



09/17/12

Technical Report for

XTO Energy

T78X-12G

Accutest Job Number: D38518

Sampling Date: 09/06/12

Report to:

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

Total number of pages in report: 182



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


Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

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

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Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	4
Section 2: Case Narrative/Conformance Summary	5
Section 3: Summary of Hits	8
Section 4: Sample Results	10
4.1: D38518-1: CUT 2 POST SOLDIIFAICATION	11
4.2: D38518-1A: CUT 2 POST SOLDIIFAICATION	17
4.3: D38518-2: CUT 1 POST SOLDIIFAICATION	19
4.4: D38518-2A: CUT 1 POST SOLDIIFAICATION	25
Section 5: Misc. Forms	27
5.1: Chain of Custody	28
Section 6: GC/MS Volatiles - QC Data Summaries	30
6.1: Method Blank Summary	31
6.2: Blank Spike Summary	32
6.3: Matrix Spike/Matrix Spike Duplicate Summary	33
Section 7: GC/MS Volatiles - Raw Data	34
7.1: Samples	35
7.2: Method Blanks	55
Section 8: GC/MS Semi-volatiles - QC Data Summaries	58
8.1: Method Blank Summary	59
8.2: Blank Spike Summary	60
8.3: Matrix Spike/Matrix Spike Duplicate Summary	61
Section 9: GC/MS Semi-volatiles - Raw Data	62
9.1: Samples	63
9.2: Method Blanks	97
Section 10: GC Volatiles - QC Data Summaries	114
10.1: Method Blank Summary	115
10.2: Blank Spike Summary	116
10.3: Matrix Spike/Matrix Spike Duplicate Summary	117
Section 11: GC Volatiles - Raw Data	118
11.1: Samples	119
11.2: Method Blanks	129
Section 12: GC Semi-volatiles - QC Data Summaries	134
12.1: Method Blank Summary	135
12.2: Blank Spike Summary	136
12.3: Matrix Spike/Matrix Spike Duplicate Summary	137
Section 13: GC Semi-volatiles - Raw Data	138
13.1: Samples	139
13.2: Method Blanks	145
Section 14: Metals Analysis - QC Data Summaries	148
14.1: Prep QC MP8357: Hg	149
14.2: Prep QC MP8358: Ba,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn	153
14.3: Prep QC MP8359: As	163

Table of Contents

-2-

14.4: Prep QC MP8372: Ca,Mg,Na,Sodium Adsorption Ratio 168

Section 15: General Chemistry - QC Data Summaries 178

15.1: Method Blank and Spike Results Summary 179

15.2: Duplicate Results Summary 180

15.3: Matrix Spike Results Summary 181

15.4: Matrix Spike Duplicate Results Summary 182

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



Sample Summary

XTO Energy
T78X-12G

Job No: D38518

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D38518-1	09/06/12	16:00 DS	09/08/12	SO	Soil	CUT 2 POST SOLDIIFAICATION
D38518-1A	09/06/12	16:00 DS	09/08/12	SO	Soil	CUT 2 POST SOLDIIFAICATION
D38518-2	09/06/12	16:10 DS	09/08/12	SO	Soil	CUT 1 POST SOLDIIFAICATION
D38518-2A	09/06/12	16:10 DS	09/08/12	SO	Soil	CUT 1 POST SOLDIIFAICATION

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



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: XTO Energy

Job No D38518

Site: T78X-12G

Report Date 9/17/2012 9:31:58 AM

On 09/08/2012, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 5.3 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D38518 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: V3V1186

- All samples were analyzed within the recommended method holding time.
- Sample(s) D38294-20MS, D38294-20MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO

Batch ID: OP6602

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D38513-1MS, D38513-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Volatiles by GC By Method SW846 8015B

Matrix SO

Batch ID: GGB959

- All samples were analyzed within the recommended method holding time.
- Sample(s) D38513-1MS, D38513-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix SO

Batch ID: OP6610

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D38290-2MS, D38290-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010C

Matrix AQ

Batch ID: MP8372

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38518-1AMS, D38518-1AMSD, D38518-1ASDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Magnesium are outside control limits for sample MP8372-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix SO

Batch ID: MP8358

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38480-1MS, D38480-1MSD, D38480-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Copper are outside control limits. Spike recovery indicates possible matrix interference.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The RPD(s) for the MS and MSD recoveries of Barium are outside control limits for sample MP8358-S2. High RPD due to possible sample matrix or nonhomogeneity.
- The serial dilution RPD(s) for Cadmium, Selenium, Silver, Copper are outside control limits for sample MP8358-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP8358-SD1 for Copper: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020A

Matrix SO

Batch ID: MP8359

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38480-1MSD, D38480-1SDL, D38480-1MS were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Arsenic are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

Metals By Method SW846 7471B

Matrix SO

Batch ID: MP8357

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38479-1MS, D38479-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO

Batch ID: GN16683

- Sample(s) D38518-2DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM19 2540B M

Matrix SO

Batch ID: GN16735

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

Wet Chemistry By Method SM2510B-1997 MOD

Matrix SO	Batch ID: GP8183
------------------	-------------------------

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SW846 3060/7196A M

Matrix SO	Batch ID: R14356
------------------	-------------------------

- The data for SW846 3060/7196A M meets quality control requirements.
- D38518-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix SO	Batch ID: R14357
------------------	-------------------------

- The data for SW846 3060/7196A M meets quality control requirements.
- D38518-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO	Batch ID: GP8138
------------------	-------------------------

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38513-1MS, D38513-1MSD, D38513-1DUP were used as the QC samples for the Chromium, Hexavalent analysis.
- The duplicate RPD(s) for Chromium, Hexavalent are outside control limits for sample GP8138-D1. RPD acceptable due to low duplicate and sample concentrations.

Wet Chemistry By Method SW846 9045D

Matrix SO	Batch ID: GN16689
------------------	--------------------------

- The following samples were run outside of holding time for method SW846 9045D: D38518-1, D38518-2

Wet Chemistry By Method USDA HANDBOOK 60

Matrix SO	Batch ID: MP8372
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- All samples for Sodium Adsorption Ratio: Calculated as: $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

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

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

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

Summary of Hits

Job Number: D38518
Account: XTO Energy
Project: T78X-12G
Collected: 09/06/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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D38518-1 CUT 2 POST SOLDIIFAICATION

Benzene	0.419	0.075	0.037	mg/kg	SW846 8260B
Toluene	1.93	0.15	0.075	mg/kg	SW846 8260B
Ethylbenzene	0.370	0.15	0.028	mg/kg	SW846 8260B
Xylene (total)	1.95	0.30	0.15	mg/kg	SW846 8260B
Chrysene	0.0280	0.010	0.0054	mg/kg	SW846 8270C BY SIM
Naphthalene	0.336	0.015	0.013	mg/kg	SW846 8270C BY SIM
Pyrene	0.0389	0.010	0.0054	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	77.6	15	7.5	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	523	17	11	mg/kg	SW846-8015B
Arsenic	14.2	0.12		mg/kg	SW846 6020A
Barium	2100	1.2		mg/kg	SW846 6010C
Chromium	18.0	1.2		mg/kg	SW846 6010C
Copper	31.6	1.2		mg/kg	SW846 6010C
Lead	15.5	6.1		mg/kg	SW846 6010C
Nickel	52.8	3.7		mg/kg	SW846 6010C
Zinc	49.4	3.7		mg/kg	SW846 6010C
Specific Conductivity	13500	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent ^a	17.4	2.2		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2	151			mv	ASTM D1498-76M
pH	12.35			su	SW846 9045D

D38518-1A CUT 2 POST SOLDIIFAICATION

Calcium	129	2.0		mg/l	SW846 6010C
Sodium	2590	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio ^b	62.7			ratio	USDA HANDBOOK 60

D38518-2 CUT 1 POST SOLDIIFAICATION

Benzene	0.744	0.073	0.036	mg/kg	SW846 8260B
Toluene	1.78	0.15	0.073	mg/kg	SW846 8260B
Ethylbenzene	0.277	0.15	0.028	mg/kg	SW846 8260B
Xylene (total)	1.56	0.29	0.15	mg/kg	SW846 8260B
Chrysene	0.0621	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Fluoranthene	0.0165	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Fluorene	0.102	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Naphthalene	0.519	0.014	0.013	mg/kg	SW846 8270C BY SIM
Pyrene	0.0380	0.010	0.0053	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	46.7	15	7.3	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	310	16	11	mg/kg	SW846-8015B
Arsenic	10.9	0.12		mg/kg	SW846 6020A
Barium	2020	1.2		mg/kg	SW846 6010C
Chromium	12.8	1.2		mg/kg	SW846 6010C

Summary of Hits

Page 2 of 2

Job Number: D38518
Account: XTO Energy
Project: T78X-12G
Collected: 09/06/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						
Copper		28.2	1.2		mg/kg	SW846 6010C
Lead		20.4	6.0		mg/kg	SW846 6010C
Nickel		85.9	3.6		mg/kg	SW846 6010C
Zinc		40.5	3.6		mg/kg	SW846 6010C
Specific Conductivity		8560	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent ^a		12.1	2.2		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2		141			mv	ASTM D1498-76M
pH		12.49			su	SW846 9045D

D38518-2A CUT 1 POST SOLDIIFAICATION

Calcium	705	2.0	mg/l	SW846 6010C
Sodium	1420	2.0	mg/l	SW846 6010C
Sodium Adsorption Ratio ^b	14.7		ratio	USDA HANDBOOK 60

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

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

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 2 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-1	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	79.9
Method:	SW846 8260B		
Project:	T78X-12G		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V20398.D	1	09/11/12	BD	n/a	n/a	V3V1186
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.419	0.075	0.037	mg/kg	
108-88-3	Toluene	1.93	0.15	0.075	mg/kg	
100-41-4	Ethylbenzene	0.370	0.15	0.028	mg/kg	
1330-20-7	Xylene (total)	1.95	0.30	0.15	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	91%		64-130%
460-00-4	4-Bromofluorobenzene	106%		62-131%
17060-07-0	1,2-Dichloroethane-D4	110%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 2 POST SOLDIIFAICATION	
Lab Sample ID:	D38518-1	Date Sampled: 09/06/12
Matrix:	SO - Soil	Date Received: 09/08/12
Method:	SW846 8270C BY SIM SW846 3546	Percent Solids: 79.9
Project:	T78X-12G	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G11218.D	1	09/13/12	DC	09/11/12	OP6602	E3G522
Run #2							

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.010	0.0054	mg/kg	
120-12-7	Anthracene	ND	0.010	0.0054	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.010	0.0054	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.010	0.0054	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.010	0.0054	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.010	0.0054	mg/kg	
218-01-9	Chrysene	0.0280	0.010	0.0054	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.010	0.0054	mg/kg	
206-44-0	Fluoranthene	ND	0.010	0.0054	mg/kg	
86-73-7	Fluorene	ND	0.010	0.0054	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.010	0.0054	mg/kg	
91-20-3	Naphthalene	0.336	0.015	0.013	mg/kg	
129-00-0	Pyrene	0.0389	0.010	0.0054	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%		10-145%
321-60-8	2-Fluorobiphenyl	78%		10-130%
1718-51-0	Terphenyl-d14	77%		22-130%

ND = Not detected MDL - Method Detection Limit

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N = Indicates presumptive evidence of a compound

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Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 2 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-1	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	79.9
Method:	SW846 8015B		
Project:	T78X-12G		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB17497.D	1	09/11/12	SK	n/a	n/a	GGB959
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	77.6	15	7.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	89%		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 POST SOLDIIFAICATION					Date Sampled:	09/06/12
Lab Sample ID:	D38518-1					Date Received:	09/08/12
Matrix:	SO - Soil					Percent Solids:	79.9
Method:	SW846-8015B SW846 3546						
Project:	T78X-12G						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD17357.D	1	09/12/12	AW	09/12/12	OP6610	GFD890
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)	523	17	11	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	76%		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: CUT 2 POST SOLDIIFAICATION

Lab Sample ID: D38518-1

Matrix: SO - Soil

Project: T78X-12G

Date Sampled: 09/06/12

Date Received: 09/08/12

Percent Solids: 79.9

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	14.2	0.12	mg/kg	5	09/11/12	09/14/12 JB	SW846 6020A ³	SW846 3050B ⁶
Barium	2100	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Cadmium	< 1.2	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Chromium	18.0	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Copper	31.6	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Lead	15.5	6.1	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Mercury	< 0.12	0.12	mg/kg	1	09/11/12	09/11/12 JM	SW846 7471B ¹	SW846 7471B ⁴
Nickel	52.8	3.7	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Selenium	< 6.1	6.1	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Silver	< 3.7	3.7	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Zinc	49.4	3.7	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵

(1) Instrument QC Batch: MA2789

(2) Instrument QC Batch: MA2795

(3) Instrument QC Batch: MA2802

(4) Prep QC Batch: MP8357

(5) Prep QC Batch: MP8358

(6) Prep QC Batch: MP8359

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 2 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-1	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	79.9
Project:	T78X-12G		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	13500	1.0	umhos/cm	1	09/14/12	JK	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	09/11/12	CJ	SW846 3060A/7196A
Chromium, Trivalent ^a	17.4	2.2	mg/kg	1	09/12/12 20:01	JB	SW846 3060/7196A M
Redox Potential Vs H2	151		mv	1	09/10/12	CT	ASTM D1498-76M
Solids, Percent	79.9		%	1	09/13/12	SWT	SM19 2540B M
pH	12.35		su	1	09/10/12 15:45	CJ	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 2 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-1A	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	79.9
Project:	T78X-12G		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	129	2.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	< 1.0	1.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²
Sodium	2590	2.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²

(1) Instrument QC Batch: MA2796
(2) Prep QC Batch: MP8372

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT 2 POST SOLDIIFAICATION
Lab Sample ID: D38518-1A
Matrix: SO - Soil
Project: T78X-12G

Date Sampled: 09/06/12
Date Received: 09/08/12
Percent Solids: 79.9

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	62.7		ratio	1	09/12/12 17:10	JB	USDA HANDBOOK 60

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

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 1 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-2	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	81.3
Method:	SW846 8260B		
Project:	T78X-12G		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V20399.D	1	09/11/12	BD	n/a	n/a	V3V1186
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.01 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.744	0.073	0.036	mg/kg	
108-88-3	Toluene	1.78	0.15	0.073	mg/kg	
100-41-4	Ethylbenzene	0.277	0.15	0.028	mg/kg	
1330-20-7	Xylene (total)	1.56	0.29	0.15	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	91%		64-130%
460-00-4	4-Bromofluorobenzene	104%		62-131%
17060-07-0	1,2-Dichloroethane-D4	111%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 1 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-2	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	81.3
Method:	SW846 8270C BY SIM SW846 3546		
Project:	T78X-12G		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G11219.D	1	09/13/12	DC	09/11/12	OP6602	E3G522
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.010	0.0053	mg/kg	
120-12-7	Anthracene	ND	0.010	0.0053	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.010	0.0053	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.010	0.0053	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.010	0.0053	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.010	0.0053	mg/kg	
218-01-9	Chrysene	0.0621	0.010	0.0053	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.010	0.0053	mg/kg	
206-44-0	Fluoranthene	0.0165	0.010	0.0053	mg/kg	
86-73-7	Fluorene	0.102	0.010	0.0053	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.010	0.0053	mg/kg	
91-20-3	Naphthalene	0.519	0.014	0.013	mg/kg	
129-00-0	Pyrene	0.0380	0.010	0.0053	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%		10-145%
321-60-8	2-Fluorobiphenyl	71%		10-130%
1718-51-0	Terphenyl-d14	75%		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 1 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-2	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	81.3
Method:	SW846 8015B		
Project:	T78X-12G		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB17498.D	1	09/11/12	SK	n/a	n/a	GGB959
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)	46.7	15	7.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	86%		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 1 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-2	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	81.3
Method:	SW846-8015B SW846 3546		
Project:	T78X-12G		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD17359.D	1	09/12/12	AW	09/12/12	OP6610	GFD890
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)	310	16	11	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	78%		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:	CUT 1 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-2	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	81.3
Project:	T78X-12G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	10.9	0.12	mg/kg	5	09/11/12	09/14/12 JB	SW846 6020A ³	SW846 3050B ⁶
Barium	2020	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Cadmium	< 1.2	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Chromium	12.8	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Copper	28.2	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Lead	20.4	6.0	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Mercury	< 0.12	0.12	mg/kg	1	09/11/12	09/11/12 JM	SW846 7471B ¹	SW846 7471B ⁴
Nickel	85.9	3.6	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Selenium	< 6.0	6.0	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Silver	< 3.6	3.6	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Zinc	40.5	3.6	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵

(1) Instrument QC Batch: MA2789

(2) Instrument QC Batch: MA2795

(3) Instrument QC Batch: MA2802

(4) Prep QC Batch: MP8357

(5) Prep QC Batch: MP8358

(6) Prep QC Batch: MP8359

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 1 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-2	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	81.3
Project:	T78X-12G		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	8560	1.0	umhos/cm	1	09/14/12	JK	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	09/11/12	CJ	SW846 3060A/7196A
Chromium, Trivalent ^a	12.1	2.2	mg/kg	1	09/12/12 20:11	JB	SW846 3060/7196A M
Redox Potential Vs H2	141		mv	1	09/10/12	CT	ASTM D1498-76M
Solids, Percent	81.3		%	1	09/13/12	SWT	SM19 2540B M
pH	12.49		su	1	09/10/12 15:45	CJ	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT 1 POST SOLDIIFAICATION
Lab Sample ID: D38518-2A
Matrix: SO - Soil
Project: T78X-12G

Date Sampled: 09/06/12
Date Received: 09/08/12
Percent Solids: 81.3

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	705	2.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	< 1.0	1.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²
Sodium	1420	2.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²

(1) Instrument QC Batch: MA2796
(2) Prep QC Batch: MP8372

RL = Reporting Limit

4.4
4

Report of Analysis

Client Sample ID:	CUT 1 POST SOLDIIFAICATION	Date Sampled:	09/06/12
Lab Sample ID:	D38518-2A	Date Received:	09/08/12
Matrix:	SO - Soil	Percent Solids:	81.3
Project:	T78X-12G		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	14.7		ratio	1	09/12/12 18:44	JB	USDA HANDBOOK 60

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

RL = Reporting Limit

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D38518

Client: KRW CONSULTING

Immediate Client Services Action Required: No

Date / Time Received: 9/8/2012 10:40:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XTO PCU T78X-12G

Airbill #'s: HD

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

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www.accutest.com

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1186-MB	3V20390.D	1	09/11/12	BD	n/a	n/a	V3V1186

The QC reported here applies to the following samples:

Method: SW846 8260B

D38518-1, D38518-2

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

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	98% 64-130%
460-00-4	4-Bromofluorobenzene	92% 62-131%
17060-07-0	1,2-Dichloroethane-D4	126% 70-130%

Blank Spike Summary

Page 1 of 1

Job Number: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1186-BS	3V20391.D	1	09/11/12	BD	n/a	n/a	V3V1186

The QC reported here applies to the following samples:

Method: SW846 8260B

D38518-1, D38518-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.8	98	70-130
100-41-4	Ethylbenzene	50	48.0	96	70-130
108-88-3	Toluene	50	44.8	90	70-130
1330-20-7	Xylene (total)	150	147	98	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	99%	64-130%
460-00-4	4-Bromofluorobenzene	105%	62-131%
17060-07-0	1,2-Dichloroethane-D4	117%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D38294-20MS	3V20394.D	1	09/11/12	BD	n/a	n/a	V3V1186
D38294-20MSD	3V20395.D	1	09/11/12	BD	n/a	n/a	V3V1186
D38294-20	3V20393.D	1	09/11/12	BD	n/a	n/a	V3V1186

The QC reported here applies to the following samples:

Method: SW846 8260B

D38518-1, D38518-2

CAS No.	Compound	D38294-20 ug/kg	Spike Q	ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		2470	2400	97	2470	100	3	64-139/30
100-41-4	Ethylbenzene	ND		2470	2340	95	2410	98	3	68-136/30
108-88-3	Toluene	ND		2470	2110	85	2150	87	2	60-130/30
1330-20-7	Xylene (total)	ND		7410	7210	97	7410	100	3	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D38294-20	Limits
2037-26-5	Toluene-D8	91%	92%	93%	64-130%
460-00-4	4-Bromofluorobenzene	107%	105%	100%	62-131%
17060-07-0	1,2-Dichloroethane-D4	112%	113%	117%	70-130%

* = Outside of Control Limits.

GC/MS Volatiles

Raw Data

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3091012.S\
 Data File : 3V20398.D
 Acq On : 11 Sep 2012 4:29 am
 Operator : BRETD
 Sample : D38518-1
 Misc : MS4640,V3V1186,5.050,,100,5,1
 ALS Vial : 35 Sample Multiplier: 1

Quant Time: Sep 11 09:29:53 2012
 Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
 Quant Title : 8260
 QLast Update : Fri Aug 24 10:57:50 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.857	168	202862	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.655	114	341326	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.290	117	393314	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.283	152	233895	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.251	102	25115	54.99	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	109.98%
61) Toluene-d8	14.048	98	465775	45.36	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	90.72%
69) 4-Bromofluorobenzene	16.243	95	212772	52.95	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	105.90%

Target Compounds

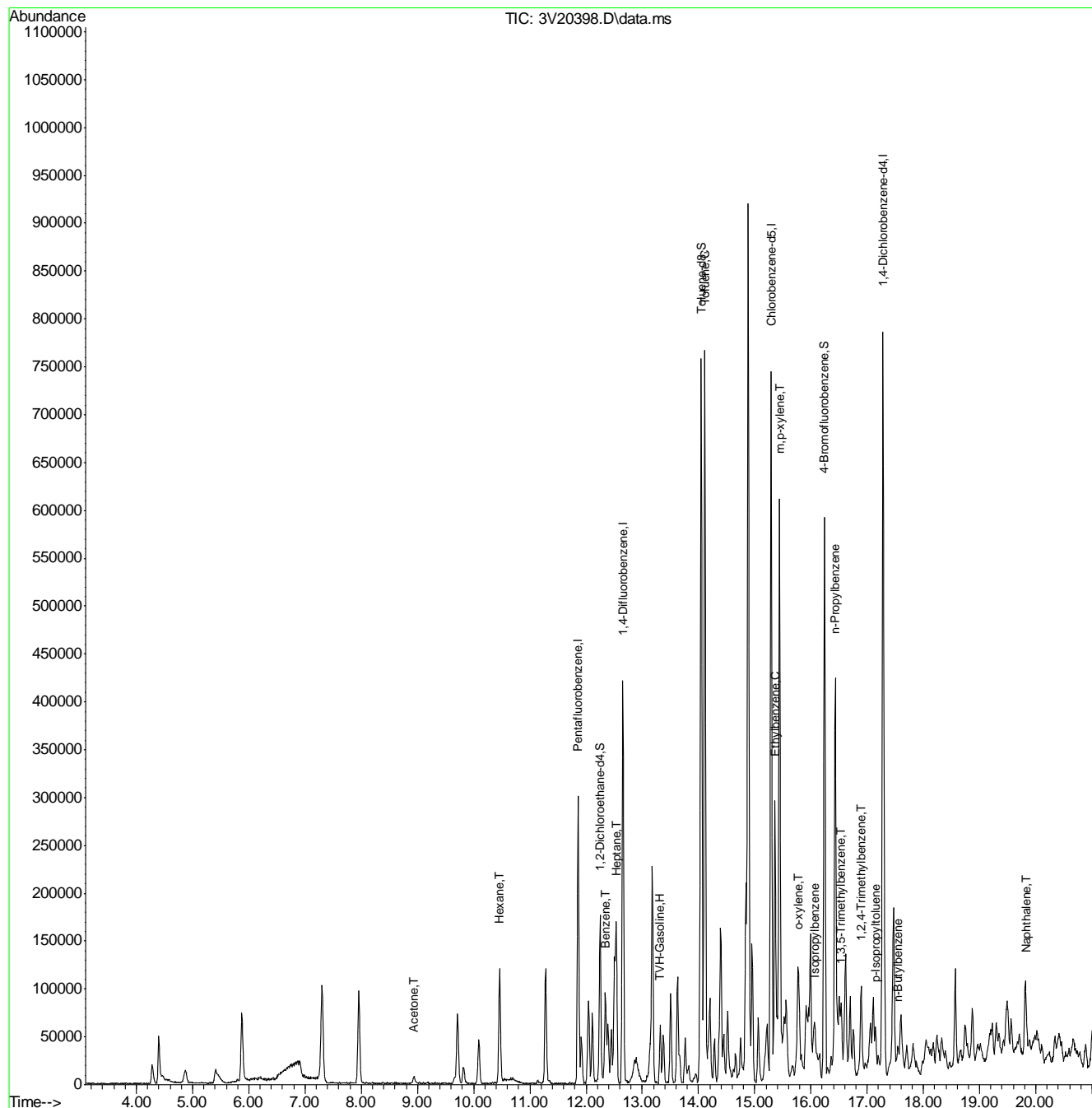
						Qvalue
1) TVH-Gasoline	13.329	TIC	13766967m	483.60	ug/l	
15) Acetone	8.943	58	3667	6.37	ug/l	# 66
41) Hexane	10.461	57	59941	11.18	ug/l	100
43) Heptane	12.537	43	72218	10.54	ug/l	95
50) Benzene	12.344	78	69291	5.62	ug/l	100
62) Toluene	14.109	92	258072	25.90	ug/l	100
66) Ethylbenzene	15.361	91	91686	4.96	ug/l	99
68) Isopropylbenzene	16.073	105	4310	0.25	ug/l	98
72) m,p-xylene	15.441	106	175179	23.69	ug/l	93
73) o-xylene	15.790	106	15699	2.53	ug/l	85
77) n-Propylbenzene	16.423	91	22233	1.01	ug/l	92
80) 1,3,5-Trimethylbenzene	16.522	105	11192m	0.72	ug/l	
82) 1,2,4-Trimethylbenzene	16.888	105	34206	2.17	ug/l	87
86) p-Isopropyltoluene	17.148	119	22183	1.36	ug/l	# 90
88) n-Butylbenzene	17.542	91	9425	0.60	ug/l	# 81
91) Naphthalene	19.834	128	24489	2.04	ug/l	100

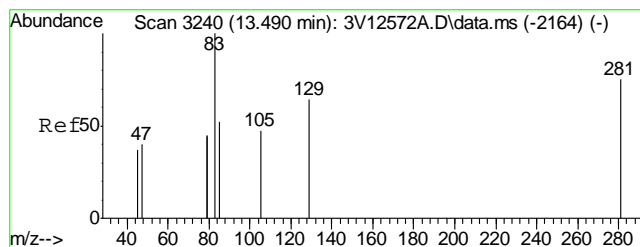
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

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Data File : 3V20398.D
Acq On : 11 Sep 2012 4:29 am
Operator : BRETD
Sample : D38518-1
Misc : MS4640,V3V1186,5.050,,100,5,1
ALS Vial : 35 Sample Multiplier: 1

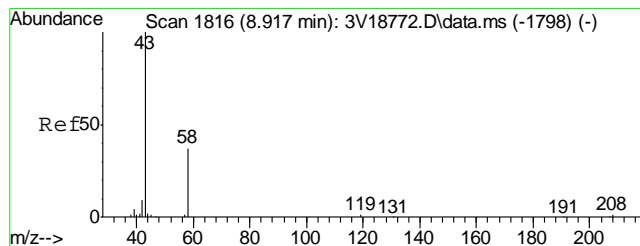
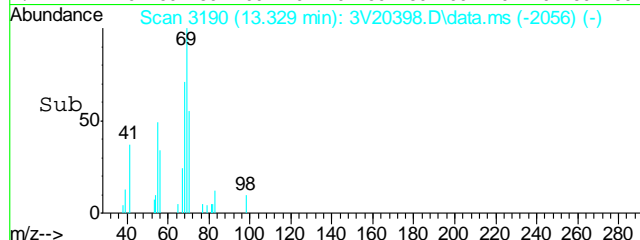
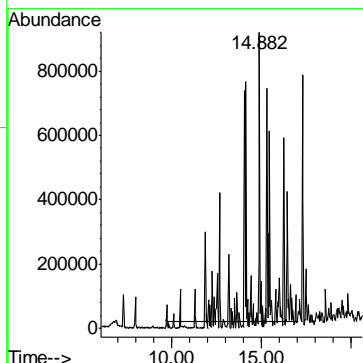
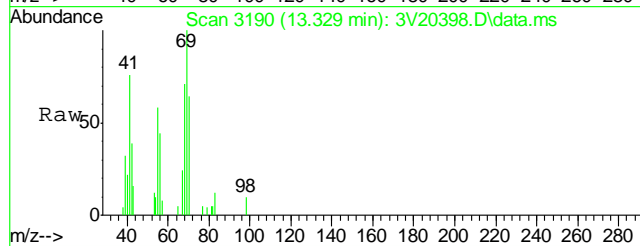
Quant Time: Sep 11 09:29:53 2012
Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
Quant Title : 8260
QLast Update : Fri Aug 24 10:57:50 2012
Response via : Initial Calibration





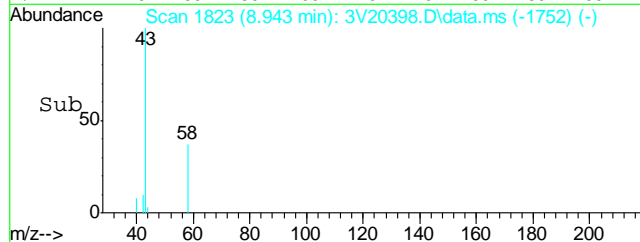
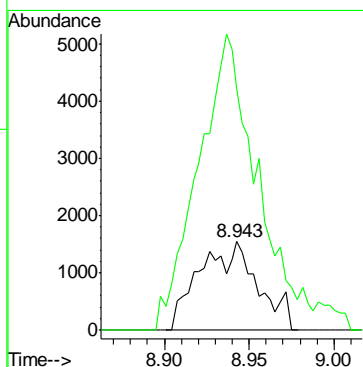
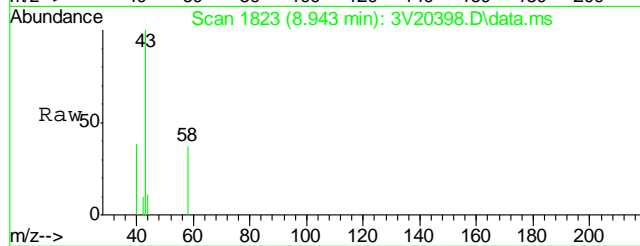
#1
TVH-Gasoline
Concen: 483.60 ug/l m
RT: 13.329 min Scan# 3190
Delta R.T. 0.000 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

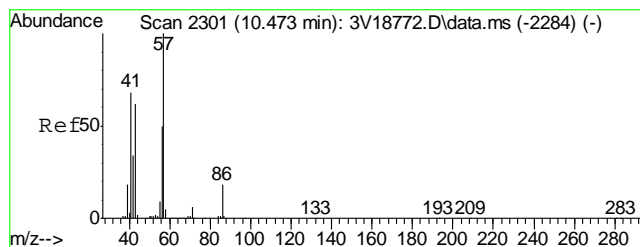
Tgt Ion:TIC Resp:13766967



#15
Acetone
Concen: 6.37 ug/l
RT: 8.943 min Scan# 1823
Delta R.T. 0.029 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

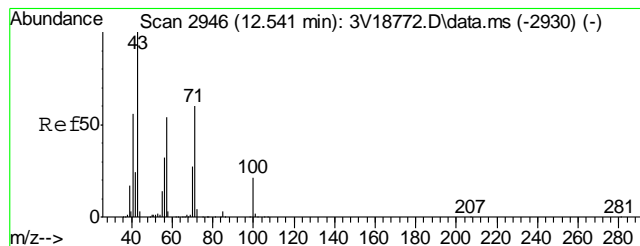
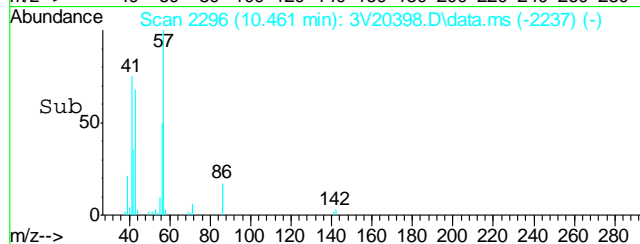
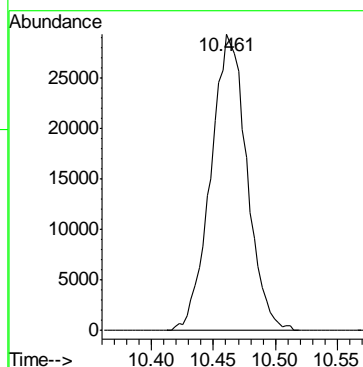
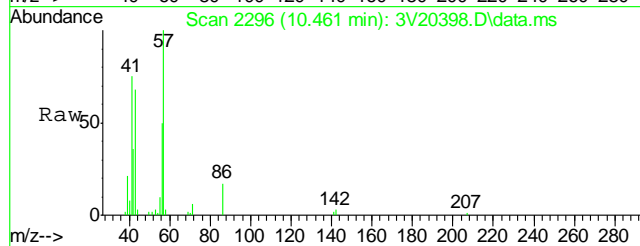
Tgt Ion: 58 Resp: 3667
Ion Ratio Lower Upper
58 100
43 351.5 267.0 307.0#





#41
Hexane
Concen: 11.18 ug/l
RT: 10.461 min Scan# 2296
Delta R.T. -0.010 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

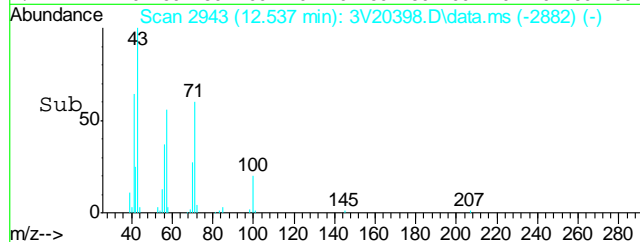
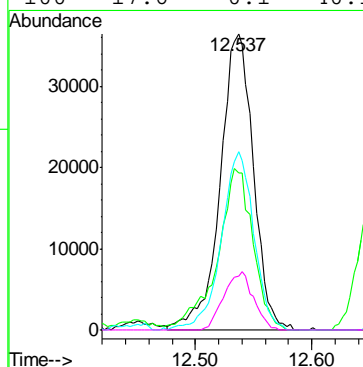
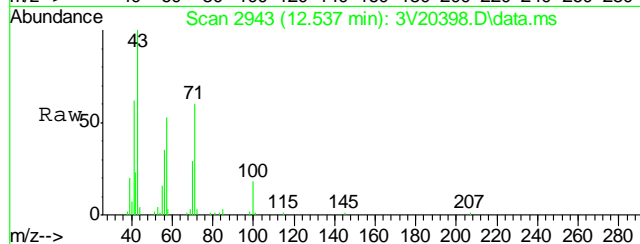
Tgt Ion: 57 Resp: 59941

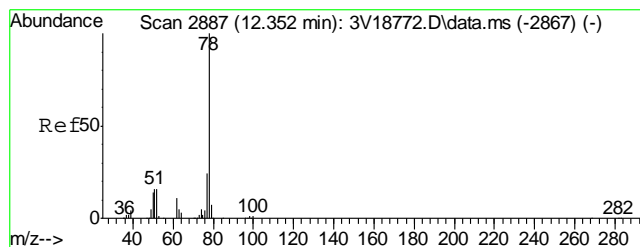


#43
Heptane
Concen: 10.54 ug/l
RT: 12.537 min Scan# 2943
Delta R.T. -0.004 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

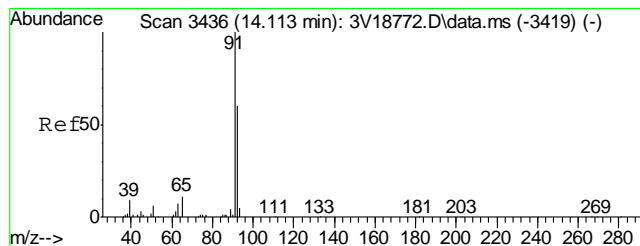
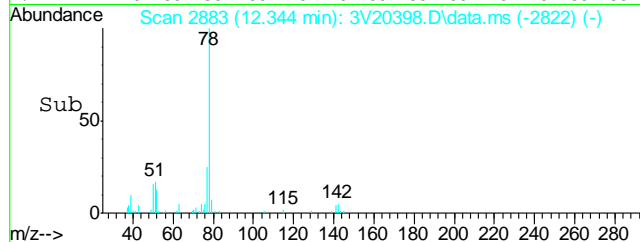
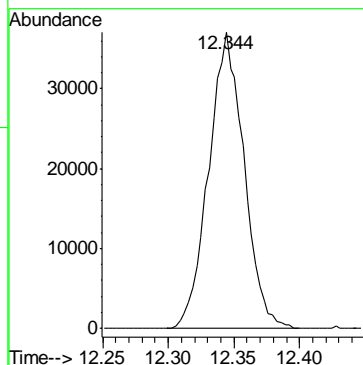
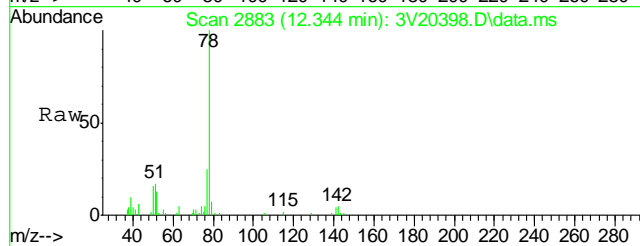
Tgt Ion: 43 Resp: 72218

Ion	Ratio	Lower	Upper
43	100		
57	58.5	32.1	72.1
71	59.0	39.6	79.6
100	17.6	0.1	40.1

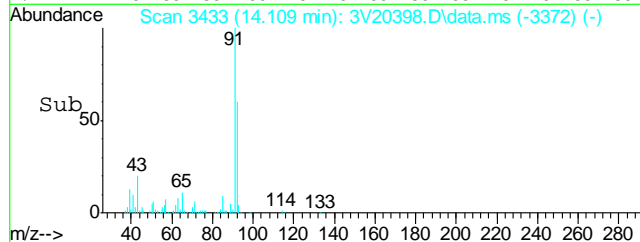
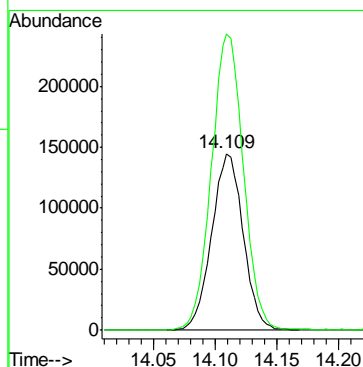
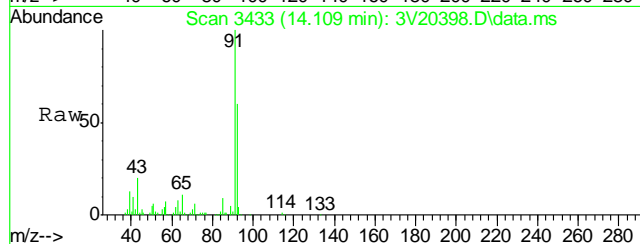


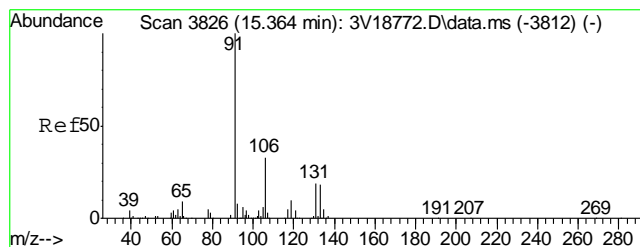


#50
Benzene
Concen: 5.62 ug/l
RT: 12.344 min Scan# 2883
Delta R.T. -0.004 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am
Tgt Ion: 78 Resp: 69291



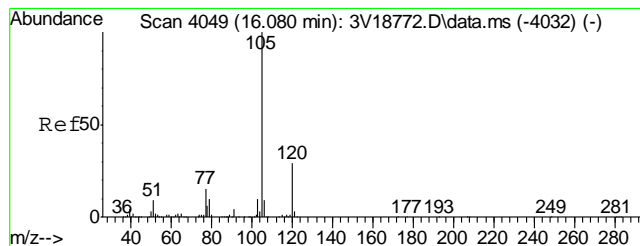
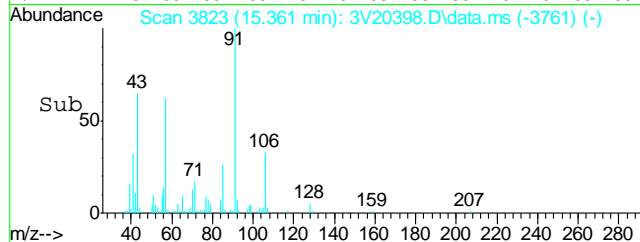
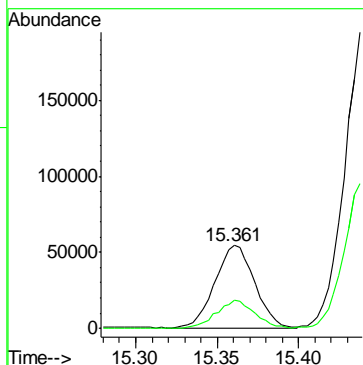
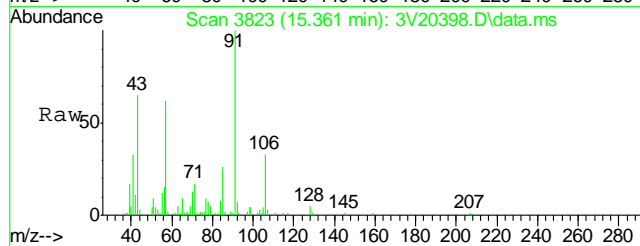
#62
Toluene
Concen: 25.90 ug/l
RT: 14.109 min Scan# 3433
Delta R.T. -0.004 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am
Tgt Ion: 92 Resp: 258072
Ion Ratio Lower Upper
92 100
91 170.9 150.2 190.2





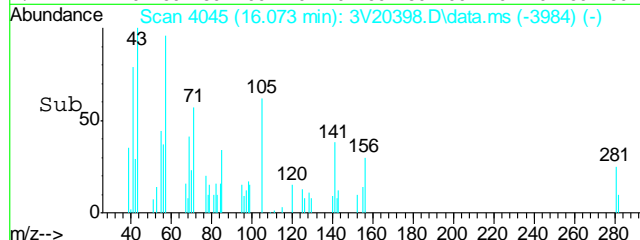
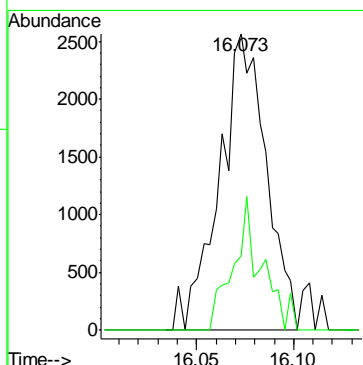
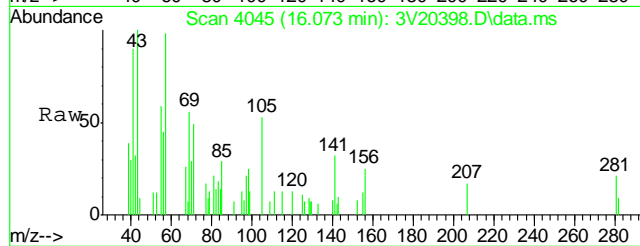
#66
Ethylbenzene
Concen: 4.96 ug/l
RT: 15.361 min Scan# 3823
Delta R.T. -0.000 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

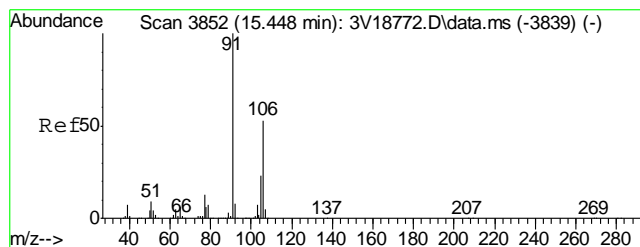
Tgt Ion: 91 Resp: 91686
Ion Ratio Lower Upper
91 100
106 32.7 13.2 53.2



#68
Isopropylbenzene
Concen: 0.25 ug/l
RT: 16.073 min Scan# 4045
Delta R.T. -0.004 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

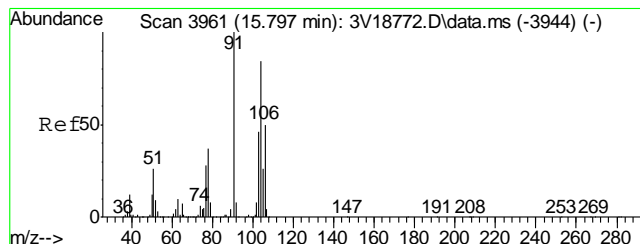
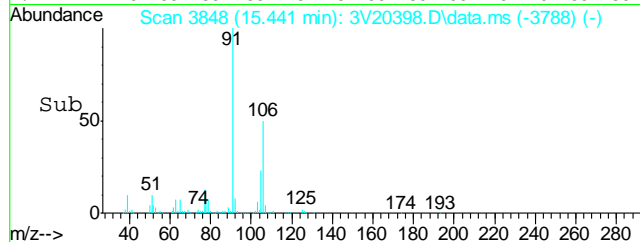
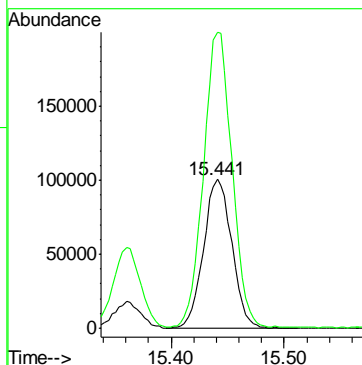
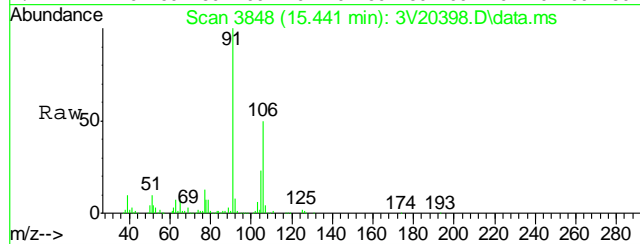
Tgt Ion: 105 Resp: 4310
Ion Ratio Lower Upper
105 100
120 27.3 22.6 34.0





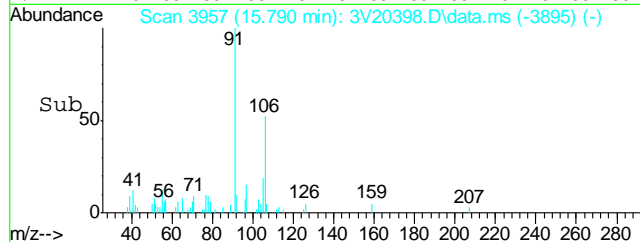
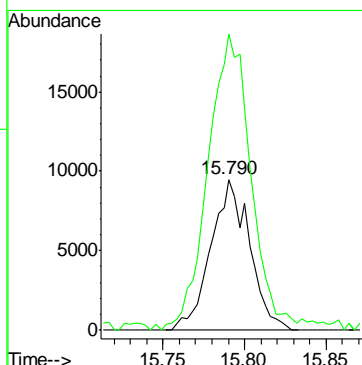
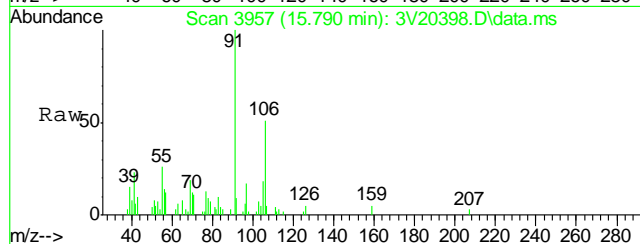
#72
m,p-xylene
Concen: 23.69 ug/l
RT: 15.441 min Scan# 3848
Delta R.T. -0.007 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

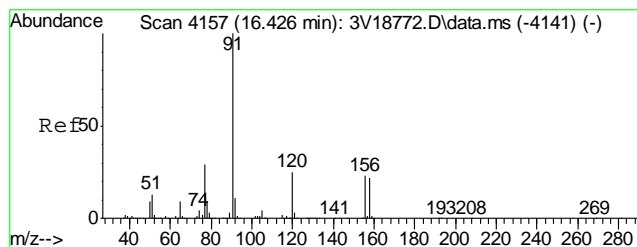
Tgt Ion	Ratio	Lower	Upper
106	100		
91	198.1	168.1	208.1



#73
o-xylene
Concen: 2.53 ug/l
RT: 15.790 min Scan# 3957
Delta R.T. 0.000 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

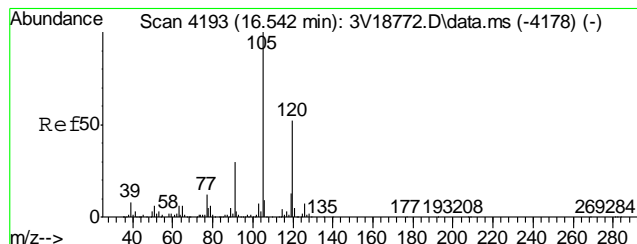
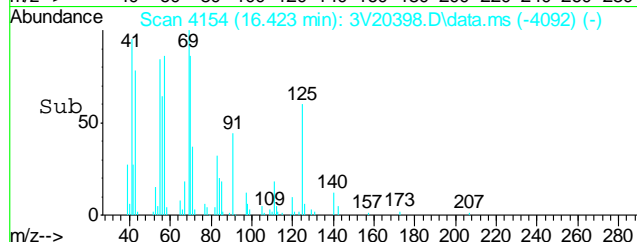
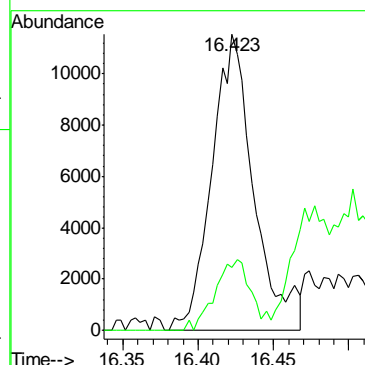
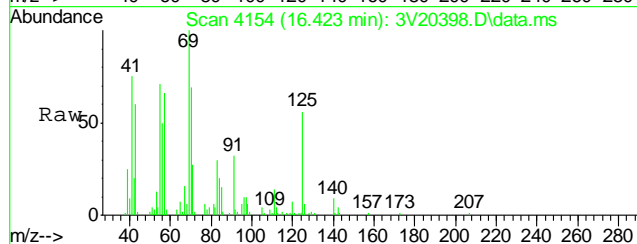
Tgt Ion	Ratio	Lower	Upper
106	100		
91	223.0	160.2	240.4





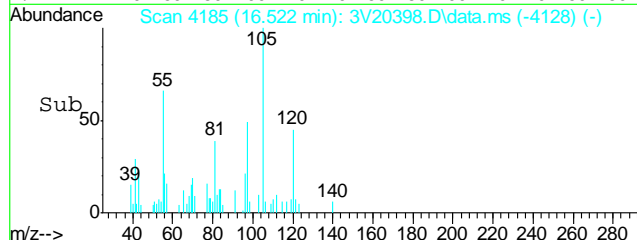
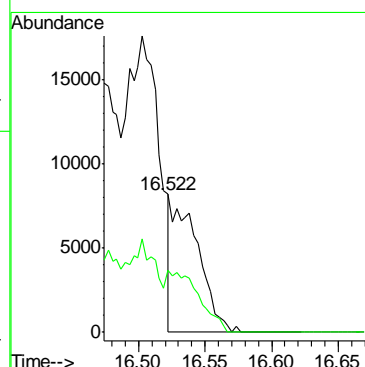
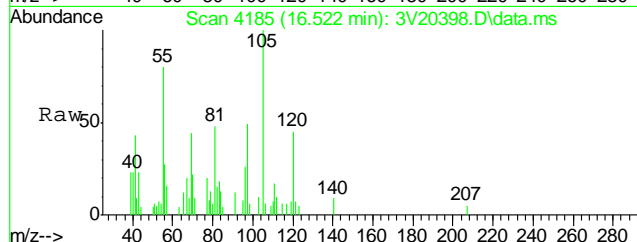
#77
n-Propylbenzene
Concen: 1.01 ug/l
RT: 16.423 min Scan# 4154
Delta R.T. -0.000 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

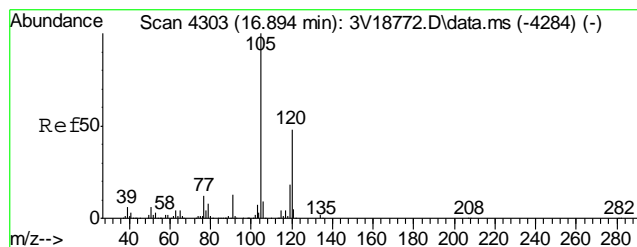
Tgt Ion: 91 Resp: 22233
Ion Ratio Lower Upper
91 100
120 20.7 19.9 29.9



#80
1,3,5-Trimethylbenzene
Concen: 0.72 ug/l m
RT: 16.522 min Scan# 4185
Delta R.T. -0.016 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

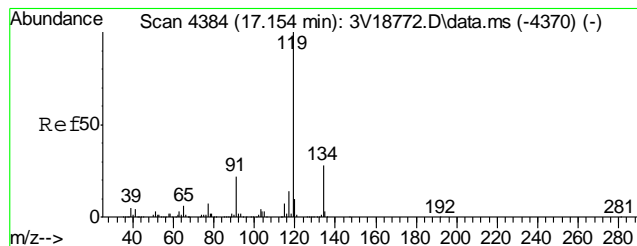
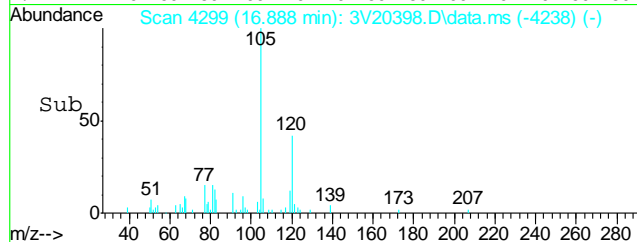
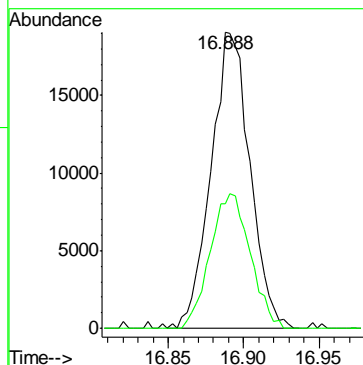
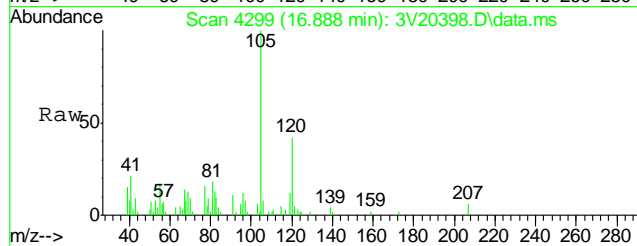
Tgt Ion: 105 Resp: 11192
Ion Ratio Lower Upper
105 100
120 193.8 41.4 62.2#





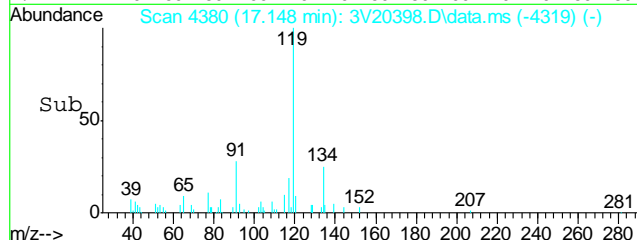
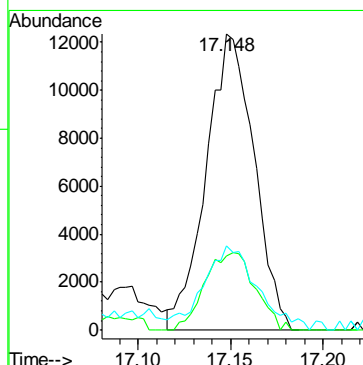
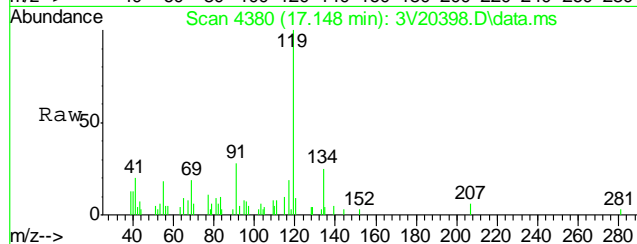
#82
1,2,4-Trimethylbenzene
Concen: 2.17 ug/l
RT: 16.888 min Scan# 4299
Delta R.T. -0.004 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

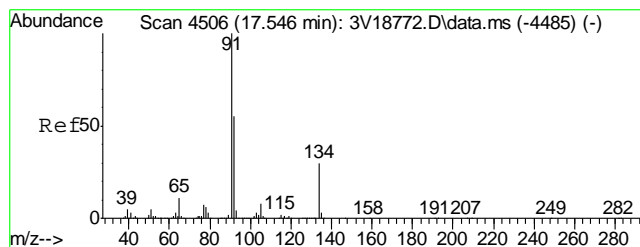
Tgt Ion	Ratio	Lower	Upper
105	100		
120	46.8	45.1	67.7



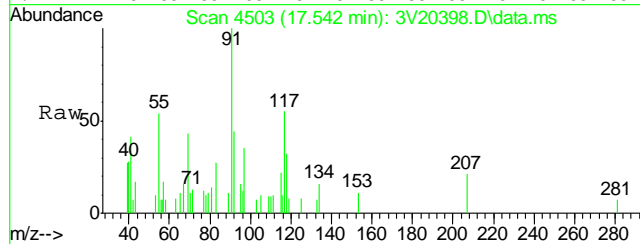
#86
p-Isopropyltoluene
Concen: 1.36 ug/l
RT: 17.148 min Scan# 4380
Delta R.T. -0.004 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am

Tgt Ion	Ratio	Lower	Upper
119	100		
134	27.5	22.3	33.5
91	31.9	17.4	26.2#

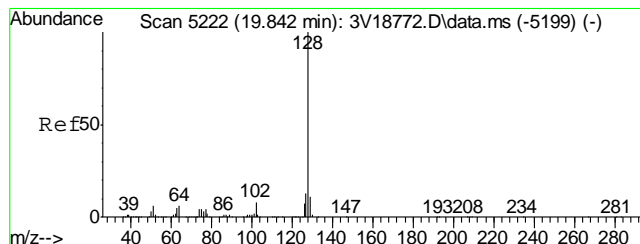
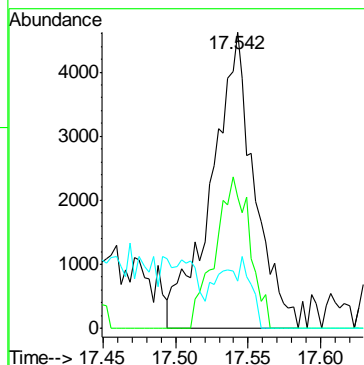
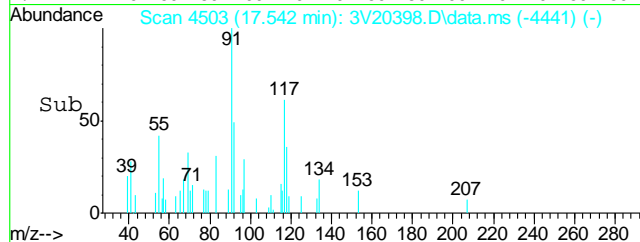




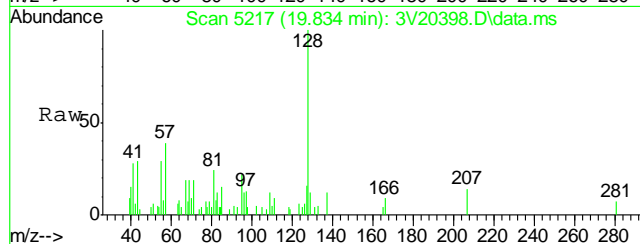
#88
n-Butylbenzene
Concen: 0.60 ug/l
RT: 17.542 min Scan# 4503
Delta R.T. -0.000 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am



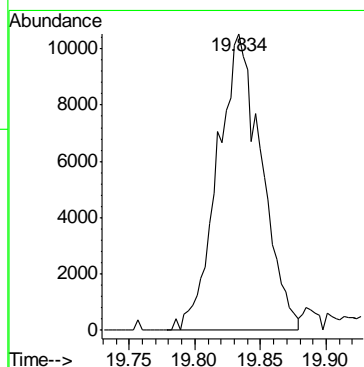
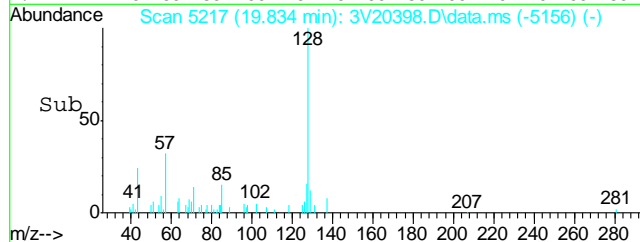
Tgt Ion	Ratio	Lower	Upper
91	100		
92	41.5	43.8	65.8#
134	18.0	23.1	34.7#



#91
Naphthalene
Concen: 2.04 ug/l
RT: 19.834 min Scan# 5217
Delta R.T. -0.004 min
Lab File: 3V20398.D
Acq: 11 Sep 2012 4:29 am



Tgt Ion: 128 Resp: 24489



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3091012.S\
 Data File : 3V20399.D
 Acq On : 11 Sep 2012 5:00 am
 Operator : BRETD
 Sample : D38518-2
 Misc : MS4640,V3V1186,5.010,,100,5,1
 ALS Vial : 36 Sample Multiplier: 1

Quant Time: Sep 11 09:32:41 2012
 Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
 Quant Title : 8260
 QLast Update : Fri Aug 24 10:57:50 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.860	168	212049	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.655	114	349068	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.290	117	394481	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.279	152	232597	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.248	102	26570	55.65	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	111.30%
61) Toluene-d8	14.048	98	470141	45.65	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	91.30%
69) 4-Bromofluorobenzene	16.240	95	208883	51.83	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	103.66%

Target Compounds

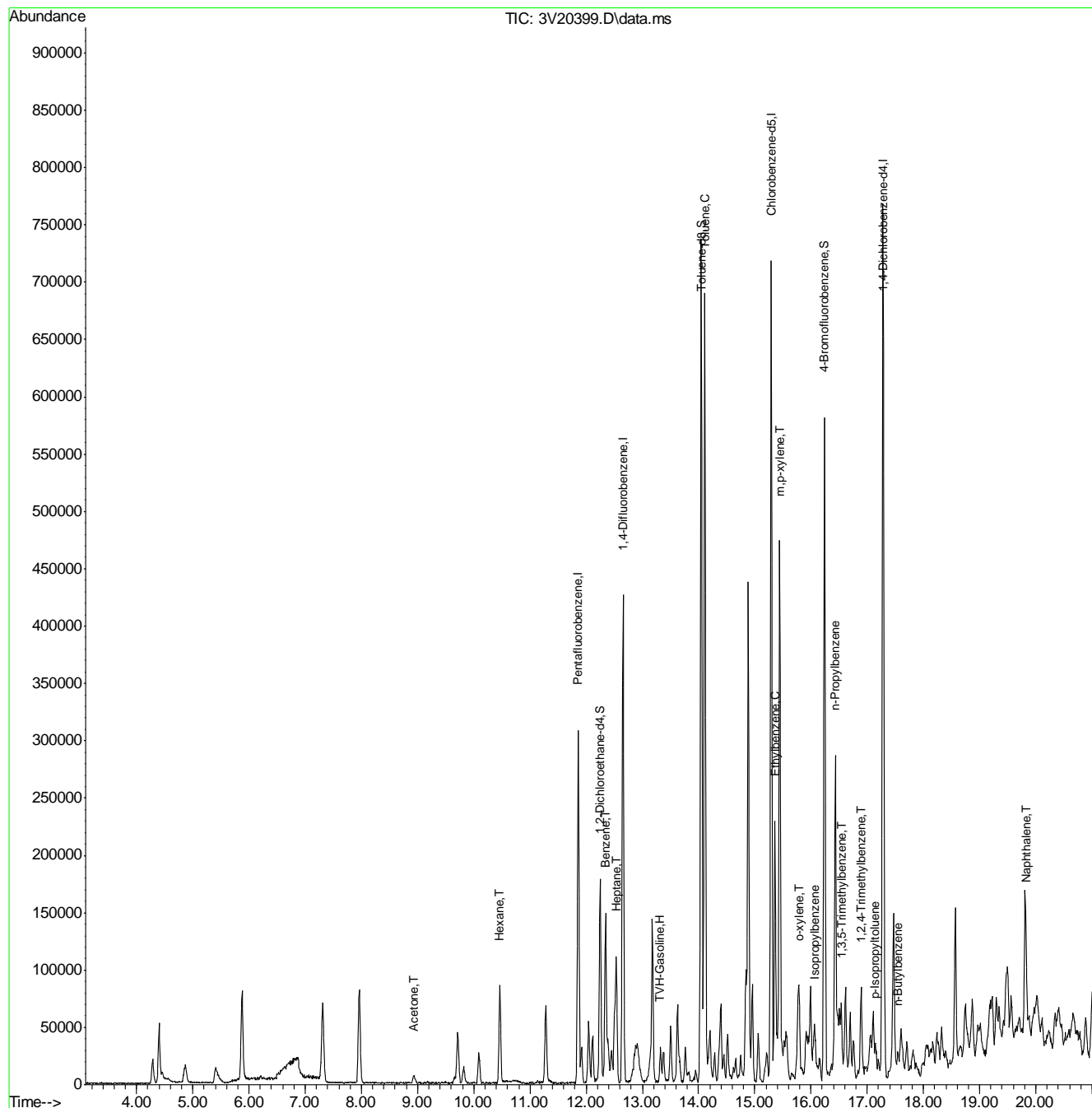
						Qvalue
1) TVH-Gasoline	13.329	TIC	9394170m	329.99	ug/l	
15) Acetone	8.936	58	3391	4.82	ug/l	# 63
41) Hexane	10.461	57	44362	8.09	ug/l	100
43) Heptane	12.537	43	46963	6.70	ug/l	96
50) Benzene	12.341	78	128603	10.20	ug/l	100
62) Toluene	14.112	92	244574	24.48	ug/l	98
66) Ethylbenzene	15.364	91	70569	3.81	ug/l	97
68) Isopropylbenzene	16.073	105	6116	0.36	ug/l	94
72) m,p-xylene	15.441	106	138634	18.69	ug/l	93
73) o-xylene	15.794	106	17220	2.75	ug/l	88
77) n-Propylbenzene	16.426	91	21531	0.98	ug/l	92
80) 1,3,5-Trimethylbenzene	16.532	105	13718m	0.89	ug/l	
82) 1,2,4-Trimethylbenzene	16.888	105	36274	2.31	ug/l	85
86) p-Isopropyltoluene	17.151	119	13163	0.81	ug/l	94
88) n-Butylbenzene	17.542	91	7984	0.51	ug/l	# 80
91) Naphthalene	19.834	128	32157	2.69	ug/l	100

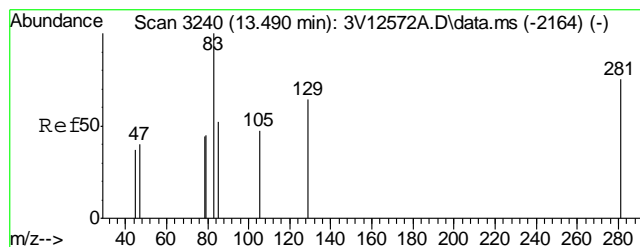
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3091012.S\
Data File : 3V20399.D
Acq On : 11 Sep 2012 5:00 am
Operator : BRETD
Sample : D38518-2
Misc : MS4640,V3V1186,5.010,,100,5,1
ALS Vial : 36 Sample Multiplier: 1

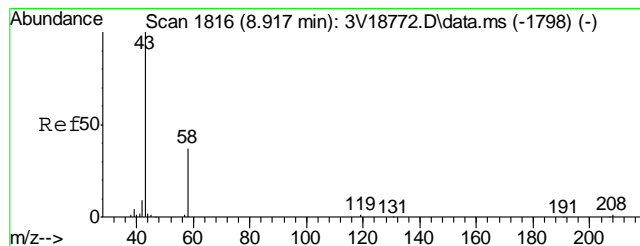
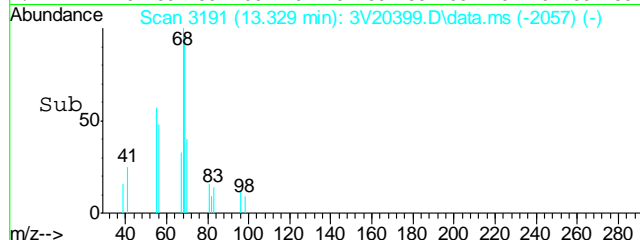
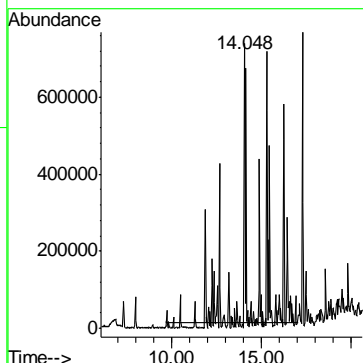
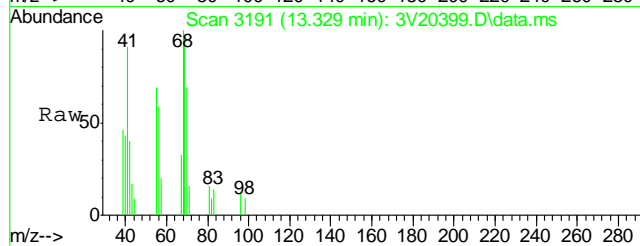
Quant Time: Sep 11 09:32:41 2012
Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
Quant Title : 8260
QLast Update : Fri Aug 24 10:57:50 2012
Response via : Initial Calibration





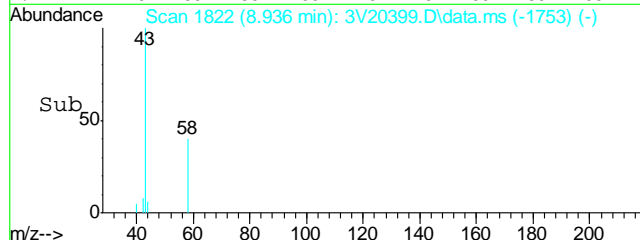
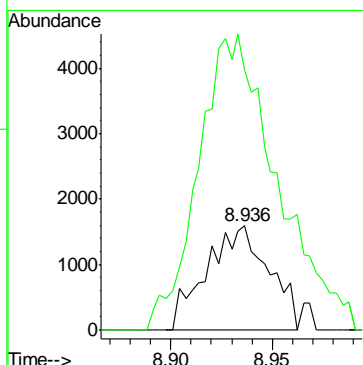
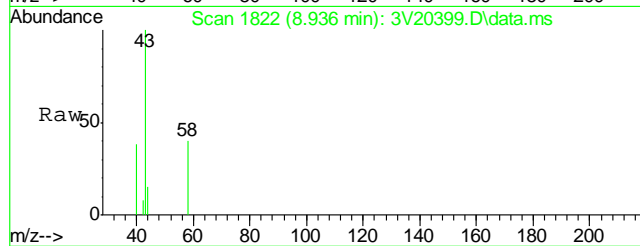
#1
TVH-Gasoline
Concen: 329.99 ug/l m
RT: 13.329 min Scan# 3191
Delta R.T. 0.000 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

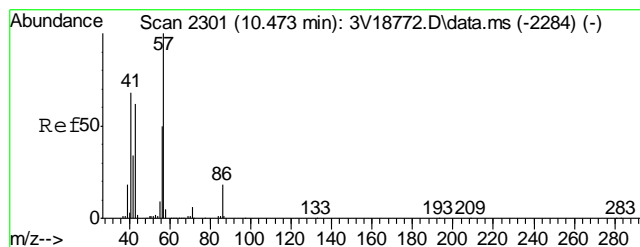
Tgt Ion:TIC Resp: 9394170



#15
Acetone
Concen: 4.82 ug/l
RT: 8.936 min Scan# 1822
Delta R.T. 0.022 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

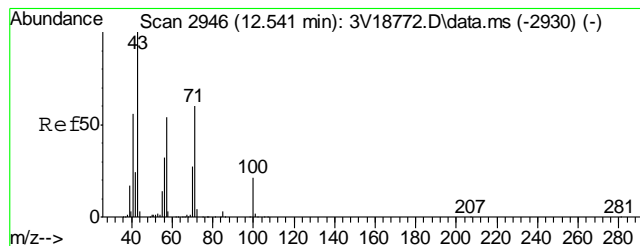
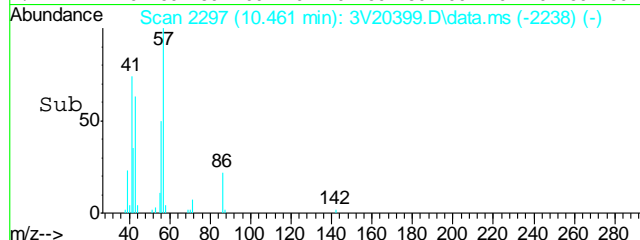
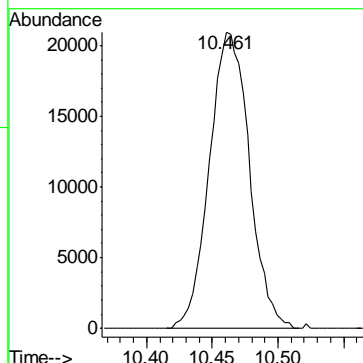
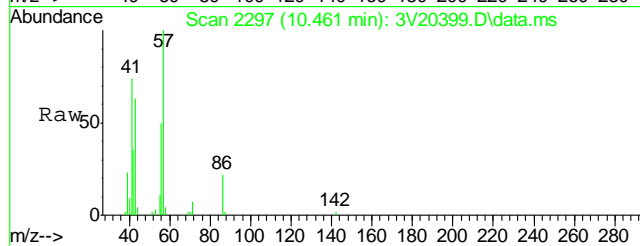
Tgt Ion: 58 Resp: 3391
Ion Ratio Lower Upper
58 100
43 357.8 267.0 307.0#





#41
Hexane
Concen: 8.09 ug/l
RT: 10.461 min Scan# 2297
Delta R.T. -0.010 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

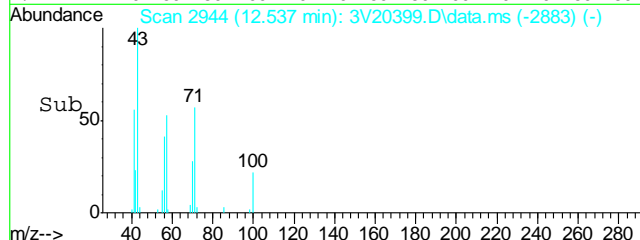
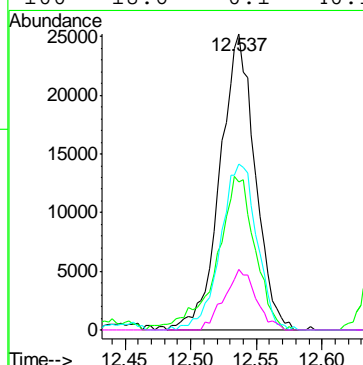
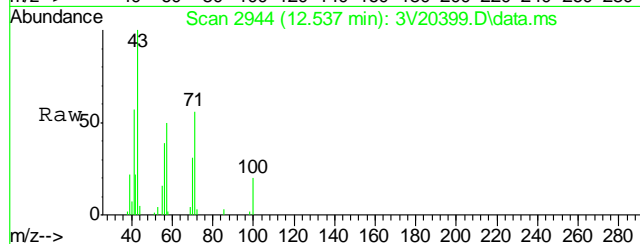
Tgt Ion: 57 Resp: 44362

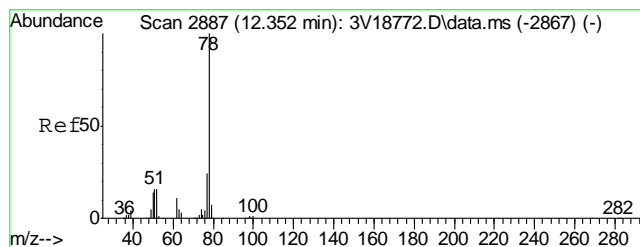


#43
Heptane
Concen: 6.70 ug/l
RT: 12.537 min Scan# 2944
Delta R.T. -0.004 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

Tgt Ion: 43 Resp: 46963

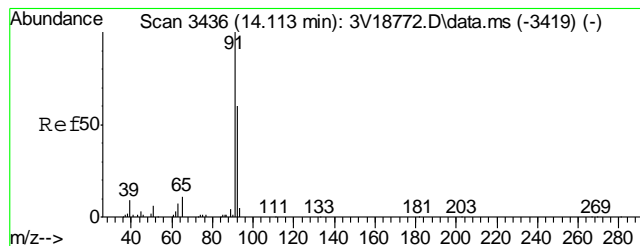
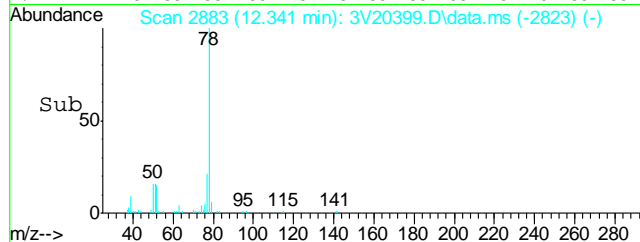
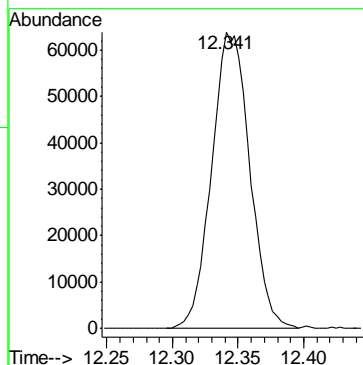
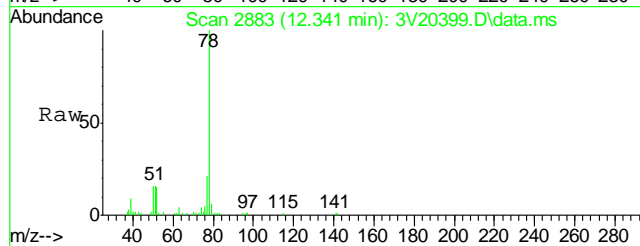
Ion	Ratio	Lower	Upper
43	100		
57	56.4	32.1	72.1
71	58.5	39.6	79.6
100	18.6	0.1	40.1





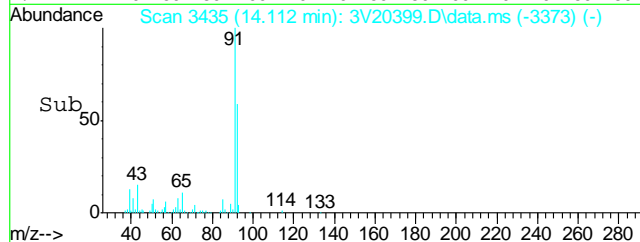
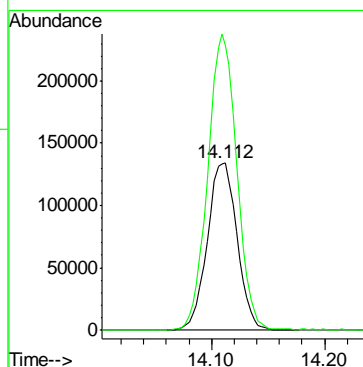
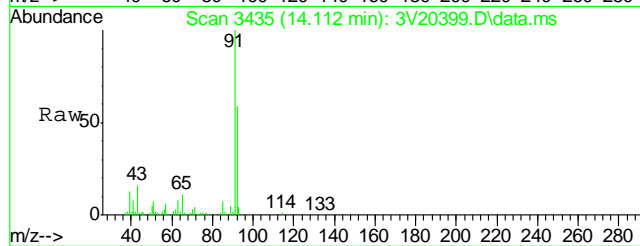
#50
Benzene
Concen: 10.20 ug/l
RT: 12.341 min Scan# 2883
Delta R.T. -0.007 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

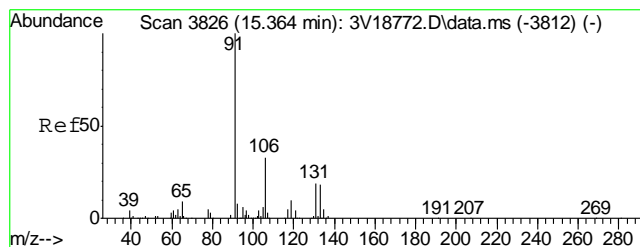
Tgt Ion: 78 Resp: 128603



#62
Toluene
Concen: 24.48 ug/l
RT: 14.112 min Scan# 3435
Delta R.T. -0.000 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

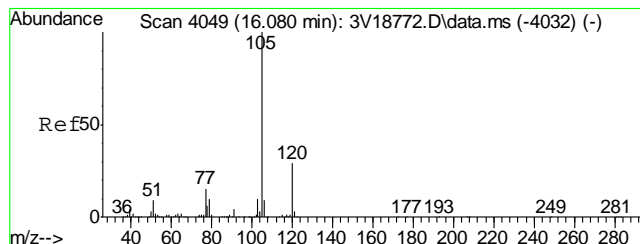
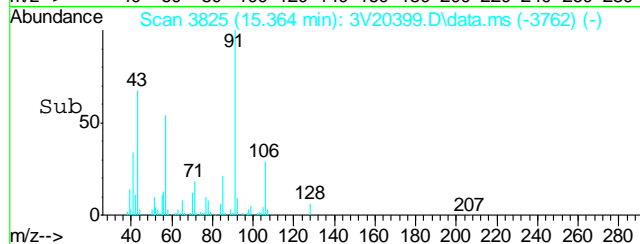
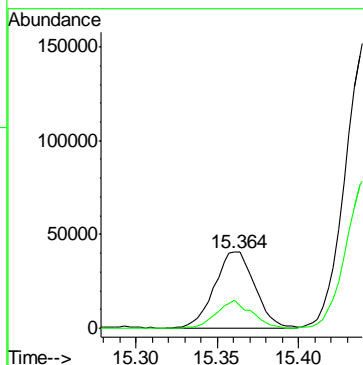
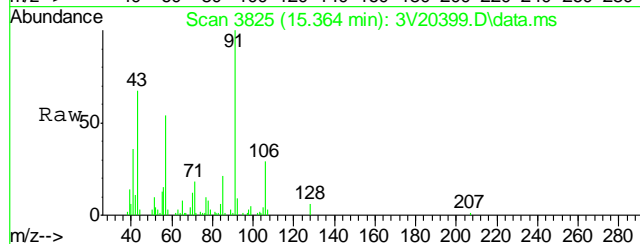
Tgt Ion: 92 Resp: 244574
Ion Ratio Lower Upper
92 100
91 172.8 150.2 190.2





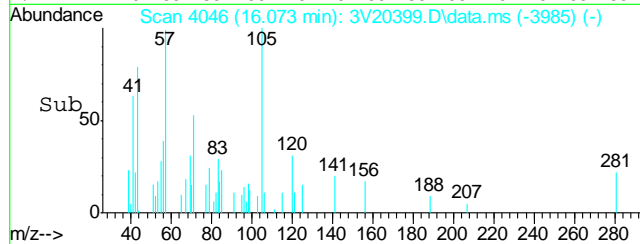
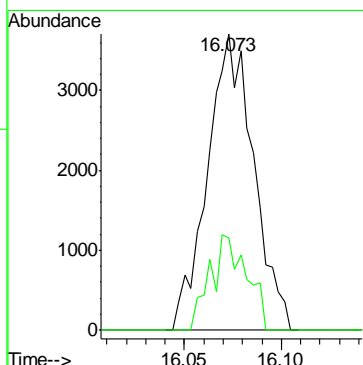
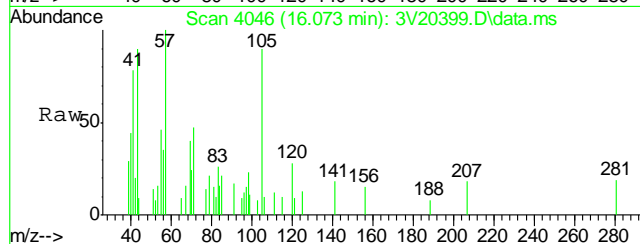
#66
Ethylbenzene
Concen: 3.81 ug/l
RT: 15.364 min Scan# 3825
Delta R.T. 0.003 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

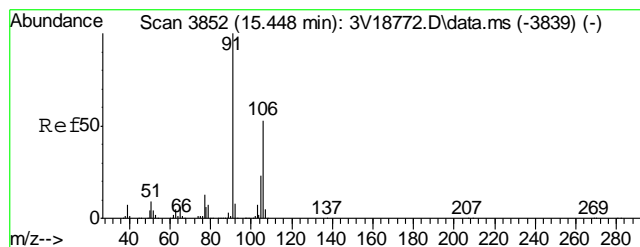
Tgt Ion: 91 Resp: 70569
Ion Ratio Lower Upper
91 100
106 31.7 13.2 53.2



#68
Isopropylbenzene
Concen: 0.36 ug/l
RT: 16.073 min Scan# 4046
Delta R.T. -0.004 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

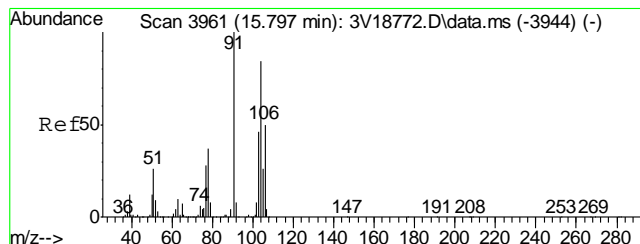
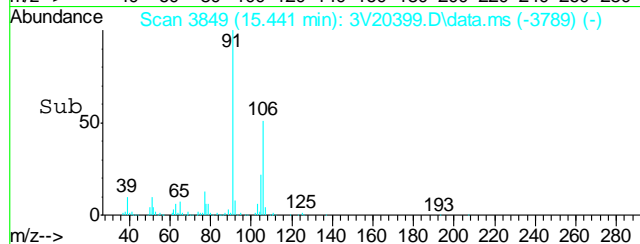
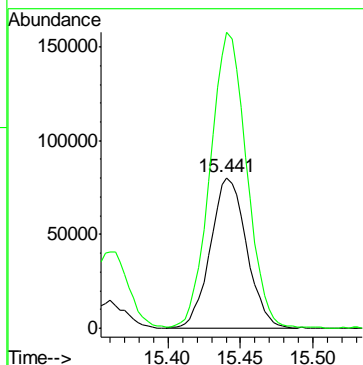
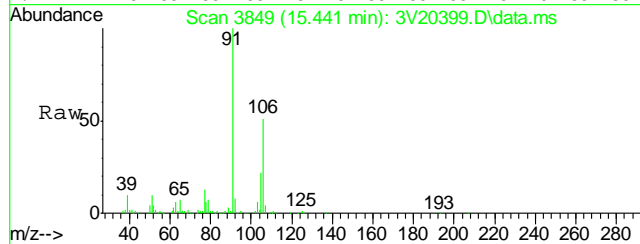
Tgt Ion: 105 Resp: 6116
Ion Ratio Lower Upper
105 100
120 25.3 22.6 34.0





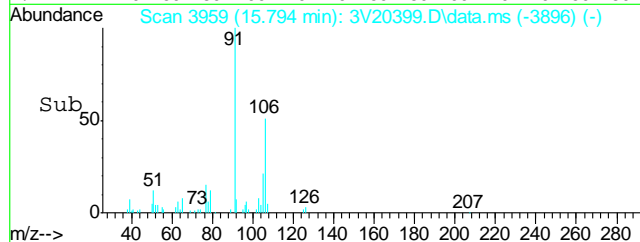
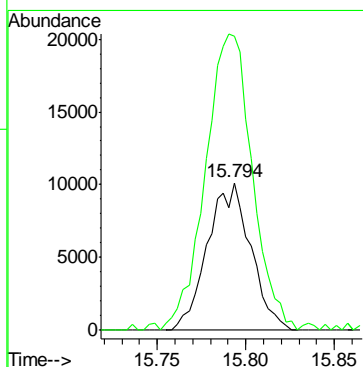
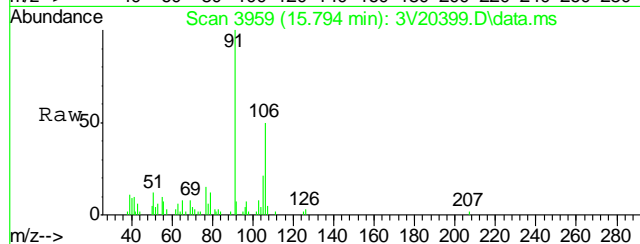
#72
m,p-xylene
Concen: 18.69 ug/l
RT: 15.441 min Scan# 3849
Delta R.T. -0.007 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

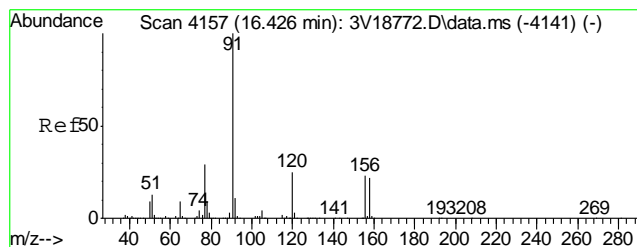
Tgt Ion:106 Resp: 138634
Ion Ratio Lower Upper
106 100
91 198.8 168.1 208.1



#73
o-xylene
Concen: 2.75 ug/l
RT: 15.794 min Scan# 3959
Delta R.T. 0.004 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

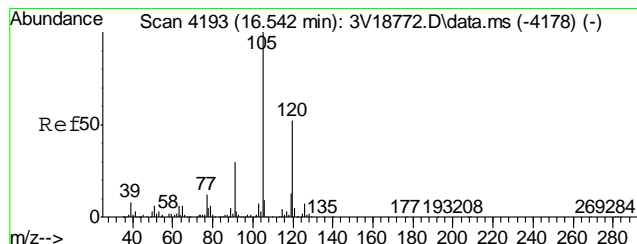
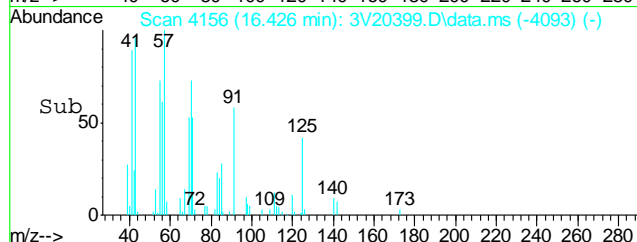
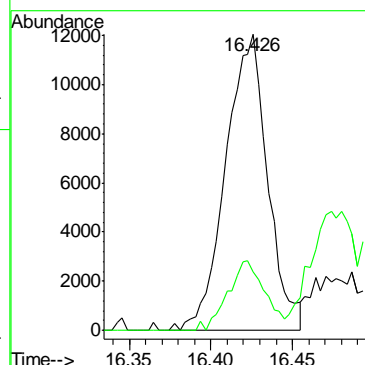
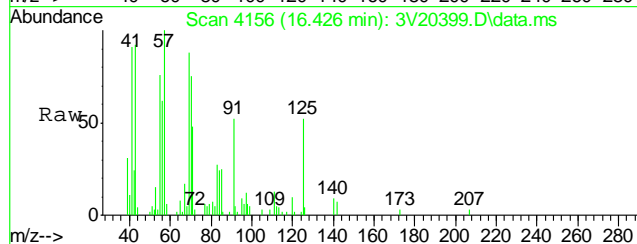
Tgt Ion:106 Resp: 17220
Ion Ratio Lower Upper
106 100
91 218.4 160.2 240.4





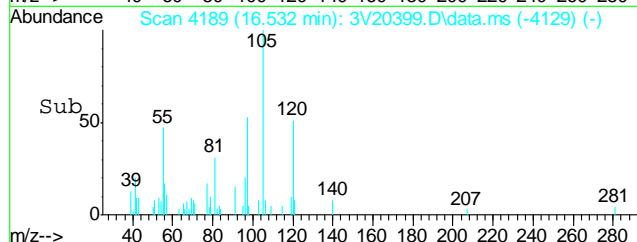
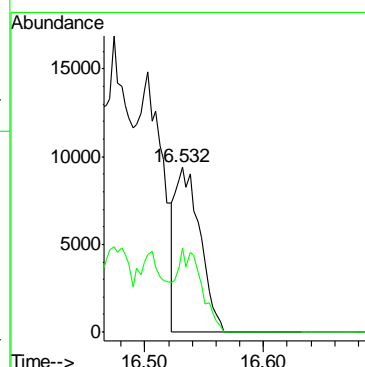
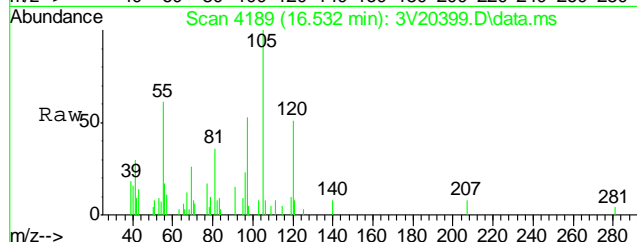
#77
n-Propylbenzene
Concen: 0.98 ug/l
RT: 16.426 min Scan# 4156
Delta R.T. 0.003 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

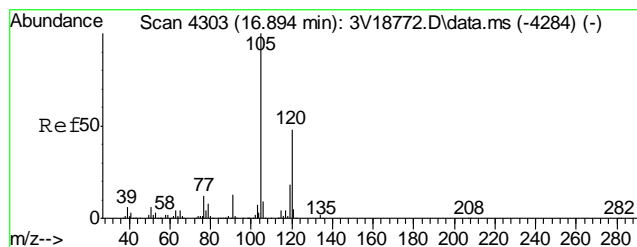
Tgt Ion: 91 Resp: 21531
Ion Ratio Lower Upper
91 100
120 20.7 19.9 29.9



#80
1,3,5-Trimethylbenzene
Concen: 0.89 ug/l m
RT: 16.532 min Scan# 4189
Delta R.T. -0.007 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

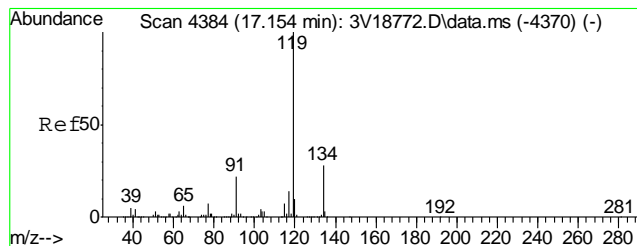
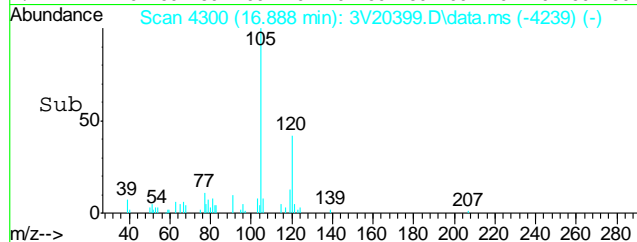
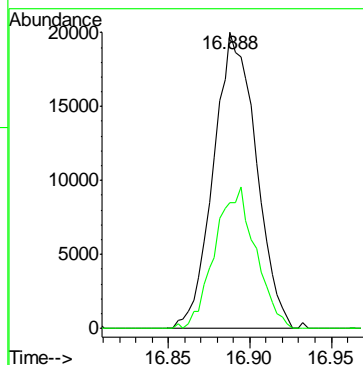
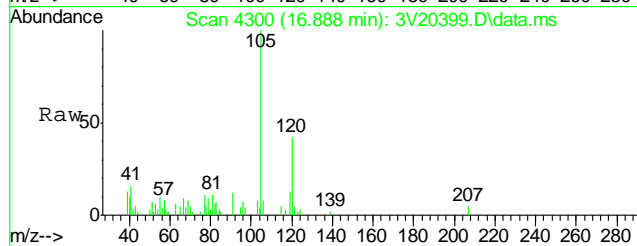
Tgt Ion: 105 Resp: 13718
Ion Ratio Lower Upper
105 100
120 117.6 41.4 62.2#





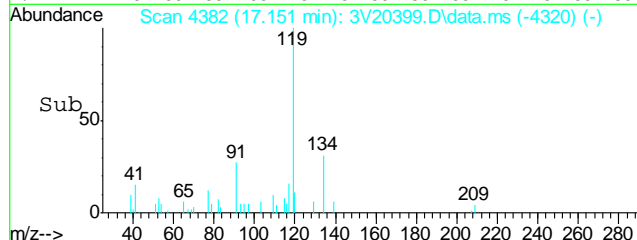
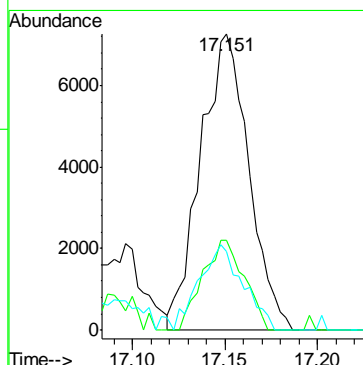
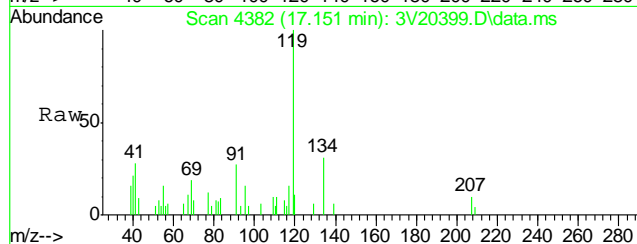
#82
1,2,4-Trimethylbenzene
Concen: 2.31 ug/l
RT: 16.888 min Scan# 4300
Delta R.T. -0.004 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

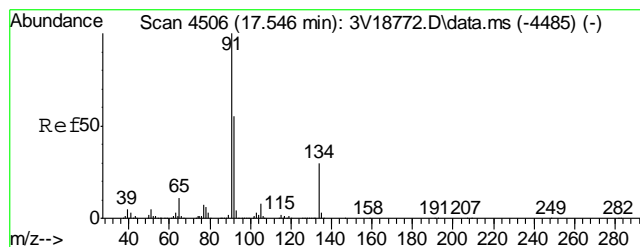
Tgt Ion	Ratio	Lower	Upper
105	100		
120	45.7	45.1	67.7



#86
p-Isopropyltoluene
Concen: 0.81 ug/l
RT: 17.151 min Scan# 4382
Delta R.T. -0.000 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

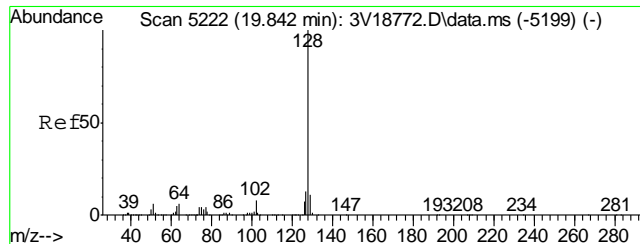
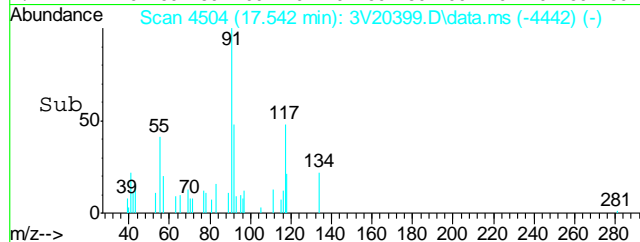
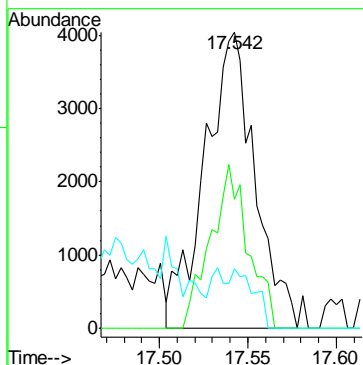
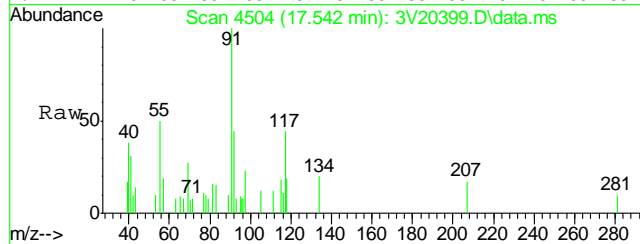
Tgt Ion	Ratio	Lower	Upper
119	100		
134	26.2	22.3	33.5
91	26.1	17.4	26.2





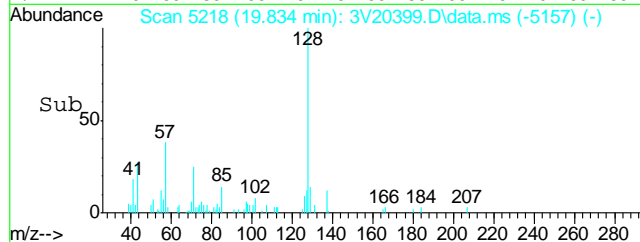
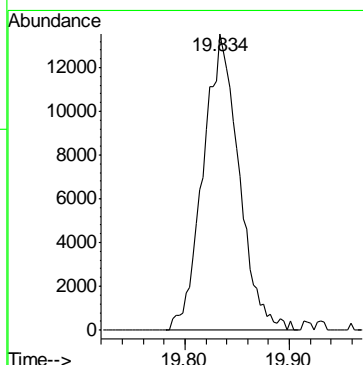
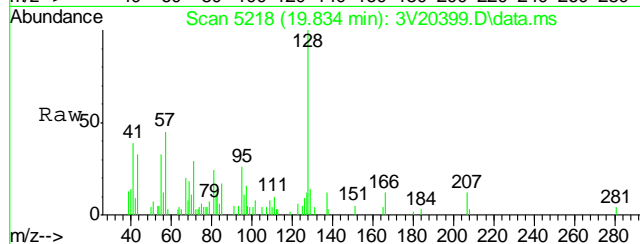
#88
n-Butylbenzene
Concen: 0.51 ug/l
RT: 17.542 min Scan# 4504
Delta R.T. -0.000 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

Tgt Ion:	91	Resp:	7984
Ion Ratio	Lower	Upper	
91	100		
92	41.7	43.8	65.8#
134	15.6	23.1	34.7#



#91
Naphthalene
Concen: 2.69 ug/l
RT: 19.834 min Scan# 5218
Delta R.T. -0.004 min
Lab File: 3V20399.D
Acq: 11 Sep 2012 5:00 am

Tgt Ion: 128 Resp: 32157



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3091012.S\
Data File : 3V20390.D
Acq On : 11 Sep 2012 12:22 am
Operator : BRETD
Sample : MB
Misc : MS4640,V3V1186,5.00,,100,5,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Sep 11 09:07:16 2012
Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
Quant Title : 8260
QLast Update : Fri Aug 24 10:57:50 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.860	168	153234	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.653	114	276002	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.291	117	281798	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.277	152	152298	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.249	102	21783	63.14	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	126.28%
61) Toluene-d8	14.049	98	359863	48.92	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	97.84%
69) 4-Bromofluorobenzene	16.240	95	132191	45.92	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	91.84%

Target Compounds

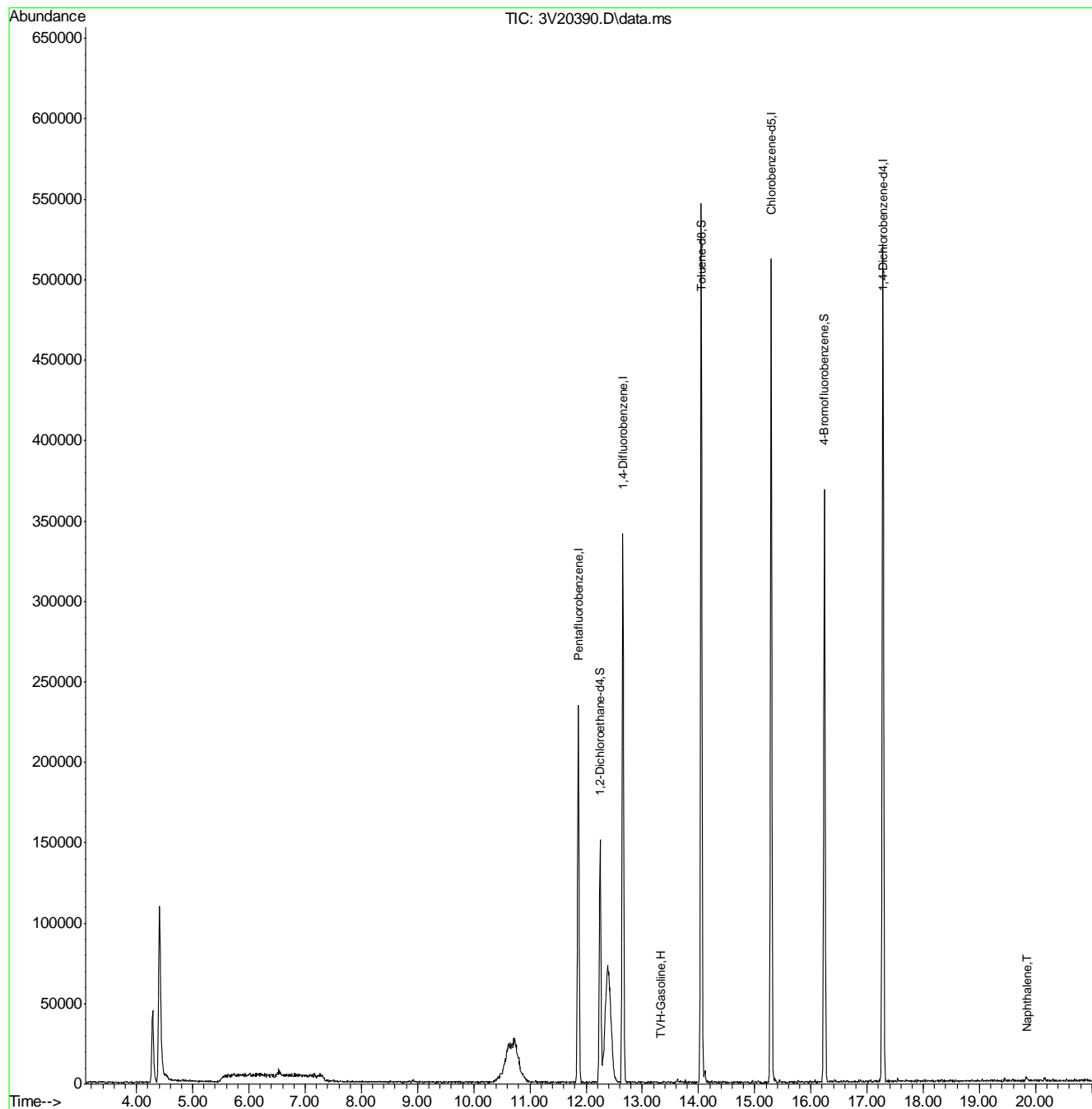
					Qvalue
1) TVH-Gasoline	13.329	TIC	902623m	31.71	ug/l
91) Naphthalene	19.831	128	5061	0.65	ug/l

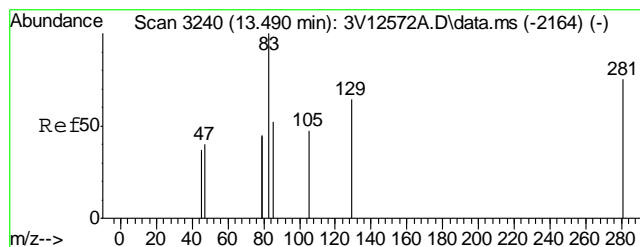
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3091012.S\
Data File : 3V20390.D
Acq On : 11 Sep 2012 12:22 am
Operator : BRETD
Sample : MB
Misc : MS4640,V3V1186,5.00,,100,5,1
ALS Vial : 27 Sample Multiplier: 1

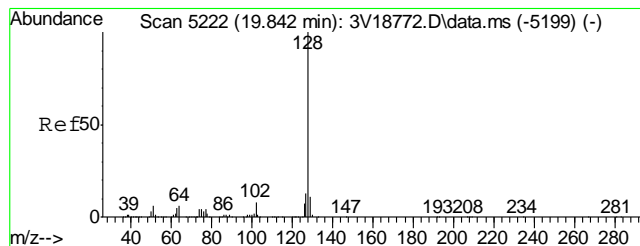
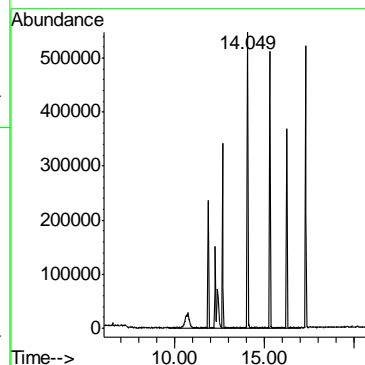
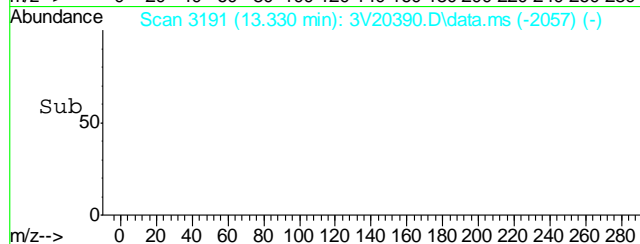
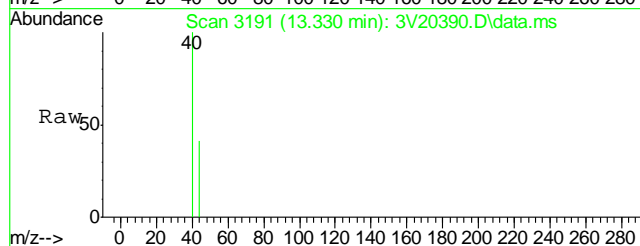
Quant Time: Sep 11 09:07:16 2012
Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
Quant Title : 8260
QLast Update : Fri Aug 24 10:57:50 2012
Response via : Initial Calibration





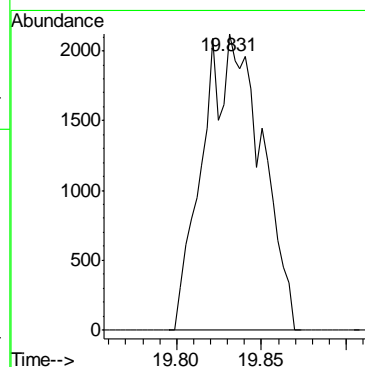
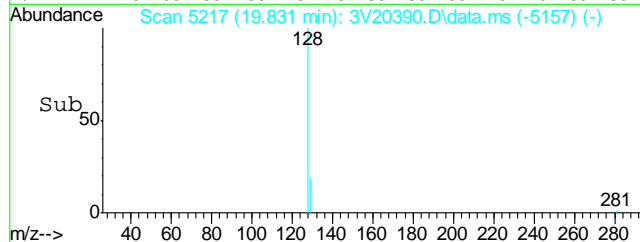
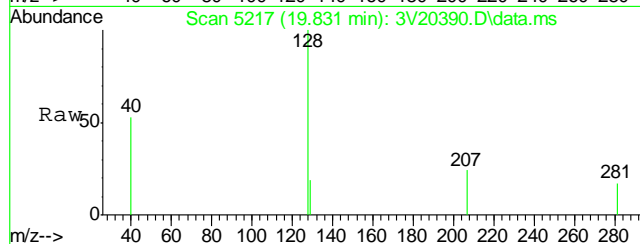
#1
TVH-Gasoline
Concen: 31.71 ug/l m
RT: 13.329 min Scan# 3191
Delta R.T. 0.000 min
Lab File: 3V20390.D
Acq: 11 Sep 2012 12:22 am

Tgt Ion:TIC Resp: 902623



#91
Naphthalene
Concen: 0.65 ug/l
RT: 19.831 min Scan# 5217
Delta R.T. -0.006 min
Lab File: 3V20390.D
Acq: 11 Sep 2012 12:22 am

Tgt Ion:128 Resp: 5061



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: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6602-MB	3G11149.D	1	09/11/12	DC	09/11/12	OP6602	E3G518

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

D38518-1, D38518-2

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

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	96% 10-145%
321-60-8	2-Fluorobiphenyl	94% 10-130%
1718-51-0	Terphenyl-d14	95% 22-130%

8.1.1

8

Blank Spike Summary

Page 1 of 1

Job Number: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6602-BS	3G11150.D	1	09/11/12	DC	09/11/12	OP6602	E3G518

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D38518-1, D38518-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	77.8	93	34-130
120-12-7	Anthracene	83.3	81.6	98	35-130
56-55-3	Benzo(a)anthracene	83.3	79.3	95	36-130
50-32-8	Benzo(a)pyrene	83.3	71.7	86	36-130
205-99-2	Benzo(b)fluoranthene	83.3	89.7	108	35-130
207-08-9	Benzo(k)fluoranthene	83.3	68.2	82	37-130
218-01-9	Chrysene	83.3	73.0	88	40-130
53-70-3	Dibenzo(a,h)anthracene	83.3	63.5	76	32-130
206-44-0	Fluoranthene	83.3	75.7	91	38-130
86-73-7	Fluorene	83.3	76.3	92	35-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	62.7	75	28-130
91-20-3	Naphthalene	83.3	77.0	92	35-130
129-00-0	Pyrene	83.3	81.8	98	37-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	89%	10-145%
321-60-8	2-Fluorobiphenyl	87%	10-130%
1718-51-0	Terphenyl-d14	87%	22-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6602-MS	3G11152.D	1	09/11/12	DC	09/11/12	OP6602	E3G518
OP6602-MSD	3G11153.D	1	09/11/12	DC	09/11/12	OP6602	E3G518
D38513-1	3G11151.D	1	09/11/12	DC	09/11/12	OP6602	E3G518

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D38518-1, D38518-2

CAS No.	Compound	D38513-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		92.5	83.8	91	79.6	86	5	10-155/30
120-12-7	Anthracene	ND		92.5	91.1	98	88.8	96	3	10-155/30
56-55-3	Benzo(a)anthracene	ND		92.5	90.0	97	89.7	97	0	10-175/30
50-32-8	Benzo(a)pyrene	ND		92.5	77.4	84	78.0	84	1	10-164/30
205-99-2	Benzo(b)fluoranthene	ND		92.5	97.3	105	98.1	106	1	10-165/30
207-08-9	Benzo(k)fluoranthene	ND		92.5	71.3	77	67.7	73	5	10-178/30
218-01-9	Chrysene	ND		92.5	81.5	88	80.1	87	2	10-147/30
53-70-3	Dibenzo(a,h)anthracene	ND		92.5	70.0	76	69.8	76	0	10-144/30
206-44-0	Fluoranthene	ND		92.5	88.0	95	86.8	94	1	10-207/30
86-73-7	Fluorene	ND		92.5	86.5	94	82.3	89	5	10-163/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		92.5	68.6	74	68.8	74	0	10-180/30
91-20-3	Naphthalene	ND		92.5	81.2	88	78.5	85	3	10-198/30
129-00-0	Pyrene	ND		92.5	94.3	102	93.1	101	1	10-189/30

CAS No.	Surrogate Recoveries	MS	MSD	D38513-1	Limits
4165-60-0	Nitrobenzene-d5	77%	77%	51%	10-145%
321-60-8	2-Fluorobiphenyl	75%	74%	49%	10-130%
1718-51-0	Terphenyl-d14	75%	78%	74%	22-130%

* = Outside of Control Limits.

GC/MS Semi-volatiles

Raw Data

6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091212\
 Data File : 3g11218.D
 Acq On : 13 Sep 2012 5:09 am
 Operator : DONC
 Sample : D38518-1
 Misc : OP6602,E3G522,30.03,,,1,1
 ALS Vial : 29 Sample Multiplier: 1

Quant Time: Sep 13 13:34:27 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
 Quant Title : PAHSIM BASE
 QLast Update : Thu Sep 06 09:42:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.921	136	173168	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.639	164	90471m	4.0000	ug/mL	0.00
15) Phenanthrene-d10	9.121	188	157308	4.0000	ug/mL	0.00
19) Chrysene-d12	11.759	240	86531	4.0000	ug/mL	0.00
24) Perylene-d12	13.199	264	40969	4.0000	ug/mL	0.02

System Monitoring Compounds

2) Nitrobenzene-d5	5.236	82	578675	33.9647	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	67.92%		
7) 2-Fluorobiphenyl	6.978	172	1476479	39.2329	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	78.46%		
21) Terphenyl-d14	10.712	244	499471	38.3087	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	76.62%		

Target Compounds

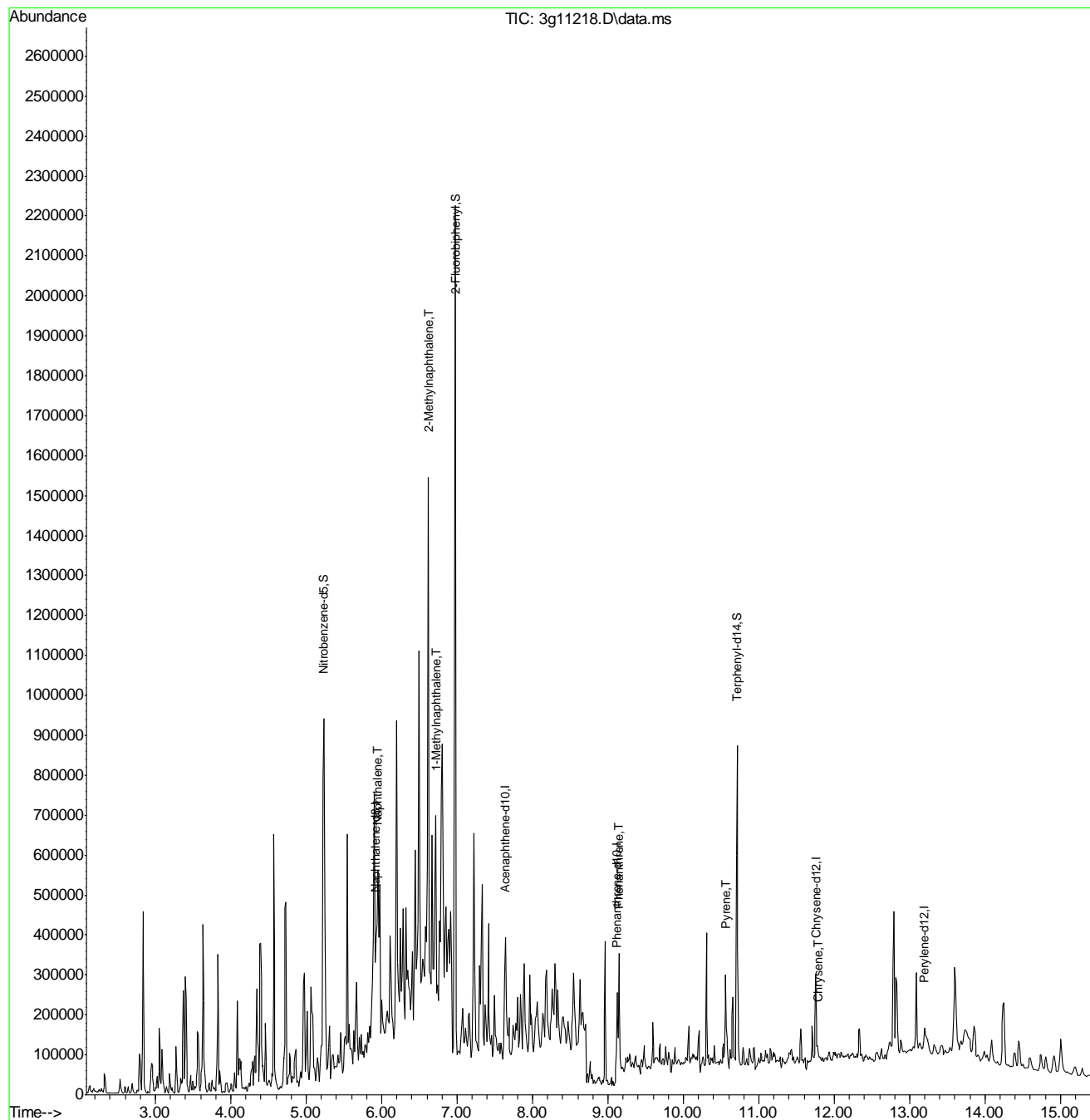
						Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.946	128	388260	8.0568	ug/mL	87
8) 2-Methylnaphthalene	6.620	142	587823m	21.9772	ug/mL	
9) 1-Methylnaphthalene	6.719	142	224345	8.1052	ug/mL	91
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	0.000	168	0	N.D.	d	
13) Fluorene	0.000	166	0	N.D.	d	
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	9.144	178	206373	3.7396	ug/mL#	63
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	0.000	202	0	N.D.	d	
20) Pyrene	10.561	202	38667	0.9335	ug/mL#	45
22) Benzo(a)anthracene	0.000	228	0	N.D.	d	
23) Chrysene	11.786	228	26113	0.6712	ug/mL#	76
25) Benzo(b)fluoranthene	0.000	252	0	N.D.	d	
26) Benzo(k)fluoranthene	0.000	252	0	N.D.	d	
27) Benzo(a)pyrene	0.000	252	0	N.D.	d	
28) Indeno(1,2,3-cd)pyrene	0.000	276	0	N.D.	d	
29) Dibenz(a,h)anthracene	0.000	278	0	N.D.	d	
30) Benzo(g,h,i)perylene	0.000	276	0	N.D.	d	

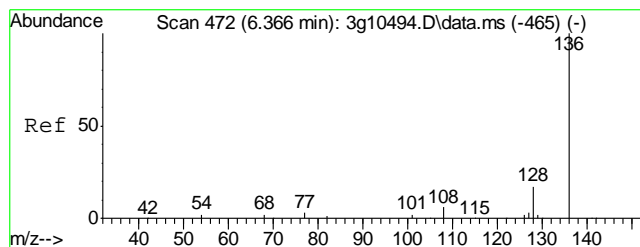
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091212\
Data File : 3g11218.D
Acq On : 13 Sep 2012 5:09 am
Operator : DONC
Sample : D38518-1
Misc : OP6602,E3G522,30.03,,,1,1
ALS Vial : 29 Sample Multiplier: 1

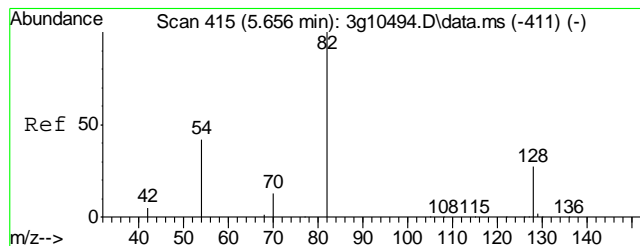
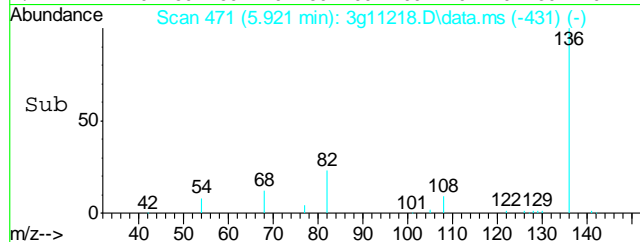
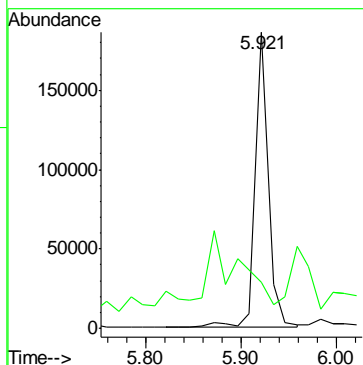
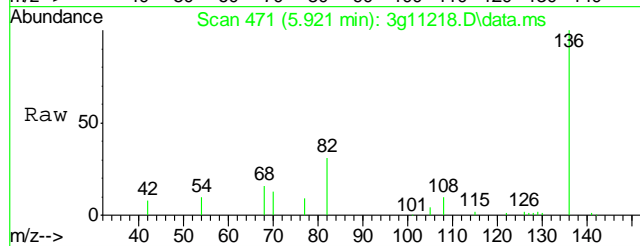
Quant Time: Sep 13 13:34:27 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
Quant Title : PAHSIM BASE
QLast Update : Thu Sep 06 09:42:23 2012
Response via : Initial Calibration





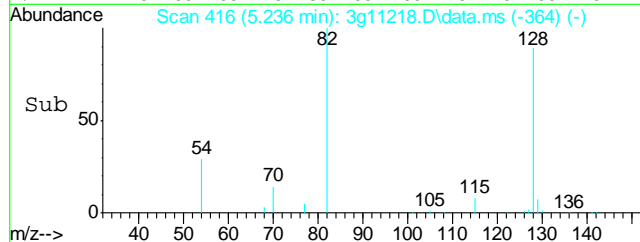
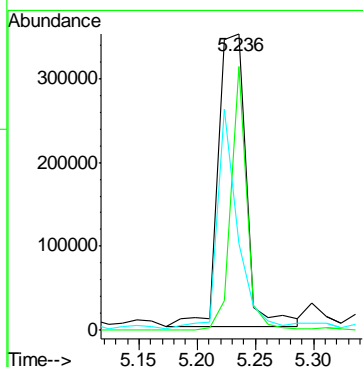
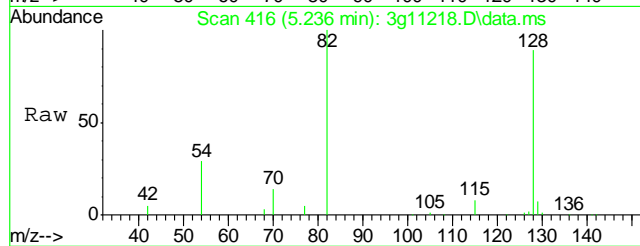
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.921 min Scan# 471
Delta R.T. -0.000 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

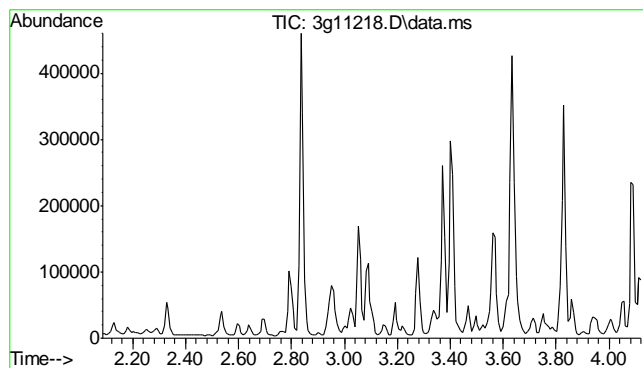
Tgt Ion	Ratio	Lower	Upper
136	100		
68	55.5	0.0	30.4#



#2
Nitrobenzene-d5
Concen: 33.9647 ug/mL
RT: 5.236 min Scan# 416
Delta R.T. 0.013 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

Tgt Ion	Ratio	Lower	Upper
82	100		
128	50.9	19.7	59.7
54	54.3	28.6	68.6

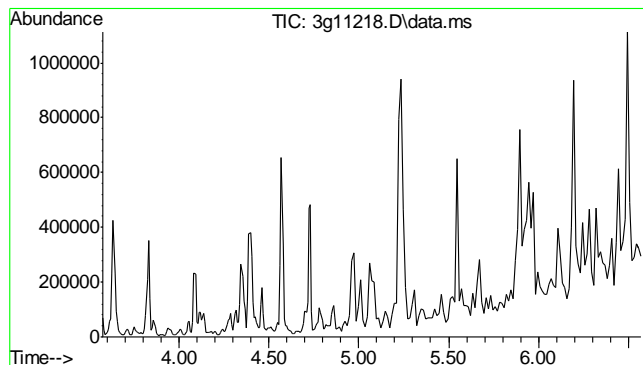
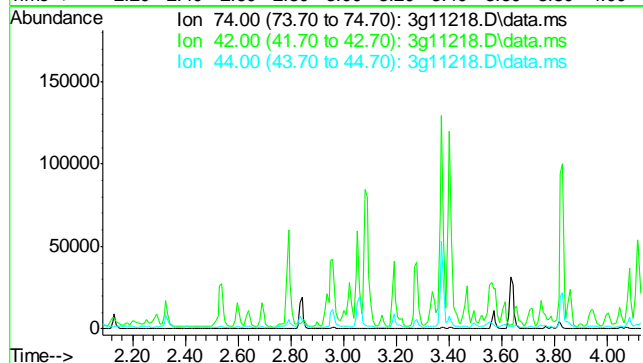




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.62 min

Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

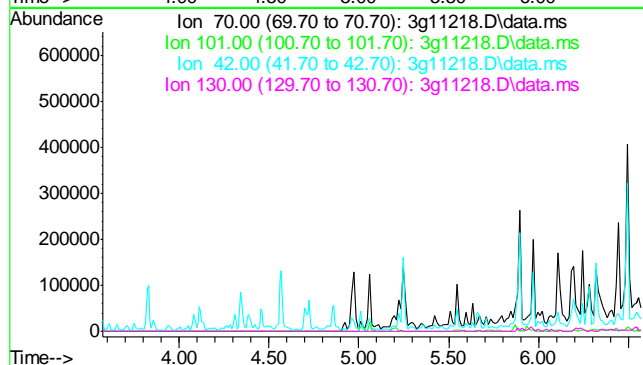
Tgt Ion	Exp Ratio
74	100
42	53.3
44	3.5

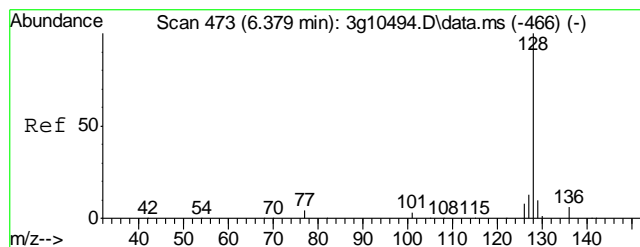


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.07 min

Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

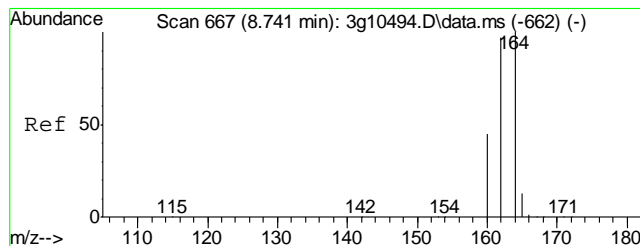
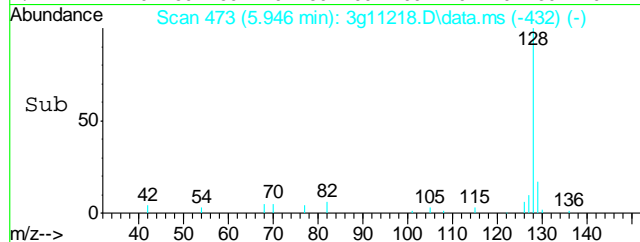
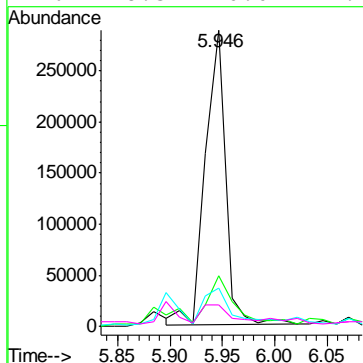
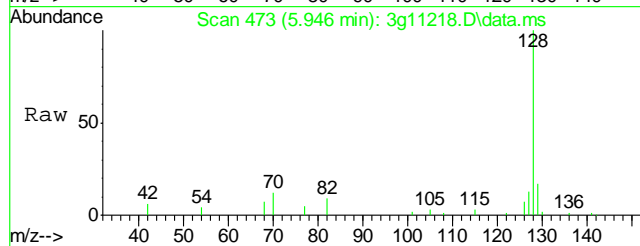
Tgt Ion	Exp Ratio
70	100
101	10.3
42	47.6
130	20.0





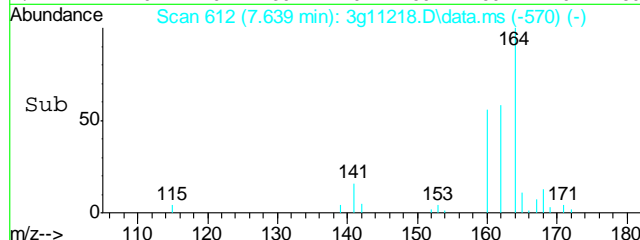
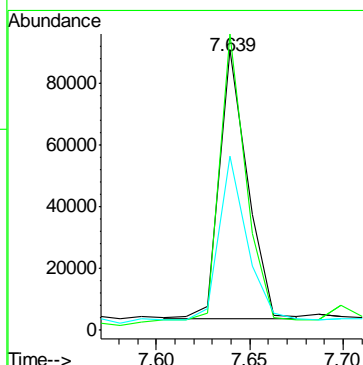
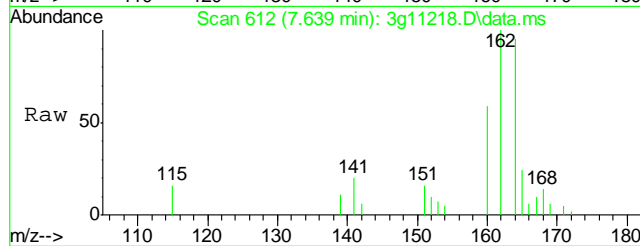
#5
Naphthalene
Concen: 8.0568 ug/mL
RT: 5.946 min Scan# 473
Delta R.T. 0.012 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

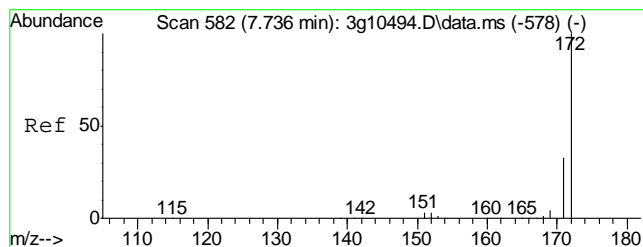
Tgt Ion:	128	Resp:	388260
Ion Ratio	Lower	Upper	
128	100		
129	20.6	0.0	30.8
127	17.4	0.0	33.4
126	8.3	0.0	27.7



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL m
RT: 7.639 min Scan# 612
Delta R.T. -0.000 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

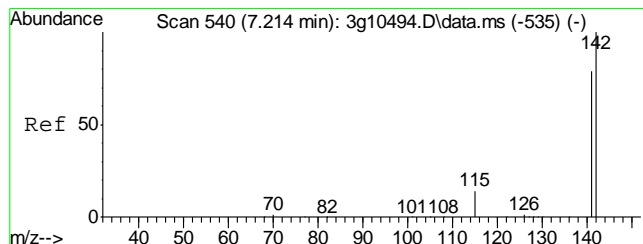
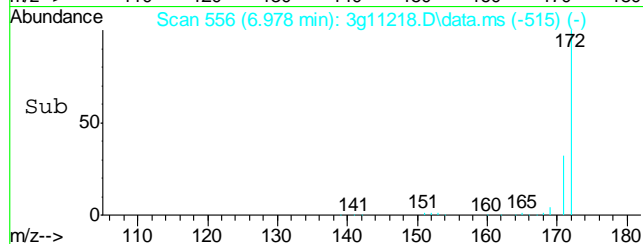
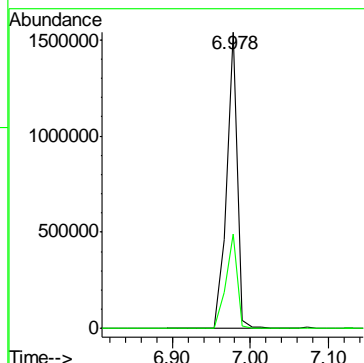
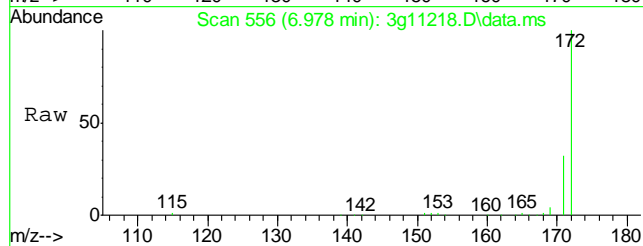
Tgt Ion:	164	Resp:	90471
Ion Ratio	Lower	Upper	
164	100		
162	9.7	73.5	113.5#
160	5.1	21.8	61.8#





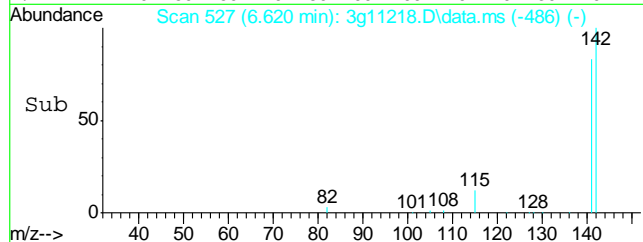
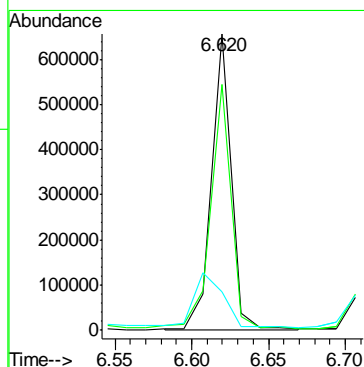
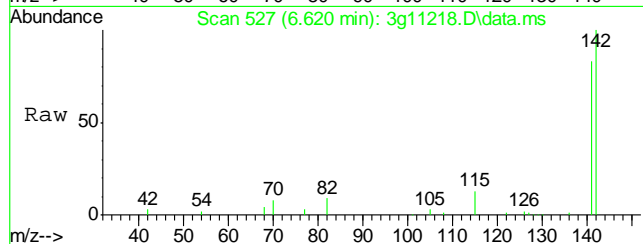
#7
2-Fluorobiphenyl
Concen: 39.2329 ug/mL
RT: 6.978 min Scan# 556
Delta R.T. 0.012 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

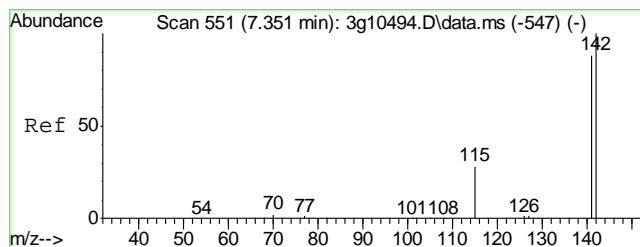
Tgt Ion	Ratio	Lower	Upper
172	100		
171	34.2	13.6	53.6



#8
2-Methylnaphthalene
Concen: 21.9772 ug/mL m
RT: 6.620 min Scan# 527
Delta R.T. 0.012 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

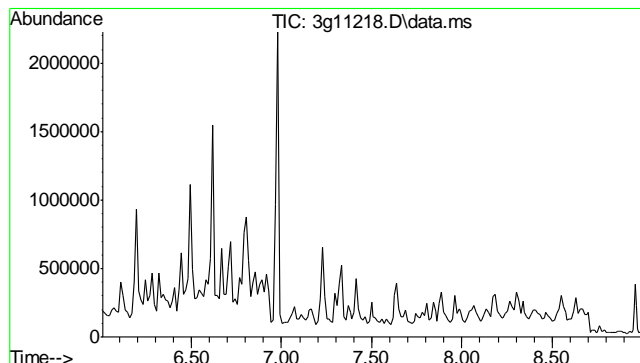
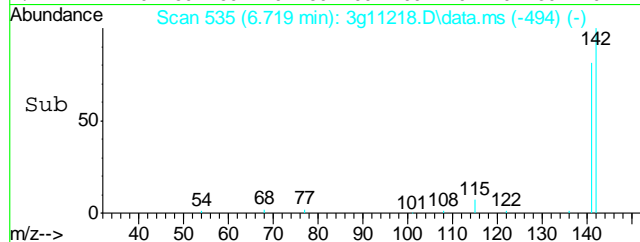
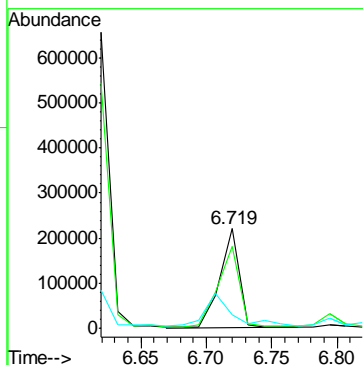
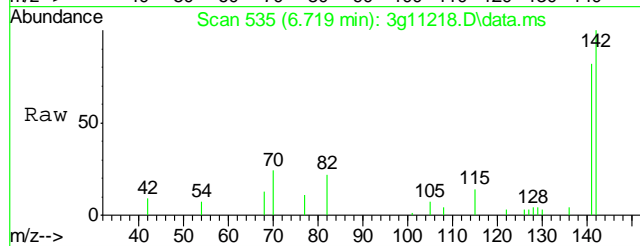
Tgt Ion	Ratio	Lower	Upper
142	100		
141	34.6	64.5	104.5#
115	16.9	13.6	53.6





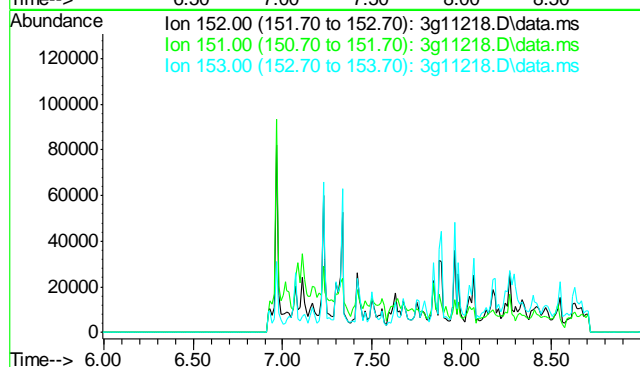
#9
1-Methylnaphthalene
Concen: 8.1052 ug/mL
RT: 6.719 min Scan# 535
Delta R.T. 0.012 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

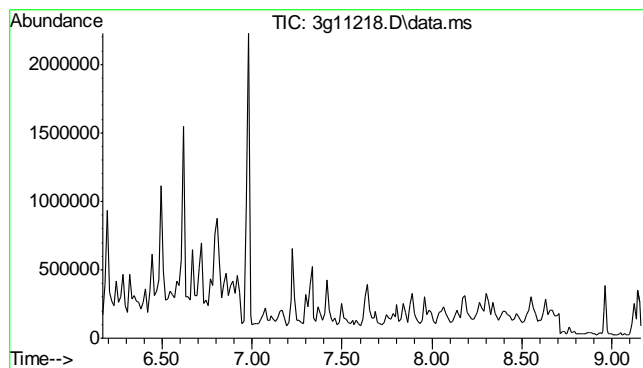
Tgt Ion:	142	Resp:	224345
Ion Ratio	Lower	Upper	
142	100		
141	90.7	67.8	107.8
115	44.3	11.0	51.0



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.50 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

Tgt Ion:	152
Sig	Exp Ratio
152	100
151	19.2
153	13.2



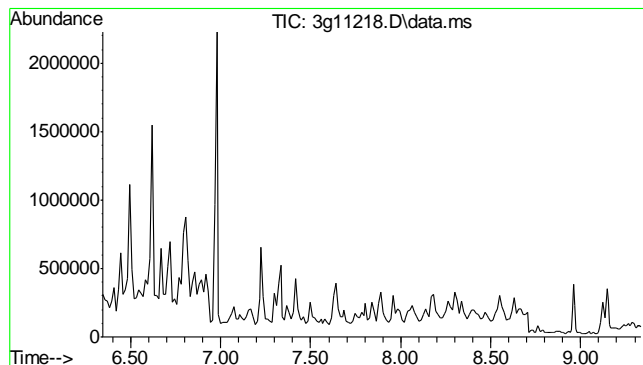
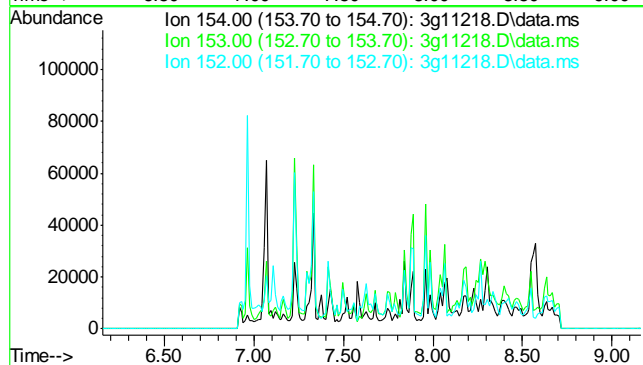


#11
 Acenaphthene
 Concen: N.D. ug/mL
 Expected RT: 7.66 min

Lab File: 3g11218.D
 Acq: 13 Sep 12 5:09 am

Tgt Ion: 154

Sig	Exp Ratio
154	100
153	104.8
152	49.9

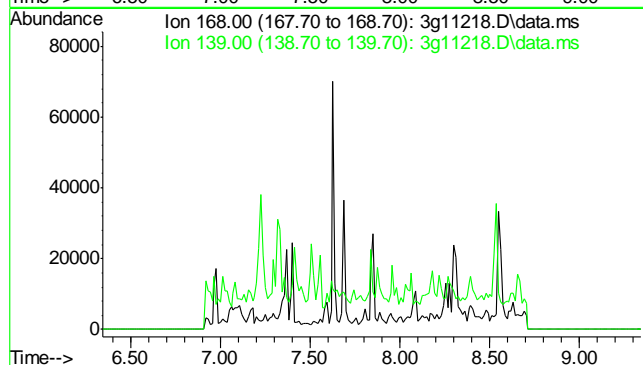


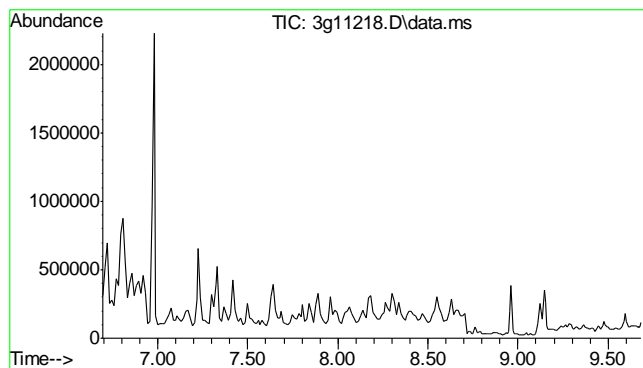
#12
 Dibenzofuran
 Concen: N.D. ug/mL
 Expected RT: 7.84 min

Lab File: 3g11218.D
 Acq: 13 Sep 12 5:09 am

Tgt Ion: 168

Sig	Exp Ratio
168	100
139	27.6

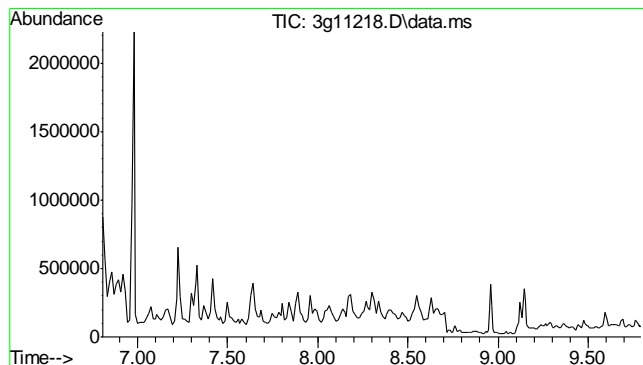
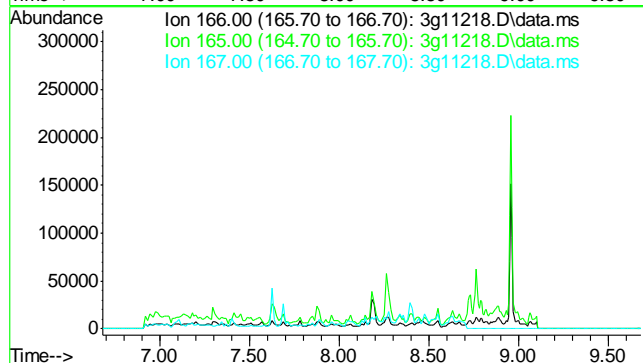




#13
 Fluorene
 Concen: N.D. ug/mL
 Expected RT: 8.18 min

Lab File: 3g11218.D
 Acq: 13 Sep 12 5:09 am

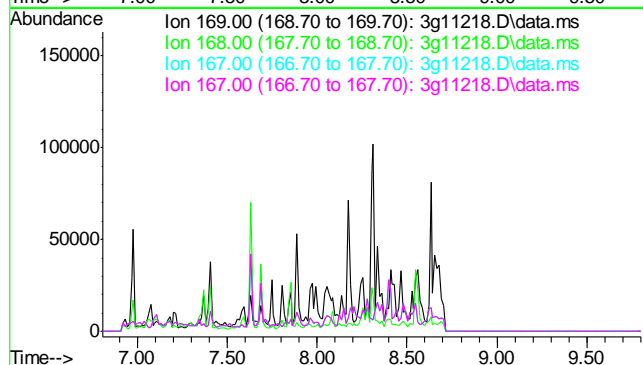
Tgt Ion	Exp Ratio
166	100
165	91.1
167	13.3

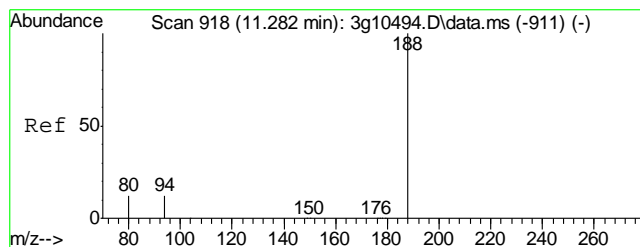


#14
 Diphenylamine
 Concen: N.D. ug/mL
 Expected RT: 8.30 min

Lab File: 3g11218.D
 Acq: 13 Sep 12 5:09 am

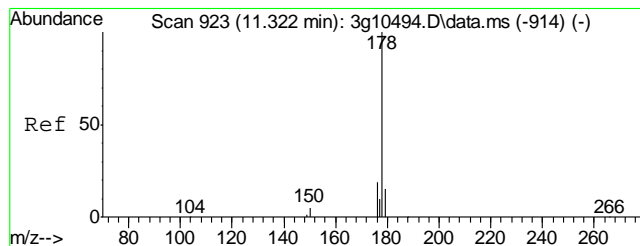
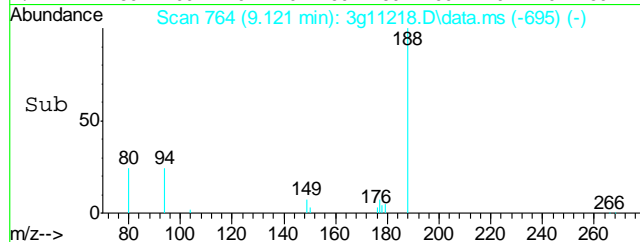
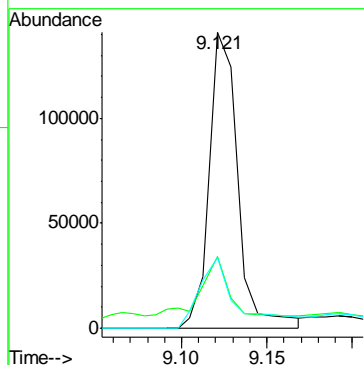
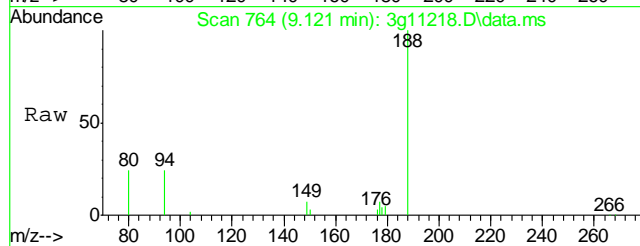
Tgt Ion	Exp Ratio
169	100
168	61.0
167	32.9
167	32.9





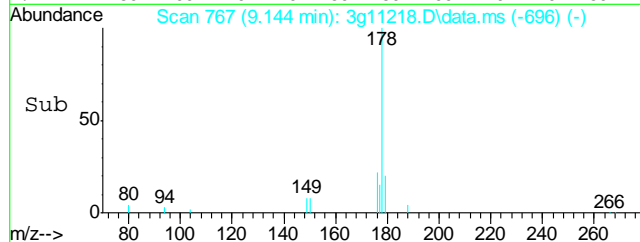
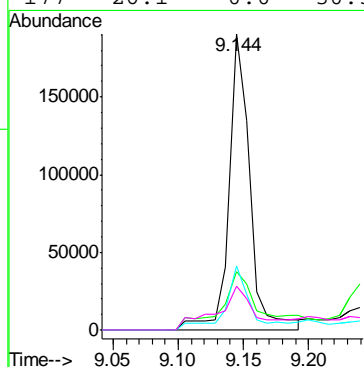
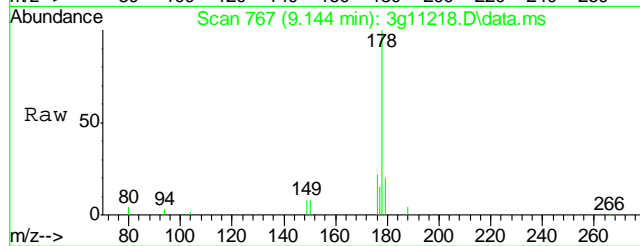
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 9.121 min Scan# 764
Delta R.T. -0.000 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

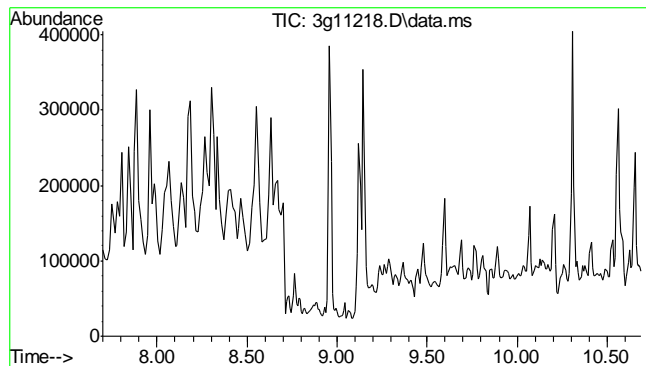
Tgt Ion:188	Resp: 157308
Ion Ratio	Lower Upper
188 100	
94 22.4	0.0 33.9
80 31.8	0.0 35.5



#16
Phenanthrene
Concen: 3.7396 ug/mL
RT: 9.144 min Scan# 767
Delta R.T. 0.008 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

Tgt Ion:178	Resp: 206373
Ion Ratio	Lower Upper
178 100	
179 40.1	0.0 35.3#
176 26.0	0.0 38.5
177 26.1	0.0 30.5

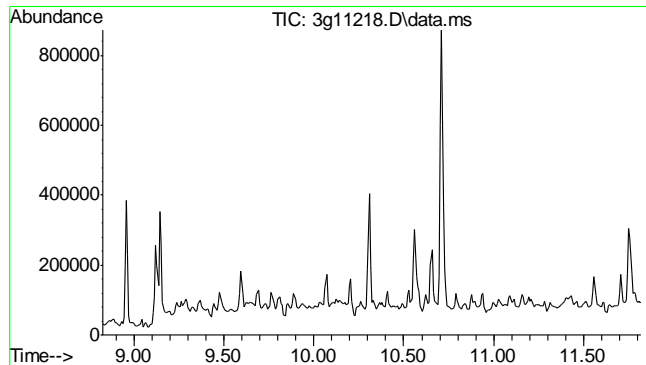
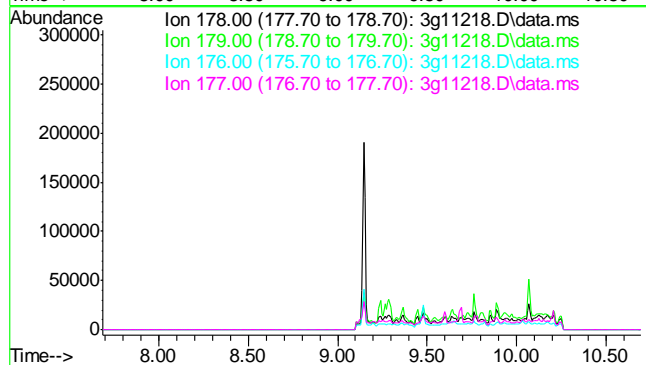




#17
Anthracene
Concen: N.D. ug/mL
Expected RT: 9.19 min

Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

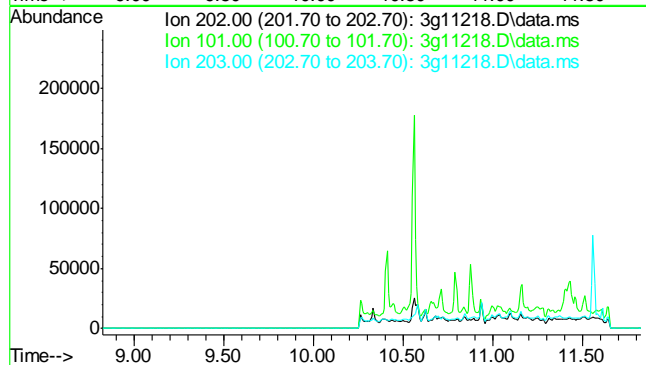
Tgt Ion: 178	
Sig	Exp Ratio
178	100
179	15.2
176	17.7
177	9.0

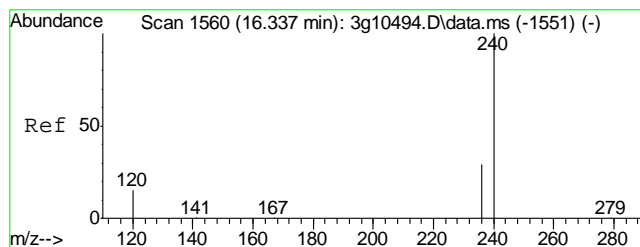


#18
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 10.32 min

Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

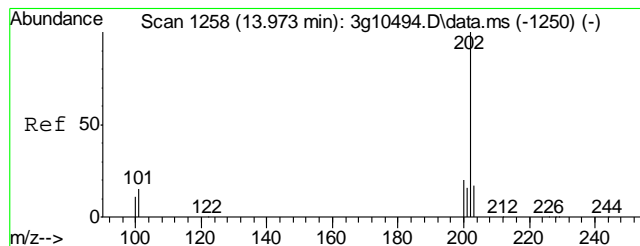
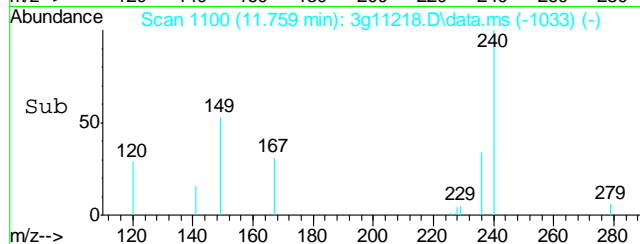
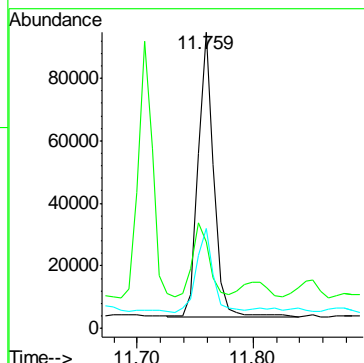
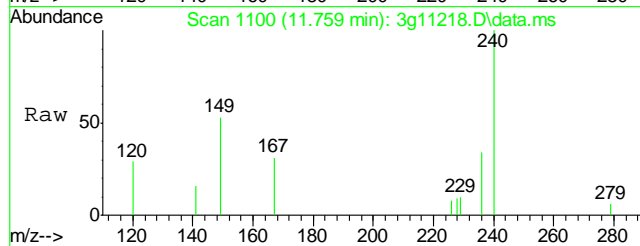
Tgt Ion: 202	
Sig	Exp Ratio
202	100
101	13.0
203	17.4





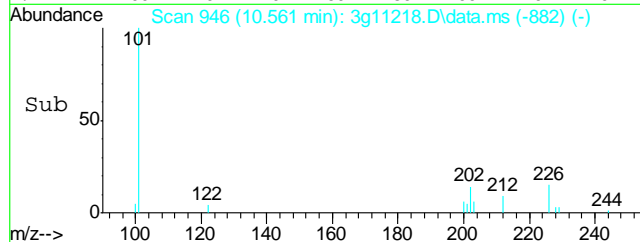
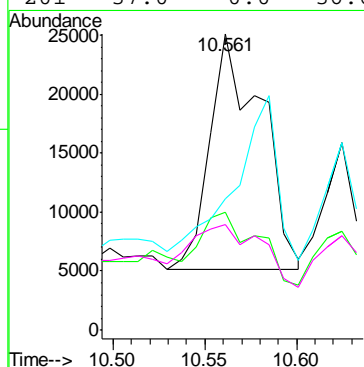
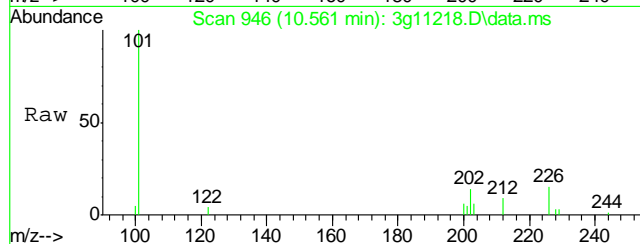
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.759 min Scan# 1100
Delta R.T. 0.006 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

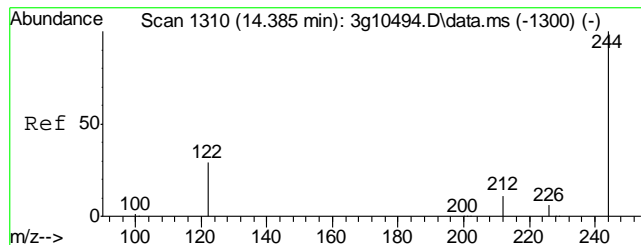
Tgt Ion	Ratio	Lower	Upper
240	100		
120	43.3	0.0	36.2#
236	31.0	8.8	48.8



#20
Pyrene
Concen: 0.9335 ug/mL
RT: 10.561 min Scan# 946
Delta R.T. 0.008 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

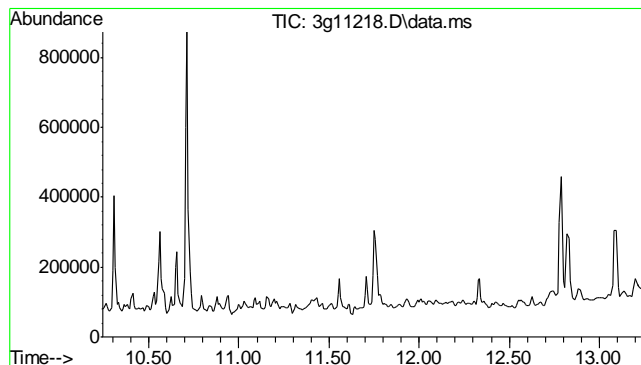
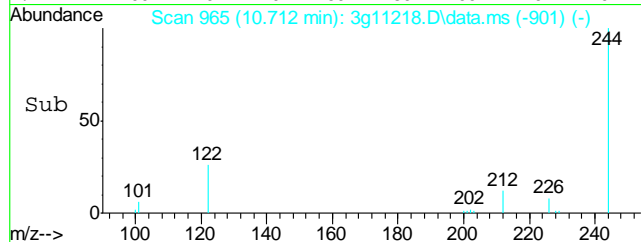
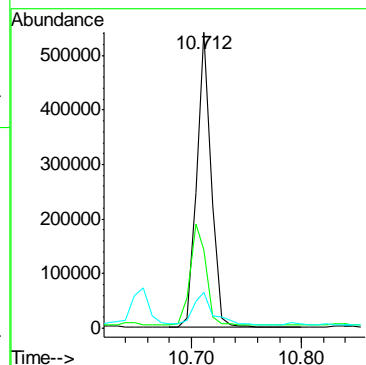
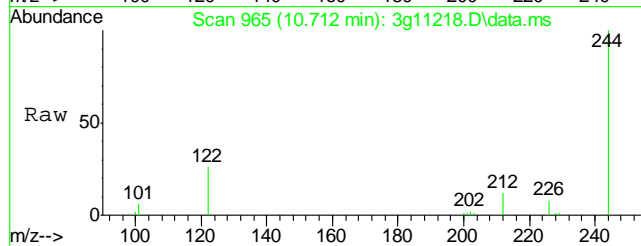
Tgt Ion	Ratio	Lower	Upper
202	100		
200	33.7	0.1	40.1
203	58.3	0.0	37.8#
201	37.0	0.0	36.6#





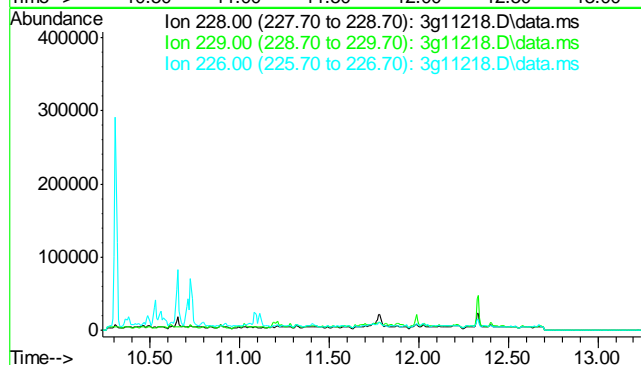
#21
Terphenyl-d14
Concen: 38.3087 ug/mL
RT: 10.712 min Scan# 965
Delta R.T. 0.008 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

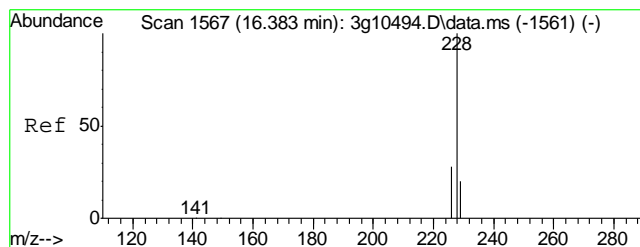
Tgt Ion	Ratio	Lower	Upper
244	100		
122	38.1	1.3	41.3
212	14.8	0.0	28.8



#22
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 11.74 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

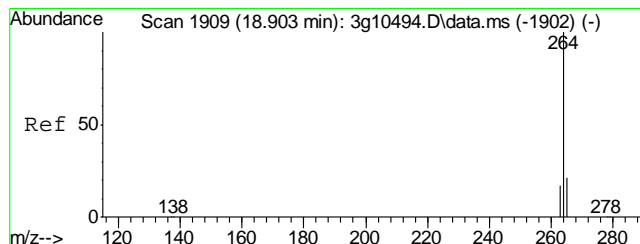
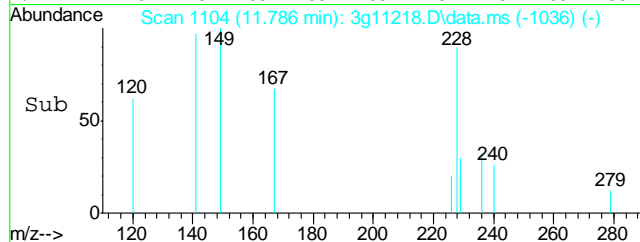
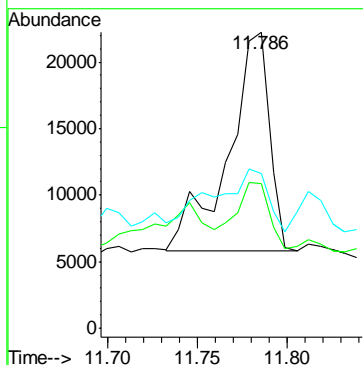
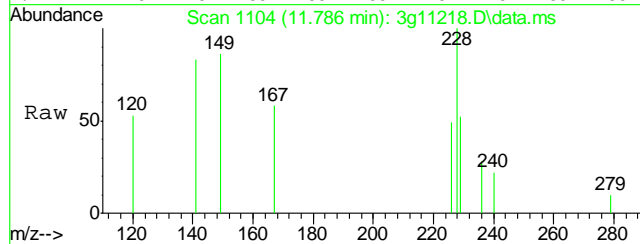
Tgt Ion	Sig	Exp Ratio
228	100	
229	19.6	
226	26.6	





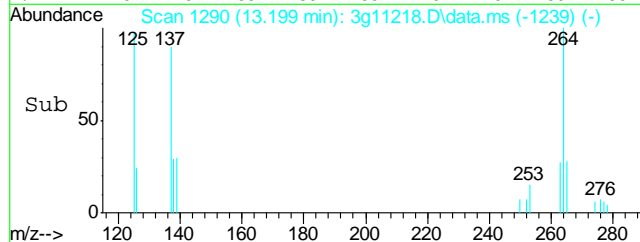
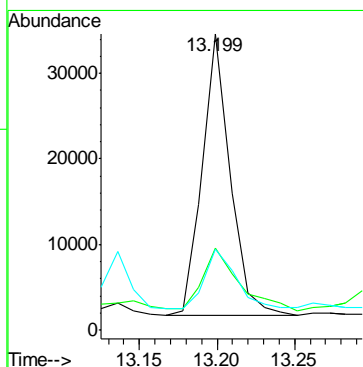
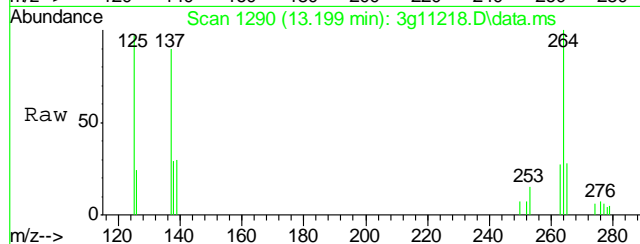
#23
Chrysene
Concen: 0.6712 ug/mL
RT: 11.786 min Scan# 1104
Delta R.T. 0.013 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

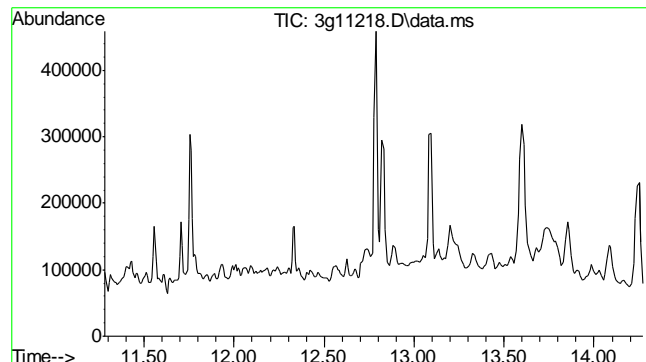
Tgt Ion	Ratio	Lower	Upper
228	100		
226	27.0	8.6	48.6
229	44.6	0.0	39.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.199 min Scan# 1290
Delta R.T. 0.021 min
Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

Tgt Ion	Ratio	Lower	Upper
264	100		
265	28.6	1.0	41.0
263	25.4	0.0	39.0

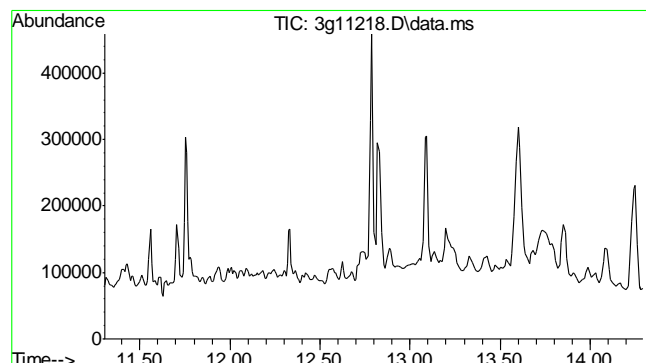
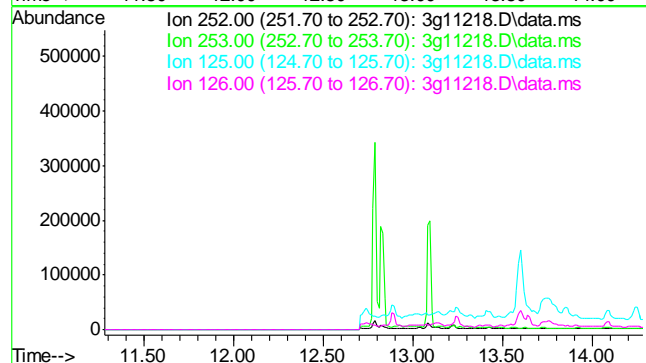




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.78 min

Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

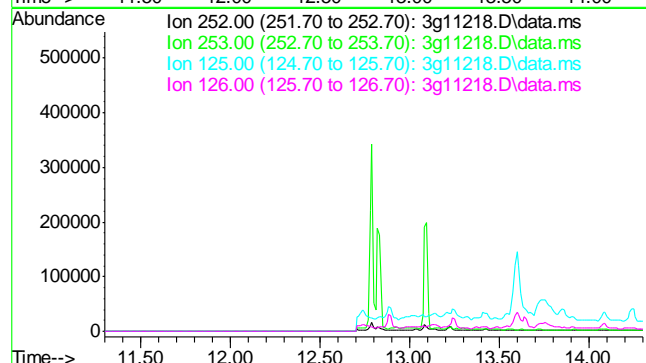
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	22.9
125	11.5
126	14.7

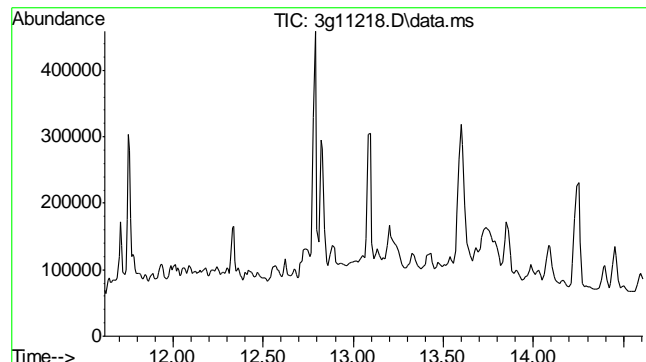


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.80 min

Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.8
125	11.0
126	14.0

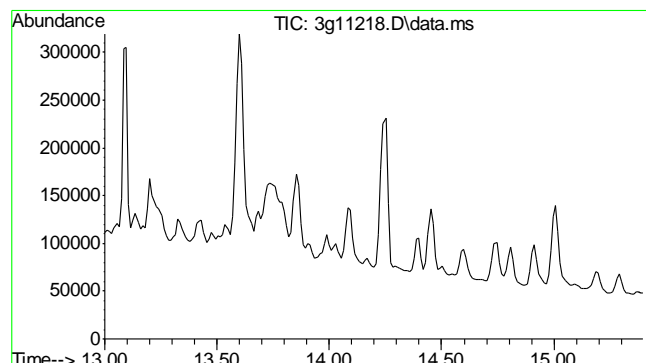
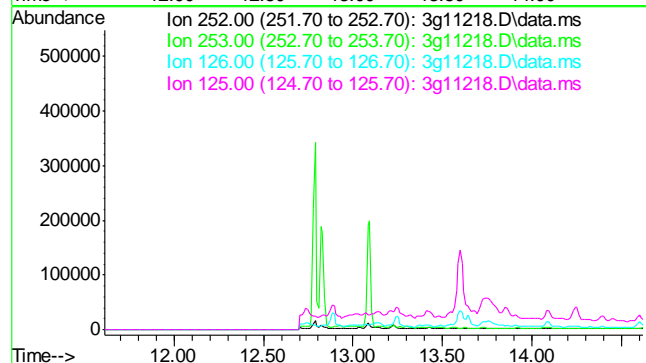




#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 13.11 min

Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

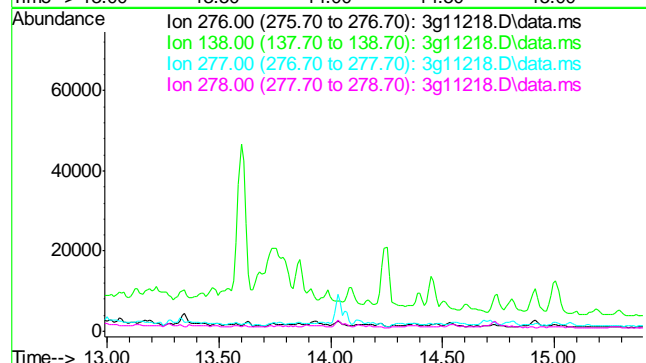
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.4
126	13.6
125	10.7

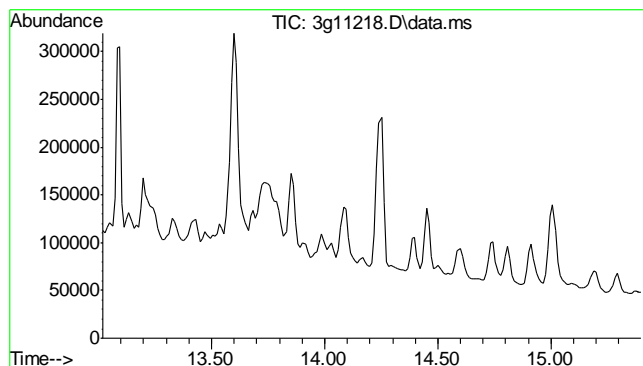


#28
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 14.49 min

Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

Tgt Ion:	276
Sig	Exp Ratio
276	100
138	25.3
277	25.0
278	79.3

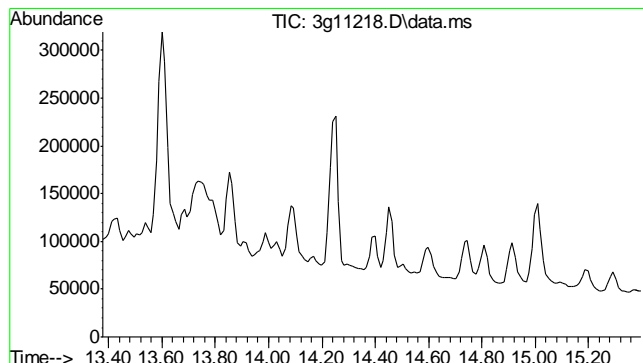
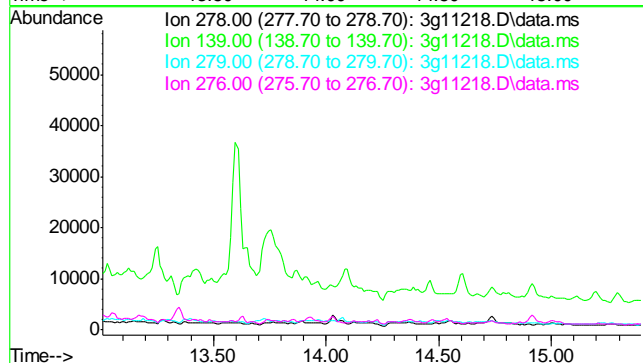




#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.51 min

Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

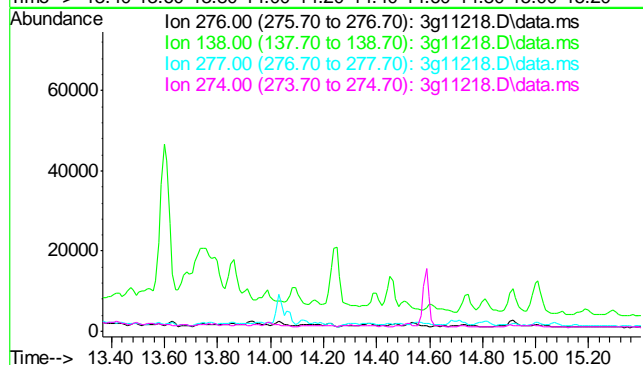
Tgt Ion	Exp Ratio
278	100
139	18.4
279	23.1
276	126.1



#30
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 14.87 min

Lab File: 3g11218.D
Acq: 13 Sep 12 5:09 am

Tgt Ion	Exp Ratio
276	100
138	21.3
277	23.4
274	21.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091212\
 Data File : 3g11219.D
 Acq On : 13 Sep 2012 5:33 am
 Operator : DONC
 Sample : D38518-2
 Misc : OP6602,E3G522,30.11,,,1,1
 ALS Vial : 30 Sample Multiplier: 1

Quant Time: Sep 13 13:20:34 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
 Quant Title : PAHSIM BASE
 QLast Update : Thu Sep 06 09:42:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.922	136	194163	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.640	164	105533	4.0000	ug/mL	0.00
15) Phenanthrene-d10	9.121	188	166448	4.0000	ug/mL	0.00
19) Chrysene-d12	11.759	240	97975	4.0000	ug/mL	0.00
24) Perylene-d12	13.188	264	53473	4.0000	ug/mL	0.01

System Monitoring Compounds

2) Nitrobenzene-d5	5.223	82	600672	31.4435	ug/mL	0.00
Spiked Amount 50.000	Range	25 - 135	Recovery	=	62.88%	
7) 2-Fluorobiphenyl	6.978	172	1552150	35.3572	ug/mL	0.01
Spiked Amount 50.000	Range	25 - 135	Recovery	=	70.72%	
21) Terphenyl-d14	10.712	244	556689	37.7100	ug/mL	0.00
Spiked Amount 50.000	Range	25 - 135	Recovery	=	75.42%	

Target Compounds

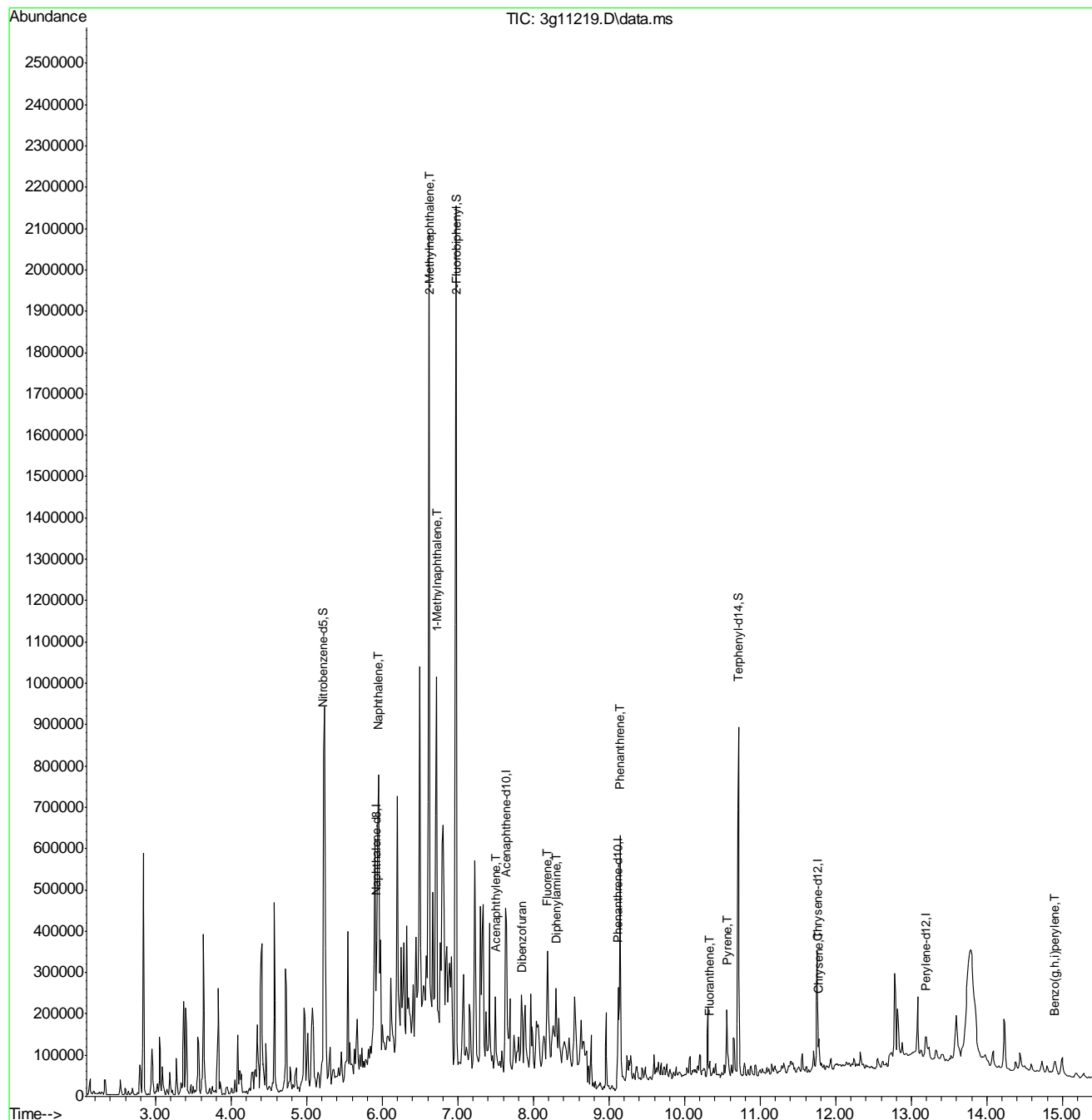
						Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.946	128	686936	12.7133	ug/mL	92
8) 2-Methylnaphthalene	6.620	142	863726	27.6836	ug/mL	95
9) 1-Methylnaphthalene	6.719	142	431039	13.3501	ug/mL	97
10) Acenaphthylene	7.498	152	14085	0.2485	ug/mL#	1
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.852	168	79408	1.4743	ug/mL	86
13) Fluorene	8.183	166	107534	2.4949	ug/mL#	69
14) Diphenylamine	8.301	169	91406m	2.6352	ug/mL	
16) Phenanthrene	9.145	178	386522	6.6194	ug/mL	87
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	10.332	202	27743	0.4041	ug/mL#	48
20) Pyrene	10.561	202	43611	0.9299	ug/mL	79
22) Benzo(a)anthracene	0.000	228	0	N.D.	d	
23) Chrysene	11.779	228	67000	1.5211	ug/mL#	74
25) Benzo(b)fluoranthene	0.000	252	0	N.D.	d	
26) Benzo(k)fluoranthene	0.000	252	0	N.D.	d	
27) Benzo(a)pyrene	0.000	252	0	N.D.	d	
28) Indeno(1,2,3-cd)pyrene	0.000	276	0	N.D.	d	
29) Dibenz(a,h)anthracene	0.000	278	0	N.D.	d	
30) Benzo(g,h,i)perylene	14.903	276	8654	0.2517	ug/mL#	1

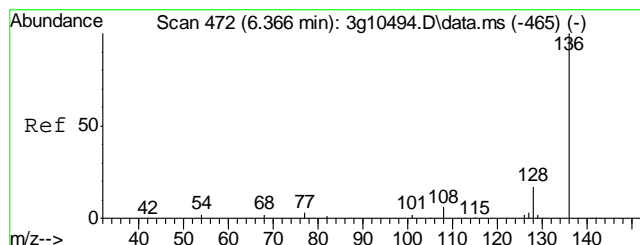
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091212\
Data File : 3g11219.D
Acq On : 13 Sep 2012 5:33 am
Operator : DONC
Sample : D38518-2
Misc : OP6602,E3G522,30.11,,,1,1
ALS Vial : 30 Sample Multiplier: 1

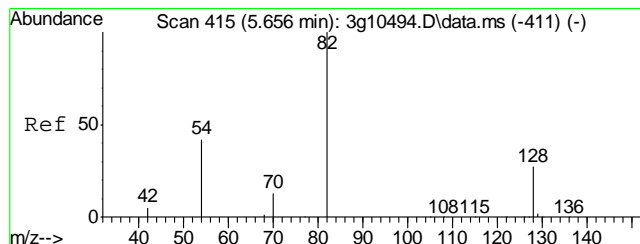
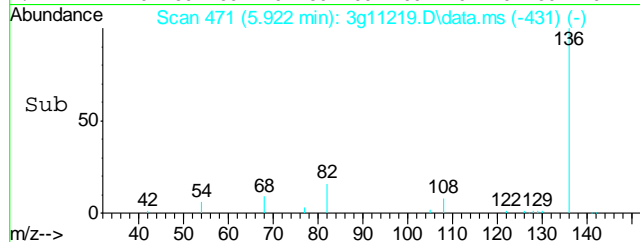
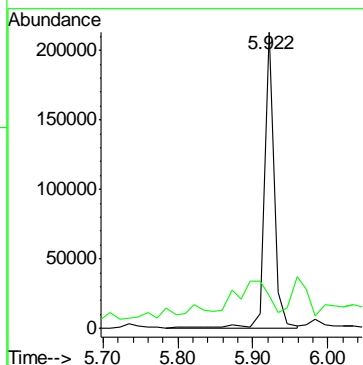
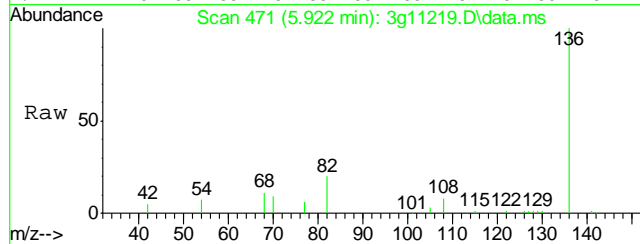
Quant Time: Sep 13 13:20:34 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
Quant Title : PAHSIM BASE
QLast Update : Thu Sep 06 09:42:23 2012
Response via : Initial Calibration





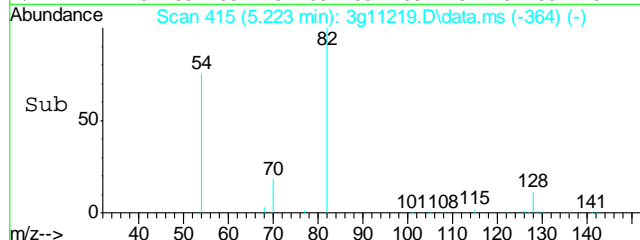
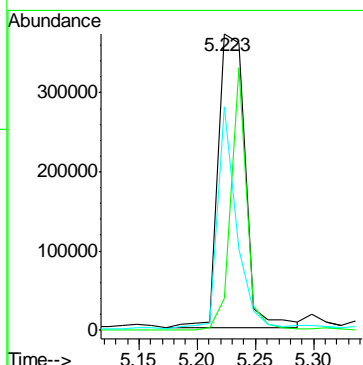
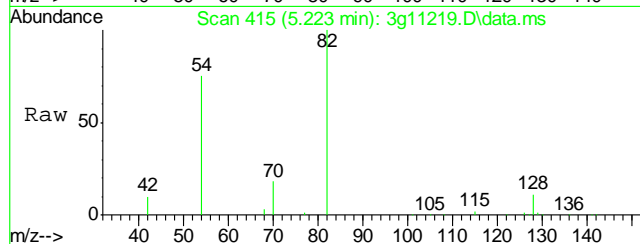
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.922 min Scan# 471
Delta R.T. -0.000 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

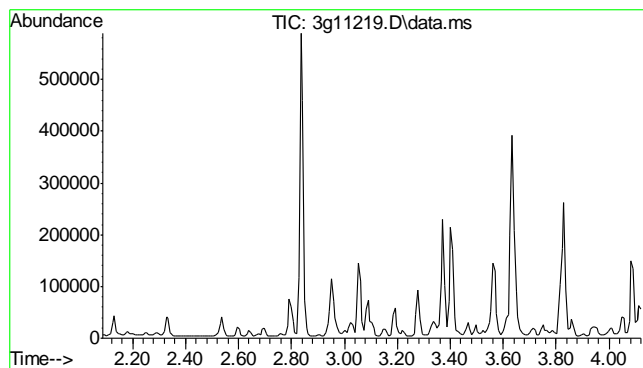
Tgt Ion	Ratio	Lower	Upper
136	100		
68	33.2	0.0	30.4#



#2
Nitrobenzene-d5
Concen: 31.4435 ug/mL
RT: 5.223 min Scan# 415
Delta R.T. 0.000 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

Tgt Ion	Ratio	Lower	Upper
82	100		
128	52.4	19.7	59.7
54	54.9	28.6	68.6

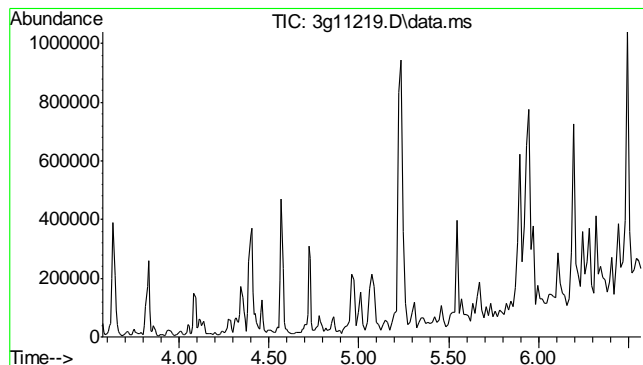
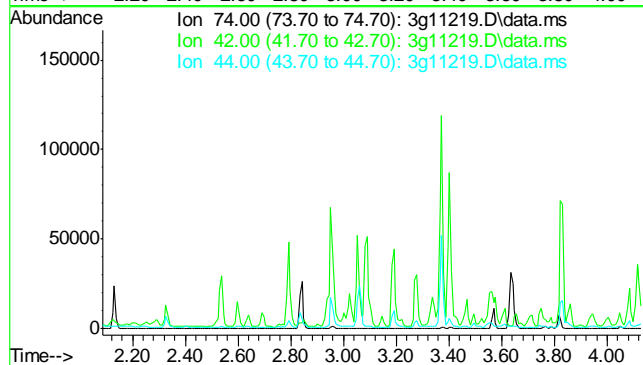




#3
 N-Nitrosodimethylamine
 Concen: N.D. ug/mL
 Expected RT: 2.62 min

 Lab File: 3g11219.D
 Acq: 13 Sep 12 5:33 am

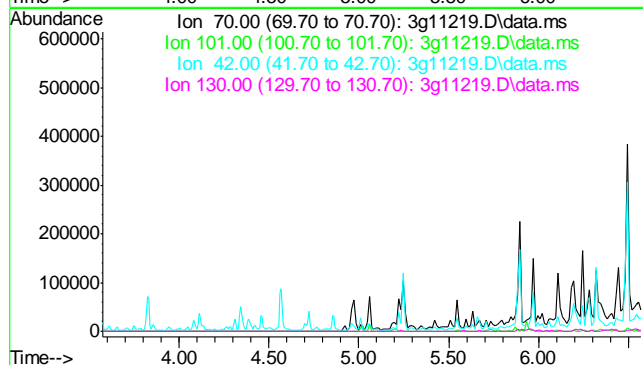
Tgt Ion	Exp Ratio
74	100
42	53.3
44	3.5

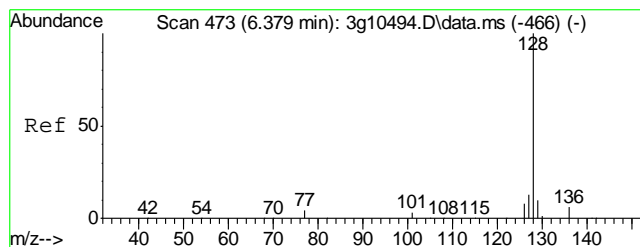


#4
 N-Nitrosodi-propylamine
 Concen: N.D. ug/mL
 Expected RT: 5.07 min

 Lab File: 3g11219.D
 Acq: 13 Sep 12 5:33 am

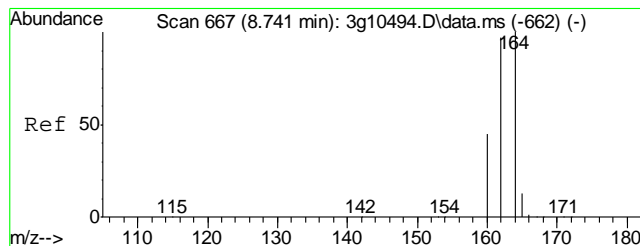
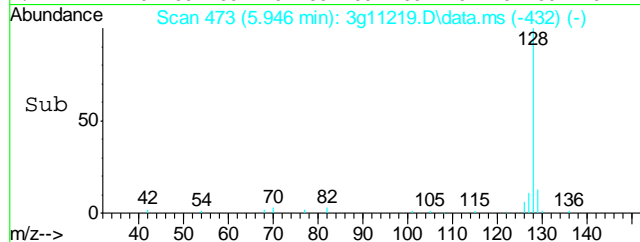
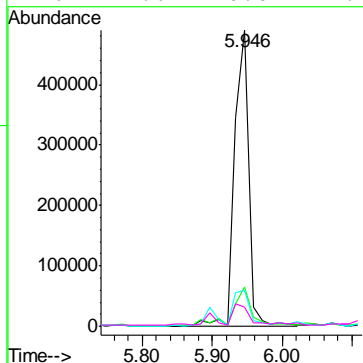
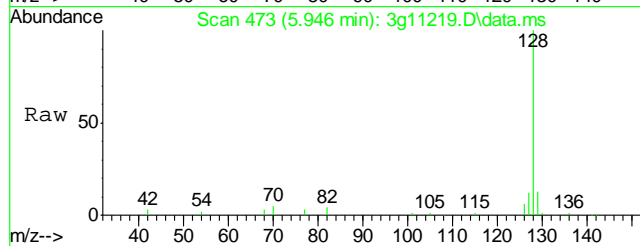
Tgt Ion	Exp Ratio
70	100
101	10.3
42	47.6
130	20.0





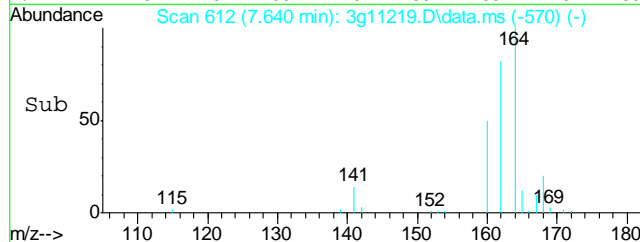
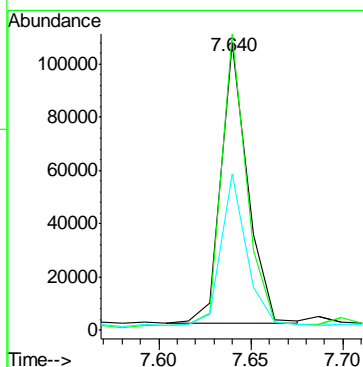
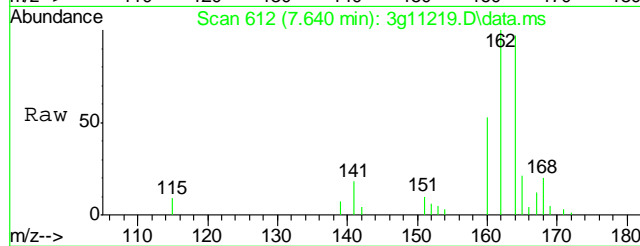
#5
Naphthalene
Concen: 12.7133 ug/mL
RT: 5.946 min Scan# 473
Delta R.T. 0.012 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

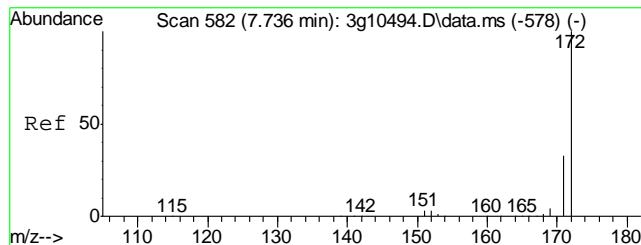
Tgt Ion:	128	Resp:	686936
Ion Ratio	Lower	Upper	
128	100		
129	18.2	0.0	30.8
127	14.3	0.0	33.4
126	7.6	0.0	27.7



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.640 min Scan# 612
Delta R.T. -0.000 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

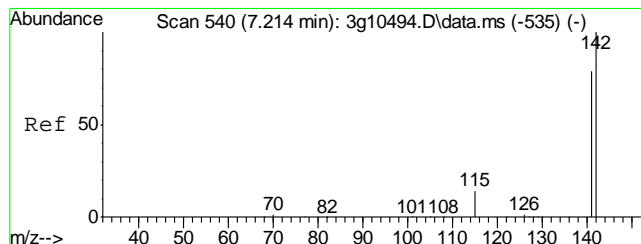
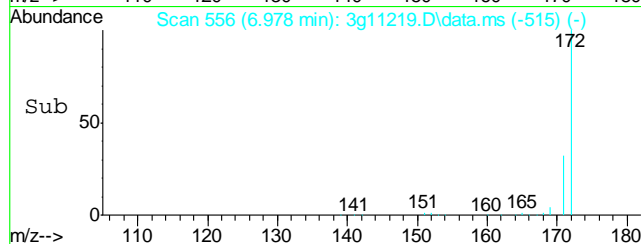
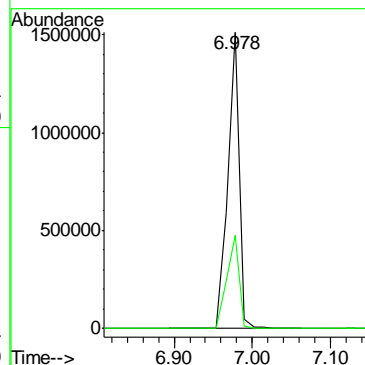
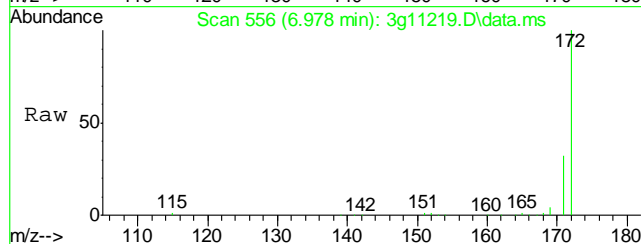
Tgt Ion:	164	Resp:	105533
Ion Ratio	Lower	Upper	
164	100		
162	101.0	73.5	113.5
160	55.5	21.8	61.8





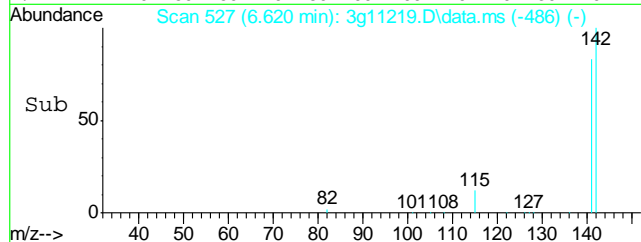
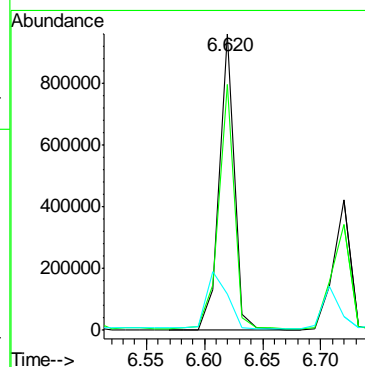
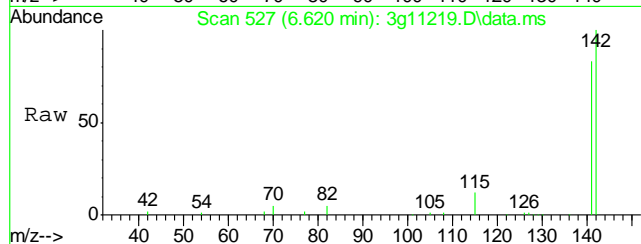
#7
2-Fluorobiphenyl
Concen: 35.3572 ug/mL
RT: 6.978 min Scan# 556
Delta R.T. 0.012 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

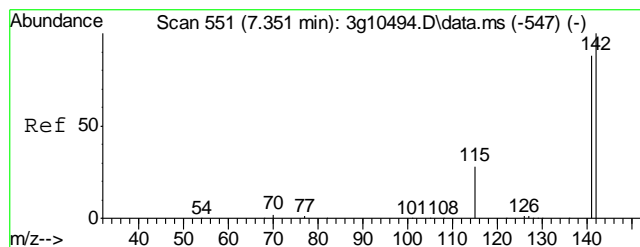
Tgt Ion:172 Resp: 1552150
Ion Ratio Lower Upper
172 100
171 34.3 13.6 53.6



#8
2-Methylnaphthalene
Concen: 27.6836 ug/mL
RT: 6.620 min Scan# 527
Delta R.T. 0.012 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

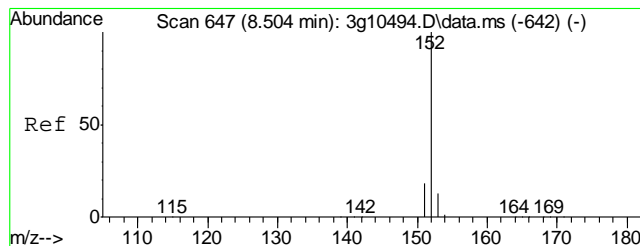
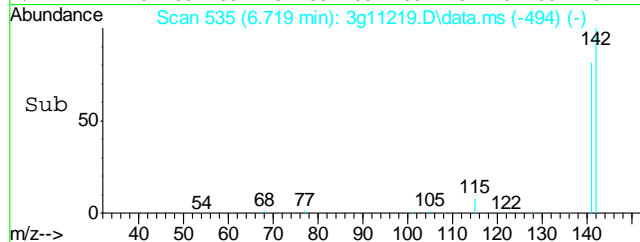
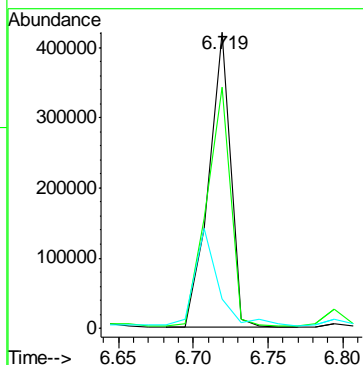
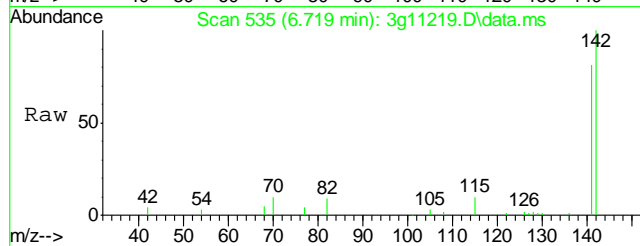
Tgt Ion:142 Resp: 863726
Ion Ratio Lower Upper
142 100
141 86.5 64.5 104.5
115 26.7 13.6 53.6





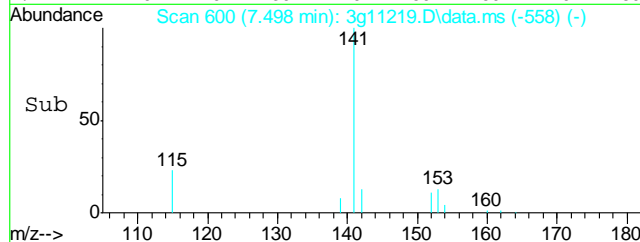
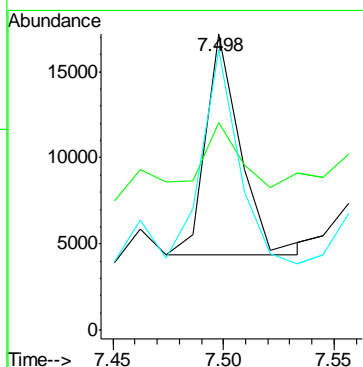
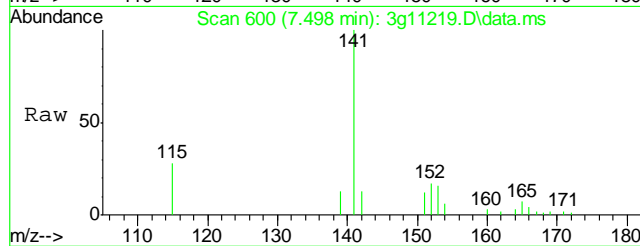
#9
1-Methylnaphthalene
Concen: 13.3501 ug/mL
RT: 6.719 min Scan# 535
Delta R.T. 0.012 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

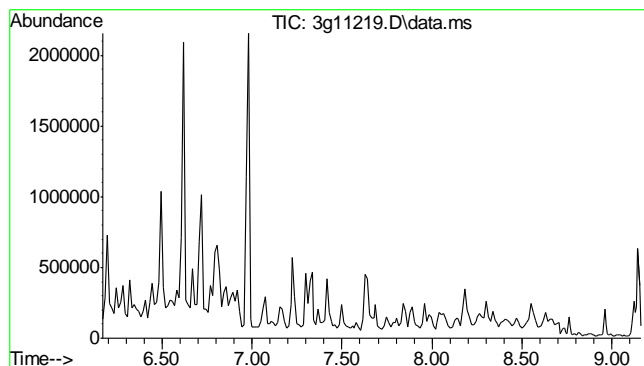
Tgt Ion	Ratio	Lower	Upper
142	100		
141	88.8	67.8	107.8
115	35.0	11.0	51.0



#10
Acenaphthylene
Concen: 0.2485 ug/mL
RT: 7.498 min Scan# 600
Delta R.T. -0.000 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

Tgt Ion	Ratio	Lower	Upper
152	100		
151	27.6	0.0	39.2
153	102.6	0.0	33.2#

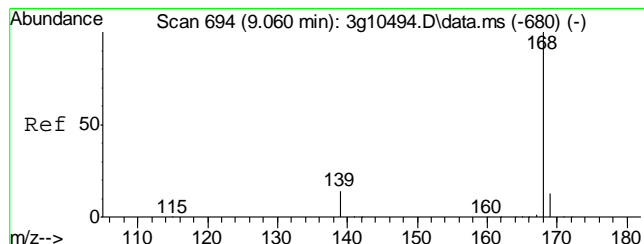
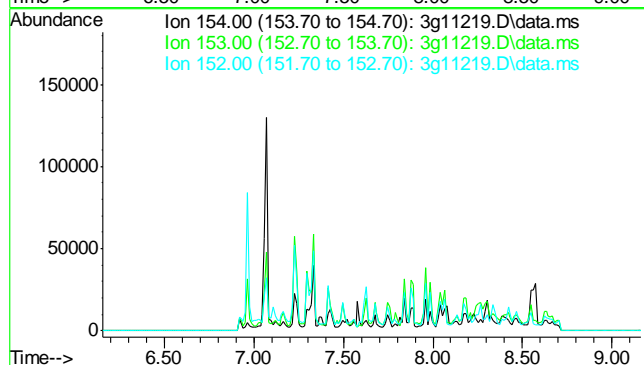




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.66 min

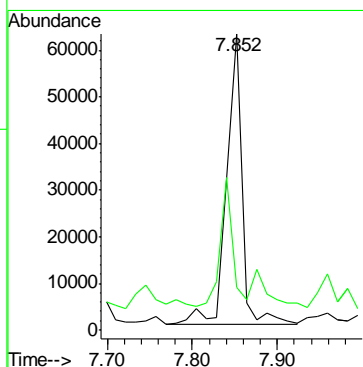
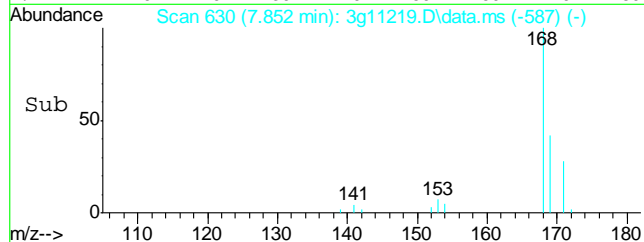
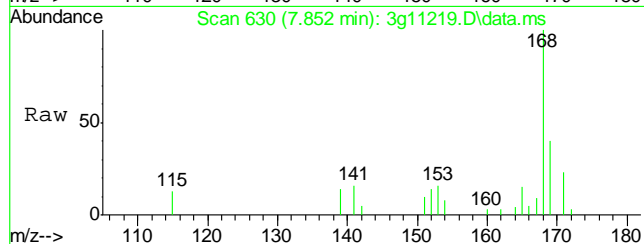
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

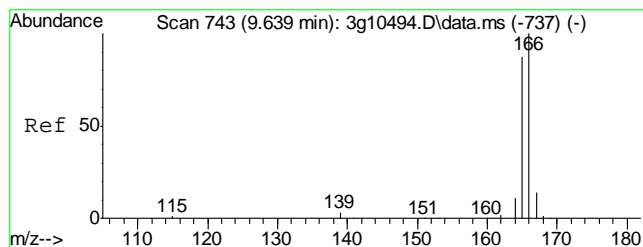
Tgt Ion: 154
Sig Exp Ratio
154 100
153 104.8
152 49.9



#12
Dibenzofuran
Concen: 1.4743 ug/mL
RT: 7.852 min Scan# 630
Delta R.T. 0.012 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

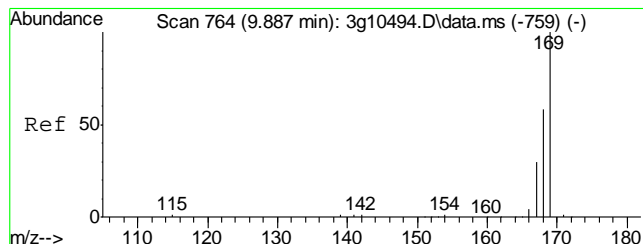
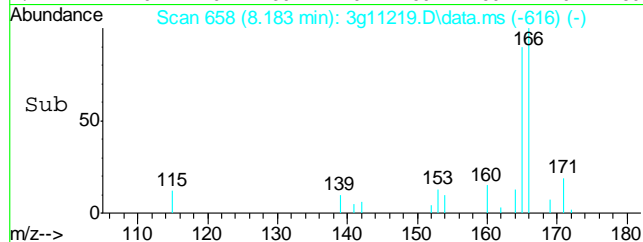
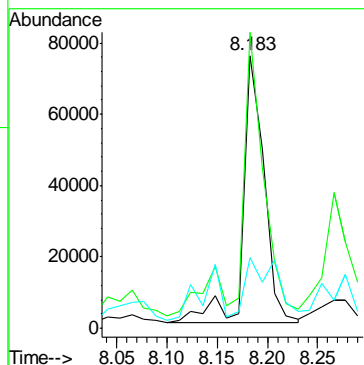
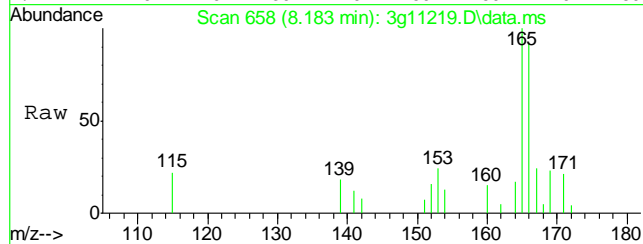
Tgt Ion: 168 Resp: 79408
Ion Ratio Lower Upper
168 100
139 34.8 7.6 47.6





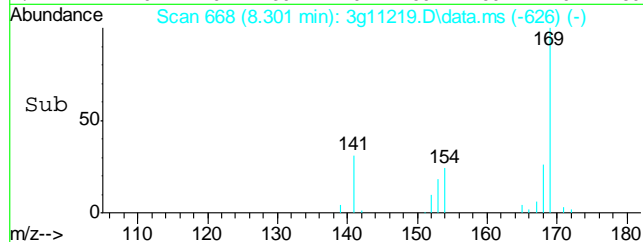
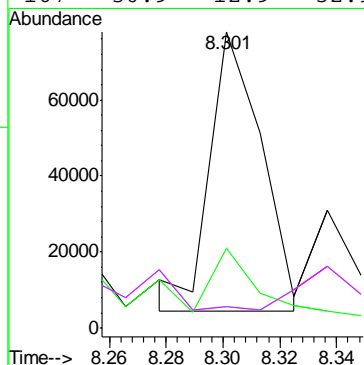
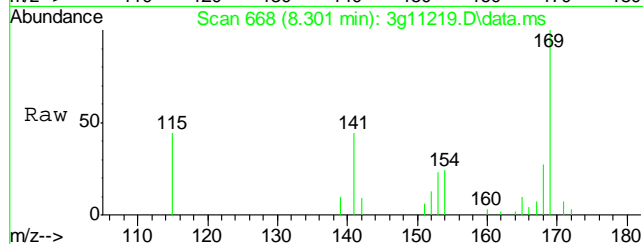
#13
Fluorene
Concen: 2.4949 ug/mL
RT: 8.183 min Scan# 658
Delta R.T. -0.000 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

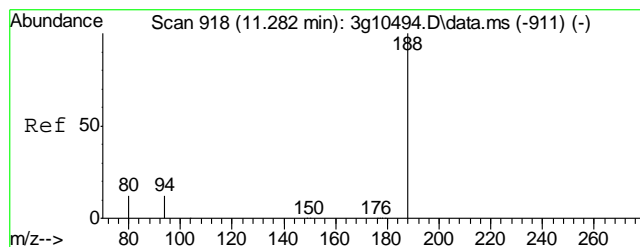
Tgt Ion	Ratio	Lower	Upper
166	100		
165	116.8	71.1	111.1#
167	35.6	0.0	33.3#



#14
Diphenylamine
Concen: 2.6352 ug/mL m
RT: 8.301 min Scan# 668
Delta R.T. -0.000 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

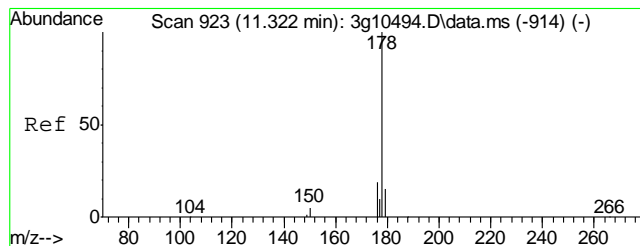
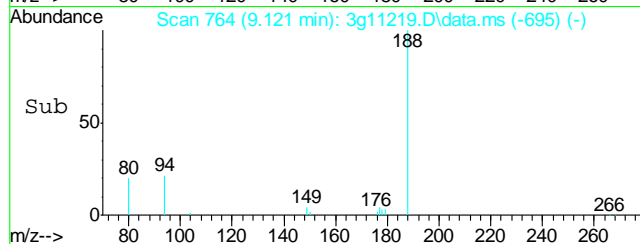
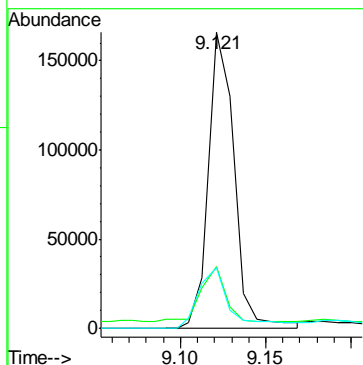
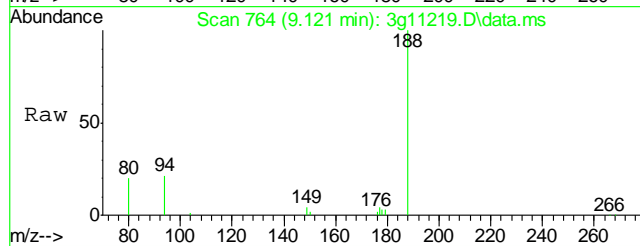
Tgt Ion	Ratio	Lower	Upper
169	100		
168	44.1	41.0	81.0
167	30.9	12.9	52.9
167	30.9	12.9	52.9





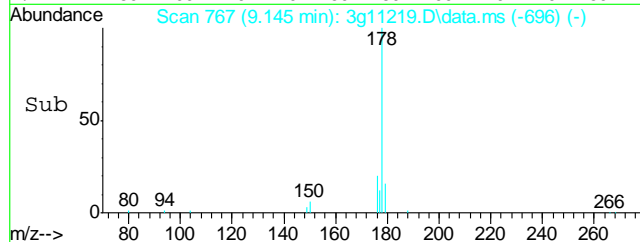
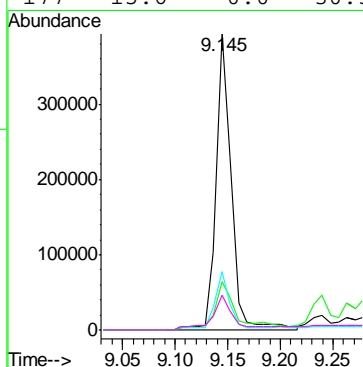
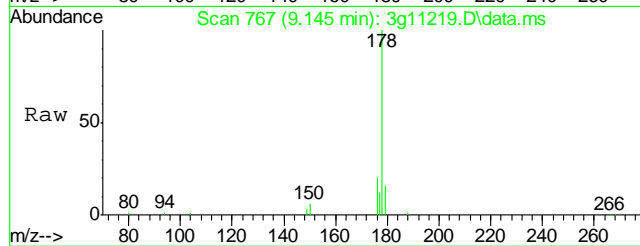
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 9.121 min Scan# 764
Delta R.T. -0.000 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

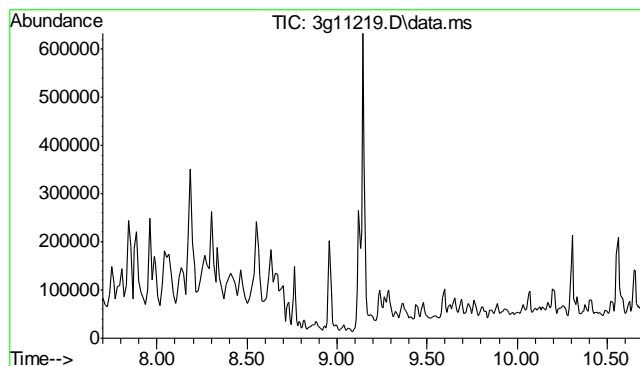
Tgt Ion:188	Resp: 166448
Ion Ratio	Lower Upper
188 100	
94 19.0	0.0 33.9
80 24.9	0.0 35.5



#16
Phenanthrene
Concen: 6.6194 ug/mL
RT: 9.145 min Scan# 767
Delta R.T. 0.008 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

Tgt Ion:178	Resp: 386522
Ion Ratio	Lower Upper
178 100	
179 24.8	0.0 35.3
176 20.3	0.0 38.5
177 15.6	0.0 30.5

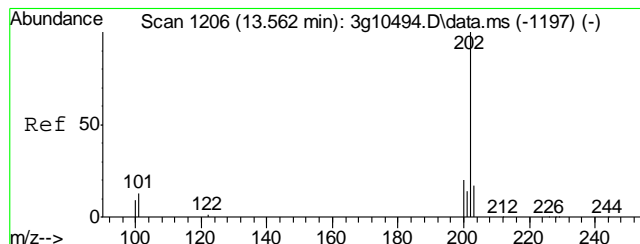
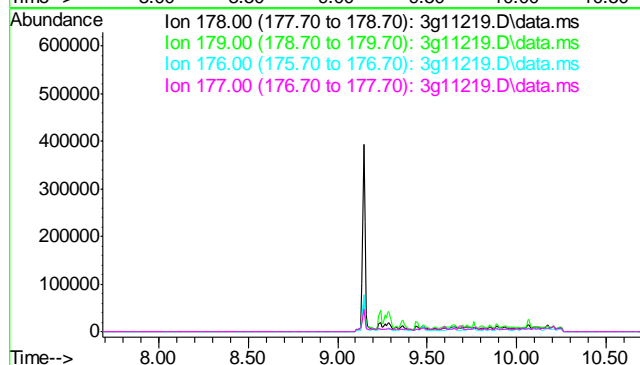




#17
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 9.19 min

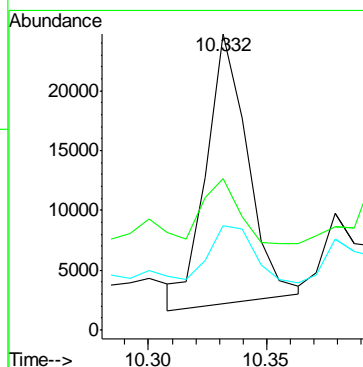
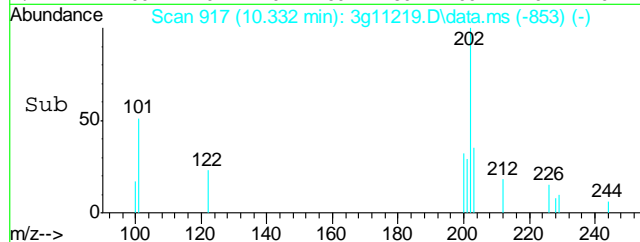
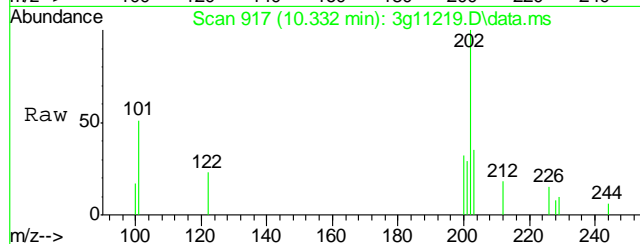
 Lab File: 3g11219.D
 Acq: 13 Sep 12 5:33 am

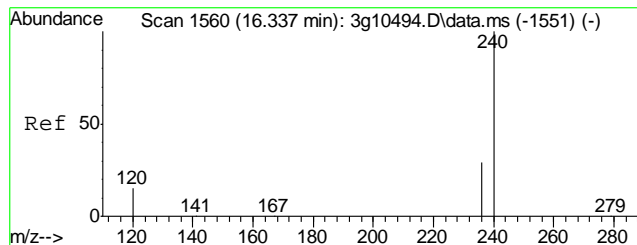
Tgt Ion: 178
 Sig Exp Ratio
 178 100
 179 15.2
 176 17.7
 177 9.0



#18
 Fluoranthene
 Concen: 0.4041 ug/mL
 RT: 10.332 min Scan# 917
 Delta R.T. 0.008 min
 Lab File: 3g11219.D
 Acq: 13 Sep 12 5:33 am

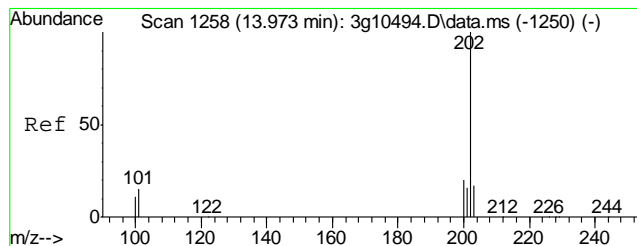
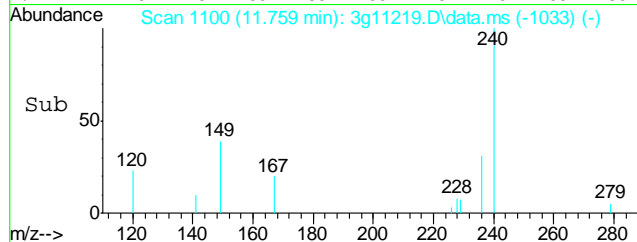
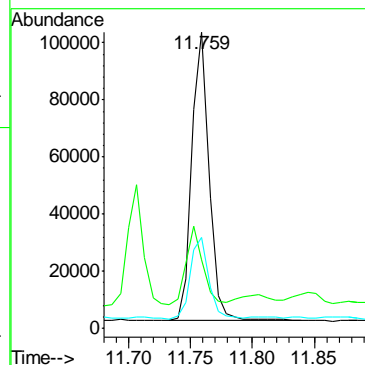
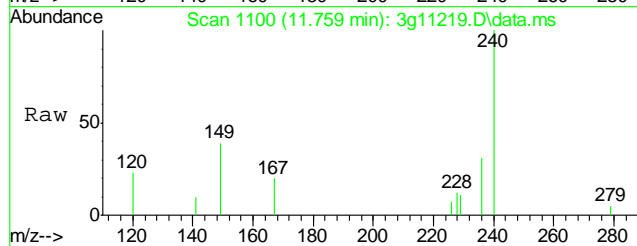
Tgt Ion: 202 Resp: 27743
 Ion Ratio Lower Upper
 202 100
 101 36.4 0.0 33.0#
 203 37.9 0.0 37.4#





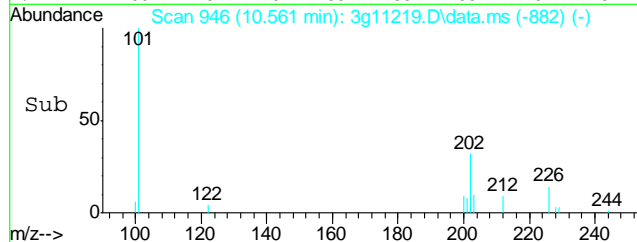
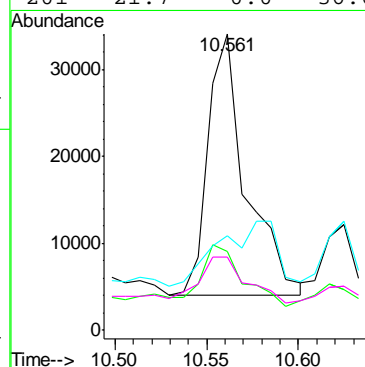
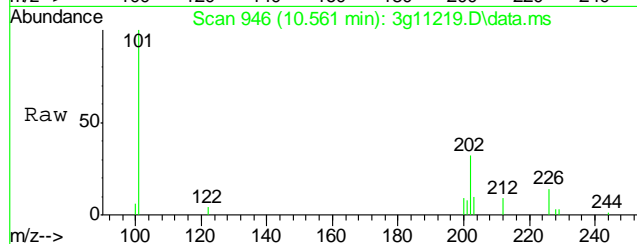
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.759 min Scan# 1100
Delta R.T. 0.006 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

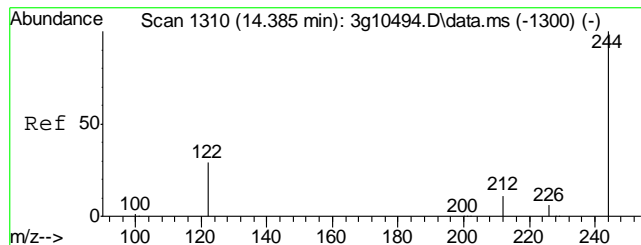
Tgt Ion:	240	Resp:	97975
Ion Ratio	Lower	Upper	
240	100		
120	29.5	0.0	36.2
236	32.4	8.8	48.8



#20
Pyrene
Concen: 0.9299 ug/mL
RT: 10.561 min Scan# 946
Delta R.T. 0.008 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

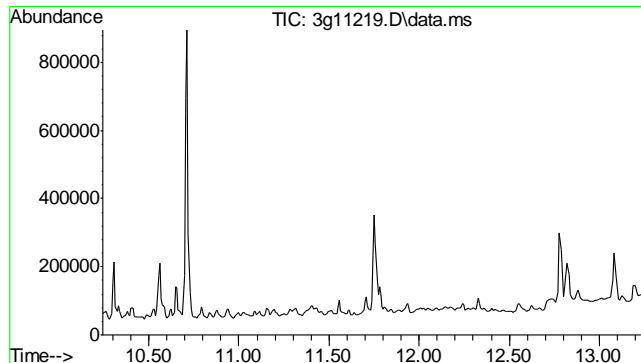
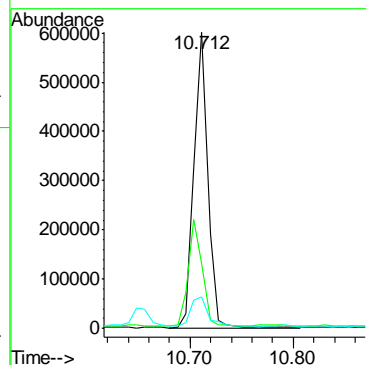
Tgt Ion:	202	Resp:	43611
Ion Ratio	Lower	Upper	
202	100		
200	24.5	0.1	40.1
203	37.2	0.0	37.8
201	21.7	0.0	36.6





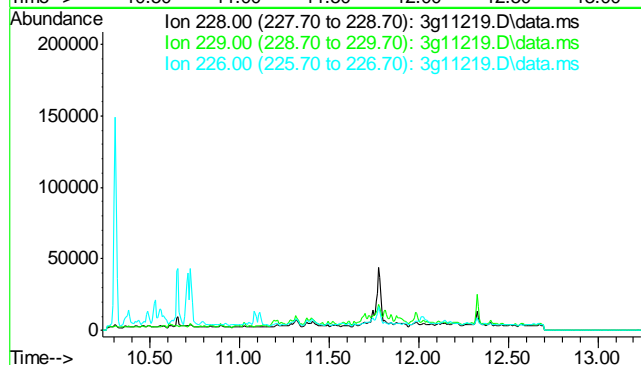
#21
Terphenyl-d14
Concen: 37.7100 ug/mL
RT: 10.712 min Scan# 965
Delta R.T. 0.008 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

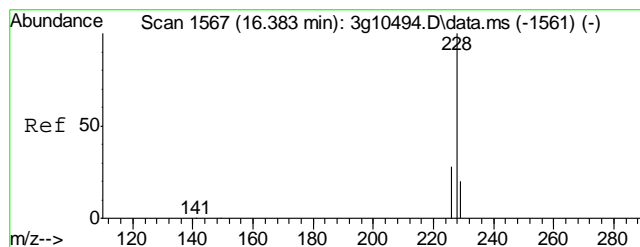
Tgt Ion	Ratio	Lower	Upper
244	100		
122	37.2	1.3	41.3
212	12.9	0.0	28.8



#22
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 11.74 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

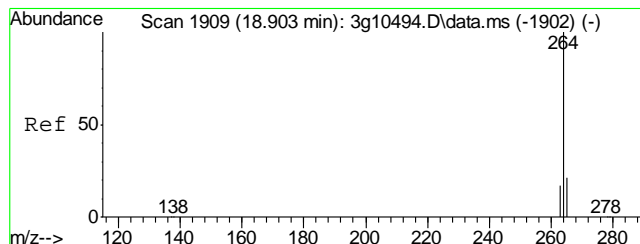
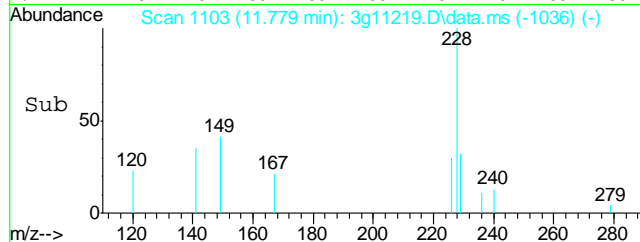
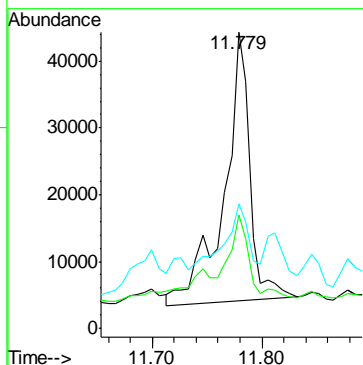
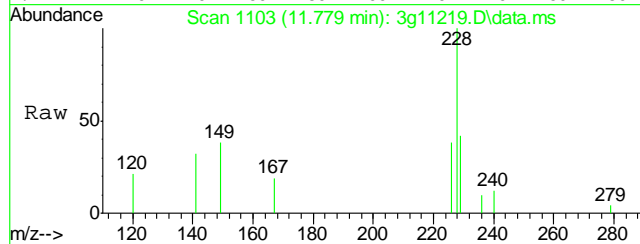
Tgt Ion	Sig	Exp Ratio
228	100	
229	19.6	
226	26.6	





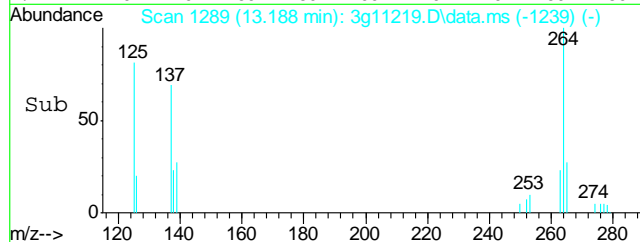
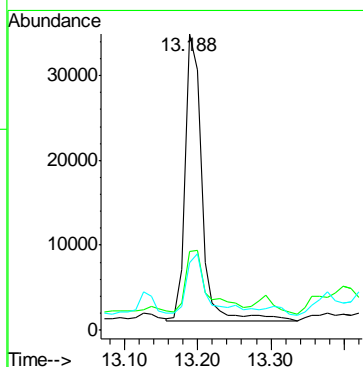
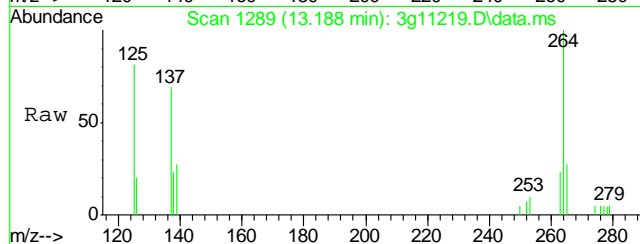
#23
Chrysene
Concen: 1.5211 ug/mL
RT: 11.779 min Scan# 1103
Delta R.T. 0.006 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

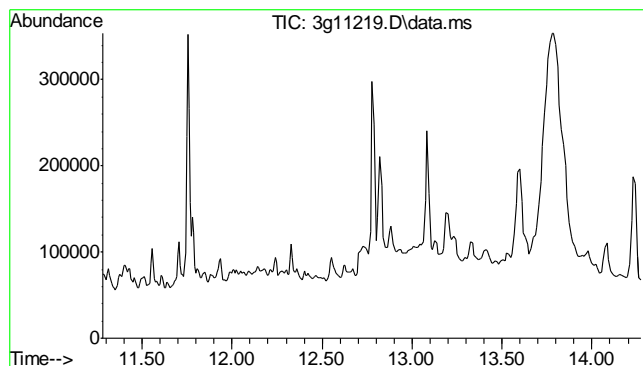
Tgt Ion	Ratio	Lower	Upper
228	100		
226	26.3	8.6	48.6
229	46.2	0.0	39.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.188 min Scan# 1289
Delta R.T. 0.010 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

Tgt Ion	Ratio	Lower	Upper
264	100		
265	27.9	1.0	41.0
263	24.2	0.0	39.0

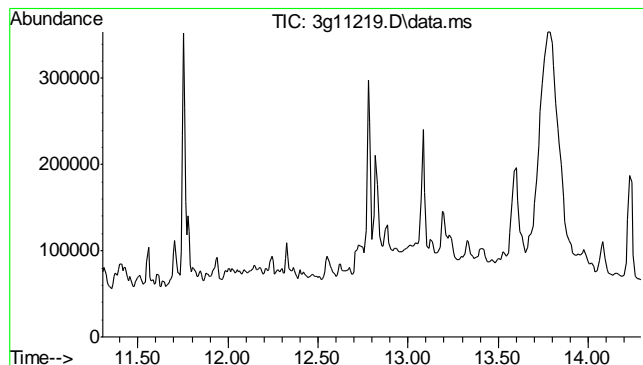
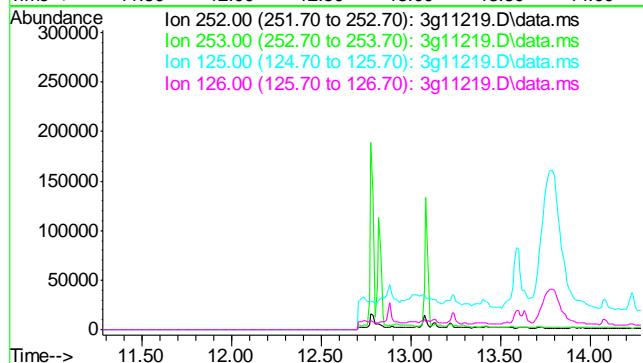




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.78 min

Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

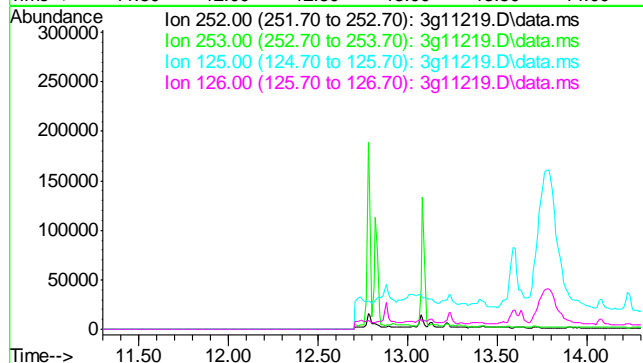
Tgt Ion	Exp Ratio
252	100
253	22.9
125	11.5
126	14.7

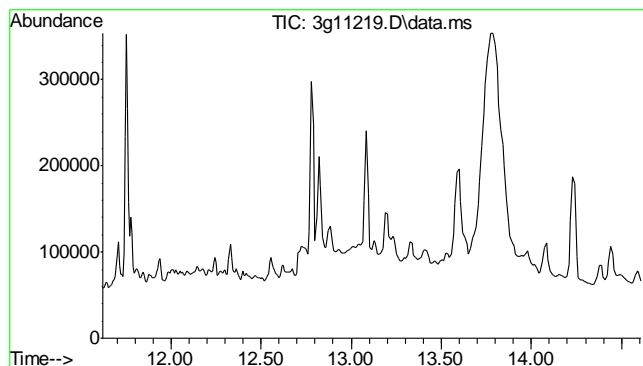


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.80 min

Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

Tgt Ion	Exp Ratio
252	100
253	21.8
125	11.0
126	14.0

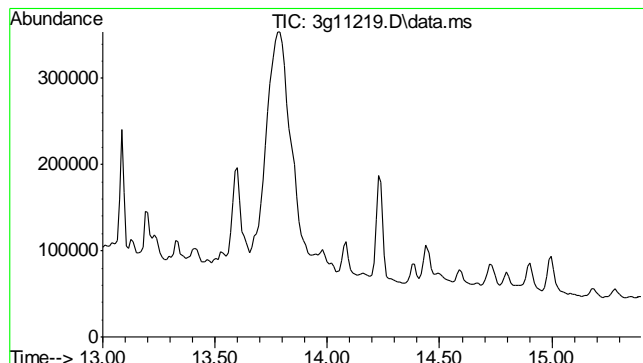
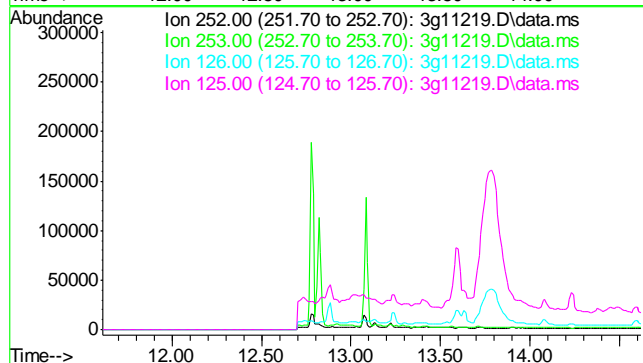




#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 13.11 min

Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

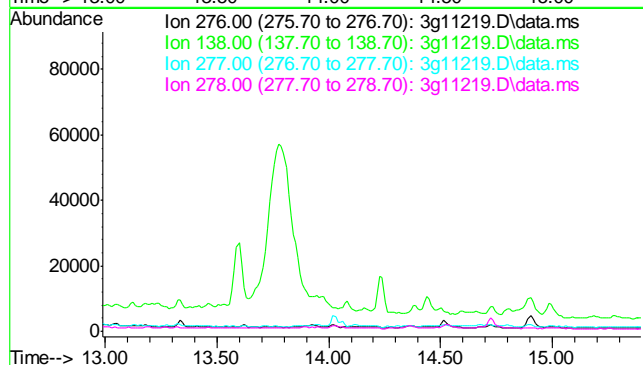
Tgt Ion	Exp Ratio
252	100
253	21.4
126	13.6
125	10.7

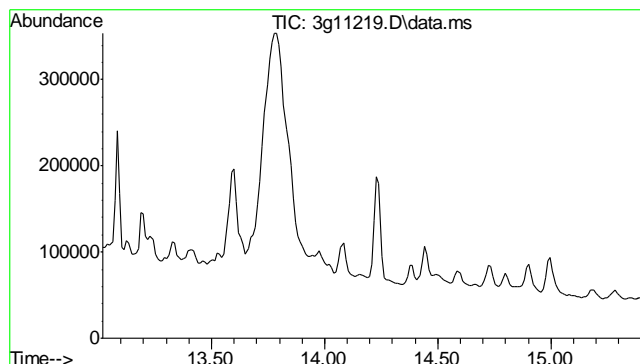


#28
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 14.49 min

Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

Tgt Ion	Exp Ratio
276	100
138	25.3
277	25.0
278	79.3

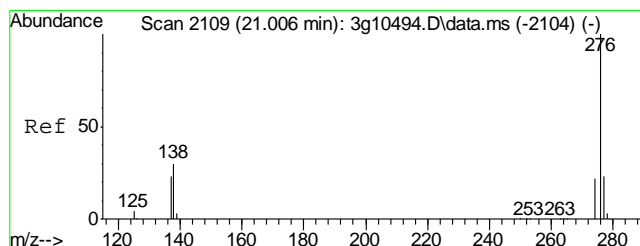
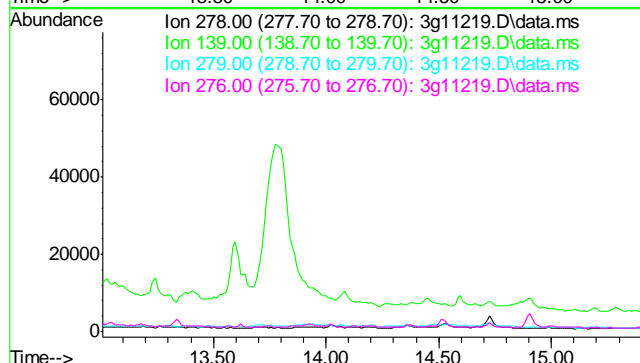




#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.51 min

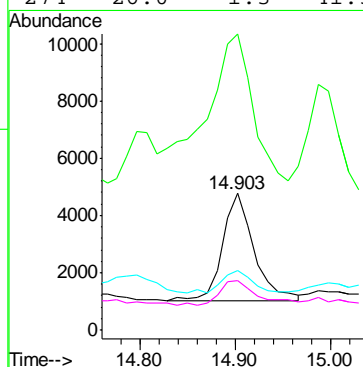
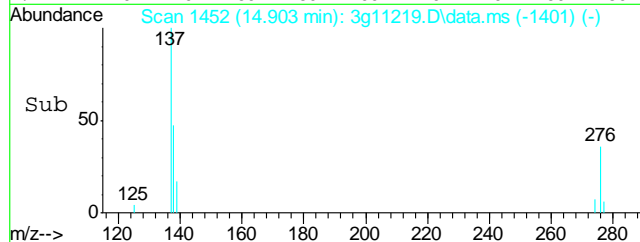
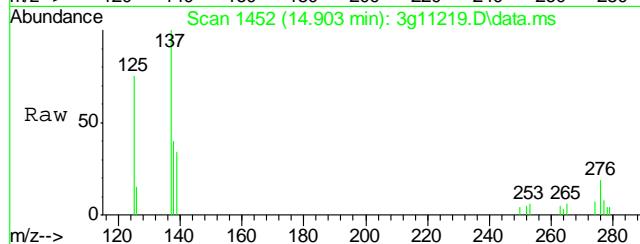
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

Tgt Ion	Exp Ratio
278	100
139	18.4
279	23.1
276	126.1



#30
Benzo(g,h,i)perylene
Concen: 0.2517 ug/mL
RT: 14.903 min Scan# 1452
Delta R.T. 0.032 min
Lab File: 3g11219.D
Acq: 13 Sep 12 5:33 am

Tgt Ion	Ratio	Lower	Upper
276	100		
138	233.8	1.3	41.3#
277	20.8	3.4	43.4
274	26.0	1.3	41.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091112\
 Data File : 3g11149.D
 Acq On : 11 Sep 2012 7:39 pm
 Operator : DONC
 Sample : OP6602-MB
 Misc : OP6602,E3G518,30.00,,,1,1
 ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 12 14:01:43 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
 Quant Title : PAHSIM BASE
 QLast Update : Thu Sep 06 09:42:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.922	136	149108	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.640	164	88112	4.0000	ug/mL	0.00
15) Phenanthrene-d10	9.121	188	148358	4.0000	ug/mL	0.00
19) Chrysene-d12	11.759	240	119708	4.0000	ug/mL	0.00
24) Perylene-d12	13.189	264	64389	4.0000	ug/mL	0.01

System Monitoring Compounds

2) Nitrobenzene-d5	5.236	82	705385	48.0824	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	96.16%		
7) 2-Fluorobiphenyl	6.978	172	1715263	46.7981	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	93.60%		
21) Terphenyl-d14	10.712	244	853237	47.3048	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	94.60%		

Target Compounds

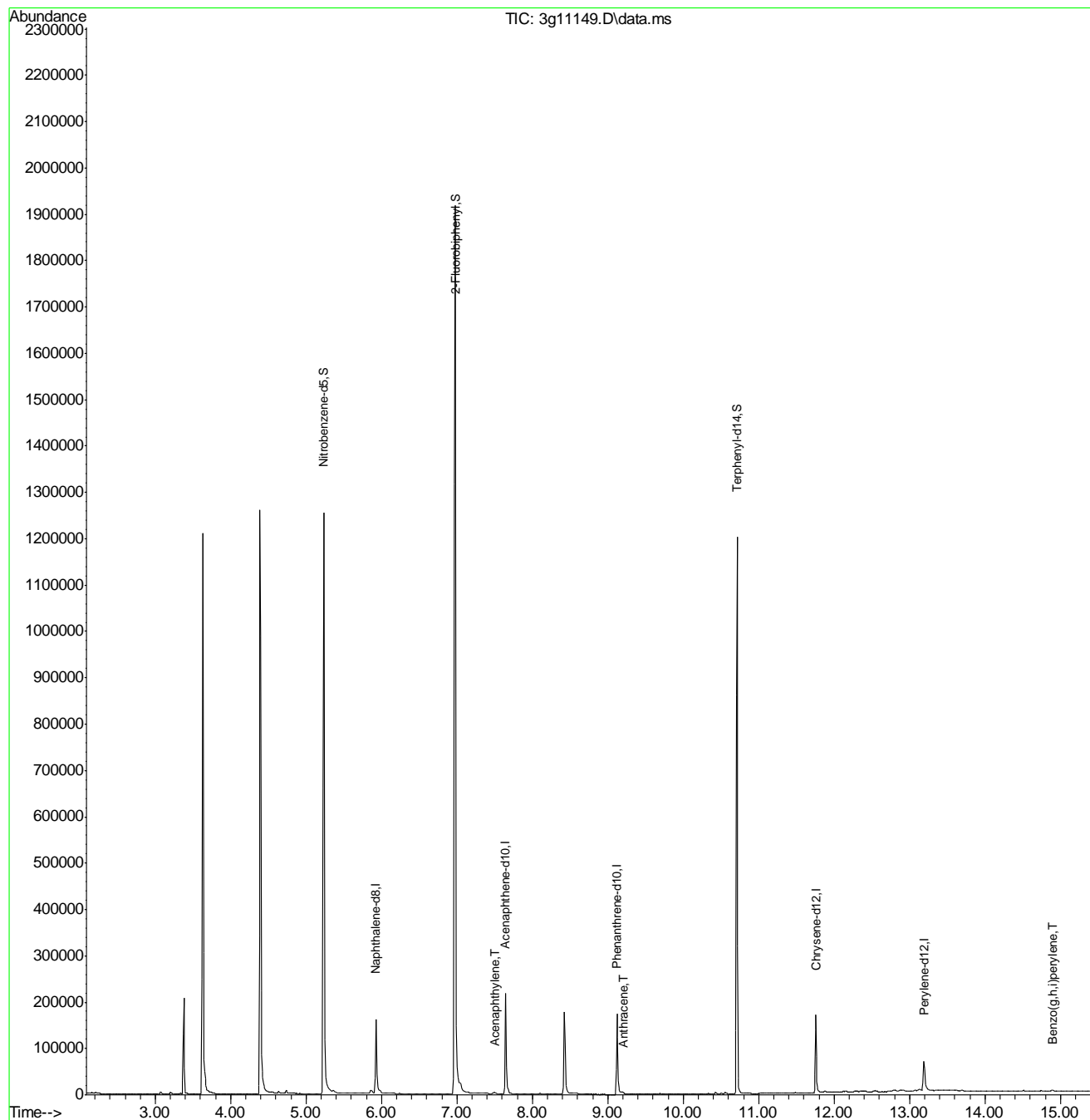
					Qvalue
3) N-Nitrosodimethylamine	2.625	74	12	N.D.	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D. d	
5) Naphthalene	5.947	128	211	N.D.	
8) 2-Methylnaphthalene	6.632	142	159	N.D.	
9) 1-Methylnaphthalene	6.719	142	210	N.D.	
10) Acenaphthylene	7.498	152	4998m	0.1056	ug/mL
11) Acenaphthene	7.640	154	763	N.D.	
12) Dibenzofuran	7.959	168	504	N.D.	
13) Fluorene	0.000	166	0	N.D. d	
14) Diphenylamine	0.000	169	0	N.D. d	
16) Phenanthrene	0.000	178	0	N.D. d	
17) Anthracene	9.200	178	3285m	0.0599	ug/mL
18) Fluoranthene	10.332	202	1940	N.D.	
20) Pyrene	10.561	202	2753	N.D.	
22) Benzo(a)anthracene	0.000	228	0	N.D. d	
23) Chrysene	0.000	228	0	N.D. d	
25) Benzo(b)fluoranthene	0.000	252	0	N.D. d	
26) Benzo(k)fluoranthene	0.000	252	0	N.D. d	
27) Benzo(a)pyrene	13.125	252	1631	N.D.	
28) Indeno(1,2,3-cd)pyrene	14.514	276	2365	N.D.	
29) Dibenz(a,h)anthracene	14.524	278	420	N.D.	
30) Benzo(g,h,i)perylene	14.892	276	3754m	0.0907	ug/mL

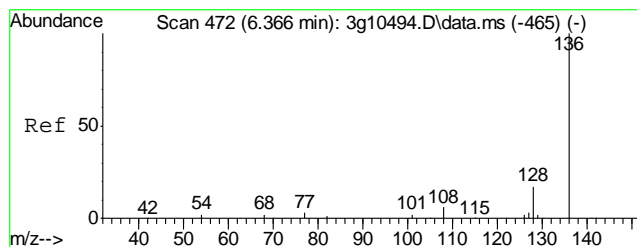
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091112\
Data File : 3g11149.D
Acq On : 11 Sep 2012 7:39 pm
Operator : DONC
Sample : OP6602-MB
Misc : OP6602,E3G518,30.00,,,1,1
ALS Vial : 20 Sample Multiplier: 1

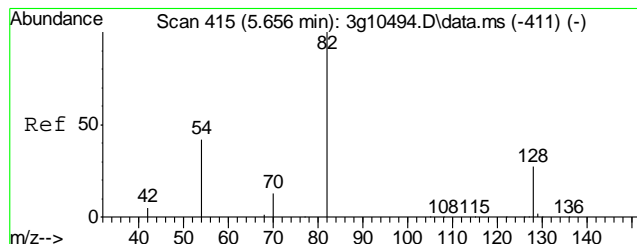
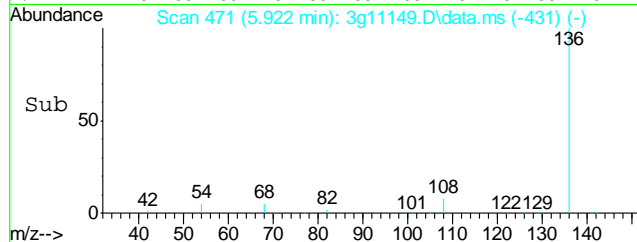
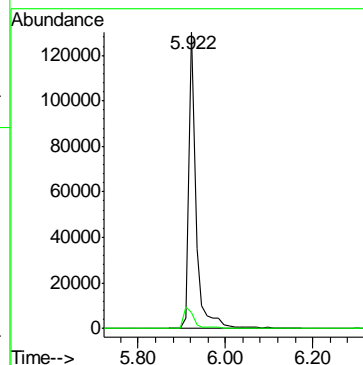
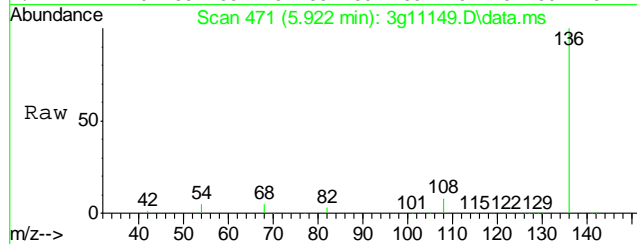
Quant Time: Sep 12 14:01:43 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
Quant Title : PAHSIM BASE
QLast Update : Thu Sep 06 09:42:23 2012
Response via : Initial Calibration





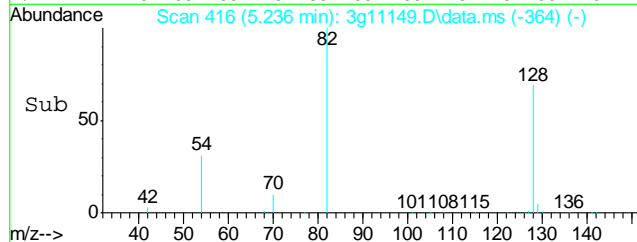
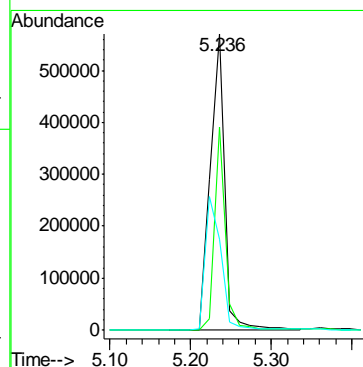
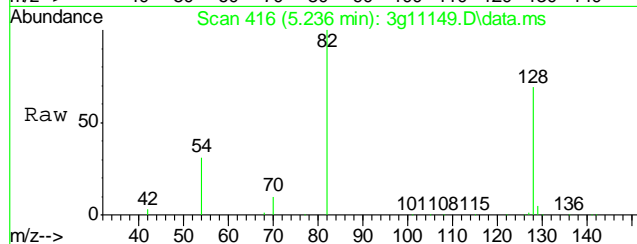
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.922 min Scan# 471
Delta R.T. -0.000 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

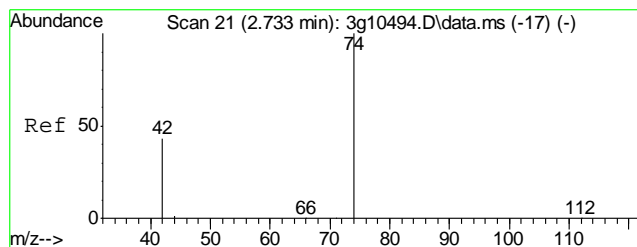
Tgt Ion: 136 Resp: 149108
Ion Ratio Lower Upper
136 100
68 9.9 0.0 30.4



#2
Nitrobenzene-d5
Concen: 48.0824 ug/mL
RT: 5.236 min Scan# 416
Delta R.T. 0.013 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

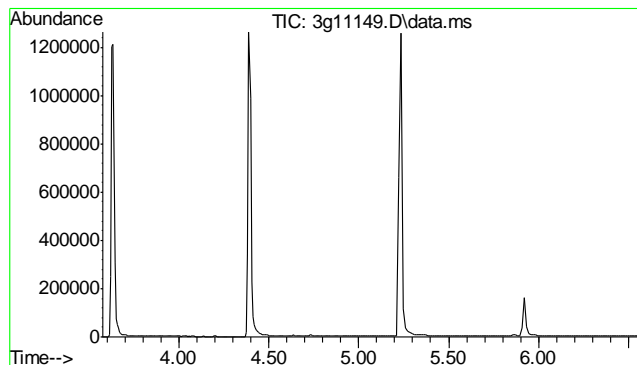
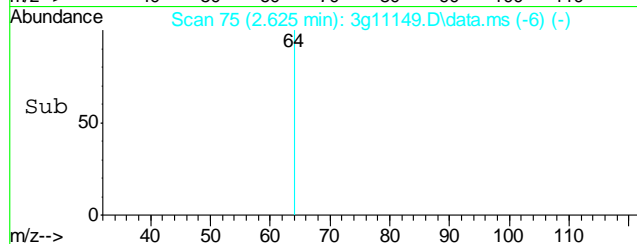
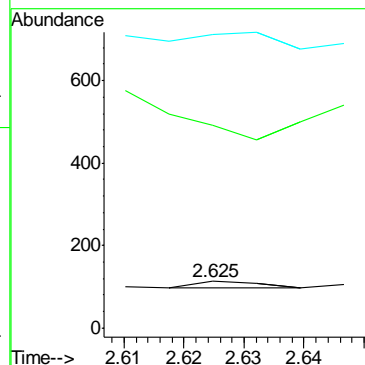
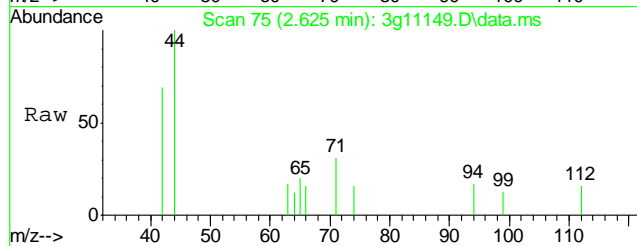
Tgt Ion: 82 Resp: 705385
Ion Ratio Lower Upper
82 100
128 53.1 19.7 59.7
54 49.7 28.6 68.6





#3
N-Nitrosodimethylamine
Concen: Below ug/mL
RT: 2.625 min Scan# 75
Delta R.T. -0.000 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

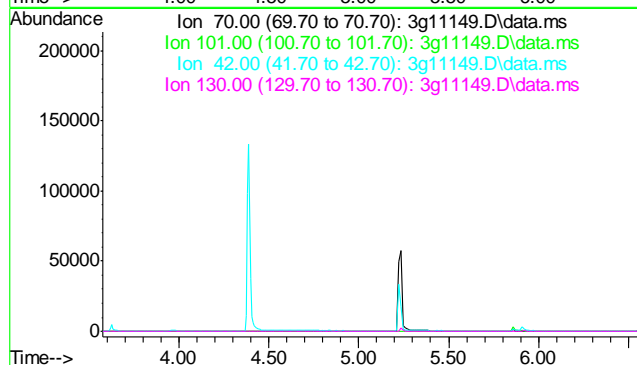
Tgt Ion: 74 Resp: 12
Ion Ratio Lower Upper
74 100
42 1400.0 33.3 73.3#
44 0.0 0.0 23.5

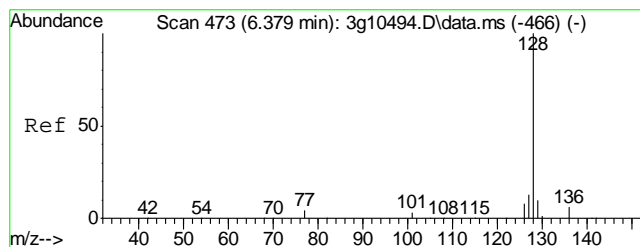


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.07 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

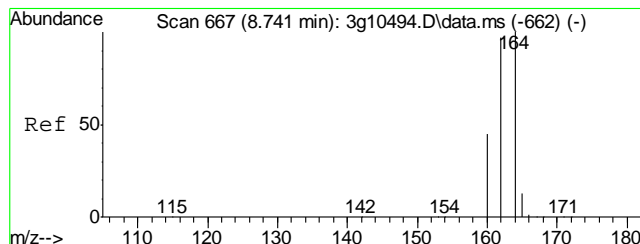
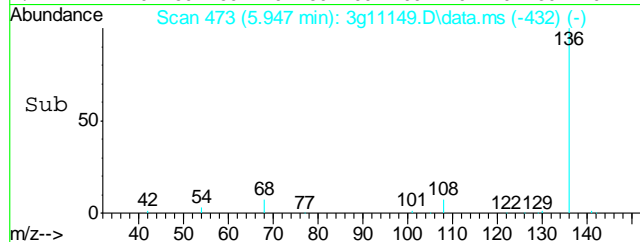
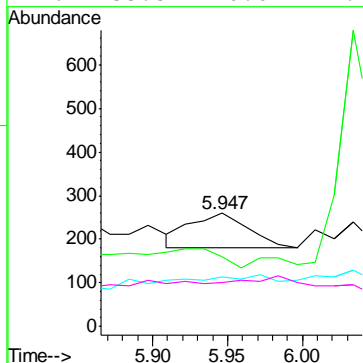
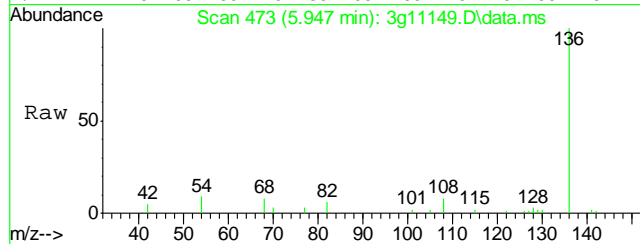
Tgt Ion: 70
Sig Exp Ratio
70 100
101 10.3
42 47.6
130 20.0





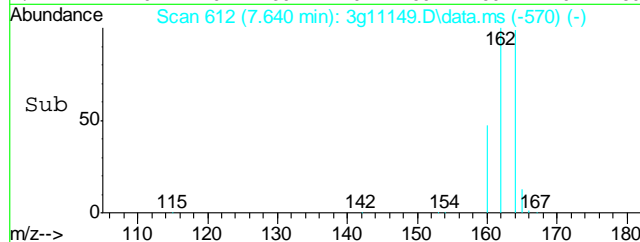
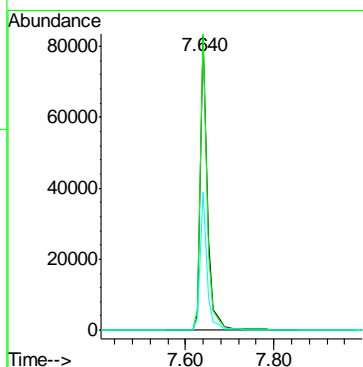
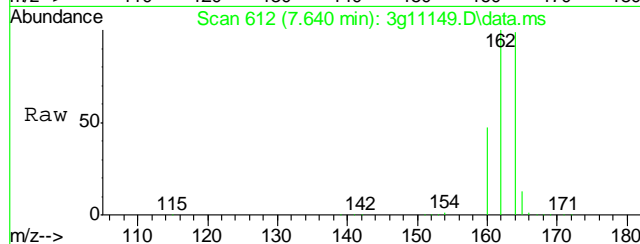
#5
Naphthalene
Concen: Below ug/mL
RT: 5.947 min Scan# 473
Delta R.T. 0.012 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

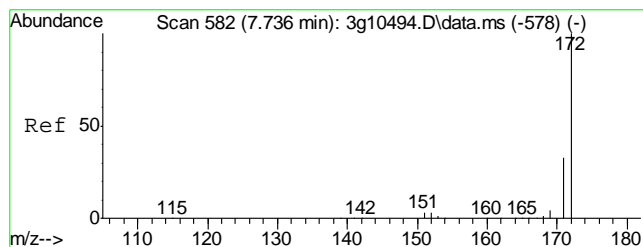
Tgt Ion	128	Ratio	100	Lower	Upper
Resp:	211				
129	52.1	0.0	30.8		
127	69.2	0.0	33.4		
126	155.5	0.0	27.7		



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.640 min Scan# 612
Delta R.T. -0.000 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

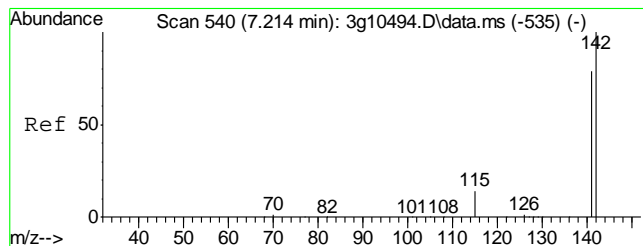
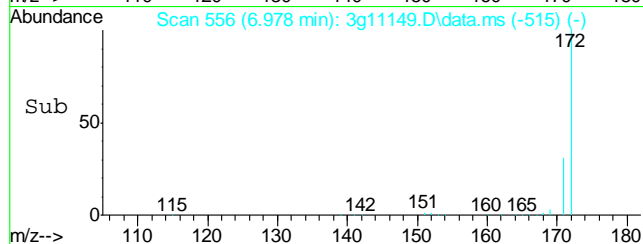
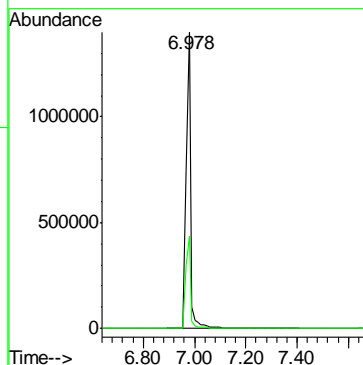
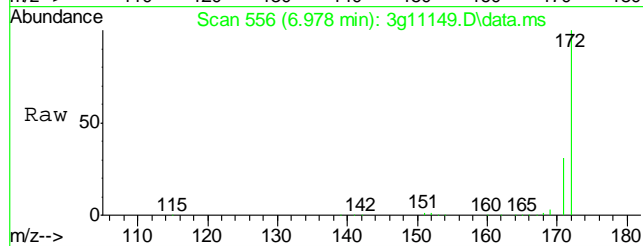
Tgt Ion	164	Ratio	100	Lower	Upper
Resp:	88112				
162	97.6	73.5	113.5		
160	45.1	21.8	61.8		





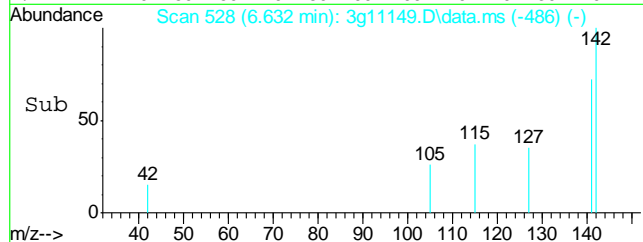
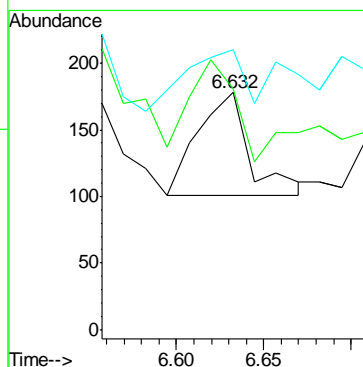
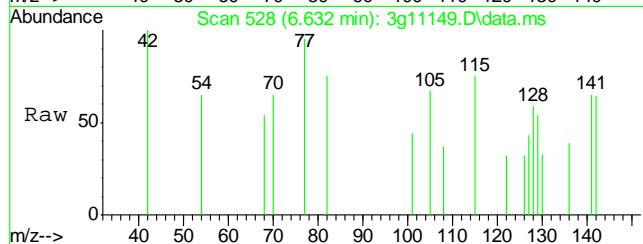
#7
2-Fluorobiphenyl
Concen: 46.7981 ug/mL
RT: 6.978 min Scan# 556
Delta R.T. 0.012 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

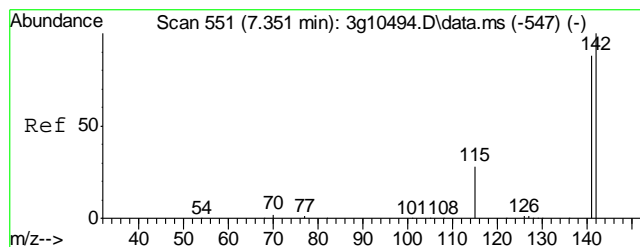
Tgt Ion:172 Resp: 1715263
Ion Ratio Lower Upper
172 100
171 34.0 13.6 53.6



#8
2-Methylnaphthalene
Concen: Below ug/mL
RT: 6.632 min Scan# 528
Delta R.T. 0.025 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

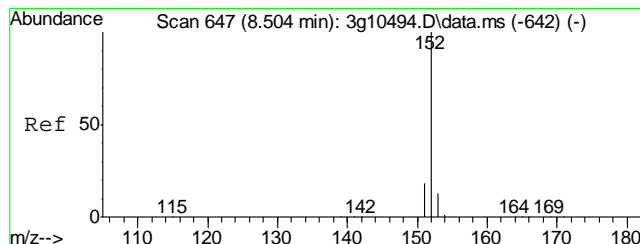
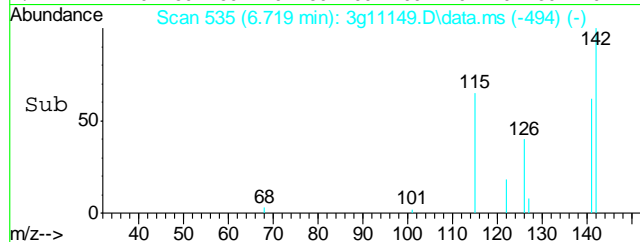
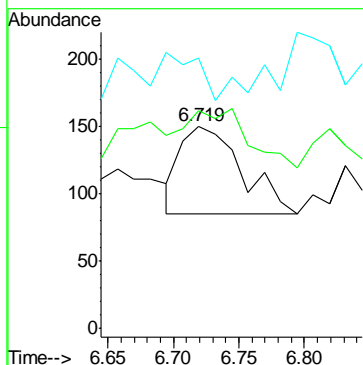
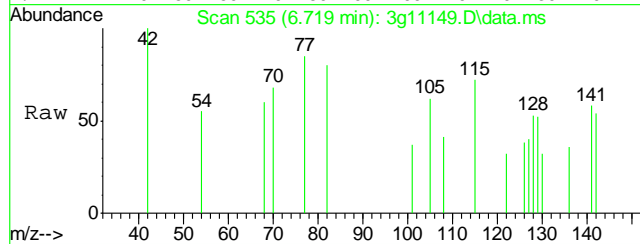
Tgt Ion:142 Resp: 159
Ion Ratio Lower Upper
142 100
141 94.3 64.5 104.5
115 0.0 13.6 53.6#





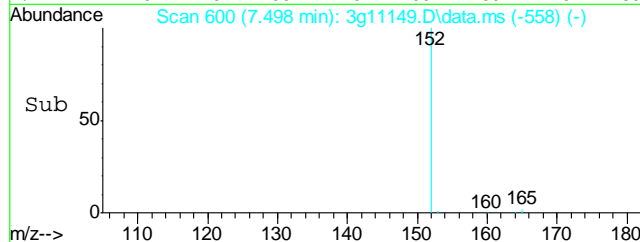
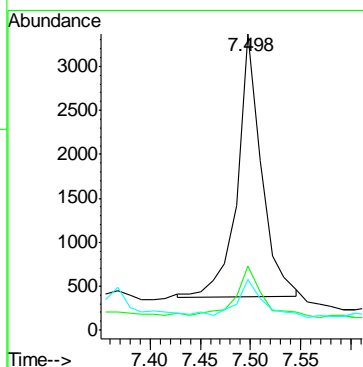
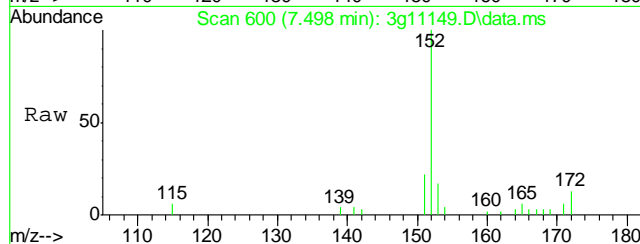
#9
1-Methylnaphthalene
Concen: Below ug/mL
RT: 6.719 min Scan# 535
Delta R.T. 0.012 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

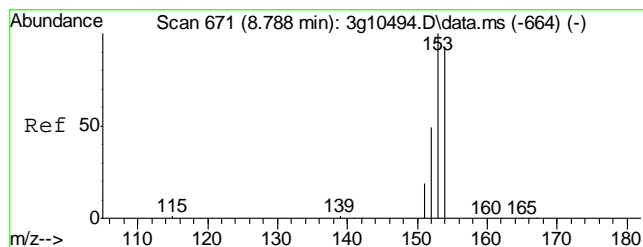
Tgt Ion:142 Resp: 210
Ion Ratio Lower Upper
142 100
141 68.6 67.8 107.8
115 0.0 11.0 51.0#



#10
Acenaphthylene
Concen: 0.1056 ug/mL m
RT: 7.498 min Scan# 600
Delta R.T. -0.000 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

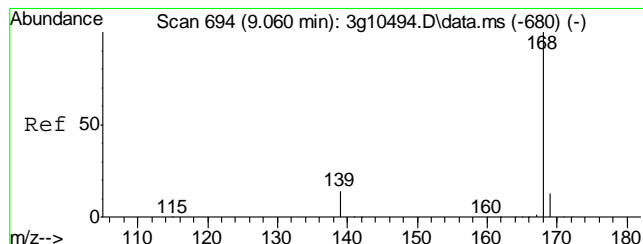
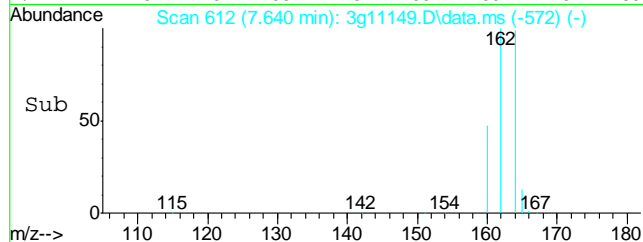
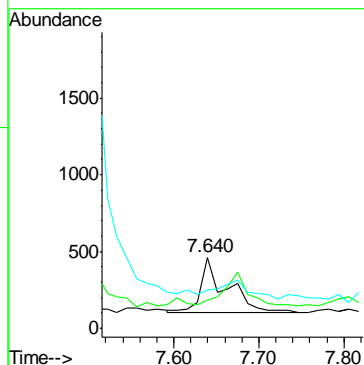
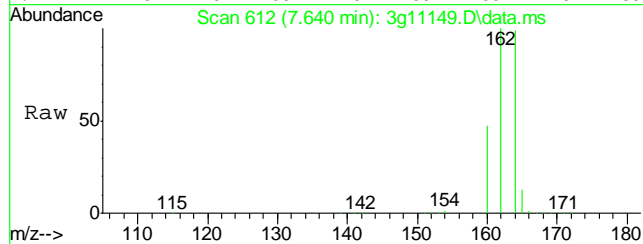
Tgt Ion:152 Resp: 4998
Ion Ratio Lower Upper
152 100
151 22.5 0.0 39.2
153 14.9 0.0 33.2





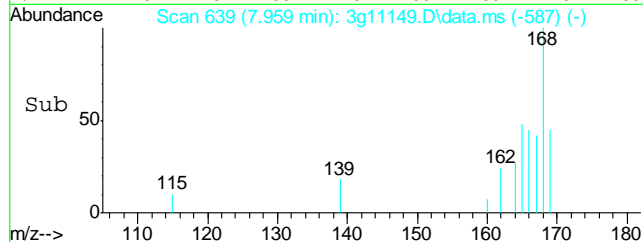
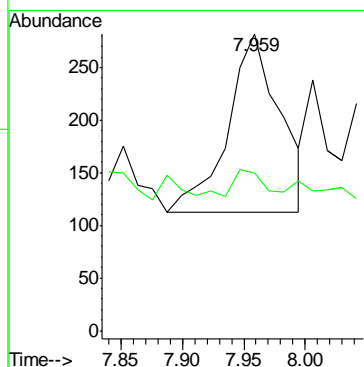
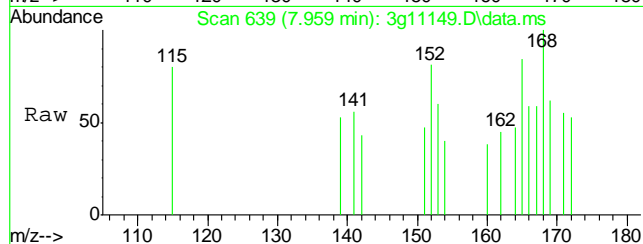
#11
Acenaphthene
Concen: Below ug/mL
RT: 7.640 min Scan# 612
Delta R.T. -0.024 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

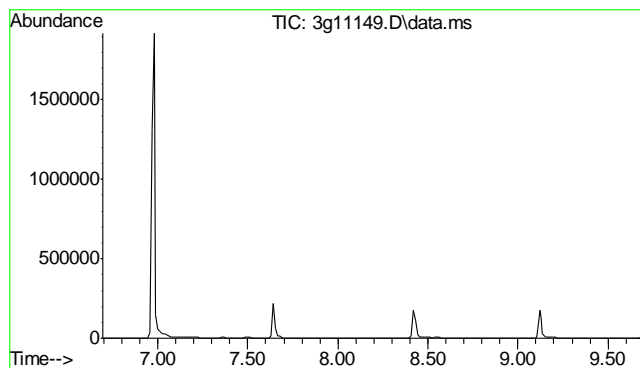
Tgt Ion:	154	Resp:	763
Ion Ratio	Lower	Upper	
154	100		
153	8.9	84.8	124.8#
152	0.0	29.9	69.9#



#12
Dibenzofuran
Concen: Below ug/mL
RT: 7.959 min Scan# 639
Delta R.T. 0.118 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

Tgt Ion:	168	Resp:	504
Ion Ratio	Lower	Upper	
168	100		
139	8.5	7.6	47.6

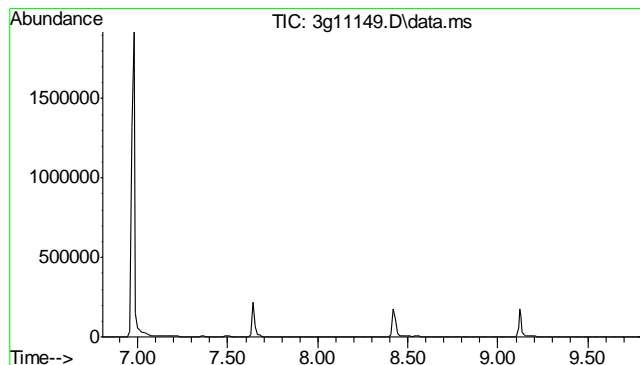
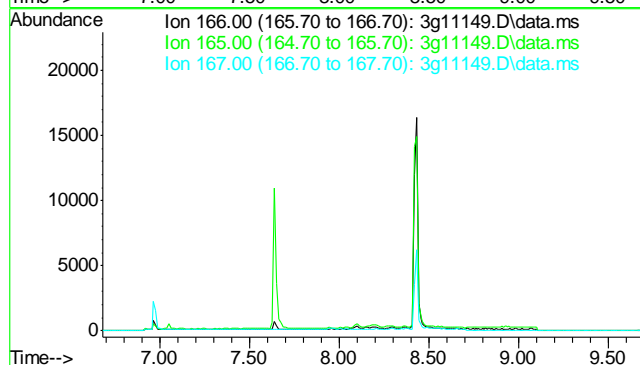




#13
Fluorene
Concen: N.D. ug/mL
Expected RT: 8.18 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

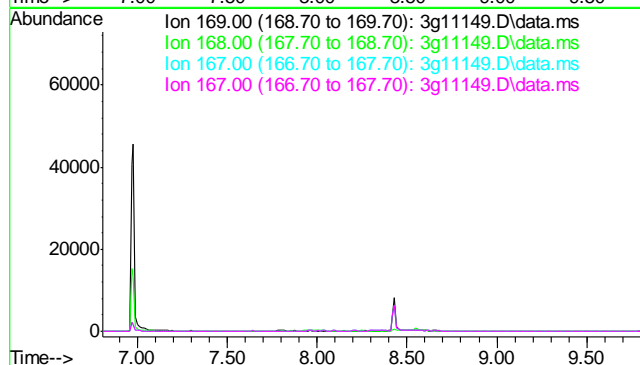
Tgt Ion:	166
Sig	Exp Ratio
166	100
165	91.1
167	13.3

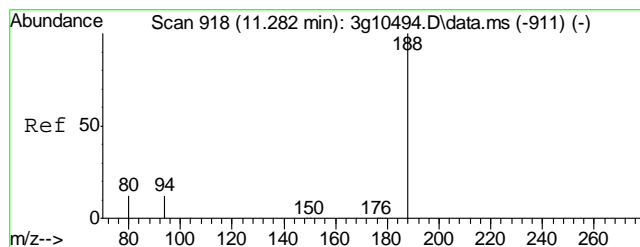


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.30 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

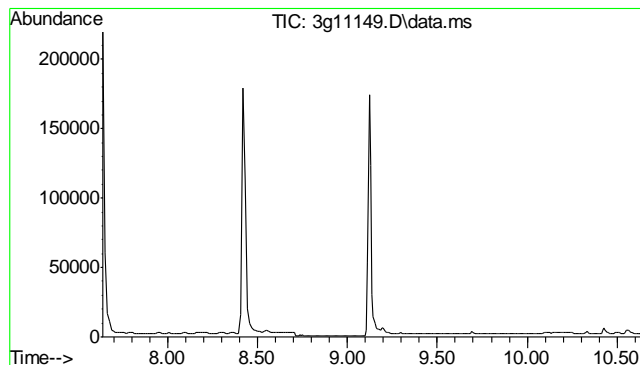
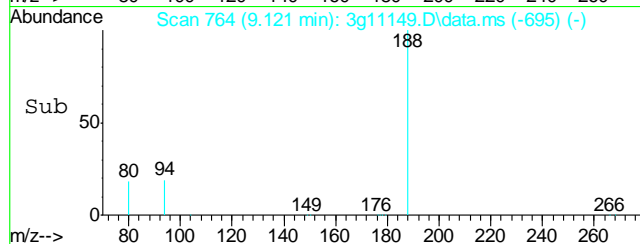
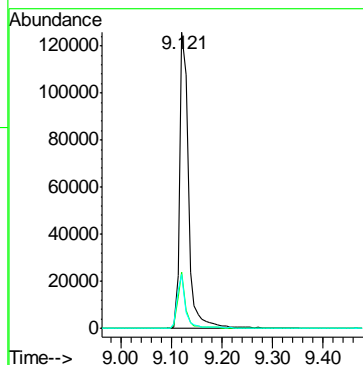
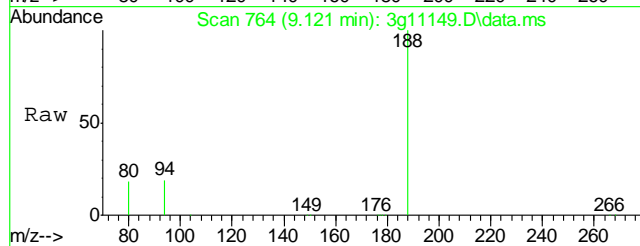
Tgt Ion:	169
Sig	Exp Ratio
169	100
168	61.0
167	32.9
167	32.9





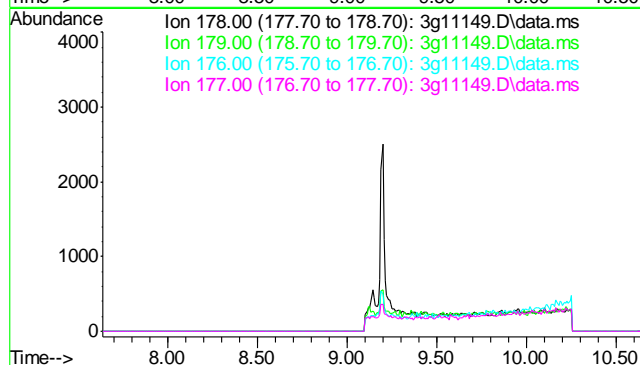
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 9.121 min Scan# 764
Delta R.T. -0.000 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

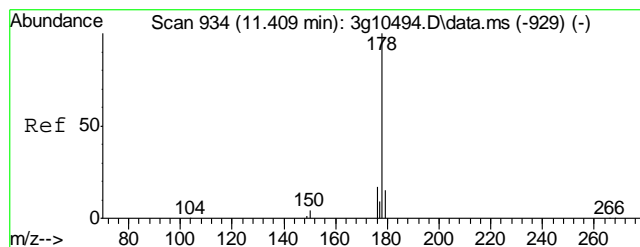
Tgt Ion	188	94	80
Resp	148358		
Ratio	100	16.1	18.0
Lower		0.0	0.0
Upper		33.9	35.5



#16
Phenanthrene
Concen: N.D. ug/mL
Expected RT: 9.14 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

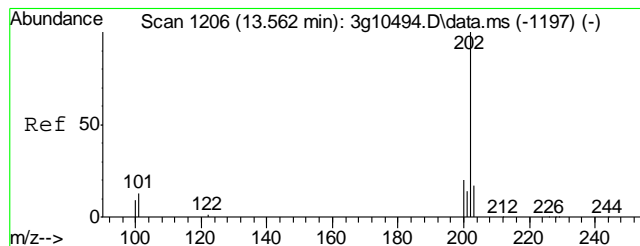
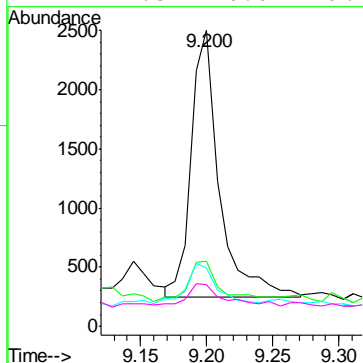
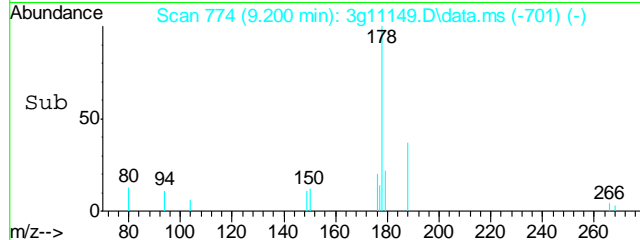
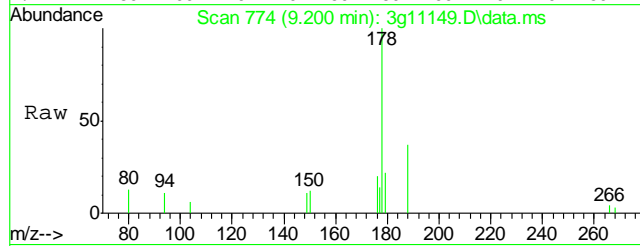
Tgt Ion	178	179	176	177
Sig				
Exp Ratio	100	15.3	18.5	10.5





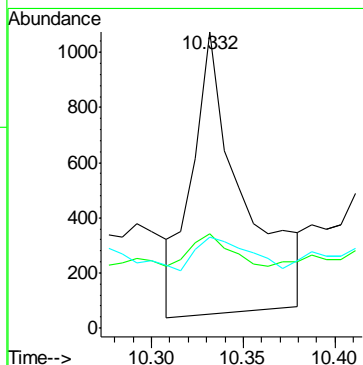
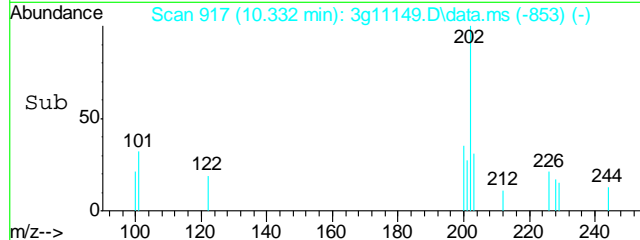
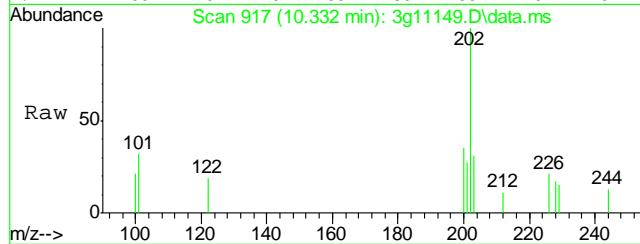
#17
Anthracene
Concen: 0.0599 ug/mL m
RT: 9.200 min Scan# 774
Delta R.T. 0.008 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

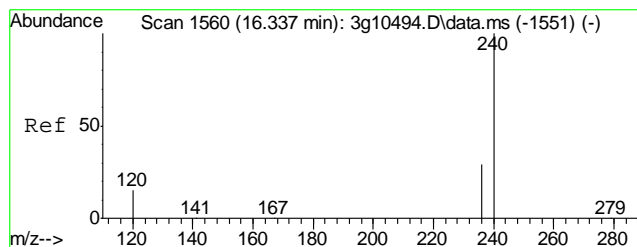
Tgt Ion: 178 Resp: 3285
Ion Ratio Lower Upper
178 100
179 18.9 0.0 35.2
176 23.1 0.0 37.7
177 17.3 0.0 29.0



#18
Fluoranthene
Concen: Below ug/mL
RT: 10.332 min Scan# 917
Delta R.T. 0.008 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

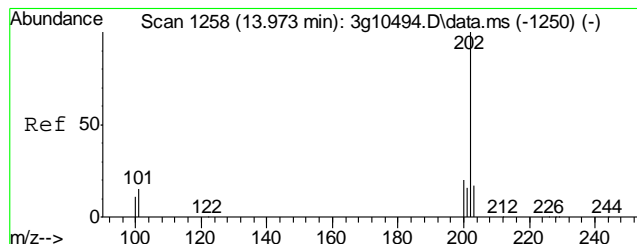
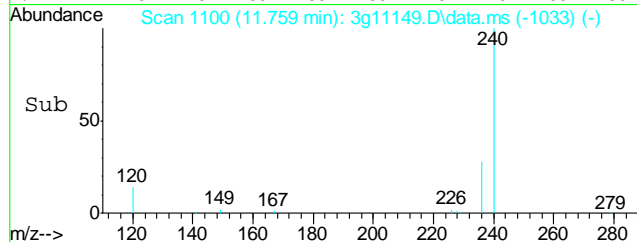
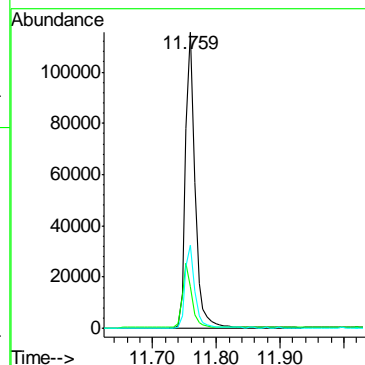
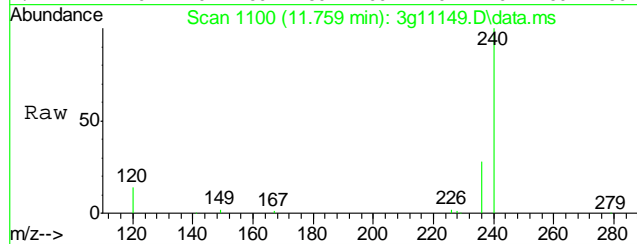
Tgt Ion: 202 Resp: 1940
Ion Ratio Lower Upper
202 100
101 17.3 0.0 33.0
203 34.9 0.0 37.4





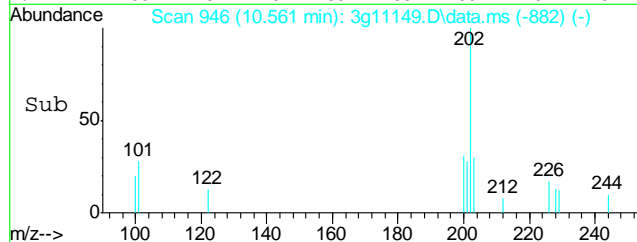
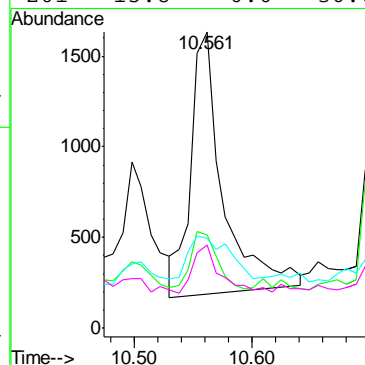
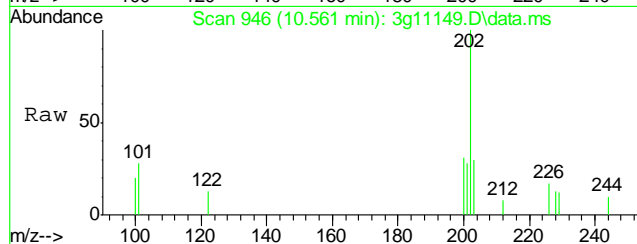
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.759 min Scan# 1100
Delta R.T. 0.007 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

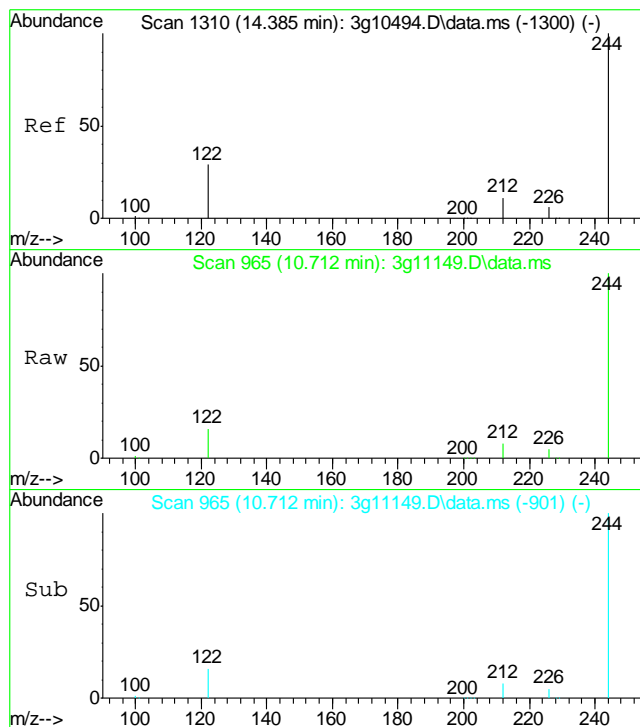
Tgt Ion:	240	Resp:	119708
Ion Ratio	Lower	Upper	
240	100		
120	21.6	0.0	36.2
236	28.6	8.8	48.8



#20
Pyrene
Concen: Below ug/mL
RT: 10.561 min Scan# 946
Delta R.T. 0.008 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

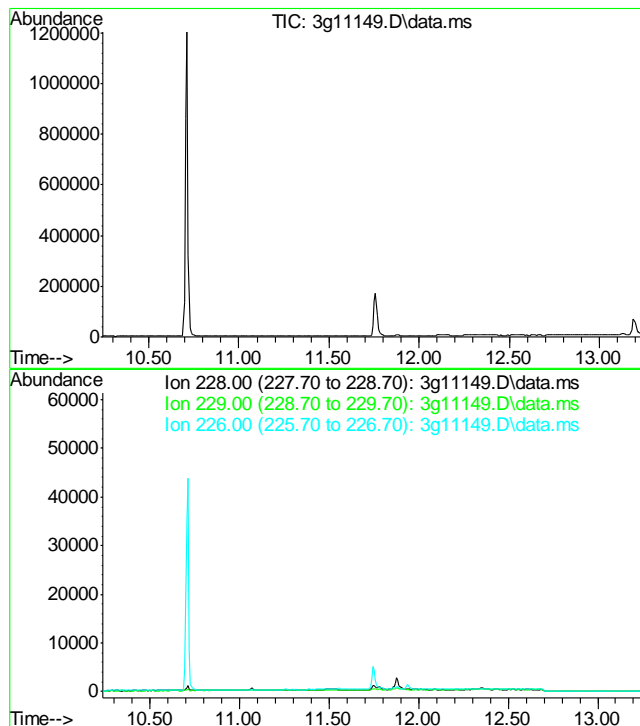
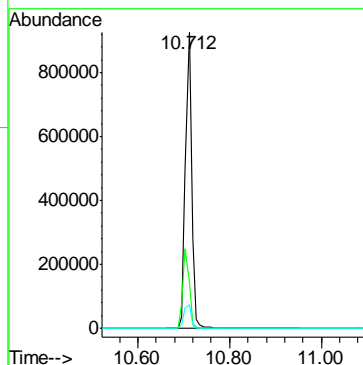
Tgt Ion:	202	Resp:	2753
Ion Ratio	Lower	Upper	
202	100		
200	19.8	0.1	40.1
203	24.3	0.0	37.8
201	15.8	0.0	36.6





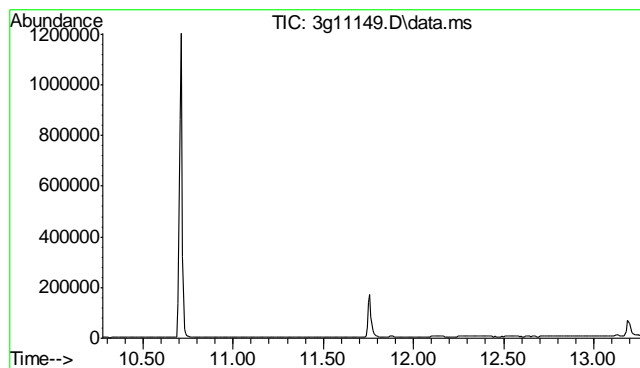
#21
Terphenyl-d14
Concen: 47.3048 ug/mL
RT: 10.712 min Scan# 965
Delta R.T. 0.008 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

Tgt Ion:	244	Resp:	853237
Ion Ratio	Lower	Upper	
244	100		
122	27.7	1.3	41.3
212	9.2	0.0	28.8



#22
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 11.74 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

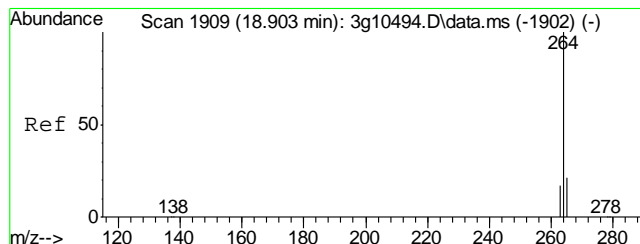
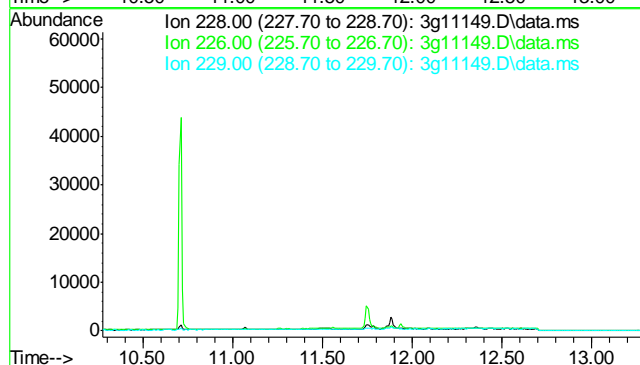
Tgt Ion:	228
Sig	Exp Ratio
228	100
229	19.6
226	26.6



#23
Chrysene
Concen: N.D. ug/mL
Expected RT: 11.77 min

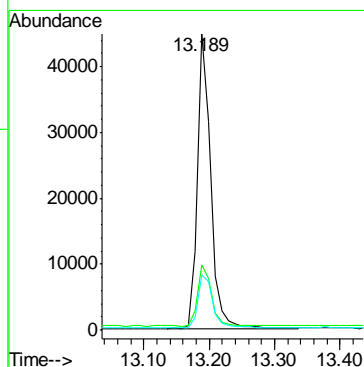
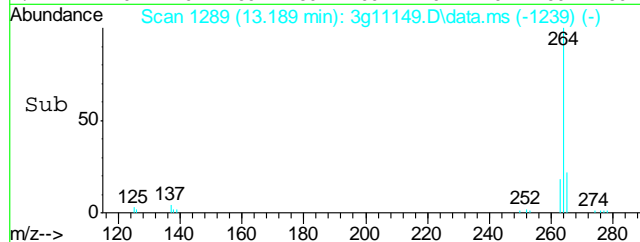
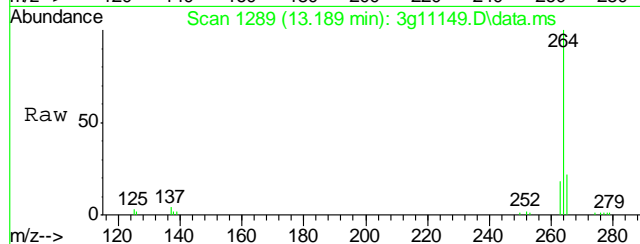
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

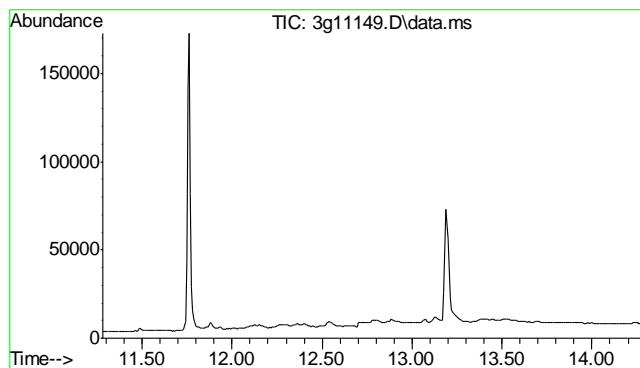
Tgt Ion:	228
Sig	Exp Ratio
228	100
226	28.6
229	19.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.189 min Scan# 1289
Delta R.T. 0.010 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

Tgt Ion:	264	Resp:	64389
Ion	Ratio	Lower	Upper
264	100		
265	22.0	1.0	41.0
263	19.5	0.0	39.0

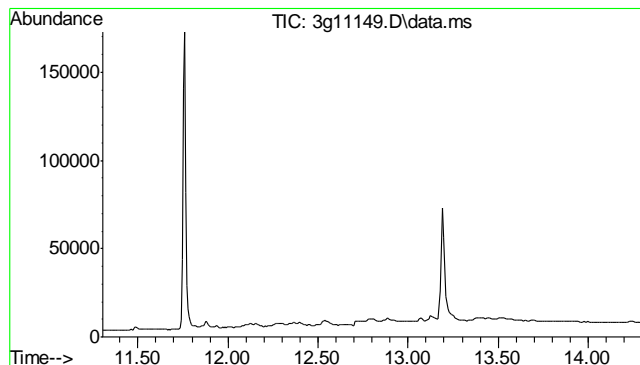
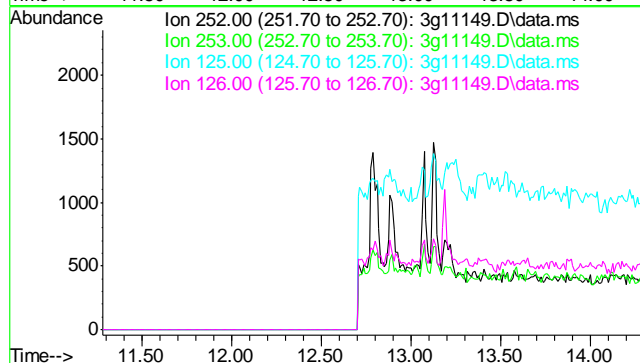




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.78 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

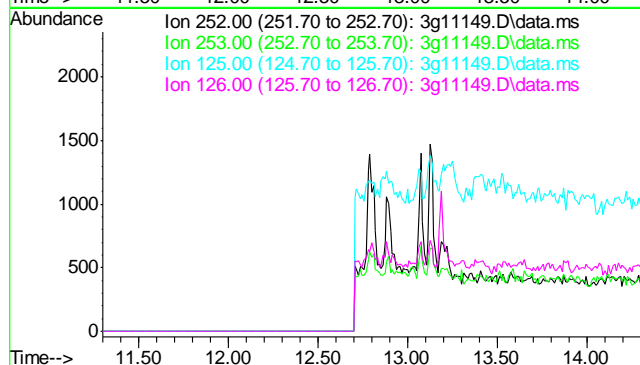
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	22.9
125	11.5
126	14.7

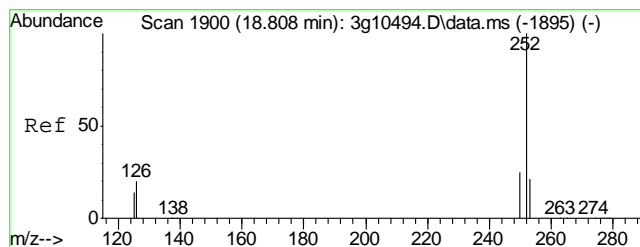


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.80 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

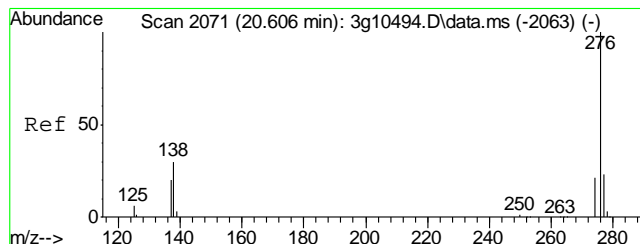
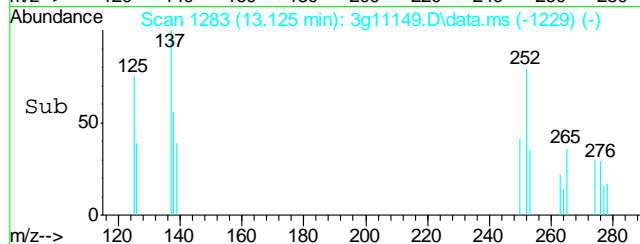
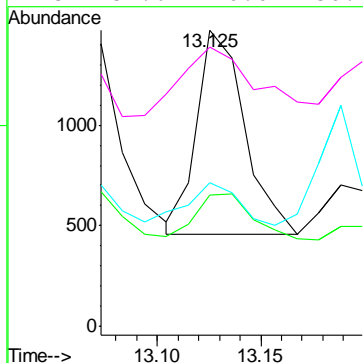
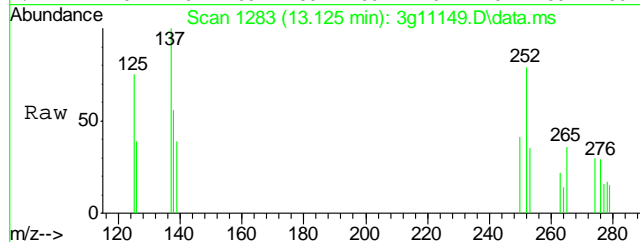
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.8
125	11.0
126	14.0





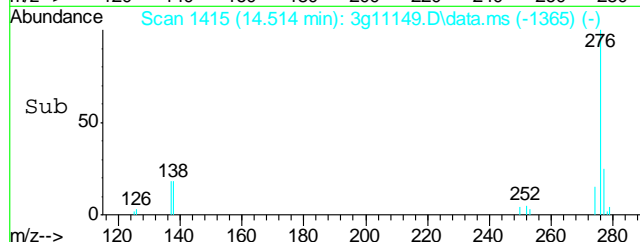
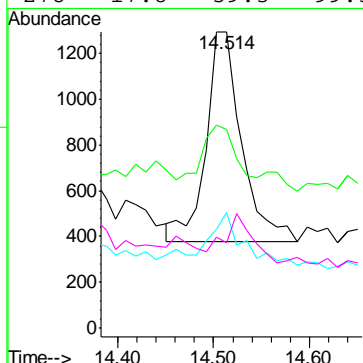
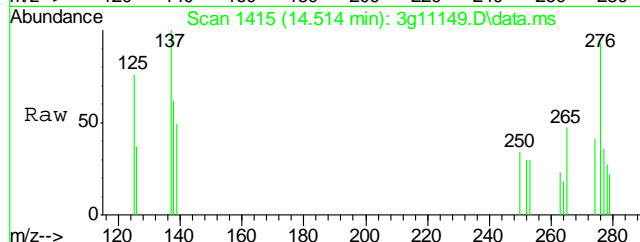
#27
Benzo(a)pyrene
Concen: Below ug/mL
RT: 13.125 min Scan# 1283
Delta R.T. 0.011 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

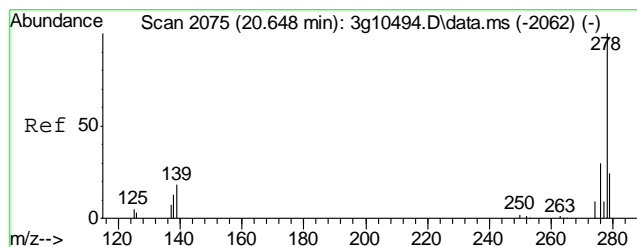
Tgt Ion	Ratio	Lower	Upper
252	100		
253	28.1	1.4	41.4
126	19.1	0.0	33.6
125	51.6	0.0	30.7#



#28
Indeno(1,2,3-cd)pyrene
Concen: Below ug/mL
RT: 14.514 min Scan# 1415
Delta R.T. 0.022 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

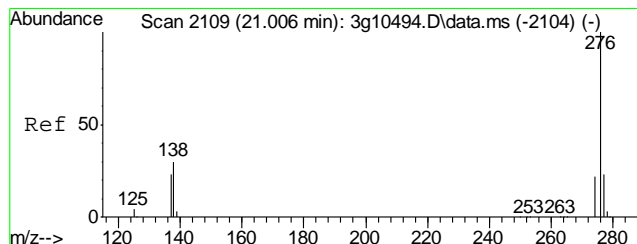
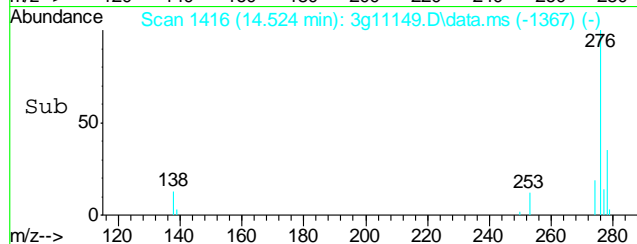
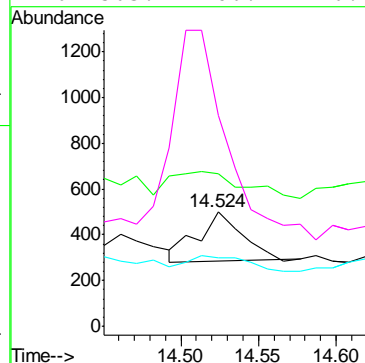
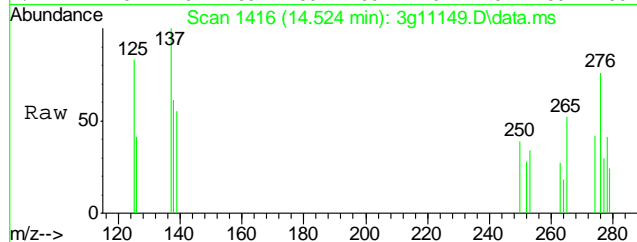
Tgt Ion	Ratio	Lower	Upper
276	100		
138	27.1	5.3	45.3
277	33.1	5.0	45.0
278	17.8	59.3	99.3#





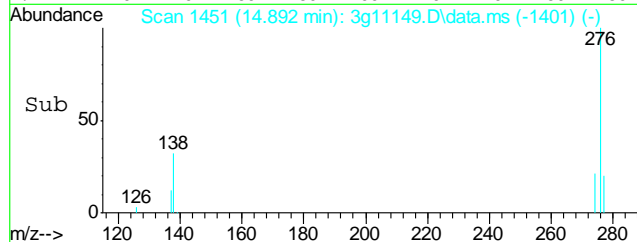
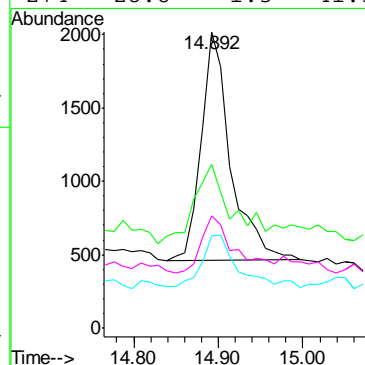
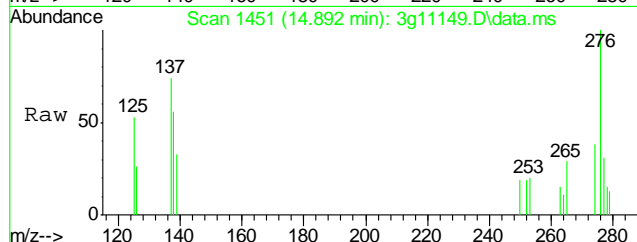
#29
Dibenzo(a,h)anthracene
Concen: Below ug/mL
RT: 14.524 min Scan# 1416
Delta R.T. 0.011 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

Tgt Ion: 278 Resp: 420
Ion Ratio Lower Upper
278 100
139 87.1 0.0 38.4#
279 42.1 3.1 43.1
276 563.1 106.1 146.1#



#30
Benzo(g,h,i)perylene
Concen: 0.0907 ug/mL m
RT: 14.892 min Scan# 1451
Delta R.T. 0.021 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

Tgt Ion: 276 Resp: 3754
Ion Ratio Lower Upper
276 100
138 48.6 1.3 41.3#
277 31.5 3.4 43.4
274 28.8 1.3 41.3



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: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB959-MB	GB17488.D	1	09/11/12	SK	n/a	n/a	GGB959

The QC reported here applies to the following samples: Method: SW846 8015B
D38518-1, D38518-2

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	94% 60-140%

10.1.1
10

Blank Spike Summary

Job Number: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB959-BS	GB17489.D	1	09/11/12	SK	n/a	n/a	GGB959

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

D38518-1, D38518-2

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

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	105%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D38513-1MS	GB17491.D	1	09/11/12	SK	n/a	n/a	GGB959
D38513-1MSD	GB17492.D	1	09/11/12	SK	n/a	n/a	GGB959
D38513-1	GB17490.D	1	09/11/12	SK	n/a	n/a	GGB959

The QC reported here applies to the following samples:

Method: SW846 8015B

D38518-1, D38518-2

CAS No.	Compound	D38513-1 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	133	153	115	155	116	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D38513-1	Limits
120-82-1	1,2,4-Trichlorobenzene	101%	105%	93%	60-140%

* = Outside of Control Limits.

GC Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091112\GB17497.D\FID1A.CH Vial: 12
 Signal #2 : Y:\1\DATA\091112\GB17497.D\FID2B.CH
 Acq On : 11 Sep 2012 6:29 pm Operator: StephK
 Sample : D38518-1, 50X Inst : GC/MS Ins
 Misc : GC3095,GGB959,5.050,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Sep 12 08:34:44 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Tue Sep 11 08:17:43 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	2783486	88.833 %	m	
10) S	1,2,4-Trichlorobenzene (P)	14.34	17299194	106.439 %		
Target Compounds						
1) H	TVH-Gasoline	7.23	67530662	1.041 mg/L		
4) T	Methyl-t-butyl-ether	2.19	171878	1.324 ug/L		
5) T	Benzene	4.08	3074538	7.629 ug/L		
6) T	Toluene	7.61	15011948	37.883 ug/L		
7) T	Ethylbenzene	10.25	3147457	9.305 ug/L		
8) T	m,p-Xylene	10.43	15394936	41.805 ug/L		
9) T	o-Xylene	10.93	1506243	4.587 ug/L		
11) T	Naphthalene	14.56	8498421	43.072 ug/L		

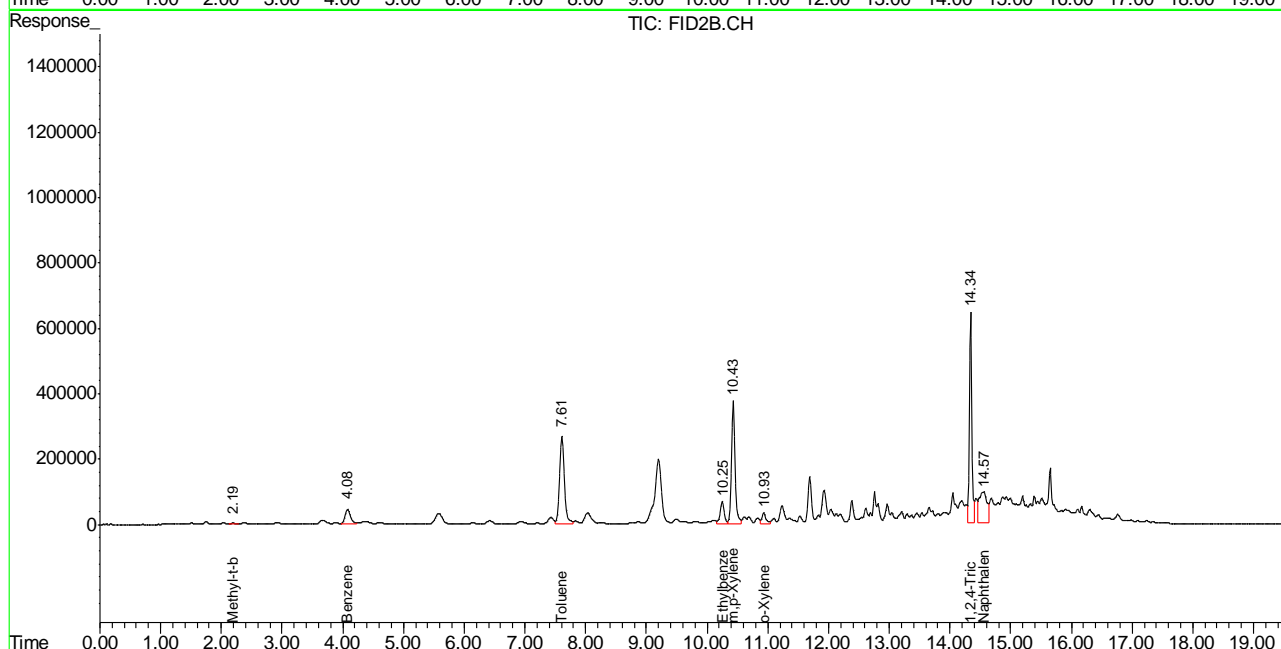
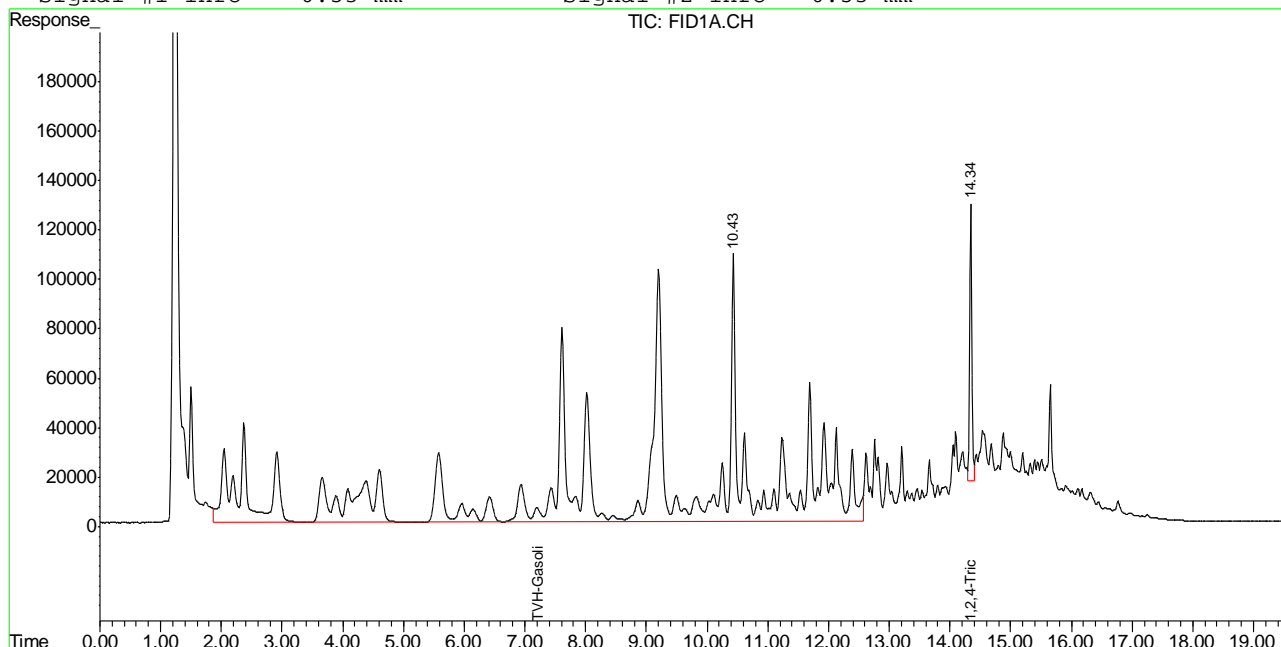
11.1.1
 11

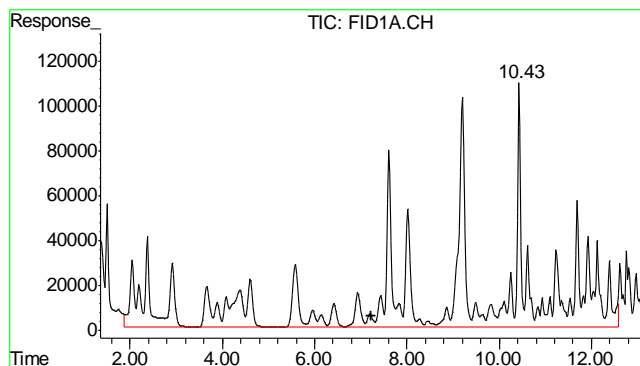
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091112\GB17497.D\FID1A.CH Vial: 12
 Signal #2 : Y:\1\DATA\091112\GB17497.D\FID2B.CH
 Acq On : 11 Sep 2012 6:29 pm Operator: StephK
 Sample : D38518-1, 50X Inst : GC/MS Ins
 Misc : GC3095,GGB959,5.050,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Sep 12 7:48 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Tue Sep 11 08:17:43 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

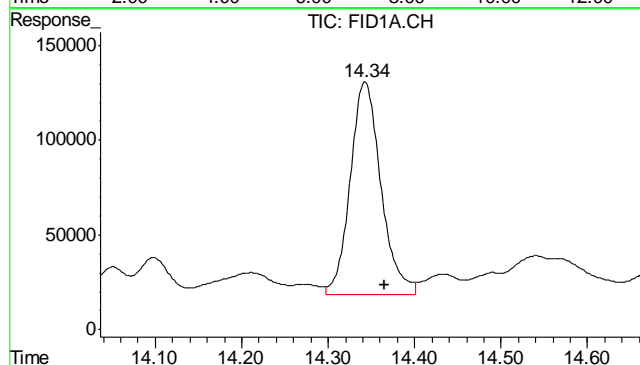
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





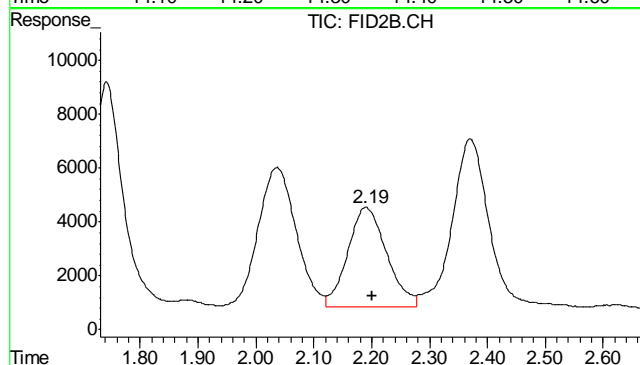
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 67530662
Conc: 1.04 mg/L m



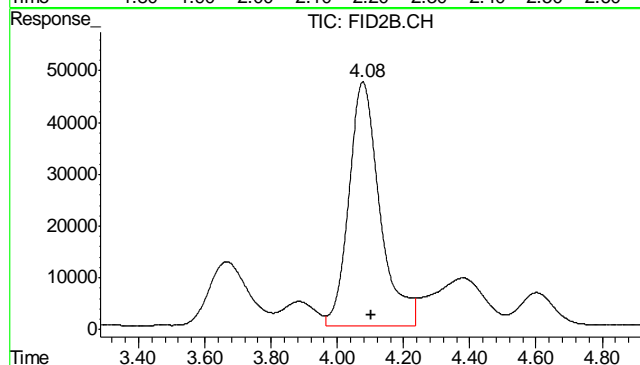
#2 1,2,4-Trichlorobenzene

R.T.: 14.342 min
Delta R.T.: -0.023 min
Response: 2783486
Conc: 88.83 % m



#4 Methyl-t-butyl-ether

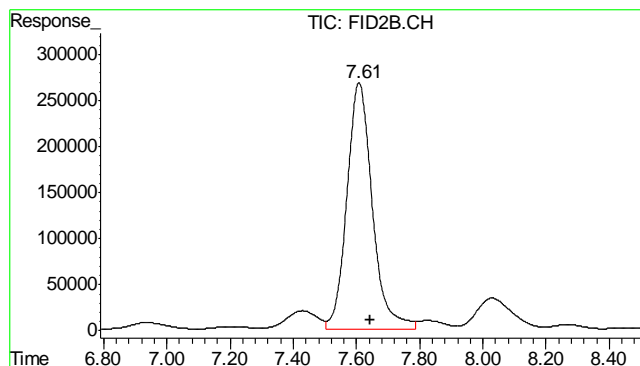
R.T.: 2.191 min
Delta R.T.: -0.011 min
Response: 171878
Conc: 1.32 ug/L



#5 Benzene

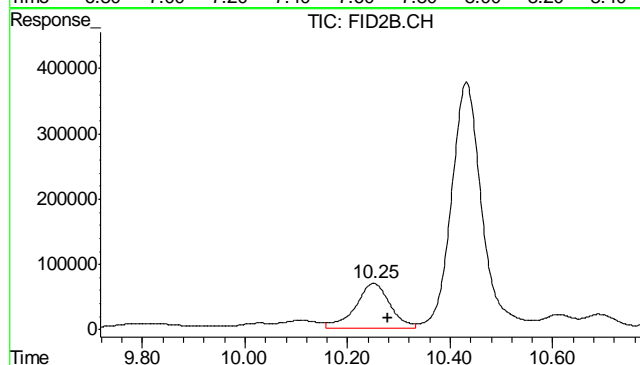
R.T.: 4.077 min
Delta R.T.: -0.026 min
Response: 3074538
Conc: 7.63 ug/L

11.1.1



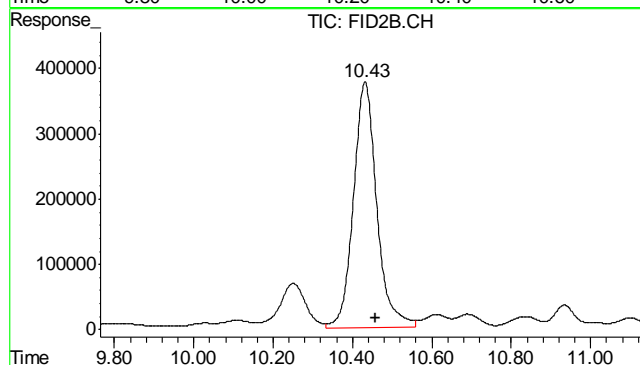
#6 Toluene

R.T.: 7.608 min
Delta R.T.: -0.033 min
Response: 15011948
Conc: 37.88 ug/L



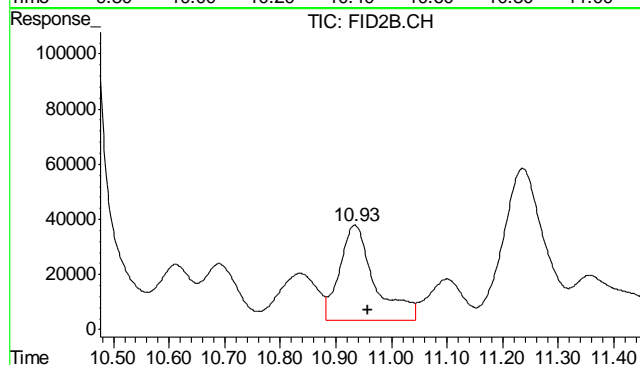
#7 Ethylbenzene

R.T.: 10.251 min
Delta R.T.: -0.028 min
Response: 3147457
Conc: 9.30 ug/L



#8 m,p-Xylene

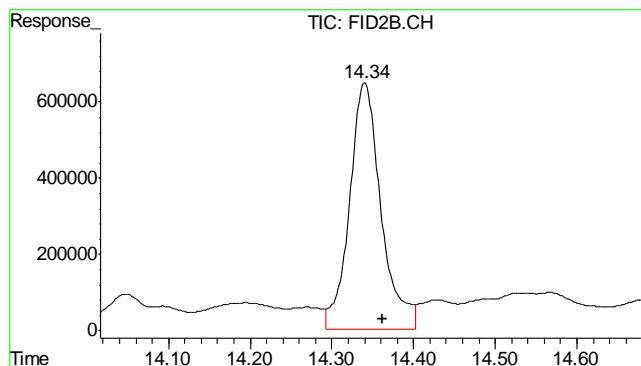
R.T.: 10.432 min
Delta R.T.: -0.028 min
Response: 15394936
Conc: 41.81 ug/L



#9 o-Xylene

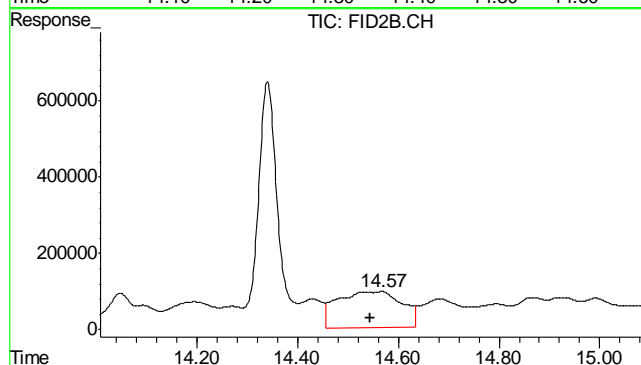
R.T.: 10.934 min
Delta R.T.: -0.023 min
Response: 1506243
Conc: 4.59 ug/L

11.1.1



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

R.T.: 14.341 min
 Delta R.T.: -0.022 min
 Response: 17299194
 Conc: 106.44 %



#11 Naphthalene

R.T.: 14.561 min
 Delta R.T.: 0.016 min
 Response: 8498421
 Conc: 43.07 ug/L

11.1.1

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091112\GB17498.D\FID1A.CH Vial: 13
Signal #2 : Y:\1\DATA\091112\GB17498.D\FID2B.CH
Acq On : 11 Sep 2012 7:04 pm Operator: StephK
Sample : D38518-2, 50X Inst : GC/MS Ins
Misc : GC3095,GGB959,5.010,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Sep 12 08:34:48 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Sep 11 08:17:43 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	14.35	2698524	86.121 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.35	18469083	113.637 %	
Target Compounds				
1) H TVH-Gasoline	7.23	42336297	0.640 mg/L	
4) T Methyl-t-butyl-ether	2.20	98713	0.760 ug/L	
5) T Benzene	4.09	5347424	13.269 ug/L	
6) T Toluene	7.63	14173377	35.767 ug/L	
7) T Ethylbenzene	10.27	1979986	5.853 ug/L	
8) T m,p-Xylene	10.45	10840721	29.328 ug/L	
9) T o-Xylene	10.95	1308715	3.986 ug/L	
11) T Naphthalene	14.54	7892676	40.002 ug/L	

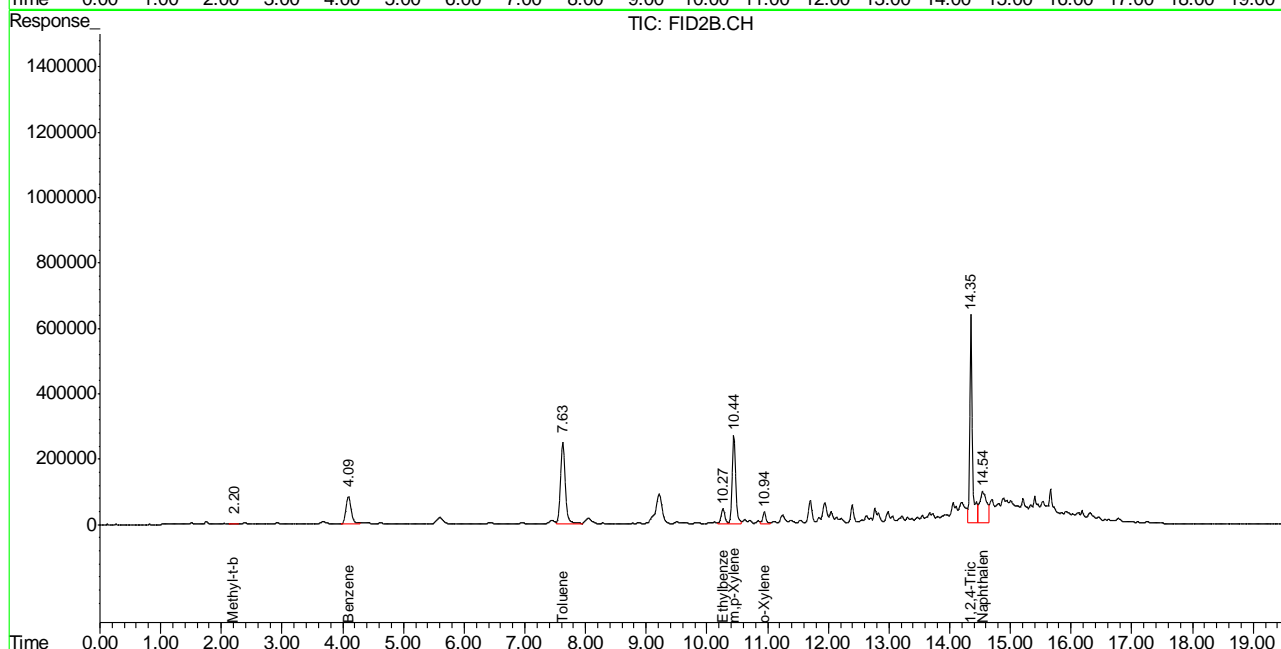
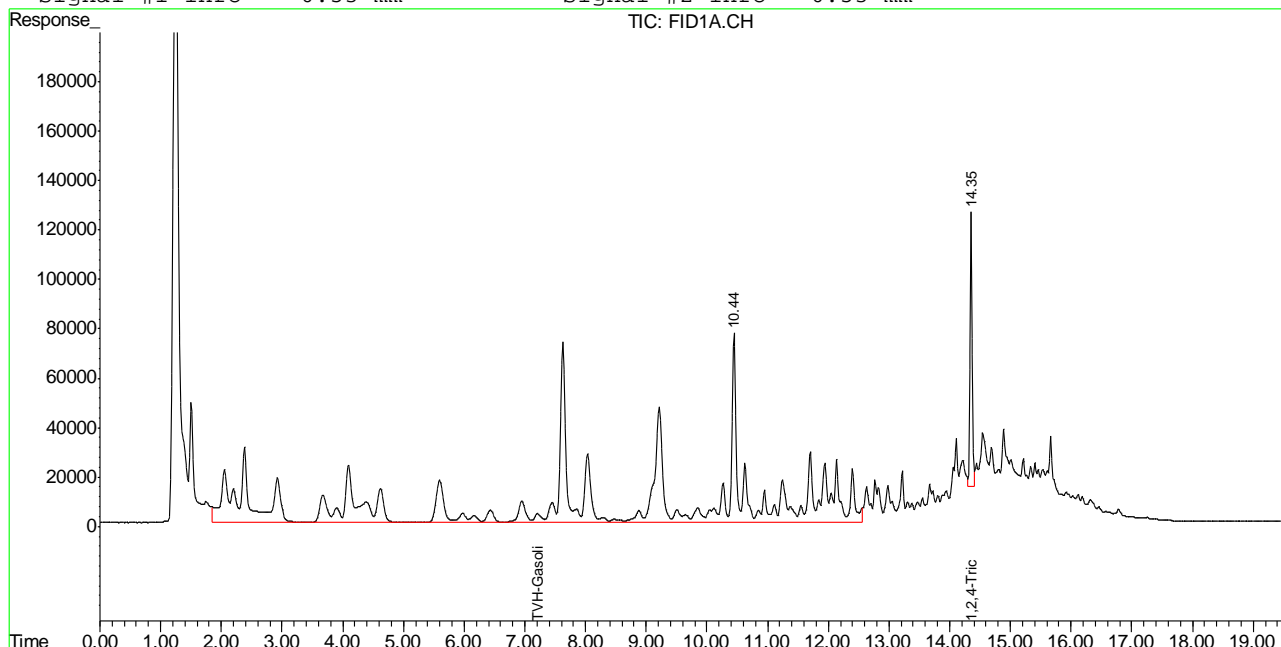
11.1.2
11

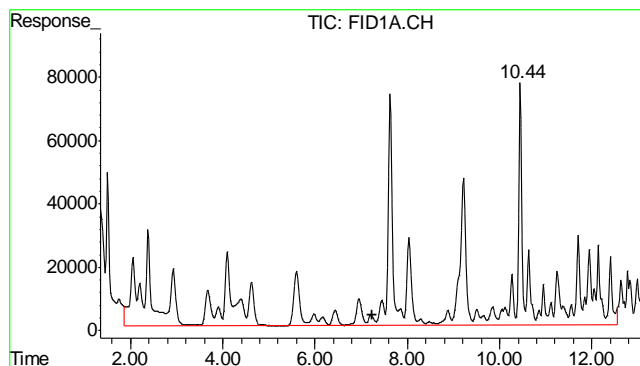
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091112\GB17498.D\FID1A.CH Vial: 13
 Signal #2 : Y:\1\DATA\091112\GB17498.D\FID2B.CH
 Acq On : 11 Sep 2012 7:04 pm Operator: StephK
 Sample : D38518-2, 50X Inst : GC/MS Ins
 Misc : GC3095,GGB959,5.010,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Sep 12 7:49 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Tue Sep 11 08:17:43 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

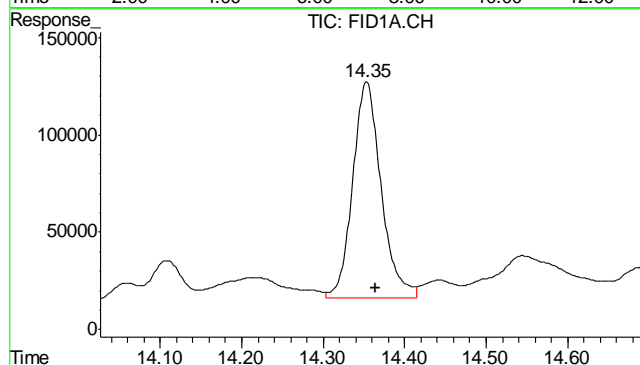
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





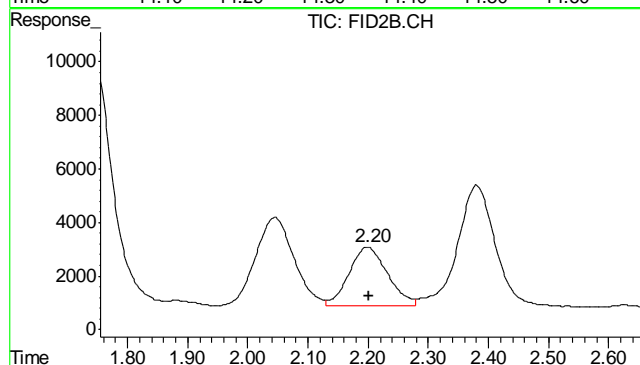
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 42336297
Conc: 0.64 mg/L m



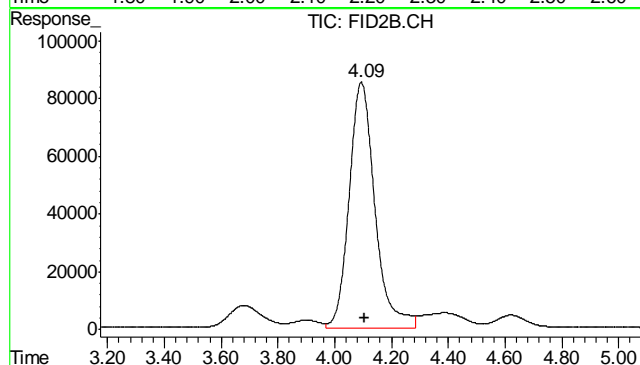
#2 1,2,4-Trichlorobenzene

R.T.: 14.353 min
Delta R.T.: -0.012 min
Response: 2698524
Conc: 86.12 % m



#4 Methyl-t-butyl-ether

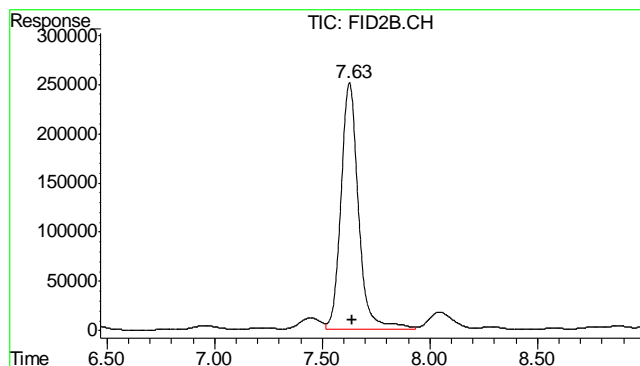
R.T.: 2.199 min
Delta R.T.: -0.002 min
Response: 98713
Conc: 0.76 ug/L



#5 Benzene

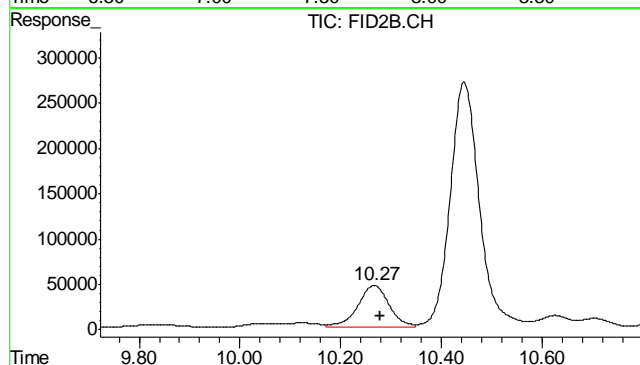
R.T.: 4.094 min
Delta R.T.: -0.010 min
Response: 5347424
Conc: 13.27 ug/L

11.12
11



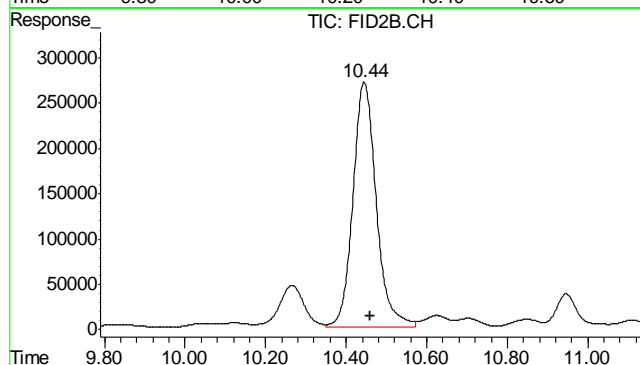
#6 Toluene

R.T.: 7.626 min
Delta R.T.: -0.015 min
Response: 14173377
Conc: 35.77 ug/L



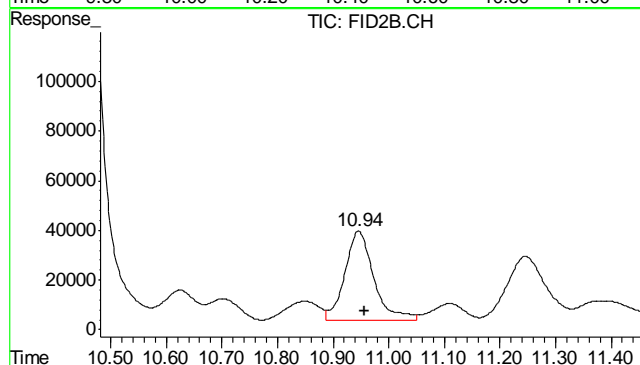
#7 Ethylbenzene

R.T.: 10.266 min
Delta R.T.: -0.013 min
Response: 1979986
Conc: 5.85 ug/L



#8 m,p-Xylene

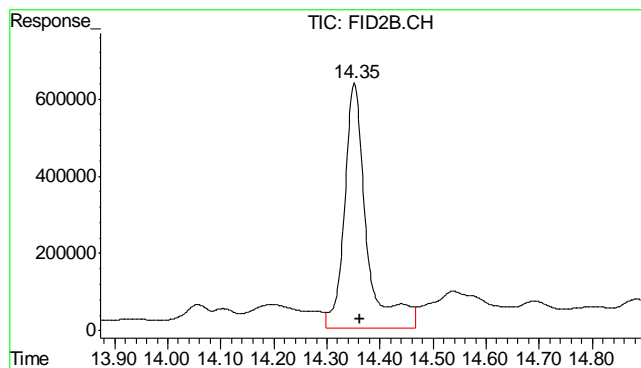
R.T.: 10.445 min
Delta R.T.: -0.015 min
Response: 10840721
Conc: 29.33 ug/L



#9 o-Xylene

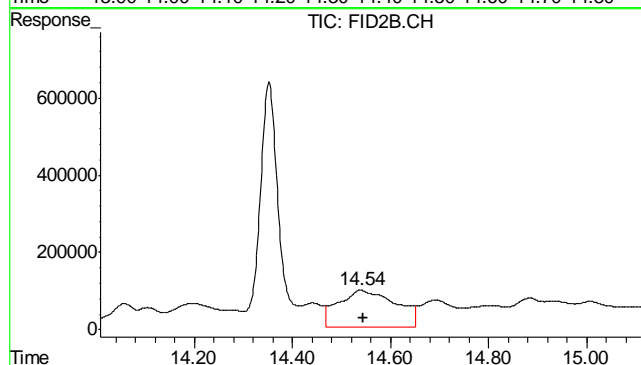
R.T.: 10.946 min
Delta R.T.: -0.011 min
Response: 1308715
Conc: 3.99 ug/L

11.12
11



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

R.T.: 14.352 min
Delta R.T.: -0.010 min
Response: 18469083
Conc: 113.64 %



#11 Naphthalene

R.T.: 14.541 min
Delta R.T.: -0.003 min
Response: 7892676
Conc: 40.00 ug/L

11.1.2
11

Judy Melson
09/13/12 13:14

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091112\GB17488.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\091112\GB17488.D\FID2B.CH
Acq On : 11 Sep 2012 1:07 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3095,GGB959,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Sep 11 13:23:15 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Sep 11 08:17:43 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

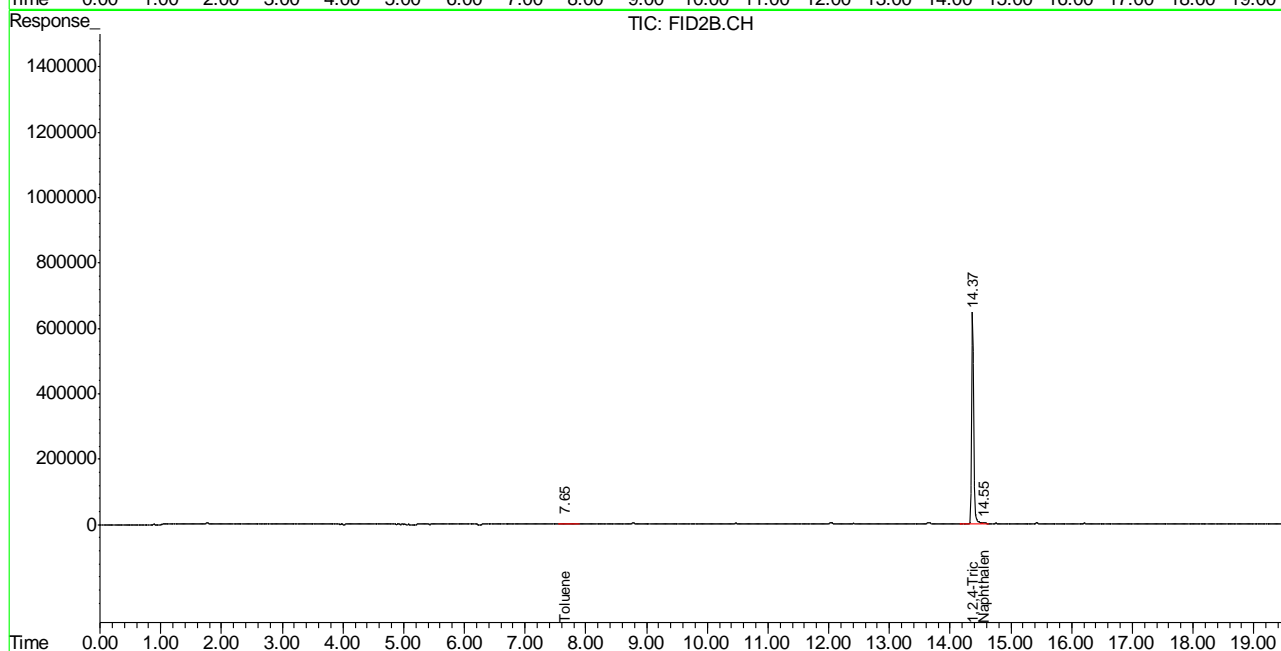
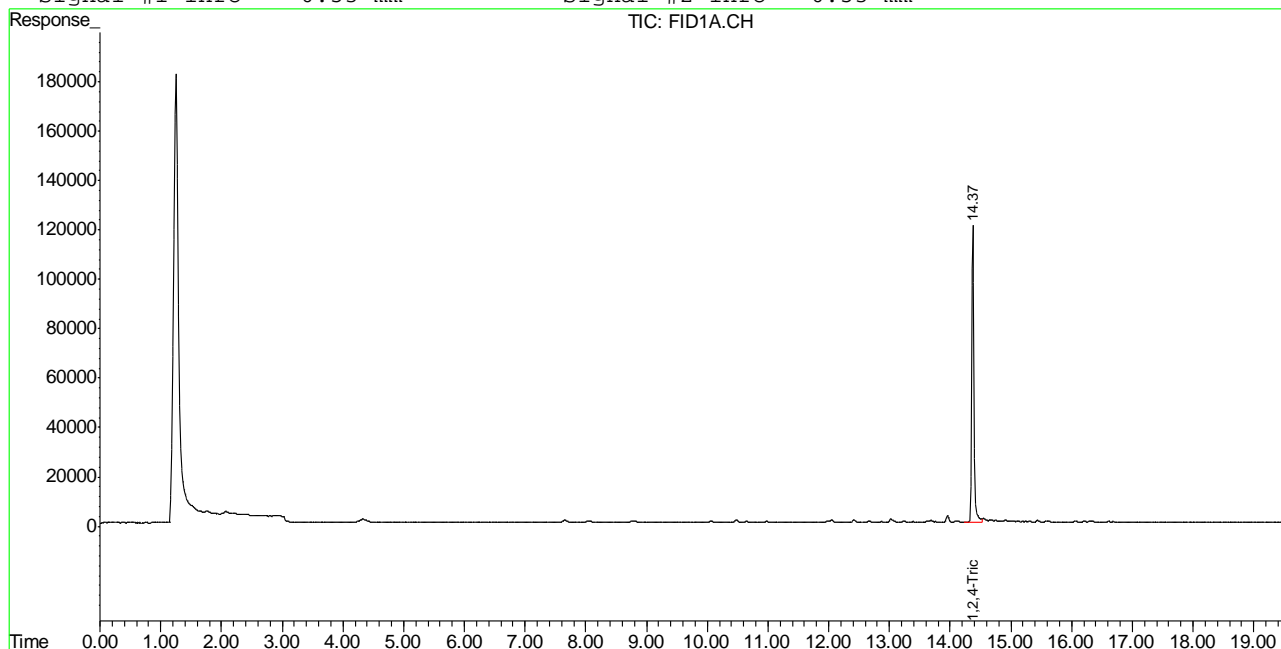
System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.37	2952854	94.238 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.37	15442568	95.015 %	
Target Compounds				
1) H TVH-Gasoline	7.23	3409310	<MDL	mg/L
4) T Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T Benzene	0.00	0	N.D.	ug/L d
6) T Toluene	7.65	190068	0.480	ug/L
7) T Ethylbenzene	0.00	0	N.D.	ug/L d
8) T m,p-Xylene	0.00	0	N.D.	ug/L d
9) T o-Xylene	0.00	0	N.D.	ug/L d
11) T Naphthalene	14.55	223237	1.131	ug/L

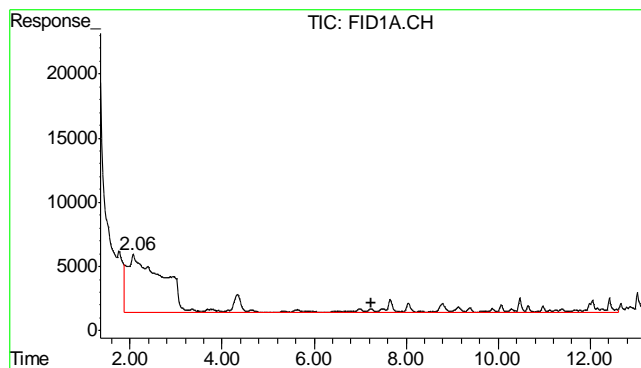
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091112\GB17488.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\091112\GB17488.D\FID2B.CH
Acq On : 11 Sep 2012 1:07 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3095,GGB959,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Sep 11 12:31 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Sep 11 08:17:43 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

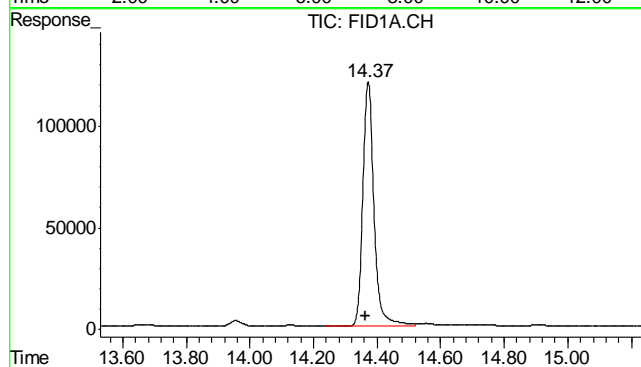
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





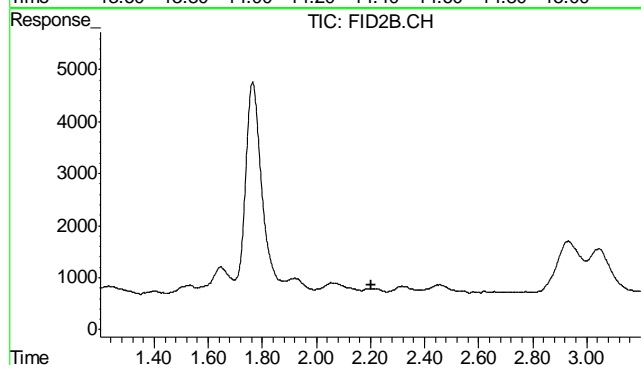
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 3409310
Conc: N.D.



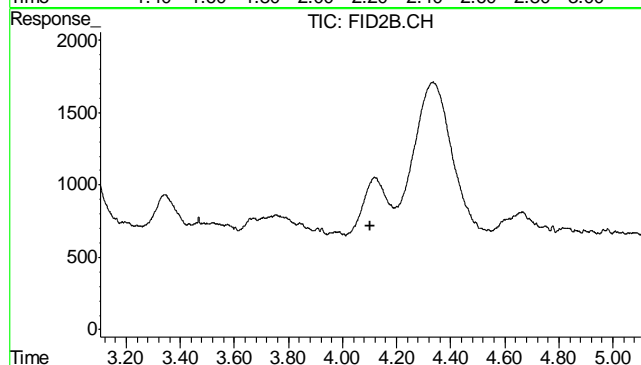
#2 1,2,4-Trichlorobenzene

R.T.: 14.372 min
Delta R.T.: 0.007 min
Response: 2952854
Conc: 94.24 % m



#4 Methyl-t-butyl-ether

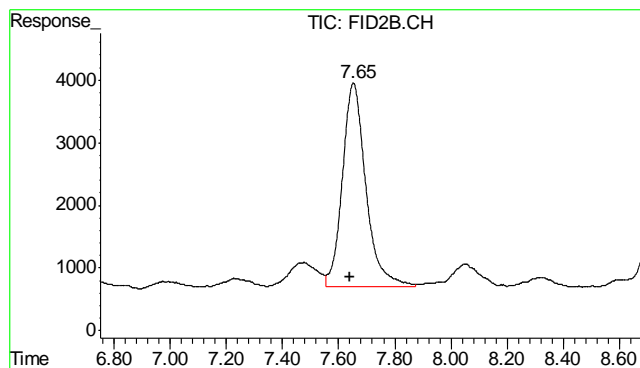
R.T.: 0.000 min
Exp R.T.: 2.201 min
Response: 0
Conc: N.D.



#5 Benzene

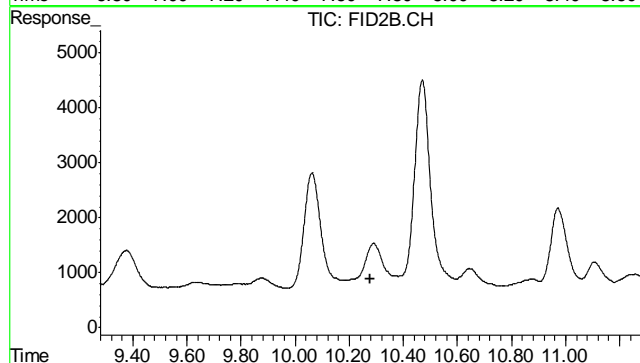
R.T.: 0.000 min
Exp R.T.: 4.104 min
Response: 0
Conc: N.D.

11.21
11



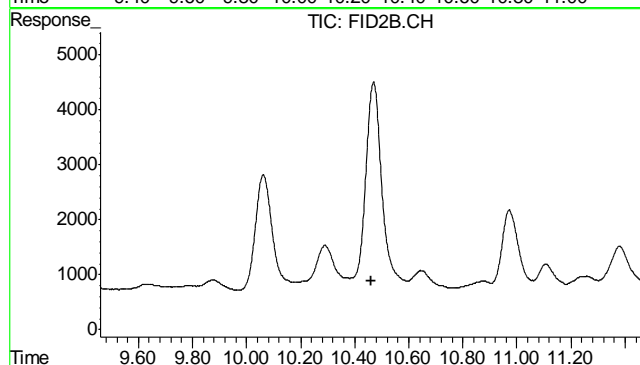
#6 Toluene

R.T.: 7.652 min
Delta R.T.: 0.011 min
Response: 190068
Conc: 0.48 ug/L



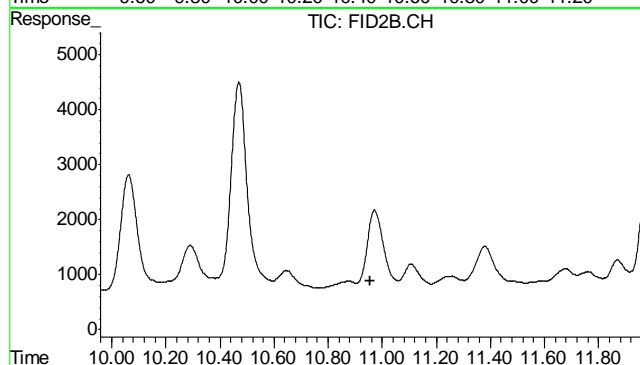
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.279 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

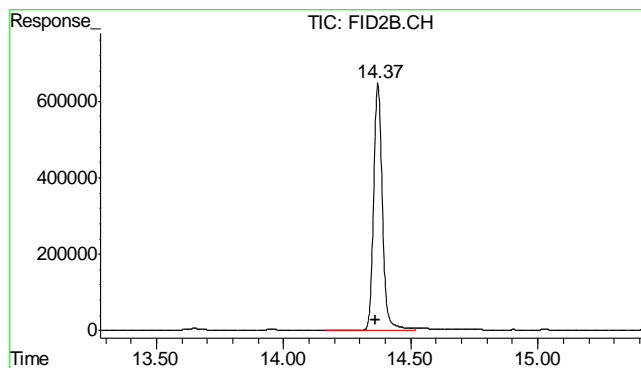
R.T.: 0.000 min
Exp R.T.: 10.460 min
Response: 0
Conc: N.D.



#9 o-Xylene

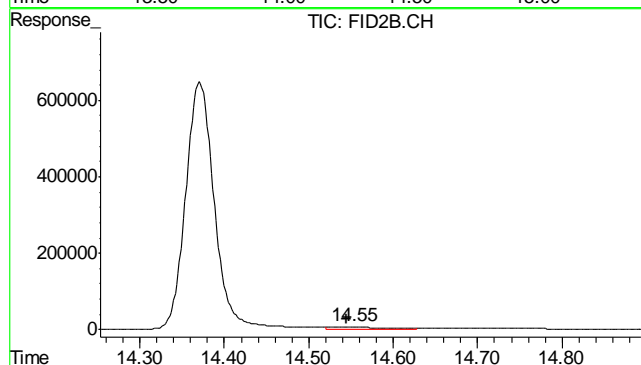
R.T.: 0.000 min
Exp R.T.: 10.957 min
Response: 0
Conc: N.D.

11.21
11



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

R.T.: 14.371 min
Delta R.T.: 0.009 min
Response: 15442568
Conc: 95.02 %



#11 Naphthalene

R.T.: 14.551 min
Delta R.T.: 0.007 min
Response: 223237
Conc: 1.13 ug/L

11.2.1
11

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6610-MB	FD17337.D	1	09/12/12	AW	09/12/12	OP6610	GFD890

The QC reported here applies to the following samples: Method: SW846-8015B
D38518-1, D38518-2

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	81% 43-136%

12.1.1
12

Blank Spike Summary

Job Number: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6610-BS	FD17339.D	1	09/12/12	AW	09/12/12	OP6610	GFD890

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

D38518-1, D38518-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	537	81	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	96%	43-136%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D38518
Account: XTOKRWR XTO Energy
Project: T78X-12G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6610-MS	FD17341.D	1	09/12/12	AW	09/12/12	OP6610	GFD890
OP6610-MSD	FD17343.D	1	09/12/12	AW	09/12/12	OP6610	GFD890
D38290-2	FD17345.D	1	09/12/12	AW	09/12/12	OP6610	GFD890

The QC reported here applies to the following samples:

Method: SW846-8015B

D38518-1, D38518-2

CAS No.	Compound	D38290-2 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND	773	594	77	578	75	3	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D38290-2	Limits
84-15-1	o-Terphenyl	85%	91%	74%	43-136%

* = Outside of Control Limits.

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212\FD17357.D Vial:
Acq On : 9-12-2012 06:18:47 PM Operator: alexwl
Sample : D38518-1 Inst : FID5
Misc : OP6610,GFD890,30.06,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 08:23:40 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Sep 11 10:47:33 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

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

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	9.10	35695723	755.648 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.08	241701452	6277.099 mg/L

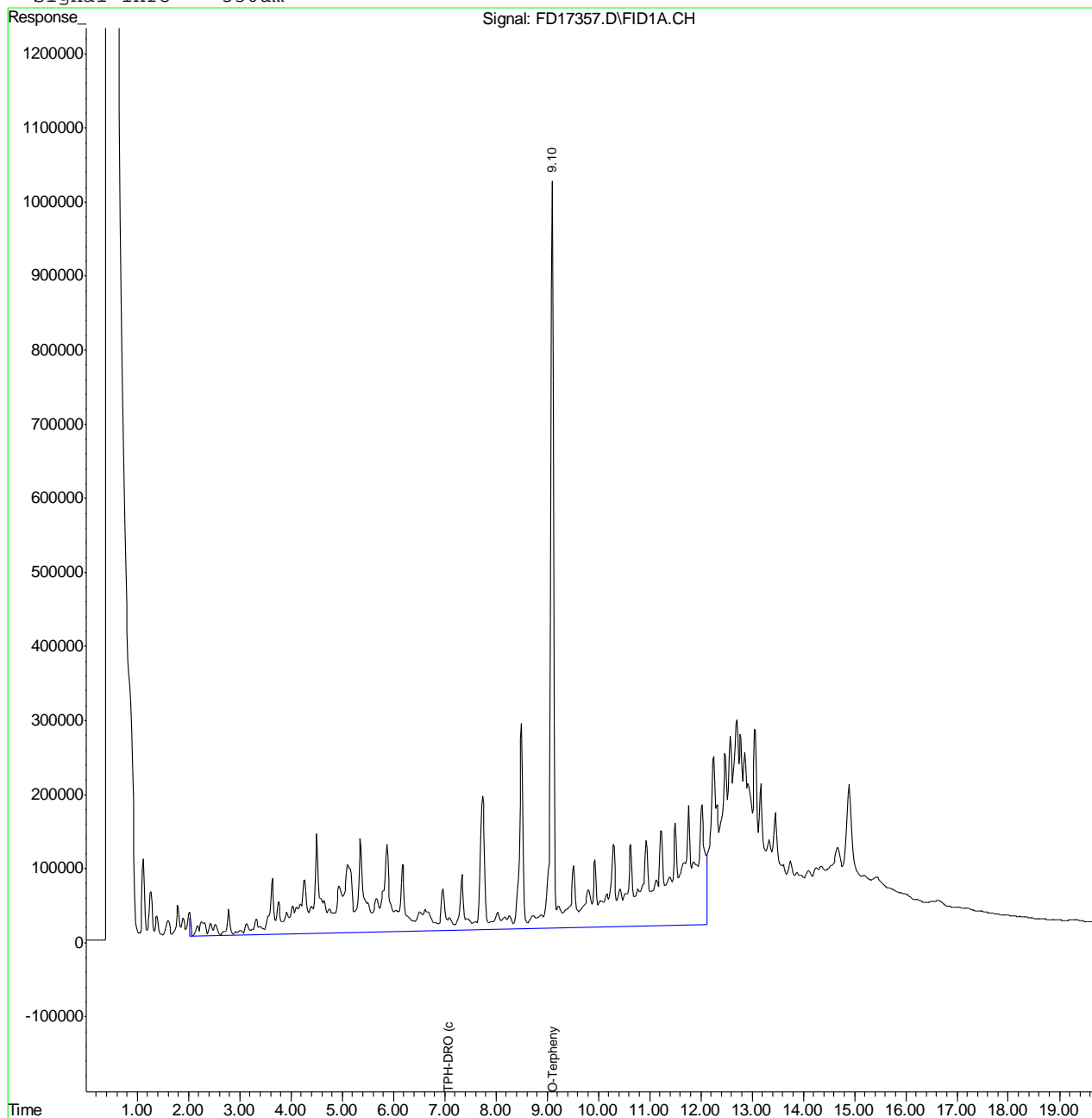
13.1.1
13

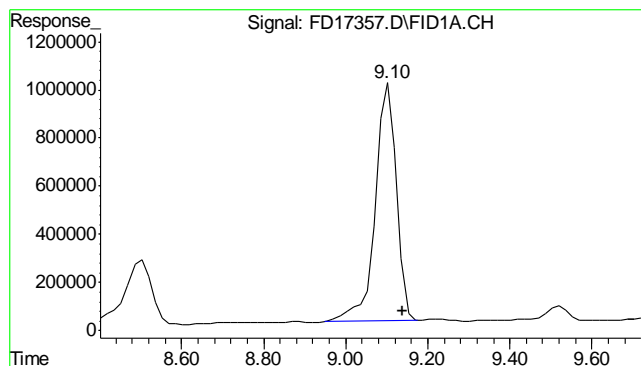
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212\FD17357.D Vial: 13
Acq On : 9-12-2012 06:18:47 PM Operator: alexwl
Sample : D38518-1 Inst : FID5
Misc : OP6610,GFD890,30.06,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 8:23 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Sep 11 10:47:33 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

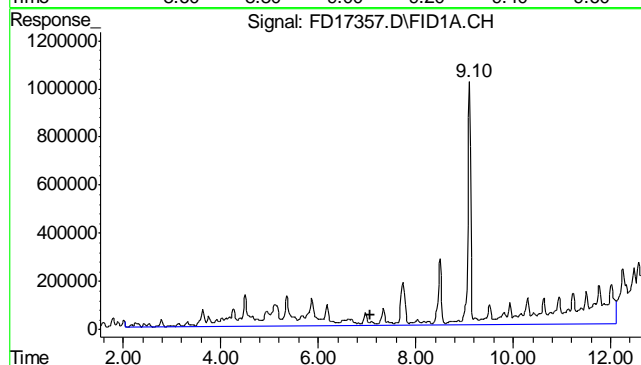
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 9.100 min
 Delta R.T.: -0.040 min
 Response: 35695723
 Conc: 755.65 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 7.075 min
 Delta R.T.: 0.000 min
 Response: 241701452
 Conc: 6277.10 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212\FD17359.D Vial: 14
Acq On : 9-12-2012 06:44:47 PM Operator: alexwl
Sample : D38518-2 Inst : FID5
Misc : OP6610,GFD890,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 08:25:01 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Sep 11 10:47:33 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

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

Compound	R.T.	Response	Conc Units

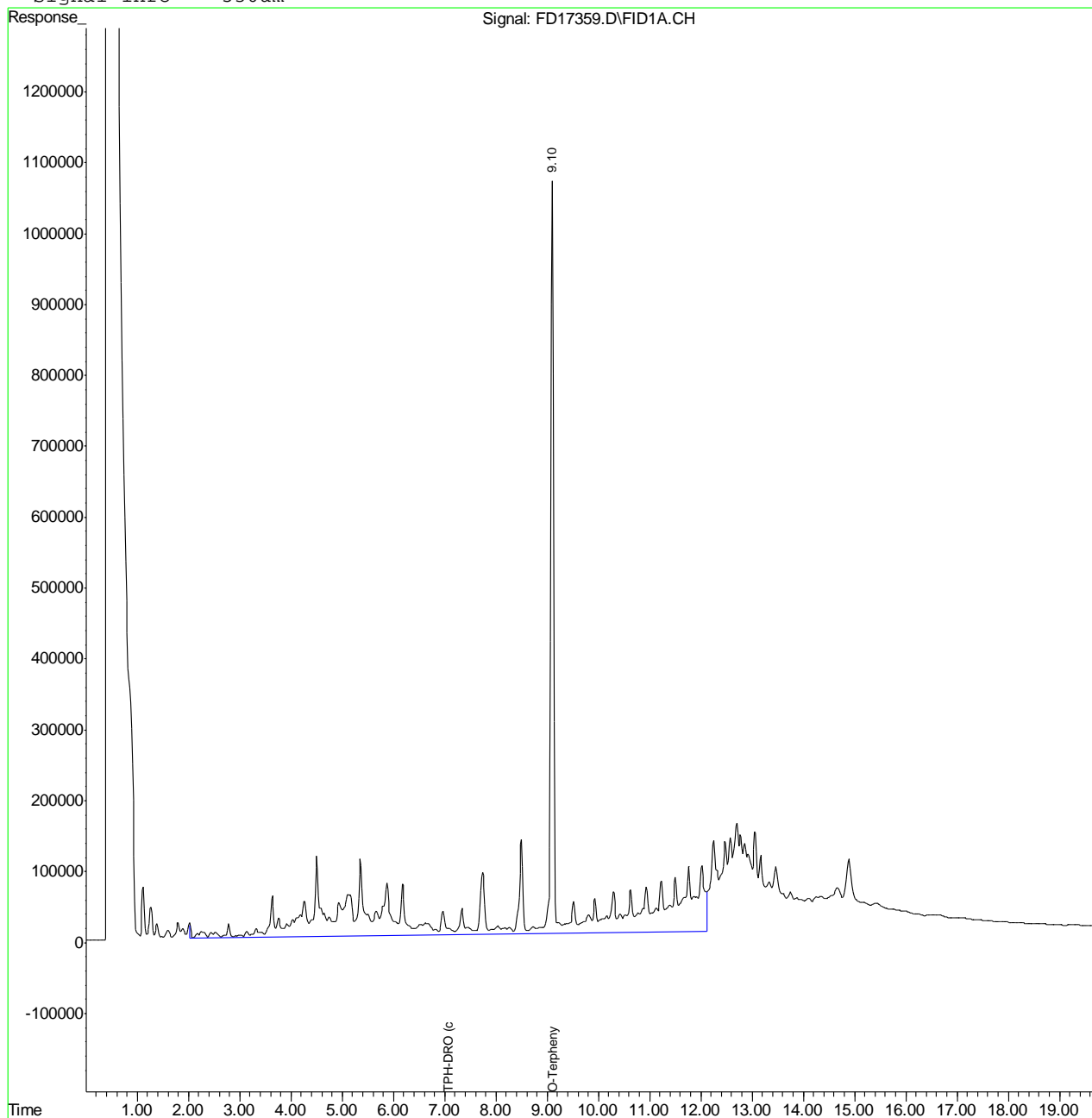
System Monitoring Compounds			
1) S O-Terphenyl	9.11	36703641	776.985 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.08	145633195	3782.162 mg/L

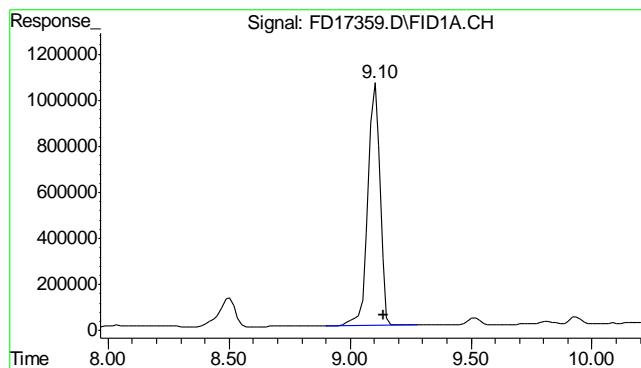
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212\FD17359.D Vial: 14
Acq On : 9-12-2012 06:44:47 PM Operator: alexwl
Sample : D38518-2 Inst : FID5
Misc : OP6610,GFD890,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 8:25 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Sep 11 10:47:33 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

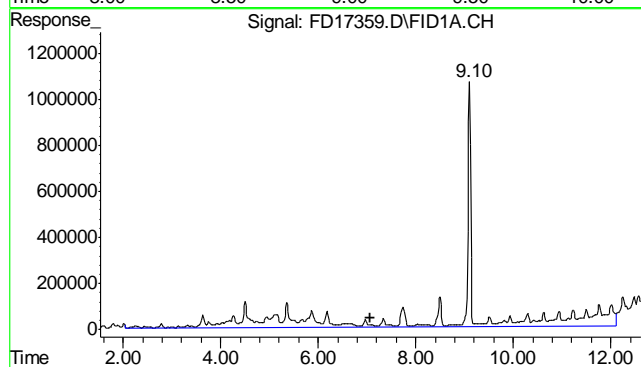
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 9.107 min
Delta R.T.: -0.033 min
Response: 36703641
Conc: 776.99 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.075 min
Delta R.T.: 0.000 min
Response: 145633195
Conc: 3782.16 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212\FD17337.D Vial: 3
Acq On : 9-12-2012 01:58:44 PM Operator: alexwl
Sample : OP6610-MB Inst : FID5
Misc : OP6610,GFD890,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 08:19:06 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Sep 11 10:47:33 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

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

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	9.13	38226478	809.222 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.08	999310	25.953 mg/L

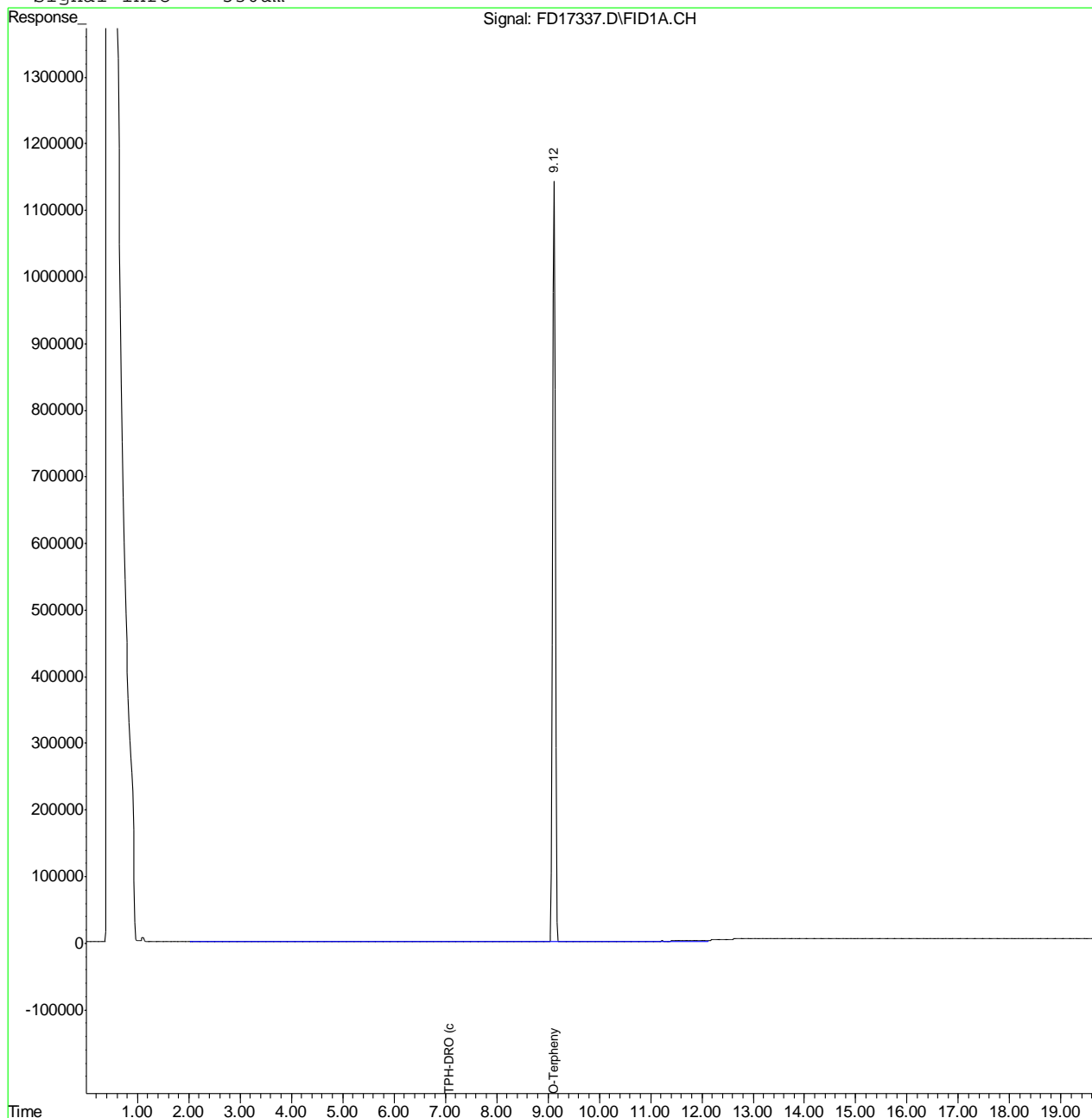
(f)=RT Delta > 1/2 Window (m)=manual int.
FD17337.D DRO-GFD823F.M Fri Sep 14 09:11:21 2012 GC

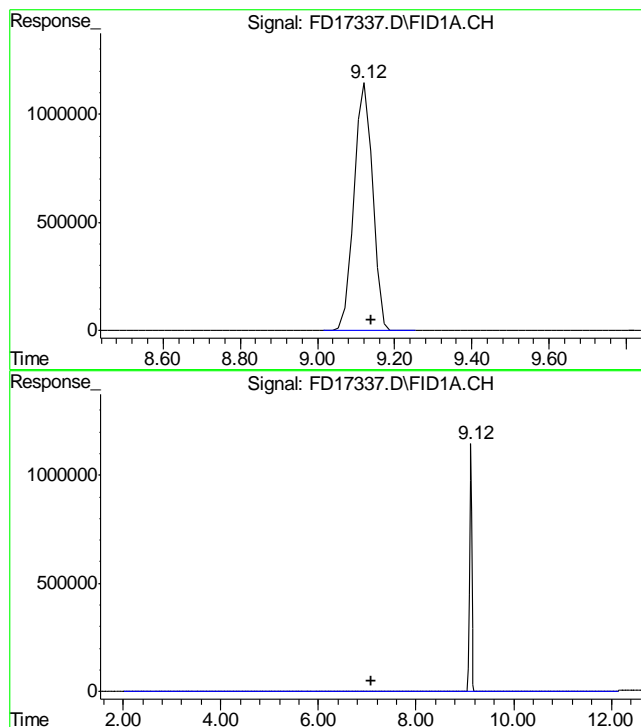
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212\FD17337.D Vial: 3
Acq On : 9-12-2012 01:58:44 PM Operator: alexwl
Sample : OP6610-MB Inst : FID5
Misc : OP6610,GFD890,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 8:19 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Sep 11 10:47:33 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

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





#1 O-Terphenyl

R.T.: 9.125 min
Delta R.T.: -0.015 min
Response: 38226478
Conc: 809.22 mg/L

#2 TPH-DRO (c10-c28)

R.T.: 7.075 min
Delta R.T.: 0.000 min
Response: 999310
Conc: 25.95 mg/L m

13.2.1
13

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: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8357
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/11/12

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.0009	-0.0022	<0.10

Associated samples MP8357: D38518-1, D38518-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
 Account: XTOKRWR - XTO Energy
 Project: T78X-12G

QC Batch ID: MP8357
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/11/12

Metal	D38479-1		Spikelot		QC
	Original	MS	HGWSR1	% Rec	Limits
Mercury	0.025	0.57	0.55	99.1	75-125

Associated samples MP8357: D38518-1, D38518-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
 Account: XTOKRWR - XTO Energy
 Project: T78X-12G

QC Batch ID: MP8357
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/11/12

Metal	D38479-1		Spikelot		MSD	QC
	Original	MSD	HGWSR1	% Rec		
Mercury	0.025	0.53	0.509	99.3	7.3	

Associated samples MP8357: D38518-1, D38518-2

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D38518
 Account: XTOKRWR - XTO Energy
 Project: T78X-12G

QC Batch ID: MP8357
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/11/12

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.41	0.4	102.5	80-120

Associated samples MP8357: D38518-1, D38518-2

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/11/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	2.1	.57		
Antimony	3.0	.36	.12		
Arsenic	2.5	.54	.56		
Barium	1.0	.08	.11	0.010	<1.0
Beryllium	1.0	.13	.15		
Boron	5.0	.43	.06		
Cadmium	1.0	.06	.036	-0.010	<1.0
Calcium	40	.84	9		
Chromium	1.0	.03	.03	-0.010	<1.0
Cobalt	0.50	.04	.07		
Copper	1.0	.12	.15	0.0	<1.0
Iron	7.0	.19	.87		
Lead	5.0	.24	.24	-0.030	<5.0
Lithium	0.20	.28	.054		
Magnesium	20	2.2	.98		
Manganese	0.50	.12	.022		
Molybdenum	1.0	.21	.08		
Nickel	3.0	.05	.026	0.030	<3.0
Phosphorus	10	1.4	1.9		
Potassium	200	15	7		
Selenium	5.0	.61	.36	0.35	<5.0
Silicon	5.0	.65	.37		
Silver	3.0	.05	.06	0.0	<3.0
Sodium	40	2.1	1.9		
Strontium	5.0	.02	.017		
Thallium	1.0	.29	.53		
Tin	5.0	1.2	2		
Titanium	1.0	.01	.038		
Uranium	5.0	.46	.26		
Vanadium	1.0	.03	.036		
Zinc	3.0	.08	.37	-0.070	<3.0

Associated samples MP8358: D38518-1, D38518-2

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/11/12

Metal	D38480-1 Original MS		Spikelot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	1270	1790	240	216.8(a)	75-125
Beryllium					
Boron					
Cadmium	0.43	62.1	60	102.8	75-125
Calcium					
Chromium	28.9	85.4	60	94.2	75-125
Cobalt					
Copper	28.8	106	60	128.7N(b)	75-125
Iron					
Lead	15.0	135	120	100.0	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	22.4	78.1	60	92.9	75-125
Phosphorus	anr				
Potassium					
Selenium	1.5	118	120	97.1	75-125
Silicon					
Silver	0.30	25.7	24	105.9	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	51.8	111	60	98.7	75-125

Associated samples MP8358: D38518-1, D38518-2

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

14.2.2
14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

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

14.2.2
14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/11/12

Metal	D38480-1 Original	MSD	Spikelot ICPAL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	1270	2280	254	397.0(a)	24.1 (b)	20
Beryllium						
Boron						
Cadmium	0.43	65.6	63.6	102.5	5.5	20
Calcium						
Chromium	28.9	86.5	63.6	90.6	1.3	20
Cobalt						
Copper	28.8	102	63.6	115.1	3.8	20
Iron						
Lead	15.0	138	127	96.7	2.2	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	22.4	76.2	63.6	84.6	2.5	20
Phosphorus	anr					
Potassium						
Selenium	1.5	124	127	96.3	5.0	20
Silicon						
Silver	0.30	26.9	25.4	104.5	4.6	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	51.8	110	63.6	91.5	0.9	20

Associated samples MP8358: D38518-1, D38518-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/11/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	221	200	110.5	80-120
Beryllium				
Boron				
Cadmium	50.7	50	101.4	80-120
Calcium				
Chromium	51.0	50	102.0	80-120
Cobalt				
Copper	51.6	50	103.2	80-120
Iron				
Lead	100	100	100.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	48.5	50	97.0	80-120
Phosphorus	anr			
Potassium				
Selenium	94.7	100	94.7	80-120
Silicon				
Silver	20.4	20	102.0	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	50.4	50	100.8	80-120

Associated samples MP8358: D38518-1, D38518-2

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/11/12

Metal	D38480-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	10100	10400	3.5	0-10
Beryllium				
Boron				
Cadmium	3.40	0.00	100.0(a)	0-10
Calcium				
Chromium	230	244	6.3	0-10
Cobalt				
Copper	228	200	12.7*(b)	0-10
Iron				
Lead	119	124	4.0	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	178	191	6.9	0-10
Phosphorus	anr			
Potassium				
Selenium	11.7	0.00	100.0(a)	0-10
Silicon				
Silver	2.40	4.00	66.7 (a)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	411	439	6.7	0-10

Associated samples MP8358: D38518-1, D38518-2

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

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

14.2.4
14

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8359
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 09/11/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.22	.31		
Antimony	0.20	.0018	.0075		
Arsenic	0.10	.006	.06	0.0047	<0.10
Barium	1.0	.0065	.037		
Beryllium	0.10	.016	.09		
Boron	20	1.2	1.2		
Cadmium	0.050	.014	.021		
Calcium	200	7.9	8		
Chromium	1.0	.033	.19		
Cobalt	0.10	.0012	.015		
Copper	1.0	.017	.065		
Iron	20	.8	5		
Lead	0.25	.0011	.024		
Magnesium	50	.44	.85		
Manganese	0.50	.0043	.02		
Molybdenum	0.50	.018	.018		
Nickel	1.0	.0049	.011		
Phosphorus	30	1.4	3.6		
Potassium	100	9.8	10		
Selenium	0.20	.029	.14		
Silver	0.050	.0009	.0065		
Sodium	250	1.5	2.3		
Strontium	10	.036	.036		
Thallium	0.10	.00095	.0095		
Tin	5.0	.023	.34		
Titanium	1.0	.044	.1		
Uranium	0.25	.00085	.001		
Vanadium	2.0	.12	.21		
Zinc	5.0	.033	.35		

Associated samples MP8359: D38518-1, D38518-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8359
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 09/11/12

Metal	D38480-1 Original MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	16.8	168	120	126.1N(a) 75-125
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8359: D38518-1, D38518-2

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
 Account: XTOKRWR - XTO Energy
 Project: T78X-12G

QC Batch ID: MP8359
 Matrix Type: SOLID

Methods: SW846 6020A
 Units: mg/kg

Prep Date: 09/11/12

Metal	D38480-1 Original	MSD	Spikelot ICPAL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	16.8	172	127	122.0	2.4	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP8359: D38518-1, D38518-2

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

14.3.2
14

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8359
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 09/11/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	105	100	105.0	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8359: D38518-1, D38518-2

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

14.3.3
14

SERIAL DILUTION RESULTS SUMMARY

Login Number: D38518
 Account: XTOKRWR - XTO Energy
 Project: T78X-12G

QC Batch ID: MP8359
 Matrix Type: SOLID

Methods: SW846 6020A
 Units: ug/l

Prep Date: 09/11/12

Metal	D38480-1			QC	
	Original	SDL 5:25	%DIF	Limits	
Aluminum					
Antimony					
Arsenic	134	137	2.3	0-10	
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP8359: D38518-1, D38518-2

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

14.3.4
 14

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date: 09/11/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	48	130		
Antimony	150	8.5	18		
Arsenic	130	22	42		
Barium	50	.5	9		
Beryllium	50	6.5	16		
Boron	250	5	22		
Cadmium	50	3	3		
Calcium	2000	27	80	930	<2000
Chromium	50	1.5	2.8		
Cobalt	25	2	2.1		
Copper	50	6	15		
Iron	350	6	100		
Lead	250	9.5	15		
Lithium	10	2.5			
Magnesium	1000	33	110	37.5	<1000
Manganese	25	6	6		
Molybdenum	50	11	11		
Nickel	150	2.5	2.9		
Phosphorus	500	70	300		
Potassium	5000	310	750		
Selenium	250	24	55		
Silicon	250	15			
Silver	150	2	4.9		
Sodium	2000	30	490	-71	<2000
Strontium	25	.2	7.5		
Thallium	50	15	43		
Tin	250	60			
Titanium	50	.5			
Uranium	250	11	23		
Vanadium	50	1	2.4		
Zinc	150	2.5	12		

Associated samples MP8372: D38518-1A, D38518-2A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

14.4.1

14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date: 09/11/12

Metal	D38518-1A Original MS		Spikelot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	129000	256000	125000	101.6	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	78.5	125000	125000	99.9	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	2590000	2490000	125000	-80.0(a)	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP8372: D38518-1A, D38518-2A

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

14.4.2
14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date:

Metal

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

14.4.2
14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date: 09/11/12

Metal	D38518-1A Original	MSD	SpikeLot ICPAL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	129000	247000	125000	94.4	3.6	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	78.5	125000	125000	99.9	0.0	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	2590000	2290000	125000	-240.0(a	8.4	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP8372: D38518-1A, D38518-2A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date:

Metal

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date: 09/11/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	132000	125000	105.6	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	122000	125000	97.6	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	125000	125000	100.0	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8372: D38518-1A, D38518-2A

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date: 09/11/12

Metal	D38518-1A Original SDL 1:5		%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	25700	26000	1.0	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	15.7	0.00	100.0(a)	0-10
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	517000	527000	1.9	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8372: D38518-1A, D38518-2A

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

14.4.4
14

SERIAL DILUTION RESULTS SUMMARY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

14.4.4
14

General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP8138/GN16704	1.0	0.0	mg/kg	60.7	67.2	111.0	80-120%
Specific Conductivity	GP8183/GN16757	1.0	<1.0	umhos/cm	9989	9910	99.2	90-110%
pH	GN16689			su	8.00	8.00	100.0	99.3-100.7%

Associated Samples:
Batch GP8138: D38518-1, D38518-2
Batch GP8183: D38518-1, D38518-2
Batch GN16689: D38518-1, D38518-2
(*) Outside of QC limits

15.1
15

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP8138/GN16704	D38513-1	mg/kg	0.0	0.0	22.4(a)	0-20%
Redox Potential Vs H2	GN16683	D38518-2	mv	141	143	1.4	0-20%

Associated Samples:

Batch GP8138: D38518-1, D38518-2

Batch GN16683: D38518-1, D38518-2

(*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP8138/GN16704	D38513-1	mg/kg	0.0	40	40.5	101.0	75-125%

Associated Samples:
Batch GP8138: D38518-1, D38518-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D38518
Account: XTOKRWR - XTO Energy
Project: T78X-12G

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GP8138/GN16704	D38513-1	mg/kg	0.0	40	41.0	1.2	

Associated Samples:
Batch GP8138: D38518-1, D38518-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits