



Pace Analytical Services, LLC.
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Report Prepared for:

State of Indiana
Attention: IDEM
100 North Senate Avenue

Indianapolis IN 46204

**REPORT OF
LABORATORY
ANALYSIS FOR
PCDD/PCDF**

Report Information:

Pace Project #: 10644640
Sample Receipt Date: 03/04/2023
Client Project #: Waste Sampling - OH Derailme
Client Sub PO #: N/A
State Cert #: C-MN-01

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 4 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Carolynne Trout, your Pace Project Manager.

This report has been reviewed by:

March 08, 2023

Carolynne Trout, Project Manager
(612) 607-6351
(612) 607-6444 (fax)
Carolynne.Trout@pacelabs.com



Report of Laboratory Analysis

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The results relate only to the samples included in this report.

Report Prepared Date:

March 8, 2023



DISCUSSION

This report presents the results from the analyses performed on three samples submitted by a representative of the State of Indiana. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The estimated detection limits (EDLs) were based on signal-to-noise measurements. Estimated maximum possible concentration (EMPC) values were treated as positives in the toxic equivalence calculations. This report was revised with changes to the client contact information.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 32-94%. Except for four low values, which were flagged "R" on the results tables, the labeled internal standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

Values were flagged "I" where incorrect isotope ratios were obtained or "P" where polychlorinated diphenyl ethers were present. Concentrations below the calibration range were flagged "J" and should be regarded as estimates. Values obtained from analyses of diluted extracts were flagged "D" and "N2". Values obtained from second column confirmation analyses were flagged "C".

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected congeners. These levels were below the calibration range of the method. The concentrations reported for the affected congeners in the field samples were higher than the corresponding blank levels by one or more orders of magnitude.

Laboratory and matrix spike samples were also prepared using clean reference matrix or sample matrix that had been fortified with native standard materials. The results show that the spiked native compounds in the laboratory spike sample were recovered at 79-97%. These results were within the target range for the method. Fifteen background-subtracted recovery values obtained for the matrix spike samples were below the 70-130% target range and flagged "R" on the results tables. These deviations may be due to the levels of the affected congeners in the sample material and/or sample inhomogeneity. The relative percent difference values obtained for the matrix spike analyses ranged from 2.3-19.9% and were within the 0-20% target range.

The responses obtained for selected labeled congeners in calibration standard analysis L230305B_10 were outside the target range. As specified in our procedures for this method, the averages of the daily response factors for these compounds were used in the calculations for the samples from this runshift. The affected values were flagged "Y" on the results tables.

REPORT OF LABORATORY ANALYSIS

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Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Missouri	10100
Alabama	40770	Montana	CERT0092
Alaska-DW	MN00064	Nebraska	NE-OS-18-06
Alaska-UST	17-009	Nevada	MN00064
Arizona	AZ0014	New Hampshire	2081
Arkansas - WW	88-0680	New Jersey	MN002
Arkansas-DW	MN00064	New York	11647
California	2929	North Carolina-	27700
Colorado	MN00064	North Carolina-	530
Connecticut	PH-0256	North Dakota	R-036
Florida	E87605	Ohio-DW	41244
Georgia	959	Ohio-VAP (170	CL101
Hawaii	MN00064	Ohio-VAP (180	CL110
Idaho	MN00064	Oklahoma	9507
Illinois	200011	Oregon-Primary	MN300001
Indiana	C-MN-01	Oregon-Second	MN200001
Iowa	368	Pennsylvania	68-00563
Kansas	E-10167	Puerto Rico	MN00064
Kentucky-DW	90062	South Carolina	74003
Kentucky-WW	90062	Tennessee	TN02818
Louisiana-DEQ	AI-84596	Texas	T104704192
Louisiana-DW	MN00064	Utah	MN00064
Maine	MN00064	Vermont	VT-027053137
Maryland	322	Virginia	460163
Michigan	9909	Washington	C486
Minnesota	027-053-137	West Virginia-D	382
Minnesota-Ag	via MN 027-053	West Virginia-D	9952C
Minnesota-Petr	1240	Wisconsin	999407970
Mississippi	MN00064	Wyoming-UST	via A2LA 2926.

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Reporting Flags

- A = Reporting Limit based on signal to noise (EDL)
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- H2 = Extracted outside of holding time
- I = Isotope ratio out of specification
- J = Estimated value
- L = Suppressive interference, analyte may be biased low
- Nn = Value obtained from additional analysis
- P = PCDE Interference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %D Exceeds limits
- Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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**2,3,7,8-TCDD Equivalency Factors (TEFs) for the
 Polychlorinated Dibenzo-p-dioxins and Dibenzofurans
 WHO2005 Factors**

Compound	TEF
2,3,7,8-TCDD	1.000000
1,2,3,7,8-PeCDD	1.000000
1,2,3,4,7,8-HxCDD	0.100000
1,2,3,6,7,8-HxCDD	0.100000
1,2,3,7,8,9-HxCDD	0.100000
1,2,3,4,6,7,8-HpCDD	0.010000
OCDD	0.000300
Total TCDD	0.000000
Total PeCDD	0.000000
Total HxCDD	0.000000
Total HpCDD	0.000000
<hr/>	
2,3,7,8-TCDF	0.100000
1,2,3,7,8-PeCDF	0.030000
2,3,4,7,8-PeCDF	0.300000
1,2,3,4,7,8-HxCDF	0.100000
1,2,3,6,7,8-HxCDF	0.100000
2,3,4,6,7,8-HxCDF	0.100000
1,2,3,7,8,9-HxCDF	0.100000
1,2,3,4,6,7,8-HpCDF	0.010000
1,2,3,4,7,8,9-HpCDF	0.010000
OCDF	0.000300
Total TCDF	0.000000
Total PeCDF	0.000000
Total HxCDF	0.000000
Total HpCDF	0.000000

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Appendix A

Sample Management

REPORT OF LABORATORY ANALYSIS

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Sample ID Cross Reference

<u>Client Sample ID</u>	<u>Pace Sample ID</u>	<u>Date Received</u>	<u>Sample Type</u>
WS-1	10644640001	03/04/2023	Solid
WS-2	10644640002	03/04/2023	Solid
WS-2 Dup	10644640003	03/04/2023	Solid

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>.

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Report Section A

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: IDEM Senate Avenue		Report To: Fran Metcalfe		Attention:	
Address: 100 N Senate Avenue		Copy To:		Company Name:	
Office of Land Quality, Indianapolis, IN 46204		Purchase Order #:		Address:	
Email: fmetcalf@idem.in.gov		Project Name: WASTE SAMPLING - OH DERAIL		Pace Quote:	
Phone: 317-232-7166 Fax:		Project #:		Pace Project Manager:	
Requested Due Date: 3 Day		Project #:		Pace Profile #:	

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample IDs must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	
				START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol				Other
				DATE	TIME	DATE	TIME													
1	WS-1	SL	G	3-4-23	0730			1								X	X	% Moisture		W1
2	WS-2	SL	G	3-4-23	0752			1								X	X			W2
3	WS-2 Dup	SL	G	3-4-23	0752			1								X	X			W3
4	WS-1 MS	SL	G	3-4-23	0730			2								X	X			W1
5	WS-1 MSD	SL	G	3-4-23	0730			2								X	X			W1
6																				
7																				
8																				
9																				
10																				
11																				
12																				

WO#: 10644640



ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
level IV	<i>[Signature]</i>	3-4-23	0801	Joshua Richard Pace	3/4/23	0803	
RUSH	Joshua Richard Pace	3-4-23	1131	<i>[Signature]</i>	3/4/23	1131	
	JRM Pace	3/4/23	1145	Eric Pace	3/4/23	1155	

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Chelsea McCammach						
SIGNATURE of SAMPLER: <i>[Signature]</i>						
DATE Signed: 3/4/23 0801						

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Effective Date:

Sample Condition Upon Receipt: **IDEM** Client Name:

Project #: **WO#: 10644640** PM: CT1 Due Date: 03/13/23 CLIENT: IDEM-OLG

Courier: FedEx UPS USPS Client Pace SpeeDee Commercial

Tracking Number: See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A Packing Material: Bubble Wrap Bubble Bags None Other Temp Blank? Yes No Thermometer: T1 (0461) T2 (1336) T3 (0459) T4 (0254) T5 (0178) T6 (0235) T7 (0042) T8 (0775) T9(0727) 01339252/1710 Type of Ice: Wet Blue Dry None Melted

Did Samples Originate in West Virginia? Yes No Were All Container Temps Taken? Yes No N/A Temp should be above freezing to 6 °C Cooler temp Read w/Temp Blank: _____ °C Average Corrected Temp (no temp blank only): 5.0 °C Correction Factor: -0.1 Cooler Temp Corrected w/temp blank: _____ °C See Exceptions ENV-FRM-MIN4-0142 1 Container

USDA Regulated Soil: N/A, water sample/other: _____ Date/Initials of Person Examining Contents: DM 3/14/23 Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Table with 2 columns: Location (Check one) and COMMENTS. Rows include Chain of Custody Present and Filled Out?, Chain of Custody Relinquished?, Sampler Name and/or Signature on COC?, Samples Arrived within Hold Time?, Short Hold Time Analysis (<72 hr)?, Rush Turn Around Time Requested?, Sufficient Sample Volume?, Correct Containers Used?, -Pace Containers Used?, Containers Intact?, Field Filtered Volume Received for Dissolved Tests?, Is sufficient information available to reconcile the samples to the COC?, All containers needing acid/base preservation have been checked?, All containers needing preservation are found to be in compliance with EPA recommendation?, Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS, Headspace in Methyl Mercury Container?, Extra labels present on soil VOA or WIDRO containers?, Headspace in VOA Vials (greater than 6mm)?, 3 Trip Blanks Present?, Trip Blank Custody Seals Present?.

CLIENT NOTIFICATION/RESOLUTION Person Contacted: _____ Date/Time: _____ Comments/Resolution: _____ Project Manager Review: Carolynne Trout Date: 03/04/2023 Field Data Required? Yes No

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers). Labeled By: DM Line: 2



DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form

Effective Date: 09/22/2022

Workorder #: _____

No Temp Blank		
Read Temp	Corrected Temp	Average temp
4.2	4.1	5.0
5.0	4.9	
5.4	5.3	
5.8	5.7	

PM Notified of Out of Temp Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, indicate who was contacted, date and time. If no, indicate reason why.
Multiple Cooler Project? <input type="checkbox"/> Yes <input type="checkbox"/> No

If anything is OVER 6.0° C, you MUST document containers in this section HERE



Tracking Number	Temperature

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples										
Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

Dioxin**Solid****Soxhlet****EB-34879**

QC Matrix Lot #: <u>Sand 216016</u>	Extract Solvents:	Extraction On (Date/Time): <u>03/04/23 14:30</u>
Time of Spiking: <u>03/04/23 13:30</u>	Toluene Lot # <u>221591</u>	Extraction Off (Date/Time): _____
Balance: <u>10BALO</u>	Hexane Lot # _____	03/05/23 06:30
	MeCl Lot # _____	

Standards	Name/ID	Amount	Initial	Witness	Expiration Date	Dispenser
Internal Std.	<u>FL-I-21266-122</u>	<u>100</u>	<u>JEF</u>	<u>CW1</u>	<u>02/14/24</u>	<u>Q763</u>
Native	<u>FL-N-21266-106</u>	<u>50</u>	<u>JEF</u>	<u>CW1</u>	<u>12/02/23</u>	<u>Q763</u>
CI37 Std.	<u>DWCL4-21266-111</u>	<u>50</u>	<u>JEF</u>		<u>12/15/23</u>	<u>Q844</u>
Recovery	<u>FL-R-21266-192</u>	<u>10</u>	<u>CBS</u>		<u>03/02/24</u>	<u>Q763</u>
Tridecane	<u>A0424714</u>	<u>10</u>	<u>CBS</u>			<u>Q763</u>
Others	_____	_____	_____	_____	_____	_____

#	Sample ID	Internal Standards	Native Standards	Extracted mL or g	Glassware Set	Location	Comments
1	BLANK-104421	x		10.5			
2	LCS-104422	x	x	10.7			
3	10644640001-MS	x	x	10.3		Rcvng	
4	10644640001-MSD	x	x	10.8		Rcvng	
5	10644640001	x		10.5		Rcvng	
6	10644640002	x		10.7		Rcvng	
7	10644640003	x		10.6		Rcvng	
8	10644584001	x		1.0		10-C16-153	
9	10644584002	x		1.0		10-C16-153	
10	10644584003	x		1.0		10-C16-153	
11	10644584004	x		1.0		10-C16-153	
12	10644584005	x		1.0		10-C16-153	
13	10644586001	x		1.0		10-C16-153	
14	10644586002	x		1.0		10-C16-153	
15	10644586003	x		1.0		10-C16-153	
16	10644586004	x		1.0		10-C16-153	
17	10644586005	x		1.0		10-C16-153	
18	10644586006	x		1.0		10-C16-153	

Relinquished By: CReceived By: J HeckmanDate: 3/5/2023 4:52:35

--

Silica	Alumina	Carbon	Florisil
Initials <u>CW1</u>	Initials <u>CW1</u>	Initials <u>CW1</u>	Initials _____
Date <u>3/5/2023</u>	Date <u>3/5/2023</u>	Date <u>3/5/2023</u>	Date _____
Neutral Batch <u>765</u>	Alumina Lot # <u>42XX</u>	Hexane Lot # <u>EF464-US</u>	Florisil Lot # _____
Basic Batch <u>828</u>	Hexane Lot # <u>EF464-US</u>	Dispenser <u>Q771</u>	Hexane Lot # _____
Acid Batch <u>954</u>	Dispenser <u>Q771</u>	50% Batch _____	Dispenser _____
Hexane Lot # <u>EF464-US</u>	60% Batch <u>2023</u>	Dispenser _____	6% Batch _____
Dispenser <u>Q771</u>	Dispenser <u>Q771</u>	75% Batch _____	Dispenser _____
		Dispenser _____	
		Toluene Lot # <u>EF407-US</u>	
		Dispenser <u>Q757</u>	
		Methanol Lot # _____	
		Dispenser _____	
Acid Base			
Sulphuric Acid Lot # <u>224621</u>			
Base Batch _____			



Solid Sample Moisture Log

Sample ID	Container Weight	Wet Weight	Dry Weight	% Moisture	% Solids	Assayed
10644640001	1.2457	6.6525	5.3305	24.4506	75.5494	3/5/2023
10644640002	1.2481	9.7701	7.8522	22.5052	77.4948	3/5/2023
10644640003	1.2491	9.8199	8.0524	20.6223	79.3777	3/5/2023

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Client names have been blacked out on notebook pages in order to preserve client confidentiality

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Analysis Key Code List

- = Not used	RRM = ReRun - Matrix
✓ = Worked up	RRLM = ReRun – Lock Mass
# = See comment # below	RRBI = ReRun – Bad Injection
Li = Liner, replace or clean	RRRT = ReRun – Retention Time shift
Ba = Baseplate, change	RR>S = Rerun – need better Sensitivity
SyB = Syringe, replace – bent	Re = Re-extract
SyP = Syringe, replace – plugged	AS = Adjust Slits
SyO = Syringe, replace – other	LC = Leak Check
IS = Injector Septum, replace	RB = Re-Boot system
BS = Batch Septum, replace	CiS = Cleaned inner Source
Fi = Filament, replace	CoS = Cleaned outer Source
Co = Contacts, adjust	AiS = Alternate inner Source
Ca = re-Calibrate	AoS = Alternate outer Source
Tu = Tune	<Y = Adjust Y focus down
TC = Tune and Calibrate	>Y = Adjust Y focus up
CC () = Cut Column (length cut)	Di () = Dilution needed (amount needed)
CO = Carry-Over possible	FE = Front End – liner, baseplate and septum

Sample List Report

MassLynx 4.2 SCN992

10MS4415 3/2/23

Sample List: C:\MassLynx\IpaceNew.PRO\SampleDB\I230302A.SPL
Last Modified: Thursday, March 02, 2023 13:36:17 Central Standard Time
Printed: Thursday, March 02, 2023 13:45:09 Central Standard Time

File Name	File Text	Strnd Exp.	Method	MS File	Inlet File	VIAL	VOL	Control
1 L230302A_01	BLANK BLANK-100017-10X - SMT		HOUSE	dioxfurL	dioxfur	Tray1:3	1.000000	--
2 L230302A_02	SAMP 50337675013 - SMT		8290	dioxfurL	dioxfur	Tray1:28	1.000000	--
3 L230302A_03	SAMP 50337675015 - SMT		8290	dioxfurL	dioxfur	Tray1:29	1.000000	--
4 L230302A_04	SAMP 50337675016 - SMT		8290	dioxfurL	dioxfur	Tray1:30	1.000000	--
5 L230302A_05	SAMP 50337675018 - SMT		8290	dioxfurL	dioxfur	Tray1:31	1.000000	--
6 L230302A_06	CAL CS3/CPM-22-171-022 - SMT FE 2" TC	240502	8290/1613B	dioxfurL	dioxfur	Tray1:1	1.000000	--
7 L230302A_07	CAL ICV-102062 - SMT	231025	8290/1613B	dioxfurL	dioxfur	Tray1:4	1.000000	--
8 L230302A_08	CAL CS3/CPM-22-171-022 - SMT 03/01 tune	240502	8290/1613B	dioxfurL	dioxfur	Tray1:1	1.000000	--
9 L230302A_09	CAL CS2-22-171-006 - SMT	231005	8290/1613B	dioxfurL	dioxfur	Tray1:5	1.000000	--
10 L230302A_10	CAL CS1-20-123-108 - SMT	230418	8290/1613B	dioxfurL	dioxfur	Tray1:6	1.000000	--
11 L230302A_11	CAL CS5-22-171-008 - SMT	231005	8290/1613B	dioxfurL	dioxfur	Tray1:7	1.000000	--
12 L230302A_12	CAL CS4-22-171-007 - SMT	231005	8290/1613B	dioxfurL	dioxfur	Tray1:8	1.000000	--
13 L230302A_13	BLANK NONANE - SMT		HOUSE	dioxfurL	dioxfur	Tray1:2	1.000000	--
14 L230302A_14	CAL ICV-102062 - SMT	231025	8290/1613B	dioxfurL	dioxfur	Tray1:4	1.000000	--

Sum 3/3/23

Sample List Report

MassLynx 4.2 SCN992

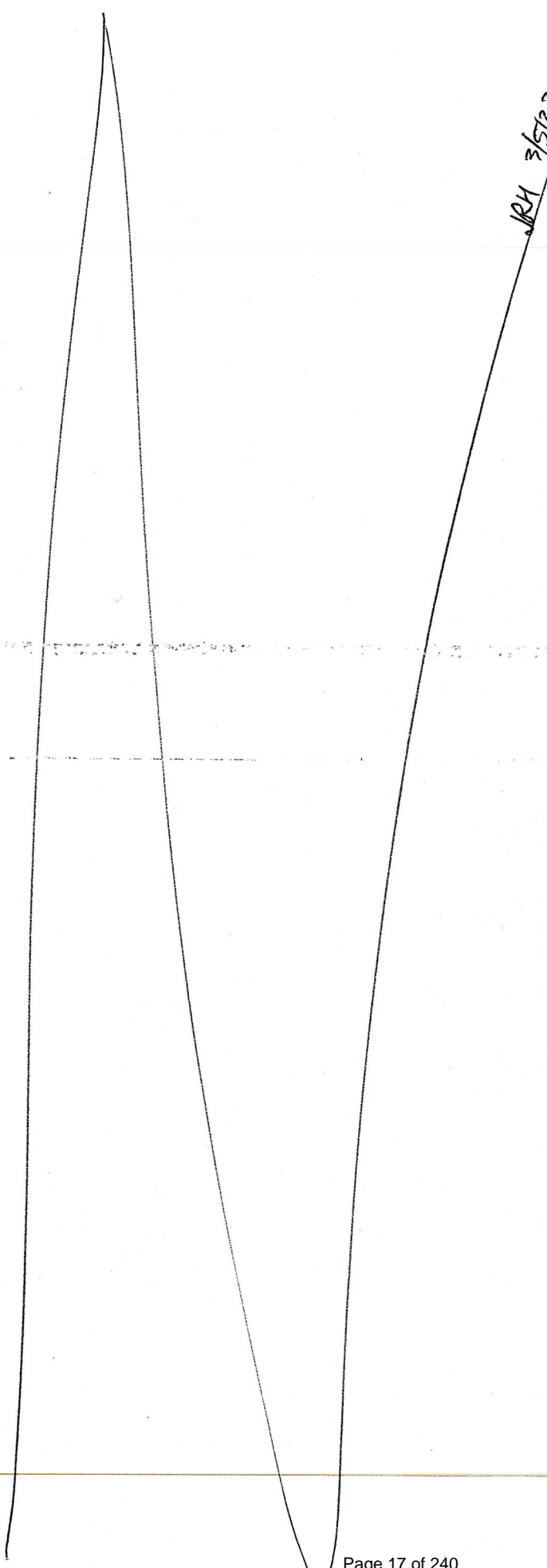
10 MSA2R15

3/5/23

Sample List: C:\MassLynx\IpaceNew\PROISample\DB\L230305A.SPL
Last Modified: Sunday, March 05, 2023 15:49:23 Central Standard Time
Printed: Sunday, March 05, 2023 15:50:16 Central Standard Time

File Name	File Text	Std Exp.	Method	MS File	Inlet File	VIAL	VOL	Control
1 L230305A_01	✓ CAL CS3/CPM-22-171-022 - JRH FECC12" TC	240502	8290/1613B	dioxfurL	dioxfur	Tray1:1	1.000000	pass 8290 + TetraS
2 L230305A_02	BLANK BLANK-100017-10X - JRH	---	HOUSE	dioxfurL	dioxfur	Tray1:3	1.000000	---
3 L230305A_03	SAMP 106433345001 - JRH	---	8290	dioxfurL	dioxfur	Tray1:33	1.000000	---
4 L230305A_04	SAMP 106433345002 - JRH	---	8290	dioxfurL	dioxfur	Tray1:34	1.000000	---
5 L230305A_05	SAMP 106433345003 - JRH	---	8290	dioxfurL	dioxfur	Tray1:35	1.000000	---
6 L230305A_06	SAMP 106433345004 - JRH	---	8290	dioxfurL	dioxfur	Tray1:36	1.000000	---
7 L230305A_07	SAMP 106433345005 - JRH	---	8290	dioxfurL	dioxfur	Tray1:37	1.000000	---
8 L230305A_08	BLANK BLANK-100017-10X - JRH	---	HOUSE	dioxfurL	dioxfur	Tray1:3	1.000000	---
9 L230305A_09	SAMP 92653933001 - JRH	---	8290	dioxfurL	dioxfur	Tray1:38	1.000000	---
10 L230305A_10	SAMP 92653933003 - JRH	---	8290	dioxfurL	dioxfur	Tray1:39	1.000000	---
11 L230305A_11	SAMP 92653933004 - JRH	---	8290	dioxfurL	dioxfur	Tray1:40	1.000000	---
12 L230305A_12	SAMP 92653933005 - JRH	---	8290	dioxfurL	dioxfur	Tray1:41	1.000000	---
13 L230305A_13	SAMP 92653933006 - JRH	---	8290	dioxfurL	dioxfur	Tray1:42	1.000000	---
14 L230305A_14	SAMP 10644341001 - JRH	---	8290	dioxfurL	dioxfur	Tray1:43	1.000000	---
15 L230305A_15	SAMP 10644342001 - JRH	---	8290	dioxfurL	dioxfur	Tray1:44	1.000000	---
16 L230305A_16	SAMP 10644346001 - JRH	---	8290	dioxfurL	dioxfur	Tray1:45	1.000000	---
17 L230305A_17	SAMP 10644225001 - JRH	---	1613B-TD	dioxfurL	dioxfur	Tray1:46	1.000000	---
18 L230305A_18	CAL CS3/CPM-22-171-022 - JRH	240502	8290/1613B	dioxfurL	dioxfur	Tray1:1	1.000000	pass all

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Sample List Report

MassLynx 4.2 SCN992

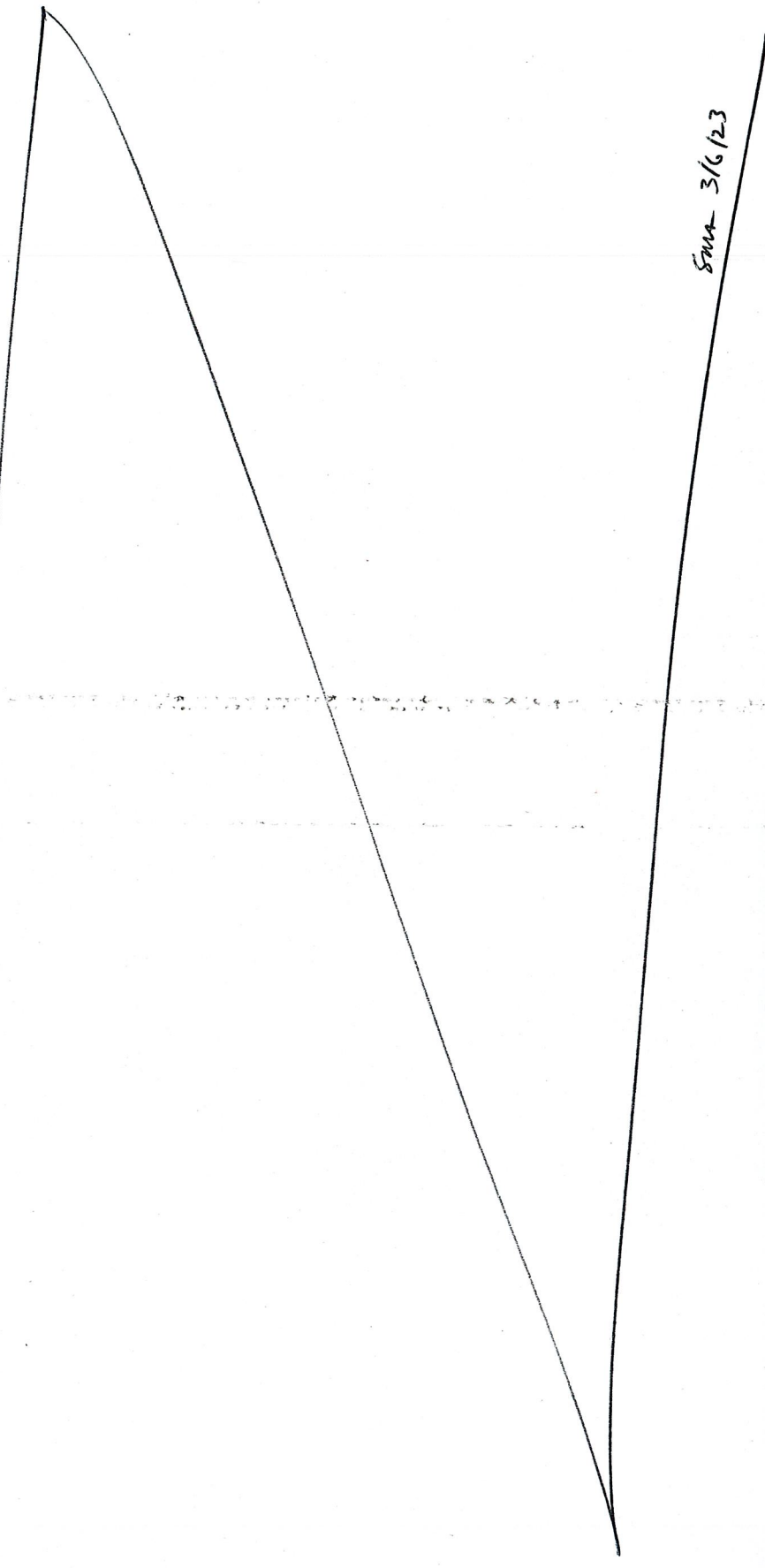
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Printed: Monday, March 06, 2023 08:09:45 Central Standard Time

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1 L230305B_01	V LCS LCS-104422 - JRH	---	8290	dioxfurL	dioxfur	Tray1:5	1.000000	---
2 L230305B_02	SAMP 10644640001-MS - JRH IDEM	---	8290	dioxfurL	dioxfur	Tray1:6	1.000000	---
3 L230305B_03	SAMP 10644640001-MSD - JRH IDEM	---	8290	dioxfurL	dioxfur	Tray1:7	1.000000	---
4 L230305B_04	BLANK BLANK-100017-10X - JRH	---	HOUSE	dioxfurL	dioxfur	Tray1:3	1.000000	---
5 L230305B_05	BLANK BLANK-104421 - JRH	---	8290	dioxfurL	dioxfur	Tray1:4	1.000000	---
6 L230305B_06	SAMP 10644640001 - JRH IDEM	---	8290	dioxfurL	dioxfur	Tray1:8	1.000000	---
7 L230305B_07	SAMP 10644640002 - JRH IDEM	---	8290	dioxfurL	dioxfur	Tray1:9	1.000000	---
8 L230305B_08	SAMP 10644640003 - JRH IDEM	---	8290	dioxfurL	dioxfur	Tray1:10	1.000000	---
9 L230305B_09	BLANK NONANE - JRH prev matrix	---	HOUSE	dioxfurL	dioxfur	Tray1:2	1.000000	---
10 L230305B_10	CAL CS3/CPM-22-171-022 - JRH	240502	8290/1613B	dioxfurL	dioxfur	Tray1:1	1.000000	---

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Sample List Report

MassLynx 4.2 SCN992

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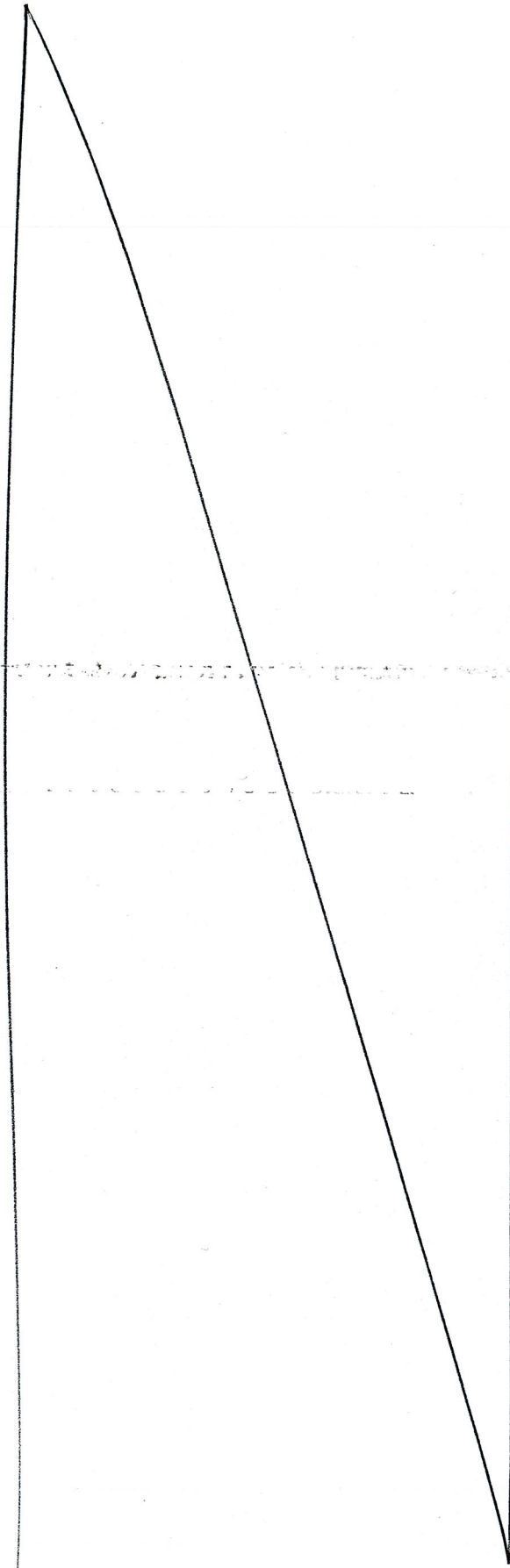
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Printed: Monday, March 06, 2023 12:09:15 Central Standard Time

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Page Position (1, 1)

File Name	File Text	Std Exp.	Method	MS File	Inlet File	VIAL	VOL	Control
1 L230306A_01	✓ CAL CS3/CPM-22-171-022 - SMT FE 3"	240502	8290/1613B	dioxfurL	dioxfur	Tray1:1	1.000000	--
2 L230306A_02	BLANK BLANK-100017-10X - SMT	--	HOUSE	dioxfurL	dioxfur	Tray1:3	1.000000	--
3 L230306A_03	✓ SAMP 10644584001 - SMT	--	8290	dioxfurL	dioxfur	Tray1:4	1.000000	--
4 L230306A_04	✓ SAMP 10644584002 - SMT	--	8290	dioxfurL	dioxfur	Tray1:5	1.000000	--
5 L230306A_05	✓ SAMP 10644584003 - SMT	--	8290	dioxfurL	dioxfur	Tray1:6	1.000000	--
6 L230306A_06	✓ SAMP 10644584004 - SMT	--	8290	dioxfurL	dioxfur	Tray1:7	1.000000	--
7 L230306A_07	✓ SAMP 10644584005 - SMT	--	8290	dioxfurL	dioxfur	Tray1:8	1.000000	--
8 L230306A_08	✓ SAMP 10644586001 - SMT	--	8290	dioxfurL	dioxfur	Tray1:9	1.000000	--
9 L230306A_09	✓ SAMP 10644586002 - SMT	--	8290	dioxfurL	dioxfur	Tray1:10	1.000000	--
10 L230306A_10	✓ SAMP 10644586003 - SMT	--	8290	dioxfurL	dioxfur	Tray1:11	1.000000	--
11 L230306A_11	✓ SAMP 10644586004 - SMT	--	8290	dioxfurL	dioxfur	Tray1:12	1.000000	--
12 L230306A_12	✓ SAMP 10644586005 - SMT	--	8290	dioxfurL	dioxfur	Tray1:13	1.000000	--
13 L230306A_13	✓ SAMP 10644586006 - SMT	--	8290	dioxfurL	dioxfur	Tray1:14	1.000000	--
14 L230306A_14	BLANK BLANK-104391 - SMT	--	8290/1613B	dioxfurL	dioxfur	Tray1:15	1.000000	--
15 L230306A_15	✓ CS MDL-104388 - SMT	--	8290/1613B	dioxfurL	dioxfur	Tray1:16	1.000000	--
16 L230306A_16	✓ CS MDL-104389 - SMT	--	8290/1613B	dioxfurL	dioxfur	Tray1:17	1.000000	--
17 L230306A_17	✓ CAL CS3/CPM-22-171-022 - SMT	240502	8290/1613B	dioxfurL	dioxfur	Tray1:1	1.000000	--

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Sample List Report

MassLynx 4.2 SCN992

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Sample List: C:\MassLynx\IpaceNew\PROISampleDB\L230306B.SPL
Last Modified: Monday, March 06, 2023 12:31:15 Central Standard Time
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Page Position (1, 1)

File Name	File Text	Stnd Exp.	Method	MS File	Inlet File	VIAL	VOL	Control
1 L230306B_01	SAMP 50337714009-MS - SMT	3/14	8290	dioxfurL	dioxfur	Tray1:18	1.000000	--
2 L230306B_02	SAMP 50337714009-MSD - SMT		8290	dioxfurL	dioxfur	Tray1:19	1.000000	--
3 L230306B_03	BLANK BLANK-100017-10X - SMT		HOUSE	dioxfurL	dioxfur	Tray1:3	1.000000	--
4 L230306B_04	BLANK BLANK-104390 - SMT		8290/1613B	dioxfurL	dioxfur	Tray1:20	1.000000	--
5 L230306B_05	SAMP 50337714009 - SMT		8290	dioxfurL	dioxfur	Tray1:21	1.000000	--
6 L230306B_06	SAMP 50337714006 - SMT	3/14	8290	dioxfurL	dioxfur	Tray1:22	1.000000	--
7 L230306B_07	SAMP 50337714001 - SMT		8290	dioxfurL	dioxfur	Tray1:23	1.000000	--
8 L230306B_08	SAMP 10644156001 - SMT		1613B	dioxfurL	dioxfur	Tray1:24	1.000000	--
9 L230306B_09	SAMP 10644156002 - SMT		1613B	dioxfurL	dioxfur	Tray1:25	1.000000	--
10 L230306B_10	SAMP 10644156003 - SMT	3/14	1613B	dioxfurL	dioxfur	Tray1:26	1.000000	--
11 L230306B_11	SAMP 10644156004 - SMT		1613B	dioxfurL	dioxfur	Tray1:27	1.000000	--
12 L230306B_12	SAMP 10644340001 - SMT	3/14	1613B	dioxfurL	dioxfur	Tray1:28	1.000000	--
13 L230306B_13	SAMP 10643984001 - SMT	3/20	1613B	dioxfurL	dioxfur	Tray1:29	1.000000	--
14 L230306B_14	SAMP 10643983001 - SMT	3/24	1613B	dioxfurL	dioxfur	Tray1:30	1.000000	--
15 L230306B_15	SAMP 10644640002 - SMT DEM-10X		8290	dioxfurL	dioxfur	Tray1:31	1.000000	--
16 L230306B_16	BLANK NONANE - SMT high level		HOUSE	dioxfurL	dioxfur	Tray1:2	1.000000	--
17 L230306B_17	CAL CS3/CPM-22-171-022 - SMT	240502	8290/1613B	dioxfurL	dioxfur	Tray1:1	1.000000	--

3/17/23

Sample List Report

MassLynx 4.2 SCN992

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10/19/22

Sample List: C:\MassLynx\Default.pro\Sampledb\U221009A.SPL

Page 1 of 1

Last Modified: Sunday, October 09, 2022 10:59:07 Central Daylight Time

Printed: Sunday, October 09, 2022 10:59:09 Central Daylight Time

Page Position (1, 1)

File Name	File Text	Stnd Exp	Method	MS File	Inlet File	Vial	Vol	Control
1 U221009A_01	✓ CAL CPM-11321-090 - JRH TC col. US2588526H	NA	TCDF-conf	DB225	DB225	Tray1:4	1.000000	--
2 U221009A_02	✓ CAL CS3/CPM-22-171-005 - JRH	231003	TCDF-conf	DB225	DB225	Tray1:1	1.000000	--
3 U221009A_03	✓ CAL CS2-22-171-006 - JRH	231005	TCDF-conf	DB225	DB225	Tray1:5	1.000000	--
4 U221009A_04	✓ CAL CS1-20-123-108 - JRH	230418	TCDF-conf	DB225	DB225	Tray1:6	1.000000	--
5 U221009A_05	✓ CAL CS5-22-171-008 - JRH	231005	TCDF-conf	DB225	DB225	Tray1:7	1.000000	--
6 U221009A_06	✓ CAL CS4-22-171-007 - JRH	231005	TCDF-conf	DB225	DB225	Tray1:8	1.000000	--
7 U221009A_07	BLANK NONANE - JRH	--	TCDF-conf	DB225	DB225	Tray1:2	1.000000	--
8 U221009A_08	✓ CAL ICV-101693 - JRH	230902	TCDF-conf	DB225	DB225	Tray1:9	1.000000	--
9 U221009A_09	BLANK NONANE - JRH	--	TCDF-conf	DB225	DB225	Tray1:2	1.000000	--

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✓ JPA 10/19/22

Sample List Report

MassLynx 4.2 SCN992

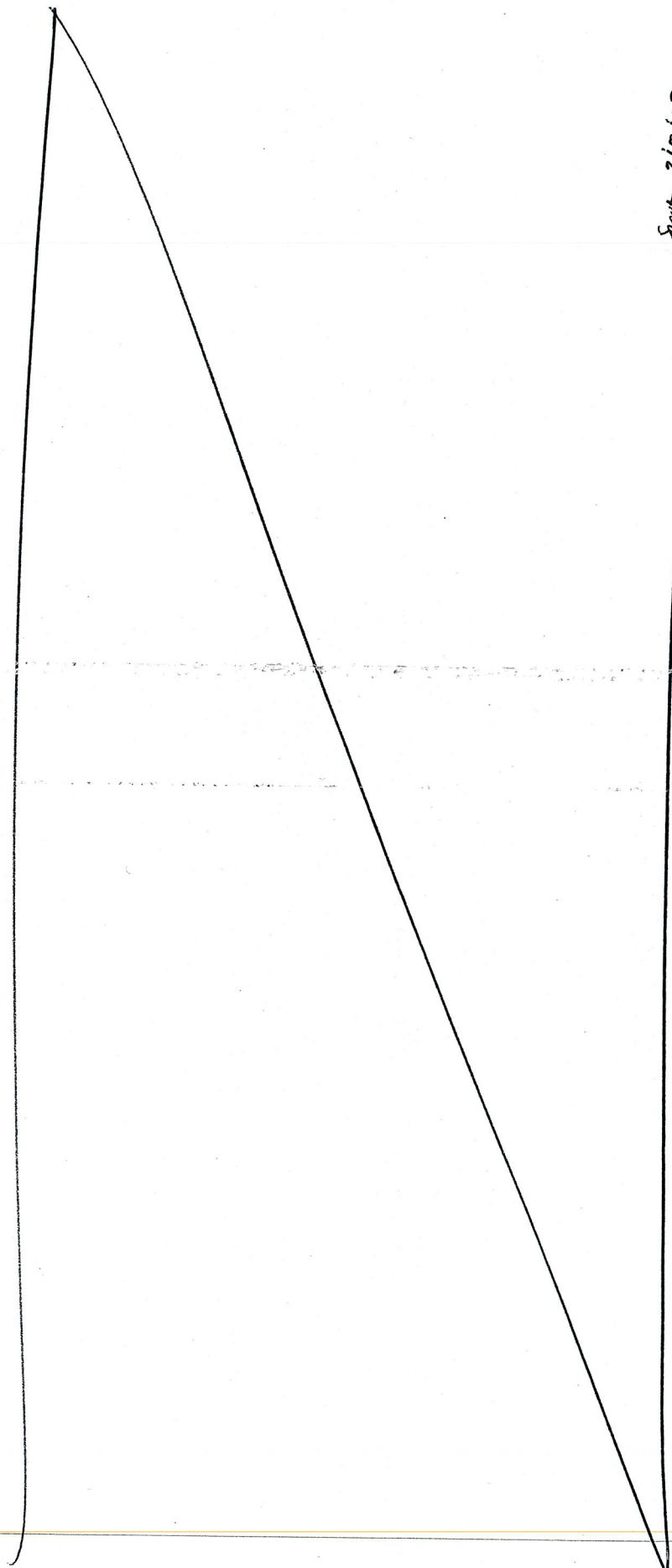
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Printed: Tuesday, March 07, 2023 14:24:44 Central Standard Time

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1 U230307A_01	✓ CAL CPM-11321-090 - SMT (empty)	NA	TCDF-conf	DB225	DB225	Tray1:4	1.000000	--
2 U230307A_02	✓ CAL CPM-11321-090 - SMT	NA	TCDF-conf	DB225	DB225	Tray1:4	1.000000	--
3 U230307A_03	✓ CAL CS3-22-171-004 - SMT	231001	TCDF-conf	DB225	DB225	Tray1:5	1.000000	--
4 U230307A_04	✓ B1ANK NONANE - SMT	--	TCDF-conf	DB225	DB225	Tray1:2	1.000000	--
5 U230307A_05	✓ SAMP 10644640001 - SMT IDEM	--	TCDF-conf	DB225	DB225	Tray1:6	1.000000	--
6 U230307A_06	✓ SAMP 10644640002 - SMT IDEM	--	TCDF-conf	DB225	DB225	Tray1:7	1.000000	--
7 U230307A_07	✓ SAMP 10644640003 - SMT IDEM	231001	TCDF-conf	DB225	DB225	Tray1:8	1.000000	--
8 U230307A_08	✓ CAL CS3-22-171-004 - SMT	230418	TCDF-conf	DB225	DB225	Tray1:5	1.000000	--
9 U230307A_09	✓ CAL CS1-20-123-108 - SMT	230418	TCDF-conf	DB225	DB225	Tray1:9	1.000000	--

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Appendix B

Sample Analysis Summary

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - State of Indiana

Client's Sample ID	WS-1		
Lab Sample ID	10644640001		
Filename	L230305B_06		
Injected By	JRH		
Total Amount Extracted	10.5 g	Matrix	Solid
% Moisture	24.5	Dilution	NA
Dry Weight Extracted	7.96 g	Collected	03/04/2023 07:30
ICAL ID	L230302	Received	03/04/2023 11:55
CCal Filename(s)	L230305A_18 & L230305B_10	Extracted	03/04/2023 14:30
Method Blank ID	BLANK-104421	Analyzed	03/06/2023 02:09

Native Isomers	Conc ug/Kg	EMPC ug/Kg	EDL ug/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.034	----	0.00050	C	2,3,7,8-TCDF-13C	2.00	81
Total TCDF	0.90	----	0.00020		2,3,7,8-TCDD-13C	2.00	74
					1,2,3,7,8-PeCDF-13C	2.00	77
2,3,7,8-TCDD	0.0030	----	0.00011		2,3,4,7,8-PeCDF-13C	2.00	73
Total TCDD	0.17	----	0.00011		1,2,3,7,8-PeCDD-13C	2.00	81
					1,2,3,4,7,8-HxCDF-13C	2.00	93
1,2,3,7,8-PeCDF	0.066	----	0.00014		1,2,3,6,7,8-HxCDF-13C	2.00	83
2,3,4,7,8-PeCDF	0.080	----	0.00021		2,3,4,6,7,8-HxCDF-13C	2.00	77
Total PeCDF	1.00	----	0.00014		1,2,3,7,8,9-HxCDF-13C	2.00	70
					1,2,3,4,7,8-HxCDD-13C	2.00	73
1,2,3,7,8-PeCDD	0.021	----	0.000085		1,2,3,6,7,8-HxCDD-13C	2.00	80
Total PeCDD	0.31	----	0.000085		1,2,3,4,6,7,8-HpCDF-13C	2.00	48
					1,2,3,4,7,8,9-HpCDF-13C	2.00	50 Y
1,2,3,4,7,8-HxCDF	----	0.13	0.00038	P	1,2,3,4,6,7,8-HpCDD-13C	2.00	48
1,2,3,6,7,8-HxCDF	0.12	----	0.00039		OCDD-13C	4.00	34 RY
2,3,4,6,7,8-HxCDF	0.076	----	0.00034				
1,2,3,7,8,9-HxCDF	0.035	----	0.00060		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.83	----	0.00034		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.024	----	0.00033		2,3,7,8-TCDD-37Cl4	0.20	69
1,2,3,6,7,8-HxCDD	0.046	----	0.00040				
1,2,3,7,8,9-HxCDD	0.037	----	0.00043				
Total HxCDD	0.50	----	0.00033				
1,2,3,4,6,7,8-HpCDF	0.51	----	0.00050		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.077	----	0.0010		Equivalence: 0.11 ug/Kg		
Total HpCDF	0.83	----	0.00050		(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	0.34	----	0.00053				
Total HpCDD	0.84	----	0.00053				
OCDF	1.6	----	0.0013				
OCDD	1.7	----	0.0012				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range
P = PCDE Interference
C = Result obtained from confirmation analysis
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - State of Indiana

Client's Sample ID	WS-2		
Lab Sample ID	10644640002		
Filename	L230305B_07		
Injected By	JRH		
Total Amount Extracted	10.7 g	Matrix	Solid
% Moisture	22.5	Dilution	NA
Dry Weight Extracted	8.32 g	Collected	03/04/2023 07:52
ICAL ID	L230302	Received	03/04/2023 11:55
CCal Filename(s)	L230305A_18 & L230305B_10	Extracted	03/04/2023 14:30
Method Blank ID	BLANK-104421	Analyzed	03/06/2023 02:53

Native Isomers	Conc ug/Kg	EMPC ug/Kg	EDL ug/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.061	----	0.00052	C	2,3,7,8-TCDF-13C	2.00	80
Total TCDF	1.5	----	0.00020		2,3,7,8-TCDD-13C	2.00	73
					1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	0.0044	----	0.00016		2,3,4,7,8-PeCDF-13C	2.00	76
Total TCDD	0.23	----	0.00016		1,2,3,7,8-PeCDD-13C	2.00	81
					1,2,3,4,7,8-HxCDF-13C	2.00	94
1,2,3,7,8-PeCDF	0.53	----	0.00055		1,2,3,6,7,8-HxCDF-13C	2.00	89
2,3,4,7,8-PeCDF	0.23	----	0.00026		2,3,4,6,7,8-HxCDF-13C	2.00	79
Total PeCDF	3.6	----	0.00026		1,2,3,7,8,9-HxCDF-13C	2.00	71
					1,2,3,4,7,8-HxCDD-13C	2.00	79
1,2,3,7,8-PeCDD	0.042	----	0.000096		1,2,3,6,7,8-HxCDD-13C	2.00	79
Total PeCDD	0.50	----	0.000096		1,2,3,4,6,7,8-HpCDF-13C	2.00	63 DN2
					1,2,3,4,7,8,9-HpCDF-13C	2.00	56 DN2
1,2,3,4,7,8-HxCDF	----	2.2	0.00087	P	1,2,3,4,6,7,8-HpCDD-13C	2.00	55
1,2,3,6,7,8-HxCDF	1.2	----	0.00093		OCDD-13C	4.00	39 RY
2,3,4,6,7,8-HxCDF	0.32	----	0.00078				
1,2,3,7,8,9-HxCDF	0.35	----	0.0013		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	6.7	----	0.00078		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.094	----	0.00045		2,3,7,8-TCDD-37Cl4	0.20	65
1,2,3,6,7,8-HxCDD	0.17	----	0.00056				
1,2,3,7,8,9-HxCDD	0.14	----	0.00034				
Total HxCDD	1.4	----	0.00034				
1,2,3,4,6,7,8-HpCDF	8.0	----	0.0044	DN2	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.3	----	0.0064	DN2	Equivalence: 0.70 ug/Kg		
Total HpCDF	12	----	0.0044	DN2	(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	2.1	----	0.00039				
Total HpCDD	3.6	----	0.00039				
OCDF	8.5	----	0.0015				
OCDD	5.6	----	0.0011				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

R = Recovery outside target range

P = PCDE Interference

D = Result obtained from analysis of diluted sample

Nh = Value obtained from additional analysis

C = Result obtained from confirmation analysis

Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - State of Indiana

Client's Sample ID	WS-2 Dup		
Lab Sample ID	10644640003		
Filename	L230305B_08		
Injected By	JRH		
Total Amount Extracted	10.6 g	Matrix	Solid
% Moisture	20.6	Dilution	NA
Dry Weight Extracted	8.44 g	Collected	03/04/2023 07:52
ICAL ID	L230302	Received	03/04/2023 11:55
CCal Filename(s)	L230305A_18 & L230305B_10	Extracted	03/04/2023 14:30
Method Blank ID	BLANK-104421	Analyzed	03/06/2023 03:38

Native Isomers	Conc ug/Kg	EMPC ug/Kg	EDL ug/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.041	----	0.00026	C	2,3,7,8-TCDF-13C	2.00	72
Total TCDF	1.1	----	0.00020		2,3,7,8-TCDD-13C	2.00	67
					1,2,3,7,8-PeCDF-13C	2.00	67
2,3,7,8-TCDD	0.0037	----	0.00013		2,3,4,7,8-PeCDF-13C	2.00	65
Total TCDD	0.20	----	0.00013		1,2,3,7,8-PeCDD-13C	2.00	68
					1,2,3,4,7,8-HxCDF-13C	2.00	89
1,2,3,7,8-PeCDF	0.090	----	0.00020		1,2,3,6,7,8-HxCDF-13C	2.00	81
2,3,4,7,8-PeCDF	0.10	----	0.00019		2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	1.3	----	0.00019		1,2,3,7,8,9-HxCDF-13C	2.00	65
					1,2,3,4,7,8-HxCDD-13C	2.00	68
1,2,3,7,8-PeCDD	0.026	----	0.00011		1,2,3,6,7,8-HxCDD-13C	2.00	74
Total PeCDD	0.41	----	0.00011		1,2,3,4,6,7,8-HpCDF-13C	2.00	47
					1,2,3,4,7,8,9-HpCDF-13C	2.00	47 Y
1,2,3,4,7,8-HxCDF	----	0.19	0.00027	P	1,2,3,4,6,7,8-HpCDD-13C	2.00	44
1,2,3,6,7,8-HxCDF	0.16	----	0.00043		OCDD-13C	4.00	32 RY
2,3,4,6,7,8-HxCDF	0.10	----	0.00039				
1,2,3,7,8,9-HxCDF	0.050	----	0.00033		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	1.1	----	0.00027		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.032	----	0.00045		2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	0.065	----	0.00041				
1,2,3,7,8,9-HxCDD	0.052	----	0.00035				
Total HxCDD	0.69	----	0.00035				
1,2,3,4,6,7,8-HpCDF	0.75	----	0.00045		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.10	----	0.00086		Equivalence: 0.15 ug/Kg		
Total HpCDF	1.2	----	0.00045		(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	0.45	----	0.00044				
Total HpCDD	1.1	----	0.00044				
OCDF	0.77	----	0.00072				
OCDD	1.7	----	0.0012				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range
P = PCDE Interference
C = Result obtained from confirmation analysis
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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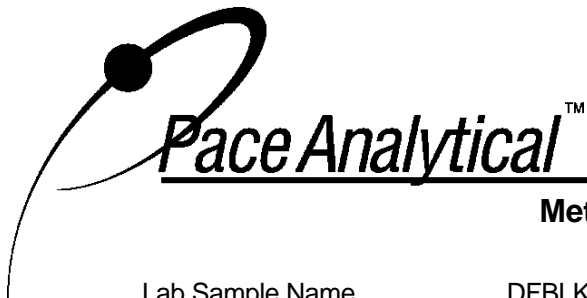
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Appendix C

QC and Calibration Results Summary

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Method 8290 Blank Analysis Results

Lab Sample Name	DFBLKYD	Matrix	Solid/Wipe
Lab Sample ID	BLANK-104421	Dilution	NA
Filename	L230305B_05	Extracted	03/04/2023 14:30
Total Amount Extracted	10.5 g	Analyzed	03/06/2023 01:24
ICAL ID	L230302	Injected By	JRH
CCal Filename(s)	L230305A_18 & L230305B_10		

Native Isomers	Conc ug/Kg	EMPC ug/Kg	EDL ug/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.000051	2,3,7,8-TCDF-13C	2.00	84
Total TCDF	ND	----	0.000051	2,3,7,8-TCDD-13C	2.00	80
				1,2,3,7,8-PeCDF-13C	2.00	94
2,3,7,8-TCDD	ND	----	0.000042	2,3,4,7,8-PeCDF-13C	2.00	94
Total TCDD	0.00021	----	0.000042 J	1,2,3,7,8-PeCDD-13C	2.00	102
				1,2,3,4,7,8-HxCDF-13C	2.00	101
1,2,3,7,8-PeCDF	ND	----	0.000029	1,2,3,6,7,8-HxCDF-13C	2.00	92
2,3,4,7,8-PeCDF	ND	----	0.000031	2,3,4,6,7,8-HxCDF-13C	2.00	92
Total PeCDF	ND	----	0.000029	1,2,3,7,8,9-HxCDF-13C	2.00	78
				1,2,3,4,7,8-HxCDD-13C	2.00	87
1,2,3,7,8-PeCDD	ND	----	0.000049	1,2,3,6,7,8-HxCDD-13C	2.00	87
Total PeCDD	ND	----	0.000049	1,2,3,4,6,7,8-HpCDF-13C	2.00	64
				1,2,3,4,7,8,9-HpCDF-13C	2.00	64 Y
1,2,3,4,7,8-HxCDF	ND	----	0.000029	1,2,3,4,6,7,8-HpCDD-13C	2.00	60
1,2,3,6,7,8-HxCDF	ND	----	0.000028	OCDD-13C	4.00	46 Y
2,3,4,6,7,8-HxCDF	ND	----	0.000030			
1,2,3,7,8,9-HxCDF	----	0.000076	0.000044 U	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	0.000028	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.00017	----	0.000090 J	2,3,7,8-TCDD-37Cl4	0.20	71
1,2,3,6,7,8-HxCDD	ND	----	0.000087			
1,2,3,7,8,9-HxCDD	ND	----	0.000082			
Total HxCDD	0.00017	----	0.000082 J			
1,2,3,4,6,7,8-HpCDF	ND	----	0.000053	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.00010	Equivalence: 0.000026 ug/Kg		
Total HpCDF	ND	----	0.000053	(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	0.00013	----	0.00012 J			
Total HpCDD	0.00013	----	0.00012 J			
OCDF	ND	----	0.00018			
OCDD	----	0.00037	0.00023 U			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
 EMPC = Estimated Maximum Possible Concentration
 EDL = Estimated Detection Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.
 J = Estimated value
 I = Isotope ratio out of specification
 Y = Calculated using average of daily RFs

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Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-104422	Matrix	Solid/Wipe
Filename	L230305B_01	Dilution	NA
Total Amount Extracted	10.7 g	Extracted	03/04/2023 14:30
ICAL ID	L230302	Analyzed	03/05/2023 22:26
CCal Filename(s)	L230305A_18 & L230305B_10	Injected By	JRH
Method Blank ID	BLANK-104421		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.17	84	2,3,7,8-TCDF-13C	2.0	102
Total TCDF				2,3,7,8-TCDD-13C	2.0	95
				1,2,3,7,8-PeCDF-13C	2.0	119
2,3,7,8-TCDD	0.20	0.18	88	2,3,4,7,8-PeCDF-13C	2.0	119
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	132
				1,2,3,4,7,8-HxCDF-13C	2.0	113
1,2,3,7,8-PeCDF	1.0	0.81	81	1,2,3,6,7,8-HxCDF-13C	2.0	104
2,3,4,7,8-PeCDF	1.0	0.83	83	2,3,4,6,7,8-HxCDF-13C	2.0	106
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	99
				1,2,3,4,7,8-HxCDD-13C	2.0	102
1,2,3,7,8-PeCDD	1.0	0.79	79	1,2,3,6,7,8-HxCDD-13C	2.0	107
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	93
				1,2,3,4,7,8,9-HpCDF-13C	2.0	114 Y
1,2,3,4,7,8-HxCDF	1.0	0.85	85	1,2,3,4,6,7,8-HpCDD-13C	2.0	98
1,2,3,6,7,8-HxCDF	1.0	0.87	87	OCDD-13C	4.0	106 Y
2,3,4,6,7,8-HxCDF	1.0	0.87	87			
1,2,3,7,8,9-HxCDF	1.0	0.88	88	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	0.91	91	2,3,7,8-TCDD-37Cl4	0.20	87
1,2,3,6,7,8-HxCDD	1.0	0.87	87			
1,2,3,7,8,9-HxCDD	1.0	0.89	89			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	0.86	86			
1,2,3,4,7,8,9-HpCDF	1.0	0.88	88			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.81	81			
Total HpCDD						
OCDF	2.0	1.8	92			
OCDD	2.0	1.9	97			

Qs = Quantity Spiked
 Qm = Quantity Measured
 Rec. = Recovery (Expressed as Percent)
 R = Recovery outside of target range

Y = RF averaging used in calculations
 Nn = Value obtained from additional analysis
 NA = Not Applicable
 * = See Discussion

REPORT OF LABORATORY ANALYSIS

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Method 8290 Spiked Sample Report

Client - State of Indiana

Client's Sample ID	WS-1-MS	Matrix	Solid
Lab Sample ID	10644640001-MS	Dilution	NA
Filename	L230305B_02	Extracted	03/04/2023 14:30
Total Amount Extracted	10.3 g	Analyzed	03/05/2023 23:11
ICAL ID	L230302	Injected By	JRH
CCal Filename(s)	L230305A_18 & L230305B_10		
Method Blank ID	BLANK-104421		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.39	62 R	2,3,7,8-TCDF-13C	2.00	95
				2,3,7,8-TCDD-13C	2.00	90
				1,2,3,7,8-PeCDF-13C	2.00	97
2,3,7,8-TCDD	0.20	0.20	86	2,3,4,7,8-PeCDF-13C	2.00	98
				1,2,3,7,8-PeCDD-13C	2.00	104
				1,2,3,4,7,8-HxCDF-13C	2.00	106
1,2,3,7,8-PeCDF	1.00	1.31	80	1,2,3,6,7,8-HxCDF-13C	2.00	99
2,3,4,7,8-PeCDF	1.00	1.45	83	2,3,4,6,7,8-HxCDF-13C	2.00	89
				1,2,3,7,8,9-HxCDF-13C	2.00	88
				1,2,3,4,7,8-HxCDD-13C	2.00	91
1,2,3,7,8-PeCDD	1.00	0.96	80	1,2,3,6,7,8-HxCDD-13C	2.00	92
				1,2,3,4,6,7,8-HpCDF-13C	2.00	64
				1,2,3,4,7,8,9-HpCDF-13C	2.00	73 Y
1,2,3,4,7,8-HxCDF	1.00	1.69	64 PR	1,2,3,4,6,7,8-HpCDD-13C	2.00	67
1,2,3,6,7,8-HxCDF	1.00	1.60	68 R	OCDD-13C	4.00	53 Y
2,3,4,6,7,8-HxCDF	1.00	1.44	85			
1,2,3,7,8,9-HxCDF	1.00	1.12	85	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.04	85	2,3,7,8-TCDD-37Cl4	0.20	80
1,2,3,6,7,8-HxCDD	1.00	1.25	89			
1,2,3,7,8,9-HxCDD	1.00	1.18	89			
1,2,3,4,6,7,8-HpCDF	1.00	3.42	0 R			
1,2,3,4,7,8,9-HpCDF	1.00	1.30	70			
1,2,3,4,6,7,8-HpCDD	1.00	2.85	20 R			
OCDF	2.00	4.52	0 R			
OCDD	2.00	11.37	0 R			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

R = Recovery outside target range

P = PCDE Interference

Y = Calculated using average of daily RFs

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Method 8290 Spiked Sample Report

Client - State of Indiana

Client's Sample ID	WS-1-MSD	Matrix	Solid
Lab Sample ID	10644640001-MSD	Dilution	NA
Filename	L230305B_03	Extracted	03/04/2023 14:30
Total Amount Extracted	10.8 g	Analyzed	03/05/2023 23:55
ICAL ID	L230302	Injected By	JRH
CCal Filename(s)	L230305A_18 & L230305B_10		
Method Blank ID	BLANK-104421		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.38	188 R	2,3,7,8-TCDF-13C	2.00	91
				2,3,7,8-TCDD-13C	2.00	85
				1,2,3,7,8-PeCDF-13C	2.00	90
2,3,7,8-TCDD	0.20	0.20	102	2,3,4,7,8-PeCDF-13C	2.00	87
				1,2,3,7,8-PeCDD-13C	2.00	92
				1,2,3,4,7,8-HxCDF-13C	2.00	103
1,2,3,7,8-PeCDF	1.00	1.26	126	1,2,3,6,7,8-HxCDF-13C	2.00	95
2,3,4,7,8-PeCDF	1.00	1.37	137 R	2,3,4,6,7,8-HxCDF-13C	2.00	86
				1,2,3,7,8,9-HxCDF-13C	2.00	79
				1,2,3,4,7,8-HxCDD-13C	2.00	87
1,2,3,7,8-PeCDD	1.00	0.94	94	1,2,3,6,7,8-HxCDD-13C	2.00	89
				1,2,3,4,6,7,8-HpCDF-13C	2.00	54
				1,2,3,4,7,8,9-HpCDF-13C	2.00	56 Y
1,2,3,4,7,8-HxCDF	1.00	1.61	161 PR	1,2,3,4,6,7,8-HpCDD-13C	2.00	53
1,2,3,6,7,8-HxCDF	1.00	1.46	145 R	OCDD-13C	4.00	37 RY
2,3,4,6,7,8-HxCDF	1.00	1.32	132 R			
1,2,3,7,8,9-HxCDF	1.00	1.09	109	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.01	101	2,3,7,8-TCDD-37Cl4	0.20	78
1,2,3,6,7,8-HxCDD	1.00	1.14	114			
1,2,3,7,8,9-HxCDD	1.00	1.07	107			
1,2,3,4,6,7,8-HpCDF	1.00	2.89	289 R			
1,2,3,4,7,8,9-HpCDF	1.00	1.24	124			
1,2,3,4,6,7,8-HpCDD	1.00	2.33	233 R			
OCDF	2.00	4.18	208 R			
OCDD	2.00	9.63	481 R			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

R = Recovery outside target range

P = PCDE Interference

Y = Calculated using average of daily RFs

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Method 8290 Spike Sample Results

Client - State of Indiana

Client Sample ID	WS-1	Sample Filename	L230305B_06
Lab Sample ID	10644640001	MS Filename	L230305B_02
MS ID	10644640001-MS	MSD Filename	L230305B_03
MSD ID	10644640001-MSD		

Analyte	Quantity Spiked	Unspiked Sample Contribution		Quantity Measured		RPD	Subtracted Recovery	
	(ng)	to MS (ng)	to MSD (ng)	MS (ng)	MSD (ng)		MS (%)	MSD (%)
2,3,7,8-TCDF	0.20	0.267	0.000280	0.39	0.38	3.9	62	188
2,3,7,8-TCDD	0.20	0.0235	0.0000247	0.20	0.20	3.8	86	102
1,2,3,7,8-PeCDF	1.00	0.510	0.000536	1.31	1.26	3.9	80	126
2,3,4,7,8-PeCDF	1.00	0.621	0.000652	1.45	1.37	5.1	83	137
1,2,3,7,8-PeCDD	1.00	0.163	0.000171	0.96	0.94	2.6	80	94
1,2,3,4,7,8-HxCDF	1.00	1.05	0.00110	1.69	1.61	5.0	64	161
1,2,3,6,7,8-HxCDF	1.00	0.920	0.000967	1.60	1.46	9.2	68	145
2,3,4,6,7,8-HxCDF	1.00	0.592	0.000622	1.44	1.32	9.0	85	132
1,2,3,7,8,9-HxCDF	1.00	0.268	0.000282	1.12	1.09	2.3	85	109
1,2,3,4,7,8-HxCDD	1.00	0.189	0.000199	1.04	1.01	3.2	85	101
1,2,3,6,7,8-HxCDD	1.00	0.359	0.000378	1.25	1.14	9.5	89	114
1,2,3,7,8,9-HxCDD	1.00	0.289	0.000304	1.18	1.07	10.1	89	107
1,2,3,4,6,7,8-HpCDF	1.00	3.95	0.00415	3.42	2.89	16.6	0	289
1,2,3,4,7,8,9-HpCDF	1.00	0.596	0.000626	1.30	1.24	4.3	70	124
1,2,3,4,6,7,8-HpCDD	1.00	2.65	0.00279	2.85	2.33	19.9	20	233
OCDF	2.00	12.1	0.0127	4.52	4.18	8.0	0	208
OCDD	2.00	13.3	0.0140	11.37	9.63	16.6	0	481

Quantity Spiked - the amount of analyte spiked into the spiked samples
 Unspiked Sample Contribution - calculated based on the amount found in the sample and the extracted amounts of the spiked and unspiked samples
 Quantity Measured - the total amount of analyte measured in the spiked samples
 RPD - the Relative Percent Difference of the spiked sample Quantity Measured values
 Subtracted Recovery - calculated after subtracting the unspiked sample contribution

Method 8290
Initial Calibration (ICAL) - Response Factor Summary

ICAL ID	L230302	Data Files:	Time	Injected
Calibration Date	03/02/2023	CS-1 L230302A_10	11:30	SMT
Instrument	10MSHR15 (L)	CS-2 L230302A_09	10:47	SMT
Column Phase	DB-5MS 0.25mm	CS-3 L230302A_08	09:49	SMT
Column ID No.	US1824614H	CS-4 L230302A_12	13:05	SMT
		CS-5 L230302A_11	12:22	SMT

Isomer	CS-1	CS-2	CS-3	CS-4	CS-5	Ave RF	%RSD
2,3,7,8-TCDF	0.9967	0.9738	1.0199	1.0034	1.0247	1.0037	2.02
2,3,7,8-TCDD	0.9761	0.9618	0.9687	0.9775	1.0048	0.9778	1.68
1,2,3,7,8-PeCDF	0.9300	0.9718	0.9886	1.0335	1.0326	0.9913	4.40
2,3,4,7,8-PeCDF	1.0135	1.0774	1.1028	1.1295	1.1357	1.0918	4.54
1,2,3,7,8-PeCDD	0.9519	0.9674	1.0093	1.0128	1.0143	0.9911	2.96
1,2,3,4,7,8-HxCDF	1.1368	1.1204	1.1615	1.1752	1.2021	1.1592	2.76
1,2,3,6,7,8-HxCDF	1.0907	1.1235	1.1163	1.1604	1.1453	1.1272	2.38
2,3,4,6,7,8-HxCDF	1.1006	1.1452	1.1842	1.1966	1.2229	1.1699	4.09
1,2,3,7,8,9-HxCDF	1.0734	1.0689	1.0876	1.1272	1.1043	1.0923	2.19
1,2,3,4,7,8-HxCDD	0.9716	0.9938	1.0001	1.0138	1.0405	1.0040	2.54
1,2,3,6,7,8-HxCDD	0.9782	0.9443	0.9738	0.9988	0.9942	0.9779	2.20
1,2,3,7,8,9-HxCDD	0.9538	0.9647	1.0091	0.9943	0.9903	0.9824	2.30
1,2,3,4,6,7,8-HpCDF	1.3217	1.3083	1.3062	1.3783	1.3773	1.3384	2.73
1,2,3,4,7,8,9-HpCDF	1.2433	1.2738	1.2851	1.3380	1.3420	1.2964	3.29
1,2,3,4,6,7,8-HpCDD	1.1192	1.0946	1.0543	1.1169	1.1074	1.0985	2.42
OCDF	1.0679	1.0881	1.1153	1.2061	1.2364	1.1427	6.51
OCDD	0.8692	0.9083	0.8881	0.9231	0.9212	0.9020	2.55
Total PeCDF	0.9718	1.0246	1.0457	1.0815	1.0842	1.0416	4.45
Total HxCDF	1.1004	1.1145	1.1374	1.1648	1.1686	1.1372	2.65
Total HxCDD	0.9679	0.9676	0.9943	1.0023	1.0083	0.9881	1.95
Total HpCDF	1.2825	1.2911	1.2956	1.3581	1.3597	1.3174	2.90
2,3,7,8-TCDF-13C	1.4440	1.3694	1.3217	1.4502	1.4563	1.4083	4.25
2,3,7,8-TCDD-13C	1.1251	1.0798	1.0844	1.1348	1.1669	1.1182	3.26
2,3,7,8-TCDD-37Cl4	0.9996	0.9304	0.9498	1.0488	1.0811	1.0020	6.37
1,2,3,7,8-PeCDF-13C	0.9608	0.8916	0.9187	1.0143	1.1047	0.9780	8.65
2,3,4,7,8-PeCDF-13C	0.9338	0.8424	0.8770	0.9821	1.0734	0.9417	9.66
1,2,3,7,8-PeCDD-13C	0.6028	0.5569	0.5722	0.6415	0.7003	0.6147	9.39
1,2,3,4,7,8-HxCDF-13C	1.1185	1.1203	1.1236	1.0630	1.0271	1.0905	3.98
1,2,3,6,7,8-HxCDF-13C	1.2839	1.2487	1.2773	1.2585	1.2927	1.2722	1.43
2,3,4,6,7,8-HxCDF-13C	1.2075	1.1739	1.1679	1.1545	1.1186	1.1645	2.77
1,2,3,7,8,9-HxCDF-13C	1.0013	0.9843	0.9887	0.9808	0.9759	0.9862	0.98
1,2,3,4,7,8-HxCDD-13C	0.8779	0.8577	0.8680	0.8469	0.8220	0.8545	2.52
1,2,3,6,7,8-HxCDD-13C	1.0253	1.0204	1.0257	1.0173	1.0681	1.0314	2.02
1,2,3,4,6,7,8-HpCDF-13C	0.9806	0.9706	0.9434	0.9280	0.9139	0.9473	2.97
1,2,3,4,7,8,9-HpCDF-13C	0.7660	0.7548	0.7618	0.7578	0.7548	0.7590	0.64
1,2,3,4,6,7,8-HpCDD-13C	0.6833	0.6770	0.6734	0.6565	0.6679	0.6716	1.51
OCDD-13C	0.6890	0.6402	0.6544	0.7095	0.7747	0.6935	7.65

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Method 8290
Initial Calibration (ICAL) - Isotope Ratio Summary

ICAL ID	L230302	Data Files:	Time	Injected
Calibration Date	03/02/2023	CS-1 L230302A_10	11:30	SMT
Instrument	10MSHR15 (L)	CS-2 L230302A_09	10:47	SMT
Column Phase	DB-5MS 0.25mm	CS-3 L230302A_08	09:49	SMT
Column ID No.	US1824614H	CS-4 L230302A_12	13:05	SMT
		CS-5 L230302A_11	12:22	SMT

Isomer	CS-1	CS-2	CS-3	CS-4	CS-5	Limits
2,3,7,8-TCDF	0.84	0.84	0.79	0.81	0.80	0.65 - 0.89
2,3,7,8-TCDD	0.85	0.82	0.79	0.79	0.78	0.65 - 0.89
1,2,3,7,8-PeCDF	1.46	1.50	1.52	1.52	1.52	1.32 - 1.78
2,3,4,7,8-PeCDF	1.53	1.53	1.58	1.53	1.52	1.32 - 1.78
1,2,3,7,8-PeCDD	0.59	0.64	0.61	0.62	0.64	0.52 - 0.70
1,2,3,4,7,8-HxCDF	1.32	1.21	1.23	1.25	1.24	1.05 - 1.43
1,2,3,6,7,8-HxCDF	1.27	1.17	1.25	1.27	1.25	1.05 - 1.43
2,3,4,6,7,8-HxCDF	1.29	1.29	1.26	1.28	1.25	1.05 - 1.43
1,2,3,7,8,9-HxCDF	1.29	1.20	1.21	1.24	1.25	1.05 - 1.43
1,2,3,4,7,8-HxCDD	1.20	1.28	1.26	1.24	1.24	1.05 - 1.43
1,2,3,6,7,8-HxCDD	1.25	1.25	1.24	1.25	1.24	1.05 - 1.43
1,2,3,7,8,9-HxCDD	1.17	1.26	1.21	1.24	1.24	1.05 - 1.43
1,2,3,4,6,7,8-HpCDF	1.03	1.05	1.03	1.07	1.03	0.88 - 1.20
1,2,3,4,7,8,9-HpCDF	1.05	1.02	1.09	1.03	1.07	0.88 - 1.20
1,2,3,4,6,7,8-HpCDD	1.04	1.04	1.06	1.08	1.05	0.88 - 1.20
OCDF	0.86	0.92	0.91	0.90	0.90	0.76 - 1.02
OCDD	0.89	0.90	0.91	0.93	0.87	0.76 - 1.02
1,2,3,4-TCDD-13C	0.88	0.88	0.89	0.89	0.89	0.65 - 0.89
1,2,3,7,8,9-HxCDD-13C	1.25	1.25	1.26	1.26	1.27	1.05 - 1.43
2,3,7,8-TCDF-13C	0.79	0.77	0.78	0.78	0.78	0.65 - 0.89
2,3,7,8-TCDD-13C	0.86	0.88	0.88	0.88	0.87	0.65 - 0.89
1,2,3,7,8-PeCDF-13C	1.56	1.56	1.58	1.56	1.58	1.32 - 1.78
2,3,4,7,8-PeCDF-13C	1.59	1.59	1.58	1.57	1.54	1.32 - 1.78
1,2,3,7,8-PeCDD-13C	1.59	1.57	1.60	1.58	1.59	1.32 - 1.78
1,2,3,4,7,8-HxCDF-13C	0.54	0.53	0.53	0.53	0.53	0.43 - 0.59
1,2,3,6,7,8-HxCDF-13C	0.52	0.52	0.53	0.53	0.53	0.43 - 0.59
2,3,4,6,7,8-HxCDF-13C	0.54	0.52	0.53	0.54	0.54	0.43 - 0.59
1,2,3,7,8,9-HxCDF-13C	0.53	0.53	0.52	0.54	0.50	0.43 - 0.59
1,2,3,4,7,8-HxCDD-13C	1.35	1.27	1.27	1.28	1.28	1.05 - 1.43
1,2,3,6,7,8-HxCDD-13C	1.20	1.24	1.28	1.28	1.28	1.05 - 1.43
1,2,3,4,6,7,8-HpCDF-13C	0.47	0.48	0.46	0.47	0.46	0.37 - 0.51
1,2,3,4,7,8,9-HpCDF-13C	0.47	0.46	0.46	0.48	0.47	0.37 - 0.51
1,2,3,4,6,7,8-HpCDD-13C	1.08	1.06	1.08	1.03	1.07	0.88 - 1.20
OCDD-13C	0.83	0.88	0.84	0.85	0.83	0.76 - 1.02

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**Method 8290
Initial Calibration (ICAL) - Response Factor Summary**

ICAL ID	U221009-DB225	Data Files:	Time	Injected
Calibration Date	10/09/2022	CS-1 U221009A_04	12:07	JRH
Instrument	10MSHR06 (U)	CS-2 U221009A_03	11:20	JRH
Column Phase	DB-225 0.25mm	CS-3 U221009A_02	10:34	JRH
Column ID No.	US2588526H	CS-4 U221009A_06	13:42	JRH
		CS-5 U221009A_05	12:57	JRH

Isomer	CS-1	CS-2	CS-3	CS-4	CS-5	Ave RF	%RSD
Native Analyte							
2,3,7,8-TCDF	1.0377	1.0108	1.0130	0.9370	0.9233	0.9844	5.16
Labeled Analyte							
2,3,7,8-TCDF-13C	1.3925	1.4025	1.2954	1.4038	1.4140	1.3816	3.53
CleanupStandard							
2,3,7,8-TCDD-37Cl4	1.1900	1.2057	1.0599	1.1241	1.0966	1.1353	5.44

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**Method 8290
Initial Calibration (ICAL) - Isotope Ratio Summary**

ICAL ID	U221009-DB225	Data Files:	Time	Injected
Calibration Date	10/09/2022	CS-1 U221009A_04	12:07	JRH
Instrument	10MSHR06 (U)	CS-2 U221009A_03	11:20	JRH
Column Phase	DB-225 0.25mm	CS-3 U221009A_02	10:34	JRH
Column ID No.	US2588526H	CS-4 U221009A_06	13:42	JRH
		CS-5 U221009A_05	12:57	JRH

Isomer	CS-1	CS-2	CS-3	CS-4	CS-5	Limits
Native Analyte						
2,3,7,8-TCDF	0.78	0.78	0.79	0.79	0.78	0.65 - 0.89
Labeled Analyte						
2,3,7,8-TCDF-13C	0.79	0.76	0.79	0.77	0.79	0.65 - 0.89
Recovery Standard						
1,2,3,4-TCDD-13C	0.79	0.80	0.80	0.79	0.79	0.65 - 0.89

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Method 8290
PCDD/PCDF Calibration Verification

Run Name: L230305A_18 Instrument ID 10MSHR15 (L)
Standard CS3/CPM-22-171-022 GC Column ID US1824614H
Analyzed 03/05/2023 21:42 ICAL ID L230302

Compound	Known Conc.	Conc Found	Ion Abund. Ratio	Average RF	Daily RF	Deviation (%)
2,3,7,8-TCDF	10	9.8	0.79	1.0037	0.9810	-2.3
2,3,7,8-TCDD	10	9.9	0.78	0.9778	0.9649	-1.3
1,2,3,7,8-PeCDF	50	50.7	1.53	0.9913	1.0046	1.3
2,3,4,7,8-PeCDF	50	50.6	1.52	1.0918	1.1040	1.1
1,2,3,7,8-PeCDD	50	50.6	0.62	0.9911	1.0038	1.3
1,2,3,4,7,8-HxCDF	50	50.1	1.24	1.1592	1.1610	0.2
1,2,3,6,7,8-HxCDF	50	50.6	1.22	1.1272	1.1398	1.1
2,3,4,6,7,8-HxCDF	50	50.3	1.27	1.1699	1.1766	0.6
1,2,3,7,8,9-HxCDF	50	51.1	1.24	1.0923	1.1163	2.2
1,2,3,4,7,8-HxCDD	50	51.0	1.24	1.0040	1.0249	2.1
1,2,3,6,7,8-HxCDD	50	50.5	1.25	0.9779	0.9876	1.0
1,2,3,7,8,9-HxCDD	50	52.8	1.20	0.9824	1.0366	5.5
1,2,3,4,6,7,8-HpCDF	50	47.3	1.04	1.3384	1.2666	-5.4
1,2,3,4,7,8,9-HpCDF	50	49.8	1.06	1.2964	1.2914	-0.4
1,2,3,4,6,7,8-HpCDD	50	47.3	1.09	1.0985	1.0389	-5.4
OCDF	100	97.5	0.91	1.1427	1.1137	-2.5
OCDD	100	102.6	0.89	0.9020	0.9254	2.6
Total PeCDF	100	101.2	NA	1.0416	1.0543	1.2
Total HxCDF	200	202.0	NA	1.1372	1.1484	1.0
Total HxCDD	150	154.3	NA	0.9881	1.0164	2.9
Total HpCDF	100	97.1	NA	1.3174	1.2790	-2.9
2,3,7,8-TCDF-13C	100	103.1	0.78	1.4083	1.4513	3.1
2,3,7,8-TCDD-13C	100	106.1	0.87	1.1182	1.1866	6.1
2,3,7,8-TCDD-37Cl4	10	10.5	NA	1.0020	1.0546	5.3
1,2,3,7,8-PeCDF-13C	100	112.7	1.57	0.9780	1.1022	12.7
2,3,4,7,8-PeCDF-13C	100	114.3	1.58	0.9417	1.0761	14.3
1,2,3,7,8-PeCDD-13C	100	113.3	1.57	0.6147	0.6962	13.3
1,2,3,4,7,8-HxCDF-13C	100	103.9	0.53	1.0905	1.1326	3.9
1,2,3,6,7,8-HxCDF-13C	100	100.8	0.53	1.2722	1.2819	0.8
2,3,4,6,7,8-HxCDF-13C	100	100.7	0.55	1.1645	1.1732	0.7
1,2,3,7,8,9-HxCDF-13C	100	99.6	0.53	0.9862	0.9819	-0.4
1,2,3,4,7,8-HxCDD-13C	100	99.7	1.29	0.8545	0.8518	-0.3
1,2,3,6,7,8-HxCDD-13C	100	100.1	1.28	1.0314	1.0325	0.1
1,2,3,4,6,7,8-HpCDF-13C	100	94.0	0.47	0.9473	0.8906	-6.0
1,2,3,4,7,8,9-HpCDF-13C	100	90.9	0.46	0.7590	0.6898	-9.1
1,2,3,4,6,7,8-HpCDD-13C	100	92.5	1.08	0.6716	0.6212	-7.5
OCDD-13C	200	171.4	0.82	0.6935	0.5944	-14.3
1,2,3,4-TCDD-13C	100	NA	0.89	NA	NA	NA
1,2,3,7,8,9-HxCDD-13C	100	NA	1.26	NA	NA	NA

Concentrations expressed as pg/ul

NA = Not Applicable

* = Outside target range

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**Method 8290
PCDD/PCDF Calibration Verification**

Run Name:	L230305B_10	Instrument ID	10MSHR15 (L)
Standard	CS3/CPM-22-171-022	GC Column ID	US1824614H
Analyzed	03/06/2023 05:07	ICAL ID	L230302

Compound	Known Conc.	Conc Found	Ion Abund. Ratio	Average RF	Daily RF	Deviation (%)
2,3,7,8-TCDF	10	10.0	0.81	1.0037	1.0056	0.2
2,3,7,8-TCDD	10	10.2	0.77	0.9778	0.9942	1.7
1,2,3,7,8-PeCDF	50	50.6	1.53	0.9913	1.0025	1.1
2,3,4,7,8-PeCDF	50	50.1	1.53	1.0918	1.0939	0.2
1,2,3,7,8-PeCDD	50	50.7	0.63	0.9911	1.0040	1.3
1,2,3,4,7,8-HxCDF	50	51.1	1.26	1.1592	1.1856	2.3
1,2,3,6,7,8-HxCDF	50	50.1	1.25	1.1272	1.1301	0.3
2,3,4,6,7,8-HxCDF	50	50.1	1.22	1.1699	1.1720	0.2
1,2,3,7,8,9-HxCDF	50	50.5	1.27	1.0923	1.1028	1.0
1,2,3,4,7,8-HxCDD	50	47.5	1.26	1.0040	0.9537	-5.0
1,2,3,6,7,8-HxCDD	50	54.4	1.27	0.9779	1.0645	8.9
1,2,3,7,8,9-HxCDD	50	53.1	1.32	0.9824	1.0425	6.1
1,2,3,4,6,7,8-HpCDF	50	48.3	1.08	1.3384	1.2916	-3.5
1,2,3,4,7,8,9-HpCDF	50	50.8	1.01	1.2964	1.3179	1.7
1,2,3,4,6,7,8-HpCDD	50	49.2	1.05	1.0985	1.0803	-1.6
OCDF	100	94.4	0.87	1.1427	1.0782	-5.6
OCDD	100	100.6	0.93	0.9020	0.9075	0.6
Total PeCDF	100	100.7	NA	1.0416	1.0482	0.6
Total HxCDF	200	201.8	NA	1.1372	1.1476	0.9
Total HxCDD	150	155.0	NA	0.9881	1.0202	3.3
Total HpCDF	100	99.1	NA	1.3174	1.3047	-1.0
2,3,7,8-TCDF-13C	100	104.0	0.78	1.4083	1.4646	4.0
2,3,7,8-TCDD-13C	100	102.6	0.89	1.1182	1.1469	2.6
2,3,7,8-TCDD-37Cl4	10	10.0	NA	1.0020	1.0051	0.3
1,2,3,7,8-PeCDF-13C	100	98.9	1.59	0.9780	0.9669	-1.1
2,3,4,7,8-PeCDF-13C	100	98.6	1.56	0.9417	0.9289	-1.4
1,2,3,7,8-PeCDD-13C	100	93.6	1.58	0.6147	0.5753	-6.4
1,2,3,4,7,8-HxCDF-13C	100	114.4	0.53	1.0905	1.2477	14.4
1,2,3,6,7,8-HxCDF-13C	100	110.2	0.53	1.2722	1.4022	10.2
2,3,4,6,7,8-HxCDF-13C	100	110.0	0.53	1.1645	1.2813	10.0
1,2,3,7,8,9-HxCDF-13C	100	95.7	0.53	0.9862	0.9441	-4.3
1,2,3,4,7,8-HxCDD-13C	100	105.9	1.28	0.8545	0.9050	5.9
1,2,3,6,7,8-HxCDD-13C	100	98.0	1.29	1.0314	1.0106	-2.0
1,2,3,4,6,7,8-HpCDF-13C	100	83.1	0.46	0.9473	0.7869	-16.9
1,2,3,4,7,8,9-HpCDF-13C	100	67.1	0.47	0.7590	0.5094	* -32.9
1,2,3,4,6,7,8-HpCDD-13C	100	72.1	1.05	0.6716	0.4843	-27.9
OCDD-13C	200	102.2	0.82	0.6935	0.3545	* -48.9
1,2,3,4-TCDD-13C	100	NA	0.89	NA	NA	NA
1,2,3,7,8,9-HxCDD-13C	100	NA	1.28	NA	NA	NA

Concentrations expressed as pg/ul

NA = Not Applicable

* = Outside target range

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Method 8290
PCDD/PCDF Calibration Verification

Run Name:	L230306A_17	Instrument ID	10MSHR15 (L)
Standard	CS3/CPM-22-171-022	GC Column ID	US1824614H
Analyzed	03/06/2023 20:03	ICAL ID	L230302

Compound	Known Conc.	Conc Found	Ion Abund. Ratio	Average RF	Daily RF	Deviation (%)
2,3,7,8-TCDF	10	10.3	0.80	1.0037	1.0379	3.4
2,3,7,8-TCDD	10	10.1	0.79	0.9778	0.9858	0.8
1,2,3,7,8-PeCDF	50	52.4	1.52	0.9913	1.0384	4.7
2,3,4,7,8-PeCDF	50	50.5	1.52	1.0918	1.1017	0.9
1,2,3,7,8-PeCDD	50	51.3	0.63	0.9911	1.0172	2.6
1,2,3,4,7,8-HxCDF	50	51.1	1.25	1.1592	1.1841	2.1
1,2,3,6,7,8-HxCDF	50	51.2	1.26	1.1272	1.1536	2.3
2,3,4,6,7,8-HxCDF	50	51.1	1.26	1.1699	1.1958	2.2
1,2,3,7,8,9-HxCDF	50	51.1	1.26	1.0923	1.1157	2.1
1,2,3,4,7,8-HxCDD	50	51.3	1.25	1.0040	1.0298	2.6
1,2,3,6,7,8-HxCDD	50	52.1	1.27	0.9779	1.0195	4.3
1,2,3,7,8,9-HxCDD	50	54.4	1.30	0.9824	1.0693	8.8
1,2,3,4,6,7,8-HpCDF	50	47.6	1.02	1.3384	1.2744	-4.8
1,2,3,4,7,8,9-HpCDF	50	51.1	1.03	1.2964	1.3238	2.1
1,2,3,4,6,7,8-HpCDD	50	48.1	1.04	1.0985	1.0576	-3.7
OCDF	100	99.6	0.88	1.1427	1.1386	-0.4
OCDD	100	101.1	0.90	0.9020	0.9119	1.1
Total PeCDF	100	102.8	NA	1.0416	1.0701	2.7
Total HxCDF	200	204.4	NA	1.1372	1.1623	2.2
Total HxCDD	150	157.8	NA	0.9881	1.0395	5.2
Total HpCDF	100	98.7	NA	1.3174	1.2991	-1.4
2,3,7,8-TCDF-13C	100	104.0	0.78	1.4083	1.4642	4.0
2,3,7,8-TCDD-13C	100	104.0	0.89	1.1182	1.1627	4.0
2,3,7,8-TCDD-37Cl4	10	10.3	NA	1.0020	1.0321	3.0
1,2,3,7,8-PeCDF-13C	100	115.6	1.57	0.9780	1.1304	15.6
2,3,4,7,8-PeCDF-13C	100	122.9	1.60	0.9417	1.1578	22.9
1,2,3,7,8-PeCDD-13C	100	116.1	1.57	0.6147	0.7136	16.1
1,2,3,4,7,8-HxCDF-13C	100	105.9	0.53	1.0905	1.1553	5.9
1,2,3,6,7,8-HxCDF-13C	100	105.3	0.53	1.2722	1.3398	5.3
2,3,4,6,7,8-HxCDF-13C	100	106.1	0.55	1.1645	1.2351	6.1
1,2,3,7,8,9-HxCDF-13C	100	104.8	0.53	0.9862	1.0337	4.8
1,2,3,4,7,8-HxCDD-13C	100	99.5	1.28	0.8545	0.8502	-0.5
1,2,3,6,7,8-HxCDD-13C	100	100.3	1.28	1.0314	1.0347	0.3
1,2,3,4,6,7,8-HpCDF-13C	100	99.2	0.48	0.9473	0.9396	-0.8
1,2,3,4,7,8,9-HpCDF-13C	100	98.8	0.48	0.7590	0.7503	-1.2
1,2,3,4,6,7,8-HpCDD-13C	100	96.0	1.07	0.6716	0.6445	-4.0
OCDD-13C	200	196.9	0.83	0.6935	0.6829	-1.5
1,2,3,4-TCDD-13C	100	NA	0.88	NA	NA	NA
1,2,3,7,8,9-HxCDD-13C	100	NA	1.27	NA	NA	NA

Concentrations expressed as pg/ul

NA = Not Applicable

* = Outside target range

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Method 8290
PCDD/PCDF Calibration Verification

Run Name:	L230306B_17	Instrument ID	10MSHR15 (L)
Standard	CS3/CPM-22-171-022	GC Column ID	US1824614H
Analyzed	03/07/2023 08:40	ICAL ID	L230302

Compound	Known Conc.	Conc Found	Ion Abund. Ratio	Average RF	Daily RF	Deviation (%)
2,3,7,8-TCDF	10	10.3	0.79	1.0037	1.0355	3.2
2,3,7,8-TCDD	10	10.4	0.82	0.9778	1.0165	4.0
1,2,3,7,8-PeCDF	50	52.2	1.55	0.9913	1.0340	4.3
2,3,4,7,8-PeCDF	50	51.5	1.53	1.0918	1.1238	2.9
1,2,3,7,8-PeCDD	50	52.0	0.62	0.9911	1.0317	4.1
1,2,3,4,7,8-HxCDF	50	50.9	1.25	1.1592	1.1798	1.8
1,2,3,6,7,8-HxCDF	50	50.2	1.21	1.1272	1.1306	0.3
2,3,4,6,7,8-HxCDF	50	51.0	1.22	1.1699	1.1935	2.0
1,2,3,7,8,9-HxCDF	50	50.9	1.28	1.0923	1.1111	1.7
1,2,3,4,7,8-HxCDD	50	49.8	1.24	1.0040	0.9995	-0.4
1,2,3,6,7,8-HxCDD	50	54.6	1.27	0.9779	1.0672	9.1
1,2,3,7,8,9-HxCDD	50	53.3	1.29	0.9824	1.0480	6.7
1,2,3,4,6,7,8-HpCDF	50	49.0	1.01	1.3384	1.3107	-2.1
1,2,3,4,7,8,9-HpCDF	50	50.2	1.04	1.2964	1.3021	0.4
1,2,3,4,6,7,8-HpCDD	50	49.7	1.05	1.0985	1.0929	-0.5
OCDF	100	98.1	0.92	1.1427	1.1214	-1.9
OCDD	100	99.7	0.89	0.9020	0.8989	-0.3
Total PeCDF	100	103.6	NA	1.0416	1.0789	3.6
Total HxCDF	200	202.9	NA	1.1372	1.1538	1.5
Total HxCDD	150	157.7	NA	0.9881	1.0382	5.1
Total HpCDF	100	99.2	NA	1.3174	1.3064	-0.8
2,3,7,8-TCDF-13C	100	106.2	0.79	1.4083	1.4952	6.2
2,3,7,8-TCDD-13C	100	104.5	0.88	1.1182	1.1690	4.5
2,3,7,8-TCDD-37Cl4	10	10.3	NA	1.0020	1.0288	2.7
1,2,3,7,8-PeCDF-13C	100	112.2	1.58	0.9780	1.0971	12.2
2,3,4,7,8-PeCDF-13C	100	113.4	1.57	0.9417	1.0677	13.4
1,2,3,7,8-PeCDD-13C	100	107.6	1.58	0.6147	0.6617	7.6
1,2,3,4,7,8-HxCDF-13C	100	108.1	0.55	1.0905	1.1793	8.1
1,2,3,6,7,8-HxCDF-13C	100	109.4	0.52	1.2722	1.3923	9.4
2,3,4,6,7,8-HxCDF-13C	100	106.9	0.52	1.1645	1.2451	6.9
1,2,3,7,8,9-HxCDF-13C	100	103.5	0.53	0.9862	1.0208	3.5
1,2,3,4,7,8-HxCDD-13C	100	100.4	1.38	0.8545	0.8575	0.4
1,2,3,6,7,8-HxCDD-13C	100	99.2	1.20	1.0314	1.0233	-0.8
1,2,3,4,6,7,8-HpCDF-13C	100	93.7	0.48	0.9473	0.8875	-6.3
1,2,3,4,7,8,9-HpCDF-13C	100	85.3	0.48	0.7590	0.6476	-14.7
1,2,3,4,6,7,8-HpCDD-13C	100	84.2	1.04	0.6716	0.5657	-15.8
OCDD-13C	200	143.5	0.83	0.6935	0.4975	-28.3
1,2,3,4-TCDD-13C	100	NA	0.89	NA	NA	NA
1,2,3,7,8,9-HxCDD-13C	100	NA	1.26	NA	NA	NA

Concentrations expressed as pg/ul

NA = Not Applicable

* = Outside target range

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**Method 8290
 PCDD/PCDF Calibration Verification**

Run Name:	U230307A_03	Instrument ID	10MSHR06 (U)
Standard	CS3-22-171-004	GC Column ID	US2588526H
Analyzed	03/07/2023 10:26	ICAL ID	U221009-DB225

Compound	Known Conc.	Conc Found	Ion Abund. Ratio	Average RF	Daily RF	Deviation (%)
Native Analyte						
2,3,7,8-TCDF	10	10.5	0.77	0.9844	1.0304	4.7
Labeled Analyte						
2,3,7,8-TCDF-13C	100	95.9	0.78	1.3816	1.3244	-4.1
Recovery Standard						
1,2,3,4-TCDD-13C	100	NA	0.79	NA	NA	NA
Cleanup Standard						
2,3,7,8-TCDD-37Cl4	10	10.2	NA	1.1353	1.1626	2.4

Concentrations expressed as pg/ul NA = Not Applicable * = Outside target range

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**Method 8290
 PCDD/PCDF Calibration Verification**

Run Name:	U230307A_08	Instrument ID	10MSHR06 (U)
Standard	CS3-22-171-004	GC Column ID	US2588526H
Analyzed	03/07/2023 14:24	ICAL ID	U221009-DB225

Compound	Known Conc.	Conc Found	Ion Abund. Ratio	Average RF	Daily RF	Deviation (%)
Native Analyte						
2,3,7,8-TCDF	10	10.3	0.79	0.9844	1.0156	3.2
Labeled Analyte						
2,3,7,8-TCDF-13C	100	91.8	0.76	1.3816	1.2689	-8.2
Recovery Standard						
1,2,3,4-TCDD-13C	100	NA	0.79	NA	NA	NA
Cleanup Standard						
2,3,7,8-TCDD-37Cl4	10	9.9	NA	1.1353	1.1273	-0.7

Concentrations expressed as pg/ul NA = Not Applicable * = Outside target range

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Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444
www.pacelabs.com

Appendix D

Sample Raw Data

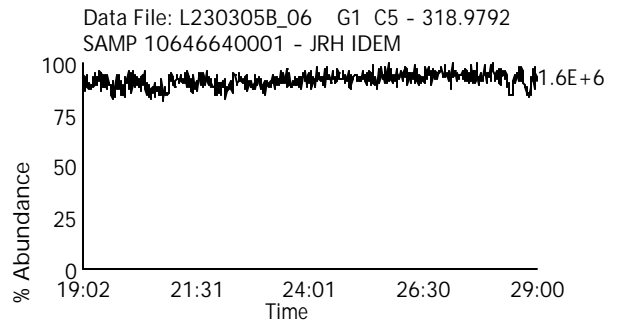
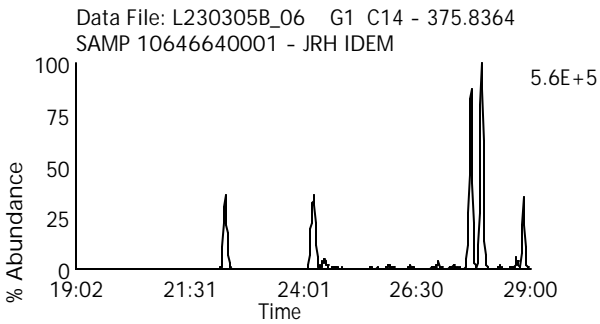
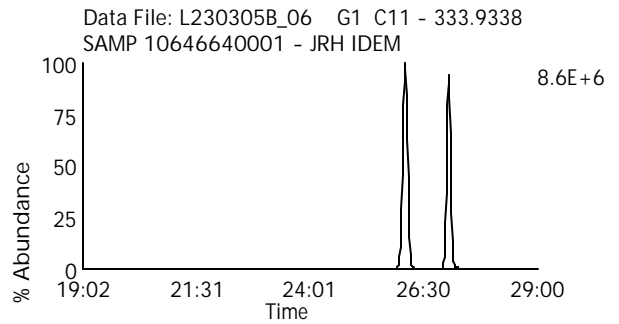
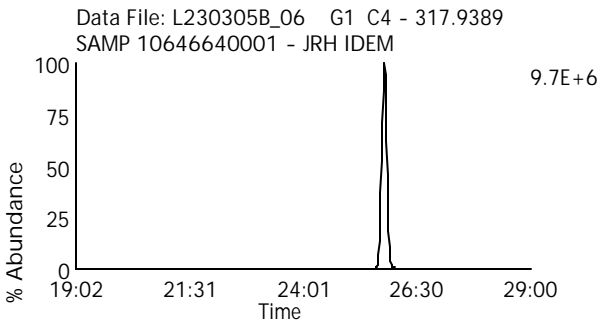
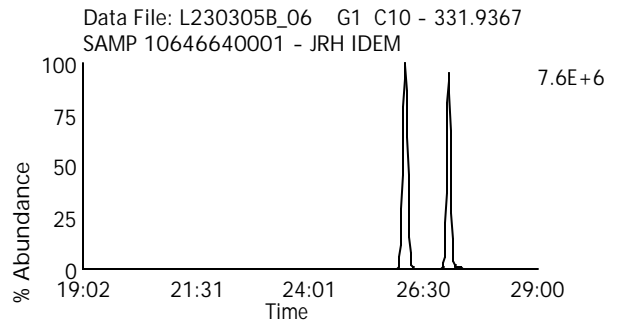
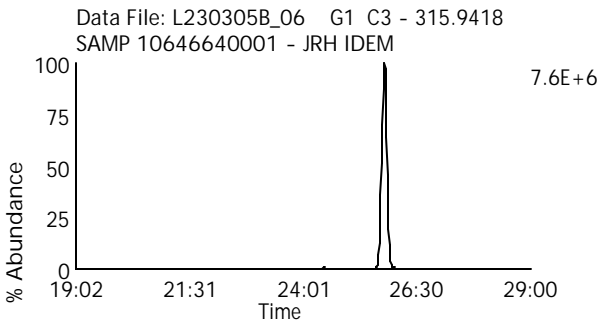
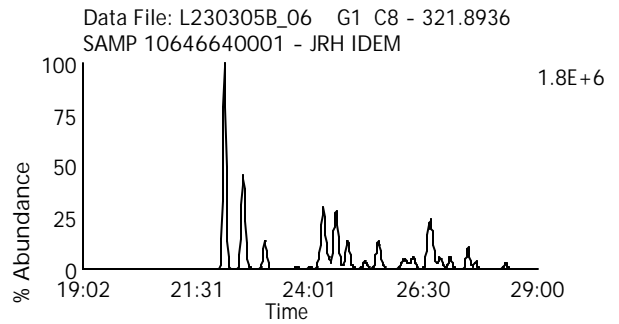
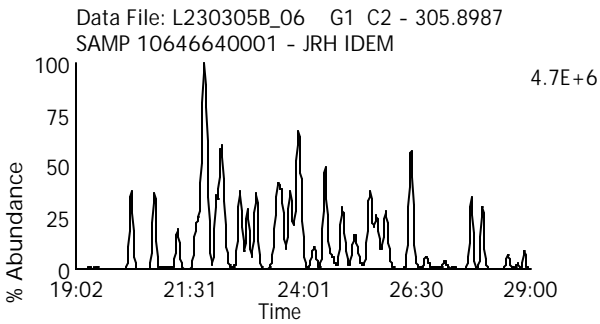
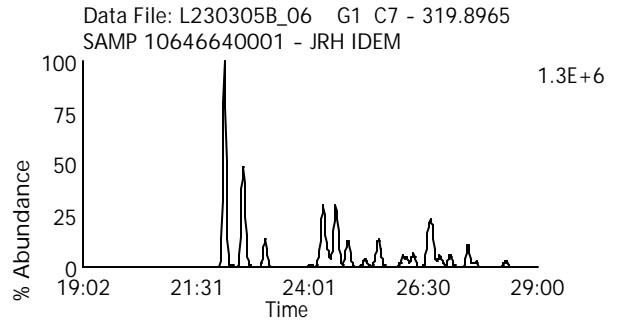
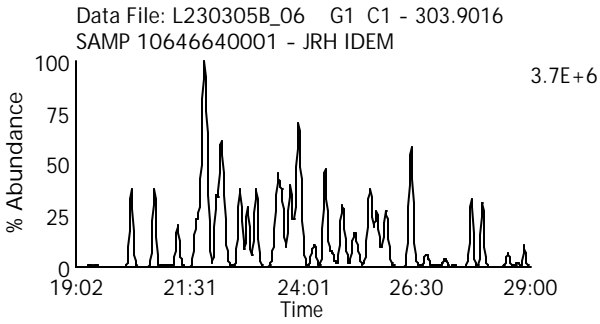
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Homologue Group: Tetras

Data File Name: L230305B_06
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640001 - JRH IDEM

Lab Sample ID: 10644640001
Client Sample ID: WS-1
Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230305B_06

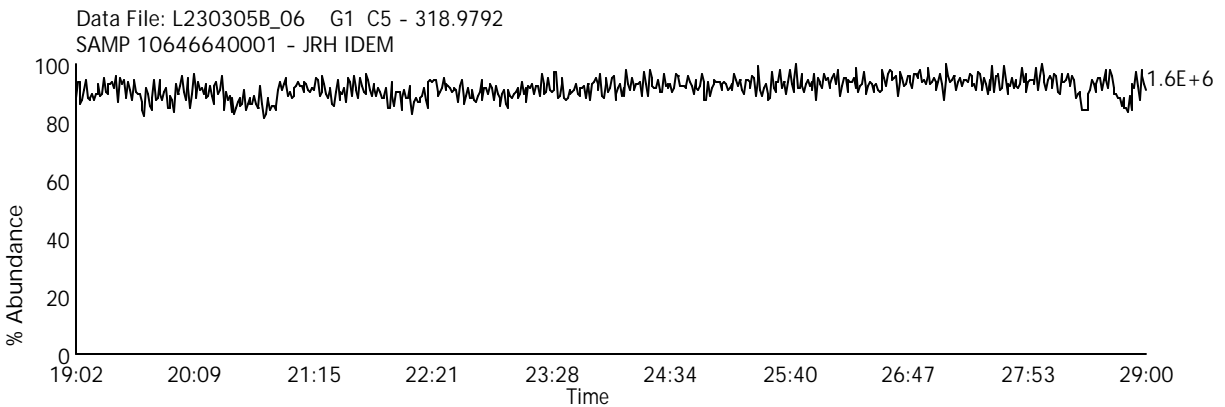
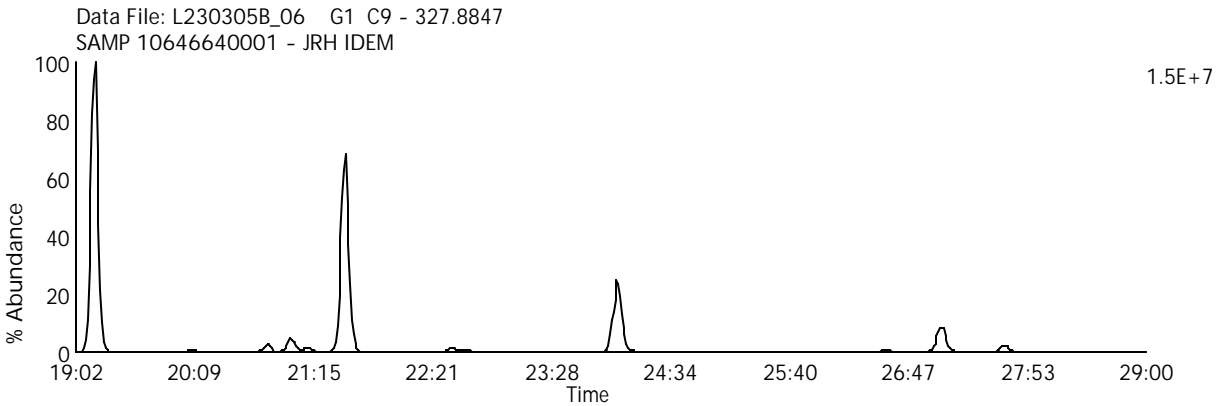
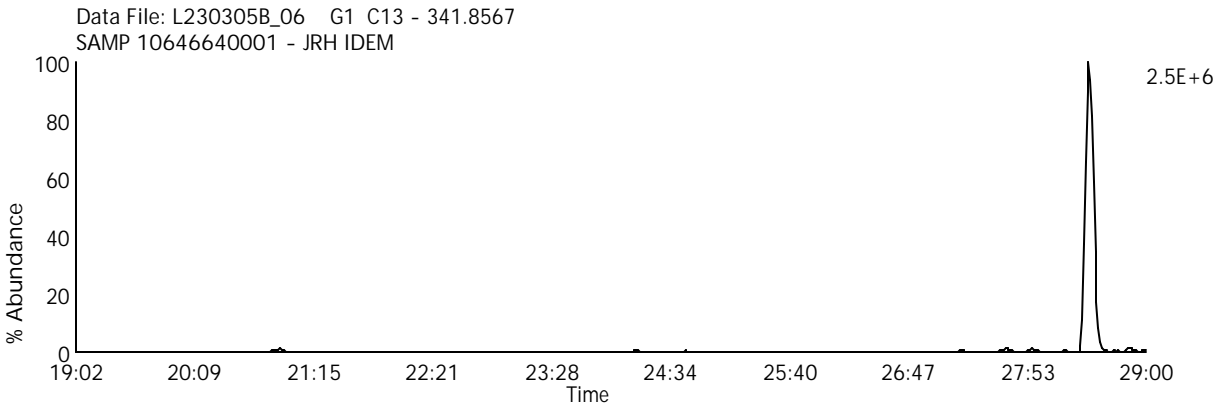
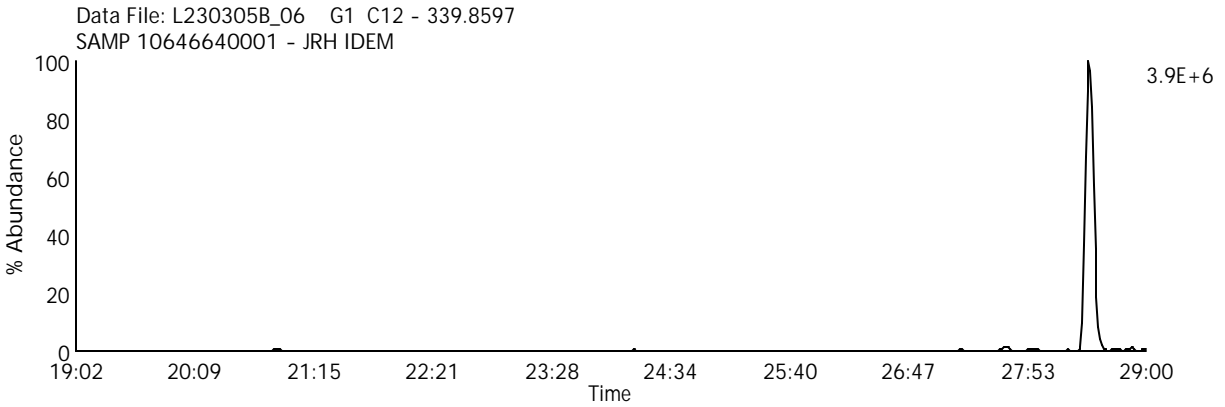
Date Acquired: 3/6/2023

Sample Description: SAMP 10646640001 - JRH IDEM

Lab Sample ID: 10644640001

Client Sample ID: WS-1

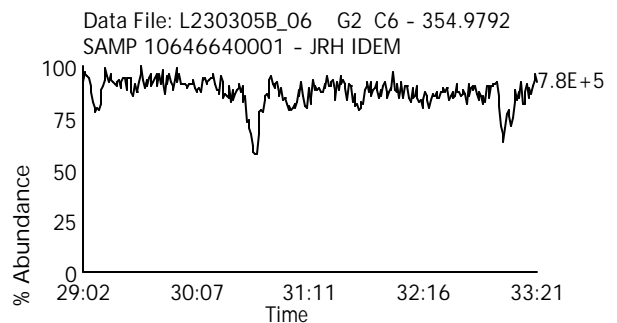
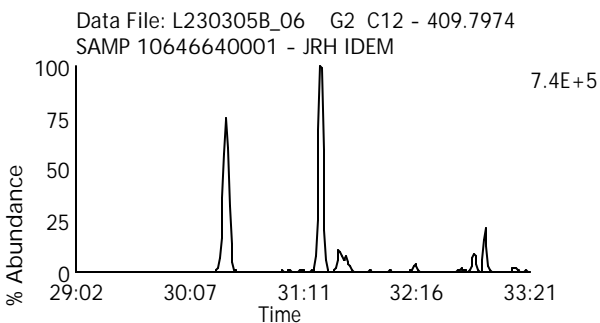
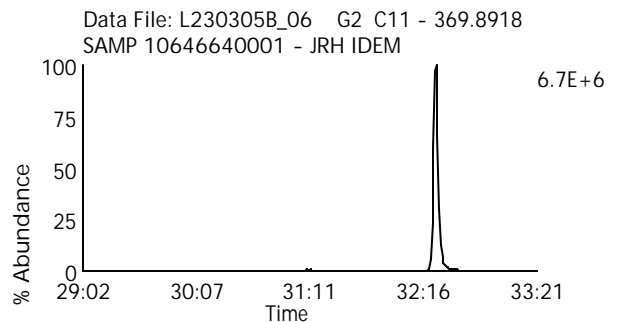
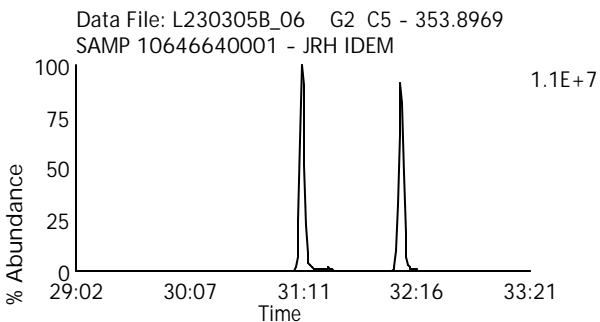
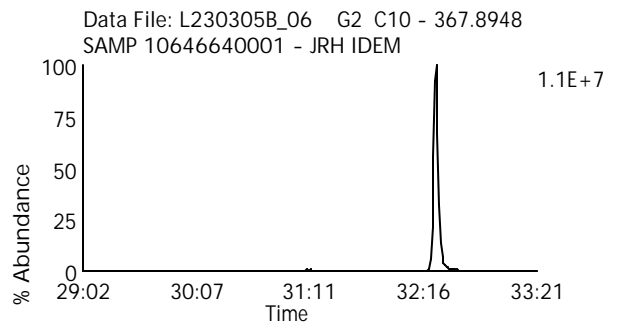
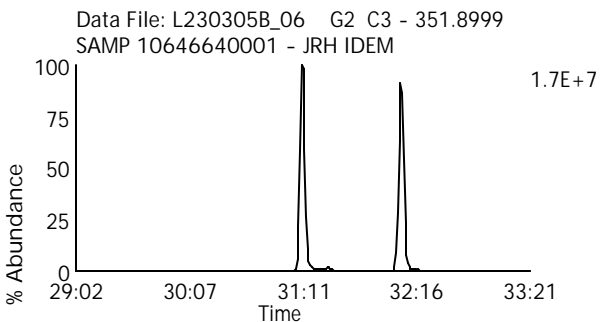
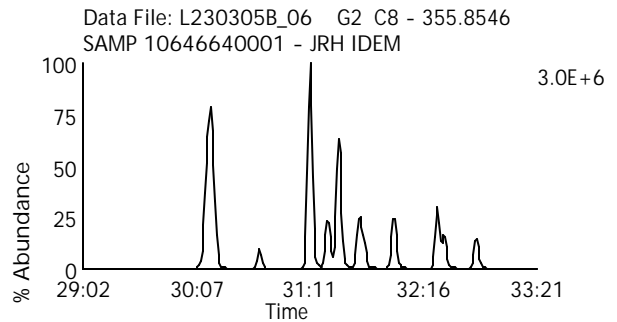
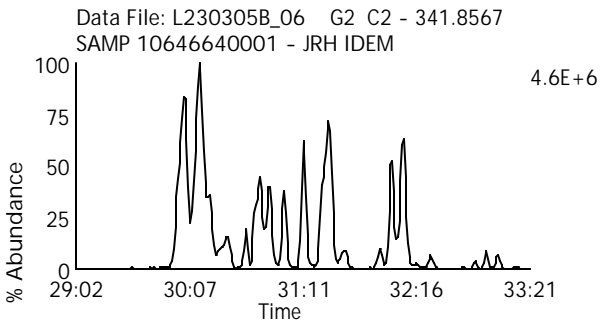
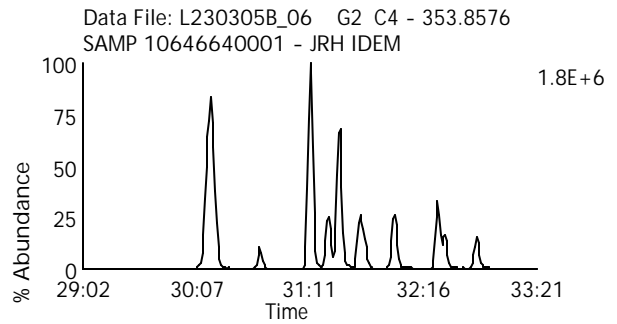
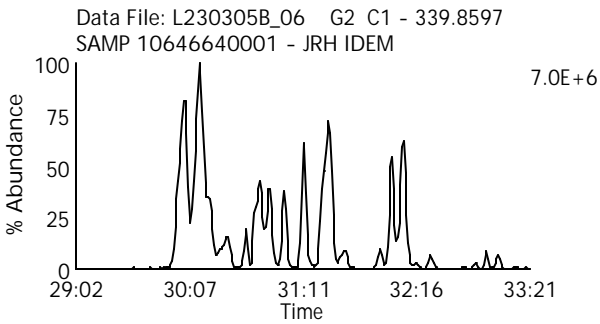
Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230305B_06
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640001 - JRH IDEM

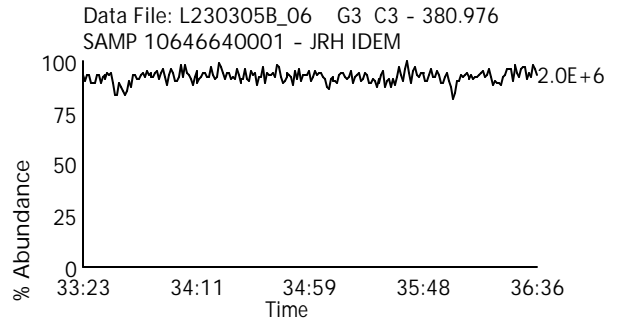
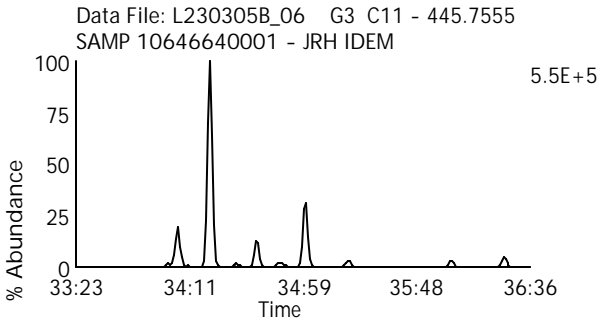
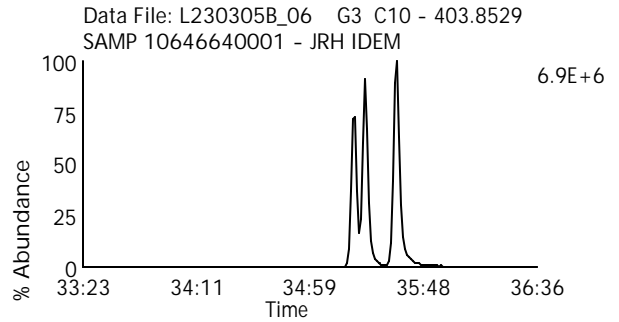
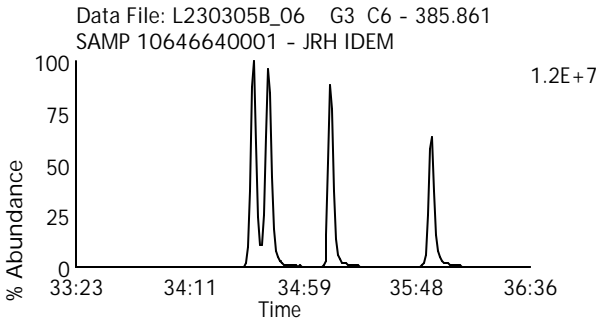
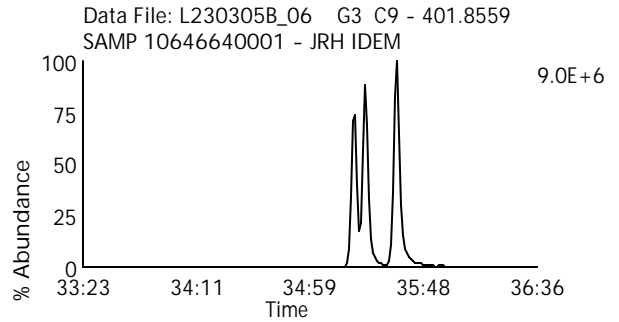
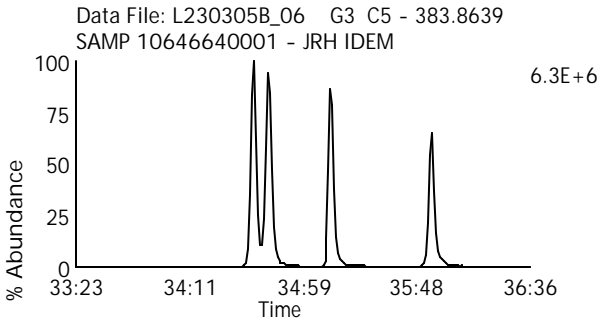
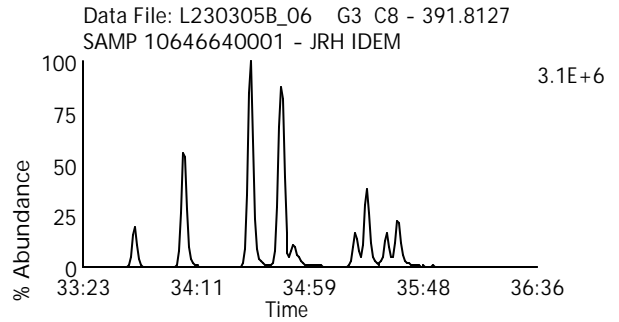
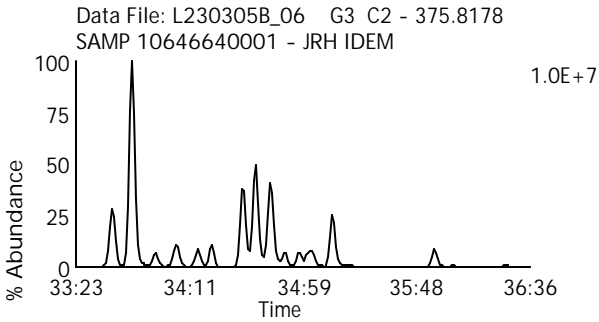
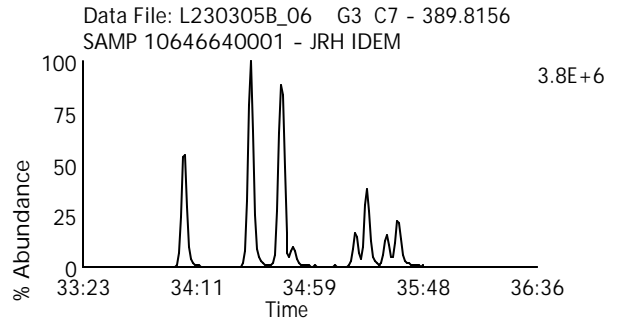
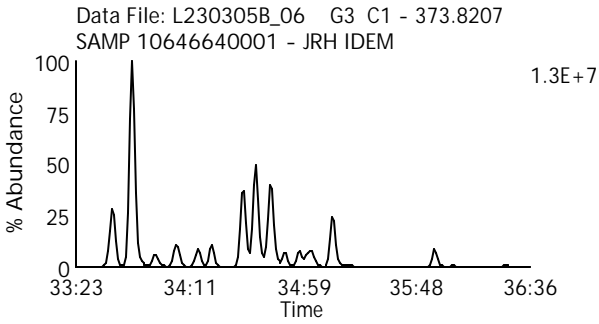
Lab Sample ID: 10644640001
Client Sample ID: WS-1
Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230305B_06
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640001 - JRH IDEM

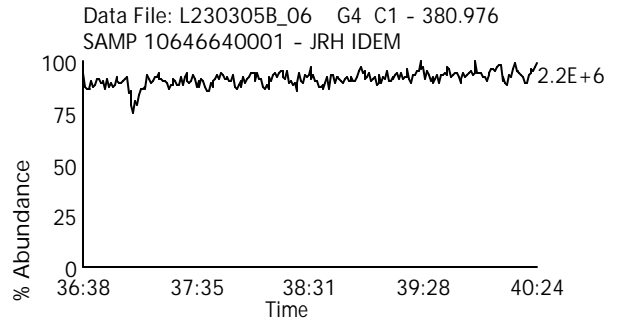
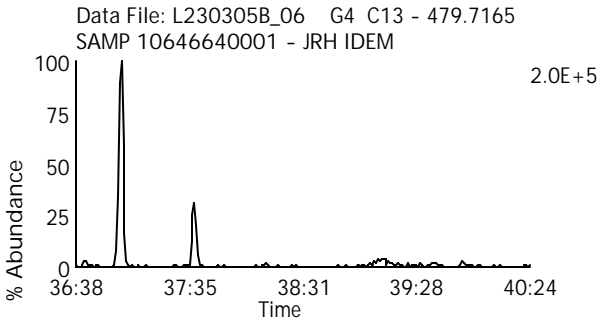
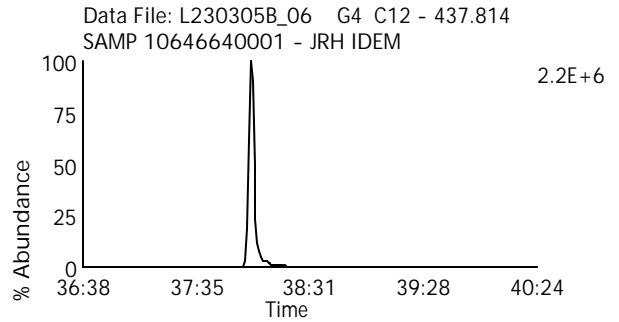
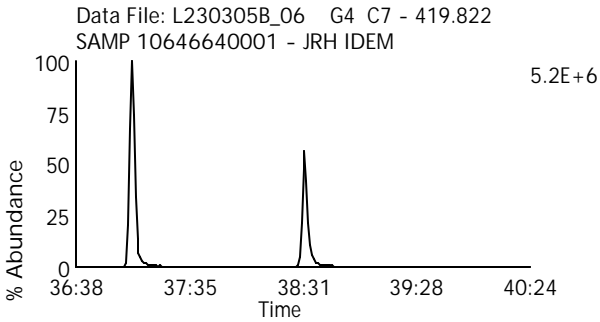
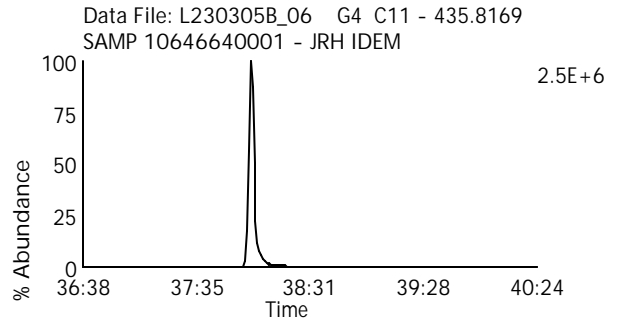
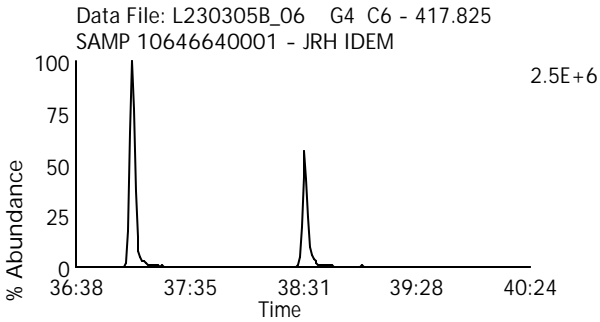
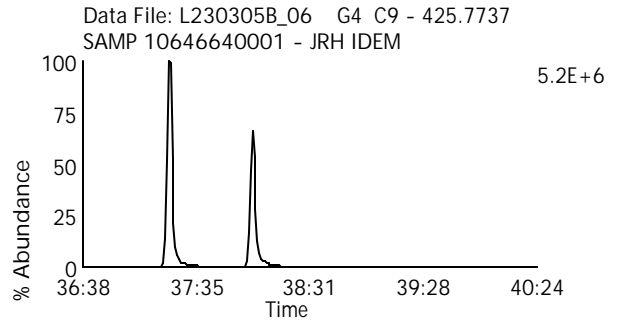
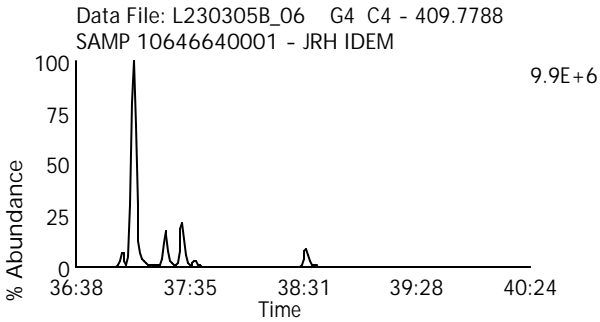
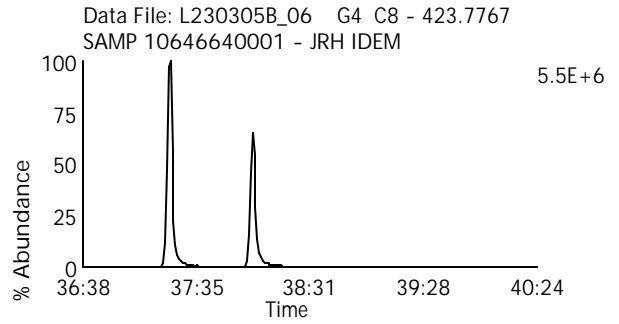
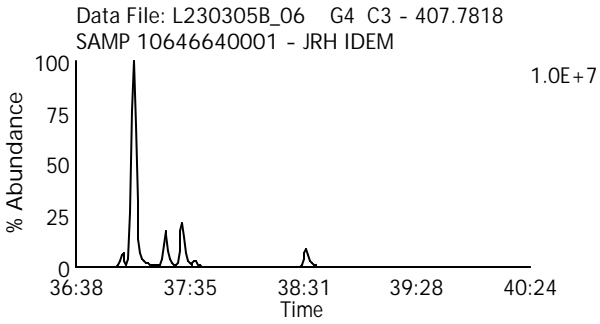
Lab Sample ID: 10644640001
Client Sample ID: WS-1
Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230305B_06
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640001 - JRH IDEM

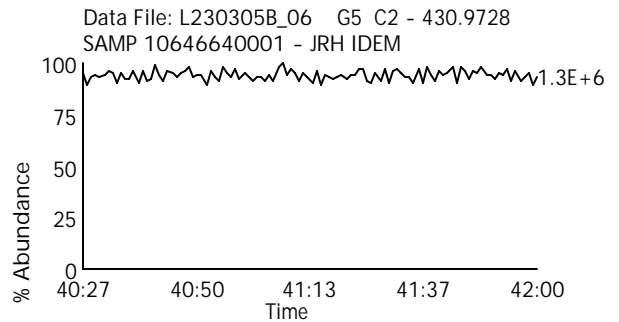
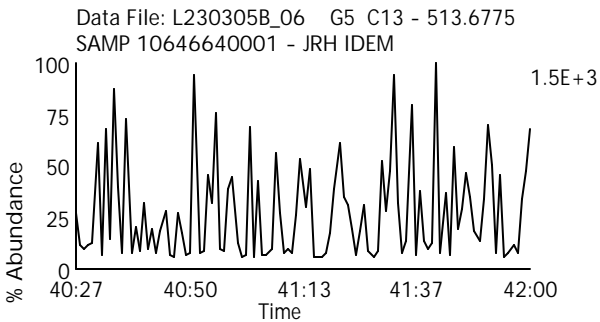
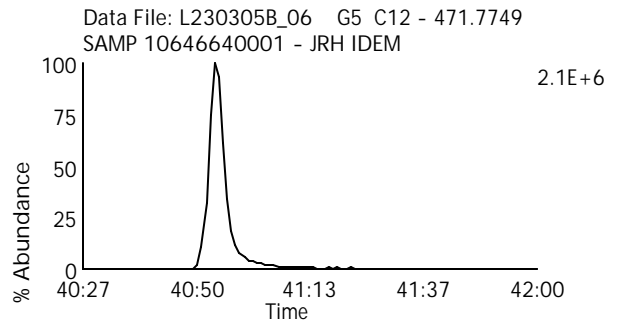
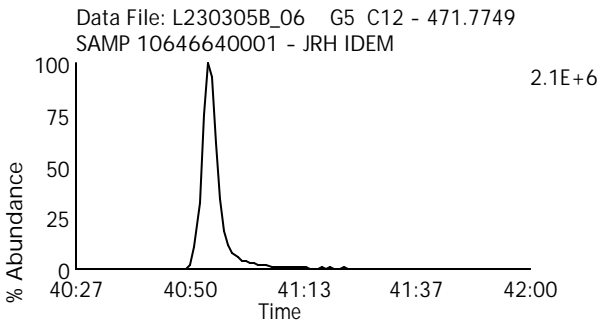
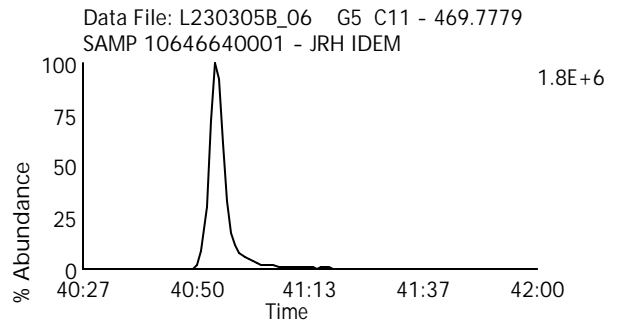
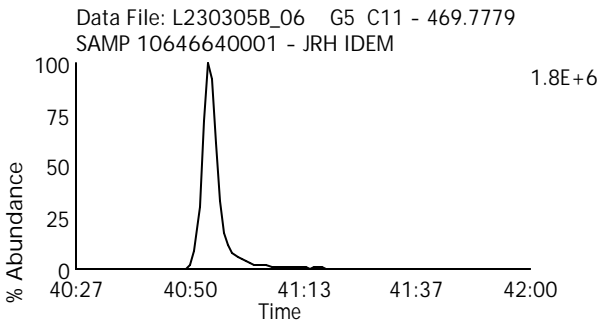
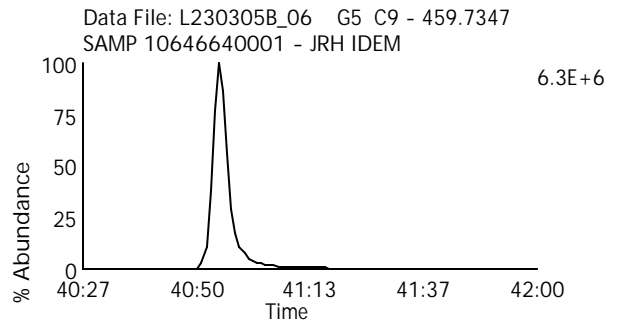
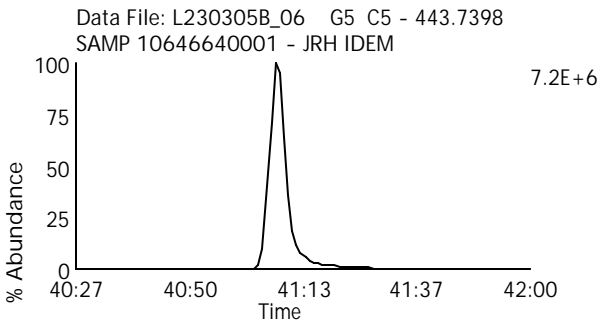
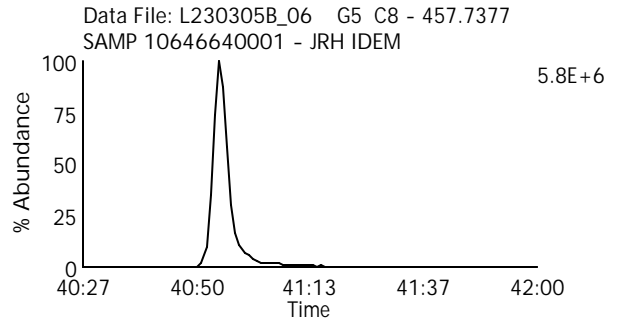
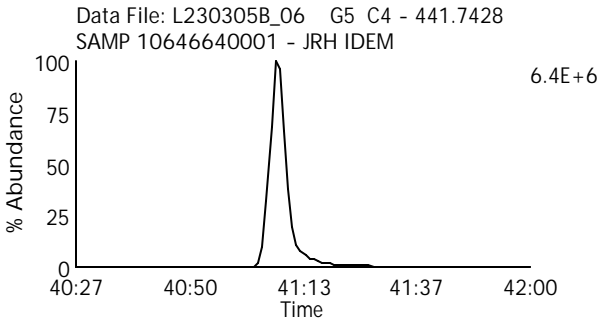
Lab Sample ID: 10644640001
Client Sample ID: WS-1
Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230305B_06
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640001 - JRH IDEM

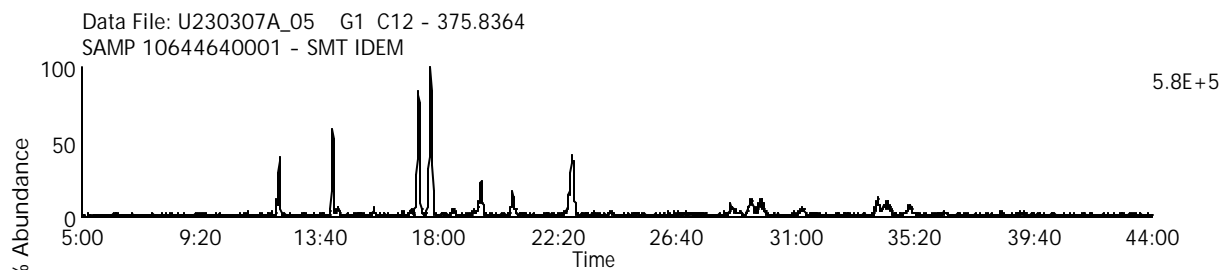
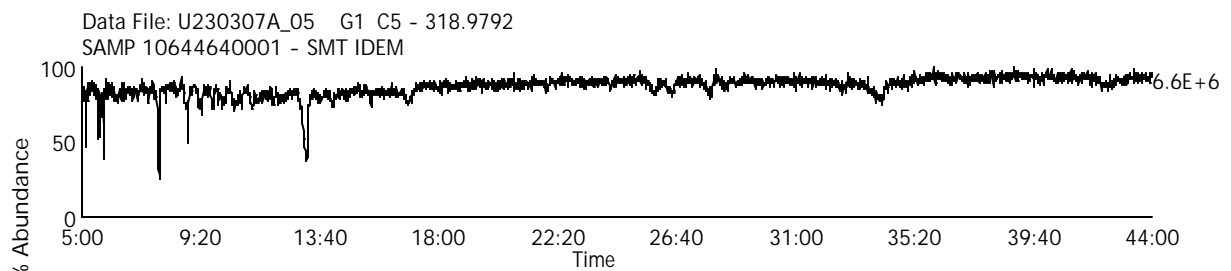
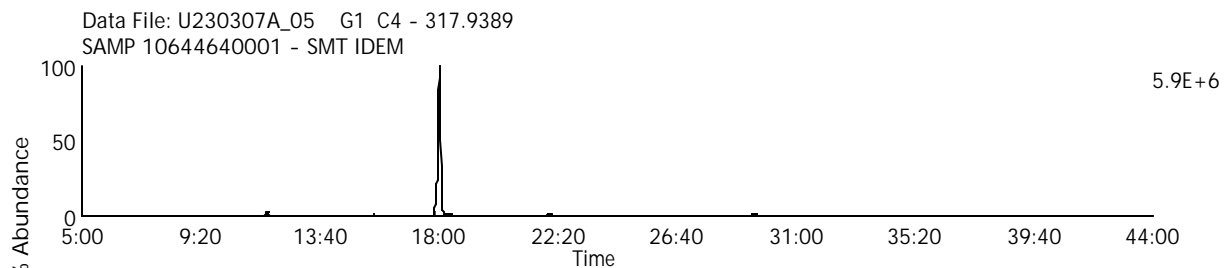
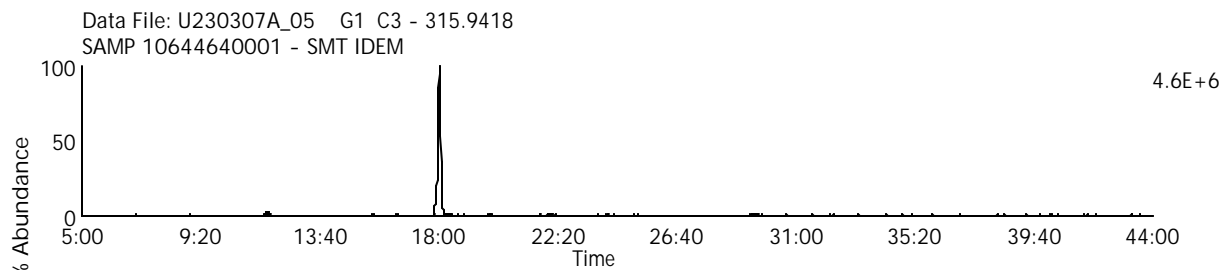
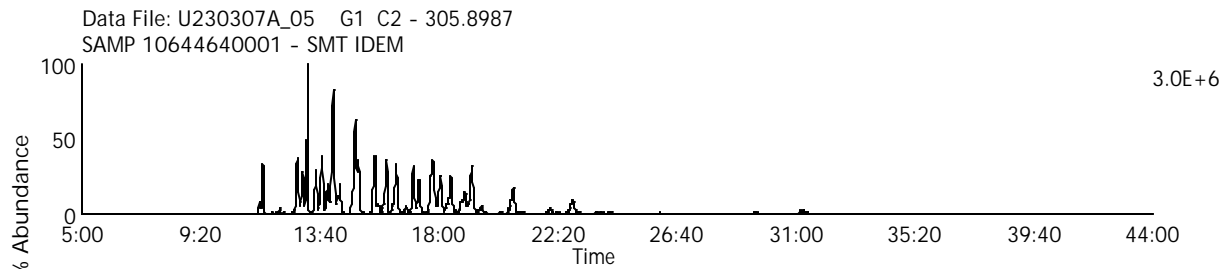
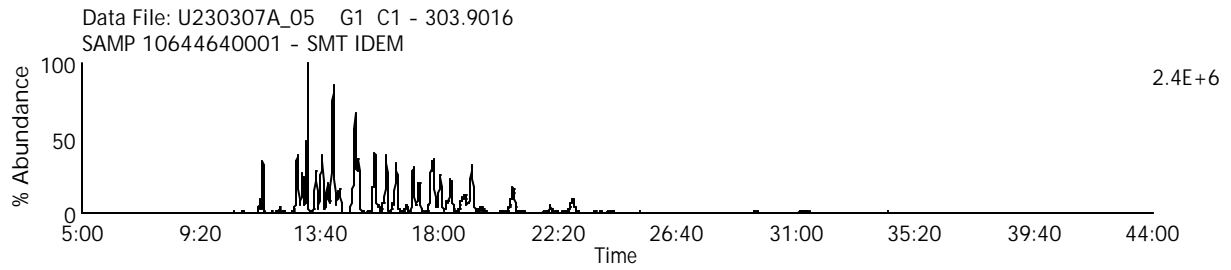
Lab Sample ID: 10644640001
Client Sample ID: WS-1
Instrument: 10MSHR15 (L)



TCDF Confirmation Analysis

Data File Name: U230307A_05
Date Acquired: 3/7/2023
Sample Description: SAMP 10644640001 - SMT IDEM

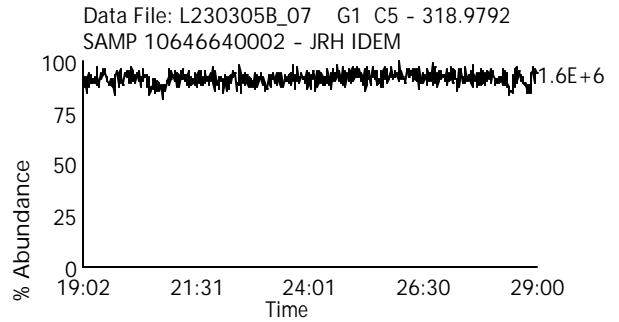
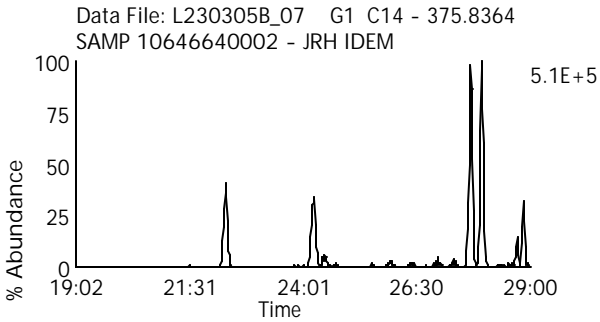
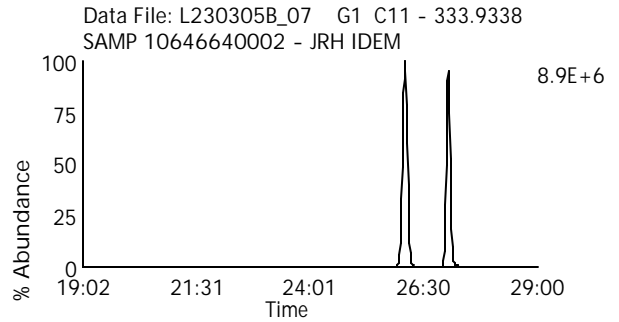
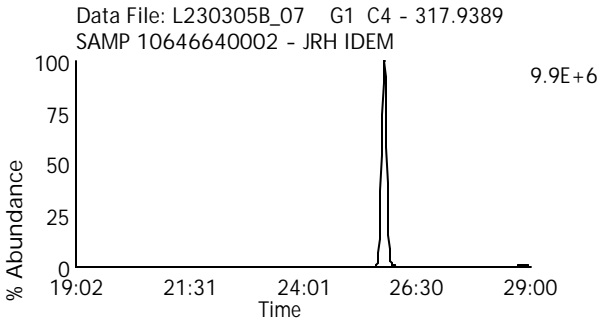
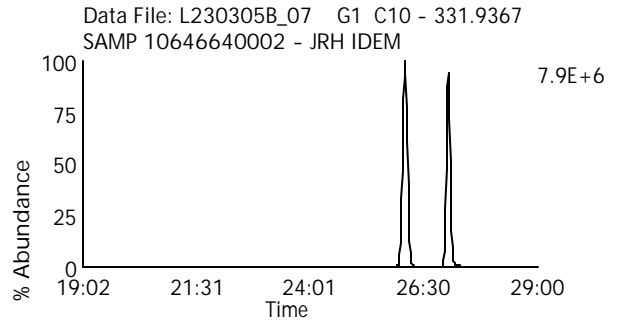
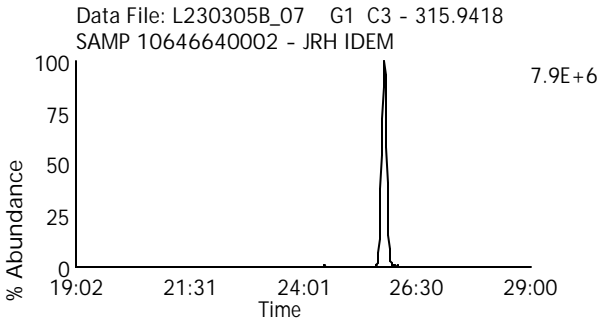
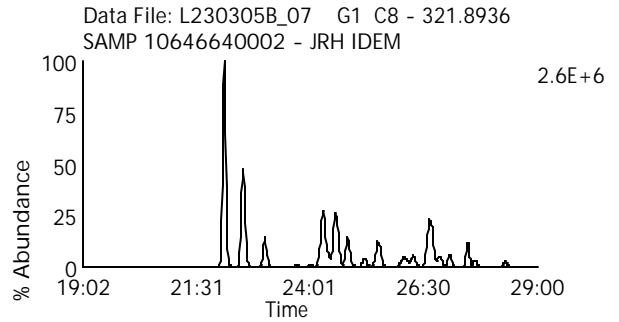
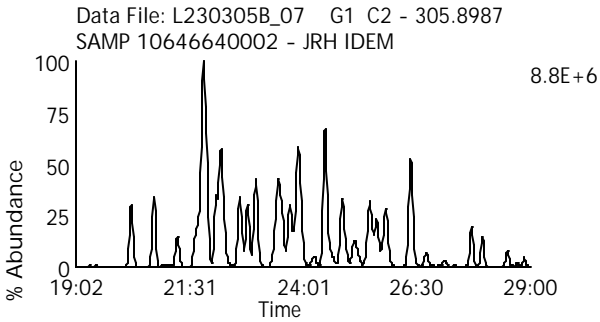
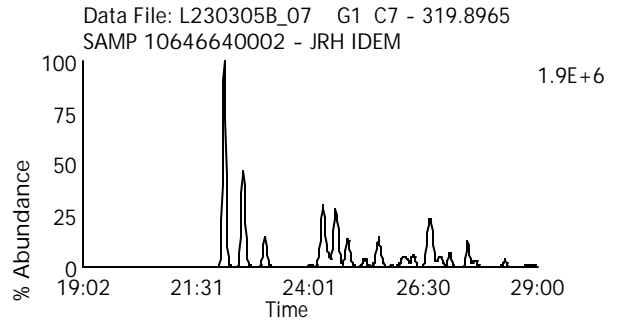
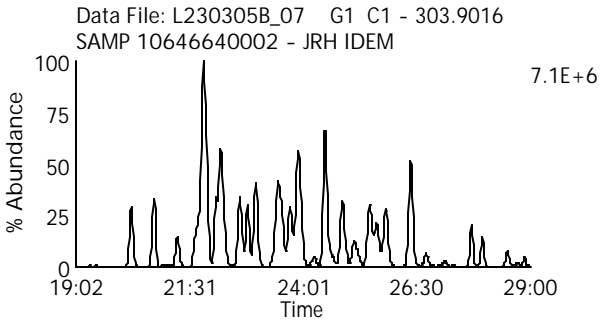
Lab Sample ID: 10644640001
Client Sample ID: WS-1
Instrument: 10MSHR06 (U)



Homologue Group: Tetras

Data File Name: L230305B_07
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640002 - JRH IDEM

Lab Sample ID: 10644640002
Client Sample ID: WS-2
Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230305B_07

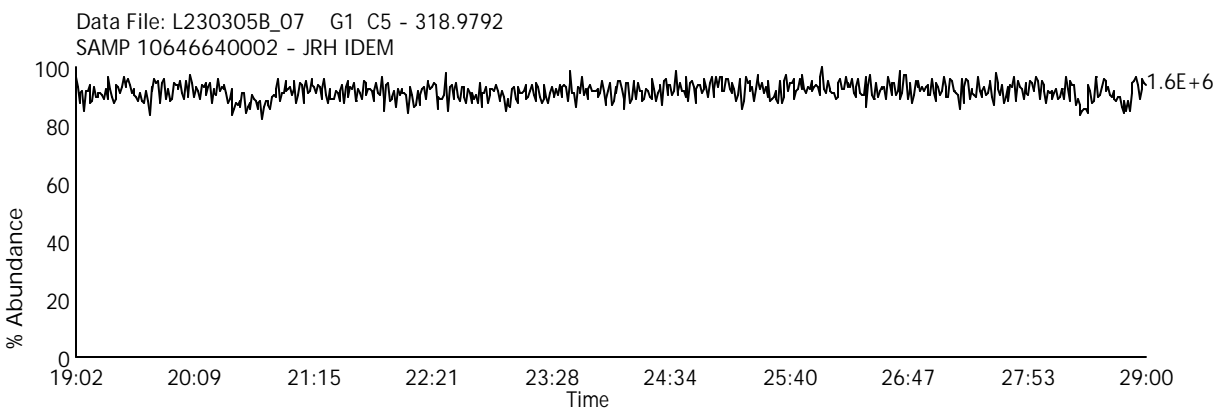
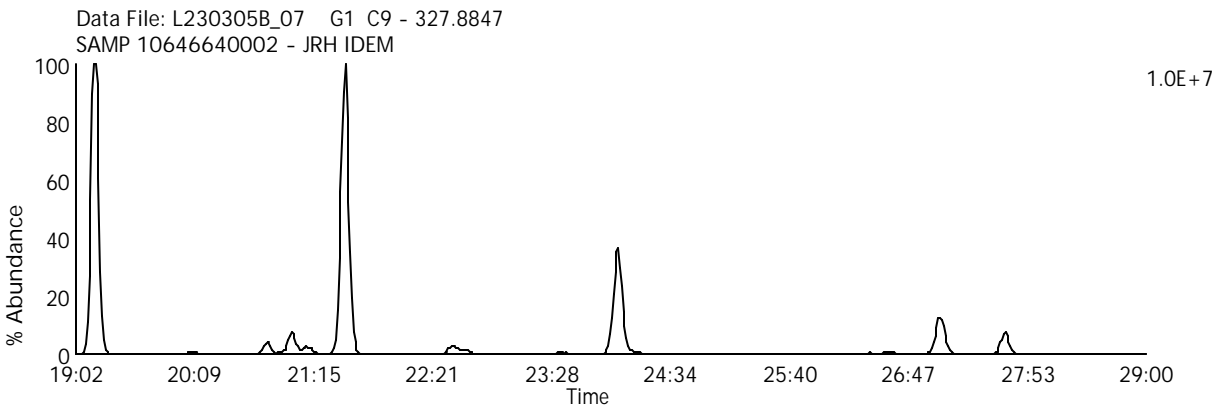
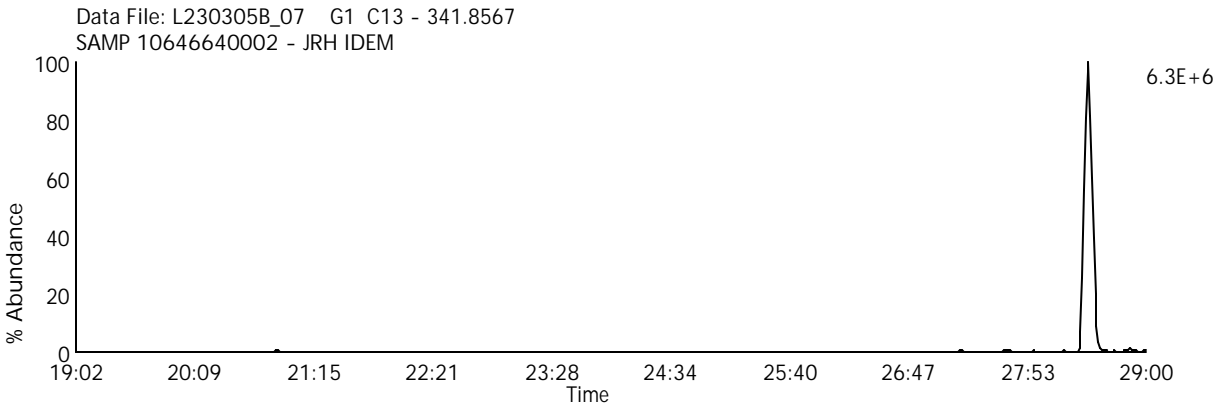
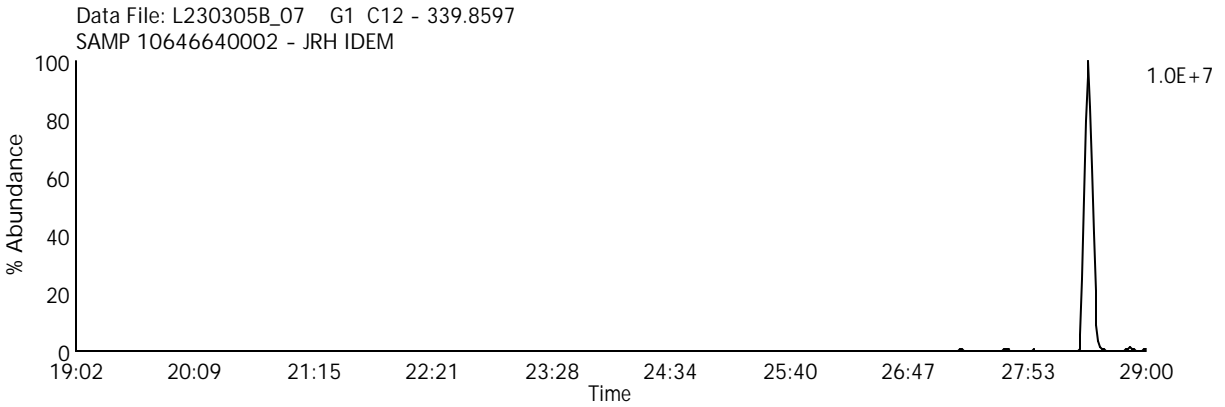
Date Acquired: 3/6/2023

Sample Description: SAMP 10646640002 - JRH IDEM

Lab Sample ID: 10644640002

Client Sample ID: WS-2

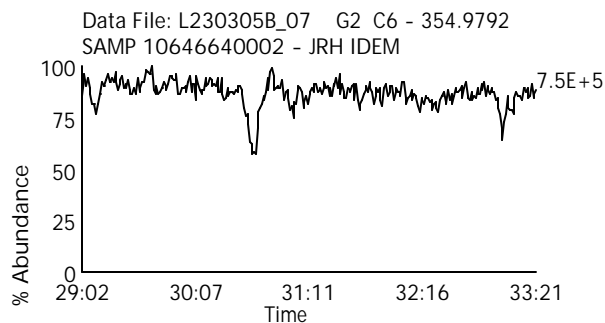
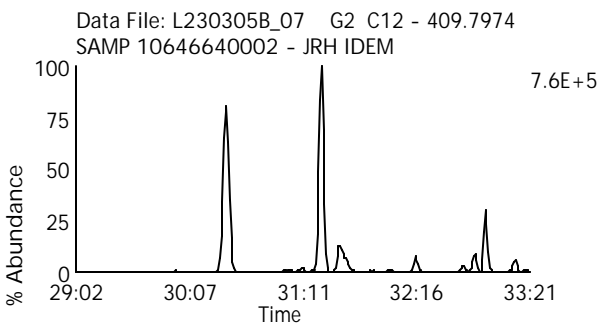
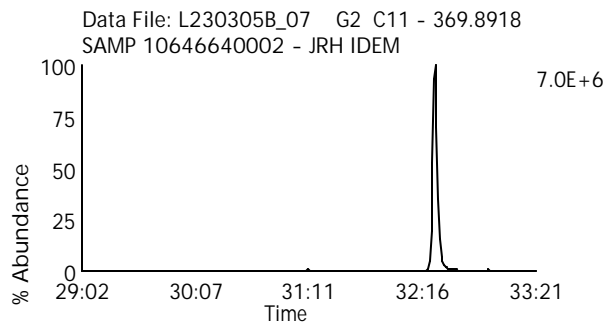
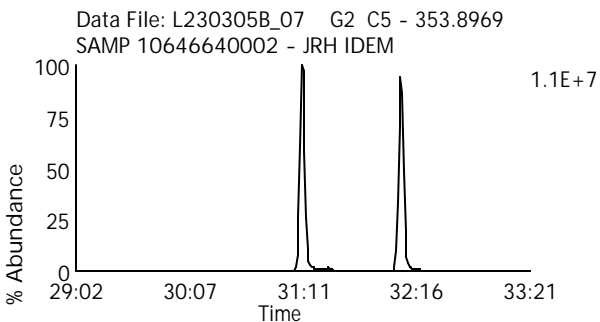
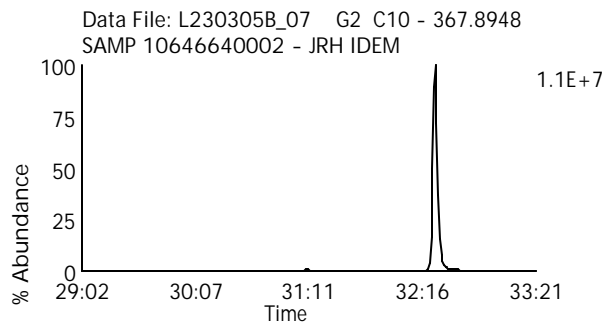
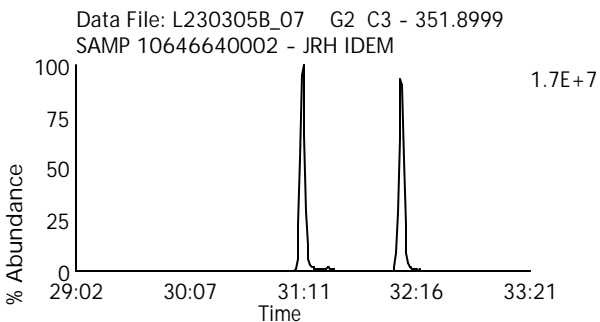
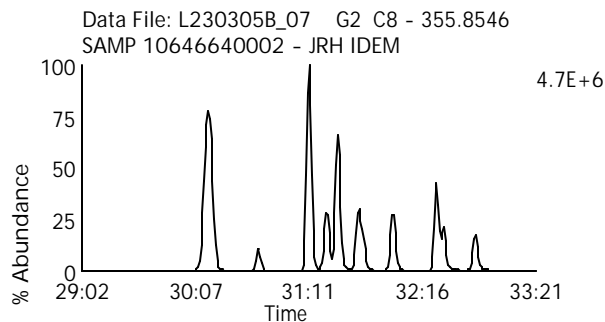
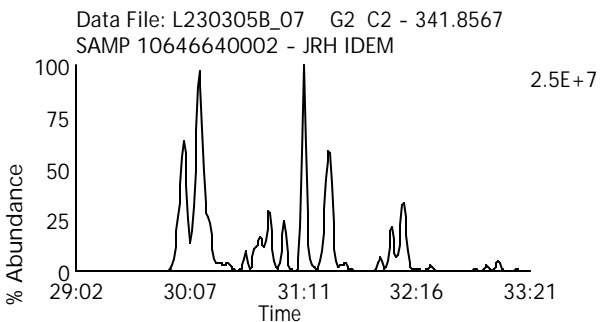
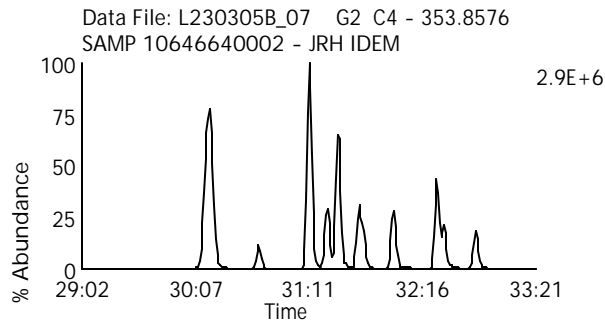
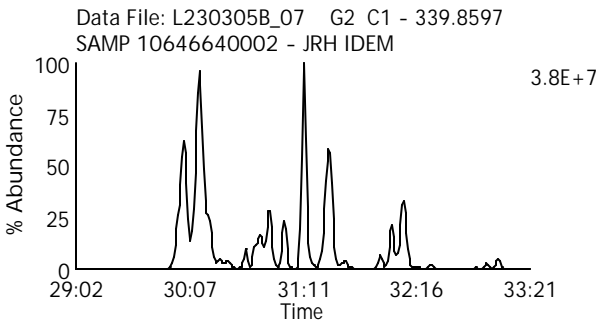
Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230305B_07
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640002 - JRH IDEM

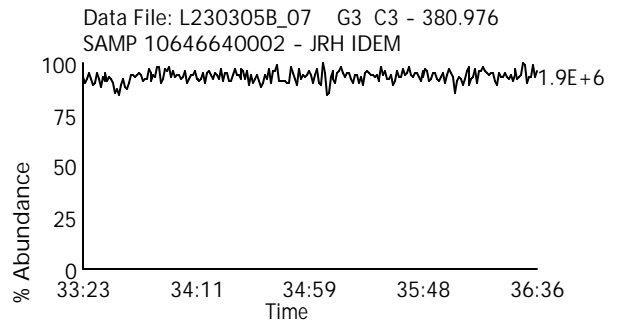
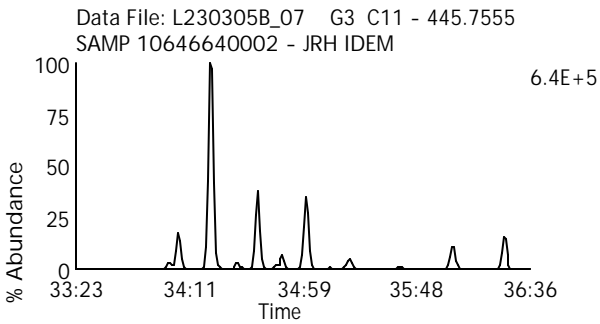
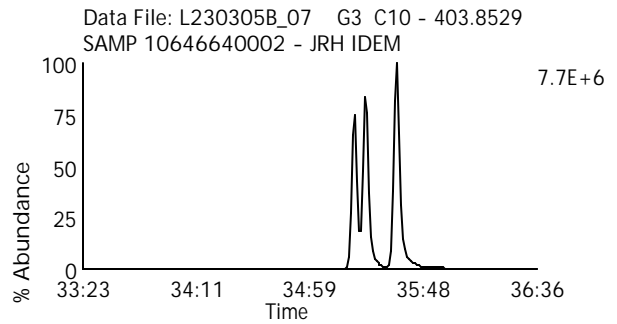
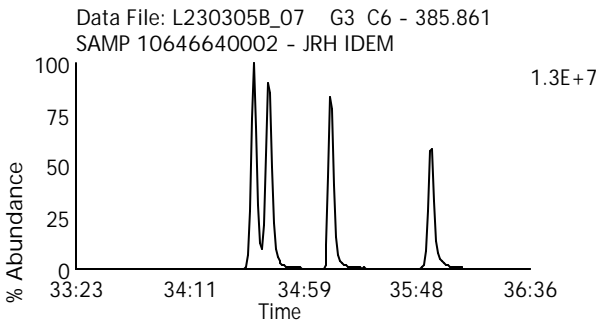
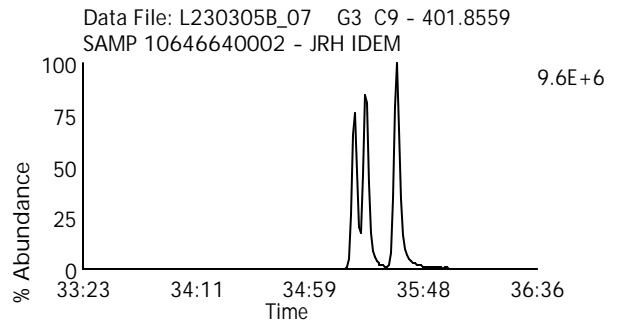
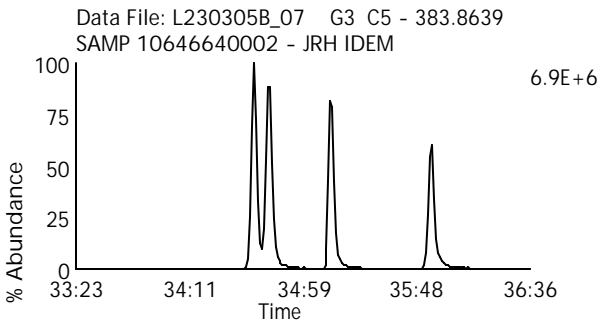
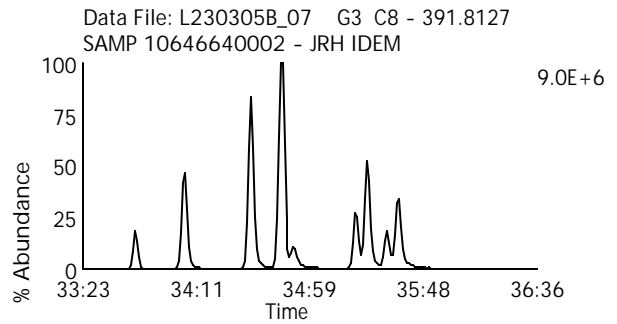
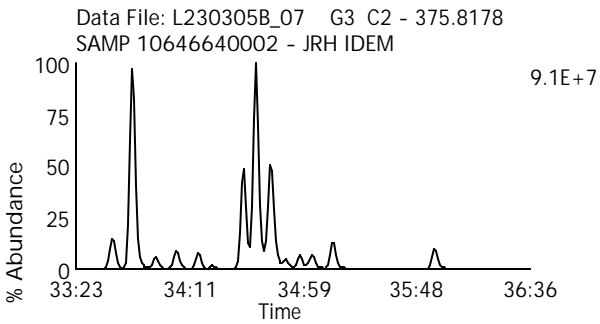
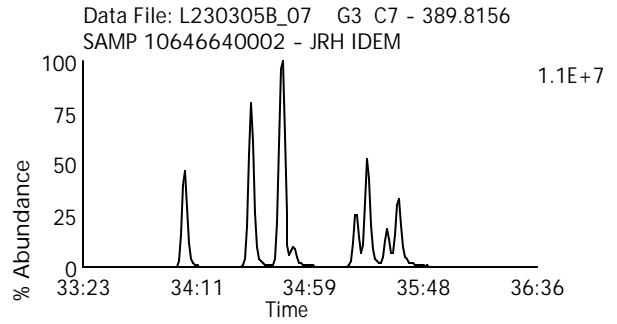
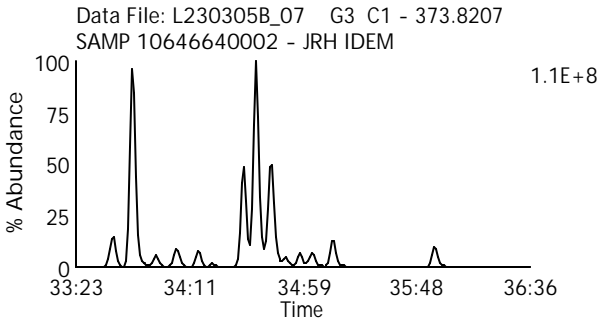
Lab Sample ID: 10644640002
Client Sample ID: WS-2
Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230305B_07
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640002 - JRH IDEM

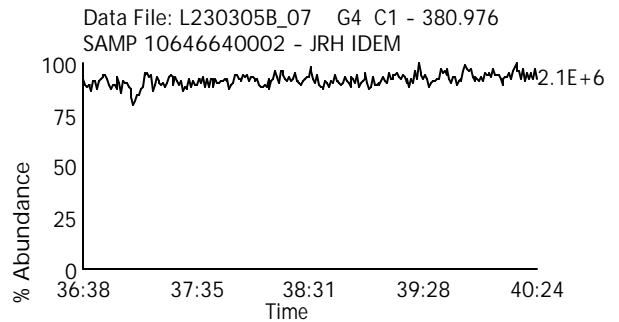
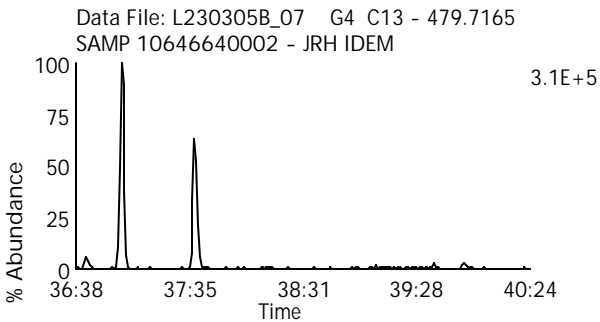
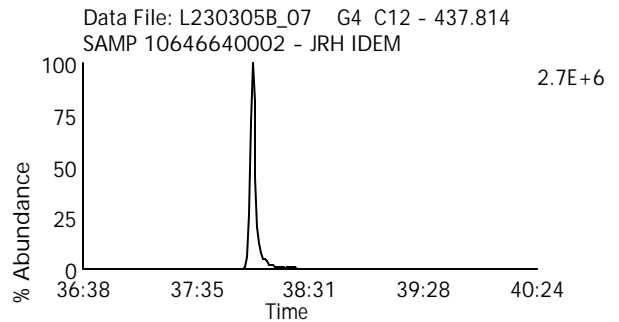
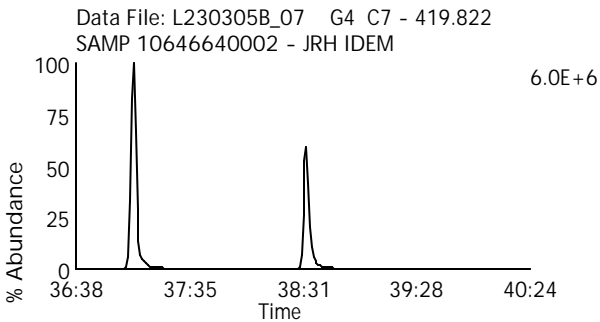
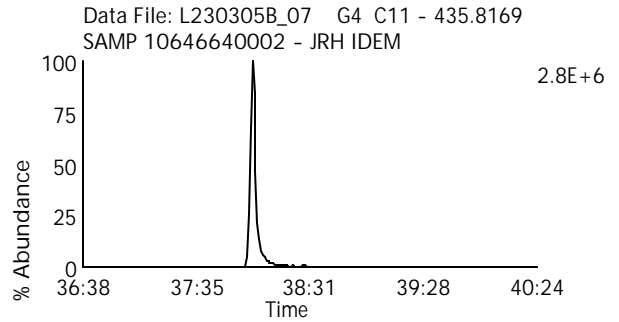
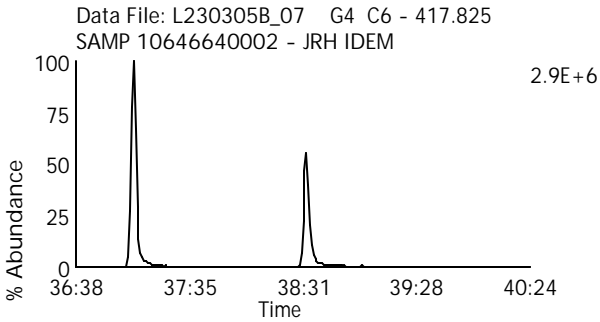
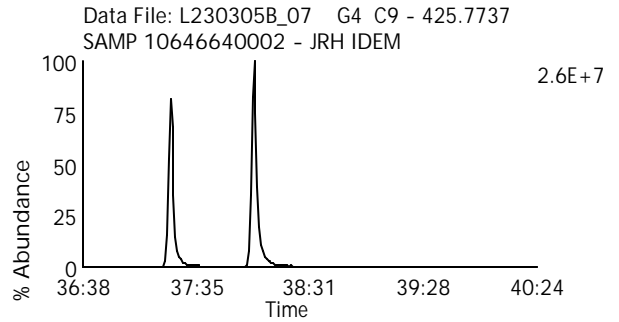
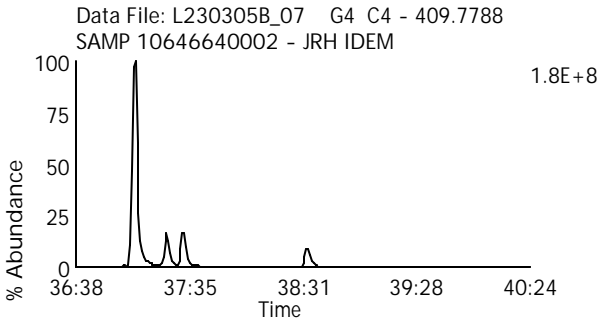
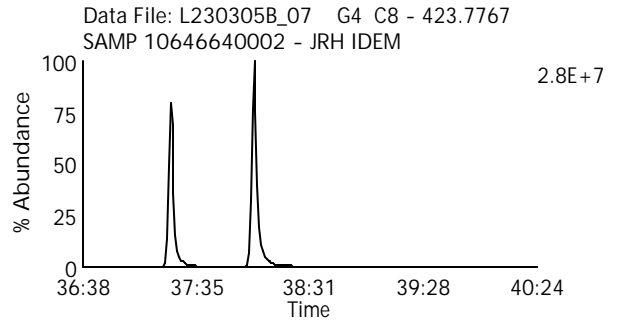
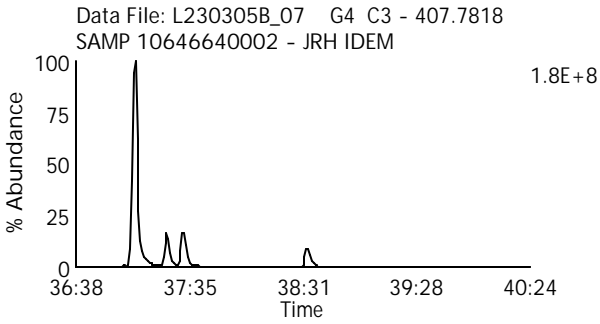
Lab Sample ID: 10644640002
Client Sample ID: WS-2
Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230305B_07
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640002 - JRH IDEM

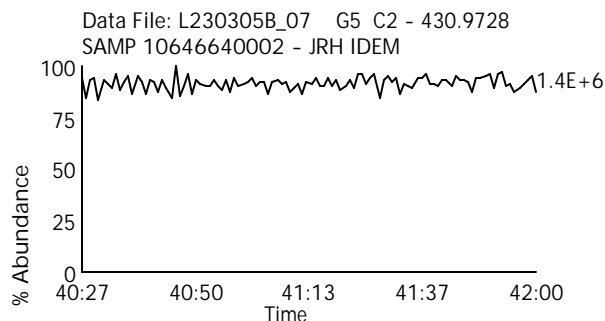
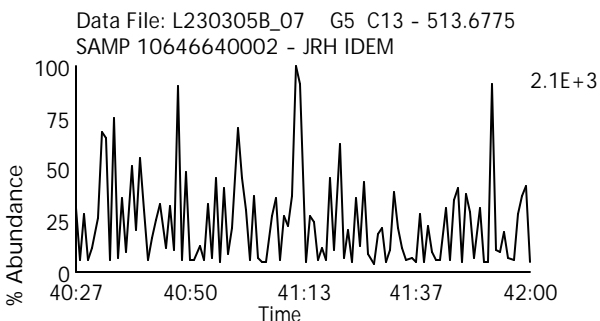
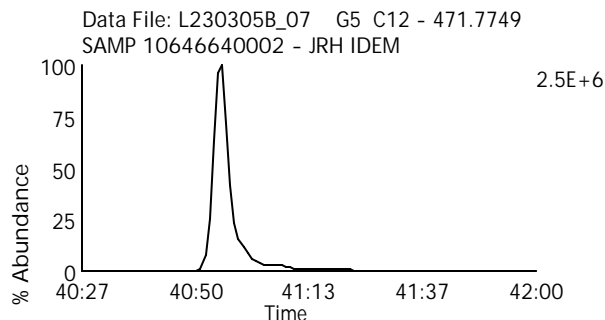
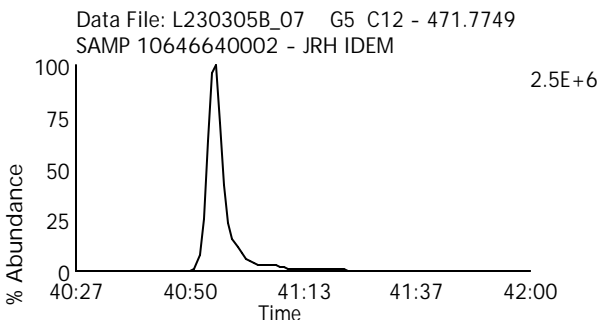
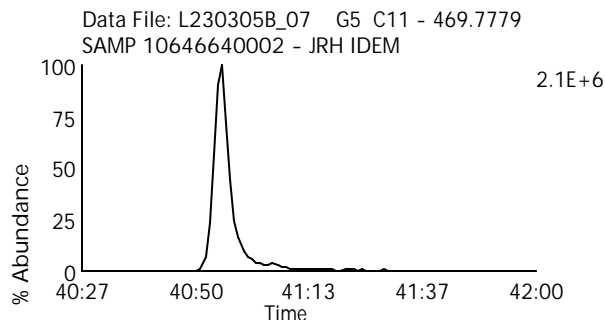
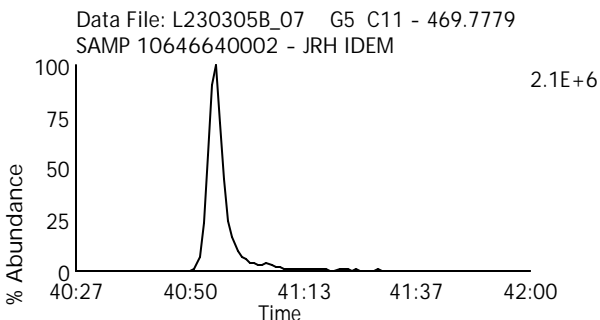
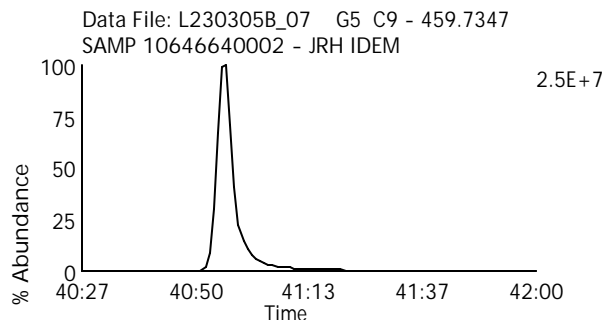
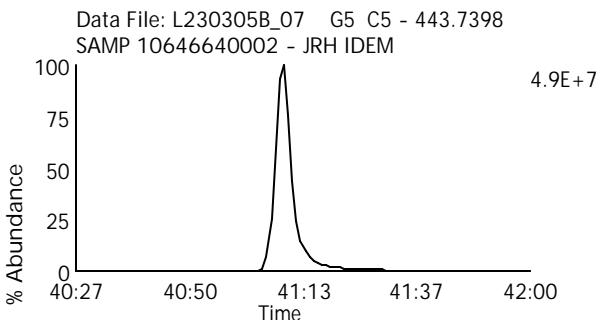
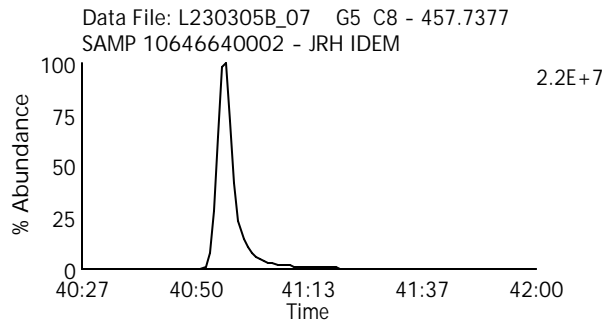
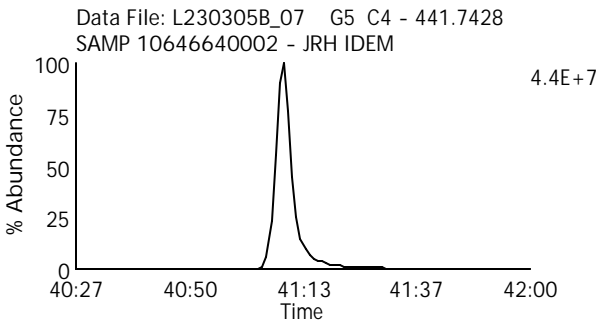
Lab Sample ID: 10644640002
Client Sample ID: WS-2
Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230305B_07
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640002 - JRH IDEM

Lab Sample ID: 10644640002
Client Sample ID: WS-2
Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230306B_15

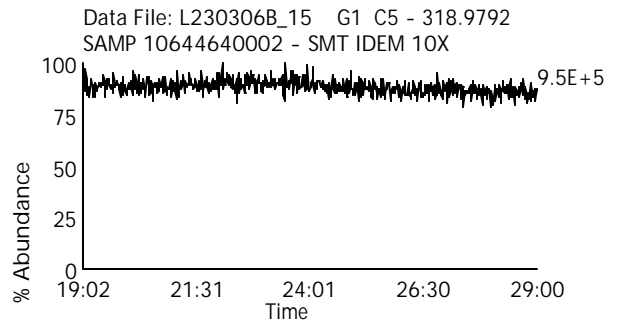
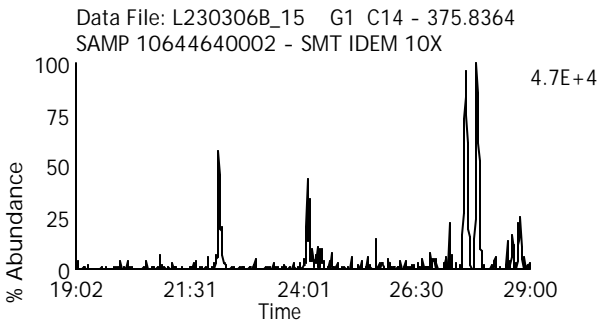
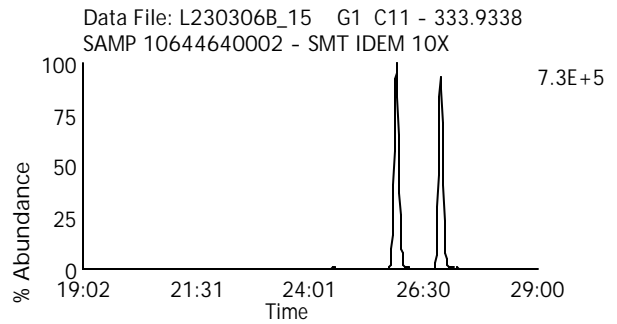
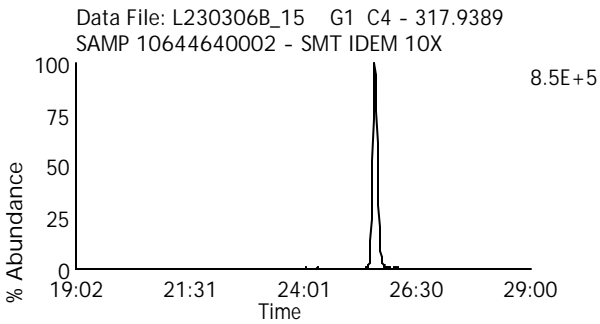
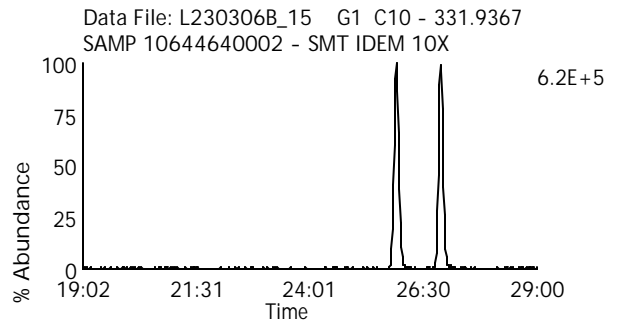
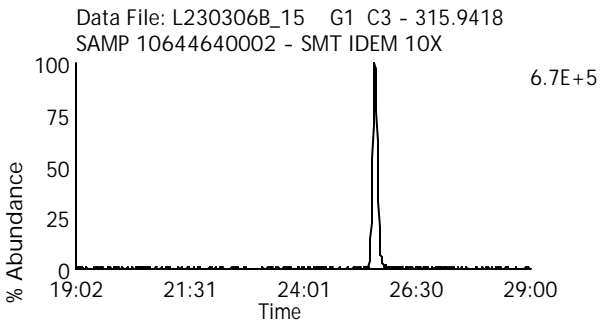
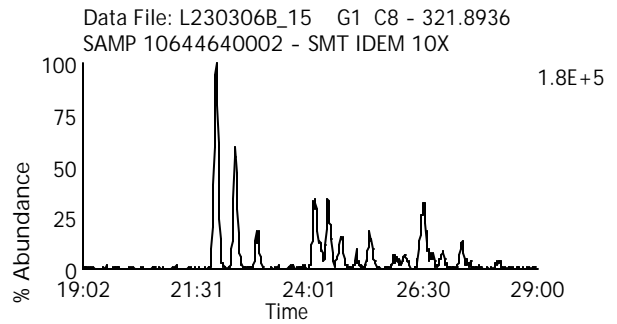
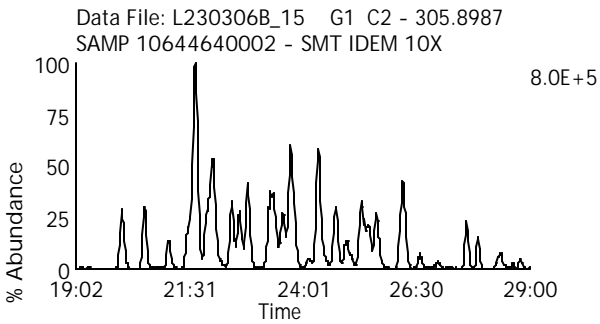
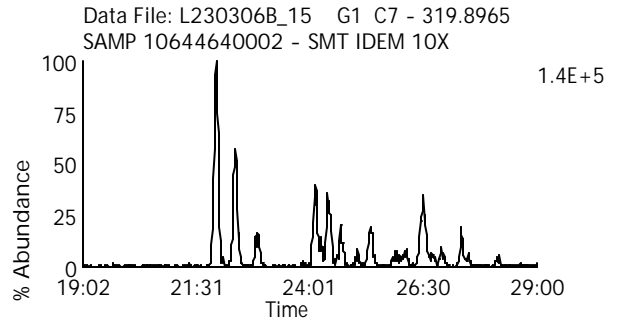
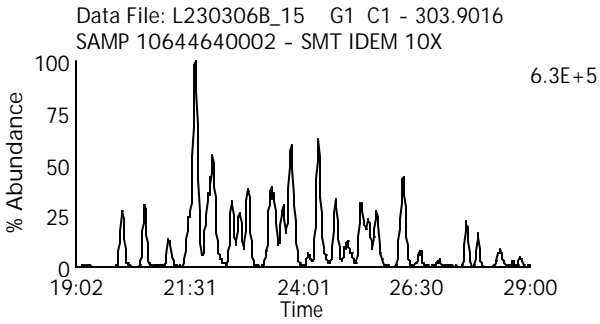
Date Acquired: 3/7/2023

Sample Description: SAMP 10644640002 - SMT IDEM 10X

Lab Sample ID: 10644640002

Client Sample ID: WS-2

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230306B_15

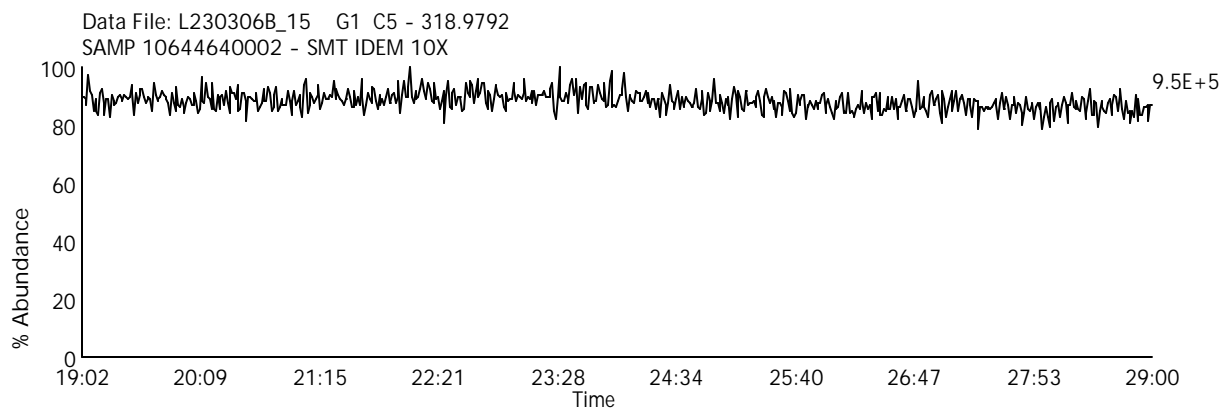
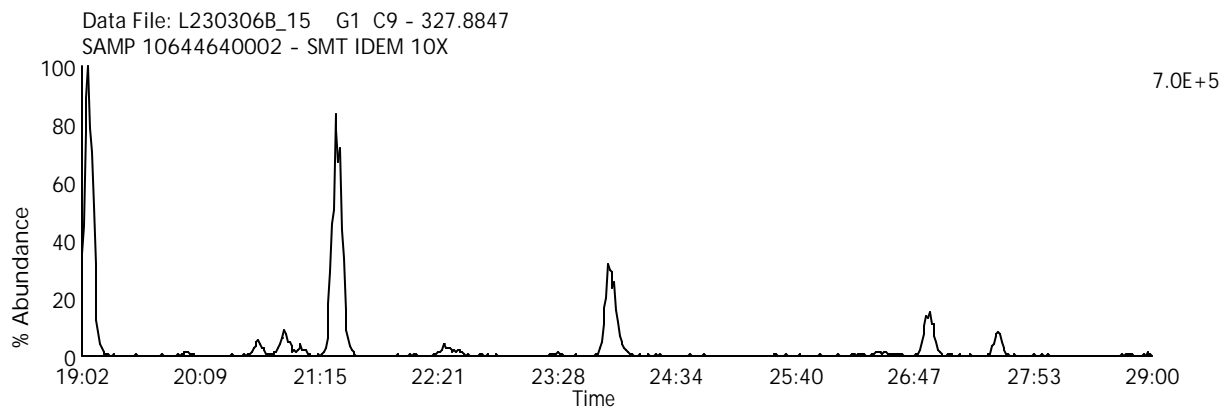
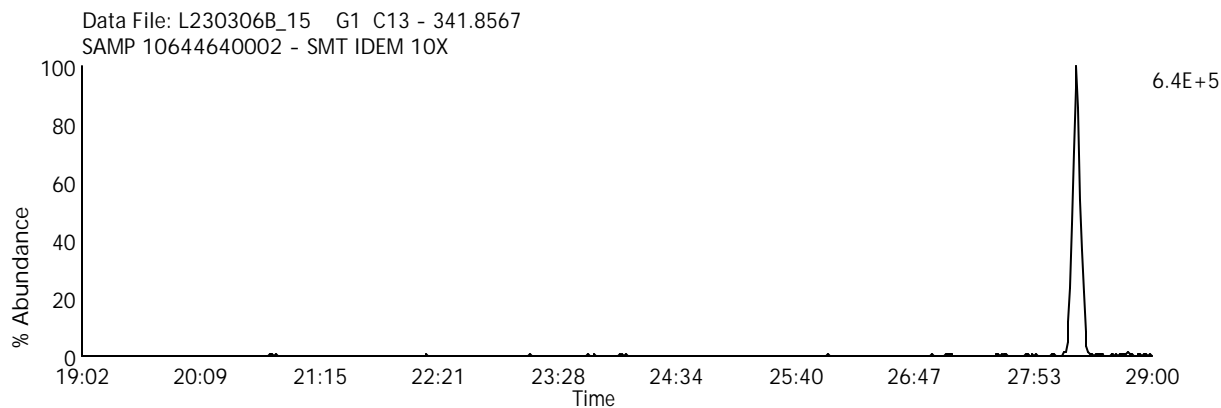
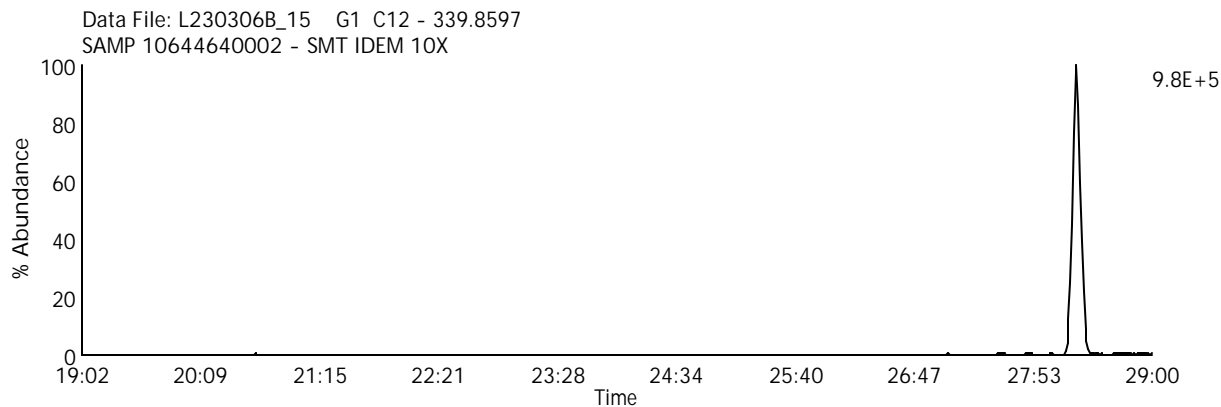
Date Acquired: 3/7/2023

Sample Description: SAMP 10644640002 - SMT IDEM 10X

Lab Sample ID: 10644640002

Client Sample ID: WS-2

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230306B_15

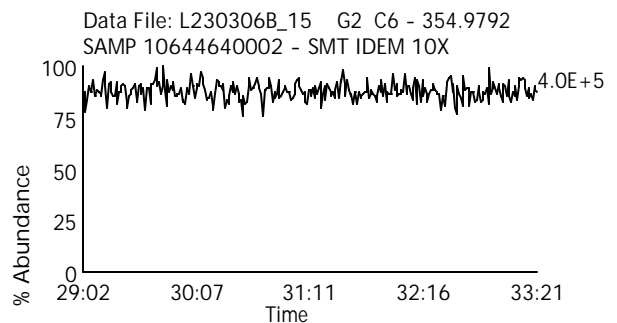
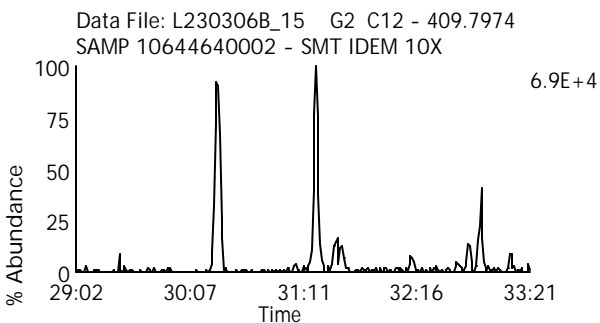
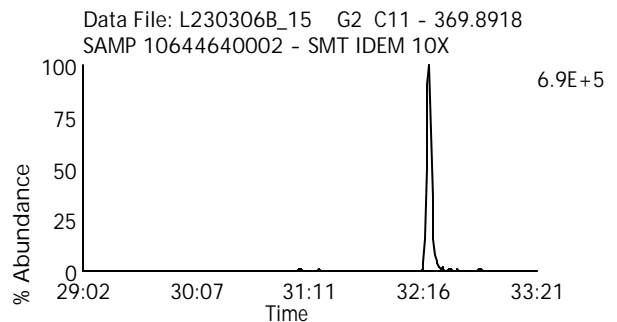
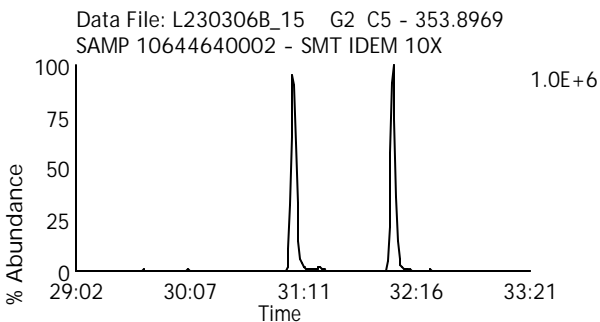
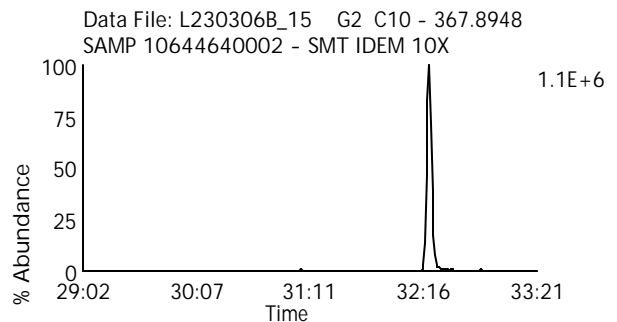
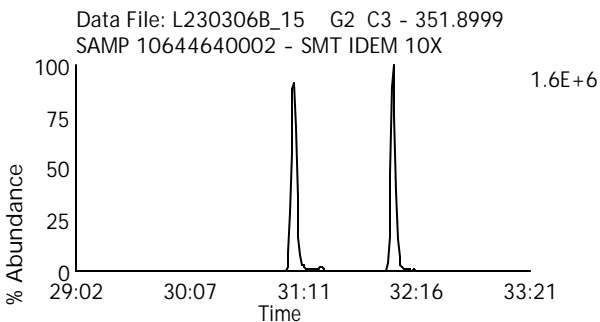
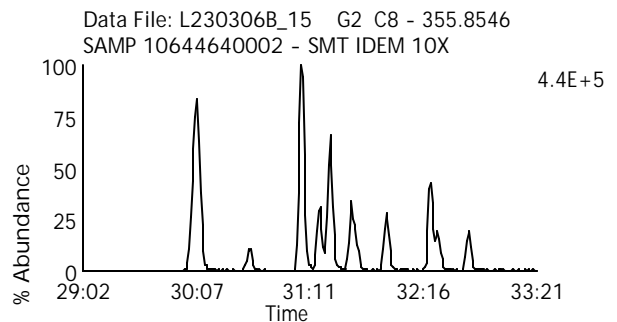
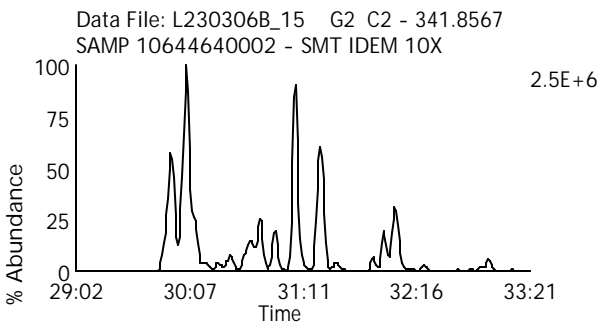
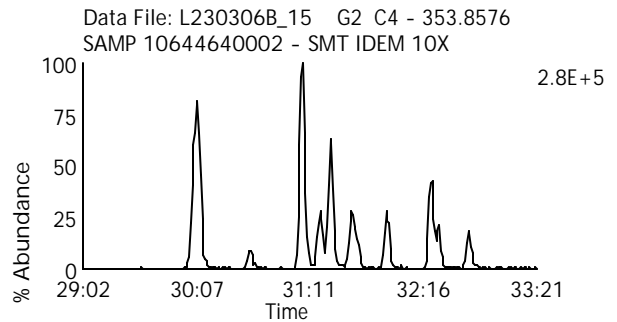
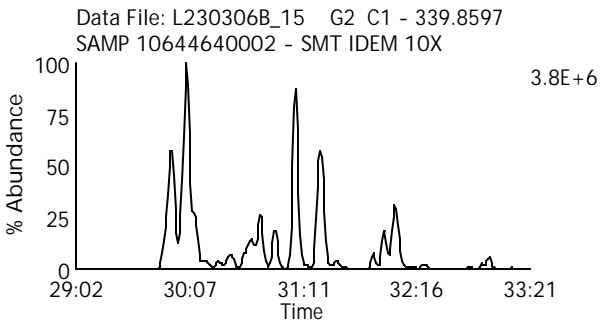
Date Acquired: 3/7/2023

Sample Description: SAMP 10644640002 - SMT IDEM 10X

Lab Sample ID: 10644640002

Client Sample ID: WS-2

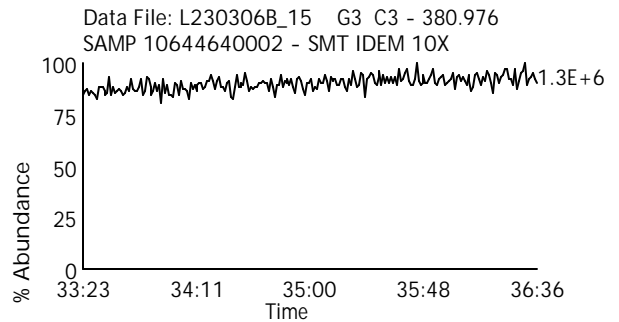
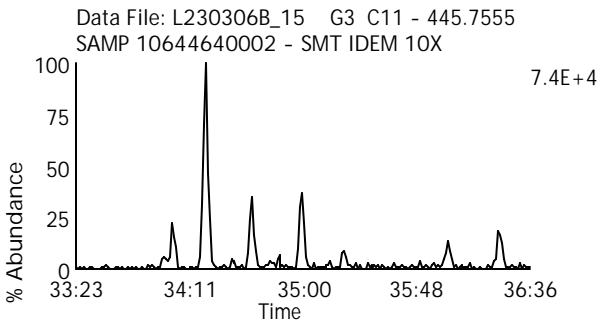
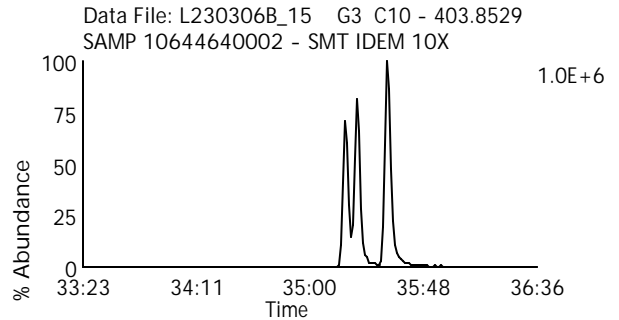
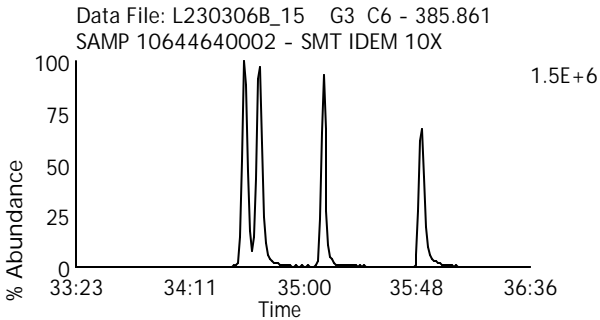
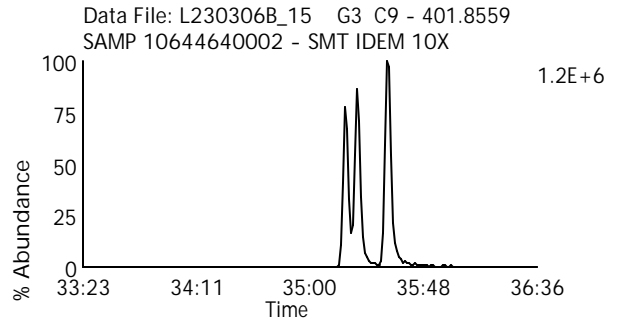
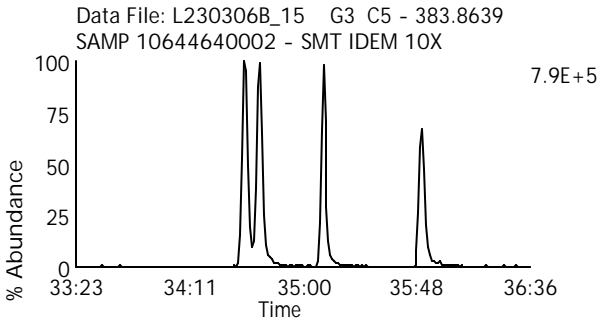
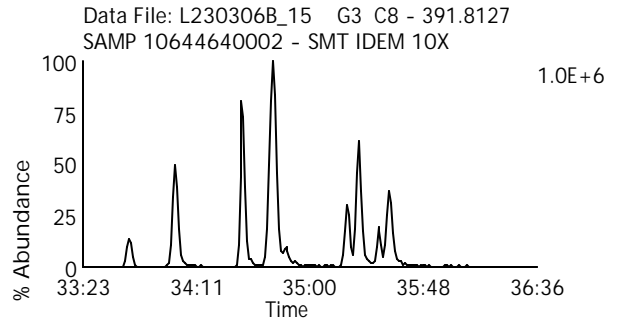
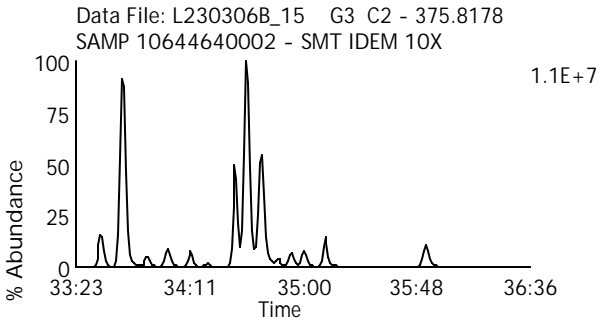
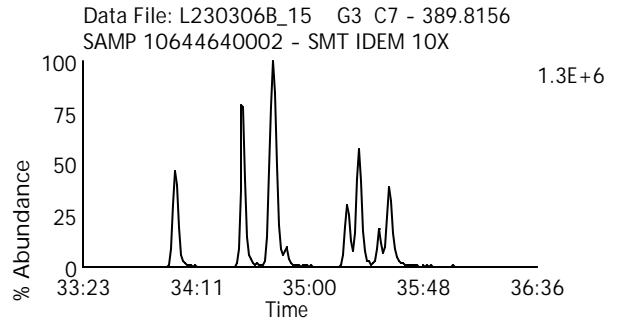
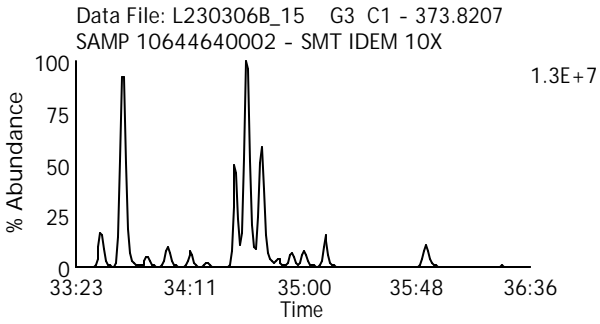
Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230306B_15
Date Acquired: 3/7/2023
Sample Description: SAMP 10644640002 - SMT IDEM 10X

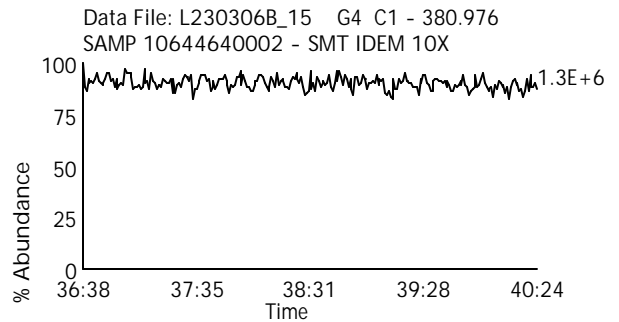
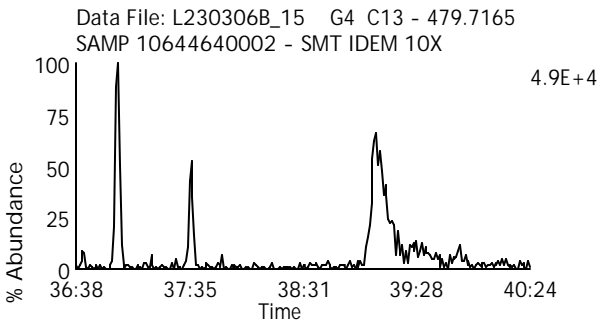
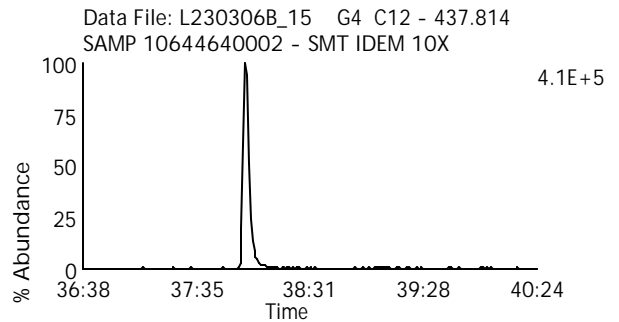
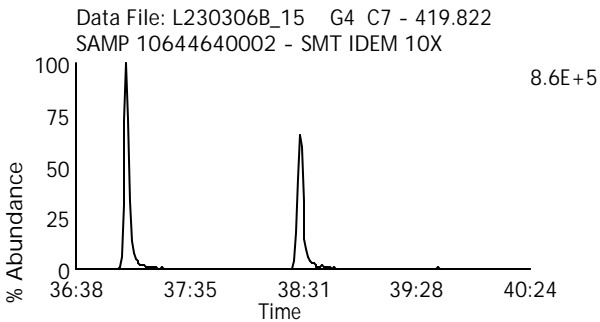
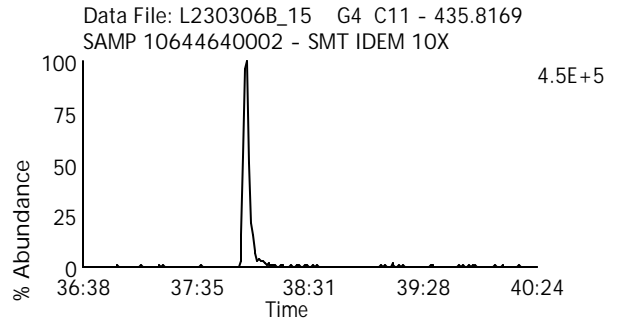
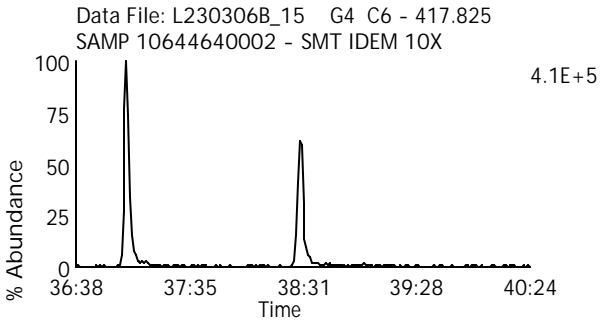
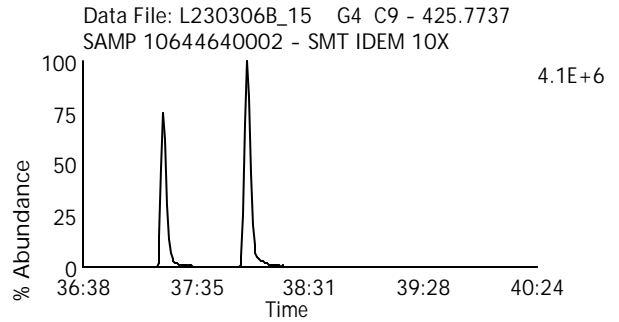
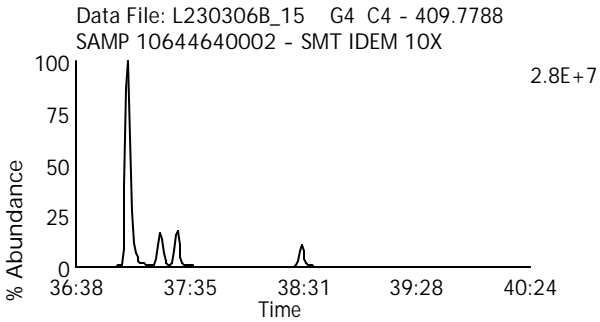
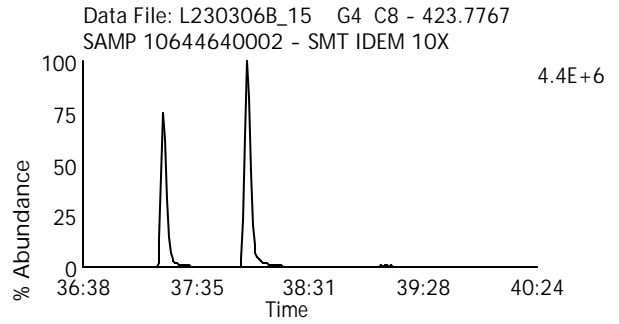
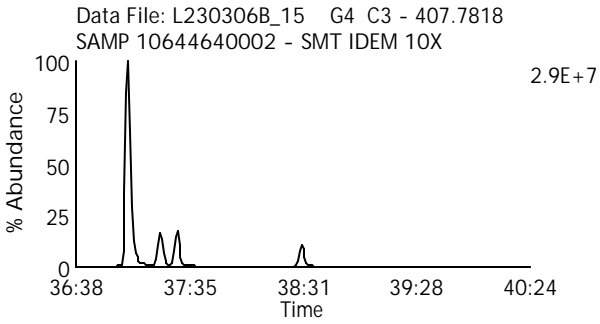
Lab Sample ID: 10644640002
Client Sample ID: WS-2
Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230306B_15
Date Acquired: 3/7/2023
Sample Description: SAMP 10644640002 - SMT IDEM 10X

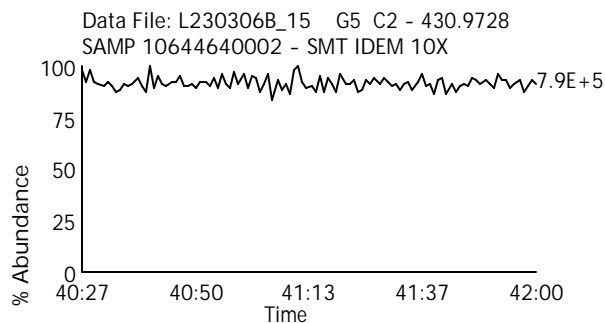
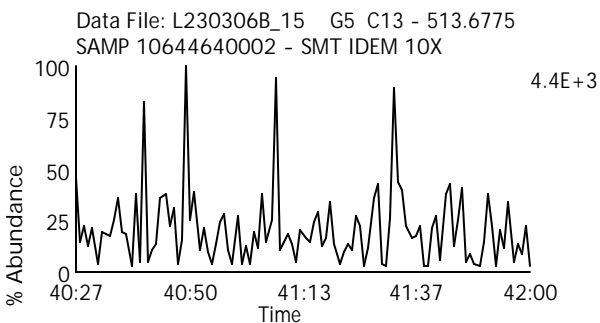
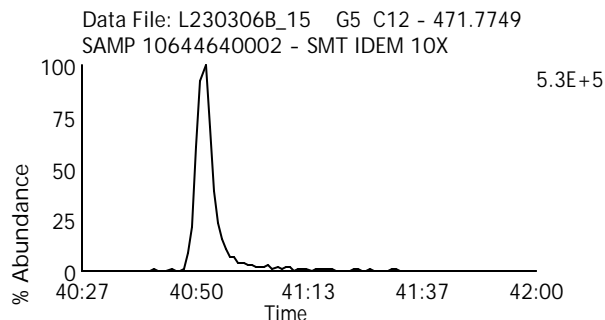
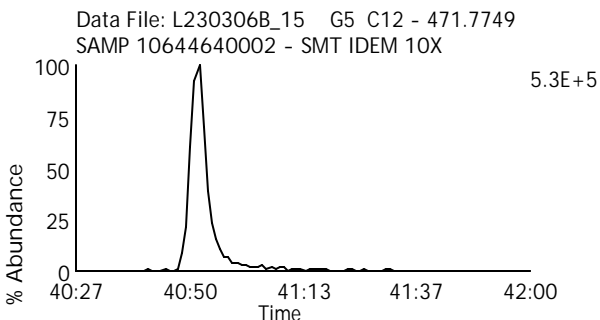
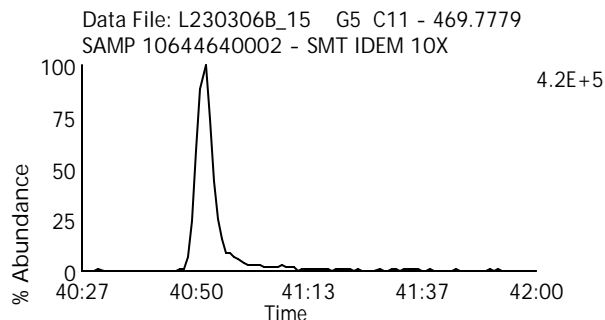
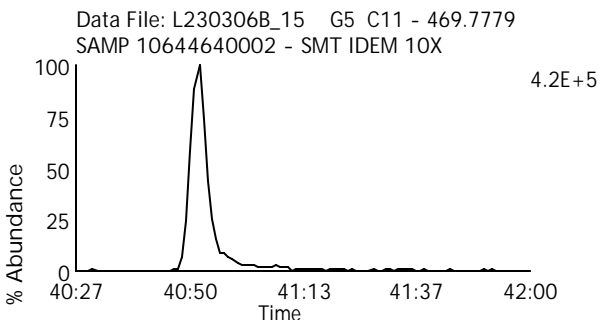
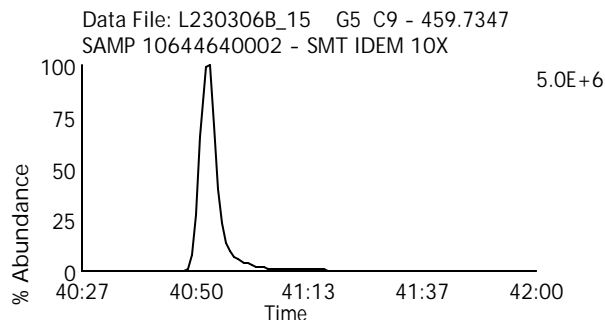
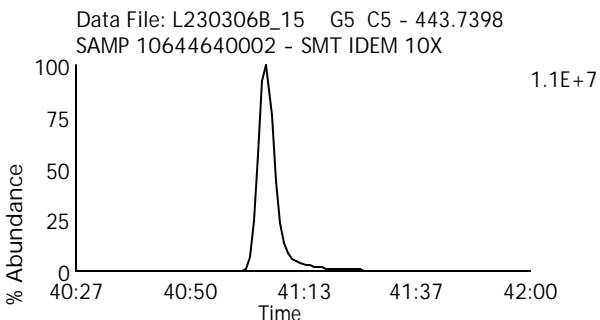
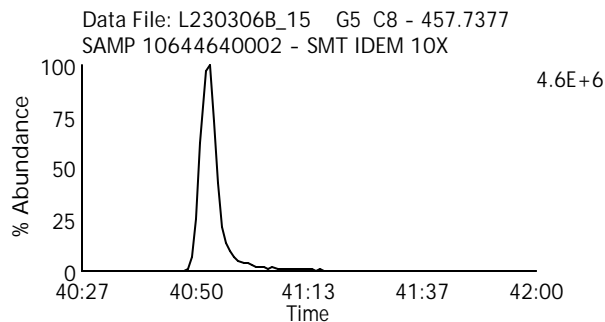
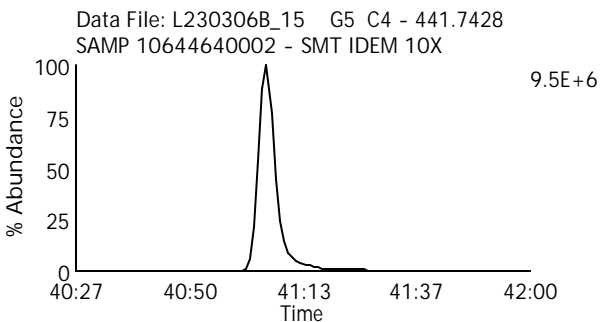
Lab Sample ID: 10644640002
Client Sample ID: WS-2
Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230306B_15
Date Acquired: 3/7/2023
Sample Description: SAMP 10644640002 - SMT IDEM 10X

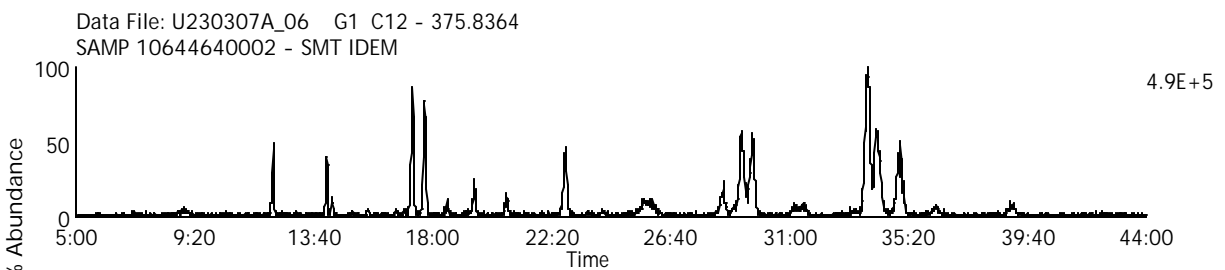
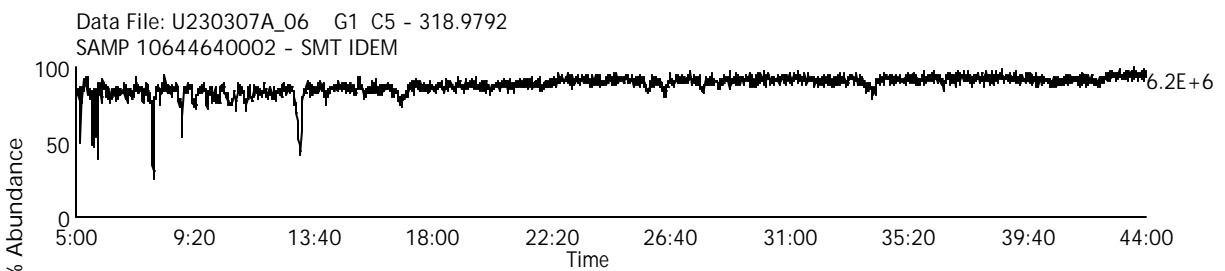
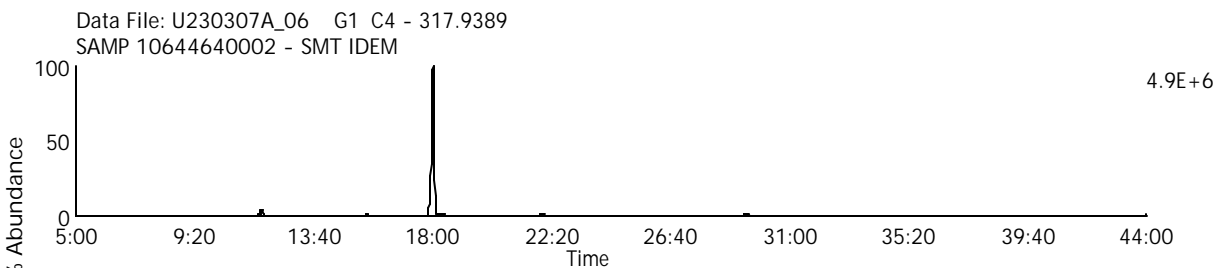
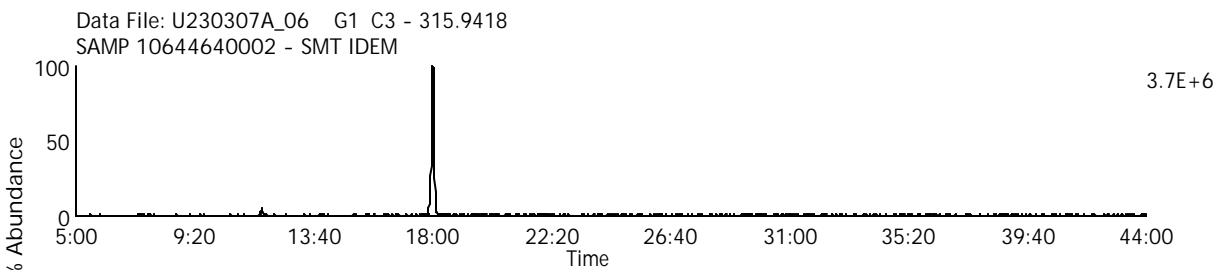
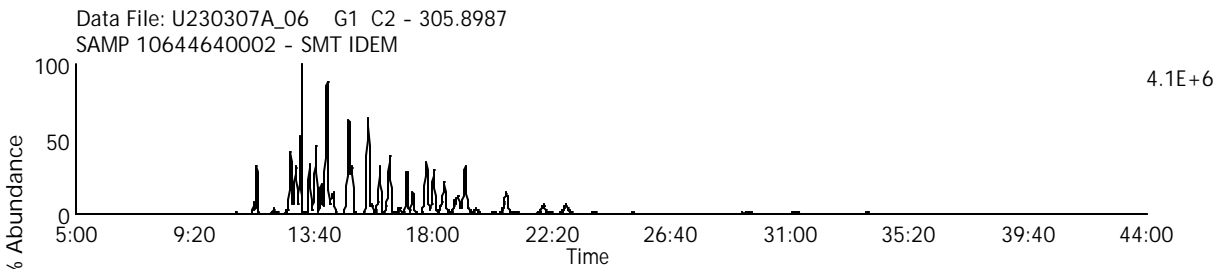
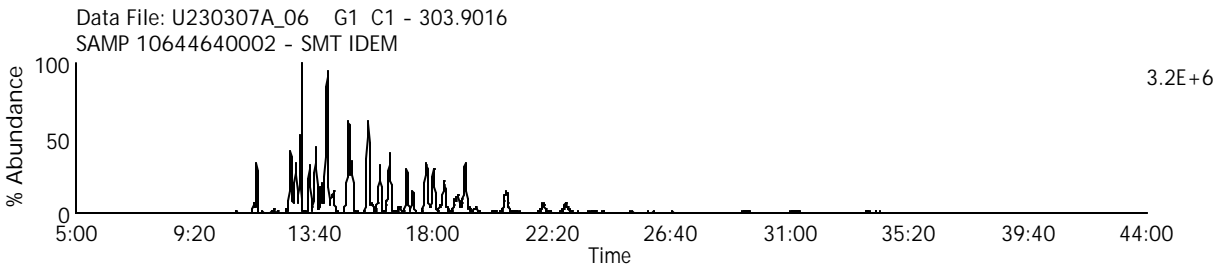
Lab Sample ID: 10644640002
Client Sample ID: WS-2
Instrument: 10MSHR15 (L)



TCDF Confirmation Analysis

Data File Name: U230307A_06
Date Acquired: 3/7/2023
Sample Description: SAMP 10644640002 - SMT IDEM

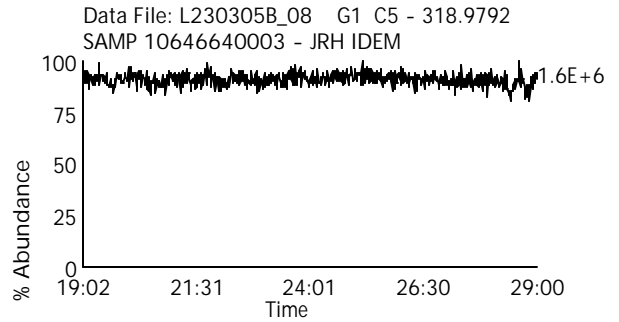
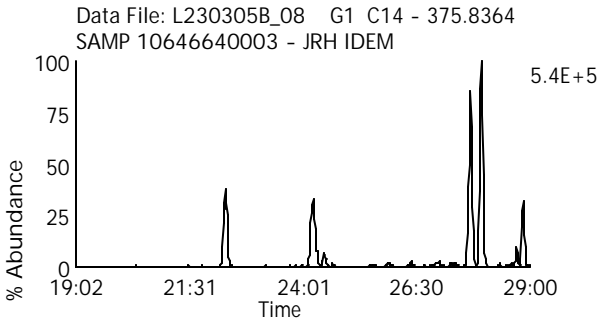
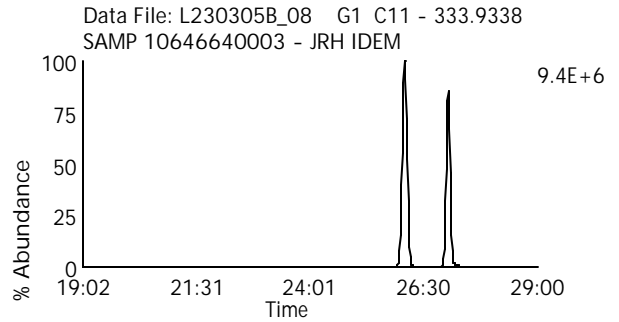
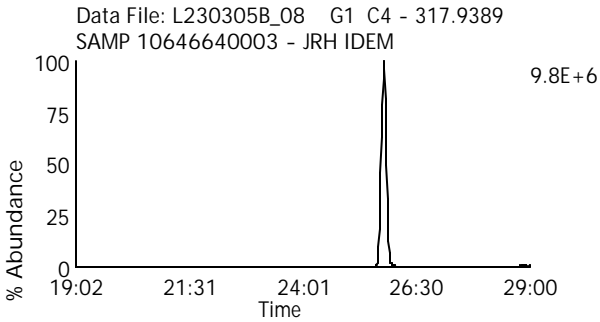
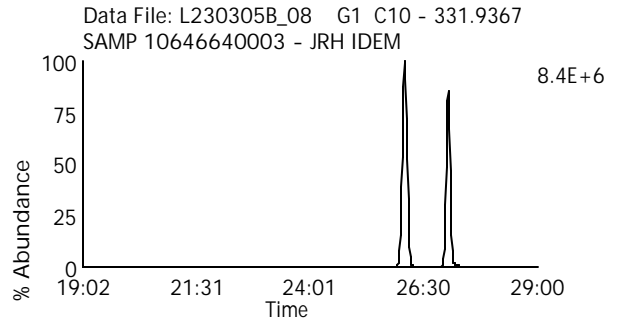
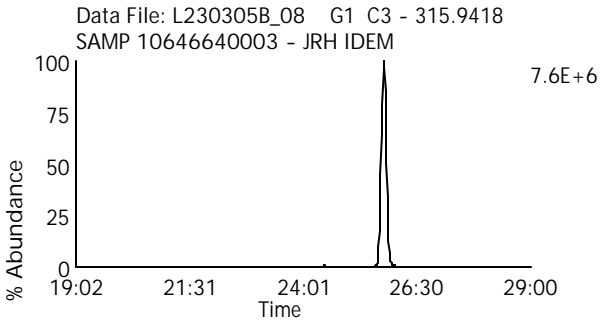
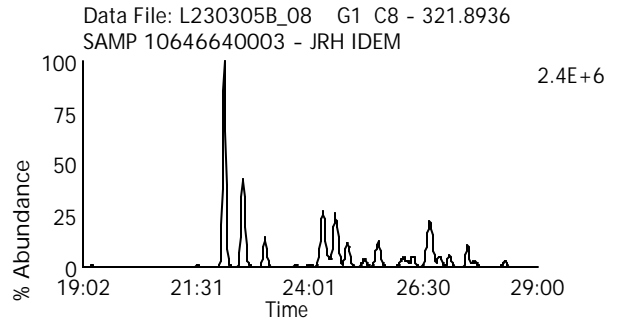
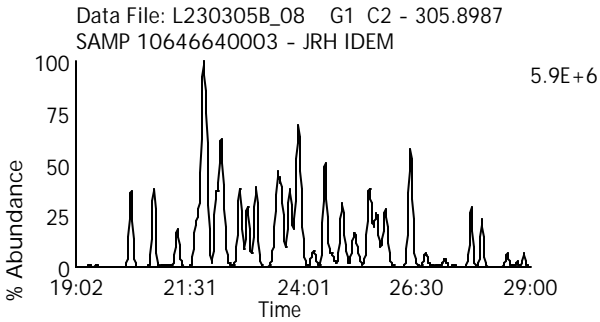
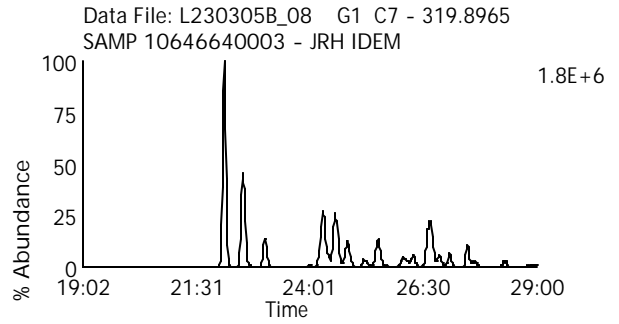
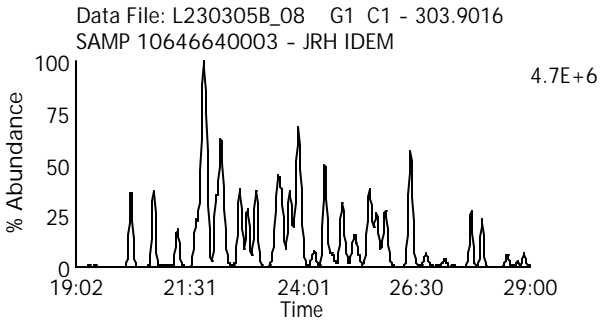
Lab Sample ID: 10644640002
Client Sample ID: WS-2
Instrument: 10MSHR06 (U)



Homologue Group: Tetras

Data File Name: L230305B_08
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640003 - JRH IDEM

Lab Sample ID: 10644640003
Client Sample ID: WS-2 Dup
Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230305B_08

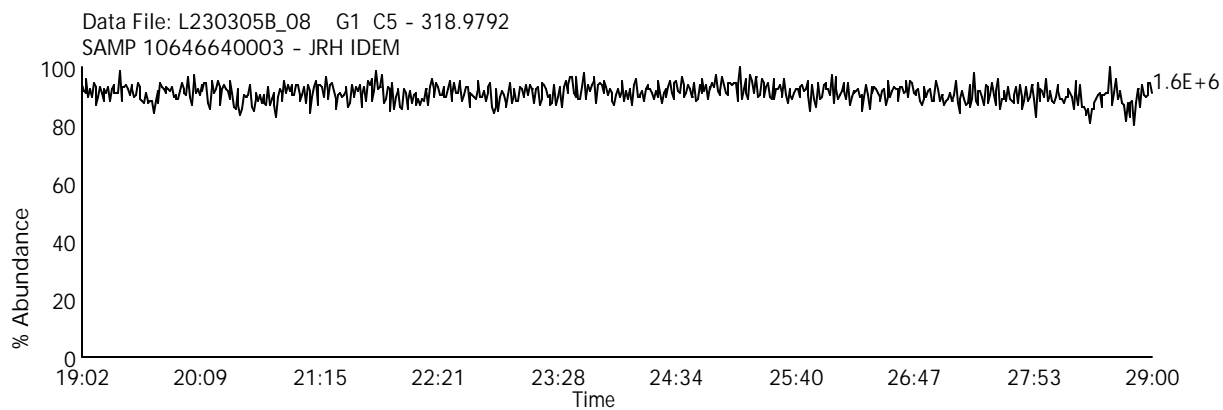
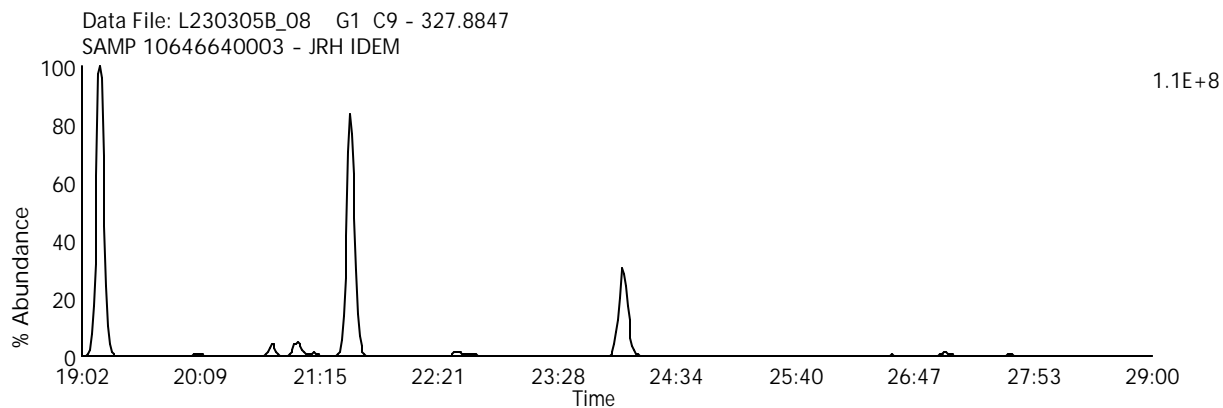
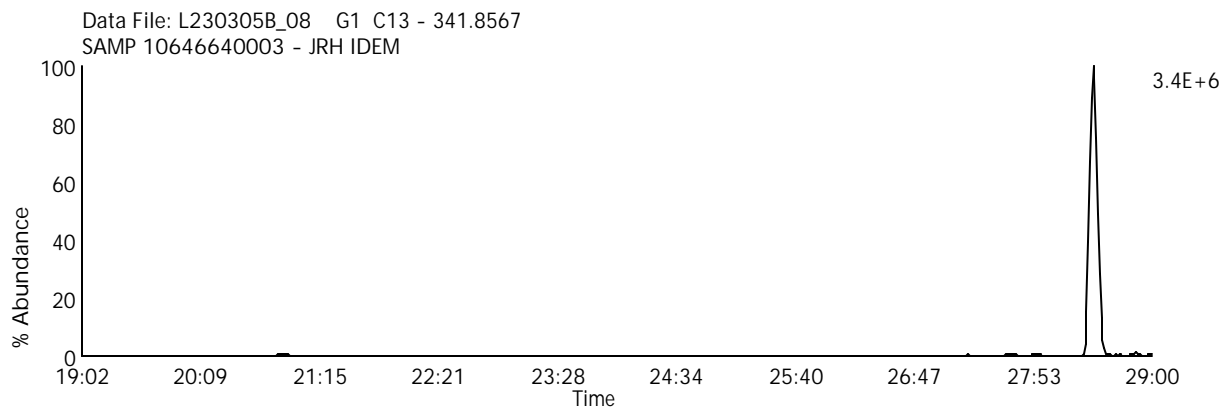
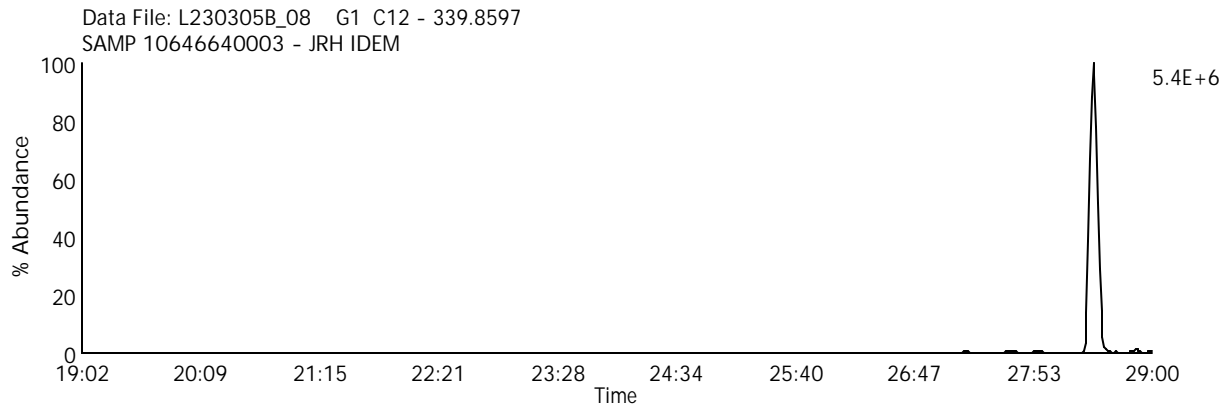
Lab Sample ID: 10644640003

Date Acquired: 3/6/2023

Client Sample ID: WS-2 Dup

Sample Description: SAMP 10646640003 - JRH IDEM

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230305B_08

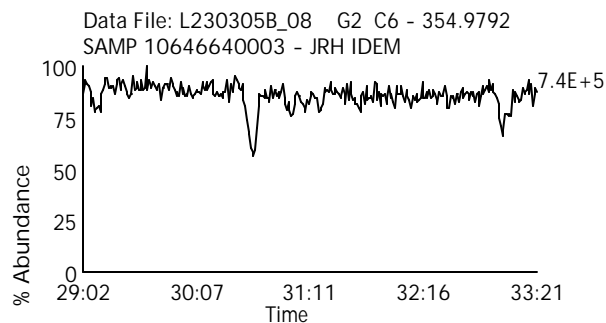
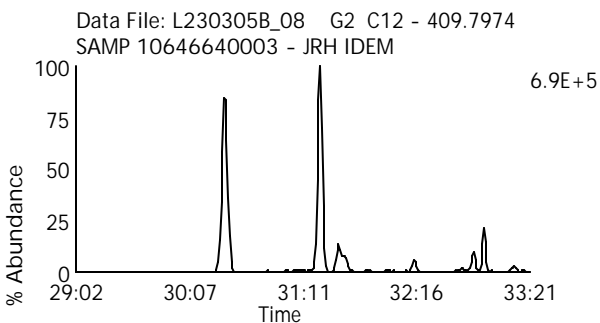
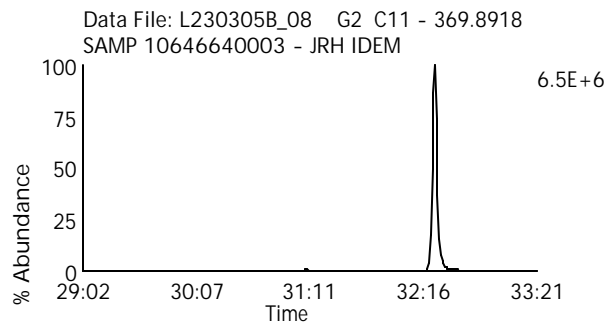
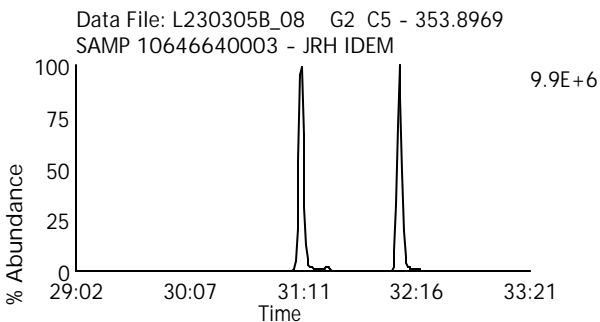
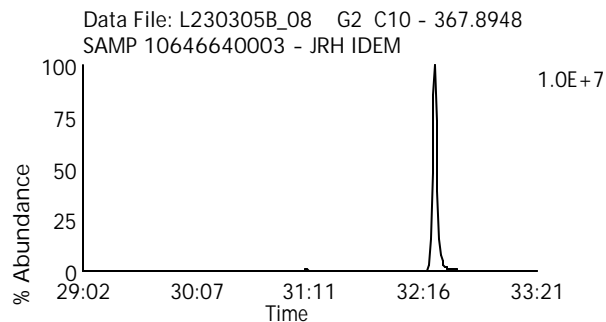
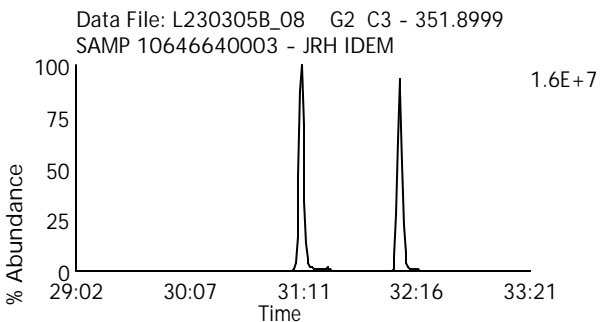
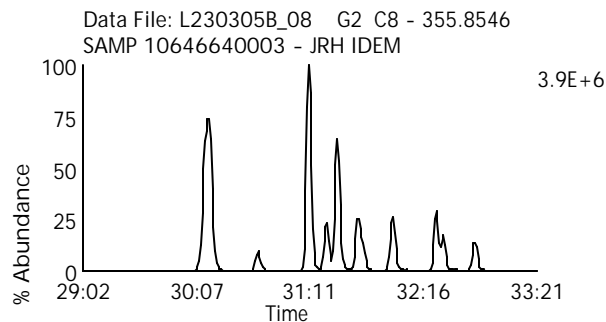
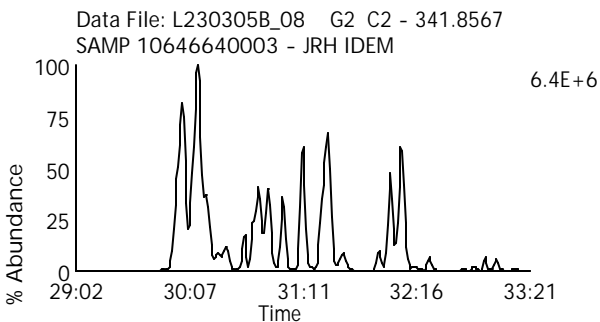
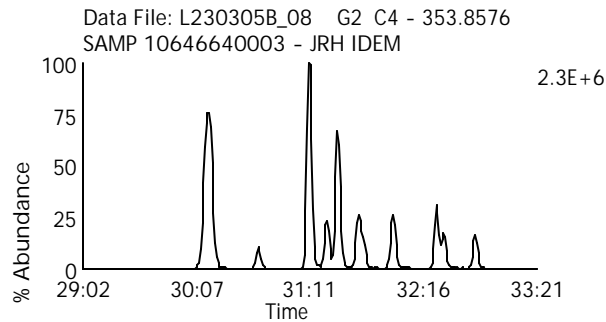
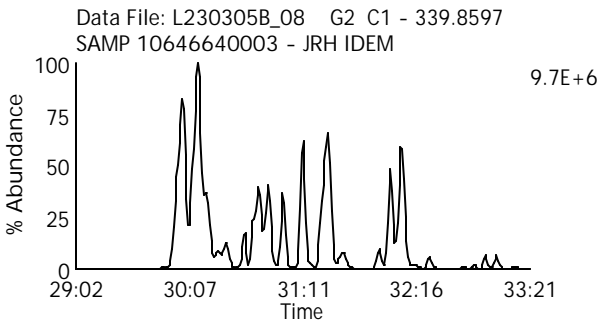
Date Acquired: 3/6/2023

Sample Description: SAMP 10646640003 - JRH IDEM

Lab Sample ID: 10644640003

Client Sample ID: WS-2 Dup

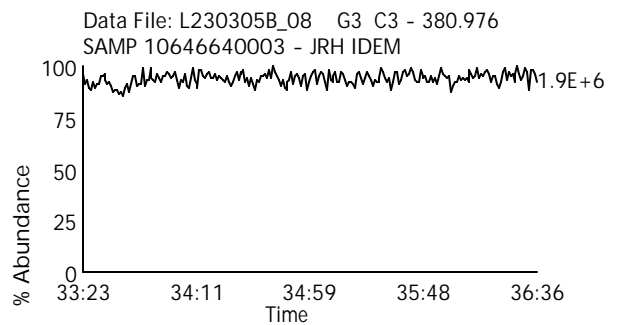
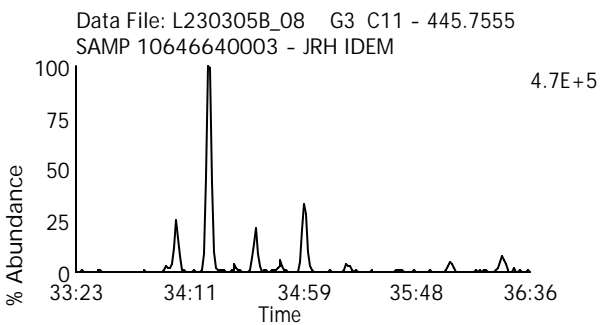
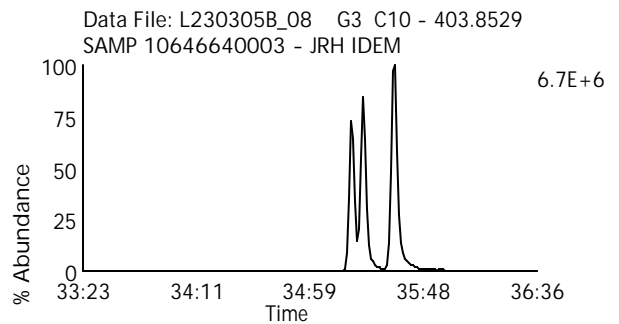
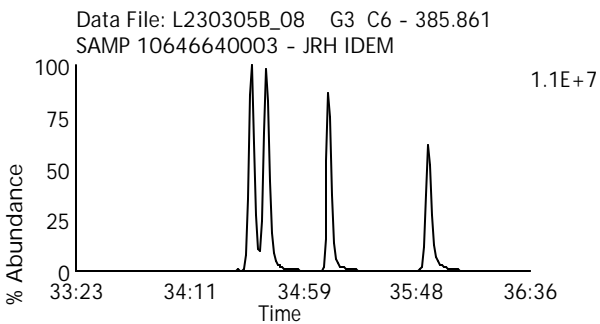
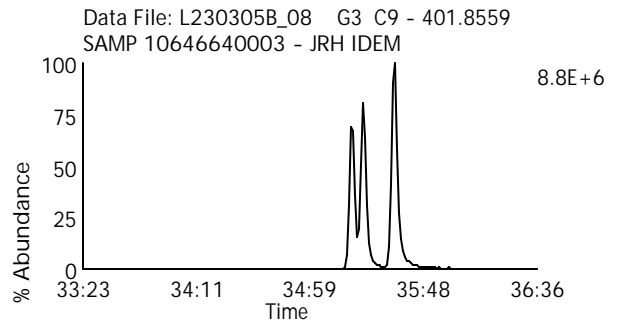
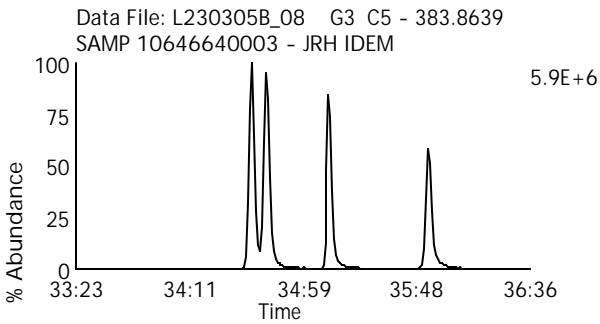
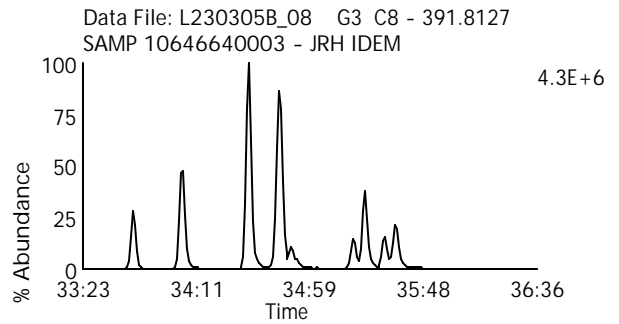
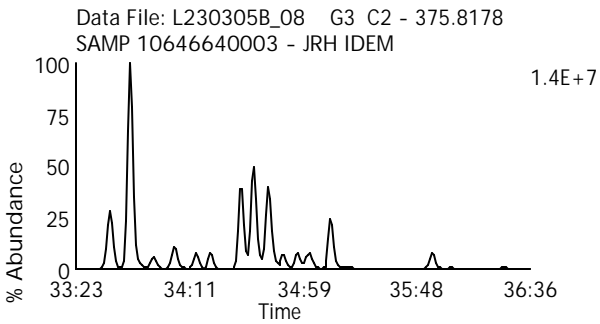
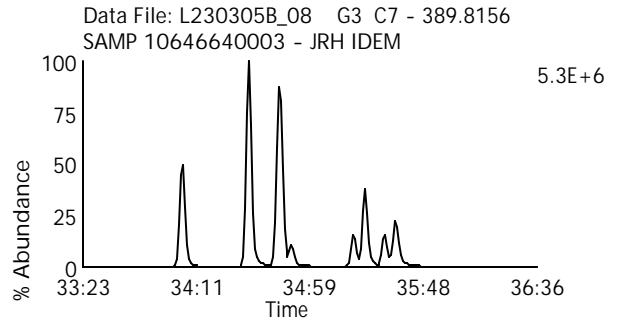
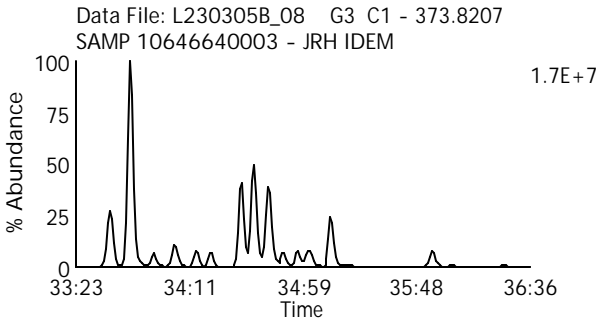
Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230305B_08
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640003 - JRH IDEM

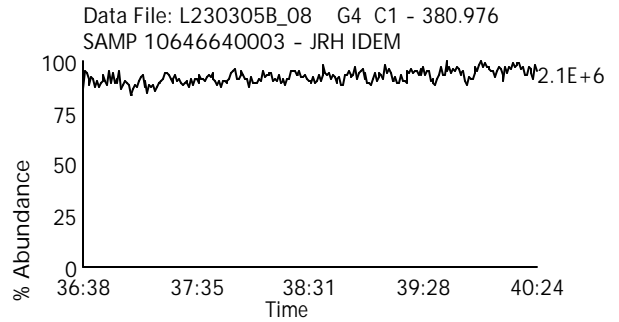
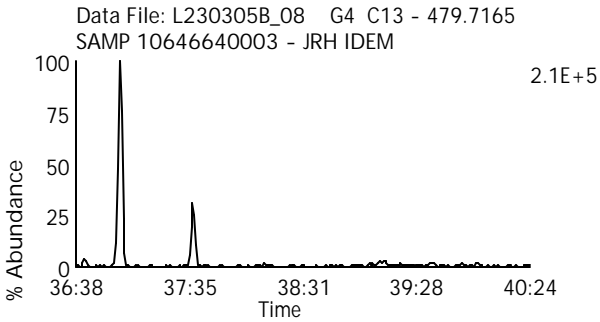
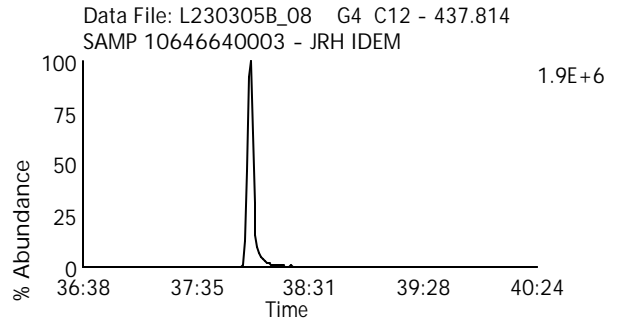
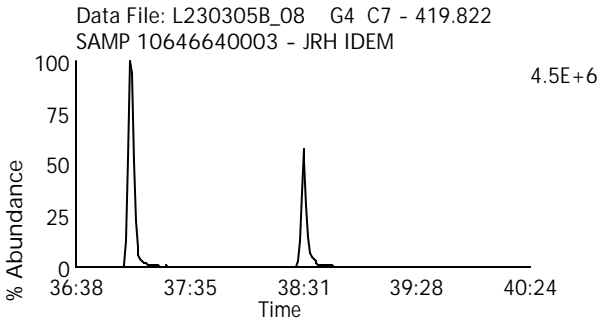
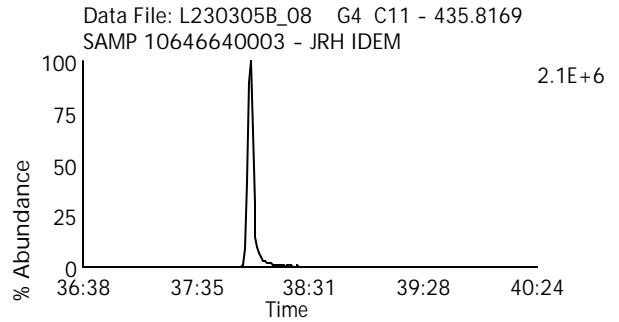
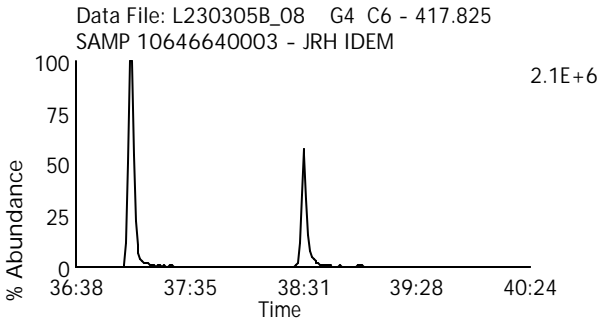
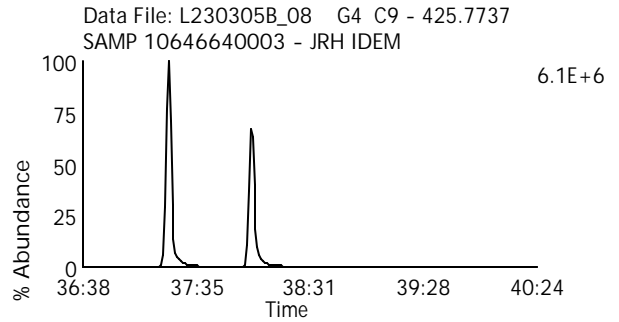
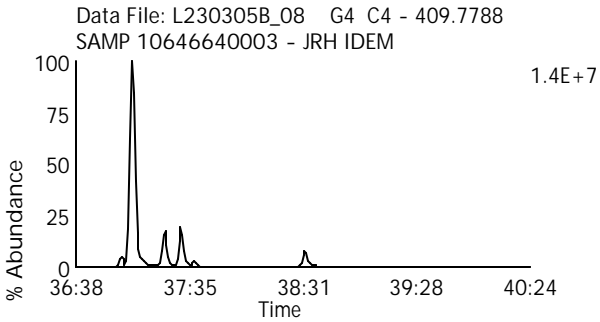
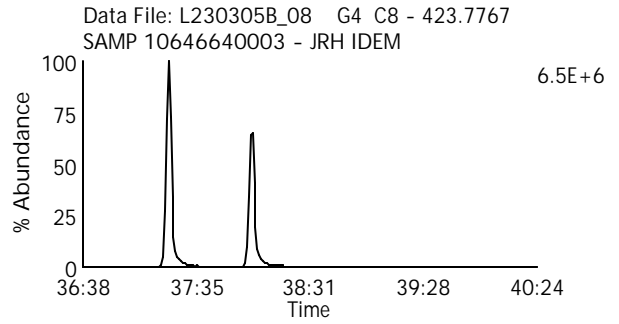
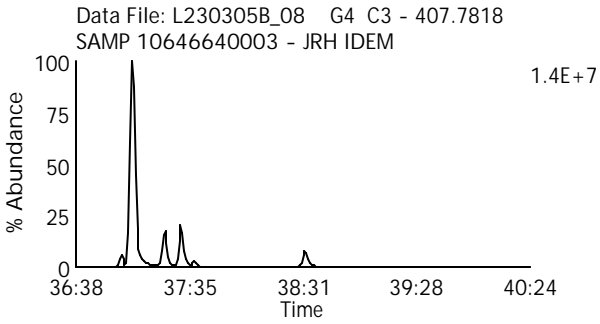
Lab Sample ID: 10644640003
Client Sample ID: WS-2 Dup
Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230305B_08
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640003 - JRH IDEM

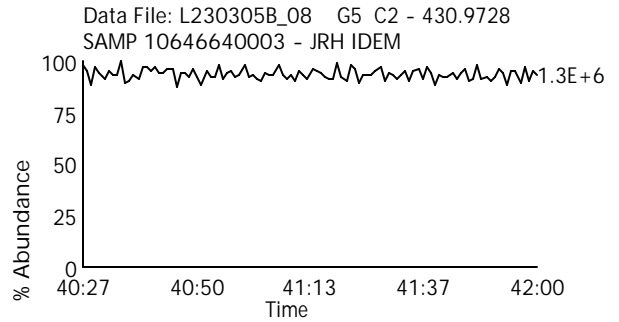
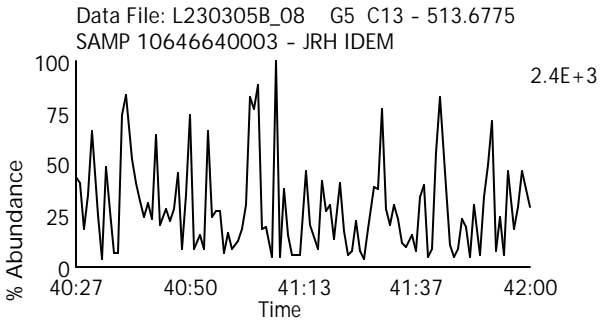
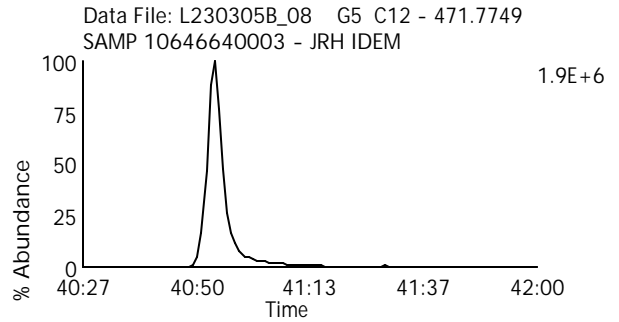
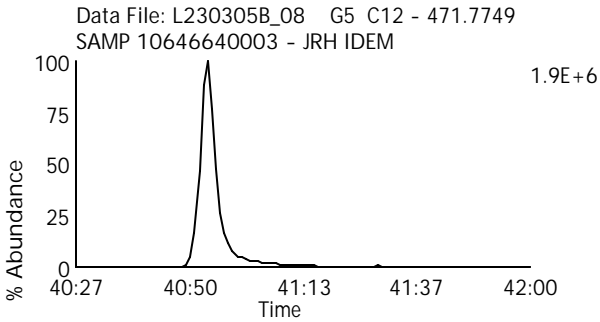
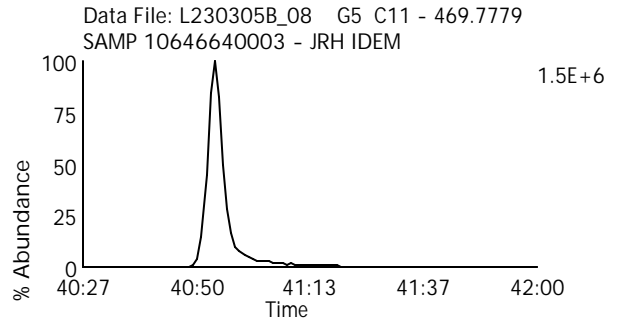
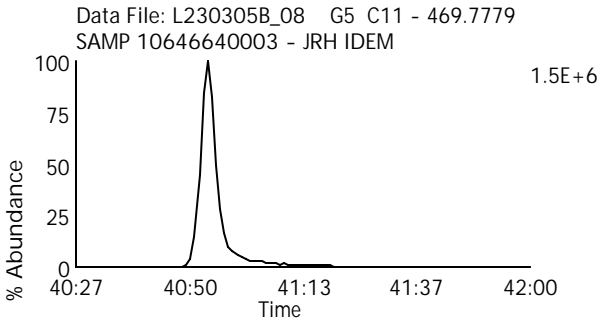
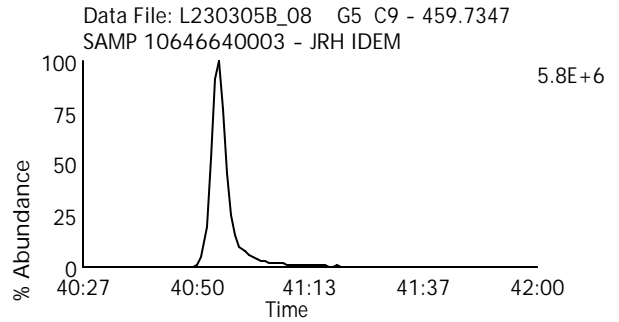
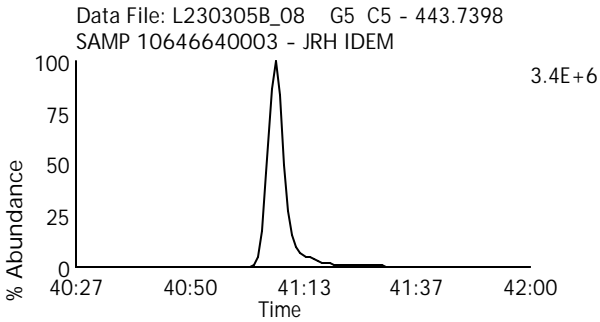
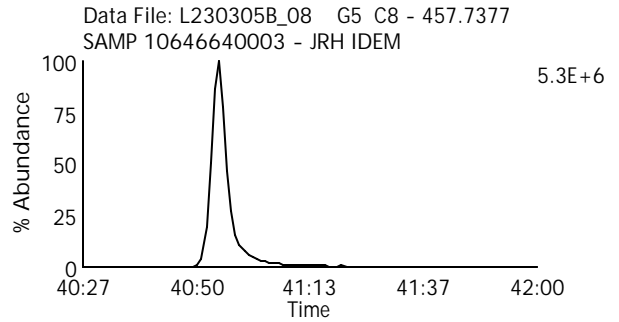
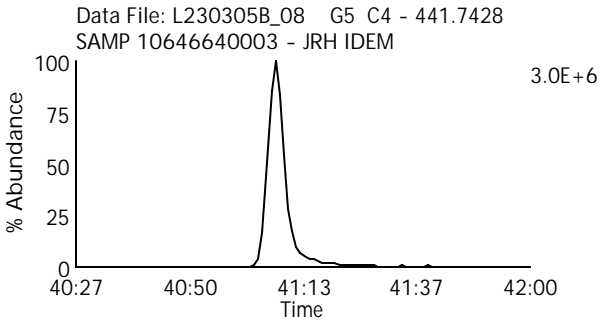
Lab Sample ID: 10644640003
Client Sample ID: WS-2 Dup
Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230305B_08
Date Acquired: 3/6/2023
Sample Description: SAMP 10646640003 - JRH IDEM

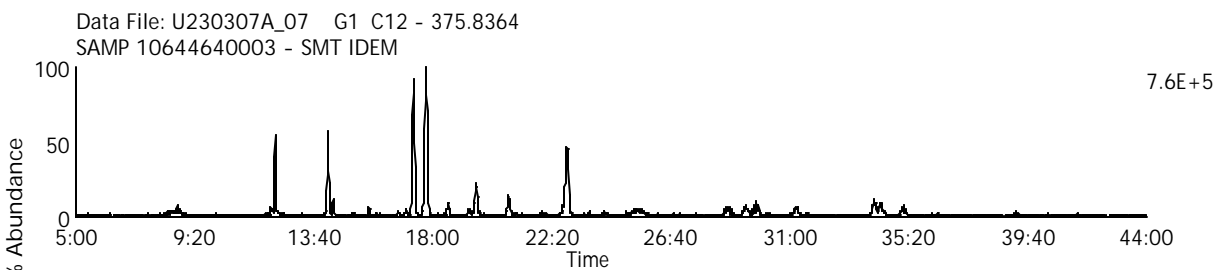
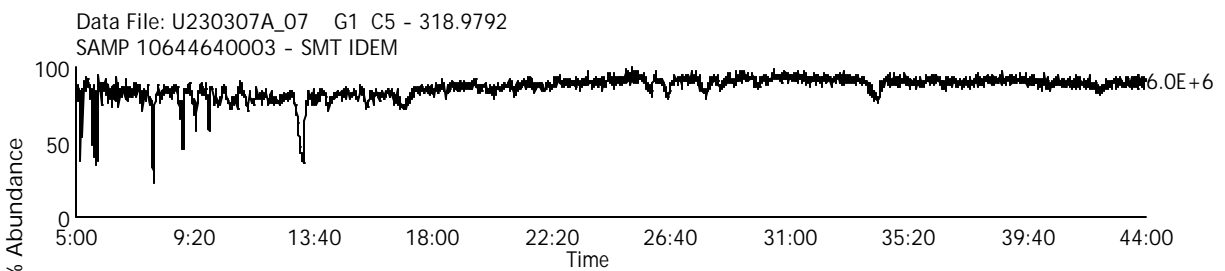
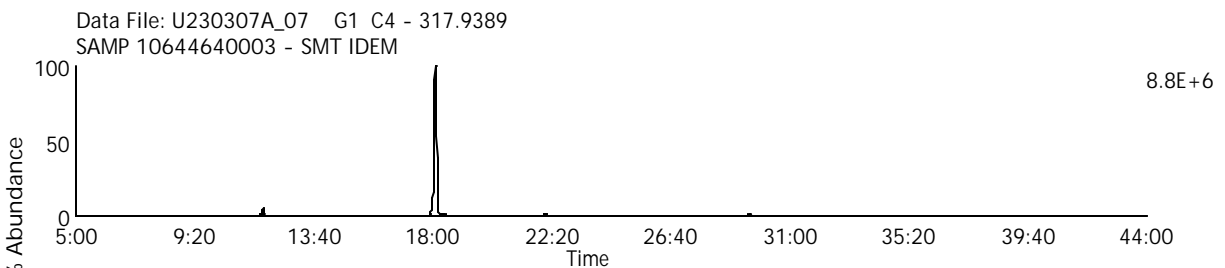
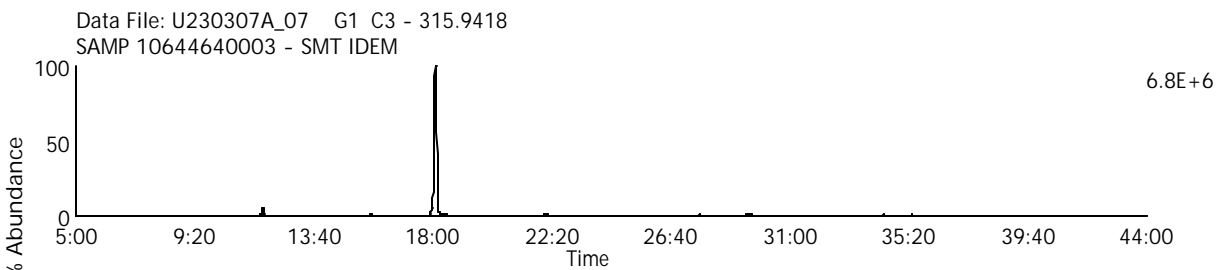
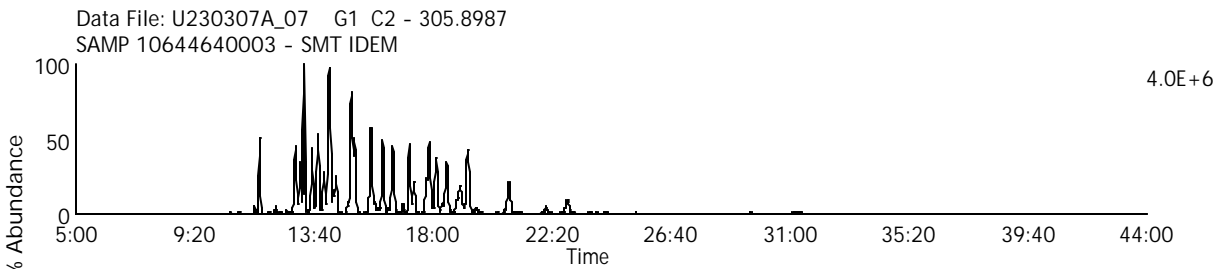
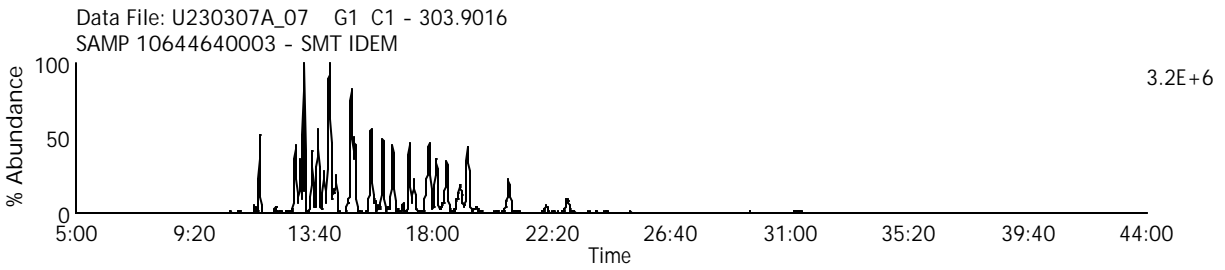
Lab Sample ID: 10644640003
Client Sample ID: WS-2 Dup
Instrument: 10MSHR15 (L)



TCDF Confirmation Analysis

Data File Name: U230307A_07
Date Acquired: 3/7/2023
Sample Description: SAMP 10644640003 - SMT IDEM

Lab Sample ID: 10644640003
Client Sample ID: WS-2 Dup
Instrument: 10MSHR06 (U)





PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name State of Indiana
 Client ID WS-1
 Lab ID 10644640001
 Filename L230305B_06
 Analyzed 03/06/2023 02:09

Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

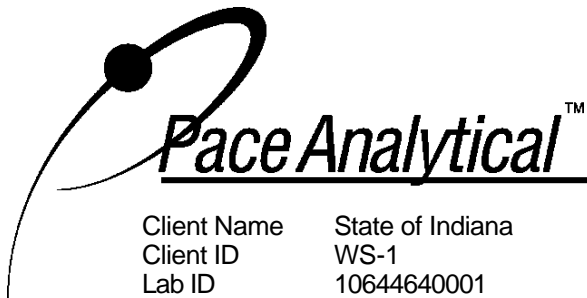
Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:48	5.91e7	7.42e7	7.63e6	9.68e6	3.356e3	2.783e3	0.80	
2,3,7,8-TCDF	25:49	7.77e6	1.02e7	1.00e6	1.30e6	2.859e3	2.597e3	0.76	
Other TCDF	1 19:29	1.63e5	1.96e5					0.83	
	2 20:15	7.88e6	9.92e6					0.79	
	3 20:45	6.59e6	8.27e6					0.80	
	4 21:16	4.28e6	5.07e6					0.85	
	5 21:52	3.77e7	4.74e7					0.80	
	6 22:06	5.99e6	7.98e6					0.75	
	7 22:14	1.75e7	2.21e7					0.79	
	8 22:38	8.27e6	1.09e7					0.76	
	9 22:47	6.61e6	7.83e6					0.84	
	10 22:59	8.59e6	1.05e7					0.82	
	11 23:28	1.87e7	2.28e7					0.82	
	12 23:45	9.79e6	1.20e7					0.81	
	13 23:55	2.19e7	2.74e7					0.80	
	14 24:52	8.36e6	1.02e7					0.82	
	15 25:08	5.74e6	7.00e6					0.82	
	16 25:30	1.12e7	1.40e7					0.80	
	17 25:38	7.13e6	8.46e6					0.84	
	18 26:24	1.50e7	1.92e7					0.78	
	19 26:42	1.78e6	2.18e6					0.81	
	20 27:08	9.85e5	1.23e6					0.80	
	21 28:30	1.45e6	1.86e6					0.78	
Ethers	1 28:44	3.39e5	4.18e5					0.81	P
	2 28:51	1.40e6	1.68e6					0.83	P
	3 24:31	1.31e7	1.63e7					0.80	P
	4 26:57	1.74e5	2.42e5					0.72	P
	5 27:42	6.70e6	8.58e6					0.78	P
	6 27:58	5.91e6	7.45e6					0.79	P

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	26:06	5.52e7	6.22e7	7.57e6	8.60e6	4.651e3	8.369e3	0.89	
2,3,7,8-TCDD-13C	27:04	4.56e7	5.16e7	7.20e6	8.12e6	6.916e3	3.840e3	0.88	
2,3,7,8-TCDD-37Cl4	27:05	8.07e6		1.25e6		3.233e3	----		
2,3,7,8-TCDD	27:05	4.91e5	6.54e5	8.00e4	1.07e5	1.347e3	1.361e3	0.75	
Other TCDD	1 22:08	6.93e6	9.06e6					0.76	
	2 22:34	4.35e6	5.34e6					0.82	
	3 23:02	1.03e6	1.36e6					0.75	
	4 24:01	9.18e4	1.25e5					0.73	

REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
 Client ID WS-1
 Lab ID 10644640001
 Filename L230305B_06
 Analyzed 03/06/2023 02:09

Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

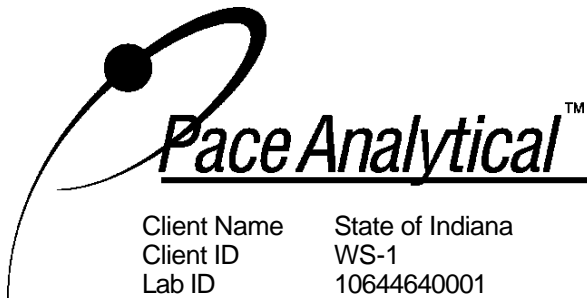
5	24:18	3.29e6	4.33e6	0.76
6	24:35	2.88e6	3.48e6	0.83
7	24:51	1.33e6	1.76e6	0.76
8	25:13	3.68e5	4.53e5	0.81
9	25:33	1.41e6	1.81e6	0.78
10	26:03	6.37e5	7.71e5	0.83
11	26:17	5.68e5	7.46e5	0.76
12	26:39	3.07e6	3.95e6	0.78
13	26:52	4.47e5	5.94e5	0.75
14	27:29	8.10e5	1.11e6	0.73
15	27:39	2.05e5	2.82e5	0.73
16	28:20	2.41e5	2.99e5	0.81

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:11	5.39e7	3.41e7	1.67e7	1.09e7	1.237e4	7.024e3	1.58	
2,3,4,7,8-PeCDF-13C	32:07	(M)5.01e7	3.10e7	1.52e7	9.92e6	1.630e4	1.106e4	1.62	
1,2,3,7,8-PeCDF	31:11	1.39e7	8.90e6	4.32e6	2.81e6	3.609e3	2.505e3	1.56	
2,3,4,7,8-PeCDF	32:09	1.70e7	1.11e7	4.37e6	2.86e6	5.459e3	3.830e3	1.53	
Other PeCDF	1	30:04	3.47e7	2.27e7				1.53	
	2	30:13	3.97e7	2.57e7				1.54	
	3	30:17	8.90e6	5.75e6				1.55	
	4	30:39	3.51e6	2.28e6				1.54	
	5	30:47	1.51e7	9.94e6				1.52	
	6	30:53	1.11e7	7.32e6				1.51	
	7	31:01	7.90e6	5.10e6				1.55	
	8	31:26	2.16e7	1.40e7				1.54	
	9	31:56	2.05e6	1.44e6				1.42	
	10	32:02	1.20e7	7.74e6				1.55	
	11	32:24	1.39e6	9.45e5				1.47	
	12	32:43	1.30e5	8.85e4				1.47	
	13	33:03	1.35e6	8.66e5				1.56	
	14	28:28	2.16e7	1.39e7				1.56	
Ethers	1	30:28	6.92e6	4.59e6				1.51	P
	2	31:35	3.04e6	1.99e6				1.52	P
	3	32:16	5.68e5	4.21e5				1.35	P
	4	32:50	6.32e5	4.36e5				1.45	P
	5	32:56	1.40e6	9.70e5				1.44	P

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:23	3.58e7	2.24e7	1.08e7	6.69e6	4.579e3	6.081e3	1.60	
1,2,3,7,8-PeCDD	32:24	(M)1.80e6	(M)3.01e6	6.39e4	9.17e5	8.787e2	1.457e3	0.60	
Other PeCDD	1	30:15	7.88e6	1.29e7				0.61	

REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
 Client ID WS-1
 Lab ID 10644640001
 Filename L230305B_06
 Analyzed 03/06/2023 02:09

Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

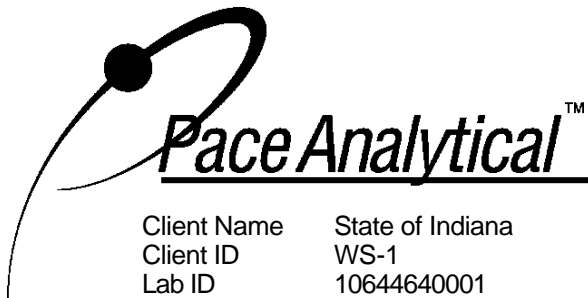
2	30:43	4.99e5	8.50e5	0.59
3	31:11	6.10e6	9.91e6	0.62
4	31:22	1.53e6	2.53e6	0.60
5	31:29	4.11e6	6.45e6	0.64
6	31:40	2.04e6	3.51e6	0.58
7	32:00	1.62e6	2.61e6	0.62
8	32:27	9.48e5	1.46e6	0.65
9	32:46	9.00e5	1.45e6	0.62

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:39	1.70e7	3.21e7	6.30e6	1.18e7	3.119e3	8.149e3	0.53	
1,2,3,6,7,8-HxCDF-13C	34:44	1.81e7	3.35e7	5.92e6	1.13e7	1.272e3	8.328e3	0.54	
2,3,4,6,7,8-HxCDF-13C	35:11	1.53e7	2.81e7	5.46e6	1.04e7	1.924e3	2.173e3	0.54	
1,2,3,7,8,9-HxCDF-13C	35:54	1.16e7	2.18e7	4.08e6	7.41e6	2.458e3	1.695e4	0.53	
1,2,3,4,7,8-HxCDF	34:40	1.70e7	1.34e7	6.24e6	4.89e6	6.534e3	6.147e3	1.27	P
1,2,3,6,7,8-HxCDF	34:45	1.53e7	1.22e7	4.99e6	4.01e6	5.417e3	6.638e3	1.25	
2,3,4,6,7,8-HxCDF	35:12	8.64e6	6.75e6	3.08e6	2.47e6	5.417e3	4.705e3	1.28	
1,2,3,7,8,9-HxCDF	35:55	2.76e6	2.25e6	1.06e6	8.21e5	5.417e3	6.638e3	1.23	
Other HxCDF	1 33:39	9.63e6	8.04e6					1.20	
	2 33:47	3.38e7	2.72e7					1.24	
	3 33:57	2.14e6	1.90e6					1.12	
	4 34:15	2.50e6	2.13e6					1.17	
	5 34:35	1.34e7	1.08e7					1.24	
	6 34:52	2.43e6	1.86e6					1.31	
	7 34:57	2.44e6	1.92e6					1.27	
	8 35:19	3.37e5	3.05e5					1.10	
Ethers	1 34:05	4.05e6	3.25e6					1.25	P
	2 34:21	2.95e6	2.43e6					1.21	P
	3 34:40	1.70e7	1.34e7					1.27	P
	4 35:03	4.02e6	3.13e6					1.29	P

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:18	1.72e7	1.31e7	6.59e6	5.04e6	6.229e3	2.362e3	1.31	
1,2,3,6,7,8-HxCDD-13C	35:23	2.27e7	1.72e7	7.91e6	6.33e6	6.229e3	2.362e3	1.32	
1,2,3,7,8,9-HxCDD-13C	35:36	2.75e7	2.10e7	8.97e6	6.91e6	2.491e3	1.382e3	1.31	
1,2,3,4,7,8-HxCDD	35:19	1.65e6	1.30e6	1.45e6	1.17e6	3.093e3	3.050e3	1.27	
1,2,3,6,7,8-HxCDD	35:23	4.01e6	3.18e6	1.45e6	1.17e6	4.522e3	4.329e3	1.26	
1,2,3,7,8,9-HxCDD	35:36	2.95e6	2.16e6	8.46e5	6.98e5	3.900e3	4.766e3	1.36	
Other HxCDD	1 34:06	5.72e6	4.74e6					1.21	
	2 34:35	1.04e7	8.33e6					1.24	
	3 34:47	1.09e7	8.66e6					1.26	
	4 34:53	1.23e6	1.07e6					1.15	

REPORT OF LABORATORY ANALYSIS

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Client Name	State of Indiana	Injected By	JRH
Client ID	WS-1	Instrument ID	10MSHR15 (L)
Lab ID	10644640001	GC Column ID	US1824614H
Filename	L230305B_06	ICAL ID	L230302
Analyzed	03/06/2023 02:09		

	5	35:32	1.58e6	1.22e6					1.30	
Hepta-Furans:										
		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C		37:06	7.18e6	1.49e7	2.48e6	5.24e6	2.610e3	5.947e3	0.48	
1,2,3,4,7,8,9-HpCDF-13C		38:32	4.60e6	1.01e7	1.40e6	2.97e6	2.881e3	1.997e3	0.46	
1,2,3,4,6,7,8-HpCDF		37:07	3.07e7	2.91e7	1.04e7	9.86e6	4.198e3	3.982e3	1.05	
1,2,3,4,7,8,9-HpCDF		38:33	3.02e6	2.79e6	8.94e5	9.04e5	5.167e3	3.982e3	1.08	
Other HpCDF										
	1	37:23	5.66e6	5.02e6					1.13	
	2	37:31	6.68e6	6.10e6					1.09	
Hepta-Dioxins:										
		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C		38:02 (M)	8.12e6	7.38e6	2.47e6	2.24e6	8.467e3	6.523e3	1.10	
1,2,3,4,6,7,8-HpCDD		38:03	1.20e7	1.11e7	3.60e6	3.42e6	2.205e3	2.139e3	1.08	
Other HpCDD										
	1	37:22	1.74e7	1.64e7					1.06	
Octa-Furans:										
		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF		41:08	2.60e7	2.86e7	6.40e6	7.18e6	2.584e3	1.862e3	0.91	
Octa-Dioxins:										
		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C		40:54	7.02e6	8.43e6	1.75e6	2.11e6	8.848e2	1.189e3	0.83	
OCDD		40:55	2.22e7	2.54e7	5.77e6	6.31e6	1.548e3	1.828e3	0.87	

REPORT OF LABORATORY ANALYSIS

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TCDF Confirmation Detected Peak List

Prepared By _____ Date _____
 ReviewedBy _____ Date _____

Client Name	State of Indiana	Injected By	SMT
Client ID	WS-1	Instrument ID	10MSHR06 (U)
Lab ID	10644640001	GC Column ID	US2588526H
Filename	U230307A_05	ICAL ID	U221009-DB225
Analyzed	03/07/2023 12:06		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	18:02	3.46e7	4.30e7	4.60e6	5.85e6	2.192e4	3.533e4	0.80	
2,3,7,8-TCDF	18:04	(M)4.41e6	6.03e6	6.11e5	7.70e5	3.540e3	4.696e3	0.73	

Cleanup & Recovery:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	16:08	3.26e7	4.17e7	4.83e6	6.18e6	7.728e3	7.285e3	0.78	
2,3,7,8-TCDD-37Cl4	15:45	5.60e6		8.80e5		4.474e3	----		

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name State of Indiana
 Client ID WS-2
 Lab ID 10644640002
 Filename L230305B_07
 Analyzed 03/06/2023 02:53

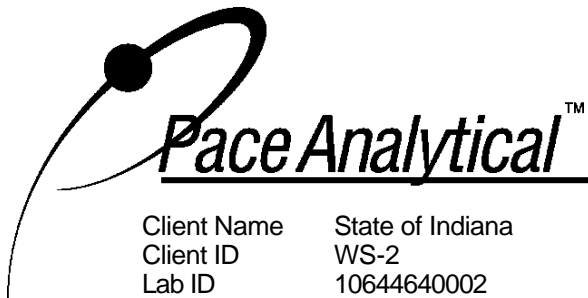
Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:48	5.98e7	7.54e7	7.93e6	9.94e6	5.630e3	3.600e3	0.79	
2,3,7,8-TCDF	25:49	1.52e7	1.92e7	1.97e6	2.46e6	3.570e3	2.280e3	0.79	
Other TCDF									
	1 22:05	1.07e7	1.35e7					0.79	
	2 22:13	3.26e7	4.09e7					0.80	
	3 27:07	1.18e6	1.61e6					0.73	
	4 28:30	3.04e6	4.00e6					0.76	
	5 19:10	5.55e4	6.27e4					0.89	
	6 19:19	2.02e5	2.43e5					0.83	
	7 19:28	2.36e5	2.96e5					0.80	
	8 20:15	1.24e7	1.58e7					0.78	
	9 20:45	1.16e7	1.47e7					0.79	
	10 20:57	2.85e5	4.24e5					0.67	
	11 21:15	6.08e6	8.17e6					0.74	
	12 21:50	6.61e7	8.49e7					0.78	
	13 22:38	1.41e7	1.84e7					0.77	
	14 22:47	1.22e7	1.62e7					0.75	
	15 22:59	1.90e7	2.42e7					0.78	
	16 23:28	3.09e7	3.93e7					0.79	
	17 23:44	1.46e7	1.89e7					0.77	
	18 23:55	3.50e7	4.42e7					0.79	
	19 24:53	1.68e7	2.13e7					0.79	
	20 25:09	8.10e6	1.05e7					0.77	
	21 25:29	1.65e7	2.22e7					0.74	
	22 25:38	1.15e7	1.34e7					0.86	
	23 26:23	2.45e7	3.16e7					0.78	
	24 26:43	3.04e6	4.02e6					0.76	
Ethers									
	1 27:19	1.73e5	2.16e5					0.80	P
	2 28:51	1.45e6	1.67e6					0.87	P
	3 28:44	6.19e5	7.21e5					0.86	P
	4 24:16	2.28e6	3.00e6					0.76	P
	5 24:30	3.28e7	4.21e7					0.78	P
	6 27:42	6.83e6	9.03e6					0.76	P
	7 27:58	4.77e6	6.48e6					0.74	P
Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	26:06	5.69e7	6.36e7	7.89e6	8.86e6	1.284e4	2.596e4	0.89	
2,3,7,8-TCDD-13C	27:03	4.51e7	5.27e7	7.43e6	8.45e6	4.527e3	4.936e3	0.86	
2,3,7,8-TCDD-37Cl4	27:05	7.85e6		1.23e6		1.837e3	----		
2,3,7,8-TCDD	27:05 (M)	7.75e5	9.89e5	1.30e5	1.57e5	1.604e3	2.455e3	0.78	

REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
 Client ID WS-2
 Lab ID 10644640002
 Filename L230305B_07
 Analyzed 03/06/2023 02:53

Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

Other TCDD	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1	22:08	1.01e7	1.30e7					0.78	
2	22:34	5.96e6	7.75e6					0.77	
3	23:01	1.62e6	1.93e6					0.84	
4	24:18	4.59e6	5.82e6					0.79	
5	24:35	3.94e6	5.04e6					0.78	
6	24:50	1.88e6	2.49e6					0.75	
7	25:12	4.97e5	6.96e5					0.71	
8	25:32	1.93e6	2.49e6					0.77	
9	26:04	8.61e5	1.14e6					0.76	
10	26:17	7.65e5	9.64e5					0.79	
11	26:38	4.29e6	5.61e6					0.76	
12	26:51	6.13e5	7.82e5					0.78	
13	27:28	1.12e6	1.61e6					0.70	
14	27:38	3.05e5	4.29e5					0.71	

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:11	5.65e7	3.59e7	1.71e7	1.09e7	1.431e4	1.454e4	1.57	
2,3,4,7,8-PeCDF-13C	32:07	5.30e7	3.29e7	1.58e7	1.03e7	1.672e4	1.193e4	1.61	
1,2,3,7,8-PeCDF	31:12	1.22e8	7.96e7	3.81e7	2.46e7	1.650e4	8.680e3	1.54	
2,3,4,7,8-PeCDF	32:09	5.33e7	3.45e7	1.27e7	8.21e6	6.466e3	5.832e3	1.54	

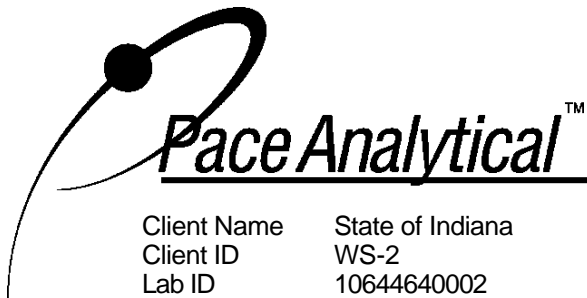
Other PeCDF	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1	29:13	2.51e5	1.60e5					1.57	
2	29:34	3.77e5	2.45e5					1.54	
3	29:45	2.01e5	1.41e5					1.42	
4	30:04	1.25e8	8.20e7					1.52	
5	30:13	1.88e8	1.23e8					1.52	
6	30:17	3.18e7	2.01e7					1.58	
7	30:23	5.61e6	3.63e6					1.54	
8	30:38	1.02e7	6.64e6					1.54	
9	30:47	3.33e7	2.18e7					1.53	
10	30:53	4.21e7	2.74e7					1.54	
11	31:01	2.76e7	1.78e7					1.54	
12	31:26	9.42e7	6.13e7					1.54	
13	31:56	7.91e6	4.98e6					1.59	
14	32:02	2.67e7	1.76e7					1.52	
15	32:24	2.83e6	1.70e6					1.67	
16	33:03	5.38e6	3.40e6					1.58	
17	28:28	5.31e7	3.31e7					1.60	

Ethers	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1	30:28	5.38e6	3.55e6					1.52	P
2	31:35	6.96e6	4.42e6					1.58	P
3	32:43	2.45e5	1.83e5					1.34	P
4	32:50	6.41e5	4.39e5					1.46	P
5	32:56	2.43e6	1.58e6					1.54	P

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
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REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
 Client ID WS-2
 Lab ID 10644640002
 Filename L230305B_07
 Analyzed 03/06/2023 02:53

Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

1,2,3,7,8-PeCDD-13C	32:23	3.71e7	2.31e7	1.12e7	6.93e6	8.812e3	2.671e4	1.61
1,2,3,7,8-PeCDD	32:24	(M)3.88e6	(M)6.52e6	3.35e4	2.02e6	1.162e3	1.711e3	0.60
Other PeCDD	1	30:15	1.24e7	2.05e7				0.60
	2	30:43	9.43e5	1.53e6				0.62
	3	31:11	9.75e6	1.58e7				0.62
	4	31:22	2.85e6	4.73e6				0.60
	5	31:28	6.51e6	1.05e7				0.62
	6	31:40	3.98e6	6.56e6				0.61
	7	32:00	2.78e6	4.54e6				0.61
	8	32:27	1.98e6	2.94e6				0.67
	9	32:46	1.65e6	2.66e6				0.62

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:39	1.79e7	3.45e7	6.92e6	1.32e7	2.265e3	6.010e3	0.52	
1,2,3,6,7,8-HxCDF-13C	34:44	1.99e7	3.81e7	6.14e6	1.19e7	2.010e3	1.453e3	0.52	
2,3,4,6,7,8-HxCDF-13C	35:11	1.65e7	3.08e7	5.66e6	1.09e7	2.222e3	1.738e3	0.53	
1,2,3,7,8,9-HxCDF-13C	35:54	1.26e7	2.32e7	4.13e6	7.68e6	5.267e3	3.595e3	0.54	
1,2,3,4,7,8-HxCDF	34:40	3.02e8	(M)2.42e8	1.13e8	9.05e7	1.983e4	1.402e4	1.25	P
1,2,3,6,7,8-HxCDF	34:46	1.81e8	1.44e8	5.53e7	4.52e7	1.763e4	1.402e4	1.26	
2,3,4,6,7,8-HxCDF	35:13	4.23e7	3.14e7	1.46e7	1.18e7	1.554e4	9.522e3	1.35	
1,2,3,7,8,9-HxCDF	35:55	3.22e7	2.44e7	1.07e7	8.88e6	1.416e4	1.324e4	1.32	

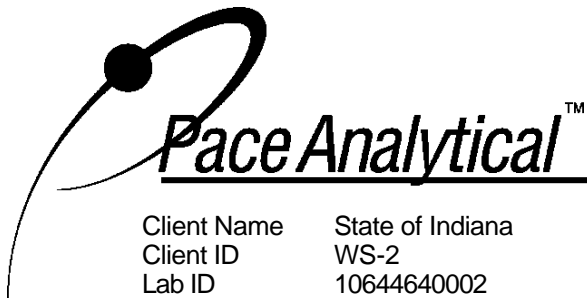
Other HxCDF		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
	1	33:28	4.93e5	3.99e5					1.24	
	2	33:39	4.75e7	3.81e7					1.25	
	3	33:47	3.05e8	2.44e8					1.25	
	4	33:57	1.62e7	1.32e7					1.22	
	5	34:05	2.65e7	2.16e7					1.22	
	6	34:15	2.22e7	1.75e7					1.27	
	7	34:35	1.44e8	1.20e8					1.20	
	8	34:53	1.47e7	1.05e7					1.41	
	9	34:58	1.82e7	1.41e7					1.29	
	10	35:03	2.14e7	1.55e7					1.38	

Ethers		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
	1	34:21	3.66e6	2.59e6					1.41	P
	2	34:40	3.02e8	2.42e8					1.25	P

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:19	1.94e7	1.52e7	7.29e6	5.80e6	3.811e3	2.945e3	1.27	
1,2,3,6,7,8-HxCDD-13C	35:23	2.34e7	1.81e7	8.09e6	6.43e6	3.811e3	3.578e3	1.30	
1,2,3,7,8,9-HxCDD-13C	35:36	2.85e7	2.27e7	9.59e6	7.73e6	3.687e3	2.673e3	1.26	
1,2,3,4,7,8-HxCDD	35:19	7.54e6	6.05e6	2.92e6	2.40e6	4.173e3	5.591e3	1.25	
1,2,3,6,7,8-HxCDD	35:23	1.64e7	1.30e7	5.99e6	4.70e6	7.465e3	5.742e3	1.26	
1,2,3,7,8,9-HxCDD	35:37	1.18e7	9.99e6	3.78e6	3.02e6	3.803e3	3.760e3	1.18	

REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
 Client ID WS-2
 Lab ID 10644640002
 Filename L230305B_07
 Analyzed 03/06/2023 02:53

Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

Other HxCDD		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
	1	34:06	1.39e7	1.13e7					1.24	
	2	34:35	2.44e7	1.98e7					1.23	
	3	34:48	3.61e7	2.88e7					1.25	
	4	34:53	3.86e6	3.27e6					1.18	
	5	35:32	5.62e6	4.17e6					1.35	

Hepta-Furans:		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C		37:07	8.60e6	1.79e7	2.89e6	5.94e6	4.707e3	9.259e3	0.48	
1,2,3,4,7,8,9-HpCDF-13C		38:33	5.57e6	1.21e7	1.60e6	3.53e6	3.538e3	7.750e3	0.46	
1,2,3,4,6,7,8-HpCDF		37:08	5.88e8	5.77e8	1.83e8	1.77e8	1.336e4	1.325e4	1.02	
1,2,3,4,7,8,9-HpCDF		38:34	5.87e7	5.76e7	1.67e7	1.63e7	7.037e3	1.804e4	1.02	

Other HpCDF	1	37:23	9.55e7	9.13e7					1.05	
	2	37:32	1.01e8	9.76e7					1.03	

Hepta-Dioxins:		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C		38:03	9.74e6	9.24e6	2.83e6	2.69e6	5.197e3	8.106e3	1.05	
1,2,3,4,6,7,8-HpCDD		38:03	9.30e7	8.76e7	2.76e7	2.59e7	1.601e3	2.360e3	1.06	

Other HpCDD	1	37:22	6.85e7	6.46e7					1.06	
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Octa-Furans:		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF		41:09	1.82e8	2.01e8	4.41e7	4.91e7	3.217e3	3.353e3	0.90	

Octa-Dioxins:		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C		40:55	8.42e6	1.06e7	2.08e6	2.53e6	6.964e3	6.411e3	0.80	
OCDD		40:56	9.42e7	1.05e8	2.23e7	2.47e7	1.895e3	1.890e3	0.90	

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name	State of Indiana	Injected By	SMT
Client ID	WS-2	Instrument ID	10MSHR15 (L)
Lab ID	10644640002	GC Column ID	US1824614H
Filename	L230306B_15	ICAL ID	L230302
Analyzed	03/07/2023 07:11		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:34	ND	ND	ND	ND	----	----		
2,3,7,8-TCDF	25:36	ND	ND	ND	ND	----	----		

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	25:53	ND	ND	ND	ND	----	----		
2,3,7,8-TCDD-13C	26:52	ND	ND	ND	ND	----	----		
2,3,7,8-TCDD-37Cl4	26:54	ND	ND	ND	ND	----	----		
2,3,7,8-TCDD	26:54	ND	ND	ND	ND	----	----		

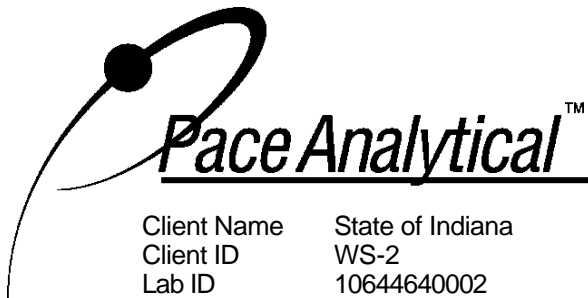
Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:05	ND	ND	ND	ND	----	----		
2,3,4,7,8-PeCDF-13C	32:02	ND	ND	ND	ND	----	----		
1,2,3,7,8-PeCDF	31:06	ND	ND	ND	ND	----	----		
2,3,4,7,8-PeCDF	32:03	ND	ND	ND	ND	----	----		

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:18	ND	ND	ND	ND	----	----		
1,2,3,7,8-PeCDD	32:19	ND	ND	ND	ND	----	----		

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:36	ND	ND	ND	ND	----	----		
1,2,3,6,7,8-HxCDF-13C	34:41	ND	ND	ND	ND	----	----		
2,3,4,6,7,8-HxCDF-13C	35:08	ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDF-13C	35:50	ND	ND	ND	ND	----	----		
1,2,3,4,7,8-HxCDF	34:36	ND	ND	ND	ND	----	----		
1,2,3,6,7,8-HxCDF	34:41	ND	ND	ND	ND	----	----		
2,3,4,6,7,8-HxCDF	35:08	ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDF	35:50	ND	ND	ND	ND	----	----		

REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
Client ID WS-2
Lab ID 10644640002
Filename L230306B_15
Analyzed 03/07/2023 07:11

Injected By SMT
Instrument ID 10MSHR15 (L)
GC Column ID US1824614H
ICAL ID L230302

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:15	ND	ND	ND	ND	----	----		
1,2,3,6,7,8-HxCDD-13C	35:19	ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDD-13C	35:32	3.58e6	3.00e6	1.18e6	9.92e5	2.801e3	2.396e3	1.19	
1,2,3,4,7,8-HxCDD	35:15	ND	ND	ND	ND	----	----		
1,2,3,6,7,8-HxCDD	35:19	ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDD	35:33	ND	ND	ND	ND	----	----		

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:04	1.27e6	2.64e6	4.10e5	8.54e5	3.191e3	2.600e3	0.48	
1,2,3,4,7,8,9-HpCDF-13C	38:30	(M)8.61e5	1.94e6	2.50e5	5.51e5	2.530e3	2.230e3	0.44	
1,2,3,4,6,7,8-HpCDF	37:04	8.71e7	8.74e7	2.88e7	2.79e7	7.096e3	5.190e3	1.00	
1,2,3,4,7,8,9-HpCDF	38:30	1.00e7	9.45e6	3.03e6	2.88e6	5.342e3	5.763e3	1.06	
Other HpCDF	1 37:20	1.33e7	1.41e7					0.94	
	2 37:29	1.48e7	1.54e7					0.96	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:00	ND	ND	ND	ND	----	----		
1,2,3,4,6,7,8-HpCDD	37:59	ND	ND	ND	ND	----	----		

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:05	ND	ND	ND	ND	----	----		

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:52	ND	ND	ND	ND	----	----		
OCDD	40:52	ND	ND	ND	ND	----	----		

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TCDF Confirmation Detected Peak List

Prepared By _____ Date _____
 ReviewedBy _____ Date _____

Client Name	State of Indiana	Injected By	SMT
Client ID	WS-2	Instrument ID	10MSHR06 (U)
Lab ID	10644640002	GC Column ID	US2588526H
Filename	U230307A_06	ICAL ID	U221009-DB225
Analyzed	03/07/2023 12:51		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	18:00	2.68e7	3.41e7	3.69e6	4.85e6	1.614e4	1.185e4	0.79	
2,3,7,8-TCDF	18:02	(M)6.66e6	8.51e6	9.32e5	1.20e6	3.611e3	3.705e3	0.78	

Cleanup & Recovery:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	16:07	2.76e7	3.38e7	4.30e6	5.47e6	9.146e3	5.137e3	0.82	
2,3,7,8-TCDD-37Cl4	15:44	4.40e6		6.67e5		3.185e3	----		

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name State of Indiana
 Client ID WS-2 Dup
 Lab ID 10644640003
 Filename L230305B_08
 Analyzed 03/06/2023 03:38

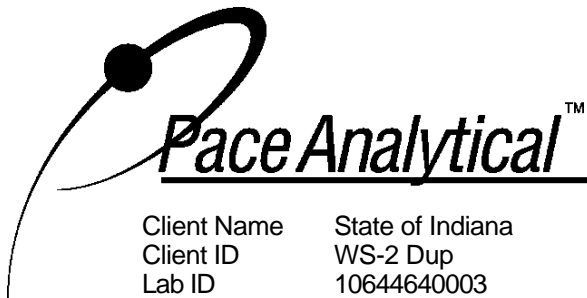
Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:47	5.80e7	7.30e7	7.62e6	9.82e6	6.574e3	5.425e3	0.80	
2,3,7,8-TCDF	25:50	1.00e7	1.28e7	1.28e6	1.63e6	2.820e3	2.986e3	0.78	
Other TCDF	1 20:14	1.01e7	1.28e7					0.78	
	2 20:44	8.76e6	1.12e7					0.78	
	3 20:56	2.81e5	3.55e5					0.79	
	4 21:04	2.82e5	3.45e5					0.82	
	5 21:16	5.37e6	6.91e6					0.78	
	6 21:51	4.92e7	6.19e7					0.79	
	7 22:13	3.13e7	3.96e7					0.79	
	8 22:38	1.13e7	1.42e7					0.79	
	9 22:48	8.36e6	1.07e7					0.78	
	10 23:00	1.14e7	1.44e7					0.79	
	11 23:28	2.35e7	2.93e7					0.80	
	12 23:43	1.20e7	1.60e7					0.75	
	13 23:55	2.75e7	3.45e7					0.79	
	14 24:52	1.05e7	1.32e7					0.80	
	15 25:10	6.87e6	8.64e6					0.80	
	16 25:28	1.37e7	1.83e7					0.75	
	17 25:38	9.19e6	1.04e7					0.88	
	18 26:23	1.83e7	2.32e7					0.79	
	19 26:43	2.08e6	2.76e6					0.75	
	20 27:07	1.19e6	1.54e6					0.77	
	21 28:29	1.66e6	2.16e6					0.77	
Ethers	1 28:51	1.44e6	1.68e6					0.86	P
	2 28:43	5.94e5	6.68e5					0.89	P
	3 24:16	2.37e6	3.10e6					0.76	P
	4 24:30	1.69e7	2.13e7					0.79	P
	5 27:42	6.23e6	8.17e6					0.76	P
	6 27:57	5.25e6	6.67e6					0.79	P

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	26:06 (M)	6.06e7	6.83e7	8.37e6	9.41e6	1.325e4	1.076e4	0.89	
2,3,7,8-TCDD-13C	27:03	4.52e7	5.12e7	7.13e6	8.00e6	3.650e3	3.336e3	0.88	
2,3,7,8-TCDD-37Cl4	27:05	7.70e6		1.32e6		3.811e3	----		
2,3,7,8-TCDD	27:05	6.25e5	8.42e5	1.11e5	1.28e5	1.739e3	1.470e3	0.74	
Other TCDD	1 22:08	8.97e6	1.17e7					0.77	
	2 22:33	5.32e6	6.72e6					0.79	
	3 23:02	1.35e6	1.76e6					0.77	
	4 24:00	1.10e5	1.56e5					0.71	

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Client Name State of Indiana
 Client ID WS-2 Dup
 Lab ID 10644640003
 Filename L230305B_08
 Analyzed 03/06/2023 03:38

Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

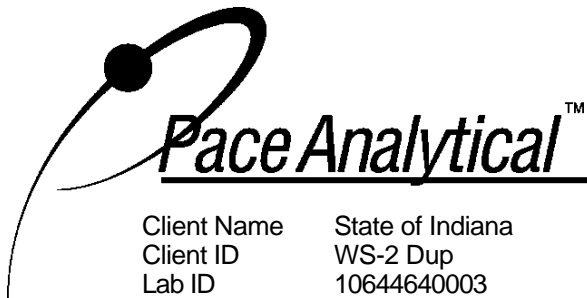
5	24:18	4.03e6	5.14e6	0.78
6	24:34	3.37e6	4.38e6	0.77
7	24:51	1.61e6	2.11e6	0.76
8	25:12	4.32e5	6.14e5	0.70
9	25:31	1.76e6	2.22e6	0.80
10	26:04	7.29e5	9.87e5	0.74
11	26:16	6.94e5	9.04e5	0.77
12	26:40	3.78e6	4.88e6	0.77
13	26:52	6.19e5	7.85e5	0.79
14	27:28	1.01e6	1.30e6	0.77
15	27:38	3.05e5	3.98e5	0.77
16	28:17	3.00e5	3.95e5	0.76

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:11	5.18e7	3.25e7	1.62e7	9.80e6	1.830e4	1.939e4	1.59	
2,3,4,7,8-PeCDF-13C	32:06	4.82e7	3.04e7	1.52e7	9.93e6	1.929e4	1.616e3	1.59	
1,2,3,7,8-PeCDF	31:11	1.93e7	1.25e7	6.01e6	3.84e6	4.411e3	4.220e3	1.54	
2,3,4,7,8-PeCDF	32:07	2.31e7	1.48e7	5.68e6	3.79e6	4.812e3	3.932e3	1.55	
Other PeCDF	1	29:12	1.15e5	8.05e4				1.43	
	2	29:35	2.22e5	1.32e5				1.69	
	3	29:44	1.57e5	1.02e5				1.54	
	4	29:50	1.37e5	9.84e4				1.40	
	5	30:03	4.56e7	2.82e7				1.62	
	6	30:12	6.45e7	4.35e7				1.48	
	7	30:22	2.97e6	1.92e6				1.55	
	8	30:37	4.81e6	3.13e6				1.54	
	9	30:46	1.93e7	1.26e7				1.53	
	10	30:52	1.60e7	1.05e7				1.53	
	11	31:00	1.05e7	6.92e6				1.52	
	12	31:25	2.83e7	1.86e7				1.53	
	13	31:55	2.67e6	1.74e6				1.53	
	14	32:01	1.48e7	9.51e6				1.55	
	15	32:23	1.75e6	1.16e6				1.51	
	16	33:02	1.66e6	1.04e6				1.61	
	17	28:27	2.87e7	1.81e7				1.58	
Ethers	1	30:27	4.97e6	3.18e6				1.56	P
	2	31:34	3.83e6	2.49e6				1.54	P
	3	32:49	5.43e5	3.94e5				1.38	P
	4	32:55	1.51e6	9.46e5				1.59	P

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:23	3.31e7	2.09e7	1.03e7	6.46e6	4.596e3	6.401e3	1.58	
1,2,3,7,8-PeCDD	32:23	2.17e6	3.63e6	9.93e6	1.13e6	1.342e3	1.686e3	0.60	

REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
 Client ID WS-2 Dup
 Lab ID 10644640003
 Filename L230305B_08
 Analyzed 03/06/2023 03:38

Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

Other PeCDD					
	1	30:14	1.01e7	1.63e7	0.62
	2	30:42	7.20e5	1.08e6	0.66
	3	31:11	7.93e6	1.28e7	0.62
	4	31:21	1.82e6	3.00e6	0.61
	5	31:27	5.17e6	8.39e6	0.62
	6	31:39	2.82e6	4.57e6	0.62
	7	31:59	2.08e6	3.52e6	0.59
	8	32:27	1.34e6	2.04e6	0.66
	9	32:45	1.22e6	1.96e6	0.63

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:38	1.57e7	2.95e7	5.90e6	1.08e7	3.481e3	2.471e3	0.53	
1,2,3,6,7,8-HxCDF-13C	34:44	1.68e7	3.12e7	5.65e6	1.06e7	2.455e3	2.136e4	0.54	
2,3,4,6,7,8-HxCDF-13C	35:10	1.40e7	2.61e7	4.96e6	9.40e6	1.405e3	2.192e3	0.54	
1,2,3,7,8,9-HxCDF-13C	35:53	1.04e7	1.96e7	3.45e6	6.56e6	6.802e3	1.713e4	0.53	
1,2,3,4,7,8-HxCDF	34:39	2.35e7	1.88e7	8.43e6	6.74e6	4.868e3	4.098e3	1.25	P
1,2,3,6,7,8-HxCDF	34:44	1.98e7	1.60e7	6.57e6	5.47e6	5.360e3	7.826e3	1.24	
2,3,4,6,7,8-HxCDF	35:11	1.13e7	9.19e6	4.22e6	3.38e6	7.429e3	3.724e3	1.23	
1,2,3,7,8,9-HxCDF	35:54	3.82e6	3.03e6	1.34e6	1.04e6	2.572e3	3.535e3	1.26	

Other HxCDF					
	1	33:38	1.38e7	1.09e7	1.27
	2	33:46	4.58e7	3.67e7	1.25
	3	33:56	3.00e6	2.16e6	1.39
	4	34:14	3.43e6	2.79e6	1.23
	5	34:34	1.84e7	1.46e7	1.26
	6	34:57	2.97e6	2.47e6	1.20

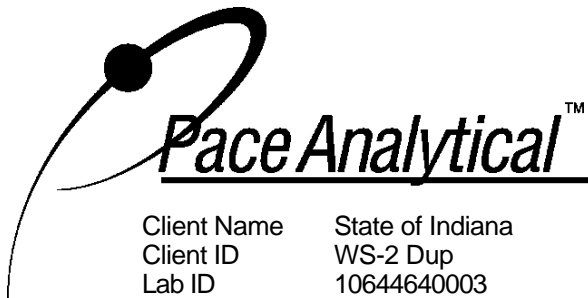
Ethers					
	1	34:05	5.67e6	4.44e6	1.28 P
	2	34:20	3.13e6	2.55e6	1.23 P
	3	34:39	2.35e7	1.88e7	1.25 P
	4	34:52	2.91e6	2.41e6	1.21 P
	5	35:02	4.44e6	3.56e6	1.25 P

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:17	1.53e7	1.19e7	6.07e6	4.86e6	3.563e3	3.305e3	1.28	
1,2,3,6,7,8-HxCDD-13C	35:22	1.99e7	1.57e7	7.15e6	5.64e6	1.800e3	2.668e3	1.26	
1,2,3,7,8,9-HxCDD-13C	35:36	2.60e7	2.07e7	8.85e6	6.70e6	3.041e3	1.844e3	1.25	
1,2,3,4,7,8-HxCDD	35:18	2.02e6	1.63e6	7.96e5	6.22e5	4.134e3	4.109e3	1.24	
1,2,3,6,7,8-HxCDD	35:23	5.28e6	4.22e6	1.99e6	1.62e6	4.098e3	4.451e3	1.25	
1,2,3,7,8,9-HxCDD	35:36	3.76e6	3.02e6	1.17e6	9.18e5	2.495e3	4.414e3	1.25	

Other HxCDD					
	1	34:05	6.95e6	5.69e6	1.22
	2	34:34	1.41e7	1.11e7	1.27
	3	34:46	1.43e7	1.14e7	1.26

REPORT OF LABORATORY ANALYSIS

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Client Name	State of Indiana	Injected By	JRH
Client ID	WS-2 Dup	Instrument ID	10MSHR15 (L)
Lab ID	10644640003	GC Column ID	US1824614H
Filename	L230305B_08	ICAL ID	L230302
Analyzed	03/06/2023 03:38		

	4	34:52	1.75e6	1.59e6						1.10
	5	35:31	2.05e6	1.75e6						1.17
Hepta-Furans:										
		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C		37:06	6.63e6	1.39e7	2.05e6	4.48e6	2.842e3	2.583e3	0.48	
1,2,3,4,7,8,9-HpCDF-13C		38:31	(M)4.25e6	8.86e6	1.18e6	2.55e6	2.474e3	1.761e3	0.48	
1,2,3,4,6,7,8-HpCDF		37:06	4.38e7	4.30e7	1.40e7	1.40e7	3.257e3	3.414e3	1.02	
1,2,3,4,7,8,9-HpCDF		38:32	3.65e6	3.66e6	1.09e6	1.04e6	3.134e3	3.878e3	1.00	
Other HpCDF										
	1	37:23	7.87e6	7.63e6						1.03
	2	37:30	8.32e6	8.03e6						1.04
Hepta-Dioxins:										
		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C		38:02	7.26e6	6.47e6	2.14e6	1.93e6	3.091e3	5.077e3	1.12	
1,2,3,4,6,7,8-HpCDD		38:03	1.46e7	1.41e7	4.27e6	4.11e6	1.712e3	1.640e3	1.04	
Other HpCDD	1	37:21	1.96e7	1.85e7						1.06
Octa-Furans:										
		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF		41:08	1.20e7	1.40e7	3.00e6	3.38e6	1.713e3	6.806e2	0.86	
Octa-Dioxins:										
		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C		40:54	(M)6.19e6	7.82e6	1.53e6	1.89e6	1.387e3	2.519e3	0.79	
OCDD		40:55	2.12e7	2.38e7	5.26e6	5.85e6	1.462e3	1.606e3	0.89	

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TCDF Confirmation Detected Peak List

Prepared By _____ Date _____
 ReviewedBy _____ Date _____

Client Name	State of Indiana	Injected By	SMT
Client ID	WS-2 Dup	Instrument ID	10MSHR06 (U)
Lab ID	10644640003	GC Column ID	US2588526H
Filename	U230307A_07	ICAL ID	U221009-DB225
Analyzed	03/07/2023 13:38		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	18:06	4.57e7	5.80e7	6.83e6	8.77e6	2.115e4	1.582e4	0.79	
2,3,7,8-TCDF	18:07	7.81e6	9.92e6	1.15e6	1.49e6	3.557e3	3.266e3	0.79	

Cleanup & Recovery:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	16:13	4.60e7	5.75e7	8.42e6	1.08e7	7.119e3	6.148e3	0.80	
2,3,7,8-TCDD-37Cl4	15:50	6.70e6		1.16e6		1.045e4	----		

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Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
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Fax: 612.607.6444
www.pacelabs.com

Appendix E

Calibration Raw Data

REPORT OF LABORATORY ANALYSIS

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Homologue Group: Tetras

Data File Name: L230302A_10

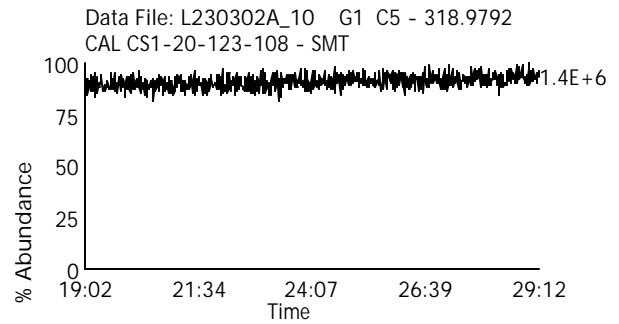
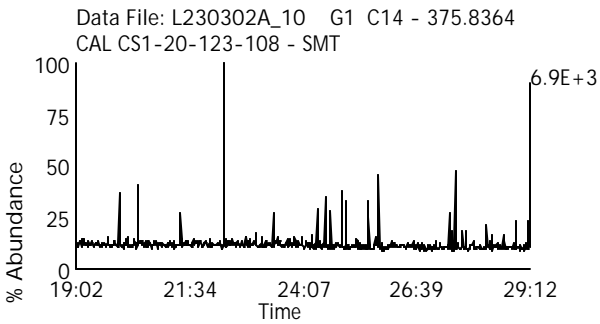
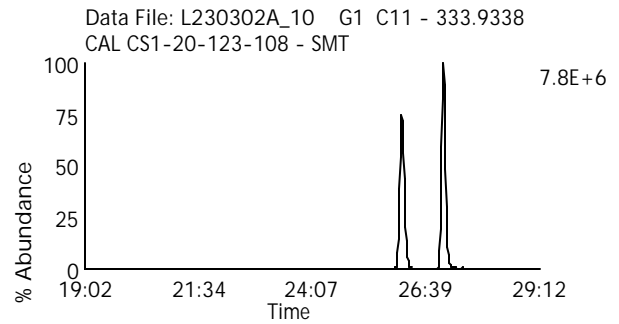
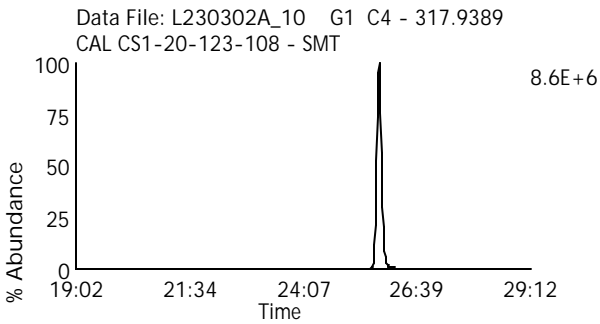
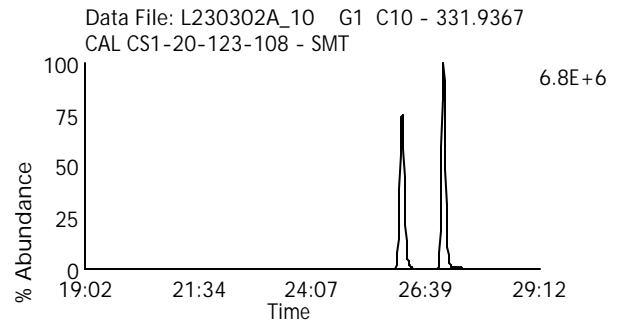
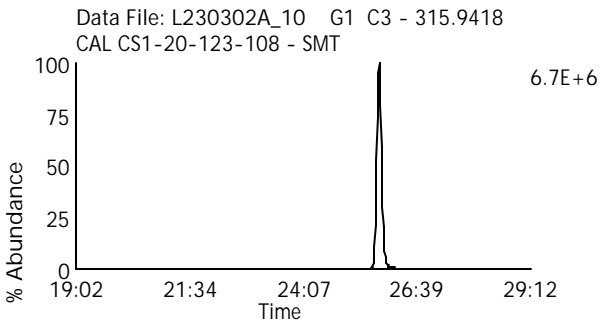
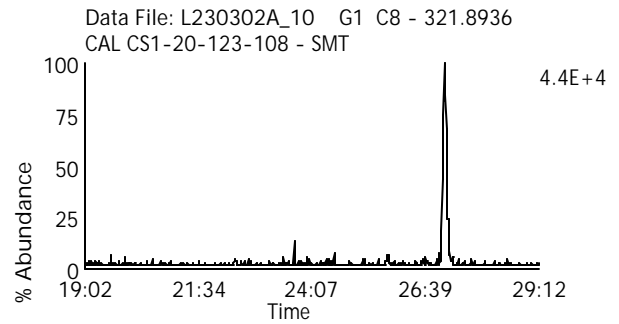
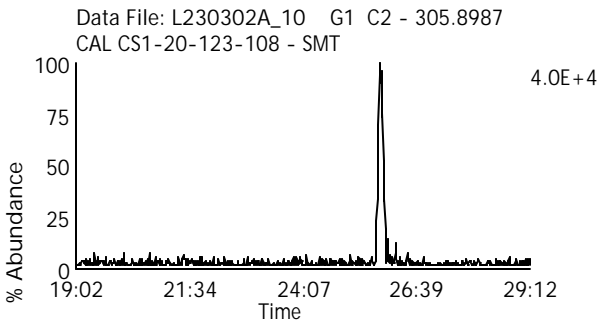
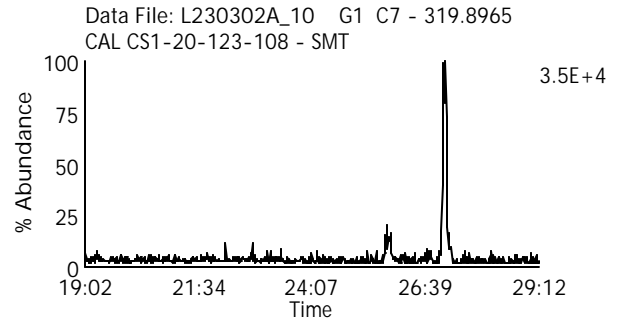
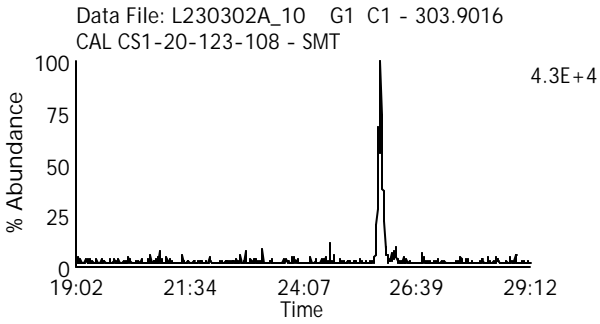
Date Acquired: 3/2/2023

Sample Description: CAL CS1-20-123-108 - SMT

Lab Sample ID: CS1-20-123-108

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230302A_10

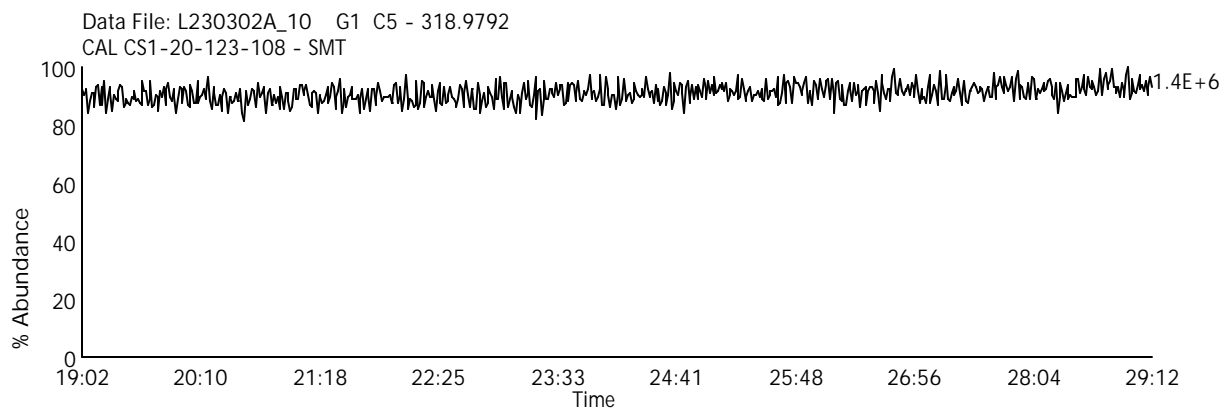
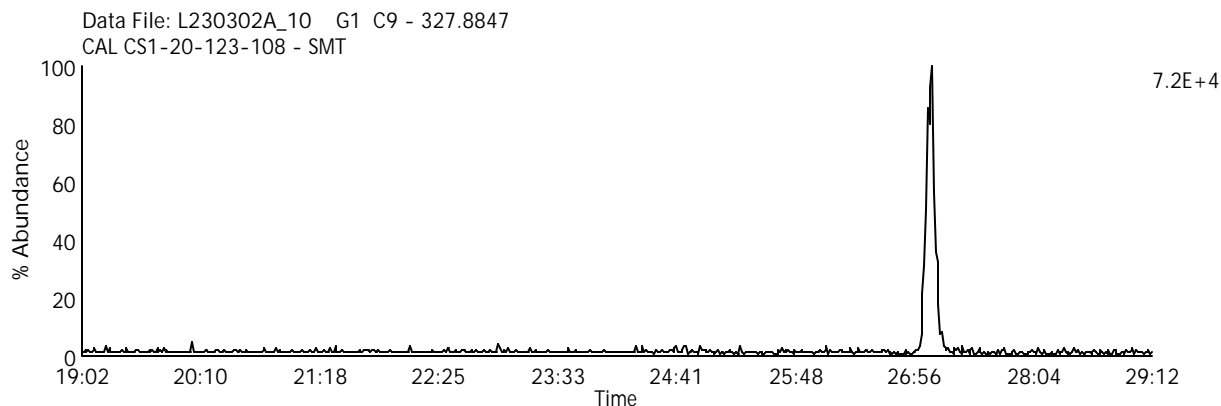
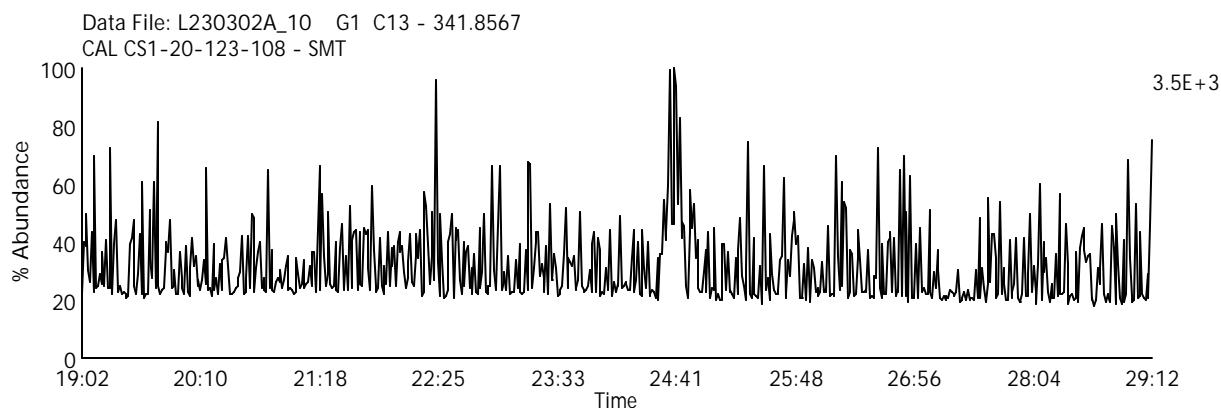
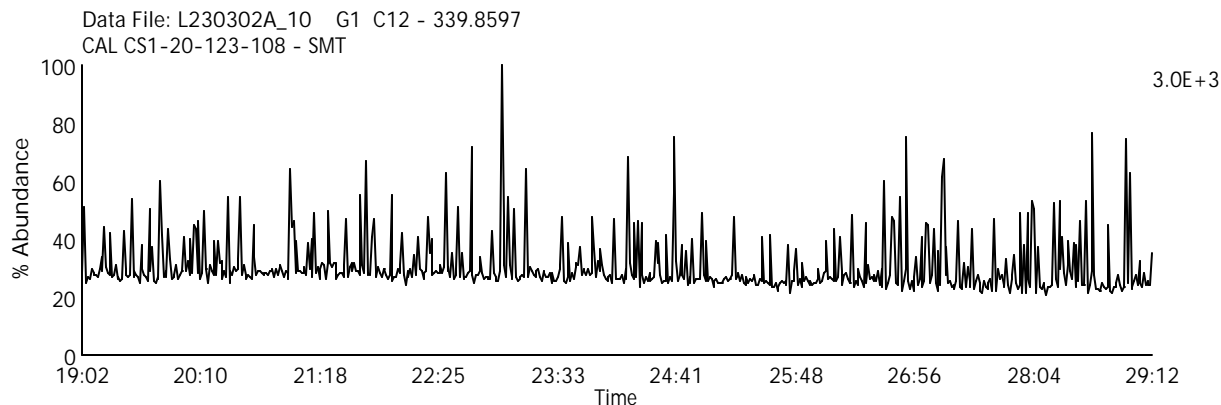
Lab Sample ID: CS1-20-123-108

Date Acquired: 3/2/2023

Client Sample ID:

Sample Description: CAL CS1-20-123-108 - SMT

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230302A_10

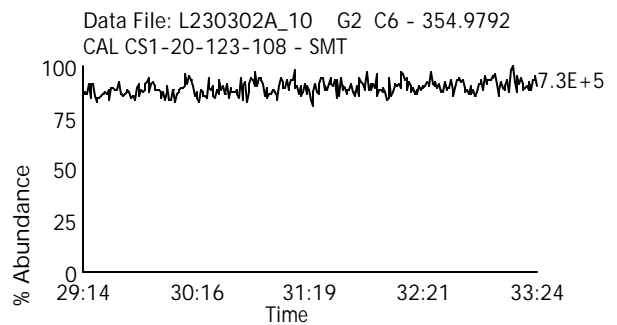
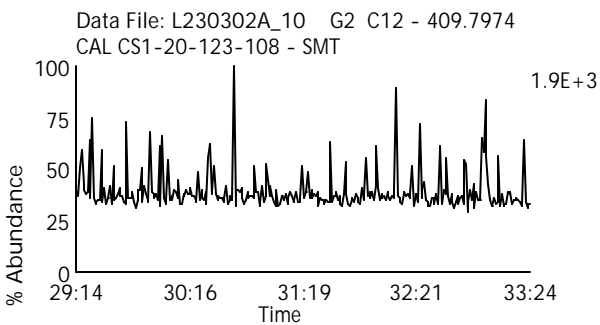
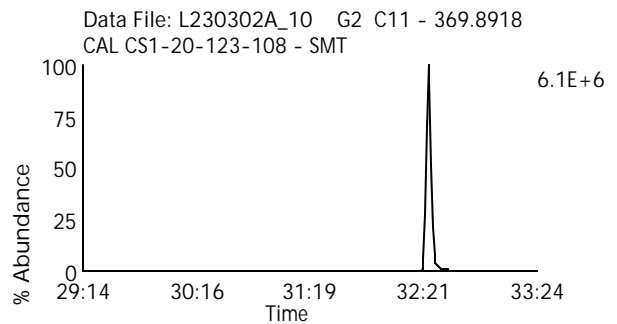
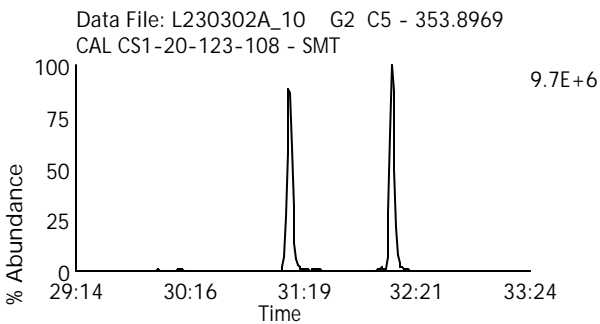
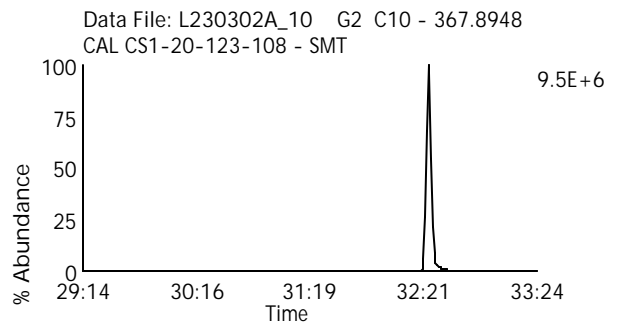
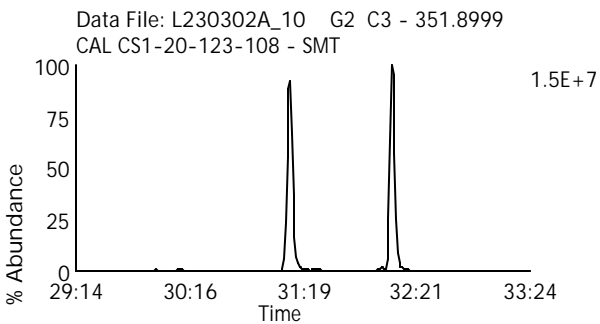
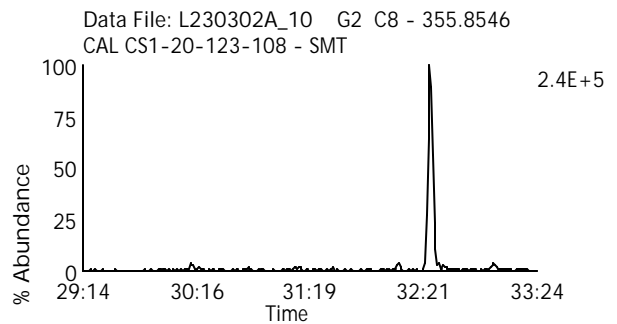
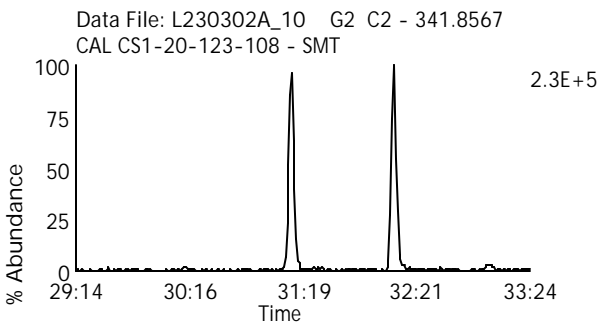
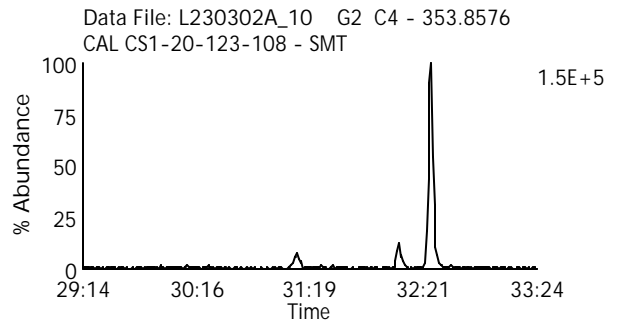
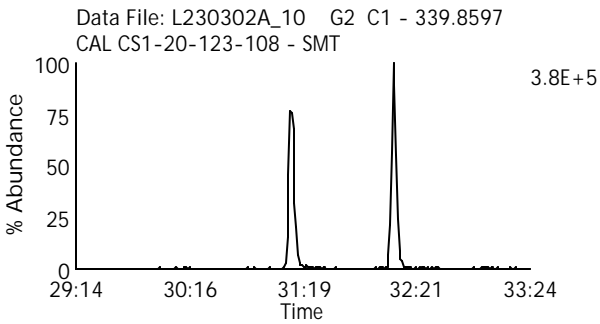
Date Acquired: 3/2/2023

Sample Description: CAL CS1-20-123-108 - SMT

Lab Sample ID: CS1-20-123-108

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230302A_10

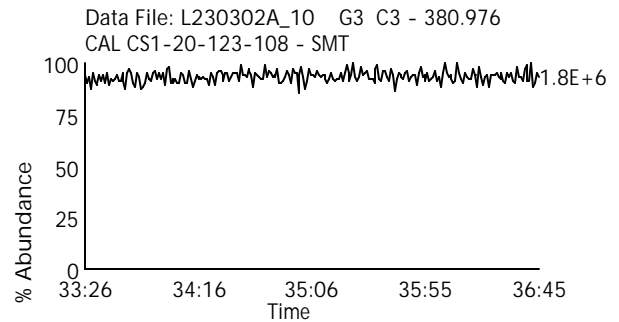
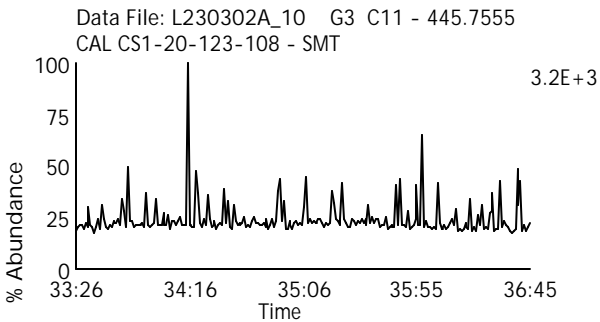
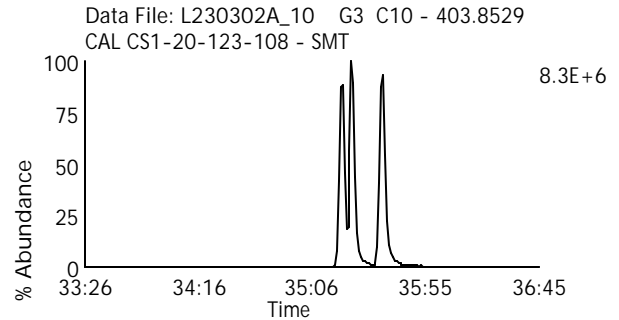
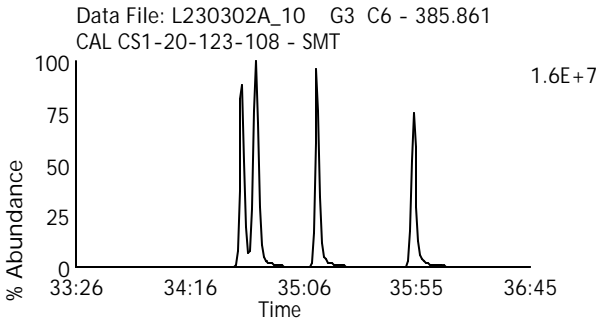
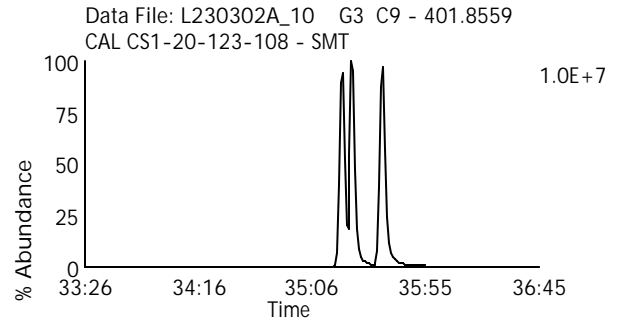
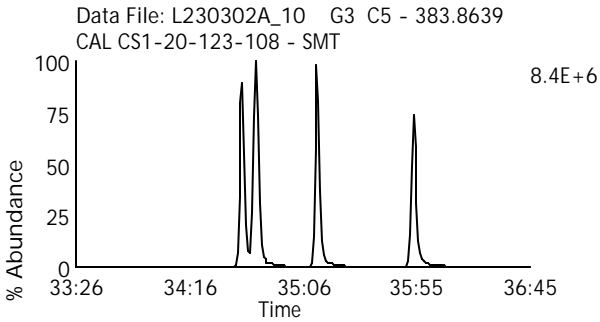
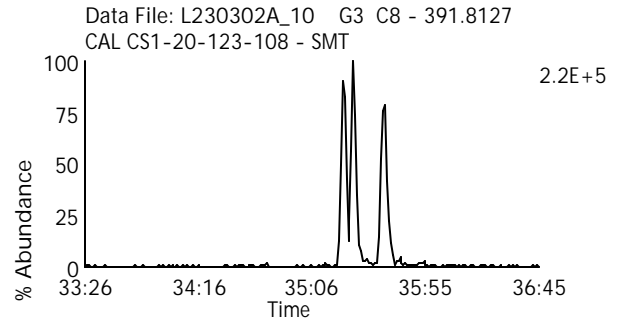
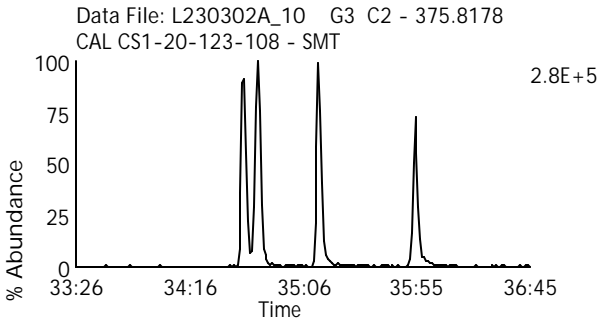
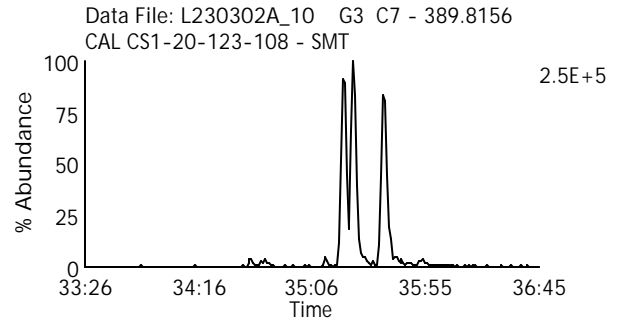
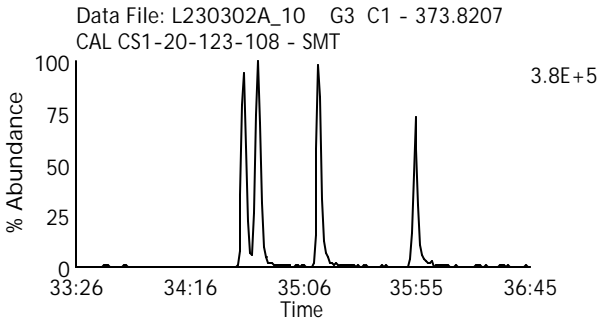
Date Acquired: 3/2/2023

Sample Description: CAL CS1-20-123-108 - SMT

Lab Sample ID: CS1-20-123-108

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230302A_10

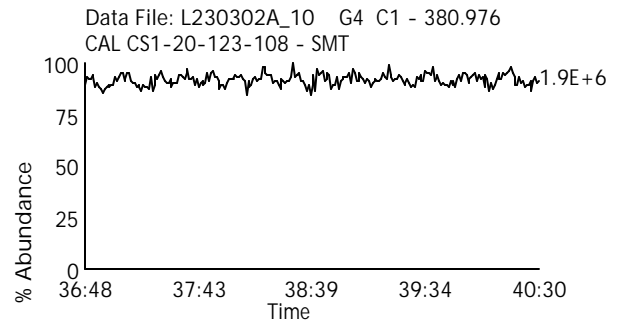
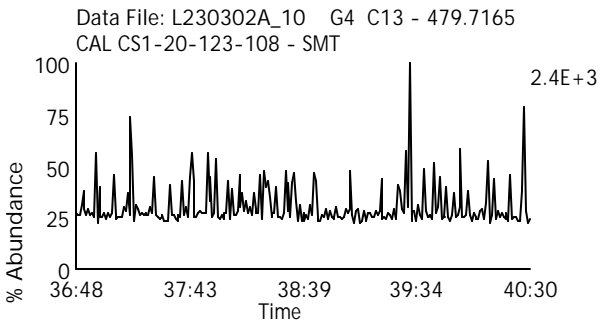
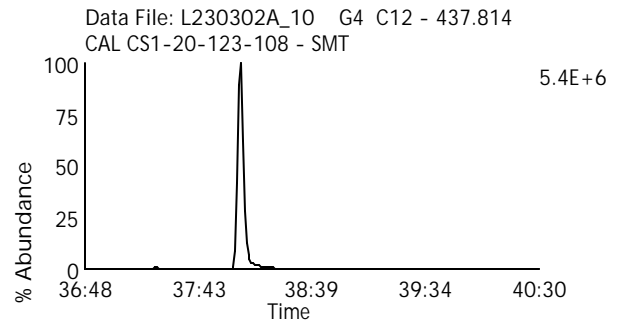
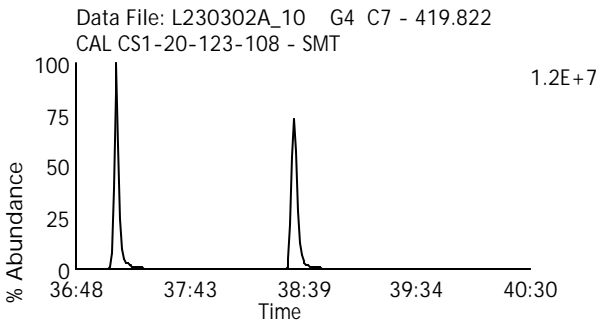
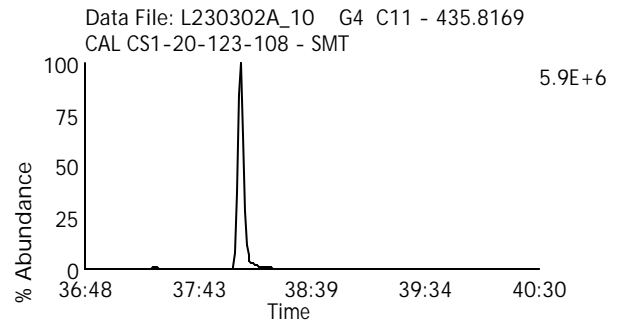
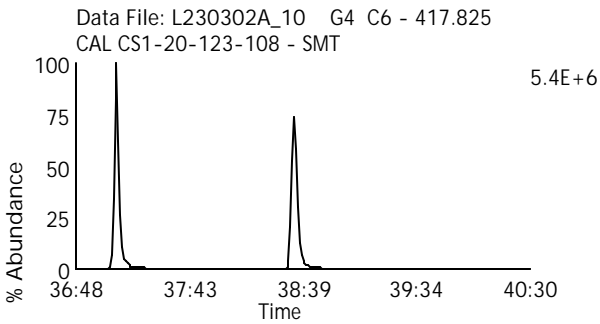
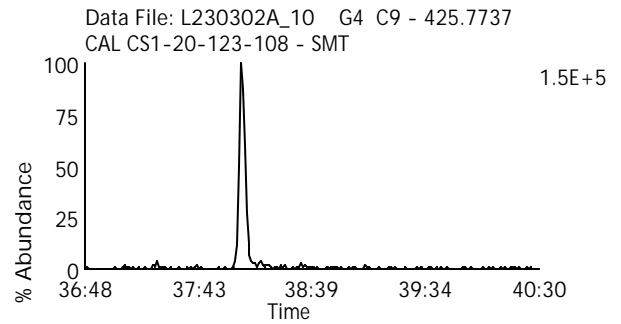
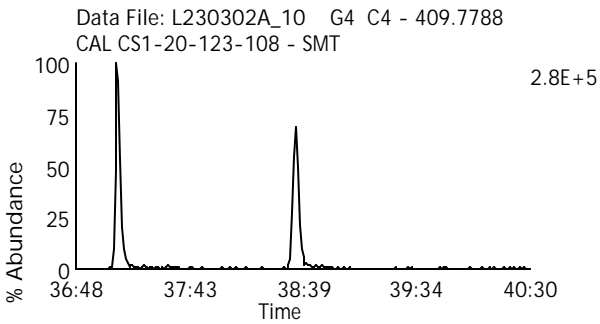
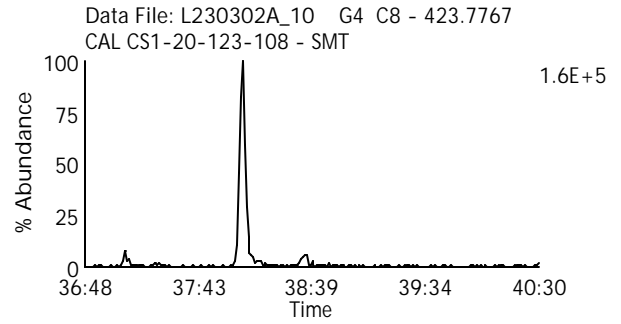
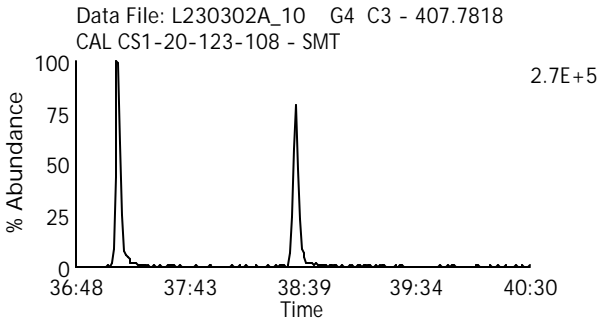
Date Acquired: 3/2/2023

Sample Description: CAL CS1-20-123-108 - SMT

Lab Sample ID: CS1-20-123-108

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230302A_10

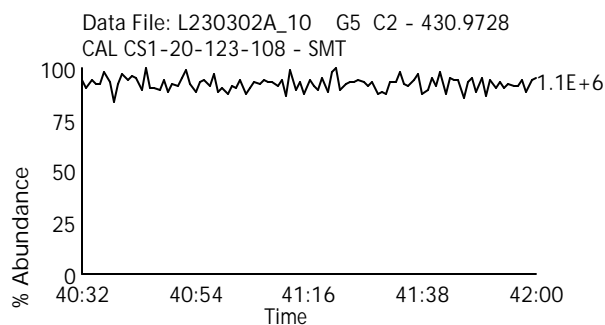
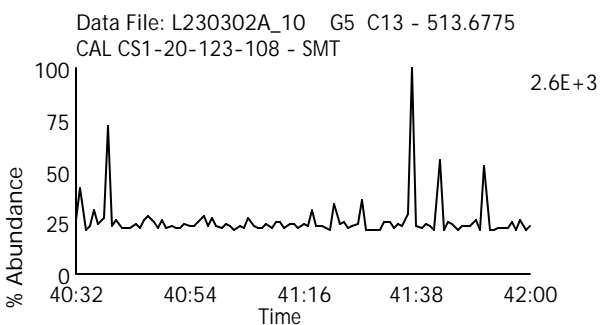
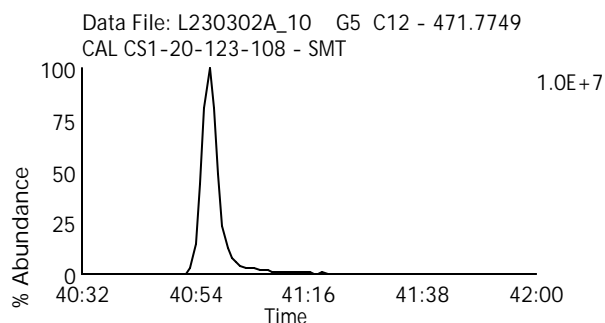
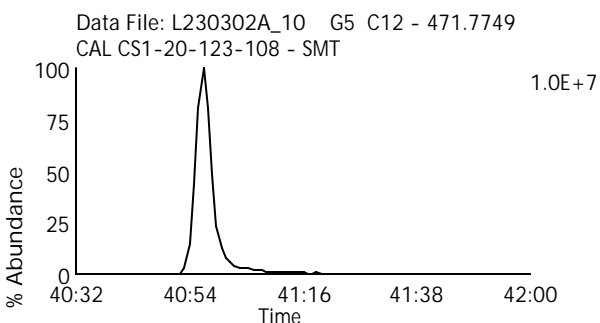
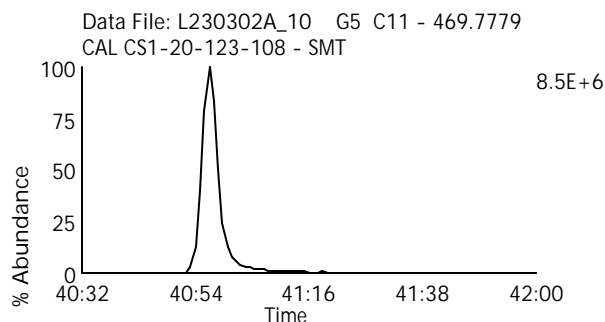
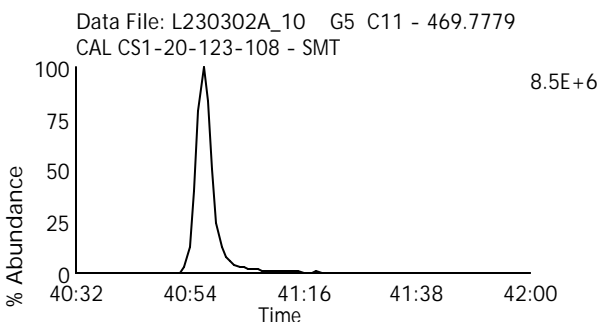
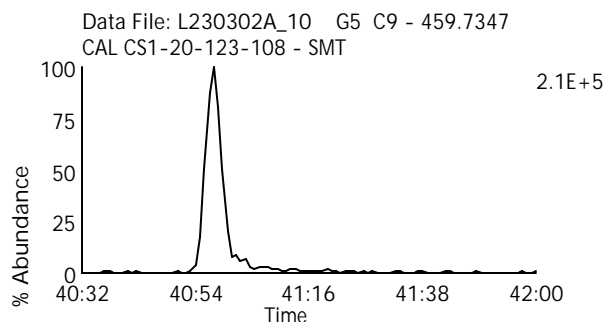
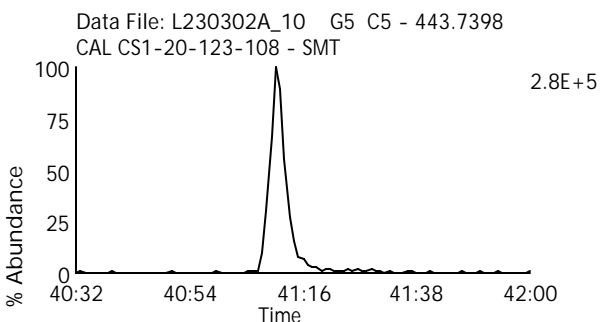
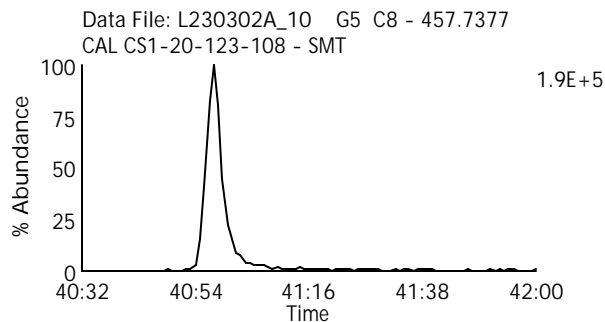
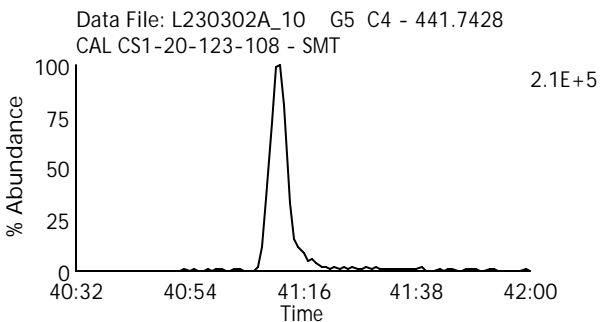
Date Acquired: 3/2/2023

Sample Description: CAL CS1-20-123-108 - SMT

Lab Sample ID: CS1-20-123-108

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230302A_09

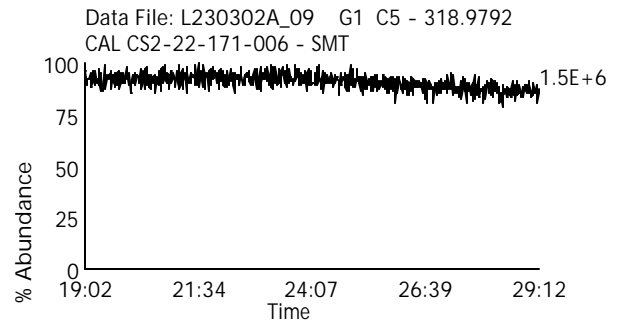
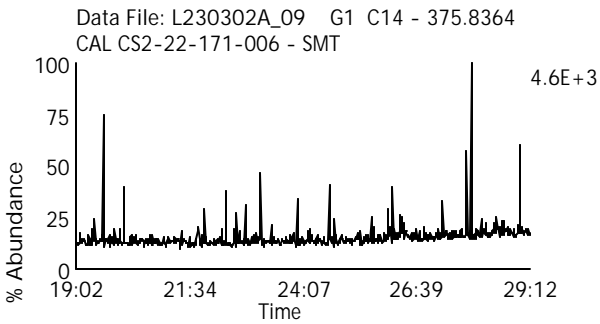
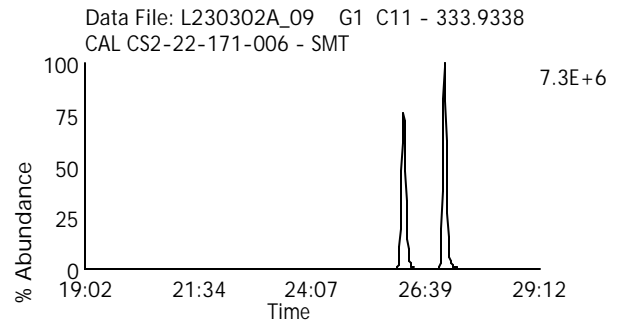
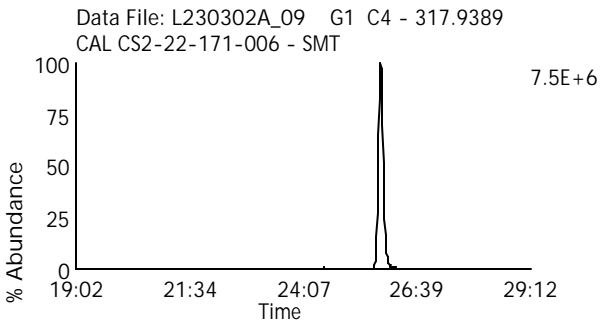
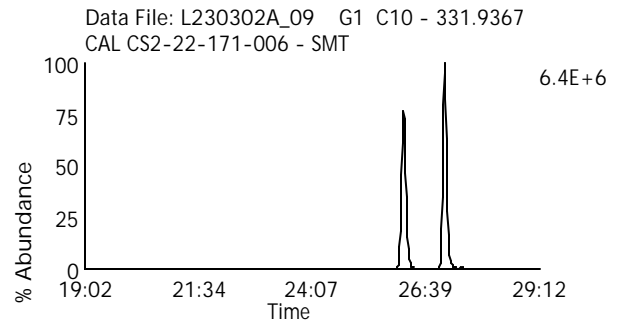
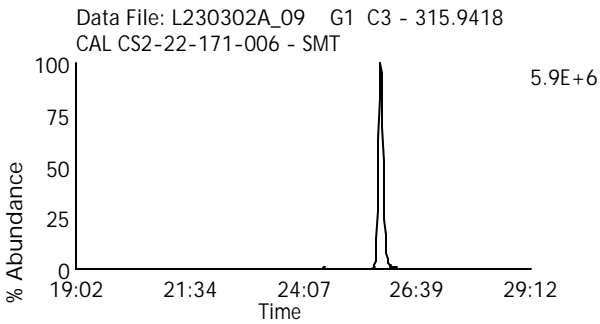
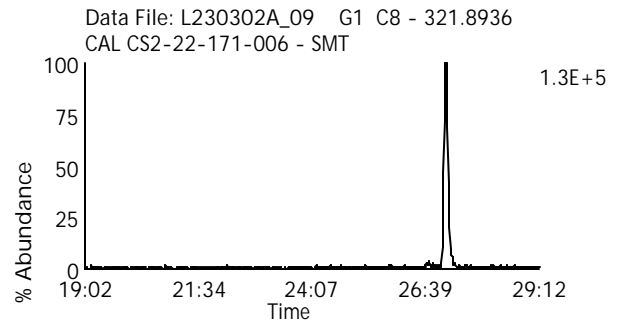
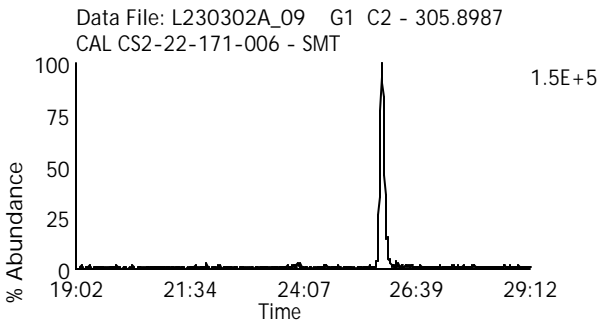
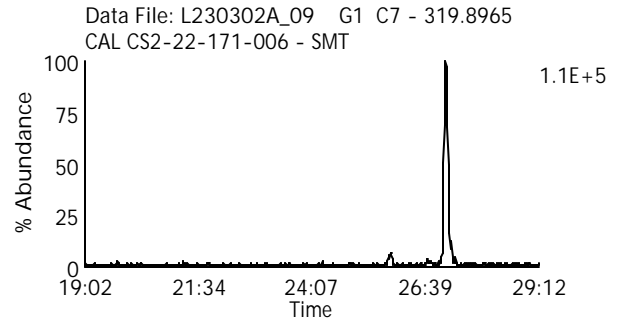
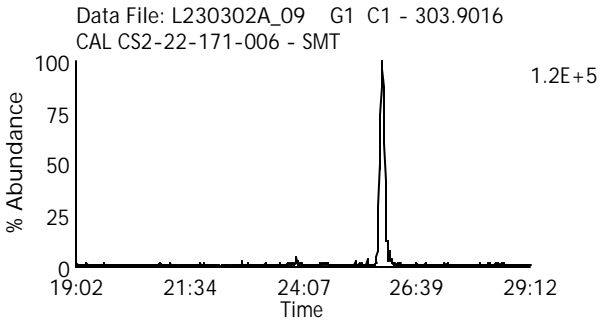
Date Acquired: 3/2/2023

Sample Description: CAL CS2-22-171-006 - SMT

Lab Sample ID: CS2-22-171-006

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230302A_09

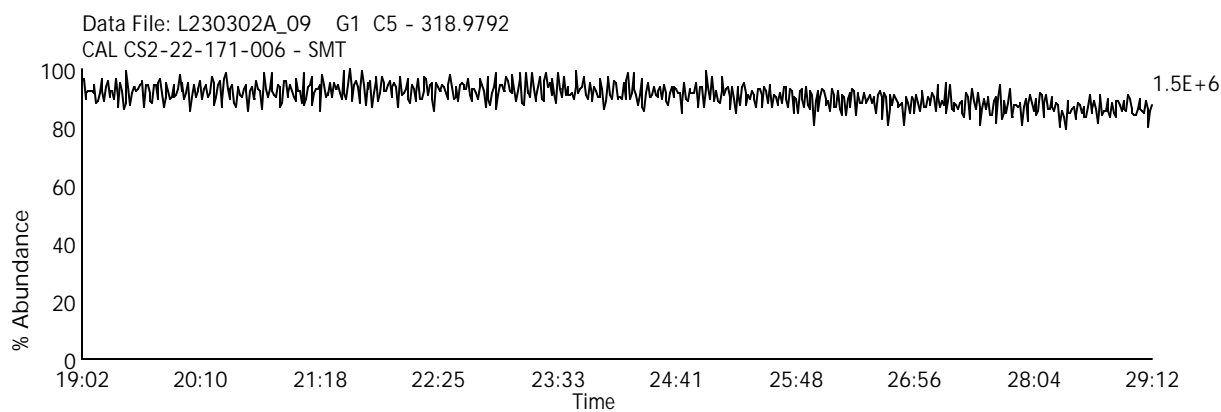
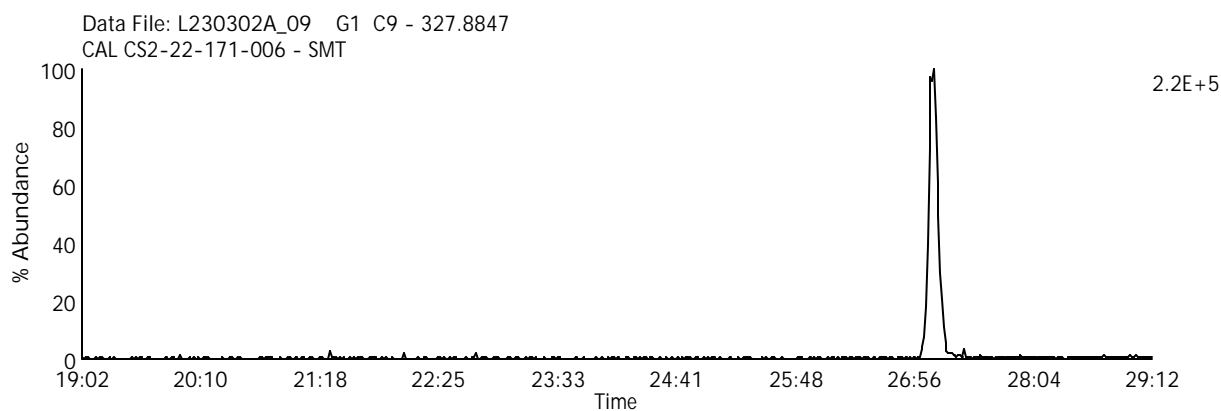
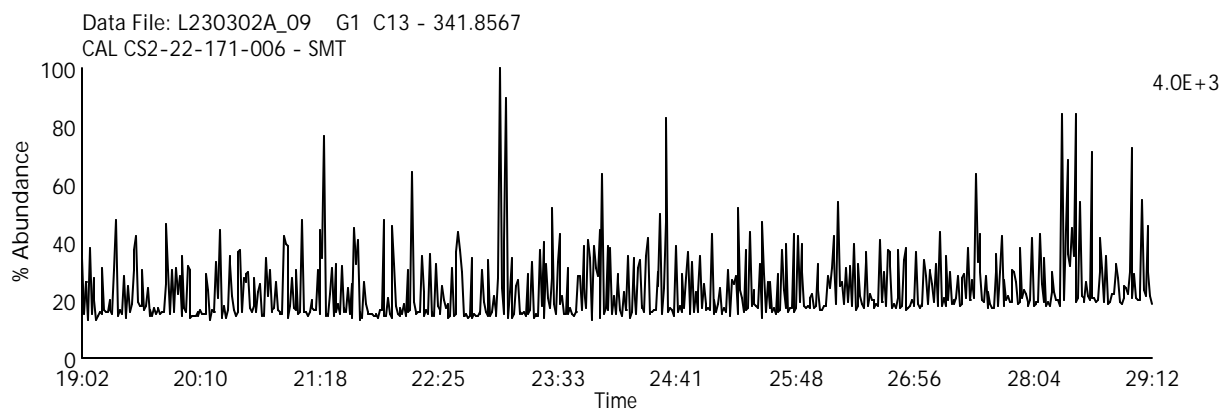
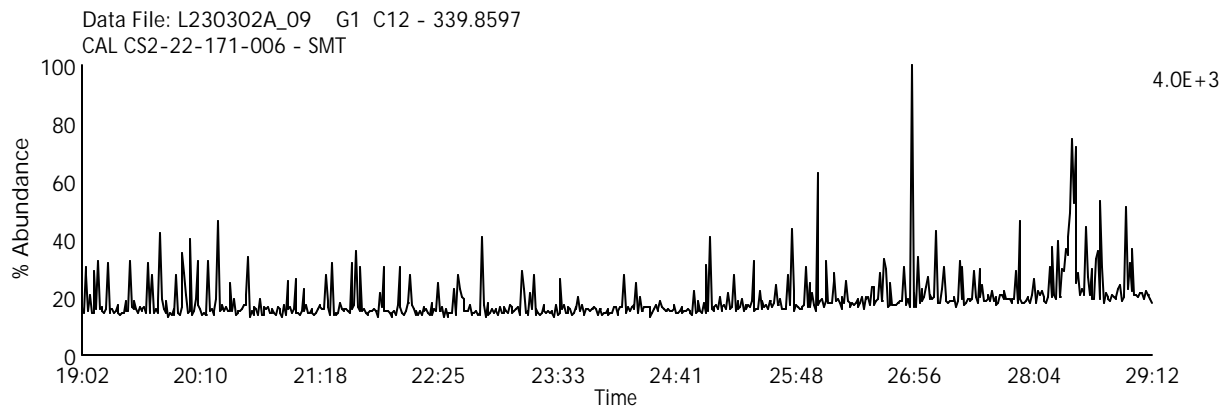
Lab Sample ID: CS2-22-171-006

Date Acquired: 3/2/2023

Client Sample ID:

Sample Description: CAL CS2-22-171-006 - SMT

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230302A_09

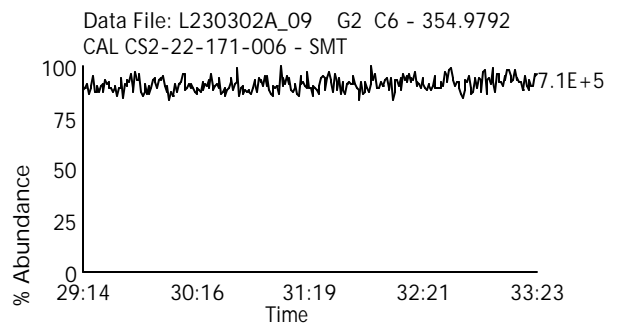
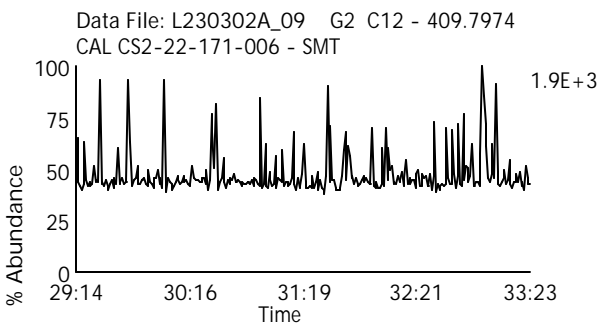
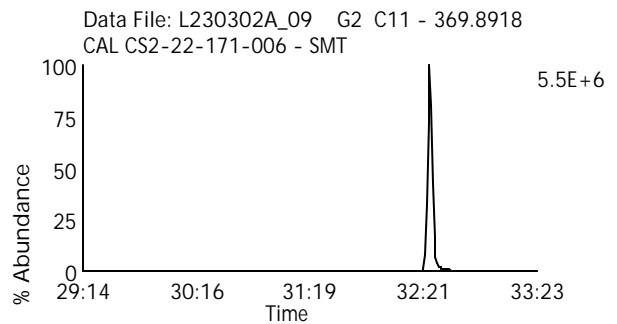
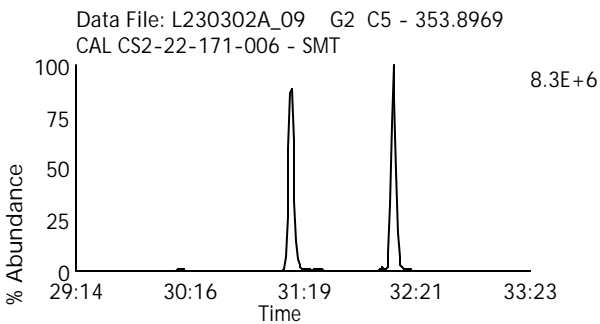
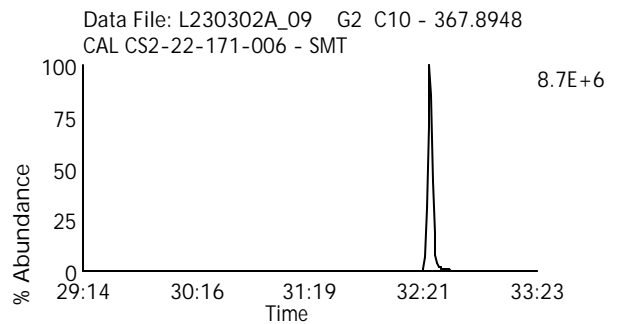
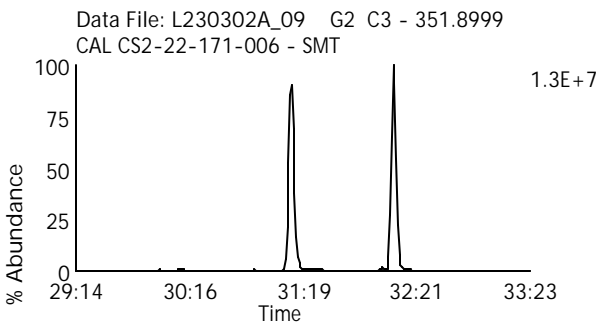
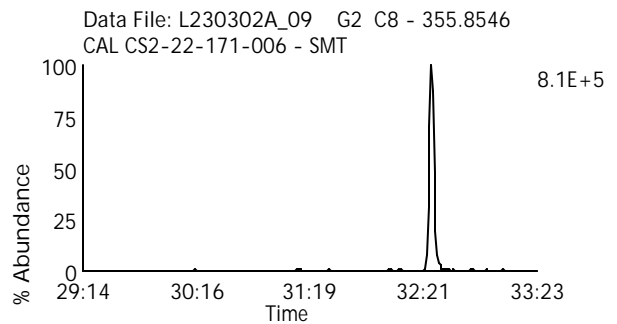
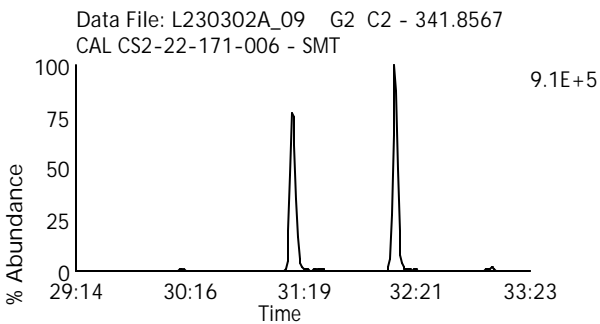
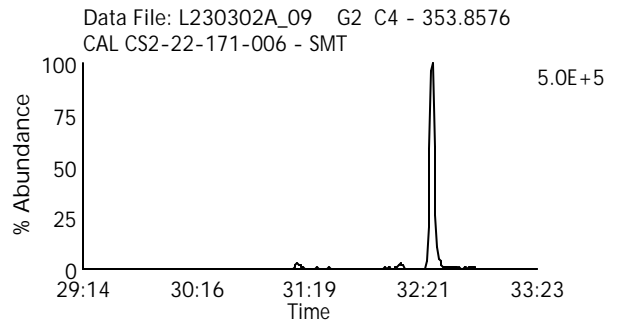
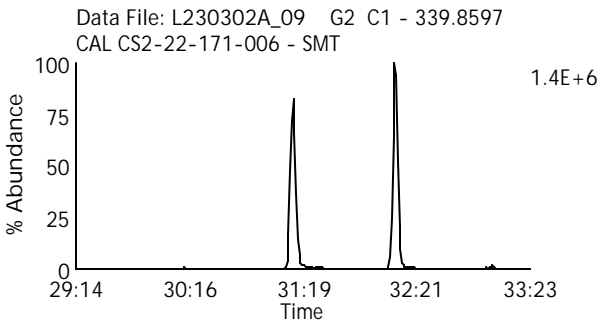
Date Acquired: 3/2/2023

Sample Description: CAL CS2-22-171-006 - SMT

Lab Sample ID: CS2-22-171-006

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230302A_09

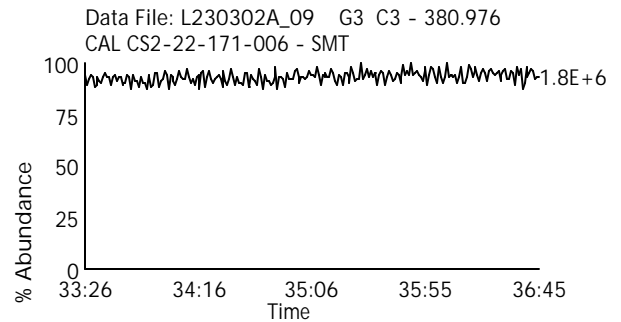
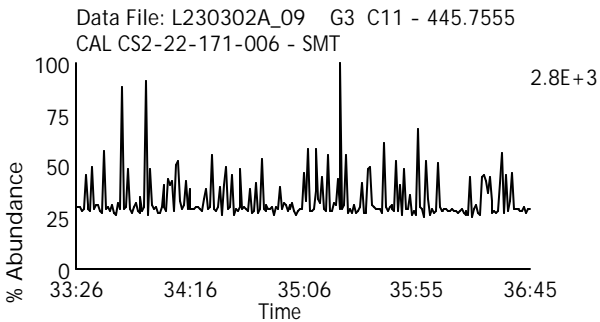
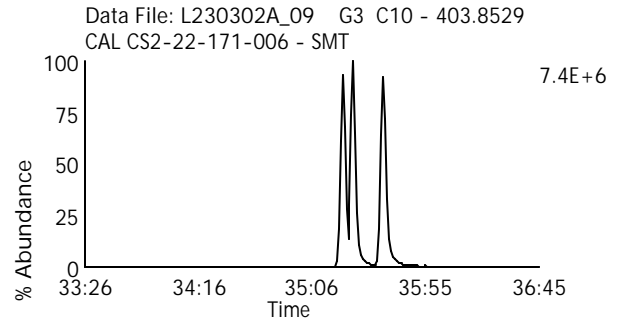
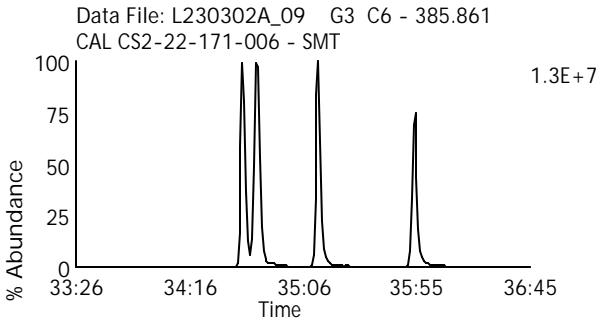
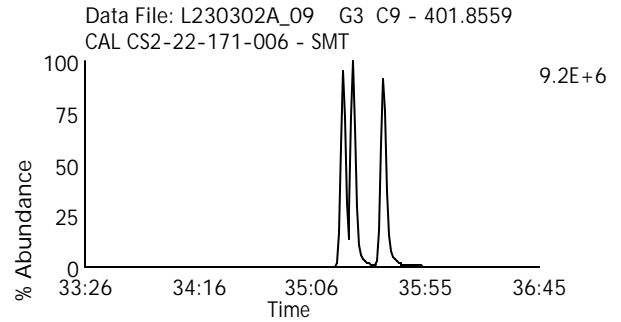
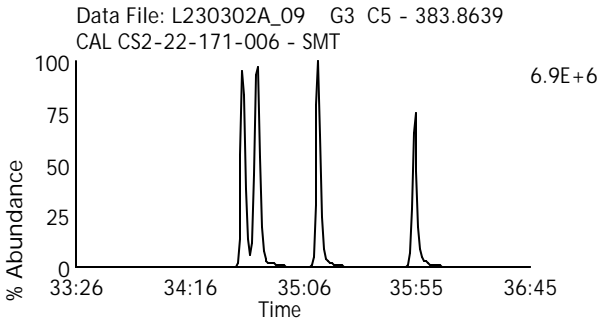
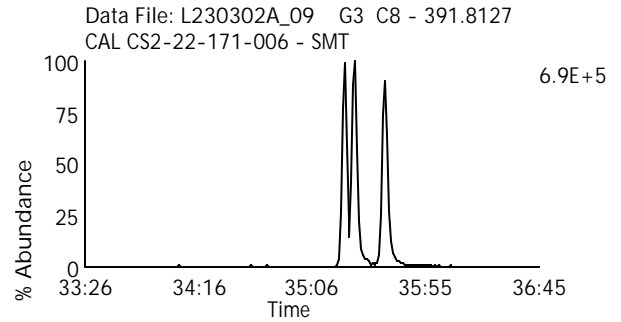
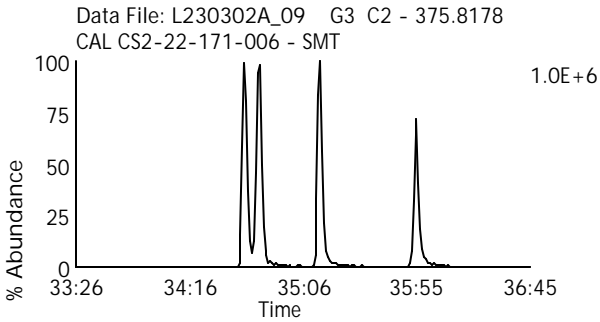
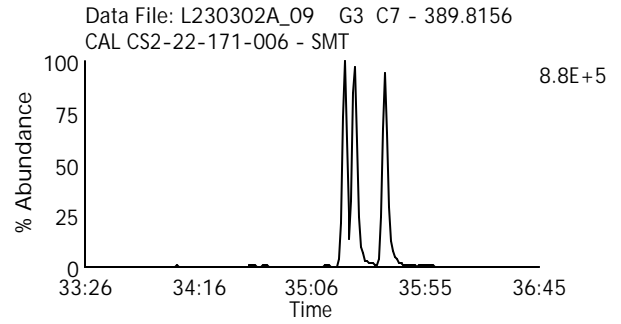
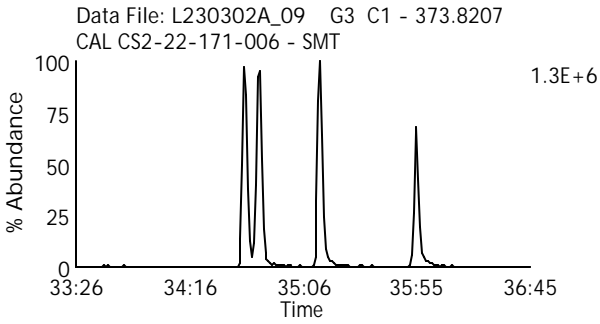
Date Acquired: 3/2/2023

Sample Description: CAL CS2-22-171-006 - SMT

Lab Sample ID: CS2-22-171-006

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230302A_09

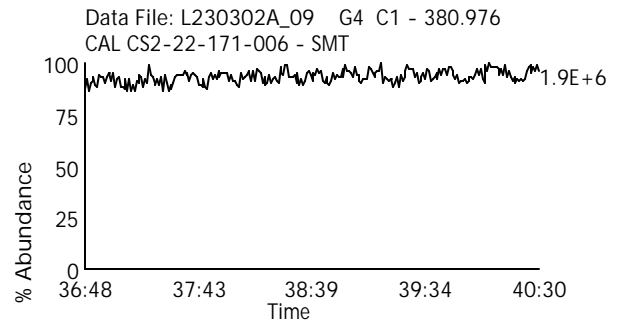
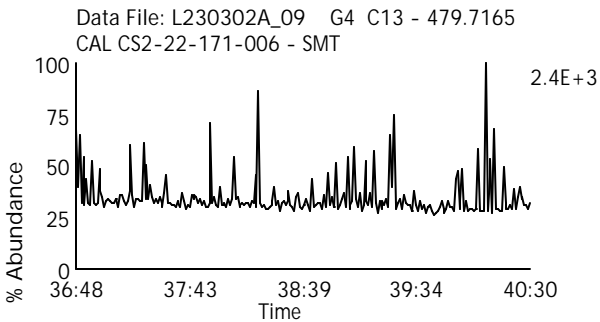
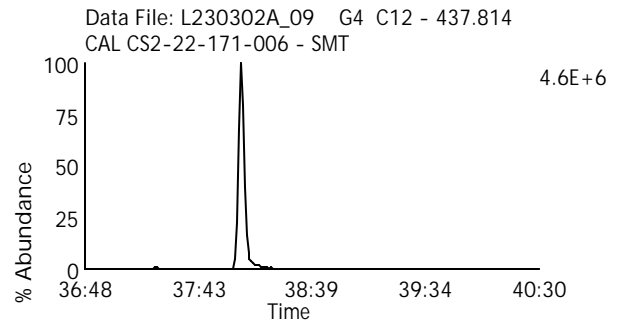
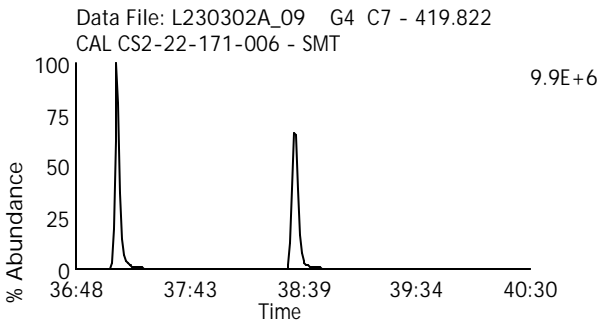
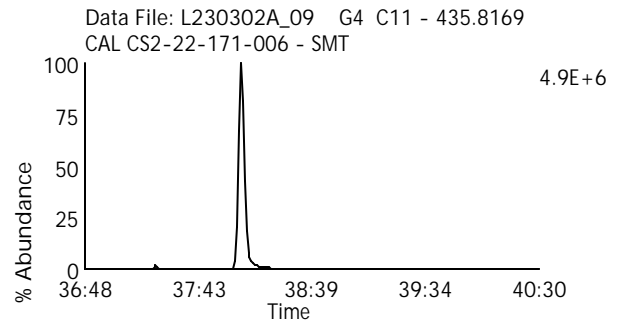
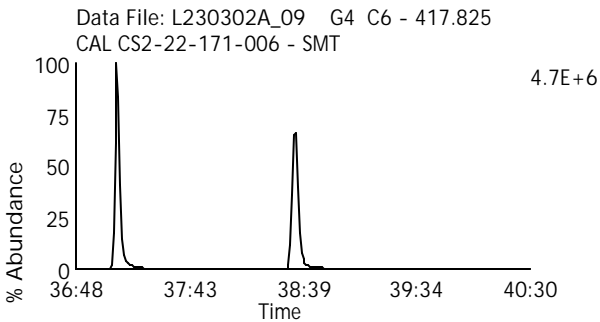
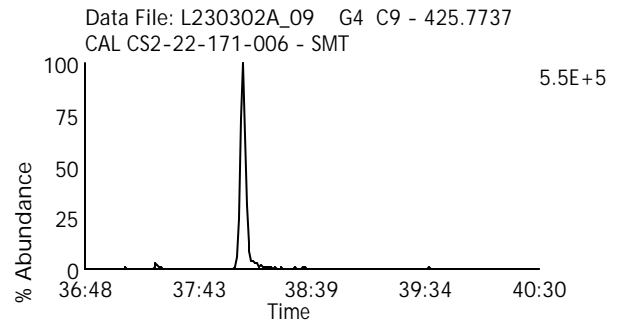
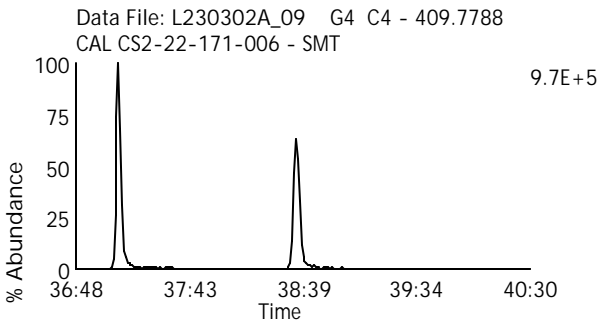
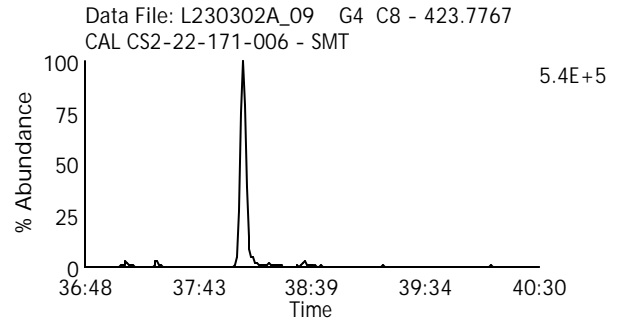
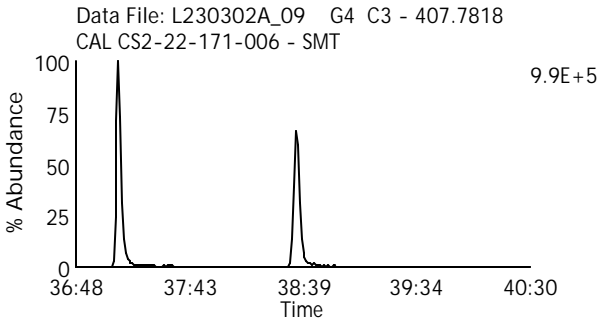
Date Acquired: 3/2/2023

Sample Description: CAL CS2-22-171-006 - SMT

Lab Sample ID: CS2-22-171-006

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230302A_09

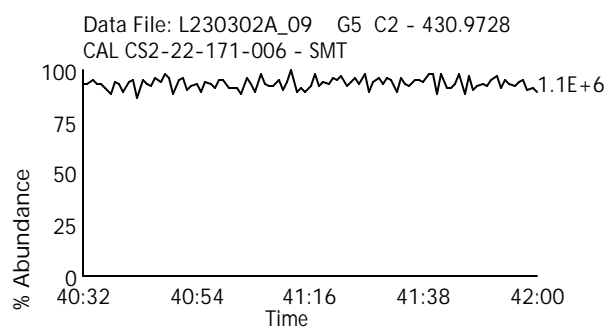
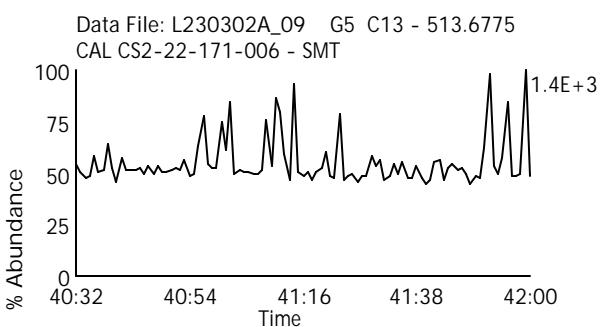
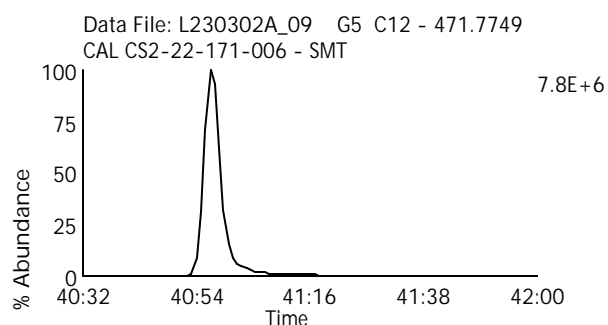
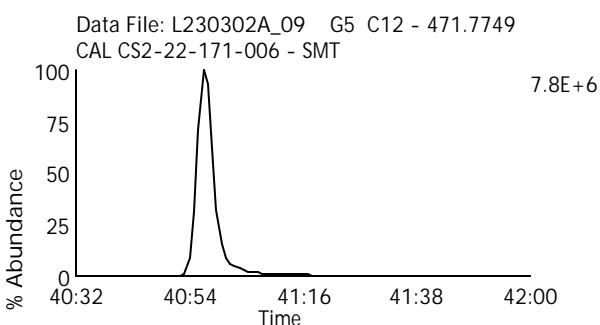
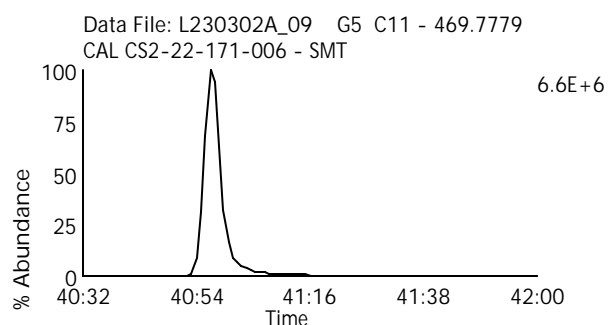
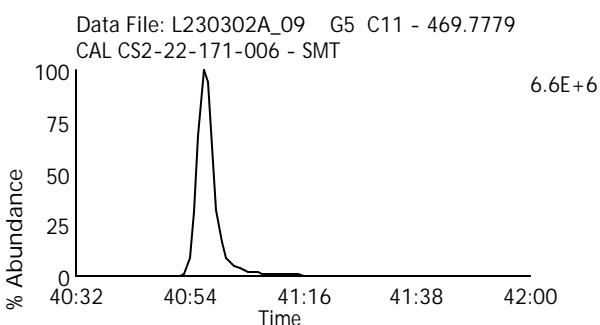
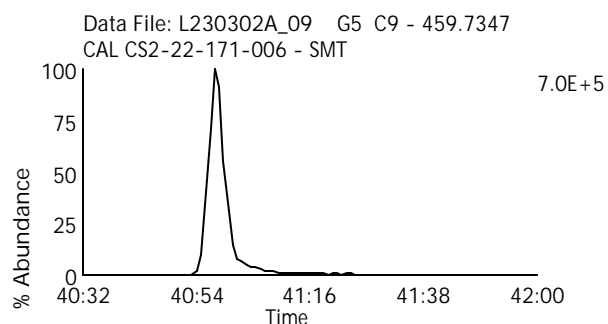
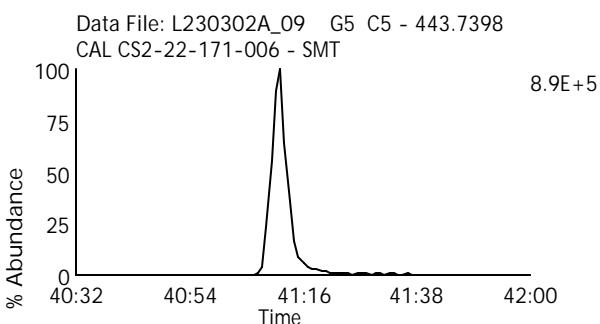
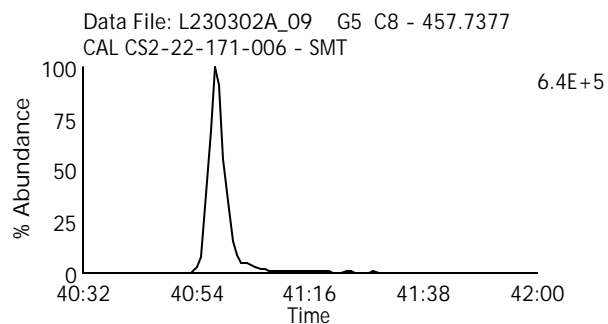
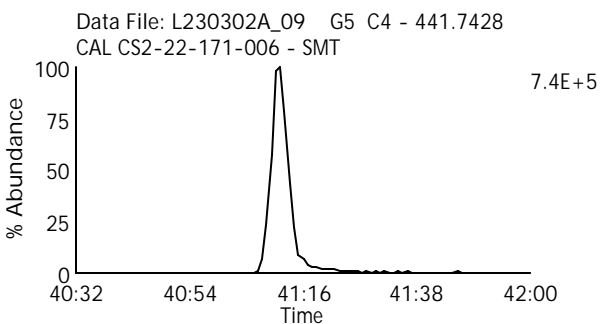
Date Acquired: 3/2/2023

Sample Description: CAL CS2-22-171-006 - SMT

Lab Sample ID: CS2-22-171-006

Client Sample ID:

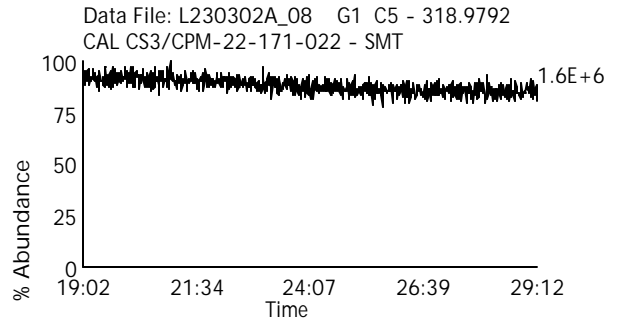
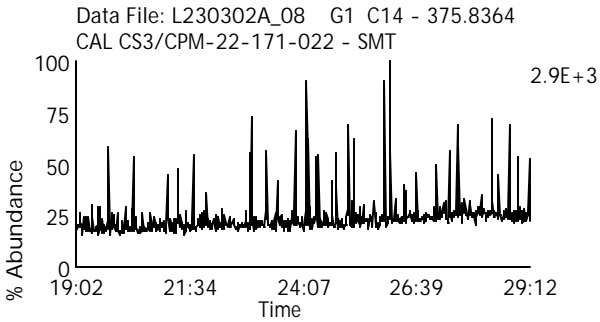
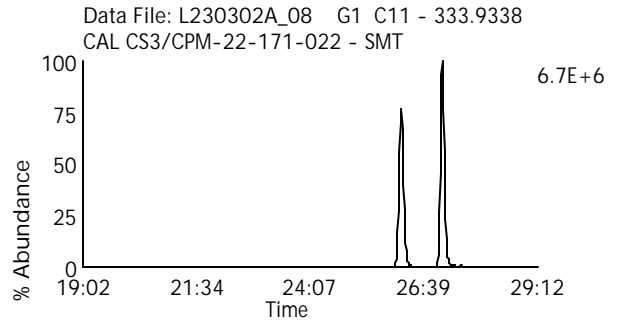
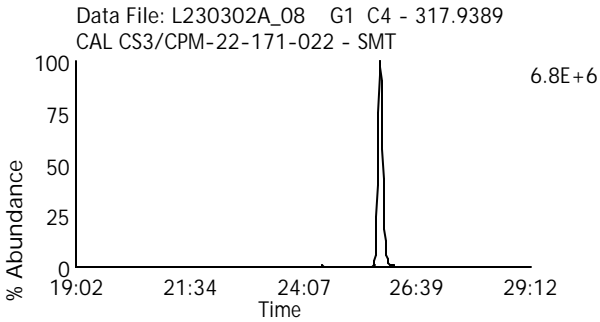
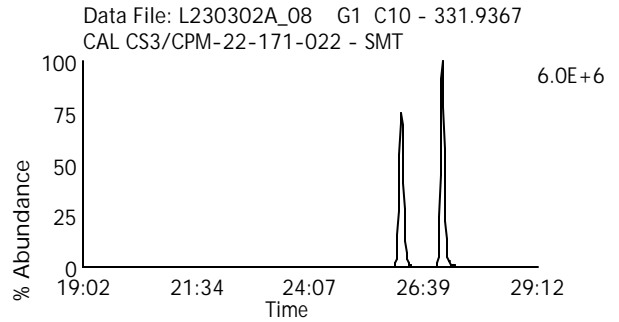
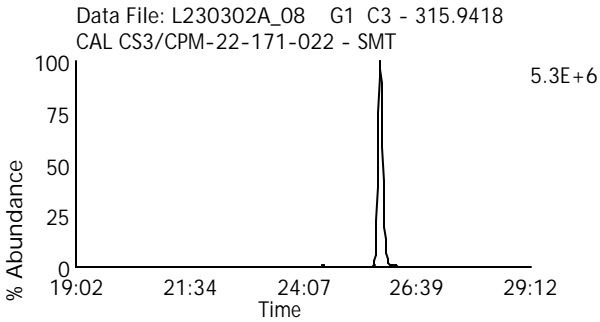
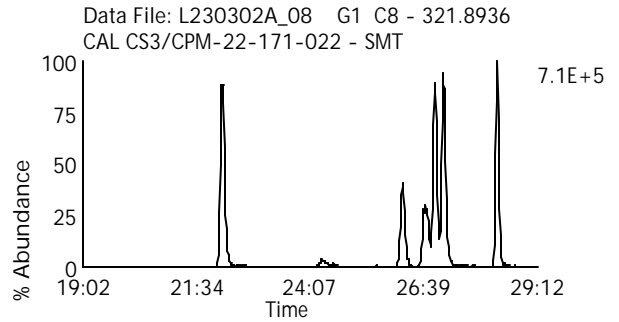
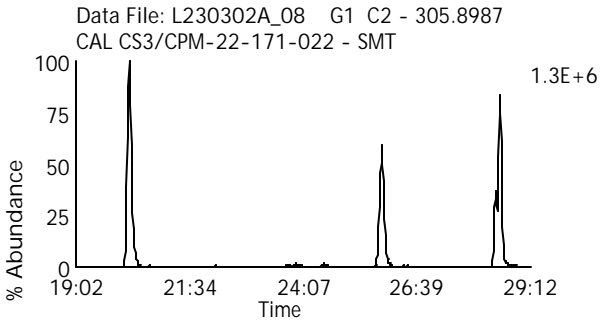
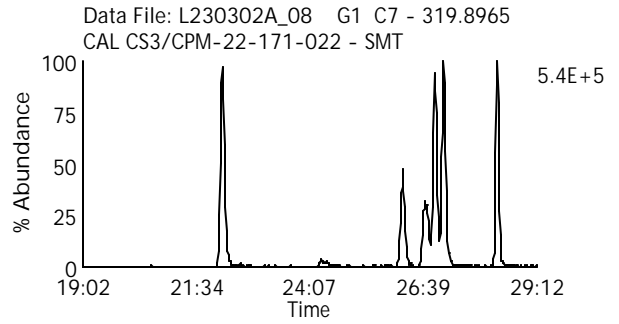
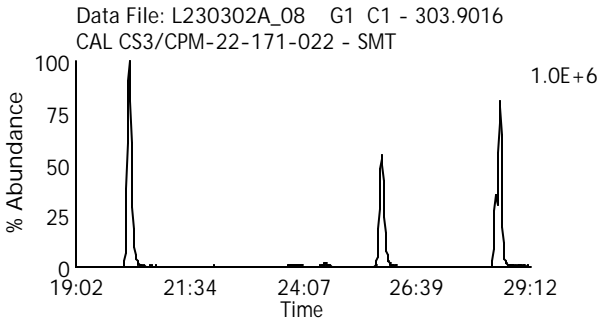
Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230302A_08
Date Acquired: 3/2/2023
Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022
Client Sample ID:
Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230302A_08

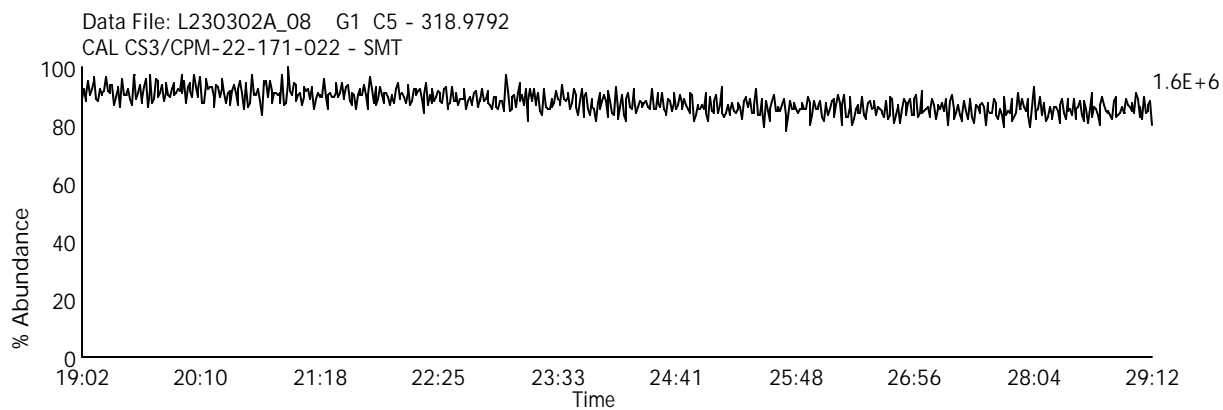
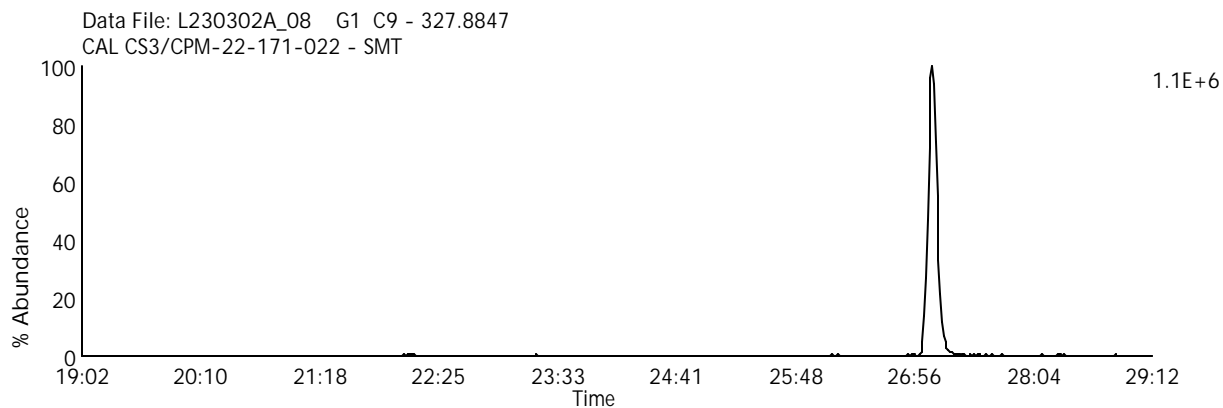
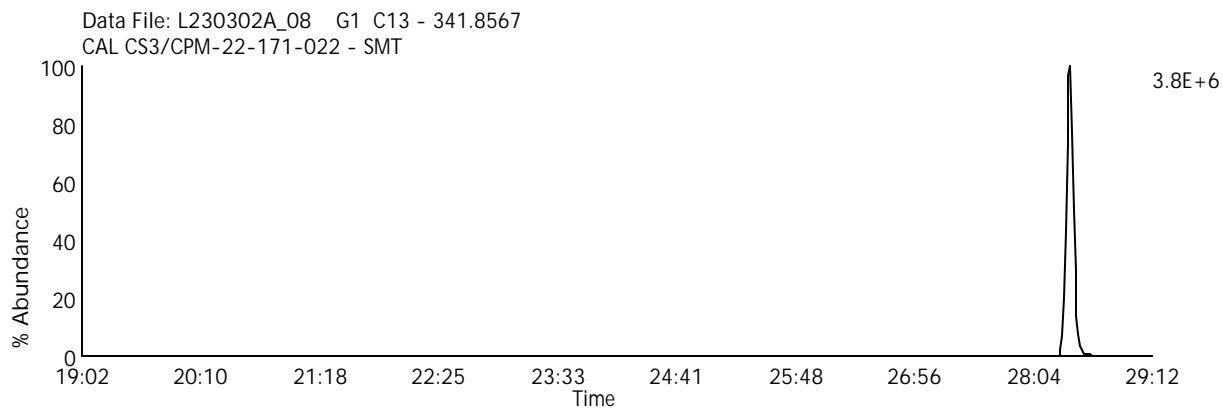
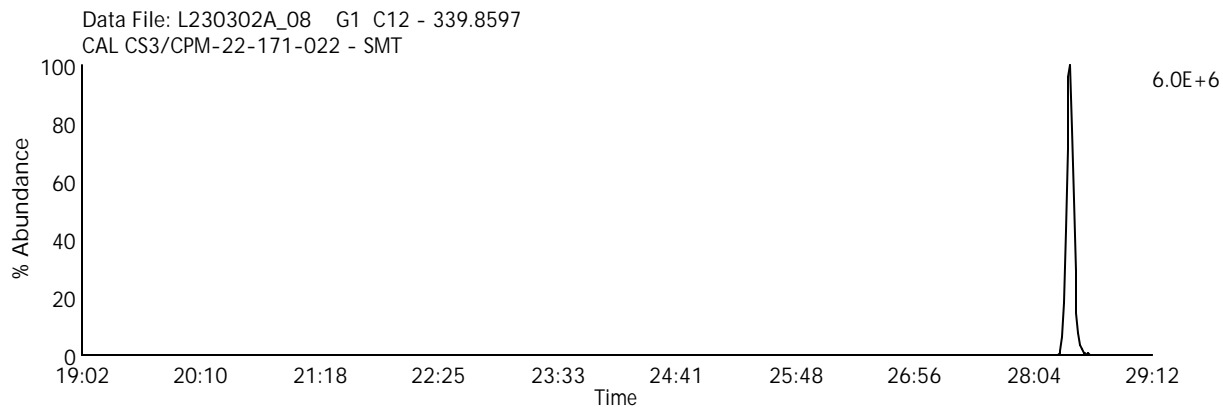
Date Acquired: 3/2/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230302A_08

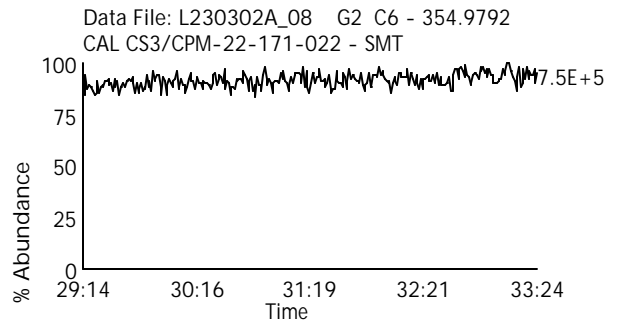
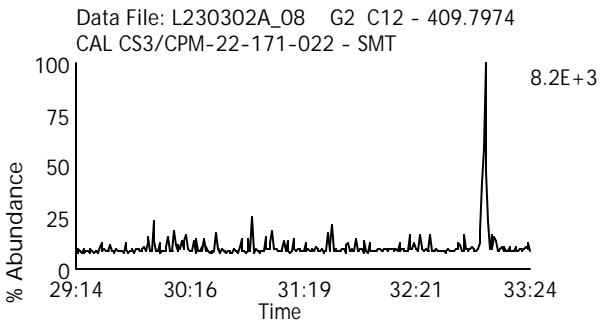
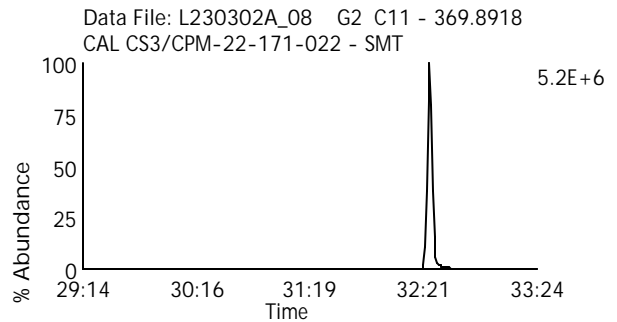
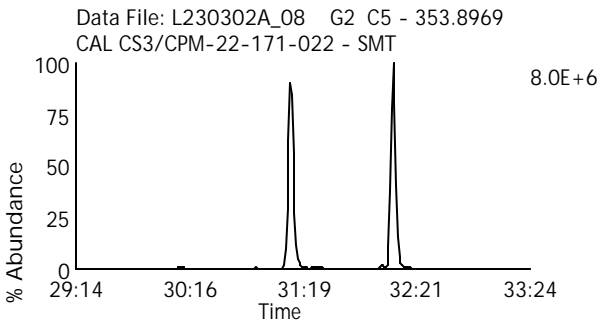
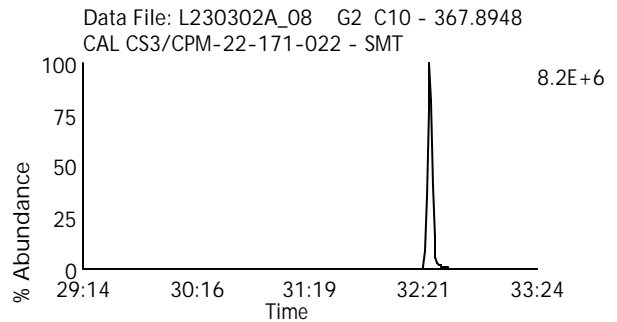
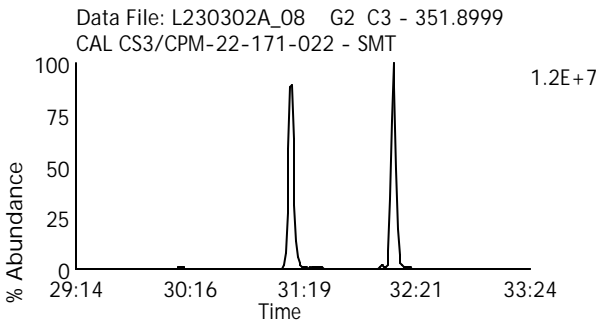
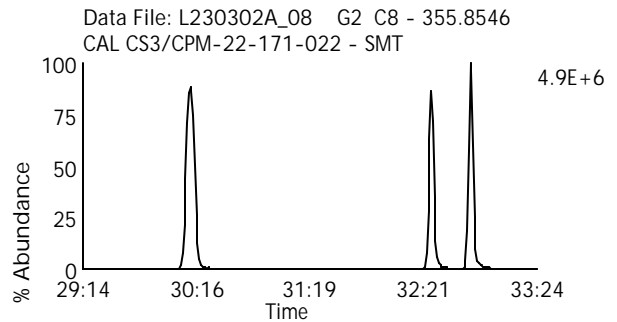
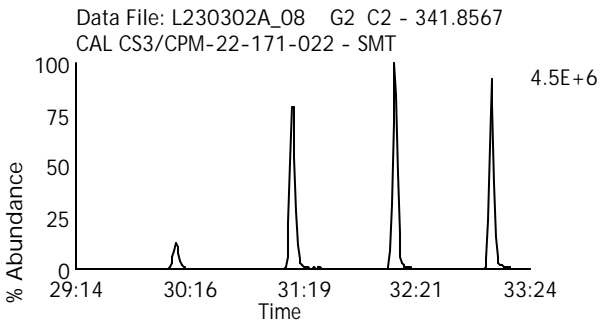
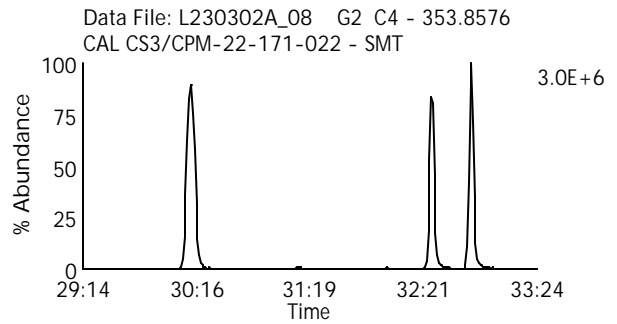
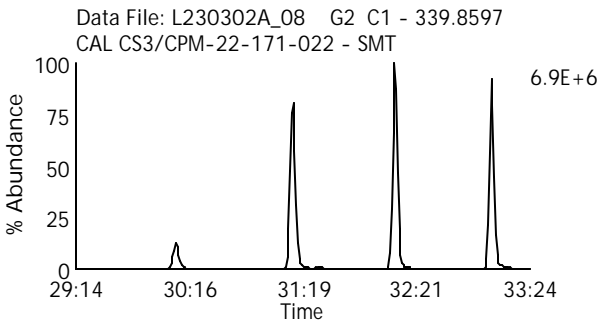
Date Acquired: 3/2/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

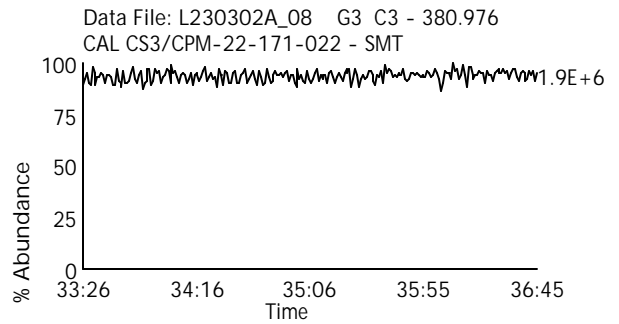
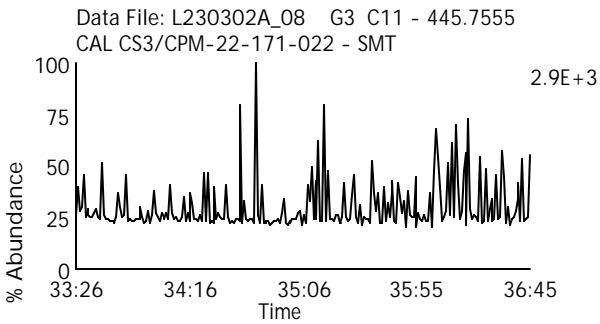
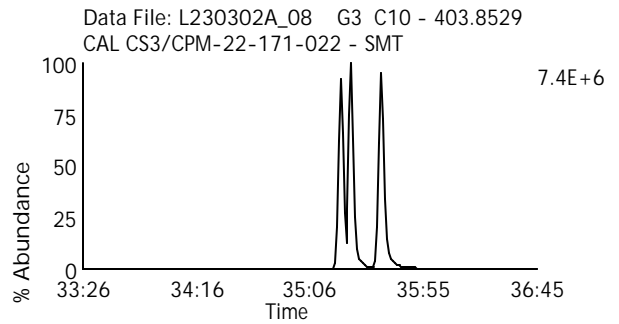
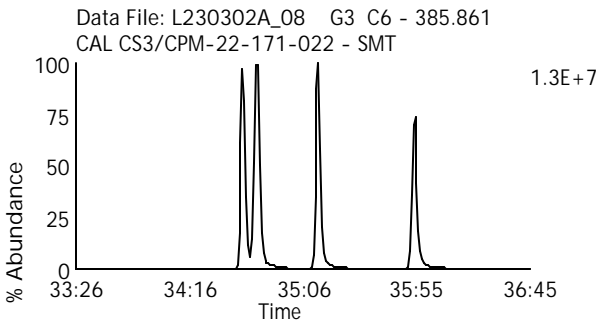
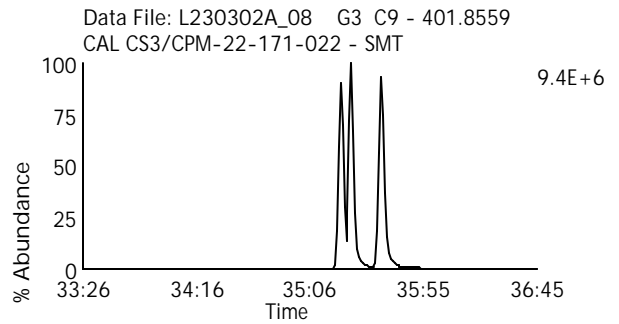
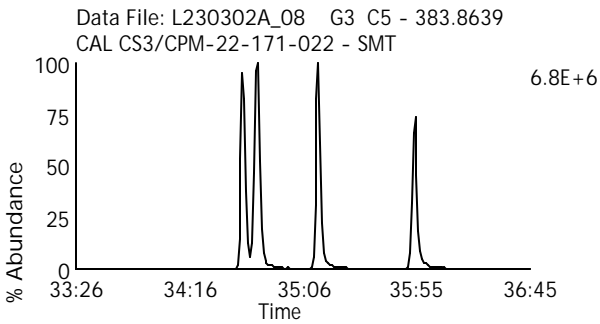
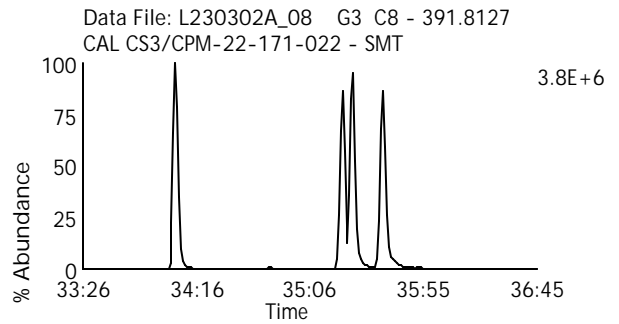
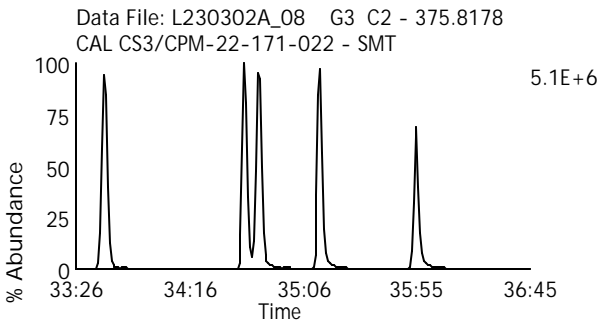
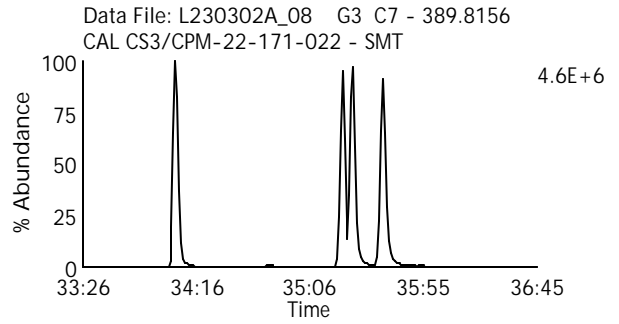
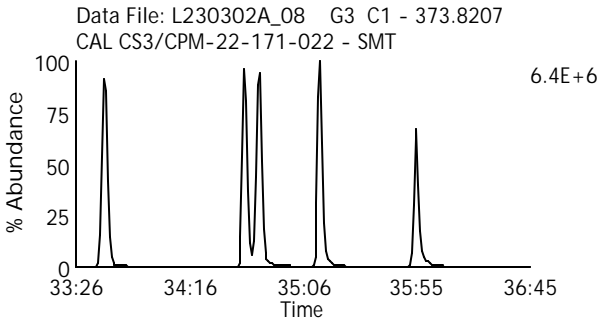
Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230302A_08
Date Acquired: 3/2/2023
Sample Description: CAL CS3/CPM-22-171-022 - SMT

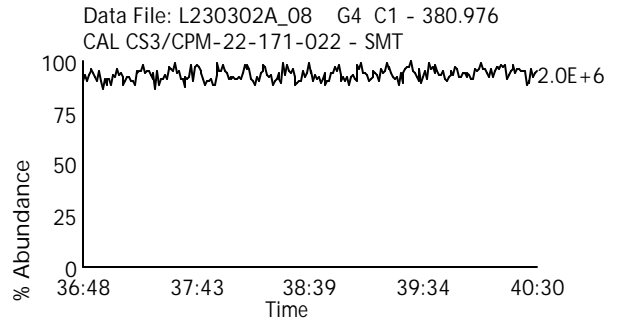
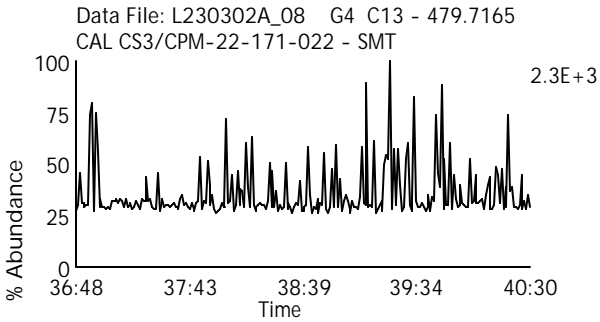
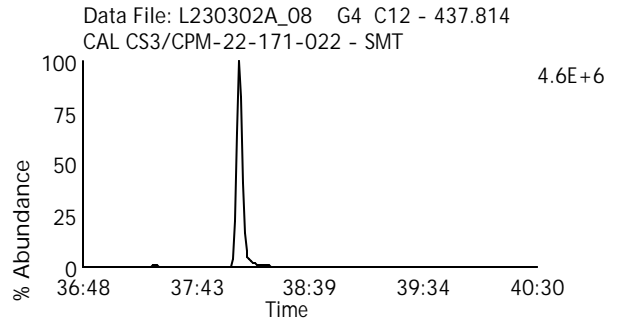
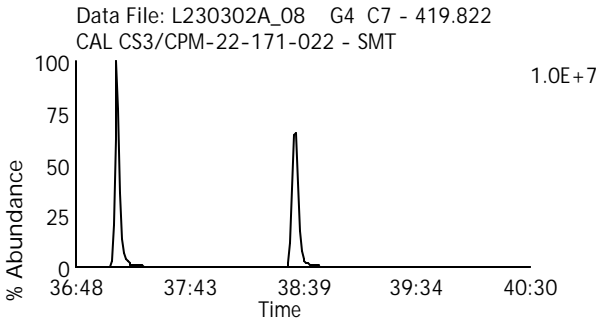
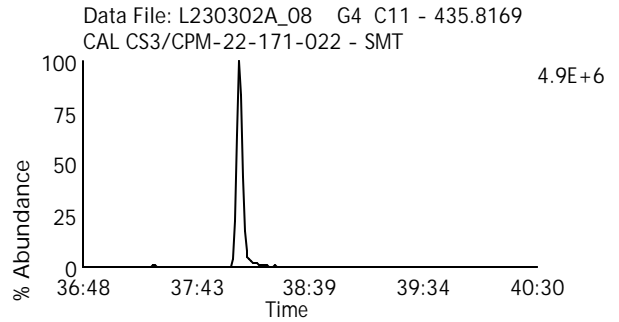
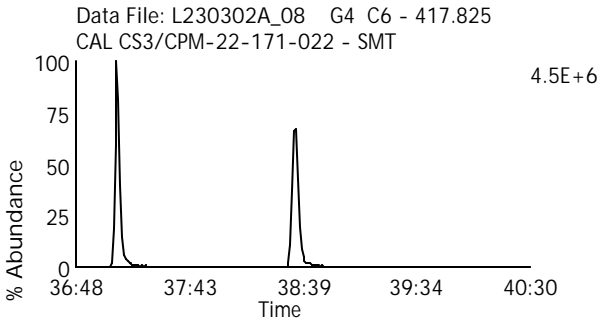
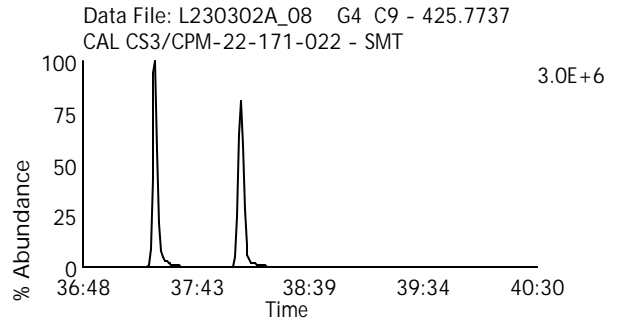
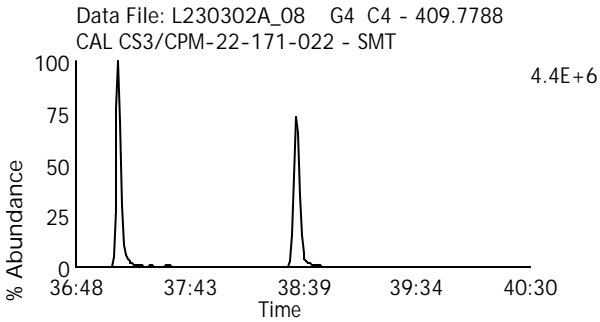
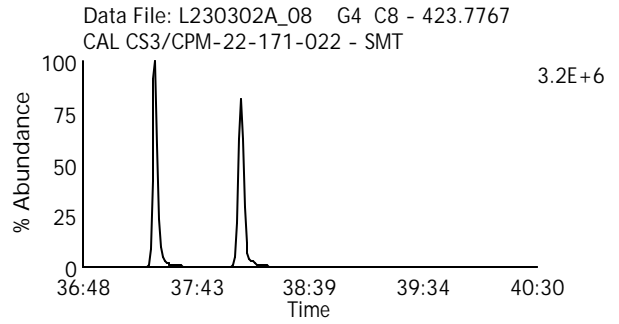
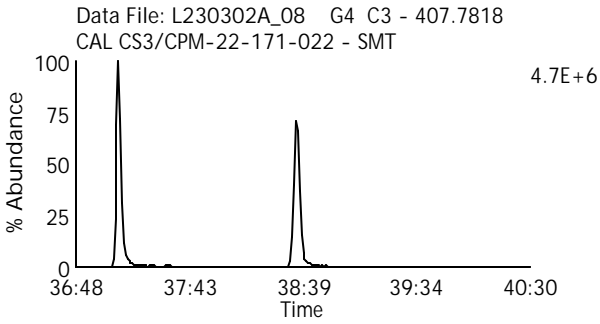
Lab Sample ID: CS3/CPM-22-171-022
Client Sample ID:
Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230302A_08
Date Acquired: 3/2/2023
Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022
Client Sample ID:
Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230302A_08

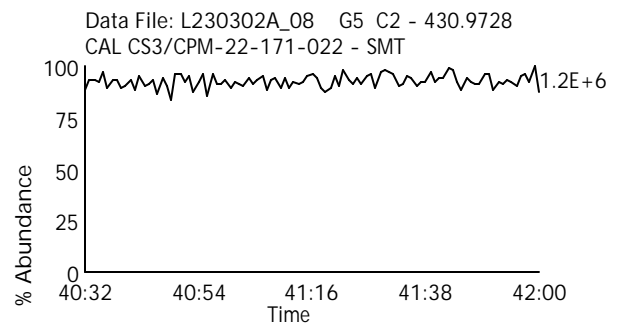
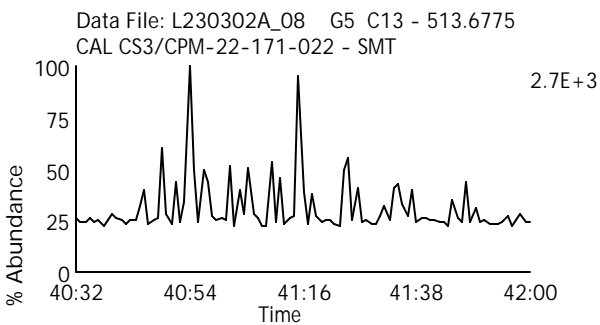
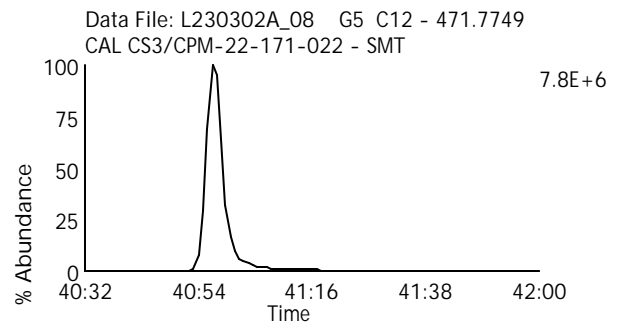
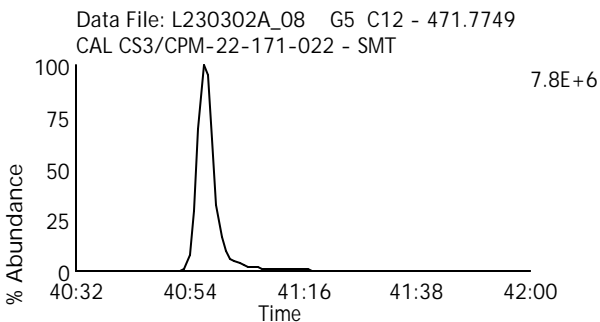
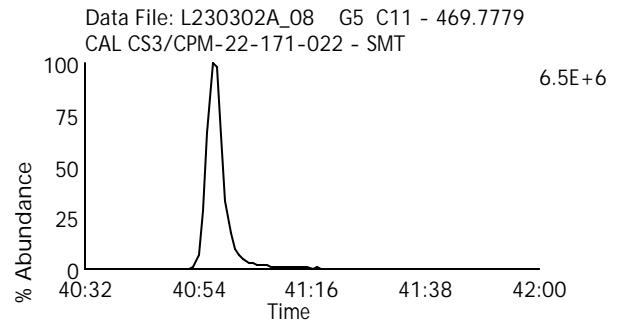
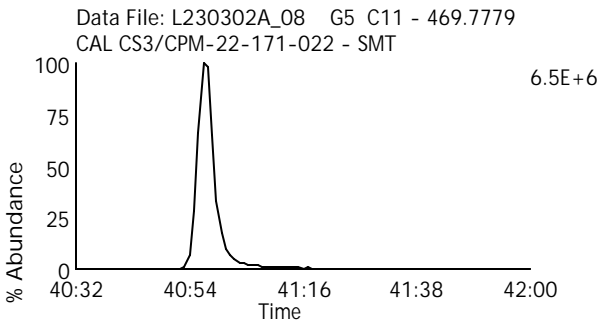
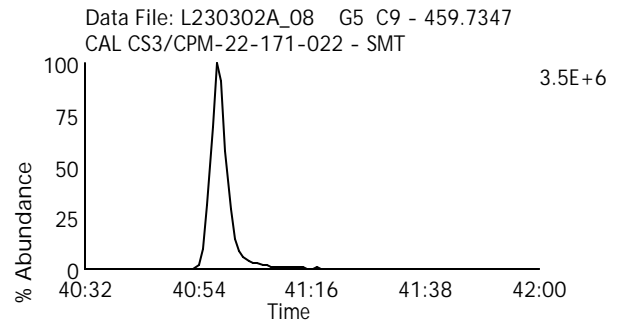
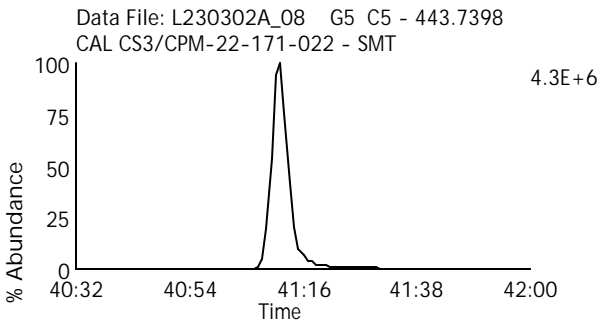
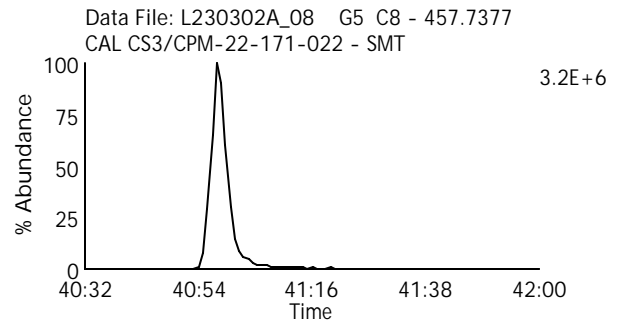
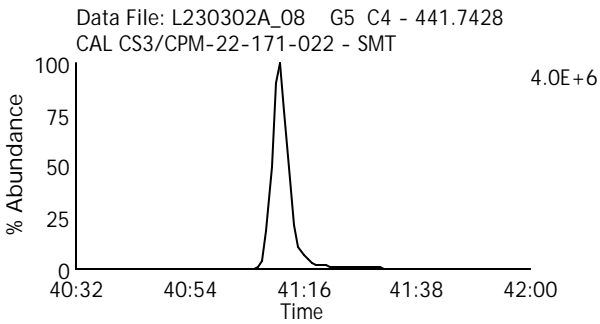
Date Acquired: 3/2/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230302A_12

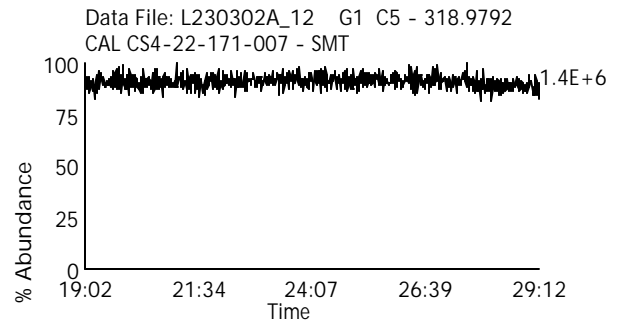
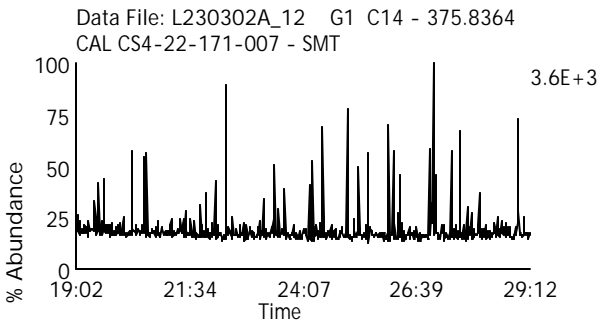
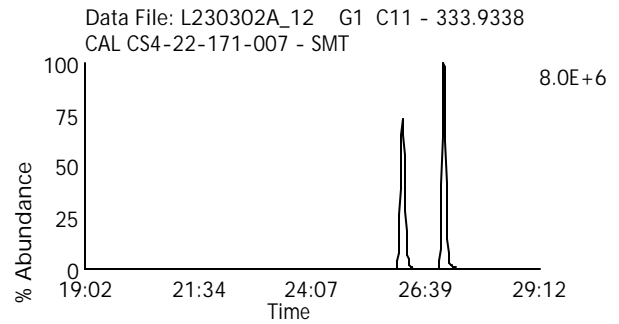
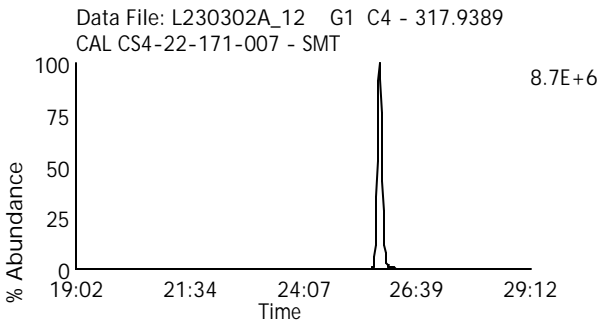
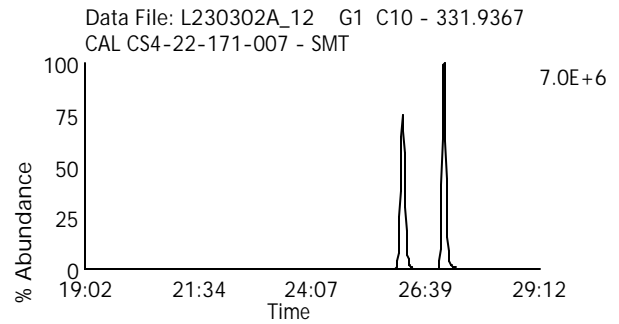
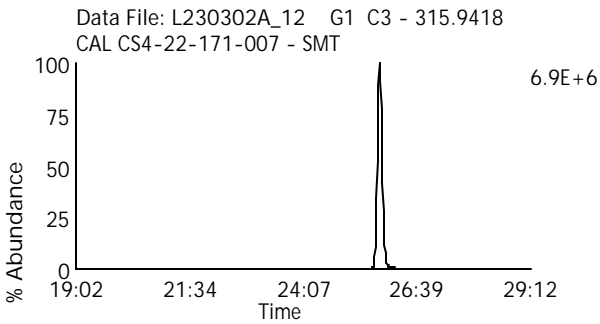
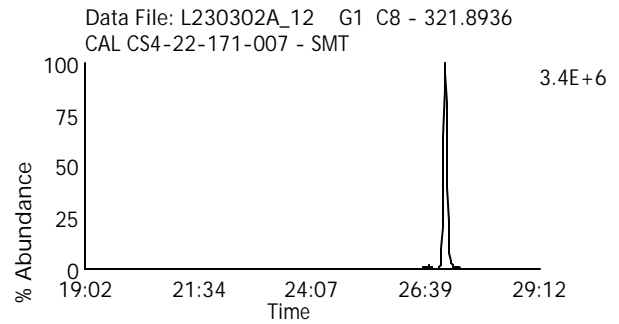
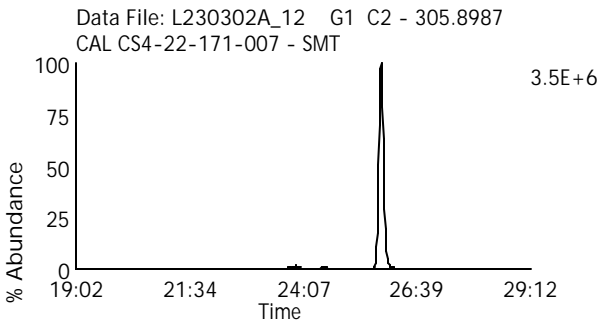
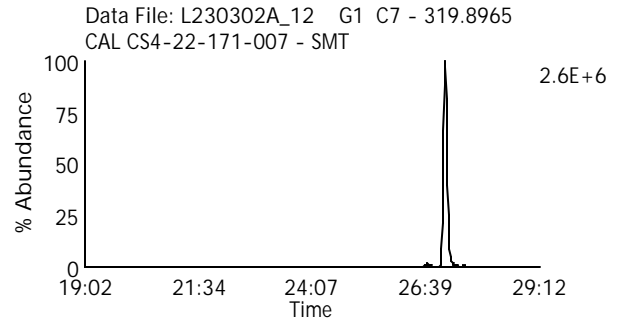
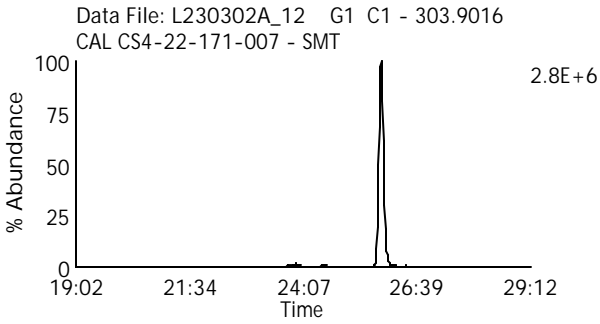
Date Acquired: 3/2/2023

Sample Description: CAL CS4-22-171-007 - SMT

Lab Sample ID: CS4-22-171-007

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230302A_12

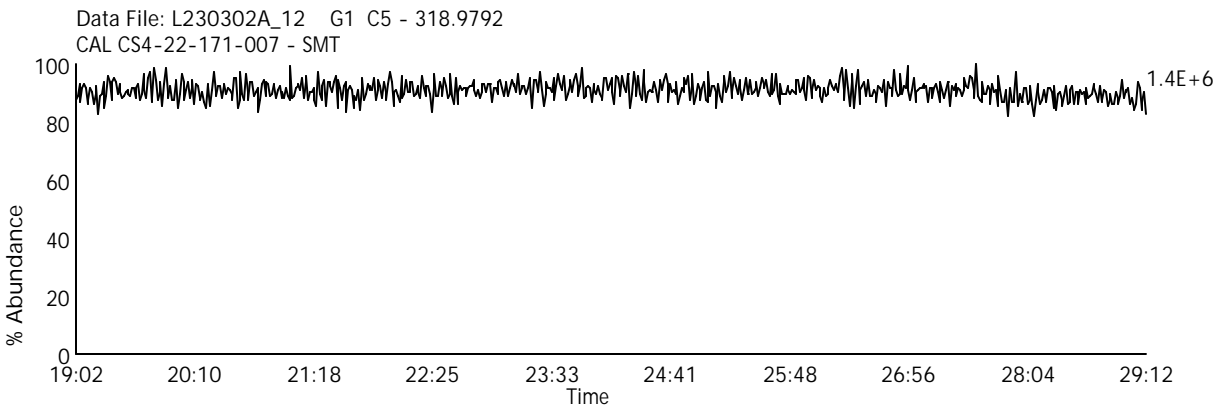
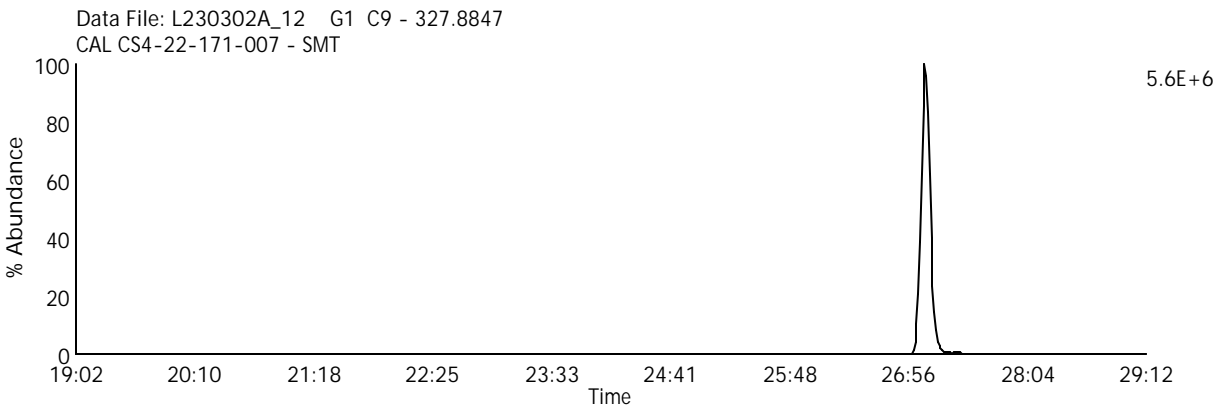
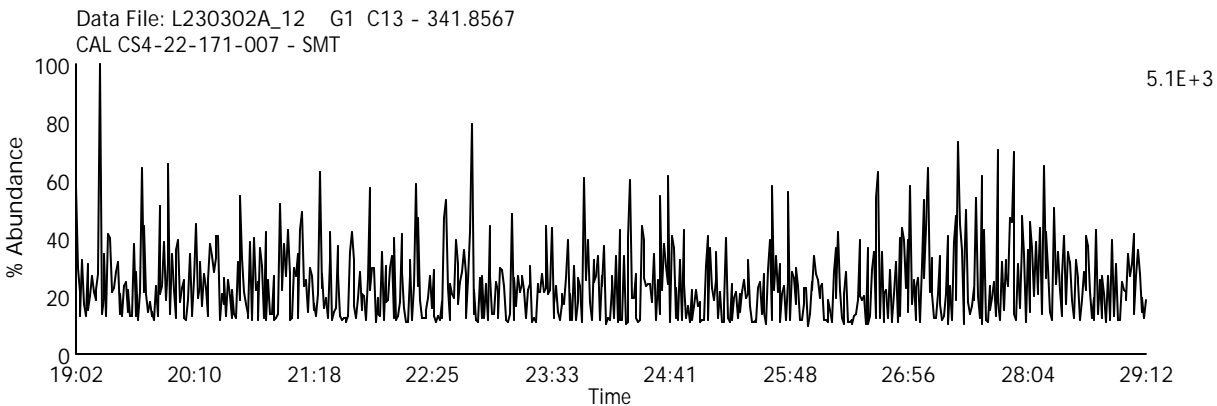
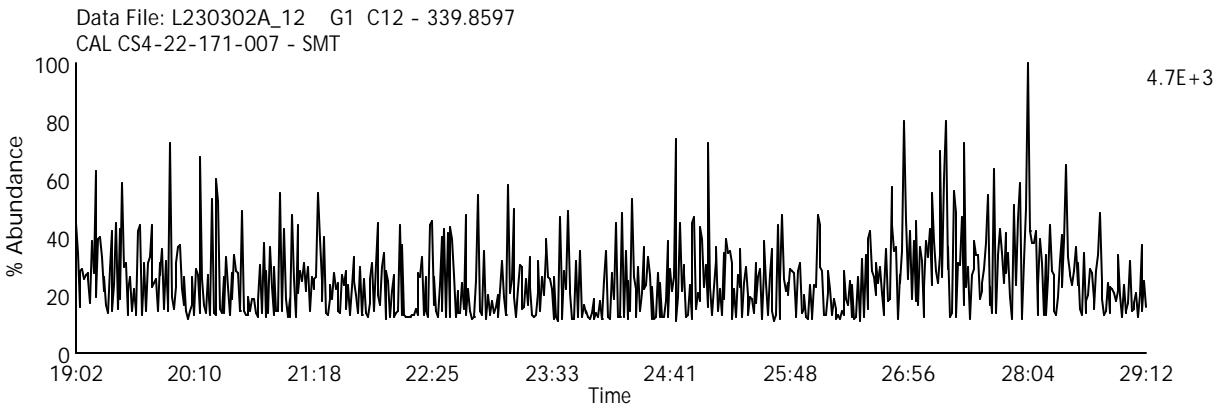
Lab Sample ID: CS4-22-171-007

Date Acquired: 3/2/2023

Client Sample ID:

Sample Description: CAL CS4-22-171-007 - SMT

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230302A_12

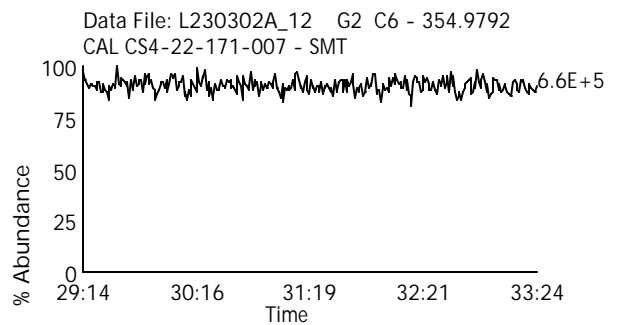
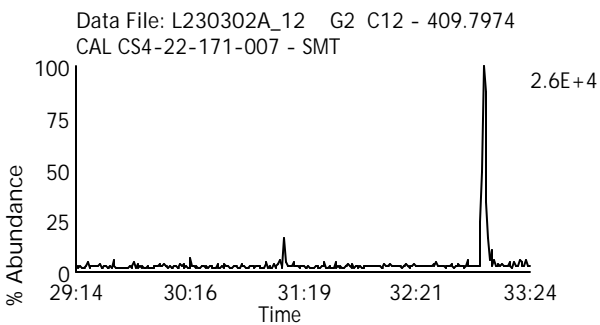
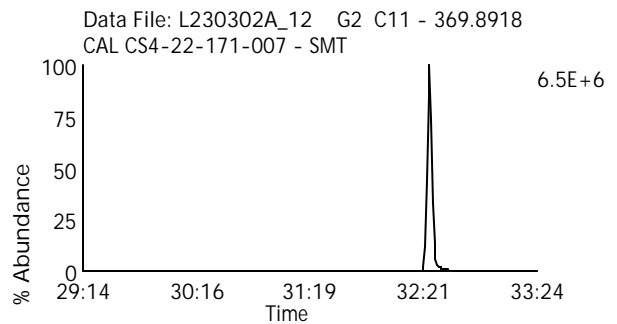
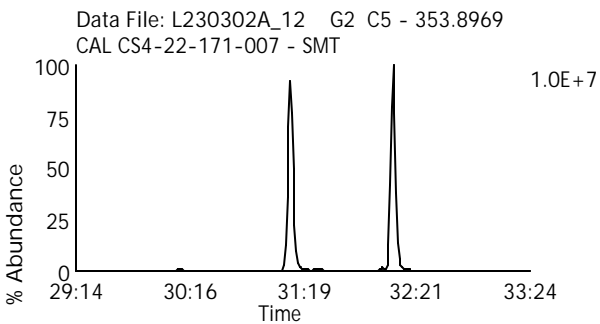
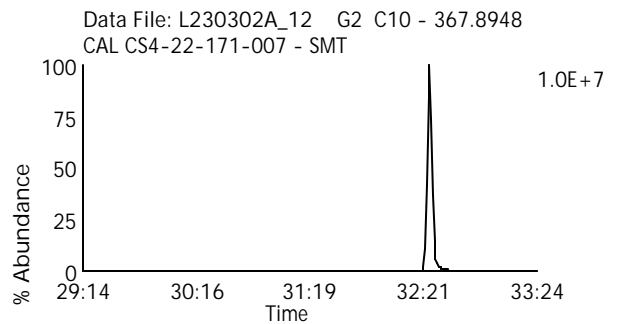
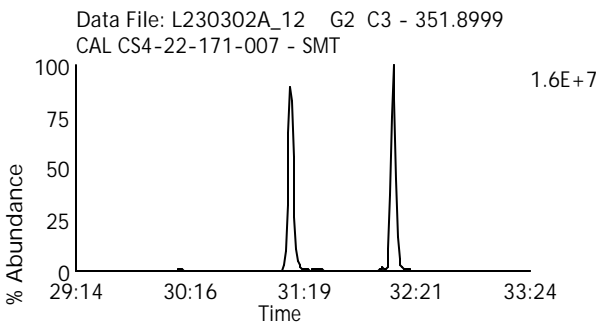
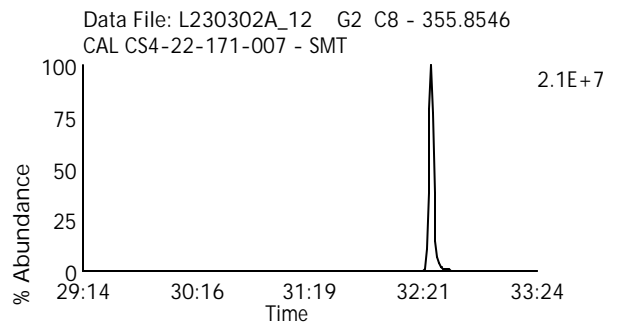
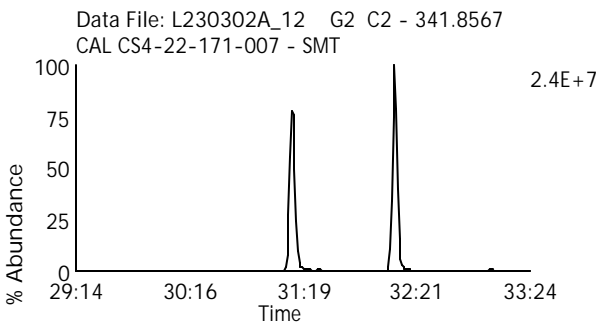
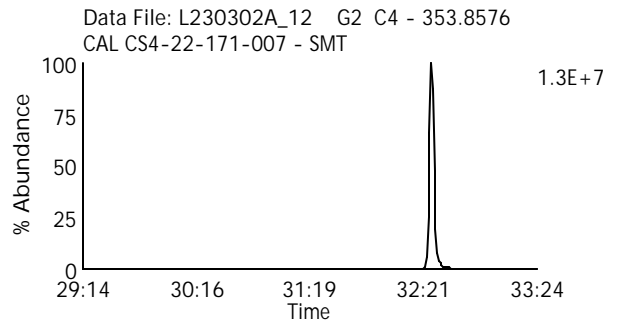
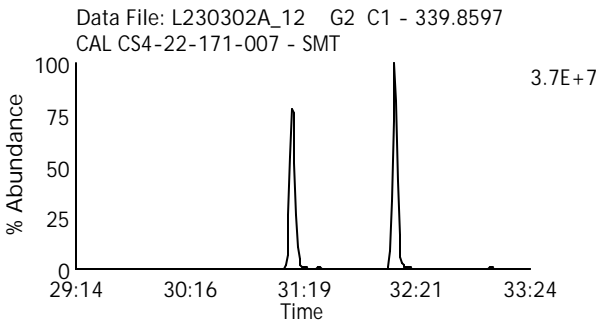
Date Acquired: 3/2/2023

Sample Description: CAL CS4-22-171-007 - SMT

Lab Sample ID: CS4-22-171-007

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230302A_12

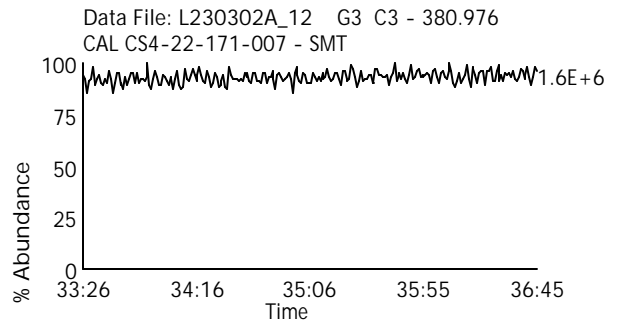
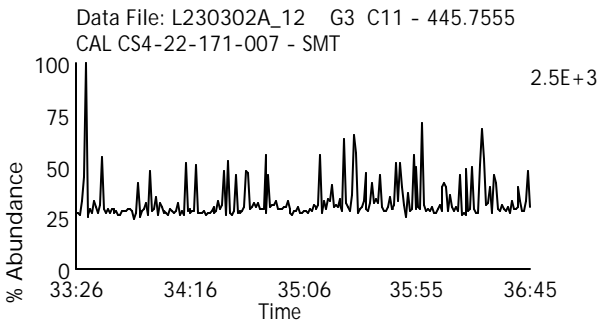
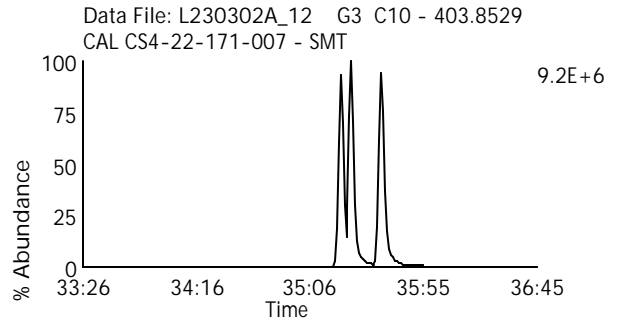
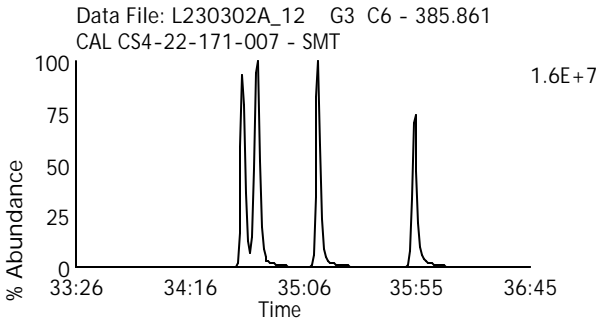
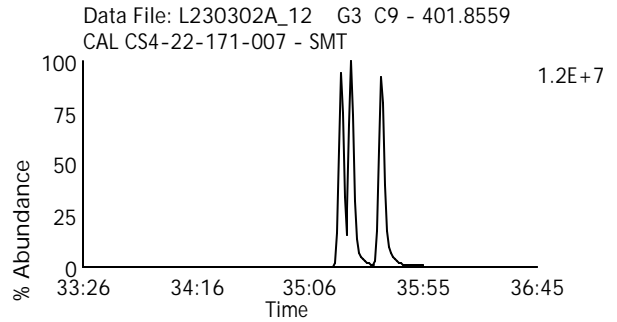
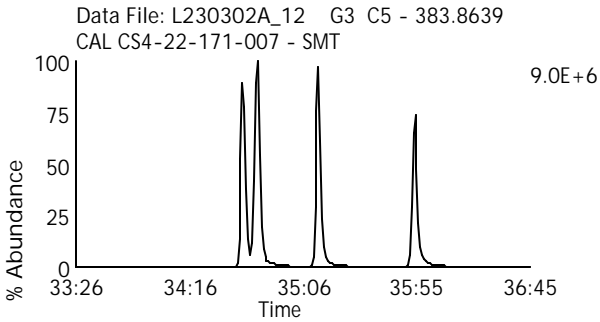
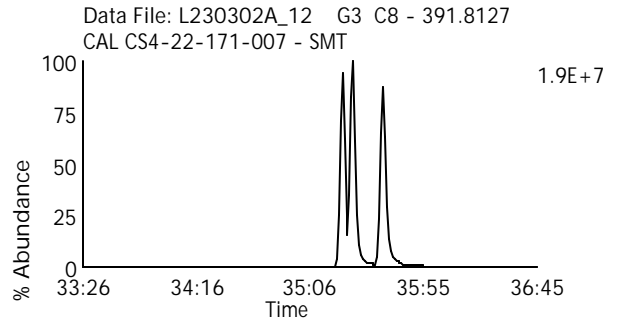
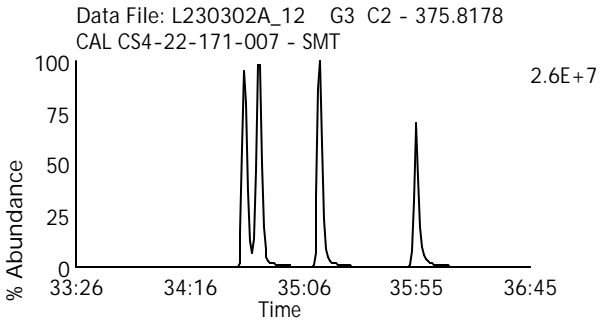
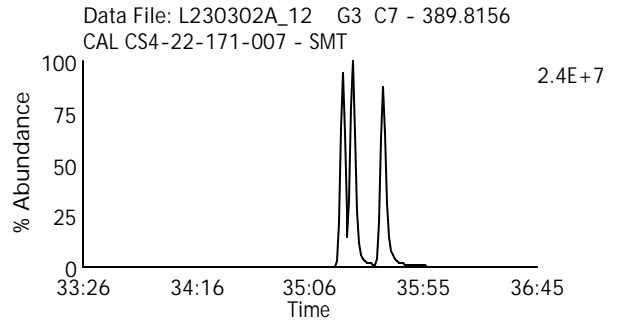
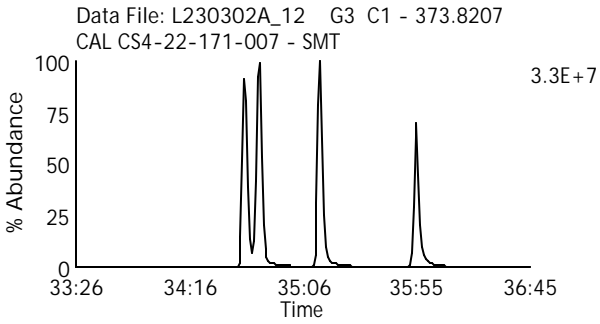
Date Acquired: 3/2/2023

Sample Description: CAL CS4-22-171-007 - SMT

Lab Sample ID: CS4-22-171-007

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230302A_12

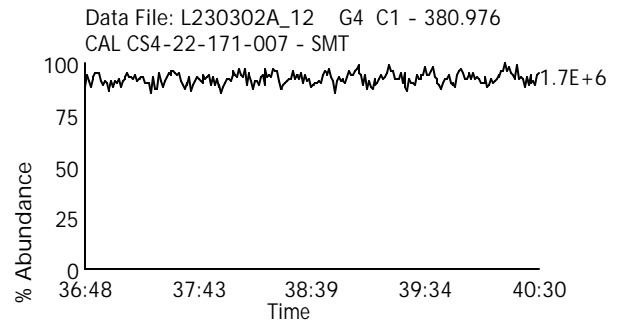
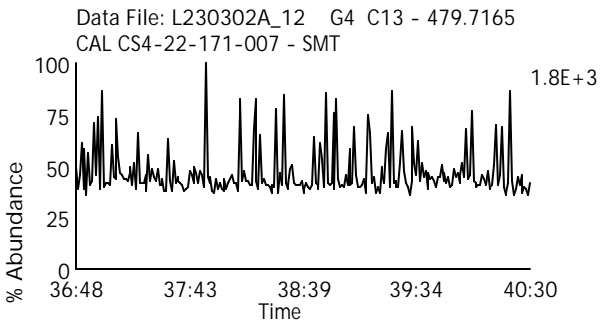
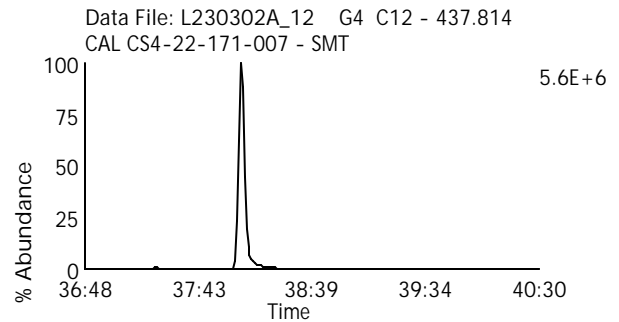
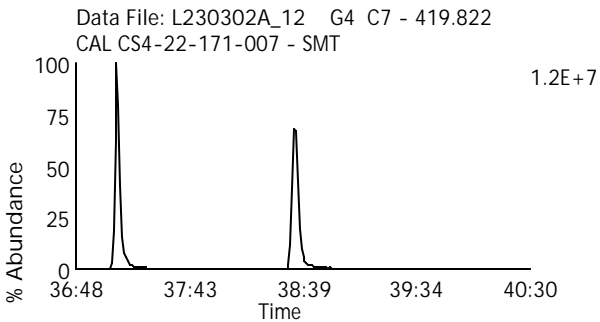
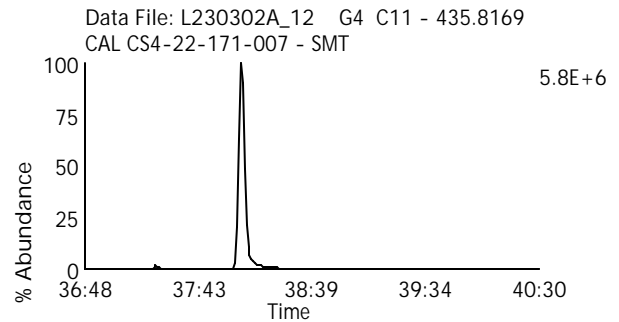
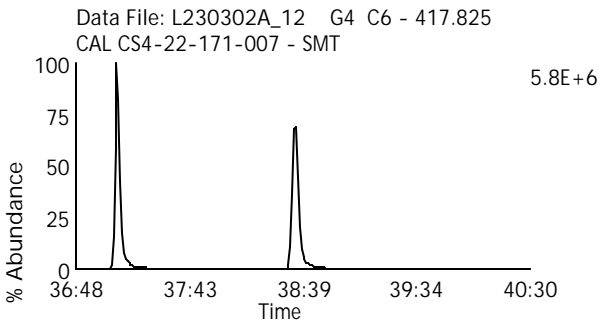
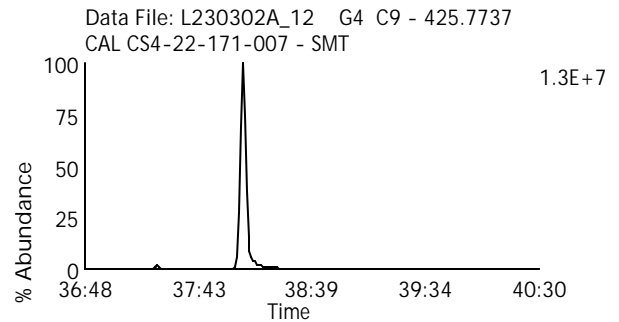
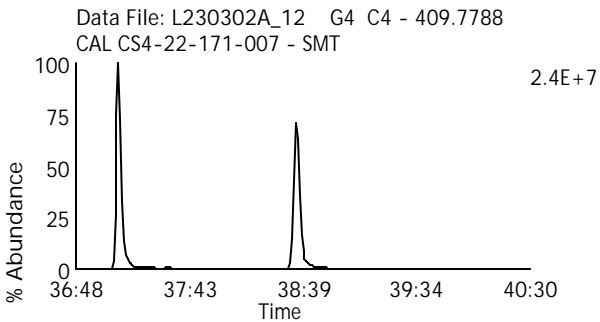
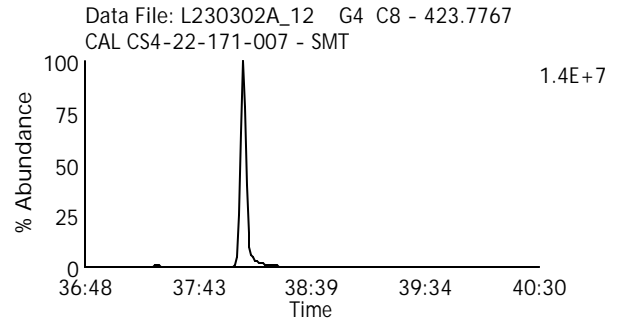
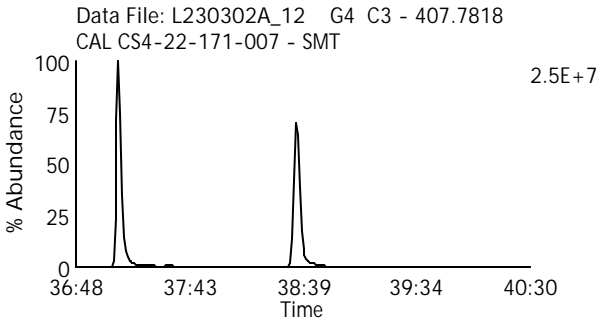
Date Acquired: 3/2/2023

Sample Description: CAL CS4-22-171-007 - SMT

Lab Sample ID: CS4-22-171-007

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230302A_12

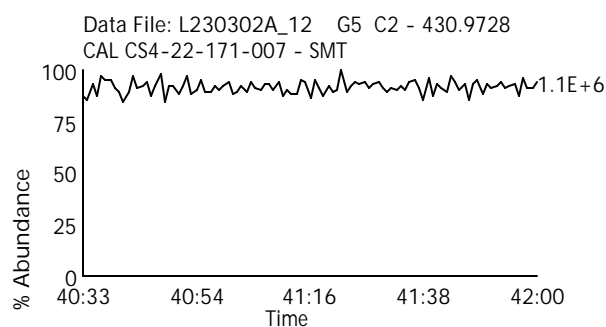
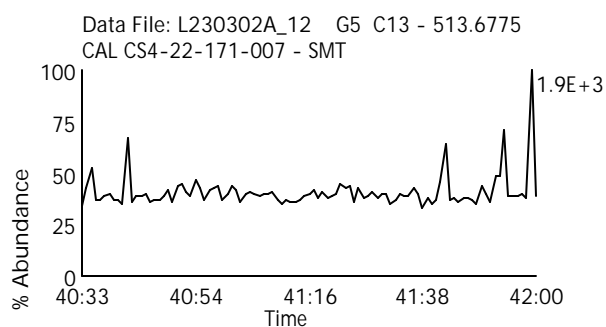
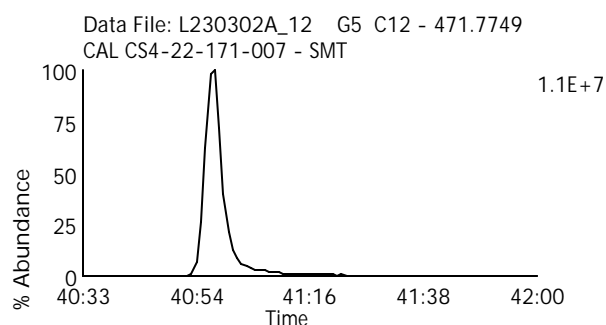
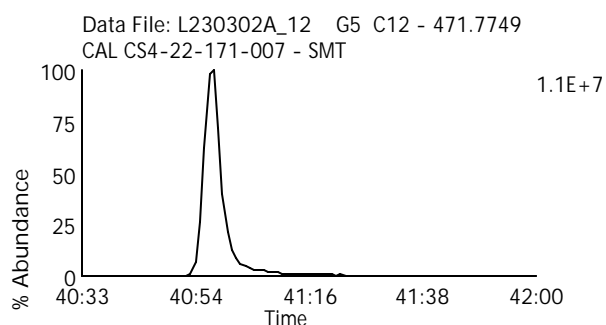
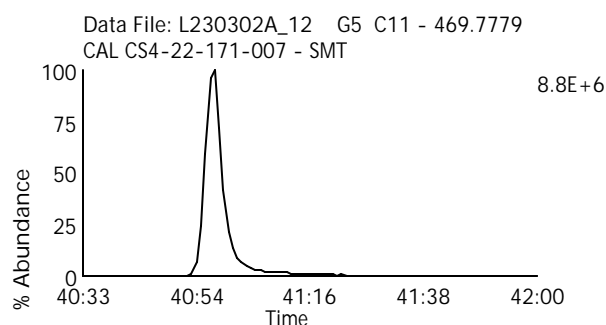
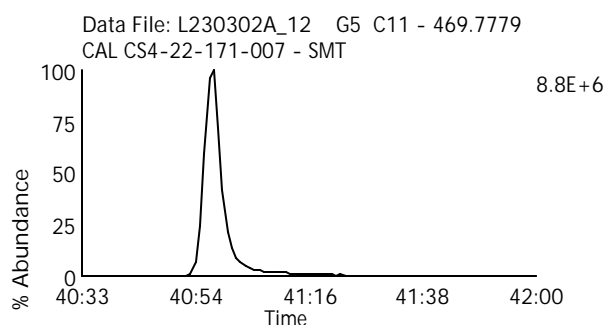
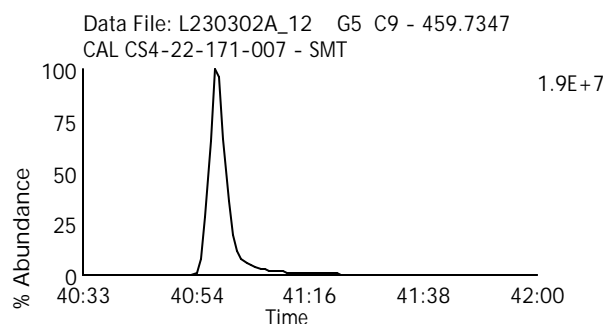
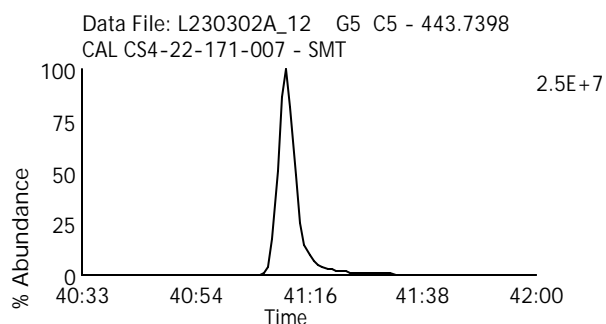
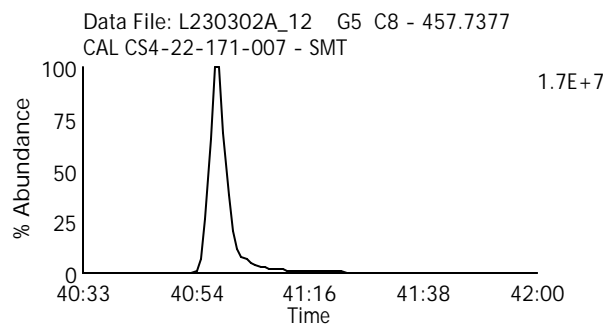
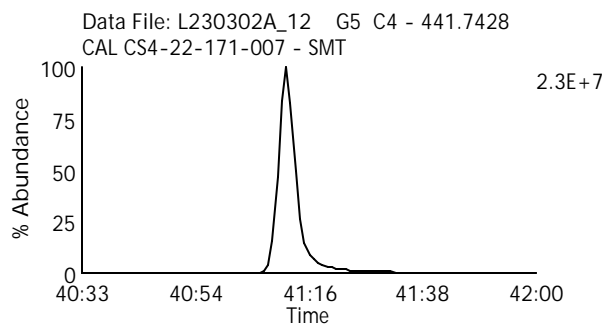
Date Acquired: 3/2/2023

Sample Description: CAL CS4-22-171-007 - SMT

Lab Sample ID: CS4-22-171-007

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230302A_11

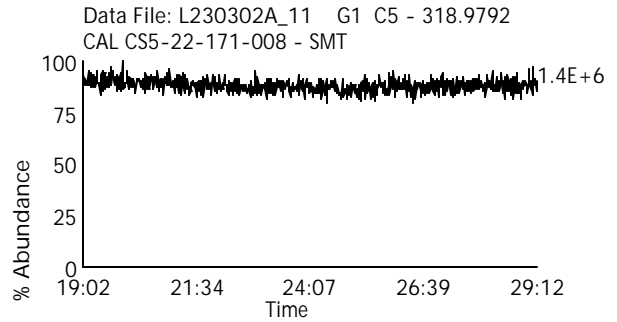
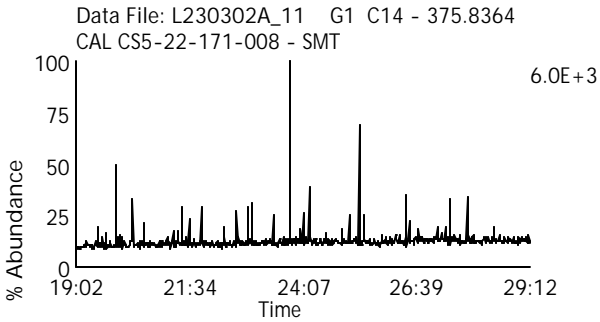
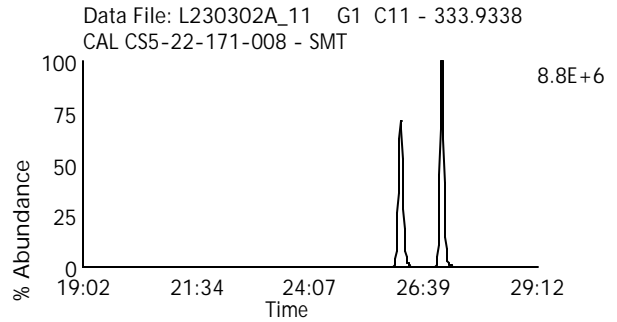
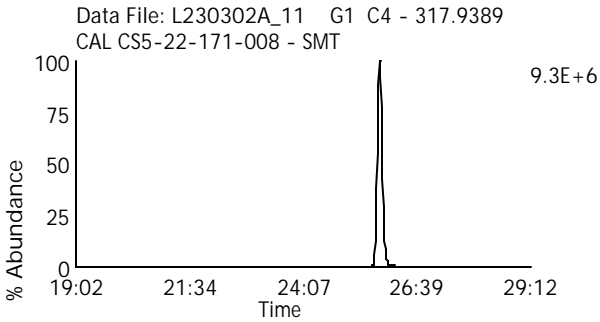
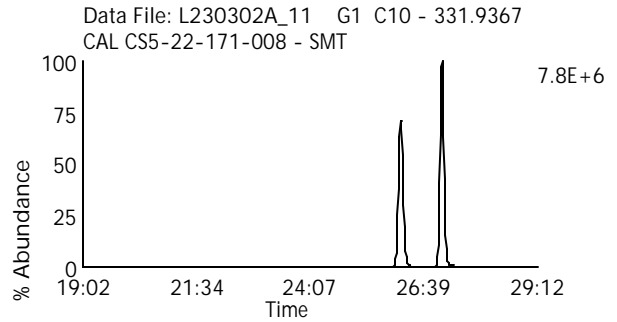
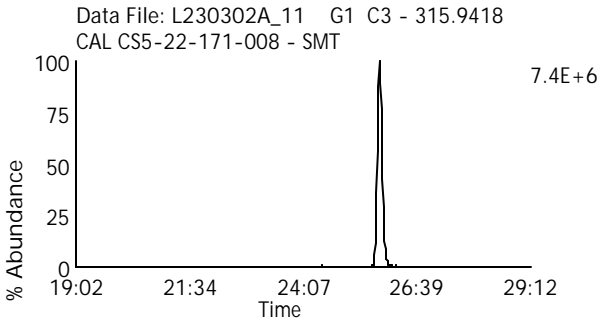
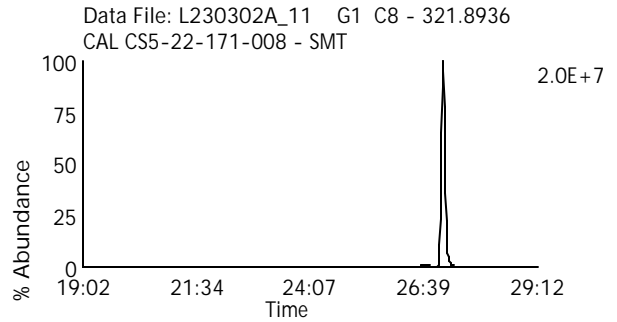
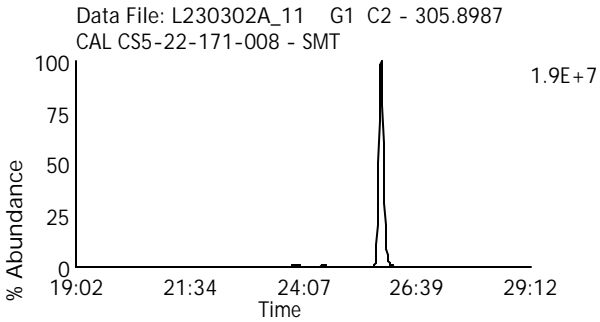
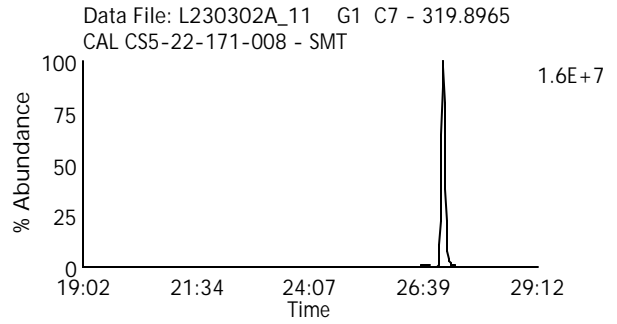
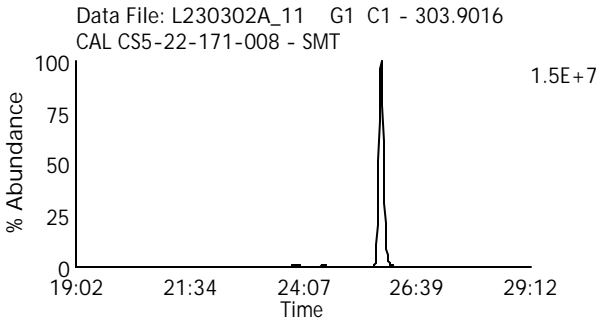
Date Acquired: 3/2/2023

Sample Description: CAL CS5-22-171-008 - SMT

Lab Sample ID: CS5-22-171-008

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230302A_11

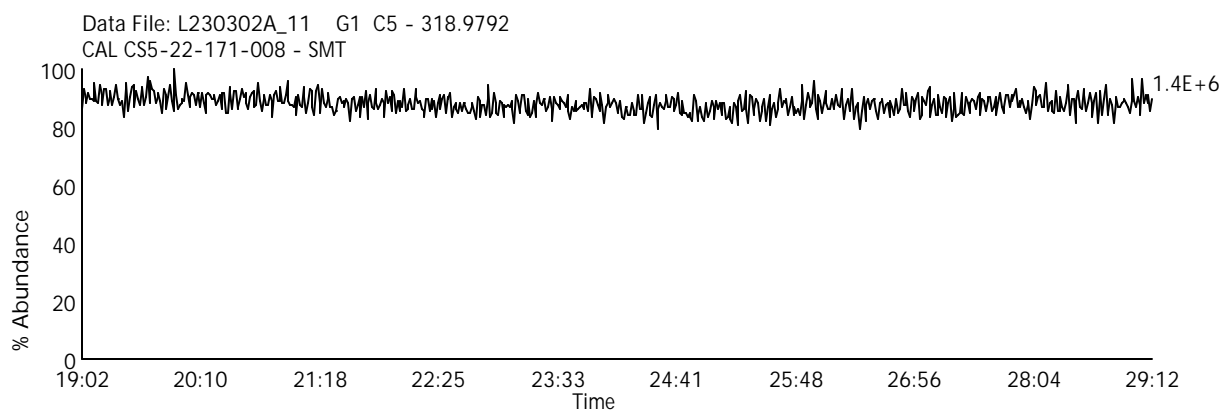
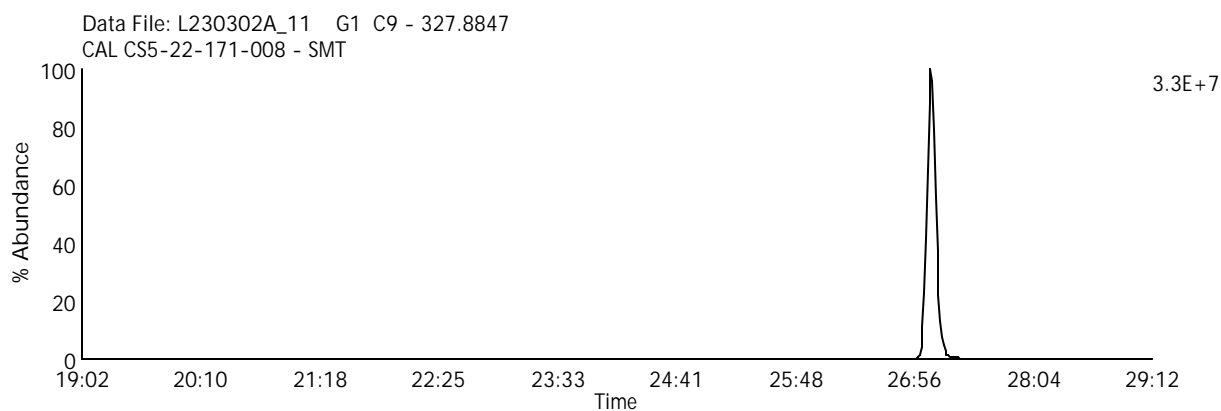
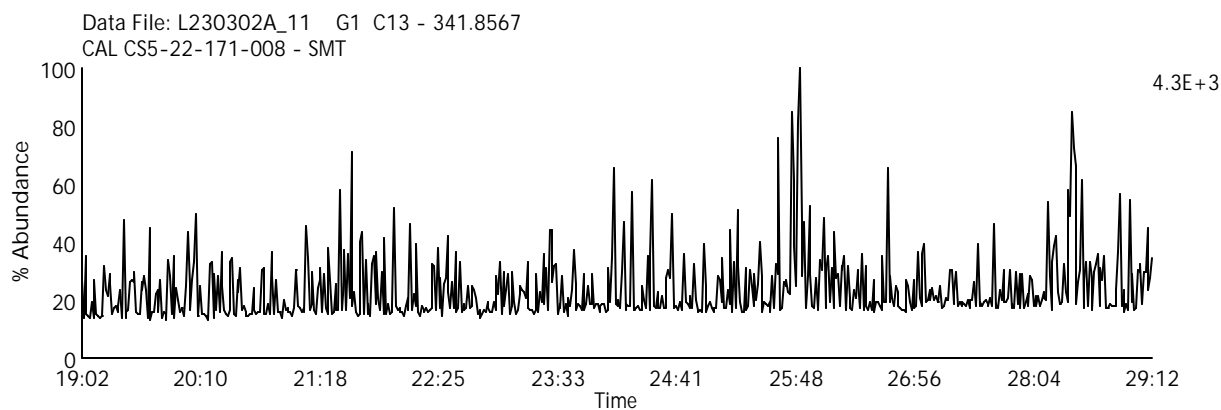
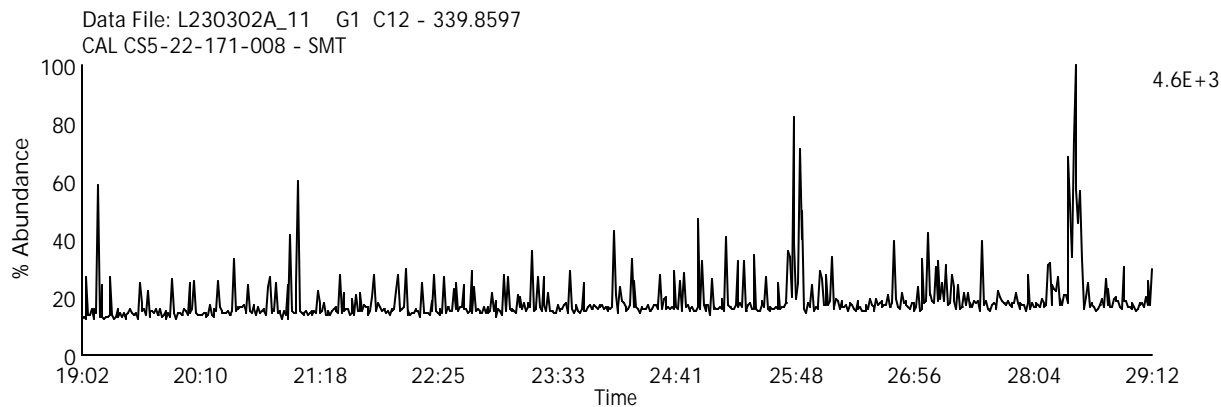
Lab Sample ID: CS5-22-171-008

Date Acquired: 3/2/2023

Client Sample ID:

Sample Description: CAL CS5-22-171-008 - SMT

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230302A_11

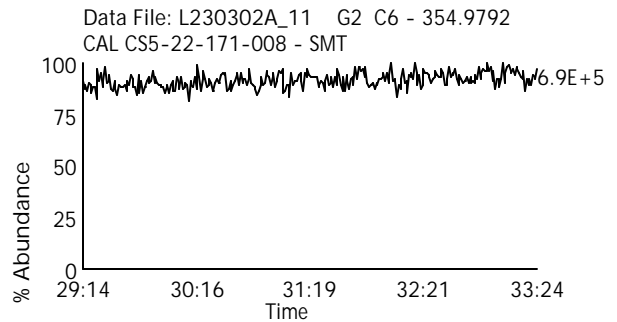
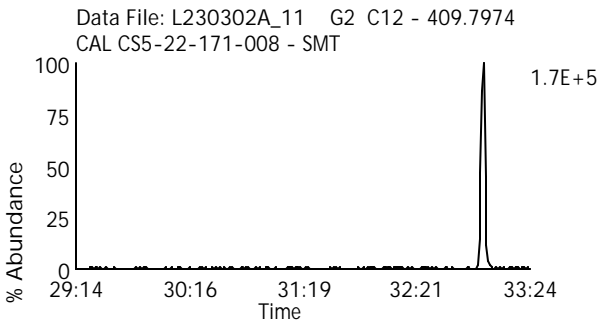
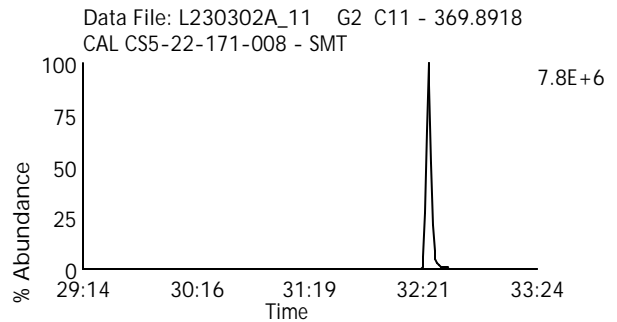
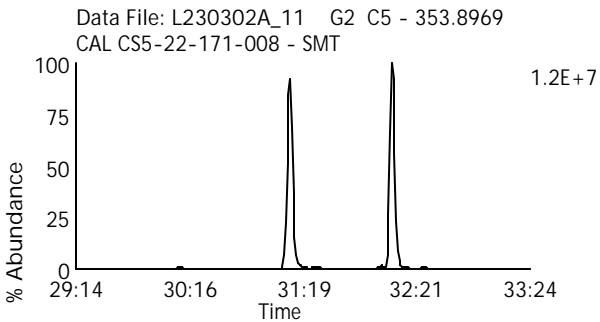
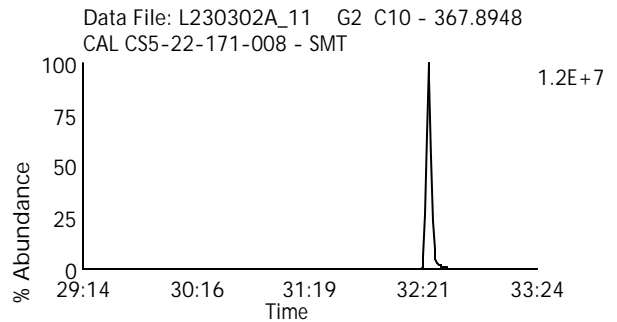
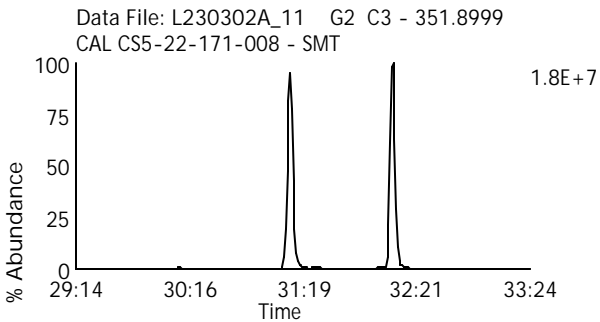
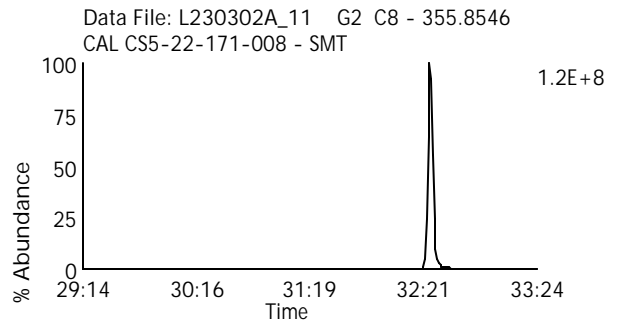
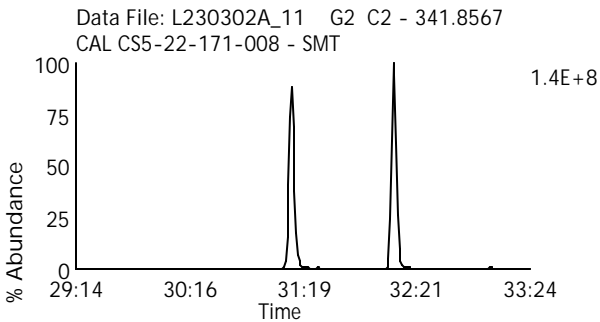
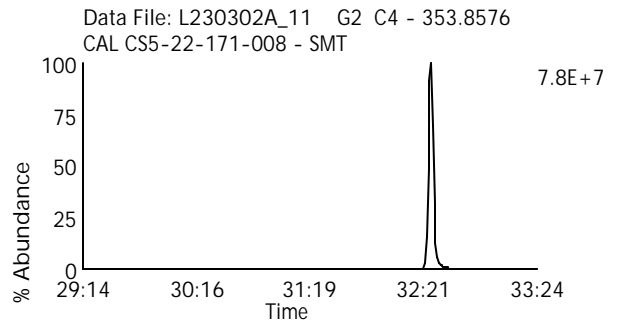
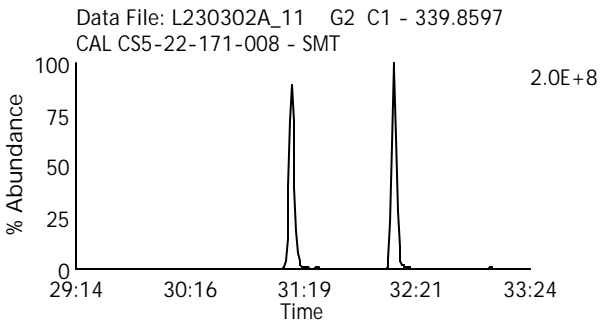
Date Acquired: 3/2/2023

Sample Description: CAL CS5-22-171-008 - SMT

Lab Sample ID: CS5-22-171-008

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230302A_11

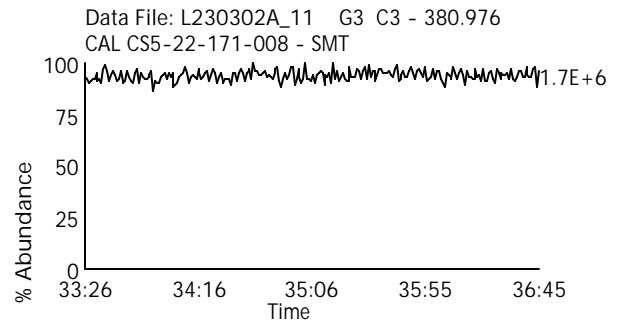
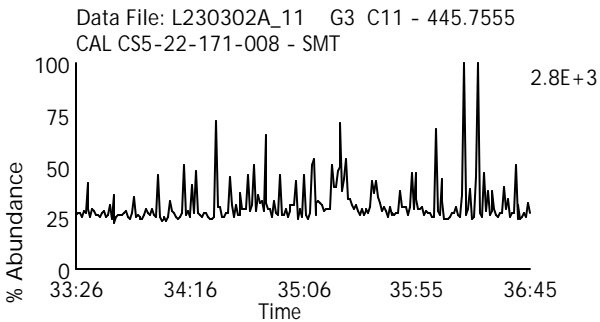
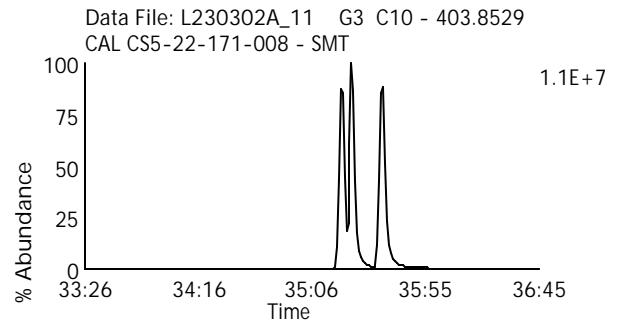
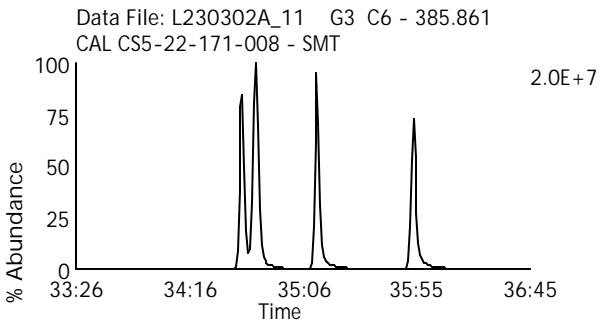
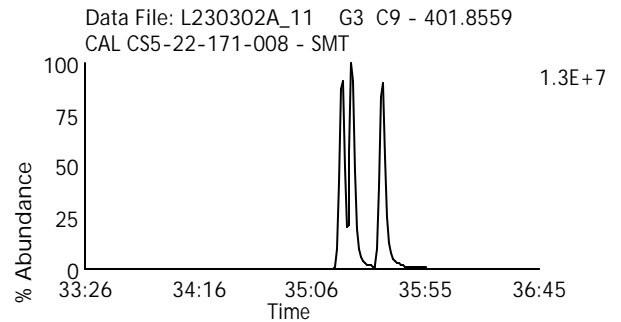
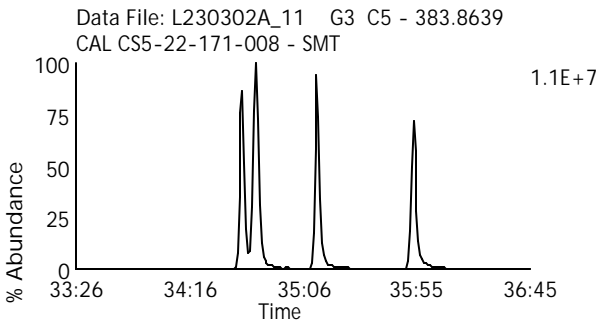
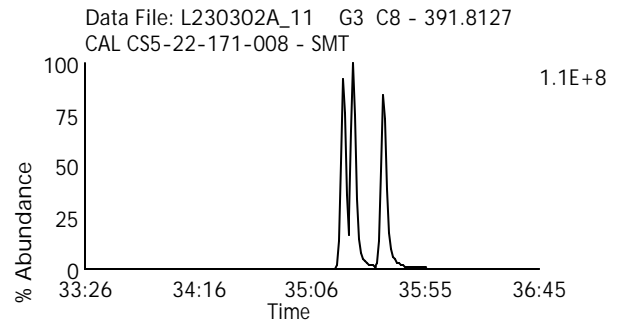
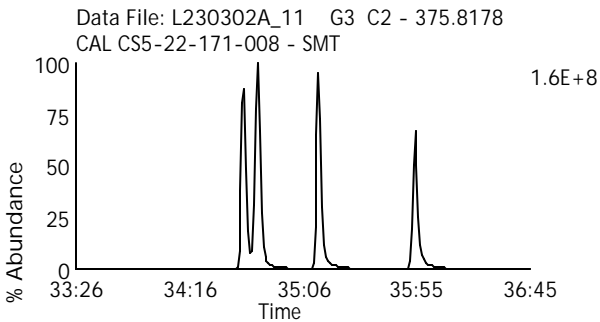
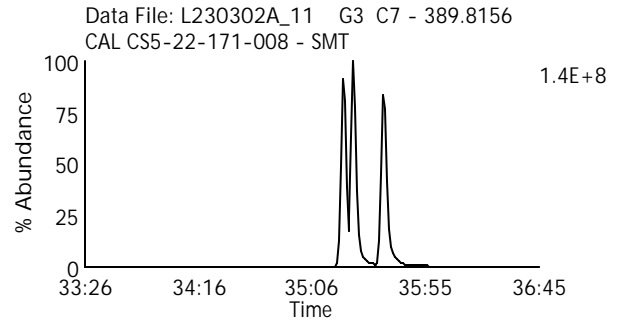
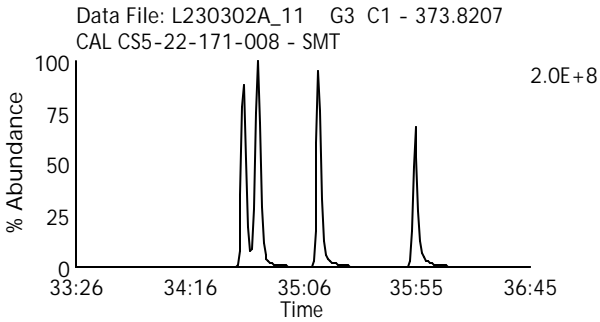
Date Acquired: 3/2/2023

Sample Description: CAL CS5-22-171-008 - SMT

Lab Sample ID: CS5-22-171-008

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230302A_11

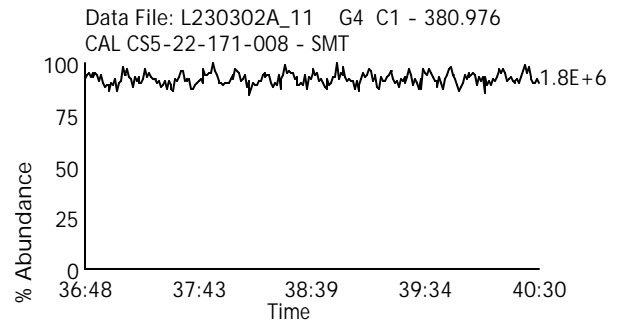
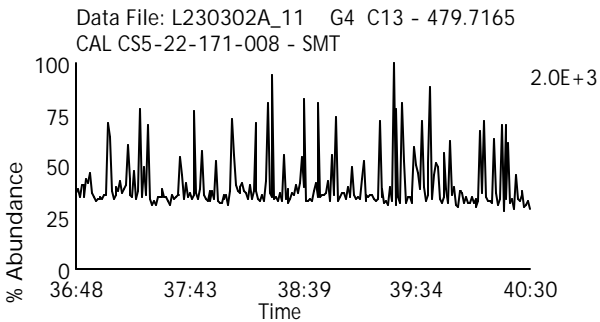
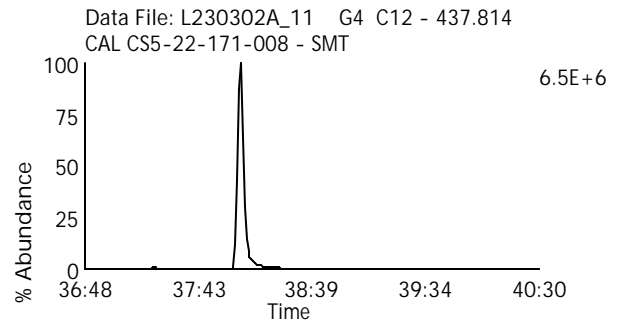
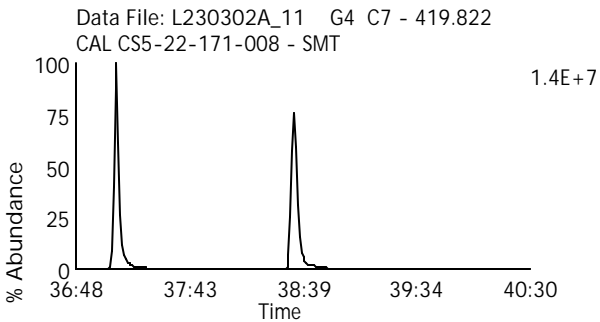
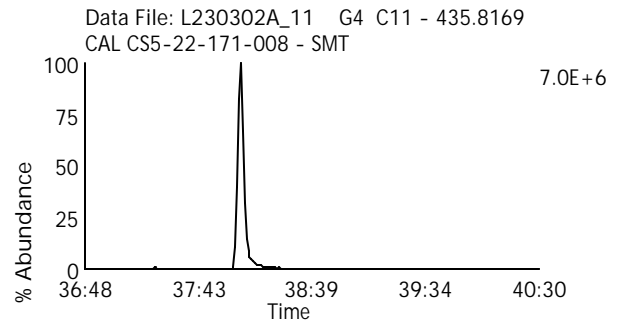
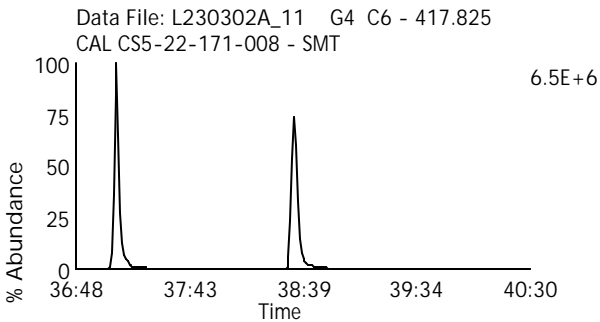
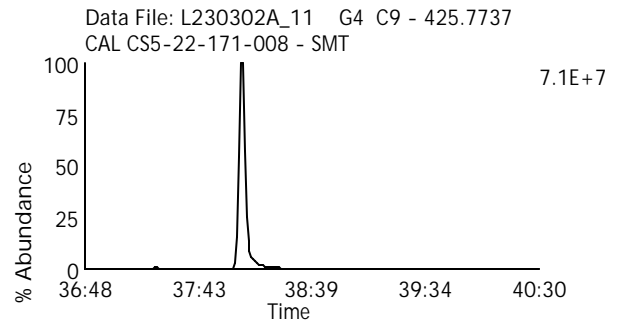
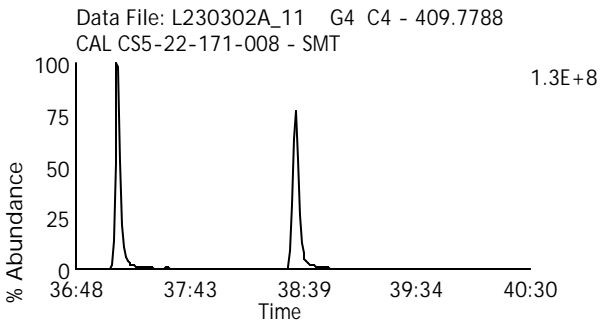
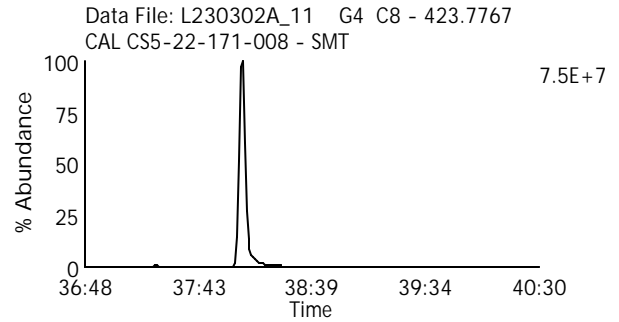
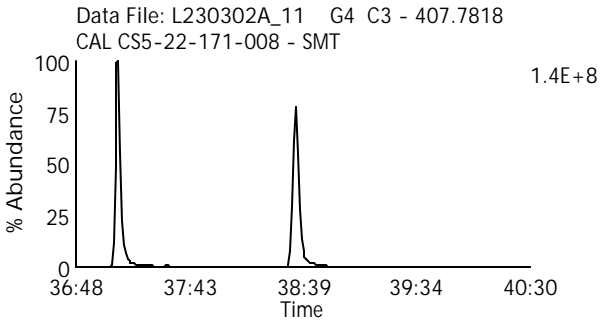
Date Acquired: 3/2/2023

Sample Description: CAL CS5-22-171-008 - SMT

Lab Sample ID: CS5-22-171-008

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230302A_11

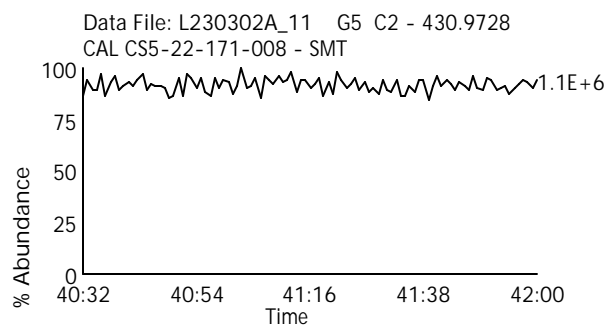
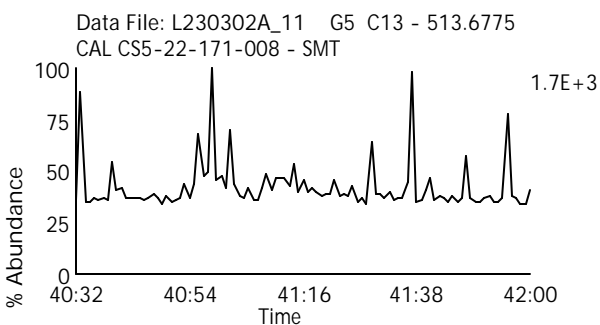
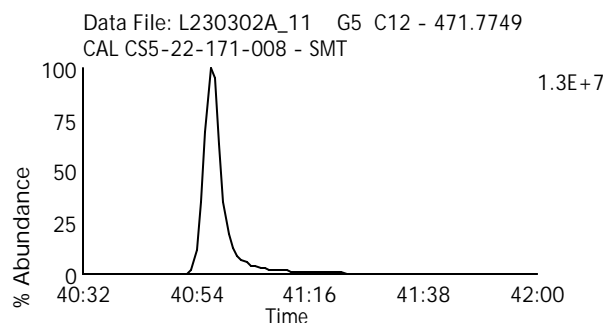
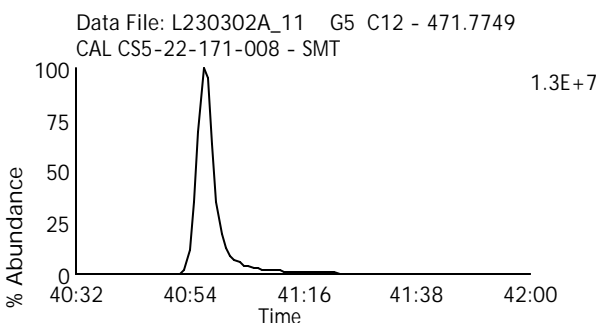
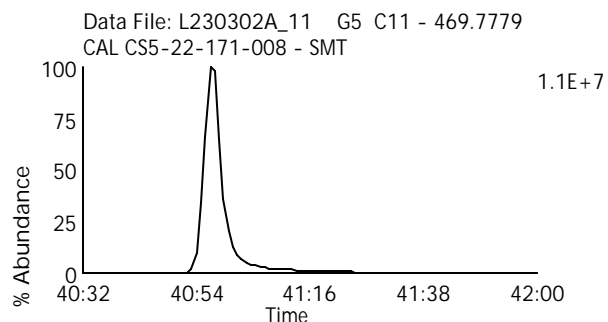
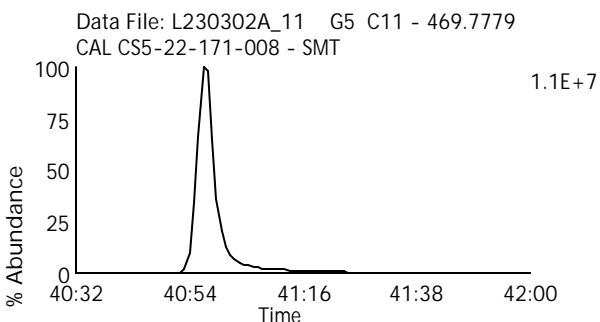
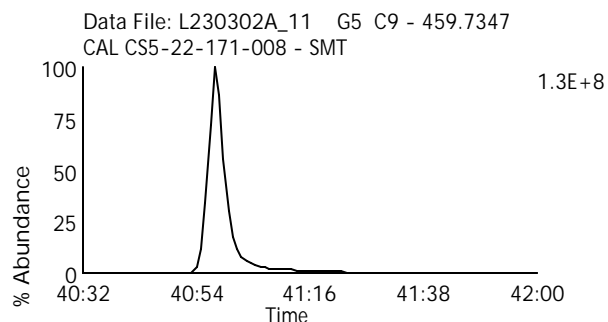
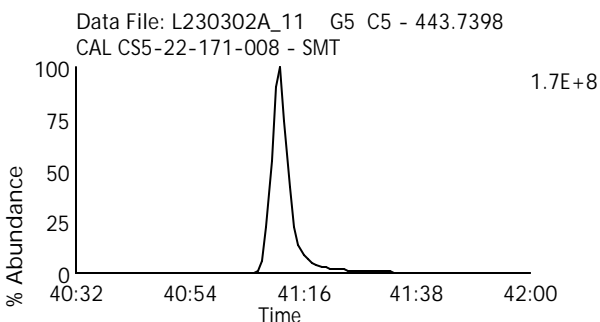
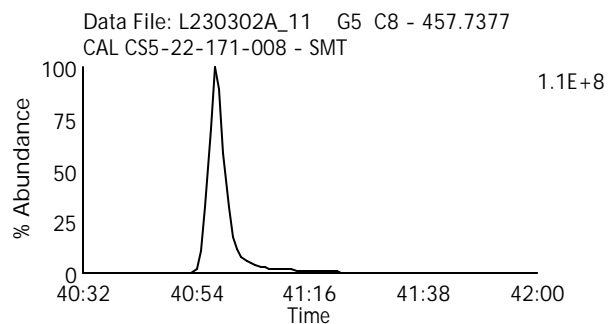
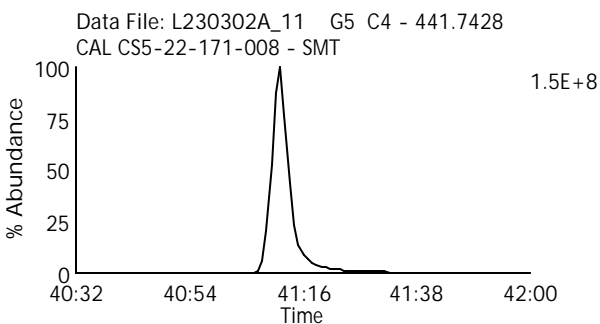
Date Acquired: 3/2/2023

Sample Description: CAL CS5-22-171-008 - SMT

Lab Sample ID: CS5-22-171-008

Client Sample ID:

Instrument: 10MSHR15 (L)



TCDF Confirmation Analysis

Data File Name: U221009A_04

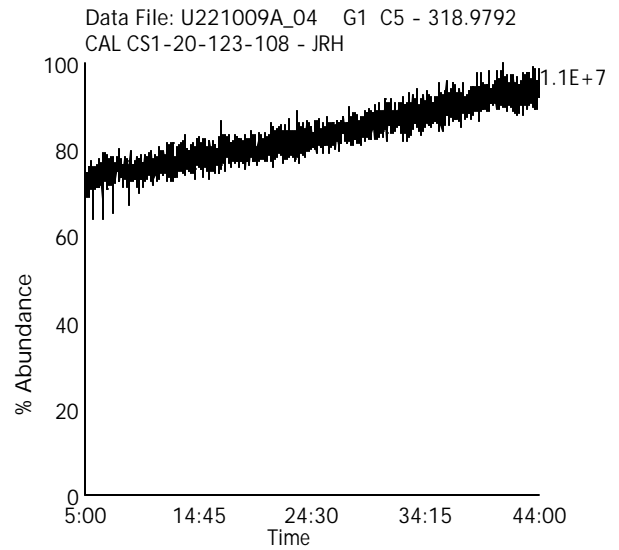
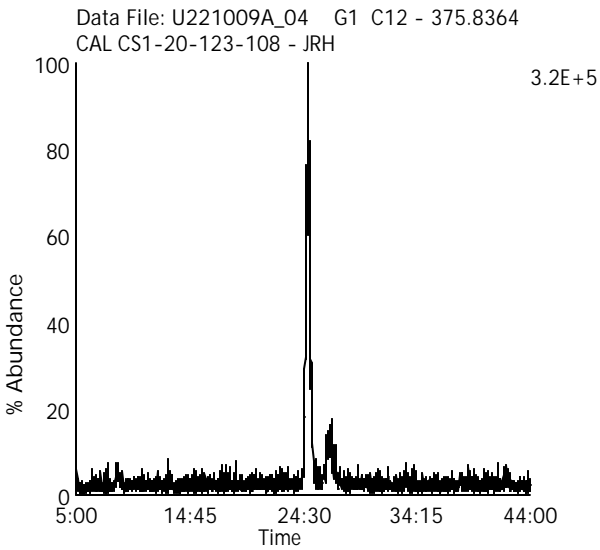
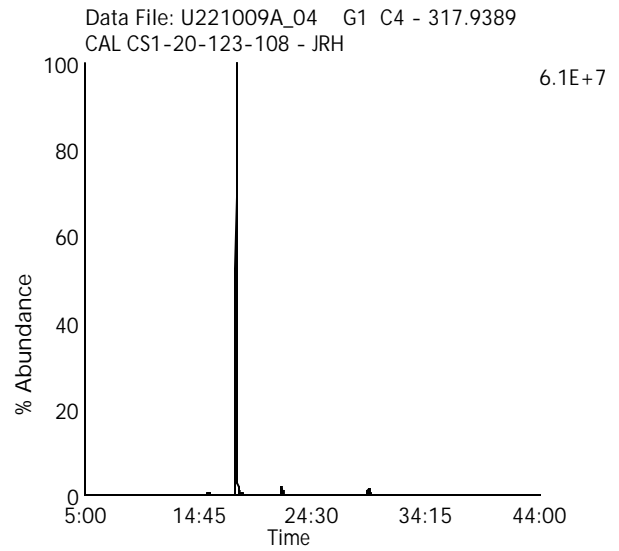
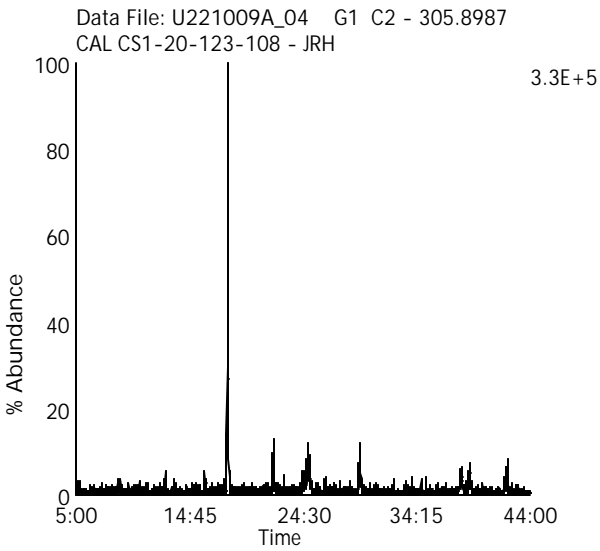
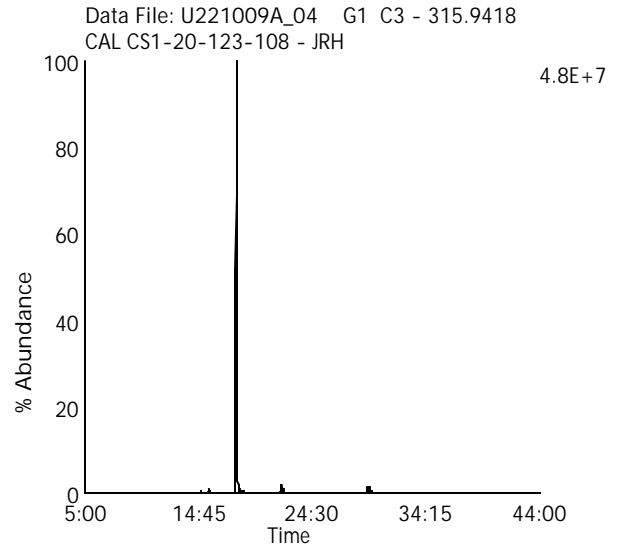
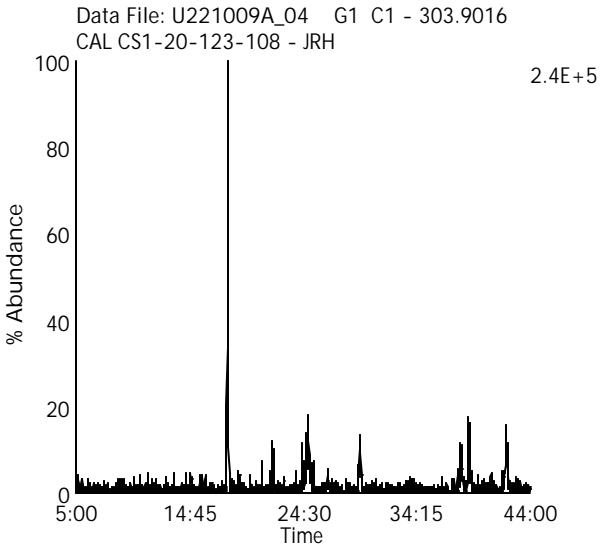
Date Acquired: 10/9/2022

Sample Description: CAL CS1-20-123-108 - JRH

Lab Sample ID: CS1-20-123-108

Client Sample ID:

Instrument: 10MSHR06 (U)



TCDF Confirmation Analysis

Data File Name: U221009A_03

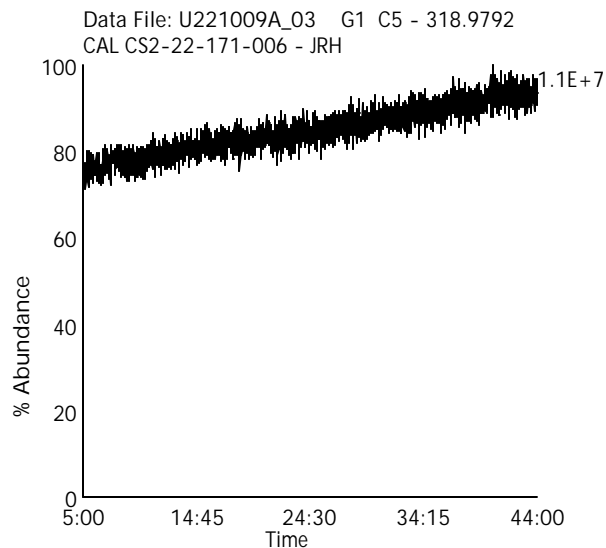
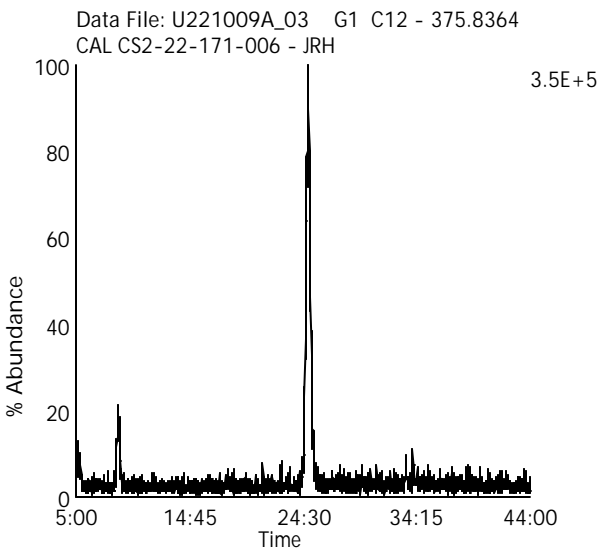
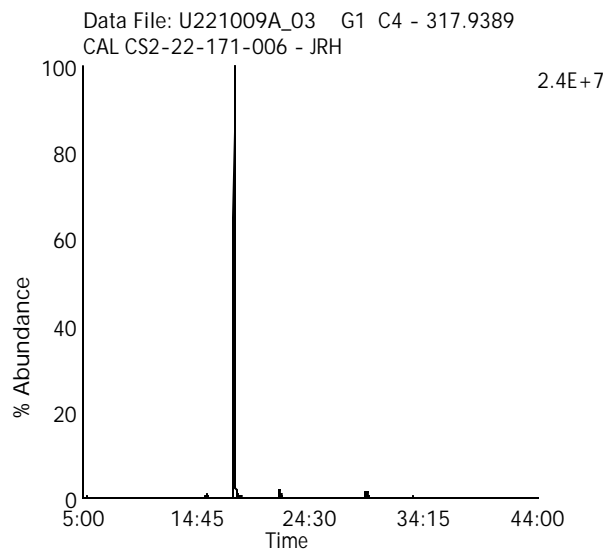
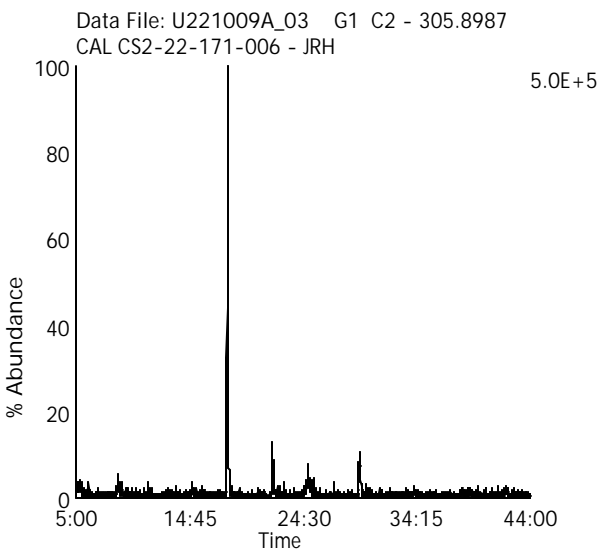
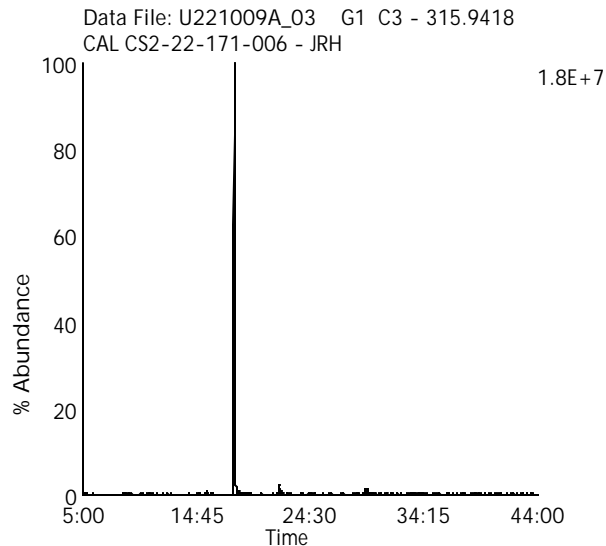
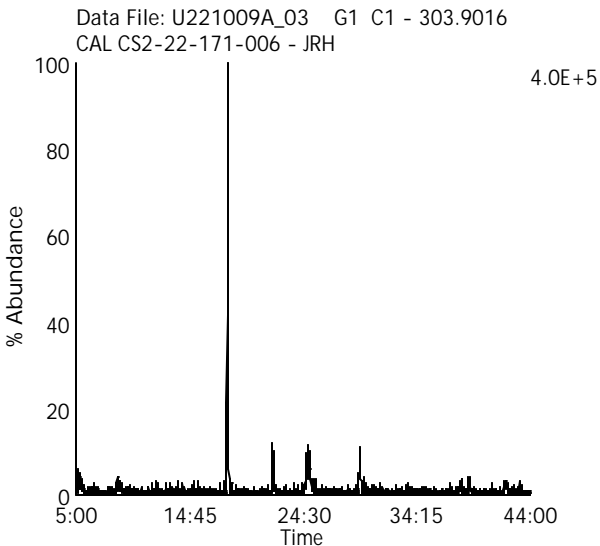
Date Acquired: 10/9/2022

Sample Description: CAL CS2-22-171-006 - JRH

Lab Sample ID: CS2-22-171-006

Client Sample ID:

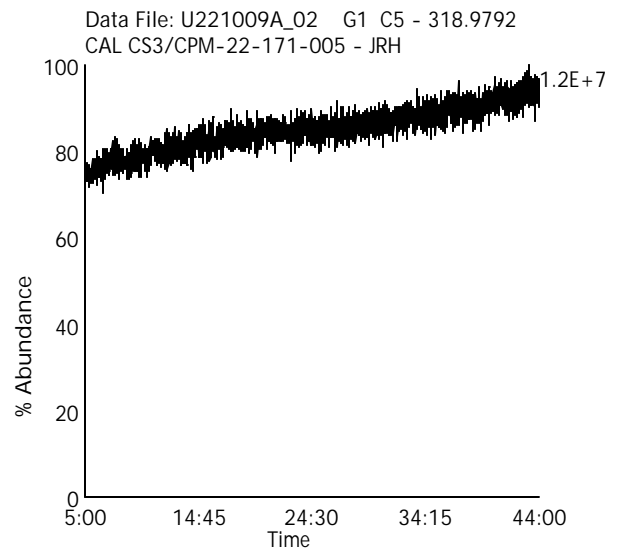
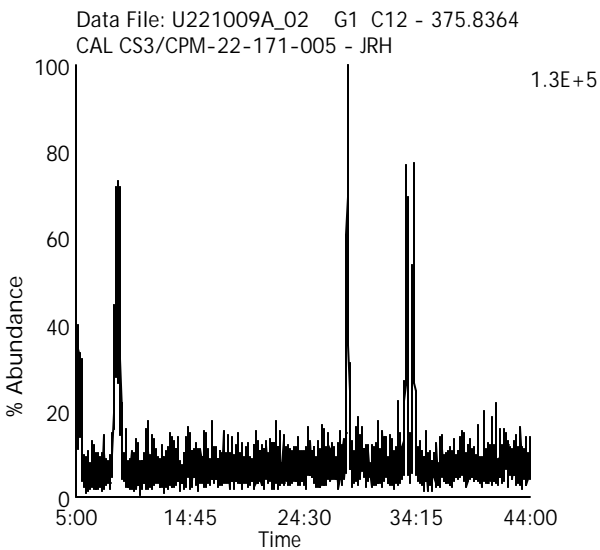
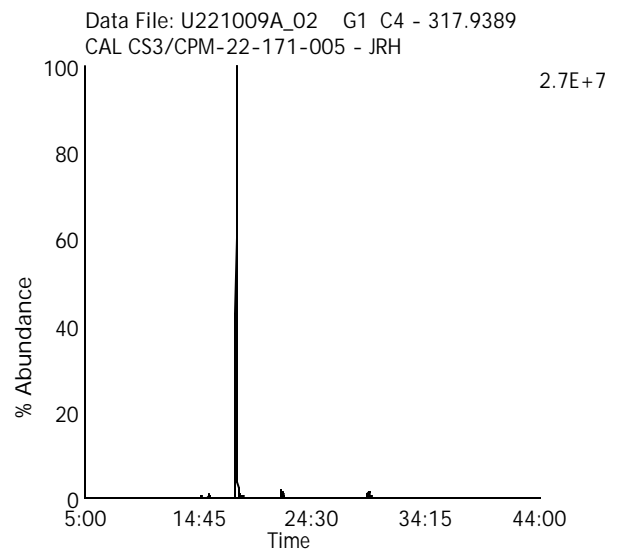
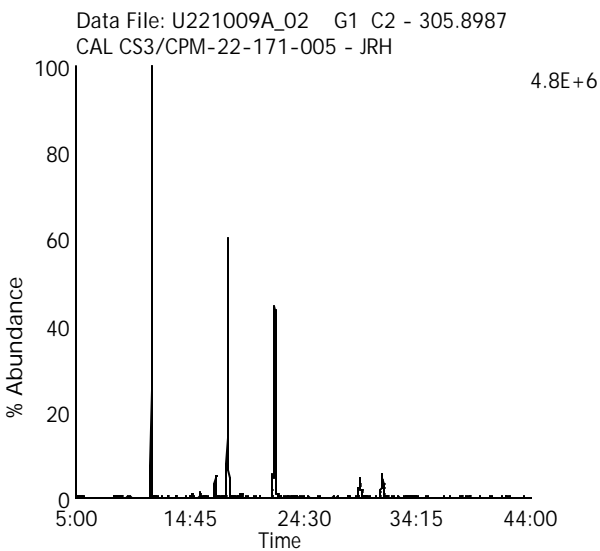
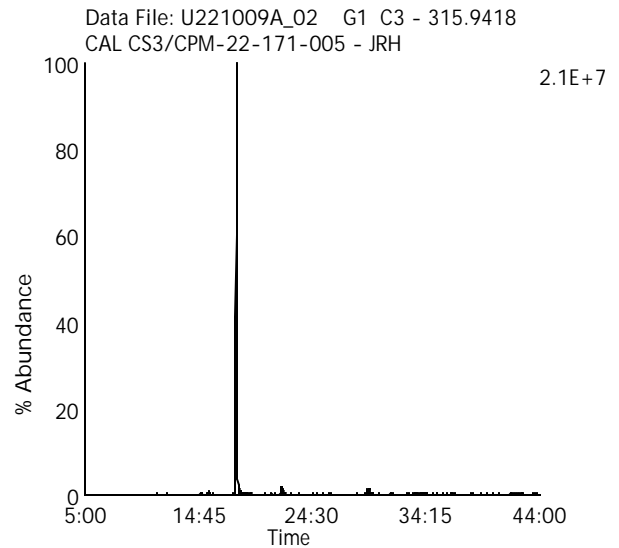
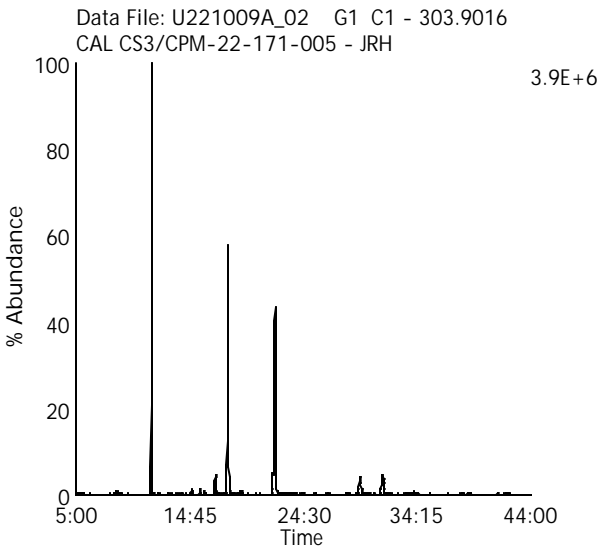
Instrument: 10MSHR06 (U)



TCDF Confirmation Analysis

Data File Name: U221009A_02
Date Acquired: 10/9/2022
Sample Description: CAL CS3/CPM-22-171-005 - JRH

Lab Sample ID: CS3/CPM-22-171-005
Client Sample ID:
Instrument: 10MSHR06 (U)



TCDF Confirmation Analysis

Data File Name: U221009A_06

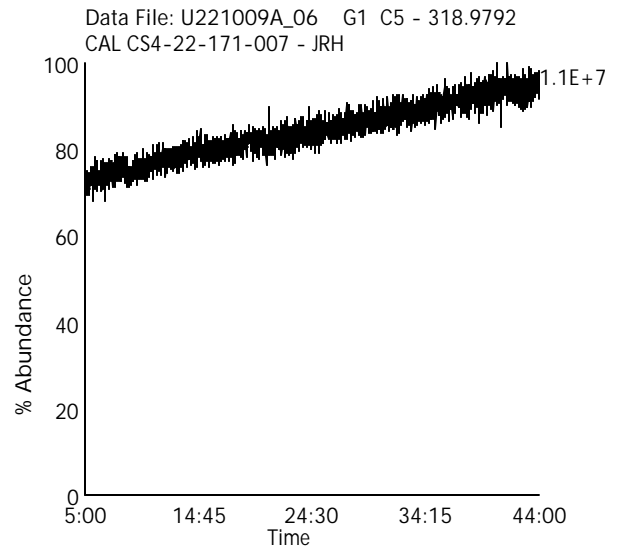
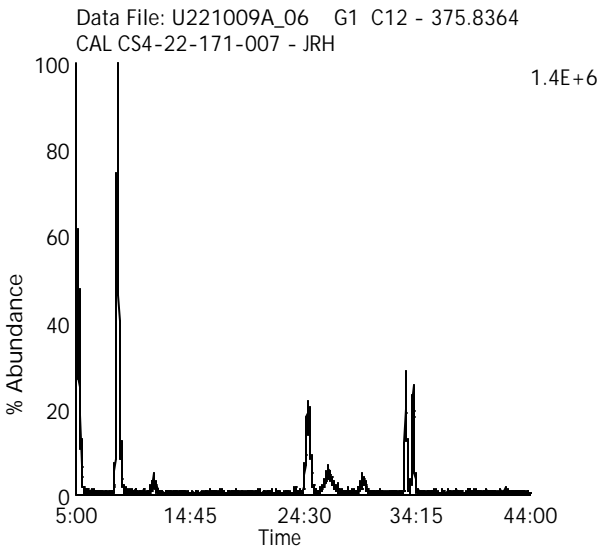
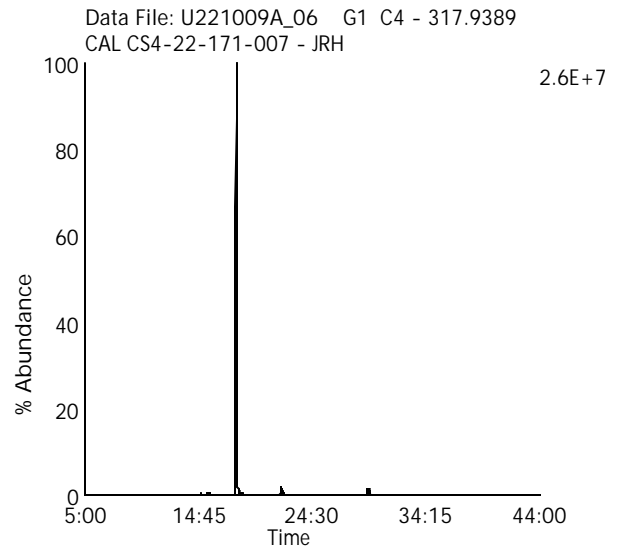
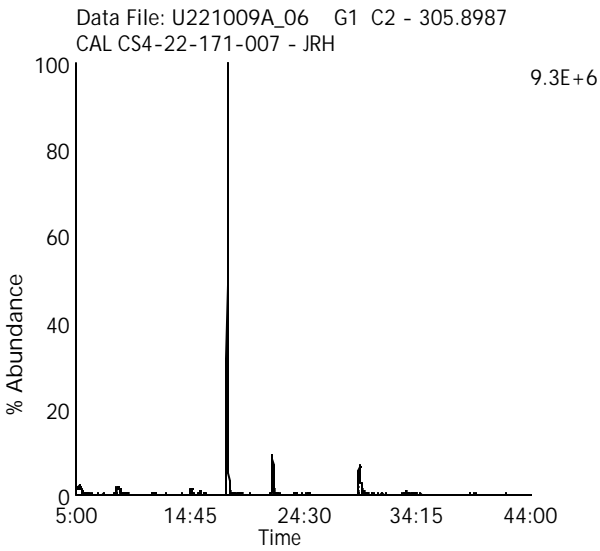
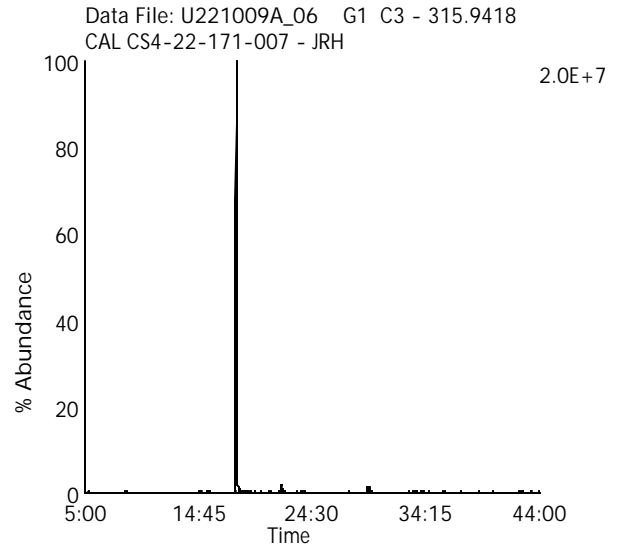
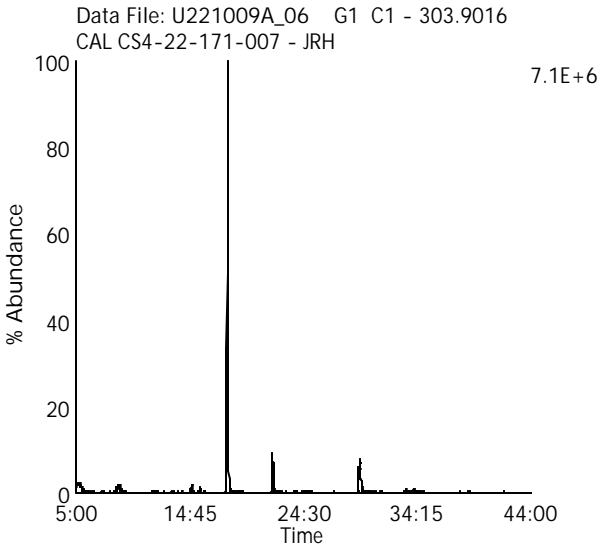
Date Acquired: 10/9/2022

Sample Description: CAL CS4-22-171-007 - JRH

Lab Sample ID: CS4-22-171-007

Client Sample ID:

Instrument: 10MSHR06 (U)



TCDF Confirmation Analysis

Data File Name: U221009A_05

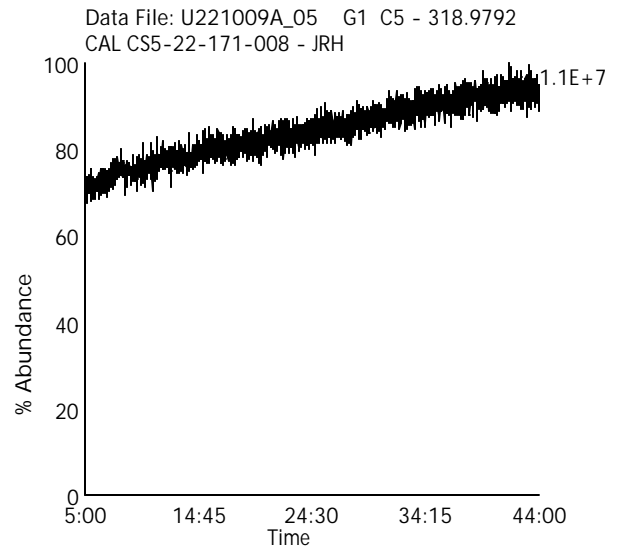
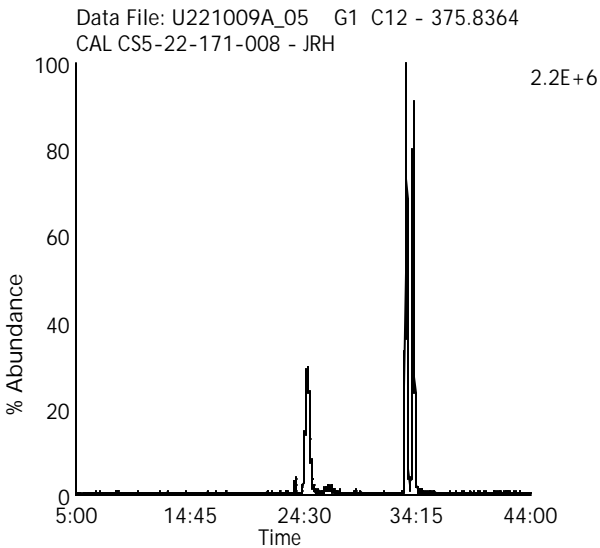
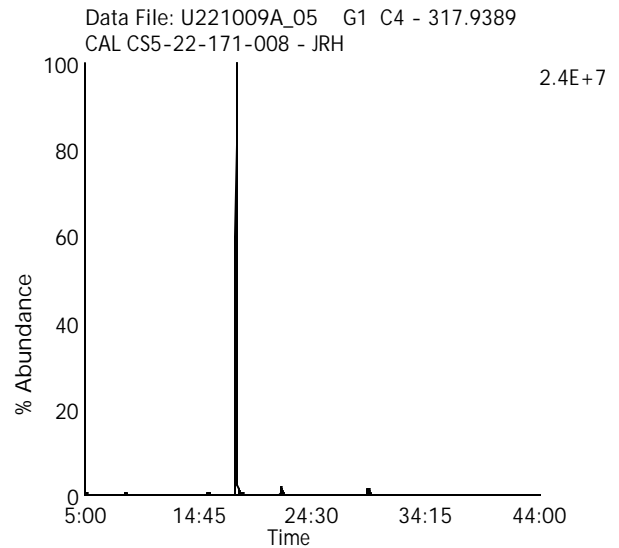
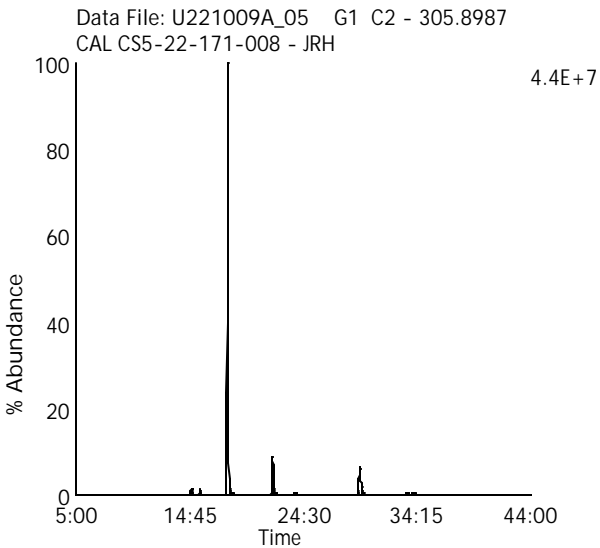
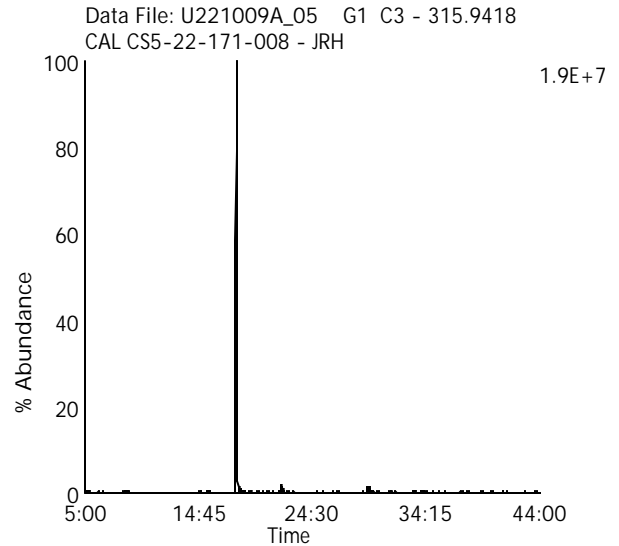
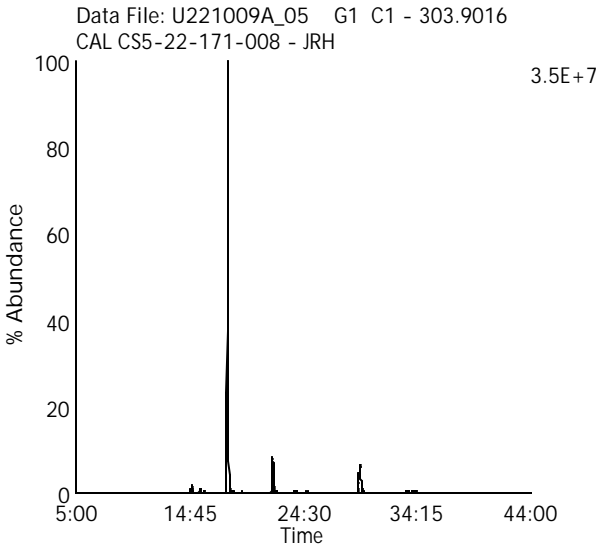
Date Acquired: 10/9/2022

Sample Description: CAL CS5-22-171-008 - JRH

Lab Sample ID: CS5-22-171-008

Client Sample ID:

Instrument: 10MSHR06 (U)



Homologue Group: Tetras

Data File Name: L230305A_18

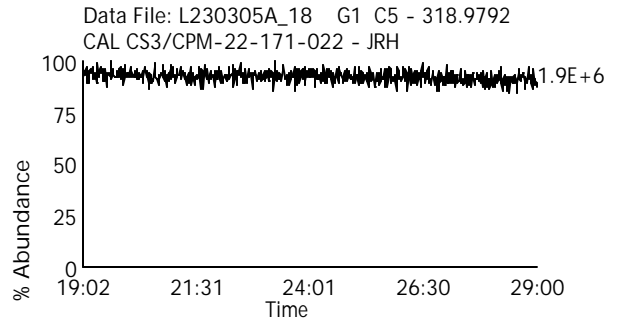
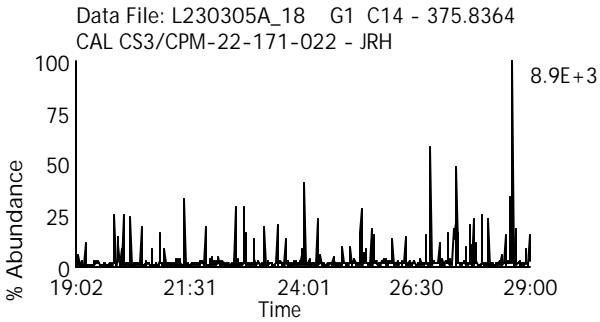
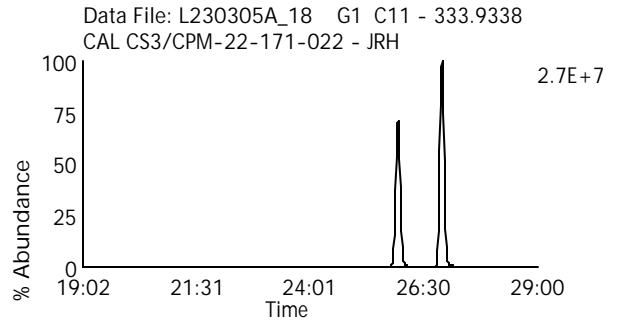
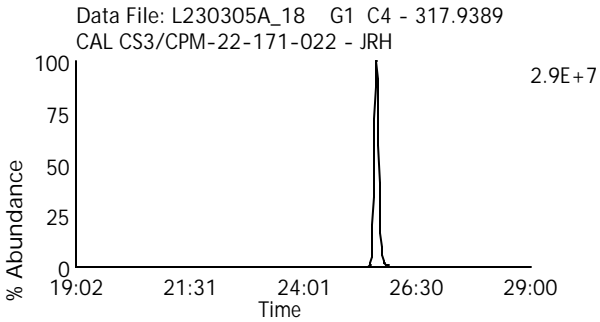
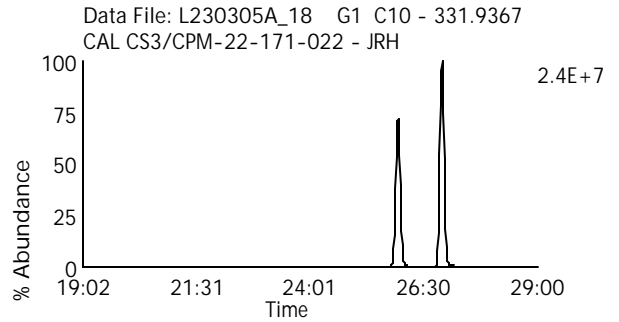
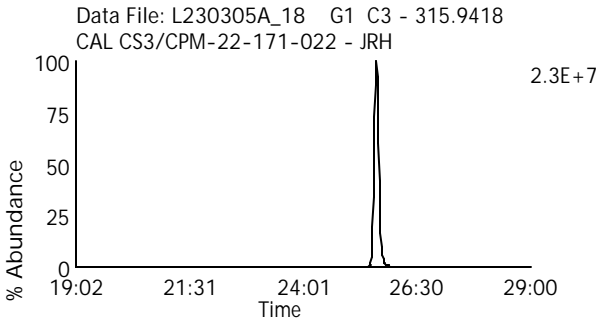
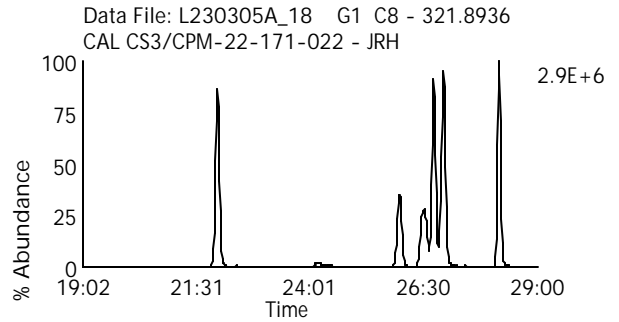
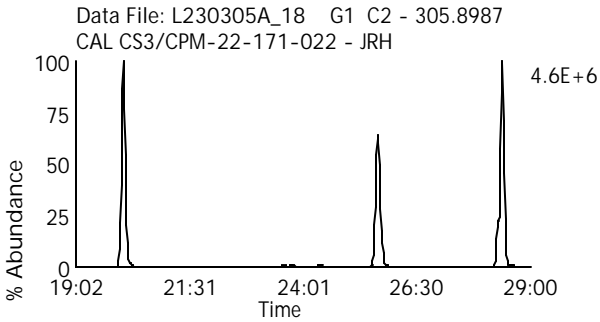
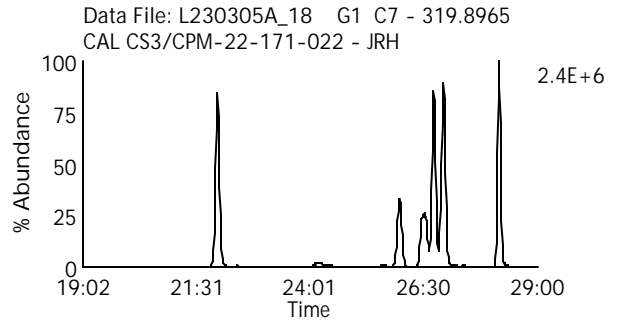
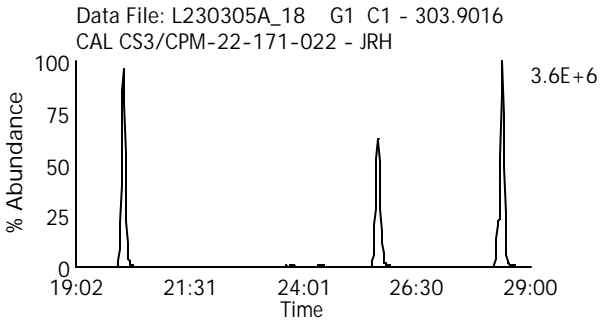
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230305A_18

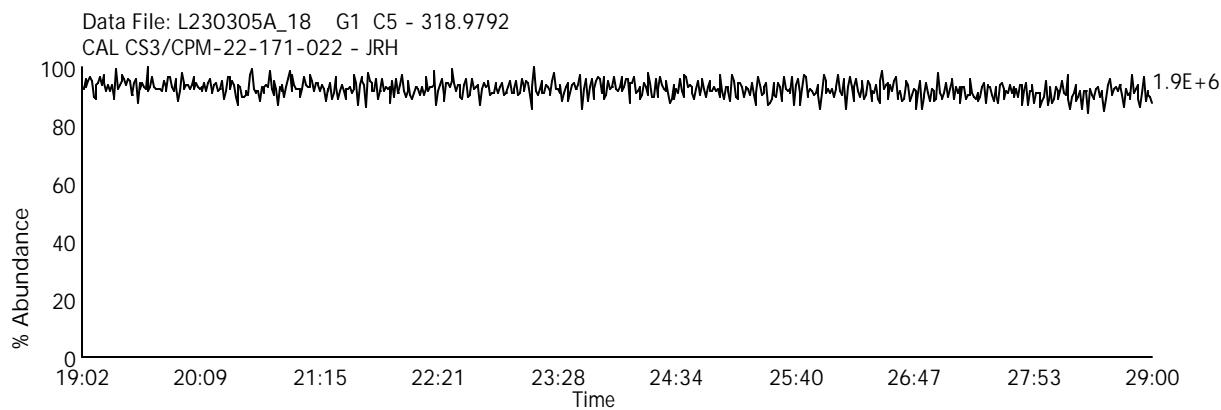
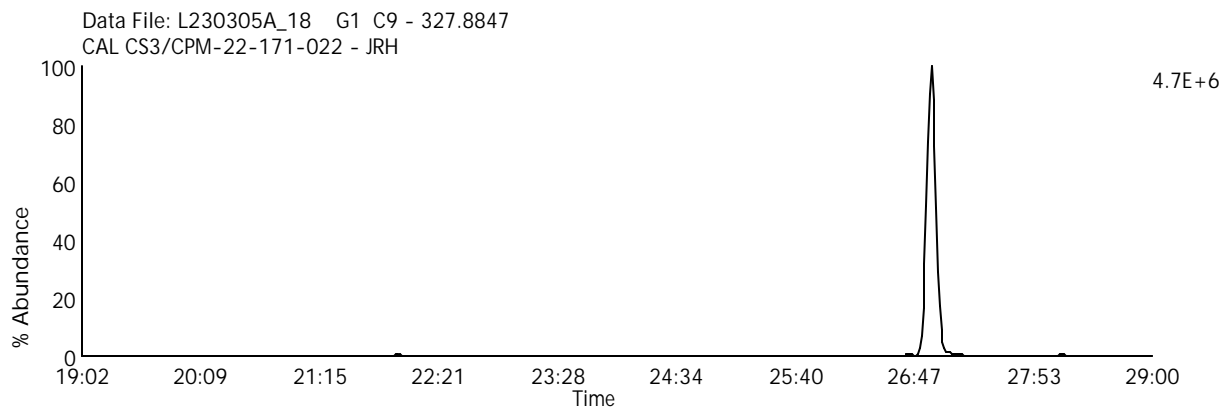
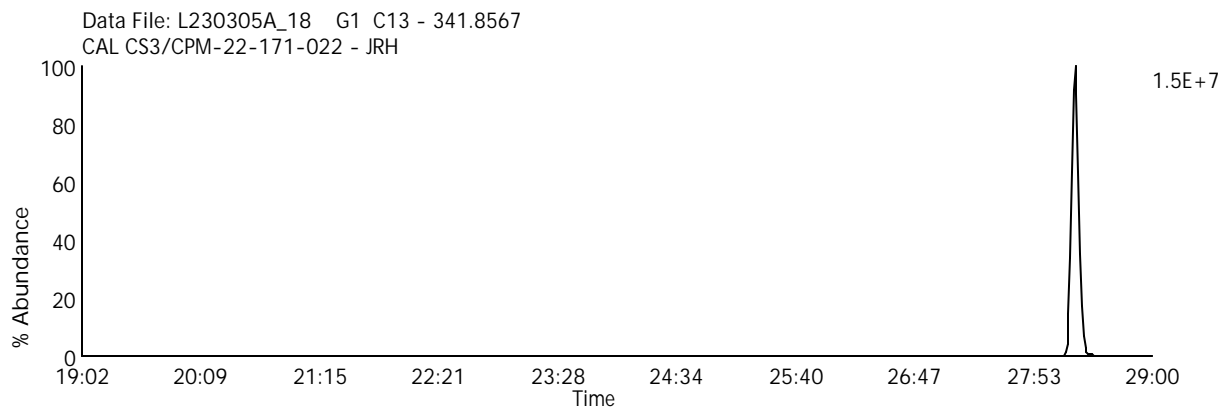
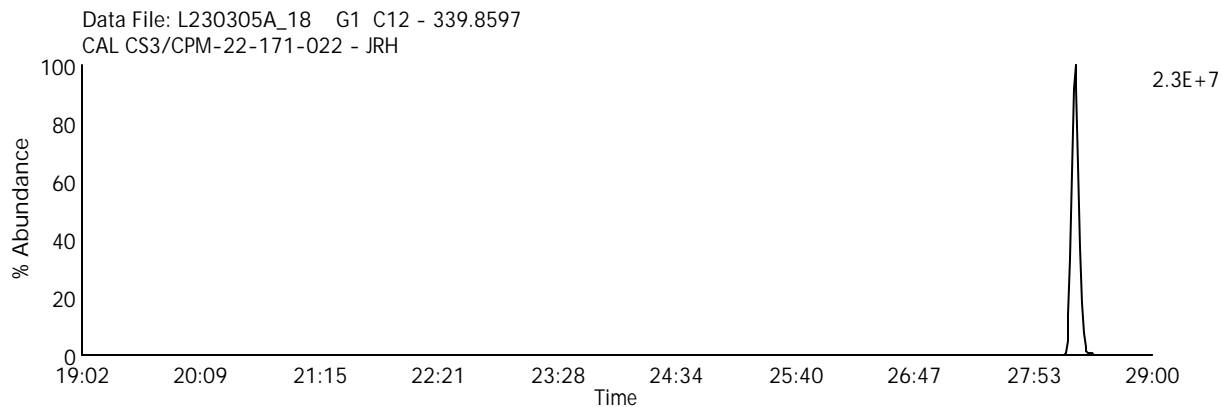
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230305A_18

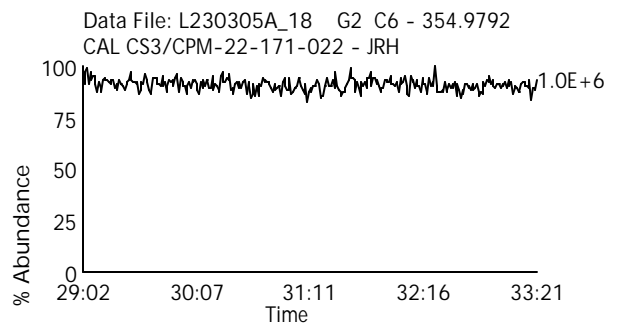
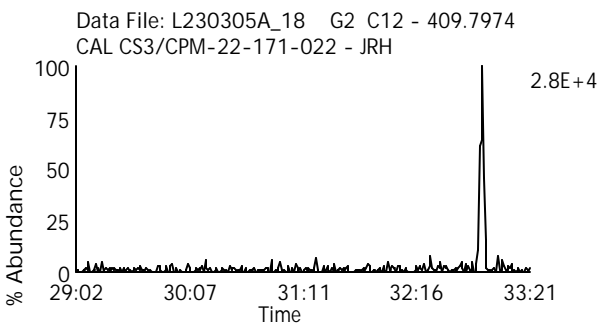
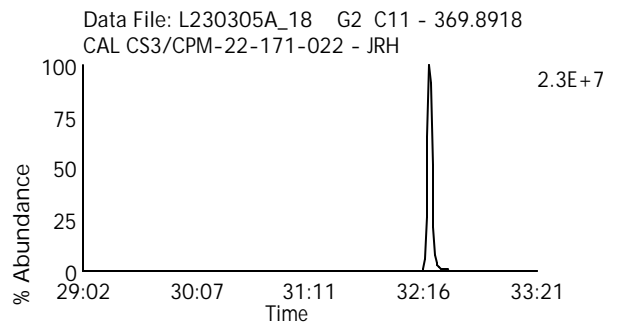
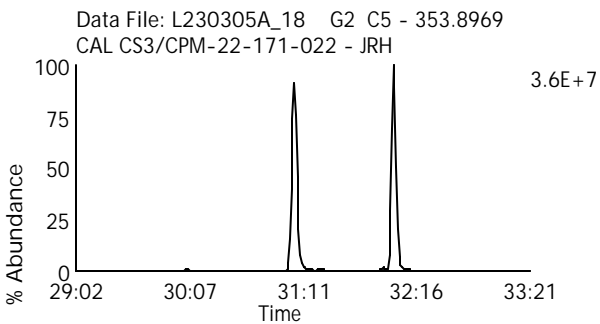
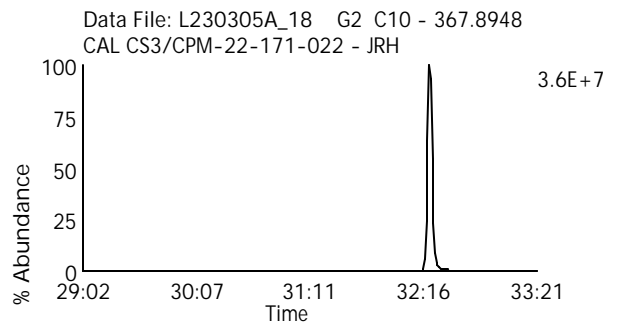
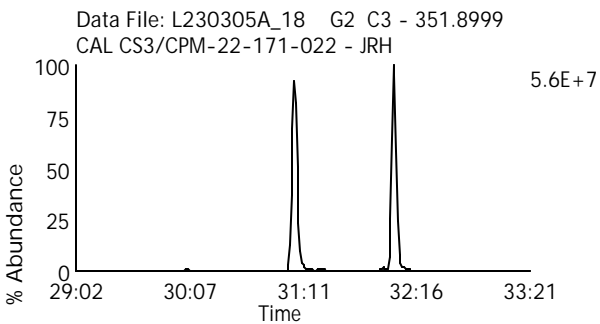
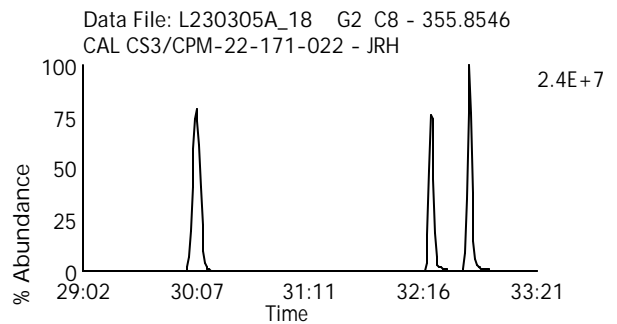
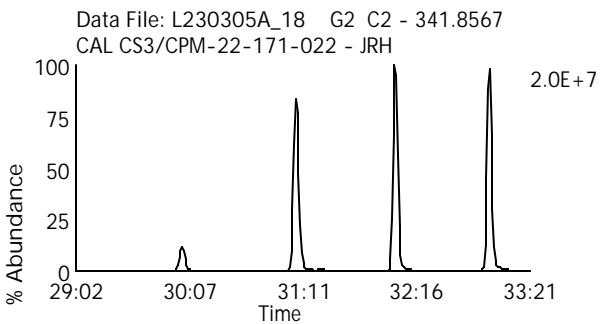
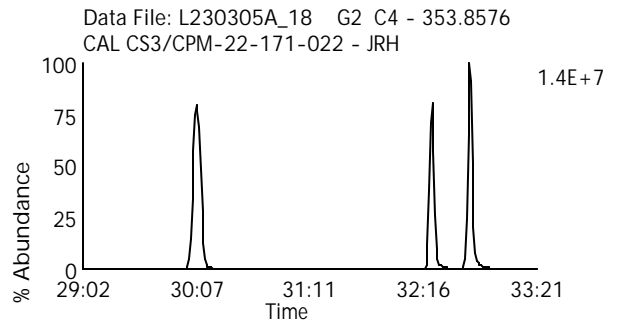
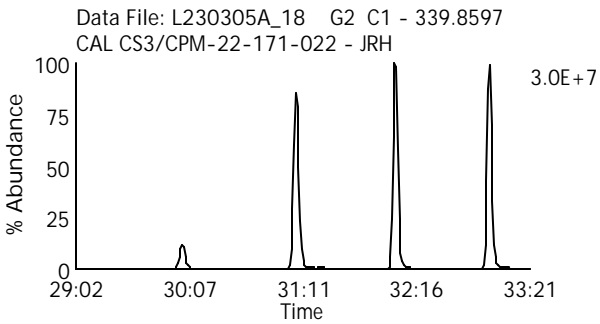
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230305A_18

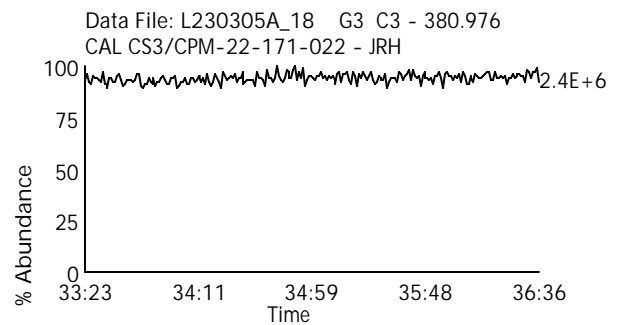
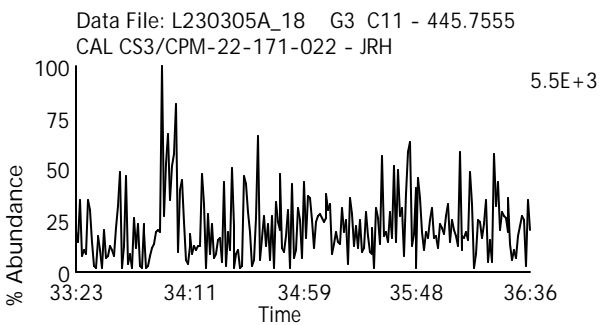
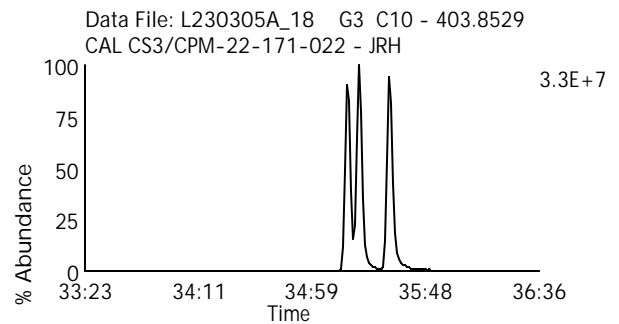
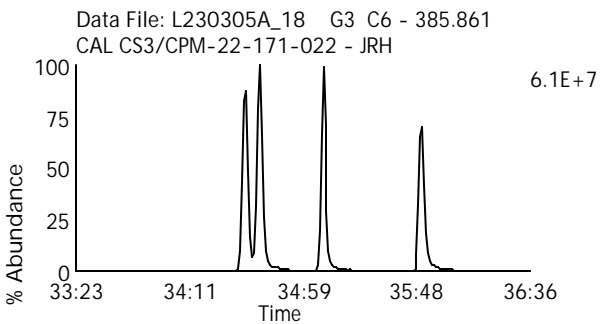
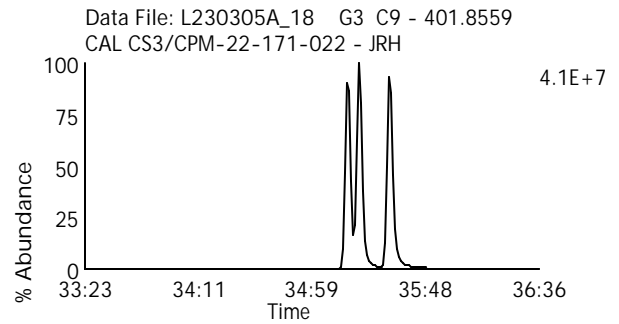
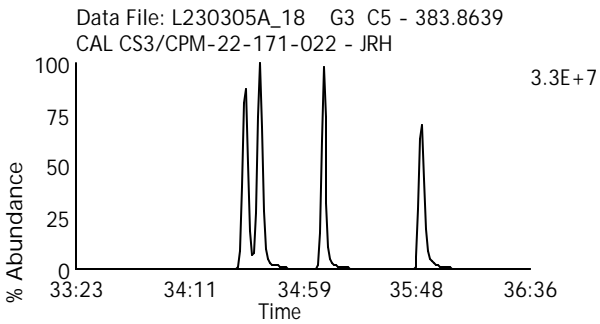
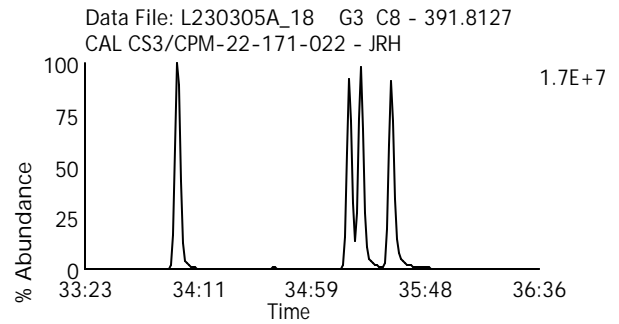
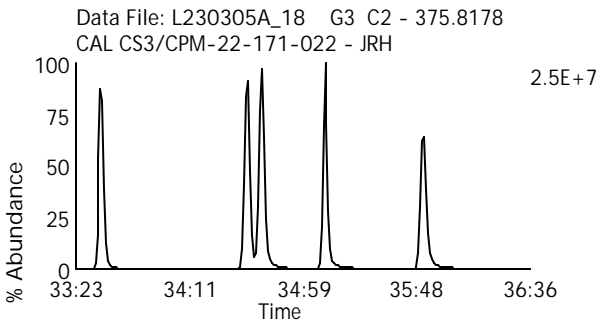
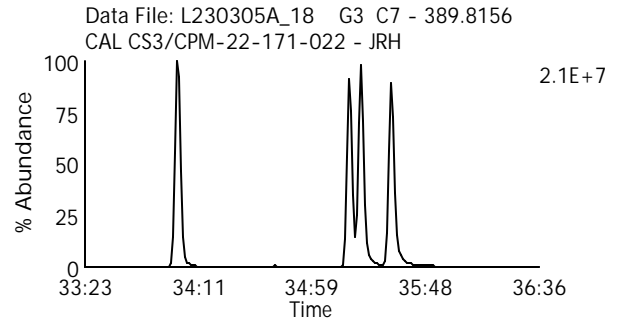
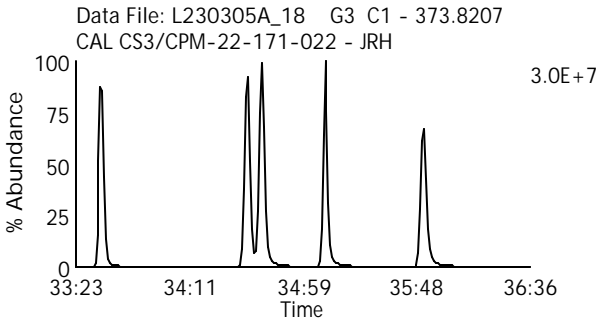
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230305A_18

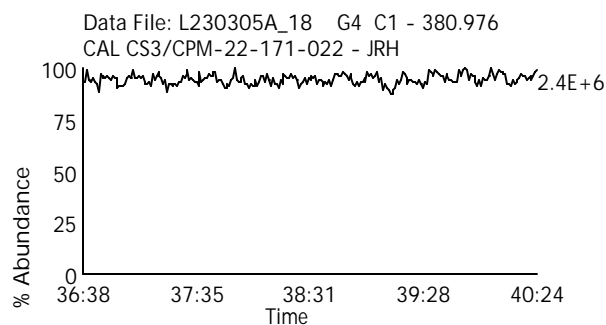
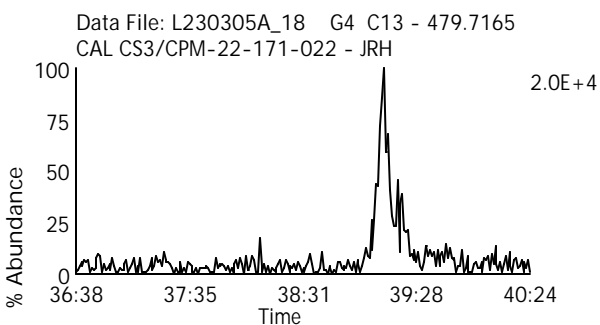
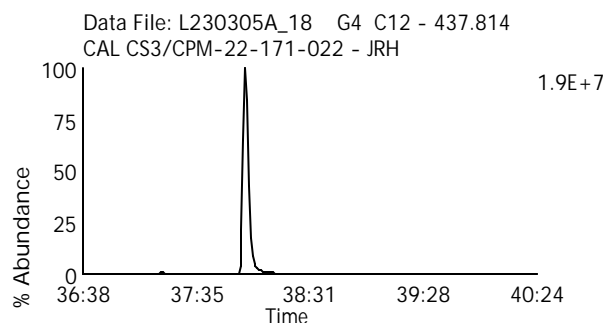
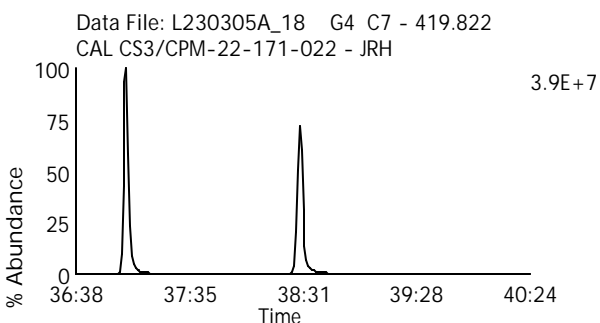
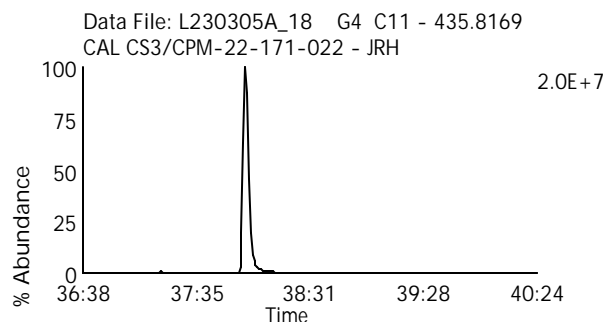
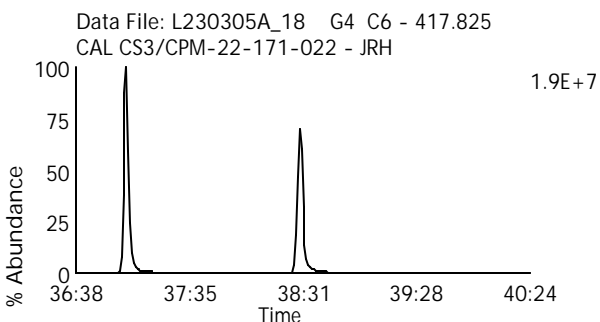
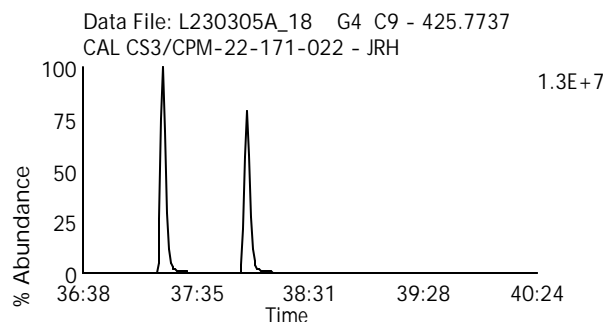
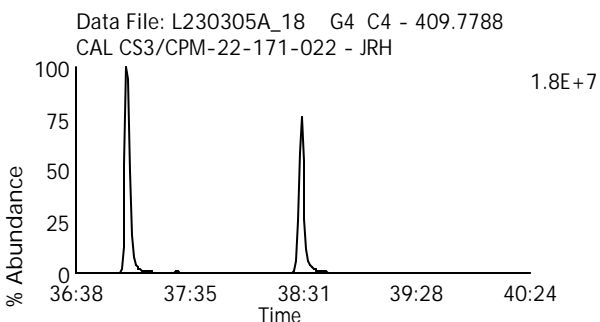
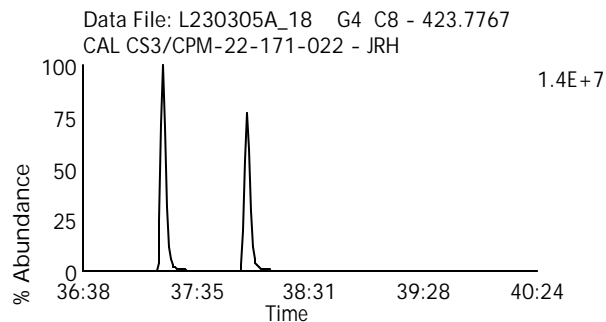
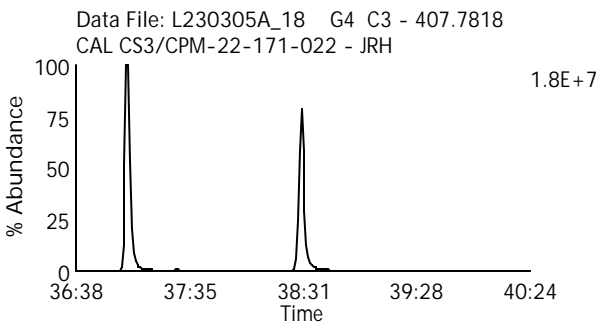
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230305A_18

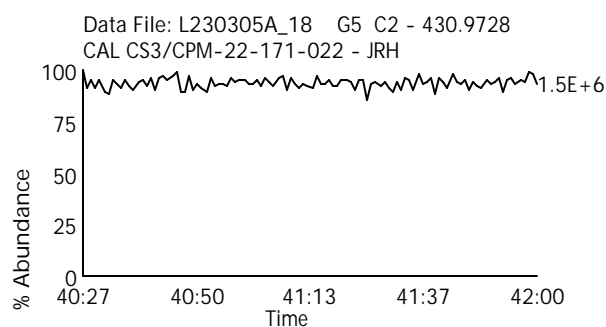
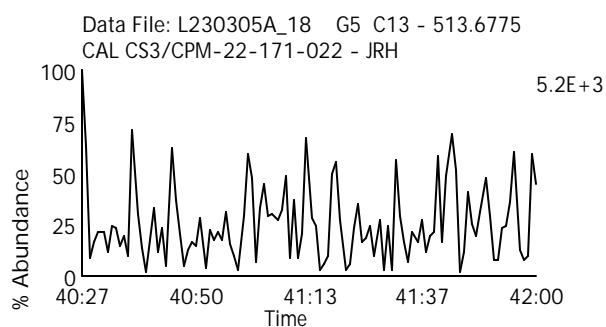
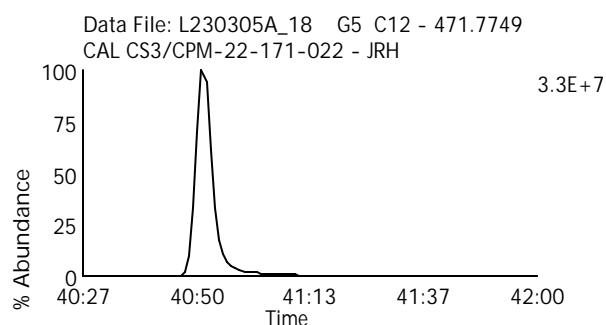
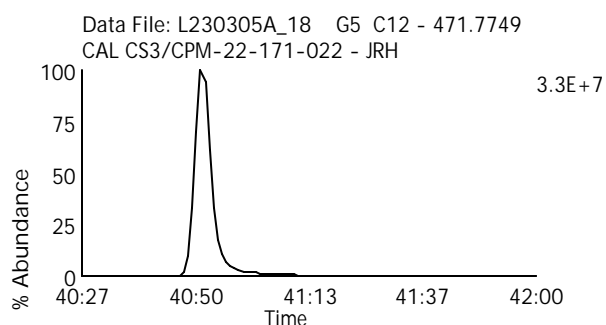
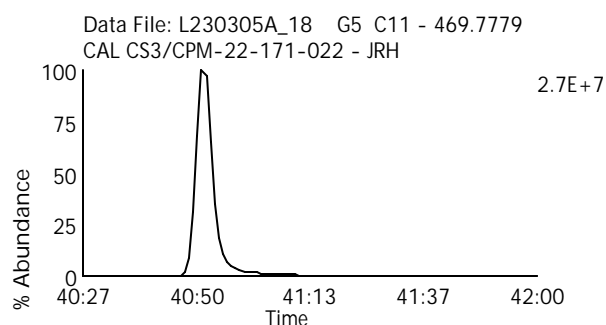
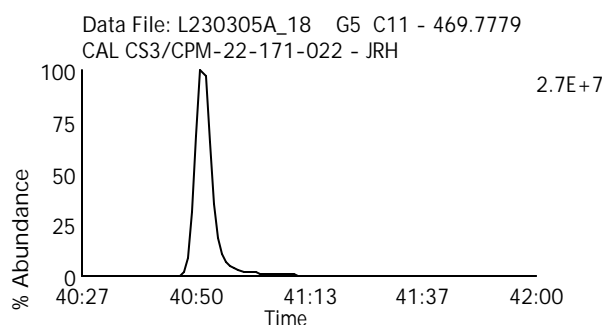
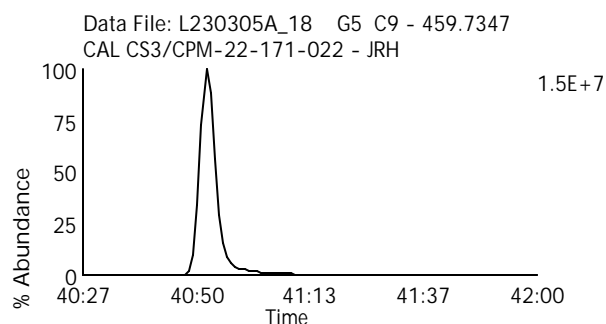
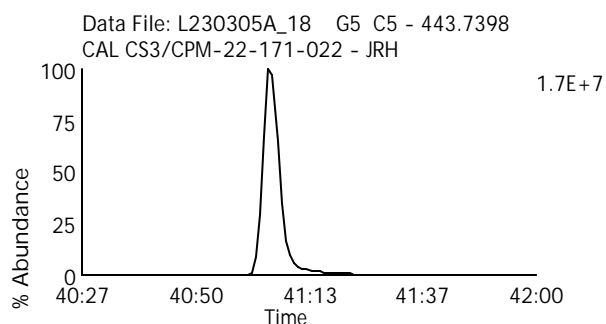
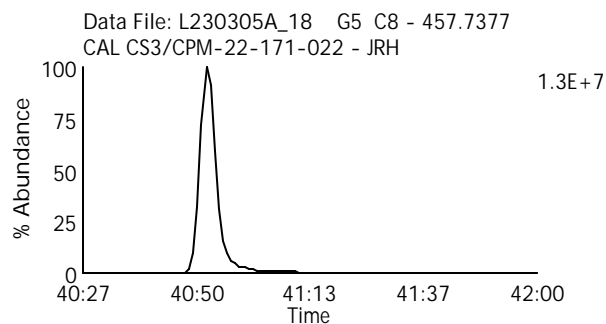
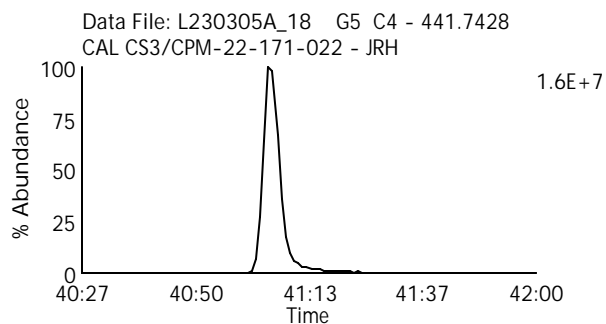
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230305B_10

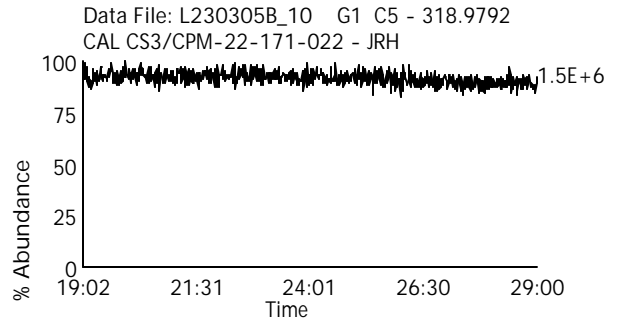
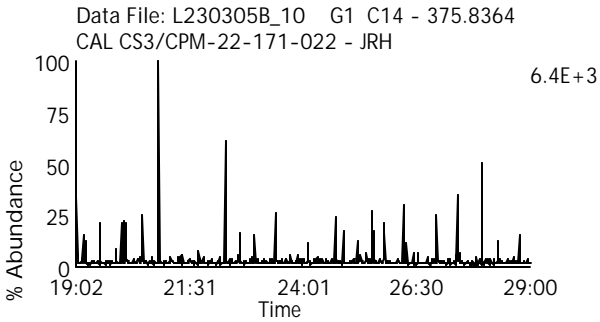
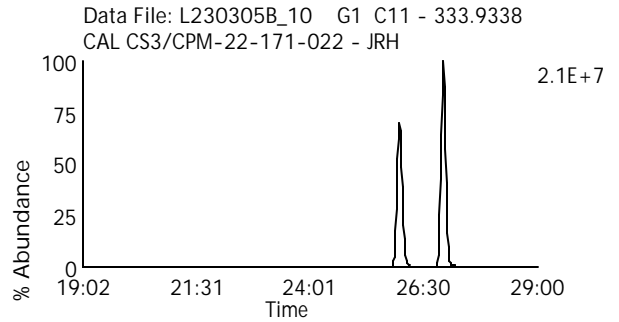
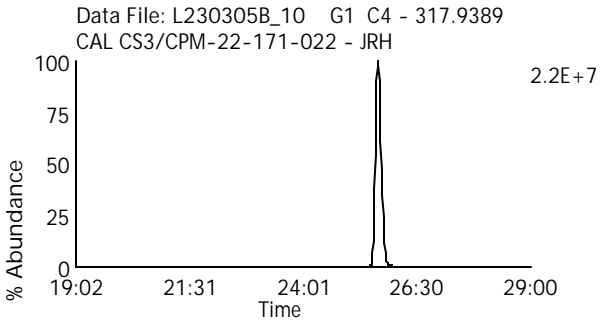
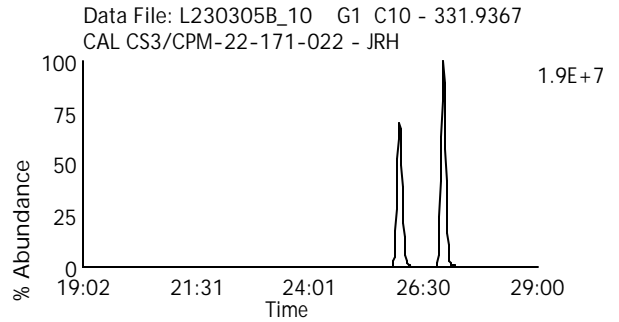
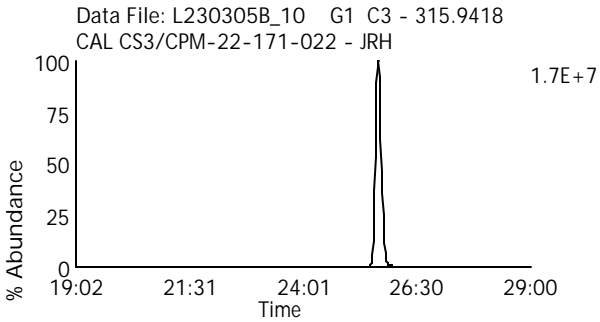
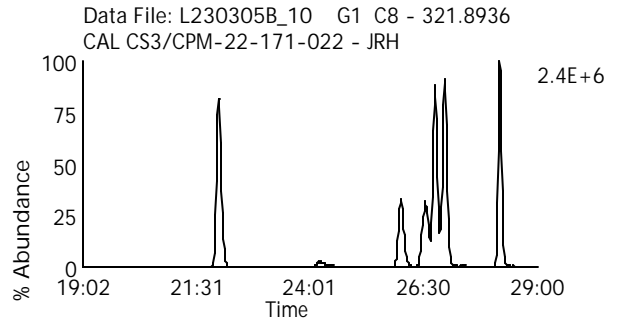
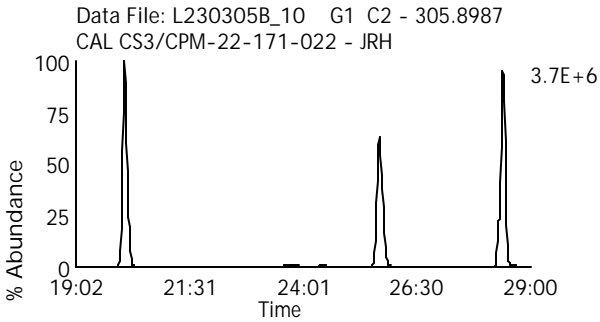
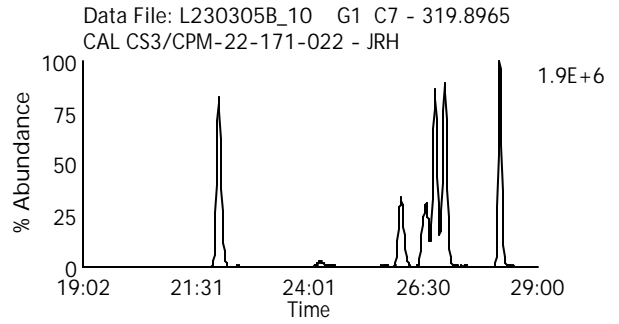
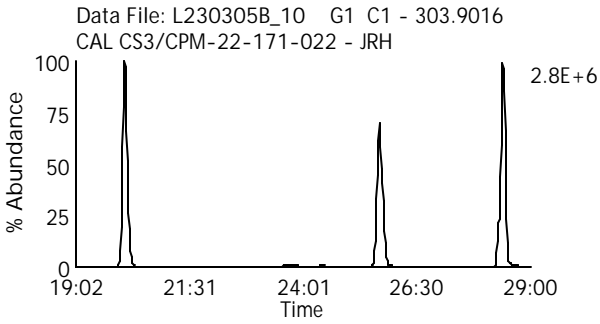
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230305B_10

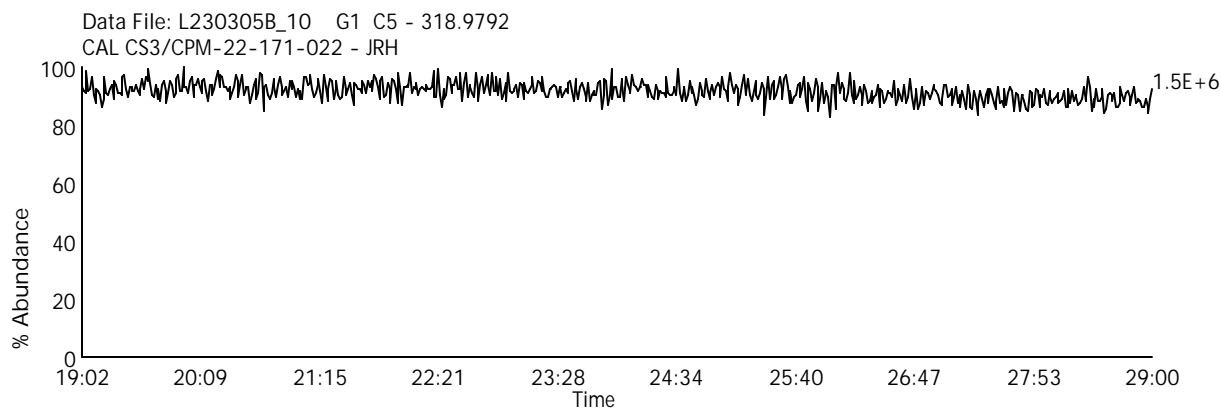
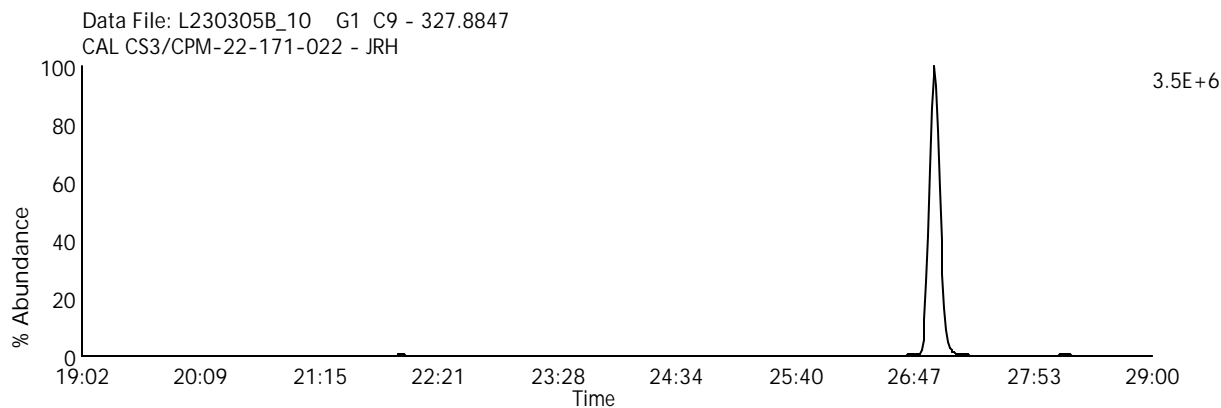
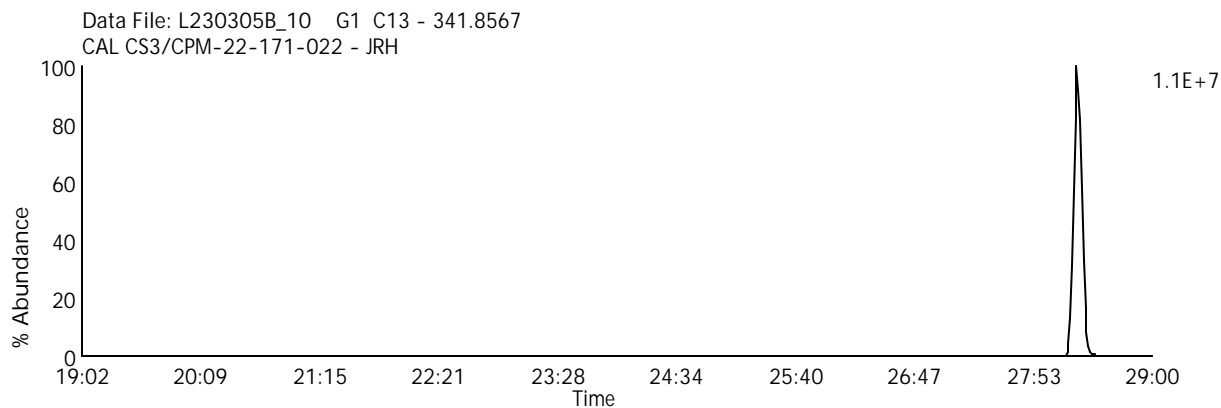
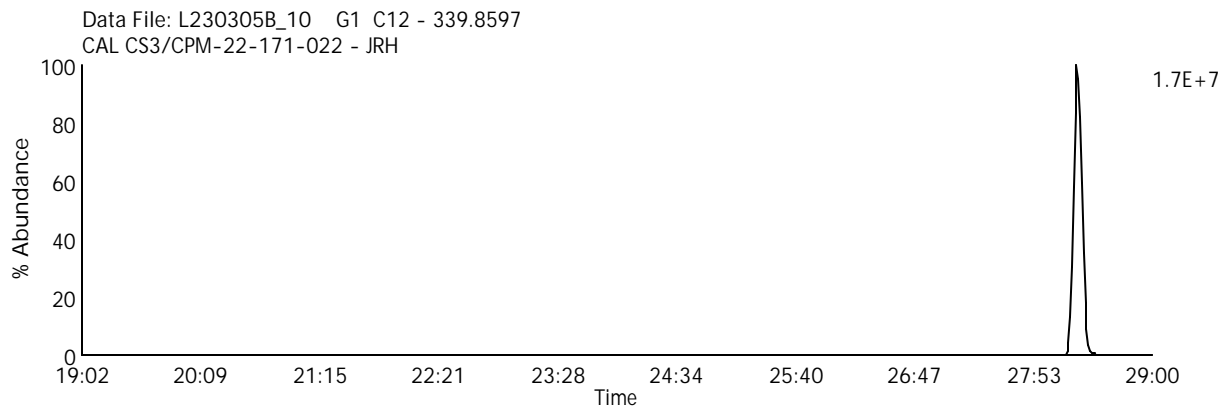
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230305B_10

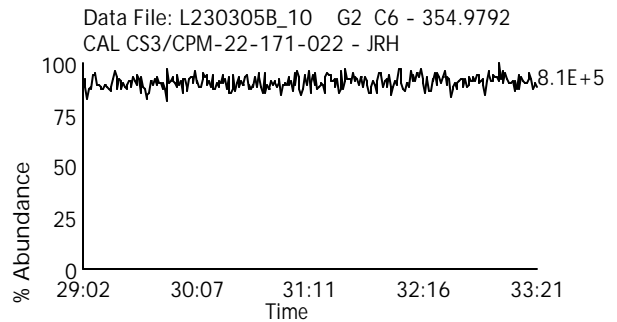
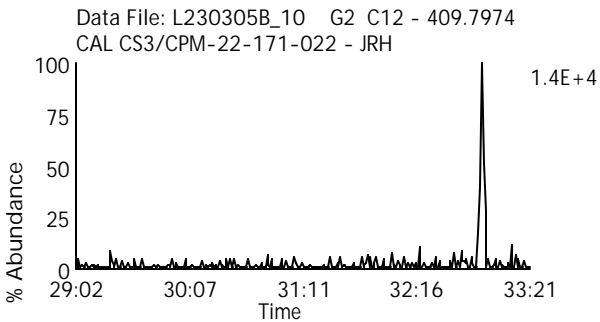
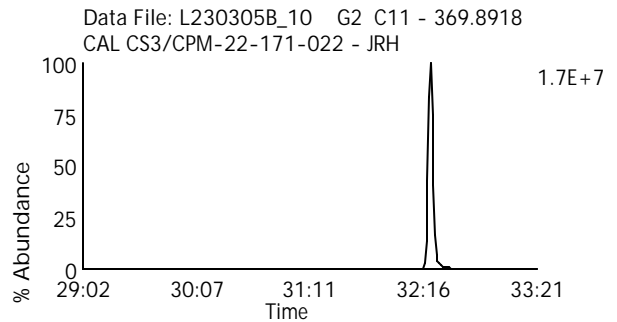
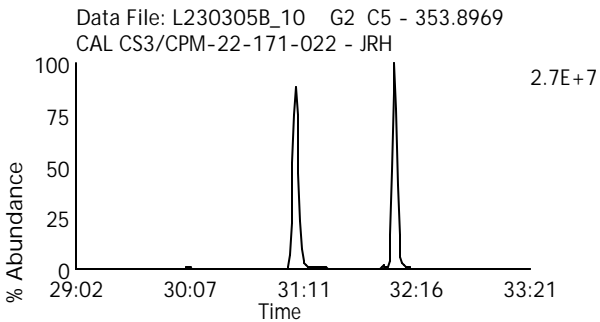
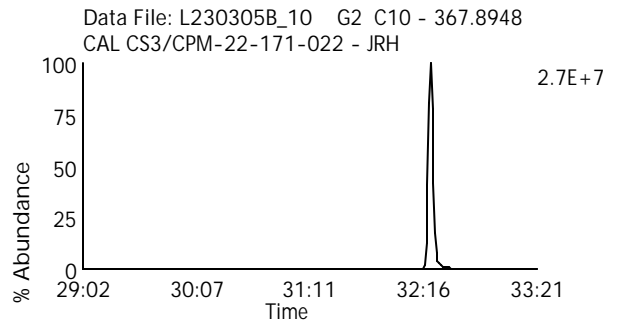
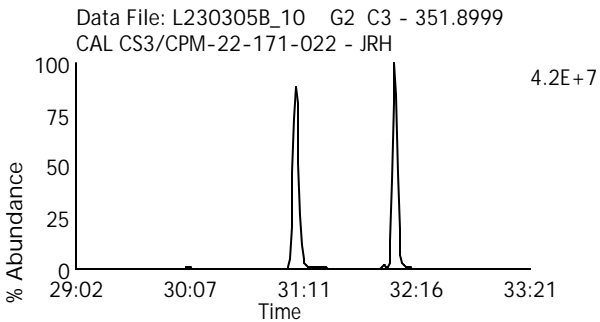
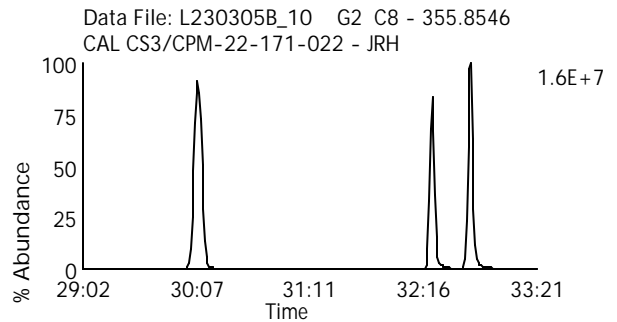
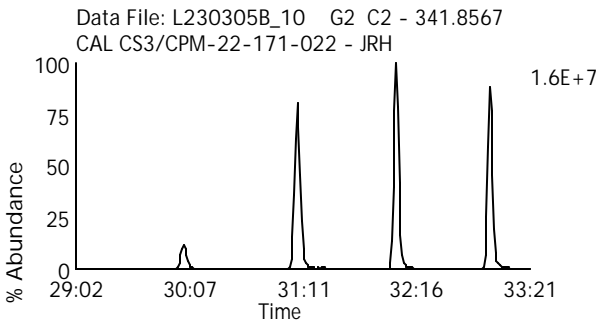
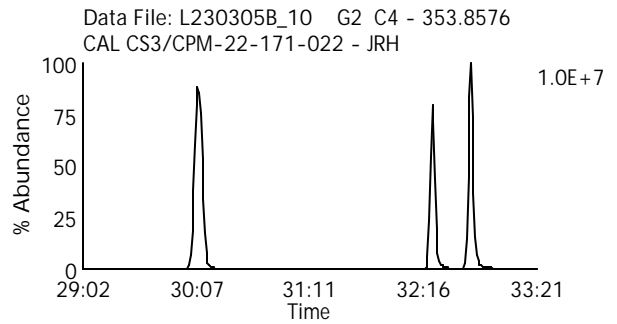
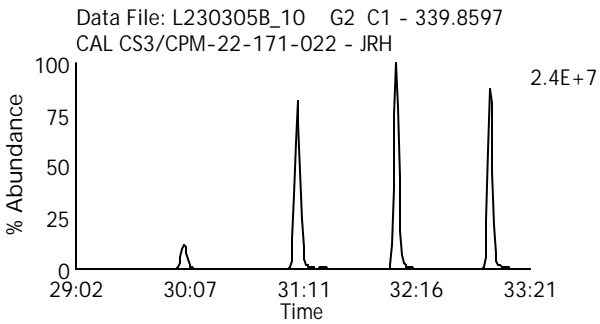
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

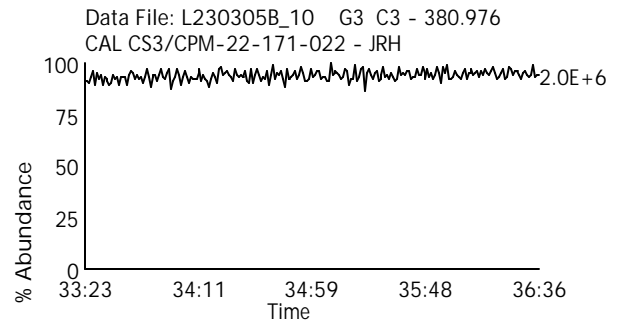
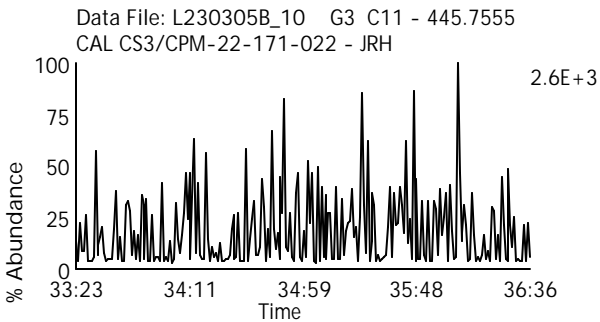
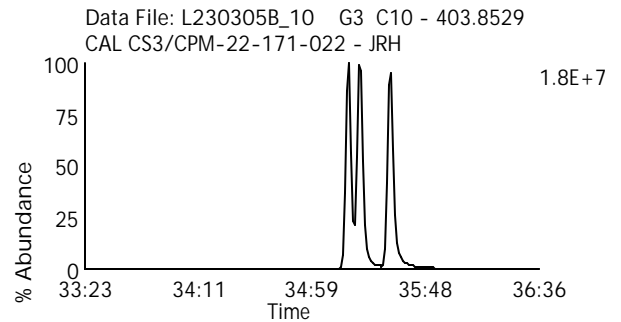
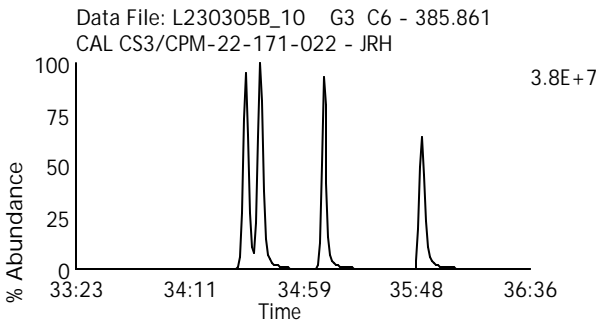
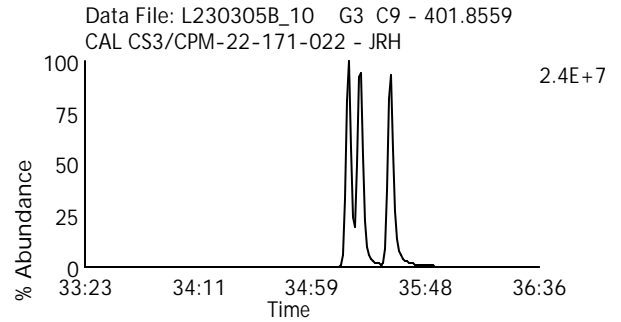
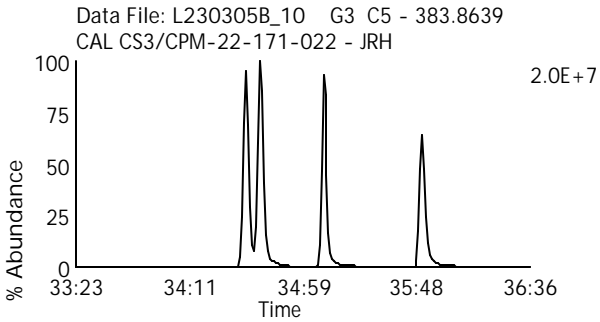
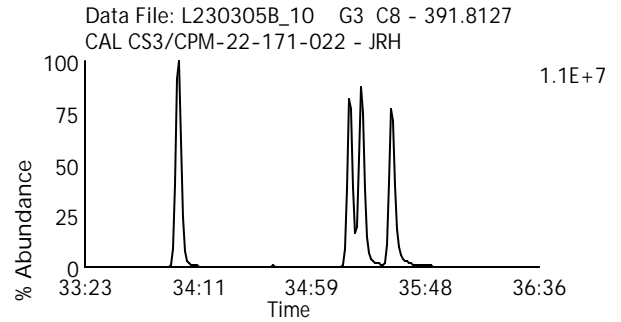
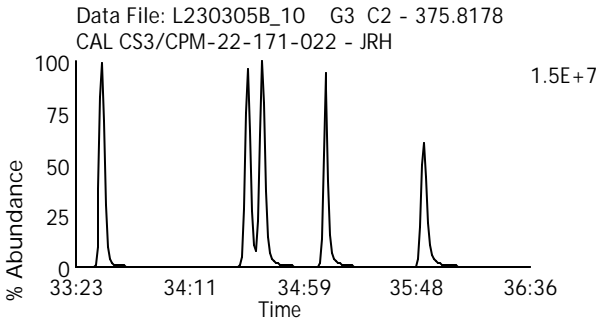
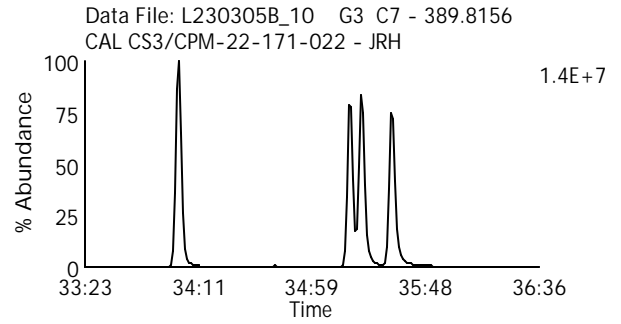
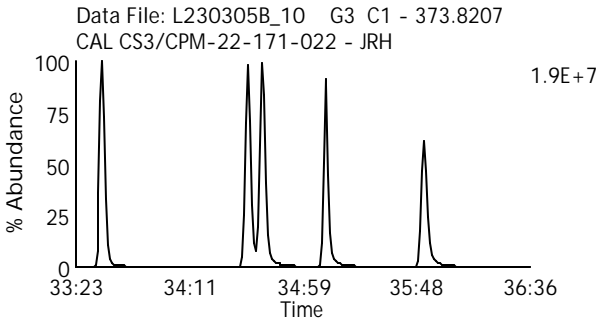
Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230305B_10
Date Acquired: 3/6/2023
Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022
Client Sample ID:
Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230305B_10

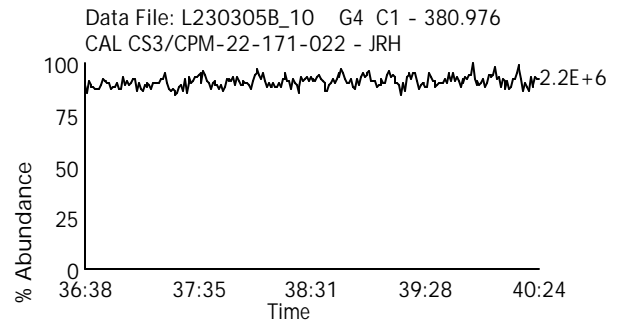
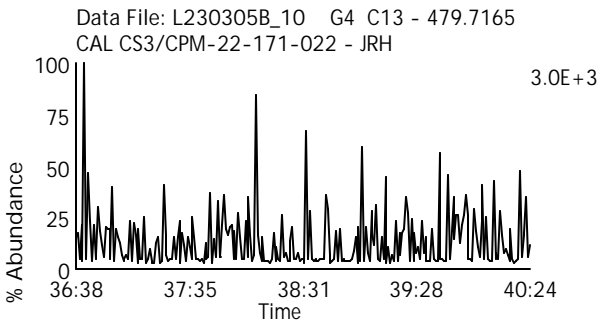
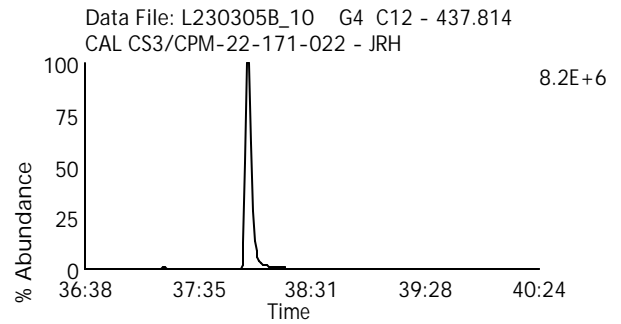
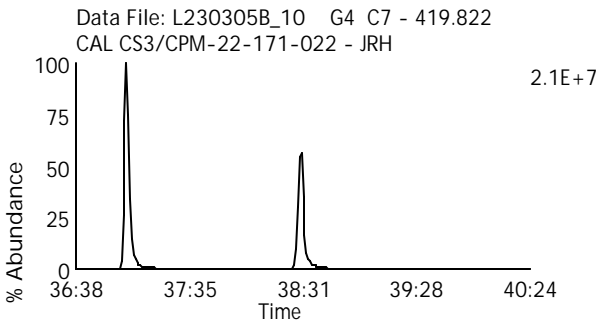
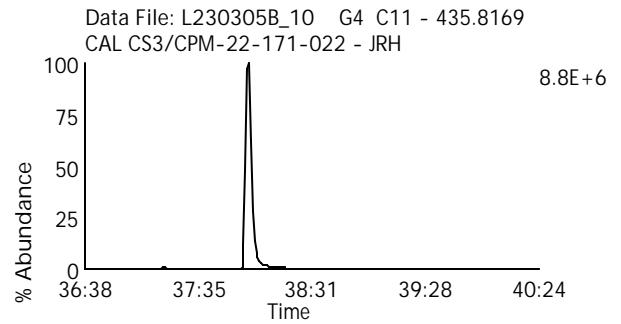
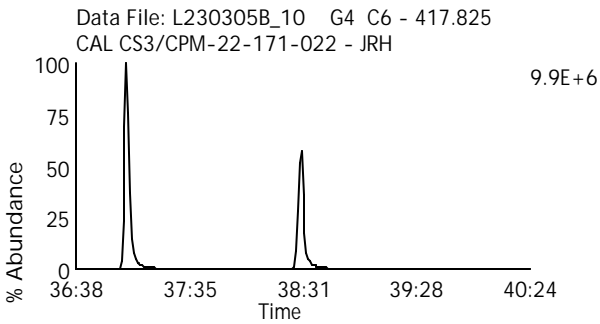
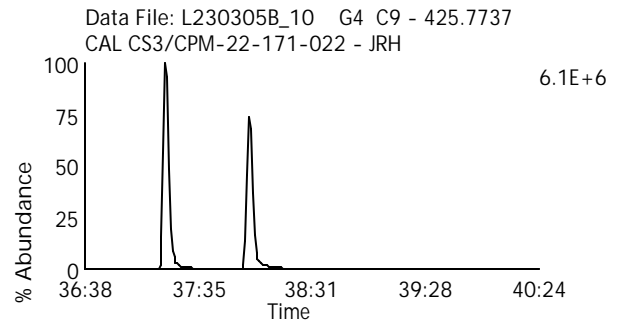
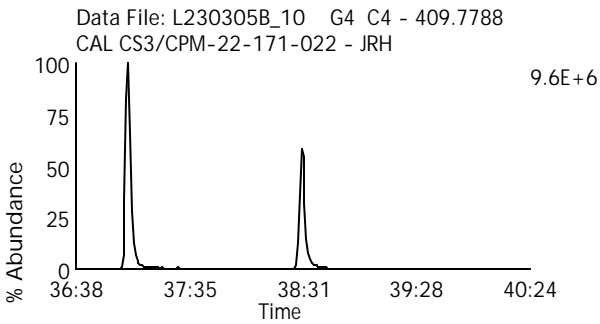
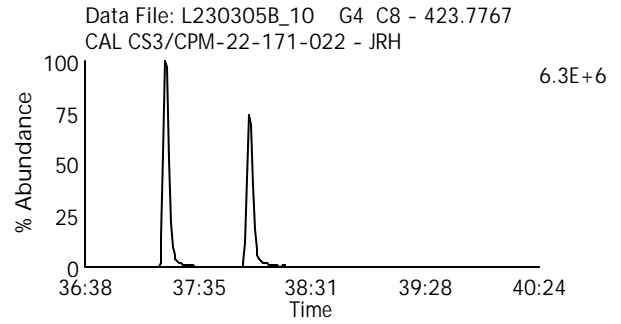
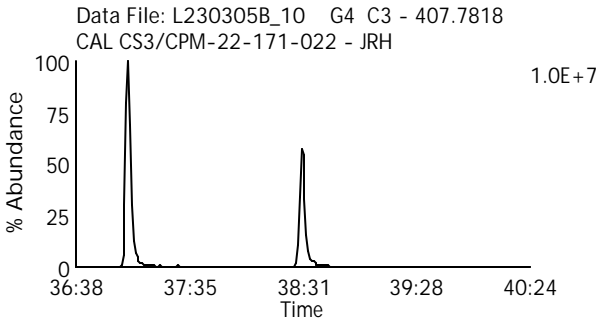
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230305B_10

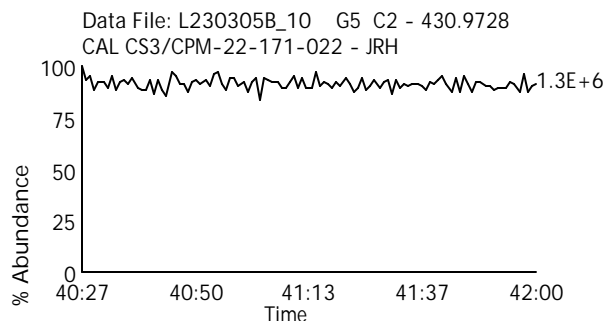
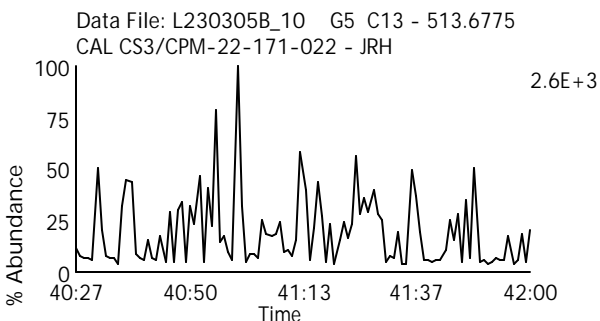
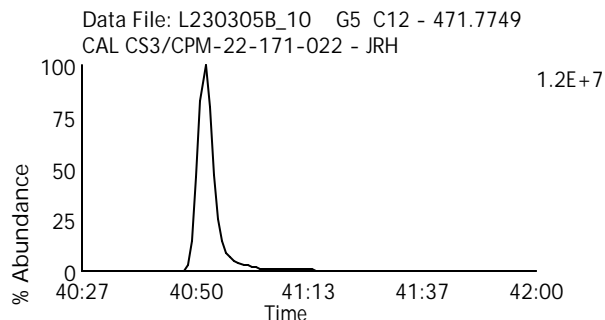
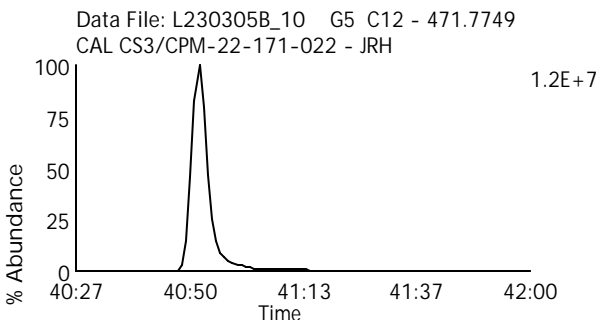
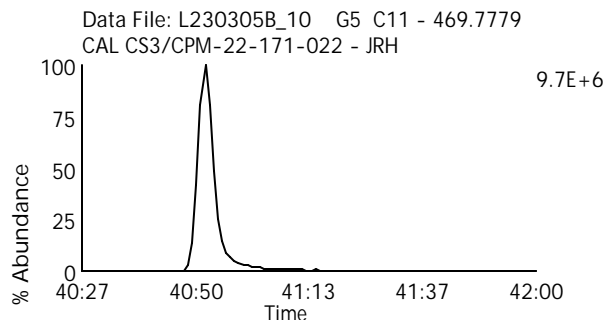
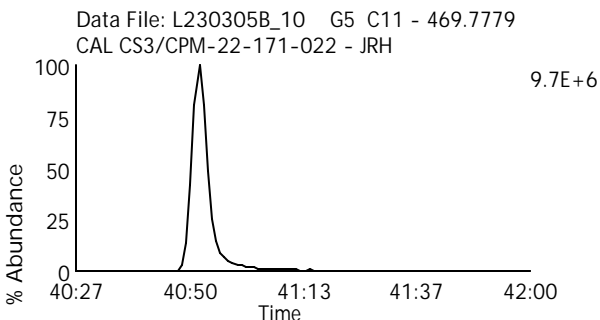
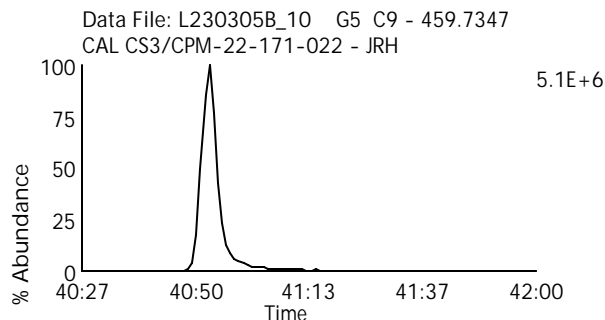
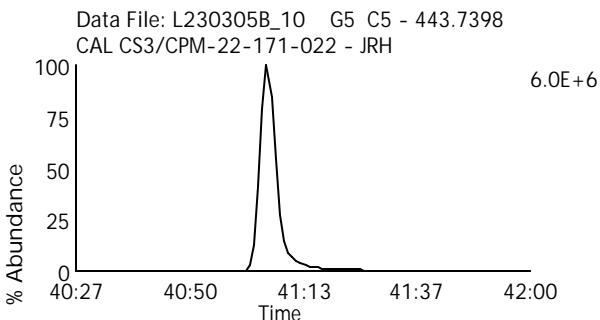
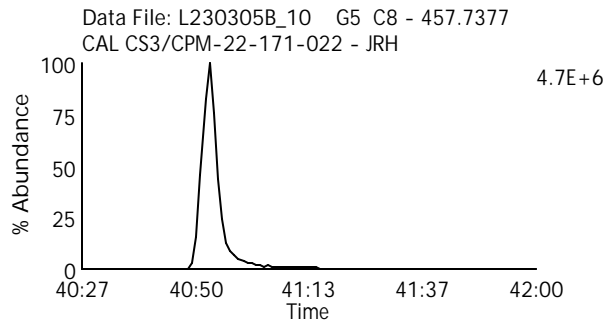
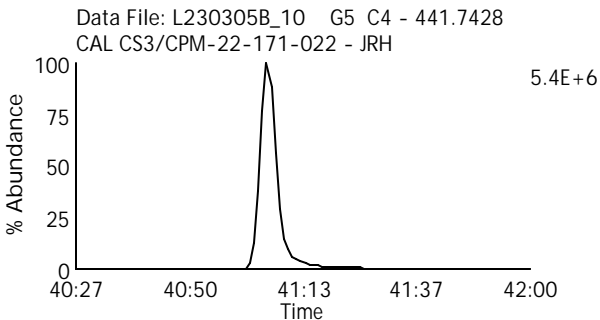
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

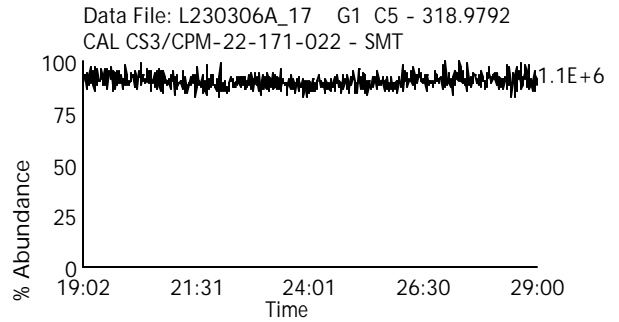
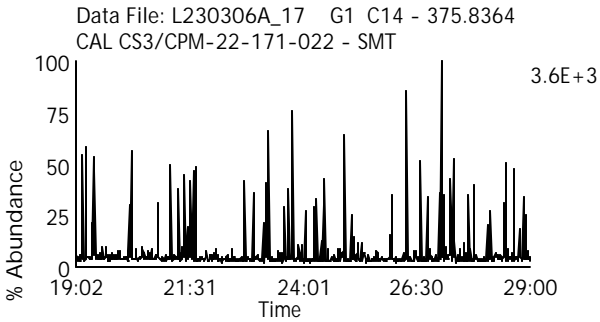
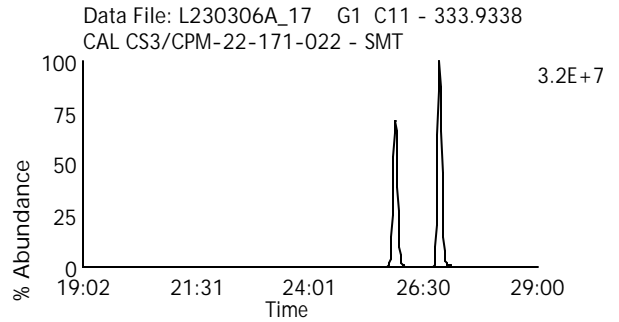
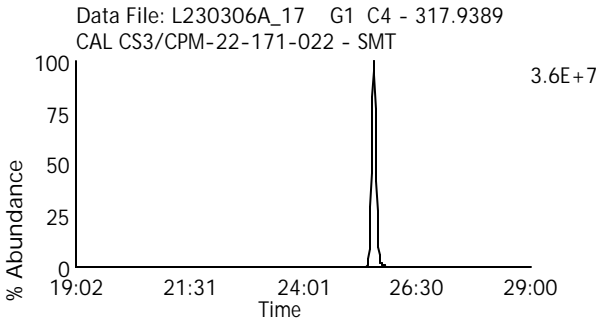
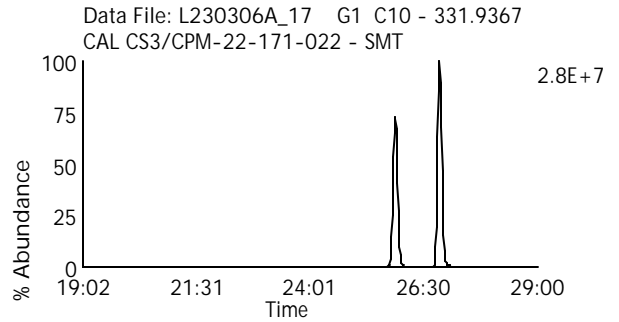
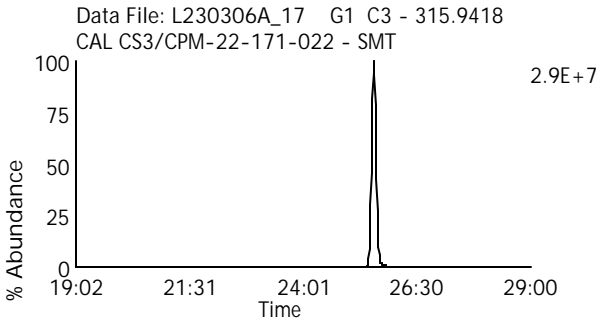
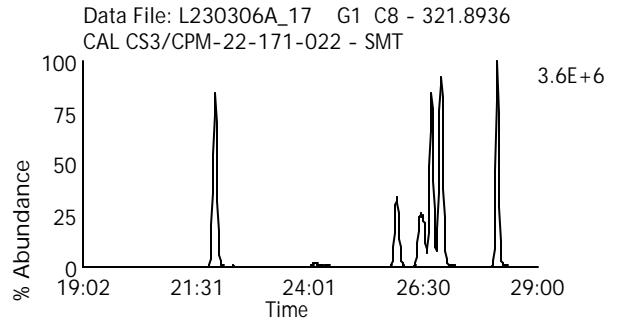
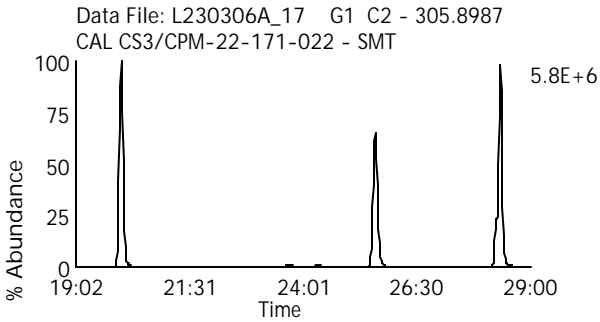
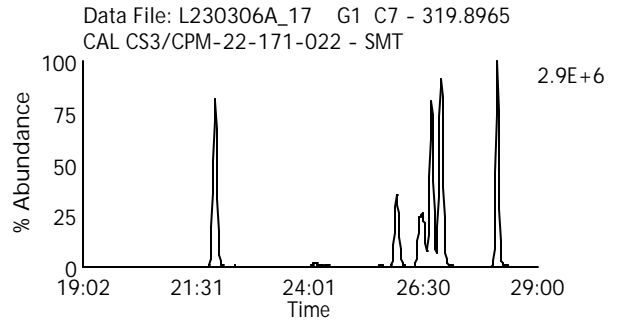
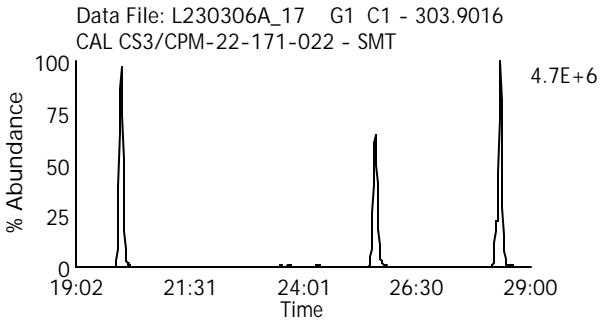
Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230306A_17
Date Acquired: 3/6/2023
Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022
Client Sample ID:
Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230306A_17

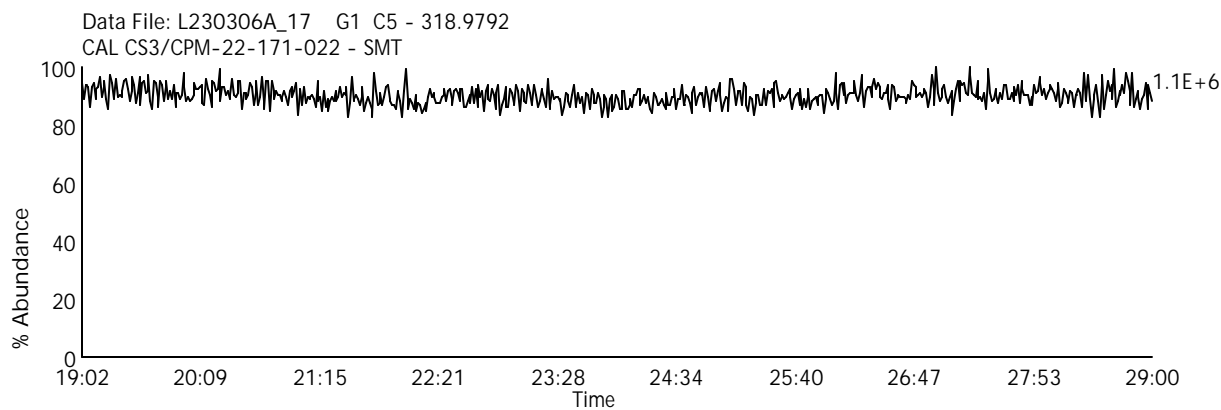
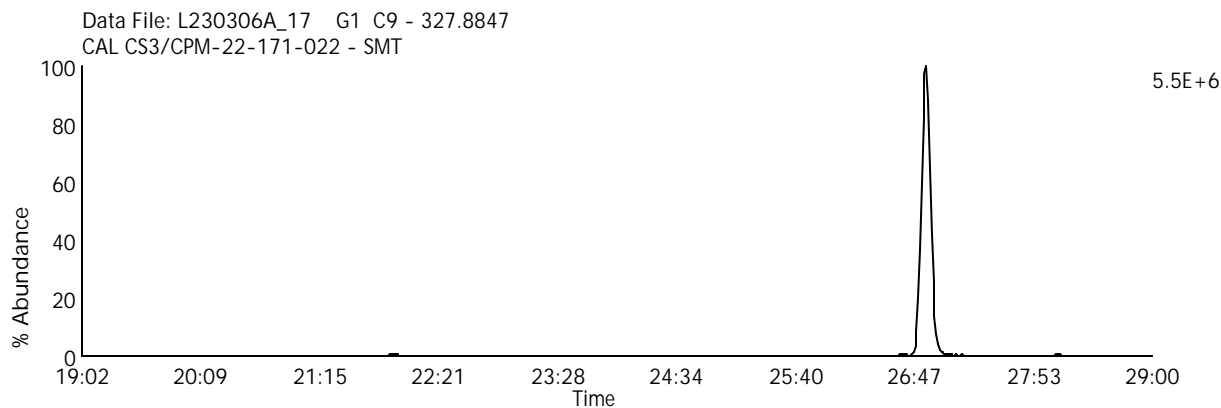
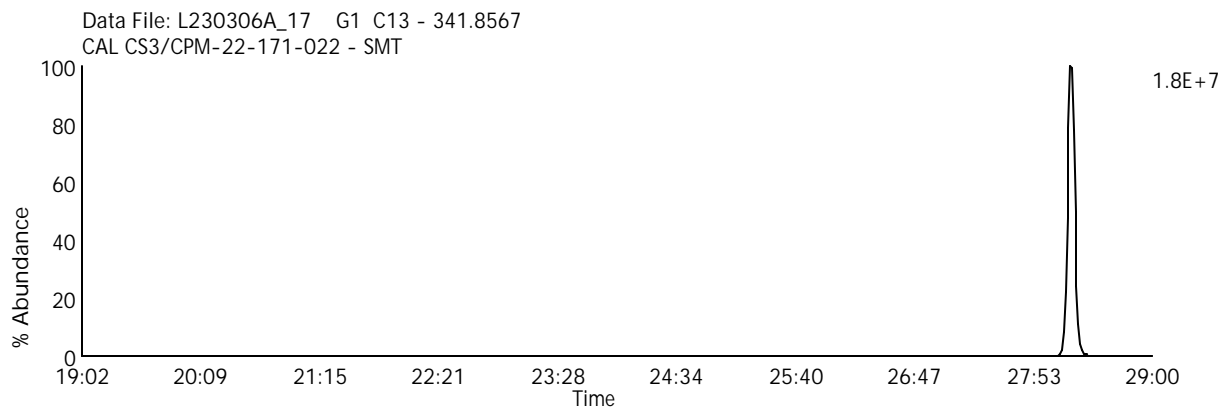
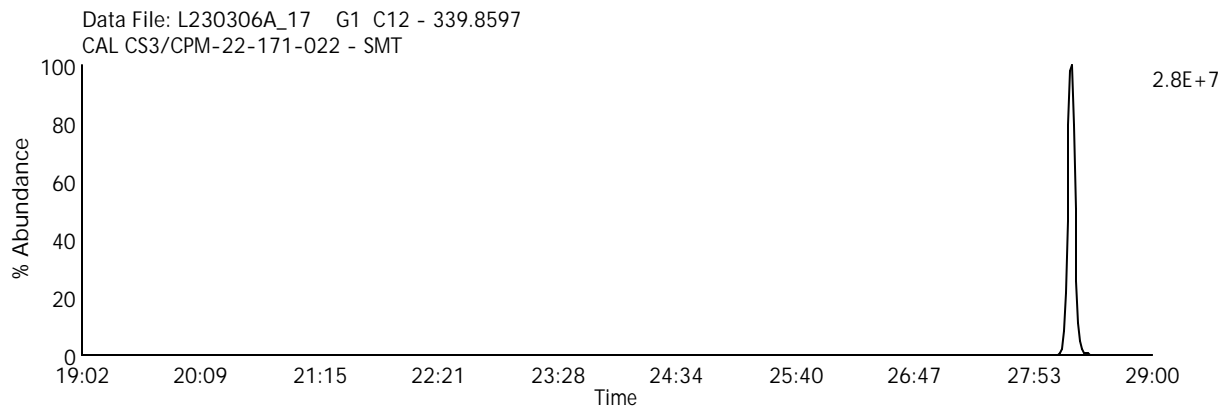
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230306A_17

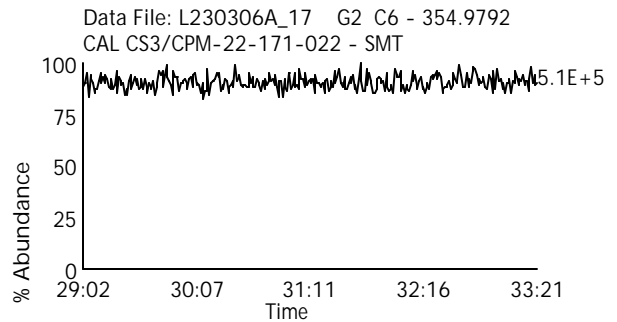
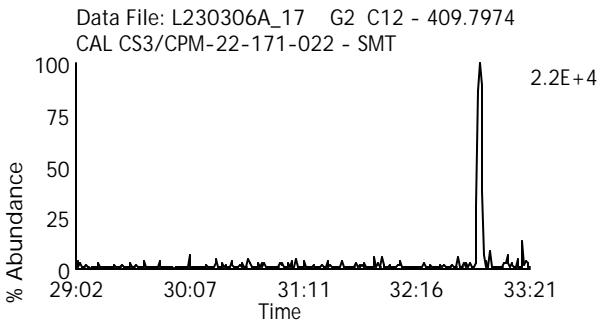
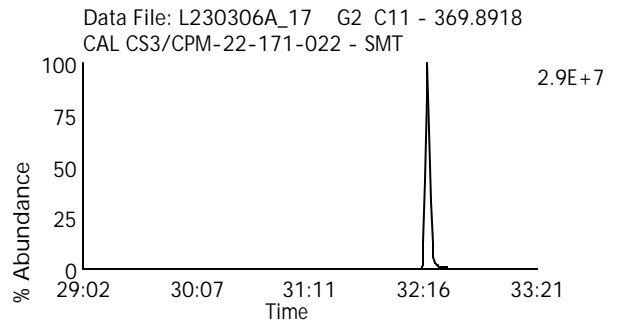
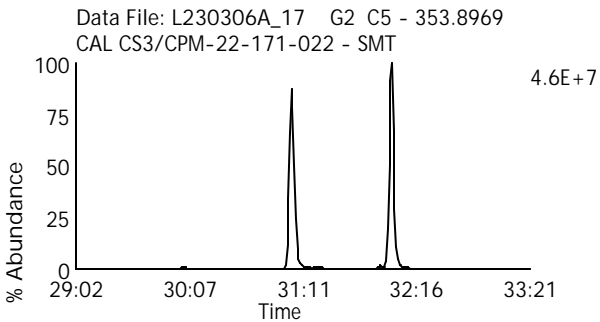
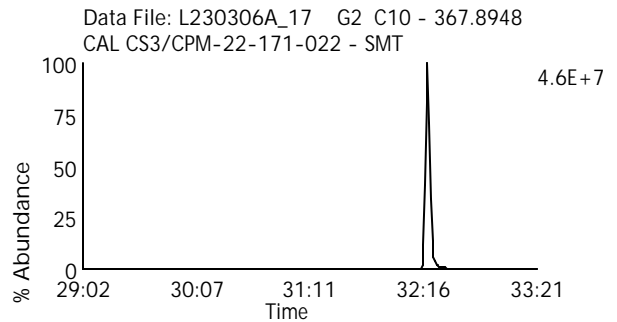
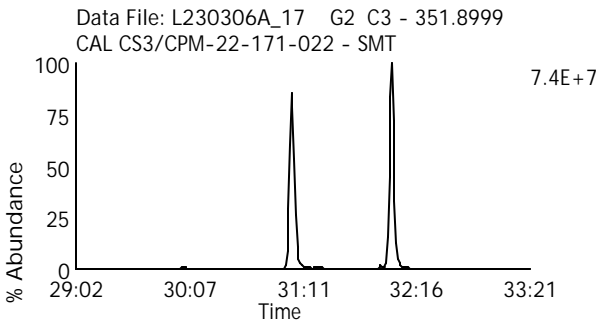
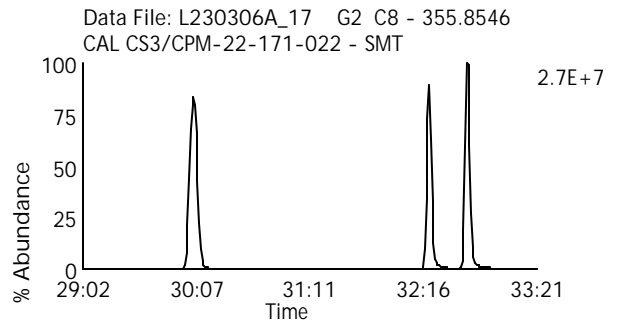
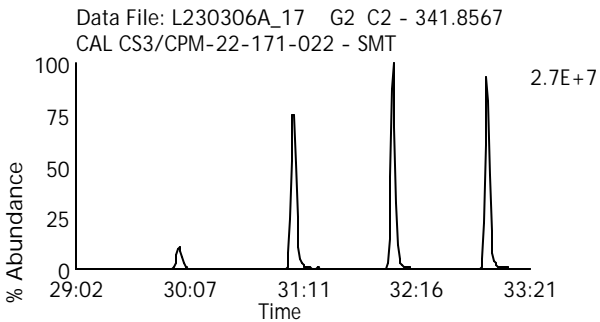
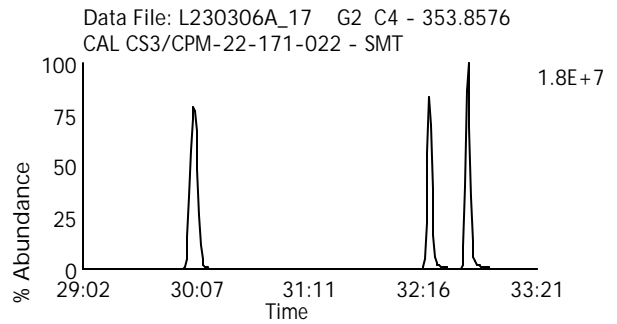
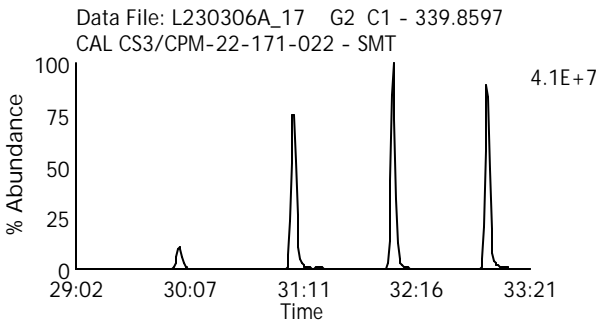
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

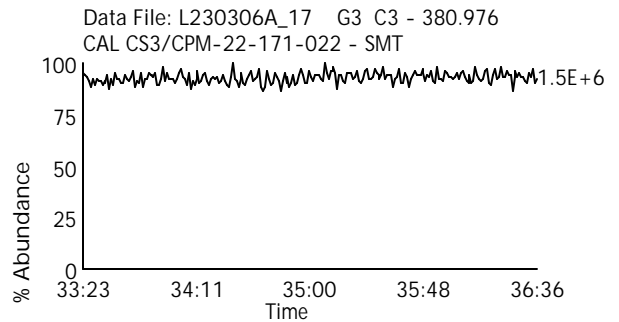
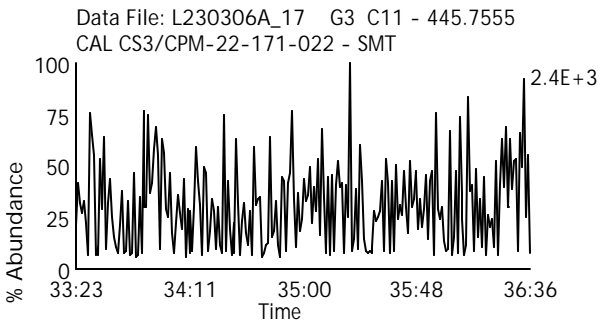
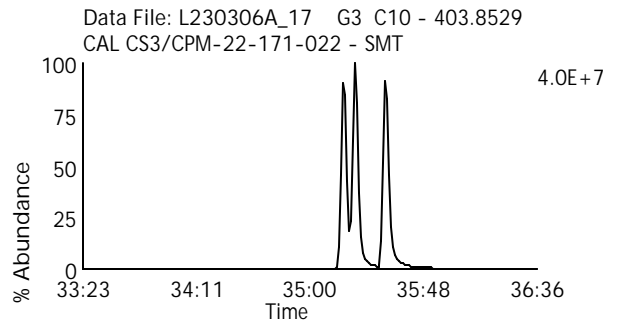
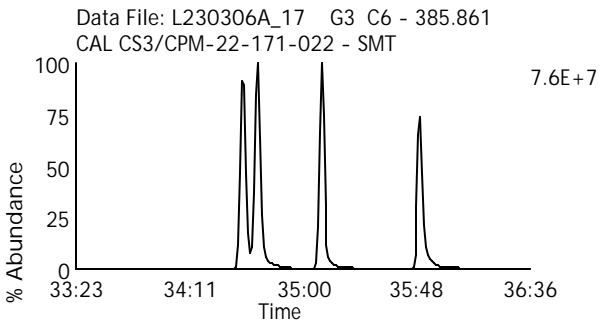
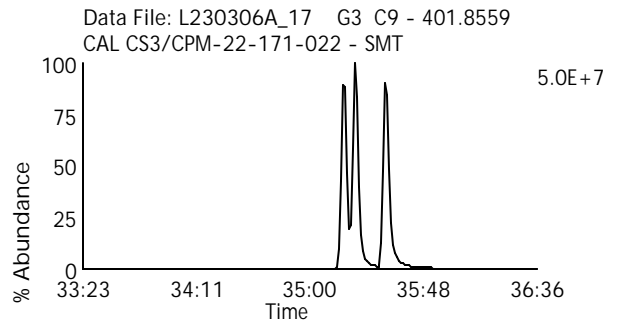
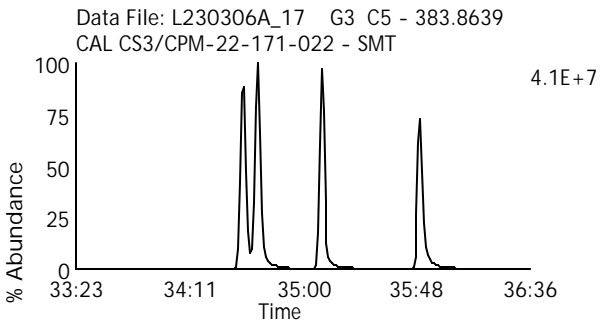
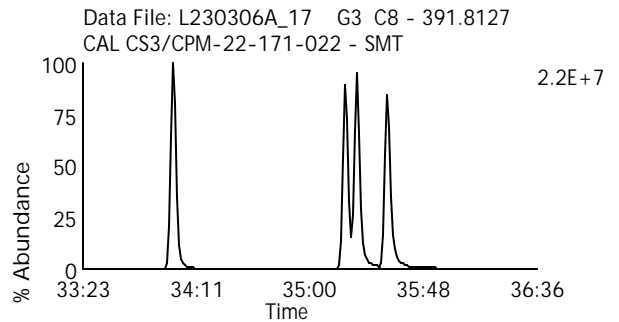
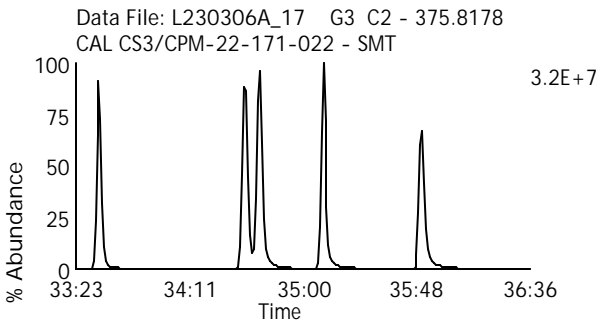
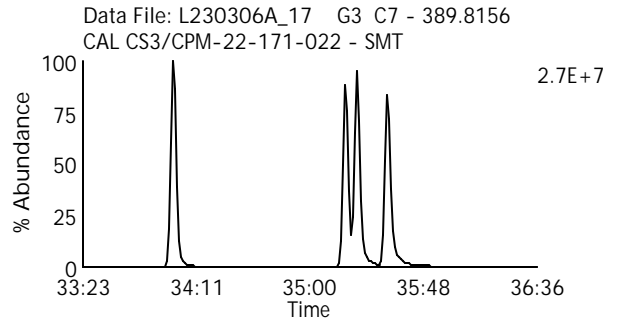
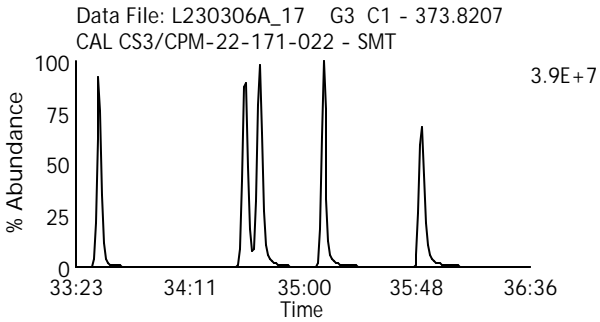
Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230306A_17
Date Acquired: 3/6/2023
Sample Description: CAL CS3/CPM-22-171-022 - SMT

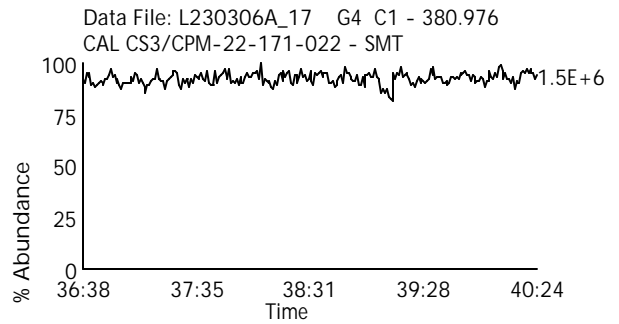
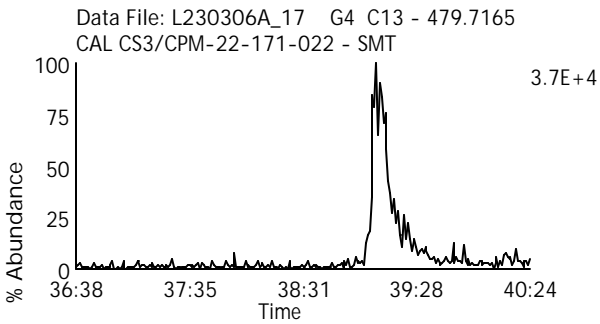
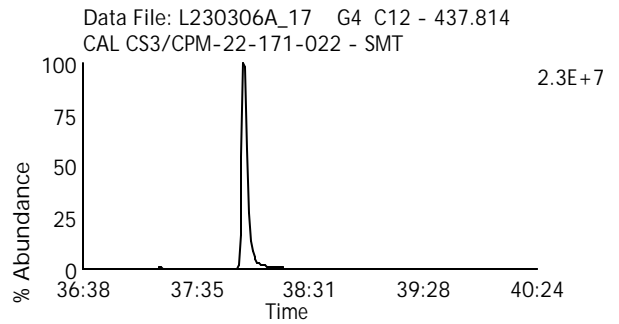
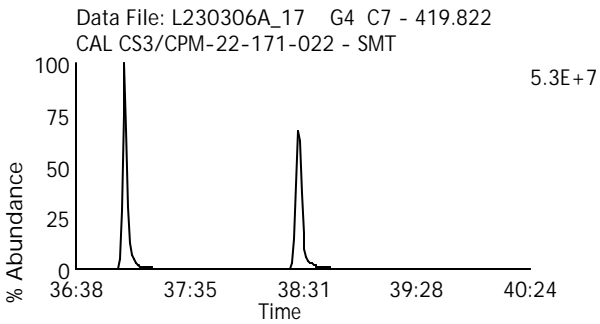
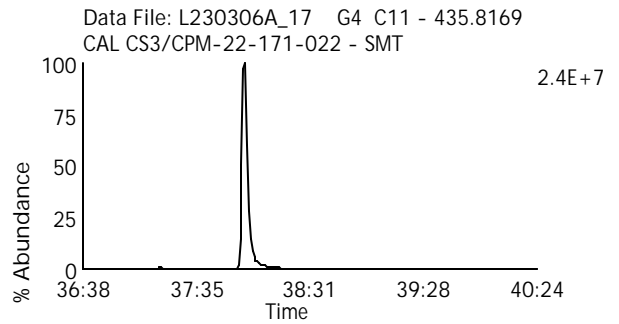
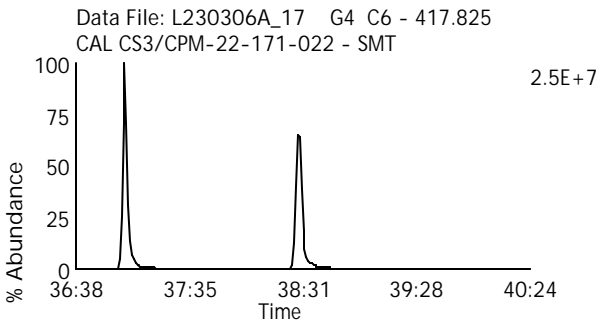
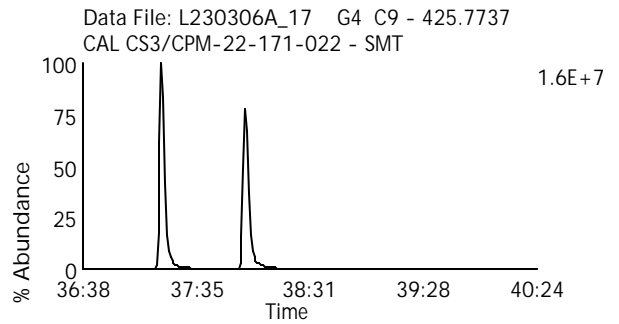
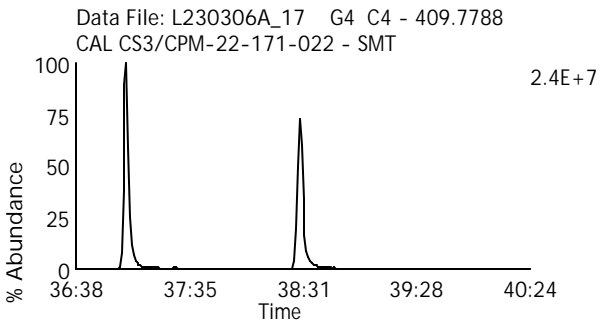
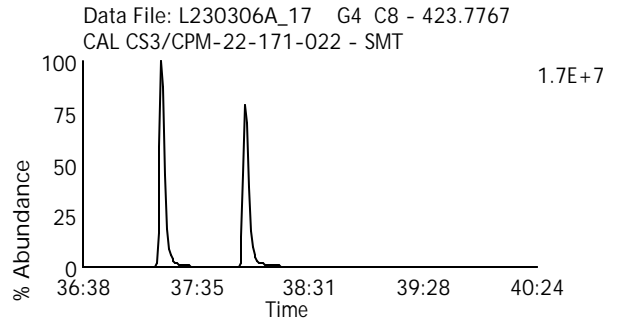
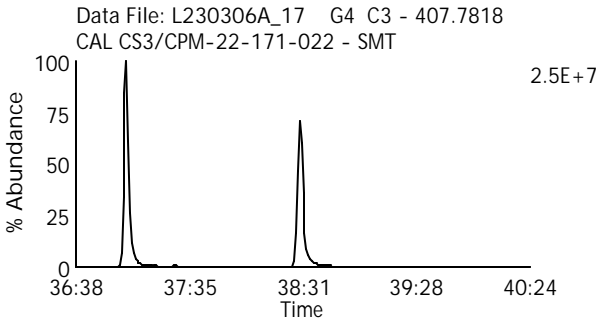
Lab Sample ID: CS3/CPM-22-171-022
Client Sample ID:
Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230306A_17
Date Acquired: 3/6/2023
Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022
Client Sample ID:
Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230306A_17

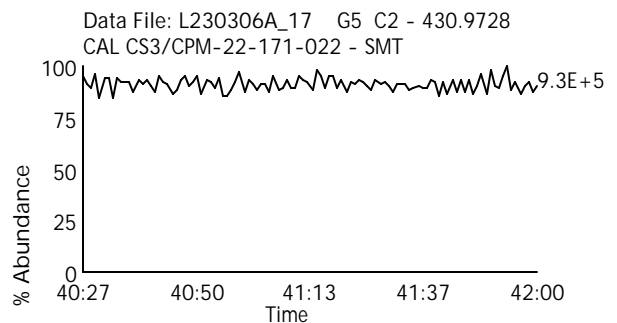
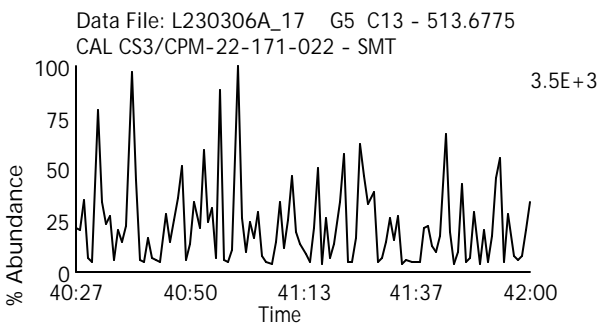
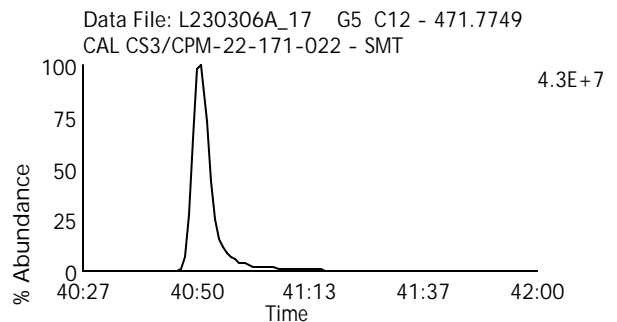
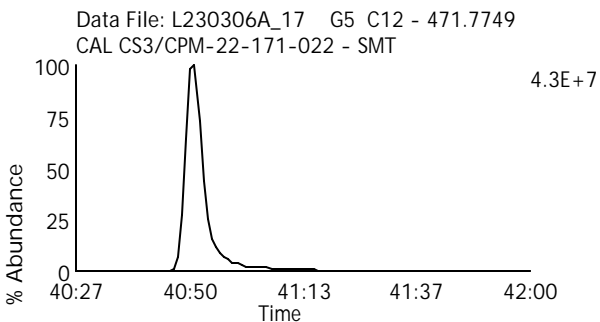
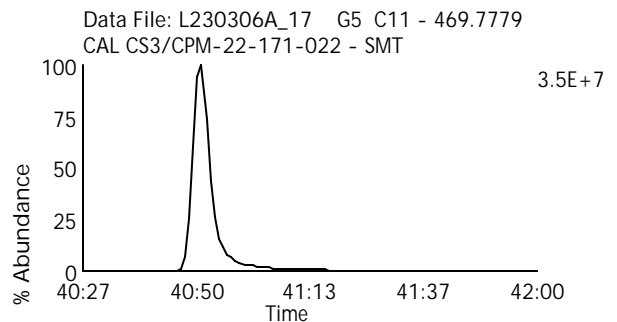
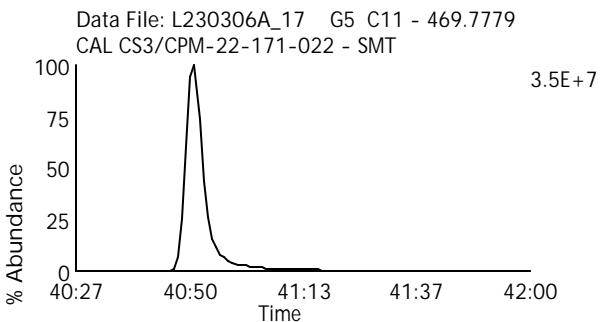
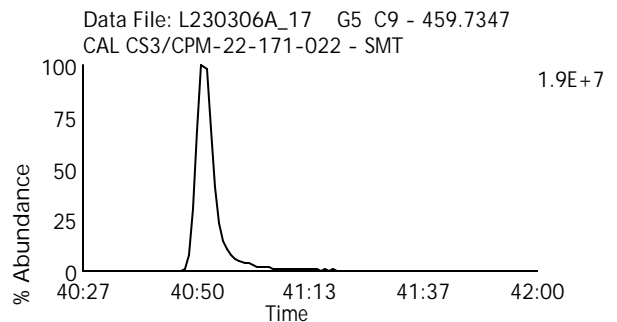
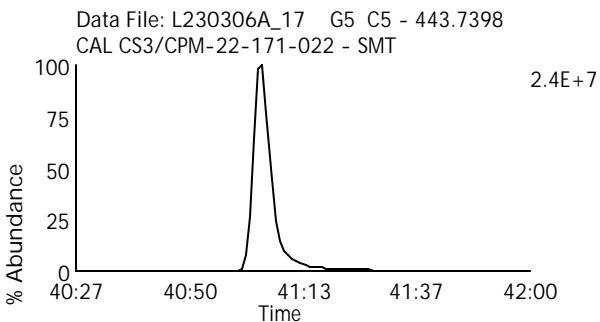
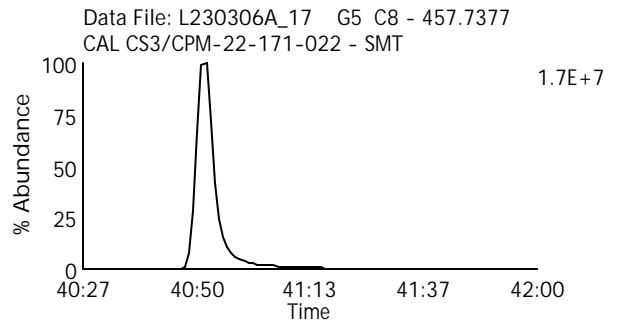
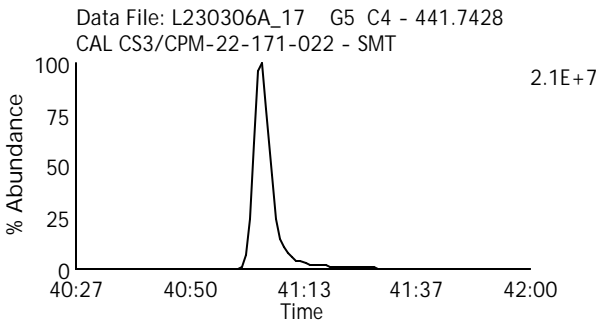
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

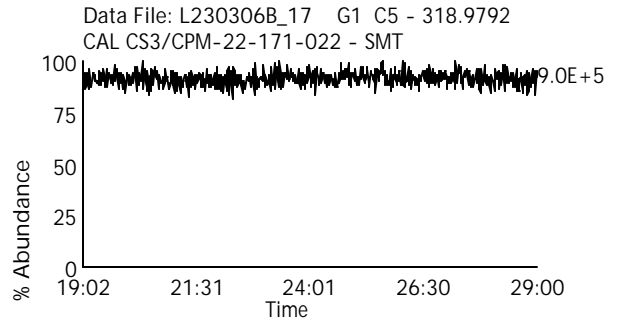
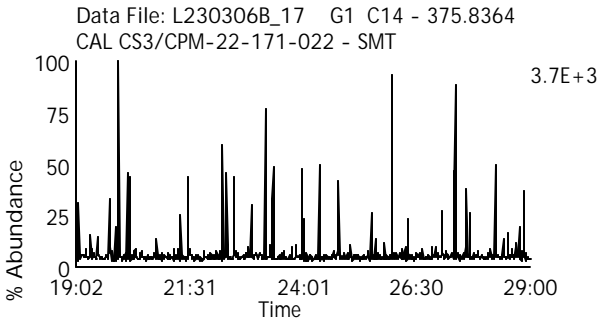
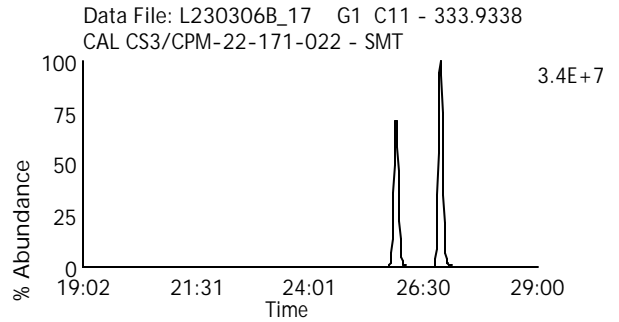
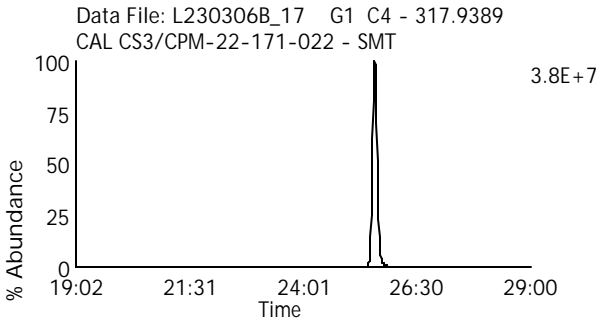
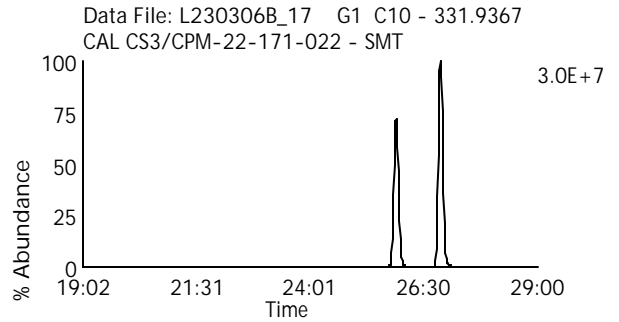
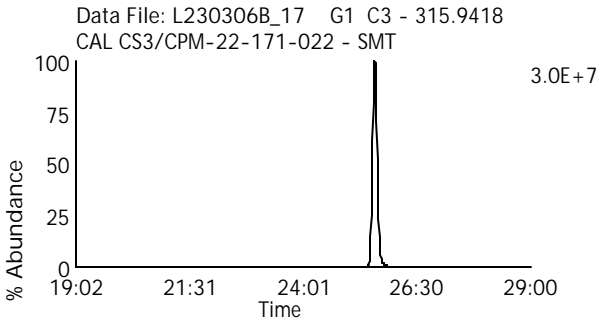
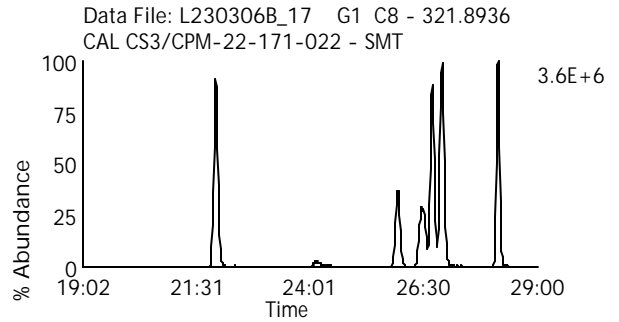
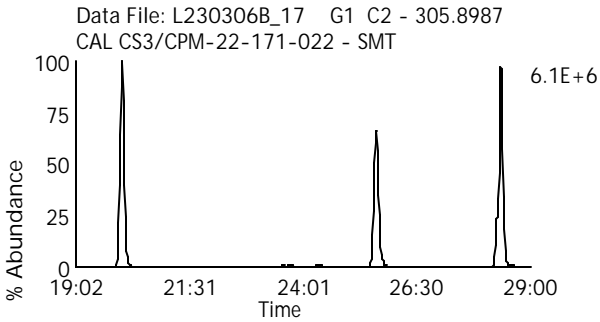
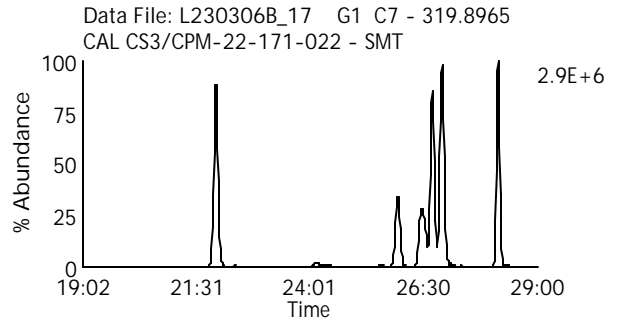
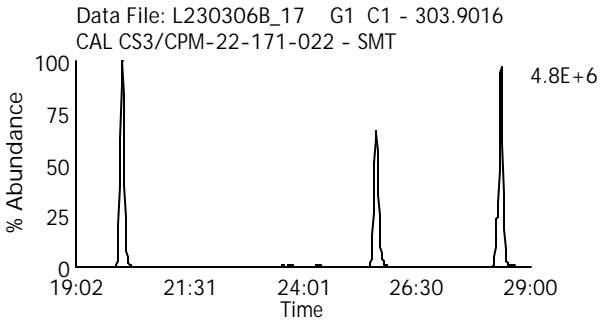
Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230306B_17
Date Acquired: 3/7/2023
Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022
Client Sample ID:
Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230306B_17

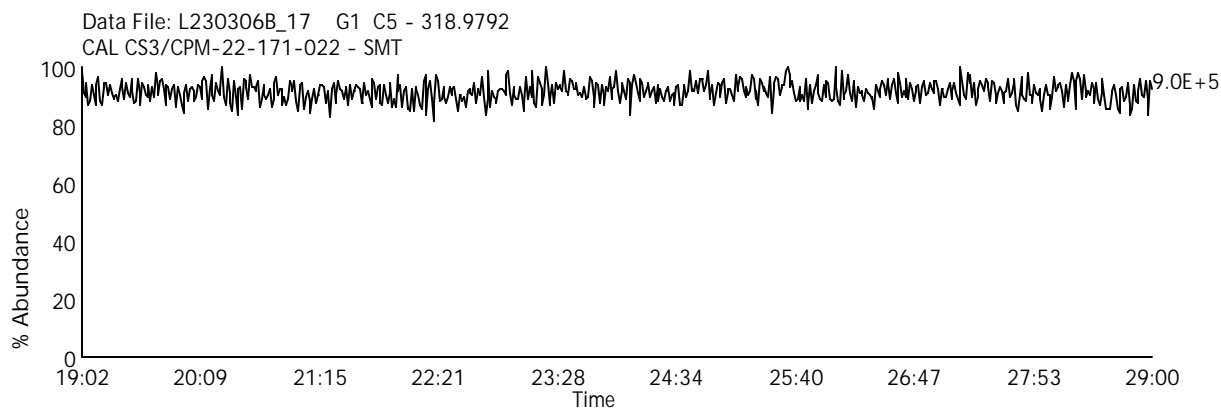
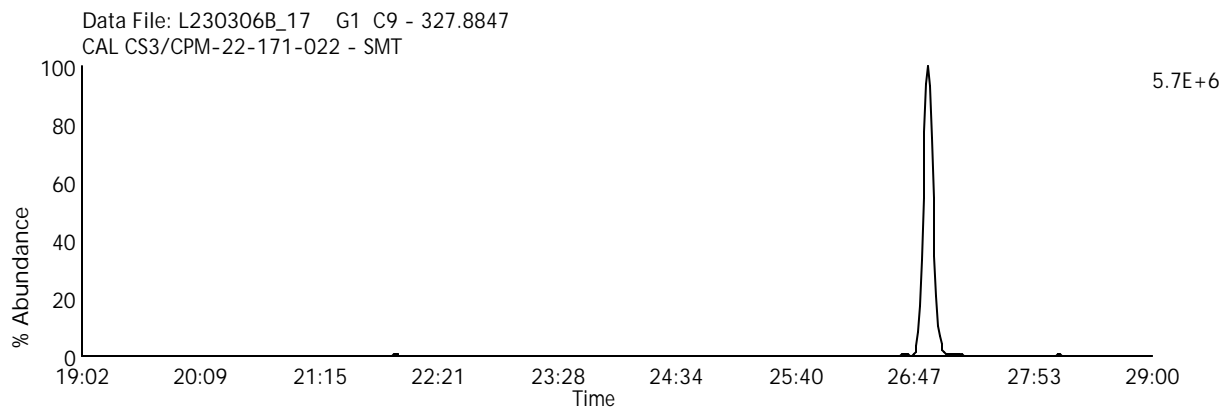
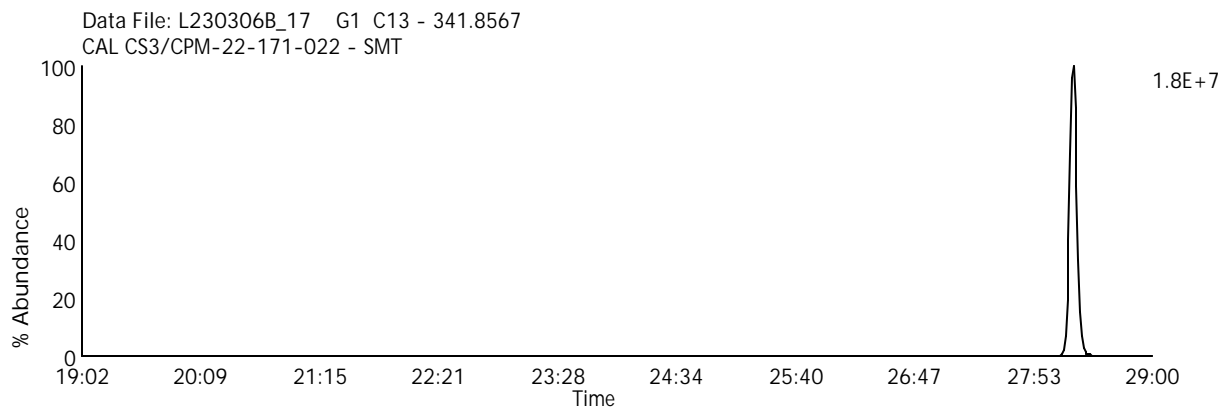
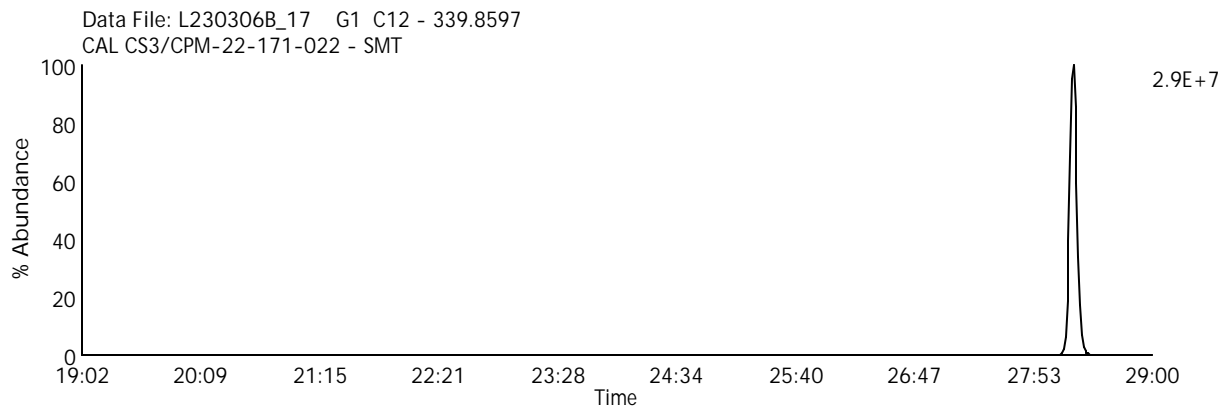
Date Acquired: 3/7/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230306B_17

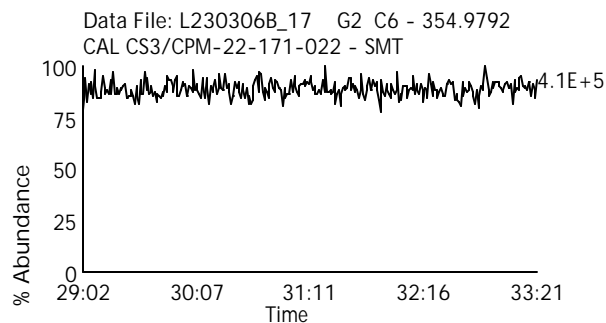
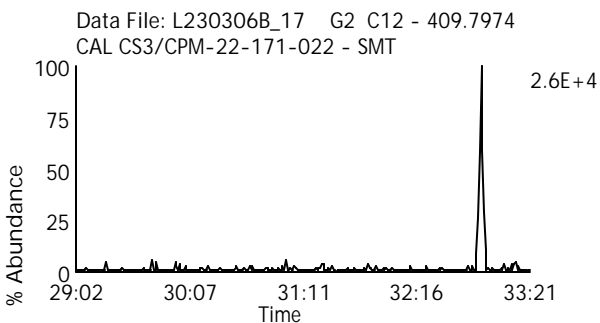
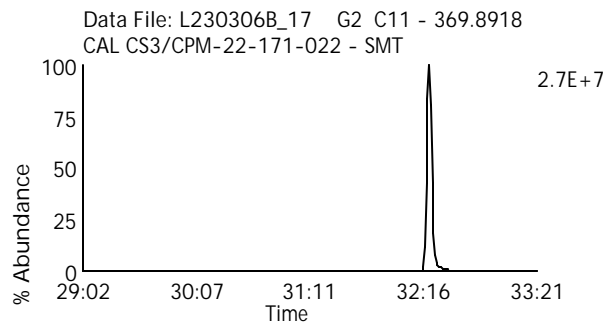
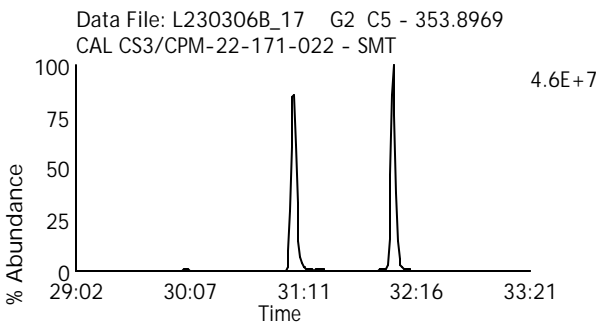
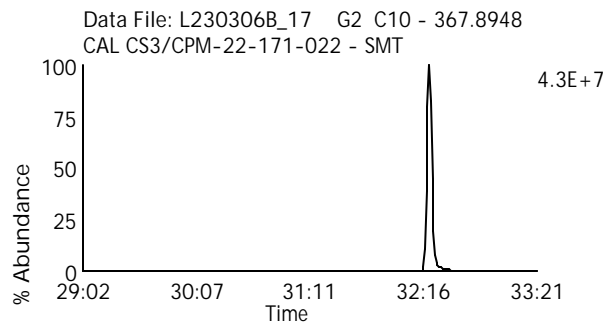
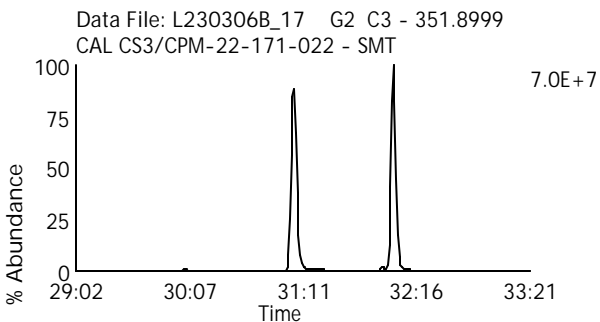
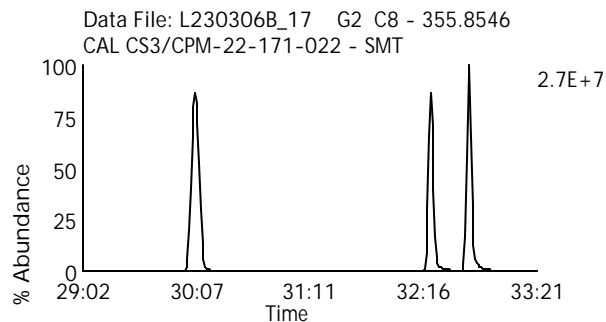
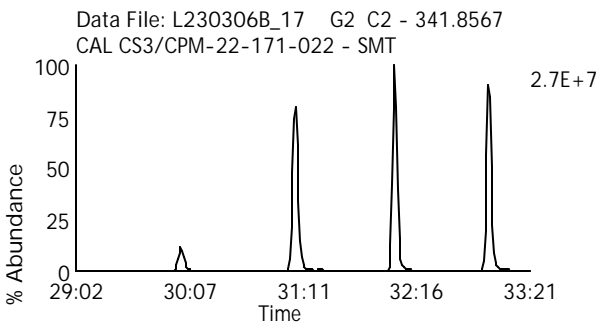
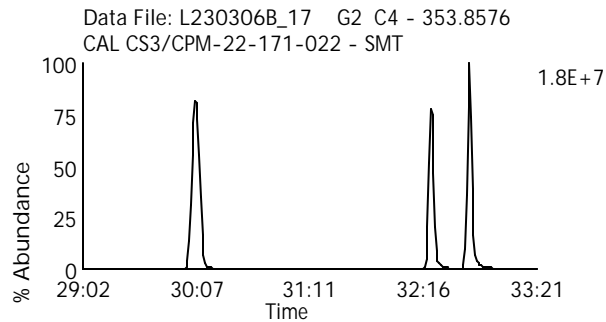
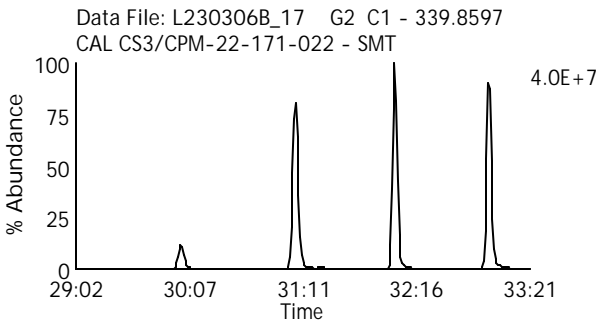
Date Acquired: 3/7/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230306B_17

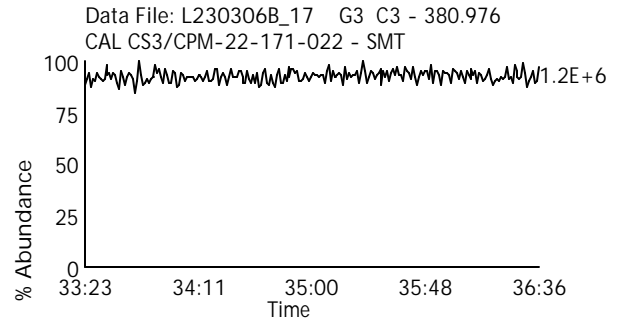
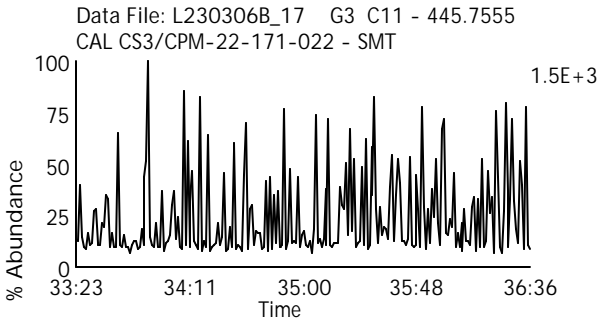
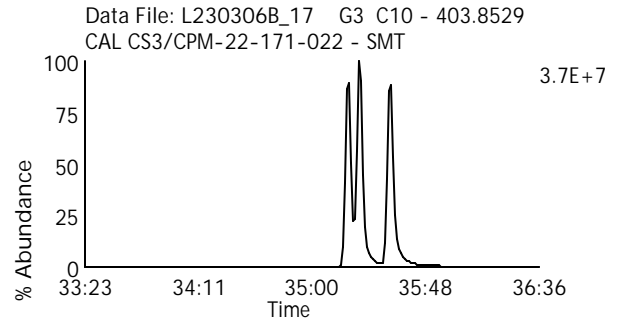
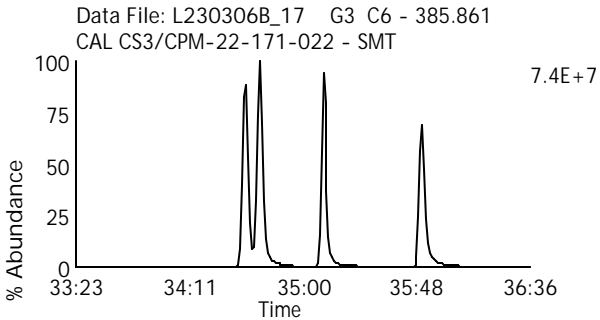
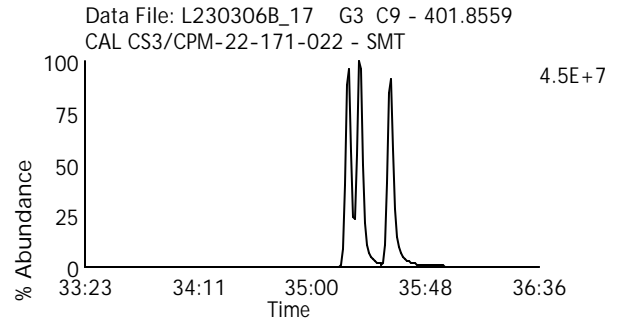
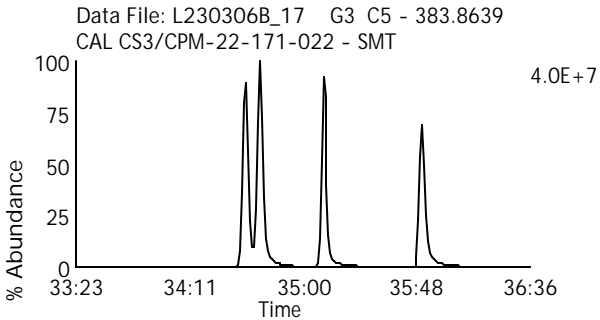
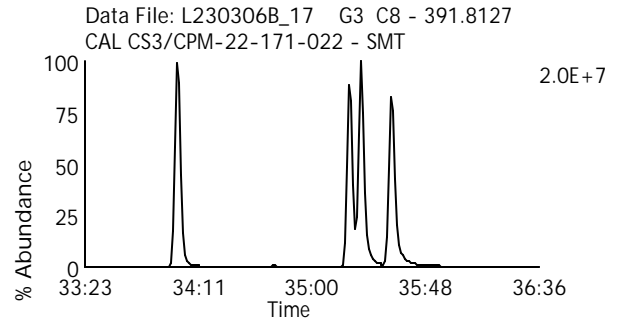
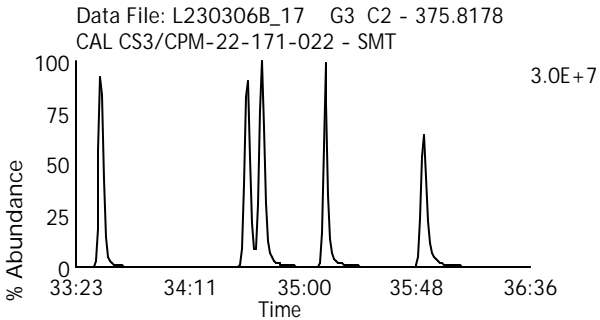
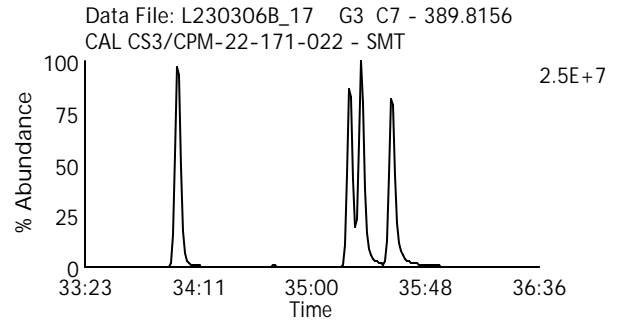
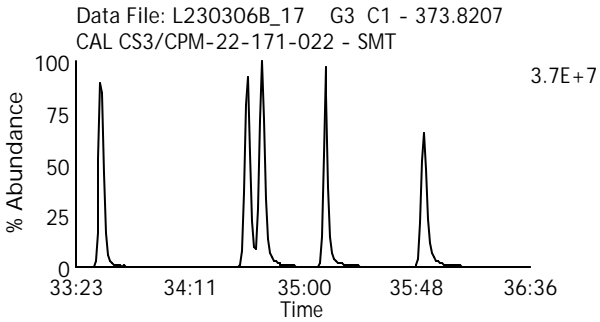
Date Acquired: 3/7/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230306B_17

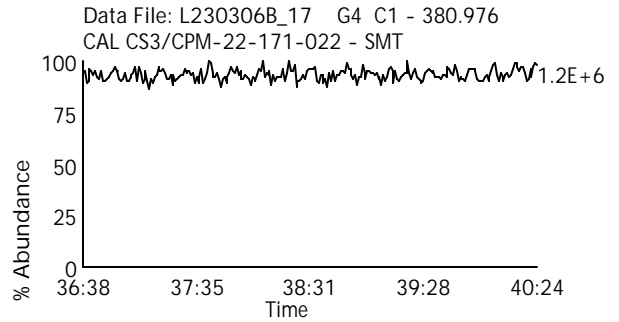
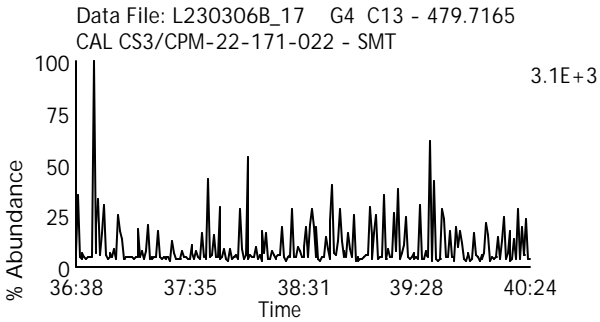
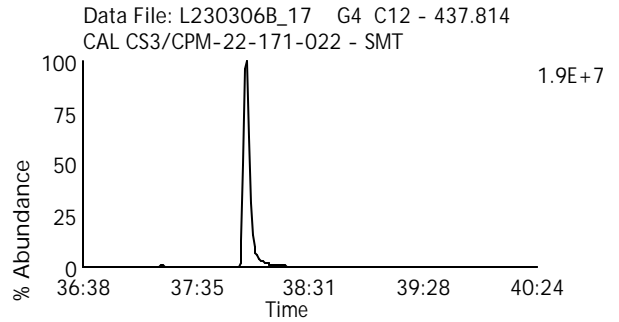
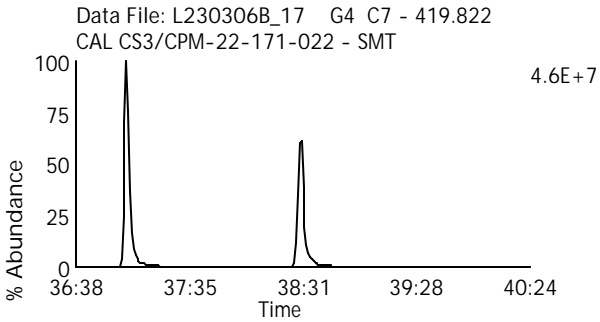
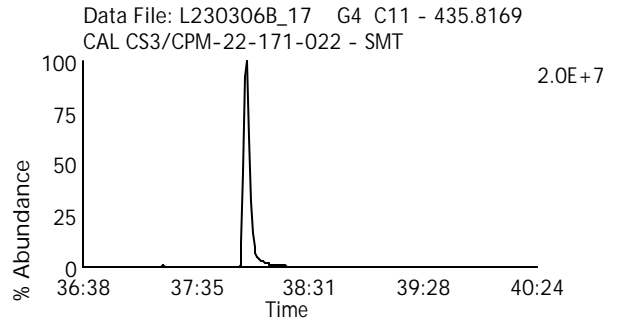
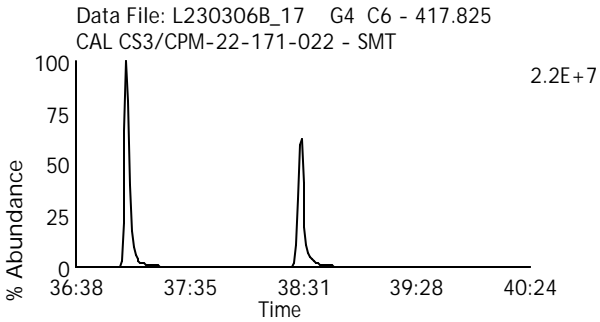
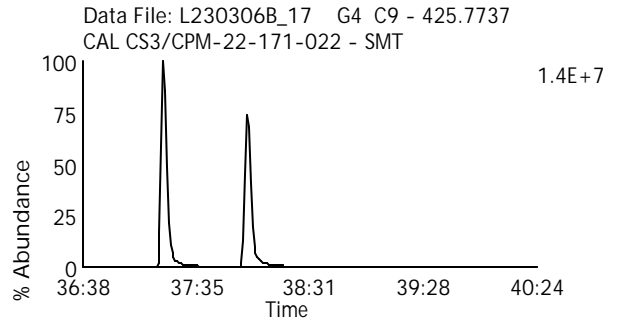
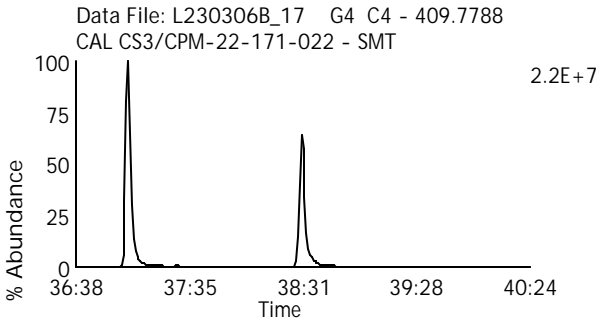
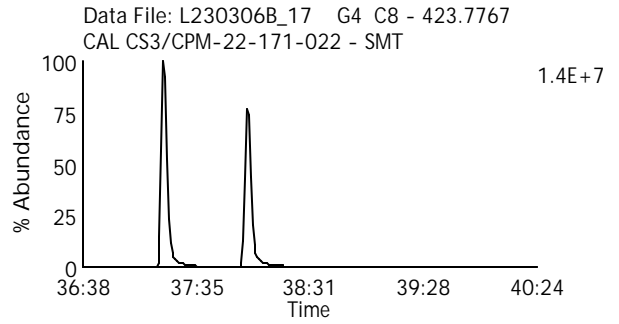
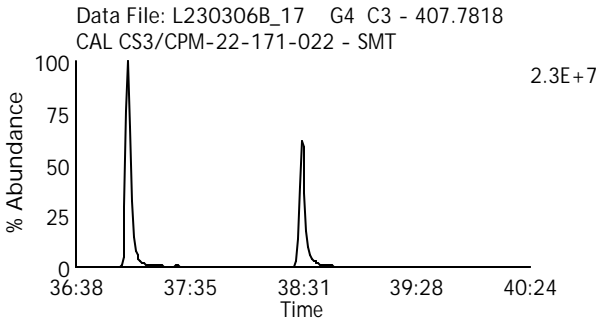
Date Acquired: 3/7/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230306B_17

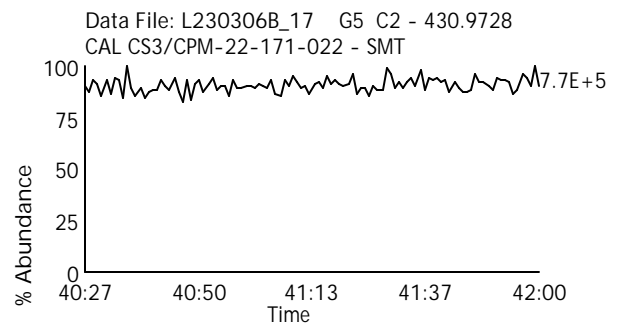
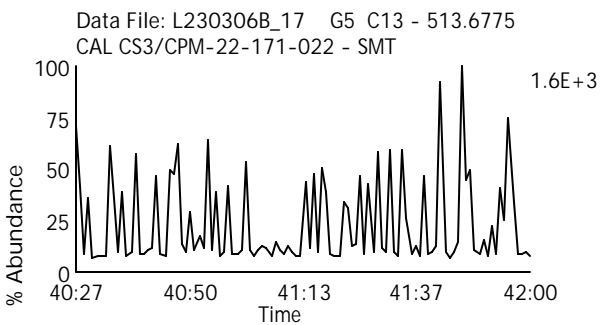
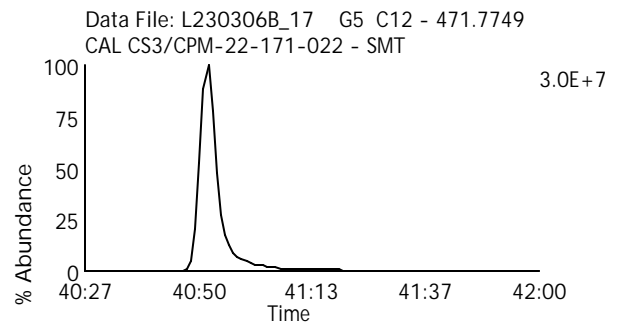
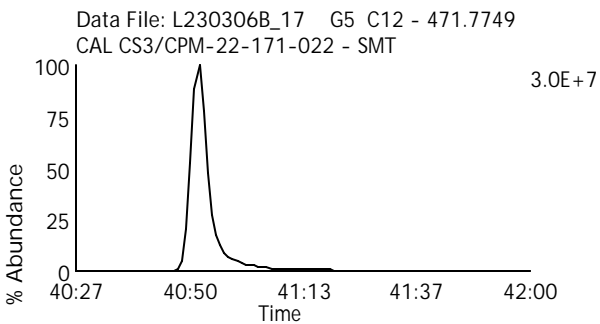
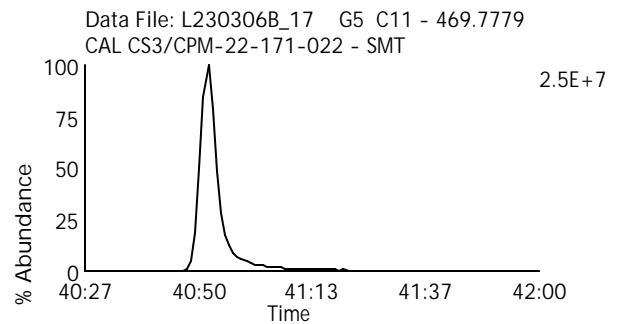
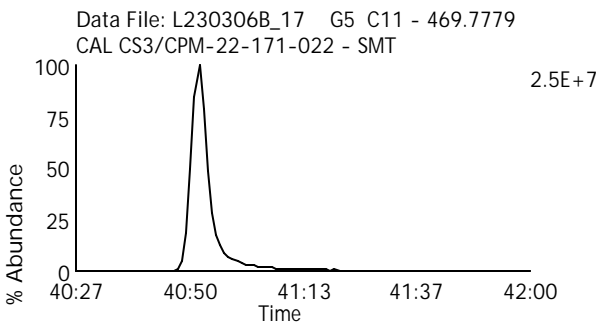
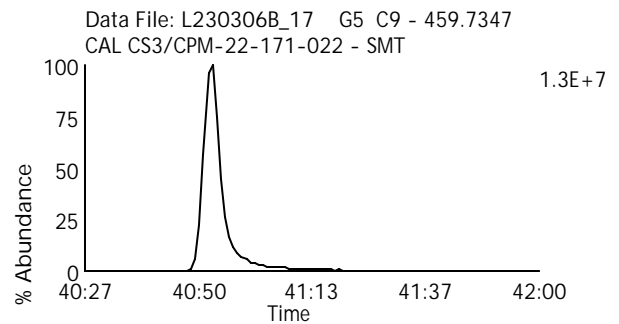
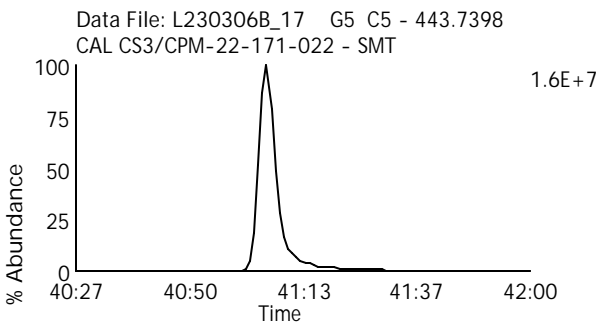
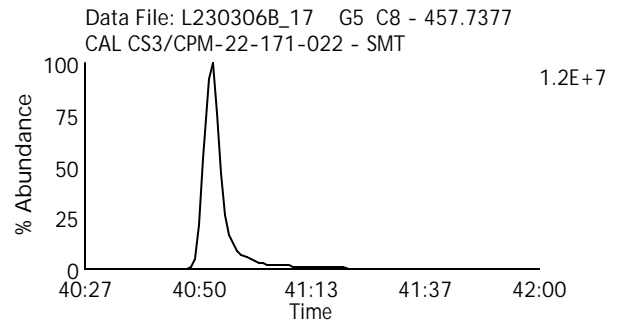
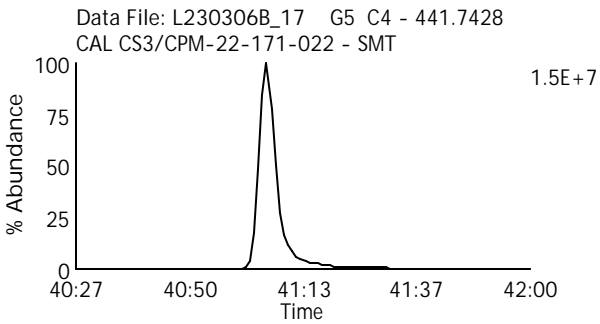
Date Acquired: 3/7/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID:

Instrument: 10MSHR15 (L)



TCDF Confirmation Analysis

Data File Name: U230307A_03

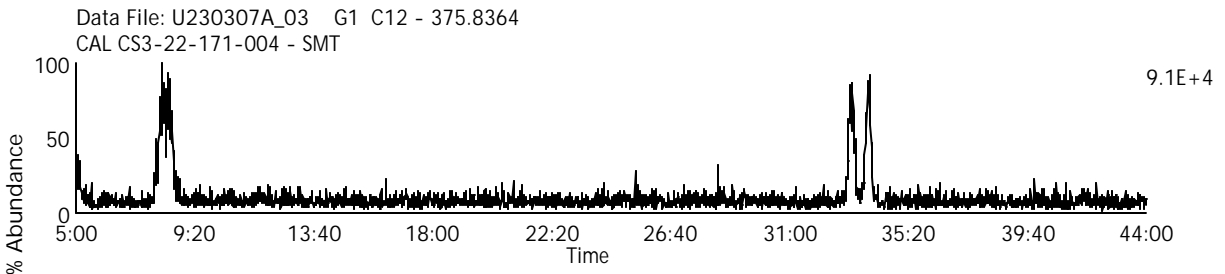
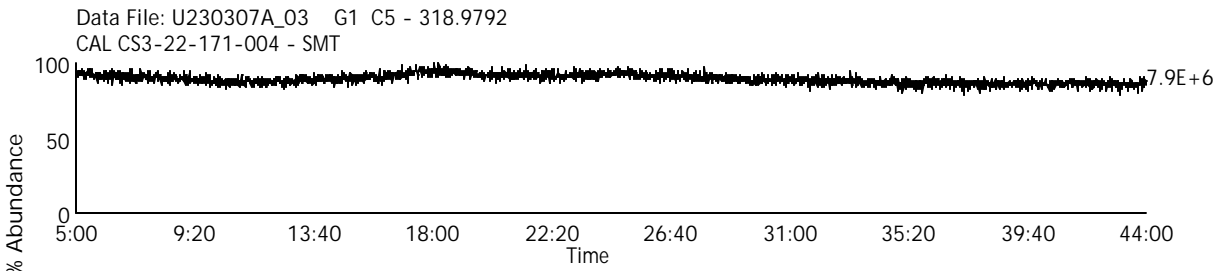
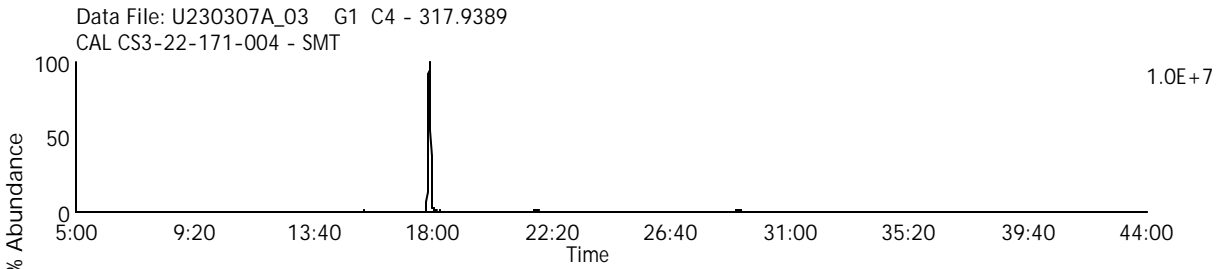
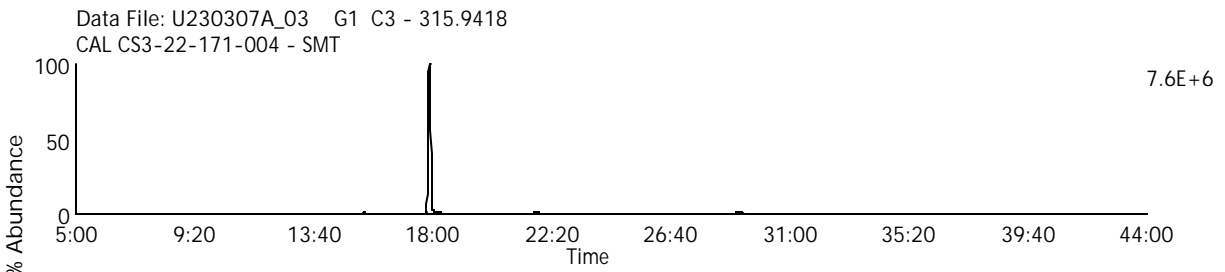
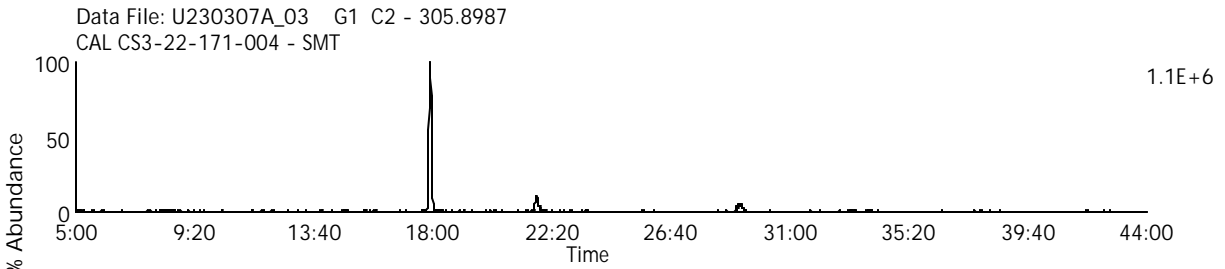
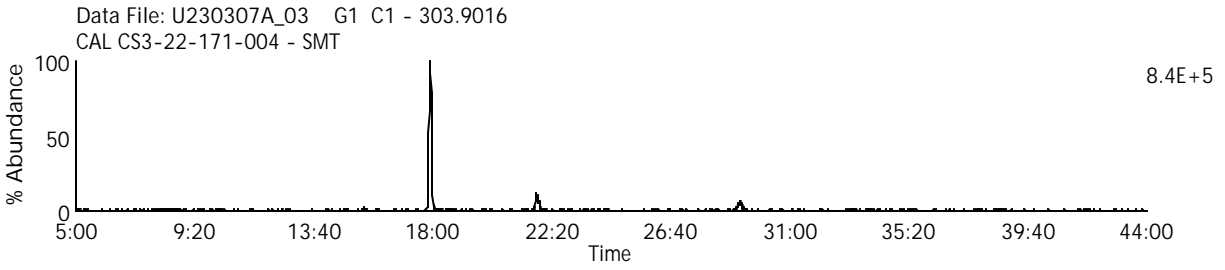
Date Acquired: 3/7/2023

Sample Description: CAL CS3-22-171-004 - SMT

Lab Sample ID: CS3-22-171-004

Client Sample ID:

Instrument: 10MSHR06 (U)



TCDF Confirmation Analysis

Data File Name: U230307A_08

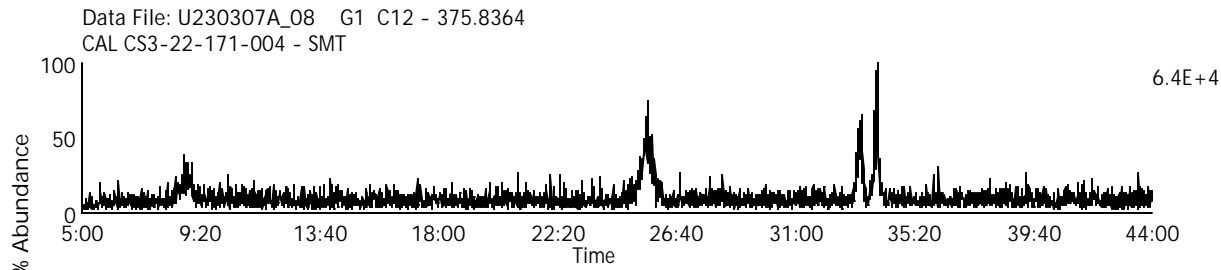
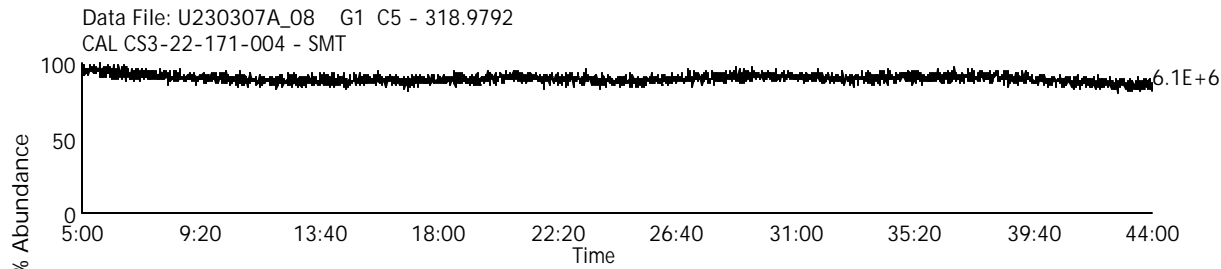
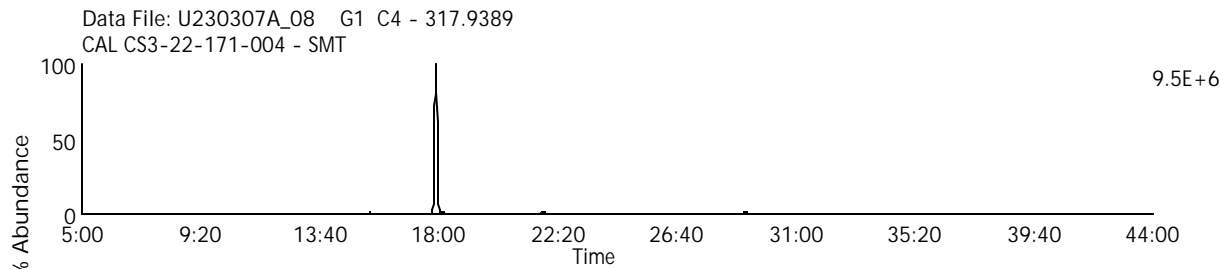
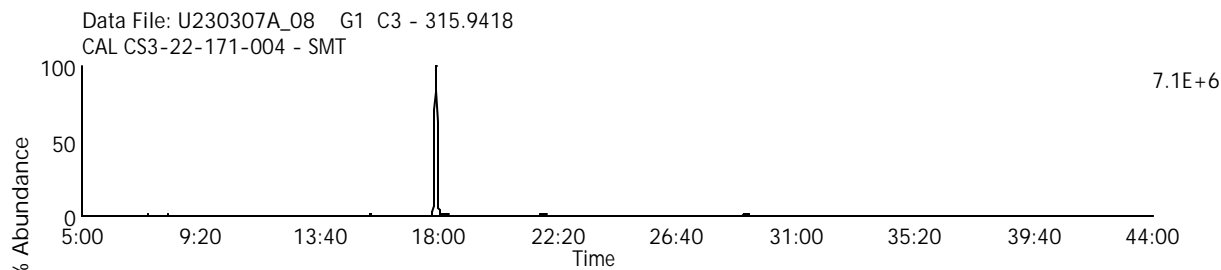
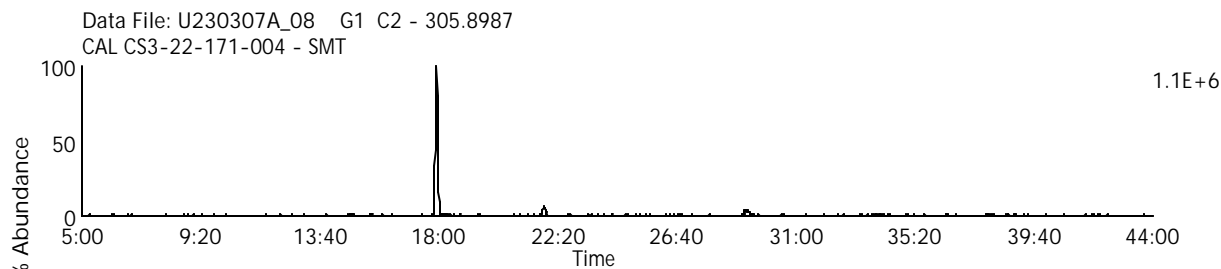
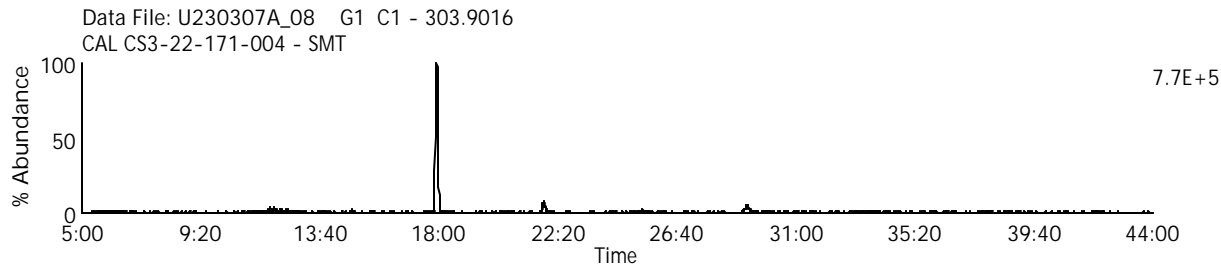
Lab Sample ID: CS3-22-171-004

Date Acquired: 3/7/2023

Client Sample ID:

Sample Description: CAL CS3-22-171-004 - SMT

Instrument: 10MSHR06 (U)





PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name	State of Indiana	Injected By	SMT
Client ID		Instrument ID	10MSHR15 (L)
Lab ID	CS1-20-123-108	GC Column ID	US1824614H
Filename	L230302A_10	ICAL ID	L230302
Analyzed	03/02/2023 11:30		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:49	5.22e7	6.64e7	6.74e6	8.65e6	----	----	0.79	
2,3,7,8-TCDF	25:51	2.69e5	3.21e5	4.27e4	3.96e4	----	----	0.84	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	26:08	3.85e7	4.36e7	5.08e6	5.81e6	----	----	0.88	
2,3,7,8-TCDD-13C	27:04	4.27e7	4.97e7	6.82e6	7.81e6	----	----	0.86	
2,3,7,8-TCDD-37Cl4	27:07	4.10e5		7.16e4		----	----		
2,3,7,8-TCDD	27:07	2.07e5	(M)2.44e5	3.39e4	4.33e4	----	----	0.85	

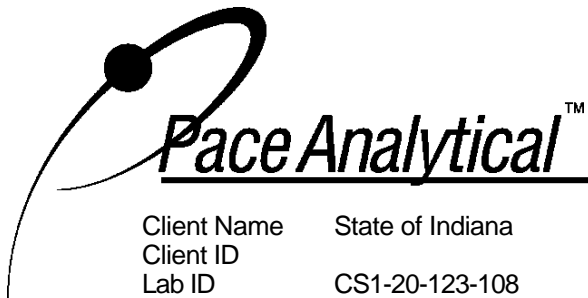
Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:12	4.81e7	3.08e7	1.36e7	8.55e6	----	----	1.56	
2,3,4,7,8-PeCDF-13C	32:07	(M)4.71e7	2.95e7	1.47e7	9.67e6	----	----	1.59	
1,2,3,7,8-PeCDF	31:12	1.09e6	7.44e5	2.96e5	2.25e5	----	----	1.46	
2,3,4,7,8-PeCDF	32:08	1.17e6	7.68e5	3.83e5	2.34e5	----	----	1.53	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:24	3.03e7	(M)1.91e7	9.48e6	6.05e6	----	----	1.59	
1,2,3,7,8-PeCDD	32:25	4.36e5	7.42e5	1.46e5	2.36e5	----	----	0.59	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:39	2.00e7	3.70e7	7.43e6	1.41e7	----	----	0.54	
1,2,3,6,7,8-HxCDF-13C	34:45	2.24e7	4.30e7	8.35e6	1.59e7	----	----	0.52	
2,3,4,6,7,8-HxCDF-13C	35:12	2.15e7	4.00e7	8.20e6	1.53e7	----	----	0.54	
1,2,3,7,8,9-HxCDF-13C	35:54	1.77e7	3.34e7	6.17e6	1.19e7	----	----	0.53	
1,2,3,4,7,8-HxCDF	34:40	(M)9.21e5	6.99e5	3.52e5	2.59e5	----	----	1.32	
1,2,3,6,7,8-HxCDF	34:46	(M)9.97e5	7.87e5	3.75e5	2.82e5	----	----	1.27	
2,3,4,6,7,8-HxCDF	35:13	9.53e5	(M)7.40e5	3.65e5	2.81e5	----	----	1.29	
1,2,3,7,8,9-HxCDF	35:55	(M)7.71e5	5.98e5	2.71e5	2.05e5	----	----	1.29	

REPORT OF LABORATORY ANALYSIS

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Client Name	State of Indiana	Injected By	SMT
Client ID		Instrument ID	10MSHR15 (L)
Lab ID	CS1-20-123-108	GC Column ID	US1824614H
Filename	L230302A_10	ICAL ID	L230302
Analyzed	03/02/2023 11:30		

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:19	2.57e7	1.91e7	9.59e6	7.32e6	----	----	1.35	
1,2,3,6,7,8-HxCDD-13C	35:23	2.85e7	2.37e7	1.01e7	8.25e6	----	----	1.20	
1,2,3,7,8,9-HxCDD-13C	35:37	2.83e7	2.26e7	9.85e6	7.66e6	----	----	1.25	
1,2,3,4,7,8-HxCDD	35:19	5.93e5	4.93e5	2.23e5	1.93e5	----	----	1.20	
1,2,3,6,7,8-HxCDD	35:24	7.09e5	5.69e5	2.46e5	2.14e5	----	----	1.25	
1,2,3,7,8,9-HxCDD	35:37	6.24e5	5.32e5	2.04e5	1.69e5	----	----	1.17	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:08	1.59e7	3.41e7	5.40e6	1.15e7	----	----	0.47	
1,2,3,4,7,8,9-HpCDF-13C	38:34	1.24e7	2.66e7	3.97e6	8.35e6	----	----	0.47	
1,2,3,4,6,7,8-HpCDF	37:08	8.39e5	8.12e5	2.72e5	2.77e5	----	----	1.03	
1,2,3,4,7,8,9-HpCDF	38:35	(M)6.21e5	5.92e5	2.14e5	1.90e5	----	----	1.05	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:04	1.81e7	1.67e7	5.86e6	5.37e6	----	----	1.08	
1,2,3,4,6,7,8-HpCDD	38:05	4.97e5	4.77e5	1.55e5	1.50e5	----	----	1.04	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:12	8.67e5	1.01e6	2.06e5	2.74e5	----	----	0.86	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:57	3.18e7	3.84e7	8.49e6	1.02e7	----	----	0.83	
OCDD	40:58	7.19e5	8.06e5	1.90e5	2.09e5	----	----	0.89	

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name	State of Indiana	Injected By	SMT
Client ID		Instrument ID	10MSHR15 (L)
Lab ID	CS2-22-171-006	GC Column ID	US1824614H
Filename	L230302A_09	ICAL ID	L230302
Analyzed	03/02/2023 10:47		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:51	4.52e7	5.85e7	5.89e6	7.49e6	----	----	0.77	
2,3,7,8-TCDF	25:53	9.21e5	1.10e6	1.20e5	1.48e5	----	----	0.84	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	26:10	3.55e7	4.03e7	4.87e6	5.46e6	----	----	0.88	
2,3,7,8-TCDD-13C	27:06	3.82e7	4.36e7	6.37e6	7.23e6	----	----	0.88	
2,3,7,8-TCDD-37Cl4	27:07	(M)1.41e6		2.20e5		----	----		
2,3,7,8-TCDD	27:07	7.10e5	8.63e5	1.06e5	1.30e5	----	----	0.82	

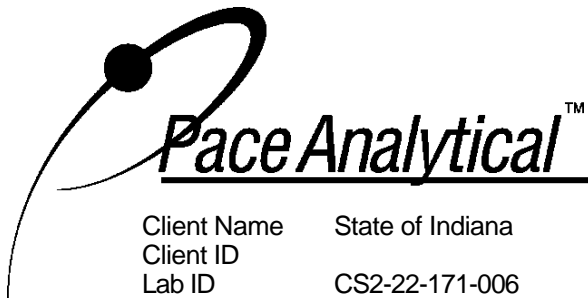
Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:13	4.11e7	2.64e7	1.16e7	7.28e6	----	----	1.56	
2,3,4,7,8-PeCDF-13C	32:08	3.92e7	2.46e7	1.28e7	8.23e6	----	----	1.59	
1,2,3,7,8-PeCDF	31:13	3.94e6	2.62e6	1.12e6	6.98e5	----	----	1.50	
2,3,4,7,8-PeCDF	32:09	4.16e6	2.72e6	1.36e6	9.05e5	----	----	1.53	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:25	2.58e7	1.64e7	8.62e6	5.46e6	----	----	1.57	
1,2,3,7,8-PeCDD	32:26	1.59e6	2.49e6	4.99e5	8.08e5	----	----	0.64	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:39	1.70e7	3.22e7	6.52e6	1.26e7	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	34:46	1.88e7	3.61e7	6.66e6	1.27e7	----	----	0.52	
2,3,4,6,7,8-HxCDF-13C	35:12	1.76e7	3.40e7	6.85e6	1.28e7	----	----	0.52	
1,2,3,7,8,9-HxCDF-13C	35:55	1.50e7	2.83e7	5.16e6	9.58e6	----	----	0.53	
1,2,3,4,7,8-HxCDF	34:40	(M)3.02e6	2.50e6	1.22e6	9.93e5	----	----	1.21	
1,2,3,6,7,8-HxCDF	34:46	(M)3.33e6	2.84e6	1.19e6	9.76e5	----	----	1.17	
2,3,4,6,7,8-HxCDF	35:13	(M)3.32e6	2.59e6	1.26e6	9.96e5	----	----	1.29	
1,2,3,7,8,9-HxCDF	35:56	2.53e6	(M)2.10e6	8.57e5	7.21e5	----	----	1.20	

REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
 Client ID
 Lab ID CS2-22-171-006
 Filename L230302A_09
 Analyzed 03/02/2023 10:47

Injected By SMT
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:19	2.11e7	1.66e7	8.77e6	6.89e6	----	----	1.27	
1,2,3,6,7,8-HxCDD-13C	35:24	2.48e7	2.01e7	9.21e6	7.36e6	----	----	1.24	
1,2,3,7,8,9-HxCDD-13C	35:37	2.45e7	1.95e7	8.41e6	6.75e6	----	----	1.25	
1,2,3,4,7,8-HxCDD	35:20	2.10e6	(M)1.65e6	8.79e5	6.77e5	----	----	1.28	
1,2,3,6,7,8-HxCDD	35:25	2.35e6	(M)1.89e6	8.48e5	6.83e5	----	----	1.25	
1,2,3,7,8,9-HxCDD	35:38	2.22e6	(M)1.76e6	8.22e5	6.18e5	----	----	1.26	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:08	1.39e7	2.88e7	4.68e6	9.92e6	----	----	0.48	
1,2,3,4,7,8,9-HpCDF-13C	38:35	1.04e7	2.27e7	3.10e6	6.60e6	----	----	0.46	
1,2,3,4,6,7,8-HpCDF	37:09	2.86e6	2.73e6	9.91e5	9.70e5	----	----	1.05	
1,2,3,4,7,8,9-HpCDF	38:35	2.14e6	2.09e6	6.54e5	6.14e5	----	----	1.02	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:04	(M)1.53e7	1.44e7	4.85e6	4.62e6	----	----	1.06	
1,2,3,4,6,7,8-HpCDD	38:05	1.66e6	1.60e6	5.33e5	5.47e5	----	----	1.04	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:12	2.93e6	3.19e6	7.39e5	8.90e5	----	----	0.92	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:57	2.64e7	2.99e7	6.64e6	7.79e6	----	----	0.88	
OCDD	40:58	2.43e6	2.68e6	6.41e5	6.95e5	----	----	0.90	

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name	State of Indiana	Injected By	SMT
Client ID		Instrument ID	10MSHR15 (L)
Lab ID	CS3/CPM-22-171-022	GC Column ID	US1824614H
Filename	L230302A_08	ICAL ID	L230302
Analyzed	03/02/2023 09:49		

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:50	4.14e7	5.28e7	5.33e6	6.76e6	----	----	0.78	
2,3,7,8-TCDF	25:53	4.25e6	5.36e6	5.46e5	7.44e5	----	----	0.79	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	26:10	3.36e7	3.76e7	4.46e6	5.13e6	----	----	0.89	
2,3,7,8-TCDD-13C	27:05	3.61e7	4.12e7	5.94e6	6.72e6	----	----	0.88	
2,3,7,8-TCDD-37Cl4	27:07	6.77e6		1.12e6		----	----		
2,3,7,8-TCDD	27:07	3.30e6	4.19e6	5.38e5	6.62e5	----	----	0.79	

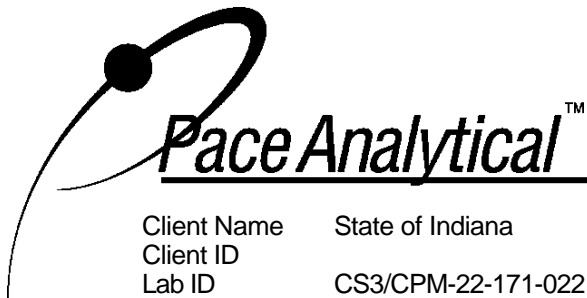
Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:13	4.01e7	2.54e7	1.10e7	7.26e6	----	----	1.58	
2,3,4,7,8-PeCDF-13C	32:08	3.83e7	2.42e7	1.23e7	7.99e6	----	----	1.58	
1,2,3,7,8-PeCDF	31:13	1.95e7	1.29e7	5.55e6	3.58e6	----	----	1.52	
2,3,4,7,8-PeCDF	32:09	2.11e7	1.34e7	6.92e6	4.51e6	----	----	1.58	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:25	2.51e7	1.57e7	8.22e6	5.13e6	----	----	1.60	
1,2,3,7,8-PeCDD	32:25	7.79e6	1.28e7	2.54e6	4.22e6	----	----	0.61	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:39	1.67e7	3.18e7	6.42e6	1.23e7	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	34:46	1.92e7	3.59e7	6.77e6	1.25e7	----	----	0.53	
2,3,4,6,7,8-HxCDF-13C	35:12	1.74e7	3.29e7	6.74e6	1.26e7	----	----	0.53	
1,2,3,7,8,9-HxCDF-13C	35:55	1.47e7	2.80e7	4.97e6	9.32e6	----	----	0.52	
1,2,3,4,7,8-HxCDF	34:40	1.55e7	1.26e7	6.21e6	5.08e6	----	----	1.23	
1,2,3,6,7,8-HxCDF	34:46	1.71e7	1.37e7	6.04e6	4.84e6	----	----	1.25	
2,3,4,6,7,8-HxCDF	35:13	1.66e7	1.32e7	6.43e6	4.95e6	----	----	1.26	
1,2,3,7,8,9-HxCDF	35:56	1.27e7	1.05e7	4.31e6	3.50e6	----	----	1.21	

REPORT OF LABORATORY ANALYSIS

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Client Name	State of Indiana	Injected By	SMT
Client ID		Instrument ID	10MSHR15 (L)
Lab ID	CS3/CPM-22-171-022	GC Column ID	US1824614H
Filename	L230302A_08	ICAL ID	L230302
Analyzed	03/02/2023 09:49		

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:19	2.09e7	1.65e7	8.44e6	6.79e6	----	----	1.27	
1,2,3,6,7,8-HxCDD-13C	35:24	2.48e7	1.94e7	9.35e6	7.36e6	----	----	1.28	
1,2,3,7,8,9-HxCDD-13C	35:37	2.40e7	1.91e7	8.66e6	6.96e6	----	----	1.26	
1,2,3,4,7,8-HxCDD	35:20	1.04e7	8.29e6	4.34e6	3.30e6	----	----	1.26	
1,2,3,6,7,8-HxCDD	35:25	1.19e7	9.62e6	4.46e6	3.64e6	----	----	1.24	
1,2,3,7,8,9-HxCDD	35:38	1.13e7	9.32e6	4.19e6	3.29e6	----	----	1.21	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:08	1.29e7	2.78e7	4.51e6	9.96e6	----	----	0.46	
1,2,3,4,7,8,9-HpCDF-13C	38:35	1.03e7	2.26e7	3.00e6	6.44e6	----	----	0.46	
1,2,3,4,6,7,8-HpCDF	37:09	1.35e7	1.31e7	4.73e6	4.41e6	----	----	1.03	
1,2,3,4,7,8,9-HpCDF	38:35	1.10e7	1.01e7	3.33e6	3.21e6	----	----	1.09	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:04	1.51e7	1.40e7	4.87e6	4.62e6	----	----	1.08	
1,2,3,4,6,7,8-HpCDD	38:05	7.89e6	7.42e6	2.57e6	2.40e6	----	----	1.06	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:12	1.50e7	1.64e7	3.96e6	4.27e6	----	----	0.91	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:57	(M)2.58e7	(M)3.07e7	6.47e6	7.82e6	----	----	0.84	
OCDD	40:58	1.19e7	1.31e7	3.19e6	3.49e6	----	----	0.91	

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name	State of Indiana	Injected By	SMT
Client ID		Instrument ID	10MSHR15 (L)
Lab ID	CS4-22-171-007	GC Column ID	US1824614H
Filename	L230302A_12	ICAL ID	L230302
Analyzed	03/02/2023 13:05		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:49	5.15e7	6.60e7	6.84e6	8.63e6	----	----	0.78	
2,3,7,8-TCDF	25:52	2.10e7	2.61e7	2.79e6	3.48e6	----	----	0.81	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	26:08	3.81e7	4.30e7	5.23e6	5.80e6	----	----	0.89	
2,3,7,8-TCDD-13C	27:05	4.30e7	4.89e7	6.96e6	7.93e6	----	----	0.88	
2,3,7,8-TCDD-37Cl4	27:06	3.40e7		5.62e6		----	----		
2,3,7,8-TCDD	27:06	1.59e7	2.01e7	2.60e6	3.38e6	----	----	0.79	

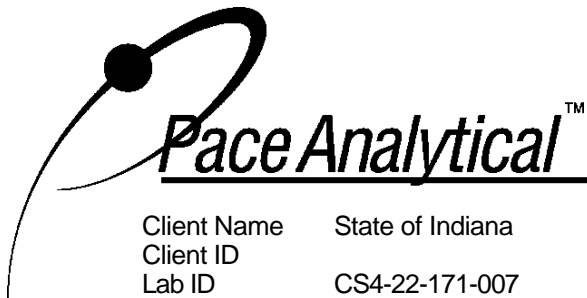
Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:12	5.01e7	3.21e7	1.42e7	9.41e6	----	----	1.56	
2,3,4,7,8-PeCDF-13C	32:08	4.87e7	3.09e7	1.58e7	1.02e7	----	----	1.57	
1,2,3,7,8-PeCDF	31:13	1.03e8	6.73e7	2.83e7	1.87e7	----	----	1.52	
2,3,4,7,8-PeCDF	32:09	1.09e8	7.10e7	3.65e7	2.40e7	----	----	1.53	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:25	3.18e7	2.01e7	1.03e7	6.50e6	----	----	1.58	
1,2,3,7,8-PeCDD	32:25	4.03e7	6.50e7	1.34e7	2.14e7	----	----	0.62	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:39	2.09e7	3.97e7	7.99e6	1.53e7	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	34:46	2.47e7	4.71e7	8.95e6	1.64e7	----	----	0.53	
2,3,4,6,7,8-HxCDF-13C	35:13	2.30e7	4.29e7	8.73e6	1.64e7	----	----	0.54	
1,2,3,7,8,9-HxCDF-13C	35:55	1.95e7	3.64e7	6.63e6	1.21e7	----	----	0.54	
1,2,3,4,7,8-HxCDF	34:40	7.92e7	6.33e7	3.02e7	2.48e7	----	----	1.25	
1,2,3,6,7,8-HxCDF	34:46	9.32e7	7.34e7	3.28e7	2.55e7	----	----	1.27	
2,3,4,6,7,8-HxCDF	35:13	8.85e7	6.91e7	3.32e7	2.59e7	----	----	1.28	
1,2,3,7,8,9-HxCDF	35:56	6.97e7	5.64e7	2.30e7	1.81e7	----	----	1.24	

REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
Client ID
Lab ID CS4-22-171-007
Filename L230302A_12
Analyzed 03/02/2023 13:05

Injected By
Instrument ID SMT
GC Column ID 10MSHR15 (L)
ICAL ID US1824614H
L230302

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:19	2.72e7	2.12e7	1.09e7	8.55e6	----	----	1.28	
1,2,3,6,7,8-HxCDD-13C	35:24	3.25e7	2.55e7	1.16e7	9.16e6	----	----	1.28	
1,2,3,7,8,9-HxCDD-13C	35:37	3.19e7	2.52e7	1.06e7	8.57e6	----	----	1.26	
1,2,3,4,7,8-HxCDD	35:20	5.42e7	4.37e7	2.22e7	1.78e7	----	----	1.24	
1,2,3,6,7,8-HxCDD	35:25	6.44e7	5.15e7	2.36e7	1.88e7	----	----	1.25	
1,2,3,7,8,9-HxCDD	35:38	5.85e7	4.72e7	2.05e7	1.65e7	----	----	1.24	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:08	1.68e7	3.61e7	5.74e6	1.23e7	----	----	0.47	
1,2,3,4,7,8,9-HpCDF-13C	38:35	1.40e7	2.92e7	3.98e6	8.33e6	----	----	0.48	
1,2,3,4,6,7,8-HpCDF	37:09	7.56e7	7.03e7	2.50e7	2.38e7	----	----	1.07	
1,2,3,4,7,8,9-HpCDF	38:35	5.88e7	5.69e7	1.73e7	1.71e7	----	----	1.03	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:04	1.90e7	1.84e7	5.82e6	5.62e6	----	----	1.03	
1,2,3,4,6,7,8-HpCDD	38:05	4.34e7	4.03e7	1.38e7	1.31e7	----	----	1.08	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:12	9.19e7	1.02e8	2.31e7	2.50e7	----	----	0.90	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:58	3.72e7	4.38e7	8.79e6	1.06e7	----	----	0.85	
OCDD	40:59 (M)	7.18e7	7.76e7	1.72e7	1.93e7	----	----	0.93	

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name	State of Indiana	Injected By	SMT
Client ID		Instrument ID	10MSHR15 (L)
Lab ID	CS5-22-171-008	GC Column ID	US1824614H
Filename	L230302A_11	ICAL ID	L230302
Analyzed	03/02/2023 12:22		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:49	5.67e7	7.30e7	7.37e6	9.28e6	----	----	0.78	
2,3,7,8-TCDF	25:52	1.18e8	1.48e8	1.53e7	1.91e7	----	----	0.80	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	26:09	4.18e7	4.72e7	5.55e6	6.28e6	----	----	0.89	
2,3,7,8-TCDD-13C	27:05	4.83e7	5.57e7	7.79e6	8.81e6	----	----	0.87	
2,3,7,8-TCDD-37Cl4	27:06	1.93e8		3.25e7		----	----		
2,3,7,8-TCDD	27:06	9.18e7	1.17e8	1.55e7	1.99e7	----	----	0.78	

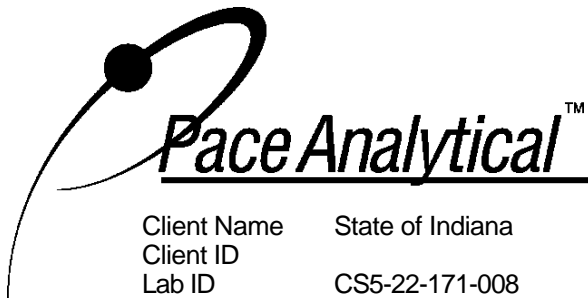
Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:12	6.03e7	3.81e7	1.71e7	1.08e7	----	----	1.58	
2,3,4,7,8-PeCDF-13C	32:08	5.80e7	3.76e7	1.79e7	1.17e7	----	----	1.54	
1,2,3,7,8-PeCDF	31:13	6.12e8	4.04e8	1.82e8	1.20e8	----	----	1.52	
2,3,4,7,8-PeCDF	32:08	6.55e8	4.31e8	2.03e8	1.35e8	----	----	1.52	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:24	3.82e7	2.41e7	1.21e7	7.74e6	----	----	1.59	
1,2,3,7,8-PeCDD	32:25	2.48e8	3.85e8	7.83e7	1.23e8	----	----	0.64	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:39	2.39e7	4.54e7	9.12e6	1.69e7	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	34:45	3.03e7	5.69e7	1.05e7	1.99e7	----	----	0.53	
2,3,4,6,7,8-HxCDF-13C	35:12	2.63e7	4.91e7	9.92e6	1.88e7	----	----	0.54	
1,2,3,7,8,9-HxCDF-13C	35:54	2.21e7	4.37e7	7.52e6	1.46e7	----	----	0.50	
1,2,3,4,7,8-HxCDF	34:40	4.61e8	3.71e8	1.77e8	1.40e8	----	----	1.24	
1,2,3,6,7,8-HxCDF	34:46	5.54e8	4.44e8	2.00e8	1.61e8	----	----	1.25	
2,3,4,6,7,8-HxCDF	35:13	5.12e8	4.11e8	1.90e8	1.53e8	----	----	1.25	
1,2,3,7,8,9-HxCDF	35:55	4.04e8	3.23e8	1.35e8	1.09e8	----	----	1.25	

REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
 Client ID
 Lab ID CS5-22-171-008
 Filename L230302A_11
 Analyzed 03/02/2023 12:22

Injected By SMT
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:18	3.11e7	2.44e7	1.21e7	9.34e6	----	----	1.28	
1,2,3,6,7,8-HxCDD-13C	35:23	4.05e7	3.16e7	1.33e7	1.06e7	----	----	1.28	
1,2,3,7,8,9-HxCDD-13C	35:37	3.78e7	2.97e7	1.20e7	9.36e6	----	----	1.27	
1,2,3,4,7,8-HxCDD	35:19	3.19e8	2.58e8	1.28e8	1.05e8	----	----	1.24	
1,2,3,6,7,8-HxCDD	35:24	3.96e8	3.20e8	1.41e8	1.14e8	----	----	1.24	
1,2,3,7,8,9-HxCDD	35:37	3.49e8	2.82e8	1.16e8	9.60e7	----	----	1.24	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:08	1.96e7	4.21e7	6.47e6	1.37e7	----	----	0.46	
1,2,3,4,7,8,9-HpCDF-13C	38:34	1.64e7	3.45e7	4.77e6	1.03e7	----	----	0.47	
1,2,3,4,6,7,8-HpCDF	37:09	4.30e8	4.19e8	1.35e8	1.29e8	----	----	1.03	
1,2,3,4,7,8,9-HpCDF	38:35	3.53e8	3.30e8	1.05e8	9.90e7	----	----	1.07	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:04	2.33e7	2.17e7	7.01e6	6.46e6	----	----	1.07	
1,2,3,4,6,7,8-HpCDD	38:05	2.55e8	2.43e8	7.44e7	7.10e7	----	----	1.05	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:12	6.07e8	6.68e8	1.51e8	1.67e8	----	----	0.91	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:57	4.66e7	5.67e7	1.12e7	1.35e7	----	----	0.82	
OCDD	40:58	4.49e8	4.98e8	1.14e8	1.27e8	----	----	0.90	

REPORT OF LABORATORY ANALYSIS

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TCDF Confirmation Detected Peak List

Prepared By _____ Date _____
 ReviewedBy _____ Date _____

Client Name	State of Indiana	Injected By	JRH
Client ID		Instrument ID	10MSHR06 (U)
Lab ID	CS1-20-123-108	GC Column ID	US2588526H
Filename	U221009A_04	ICAL ID	U221009-DB225
Analyzed	10/09/2022 12:07		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	18:01	2.99e8	(M)3.77e8	4.80e7	6.13e7	----	----	0.79	
2,3,7,8-TCDF	18:02	1.53e6	1.98e6	2.39e5	3.26e5	1.401e3	2.219e3	0.78	

Cleanup & Recovery:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	16:05	(M)2.14e8	2.72e8	3.99e7	5.12e7	----	----	0.79	
2,3,7,8-TCDD-37Cl4	15:40	2.89e6		6.05e5		2.144e3	----		

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TCDF Confirmation Detected Peak List

Prepared By _____ Date _____
 ReviewedBy _____ Date _____

Client Name	State of Indiana	Injected By	JRH
Client ID		Instrument ID	10MSHR06 (U)
Lab ID	CS2-22-171-006	GC Column ID	US2588526H
Filename	U221009A_03	ICAL ID	U221009-DB225
Analyzed	10/09/2022 11:20		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	18:01	(M)1.18e8	1.54e8	1.83e7	2.38e7	----	----	0.76	
2,3,7,8-TCDF	18:02	2.40e6	(M)3.10e6	4.01e5	4.98e5	----	----	0.78	

Cleanup & Recovery:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	16:05	8.60e7	1.08e8	1.56e7	1.97e7	----	----	0.80	
2,3,7,8-TCDD-37Cl4	15:40	(M)4.68e6		8.99e5		----	----		

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TCDF Confirmation Detected Peak List

Prepared By _____ Date _____
 ReviewedBy _____ Date _____

Client Name	State of Indiana	Injected By	JRH
Client ID		Instrument ID	10MSHR06 (U)
Lab ID	CS3/CPM-22-171-005	GC Column ID	US2588526H
Filename	U221009A_02	ICAL ID	U221009-DB225
Analyzed	10/09/2022 10:34		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	18:01	1.31e8	1.66e8	2.08e7	2.66e7	----	----	0.79	
2,3,7,8-TCDF	18:03	1.32e7	1.68e7	2.27e6	2.90e6	----	----	0.79	

Cleanup & Recovery:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	16:05	1.02e8	1.27e8	1.86e7	2.40e7	----	----	0.80	
2,3,7,8-TCDD-37Cl4	15:40	(M)2.43e7		4.46e6		----	----		

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TCDF Confirmation Detected Peak List

Prepared By _____ Date _____
 ReviewedBy _____ Date _____

Client Name	State of Indiana	Injected By	JRH
Client ID		Instrument ID	10MSHR06 (U)
Lab ID	CS4-22-171-007	GC Column ID	US2588526H
Filename	U221009A_06	ICAL ID	U221009-DB225
Analyzed	10/09/2022 13:42		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	18:00	1.20e8	1.56e8	1.95e7	2.57e7	----	----	0.77	
2,3,7,8-TCDF	18:02	4.56e7	5.75e7	7.11e6	9.29e6	----	----	0.79	

Cleanup & Recovery:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	16:05	8.66e7	1.09e8	1.62e7	2.06e7	----	----	0.79	
2,3,7,8-TCDD-37Cl4	15:39	(M)8.82e7		1.67e7		----	----		

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TCDF Confirmation Detected Peak List

Prepared By _____ Date _____
 ReviewedBy _____ Date _____

Client Name	State of Indiana	Injected By	JRH
Client ID		Instrument ID	10MSHR06 (U)
Lab ID	CS5-22-171-008	GC Column ID	US2588526H
Filename	U221009A_05	ICAL ID	U221009-DB225
Analyzed	10/09/2022 12:57		

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	18:00	1.21e8	1.53e8	1.89e7	2.39e7	----	----	0.79	
2,3,7,8-TCDF	18:02	2.21e8	2.84e8	3.50e7	4.44e7	----	----	0.78	

Cleanup & Recovery:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	16:05	8.53e7	1.08e8	1.59e7	2.03e7	----	----	0.79	
2,3,7,8-TCDD-37Cl4	15:39	(M)4.25e8		7.78e7		----	----		

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client ID		Injected By	JRH
Lab ID	CS3/CPM-22-171-022	Instrument ID	10MSHR15 (L)
Filename	L230305A_18	GC Column ID	US1824614H
Analyzed	03/05/2023 21:42	ICAL ID	L230302

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:38	1.69e8	2.17e8	2.27e7	2.91e7	----	----	0.78	
2,3,7,8-TCDF	25:40	1.67e7	2.12e7	2.25e6	2.93e6	----	----	0.79	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	25:57	1.25e8	1.41e8	1.70e7	1.92e7	----	----	0.89	
2,3,7,8-TCDD-13C	26:55	1.47e8	1.69e8	2.37e7	2.71e7	----	----	0.87	
2,3,7,8-TCDD-37Cl4	26:56	2.81e7		4.71e6		----	----		
2,3,7,8-TCDD	26:56	1.34e7	1.71e7	2.13e6	2.76e6	----	----	0.78	

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:06	1.79e8	1.14e8	5.13e7	3.31e7	----	----	1.57	
2,3,4,7,8-PeCDF-13C	32:03	1.75e8	1.11e8	5.54e7	3.61e7	----	----	1.58	
1,2,3,7,8-PeCDF	31:07	8.91e7	5.83e7	2.59e7	1.68e7	----	----	1.53	
2,3,4,7,8-PeCDF	32:04	9.55e7	6.26e7	3.02e7	2.01e7	----	----	1.52	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:19	1.13e8	7.22e7	3.63e7	2.32e7	----	----	1.57	
1,2,3,7,8-PeCDD	32:21	3.55e7	5.76e7	1.15e7	1.80e7	----	----	0.62	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:35	7.71e7	1.45e8	2.84e7	5.30e7	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	34:41	8.69e7	1.65e8	3.24e7	6.09e7	----	----	0.53	
2,3,4,6,7,8-HxCDF-13C	35:08	8.14e7	1.49e8	3.19e7	5.99e7	----	----	0.55	
1,2,3,7,8,9-HxCDF-13C	35:50	6.70e7	1.26e8	2.28e7	4.22e7	----	----	0.53	
1,2,3,4,7,8-HxCDF	34:36	7.14e7	5.78e7	2.78e7	2.23e7	----	----	1.24	
1,2,3,6,7,8-HxCDF	34:42	7.88e7	6.48e7	2.96e7	2.38e7	----	----	1.22	
2,3,4,6,7,8-HxCDF	35:09	7.59e7	5.97e7	3.00e7	2.44e7	----	----	1.27	
1,2,3,7,8,9-HxCDF	35:51	5.96e7	4.81e7	2.00e7	1.57e7	----	----	1.24	

REPORT OF LABORATORY ANALYSIS

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Client ID
Lab ID CS3/CPM-22-171-022
Filename L230305A_18
Analyzed 03/05/2023 21:42

Injected By JRH
Instrument ID 10MSHR15 (L)
GC Column ID US1824614H
ICAL ID L230302

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Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:15	9.41e7	7.32e7	3.69e7	2.92e7	----	----	1.29	
1,2,3,6,7,8-HxCDD-13C	35:19	1.14e8	8.90e7	4.07e7	3.24e7	----	----	1.28	
1,2,3,7,8,9-HxCDD-13C	35:32	1.10e8	8.69e7	3.78e7	3.05e7	----	----	1.26	
1,2,3,4,7,8-HxCDD	35:15	4.75e7	3.82e7	1.92e7	1.57e7	----	----	1.24	
1,2,3,6,7,8-HxCDD	35:20	5.57e7	4.45e7	2.06e7	1.65e7	----	----	1.25	
1,2,3,7,8,9-HxCDD	35:33	5.24e7	4.36e7	1.87e7	1.54e7	----	----	1.20	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:04	5.58e7	1.19e8	1.90e7	3.94e7	----	----	0.47	
1,2,3,4,7,8,9-HpCDF-13C	38:29	4.27e7	9.28e7	1.34e7	2.83e7	----	----	0.46	
1,2,3,4,6,7,8-HpCDF	37:04	5.64e7	5.44e7	1.83e7	1.82e7	----	----	1.04	
1,2,3,4,7,8,9-HpCDF	38:30	4.50e7	4.25e7	1.43e7	1.37e7	----	----	1.06	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	37:59	6.33e7	5.88e7	2.01e7	1.89e7	----	----	1.08	
1,2,3,4,6,7,8-HpCDD	38:00	3.31e7	3.03e7	1.09e7	1.04e7	----	----	1.09	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:05	6.18e7	6.82e7	1.56e7	1.73e7	----	----	0.91	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:51	1.05e8	1.29e8	2.64e7	3.30e7	----	----	0.82	
OCDD	40:52	5.08e7	5.73e7	1.32e7	1.50e7	----	----	0.89	

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client ID		Injected By	JRH
Lab ID	CS3/CPM-22-171-022	Instrument ID	10MSHR15 (L)
Filename	L230305B_10	GC Column ID	US1824614H
Analyzed	03/06/2023 05:07	ICAL ID	L230302

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Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:40	1.55e8	1.98e8	1.74e7	2.23e7	----	----	0.78	
2,3,7,8-TCDF	25:42	1.58e7	1.97e7	1.96e6	2.33e6	----	----	0.81	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	25:59	1.13e8	1.28e8	1.32e7	1.49e7	----	----	0.89	
2,3,7,8-TCDD-13C	26:56	1.30e8	1.47e8	1.89e7	2.13e7	----	----	0.89	
2,3,7,8-TCDD-37Cl4	26:58	2.42e7		3.47e6		----	----		
2,3,7,8-TCDD	26:58	1.19e7	1.56e7	1.65e6	2.14e6	----	----	0.77	

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:07	1.43e8	9.02e7	3.69e7	2.38e7	----	----	1.59	
2,3,4,7,8-PeCDF-13C	32:04	1.36e8	8.76e7	4.15e7	2.68e7	----	----	1.56	
1,2,3,7,8-PeCDF	31:08	7.06e7	4.62e7	1.97e7	1.28e7	----	----	1.53	
2,3,4,7,8-PeCDF	32:05	7.41e7	4.84e7	2.40e7	1.57e7	----	----	1.53	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:20	8.49e7	5.38e7	2.65e7	1.68e7	----	----	1.58	
1,2,3,7,8-PeCDD	32:21	2.69e7	4.28e7	8.28e6	1.34e7	----	----	0.63	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:35	5.02e7	9.50e7	1.93e7	3.64e7	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	34:41	5.66e7	1.07e8	2.02e7	3.83e7	----	----	0.53	
2,3,4,6,7,8-HxCDF-13C	35:08	5.16e7	9.75e7	1.88e7	3.56e7	----	----	0.53	
1,2,3,7,8,9-HxCDF-13C	35:50	3.79e7	7.20e7	1.29e7	2.45e7	----	----	0.53	
1,2,3,4,7,8-HxCDF	34:36	4.79e7	3.81e7	1.83e7	1.45e7	----	----	1.26	
1,2,3,6,7,8-HxCDF	34:42	5.13e7	4.09e7	1.85e7	1.50e7	----	----	1.25	
2,3,4,6,7,8-HxCDF	35:09	4.80e7	3.94e7	1.71e7	1.41e7	----	----	1.22	
1,2,3,7,8,9-HxCDF	35:51	3.38e7	2.67e7	1.14e7	8.97e6	----	----	1.27	

REPORT OF LABORATORY ANALYSIS

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Client ID
Lab ID CS3/CPM-22-171-022
Filename L230305B_10
Analyzed 03/06/2023 05:07

Injected By JRH
Instrument ID 10MSHR15 (L)
GC Column ID US1824614H
ICAL ID L230302

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Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:15	5.92e7	4.61e7	2.35e7	1.78e7	----	----	1.28	
1,2,3,6,7,8-HxCDD-13C	35:20	6.62e7	5.14e7	2.20e7	1.76e7	----	----	1.29	
1,2,3,7,8,9-HxCDD-13C	35:33	6.53e7	5.10e7	2.20e7	1.69e7	----	----	1.28	
1,2,3,4,7,8-HxCDD	35:15	2.80e7	2.22e7	1.08e7	8.95e6	----	----	1.26	
1,2,3,6,7,8-HxCDD	35:20	3.50e7	2.76e7	1.15e7	9.48e6	----	----	1.27	
1,2,3,7,8,9-HxCDD	35:33	3.31e7	2.50e7	1.03e7	8.36e6	----	----	1.32	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:04	2.90e7	6.26e7	9.84e6	2.10e7	----	----	0.46	
1,2,3,4,7,8,9-HpCDF-13C	38:30	1.91e7	4.02e7	5.64e6	1.17e7	----	----	0.47	
1,2,3,4,6,7,8-HpCDF	37:04	3.06e7	2.85e7	1.01e7	9.59e6	----	----	1.08	
1,2,3,4,7,8,9-HpCDF	38:30	1.96e7	1.94e7	5.74e6	5.64e6	----	----	1.01	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:00	2.89e7	2.75e7	8.71e6	8.11e6	----	----	1.05	
1,2,3,4,6,7,8-HpCDD	38:00	1.56e7	1.49e7	4.66e6	4.50e6	----	----	1.05	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:06	2.07e7	2.37e7	5.34e6	6.03e6	----	----	0.87	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:52	3.72e7	4.53e7	9.67e6	1.18e7	----	----	0.82	
OCDD	40:53	1.80e7	1.94e7	4.70e6	5.09e6	----	----	0.93	

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client ID		Injected By	SMT
Lab ID	CS3/CPM-22-171-022	Instrument ID	10MSHR15 (L)
Filename	L230306A_17	GC Column ID	US1824614H
Analyzed	03/06/2023 20:03	ICAL ID	L230302

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Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:34	2.04e8	2.60e8	2.85e7	3.64e7	----	----	0.78	
2,3,7,8-TCDF	25:36	2.14e7	2.67e7	3.02e6	3.75e6	----	----	0.80	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	25:53	1.48e8	1.68e8	2.02e7	2.26e7	----	----	0.88	
2,3,7,8-TCDD-13C	26:52	1.74e8	1.95e8	2.78e7	3.16e7	----	----	0.89	
2,3,7,8-TCDD-37Cl4	26:54	3.27e7		5.47e6		----	----		
2,3,7,8-TCDD	26:54	1.60e7	2.03e7	2.67e6	3.34e6	----	----	0.79	

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:05	2.19e8	1.39e8	6.27e7	3.99e7	----	----	1.57	
2,3,4,7,8-PeCDF-13C	32:02	(M)2.26e8	(M)1.41e8	7.34e7	4.56e7	----	----	1.60	
1,2,3,7,8-PeCDF	31:06	1.12e8	7.37e7	3.06e7	2.00e7	----	----	1.52	
2,3,4,7,8-PeCDF	32:03	1.22e8	8.02e7	4.08e7	2.67e7	----	----	1.52	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:18	1.38e8	8.81e7	4.60e7	2.92e7	----	----	1.57	
1,2,3,7,8-PeCDD	32:19	4.43e7	7.08e7	1.48e7	2.37e7	----	----	0.63	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:35	9.81e7	1.87e8	3.65e7	6.86e7	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	34:40	1.15e8	2.16e8	4.12e7	7.51e7	----	----	0.53	
2,3,4,6,7,8-HxCDF-13C	35:07	1.07e8	1.97e8	4.02e7	7.53e7	----	----	0.55	
1,2,3,7,8,9-HxCDF-13C	35:49	8.85e7	1.66e8	2.98e7	5.53e7	----	----	0.53	
1,2,3,4,7,8-HxCDF	34:36	9.37e7	7.48e7	3.48e7	2.78e7	----	----	1.25	
1,2,3,6,7,8-HxCDF	34:41	1.06e8	8.45e7	3.81e7	3.02e7	----	----	1.26	
2,3,4,6,7,8-HxCDF	35:08	1.01e8	8.06e7	3.88e7	3.14e7	----	----	1.26	
1,2,3,7,8,9-HxCDF	35:50	7.92e7	6.29e7	2.64e7	2.10e7	----	----	1.26	

REPORT OF LABORATORY ANALYSIS

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Client ID
 Lab ID CS3/CPM-22-171-022
 Filename L230306A_17
 Analyzed 03/06/2023 20:03

Injected By
 Instrument ID
 GC Column ID
 ICAL ID

SMT
 10MSHR15 (L)
 US1824614H
 L230302

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:14	1.18e8	9.20e7	4.48e7	3.61e7	----	----	1.28	
1,2,3,6,7,8-HxCDD-13C	35:19	1.43e8	1.12e8	5.02e7	3.98e7	----	----	1.28	
1,2,3,7,8,9-HxCDD-13C	35:32	1.38e8	1.08e8	4.50e7	3.62e7	----	----	1.27	
1,2,3,4,7,8-HxCDD	35:15	5.99e7	4.80e7	2.42e7	1.97e7	----	----	1.25	
1,2,3,6,7,8-HxCDD	35:19	7.28e7	5.72e7	2.60e7	2.10e7	----	----	1.27	
1,2,3,7,8,9-HxCDD	35:32	7.02e7	5.40e7	2.28e7	1.86e7	----	----	1.30	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:03	7.46e7	1.57e8	2.54e7	5.32e7	----	----	0.48	
1,2,3,4,7,8,9-HpCDF-13C	38:29	6.01e7	1.25e8	1.65e7	3.56e7	----	----	0.48	
1,2,3,4,6,7,8-HpCDF	37:04	7.44e7	7.31e7	2.52e7	2.41e7	----	----	1.02	
1,2,3,4,7,8,9-HpCDF	38:30	6.20e7	6.04e7	1.80e7	1.77e7	----	----	1.03	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	37:59	8.21e7	7.67e7	2.41e7	2.24e7	----	----	1.07	
1,2,3,4,6,7,8-HpCDD	37:59	4.27e7	4.13e7	1.33e7	1.28e7	----	----	1.04	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:05	8.95e7	1.02e8	2.12e7	2.35e7	----	----	0.88	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:51	1.53e8	1.84e8	3.52e7	4.24e7	----	----	0.83	
OCDD	40:52	7.27e7	8.08e7	1.70e7	1.90e7	----	----	0.90	

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client ID		Injected By	SMT
Lab ID	CS3/CPM-22-171-022	Instrument ID	10MSHR15 (L)
Filename	L230306B_17	GC Column ID	US1824614H
Analyzed	03/07/2023 08:40	ICAL ID	L230302

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Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:35	2.27e8	2.88e8	3.00e7	3.83e7	----	----	0.79	
2,3,7,8-TCDF	25:37	2.36e7	2.98e7	3.17e6	4.00e6	----	----	0.79	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	25:54	1.62e8	1.82e8	2.12e7	2.38e7	----	----	0.89	
2,3,7,8-TCDD-13C	26:53	1.89e8	2.14e8	2.97e7	3.36e7	----	----	0.88	
2,3,7,8-TCDD-37Cl4	26:55	3.55e7		5.68e6		----	----		
2,3,7,8-TCDD	26:55	1.84e7	2.25e7	2.88e6	3.60e6	----	----	0.82	

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:07	2.32e8	1.47e8	6.25e7	3.90e7	----	----	1.58	
2,3,4,7,8-PeCDF-13C	32:03	2.25e8	1.43e8	7.02e7	4.54e7	----	----	1.57	
1,2,3,7,8-PeCDF	31:07	1.19e8	7.67e7	3.25e7	2.12e7	----	----	1.55	
2,3,4,7,8-PeCDF	32:04	1.25e8	8.19e7	4.03e7	2.65e7	----	----	1.53	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:19	1.40e8	8.84e7	4.33e7	2.72e7	----	----	1.58	
1,2,3,7,8-PeCDD	32:20	4.52e7	7.25e7	1.38e7	2.31e7	----	----	0.62	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:36	9.88e7	1.78e8	3.53e7	6.55e7	----	----	0.55	
1,2,3,6,7,8-HxCDF-13C	34:41	1.12e8	2.15e8	3.95e7	7.40e7	----	----	0.52	
2,3,4,6,7,8-HxCDF-13C	35:08	1.01e8	1.92e8	3.62e7	6.96e7	----	----	0.52	
1,2,3,7,8,9-HxCDF-13C	35:50	8.34e7	1.56e8	2.71e7	5.06e7	----	----	0.53	
1,2,3,4,7,8-HxCDF	34:36	9.10e7	7.25e7	3.40e7	2.68e7	----	----	1.25	
1,2,3,6,7,8-HxCDF	34:42	1.01e8	8.38e7	3.69e7	2.95e7	----	----	1.21	
2,3,4,6,7,8-HxCDF	35:09	9.59e7	7.87e7	3.58e7	2.93e7	----	----	1.22	
1,2,3,7,8,9-HxCDF	35:51	7.49e7	5.84e7	2.41e7	1.90e7	----	----	1.28	

REPORT OF LABORATORY ANALYSIS

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Client ID
Lab ID CS3/CPM-22-171-022
Filename L230306B_17
Analyzed 03/07/2023 08:40

Injected By
Instrument ID
GC Column ID
ICAL ID
SMT
10MSHR15 (L)
US1824614H
L230302

Page 2

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:15	1.17e8	8.45e7	4.30e7	3.24e7	----	----	1.38	
1,2,3,6,7,8-HxCDD-13C	35:19	1.31e8	1.09e8	4.48e7	3.64e7	----	----	1.20	
1,2,3,7,8,9-HxCDD-13C	35:33	1.31e8	1.04e8	4.08e7	3.20e7	----	----	1.26	
1,2,3,4,7,8-HxCDD	35:15	5.58e7	4.49e7	2.15e7	1.76e7	----	----	1.24	
1,2,3,6,7,8-HxCDD	35:20	7.17e7	5.66e7	2.47e7	1.99e7	----	----	1.27	
1,2,3,7,8,9-HxCDD	35:33	6.52e7	5.06e7	2.02e7	1.64e7	----	----	1.29	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:04	6.74e7	1.41e8	2.16e7	4.62e7	----	----	0.48	
1,2,3,4,7,8,9-HpCDF-13C	38:30	4.93e7	1.03e8	1.33e7	2.80e7	----	----	0.48	
1,2,3,4,6,7,8-HpCDF	37:04	6.88e7	6.79e7	2.28e7	2.19e7	----	----	1.01	
1,2,3,4,7,8,9-HpCDF	38:30	5.04e7	4.86e7	1.39e7	1.40e7	----	----	1.04	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:00	6.79e7	6.50e7	2.02e7	1.88e7	----	----	1.04	
1,2,3,4,6,7,8-HpCDD	38:00	3.72e7	3.55e7	1.07e7	1.02e7	----	----	1.05	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:06	6.28e7	6.83e7	1.51e7	1.63e7	----	----	0.92	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:52	(M)1.06e8	(M)1.28e8	2.49e7	2.98e7	----	----	0.83	
OCDD	40:53	4.95e7	5.56e7	1.17e7	1.31e7	----	----	0.89	

REPORT OF LABORATORY ANALYSIS

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TCDF Confirmation Detected Peak List

Prepared By _____ Date _____
 ReviewedBy _____ Date _____

Client ID		Injected By	SMT
Lab ID	CS3-22-171-004	Instrument ID	10MSHR06 (U)
Filename	U230307A_03	GC Column ID	US2588526H
Analyzed	03/07/2023 10:26	ICAL ID	U221009-DB225

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	17:54	4.96e7	6.39e7	7.62e6	9.95e6	----	----	0.78	
2,3,7,8-TCDF	17:55	5.08e6	6.61e6	8.36e5	1.06e6	----	----	0.77	

Cleanup & Recovery:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	15:58	3.78e7	4.79e7	7.05e6	8.70e6	----	----	0.79	
2,3,7,8-TCDD-37Cl4	15:33	9.96e6		1.85e6		----	----		

REPORT OF LABORATORY ANALYSIS

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TCDF Confirmation Detected Peak List

Prepared By _____ Date _____
 ReviewedBy _____ Date _____

Client ID		Injected By	SMT
Lab ID	CS3-22-171-004	Instrument ID	10MSHR06 (U)
Filename	U230307A_08	GC Column ID	US2588526H
Analyzed	03/07/2023 14:24	ICAL ID	U221009-DB225

Page 1

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	17:54	4.65e7	6.11e7	7.11e6	9.44e6	----	----	0.76	
2,3,7,8-TCDF	17:56	4.81e6	6.11e6	7.69e5	1.09e6	----	----	0.79	

Cleanup & Recovery:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	15:58	3.73e7	4.74e7	6.71e6	8.51e6	----	----	0.79	
2,3,7,8-TCDD-37Cl4	15:35	9.55e6		1.65e6		----	----		

REPORT OF LABORATORY ANALYSIS

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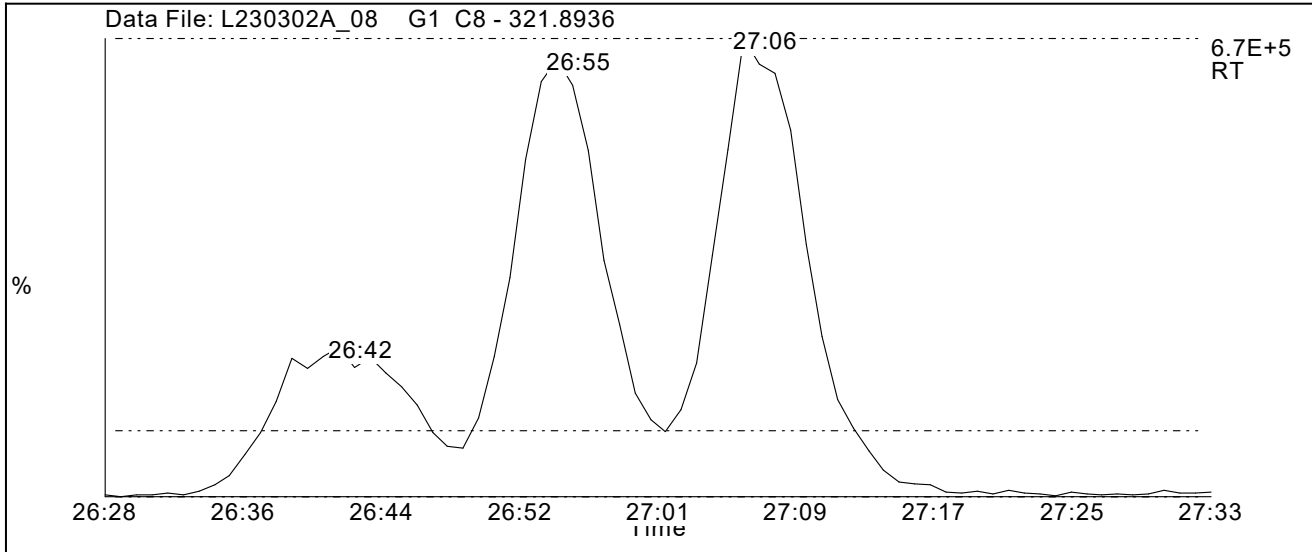


Column Performance Mix (CPM) / Window Defining Mix (WDM)

Lab Sample ID: CS3/CPM-22-171-022
 Raw Data File: L230302A_08
 Date Analyzed: 3/2/2023
 Time Analyzed: 09:49

Injected By: SMT
 Instrument ID: 10MSHR15 (L)
 GC Column: DB-5MS
 GC Column S/N: US1824614H

Resolution: 14.5%



Group	Msss	First Eluter	Last Eluter
TCDF	305.8987	20:13	28:31
PeCDF	341.8567	28:25	33:02
HxCDF	373.8207	33:38	35:56
HpCDF	407.7818	37:09	38:35
OCDF	441.7428	41:12	0:00
TCDD	321.8936	22:09	28:19
PeCDD	357.8517	30:13	32:47
HxCDD	391.8127	34:07	35:38
HpCDD	425.7737	37:23	38:05
OCDD	459.7347	40:58	0:00
1234-TCDD-13	331.9367	26:09	0:00
123789-HxCDD	401.8559	35:37	0:00

REPORT OF LABORATORY ANALYSIS

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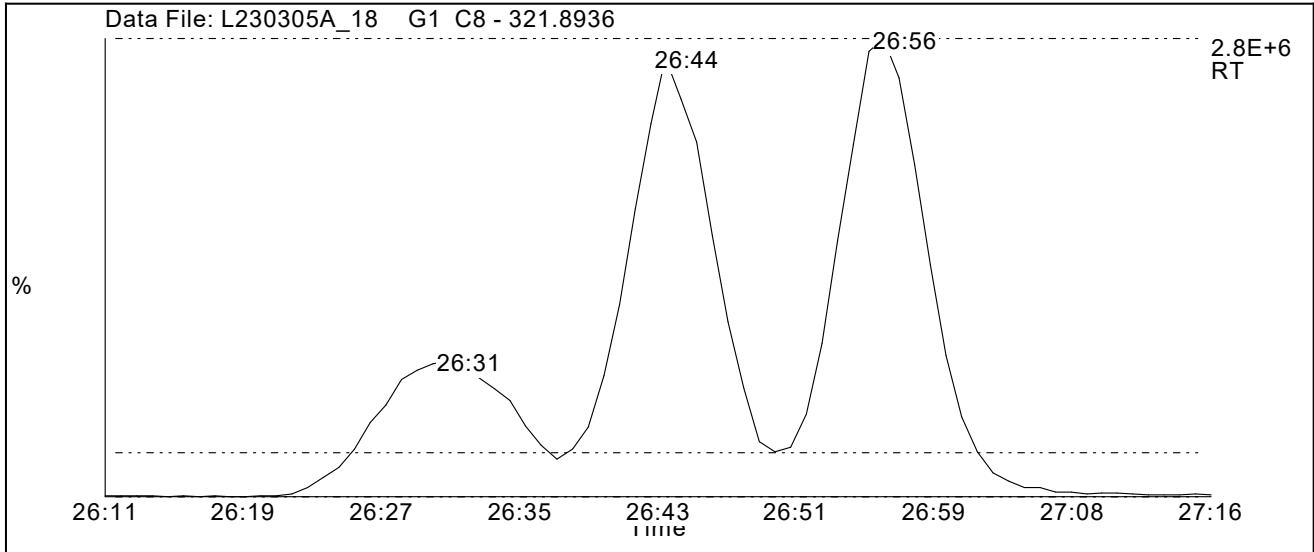


Column Performance Mix (CPM) / Window Defining Mix (WDM)

Lab Sample ID: CS3/CPM-22-171-022
 Raw Data File: L230305A_18
 Date Analyzed: 3/5/2023
 Time Analyzed: 21:42

Injected By: JRH
 Instrument ID: 10MSHR15 (L)
 GC Column: DB-5MS
 GC Column S/N: US1824614H

Resolution: 9.6%



Group	Msss	First Eluter	Last Eluter
TCDF	305.8987	20:04	28:23
PeCDF	341.8567	28:17	32:58
HxCDF	373.8207	33:34	35:51
HpCDF	407.7818	37:04	38:30
OCDF	441.7428	41:05	0:00
TCDD	321.8936	21:59	28:09
PeCDD	357.8517	30:07	32:42
HxCDD	391.8127	34:02	35:33
HpCDD	425.7737	37:18	38:00
OCDD	459.7347	40:52	0:00
1234-TCDD-13	331.9367	25:57	0:00
123789-HxCDD	401.8559	35:32	0:00

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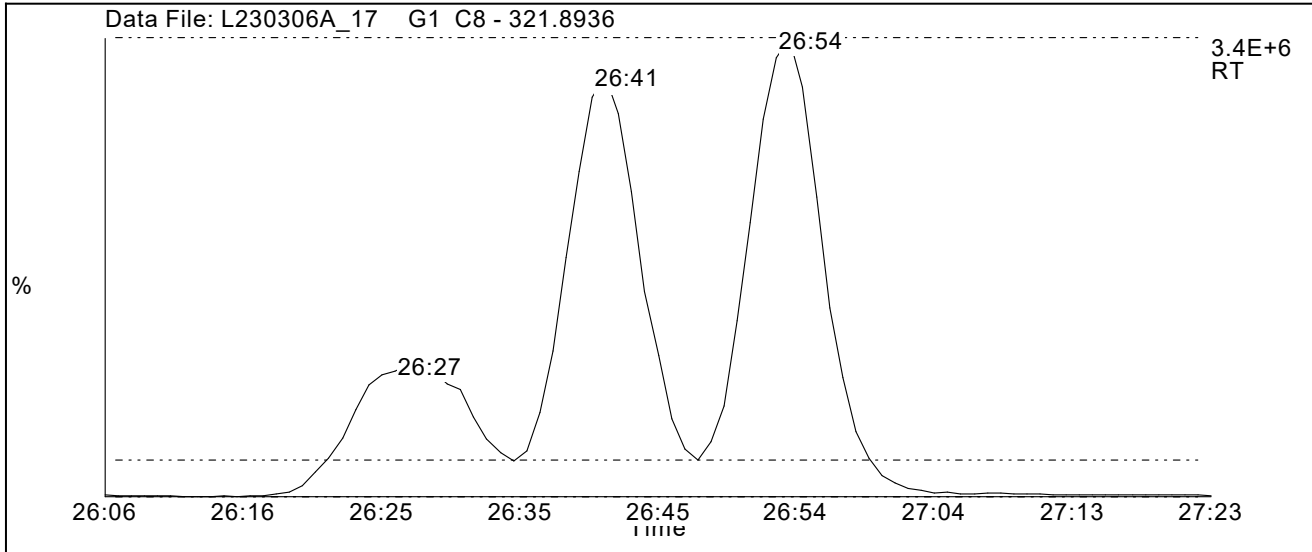


Column Performance Mix (CPM) / Window Defining Mix (WDM)

Lab Sample ID: CS3/CPM-22-171-022
 Raw Data File: L230306A_17
 Date Analyzed: 3/6/2023
 Time Analyzed: 20:03

Injected By: SMT
 Instrument ID: 10MSHR15 (L)
 GC Column: DB-5MS
 GC Column S/N: US1824614H

Resolution: 8.0%



Group	Msss	First Eluter	Last Eluter
TCDF	305.8987	20:01	28:21
PeCDF	341.8567	28:14	32:56
HxCDF	373.8207	33:33	35:50
HpCDF	407.7818	37:04	38:30
OCDF	441.7428	41:05	0:00
TCDD	321.8936	21:56	28:08
PeCDD	357.8517	30:04	32:41
HxCDD	391.8127	34:01	35:32
HpCDD	425.7737	37:17	37:59
OCDD	459.7347	40:51	0:00
1234-TCDD-13	331.9367	25:54	0:00
123789-HxCDD	401.8559	35:32	0:00

REPORT OF LABORATORY ANALYSIS

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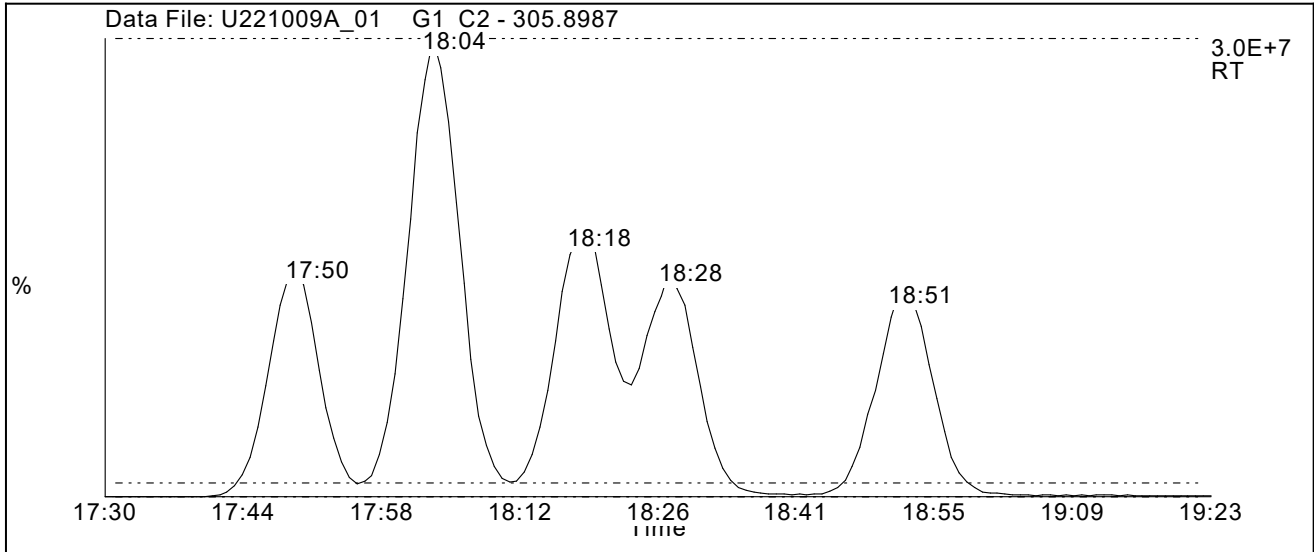


Column Performance Mix (CPM) / Window Defining Mix (WDM)

Lab Sample ID: CPM-11321-090
 Raw Data File: U221009A_01
 Date Analyzed: 10/9/2022
 Time Analyzed: 09:48

Injected By: JRH
 Instrument ID: 10MSHR06 (U)
 GC Column: DB-225
 GC Column S/N: US2588526H

Resolution: 3.0%



Group	Msss	First Eluter	Last Eluter
2,3,7,8-TCDF	305.8987	18:03	0:00

REPORT OF LABORATORY ANALYSIS

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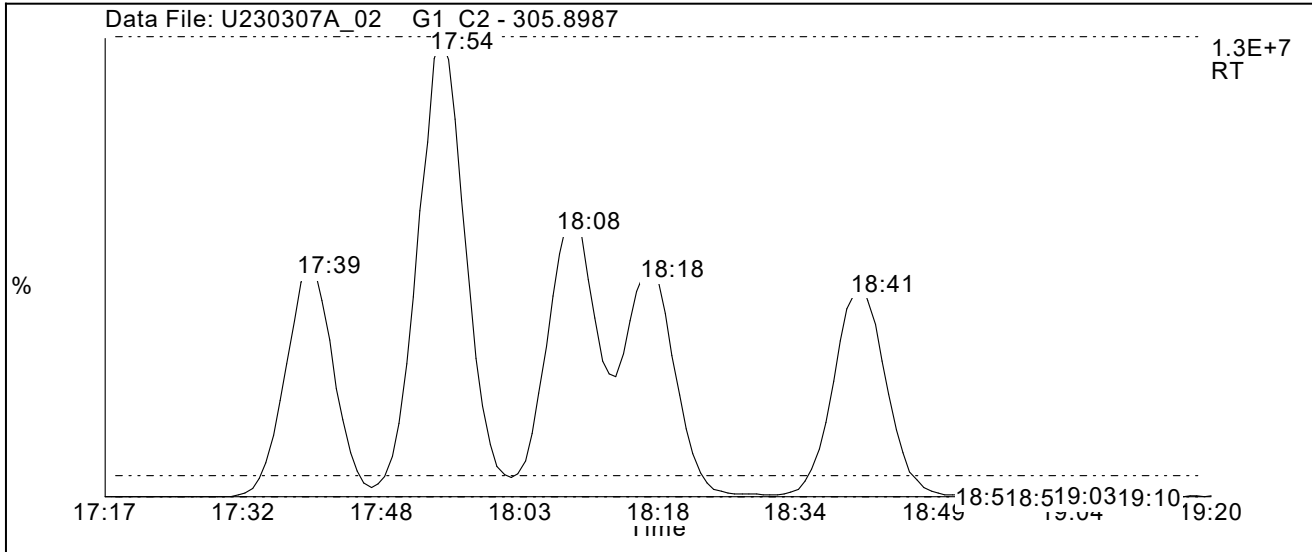


Column Performance Mix (CPM) / Window Defining Mix (WDM)

Lab Sample ID: CPM-11321-090
 Raw Data File: U230307A_02
 Date Analyzed: 3/7/2023
 Time Analyzed: 09:40

Injected By: SMT
 Instrument ID: 10MSHR06 (U)
 GC Column: DB-225
 GC Column S/N: US2588526H

Resolution: 4.6%



Group	Msss	First Eluter	Last Eluter
2,3,7,8-TCDF	305.8987	17:53	0:00

REPORT OF LABORATORY ANALYSIS

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Homologue Group: Tetras

Data File Name: L230302A_08

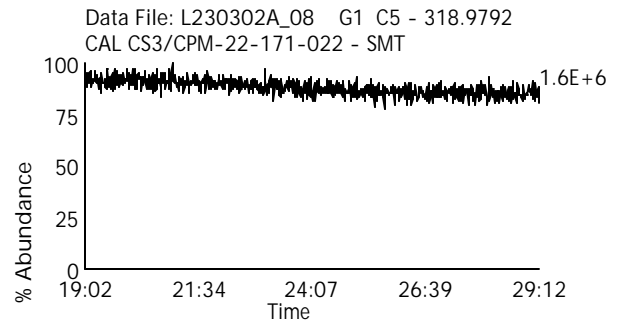
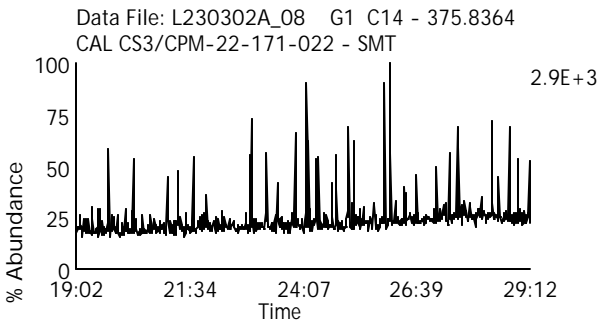
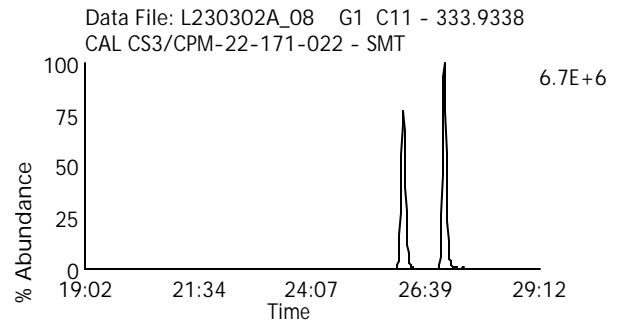
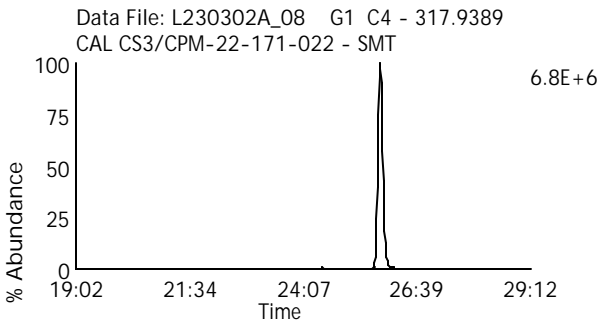
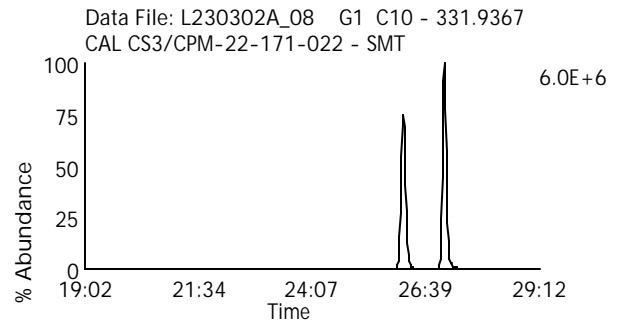
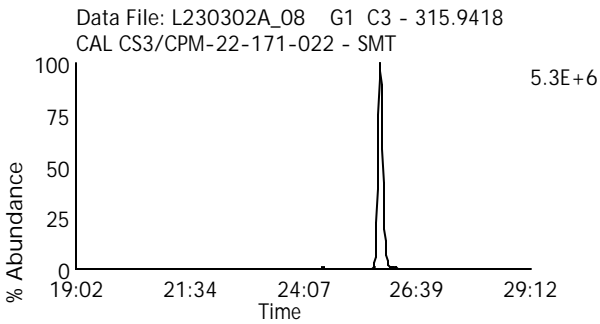
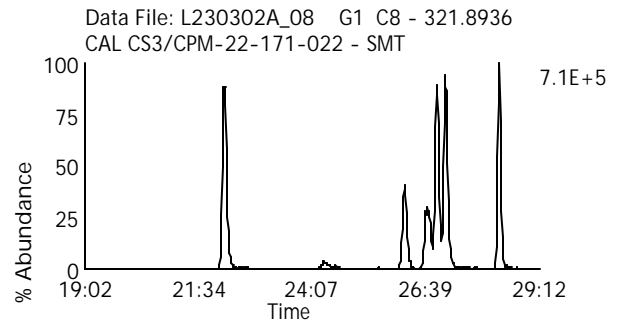
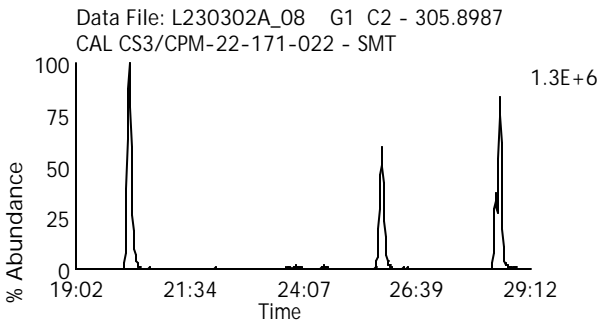
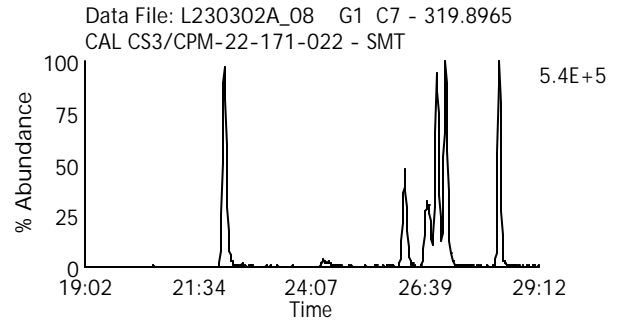
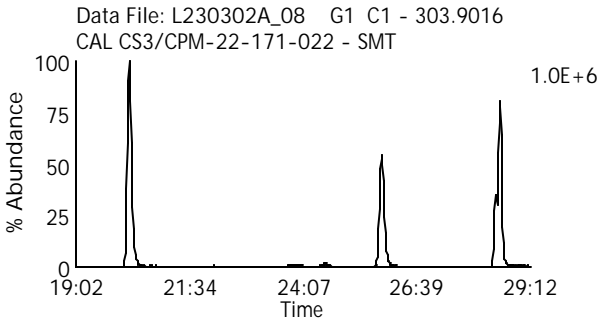
Date Acquired: 3/2/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230302A_08

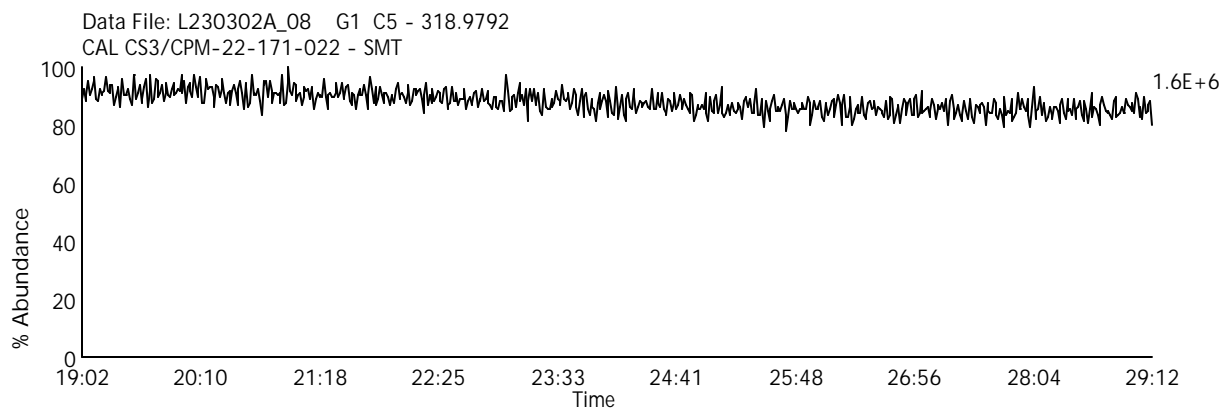
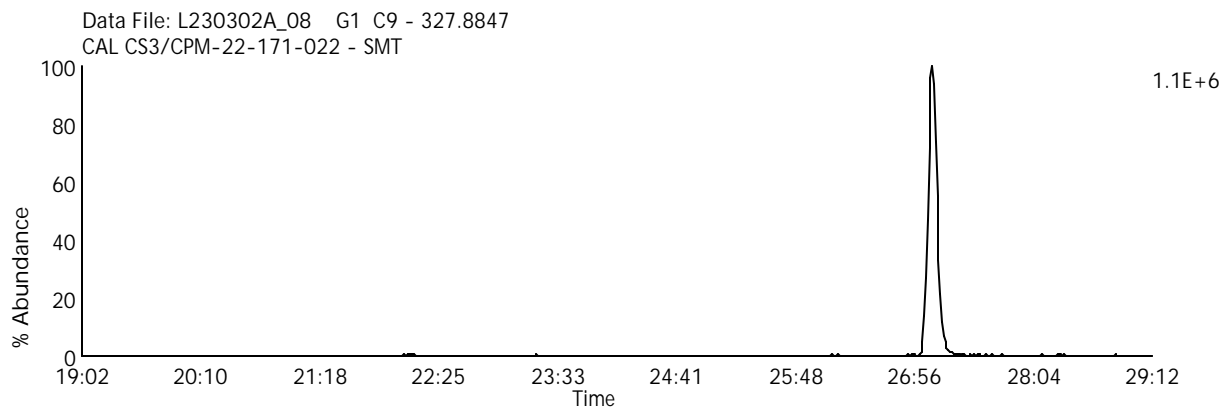
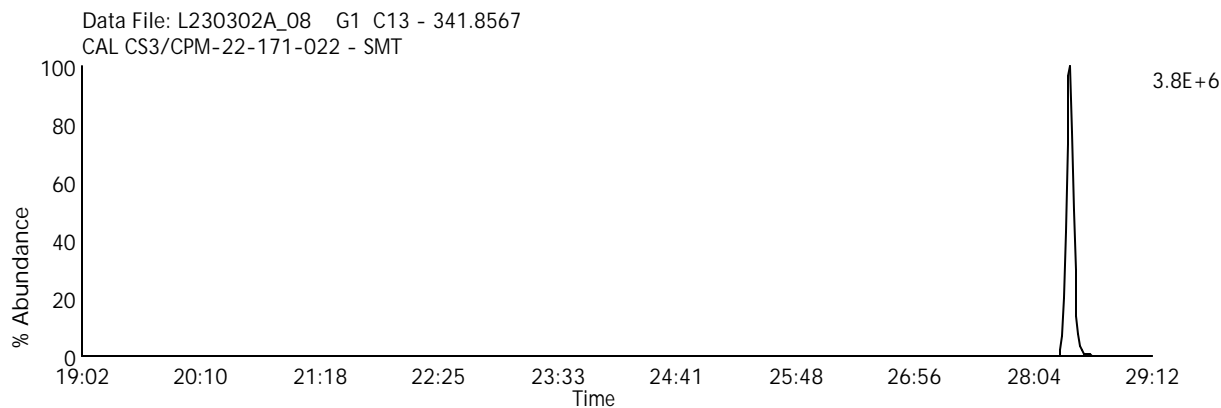
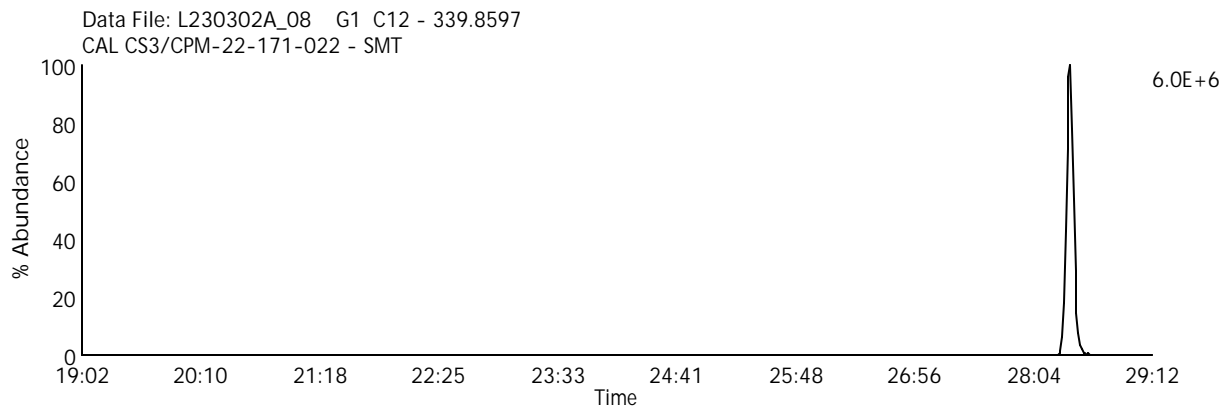
Date Acquired: 3/2/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230302A_08

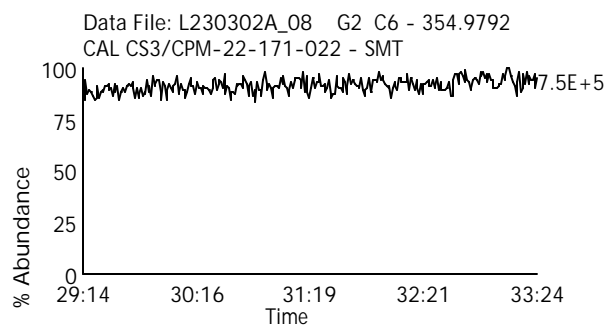
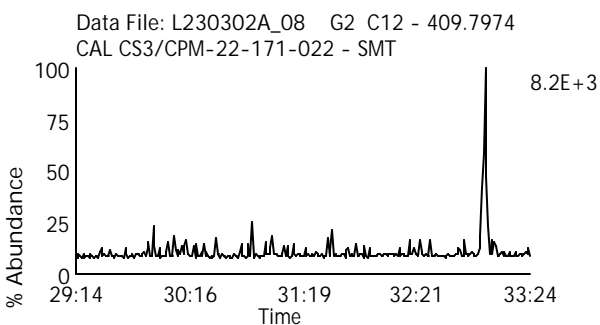
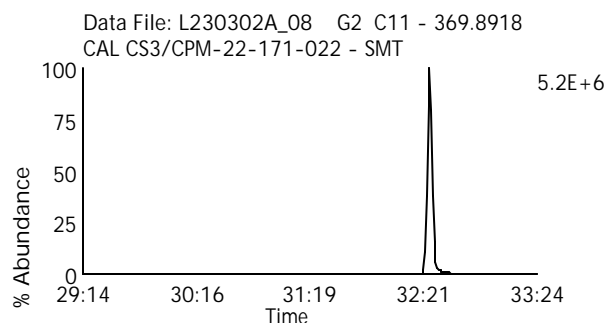
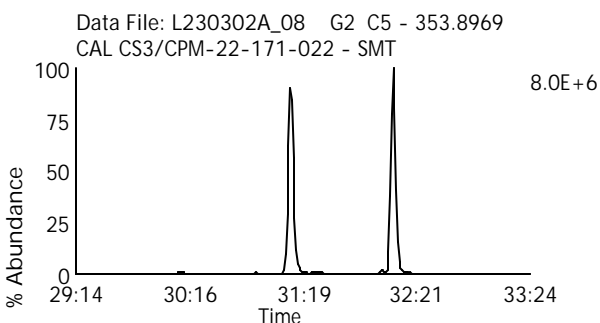
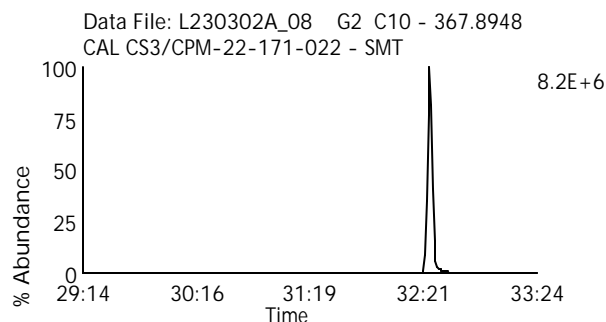
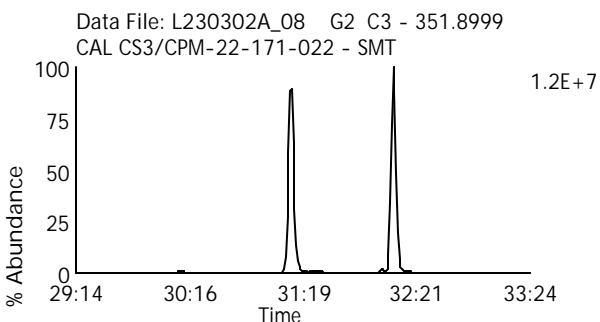
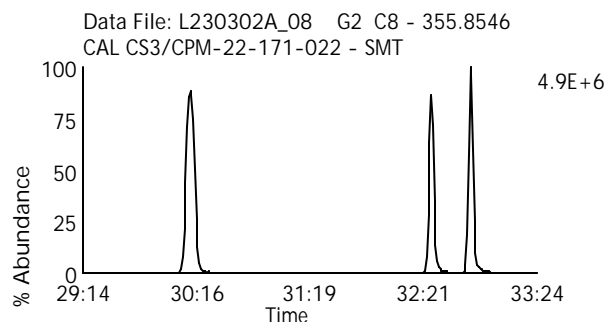
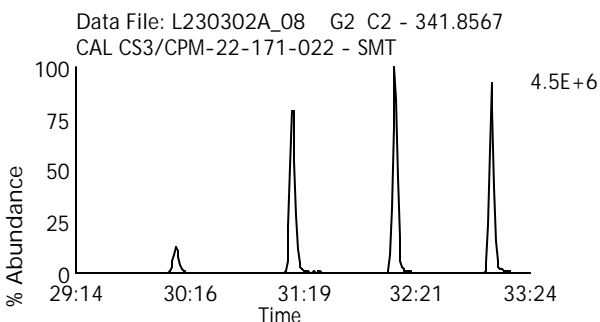
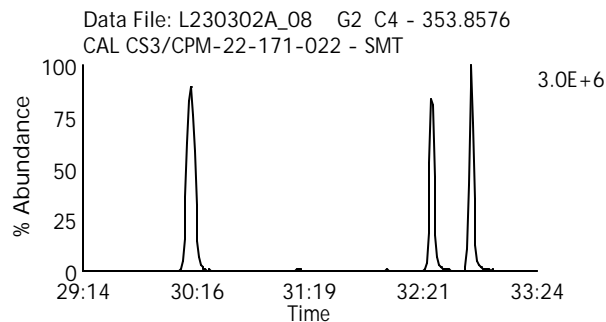
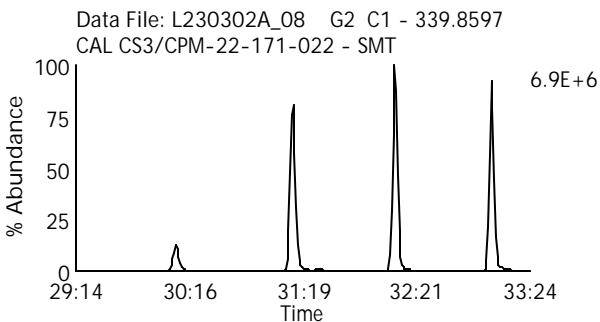
Date Acquired: 3/2/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230302A_08

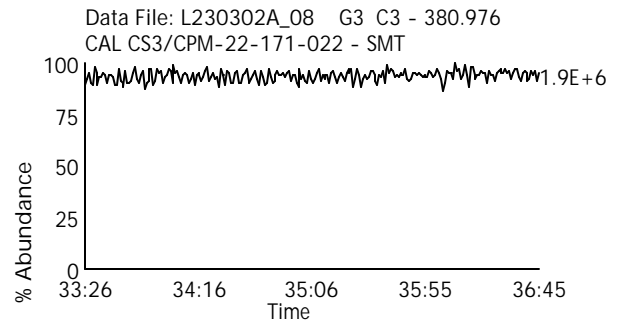
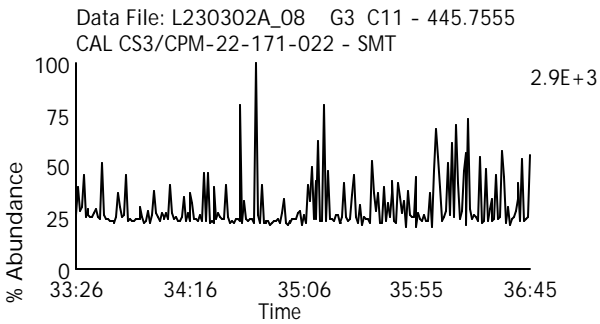
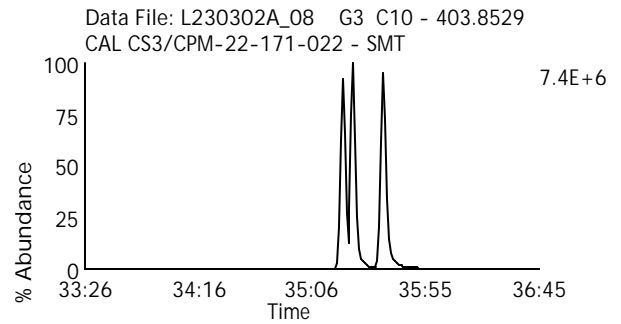
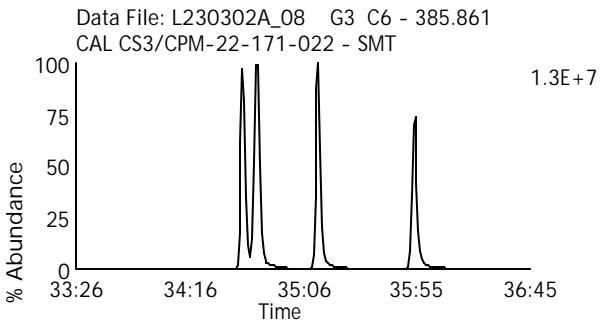
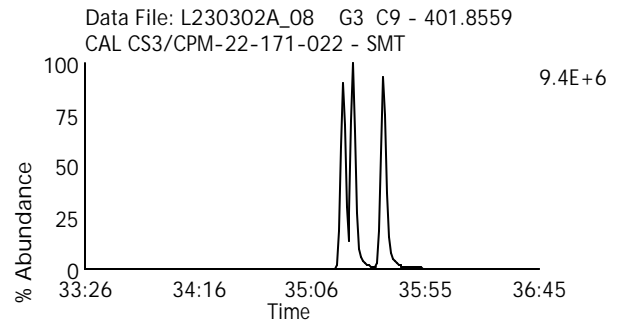
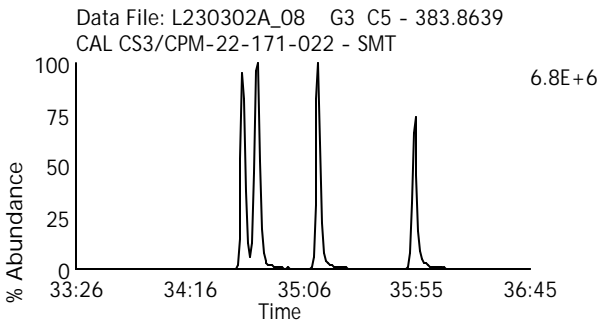
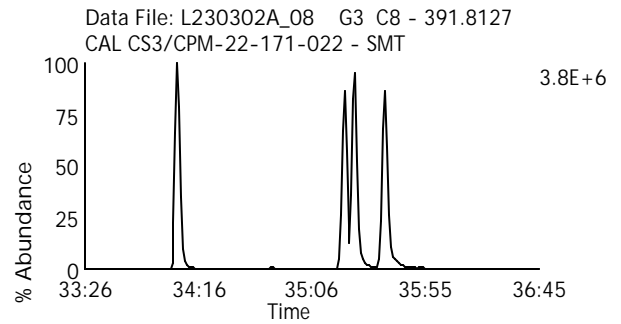
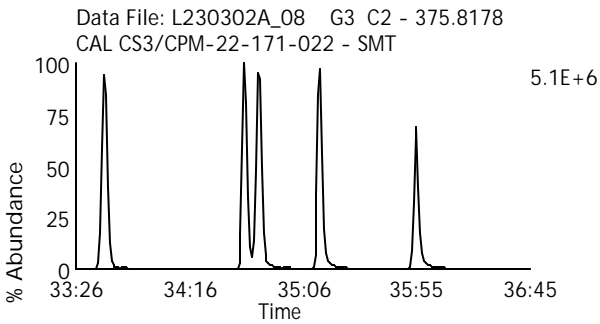
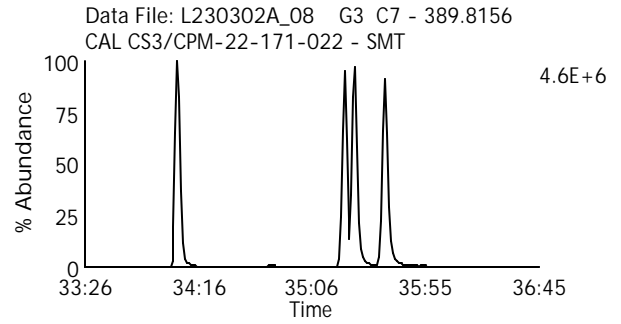
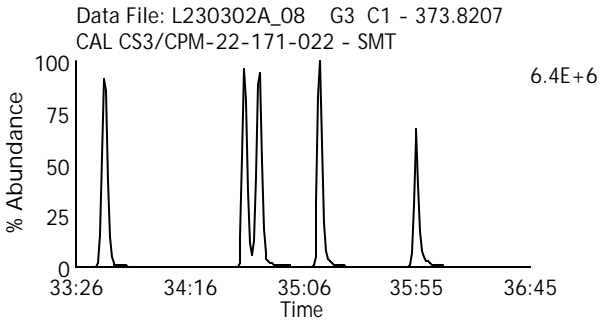
Date Acquired: 3/2/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230302A_08

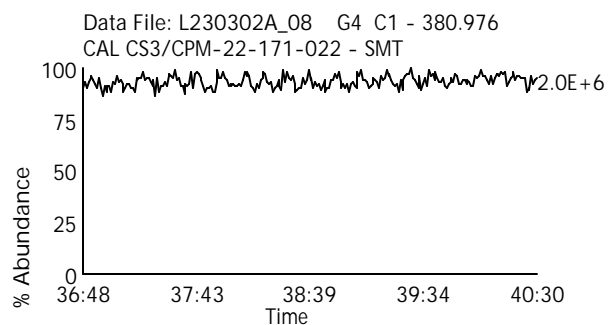
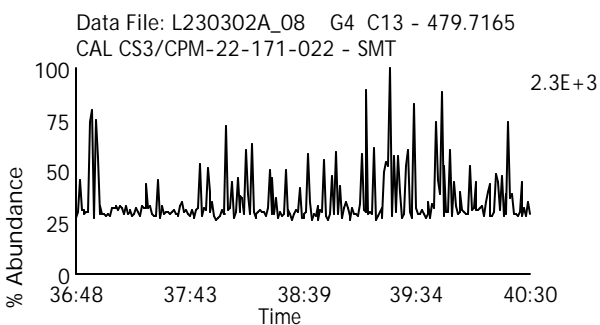
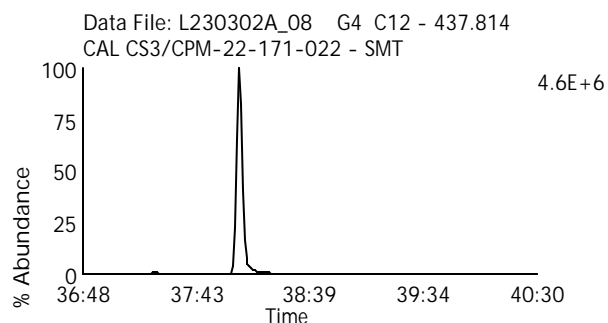
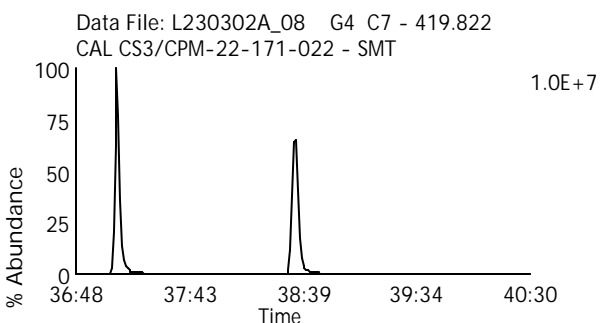
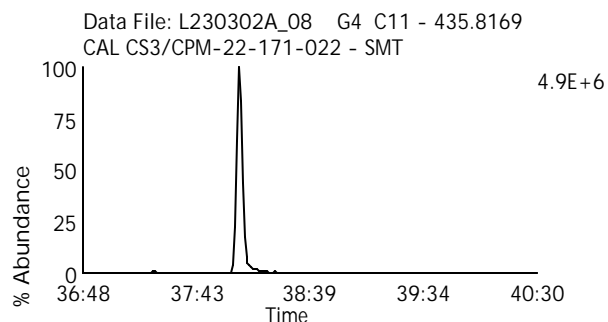
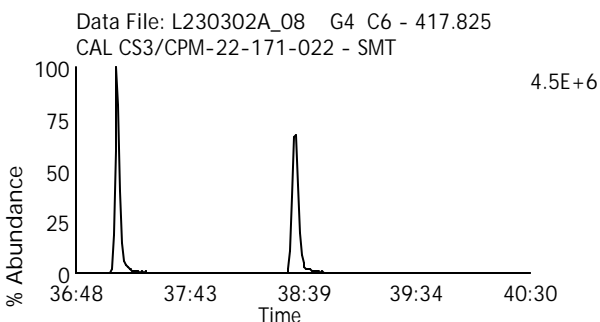
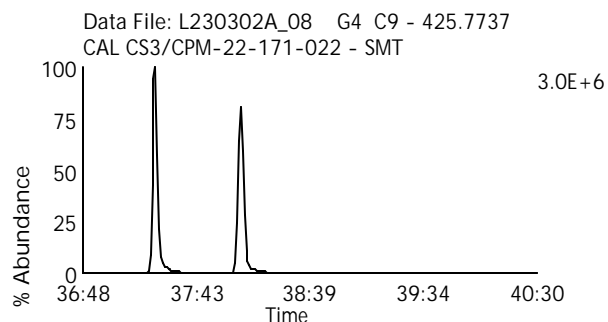
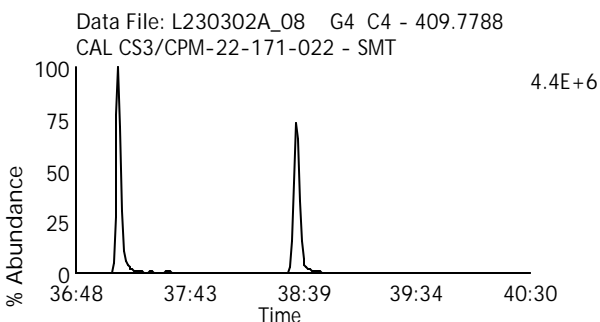
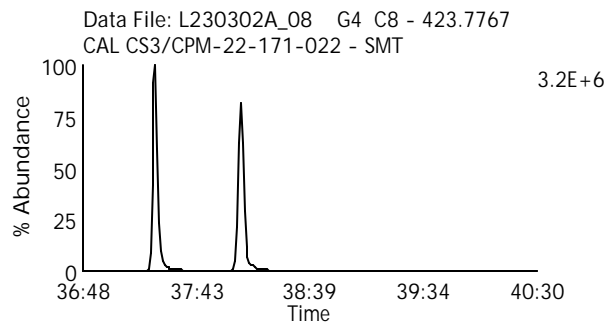
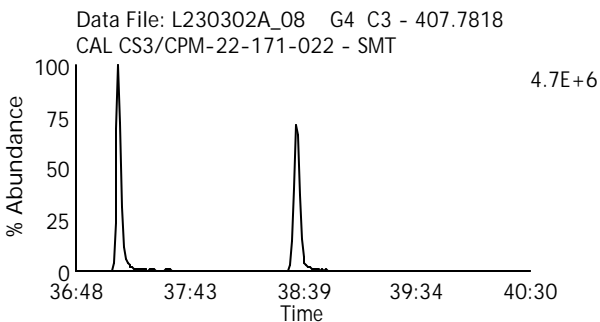
Date Acquired: 3/2/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230302A_08

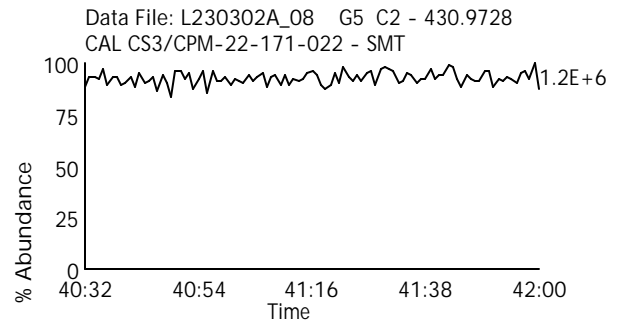
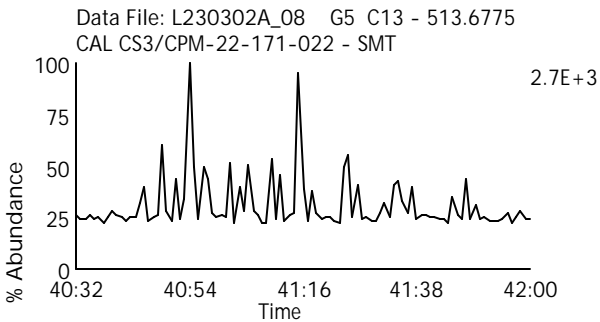
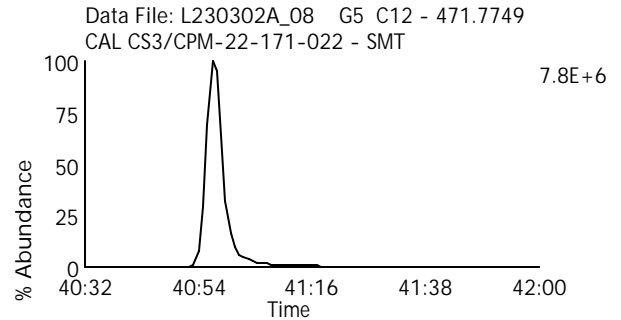
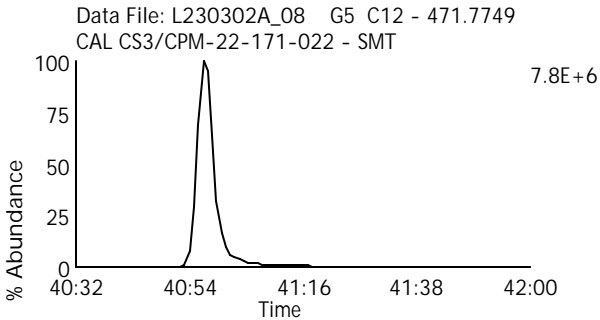
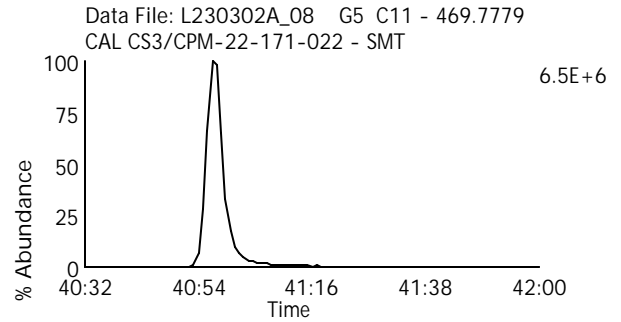
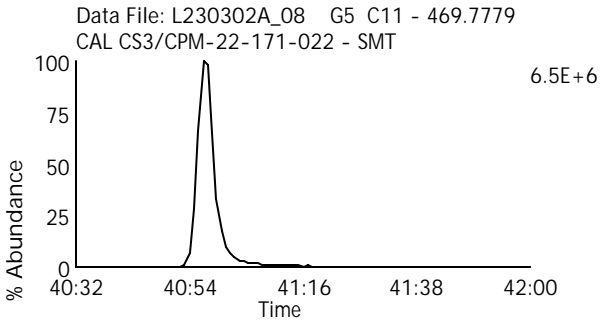
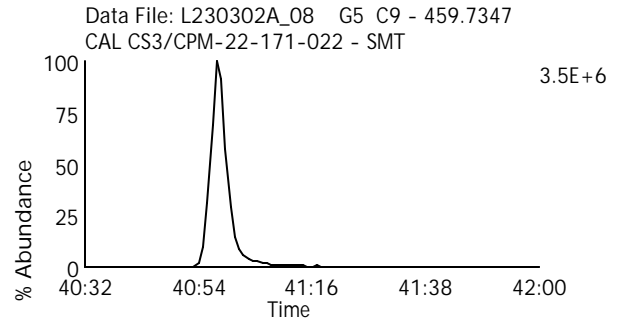
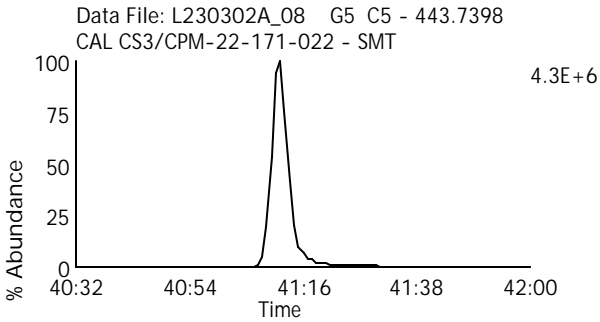
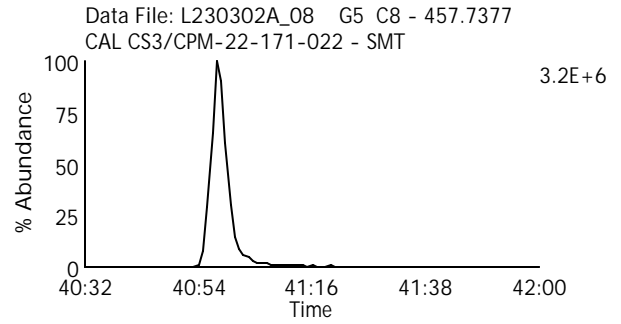
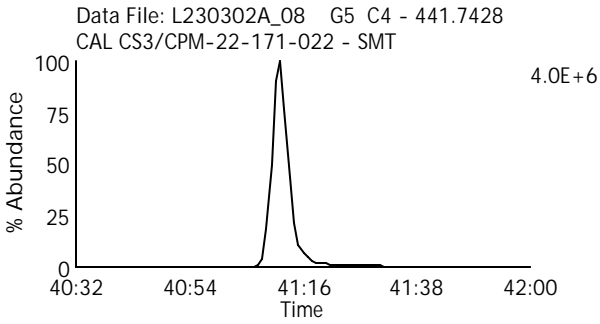
Date Acquired: 3/2/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230305A_18

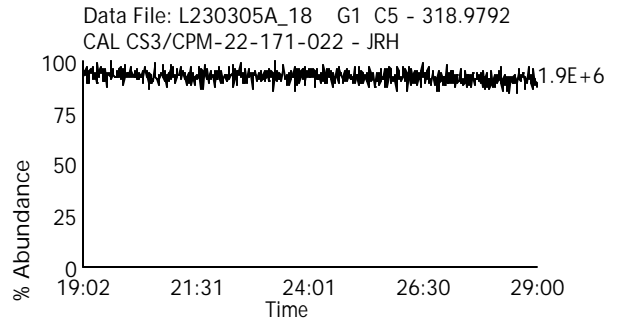
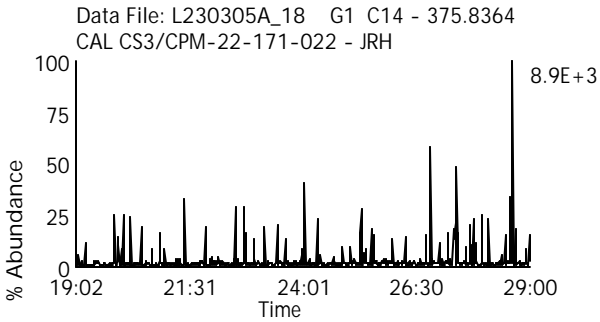
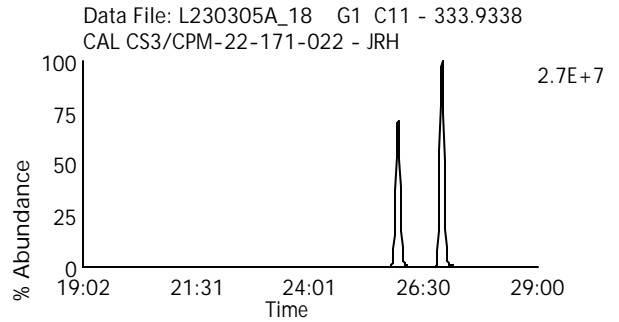
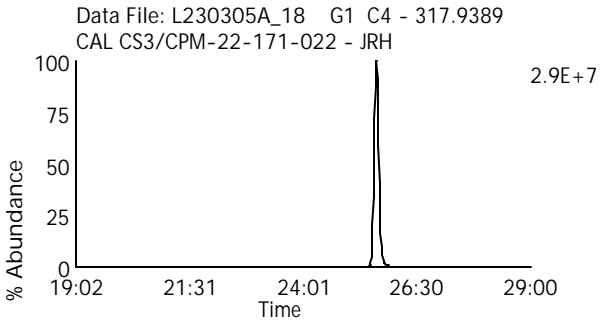
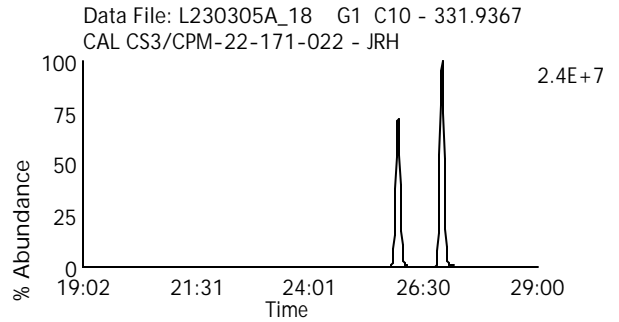
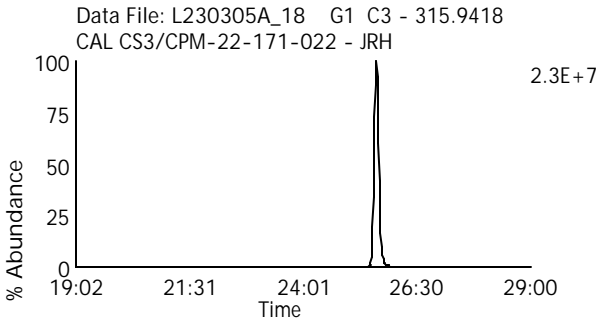
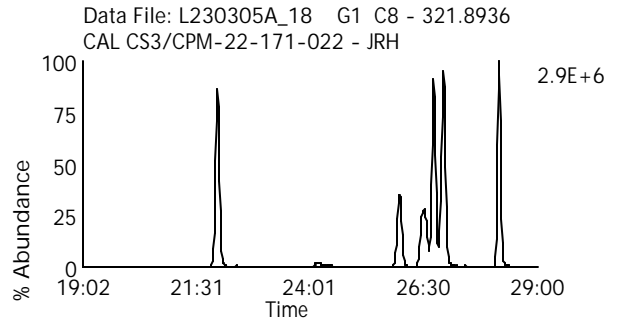
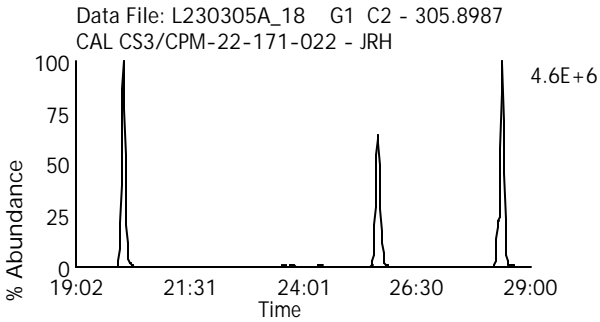
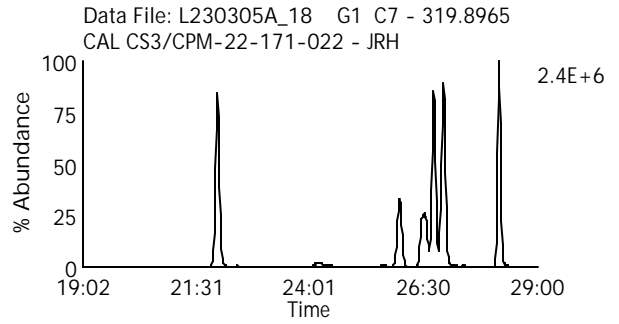
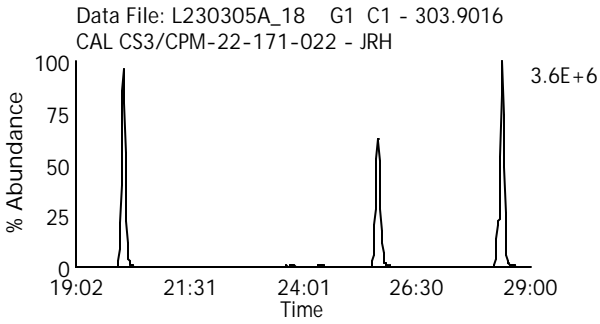
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230305A_18

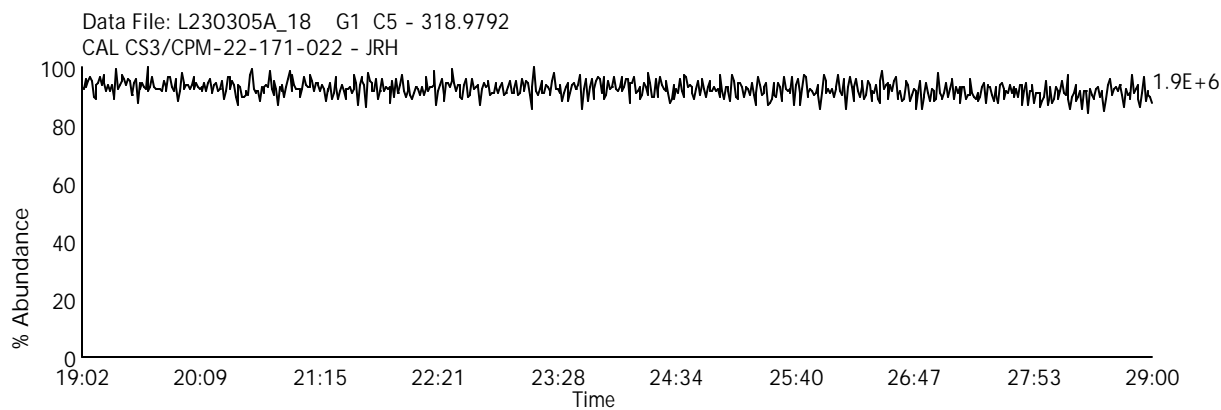
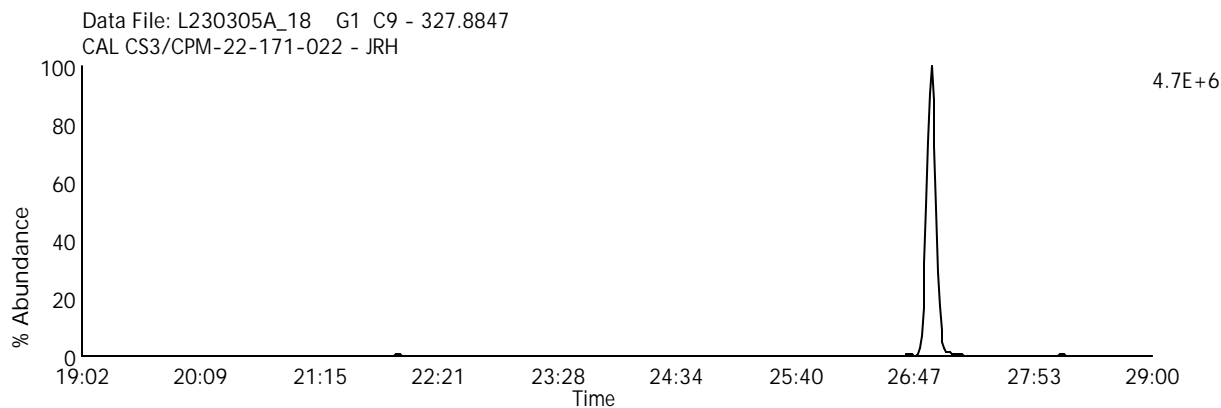
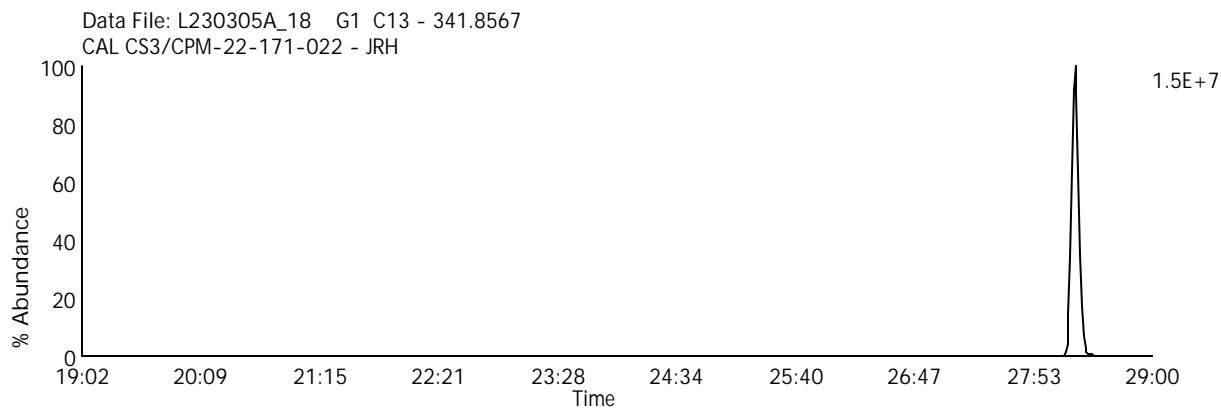
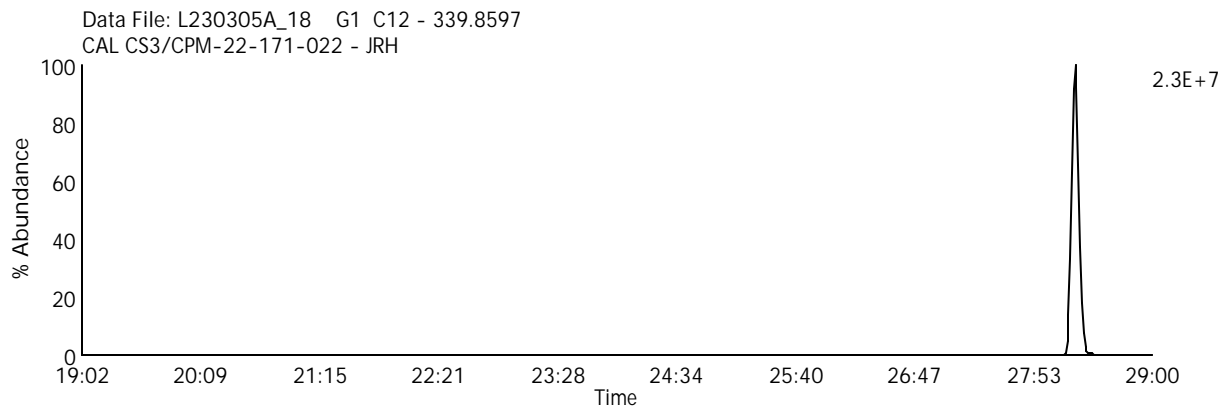
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230305A_18

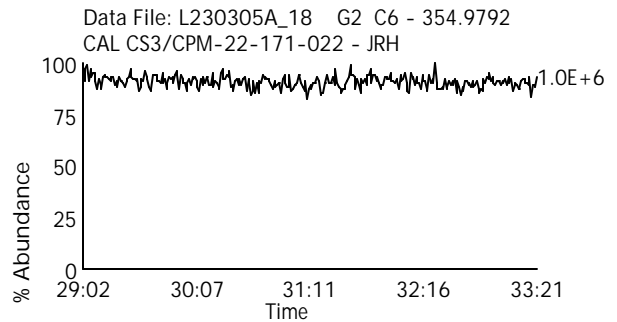
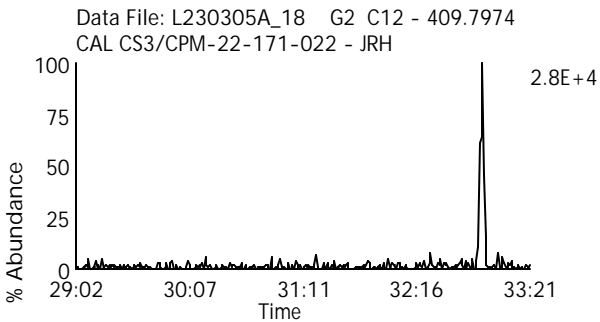
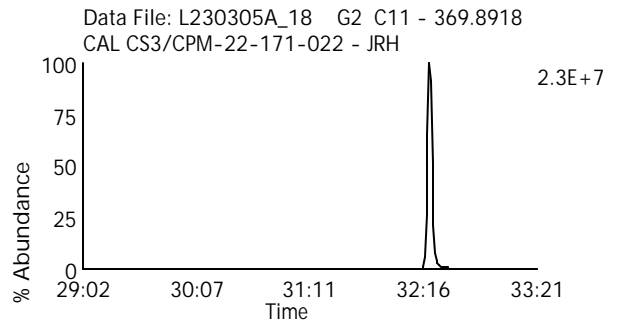
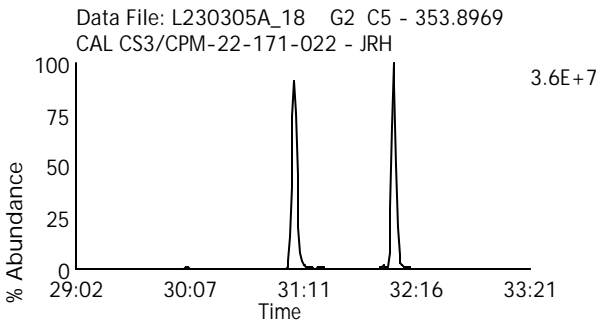
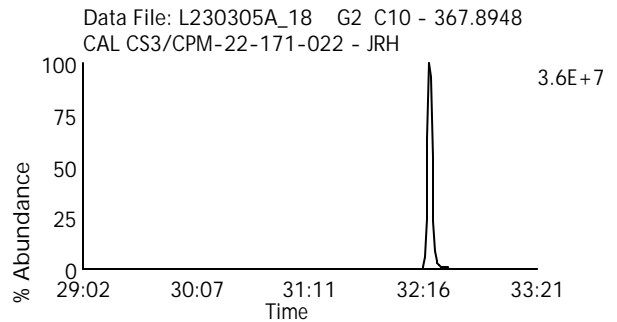
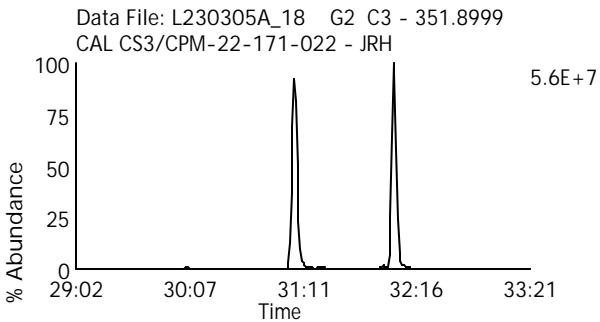
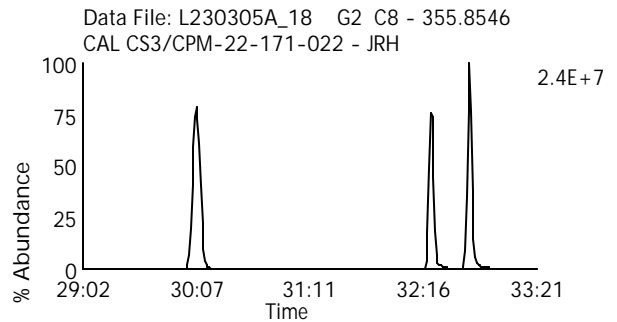
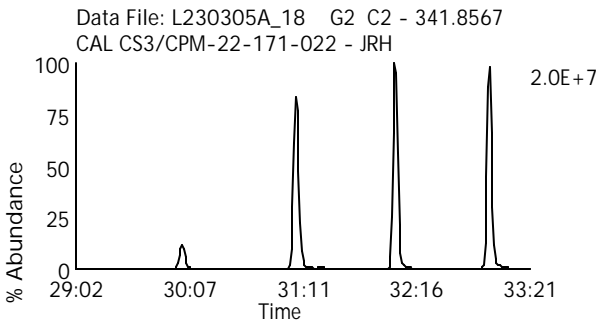
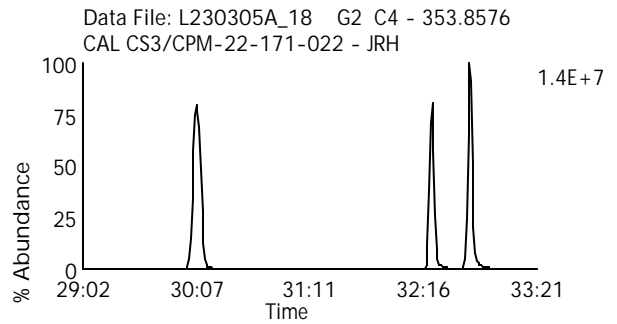
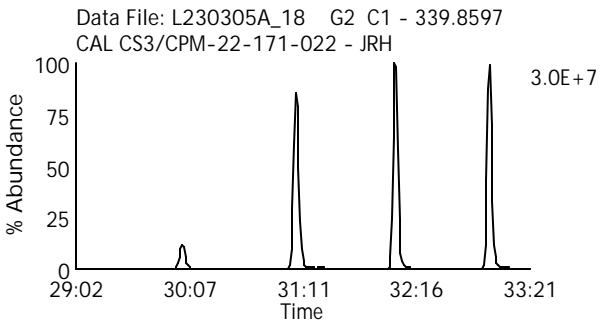
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230305A_18

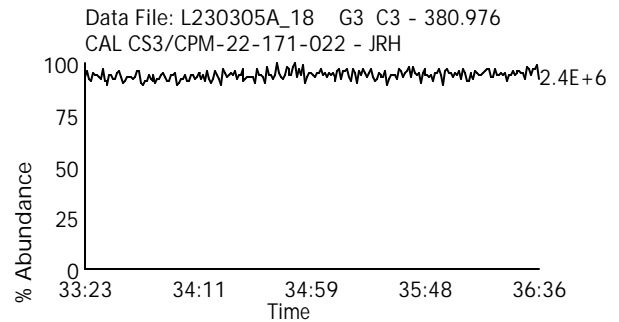
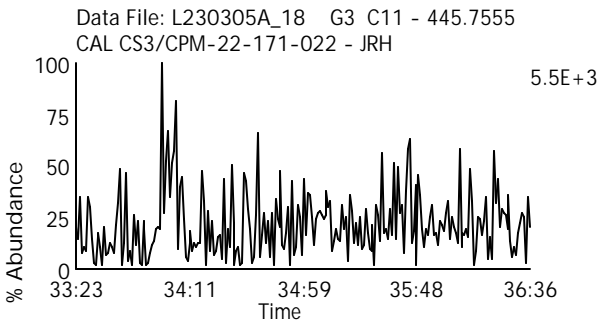
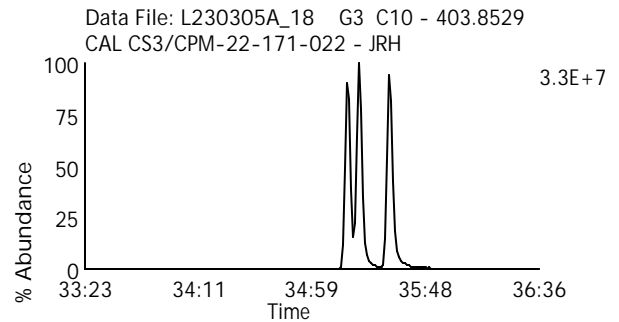
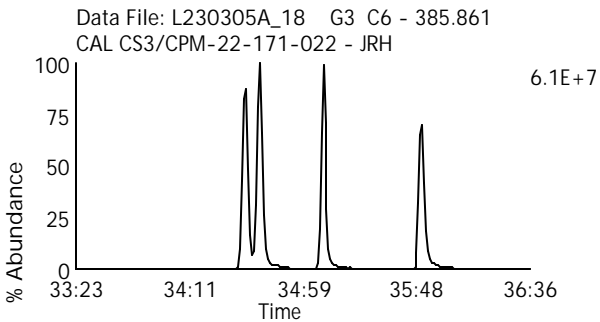
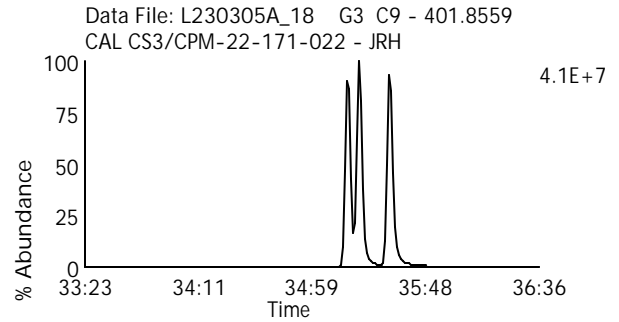
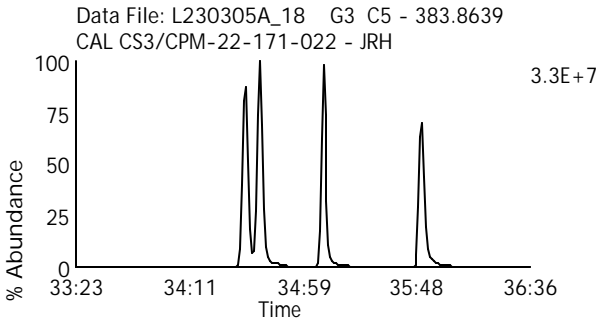
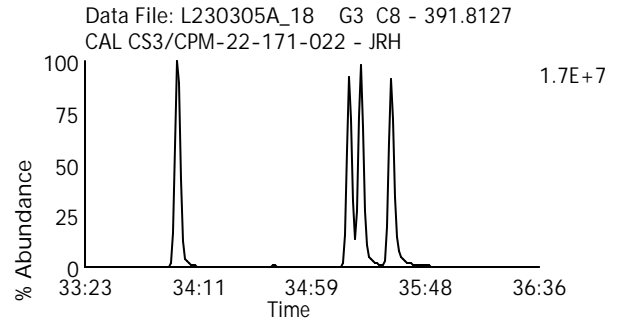
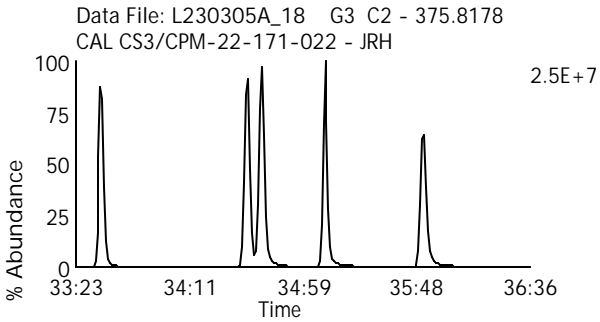
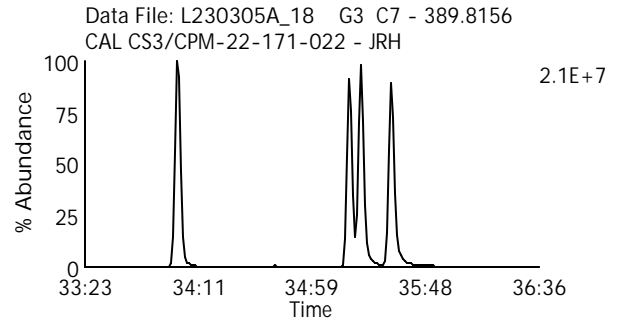
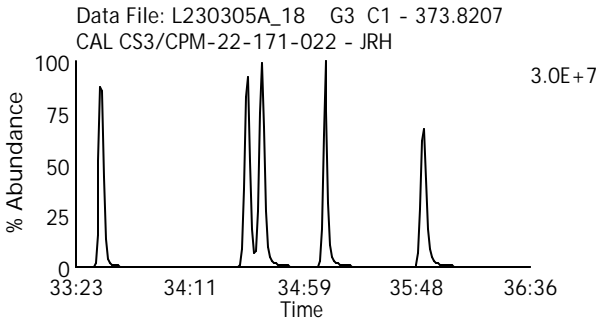
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230305A_18

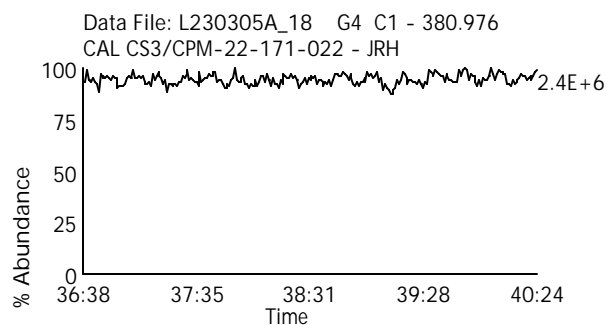
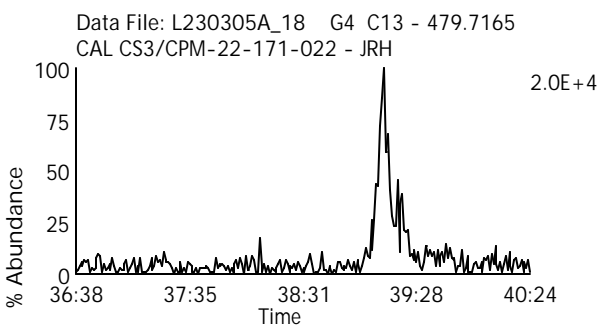
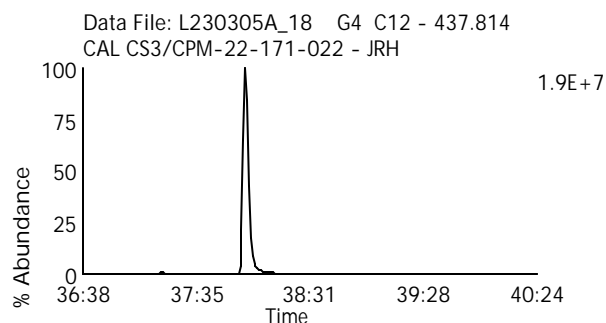
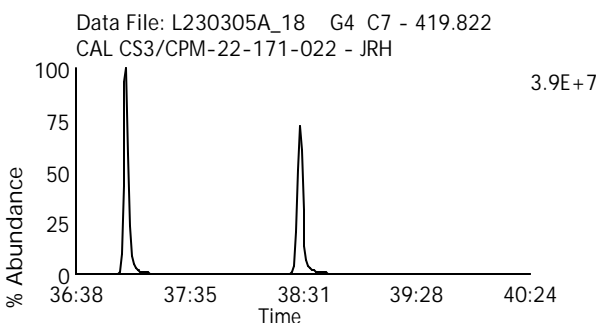
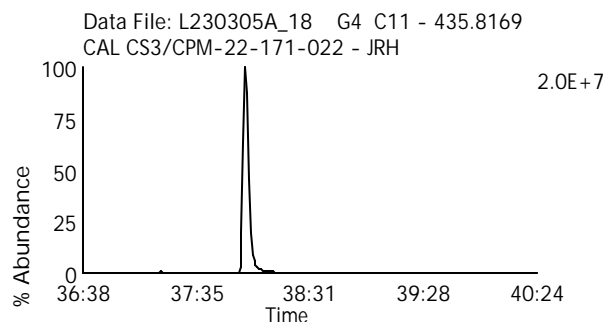
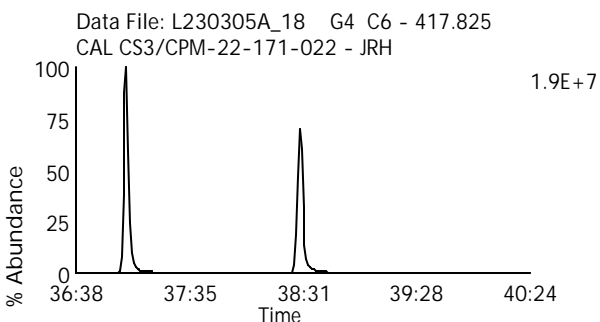
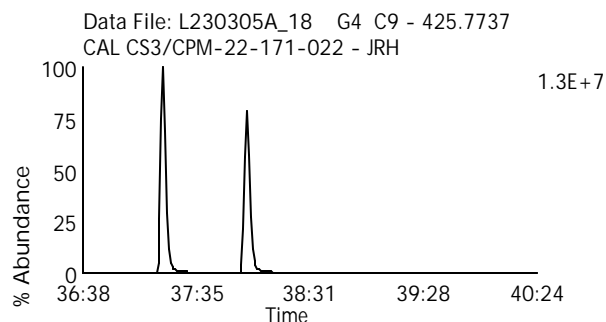
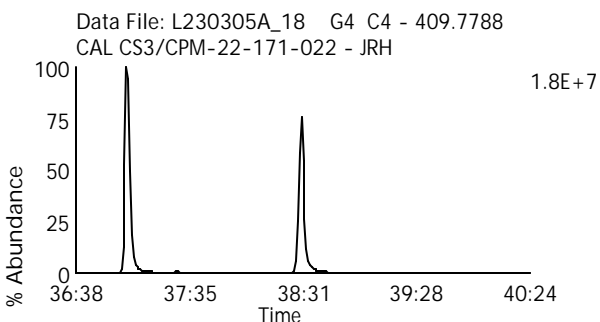
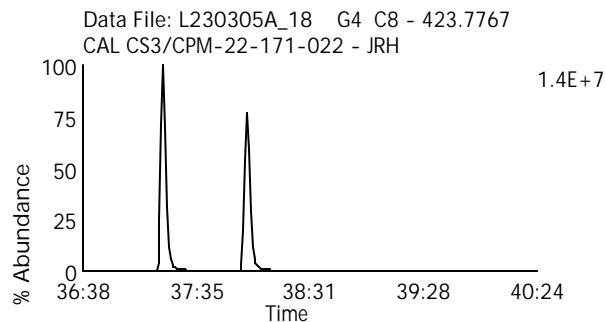
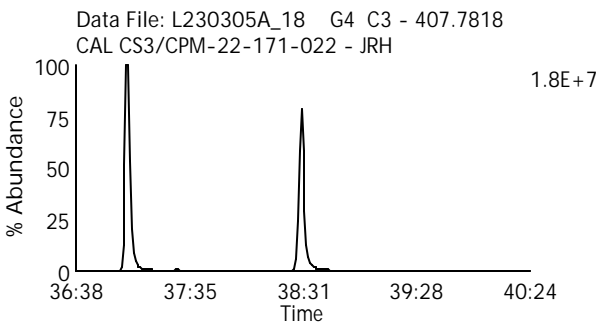
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230305A_18

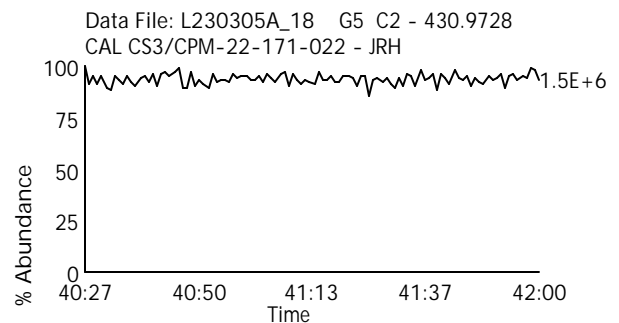
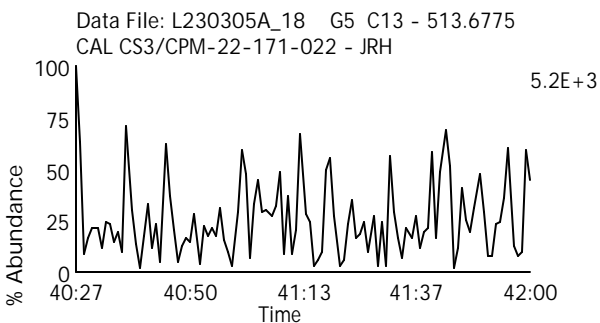
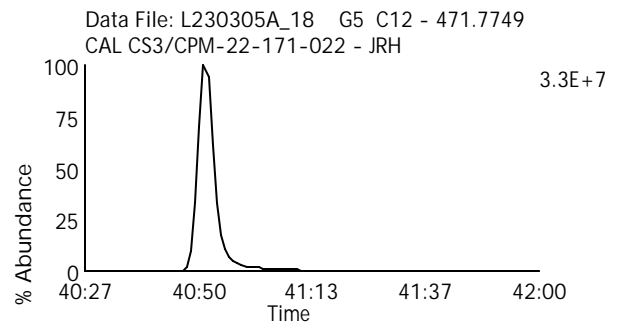
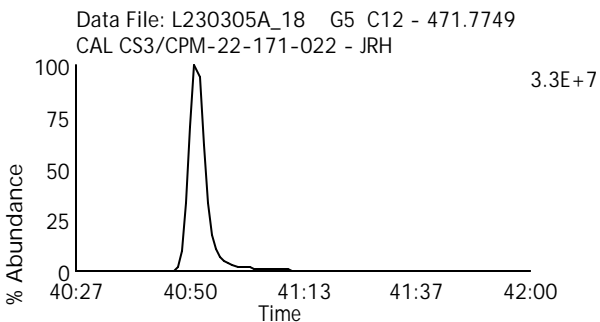
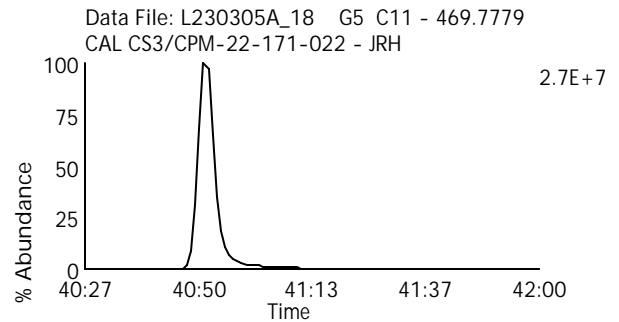
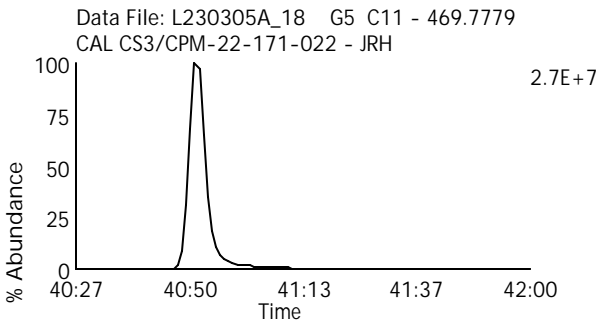
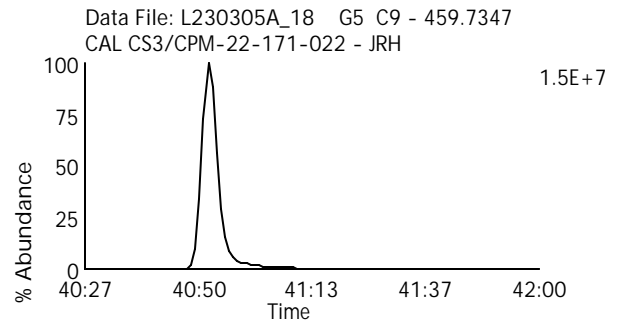
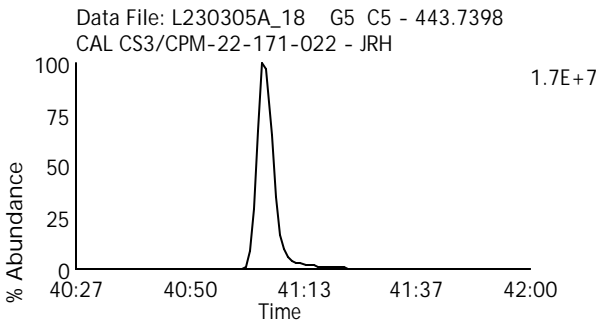
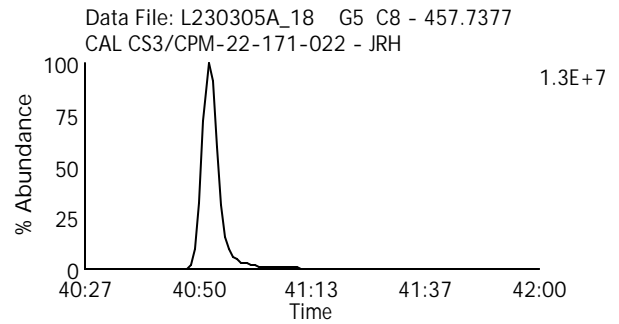
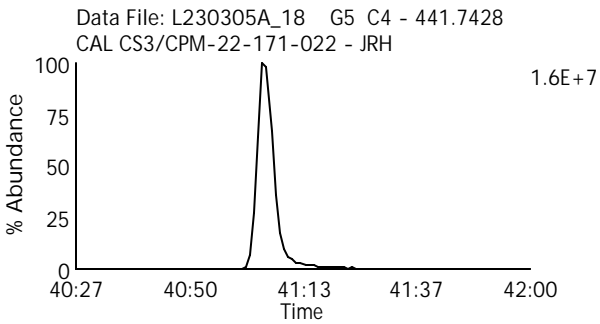
Date Acquired: 3/5/2023

Sample Description: CAL CS3/CPM-22-171-022 - JRH

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

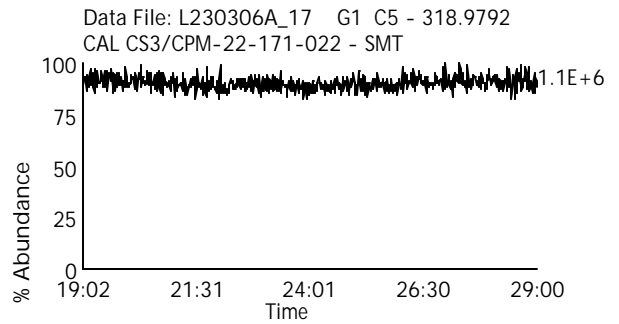
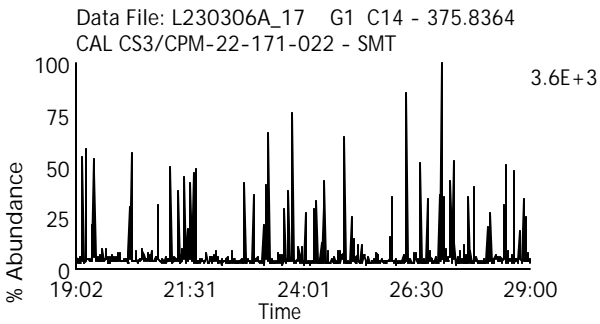
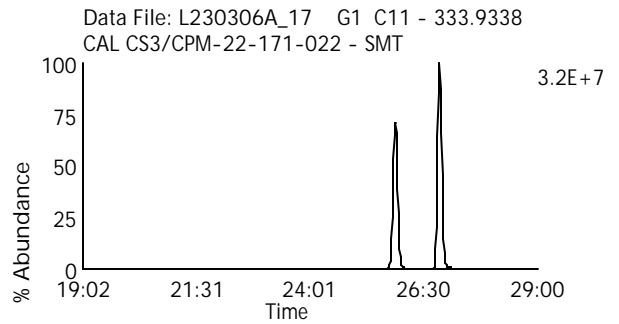
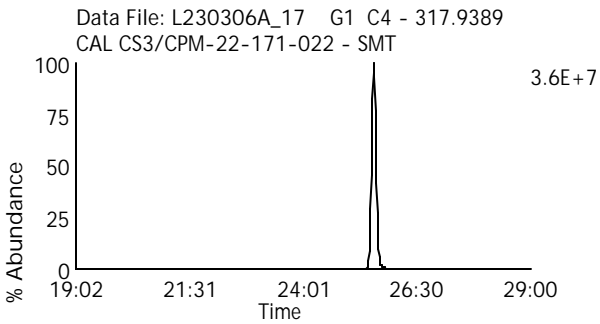
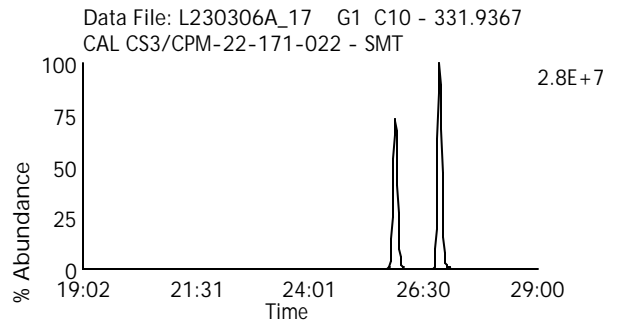
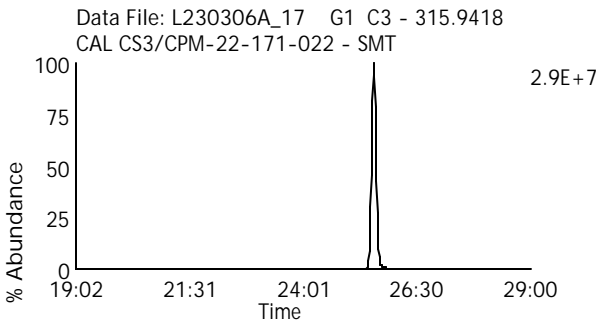
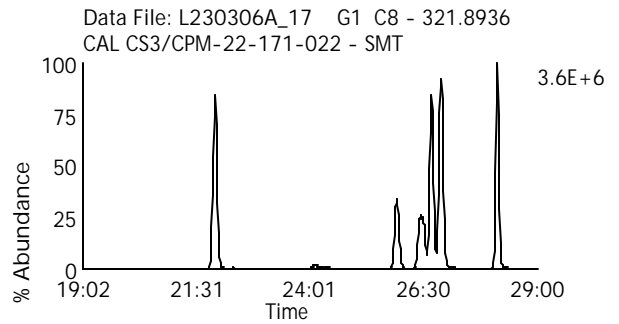
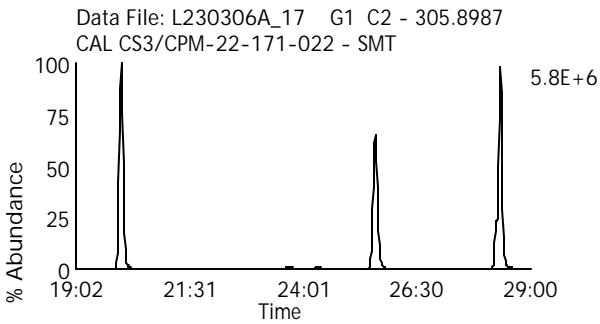
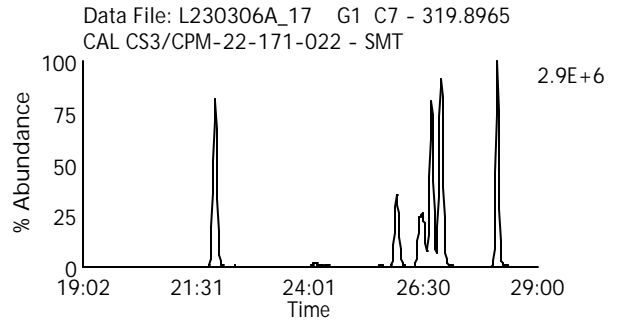
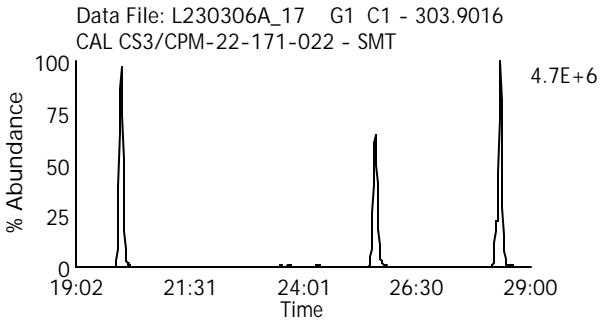
Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230306A_17
Date Acquired: 3/6/2023
Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022
Client Sample ID: CPM/WDM
Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230306A_17

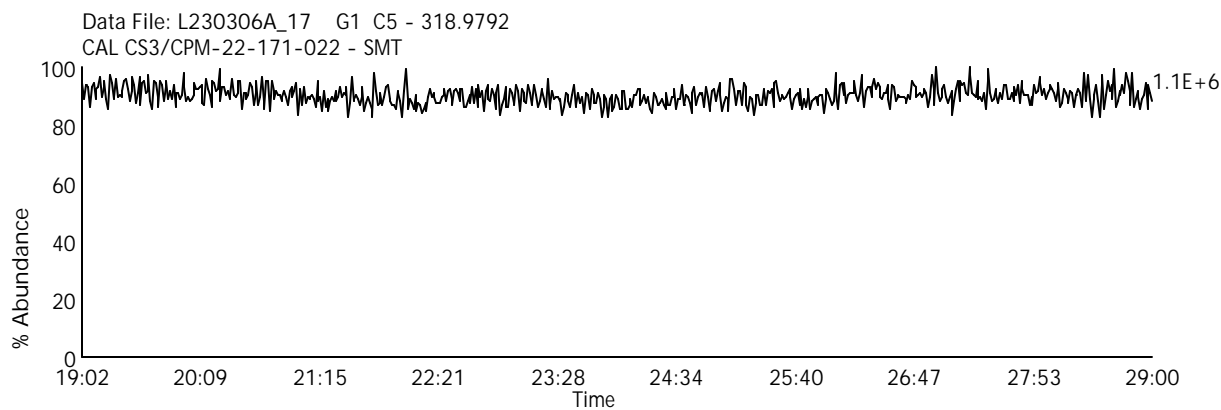
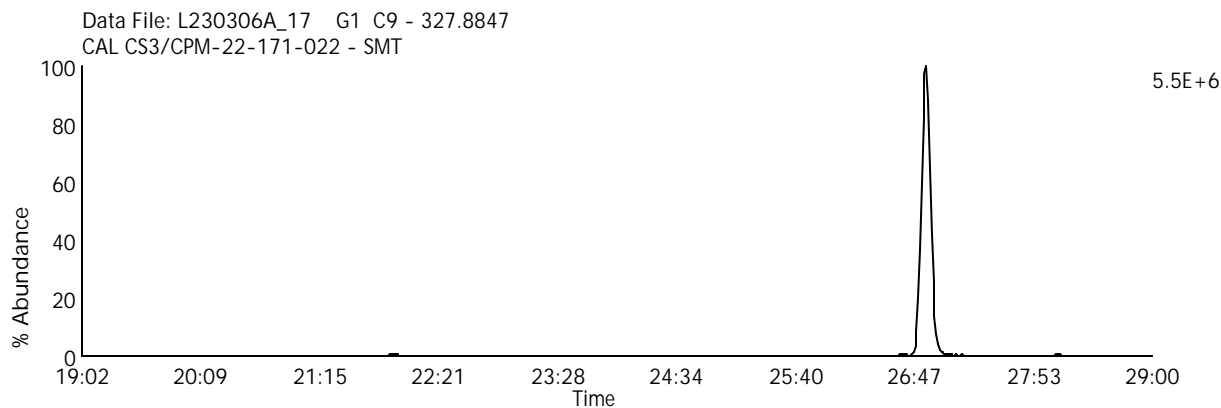
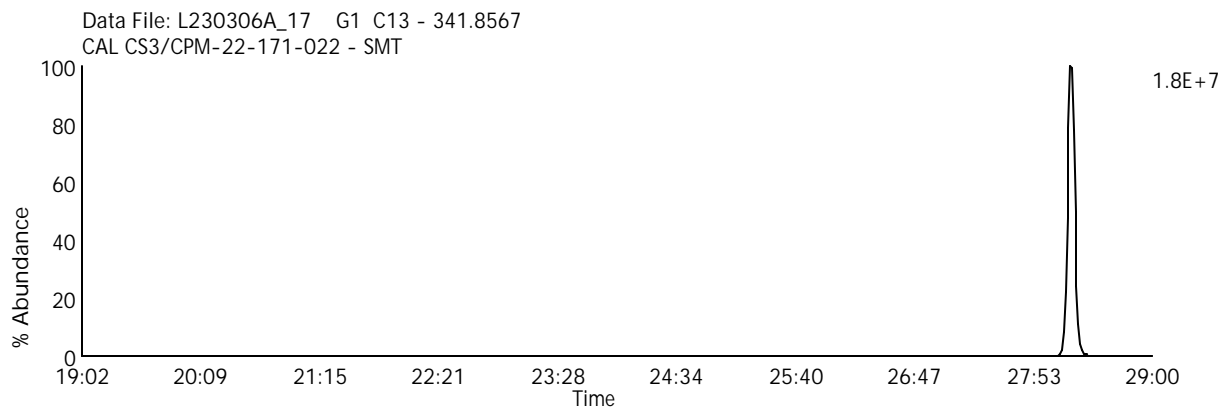
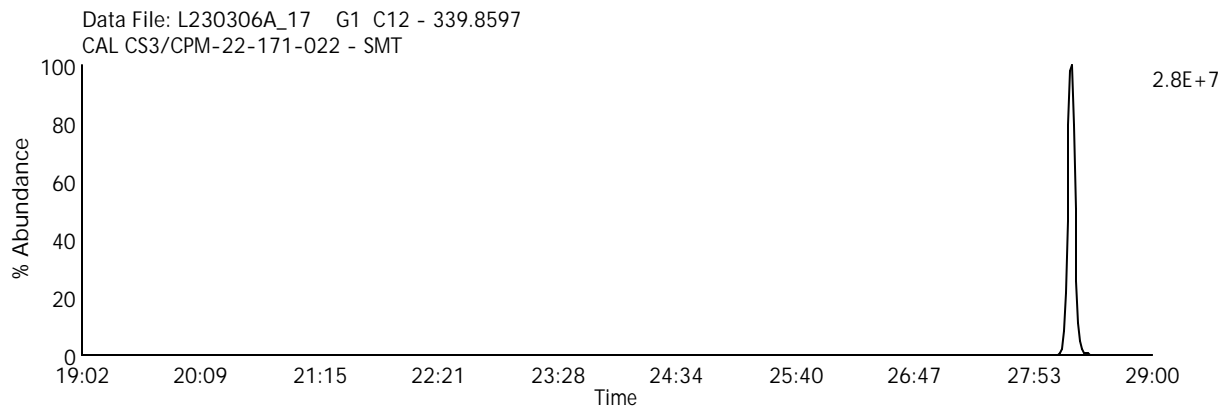
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230306A_17

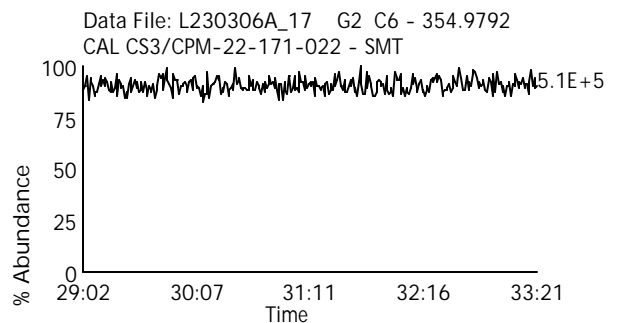
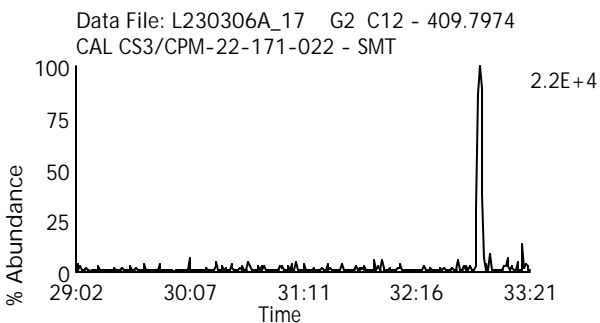
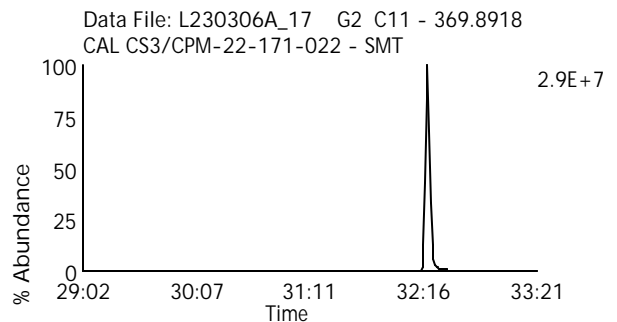
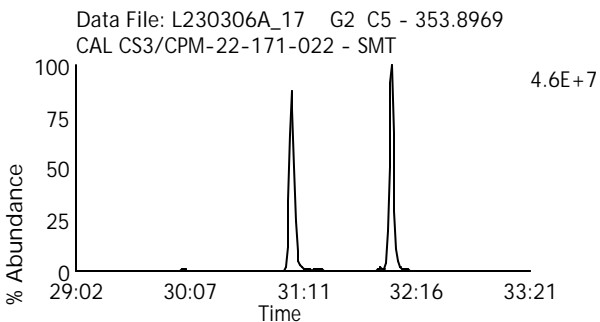
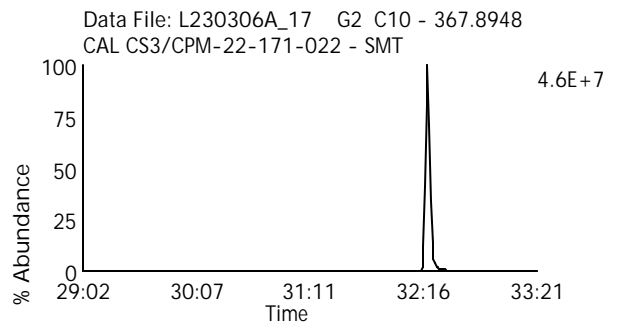
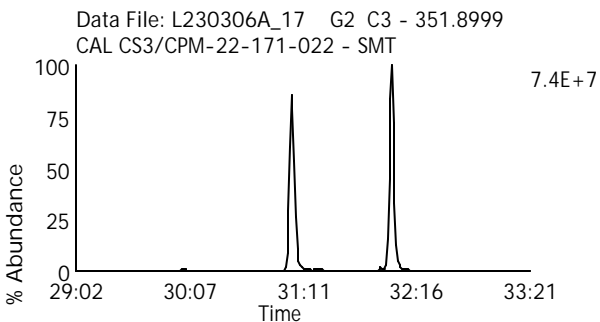
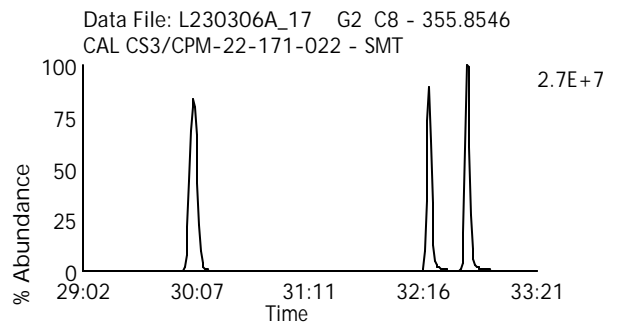
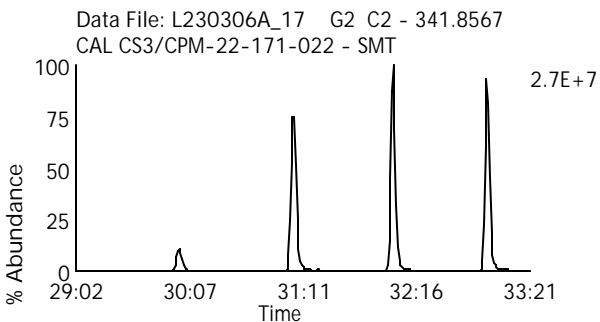
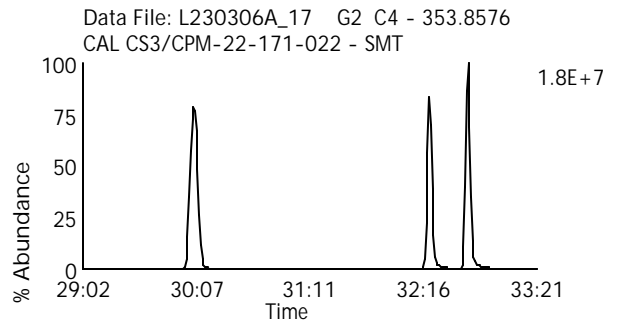
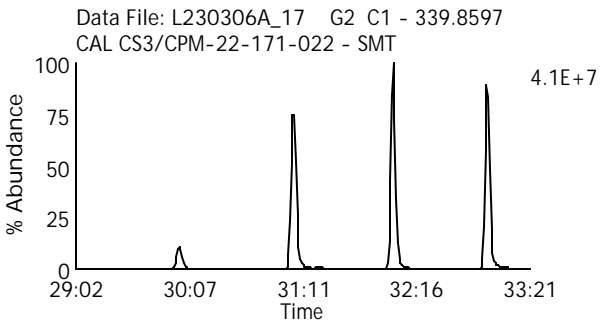
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

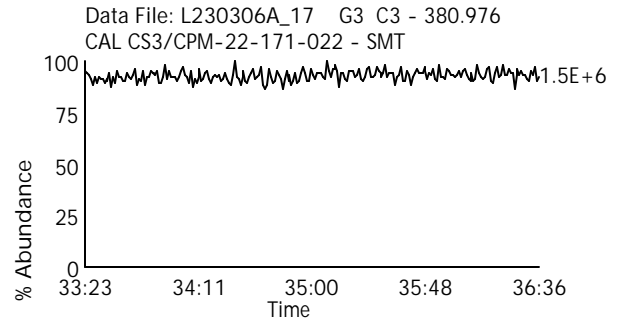
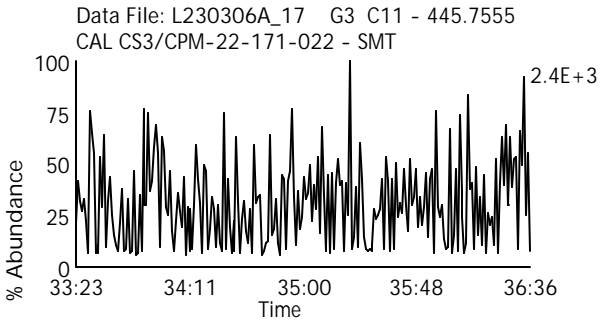
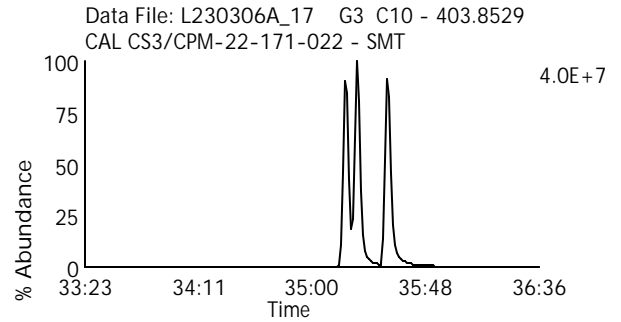
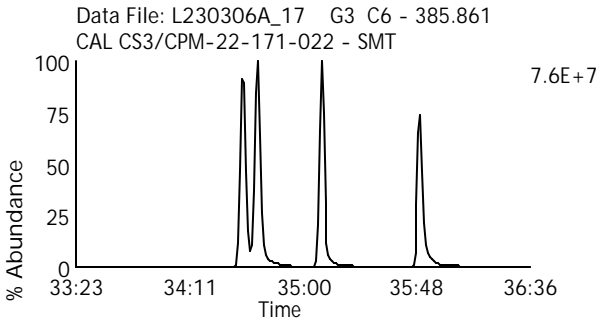
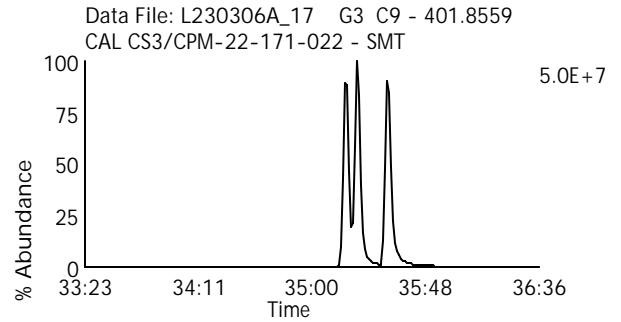
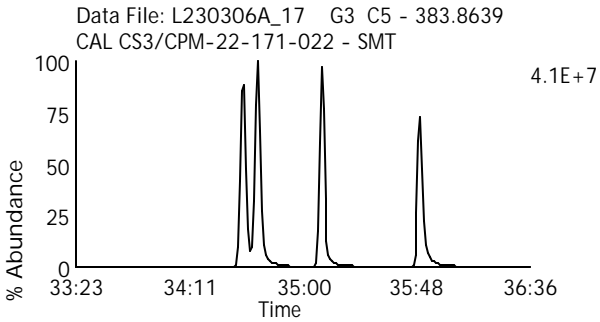
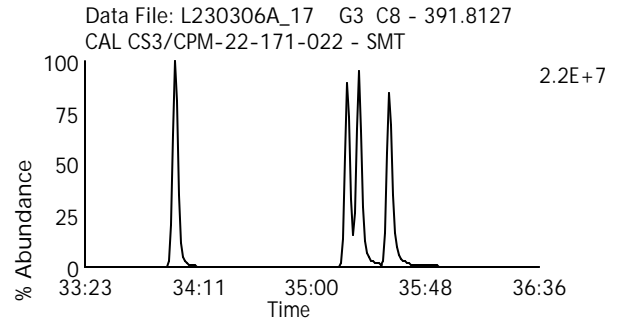
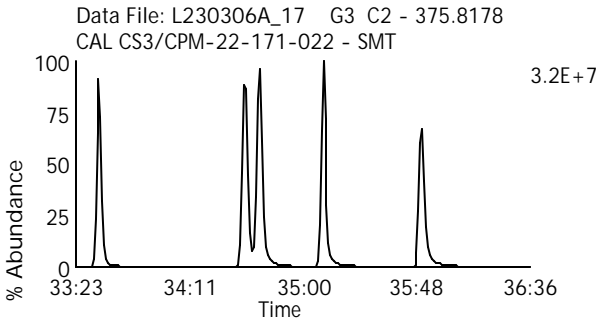
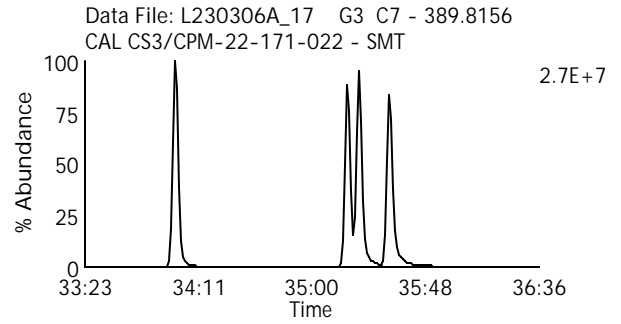
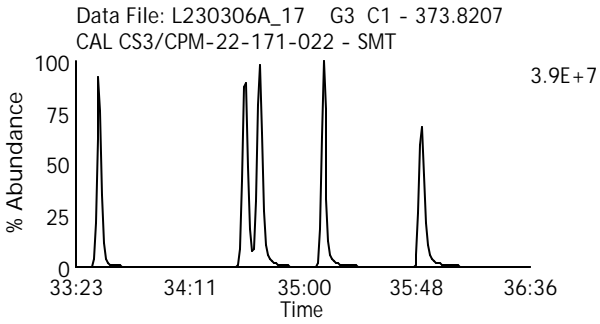
Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230306A_17
Date Acquired: 3/6/2023
Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022
Client Sample ID: CPM/WDM
Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230306A_17

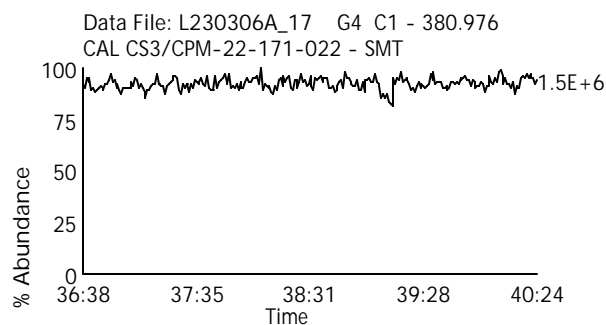
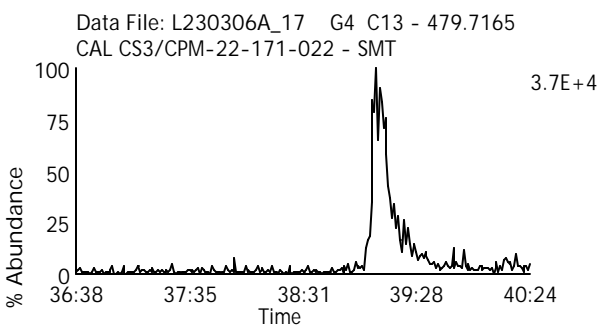
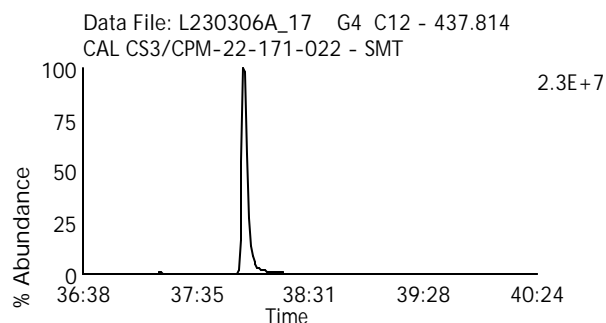
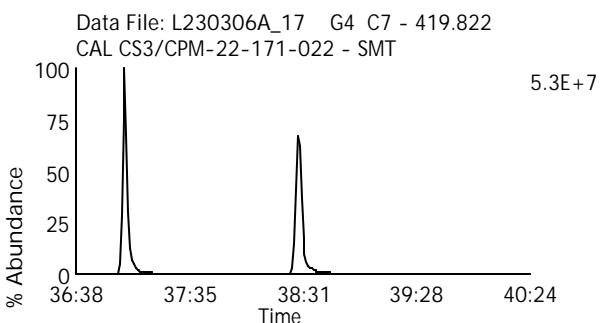
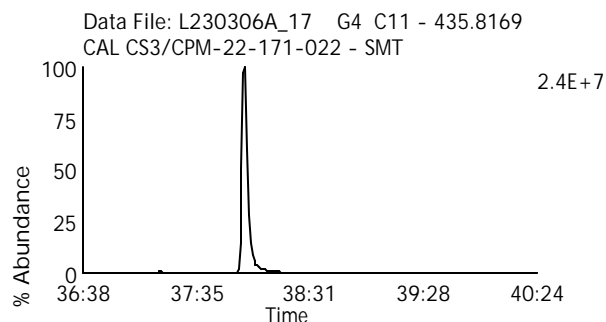
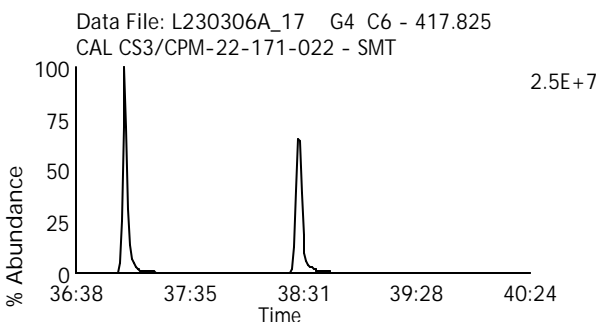
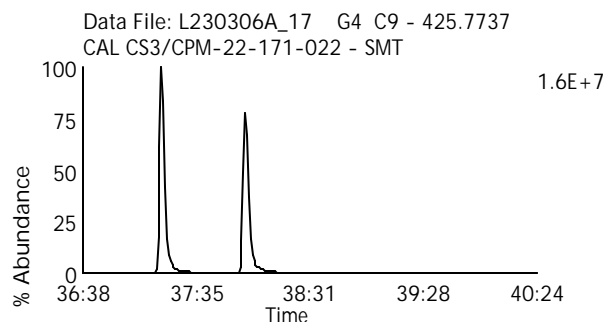
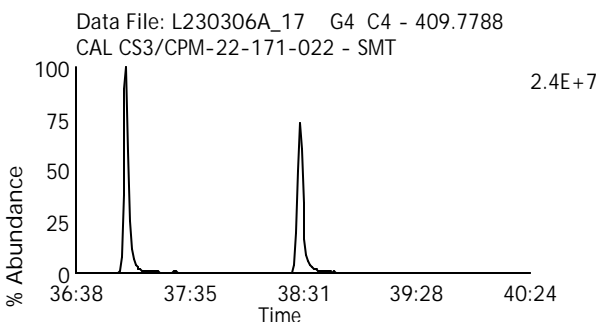
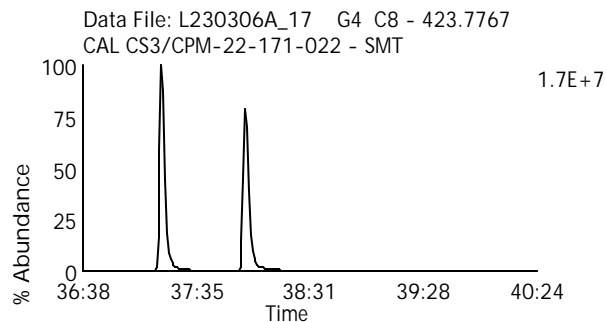
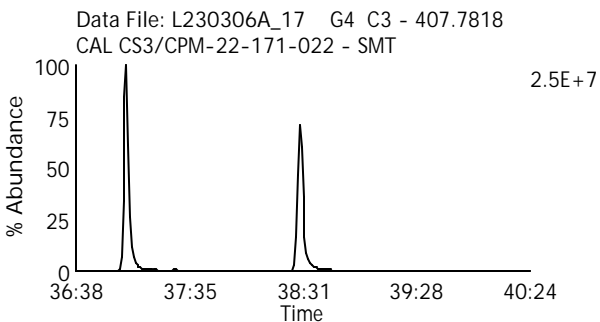
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230306A_17

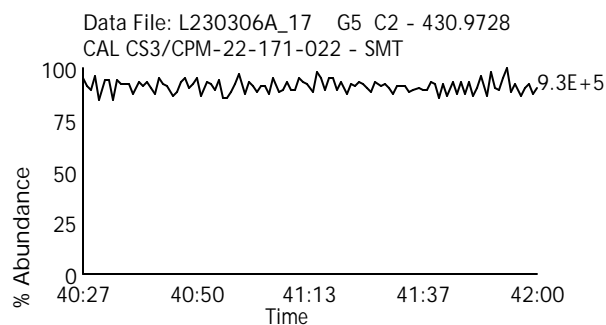
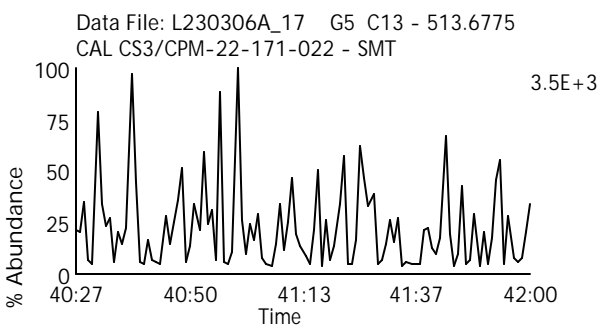
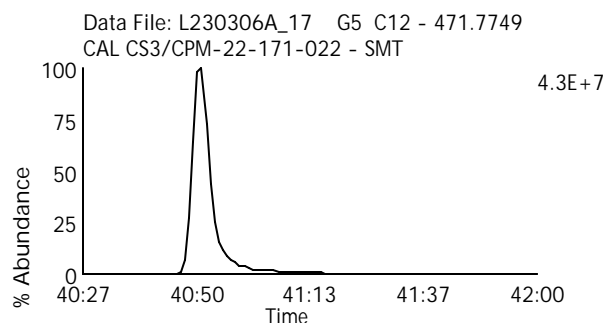
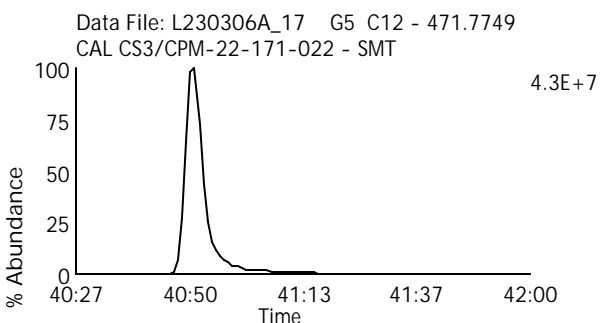
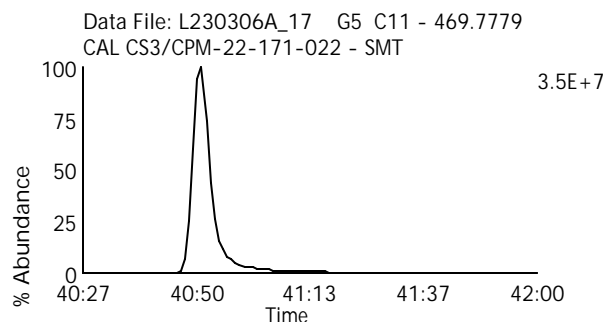
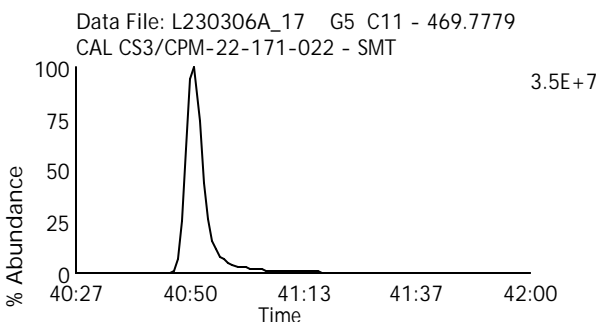
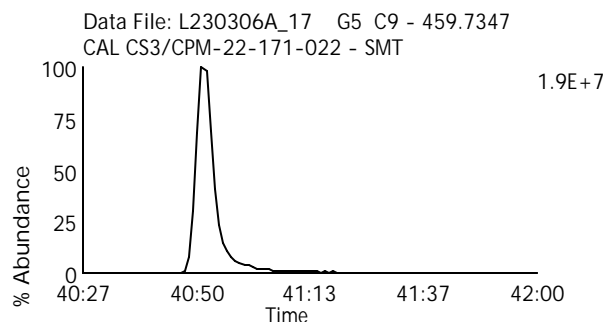
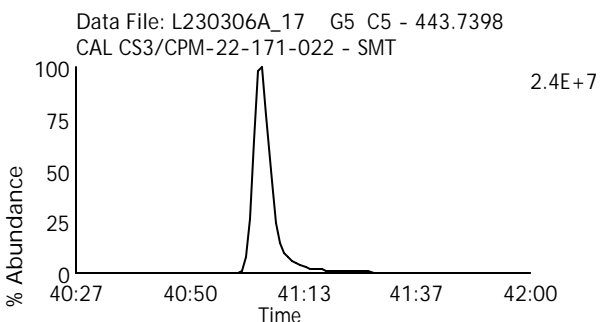
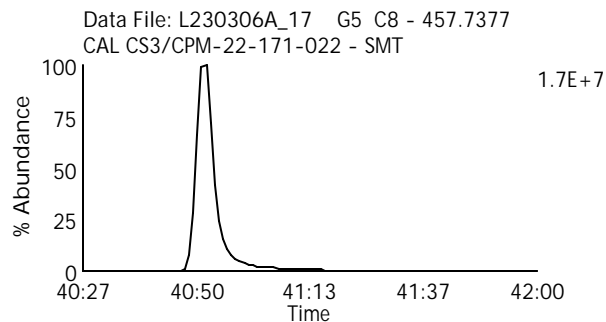
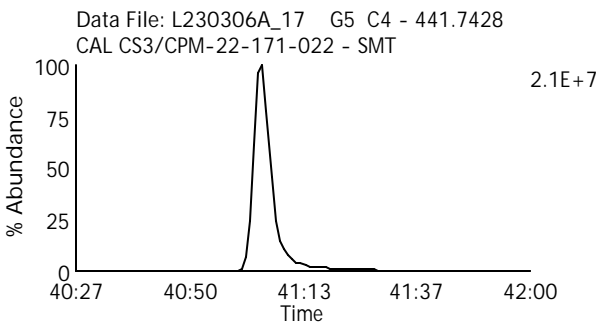
Date Acquired: 3/6/2023

Sample Description: CAL CS3/CPM-22-171-022 - SMT

Lab Sample ID: CS3/CPM-22-171-022

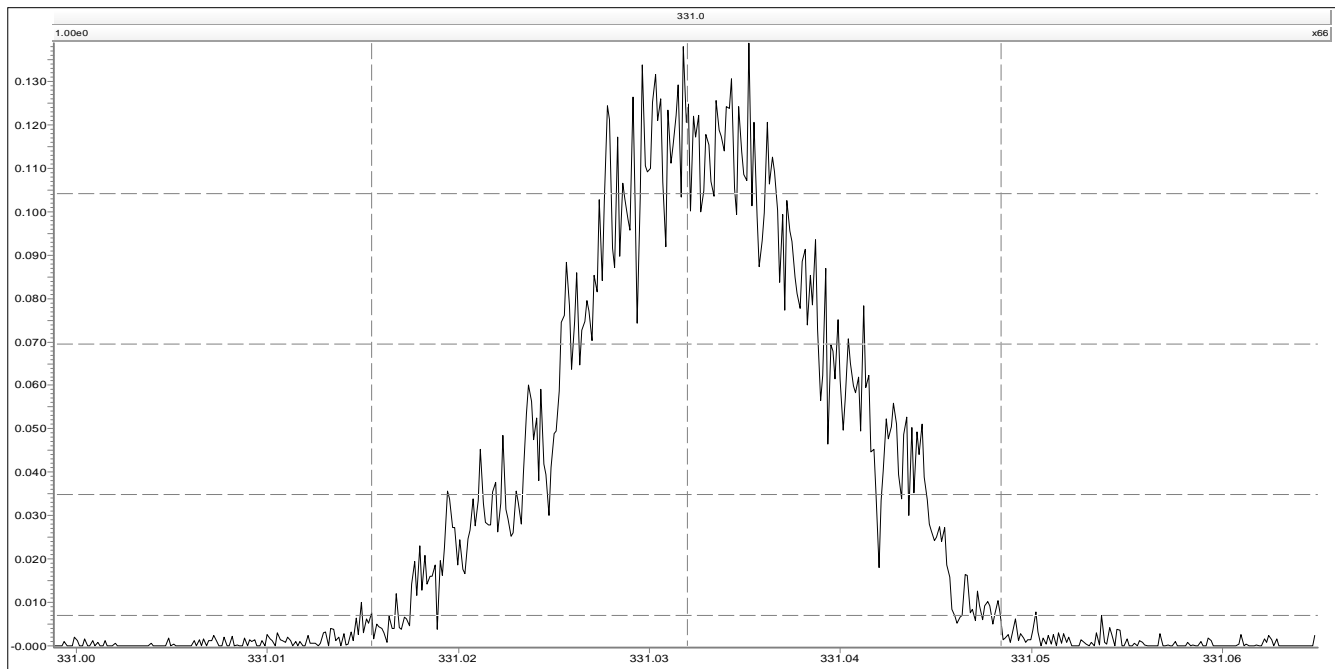
Client Sample ID: CPM/WDM

Instrument: 10MSHR15 (L)



File: C:\MassLynx\1PaceNew.PRO\ACQUDB\10MSHR15L.ipr

Printed: Thursday, March 02, 2023 09:46:46 Central Standard Time



Source (EI+)

Ion Repeller (V)	-10.03
Focus 1	928
Beam Centre	-4.3
Focus 2	3932
Temperature (C)	280
Elec Energy (eV)	35.0
Trap Current (uA)	500.0
Y Deflect 1	-15.0
Z Deflect 1	50.5
Z Deflect 2	-10.8
Z Focus 2	2086
Z Focus 3	0
Z Deflect 3	-45.6
Y Focus	3759
Rotate 2	-0.6
Curve 2	7.5
Curve 3	-4.1
Rotate 3	13.8
Rotate 4	-15.4
V Acc (V)	7000.47
Magnet Mass	331.0
Source Slit	25.04
Collector Slit	12.44
MIKES Slit	100.00
Alpha	65.00
Detector Voltage	360
Ion Energy	6.00
Z4 Restrictor	Off
Vacc Limit	8000

Analyser

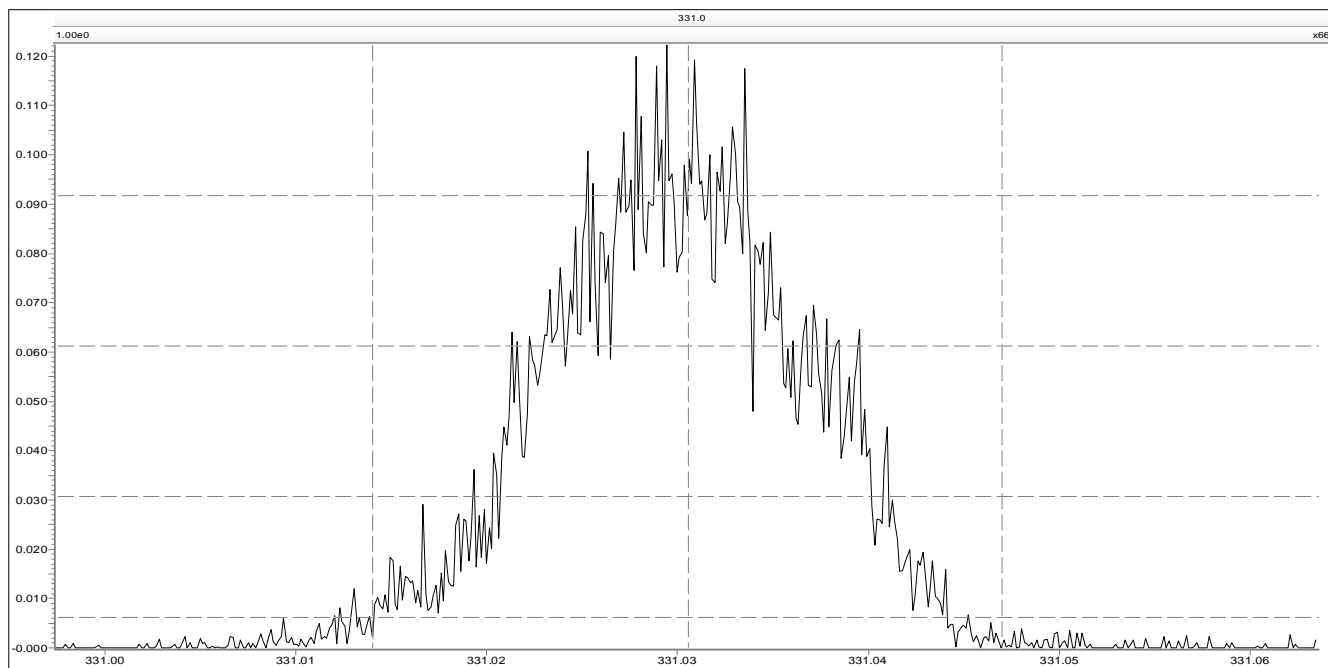
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Engineer

No information

File: C:\MassLynx\IpaceNew.PRO\ACQUDB\10MSHR15L.ipr

Printed: Thursday, March 02, 2023 15:36:23 Central Standard Time



Source (EI+)

Ion Repeller (V)	-10.03
Focus 1	928
Beam Centre	-4.3
Focus 2	3932
Temperature (C)	280
Elec Energy (eV)	35.0
Trap Current (uA)	500.0
Y Deflect 1	-15.0
Z Deflect 1	50.5
Z Deflect 2	-10.8
Z Focus 2	2086
Z Focus 3	0
Z Deflect 3	-45.6
Y Focus	3759
Rotate 2	-0.6
Curve 2	7.5
Curve 3	-4.1
Rotate 3	13.8
Rotate 4	-15.4
V Acc (V)	7000.50
Magnet Mass	331.0
Source Slit	25.04
Collector Slit	12.44
MIKES Slit	100.00
Alpha	65.00
Detector Voltage	360
Ion Energy	6.00
Z4 Restrictor	Off
Vacc Limit	8000

Analyser

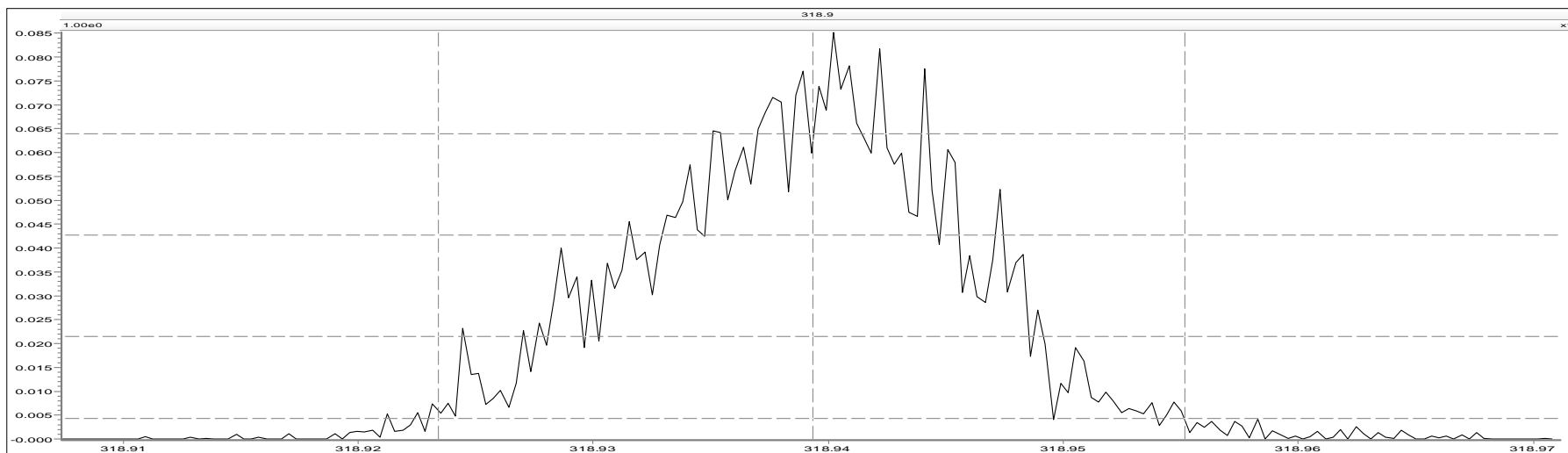
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Engineer

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Printed: Sunday, March 05, 2023 17:01:09 Central Standard Time

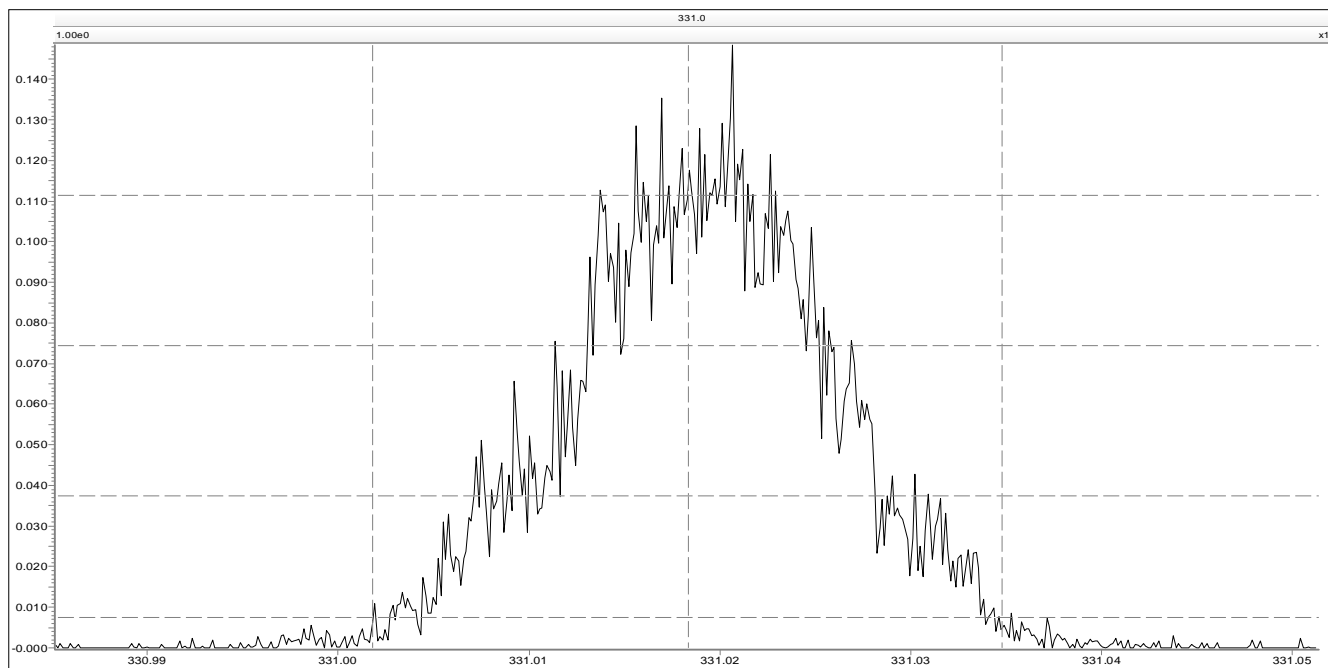


Source (EI+)

Ion Repeller (V)	-10.94	Ion Energy	6.00
Focus 1	928	Z4 Restrictor	Off
Beam Centre	-4.3	Vacc Limit	8000
Focus 2	3932		
Temperature (C)	280	Analyser	
Elec Energy (eV)	35.0	No information	
Trap Current (uA)	500.0	Engineer	
Y Deflect 1	-15.0	No information	
Z Deflect 1	50.5		
Z Deflect 2	-10.8		
Z Focus 2	2086		
Z Focus 3	0		
Z Deflect 3	-45.6		
Y Focus	3769		
Rotate 2	1.1		
Curve 2	6.2		
Curve 3	-4.3		
Rotate 3	14.7		
Rotate 4	-15.4		
V Acc (V)	6988.28		
Magnet Mass	331.0		
Source Slit	25.04		
Collector Slit	12.44		
MIKES Slit	100.00		
Apert No.....10644640_SW8290FC_L4_R1_dfr	65.00	Revision 1	Page 200 of 240
Detector Voltage	360		

File: C:\MassLynx\lPaceNew.PRO\ACQUDB\10MSHR15L.ipr

Printed: Monday, March 06, 2023 07:23:49 Central Standard Time



Source (EI+)

Ion Repeller (V)	-10.94
Focus 1	928
Beam Centre	-4.3
Focus 2	3932
Temperature (C)	280
Elec Energy (eV)	35.0
Trap Current (uA)	500.0
Y Deflect 1	-15.0
Z Deflect 1	50.5
Z Deflect 2	-10.8
Z Focus 2	2086
Z Focus 3	0
Z Deflect 3	-45.6
Y Focus	3769
Rotate 2	1.1
Curve 2	6.2
Curve 3	-4.3
Rotate 3	14.7
Rotate 4	-15.4
V Acc (V)	6988.38
Magnet Mass	331.0
Source Slit	25.04
Collector Slit	12.44
MIKES Slit	100.00
Alpha	65.00
Detector Voltage	360
Ion Energy	6.00
Z4 Restrictor	Off
Vacc Limit	8000

Analyser

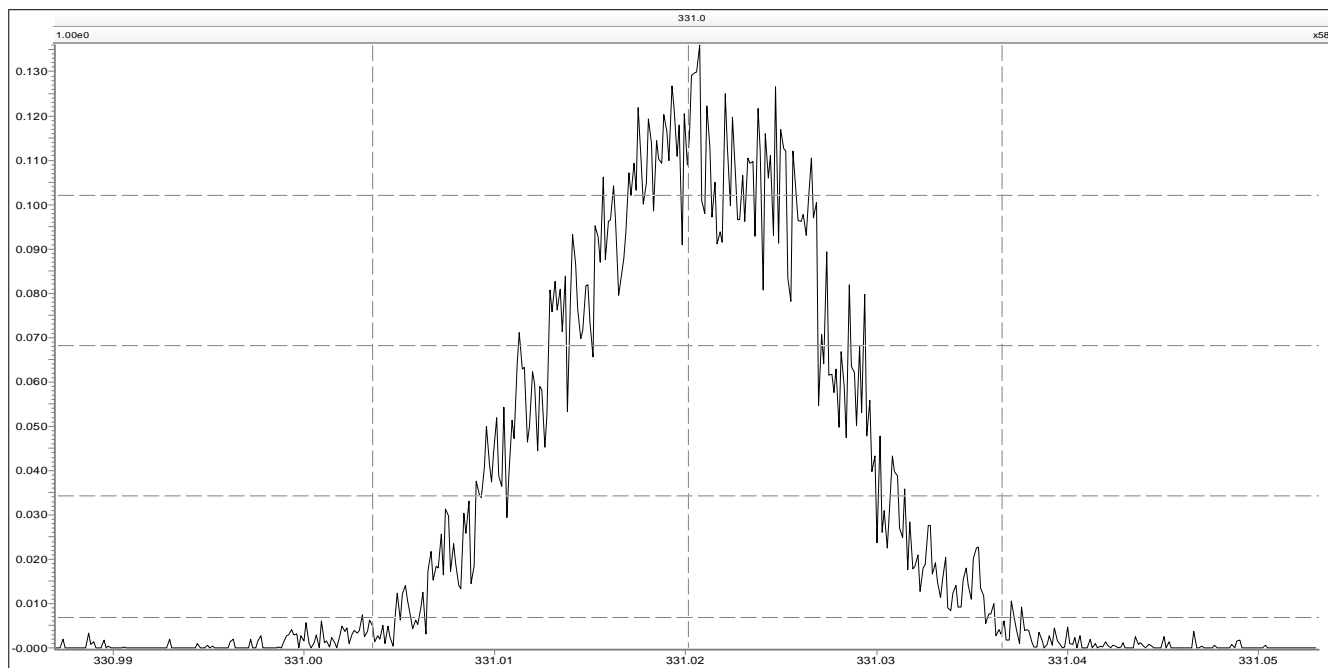
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Engineer

No information

File: C:\MassLynx\TraceNew.PRO\ACQUDB\10MSHR15L.ipr

Printed: Monday, March 06, 2023 08:02:48 Central Standard Time



Source (EI+)

Ion Repeller (V)	-10.94
Focus 1	928
Beam Centre	-4.3
Focus 2	3932
Temperature (C)	280
Elec Energy (eV)	35.0
Trap Current (uA)	500.0
Y Deflect 1	-15.0
Z Deflect 1	50.5
Z Deflect 2	-10.8
Z Focus 2	2086
Z Focus 3	0
Z Deflect 3	-45.6
Y Focus	3769
Rotate 2	1.1
Curve 2	6.2
Curve 3	-4.3
Rotate 3	14.7
Rotate 4	-15.4
V Acc (V)	6988.35
Magnet Mass	331.0
Source Slit	25.04
Collector Slit	12.44
MIKES Slit	100.00
Alpha	65.00
Detector Voltage	360
Ion Energy	6.00
Z4 Restrictor	Off
Vacc Limit	8000

Analyser

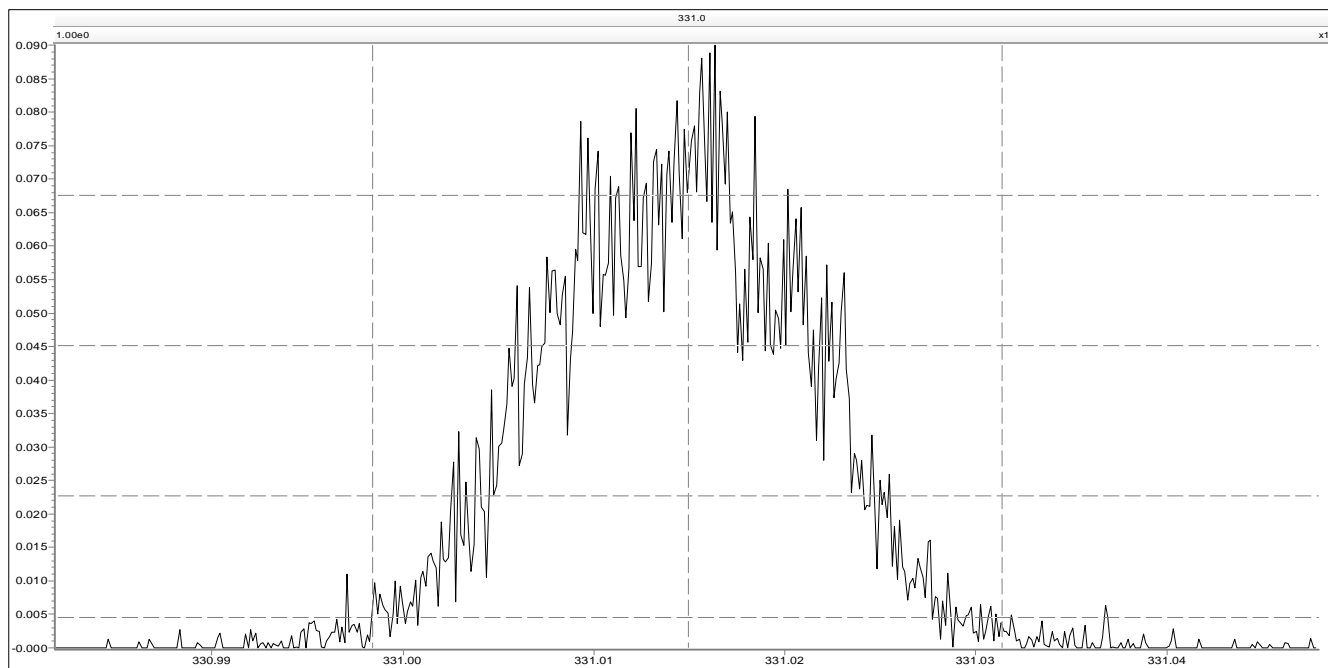
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Engineer

No information

File: C:\MassLynx\1PaceNew.PRO\ACQUDB\10MSHR15L.ipr

Printed: Tuesday, March 07, 2023 09:26:07 Central Standard Time



Source (EI+)

Ion Repeller (V)	-10.94
Focus 1	928
Beam Centre	-4.3
Focus 2	3932
Temperature (C)	280
Elec Energy (eV)	35.0
Trap Current (uA)	500.0
Y Deflect 1	-15.0
Z Deflect 1	50.5
Z Deflect 2	-10.8
Z Focus 2	2086
Z Focus 3	0
Z Deflect 3	-45.6
Y Focus	3769
Rotate 2	1.1
Curve 2	6.2
Curve 3	-4.3
Rotate 3	14.7
Rotate 4	-15.4
V Acc (V)	6988.46
Magnet Mass	331.0
Source Slit	25.04
Collector Slit	12.44
MIKES Slit	100.00
Alpha	65.00
Detector Voltage	360
Ion Energy	6.00
Z4 Restrictor	Off
Vacc Limit	8000

Analyser

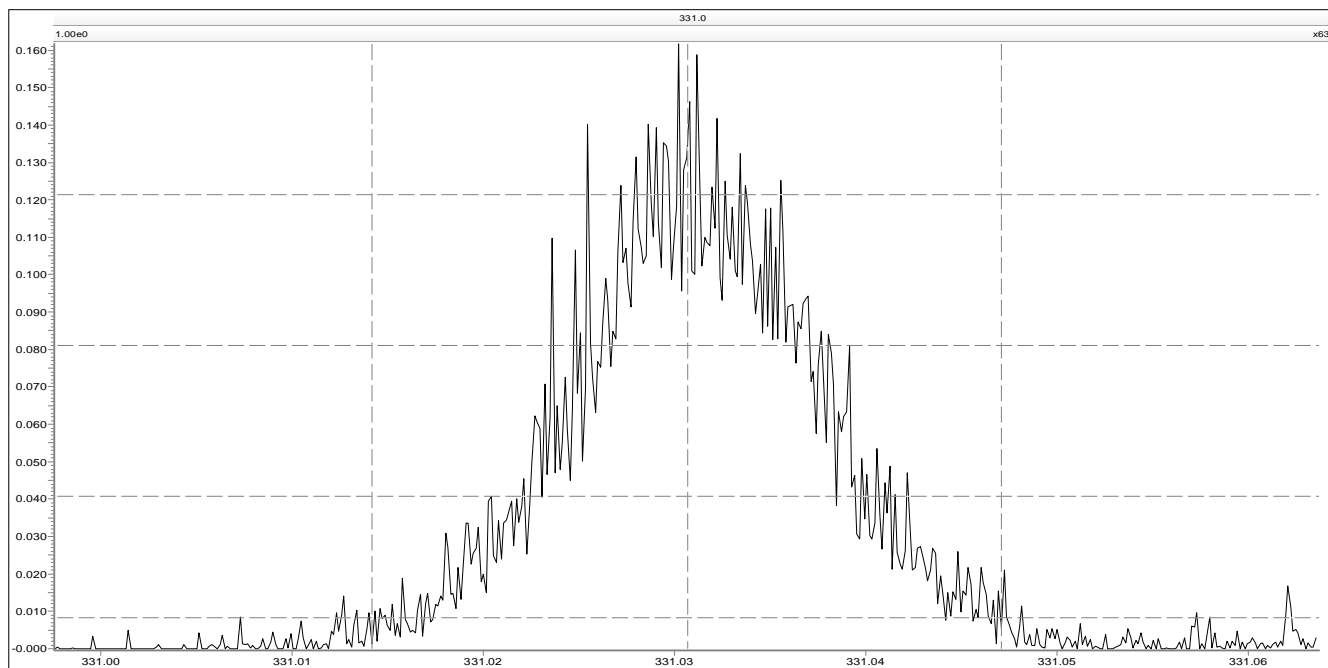
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Engineer

No information

File: C:\MassLynx\Default.pro\Acqudb\U10MSHR06225.IPR

Printed: Tuesday, March 07, 2023 08:46:43 Central Standard Time



Source (EI+)

Ion Repeller (V)	-1.80
Focus 1	420
Beam Centre	0.8
Focus 2	4396
Temperature (C)	280
Elec Energy (eV)	35.0
Trap Current (uA)	500.0
Y Deflect 1	78.4
Z Deflect 1	-35.5
Z Deflect 2	-25.1
Z Focus 2	2455
Z Focus 3	0
Z Deflect 3	10.7
Y Focus	4336
Rotate 2	-11.9
Curve 2	-8.4
Curve 3	0.5
Rotate 3	-1.5
Rotate 4	3.6
V Acc (V)	7000.89
Magnet Mass	331.0
Source Slit	31.30
Collector Slit	15.04
MIKES Slit	100.00
Alpha	60.00
Detector Voltage	380
Ion Energy	-3.10
Z4 Restrictor	Off
Vacc Limit	8000

Analyser

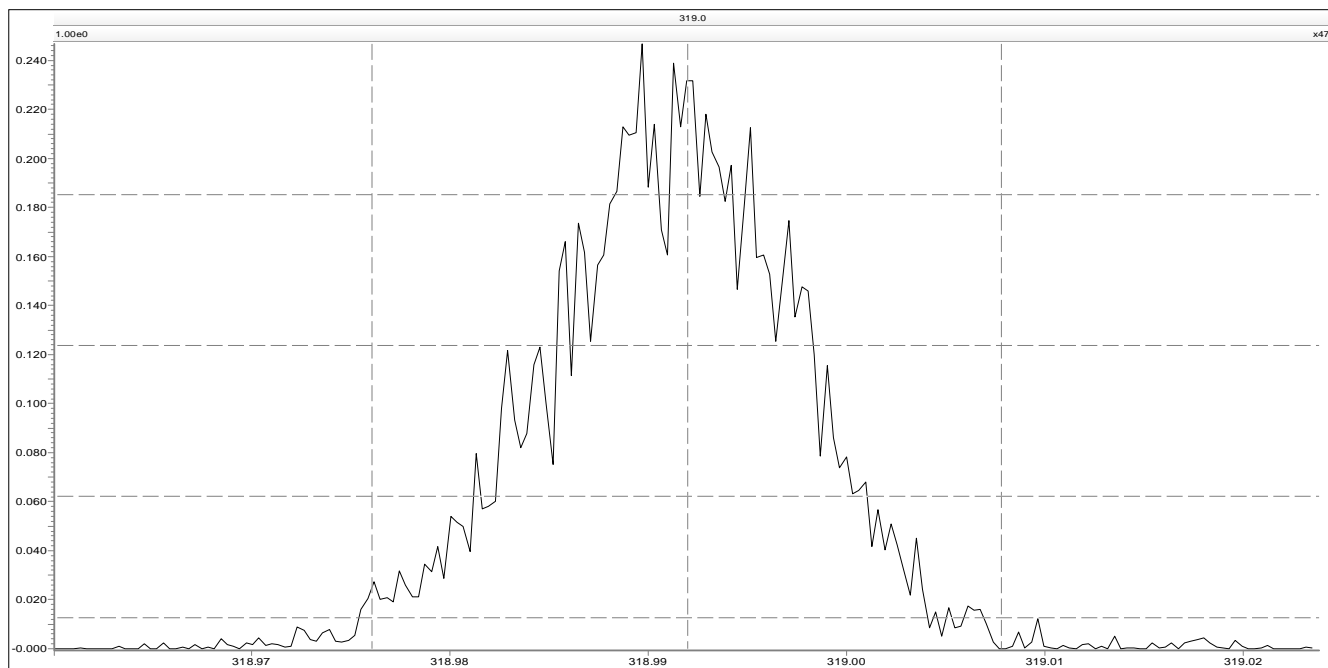
No information

Engineer

No information

File: C:\MassLynx\DEFAULT.PRO\ACQUDB\U10MSHR06225.IPR

Printed: Tuesday, March 07, 2023 14:54:22 Central Standard Time



Source (EI+)

Ion Repeller (V)	-1.80
Focus 1	420
Beam Centre	0.8
Focus 2	4396
Temperature (C)	280
Elec Energy (eV)	35.0
Trap Current (uA)	500.0
Y Deflect 1	78.4
Z Deflect 1	-35.5
Z Deflect 2	-25.1
Z Focus 2	2455
Z Focus 3	0
Z Deflect 3	10.7
Y Focus	4336
Rotate 2	-11.9
Curve 2	-8.4
Curve 3	0.5
Rotate 3	-1.5
Rotate 4	3.6
V Acc (V)	7000.90
Magnet Mass	331.0
Source Slit	31.30
Collector Slit	15.04
MIKES Slit	100.00
Alpha	60.00
Detector Voltage	380
Ion Energy	-3.10
Z4 Restrictor	Off
Vacc Limit	8000

Analyser

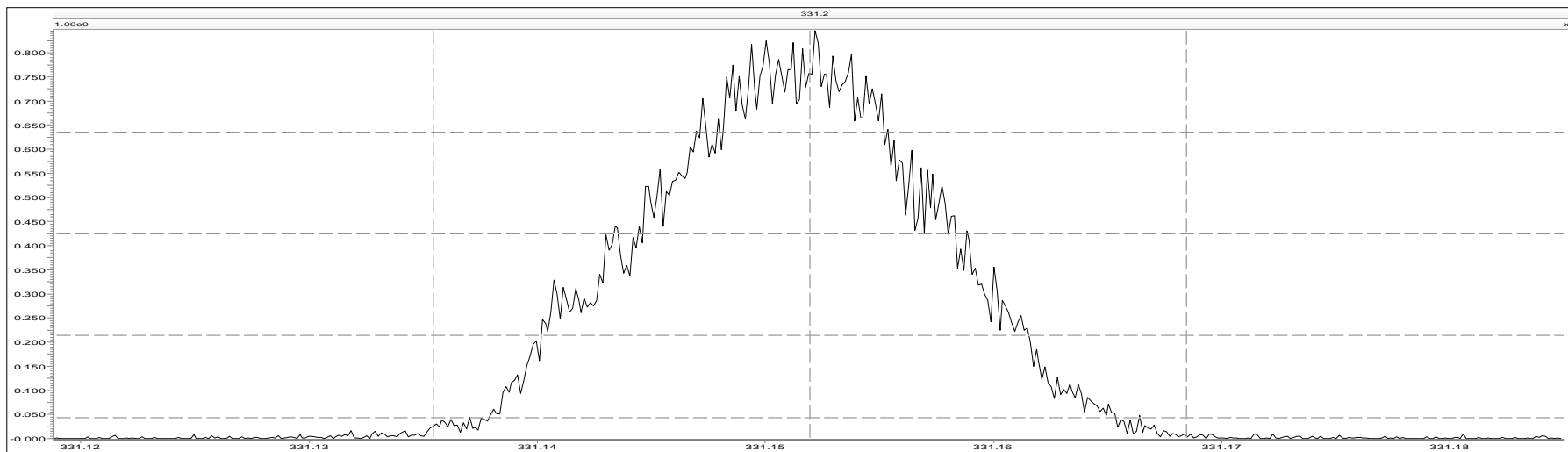
No information

Engineer

No information

File: C:\MassLynx\DEFAULT.PRO\ACQUDB\U10MSHR06225.IPR

Printed: Sunday, October 09, 2022 09:45:15 Central Daylight Time

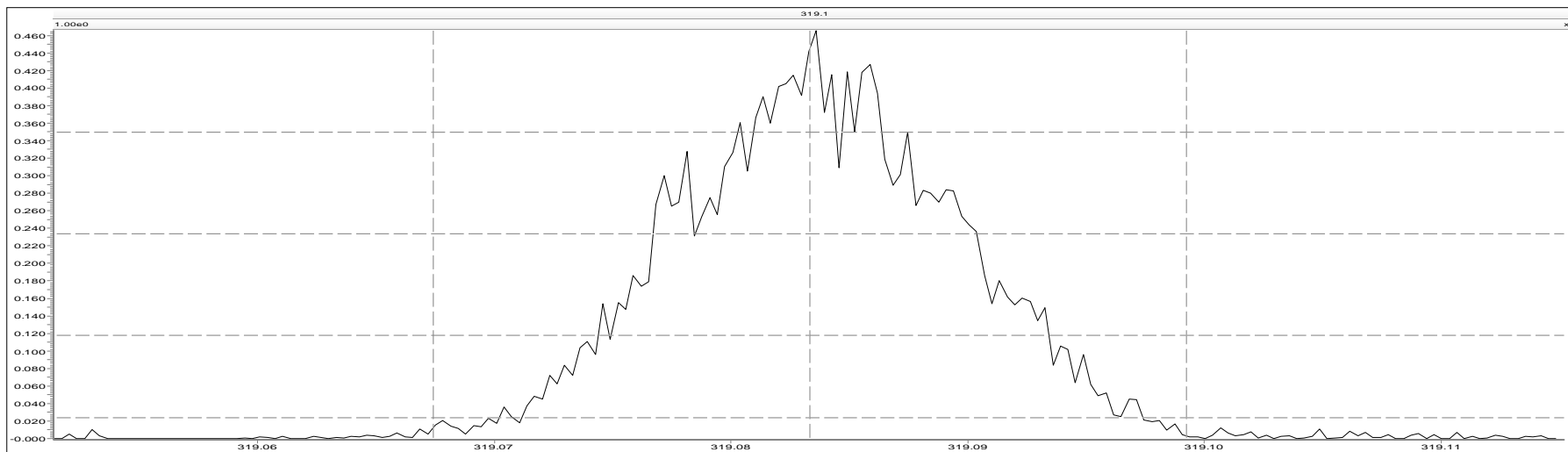


Source (EI+)

Ion Repeller (V)	-10.78	Ion Energy	-3.10
Focus 1	725	Z4 Restrictor	Off
Beam Centre	5.3	Vacc Limit	8000
Focus 2	4266		
Temperature (C)	290	Analyser	
Elec Energy (eV)	35.0	No information	
Trap Current (uA)	500.0	Engineer	
Y Deflect 1	7.1	No information	
Z Deflect 1	-38.2		
Z Deflect 2	5.4		
Z Focus 2	2210		
Z Focus 3	0		
Z Deflect 3	-2.9		
Y Focus	4111		
Rotate 2	-11.1		
Curve 2	-0.6		
Curve 3	-3.7		
Rotate 3	1.4		
Rotate 4	0.0		
V Acc (V)	7115.94		
Magnet Mass	331.2		
Source Slit	28.24		
Collector Slit	14.88		
MIKES Slit	100.00		
Apert No.....10644640_SW8290FC_L4_R1_dfr	60.00	Revision 1	Page 206 of 240
Detector Voltage	380		

File: C:\MassLynx\DEFAULT.PRO\ACQUDB\U10MSHR06225.IPR

Printed: Sunday, October 09, 2022 15:59:31 Central Daylight Time



Source (EI+)

Ion Repeller (V)	-10.78	Ion Energy	-3.10
Focus 1	725	Z4 Restrictor	Off
Beam Centre	5.3	Vacc Limit	8000
Focus 2	4266		
Temperature (C)	290	Analyser	
Elec Energy (eV)	35.0	No information	
Trap Current (uA)	500.0	Engineer	
Y Deflect 1	7.1	No information	
Z Deflect 1	-38.2		
Z Deflect 2	5.4		
Z Focus 2	2210		
Z Focus 3	0		
Z Deflect 3	-2.9		
Y Focus	4111		
Rotate 2	-11.1		
Curve 2	-0.6		
Curve 3	-3.7		
Rotate 3	1.4		
Rotate 4	0.0		
V Acc (V)	7115.94		
Magnet Mass	331.2		
Source Slit	28.24		
Collector Slit	14.88		
MIKES Slit	100.00		
Apert No.....10644640_SW8290FC_L4_R1_dfr	60.00	Revision 1	Page 207 of 240
Detector Voltage	380		



Pace Analytical Services, LLC
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Minneapolis, MN 55414
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Fax: 612.607.6444
www.pacelabs.com

Appendix F

QC Raw Data

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

Homologue Group: Tetras

Data File Name: L230305B_05

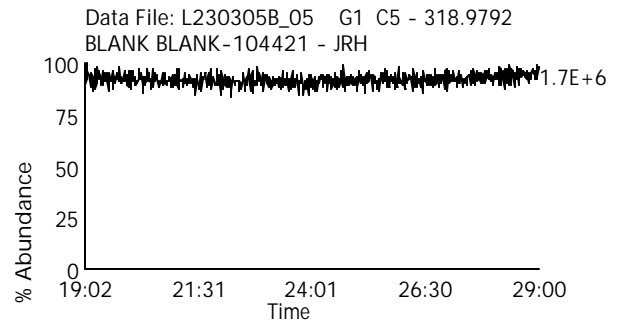
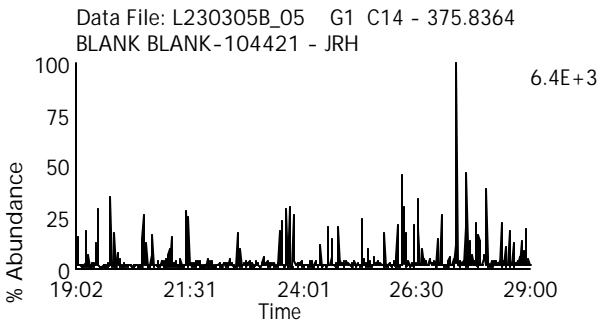
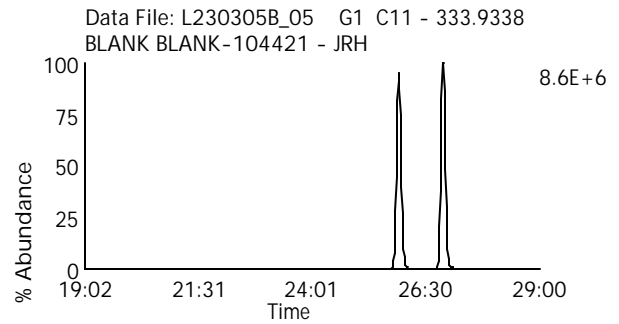
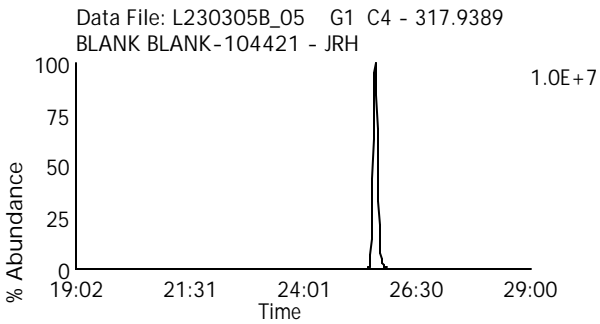
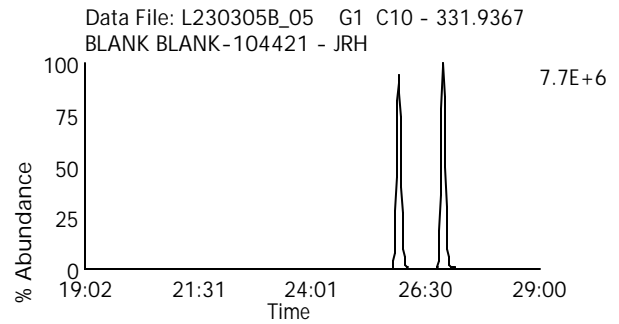
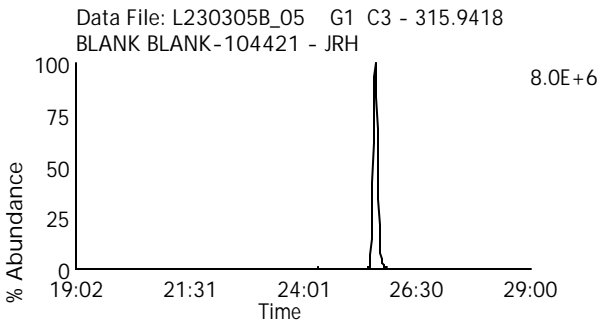
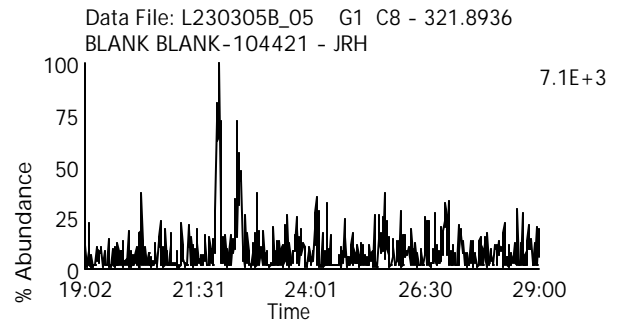
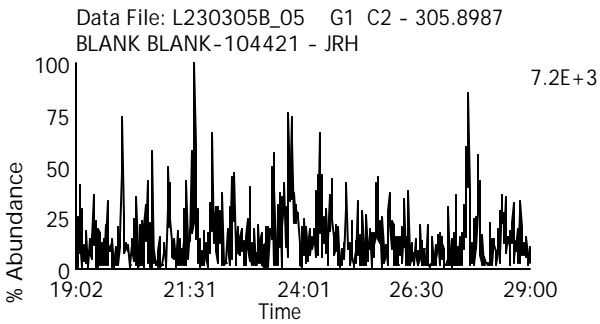
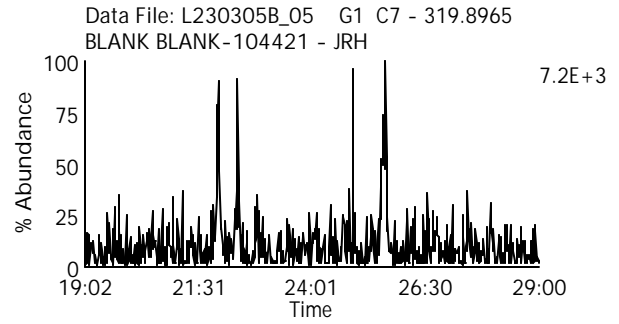
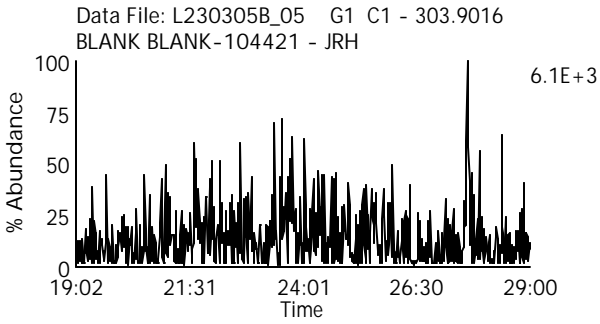
Date Acquired: 3/6/2023

Sample Description: BLANK BLANK-104421 - JRH

Lab Sample ID: BLANK-104421

Client Sample ID: DFBLKYD

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230305B_05

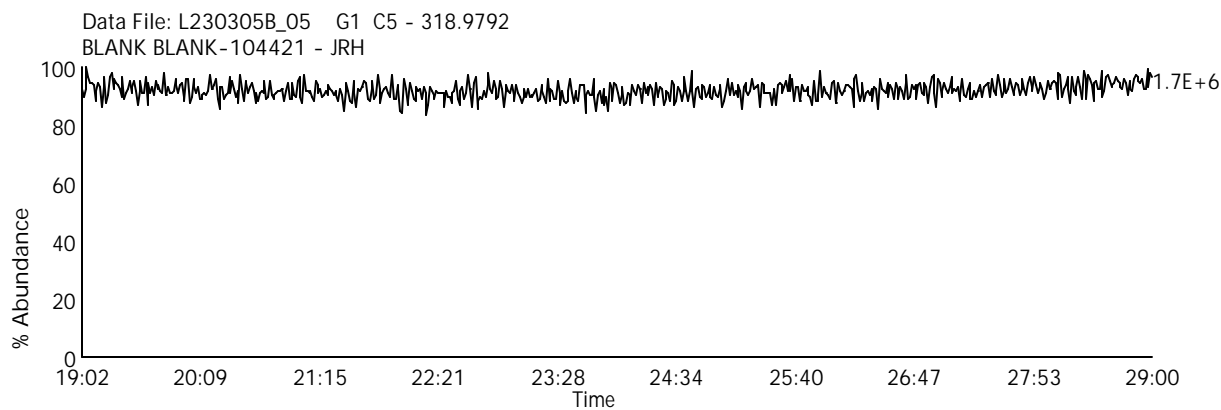
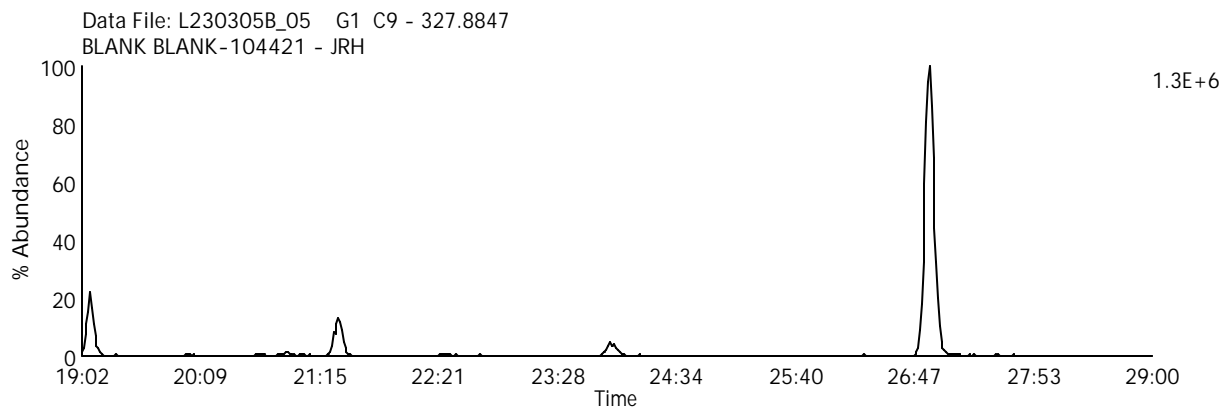
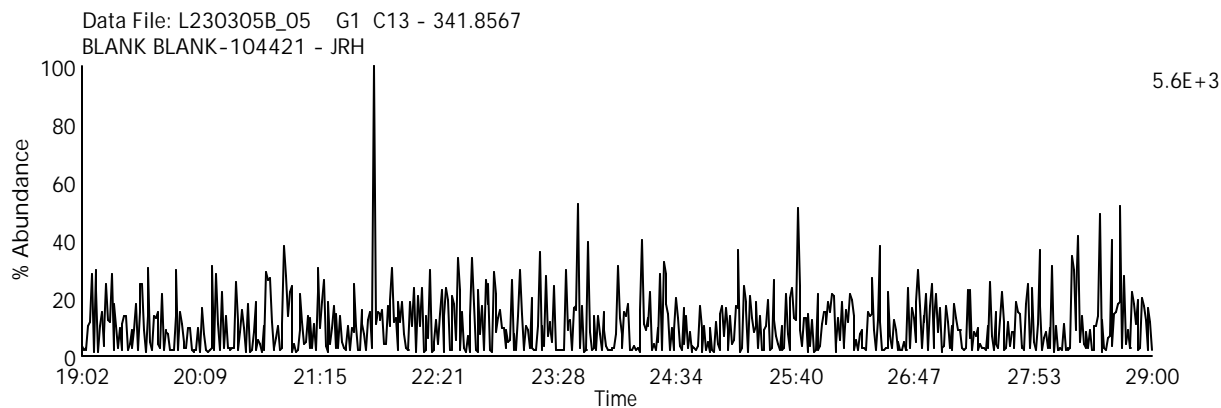
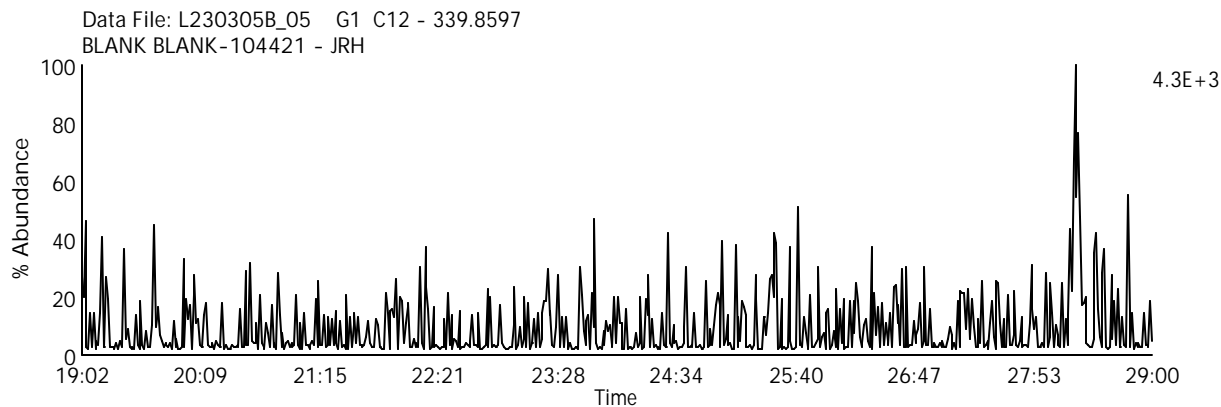
Lab Sample ID: BLANK-104421

Date Acquired: 3/6/2023

Client Sample ID: DFBLKYD

Sample Description: BLANK BLANK-104421 - JRH

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230305B_05

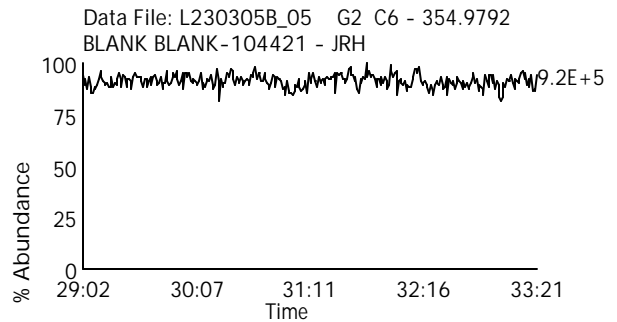
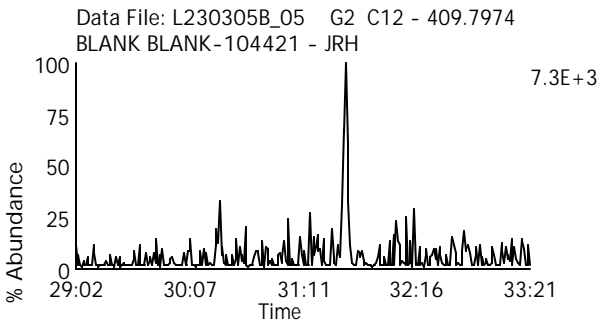
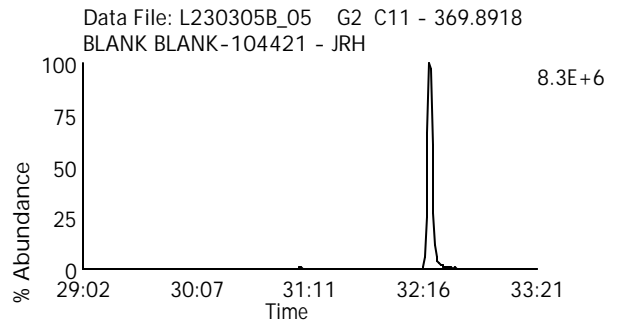
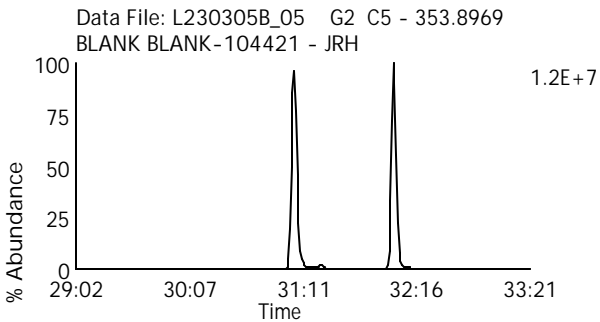
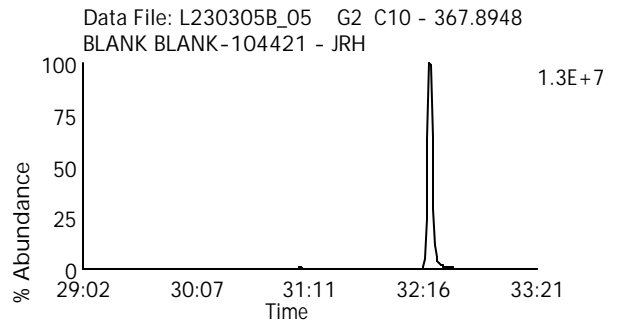
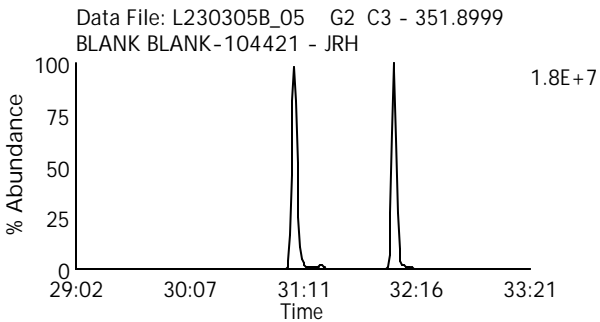
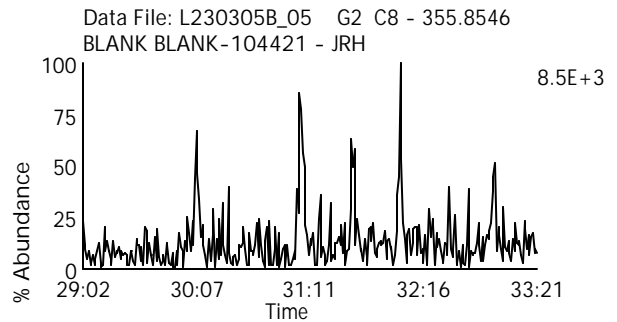
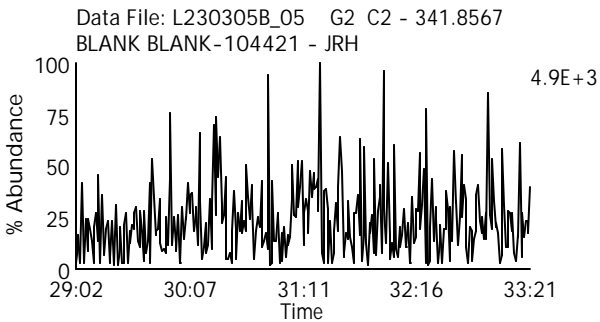
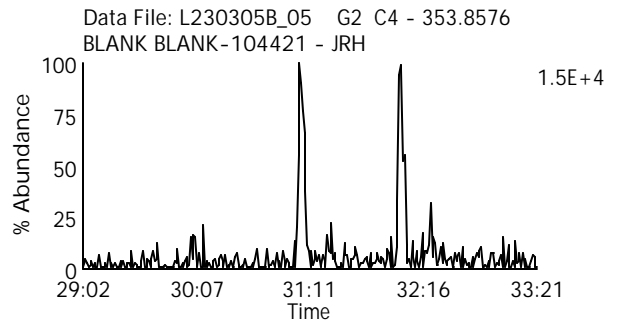
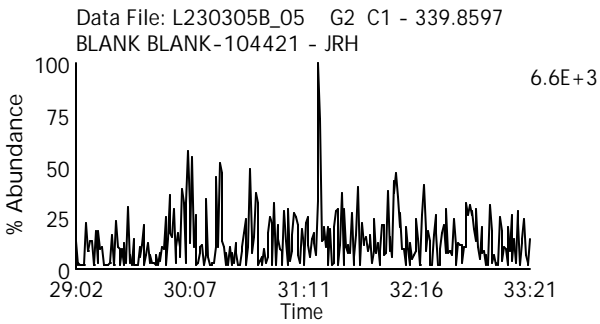
Date Acquired: 3/6/2023

Sample Description: BLANK BLANK-104421 - JRH

Lab Sample ID: BLANK-104421

Client Sample ID: DFBLKYD

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230305B_05

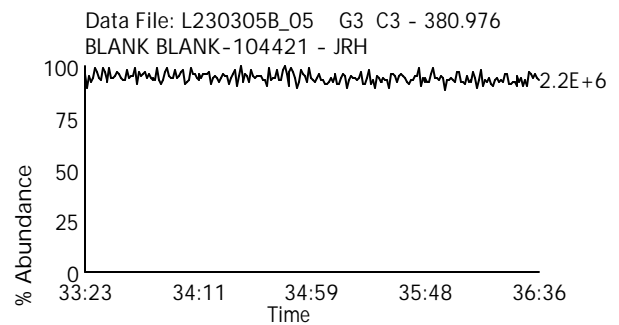
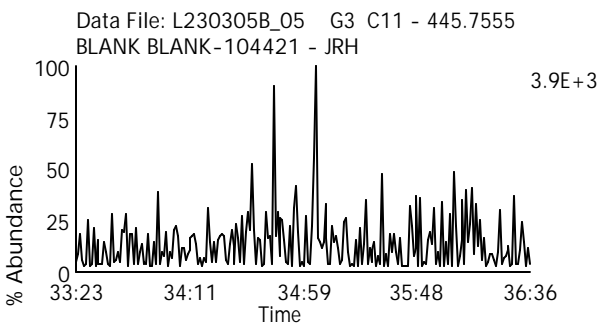
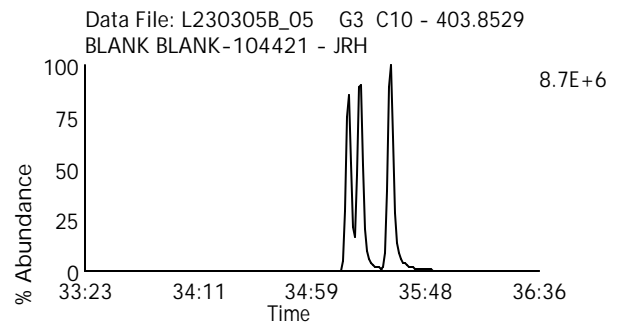
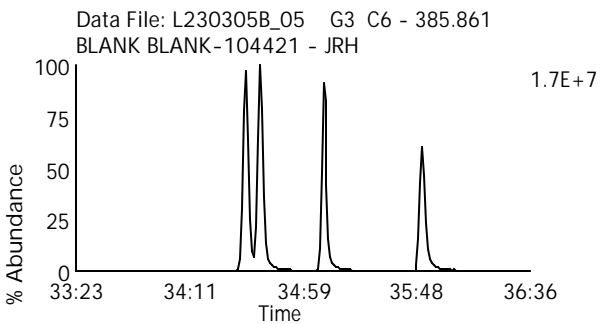
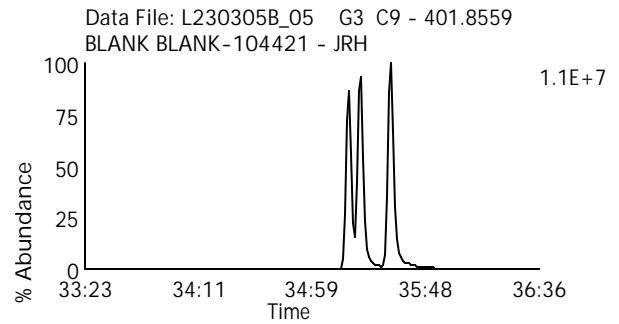
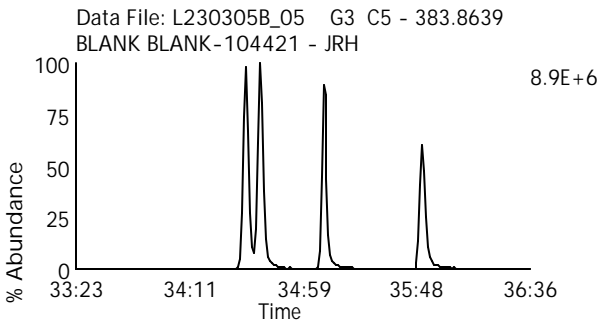
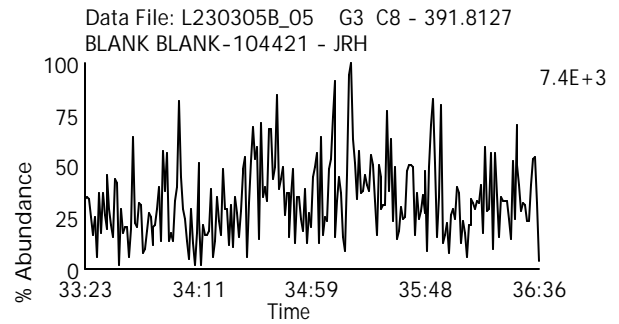
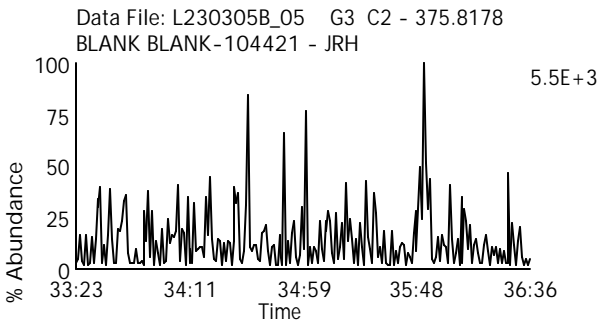
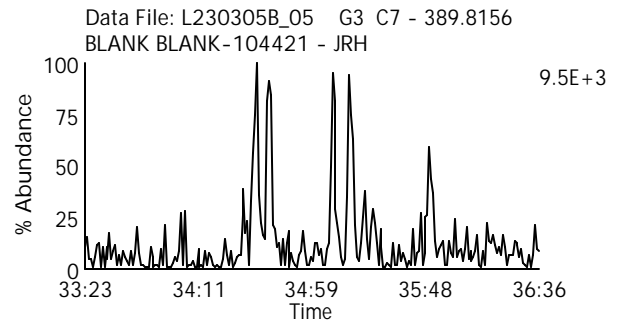
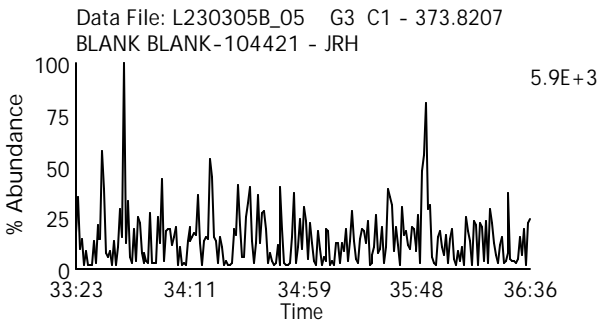
Date Acquired: 3/6/2023

Sample Description: BLANK BLANK-104421 - JRH

Lab Sample ID: BLANK-104421

Client Sample ID: DFBLKYD

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230305B_05

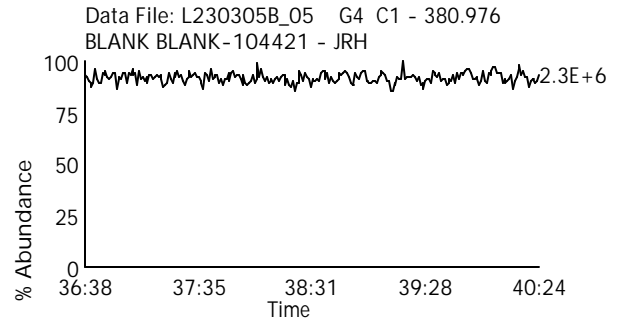
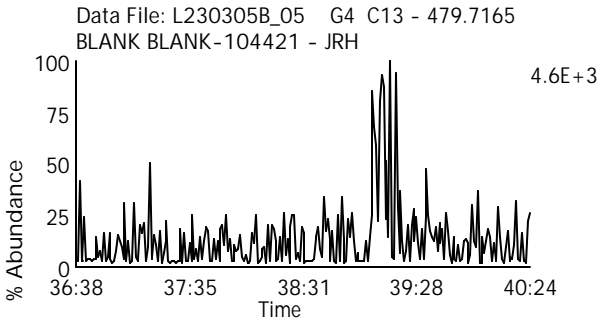
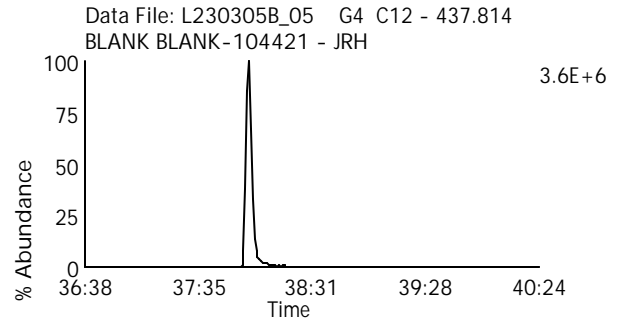
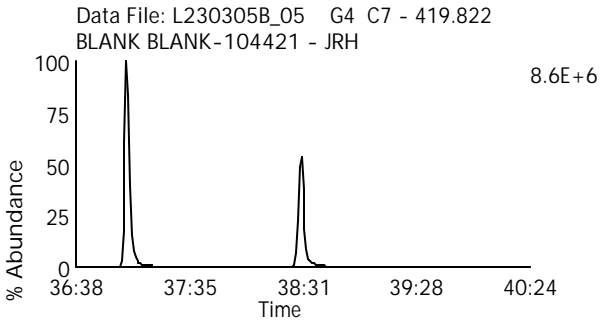
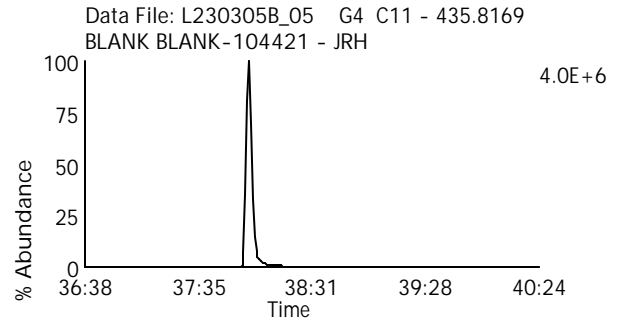
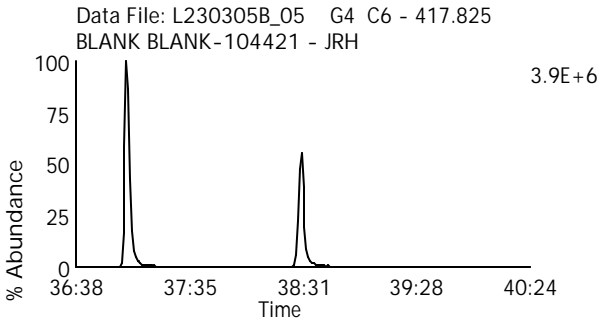
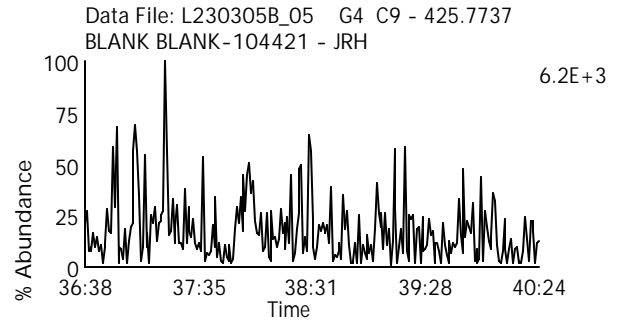
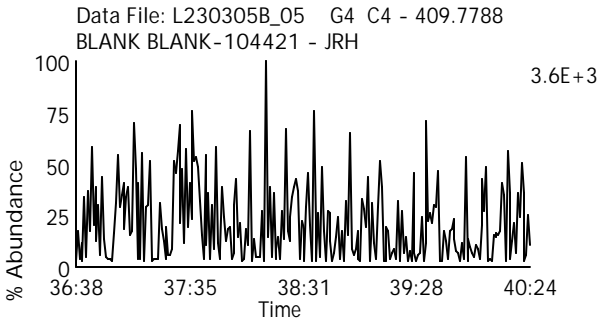
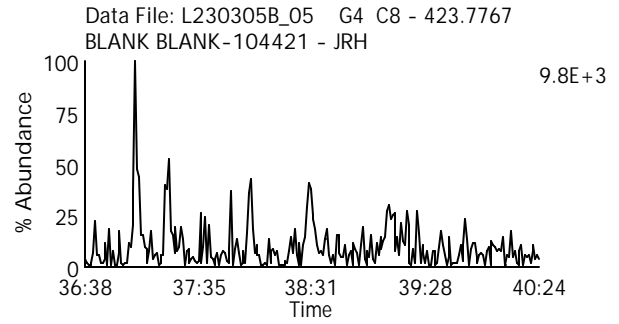
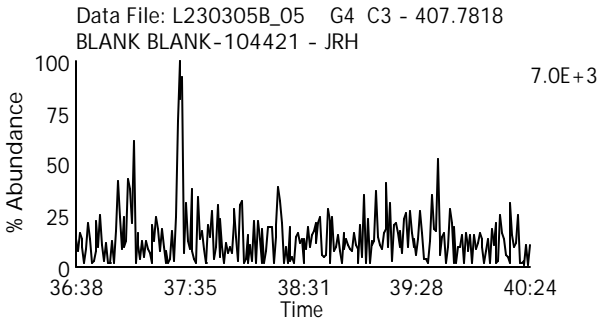
Date Acquired: 3/6/2023

Sample Description: BLANK BLANK-104421 - JRH

Lab Sample ID: BLANK-104421

Client Sample ID: DFBLKYD

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230305B_05

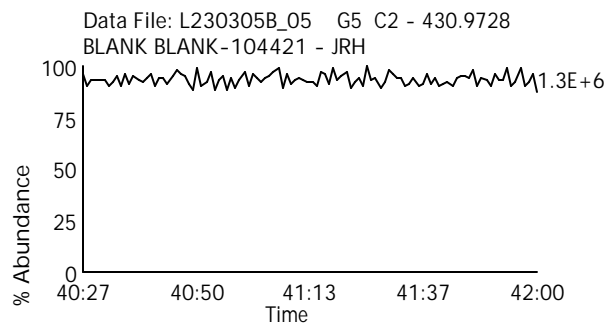
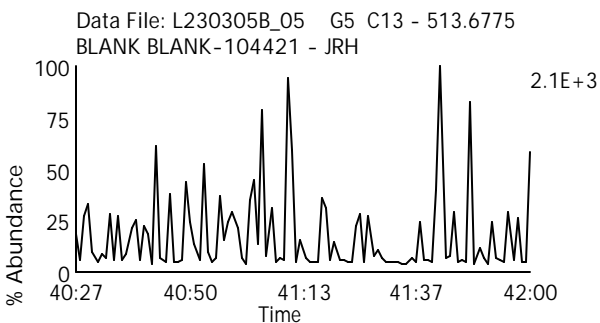
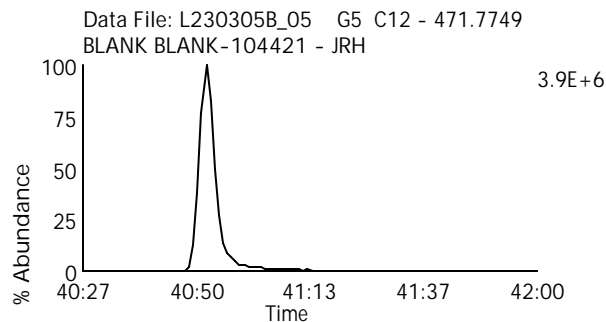
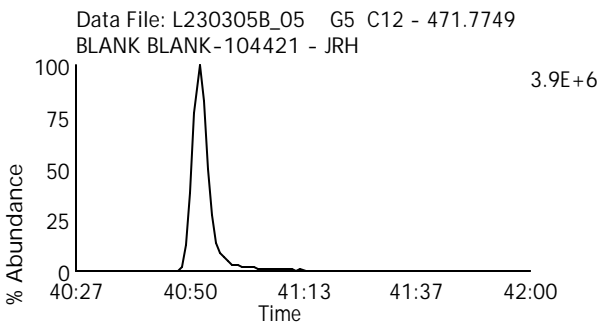
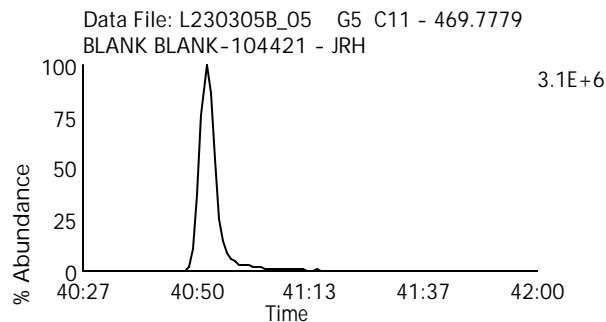
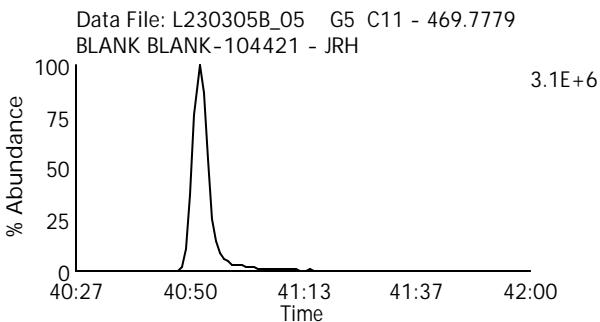
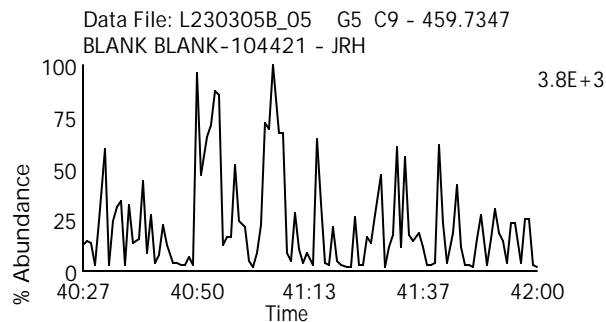
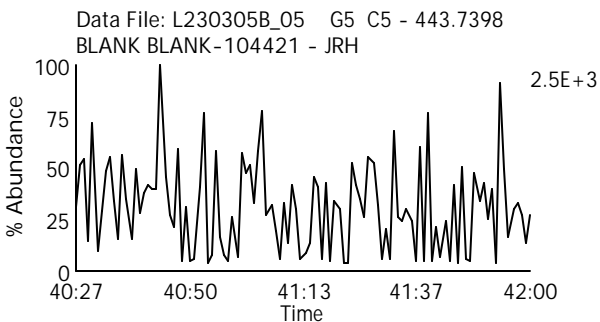
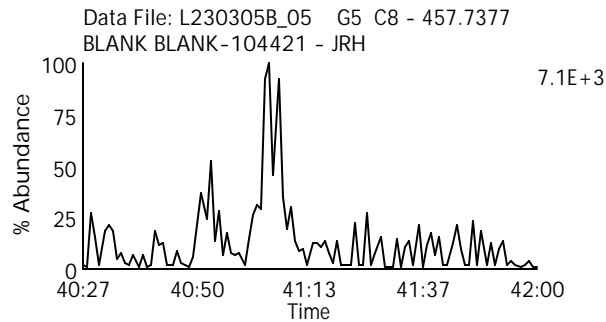
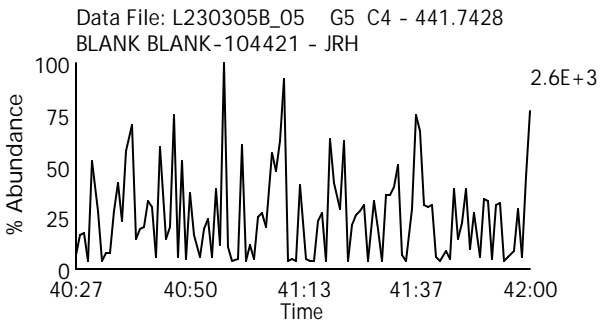
Date Acquired: 3/6/2023

Sample Description: BLANK BLANK-104421 - JRH

Lab Sample ID: BLANK-104421

Client Sample ID: DFBLKYD

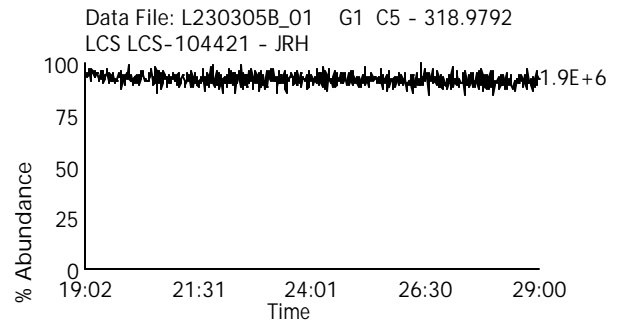
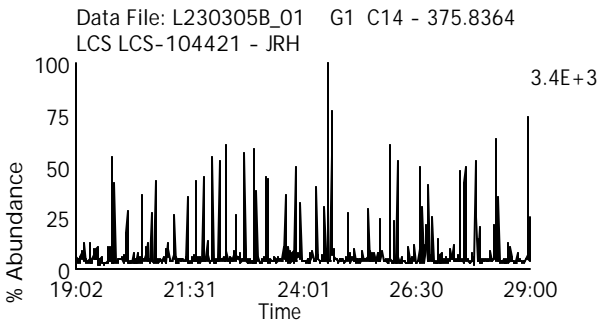
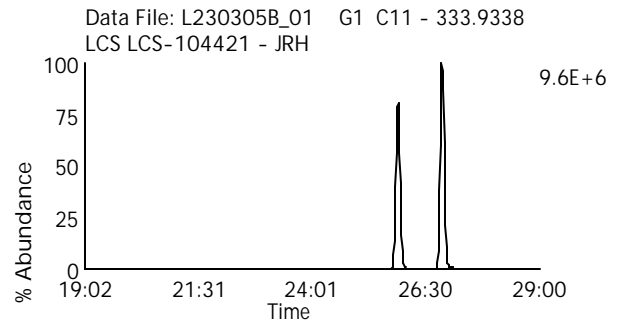
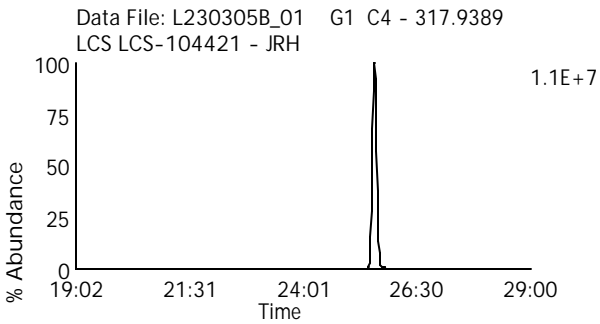
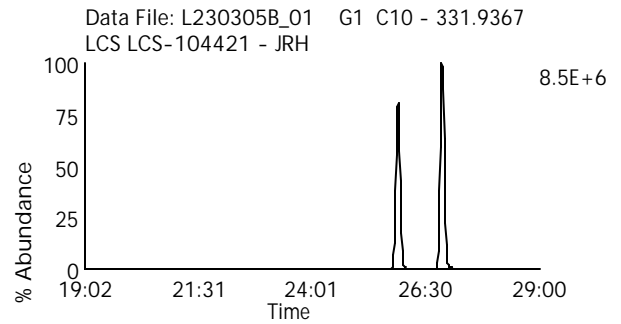
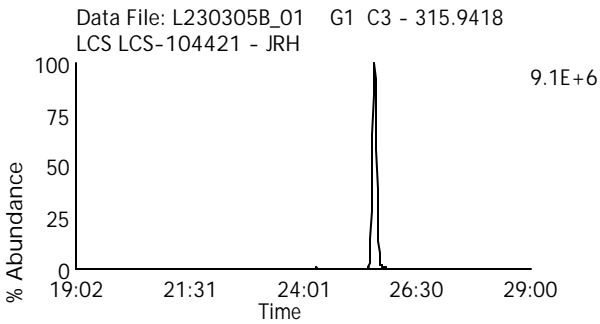
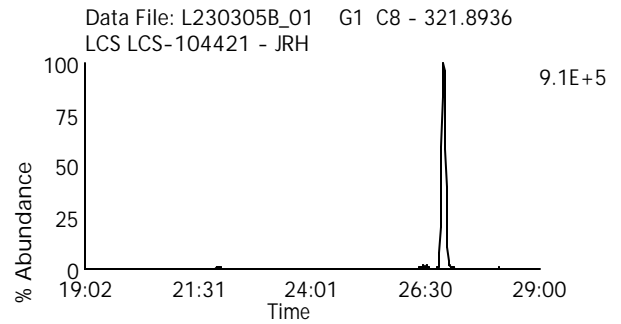
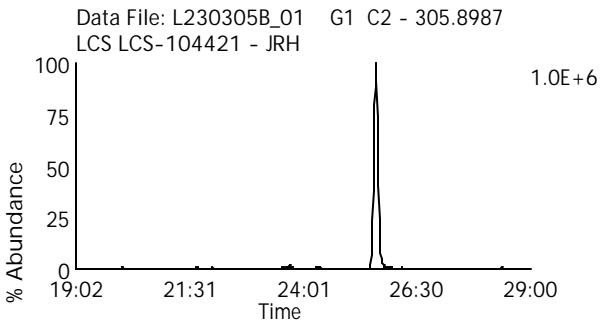
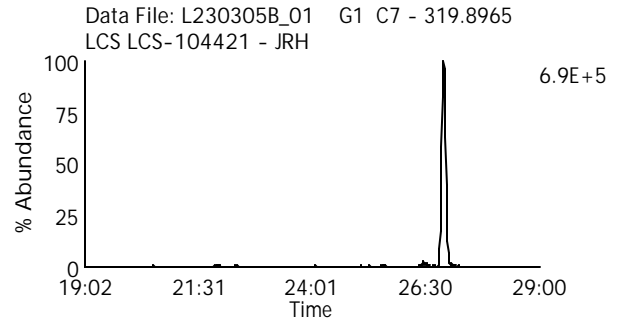
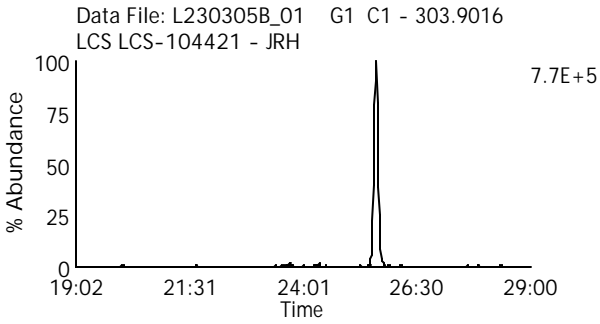
Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230305B_01
Date Acquired: 3/5/2023
Sample Description: LCS LCS-104421 - JRH

Lab Sample ID: LCS-104422
Client Sample ID: DLCSLT
Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

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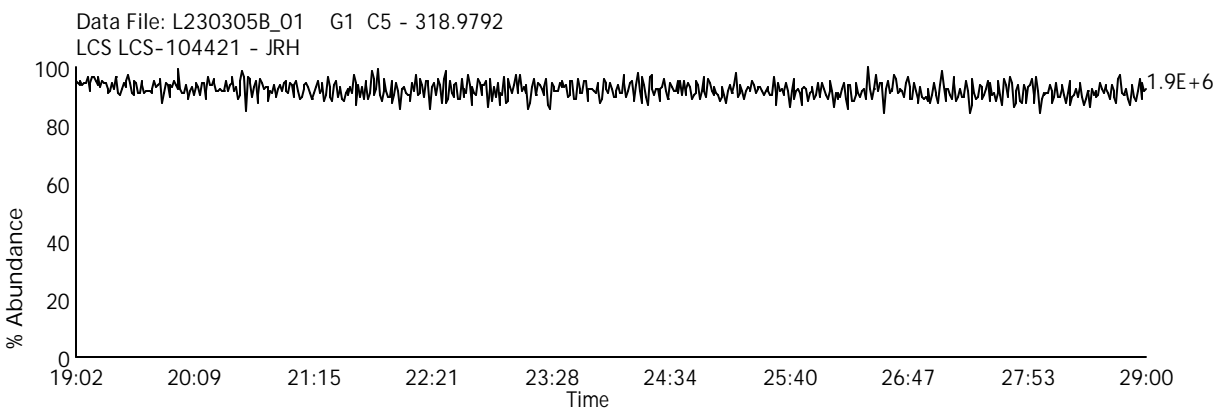
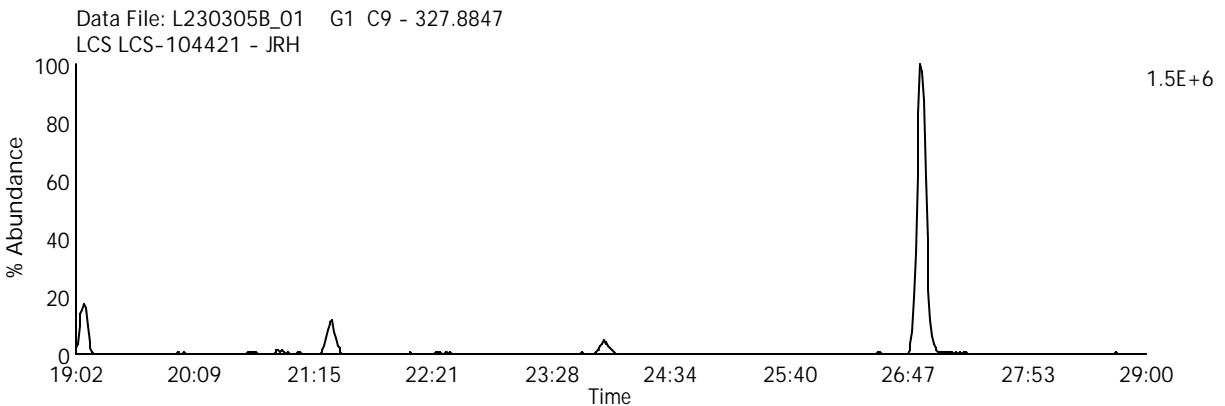
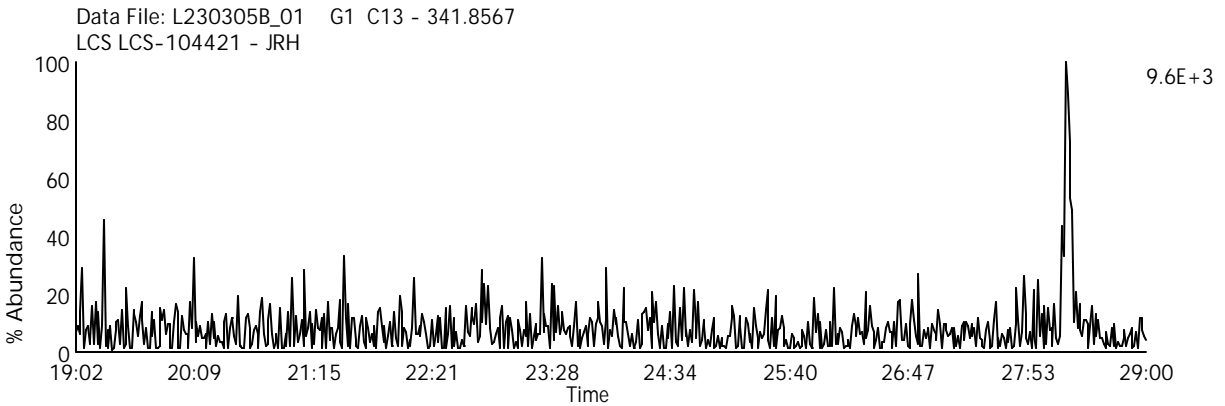
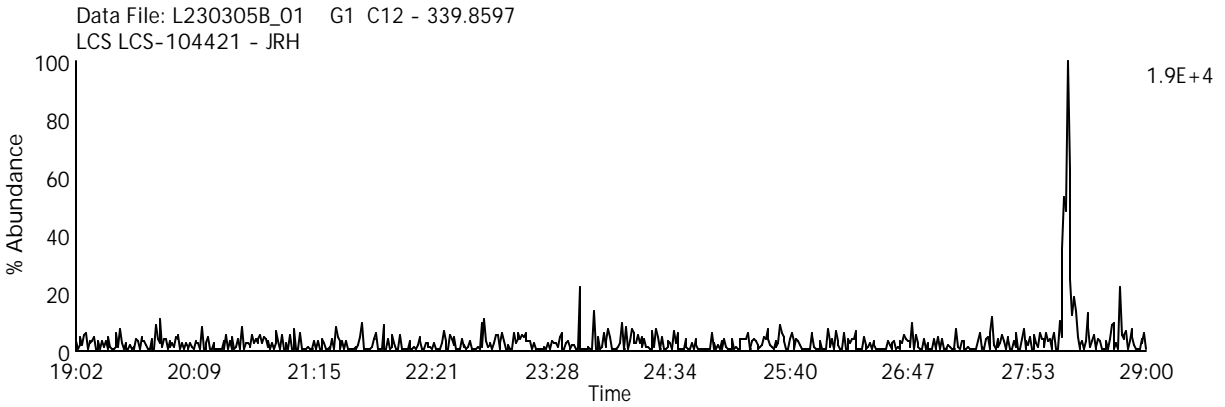
Date Acquired: 3/5/2023

Sample Description: LCS LCS-104421 - JRH

Lab Sample ID: LCS-104422

Client Sample ID: DLCSLT

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230305B_01

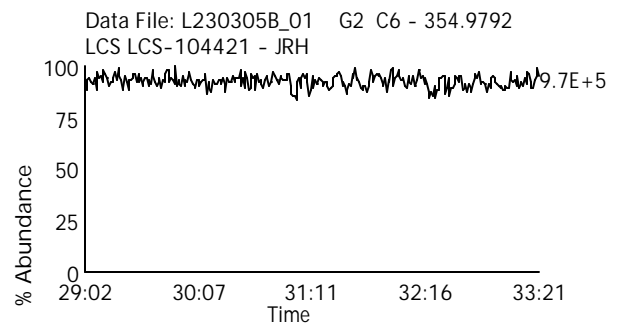
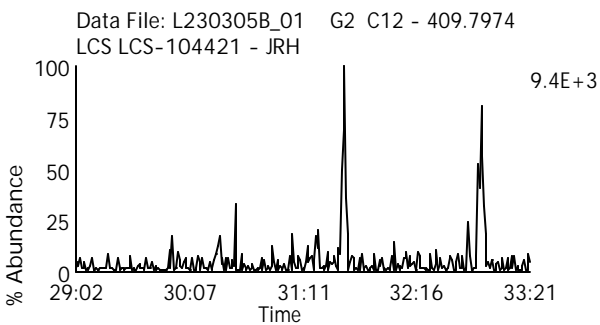
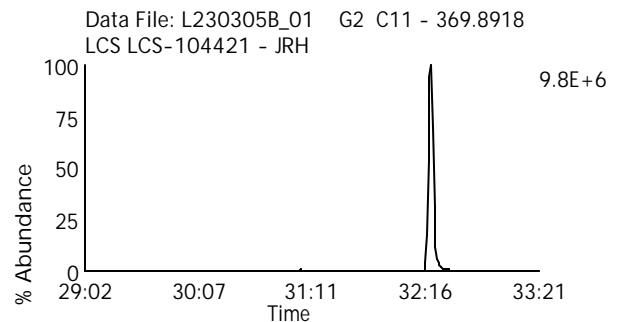
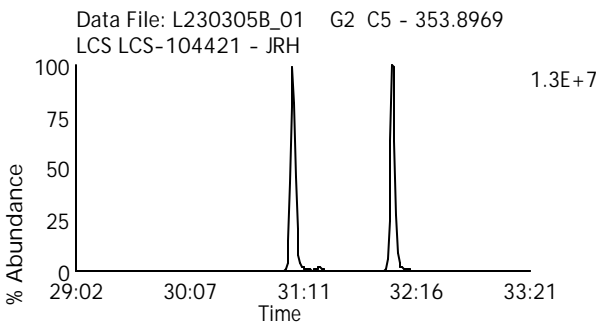
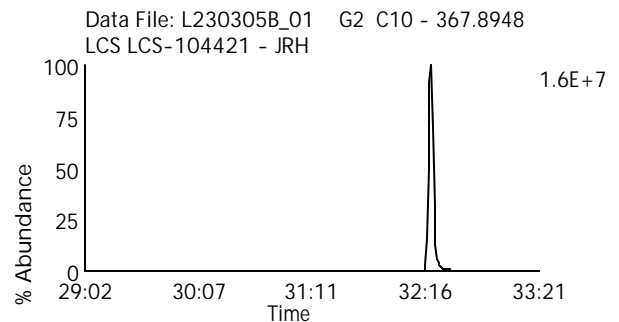
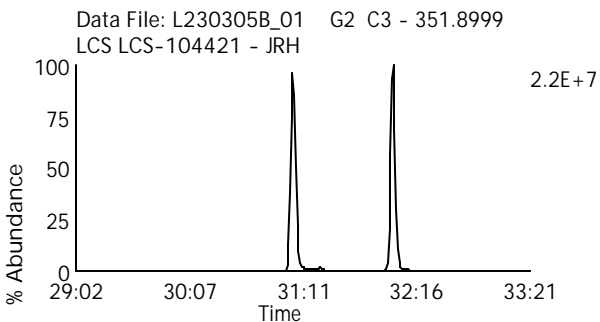
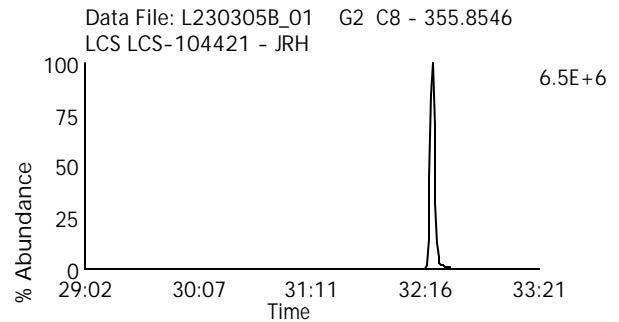
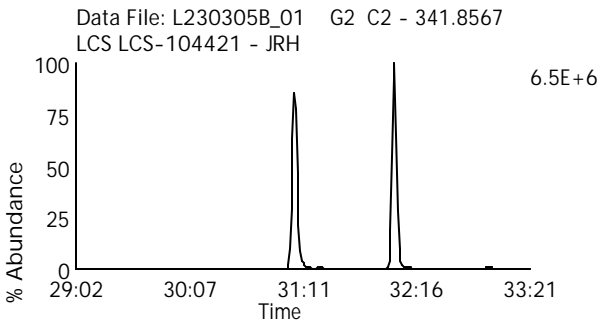
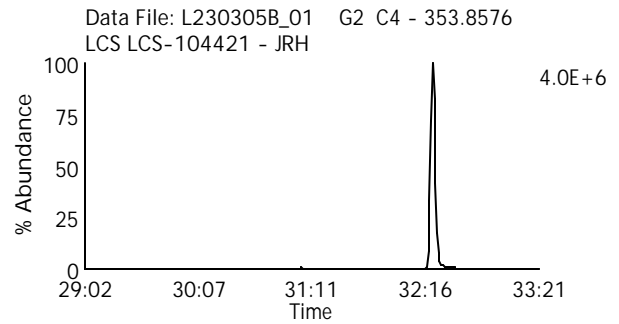
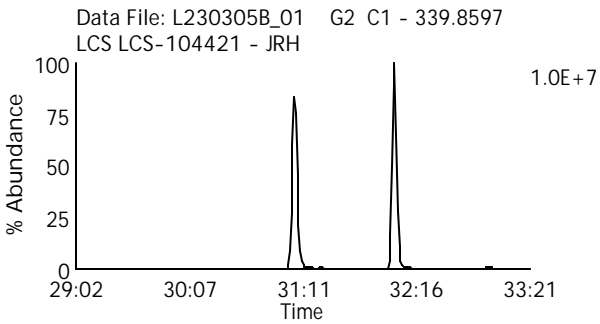
Date Acquired: 3/5/2023

Sample Description: LCS LCS-104421 - JRH

Lab Sample ID: LCS-104422

Client Sample ID: DLCSLT

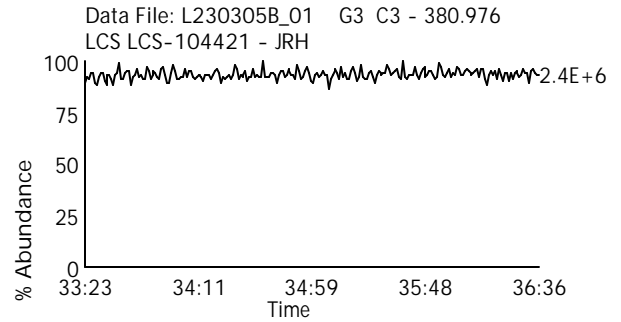
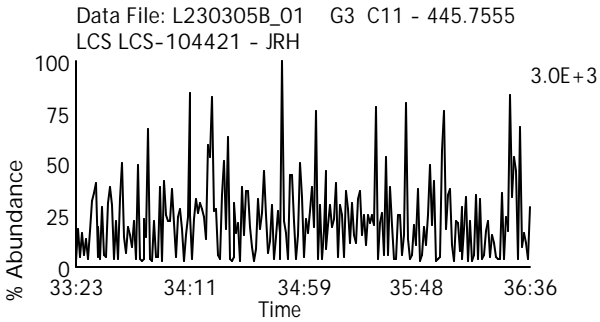
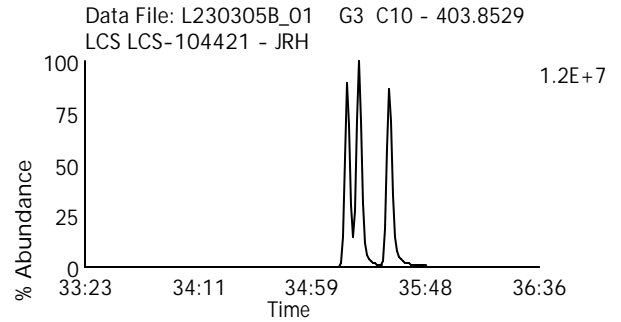
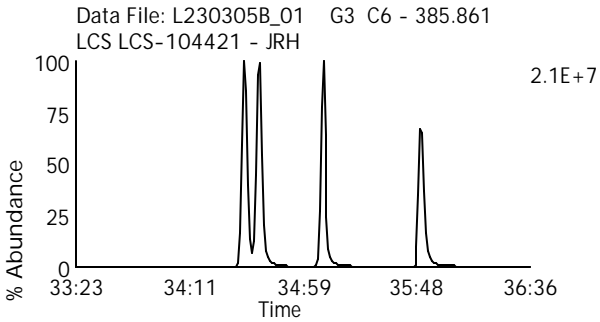
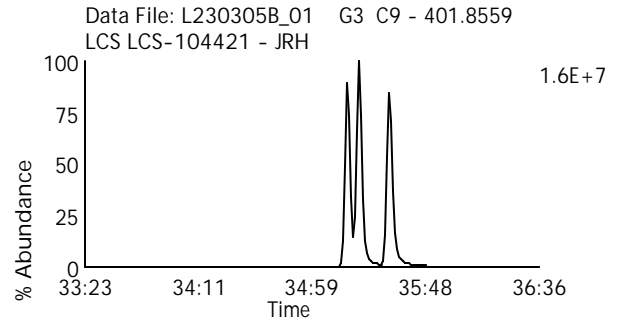
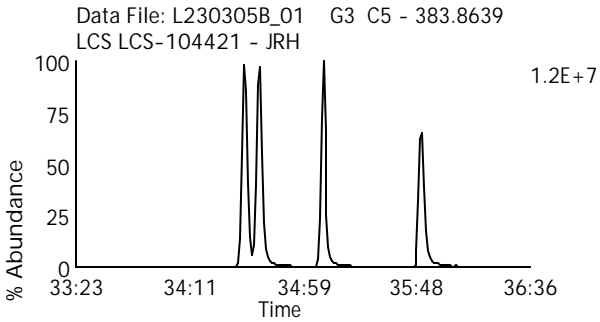
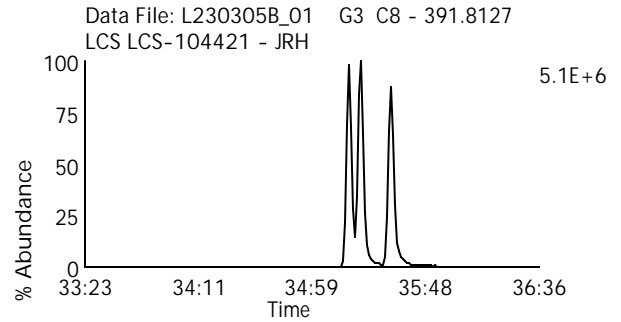
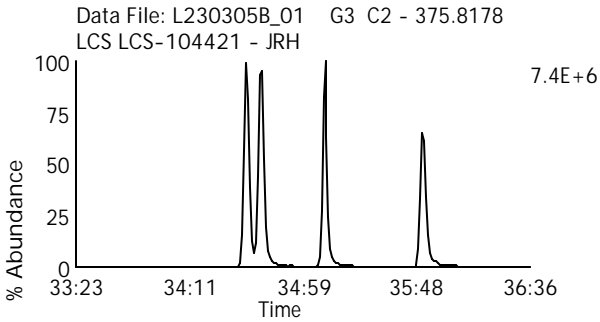
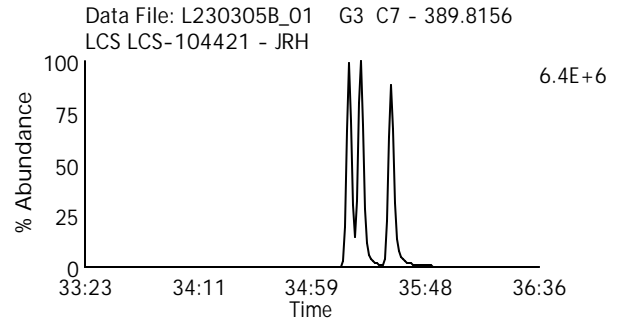
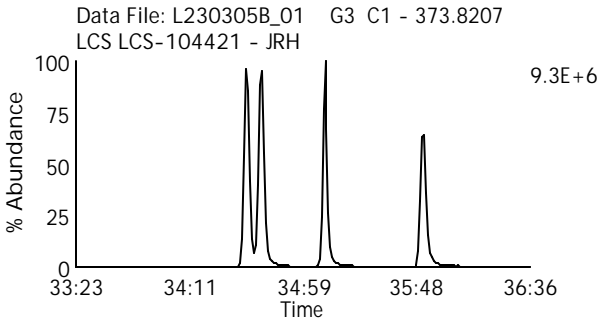
Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230305B_01
Date Acquired: 3/5/2023
Sample Description: LCS LCS-104421 - JRH

Lab Sample ID: LCS-104422
Client Sample ID: DLCSLT
Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230305B_01

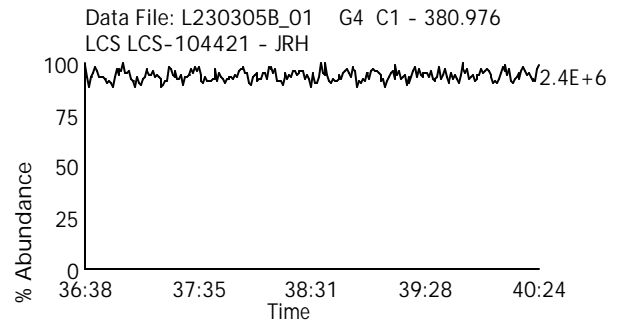
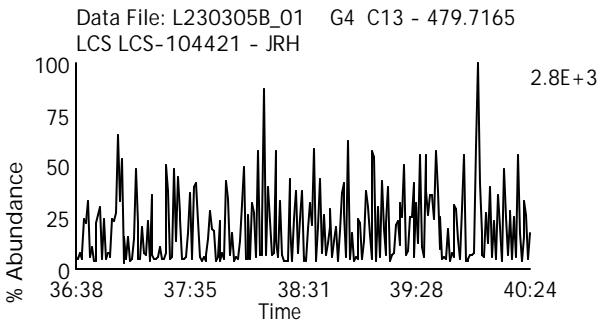
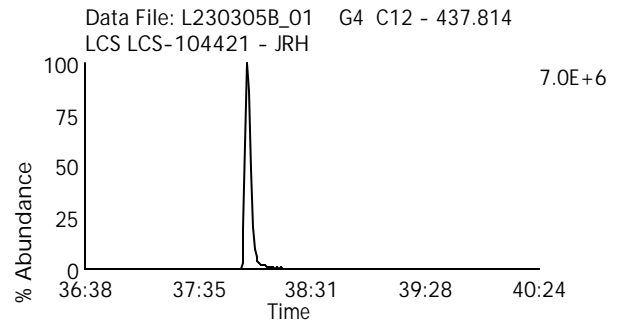
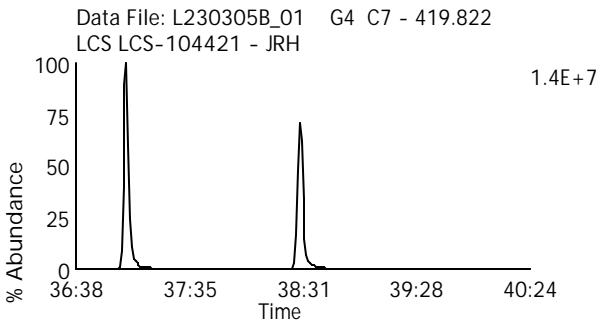
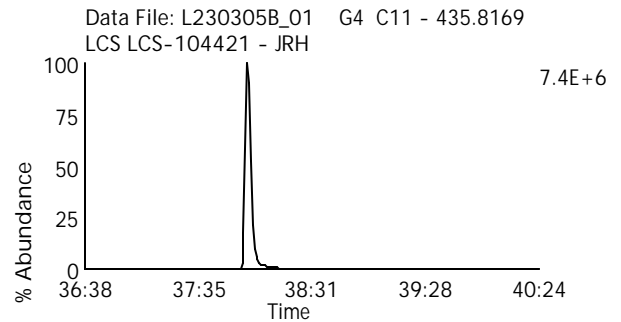
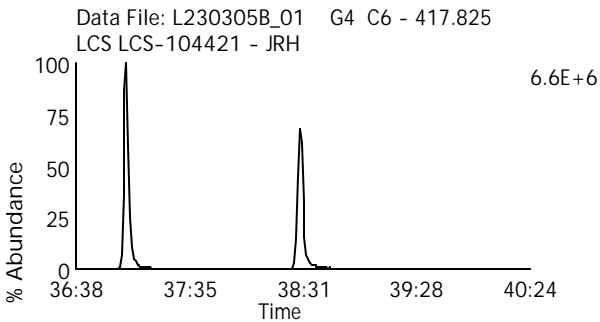
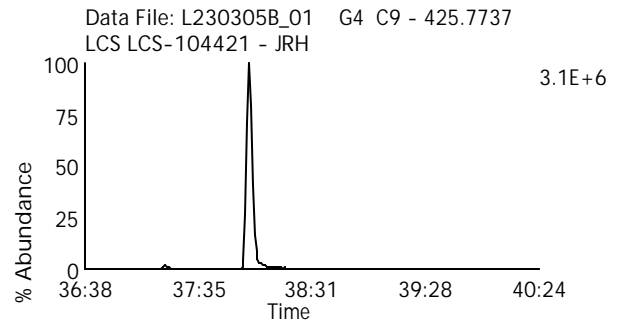
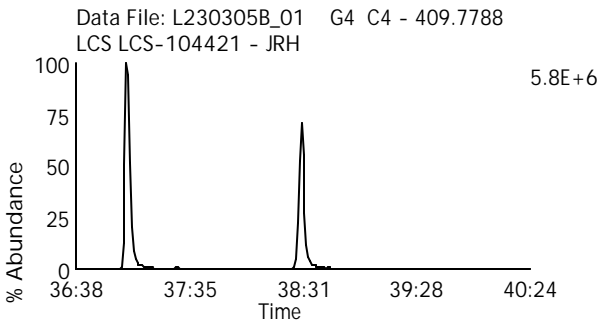
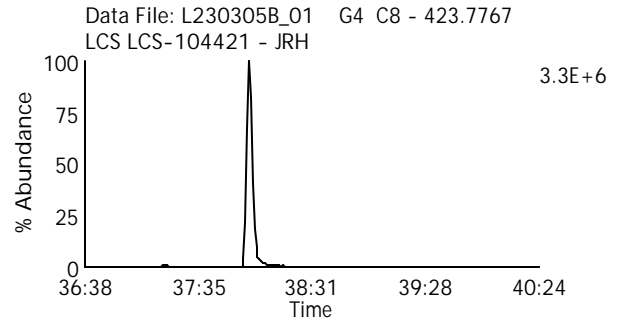
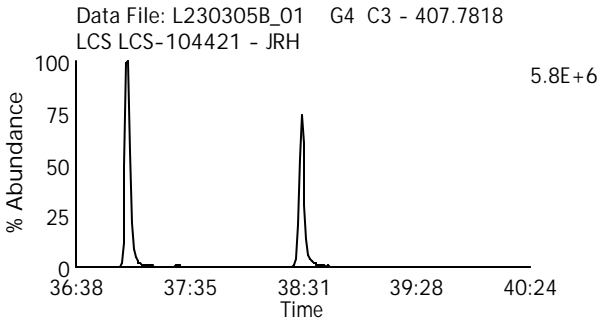
Date Acquired: 3/5/2023

Sample Description: LCS LCS-104421 - JRH

Lab Sample ID: LCS-104422

Client Sample ID: DLCSLT

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230305B_01

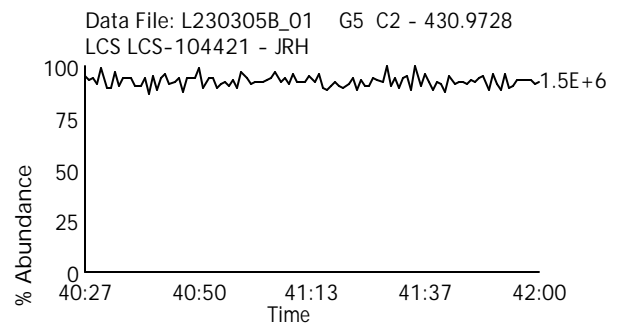
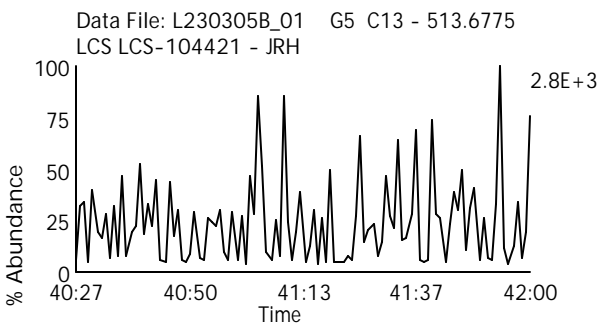
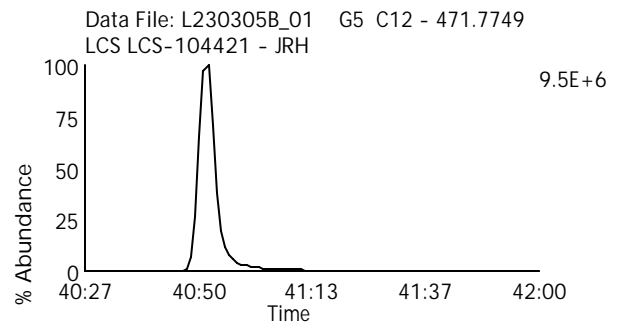
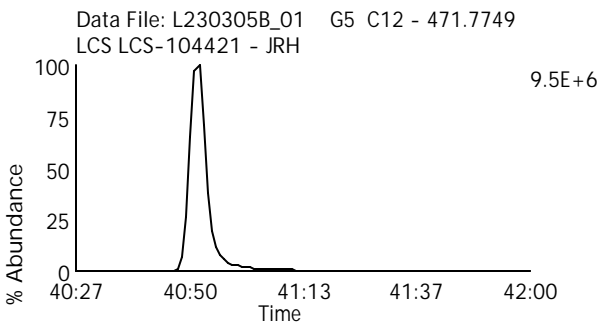
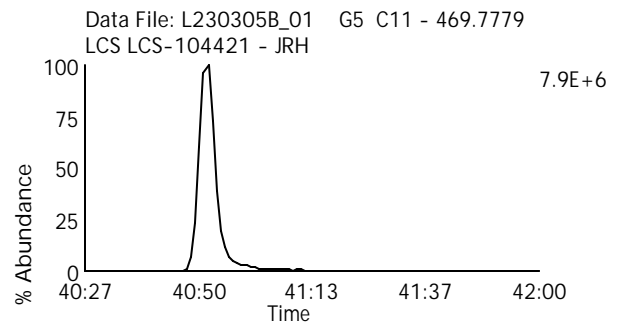
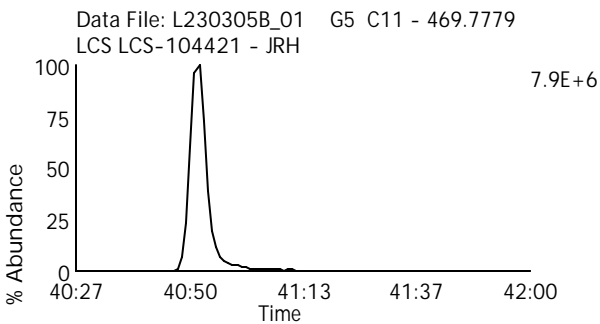
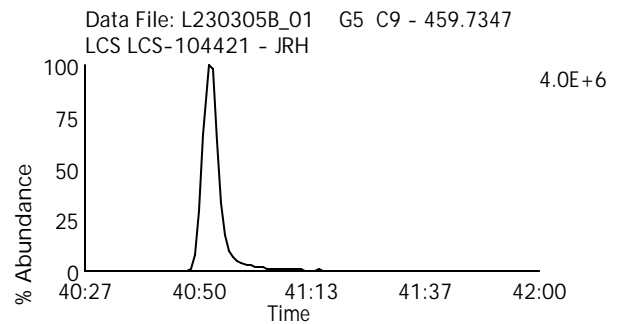
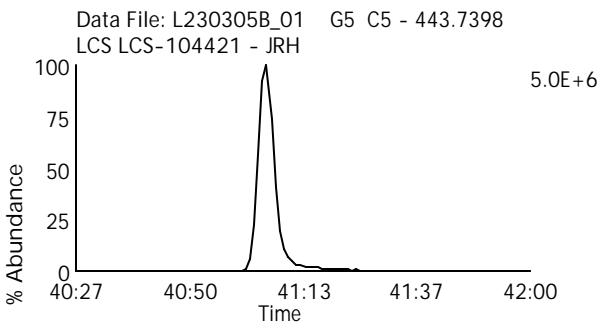
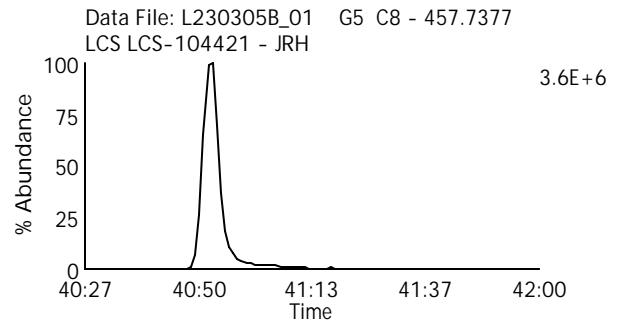
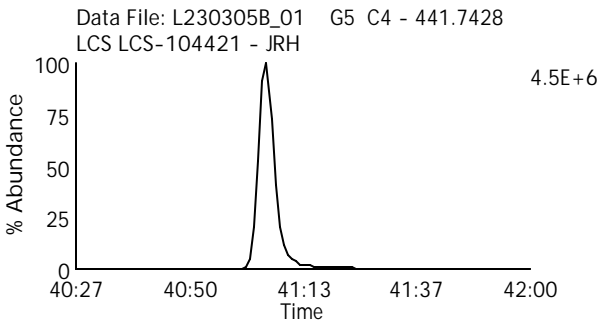
Date Acquired: 3/5/2023

Sample Description: LCS LCS-104421 - JRH

Lab Sample ID: LCS-104422

Client Sample ID: DLCSLT

Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230305B_02

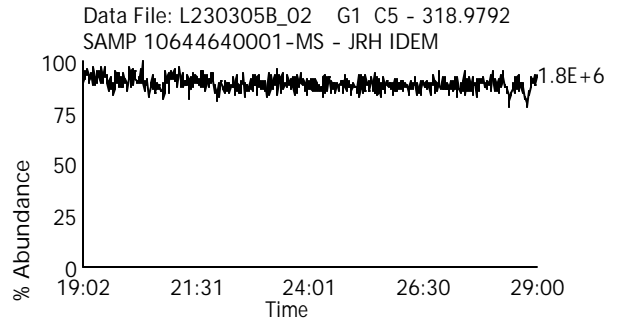
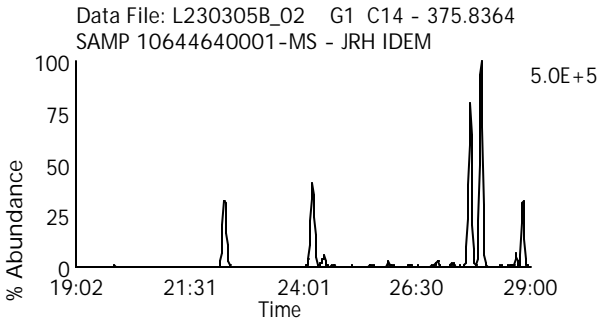
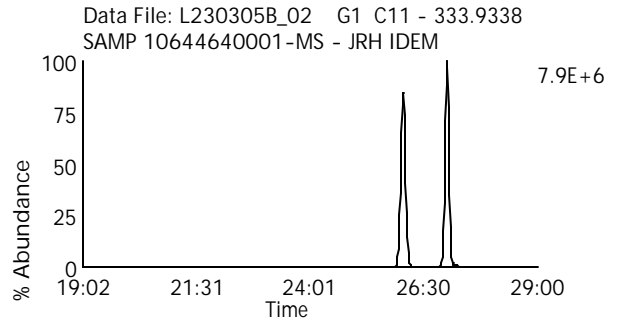
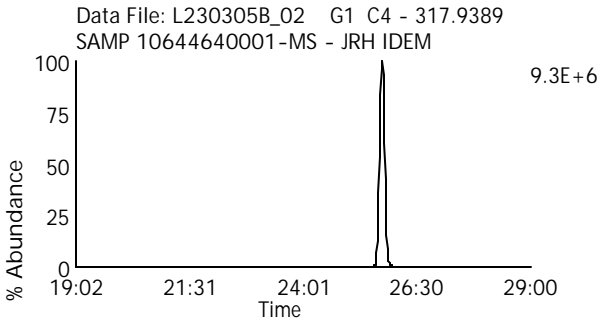
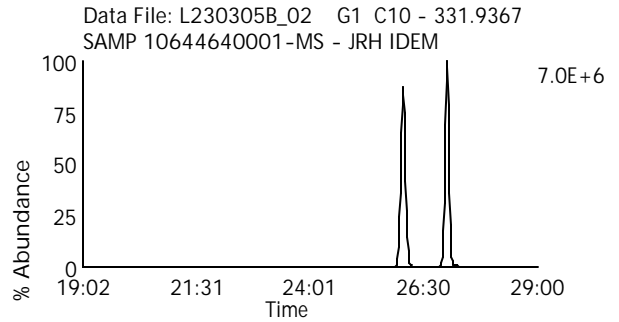
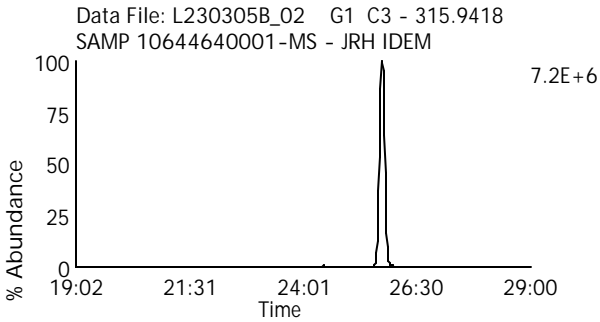
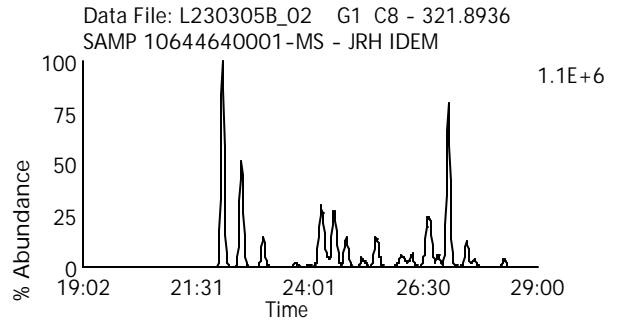
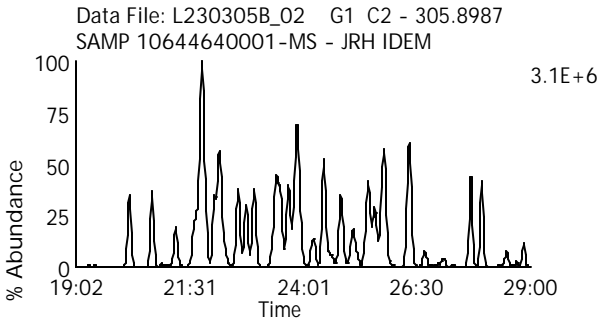
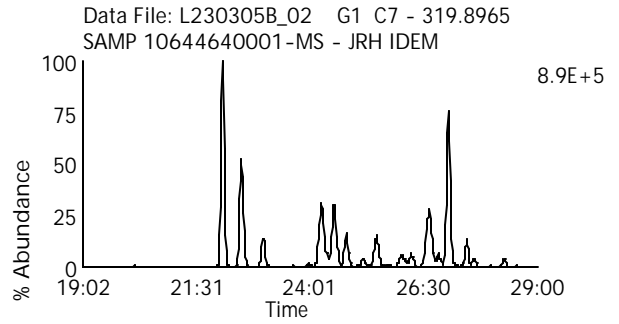
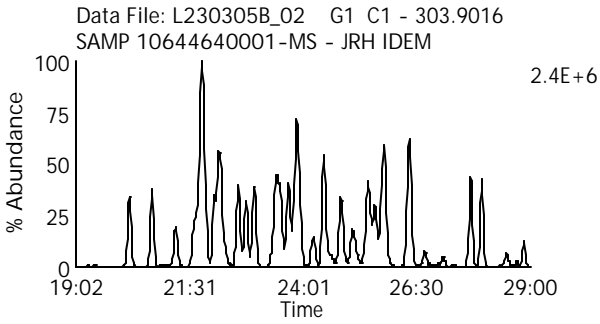
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MS - JRH IDEM

Lab Sample ID: 10644640001-MS

Client Sample ID: WS-1-MS

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230305B_02

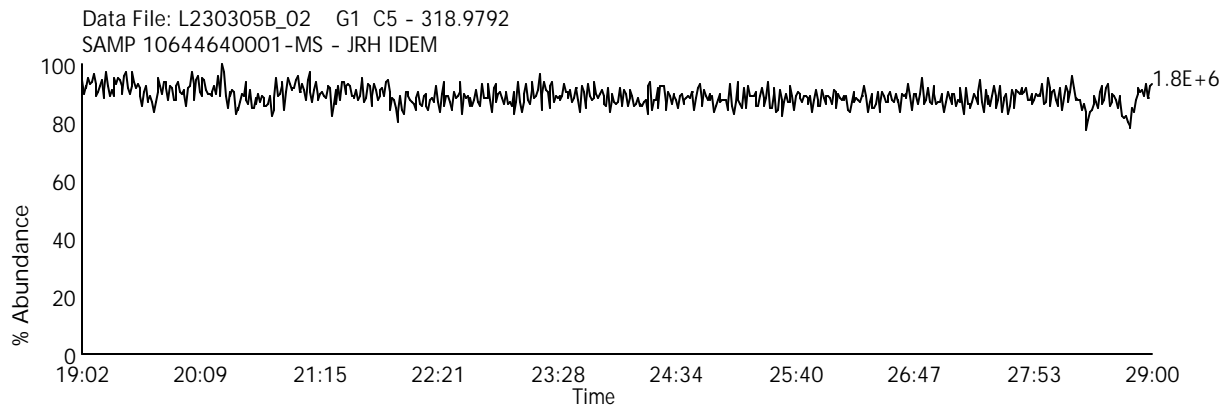
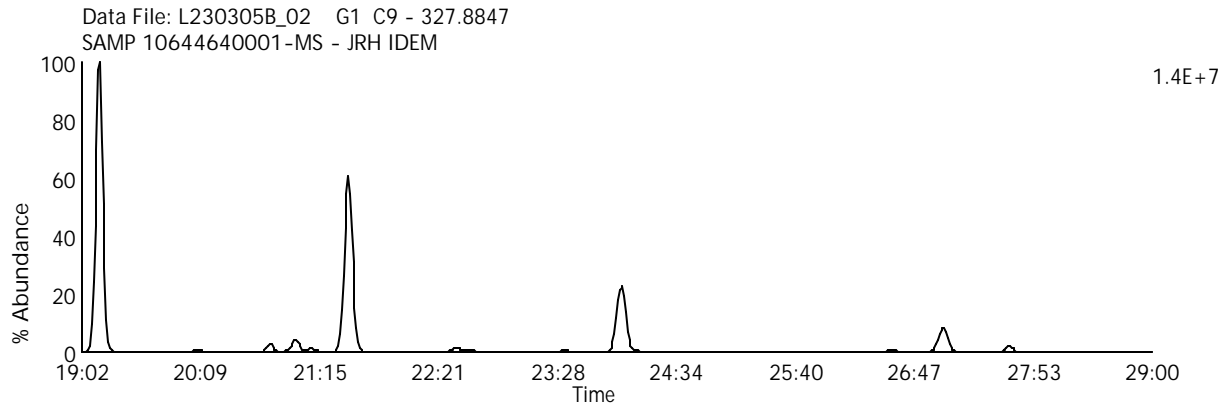
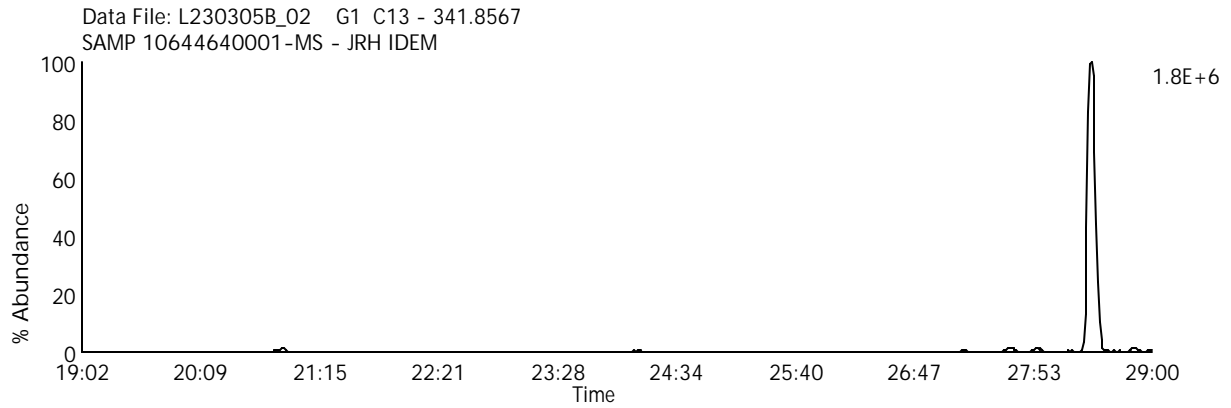
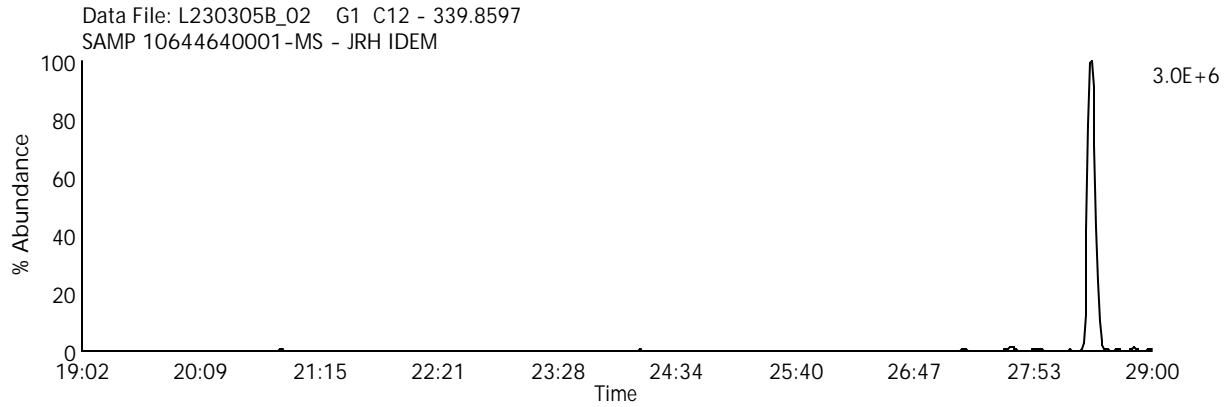
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MS - JRH IDEM

Lab Sample ID: 10644640001-MS

Client Sample ID: WS-1-MS

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230305B_02

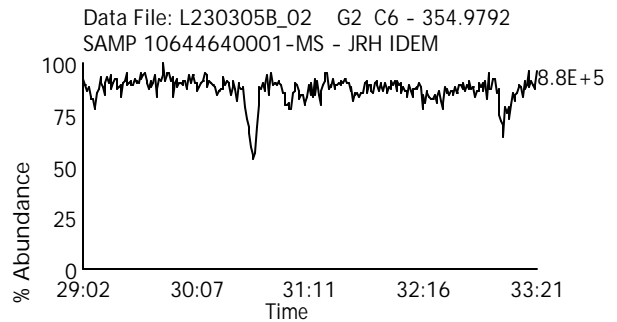
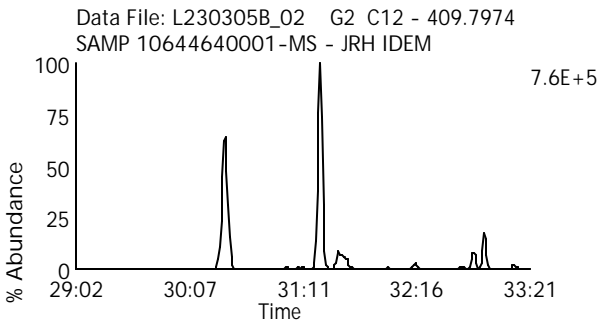
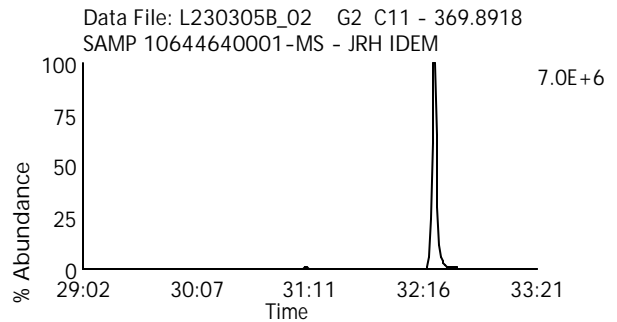
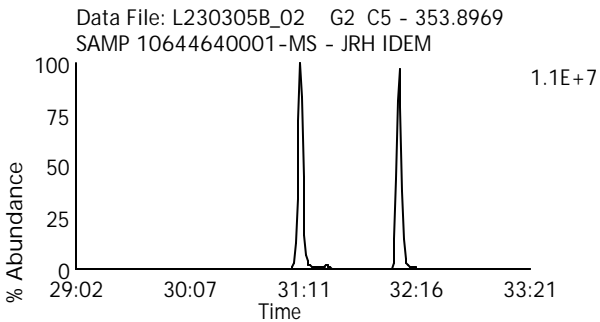
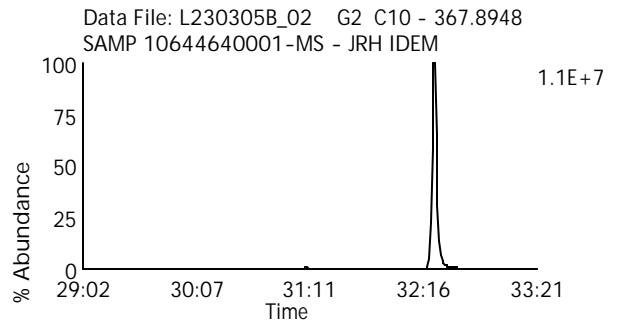
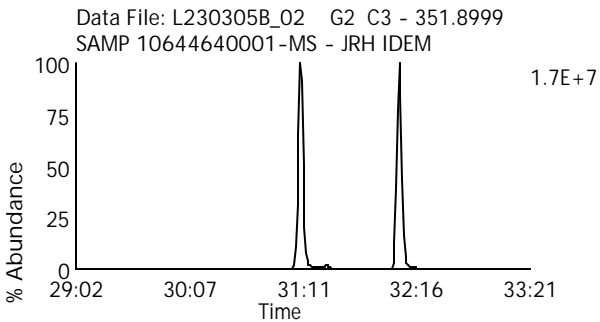
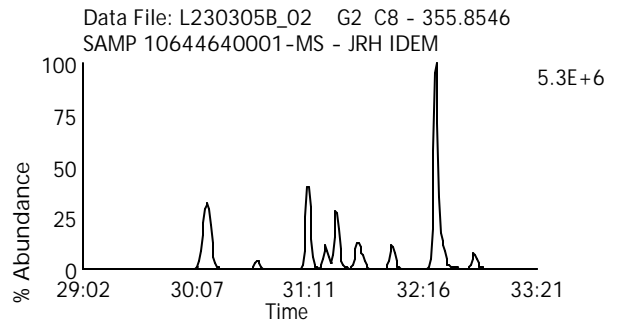
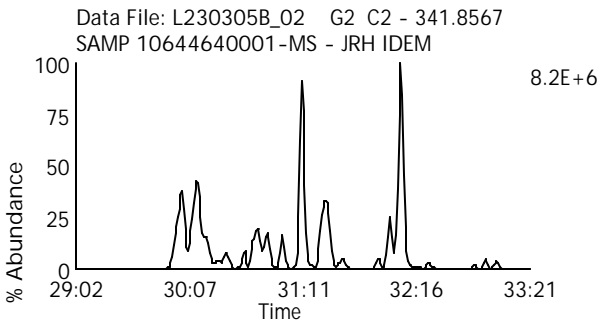
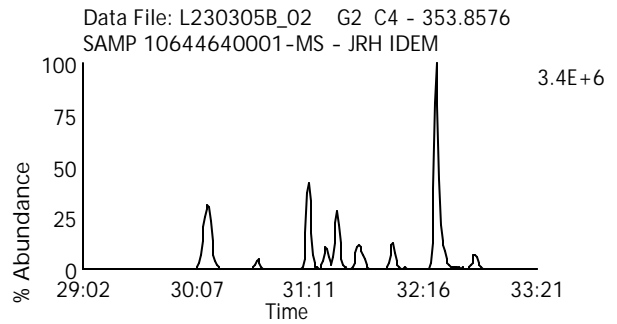
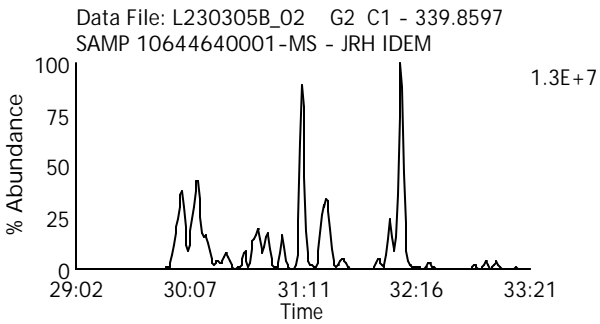
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MS - JRH IDEM

Lab Sample ID: 10644640001-MS

Client Sample ID: WS-1-MS

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230305B_02

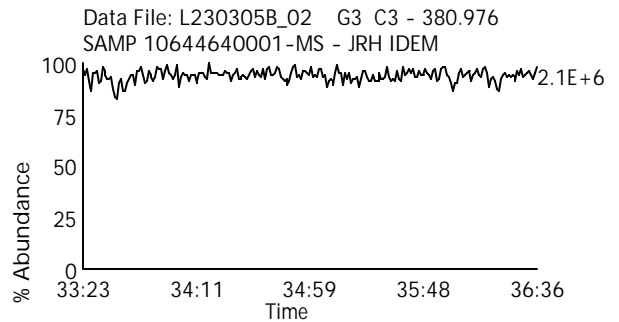
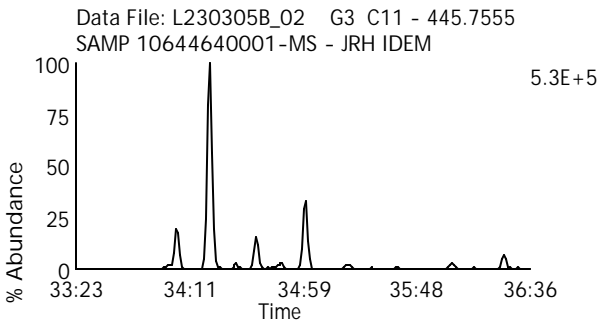
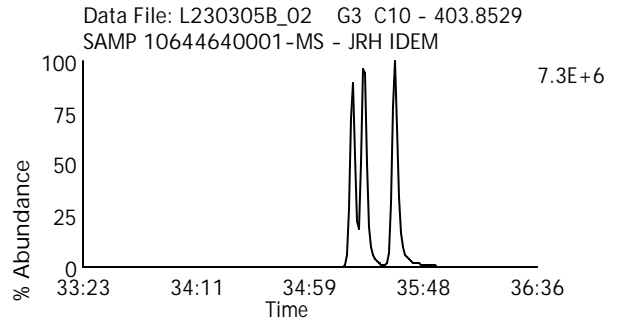
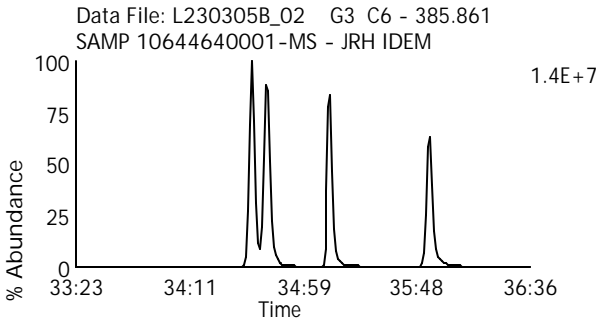
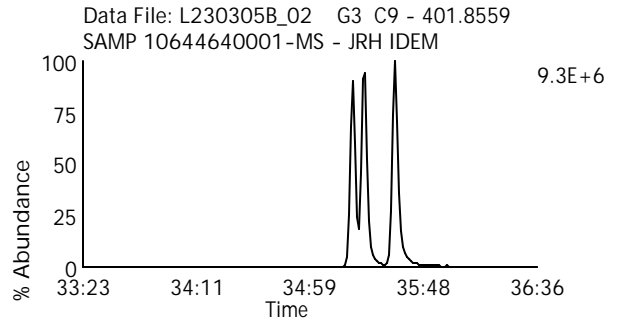
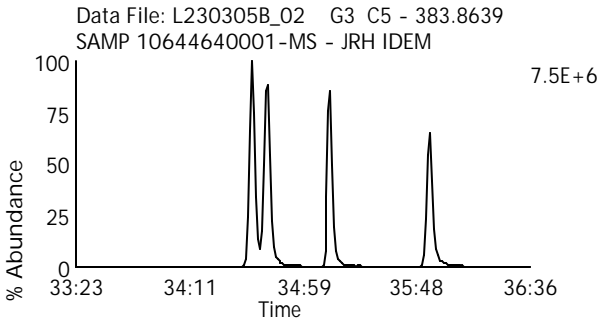
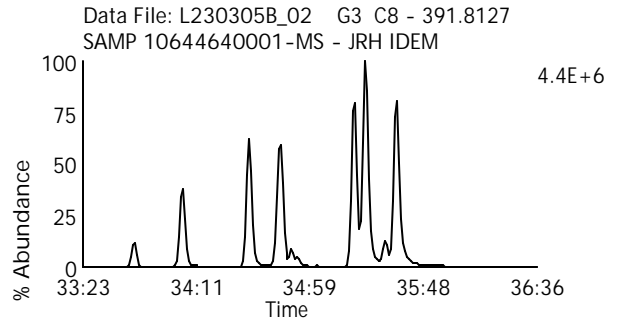
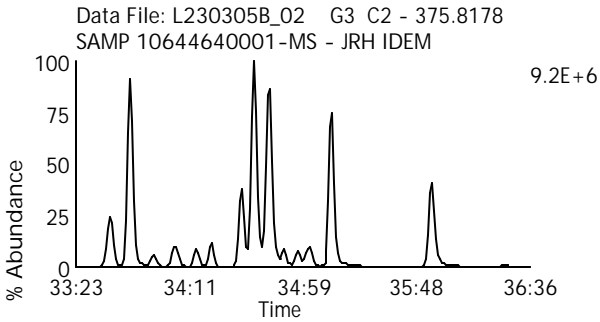
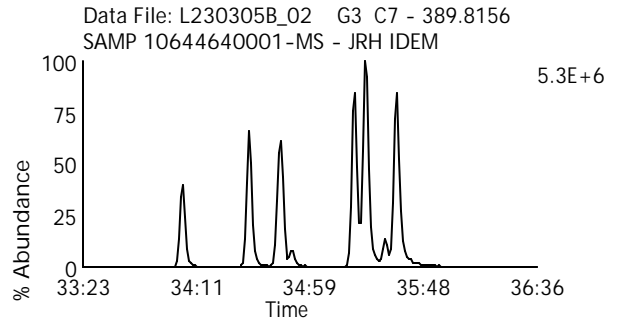
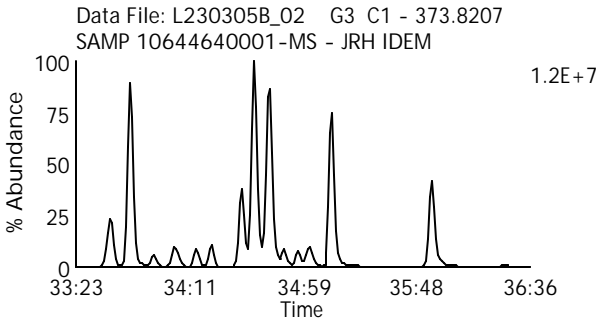
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MS - JRH IDEM

Lab Sample ID: 10644640001-MS

Client Sample ID: WS-1-MS

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230305B_02

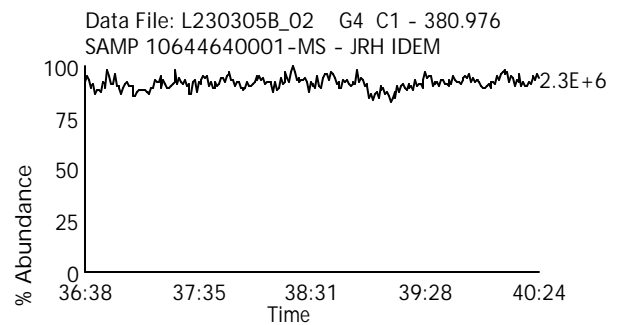
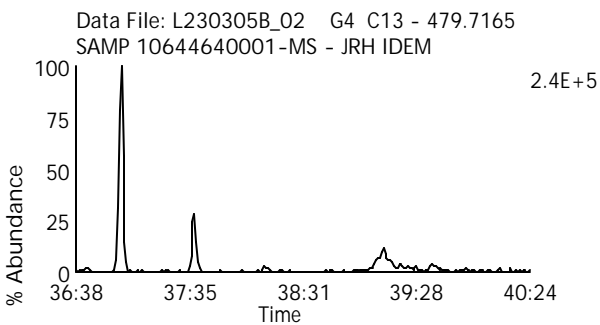
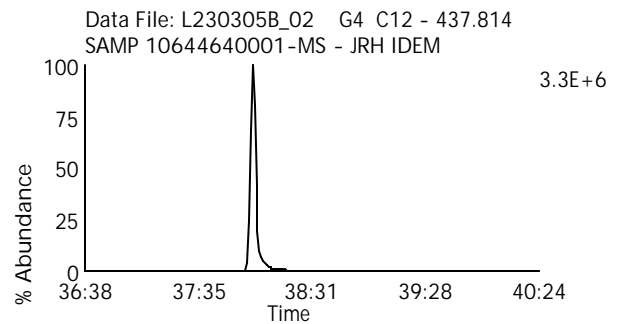
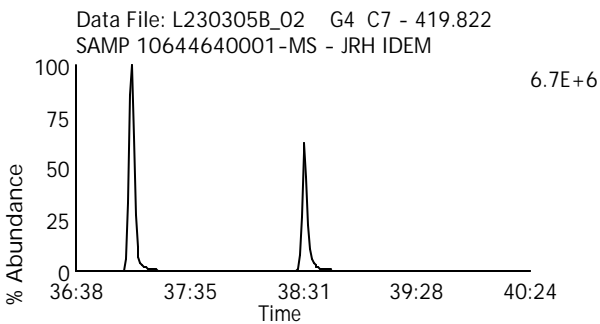
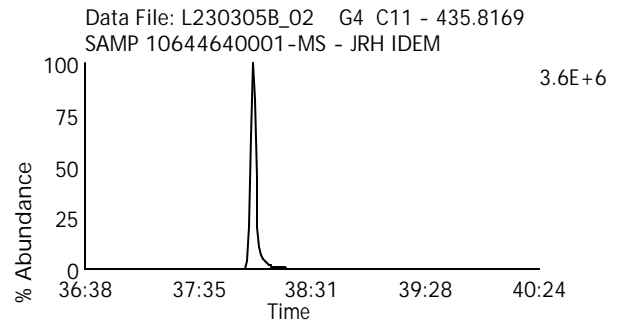
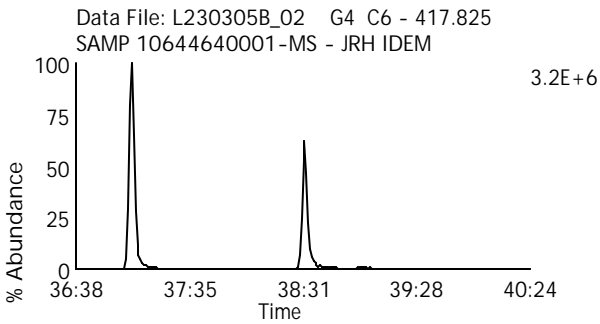
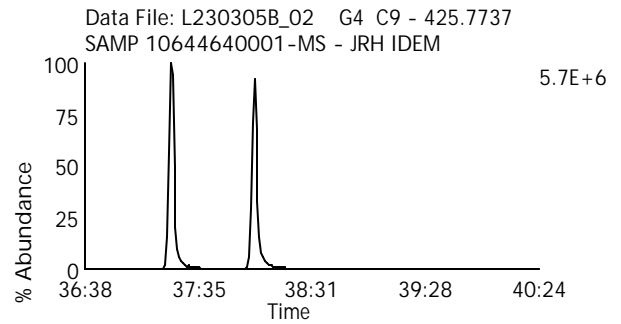
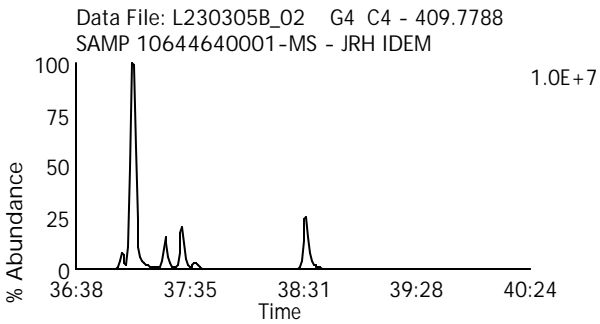
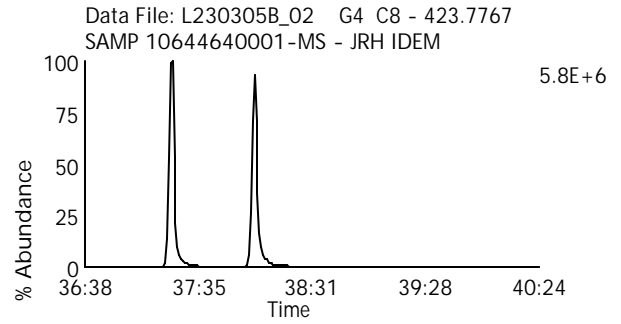
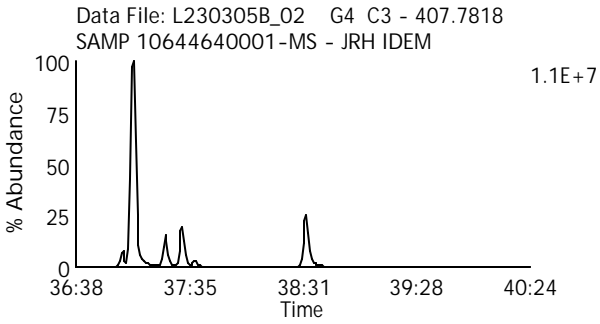
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MS - JRH IDEM

Lab Sample ID: 10644640001-MS

Client Sample ID: WS-1-MS

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230305B_02

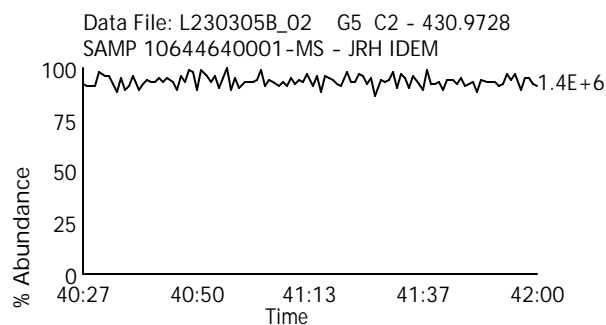
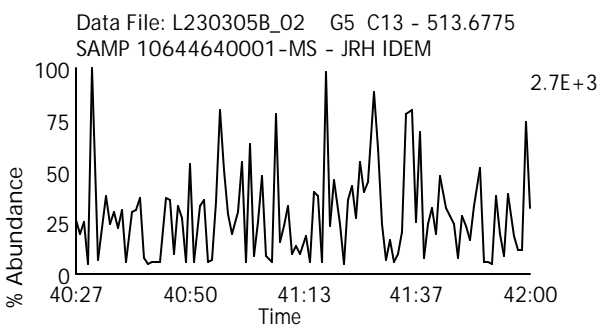
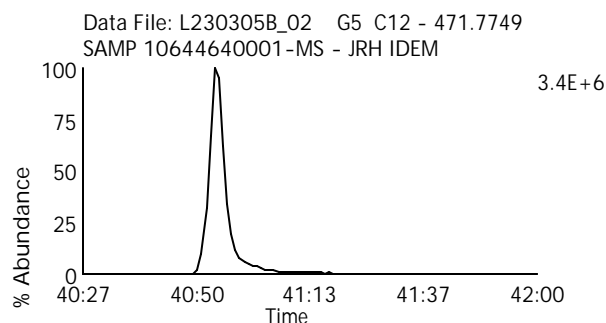
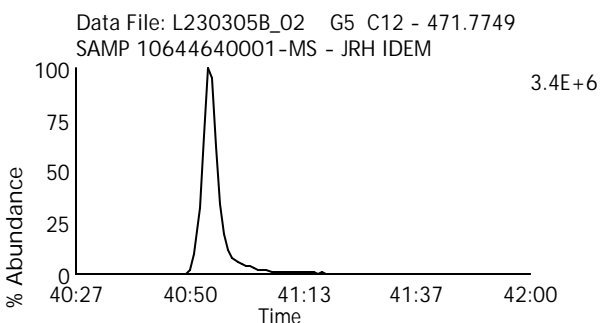
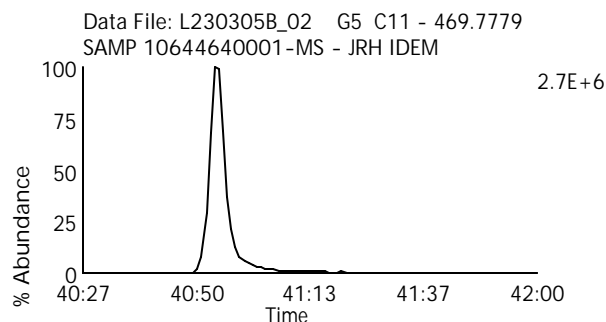
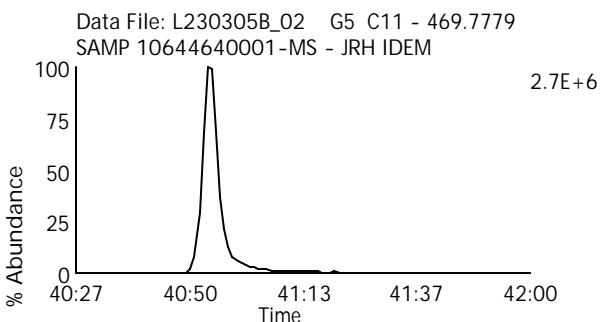
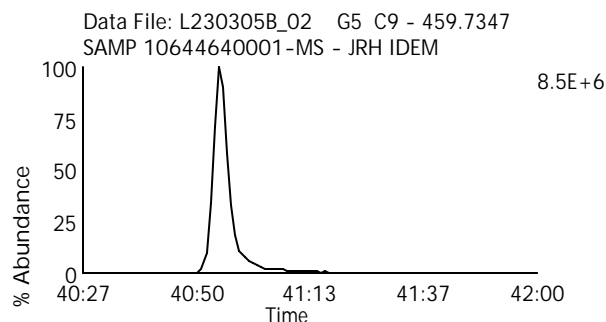
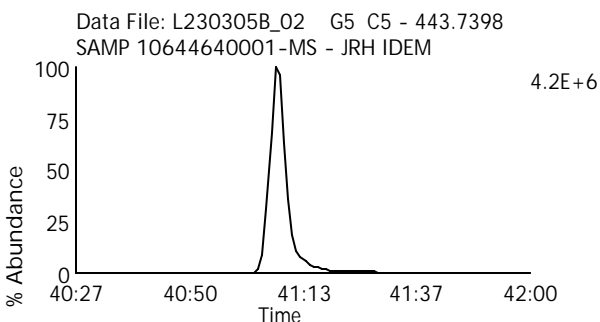
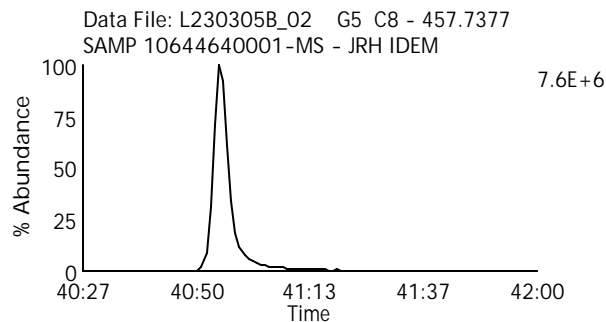
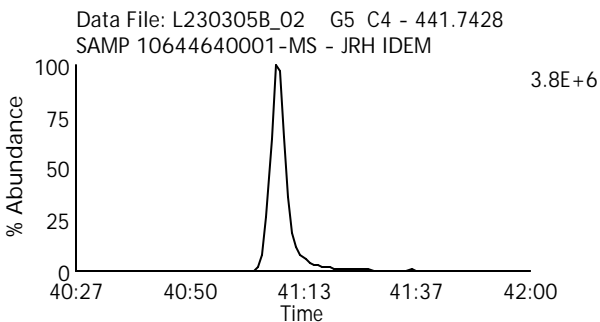
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MS - JRH IDEM

Lab Sample ID: 10644640001-MS

Client Sample ID: WS-1-MS

Instrument: 10MSHR15 (L)



Homologue Group: Tetras

Data File Name: L230305B_03

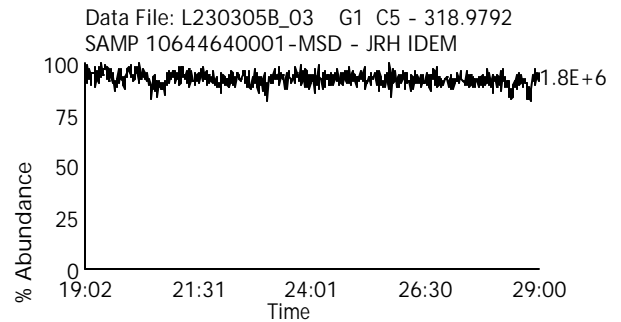
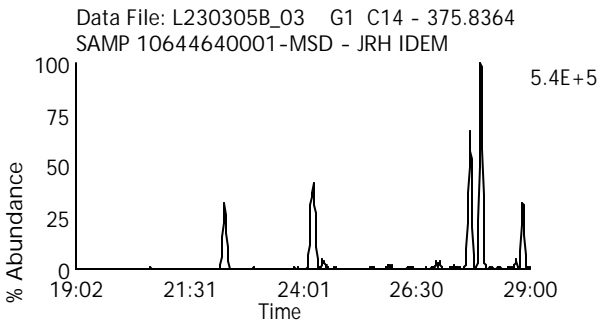
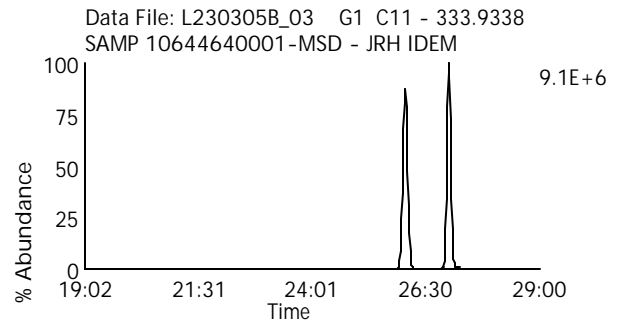
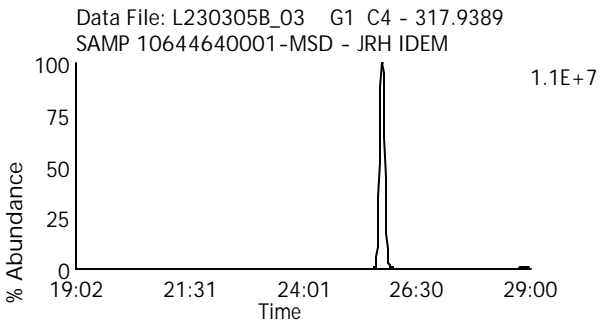
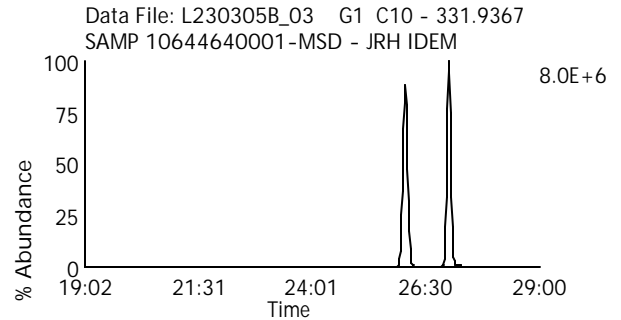
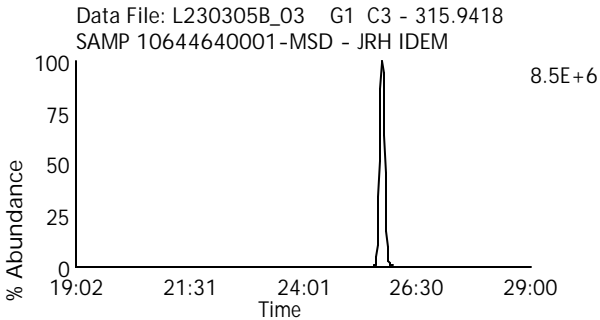
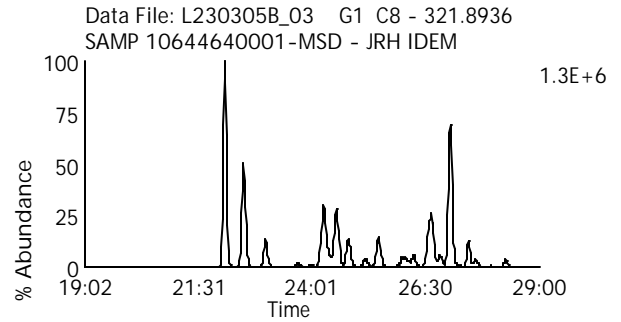
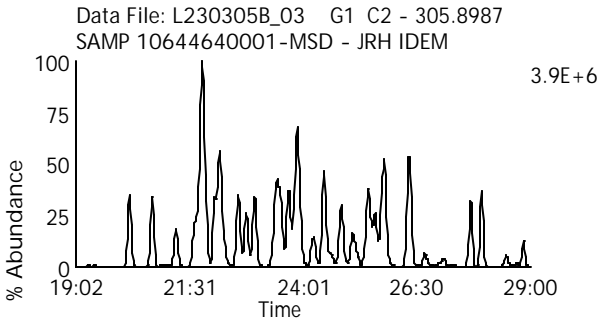
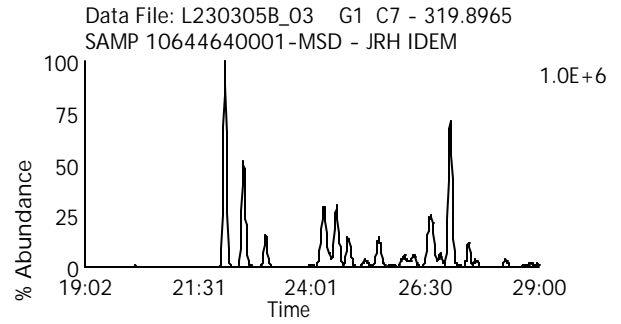
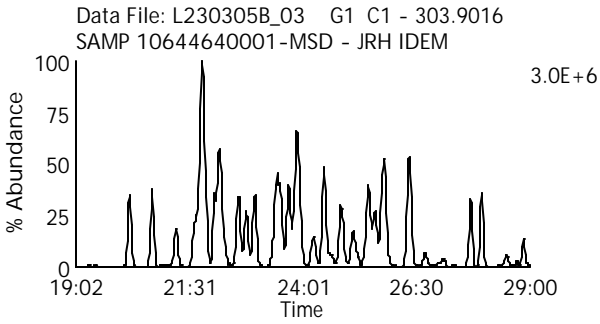
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MSD - JRH IDEM

Lab Sample ID: 10644640001-MSD

Client Sample ID: WS-1-MSD

Instrument: 10MSHR15 (L)



Homologue Group: Penta & Cleanup

Data File Name: L230305B_03

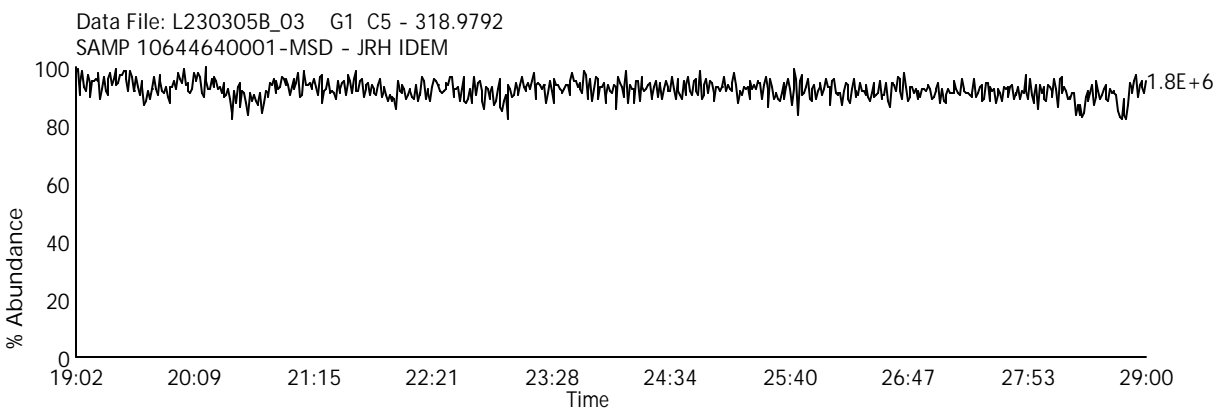
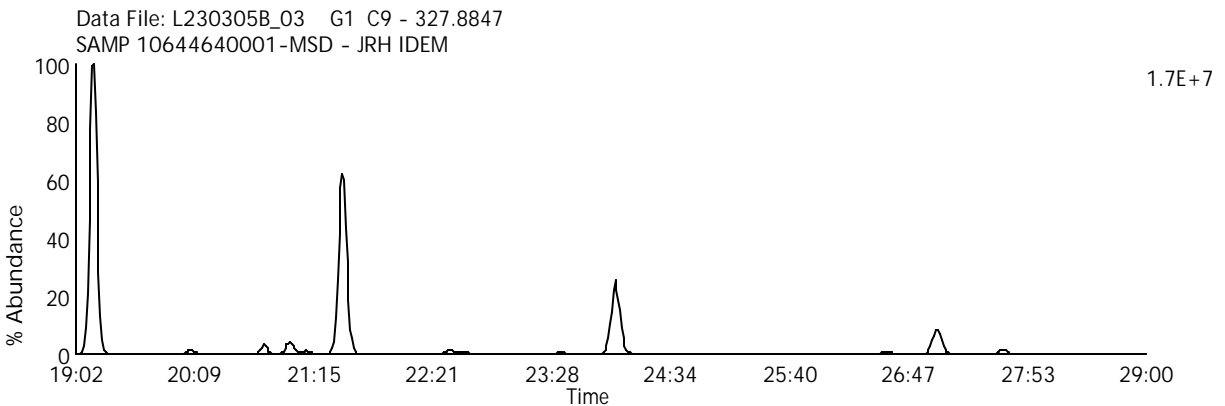
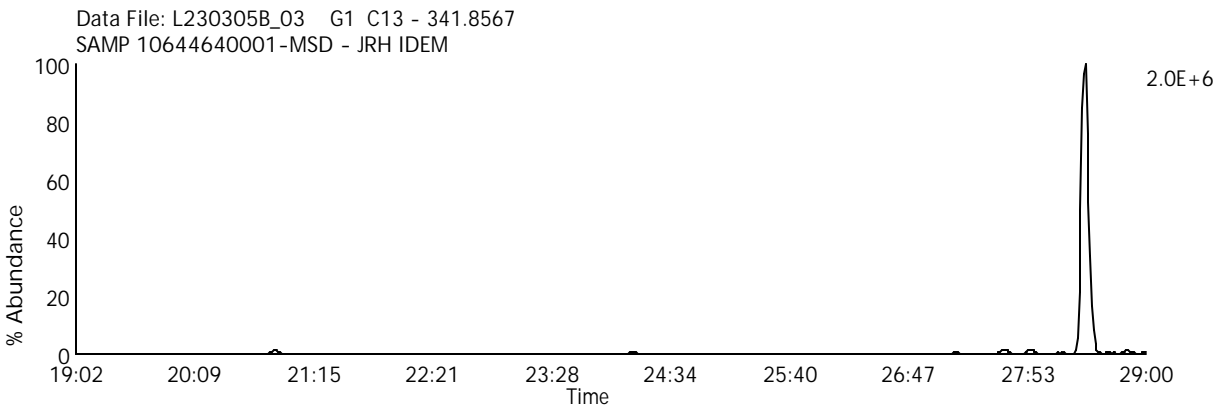
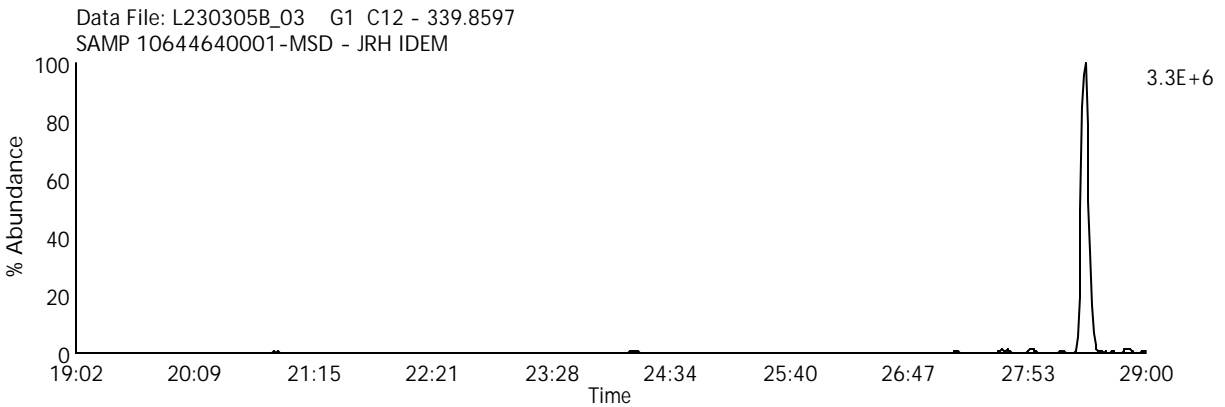
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MSD - JRH IDEM

Lab Sample ID: 10644640001-MSD

Client Sample ID: WS-1-MSD

Instrument: 10MSHR15 (L)



Homologue Group: Pentas

Data File Name: L230305B_03

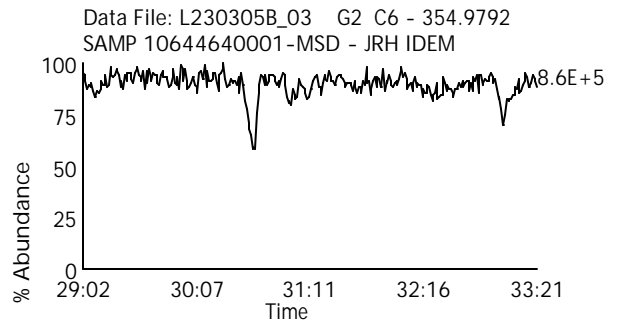
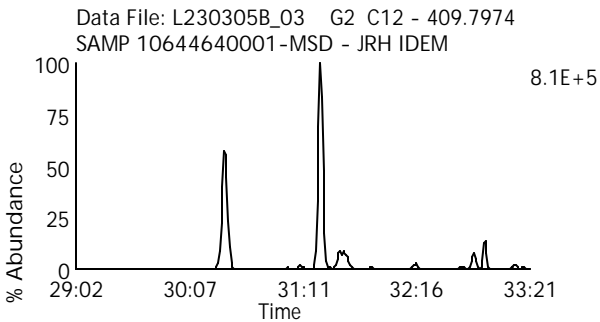
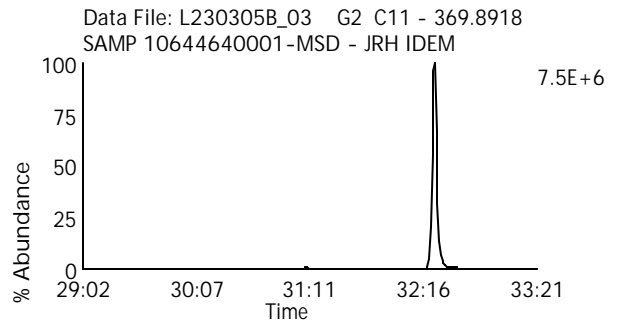
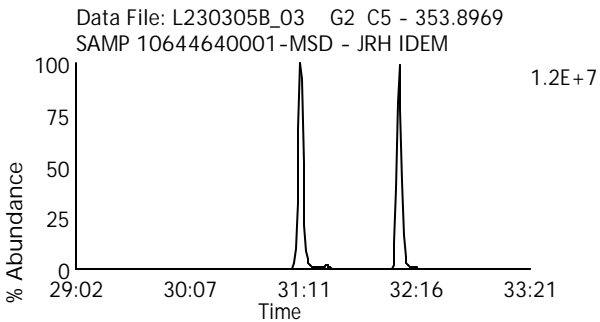
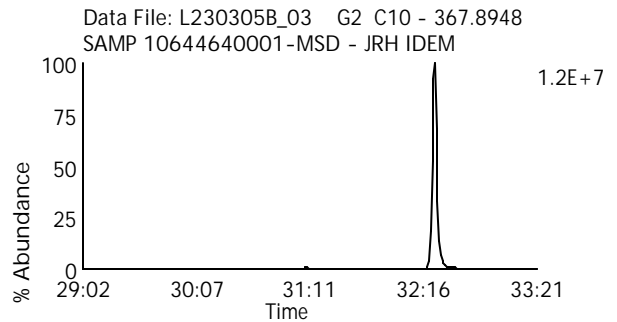
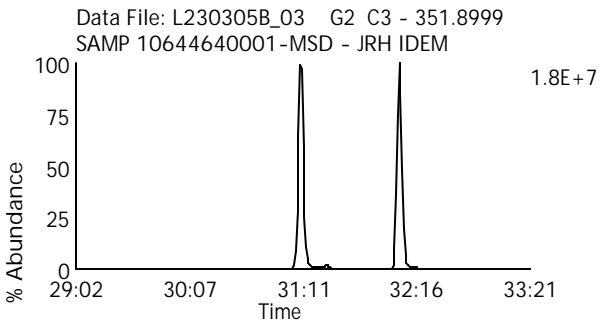
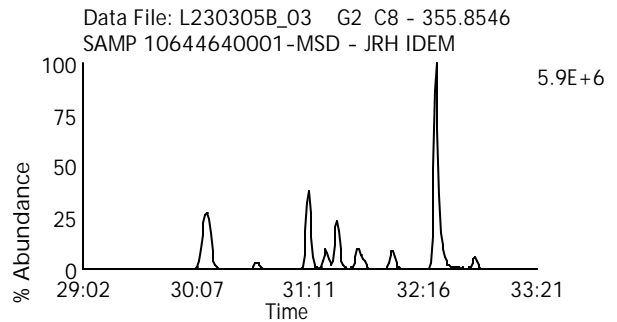
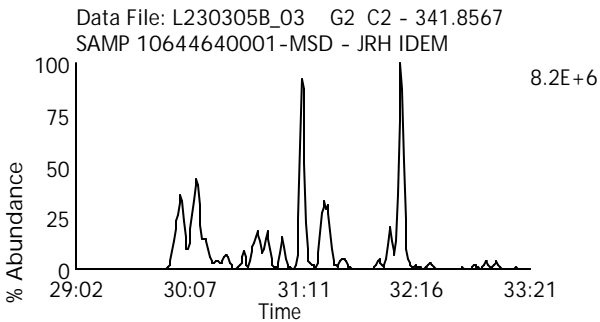
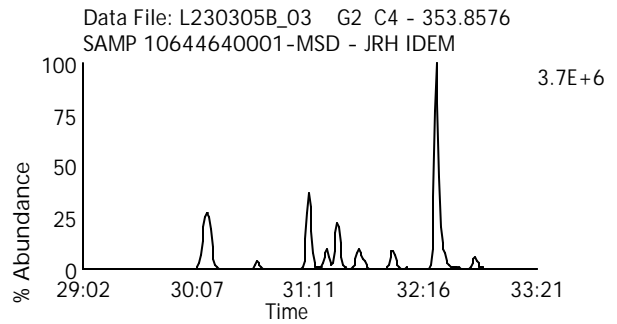
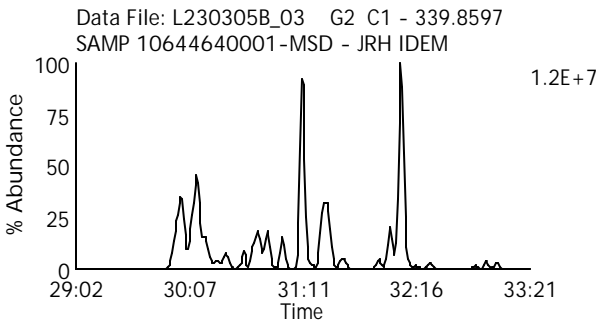
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MSD - JRH IDEM

Lab Sample ID: 10644640001-MSD

Client Sample ID: WS-1-MSD

Instrument: 10MSHR15 (L)



Homologue Group: Hexas

Data File Name: L230305B_03

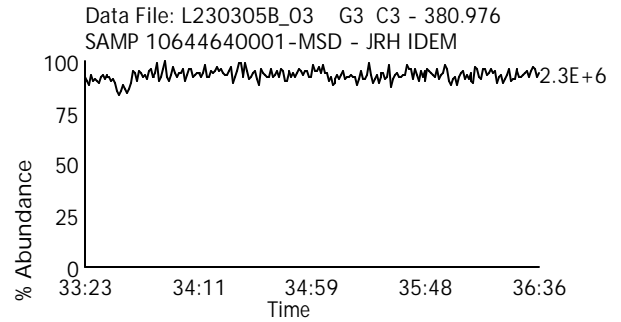
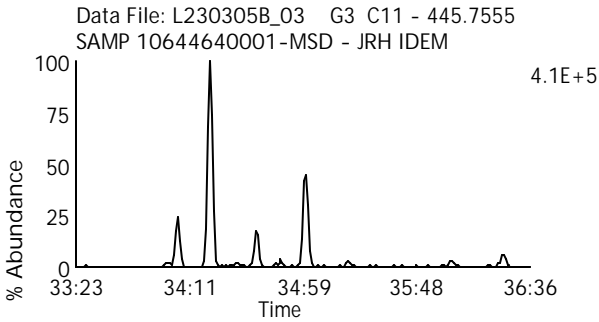
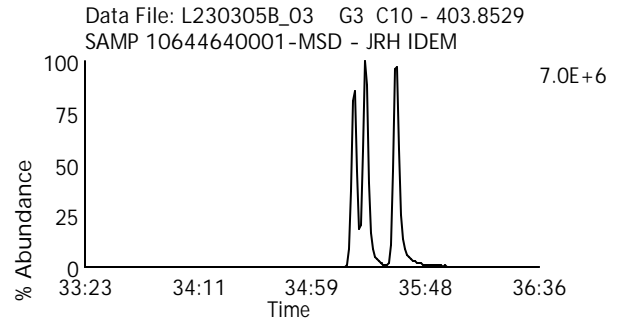
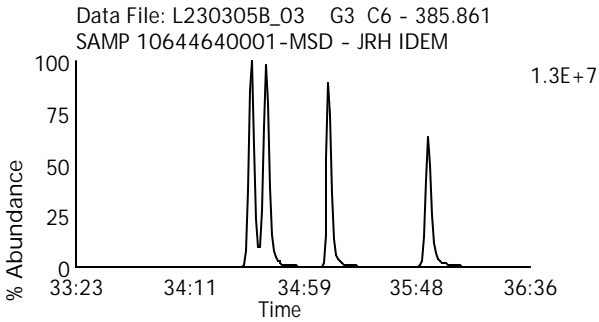
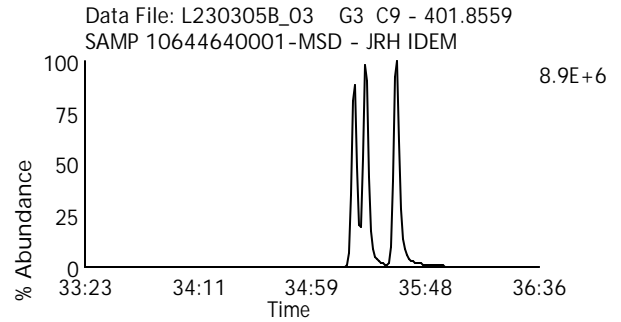
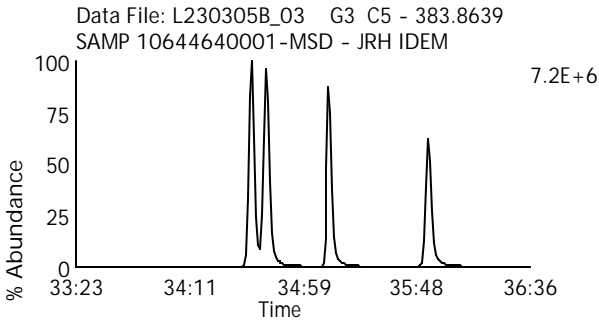
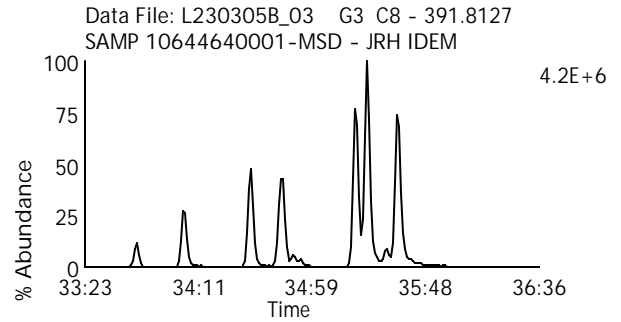
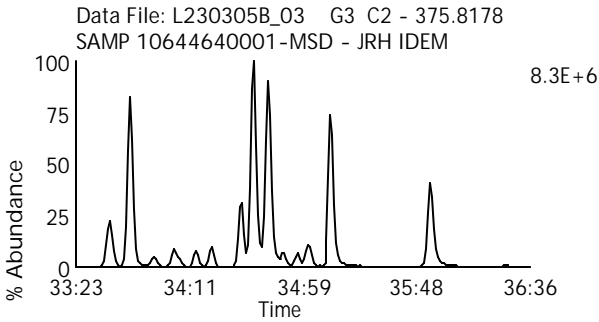
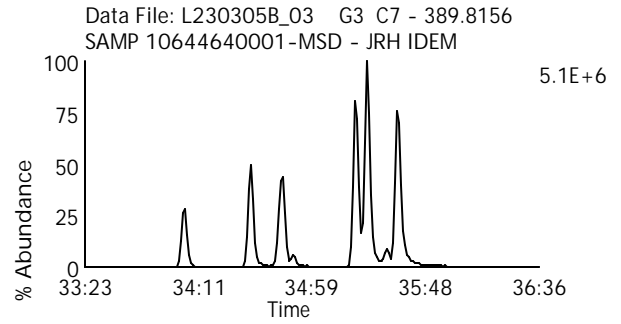
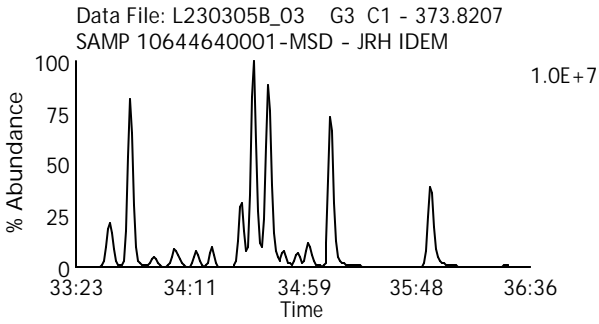
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MSD - JRH IDEM

Lab Sample ID: 10644640001-MSD

Client Sample ID: WS-1-MSD

Instrument: 10MSHR15 (L)



Homologue Group: Heptas

Data File Name: L230305B_03

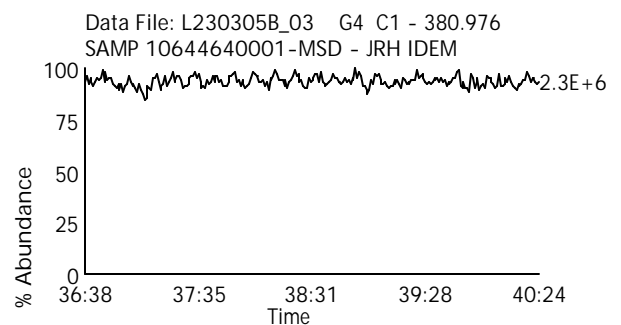
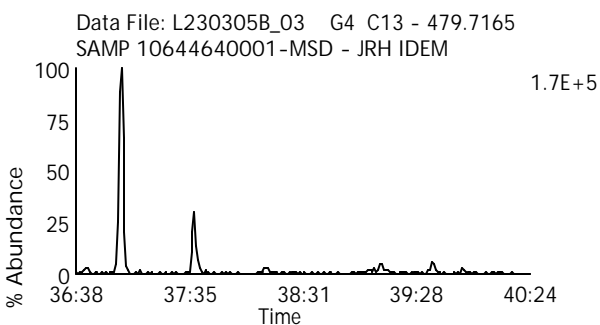
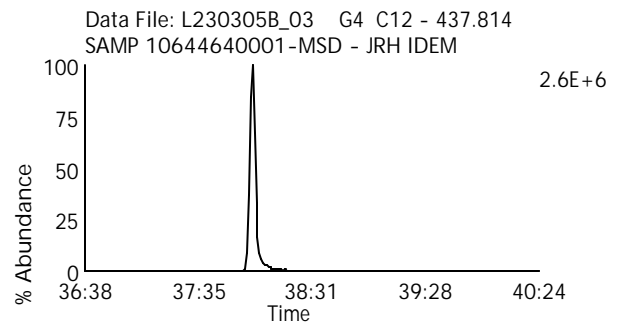
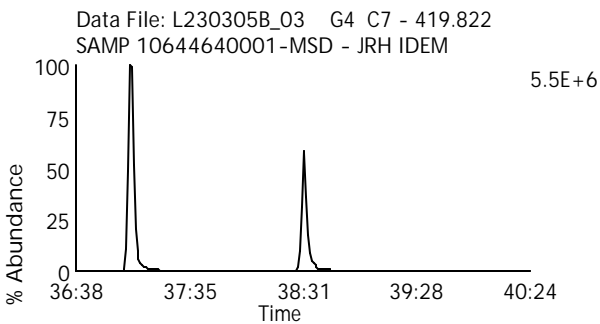
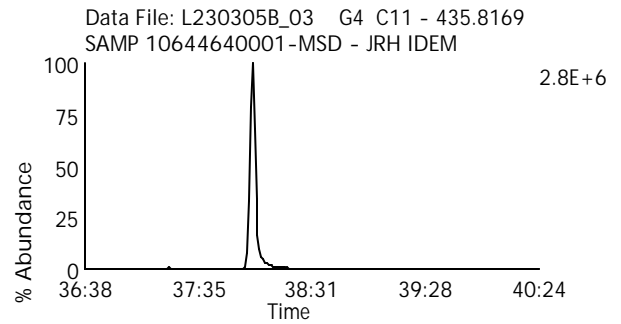
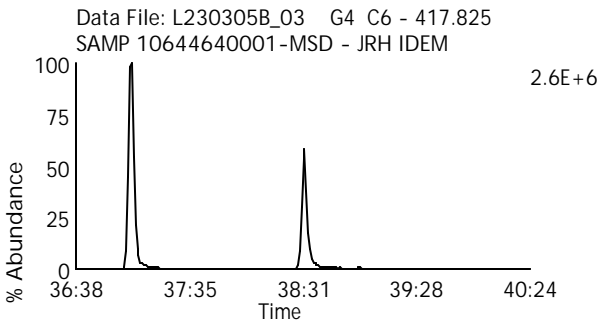
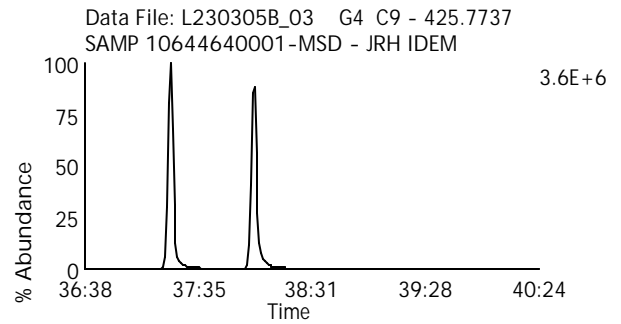
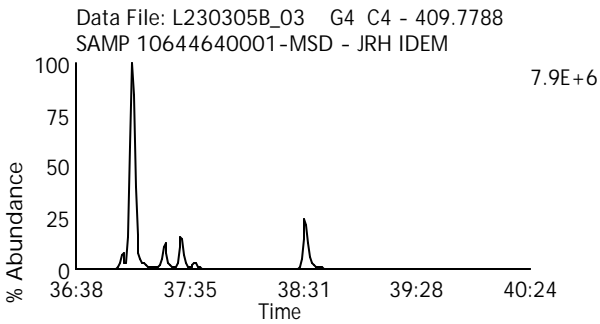
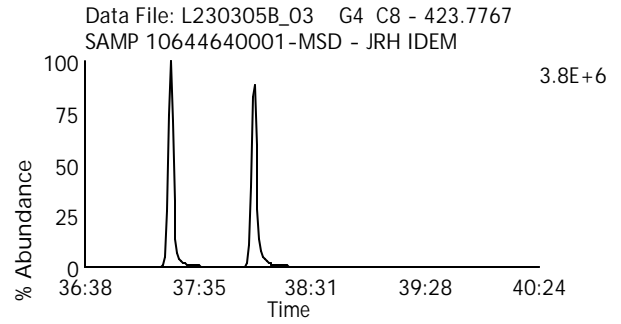
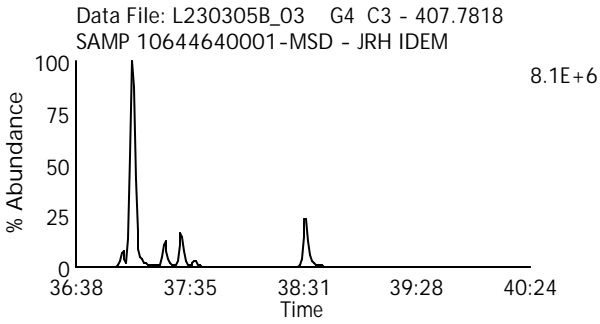
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MSD - JRH IDEM

Lab Sample ID: 10644640001-MSD

Client Sample ID: WS-1-MSD

Instrument: 10MSHR15 (L)



Homologue Group: Octas

Data File Name: L230305B_03

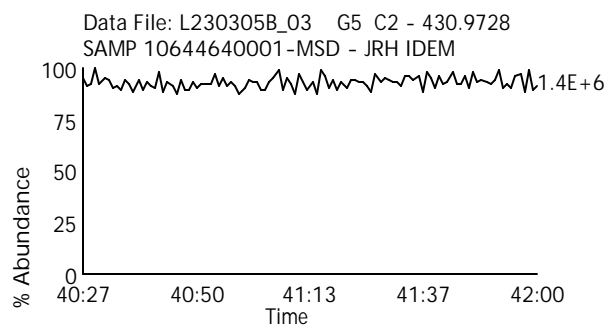
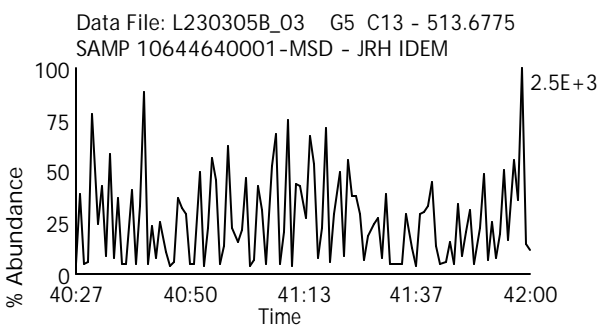
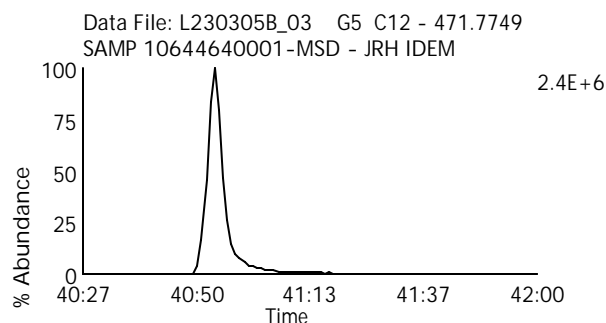
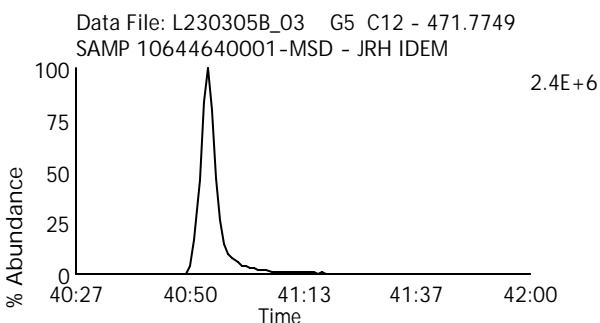
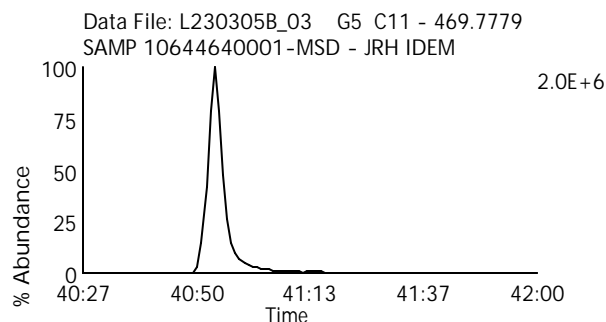
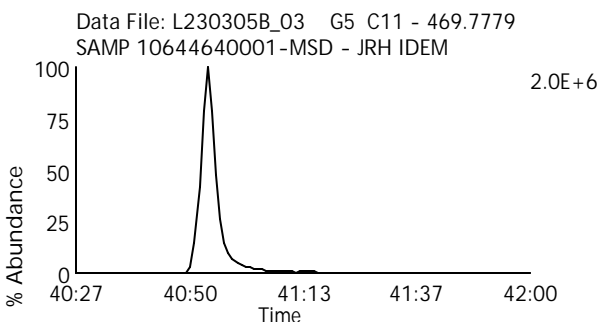
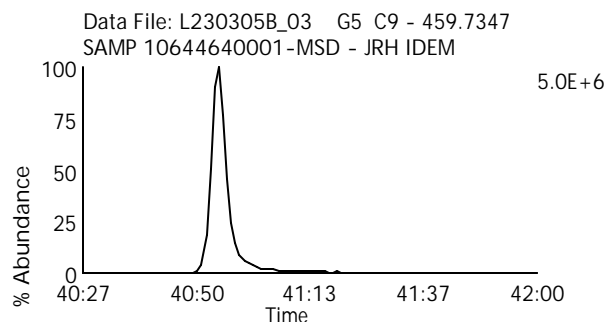
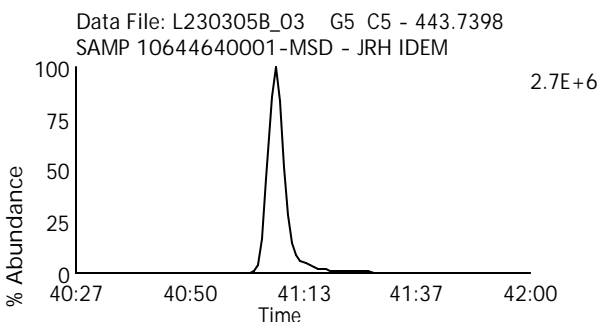
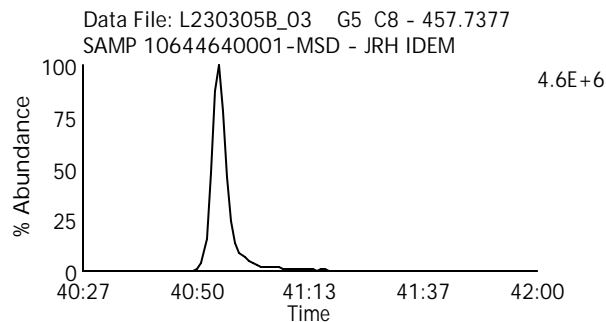
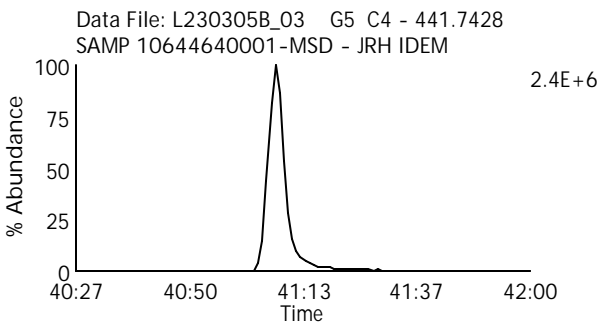
Date Acquired: 3/5/2023

Sample Description: SAMP 10644640001-MSD - JRH IDEM

Lab Sample ID: 10644640001-MSD

Client Sample ID: WS-1-MSD

Instrument: 10MSHR15 (L)





PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client ID	DFBLKYD	Injected By	JRH
Lab ID	BLANK-104421	Instrument ID	10MSHR15 (L)
Filename	L230305B_05	GC Column ID	US1824614H
Analyzed	03/06/2023 01:24	ICAL ID	L230302

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Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:36	5.92e7	7.52e7	8.03e6	1.00e7	7.502e3	6.035e3	0.79	
2,3,7,8-TCDF	25:38	ND	ND	ND	ND	9.814e2	9.587e2		

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	25:55	5.28e7	6.01e7	7.26e6	8.19e6	3.938e3	5.638e3	0.88	
2,3,7,8-TCDD-13C	26:54	4.74e7	5.33e7	7.73e6	8.59e6	2.947e3	9.861e2	0.89	
2,3,7,8-TCDD-37Cl4	26:56	8.00e6		1.29e6		1.012e3	----		
2,3,7,8-TCDD	26:56	ND	ND	ND	ND	8.473e2	5.743e2		
Other TCDD	1 22:23	1.98e4	2.38e4					0.83	
	2 21:57	2.66e4	3.74e4					0.71	

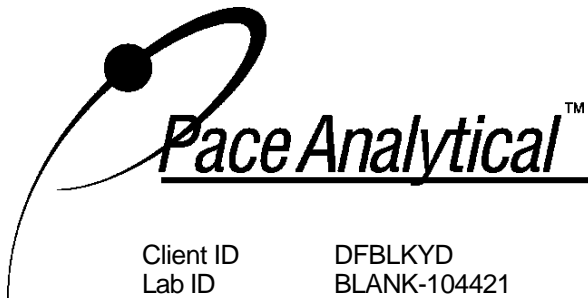
Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:06	6.41e7	4.00e7	1.79e7	1.13e7	4.265e2	2.069e4	1.60	
2,3,4,7,8-PeCDF-13C	32:03	(M)6.15e7	(M)3.83e7	1.83e7	1.18e7	3.990e3	7.781e3	1.61	
1,2,3,7,8-PeCDF	31:07	ND	ND	ND	ND	8.133e2	9.369e2		
2,3,4,7,8-PeCDF	32:04	ND	ND	ND	ND	1.027e3	1.143e3		

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:19	4.33e7	2.76e7	1.29e7	8.29e6	1.278e4	8.911e3	1.57	
1,2,3,7,8-PeCDD	32:21	ND	ND	ND	ND	9.167e2	1.242e3		

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:35	2.25e7	4.27e7	8.69e6	1.65e7	9.580e2	1.447e3	0.53	
1,2,3,6,7,8-HxCDF-13C	34:41	2.42e7	4.56e7	8.90e6	1.69e7	1.659e3	1.486e3	0.53	
2,3,4,6,7,8-HxCDF-13C	35:08	2.21e7	4.15e7	7.91e6	1.54e7	1.079e3	9.380e2	0.53	
1,2,3,7,8,9-HxCDF-13C	35:50	1.55e7	3.00e7	5.31e6	1.02e7	9.927e3	1.012e4	0.52	
1,2,3,4,7,8-HxCDF	34:36	ND	ND	ND	ND	1.011e3	7.513e2		
1,2,3,6,7,8-HxCDF	34:42	ND	ND	ND	ND	9.537e2	7.334e2		
2,3,4,6,7,8-HxCDF	35:09	ND	ND	ND	ND	9.537e2	7.513e2		

REPORT OF LABORATORY ANALYSIS

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Client ID	DFBLKYD	Injected By	JRH
Lab ID	BLANK-104421	Instrument ID	10MSHR15 (L)
Filename	L230305B_05	GC Column ID	US1824614H
Analyzed	03/06/2023 01:24	ICAL ID	L230302

1,2,3,7,8,9-HxCDF	35:52	(M)1.10e4	(M)1.10e4	3.92e3	4.81e3	9.228e2	6.439e2	1.00	I
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Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:15	2.49e7	1.94e7	9.68e6	7.42e6	4.316e3	5.270e3	1.28	
1,2,3,6,7,8-HxCDD-13C	35:20	2.99e7	2.33e7	1.04e7	7.80e6	3.314e3	2.088e3	1.28	
1,2,3,7,8,9-HxCDD-13C	35:33	3.29e7	2.66e7	1.12e7	8.66e6	2.252e3	1.565e3	1.24	
1,2,3,4,7,8-HxCDD	35:15	(M)2.16e4	(M)1.71e4	8.16e3	3.74e3	8.928e2	2.361e3	1.27	
1,2,3,6,7,8-HxCDD	35:21	ND	ND	ND	ND	8.928e2	2.361e3		
1,2,3,7,8,9-HxCDD	35:34	ND	ND	ND	ND	9.768e2	2.024e3		

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:04	1.15e7	2.48e7	3.94e6	8.59e6	2.725e3	6.618e3	0.47	
1,2,3,4,7,8,9-HpCDF-13C	38:30	7.28e6	1.57e7	2.19e6	4.58e6	1.168e4	6.618e3	0.46	
1,2,3,4,6,7,8-HpCDF	37:04	ND	ND	ND	ND	1.065e3	8.141e2		
1,2,3,4,7,8,9-HpCDF	38:31	ND	ND	ND	ND	1.042e3	8.025e2		

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:00	1.25e7	1.15e7	3.96e6	3.61e6	1.429e3	1.066e4	1.09	
1,2,3,4,6,7,8-HpCDD	38:00	(M)9.36e3	(M)8.47e3	3.47e3	1.87e3	8.588e2	1.219e3	1.11	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:06	ND	ND	ND	ND	7.376e2	7.844e2		

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:52	1.17e7	1.45e7	3.06e6	3.87e6	2.421e2	3.968e2	0.80	
OCDD	40:53	(M)1.07e4	(M)1.46e4	3.09e3	3.03e3	7.796e2	7.495e2	0.73	I

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client ID	DLCSLT	Injected By	JRH
Lab ID	LCS-104422	Instrument ID	10MSHR15 (L)
Filename	L230305B_01	GC Column ID	US1824614H
Analyzed	03/05/2023 22:26	ICAL ID	L230302

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Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:35	6.27e7	8.02e7	9.04e6	1.13e7	----	----	0.78	
2,3,7,8-TCDF	25:38	5.31e6	6.73e6	7.69e5	1.02e6	----	----	0.79	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	25:54	4.68e7	5.31e7	6.82e6	7.73e6	----	----	0.88	
2,3,7,8-TCDD-13C	26:52	(M)4.99e7	(M)5.63e7	8.49e6	9.60e6	----	----	0.89	
2,3,7,8-TCDD-37Cl4	26:54	8.70e6		1.48e6		----	----		
2,3,7,8-TCDD	26:54	4.04e6	5.13e6	6.89e5	9.06e5	----	----	0.79	

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:06	7.14e7	4.50e7	2.08e7	1.33e7	----	----	1.59	
2,3,4,7,8-PeCDF-13C	32:03	6.82e7	4.40e7	2.14e7	1.34e7	----	----	1.55	
1,2,3,7,8-PeCDF	31:06	2.78e7	1.89e7	8.47e6	5.57e6	----	----	1.47	
2,3,4,7,8-PeCDF	32:04	(M)3.06e7	2.03e7	1.02e7	6.49e6	----	----	1.51	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:19	4.95e7	3.18e7	1.57e7	9.77e6	----	----	1.56	
1,2,3,7,8-PeCDD	32:20	1.22e7	1.95e7	3.97e6	6.43e6	----	----	0.63	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:35	2.92e7	5.55e7	1.14e7	2.14e7	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	34:41	3.13e7	5.99e7	1.13e7	2.11e7	----	----	0.52	
2,3,4,6,7,8-HxCDF-13C	35:08	3.00e7	5.51e7	1.16e7	2.13e7	----	----	0.54	
1,2,3,7,8,9-HxCDF-13C	35:50	2.38e7	4.33e7	7.56e6	1.44e7	----	----	0.55	
1,2,3,4,7,8-HxCDF	34:35	2.33e7	1.86e7	8.90e6	7.25e6	----	----	1.25	
1,2,3,6,7,8-HxCDF	34:42	2.50e7	1.99e7	8.74e6	6.95e6	----	----	1.26	
2,3,4,6,7,8-HxCDF	35:09	2.41e7	(M)1.91e7	9.23e6	7.34e6	----	----	1.26	
1,2,3,7,8,9-HxCDF	35:51	1.78e7	1.46e7	5.86e6	4.74e6	----	----	1.23	

REPORT OF LABORATORY ANALYSIS

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Client ID	DLCSLT	Injected By	JRH
Lab ID	LCS-104422	Instrument ID	10MSHR15 (L)
Filename	L230305B_01	GC Column ID	US1824614H
Analyzed	03/05/2023 22:26	ICAL ID	L230302

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:15	3.39e7	2.61e7	1.40e7	1.10e7	----	----	1.30	
1,2,3,6,7,8-HxCDD-13C	35:19	4.25e7	3.31e7	1.57e7	1.23e7	----	----	1.29	
1,2,3,7,8,9-HxCDD-13C	35:32	3.87e7	3.01e7	1.32e7	1.06e7	----	----	1.28	
1,2,3,4,7,8-HxCDD	35:15	1.53e7	1.21e7	6.36e6	5.02e6	----	----	1.27	
1,2,3,6,7,8-HxCDD	35:20	1.80e7	1.40e7	6.40e6	5.10e6	----	----	1.29	
1,2,3,7,8,9-HxCDD	35:33	1.69e7	1.26e7	5.67e6	4.44e6	----	----	1.34	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:04	1.95e7	4.11e7	6.61e6	1.38e7	----	----	0.47	
1,2,3,4,7,8,9-HpCDF-13C	38:29	(M)1.49e7	3.23e7	4.52e6	9.79e6	----	----	0.46	
1,2,3,4,6,7,8-HpCDF	37:04	1.76e7	1.74e7	5.72e6	5.75e6	----	----	1.01	
1,2,3,4,7,8,9-HpCDF	38:30	1.37e7	1.31e7	4.26e6	4.08e6	----	----	1.04	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	37:59	2.29e7	2.22e7	7.30e6	6.98e6	----	----	1.03	
1,2,3,4,6,7,8-HpCDD	38:00	(M)1.04e7	9.70e6	3.32e6	3.10e6	----	----	1.07	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:06	1.68e7	1.94e7	4.48e6	4.98e6	----	----	0.87	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:52	3.12e7	3.80e7	7.90e6	9.47e6	----	----	0.82	
OCDD	40:53	1.44e7	1.57e7	3.56e6	4.02e6	----	----	0.91	

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name State of Indiana
 Client ID WS-1-MS
 Lab ID 10644640001-MS
 Filename L230305B_02
 Analyzed 03/05/2023 23:11

Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

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Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:44	5.55e7	6.96e7	7.21e6	9.29e6	----	----	0.80	
2,3,7,8-TCDF	25:48	1.09e7	1.37e7	1.44e6	1.81e6	----	----	0.80	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	26:04	4.39e7	4.93e7	6.11e6	6.71e6	----	----	0.89	
2,3,7,8-TCDD-13C	27:01	4.41e7	4.98e7	7.00e6	7.92e6	----	----	0.89	
2,3,7,8-TCDD-37Cl4	27:04	7.42e6		1.18e6		----	----		
2,3,7,8-TCDD	27:03	4.00e6	5.02e6	6.74e5	8.92e5	----	----	0.80	

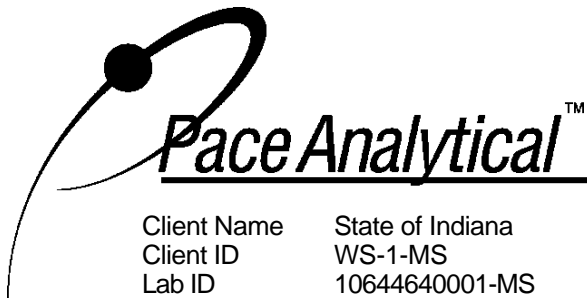
Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:10	5.41e7	3.40e7	1.71e7	1.10e7	----	----	1.59	
2,3,4,7,8-PeCDF-13C	32:06	5.34e7	3.29e7	1.70e7	1.05e7	----	----	1.62	
1,2,3,7,8-PeCDF	31:11 (M)	3.46e7	2.27e7	1.12e7	7.46e6	----	----	1.52	
2,3,4,7,8-PeCDF	32:07	4.13e7	(M)2.68e7	1.25e7	8.14e6	----	----	1.54	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:23	3.66e7	2.31e7	1.11e7	6.94e6	----	----	1.59	
1,2,3,7,8-PeCDD	32:23 (M)	1.07e7	(M)1.77e7	3.41e6	5.33e6	----	----	0.60	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:38	1.94e7	3.69e7	7.51e6	1.43e7	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	34:44	2.10e7	4.01e7	6.59e6	1.26e7	----	----	0.52	
2,3,4,6,7,8-HxCDF-13C	35:11	1.73e7	3.34e7	6.43e6	1.19e7	----	----	0.52	
1,2,3,7,8,9-HxCDF-13C	35:54	1.43e7	2.79e7	4.92e6	9.02e6	----	----	0.51	
1,2,3,4,7,8-HxCDF	34:39	3.09e7	2.43e7	1.16e7	9.09e6	----	----	1.27	P
1,2,3,6,7,8-HxCDF	34:45	3.08e7	2.41e7	9.93e6	7.89e6	----	----	1.28	
2,3,4,6,7,8-HxCDF	35:12	2.39e7	(M)1.89e7	8.60e6	6.80e6	----	----	1.27	
1,2,3,7,8,9-HxCDF	35:54	1.45e7	1.13e7	4.79e6	3.76e6	----	----	1.29	

REPORT OF LABORATORY ANALYSIS

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Client Name State of Indiana
 Client ID WS-1-MS
 Lab ID 10644640001-MS
 Filename L230305B_02
 Analyzed 03/05/2023 23:11

Injected By JRH
 Instrument ID 10MSHR15 (L)
 GC Column ID US1824614H
 ICAL ID L230302

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:18	2.13e7	1.67e7	8.44e6	6.55e6	----	----	1.28	
1,2,3,6,7,8-HxCDD-13C	35:23	2.57e7	2.07e7	8.71e6	7.06e6	----	----	1.24	
1,2,3,7,8,9-HxCDD-13C	35:36	2.70e7	2.17e7	9.27e6	7.30e6	----	----	1.24	
1,2,3,4,7,8-HxCDD	35:18	1.10e7	8.85e6	4.51e6	3.46e6	----	----	1.24	
1,2,3,6,7,8-HxCDD	35:23	1.58e7	1.26e7	5.31e6	4.37e6	----	----	1.25	
1,2,3,7,8,9-HxCDD	35:36	1.34e7	1.10e7	4.45e6	3.52e6	----	----	1.23	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:06	9.36e6	1.99e7	3.19e6	6.68e6	----	----	0.47	
1,2,3,4,7,8,9-HpCDF-13C	38:32	6.82e6	1.46e7	1.98e6	4.17e6	----	----	0.47	
1,2,3,4,6,7,8-HpCDF	37:07	3.43e7	3.27e7	1.07e7	1.01e7	----	----	1.05	
1,2,3,4,7,8,9-HpCDF	38:33	9.04e6	8.94e6	2.69e6	2.53e6	----	----	1.01	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:02	1.14e7	(M)1.06e7	3.54e6	3.29e6	----	----	1.08	
1,2,3,4,6,7,8-HpCDD	38:03	1.76e7	(M)1.68e7	5.42e6	5.24e6	----	----	1.05	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:08	1.50e7	1.69e7	3.79e6	4.15e6	----	----	0.89	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:54	1.10e7	1.36e7	2.69e6	3.40e6	----	----	0.81	
OCDD	40:55	2.99e7	3.34e7	7.53e6	8.47e6	----	----	0.90	

REPORT OF LABORATORY ANALYSIS

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PCDD/PCDF Detected Peak List

Prepared By _____ Date _____
 Reviewed By _____ Date _____

Client Name	State of Indiana	Injected By	JRH
Client ID	WS-1-MSD	Instrument ID	10MSHR15 (L)
Lab ID	10644640001-MSD	GC Column ID	US1824614H
Filename	L230305B_03	ICAL ID	L230302
Analyzed	03/05/2023 23:55		

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Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	25:45	6.39e7	8.07e7	8.46e6	1.06e7	----	----	0.79	
2,3,7,8-TCDF	25:47	1.19e7	1.54e7	1.57e6	2.02e6	----	----	0.77	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	26:04	5.27e7	5.95e7	7.09e6	7.92e6	----	----	0.89	
2,3,7,8-TCDD-13C	27:01	4.99e7	5.70e7	8.00e6	9.06e6	----	----	0.88	
2,3,7,8-TCDD-37Cl4	27:03	8.83e6		1.38e6		----	----		
2,3,7,8-TCDD	27:03 (M)	4.60e6	6.06e6	7.12e5	9.14e5	----	----	0.76	

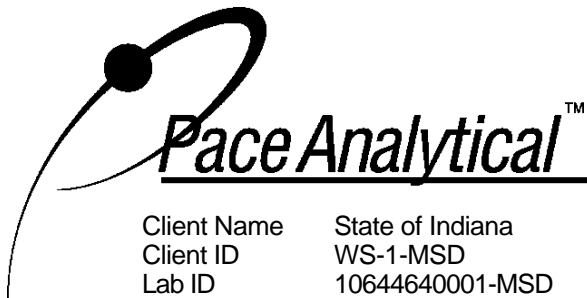
Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:10	6.04e7	3.81e7	1.79e7	1.16e7	----	----	1.59	
2,3,4,7,8-PeCDF-13C	32:06	5.63e7	3.55e7	1.79e7	1.14e7	----	----	1.58	
1,2,3,7,8-PeCDF	31:11	3.72e7	2.44e7	1.13e7	7.49e6	----	----	1.53	
2,3,4,7,8-PeCDF	32:07	4.16e7	2.73e7	1.23e7	8.15e6	----	----	1.52	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:23	3.93e7	2.43e7	1.21e7	7.49e6	----	----	1.61	
1,2,3,7,8-PeCDD	32:23 (M)	1.13e7	(M)1.82e7	3.67e6	5.84e6	----	----	0.62	

Hexa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDF-13C	34:38	1.87e7	3.56e7	7.15e6	1.34e7	----	----	0.52	
1,2,3,6,7,8-HxCDF-13C	34:44	2.00e7	3.83e7	6.87e6	1.31e7	----	----	0.52	
2,3,4,6,7,8-HxCDF-13C	35:10	1.68e7	3.19e7	6.24e6	1.20e7	----	----	0.53	
1,2,3,7,8,9-HxCDF-13C	35:53	1.27e7	2.52e7	4.40e6	8.42e6	----	----	0.50	
1,2,3,4,7,8-HxCDF	34:39	2.79e7	2.27e7	1.03e7	8.26e6	----	----	1.23	P
1,2,3,6,7,8-HxCDF	34:44	2.66e7	2.12e7	9.14e6	7.46e6	----	----	1.25	
2,3,4,6,7,8-HxCDF	35:11	2.06e7	1.69e7	7.47e6	6.07e6	----	----	1.22	
1,2,3,7,8,9-HxCDF	35:54	1.26e7	1.00e7	4.01e6	3.37e6	----	----	1.26	

REPORT OF LABORATORY ANALYSIS

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Client Name	State of Indiana	Injected By	JRH
Client ID	WS-1-MSD	Instrument ID	10MSHR15 (L)
Lab ID	10644640001-MSD	GC Column ID	US1824614H
Filename	L230305B_03	ICAL ID	L230302
Analyzed	03/05/2023 23:55		

Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	35:18	2.08e7	1.52e7	7.84e6	5.94e6	----	----	1.37	
1,2,3,6,7,8-HxCDD-13C	35:22	2.45e7	1.97e7	8.66e6	6.96e6	----	----	1.24	
1,2,3,7,8,9-HxCDD-13C	35:36	2.74e7	2.10e7	8.87e6	6.77e6	----	----	1.30	
1,2,3,4,7,8-HxCDD	35:18	1.01e7	8.08e6	4.08e6	3.20e6	----	----	1.25	
1,2,3,6,7,8-HxCDD	35:23	1.36e7	1.11e7	5.10e6	4.18e6	----	----	1.23	
1,2,3,7,8,9-HxCDD	35:36	1.17e7	9.28e6	3.87e6	3.08e6	----	----	1.26	

Hepta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDF-13C	37:06	7.91e6	1.67e7	2.56e6	5.47e6	----	----	0.47	
1,2,3,4,7,8,9-HpCDF-13C	38:32	5.08e6	1.12e7	1.49e6	3.18e6	----	----	0.45	
1,2,3,4,6,7,8-HpCDF	37:06	2.41e7	2.36e7	8.10e6	7.90e6	----	----	1.02	
1,2,3,4,7,8,9-HpCDF	38:32	6.54e6	6.56e6	1.90e6	1.88e6	----	----	1.00	

Hepta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,6,7,8-HpCDD-13C	38:02	8.98e6	8.11e6	2.81e6	2.55e6	----	----	1.11	
1,2,3,4,6,7,8-HpCDD	38:03	1.12e7	1.07e7	3.38e6	3.19e6	----	----	1.05	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	41:08	9.60e6	1.07e7	2.40e6	2.71e6	----	----	0.90	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	40:54	7.58e6	9.40e6	1.99e6	2.39e6	----	----	0.81	
OCDD	40:55	(M)1.75e7	(M)1.94e7	4.56e6	4.96e6	----	----	0.90	

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