Mountain States ACCUTEST LABORATORIES

11/05/12

Technical Report for

XTO Energy

PCU 296-5A

1210-04

Accutest Job Number: D40328

Sampling Date: 10/25/12

Report to:

KRW Consulting, Inc.
8000 West 14th Avenue
Lakewood, CO 80214
dknudson@krwconsulting.com; jhess@krwconsulting.com;
crachak@krwconsulting.com; rrasnic@krwconsulting.com;
ATTN: Dwayne Knudson

Total number of pages in report: **138**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

Sections: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

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Table of Contents

Sample Summary

XTO Energy

Job No: D40328

PCU 296-5A
Project No: 1210-04

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D40328-1	10/25/12	13:00	DK	10/27/12	SO	Soil	FW SUBLINER COMP
D40328-1A	10/25/12	13:00	DK	10/27/12	SO	Soil	FW SUBLINER COMP

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	XTO Energy	**Job No**	D40328
Site:	PCU 296-5A	**Report Dat**	11/5/2012 1:29:12 PM

On 10/27/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.5 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D40328 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix SO **Batch ID:** V5V1486

- All samples were analyzed within the recommended method holding time.
- Sample(s) D40126-1MS, D40126-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP6884

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D40329-1MS, D40329-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The matrix spike (MS) recovery(s) of Chrysene are outside control limits. Outside control limits due to matrix interference.
- Sample(s) OP6884-MS have surrogates outside control limits. Probable cause due to matrix interference.
- D40328-1: Elevated reporting limits due to matrix interference, dilution required during sample prep.
- OP6884-MS for Nitrobenzene-d5: Outside control limits due to matrix interference.

Volatiles by GC By Method SW846 8015B

Matrix SO **Batch ID:** GGB998

- All samples were analyzed within the recommended method holding time.
- Sample(s) D40315-1MS, D40315-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP6873

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D40313-4MS, D40313-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010C

Matrix	AQ	Batch ID:	MP8775

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40339-2MSD, D40339-2SDL, D40339-2MS, D40339-2MSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Sodium, Calcium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Magnesium are outside control limits for sample MP8775-SD1. Probable cause due to sample homogeneity.
- MP8775-SD1 for Magnesium: Serial dilution indicates possible matrix interference.

Matrix	SO	Batch ID:	MP8772

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40329-1MS, D40329-1MSD, D40329-1SDL were used as the QC samples for the metals analysis.
- The matrix spike duplicate (MSD) recovery(s) of Zinc are outside control limits. Probable cause due to matrix interference.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The RPD(s) for the MS and MSD recoveries of Barium are outside control limits for sample MP8772-S2. High RPD due to possible sample matrix or nonhomogeneity.
- The serial dilution RPD(s) for Selenium, Barium, Chromium, Lead, Nickel, Zinc are outside control limits for sample MP8772-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP8772-SD1 for Lead: Serial dilution indicates possible matrix interference.
- MP8772-SD1 for Nickel: Serial dilution indicates possible matrix interference.
- MP8772-SD1 for Zinc: Serial dilution indicates possible matrix interference.
- MP8772-SD1 for Chromium: Serial dilution indicates possible matrix interference.
- MP8772-SD1 for Barium: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020A

Matrix	SO	Batch ID:	MP8773

- All samples were digested and analyzed within the recommended method holding time.
- .
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40329-1MS, D40329-1MSD, D40329-1SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471B

Matrix	SO	Batch ID:	MP8794

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40329-1MS, D40329-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix	SO	Batch ID:	GN17476

- Sample(s) D40350-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM19 2540B M

Matrix SO **Batch ID:** GN17451

- The data for SM19 2540B M meets quality control requirements.

Wet Chemistry By Method SW846 3060/7196A M

Matrix SO **Batch ID:** R15016

- The data for SW846 3060/7196A M meets quality control requirements.
- D40328-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO **Batch ID:** GP8586

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40427-1DUP, D40427-1MS, D40427-1MSD were used as the QC samples for the Chromium, Hexavalent analysis.

Wet Chemistry By Method SW846 9045D

Matrix SO **Batch ID:** GN17446

- The following samples were run outside of holding time for method SW846 9045D: D40328-1

Wet Chemistry By Method USDA HANDBOOK 60

Matrix SO **Batch ID:** MP8775

- D40328-1A for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D40328
Account: XTO Energy
Project: PCU 296-5A
Collected: 10/25/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D40328-1	**FW SUBLINER COMP**					
Arsenic		4.1	0.13		mg/kg	SW846 6020A
Barium		488	1.3		mg/kg	SW846 6010C
Chromium		20.3	1.3		mg/kg	SW846 6010C
Copper		12.0	1.3		mg/kg	SW846 6010C
Lead		10.9	6.6		mg/kg	SW846 6010C
Nickel		15.2	4.0		mg/kg	SW846 6010C
Zinc		33.7	4.0		mg/kg	SW846 6010C
Specific Conductivity		228	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent [a]		20.3	2.3		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2		360			mv	ASTM D1498-76M
pH		9.50			su	SW846 9045D
D40328-1A	**FW SUBLINER COMP**					
Calcium		15.2	2.0		mg/l	SW846 6010C
Magnesium		3.95	1.0		mg/l	SW846 6010C
Sodium		32.1	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio [b]		1.90			ratio	USDA HANDBOOK 60

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)
(b) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	FW SUBLINER COMP		
Lab Sample ID:	D40328-1	**Date Sampled:**	10/25/12
Matrix:	SO - Soil	**Date Received:**	10/27/12
Method:	SW846 8260B	**Percent Solids:**	78.8
Project:	PCU 296-5A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V24392.D	1	10/29/12	BD	n/a	n/a	V5V1486
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.05 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.076	0.038	mg/kg	
108-88-3	Toluene	ND	0.15	0.076	mg/kg	
100-41-4	Ethylbenzene	ND	0.15	0.029	mg/kg	
1330-20-7	Xylene (total)	ND	0.31	0.15	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	91%		64-130%
460-00-4	4-Bromofluorobenzene	100%		62-131%
17060-07-0	1,2-Dichloroethane-D4	103%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	FW SUBLINER COMP		
Lab Sample ID:	D40328-1	**Date Sampled:**	10/25/12
Matrix:	SO - Soil	**Date Received:**	10/27/12
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	78.8
Project:	PCU 296-5A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	3G11850.D	1	10/31/12	DC	10/30/12	OP6884	E3G558
Run #2							

	Initial Weight	Final Volume
Run #1	5.36 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.059	0.031	mg/kg	
120-12-7	Anthracene	ND	0.059	0.031	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.059	0.031	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.059	0.031	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.059	0.031	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.059	0.031	mg/kg	
218-01-9	Chrysene	ND	0.059	0.031	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.059	0.031	mg/kg	
206-44-0	Fluoranthene	ND	0.059	0.031	mg/kg	
86-73-7	Fluorene	ND	0.059	0.031	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.059	0.031	mg/kg	
91-20-3	Naphthalene	ND	0.083	0.073	mg/kg	
129-00-0	Pyrene	ND	0.059	0.031	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	75%		10-159%
321-60-8	2-Fluorobiphenyl	70%		19-131%
1718-51-0	Terphenyl-d14	86%		18-150%

(a) Elevated reporting limits due to matrix interference, dilution required during sample prep.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	FW SUBLINER COMP		
Lab Sample ID:	D40328-1	**Date Sampled:**	10/25/12
Matrix:	SO - Soil	**Date Received:**	10/27/12
Method:	SW846 8015B	**Percent Solids:**	78.8
Project:	PCU 296-5A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB18265.D	1	10/29/12	SK	n/a	n/a	GGB998
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	15	7.6	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	FW SUBLINER COMP		
Lab Sample ID:	D40328-1	**Date Sampled:**	10/25/12
Matrix:	SO - Soil	**Date Received:**	10/27/12
Method:	SW846-8015B SW846 3546	**Percent Solids:**	78.8
Project:	PCU 296-5A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD19027.D	1	10/30/12	AV	10/29/12	OP6873	GFD960
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	17	11	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	80%		43-136%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FW SUBLINER COMP
Lab Sample ID: D40328-1
Matrix: SO - Soil
Project: PCU 296-5A

Date Sampled: 10/25/12
Date Received: 10/27/12
Percent Solids: 78.8

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.1	0.13	mg/kg	5	10/30/12	11/03/12	JB	SW846 6020A [3]	SW846 3050B [5]
Barium	488	1.3	mg/kg	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3050B [4]
Cadmium	< 1.3	1.3	mg/kg	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3050B [4]
Chromium	20.3	1.3	mg/kg	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3050B [4]
Copper	12.0	1.3	mg/kg	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3050B [4]
Lead	10.9	6.6	mg/kg	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3050B [4]
Mercury	< 0.098	0.098	mg/kg	1	11/01/12	11/01/12	JM	SW846 7471B [2]	SW846 7471B [6]
Nickel	15.2	4.0	mg/kg	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3050B [4]
Selenium	< 6.6	6.6	mg/kg	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3050B [4]
Silver	< 4.0	4.0	mg/kg	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3050B [4]
Zinc	33.7	4.0	mg/kg	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3050B [4]

(1) Instrument QC Batch: MA2949
(2) Instrument QC Batch: MA2954
(3) Instrument QC Batch: MA2961
(4) Prep QC Batch: MP8772
(5) Prep QC Batch: MP8773
(6) Prep QC Batch: MP8794

RL = Reporting Limit

Report of Analysis

Client Sample ID: FW SUBLINER COMP
Lab Sample ID: D40328-1
Matrix: SO - Soil
Project: PCU 296-5A

Date Sampled: 10/25/12
Date Received: 10/27/12
Percent Solids: 78.8

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	228	1.0	umhos/cm	1	10/31/12	JD	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	11/02/12	KB	SW846 3060A/7196A
Chromium, Trivalent [a]	20.3	2.3	mg/kg	1	11/02/12	KB	SW846 3060/7196A M
Redox Potential Vs H2	360		mv	1	10/30/12	CT	ASTM D1498-76M
Solids, Percent	78.8		%	1	10/30/12	SWT	SM19 2540B M
pH	9.50		su	1	10/29/12 15:05	JD	SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID: FW SUBLINER COMP
Lab Sample ID: D40328-1A
Matrix: SO - Soil
Project: PCU 296-5A

Date Sampled: 10/25/12
Date Received: 10/27/12
Percent Solids: 78.8

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	15.2	2.0	mg/l	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3010A/M [2]
Magnesium	3.95	1.0	mg/l	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3010A/M [2]
Sodium	32.1	2.0	mg/l	1	10/30/12	10/31/12	JM	SW846 6010C [1]	SW846 3010A/M [2]

(1) Instrument QC Batch: MA2949
(2) Prep QC Batch: MP8775

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FW SUBLINER COMP		
Lab Sample ID:	D40328-1A	**Date Sampled:**	10/25/12
Matrix:	SO - Soil	**Date Received:**	10/27/12
		Percent Solids:	78.8
Project:	PCU 296-5A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	1.90		ratio	1	10/31/12 21:11	JM	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST LABORATORIES
4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: D40328

Client / Reporting Information

Company Name: KRW Consulting
Street Address: 8000 West 14th Street; Suite 200
City: Lakewood, CO 80214
Project Contact: Dwayne Knudson
Phone #: 970-488-1098
Sampler(s) Name(s): DWAYNE KNUDSON 970-488-1098

Project Information

Project Name: XTO PCU 296-5A
Street:
City: State:
Project #: 1210-04
Client Purchase Order #:
Project Manager: Joe Hess

Billing Information (if different from Report to)

Company Name: XTO Energy
Street Address: 21459 CR 5
City: Rifle, CO 81650
Attention: Jessica Dooling

Requested Analysis (see TEST CODE sheet)

T-910

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bisulfate	LAB USE ONLY
	FW SUBLINER COMP		10-25-12	1:00	DK	SO	5					X					01

Turnaround Time (Business days)

Approved By (Accutest PM): / Date:

- [ ] Std. 10 Business Days
- [x] Std. 5 Business Days (By contract only)
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ]

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [x] Report by PDF ONLY
- [ ] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

Please email to: KRW Piceance Team

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	[illegible]	10/26/12 16:30	1 Rifle Service Center	2		2 10/27 1045
3			3	4		4
5			5			

Custody Seal #: FX — [x] Intact [ ] Not Intact — Preserved where applicable: [ ] — On Ice: [x] — Cooler Temp.: 2.5

D40328: Chain of Custody
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Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D40328 **Client:** KRW CONSULTING **Immediate Client Services Action Required:** No

Date / Time Received: 10/27/2012 10:45:00 A **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: XTO PCU 296-5A **Airbill #'s:** FedEx

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	
2. Trip Blank listed on COC:	☐		☐	
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume rec'd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www/accutest.com

D40328: Chain of Custody
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Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1486-MB	5V24387.D	1	10/29/12	BD	n/a	n/a	V5V1486

The QC reported here applies to the following samples: **Method:** SW846 8260B

D40328-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	25	ug/kg	
100-41-4	Ethylbenzene	ND	100	19	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries		Limits
2037-26-5	Toluene-D8	90%	64-130%
460-00-4	4-Bromofluorobenzene	89%	62-131%
17060-07-0	1,2-Dichloroethane-D4	100%	70-130%

Blank Spike Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1486-BS	5V24388.D	1	10/29/12	BD	n/a	n/a	V5V1486

The QC reported here applies to the following samples: **Method:** SW846 8260B

D40328-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	44.5	89	70-130
100-41-4	Ethylbenzene	50	44.4	89	70-130
108-88-3	Toluene	50	42.3	85	70-130
1330-20-7	Xylene (total)	150	141	94	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	92%	64-130%
460-00-4	4-Bromofluorobenzene	100%	62-131%
17060-07-0	1,2-Dichloroethane-D4	97%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D40126-1MS	5V24390.D	1	10/29/12	BD	n/a	n/a	V5V1486
D40126-1MSD	5V24391.D	1	10/29/12	BD	n/a	n/a	V5V1486
D40126-1	5V24389.D	1	10/29/12	BD	n/a	n/a	V5V1486

The QC reported here applies to the following samples: **Method:** SW846 8260B

D40328-1

CAS No.	Compound	D40126-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3430	3600	105	3650	106	1	64-139/30
100-41-4	Ethylbenzene	ND		3430	3470	101	3540	103	2	68-136/30
108-88-3	Toluene	ND		3430	3220	94	3400	99	5	60-130/30
1330-20-7	Xylene (total)	ND		10300	11100	108	11200	109	1	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D40126-1	Limits
2037-26-5	Toluene-D8	88%	90%	89%	64-130%
460-00-4	4-Bromofluorobenzene	112%	110%	101%	62-131%
17060-07-0	1,2-Dichloroethane-D4	100%	94%	99%	70-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5102912.S\
Data File : 5V24392.D
Acq On : 29 Oct 2012 2:05 pm
Operator : BRETD
Sample : D40328-1
Misc : MS4875,V5V1486,5.050,,100,5,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 30 14:41:15 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1442TVH1442.M
Quant Title : 8260
QLast Update : Fri Sep 07 10:53:51 2012
Response via : Initial Calibration

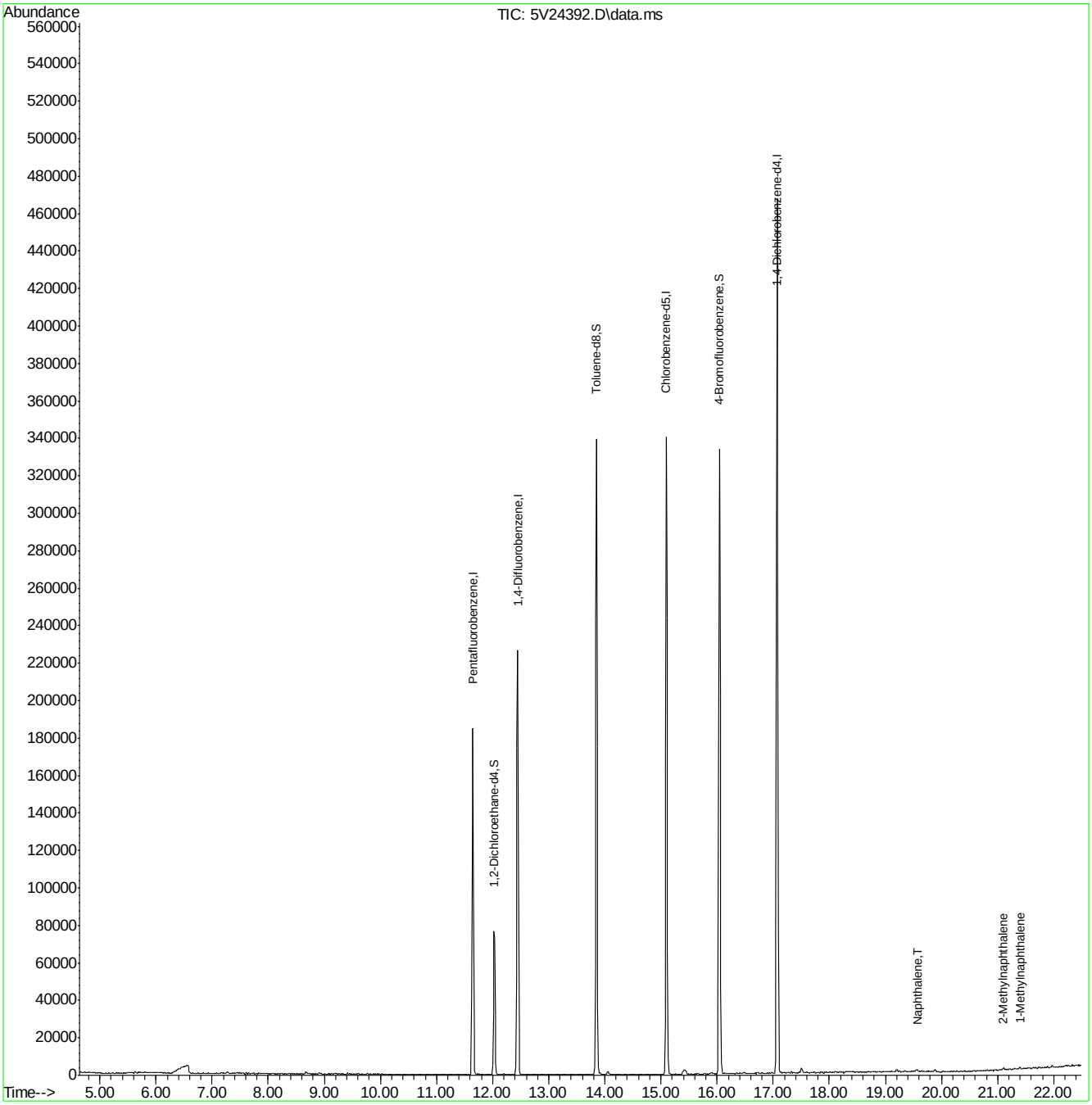
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	140830	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	192923	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	209227	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	158480	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.024	102	13951	51.65	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 103.30%			
61) Toluene-d8	13.850	98	224806	45.30	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 90.60%			
69) 4-Bromofluorobenzene	16.042	95	113122	50.05	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 100.10%			
Target Compounds						Qvalue
91) Naphthalene	19.570	128	2436	0.27	ug/l	100
94) 2-Methylnaphthalene	21.100	142	954	1.10	ug/l #	74
95) 1-Methylnaphthalene	21.397	142	486	0.71	ug/l #	82

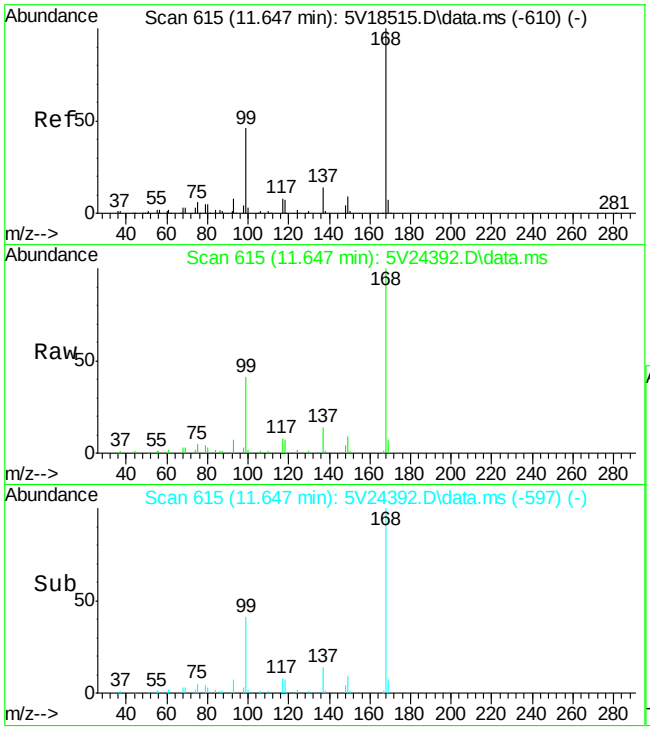
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5102912.S\
Data File : 5V24392.D
Acq On : 29 Oct 2012 2:05 pm
Operator : BRETD
Sample : D40328-1
Misc : MS4875,V5V1486,5.050,,100,5,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 30 14:41:15 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1442TVH1442.M
Quant Title : 8260
QLast Update : Fri Sep 07 10:53:51 2012
Response via : Initial Calibration

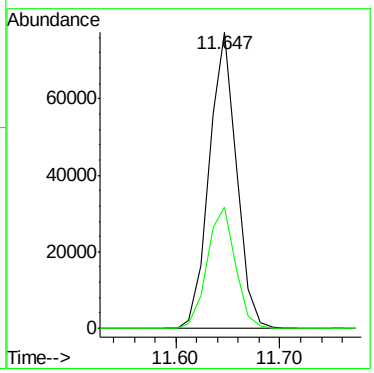


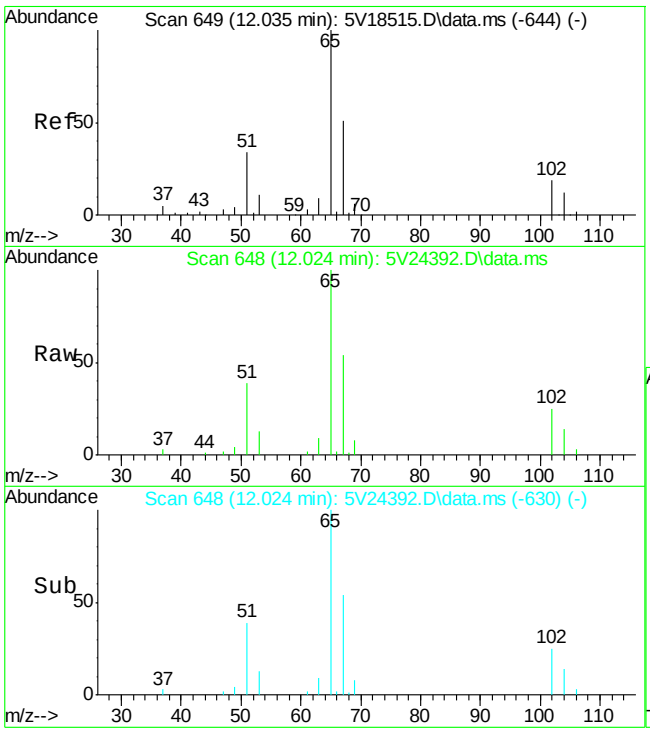


#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.647 min Scan# 615
Delta R.T. 0.000 min
Lab File: 5V24392.D
Acq: 29 Oct 2012 2:05 pm

Tgt Ion:168 Resp: 140830

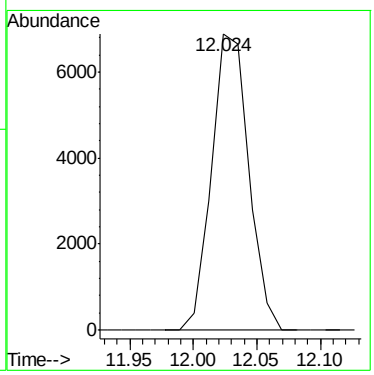
Ion	Ratio	Lower	Upper
168	100		
99	42.2	37.4	56.2

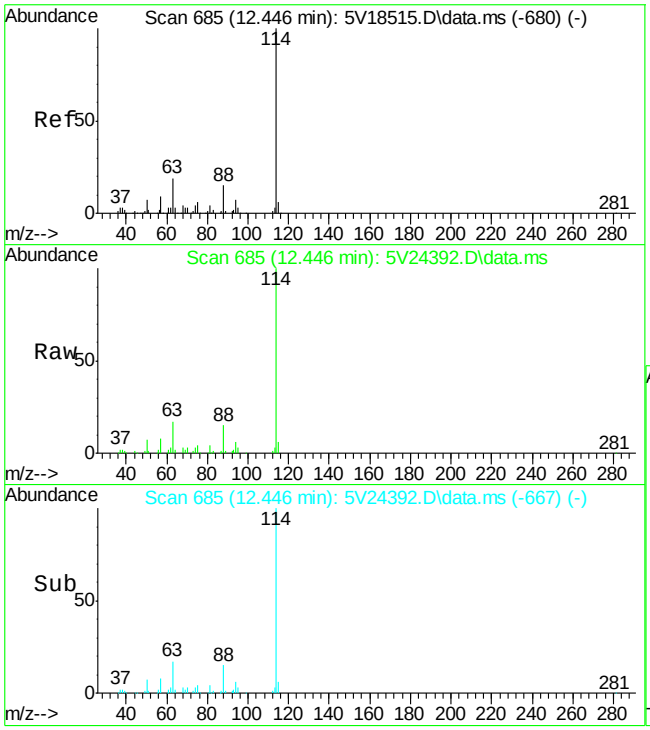




#33
1,2-Dichloroethane-d4
Concen: 51.65 ug/l
RT: 12.024 min Scan# 648
Delta R.T. 0.000 min
Lab File: 5V24392.D
Acq: 29 Oct 2012 2:05 pm

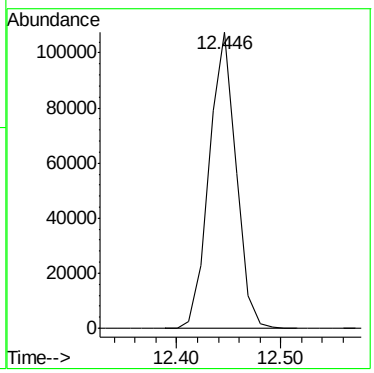
Tgt Ion:102 Resp: 13951

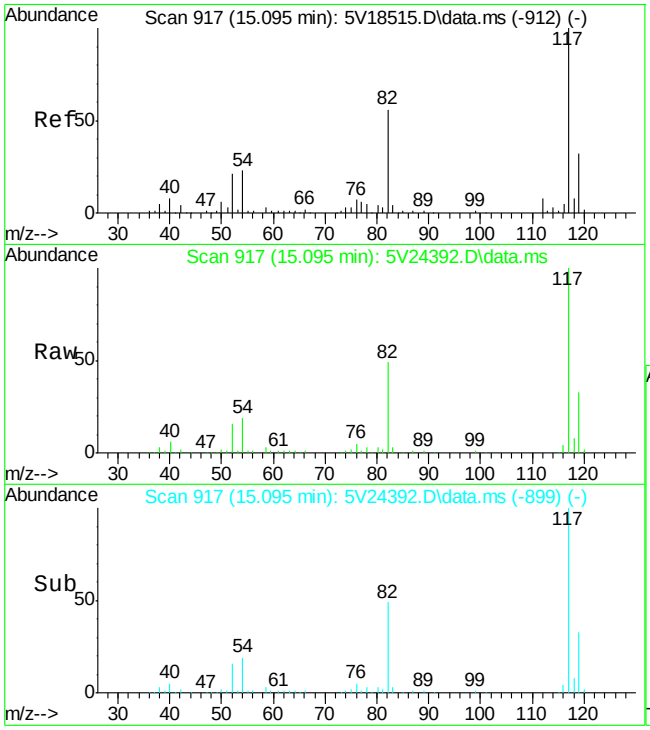




#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.446 min Scan# 685
Delta R.T. 0.000 min
Lab File: 5V24392.D
Acq: 29 Oct 2012 2:05 pm

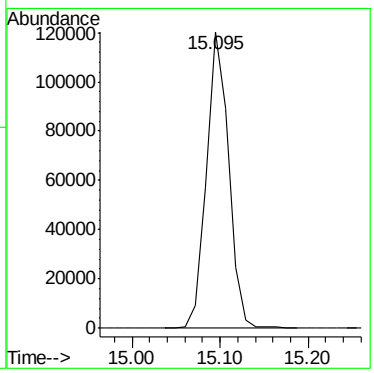
Tgt Ion:114 Resp: 192923

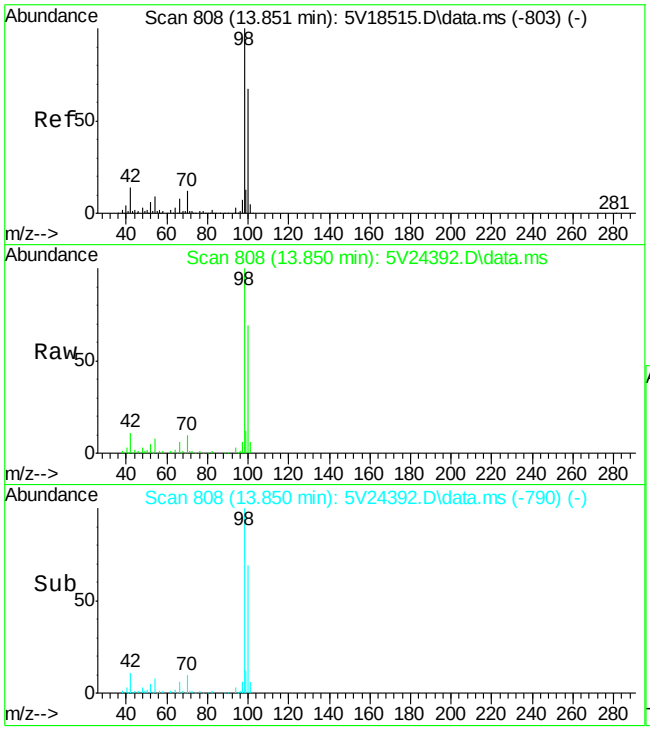




#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.095 min Scan# 917
Delta R.T. 0.000 min
Lab File: 5V24392.D
Acq: 29 Oct 2012 2:05 pm

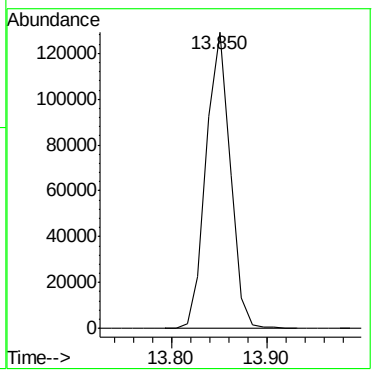
Tgt Ion:117 Resp: 209227

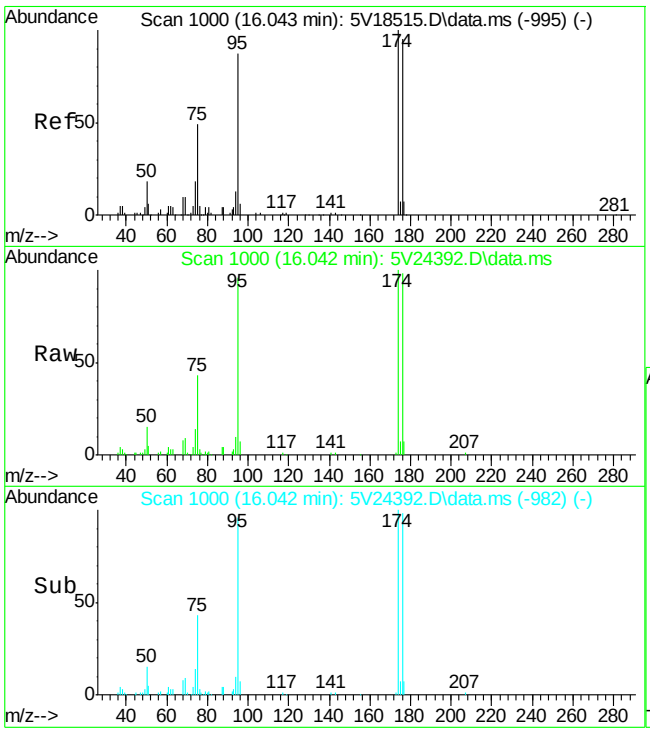




#61
Toluene-d8
Concen: 45.30 ug/l
RT: 13.850 min Scan# 808
Delta R.T. 0.000 min
Lab File: 5V24392.D
Acq: 29 Oct 2012 2:05 pm

Tgt Ion: 98 Resp: 224806

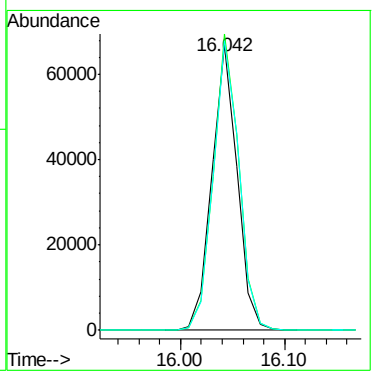


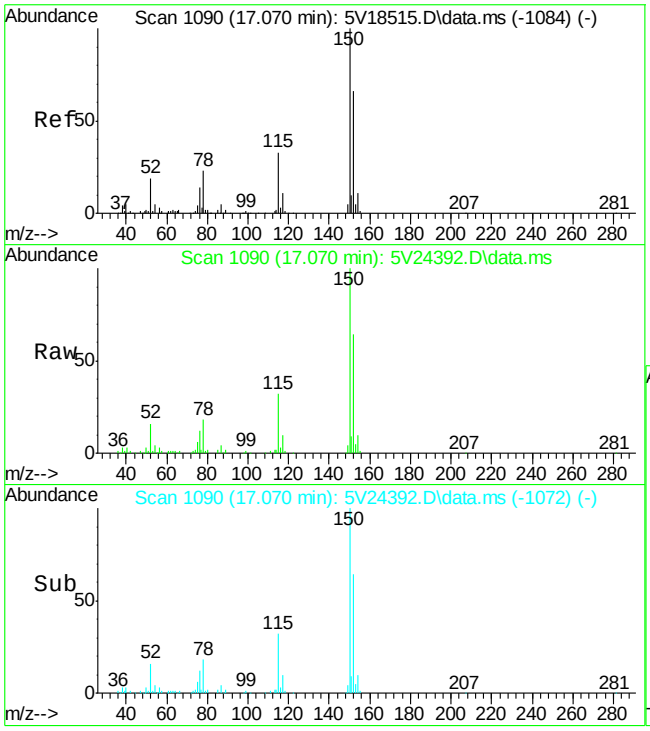


#69
4-Bromofluorobenzene
Concen: 50.05 ug/l
RT: 16.042 min Scan# 1000
Delta R.T. 0.000 min
Lab File: 5V24392.D
Acq: 29 Oct 2012 2:05 pm

Tgt Ion: 95 Resp: 113122

Ion	Ratio	Lower	Upper
95	100		
174	104.7	77.1	117.1
176	103.5	73.4	113.4

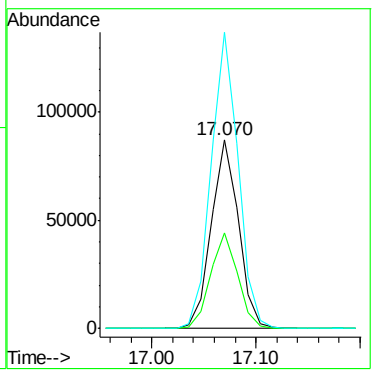


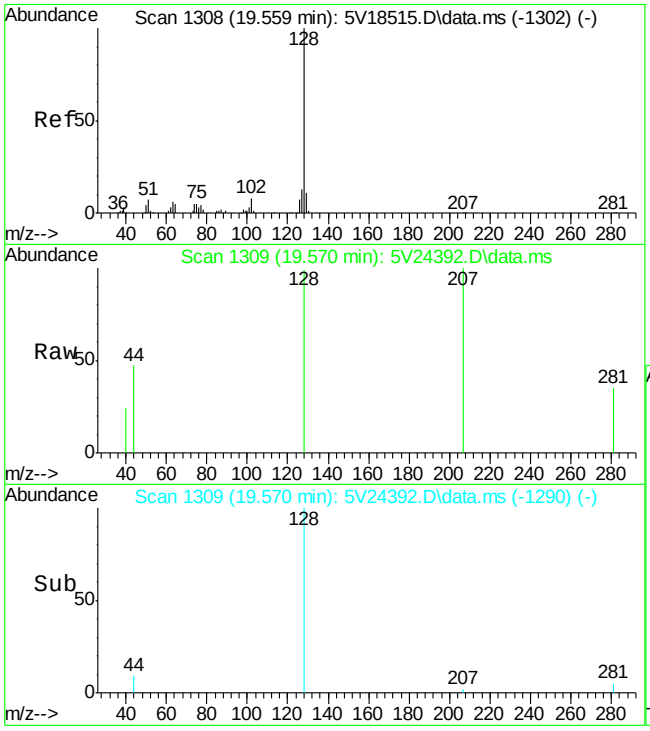


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.070 min Scan# 1090
Delta R.T. 0.000 min
Lab File: 5V24392.D
Acq: 29 Oct 2012 2:05 pm

Tgt Ion:152 Resp: 158480

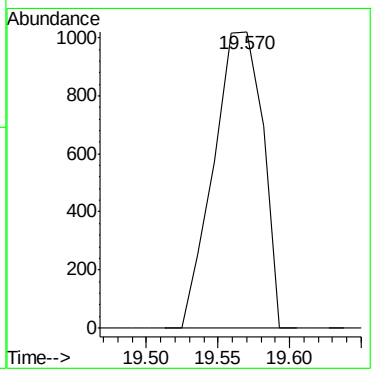
Ion	Ratio	Lower	Upper
152	100		
115	50.3	41.4	62.0
150	156.5	153.9	230.9

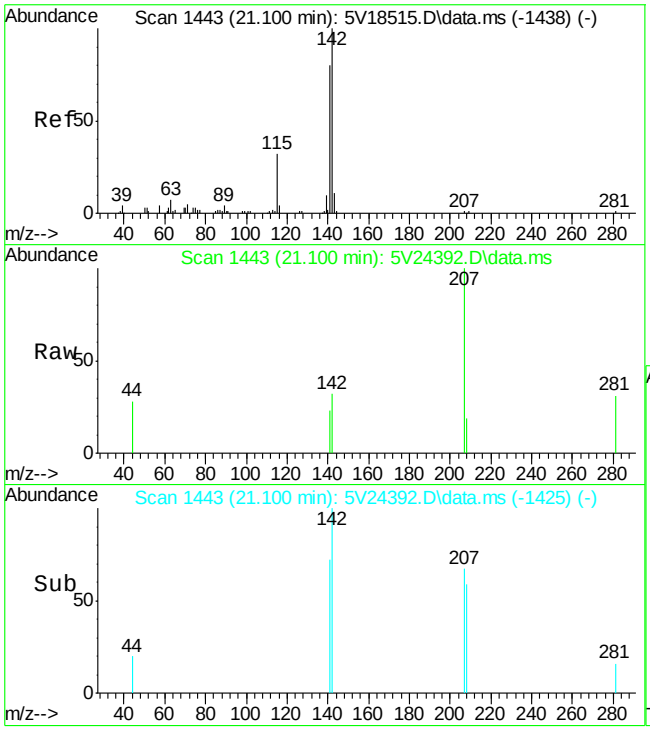




#91
Naphthalene
Concen: 0.27 ug/l
RT: 19.570 min Scan# 1309
Delta R.T. 0.011 min
Lab File: 5V24392.D
Acq: 29 Oct 2012 2:05 pm

Tgt Ion:128 Resp: 2436

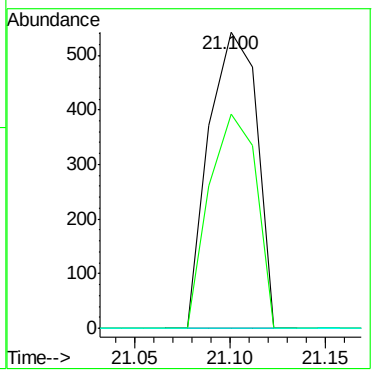


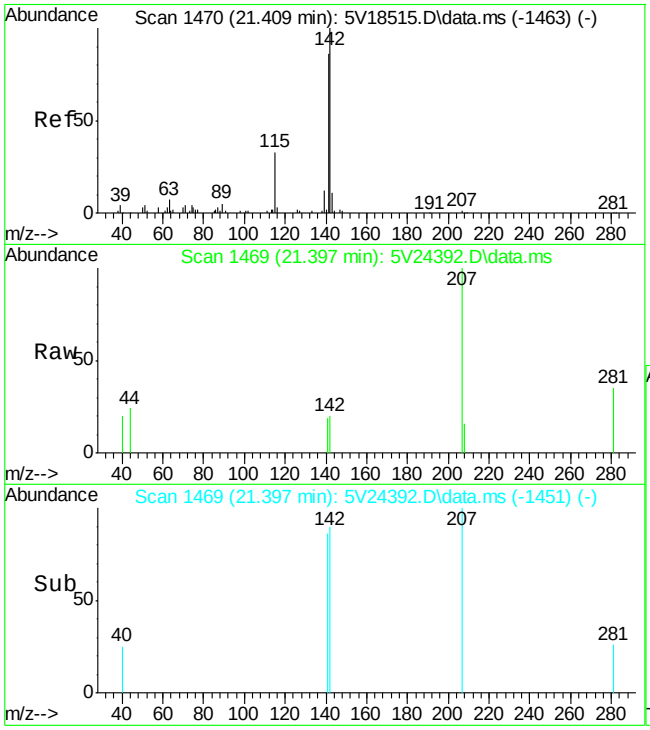


#94
2-Methylnaphthalene
Concen: 1.10 ug/l
RT: 21.100 min Scan# 1443
Delta R.T. 0.000 min
Lab File: 5V24392.D
Acq: 29 Oct 2012 2:05 pm

Tgt Ion:142 Resp: 954

Ion	Ratio	Lower	Upper
142	100		
141	71.0	66.2	99.4
115	0.0	25.9	38.9#

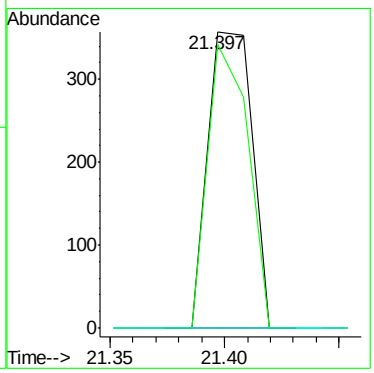




#95
1-Methylnaphthalene
Concen: 0.71 ug/l
RT: 21.397 min Scan# 1469
Delta R.T. 0.001 min
Lab File: 5V24392.D
Acq: 29 Oct 2012 2:05 pm

Tgt Ion:142 Resp: 486

Ion	Ratio	Lower	Upper
142	100		
141	87.4	68.9	103.3
115	0.0	27.3	40.9#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5102912.S\
Data File : 5V24387.D
Acq On : 29 Oct 2012 11:19 am
Operator : BRETD
Sample : MB
Misc : MS4875,V5V1486,5.00,,100,5,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 30 14:37:24 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1442TVH1442.M
Quant Title : 8260
QLast Update : Fri Sep 07 10:53:51 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	115918	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	158718	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	173604	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	124262	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.024	102	11164	50.21	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 100.42%			
61) Toluene-d8	13.850	98	185097	44.95	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 89.90%			
69) 4-Bromofluorobenzene	16.042	95	83385	44.47	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 88.94%			

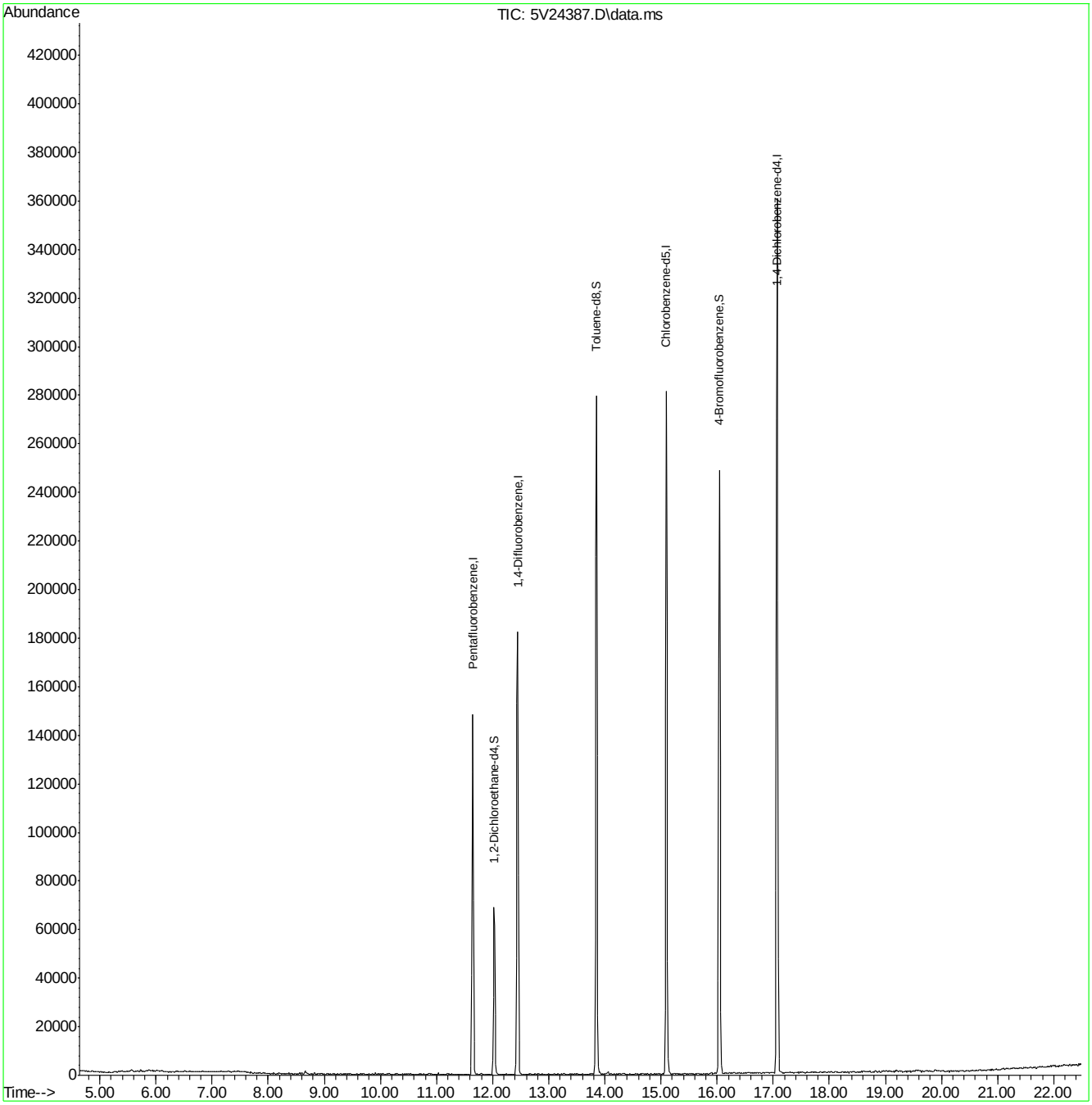
Target Compounds	Qvalue

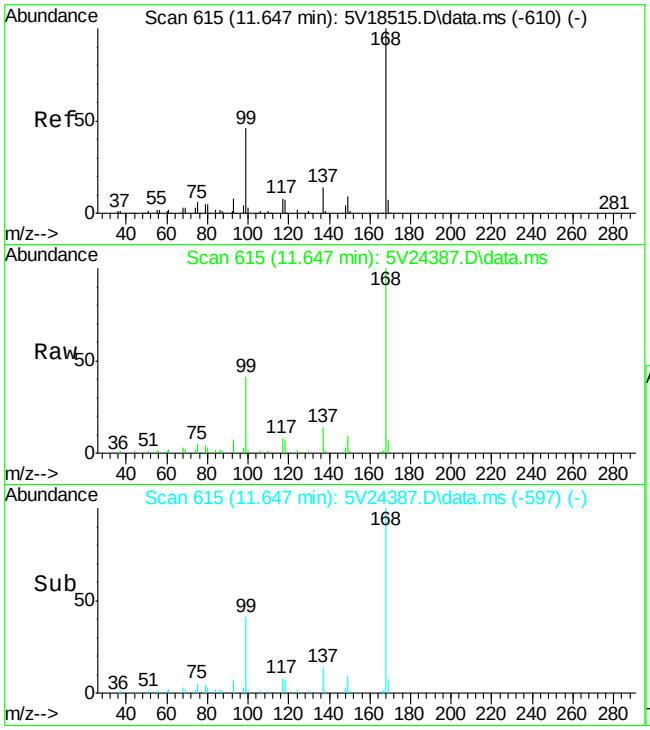
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5102912.S\
Data File : 5V24387.D
Acq On : 29 Oct 2012 11:19 am
Operator : BRETD
Sample : MB
Misc : MS4875,V5V1486,5.00,,100,5,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 30 14:37:24 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1442TVH1442.M
Quant Title : 8260
QLast Update : Fri Sep 07 10:53:51 2012
Response via : Initial Calibration

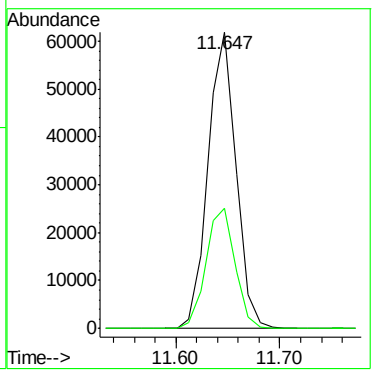


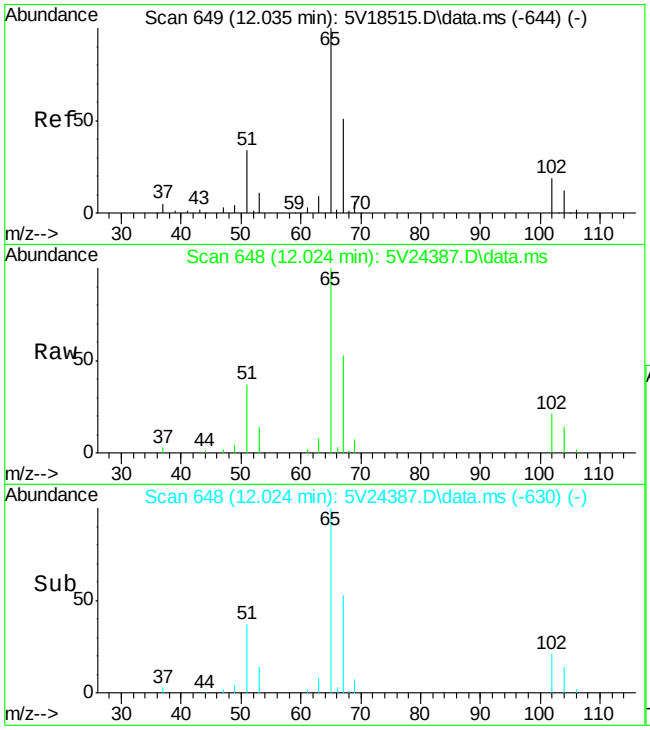


#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.647 min Scan# 615
Delta R.T. 0.000 min
Lab File: 5V24387.D
Acq: 29 Oct 2012 11:19 am

Tgt Ion:168 Resp: 115918

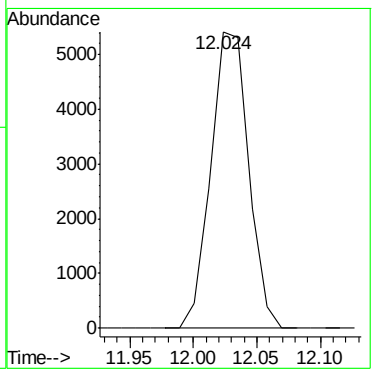
Ion	Ratio	Lower	Upper
168	100		
99	42.1	37.4	56.2

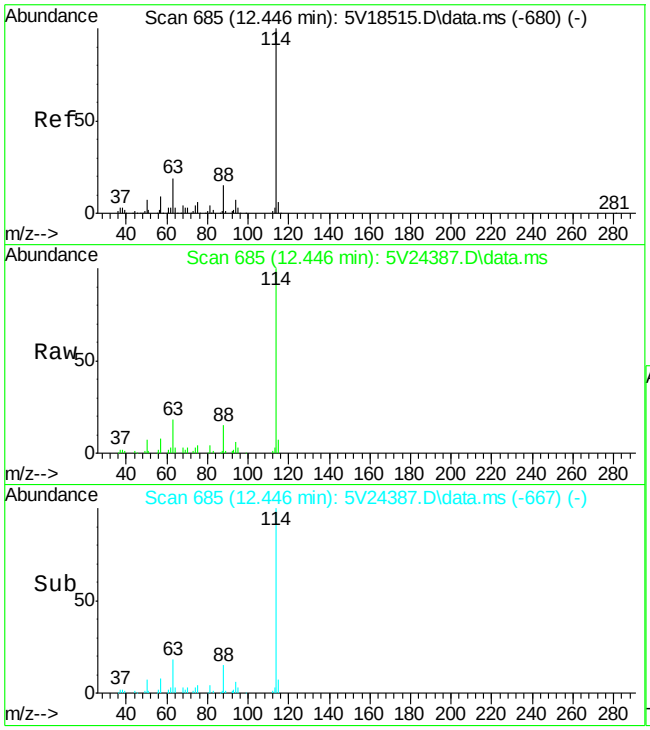




#33
1,2-Dichloroethane-d4
Concen: 50.21 ug/l
RT: 12.024 min Scan# 648
Delta R.T. 0.000 min
Lab File: 5V24387.D
Acq: 29 Oct 2012 11:19 am

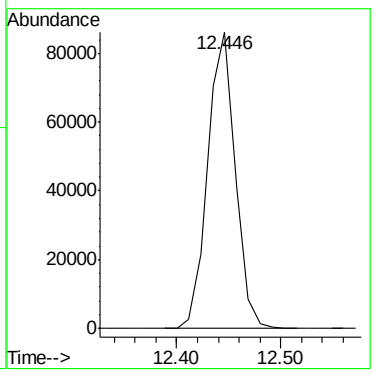
Tgt Ion:102 Resp: 11164

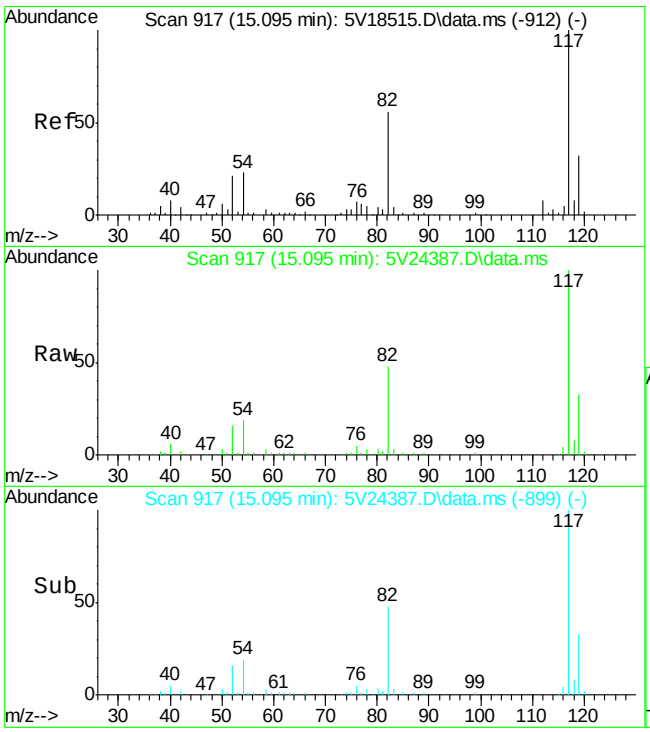




#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.446 min Scan# 685
Delta R.T. 0.000 min
Lab File: 5V24387.D
Acq: 29 Oct 2012 11:19 am

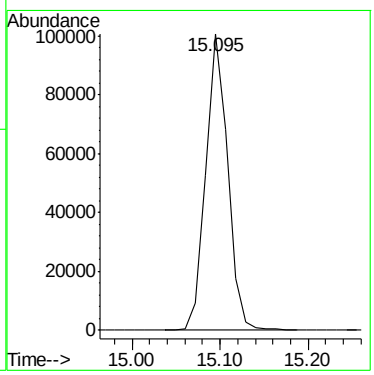
Tgt Ion:114 Resp: 158718

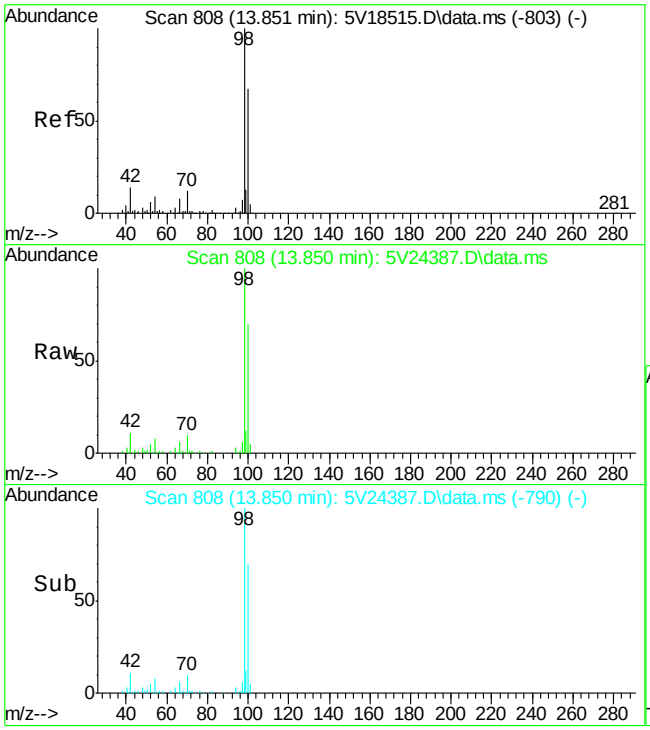




#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.095 min Scan# 917
Delta R.T. 0.000 min
Lab File: 5V24387.D
Acq: 29 Oct 2012 11:19 am

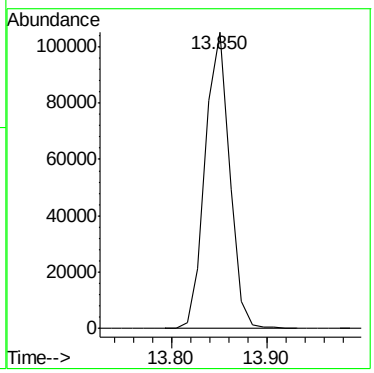
Tgt Ion:117 Resp: 173604

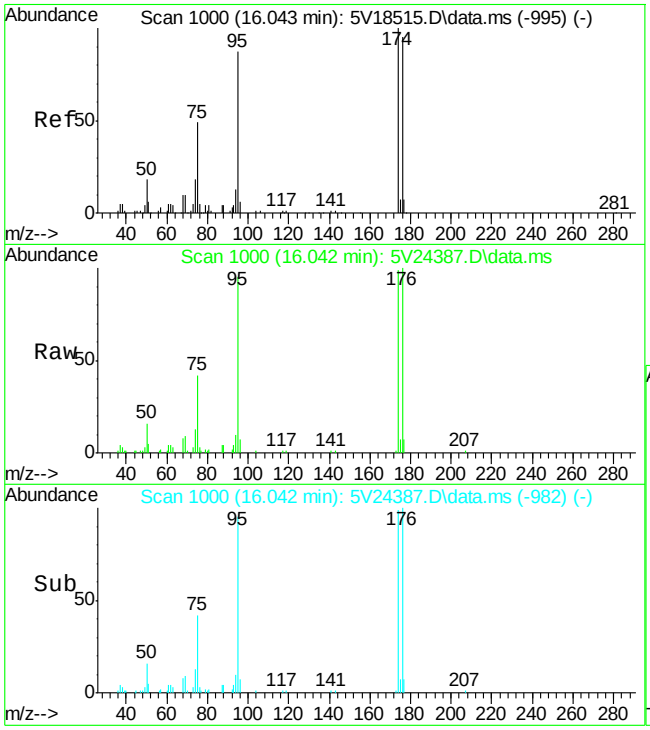




#61
Toluene-d8
Concen: 44.95 ug/l
RT: 13.850 min Scan# 808
Delta R.T. 0.000 min
Lab File: 5V24387.D
Acq: 29 Oct 2012 11:19 am

Tgt Ion: 98 Resp: 185097

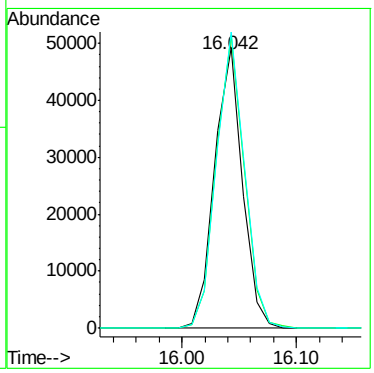


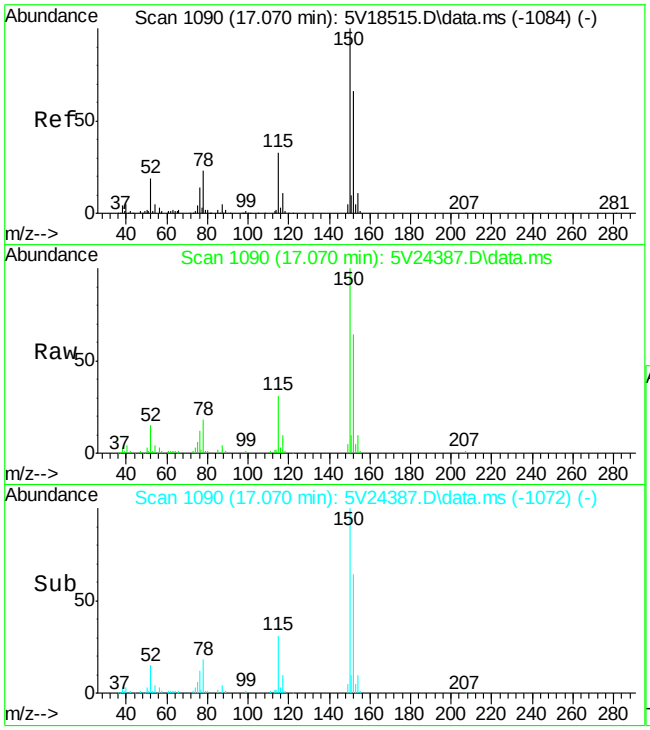


#69
4-Bromofluorobenzene
Concen: 44.47 ug/l
RT: 16.042 min Scan# 1000
Delta R.T. 0.000 min
Lab File: 5V24387.D
Acq: 29 Oct 2012 11:19 am

Tgt Ion: 95 Resp: 83385

Ion	Ratio	Lower	Upper
95	100		
174	105.7	77.1	117.1
176	106.3	73.4	113.4

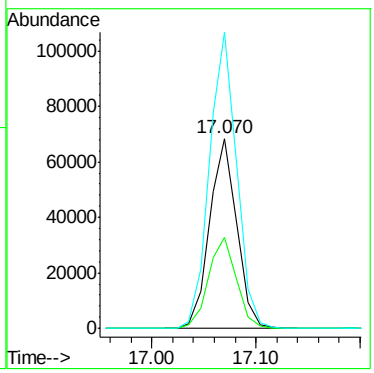




#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.070 min Scan# 1090
Delta R.T. 0.000 min
Lab File: 5V24387.D
Acq: 29 Oct 2012 11:19 am

Tgt Ion:152 Resp: 124262

Ion	Ratio	Lower	Upper
152	100		
115	48.9	41.4	62.0
150	156.4	153.9	230.9



7.2.1

7

Mountain States ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6884-MB	3G11847.D	1	10/31/12	DC	10/30/12	OP6884	E3G558

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D40328-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	8.3	4.3	ug/kg	
120-12-7	Anthracene	ND	8.3	4.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	8.3	4.3	ug/kg	
50-32-8	Benzo(a)pyrene	ND	8.3	4.3	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	8.3	4.3	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	8.3	4.3	ug/kg	
218-01-9	Chrysene	ND	8.3	4.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	8.3	4.3	ug/kg	
206-44-0	Fluoranthene	ND	8.3	4.3	ug/kg	
86-73-7	Fluorene	ND	8.3	4.3	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	8.3	4.3	ug/kg	
91-20-3	Naphthalene	ND	12	10	ug/kg	
129-00-0	Pyrene	ND	8.3	4.3	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	74%	10-159%
321-60-8	2-Fluorobiphenyl	72%	19-131%
1718-51-0	Terphenyl-d14	87%	18-150%

Blank Spike Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6884-BS	3G11848.D	1	10/31/12	DC	10/30/12	OP6884	E3G558

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D40328-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	66.0	79	68-130
120-12-7	Anthracene	83.3	71.5	86	67-130
56-55-3	Benzo(a)anthracene	83.3	74.2	89	65-130
50-32-8	Benzo(a)pyrene	83.3	80.1	96	62-130
205-99-2	Benzo(b)fluoranthene	83.3	89.2	107	44-130
207-08-9	Benzo(k)fluoranthene	83.3	73.8	89	56-131
218-01-9	Chrysene	83.3	80.3	96	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	78.7	94	55-130
206-44-0	Fluoranthene	83.3	72.4	87	70-130
86-73-7	Fluorene	83.3	67.2	81	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	80.0	96	56-130
91-20-3	Naphthalene	83.3	64.4	77	70-130
129-00-0	Pyrene	83.3	74.7	90	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	73%	10-159%
321-60-8	2-Fluorobiphenyl	61%	19-131%
1718-51-0	Terphenyl-d14	82%	18-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6884-MS	3G11859.D	1	10/31/12	DC	10/30/12	OP6884	E3G558
OP6884-MSD	3G11860.D	1	10/31/12	DC	10/30/12	OP6884	E3G558
D40329-1	3G11858.D	1	10/31/12	DC	10/30/12	OP6884	E3G558

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D40328-1

CAS No.	Compound	D40329-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		98.8	65.4	66	75.1	76	3	25-151/30
120-12-7	Anthracene	ND		98.8	72.0	73	81.5	82	1	39-159/30
56-55-3	Benzo(a)anthracene	27.6		98.8	84.6	58	94.8	68	2	39-168/30
50-32-8	Benzo(a)pyrene	28.6		98.8	75.0	47	85.6	58	3	32-144/30
205-99-2	Benzo(b)fluoranthene	ND		98.8	88.4	89	102	103	19	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		98.8	80.3	81	91.3	92	13	10-188/30
218-01-9	Chrysene	85.7		98.8	127	42* [a]	146	61	14	43-150/30
53-70-3	Dibenzo(a,h)anthracene	11.2		98.8	60.9	50	69.1	59	13	21-152/30
206-44-0	Fluoranthene	36.2		98.8	82.0	46	88.5	53	8	36-157/30
86-73-7	Fluorene	115		98.8	150	35	171	57	13	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	13.0		98.8	55.1	43	64.7	52	16	20-154/30
91-20-3	Naphthalene	405		98.8	415	10	517	113	22	10-163/30
129-00-0	Pyrene	59.1		98.8	126	68	143	85	13	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D40329-1	Limits
4165-60-0	Nitrobenzene-d5	5%* [a]	22%	9%* [b]	10-159%
321-60-8	2-Fluorobiphenyl	49%	56%	57%	19-131%
1718-51-0	Terphenyl-d14	63%	72%	67%	18-150%

(a) Outside control limits due to matrix interference.
(b) Outside control limits due to matrix interference. Confirmed by MS.

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC/MS Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\103112\
Data File : 3g11850.D
Acq On : 31 Oct 2012 7:02 pm
Operator : DONC
Sample : D40328-1
Misc : OP6884,E3G558,5.36,,,1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Nov 02 09:51:01 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G558.M
Quant Title : PAHSIM BASE
QLast Update : Wed Oct 31 14:49:52 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.789	136	194169	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.507	164	111167	4.0000	ug/mL	0.00
15) Phenanthrene-d10	8.995	188	184086	4.0000	ug/mL	0.00
19) Chrysene-d12	11.630	240	138939	4.0000	ug/mL	0.00
24) Perylene-d12	13.035	264	97219	4.0000	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	5.103	82	898687	37.4339	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 74.86%			
7) 2-Fluorobiphenyl	6.846	172	1607415	34.8265	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 69.66%			
21) Terphenyl-d14	10.578	244	851233	43.0793	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 86.16%			

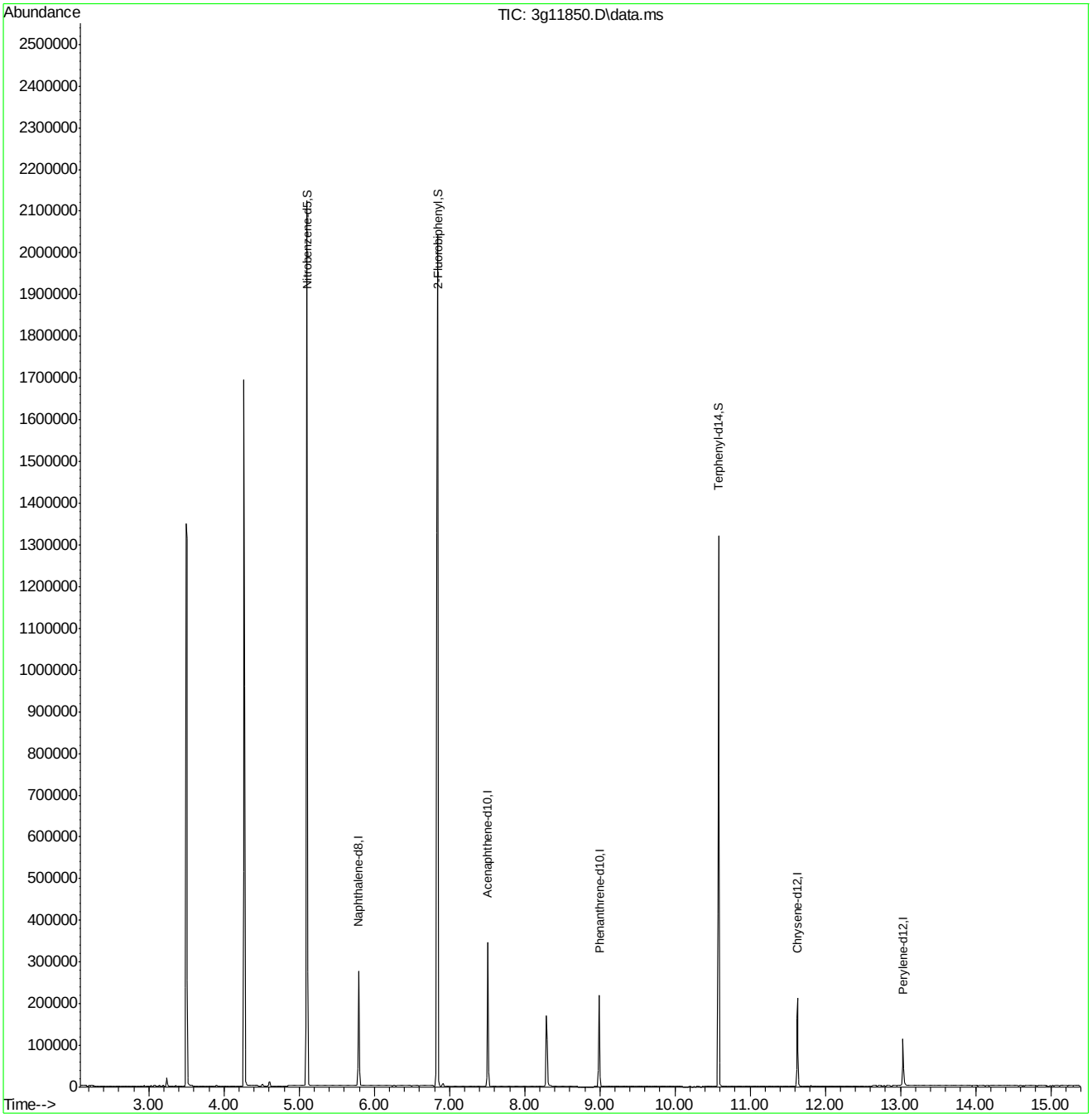
Target Compounds				Qvalue
3) N-Nitrosodimethylamine	2.501	74	19	N.D.
4) N-Nitrosodi-propylamine	0.000	70	0	N.D. d
5) Naphthalene	5.814	128	724	N.D.
8) 2-Methylnaphthalene	6.487	142	319	N.D.
9) 1-Methylnaphthalene	6.574	142	253	N.D.
10) Acenaphthylene	7.366	152	172	N.D.
11) Acenaphthene	7.507	154	571	N.D.
12) Dibenzofuran	7.720	168	189	N.D.
13) Fluorene	0.000	166	0	N.D. d
14) Diphenylamine	0.000	169	0	N.D. d
16) Phenanthrene	9.011	178	705	N.D.
17) Anthracene	9.067	178	312	N.D.
18) Fluoranthene	10.198	202	366	N.D.
20) Pyrene	10.428	202	320	N.D.
22) Benzo(a)anthracene	11.623	228	906	N.D.
23) Chrysene	11.623	228	906	N.D.
25) Benzo(b)fluoranthene	12.667	252	941	N.D.
26) Benzo(k)fluoranthene	12.667	252	941	N.D.
27) Benzo(a)pyrene	12.972	252	194	N.D.
28) Indeno(1,2,3-cd)pyrene	14.307	276	308	N.D.
29) Dibenz(a,h)anthracene	14.329	278	252	N.D.
30) Benzo(g,h,i)perylene	14.676	276	309	N.D.

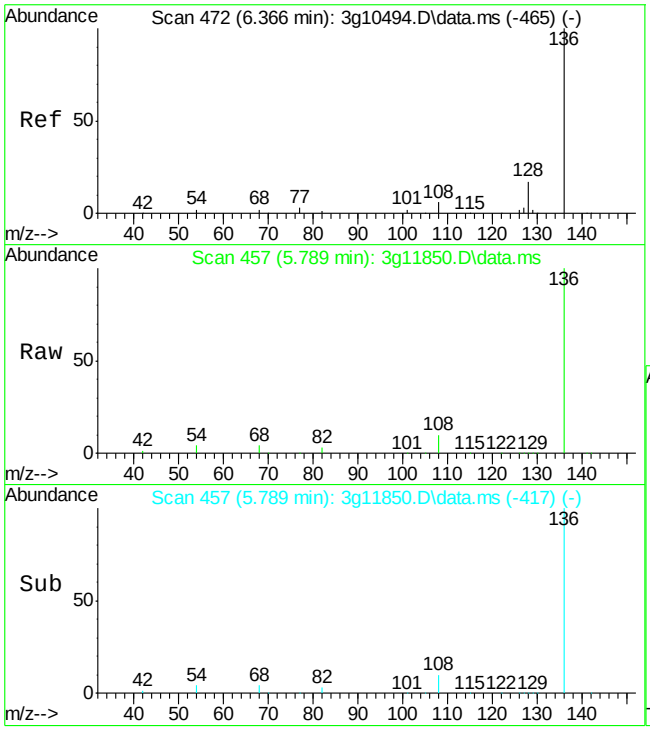
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\103112\
Data File : 3g11850.D
Acq On : 31 Oct 2012 7:02 pm
Operator : DONC
Sample : D40328-1
Misc : OP6884,E3G558,5.36,,,1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Nov 02 09:51:01 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G558.M
Quant Title : PAHSIM BASE
QLast Update : Wed Oct 31 14:49:52 2012
Response via : Initial Calibration

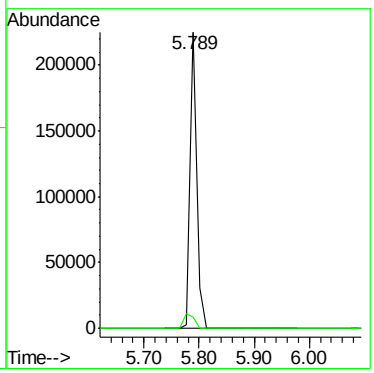


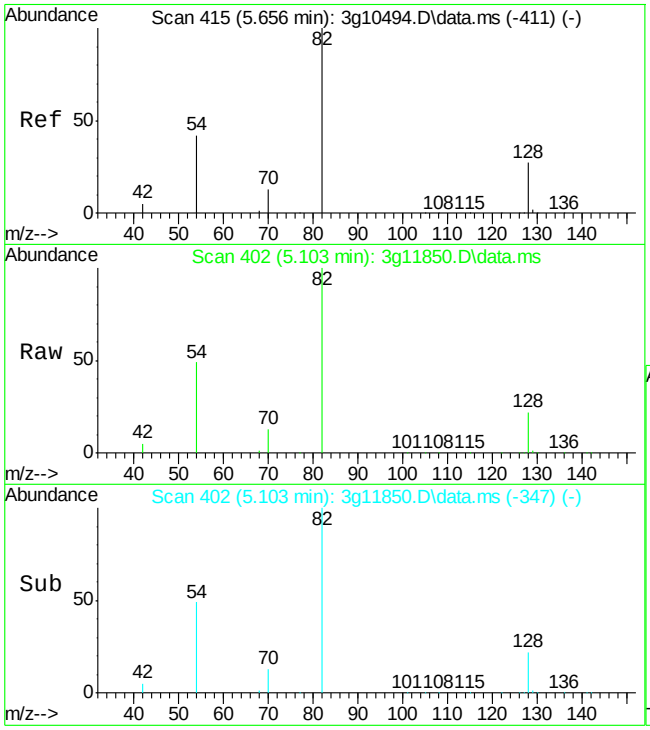


#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.789 min Scan# 457
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:136 Resp: 194169

Ion	Ratio	Lower	Upper
136	100		
68	7.9	0.0	28.7

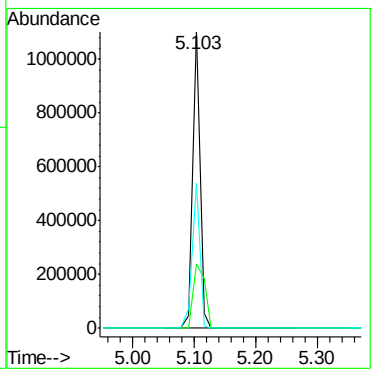


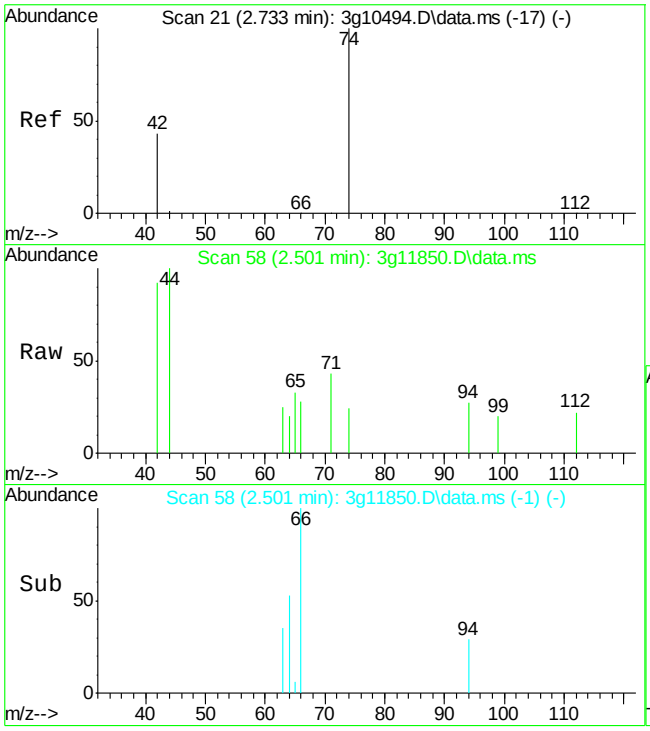


#2
Nitrobenzene-d5
Concen: 37.4339 ug/mL
RT: 5.103 min Scan# 402
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion: 82 Resp: 898687

Ion	Ratio	Lower	Upper
82	100		
128	35.3	17.4	57.4
54	51.6	32.8	72.8

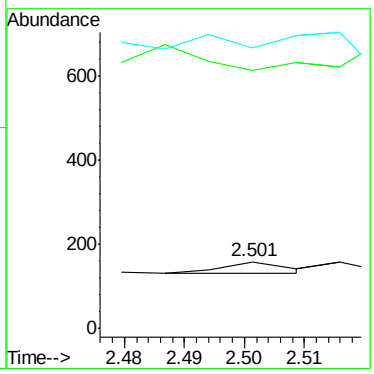


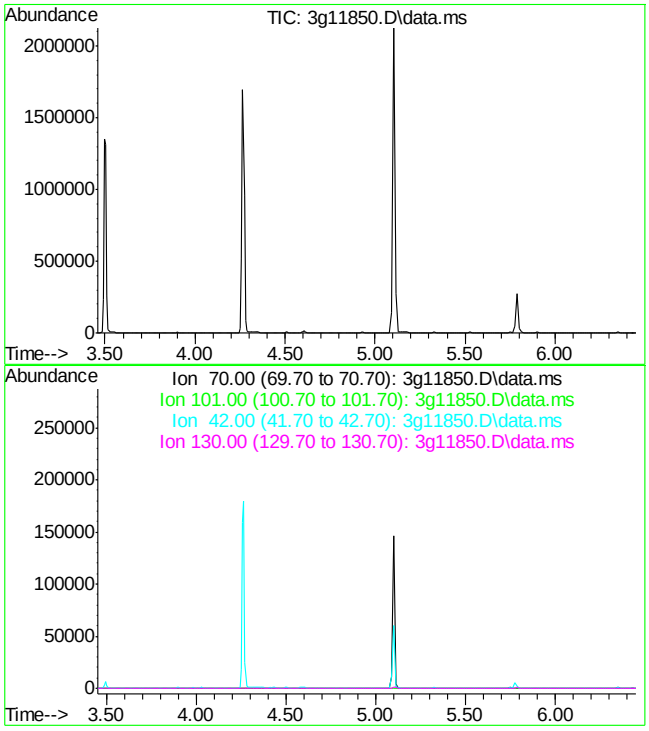


#3
N-Nitrosodimethylamine
Concen: Below ug/mL
RT: 2.501 min Scan# 58
Delta R.T. 0.015 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion: 74 Resp: 19

Ion	Ratio	Lower	Upper
74	100		
42	394.7	53.7	93.7#
44	0.0	0.0	24.1



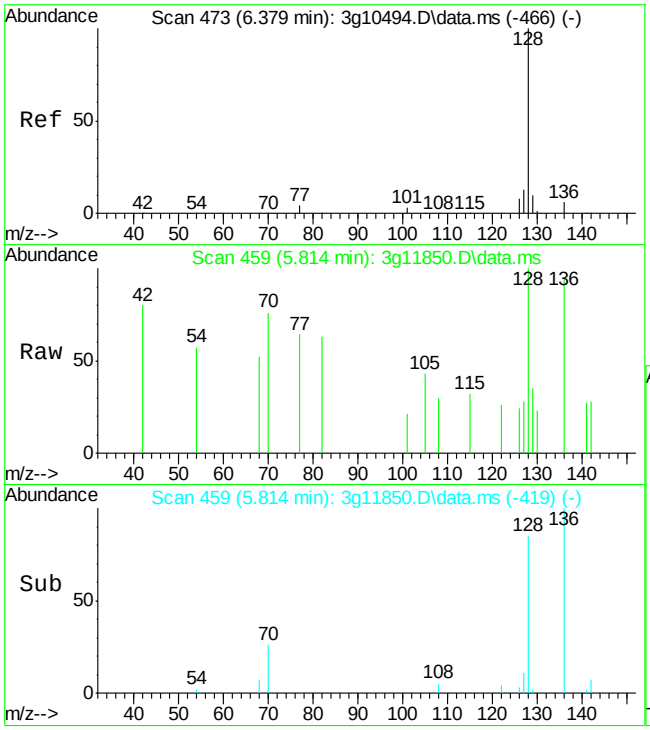


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.95 min

Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion: 70

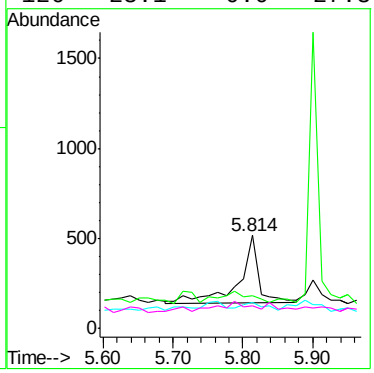
Sig	Exp Ratio
70	100
101	12.3
42	51.9
130	24.1

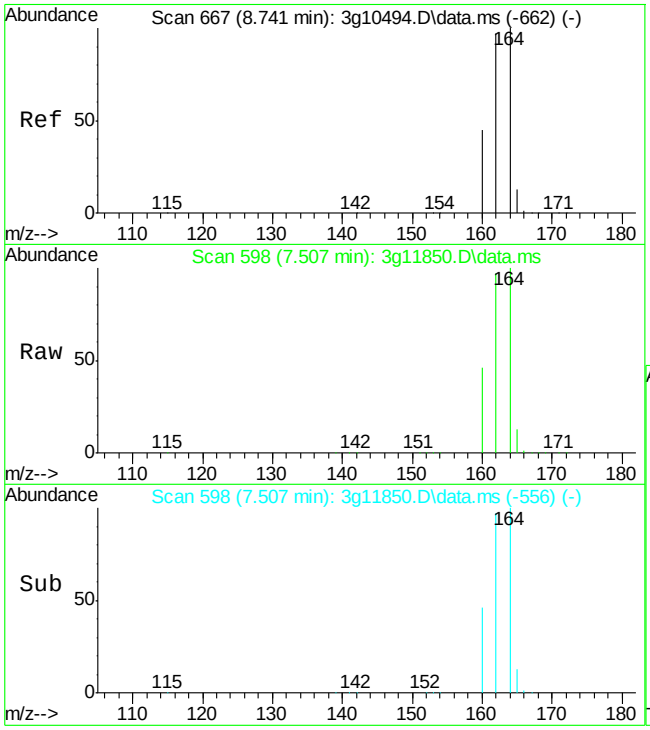


#5
Naphthalene
Concen: Below ug/mL
RT: 5.814 min Scan# 459
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:128 Resp: 724

Ion	Ratio	Lower	Upper
128	100		
129	27.3	0.0	31.1
127	12.0	0.0	32.6
126	23.1	0.0	27.3

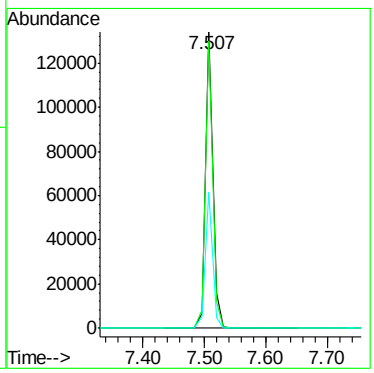


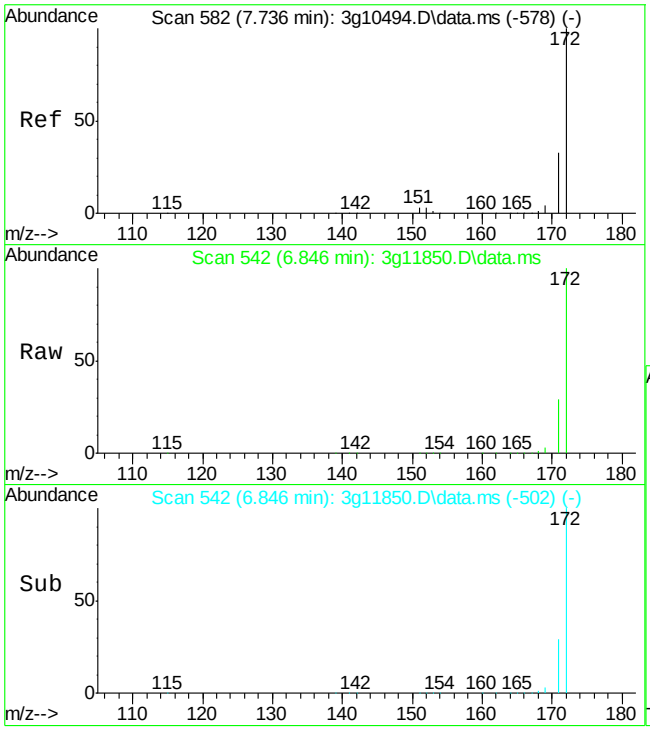


#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.507 min Scan# 598
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:164 Resp: 111167

Ion	Ratio	Lower	Upper
164	100		
162	96.3	77.7	117.7
160	45.6	26.6	66.6

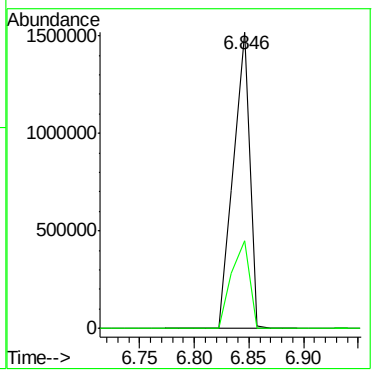


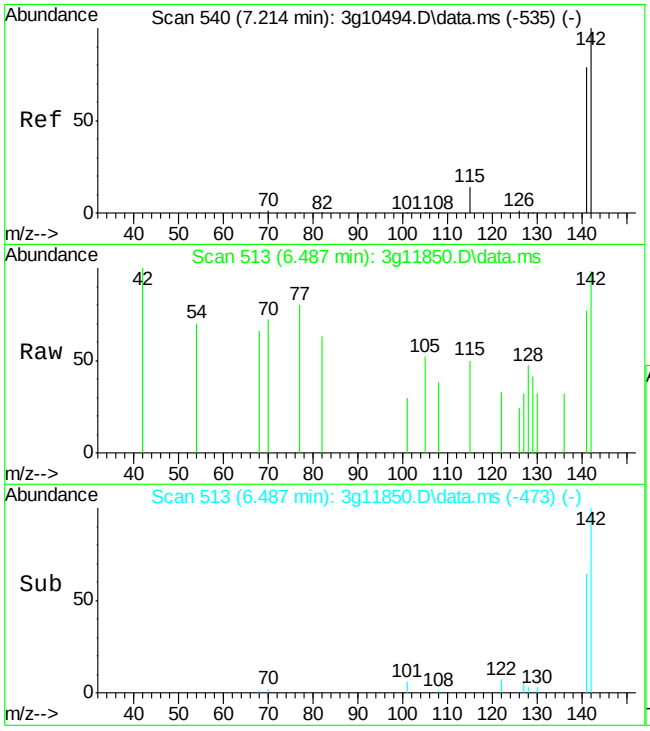


#7
2-Fluorobiphenyl
Concen: 34.8265 ug/mL
RT: 6.846 min Scan# 542
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:172 Resp: 1607415

Ion	Ratio	Lower	Upper
172	100		
171	32.8	12.9	52.9

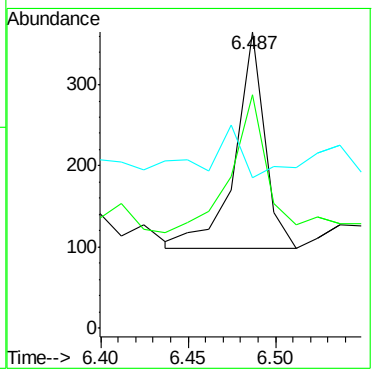


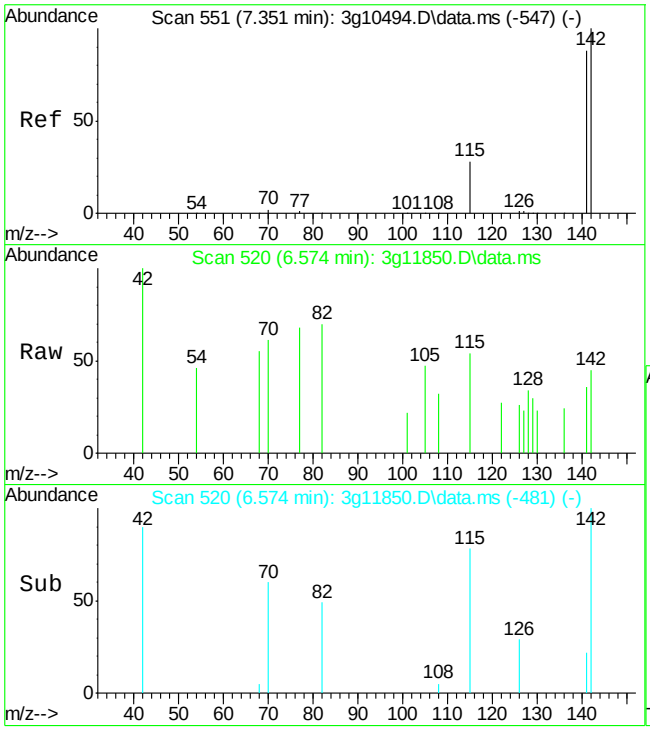


#8
2-Methylnaphthalene
Concen: Below ug/mL
RT: 6.487 min Scan# 513
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:142 Resp: 319

Ion	Ratio	Lower	Upper
142	100		
141	81.8	62.7	102.7
115	0.0	8.3	48.3#

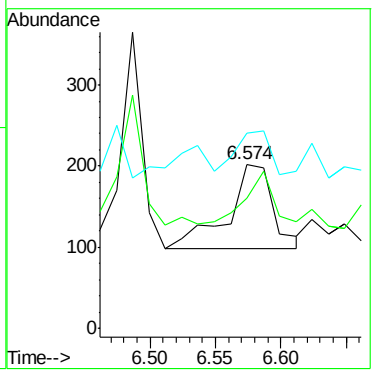


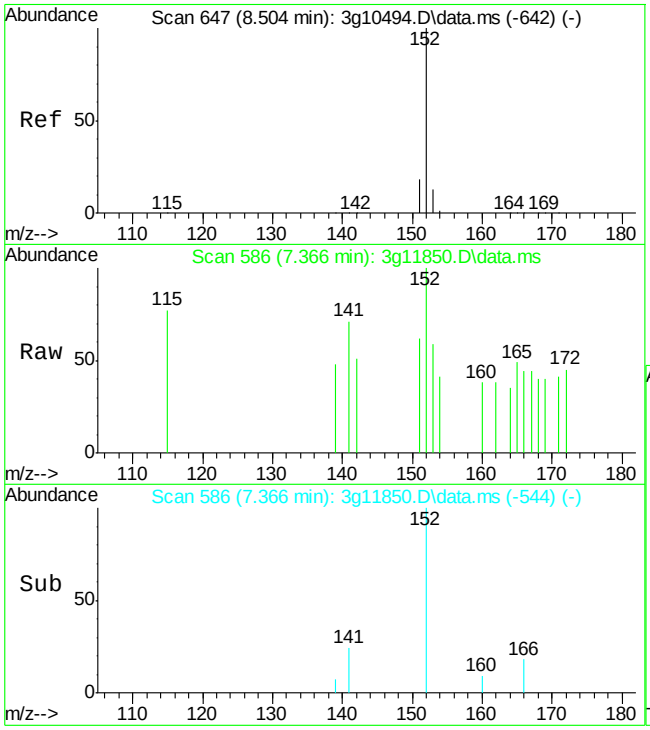


#9
1-Methylnaphthalene
Concen: Below ug/mL
RT: 6.574 min Scan# 520
Delta R.T. -0.012 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:142 Resp: 253

Ion	Ratio	Lower	Upper
142	100		
141	54.5	65.6	105.6#
115	0.0	14.0	54.0#

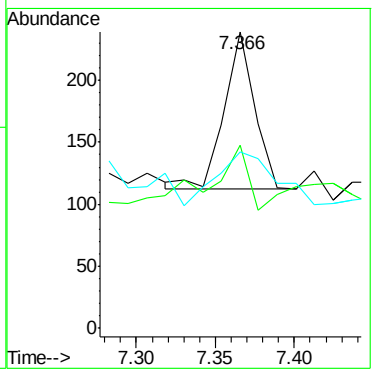


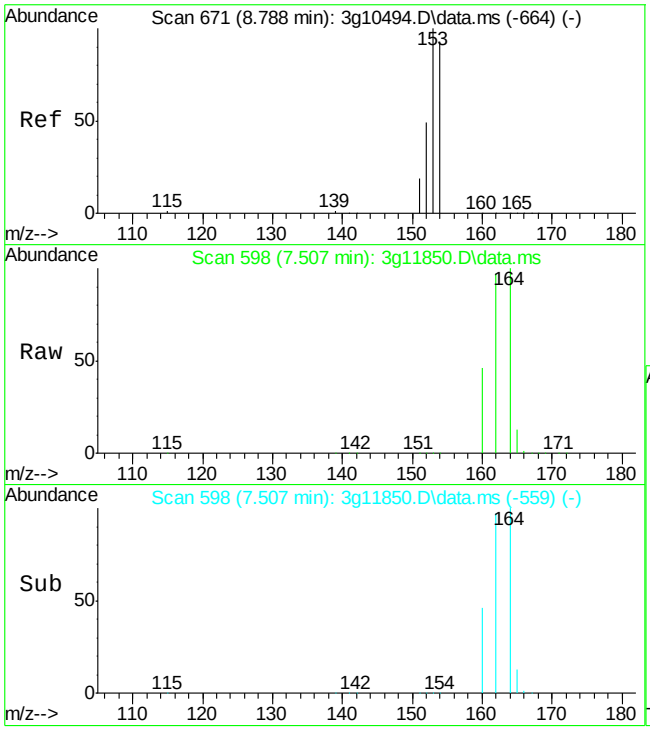


#10
Acenaphthylene
Concen: Below ug/mL
RT: 7.366 min Scan# 586
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:152 Resp: 172

Ion	Ratio	Lower	Upper
152	100		
151	70.9	0.0	39.6#
153	66.3	0.0	33.0#

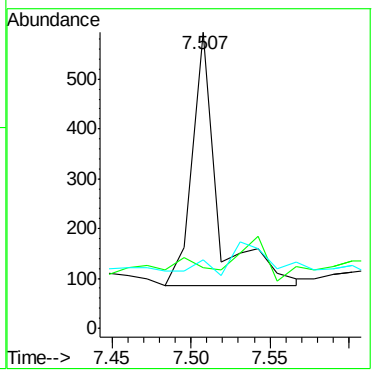


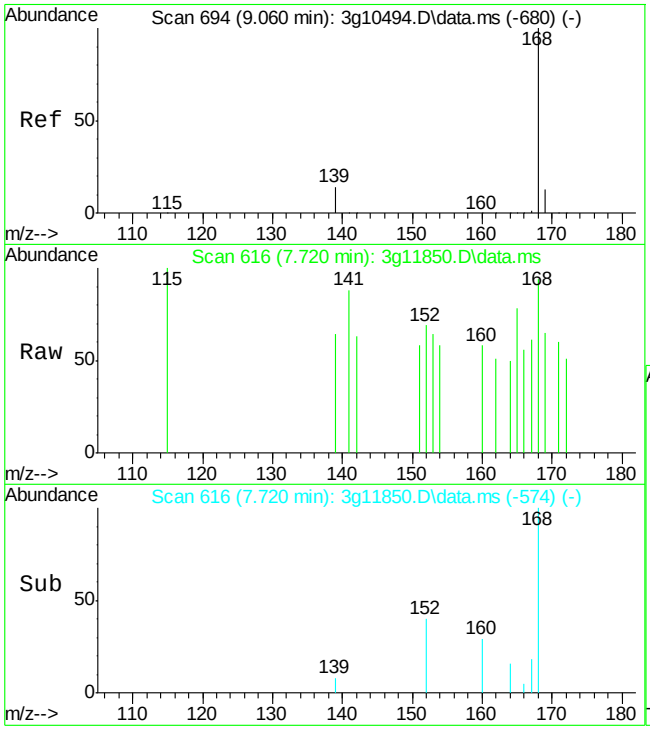


#11
Acenaphthene
Concen: Below ug/mL
RT: 7.507 min Scan# 598
Delta R.T. -0.035 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:154 Resp: 571

Ion	Ratio	Lower	Upper
154	100		
153	18.4	83.1	123.1#
152	0.0	29.1	69.1#

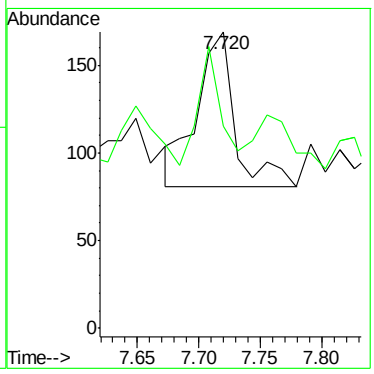


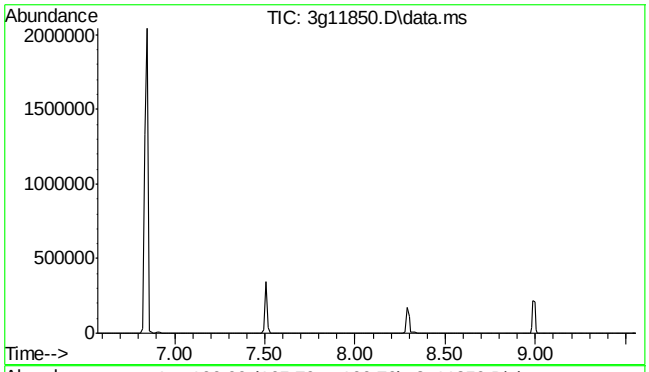


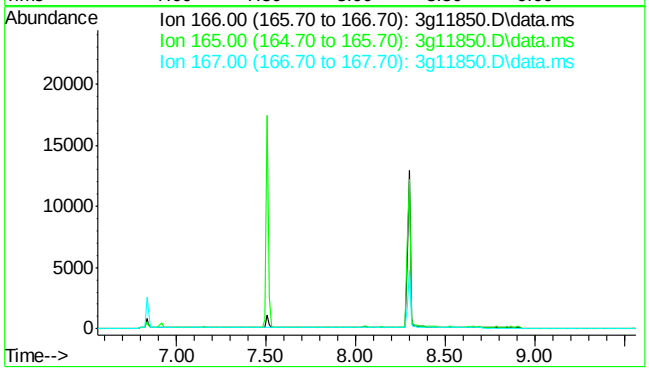
#12
Dibenzofuran
Concen: Below ug/mL
RT: 7.720 min Scan# 616
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:168 Resp: 189

Ion	Ratio	Lower	Upper
168	100		
139	45.0	14.1	54.1





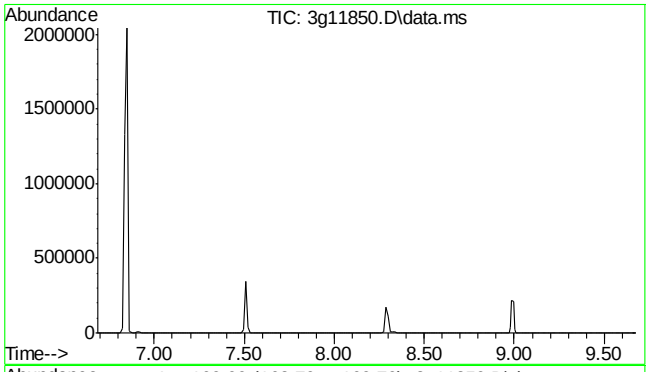


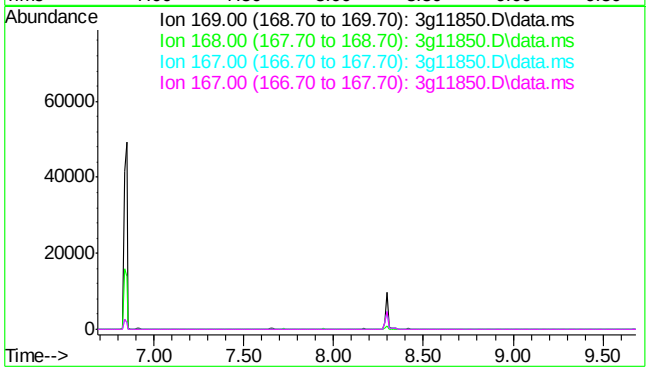
#13
Fluorene
Concen: N.D. ug/mL
Expected RT: 8.06 min

Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion: 166

Sig	Exp Ratio
166	100
165	92.9
167	13.2



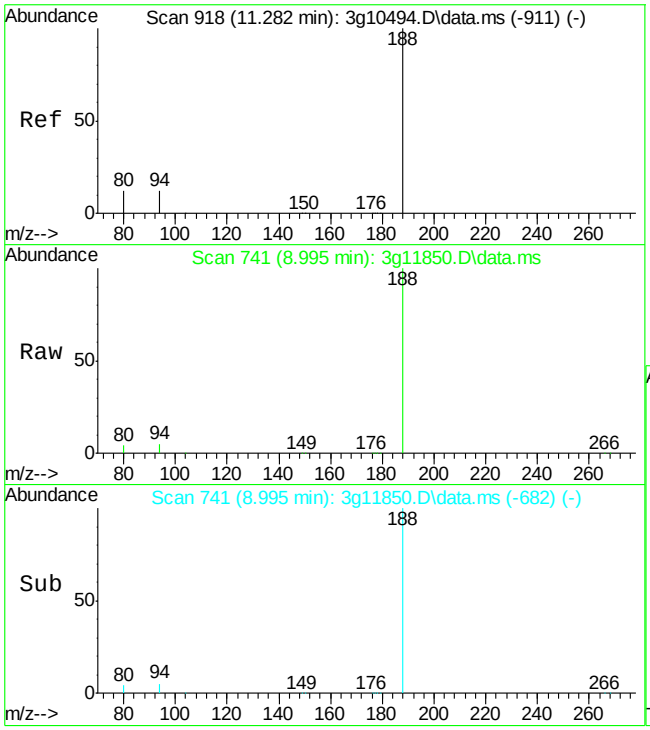


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.18 min

Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion: 169

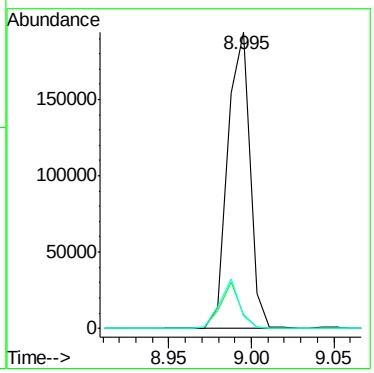
Sig	Exp Ratio
169	100
168	62.0
167	34.1
167	34.1

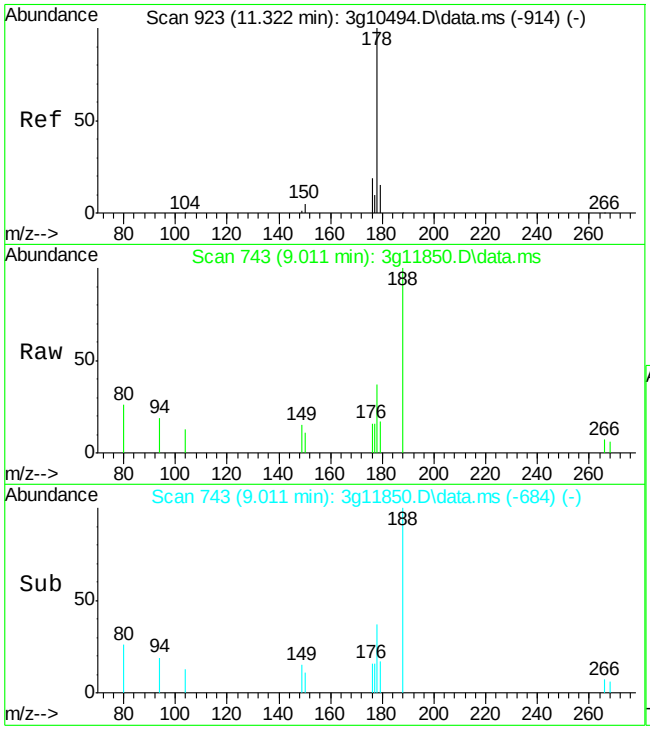


#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.995 min Scan# 741
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:188 Resp: 184086

Ion	Ratio	Lower	Upper
188	100		
94	13.3	0.0	33.4
80	14.1	0.0	34.7

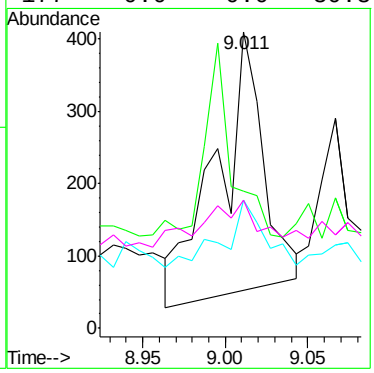


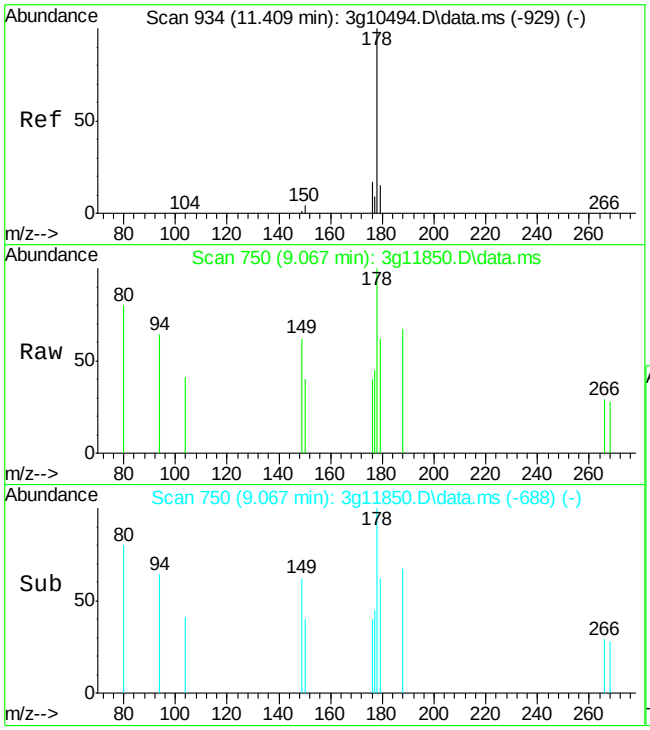


#16
Phenanthrene
Concen: Below ug/mL
RT: 9.011 min Scan# 743
Delta R.T. -0.008 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:178 Resp: 705

Ion	Ratio	Lower	Upper
178	100		
179	57.6	0.0	35.2#
176	30.4	0.0	38.9
177	0.0	0.0	30.3

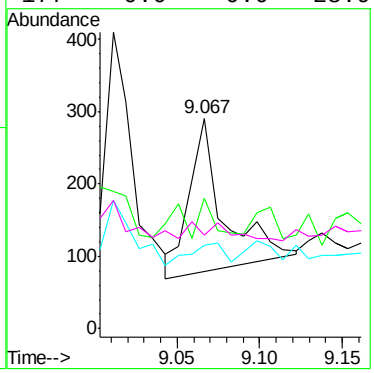


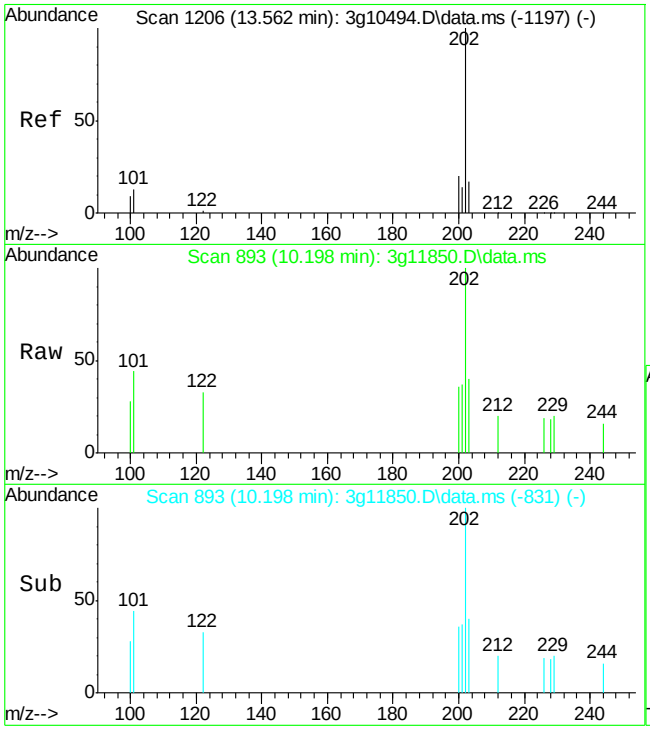


#17
Anthracene
Concen: Below ug/mL
RT: 9.067 min Scan# 750
Delta R.T. -0.008 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:178 Resp: 312

Ion	Ratio	Lower	Upper
178	100		
179	0.0	0.0	35.1
176	0.0	0.0	38.3
177	0.0	0.0	28.9

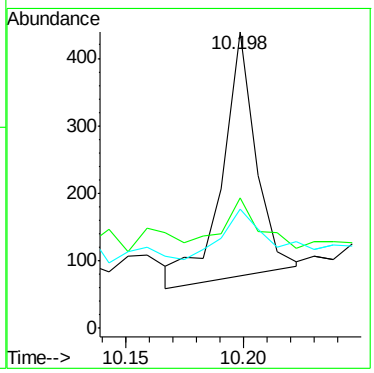


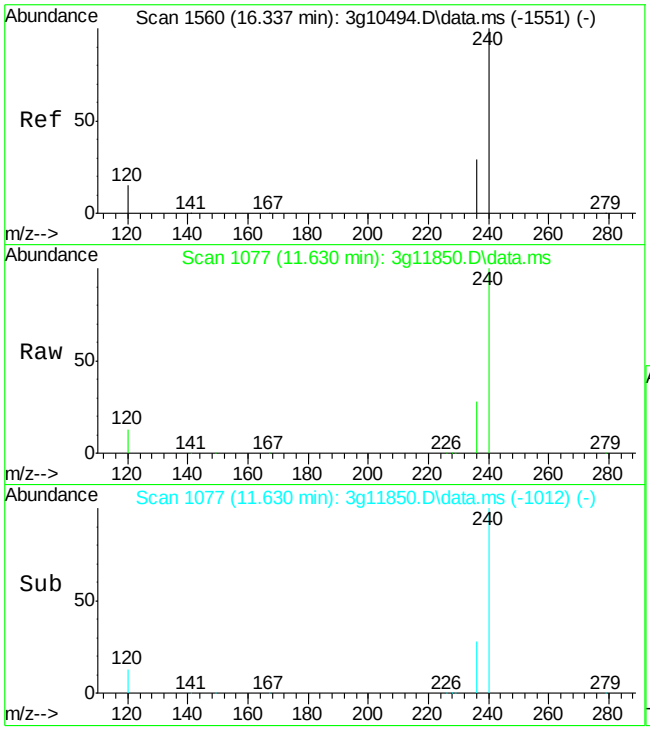


#18
Fluoranthene
Concen: Below ug/mL
RT: 10.198 min Scan# 893
Delta R.T. -0.008 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:202 Resp: 366

Ion	Ratio	Lower	Upper
202	100		
101	18.9	0.0	33.9
203	29.0	0.0	37.2

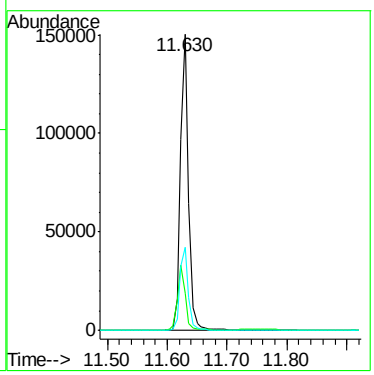


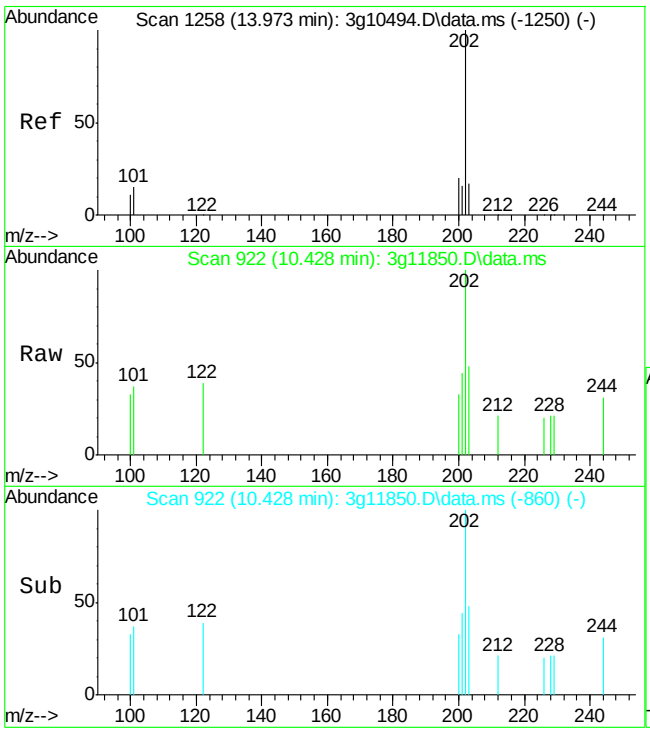


#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.630 min Scan# 1077
Delta R.T. -0.007 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:240 Resp: 138939

Ion	Ratio	Lower	Upper
240	100		
120	21.2	1.4	41.4
236	29.5	9.7	49.7

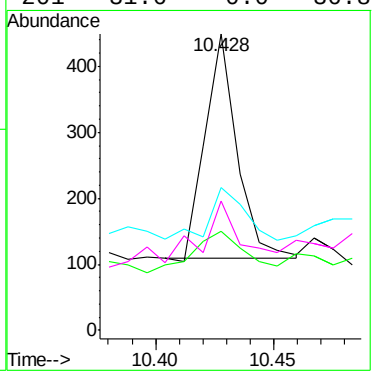


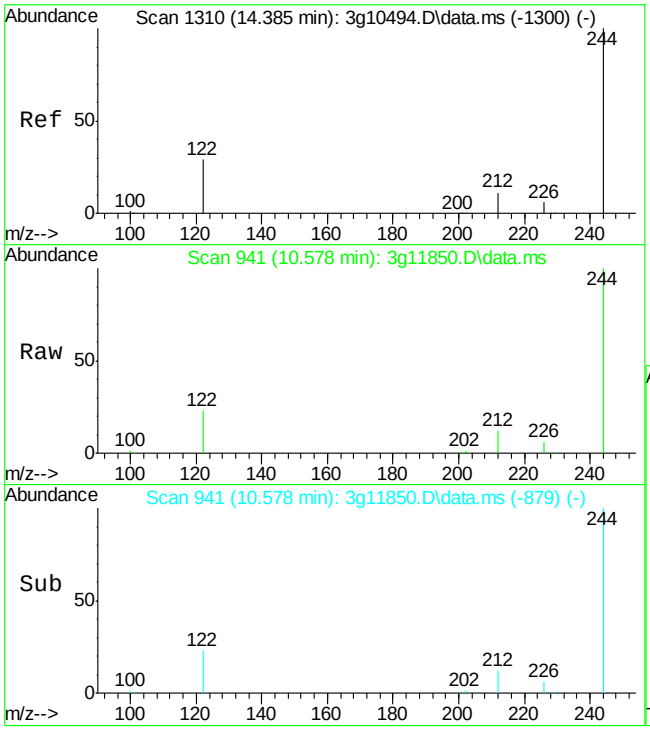


#20
Pyrene
Concen: Below ug/mL
RT: 10.428 min Scan# 922
Delta R.T. -0.008 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:202 Resp: 320

Ion	Ratio	Lower	Upper
202	100		
200	30.0	0.8	40.8
203	22.2	0.0	37.9
201	31.6	0.0	36.8

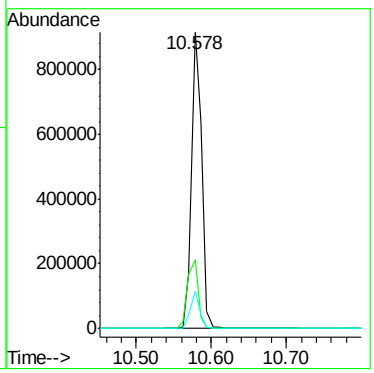


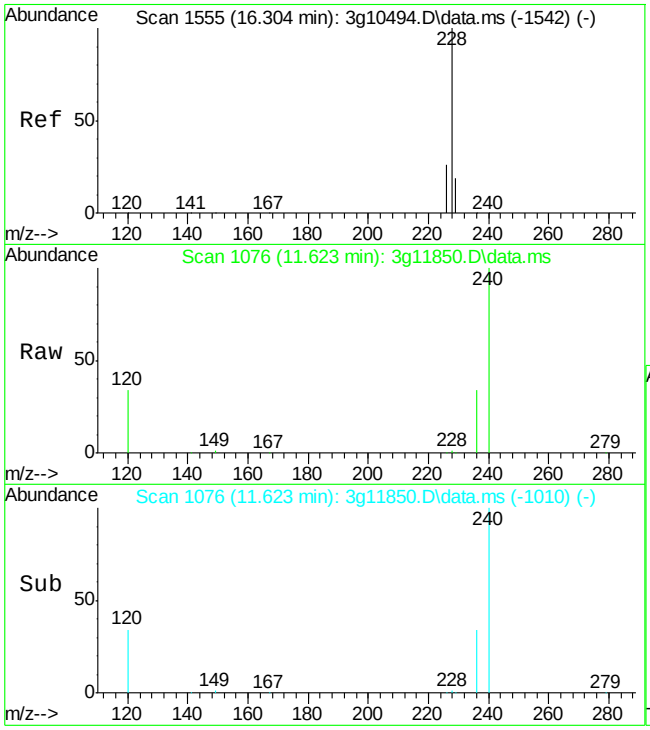


#21
Terphenyl-d14
Concen: 43.0793 ug/mL
RT: 10.578 min Scan# 941
Delta R.T. -0.008 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:244 Resp: 851233

Ion	Ratio	Lower	Upper
244	100		
122	24.7	6.6	46.6
212	11.4	0.0	31.7

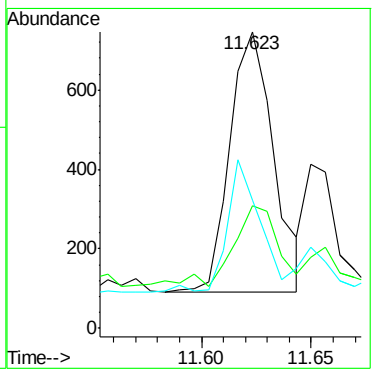


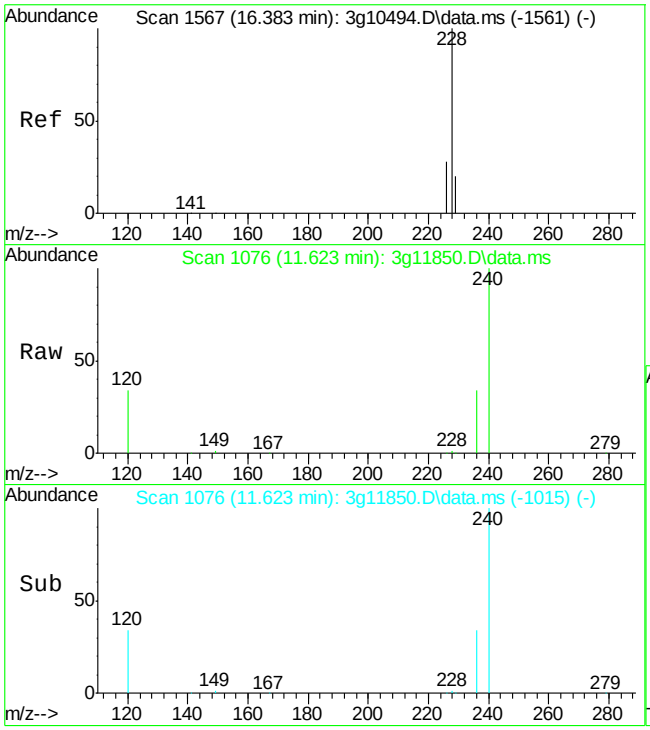


#22
Benzo(a)anthracene
Concen: Below ug/mL
RT: 11.623 min Scan# 1076
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:228 Resp: 906

Ion	Ratio	Lower	Upper
228	100		
229	30.4	0.0	39.5
226	37.5	7.1	47.1

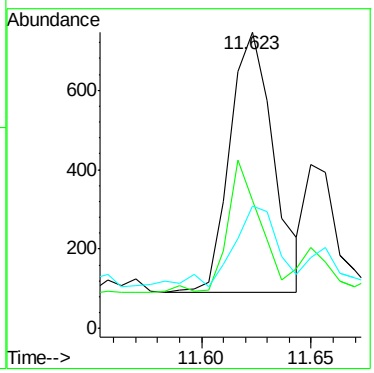


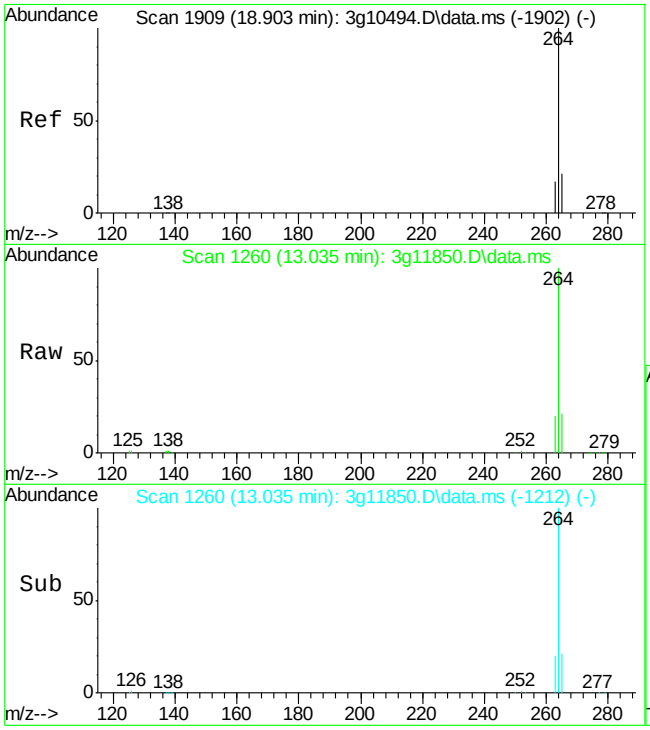


#23
Chrysene
Concen: Below ug/mL
RT: 11.623 min Scan# 1076
Delta R.T. -0.040 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:228 Resp: 906

Ion	Ratio	Lower	Upper
228	100		
226	37.5	9.6	49.6
229	30.4	0.0	39.3

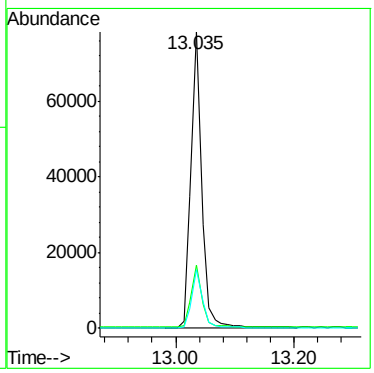


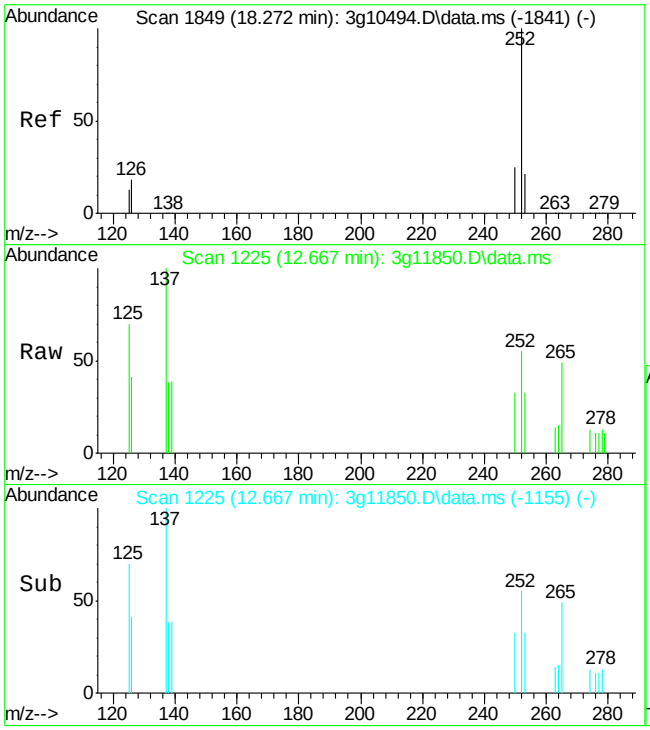


#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.035 min Scan# 1260
Delta R.T. 0.000 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:264 Resp: 97219

Ion	Ratio	Lower	Upper
264	100		
265	20.5	1.2	41.2
263	19.5	0.0	39.6

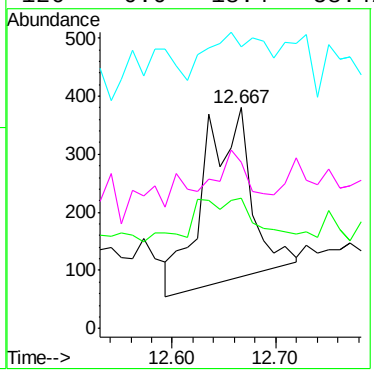


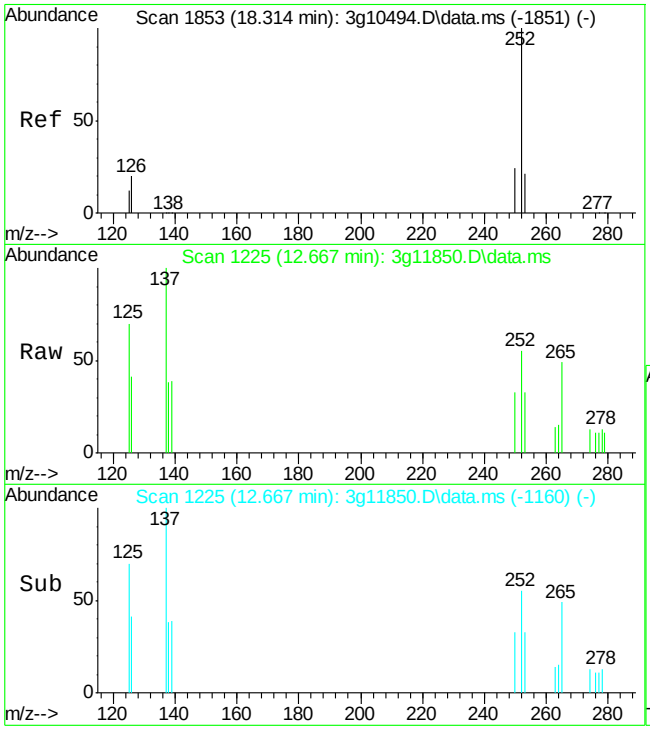


#25
Benzo(b)fluoranthene
Concen: Below ug/mL
RT: 12.667 min Scan# 1225
Delta R.T. 0.021 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:252 Resp: 941

Ion	Ratio	Lower	Upper
252	100		
253	11.9	1.0	41.0
125	0.0	6.5	46.5#
126	0.0	18.4	58.4#

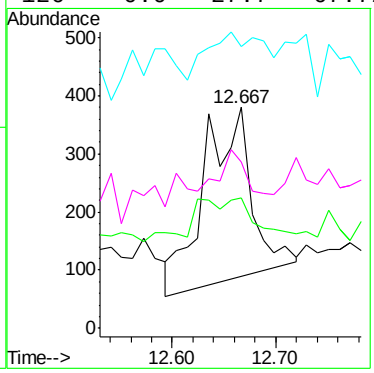


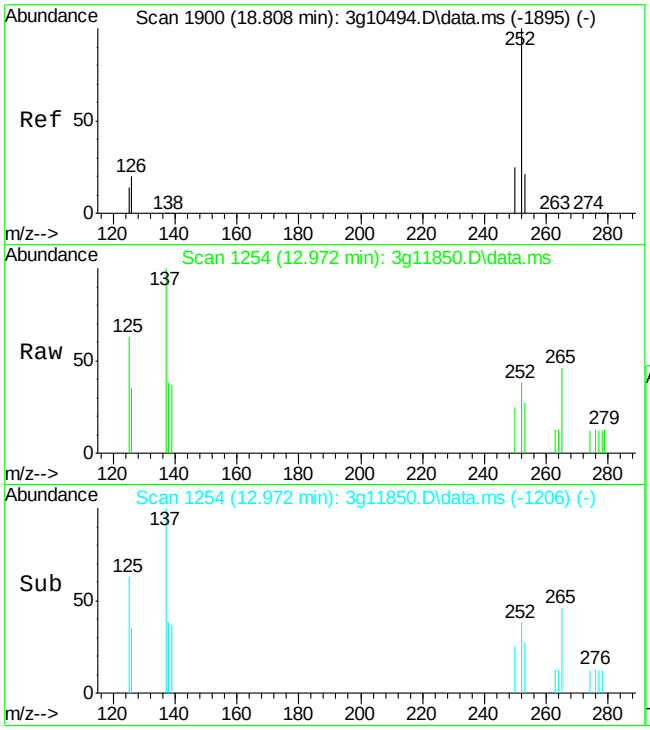


#26
Benzo(k)fluoranthene
Concen: Below ug/mL
RT: 12.667 min Scan# 1225
Delta R.T. -0.010 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:252 Resp: 941

Ion	Ratio	Lower	Upper
252	100		
253	11.9	6.1	46.1
125	0.0	12.9	52.9#
126	0.0	27.7	67.7#

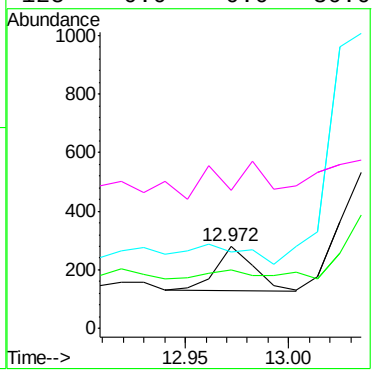


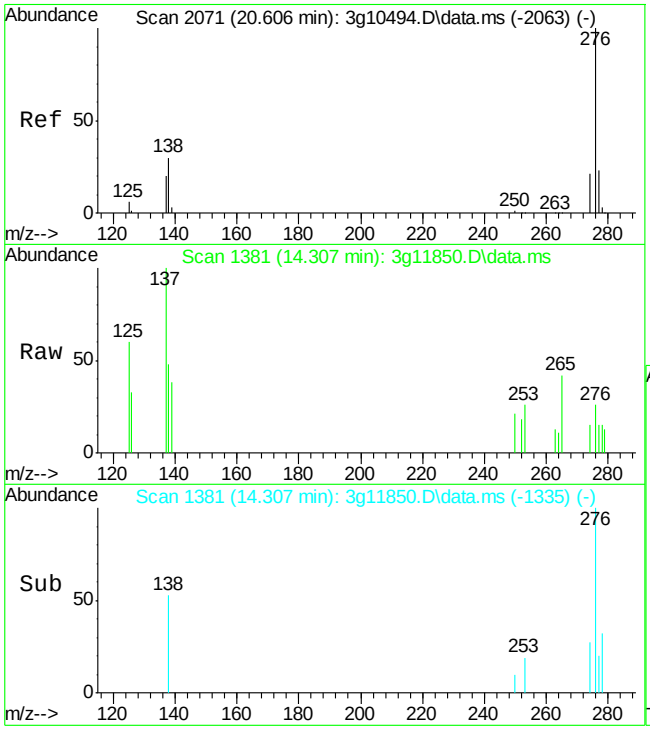


#27
Benzo(a)pyrene
Concen: Below ug/mL
RT: 12.972 min Scan# 1254
Delta R.T. -0.010 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:252 Resp: 194

Ion	Ratio	Lower	Upper
252	100		
253	0.0	1.7	41.7#
126	0.0	1.5	41.5#
125	0.0	0.0	36.0

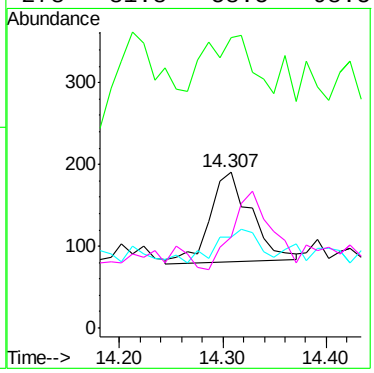


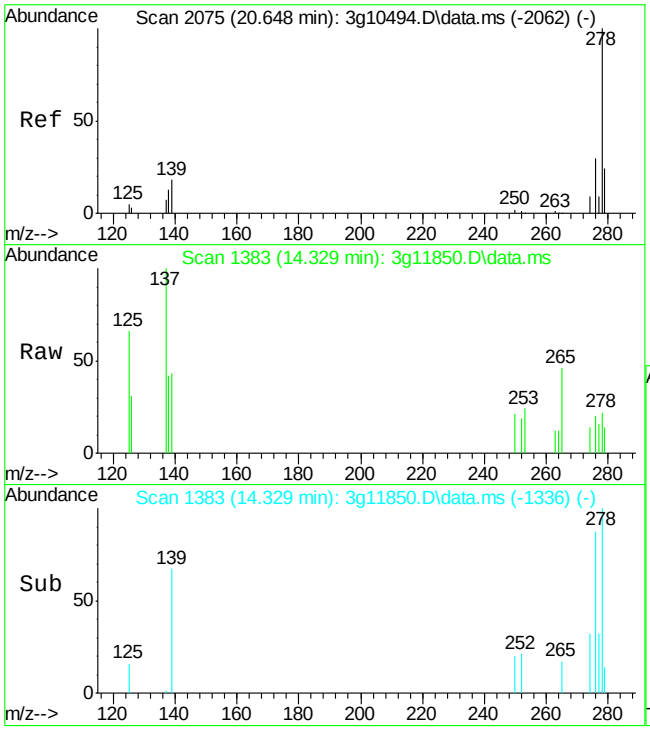


#28
Indeno(1,2,3-cd)pyrene
Concen: Below ug/mL
RT: 14.307 min Scan# 1381
Delta R.T. -0.021 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:276 Resp: 308

Ion	Ratio	Lower	Upper
276	100		
138	74.0	24.2	64.2#
277	38.6	5.0	45.0
278	81.8	58.5	98.5

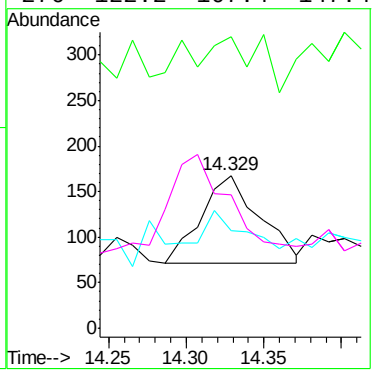


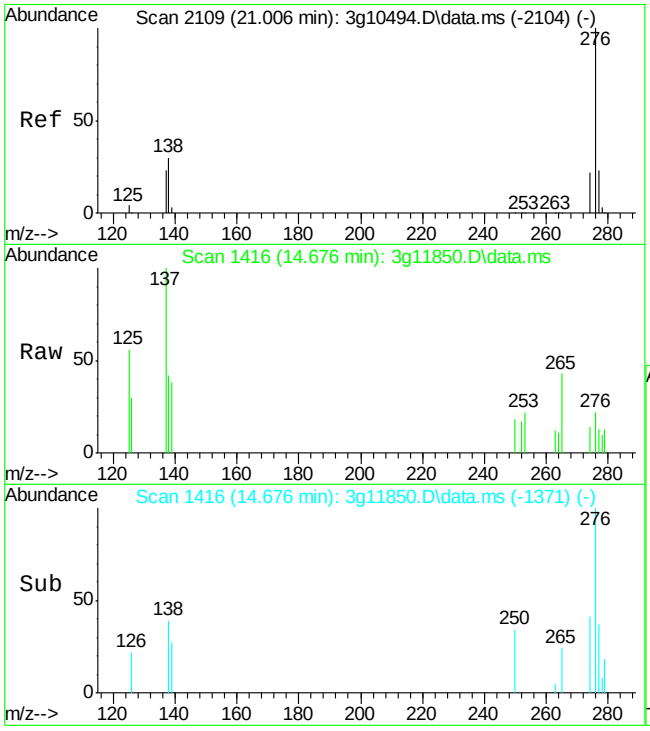


#29
Dibenz(a,h)anthracene
Concen: Below ug/mL
RT: 14.329 min Scan# 1383
Delta R.T. -0.011 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:278 Resp: 252

Ion	Ratio	Lower	Upper
278	100		
139	72.2	13.5	53.5#
279	37.3	3.1	43.1
276	122.2	107.4	147.4

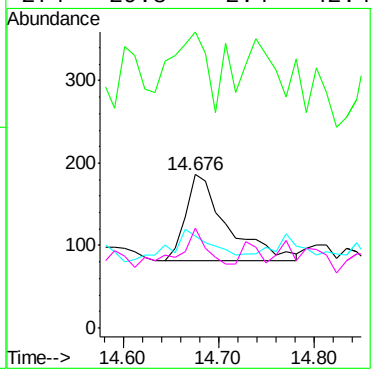




#30
Benzo(g,h,i)perylene
Concen: Below ug/mL
RT: 14.676 min Scan# 1416
Delta R.T. -0.032 min
Lab File: 3g11850.D
Acq: 31 Oct 12 7:02 pm

Tgt Ion:276 Resp: 309

Ion	Ratio	Lower	Upper
276	100		
138	79.0	18.4	58.4#
277	38.2	3.6	43.6
274	29.8	2.4	42.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\103112\
Data File : 3g11847.D
Acq On : 31 Oct 2012 5:50 pm
Operator : DONC
Sample : OP6884-MB
Misc : OP6884,E3G558,30.00,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 02 09:40:27 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G558.M
Quant Title : PAHSIM BASE
QLast Update : Wed Oct 31 14:49:52 2012
Response via : Initial Calibration

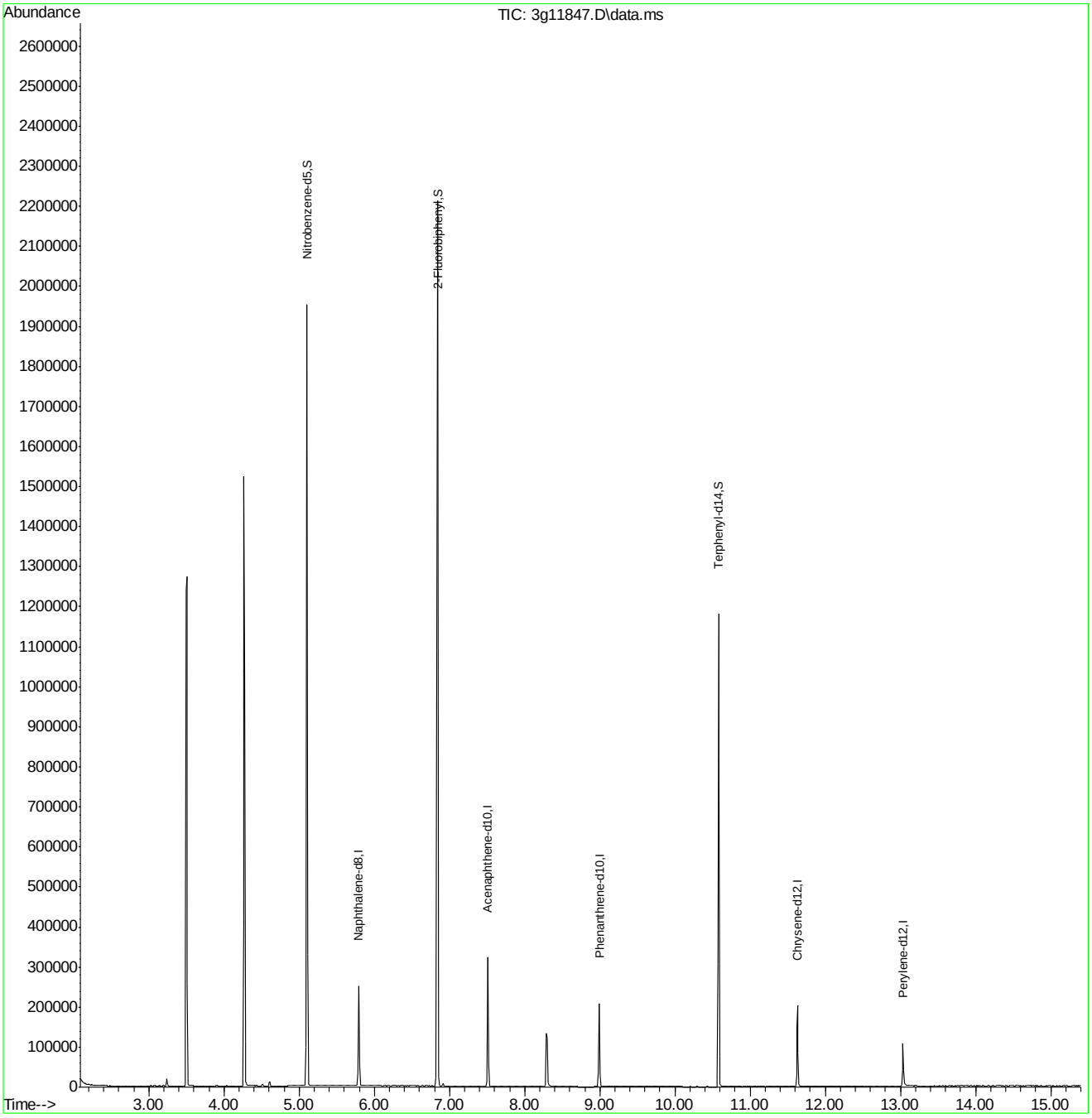
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.789	136	181249	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.507	164	106571	4.0000	ug/mL	0.00
15) Phenanthrene-d10	8.995	188	174119	4.0000	ug/mL	0.00
19) Chrysene-d12	11.630	240	127938	4.0000	ug/mL	0.00
24) Perylene-d12	13.035	264	90622	4.0000	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	5.103	82	824592	36.7959	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 73.60%			
7) 2-Fluorobiphenyl	6.846	172	1582798	35.7721	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 71.54%			
21) Terphenyl-d14	10.578	244	792729	43.5682	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 87.14%			
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	2.472	74	54	N.D.		
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.		d
5) Naphthalene	5.814	128	409	N.D.		
8) 2-Methylnaphthalene	6.487	142	176	N.D.		
9) 1-Methylnaphthalene	6.587	142	153	N.D.		
10) Acenaphthylene	7.366	152	121	N.D.		
11) Acenaphthene	7.507	154	615	N.D.		
12) Dibenzofuran	7.555	168	57	N.D.		
13) Fluorene	0.000	166	0	N.D.		d
14) Diphenylamine	0.000	169	0	N.D.		d
16) Phenanthrene	9.011	178	464	N.D.		
17) Anthracene	9.067	178	149	N.D.		
18) Fluoranthene	10.198	202	169	N.D.		
20) Pyrene	10.428	202	204	N.D.		
22) Benzo(a)anthracene	11.623	228	718	N.D.		
23) Chrysene	11.650	228	249	N.D.		
25) Benzo(b)fluoranthene	12.635	252	276	N.D.		
26) Benzo(k)fluoranthene	12.635	252	276	N.D.		
27) Benzo(a)pyrene	12.972	252	113	N.D.		
28) Indeno(1,2,3-cd)pyrene	14.307	276	276	N.D.		
29) Dibenz(a,h)anthracene	14.318	278	91	N.D.		
30) Benzo(g,h,i)perylene	14.686	276	278	N.D.		

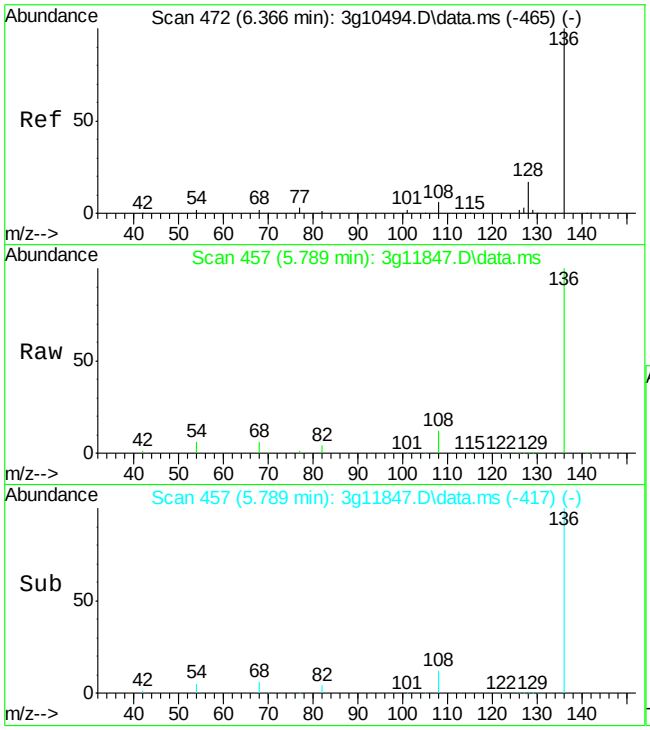
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\103112\
Data File : 3g11847.D
Acq On : 31 Oct 2012 5:50 pm
Operator : DONC
Sample : OP6884-MB
Misc : OP6884,E3G558,30.00,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 02 09:40:27 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G558.M
Quant Title : PAHSIM BASE
QLast Update : Wed Oct 31 14:49:52 2012
Response via : Initial Calibration

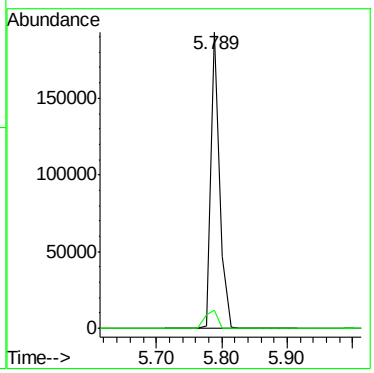


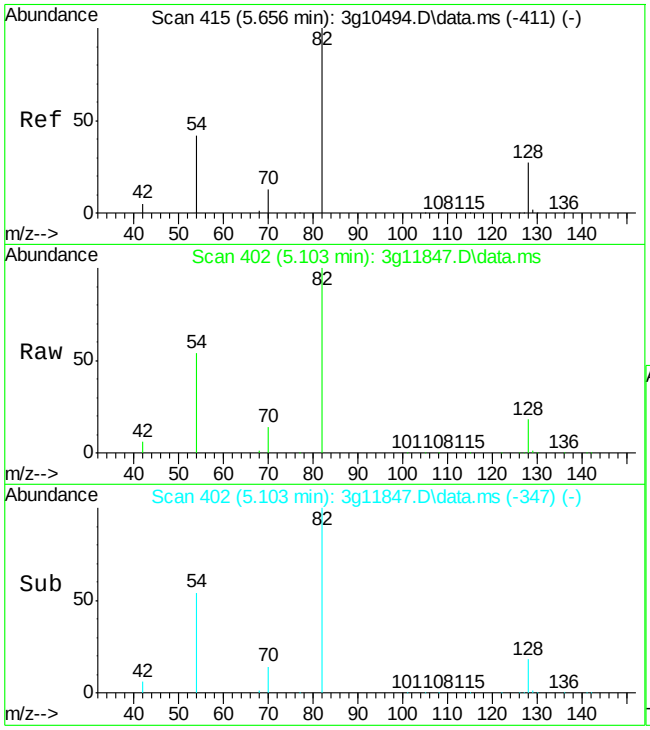


#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.789 min Scan# 457
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:136 Resp: 181249

Ion	Ratio	Lower	Upper
136	100		
68	8.2	0.0	28.7

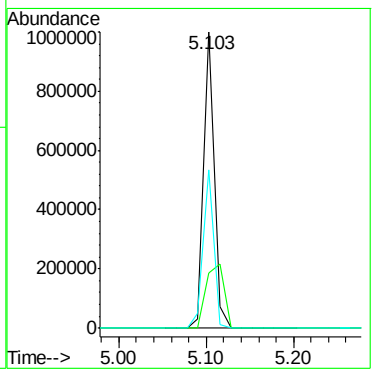


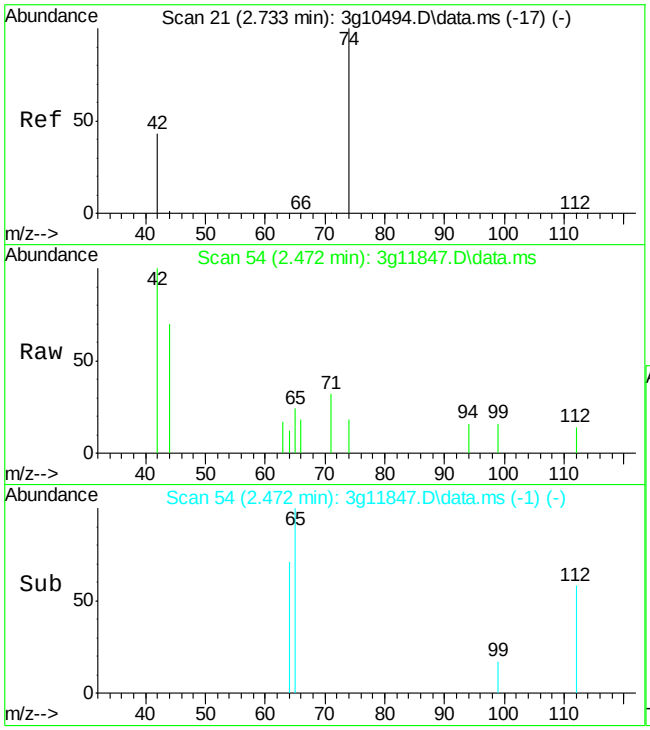


#2
Nitrobenzene-d5
Concen: 36.7959 ug/mL
RT: 5.103 min Scan# 402
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion: 82 Resp: 824592

Ion	Ratio	Lower	Upper
82	100		
128	36.5	17.4	57.4
54	54.1	32.8	72.8

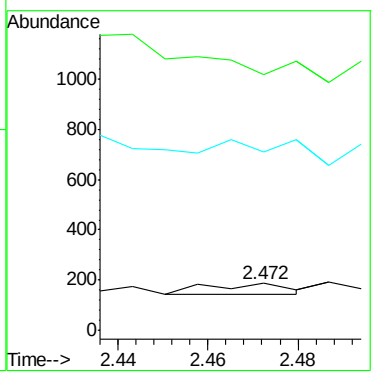


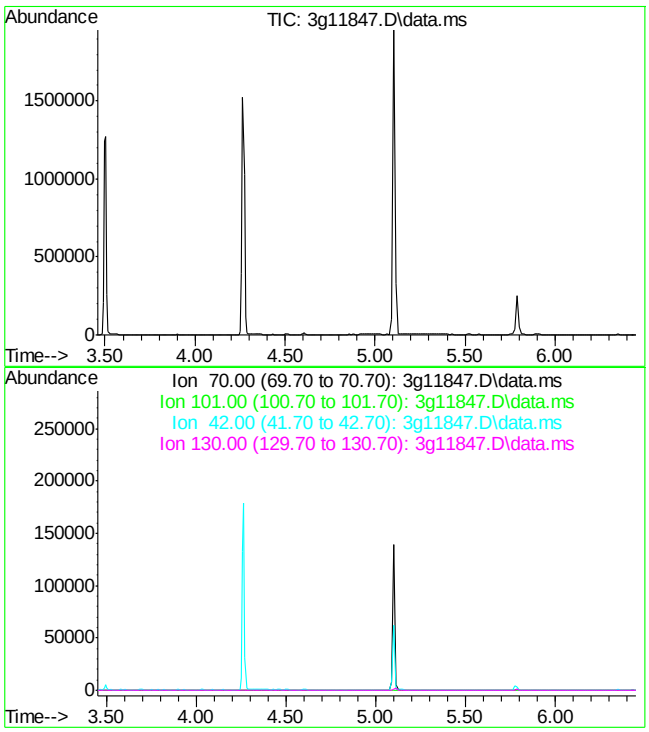


#3
N-Nitrosodimethylamine
Concen: Below ug/mL
RT: 2.472 min Scan# 54
Delta R.T. -0.014 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion: 74 Resp: 54

Ion	Ratio	Lower	Upper
74	100		
42	0.0	53.7	93.7#
44	207.4	0.0	24.1#



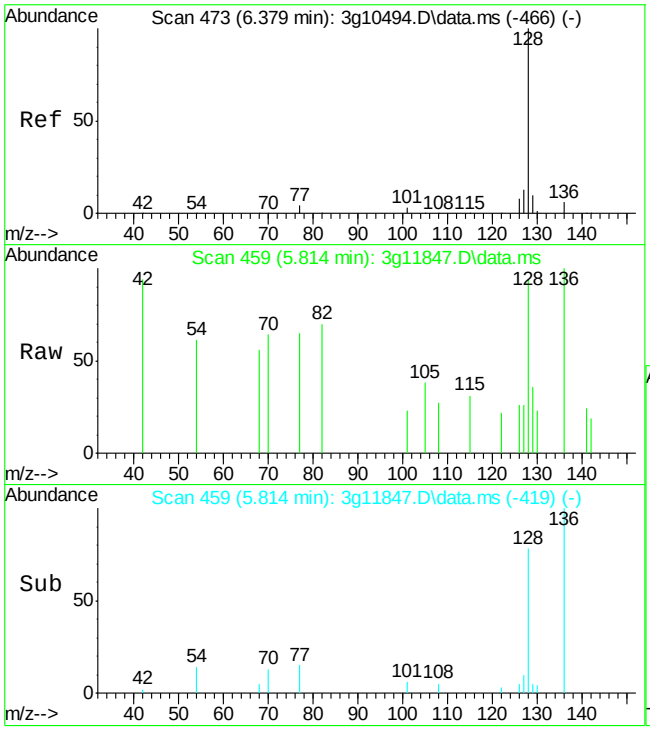


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.95 min

Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion: 70

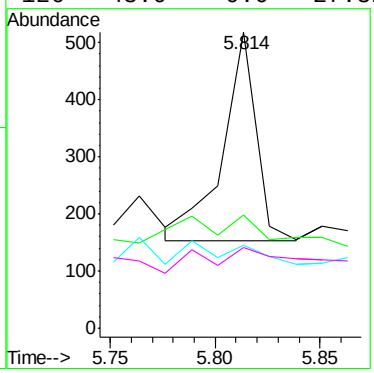
Sig	Exp Ratio
70	100
101	12.3
42	51.9
130	24.1

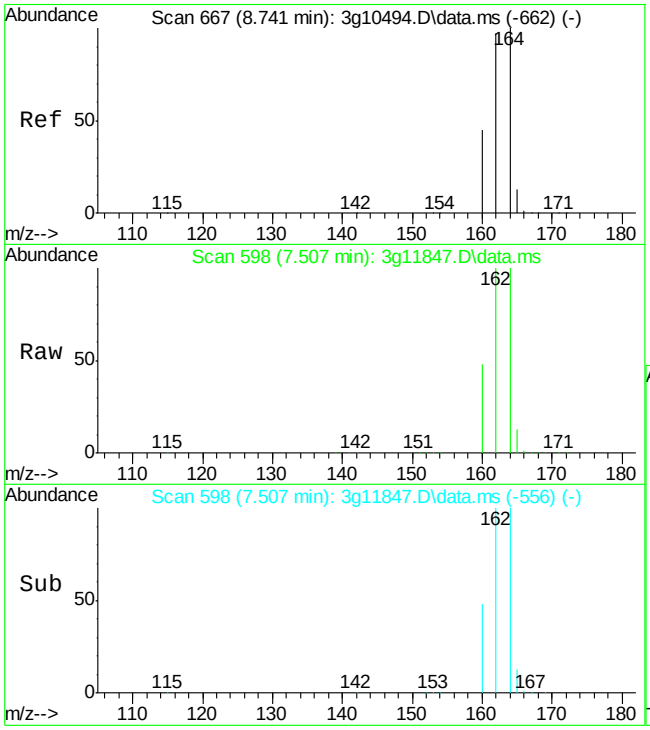


#5
Naphthalene
Concen: Below ug/mL
RT: 5.814 min Scan# 459
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:128 Resp: 409

Ion	Ratio	Lower	Upper
128	100		
129	35.5	0.0	31.1#
127	0.0	0.0	32.6
126	43.0	0.0	27.3#

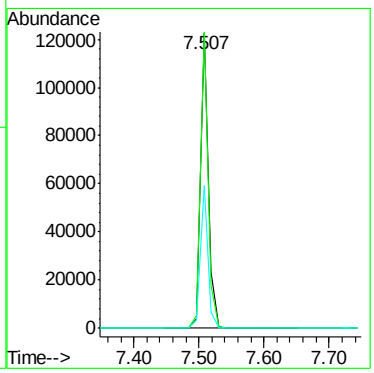


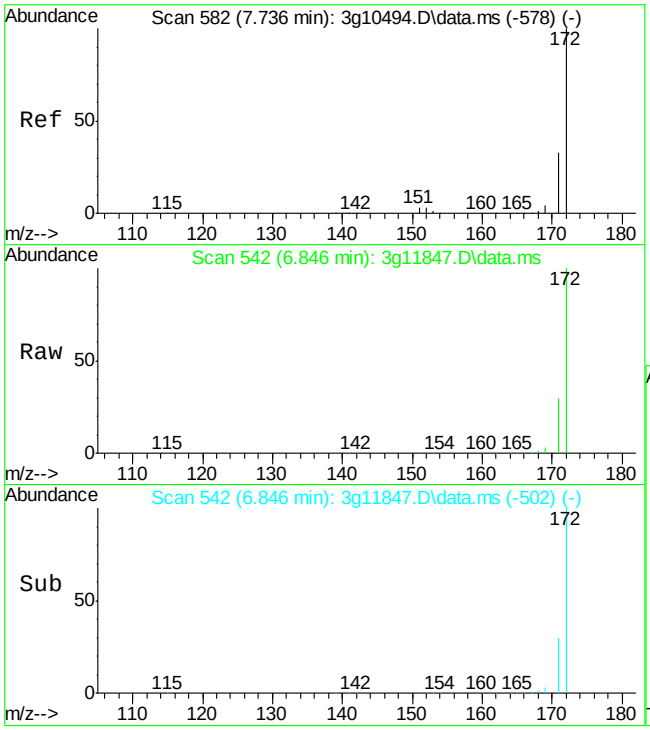


#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.507 min Scan# 598
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:164 Resp: 106571

Ion	Ratio	Lower	Upper
164	100		
162	97.4	77.7	117.7
160	46.3	26.6	66.6

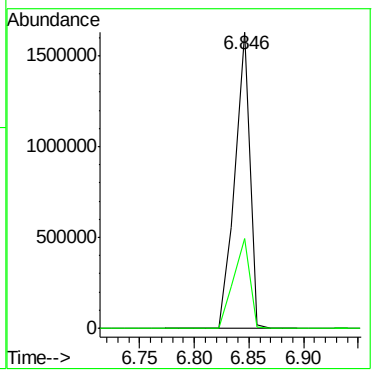


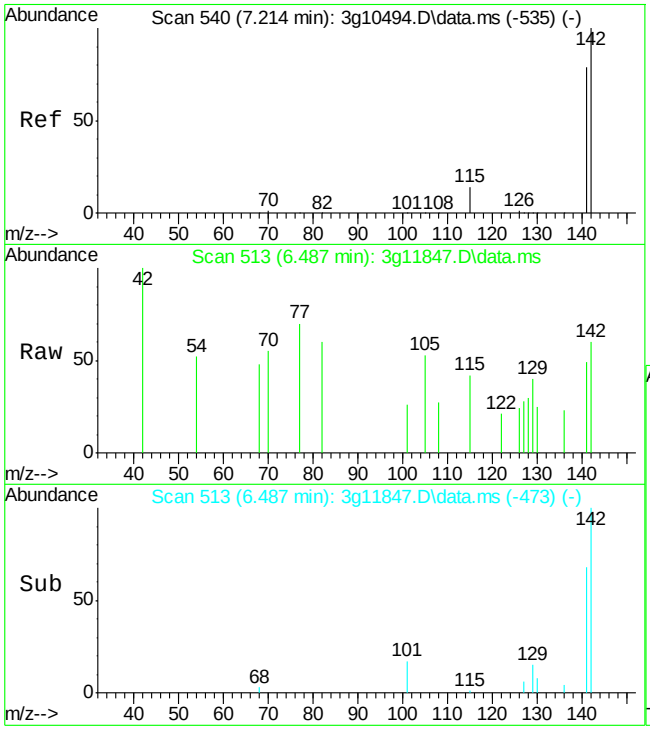


#7
2-Fluorobiphenyl
Concen: 35.7721 ug/mL
RT: 6.846 min Scan# 542
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:172 Resp: 1582798

Ion	Ratio	Lower	Upper
172	100		
171	32.9	12.9	52.9

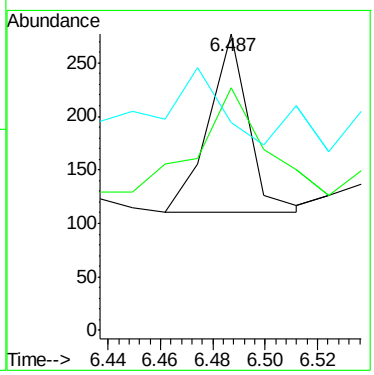


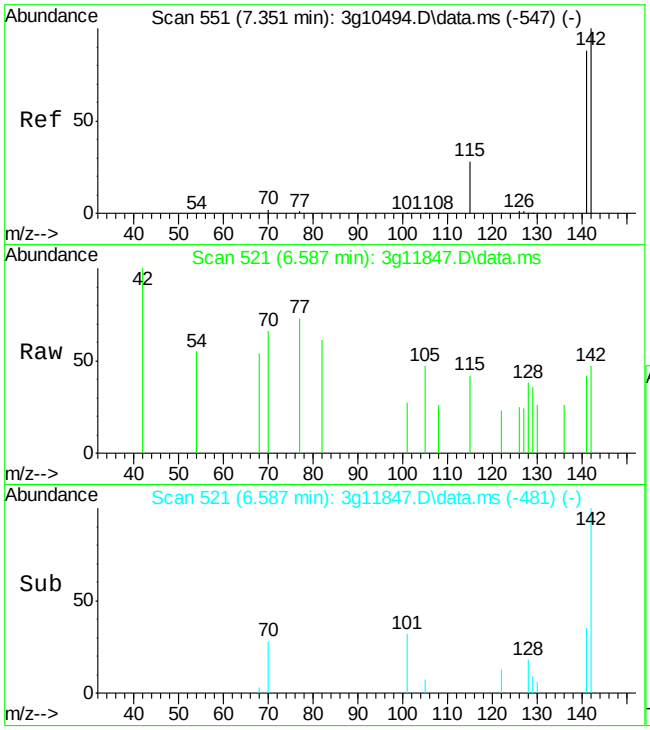


#8
2-Methylnaphthalene
Concen: Below ug/mL
RT: 6.487 min Scan# 513
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:142 Resp: 176

Ion	Ratio	Lower	Upper
142	100		
141	104.0	62.7	102.7#
115	0.0	8.3	48.3#

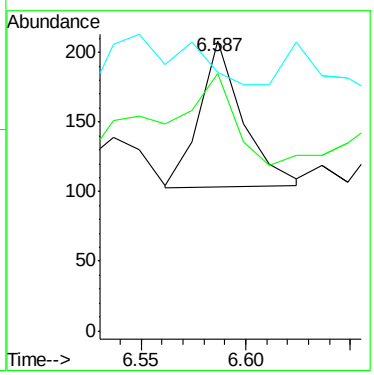


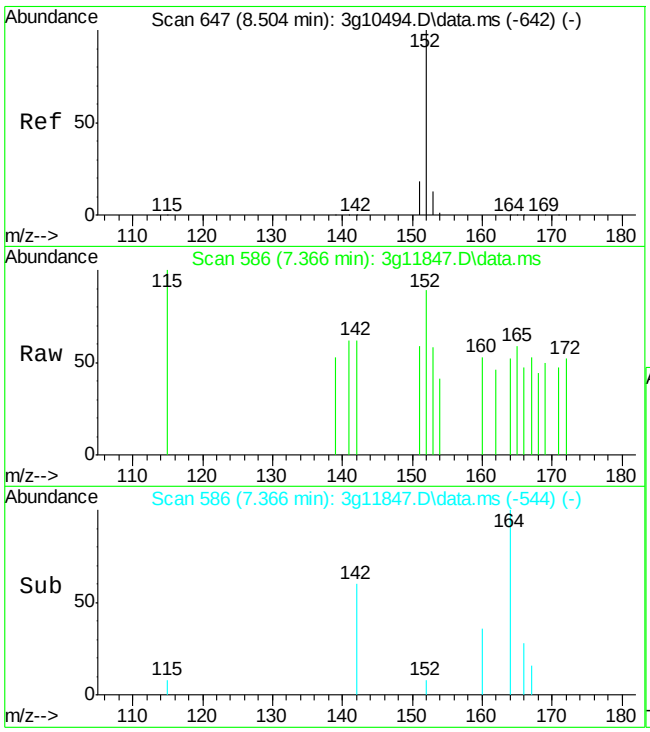


#9
1-Methylnaphthalene
Concen: Below ug/mL
RT: 6.587 min Scan# 521
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:142 Resp: 153

Ion	Ratio	Lower	Upper
142	100		
141	107.2	65.6	105.6#
115	0.0	14.0	54.0#

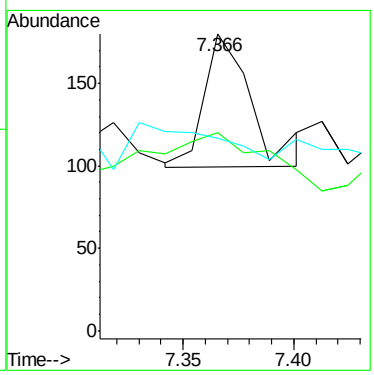


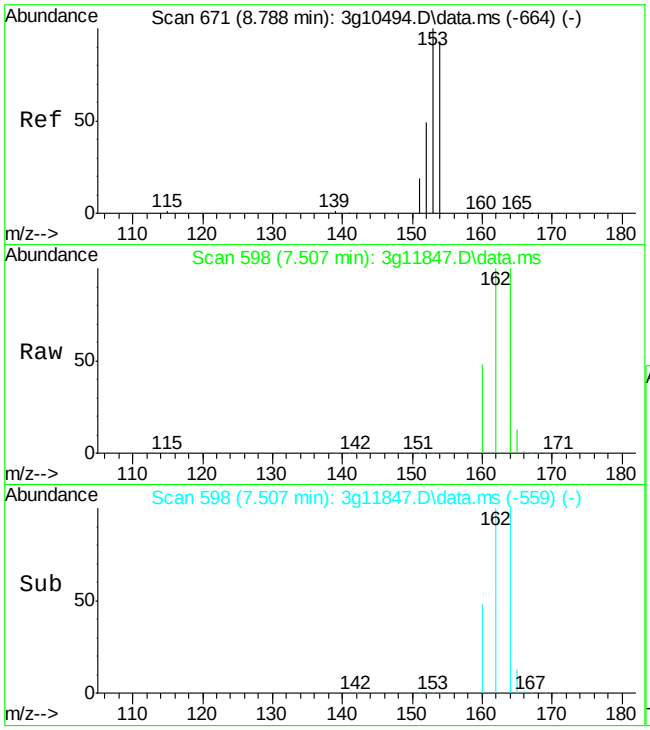


#10
Acenaphthylene
Concen: Below ug/mL
RT: 7.366 min Scan# 586
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:152 Resp: 121

Ion	Ratio	Lower	Upper
152	100		
151	109.1	0.0	39.6#
153	17.4	0.0	33.0

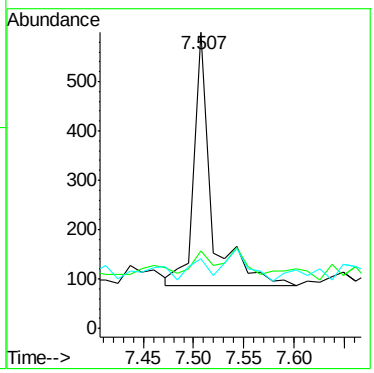


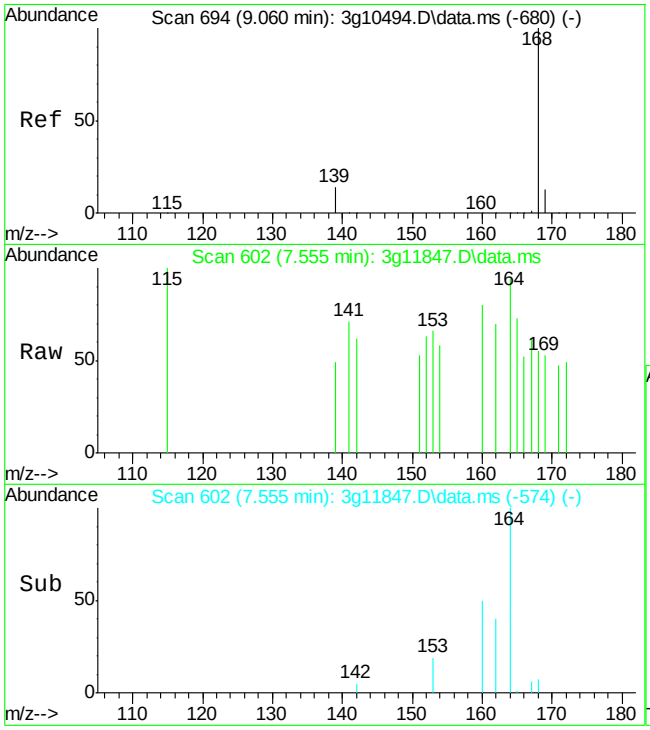


#11
Acenaphthene
Concen: Below ug/mL
RT: 7.507 min Scan# 598
Delta R.T. -0.035 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:154 Resp: 615

Ion	Ratio	Lower	Upper
154	100		
153	7.8	83.1	123.1#
152	8.9	29.1	69.1#

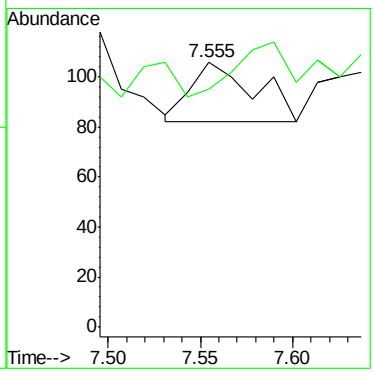


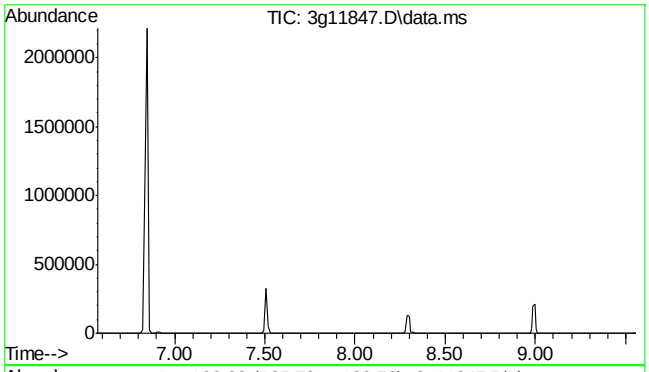


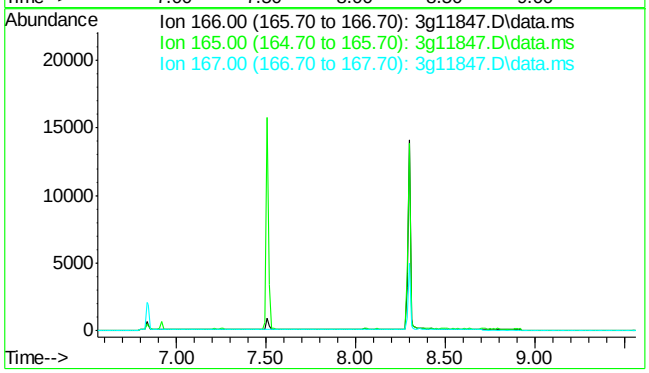
#12
Dibenzofuran
Concen: Below ug/mL
RT: 7.555 min Scan# 602
Delta R.T. -0.165 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:168 Resp: 57

Ion	Ratio	Lower	Upper
168	100		
139	52.6	14.1	54.1





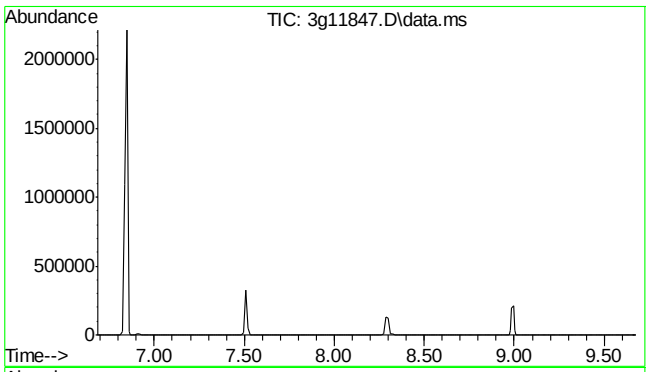


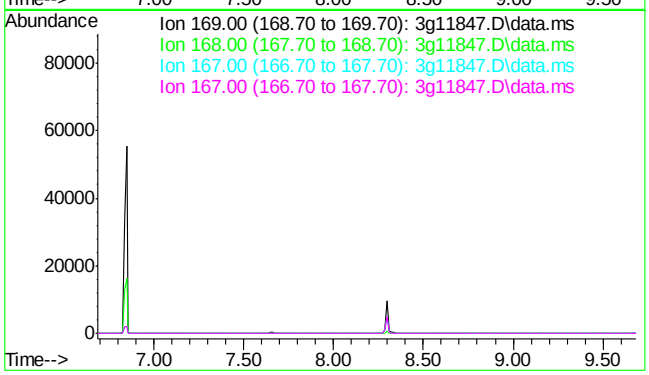
#13
Fluorene
Concen: N.D. ug/mL
Expected RT: 8.06 min

Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion: 166

Sig	Exp Ratio
166	100
165	92.9
167	13.2



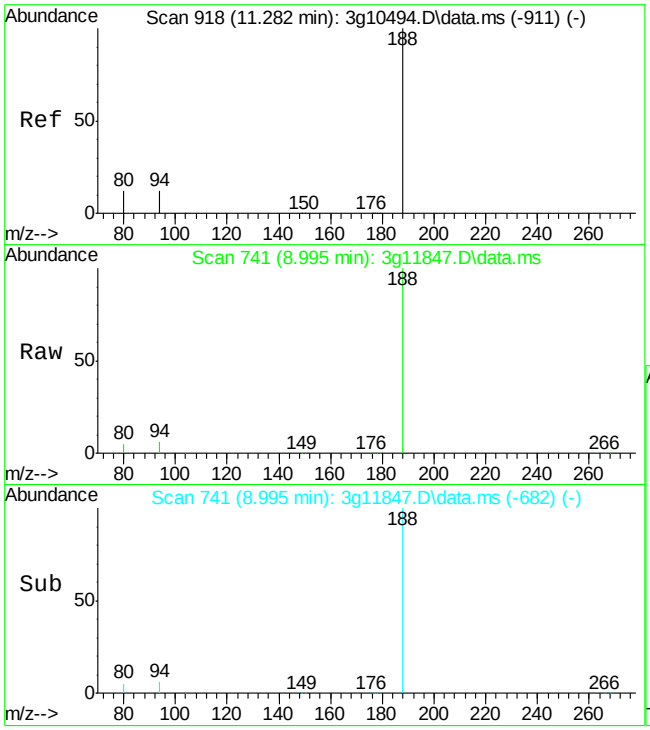


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.18 min

Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion: 169

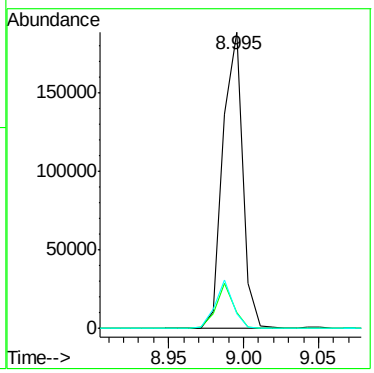
Sig	Exp Ratio
169	100
168	62.0
167	34.1
167	34.1

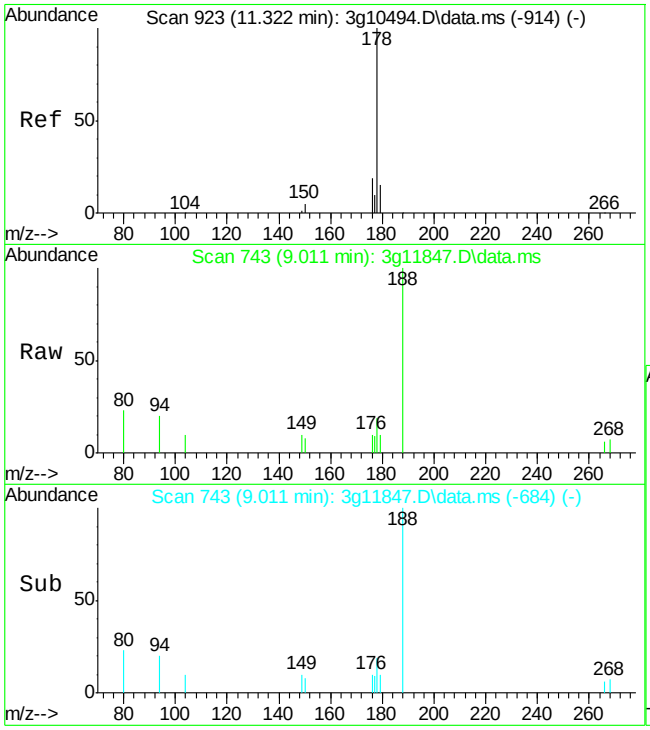


#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.995 min Scan# 741
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:188 Resp: 174119

Ion	Ratio	Lower	Upper
188	100		
94	13.4	0.0	33.4
80	14.7	0.0	34.7

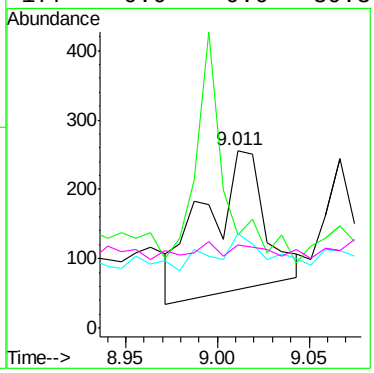


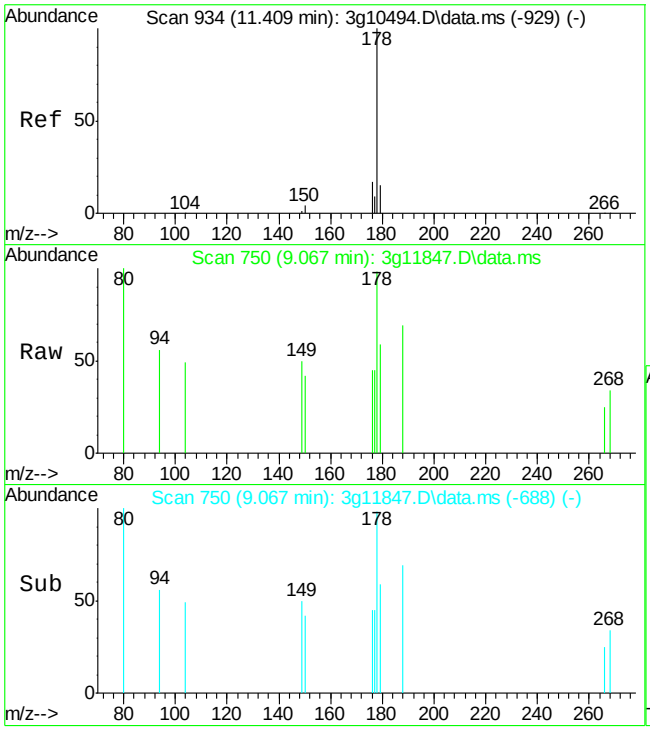


#16
Phenanthrene
Concen: Below ug/mL
RT: 9.011 min Scan# 743
Delta R.T. -0.008 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:178 Resp: 464

Ion	Ratio	Lower	Upper
178	100		
179	114.7	0.0	35.2#
176	0.0	0.0	38.9
177	0.0	0.0	30.3

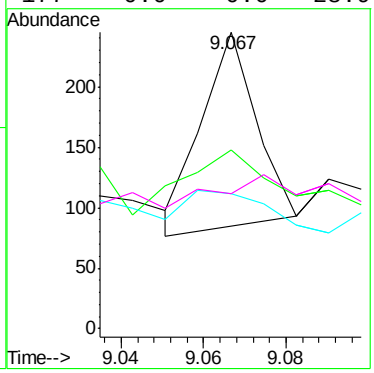


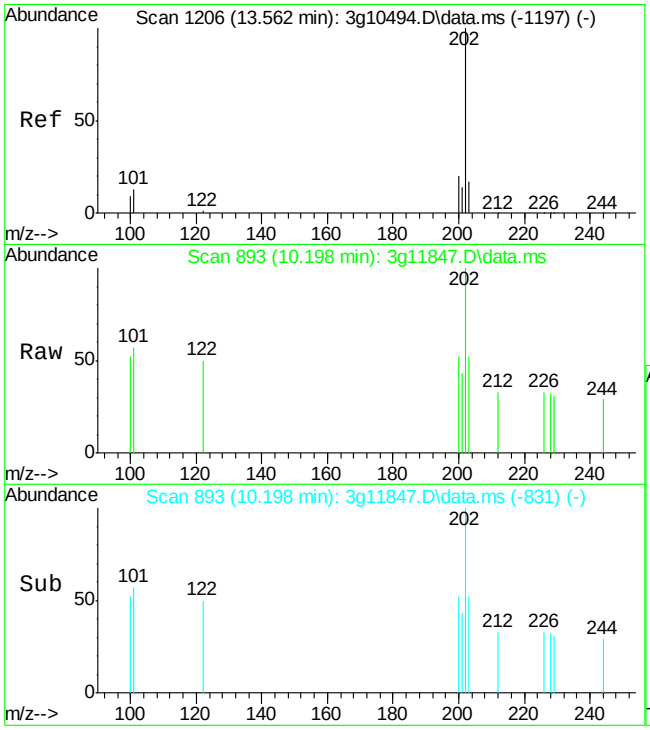


#17
Anthracene
Concen: Below ug/mL
RT: 9.067 min Scan# 750
Delta R.T. -0.008 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:178 Resp: 149

Ion	Ratio	Lower	Upper
178	100		
179	61.1	0.0	35.1#
176	31.5	0.0	38.3
177	0.0	0.0	28.9

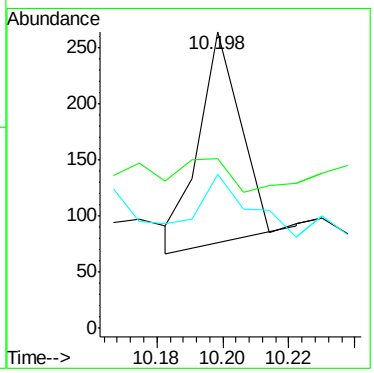


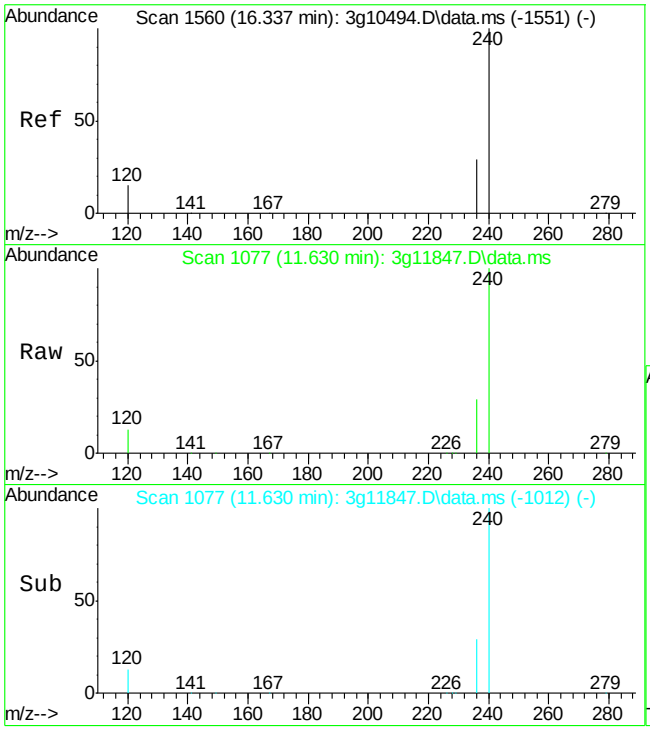


#18
Fluoranthene
Concen: Below ug/mL
RT: 10.198 min Scan# 893
Delta R.T. -0.008 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:202 Resp: 169

Ion	Ratio	Lower	Upper
202	100		
101	0.0	0.0	33.9
203	33.7	0.0	37.2

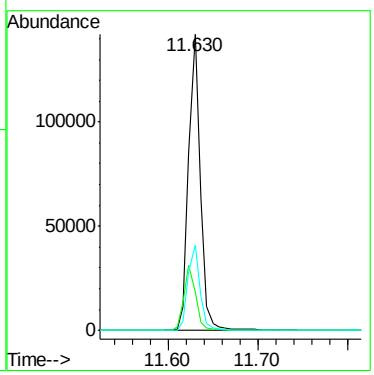


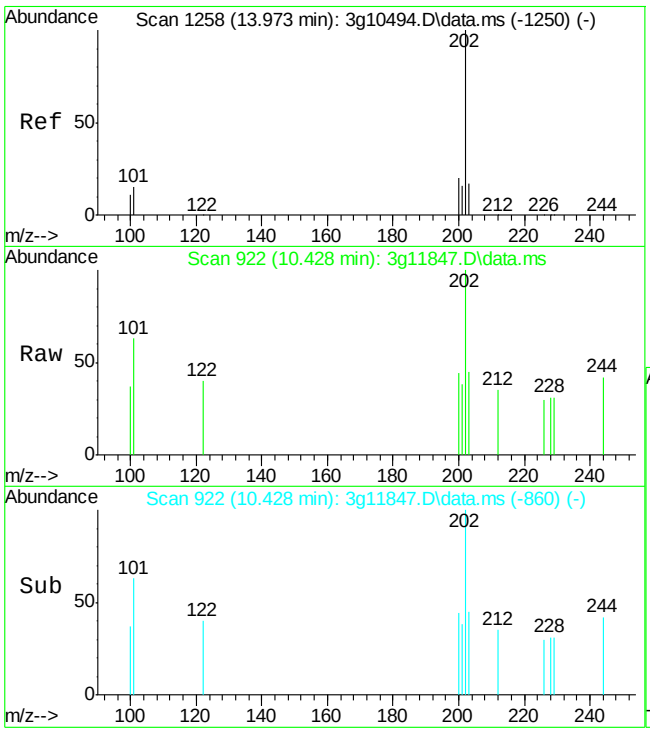


#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.630 min Scan# 1077
Delta R.T. -0.007 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:240 Resp: 127938

Ion	Ratio	Lower	Upper
240	100		
120	21.8	1.4	41.4
236	29.6	9.7	49.7

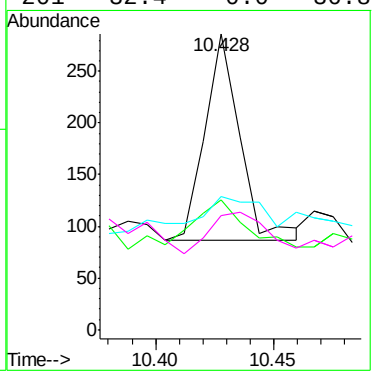


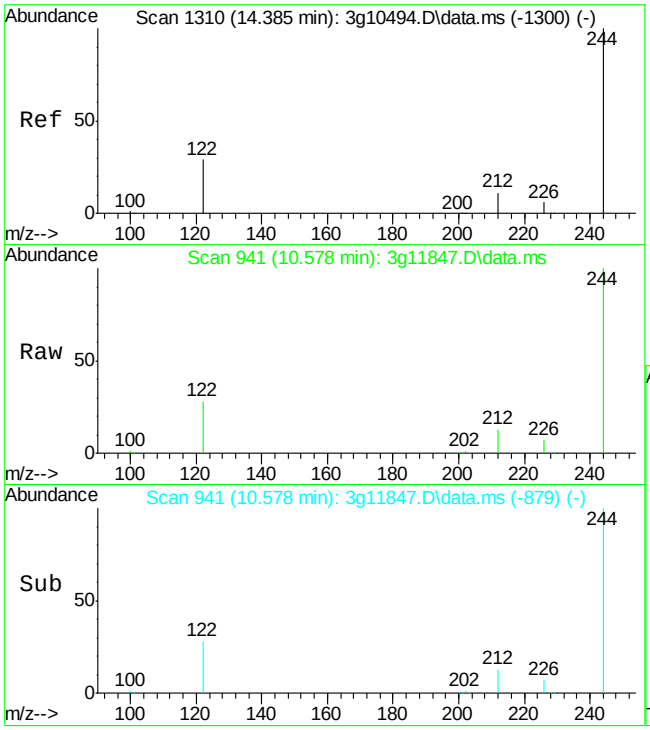


#20
Pyrene
Concen: Below ug/mL
RT: 10.428 min Scan# 922
Delta R.T. -0.008 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:202 Resp: 204

Ion	Ratio	Lower	Upper
202	100		
200	0.0	0.8	40.8#
203	0.0	0.0	37.9
201	32.4	0.0	36.8

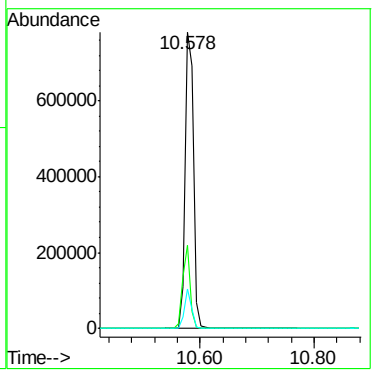


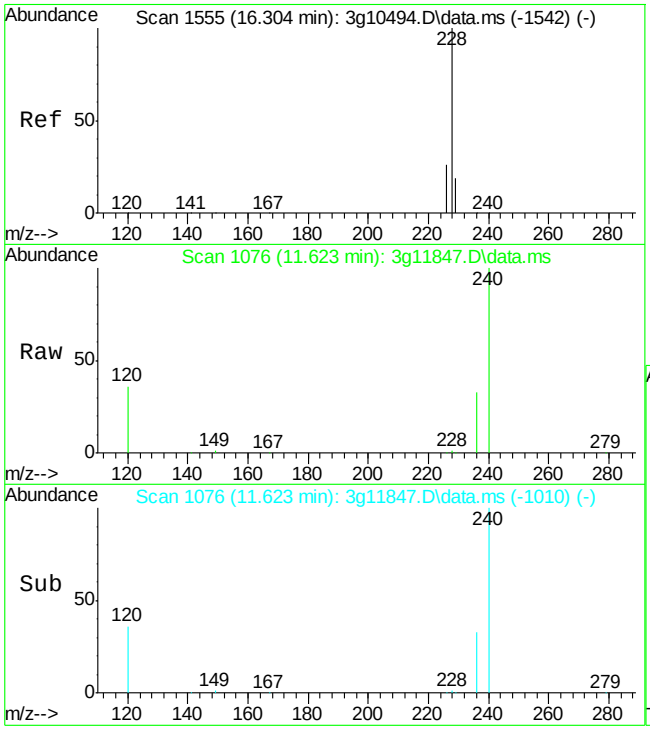


#21
Terphenyl-d14
Concen: 43.5682 ug/mL
RT: 10.578 min Scan# 941
Delta R.T. -0.008 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:244 Resp: 792729

Ion	Ratio	Lower	Upper
244	100		
122	25.1	6.6	46.6
212	11.4	0.0	31.7

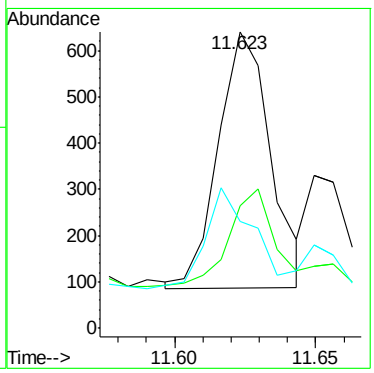


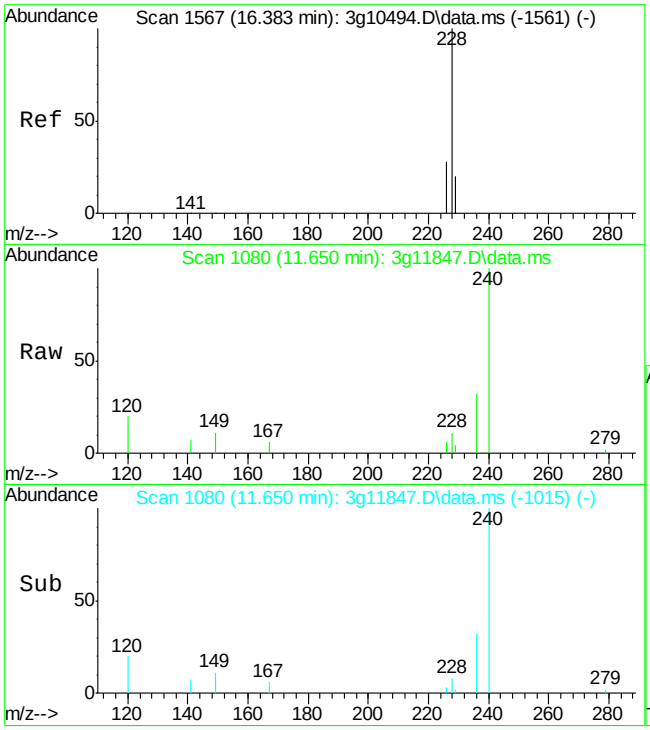


#22
Benzo(a)anthracene
Concen: Below ug/mL
RT: 11.623 min Scan# 1076
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:228 Resp: 718

Ion	Ratio	Lower	Upper
228	100		
229	46.5	0.0	39.5#
226	37.7	7.1	47.1

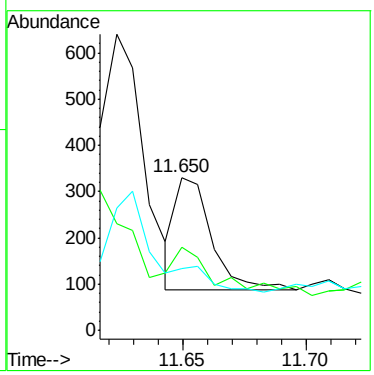


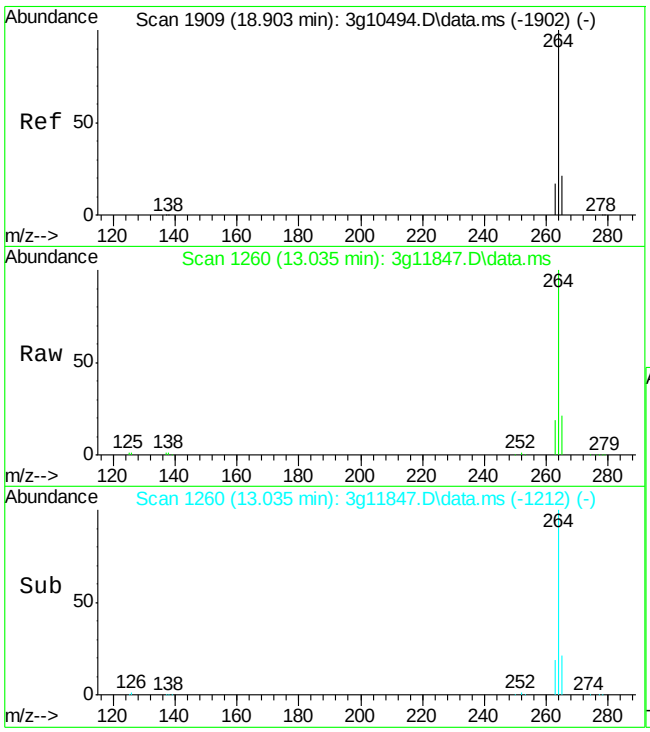


#23
Chrysene
Concen: Below ug/mL
RT: 11.650 min Scan# 1080
Delta R.T. -0.013 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:228 Resp: 249

Ion	Ratio	Lower	Upper
228	100		
226	50.6	9.6	49.6#
229	0.0	0.0	39.3

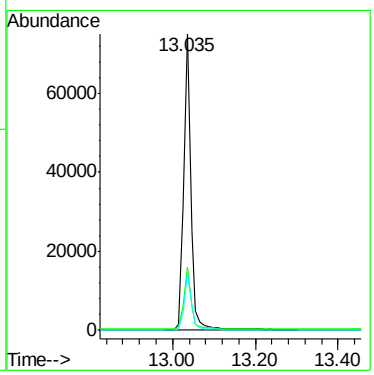


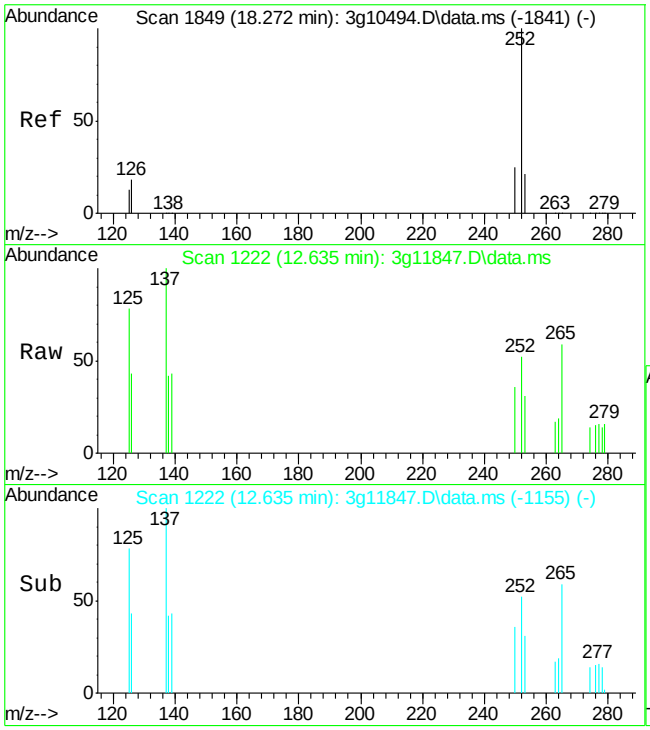


#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.035 min Scan# 1260
Delta R.T. 0.000 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:264 Resp: 90622

Ion	Ratio	Lower	Upper
264	100		
265	20.8	1.2	41.2
263	19.3	0.0	39.6

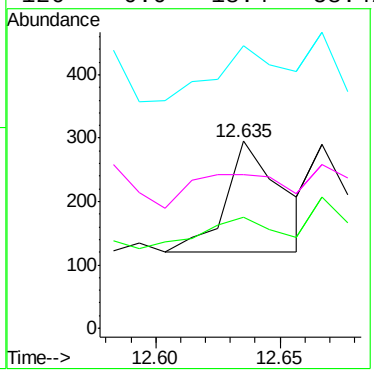


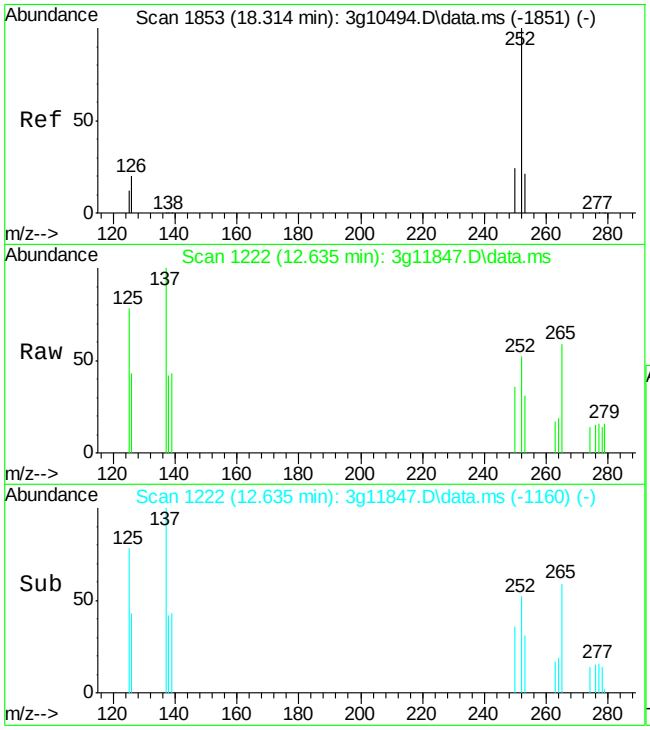


#25
Benzo(b)fluoranthene
Concen: Below ug/mL
RT: 12.635 min Scan# 1222
Delta R.T. -0.011 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:252 Resp: 276

Ion	Ratio	Lower	Upper
252	100		
253	43.8	1.0	41.0#
125	0.0	6.5	46.5#
126	0.0	18.4	58.4#

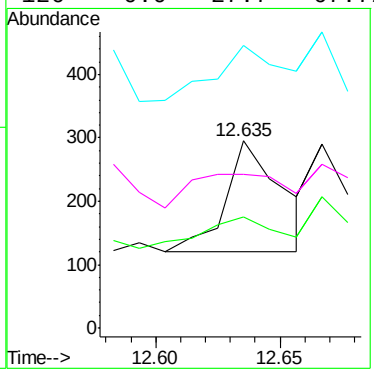


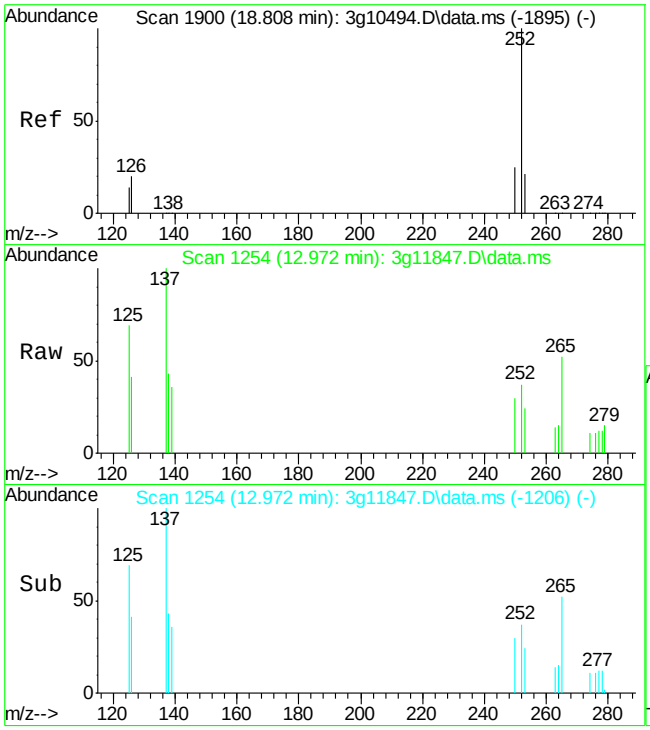


#26
Benzo(k)fluoranthene
Concen: Below ug/mL
RT: 12.635 min Scan# 1222
Delta R.T. -0.042 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:252 Resp: 276

Ion	Ratio	Lower	Upper
252	100		
253	43.8	6.1	46.1
125	0.0	12.9	52.9#
126	0.0	27.7	67.7#

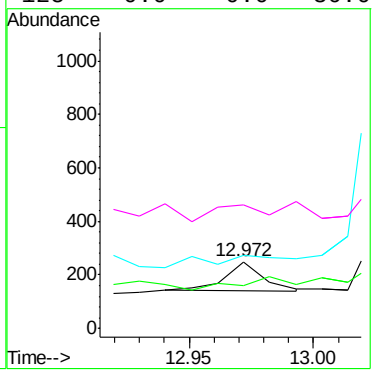


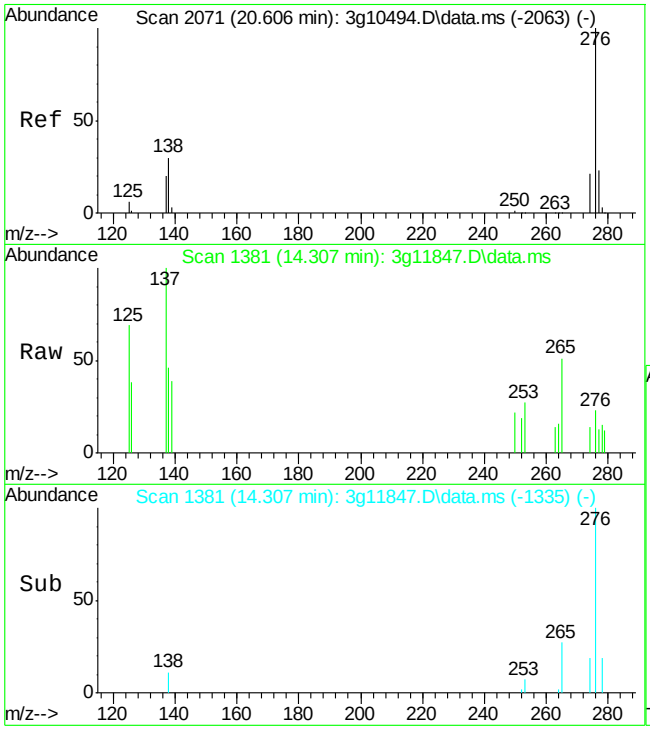


#27
Benzo(a)pyrene
Concen: Below ug/mL
RT: 12.972 min Scan# 1254
Delta R.T. -0.010 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:252 Resp: 113

Ion	Ratio	Lower	Upper
252	100		
253	0.0	1.7	41.7#
126	0.0	1.5	41.5#
125	0.0	0.0	36.0

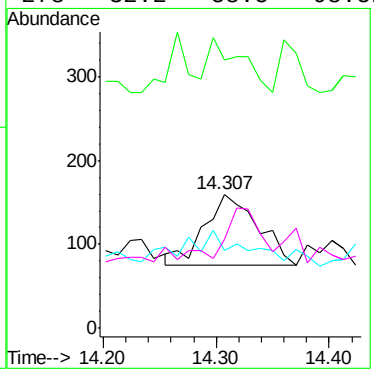


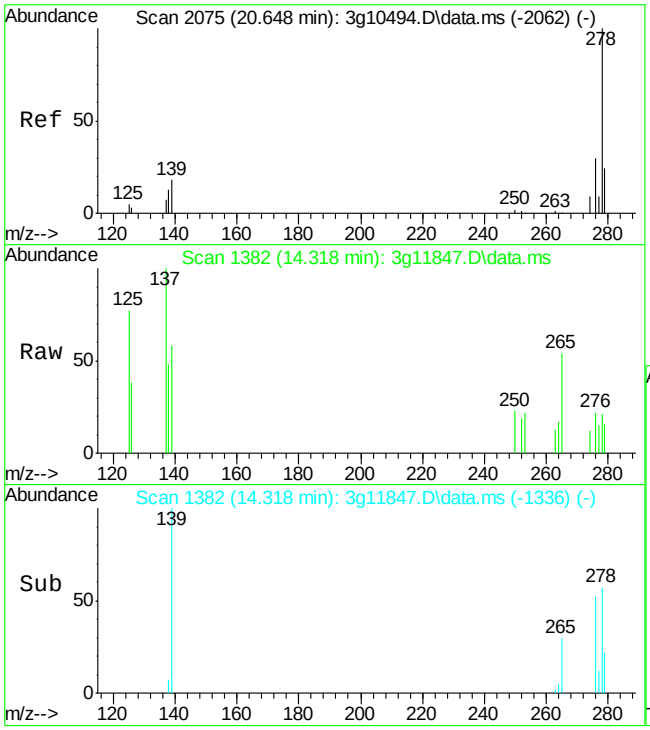


#28
Indeno(1,2,3-cd)pyrene
Concen: Below ug/mL
RT: 14.307 min Scan# 1381
Delta R.T. -0.021 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:276 Resp: 276

Ion	Ratio	Lower	Upper
276	100		
138	47.5	24.2	64.2
277	46.7	5.0	45.0#
278	32.2	58.5	98.5#

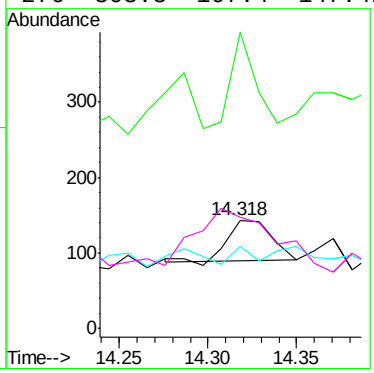


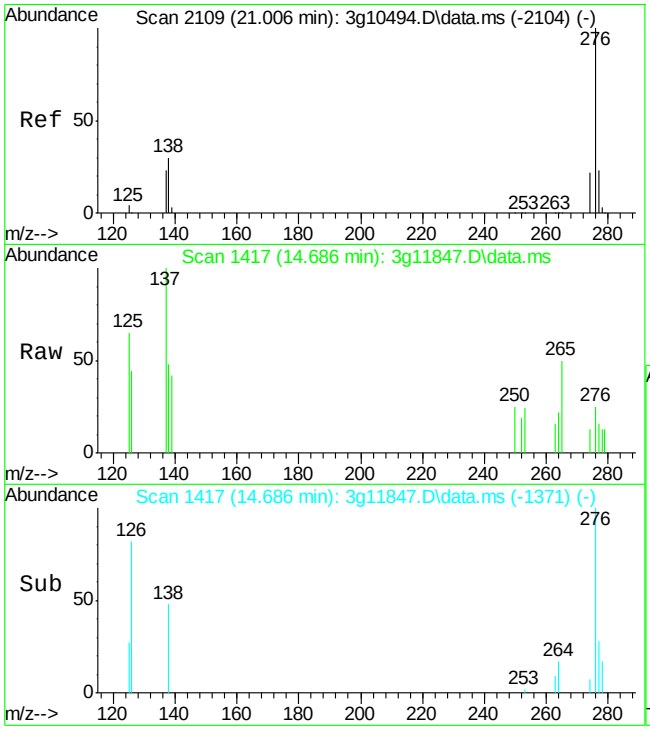


#29
Dibenz(a,h)anthracene
Concen: Below ug/mL
RT: 14.318 min Scan# 1382
Delta R.T. -0.021 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:278 Resp: 91

Ion	Ratio	Lower	Upper
278	100		
139	133.0	13.5	53.5#
279	60.4	3.1	43.1#
276	303.3	107.4	147.4#

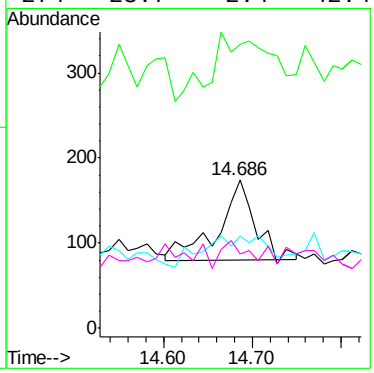




#30
Benzo(g,h,i)perylene
Concen: Below ug/mL
RT: 14.686 min Scan# 1417
Delta R.T. -0.021 min
Lab File: 3g11847.D
Acq: 31 Oct 12 5:50 pm

Tgt Ion:276 Resp: 278

Ion	Ratio	Lower	Upper
276	100		
138	45.7	18.4	58.4
277	32.7	3.6	43.6
274	23.7	2.4	42.4



Mountain States ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB998-MB	GB18246.D	1	10/29/12	SK	n/a	n/a	GGB998

The QC reported here applies to the following samples: **Method:** SW846 8015B

D40328-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	93%	60-140%

Blank Spike Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB998-BS	GB18247.D	1	10/29/12	SK	n/a	n/a	GGB998

The QC reported here applies to the following samples: **Method:** SW846 8015B

D40328-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	124	113	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	107%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D40315-1MS	GB18249.D	1	10/29/12	SK	n/a	n/a	GGB998
D40315-1MSD	GB18250.D	1	10/29/12	SK	n/a	n/a	GGB998
D40315-1	GB18248.D	1	10/29/12	SK	n/a	n/a	GGB998

The QC reported here applies to the following samples: **Method:** SW846 8015B

D40328-1

CAS No.	Compound	D40315-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		130	146	112	145	111	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D40315-1	Limits
120-82-1	1,2,4-Trichlorobenzene	104%	104%	96%	60-140%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 10/30/12 14:32

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\102912\GB18265.D\FID1A.CH Vial: 22
Signal #2 : Y:\1\DATA\102912\GB18265.D\FID2B.CH
Acq On : 29 Oct 2012 10:11 pm Operator: StephK
Sample : D40328-1, 50X Inst : GC/MS Ins
Misc : GC3204,GGB998,5.050,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Oct 30 09:14:10 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Oct 29 11:06:08 2012
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.40	3025702	96.563	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.40	15505978	95.405	%	
	Target Compounds					
1) H	TVH-Gasoline	7.23	3595142	<MDL	mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5) T	Benzene	0.00	0	N.D.	ug/L	d
6) T	Toluene	0.00	0	N.D.	ug/L	d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L	d
9) T	o-Xylene	0.00	0	N.D.	ug/L	d
11) T	Naphthalene	14.58	145300	0.736	ug/L	

11.1.1 11

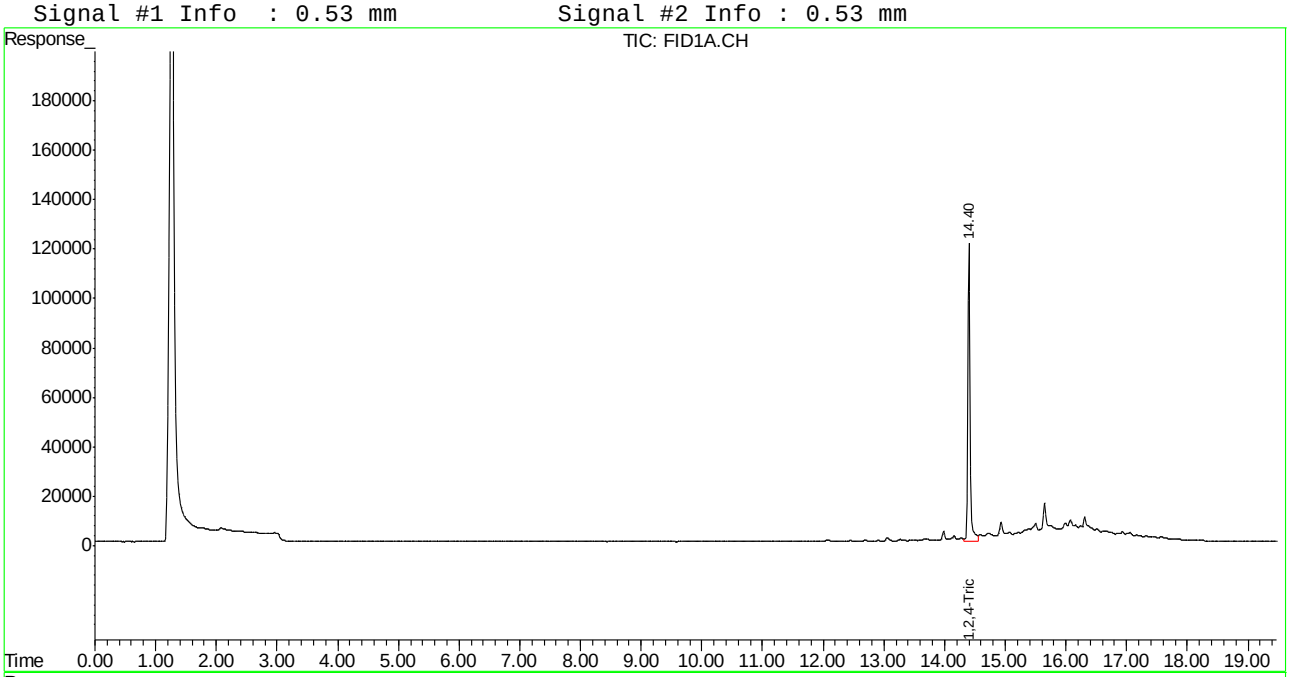
(f)=RT Delta > 1/2 Window (m)=manual int.
GB18265.D TB868GB868SOIL.M Tue Oct 30 09:21:39 2012 GC Page 1

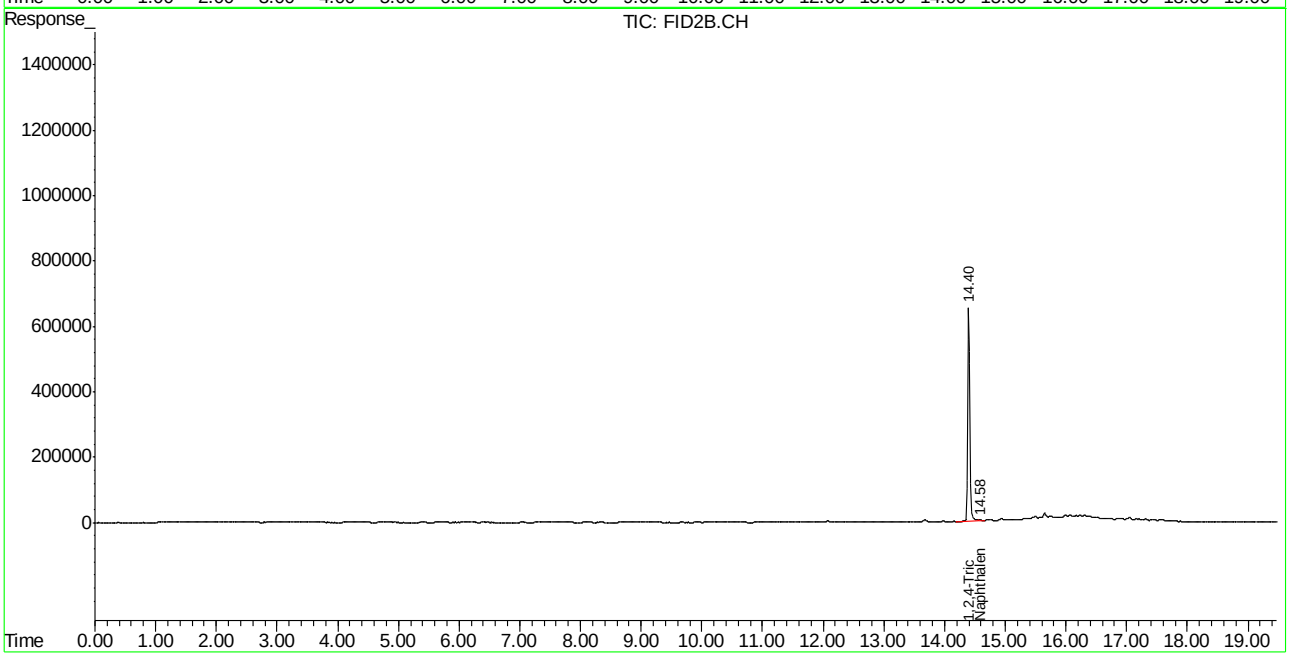
Quantitation Report (QT Reviewed)

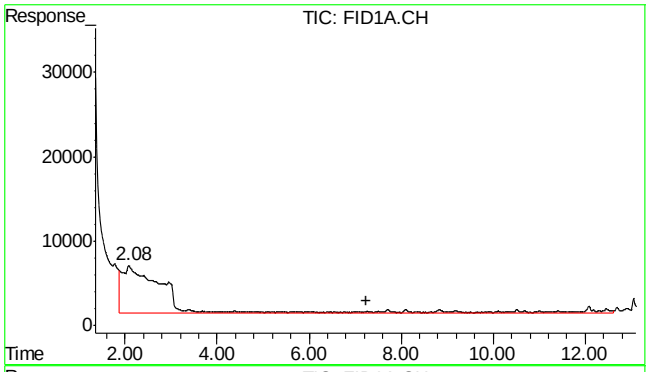
Signal #1 : Y:\1\DATA\102912\GB18265.D\FID1A.CH Vial: 22
Signal #2 : Y:\1\DATA\102912\GB18265.D\FID2B.CH
Acq On : 29 Oct 2012 10:11 pm Operator: StephK
Sample : D40328-1, 50X Inst : GC/MS Ins
Misc : GC3204,GGB998,5.050,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Oct 30 9:27 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Oct 29 11:06:08 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

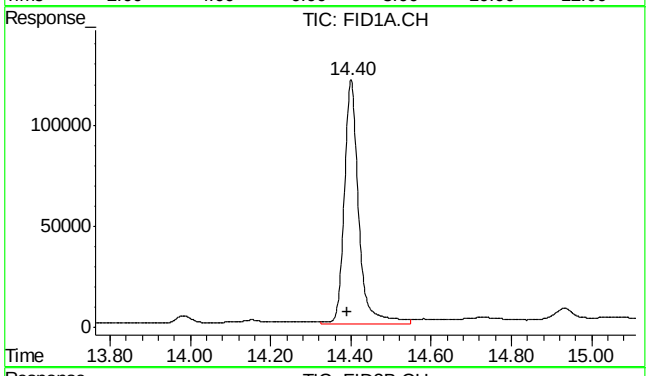






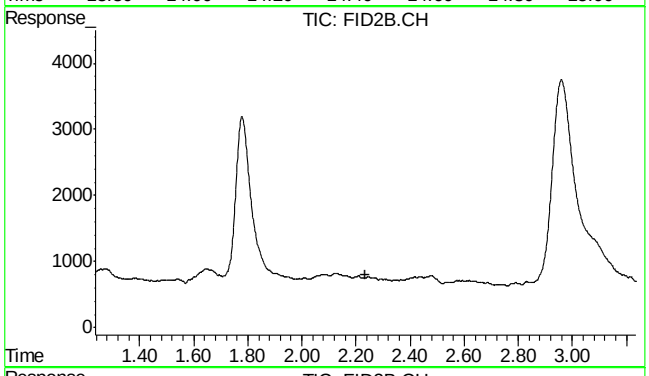
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 3595142
Conc: N.D.



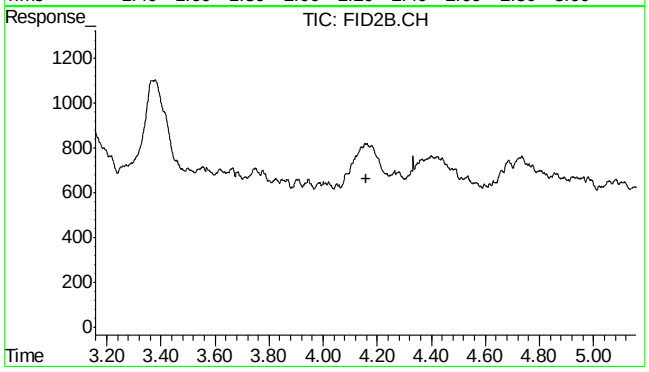
#2 1,2,4-Trichlorobenzene

R.T.: 14.400 min
Delta R.T.: 0.010 min
Response: 3025702
Conc: 96.56 % m



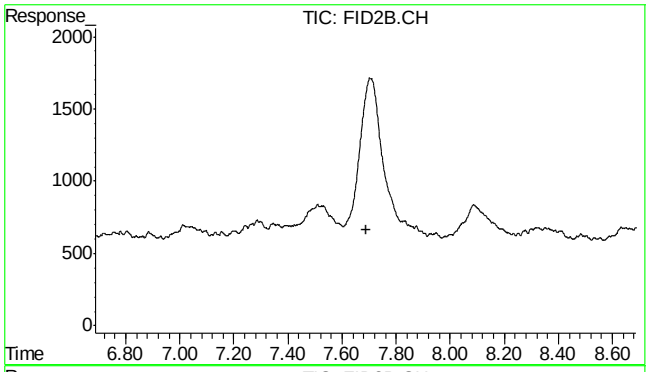
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.236 min
Response: 0
Conc: N.D.



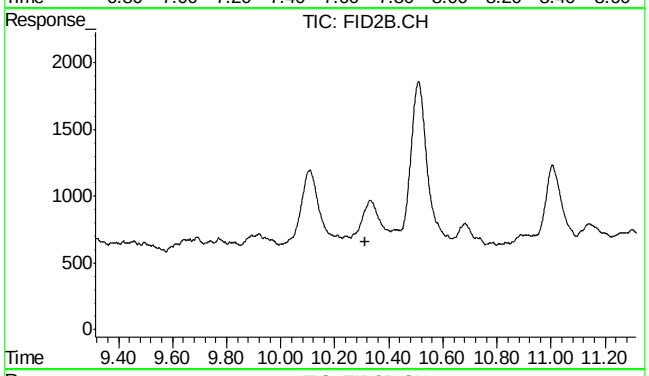
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.158 min
Response: 0
Conc: N.D.



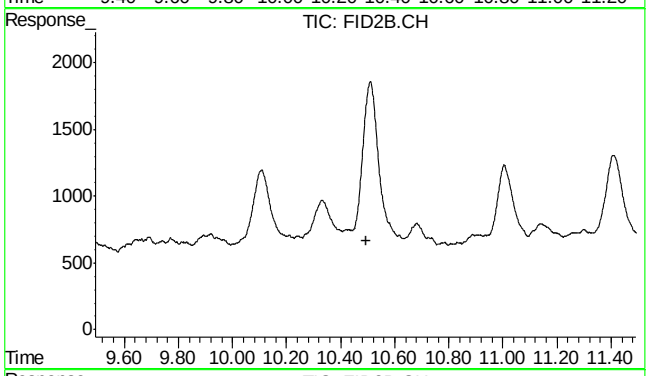
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 7.688 min
Response: 0
Conc: N.D.



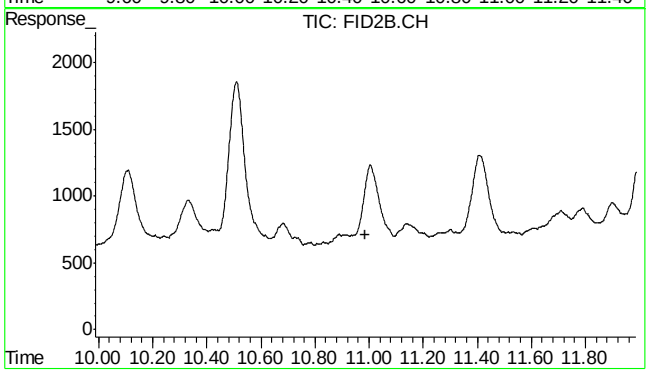
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.314 min
Response: 0
Conc: N.D.



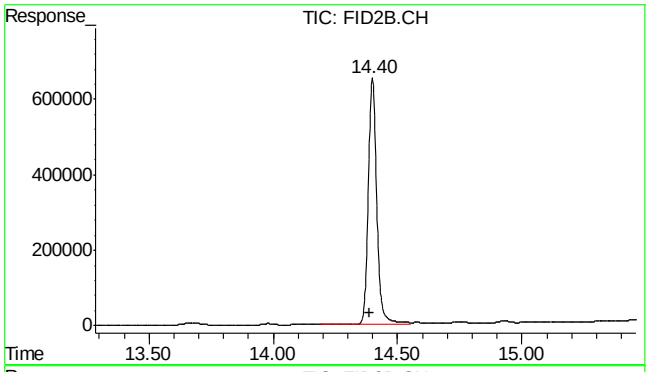
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.493 min
Response: 0
Conc: N.D.



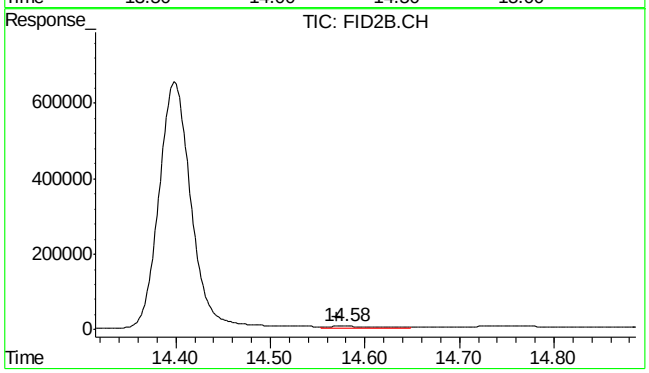
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.987 min
Response: 0
Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.:	14.399 min
Delta R.T.:	0.010 min
Response:	15505978
Conc:	95.41 %



#11 Naphthalene

R.T.:	14.578 min
Delta R.T.:	0.008 min
Response:	145300
Conc:	0.74 ug/L

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\102912\GB18246.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\102912\GB18246.D\FID2B.CH
Acq On : 29 Oct 2012 10:57 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3204,GGB998,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Oct 29 11:07:48 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Oct 29 11:06:08 2012
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
2) S	1,2,4-Trichlorobenzene	14.42	2898612	92.507	%
10) S	1,2,4-Trichlorobenzene (P)	14.42	15830092	97.399	%
	Target Compounds				
1) H	TVH-Gasoline	7.23	3656743	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	7.73	84357	0.213	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	14.60	214066	1.085	ug/L

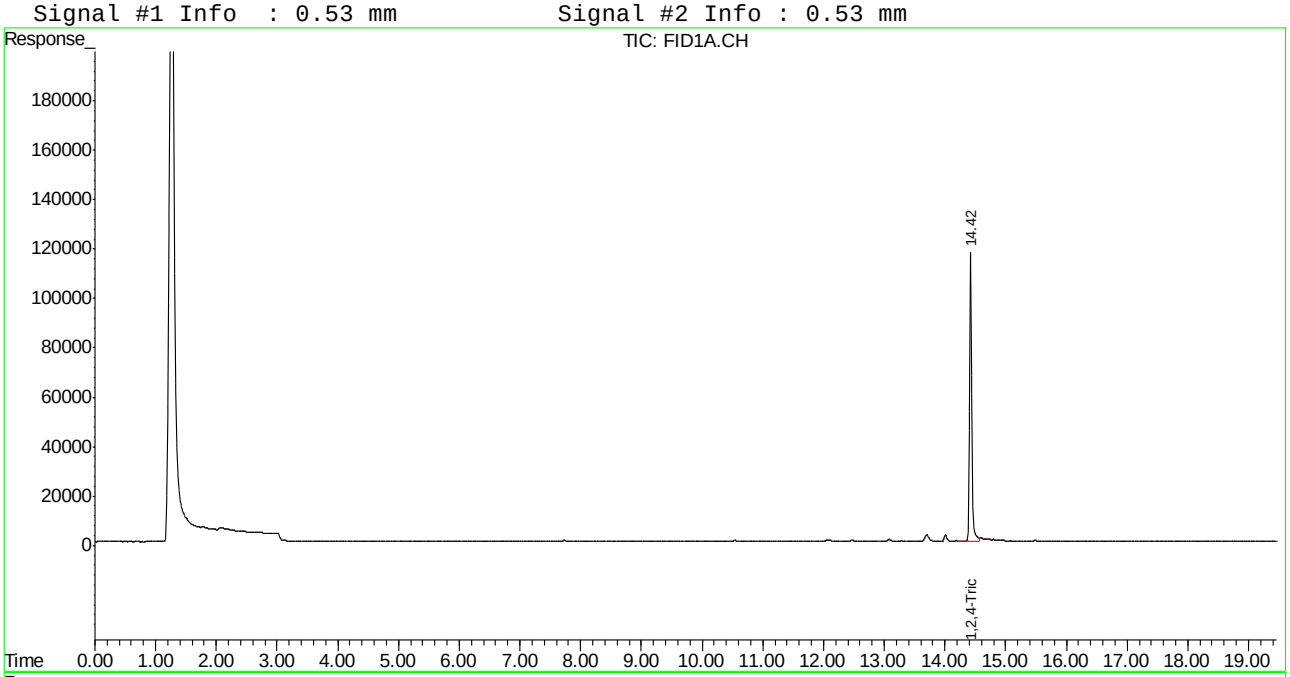
(f)=RT Delta > 1/2 Window (m)=manual int.

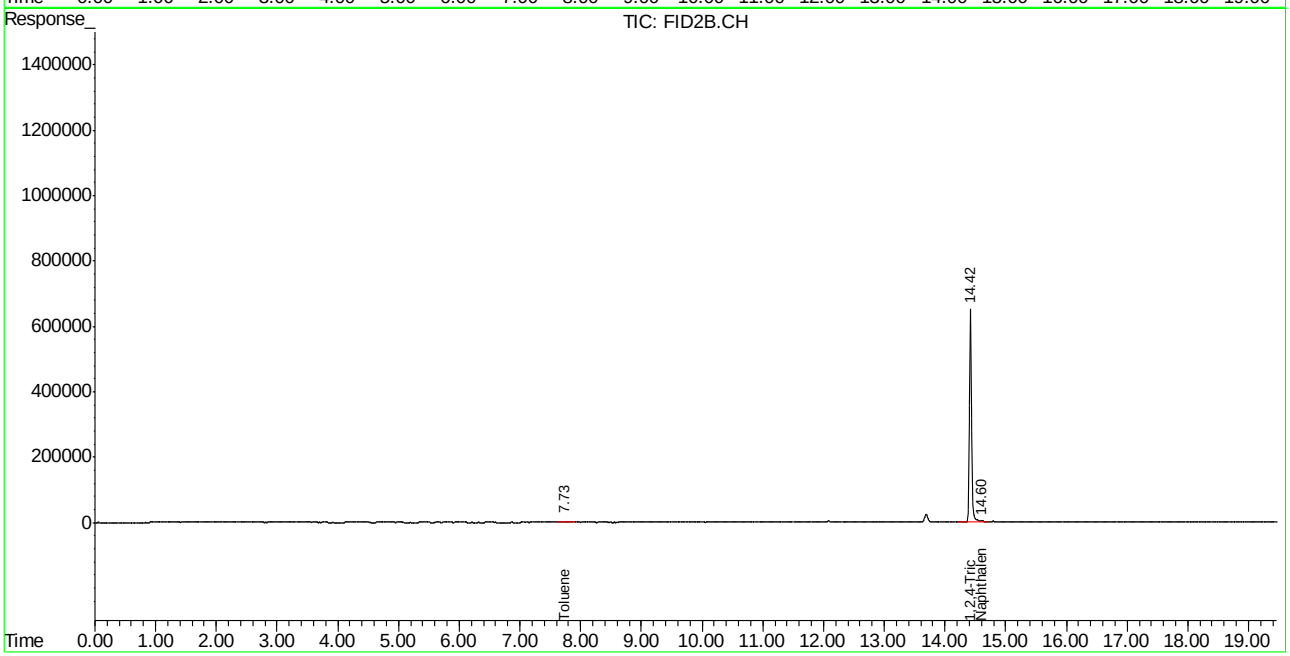
Quantitation Report (QT Reviewed)

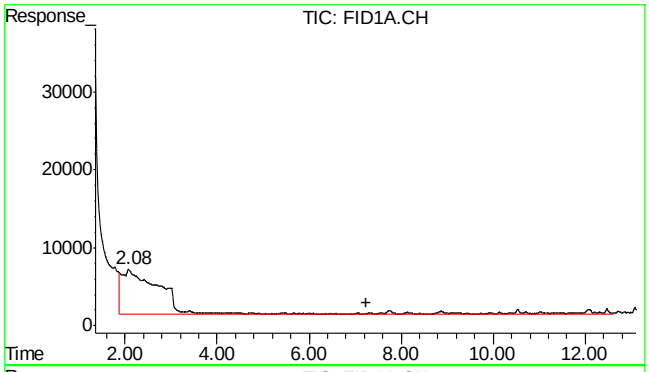
Signal #1 : Y:\1\DATA\102912\GB18246.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\102912\GB18246.D\FID2B.CH
Acq On : 29 Oct 2012 10:57 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3204,GGB998,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Oct 29 11:17 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Oct 29 11:06:08 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

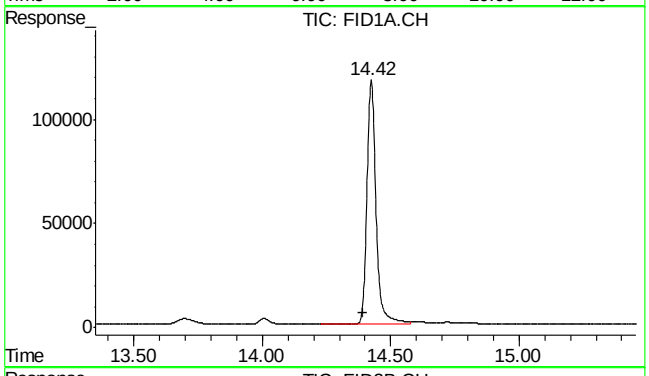






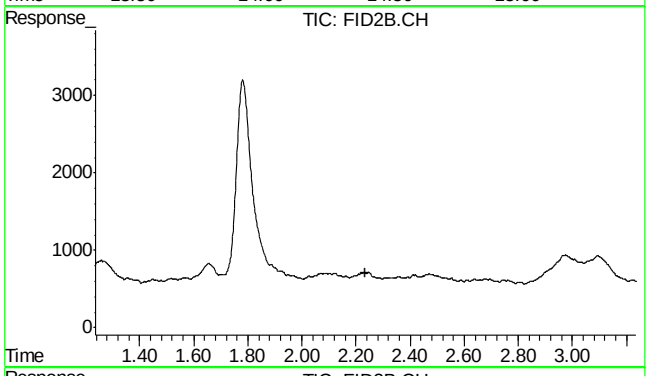
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 3656743
Conc: N.D.



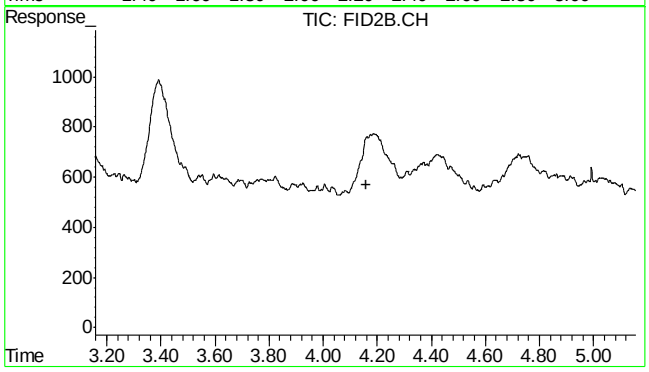
#2 1,2,4-Trichlorobenzene

R.T.: 14.425 min
Delta R.T.: 0.034 min
Response: 2898612
Conc: 92.51 %



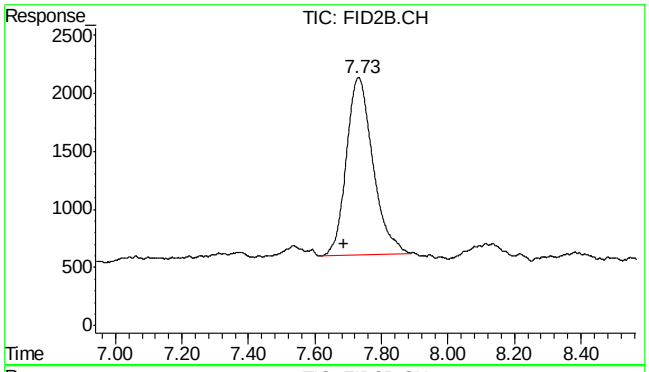
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.236 min
Response: 0
Conc: N.D.



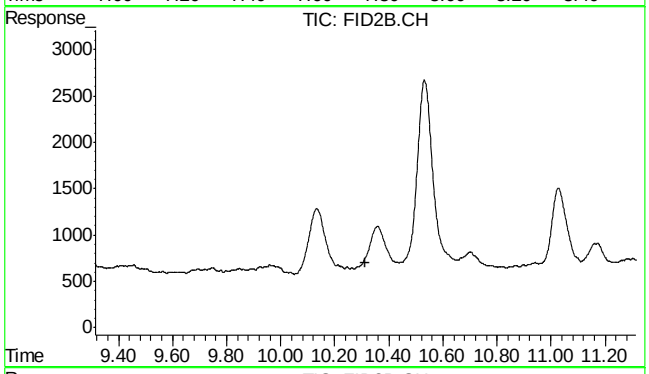
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.158 min
Response: 0
Conc: N.D.



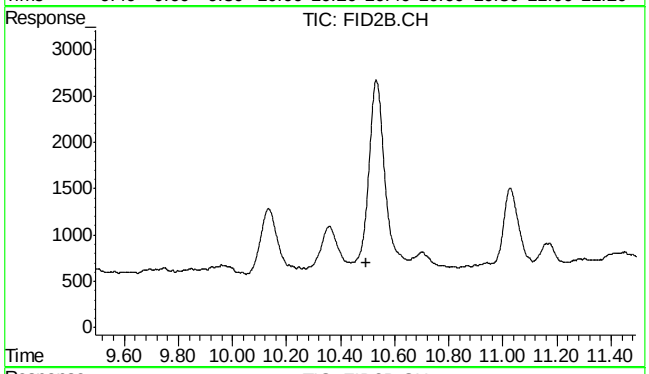
#6 Toluene

R.T.: 7.732 min
Delta R.T.: 0.044 min
Response: 84357
Conc: 0.21 ug/L



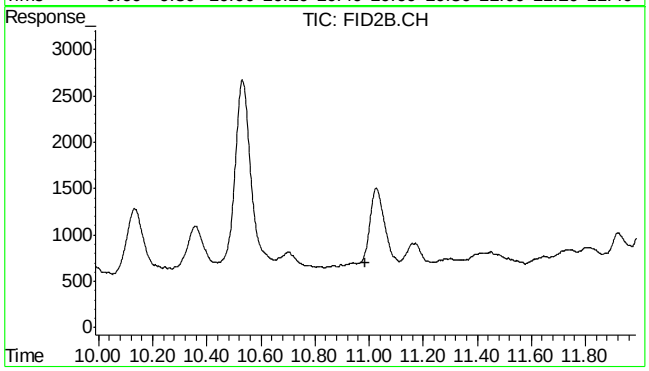
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.314 min
Response: 0
Conc: N.D.



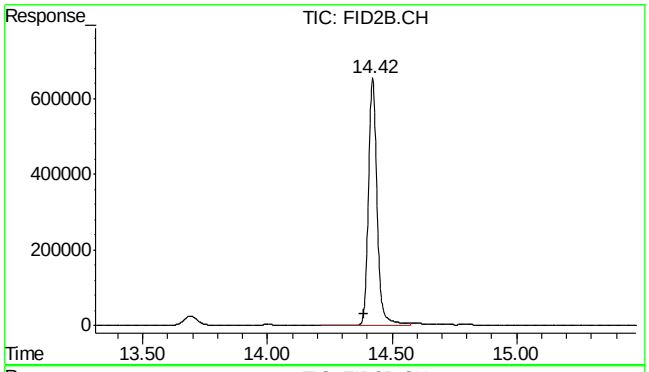
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.493 min
Response: 0
Conc: N.D.



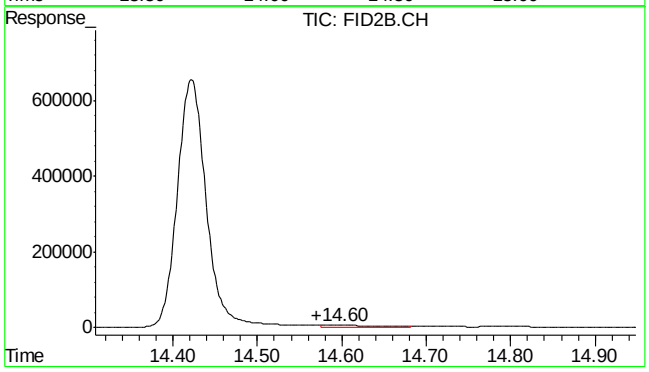
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.987 min
Response: 0
Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.422 min
Delta R.T.: 0.034 min
Response: 15830092
Conc: 97.40 %



#11 Naphthalene

R.T.: 14.602 min
Delta R.T.: 0.031 min
Response: 214066
Conc: 1.08 ug/L

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6873-MB	FD19014.D	1	10/30/12	AV	10/29/12	OP6873	GFD960

The QC reported here applies to the following samples: **Method:** SW846-8015B

D40328-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	13	8.7	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	92%	43-136%

Blank Spike Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6873-BS	FD19015.D	1	10/30/12	AV	10/29/12	OP6873	GFD960

The QC reported here applies to the following samples: **Method:** SW846-8015B

D40328-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	624	94	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	92%	43-136%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D40328
Account: XTOKRWR XTO Energy
Project: PCU 296-5A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6873-MS	FD19016.D	1	10/30/12	AV	10/29/12	OP6873	GFD960
OP6873-MSD	FD19017.D	1	10/30/12	AV	10/29/12	OP6873	GFD960
D40313-4	FD19021.D	1	10/30/12	AV	10/29/12	OP6873	GFD960

The QC reported here applies to the following samples: **Method:** SW846-8015B

D40328-1

CAS No.	Compound	D40313-4 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	2380		741	2980	81	2770	53	7	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D40313-4	Limits
84-15-1	o-Terphenyl	68%	68%	76%	43-136%

12.3.1
12

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\OCT\FD102912\FD19027.D Vial: 40
Acq On : 10-30-2012 09:58:34 AM Operator: ashleyv
Sample : D40328-1 Inst : FID5
Misc : OP6873,GFD960,30.05,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Oct 30 10:50:38 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Oct 22 10:08:28 2012
Response via : Initial Calibration
DataAcq Meth : DRO_FR.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
1) S	O-Terphenyl	8.98	37803565	800.270 mg/L
	Target Compounds			
2) H	TPH-DRO (c10-c28)	7.08	4904288	127.367 mg/L

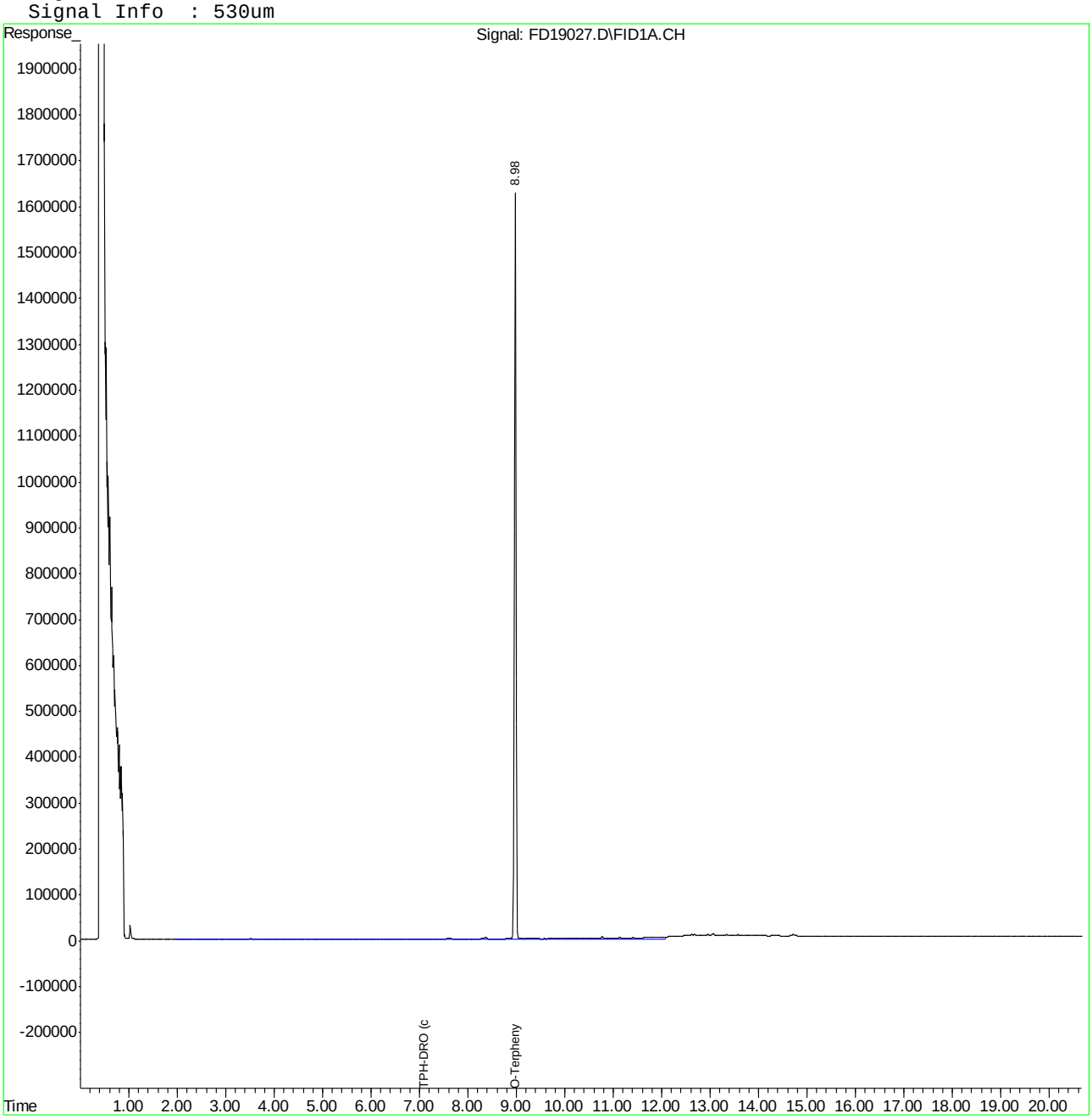
(f)=RT Delta > 1/2 Window (m)=manual int.
FD19027.D DRO-GFD823F.M Tue Oct 30 11:28:51 2012 GC Page 1

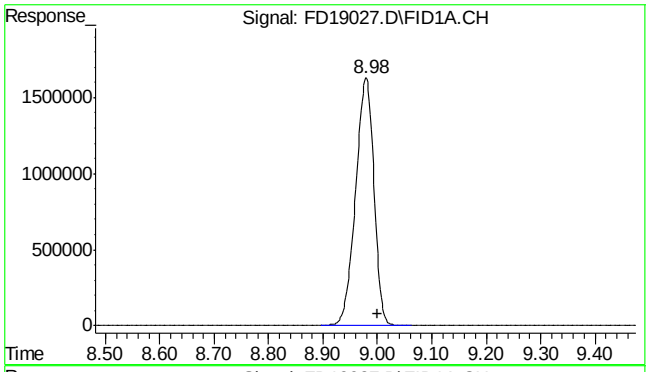
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\OCT\FD102912\FD19027.D Vial: 40
Acq On : 10-30-2012 09:58:34 AM Operator: ashleyv
Sample : D40328-1 Inst : FID5
Misc : OP6873,GFD960,30.05,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Oct 30 11:28 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Oct 22 10:08:28 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRO_FR.M

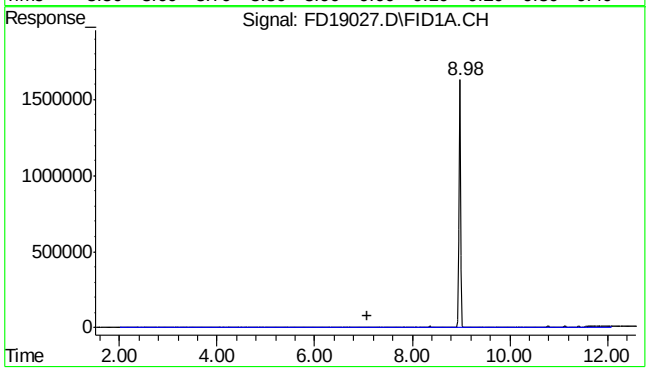
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.979 min
Delta R.T.: -0.021 min
Response: 37803565
Conc: 800.27 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.075 min
Delta R.T.: 0.000 min
Response: 4904288
Conc: 127.37 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\OCT\FD102912\FD19014.D Vial: 27
Acq On : 10-30-2012 03:49:21 AM Operator: ashleyv
Sample : OP6873-MB Inst : FID5
Misc : OP6873,GFD960,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Oct 30 09:20:36 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Oct 22 10:08:28 2012
Response via : Initial Calibration
DataAcq Meth : DRO_FR.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
1) S	O-Terphenyl	8.96	43618115	923.359 mg/L
	Target Compounds			
2) H	TPH-DRO (c10-c28)	7.08	2720709	70.658 mg/L

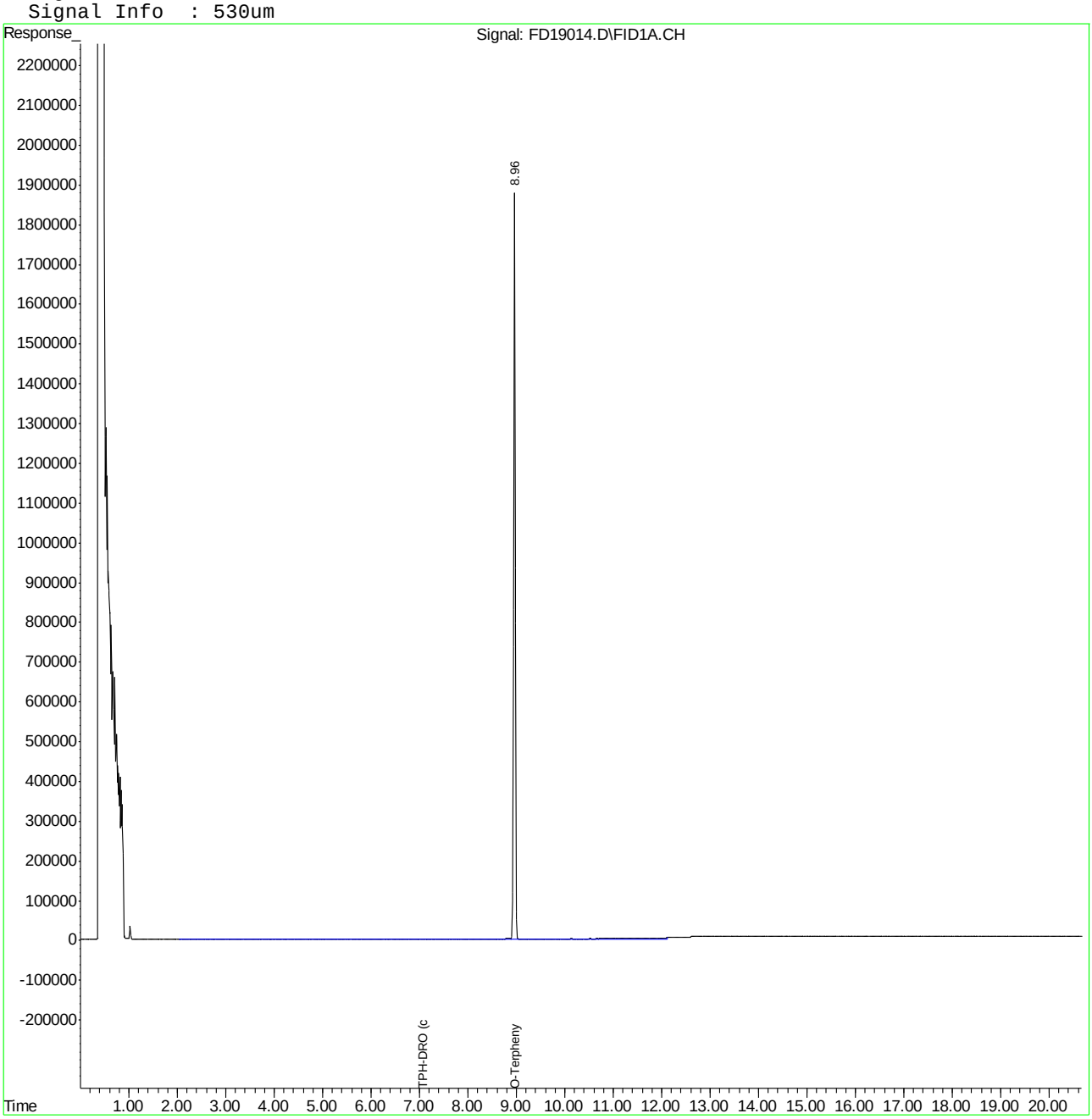
(f)=RT Delta > 1/2 Window (m)=manual int.
FD19014.D DRO-GFD823F.M Tue Oct 30 11:28:38 2012 GC Page 1

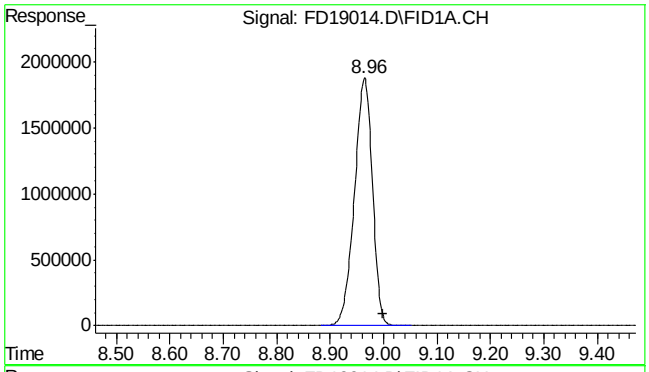
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\OCT\FD102912\FD19014.D Vial: 27
Acq On : 10-30-2012 03:49:21 AM Operator: ashleyv
Sample : OP6873-MB Inst : FID5
Misc : OP6873,GFD960,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Oct 30 9:20 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Oct 22 10:08:28 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRO_FR.M

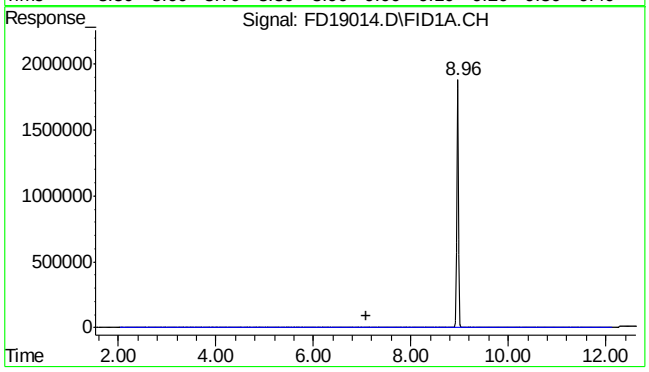
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.965 min
Delta R.T.: -0.035 min
Response: 43618115
Conc: 923.36 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.075 min
Delta R.T.: 0.000 min
Response: 2720709
Conc: 70.66 mg/L m

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8772
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/30/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.96	.57		
Antimony	3.0	.17	.12		
Arsenic	2.5	.44	.56		
Barium	1.0	.01	.11	0.10	<1.0
Beryllium	1.0	.13	.15		
Boron	5.0	.1	.06		
Cadmium	1.0	.06	.036	0.0	<1.0
Calcium	40	.54	9		
Chromium	1.0	.03	.03	0.030	<1.0
Cobalt	0.50	.04	.07		
Copper	1.0	.12	.15	-0.15	<1.0
Iron	7.0	.12	.87		
Lead	5.0	.19	.24	0.040	<5.0
Lithium	0.20	.05	.054		
Magnesium	20	.65	.98		
Manganese	0.50	.12	.022		
Molybdenum	1.0	.21	.08		
Nickel	3.0	.05	.026	0.0	<3.0
Phosphorus	10	1.4	1.9		
Potassium	200	6.1	7		
Selenium	5.0	.48	.36	-0.20	<5.0
Silicon	5.0	.29	.37		
Silver	3.0	.04	.06	-0.020	<3.0
Sodium	40	.59	1.9		
Strontium	5.0	.004	.017		
Thallium	1.0	.29	.53		
Tin	5.0	1.2	2		
Titanium	1.0	.01	.038		
Uranium	5.0	.22	.26		
Vanadium	1.0	.02	.036		
Zinc	3.0	.05	.37	0.090	<3.0

Associated samples MP8772: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8772
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8772
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/30/12

Metal	D40329-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	10800	12600	235	765.4(a)	75-125
Beryllium	anr				
Boron	anr				
Cadmium	0.0	50.2	58.8	85.4	75-125
Calcium	anr				
Chromium	7.5	59.4	58.8	88.3	75-125
Cobalt	anr				
Copper	32.4	96.3	58.8	108.7	75-125
Iron	anr				
Lead	25.6	124	118	83.7	75-125
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum	anr				
Nickel	10.3	56.7	58.8	78.9	75-125
Phosphorus	anr				
Potassium	anr				
Selenium	0.91	104	118	87.7	75-125
Silicon					
Silver	0.0	22.0	23.5	93.5	75-125
Sodium	anr				
Strontium	anr				
Thallium	anr				
Tin	anr				
Titanium	anr				
Uranium					
Vanadium	anr				
Zinc	33.6	78.4	58.8	76.2	75-125

Associated samples MP8772: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8772
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8772 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/30/12

Metal	D40329-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	10800	12700	242	783.9(a)	25.3 (b)	20
Beryllium	anr					
Boron	anr					
Cadmium	0.0	51.0	60.6	84.2	1.6	20
Calcium	anr					
Chromium	7.5	60.0	60.6	86.6	1.0	20
Cobalt	anr					
Copper	32.4	87.1	60.6	90.3	10.0	20
Iron	anr					
Lead	25.6	122	121	79.5	1.6	20
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	10.3	57.3	60.6	77.6	1.1	20
Phosphorus	anr					
Potassium	anr					
Selenium	0.91	107	121	87.5	2.8	20
Silicon						
Silver	0.0	22.4	24.2	92.4	1.8	20
Sodium	anr					
Strontium	anr					
Thallium	anr					
Tin	anr					
Titanium	anr					
Uranium						
Vanadium	anr					
Zinc	33.6	77.2	60.6	72.0N(c)	1.5	20

Associated samples MP8772: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8772
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(b) High RPD due to possible sample matrix or nonhomogeneity.
(c) Spike recovery indicates possible matrix interference.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8772
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/30/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	200	200	100.0	80-120
Beryllium	anr			
Boron	anr			
Cadmium	45.4	50	90.8	80-120
Calcium	anr			
Chromium	48.3	50	96.6	80-120
Cobalt	anr			
Copper	46.9	50	93.8	80-120
Iron	anr			
Lead	95.0	100	95.0	80-120
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	45.7	50	91.4	80-120
Phosphorus	anr			
Potassium	anr			
Selenium	92.8	100	92.8	80-120
Silicon				
Silver	19.4	20	97.0	80-120
Sodium	anr			
Strontium	anr			
Thallium	anr			
Tin	anr			
Titanium	anr			
Uranium				
Vanadium	anr			
Zinc	46.1	50	92.2	80-120

Associated samples MP8772: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8772
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8772
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 10/30/12

Metal	D40329-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	71700	75800	14.6*(a)	0-10
Beryllium	anr			
Boron	anr			
Cadmium	0.00	0.00	NC	0-10
Calcium	anr			
Chromium	62.0	69.0	11.3*(a)	0-10
Cobalt	anr			
Copper	267	278	4.1	0-10
Iron	anr			
Lead	211	241	13.8*(a)	0-10
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	84.7	97.5	15.1*(a)	0-10
Phosphorus	anr			
Potassium	anr			
Selenium	7.50	0.00	100.0(b)	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium	anr			
Strontium	anr			
Thallium	anr			
Tin	anr			
Titanium	anr			
Uranium				
Vanadium	anr			
Zinc	277	337	21.3*(a)	0-10

Associated samples MP8772: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8772
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8773
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/30/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.22	.31		
Arsenic	0.10	.006	.06	0.027	<0.10
Barium	1.0	.0065	.037		
Beryllium	0.10	.016	.09		
Boron	20	1.2	1.2		
Calcium	200	7.9	8		
Chromium	1.0	.033	.19		
Cobalt	0.10	.0012	.015		
Copper	1.0	.017	.065		
Lead	0.25	.0011	.024		
Magnesium	50	.44	.85		
Manganese	0.50	.0043	.02		
Molybdenum	0.50	.018	.018		
Nickel	1.0	.0049	.011		
Phosphorus	30	1.4	3.6		
Potassium	100	9.8	10		
Selenium	0.20	.029	.14		
Silver	0.050	.0009	.0065		
Sodium	250	1.5	2.3		
Strontium	10	.036	.036		
Thallium	0.10	.00095	.0095		
Tin	5.0	.023	.34		
Uranium	0.25	.00085	.001		
Zinc	5.0	.033	.35		

Associated samples MP8773: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8773
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/30/12

Metal	D40329-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Arsenic	6.3	121	118	97.5	75-125
Beryllium	anr				
Boron	anr				
Chromium	anr				
Cobalt	anr				
Copper	anr				
Lead	anr				
Magnesium	anr				
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silver	anr				
Sodium	anr				
Strontium					
Thallium	anr				
Tin					
Uranium					
Zinc	anr				

Associated samples MP8773: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8773 Methods: SW846 6020A
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/30/12

Metal	D40329-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Arsenic	6.3	128	121	100.4	5.6	20
Beryllium	anr					
Boron	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Lead	anr					
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silver	anr					
Sodium	anr					
Strontium						
Thallium	anr					
Tin						
Uranium						
Zinc	anr					

Associated samples MP8773: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8773
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/30/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Arsenic	104	100	104.0	80-120
Barium	anr			
Beryllium	anr			
Boron	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Lead	anr			
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Uranium				
Zinc	anr			

Associated samples MP8773: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8773
Matrix Type: SOLID

Methods: SW846 6020A
Units: ug/l

Prep Date: 10/30/12

Metal	D40329-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum	anr			
Arsenic	51.8	52.1	0.7	0-10
Beryllium	anr			
Boron	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Lead	anr			
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Uranium				
Zinc	anr			

Associated samples MP8773: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8775
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 10/30/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	48	130		
Antimony	150	8.5	18		
Arsenic	130	22	42		
Barium	50	.5	9		
Beryllium	50	6.5	16		
Boron	250	5	22		
Cadmium	50	3	3		
Calcium	2000	27	80	1.5	<2000
Chromium	50	1.5	2.8		
Cobalt	25	2	2.1		
Copper	50	6	15		
Iron	350	6	100		
Lead	250	9.5	15		
Lithium	10	2.5			
Magnesium	1000	33	110	-19	<1000
Manganese	25	6	6		
Molybdenum	50	11	11		
Nickel	150	2.5	2.9		
Phosphorus	500	70	300		
Potassium	5000	310	750		
Selenium	250	24	55		
Silicon	250	15			
Silver	150	2	4.9		
Sodium	2000	30	490	-230	<2000
Strontium	25	.2	7.5		
Thallium	50	15	43		
Tin	250	60			
Titanium	50	.5			
Uranium	250	11	23		
Vanadium	50	1	2.4		
Zinc	150	2.5	12		

Associated samples MP8775: D40328-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8775
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8775
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 10/30/12

Metal	D40339-2 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	2530000	2750000	125000	176.0(a)	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	174000	309000	125000	105.6	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	9430000	9660000	125000	184.0(a)	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP8775: D40328-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8775
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8775
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 10/30/12

Metal	D40339-2 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	2530000	2670000	125000	112.0	3.0	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	174000	304000	125000	101.6	1.6	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	9430000	10100000	125000	536.0(a)	4.5	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP8775: D40328-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8775
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8775
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 10/30/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	135000	125000	108.0	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	127000	125000	101.6	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	132000	125000	105.6	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8775: D40328-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8775
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8775
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 10/30/12

Metal	D40339-2 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	505000	549000	8.6	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	34900	39400	11.5*(a)	0-10
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	1890000	1910000	1.4	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8775: D40328-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8775
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8794 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/01/12

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.083	.00088	.00075	0.0027	<0.083

Associated samples MP8794: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8794
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/01/12

Metal	D40329-1 Original	MS	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.055	0.44	0.396	97.3	75-125

Associated samples MP8794: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8794 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/01/12

Metal	D40329-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.055	0.45	0.396	99.8	2.2	

Associated samples MP8794: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

QC Batch ID: MP8794
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/01/12

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.34	0.333	102.0	80-120

Associated samples MP8794: D40328-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP8586/GN17528	1.0	0.0	mg/kg	176	179	102.0	80-120%
Specific Conductivity	GP8575/GN17488			umhos/cm	9989	9950	99.6	90-110%
pH	GN17446			su	8.00	8.00	100.0	99.3-100.7%

Associated Samples:
Batch GP8575: D40328-1
Batch GP8586: D40328-1
Batch GN17446: D40328-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP8586/GN17528	D40427-1	mg/kg	0.0	0.0	0.0	0-20%
Redox Potential Vs H2	GN17476	D40350-1	mv	336	344	2.4	0-20%

Associated Samples:
Batch GP8586: D40328-1
Batch GN17476: D40328-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP8586/GN17528	D40427-1	mg/kg	0.0	0.40	35.8	89.5	75-125%

Associated Samples:
Batch GP8586: D40328-1
Batch MP8775: D40328-1A
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40328
Account: XTOKRWR - XTO Energy
Project: PCU 296-5A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GP8586/GN17528	D40427-1	mg/kg	0.0	0.40	36.5	1.9	

Associated Samples:
Batch GP8586: D40328-1
Batch MP8775: D40328-1A
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits