

**Report Prepared for:**

Eric Grosjean  
Atmospheric Analysis & Consulting  
1534 Eastman Ave  
Ventura CA 93003

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

**Report Information:**

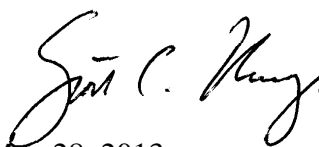
**Pace Project #: 10228183**  
**Sample Receipt Date: 05/09/2013**  
**Client Project #: BRIDGETON**  
**Client Sub PO #: N/A**  
**State Cert #: 01155CA**

**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 Scott Unze, your Pace Project Manager.

**This report has been reviewed by:**



May 28, 2013

Scott Unze, Project Manager  
(612) 607-6383  
(612) 607-6444 (fax)  
scott.unze@pacelabs.com



**Report of Laboratory Analysis**

This report contains results for EPA Method 23 which is not included in Pace Analytical Service's, Inc. NELAC scope of accreditation

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

**Report Prepared Date:**

May 28, 2013



## **DISCUSSION**

This report presents the results from the analyses performed on seven samples submitted by a representative of Atmospheric Analysis & Consulting. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method TO9A. The reporting limits were based on signal-to-noise measurements. Estimated Maximum Possible Concentration (EMPC) values were treated as positives in the toxic equivalence calculations.

The samples were inadvertently extracted without the prior addition of the TO9A labeled internal standards. After extraction, each extract was spiked with twice the standard amount of the TO9A internal standard spiking solution. Also, the laboratory spike sample extracts were spiked with twice the standard amount of the TO9A native congener spiking solution. After concentration, each extract was split into two equal portions and processed for TO9A and TO13A analyses. It should be noted that, since the internal standards were not added prior to extraction, the TO9A results were not corrected for recovery.

The recoveries of the isotopically labeled PCDD/PCDF internal standards in the sample extracts ranged from 54-93%. All of the labeled internal standard recoveries obtained for this project were within the target ranges for the method. Also, since the internal standards were added to the samples prior to the extraction step, the data were automatically corrected for recovery and accurate values were obtained.

The recoveries obtained for the PCDD/PCDF surrogate compounds in the field samples ranged from 17-106%. Except for three low values, which were flagged "R" on the results tables, the surrogate recoveries obtained for this project were within the 50-120% target range specified in the method.

In some cases, interfering substances impacted the determinations of native or labeled PCDD or PCDF congeners; the affected values were flagged "I" where incorrect isotope ratios were obtained. Concentrations below the calibration range were flagged "J" and should be regarded as estimates.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. For ease of comparison, the method blank results (and the field blank results) were normalized to the lowest field sample collection volume. The results show the blank to contain trace levels of selected congeners. These levels were below the calibration range of the method. Sample levels similar to the corresponding blank levels were flagged "B" on the results tables and may be, at least partially, attributed to the background. It should be noted that levels less than ten times the background are not generally considered to be statistically different from the background.

Laboratory quality control PCDD/PCDF spike samples were also prepared with the sample batch using clean PUF cartridges that had been fortified with native standards. The results show that the spiked native compounds were recovered at 86-126% with relative percent differences of 0.0-10.9%. These results indicate high degrees of accuracy and precision for these determinations. Matrix spikes were not prepared with the sample batch.

## **REPORT OF LABORATORY ANALYSIS**

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## Minnesota Laboratory Certifications

<b>Authority</b>	<b>Certificate #</b>	<b>Authority</b>	<b>Certificate #</b>
Alabama	40770	Mississippi	MN00064
Alaska	MN00064	Montana	92
Arizona	AZ0014	Nebraska	
Arkansas	88-0680	Nevada	MN_00064_200
California	01155CA	New Jersey (NE)	MN002
Colorado	MN00064	New Mexico	MN00064
Connecticut	PH-0256	New York (NEL)	11647
EPA Region 5	WD-15J	North Carolina	27700
EPA Region 8	8TMS-Q	North Dakota	R-036
Florida (NELAP)	E87605	Ohio	4150
Georgia (DNR)	959	Oklahoma	D9922
Guam	959	Oregon (ELAP)	MN200001-005
Hawaii	SLD	Oregon (OREL)	MN300001-001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennessee	2818
Iowa	368	Tennessee	02818
Kansas	E-10167	Texas	T104704192-08
Kentucky	90062	Utah (NELAP)	PAM
Louisiana	03086	Virginia	00251
Maine	2007029	Washington	C755
Maryland	322	West Virginia	9952C
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-Q

## REPORT OF LABORATORY ANALYSIS

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## Reporting Flags

- A = Reporting Limit based on signal to noise
- 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
- I = Interference present
- J = Estimated value
- 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
- \* = See Discussion

### REPORT OF LABORATORY ANALYSIS

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

**89-ITE-Factors**

Compound	TEF
2,3,7,8-TCDD	1.000000
1,2,3,7,8-PeCDD	0.500000
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	0.001000
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	0.050000
2,3,4,7,8-PeCDF	0.500000
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	0.001000
Total TCDF	0.000000
Total PeCDF	0.000000
Total HxCDF	0.000000
Total HpCDF	0.000000

**REPORT OF LABORATORY ANALYSIS**

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# **Appendix A**

## Sample Management



## Sample ID Cross Reference

<u>Client Sample ID</u>	<u>Pace Sample ID</u>	<u>Date Received</u>	<u>Sample Type</u>
D-1	10228183001	05/09/2013	PUF
U-2	10228183002	05/09/2013	PUF
BZ-1	10228183003	05/09/2013	PUF
F-2	10228183004	05/09/2013	PUF
F-1	10228183005	05/09/2013	PUF
F-3	10228183006	05/09/2013	PUF
TRIP BLANK	10228183007	05/09/2013	PUF

## REPORT OF LABORATORY ANALYSIS

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38391  
1125

10228183

**CHAIN OF CUSTODY RECORD / ANALYTICAL REQUEST FORM**

Bridgeton Sanitary Landfill Air Quality Assessment

Client Name: SOIL / WATER AIR PROTECTION ENTERPRISE		Telephone No. / Fax No.: (310) 434-0110 / (310) 434-0011		Date: 5/2/13	Page 1 of 1
Project Manager: PAUL ROSENFELD, PH.D.		REQUESTED TESTS / ANALYSES			
Address: 1640 FIFTH STREET, SUITE 204, SANTA MONICA, CA 90401		Reduced Sulfur Compounds - ASTM D6504	Aldehydes - EPA TO-11A	Carboxylic Acids - Tube GC-MS	HCL - NIOSH 7903
Project Name and Location: BRIDGETON SANITARY LANDFILL AIR QUALITY ASSESSMENT		Ammonia - OSHA ID-188	SO2 - OSHA ID-200	HCN - NIOSH 6010	Amines - NIOSH 2010M
Sampled By: ERIC WINEGAR		VOCS - EPA TO-15	Fixed Gases - EPA 3C	PAHs / Dioxins EPA TO-13A / 9A	Mercury - NIOSH 6009
Sampler Signatures: <i>Eric Winegar</i>		Odor Evaluation	Special Instructions / Conditions of Receipt		
LAB ID	SAMPLE ID NUMBER	Type	Date	Time	
	D-1	PUF	5/7/13	8:35	10228183001
	U-2		5/7/13	9:47	002
	BE-1		5/7/13	10:53	003
	F-2		5/8/13	12:12	004
	F-1		5/8/13	14:20	005
	F-3		5/8/13	16:45	006
	F-2-CONDENSATE	LIQUID	5/8/13	12:12	COMBINE WITH 004
	F-1-CONDENSATE		5/8/13	14:20	ATCH SOLENT 005
	F-3-CONDENSATE		5/8/13	16:45	SAMPLE / PUF 006
	TRIP BLANK	PUF	5/8/13	17:00	* NOTE 007

QC Requirements:  
Provide Level IV QC Package for all Analyses.

Relinquished By: <i>Eric Winegar</i>	Date: 5/8/13	Time: 16:55	Received By: <i>Bob Hesse</i>	Date: 5/8/13	Time: 16:55
Relinquished By: <i>Bob Hesse</i>	Date: 5/10/13	Time: 18:30	Received By: <i>Eric Winegar</i>	Date: 5/10/13	Time: 8:25
Relinquished By:	Date:	Time:	Received By:	Date:	Time:


SOIL / WATER / AIR PROTECTION ENTERPRISE \* PLEASE CALL TO CONFIRM OR WITH ANY QUESTIONS



**Sample Condition Upon Receipt**

**Client Name:** SIC/WATER Protection      **Project #:** \_\_\_\_\_

WO# : 10228183



10228183

**Courier:**  Fed Ex     UPS     USPS     Client  
 Commercial     Pace     Other: \_\_\_\_\_

**Tracking Number:** 7997 0752 3573

**Custody Seal on Cooler/Box Present?**  Yes  No      **Seals Intact?**  Yes  No      **Optional:** Proj. Due Date: \_\_\_\_\_ Proj. Name: \_\_\_\_\_

**Packing Material:**  Bubble Wrap     Bubble Bags     None     Other: \_\_\_\_\_      **Temp Blank?**  Yes  No

**Thermom. Used:**  B88A912167504     80512447     72337080      **Type of Ice:**  Wet     Blue     None     Samples on ice, cooling process has begun

**Cooler Temp Read (°C):** 2.2      **Cooler Temp Corrected (°C):** 3.0      **Biological Tissue Frozen?**  Yes  No  
**Temp should be above freezing to 6°C**      **Correction Factor:** 10.0      **Date and Initials of Person Examining Contents:** 28 Jan 13

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

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	11.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>PUFF FW</u>				
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>12)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	Sample #
Exceptions: VOA, Colliform, TOC, Oil and Grease, WI-DRO (water)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		Initial when completed:
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):				

**CLIENT NOTIFICATION/RESOLUTION**      **Field Data Required?**  Yes  No

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

**Project Manager Review:** \_\_\_\_\_ W      **Date:** 05/10/13

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)

# DIOXIN EXTRACTION WORKSHEET

Non Aqueous

Extraction Batch : EB-13425

Pace Analytical Services, Inc.

EB-13425

**Method** 8290 1613B TO9 M23  
**Matrix** PUF XAD Solid Oil  
 Tissue Other \_\_\_\_\_  
**Spiked By** \_\_\_\_\_  
**Spike Witness** \_\_\_\_\_  
**Time of Spiking** \_\_\_\_\_

**Extraction On (Date/Time):**  
5/14/2013 10:30:00 PM  
**Extraction Off (Date/Time):**  
5/15/2013 2:30:00 PM

**Standards:**

Internal Std m23-IS-9066-171  
 Native FS-N-9066-114  
 CI-37 Std M23-ALT-9066-0  
 Recovery Std FS-R-9066-191  
 Tridecane A0300198  
 Mineral Oil  
 Others M23-S-9066-075

	Sample #	Internal Stds	Native Stds	Extracted mL or g	#AcidRinse	Buffer Soln	Glassware Set	Location	Comments
1	BLANK-36495			8.35					
2	LCS-36496			0.50					
3	LCSD-36497			0.50					
4	10228183001			165.50				Rcvng	TO-9/TO-13 split,extract by 5/14!
5	10228183002			157.90				Rcvng	TO-9/TO-13 split,extract by 5/14!
6	10228183003			139.60				Rcvng	TO-9/TO-13 split,extract by 5/14!
7	10228183004			8.65				Rcvng	TO-9/TO-13 split,extract by 5/14!
8	10228183005			8.35				Rcvng	TO-9/TO-13 split,extract by 5/14!
9	10228183006			12.60				Rcvng	TO-9/TO-13 split,extract by 5/14!
10	10228183007			8.35				Rcvng	TO-9/TO-13 split,extract by 5/14!

**Silica:**

Date 5/15/2013  
 Initials KH  
 Hexane Lot # 130151  
 Dispenser ID  
 Neutral Batch # 237  
 Basic Batch # 319  
 Acid Batch # 480

**Alumina:**

Date 5/16/2013  
 Initials ME  
 Hexane Lot # 130152  
 Dispenser ID  
 60% Batch # 1523  
 Dispenser ID  
 Alumina Lot

**Carbon:**

Date 5/16/2013  
 Initials ME  
 Toluene Lot # 121542  
 Dispenser ID  
 75% Batch # 305  
 Dispenser ID  
 50% Batch # 425  
 Dispenser ID  
 Hexane Lot # 130152  
 Dispenser ID

**Extract Solvents:**

Toluene Lot #  
 Hexane Lot #  
 MeCl Lot #

**Acid Base:**

H2SO4 Lot #  
 Buffer Soln #

QC Matrix Lot/Batch# \_\_\_\_\_

Extracts Relinquished By: \_\_\_\_\_

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

Date: \_\_\_\_\_

# METHOD 23 EXTRACTION WORKSHEET

EB-13425

Extraction Batch : EB-13425

## Extraction Notes

split samples were extracted in the Organic Prep Lab on 05/14/13

TO9 spikes were added after extraction, prior to concentration and cleanup.

AEJ 05/15/13

Per KH, the TO9 internal and native standard spiking solutions were added (at twice the standard amounts) prior to splitting the extracts. SWH  
05/17/2013

BLANK-36495 - M23 surrogate added before split KH 5/15/13

LCS-36496 - M23 surrogate added before split KH 5/15/13

LCSD-36497 - M23 surrogate added before split KH 5/15/13

10228183001 - M23 surrogate added prior to sampling KH 5/15/13

10228183002 - M23 surrogate added prior to sampling KH 5/15/13

10228183003 - M23 surrogate added prior to sampling KH 5/15/13

10228183004 - M23 surrogate added prior to sampling KH 5/15/13

10228183005 - M23 surrogate added prior to sampling KH 5/15/13

10228183006 - M23 surrogate added prior to sampling KH 5/15/13

10228183007 - M23 surrogate added prior to sampling KH 5/15/13

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



## 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 4.0 SCN480 SCN533

10MSH/05 4/8/13

Sample List: C:\MassLynx\Default.pro\Sampledb\F130408A.SPL  
Last Modified: Monday, April 08, 2013 2:32:34 PM Central Daylight Time  
Printed: Monday, April 08, 2013 2:33:00 PM Central Daylight Time

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File Name	File Text	Method	MS File	Inlet File	Vial	Inject
1	F130408A_01 ✓ CAL CS3/CPM-7604-254 - SMT Ca	8290/1613B	dioxfur	dioxfur	1	1.000000
2	F130408A_02 ✓ CAL CS3/CPM-7604-254 - SMT FE 2"	8290/1613B	dioxfur	dioxfur	1	1.000000
3	F130408A_03 ✓ CAL CS3-7604-246 - SMT	23	dioxfur	dioxfur	4	1.000000
4	F130408A_04 ✓ CAL CS2-7604-219 - SMT	23	dioxfur	dioxfur	5	1.000000
5	F130408A_05 ✓ CAL CS1-7604-218 - SMT	23	dioxfur	dioxfur	6	1.000000
6	F130408A_06 ✓ CAL CS5-7604-222 - SMT	23	dioxfur	dioxfur	7	1.000000
7	F130408A_07 ✓ CAL CS4-7604-221 - SMT	23	dioxfur	dioxfur	8	1.000000
8	F130408A_08 ✓ BLANK NONANE - SMT	HOUSE	dioxfur	dioxfur	3	1.000000
9	F130408A_09 ✓ CAL STD-33643 - SMT 2ND	23	dioxfur	dioxfur	9	1.000000
10	F130408A_10 ✓ LCS LCS-36058 - SMT	1613B	dioxfur	dioxfur	10	1.000000
11	F130408A_11 ✓ LCS LCSD-36059 - SMT	1613B	dioxfur	dioxfur	11	1.000000
12	F130408A_12 ✓ BLANK BLANK-8151-142-10X - SMT	HOUSE	dioxfur	dioxfur	3	1.000000
13	F130408A_13 ✓ BLANK BLANK-36057 - SMT	1613B	dioxfur	dioxfur	12	1.000000
14	F130408A_14 ✓ SAMP 10224336001 - SMT	1613B	dioxfur	dioxfur	13	1.000000
15	F130408A_15 ✓ SAMP 10224517001 - SMT	1613B	dioxfur	dioxfur	14	1.000000
16	F130408A_16 ✓ BLANK BLANK-36046 - SMT	HOUSE	dioxfur	dioxfur	15	1.000000
17	F130408A_17 ✓ BLANK BLANK-36047 - SMT	HOUSE	dioxfur	dioxfur	16	1.000000

Sample List Report

MassLynx 4.0 SCN480 SCN533

10MSHROS

5/16/13

Sample List: C:\MassLynx\Default.pro\Sampledb\F130516A.SPL  
Last Modified: Thursday, May 16, 2013 4:43:18 PM Central Daylight Time  
Printed: Thursday, May 16, 2013 4:44:12 PM Central Daylight Time

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Page Position (1, 1)

File Name	File Text	Method	MS File	Inlet File	Vial	Inject
1	F130516A_01 BLANK NONANE - BAL	HOUSE	dioxfur	dioxfur	2	1.000000
2	F130516A_02 BLANK BLANK-8515-142-10X - BAL	HOUSE	dioxfur	dioxfur	3	1.000000
3	F130516A_03 SAMP 10227993001 - BAL	1613B	dioxfur	dioxfur	16	1.000000
4	F130516A_04 SAMP 10227374001 - BAL	8290	dioxfur	dioxfur	17	1.000000
5	F130516A_05 SAMP 10227933001 - BAL	1613B	dioxfur	dioxfur	18	1.000000
6	F130516A_06 SAMP 10227669001 - BAL	1613B-TDF	dioxfur	dioxfur	19	1.000000
7	F130516A_07 SAMP 10227726001 - SMT	1613B-TD	dioxfur	dioxfur	20	1.000000
8	F130516A_08 SAMP 4077355001 - SMT	1613B-TD/F	dioxfur	dioxfur	21	1.000000
9	F130516A_09 BLANK BLANK-36452 - SMT	8290/1613B	dioxfur	dioxfur	22	1.000000
10	F130516A_10 SAMP 10226712007 - SMT	1613B	dioxfur	dioxfur	23	1.000000
11	F130516A_11 SAMP 10226712008 - SMT syringe plug	1613B	dioxfur	dioxfur	24	1.000000
12	F130516A_12 SAMP 10228065001 - SMT dec syringe plug	8290	dioxfur	dioxfur	25	1.000000
13	F130516A_13 SAMP 10226712008 - SMT new syringe	1613B	dioxfur	dioxfur	26	1.000000
14	F130516A_14 LCS LCS-36453 - SMT	8290/1613B	dioxfur	dioxfur	27	1.000000
15	F130516A_15 CAL CS3/CPM-7604-264 - SMT	8290/1613B	dioxfur	dioxfur	1	1.000000

①  
pass  
all

① Still no peaks. Try SX BAL 5/16/13

Sum 5/17/13

Sample List Report

MassLynx 4.0 SCN480 SCN533

10MS14205

5/16/13

Sample List: C:\MassLynx\Default.pro\Sampledb\F130516B.SPL  
Last Modified: Thursday, May 16, 2013 8:21:20 PM Central Daylight Time  
Printed: Thursday, May 16, 2013 8:52:30 PM Central Daylight Time

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Page Position (1, 1)

File Name	File Text	Method	MS File	Inlet File	Vial	Inject
1	F130516B_01 ✓ CAL CS3-7604-246 - BAL	23	dioxfur	dioxfur	4	1.000000
2	F130516B_02 ✓ BLANK BLANK-8515-142-10X - BAL	HOUSE	dioxfur	dioxfur	3	1.000000
3	F130516B_03 ✓ BLANK BLANK-36495 - BAL	23	dioxfur	dioxfur	5	1.000000
4	F130516B_04 ✓ SAMP 10228183001 - BAL AAC	23	dioxfur	dioxfur	6	1.000000
5	F130516B_05 ✓ SAMP 10228183002 - BAL AAC	23	dioxfur	dioxfur	7	1.000000
6	F130516B_06 ✓ SAMP 10228183003 - BAL AAC	23	dioxfur	dioxfur	8	1.000000
7	F130516B_07 ✓ SAMP 10228183004 - BAL AAC	23	dioxfur	dioxfur	9	1.000000
8	F130516B_08 ✓ SAMP 10228183005 - BAL AAC	23	dioxfur	dioxfur	10	1.000000
9	F130516B_09 ✓ SAMP 10228183006 - BAL AAC	23	dioxfur	dioxfur	11	1.000000
10	F130516B_10 ✓ SAMP 10228183007 - BAL AAC	23	dioxfur	dioxfur	12	1.000000
11	F130516B_11 ✓ SAMP 10227755001 - SMT [REDACTED]	1613B-TD	dioxfur	dioxfur	28	1.000000
12	F130516B_12 ✓ SAMP 10226712008 - SMT [REDACTED] 5X	1613B	dioxfur	dioxfur	26	1.000000
13	F130516B_13 ✓ SAMP 10228065001 - SMT [REDACTED] dec	8290	dioxfur	dioxfur	25	1.000000
14	F130516B_14 ✓ LCS LCS-36496 - BAL	23	dioxfur	dioxfur	13	1.000000
15	F130516B_15 ✓ LCS LCSD-36497 - BAL	23	dioxfur	dioxfur	14	1.000000
16	F130516B_16 ✓ CAL CS3/CPM-7604-264 - SMT	8290/1613B	dioxfur	dioxfur	1	1.000000

*pass will*



## Steve Hannan - PUF extractions

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**From:** Chuck Sueper  
**To:** Unze, Scott  
**Date:** 5/15/2013 3:14 PM  
**Subject:** PUF extractions  
**CC:** Hannan, Steve; Hoelscher, Kenneth; Jacobson, Amy

---

This e-mail is provided as a summary of the issues that have arisen for project 10228183.

The extraction for these samples was intended to take place in the specialty preparation laboratory. It was noticed by the organic preparatory staff that the sample needed to be extracted in order to meet the hold time for the methods being tested. Therefore, the samples were set up in the organic preparation lab on May 14, 2013, and only included the spiking required for TO-13.

The sample extracts are currently being split and the fraction designated for TO-9 determination will be spiked with the PCDD/PCDF standards post extraction. Since this approach does not correct for potential losses during the extraction process, the client should be contacted to verify whether or not they wish for us to proceed with the determinations. It should be noted that some indication of extraction efficiency can be derived from the TO-13 results, but that built in corrections derived from isotope dilution methodology will only correct for losses that occur during sample enrichment and do not indicate the efficiency of the extraction process.

However, on the positive side, the PUFs were spiked with pre-sampling PCDD/PCDF surrogates prior to sample collection. These surrogate recoveries will now provide an indication of the combined losses of sample collection and extraction. If they are well recovered, this, combined with acceptable laboratory QC results, would provide an expectation of overall accurate sample results. Reductions in surrogate recovery would indicate a likely low bias in the sample results.

Chuck

10228183

Date	Location	Sample ID	Lab ID	Inst ID	Start Time	Start Meter
5/7/2013	Warehouse	D1	5 of 8	201762	5/7/2013 8:35	8809.45
5/7/2013	Upwind	U2	4 of 8	201761	5/7/2013 9:47	5979.60
5/7/2013	Amphitheater	BZ1	2 of 8	201760	5/7/2013 10:53	850.51
5/8/2013	FML-F2	F2		201762	5/8/2013 10:10	8833.45
5/8/2013	FML-F1	F1		201760	5/8/2013 12:25	674.77
5/8/2013	FML-F3	F3		201762	5/8/2013 14:45	8835.66

Start Flow (in)	Start Flow (lpm)	Check Time	Check Meter	Check Flow	Check Time
50	233.5	5/7/2013 11:30		50	
47	217.8	5/7/2013 12:20		49	5/7/2013 13:12
50	192.0	5/7/2013 11:34		50	
20	141	5/8/2013 11:00		20	
34	152				
40	211				

Check Meter	Check Flow	End Time	End Meter	End Flow (in)	End Flow (lpm)
		5/8/2013 8:00	8832.88	52	237.4
5982.42	50	5/8/2013 9:47	6003.41	50	224.3
		5/8/2013 11:07	874.71	50	192.0
		5/8/2013 12:12	8853.43	20	141
		5/8/2013 14:20	676.66	30	138
		5/8/2013 16:45	8837.78	39	209

Elapsed Time (hr)	Elapsed Time (min)	Elapsed Meter	Min-meter	Avg Flow (lpm)
23.42	1405.0	23.43	1405.8	235
24.00	1404.0	23.81	1428.6	221
24.23	1454.0	24.20	1452.0	192
2.03	122.0	19.98	1198.8	141
1.92	115.0	1.89	113.4	145
2.00	120.0	2.12	127.2	210

Field ID	Total Volume (m3)	Vol (check)	Notes
D1	331.0	333.6	
U2	315.8	314.9	36 min lost from power outage
BZ1	279.2	279.2	
F2	17.3	17.3	~5 mL of condensate
F1	16.7	15.9	~150 mL condensate
F3	25.2	25.0	~150 mL condensate

## **Appendix B**

### Sample Analysis Summary

**Method TO9 Sample Analysis Results**

Client - Atmospheric Analysis & Consulting

Client's Sample ID	D-1		
Lab Sample ID	10228183001		
Filename	F130516B_04	Matrix	PUF
Injected By	BAL	Dilution	NA
Amount Extracted	166 m3	Collected	05/07/2013 08:35
ICAL ID	F130408	Received	05/09/2013 08:25
CCal Filename(s)	F130516B_01	Extracted	05/14/2013 22:30
Method Blank ID	BLANK-36495	Analyzed	05/16/2013 21:47

Native Isomers	Conc pg/m3	EMPC pg/m3	LRL pg/m3		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.0120	----	0.0056	J	2,3,7,8-TCDF-13C	2.00	78
Total TCDF	0.1600	----	0.0056		2,3,7,8-TCDD-13C	2.00	85
					1,2,3,7,8-PeCDF-13C	2.00	85
2,3,7,8-TCDD	ND	----	0.0084		1,2,3,7,8-PeCDD-13C	2.00	92
Total TCDD	0.0280	----	0.0084	J	1,2,3,6,7,8-HxCDF-13C	2.00	86
					1,2,3,6,7,8-HxCDD-13C	2.00	81
1,2,3,7,8-PeCDF	0.0120	----	0.0041	J	1,2,3,4,6,7,8-HpCDF-13C	2.00	84
2,3,4,7,8-PeCDF	0.0120	----	0.0036	BJ	1,2,3,4,6,7,8-HpCDD-13C	2.00	92
Total PeCDF	0.2300	----	0.0039	BJ	OCDD-13C	4.00	62
1,2,3,7,8-PeCDD	0.0065	----	0.0050	J	Recovery		
Total PeCDD	0.0350	----	0.0050	J	Standards		
					1,2,3,4-TCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDF	0.0150	----	0.0040	BJ	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,6,7,8-HxCDF	0.0130	----	0.0048	BJ			
2,3,4,6,7,8-HxCDF	0.0110	----	0.0053	BJ	Surrogates		
1,2,3,7,8,9-HxCDF	0.0072	----	0.0049	J	2,3,7,8-TCDD-37Cl4	1.00	99
Total HxCDF	0.1400	----	0.0047	BJ	2,3,4,7,8-PeCDF-13C	1.00	94
					1,2,3,4,7,8-HxCDF-13C	1.00	77
1,2,3,4,7,8-HxCDD	ND	----	0.0072		1,2,3,4,7,8-HxCDD-13C	1.00	92
1,2,3,6,7,8-HxCDD	0.0100	----	0.0059	BJ	1,2,3,4,7,8,9-HpCDF-13C	1.00	57
1,2,3,7,8,9-HxCDD	0.0110	----	0.0058	J			
Total HxCDD	0.0210	----	0.0063	BJ			
1,2,3,4,6,7,8-HpCDF	0.0310	----	0.0050	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.0066		Equivalence: 0.019 pg/m3		
Total HpCDF	0.0420	----	0.0058	J	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	0.0460	----	0.0063	J			
Total HpCDD	0.1000	----	0.0063	BJ			
OCDF	0.0290	----	0.0130	BJ			
OCDD	0.2600	----	0.0320	BJ			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
LRL = Lower Reporting Limit  
J = Estimated value  
B = Less than 10 times higher than method blank level  
R = Recovery outside of target range  
Nn = Value obtained from additional analysis  
A = Detection Limit based on signal to noise

I = Interference  
P = PCDE Interference  
S = Saturated signal  
ND = Not Detected  
NA = Not Applicable  
NC = Not Calculated

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**Method TO9 Sample Analysis Results**

Client - Atmospheric Analysis & Consulting

Client's Sample ID	U-2		
Lab Sample ID	10228183002		
Filename	F130516B_05	Matrix	PUF
Injected By	BAL	Dilution	NA
Amount Extracted	158 m3	Collected	05/07/2013 09:47
ICAL ID	F130408	Received	05/09/2013 08:25
CCal Filename(s)	F130516B_01	Extracted	05/14/2013 22:30
Method Blank ID	BLANK-36495	Analyzed	05/16/2013 22:34

Native Isomers	Conc pg/m3	EMPC pg/m3	LRL pg/m3		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.0110		2,3,7,8-TCDF-13C	2.00	80
Total TCDF	0.014	----	0.0110	J	2,3,7,8-TCDD-13C	2.00	88
					1,2,3,7,8-PeCDF-13C	2.00	88
2,3,7,8-TCDD	ND	----	0.0160		1,2,3,7,8-PeCDD-13C	2.00	92
Total TCDD	ND	----	0.0160		1,2,3,6,7,8-HxCDF-13C	2.00	84
					1,2,3,6,7,8-HxCDD-13C	2.00	81
1,2,3,7,8-PeCDF	ND	----	0.0081		1,2,3,4,6,7,8-HpCDF-13C	2.00	82
2,3,4,7,8-PeCDF	ND	----	0.0082		1,2,3,4,6,7,8-HpCDD-13C	2.00	87
Total PeCDF	0.044	----	0.0082	BJ	OCDD-13C	4.00	57
1,2,3,7,8-PeCDD	ND	----	0.0130		Recovery Standards		
Total PeCDD	ND	----	0.0130		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-HxCDF	ND	----	0.0088		Surrogates		
1,2,3,6,7,8-HxCDF	ND	----	0.0085		2,3,7,8-TCDD-37Cl4	1.00	95
2,3,4,6,7,8-HxCDF	ND	----	0.0100		2,3,4,7,8-PeCDF-13C	1.00	89
1,2,3,7,8,9-HxCDF	ND	----	0.0097		1,2,3,4,7,8-HxCDF-13C	1.00	78
Total HxCDF	0.031	----	0.0093	BJ	1,2,3,4,7,8,9-HpCDF-13C	1.00	92
1,2,3,4,7,8-HxCDD	ND	----	0.0110				54
1,2,3,6,7,8-HxCDD	ND	----	0.0110				
1,2,3,7,8,9-HxCDD	ND	----	0.0094				
Total HxCDD	ND	----	0.0110				
1,2,3,4,6,7,8-HpCDF	0.017	----	0.0095	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.0120		Equivalence: 0.00076 pg/m3		
Total HpCDF	0.017	----	0.0110	J	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	----	0.036	0.0140	I			
Total HpCDD	0.038	----	0.0140	BJ			
OCDF	ND	----	0.0240				
OCDD	0.230	----	0.0470	BJ			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
 EMPC = Estimated Maximum Possible Concentration  
 LRL = Lower Reporting Limit  
 J = Estimated value  
 B = Less than 10 times higher than method blank level  
 R = Recovery outside of target range  
 Nn = Value obtained from additional analysis  
 A = Detection Limit based on signal to noise

I = Interference  
 P = PCDE Interference  
 S = Saturated signal  
 ND = Not Detected  
 NA = Not Applicable  
 NC = Not Calculated

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## Method TO9 Sample Analysis Results

Client - Atmospheric Analysis & Consulting

Client's Sample ID	BZ-1		
Lab Sample ID	10228183003		
Filename	F130516B_06	Matrix	PUF
Injected By	BAL	Dilution	NA
Amount Extracted	140 m3	Collected	05/07/2013 10:53
ICAL ID	F130408	Received	05/09/2013 08:25
CCal Filename(s)	F130516B_01	Extracted	05/14/2013 22:30
Method Blank ID	BLANK-36495	Analyzed	05/16/2013 23:22

Native Isomers	Conc pg/m3	EMPC pg/m3	LRL pg/m3		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.0077		2,3,7,8-TCDF-13C	2.00	72
Total TCDF	0.0940	----	0.0077		2,3,7,8-TCDD-13C	2.00	79
					1,2,3,7,8-PeCDF-13C	2.00	83
2,3,7,8-TCDD	ND	----	0.0110		1,2,3,7,8-PeCDD-13C	2.00	87
Total TCDD	ND	----	0.0110		1,2,3,6,7,8-HxCDF-13C	2.00	87
					1,2,3,6,7,8-HxCDD-13C	2.00	77
1,2,3,7,8-PeCDF	0.0068	----	0.0058	J	1,2,3,4,6,7,8-HpCDF-13C	2.00	80
2,3,4,7,8-PeCDF	ND	----	0.0060		1,2,3,4,6,7,8-HpCDD-13C	2.00	82
Total PeCDF	0.1200	----	0.0059	BJ	OCDD-13C	4.00	57
1,2,3,7,8-PeCDD	ND	----	0.0100		Recovery		
Total PeCDD	0.0190	----	0.0100	J	Standards		
					1,2,3,4-TCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDF	ND	----	0.0076		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,6,7,8-HxCDF	0.0080	----	0.0066	BJ			
2,3,4,6,7,8-HxCDF	ND	----	0.0074		Surrogates		
1,2,3,7,8,9-HxCDF	ND	----	0.0072		2,3,7,8-TCDD-37Cl4	1.00	102
Total HxCDF	0.0760	----	0.0072	BJ	2,3,4,7,8-PeCDF-13C	1.00	90
					1,2,3,4,7,8-HxCDF-13C	1.00	80
1,2,3,4,7,8-HxCDD	ND	----	0.0094		1,2,3,4,7,8-HxCDD-13C	1.00	106
1,2,3,6,7,8-HxCDD	0.0100	----	0.0091	BJ	1,2,3,4,7,8,9-HpCDF-13C	1.00	49 R
1,2,3,7,8,9-HxCDD	0.0078	----	0.0074	J			
Total HxCDD	0.0870	----	0.0086	BJ			
1,2,3,4,6,7,8-HpCDF	0.0240	----	0.0069	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.0087	----	0.0071	J	Equivalence: 0.0041 pg/m3		
Total HpCDF	0.0460	----	0.0070	J	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	----	0.051	0.0130	I			
Total HpCDD	0.0670	----	0.0130	BJ			
OCDF	ND	----	0.0180				
OCDD	0.3600	----	0.0260	BJ			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
LRL = Lower Reporting Limit  
J = Estimated value  
B = Less than 10 times higher than method blank level  
R = Recovery outside of target range  
Nn = Value obtained from additional analysis  
A = Detection Limit based on signal to noise

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P = PCDE Interference  
S = Saturated signal  
ND = Not Detected  
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NC = Not Calculated

## REPORT OF LABORATORY ANALYSIS

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**Method TO9 Sample Analysis Results**

Client - Atmospheric Analysis & Consulting

Client's Sample ID	F-2		
Lab Sample ID	10228183004		
Filename	F130516B_07	Matrix	PUF
Injected By	BAL	Dilution	NA
Amount Extracted	8.65 m3	Collected	05/08/2013 12:12
ICAL ID	F130408	Received	05/09/2013 08:25
CCal Filename(s)	F130516B_01	Extracted	05/14/2013 22:30
Method Blank ID	BLANK-36495	Analyzed	05/17/2013 00:09

Native Isomers	Conc pg/m3	EMPC pg/m3	LRL pg/m3	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.58	2,3,7,8-TCDF-13C	2.00	78
Total TCDF	ND	----	0.58	2,3,7,8-TCDD-13C	2.00	86
				1,2,3,7,8-PeCDF-13C	2.00	84
2,3,7,8-TCDD	ND	----	0.79	1,2,3,7,8-PeCDD-13C	2.00	93
Total TCDD	ND	----	0.79	1,2,3,6,7,8-HxCDF-13C	2.00	82
				1,2,3,6,7,8-HxCDD-13C	2.00	84
1,2,3,7,8-PeCDF	ND	----	0.50	1,2,3,4,6,7,8-HpCDF-13C	2.00	64
2,3,4,7,8-PeCDF	ND	----	0.49	1,2,3,4,6,7,8-HpCDD-13C	2.00	90
Total PeCDF	ND	----	0.50	OCDD-13C	4.00	57
1,2,3,7,8-PeCDD	ND	----	0.41	Recovery Standards		
Total PeCDD	ND	----	0.41	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-HxCDF	ND	----	0.43	Surrogates		
1,2,3,6,7,8-HxCDF	ND	----	0.33	2,3,7,8-TCDD-37Cl4	1.00	106
2,3,4,6,7,8-HxCDF	ND	----	0.47	2,3,4,7,8-PeCDF-13C	1.00	104
1,2,3,7,8,9-HxCDF	ND	----	0.53	1,2,3,4,7,8-HxCDF-13C	1.00	86
Total HxCDF	ND	----	0.44	1,2,3,4,7,8-HxCDD-13C	1.00	104
1,2,3,4,7,8-HxCDD	ND	----	0.58	1,2,3,4,7,8,9-HpCDF-13C	1.00	17 IR
1,2,3,6,7,8-HxCDD	ND	----	0.51			
1,2,3,7,8,9-HxCDD	ND	----	0.42			
Total HxCDD	ND	----	0.50			
1,2,3,4,6,7,8-HpCDF	ND	----	0.60	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.69	Equivalence: 0.00 pg/m3		
Total HpCDF	ND	----	0.65	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	0.71			
Total HpCDD	ND	----	0.71			
OCDF	ND	----	1.60			
OCDD	ND	----	2.90			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
 EMPC = Estimated Maximum Possible Concentration  
 LRL = Lower Reporting Limit  
 J = Estimated value  
 B = Less than 10 times higher than method blank level  
 R = Recovery outside of target range  
 Nn = Value obtained from additional analysis  
 A = Detection Limit based on signal to noise

I = Interference  
 P = PCDE Interference  
 S = Saturated signal  
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**Method TO9 Sample Analysis Results**

Client - Atmospheric Analysis & Consulting

Client's Sample ID	F-1		
Lab Sample ID	10228183005		
Filename	F130516B_08	Matrix	PUF
Injected By	BAL	Dilution	NA
Amount Extracted	8.35 m3	Collected	05/08/2013 14:20
ICAL ID	F130408	Received	05/09/2013 08:25
CCal Filename(s)	F130516B_01	Extracted	05/14/2013 22:30
Method Blank ID	BLANK-36495	Analyzed	05/17/2013 00:56

Native Isomers	Conc pg/m3	EMPC pg/m3	LRL pg/m3	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.80	2,3,7,8-TCDF-13C	2.00	80
Total TCDF	ND	----	0.80	2,3,7,8-TCDD-13C	2.00	86
				1,2,3,7,8-PeCDF-13C	2.00	85
2,3,7,8-TCDD	ND	----	1.10	1,2,3,7,8-PeCDD-13C	2.00	90
Total TCDD	ND	----	1.10	1,2,3,6,7,8-HxCDF-13C	2.00	92
				1,2,3,6,7,8-HxCDD-13C	2.00	88
1,2,3,7,8-PeCDF	ND	----	0.59	1,2,3,4,6,7,8-HpCDF-13C	2.00	85
2,3,4,7,8-PeCDF	ND	----	0.54	1,2,3,4,6,7,8-HpCDD-13C	2.00	88
Total PeCDF	ND	----	0.56	OCDD-13C	4.00	59
1,2,3,7,8-PeCDD	ND	----	0.65	Recovery Standards		
Total PeCDD	ND	----	0.65	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-HxCDF	ND	----	0.38	Surrogates		
1,2,3,6,7,8-HxCDF	ND	----	0.31	2,3,7,8-TCDD-37Cl4	1.00	102
2,3,4,6,7,8-HxCDF	ND	----	0.39	2,3,4,7,8-PeCDF-13C	1.00	85
1,2,3,7,8,9-HxCDF	ND	----	0.35	1,2,3,4,7,8-HxCDF-13C	1.00	70
Total HxCDF	ND	----	0.36	1,2,3,4,7,8-HxCDD-13C	1.00	96
1,2,3,4,7,8-HxCDD	ND	----	0.64	1,2,3,4,7,8,9-HpCDF-13C	1.00	23 R
1,2,3,6,7,8-HxCDD	ND	----	0.56			
1,2,3,7,8,9-HxCDD	ND	----	0.55			
Total HxCDD	ND	----	0.58			
1,2,3,4,6,7,8-HpCDF	ND	----	0.59	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.71	Equivalence: 0.0064 pg/m3		
Total HpCDF	ND	----	0.65	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	0.89			
Total HpCDD	ND	----	0.89			
OCDF	ND	----	2.20			
OCDD	6.4	----	3.20 BJ			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
LRL = Lower Reporting Limit  
J = Estimated value  
B = Less than 10 times higher than method blank level  
R = Recovery outside of target range  
Nn = Value obtained from additional analysis  
A = Detection Limit based on signal to noise

I = Interference  
P = PCDE Interference  
S = Saturated signal  
ND = Not Detected  
NA = Not Applicable  
NC = Not Calculated

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**Method TO9 Sample Analysis Results**

Client - Atmospheric Analysis & Consulting

Client's Sample ID	F-3		
Lab Sample ID	10228183006		
Filename	F130516B_09	Matrix	PUF
Injected By	BAL	Dilution	NA
Amount Extracted	12.6 m3	Collected	05/08/2013 16:45
ICAL ID	F130408	Received	05/09/2013 08:25
CCal Filename(s)	F130516B_01	Extracted	05/14/2013 22:30
Method Blank ID	BLANK-36495	Analyzed	05/17/2013 01:43

Native Isomers	Conc pg/m3	EMPC pg/m3	LRL pg/m3	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.29	2,3,7,8-TCDF-13C	2.00	77
Total TCDF	ND	----	0.29	2,3,7,8-TCDD-13C	2.00	85
				1,2,3,7,8-PeCDF-13C	2.00	84
2,3,7,8-TCDD	ND	----	0.39	1,2,3,7,8-PeCDD-13C	2.00	90
Total TCDD	ND	----	0.39	1,2,3,6,7,8-HxCDF-13C	2.00	88
				1,2,3,6,7,8-HxCDD-13C	2.00	86
1,2,3,7,8-PeCDF	ND	----	0.25	1,2,3,4,6,7,8-HpCDF-13C	2.00	87
2,3,4,7,8-PeCDF	ND	----	0.27	1,2,3,4,6,7,8-HpCDD-13C	2.00	90
Total PeCDF	ND	----	0.26	OCDD-13C	4.00	57
1,2,3,7,8-PeCDD	ND	----	0.43	Recovery		
Total PeCDD	ND	----	0.43	Standards		
				1,2,3,4-TCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDF	ND	----	0.19	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,6,7,8-HxCDF	ND	----	0.16			
2,3,4,6,7,8-HxCDF	ND	----	0.20	Surrogates		
1,2,3,7,8,9-HxCDF	ND	----	0.20	2,3,7,8-TCDD-37Cl4	1.00	100
Total HxCDF	ND	----	0.19	2,3,4,7,8-PeCDF-13C	1.00	93
				1,2,3,4,7,8-HxCDF-13C	1.00	77
1,2,3,4,7,8-HxCDD	ND	----	0.45	1,2,3,4,7,8-HxCDD-13C	1.00	88
1,2,3,6,7,8-HxCDD	ND	----	0.39	1,2,3,4,7,8,9-HpCDF-13C	1.00	54
1,2,3,7,8,9-HxCDD	ND	----	0.42			
Total HxCDD	ND	----	0.42			
1,2,3,4,6,7,8-HpCDF	ND	----	0.25	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.24	Equivalence: 0.0025 pg/m3		
Total HpCDF	ND	----	0.24	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	0.47			
Total HpCDD	ND	----	0.47			
OCDF	ND	----	0.67			
OCDD	2.5	----	1.40	BJ		

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
 EMPC = Estimated Maximum Possible Concentration  
 LRL = Lower Reporting Limit  
 J = Estimated value  
 B = Less than 10 times higher than method blank level  
 R = Recovery outside of target range  
 Nn = Value obtained from additional analysis  
 A = Detection Limit based on signal to noise

I = Interference  
 P = PCDE Interference  
 S = Saturated signal  
 ND = Not Detected  
 NA = Not Applicable  
 NC = Not Calculated

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**Method TO9 Sample Analysis Results**

Client - Atmospheric Analysis & Consulting

Client's Sample ID	TRIP BLANK	Matrix	PUF
Lab Sample ID	10228183007	Dilution	NA
Filename	F130516B_10	Collected	05/08/2013 17:00
Injected By	BAL	Received	05/09/2013 08:25
Amount Extracted	8.35 m3	Extracted	05/14/2013 22:30
ICAL ID	F130408	Analyzed	05/17/2013 02:30
CCal Filename(s)	F130516B_01		
Method Blank ID	BLANK-36495		

Native Isomers	Conc pg/m3	EMPC pg/m3	LRL pg/m3	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.12	----	0.110 J	2,3,7,8-TCDF-13C	2.00	73
Total TCDF	2.50	----	0.110	2,3,7,8-TCDD-13C	2.00	83
				1,2,3,7,8-PeCDF-13C	2.00	83
2,3,7,8-TCDD	ND	----	0.210	1,2,3,7,8-PeCDD-13C	2.00	90
Total TCDD	2.50	----	0.210	1,2,3,6,7,8-HxCDF-13C	2.00	79
				1,2,3,6,7,8-HxCDD-13C	2.00	79
1,2,3,7,8-PeCDF	ND	----	0.100	1,2,3,4,6,7,8-HpCDF-13C	2.00	82
2,3,4,7,8-PeCDF	----	0.15	0.091 I	1,2,3,4,6,7,8-HpCDD-13C	2.00	85
Total PeCDF	1.20	----	0.097 BJ	OCDD-13C	4.00	54
1,2,3,7,8-PeCDD	ND	----	0.190	Recovery Standards		
Total PeCDD	1.50	----	0.190 J	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-HxCDF	ND	----	0.100	Surrogates		
1,2,3,6,7,8-HxCDF	ND	----	0.100	2,3,7,8-TCDD-37Cl4	1.00	104
2,3,4,6,7,8-HxCDF	ND	----	0.110	2,3,4,7,8-PeCDF-13C	1.00	100
1,2,3,7,8,9-HxCDF	ND	----	0.140	1,2,3,4,7,8-HxCDF-13C	1.00	85
Total HxCDF	0.48	----	0.110 BJ	1,2,3,4,7,8-HxCDD-13C	1.00	101
1,2,3,4,7,8-HxCDD	ND	----	0.180	1,2,3,4,7,8,9-HpCDF-13C	1.00	77
1,2,3,6,7,8-HxCDD	0.15	----	0.140 BJ			
1,2,3,7,8,9-HxCDD	ND	----	0.140			
Total HxCDD	3.20	----	0.150 J			
1,2,3,4,6,7,8-HpCDF	----	0.15	0.130 I	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.130	Equivalence: 0.12 pg/m3		
Total HpCDF	ND	----	0.130	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	----	0.73	0.210 I			
Total HpCDD	0.85	----	0.210 BJ			
OCDF	ND	----	0.580			
OCDD	----	3.20	0.750 I			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
 EMPC = Estimated Maximum Possible Concentration  
 LRL = Lower Reporting Limit  
 J = Estimated value  
 B = Less than 10 times higher than method blank level  
 R = Recovery outside of target range  
 Nn = Value obtained from additional analysis  
 A = Detection Limit based on signal to noise

I = Interference  
 P = PCDE Interference  
 S = Saturated signal  
 ND = Not Detected  
 NA = Not Applicable  
 NC = Not Calculated

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## **Appendix C**

### QC and Calibration Results Summary



### Method TO9 Blank Analysis Results

Lab Sample ID	BLANK-36495	Matrix	PUF
Filename	F130516B_03	Dilution	NA
Amount Extracted	8.35 m3	Extracted	05/14/2013 22:30
ICAL ID	F130408	Analyzed	05/16/2013 20:59
CCal Filename(s)	F130516B_01	Injected By	BAL

Native Isomers	Conc pg/m3	EMPC pg/m3	LRL pg/m3	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.120	2,3,7,8-TCDF-13C	2.00	71
Total TCDF	ND	----	0.120	2,3,7,8-TCDD-13C	2.00	80
				1,2,3,7,8-PeCDF-13C	2.00	80
2,3,7,8-TCDD	ND	----	0.190	1,2,3,7,8-PeCDD-13C	2.00	87
Total TCDD	ND	----	0.190	1,2,3,6,7,8-HxCDF-13C	2.00	81
				1,2,3,6,7,8-HxCDD-13C	2.00	78
1,2,3,7,8-PeCDF	ND	----	0.110	1,2,3,4,6,7,8-HpCDF-13C	2.00	83
2,3,4,7,8-PeCDF	0.120	----	0.100 J	1,2,3,4,6,7,8-HpCDD-13C	2.00	90
Total PeCDF	0.120	----	0.110 J	OCDD-13C	4.00	60
1,2,3,7,8-PeCDD	ND	----	0.150	Recovery		
Total PeCDD	ND	----	0.150	Standards		
				1,2,3,4-TCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDF	0.130	----	0.092 J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,6,7,8-HxCDF	0.100	----	0.069 J			
2,3,4,6,7,8-HxCDF	0.091	----	0.082 J	Surrogates		
1,2,3,7,8,9-HxCDF	ND	----	0.095	2,3,7,8-TCDD-37Cl4	1.00	102
Total HxCDF	0.320	----	0.084 J	2,3,4,7,8-PeCDF-13C	1.00	96
				1,2,3,4,7,8-HxCDF-13C	1.00	83
1,2,3,4,7,8-HxCDD	ND	----	0.170	1,2,3,4,7,8-HxCDD-13C	1.00	106
1,2,3,6,7,8-HxCDD	0.150	----	0.120 J	1,2,3,4,7,8,9-HpCDF-13C	1.00	89
1,2,3,7,8,9-HxCDD	----	0.15	0.120 I			
Total HxCDD	0.150	----	0.140 J			
1,2,3,4,6,7,8-HpCDF	----	0.11	0.090 I	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.120	Equivalence: 0.13 pg/m3		
Total HpCDF	ND	----	0.110	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	----	0.20	0.150 I			
Total HpCDD	0.330	----	0.150 J			
OCDF	0.300	----	0.260 J			
OCDD	2.300	----	0.420 J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
LRL = Lower Reporting Limit  
J = Estimated value  
Nn = Value obtained from additional analysis  
A = Detection Limit based on signal to noise  
R = Recovery outside of target range

I = Interference  
P = PCDE Interference  
ND = Not Detected  
NA = Not Applicable  
NC = Not Calculated

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### Method TO9 Laboratory Control Spike Results

Lab Sample ID	LCS-36496	Matrix	PUF
Filename	F130516B_14	Dilution	NA
Total Amount Extracted	0.500 Sample	Extracted	05/14/2013 22:30
ICAL ID	F130408	Analyzed	05/17/2013 05:39
CCal Filename(s)	F130516B_01	Injected By	BAL
Method Blank ID	BLANK-36495		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.23	113	2,3,7,8-TCDF-13C	2.0	73
Total TCDF				2,3,7,8-TCDD-13C	2.0	80
				1,2,3,7,8-PeCDF-13C	2.0	80
2,3,7,8-TCDD	0.20	0.18	92	1,2,3,7,8-PeCDD-13C	2.0	86
Total TCDD				1,2,3,6,7,8-HxCDF-13C	2.0	72
				1,2,3,6,7,8-HxCDD-13C	2.0	75
1,2,3,7,8-PeCDF	1.0	1.2	117	1,2,3,4,6,7,8-HpCDF-13C	2.0	76
2,3,4,7,8-PeCDF	1.0	1.1	109	1,2,3,4,6,7,8-HpCDD-13C	2.0	83
Total PeCDF				OCDD-13C	4.0	53
1,2,3,7,8-PeCDD	1.0	1.0	101	Recovery Standards		
Total PeCDD				1,2,3,4-TCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDF	1.0	1.1	109	1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,6,7,8-HxCDF	1.0	1.1	111			
2,3,4,6,7,8-HxCDF	1.0	1.2	118	Surrogates		
1,2,3,7,8,9-HxCDF	1.0	1.00	100	2,3,7,8-TCDD-37Cl4	1.0	96
Total HxCDF				2,3,4,7,8-PeCDF-13C	1.0	86
1,2,3,4,7,8-HxCDD	1.0	1.1	112	1,2,3,4,7,8-HxCDF-13C	1.0	81
1,2,3,6,7,8-HxCDD	1.0	1.1	113	1,2,3,4,7,8-HxCDD-13C	1.0	89
1,2,3,7,8,9-HxCDD	1.0	1.1	106	1,2,3,4,7,8,9-HpCDF-13C	1.0	79
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	1.1	106			
1,2,3,4,7,8,9-HpCDF	1.0	0.86	86			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.99	99			
Total HpCDD						
OCDF	2.0	2.0	98			
OCDD	2.0	2.2	111			

Qs = Quantity Spiked  
 Qm = Quantity Measured  
 Rec. = Recovery (Expressed as Percent)  
 R = Outside the method specified target recovery range  
 NA = Not Applicable  
 Nn = Value obtained from additional analysis

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## Method TO9 Laboratory Control Spike Results

Lab Sample ID	LCSD-36497	Matrix	PUF
Filename	F130516B_15	Dilution	NA
Total Amount Extracted	0.500 Sample	Extracted	05/14/2013 22:30
ICAL ID	F130408	Analyzed	05/17/2013 06:26
CCal Filename(s)	F130516B_01	Injected By	BAL
Method Blank ID	BLANK-36495		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.23	113	2,3,7,8-TCDF-13C	2.0	75
Total TCDF				2,3,7,8-TCDD-13C	2.0	84
				1,2,3,7,8-PeCDF-13C	2.0	84
2,3,7,8-TCDD	0.20	0.19	93	1,2,3,7,8-PeCDD-13C	2.0	91
Total TCDD				1,2,3,6,7,8-HxCDF-13C	2.0	79
				1,2,3,6,7,8-HxCDD-13C	2.0	78
1,2,3,7,8-PeCDF	1.0	1.2	122	1,2,3,4,6,7,8-HpCDF-13C	2.0	83
2,3,4,7,8-PeCDF	1.0	1.2	116	1,2,3,4,6,7,8-HpCDD-13C	2.0	88
Total PeCDF				OCDD-13C	4.0	59
1,2,3,7,8-PeCDD	1.0	1.1	107	Recovery Standards		
Total PeCDD				1,2,3,4-TCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDF	1.0	1.1	108	1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,6,7,8-HxCDF	1.0	1.1	113			
2,3,4,6,7,8-HxCDF	1.0	1.2	118	Surrogates		
1,2,3,7,8,9-HxCDF	1.0	1.0	102	2,3,7,8-TCDD-37Cl4	1.0	97
Total HxCDF				2,3,4,7,8-PeCDF-13C	1.0	95
1,2,3,4,7,8-HxCDD	1.0	1.1	115	1,2,3,4,7,8-HxCDF-13C	1.0	86
1,2,3,6,7,8-HxCDD	1.0	1.3	126	1,2,3,4,7,8-HxCDD-13C	1.0	101
1,2,3,7,8,9-HxCDD	1.0	1.1	112	1,2,3,4,7,8,9-HpCDF-13C	1.0	79
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	1.1	110			
1,2,3,4,7,8,9-HpCDF	1.0	0.92	92			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	1.0	104			
Total HpCDD						
OCDF	2.0	2.0	102			
OCDD	2.0	2.4	121			

Qs = Quantity Spiked  
 Qm = Quantity Measured  
 Rec. = Recovery (Expressed as Percent)  
 R = Outside the method specified target recovery range  
 NA = Not Applicable  
 Nn = Value obtained from additional analysis

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**Method TO9**

**Spike Recovery Relative Percent Difference (RPD) Results**

Client Atmospheric Analysis & Consulting

Spike 1 ID LCS-36496 Spike 2 ID LCSD-36497  
Spike 1 Filename F130516B\_14 Spike 2 Filename F130516B\_15

Compound	Spike 1 %REC	Spike 2 %REC	%RPD
2,3,7,8-TCDF	113	113	0.0
2,3,7,8-TCDD	92	93	1.1
1,2,3,7,8-PeCDF	117	122	4.2
2,3,4,7,8-PeCDF	109	116	6.2
1,2,3,7,8-PeCDD	101	107	5.8
1,2,3,4,7,8-HxCDF	109	108	0.9
1,2,3,6,7,8-HxCDF	111	113	1.8
2,3,4,6,7,8-HxCDF	118	118	0.0
1,2,3,7,8,9-HxCDF	100	102	2.0
1,2,3,4,7,8-HxCDD	112	115	2.6
1,2,3,6,7,8-HxCDD	113	126	10.9
1,2,3,7,8,9-HxCDD	106	112	5.5
1,2,3,4,6,7,8-HpCDF	106	110	3.7
1,2,3,4,7,8,9-HpCDF	86	92	6.7
1,2,3,4,6,7,8-HpCDD	99	104	4.9
OCDF	98	102	4.0
OCDD	111	121	8.6

%REC = Percent Recovered

RPD = The difference between the two values divided by the mean value

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## Method 23 Initial Calibration (ICAL) - Response Factor Summary

<b>Ical ID.....F130408</b>	Data Files:	Time	Analyst
Calibration Date.....04/08/2013	CS-1 F130408A_05	15:19	SMT
Instrument.....10MSHR05 (F)	CS-2 F130408A_04	14:31	SMT
Column Phase.....DB-5MS	CS-3 F130408A_03	13:45	SMT
Column ID No.....USC508227H	CS-4 F130408A_07	16:53	SMT
	CS-5 F130408A_06	16:06	SMT

Isomer	CS-1	CS-2	CS-3	CS-4	CS-5	Ave RF	%RSD
<b>Native Analytes</b>							
2,3,7,8-TCDF	0.9228	0.9261	0.9499	0.9692	0.9530	0.9442	2.06
2,3,7,8-TCDD	0.9312	0.9493	0.9860	1.0266	1.0261	0.9838	4.42
1,2,3,7,8-PeCDF	0.9105	0.9536	0.9634	0.9506	0.9336	0.9424	2.20
2,3,4,7,8-PeCDF	0.8786	0.9061	0.9069	1.0002	1.0146	0.9413	6.55
1,2,3,7,8-PeCDD	0.8911	0.9449	0.9697	0.9723	0.9538	0.9464	3.48
1,2,3,4,7,8-HxCDF	0.9890	0.9716	0.9391	0.9875	0.8914	0.9557	4.31
1,2,3,6,7,8-HxCDF	1.1881	1.2187	1.2484	1.0912	0.9770	1.1447	9.68
2,3,4,6,7,8-HxCDF	0.9379	1.0008	0.9452	0.9265	0.8339	0.9289	6.49
1,2,3,7,8,9-HxCDF	0.8732	0.8763	0.8566	0.8900	0.7977	0.8588	4.21
1,2,3,4,7,8-HxCDD	0.8922	0.8861	0.9300	0.9244	0.8730	0.9011	2.76
1,2,3,6,7,8-HxCDD	1.0450	1.0603	1.1009	0.9731	0.8938	1.0146	8.06
1,2,3,7,8,9-HxCDD	1.0676	1.0389	1.1246	0.9973	0.9044	1.0265	8.04
1,2,3,4,6,7,8-HpCDF	1.4744	1.4622	1.4947	1.5571	1.5343	1.5045	2.67
1,2,3,4,7,8,9-HpCDF	1.0744	1.1870	1.2098	1.4040	1.4118	1.2574	11.67
1,2,3,4,6,7,8-HpCDD	1.1154	1.1105	1.1375	1.1135	1.1078	1.1169	1.06
OCDF	1.1051	1.1609	1.2432	1.3156	1.3214	1.2292	7.74
OCDD	0.9352	0.9944	1.0000	1.0524	1.0275	1.0019	4.39
Total PeCDF	0.8945	0.9299	0.9351	0.9754	0.9741	0.9418	3.60
Total HxCDF	0.9970	1.0168	0.9973	0.9738	0.8750	0.9720	5.80
Total HxCDD	1.0016	0.9951	1.0518	0.9649	0.8904	0.9808	6.06
Total HpCDF	1.2744	1.3246	1.3522	1.4806	1.4731	1.3810	6.65
<b>Surrogate Standards</b>							
2,3,7,8-TCDD-37Cl4	0.8706	0.9718	1.0188	1.0365	1.0396	0.9874	7.16
2,3,4,7,8-PeCDF-13C	0.9605	0.9520	0.9015	0.9672	0.9607	0.9484	2.82
1,2,3,4,7,8-HxCDF-13C	0.9692	0.9538	0.8328	0.8312	0.7541	0.8682	10.49
1,2,3,4,7,8-HxCDD-13C	0.8669	0.8944	0.8726	0.8407	0.8015	0.8552	4.16
1,2,3,4,7,8,9-HpCDF-13C	0.7678	0.8288	0.8456	0.9831	0.9754	0.8801	10.80
<b>Internal Standards</b>							
2,3,7,8-TCDF-13C	1.4631	1.4287	1.4103	1.4588	1.4665	1.4455	1.71
2,3,7,8-TCDD-13C	0.9940	0.9861	1.0132	1.0283	1.0185	1.0080	1.73
1,2,3,7,8-PeCDF-13C	1.1705	1.1158	1.2389	1.2647	1.3015	1.2183	6.13
1,2,3,7,8-PeCDD-13C	0.7769	0.7722	0.8205	0.8549	0.8746	0.8198	5.57
1,2,3,6,7,8-HxCDF-13C	1.2791	1.2577	1.3413	1.4809	1.6235	1.3965	11.02
1,2,3,6,7,8-HxCDD-13C	0.8892	0.9200	0.9199	1.0575	1.1186	0.9810	10.28
1,2,3,4,6,7,8-HpCDF-13C	0.9313	0.9341	0.9582	0.9200	0.9153	0.9318	1.79
1,2,3,4,6,7,8-HpCDD-13C	0.7472	0.7571	0.7748	0.7622	0.7580	0.7599	1.32
OCDD-13C	0.8431	0.8354	0.8496	0.8577	0.8573	0.8486	1.12

## Method 23 Initial Calibration (ICAL) - Isotope Ratio Summary

<b>Ical ID</b> ..... <b>F130408</b>	Data Files:	Time	Analyst
Calibration Date.....04/08/2013	CS-1 F130408A_05	15:19	SMT
Instrument.....10MSHR05 (F)	CS-2 F130408A_04	14:31	SMT
Column Phase.....DB-5MS	CS-3 F130408A_03	13:45	SMT
Column ID No.....USC508227H	CS-4 F130408A_07	16:53	SMT
	CS-5 F130408A_06	16:06	SMT

Isomer	CS-1	CS-2	CS-3	CS-4	CS-5	Limits
<b>Native Analytes</b>						
2,3,7,8-TCDF	0.75	0.73	0.76	0.77	0.76	0.65 - 0.89
2,3,7,8-TCDD	0.79	0.87	0.78	0.78	0.77	0.65 - 0.89
1,2,3,7,8-PeCDF	1.55	1.53	1.57	1.56	1.51	1.32 - 1.78
2,3,4,7,8-PeCDF	1.57	1.51	1.54	1.52	1.55	1.32 - 1.78
1,2,3,7,8-PeCDD	0.66	0.60	0.62	0.62	0.62	0.52 - 0.70
1,2,3,4,7,8-HxCDF	1.36	1.21	1.24	1.26	1.25	1.05 - 1.43
1,2,3,6,7,8-HxCDF	1.22	1.28	1.25	1.24	1.27	1.05 - 1.43
2,3,4,6,7,8-HxCDF	1.25	1.25	1.28	1.25	1.27	1.05 - 1.43
1,2,3,7,8,9-HxCDF	1.18	1.22	1.28	1.29	1.24	1.05 - 1.43
1,2,3,4,7,8-HxCDD	1.25	1.17	1.28	1.25	1.24	1.05 - 1.43
1,2,3,6,7,8-HxCDD	1.28	1.34	1.26	1.25	1.25	1.05 - 1.43
1,2,3,7,8,9-HxCDD	1.17	1.37	1.24	1.25	1.24	1.05 - 1.43
1,2,3,4,6,7,8-HpCDF	1.06	1.13	1.02	1.05	1.02	0.88 - 1.20
1,2,3,4,7,8,9-HpCDF	1.09	1.01	1.07	1.03	1.01	0.88 - 1.20
1,2,3,4,6,7,8-HpCDD	1.13	1.08	1.04	1.08	1.07	0.88 - 1.20
OCDF	0.86	0.88	0.92	0.90	0.92	0.76 - 1.02
OCDD	0.89	0.83	0.92	0.90	0.87	0.76 - 1.02
<b>Surrogate Standards</b>						
2,3,4,7,8-PeCDF-13C	1.51	1.59	1.58	1.58	1.59	1.32 - 1.78
1,2,3,4,7,8-HxCDF-13C	0.50	0.48	0.51	0.53	0.52	0.43 - 0.59
1,2,3,4,7,8-HxCDD-13C	1.18	1.29	1.35	1.30	1.24	1.05 - 1.43
1,2,3,4,7,8,9-HpCDF-13C	0.42	0.47	0.47	0.46	0.45	0.37 - 0.51
<b>Internal Standards</b>						
2,3,7,8-TCDF-13C	0.80	0.78	0.78	0.79	0.78	0.65 - 0.89
2,3,7,8-TCDD-13C	0.81	0.81	0.80	0.82	0.80	0.65 - 0.89
1,2,3,7,8-PeCDF-13C	1.58	1.56	1.55	1.56	1.55	1.32 - 1.78
1,2,3,7,8-PeCDD-13C	1.58	1.57	1.56	1.50	1.58	1.32 - 1.78
1,2,3,6,7,8-HxCDF-13C	0.52	0.53	0.53	0.52	0.53	0.43 - 0.59
1,2,3,6,7,8-HxCDD-13C	1.27	1.25	1.24	1.17	1.27	1.05 - 1.43
1,2,3,4,6,7,8-HpCDF-13C	0.46	0.44	0.45	0.45	0.45	0.37 - 0.51
1,2,3,4,6,7,8-HpCDD-13C	1.06	1.11	1.06	1.05	1.07	0.88 - 1.20
OCDD-13C	0.89	0.93	0.90	0.94	0.91	0.76 - 1.02
<b>Recovery Standards</b>						
1,2,3,4-TCDD-13C	0.80	0.83	0.82	0.79	0.81	0.65 - 0.89
1,2,3,7,8,9-HxCDD-13C	1.26	1.29	1.27	1.25	1.25	1.05 - 1.43

**PCDD/PCDF Calibration Verification**

Run Name:	F130516B_01	Instrument ID	10MSHR05 (F)
Standard	CS3-7604-246	GC Column ID	USC508227H
Analyzed	05/16/2013 19:24	ICAL ID	F130408

Compound	Known Conc.	Conc Found	Ion Abund. Ratio	Average RF	Daily RF	Deviation (%)
2,3,7,8-TCDF	5.0	5.2	0.77	0.9442	0.9771	3.5
2,3,7,8-TCDD	5.0	4.7	0.75	0.9838	0.9180	-6.7
1,2,3,7,8-PeCDF	25.0	26.6	1.58	0.9424	1.0038	6.5
2,3,4,7,8-PeCDF	25.0	27.0	1.54	0.9413	1.0161	8.0
1,2,3,7,8-PeCDD	25.0	25.0	0.62	0.9464	0.9451	-0.1
1,2,3,4,7,8-HxCDF	25.0	25.5	1.24	0.9557	0.9737	1.9
1,2,3,6,7,8-HxCDF	25.0	27.9	1.28	1.1447	1.2773	11.6
2,3,4,6,7,8-HxCDF	25.0	27.9	1.21	0.9289	1.0370	11.6
1,2,3,7,8,9-HxCDF	25.0	26.7	1.25	0.8588	0.9174	6.8
1,2,3,4,7,8-HxCDD	25.0	24.9	1.22	0.9011	0.8990	-0.2
1,2,3,6,7,8-HxCDD	25.0	27.5	1.28	1.0146	1.1159	10.0
1,2,3,7,8,9-HxCDD	25.0	26.8	1.25	1.0265	1.1011	7.3
1,2,3,4,6,7,8-HpCDF	25.0	23.2	1.04	1.5045	1.3981	-7.1
1,2,3,4,7,8,9-HpCDF	25.0	22.5	1.04	1.2574	1.1319	-10.0
1,2,3,4,6,7,8-HpCDD	25.0	23.9	1.07	1.1169	1.0670	-4.5
OCDF	50.0	46.1	0.92	1.2292	1.1335	-7.8
OCDD	50.0	47.4	0.87	1.0019	0.9499	-5.2
Total PeCDF	50	53.6	NA	0.9418	1.0100	7.2
Total HxCDF	100	108.0	NA	0.9720	1.0513	8.2
Total HxCDD	75	79.2	NA	0.9808	1.0386	5.9
Total HpCDF	50	45.7	NA	1.3810	1.2650	-8.4
2,3,7,8-TCDD-37Cl4	5.0	5.0	NA	0.9874	0.9789	-0.9
2,3,4,7,8-PeCDF-13C	25.0	25.8	1.60	0.9484	0.9791	3.2
1,2,3,4,7,8-HxCDF-13C	25.0	24.0	0.56	0.8682	0.8347	-3.9
1,2,3,4,7,8-HxCDD-13C	25.0	22.4	1.23	0.8552	0.7676	-10.2
1,2,3,4,7,8,9-HpCDF-13C	25.0	23.9	0.46	0.8801	0.8397	-4.6
2,3,7,8-TCDF-13C	100.0	83.4	0.79	1.4455	1.2051	-16.6
2,3,7,8-TCDD-13C	100.0	96.9	0.79	1.0080	0.9765	-3.1
1,2,3,7,8-PeCDF-13C	100.0	88.8	1.62	1.2183	1.0814	-11.2
1,2,3,7,8-PeCDD-13C	100.0	98.9	1.58	0.8198	0.8112	-1.1
1,2,3,6,7,8-HxCDF-13C	100.0	91.4	0.52	1.3965	1.2763	-8.6
1,2,3,6,7,8-HxCDD-13C	100.0	96.0	1.25	0.9810	0.9421	-4.0
1,2,3,4,6,7,8-HpCDF-13C	100.0	102.0	0.45	0.9318	0.9500	2.0
1,2,3,4,6,7,8-HpCDD-13C	100.0	112.1	1.07	0.7599	0.8517	12.1
OCDD-13C	200.0	181.4	0.91	0.8486	0.7696	-9.3
1,2,3,4-TCDD-13C	100.0	NA	0.80	NA	NA	NA
1,2,3,7,8,9-HxCDD-13C	100.0	NA	1.27	NA	NA	NA

Concentrations expressed as pg/ul      NA = Not Applicable      \* = Outside Quality Control limits

**REPORT OF LABORATORY ANALYSIS**

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# Appendix D

## Sample Raw Data

Homologue Group: Tetras

Data File Name: F130516B\_04

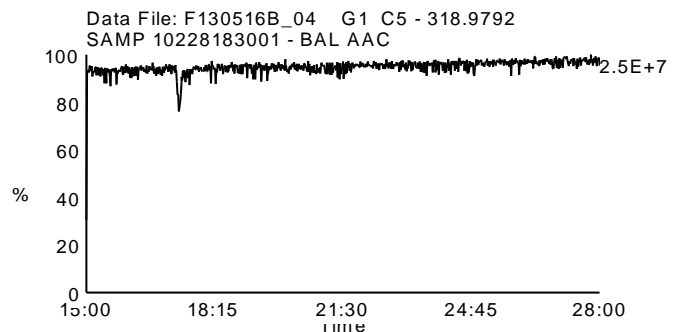
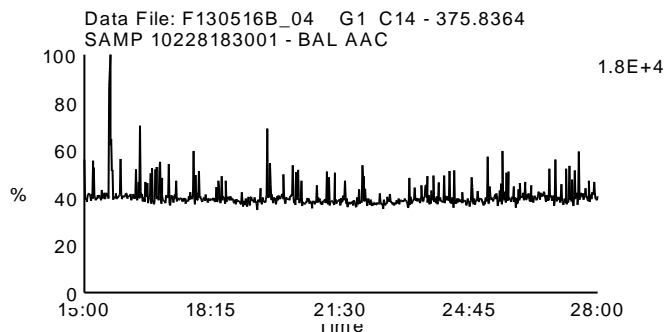
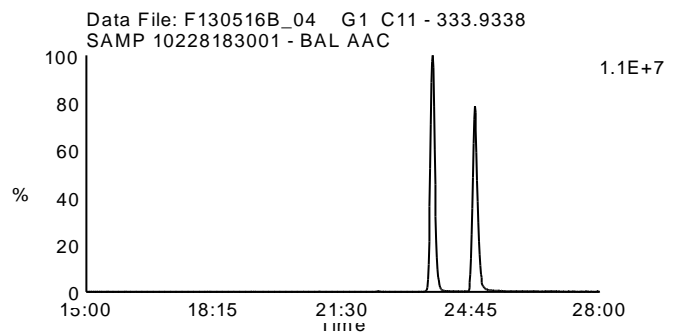
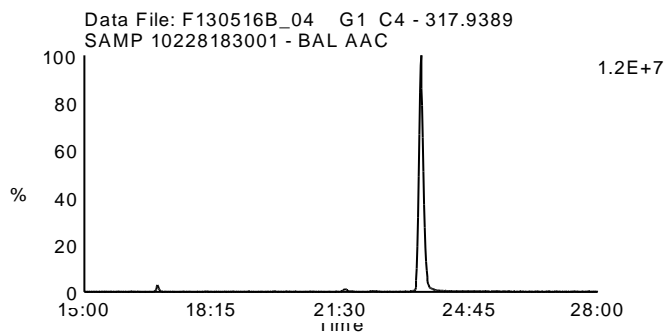
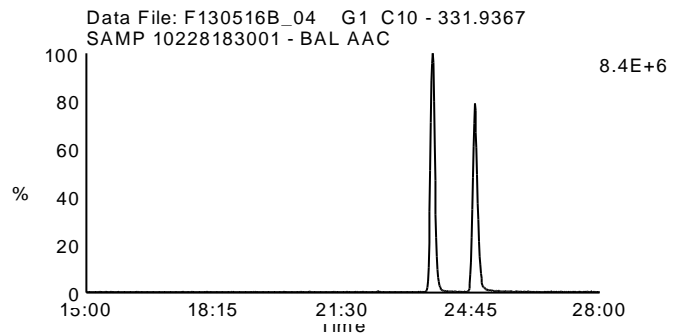
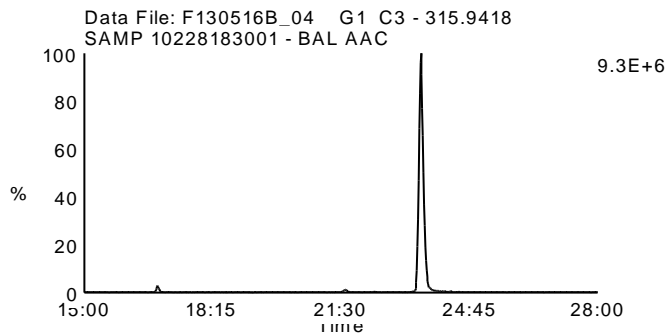
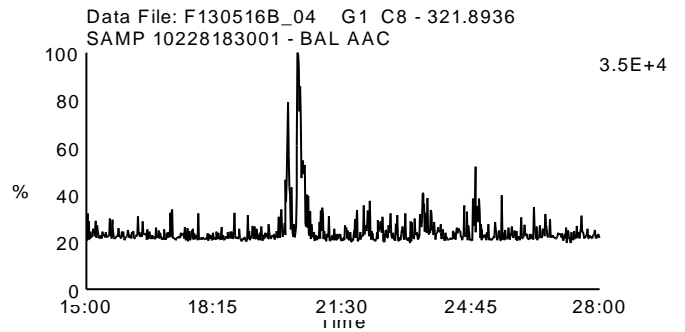
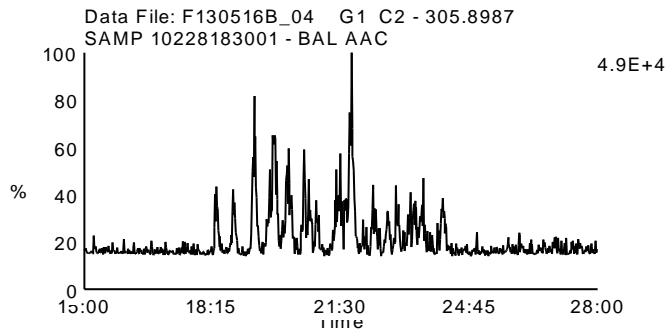
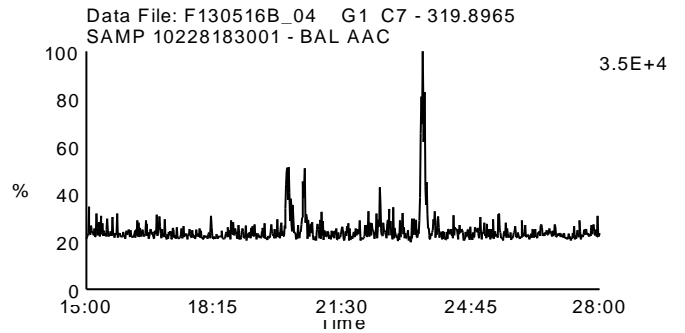
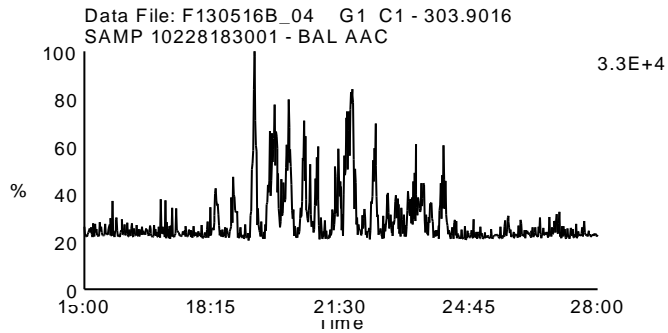
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183001 - BAL AAC

Lab Sample ID: 10228183001

Client Sample ID: D-1

Instrument: 10MSHR05 (F)





Homologue Group: Penta & Cleanup

Data File Name: F130516B\_04

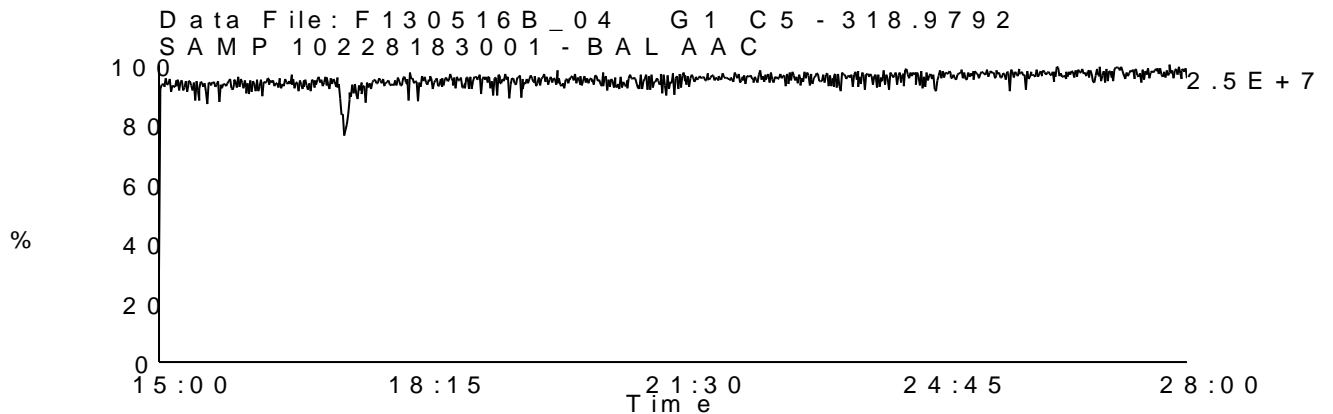
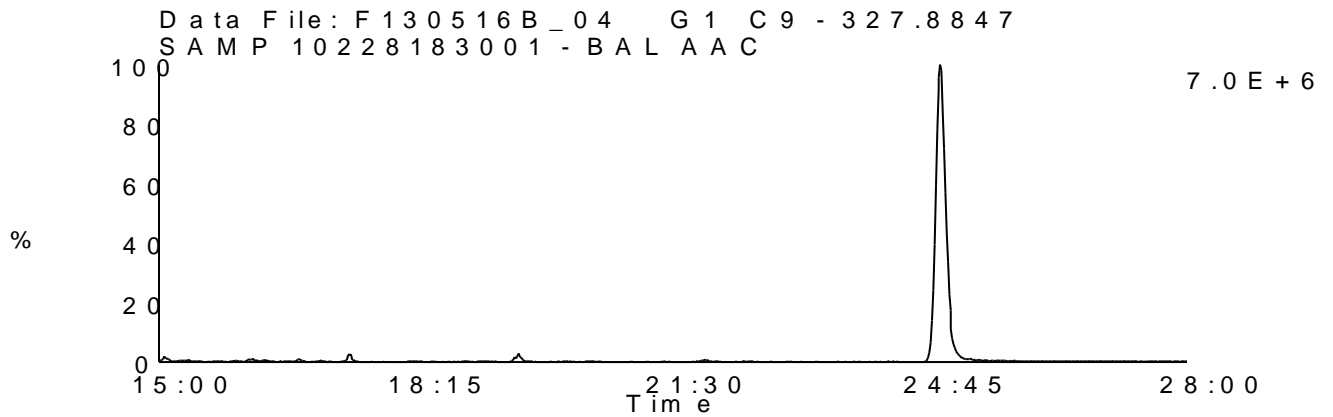
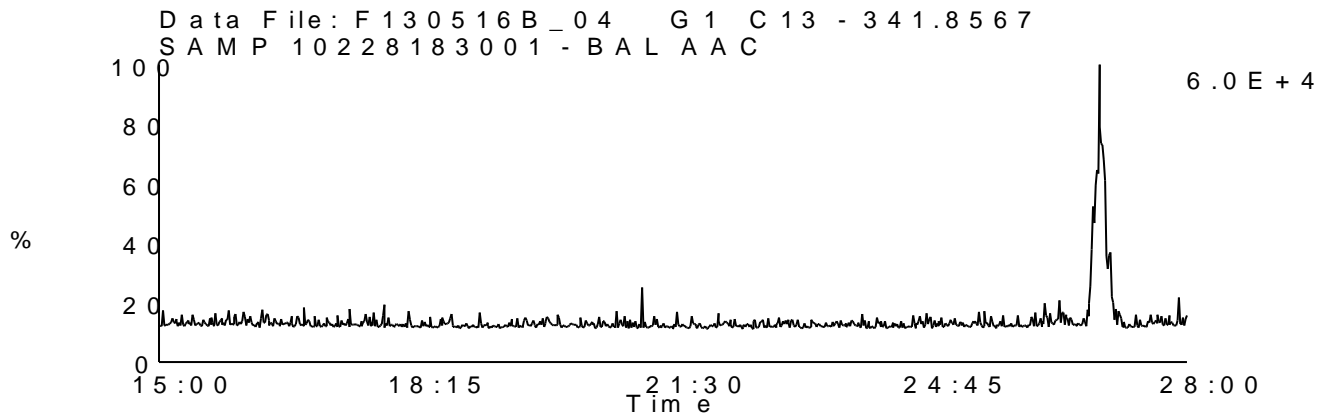
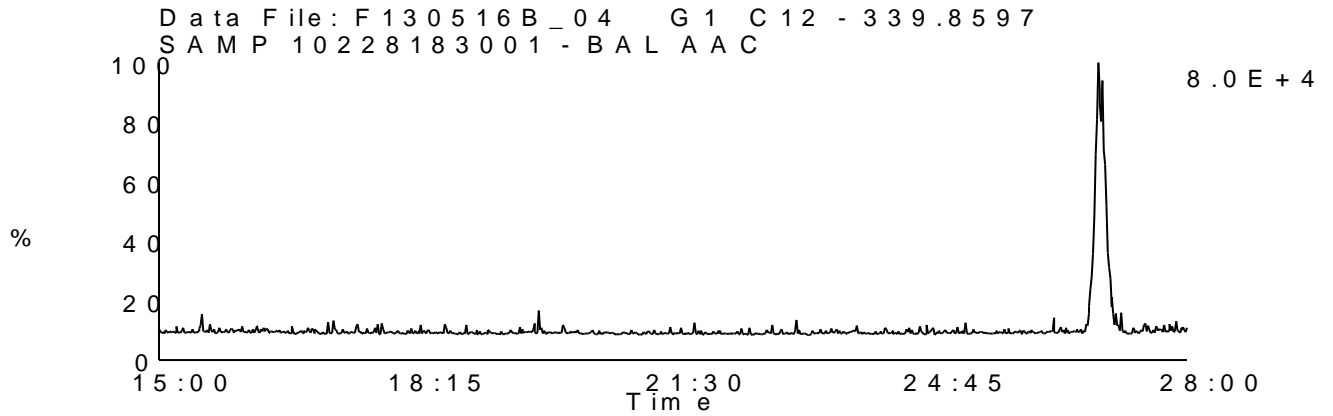
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183001 - BAL AAC

Lab Sample ID: 10228183001

Client Sample ID: D-1

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516B\_04

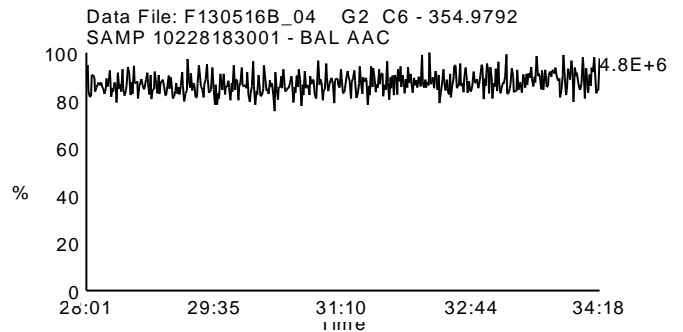
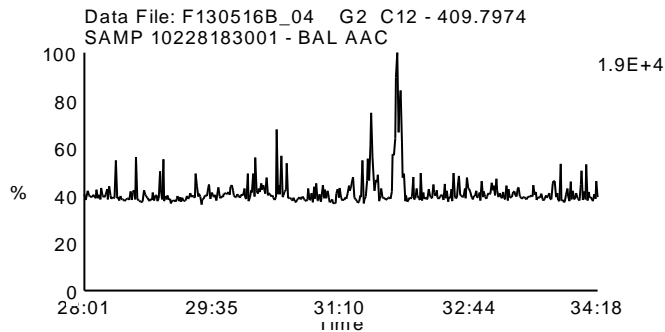
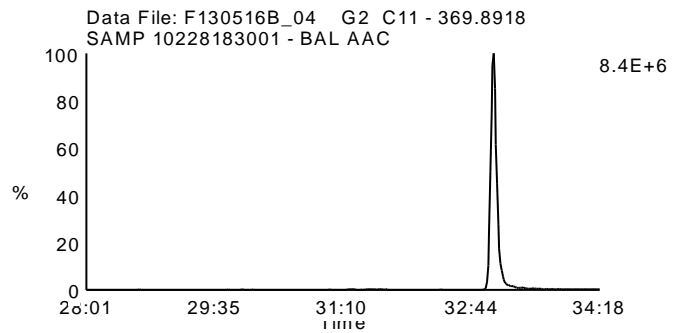
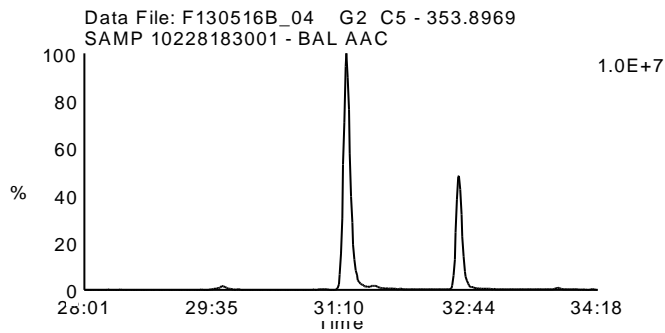
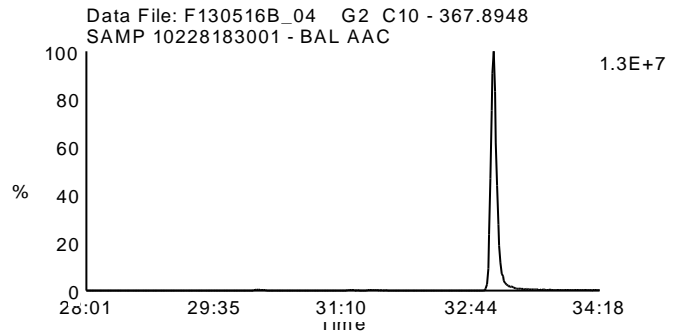
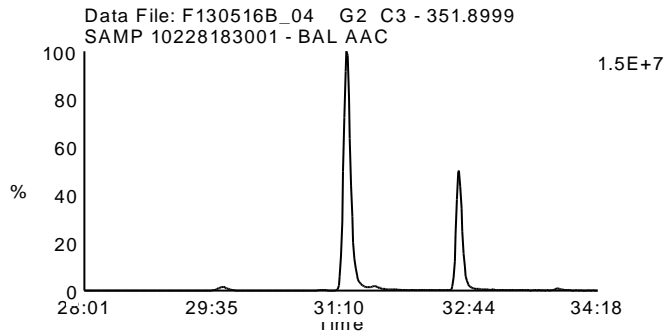
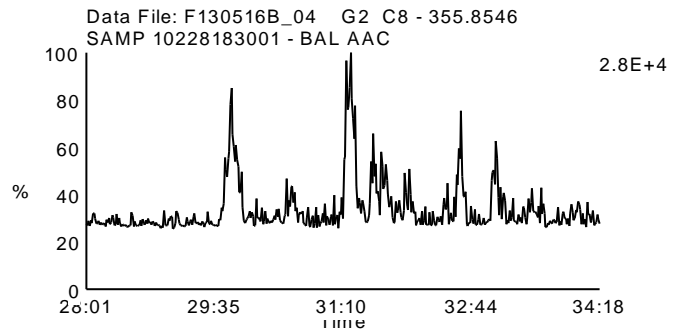
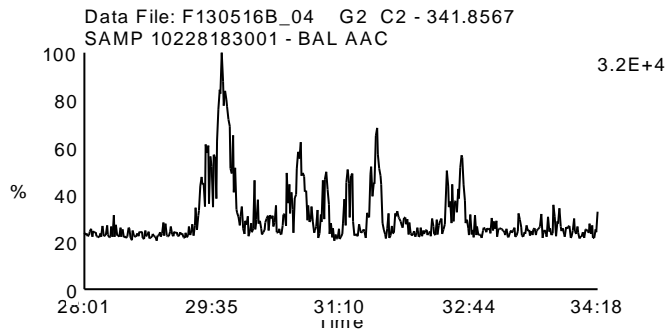
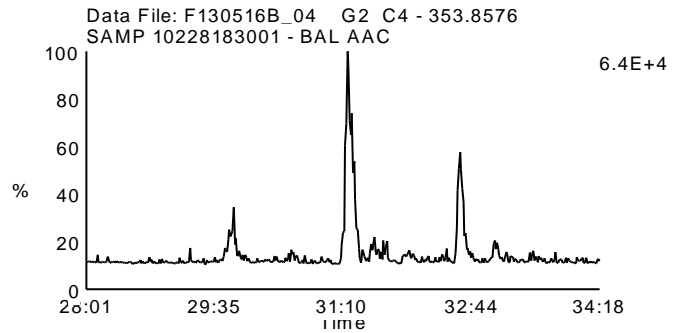
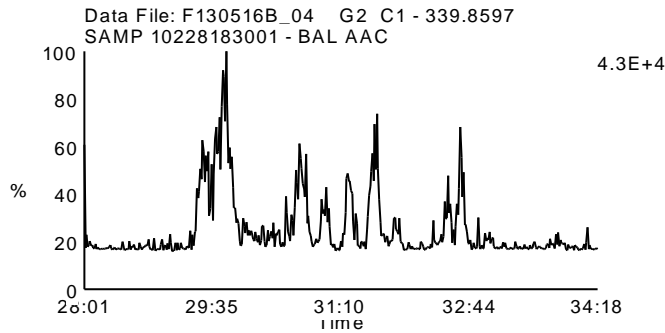
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183001 - BAL AAC

Lab Sample ID: 10228183001

Client Sample ID: D-1

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130516B\_04

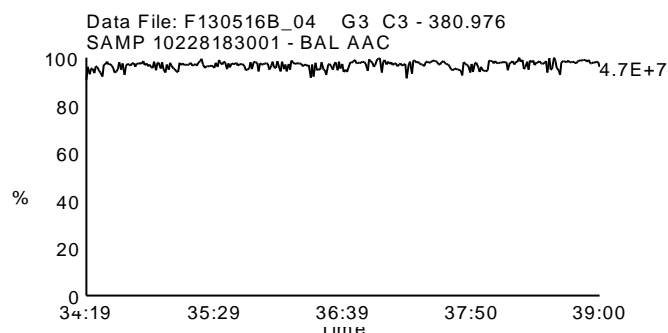
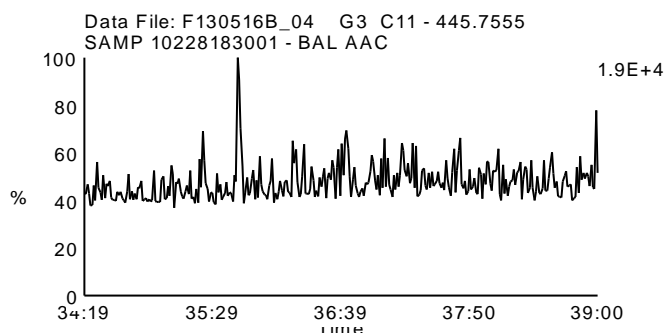
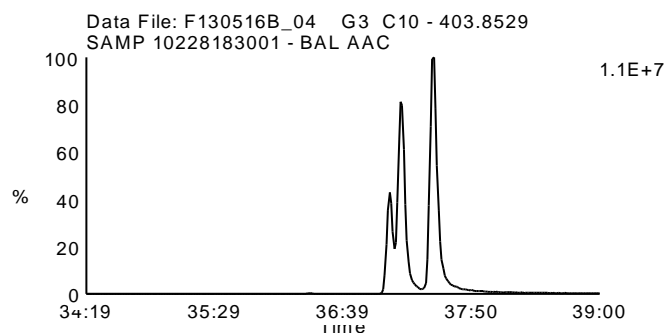
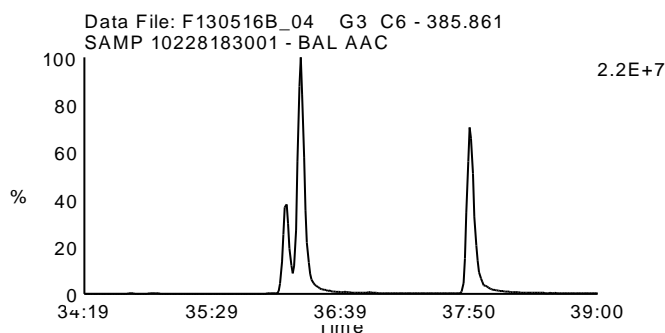
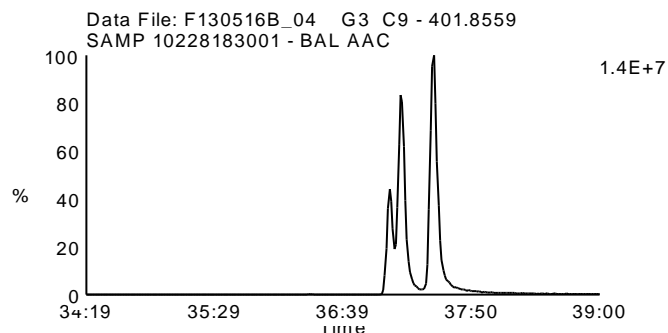
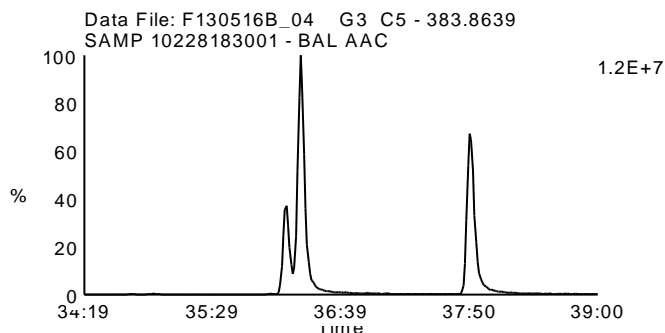
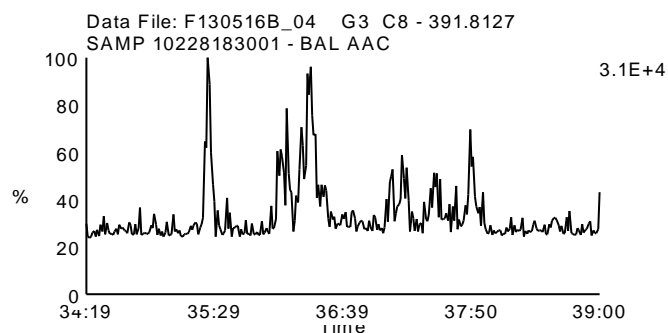
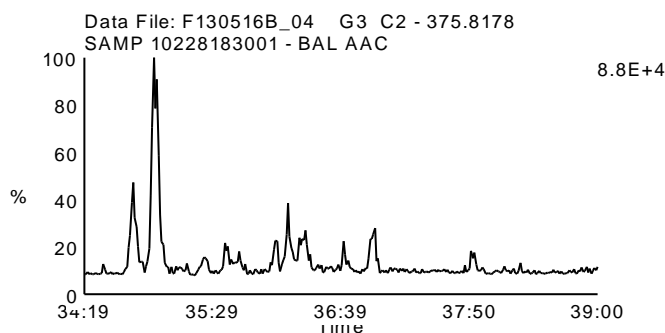
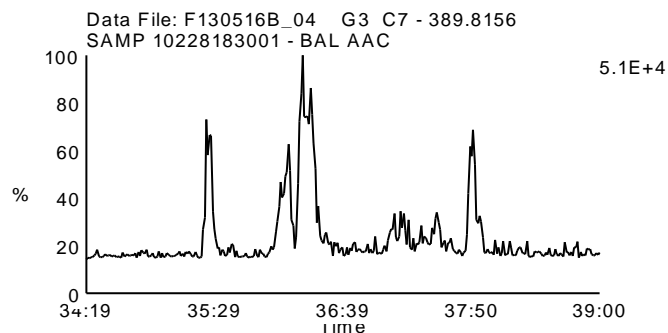
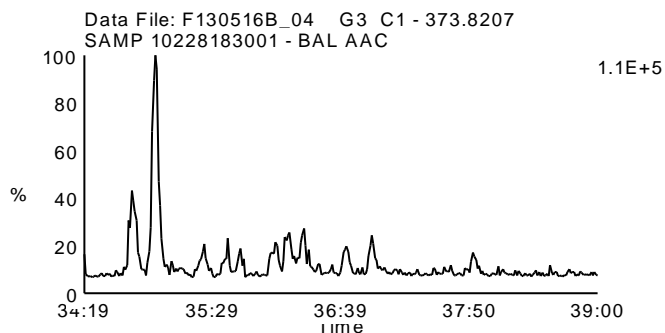
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183001 - BAL AAC

Lab Sample ID: 10228183001

Client Sample ID: D-1

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516B\_04

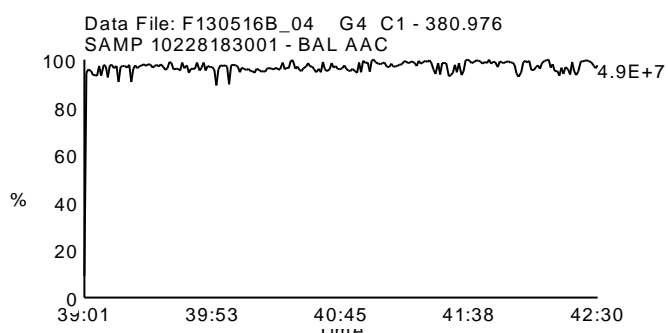
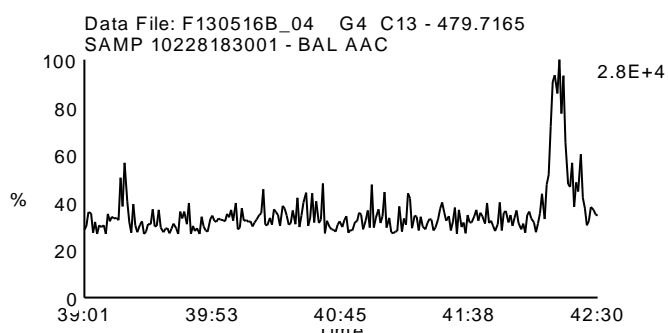
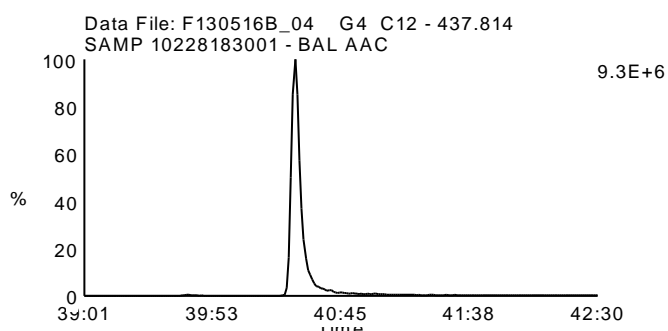
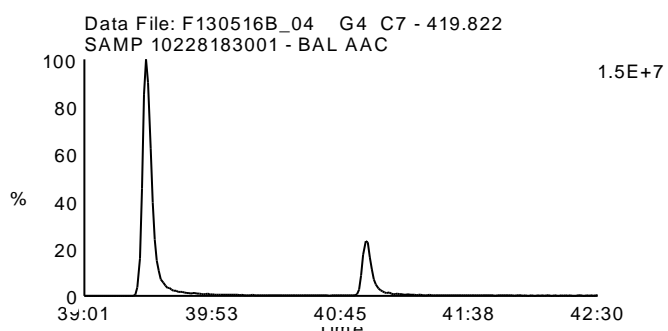
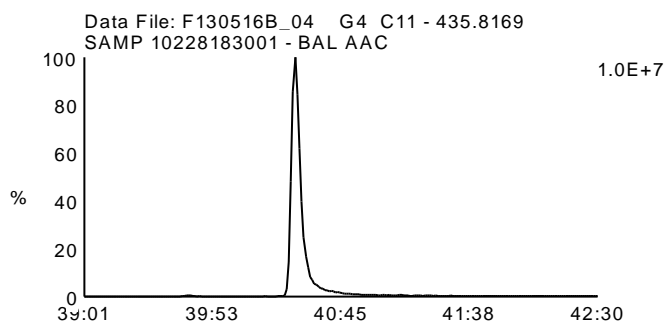
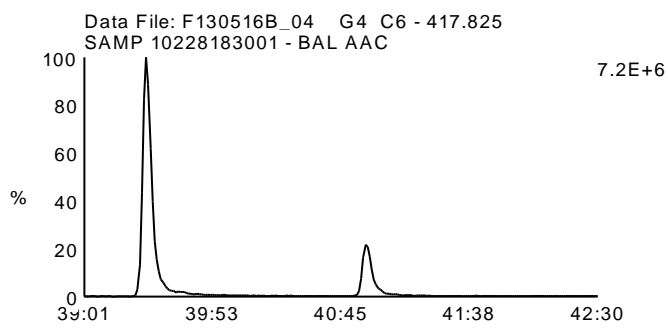
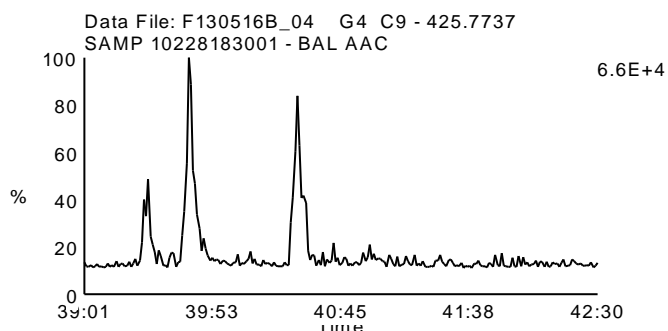
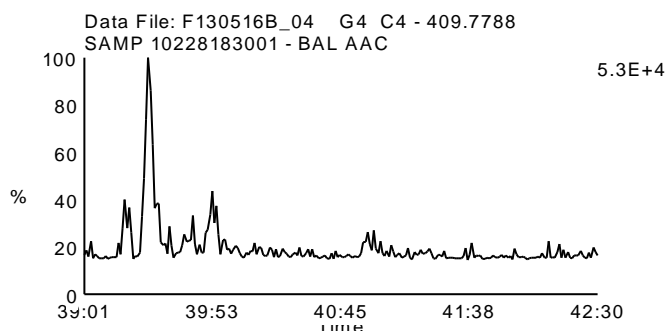
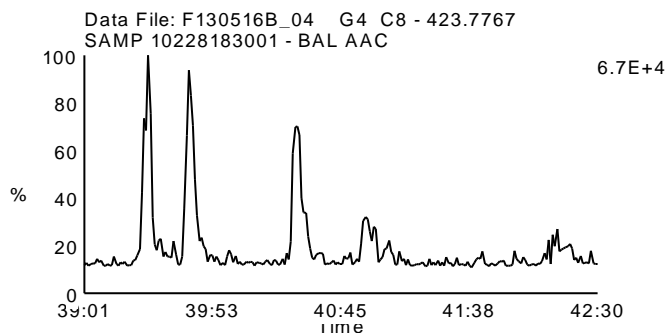
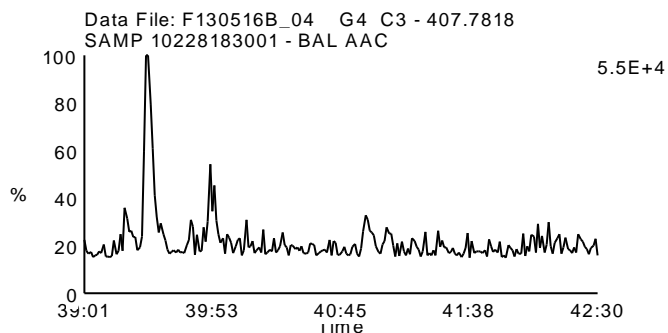
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183001 - BAL AAC

Lab Sample ID: 10228183001

Client Sample ID: D-1

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130516B\_04

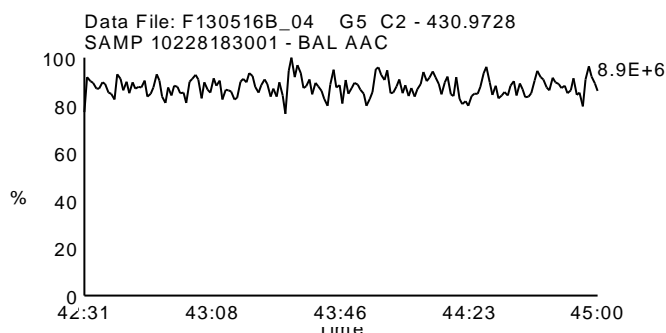
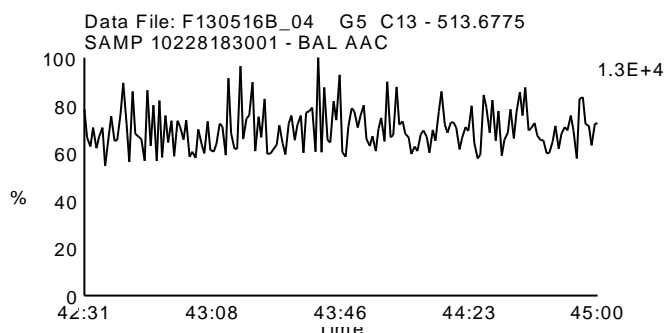
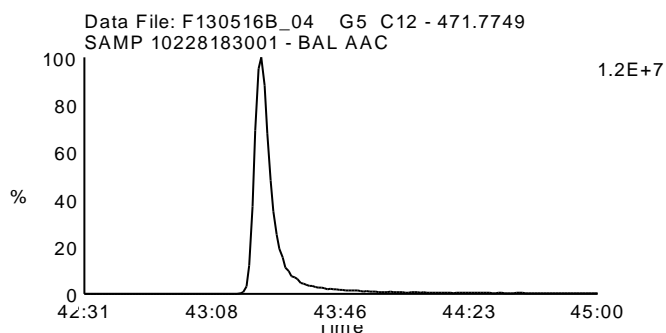
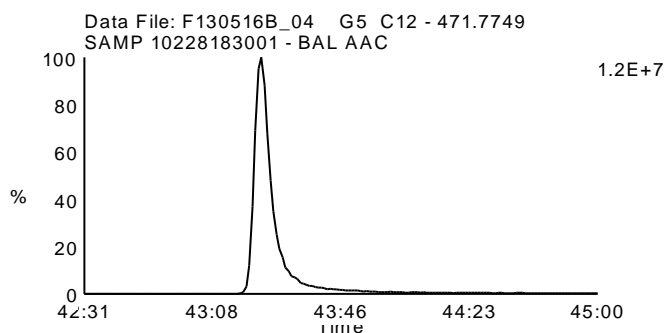
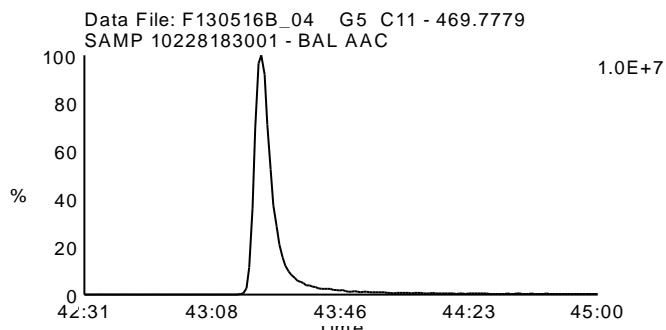
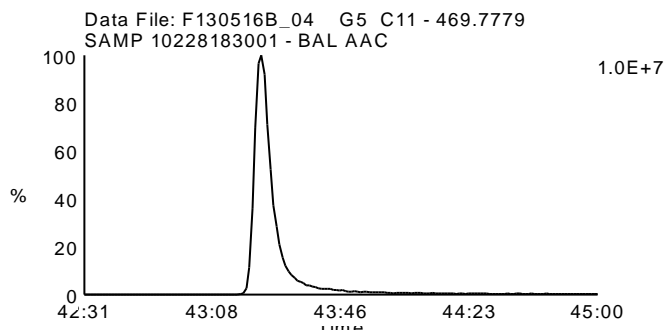
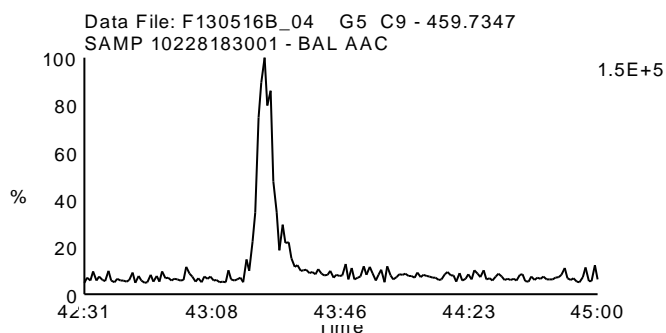
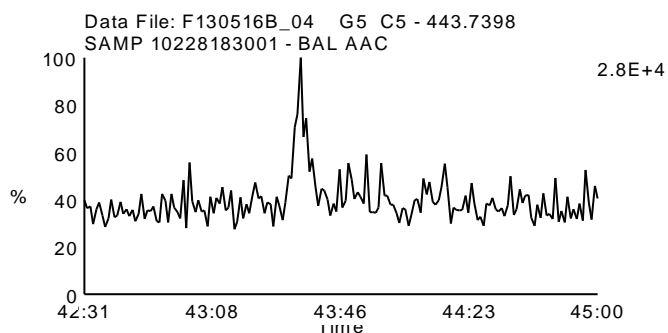
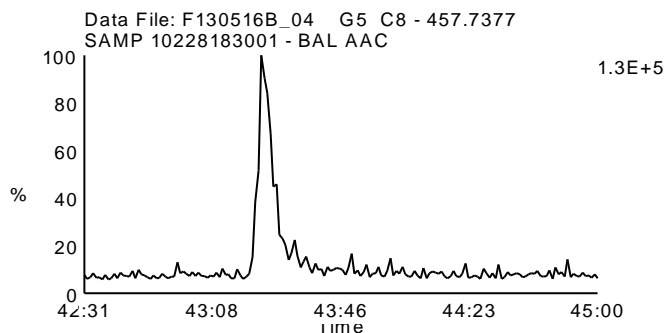
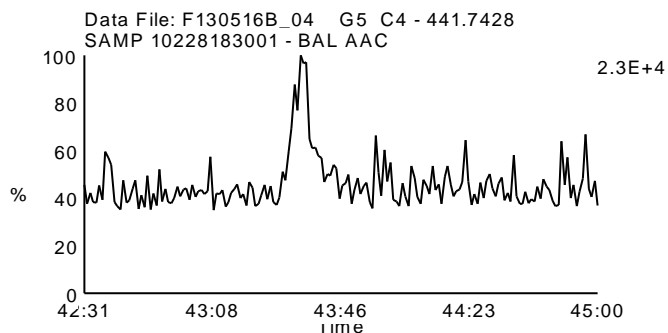
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183001 - BAL AAC

Lab Sample ID: 10228183001

Client Sample ID: D-1

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130516B\_05

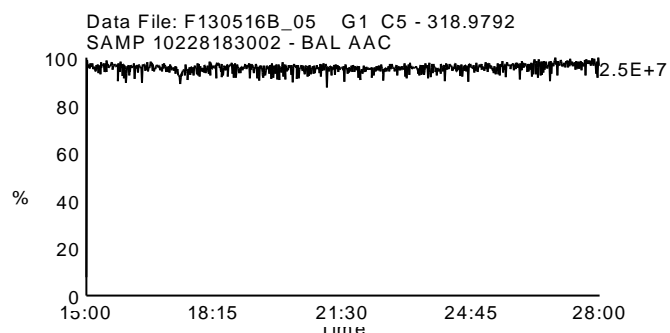
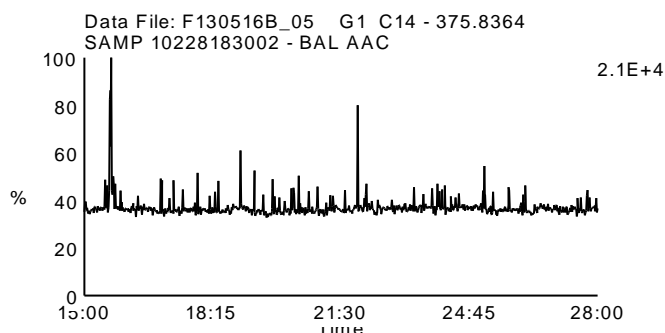
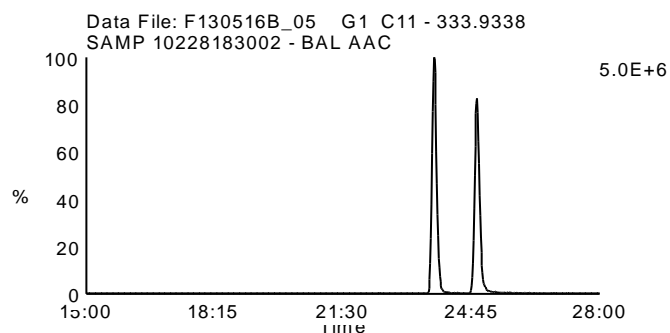
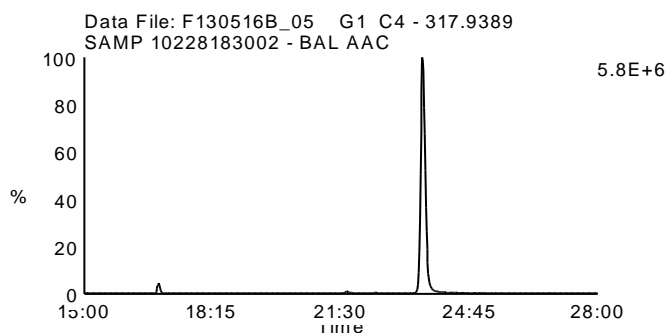
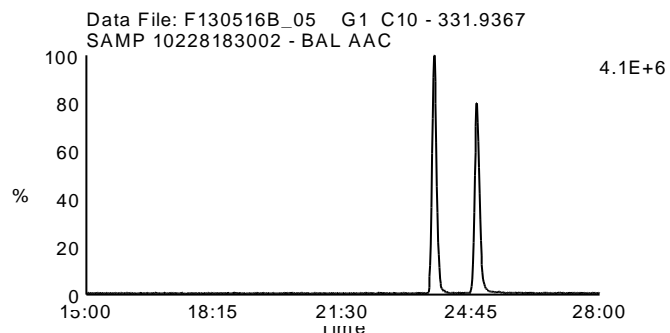
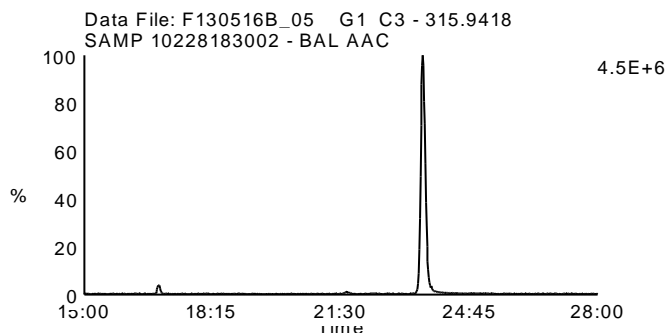
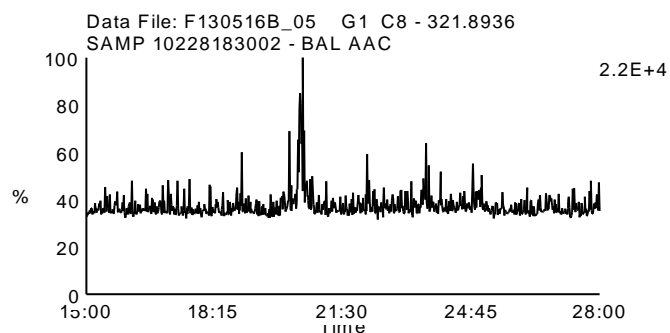
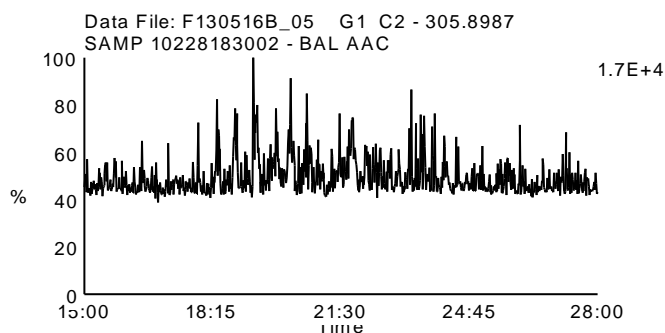
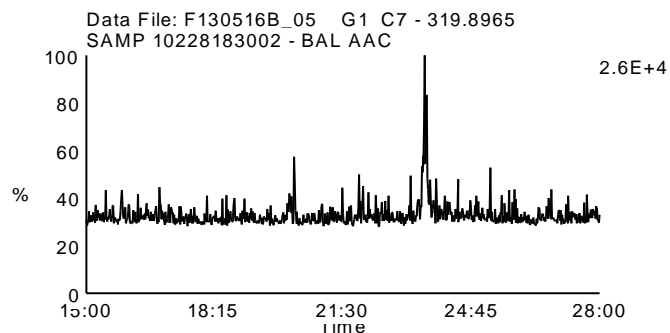
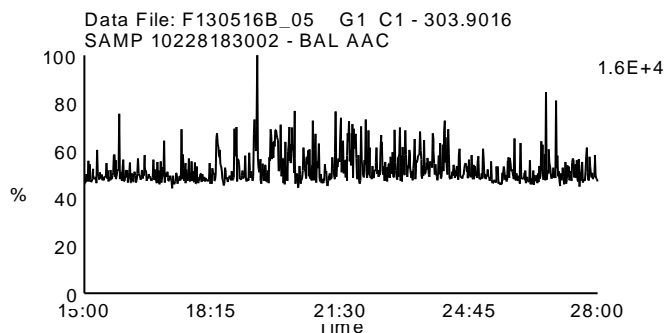
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183002 - BAL AAC

Lab Sample ID: 10228183002

Client Sample ID: U-2

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130516B\_05

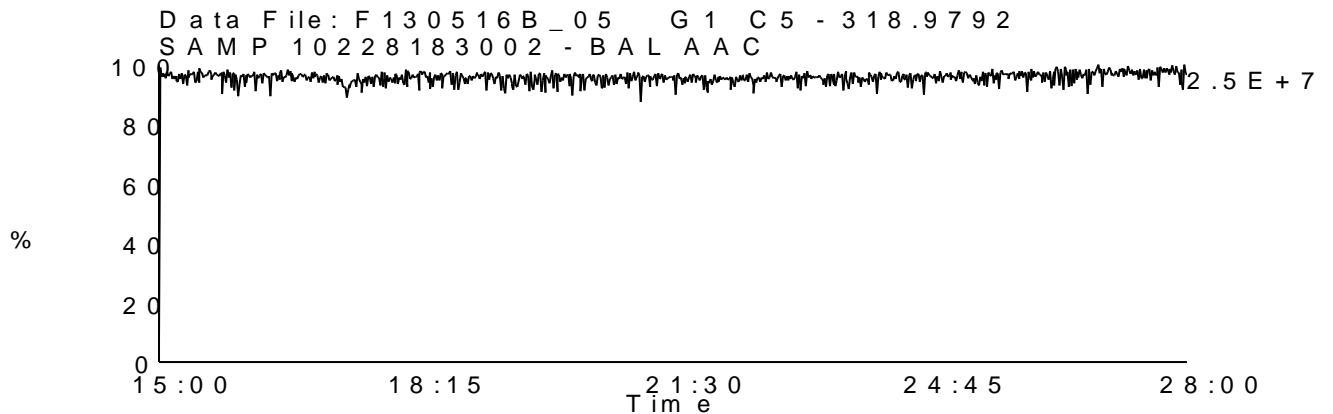
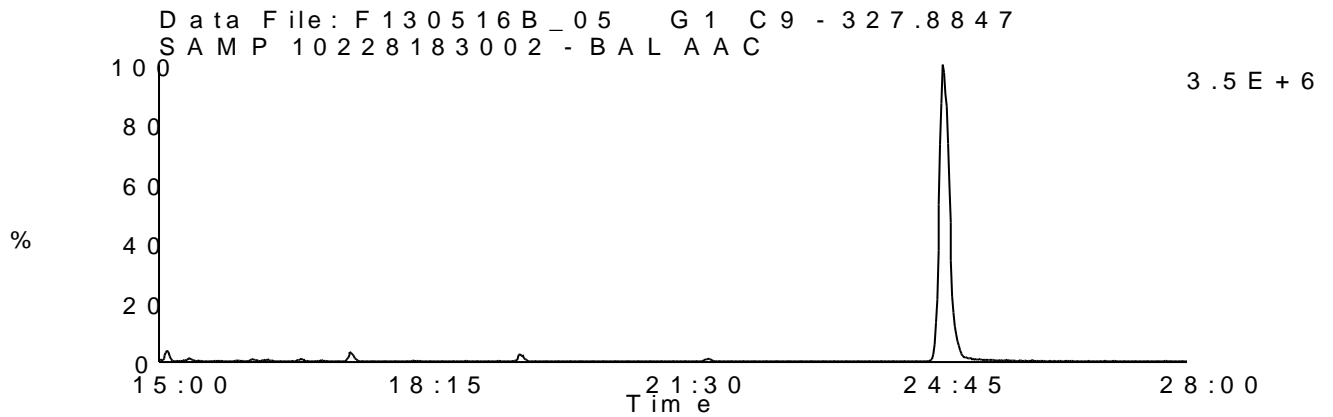
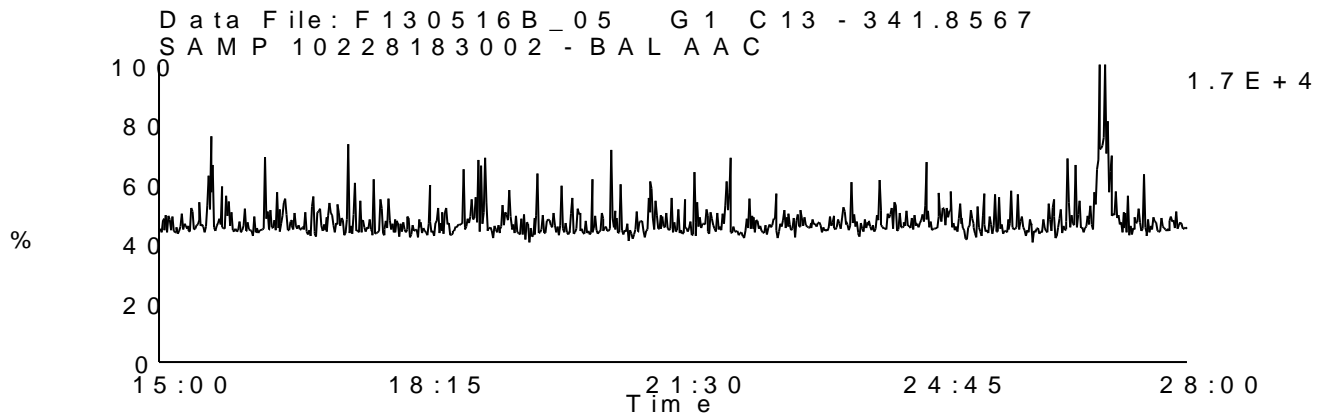
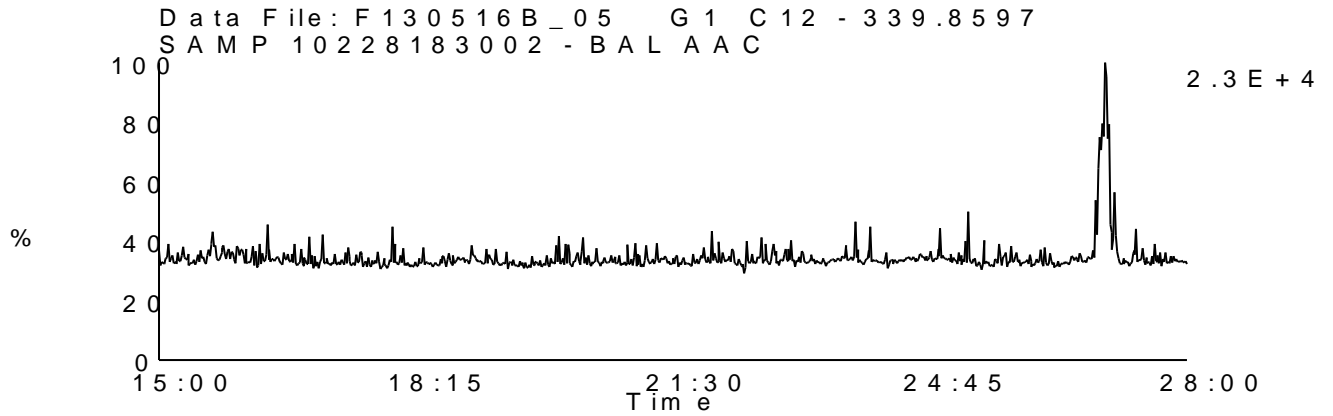
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183002 - BAL AAC

Lab Sample ID: 10228183002

Client Sample ID: U-2

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516B\_05

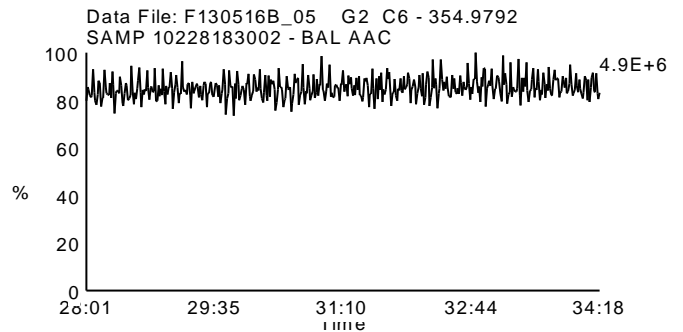
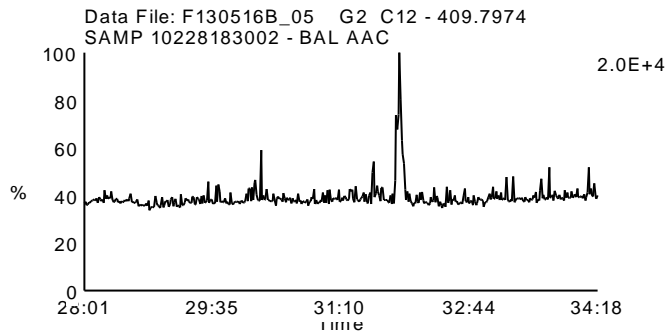
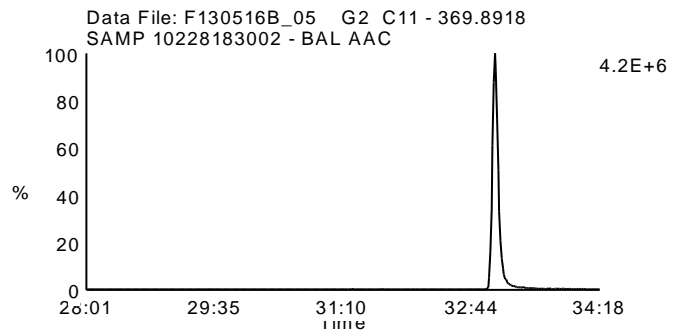
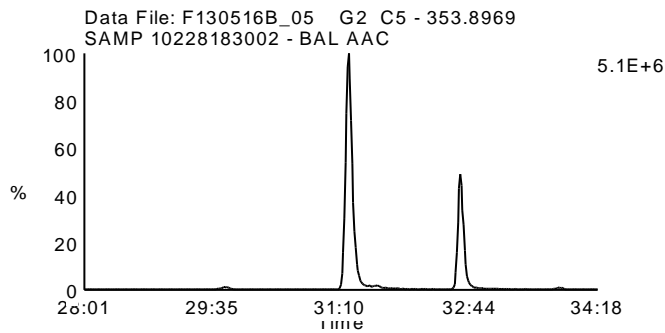
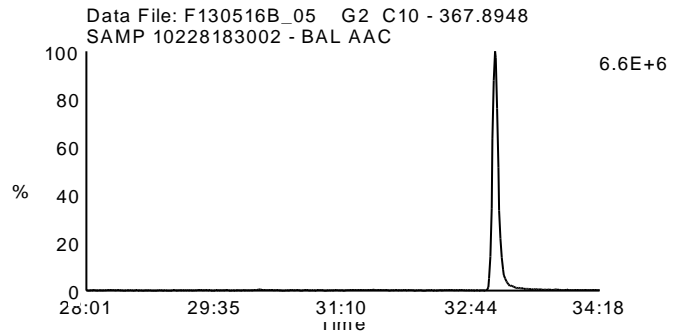
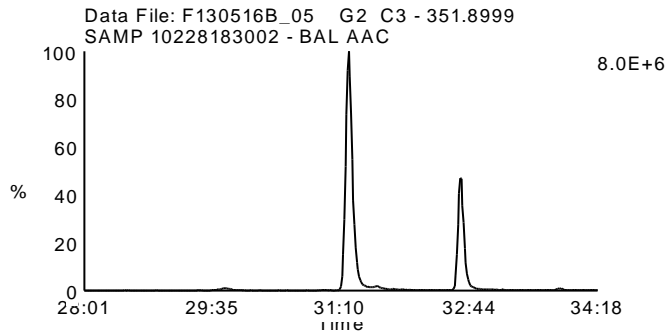
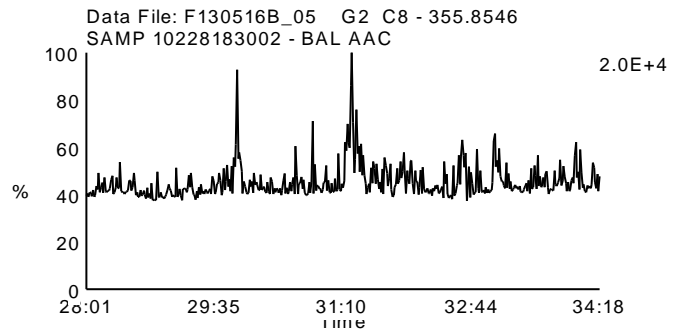
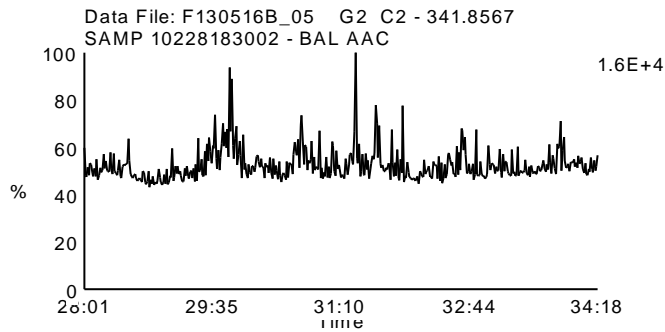
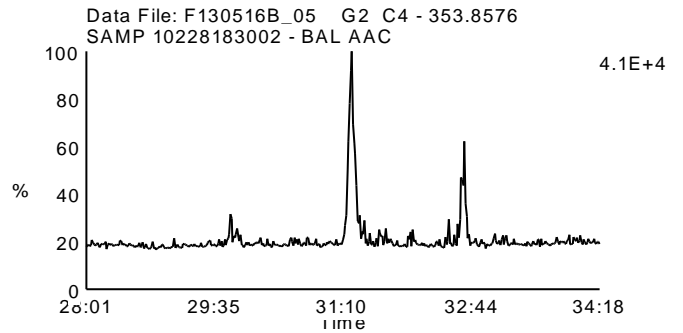
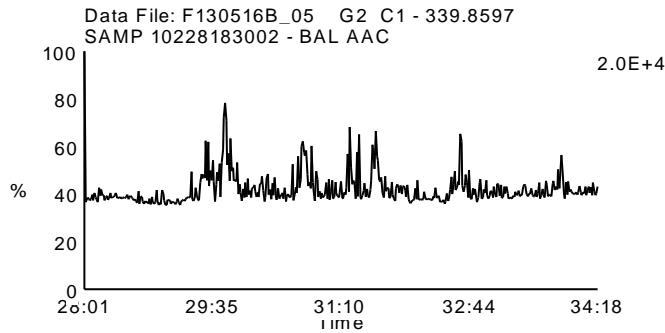
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183002 - BAL AAC

Lab Sample ID: 10228183002

Client Sample ID: U-2

Instrument: 10MSHR05 (F)





Homologue Group: Hexas

Data File Name: F130516B\_05

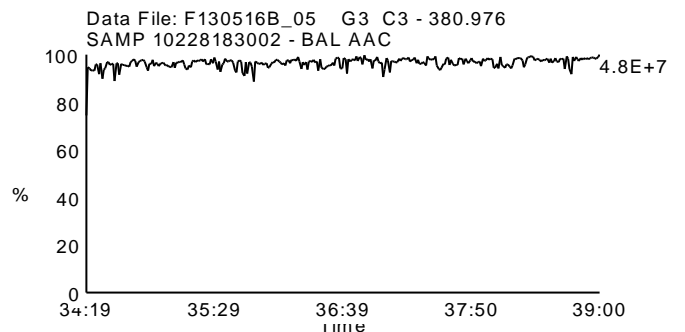
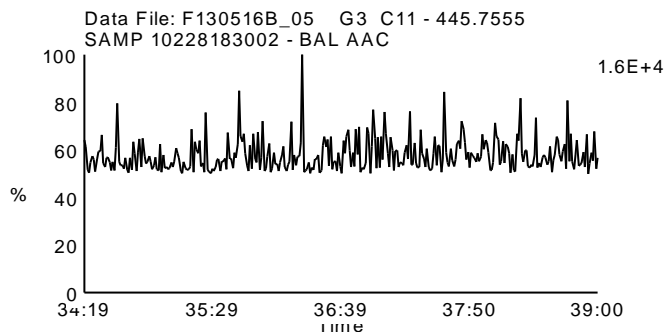
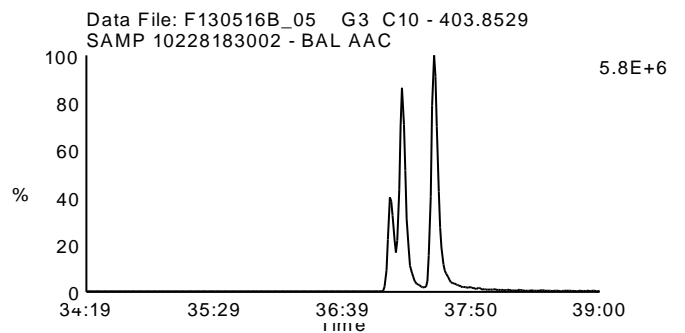
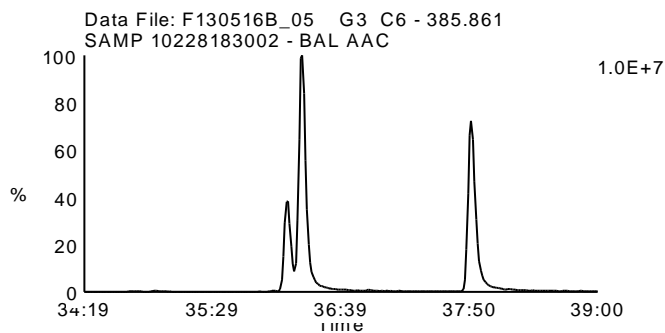
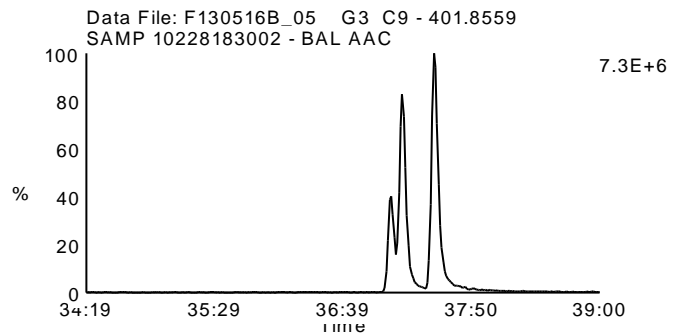
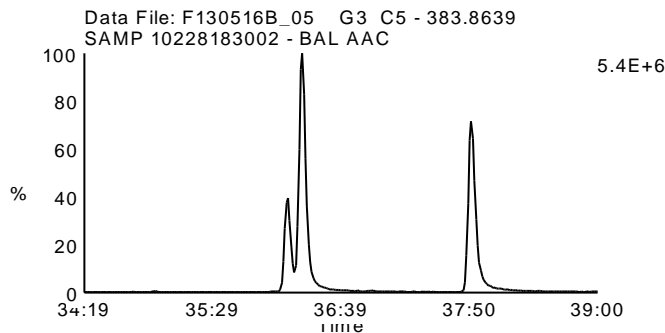
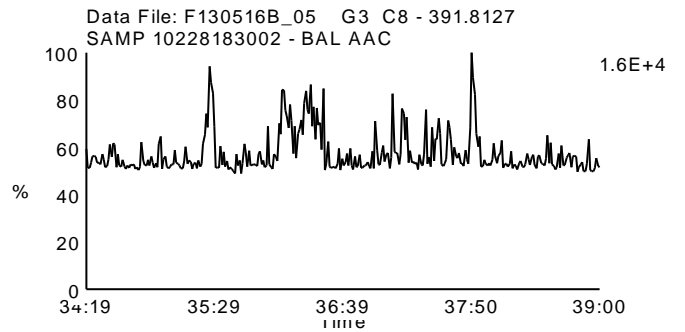
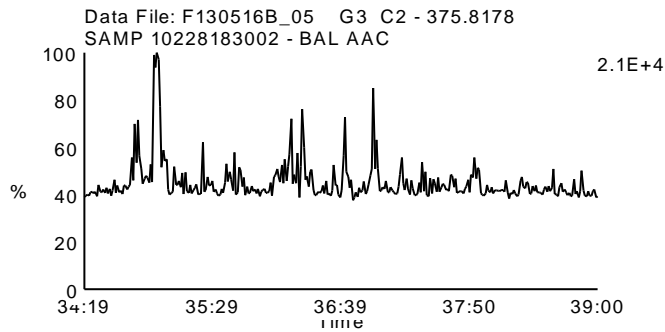
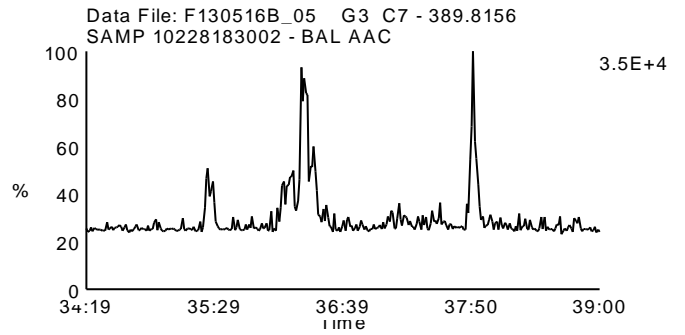
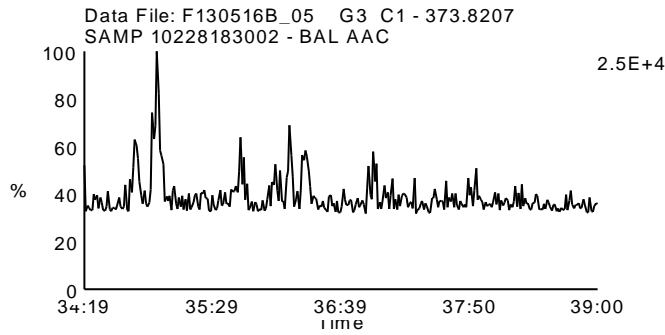
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183002 - BAL AAC

Lab Sample ID: 10228183002

Client Sample ID: U-2

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516B\_05

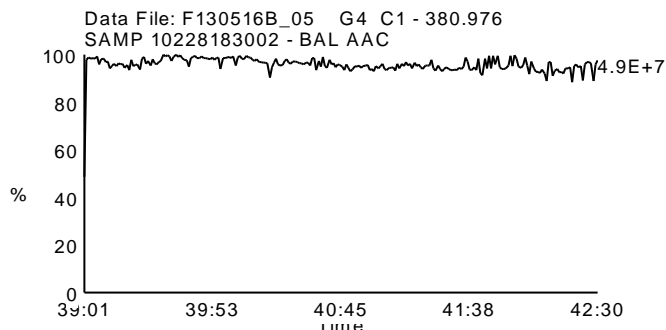
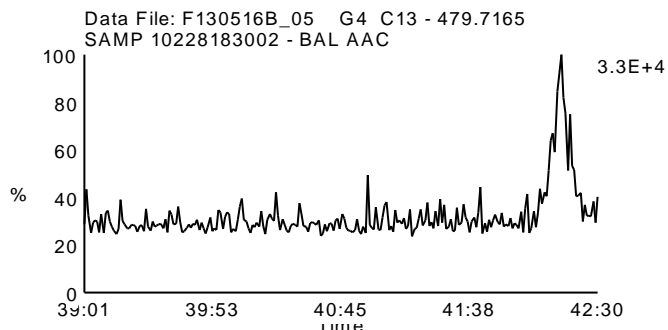
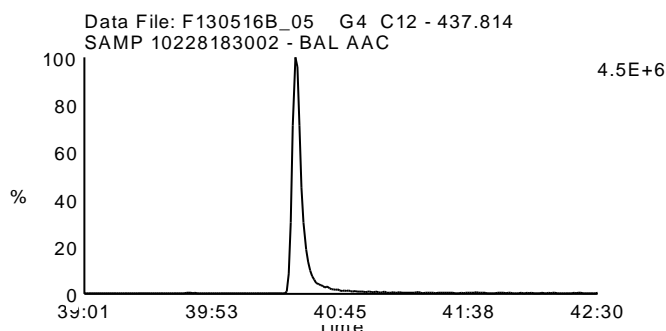
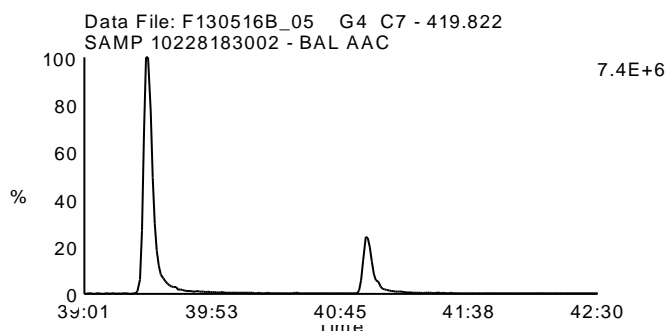
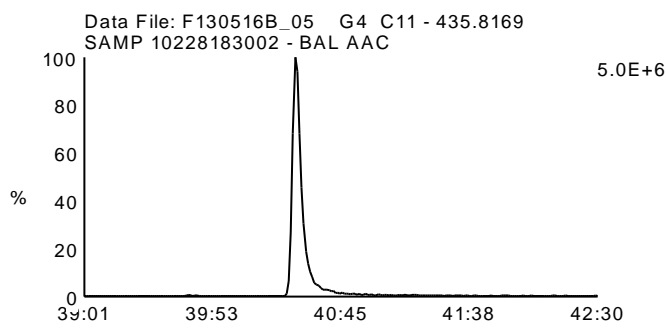
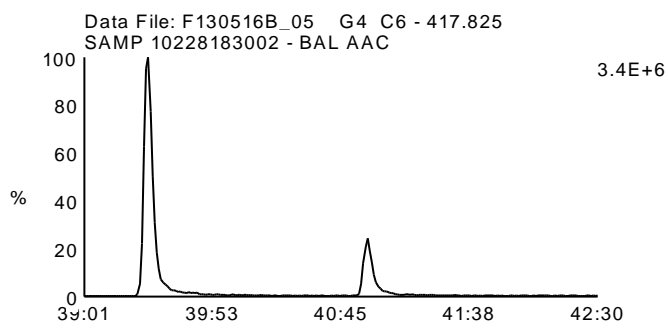
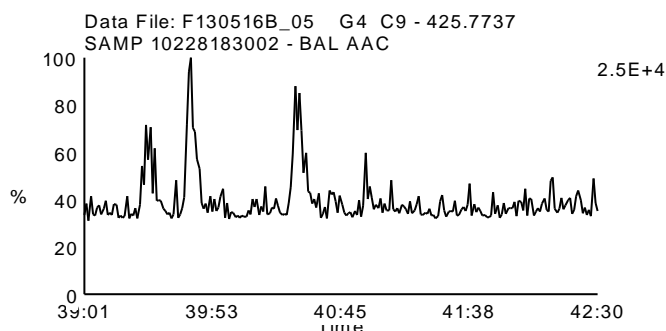
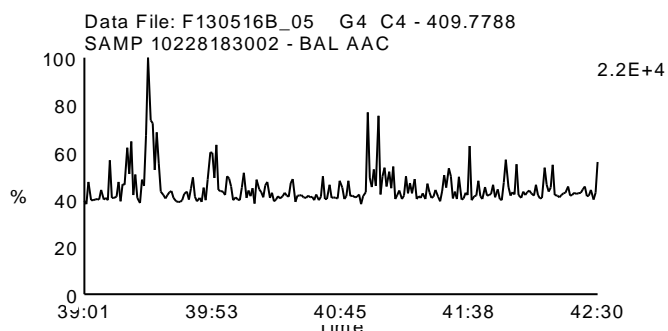
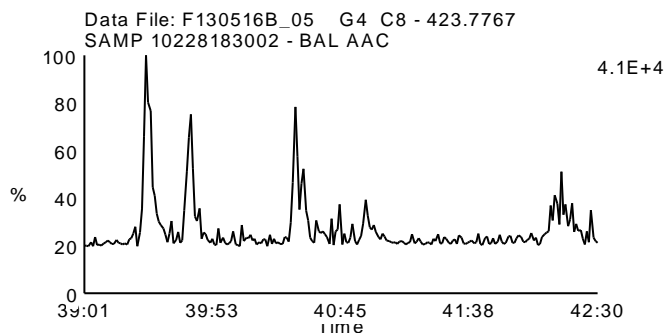
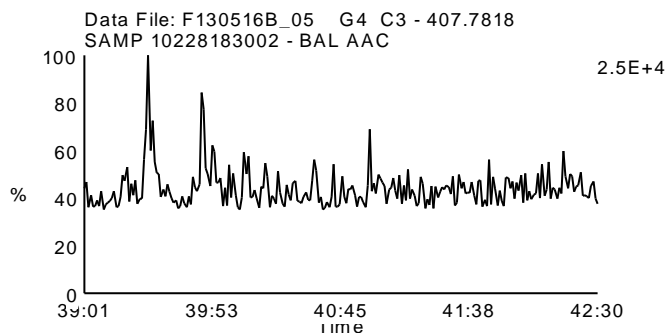
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183002 - BAL AAC

Lab Sample ID: 10228183002

Client Sample ID: U-2

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130516B\_05

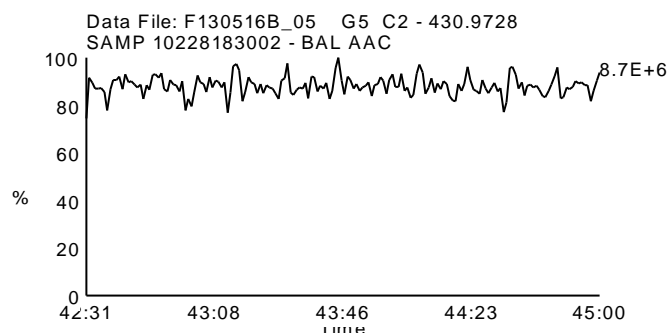
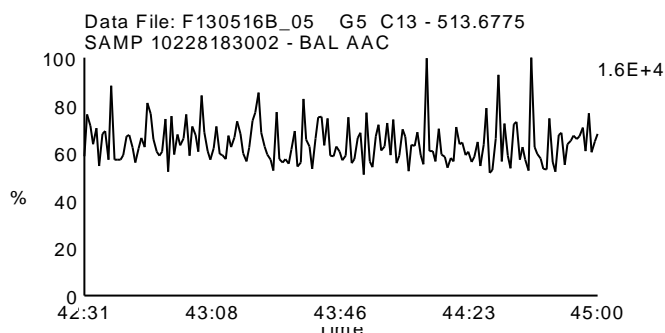
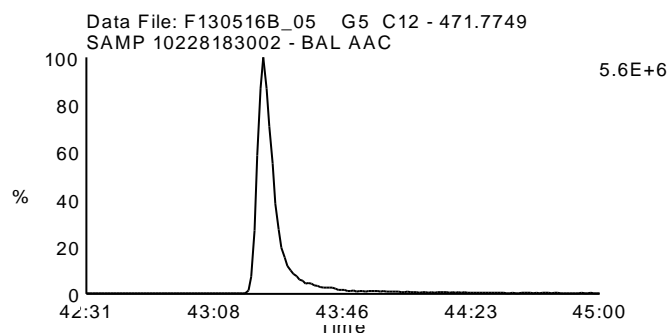
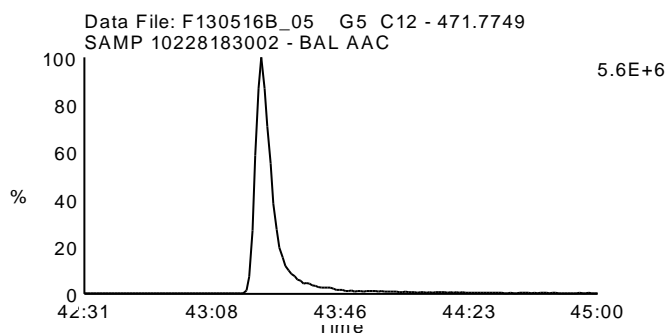
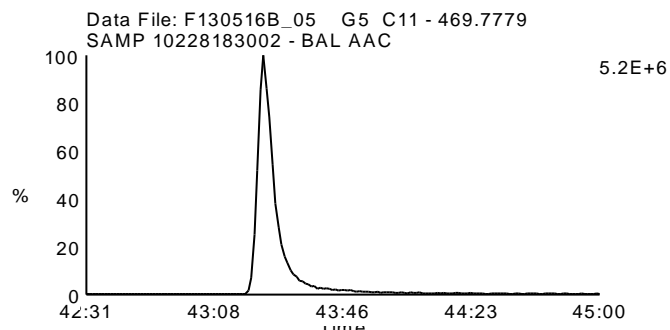
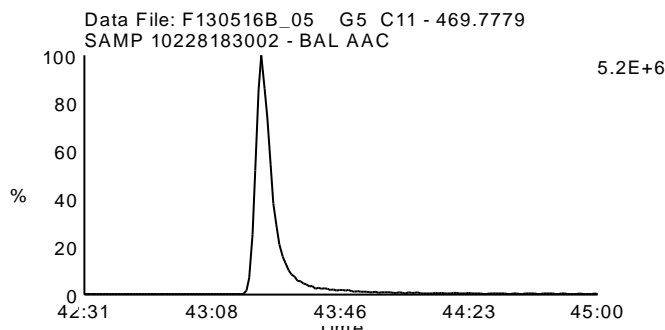
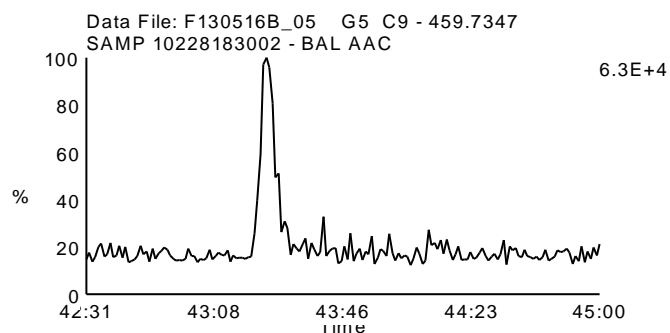
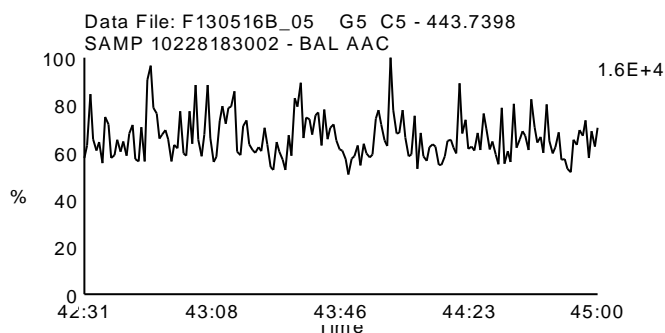
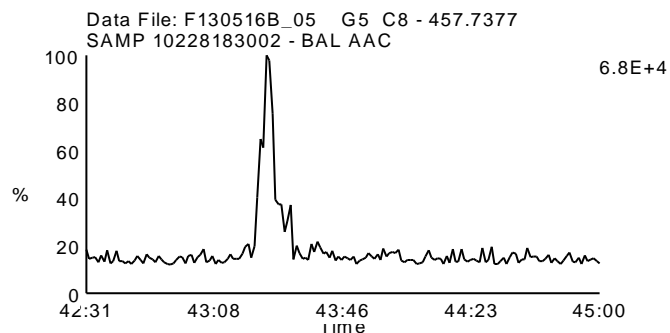
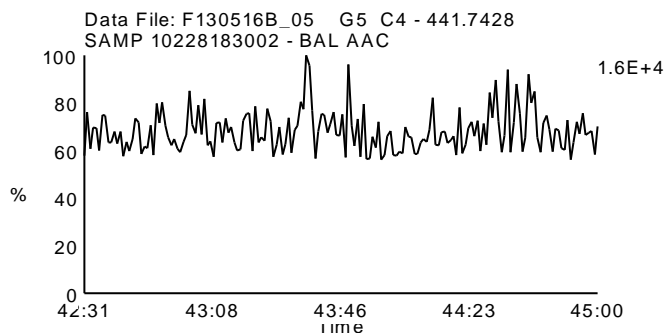
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183002 - BAL AAC

Lab Sample ID: 10228183002

Client Sample ID: U-2

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130516B\_06

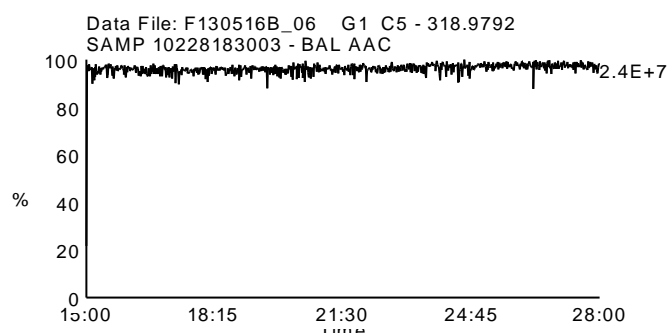
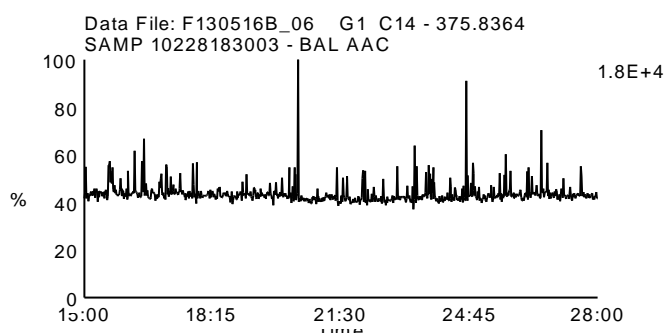
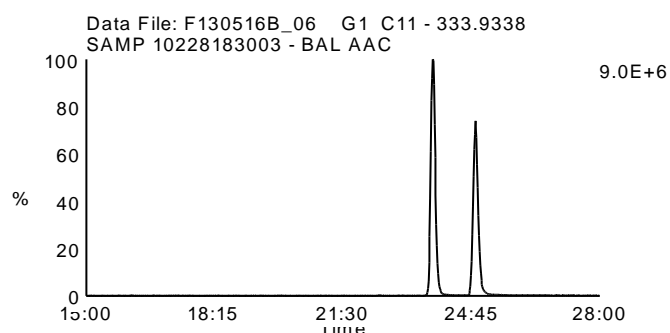
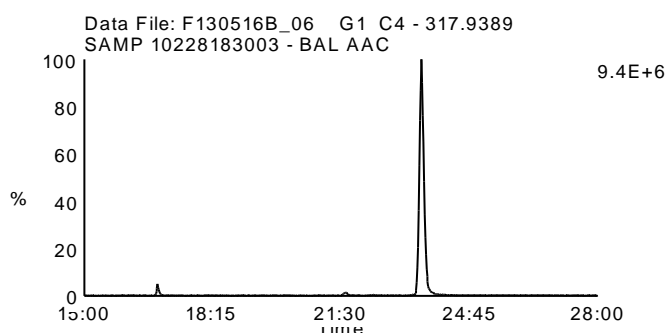
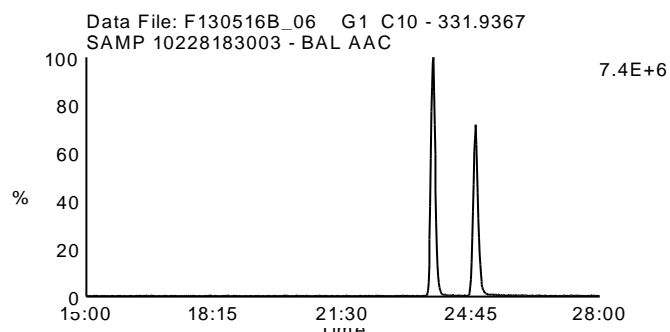
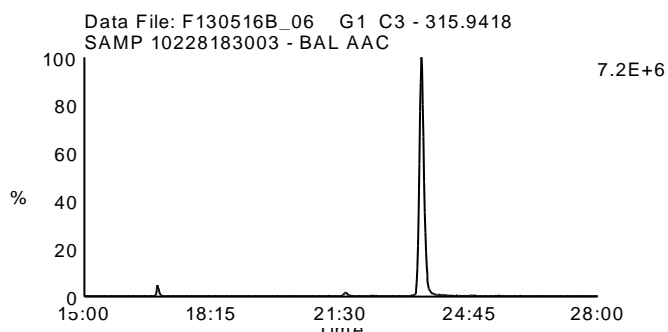
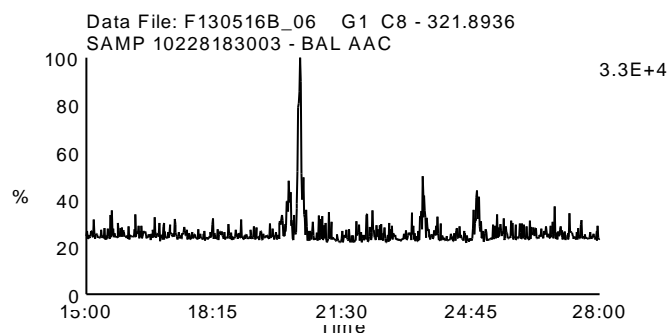
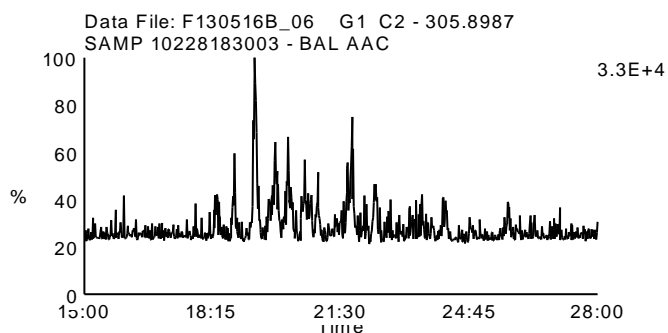
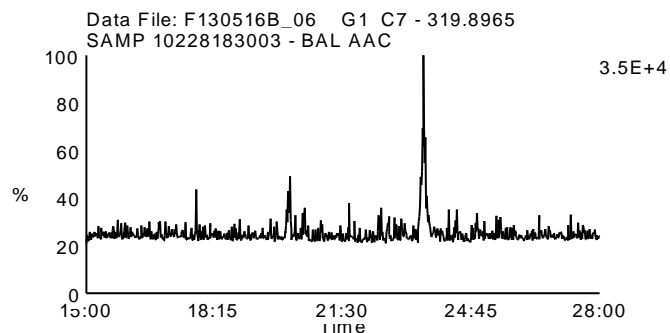
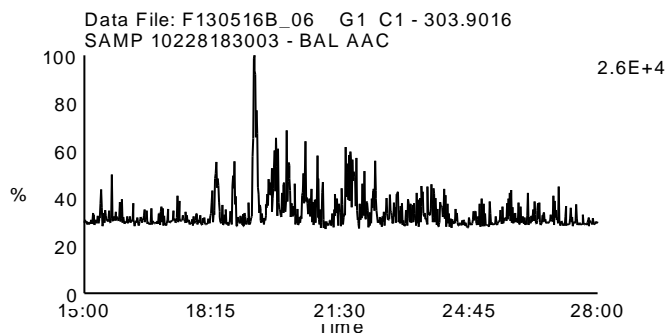
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183003 - BAL AAC

Lab Sample ID: 10228183003

Client Sample ID: BZ-1

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130516B\_06

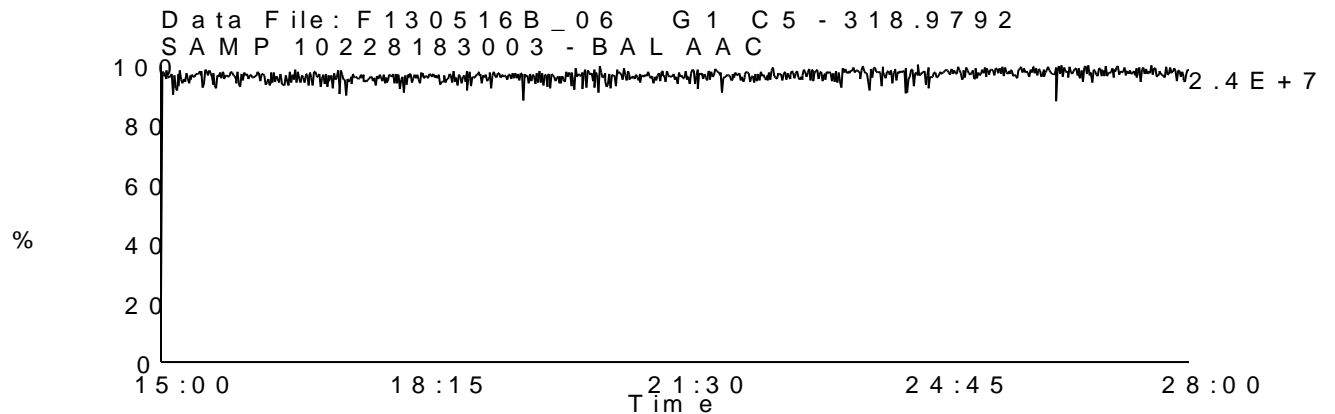
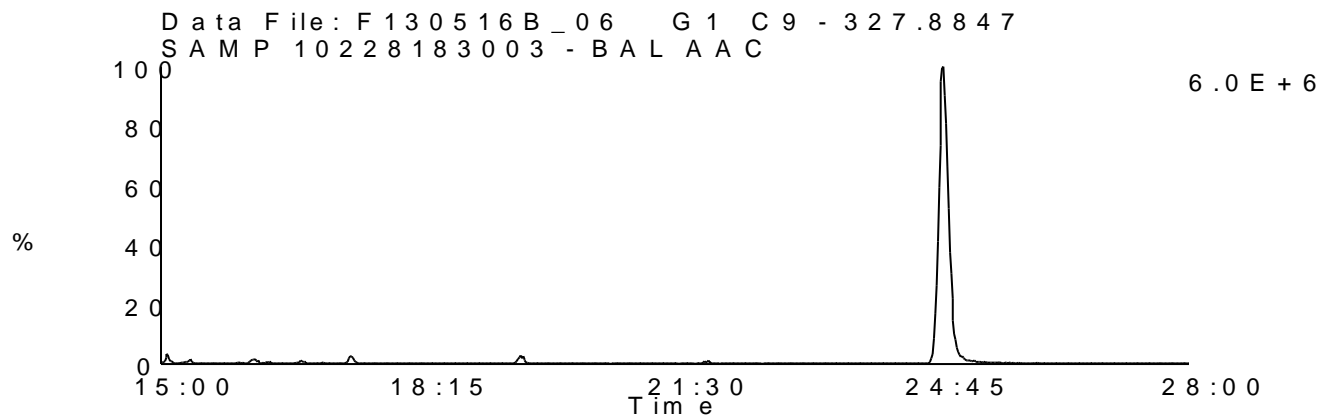
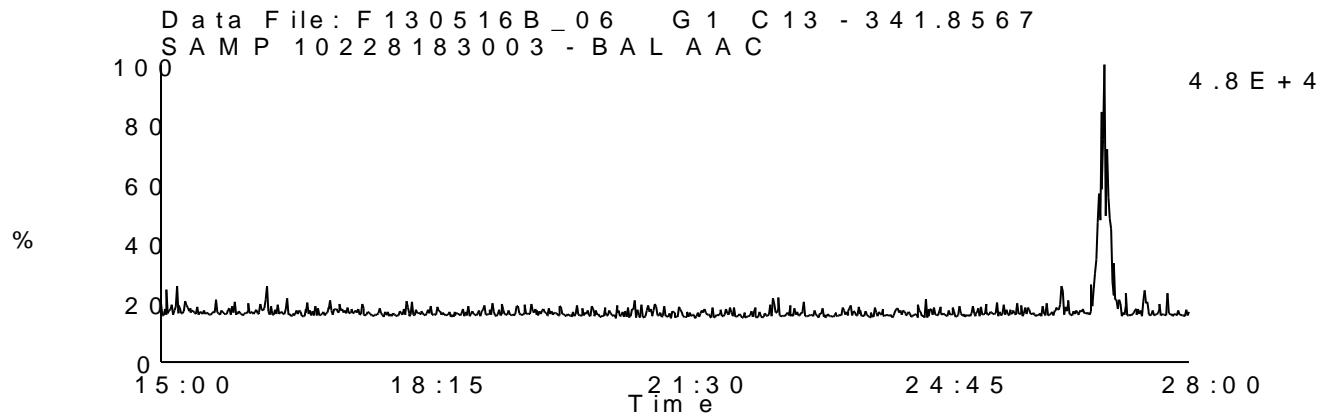
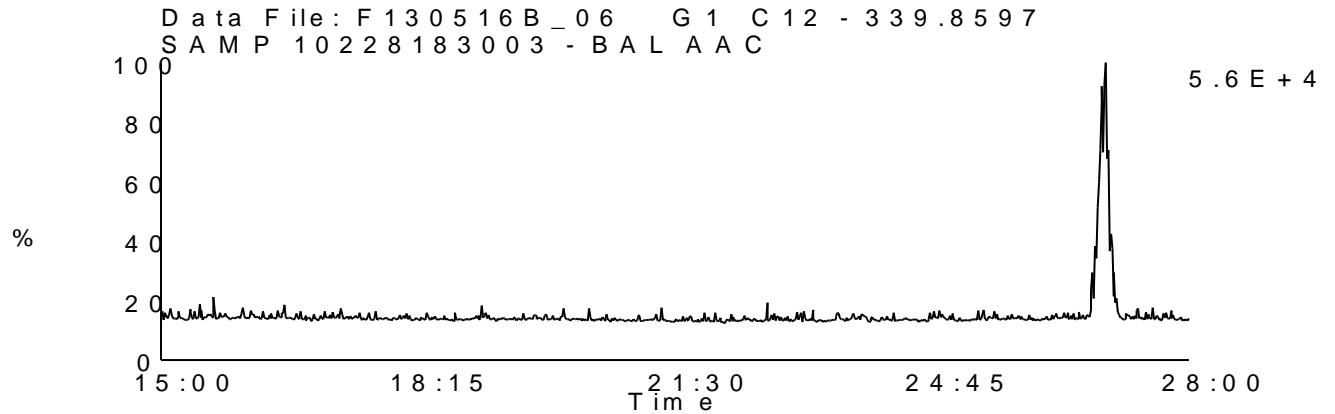
Lab Sample ID: 10228183003

Date Acquired: 5/16/2013

Client Sample ID: BZ-1

Sample Description: SAMP 10228183003 - BAL AAC

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516B\_06

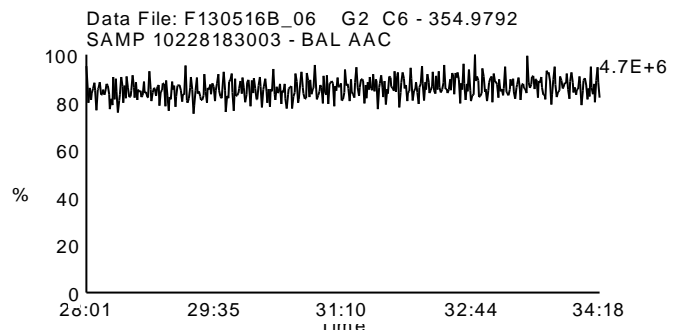
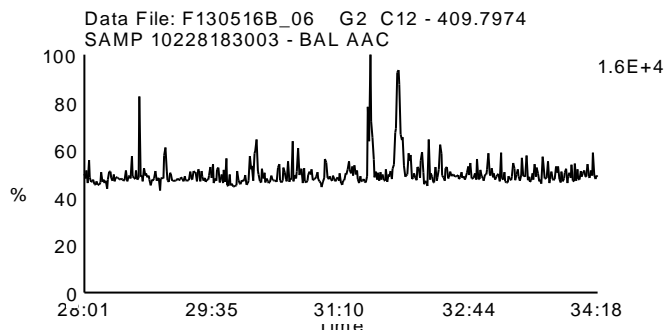
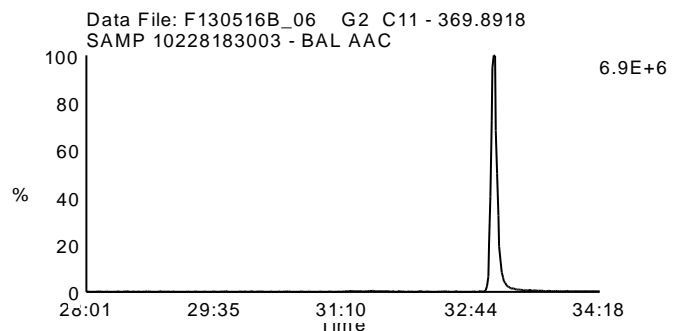
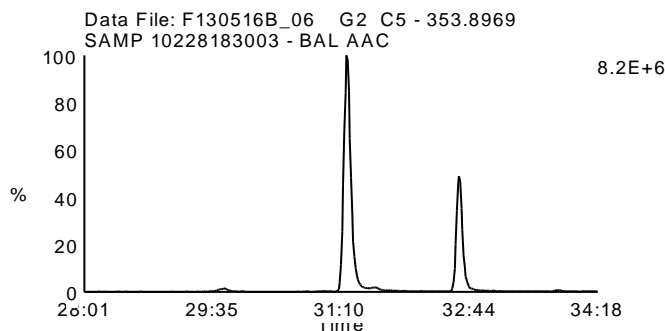
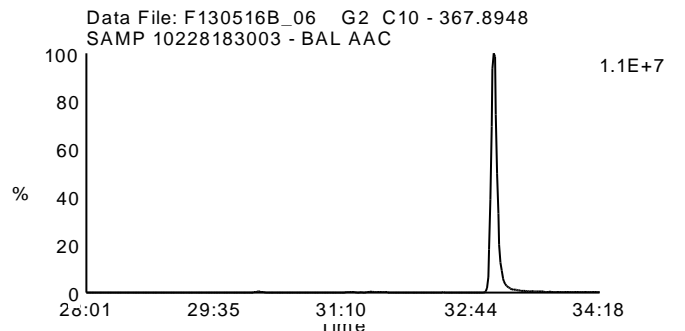
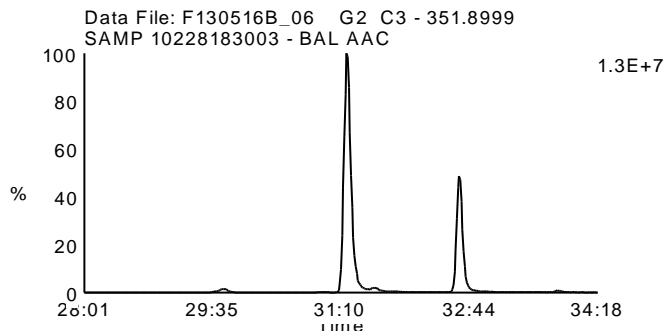
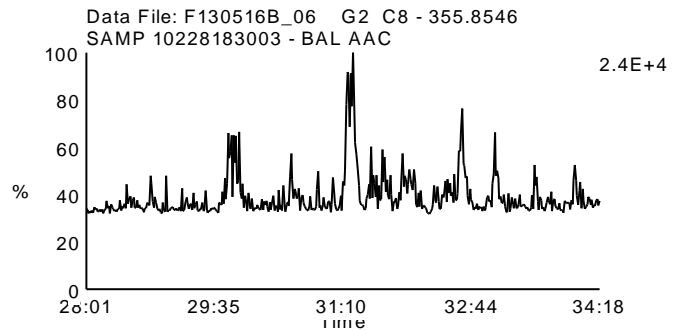
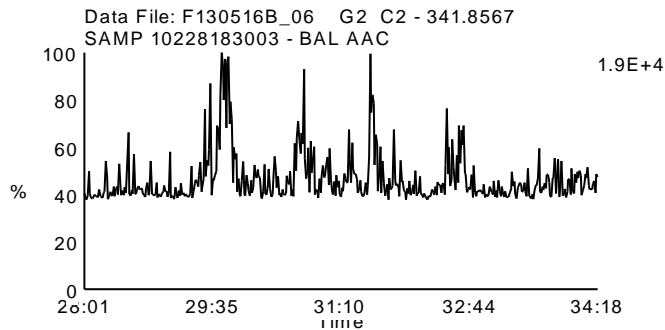
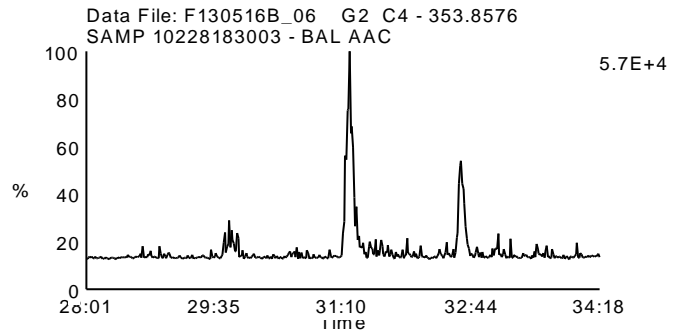
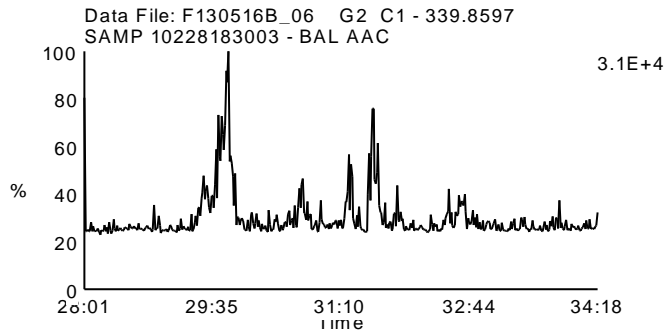
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183003 - BAL AAC

Lab Sample ID: 10228183003

Client Sample ID: BZ-1

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130516B\_06

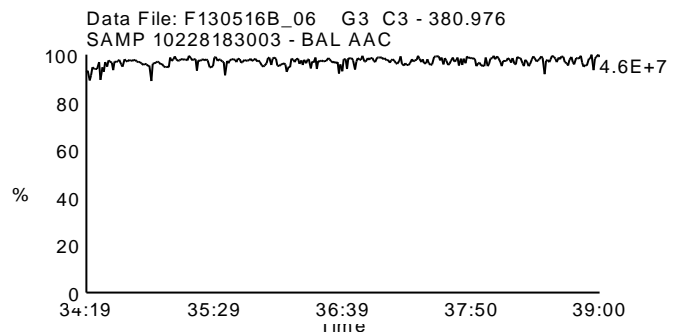
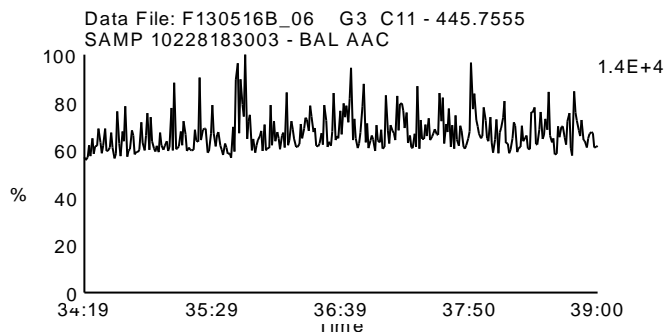
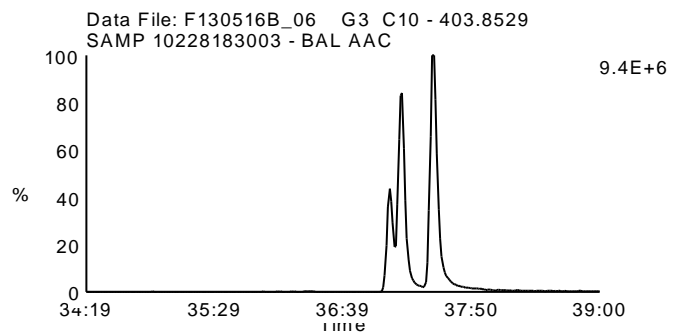
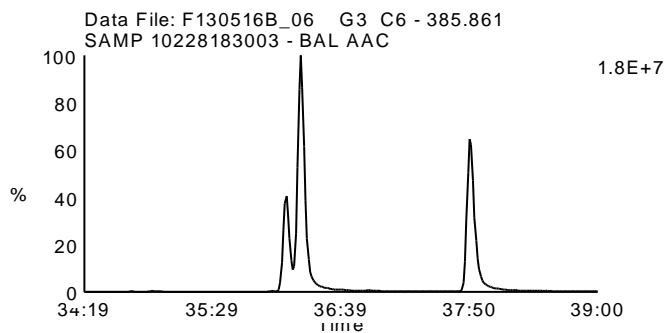
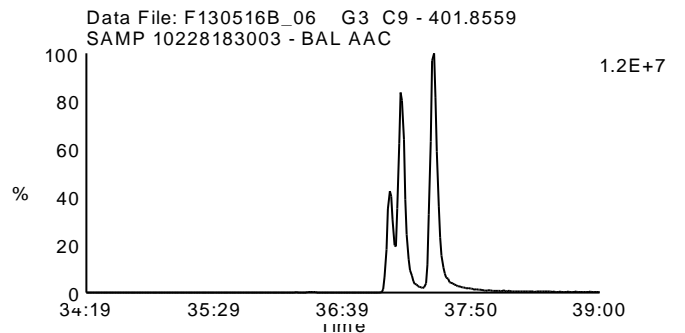
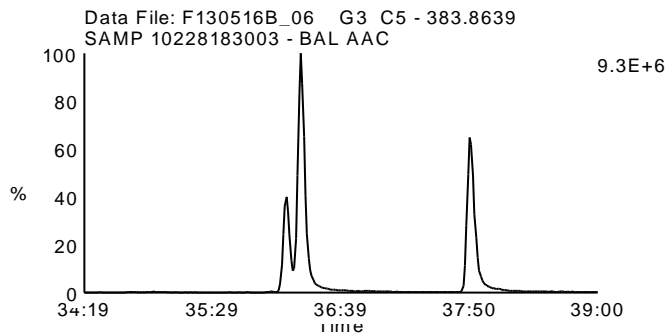
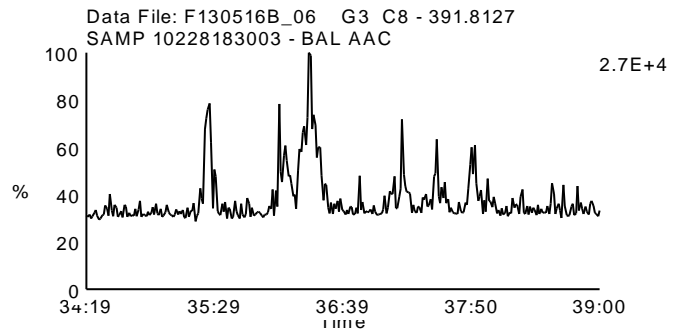
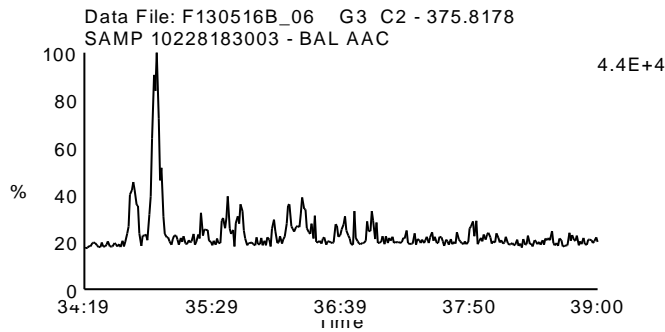
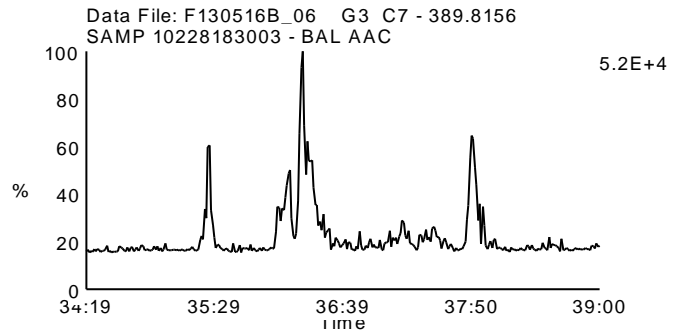
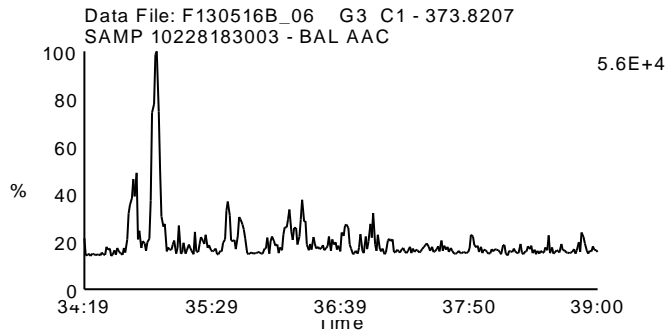
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183003 - BAL AAC

Lab Sample ID: 10228183003

Client Sample ID: BZ-1

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516B\_06

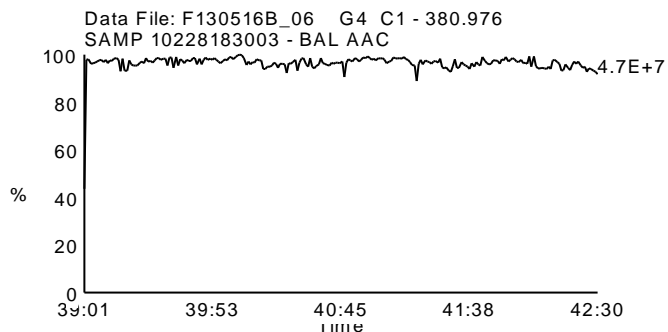
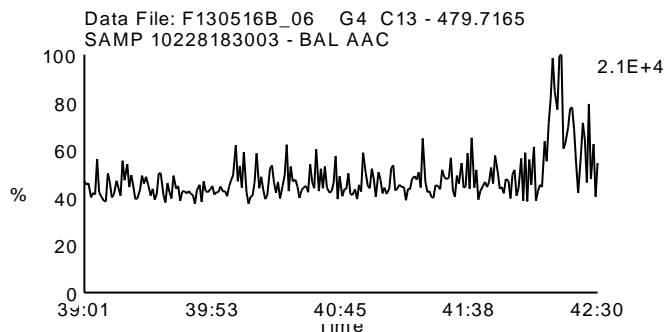
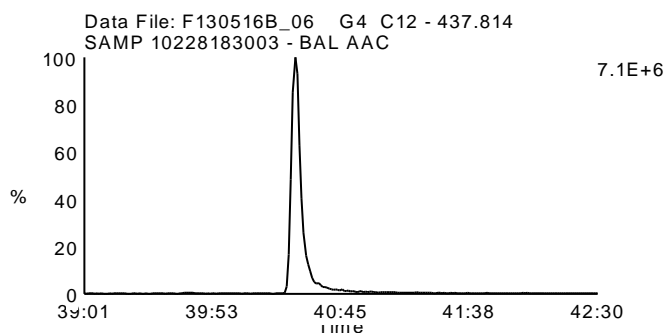
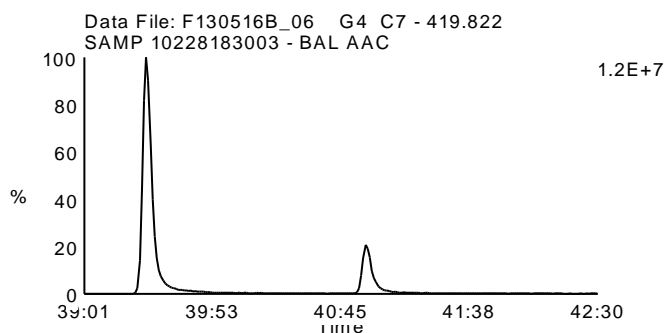
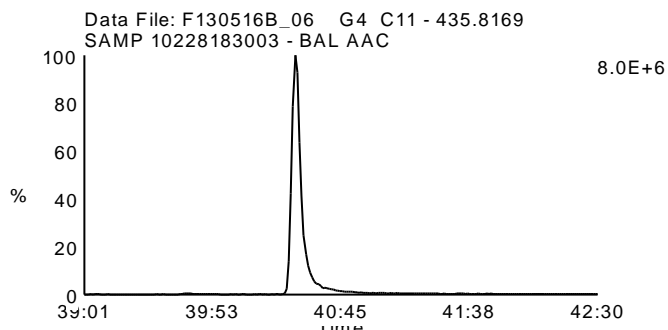
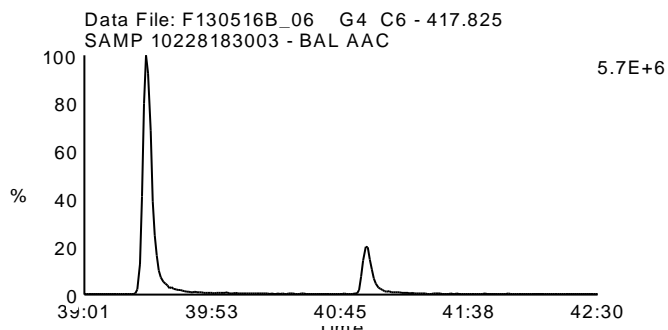
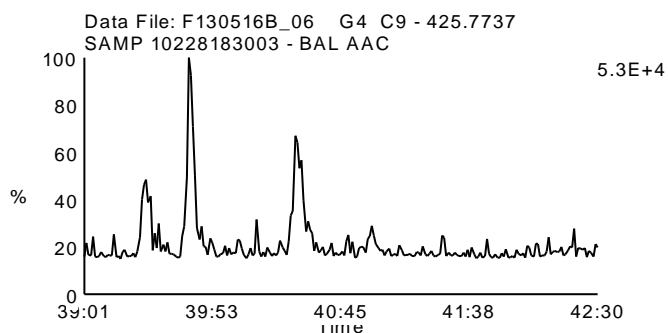
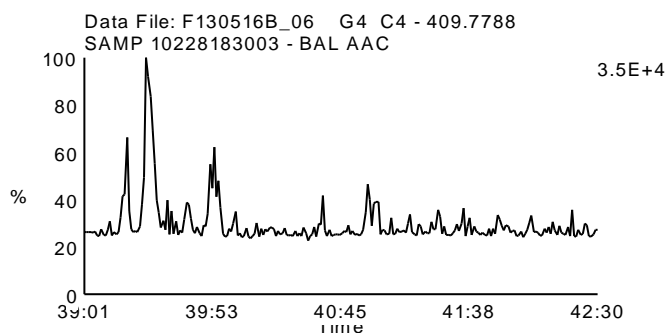
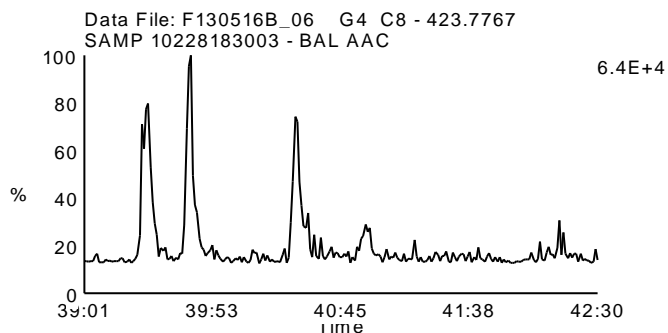
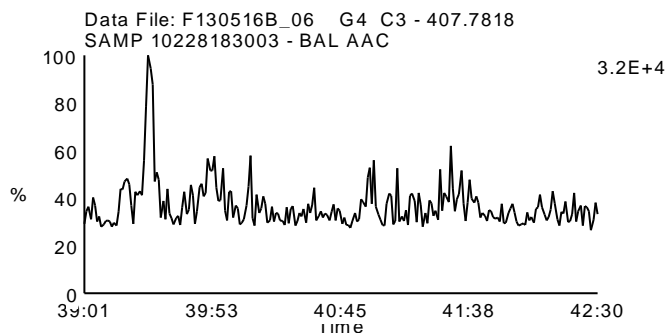
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183003 - BAL AAC

Lab Sample ID: 10228183003

Client Sample ID: BZ-1

Instrument: 10MSHR05 (F)





Homologue Group: Octas

Data File Name: F130516B\_06

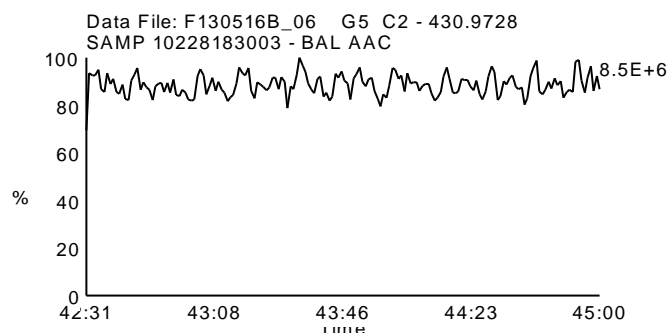
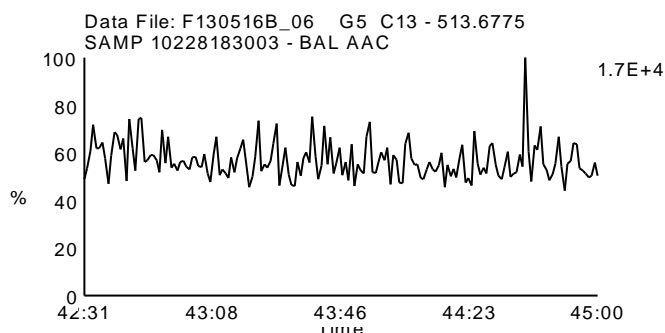
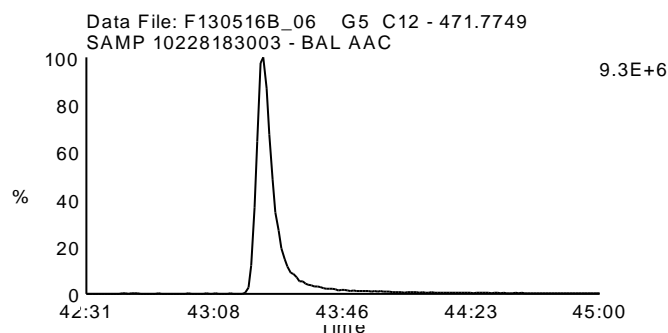
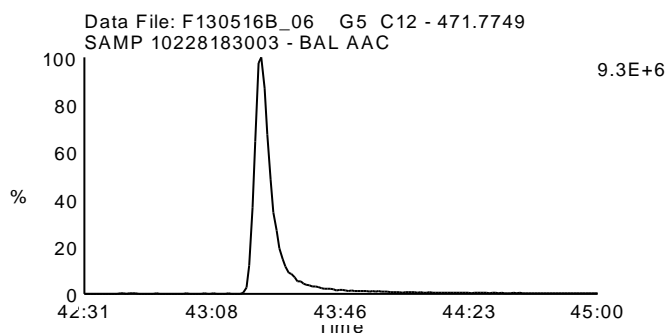
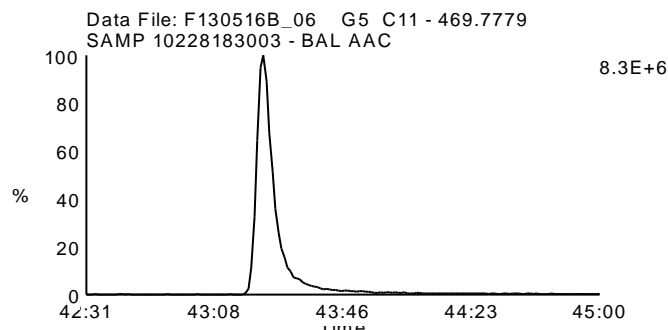
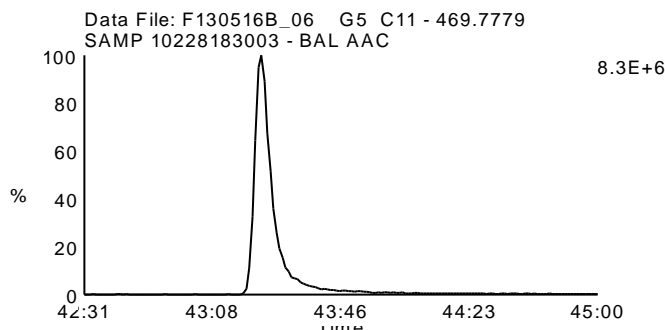
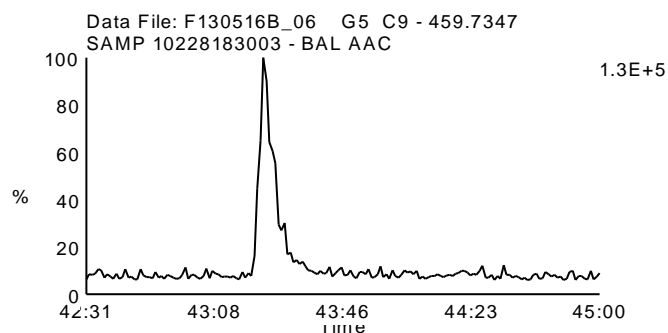
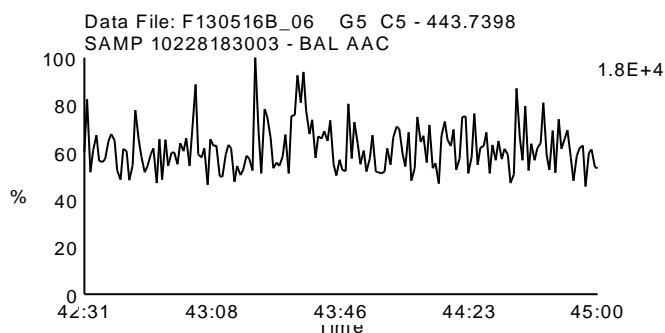
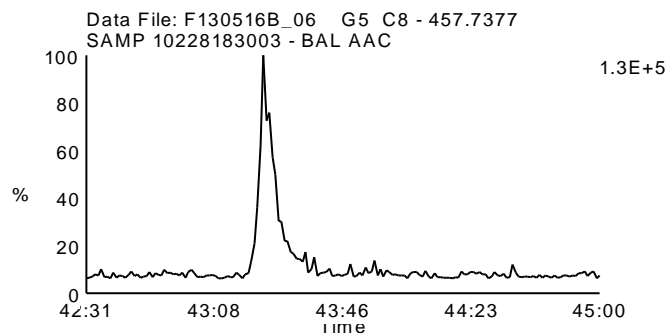
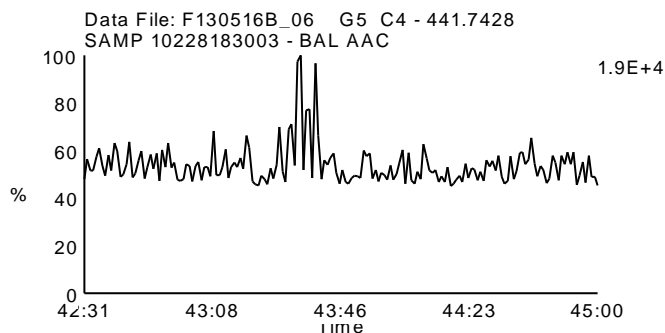
Date Acquired: 5/16/2013

Sample Description: SAMP 10228183003 - BAL AAC

Lab Sample ID: 10228183003

Client Sample ID: BZ-1

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130516B\_07

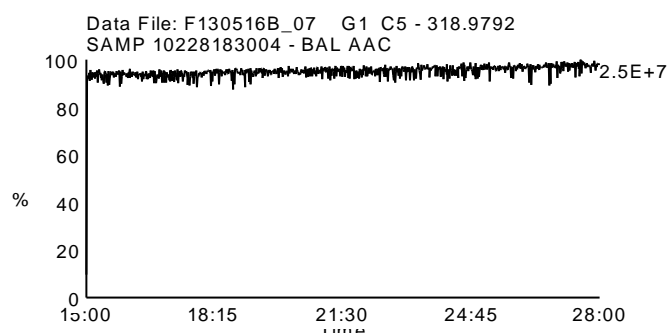
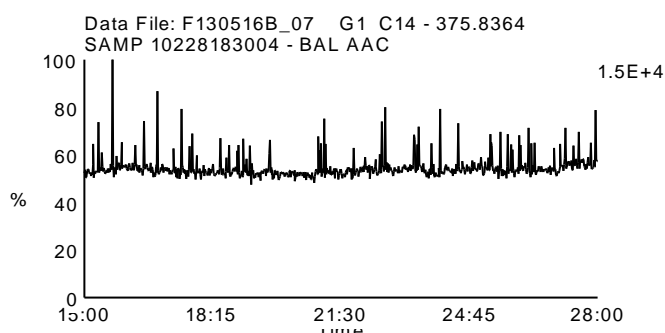
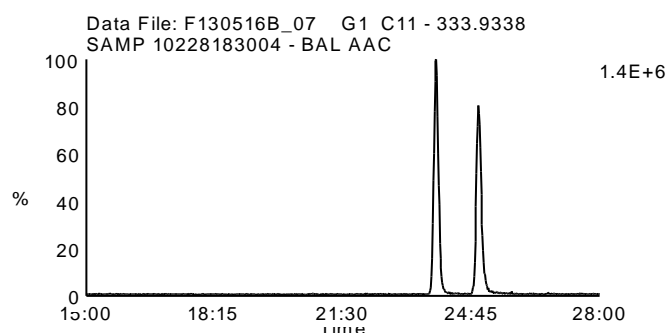
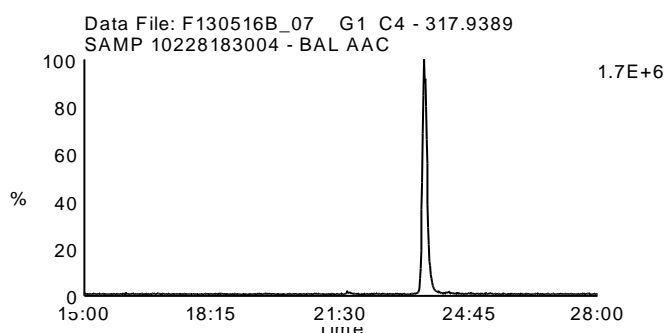
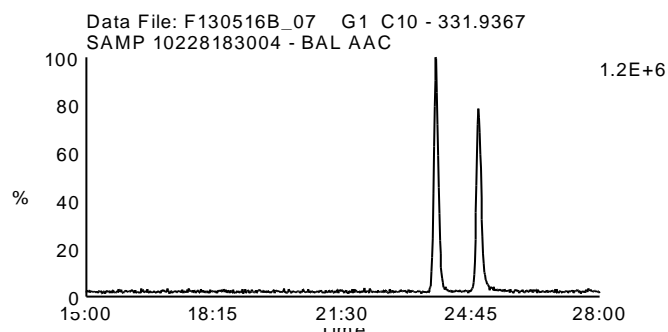
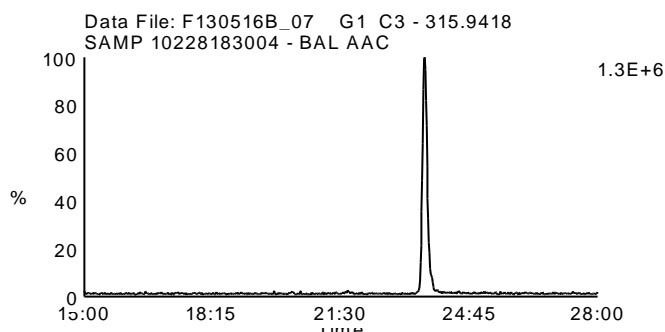
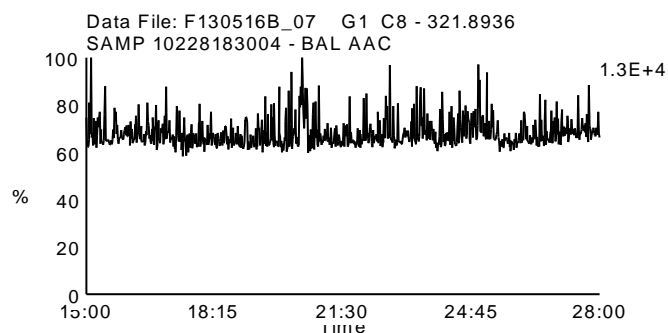
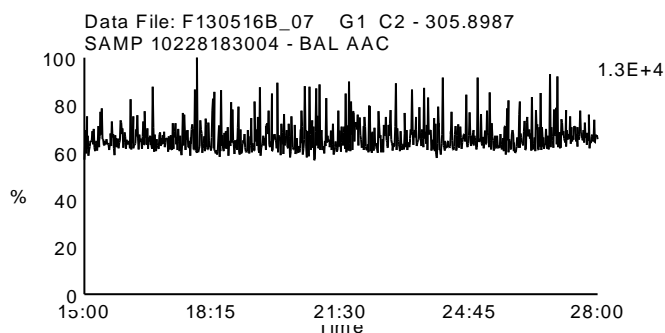
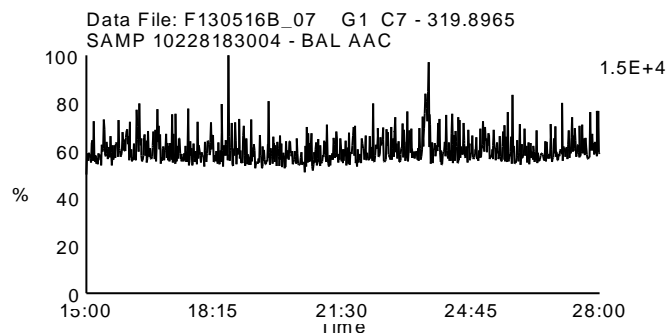
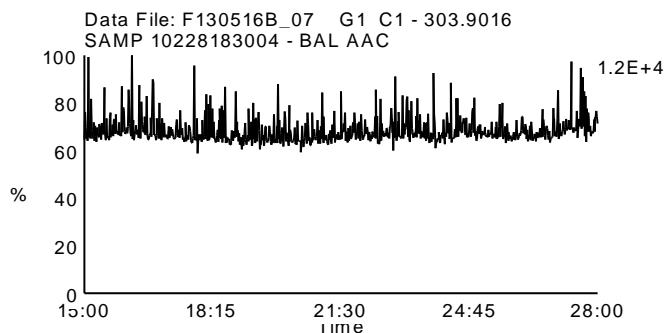
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183004 - BAL AAC

Lab Sample ID: 10228183004

Client Sample ID: F-2

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130516B\_07

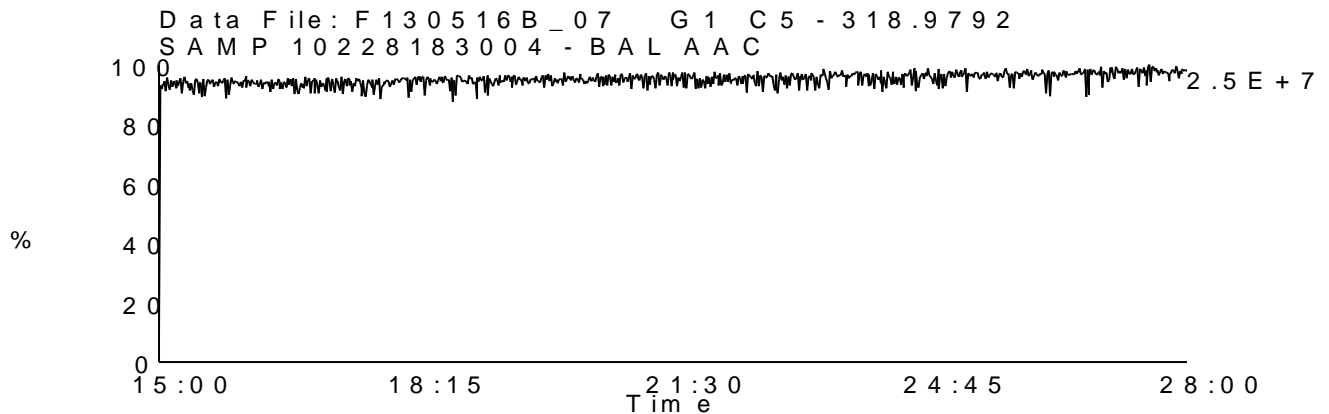
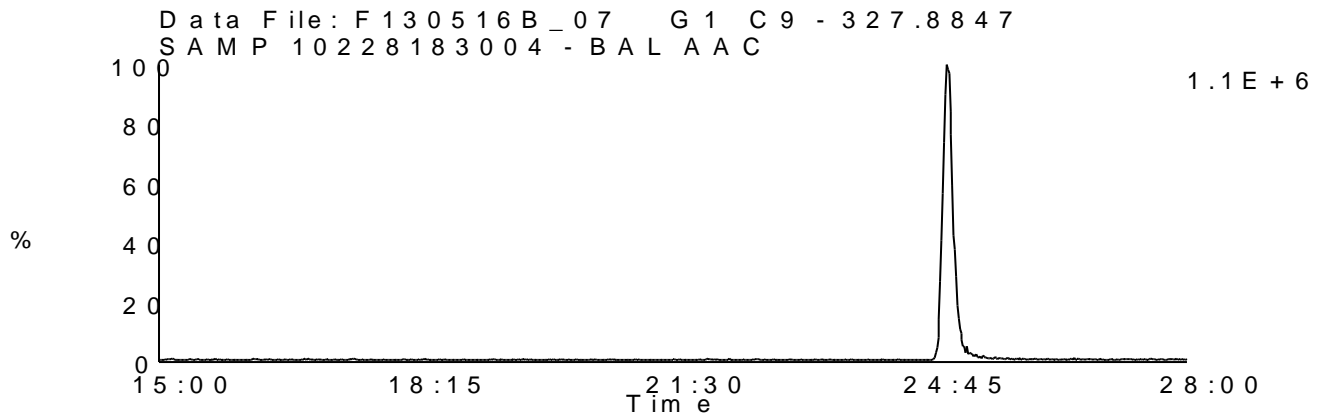
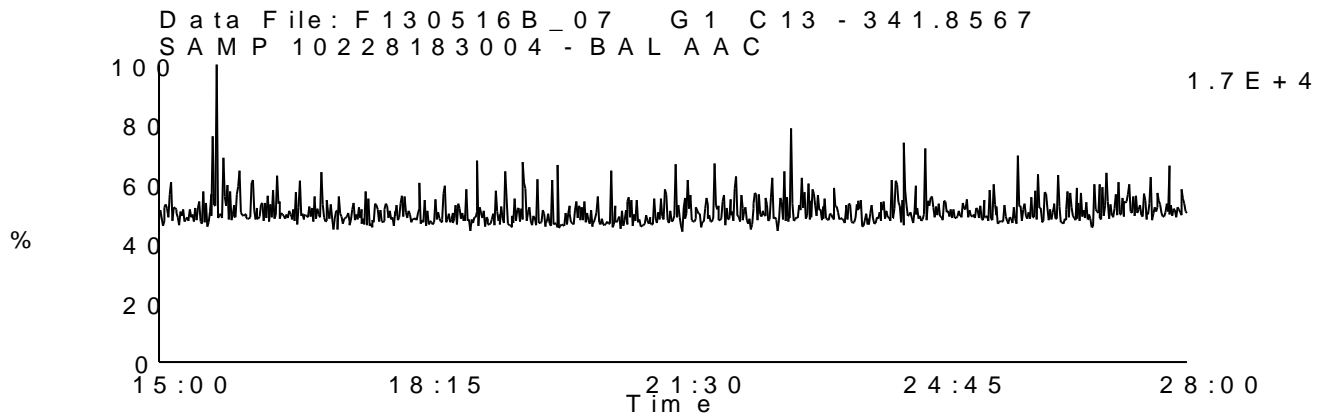
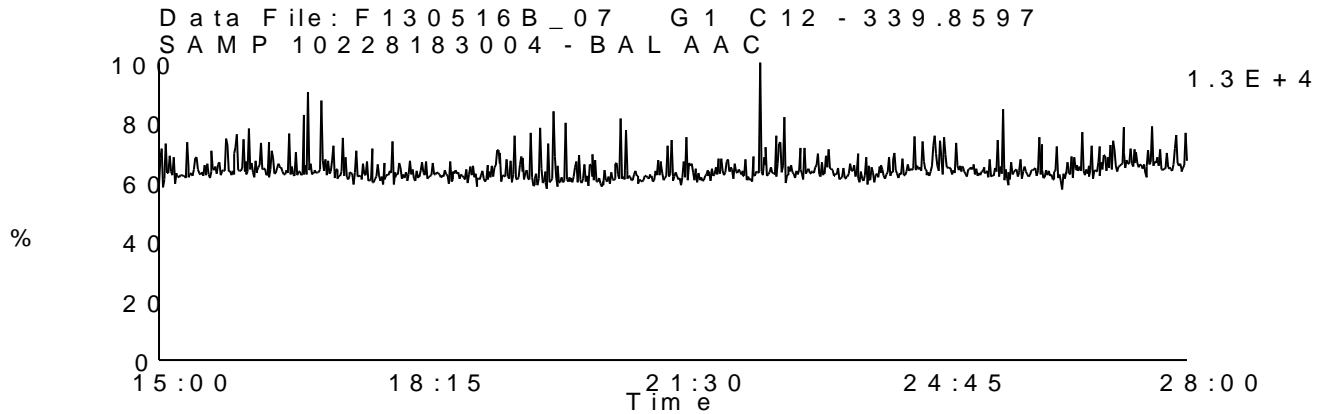
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183004 - BAL AAC

Lab Sample ID: 10228183004

Client Sample ID: F-2

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516B\_07

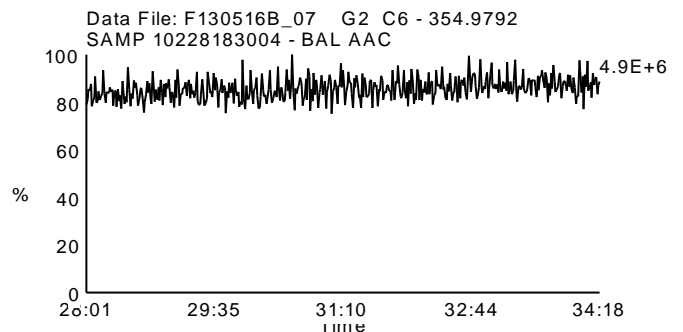
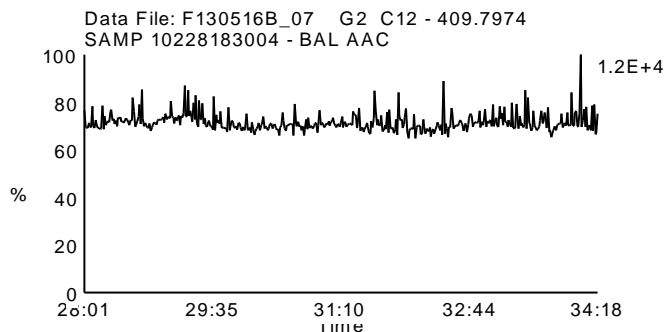
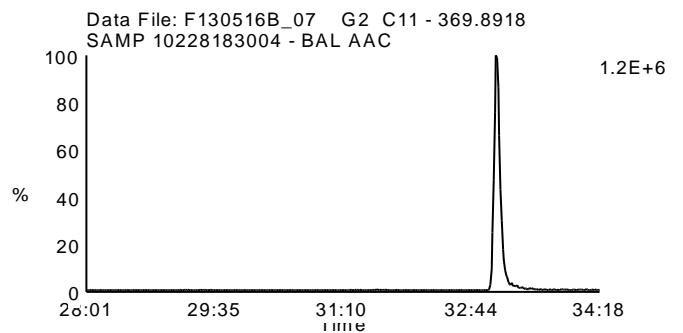
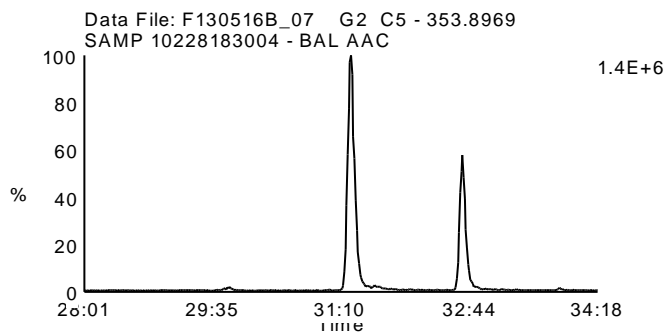
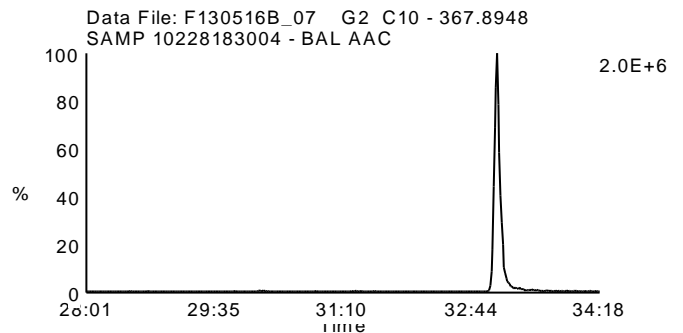
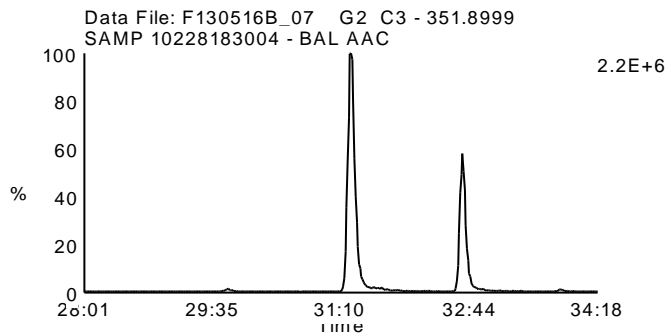
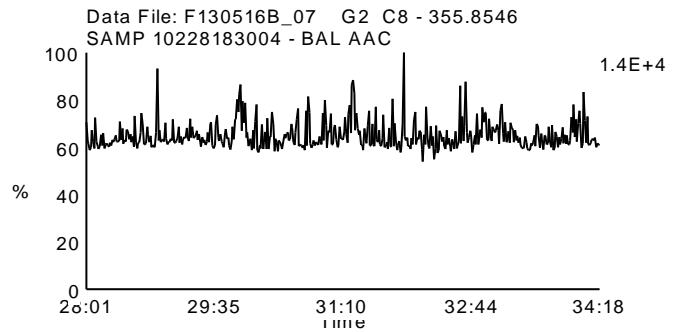
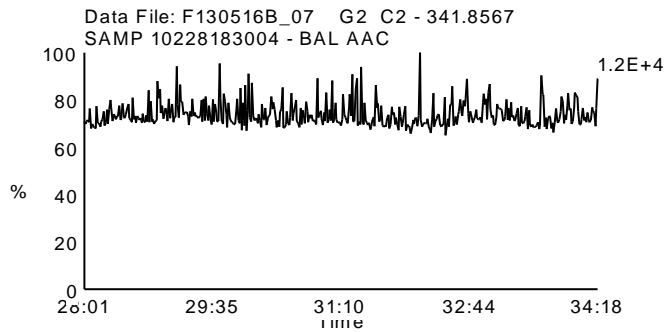
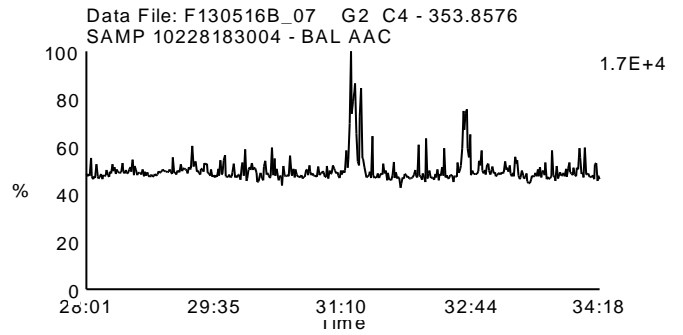
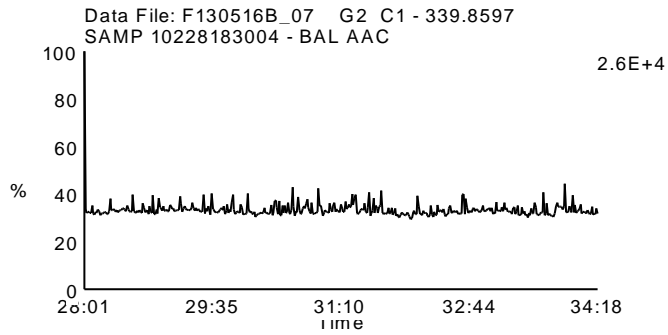
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183004 - BAL AAC

Lab Sample ID: 10228183004

Client Sample ID: F-2

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130516B\_07

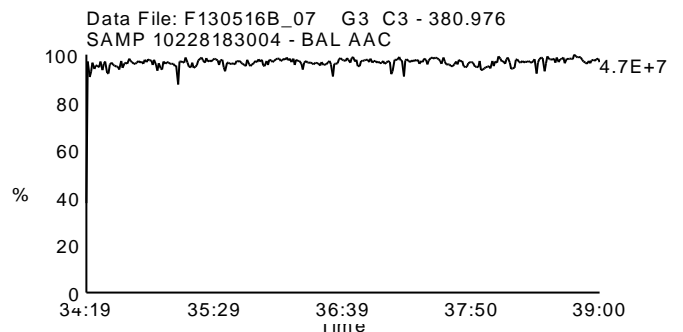
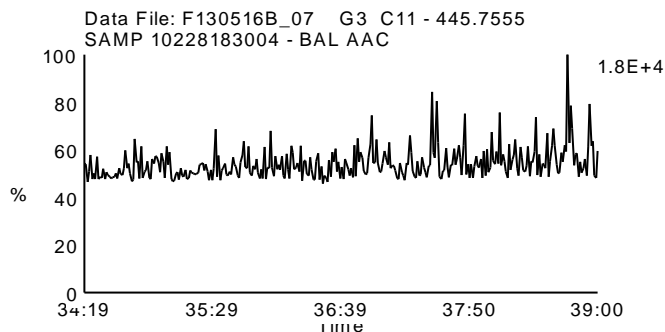
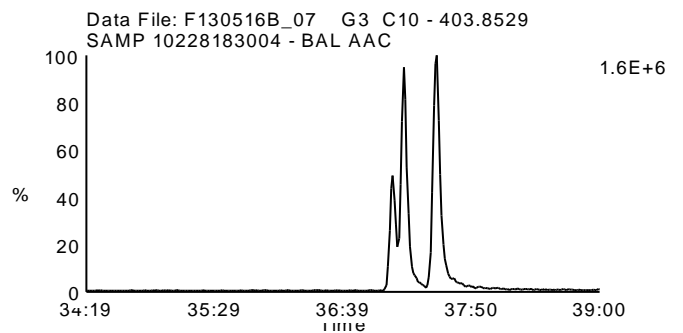
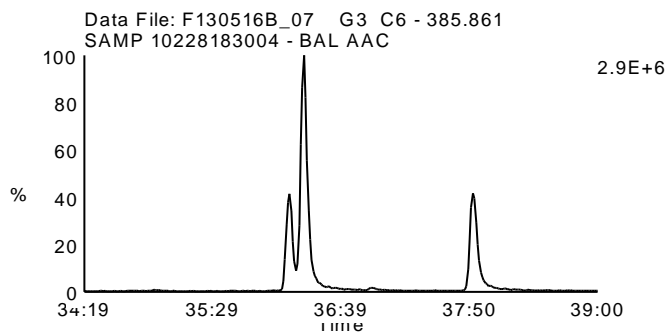
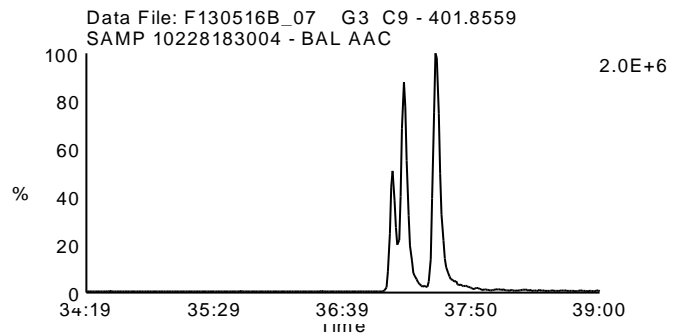
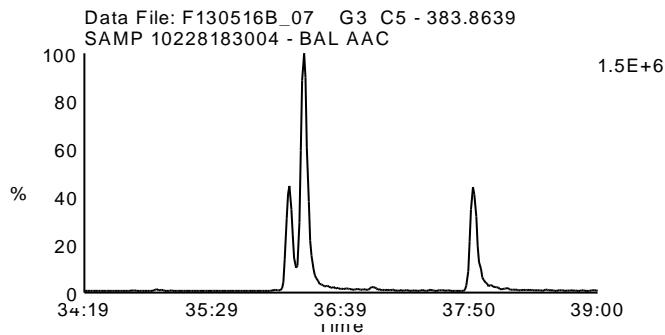
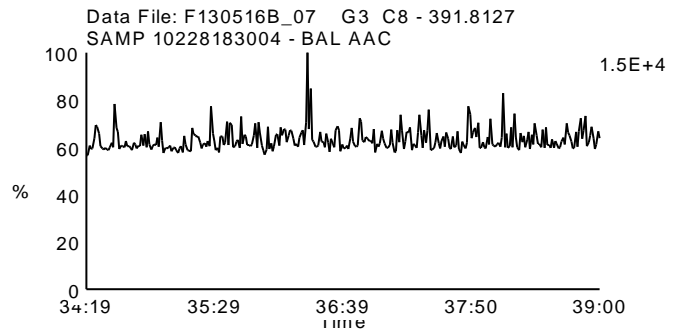
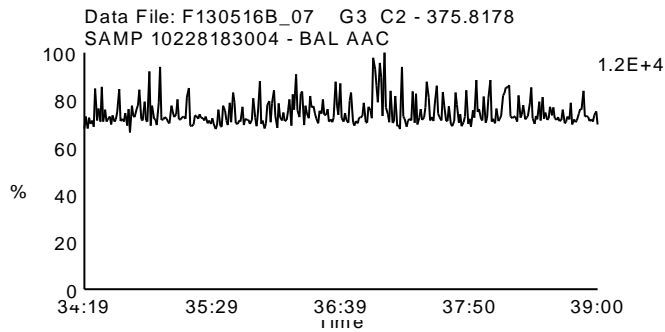
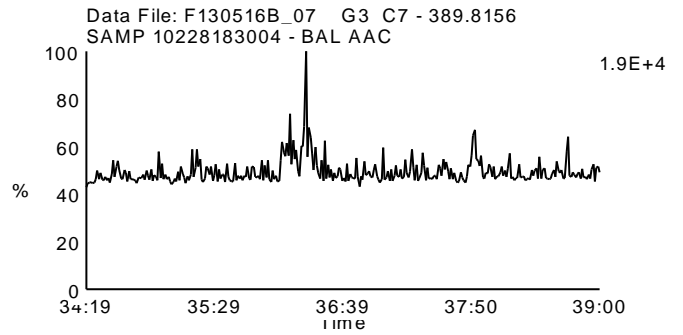
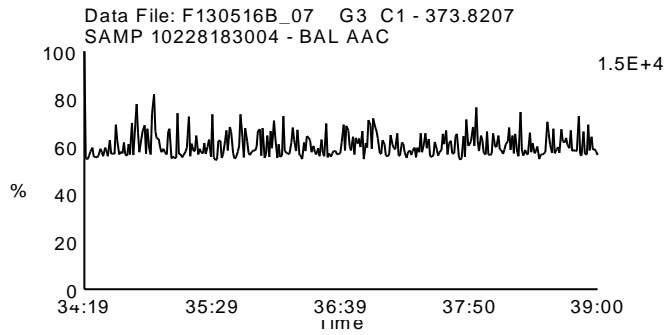
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183004 - BAL AAC

Lab Sample ID: 10228183004

Client Sample ID: F-2

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516B\_07

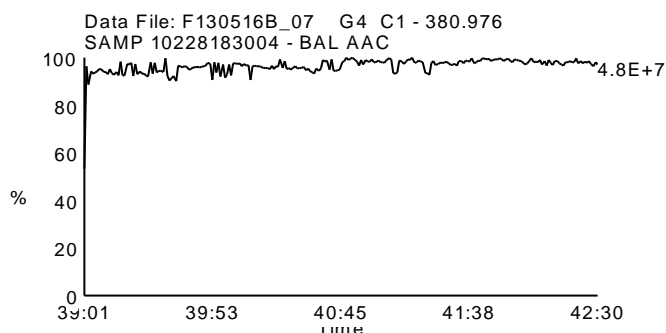
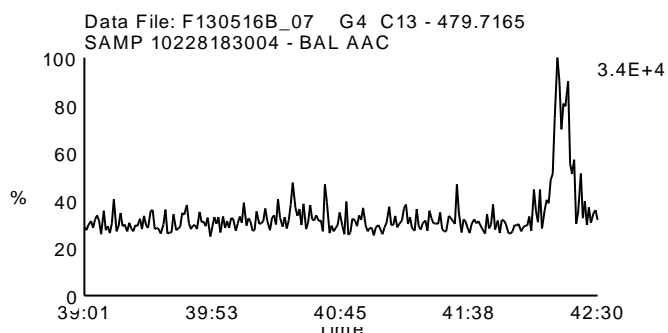
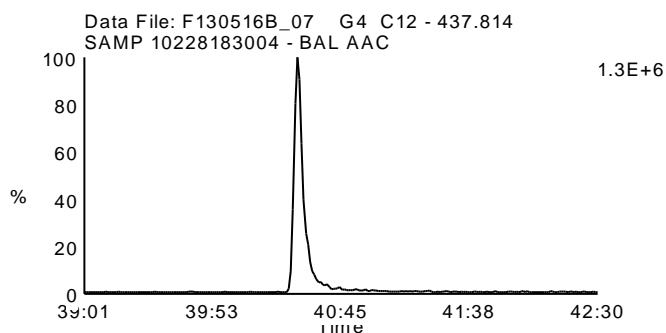
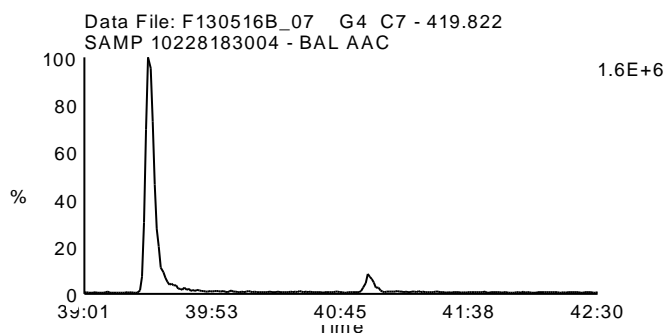
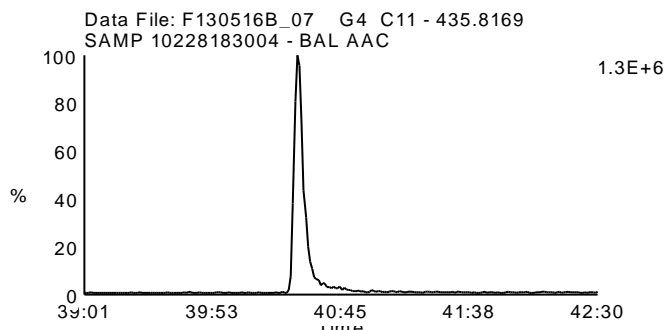
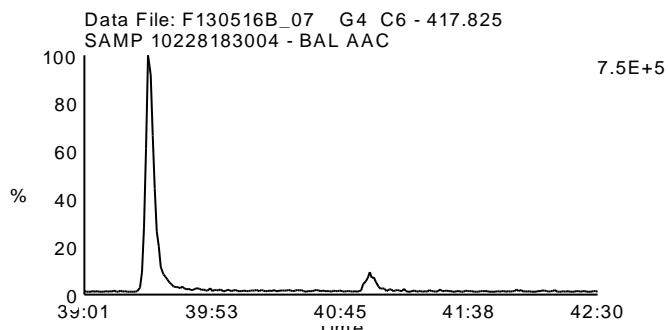
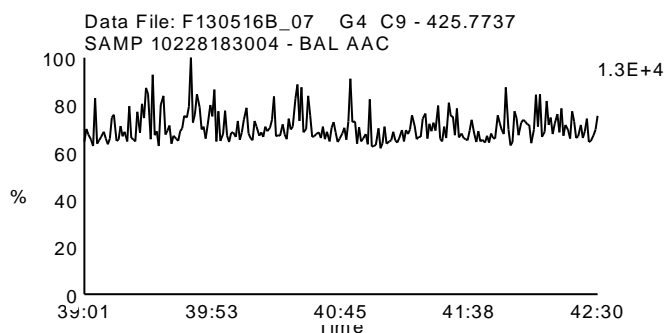
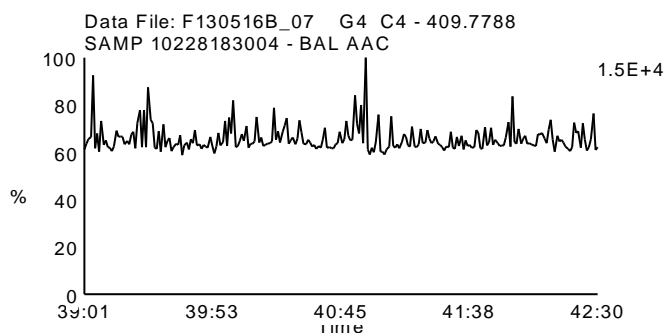
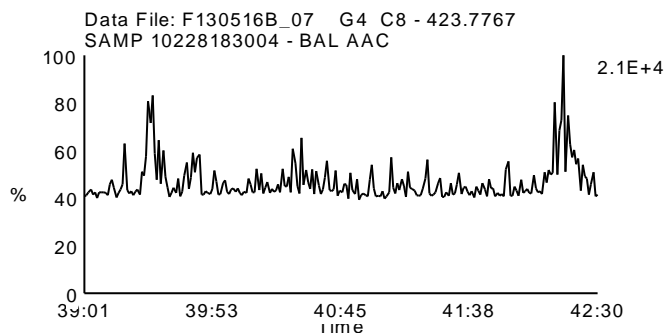
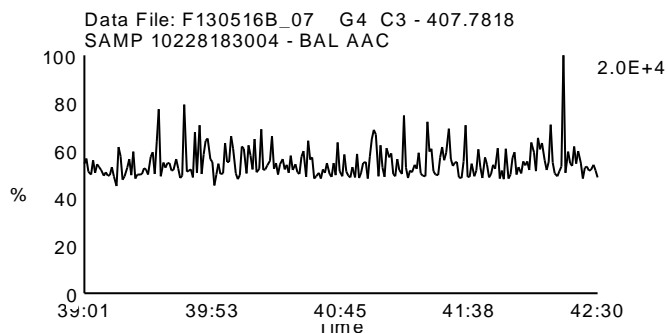
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183004 - BAL AAC

Lab Sample ID: 10228183004

Client Sample ID: F-2

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130516B\_07

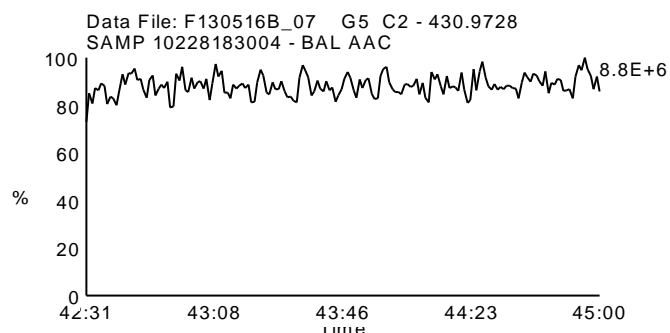
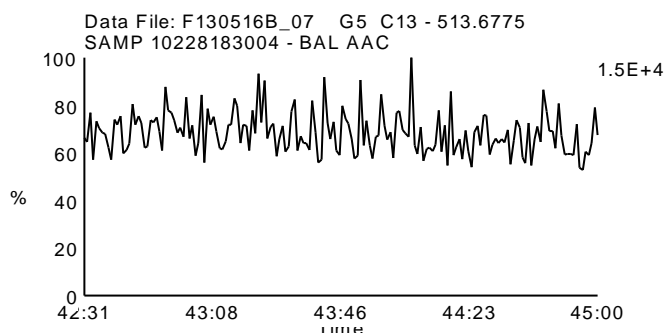
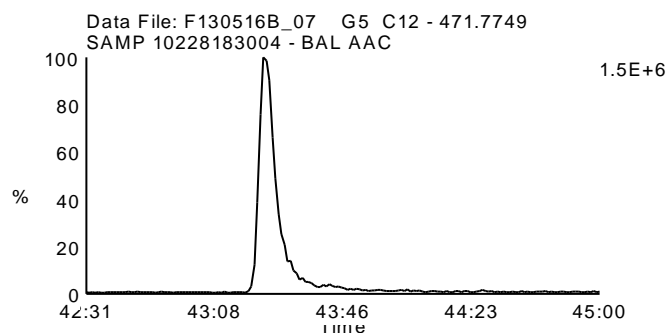
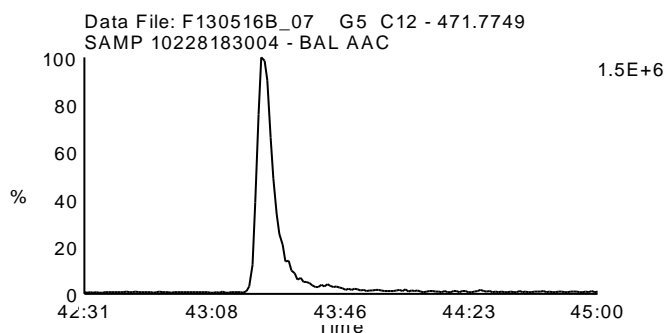
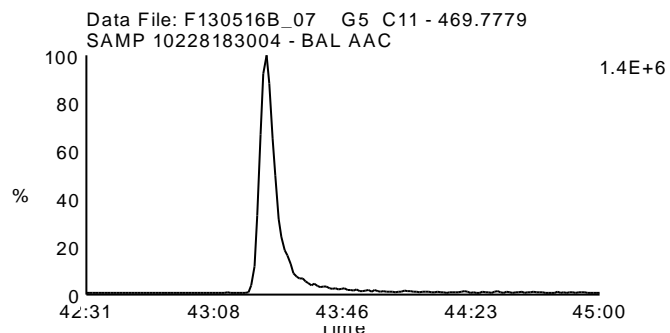
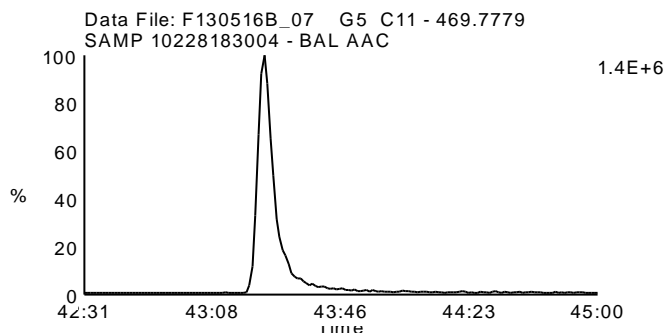
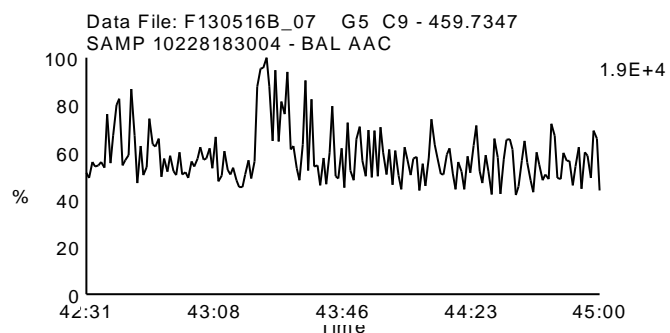
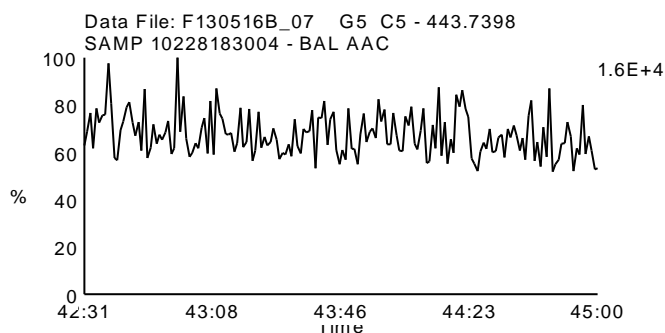
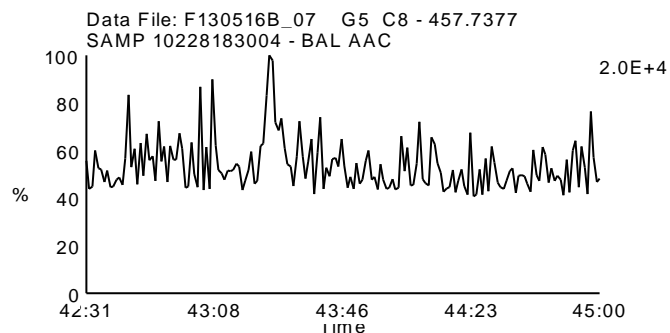
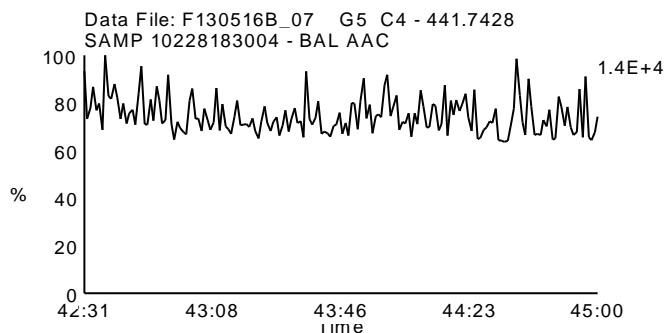
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183004 - BAL AAC

Lab Sample ID: 10228183004

Client Sample ID: F-2

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130516B\_08

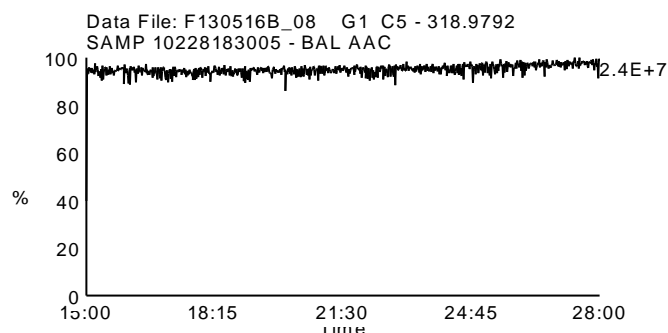
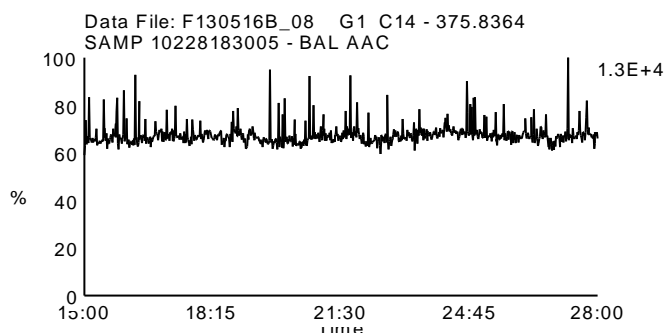
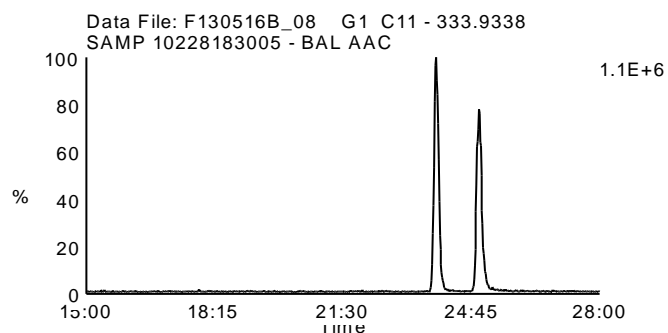
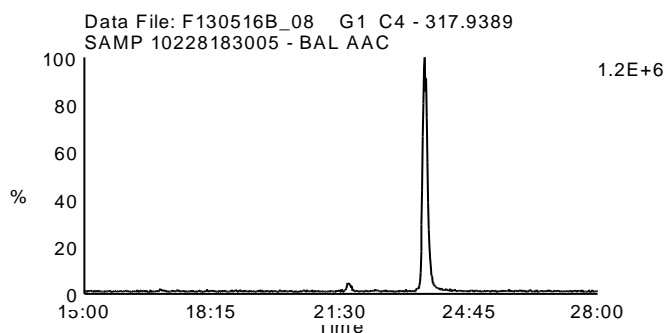
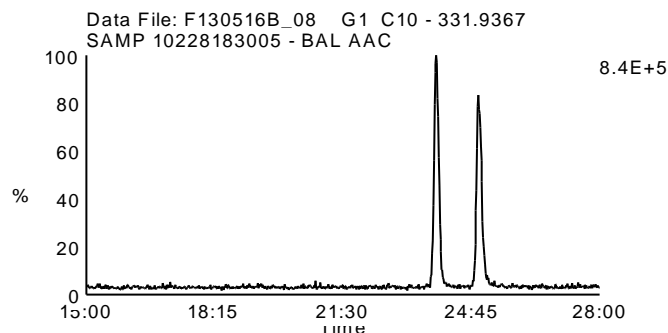
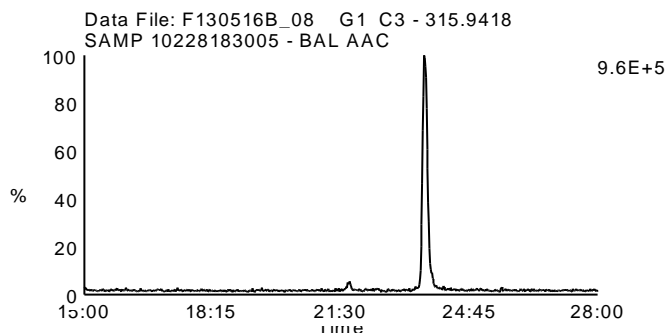
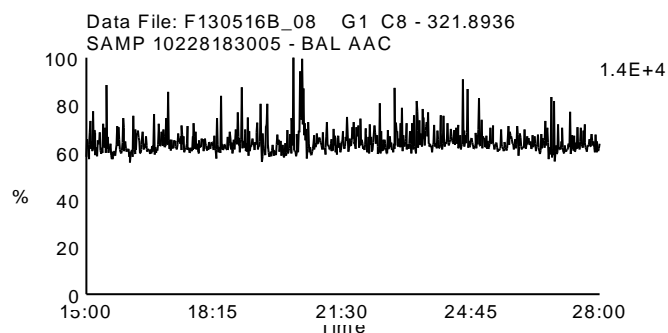
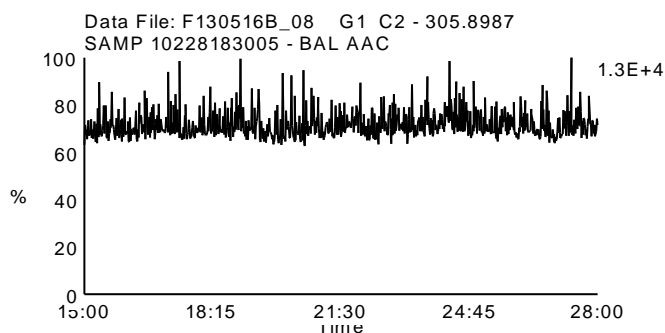
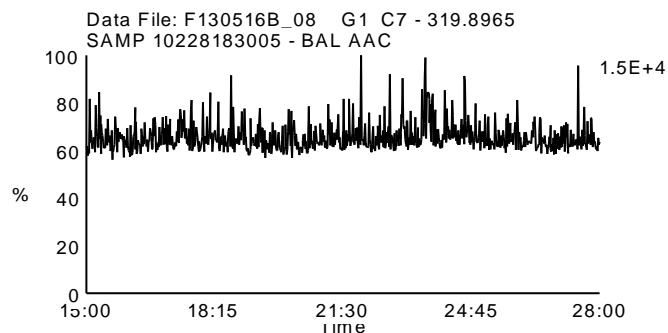
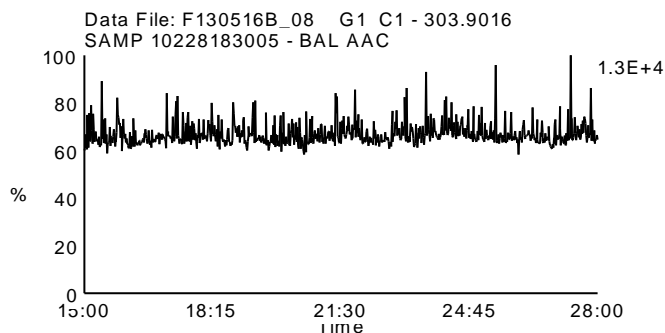
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183005 - BAL AAC

Lab Sample ID: 10228183005

Client Sample ID: F-1

Instrument: 10MSHR05 (F)





Homologue Group: Penta & Cleanup

Data File Name: F130516B\_08

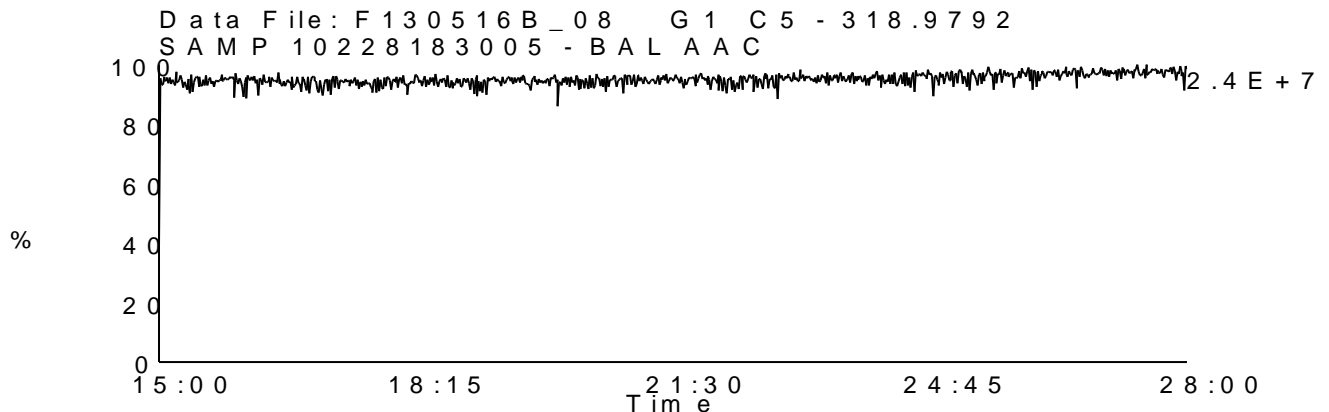
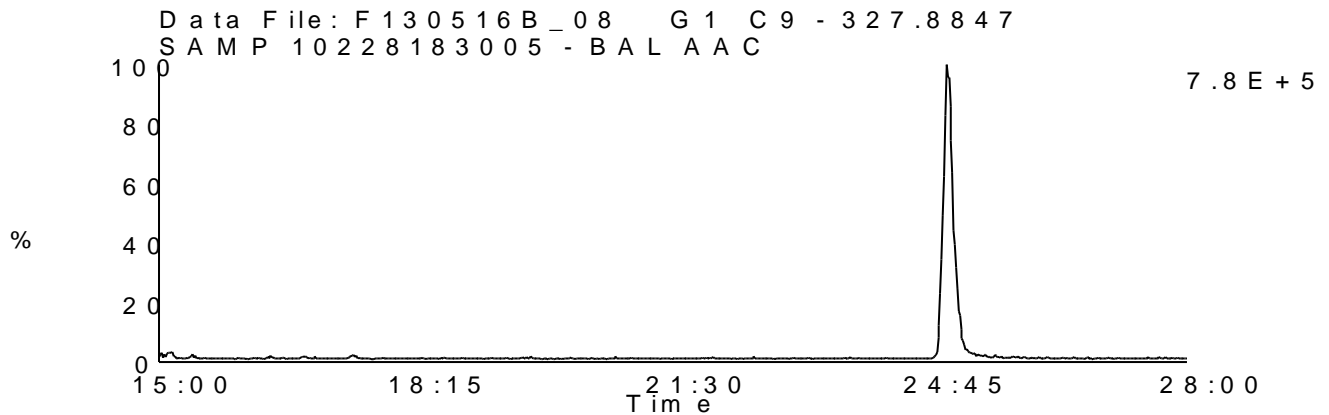
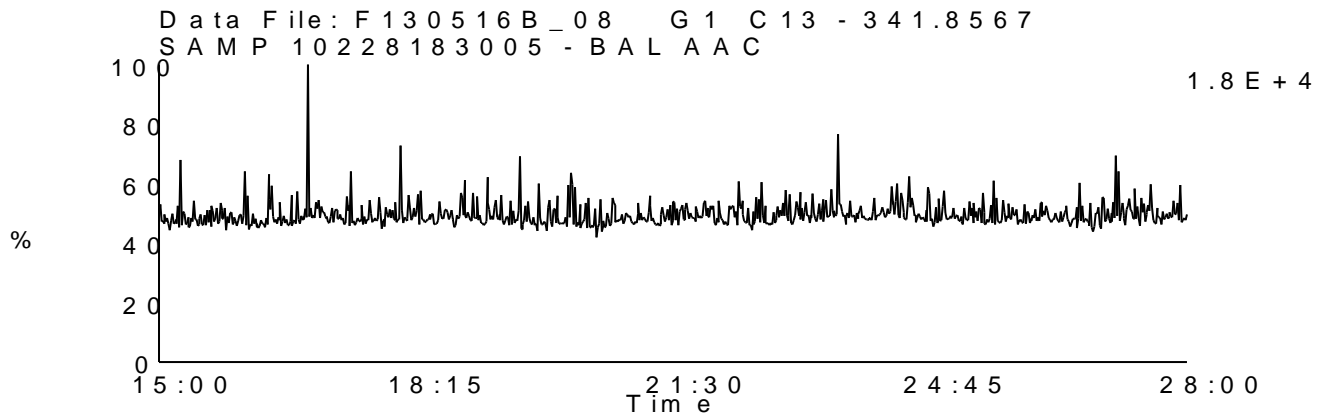
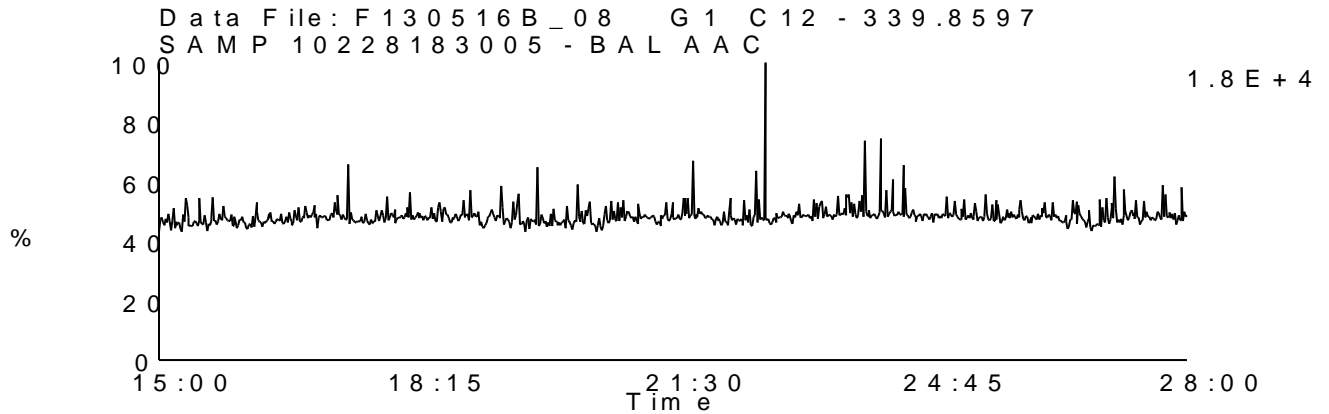
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183005 - BAL AAC

Lab Sample ID: 10228183005

Client Sample ID: F-1

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516B\_08

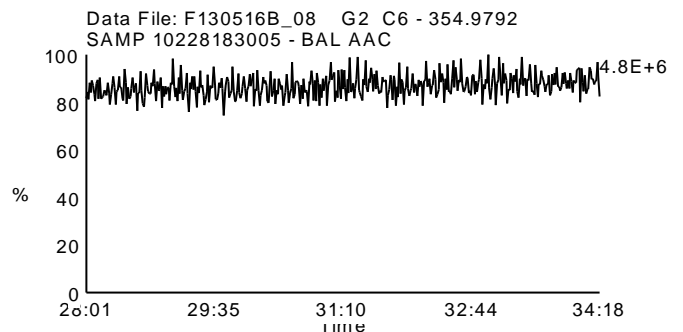
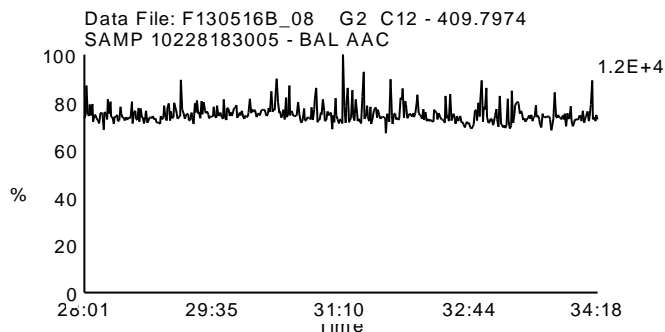
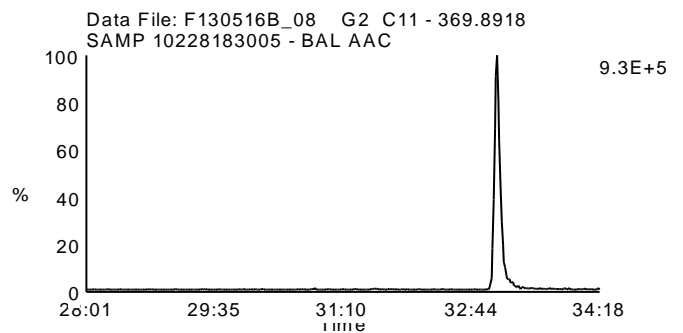
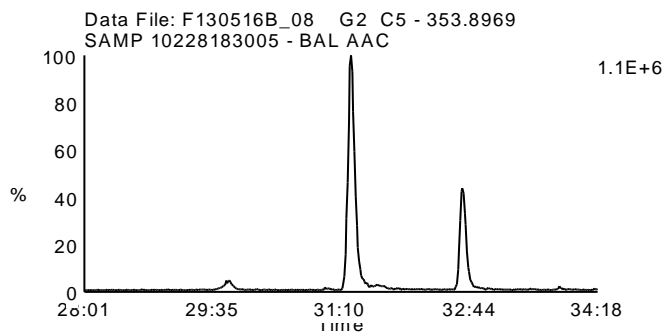
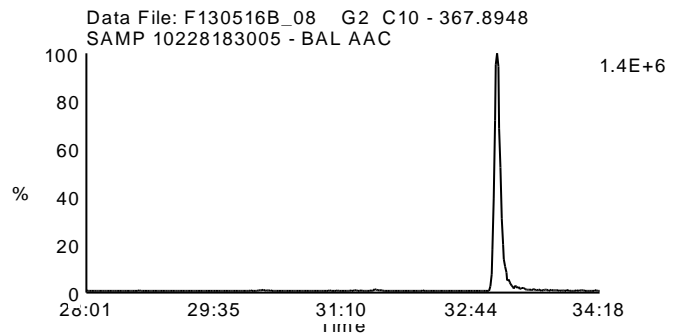
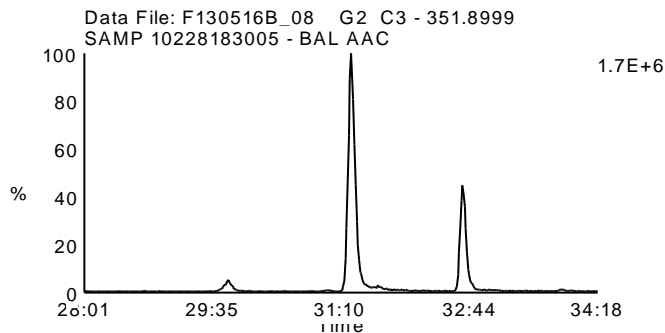
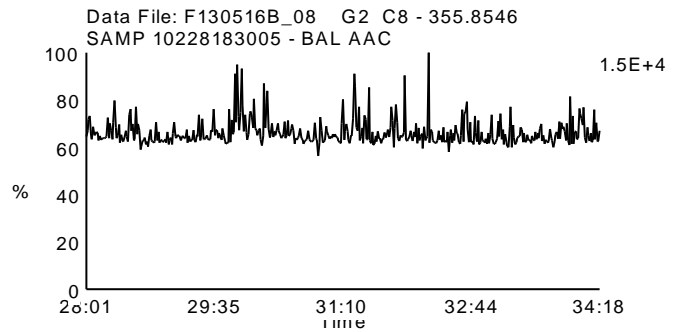
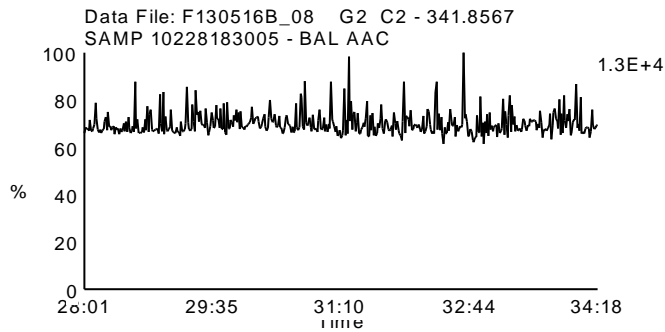
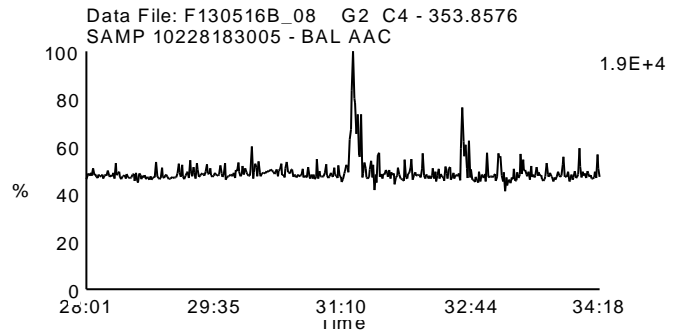
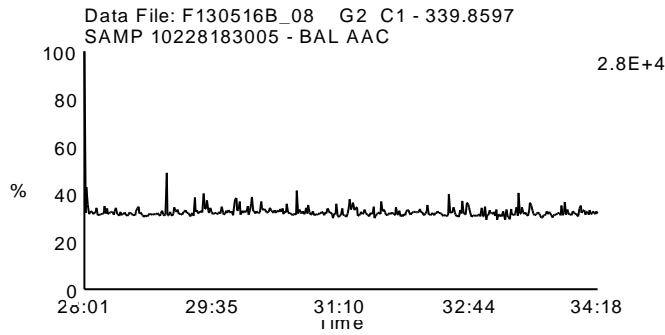
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183005 - BAL AAC

Lab Sample ID: 10228183005

Client Sample ID: F-1

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130516B\_08

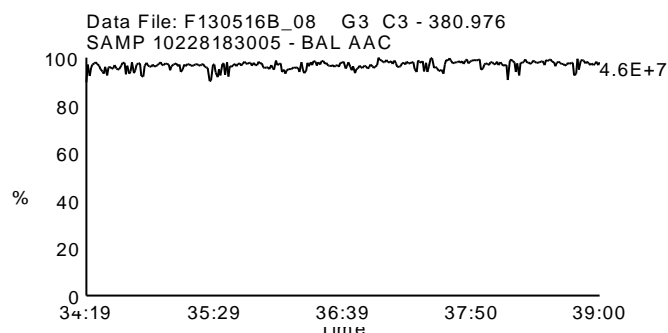
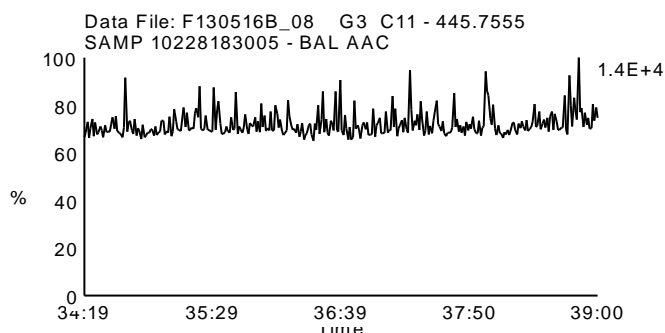
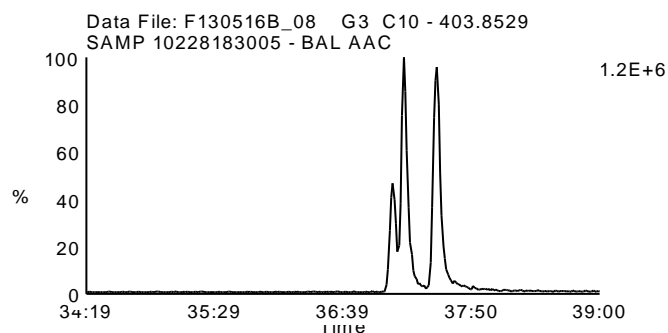
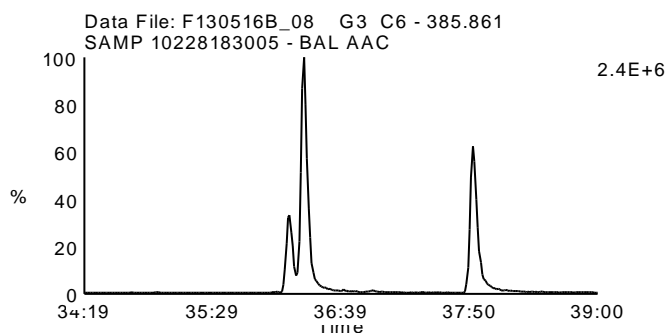
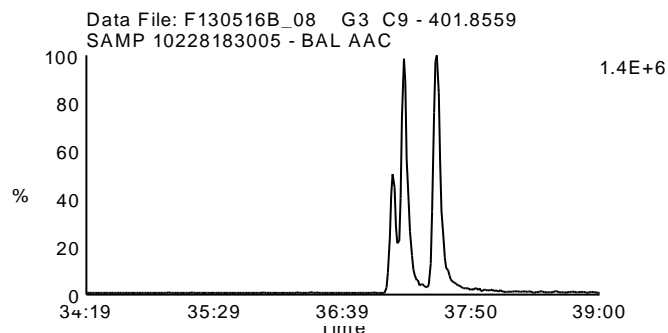
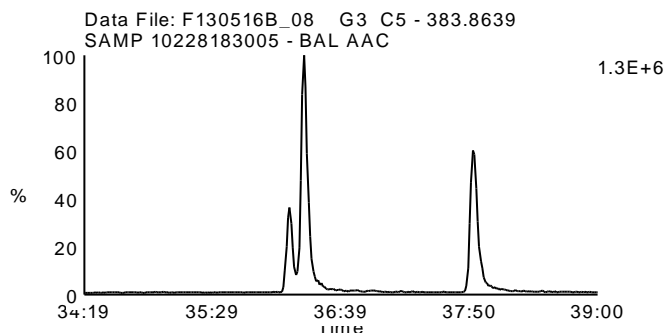
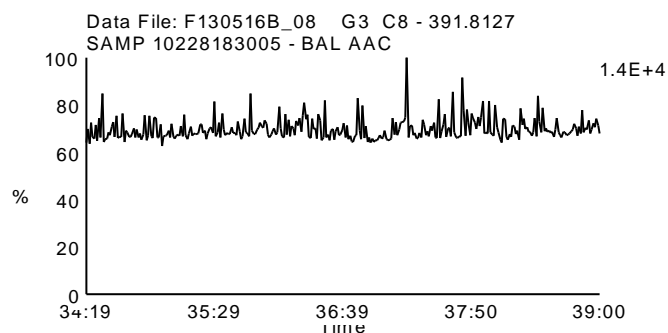
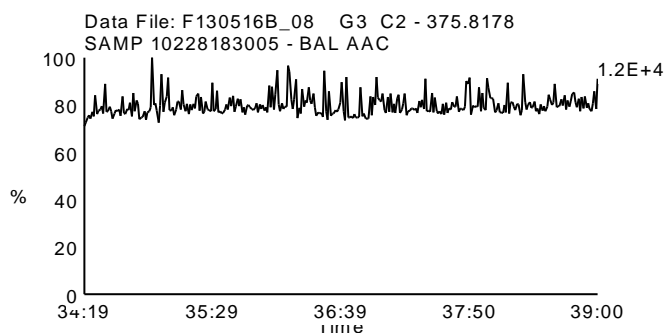
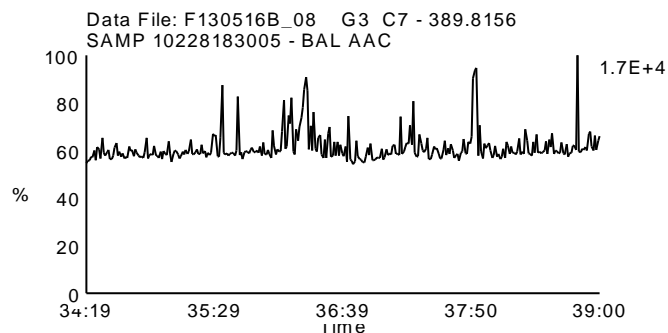
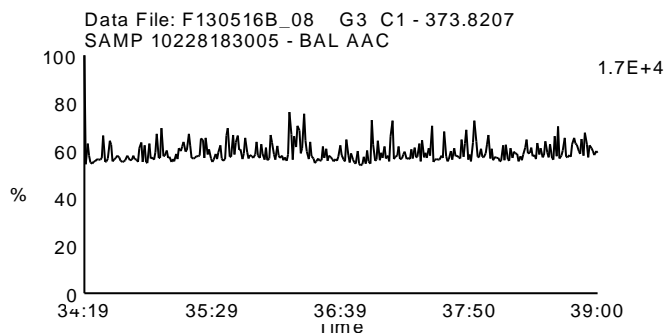
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183005 - BAL AAC

Lab Sample ID: 10228183005

Client Sample ID: F-1

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516B\_08

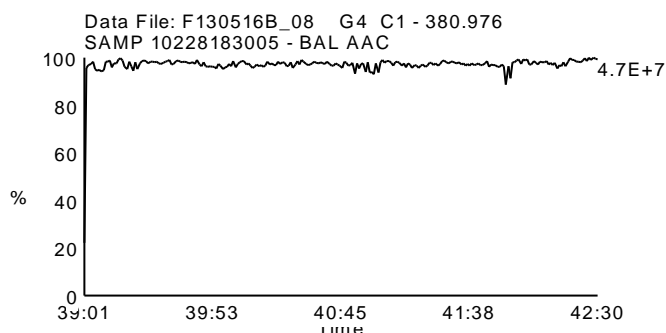
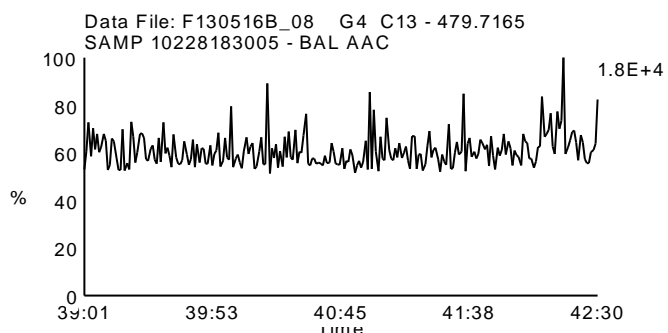
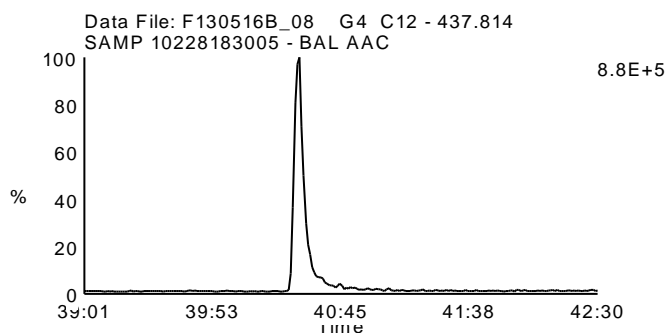
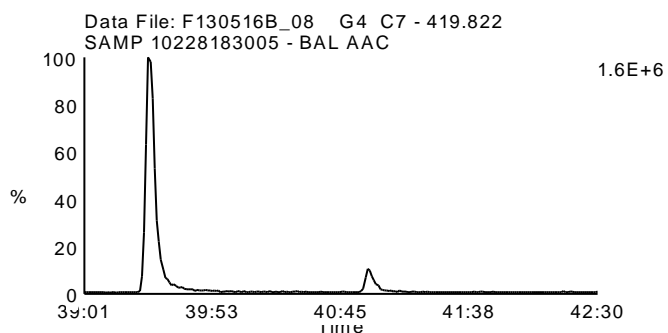
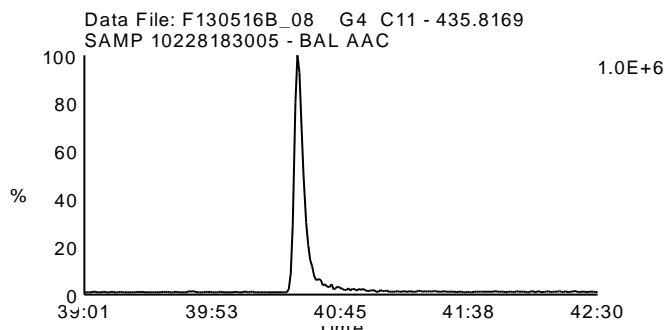
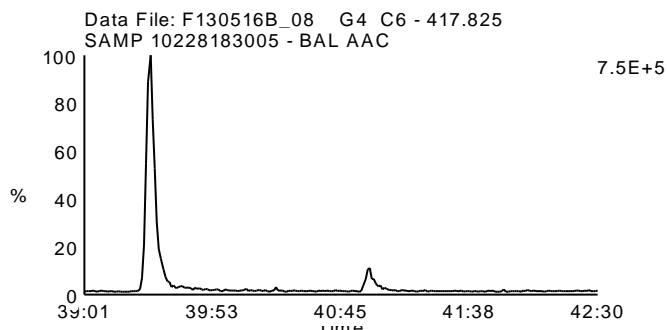
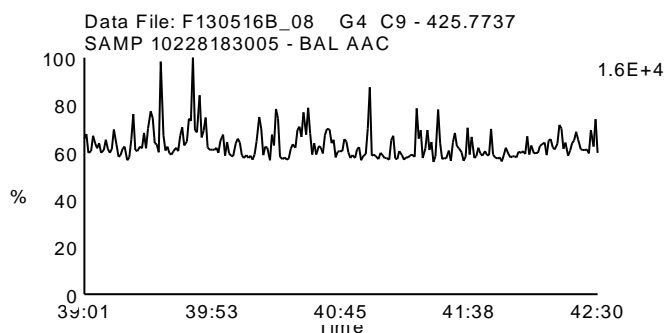
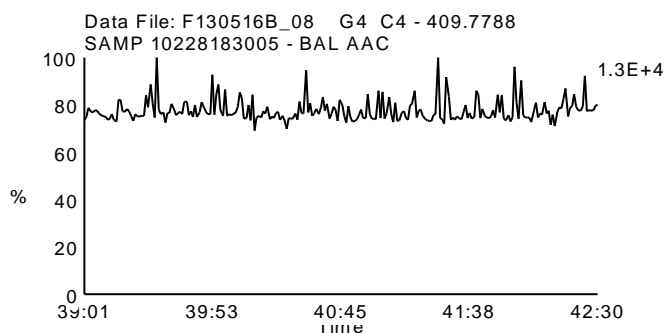
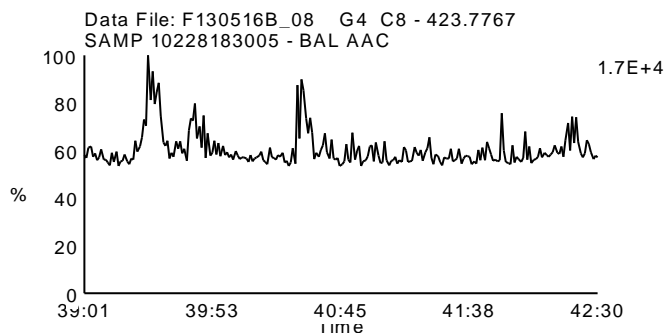
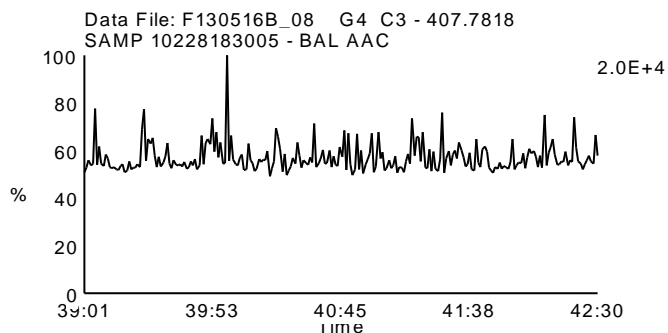
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183005 - BAL AAC

Lab Sample ID: 10228183005

Client Sample ID: F-1

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130516B\_08

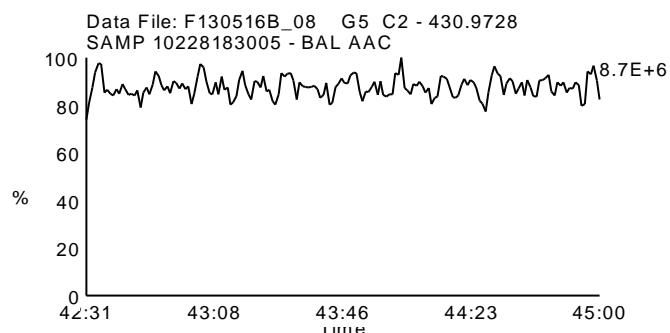
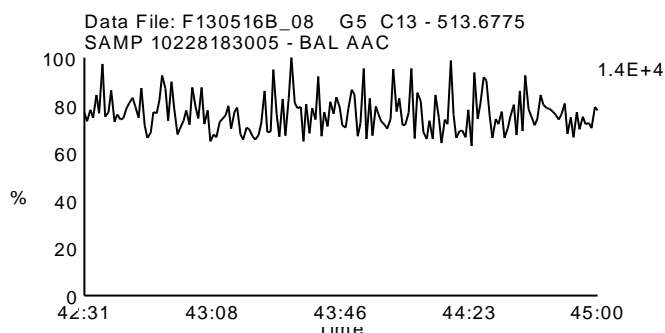
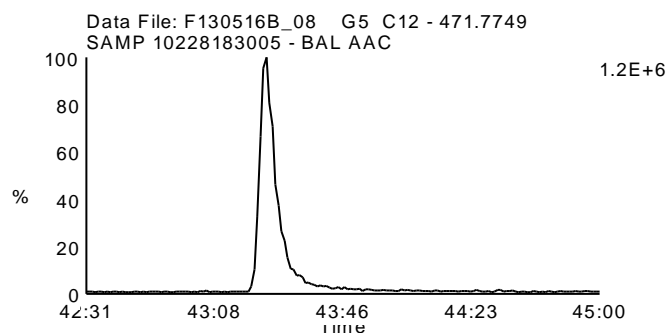
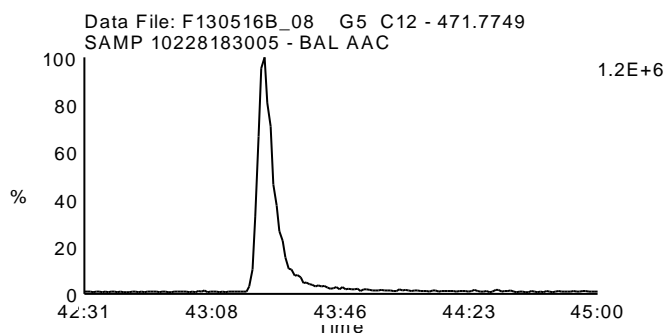
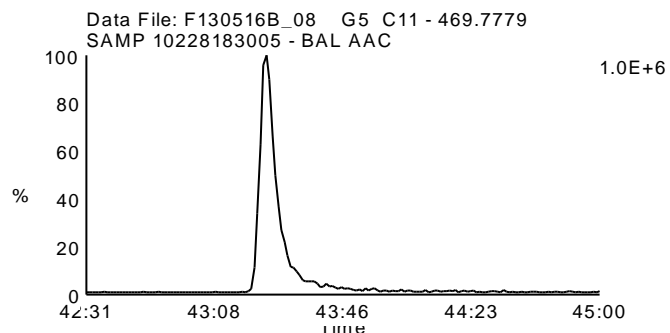
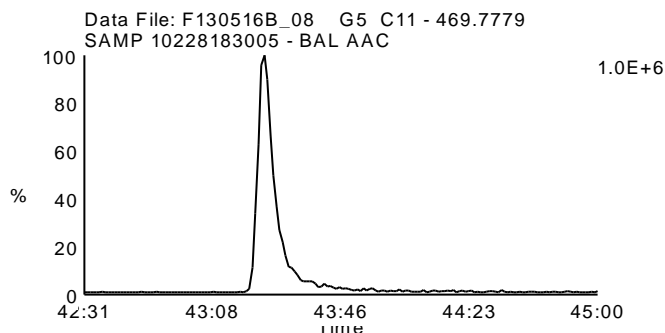
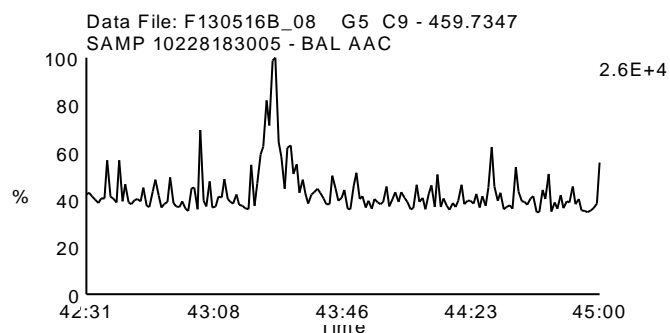
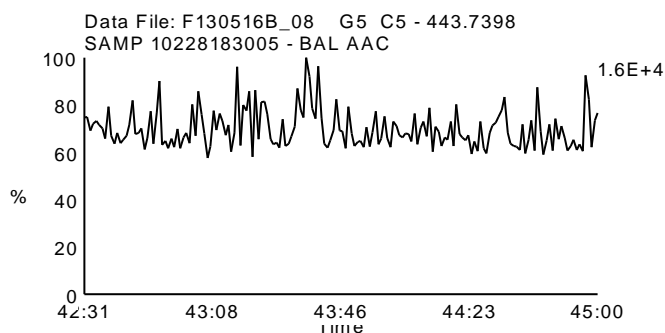
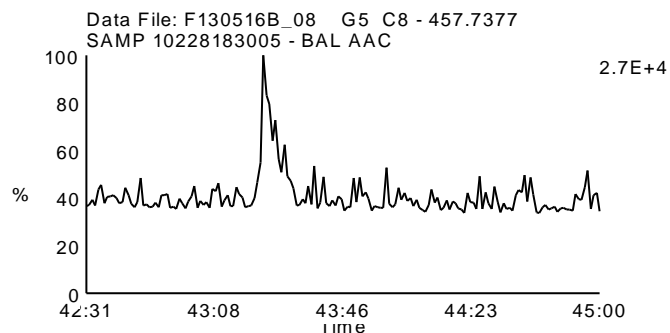
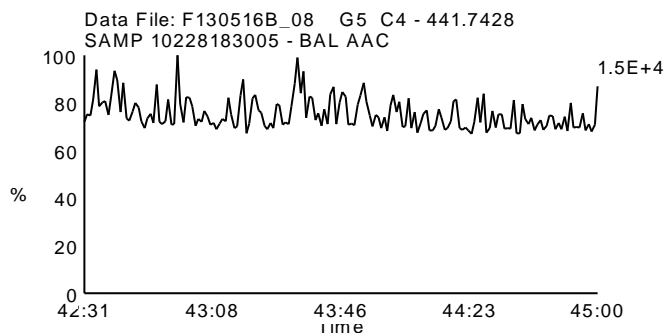
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183005 - BAL AAC

Lab Sample ID: 10228183005

Client Sample ID: F-1

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130516B\_09

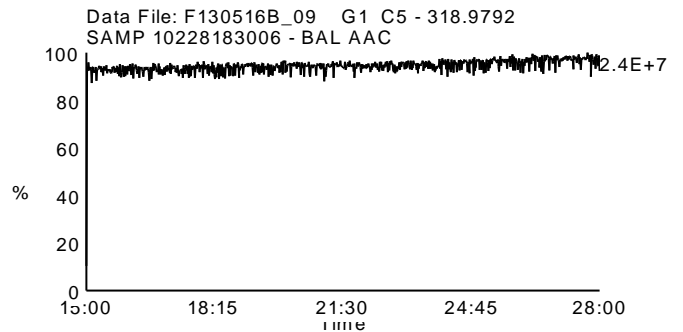
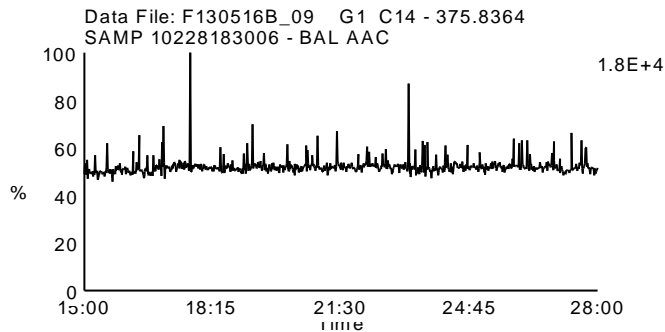
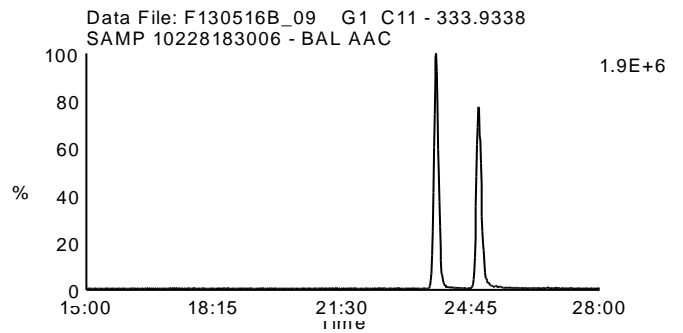
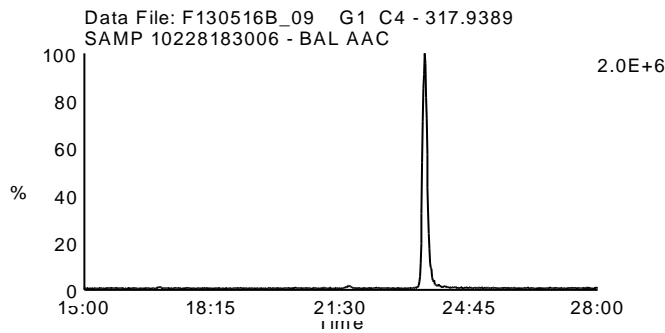
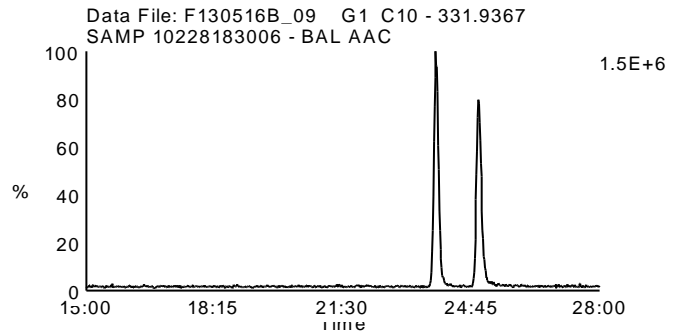
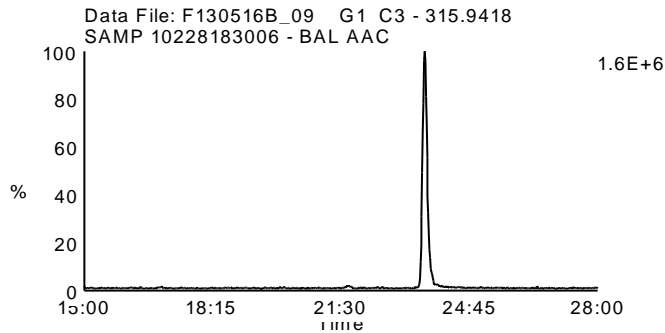
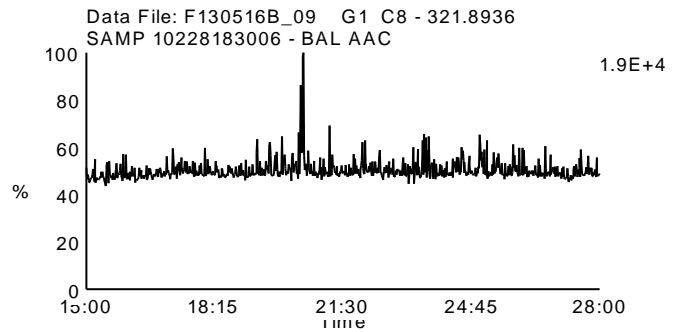
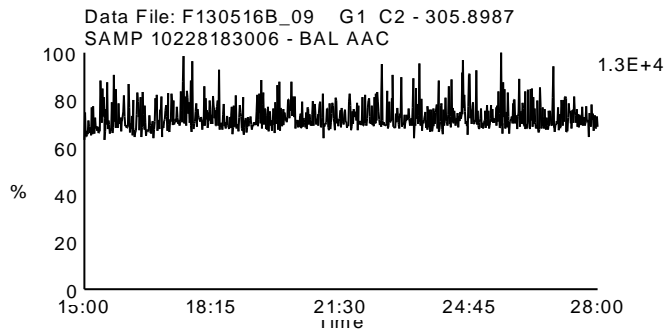
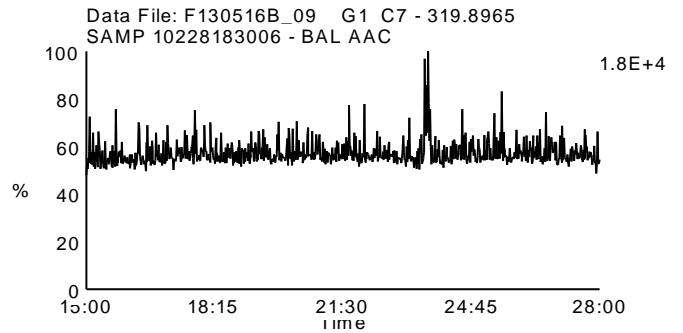
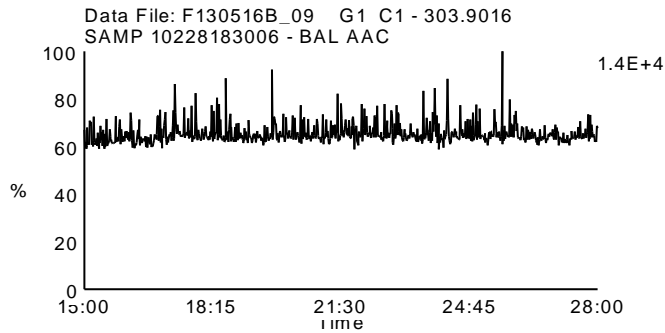
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183006 - BAL AAC

Lab Sample ID: 10228183006

Client Sample ID: F-3

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130516B\_09

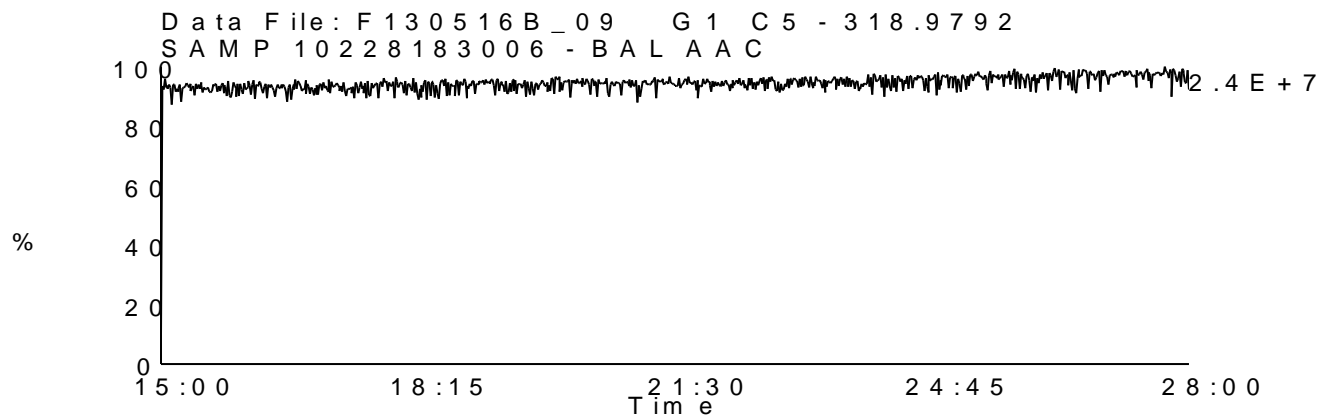
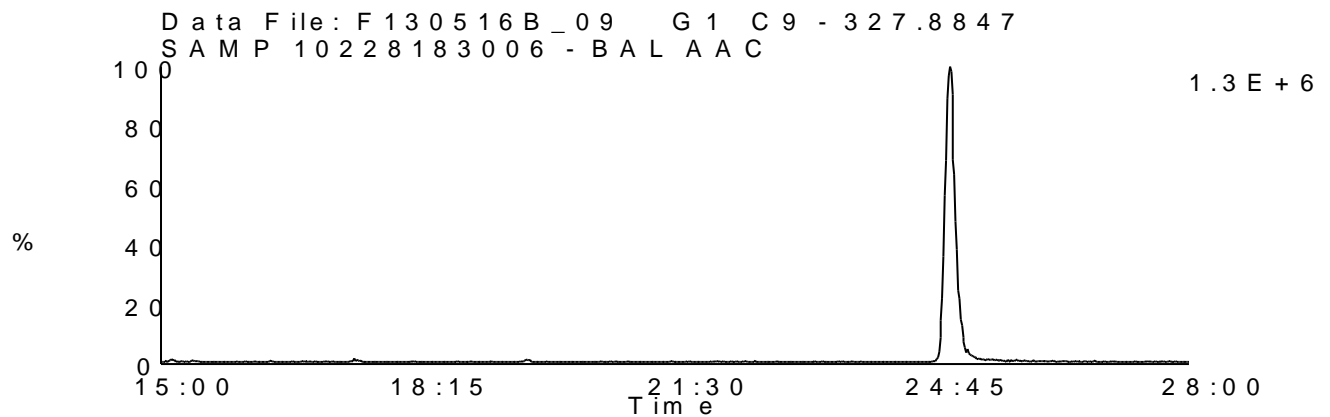
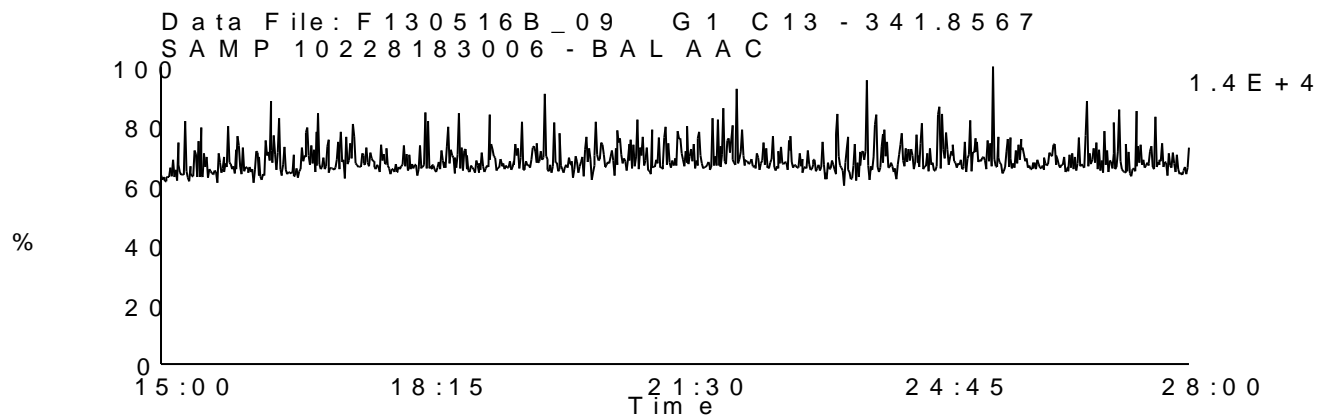
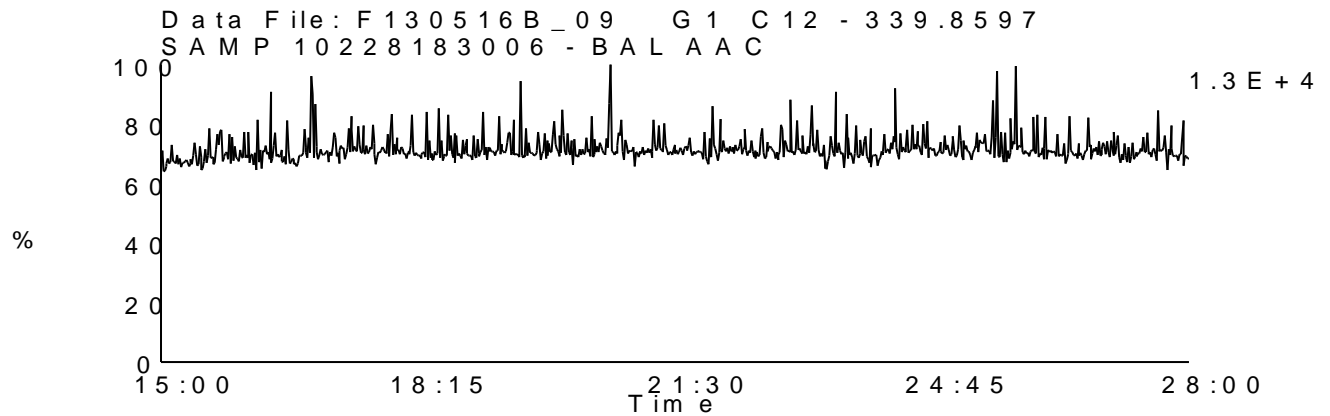
Lab Sample ID: 10228183006

Date Acquired: 5/17/2013

Client Sample ID: F-3

Sample Description: SAMP 10228183006 - BAL AAC

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516B\_09

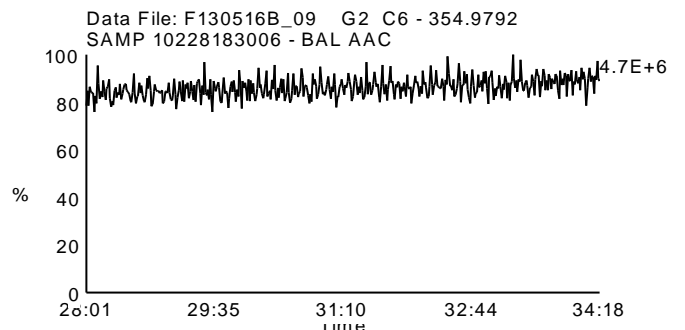
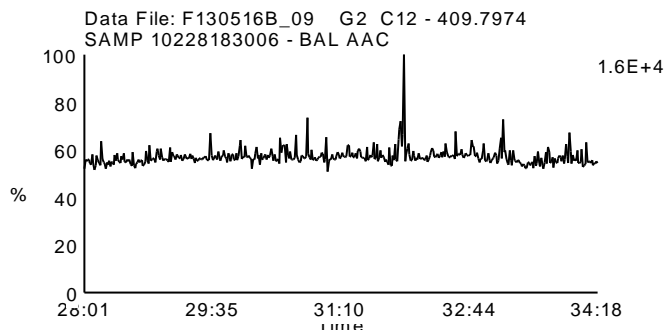
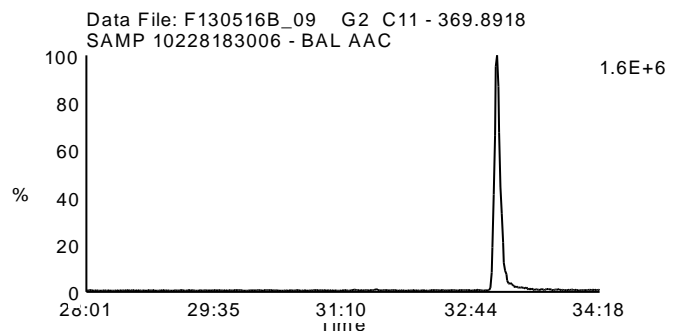
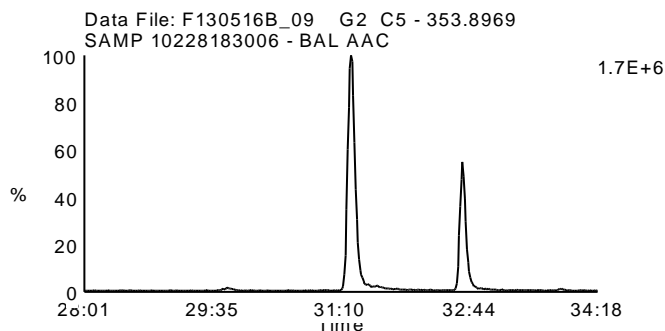
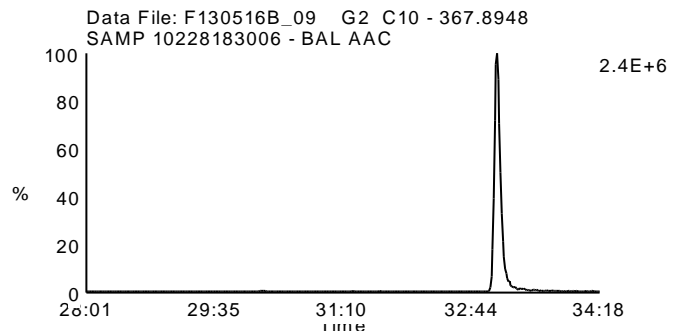
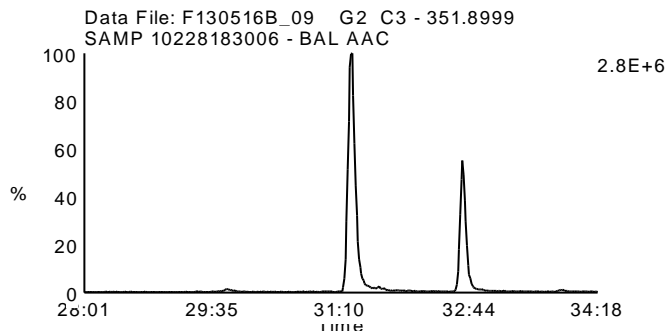
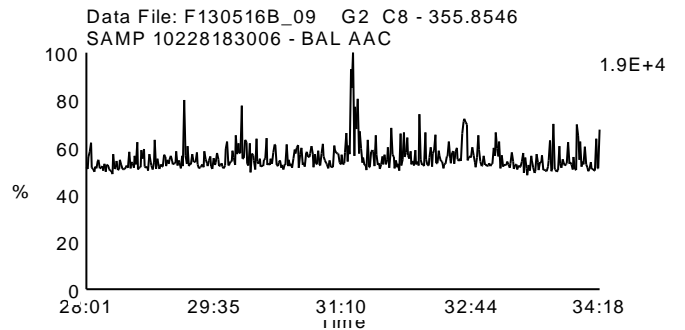
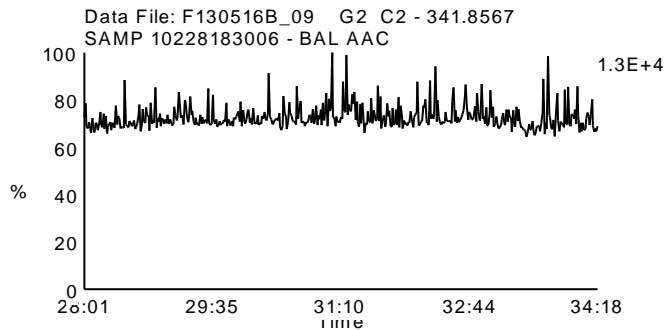
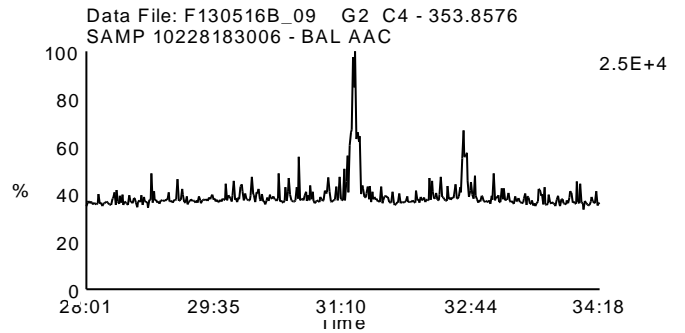
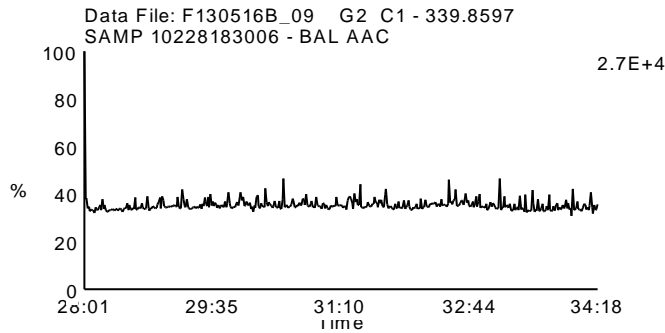
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183006 - BAL AAC

Lab Sample ID: 10228183006

Client Sample ID: F-3

Instrument: 10MSHR05 (F)





Homologue Group: Hexas

Data File Name: F130516B\_09

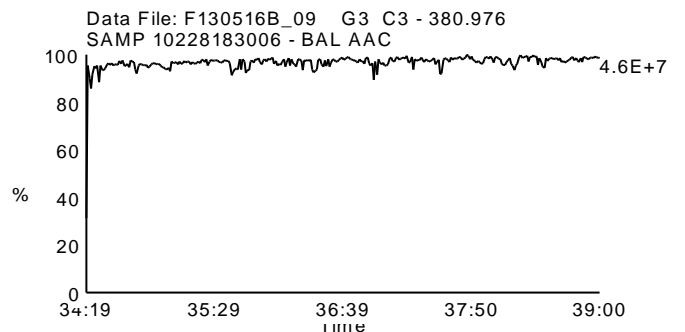
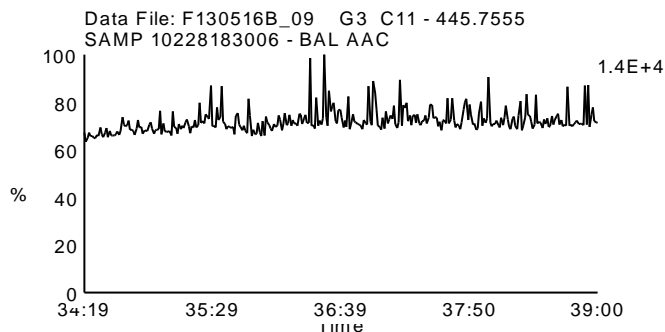
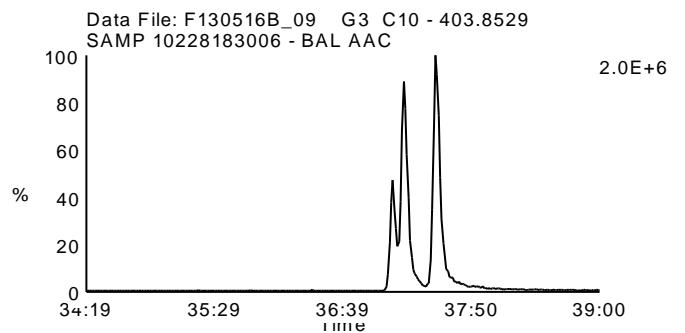
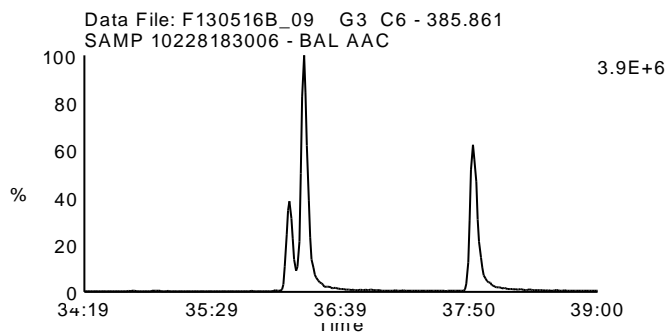
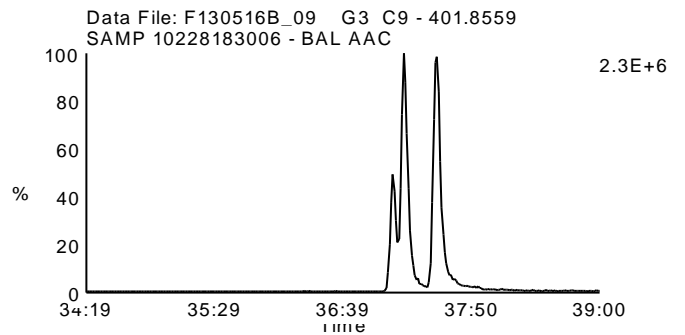
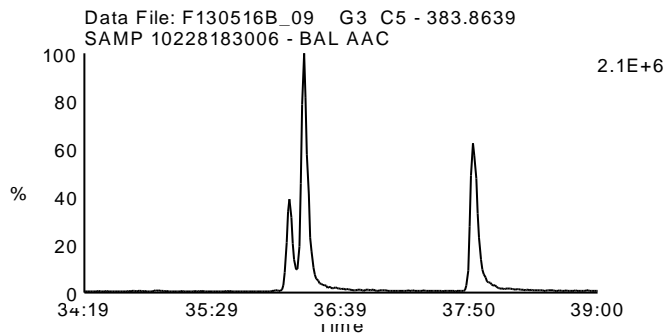
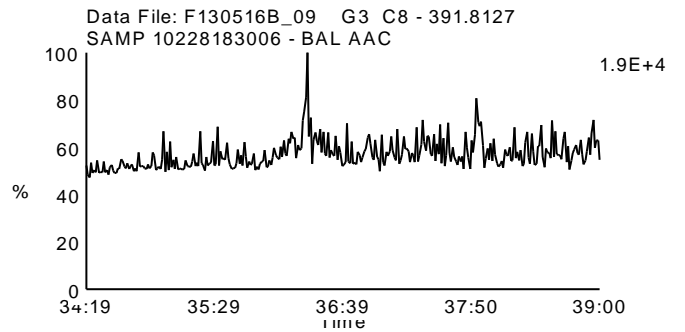
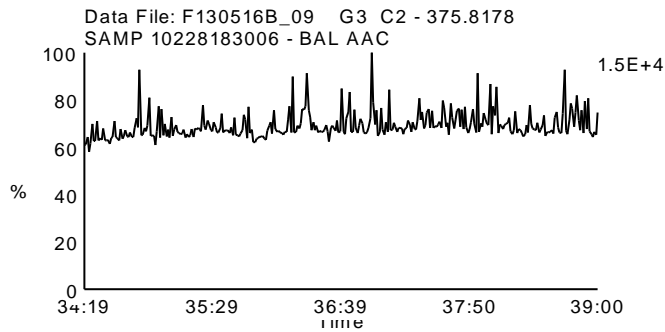
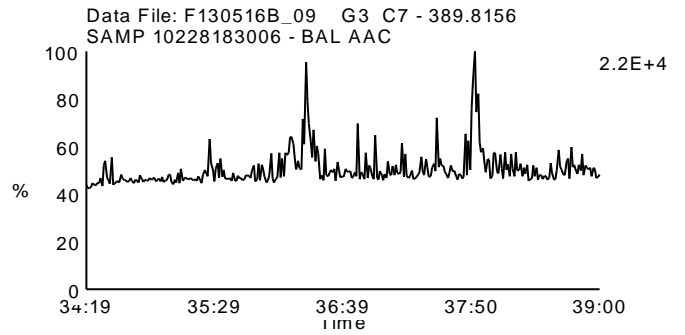
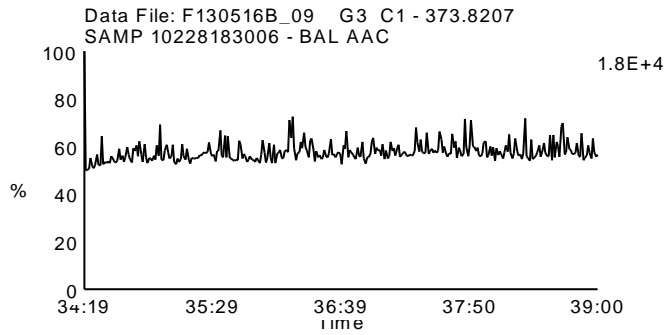
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183006 - BAL AAC

Lab Sample ID: 10228183006

Client Sample ID: F-3

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516B\_09

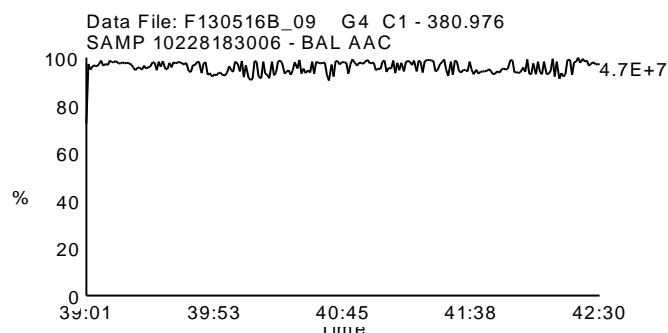
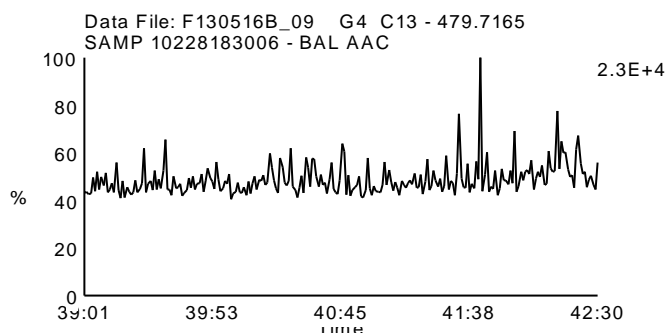
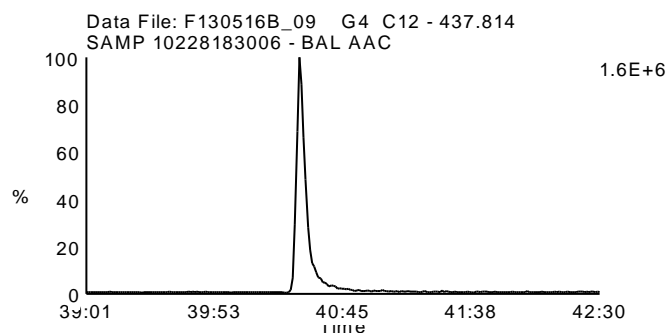
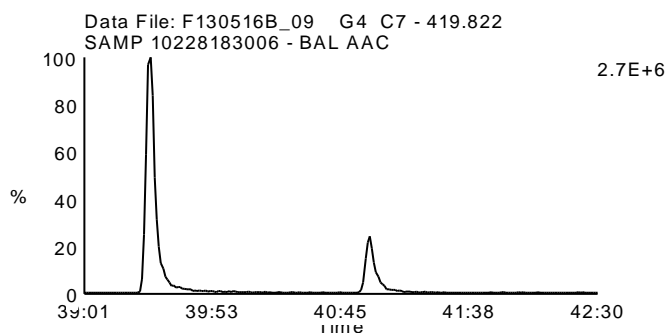
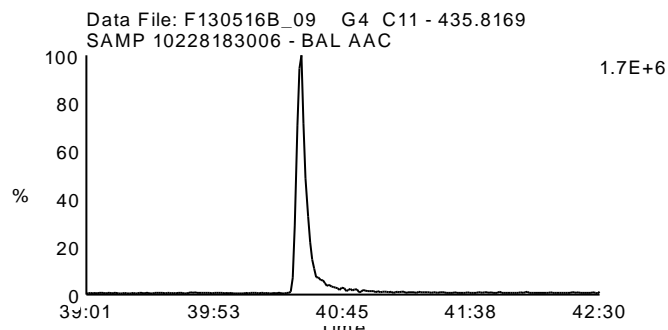
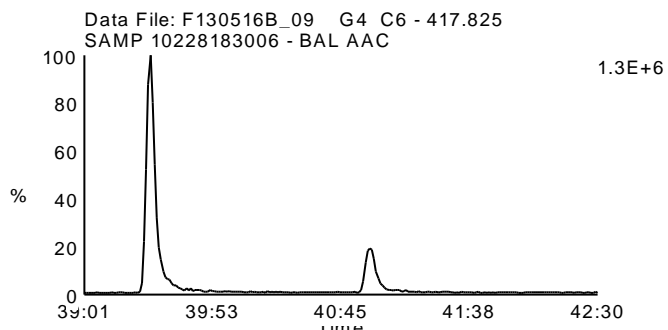
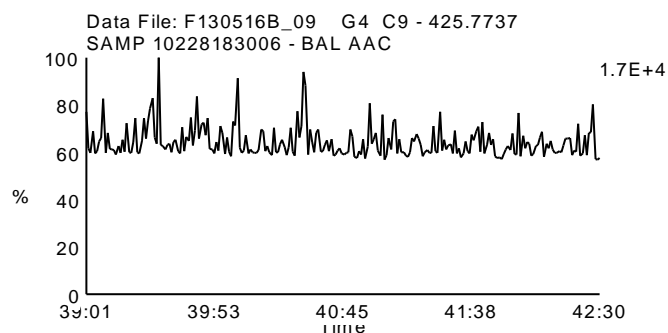
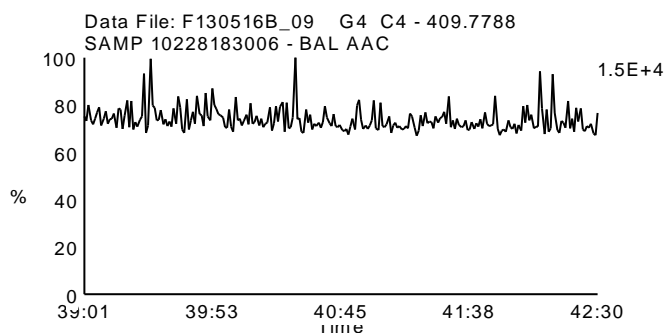
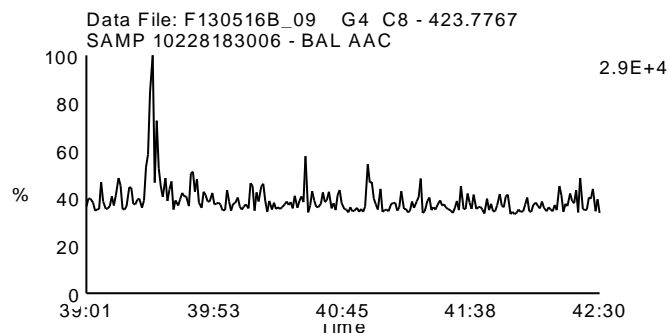
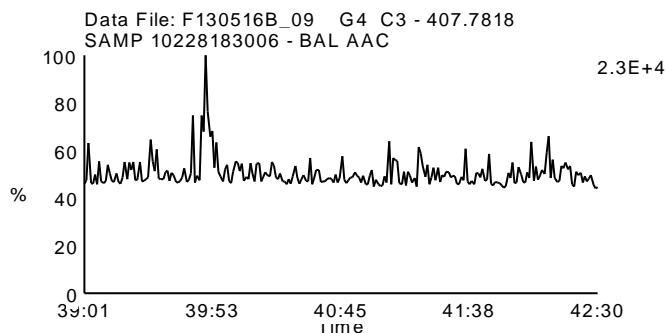
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183006 - BAL AAC

Lab Sample ID: 10228183006

Client Sample ID: F-3

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130516B\_09

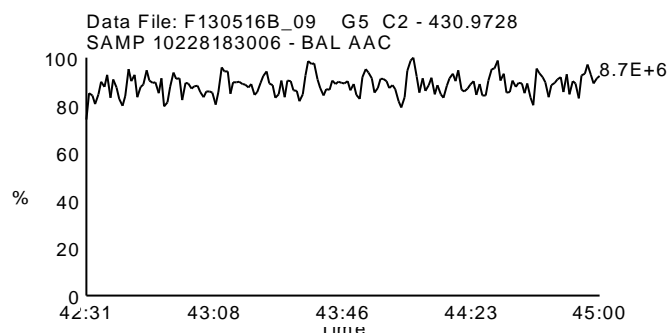
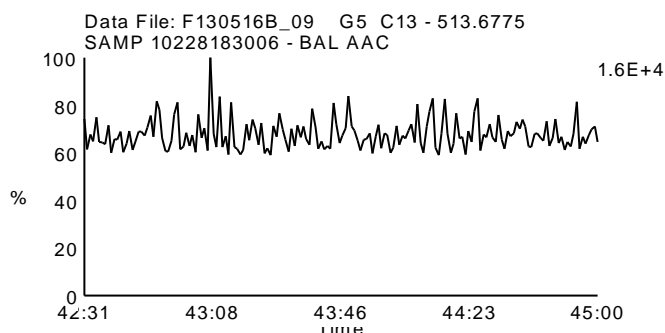
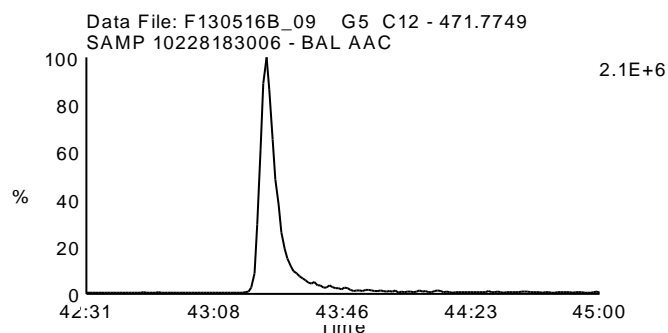
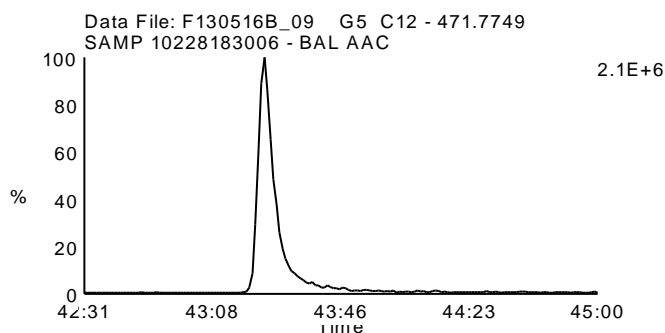
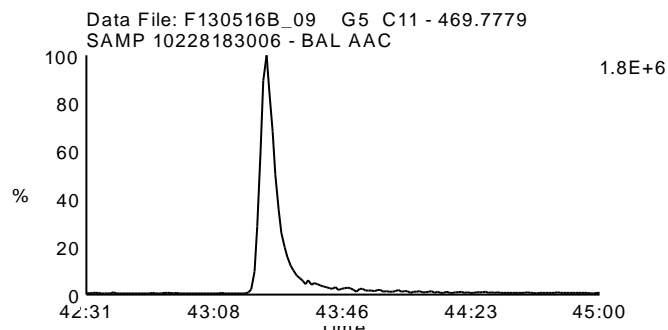
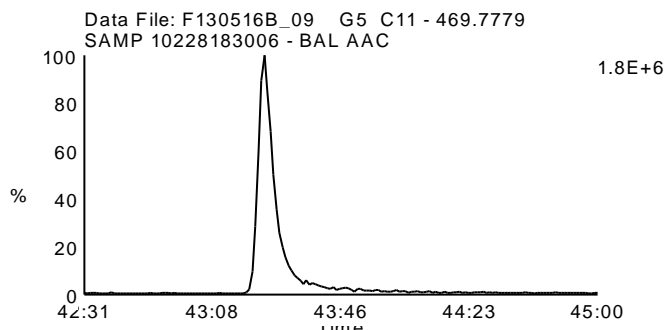
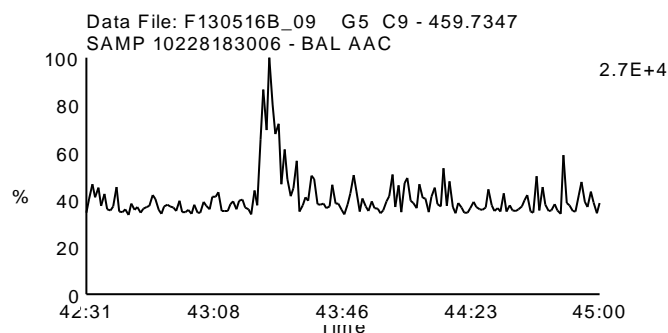
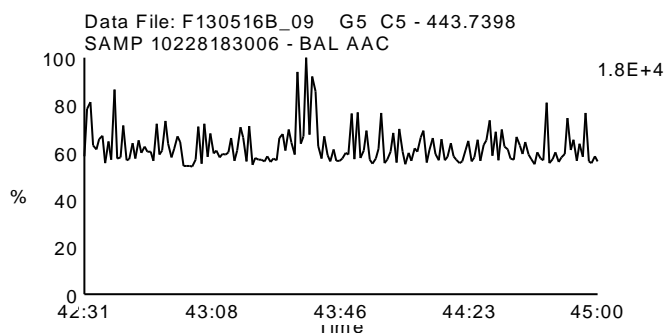
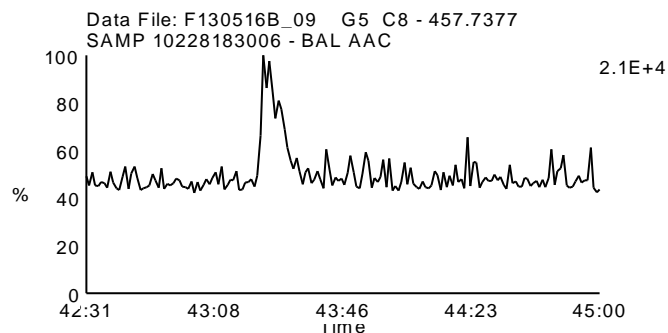
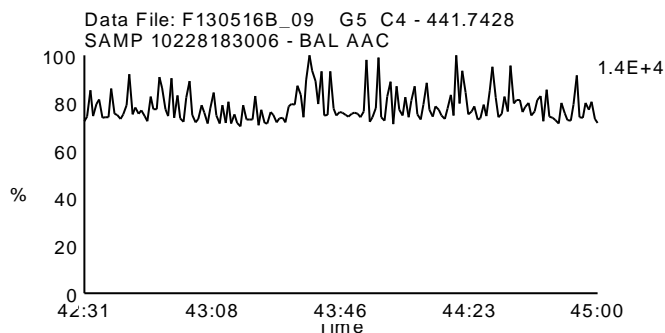
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183006 - BAL AAC

Lab Sample ID: 10228183006

Client Sample ID: F-3

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130516B\_10

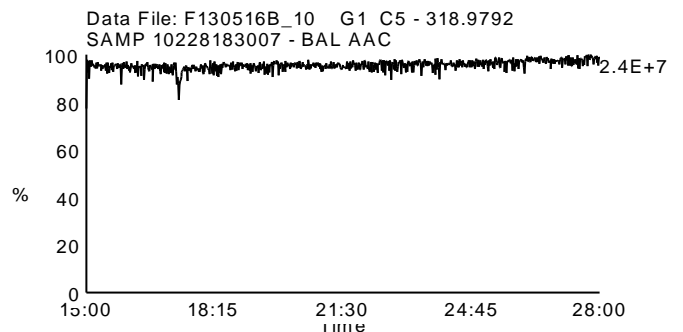
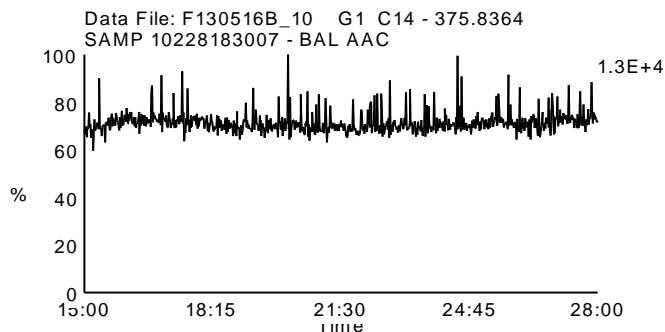
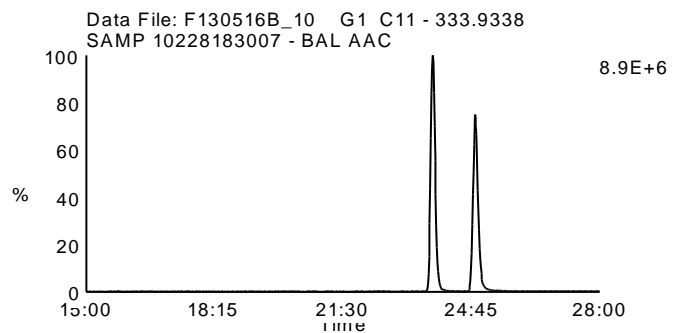
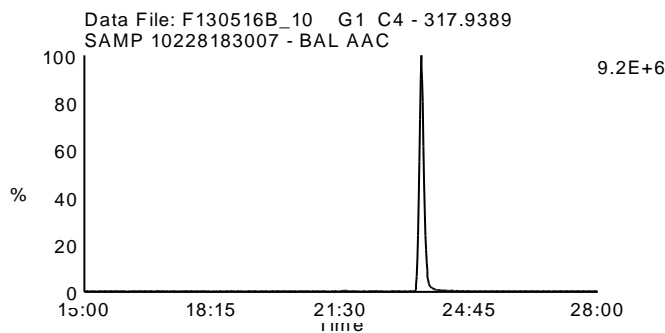
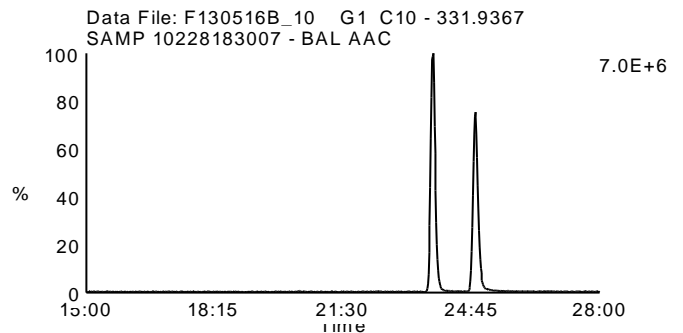
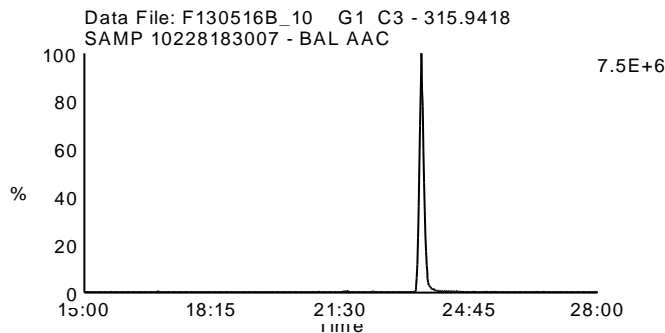
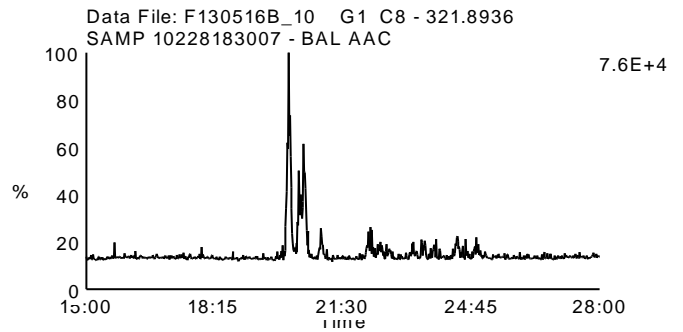
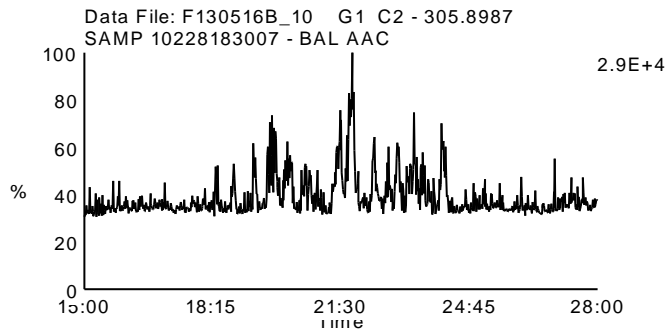
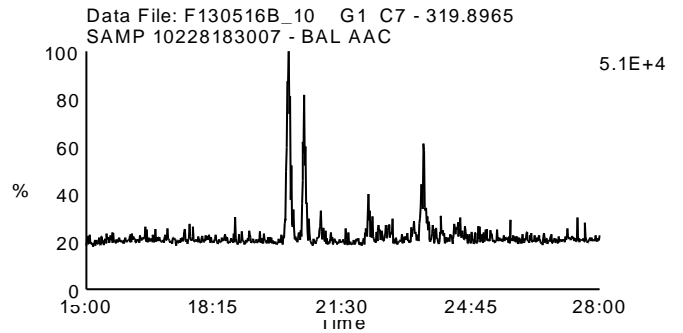
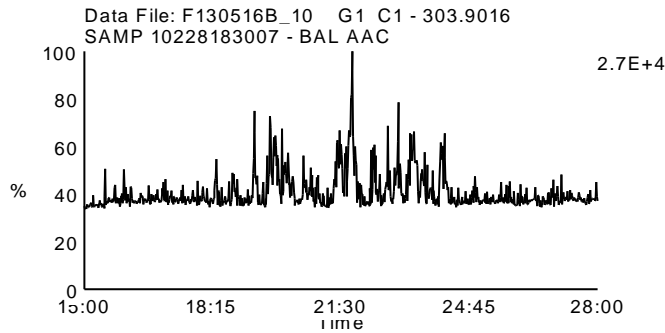
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183007 - BAL AAC

Lab Sample ID: 10228183007

Client Sample ID: TRIP BLANK

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130516B\_10

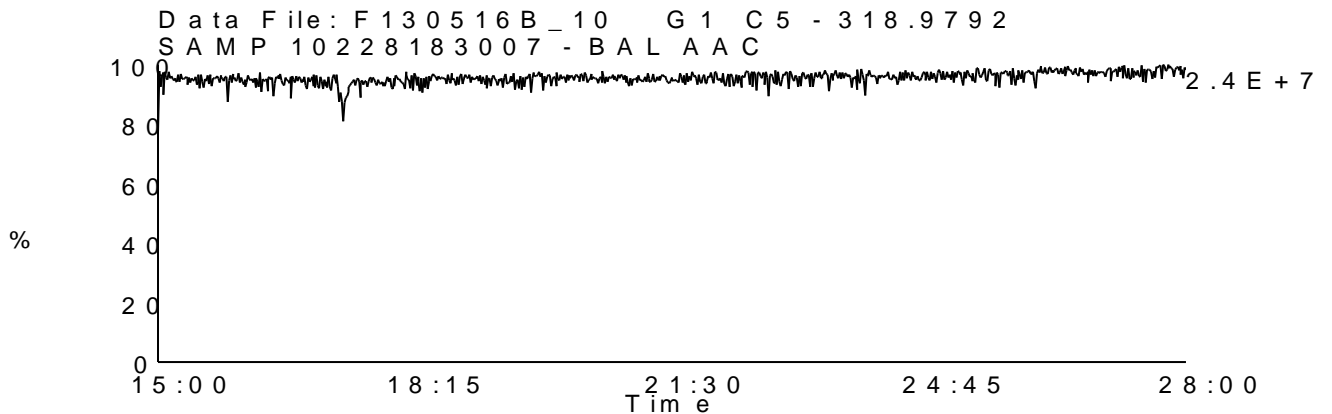
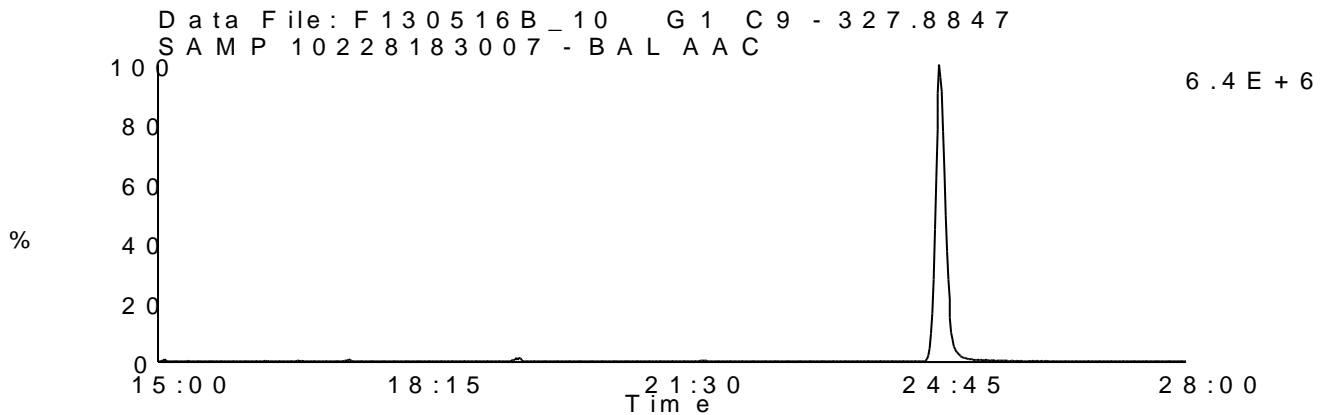
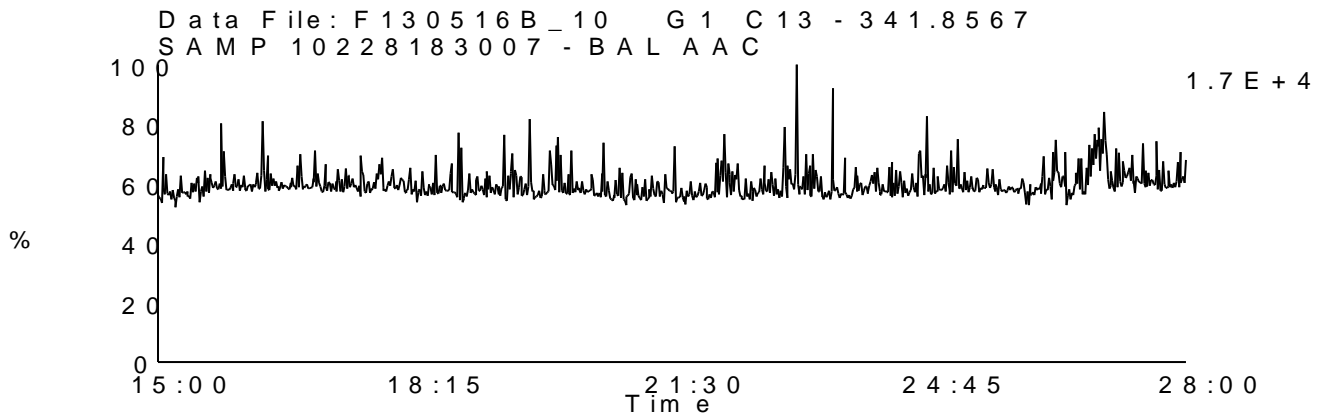
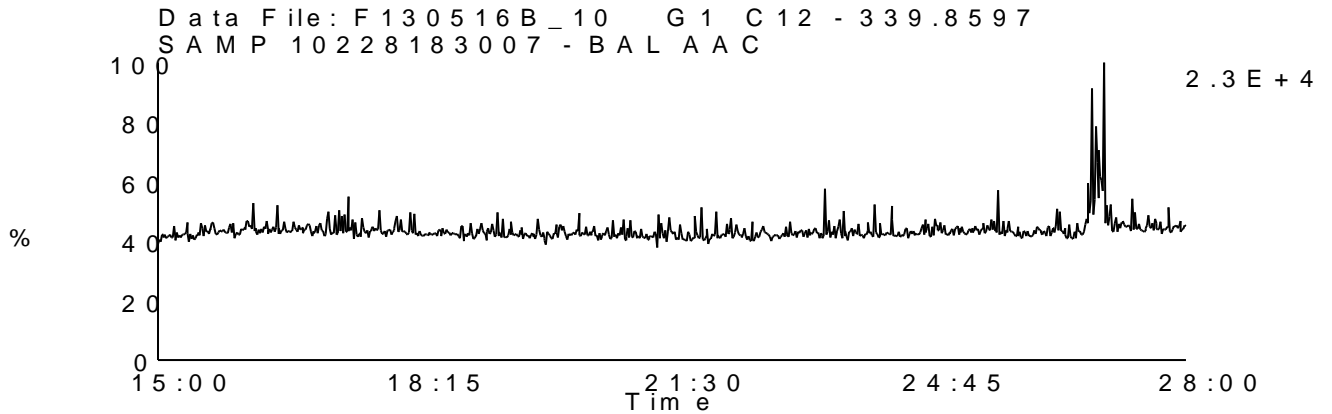
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183007 - BAL AAC

Lab Sample ID: 10228183007

Client Sample ID: TRIP BLANK

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516B\_10

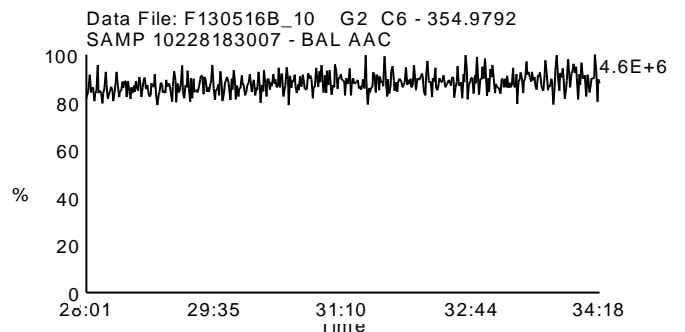
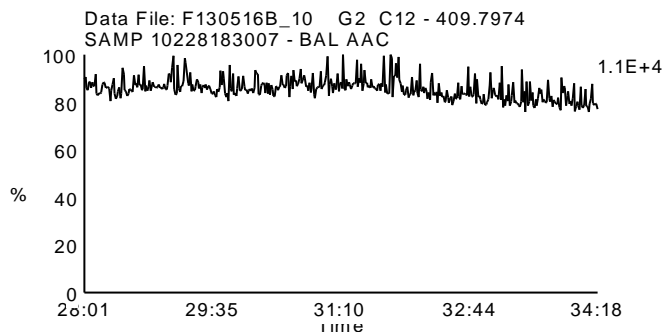
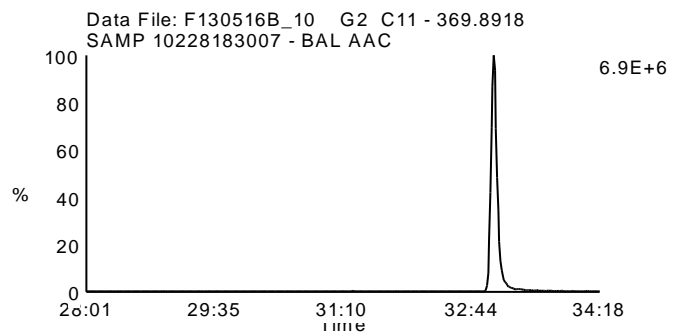
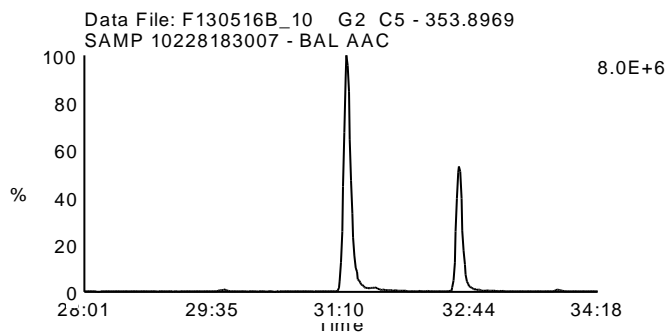
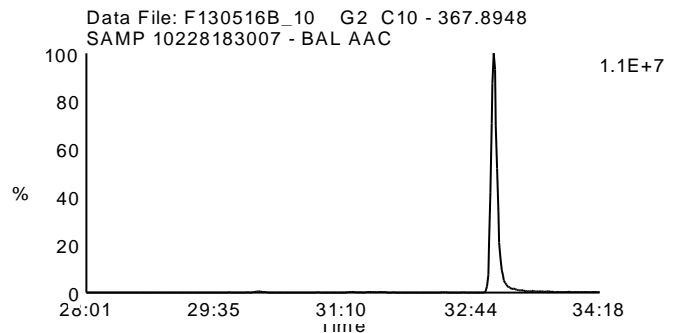
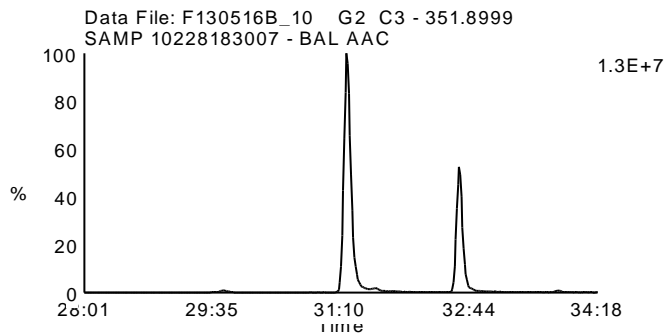
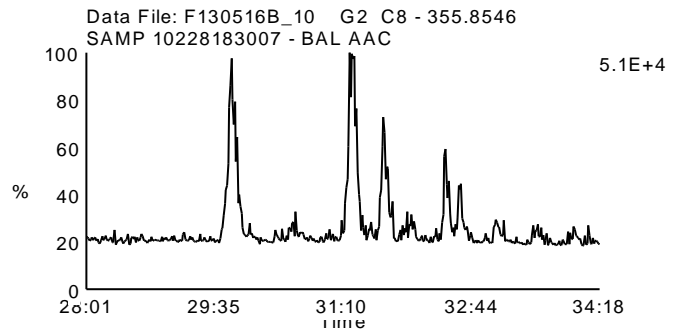
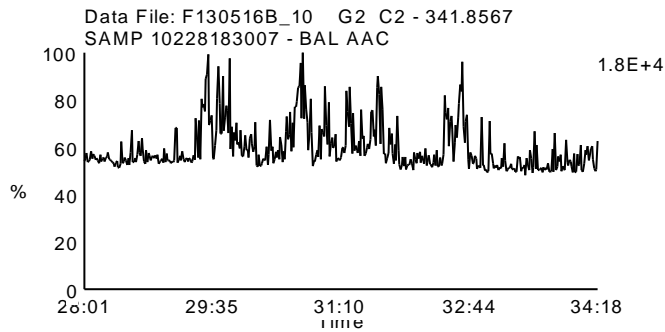
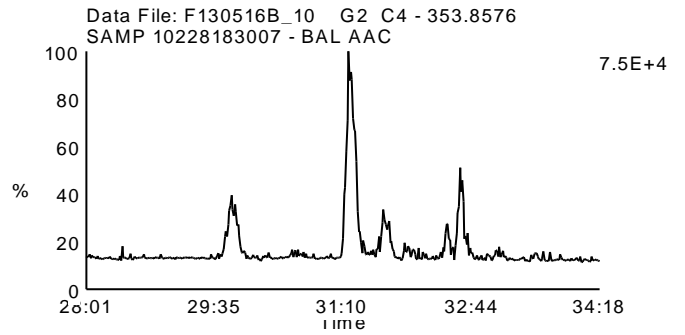
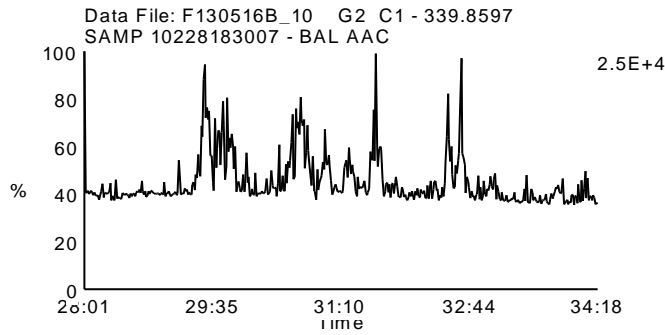
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183007 - BAL AAC

Lab Sample ID: 10228183007

Client Sample ID: TRIP BLANK

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130516B\_10

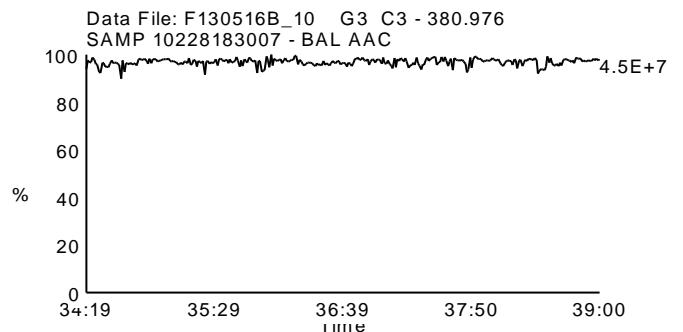
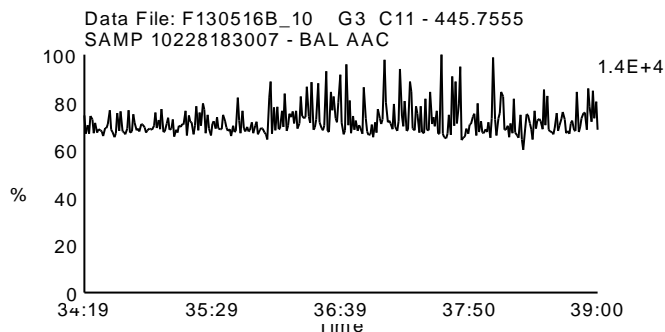
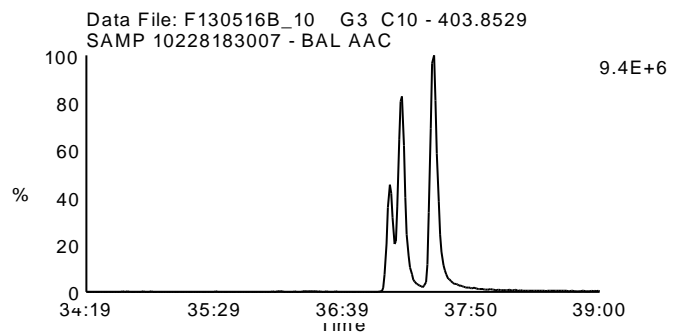
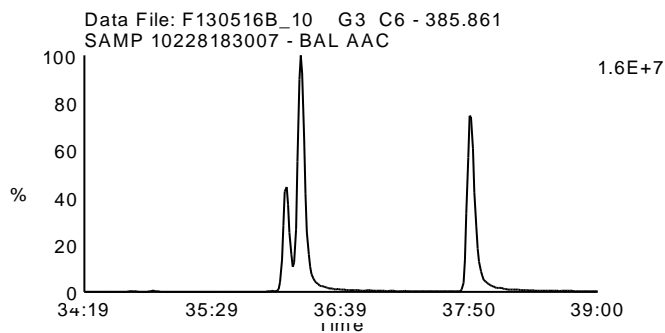
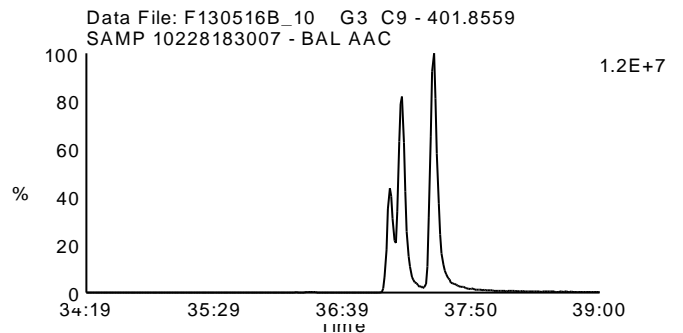
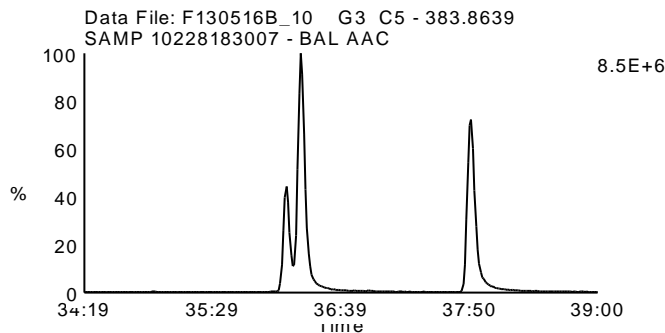
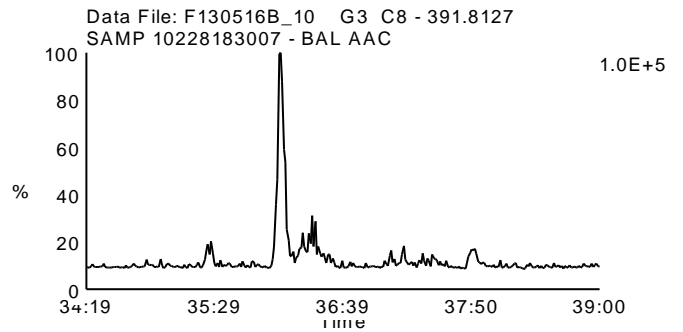
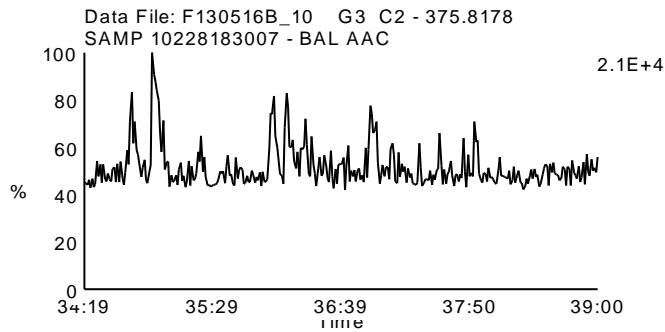
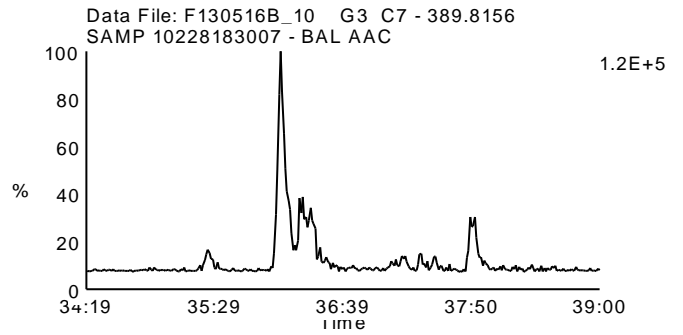
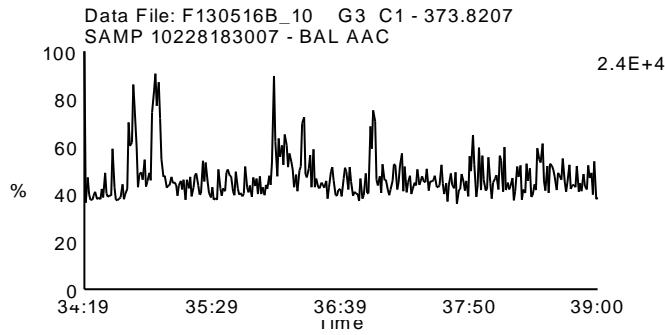
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183007 - BAL AAC

Lab Sample ID: 10228183007

Client Sample ID: TRIP BLANK

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516B\_10

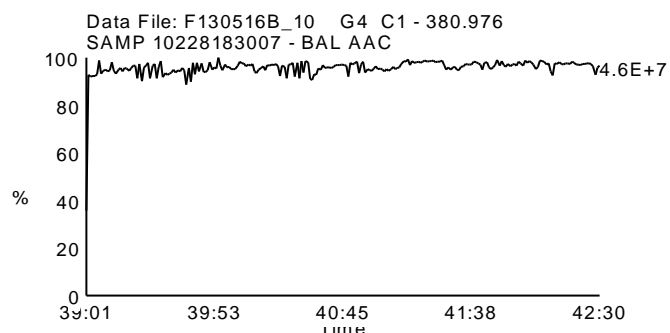
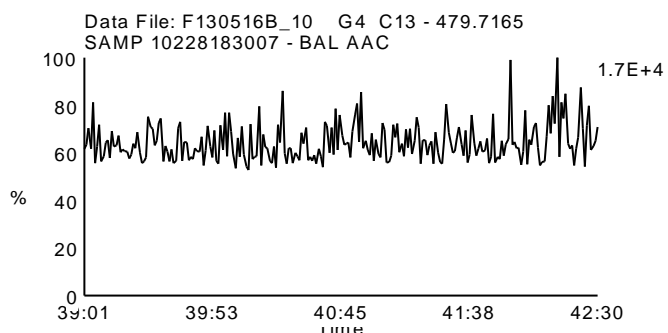
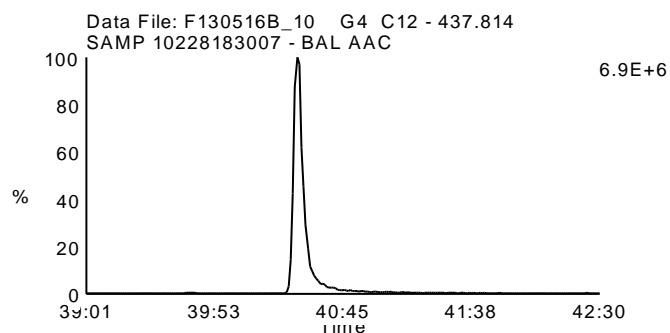
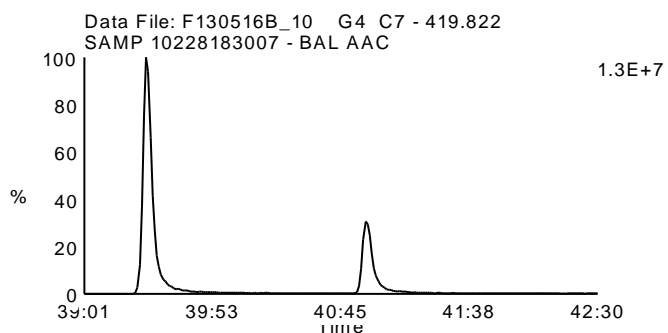
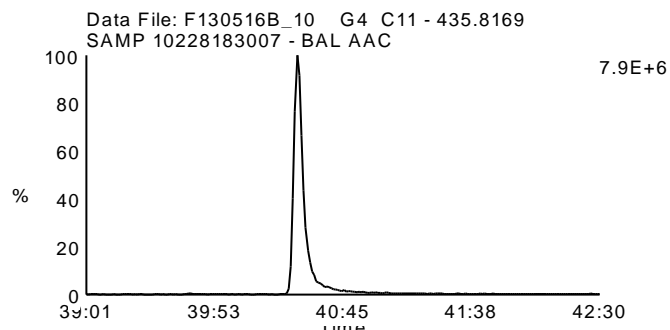
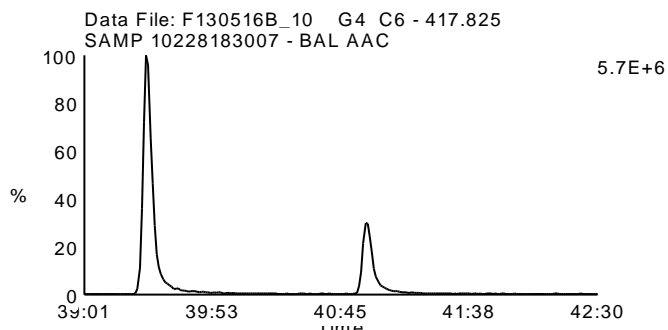
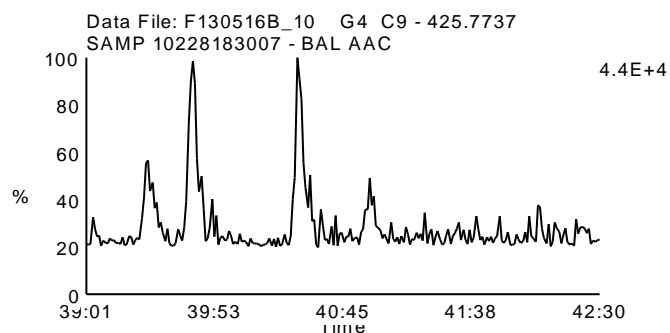
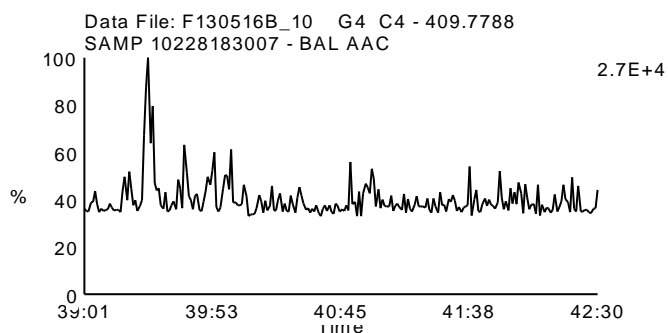
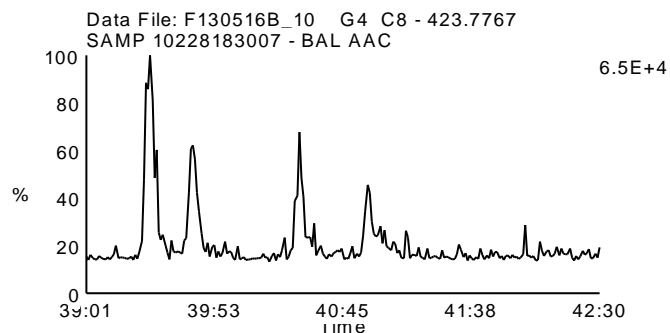
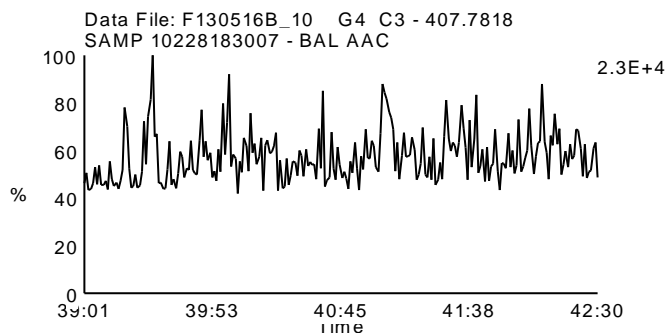
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183007 - BAL AAC

Lab Sample ID: 10228183007

Client Sample ID: TRIP BLANK

Instrument: 10MSHR05 (F)





Homologue Group: Octas

Data File Name: F130516B\_10

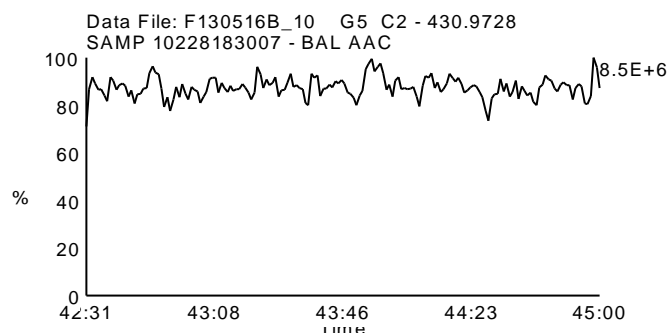
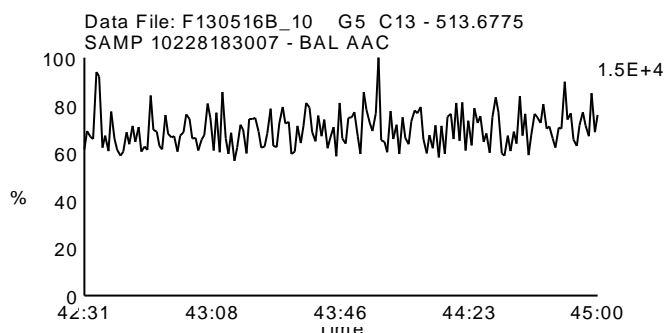
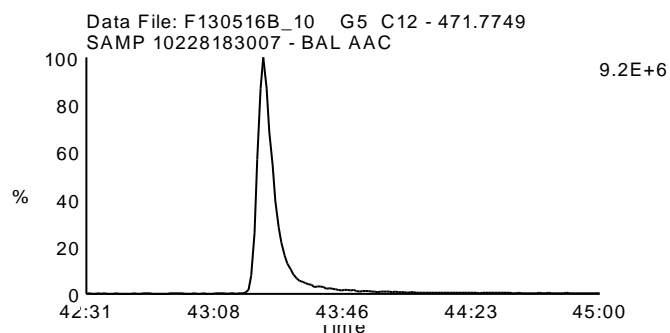
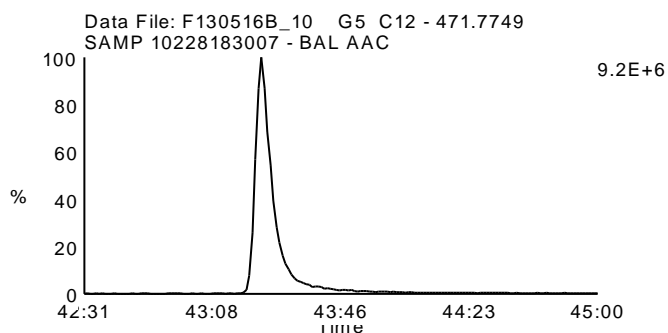
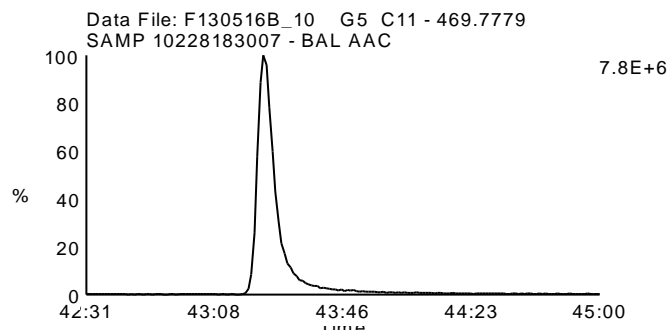
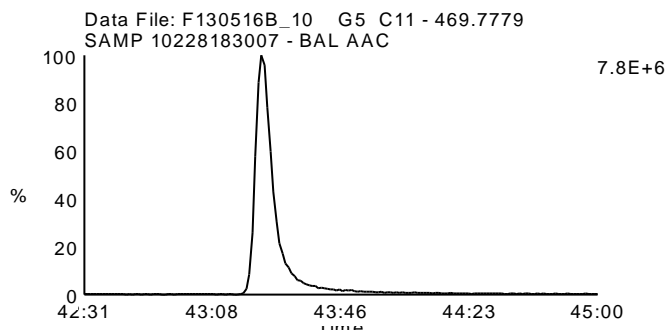
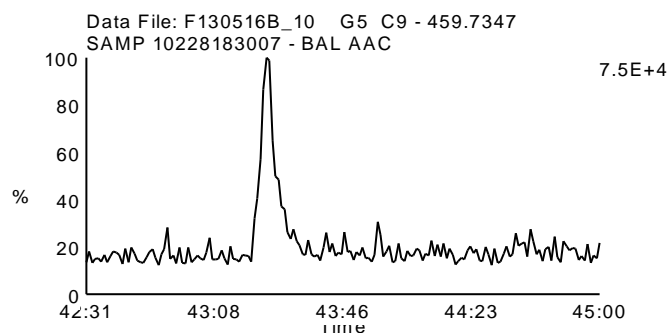
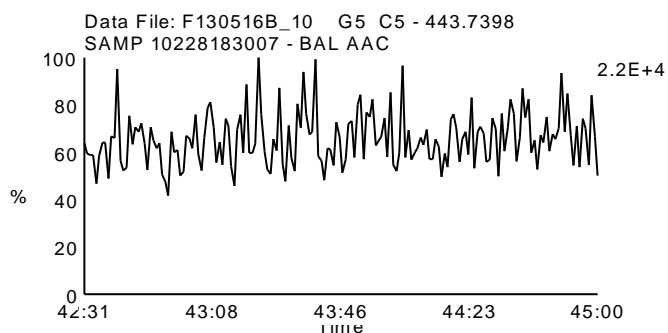
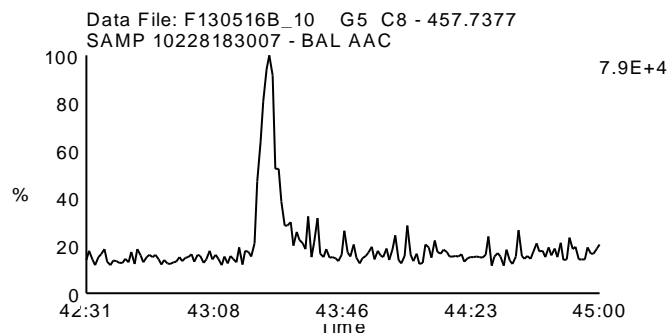
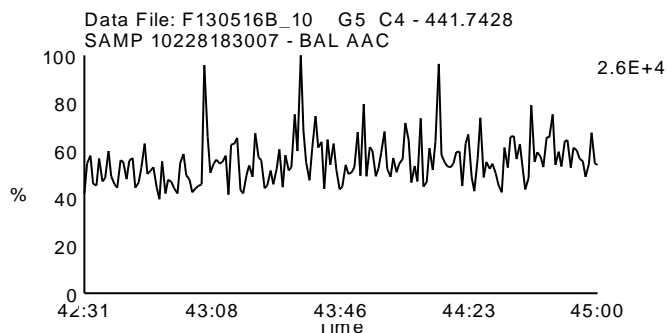
Date Acquired: 5/17/2013

Sample Description: SAMP 10228183007 - BAL AAC

Lab Sample ID: 10228183007

Client Sample ID: TRIP BLANK

Instrument: 10MSHR05 (F)



**PCDD/PCDF Detected Peak List**

Client ID	D-1	Injected By	BAL
Lab ID	10228183001	Instrument ID	10MSHR05 (F)
Filename	F130516B_04	GC Column ID	USC508227H
Analyzed	05/16/2013 21:47	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:33	7.45e7	9.38e7	9.26e6	1.17e7	9.533e4	1.222e5	0.79	
2,3,7,8-TCDF	23:36	6.82e4	8.79e4	6.89e3	1.44e4	1.547e3	2.128e3	0.78	
Other TCDF									
	1 23:13	3.70e4	5.61e4					0.66	
	2 23:24	5.31e4	6.27e4					0.85	
	3 24:06	6.94e4	7.83e4					0.89	
	4 21:48	1.90e5	2.49e5					0.76	
	5 18:47	4.86e4	6.55e4					0.74	
	6 19:20	1.52e5	1.74e5					0.87	
	7 19:40	5.12e4	6.33e4					0.81	
	8 19:50	1.54e5	1.96e5					0.79	
	9 20:11	1.29e5	1.59e5					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	23:47	6.70e7	8.28e7	8.37e6	1.05e7	1.085e4	3.557e3	0.81	
2,3,7,8-TCDD-13C	24:51	5.71e7	7.15e7	6.61e6	8.28e6	1.258e4	4.145e3	0.80	
2,3,7,8-TCDD-37Cl4	24:54	6.31e7		6.95e6		1.122e3	----		
2,3,7,8-TCDD	24:54	ND	ND	ND	ND	1.656e3	2.400e3		
Other TCDD									
	1 20:08	7.78e4	9.33e4					0.83	
	2 20:33	4.68e4	6.89e4					0.68	

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:14	9.53e7	6.03e7	1.54e7	1.01e7	2.085e3	3.436e3	1.58	
2,3,4,7,8-PeCDF-13C	32:37	4.27e7	2.66e7	7.68e6	4.83e6	2.219e4	3.556e3	1.60	
1,2,3,7,8-PeCDF	31:15	8.96e4	5.12e4	1.30e4	8.43e3	1.526e3	1.746e3	1.75	
2,3,4,7,8-PeCDF	32:38	8.74e4	5.66e4	2.15e4	1.04e4	1.281e3	1.595e3	1.54	
Other PeCDF									
	1 32:29	5.04e4	3.57e4					1.41	
	2 31:37	1.41e5	9.78e4					1.44	
	3 29:28	1.63e5	9.36e4					1.75	
	4 29:46	3.43e5	2.54e5					1.35	
	5 30:40	1.26e5	8.86e4					1.42	
	6 26:53	6.77e5	4.30e5					1.57	
Ethers									
	1 31:50	3.06e4	1.94e4					1.58	E

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Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	33:01	6.94e7	4.38e7	1.35e7	8.36e6	2.767e3	1.429e3	1.58	
1,2,3,7,8-PeCDD	33:02	2.21e4	3.54e4	2.87e4	9.35e3	1.423e3	2.013e3	0.62	
Other PeCDD	1 31:40	2.38e4	4.36e4					0.55	
	2 29:50	6.59e4	1.20e5					0.55	

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	36:10	1.78e7	3.43e7	4.32e6	8.16e6	8.623e2	2.230e2	0.52	
1,2,3,6,7,8-HxCDF-13C	36:18	5.37e7	1.02e8	1.16e7	2.16e7	7.800e2	2.241e3	0.53	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	7.800e2	3.041e3		
1,2,3,7,8,9-HxCDF-13C	37:50	4.03e7	7.65e7	7.80e6	1.52e7	7.124e3	1.272e4	0.53	
1,2,3,4,7,8-HxCDF	36:12	9.95e4	8.39e4	1.77e4	2.56e4	2.383e3	1.818e3	1.19	
1,2,3,6,7,8-HxCDF	36:20	1.07e5	8.92e4	2.03e4	1.54e4	3.336e3	2.761e3	1.20	
2,3,4,6,7,8-HxCDF	36:57	6.94e4	6.44e4	1.67e4	1.63e4	3.557e3	1.818e3	1.08	
1,2,3,7,8,9-HxCDF	37:52	4.67e4	3.31e4	9.25e3	7.25e3	2.384e3	2.206e3	1.41	
Other HxCDF	1 35:36	5.02e4	4.65e4					1.08	
	2 34:45	1.88e5	1.33e5					1.41	
	3 34:58	4.24e5	3.59e5					1.18	
Ethers	1 35:45	4.66e4	3.69e4					1.26	E

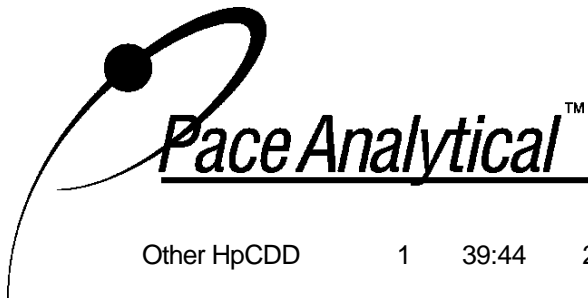
Hexa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4,7,8-HxCDD-13C	37:05	2.25e7	1.79e7	6.21e6	4.86e6	1.048e4	9.411e3	1.26	
1,2,3,6,7,8-HxCDD-13C	37:11	5.74e7	4.55e7	1.18e7	9.19e6	2.475e3	3.292e3	1.26	
1,2,3,7,8,9-HxCDD-13C	37:30	7.14e7	5.77e7	1.41e7	1.13e7	3.221e3	3.007e3	1.24	
1,2,3,4,7,8-HxCDD	37:05	2.34e4	2.57e4	7.99e3	7.90e3	2.714e3	1.788e3	0.91	I
1,2,3,6,7,8-HxCDD	37:11	4.72e4	4.29e4	8.75e3	9.72e3	2.488e3	1.650e3	1.10	
1,2,3,7,8,9-HxCDD	37:31	4.87e4	4.47e4	8.14e3	7.49e3	2.494e3	1.624e3	1.09	

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	39:27	3.20e7	6.94e7	7.17e6	1.54e7	9.366e3	1.304e4	0.46	
1,2,3,4,7,8,9-HpCDF-13C	40:56	7.72e6	1.78e7	1.54e6	3.54e6	6.961e3	6.230e3	0.43	
1,2,3,4,6,7,8-HpCDF	39:27	1.90e5	1.98e5	4.51e4	4.40e4	3.298e3	2.265e3	0.96	
1,2,3,4,7,8,9-HpCDF	40:56	3.79e4	2.29e4	7.42e3	5.25e3	3.861e3	2.336e3	1.65	I
Other HpCDF	1 39:53	7.00e4	6.20e4					1.13	

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	40:27	4.71e7	4.27e7	1.00e7	9.30e6	6.724e3	2.254e3	1.10	
1,2,3,4,6,7,8-HpCDD	40:28	1.91e5	1.90e5	3.85e4	4.65e4	2.088e3	2.437e3	1.01	

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Other HpCDD	1	39:44	2.25e5	2.23e5						1.01
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Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	43:34	9.81e4	1.02e5	1.37e4	1.72e4	2.863e3	3.113e3	0.97	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:23	6.43e7	7.17e7	1.02e7	1.19e7	1.174e3	2.779e3	0.90	
OCDD	43:23	6.31e5	8.27e5	1.15e5	1.41e5	5.047e3	6.824e3	0.76	

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**PCDD/PCDF Detected Peak List**

Client ID	U-2	Injected By	BAL
Lab ID	10228183002	Instrument ID	10MSHR05 (F)
Filename	F130516B_05	GC Column ID	USC508227H
Analyzed	05/16/2013 22:34	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:35	3.74e7	4.71e7	4.46e6	5.75e6	3.596e4	4.998e4	0.79	
2,3,7,8-TCDF	23:37	ND	ND	ND	ND	1.446e3	2.046e3		
Other TCDF	1	24:08	1.92e4	2.20e4				0.87	
	2	21:43	3.81e4	4.88e4				0.78	
	3	18:23	1.96e4	3.01e4				0.65	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:50	3.27e7	4.06e7	4.06e6	5.03e6	9.499e3	4.899e3	0.80	
2,3,7,8-TCDD-13C	24:55	2.88e7	3.64e7	3.24e6	4.16e6	1.039e4	2.591e3	0.79	
2,3,7,8-TCDD-37Cl4	24:56	3.07e7		3.47e6		1.480e3	----		
2,3,7,8-TCDD	24:58	ND	ND	ND	ND	1.835e3	1.797e3		

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:16	4.79e7	3.03e7	8.01e6	5.09e6	2.878e4	2.074e3	1.58	
2,3,4,7,8-PeCDF-13C	32:38	2.03e7	1.28e7	3.75e6	2.48e6	1.776e4	4.857e3	1.59	
1,2,3,7,8-PeCDF	31:17	ND	ND	ND	ND	1.690e3	1.466e3		
2,3,4,7,8-PeCDF	32:38	1.80e4	1.32e4	5.28e3	2.86e3	1.691e3	1.514e3	1.36	
Other PeCDF	1	31:36	2.44e4	1.74e4				1.40	
	2	30:42	3.62e4	2.54e4				1.43	
	3	26:59	1.22e5	7.07e4				1.72	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	33:02	3.40e7	2.14e7	6.57e6	4.22e6	1.492e3	1.034e3	1.59	
1,2,3,7,8-PeCDD	33:03	ND	ND	ND	ND	1.717e3	2.383e3		

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	36:11	8.58e6	1.64e7	2.13e6	3.85e6	1.109e3	1.178e3	0.52	
1,2,3,6,7,8-HxCDF-13C	36:19	2.56e7	4.83e7	5.40e6	1.00e7	1.392e3	2.613e3	0.53	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	1.002e3	2.519e3		

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1,2,3,7,8,9-HxCDF-13C	37:51	1.87e7	3.58e7	3.86e6	7.24e6	2.955e3	9.451e3	0.52	
1,2,3,4,7,8-HxCDF	36:12	2.51e4	2.50e4	8.31e3	5.80e3	2.013e3	2.112e3	1.00	I
1,2,3,6,7,8-HxCDF	36:20	2.82e4	2.18e4	5.66e3	6.31e3	2.434e3	2.307e3	1.29	
2,3,4,6,7,8-HxCDF	36:58	2.18e4	1.95e4	5.58e3	8.44e3	2.546e3	2.032e3	1.12	
1,2,3,7,8,9-HxCDF	37:52	ND	ND	ND	ND	2.426e3	1.649e3		
Other HxCDF	1	34:59	6.33e4	5.52e4					1.15
	2	34:47	3.17e4	2.50e4					1.27

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	37:06	1.10e7	8.63e6	6.09e6	4.97e6	2.932e3	1.131e3	1.28	
1,2,3,6,7,8-HxCDD-13C	37:12	2.80e7	2.19e7	6.08e6	4.97e6	7.614e3	6.116e3	1.28	
1,2,3,7,8,9-HxCDD-13C	37:30	3.50e7	2.81e7	7.33e6	5.76e6	8.609e3	2.005e3	1.24	
1,2,3,4,7,8-HxCDD	37:07	ND	ND	ND	ND	2.397e3	1.130e3		
1,2,3,6,7,8-HxCDD	37:13	ND	ND	ND	ND	2.571e3	1.280e3		
1,2,3,7,8,9-HxCDD	37:31	ND	ND	ND	ND	2.028e3	1.349e3		

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	39:27	1.48e7	3.33e7	3.40e6	7.37e6	5.730e3	1.087e4	0.44	
1,2,3,4,7,8,9-HpCDF-13C	40:57	3.52e6	7.84e6	8.17e5	1.76e6	6.769e3	1.149e4	0.45	
1,2,3,4,6,7,8-HpCDF	39:27	4.91e4	4.54e4	1.39e4	1.23e4	2.571e3	2.312e3	1.08	
1,2,3,4,7,8,9-HpCDF	40:58	ND	ND	ND	ND	3.157e3	1.926e3		

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	40:27	2.18e7	2.01e7	4.96e6	4.50e6	4.238e3	2.877e3	1.08	
1,2,3,4,6,7,8-HpCDD	40:27	7.95e4	6.52e4	2.30e4	1.31e4	2.923e3	1.918e3	1.22	I
Other HpCDD	1	39:45	7.54e4	6.33e4					1.19

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	43:35	ND	ND	ND	ND	2.135e3	2.834e3		

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:23	2.93e7	3.18e7	5.15e6	5.60e6	8.000e2	2.493e3	0.92	
OCDD	43:24	2.85e5	2.82e5	5.73e4	5.26e4	3.179e3	4.888e3	1.01	

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**PCDD/PCDF Detected Peak List**

Client ID	BZ-1	Injected By	BAL
Lab ID	10228183003	Instrument ID	10MSHR05 (F)
Filename	F130516B_06	GC Column ID	USC508227H
Analyzed	05/16/2013 23:22	ICAL ID	F130408

Tetra-Furans:		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C		23:34	6.00e7	7.57e7	7.14e6	9.42e6	9.652e3	2.713e4	0.79	
2,3,7,8-TCDF		23:35	ND	ND	ND	ND	1.608e3	1.767e3		
Other TCDF	1	21:45	7.39e4	9.44e4					0.78	
	2	21:38	3.11e4	4.12e4					0.75	
	3	20:55	3.28e4	4.21e4					0.78	
	4	20:37	3.85e4	5.54e4					0.70	
	5	19:19	1.23e5	1.64e5					0.75	
	6	19:41	3.48e4	4.09e4					0.85	
	7	18:22	3.36e4	3.83e4					0.88	
	8	18:49	2.44e4	3.61e4					0.68	

Tetra-Dioxins:		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C		23:48	5.83e7	7.25e7	7.39e6	9.02e6	1.241e4	4.530e3	0.80	
2,3,7,8-TCDD-13C		24:53	4.62e7	5.85e7	5.30e6	6.68e6	1.068e4	2.141e3	0.79	
2,3,7,8-TCDD-37Cl4		24:55	5.30e7		6.03e6		1.797e3	-----		
2,3,7,8-TCDD		24:56	ND	ND	ND	ND	1.816e3	1.941e3		

Penta-Furans:		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C		31:14	8.06e7	5.09e7	1.31e7	8.24e6	2.741e3	1.123e3	1.58	
2,3,4,7,8-PeCDF-13C		32:37	3.43e7	2.17e7	6.32e6	4.00e6	8.799e3	4.166e3	1.58	
1,2,3,7,8-PeCDF		31:16	3.65e4	2.19e4	9.20e3	4.05e3	1.499e3	1.736e3	1.67	
2,3,4,7,8-PeCDF		32:38	2.67e4	2.51e4	4.14e3	5.29e3	1.858e3	1.487e3	1.07	I
Other PeCDF	1	29:47	1.92e5	1.08e5					1.78	
	2	26:58	4.12e5	2.95e5					1.40	
Ethers	1	31:32	5.24e4	3.19e4					1.64	E

Penta-Dioxins:		RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C		33:01	5.66e7	3.66e7	1.06e7	6.85e6	3.783e2	9.703e2	1.55	
1,2,3,7,8-PeCDD		33:02	ND	ND	ND	ND	3.071e3	1.752e3		
Other PeCDD	1	29:47	4.70e4	6.88e4					0.68	

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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	36:10	1.53e7	2.95e7	3.70e6	7.15e6	6.875e2	1.502e3	0.52	
1,2,3,6,7,8-HxCDF-13C	36:18	4.46e7	8.46e7	9.28e6	1.77e7	1.034e3	1.997e3	0.53	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	2.724e2	1.914e3		
1,2,3,7,8,9-HxCDF-13C	37:50	3.10e7	6.06e7	6.00e6	1.14e7	5.706e3	9.999e3	0.51	
1,2,3,4,7,8-HxCDF	36:10	3.28e4	2.36e4	9.76e3	6.69e3	2.749e3	2.696e3	1.39	
1,2,3,6,7,8-HxCDF	36:19	4.76e4	3.51e4	1.17e4	7.88e3	3.304e3	2.384e3	1.35	
2,3,4,6,7,8-HxCDF	36:56	2.73e4	2.04e4	8.34e3	5.40e3	2.999e3	2.175e3	1.34	
1,2,3,7,8,9-HxCDF	37:51	1.27e4	1.49e4	3.97e3	3.84e3	2.249e3	2.373e3	0.85	I

Other HxCDF	1	35:38	3.98e4	3.04e4				1.31	
	2	34:48	8.30e4	5.88e4				1.41	
	3	34:59	2.18e5	1.64e5				1.33	

Ethers	1	35:44	3.27e4	2.82e4				1.16	E
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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	37:05	2.05e7	1.63e7	4.96e6	4.11e6	6.854e3	1.967e3	1.26	
1,2,3,6,7,8-HxCDD-13C	37:11	4.52e7	3.58e7	9.82e6	7.92e6	8.656e3	5.895e3	1.26	
1,2,3,7,8,9-HxCDD-13C	37:30	5.89e7	4.77e7	1.17e7	9.43e6	3.718e3	1.833e3	1.23	
1,2,3,4,7,8-HxCDD	37:05	1.82e4	1.40e4	3.17e3	3.24e3	2.790e3	1.400e3	1.30	
1,2,3,6,7,8-HxCDD	37:12	3.09e4	2.71e4	5.24e3	9.61e3	2.790e3	1.801e3	1.14	
1,2,3,7,8,9-HxCDD	37:30	2.52e4	2.03e4	4.22e3	6.59e3	2.092e3	1.681e3	1.24	

Other HxCDD	1	35:27	7.61e4	6.18e4				1.23	
	2	36:04	2.24e4	2.03e4				1.10	
	3	36:22	1.42e5	1.01e5				1.40	

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	39:27	2.52e7	5.45e7	5.70e6	1.24e7	1.129e4	1.111e4	0.46	
1,2,3,4,7,8,9-HpCDF-13C	40:56	5.47e6	1.18e7	1.12e6	2.54e6	6.150e3	1.578e4	0.46	
1,2,3,4,6,7,8-HpCDF	39:27	1.02e5	1.03e5	2.22e4	2.57e4	2.700e3	2.540e3	0.99	
1,2,3,4,7,8,9-HpCDF	40:59	3.31e4	2.79e4	6.60e3	6.83e3	2.444e3	2.089e3	1.18	

Other HpCDF	1	39:54	5.28e4	4.90e4				1.08	
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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	40:27	3.49e7	3.19e7	8.00e6	7.10e6	2.824e3	7.554e2	1.09	
1,2,3,4,6,7,8-HpCDD	40:27	1.61e5	1.30e5	3.88e4	2.47e4	2.736e3	3.278e3	1.24	I

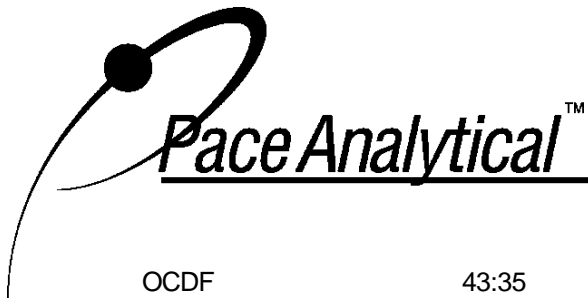
Other HpCDD	1	39:45	1.89e5	1.61e5				1.18	
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Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
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OCDF 43:35 ND ND ND ND 2.512e3 2.882e3

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:23	4.83e7	5.41e7	8.32e6	9.29e6	7.865e2	2.375e3	0.89	
OCDD	43:23	6.30e5	6.61e5	1.17e5	1.23e5	3.092e3	3.243e3	0.95	

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**PCDD/PCDF Detected Peak List**

Client ID	F-2	Injected By	BAL
Lab ID	10228183004	Instrument ID	10MSHR05 (F)
Filename	F130516B_07	GC Column ID	USC508227H
Analyzed	05/17/2013 00:09	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:38	1.07e7	1.39e7	1.24e6	1.65e6	1.254e4	8.740e3	0.77	
2,3,7,8-TCDF	23:40	ND	ND	ND	ND	1.149e3	1.599e3		

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:52	9.71e6	1.19e7	1.19e6	1.42e6	1.724e4	6.102e3	0.81	
2,3,7,8-TCDD-13C	24:57	8.40e6	1.03e7	9.30e5	1.14e6	1.282e4	5.343e3	0.81	
2,3,7,8-TCDD-37Cl4	24:58	9.82e6		1.06e6		1.806e3	----		
2,3,7,8-TCDD	24:59	ND	ND	ND	ND	1.473e3	1.314e3		

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:18	1.37e7	8.46e6	2.17e6	1.41e6	3.163e3	1.450e3	1.62	
2,3,4,7,8-PeCDF-13C	32:39	6.64e6	4.25e6	1.26e6	8.08e5	1.430e3	4.614e3	1.56	
1,2,3,7,8-PeCDF	31:18	ND	ND	ND	ND	1.709e3	1.205e3		
2,3,4,7,8-PeCDF	32:40	ND	ND	ND	ND	1.601e3	1.261e3		

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	33:03	1.01e7	6.37e6	2.03e6	1.19e6	1.025e3	1.263e3	1.58	
1,2,3,7,8-PeCDD	33:05	ND	ND	ND	ND	9.979e2	1.159e3		

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	36:12	2.65e6	4.87e6	6.41e5	1.17e6	8.328e3	1.487e4	0.54	
1,2,3,6,7,8-HxCDF-13C	36:20	7.08e6	1.31e7	1.46e6	2.85e6	1.009e3	9.007e2	0.54	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	1.071e3	8.385e2		
1,2,3,7,8,9-HxCDF-13C	37:52	3.19e6	6.15e6	6.37e5	1.18e6	3.090e3	5.549e3	0.52	
1,2,3,4,7,8-HxCDF	36:13	ND	ND	ND	ND	1.469e3	1.607e3		
1,2,3,6,7,8-HxCDF	36:21	ND	ND	ND	ND	1.516e3	1.321e3		
2,3,4,6,7,8-HxCDF	36:59	ND	ND	ND	ND	1.774e3	1.494e3		
1,2,3,7,8,9-HxCDF	37:53	ND	ND	ND	ND	1.561e3	1.854e3		

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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	37:07	3.53e6	2.85e6	1.00e6	7.71e5	2.615e3	1.738e3	1.24	
1,2,3,6,7,8-HxCDD-13C	37:13	7.97e6	6.42e6	1.74e6	1.50e6	3.723e3	1.861e3	1.24	
1,2,3,7,8,9-HxCDD-13C	37:31	9.84e6	7.73e6	1.98e6	1.58e6	3.888e3	1.861e3	1.27	
1,2,3,4,7,8-HxCDD	37:08	ND	ND	ND	ND	1.642e3	1.311e3		
1,2,3,6,7,8-HxCDD	37:14	ND	ND	ND	ND	1.642e3	1.239e3		
1,2,3,7,8,9-HxCDD	37:31	ND	ND	ND	ND	1.393e3	1.030e3		

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	39:27	3.15e6	7.30e6	7.34e5	1.61e6	3.098e3	4.370e3	0.43	
1,2,3,4,7,8,9-HpCDF-13C	40:58	2.73e5	5.24e5	5.86e4	1.24e5	3.942e3	4.125e3	0.52	I
1,2,3,4,6,7,8-HpCDF	39:28	ND	ND	ND	ND	2.332e3	1.341e3		
1,2,3,4,7,8,9-HpCDF	40:59	ND	ND	ND	ND	2.323e3	1.218e3		

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	40:28	6.13e6	5.84e6	1.29e6	1.29e6	4.074e3	4.084e3	1.05	
1,2,3,4,6,7,8-HpCDD	40:29	ND	ND	ND	ND	2.189e3	1.342e3		

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	43:36	ND	ND	ND	ND	2.028e3	2.752e3		

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:24	8.06e6	8.94e6	1.37e6	1.48e6	1.180e3	1.819e3	0.90	
OCDD	43:25	ND	ND	ND	ND	4.139e3	2.962e3		

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**PCDD/PCDF Detected Peak List**

Client ID	F-1	Injected By	BAL
Lab ID	10228183005	Instrument ID	10MSHR05 (F)
Filename	F130516B_08	GC Column ID	USC508227H
Analyzed	05/17/2013 00:56	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:37	8.47e6	1.06e7	9.42e5	1.21e6	6.842e3	6.894e3	0.80	
2,3,7,8-TCDF	23:39	ND	ND	ND	ND	1.195e3	1.517e3		

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:53	7.33e6	9.08e6	8.18e5	1.07e6	1.458e4	4.835e3	0.81	
2,3,7,8-TCDD-13C	24:57	6.39e6	7.85e6	6.74e5	8.31e5	1.760e4	6.049e3	0.81	
2,3,7,8-TCDD-37Cl4	24:58	7.19e6		7.75e5		1.477e3	----		
2,3,7,8-TCDD	24:59	ND	ND	ND	ND	1.412e3	1.331e3		

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:18	1.03e7	6.59e6	1.74e6	1.09e6	1.274e3	1.672e3	1.57	
2,3,4,7,8-PeCDF-13C	32:39	4.18e6	2.64e6	7.72e5	4.69e5	4.037e3	4.632e3	1.58	
1,2,3,7,8-PeCDF	31:18	ND	ND	ND	ND	1.337e3	1.279e3		
2,3,4,7,8-PeCDF	32:40	ND	ND	ND	ND	9.786e2	1.411e3		

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	33:03	7.38e6	4.72e6	1.37e6	9.17e5	9.522e2	2.135e3	1.56	
1,2,3,7,8-PeCDD	33:05	ND	ND	ND	ND	1.080e3	1.282e3		

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	36:12	1.76e6	3.36e6	4.51e5	8.02e5	1.888e3	1.663e3	0.52	
1,2,3,6,7,8-HxCDF-13C	36:20	5.76e6	1.10e7	1.26e6	2.43e6	1.582e3	1.825e3	0.53	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	1.582e3	2.368e3		
1,2,3,7,8,9-HxCDF-13C	37:52	3.89e6	7.27e6	7.49e5	1.51e6	5.883e3	2.916e3	0.54	
1,2,3,4,7,8-HxCDF	36:13	ND	ND	ND	ND	1.191e3	1.030e3		
1,2,3,6,7,8-HxCDF	36:21	ND	ND	ND	ND	1.188e3	1.030e3		
2,3,4,6,7,8-HxCDF	36:59	ND	ND	ND	ND	1.188e3	1.030e3		
1,2,3,7,8,9-HxCDF	37:53	ND	ND	ND	ND	1.038e3	8.214e2		

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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	37:07	2.54e6	2.05e6	6.97e5	5.38e5	3.385e3	1.811e3	1.24	
1,2,3,6,7,8-HxCDD-13C	37:13	6.28e6	4.97e6	1.38e6	1.16e6	3.385e3	1.450e3	1.26	
1,2,3,7,8,9-HxCDD-13C	37:31	7.38e6	5.69e6	1.40e6	1.11e6	1.280e3	1.503e3	1.30	
1,2,3,4,7,8-HxCDD	37:08	ND	ND	ND	ND	1.395e3	1.061e3		
1,2,3,6,7,8-HxCDD	37:14	ND	ND	ND	ND	1.395e3	1.004e3		
1,2,3,7,8,9-HxCDD	37:32	ND	ND	ND	ND	1.326e3	1.061e3		

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	39:28	3.14e6	7.17e6	7.39e5	1.55e6	4.198e3	2.950e3	0.44	
1,2,3,4,7,8,9-HpCDF-13C	40:58	3.20e5	7.10e5	7.13e4	1.55e5	4.198e3	3.409e3	0.45	
1,2,3,4,6,7,8-HpCDF	39:29	ND	ND	ND	ND	2.180e3	1.239e3		
1,2,3,4,7,8,9-HpCDF	40:59	ND	ND	ND	ND	2.180e3	1.239e3		

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	40:28	4.49e6	4.23e6	9.86e5	8.67e5	1.503e3	2.052e3	1.06	
1,2,3,4,6,7,8-HpCDD	40:30	2.52e4	1.36e4	5.36e3	2.78e3	1.479e3	1.591e3	1.85	I
Other HpCDD	1 39:47	1.70e4	1.81e4					0.94	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	43:36	ND	ND	ND	ND	1.877e3	3.125e3		

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:24	6.24e6	6.84e6	1.02e6	1.17e6	5.001e3	7.305e3	0.91	
OCDD	43:23	8.60e4	8.81e4	1.61e4	1.52e4	2.795e3	3.128e3	0.98	

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**PCDD/PCDF Detected Peak List**

Client ID	F-3	Injected By	BAL
Lab ID	10228183006	Instrument ID	10MSHR05 (F)
Filename	F130516B_09	GC Column ID	USC508227H
Analyzed	05/17/2013 01:43	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:38	1.36e7	1.77e7	1.62e6	2.03e6	4.888e3	8.014e3	0.77	
2,3,7,8-TCDF	23:40	ND	ND	ND	ND	1.127e3	1.356e3		

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:52	1.25e7	1.58e7	1.49e6	1.91e6	1.455e4	3.995e3	0.79	
2,3,7,8-TCDD-13C	24:57	1.09e7	1.34e7	1.19e6	1.47e6	1.226e4	4.895e3	0.81	
2,3,7,8-TCDD-37Cl4	24:59	1.20e7		1.28e6		1.951e3	----		
2,3,7,8-TCDD	24:59	ND	ND	ND	ND	1.484e3	1.071e3		

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:18	1.80e7	1.09e7	2.79e6	1.70e6	7.427e2	1.518e3	1.65	
2,3,4,7,8-PeCDF-13C	32:39	7.88e6	4.91e6	1.53e6	9.27e5	3.978e3	2.568e3	1.61	
1,2,3,7,8-PeCDF	31:19	ND	ND	ND	ND	1.282e3	1.367e3		
2,3,4,7,8-PeCDF	32:40	ND	ND	ND	ND	1.525e3	1.359e3		

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	33:03	1.28e7	8.04e6	2.35e6	1.56e6	2.417e3	8.730e2	1.60	
1,2,3,7,8-PeCDD	33:05	ND	ND	ND	ND	2.014e3	2.030e3		

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	36:12	3.08e6	6.09e6	8.02e5	1.49e6	2.059e3	3.322e3	0.51	
1,2,3,6,7,8-HxCDF-13C	36:20	9.33e6	1.80e7	2.07e6	3.90e6	2.276e3	1.805e3	0.52	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	7.644e3	9.005e3		
1,2,3,7,8,9-HxCDF-13C	37:52	6.67e6	1.26e7	1.28e6	2.41e6	1.722e3	6.246e3	0.53	
1,2,3,4,7,8-HxCDF	36:13	ND	ND	ND	ND	1.413e3	1.333e3		
1,2,3,6,7,8-HxCDF	36:21	ND	ND	ND	ND	1.481e3	1.194e3		
2,3,4,6,7,8-HxCDF	36:59	ND	ND	ND	ND	1.498e3	1.256e3		
1,2,3,7,8,9-HxCDF	37:53	ND	ND	ND	ND	1.306e3	1.324e3		

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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	37:07	3.95e6	3.15e6	1.14e6	9.33e5	1.901e3	3.642e3	1.25	
1,2,3,6,7,8-HxCDD-13C	37:13	1.06e7	8.15e6	2.31e6	1.77e6	3.867e3	3.642e3	1.31	
1,2,3,7,8,9-HxCDD-13C	37:31	1.24e7	9.80e6	2.27e6	1.99e6	2.980e3	1.048e3	1.27	
1,2,3,4,7,8-HxCDD	37:08	ND	ND	ND	ND	1.947e3	2.227e3		
1,2,3,6,7,8-HxCDD	37:14	ND	ND	ND	ND	1.947e3	2.118e3		
1,2,3,7,8,9-HxCDD	37:32	ND	ND	ND	ND	2.406e3	2.047e3		

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	39:28	5.68e6	1.23e7	1.28e6	2.69e6	2.392e3	5.879e3	0.46	
1,2,3,4,7,8,9-HpCDF-13C	40:58	1.28e6	2.98e6	2.36e5	6.47e5	2.392e3	7.290e3	0.43	
1,2,3,4,6,7,8-HpCDF	39:29	ND	ND	ND	ND	1.987e3	1.756e3		
1,2,3,4,7,8,9-HpCDF	40:59	ND	ND	ND	ND	1.780e3	1.218e3		

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	40:29	8.03e6	7.24e6	1.69e6	1.60e6	2.791e3	4.975e3	1.11	
1,2,3,4,6,7,8-HpCDD	40:30	ND	ND	ND	ND	2.462e3	1.851e3		

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	43:36	ND	ND	ND	ND	1.958e3	2.052e3		

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:24	1.00e7	1.17e7	1.79e6	2.05e6	8.806e2	1.770e3	0.86	
OCDD	43:23	7.31e4	9.64e4	1.07e4	1.60e4	3.174e3	3.565e3	0.76	

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### PCDD/PCDF Detected Peak List

Client ID	TRIP BLANK	Injected By	BAL
Lab ID	10228183007	Instrument ID	10MSHR05 (F)
Filename	F130516B_10	GC Column ID	USC508227H
Analyzed	05/17/2013 02:30	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:34	6.03e7	7.65e7	7.50e6	9.21e6	3.273e4	3.511e4	0.79	
2,3,7,8-TCDF	23:38	2.95e4	3.57e4	4.98e3	5.84e3	1.527e3	1.432e3	0.83	
Other TCDF									
	1 18:46	1.62e4	2.47e4					0.66	
	2 24:08	6.22e4	7.19e4					0.87	
	3 22:58	5.22e4	6.23e4					0.84	
	4 22:43	2.97e4	3.52e4					0.84	
	5 22:22	4.15e4	5.54e4					0.75	
	6 21:48	1.37e5	1.81e5					0.76	
	7 19:43	1.00e5	1.12e5					0.89	
	8 20:07	6.20e4	7.75e4					0.80	
	9 21:29	7.26e4	1.09e5					0.66	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:48	5.76e7	7.14e7	6.96e6	8.92e6	1.626e4	5.337e3	0.81	
2,3,7,8-TCDD-13C	24:52	4.75e7	6.03e7	5.25e6	6.68e6	1.157e4	3.275e3	0.79	
2,3,7,8-TCDD-37Cl4	24:54	5.56e7		6.34e6		1.357e3	-----		
2,3,7,8-TCDD	24:55	ND	ND	ND	ND	2.242e3	1.893e3		
Other TCDD									
	1 20:08	2.67e5	3.52e5					0.76	
	2 20:32	1.43e5	2.08e5					0.69	
	3 20:58	3.05e4	4.13e4					0.74	
	4 22:10	5.79e4	6.50e4					0.89	

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:14	8.13e7	4.99e7	1.31e7	8.01e6	1.057e5	6.374e4	1.63	
2,3,4,7,8-PeCDF-13C	32:37	3.79e7	2.41e7	6.89e6	4.24e6	2.928e4	8.625e3	1.57	
1,2,3,7,8-PeCDF	31:16	2.56e4	2.38e4	5.12e3	5.67e3	1.879e3	1.518e3	1.08	I
2,3,4,7,8-PeCDF	32:38	4.72e4	4.10e4	1.46e4	7.78e3	1.561e3	1.461e3	1.15	I
Other PeCDF									
	1 32:29	3.54e4	2.54e4					1.39	
	2 31:36	5.21e4	3.71e4					1.40	
	3 30:40	1.05e5	7.93e4					1.32	
	4 29:47	8.24e4	5.79e4					1.42	
	5 29:30	7.82e4	4.85e4					1.61	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
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1,2,3,7,8-PeCDD-13C	33:01	5.81e7	3.70e7	1.08e7	6.92e6	4.580e3	5.305e3	1.57
1,2,3,7,8-PeCDD	33:02	ND	ND	ND	ND	3.519e3	1.815e3	
Other PeCDD	1 29:48	1.60e5	2.74e5					0.58
	2 32:27	5.19e4	8.21e4					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	36:10	1.55e7	2.98e7	3.77e6	7.02e6	3.030e4	2.308e3	0.52	
1,2,3,6,7,8-HxCDF-13C	36:18	4.23e7	8.00e7	8.52e6	1.58e7	3.030e4	1.769e3	0.53	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	3.030e4	4.205e4		
1,2,3,7,8,9-HxCDF-13C	37:51	3.32e7	6.38e7	6.15e6	1.18e7	1.969e4	2.282e4	0.52	
1,2,3,4,7,8-HxCDF	36:09	2.38e4	2.84e4	4.93e3	7.06e3	2.177e3	1.782e3	0.84	I
1,2,3,6,7,8-HxCDF	36:19	1.90e4	1.49e4	6.08e3	4.99e3	2.771e3	2.101e3	1.27	
2,3,4,6,7,8-HxCDF	36:58	2.79e4	2.69e4	7.52e3	6.38e3	2.384e3	1.892e3	1.04	I
1,2,3,7,8,9-HxCDF	37:52	ND	ND	ND	ND	2.668e3	2.066e3		
Other HxCDF	1 36:03	3.14e4	2.72e4					1.15	
	2 34:58	5.66e4	5.31e4					1.06	
	3 34:46	4.09e4	3.07e4					1.33	

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	37:05	2.16e7	1.56e7	5.21e6	4.25e6	4.487e3	7.093e3	1.38	
1,2,3,6,7,8-HxCDD-13C	37:12	4.72e7	3.90e7	9.82e6	7.78e6	4.487e3	6.777e3	1.21	
1,2,3,7,8,9-HxCDD-13C	37:30	6.14e7	5.00e7	1.20e7	9.42e6	1.318e4	5.715e3	1.23	
1,2,3,4,7,8-HxCDD	37:06	1.90e4	1.85e4	5.07e3	6.91e3	2.651e3	2.100e3	1.03	I
1,2,3,6,7,8-HxCDD	37:12	3.24e4	2.41e4	6.71e3	8.73e3	2.651e3	1.492e3	1.34	
1,2,3,7,8,9-HxCDD	37:30	2.33e4	1.56e4	6.63e3	5.04e3	2.586e3	1.492e3	1.50	I
Other HxCDD	1 35:26	4.24e4	3.85e4					1.10	
	2 36:06	5.63e5	4.25e5					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	39:27	2.61e7	5.87e7	5.65e6	1.28e7	1.022e4	1.412e4	0.44	
1,2,3,4,7,8,9-HpCDF-13C	40:56	8.89e6	2.00e7	1.68e6	3.89e6	1.022e4	1.412e4	0.44	
1,2,3,4,6,7,8-HpCDF	39:29	4.21e4	6.00e4	1.10e4	1.68e4	3.341e3	2.678e3	0.70	I
1,2,3,4,7,8,9-HpCDF	40:57	ND	ND	ND	ND	2.778e3	2.289e3		

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	40:27	3.79e7	3.45e7	7.88e6	6.91e6	2.752e4	2.125e4	1.10	
1,2,3,4,6,7,8-HpCDD	40:28	1.27e5	1.50e5	3.31e4	3.34e4	3.283e3	2.471e3	0.84	I
Other HpCDD	1 39:45	1.35e5	1.53e5					0.88	

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Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	43:35	ND	ND	ND	ND	5.128e3	5.032e3		

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:23	4.89e7	5.39e7	7.81e6	9.22e6	1.882e3	5.512e3	0.91	
OCDD	43:25	4.04e5	3.70e5	6.60e4	6.27e4	4.631e3	6.066e3	1.09	I

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# Appendix E

## Calibration Raw Data

Homologue Group: Tetras

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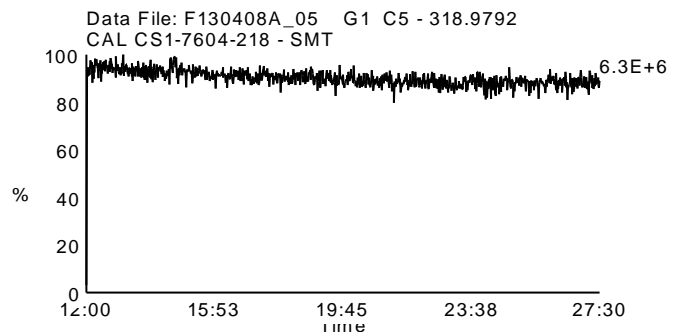
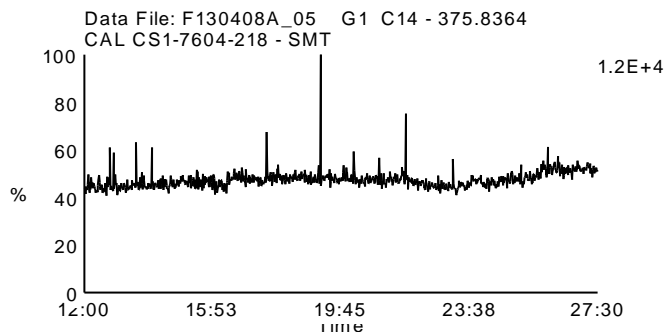
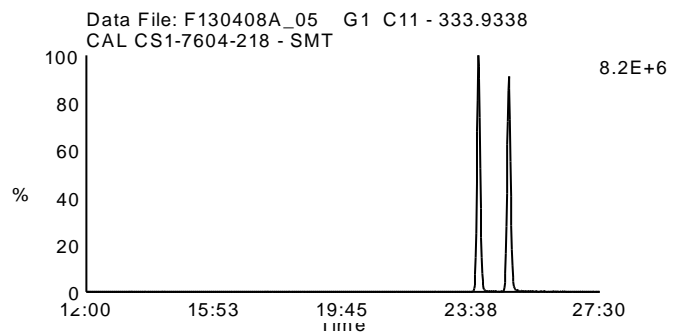
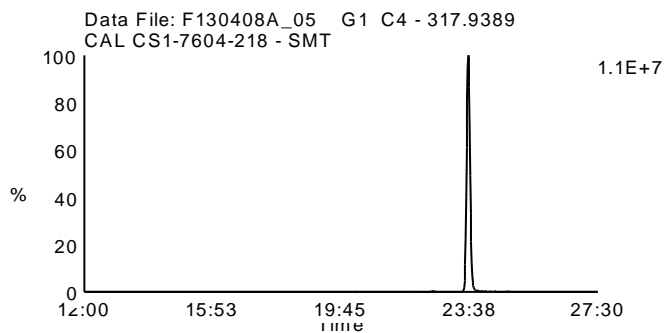
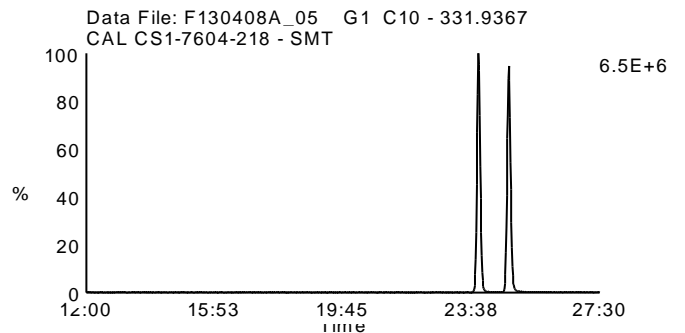
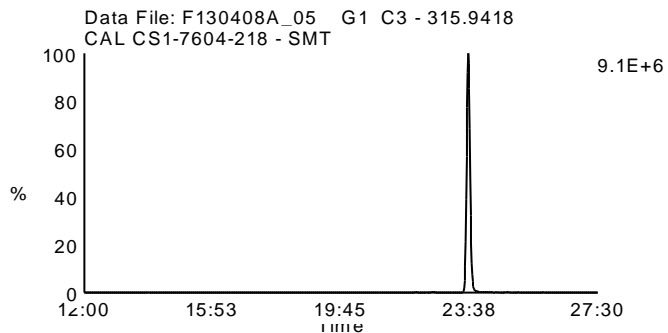
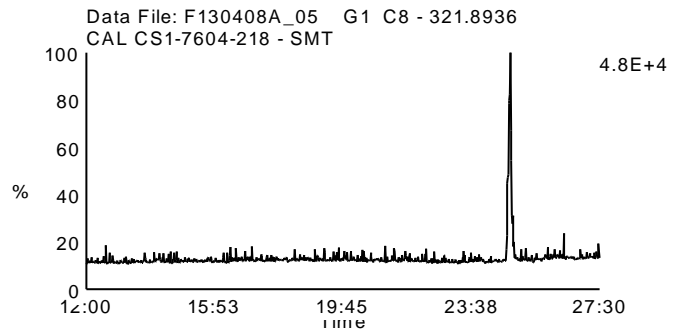
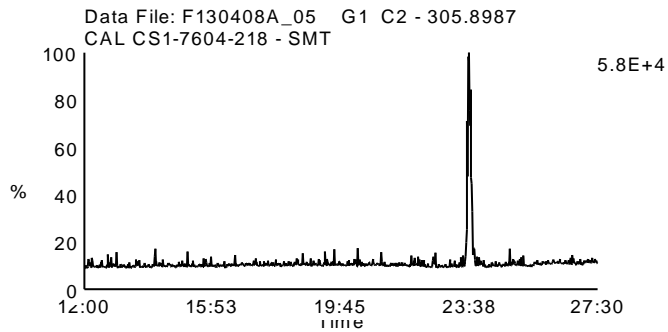
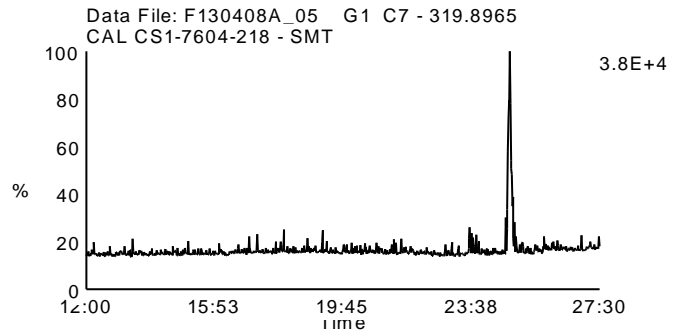
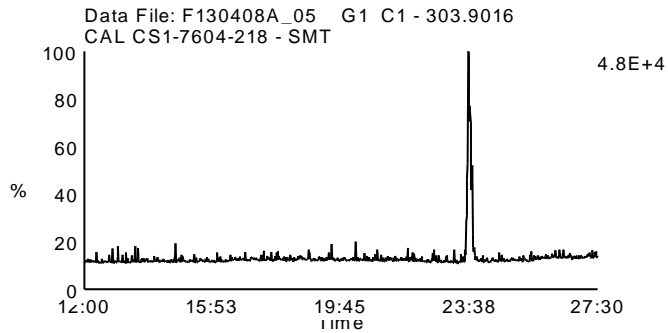
Date Acquired: 4/8/2013

Sample Description: CAL CS1-7604-218 - SMT

Lab Sample ID: CS1-7604-218

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130408A\_05

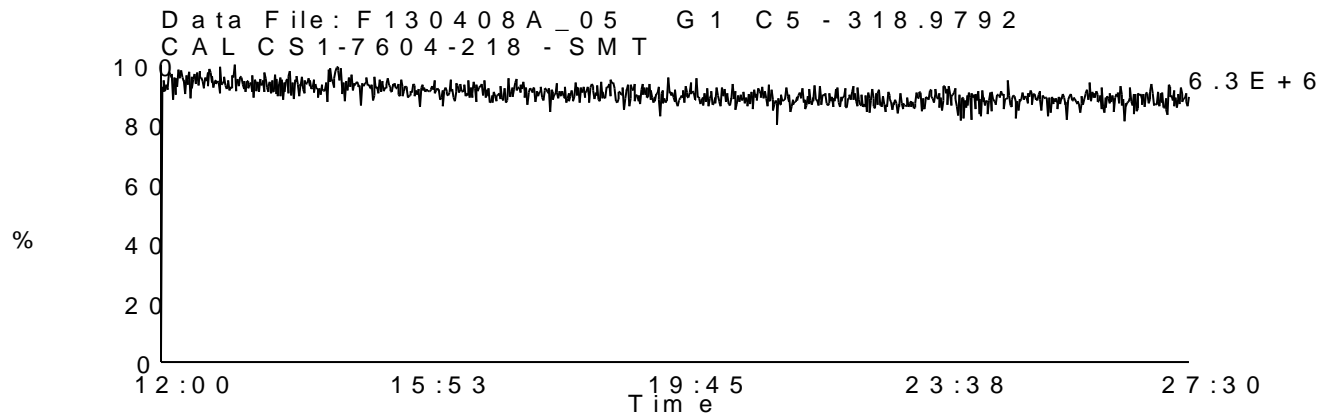
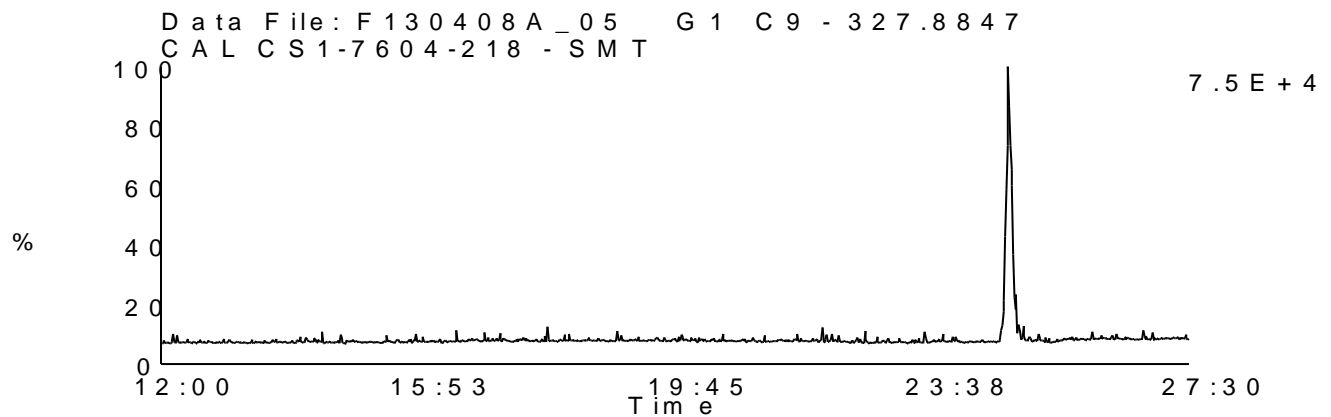
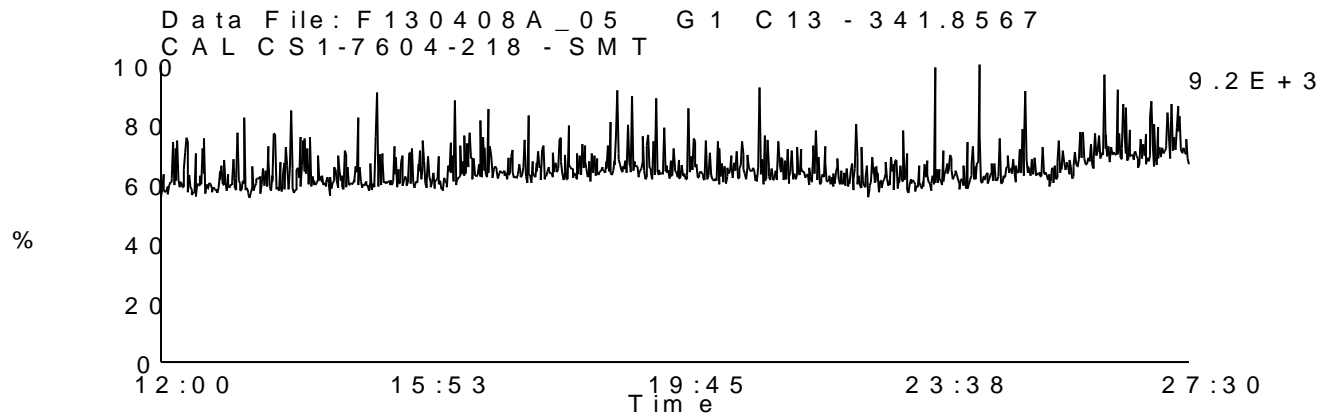
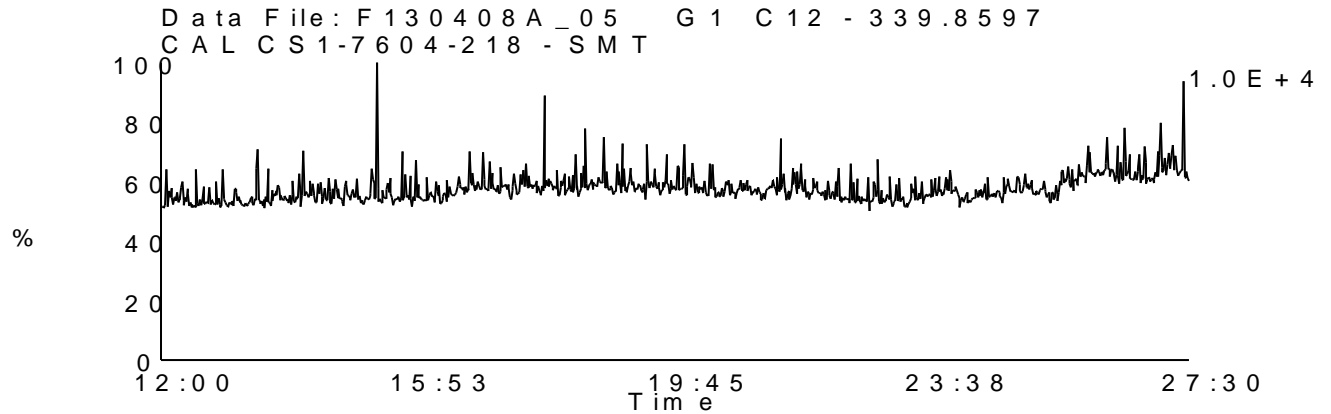
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Sample Description: CAL CS1-7604-218 - SMT

Lab Sample ID: CS1-7604-218

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130408A\_05

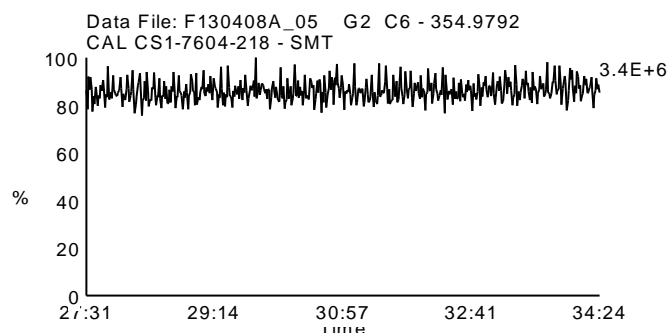
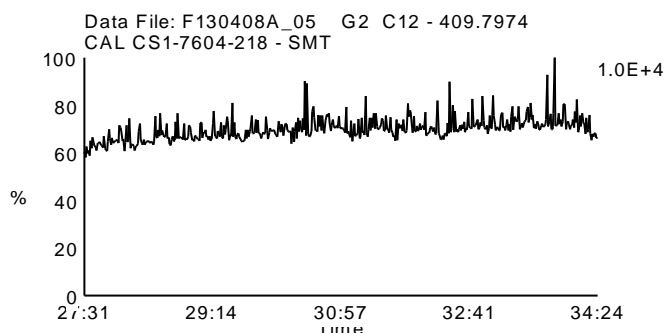
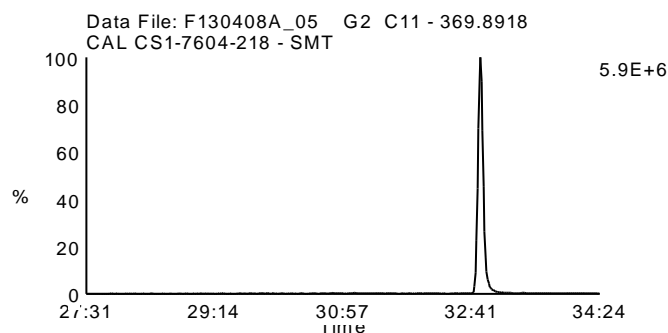
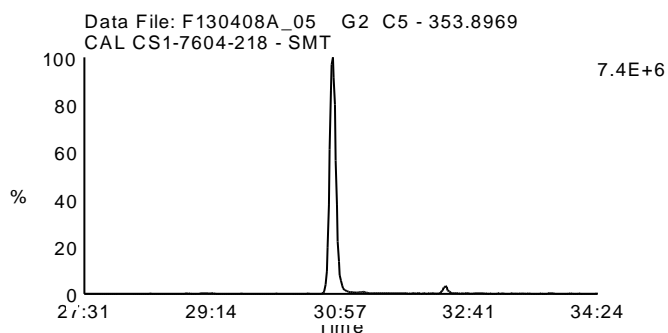
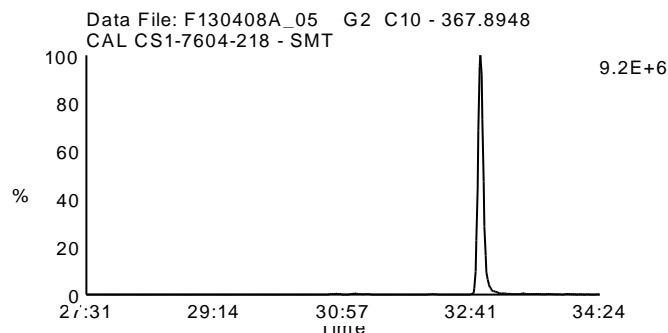
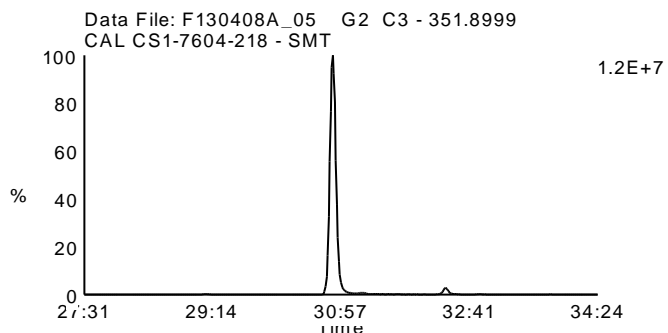
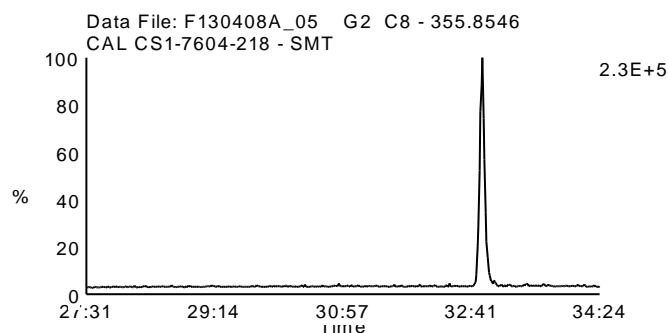
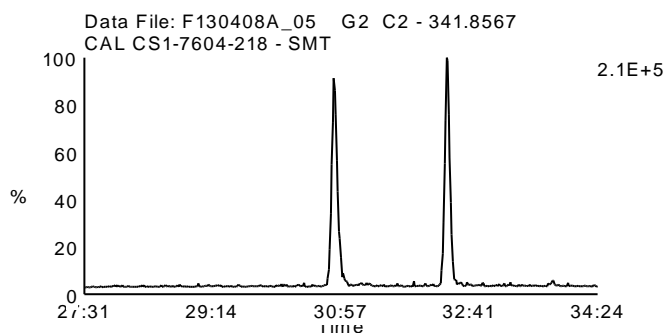
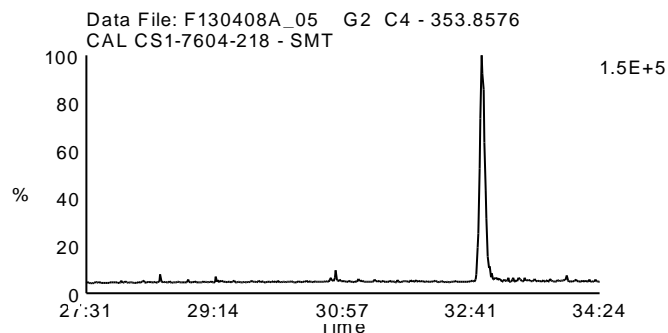
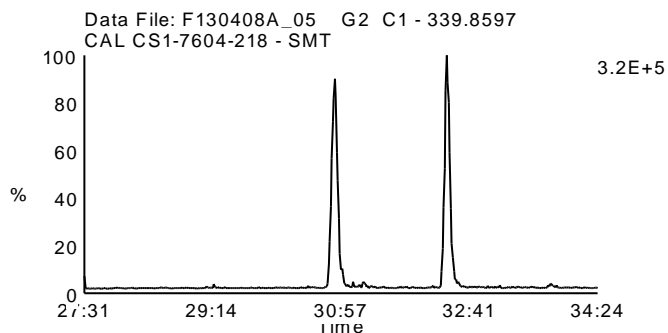
Date Acquired: 4/8/2013

Sample Description: CAL CS1-7604-218 - SMT

Lab Sample ID: CS1-7604-218

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130408A\_05

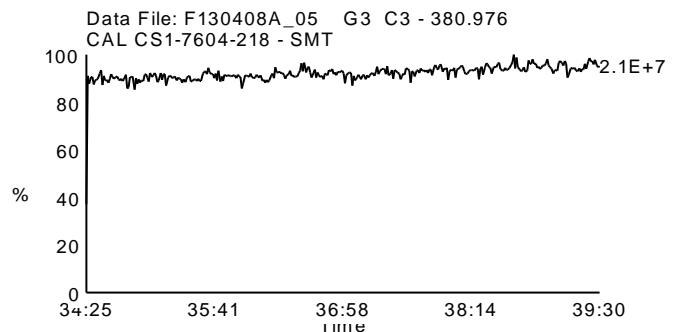
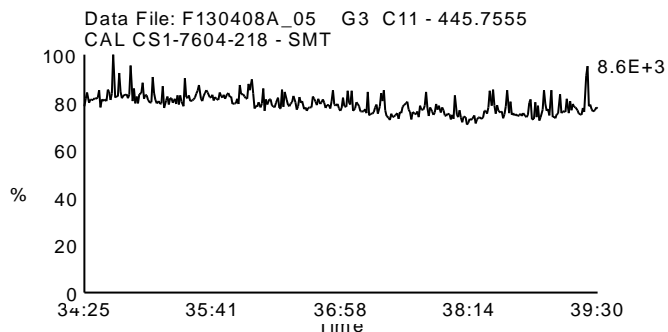
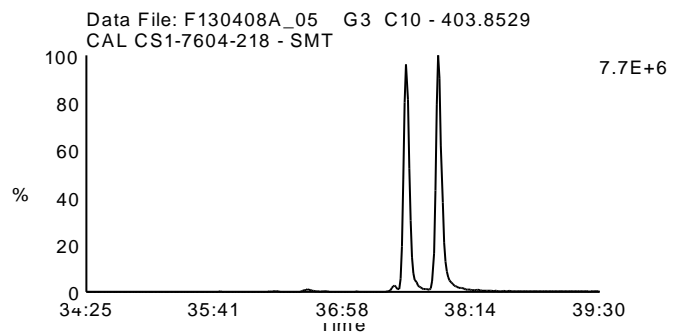
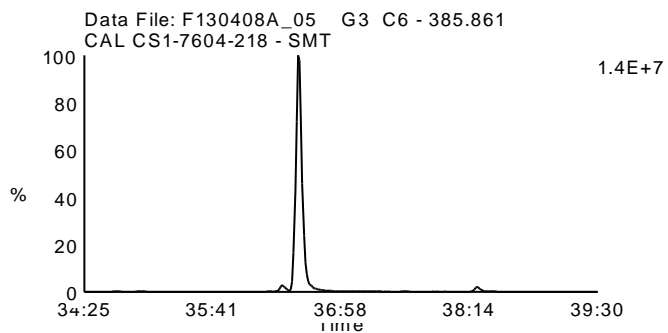
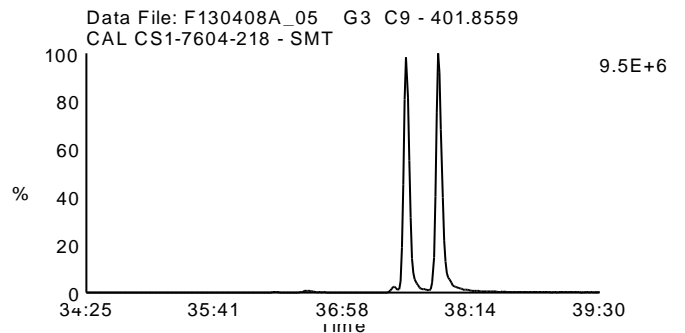
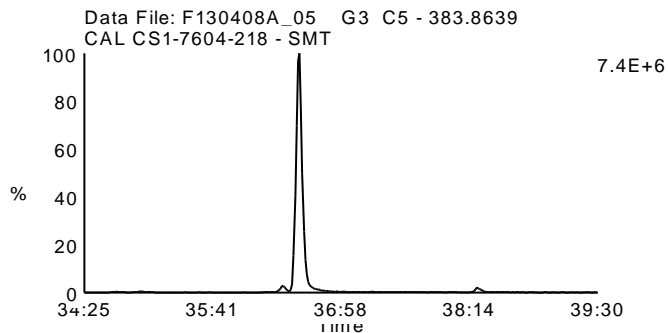
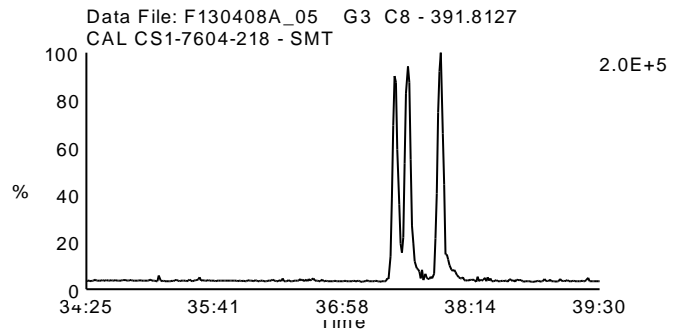
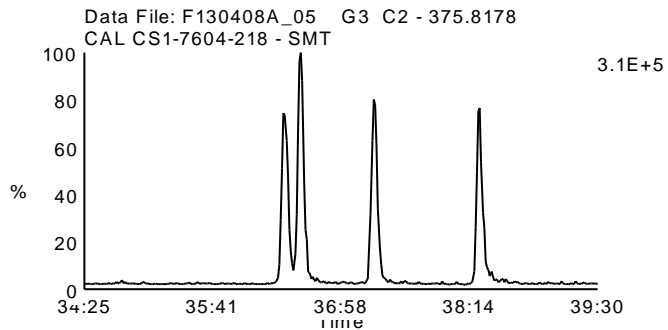
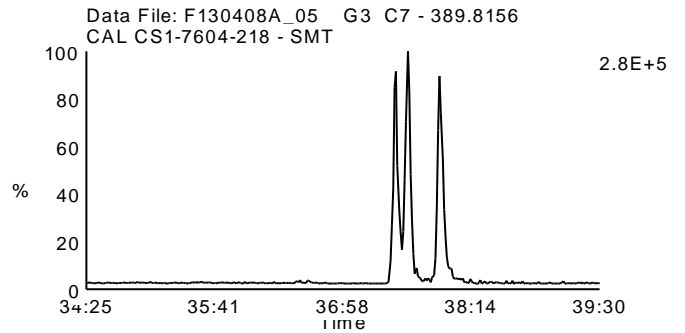
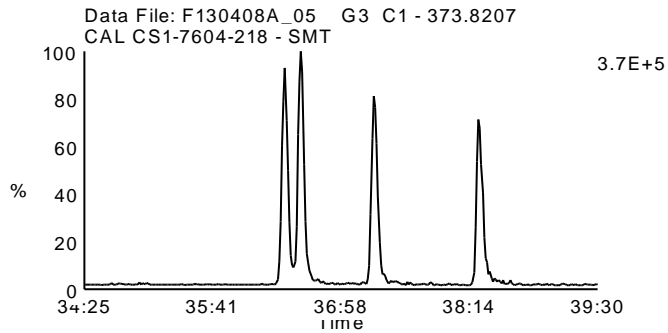
Date Acquired: 4/8/2013

Sample Description: CAL CS1-7604-218 - SMT

Lab Sample ID: CS1-7604-218

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130408A\_05

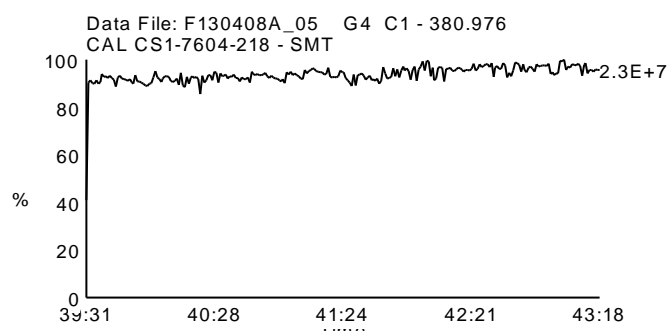
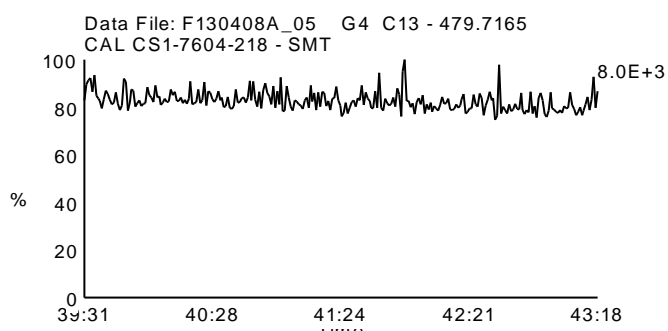
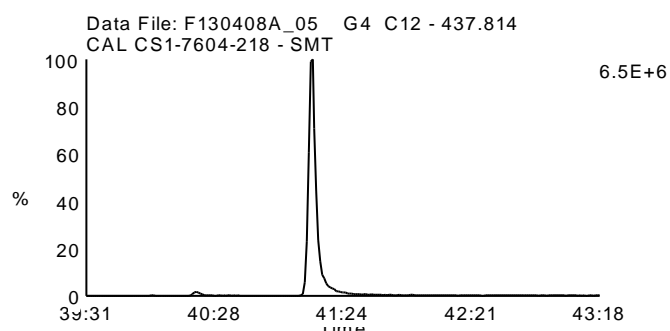
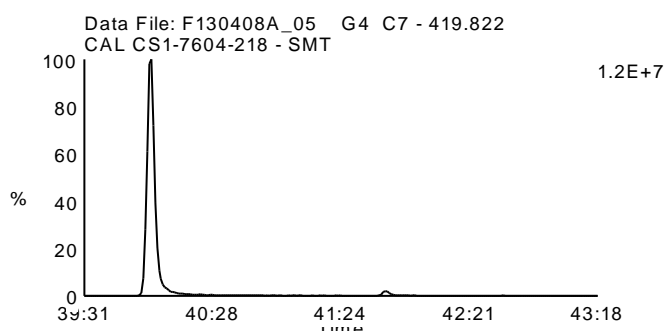
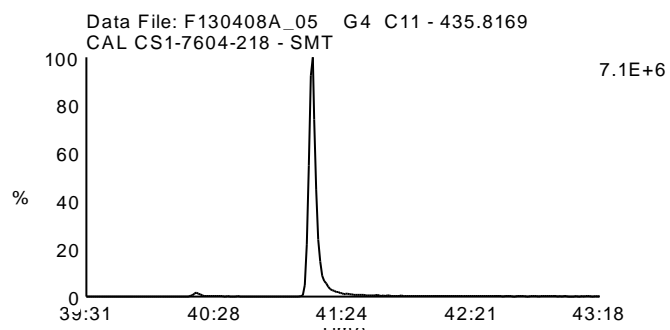
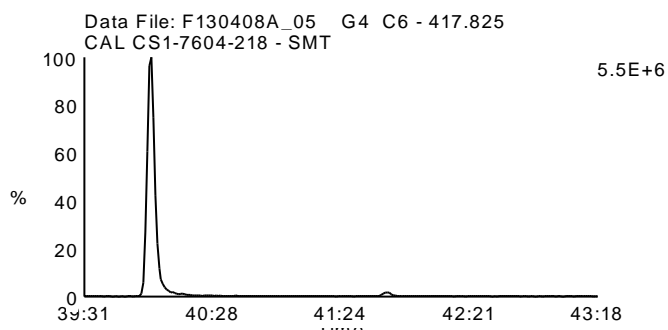
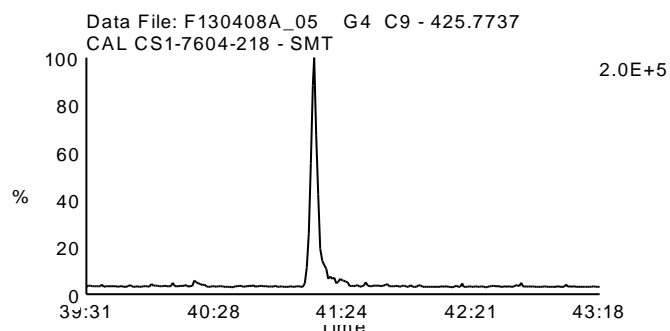
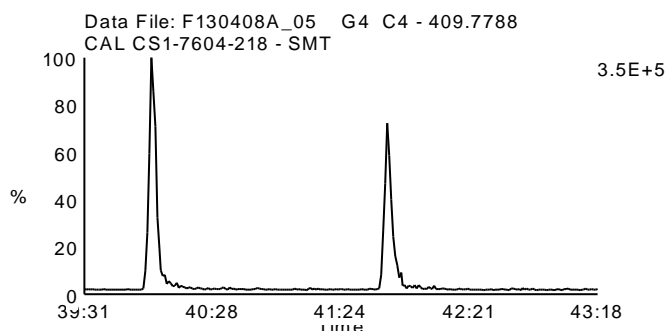
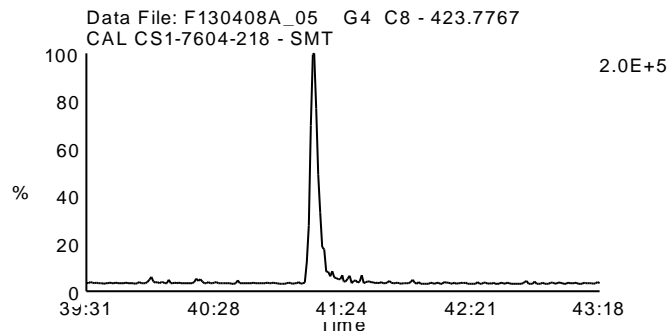
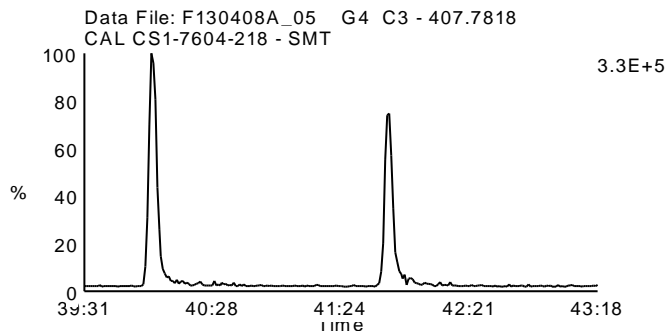
Date Acquired: 4/8/2013

Sample Description: CAL CS1-7604-218 - SMT

Lab Sample ID: CS1-7604-218

Client Sample ID:

Instrument: 10MSHR05 (F)





Homologue Group: Octas

Data File Name: F130408A\_05

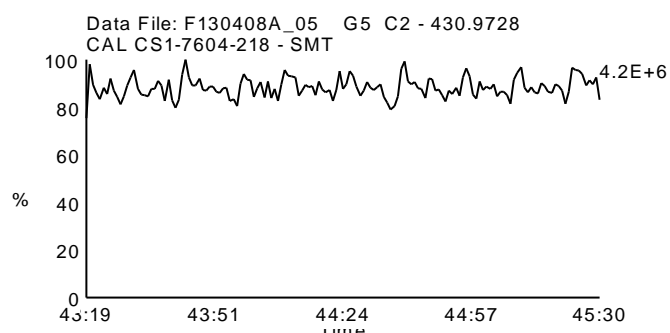
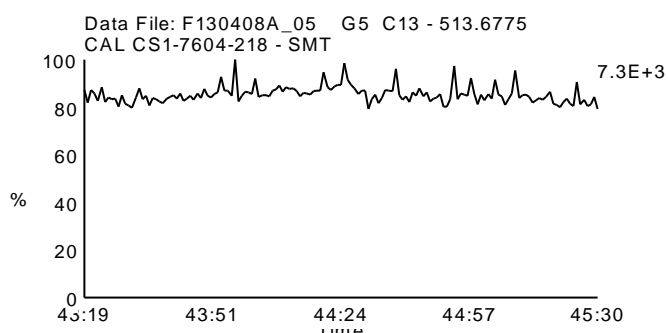
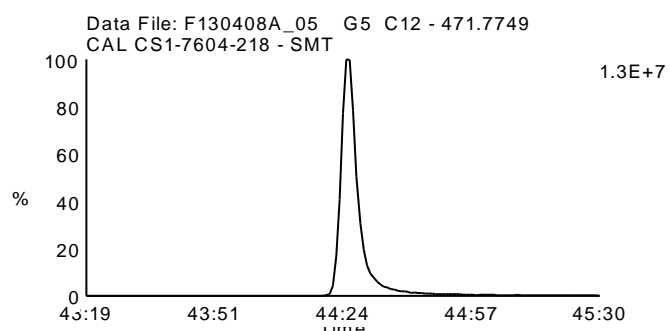
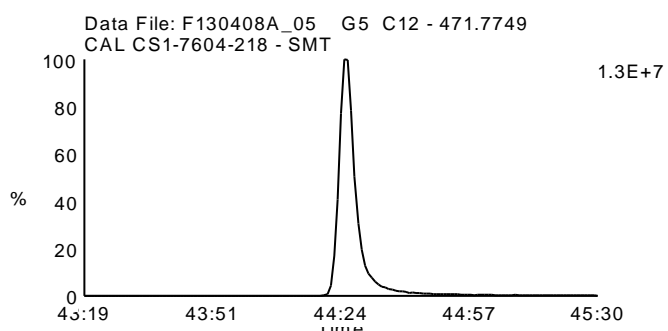
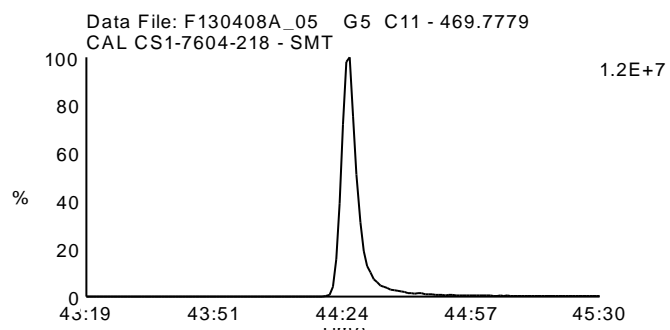
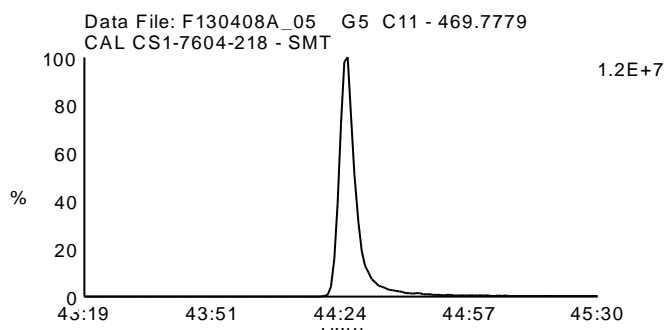
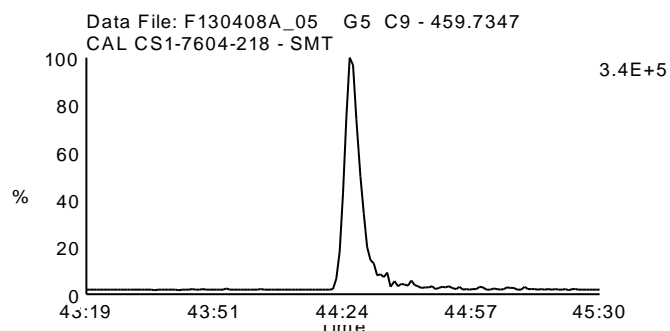
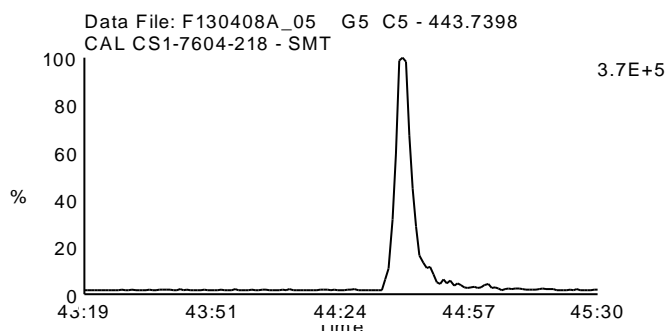
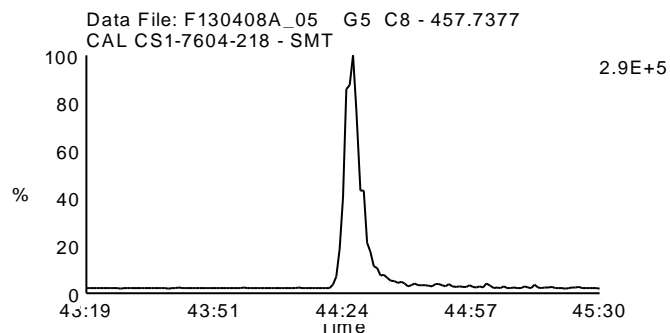
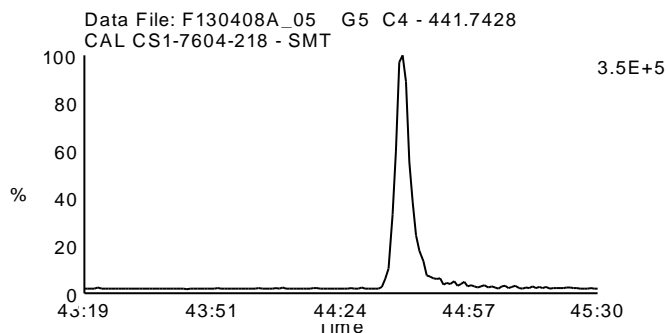
Date Acquired: 4/8/2013

Sample Description: CAL CS1-7604-218 - SMT

Lab Sample ID: CS1-7604-218

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130408A\_04

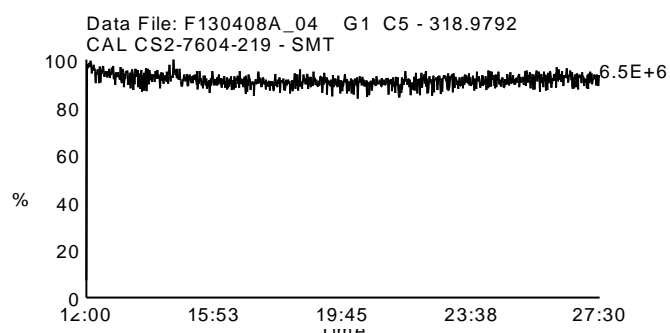
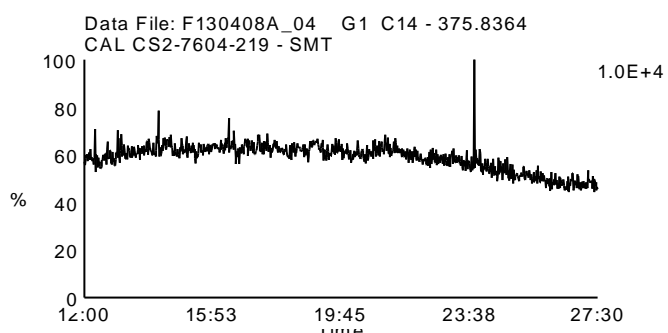
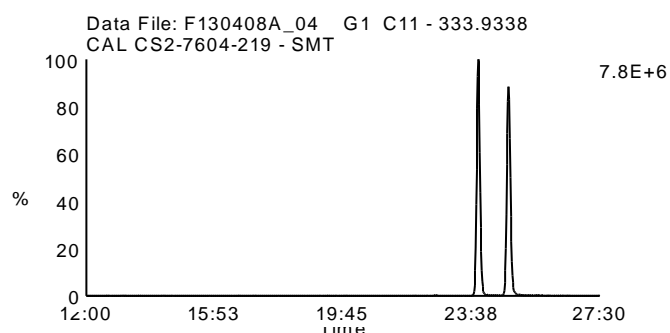
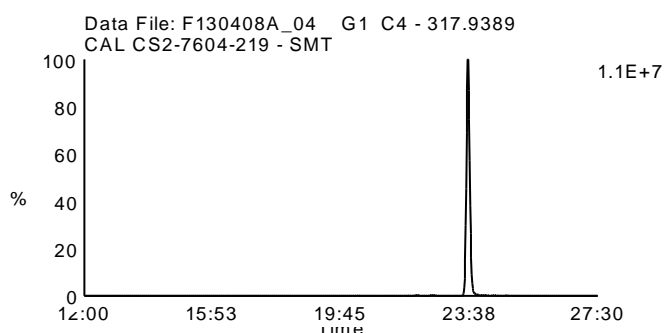
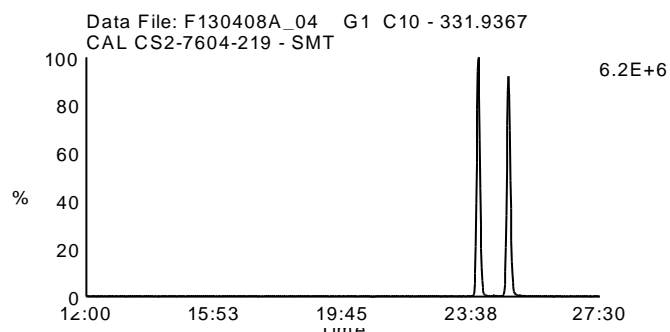
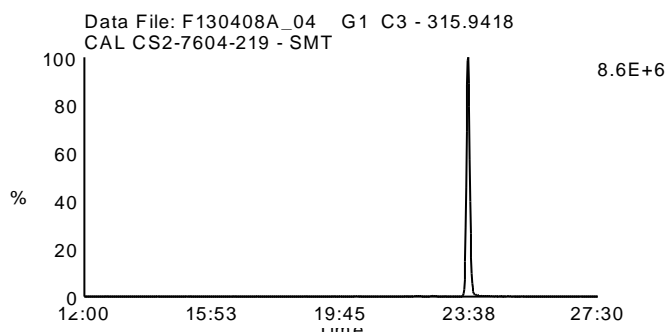
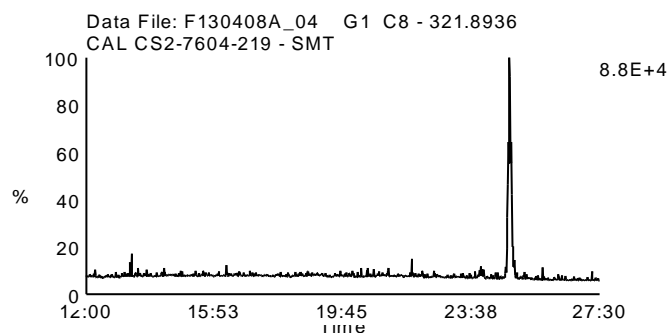
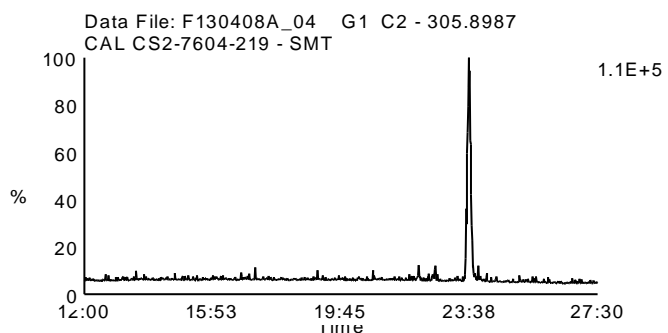
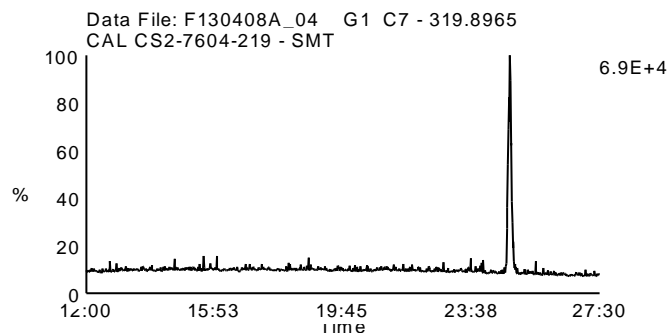
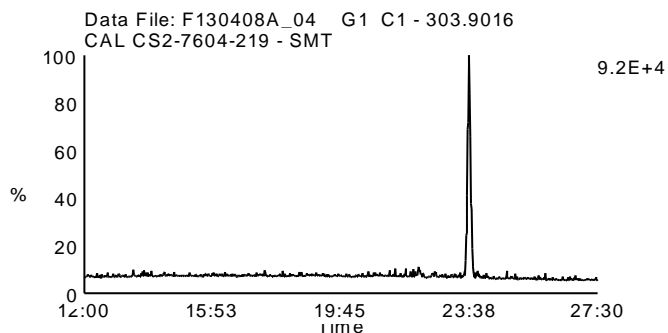
Date Acquired: 4/8/2013

Sample Description: CAL CS2-7604-219 - SMT

Lab Sample ID: CS2-7604-219

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130408A\_04

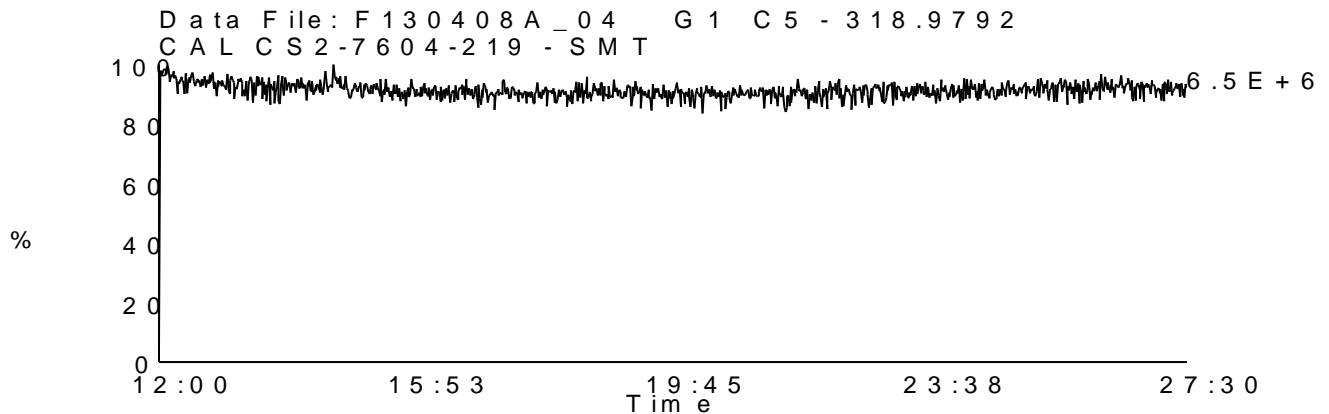
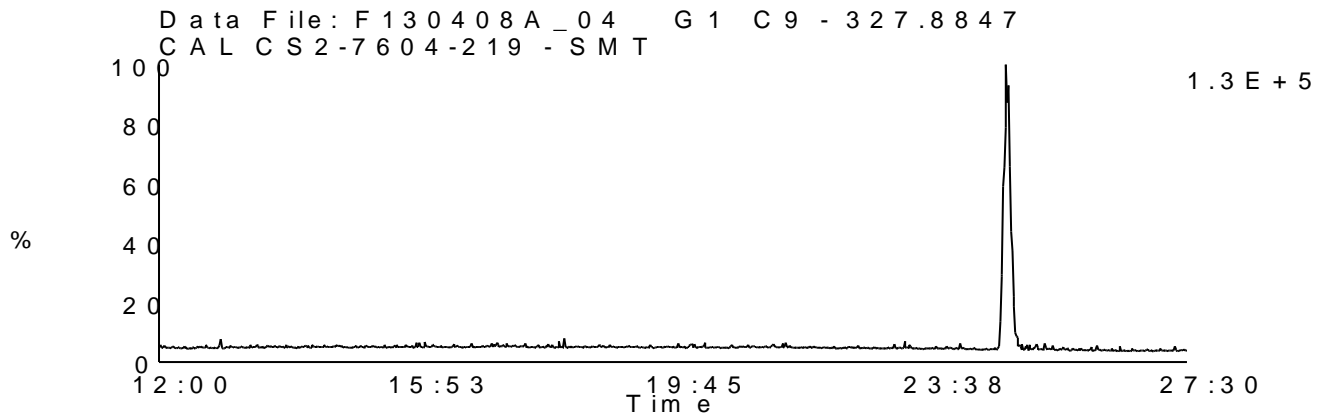
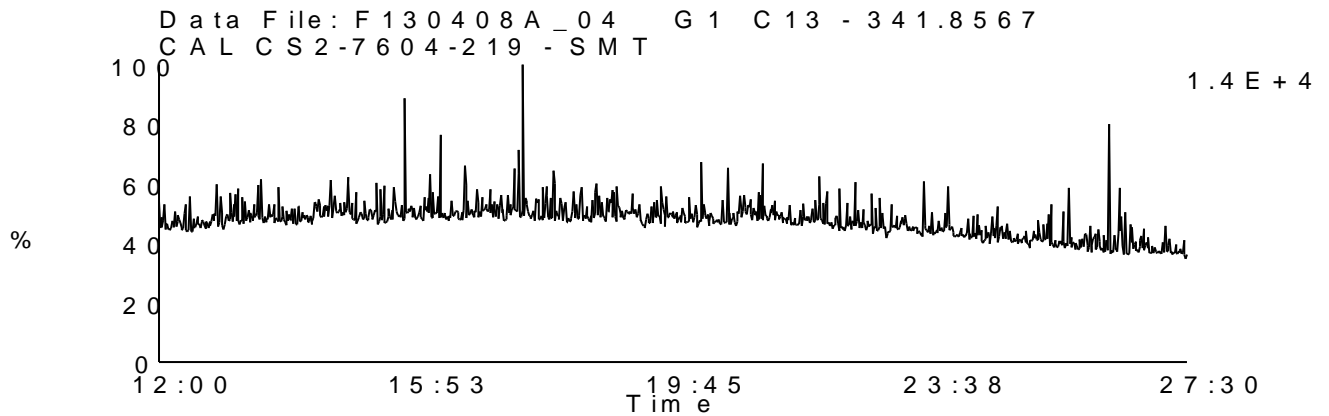
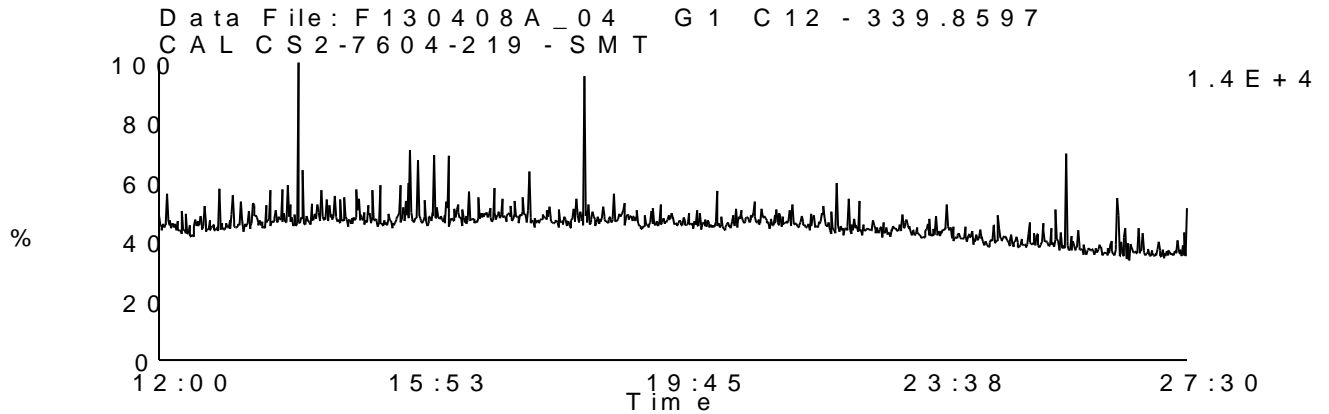
Date Acquired: 4/8/2013

Sample Description: CAL CS2-7604-219 - SMT

Lab Sample ID: CS2-7604-219

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130408A\_04

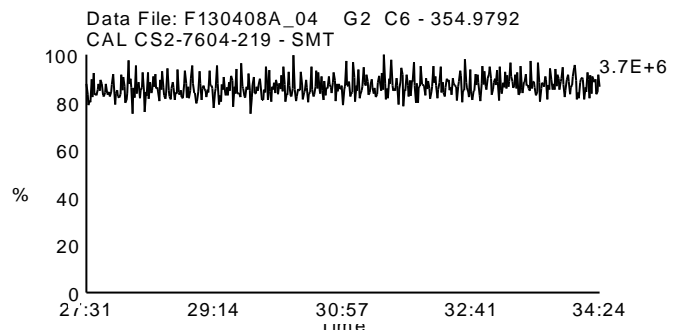
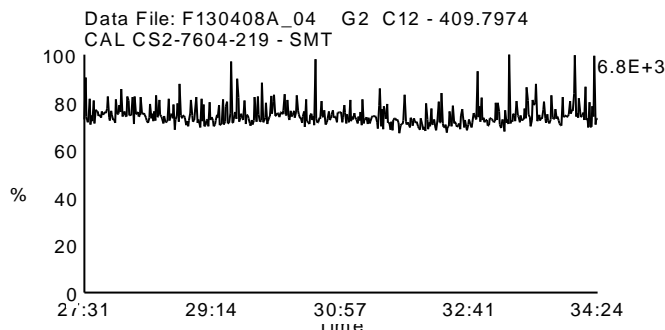
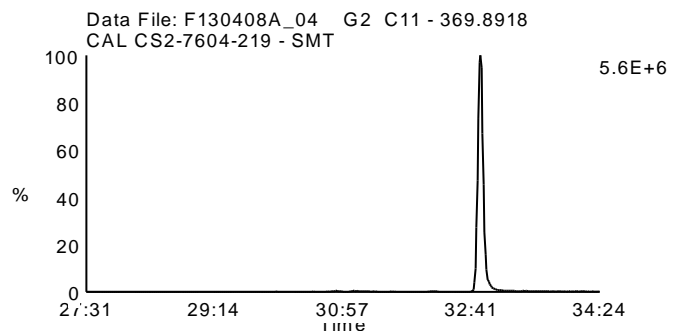
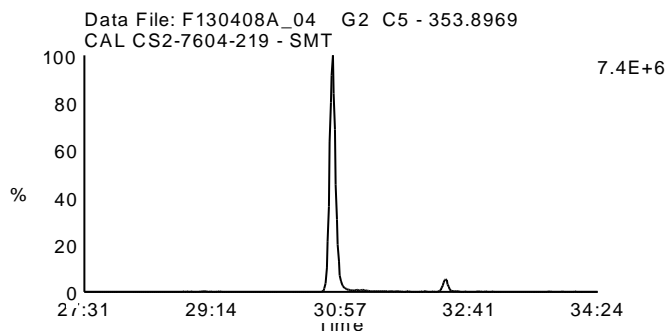
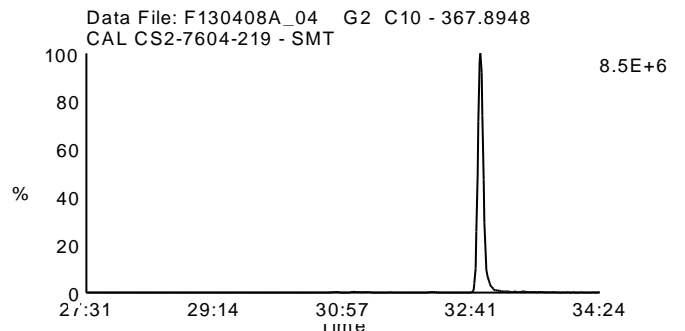
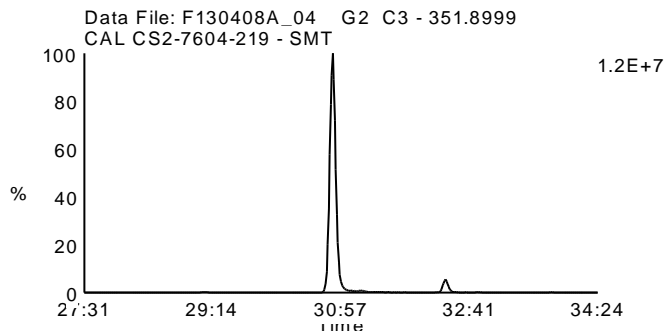
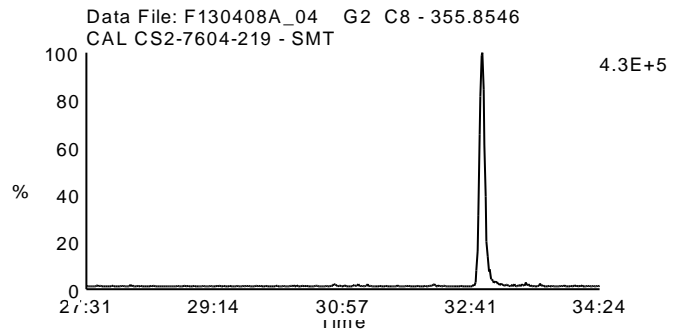
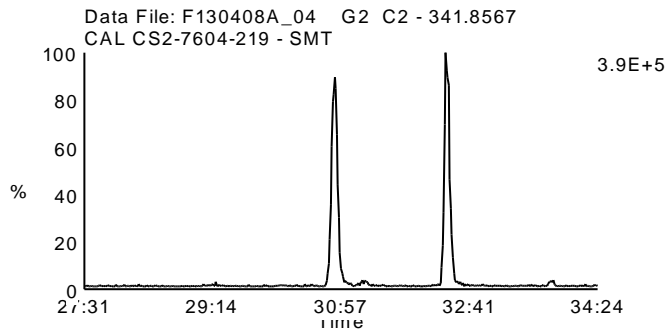
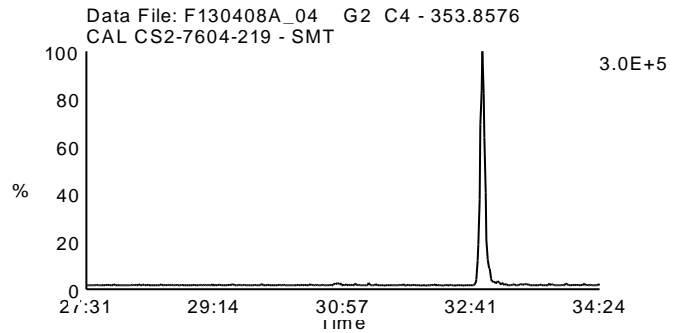
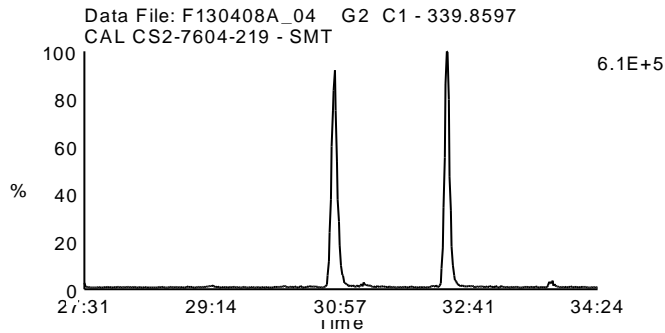
Date Acquired: 4/8/2013

Sample Description: CAL CS2-7604-219 - SMT

Lab Sample ID: CS2-7604-219

Client Sample ID:

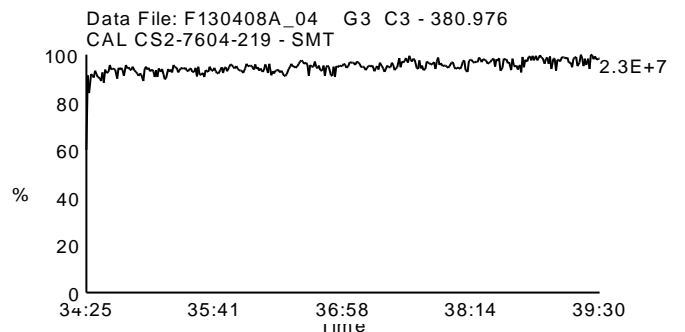
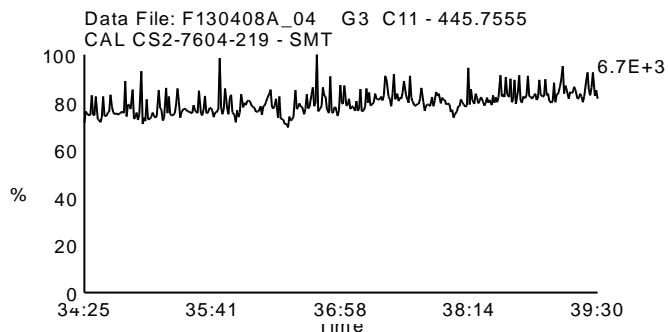
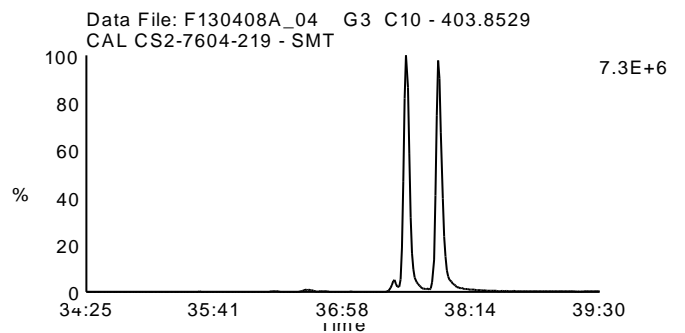
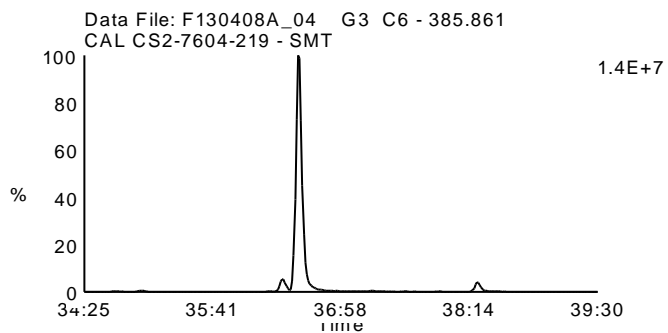
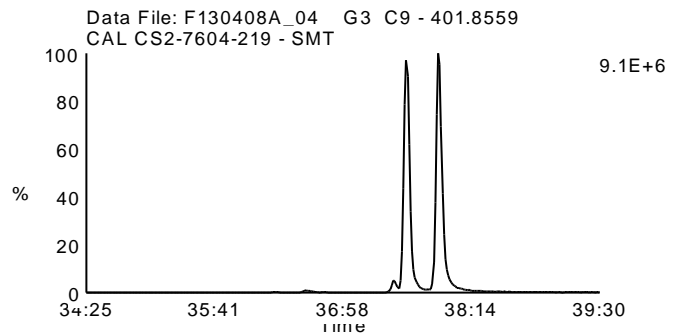
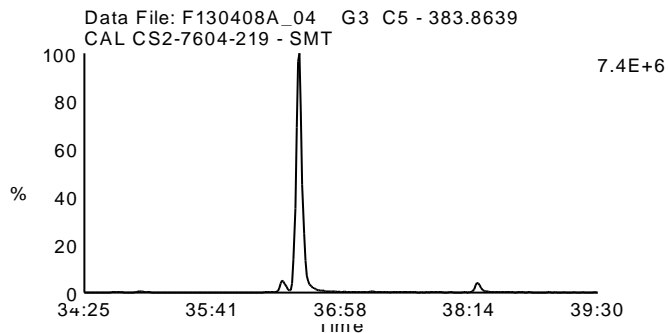
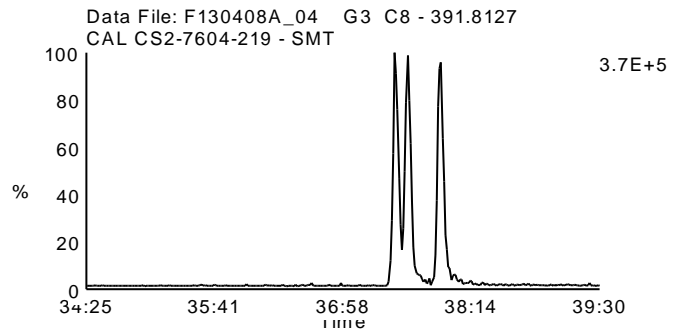
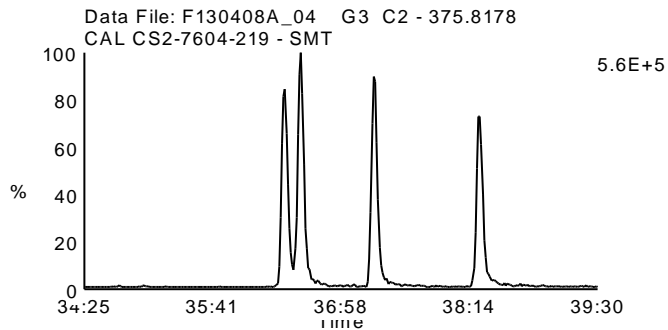
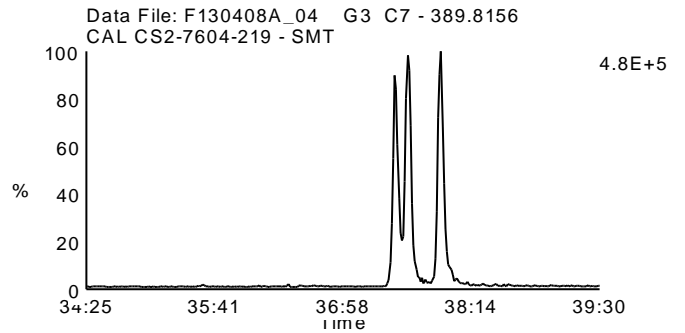
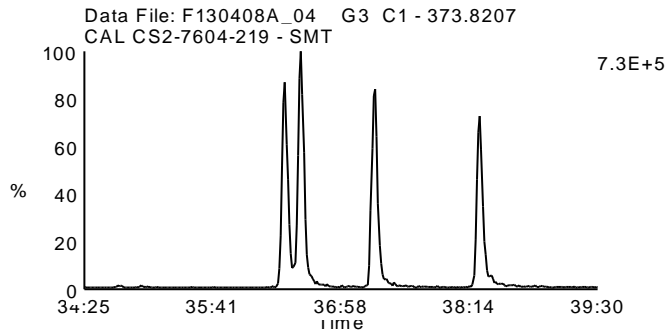
Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130408A\_04  
Date Acquired: 4/8/2013  
Sample Description: CAL CS2-7604-219 - SMT

Lab Sample ID: CS2-7604-219  
Client Sample ID:  
Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130408A\_04

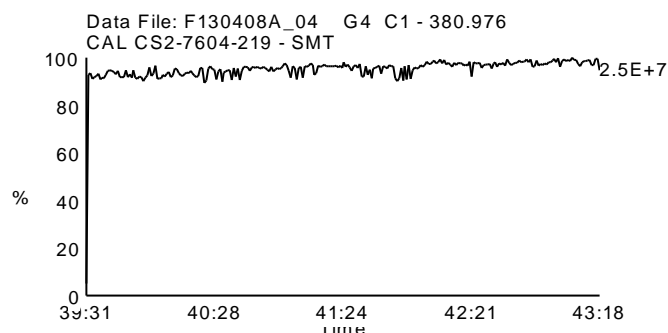
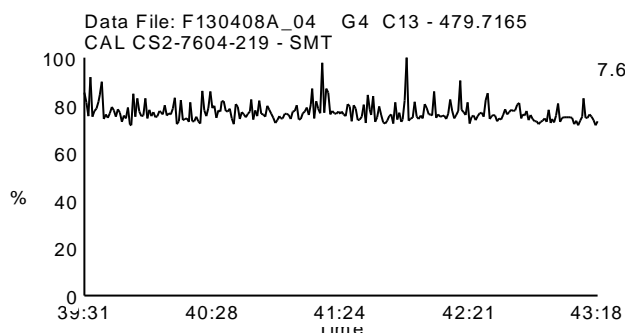
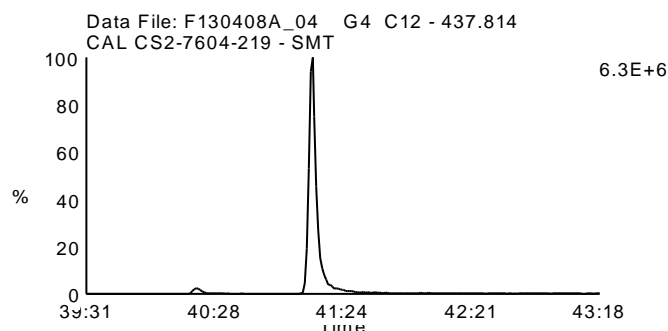
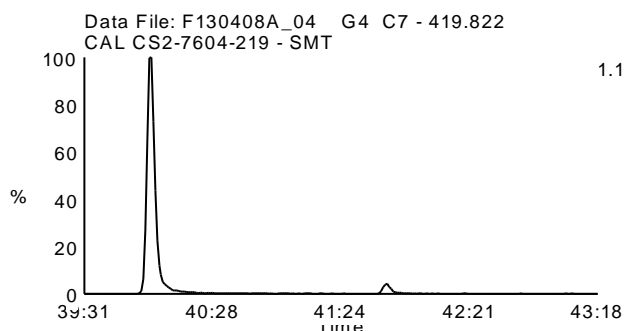
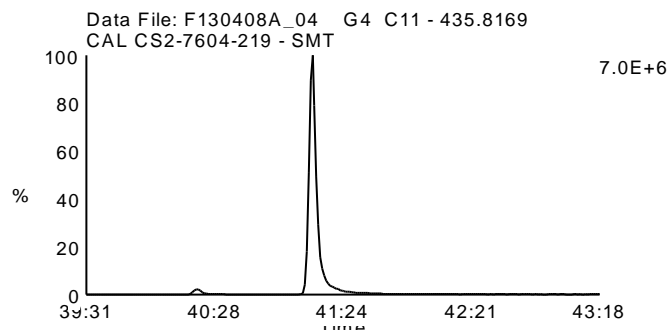
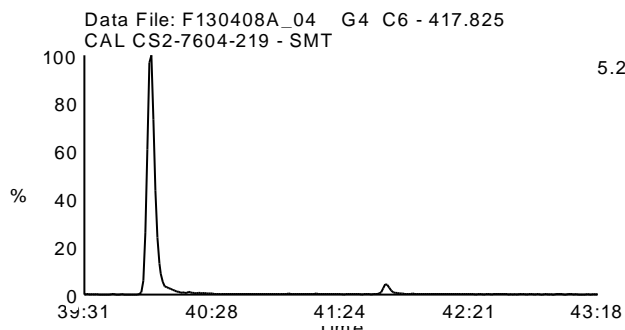
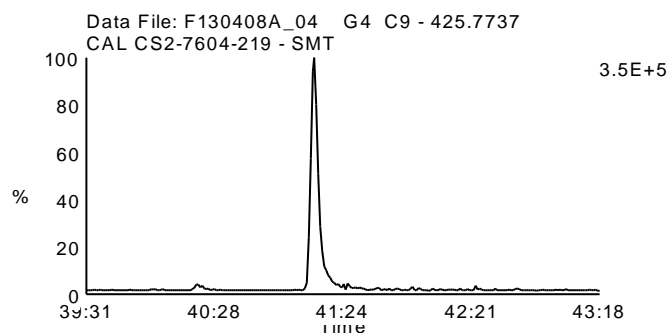
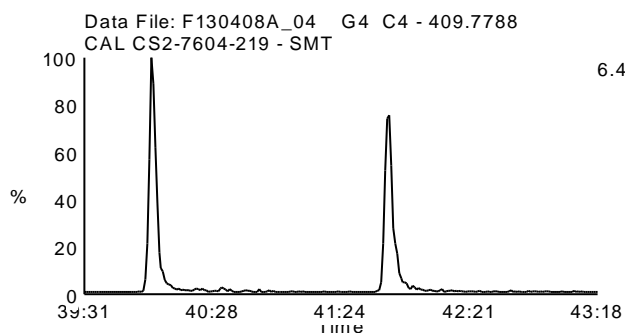
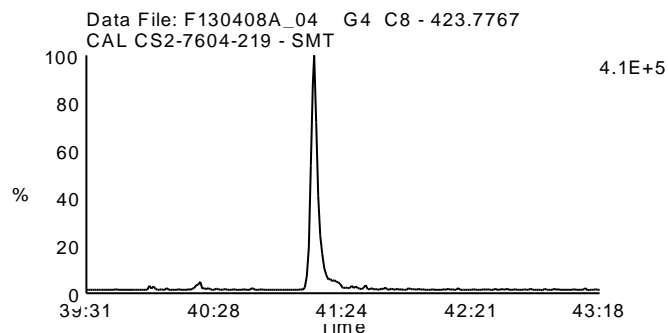
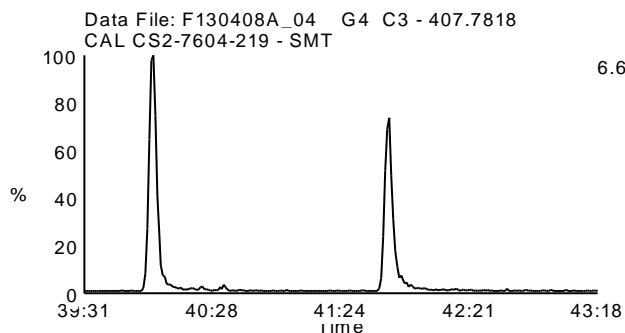
Date Acquired: 4/8/2013

Sample Description: CAL CS2-7604-219 - SMT

Lab Sample ID: CS2-7604-219

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130408A\_04

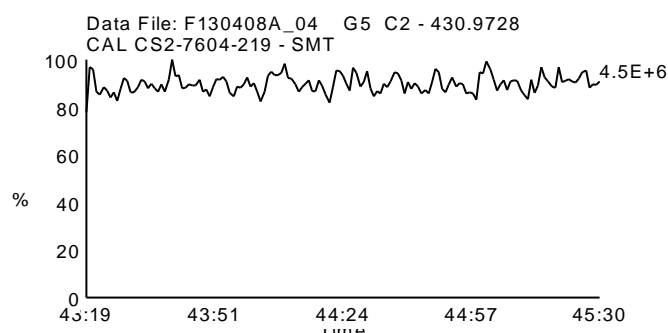
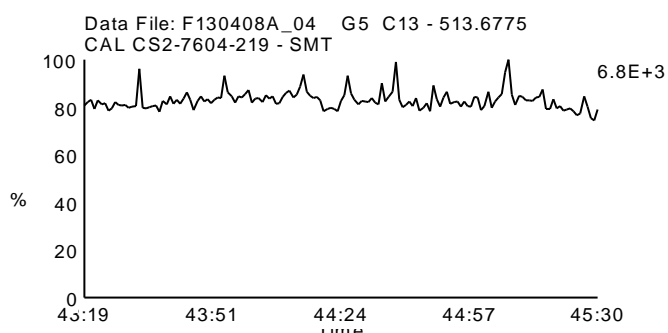
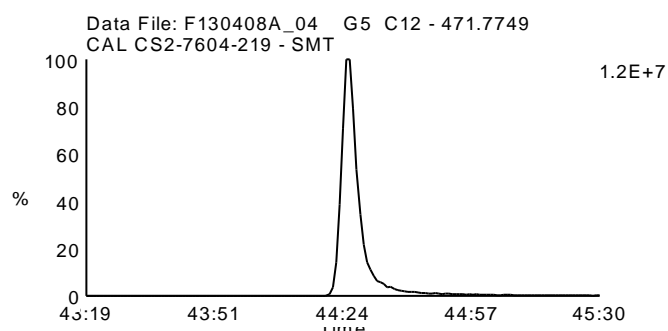
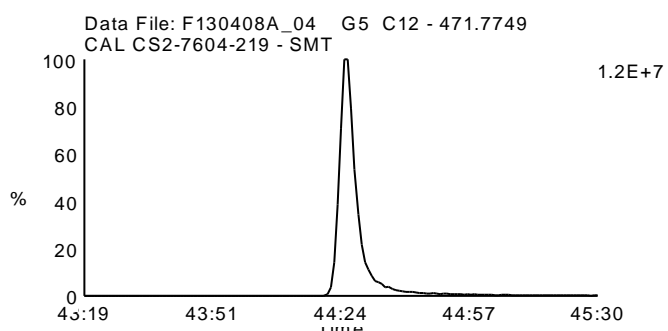
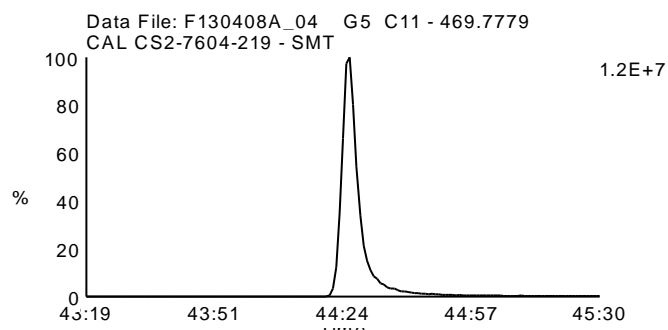
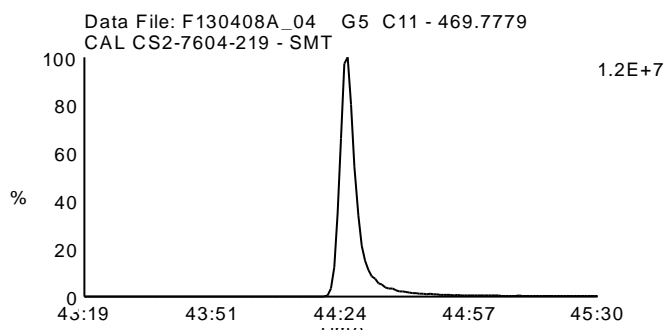
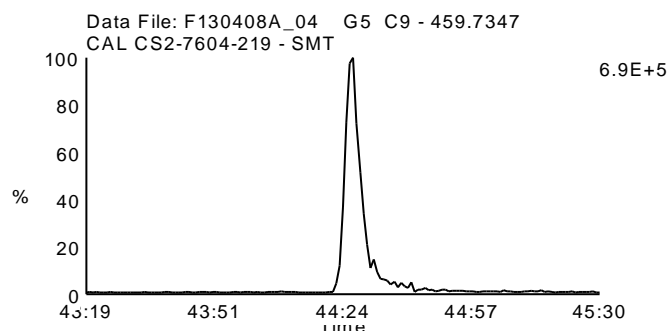
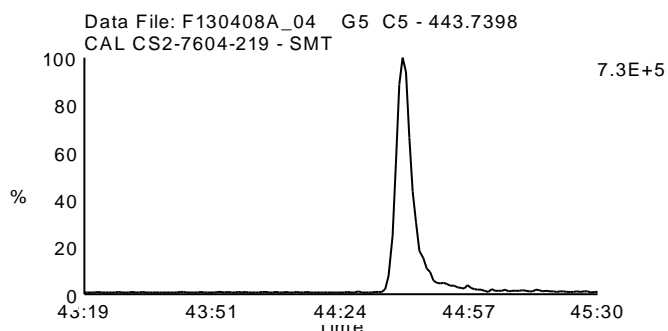
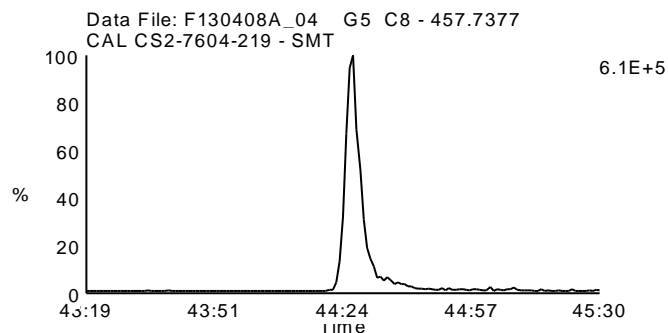
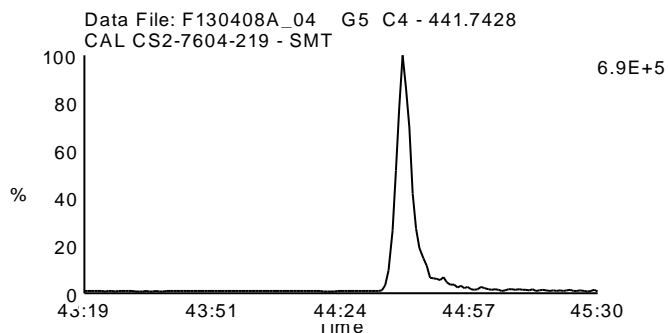
Date Acquired: 4/8/2013

Sample Description: CAL CS2-7604-219 - SMT

Lab Sample ID: CS2-7604-219

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130408A\_03

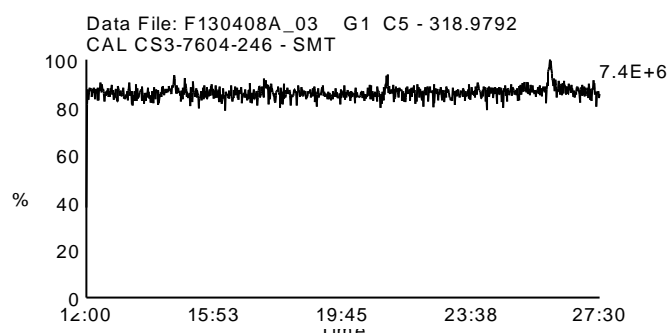
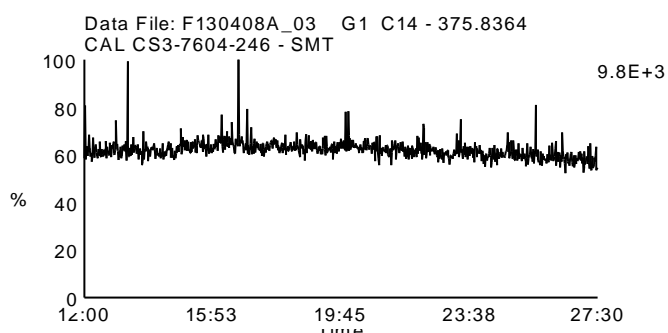
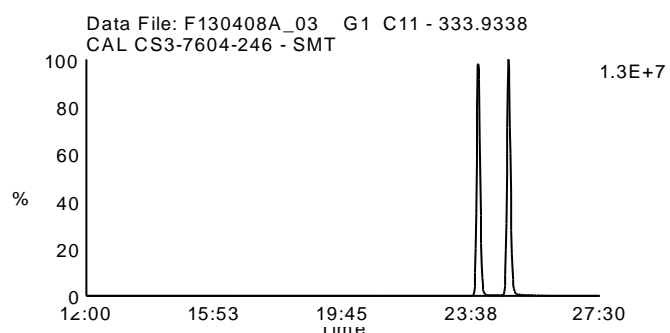
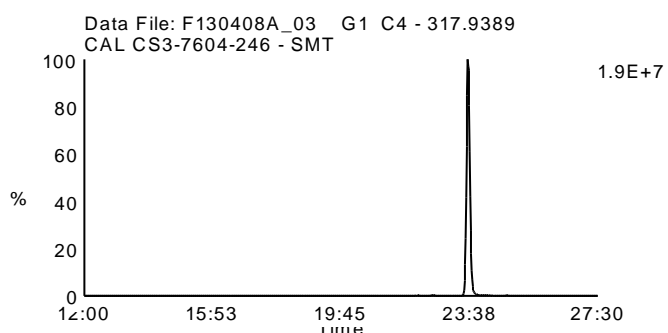
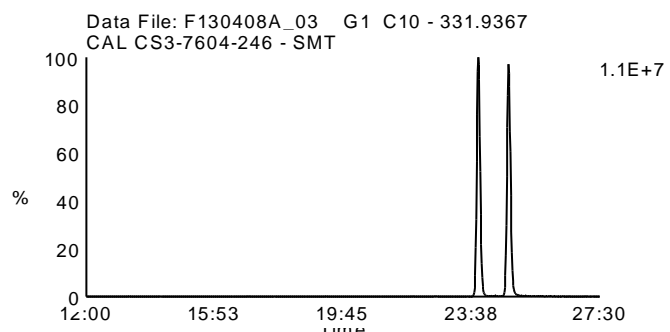
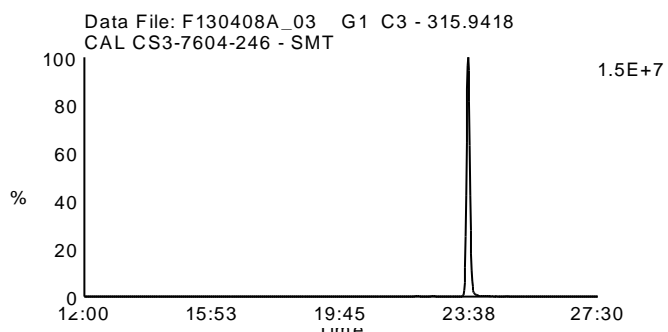
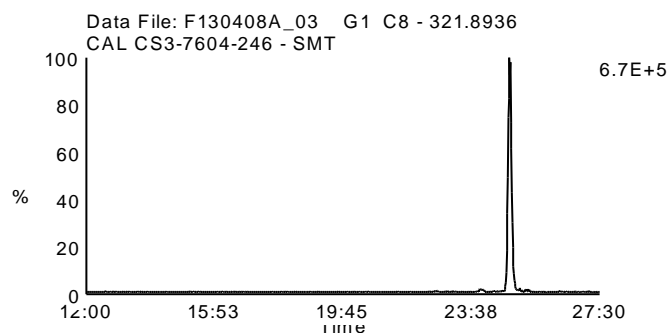
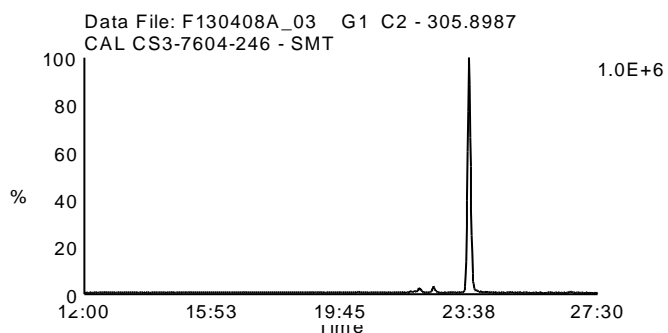
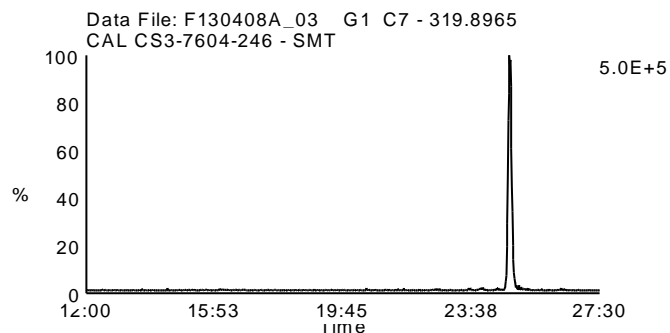
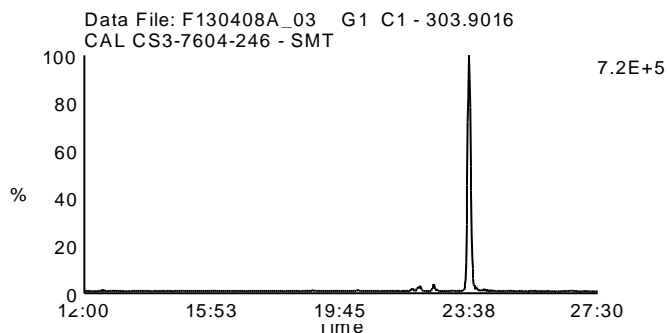
Date Acquired: 4/8/2013

Sample Description: CAL CS3-7604-246 - SMT

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)





Homologue Group: Penta & Cleanup

Data File Name: F130408A\_03

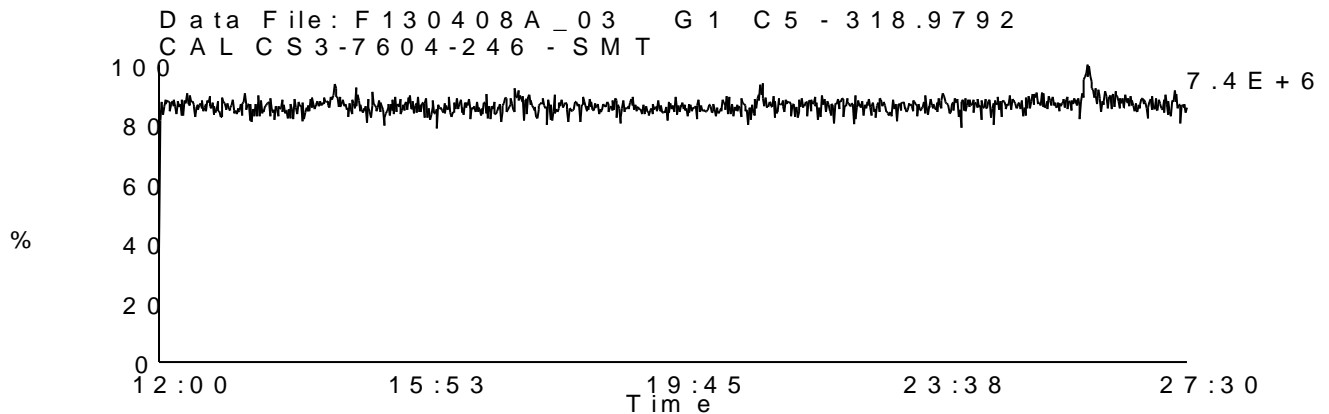
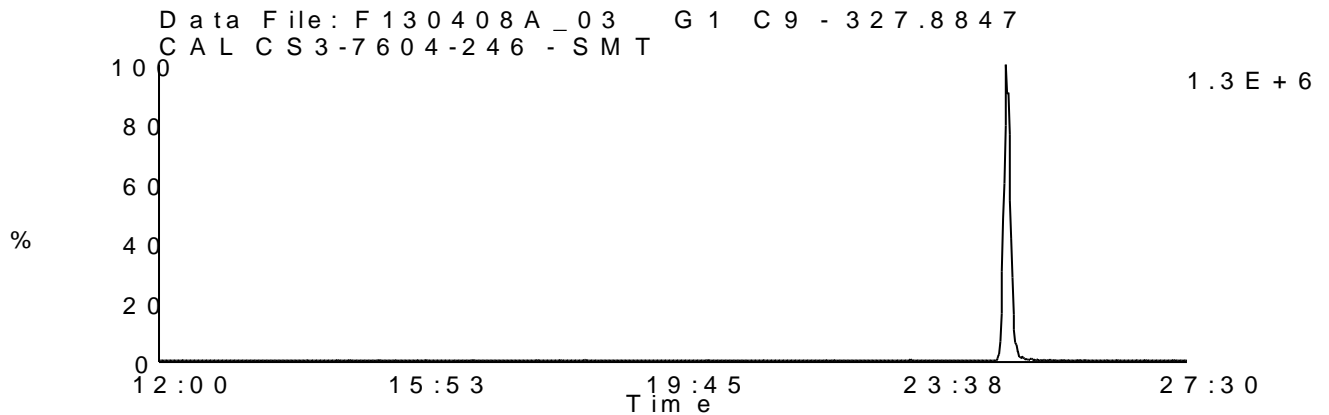
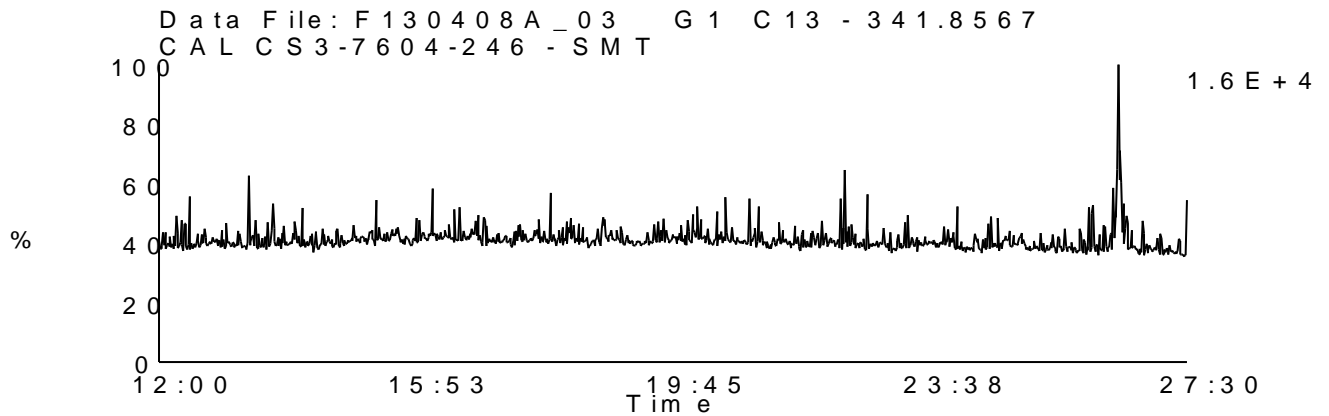
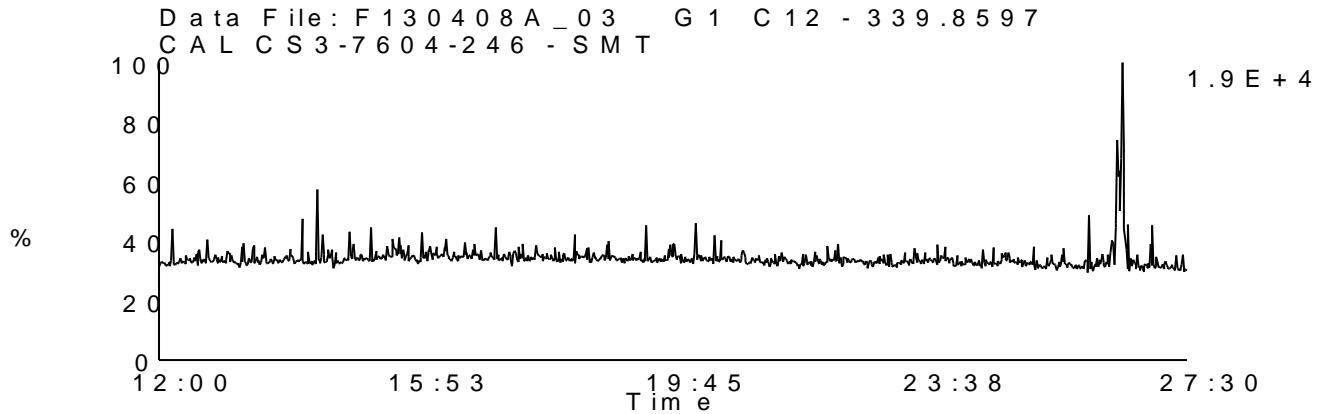
Date Acquired: 4/8/2013

Sample Description: CAL CS3-7604-246 - SMT

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130408A\_03

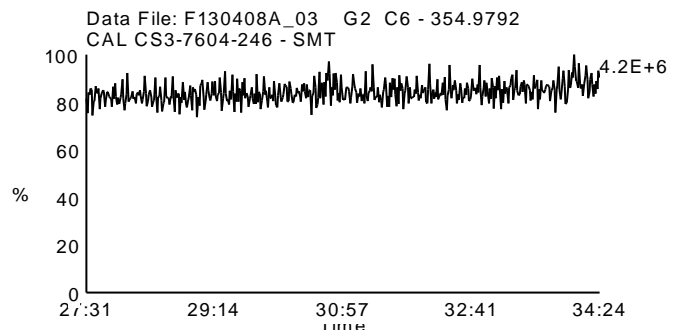
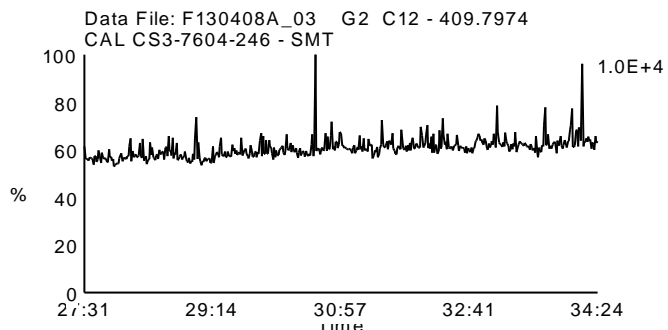
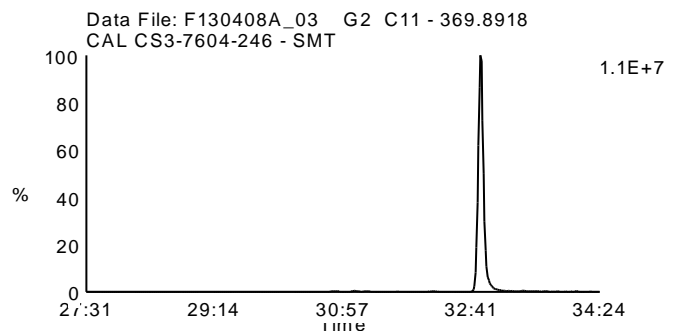
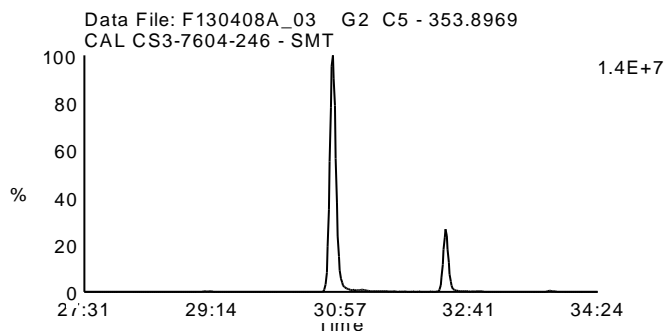
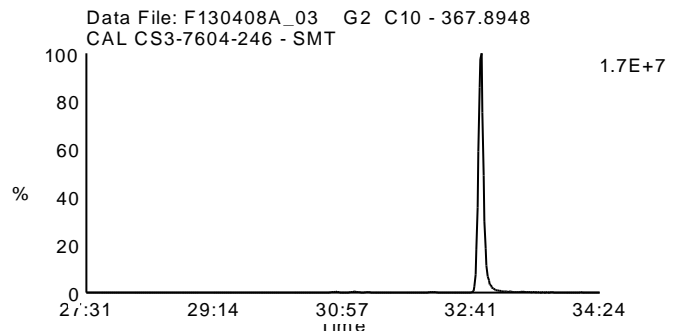
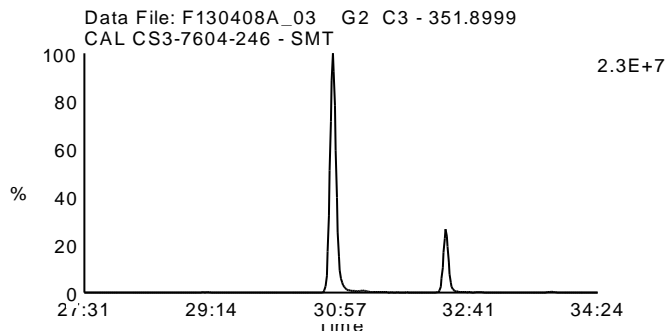
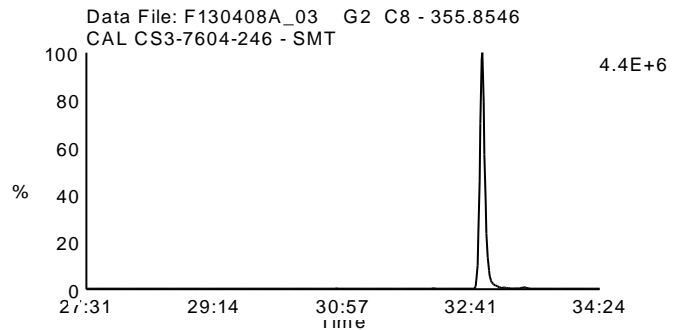
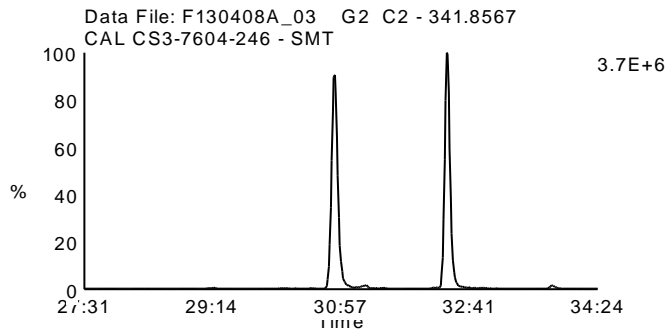
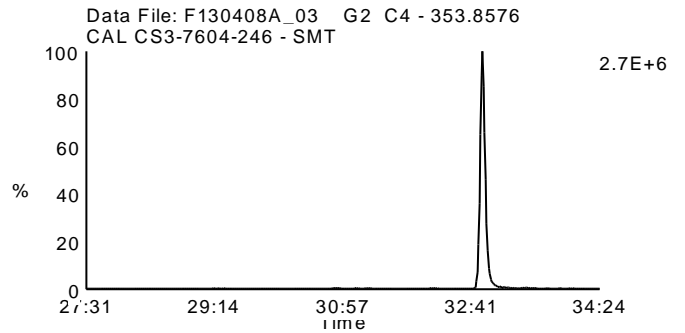
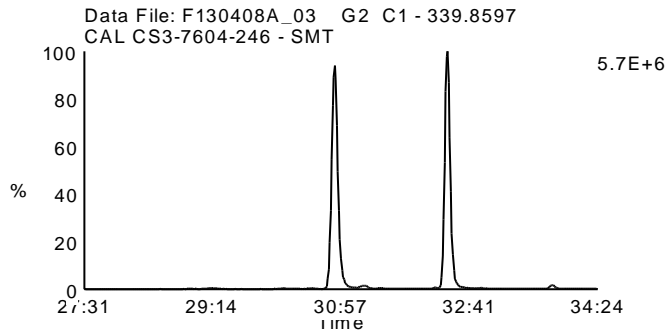
Date Acquired: 4/8/2013

Sample Description: CAL CS3-7604-246 - SMT

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130408A\_03

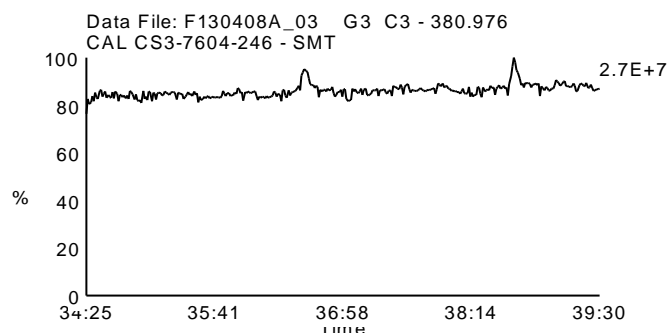
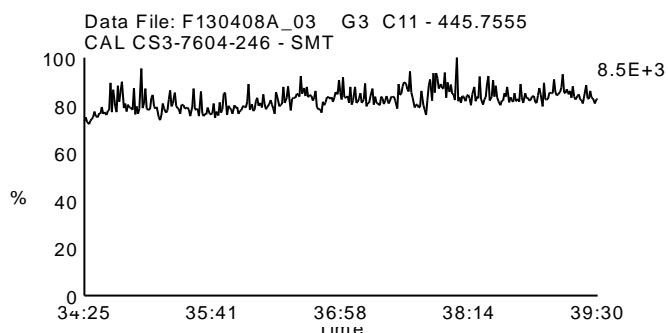
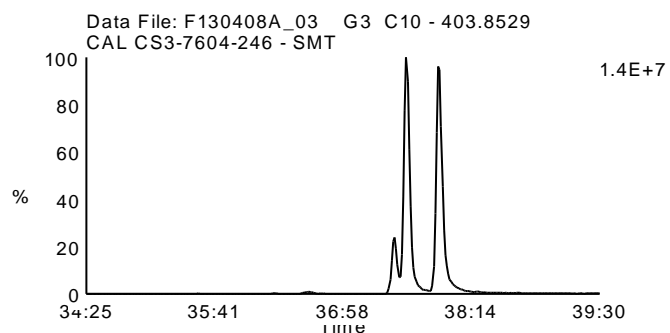
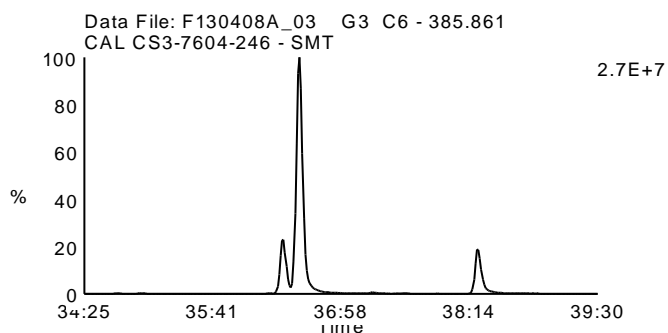
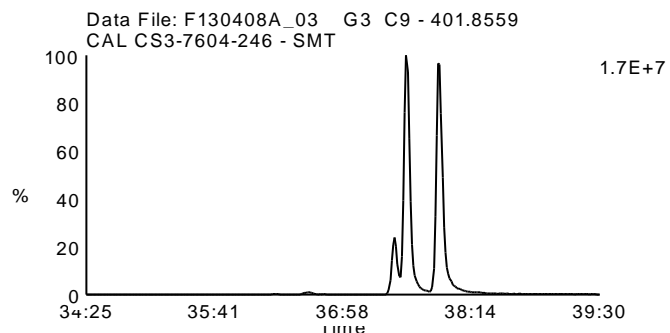
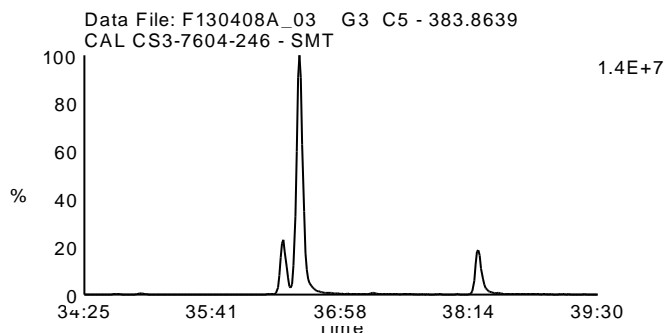
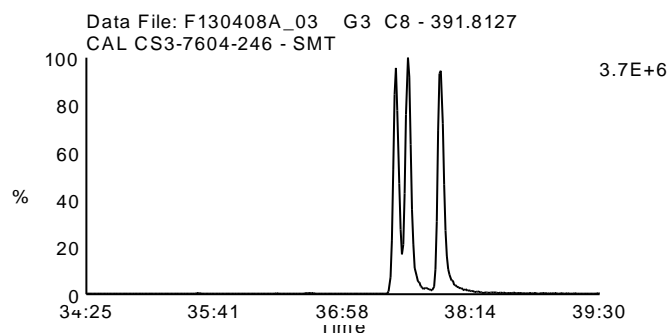
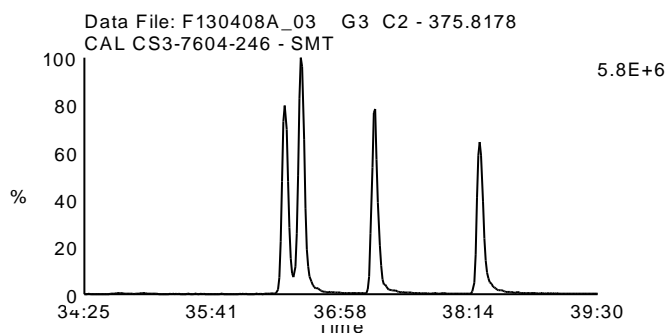
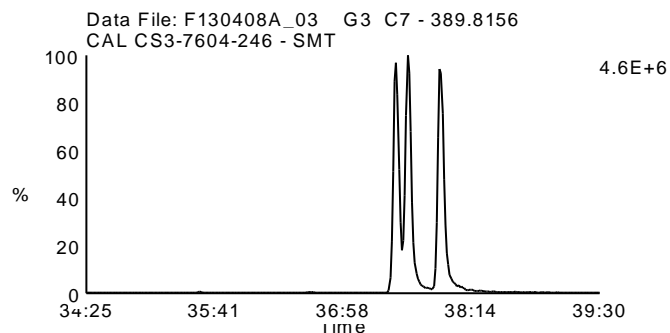
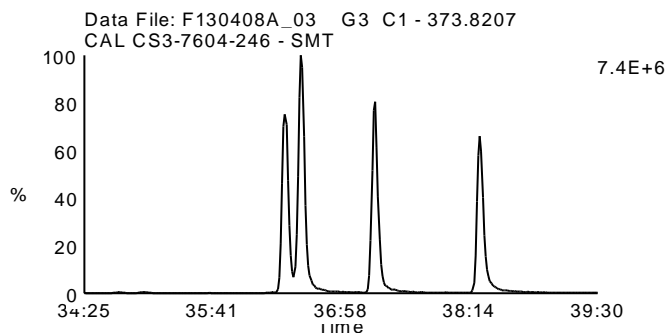
Date Acquired: 4/8/2013

Sample Description: CAL CS3-7604-246 - SMT

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130408A\_03

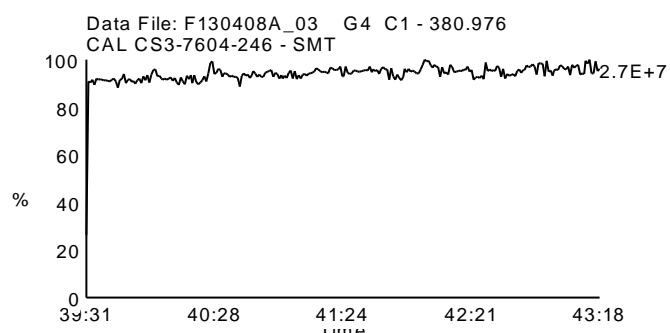
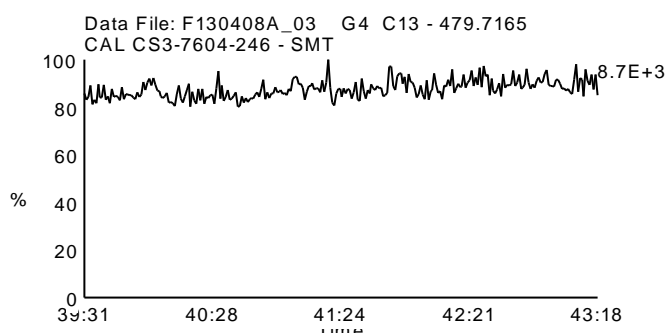
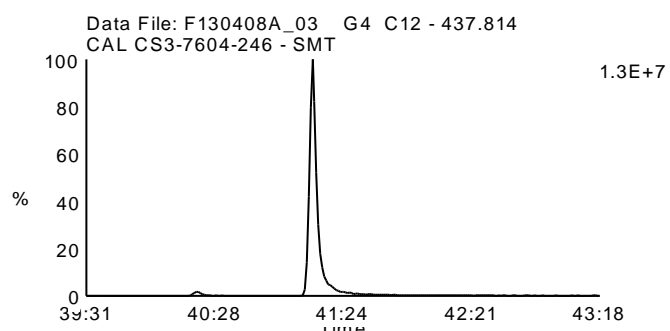
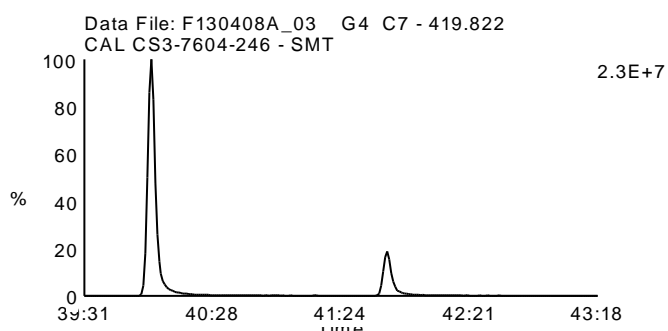
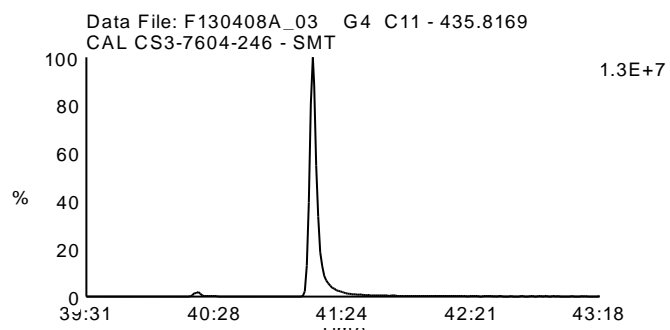
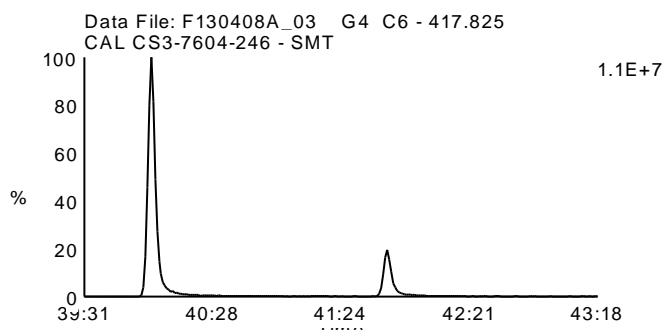
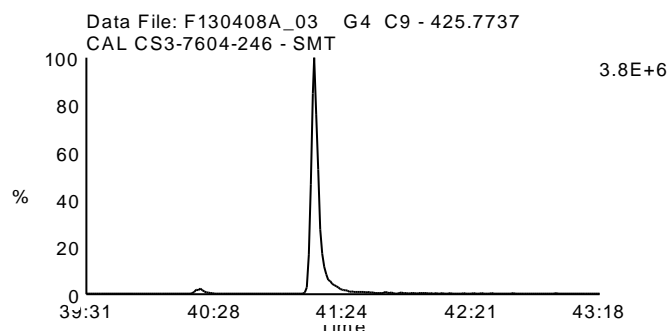
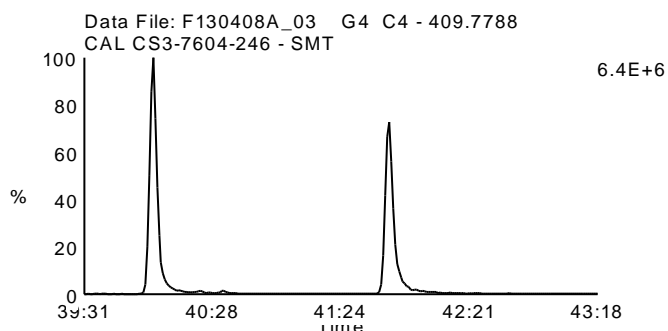
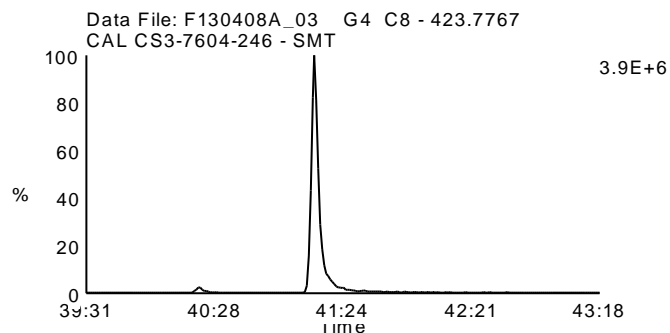
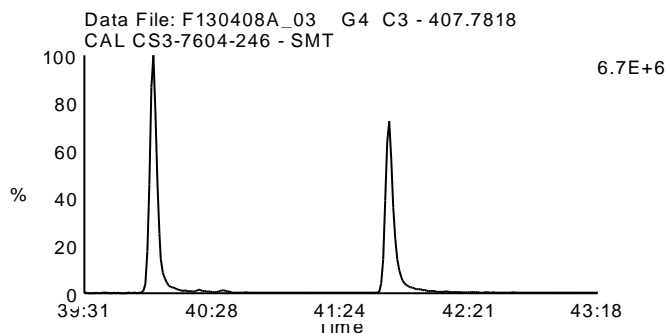
Date Acquired: 4/8/2013

Sample Description: CAL CS3-7604-246 - SMT

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130408A\_03

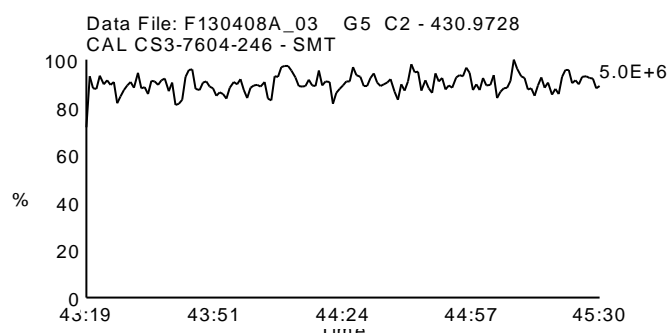
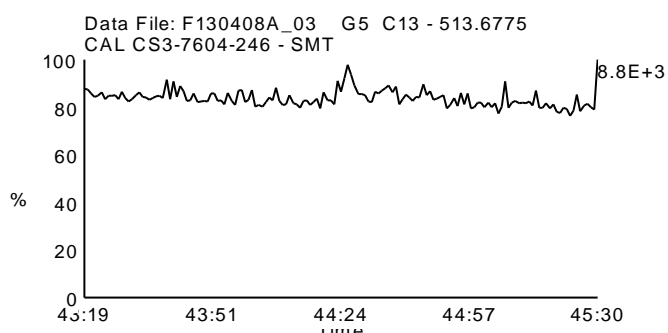
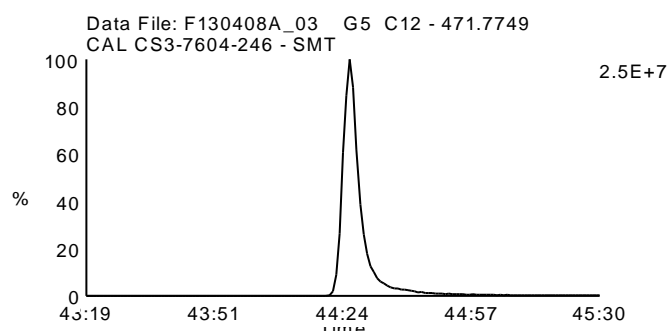
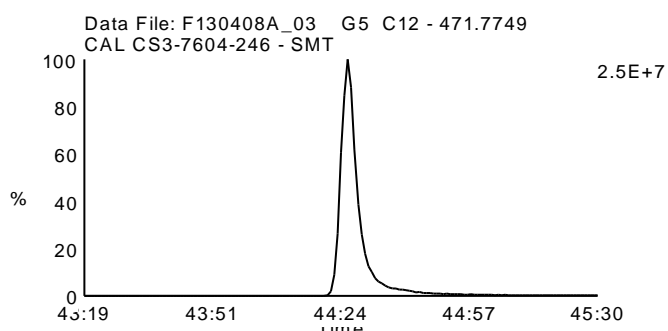
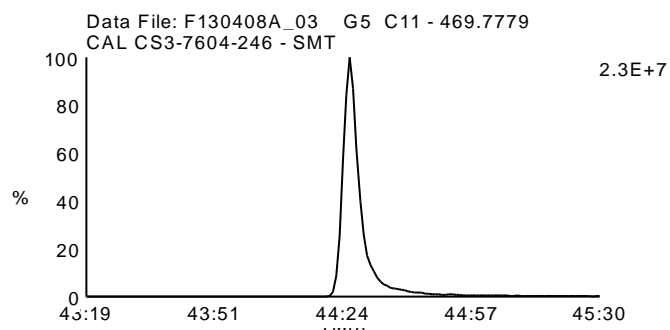
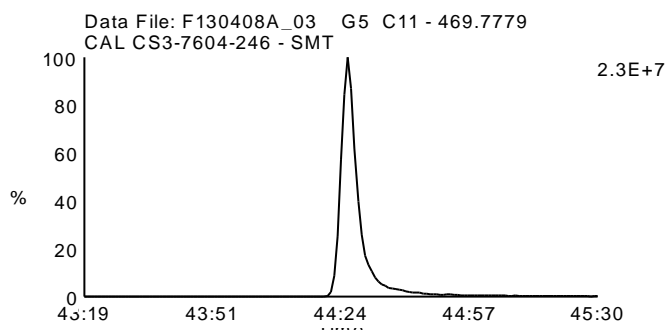
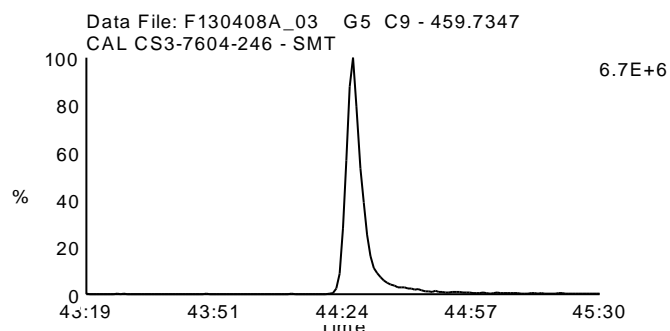
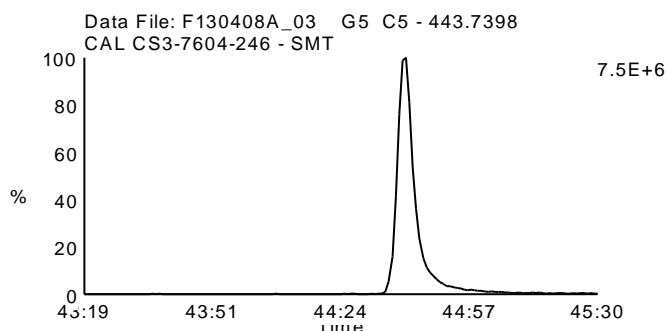
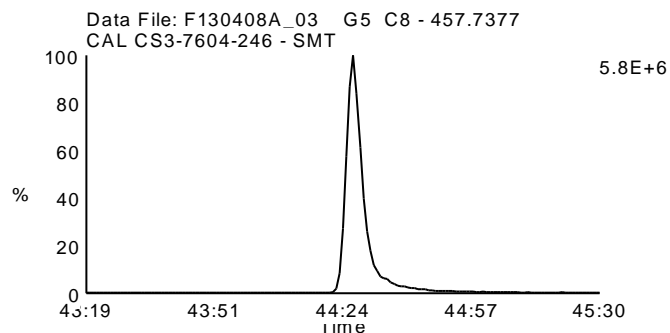
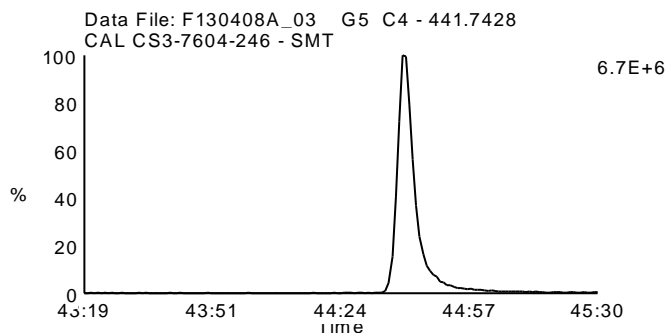
Date Acquired: 4/8/2013

Sample Description: CAL CS3-7604-246 - SMT

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130408A\_07

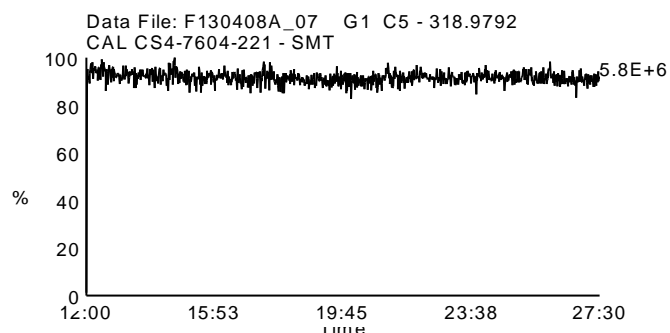
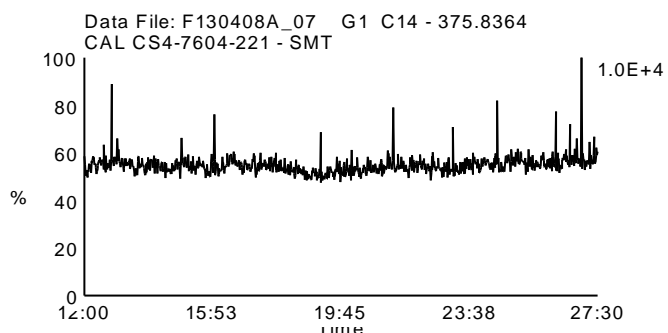
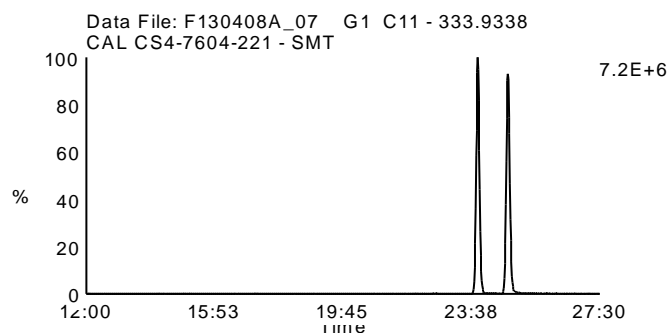
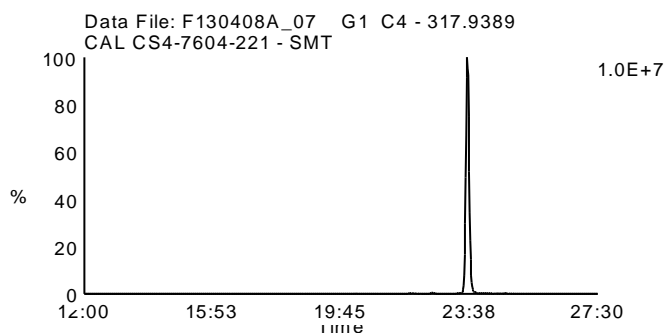
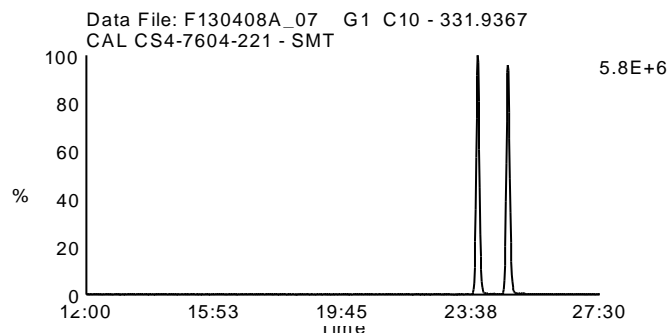
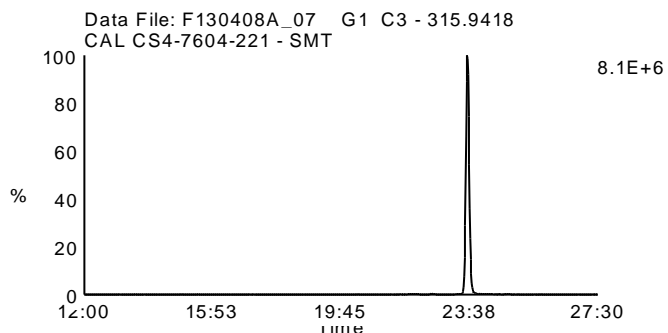
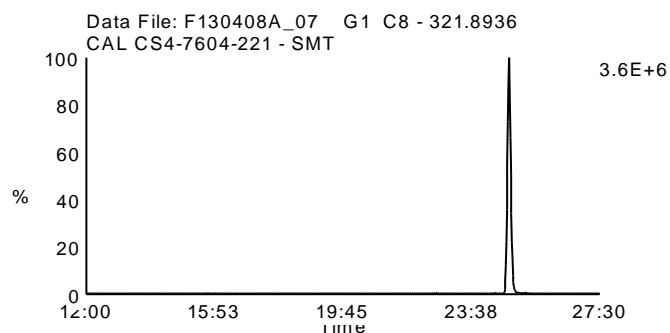
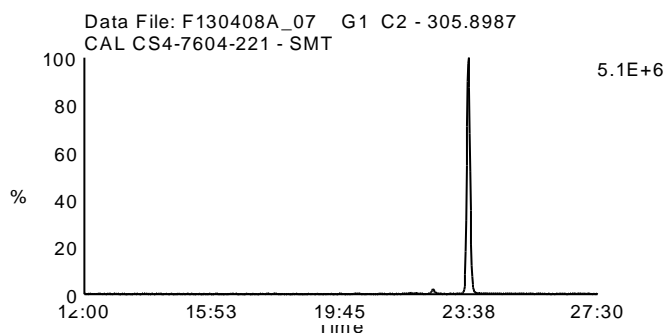
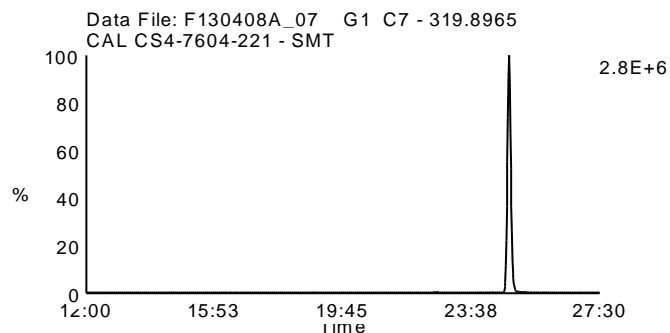
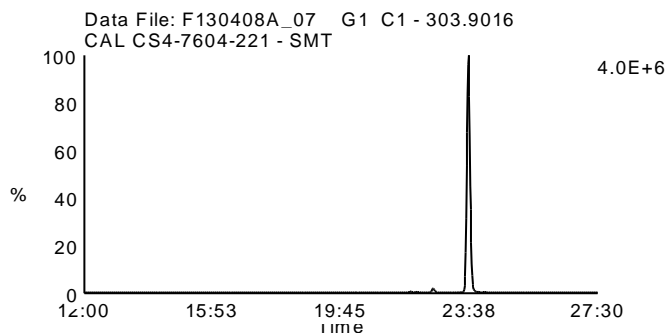
Date Acquired: 4/8/2013

Sample Description: CAL CS4-7604-221 - SMT

Lab Sample ID: CS4-7604-221

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130408A\_07

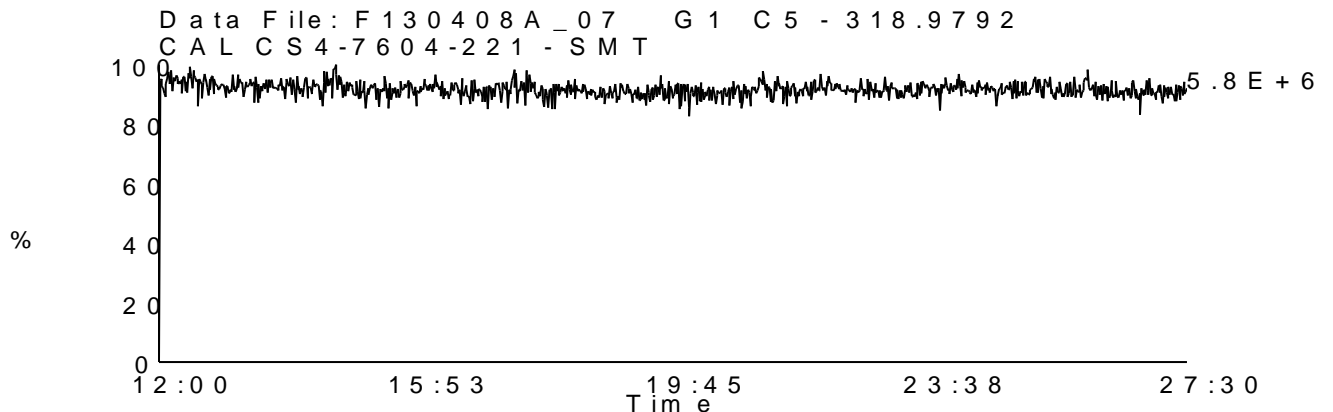
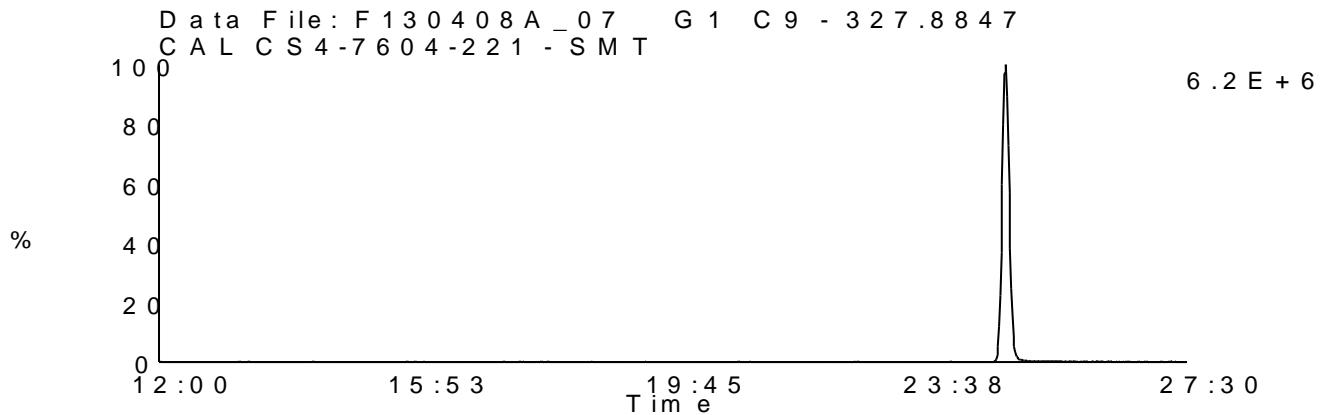
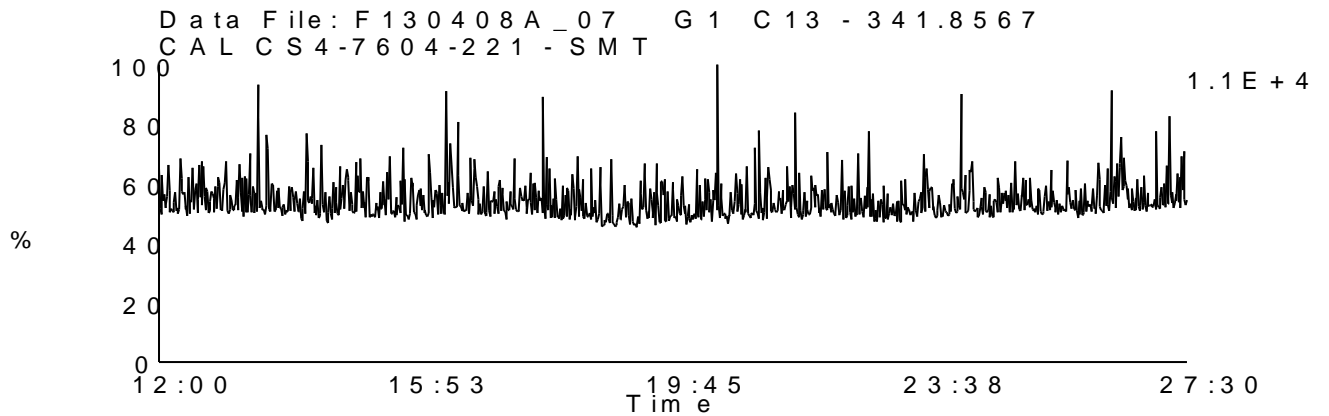
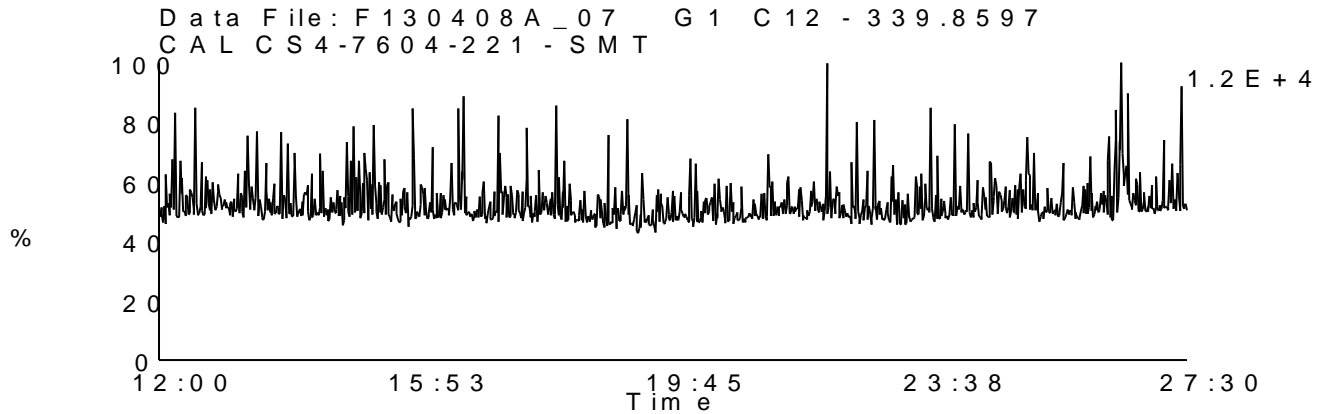
Date Acquired: 4/8/2013

Sample Description: CAL CS4-7604-221 - SMT

Lab Sample ID: CS4-7604-221

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130408A\_07

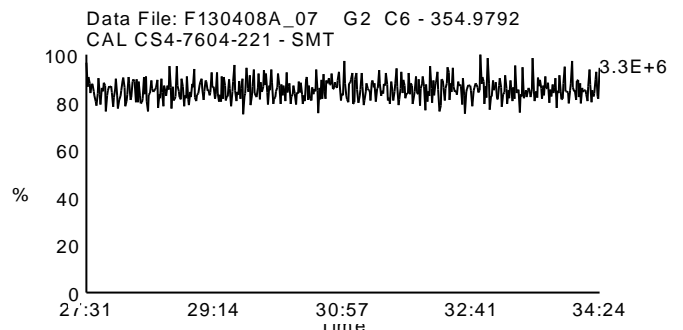
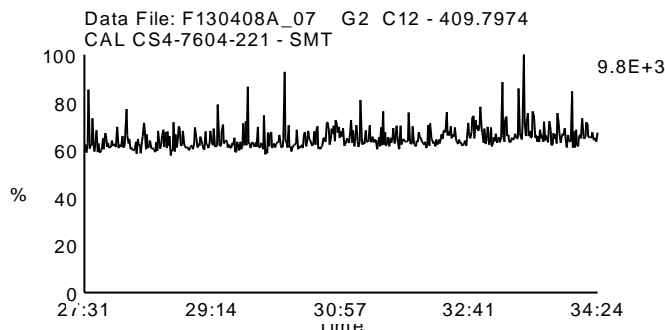
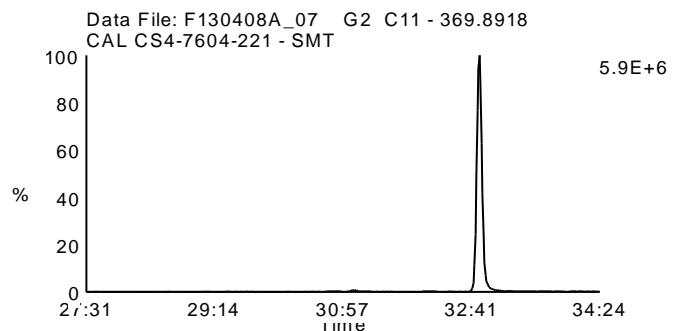
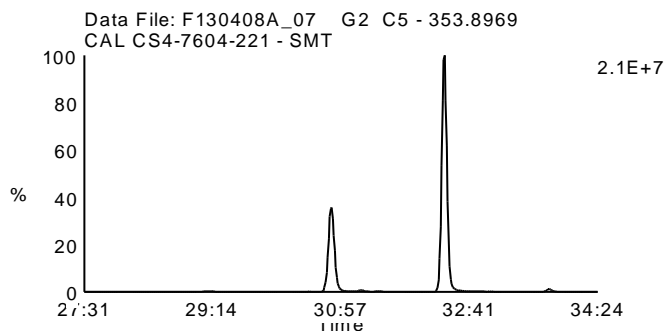
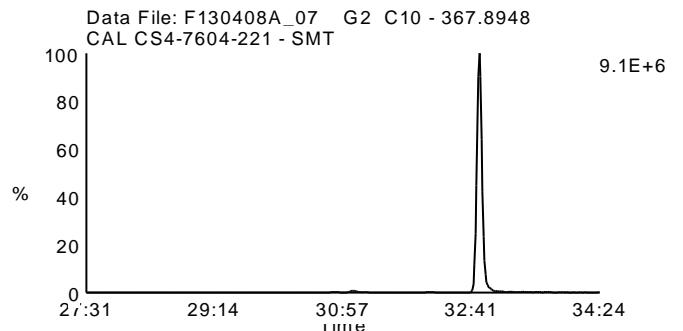
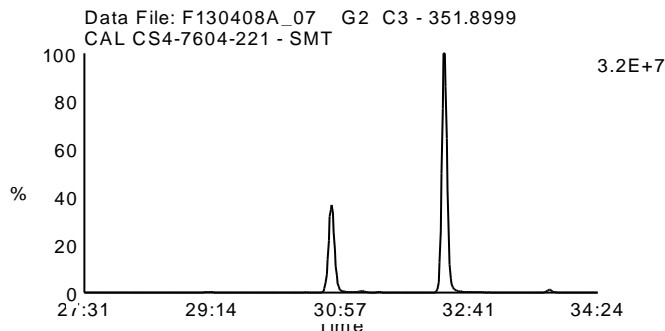
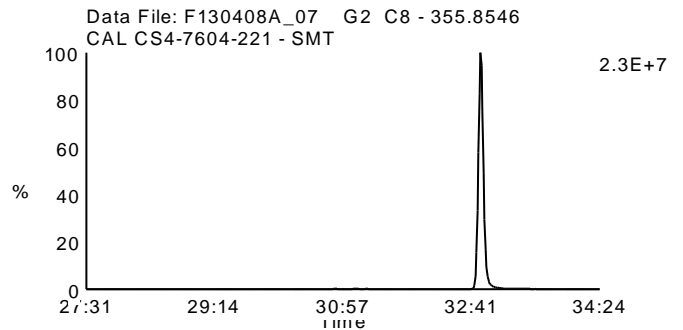
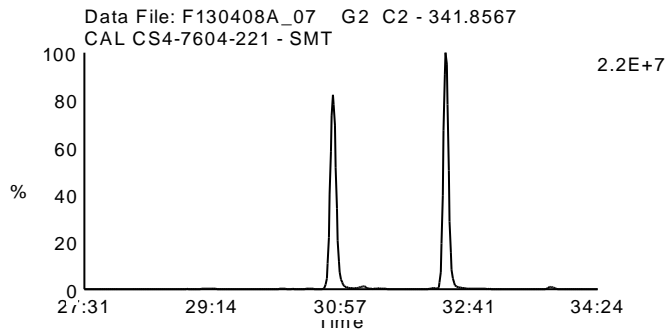
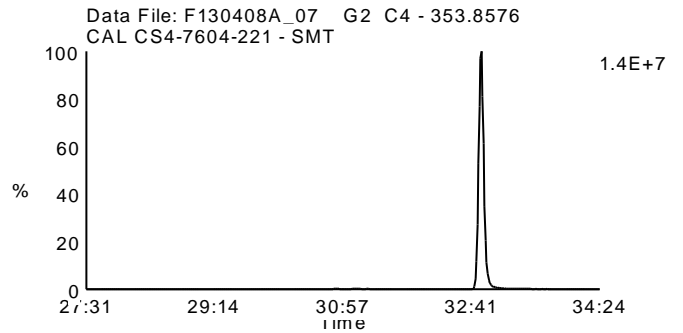
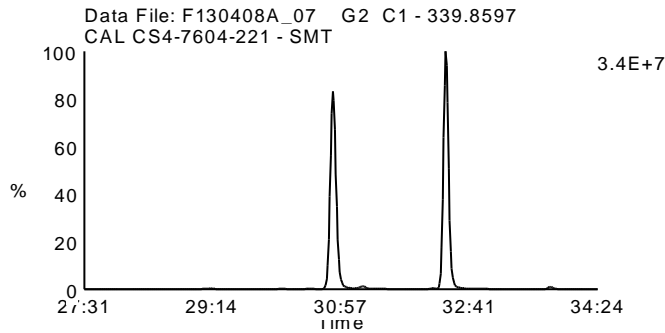
Date Acquired: 4/8/2013

Sample Description: CAL CS4-7604-221 - SMT

Lab Sample ID: CS4-7604-221

Client Sample ID:

Instrument: 10MSHR05 (F)





Homologue Group: Hexas

Data File Name: F130408A\_07

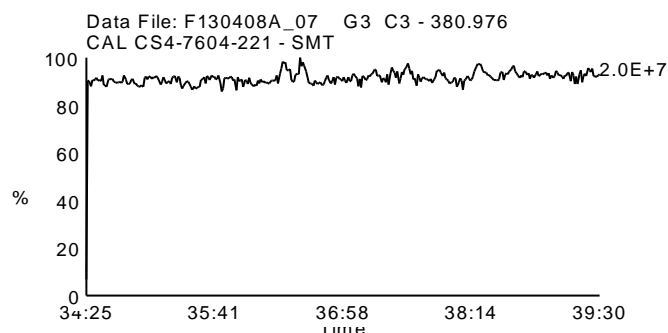
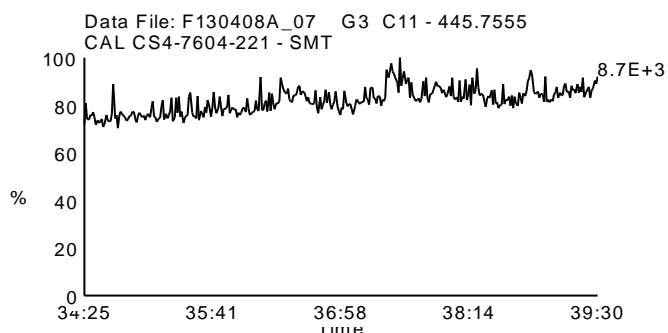
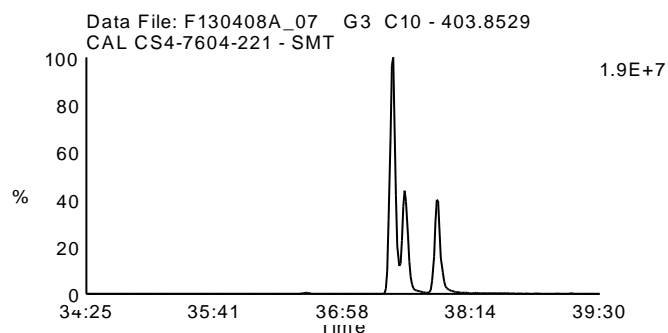
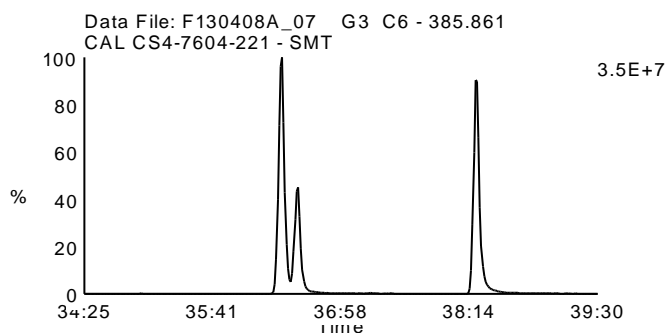
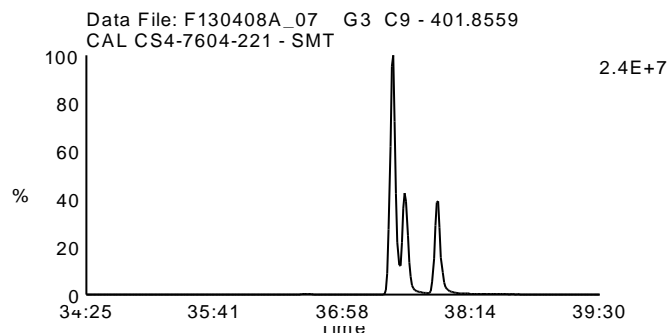
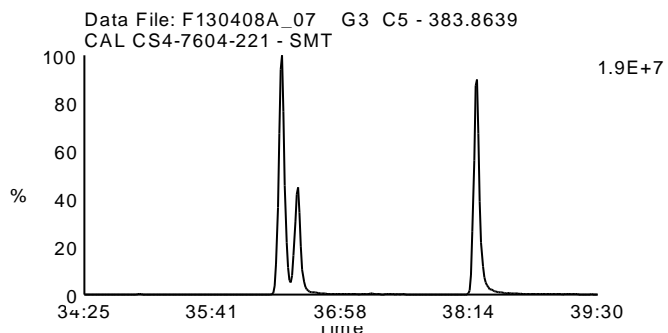
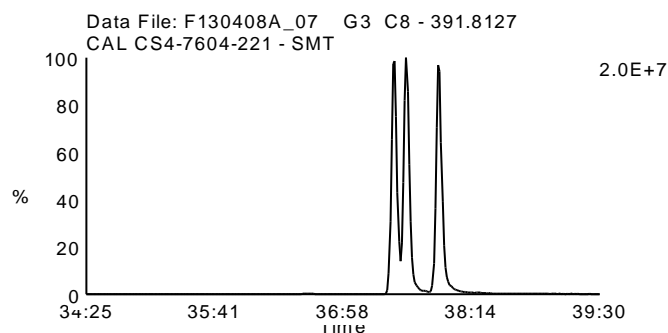
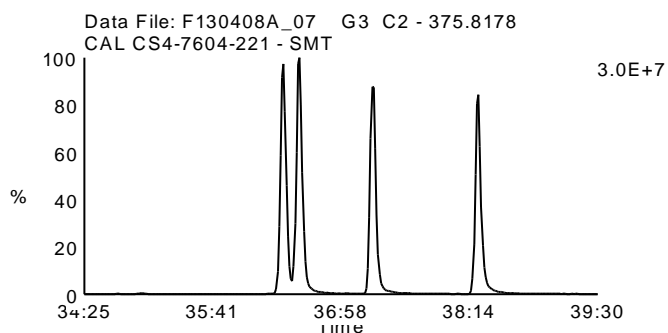
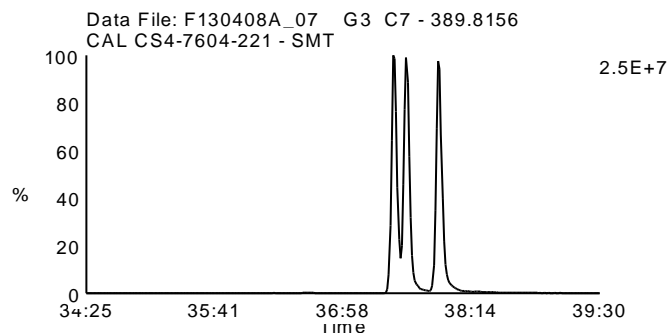
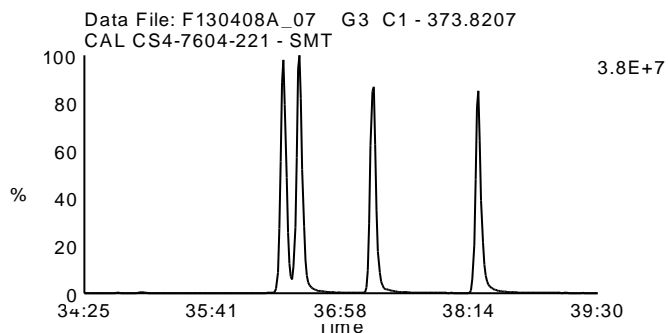
Date Acquired: 4/8/2013

Sample Description: CAL CS4-7604-221 - SMT

Lab Sample ID: CS4-7604-221

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130408A\_07

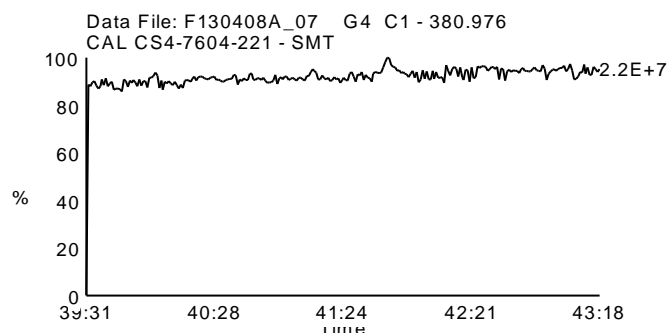
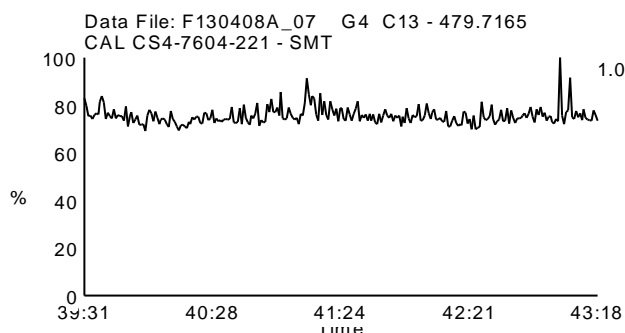
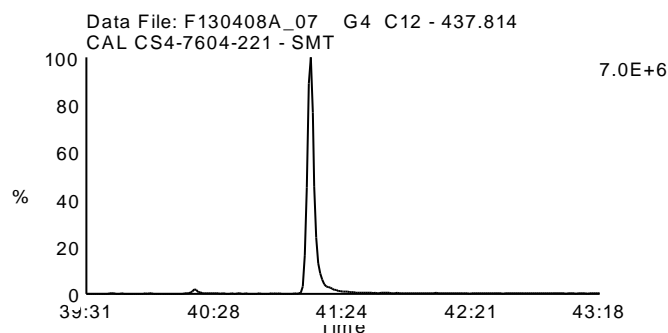
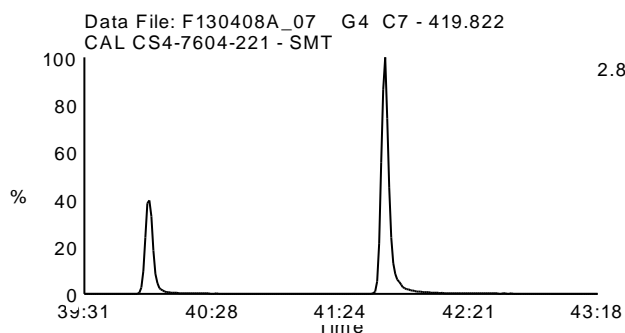
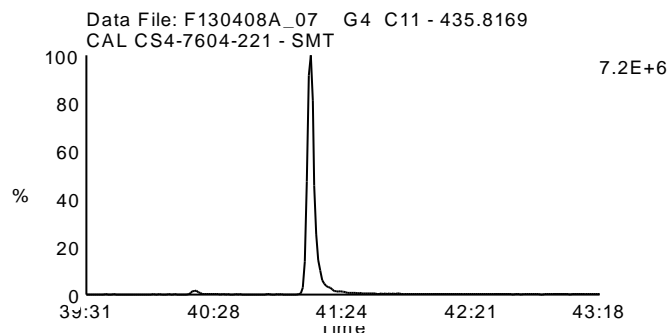
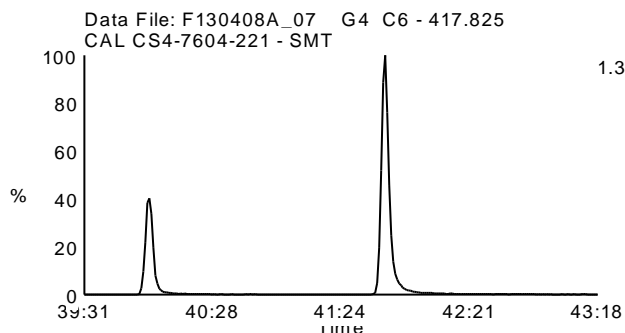
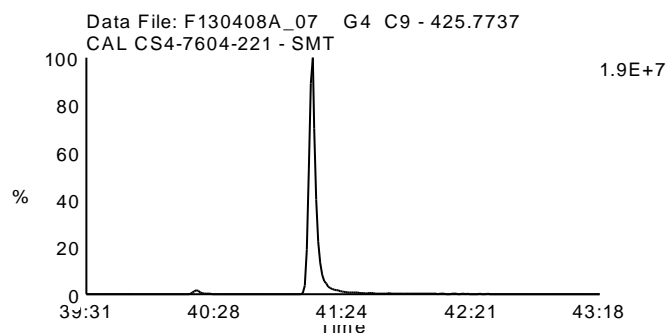
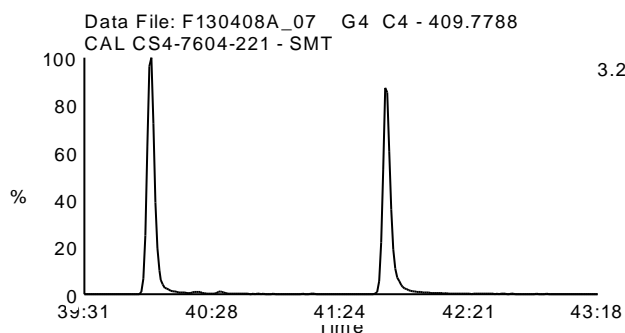
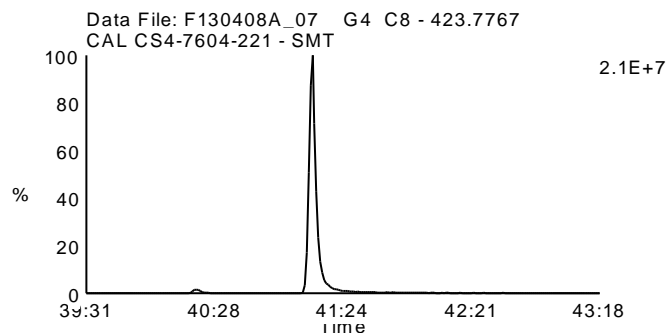
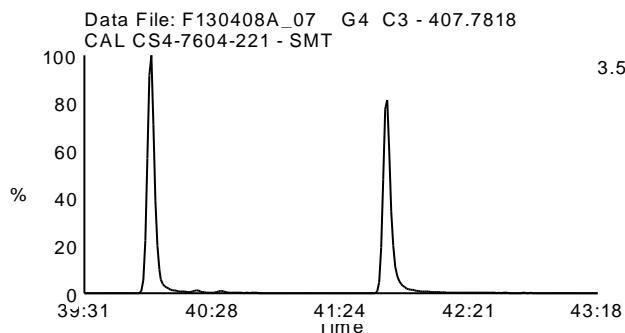
Date Acquired: 4/8/2013

Sample Description: CAL CS4-7604-221 - SMT

Lab Sample ID: CS4-7604-221

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130408A\_07

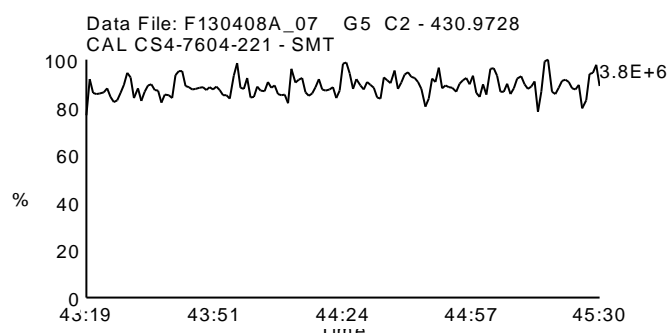
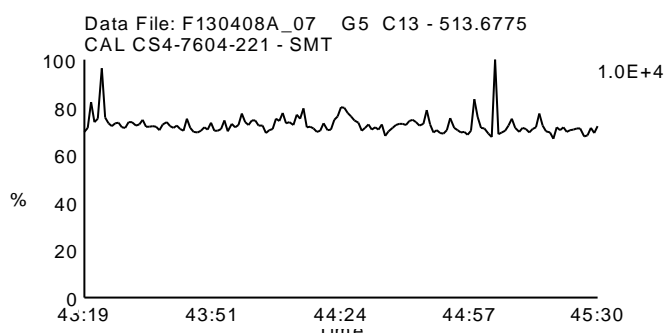
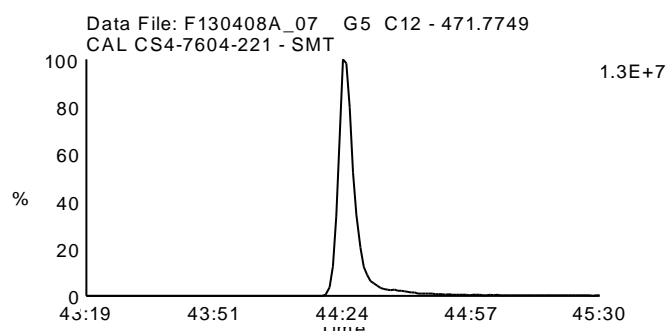
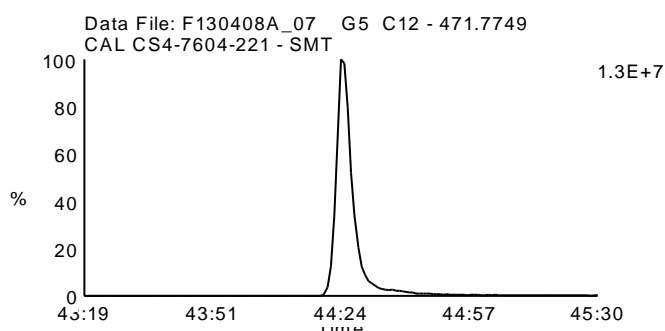
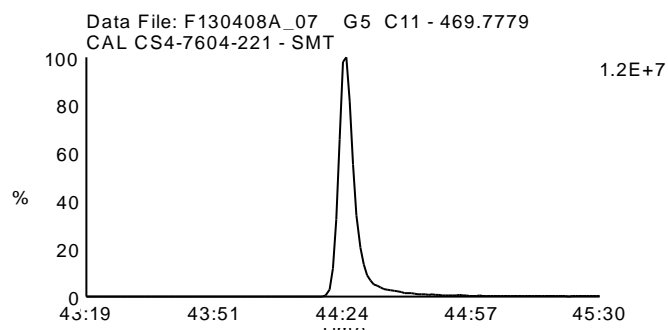
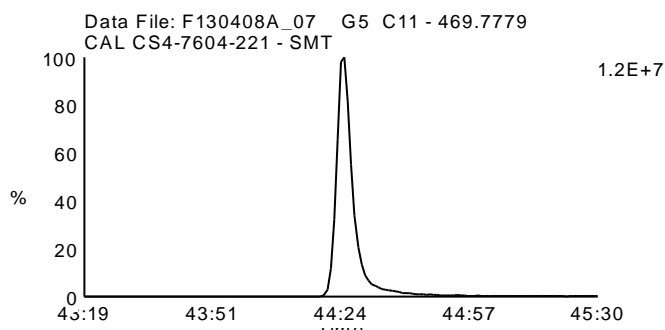
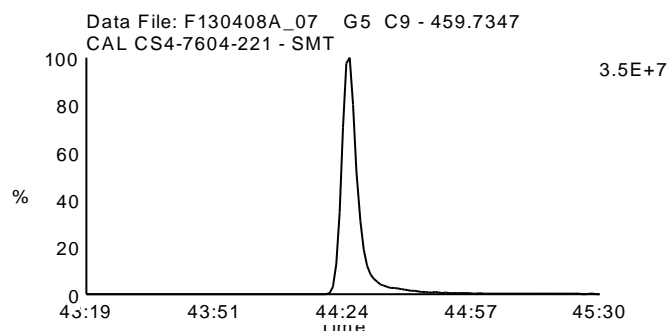
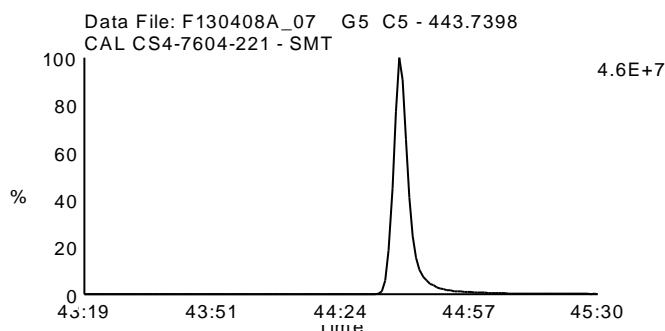
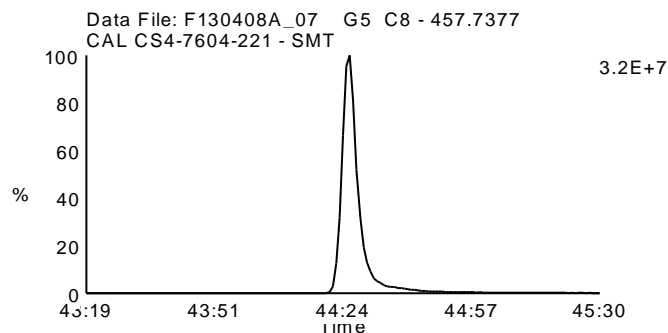
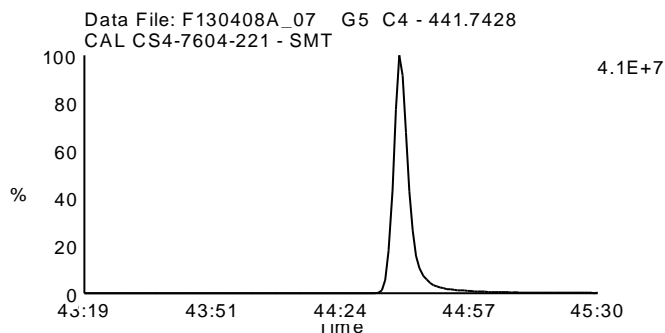
Date Acquired: 4/8/2013

Sample Description: CAL CS4-7604-221 - SMT

Lab Sample ID: CS4-7604-221

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130408A\_06

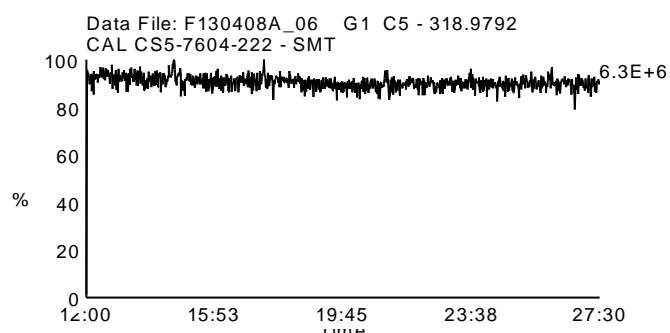
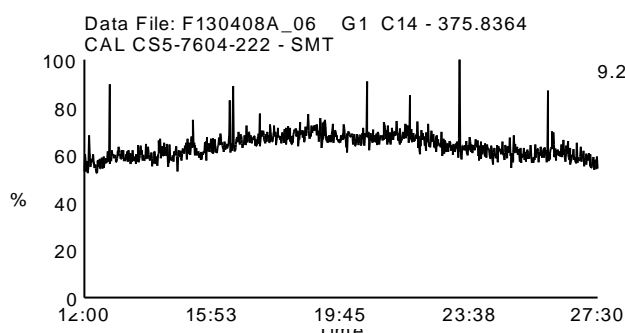
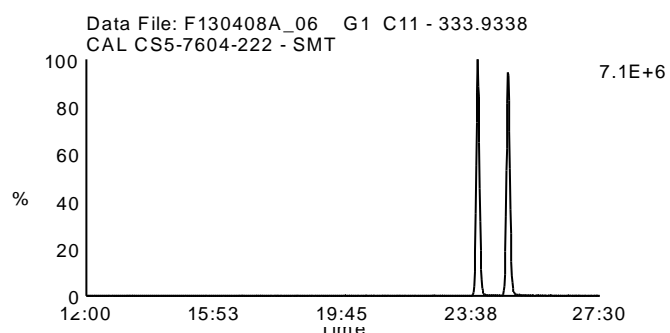
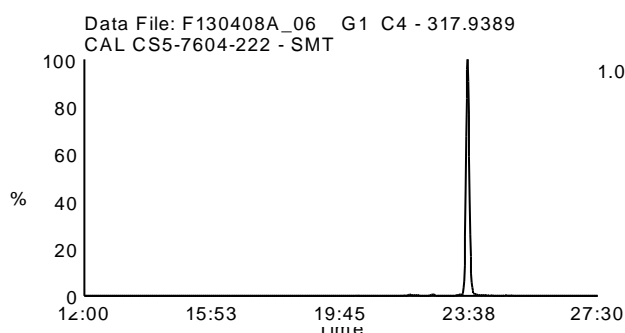
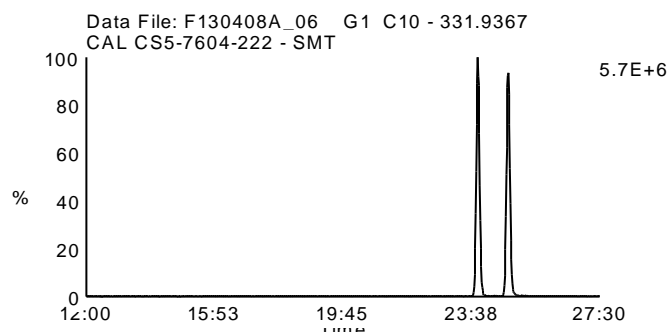
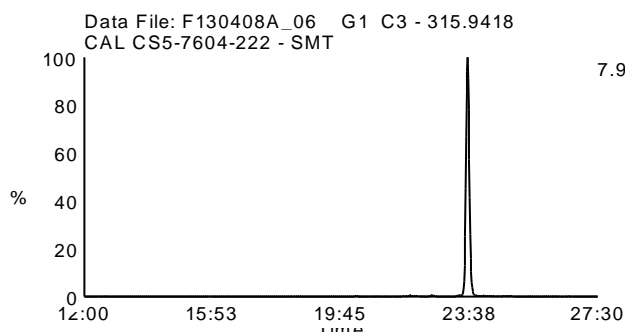
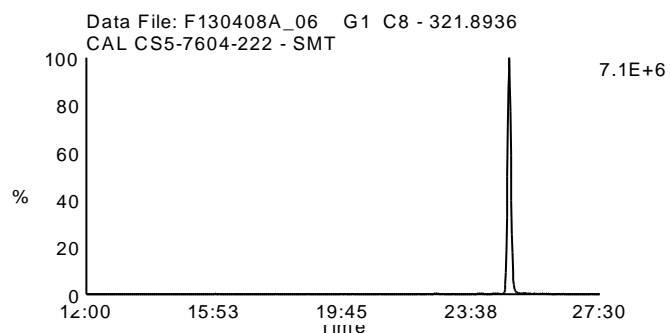
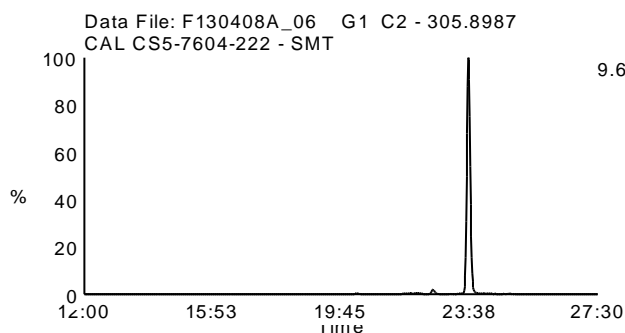
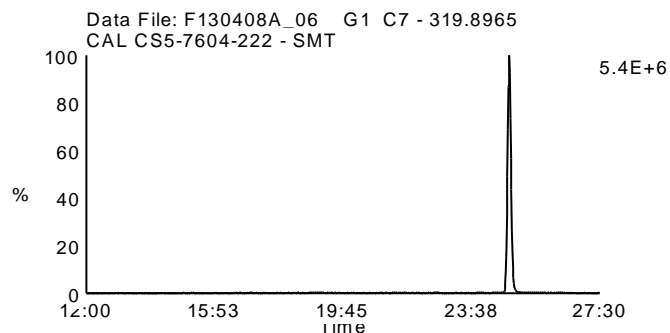
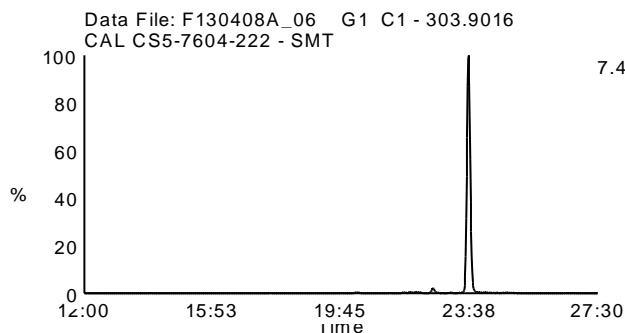
Date Acquired: 4/8/2013

Sample Description: CAL CS5-7604-222 - SMT

Lab Sample ID: CS5-7604-222

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130408A\_06

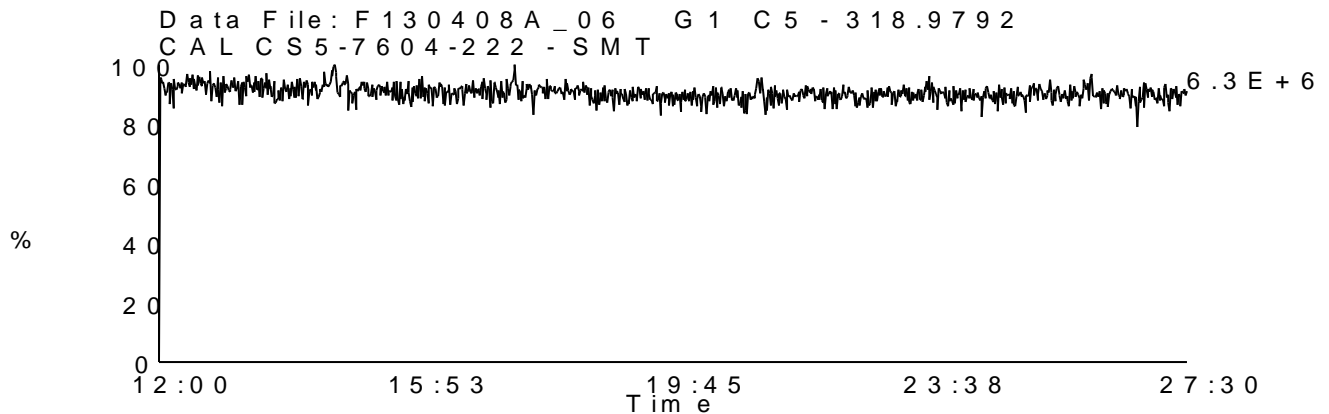
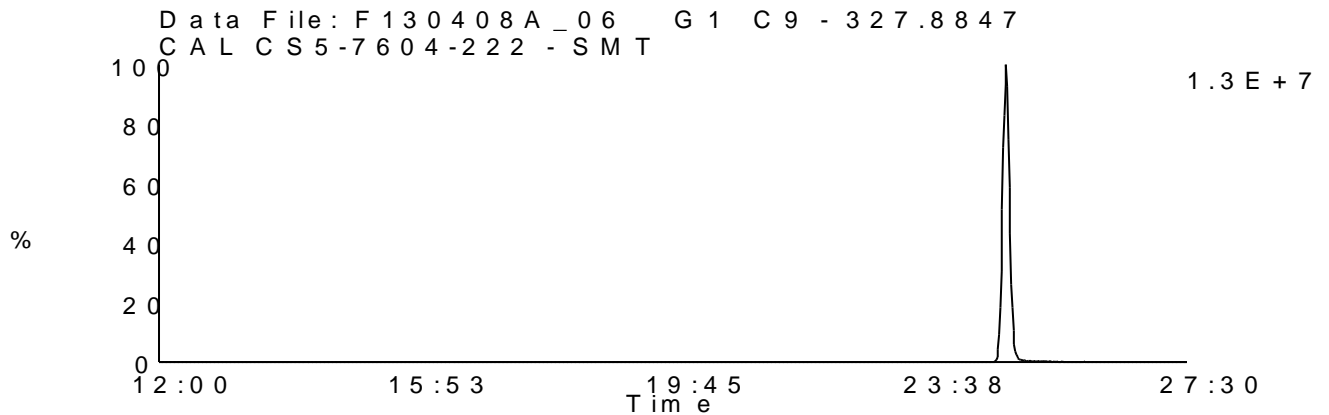
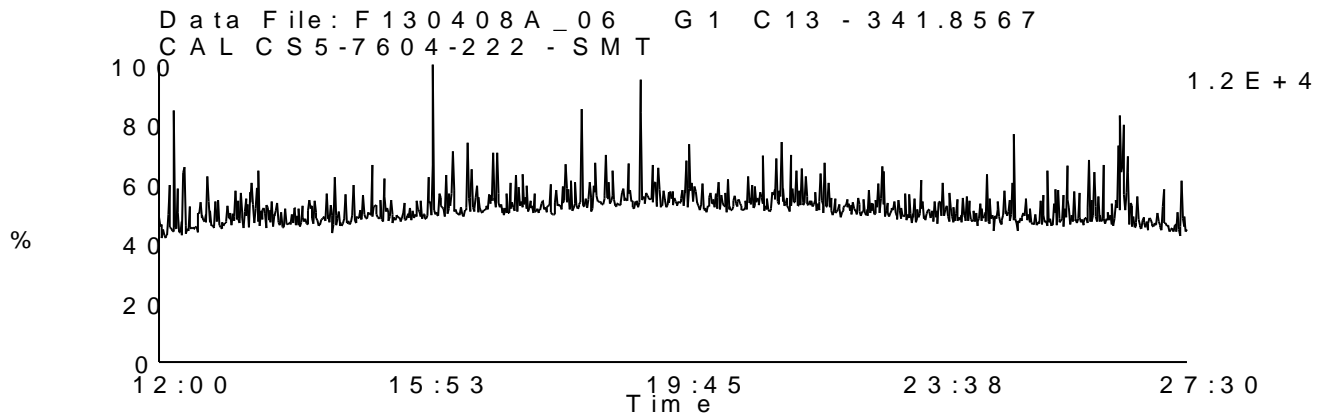
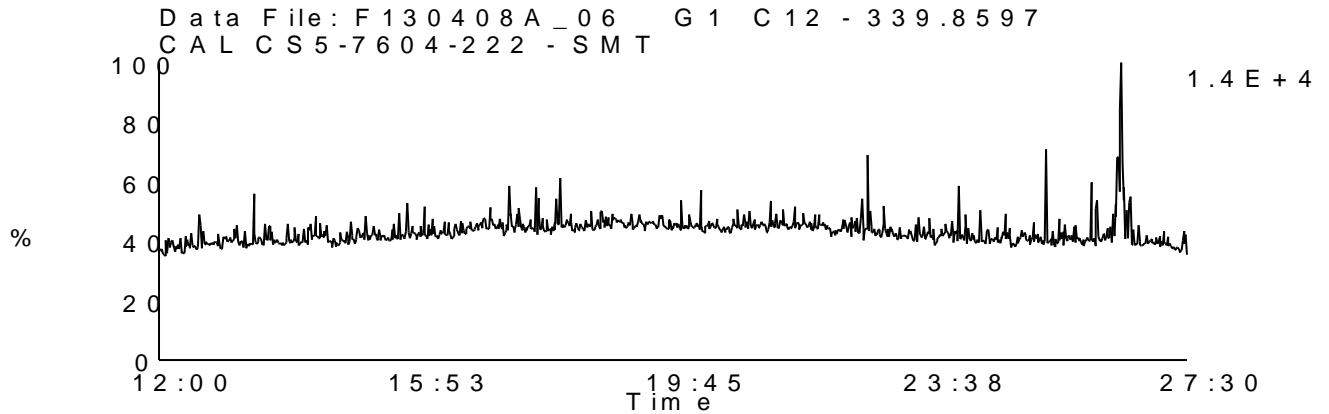
Date Acquired: 4/8/2013

Sample Description: CAL CS5-7604-222 - SMT

Lab Sample ID: CS5-7604-222

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130408A\_06

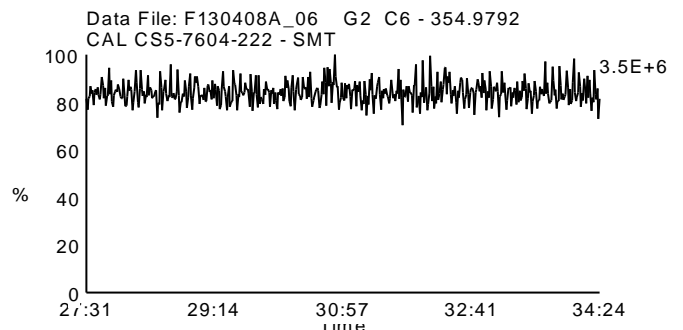
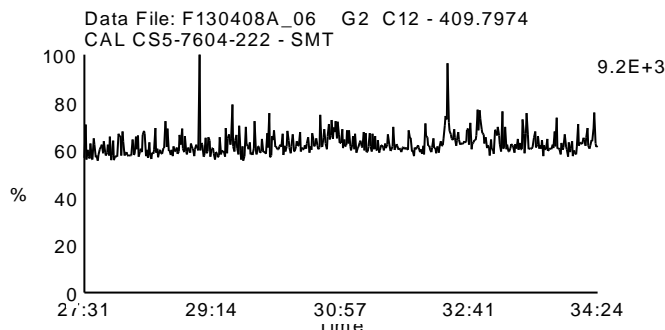
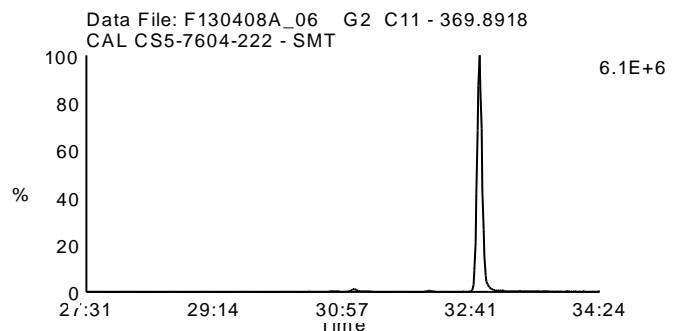
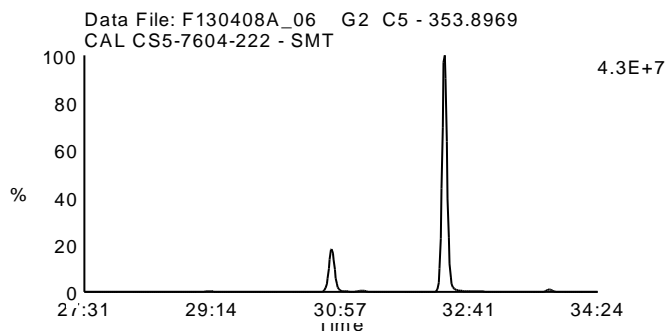
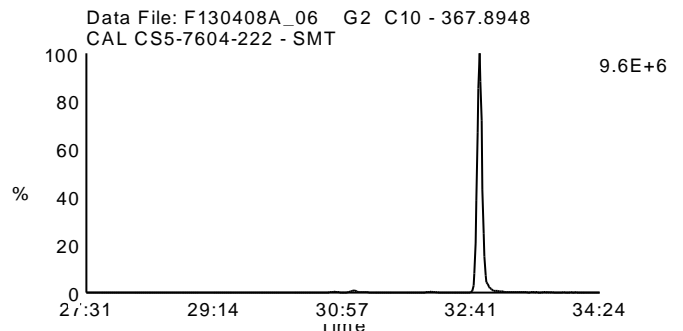
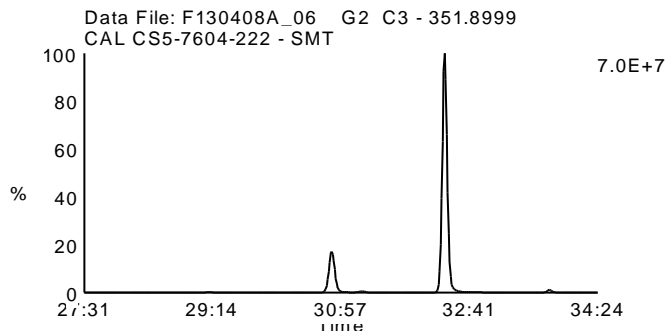
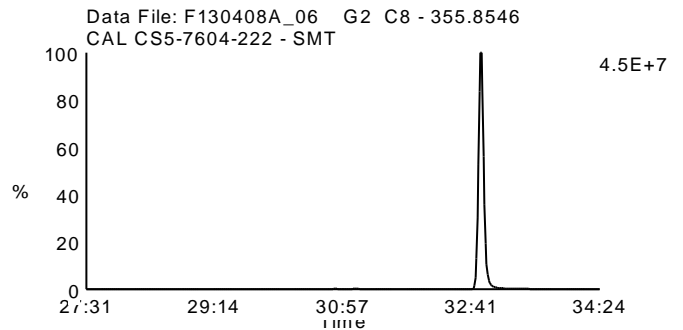
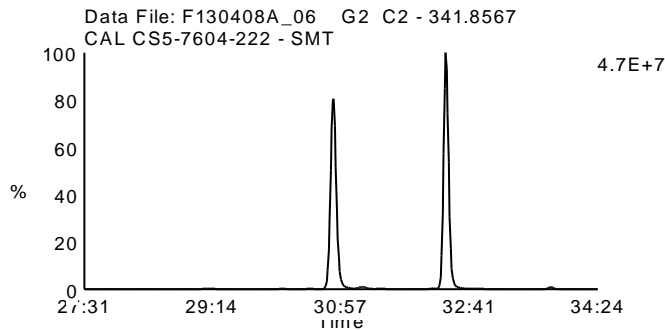
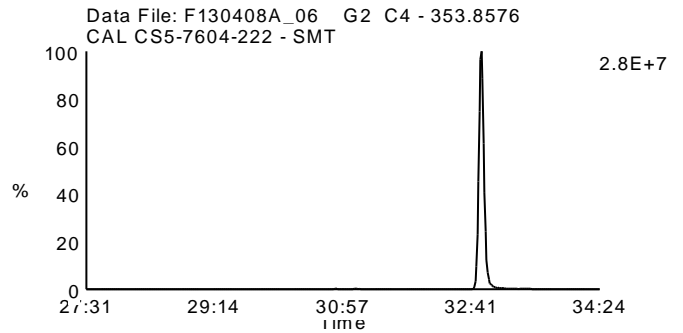
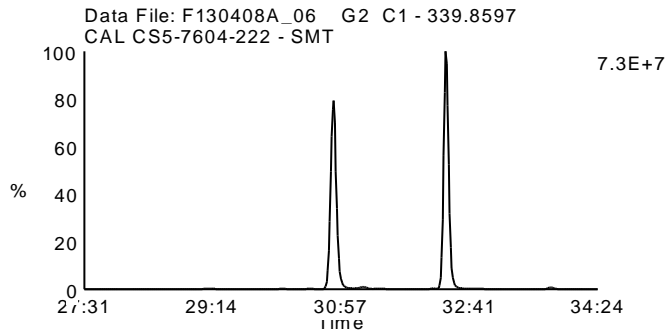
Date Acquired: 4/8/2013

Sample Description: CAL CS5-7604-222 - SMT

Lab Sample ID: CS5-7604-222

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130408A\_06

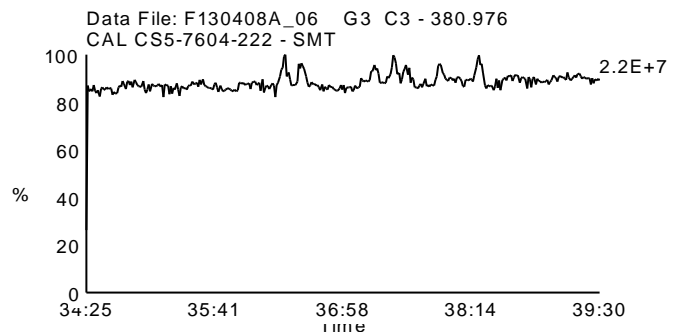
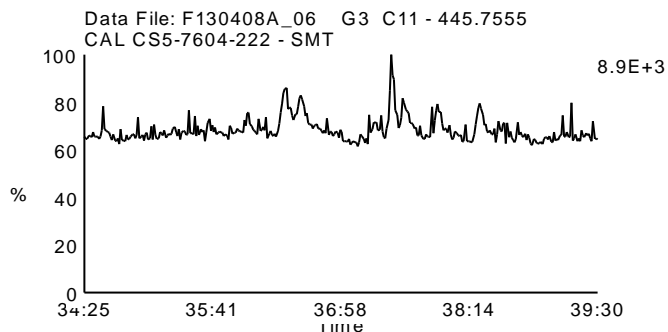
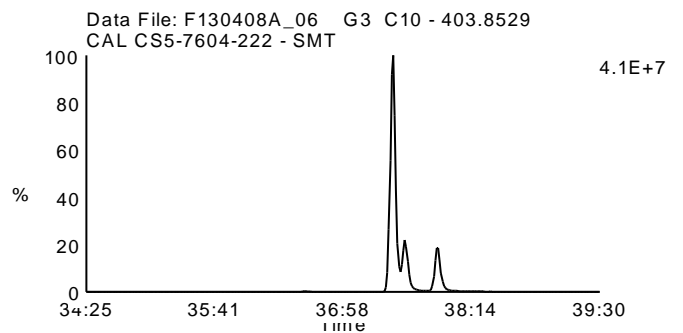
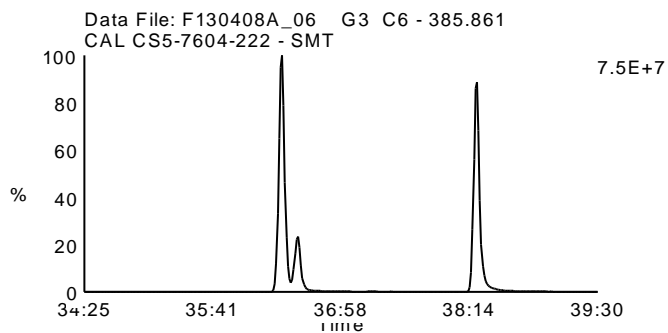
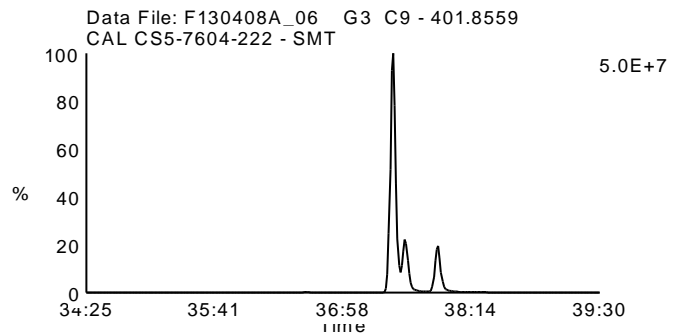
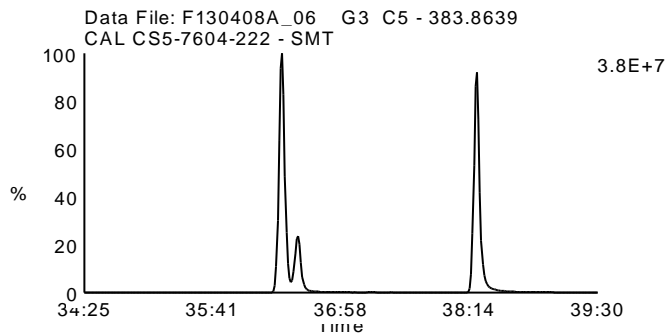
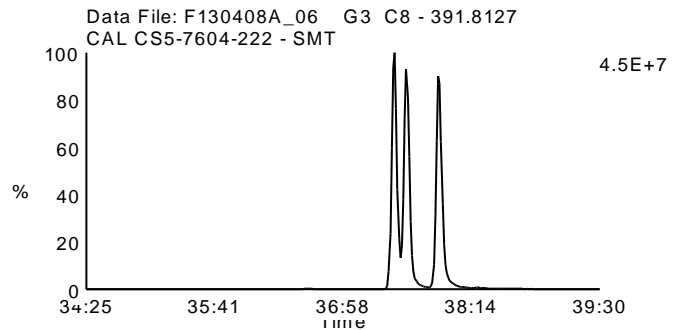
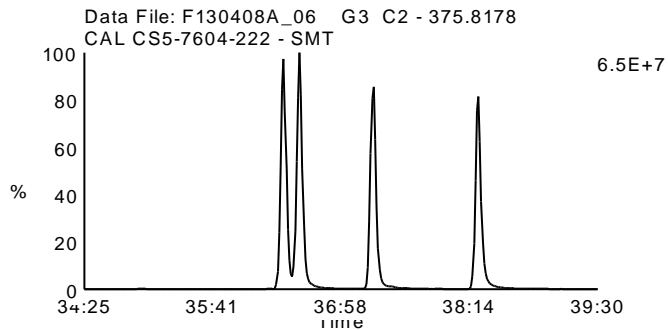
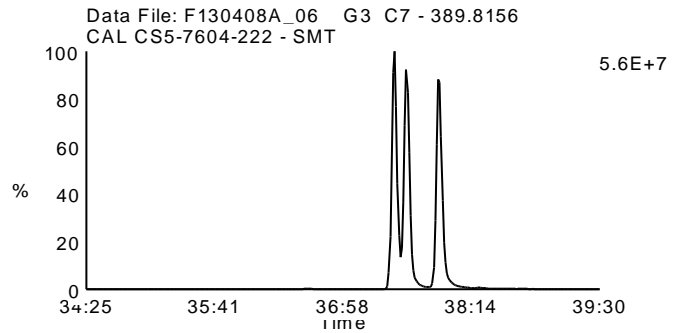
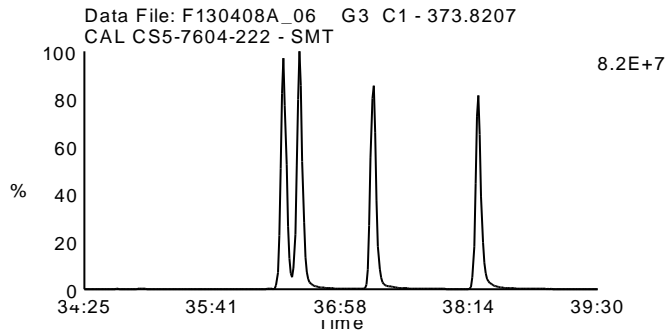
Date Acquired: 4/8/2013

Sample Description: CAL CS5-7604-222 - SMT

Lab Sample ID: CS5-7604-222

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130408A\_06

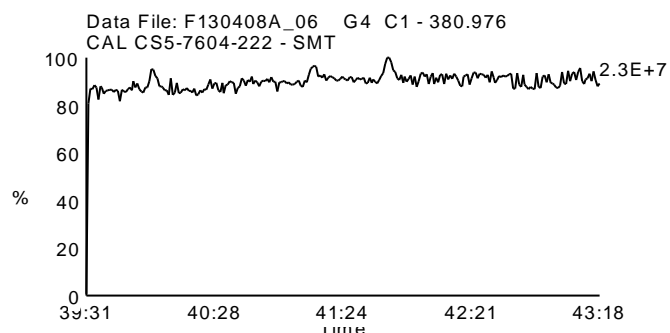
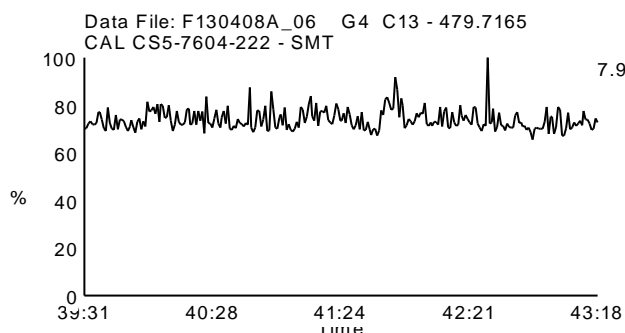
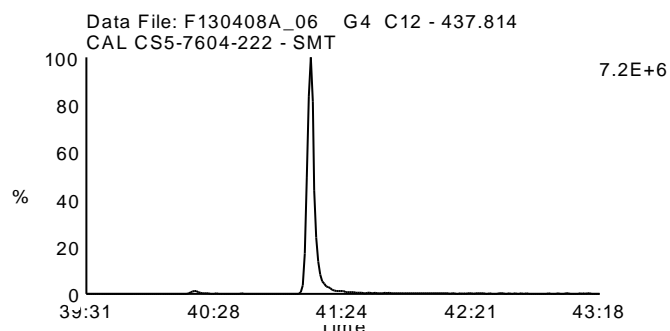
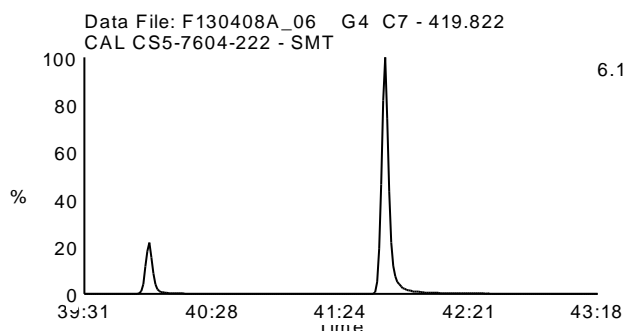
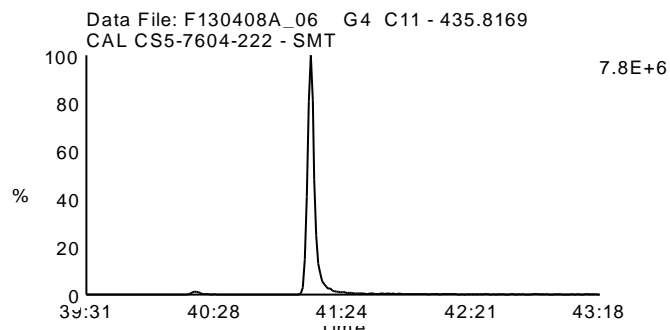
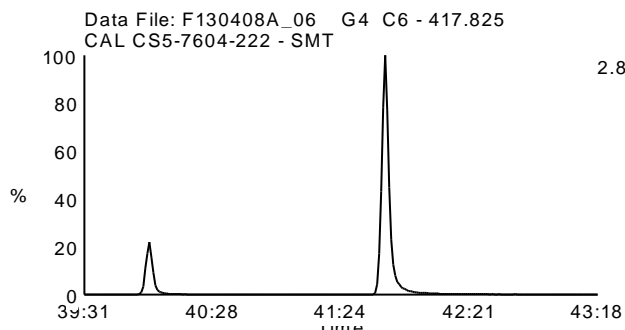
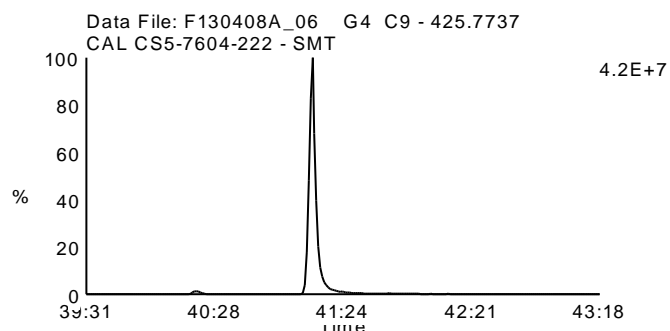
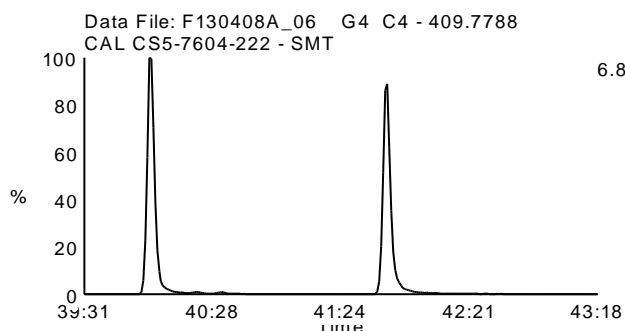
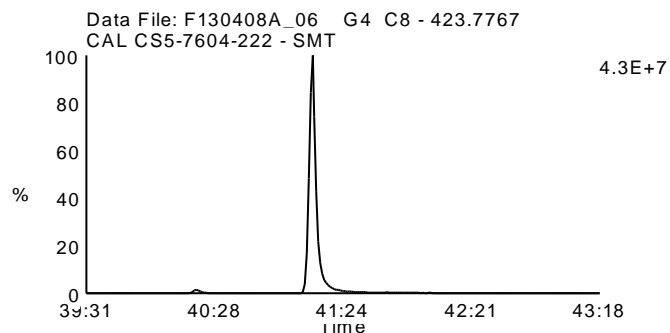
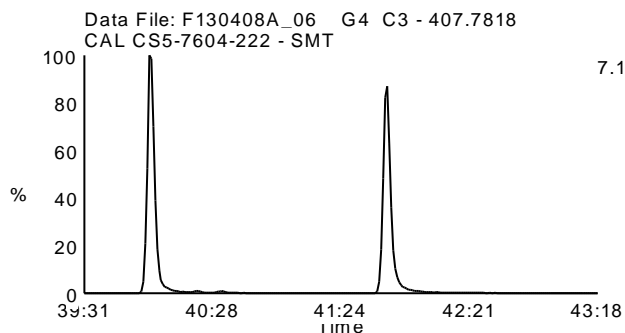
Date Acquired: 4/8/2013

Sample Description: CAL CS5-7604-222 - SMT

Lab Sample ID: CS5-7604-222

Client Sample ID:

Instrument: 10MSHR05 (F)





Homologue Group: Octas

Data File Name: F130408A\_06

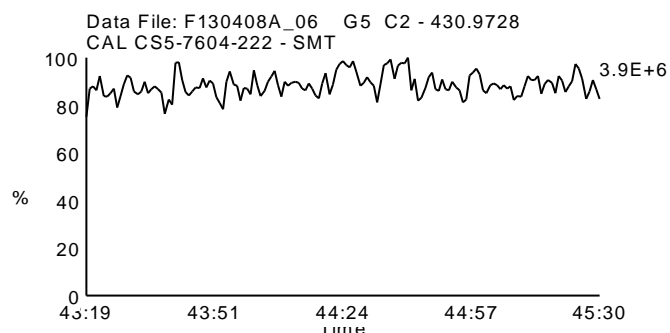
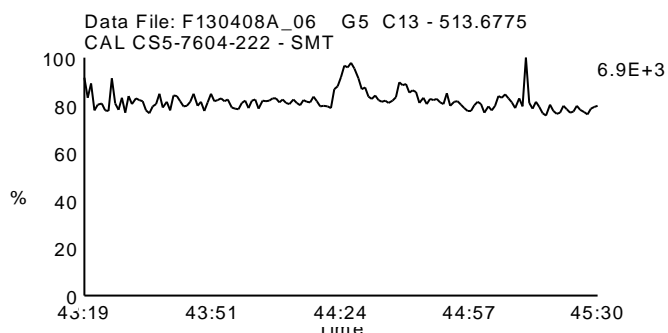
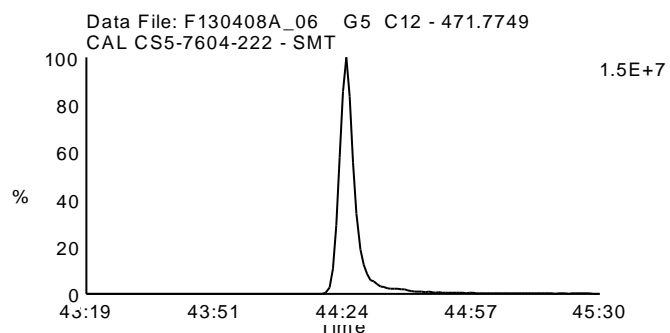
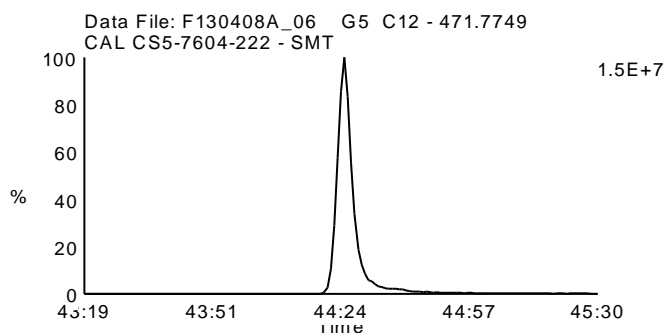
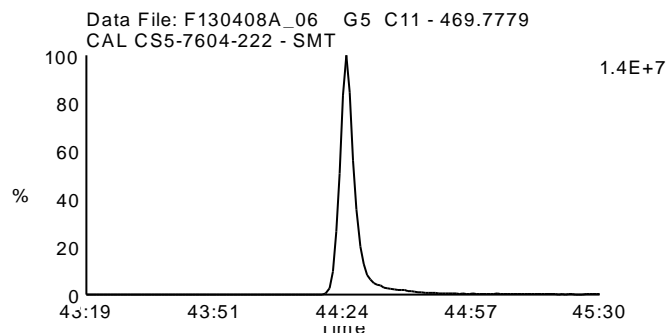
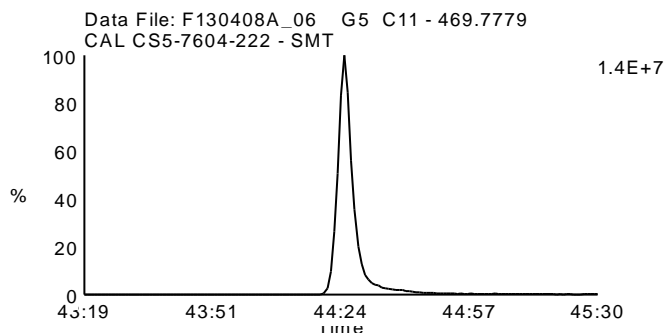
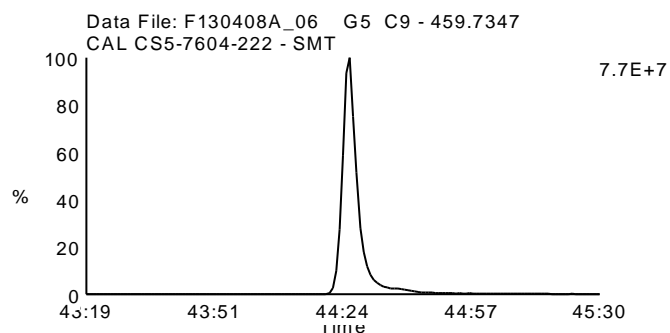
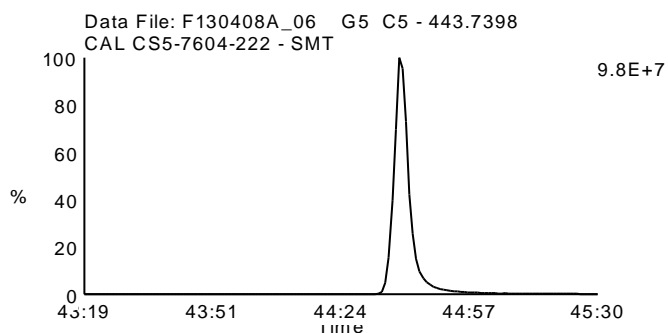
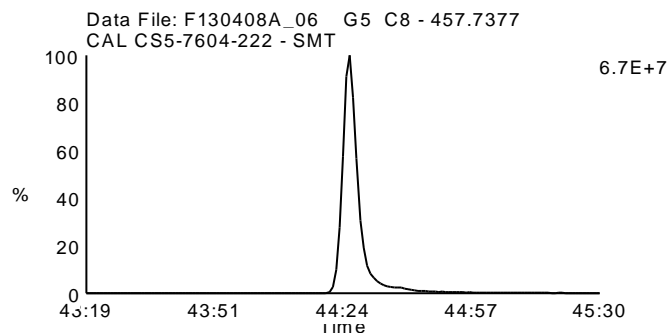
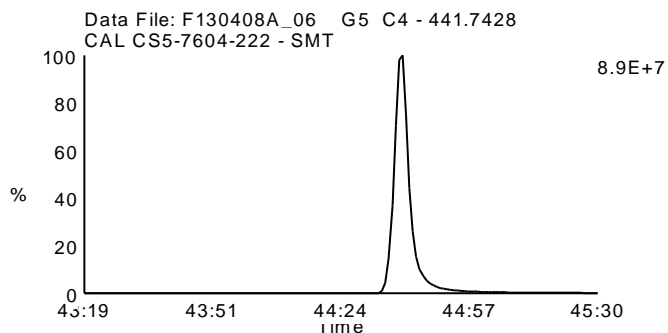
Date Acquired: 4/8/2013

Sample Description: CAL CS5-7604-222 - SMT

Lab Sample ID: CS5-7604-222

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130516B\_01

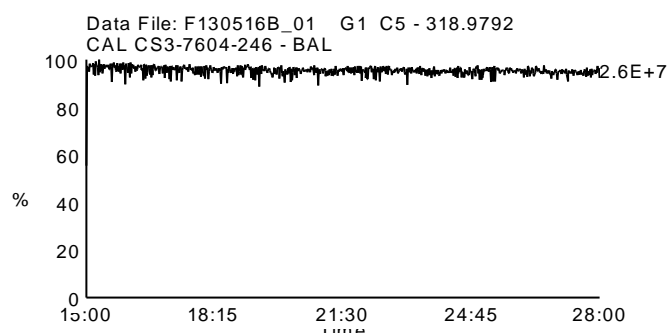
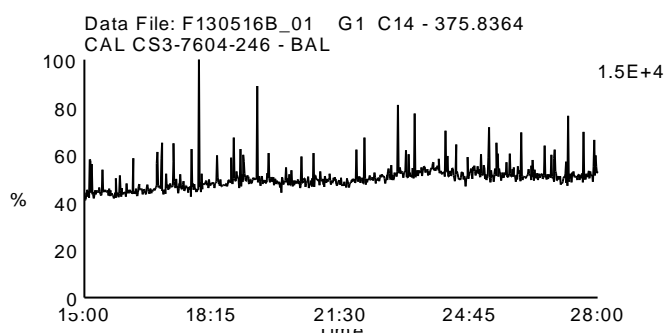
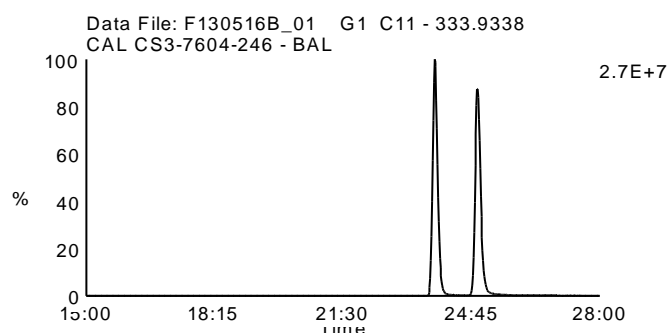
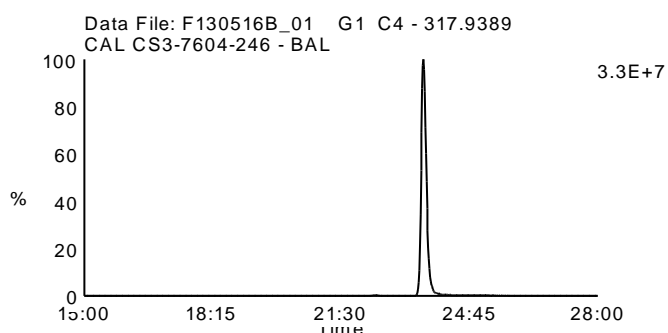
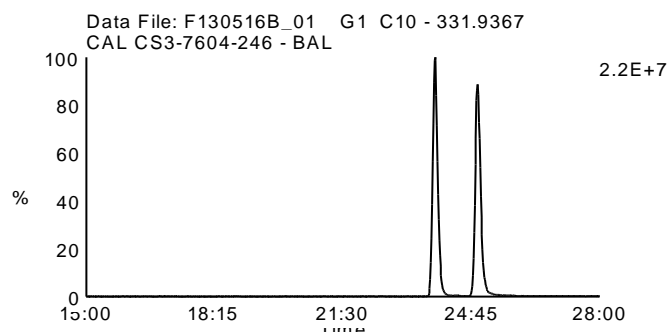
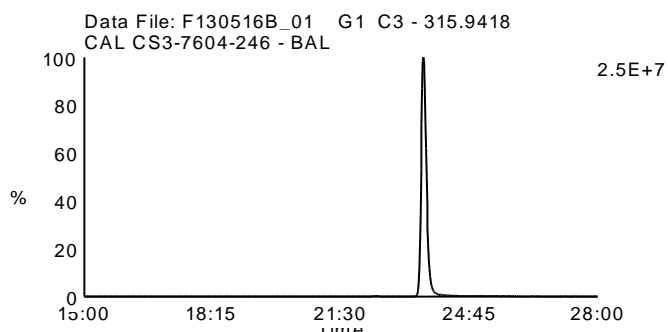
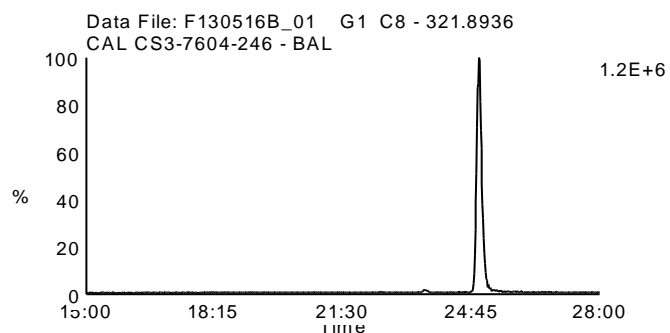
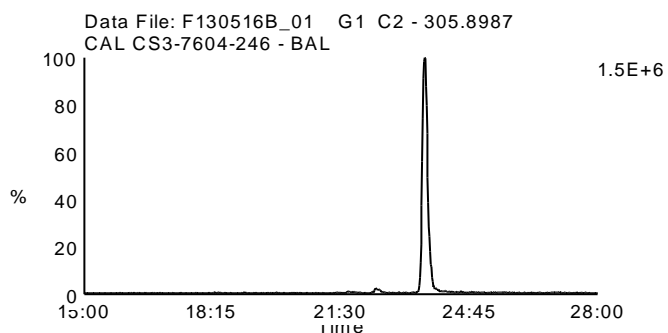
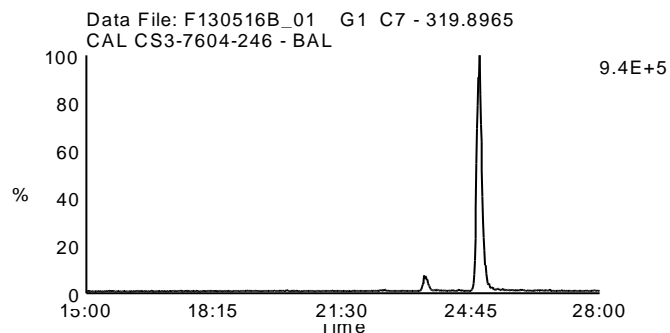
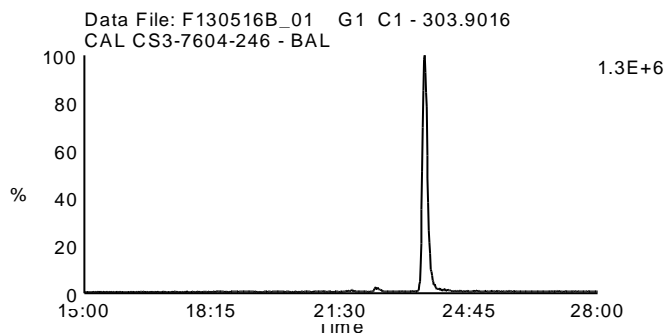
Date Acquired: 5/16/2013

Sample Description: CAL CS3-7604-246 - BAL

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130516B\_01

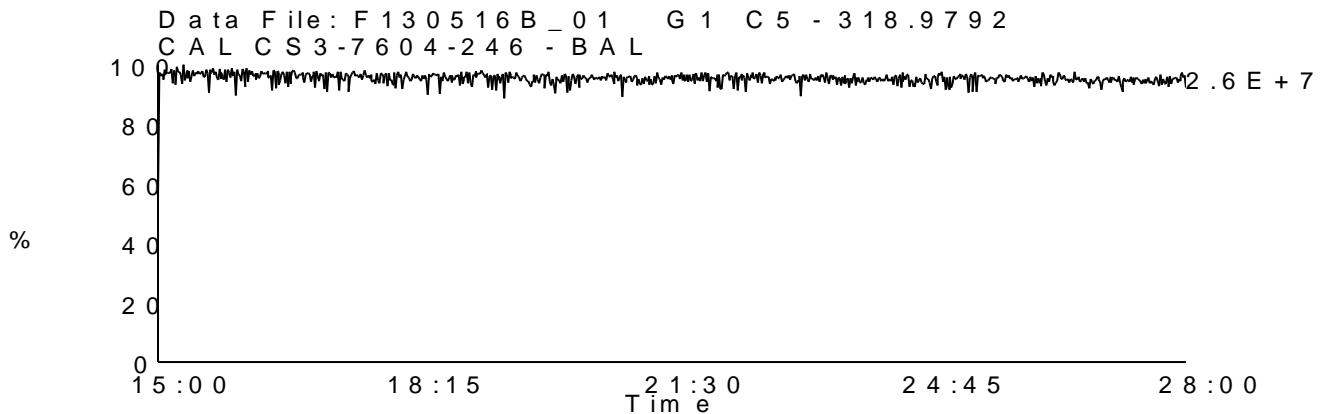
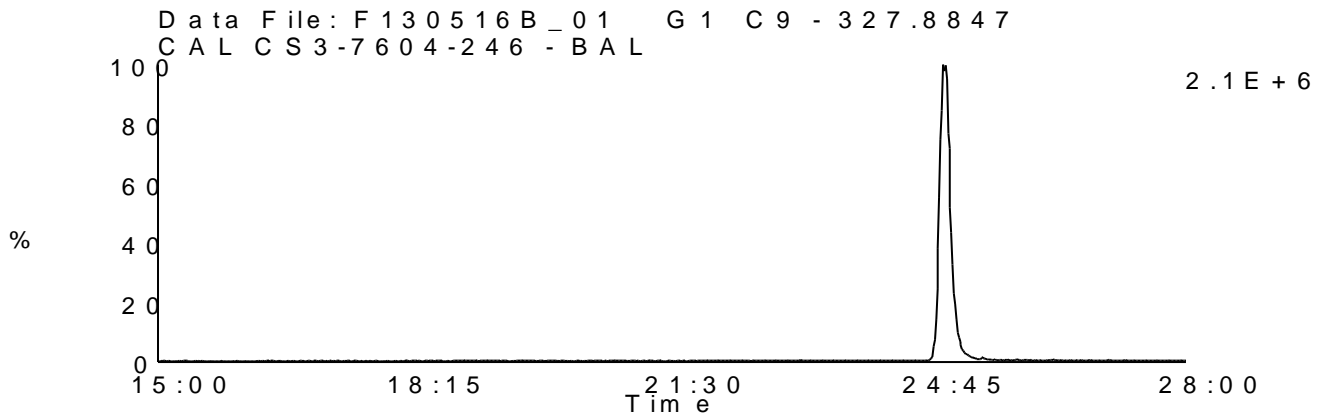
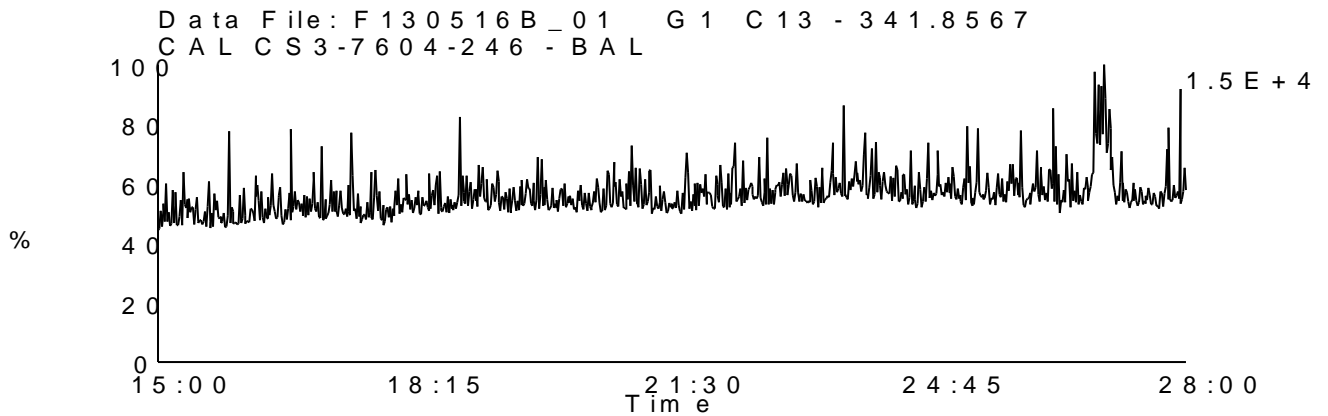
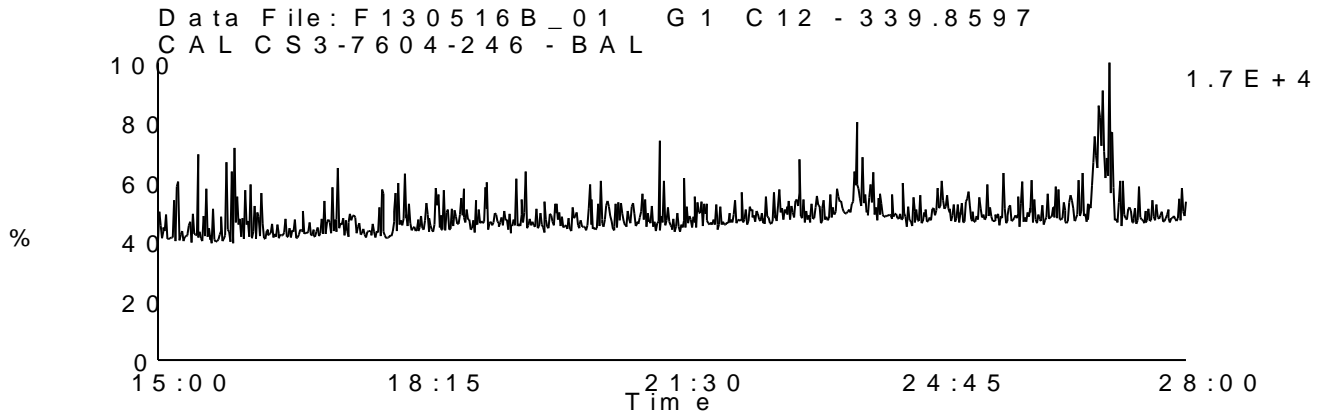
Date Acquired: 5/16/2013

Sample Description: CAL CS3-7604-246 - BAL

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516B\_01

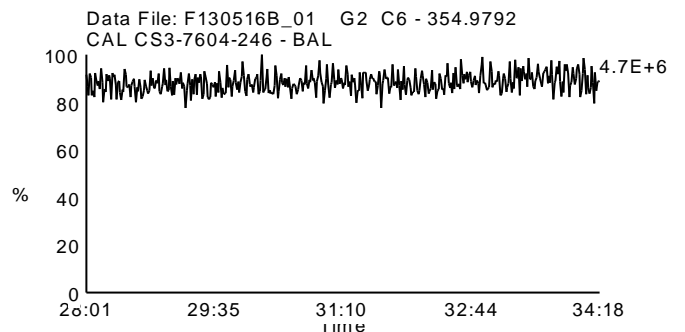
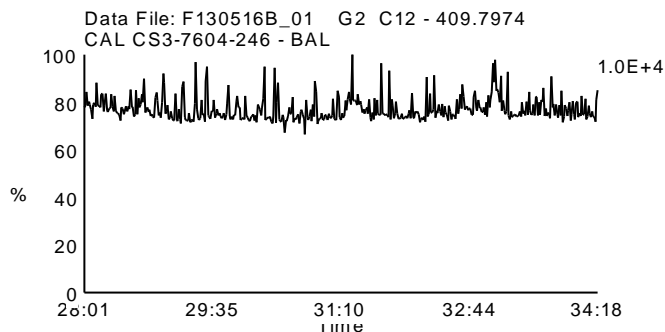
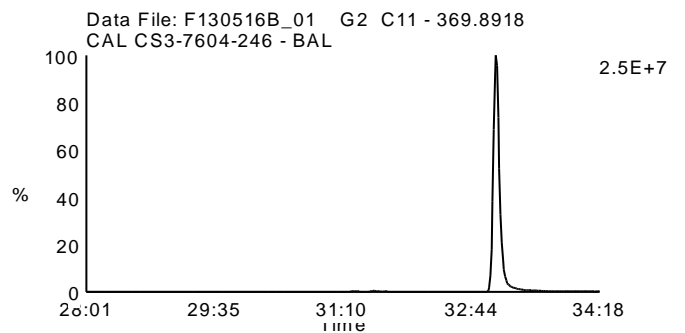
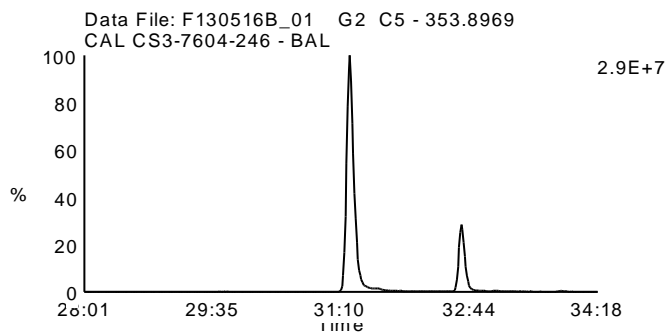
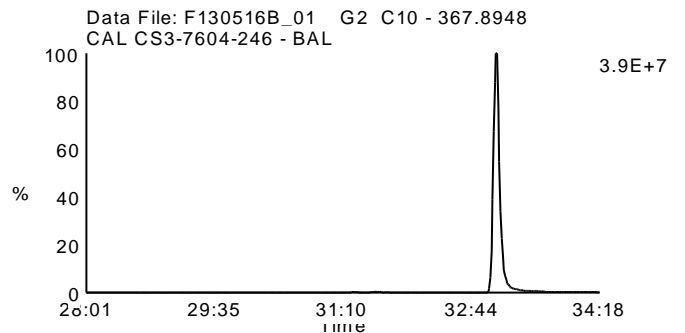
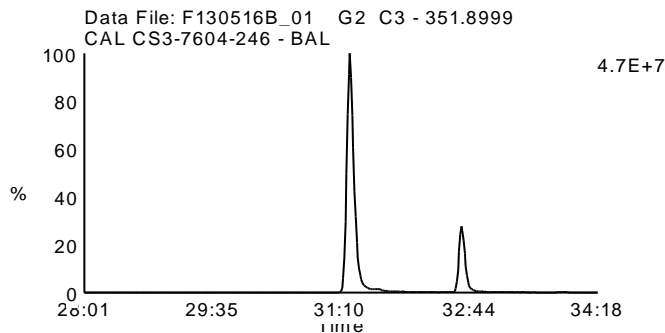
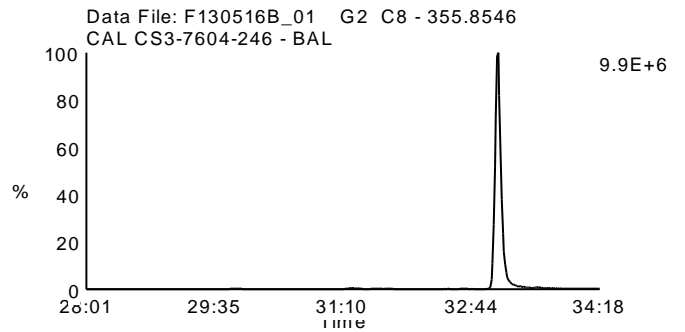
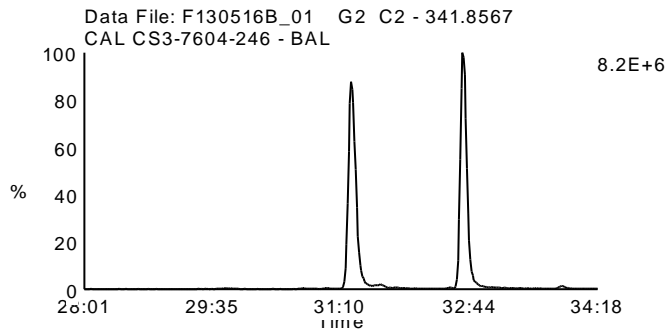
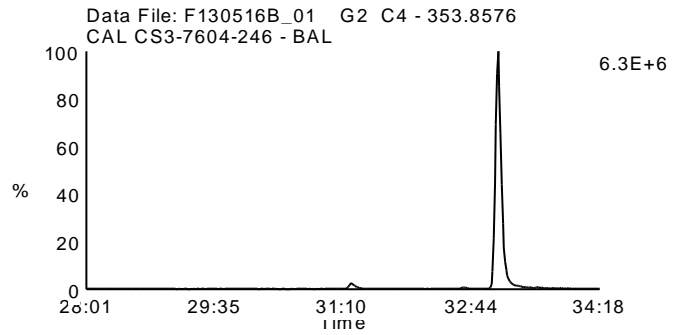
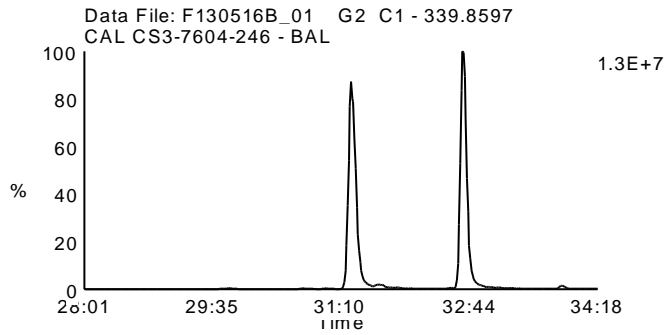
Date Acquired: 5/16/2013

Sample Description: CAL CS3-7604-246 - BAL

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130516B\_01

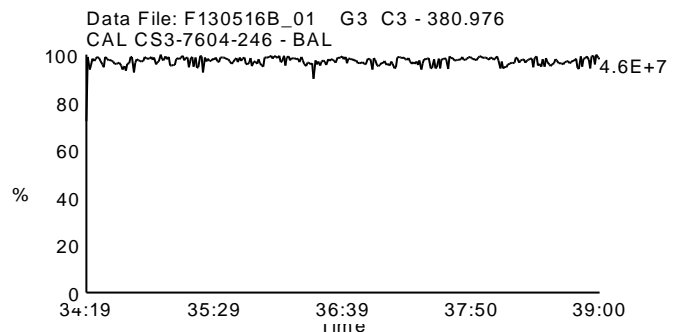
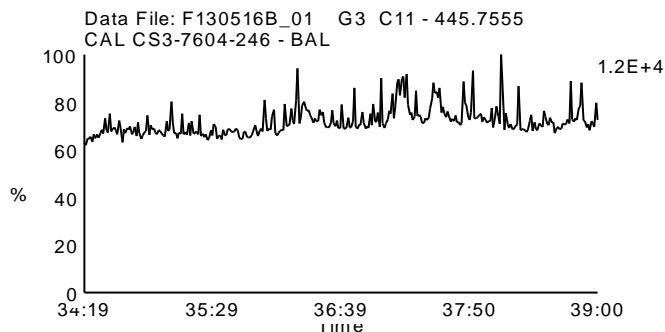
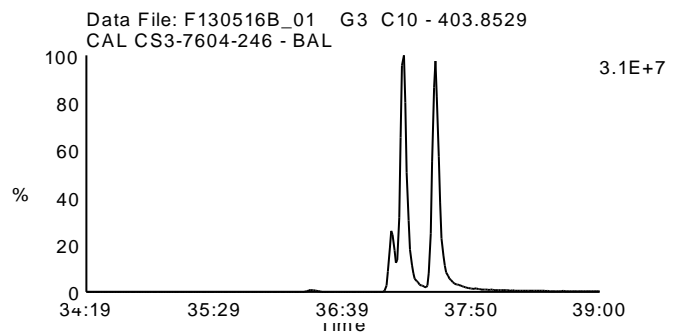
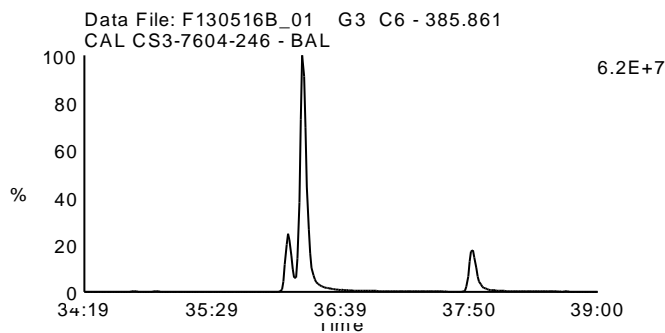
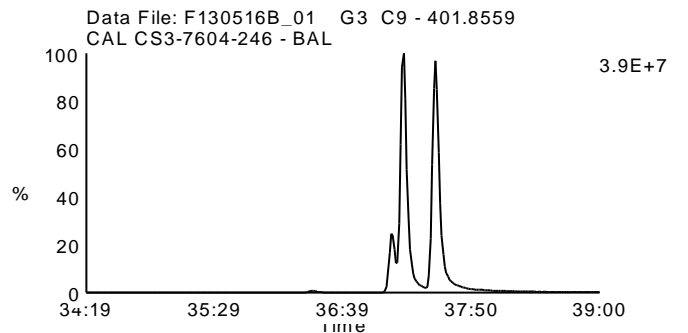
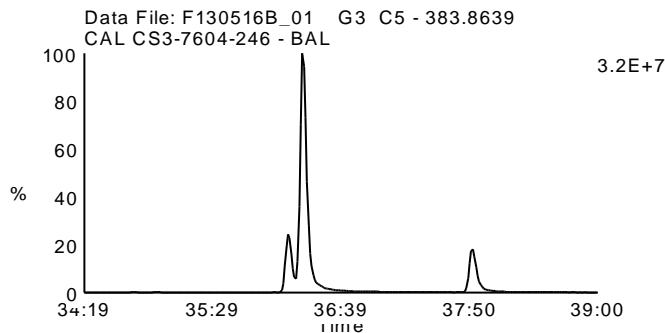
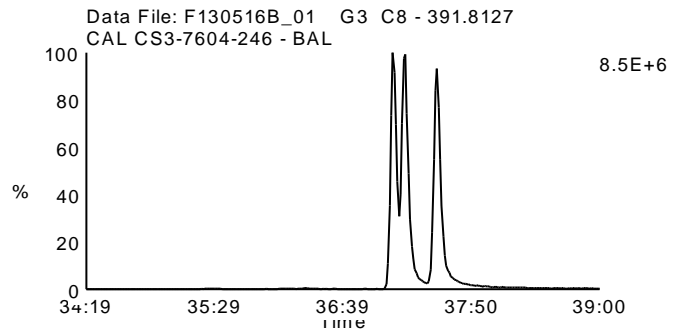
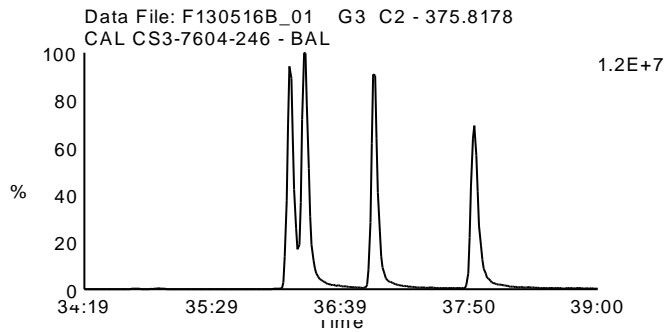
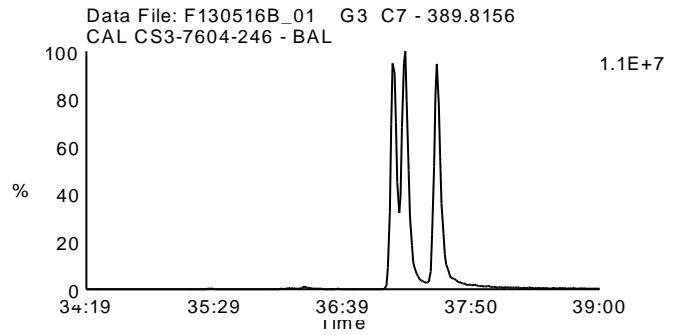
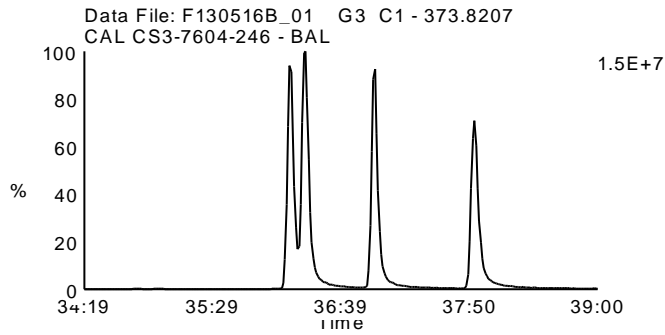
Date Acquired: 5/16/2013

Sample Description: CAL CS3-7604-246 - BAL

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516B\_01

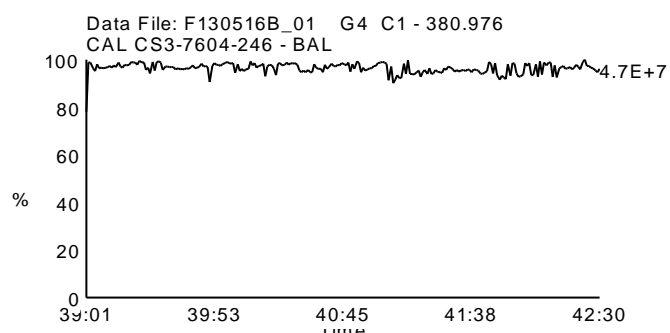
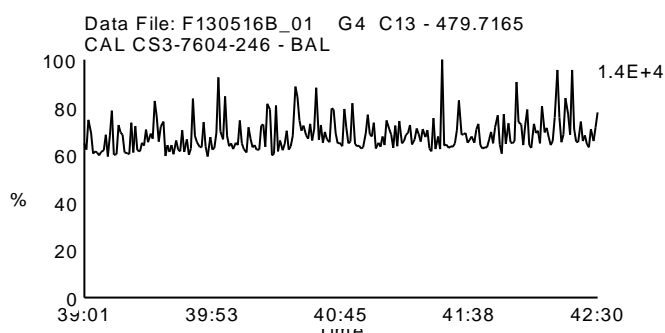
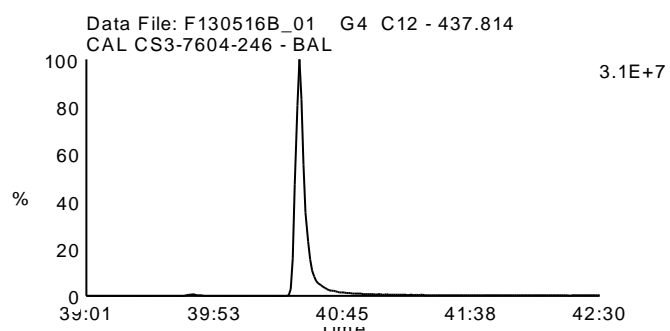
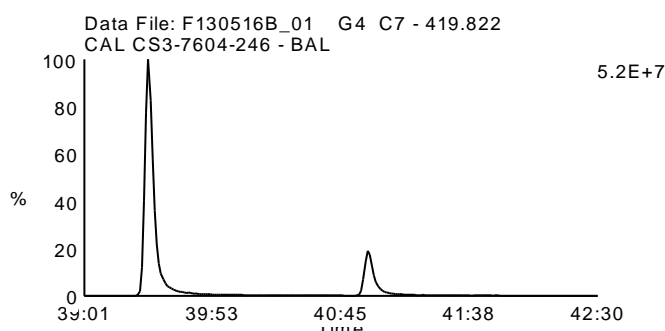
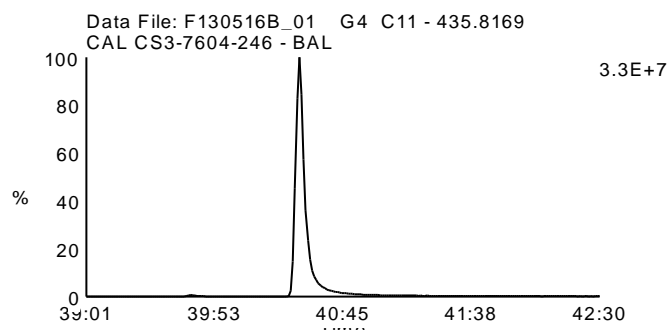
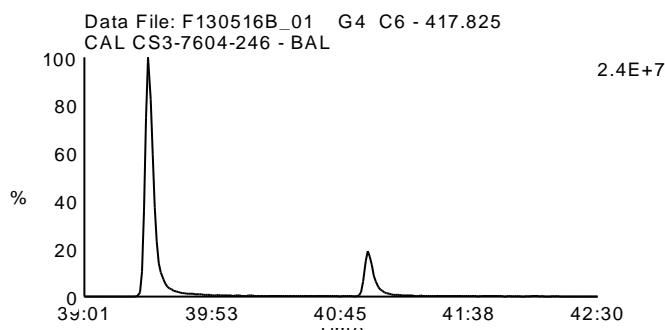
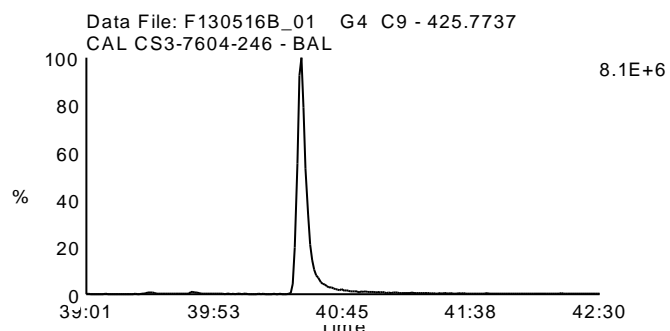
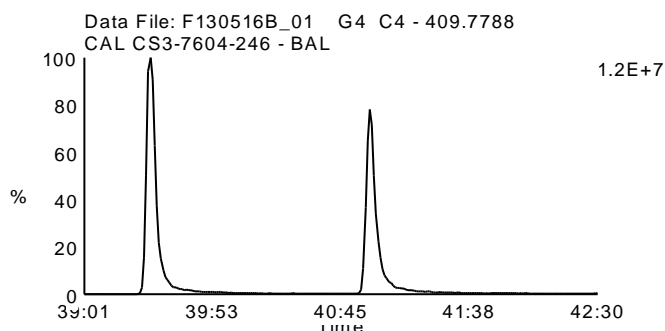
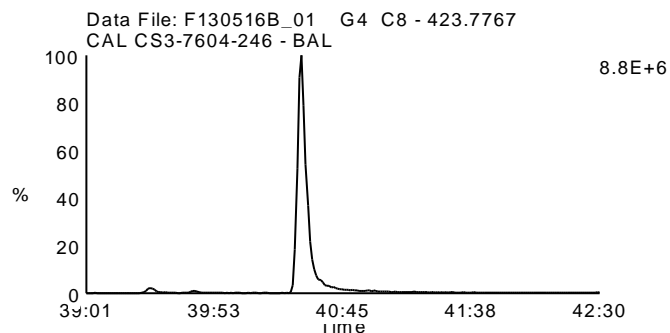
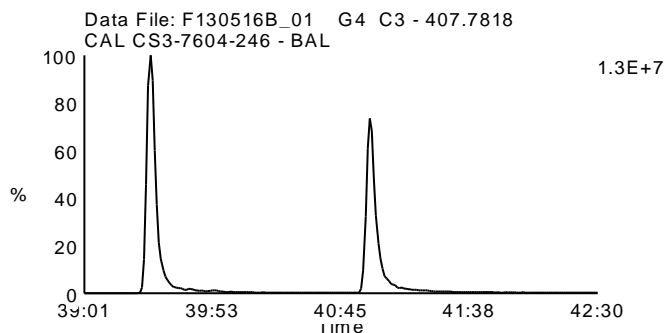
Date Acquired: 5/16/2013

Sample Description: CAL CS3-7604-246 - BAL

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130516B\_01

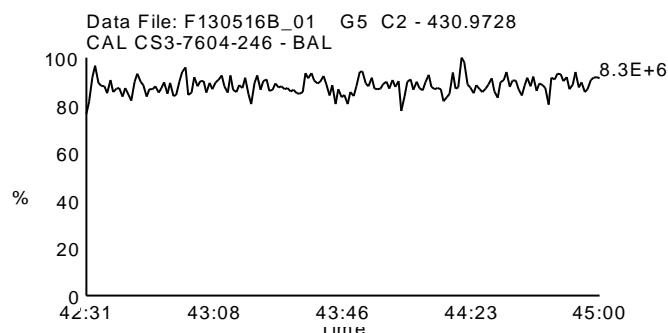
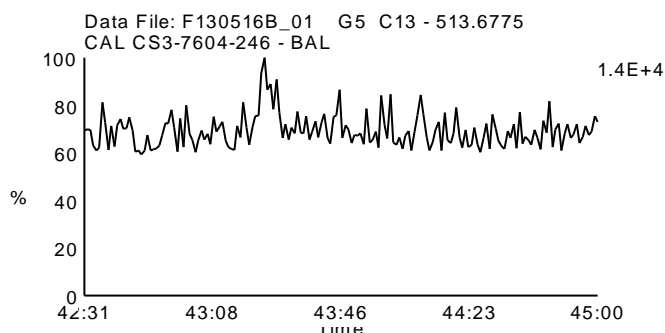
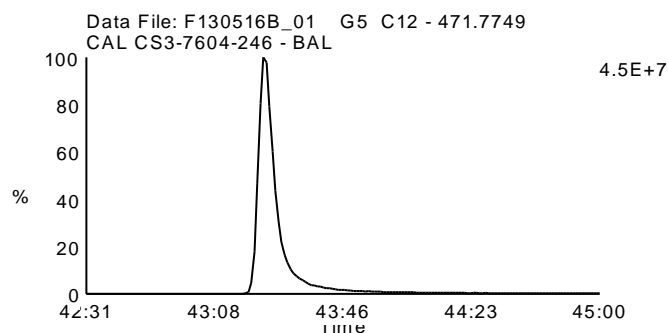
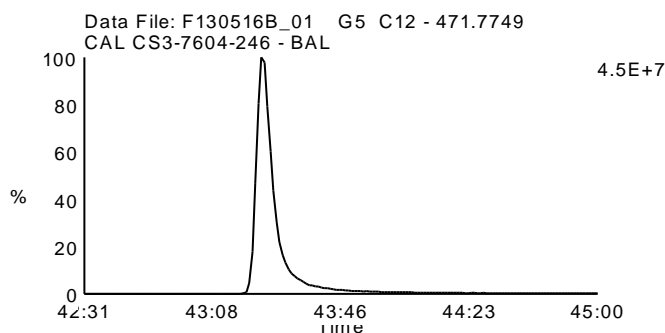
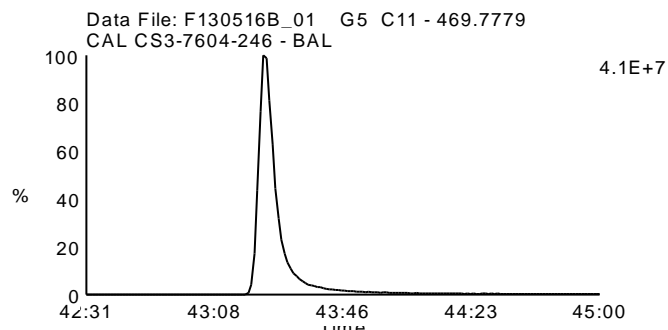
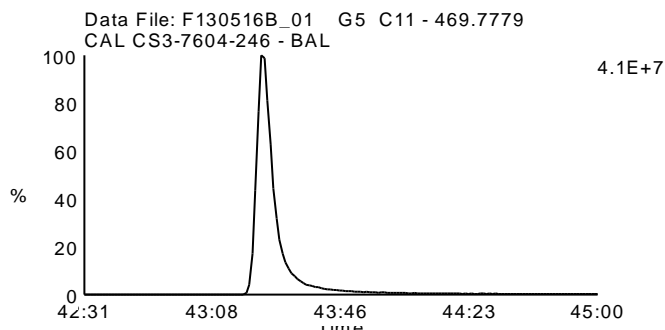
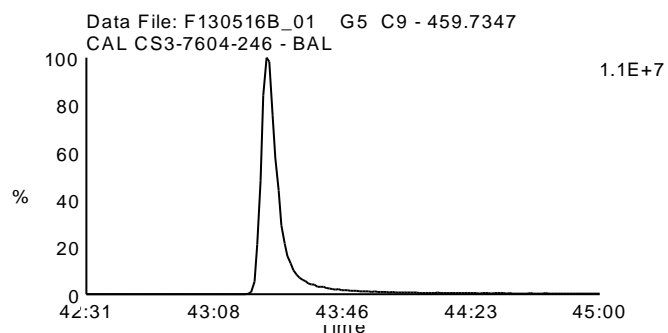
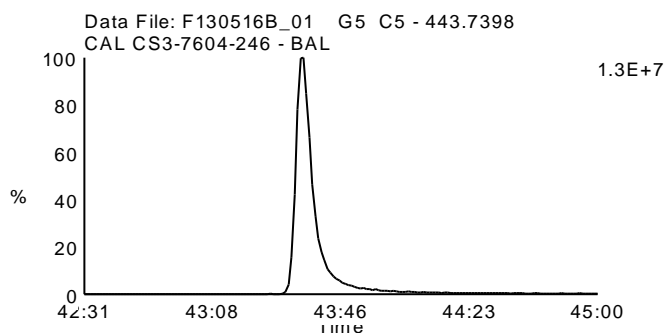
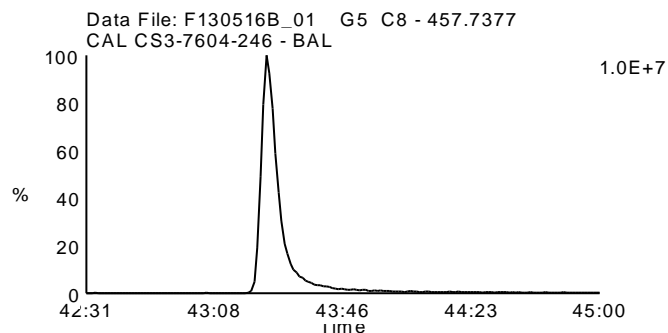
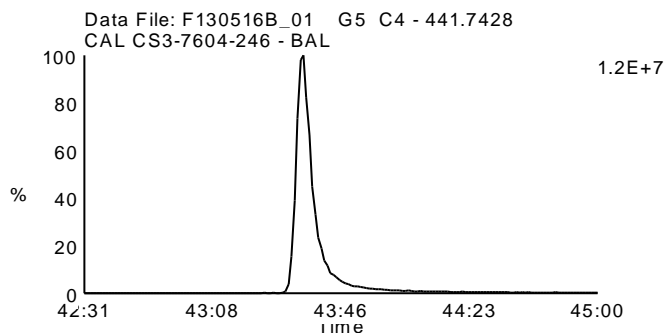
Date Acquired: 5/16/2013

Sample Description: CAL CS3-7604-246 - BAL

Lab Sample ID: CS3-7604-246

Client Sample ID:

Instrument: 10MSHR05 (F)



**PCDD/PCDF Detected Peak List**

Client ID		Injected By	SMT
Lab ID	CS1-7604-218	Instrument ID	10MSHR05 (F)
Filename	F130408A_05	GC Column ID	USC508227H
Analyzed	04/08/2013 15:19	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:36	6.56e7	8.22e7	9.04e6	1.11e7	2.710e3	1.164e3	0.80	
2,3,7,8-TCDF	23:36	2.92e5	3.90e5	4.13e4	5.13e4	7.166e2	8.406e2	0.75	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:51	4.50e7	5.61e7	6.50e6	8.22e6	3.662e3	9.561e2	0.80	
2,3,7,8-TCDD-13C	24:46	4.49e7	5.55e7	6.15e6	7.48e6	5.352e3	1.222e3	0.81	
2,3,7,8-TCDD-37Cl4	24:47	4.37e5		6.98e4		7.620e2	----		
2,3,7,8-TCDD	24:48	2.07e5	2.61e5	3.16e4	4.20e4	6.770e2	6.181e2	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	30:51	7.24e7	4.59e7	1.22e7	7.41e6	8.332e3	9.014e3	1.58	
2,3,4,7,8-PeCDF-13C	32:22	1.71e6	1.13e6	3.41e5	2.39e5	7.150e3	3.019e3	1.51	
1,2,3,7,8-PeCDF	30:53	1.64e6	1.06e6	2.82e5	1.88e5	1.133e3	1.819e3	1.55	
2,3,4,7,8-PeCDF	32:23	1.59e6	1.01e6	3.13e5	2.06e5	1.893e3	2.257e3	1.57	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:49	4.81e7	3.04e7	9.24e6	5.90e6	2.309e3	9.244e2	1.58	
1,2,3,7,8-PeCDD	32:49	6.97e5	1.05e6	1.14e4	2.19e5	1.168e3	9.202e2	0.66	

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	36:23	7.92e5	1.58e6	1.98e5	4.10e5	1.115e3	3.966e2	0.50	
1,2,3,6,7,8-HxCDF-13C	36:33	3.34e7	6.47e7	7.34e6	1.43e7	9.677e2	7.791e2	0.52	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	1.115e3	7.791e2		
1,2,3,7,8,9-HxCDF-13C	38:19	6.77e5	1.29e6	1.43e5	3.03e5	3.030e3	2.582e3	0.52	
1,2,3,4,7,8-HxCDF	36:25	1.40e6	1.03e6	3.38e5	2.20e5	1.246e3	5.956e2	1.36	
1,2,3,6,7,8-HxCDF	36:34	1.60e6	1.31e6	3.64e5	2.98e5	9.318e2	6.505e2	1.22	
2,3,4,6,7,8-HxCDF	37:18	1.28e6	1.02e6	2.94e5	2.37e5	1.693e3	2.452e3	1.25	
1,2,3,7,8,9-HxCDF	38:20	1.16e6	9.83e5	2.58e5	2.26e5	1.486e3	2.302e3	1.18	

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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	37:28	8.00e5	6.78e5	9.35e6	7.34e6	9.404e3	5.049e3	1.18	
1,2,3,6,7,8-HxCDD-13C	37:36	3.81e7	3.01e7	9.32e6	7.34e6	2.383e4	1.185e4	1.27	
1,2,3,7,8,9-HxCDD-13C	37:55	4.27e7	3.40e7	9.51e6	7.65e6	5.643e3	1.472e3	1.26	
1,2,3,4,7,8-HxCDD	37:30	8.44e5	6.77e5	2.44e5	1.72e5	1.467e3	1.301e3	1.25	
1,2,3,6,7,8-HxCDD	37:37	1.00e6	7.81e5	2.68e5	1.81e5	1.171e3	4.901e2	1.28	
1,2,3,7,8,9-HxCDD	37:56	9.82e5	8.38e5	2.39e5	1.92e5	1.171e3	5.693e2	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	40:01	2.24e7	4.90e7	5.49e6	1.19e7	1.938e3	2.908e3	0.46	
1,2,3,4,7,8,9-HpCDF-13C	41:45	4.08e5	9.62e5	9.16e4	2.22e5	1.660e3	4.674e3	0.42	
1,2,3,4,6,7,8-HpCDF	40:01	1.36e6	1.28e6	3.18e5	3.46e5	1.420e3	2.223e3	1.06	
1,2,3,4,7,8,9-HpCDF	41:46	9.98e5	9.20e5	2.36e5	2.48e5	7.054e2	2.223e3	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	41:12	2.95e7	2.78e7	7.11e6	6.51e6	9.696e3	6.952e3	1.06	
1,2,3,4,6,7,8-HpCDD	41:12	8.48e5	7.49e5	1.91e5	1.96e5	1.592e3	9.798e2	1.13	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	44:40	1.65e6	1.92e6	3.39e5	3.66e5	2.092e2	6.520e2	0.86	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	44:26	6.08e7	6.85e7	1.22e7	1.32e7	2.886e4	9.159e3	0.89	
OCDD	44:27	1.42e6	1.60e6	2.88e5	3.29e5	5.582e2	6.124e2	0.89	

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**PCDD/PCDF Detected Peak List**

Client ID		Injected By	SMT
Lab ID	CS2-7604-219	Instrument ID	10MSHR05 (F)
Filename	F130408A_04	GC Column ID	USC508227H
Analyzed	04/08/2013 14:31	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:36	6.18e7	7.89e7	8.58e6	1.09e7	----	----	0.78	
2,3,7,8-TCDF	23:38	5.51e5	7.52e5	8.65e4	1.04e5	----	----	0.73	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:52	4.45e7	5.39e7	6.22e6	7.80e6	----	----	0.83	
2,3,7,8-TCDD-13C	24:45	4.34e7	5.37e7	5.73e6	6.91e6	----	----	0.81	
2,3,7,8-TCDD-37Cl4	24:47	9.44e5		1.29e5		----	----		
2,3,7,8-TCDD	24:48	4.29e5	4.92e5	6.37e4	8.18e4	----	----	0.87	

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	30:51	6.70e7	4.28e7	1.17e7	7.44e6	----	----	1.56	
2,3,4,7,8-PeCDF-13C	32:22	3.21e6	2.02e6	6.23e5	3.93e5	----	----	1.59	
1,2,3,7,8-PeCDF	30:53	3.17e6	2.07e6	5.59e5	3.44e5	----	----	1.53	
2,3,4,7,8-PeCDF	32:23	2.99e6	1.98e6	6.07e5	3.84e5	----	----	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	32:49	4.65e7	2.96e7	8.54e6	5.61e6	----	----	1.57	
1,2,3,7,8-PeCDD	32:50	1.35e6	2.25e6	2.92e5	4.21e5	----	----	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	36:23	1.46e6	3.02e6	3.74e5	7.28e5	----	----	0.48	
1,2,3,6,7,8-HxCDF-13C	36:33	3.24e7	6.15e7	7.42e6	1.37e7	----	----	0.53	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDF-13C	38:19	1.37e6	2.56e6	2.91e5	5.38e5	----	----	0.53	
1,2,3,4,7,8-HxCDF	36:25	2.50e6	2.07e6	6.32e5	4.66e5	----	----	1.21	
1,2,3,6,7,8-HxCDF	36:34	3.22e6	2.51e6	7.27e5	5.53e5	----	----	1.28	
2,3,4,6,7,8-HxCDF	37:18	2.61e6	2.09e6	6.11e5	4.95e5	----	----	1.25	
1,2,3,7,8,9-HxCDF	38:21	2.26e6	1.86e6	5.27e5	4.03e5	----	----	1.22	

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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	37:28	1.73e6	1.34e6	4.67e5	3.65e5	----	----	1.29	
1,2,3,6,7,8-HxCDD-13C	37:36	3.82e7	3.06e7	8.88e6	7.32e6	----	----	1.25	
1,2,3,7,8,9-HxCDD-13C	37:55	4.20e7	3.27e7	9.13e6	7.16e6	----	----	1.29	
1,2,3,4,7,8-HxCDD	37:29	1.64e6	1.40e6	4.23e5	3.63e5	----	----	1.17	
1,2,3,6,7,8-HxCDD	37:37	2.09e6	1.55e6	4.64e5	3.59e5	----	----	1.34	
1,2,3,7,8,9-HxCDD	37:56	2.06e6	1.51e6	4.72e5	3.48e5	----	----	1.37	

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	40:01	2.13e7	4.85e7	5.21e6	1.14e7	----	----	0.44	
1,2,3,4,7,8,9-HpCDF-13C	41:44	9.18e5	1.97e6	2.18e5	4.82e5	----	----	0.47	
1,2,3,4,6,7,8-HpCDF	40:02	2.71e6	2.39e6	6.54e5	6.32e5	----	----	1.13	
1,2,3,4,7,8,9-HpCDF	41:46	2.08e6	2.06e6	4.80e5	4.76e5	----	----	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	41:11	2.98e7	2.68e7	6.99e6	6.28e6	----	----	1.11	
1,2,3,4,6,7,8-HpCDD	41:12	1.63e6	1.51e6	4.05e5	3.46e5	----	----	1.08	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	44:40	3.38e6	3.86e6	6.84e5	7.29e5	----	----	0.88	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	44:26	6.02e7	6.46e7	1.17e7	1.24e7	----	----	0.93	
OCDD	44:27	2.81e6	3.39e6	6.08e5	6.81e5	----	----	0.83	

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**PCDD/PCDF Detected Peak List**

Client ID		Injected By	SMT
Lab ID	CS3-7604-246	Instrument ID	10MSHR05 (F)
Filename	F130408A_03	GC Column ID	USC508227H
Analyzed	04/08/2013 13:45	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:36	1.09e8	1.39e8	1.50e7	1.93e7	----	----	0.78	
2,3,7,8-TCDF	23:38	5.10e6	6.69e6	7.13e5	9.90e5	----	----	0.76	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:51	7.93e7	9.67e7	1.09e7	1.29e7	----	----	0.82	
2,3,7,8-TCDD-13C	24:45	7.90e7	9.93e7	1.06e7	1.32e7	----	----	0.80	
2,3,7,8-TCDD-37Cl4	24:47	9.08e6		1.29e6		----	----		
2,3,7,8-TCDD	24:47	3.86e6	4.93e6	4.97e5	6.62e5	----	----	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	30:51	1.33e8	8.54e7	2.25e7	1.41e7	----	----	1.55	
2,3,4,7,8-PeCDF-13C	32:22	3.01e7	1.91e7	5.94e6	3.71e6	----	----	1.58	
1,2,3,7,8-PeCDF	30:53	3.21e7	2.04e7	5.31e6	3.37e6	----	----	1.57	
2,3,4,7,8-PeCDF	32:24	3.00e7	1.94e7	5.64e6	3.72e6	----	----	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	32:49	8.79e7	5.64e7	1.70e7	1.09e7	----	----	1.56	
1,2,3,7,8-PeCDD	32:50	1.34e7	2.16e7	2.73e6	4.39e6	----	----	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	36:24	1.38e7	2.68e7	3.23e6	6.16e6	----	----	0.51	
1,2,3,6,7,8-HxCDF-13C	36:33	6.73e7	1.28e8	1.41e7	2.71e7	----	----	0.53	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDF-13C	38:20	1.29e7	2.50e7	2.59e6	5.06e6	----	----	0.52	
1,2,3,4,7,8-HxCDF	36:25	2.53e7	2.05e7	5.55e6	4.65e6	----	----	1.24	
1,2,3,6,7,8-HxCDF	36:34	3.38e7	2.70e7	7.38e6	5.83e6	----	----	1.25	
2,3,4,6,7,8-HxCDF	37:18	2.59e7	2.02e7	5.95e6	4.56e6	----	----	1.28	
1,2,3,7,8,9-HxCDF	38:21	2.35e7	1.83e7	4.87e6	3.75e6	----	----	1.28	

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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	37:29	1.67e7	1.24e7	4.11e6	3.35e6	----	----	1.35	
1,2,3,6,7,8-HxCDD-13C	37:36	7.39e7	5.98e7	1.73e7	1.41e7	----	----	1.24	
1,2,3,7,8,9-HxCDD-13C	37:55	8.14e7	6.39e7	1.67e7	1.35e7	----	----	1.27	
1,2,3,4,7,8-HxCDD	37:30	1.75e7	1.36e7	4.47e6	3.58e6	----	----	1.28	
1,2,3,6,7,8-HxCDD	37:37	2.05e7	1.63e7	4.61e6	3.74e6	----	----	1.26	
1,2,3,7,8,9-HxCDD	37:56	2.08e7	1.68e7	4.34e6	3.53e6	----	----	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	40:01	4.31e7	9.62e7	1.09e7	2.33e7	----	----	0.45	
1,2,3,4,7,8,9-HpCDF-13C	41:45	9.42e6	2.00e7	2.12e6	4.38e6	----	----	0.47	
1,2,3,4,6,7,8-HpCDF	40:02	2.63e7	2.58e7	6.68e6	6.39e6	----	----	1.02	
1,2,3,4,7,8,9-HpCDF	41:46	2.17e7	2.04e7	4.83e6	4.64e6	----	----	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	41:11	5.80e7	5.46e7	1.35e7	1.30e7	----	----	1.06	
1,2,3,4,6,7,8-HpCDD	41:12	1.63e7	1.57e7	3.88e6	3.75e6	----	----	1.04	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	44:40	3.67e7	4.01e7	6.73e6	7.45e6	----	----	0.92	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	44:26	1.17e8	1.30e8	2.29e7	2.52e7	----	----	0.90	
OCDD	44:27	2.96e7	3.22e7	5.83e6	6.71e6	----	----	0.92	

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**PCDD/PCDF Detected Peak List**

Client ID		Injected By	SMT
Lab ID	CS4-7604-221	Instrument ID	10MSHR05 (F)
Filename	F130408A_07	GC Column ID	USC508227H
Analyzed	04/08/2013 16:53	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:34	5.70e7	7.23e7	8.07e6	1.02e7	----	----	0.79	
2,3,7,8-TCDF	23:37	2.72e7	3.55e7	4.02e6	5.05e6	----	----	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	23:50	3.92e7	4.94e7	5.76e6	7.20e6	----	----	0.79	
2,3,7,8-TCDD-13C	24:44	4.10e7	5.02e7	5.53e6	6.71e6	----	----	0.82	
2,3,7,8-TCDD-37Cl4	24:47	4.72e7		6.19e6		----	----		
2,3,7,8-TCDD	24:46	2.05e7	2.62e7	2.80e6	3.64e6	----	----	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	30:50	6.84e7	4.38e7	1.18e7	7.40e6	----	----	1.56	
2,3,4,7,8-PeCDF-13C	32:21	1.66e8	1.05e8	3.23e7	2.07e7	----	----	1.58	
1,2,3,7,8-PeCDF	30:51	1.62e8	1.04e8	2.83e7	1.77e7	----	----	1.56	
2,3,4,7,8-PeCDF	32:22	1.69e8	1.11e8	3.40e7	2.16e7	----	----	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	32:48	4.55e7	3.03e7	9.12e6	5.92e6	----	----	1.50	
1,2,3,7,8-PeCDD	32:49	7.02e7	1.14e8	1.41e7	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	36:23	7.78e7	1.47e8	1.87e7	3.52e7	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	36:33	3.71e7	7.13e7	8.37e6	1.58e7	----	----	0.52	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDF-13C	38:19	7.23e7	1.39e8	1.68e7	3.18e7	----	----	0.52	
1,2,3,4,7,8-HxCDF	36:24	1.49e8	1.18e8	3.73e7	2.93e7	----	----	1.26	
1,2,3,6,7,8-HxCDF	36:33	1.64e8	1.32e8	3.80e7	3.01e7	----	----	1.24	
2,3,4,6,7,8-HxCDF	37:18	1.40e8	1.12e8	3.30e7	2.64e7	----	----	1.25	
1,2,3,7,8,9-HxCDF	38:20	1.36e8	1.05e8	3.24e7	2.54e7	----	----	1.29	

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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	37:28	9.20e7	7.06e7	2.35e7	1.85e7	----	----	1.30	
1,2,3,6,7,8-HxCDD-13C	37:35	4.18e7	3.56e7	9.96e6	8.06e6	----	----	1.17	
1,2,3,7,8,9-HxCDD-13C	37:55	4.07e7	3.25e7	9.19e6	7.35e6	----	----	1.25	
1,2,3,4,7,8-HxCDD	37:28	9.95e7	7.93e7	2.54e7	1.99e7	----	----	1.25	
1,2,3,6,7,8-HxCDD	37:36	1.05e8	8.38e7	2.51e7	2.03e7	----	----	1.25	
1,2,3,7,8,9-HxCDD	37:55	1.07e8	8.56e7	2.47e7	1.96e7	----	----	1.25	

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	40:00	2.09e7	4.64e7	5.14e6	1.11e7	----	----	0.45	
1,2,3,4,7,8,9-HpCDF-13C	41:44	5.20e7	1.14e8	1.28e7	2.80e7	----	----	0.46	
1,2,3,4,6,7,8-HpCDF	40:01	1.34e8	1.28e8	3.50e7	3.21e7	----	----	1.05	
1,2,3,4,7,8,9-HpCDF	41:45	1.20e8	1.17e8	2.84e7	2.80e7	----	----	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	41:11	2.86e7	2.72e7	7.15e6	7.03e6	----	----	1.05	
1,2,3,4,6,7,8-HpCDD	41:11	8.06e7	7.47e7	2.09e7	1.93e7	----	----	1.08	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	44:39	1.96e8	2.17e8	4.15e7	4.64e7	----	----	0.90	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	44:25	6.07e7	6.48e7	1.23e7	1.32e7	----	----	0.94	
OCDD	44:26	1.56e8	1.74e8	3.18e7	3.53e7	----	----	0.90	

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**PCDD/PCDF Detected Peak List**

Client ID		Injected By	SMT
Lab ID	CS5-7604-222	Instrument ID	10MSHR05 (F)
Filename	F130408A_06	GC Column ID	USC508227H
Analyzed	04/08/2013 16:06	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:35	5.64e7	7.23e7	7.93e6	1.01e7	----	----	0.78	
2,3,7,8-TCDF	23:37	5.31e7	6.95e7	7.43e6	9.61e6	----	----	0.76	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:50	3.92e7	4.85e7	5.69e6	7.09e6	----	----	0.81	
2,3,7,8-TCDD-13C	24:45	3.98e7	4.95e7	5.31e6	6.70e6	----	----	0.80	
2,3,7,8-TCDD-37Cl4	24:47	9.29e7		1.26e7		----	----		
2,3,7,8-TCDD	24:47	4.00e7	5.17e7	5.43e6	7.07e6	----	----	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	30:50	6.95e7	4.47e7	1.21e7	7.82e6	----	----	1.55	
2,3,4,7,8-PeCDF-13C	32:21	3.37e8	2.12e8	7.05e7	4.34e7	----	----	1.59	
1,2,3,7,8-PeCDF	30:52	3.21e8	2.12e8	5.78e7	3.74e7	----	----	1.51	
2,3,4,7,8-PeCDF	32:22	3.52e8	2.28e8	7.29e7	4.65e7	----	----	1.55	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:48	4.70e7	2.98e7	9.57e6	6.06e6	----	----	1.58	
1,2,3,7,8-PeCDD	32:49	1.40e8	2.26e8	2.83e7	4.47e7	----	----	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	36:23	1.60e8	3.09e8	3.85e7	7.47e7	----	----	0.52	
1,2,3,6,7,8-HxCDF-13C	36:33	4.29e7	8.15e7	9.07e6	1.74e7	----	----	0.53	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDF-13C	38:19	1.49e8	2.86e8	3.54e7	6.62e7	----	----	0.52	
1,2,3,4,7,8-HxCDF	36:24	3.08e8	2.46e8	7.92e7	6.33e7	----	----	1.25	
1,2,3,6,7,8-HxCDF	36:33	3.40e8	2.67e8	8.15e7	6.51e7	----	----	1.27	
2,3,4,6,7,8-HxCDF	37:18	2.90e8	2.29e8	6.97e7	5.56e7	----	----	1.27	
1,2,3,7,8,9-HxCDF	38:20	2.74e8	2.22e8	6.63e7	5.30e7	----	----	1.24	

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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	37:28	1.90e8	1.53e8	5.02e7	4.09e7	----	----	1.24	
1,2,3,6,7,8-HxCDD-13C	37:35	4.79e7	3.78e7	1.11e7	8.94e6	----	----	1.27	
1,2,3,7,8,9-HxCDD-13C	37:55	4.26e7	3.40e7	9.74e6	7.60e6	----	----	1.25	
1,2,3,4,7,8-HxCDD	37:29	2.07e8	1.67e8	5.62e7	4.49e7	----	----	1.24	
1,2,3,6,7,8-HxCDD	37:36	2.13e8	1.70e8	5.18e7	4.18e7	----	----	1.25	
1,2,3,7,8,9-HxCDD	37:55	2.15e8	1.73e8	4.96e7	4.04e7	----	----	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	40:00	2.18e7	4.83e7	6.09e6	1.33e7	----	----	0.45	
1,2,3,4,7,8,9-HpCDF-13C	41:45	1.07e8	2.35e8	2.80e7	6.11e7	----	----	0.45	
1,2,3,4,6,7,8-HpCDF	40:00	2.72e8	2.66e8	7.11e7	6.83e7	----	----	1.02	
1,2,3,4,7,8,9-HpCDF	41:45	2.49e8	2.46e8	6.19e7	6.08e7	----	----	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	41:11	3.00e7	2.81e7	7.80e6	7.17e6	----	----	1.07	
1,2,3,4,6,7,8-HpCDD	41:12	1.66e8	1.56e8	4.28e7	4.22e7	----	----	1.07	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	44:40	4.16e8	4.51e8	8.88e7	9.77e7	----	----	0.92	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	44:26	6.26e7	6.87e7	1.35e7	1.48e7	----	----	0.91	
OCDD	44:26	3.15e8	3.60e8	6.65e7	7.70e7	----	----	0.87	

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**PCDD/PCDF Detected Peak List**

Client ID		Injected By	BAL
Lab ID	CS3-7604-246	Instrument ID	10MSHR05 (F)
Filename	F130516B_01	GC Column ID	USC508227H
Analyzed	05/16/2013 19:24	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:36	2.34e8	2.95e8	2.53e7	3.26e7	----	----	0.79	
2,3,7,8-TCDF	23:38	1.13e7	1.45e7	1.26e6	1.51e6	----	----	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	23:51	1.94e8	2.44e8	2.18e7	2.75e7	----	----	0.80	
2,3,7,8-TCDD-13C	24:56	1.89e8	2.39e8	1.94e7	2.40e7	----	----	0.79	
2,3,7,8-TCDD-37Cl4	24:57	2.10e7		2.12e6		----	----		
2,3,7,8-TCDD	24:58	8.45e6	1.12e7	9.31e5	1.22e6	----	----	0.75	

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:17	2.93e8	1.81e8	4.71e7	2.93e7	----	----	1.62	
2,3,4,7,8-PeCDF-13C	32:38	7.15e7	4.46e7	1.30e7	8.31e6	----	----	1.60	
1,2,3,7,8-PeCDF	31:18	7.30e7	4.61e7	1.14e7	7.20e6	----	----	1.58	
2,3,4,7,8-PeCDF	32:39	7.30e7	4.75e7	1.30e7	8.21e6	----	----	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	33:02	2.18e8	1.38e8	3.89e7	2.54e7	----	----	1.58	
1,2,3,7,8-PeCDD	33:04	3.22e7	5.18e7	6.25e6	9.90e6	----	----	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	36:11	3.32e7	5.89e7	7.88e6	1.51e7	----	----	0.56	
1,2,3,6,7,8-HxCDF-13C	36:19	1.51e8	2.91e8	3.23e7	6.19e7	----	----	0.52	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDF-13C	37:52	3.14e7	5.67e7	5.80e6	1.08e7	----	----	0.55	
1,2,3,4,7,8-HxCDF	36:12	5.94e7	4.80e7	1.45e7	1.17e7	----	----	1.24	
1,2,3,6,7,8-HxCDF	36:20	7.91e7	6.18e7	1.54e7	1.25e7	----	----	1.28	
2,3,4,6,7,8-HxCDF	36:59	6.26e7	5.18e7	1.43e7	1.13e7	----	----	1.21	
1,2,3,7,8,9-HxCDF	37:53	5.62e7	4.50e7	1.09e7	8.62e6	----	----	1.25	

**REPORT OF LABORATORY ANALYSIS**

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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	37:06	3.44e7	2.81e7	9.68e6	8.02e6	----	----	1.23	
1,2,3,6,7,8-HxCDD-13C	37:13	1.81e8	1.45e8	3.93e7	3.11e7	----	----	1.25	
1,2,3,7,8,9-HxCDD-13C	37:31	1.93e8	1.53e8	3.81e7	3.04e7	----	----	1.27	
1,2,3,4,7,8-HxCDD	37:07	4.03e7	3.29e7	1.02e7	8.53e6	----	----	1.22	
1,2,3,6,7,8-HxCDD	37:14	5.10e7	3.99e7	1.08e7	8.48e6	----	----	1.28	
1,2,3,7,8,9-HxCDD	37:31	4.99e7	3.98e7	1.02e7	7.95e6	----	----	1.25	

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	39:27	1.02e8	2.27e8	2.36e7	5.15e7	----	----	0.45	
1,2,3,4,7,8,9-HpCDF-13C	40:57	2.17e7	4.72e7	4.47e6	9.79e6	----	----	0.46	
1,2,3,4,6,7,8-HpCDF	39:28	5.85e7	5.63e7	1.28e7	1.18e7	----	----	1.04	
1,2,3,4,7,8,9-HpCDF	40:58	4.74e7	4.55e7	9.40e6	9.20e6	----	----	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	40:28	1.52e8	1.42e8	3.26e7	3.10e7	----	----	1.07	
1,2,3,4,6,7,8-HpCDD	40:29	4.07e7	3.79e7	8.76e6	8.10e6	----	----	1.07	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	43:35	7.23e7	7.85e7	1.19e7	1.27e7	----	----	0.92	

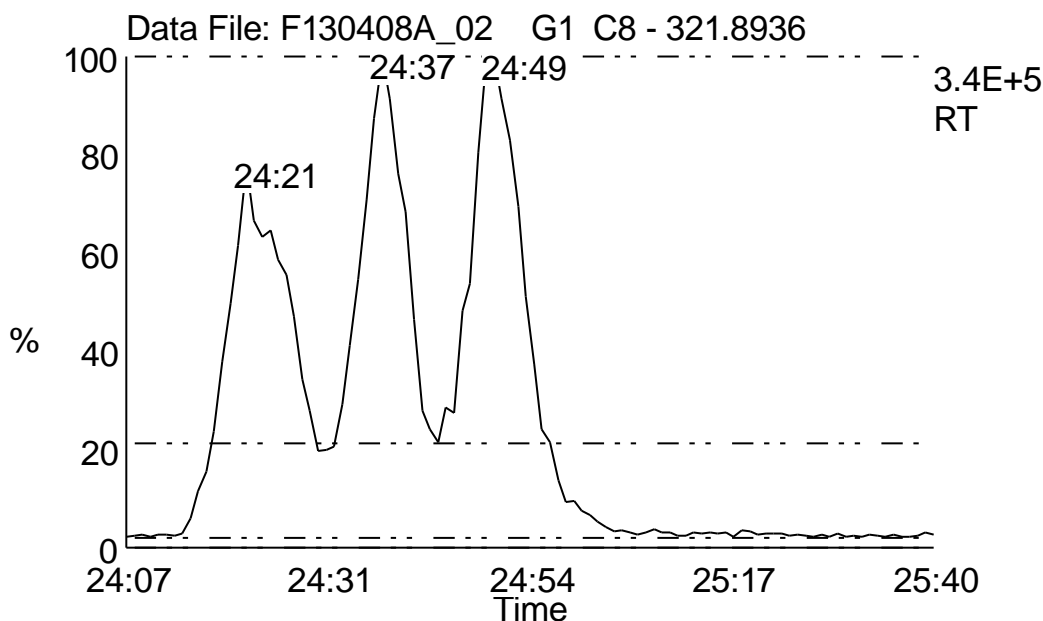
Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:23	2.53e8	2.79e8	4.10e7	4.54e7	----	----	0.91	
OCDD	43:24	5.89e7	6.75e7	9.97e6	1.12e7	----	----	0.87	

## REPORT OF LABORATORY ANALYSIS

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

Lab Sample ID	CS3/CPM-7604-254	Injected By	SMT
Raw Data File	F130408A_02	Instrument ID	10MSHR05 (F)
Date Analyzed	4/8/2013	GC Column Type	DB-5MS 0.25 uM
Time Analyzed	12:46	GC Column S/N	USC508227H
<b>Resolution</b>	<b>19.8%</b>		



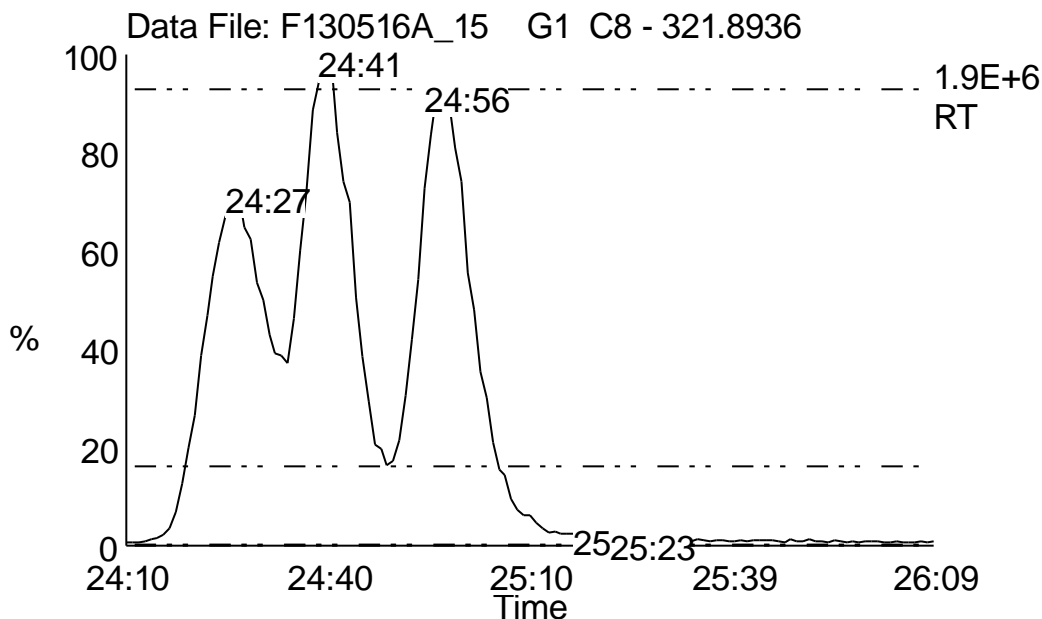
Group	Mass	First Eluter	Last Eluter
TCDF	305.8987	18:55	26:46
PeCDF	341.8567	26:32	33:48
HxCDF	373.8207	34:46	38:21
HpCDF	407.7818	40:01	41:47
OCDF	441.7428	44:41	0:00
TCDD	321.8936	20:30	26:22
PeCDD	357.8517	29:16	33:25
HxCDD	391.8127	35:32	37:56
HpCDD	425.7737	40:21	41:13
OCDD	459.7347	44:28	0:00
1234-TCDD-13C(RS)	331.9367	23:53	0:00
123789-HxCDD-13C(RS)	401.8559	37:55	0:00

**REPORT OF LABORATORY ANALYSIS**

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

Lab Sample ID	CS3/CPM-7604-264	Injected By	SMT
Raw Data File	F130516A_15	Instrument ID	10MSHR05 (F)
Date Analyzed	5/16/2013	GC Column Type	DB-5MS 0.25 uM
Time Analyzed	18:32	GC Column S/N	USC508227H
<b>Resolution</b>	<b>17.0%</b>		



Group	Mass	First Eluter	Last Eluter
TCDF	305.8987	18:23	26:59
PeCDF	341.8567	26:55	33:51
HxCDF	373.8207	34:46	37:52
HpCDF	407.7818	39:28	40:56
OCDF	441.7428	43:34	0:00
TCDD	321.8936	20:10	26:37
PeCDD	357.8517	29:49	33:32
HxCDD	391.8127	35:26	37:30
HpCDD	425.7737	39:44	40:28
OCDD	459.7347	43:23	0:00
1234-TCDD-13C(RS)	331.9367	23:50	0:00
123789-HxCDD-13C(RS)	401.8559	37:29	0:00

**REPORT OF LABORATORY ANALYSIS**

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Homologue Group: Tetras

Data File Name: F130408A\_02

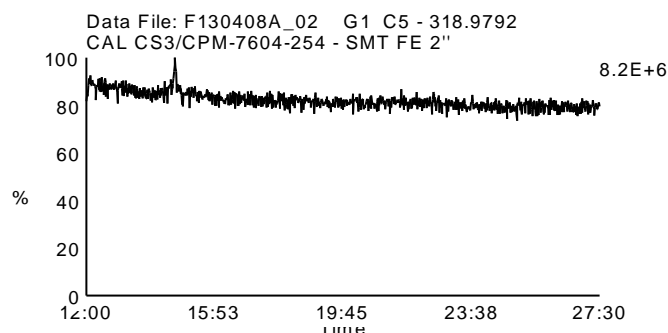
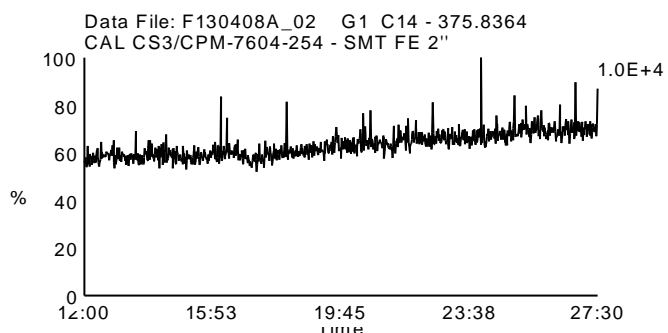
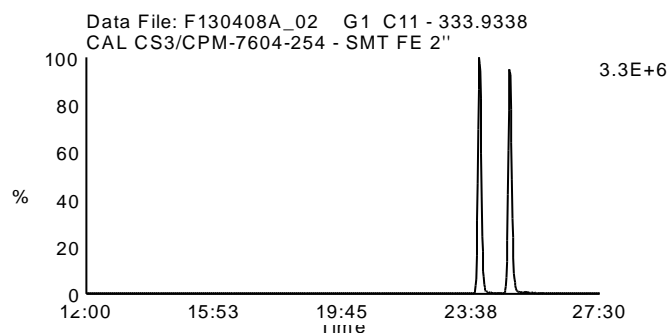
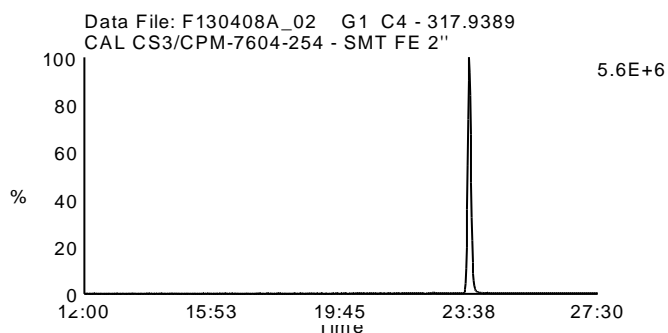
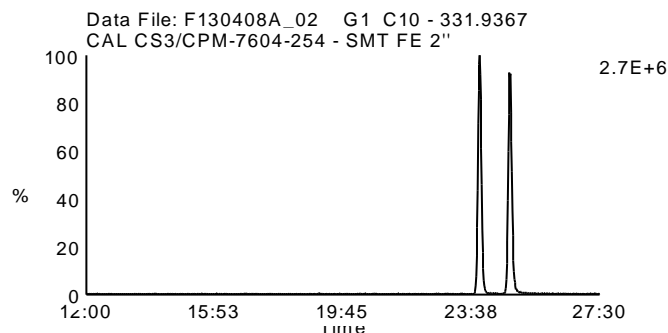
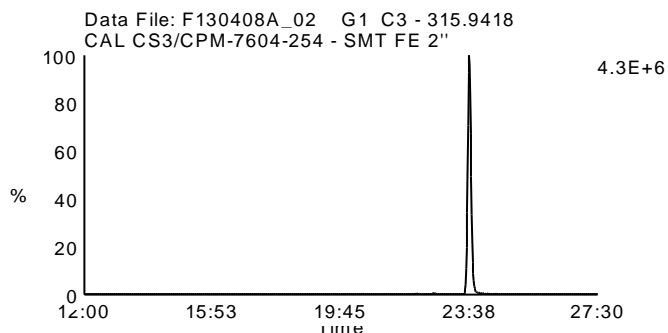
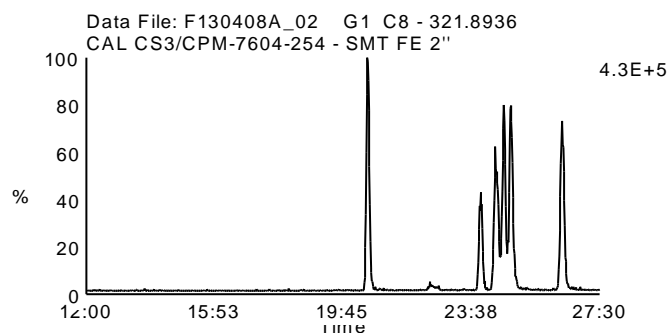
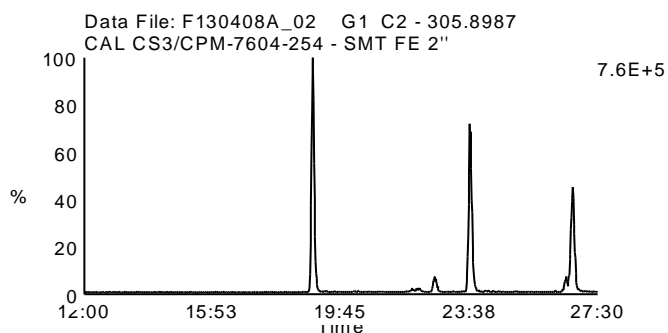
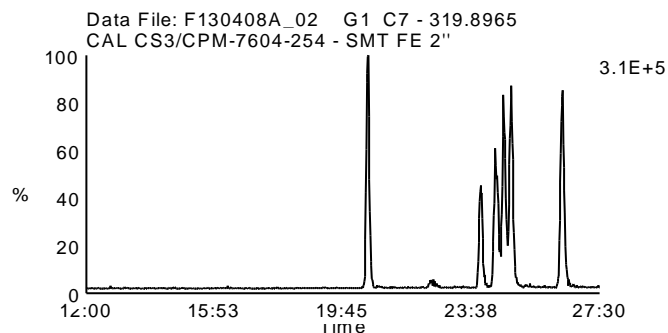
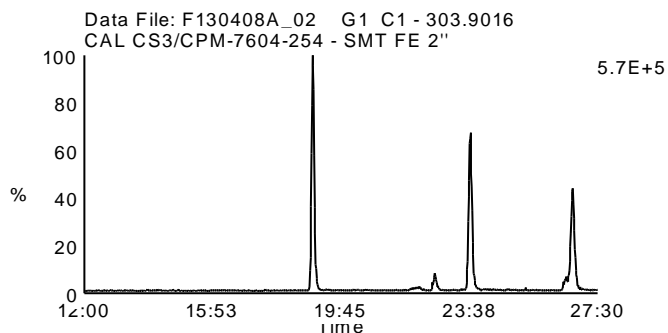
Date Acquired: 4/8/2013

Sample Description: CAL CS3/CPM-7604-254 - SMT FE 2"

Lab Sample ID: CS3/CPM-7604-254

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130408A\_02

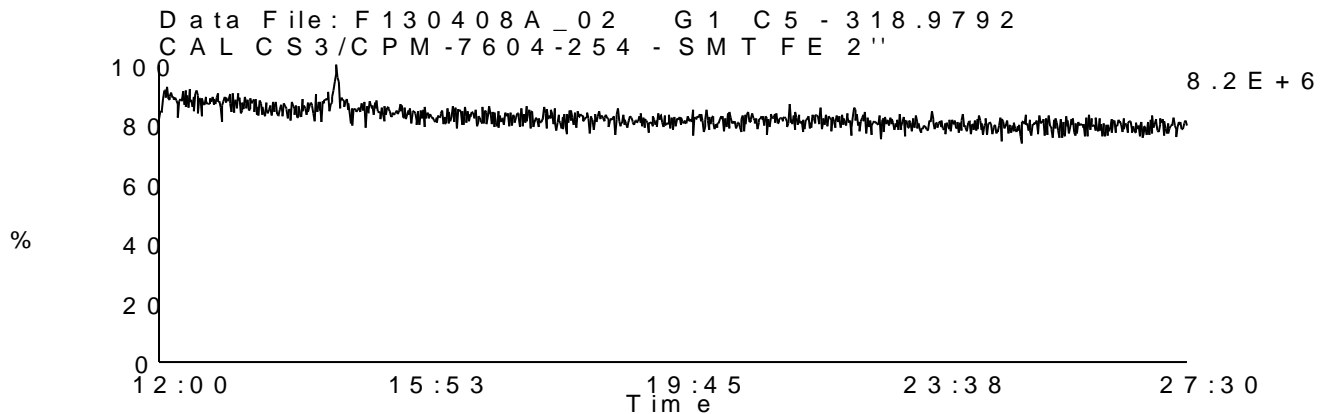
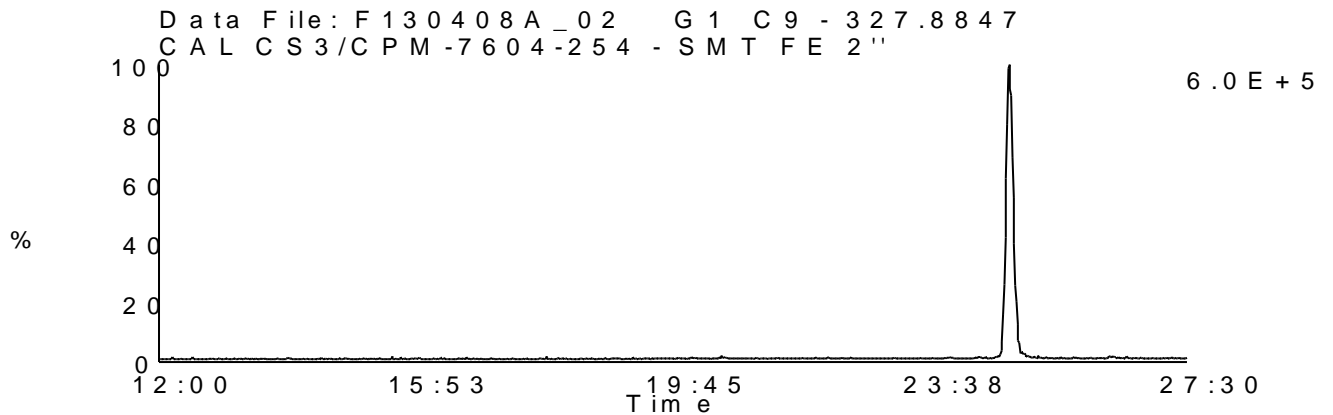
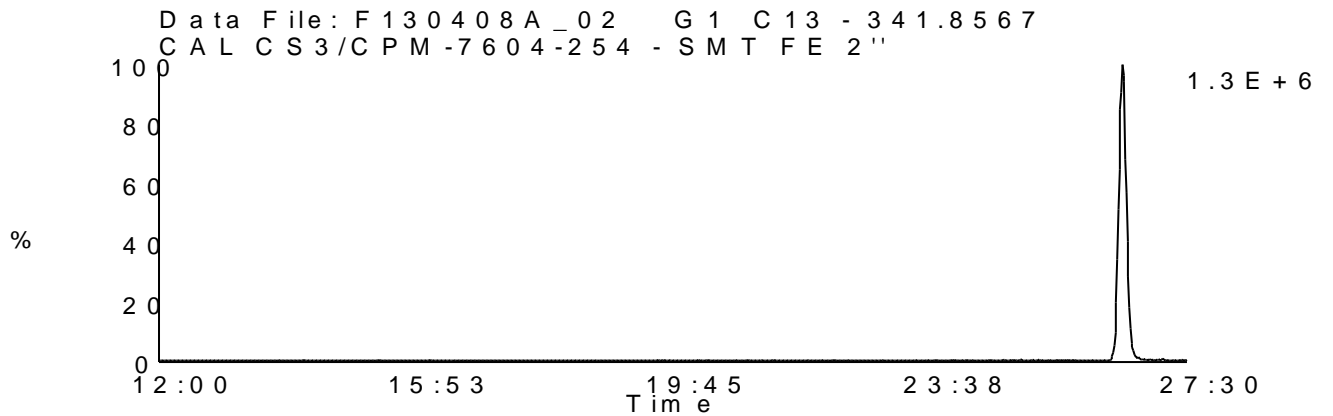
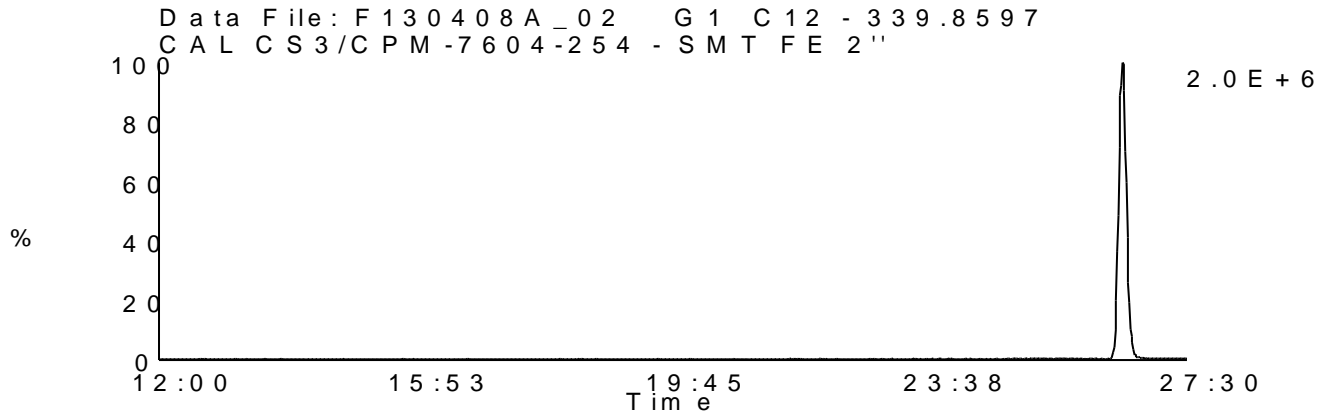
Date Acquired: 4/8/2013

Sample Description: CAL CS3/CPM-7604-254 - SMT FE 2"

Lab Sample ID: CS3/CPM-7604-254

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130408A\_02

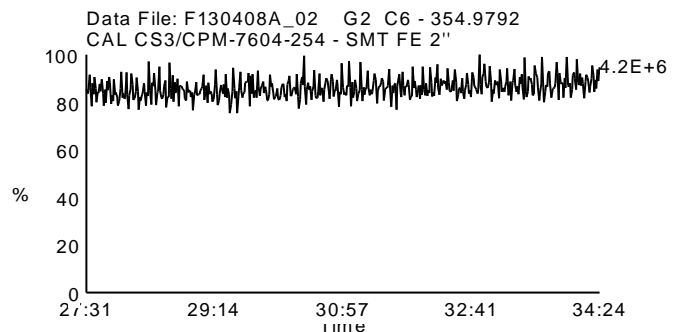
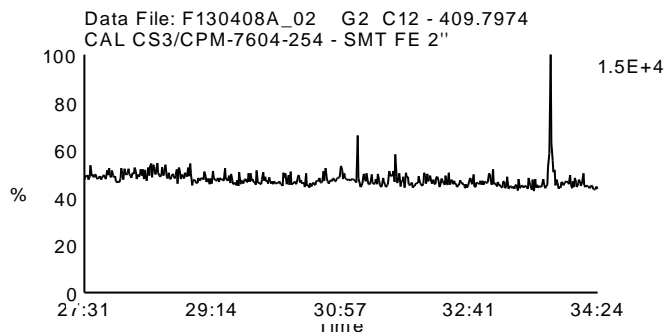
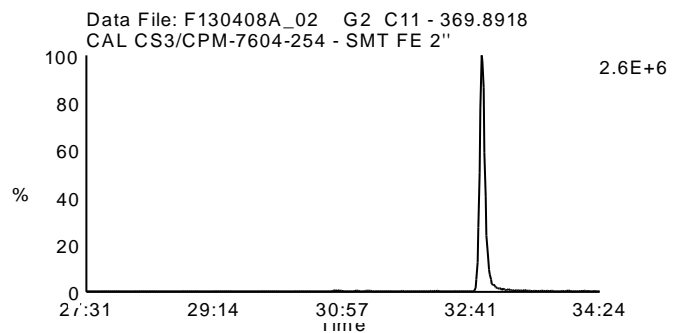
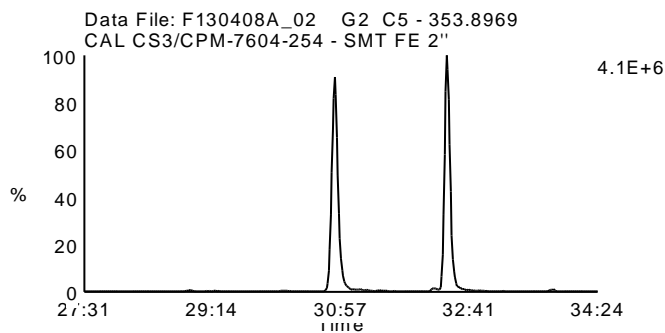
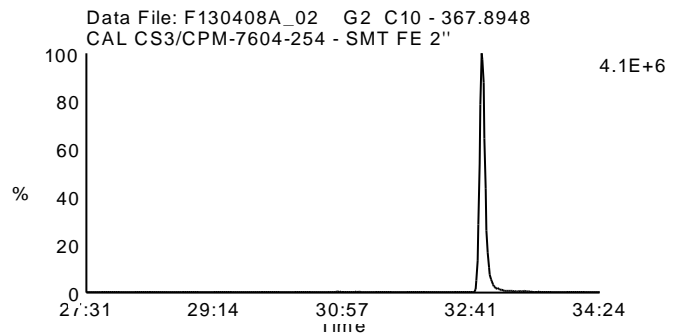
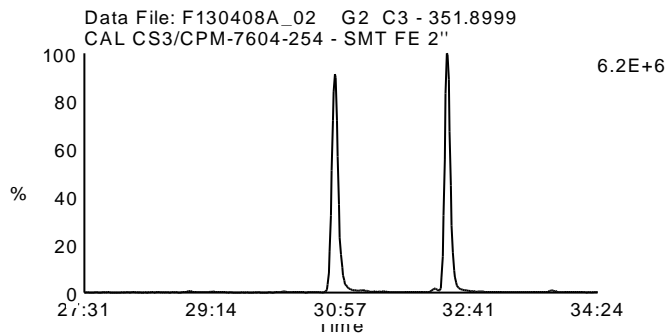
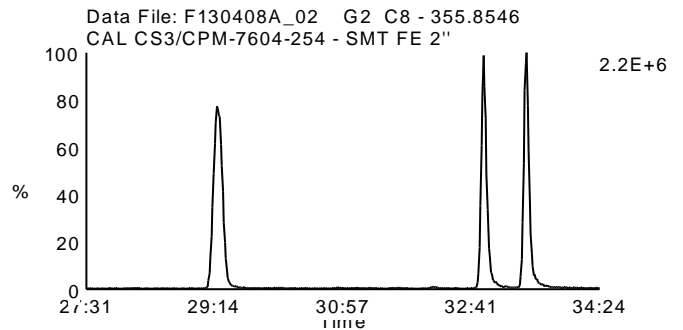
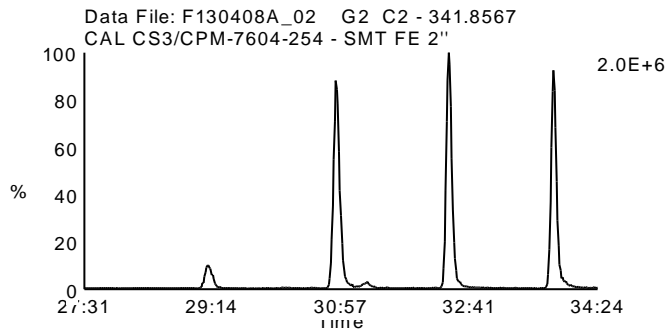
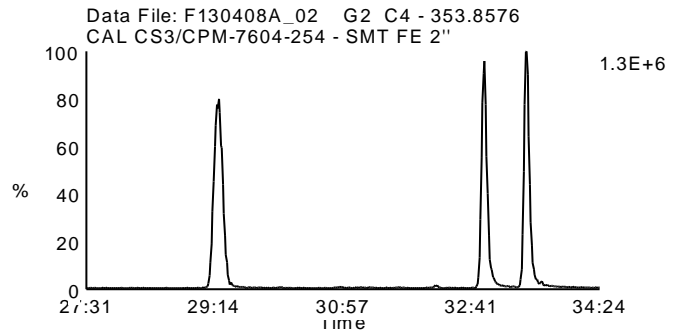
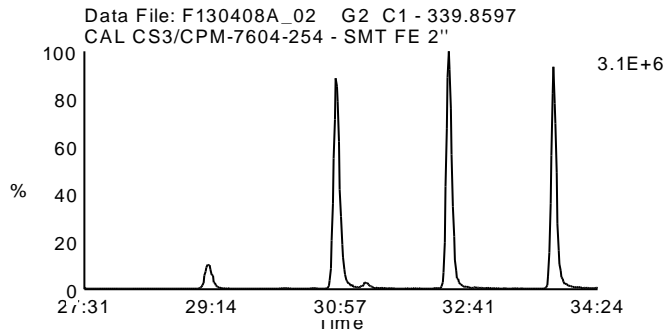
Date Acquired: 4/8/2013

Sample Description: CAL CS3/CPM-7604-254 - SMT FE 2"

Lab Sample ID: CS3/CPM-7604-254

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)





Homologue Group: Hexas

Data File Name: F130408A\_02

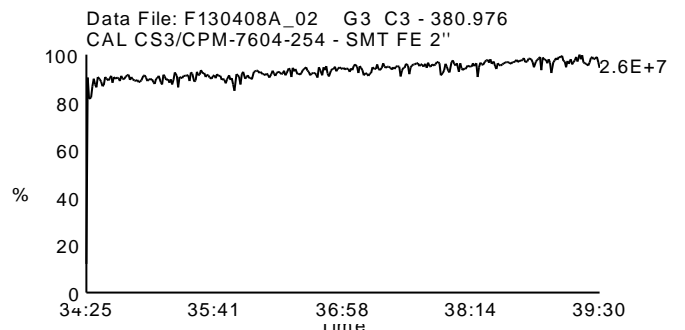
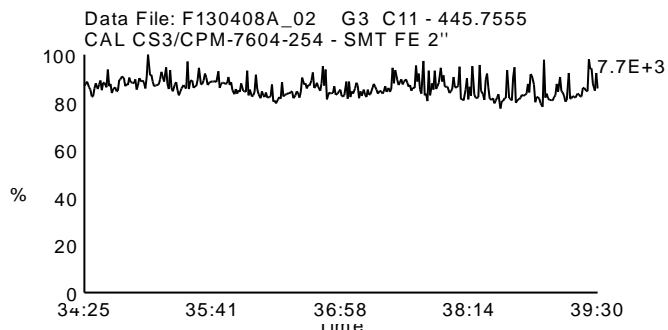
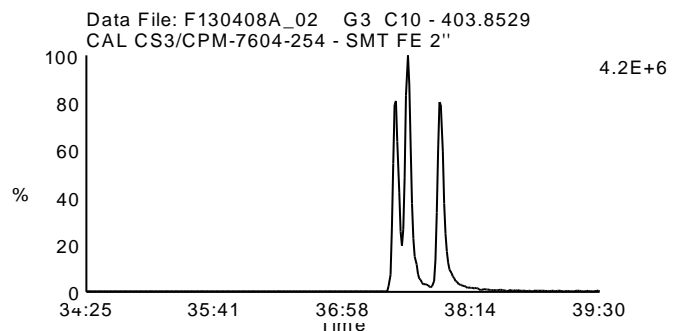
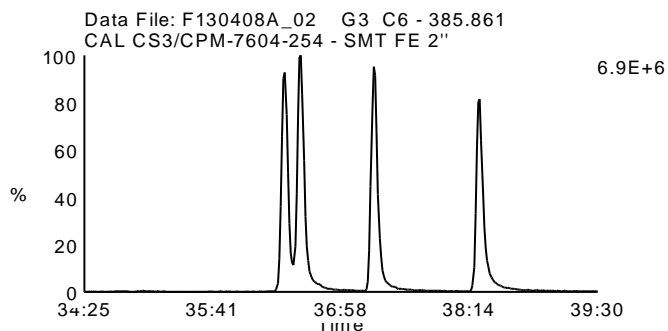
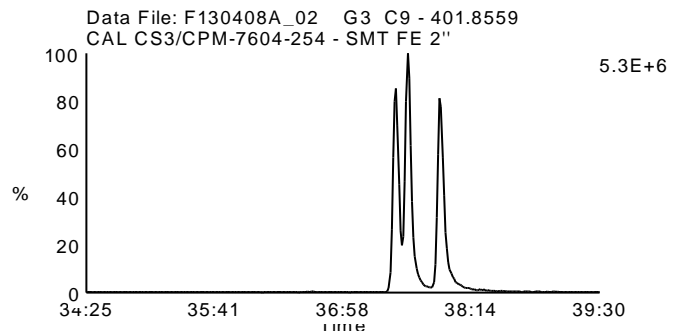
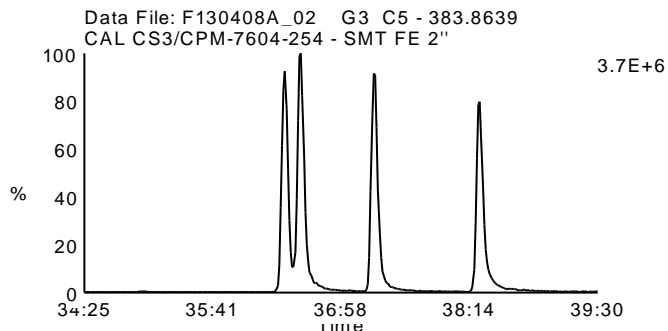
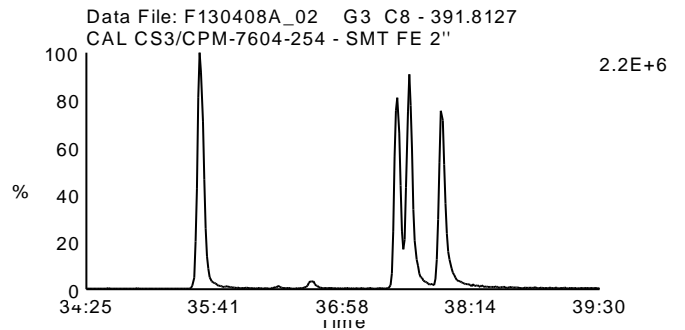
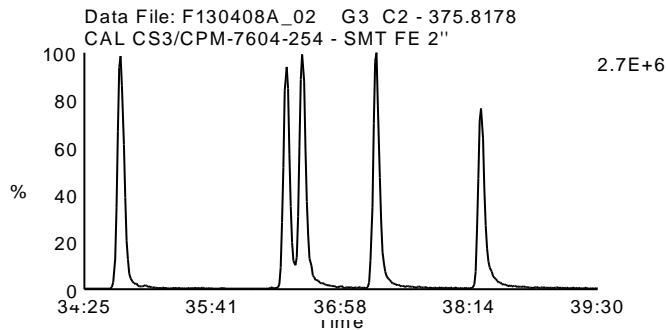
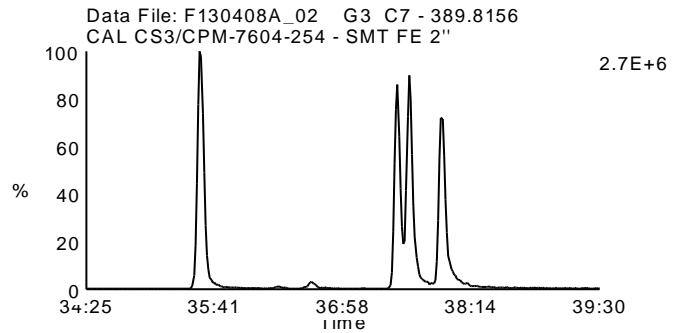
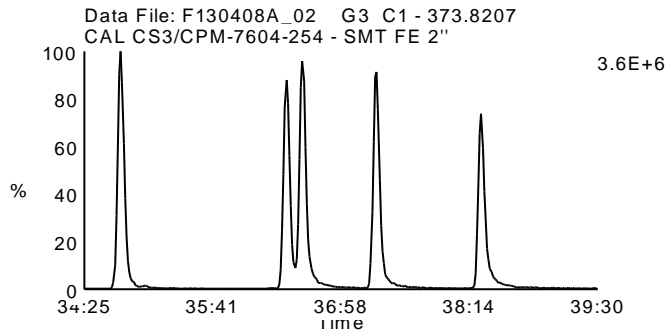
Date Acquired: 4/8/2013

Sample Description: CAL CS3/CPM-7604-254 - SMT FE 2"

Lab Sample ID: CS3/CPM-7604-254

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130408A\_02

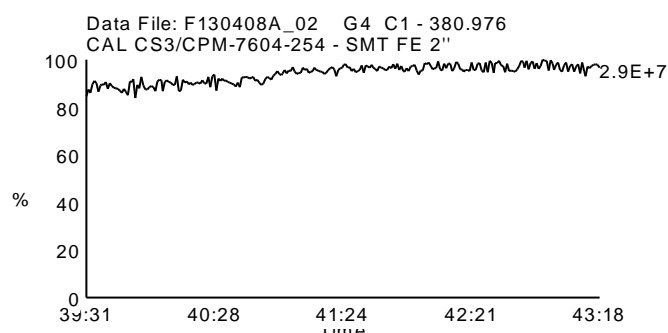
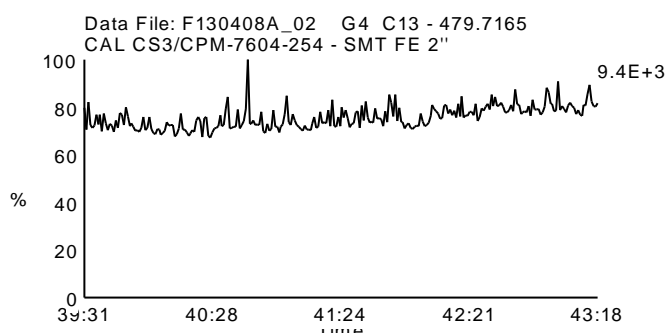
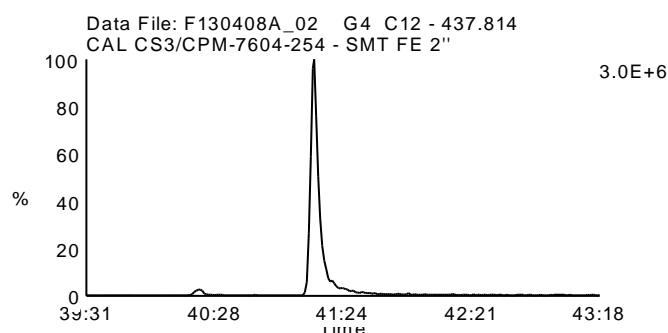
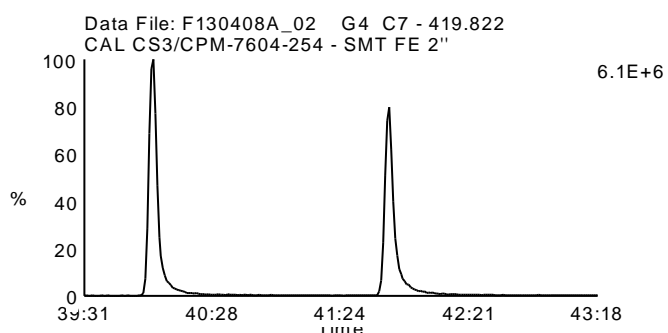
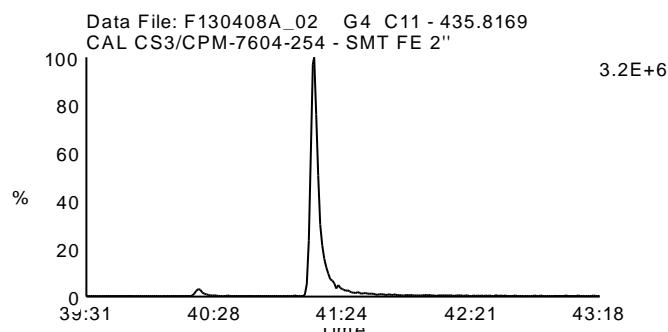
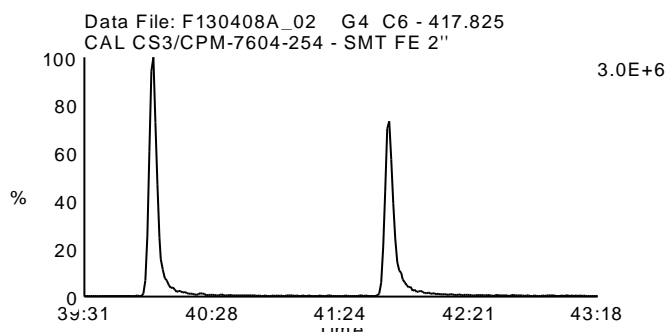
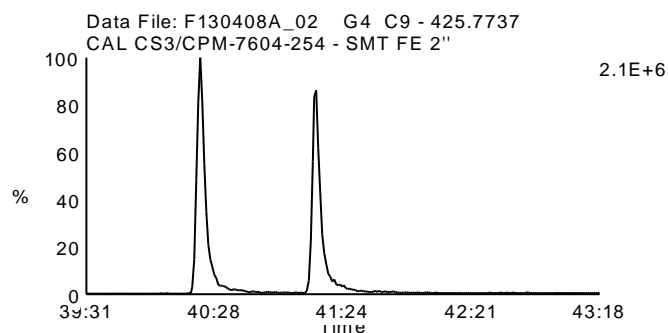
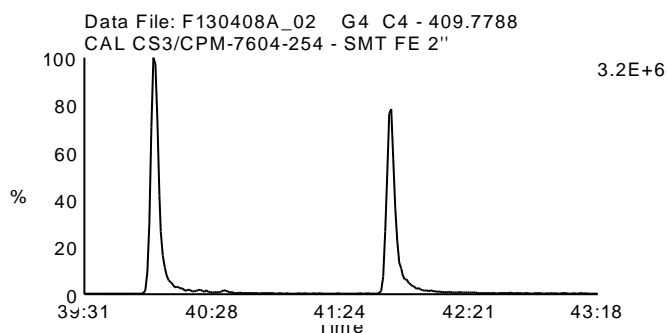
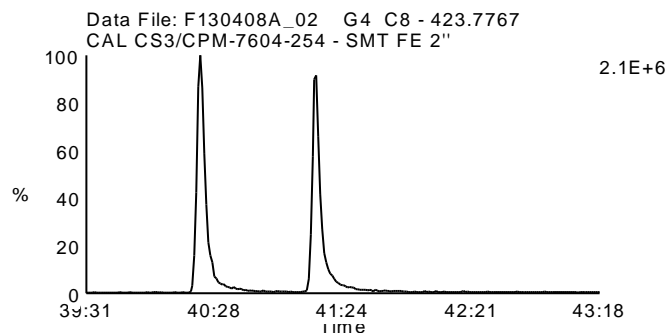
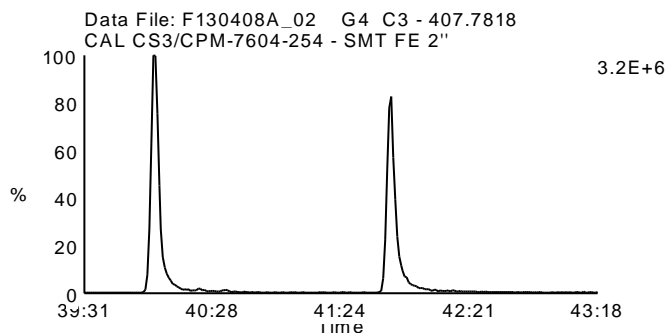
Date Acquired: 4/8/2013

Sample Description: CAL CS3/CPM-7604-254 - SMT FE 2"

Lab Sample ID: CS3/CPM-7604-254

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130408A\_02

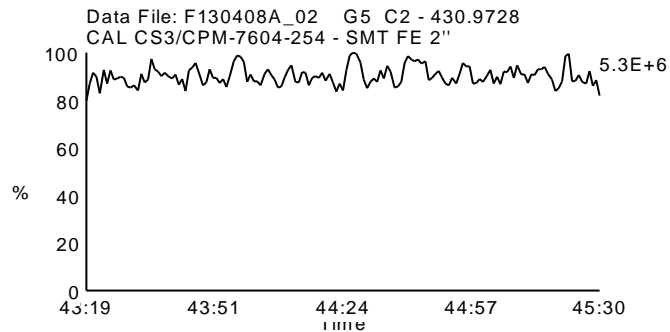
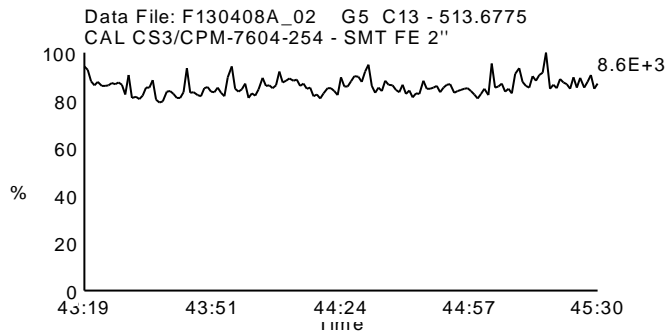
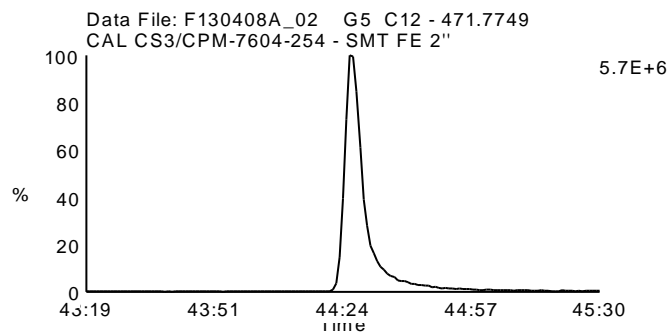
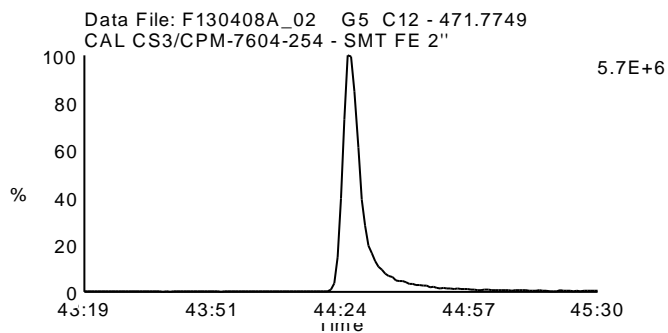
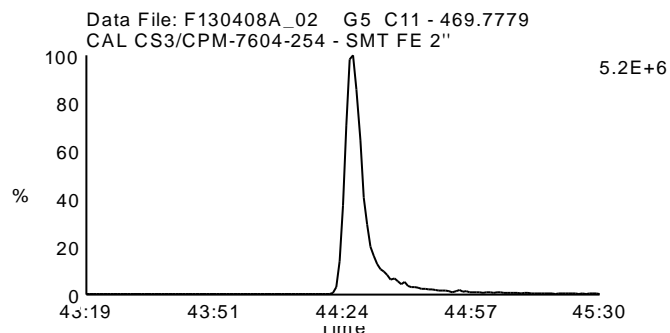
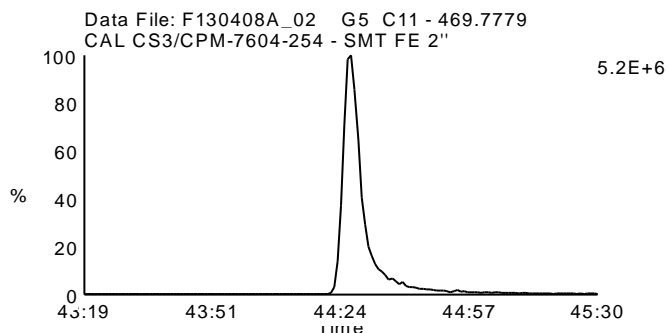
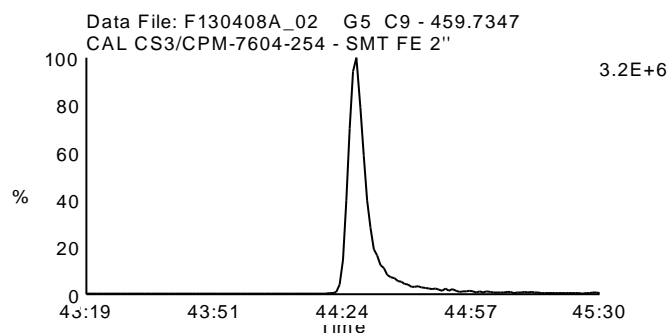
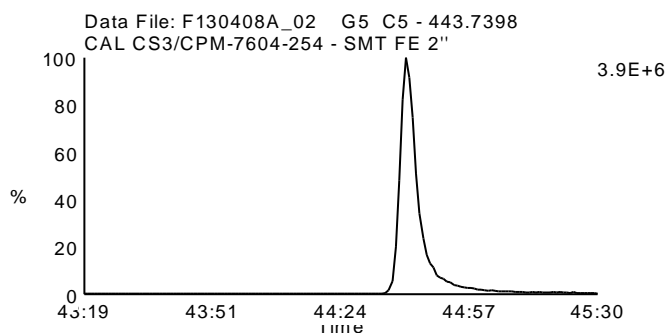
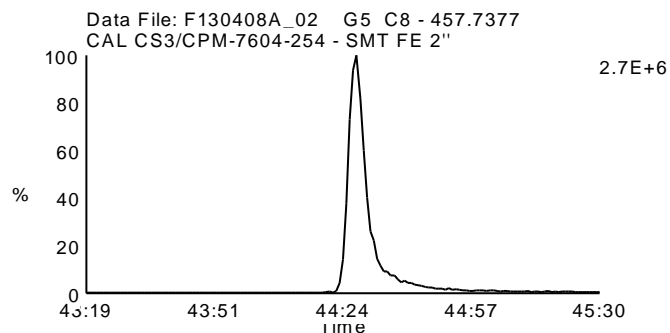
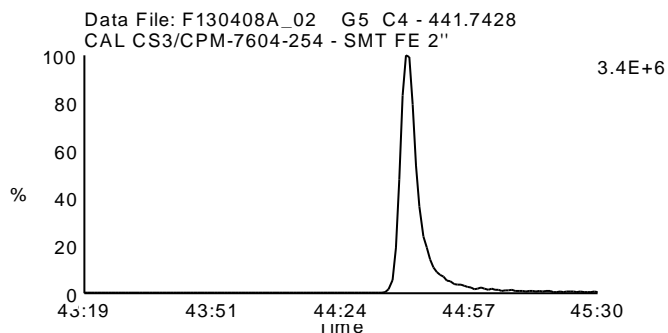
Date Acquired: 4/8/2013

Sample Description: CAL CS3/CPM-7604-254 - SMT FE 2"

Lab Sample ID: CS3/CPM-7604-254

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130516A\_15

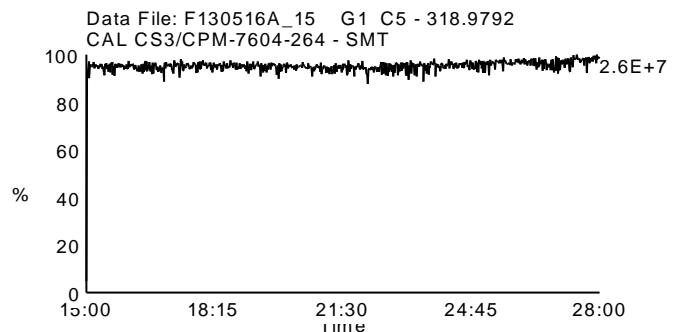
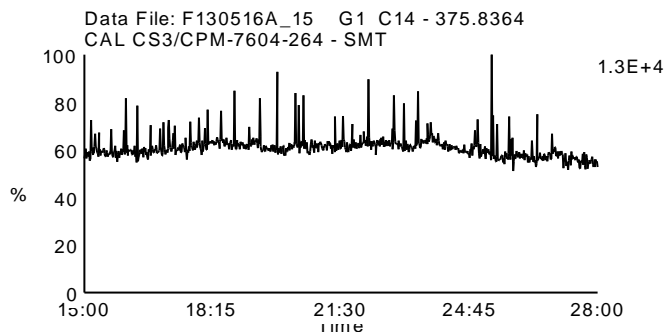
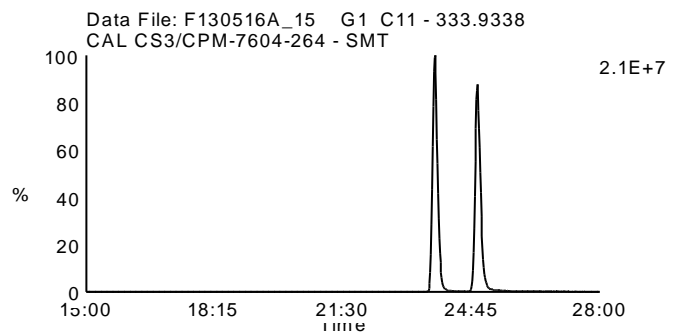
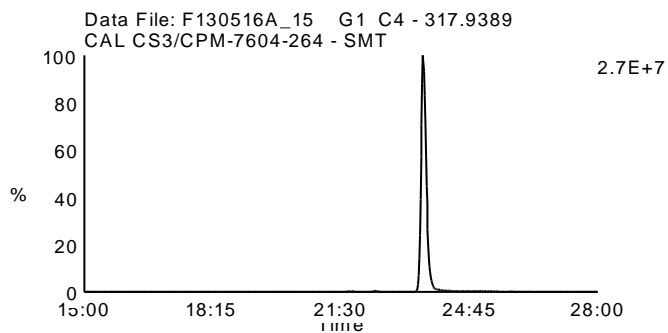
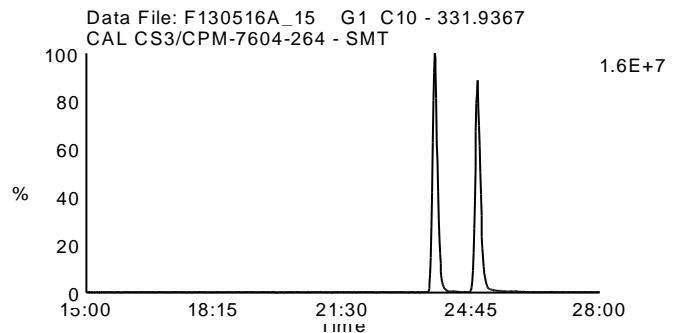
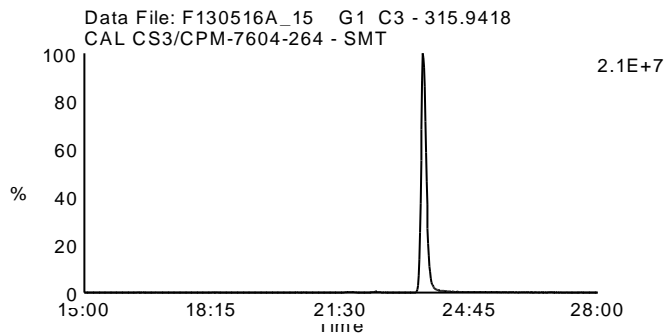
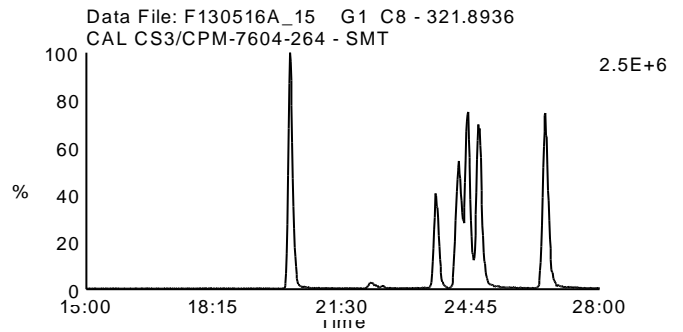
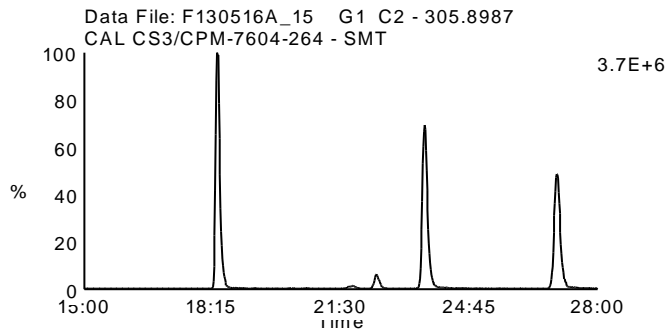
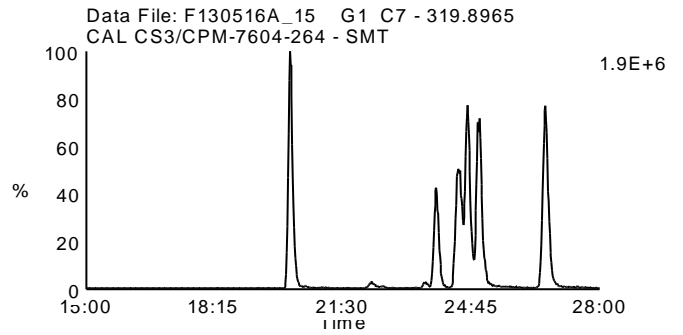
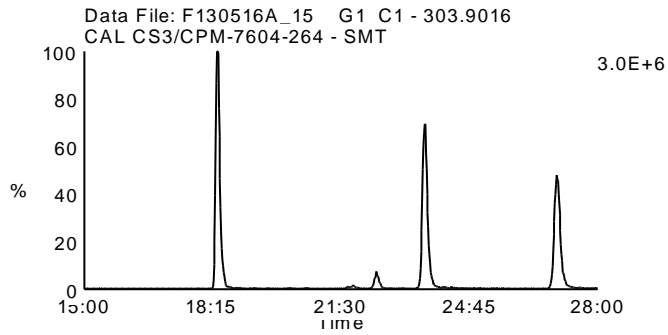
Date Acquired: 5/16/2013

Sample Description: CAL CS3/CPM-7604-264 - SMT

Lab Sample ID: CS3/CPM-7604-264

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130516A\_15

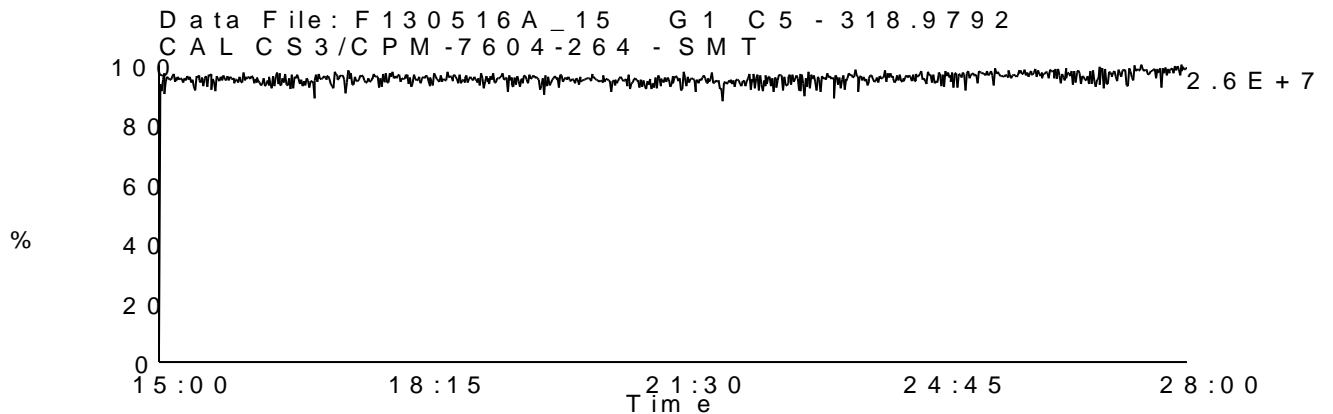
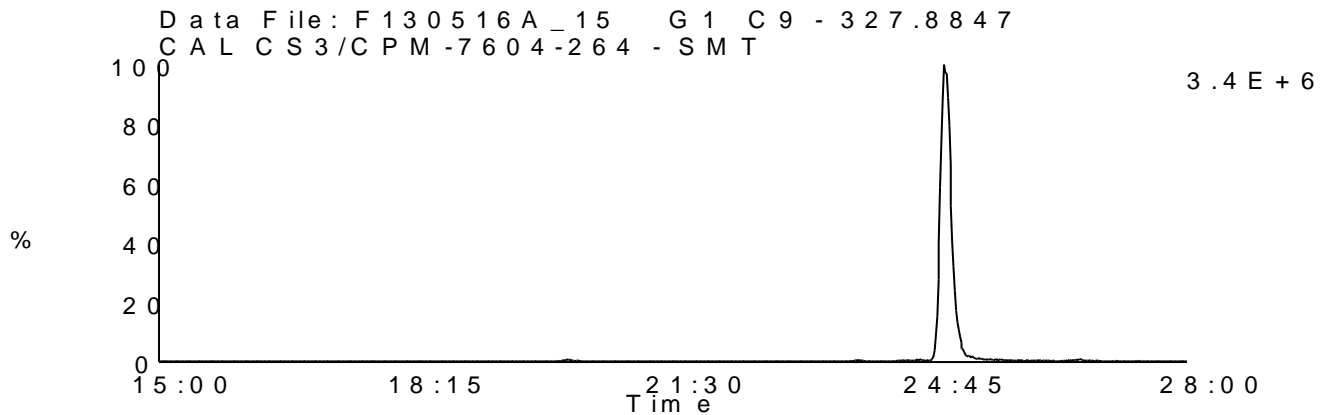
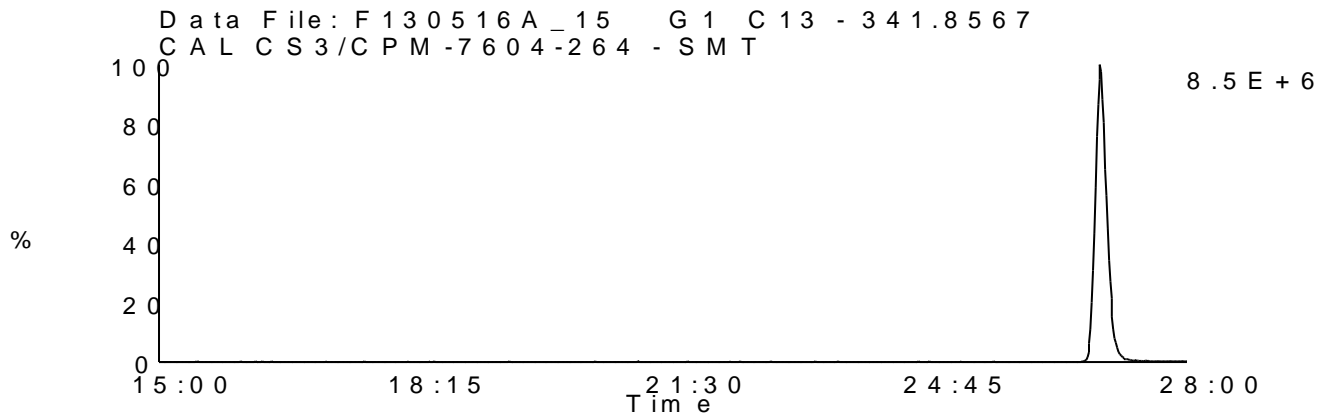
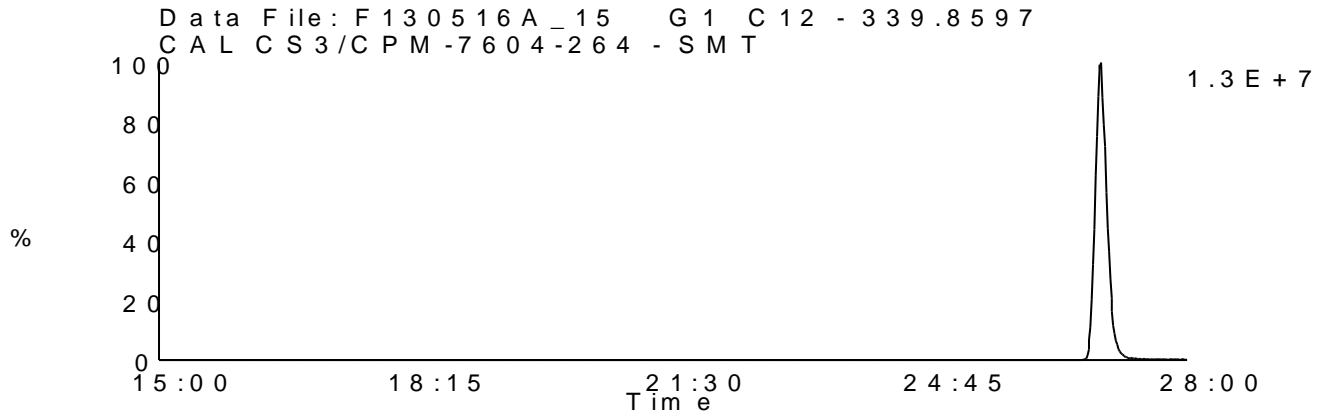
Date Acquired: 5/16/2013

Sample Description: CAL CS3/CPM-7604-264 - SMT

Lab Sample ID: CS3/CPM-7604-264

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516A\_15

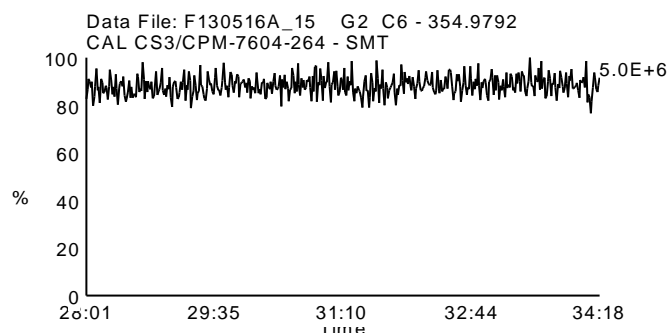
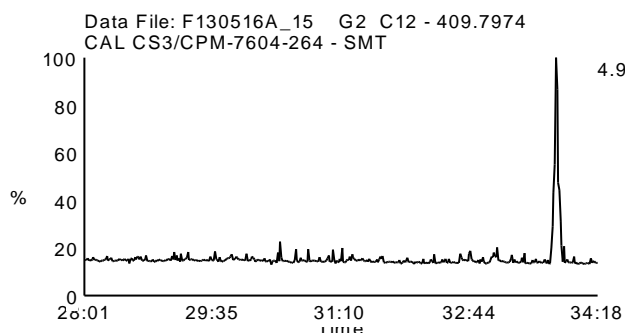
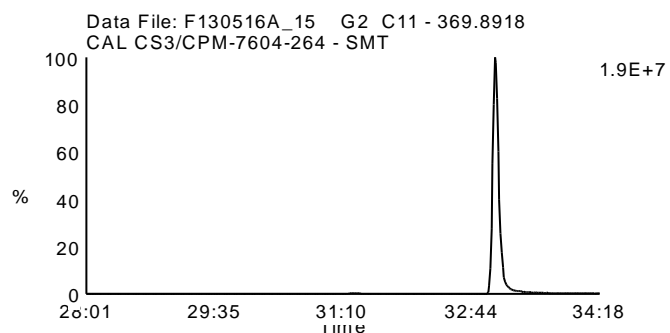
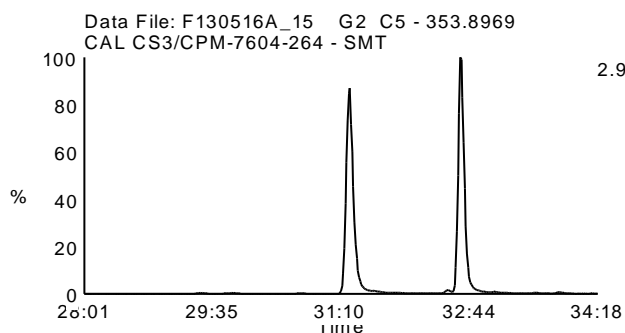
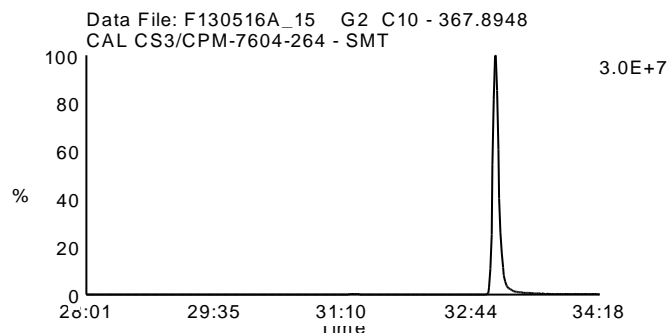
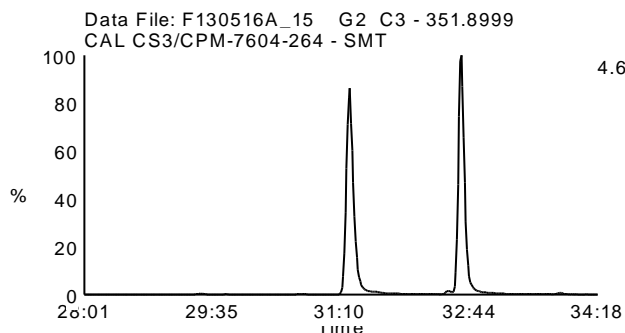
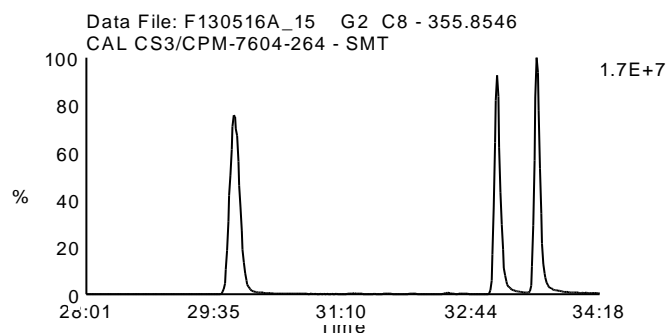
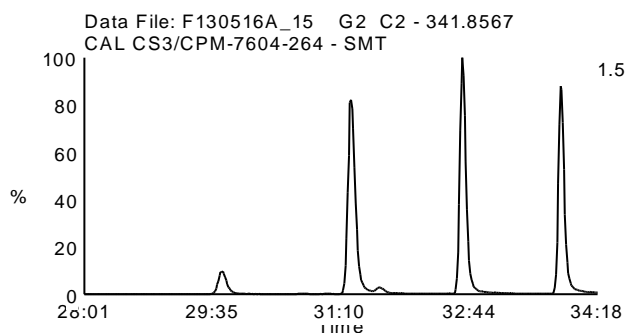
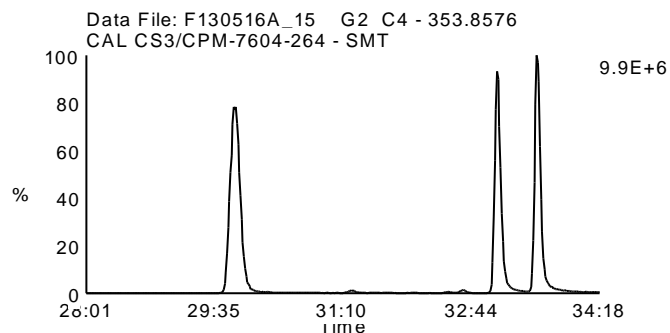
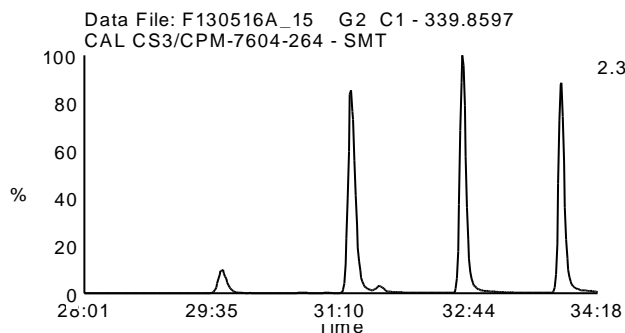
Date Acquired: 5/16/2013

Sample Description: CAL CS3/CPM-7604-264 - SMT

Lab Sample ID: CS3/CPM-7604-264

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130516A\_15

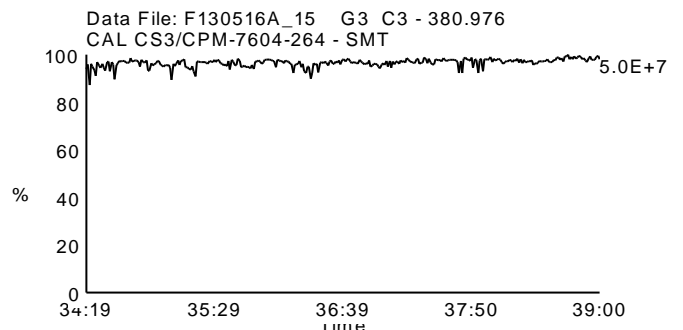
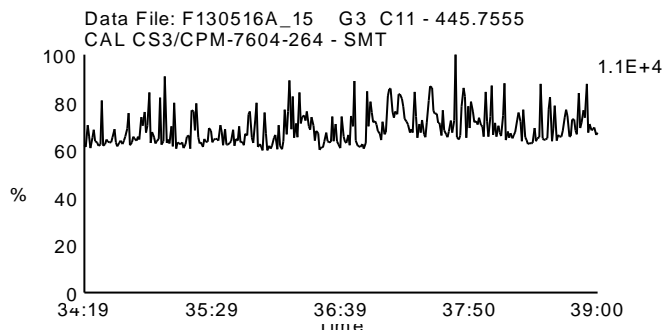
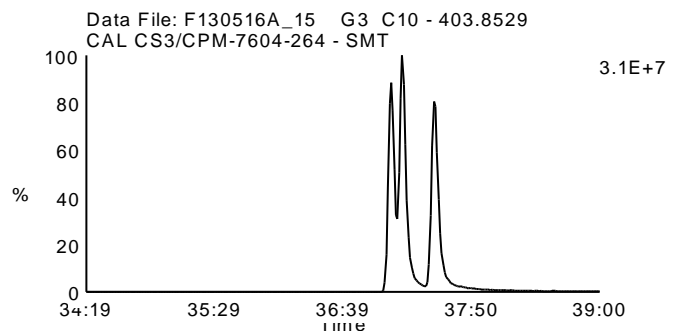
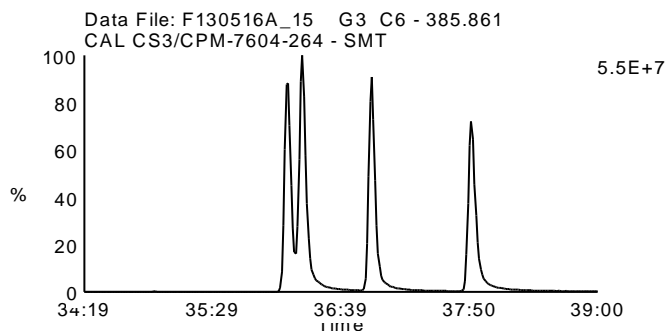
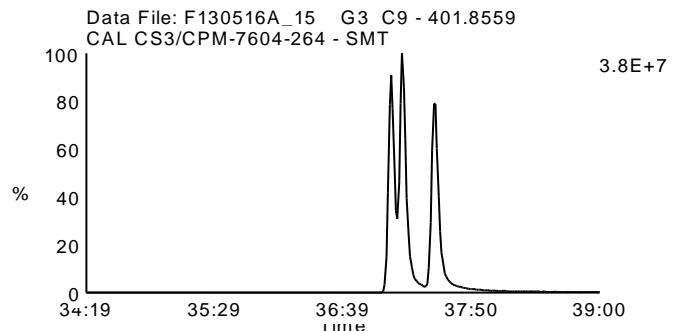
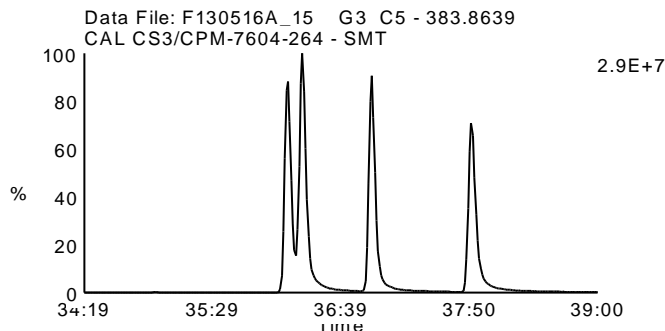
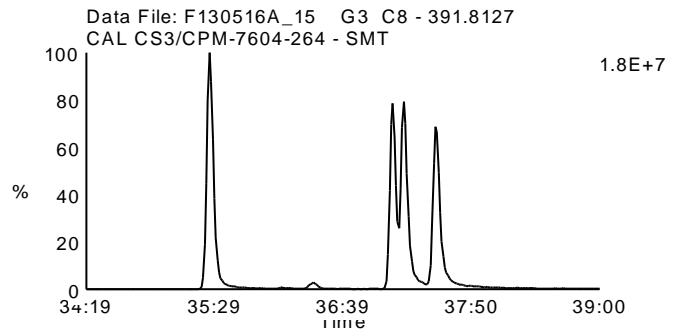
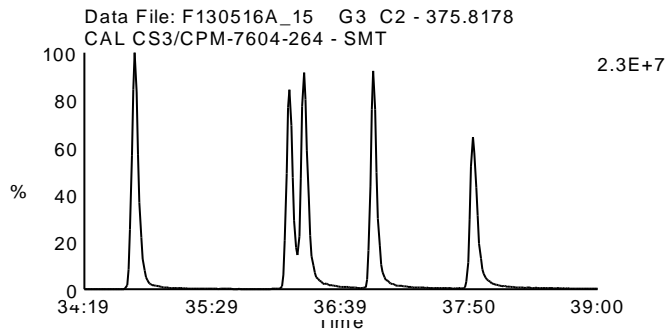
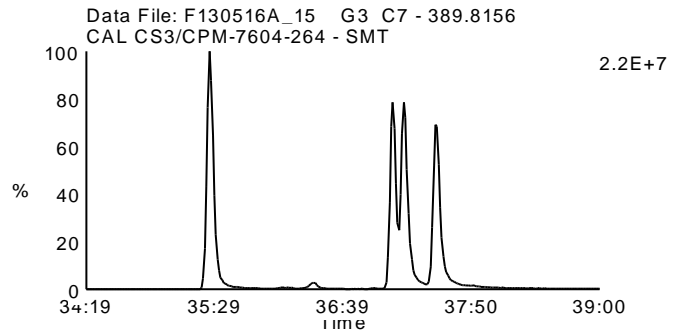
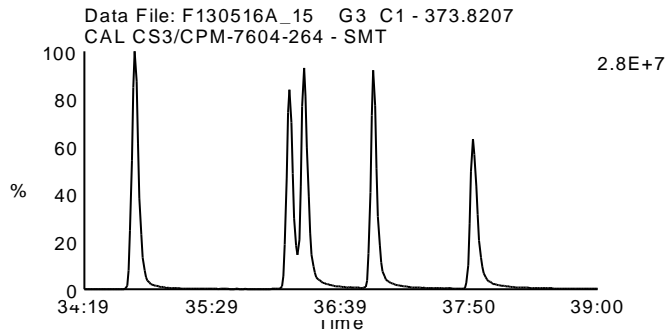
Date Acquired: 5/16/2013

Sample Description: CAL CS3/CPM-7604-264 - SMT

Lab Sample ID: CS3/CPM-7604-264

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516A\_15

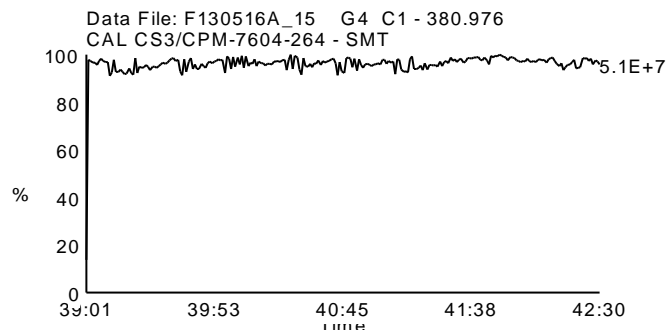
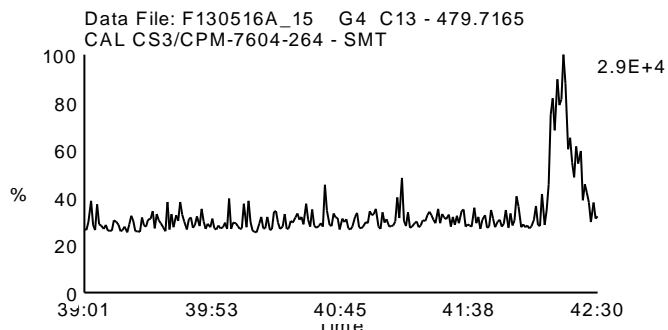
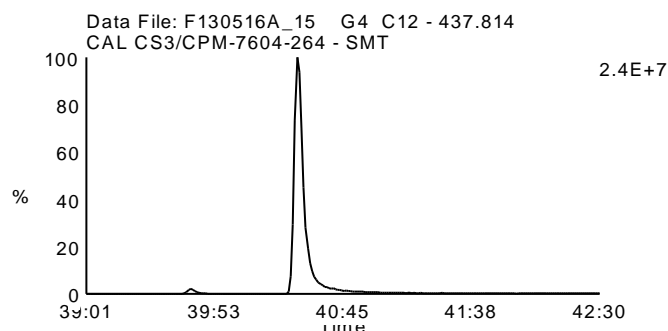
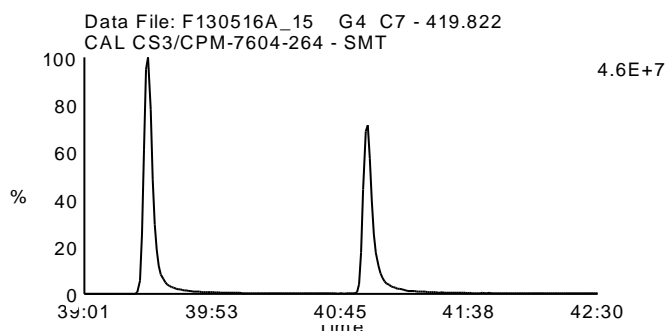
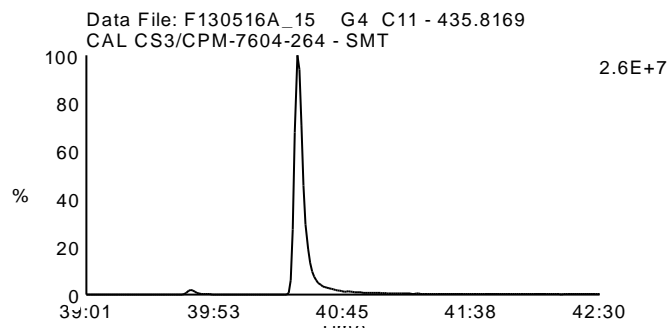
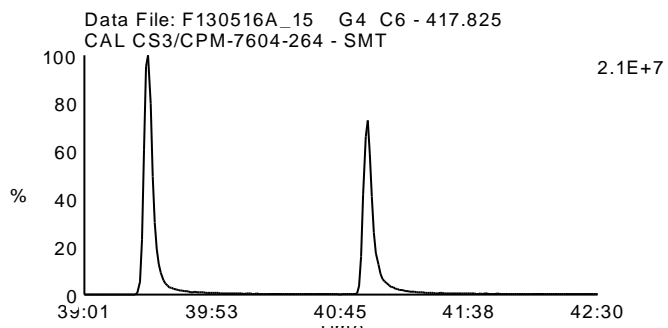
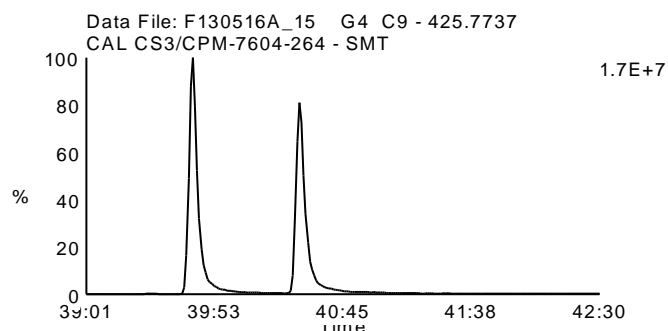
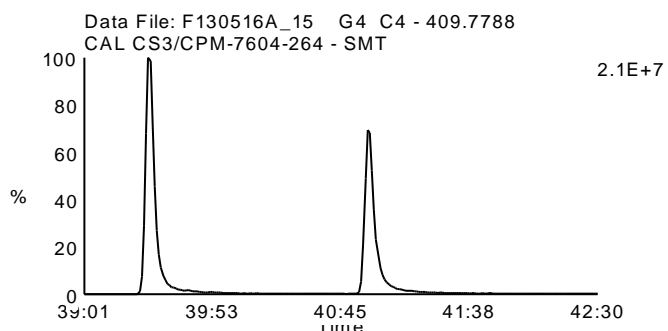
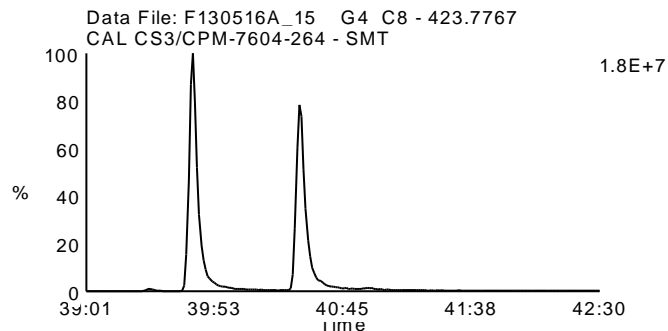
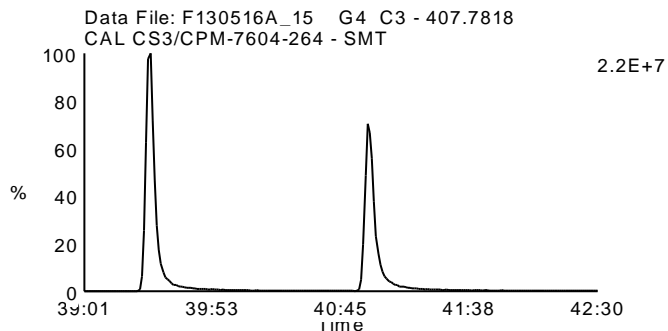
Date Acquired: 5/16/2013

Sample Description: CAL CS3/CPM-7604-264 - SMT

Lab Sample ID: CS3/CPM-7604-264

Client Sample ID: CPM/WDM

Instrument: 10MSHR05 (F)





Homologue Group: Octas

Data File Name: F130516A\_15

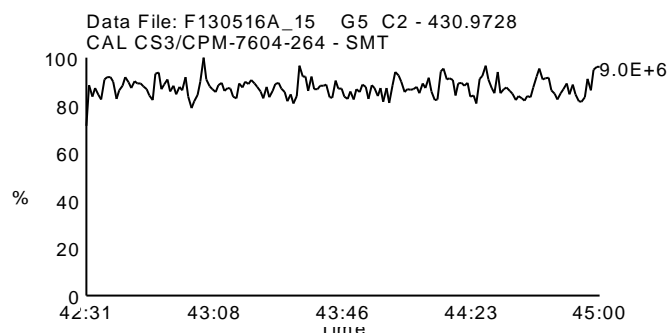
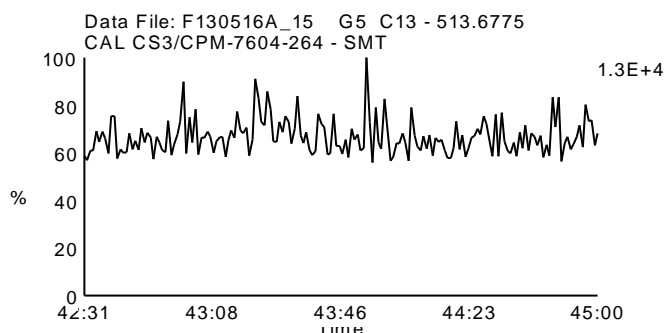
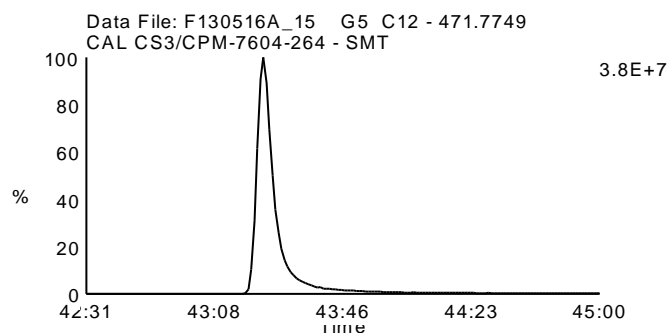
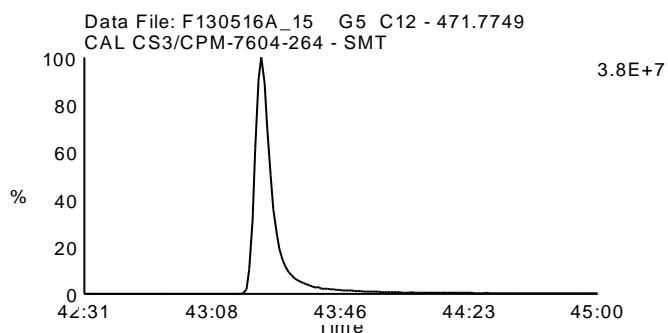
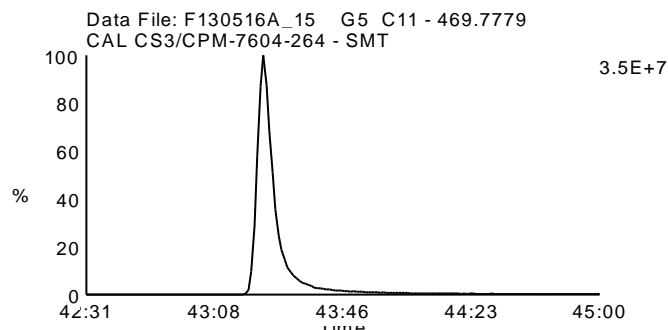
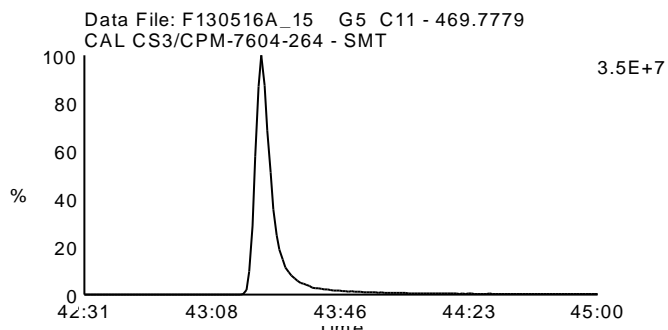
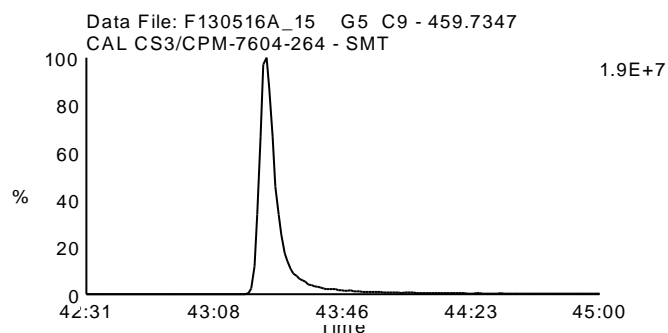
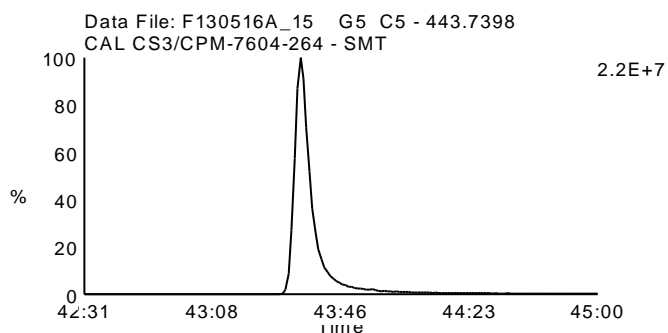
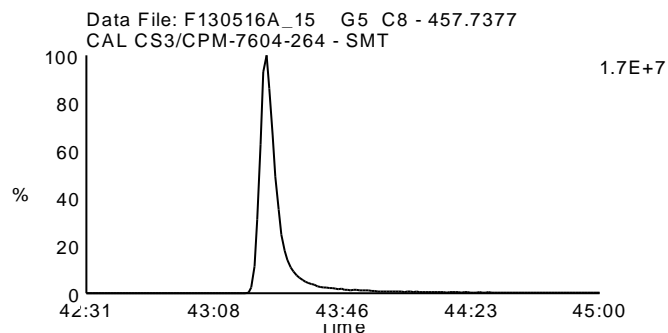
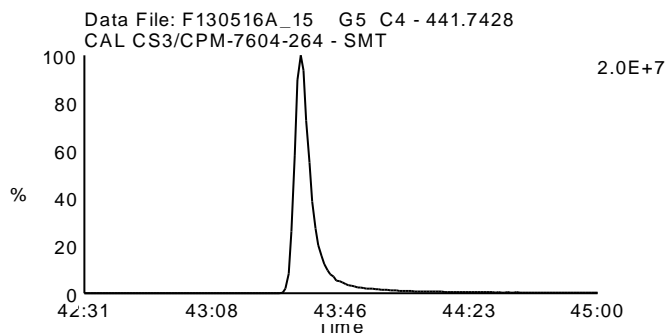
Date Acquired: 5/16/2013

Sample Description: CAL CS3/CPM-7604-264 - SMT

Lab Sample ID: CS3/CPM-7604-264

Client Sample ID: CPM/WDM

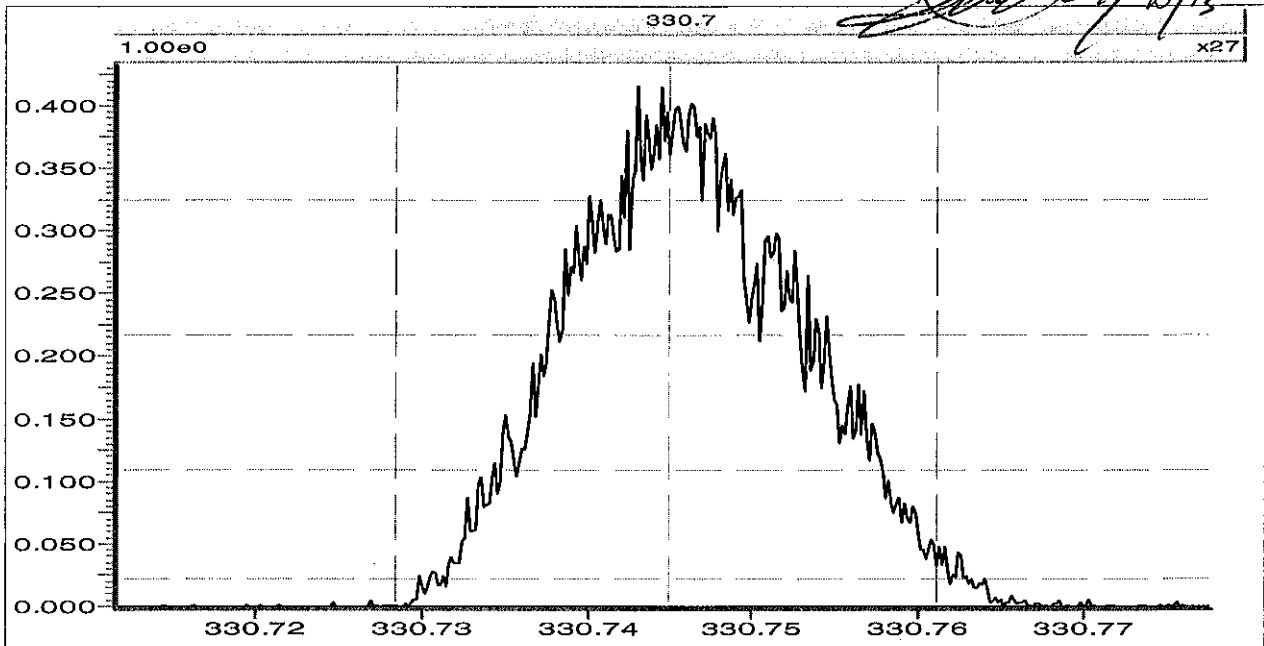
Instrument: 10MSHR05 (F)



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Printed: Monday, April 08, 2013 10:54:15 Central Daylight Time

*Handwritten signature and date: 04/08/13*



*ACE  
4/8/13*

**Source (EI+)**

Ion Repeller (V)	-6.49
Focus 1	734
Beam Centre	-47.6
Focus 2	4331
Temperature (C)	290
Elec Energy (eV)	36.0
Trap Current (uA)	450.0
Y Deflect 1	-21.9
Z Deflect 1	19.9
Z Deflect 2	-4.7
Z Focus 2	2520
Z Focus 3	0
Z Deflect 3	23.4
Y Focus	3545
Rotate 2	-14.5
Curve 2	10.9
Curve 3	-1.4
Rotate 3	-23.0
Rotate 4	-3.4
V Acc (V)	7991.40
Magnet Mass	330.7
Source Slit	23.58
Collector Slit	18.18
MIKES Slit	100.00
Alpha	40.00
Detector Voltage	350
Ion Energy	-4.00
Z4 Restrictor	Off
Vacc Limit	8000

**Analyser**

No information

**Engineer**

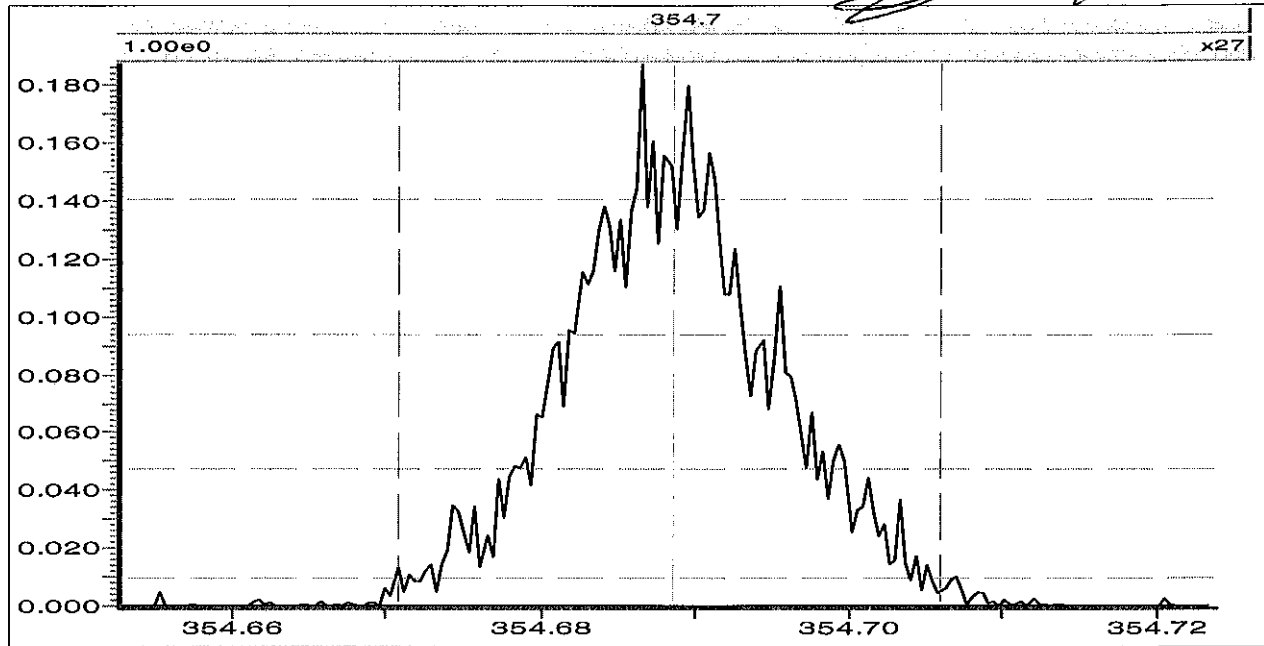
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Printed: Tuesday, April 09, 2013 06:50:05 Central Daylight Time

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4/9/13

*Sum*  
4/9/13



**Source (EI+)**

Ion Repeller (V)	-6.49
Focus 1	734
Beam Centre	-47.6
Focus 2	4331
Temperature (C)	290
Elec Energy (eV)	36.0
Trap Current (uA)	450.0
Y Deflect 1	-21.9
Z Deflect 1	19.9
Z Deflect 2	-4.7
Z Focus 2	2520
Z Focus 3	0
Z Deflect 3	23.4
Y Focus	3545
Rotate 2	-14.5
Curve 2	10.9
Curve 3	-1.4
Rotate 3	-23.0
Rotate 4	-3.4
V Acc (V)	7991.40
Magnet Mass	330.7
Source Slit	23.58
Collector Slit	18.18
MIKES Slit	100.00
Alpha	40.00
Detector Voltage	350
Ion Energy	-4.00
Z4 Restrictor	Off
Vacc Limit	8000

**Analyser**

No information

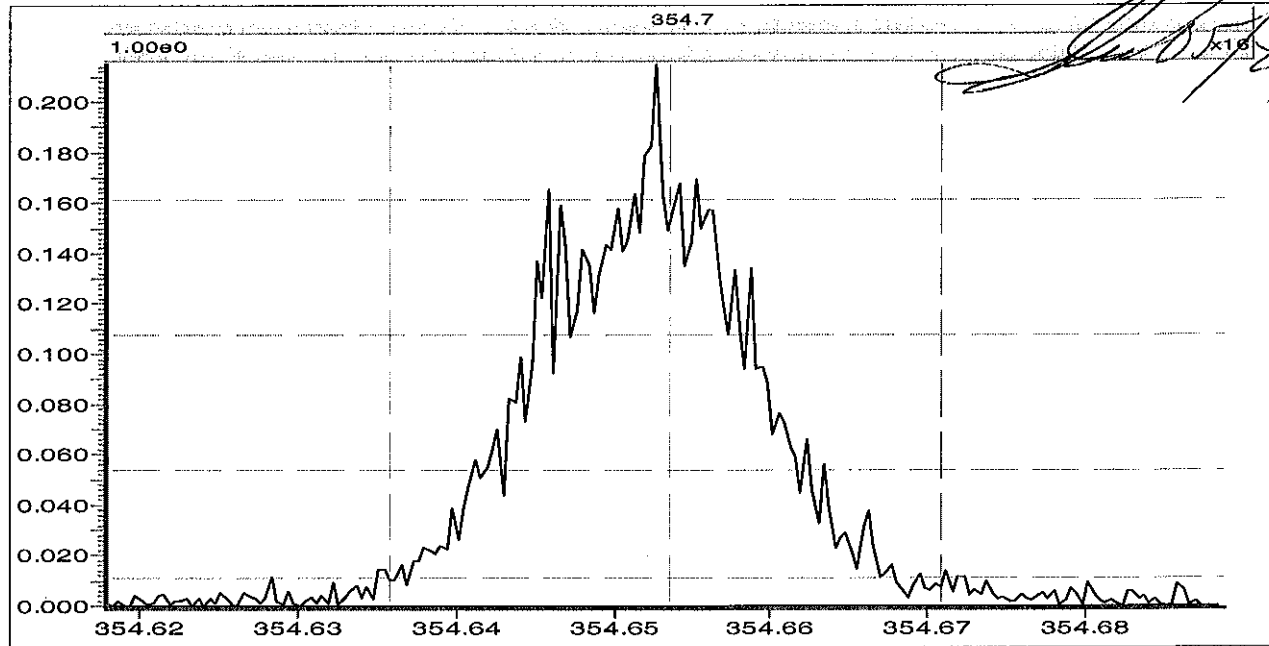
**Engineer**

No information

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BAL 5/16/13

Printed: Thursday, May 16, 2013 19:57:07 Central Daylight Time



Source (EI+)

Ion Repeller (V)	-10.70
Focus 1	930
Beam Centre	-48.0
Focus 2	3909
Temperature (C)	280
Elec Energy (eV)	36.0
Trap Current (uA)	500.0
Y Deflect 1	-43.2
Z Deflect 1	-25.3
Z Deflect 2	12.1
Z Focus 2	2215
Z Focus 3	2236
Z Deflect 3	4.2
Y Focus	3448
Rotate 2	-9.8
Curve 2	8.5
Curve 3	9.0
Rotate 3	-1.9
Rotate 4	0.9
V Acc (V)	7991.94
Magnet Mass	330.7
Source Slit	24.04
Collector Slit	19.52
MIKES Slit	100.00
Alpha	50.00
Detector Voltage	350
Ion Energy	-4.00
Z4 Restrictor	Off
Vacc Limit	8000

Analyser

No information

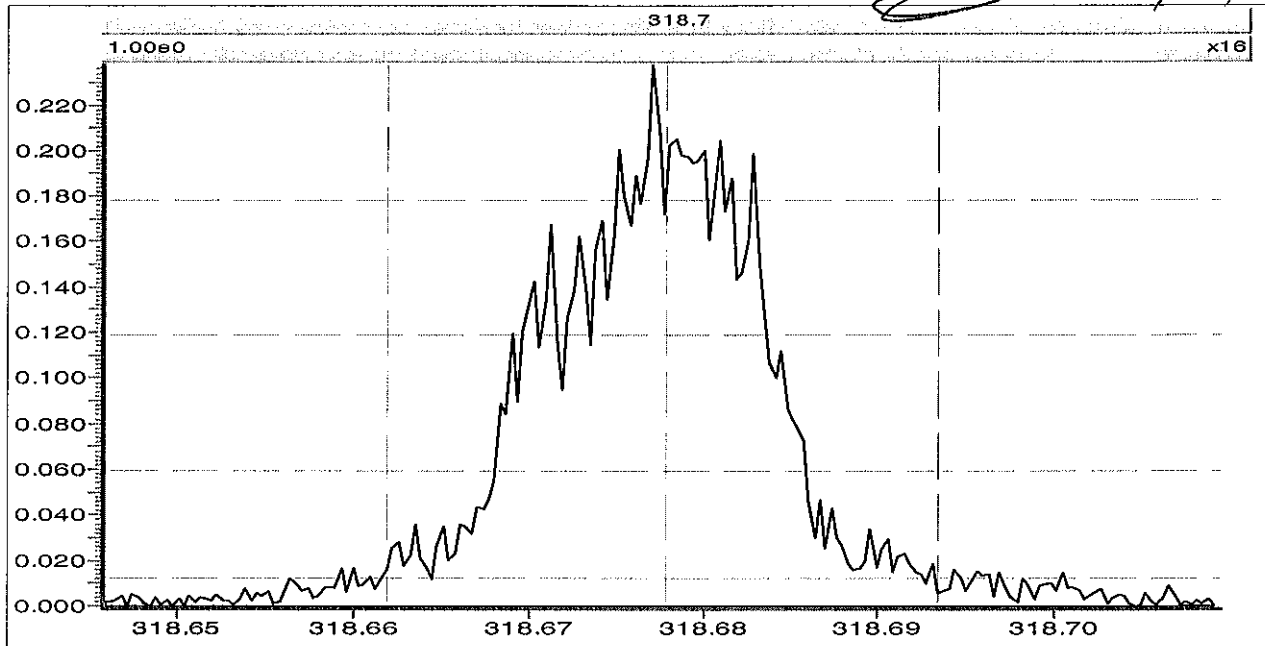
Engineer

No information

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Printed: Friday, May 17, 2013 07:31:38 Central Daylight Time

*CS*  
*5/17/13*  
*[Signature]*  
*5/20/13*



**Source (EI+)**

Ion Repeller (V)	-10.70
Focus 1	930
Beam Centre	-48.0
Focus 2	3909
Temperature (C)	280
Elec Energy (eV)	36.0
Trap Current (uA)	500.0
Y Deflect 1	-43.2
Z Deflect 1	-25.3
Z Deflect 2	12.1
Z Focus 2	2215
Z Focus 3	2236
Z Deflect 3	4.2
Y Focus	3448
Rotate 2	-9.8
Curve 2	8.5
Curve 3	9.0
Rotate 3	-1.9
Rotate 4	0.9
V Acc (V)	7991.94
Magnet Mass	330.7
Source Slit	24.04
Collector Slit	19.52
MIKES Slit	100.00
Alpha	50.00
Detector Voltage	350
Ion Energy	-4.00
Z4 Restrictor	Off
Vacc Limit	8000

**Analyser**

No information

**Engineer**

No information

## **Appendix F**

QC Raw Data

Homologue Group: Tetras

Data File Name: F130516B\_03

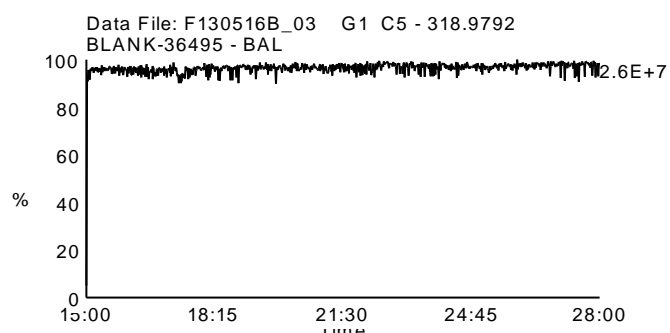
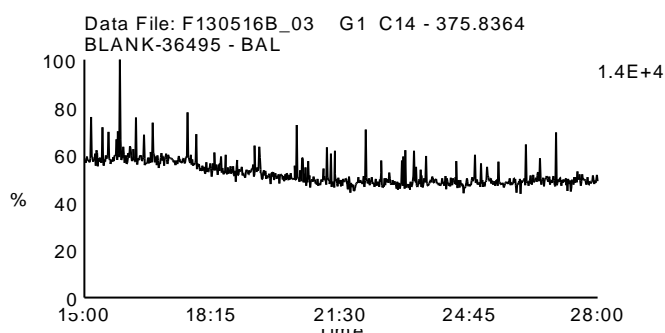
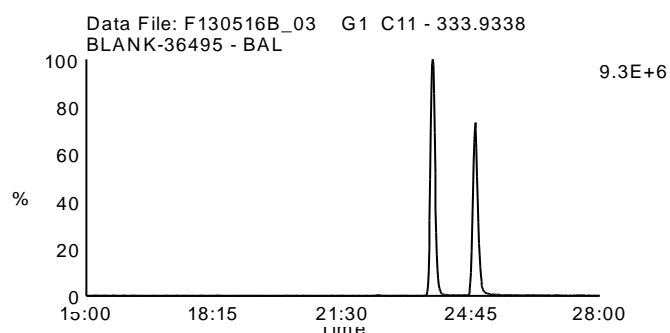
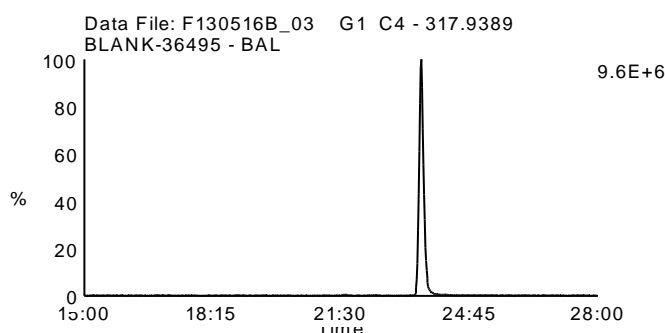
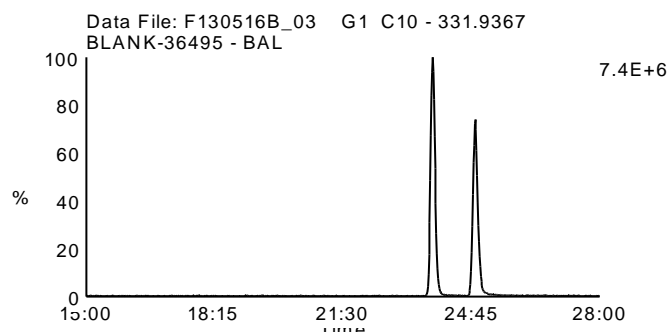
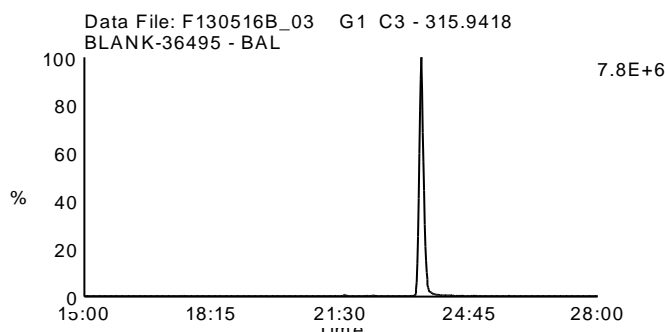
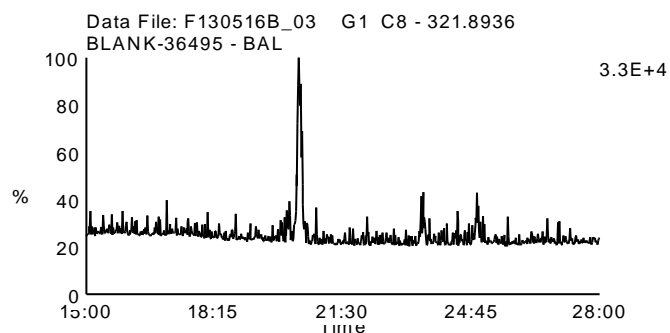
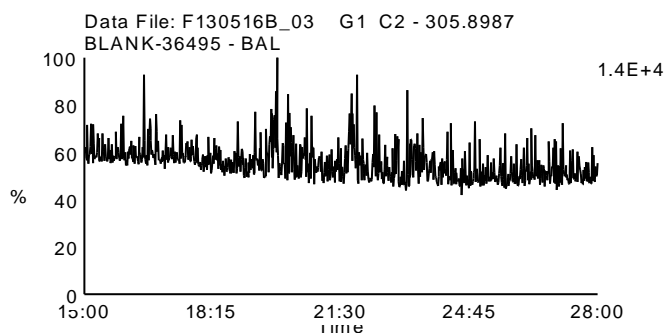
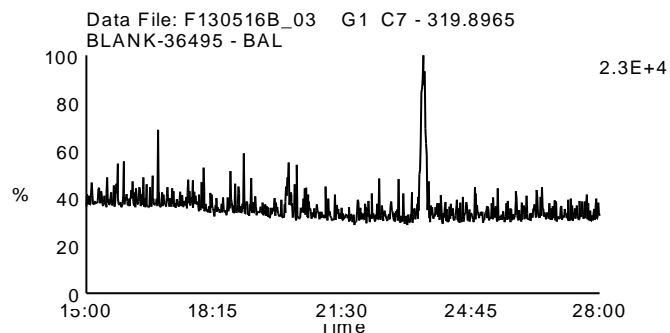
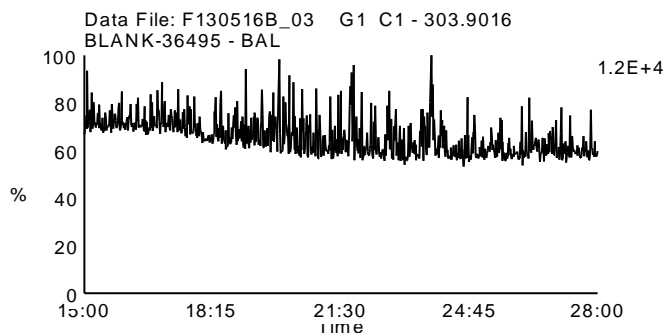
Date Acquired: 5/16/2013

Sample Description: BLANK-36495 - BAL

Lab Sample ID: BLANK-36495

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130516B\_03

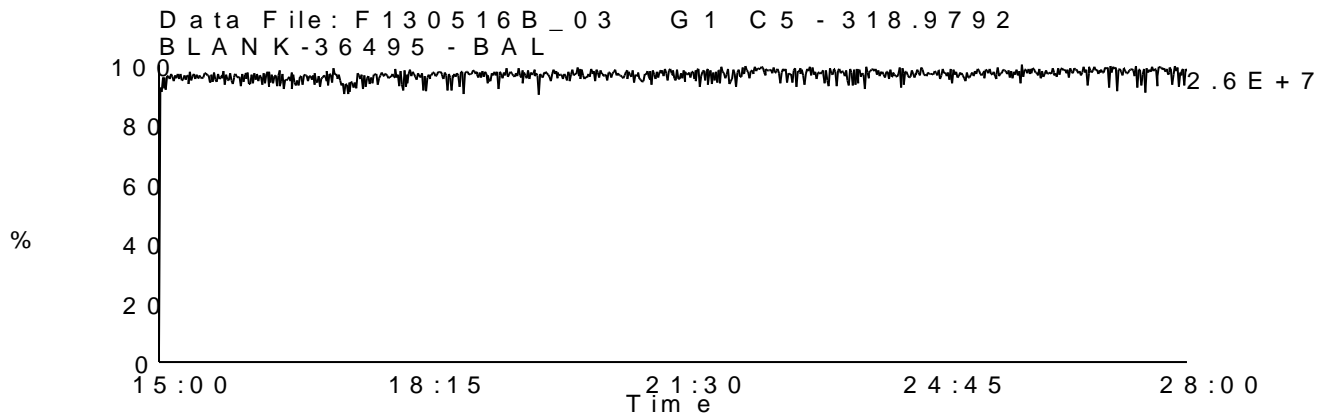
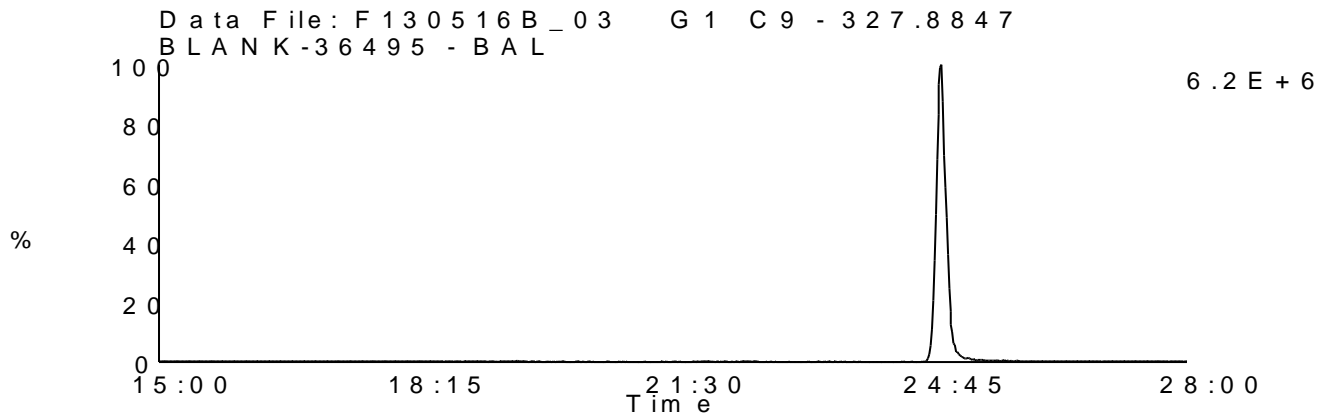
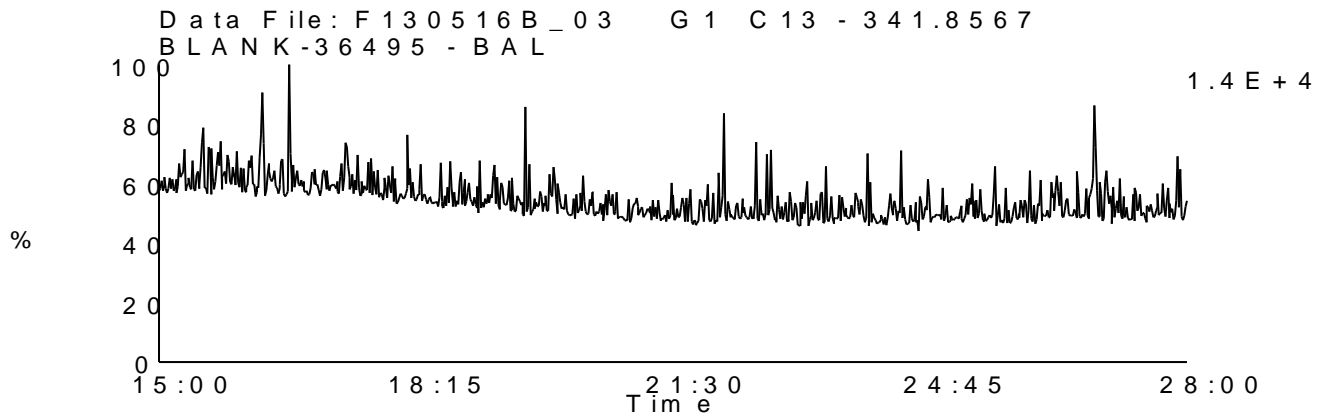
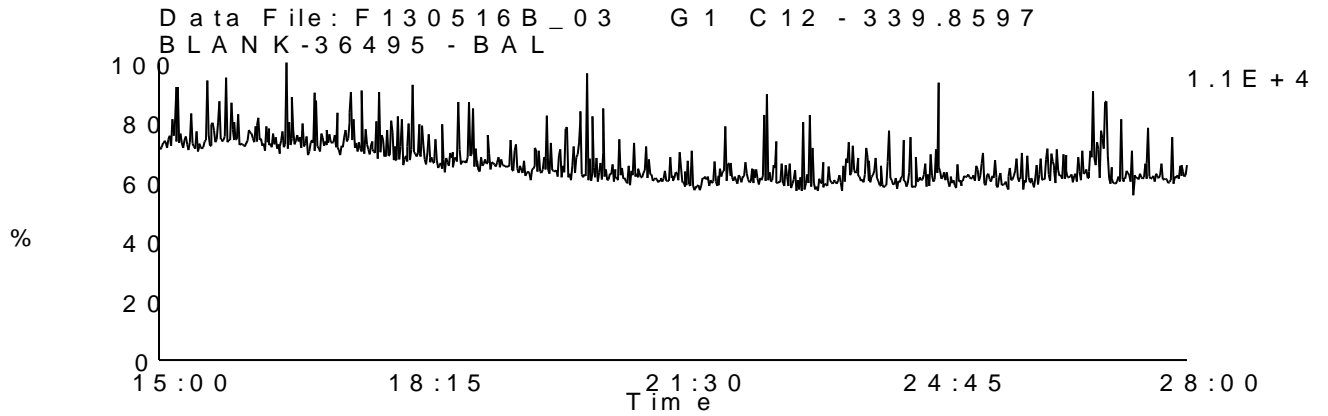
Date Acquired: 5/16/2013

Sample Description: BLANK-36495 - BAL

Lab Sample ID: BLANK-36495

Client Sample ID:

Instrument: 10MSHR05 (F)





Homologue Group: Pentas

Data File Name: F130516B\_03

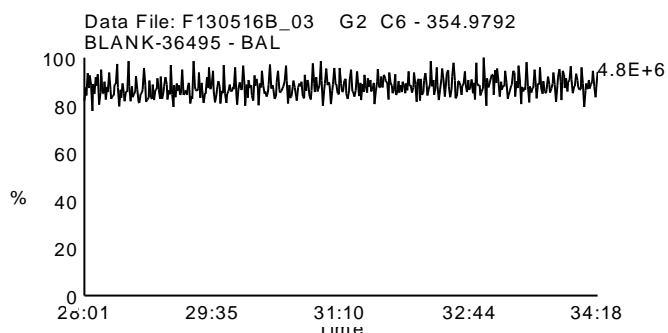
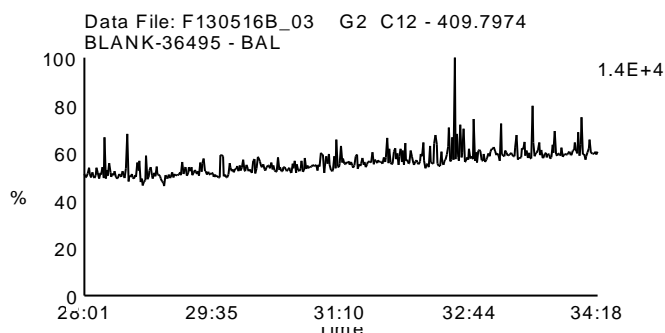
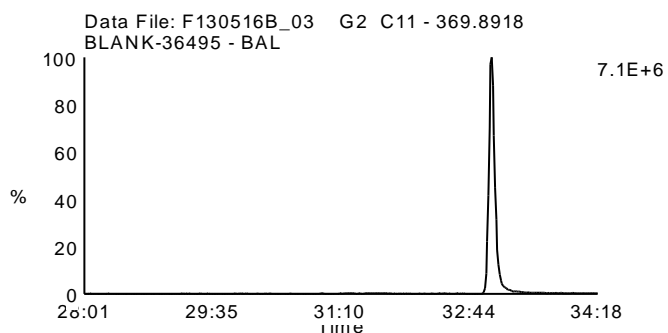
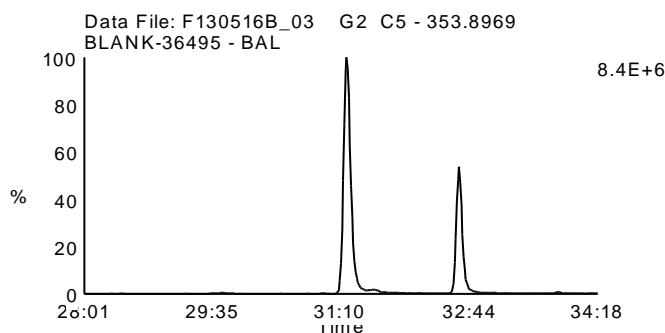
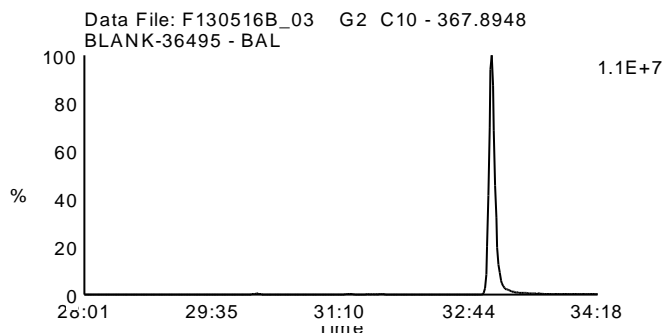
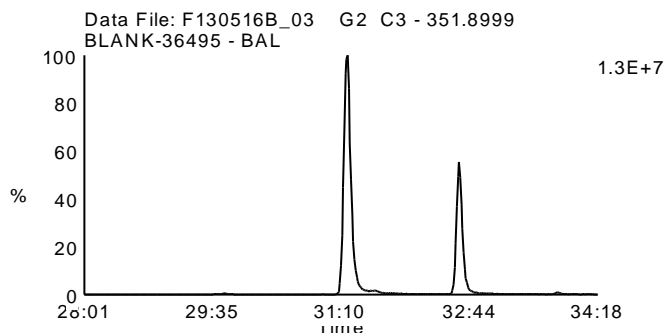
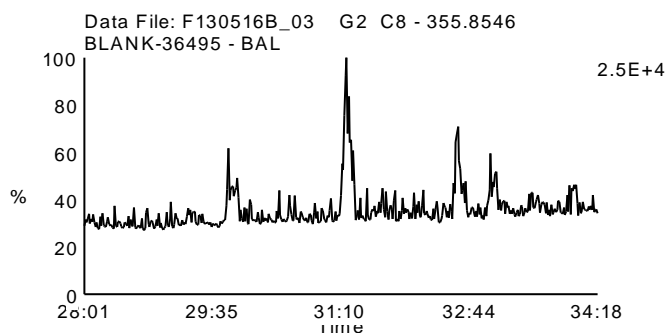
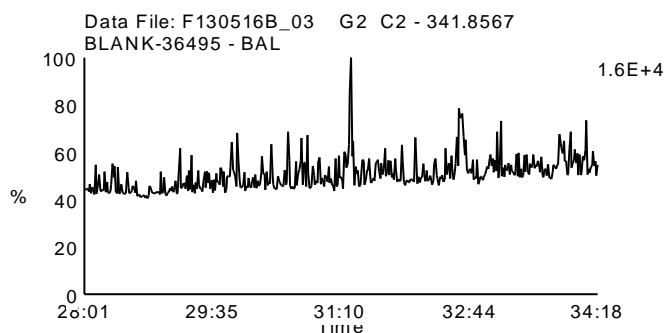
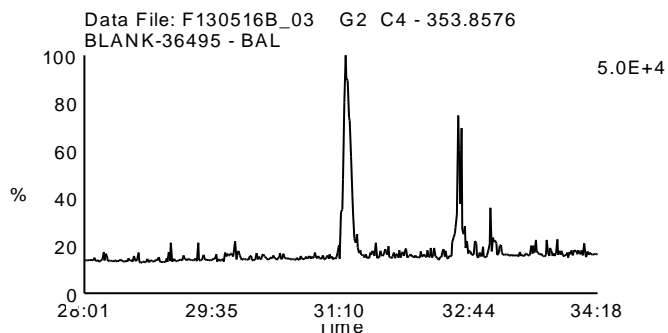
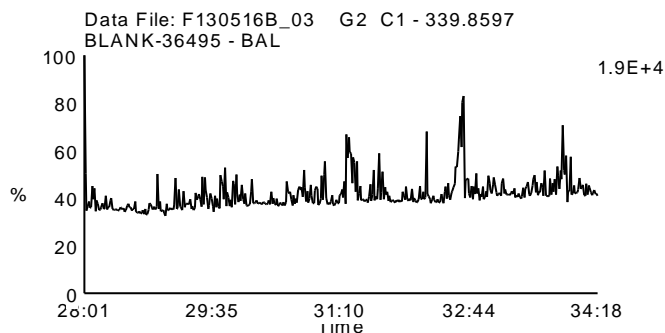
Date Acquired: 5/16/2013

Sample Description: BLANK-36495 - BAL

Lab Sample ID: BLANK-36495

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130516B\_03

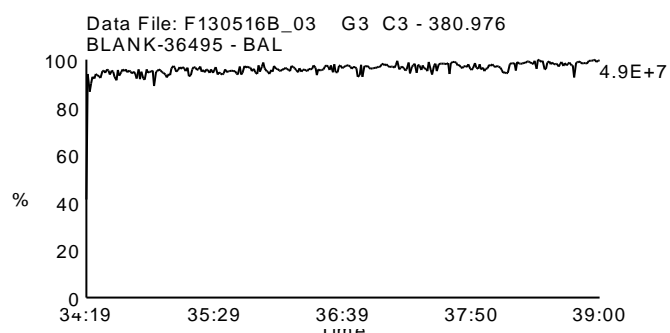
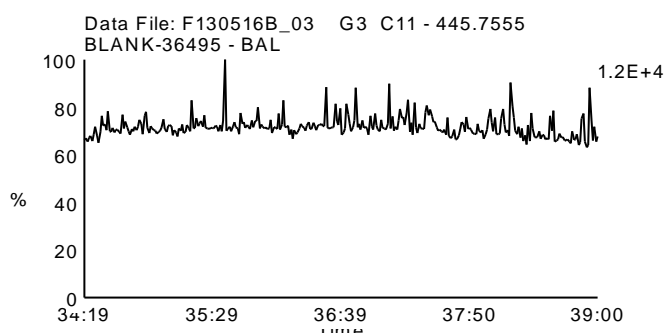
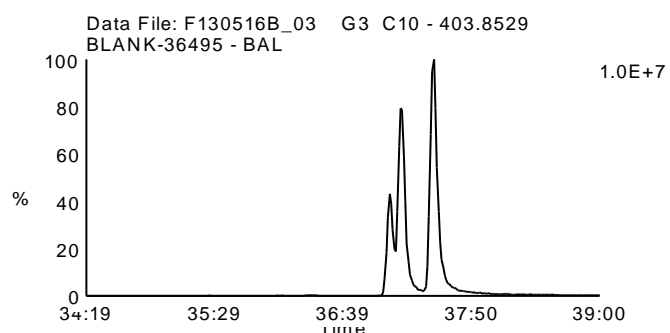
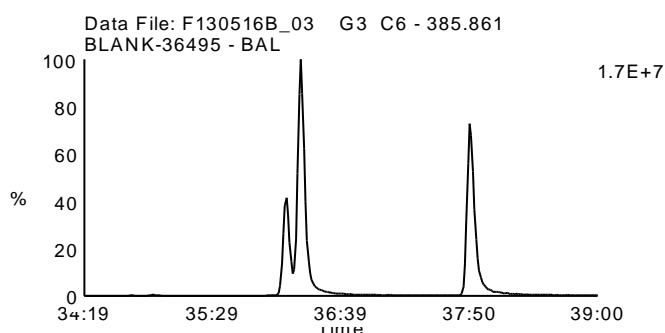
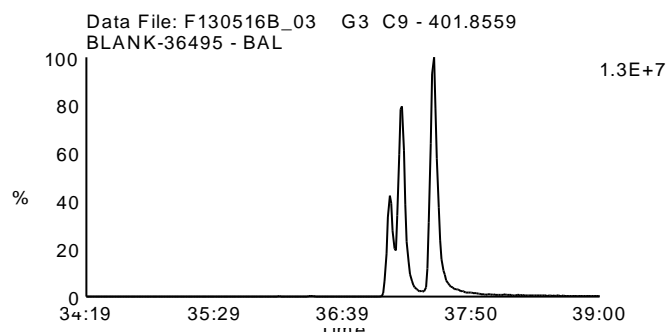
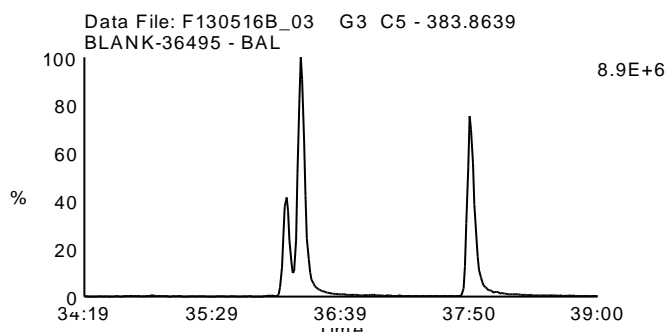
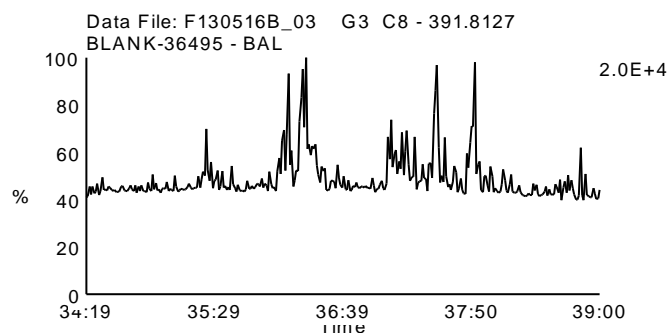
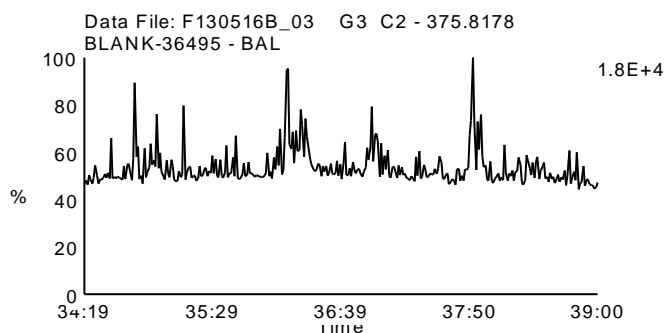
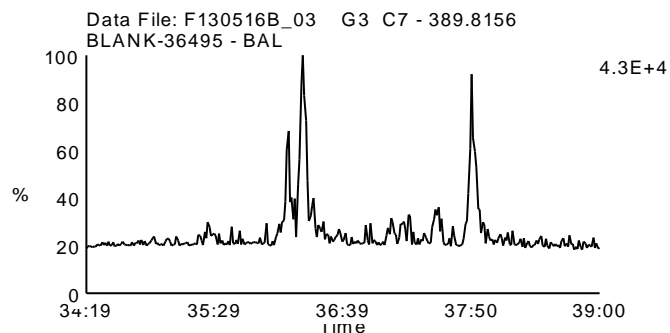
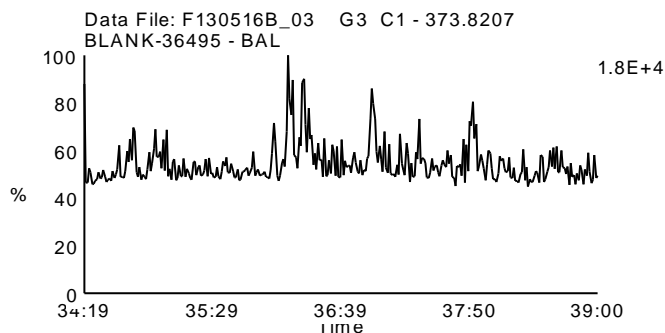
Date Acquired: 5/16/2013

Sample Description: BLANK-36495 - BAL

Lab Sample ID: BLANK-36495

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516B\_03

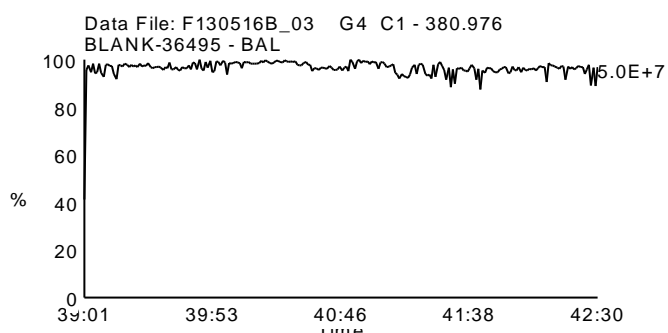
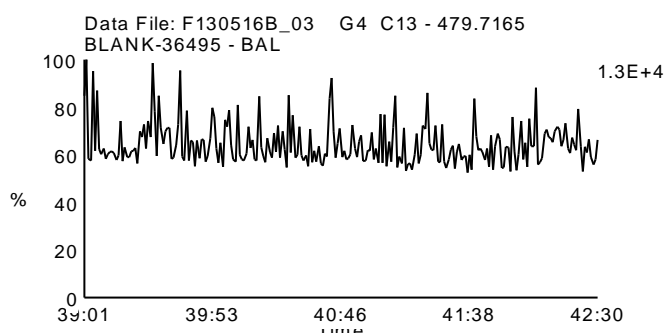
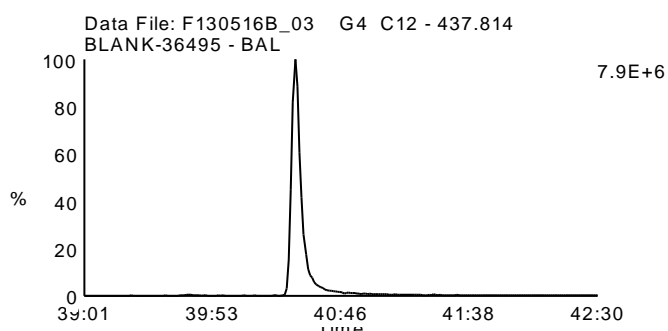
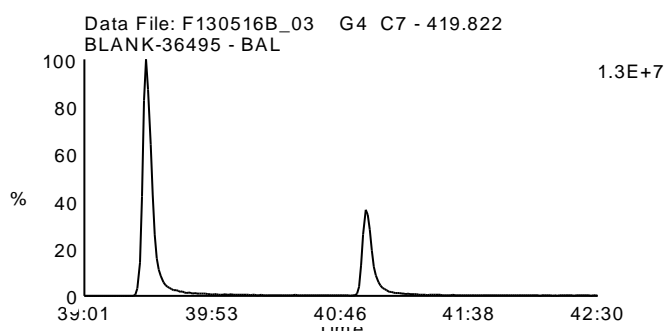
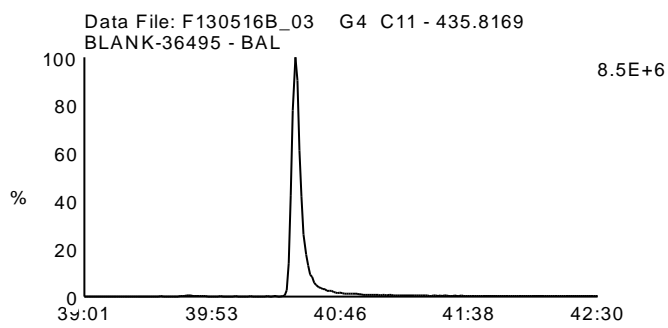
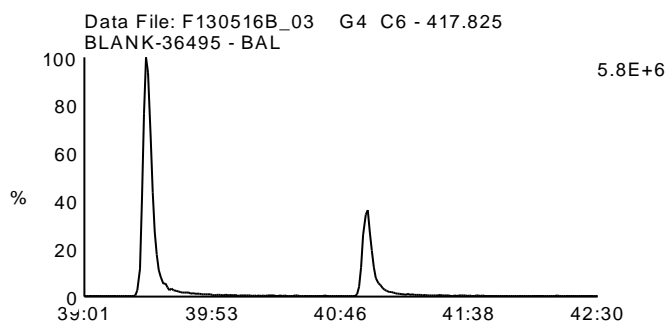
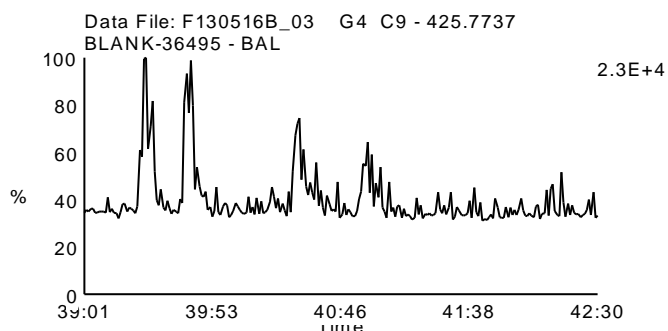
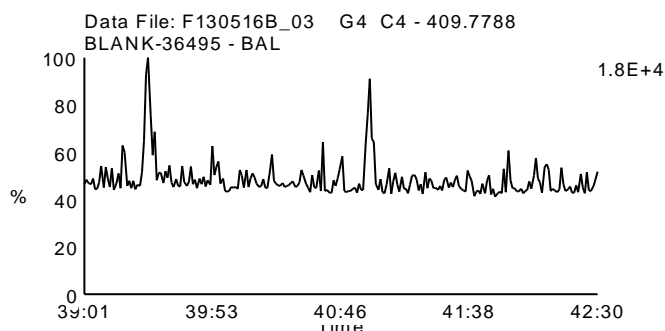
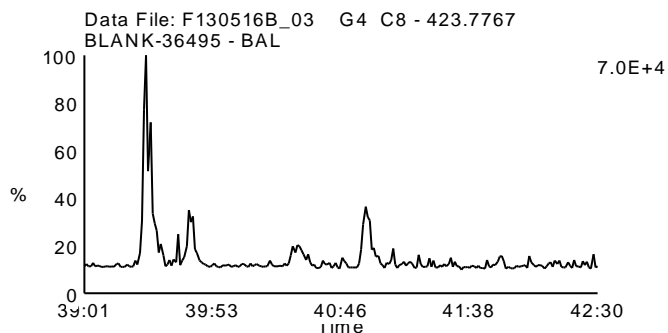
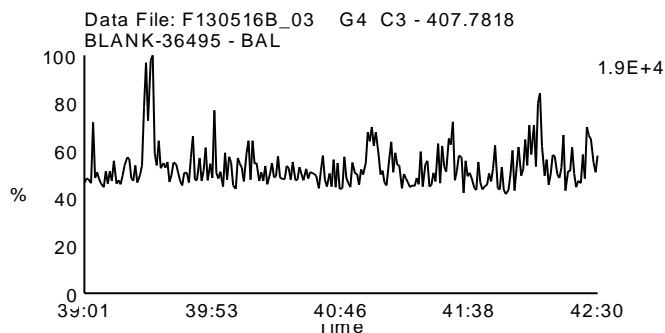
Date Acquired: 5/16/2013

Sample Description: BLANK-36495 - BAL

Lab Sample ID: BLANK-36495

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130516B\_03

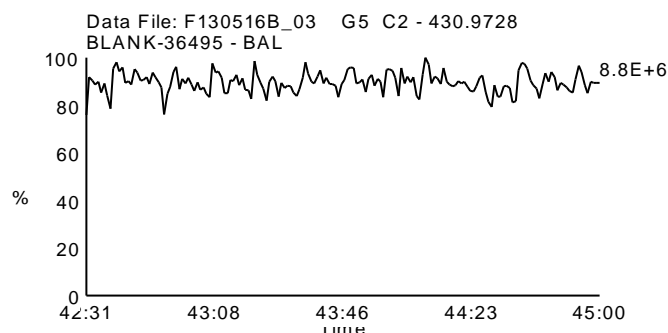
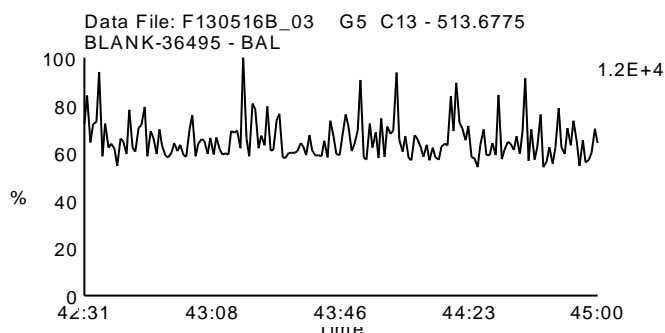
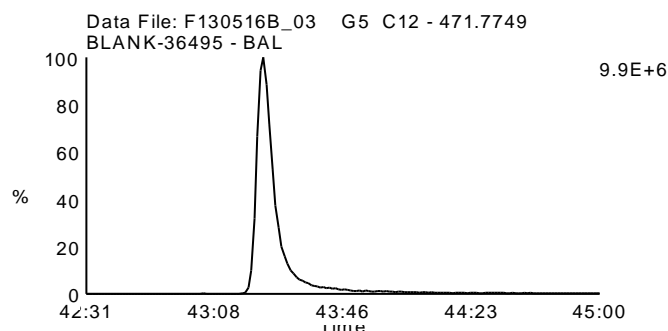
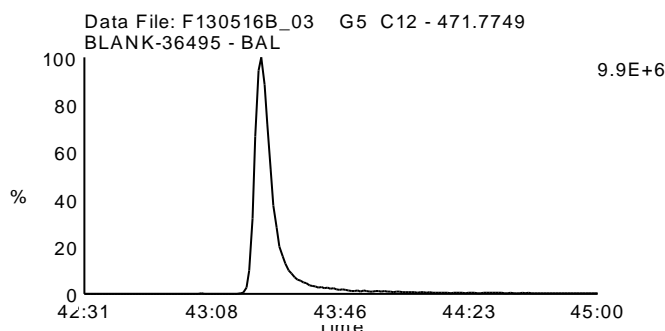
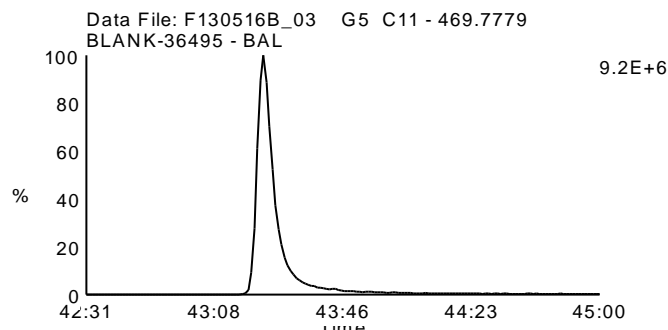
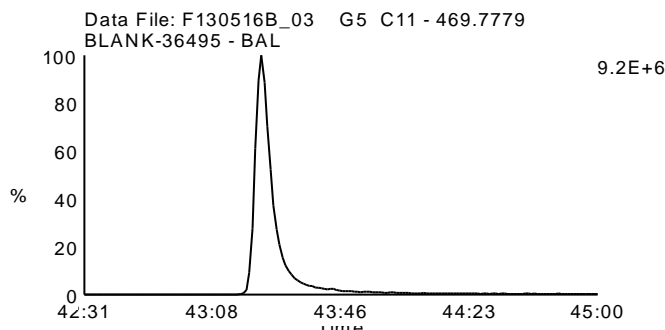
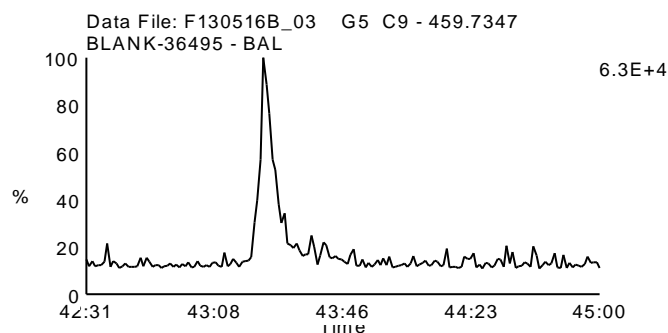
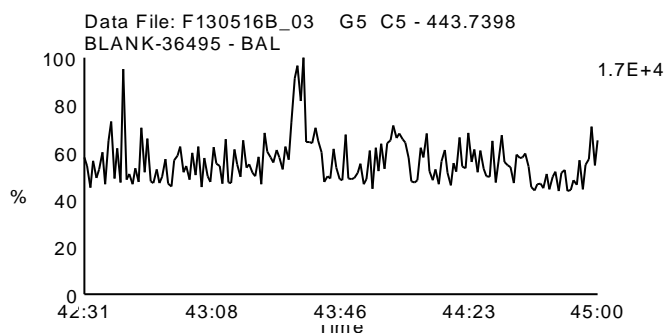
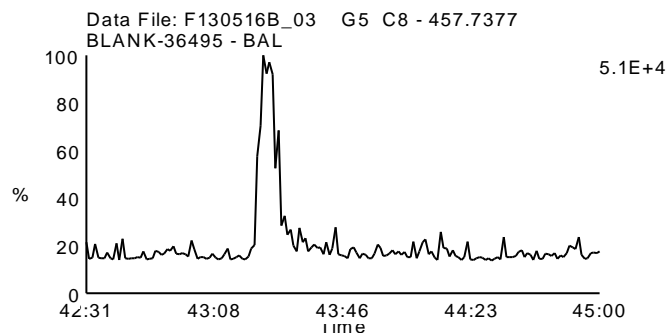
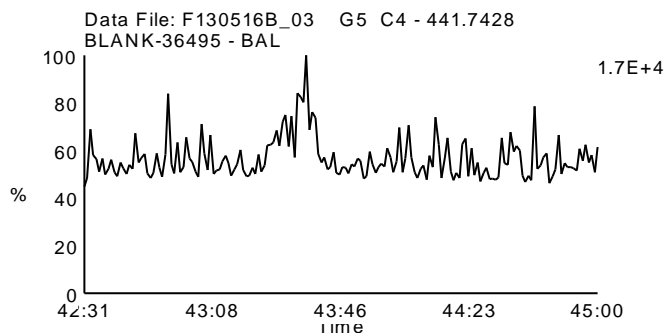
Date Acquired: 5/16/2013

Sample Description: BLANK-36495 - BAL

Lab Sample ID: BLANK-36495

Client Sample ID:

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130516B\_14

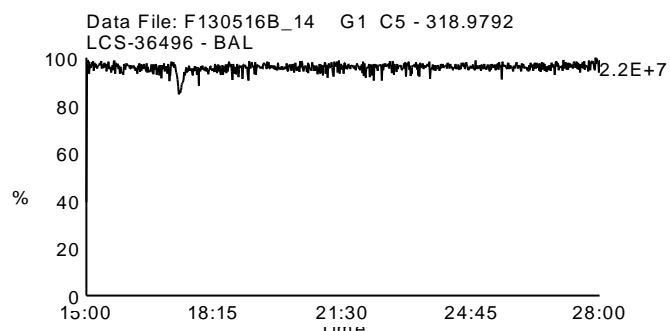
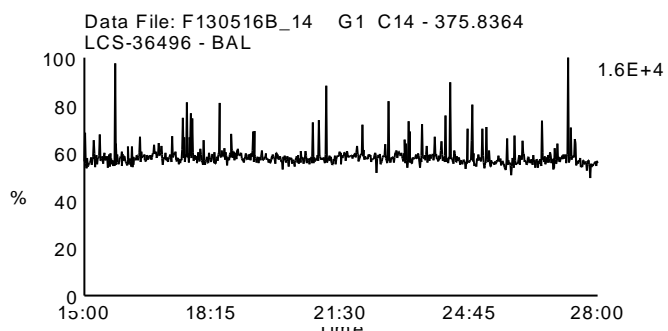
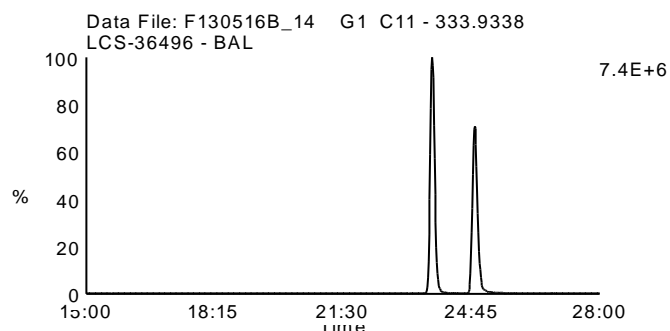
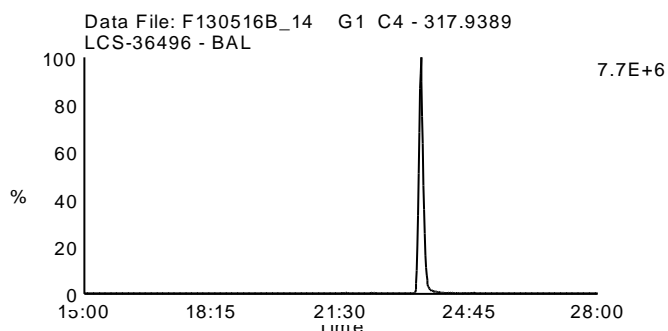
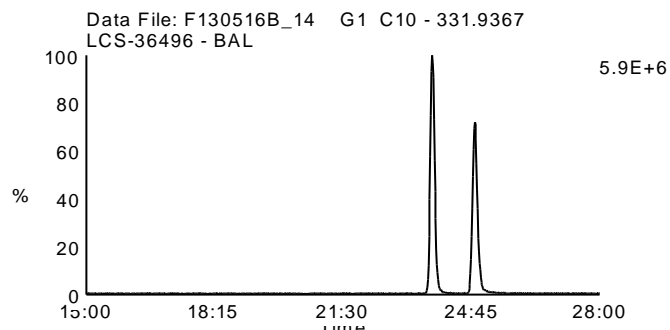
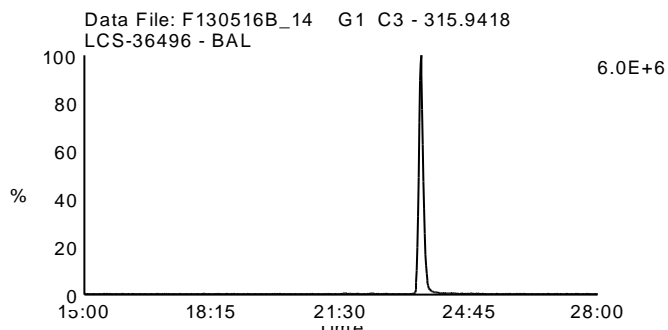
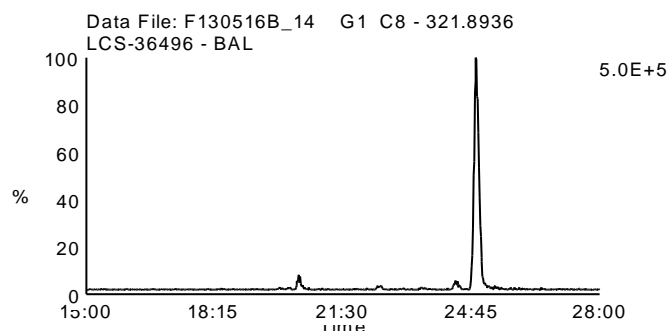
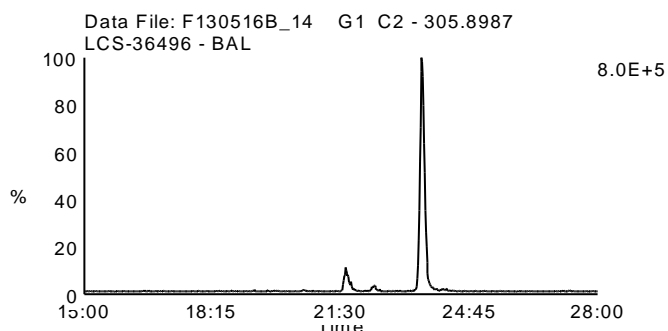
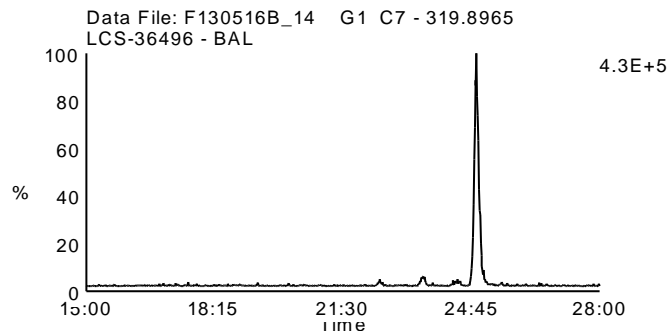
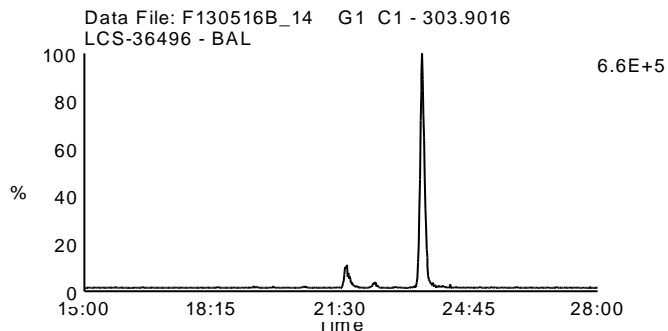
Date Acquired: 5/17/2013

Sample Description: LCS-36496 - BAL

Lab Sample ID: LCS-36496

Client Sample ID: LCSCS

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130516B\_14

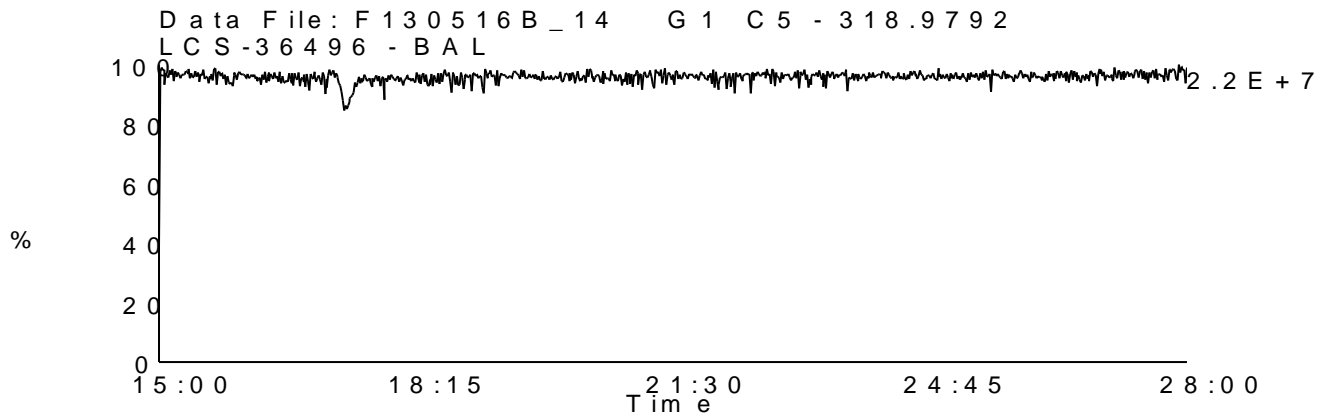
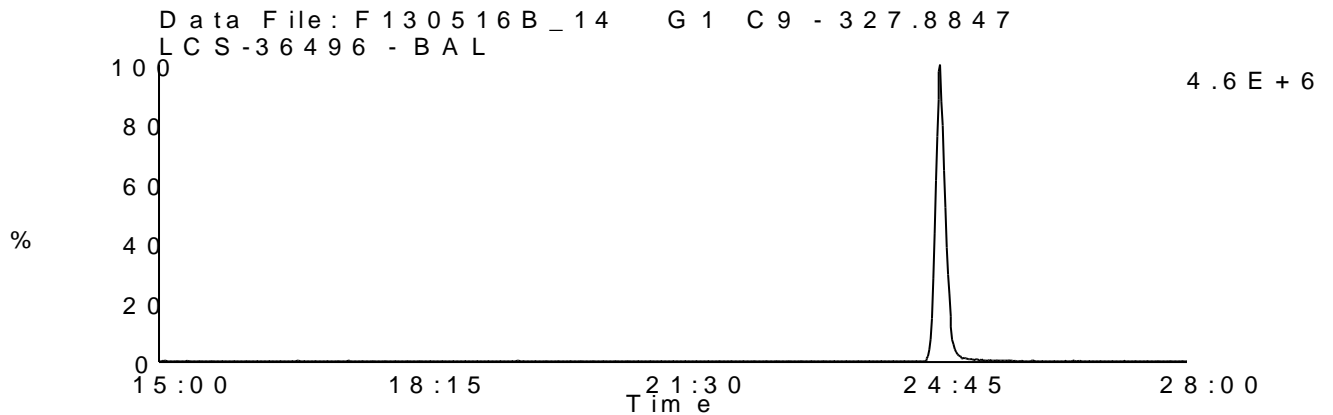
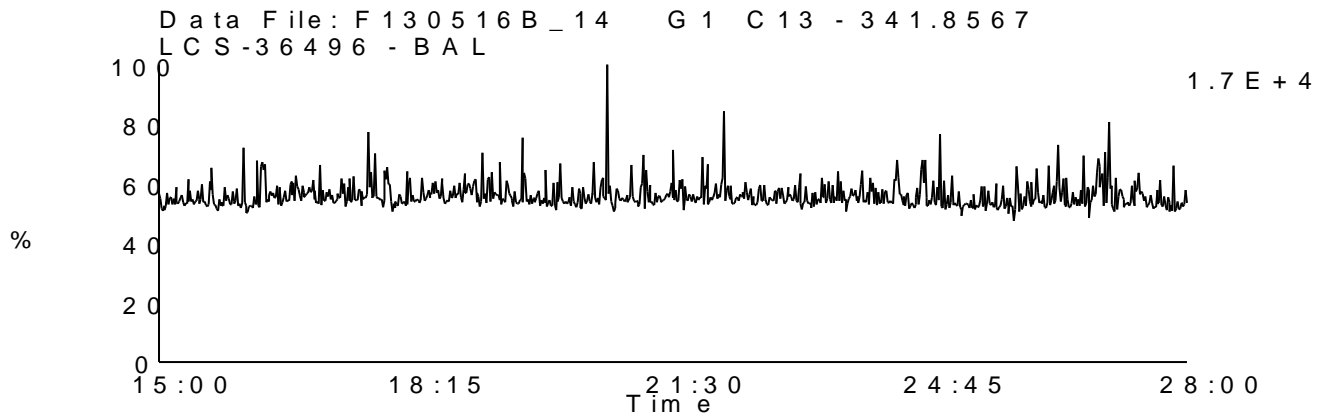
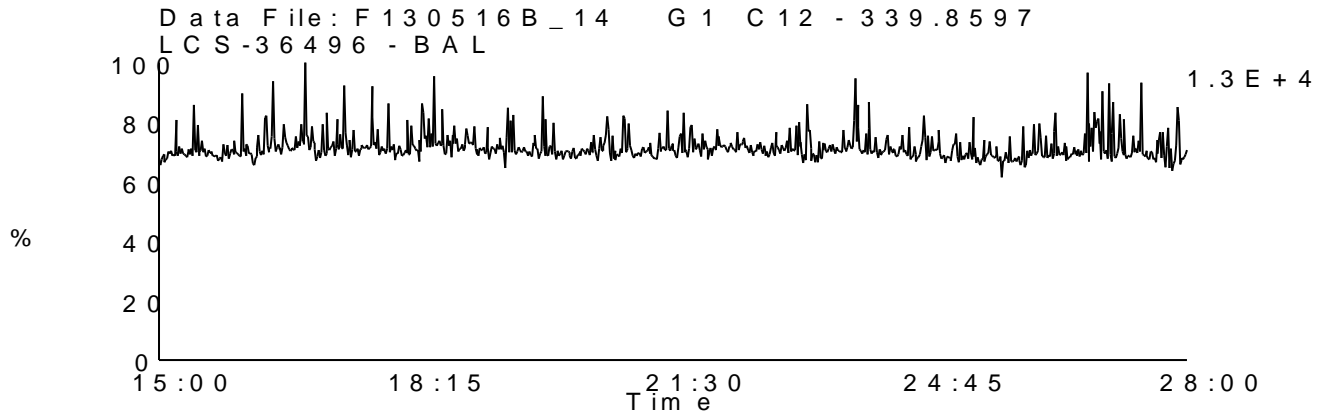
Date Acquired: 5/17/2013

Sample Description: LCS-36496 - BAL

Lab Sample ID: LCS-36496

Client Sample ID: LCSCS

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516B\_14

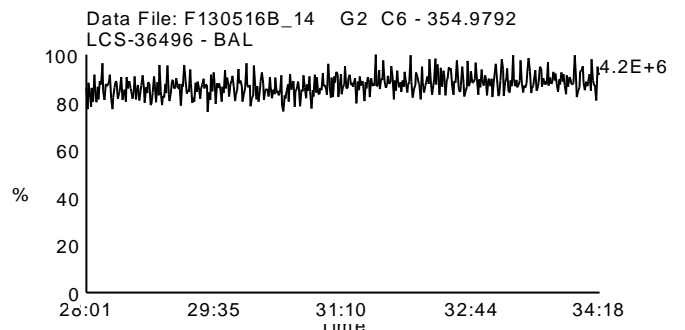
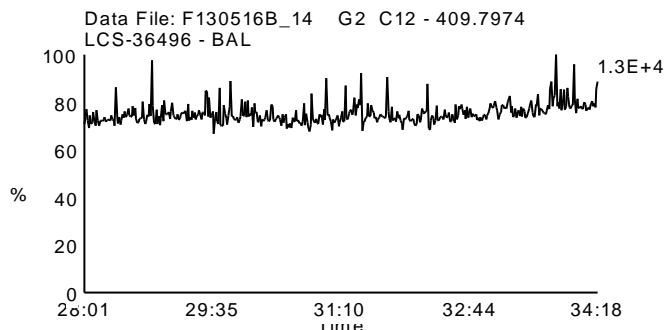
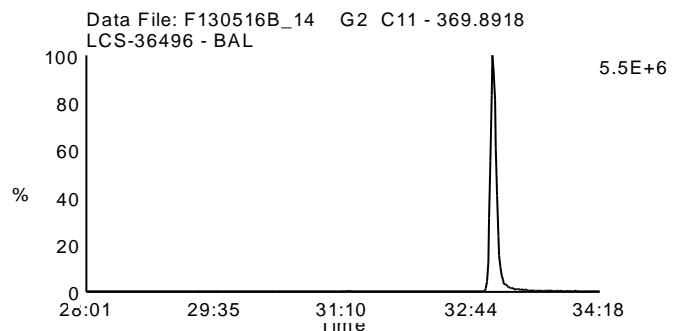
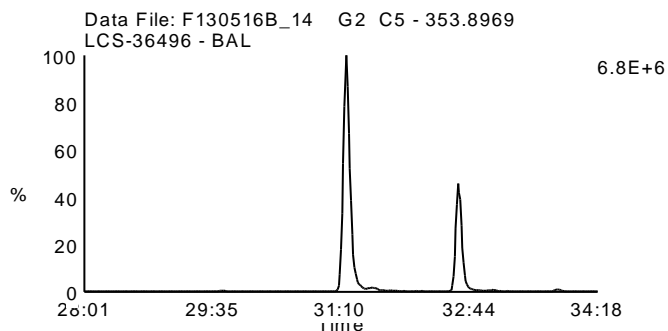
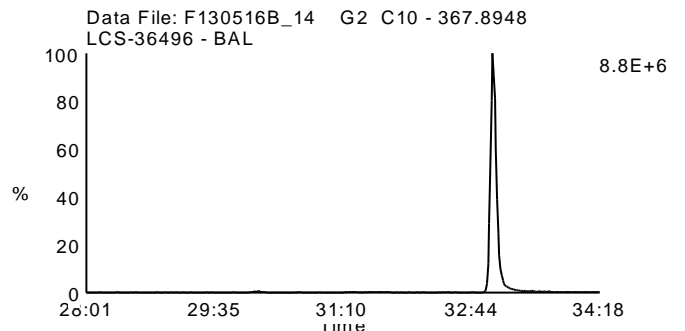
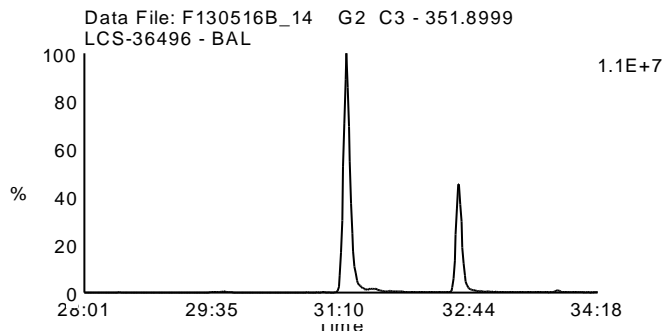
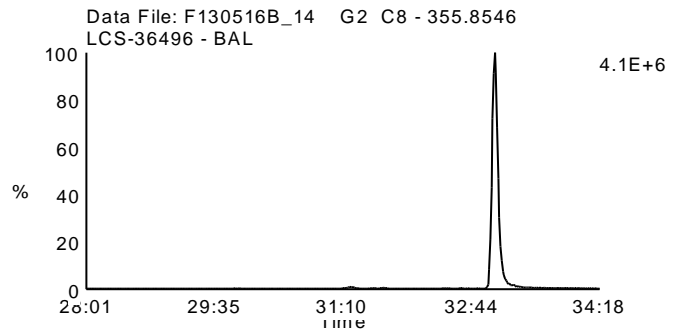
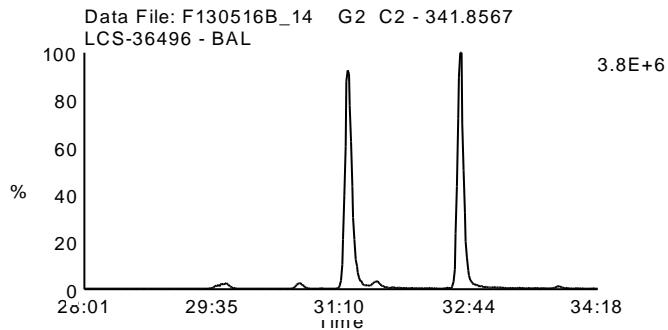
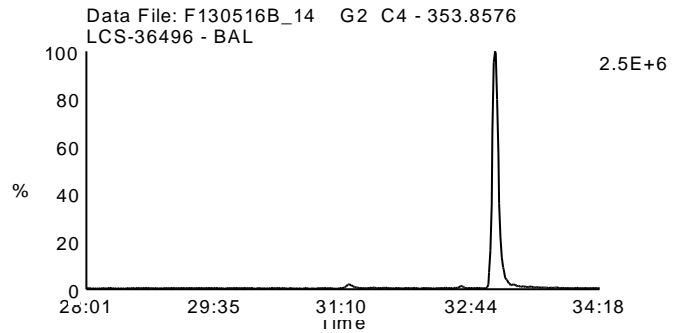
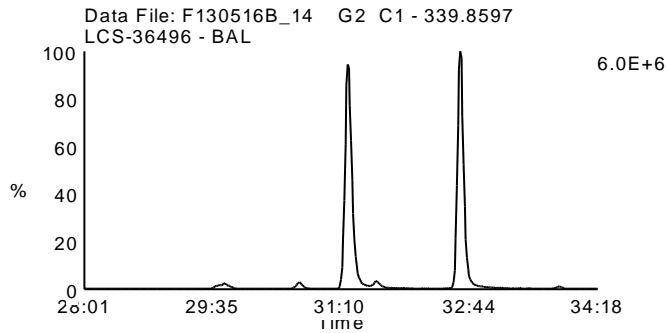
Date Acquired: 5/17/2013

Sample Description: LCS-36496 - BAL

Lab Sample ID: LCS-36496

Client Sample ID: LCSCS

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130516B\_14

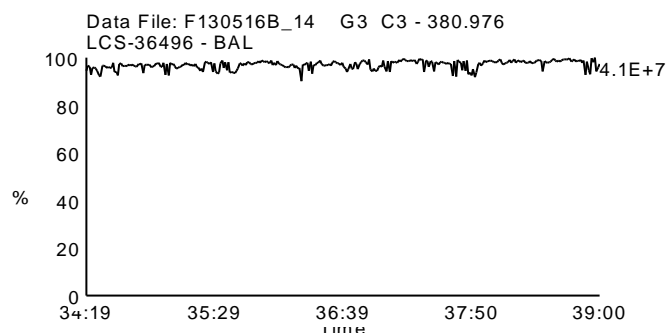
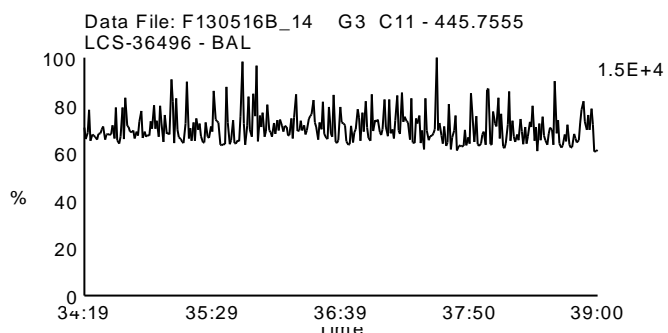
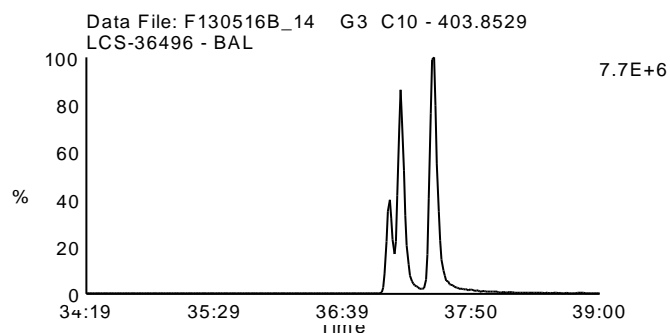
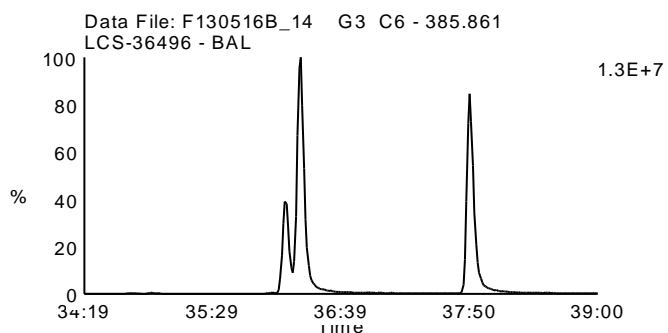
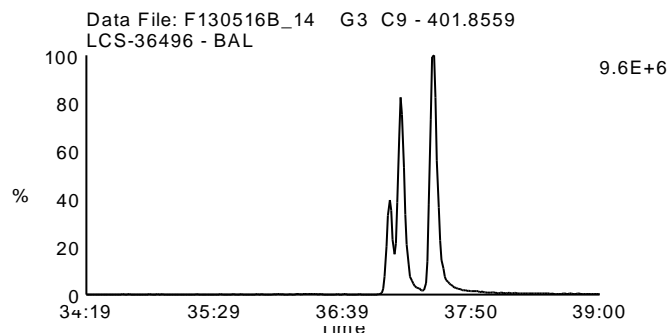
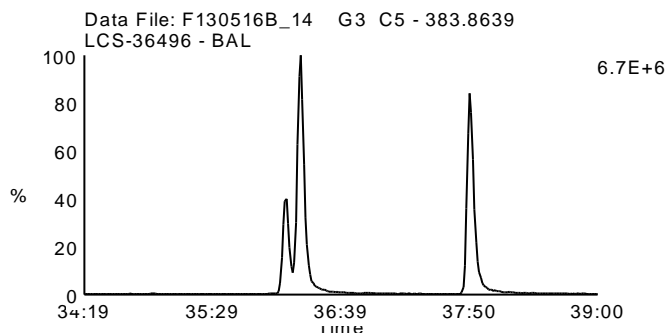
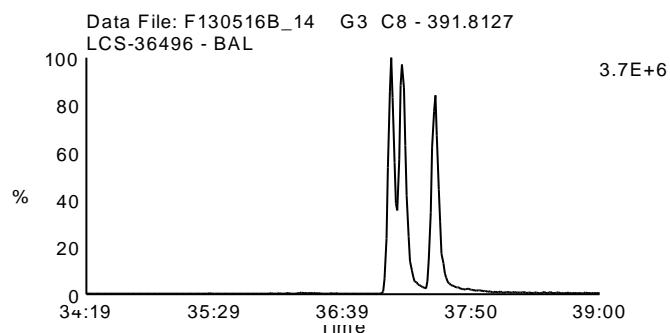
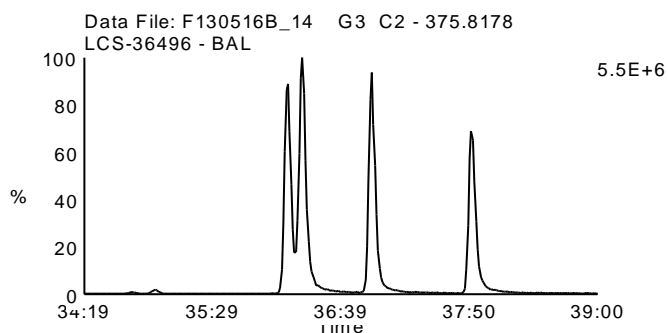
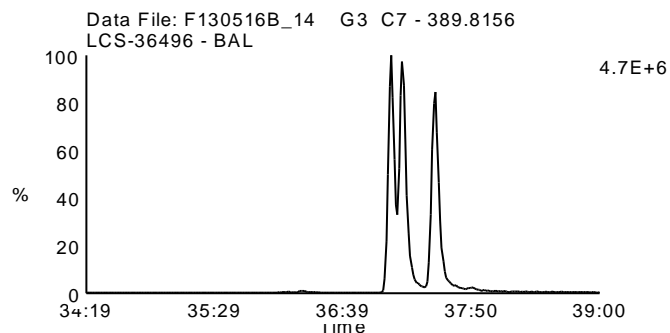
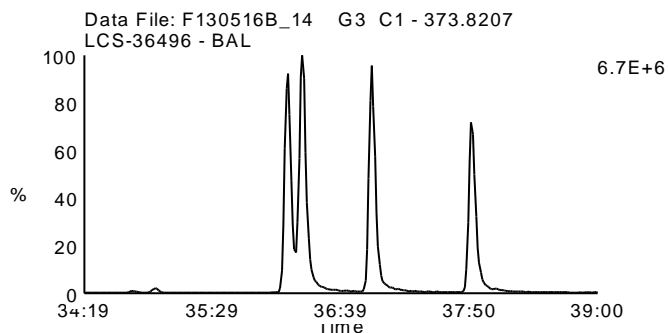
Date Acquired: 5/17/2013

Sample Description: LCS-36496 - BAL

Lab Sample ID: LCS-36496

Client Sample ID: LCSCS

Instrument: 10MSHR05 (F)





Homologue Group: Heptas

Data File Name: F130516B\_14

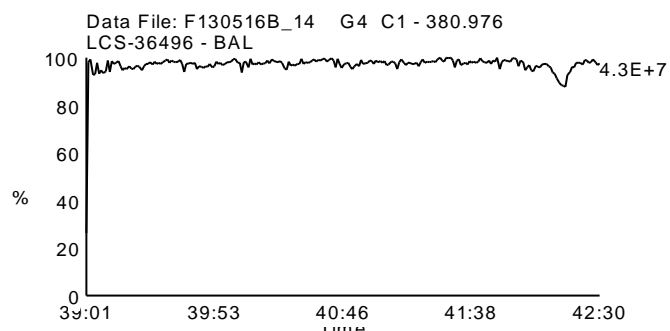
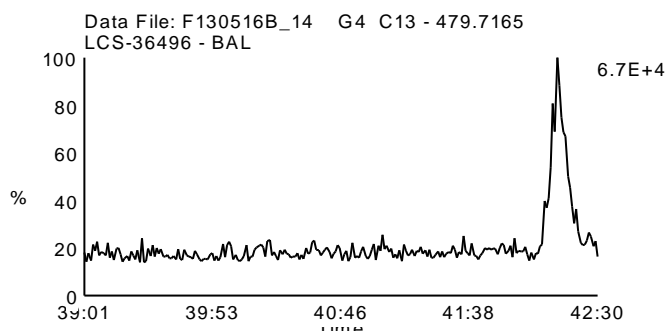
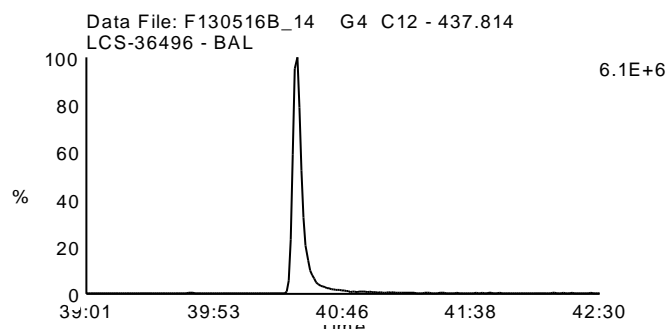
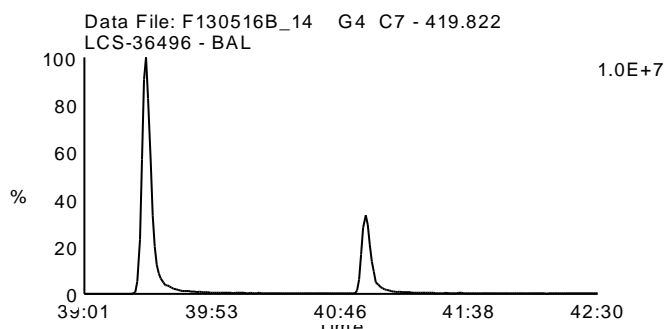
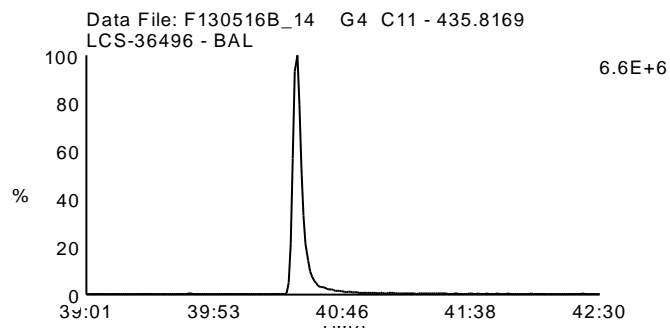
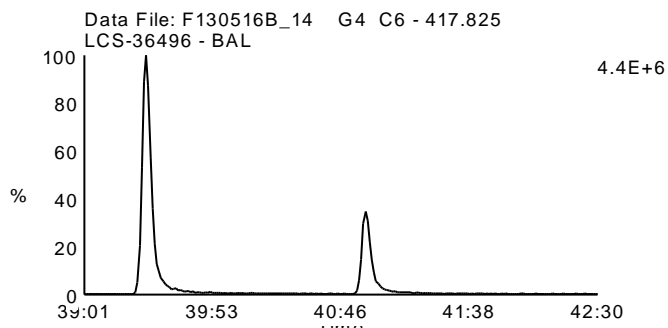
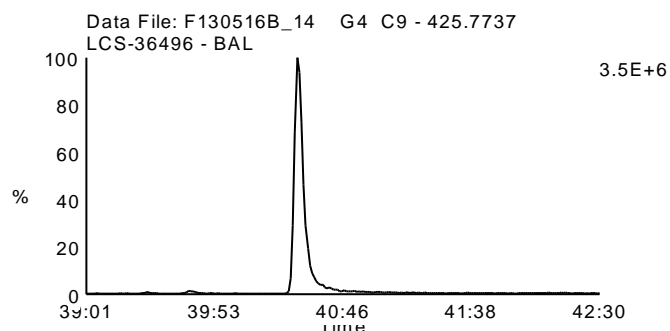
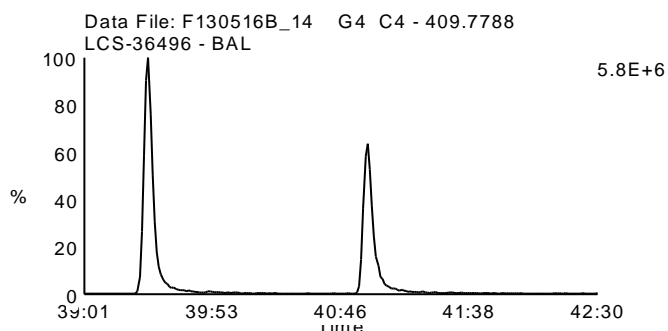
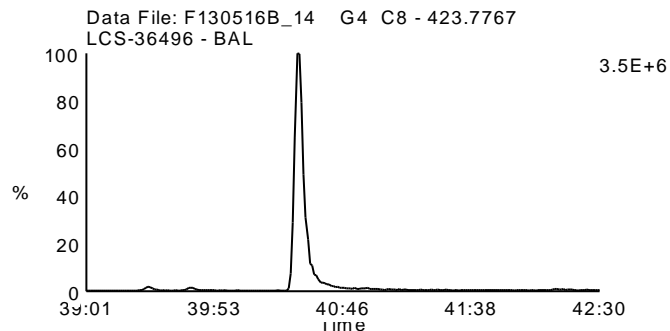
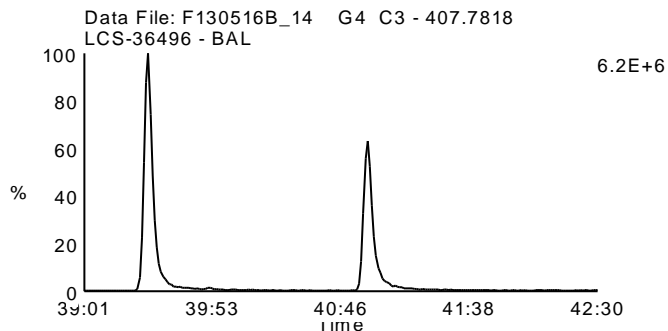
Date Acquired: 5/17/2013

Sample Description: LCS-36496 - BAL

Lab Sample ID: LCS-36496

Client Sample ID: LCSCS

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130516B\_14

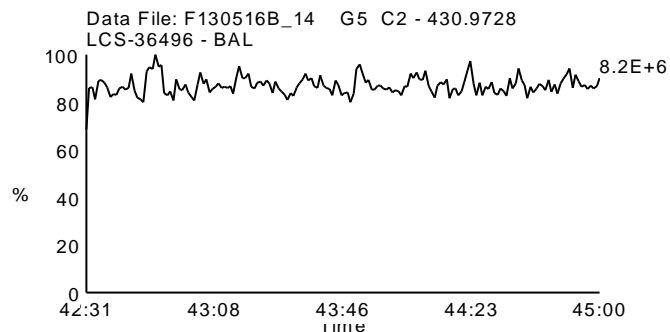
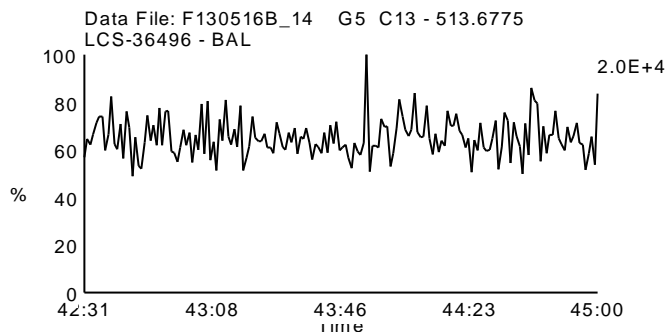
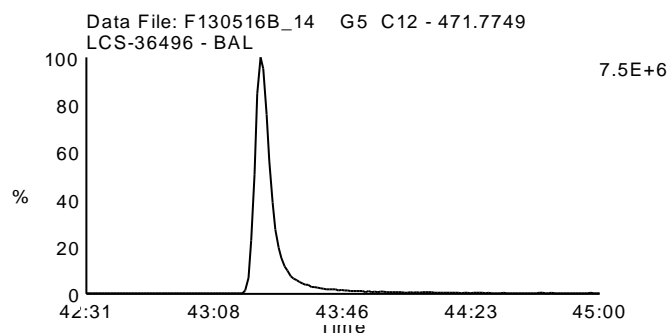
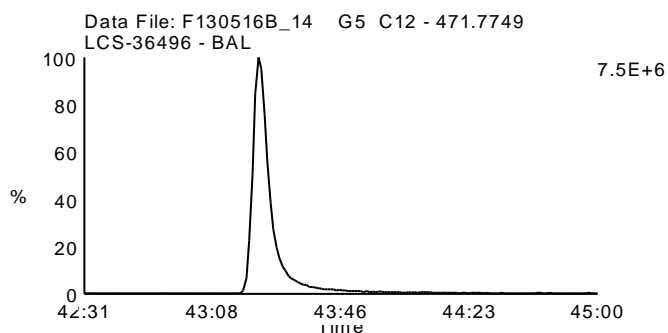
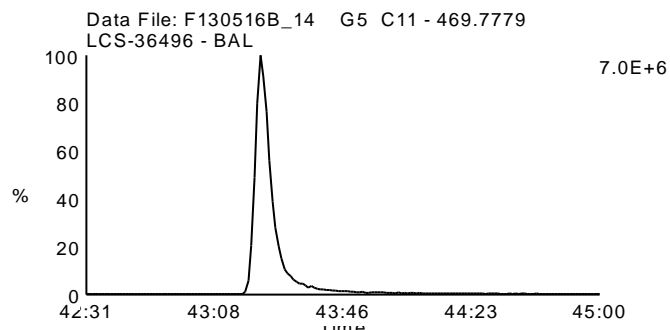
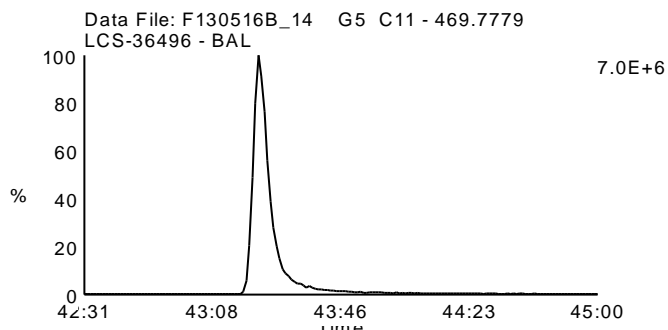
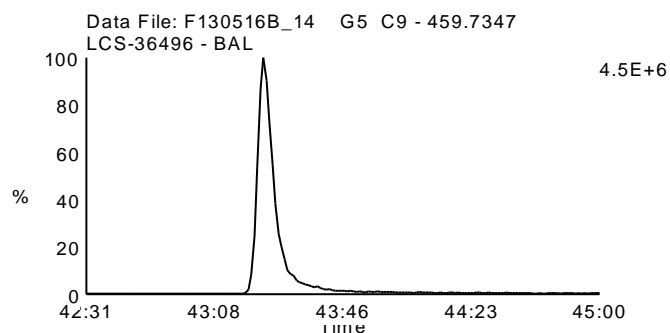
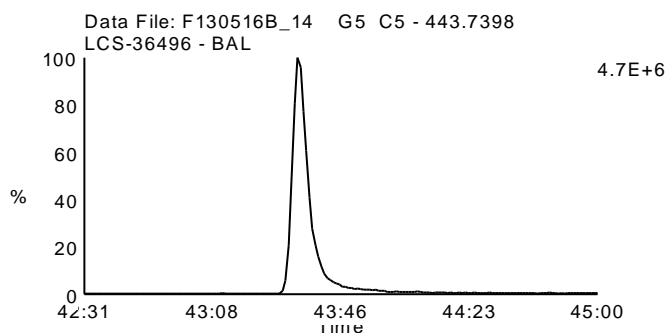
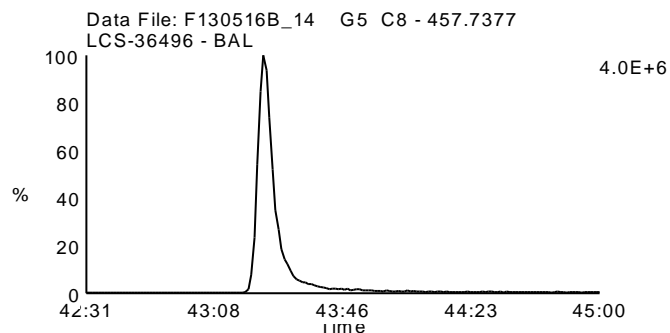
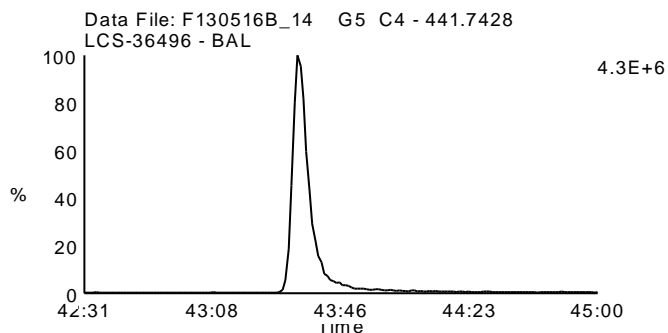
Date Acquired: 5/17/2013

Sample Description: LCS-36496 - BAL

Lab Sample ID: LCS-36496

Client Sample ID: LCSCS

Instrument: 10MSHR05 (F)



Homologue Group: Tetras

Data File Name: F130516B\_15

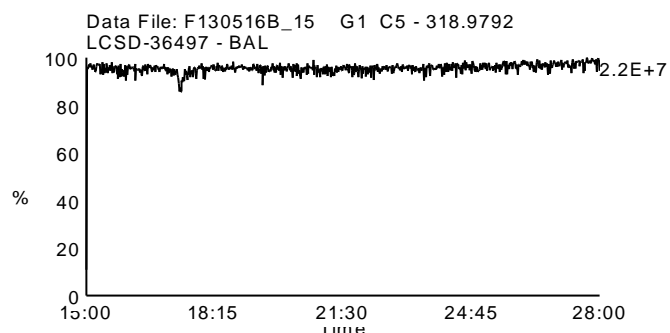
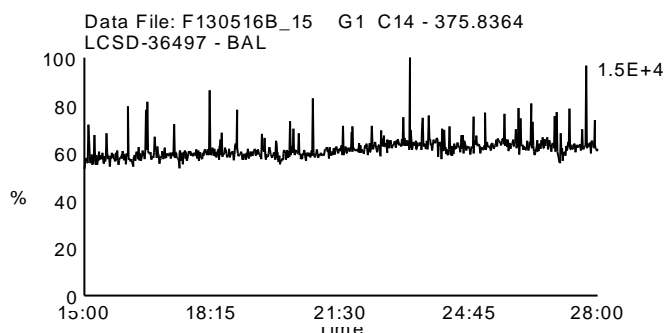
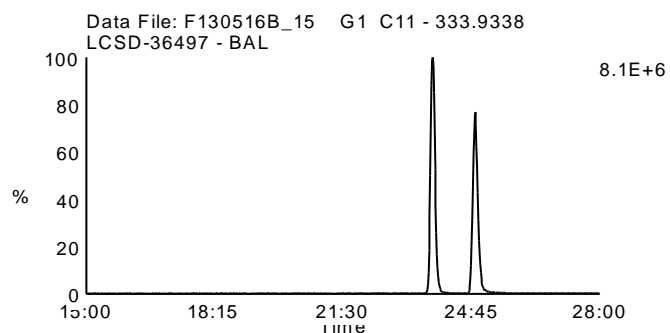
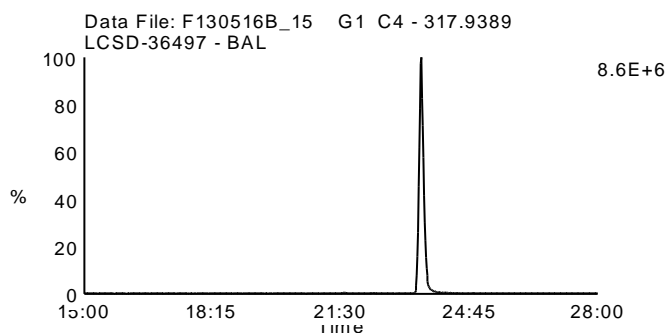
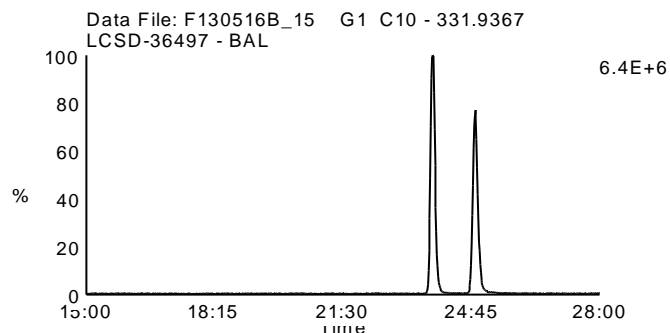
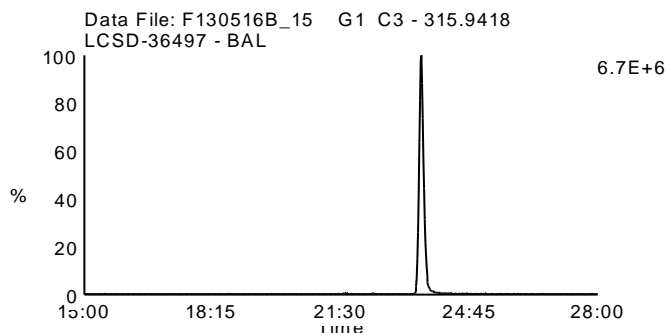
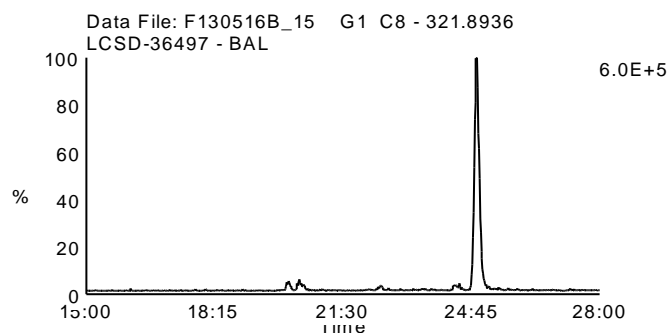
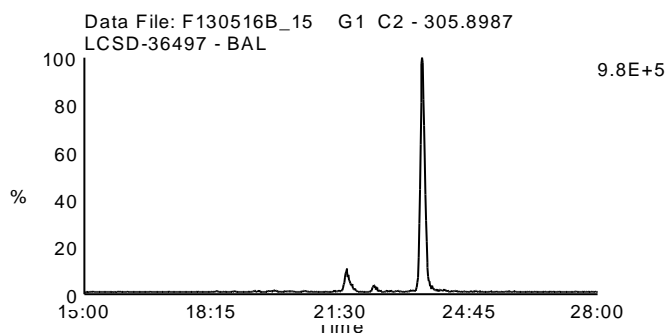
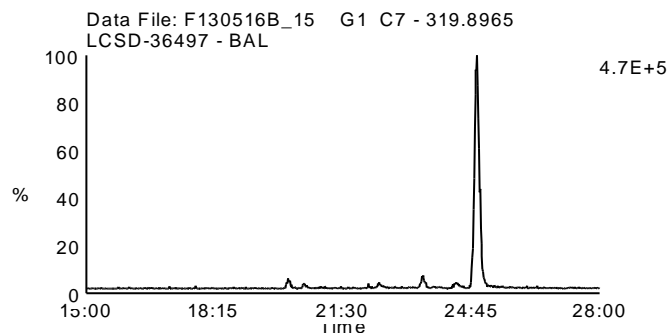
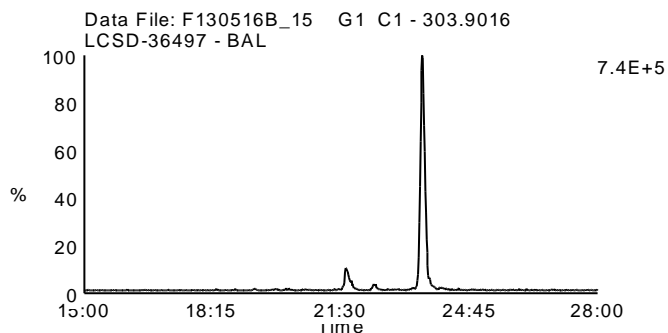
Date Acquired: 5/17/2013

Sample Description: LCSD-36497 - BAL

Lab Sample ID: LCSD-36497

Client Sample ID: LCSCT

Instrument: 10MSHR05 (F)



Homologue Group: Penta & Cleanup

Data File Name: F130516B\_15

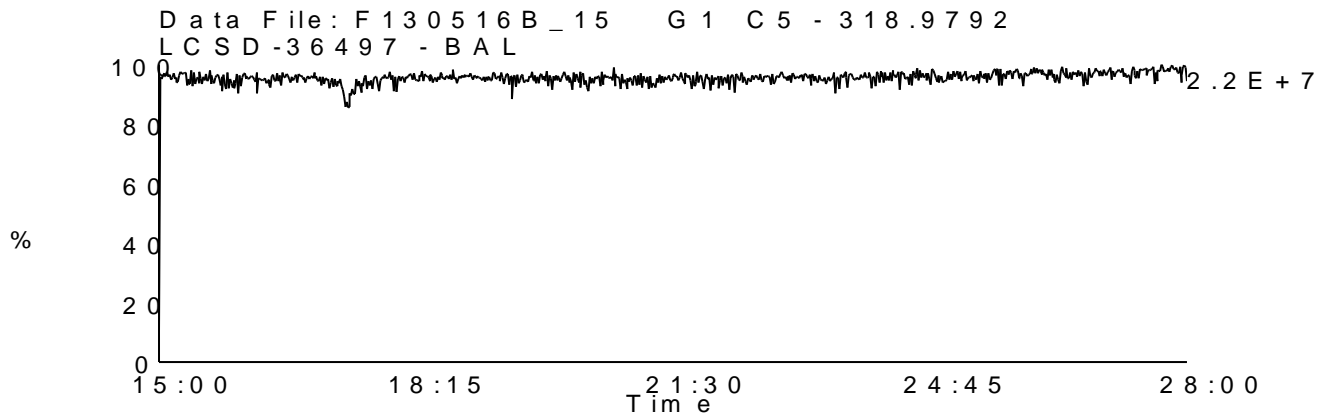
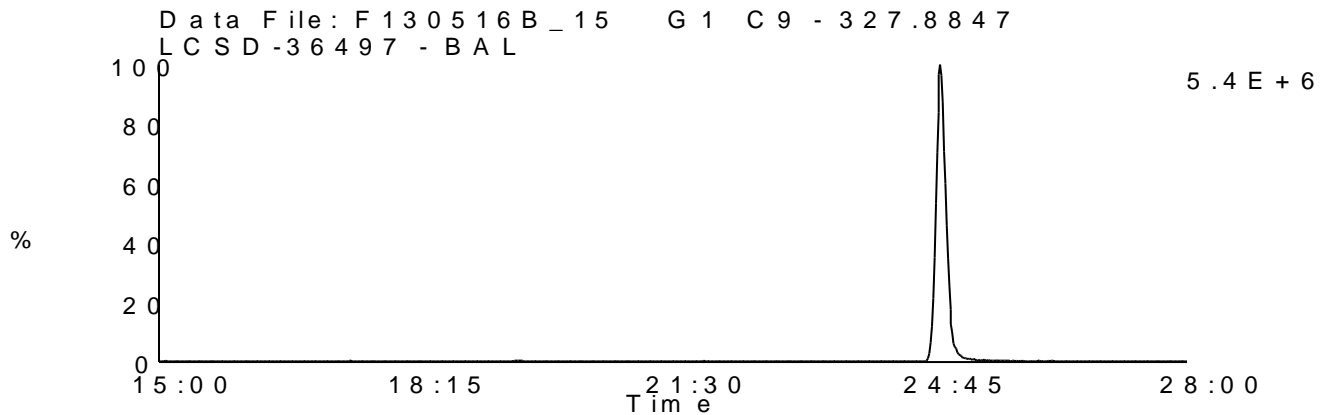
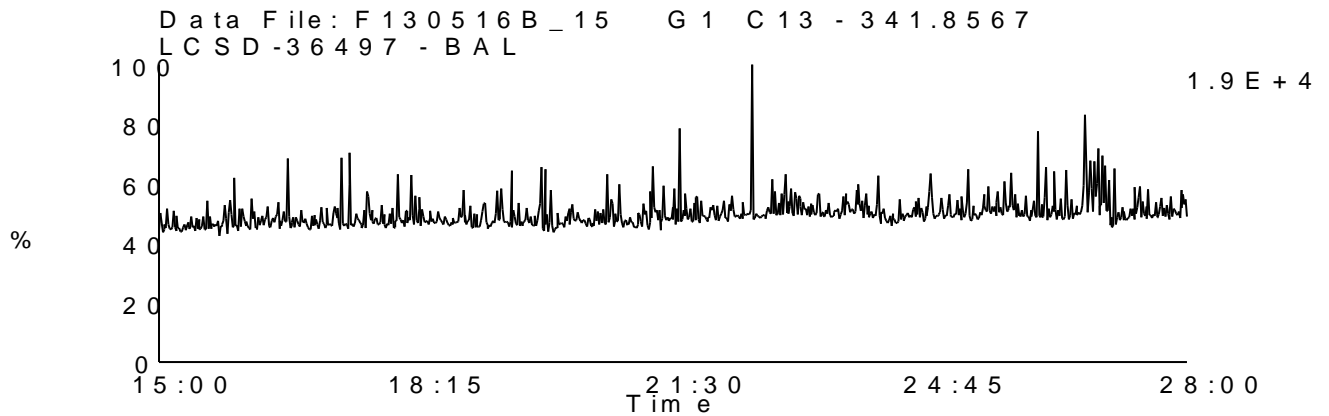
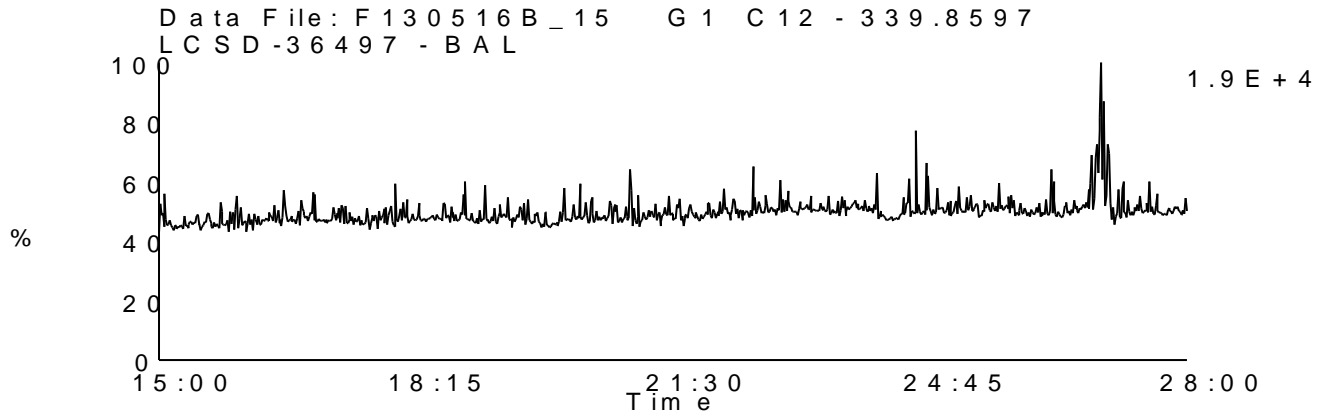
Date Acquired: 5/17/2013

Sample Description: LCSD-36497 - BAL

Lab Sample ID: LCSD-36497

Client Sample ID: LCSCCT

Instrument: 10MSHR05 (F)



Homologue Group: Pentas

Data File Name: F130516B\_15

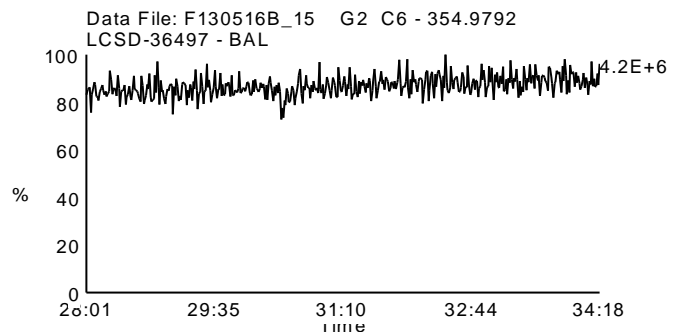
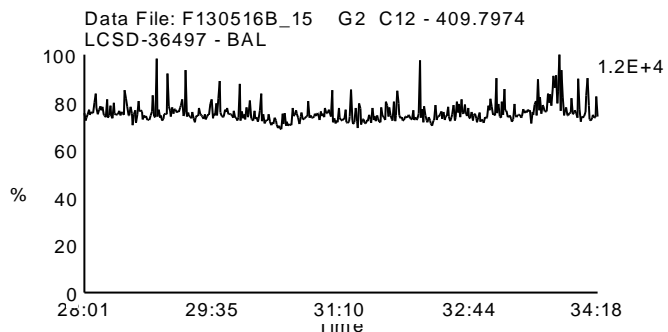
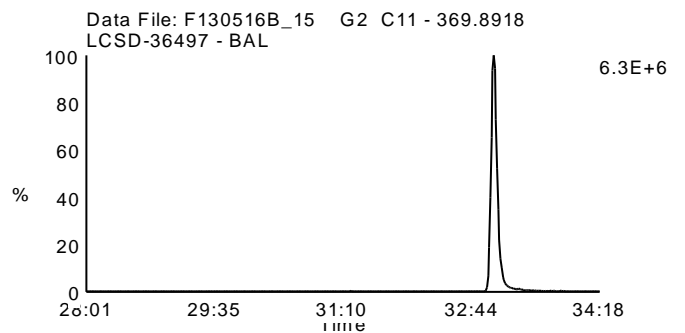
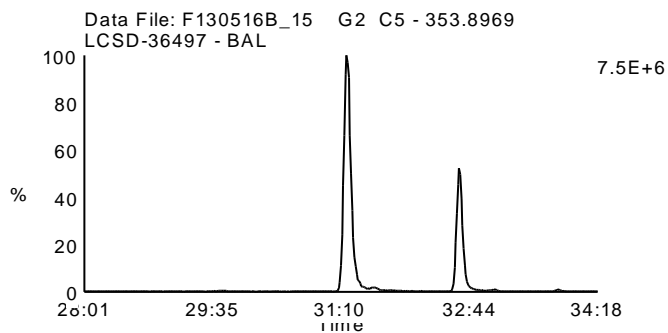
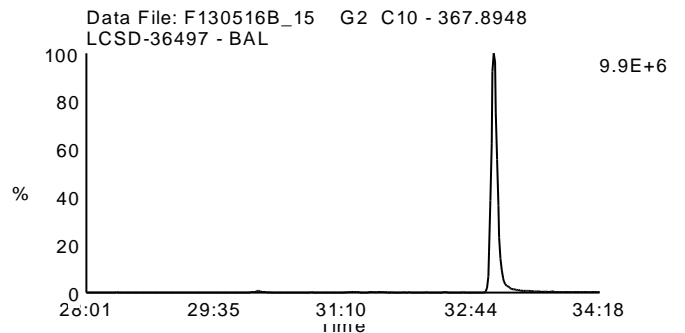
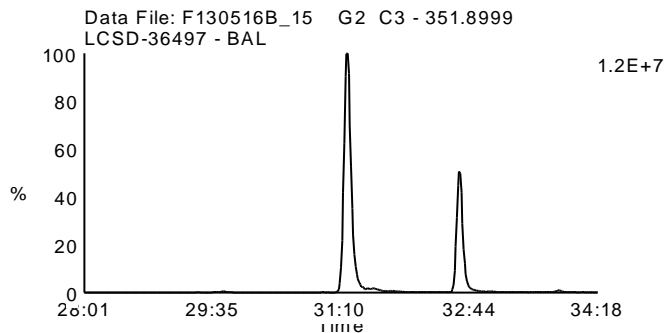
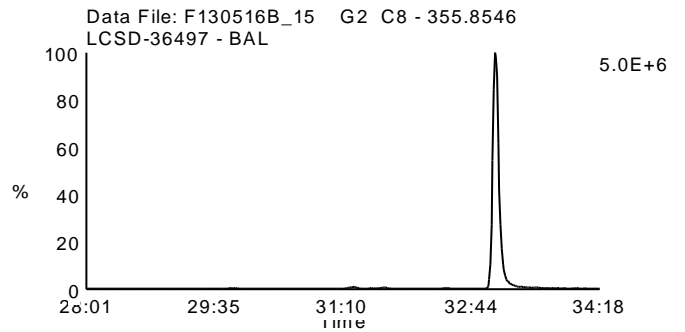
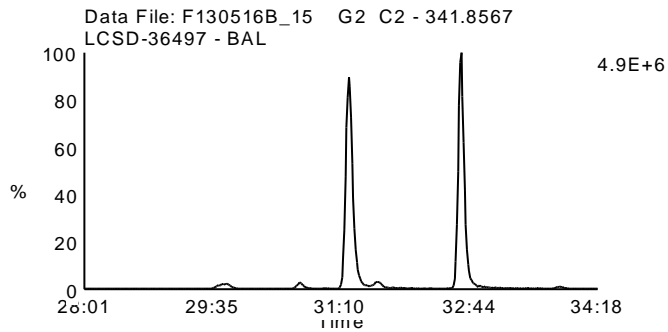
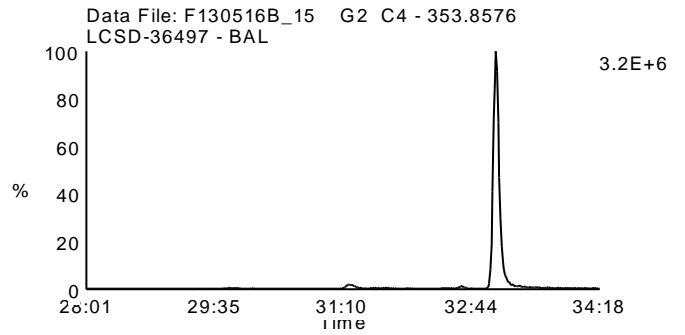
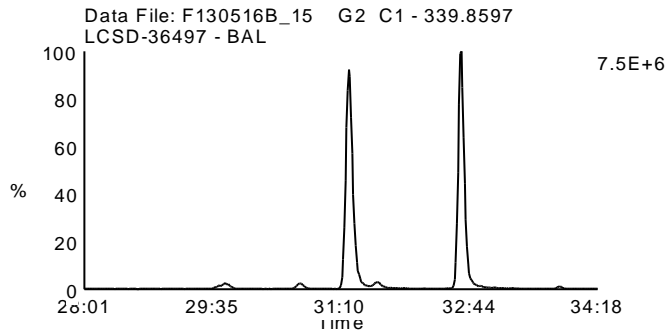
Date Acquired: 5/17/2013

Sample Description: LCSD-36497 - BAL

Lab Sample ID: LCSD-36497

Client Sample ID: LCSCT

Instrument: 10MSHR05 (F)



Homologue Group: Hexas

Data File Name: F130516B\_15

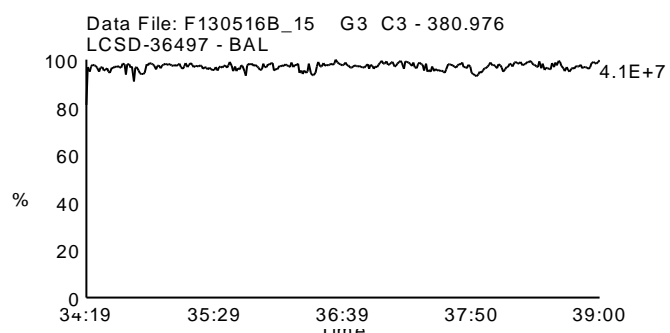
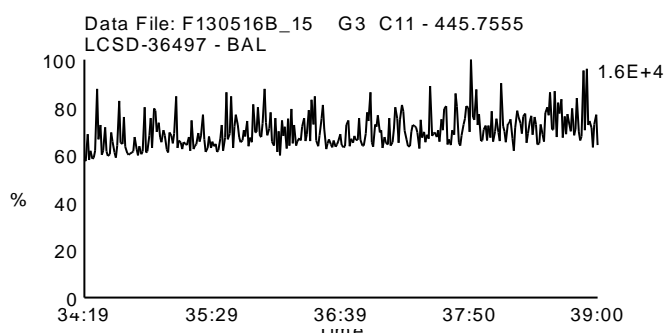
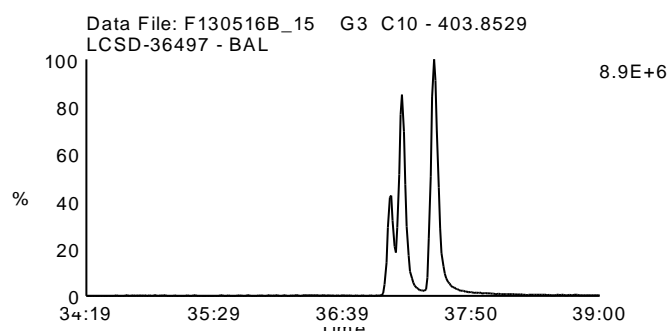
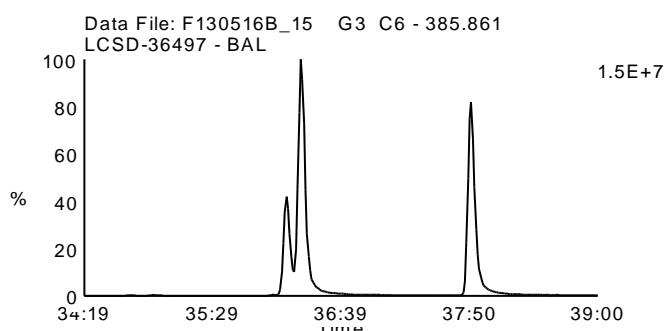
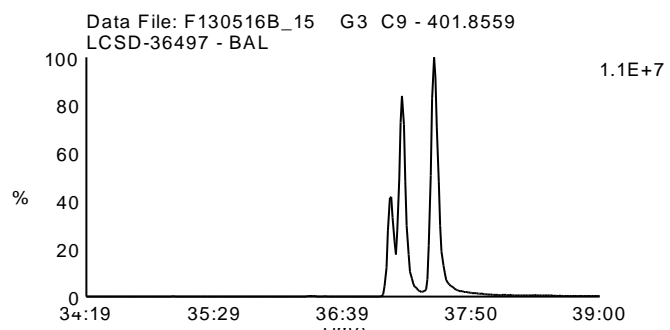
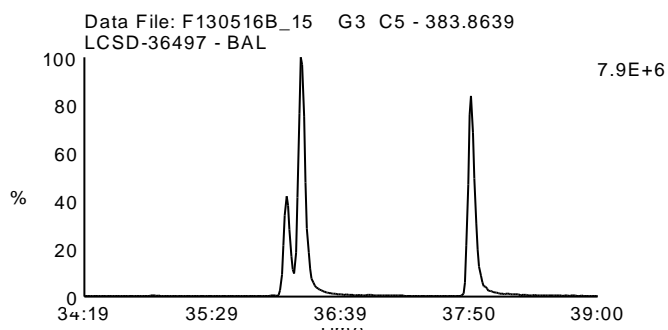
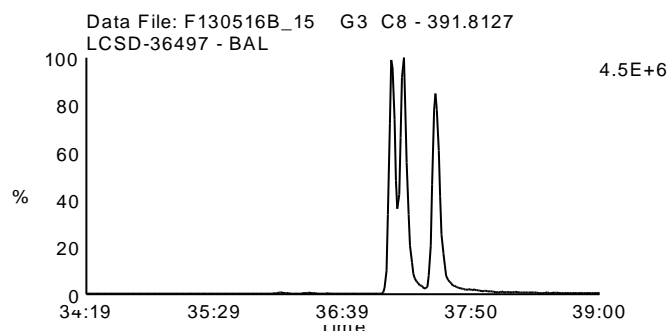
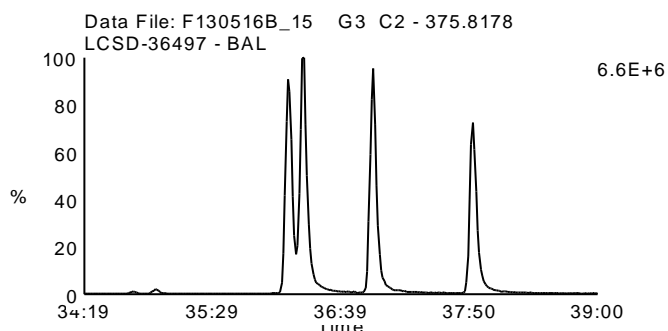
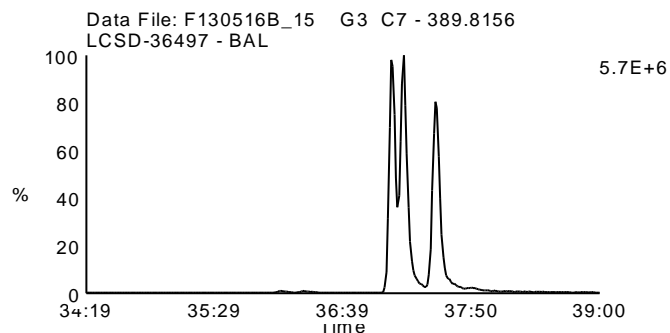
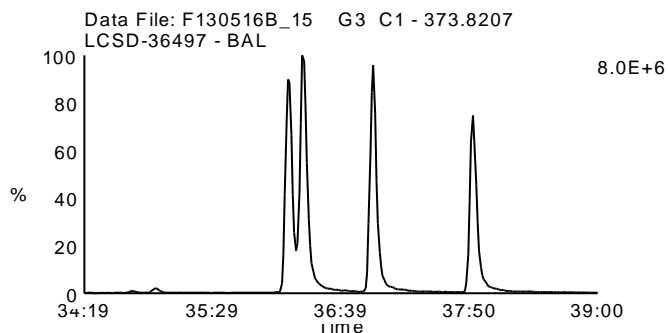
Date Acquired: 5/17/2013

Sample Description: LCSD-36497 - BAL

Lab Sample ID: LCSD-36497

Client Sample ID: LCSCT

Instrument: 10MSHR05 (F)



Homologue Group: Heptas

Data File Name: F130516B\_15

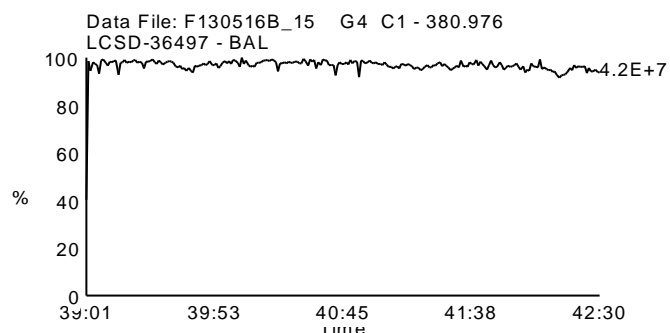
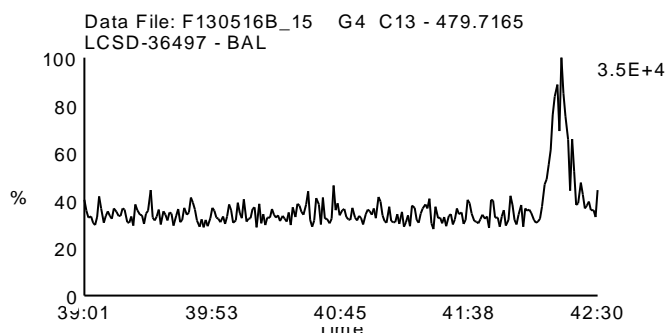
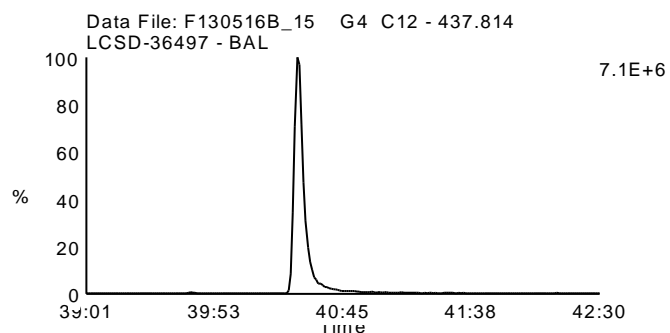
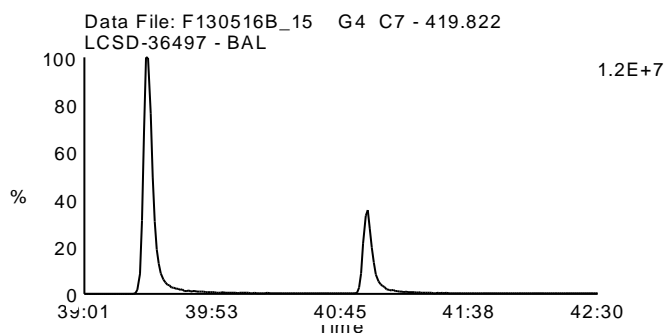
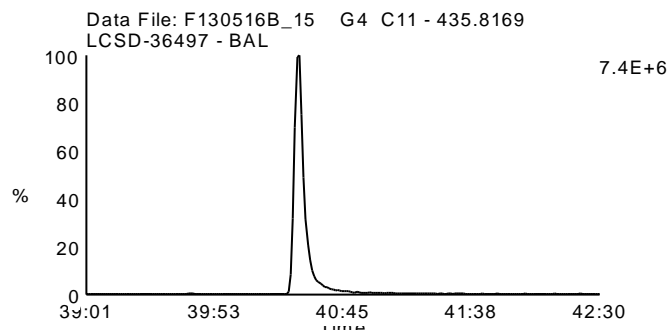
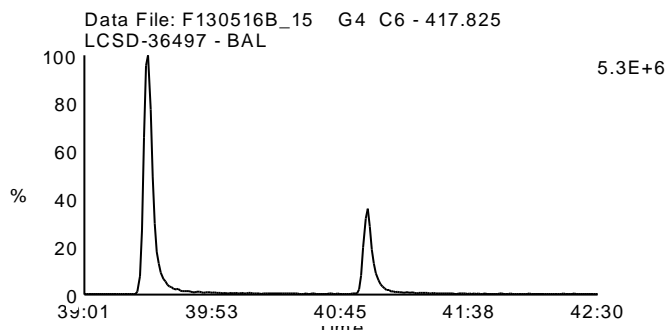
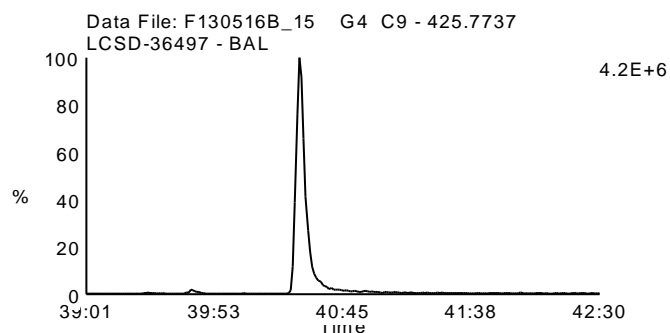
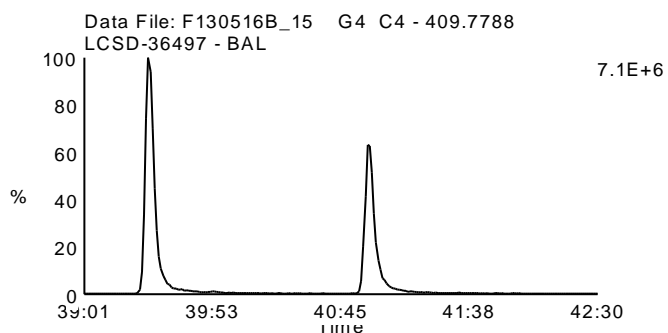
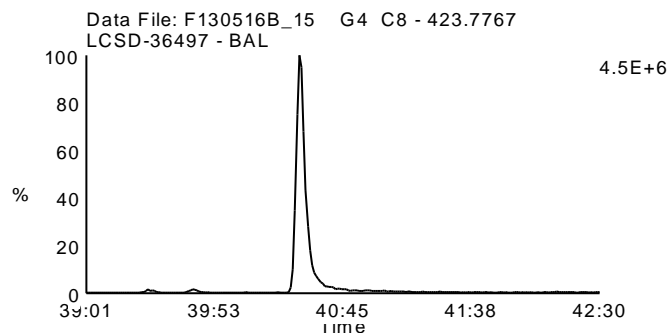
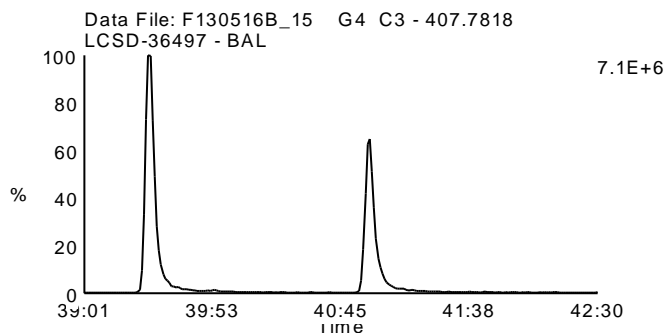
Date Acquired: 5/17/2013

Sample Description: LCSD-36497 - BAL

Lab Sample ID: LCSD-36497

Client Sample ID: LCSCT

Instrument: 10MSHR05 (F)



Homologue Group: Octas

Data File Name: F130516B\_15

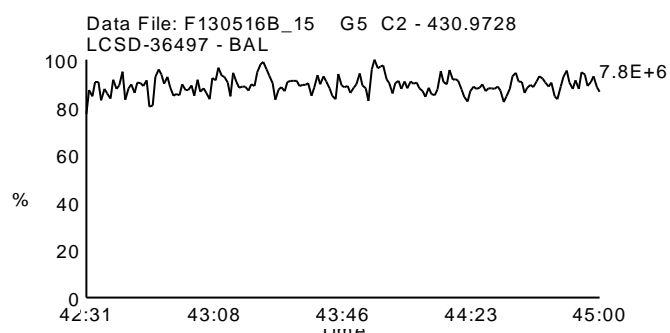
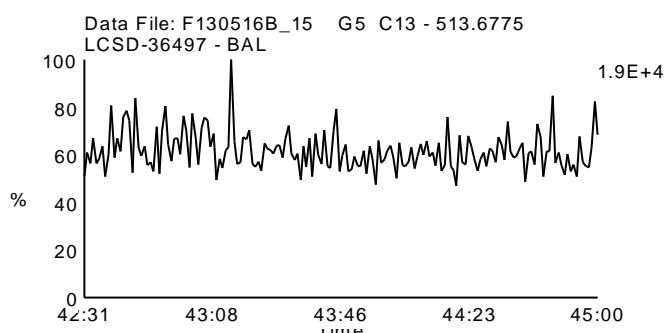
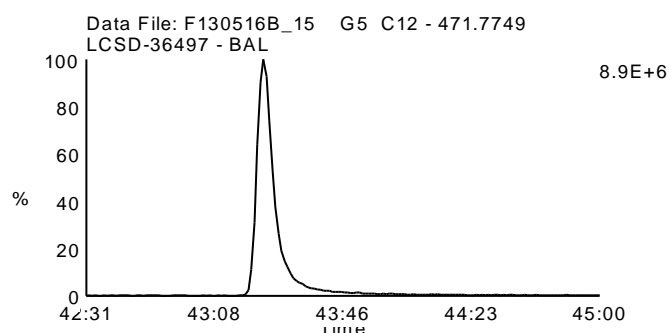
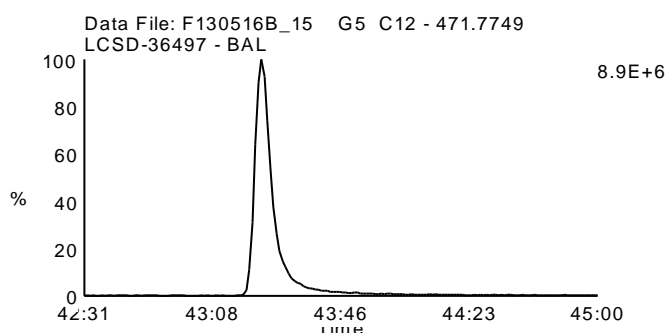
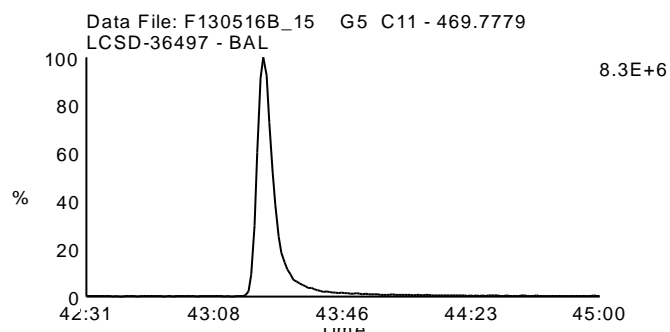
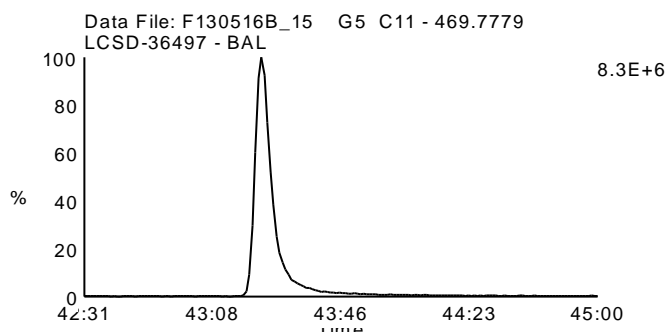
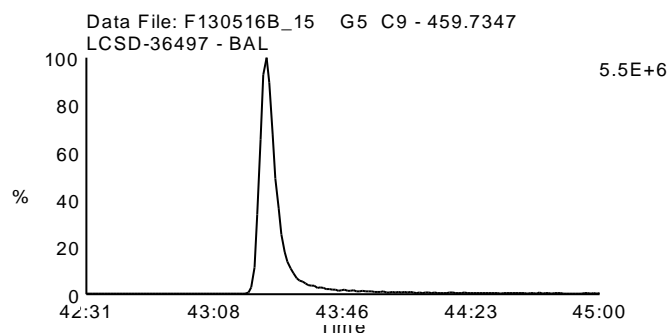
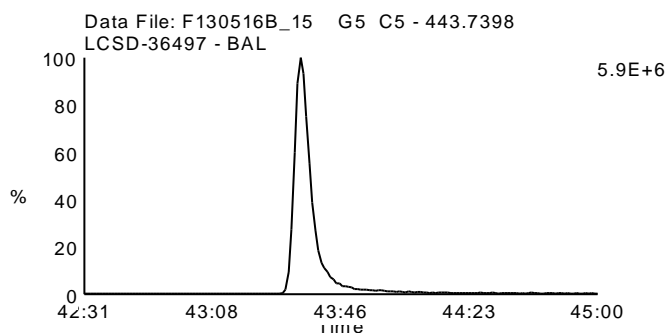
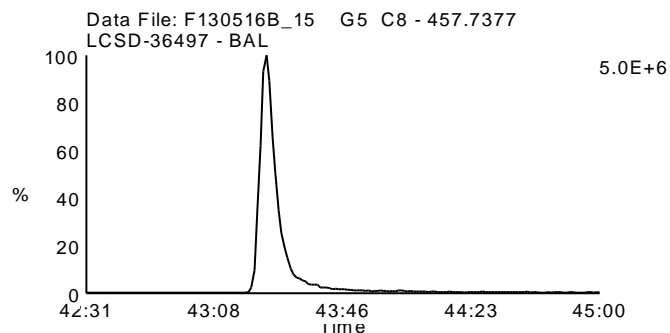
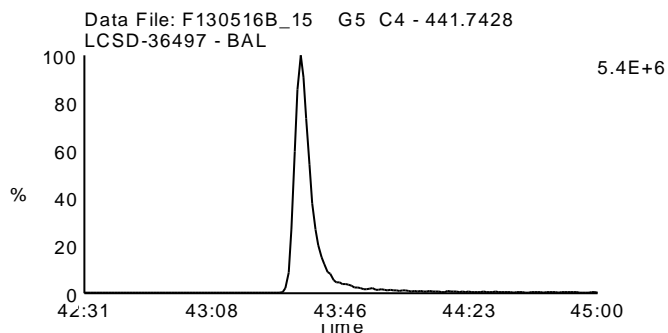
Date Acquired: 5/17/2013

Sample Description: LCSD-36497 - BAL

Lab Sample ID: LCSD-36497

Client Sample ID: LCSCCT

Instrument: 10MSHR05 (F)





**PCDD/PCDF Detected Peak List**

Client ID		Injected By	BAL
Lab ID	BLANK-36495	Instrument ID	10MSHR05 (F)
Filename	F130516B_03	GC Column ID	USC508227H
Analyzed	05/16/2013 20:59	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:33	6.22e7	7.78e7	7.76e6	9.55e6	6.241e3	7.871e3	0.80	
2,3,7,8-TCDF	23:35	ND	ND	ND	ND	1.389e3	1.977e3		

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:47	5.90e7	7.66e7	7.42e6	9.29e6	1.585e4	8.326e3	0.77	
2,3,7,8-TCDD-13C	24:52	4.84e7	6.06e7	5.49e6	6.81e6	7.638e3	1.454e3	0.80	
2,3,7,8-TCDD-37Cl4	24:55	5.49e7		6.17e6		1.847e3	----		
2,3,7,8-TCDD	24:55	ND	ND	ND	ND	2.025e3	1.906e3		

Penta-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDF-13C	31:15	8.04e7	5.17e7	1.30e7	8.36e6	3.672e3	6.272e3	1.55	
2,3,4,7,8-PeCDF-13C	32:37	3.67e7	2.35e7	7.17e6	4.47e6	1.943e4	8.108e3	1.56	
1,2,3,7,8-PeCDF	31:16	3.02e4	2.40e4	4.90e3	7.56e3	1.735e3	1.924e3	1.26	I
2,3,4,7,8-PeCDF	32:37	3.73e4	2.54e4	7.47e3	3.61e3	1.562e3	1.853e3	1.47	
Other PeCDF	1 33:53	1.87e4	1.20e4					1.56	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	33:01	5.93e7	3.75e7	1.11e7	7.04e6	3.815e3	1.268e3	1.58	
1,2,3,7,8-PeCDD	32:60	2.54e4	2.70e4	2.79e4	6.41e3	2.736e3	1.692e3	0.94	I

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	36:10	1.55e7	3.00e7	3.69e6	7.10e6	2.886e3	9.417e3	0.52	
1,2,3,6,7,8-HxCDF-13C	36:18	4.37e7	8.23e7	8.91e6	1.72e7	5.745e3	5.795e4	0.53	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	9.335e3	4.157e4		
1,2,3,7,8,9-HxCDF-13C	37:50	3.32e7	6.25e7	6.69e6	1.25e7	1.448e4	1.671e4	0.53	
1,2,3,4,7,8-HxCDF	36:11	3.41e4	3.12e4	8.02e3	7.16e3	2.060e3	1.767e3	1.09	
1,2,3,6,7,8-HxCDF	36:20	3.58e4	2.59e4	6.31e3	4.13e3	1.822e3	1.598e3	1.38	
2,3,4,6,7,8-HxCDF	36:57	2.55e4	1.88e4	5.46e3	3.46e3	1.901e3	1.419e3	1.35	
1,2,3,7,8,9-HxCDF	37:52	2.16e4	1.95e4	5.01e3	8.27e3	2.125e3	1.442e3	1.11	

**REPORT OF LABORATORY ANALYSIS**

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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	37:05	2.13e7	1.71e7	5.28e6	4.29e6	1.865e4	2.780e3	1.25	
1,2,3,6,7,8-HxCDD-13C	37:12	4.71e7	3.78e7	9.99e6	7.90e6	1.865e4	6.164e3	1.25	
1,2,3,7,8,9-HxCDD-13C	37:30	6.20e7	4.93e7	1.26e7	9.97e6	1.259e3	1.223e3	1.26	
1,2,3,4,7,8-HxCDD	37:06	1.93e4	1.96e4	4.29e3	5.70e3	3.266e3	1.391e3	0.98	I
1,2,3,6,7,8-HxCDD	37:16	2.96e4	2.49e4	4.36e3	4.73e3	2.497e3	1.011e3	1.19	
1,2,3,7,8,9-HxCDD	37:32	3.10e4	3.18e4	4.81e3	1.03e4	2.641e3	1.030e3	0.97	I

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	39:27	2.69e7	5.91e7	5.77e6	1.29e7	2.812e4	2.609e4	0.46	
1,2,3,4,7,8,9-HpCDF-13C	40:57	1.04e7	2.32e7	2.08e6	4.64e6	7.813e3	1.735e4	0.45	
1,2,3,4,6,7,8-HpCDF	39:27	3.81e4	2.97e4	9.16e3	9.01e3	1.924e3	2.266e3	1.28	I
1,2,3,4,7,8,9-HpCDF	40:59	1.83e4	2.27e4	3.64e3	7.92e3	2.426e3	2.346e3	0.80	I

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	40:27	3.95e7	3.66e7	8.47e6	7.84e6	2.715e4	3.382e4	1.08	
1,2,3,4,6,7,8-HpCDD	40:28	3.56e4	4.47e4	6.07e3	8.91e3	2.607e3	1.946e3	0.80	I
Other HpCDD	1 39:44	5.40e4	6.16e4					0.88	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	43:36	4.29e4	4.56e4	7.76e3	7.55e3	2.287e3	2.874e3	0.94	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:23	5.44e7	5.97e7	9.23e6	9.91e6	1.027e3	1.127e3	0.91	
OCDD	43:23	2.64e5	2.74e5	4.20e4	5.52e4	3.456e3	3.279e3	0.96	

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**PCDD/PCDF Detected Peak List**

Client ID	LCSCS	Injected By	BAL
Lab ID	LCS-36496	Instrument ID	10MSHR05 (F)
Filename	F130516B_14	GC Column ID	USC508227H
Analyzed	05/17/2013 05:39	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:33	4.87e7	6.11e7	6.01e6	7.70e6	----	----	0.80	
2,3,7,8-TCDF	23:35	5.14e6	6.53e6	6.54e5	7.90e5	----	----	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	23:46	4.59e7	5.87e7	5.86e6	7.37e6	----	----	0.78	
2,3,7,8-TCDD-13C	24:51	3.75e7	4.66e7	4.21e6	5.20e6	----	----	0.80	
2,3,7,8-TCDD-37Cl4	24:54	3.97e7		4.56e6		----	----		
2,3,7,8-TCDD	24:54	3.39e6	4.25e6	4.26e5	4.86e5	----	----	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	31:14	6.23e7	3.99e7	1.08e7	6.76e6	----	----	1.56	
2,3,4,7,8-PeCDF-13C	32:37	2.53e7	1.63e7	4.85e6	3.09e6	----	----	1.55	
1,2,3,7,8-PeCDF	31:15	3.45e7	2.17e7	5.67e6	3.55e6	----	----	1.59	
2,3,4,7,8-PeCDF	32:38	3.23e7	2.03e7	5.98e6	3.81e6	----	----	1.59	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	32:60	4.50e7	2.92e7	8.75e6	5.51e6	----	----	1.54	
1,2,3,7,8-PeCDD	33:02	1.37e7	2.18e7	2.49e6	4.12e6	----	----	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	36:10	1.11e7	2.09e7	2.67e6	4.97e6	----	----	0.53	
1,2,3,6,7,8-HxCDF-13C	36:18	3.12e7	6.04e7	6.71e6	1.28e7	----	----	0.52	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDF-13C	37:50	2.57e7	4.88e7	5.66e6	1.08e7	----	----	0.53	
1,2,3,4,7,8-HxCDF	36:11	2.65e7	2.11e7	6.14e6	4.83e6	----	----	1.26	
1,2,3,6,7,8-HxCDF	36:19	3.24e7	2.59e7	6.66e6	5.44e6	----	----	1.25	
2,3,4,6,7,8-HxCDF	36:57	2.79e7	2.23e7	6.37e6	5.10e6	----	----	1.25	
1,2,3,7,8,9-HxCDF	37:51	2.18e7	1.75e7	4.77e6	3.75e6	----	----	1.25	

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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	37:05	1.41e7	1.15e7	3.78e6	3.07e6	----	----	1.23	
1,2,3,6,7,8-HxCDD-13C	37:11	3.71e7	2.99e7	7.92e6	6.62e6	----	----	1.24	
1,2,3,7,8,9-HxCDD-13C	37:30	5.06e7	4.06e7	9.61e6	7.71e6	----	----	1.25	
1,2,3,4,7,8-HxCDD	37:06	1.88e7	1.50e7	4.71e6	3.71e6	----	----	1.25	
1,2,3,6,7,8-HxCDD	37:12	2.15e7	1.70e7	4.59e6	3.60e6	----	----	1.27	
1,2,3,7,8,9-HxCDD	37:31	2.04e7	1.60e7	3.98e6	3.11e6	----	----	1.28	

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	39:27	2.00e7	4.49e7	4.42e6	1.00e7	----	----	0.45	
1,2,3,4,7,8,9-HpCDF-13C	40:56	7.11e6	1.54e7	1.52e6	3.33e6	----	----	0.46	
1,2,3,4,6,7,8-HpCDF	39:27	2.63e7	2.56e7	6.22e6	5.80e6	----	----	1.03	
1,2,3,4,7,8,9-HpCDF	40:57	1.77e7	1.74e7	3.91e6	3.68e6	----	----	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	40:27	2.96e7	2.78e7	6.55e6	6.07e6	----	----	1.06	
1,2,3,4,6,7,8-HpCDD	40:27	1.62e7	1.53e7	3.52e6	3.48e6	----	----	1.06	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	43:34	2.36e7	2.58e7	4.29e6	4.70e6	----	----	0.92	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:22	3.93e7	4.30e7	7.00e6	7.50e6	----	----	0.91	
OCDD	43:23	2.14e7	2.44e7	3.95e6	4.47e6	----	----	0.88	

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**PCDD/PCDF Detected Peak List**

Client ID	LCSCCT	Injected By	BAL
Lab ID	LCSD-36497	Instrument ID	10MSHR05 (F)
Filename	F130516B_15	GC Column ID	USC508227H
Analyzed	05/17/2013 06:26	ICAL ID	F130408

Tetra-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
2,3,7,8-TCDF-13C	23:34	5.60e7	7.13e7	6.67e6	8.55e6	----	----	0.79	
2,3,7,8-TCDF	23:35	5.82e6	7.80e6	7.26e5	9.71e5	----	----	0.75	

Tetra-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,4-TCDD-13C	23:47	5.17e7	6.59e7	6.33e6	8.12e6	----	----	0.79	
2,3,7,8-TCDD-13C	24:52	4.39e7	5.59e7	4.87e6	6.23e6	----	----	0.79	
2,3,7,8-TCDD-37Cl4	24:54	4.76e7		5.39e6		----	----		
2,3,7,8-TCDD	24:55	4.02e6	5.15e6	4.63e5	5.86e5	----	----	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	31:15	7.34e7	4.63e7	1.18e7	7.48e6	----	----	1.59	
2,3,4,7,8-PeCDF-13C	32:37	3.27e7	2.10e7	5.95e6	3.90e6	----	----	1.55	
1,2,3,7,8-PeCDF	31:16	4.21e7	2.66e7	6.95e6	4.36e6	----	----	1.58	
2,3,4,7,8-PeCDF	32:38	4.02e7	2.53e7	7.52e6	4.86e6	----	----	1.59	

Penta-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
1,2,3,7,8-PeCDD-13C	33:01	5.35e7	3.41e7	9.86e6	6.31e6	----	----	1.57	
1,2,3,7,8-PeCDD	33:02	1.70e7	2.72e7	3.22e6	4.97e6	----	----	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	36:10	1.41e7	2.74e7	3.30e6	6.38e6	----	----	0.51	
1,2,3,6,7,8-HxCDF-13C	36:18	3.82e7	7.27e7	7.88e6	1.52e7	----	----	0.53	
2,3,4,6,7,8-HxCDF-13C		ND	ND	ND	ND	----	----		
1,2,3,7,8,9-HxCDF-13C	37:51	2.95e7	5.58e7	6.58e6	1.24e7	----	----	0.53	
1,2,3,4,7,8-HxCDF	36:11	3.17e7	2.57e7	7.17e6	5.93e6	----	----	1.24	
1,2,3,6,7,8-HxCDF	36:19	3.96e7	3.19e7	7.95e6	6.53e6	----	----	1.24	
2,3,4,6,7,8-HxCDF	36:58	3.36e7	2.71e7	7.62e6	6.23e6	----	----	1.24	
1,2,3,7,8,9-HxCDF	37:52	2.69e7	2.16e7	5.93e6	4.73e6	----	----	1.25	

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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	37:06	1.84e7	1.49e7	4.63e6	3.78e6	----	----	1.24	
1,2,3,6,7,8-HxCDD-13C	37:12	4.26e7	3.45e7	9.34e6	7.58e6	----	----	1.23	
1,2,3,7,8,9-HxCDD-13C	37:30	5.60e7	4.48e7	1.11e7	8.88e6	----	----	1.25	
1,2,3,4,7,8-HxCDD	37:06	2.21e7	1.78e7	5.57e6	4.47e6	----	----	1.24	
1,2,3,6,7,8-HxCDD	37:13	2.76e7	2.18e7	5.68e6	4.51e6	----	----	1.27	
1,2,3,7,8,9-HxCDD	37:31	2.42e7	2.00e7	4.57e6	3.82e6	----	----	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	39:27	2.41e7	5.37e7	5.33e6	1.16e7	----	----	0.45	
1,2,3,4,7,8,9-HpCDF-13C	40:57	8.40e6	1.86e7	1.89e6	4.06e6	----	----	0.45	
1,2,3,4,6,7,8-HpCDF	39:27	3.27e7	3.19e7	7.11e6	7.11e6	----	----	1.03	
1,2,3,4,7,8,9-HpCDF	40:58	2.28e7	2.21e7	4.61e6	4.47e6	----	----	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	40:28	3.46e7	3.25e7	7.42e6	7.07e6	----	----	1.07	
1,2,3,4,6,7,8-HpCDD	40:28	2.03e7	1.87e7	4.48e6	4.22e6	----	----	1.08	

Octa-Furans:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDF	43:34	3.00e7	3.34e7	5.38e6	5.92e6	----	----	0.90	

Octa-Dioxins:	RT	Area 1	Area 2	Height 1	Height 2	Noise 1	Noise 2	Ratio	Code
OCDD-13C	43:23	4.80e7	5.26e7	8.26e6	8.90e6	----	----	0.91	
OCDD	43:24	2.87e7	3.21e7	5.00e6	5.54e6	----	----	0.89	

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