



03/15/12

Technical Report for

XTO Energy

FRU 297-32A

1108-12A

Accutest Job Number: D32610

Sampling Date: 03/07/12

Report to:

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Total number of pages in report: 131



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)

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Test results relate only to samples analyzed.

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Sample Summary

XTO Energy

Job No: D32610

FRU 297-32A

Project No: 1108-12A

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D32610-1	03/07/12	14:15	DS	03/12/12	SO	Soil	CUT 2 M/B DAY 6 (3/6)
D32610-2	03/07/12	14:30	DS	03/12/12	SO	Soil	RP MB 3:1

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: XTO Energy

Job No D32610

Site: FRU 297-32A

Report Date 3/15/2012 4:55:31 PM

On 03/12/2012, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.6 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D32610 was assigned to the project. The lab sample IDs, client sample IDs, 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: V5V1203

- All samples were analyzed within the recommended method holding time.
- Sample(s) D32550-1MS, D32550-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32550-1MSD have surrogates outside control limits. Probable cause due to matrix interference.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO

Batch ID: OP5528

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D32609-1MS, D32609-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The RPD(s) for the MS and MSD recoveries of Dibenzo(a,h)anthracene are outside control limits for sample OP5528-MSD. Variability of recovery may be due to sample matrix/homogeneity.

Volatiles by GC By Method SW846 8015B

Matrix SO

Batch ID: GGB858

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32609-1MS, D32609-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO

Batch ID: OP5519

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32595-1MSD, D32595-1MS, D32595-1MSD were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) of TPH-DRO (C10-C28) are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- Sample(s) OP5519-MS, OP5519-MSD have surrogates outside control limits. Probable cause due to matrix interference.
- OP5519-MS/MSD for o-Terphenyl: Outside control limits due to dilution.

Matrix SO

Batch ID: OP5547

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32703-1MS, D32703-1MSD were used as the QC samples indicated.
- Sample(s) OP5519-MS, OP5519-MSD have surrogates outside control limits. Probable cause due to matrix interference.

Metals By Method SW846 6010C

Matrix SO

Batch ID: MP7055

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32609-1MSD, D32609-1SDL, D32609-1MS were used as the QC samples for the metals analysis.
- 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.

Wet Chemistry By Method SM19 2540B M

Matrix SO

Batch ID: GN14053

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

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.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID: CUT 2 M/B DAY 6 (3/6)
Lab Sample ID: D32610-1
Matrix: SO - Soil
Method: SW846 8260B
Project: FRU 297-32A

Date Sampled: 03/07/12
Date Received: 03/12/12
Percent Solids: 87.3

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V19973.D	1	03/13/12	KV	n/a	n/a	V5V1203
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.02 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.130	0.064	0.028	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	96%		61-130%
460-00-4	4-Bromofluorobenzene	100%		53-131%
17060-07-0	1,2-Dichloroethane-D4	102%		62-130%

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

Page 1 of 1

Client Sample ID:	CUT 2 M/B DAY 6 (3/6)	
Lab Sample ID:	D32610-1	Date Sampled: 03/07/12
Matrix:	SO - Soil	Date Received: 03/12/12
Method:	SW846 8270C BY SIM SW846 3546	Percent Solids: 87.3
Project:	FRU 297-32A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G08529.D	1	03/14/12	DC	03/13/12	OP5528	E3G348
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
53-70-3	Dibenzo(a,h)anthracene	ND	0.0095	0.0050	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	45%		10-145%
321-60-8	2-Fluorobiphenyl	42%		10-130%
1718-51-0	Terphenyl-d14	59%		22-130%

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

Page 1 of 1

Client Sample ID:	CUT 2 M/B DAY 6 (3/6)	
Lab Sample ID:	D32610-1	Date Sampled: 03/07/12
Matrix:	SO - Soil	Date Received: 03/12/12
Method:	SW846 8015B	Percent Solids: 87.3
Project:	FRU 297-32A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15300.D	1	03/13/12	SK	n/a	n/a	GGB858
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	11.2	13	6.4	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	104%		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

Page 1 of 1

Client Sample ID:	CUT 2 M/B DAY 6 (3/6)	
Lab Sample ID:	D32610-1	Date Sampled: 03/07/12
Matrix:	SO - Soil	Date Received: 03/12/12
Method:	SW846-8015B SW846 3546	Percent Solids: 87.3
Project:	FRU 297-32A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH002248.D	1	03/15/12	TR	03/15/12	OP5547	GFH117
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	121	15	9.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	50%		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

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	RP MB 3:1	
Lab Sample ID:	D32610-2	Date Sampled: 03/07/12
Matrix:	SO - Soil	Date Received: 03/12/12
Method:	SW846 8260B	Percent Solids: 83.7
Project:	FRU 297-32A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V19974.D	1	03/13/12	KV	n/a	n/a	V5V1203
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.00 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.069	0.031	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	101%		61-130%
460-00-4	4-Bromofluorobenzene	110%		53-131%
17060-07-0	1,2-Dichloroethane-D4	112%		62-130%

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

Page 1 of 1

Client Sample ID:	RP MB 3:1	
Lab Sample ID:	D32610-2	Date Sampled: 03/07/12
Matrix:	SO - Soil	Date Received: 03/12/12
Method:	SW846 8015B	Percent Solids: 83.7
Project:	FRU 297-32A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15301.D	1	03/13/12	SK	n/a	n/a	GGB858
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	24.1	14	6.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	94%		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

Page 1 of 1

Client Sample ID:	RP MB 3:1	
Lab Sample ID:	D32610-2	Date Sampled: 03/07/12
Matrix:	SO - Soil	Date Received: 03/12/12
Method:	SW846-8015B SW846 3546	Percent Solids: 83.7
Project:	FRU 297-32A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH002206.D	1	03/13/12	TR	03/12/12	OP5519	GFH113
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)	572	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	47%		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:	RP MB 3:1	Date Sampled:	03/07/12
Lab Sample ID:	D32610-2	Date Received:	03/12/12
Matrix:	SO - Soil	Percent Solids:	83.7
Project:	FRU 297-32A		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	3430	12	mg/kg	10	03/14/12	03/14/12 JB	SW846 6010C ¹	SW846 3050B ²

(1) Instrument QC Batch: MA2258
(2) Prep QC Batch: MP7055

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

[illegible]

D32610: Chain of Custody

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Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D32610

Client: KRW CONSULTING

Immediate Client Services Action Required: No

Date / Time Received: 3/12/2012 1:30:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XTO FRU 297-32A

Airbill #'s: HD/CO

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:			Intact

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1203-MB	5V19961.D	1	03/13/12	KV	n/a	n/a	V5V1203

The QC reported here applies to the following samples:

Method: SW846 8260B

D32610-1, D32610-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	22	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	104% 61-130%
460-00-4	4-Bromofluorobenzene	99% 53-131%
17060-07-0	1,2-Dichloroethane-D4	115% 62-130%

Blank Spike Summary

Page 1 of 1

Job Number: D32610

Account: XTOKRWR XTO Energy

Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1203-BS	5V19962.D	1	03/13/12	KV	n/a	n/a	V5V1203

The QC reported here applies to the following samples:

Method: SW846 8260B

D32610-1, D32610-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	49.4	99	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	93%	61-130%
460-00-4	4-Bromofluorobenzene	102%	53-131%
17060-07-0	1,2-Dichloroethane-D4	97%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D32550-1MS	5V19964.D	1	03/13/12	KV	n/a	n/a	V5V1203
D32550-1MSD	5V19965.D	1	03/13/12	KV	n/a	n/a	V5V1203
D32550-1	5V19963.D	1	03/13/12	KV	n/a	n/a	V5V1203

The QC reported here applies to the following samples:

Method: SW846 8260B

D32610-1, D32610-2

CAS No.	Compound	D32550-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	384		5830	6590	106	7520	122	13	70-134/30

CAS No.	Surrogate Recoveries	MS	MSD	D32550-1	Limits
2037-26-5	Toluene-D8	99%	109%	89%	61-130%
460-00-4	4-Bromofluorobenzene	126%	138% *	101%	53-131%
17060-07-0	1,2-Dichloroethane-D4	95%	105%	87%	62-130%

GC/MS Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031312.S\
 Data File : 5V19973.D
 Acq On : 13 Mar 2012 4:56 pm
 Operator : KOROUSHV
 Sample : D32610-1
 Misc : MS3551,V5V1203,5.021,,100,5,1
 ALS Vial : 15 Sample Multiplier: 1

Quant Time: Mar 14 10:08:31 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1186TVH1186.M
 Quant Title : 8260
 QLast Update : Fri Mar 02 14:22:16 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	193869	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	351519	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	534068	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	386471	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	42621	50.91	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	101.82%
61) Toluene-d8	13.850	98	826360	47.86	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	95.72%
69) 4-Bromofluorobenzene	16.042	95	357873	50.18	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	100.36%

Target Compounds

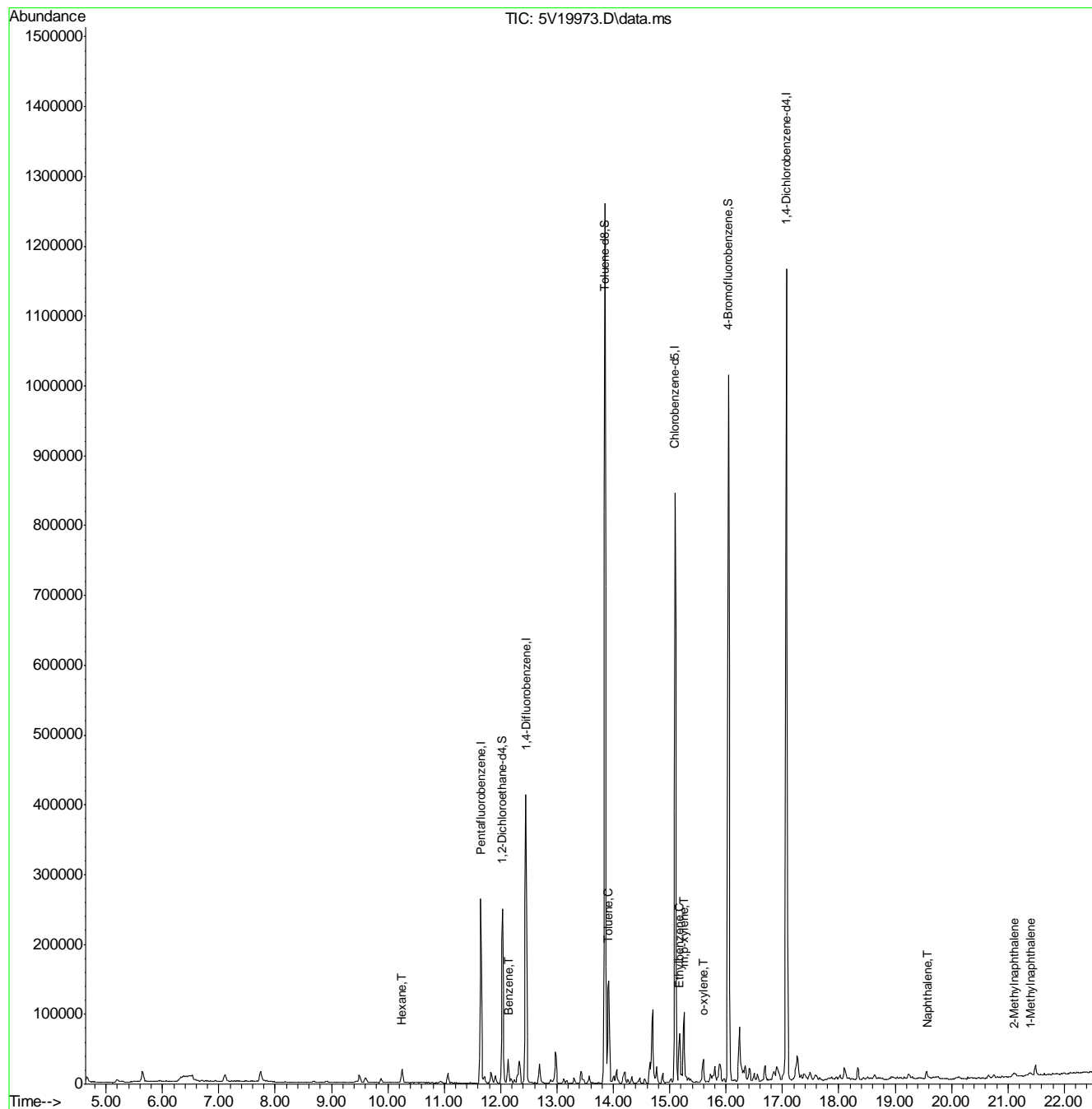
					Qvalue
41) Hexane	10.243	57	10583	2.78 ug/l	100
50) Benzene	12.138	78	35029	2.03 ug/l	100
62) Toluene	13.908	92	53477	4.07 ug/l	98
66) Ethylbenzene	15.175	91	16354	0.66 ug/l	96
72) m,p-xylene	15.255	106	33020	3.30 ug/l	96
73) o-xylene	15.597	106	5352	0.96 ug/l	99
91) Naphthalene	19.570	128	9715	1.78 ug/l	100
94) 2-Methylnaphthalene	21.112	142	4141	2.76 ug/l	95
95) 1-Methylnaphthalene	21.408	142	2648	2.29 ug/l	94

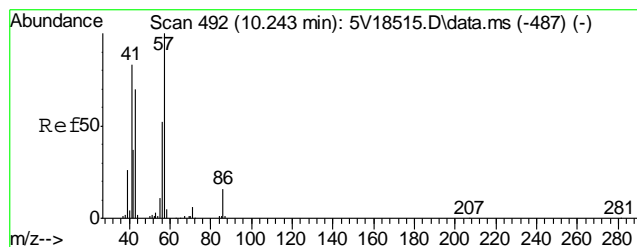
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031312.S\
Data File : 5V19973.D
Acq On : 13 Mar 2012 4:56 pm
Operator : KOROUSHV
Sample : D32610-1
Misc : MS3551,V5V1203,5.021,,100,5,1
ALS Vial : 15 Sample Multiplier: 1

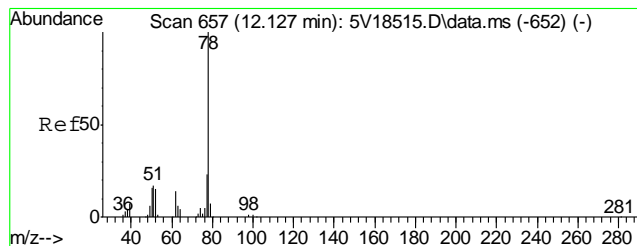
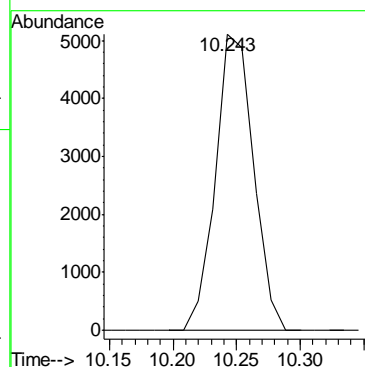
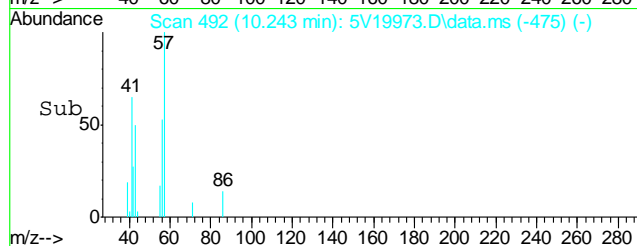
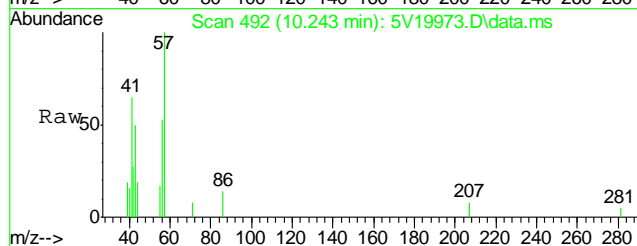
Quant Time: Mar 14 10:08:31 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1186TVH1186.M
Quant Title : 8260
QLast Update : Fri Mar 02 14:22:16 2012
Response via : Initial Calibration





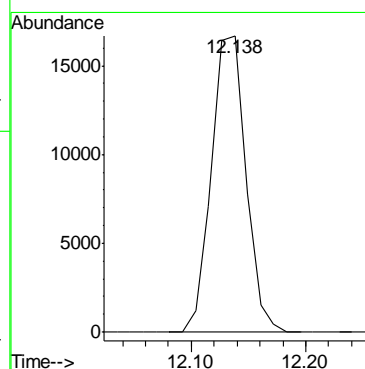
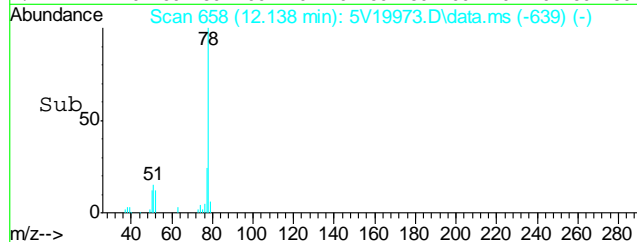
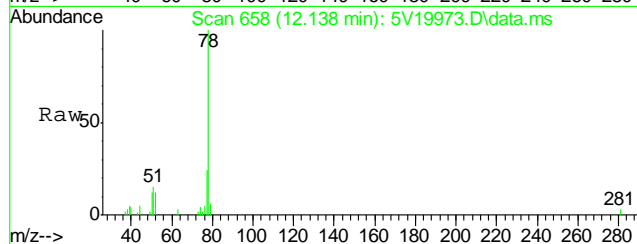
#41
Hexane
Concen: 2.78 ug/l
RT: 10.243 min Scan# 492
Delta R.T. -0.011 min
Lab File: 5V19973.D
Acq: 13 Mar 2012 4:56 pm

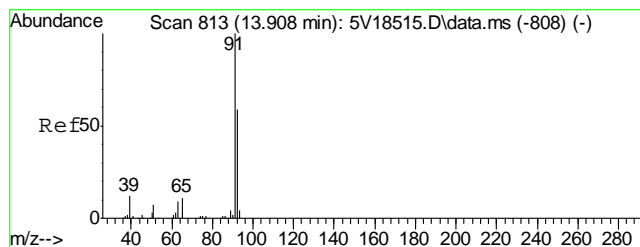
Tgt Ion: 57 Resp: 10583



#50
Benzene
Concen: 2.03 ug/l
RT: 12.138 min Scan# 658
Delta R.T. 0.011 min
Lab File: 5V19973.D
Acq: 13 Mar 2012 4:56 pm

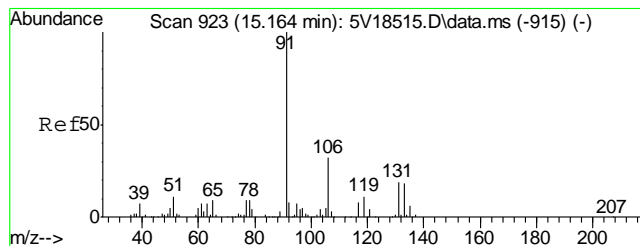
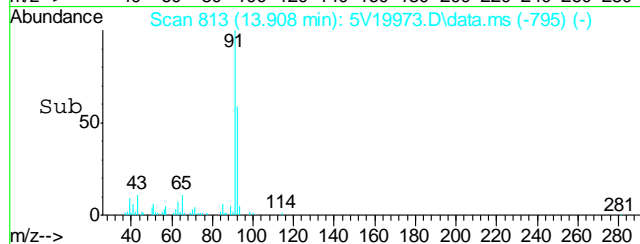
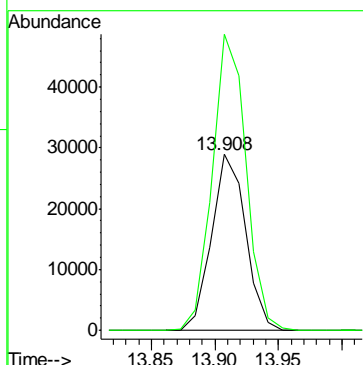
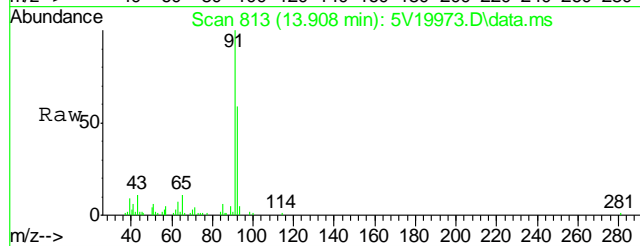
Tgt Ion: 78 Resp: 35029





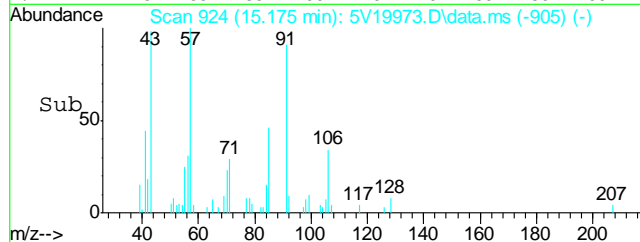
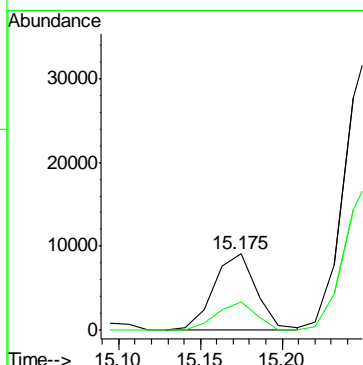
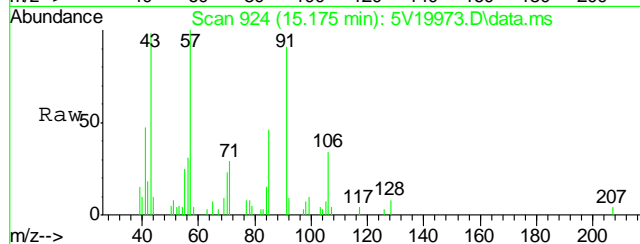
#62
Toluene
Concen: 4.07 ug/l
RT: 13.908 min Scan# 813
Delta R.T. 0.000 min
Lab File: 5V19973.D
Acq: 13 Mar 2012 4:56 pm

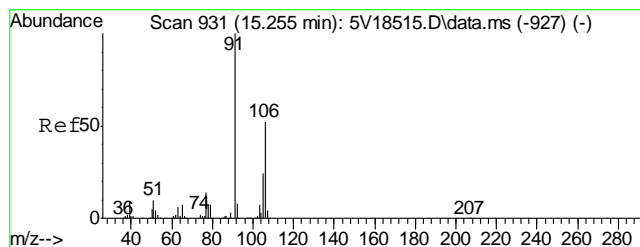
Tgt Ion: 92 Resp: 53477
Ion Ratio Lower Upper
92 100
91 167.3 149.8 189.8



#66
Ethylbenzene
Concen: 0.66 ug/l
RT: 15.175 min Scan# 924
Delta R.T. 0.011 min
Lab File: 5V19973.D
Acq: 13 Mar 2012 4:56 pm

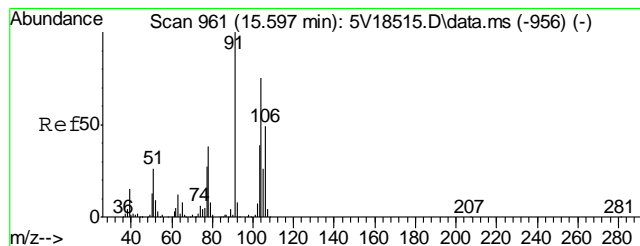
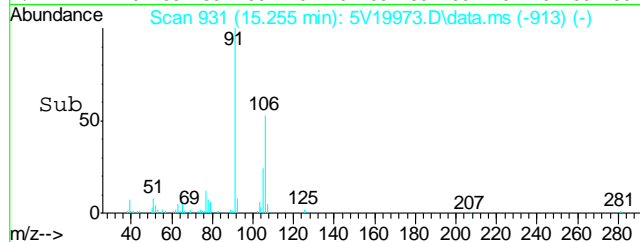
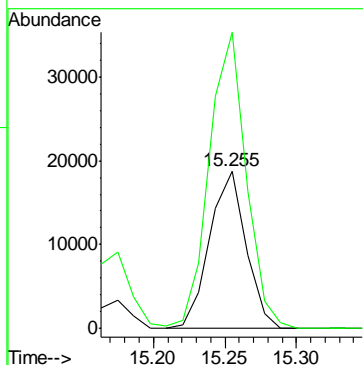
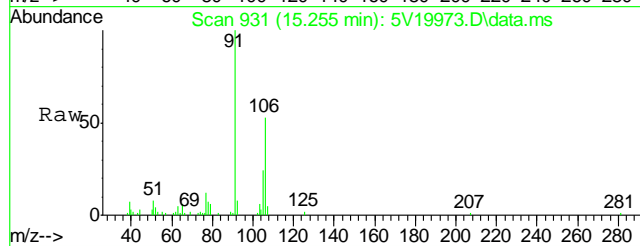
Tgt Ion: 91 Resp: 16354
Ion Ratio Lower Upper
91 100
106 33.9 11.7 51.7





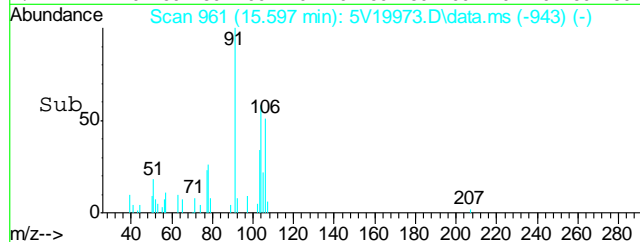
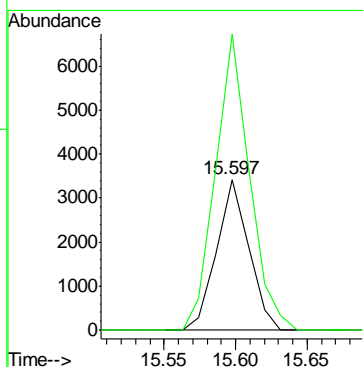
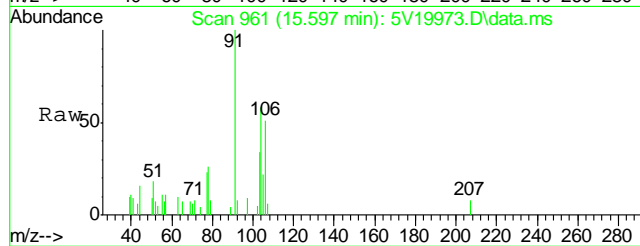
#72
m,p-xylene
Concen: 3.30 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.000 min
Lab File: 5V19973.D
Acq: 13 Mar 2012 4:56 pm

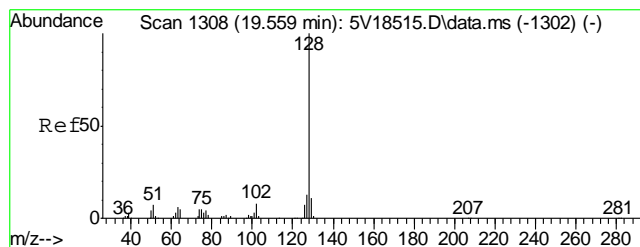
Tgt Ion:106 Resp: 33020
Ion Ratio Lower Upper
106 100
91 190.5 177.1 217.1



#73
o-xylene
Concen: 0.96 ug/l
RT: 15.597 min Scan# 961
Delta R.T. 0.000 min
Lab File: 5V19973.D
Acq: 13 Mar 2012 4:56 pm

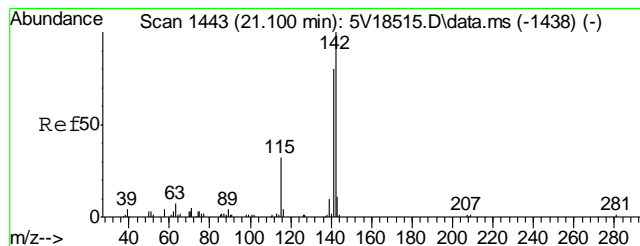
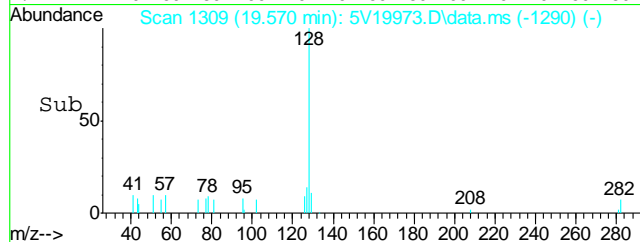
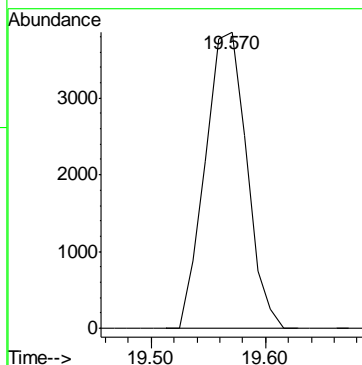
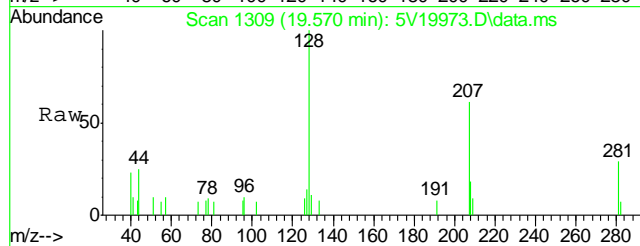
Tgt Ion:106 Resp: 5352
Ion Ratio Lower Upper
106 100
91 207.0 166.6 249.8





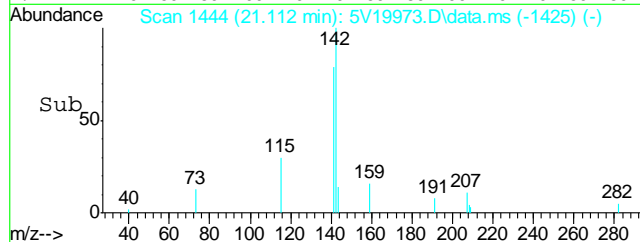
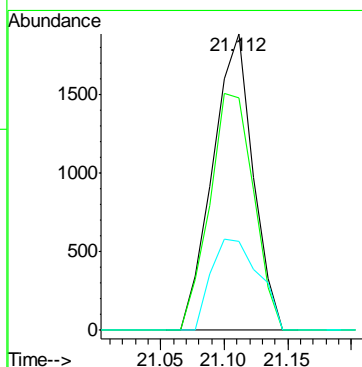
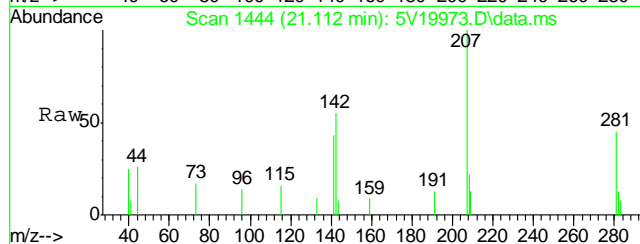
#91
Naphthalene
Concen: 1.78 ug/l
RT: 19.570 min Scan# 1309
Delta R.T. 0.012 min
Lab File: 5V19973.D
Acq: 13 Mar 2012 4:56 pm

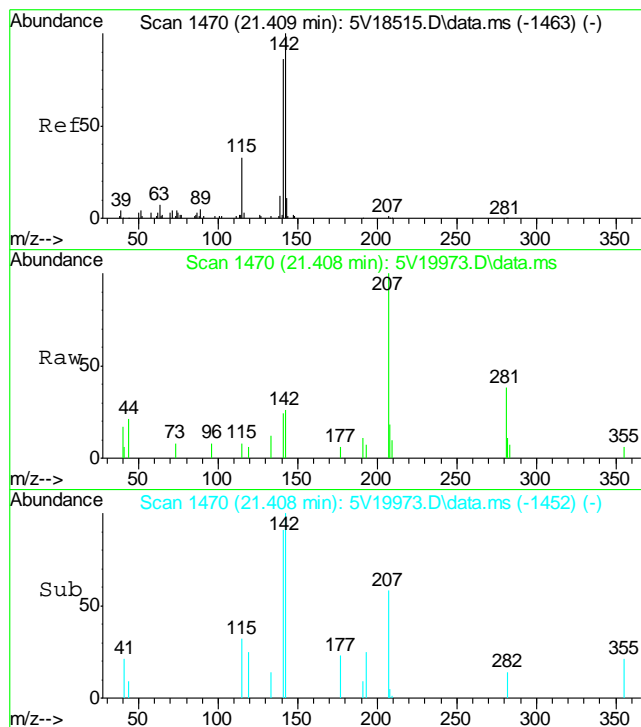
Tgt Ion:128 Resp: 9715



#94
2-Methylnaphthalene
Concen: 2.76 ug/l
RT: 21.112 min Scan# 1444
Delta R.T. 0.012 min
Lab File: 5V19973.D
Acq: 13 Mar 2012 4:56 pm

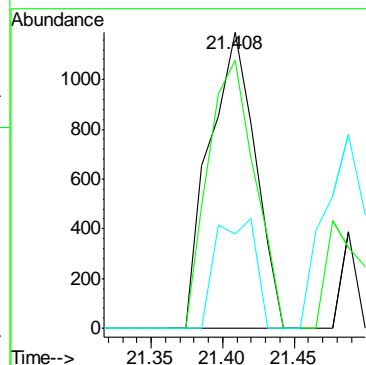
Tgt Ion:142 Resp: 4141
Ion Ratio Lower Upper
142 100
141 87.2 66.2 99.4
115 36.2 25.9 38.9





#95
1-Methylnaphthalene
Concen: 2.29 ug/l
RT: 21.408 min Scan# 1470
Delta R.T. 0.000 min
Lab File: 5V19973.D
Acq: 13 Mar 2012 4:56 pm

Tgt Ion:	142	Resp:	2648
Ion Ratio	Lower	Upper	
142	100		
141	92.3	68.9	103.3
115	32.0	27.3	40.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031312.S\
 Data File : 5V19974.D
 Acq On : 13 Mar 2012 5:28 pm
 Operator : KOROUSHV
 Sample : D32610-2
 Misc : MS3551,V5V1203,5.002,,100,5,1
 ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 14 10:09:51 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1186TVH1186.M
 Quant Title : 8260
 QLast Update : Fri Mar 02 14:22:16 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	184411	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	340125	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	525991	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	387702	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	44393	56.09	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	112.18%
61) Toluene-d8	13.850	98	857885	50.45	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	100.90%
69) 4-Bromofluorobenzene	16.043	95	385414	54.87	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	109.74%

Target Compounds

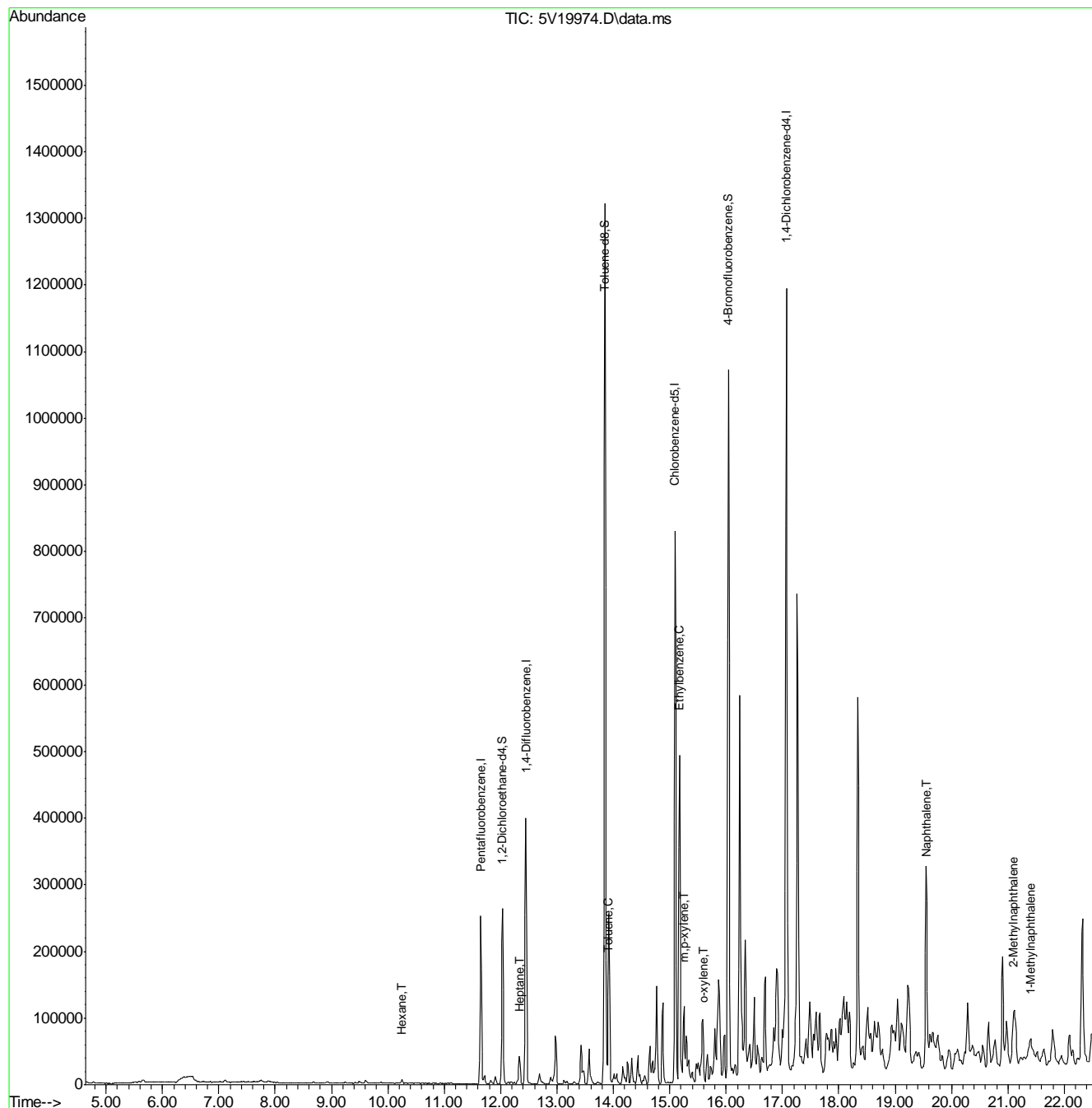
						Qvalue
41) Hexane	10.243	57	2880	1.16	ug/l	100
43) Heptane	12.332	43	14392	3.30	ug/l	85
62) Toluene	13.908	92	10456	0.81	ug/l	95
66) Ethylbenzene	15.175	91	7859	0.32	ug/l	100
72) m,p-xylene	15.255	106	32877	3.34	ug/l	95
73) o-xylene	15.597	106	5475	0.98	ug/l	95
91) Naphthalene	19.559	128	39167	3.46	ug/l	100
94) 2-Methylnaphthalene	21.100	142	50254	14.06	ug/l	92
95) 1-Methylnaphthalene	21.408	142	17552	5.22	ug/l #	71

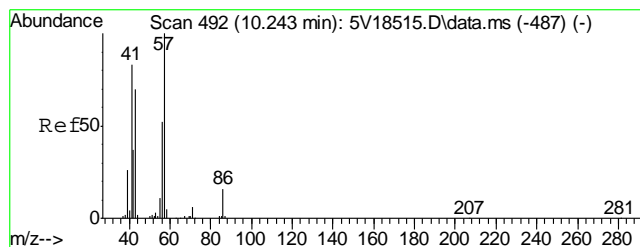
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031312.S\
Data File : 5V19974.D
Acq On : 13 Mar 2012 5:28 pm
Operator : KOROUSHV
Sample : D32610-2
Misc : MS3551,V5V1203,5.002,,100,5,1
ALS Vial : 16 Sample Multiplier: 1

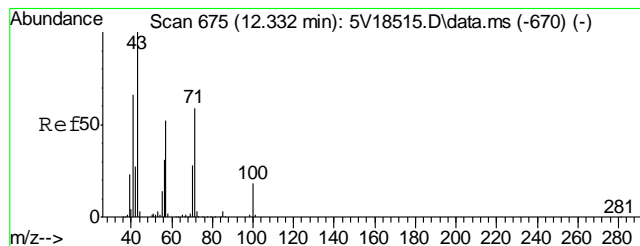
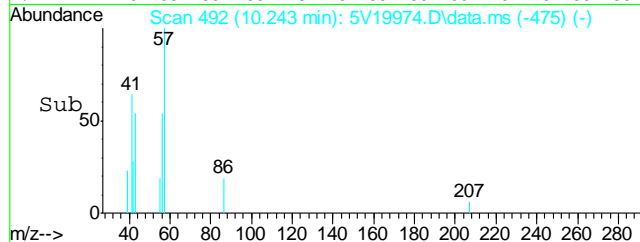
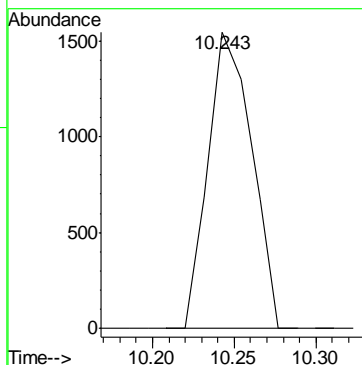
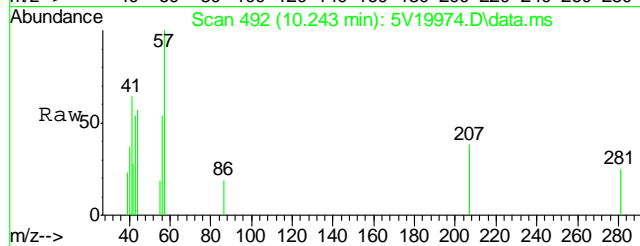
Quant Time: Mar 14 10:09:51 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1186TVH1186.M
Quant Title : 8260
QLast Update : Fri Mar 02 14:22:16 2012
Response via : Initial Calibration





#41
Hexane
Concen: 1.16 ug/l
RT: 10.243 min Scan# 492
Delta R.T. -0.011 min
Lab File: 5V19974.D
Acq: 13 Mar 2012 5:28 pm

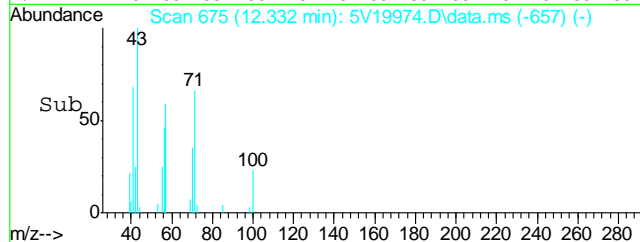
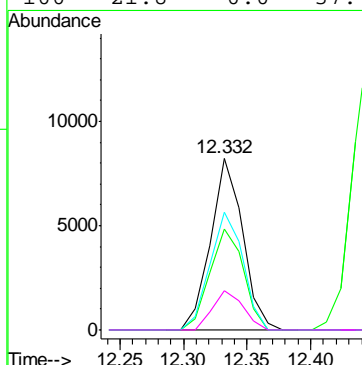
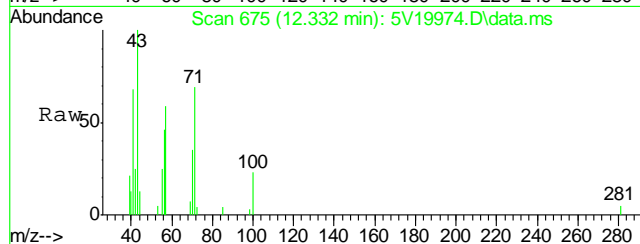
Tgt Ion: 57 Resp: 2880

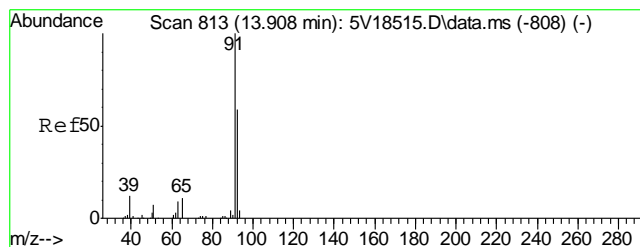


#43
Heptane
Concen: 3.30 ug/l
RT: 12.332 min Scan# 675
Delta R.T. 0.001 min
Lab File: 5V19974.D
Acq: 13 Mar 2012 5:28 pm

Tgt Ion: 43 Resp: 14392

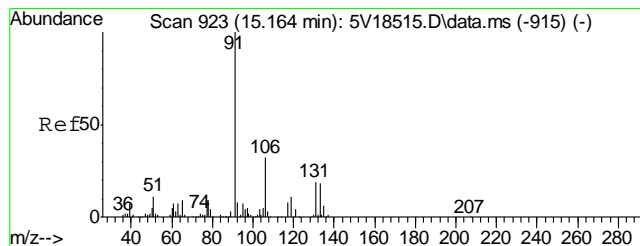
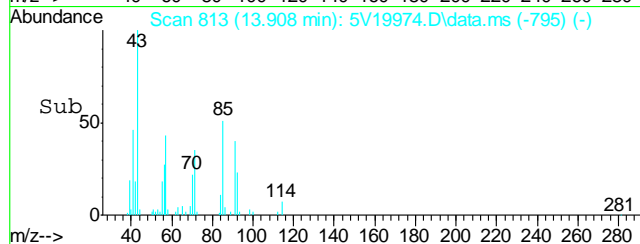
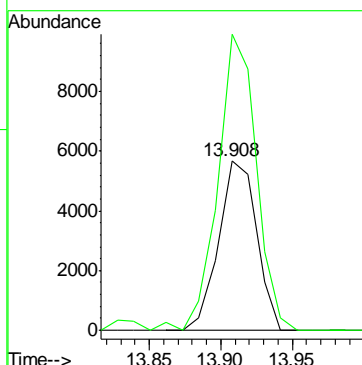
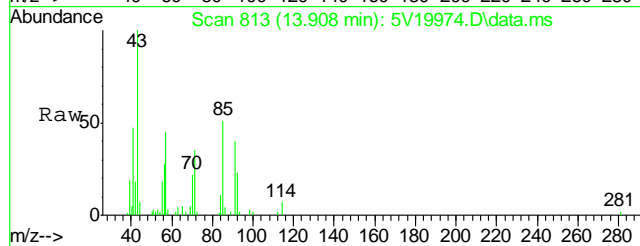
Ion	Ratio	Lower	Upper
43	100		
57	61.3	30.6	70.6
71	70.6	38.9	78.9
100	21.8	0.0	37.4





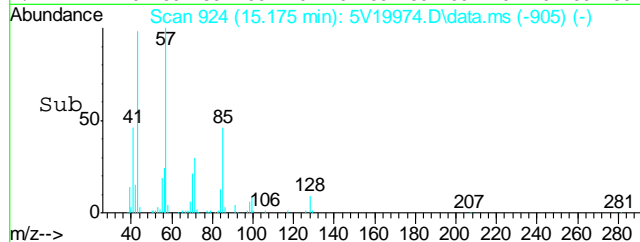
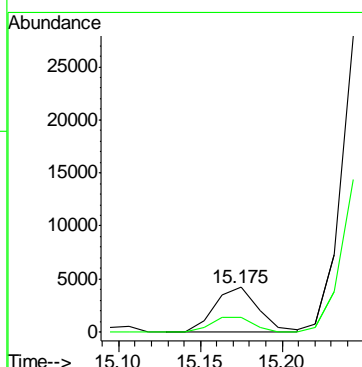
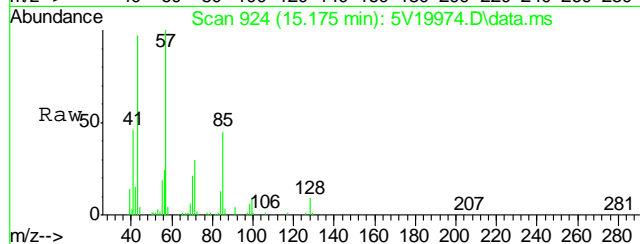
#62
Toluene
Concen: 0.81 ug/l
RT: 13.908 min Scan# 813
Delta R.T. 0.000 min
Lab File: 5V19974.D
Acq: 13 Mar 2012 5:28 pm

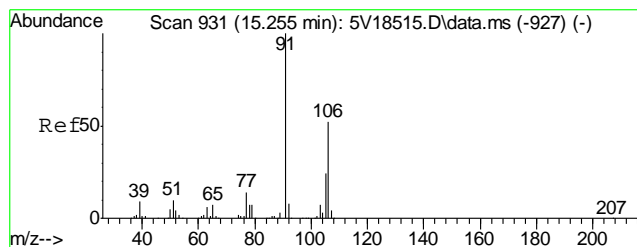
Tgt Ion: 92 Resp: 10456
Ion Ratio Lower Upper
92 100
91 176.4 149.8 189.8



#66
Ethylbenzene
Concen: 0.32 ug/l
RT: 15.175 min Scan# 924
Delta R.T. 0.012 min
Lab File: 5V19974.D
Acq: 13 Mar 2012 5:28 pm

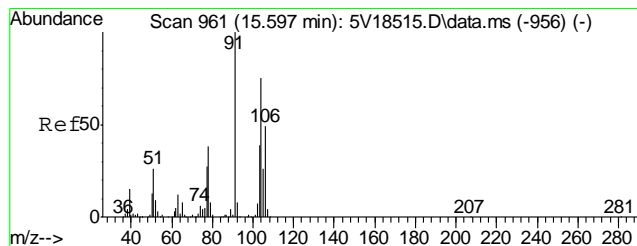
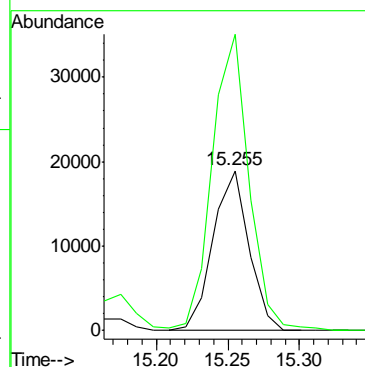
Tgt Ion: 91 Resp: 7859
Ion Ratio Lower Upper
91 100
106 31.8 11.7 51.7





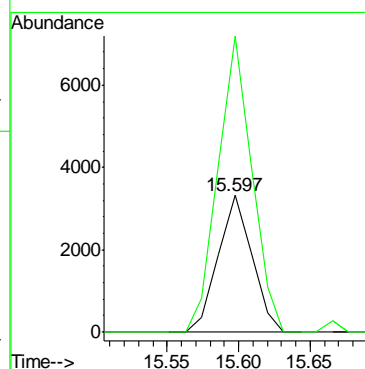
#72
m,p-xylene
Concen: 3.34 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.000 min
Lab File: 5V19974.D
Acq: 13 Mar 2012 5:28 pm

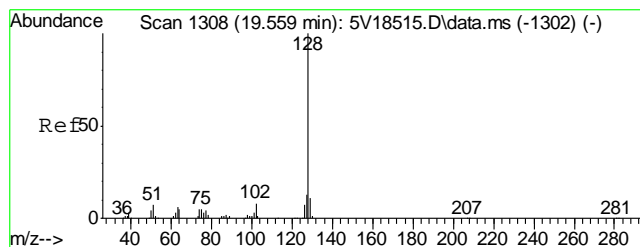
Tgt Ion:106 Resp: 32877
Ion Ratio Lower Upper
106 100
91 189.7 177.1 217.1



#73
o-xylene
Concen: 0.98 ug/l
RT: 15.597 min Scan# 961
Delta R.T. 0.000 min
Lab File: 5V19974.D
Acq: 13 Mar 2012 5:28 pm

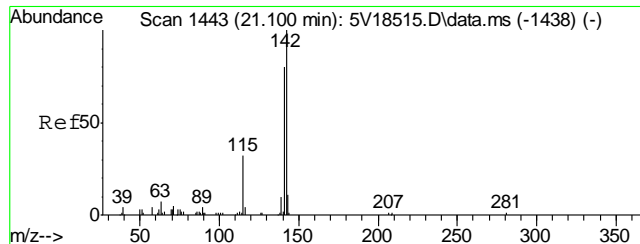
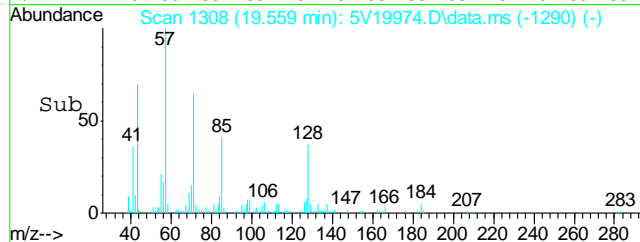
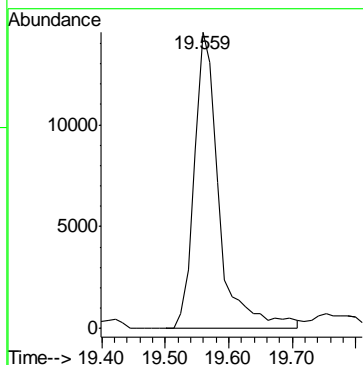
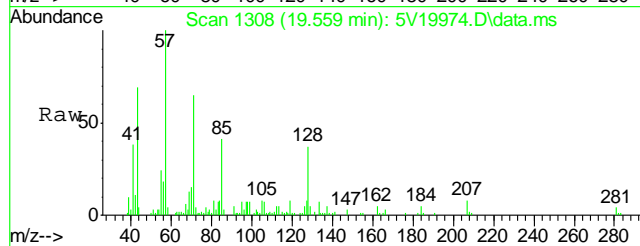
Tgt Ion:106 Resp: 5475
Ion Ratio Lower Upper
106 100
91 216.6 166.6 249.8





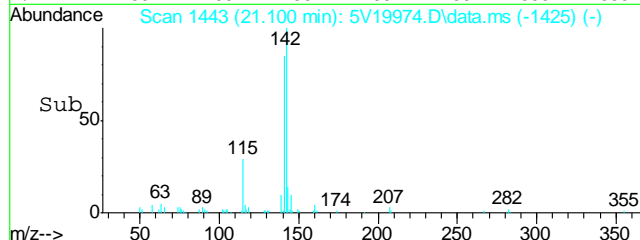
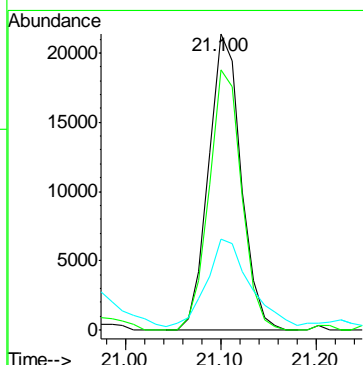
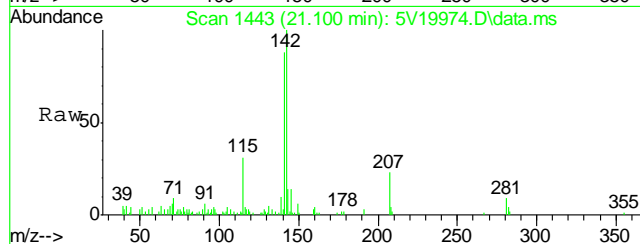
#91
Naphthalene
Concen: 3.46 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.001 min
Lab File: 5V19974.D
Acq: 13 Mar 2012 5:28 pm

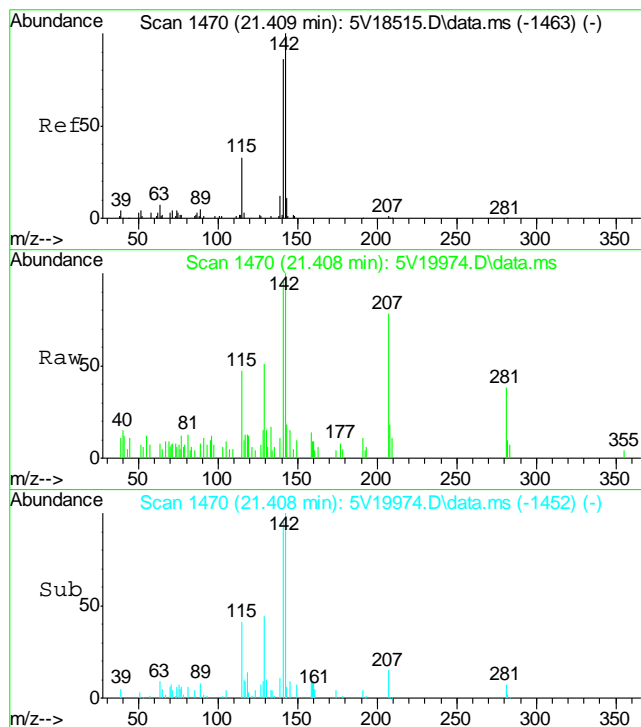
Tgt Ion:128 Resp: 39167



#94
2-Methylnaphthalene
Concen: 14.06 ug/l
RT: 21.100 min Scan# 1443
Delta R.T. 0.000 min
Lab File: 5V19974.D
Acq: 13 Mar 2012 5:28 pm

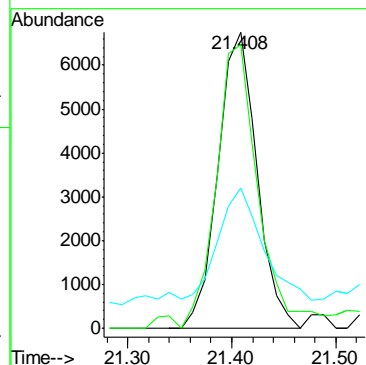
Tgt Ion:142 Resp: 50254
Ion Ratio Lower Upper
142 100
141 88.6 66.2 99.4
115 38.7 25.9 38.9





#95
 1-Methylnaphthalene
 Concen: 5.22 ug/l
 RT: 21.408 min Scan# 1470
 Delta R.T. 0.000 min
 Lab File: 5V19974.D
 Acq: 13 Mar 2012 5:28 pm

Tgt Ion:	142	Resp:	17552
Ion Ratio	Lower	Upper	
142	100		
141	107.6	68.9	103.3#
115	59.1	27.3	40.9#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031312.S\
Data File : 5V19961.D
Acq On : 13 Mar 2012 10:14 am
Operator : KOROUSHV
Sample : MB
Misc : MS3551,V5V1203,5.00,,100,5,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 14 09:51:19 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1186TVH1186.M
Quant Title : 8260
QLast Update : Fri Mar 02 14:22:16 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	192012	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	342802	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	507384	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	334611	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	47123	57.25	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	114.50%
61) Toluene-d8	13.850	98	857074	52.25	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	104.50%
69) 4-Bromofluorobenzene	16.043	95	335704	49.54	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	99.08%

Target Compounds

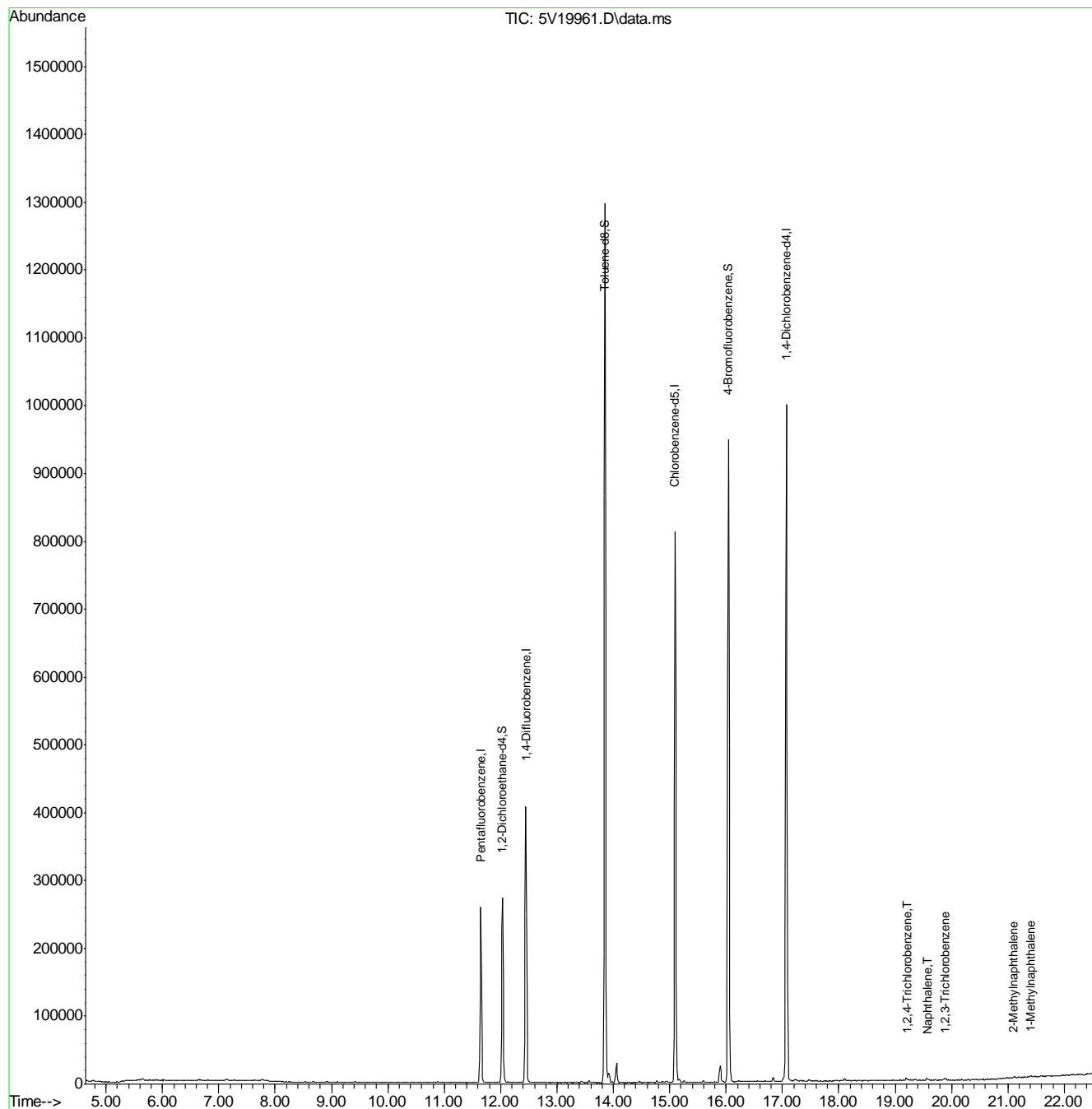
						Qvalue
90) 1,2,4-Trichlorobenzene	19.205	180	1996	0.83	ug/l #	80
91) Naphthalene	19.570	128	5625	1.59	ug/l	100
93) 1,2,3-Trichlorobenzene	19.879	180	2428	0.86	ug/l #	89
94) 2-Methylnaphthalene	21.100	142	1211	2.05	ug/l #	84
95) 1-Methylnaphthalene	21.397	142	1655	2.14	ug/l #	85

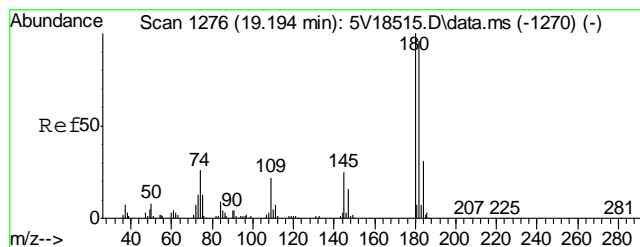
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031312.S\
Data File : 5V19961.D
Acq On : 13 Mar 2012 10:14 am
Operator : KOROUSHV
Sample : MB
Misc : MS3551,V5V1203,5.00,,100,5,1
ALS Vial : 3 Sample Multiplier: 1

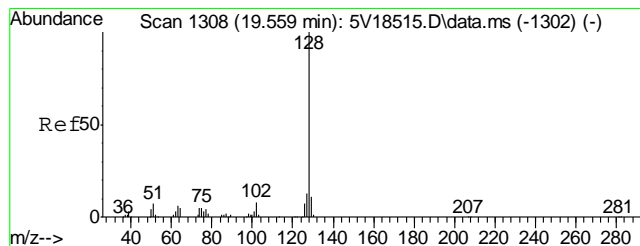
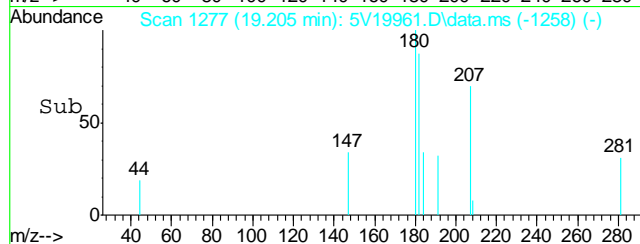
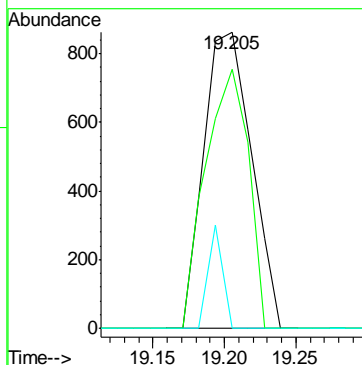
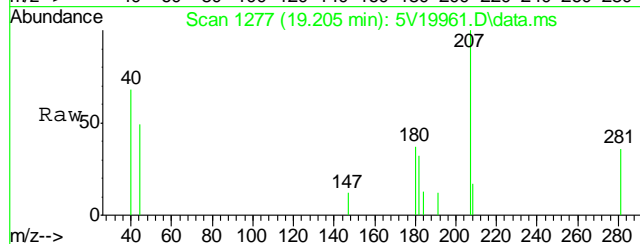
Quant Time: Mar 14 09:51:19 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1186TVH1186.M
Quant Title : 8260
QLast Update : Fri Mar 02 14:22:16 2012
Response via : Initial Calibration





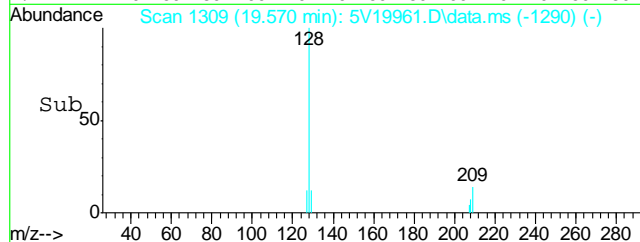
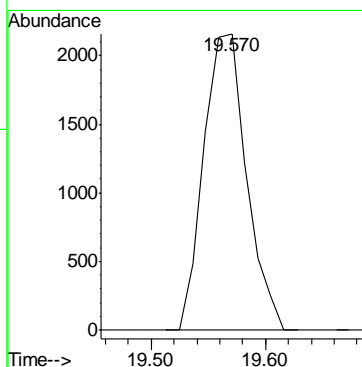
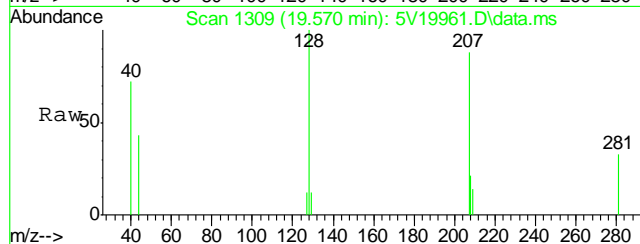
#90
1,2,4-Trichlorobenzene
Concen: 0.83 ug/l
RT: 19.205 min Scan# 1277
Delta R.T. 0.012 min
Lab File: 5V19961.D
Acq: 13 Mar 2012 10:14 am

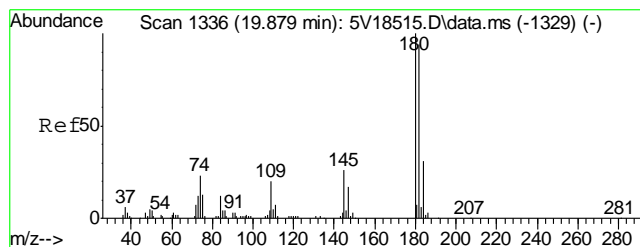
Tgt Ion	Ratio	Lower	Upper
180	100		
182	78.4	76.2	114.4
145	10.3	20.1	30.1#



#91
Naphthalene
Concen: 1.59 ug/l
RT: 19.570 min Scan# 1309
Delta R.T. 0.012 min
Lab File: 5V19961.D
Acq: 13 Mar 2012 10:14 am

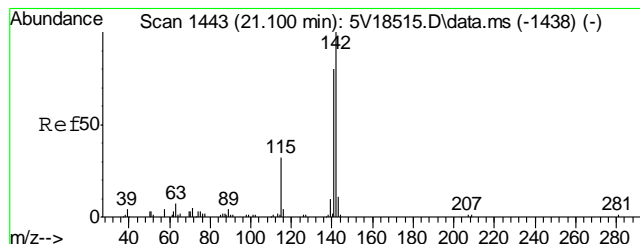
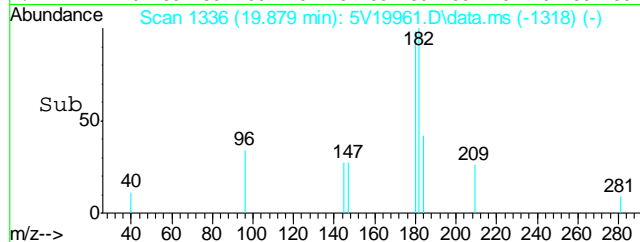
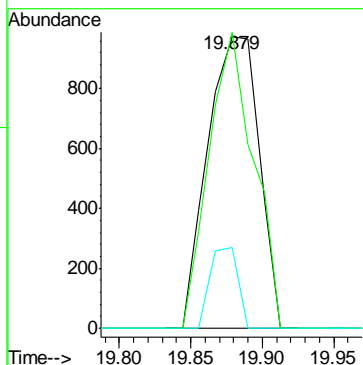
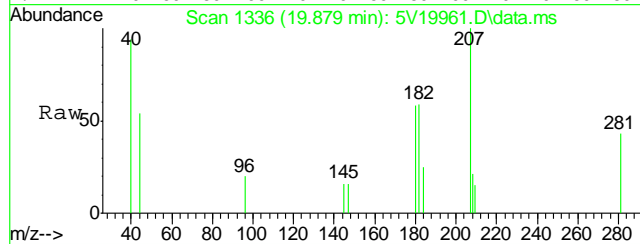
Tgt Ion:128 Resp: 5625





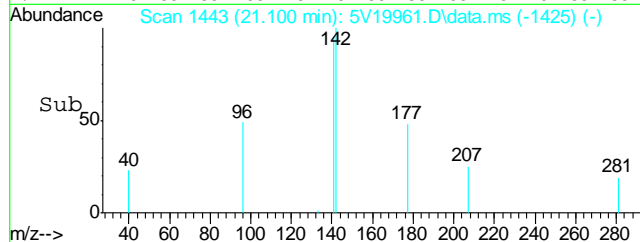
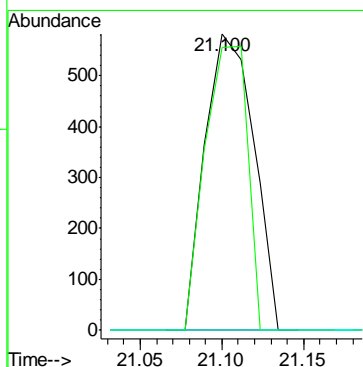
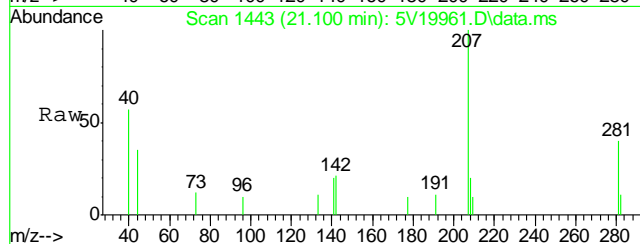
#93
1,2,3-Trichlorobenzene
Concen: 0.86 ug/l
RT: 19.879 min Scan# 1336
Delta R.T. 0.001 min
Lab File: 5V19961.D
Acq: 13 Mar 2012 10:14 am

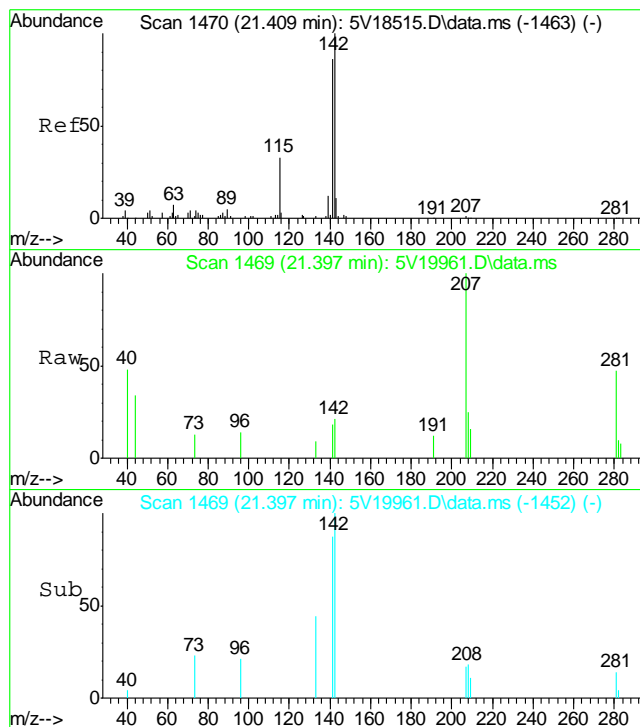
Tgt Ion:180	Resp:	2428
Ion Ratio	Lower	Upper
180	100	
182	88.0	76.0 114.0
145	14.9	21.4 32.0#



#94
2-Methylnaphthalene
Concen: 2.05 ug/l
RT: 21.100 min Scan# 1443
Delta R.T. 0.000 min
Lab File: 5V19961.D
Acq: 13 Mar 2012 10:14 am

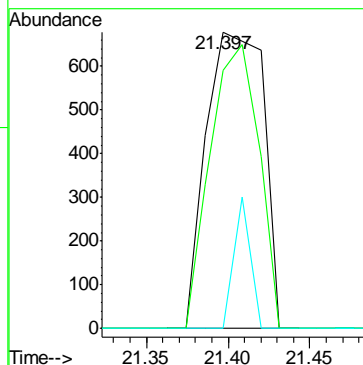
Tgt Ion:142	Resp:	1211
Ion Ratio	Lower	Upper
142	100	
141	83.0	66.2 99.4
115	0.0	25.9 38.9#





#95
1-Methylnaphthalene
Concen: 2.14 ug/l
RT: 21.397 min Scan# 1469
Delta R.T. -0.011 min
Lab File: 5V19961.D
Acq: 13 Mar 2012 10:14 am

Tgt Ion	Ratio	Lower	Upper
142	100		
141	81.1	68.9	103.3
115	12.5	27.3	40.9



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

Page 1 of 1

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5528-MB	3G08524.D	1	03/14/12	DC	03/13/12	OP5528	E3G348

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D32610-1

CAS No.	Compound	Result	RL	MDL	Units	Q
53-70-3	Dibenzo(a,h)anthracene	ND	8.3	4.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	78% 10-145%
321-60-8	2-Fluorobiphenyl	67% 10-130%
1718-51-0	Terphenyl-d14	79% 22-130%

Blank Spike Summary

Page 1 of 1

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5528-BS	3G08525.D	1	03/14/12	DC	03/13/12	OP5528	E3G348

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D32610-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
53-70-3	Dibenzo(a,h)anthracene	83.3	74.9	90	32-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	76%	10-145%
321-60-8	2-Fluorobiphenyl	66%	10-130%
1718-51-0	Terphenyl-d14	78%	22-130%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5528-MS	3G08527.D	1	03/14/12	DC	03/13/12	OP5528	E3G348
OP5528-MSD	3G08528.D	1	03/14/12	DC	03/13/12	OP5528	E3G348
D32609-1	3G08526.D	1	03/14/12	DC	03/13/12	OP5528	E3G348

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D32610-1

CAS No.	Compound	D32609-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
53-70-3	Dibenzo(a,h)anthracene	ND		88	74.1	84	108	123	37* a	10-144/30

CAS No.	Surrogate Recoveries	MS	MSD	D32609-1	Limits
4165-60-0	Nitrobenzene-d5	49%	70%	53%	10-145%
321-60-8	2-Fluorobiphenyl	40%	59%	48%	10-130%
1718-51-0	Terphenyl-d14	57%	77%	76%	22-130%

(a) Variability of recovery may be due to sample matrix/homogeneity.

GC/MS Semi-volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\031412\
 Data File : 3g08529.D
 Acq On : 14 Mar 2012 12:36 pm
 Operator : DONC
 Sample : D32610-1
 Misc : OP5528,E3G348,30.01,,,1,1
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 15 08:07:03 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G344.M
 Quant Title : PAHSIM BASE
 QLast Update : Mon Mar 12 09:19:25 2012
 Response via : Initial Calibration

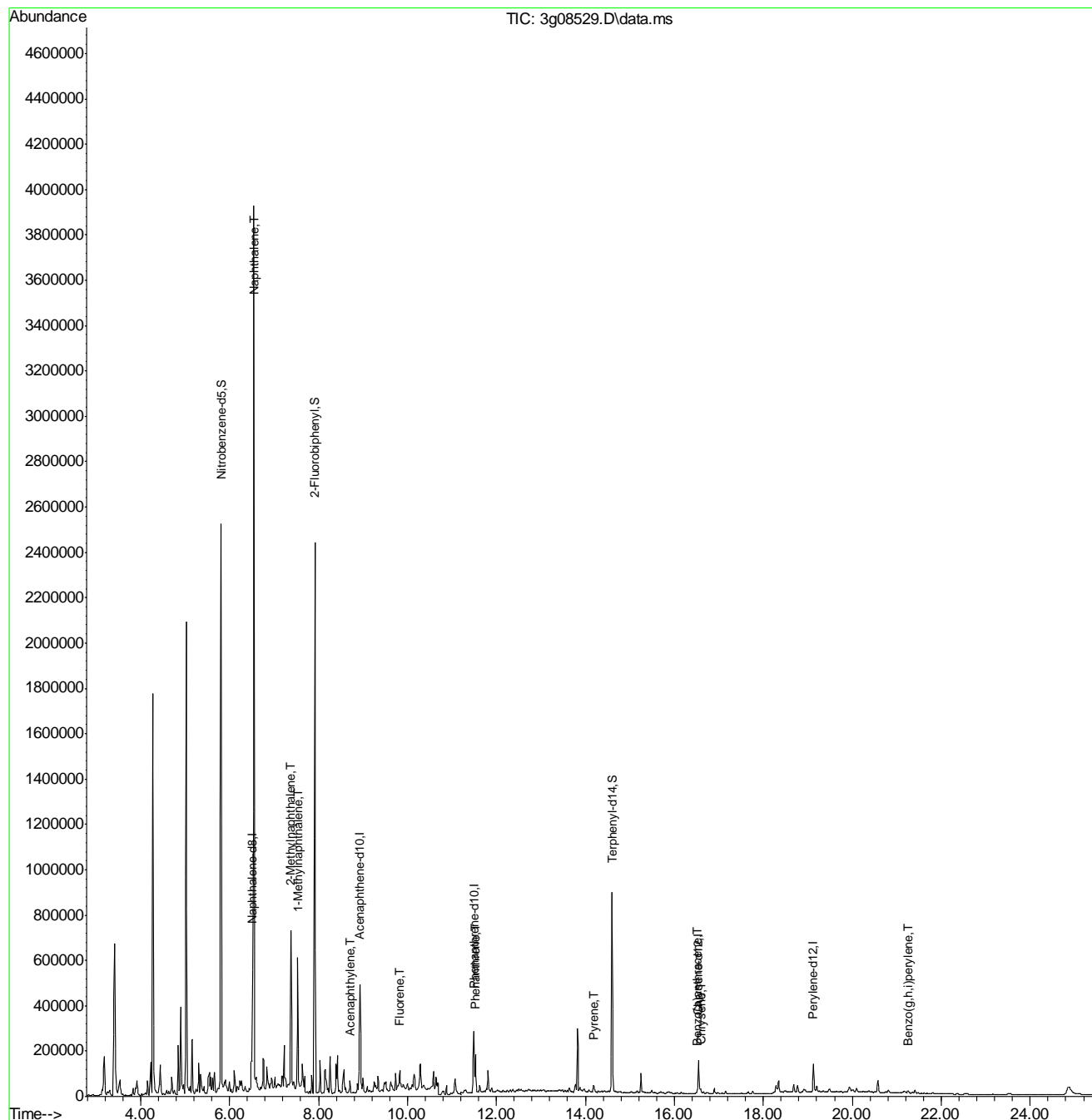
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.520	136	475755	4.00	ug/mL	-0.01
6) Acenaphthene-d10	8.933	164	243644	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.493	188	291425	4.00	ug/mL	0.00
18) Chrysene-d12	16.547	240	159280	4.00	ug/mL	0.00
23) Perylene-d12	19.121	264	164542	4.00	ug/mL	-0.01
System Monitoring Compounds						
2) Nitrobenzene-d5	5.809	82	1450137	22.37	ug/mL	0.00
Spiked Amount	50.000	Range	25 - 135	Recovery	=	44.74%
7) 2-Fluorobiphenyl	7.917	172	2036126	20.83	ug/mL	-0.01
Spiked Amount	50.000	Range	25 - 135	Recovery	=	41.66%
20) Terphenyl-d14	14.603	244	1011129	29.36	ug/mL	0.00
Spiked Amount	50.000	Range	25 - 135	Recovery	=	58.72%
Target Compounds						
					Qvalue	
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	6.545	128	3268309	20.44	ug/mL	99
8) 2-Methylnaphthalene	7.380	142	378134	4.28	ug/mL	99
9) 1-Methylnaphthalene	7.530	142	194394	2.29	ug/mL	98
10) Acenaphthylene	8.708	152	8149	0.07	ug/mL#	10
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	9.831	166	59118m	0.68	ug/mL	
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	11.532	178	198286	1.96	ug/mL	97
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	14.184	202	21077	0.29	ug/mL#	1
21) Benzo(a)anthracene	16.514	228	6386m	0.12	ug/mL	
22) Chrysene	16.593	228	21354	0.39	ug/mL	89
24) Benzo(b)fluoranthene	0.000		0	N.D.	d	
25) Benzo(k)fluoranthene	0.000		0	N.D.	d	
26) Benzo(a)pyrene	0.000		0	N.D.	d	
27) Indeno(1,2,3-cd)pyrene	0.000		0	N.D.	d	
28) Dibenz(a,h)anthracene	0.000		0	N.D.	d	
29) Benzo(g,h,i)perylene	21.256	276	5716	0.16	ug/mL	87

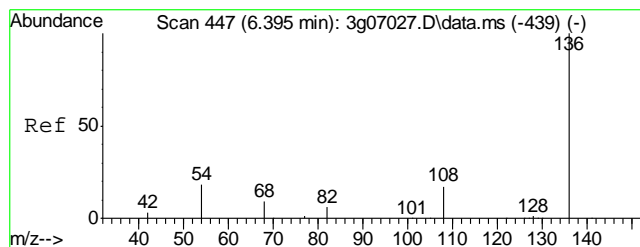
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\031412\
 Data File : 3g08529.D
 Acq On : 14 Mar 2012 12:36 pm
 Operator : DONC
 Sample : D32610-1
 Misc : OP5528,E3G348,30.01,,,1,1
 ALS Vial : 9 Sample Multiplier: 1

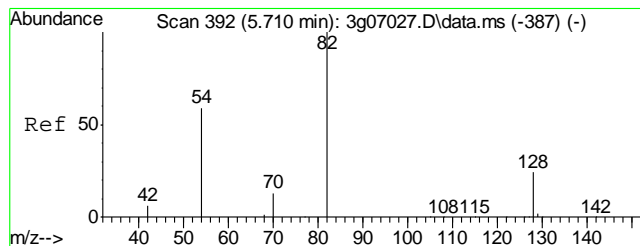
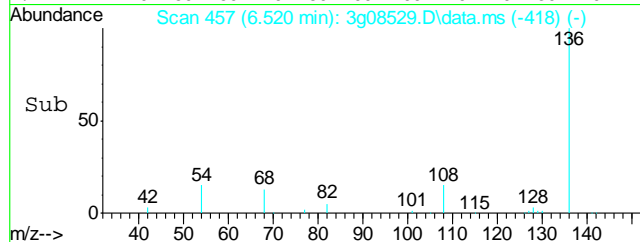
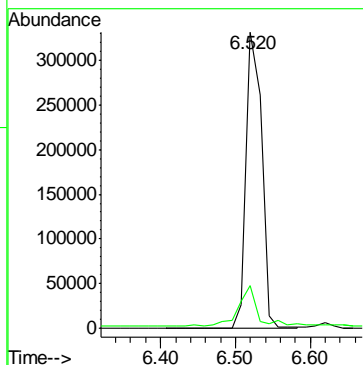
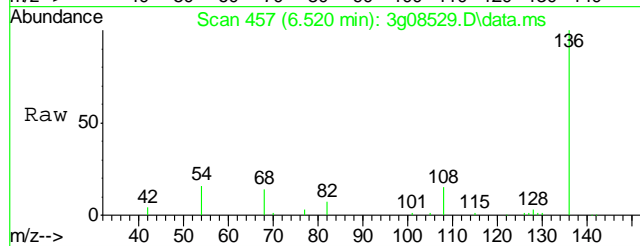
Quant Time: Mar 15 08:07:03 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G344.M
 Quant Title : PAHSIM BASE
 QLast Update : Mon Mar 12 09:19:25 2012
 Response via : Initial Calibration





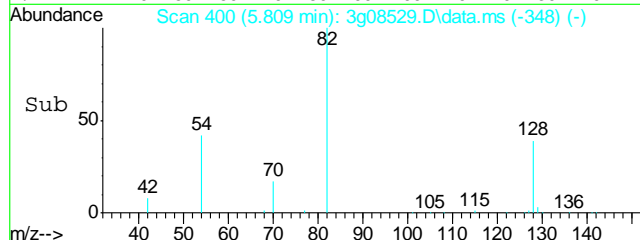
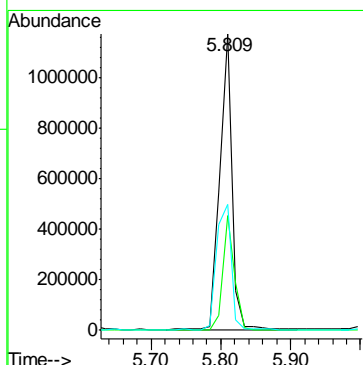
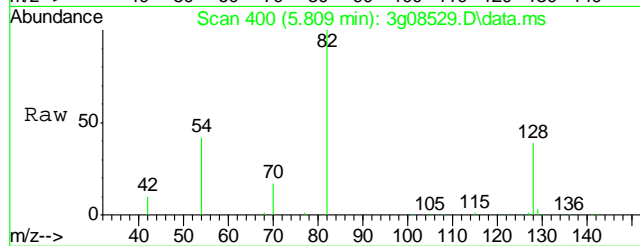
#1
Naphthalene-d8
Concen: 4.00 ug/mL
RT: 6.520 min Scan# 457
Delta R.T. -0.013 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

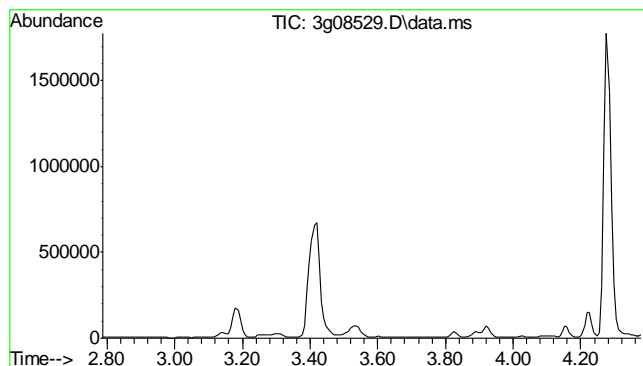
Tgt Ion: 136 Resp: 475755
Ion Ratio Lower Upper
136 100
68 17.1 0.0 32.2



#2
Nitrobenzene-d5
Concen: 22.37 ug/mL
RT: 5.809 min Scan# 400
Delta R.T. -0.000 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

Tgt Ion: 82 Resp: 1450137
Ion Ratio Lower Upper
82 100
128 36.8 16.8 56.8
54 51.2 27.0 67.0

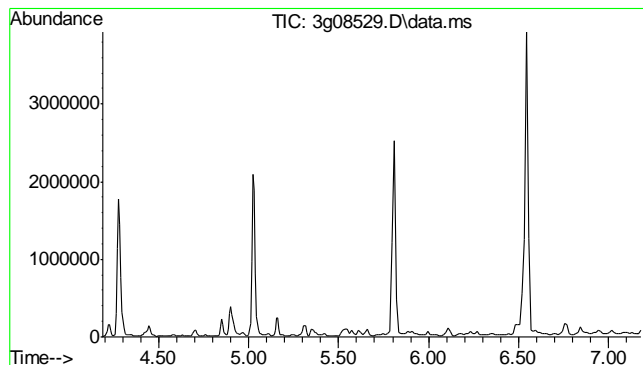
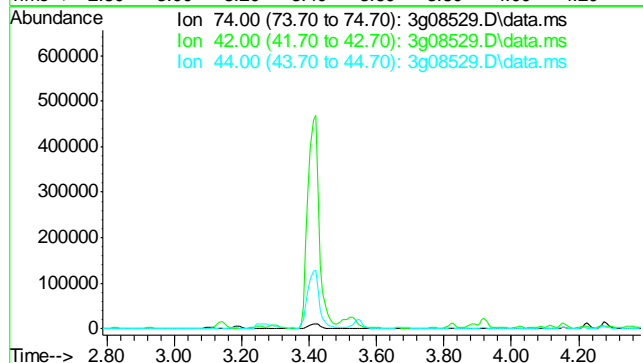




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.88 min

Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

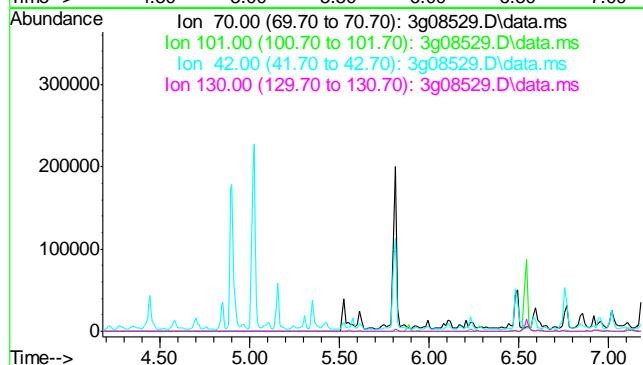
Tgt Ion	Exp Ratio
74	100
42	58.8
44	4.0

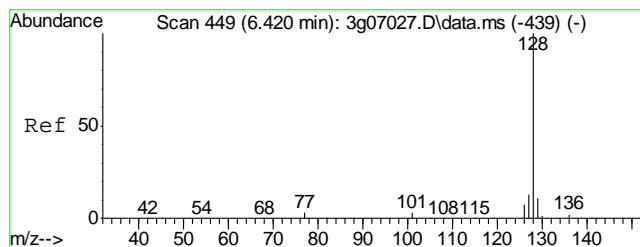


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.68 min

Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

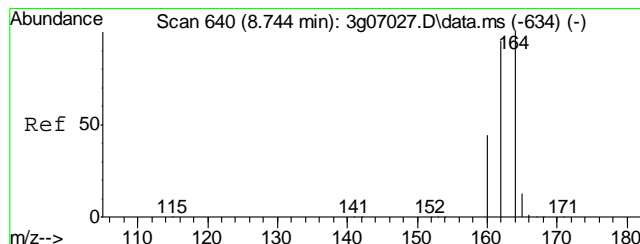
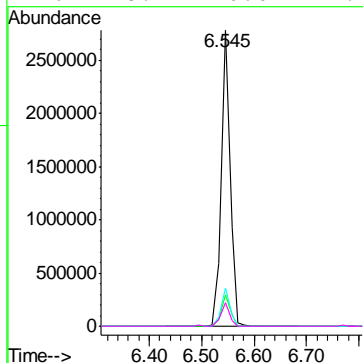
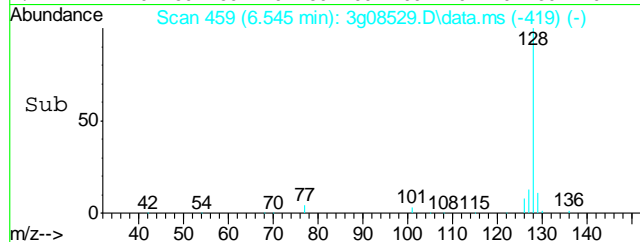
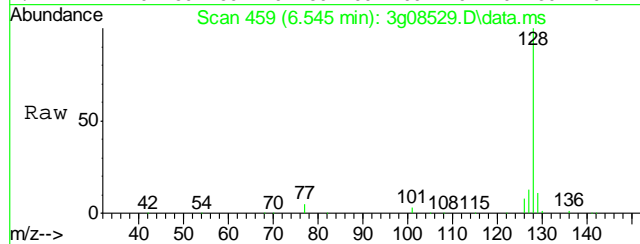
Tgt Ion	Exp Ratio
70	100
101	11.0
42	49.0
130	18.8





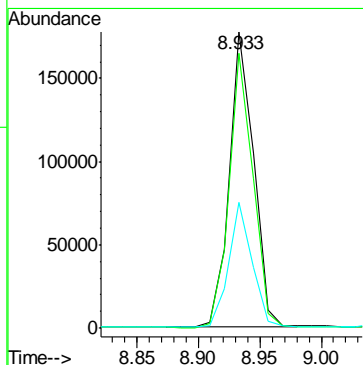
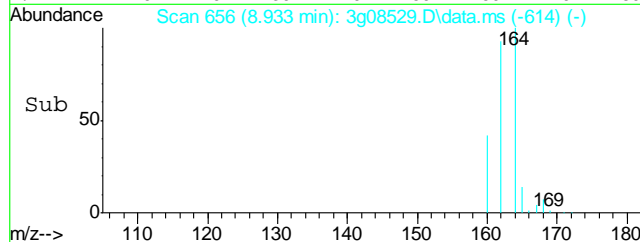
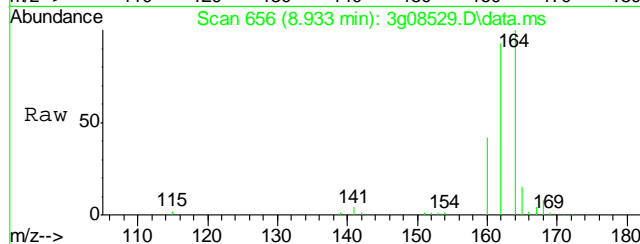
#5
Naphthalene
Concen: 20.44 ug/mL
RT: 6.545 min Scan# 459
Delta R.T. -0.000 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

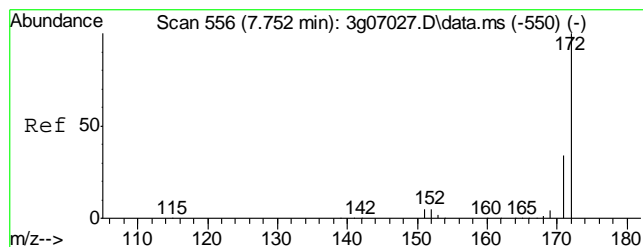
Tgt Ion:	128	Resp:	3268309
Ion Ratio	Lower	Upper	
128	100		
129	10.8	0.0	30.9
127	13.0	0.0	32.4
126	8.2	0.0	27.6



#6
Acenaphthene-d10
Concen: 4.00 ug/mL
RT: 8.933 min Scan# 656
Delta R.T. -0.000 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

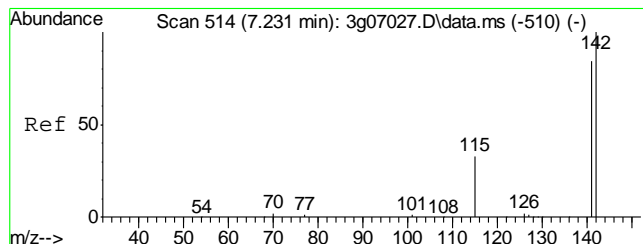
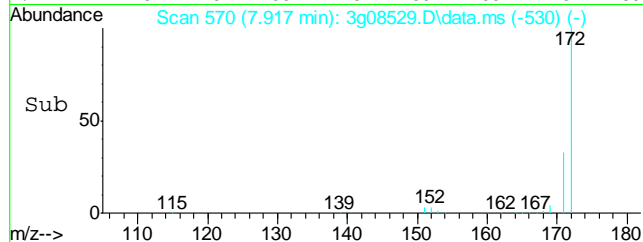
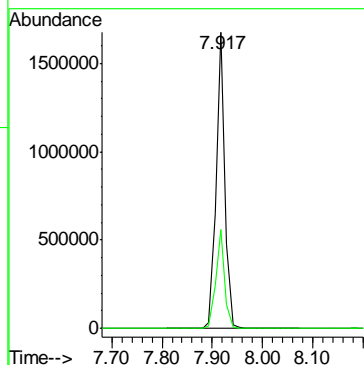
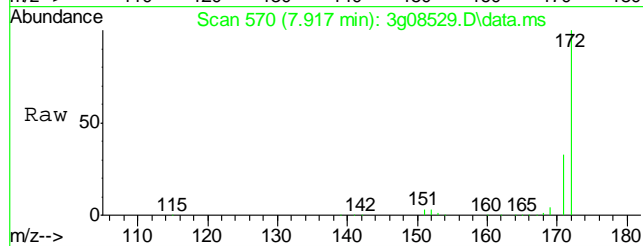
Tgt Ion:	164	Resp:	243644
Ion Ratio	Lower	Upper	
164	100		
162	91.3	72.9	112.9
160	40.8	22.1	62.1





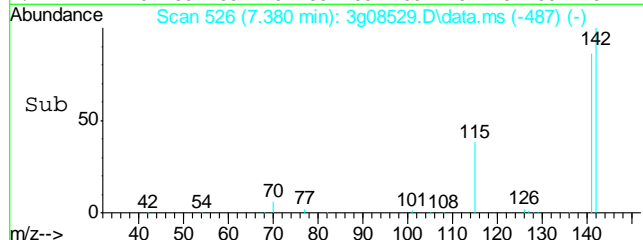
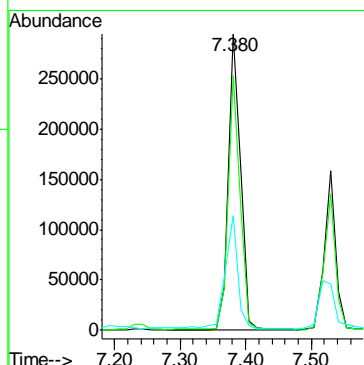
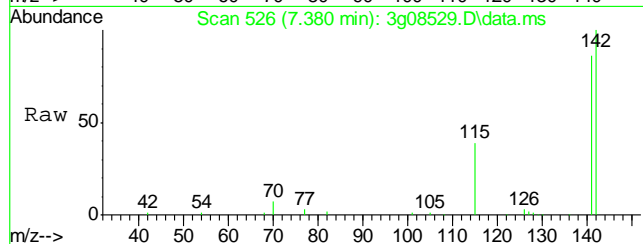
#7
2-Fluorobiphenyl
Concen: 20.83 ug/mL
RT: 7.917 min Scan# 570
Delta R.T. -0.012 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

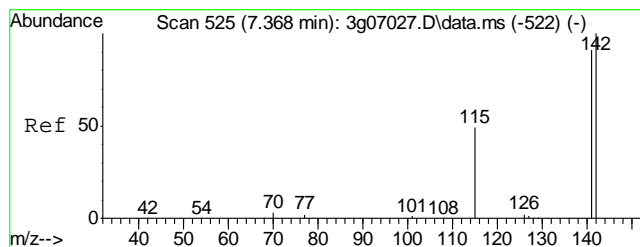
Tgt Ion	Ratio	Lower	Upper
172	100		
171	33.6	12.9	52.9



#8
2-Methylnaphthalene
Concen: 4.28 ug/mL
RT: 7.380 min Scan# 526
Delta R.T. -0.013 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

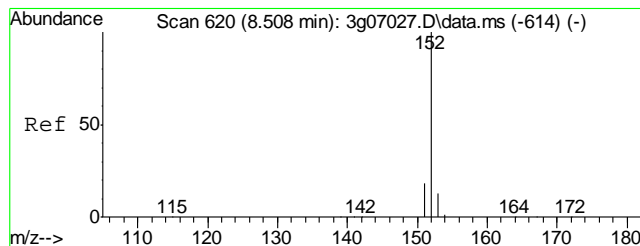
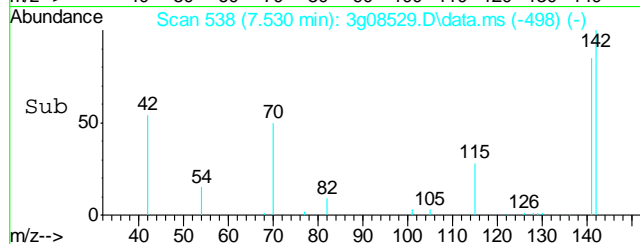
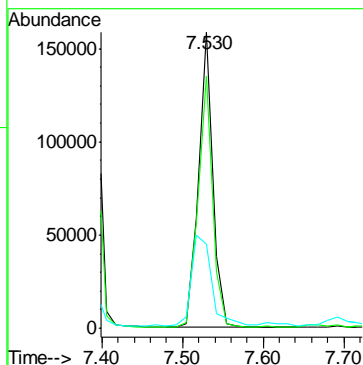
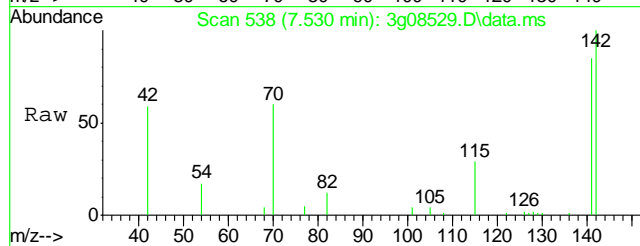
Tgt Ion	Ratio	Lower	Upper
142	100		
141	83.6	63.6	103.6
115	39.7	17.0	57.0





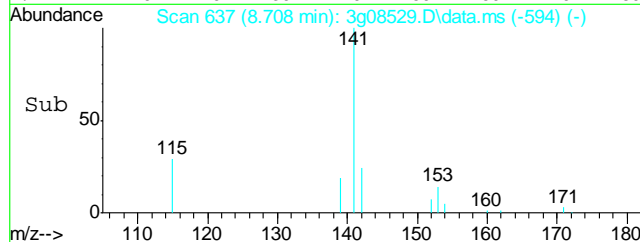
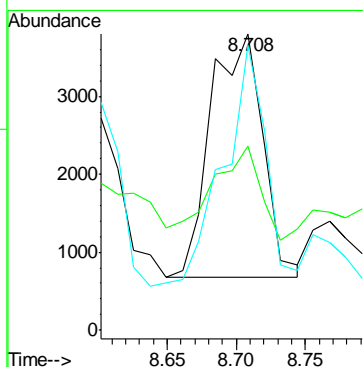
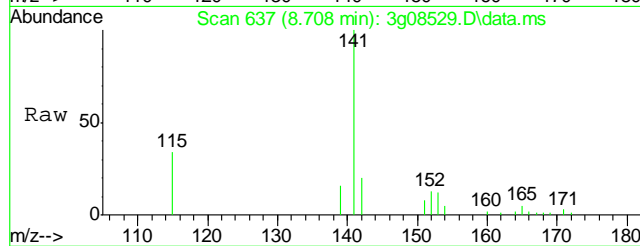
#9
1-Methylnaphthalene
Concen: 2.29 ug/mL
RT: 7.530 min Scan# 538
Delta R.T. -0.000 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

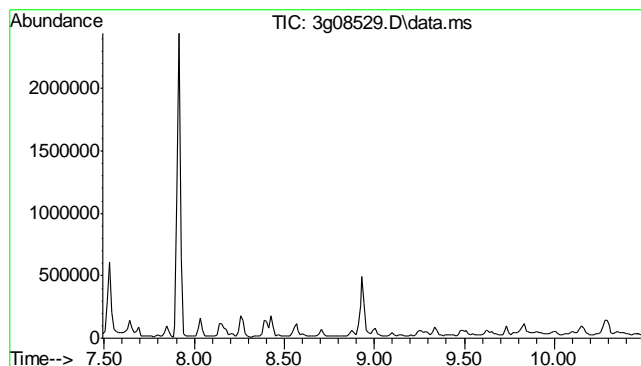
Tgt Ion	Ratio	Lower	Upper
142	100		
141	86.5	66.9	106.9
115	43.3	19.7	59.7



#10
Acenaphthylene
Concen: 0.07 ug/mL
RT: 8.708 min Scan# 637
Delta R.T. 0.012 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

Tgt Ion	Ratio	Lower	Upper
152	100		
151	34.8	0.0	38.9
153	80.7	0.0	32.9

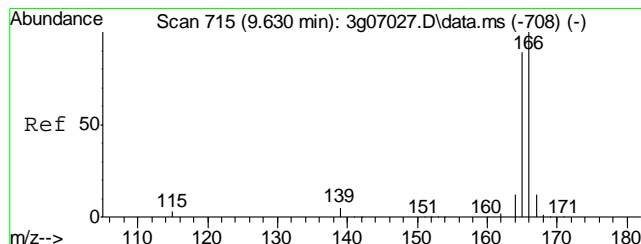
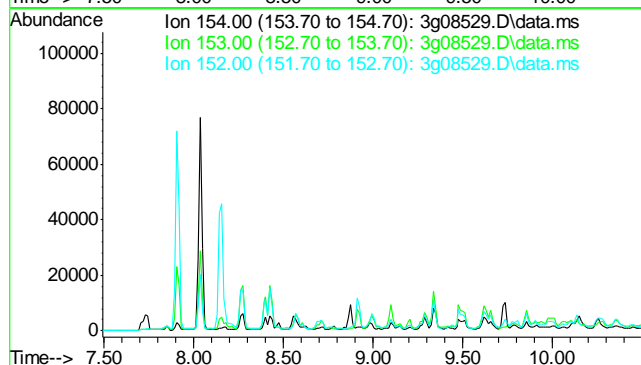




#11
 Acenaphthene
 Concen: N.D. ug/mL
 Expected RT: 8.99 min

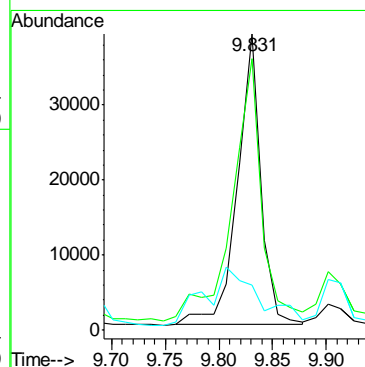
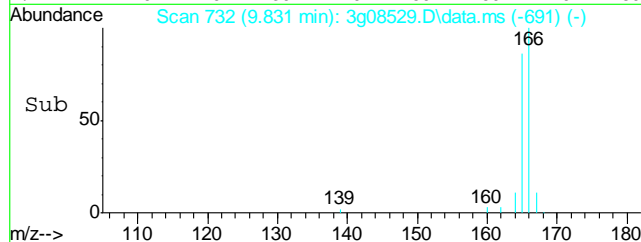
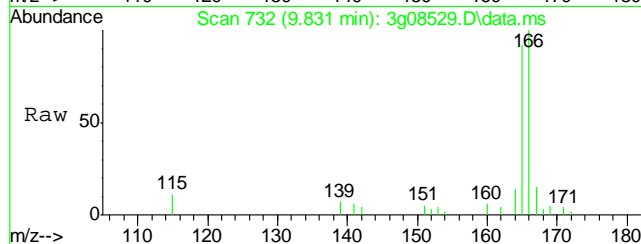
 Lab File: 3g08529.D
 Acq: 14 Mar 12 12:36 pm

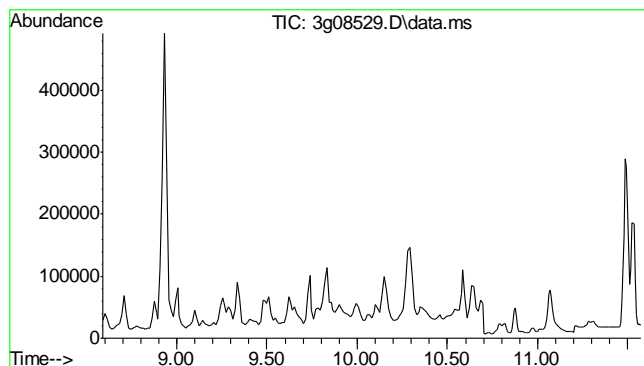
Tgt Ion: 154
 Sig Exp Ratio
 154 100
 153 104.5
 152 50.0



#12
 Fluorene
 Concen: 0.68 ug/mL m
 RT: 9.831 min Scan# 732
 Delta R.T. -0.012 min
 Lab File: 3g08529.D
 Acq: 14 Mar 12 12:36 pm

Tgt Ion: 166 Resp: 59118
 Ion Ratio Lower Upper
 166 100
 165 19.3 71.4 111.4#
 167 5.0 0.0 33.2

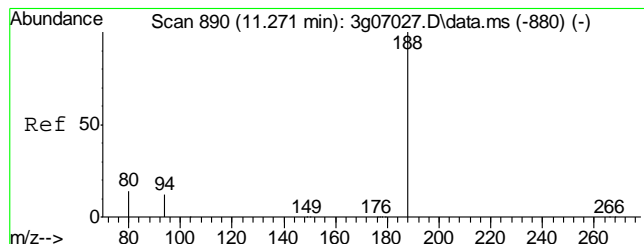
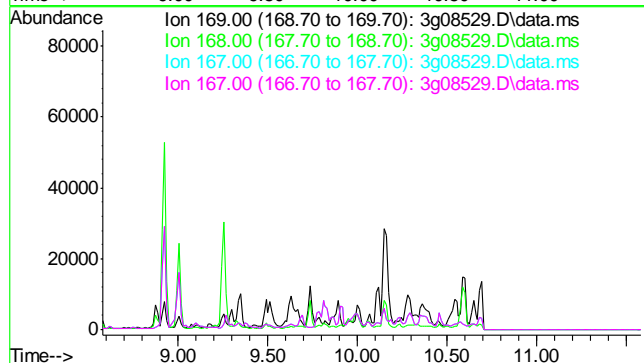




#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 10.08 min

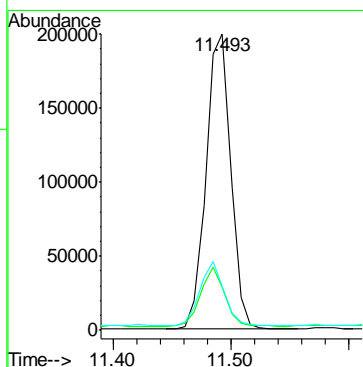
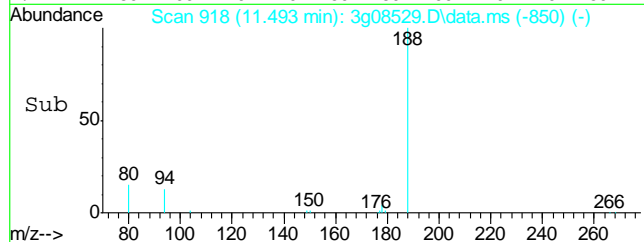
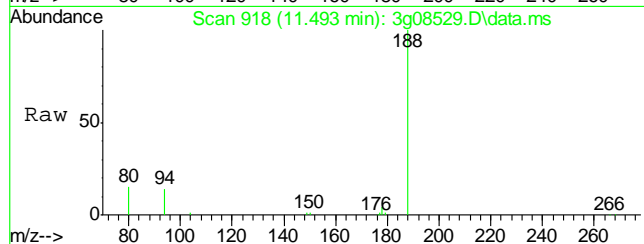
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

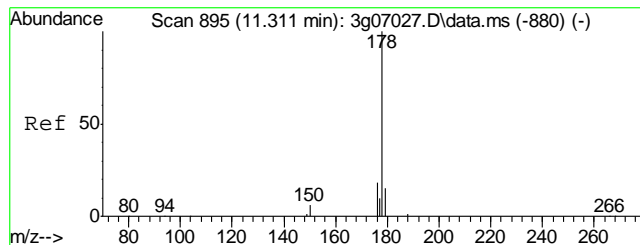
Tgt Ion	Exp Ratio
169	100
168	61.3
167	33.2
167	33.2



#14
Phenanthrene-d10
Concen: 4.00 ug/mL
RT: 11.493 min Scan# 918
Delta R.T. -0.000 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

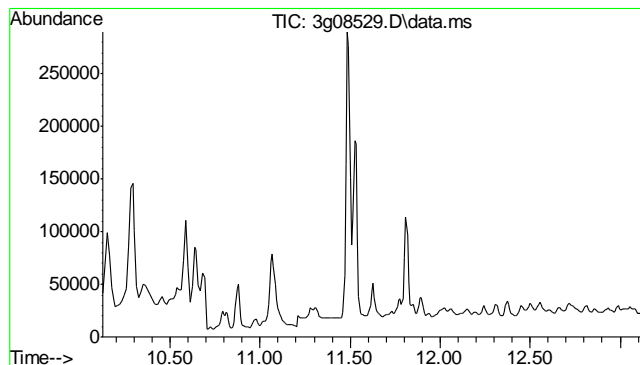
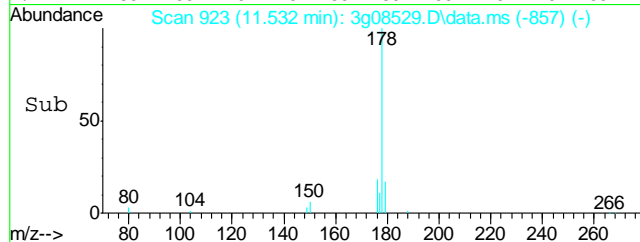
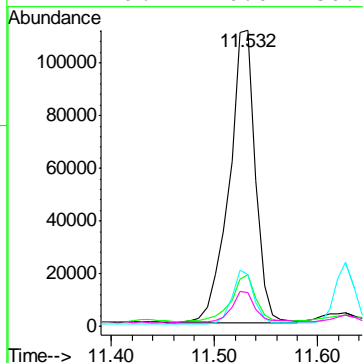
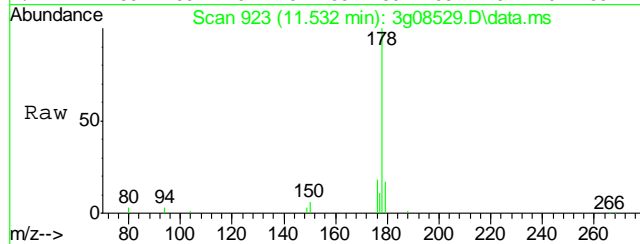
Tgt Ion	Ratio	Lower	Upper
188	100		
94	19.1	1.7	41.7
80	21.1	2.2	42.2





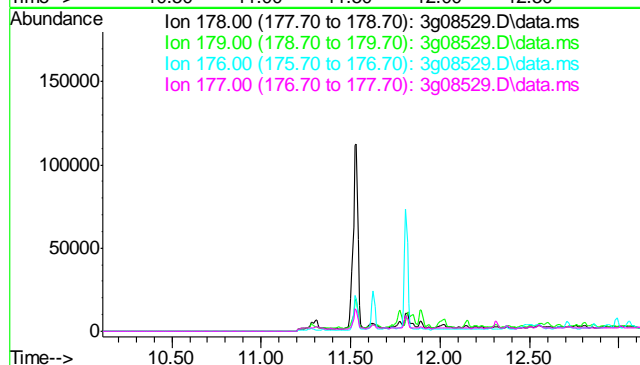
#15
Phenanthrene
Concen: 1.96 ug/mL
RT: 11.532 min Scan# 923
Delta R.T. -0.008 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

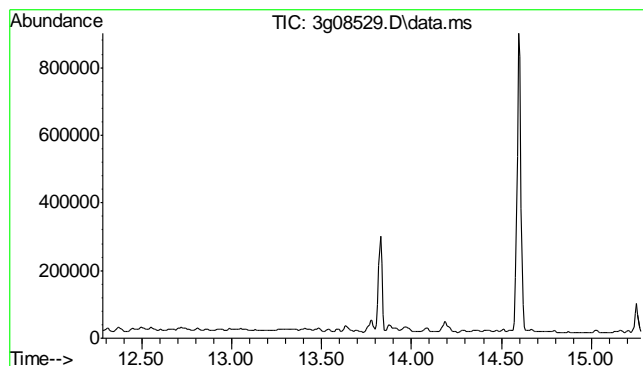
Tgt Ion:	178	Resp:	198286
Ion Ratio	Lower	Upper	
178	100		
179	15.2	0.0	35.1
176	15.6	0.0	38.5
177	9.1	0.0	30.2



#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 11.62 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

Tgt Ion:	178
Sig	Exp Ratio
178	100
179	15.0
176	17.7
177	8.7

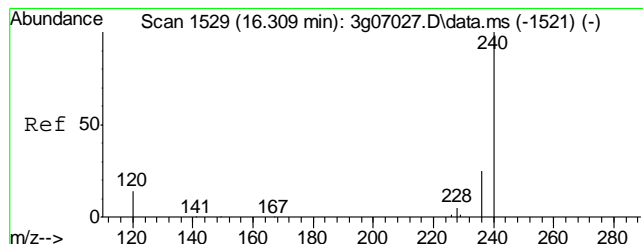
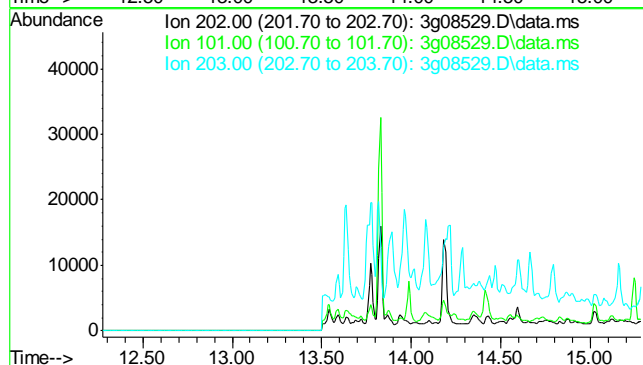




#17
 Fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 13.78 min

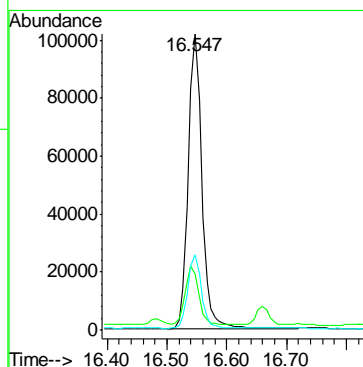
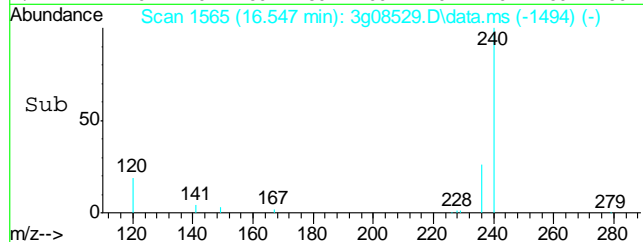
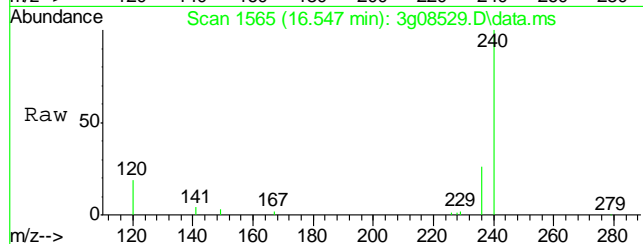
Lab File: 3g08529.D
 Acq: 14 Mar 12 12:36 pm

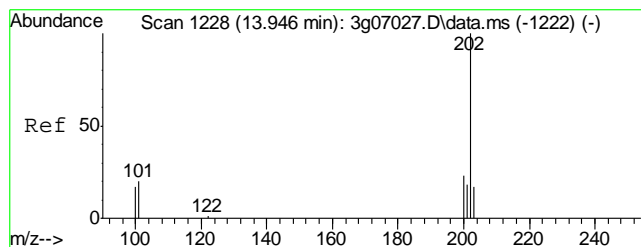
Tgt Ion: 202
 Sig Exp Ratio
 202 100
 101 23.2
 203 17.2



#18
 Chrysene-d12
 Concen: 4.00 ug/mL
 RT: 16.547 min Scan# 1565
 Delta R.T. -0.007 min
 Lab File: 3g08529.D
 Acq: 14 Mar 12 12:36 pm

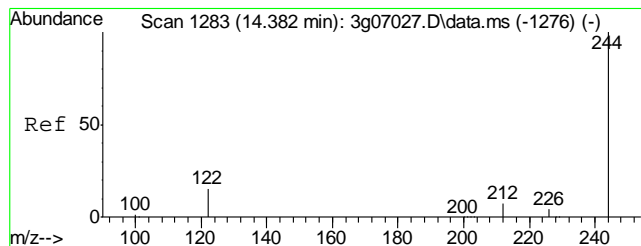
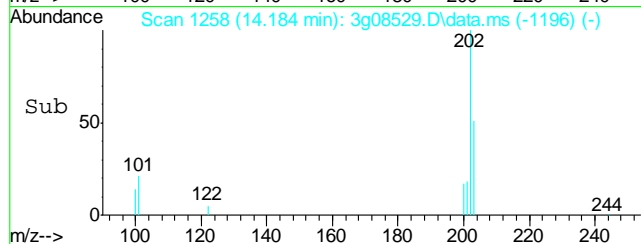
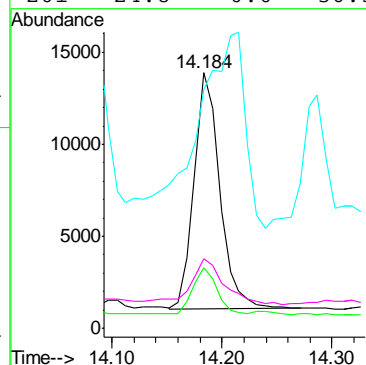
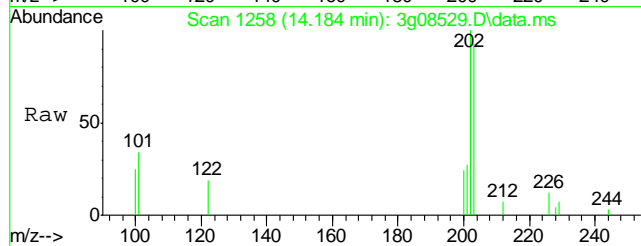
Tgt Ion: 240 Resp: 159280
 Ion Ratio Lower Upper
 240 100
 120 19.3 4.4 44.4
 236 24.7 5.0 45.0





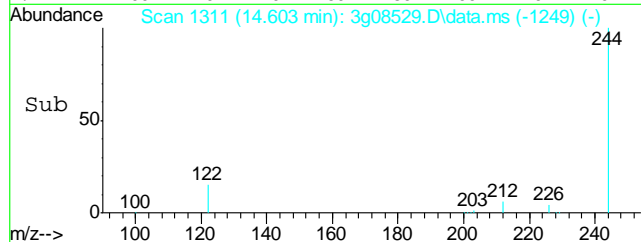
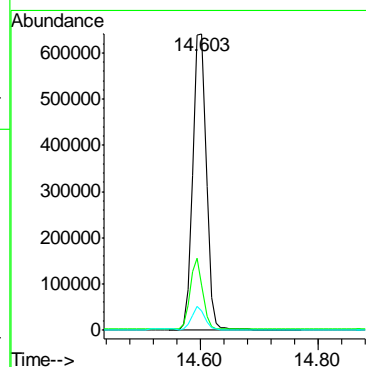
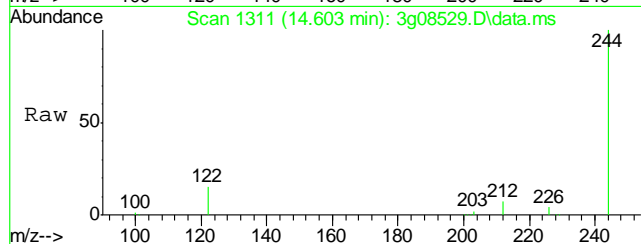
#19
Pyrene
Concen: 0.29 ug/mL
RT: 14.184 min Scan# 1258
Delta R.T. -0.008 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

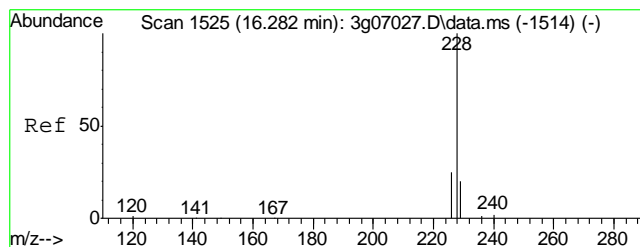
Tgt Ion:	202	Resp:	21077
Ion Ratio	Lower	Upper	
202	100		
200	0.0	0.1	40.1#
203	157.5	0.0	37.8#
201	24.8	0.0	36.5



#20
Terphenyl-d14
Concen: 29.36 ug/mL
RT: 14.603 min Scan# 1311
Delta R.T. -0.008 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

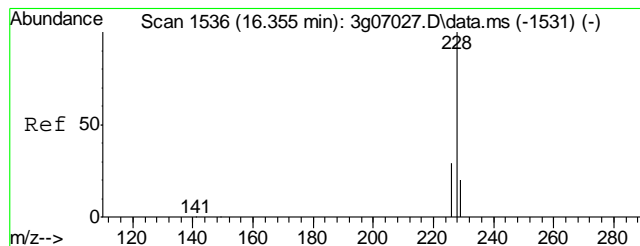
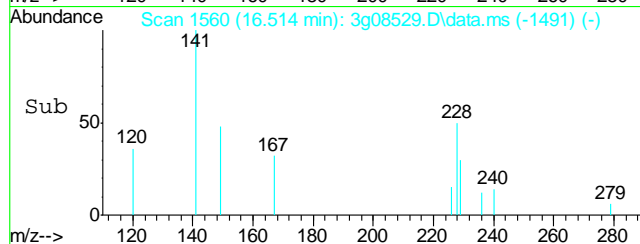
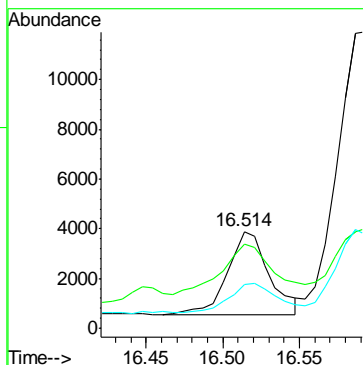
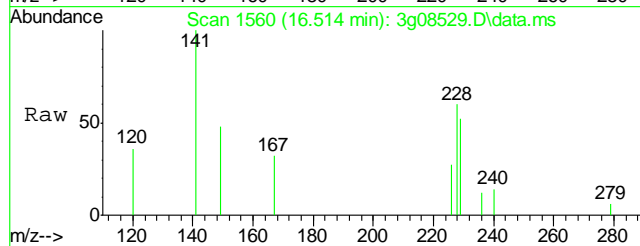
Tgt Ion:	244	Resp:	1011129
Ion Ratio	Lower	Upper	
244	100		
122	22.6	4.9	44.9
212	7.3	0.0	27.3





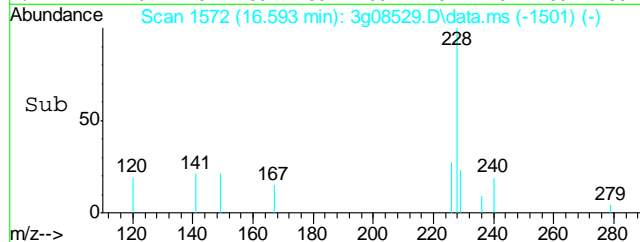
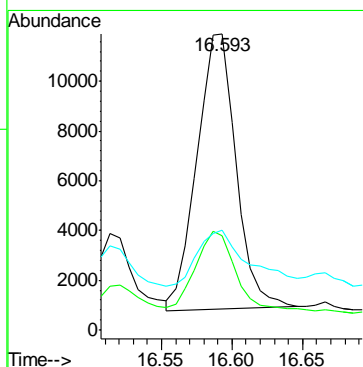
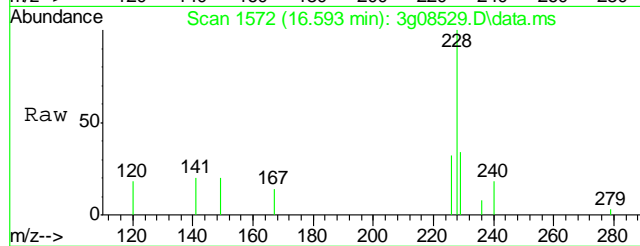
#21
Benzo(a)anthracene
Concen: 0.12 ug/mL m
RT: 16.514 min Scan# 1560
Delta R.T. -0.013 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

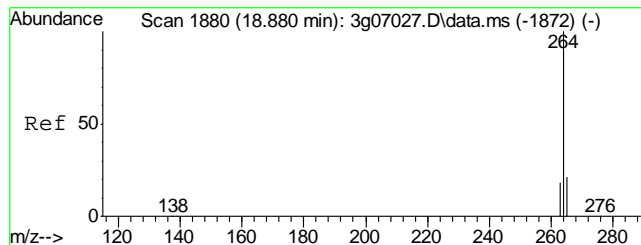
Tgt Ion: 228 Resp: 6386
Ion Ratio Lower Upper
228 100
229 91.6 0.0 39.6#
226 107.2 5.7 45.7#



#22
Chrysene
Concen: 0.39 ug/mL
RT: 16.593 min Scan# 1572
Delta R.T. -0.013 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

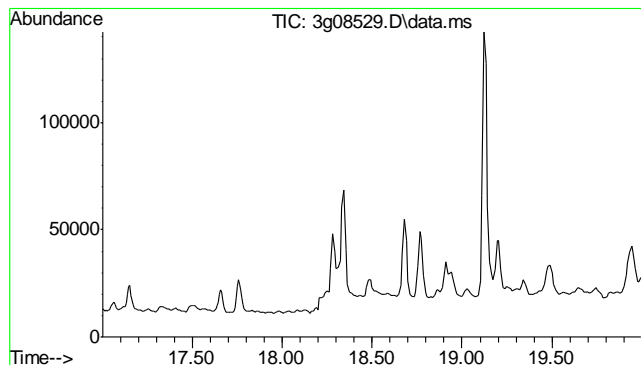
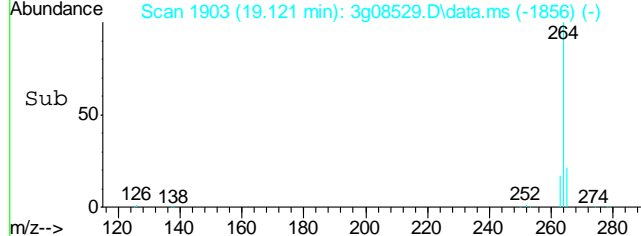
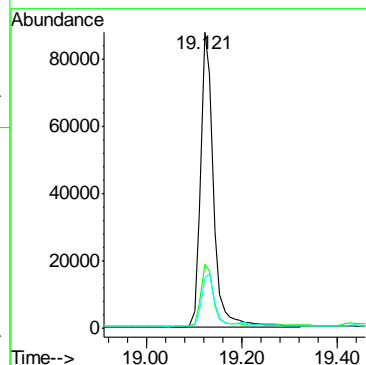
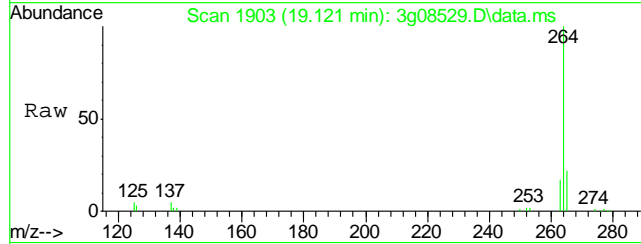
Tgt Ion: 228 Resp: 21354
Ion Ratio Lower Upper
228 100
226 32.1 8.7 48.7
229 27.4 0.0 39.4





#23
Perylene-d12
Concen: 4.00 ug/mL
RT: 19.121 min Scan# 1903
Delta R.T. -0.011 min
Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

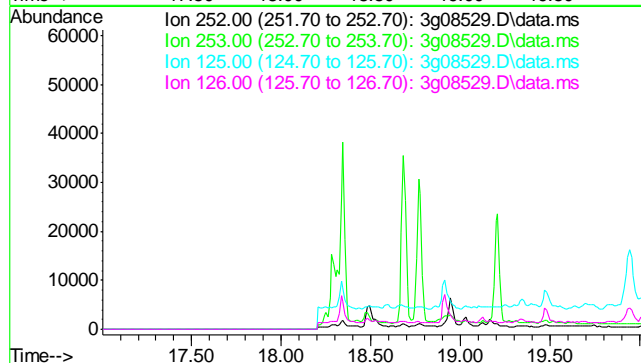
Tgt Ion:	264	Resp:	164542
Ion Ratio	Lower	Upper	
264	100		
265	21.0	1.1	41.1
263	18.4	0.0	39.1

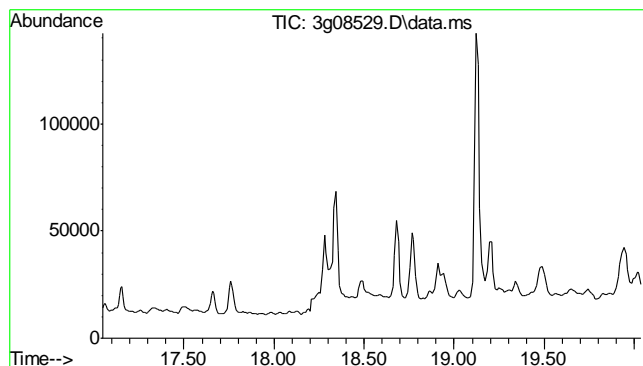


#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.50 min

Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.5
125	18.6
126	26.2

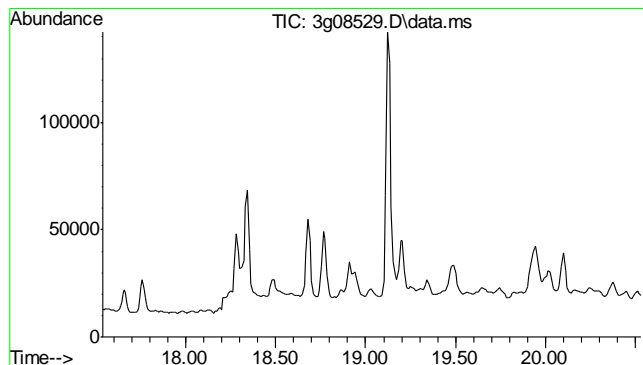
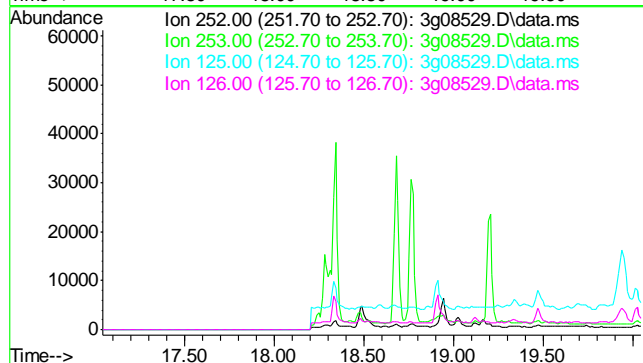




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.54 min

Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

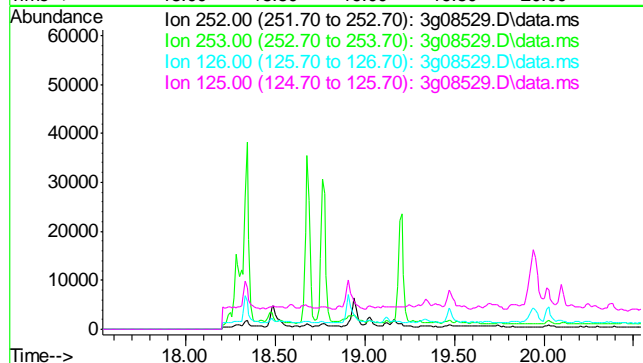
Tgt Ion	Sig	Exp Ratio
252	100	
253	21.7	
125	16.4	
126	25.4	

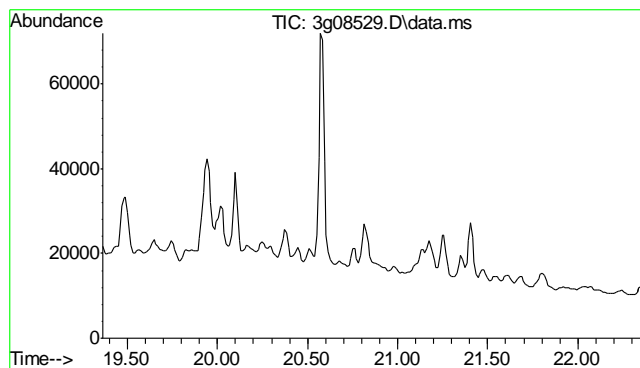


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 19.04 min

Lab File: 3g08529.D
Acq: 14 Mar 12 12:36 pm

Tgt Ion	Sig	Exp Ratio
252	100	
253	21.3	
126	23.6	
125	17.1	

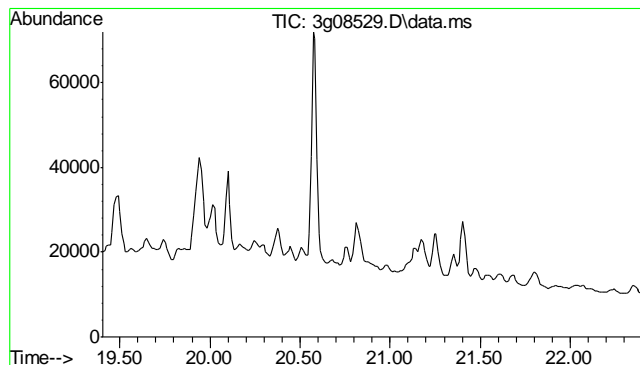
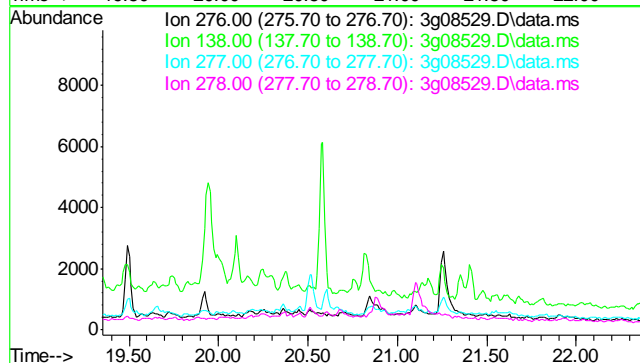




#27
 Indeno(1,2,3-cd)pyrene
 Concen: N.D. ug/mL
 Expected RT: 20.86 min

 Lab File: 3g08529.D
 Acq: 14 Mar 12 12:36 pm

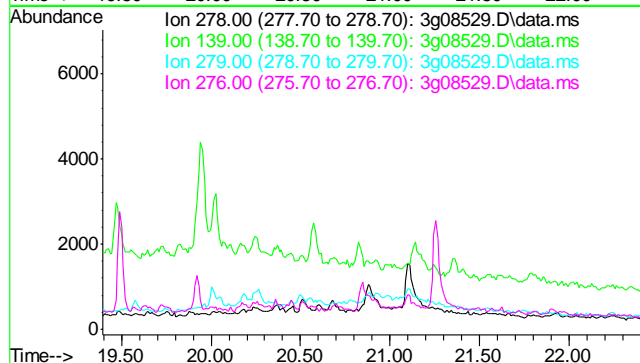
Tgt Ion	Exp Ratio
276	100
138	80.3
277	51.9
278	157.2

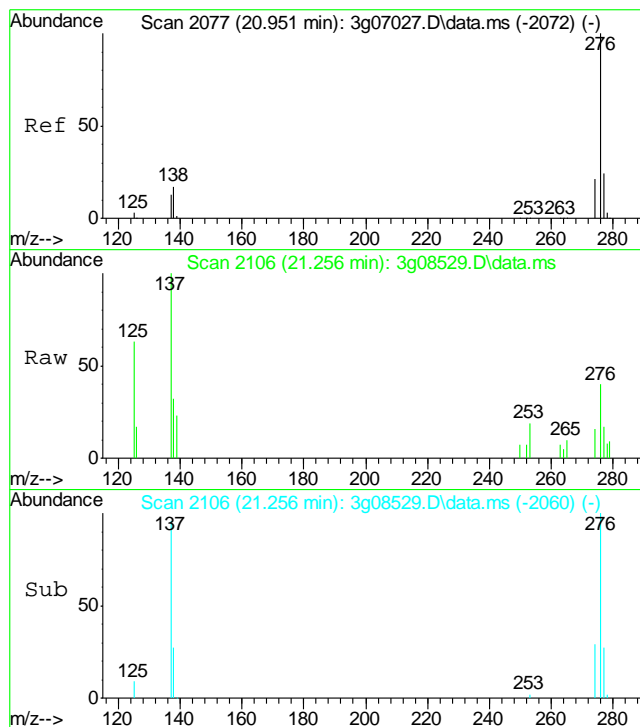


#28
 Dibenzo(a,h)anthracene
 Concen: N.D. ug/mL
 Expected RT: 20.90 min

 Lab File: 3g08529.D
 Acq: 14 Mar 12 12:36 pm

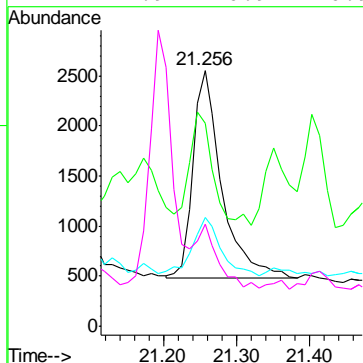
Tgt Ion	Exp Ratio
278	100
139	26.0
279	23.2
276	133.1





#29
 Benzo(g,h,i)perylene
 Concen: 0.16 ug/mL
 RT: 21.256 min Scan# 2106
 Delta R.T. -0.021 min
 Lab File: 3g08529.D
 Acq: 14 Mar 12 12:36 pm

Tgt Ion:	276	Resp:	5716
Ion Ratio	Lower	Upper	
276	100		
138	44.0	12.2	52.2
277	28.8	3.3	43.3
274	22.9	0.9	40.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\031412\
 Data File : 3g08524.D
 Acq On : 14 Mar 2012 9:39 am
 Operator : DONC
 Sample : OP5528-MB
 Misc : OP5528,E3G348,30.00,,,1,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 15 07:59:40 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G344.M
 Quant Title : PAHSIM BASE
 QLast Update : Mon Mar 12 09:19:25 2012
 Response via : Initial Calibration

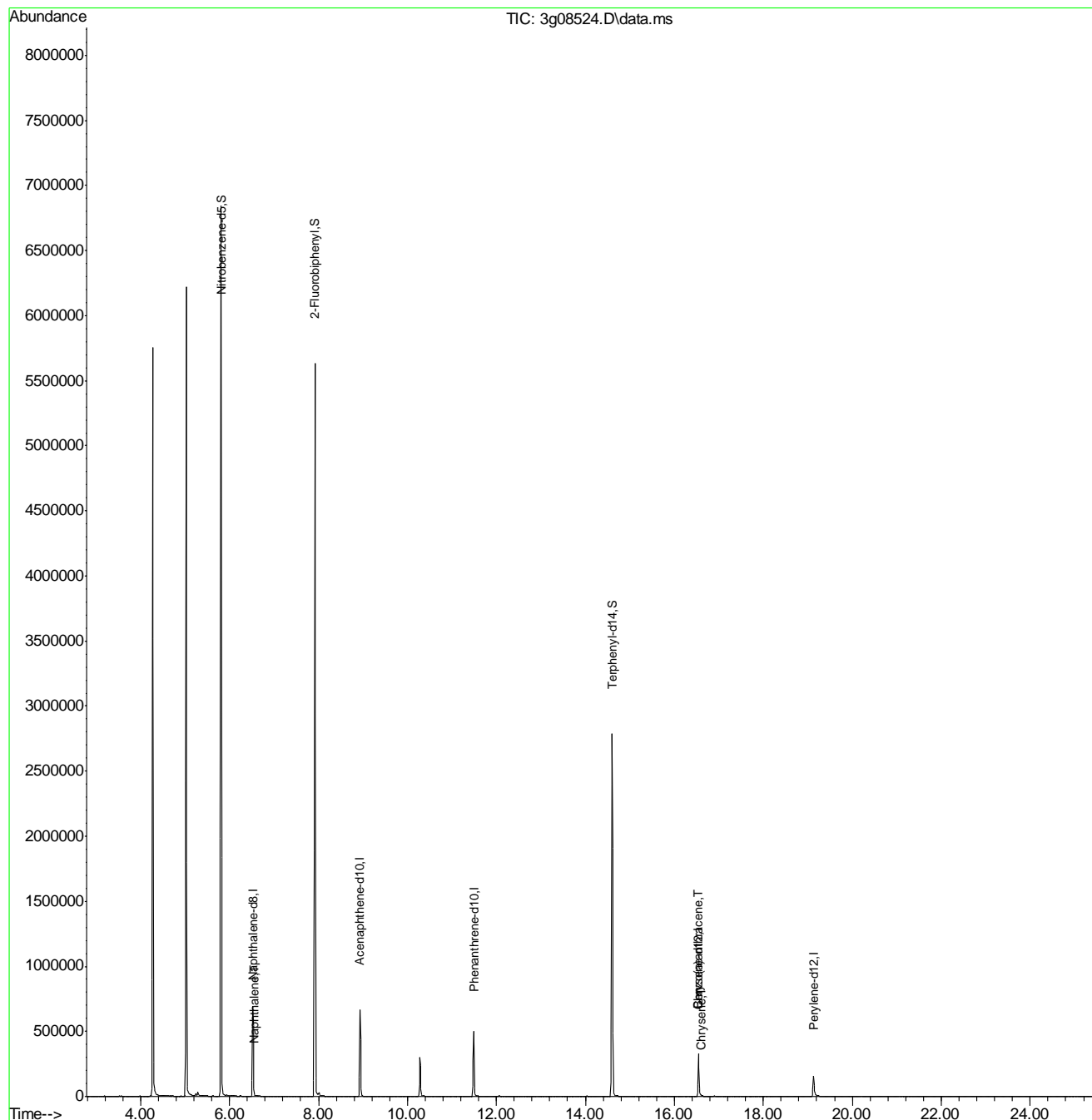
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.532	136	745037	4.00	ug/mL	0.00
6) Acenaphthene-d10	8.933	164	381870	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.493	188	534122	4.00	ug/mL	0.00
18) Chrysene-d12	16.547	240	397538	4.00	ug/mL	0.00
23) Perylene-d12	19.132	264	263103	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	5.809	82	3959513	39.00	ug/mL	0.00
Spiked Amount	50.000	Range 25 - 135	Recovery	=	78.00%	
7) 2-Fluorobiphenyl	7.917	172	5119221	33.41	ug/mL	-0.01
Spiked Amount	50.000	Range 25 - 135	Recovery	=	66.82%	
20) Terphenyl-d14	14.603	244	3392724	39.48	ug/mL	0.00
Spiked Amount	50.000	Range 25 - 135	Recovery	=	78.96%	
Target Compounds						
					Qvalue	
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	6.545	128	2724	0.01	ug/mL	93
8) 2-Methylnaphthalene	0.000		0	N.D.	d	
9) 1-Methylnaphthalene	0.000		0	N.D.	d	
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	0.000		0	N.D.	d	
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	0.000		0	N.D.	d	
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	0.000		0	N.D.	d	
21) Benzo(a)anthracene	16.540	228	1664	0.01	ug/mL	70
22) Chrysene	16.593	228	1201	0.01	ug/mL	82
24) Benzo(b)fluoranthene	0.000		0	N.D.	d	
25) Benzo(k)fluoranthene	0.000		0	N.D.	d	
26) Benzo(a)pyrene	0.000		0	N.D.	d	
27) Indeno(1,2,3-cd)pyrene	0.000		0	N.D.	d	
28) Dibenz(a,h)anthracene	0.000		0	N.D.	d	
29) Benzo(g,h,i)perylene	0.000		0	N.D.	d	

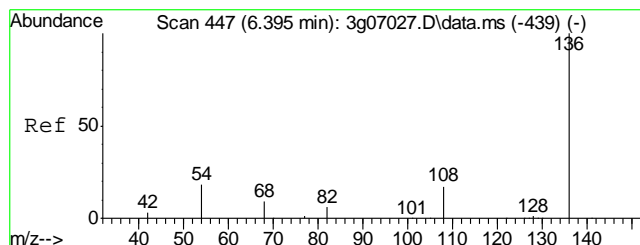
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\031412\
Data File : 3g08524.D
Acq On : 14 Mar 2012 9:39 am
Operator : DONC
Sample : OP5528-MB
Misc : OP5528,E3G348,30.00,,,1,1
ALS Vial : 4 Sample Multiplier: 1

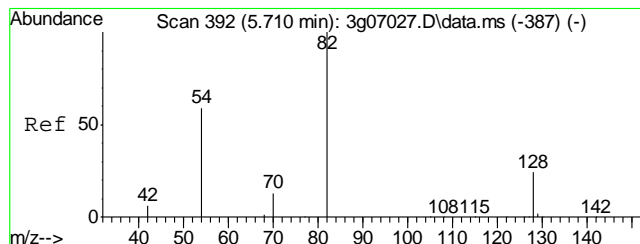
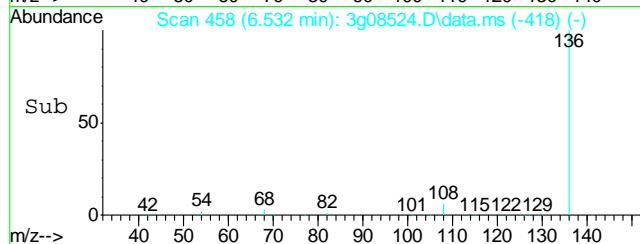
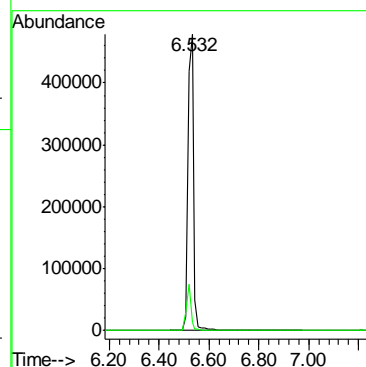
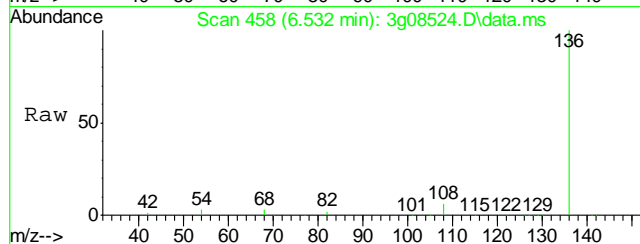
Quant Time: Mar 15 07:59:40 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G344.M
Quant Title : PAHSIM BASE
QLast Update : Mon Mar 12 09:19:25 2012
Response via : Initial Calibration





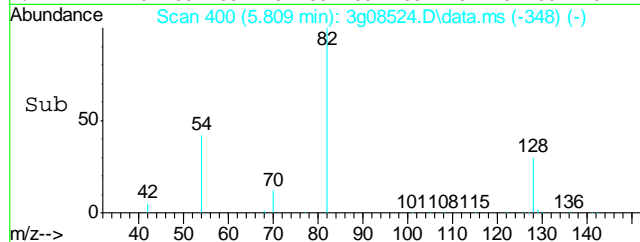
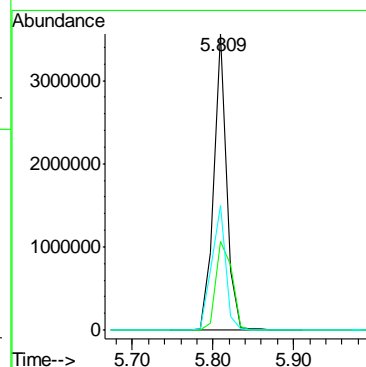
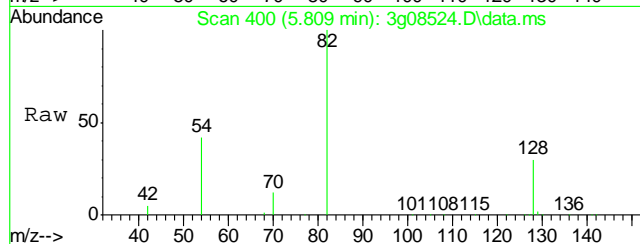
#1
Naphthalene-d8
Concen: 4.00 ug/mL
RT: 6.532 min Scan# 458
Delta R.T. -0.000 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

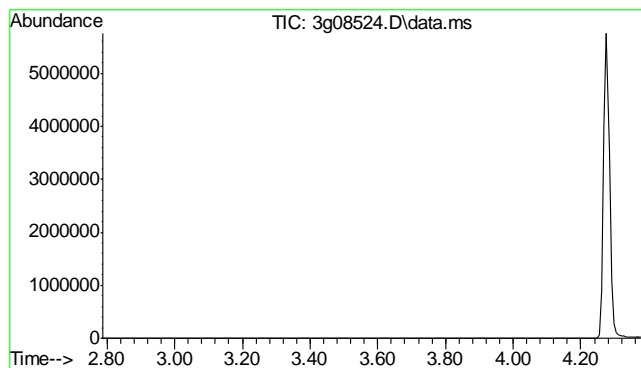
Tgt Ion: 136 Resp: 745037
Ion Ratio Lower Upper
136 100
68 12.2 0.0 32.2



#2
Nitrobenzene-d5
Concen: 39.00 ug/mL
RT: 5.809 min Scan# 400
Delta R.T. -0.000 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

Tgt Ion: 82 Resp: 3959513
Ion Ratio Lower Upper
82 100
128 37.6 16.8 56.8
54 46.0 27.0 67.0

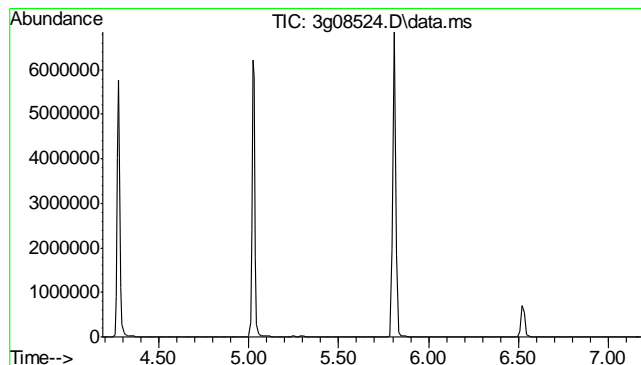
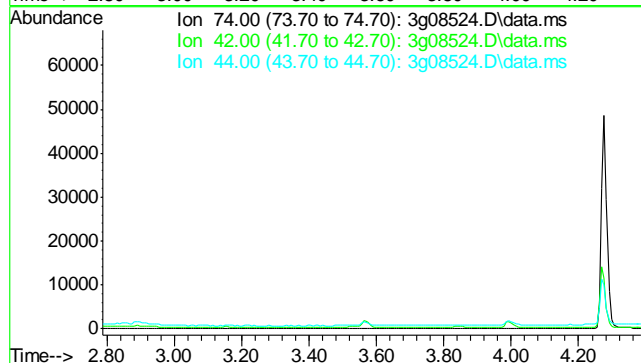




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.88 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

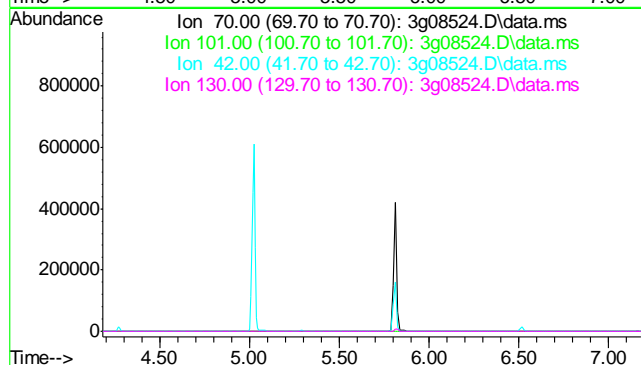
Tgt Ion:	74
Sig	Exp Ratio
74	100
42	58.8
44	4.0

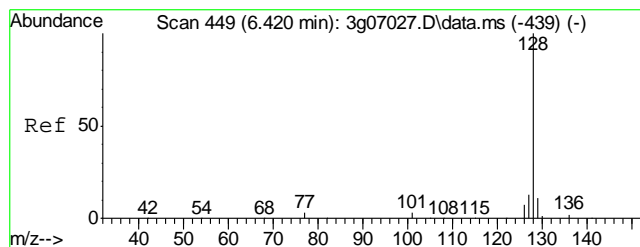


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.68 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

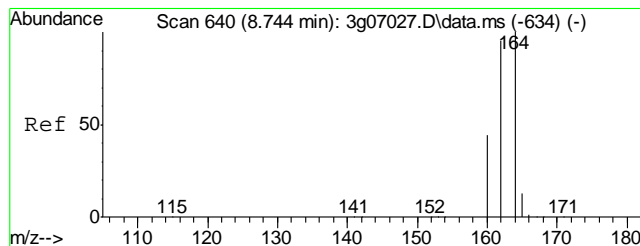
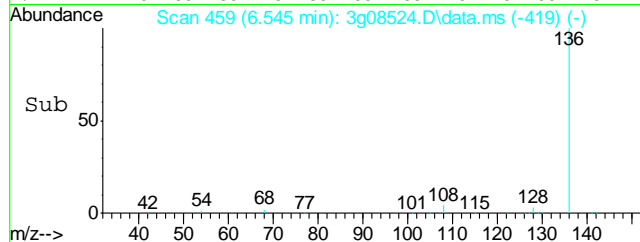
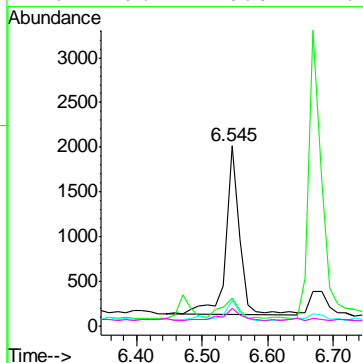
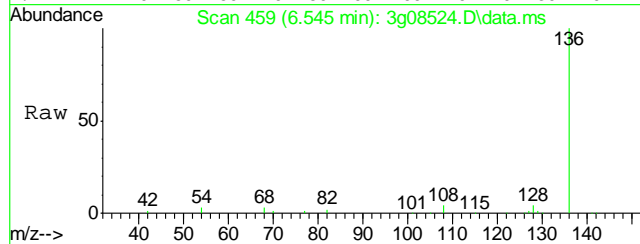
Tgt Ion:	70
Sig	Exp Ratio
70	100
101	11.0
42	49.0
130	18.8





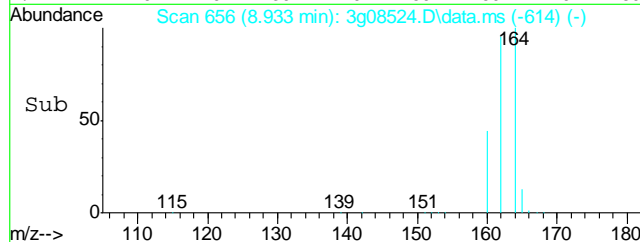
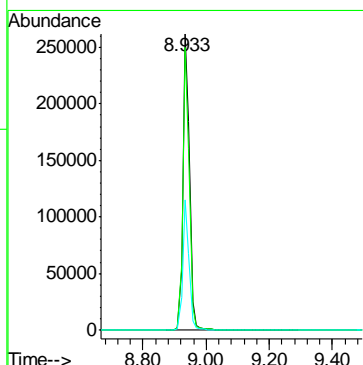
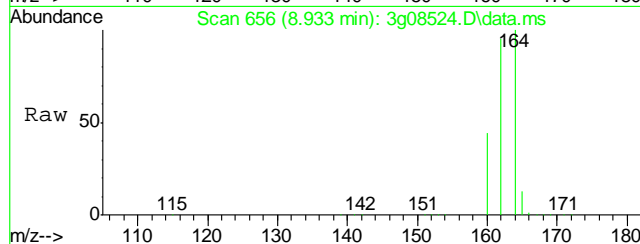
#5
Naphthalene
Concen: 0.01 ug/mL
RT: 6.545 min Scan# 459
Delta R.T. -0.000 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

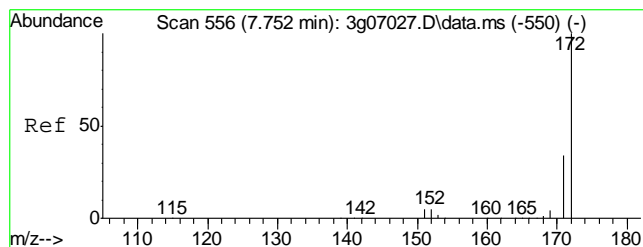
Tgt Ion:128	Resp:	2724
Ion Ratio	Lower	Upper
128	100	
129	15.3	0.0 30.9
127	10.6	0.0 32.4
126	9.7	0.0 27.6



#6
Acenaphthene-d10
Concen: 4.00 ug/mL
RT: 8.933 min Scan# 656
Delta R.T. -0.000 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

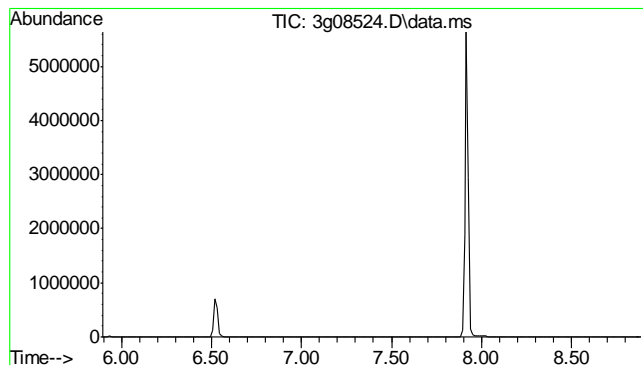
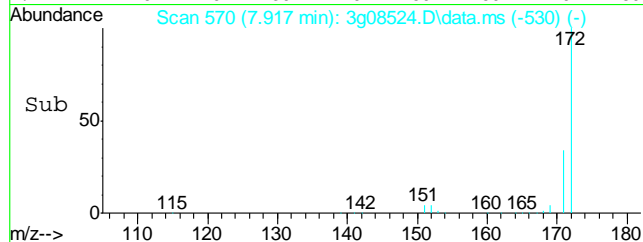
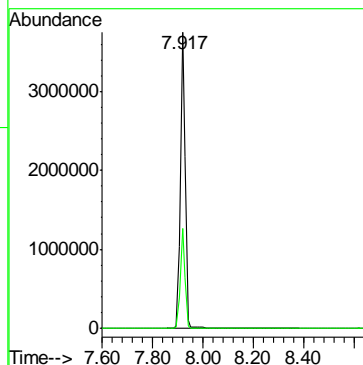
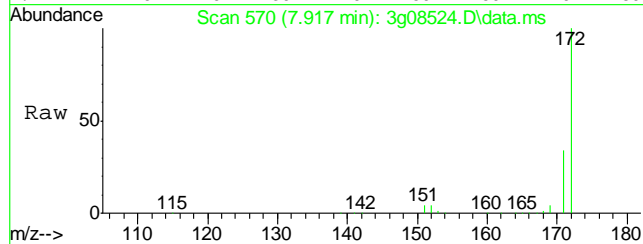
Tgt Ion:164	Resp:	381870
Ion Ratio	Lower	Upper
164	100	
162	93.0	72.9 112.9
160	42.0	22.1 62.1





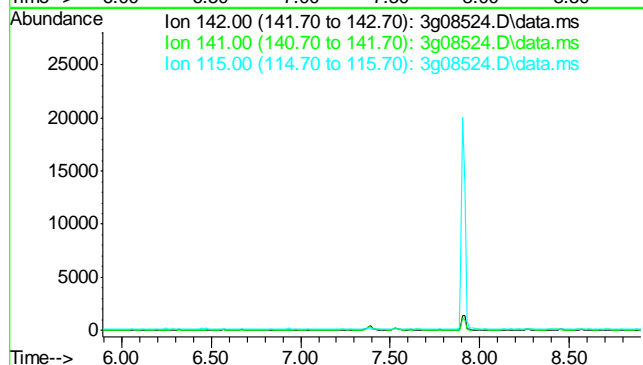
#7
2-Fluorobiphenyl
Concen: 33.41 ug/mL
RT: 7.917 min Scan# 570
Delta R.T. -0.012 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

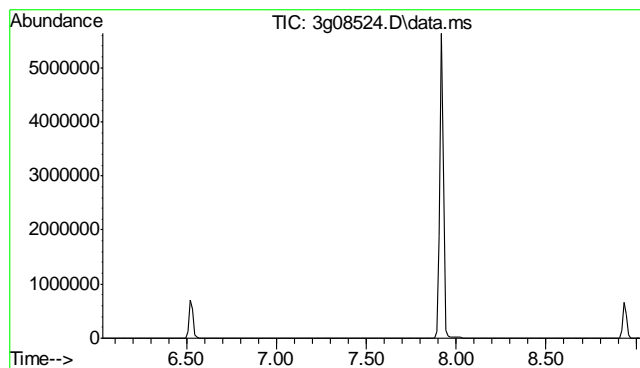
Tgt Ion: 172 Resp: 5119221
Ion Ratio Lower Upper
172 100
171 33.0 12.9 52.9



#8
2-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.39 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

Tgt Ion: 142
Sig Exp Ratio
142 100
141 83.6
115 37.0

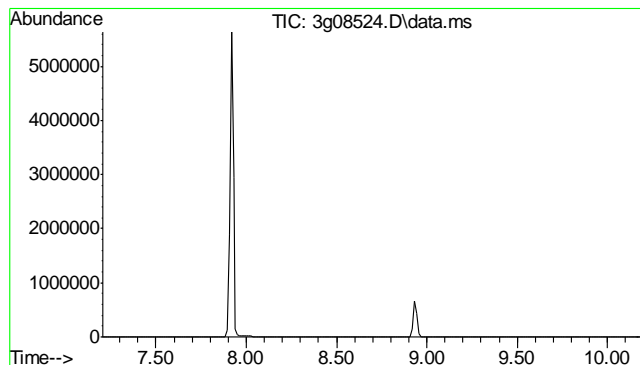
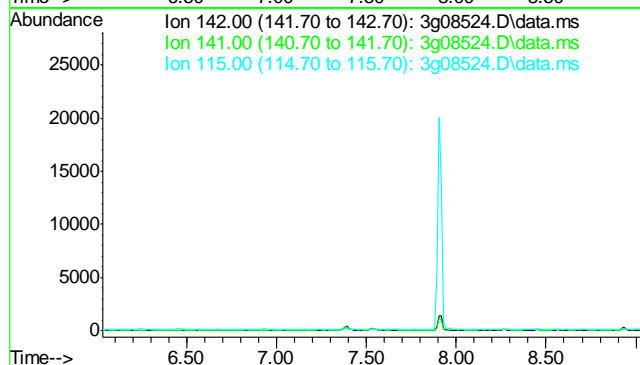




#9
1-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.53 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

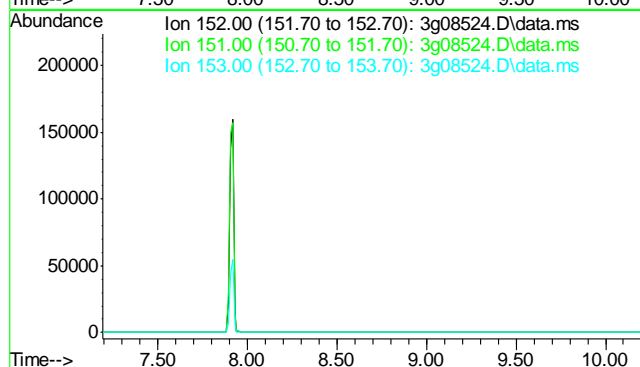
Tgt Ion:	142
Sig	Exp Ratio
142	100
141	86.9
115	39.7

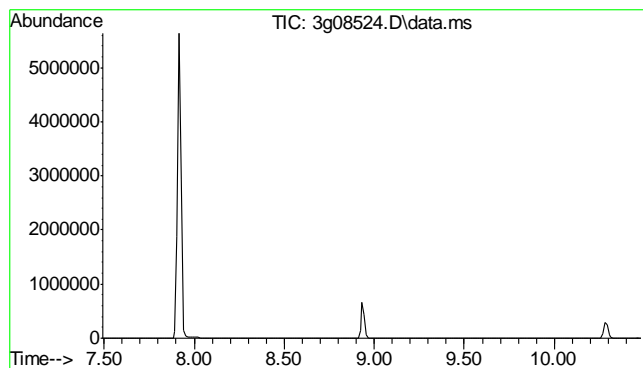


#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 8.70 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

Tgt Ion:	152
Sig	Exp Ratio
152	100
151	18.9
153	12.9

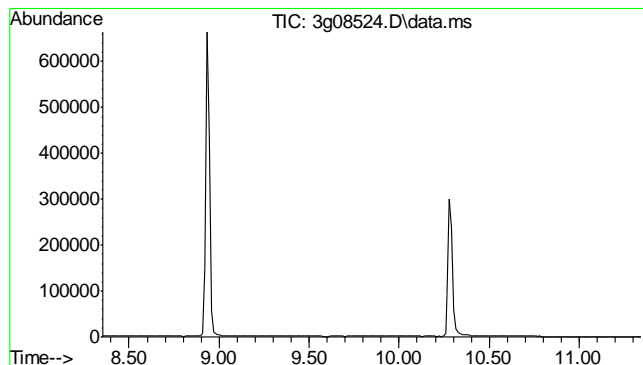
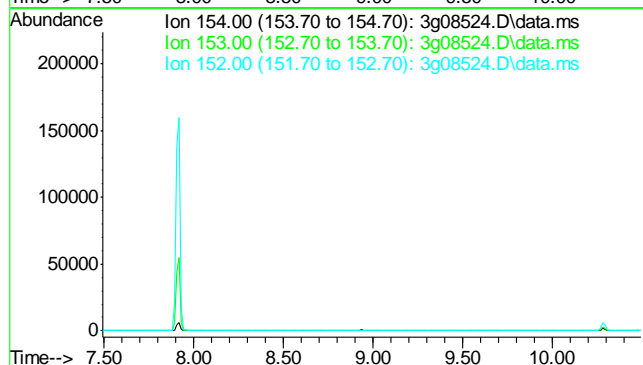




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 8.99 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

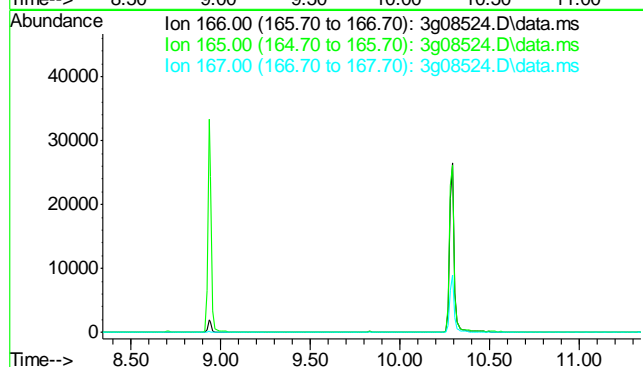
Tgt Ion: 154
Sig Exp Ratio
154 100
153 104.5
152 50.0

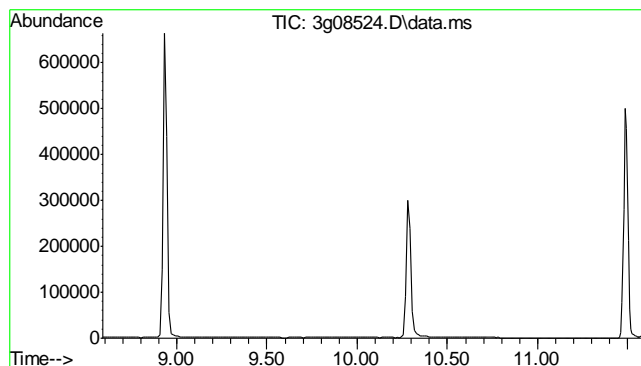


#12
Fluorene
Concen: N.D. ug/mL
Expected RT: 9.84 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

Tgt Ion: 166
Sig Exp Ratio
166 100
165 91.4
167 13.2

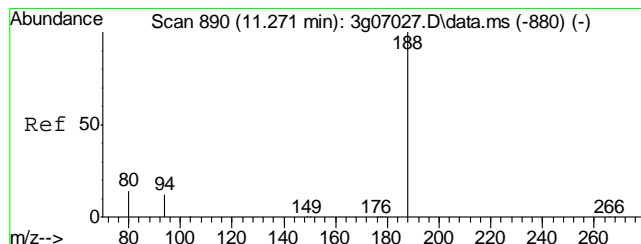
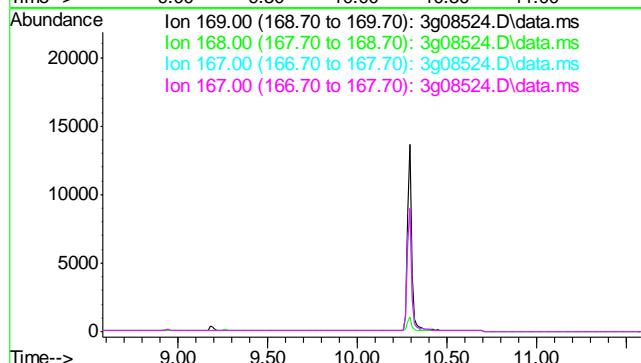




#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 10.08 min

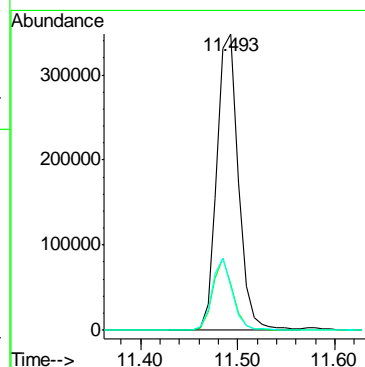
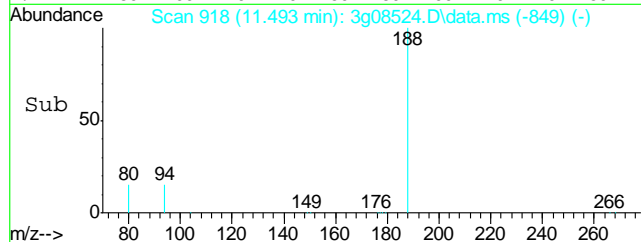
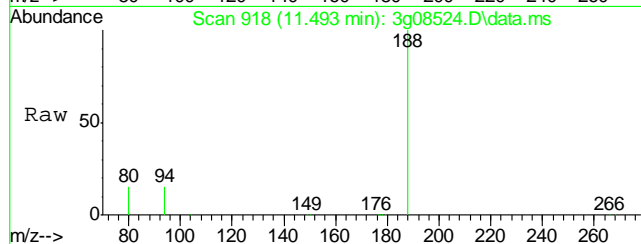
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

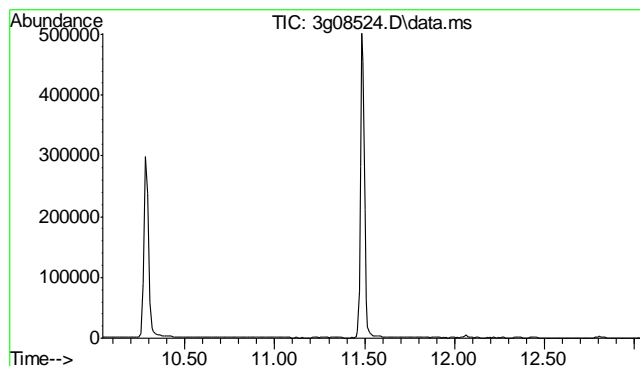
Tgt Ion: 169
Sig Exp Ratio
169 100
168 61.3
167 33.2
167 33.2



#14
Phenanthrene-d10
Concen: 4.00 ug/mL
RT: 11.493 min Scan# 918
Delta R.T. -0.000 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

Tgt Ion: 188 Resp: 534122
Ion Ratio Lower Upper
188 100
94 22.4 1.7 41.7
80 22.9 2.2 42.2

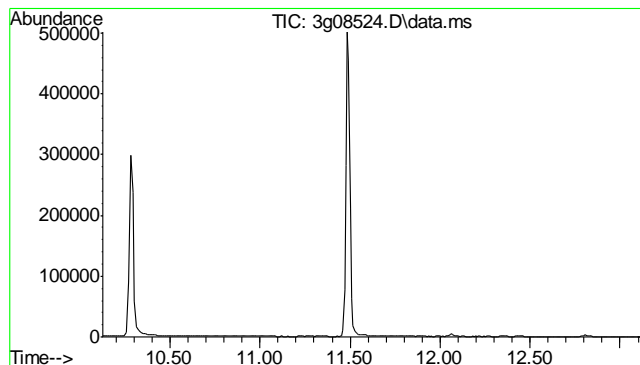
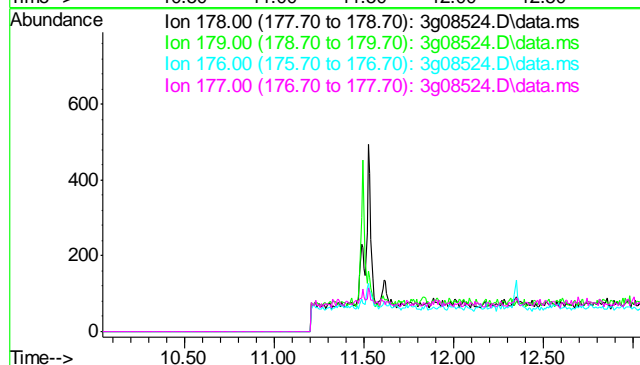




#15
Phenanthrene
Concen: N.D. ug/mL
Expected RT: 11.54 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

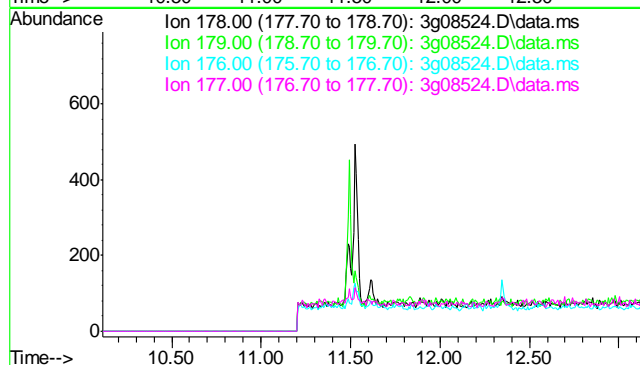
Tgt Ion:	178
Sig	Exp Ratio
178	100
179	15.1
176	18.5
177	10.2

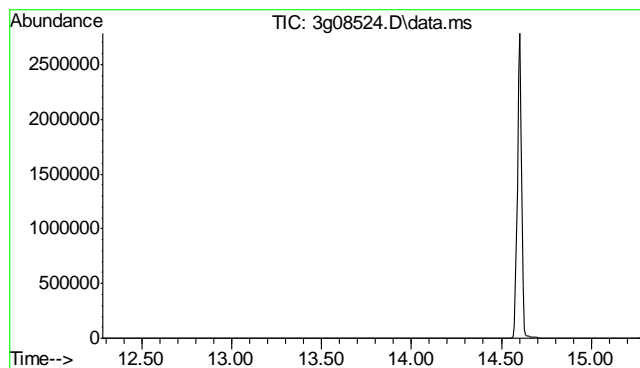


#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 11.62 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

Tgt Ion:	178
Sig	Exp Ratio
178	100
179	15.0
176	17.7
177	8.7

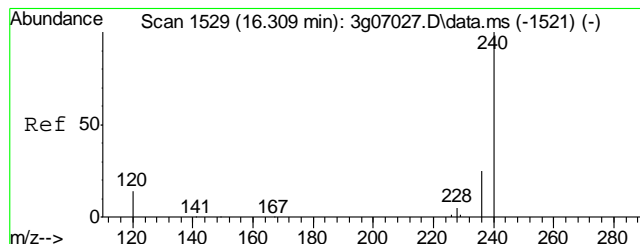
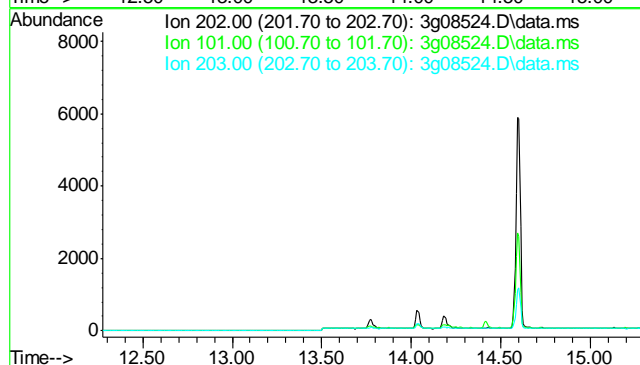




#17
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 13.78 min

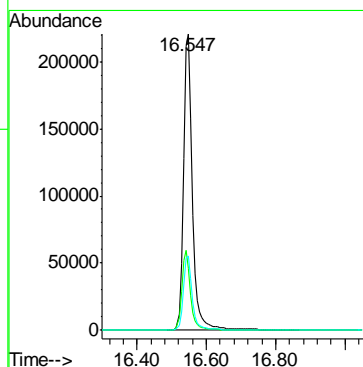
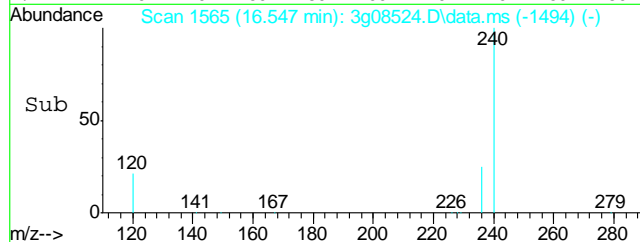
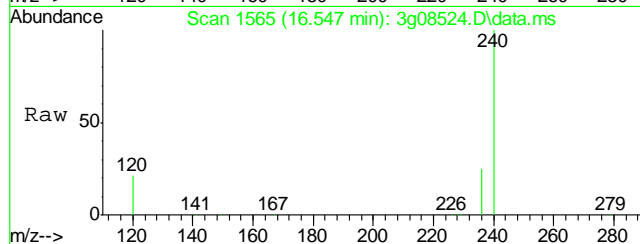
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

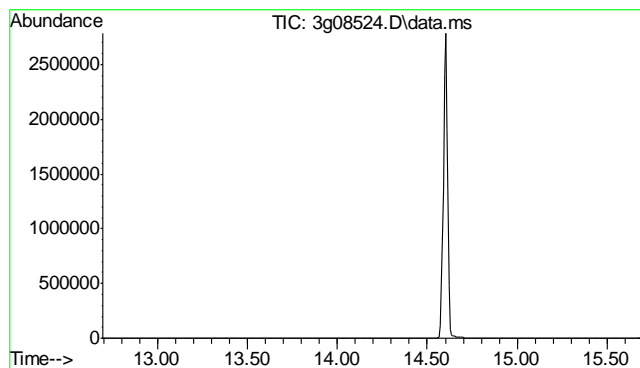
Tgt Ion:	202
Sig	Exp Ratio
202	100
101	23.2
203	17.2



#18
Chrysene-d12
Concen: 4.00 ug/mL
RT: 16.547 min Scan# 1565
Delta R.T. -0.007 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

Tgt Ion:	240	Resp:	397538
Ion	Ratio	Lower	Upper
240	100		
120	26.1	4.4	44.4
236	25.0	5.0	45.0

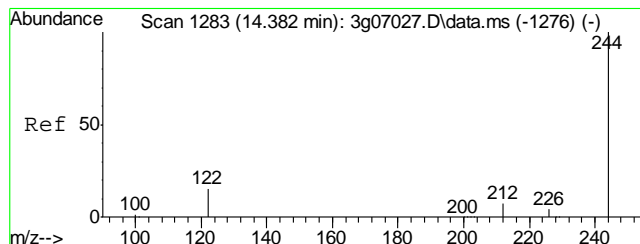
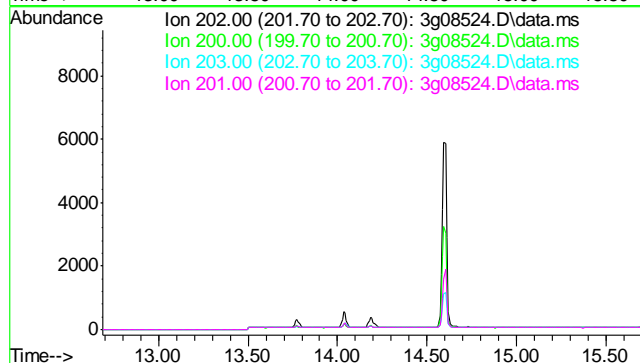




#19
Pyrene
Concen: N.D. ug/mL
Expected RT: 14.19 min

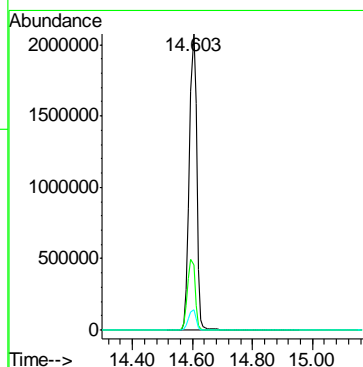
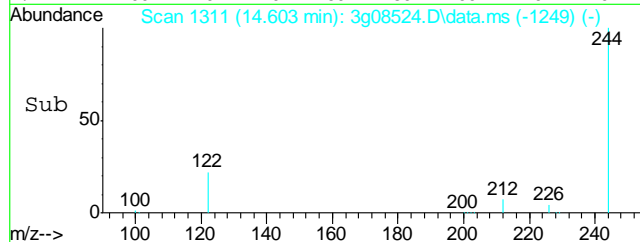
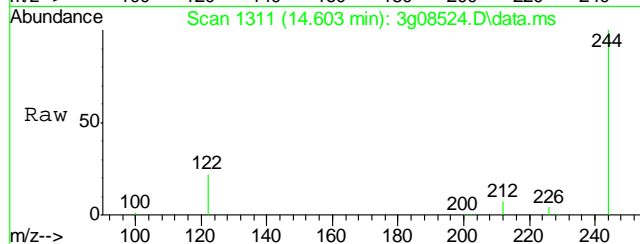
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

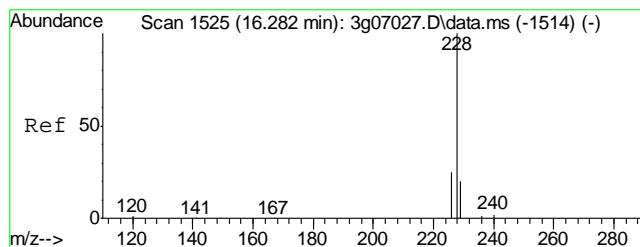
Tgt Ion:	202
Sig	Exp Ratio
202	100
200	20.1
203	17.8
201	16.5



#20
Terphenyl-d14
Concen: 39.48 ug/mL
RT: 14.603 min Scan# 1311
Delta R.T. -0.008 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

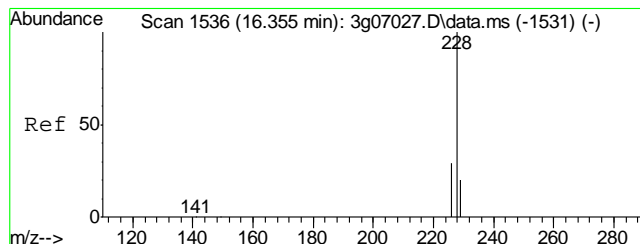
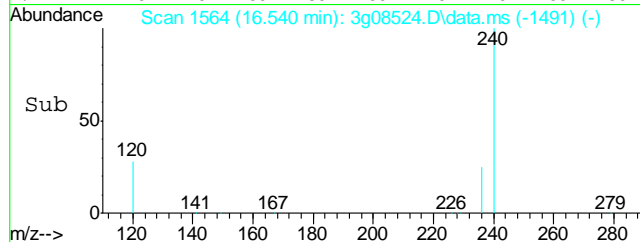
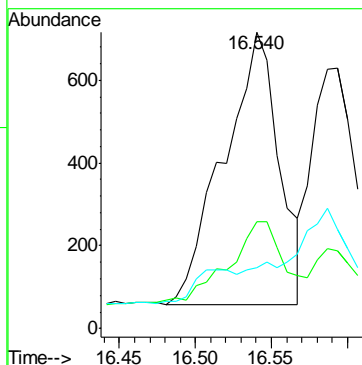
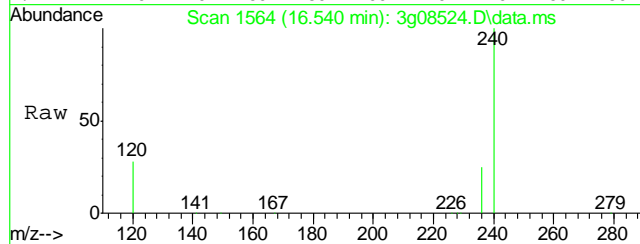
Tgt Ion:	244	Resp:	3392724
Ion	Ratio	Lower	Upper
244	100		
122	24.9	4.9	44.9
212	6.9	0.0	27.3





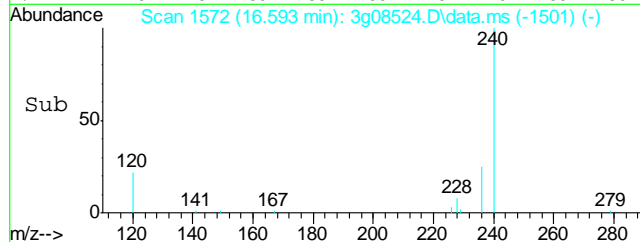
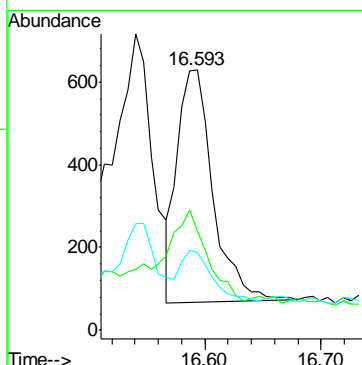
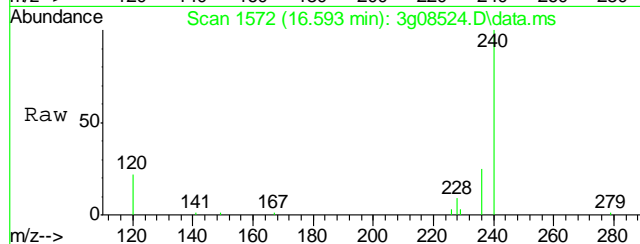
#21
Benzo(a)anthracene
Concen: 0.01 ug/mL
RT: 16.540 min Scan# 1564
Delta R.T. 0.013 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

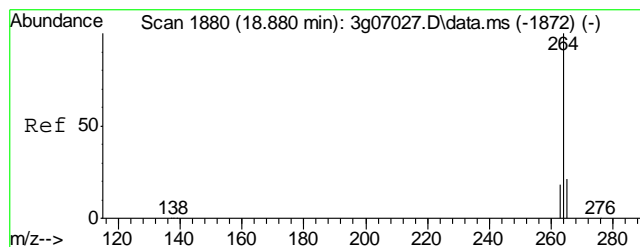
Tgt Ion:	228	Resp:	1664
Ion Ratio	Lower	Upper	
228	100		
229	31.9	0.0	39.6
226	9.6	5.7	45.7



#22
Chrysene
Concen: 0.01 ug/mL
RT: 16.593 min Scan# 1572
Delta R.T. -0.013 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

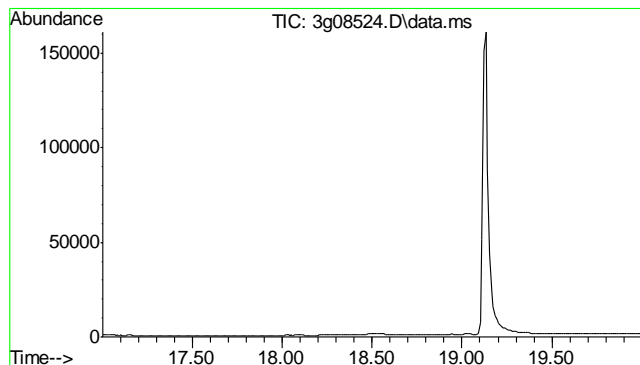
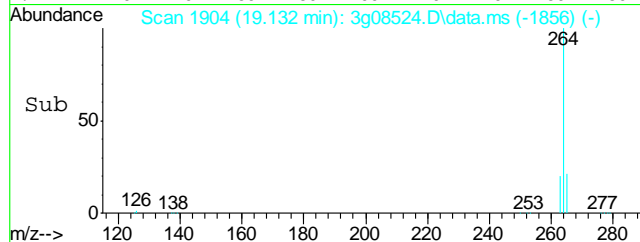
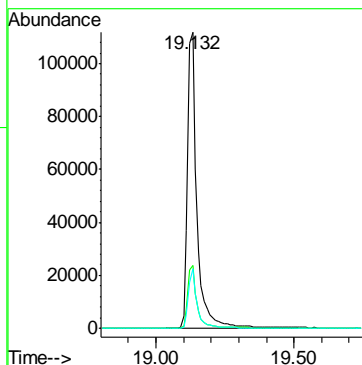
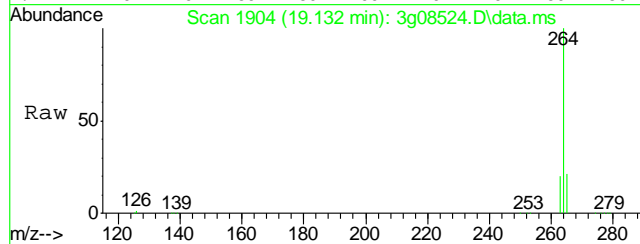
Tgt Ion:	228	Resp:	1201
Ion Ratio	Lower	Upper	
228	100		
226	43.5	8.7	48.7
229	20.5	0.0	39.4





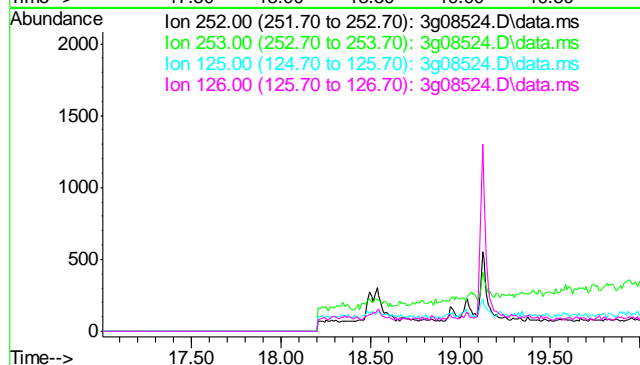
#23
Perylene-d12
Concen: 4.00 ug/mL
RT: 19.132 min Scan# 1904
Delta R.T. -0.000 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

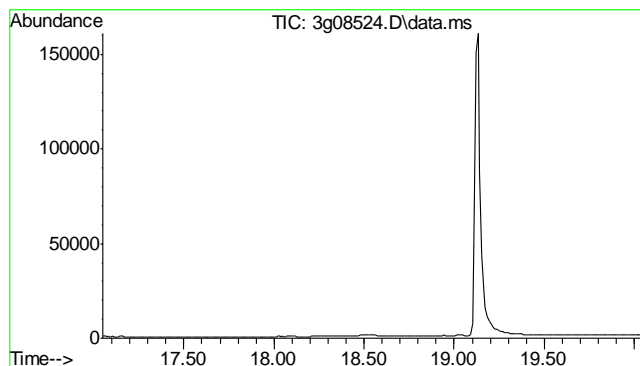
Tgt Ion:	264	Resp:	263103
Ion Ratio	Lower	Upper	
264	100		
265	21.1	1.1	41.1
263	18.9	0.0	39.1



#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.50 min
Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.5
125	18.6
126	26.2

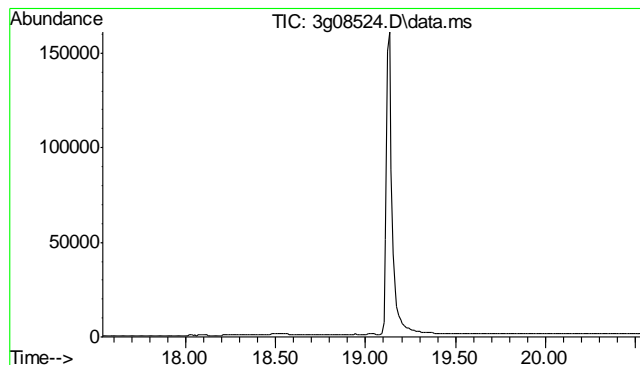
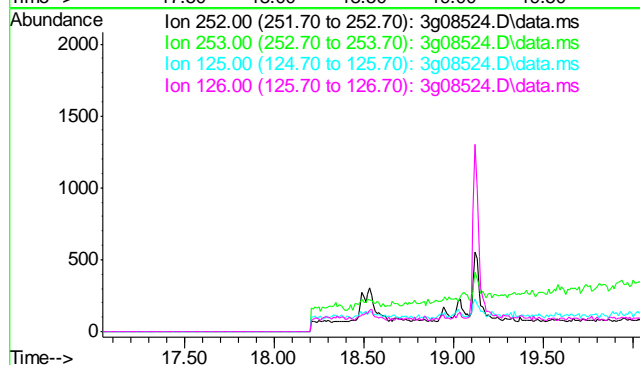




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.54 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

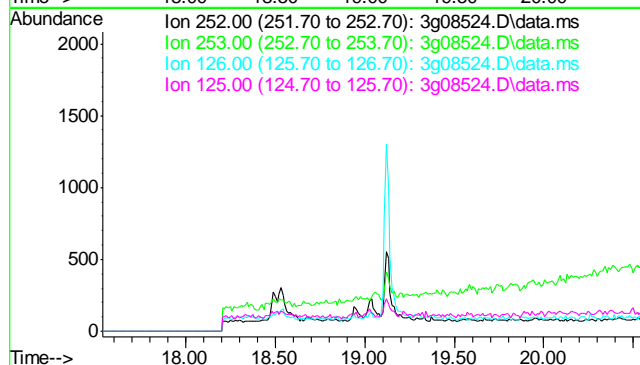
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.7
125	16.4
126	25.4

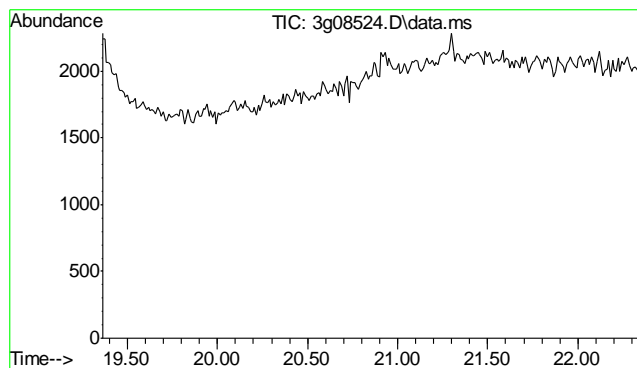


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 19.04 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.3
126	23.6
125	17.1

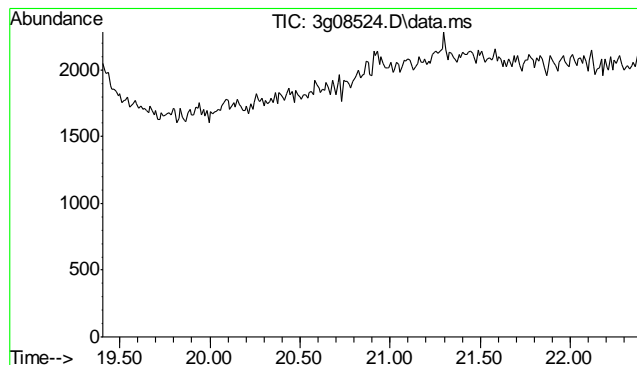
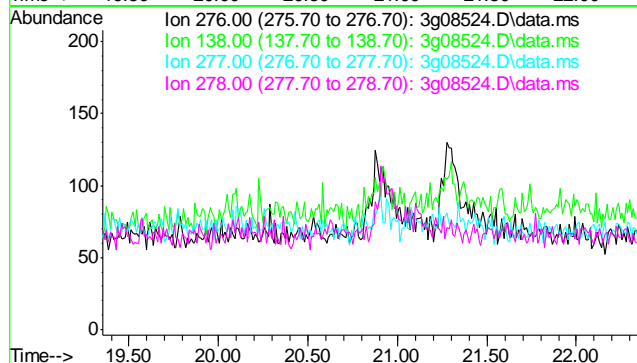




#27
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 20.86 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

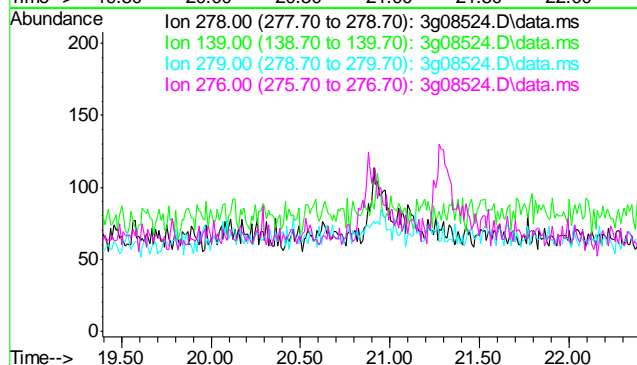
Tgt Ion:	276
Sig	Exp Ratio
276	100
138	80.3
277	51.9
278	157.2

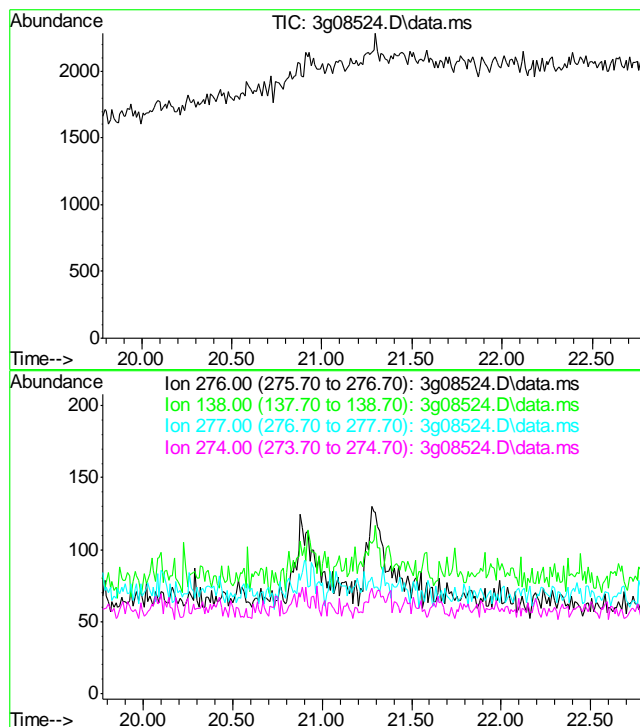


#28
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 20.90 min

Lab File: 3g08524.D
Acq: 14 Mar 12 9:39 am

Tgt Ion:	278
Sig	Exp Ratio
278	100
139	26.0
279	23.2
276	133.1





#29

Benzo(g,h,i)perylene

Concen: N.D. ug/mL

Expected RT: 21.28 min

Lab File: 3g08524.D

Acq: 14 Mar 12 9:39 am

Tgt Ion: 276

Sig Exp Ratio

276 100

138 32.2

277 23.3

274 20.9

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: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB858-MB	GB15295.D	1	03/13/12	SK	n/a	n/a	GGB858

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

D32610-1, D32610-2

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	109% 60-140%

9.1.1
9

Blank Spike Summary

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB858-BS	GB15296.D	1	03/13/12	SK	n/a	n/a	GGB858

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

D32610-1, D32610-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	112	102	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	117%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D32609-1MS	GB15298.D	1	03/13/12	SK	n/a	n/a	GGB858
D32609-1MSD	GB15299.D	1	03/13/12	SK	n/a	n/a	GGB858
D32609-1	GB15297.D	1	03/13/12	SK	n/a	n/a	GGB858

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

D32610-1, D32610-2

CAS No.	Compound	D32609-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	8.20	J	122	122	93	128	98	5	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D32609-1	Limits
120-82-1	1,2,4-Trichlorobenzene	108%	111%	107%	60-140%

9.3.1
6

GC Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\031312\GB15300.D\FID1A.CH Vial: 8
Signal #2 : Y:\1\DATA\031312\GB15300.D\FID2B.CH
Acq On : 13 Mar 2012 8:29 pm Operator: StephK
Sample : D32610-1, 50X Inst : GC/MS Ins
Misc : GC2671,GGB858,5.021,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Mar 14 08:40:40 2012 Quant Results File: TB851GB851SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB851GB851SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Mar 14 08:40:04 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	

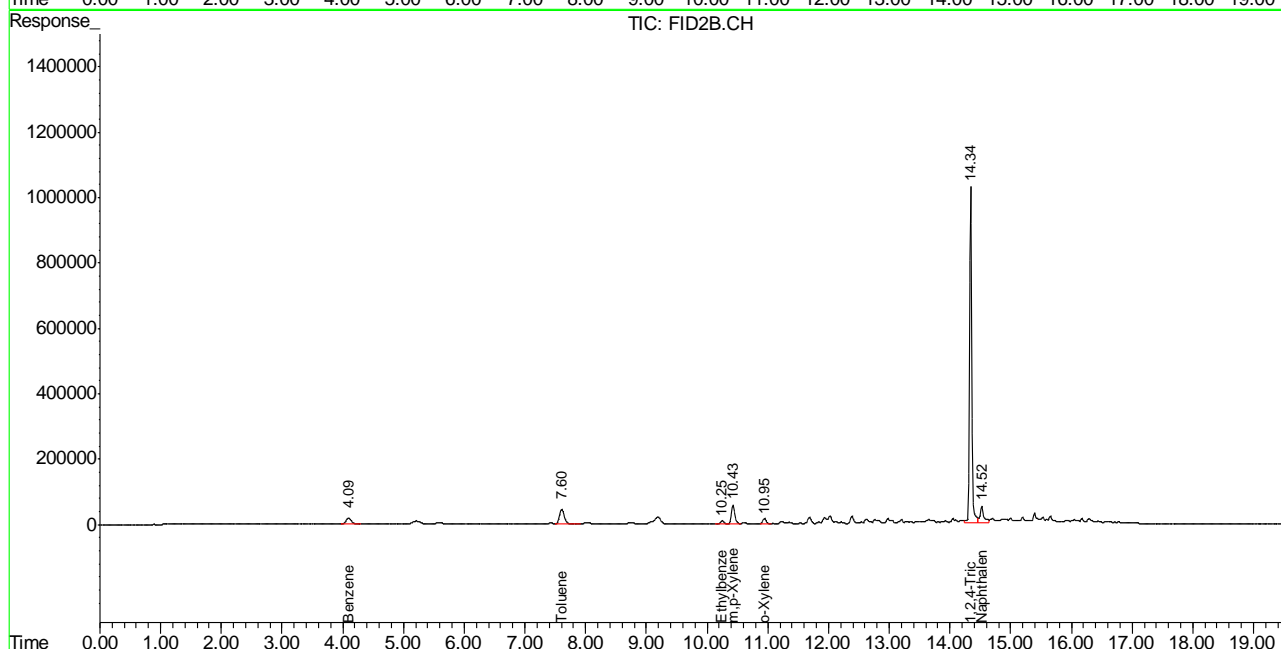
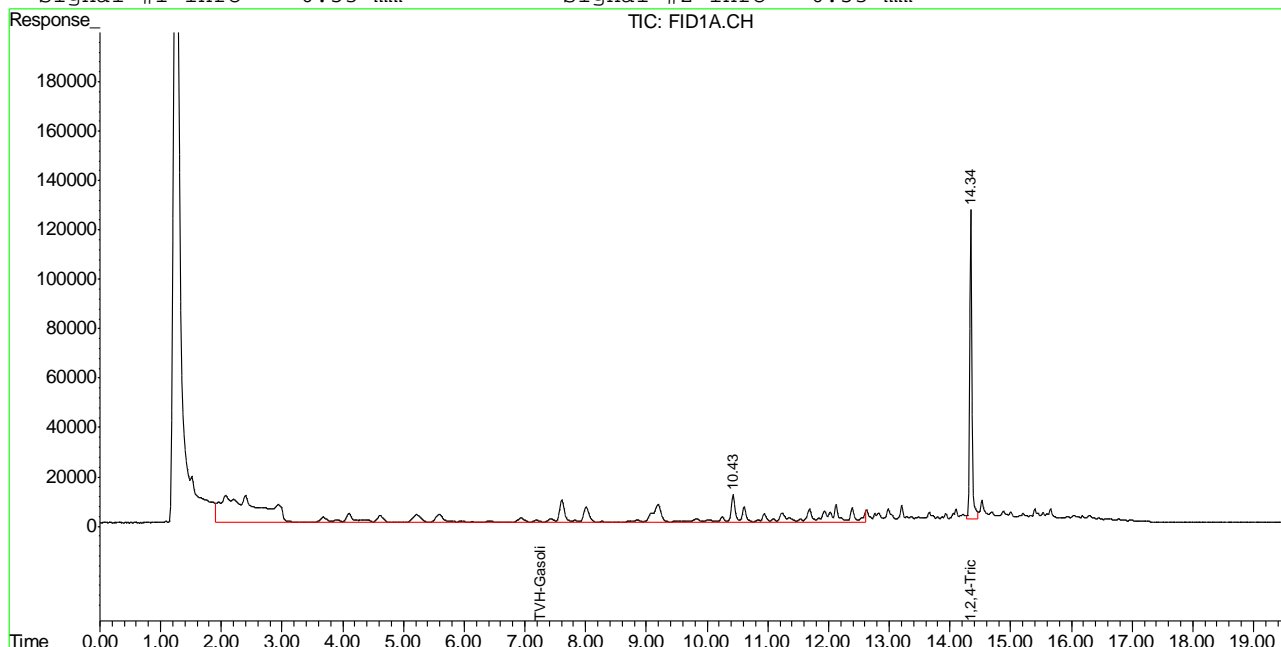
System Monitoring Compounds						
2) S	1,2,4-Trichlorobenzene	14.34	3151714	104.475 %	m	
10) S	1,2,4-Trichlorobenzene (P)	14.34	25323792	108.816 %		
Target Compounds						
1) H	TVH-Gasoline	7.26	12528964	0.173 mg/L		
4) T	Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d	
5) T	Benzene	4.09	1227110	2.217 ug/L		
6) T	Toluene	7.61	2746888	5.018 ug/L		
7) T	Ethylbenzene	10.25	437034	0.956 ug/L		
8) T	m,p-Xylene	10.43	2432599	4.344 ug/L		
9) T	o-Xylene	10.95	716629	1.564 ug/L		
11) T	Naphthalene	14.52	2179349	8.341 ug/L		

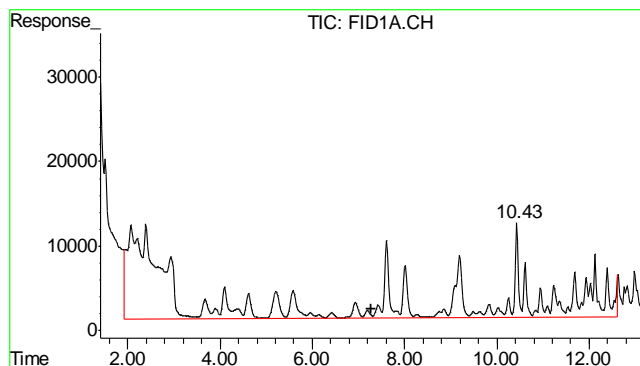
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\031312\GB15300.D\FID1A.CH Vial: 8
 Signal #2 : Y:\1\DATA\031312\GB15300.D\FID2B.CH
 Acq On : 13 Mar 2012 8:29 pm Operator: StephK
 Sample : D32610-1, 50X Inst : GC/MS Ins
 Misc : GC2671,GGB858,5.021,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Mar 14 8:44 2012 Quant Results File: TB851GB851SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB851GB851SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed Mar 14 08:40:04 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

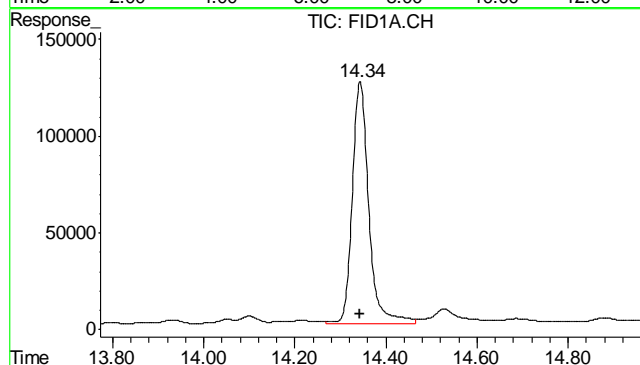
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





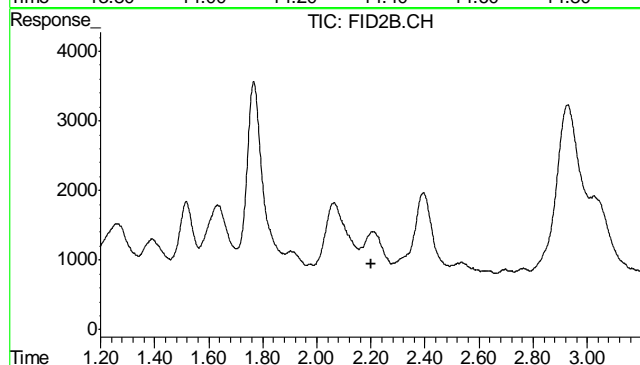
#1 TVH-Gasoline

R.T.: 7.265 min
Delta R.T.: 0.000 min
Response: 12528964
Conc: 0.17 mg/L m



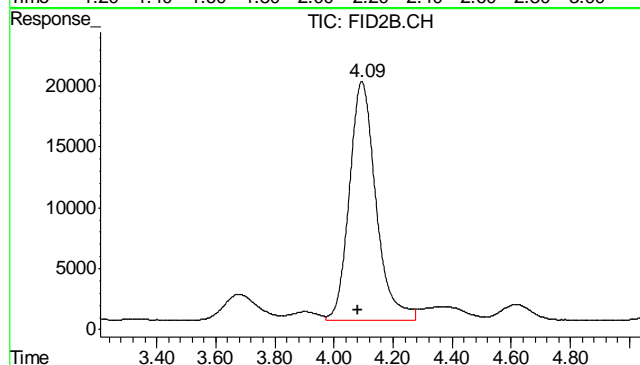
#2 1,2,4-Trichlorobenzene

R.T.: 14.343 min
Delta R.T.: 0.000 min
Response: 3151714
Conc: 104.48 % m



#4 Methyl-t-butyl-ether

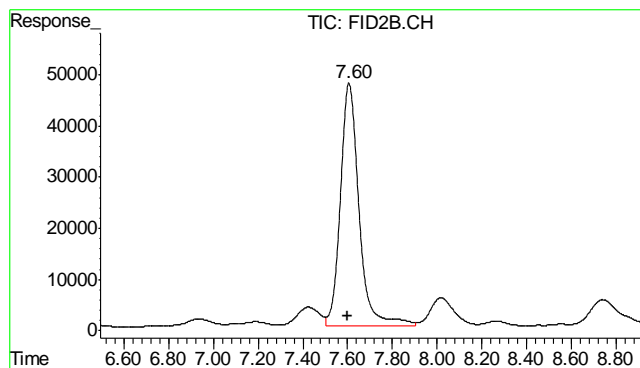
R.T.: 0.000 min
Exp R.T.: 2.199 min
Response: 0
Conc: N.D.



#5 Benzene

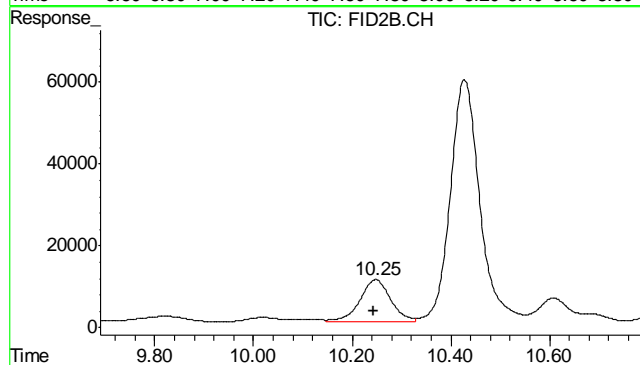
R.T.: 4.094 min
Delta R.T.: 0.015 min
Response: 1227110
Conc: 2.22 ug/L

10.1.1
10



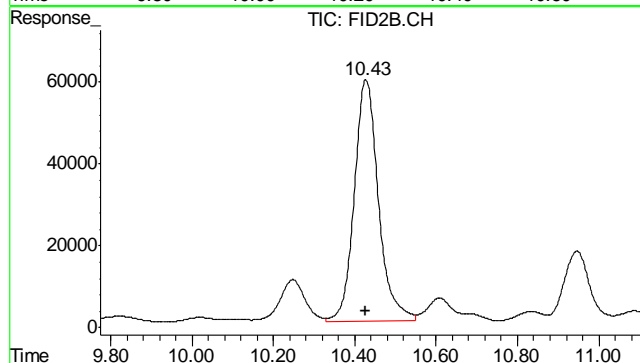
#6 Toluene

R.T.: 7.606 min
Delta R.T.: 0.005 min
Response: 2746888
Conc: 5.02 ug/L



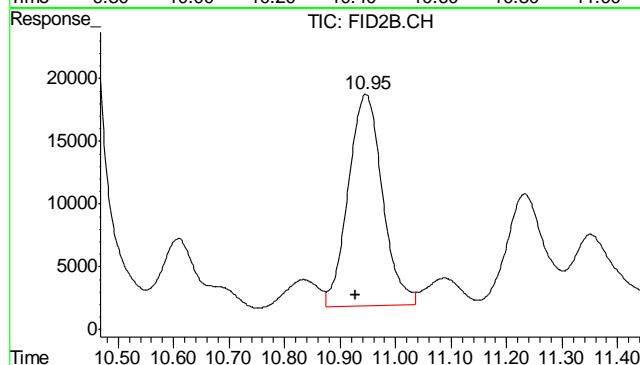
#7 Ethylbenzene

R.T.: 10.248 min
Delta R.T.: 0.004 min
Response: 437034
Conc: 0.96 ug/L



#8 m,p-Xylene

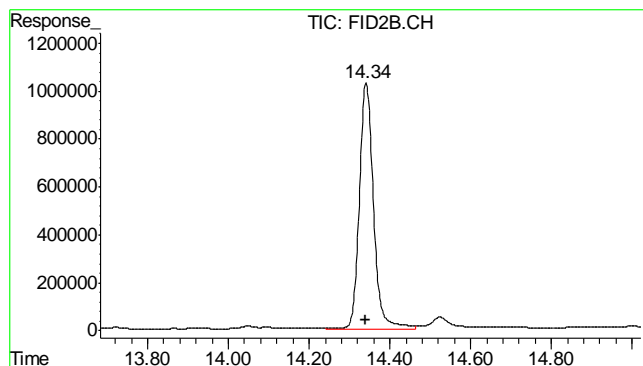
R.T.: 10.428 min
Delta R.T.: 0.001 min
Response: 2432599
Conc: 4.34 ug/L



#9 o-Xylene

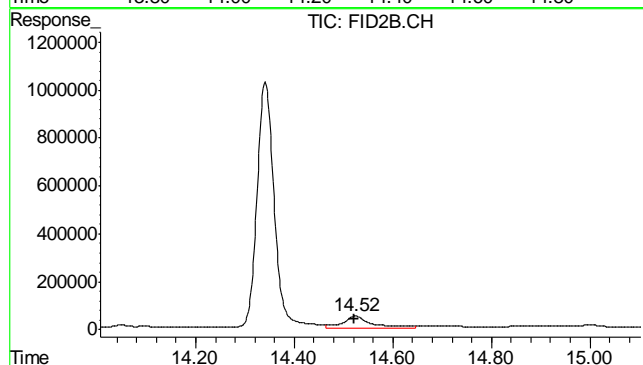
R.T.: 10.946 min
Delta R.T.: 0.019 min
Response: 716629
Conc: 1.56 ug/L

10.1.1
10



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

R.T.: 14.341 min
Delta R.T.: 0.002 min
Response: 25323792
Conc: 108.82 %



#11 Naphthalene

R.T.: 14.524 min
Delta R.T.: 0.003 min
Response: 2179349
Conc: 8.34 ug/L

10.1.1
10

Judy Melson
03/14/12 09:45

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\031312\GB15301.D\FID1A.CH Vial: 9
 Signal #2 : Y:\1\DATA\031312\GB15301.D\FID2B.CH
 Acq On : 13 Mar 2012 9:05 pm Operator: StephK
 Sample : D32610-2, 50X Inst : GC/MS Ins
 Misc : GC2671,GGB858,5.002,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Mar 14 08:40:44 2012 Quant Results File: TB851GB851SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB851GB851SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed Mar 14 08:40:04 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	14.33	2830478	93.826 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.33	27282242	117.232 %	
Target Compounds				
1) H TVH-Gasoline	7.26	25087880	0.347 mg/L	
4) T Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T Benzene	4.09	113597	0.205 ug/L	
6) T Toluene	7.60	728185	1.330 ug/L	
7) T Ethylbenzene	10.23	295560	0.646 ug/L	
8) T m,p-Xylene	10.42	3256870	5.816 ug/L	
9) T o-Xylene	10.92	620175	1.353 ug/L	
11) T Naphthalene	14.52	6168043	23.606 ug/L	

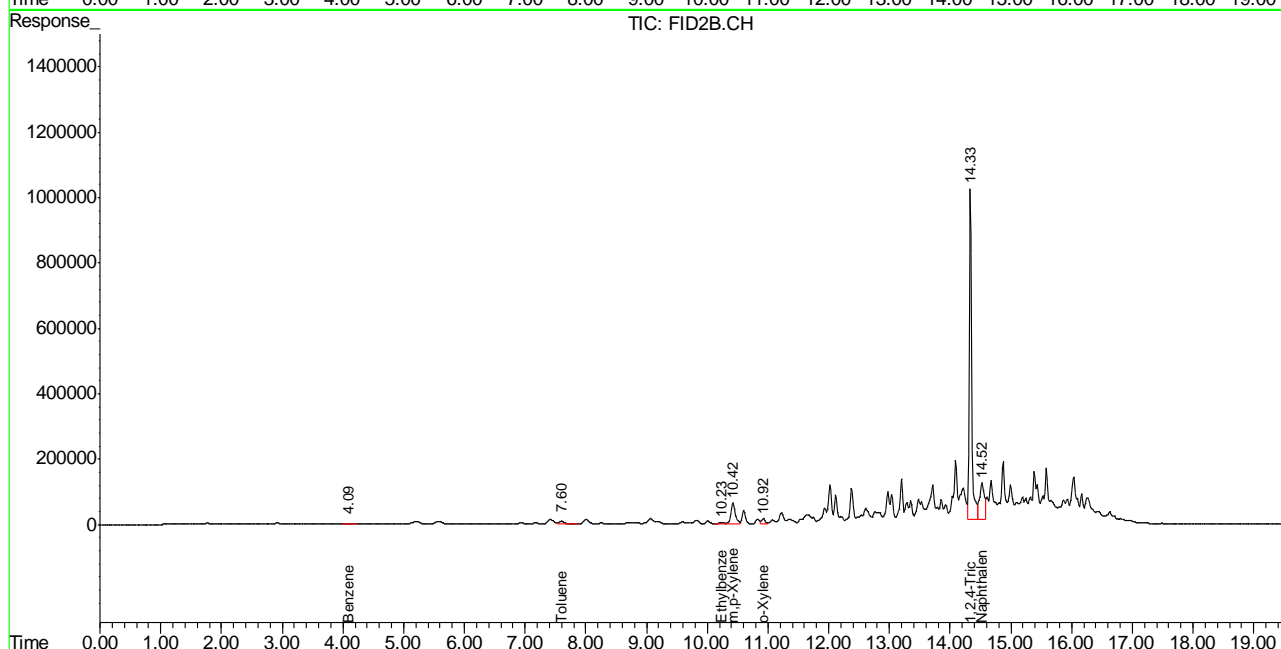
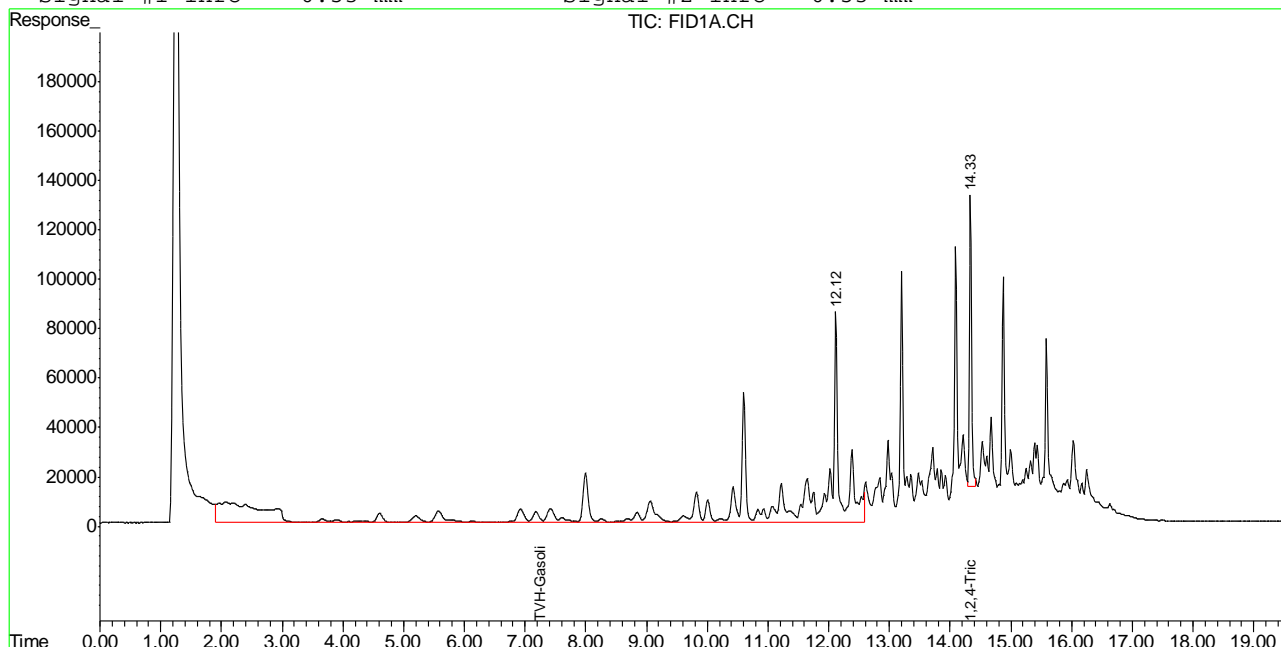
(f)=RT Delta > 1/2 Window (m)=manual int.
 GB15301.D TB851GB851SOIL.M Wed Mar 14 08:46:46 2012 GC

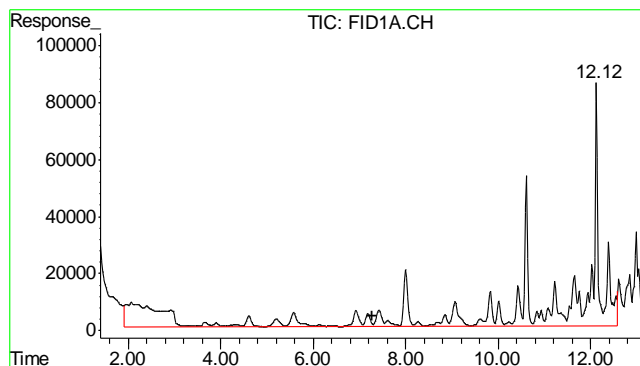
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\031312\GB15301.D\FID1A.CH Vial: 9
 Signal #2 : Y:\1\DATA\031312\GB15301.D\FID2B.CH
 Acq On : 13 Mar 2012 9:05 pm Operator: StephK
 Sample : D32610-2, 50X Inst : GC/MS Ins
 Misc : GC2671,GGB858,5.002,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Mar 14 8:45 2012 Quant Results File: TB851GB851SOIL.RES

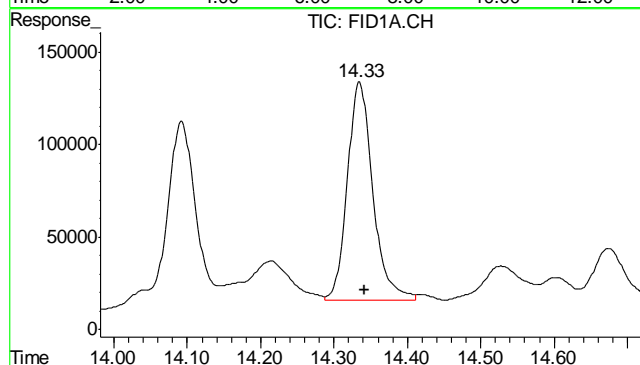
Quant Method : C:\MSDCHEM\1...\TB851GB851SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed Mar 14 08:40:04 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

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

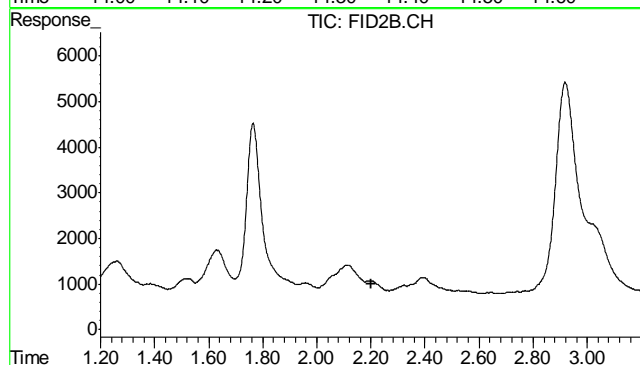




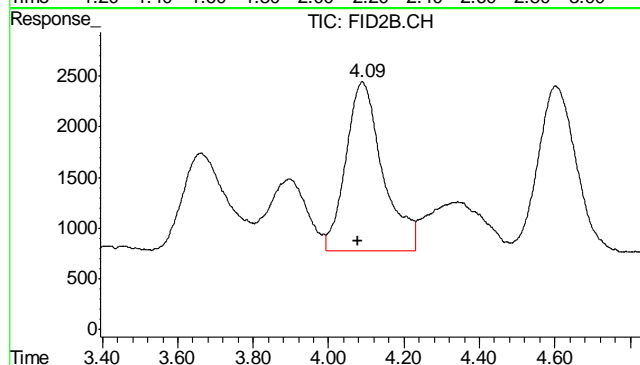
#1 TVH-Gasoline
 R.T.: 7.265 min
 Delta R.T.: 0.000 min
 Response: 25087880
 Conc: 0.35 mg/L m



#2 1,2,4-Trichlorobenzene
 R.T.: 14.334 min
 Delta R.T.: -0.008 min
 Response: 2830478
 Conc: 93.83 % m

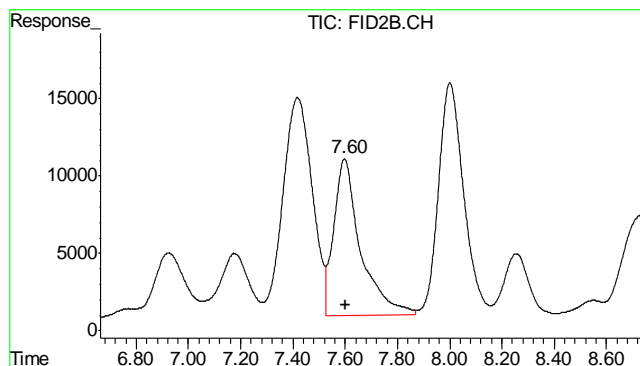


#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T.: 2.199 min
 Response: 0
 Conc: N.D.



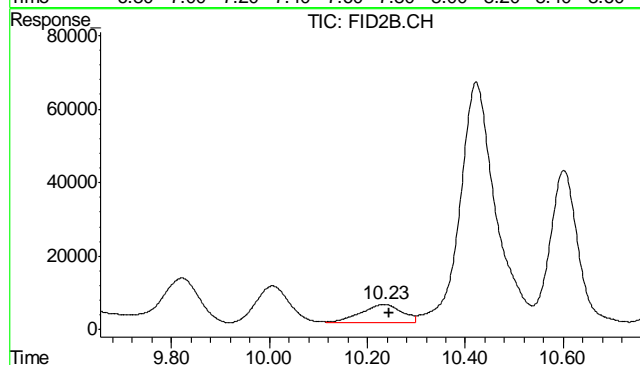
#5 Benzene
 R.T.: 4.089 min
 Delta R.T.: 0.010 min
 Response: 113597
 Conc: 0.21 ug/L

10.12 10



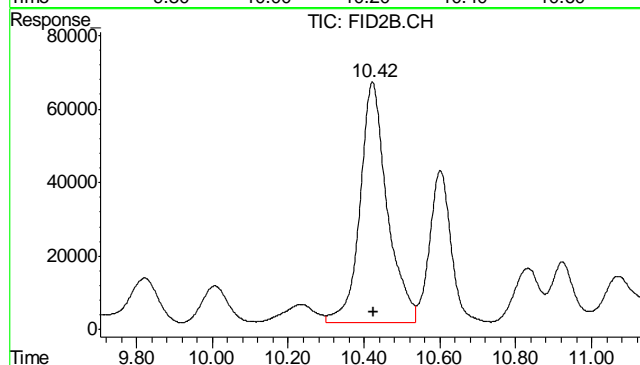
#6 Toluene

R.T.: 7.597 min
Delta R.T.: -0.003 min
Response: 728185
Conc: 1.33 ug/L



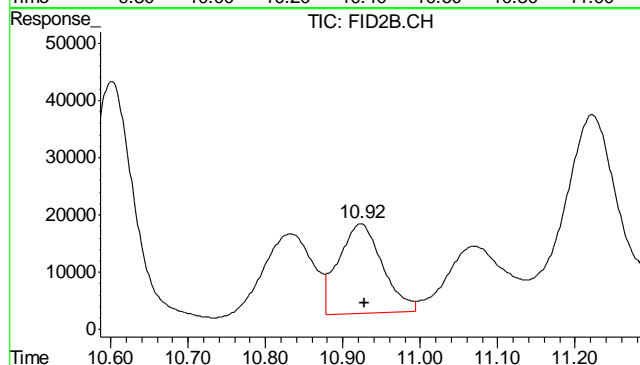
#7 Ethylbenzene

R.T.: 10.234 min
Delta R.T.: -0.010 min
Response: 295560
Conc: 0.65 ug/L



#8 m,p-Xylene

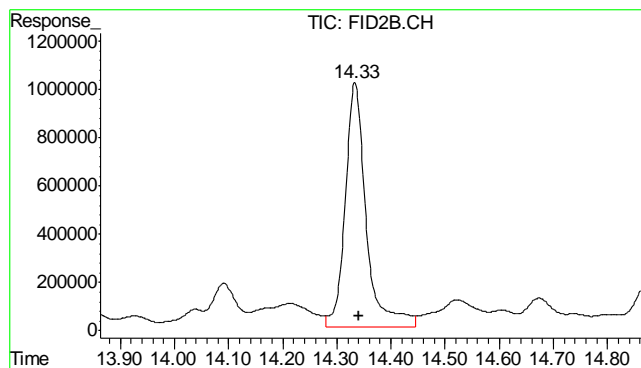
R.T.: 10.422 min
Delta R.T.: -0.004 min
Response: 3256870
Conc: 5.82 ug/L



#9 o-Xylene

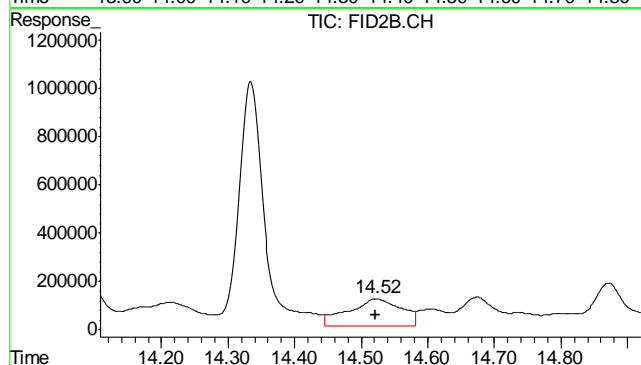
R.T.: 10.923 min
Delta R.T.: -0.004 min
Response: 620175
Conc: 1.35 ug/L

10.12 10



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

R.T.: 14.334 min
Delta R.T.: -0.006 min
Response: 27282242
Conc: 117.23 %



#11 Naphthalene

R.T.: 14.523 min
Delta R.T.: 0.000 min
Response: 6168043
Conc: 23.61 ug/L

10.1.2
10

Judy Melson
03/14/12 09:45

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\031312\GB15295.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\031312\GB15295.D\FID2B.CH
Acq On : 13 Mar 2012 5:30 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2671,GGB858,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Mar 14 08:40:20 2012 Quant Results File: TB851GB851SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB851GB851SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Mar 14 08:40:04 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	

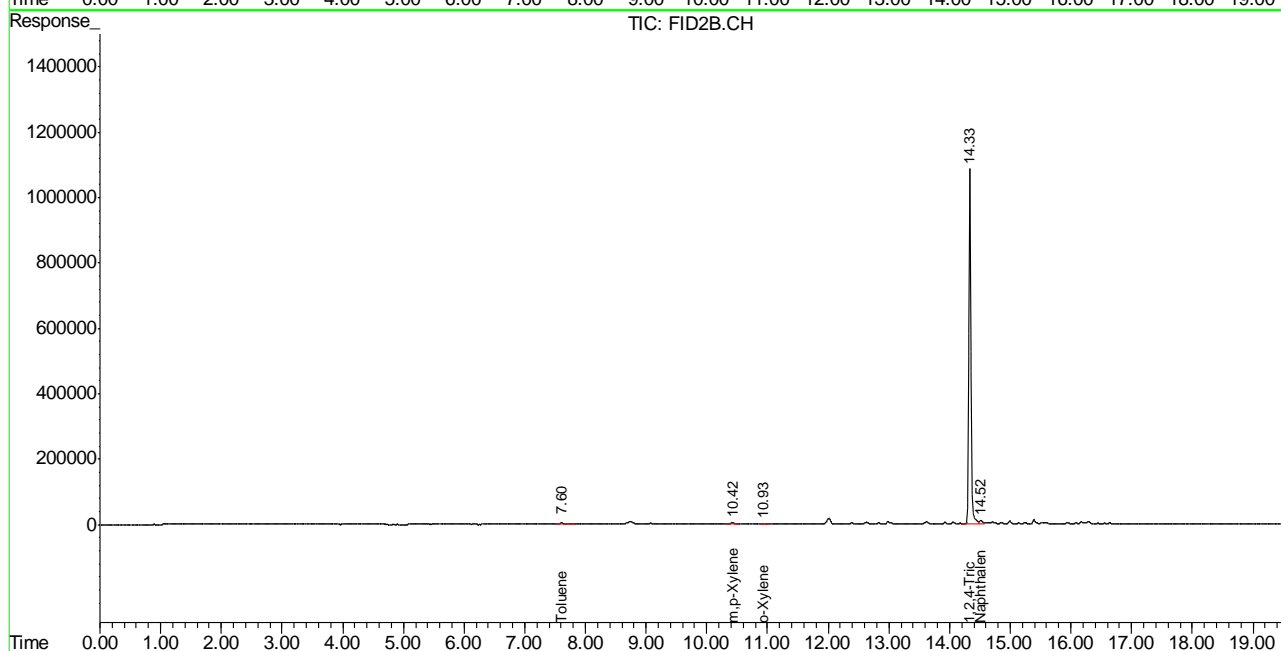
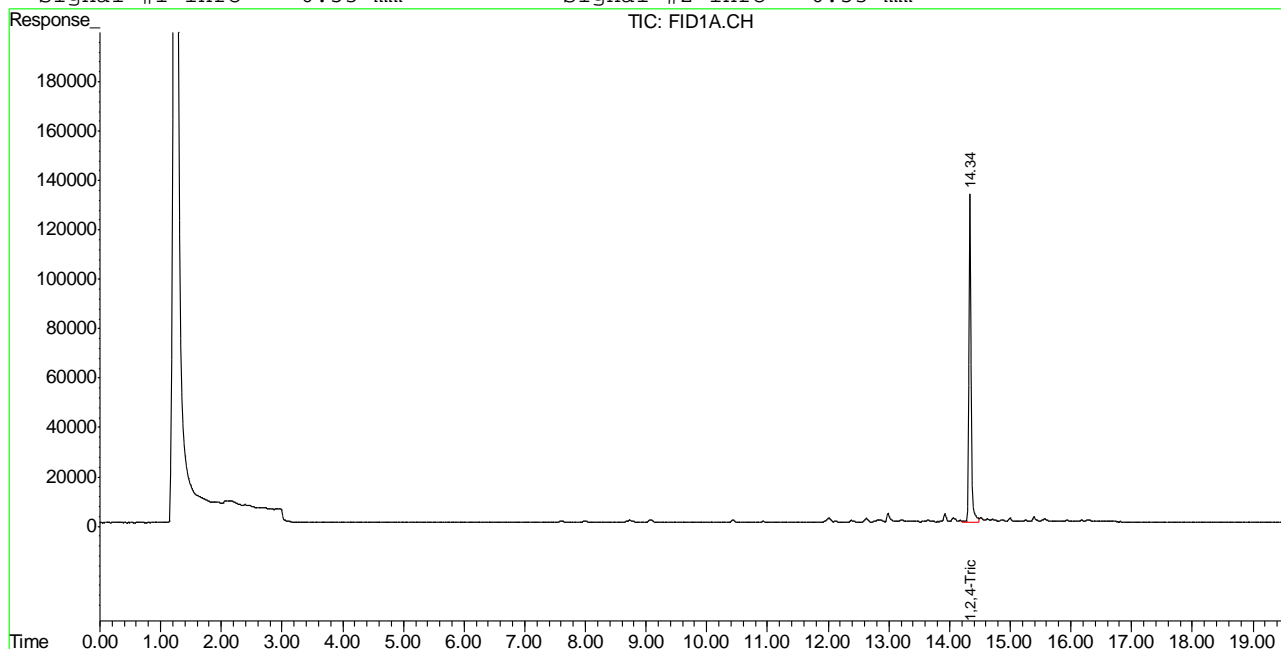
System Monitoring Compounds						
2) S	1,2,4-Trichlorobenzene	14.34	3279322	108.705	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.34	26080780	112.069	%	
Target Compounds						
1) H	TVH-Gasoline	7.26	5696664	<MDL	mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5) T	Benzene	0.00	0	N.D.	ug/L	d
6) T	Toluene	7.60	218482	0.399	ug/L	
7) T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8) T	m,p-Xylene	10.42	220790	0.394	ug/L	
9) T	o-Xylene	10.93	88601	0.193	ug/L	
11) T	Naphthalene	14.52	378695	1.449	ug/L	

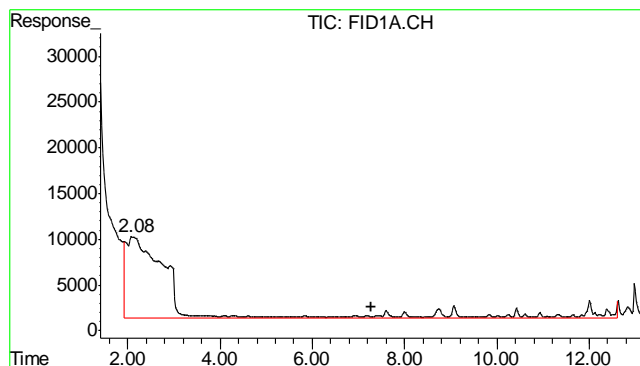
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\031312\GB15295.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\031312\GB15295.D\FID2B.CH
Acq On : 13 Mar 2012 5:30 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2671,GGB858,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Mar 14 8:43 2012 Quant Results File: TB851GB851SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB851GB851SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Mar 14 08:40:04 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

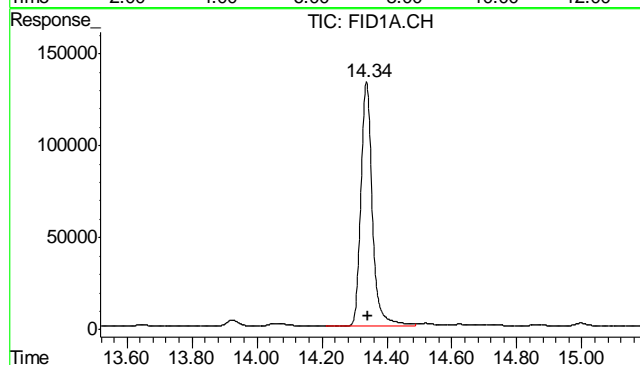
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





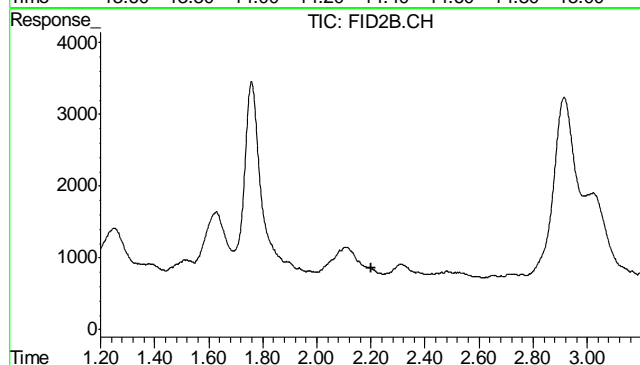
#1 TVH-Gasoline

R.T.: 7.265 min
Delta R.T.: 0.000 min
Response: 5696664
Conc: N.D.



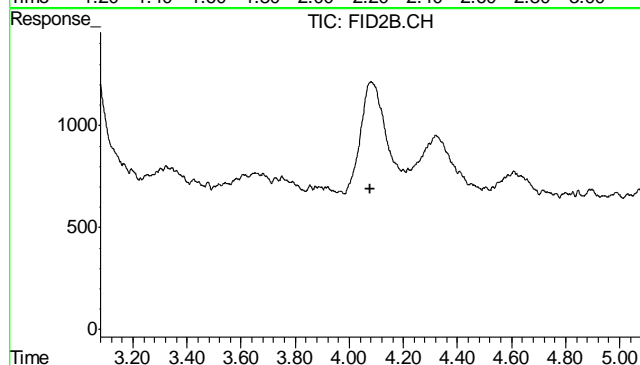
#2 1,2,4-Trichlorobenzene

R.T.: 14.336 min
Delta R.T.: -0.006 min
Response: 3279322
Conc: 108.71 % m



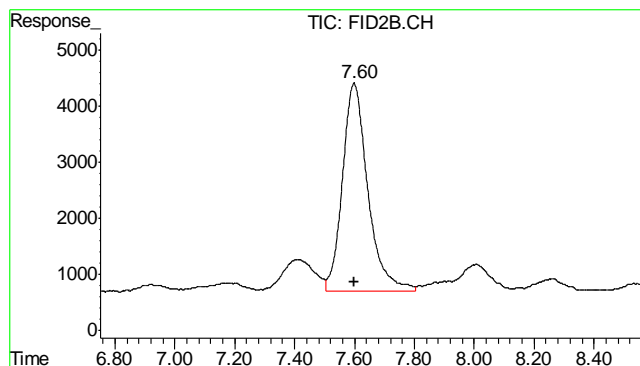
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.199 min
Response: 0
Conc: N.D.



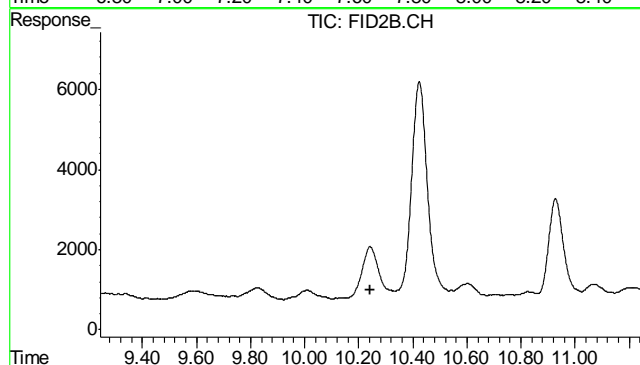
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.079 min
Response: 0
Conc: N.D.



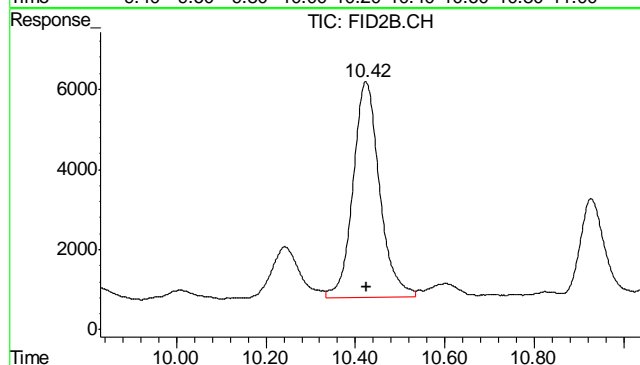
#6 Toluene

R.T.: 7.599 min
Delta R.T.: -0.002 min
Response: 218482
Conc: 0.40 ug/L



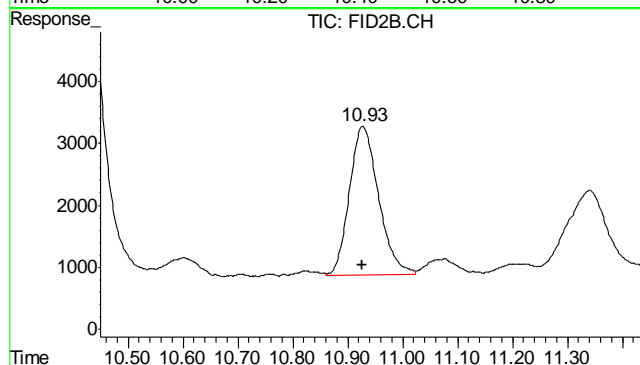
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.244 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

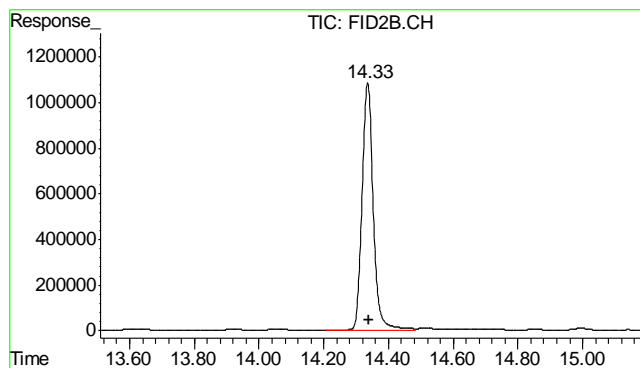
R.T.: 10.424 min
Delta R.T.: -0.003 min
Response: 220790
Conc: 0.39 ug/L



#9 o-Xylene

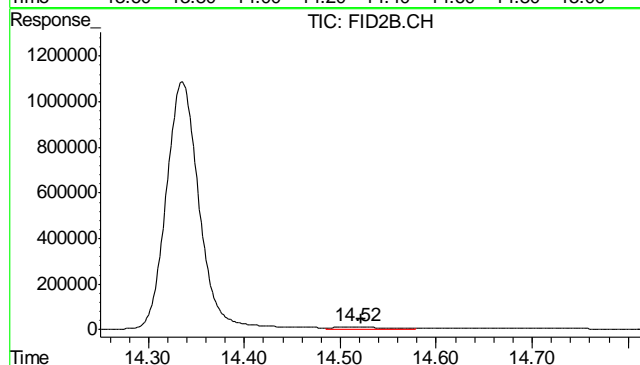
R.T.: 10.928 min
Delta R.T.: 0.000 min
Response: 88601
Conc: 0.19 ug/L

10.2.1
10



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

R.T.: 14.336 min
Delta R.T.: -0.004 min
Response: 26080780
Conc: 112.07 %



#11 Naphthalene

R.T.: 14.517 min
Delta R.T.: -0.005 min
Response: 378695
Conc: 1.45 ug/L

10.2.1
10

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

Page 1 of 1

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5519-MB	FH002184.D	1	03/13/12	TR	03/12/12	OP5519	GFH113

The QC reported here applies to the following samples:

Method: SW846-8015B

D32610-2

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	88% 43-136%

Method Blank Summary

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5547-MB	FH002238.D	1	03/15/12	TR	03/15/12	OP5547	GFH117

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

D32610-1

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	90% 43-136%

11.1.2
11

Blank Spike Summary

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5519-BS	FH002186.D	1	03/13/12	TR	03/12/12	OP5519	GFH113

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

D32610-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	536	80	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	86%	43-136%

11.2.1
11

Blank Spike Summary

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5547-BS	FH002240.D	1	03/15/12	TR	03/15/12	OP5547	GFH117

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

D32610-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	544	82	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	88%	43-136%

11.2.2
11

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5519-MS	FH002216.D	50	03/14/12	TR	03/12/12	OP5519	GFH115
OP5519-MSD	FH002218.D	50	03/14/12	TR	03/12/12	OP5519	GFH115
D32595-1	FH002222.D	50	03/14/12	TR	03/12/12	OP5519	GFH115

The QC reported here applies to the following samples:

Method: SW846-8015B

D32610-2

CAS No.	Compound	D32595-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	43300		869	50300	805* a	41000	-264* a	20	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D32595-1	Limits
84-15-1	o-Terphenyl	0% * b	0% * b	0% * b	43-136%

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Outside control limits due to dilution.

11.3.1
11

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D32610
Account: XTOKRWR XTO Energy
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5547-MS	FH002242.D	1	03/15/12	TR	03/15/12	OP5547	GFH117
OP5547-MSD	FH002244.D	1	03/15/12	TR	03/15/12	OP5547	GFH117
D32703-1	FH002246.D	1	03/15/12	TR	03/15/12	OP5547	GFH117

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

D32610-1

CAS No.	Compound	D32703-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	205		680	492	42	525	47	6	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D32703-1	Limits
84-15-1	o-Terphenyl	49%	54%	59%	43-136%

GC Semi-volatiles

Raw Data

Judy Melson
03/15/12 16:32

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH031512.SEC\
Data File : FH002248.D
Signal(s) : FID2B.ch
Acq On : 15 Mar 2012 1:59 pm
Operator : tedr
Sample : D32610-1
Misc : OP5547,GFH117,30.02,,,2,1
ALS Vial : 58 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 15 16:08:13 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) s o-Terphenyl	12.344	862085775	503.449 ug/mlm
Target Compounds			
1) H TPH-DRO (C10-C28)	9.832	2439016603	1580.457 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

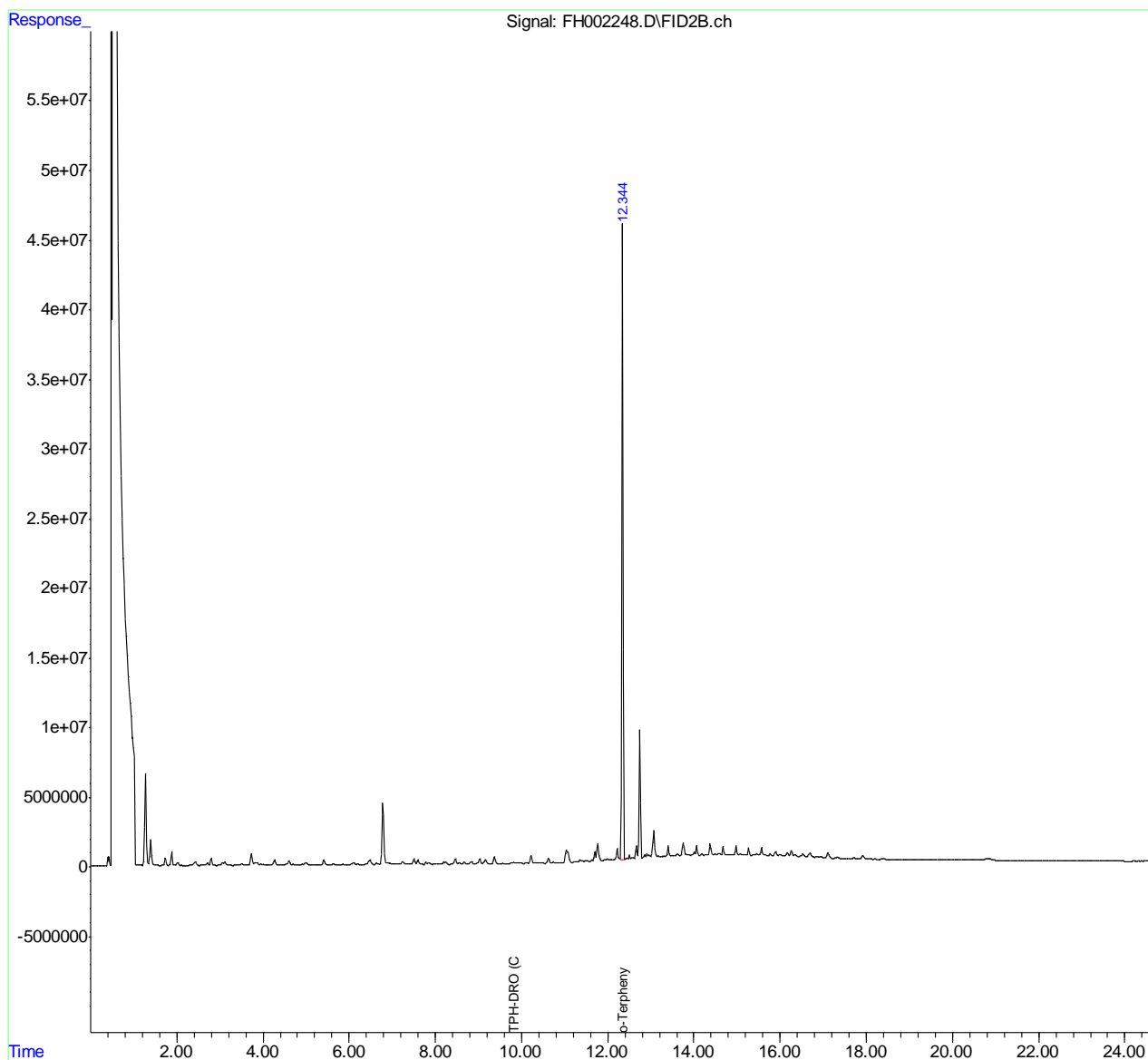
12.1.1
12

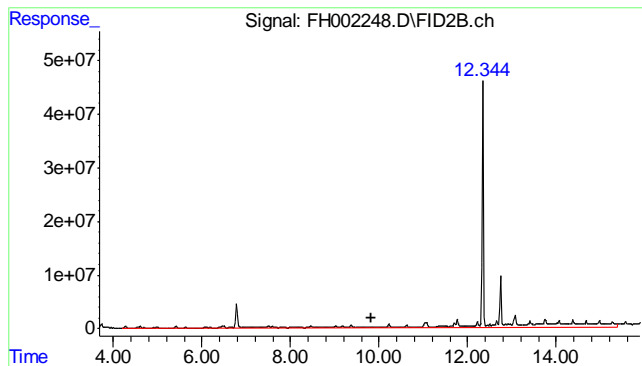
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH031512.SEC\
Data File : FH002248.D
Signal(s) : FID2B.ch
Acq On : 15 Mar 2012 1:59 pm
Operator : tedr
Sample : D32610-1
Misc : OP5547,GFH117,30.02,,,2,1
ALS Vial : 58 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 15 16:08:13 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :





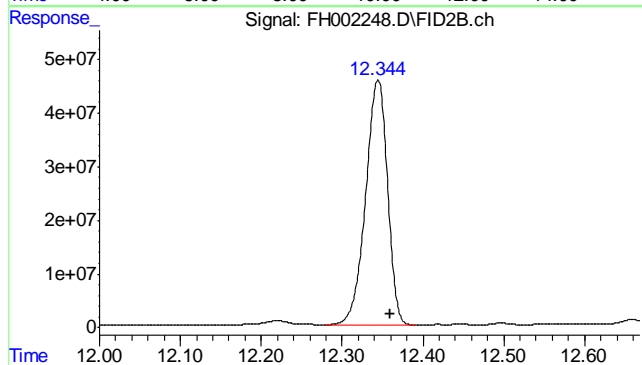
#1 TPH-DRO (C10-C28)

R.T.: 9.832 min

Delta R.T.: 0.000 min

Response: 2439016603

Conc: 1580.46 ug/ml m



#2 o-Terphenyl

R.T.: 12.344 min

Delta R.T.: -0.016 min

Response: 862085775

Conc: 503.45 ug/ml m

12.1.1
12

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH031312.SEC\
Data File : FH002206.D
Signal(s) : FID2B.ch
Acq On : 13 Mar 2012 10:32 pm
Operator : tedr
Sample : D32610-2
Misc : OP5519,GFH113,30.07,,,2,1
ALS Vial : 64 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 14 08:30:27 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) s o-Terphenyl	12.346	803169531	469.042 ug/mlm
Target Compounds			
1) H TPH-DRO (C10-C28)	9.832	11100790407	7193.197 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

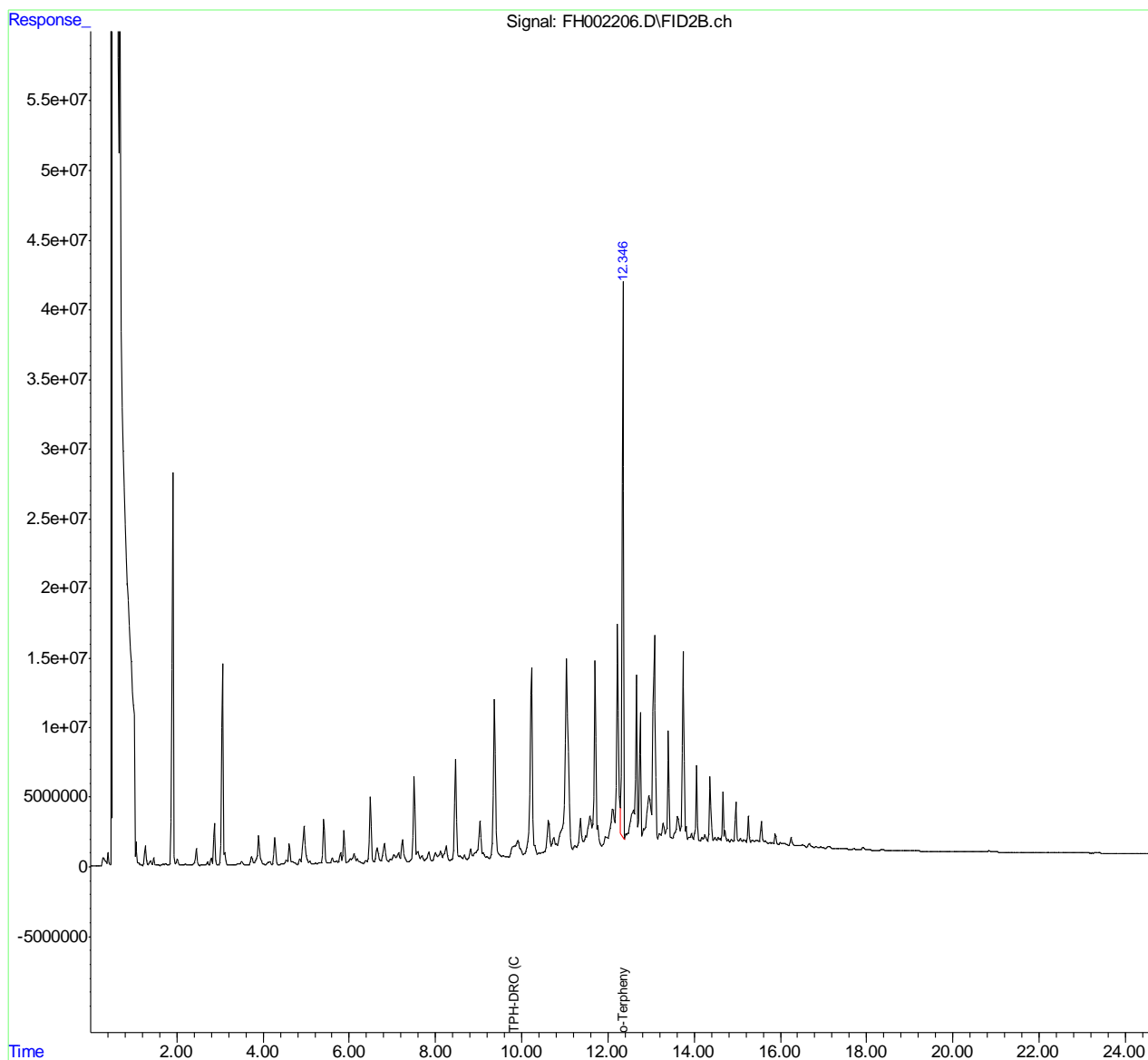
12.1.2
12

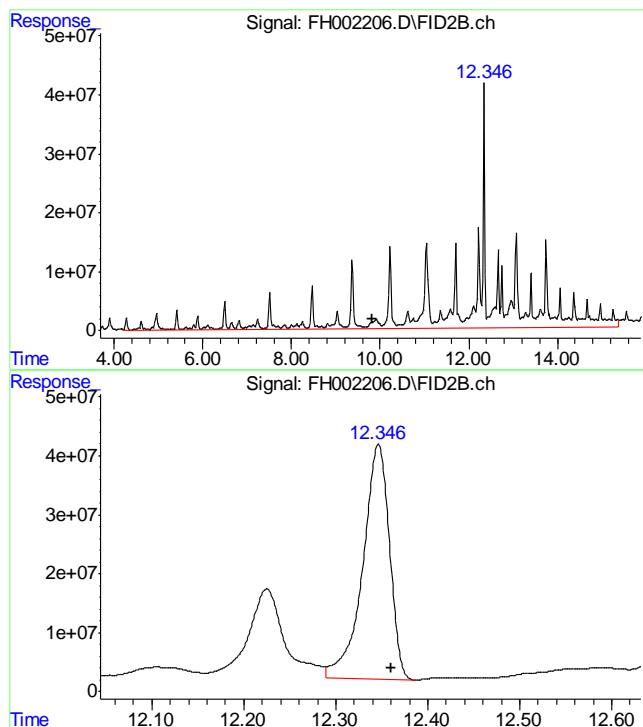
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH031312.SEC\
Data File : FH002206.D
Signal(s) : FID2B.ch
Acq On : 13 Mar 2012 10:32 pm
Operator : tedr
Sample : D32610-2
Misc : OP5519,GFH113,30.07,,,2,1
ALS Vial : 64 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 14 08:30:27 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)
 R.T.: 9.832 min
 Delta R.T.: 0.000 min
 Response: 11100790407
 Conc: 7193.20 ug/ml m

#2 o-Terphenyl
 R.T.: 12.346 min
 Delta R.T.: -0.014 min
 Response: 803169531
 Conc: 469.04 ug/ml m

12.1.2
 12

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH031312.SEC\
Data File : FH002184.D
Signal(s) : FID2B.ch
Acq On : 13 Mar 2012 3:56 pm
Operator : tedr
Sample : OP5519-MB
Misc : OP5519,GFH113,30.00,,,2,1
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 13 17:12:48 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) s o-Terphenyl	12.356	1505589486	879.248 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	9.832	75794120	49.114 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

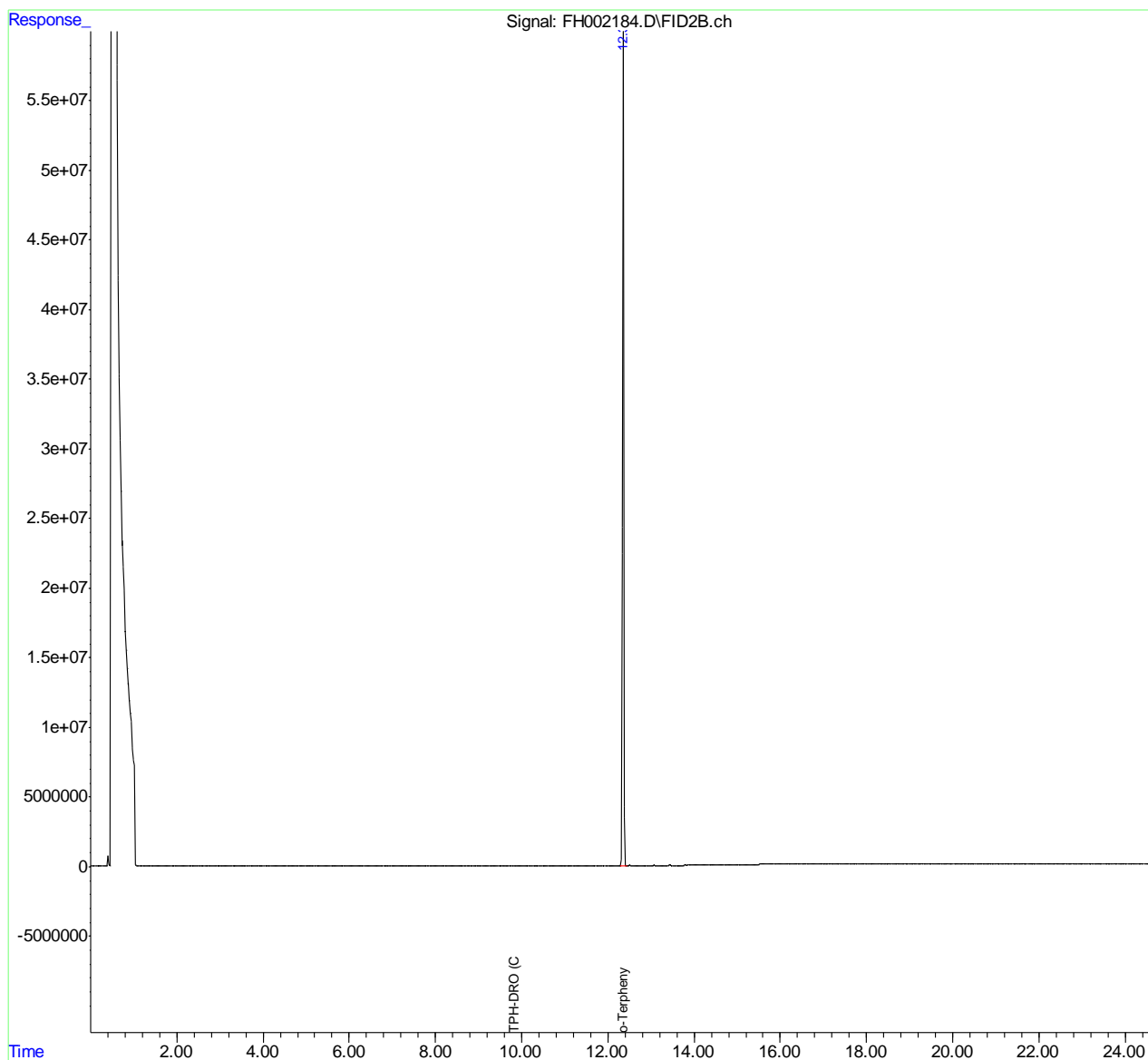
12.2.1
12

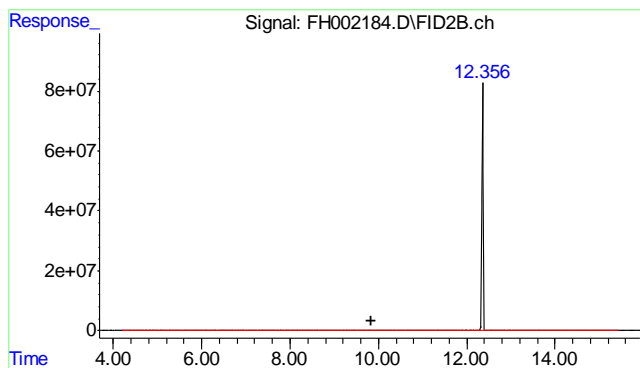
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH031312.SEC\
Data File : FH002184.D
Signal(s) : FID2B.ch
Acq On : 13 Mar 2012 3:56 pm
Operator : tedr
Sample : OP5519-MB
Misc : OP5519,GFH113,30.00,,,2,1
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 13 17:12:48 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

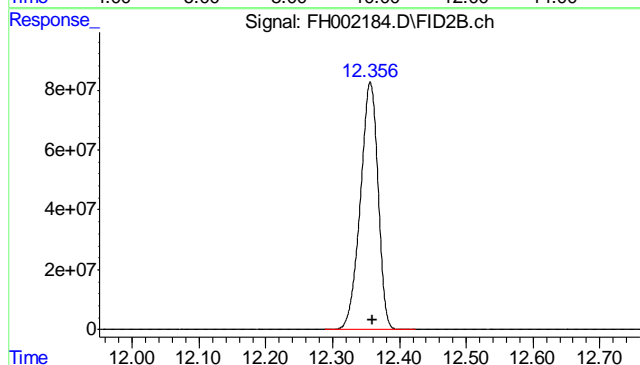
Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.832 min
Delta R.T.: 0.000 min
Response: 75794120
Conc: 49.11 ug/ml m



#2 o-Terphenyl

R.T.: 12.356 min
Delta R.T.: -0.004 min
Response: 1505589486
Conc: 879.25 ug/ml

12.2.1
12

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH031512.SEC\
Data File : FH002238.D
Signal(s) : FID2B.ch
Acq On : 15 Mar 2012 11:01 am
Operator : tedr
Sample : OP5547-MB
Misc : OP5547,GFH117,30.00,,,2,1
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 15 11:52:54 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) s o-Terphenyl	12.349	1535732365	896.851 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	9.832	133087049	86.239 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

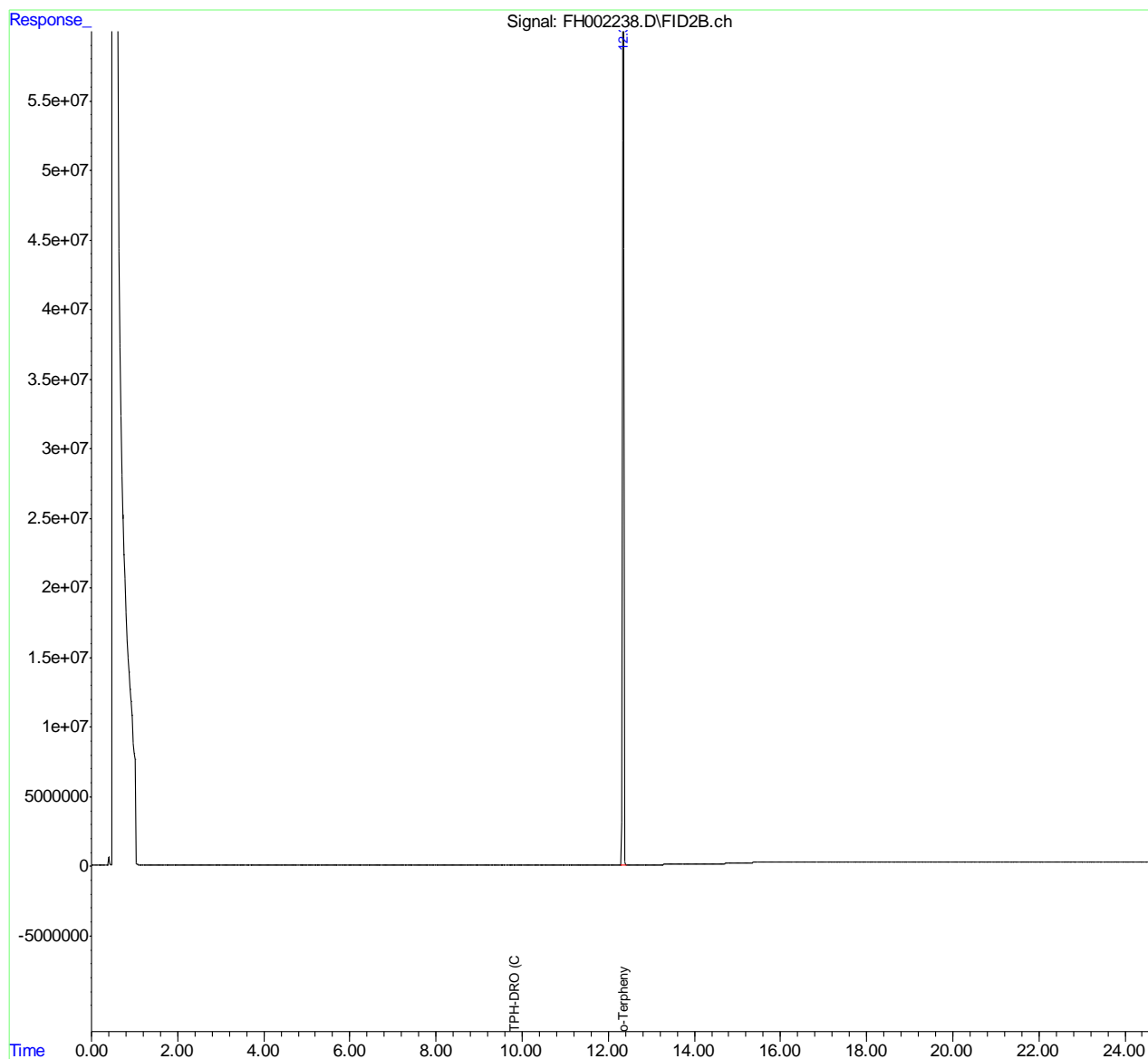
12.2.2
12

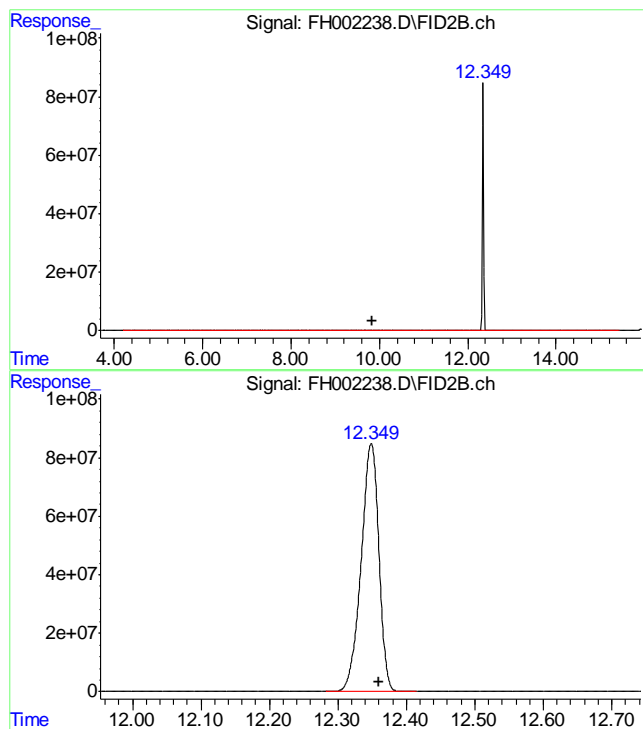
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH031512.SEC\
Data File : FH002238.D
Signal(s) : FID2B.ch
Acq On : 15 Mar 2012 11:01 am
Operator : tedr
Sample : OP5547-MB
Misc : OP5547,GFH117,30.00,,,2,1
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 15 11:52:54 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.832 min
Delta R.T.: 0.000 min
Response: 133087049
Conc: 86.24 ug/ml m

#2 o-Terphenyl

R.T.: 12.349 min
Delta R.T.: -0.011 min
Response: 1535732365
Conc: 896.85 ug/ml

12.2.2
12

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: D32610
Account: XTOKRWR - XTO Energy
Project: FRU 297-32A

QC Batch ID: MP7055
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 03/14/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.59	.59		
Antimony	3.0	.31	.31		
Arsenic	2.5	.59	.59		
Barium	1.0	.11	.11	0.090	<1.0
Beryllium	1.0	.044	.1		
Boron	5.0	.48	.48		
Cadmium	1.0	.027	.27		
Calcium	40	.96	1.1		
Chromium	1.0	.018	.031		
Cobalt	0.50	.035	.035		
Copper	1.0	.085	.16		
Iron	7.0	.34	2		
Lead	5.0	.16	.21		
Lithium	0.20	.028	.031		
Magnesium	20	.58	1.4		
Manganese	0.50	.0053	.012		
Molybdenum	1.0	.045	.054		
Nickel	3.0	.043	.099		
Phosphorus	10	1.1	1.2		
Potassium	200	5.5	9.2		
Selenium	5.0	.38	.5		
Silicon	5.0	.38	.51		
Silver	3.0	.018	.051		
Sodium	40	11	11		
Strontium	5.0		.017		
Thallium	1.0	.29	.34		
Tin	5.0	.55	1.3		
Titanium	1.0	.011	.1		
Uranium	5.0	.15	.2		
Vanadium	1.0	.016	.025		
Zinc	3.0	.028	.06		

Associated samples MP7055: D32610-2

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D32610
Account: XTOKRWR - XTO Energy
Project: FRU 297-32A

QC Batch ID: MP7055
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D32610
Account: XTOKRWR - XTO Energy
Project: FRU 297-32A

QC Batch ID: MP7055
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 03/14/12

Metal	D32609-1 Original MS	Spikelot MPICPALL % Rec	QC Limits
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	2100 2570	212	221.8(a) 75-125
Beryllium	anr		
Boron			
Cadmium	anr		
Calcium			
Chromium	anr		
Cobalt			
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus	anr		
Potassium			
Selenium	anr		
Silicon			
Silver	anr		
Sodium			
Strontium			
Thallium	anr		
Tin			
Titanium			
Uranium	anr		
Vanadium			
Zinc	anr		

Associated samples MP7055: D32610-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D32610
Account: XTOKRWR - XTO Energy
Project: FRU 297-32A

QC Batch ID: MP7055
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: D32610
Account: XTOKRWR - XTO Energy
Project: FRU 297-32A

QC Batch ID: MP7055
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 03/14/12

Metal	D32609-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	2100	2690	216	272.9(a)	4.6	20
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus	anr					
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium	anr					
Vanadium						
Zinc	anr					

Associated samples MP7055: D32610-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D32610
Account: XTOKRWR - XTO Energy
Project: FRU 297-32A

QC Batch ID: MP7055
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.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D32610
Account: XTOKRWR - XTO Energy
Project: FRU 297-32A

QC Batch ID: MP7055
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 03/14/12

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	189	200	94.5	80-120
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus	anr			
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	anr			

Associated samples MP7055: D32610-2

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D32610
Account: XTOKRWR - XTO Energy
Project: FRU 297-32A

QC Batch ID: MP7055
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D32610
Account: XTOKRWR - XTO Energy
Project: FRU 297-32A

QC Batch ID: MP7055
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 03/14/12

Metal	D32609-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	22100	21300	9.0	0-10
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus	anr			
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	anr			

Associated samples MP7055: D32610-2

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D32610
Account: XTOKRWR - XTO Energy
Project: FRU 297-32A

QC Batch ID: MP7055
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

13.1.4
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