



11/15/12

Technical Report for

XTO Energy

PCU 296-6A

1211-02

Accutest Job Number: D40712

Sampling Date: 11/06/12

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: 249



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.

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Sample Summary

XTO Energy

Job No: D40712

PCU 296-6A
Project No: 1211-02

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D40712-1	11/06/12	11:15 DK	11/08/12	SO	Soil	CUT 1 POST SOLIDIFICATION
D40712-1A	11/06/12	11:15 DK	11/08/12	SO	Soil	CUT 1 POST SOLIDIFICATION
D40712-2	11/06/12	11:20 DK	11/08/12	SO	Soil	CUT 2 POST SOLIDIFICATION
D40712-2A	11/06/12	11:20 DK	11/08/12	SO	Soil	CUT 2 POST SOLIDIFICATION
D40712-3	11/06/12	11:25 DK	11/08/12	SO	Soil	CUT 3 POST SOLIDIFICATION
D40712-3A	11/06/12	11:25 DK	11/08/12	SO	Soil	CUT 3 POST SOLIDIFICATION

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



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: XTO Energy

Job No D40712

Site: PCU 296-6A

Report Date 11/15/2012 1:49:23 PM

On 11/08/2012, 3 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D40712 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

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

Volatiles by GCMS By Method SW846 8260B

Matrix SO

Batch ID: V5V1501

- All samples were analyzed within the recommended method holding time.
- Sample(s) D40713-1MS, D40713-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO

Batch ID: OP6941

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40713-1MS, D40713-1MSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8015B

Matrix SO

Batch ID: GGB1004

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40718-1MS, D40718-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO

Batch ID: OP6942

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) D40713-1MS, D40713-1MSD 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: MP8858

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40714-1AMS, D40714-1AMSD, D40714-1ASDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Magnesium, Sodium are outside control limits for sample MP8858-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP8858-SD1 for Sodium: Serial dilution indicates possible matrix interference.

Matrix SO

Batch ID: MP8856

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40712-1MS, D40712-1MSD, D40712-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Chromium, Zinc, Nickel are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- The matrix spike duplicate (MSD) recovery(s) of Nickel are outside control limits. Probable cause due to matrix interference.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Selenium, Barium, Chromium, Nickel, Zinc are outside control limits for sample MP8856-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP8856-SD1 for Zinc: Serial dilution indicates possible matrix interference.
- MP8856-SD1 for Barium: Serial dilution indicates possible matrix interference.
- MP8856-S1 for Nickel: Spike recovery indicates possible matrix interference.
- MP8856-SD1 for Chromium: Serial dilution indicates possible matrix interference.
- MP8856-MB1 for Barium: All sample results >10x method blank concentration.
- MP8856-SD1 for Nickel: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020A

Matrix SO

Batch ID: MP8857

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40712-1MS, D40712-1SDL, D40712-1MSD were used as the QC samples for the metals analysis.
- The RPD(s) for the MS and MSD recoveries of Arsenic are outside control limits for sample MP8857-S2. High RPD due to possible sample matrix or nonhomogeneity.

Metals By Method SW846 7471B

Matrix SO

Batch ID: MP8871

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40797-1MS, D40797-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO	Batch ID: GN17603
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- Sample(s) D40617-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM19 2540B M

Matrix SO	Batch ID: GN17606
------------------	--------------------------

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

Wet Chemistry By Method SW846 3060/7196A M

Matrix SO	Batch ID: R15100
------------------	-------------------------

- The data for SW846 3060/7196A M meets quality control requirements.
- D40712-3 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix SO	Batch ID: R15101
------------------	-------------------------

- The data for SW846 3060/7196A M meets quality control requirements.
- D40712-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix SO	Batch ID: R15102
------------------	-------------------------

- The data for SW846 3060/7196A M meets quality control requirements.
- D40712-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO	Batch ID: GP8655
------------------	-------------------------

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40715-1DUP, D40715-1MS, D40715-1MSD were used as the QC samples for the Chromium, Hexavalent analysis.

Wet Chemistry By Method SW846 9045D

Matrix SO	Batch ID: GN17604
------------------	--------------------------

- The following samples were run outside of holding time for method SW846 9045D: D40712-1, D40712-2, D40712-3

Wet Chemistry By Method USDA HANDBOOK 60

Matrix SO	Batch ID: MP8858
------------------	-------------------------

- D40712-1A for Sodium Adsorption Ratio: Calculated as: $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$
- D40712-2A for Sodium Adsorption Ratio: Calculated as: $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$
- D40712-3A 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: D40712
Account: XTO Energy
Project: PCU 296-6A
Collected: 11/06/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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D40712-1 CUT 1 POST SOLIDIFICATION

Benzene	0.805	0.069	0.035	mg/kg	SW846 8260B
Toluene	2.92	0.14	0.069	mg/kg	SW846 8260B
Ethylbenzene	0.661	0.14	0.026	mg/kg	SW846 8260B
Xylene (total)	3.22	0.28	0.14	mg/kg	SW846 8260B
Chrysene	0.0377	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Fluorene	0.0710	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Naphthalene	0.437	0.014	0.012	mg/kg	SW846 8270C BY SIM
Pyrene	0.0332	0.010	0.0052	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	17.7	14	6.9	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	536	16	10	mg/kg	SW846-8015B
Arsenic	9.6	0.12		mg/kg	SW846 6020A
Barium	8010	5.8		mg/kg	SW846 6010C
Chromium	18.5	1.2		mg/kg	SW846 6010C
Copper	28.0	1.2		mg/kg	SW846 6010C
Lead	14.0	5.8		mg/kg	SW846 6010C
Nickel	12.5	3.5		mg/kg	SW846 6010C
Zinc	47.2	3.5		mg/kg	SW846 6010C
Specific Conductivity	3630	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent ^a	18.5	2.2		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2	123			mv	ASTM D1498-76M
pH	12.14			su	SW846 9045D

D40712-1A CUT 1 POST SOLIDIFICATION

Calcium	91.6	2.0		mg/l	SW846 6010C
Sodium	624	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio ^b	17.9			ratio	USDA HANDBOOK 60

D40712-2 CUT 2 POST SOLIDIFICATION

Benzene	1.35	0.069	0.035	mg/kg	SW846 8260B
Toluene	2.79	0.14	0.069	mg/kg	SW846 8260B
Ethylbenzene	0.496	0.14	0.026	mg/kg	SW846 8260B
Xylene (total)	2.34	0.28	0.14	mg/kg	SW846 8260B
Chrysene	0.0616	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Fluoranthene	0.0223	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Fluorene	0.113	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Naphthalene	0.659	0.014	0.012	mg/kg	SW846 8270C BY SIM
Pyrene	0.0432	0.010	0.0052	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	9.39 J	14	6.9	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	350	16	10	mg/kg	SW846-8015B
Arsenic	12.6	0.12		mg/kg	SW846 6020A
Barium	8180	6.0		mg/kg	SW846 6010C

Summary of Hits

Job Number: D40712
Account: XTO Energy
Project: PCU 296-6A
Collected: 11/06/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						
Chromium		12.5	1.2		mg/kg	SW846 6010C
Copper		29.5	1.2		mg/kg	SW846 6010C
Lead		19.5	6.0		mg/kg	SW846 6010C
Nickel		12.9	3.6		mg/kg	SW846 6010C
Zinc		36.8	3.6		mg/kg	SW846 6010C
Specific Conductivity		4640	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent ^a		12.5	2.2		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2		115			mv	ASTM D1498-76M
pH		11.46			su	SW846 9045D
D40712-2A CUT 2 POST SOLIDIFICATION						
Calcium		22.0	2.0		mg/l	SW846 6010C
Sodium		965	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio ^b		56.6			ratio	USDA HANDBOOK 60
D40712-3 CUT 3 POST SOLIDIFICATION						
Benzene		0.939	0.069	0.034	mg/kg	SW846 8260B
Toluene		3.78	0.14	0.069	mg/kg	SW846 8260B
Ethylbenzene		0.779	0.14	0.026	mg/kg	SW846 8260B
Xylene (total)		4.24	0.28	0.14	mg/kg	SW846 8260B
Chrysene		0.0435	0.0099	0.0051	mg/kg	SW846 8270C BY SIM
Fluorene		0.0783	0.0099	0.0051	mg/kg	SW846 8270C BY SIM
Naphthalene		0.522	0.014	0.012	mg/kg	SW846 8270C BY SIM
Pyrene		0.0457	0.0099	0.0051	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)		11.7 J	14	6.9	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		545	16	10	mg/kg	SW846-8015B
Arsenic		13.9	0.12		mg/kg	SW846 6020A
Barium		5840	6.1		mg/kg	SW846 6010C
Chromium		14.9	1.2		mg/kg	SW846 6010C
Copper		30.1	1.2		mg/kg	SW846 6010C
Lead		18.0	6.1		mg/kg	SW846 6010C
Nickel		14.5	3.6		mg/kg	SW846 6010C
Zinc		43.5	3.6		mg/kg	SW846 6010C
Specific Conductivity		5090	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent ^a		14.9	2.2		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2		121			mv	ASTM D1498-76M
pH		11.40			su	SW846 9045D
D40712-3A CUT 3 POST SOLIDIFICATION						
Calcium		8.91	2.0		mg/l	SW846 6010C
Sodium		1090	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio ^b		97.4			ratio	USDA HANDBOOK 60

Summary of Hits

Job Number: D40712
Account: XTO Energy
Project: PCU 296-6A
Collected: 11/06/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						

- (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

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Report of Analysis

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Client Sample ID:	CUT 1 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-1	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.4
Method:	SW846 8260B		
Project:	PCU 296-6A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V24602.D	1	11/14/12	BD	n/a	n/a	V5V1501
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.07 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.805	0.069	0.035	mg/kg	
108-88-3	Toluene	2.92	0.14	0.069	mg/kg	
100-41-4	Ethylbenzene	0.661	0.14	0.026	mg/kg	
1330-20-7	Xylene (total)	3.22	0.28	0.14	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	103%		64-130%
460-00-4	4-Bromofluorobenzene	101%		62-131%
17060-07-0	1,2-Dichloroethane-D4	96%		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

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Report of Analysis

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Client Sample ID:	CUT 1 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-1	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.4
Method:	SW846 8270C BY SIM SW846 3546		
Project:	PCU 296-6A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G12009.D	1	11/09/12	DC	11/09/12	OP6941	E3G567
Run #2							

Run #	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	0.0052	mg/kg	
120-12-7	Anthracene	ND	0.010	0.0052	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.010	0.0052	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.010	0.0052	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.010	0.0052	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.010	0.0052	mg/kg	
218-01-9	Chrysene	0.0377	0.010	0.0052	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.010	0.0052	mg/kg	
206-44-0	Fluoranthene	ND	0.010	0.0052	mg/kg	
86-73-7	Fluorene	0.0710	0.010	0.0052	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.010	0.0052	mg/kg	
91-20-3	Naphthalene	0.437	0.014	0.012	mg/kg	
129-00-0	Pyrene	0.0332	0.010	0.0052	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	76%		10-159%
321-60-8	2-Fluorobiphenyl	77%		19-131%
1718-51-0	Terphenyl-d14	82%		18-150%

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

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Report of Analysis

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Client Sample ID:	CUT 1 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-1	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.4
Method:	SW846 8015B		
Project:	PCU 296-6A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB18386.D	1	11/08/12	SK	n/a	n/a	GGB1004
Run #2							

Run #	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)	17.7	14	6.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	94%		60-140%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	CUT 1 POST SOLIDIFICATION					Date Sampled:	11/06/12
Lab Sample ID:	D40712-1					Date Received:	11/08/12
Matrix:	SO - Soil					Percent Solids:	83.4
Method:	SW846-8015B SW846 3546						
Project:	PCU 296-6A						

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD19397.D	1	11/12/12	AV	11/09/12	OP6942	GFD977
Run #2							

Run #	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)	536	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	87%		35-130%		

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

Report of Analysis

Client Sample ID: CUT 1 POST SOLIDIFICATION

Lab Sample ID: D40712-1

Matrix: SO - Soil

Project: PCU 296-6A

Date Sampled: 11/06/12

Date Received: 11/08/12

Percent Solids: 83.4

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	9.6	0.12	mg/kg	5	11/09/12	11/14/12 JB	SW846 6020A ⁴	SW846 3050B ⁶
Barium	8010	5.8	mg/kg	5	11/09/12	11/13/12 JM	SW846 6010C ³	SW846 3050B ⁵
Cadmium	< 1.2	1.2	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Chromium	18.5	1.2	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Copper	28.0	1.2	mg/kg	1	11/09/12	11/13/12 JM	SW846 6010C ³	SW846 3050B ⁵
Lead	14.0	5.8	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Mercury	< 0.092	0.092	mg/kg	1	11/13/12	11/13/12 JM	SW846 7471B ²	SW846 7471B ⁷
Nickel	12.5	3.5	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Selenium	< 5.8	5.8	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Silver	< 3.5	3.5	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Zinc	47.2	3.5	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵

(1) Instrument QC Batch: MA2986

(2) Instrument QC Batch: MA2991

(3) Instrument QC Batch: MA2995

(4) Instrument QC Batch: MA2996

(5) Prep QC Batch: MP8856

(6) Prep QC Batch: MP8857

(7) Prep QC Batch: MP8871

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 1 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-1	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.4
Project:	PCU 296-6A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	3630	1.0	umhos/cm	1	11/09/12	JD	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	11/12/12	KB	SW846 3060A/7196A
Chromium, Trivalent ^a	18.5	2.2	mg/kg	1	11/12/12	KB	SW846 3060/7196A M
Redox Potential Vs H2	123		mv	1	11/08/12	JD	ASTM D1498-76M
Solids, Percent	83.4		%	1	11/09/12	SWT	SM19 2540B M
pH	12.14		su	1	11/08/12 15:15	JK	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT 1 POST SOLIDIFICATION
Lab Sample ID: D40712-1A
Matrix: SO - Soil
Project: PCU 296-6A

Date Sampled: 11/06/12
Date Received: 11/08/12
Percent Solids: 83.4

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	91.6	2.0	mg/l	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	< 1.0	1.0	mg/l	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3010A/M ²
Sodium	624	2.0	mg/l	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3010A/M ²

- (1) Instrument QC Batch: MA2986
(2) Prep QC Batch: MP8858

RL = Reporting Limit

4.2
4

Report of Analysis

Client Sample ID:	CUT 1 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-1A	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.4
Project:	PCU 296-6A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	17.9		ratio	1	11/09/12 15:47	JM	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

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Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-2	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.1
Method:	SW846 8260B		
Project:	PCU 296-6A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V24603.D	1	11/14/12	BD	n/a	n/a	V5V1501
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.08 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.35	0.069	0.035	mg/kg	
108-88-3	Toluene	2.79	0.14	0.069	mg/kg	
100-41-4	Ethylbenzene	0.496	0.14	0.026	mg/kg	
1330-20-7	Xylene (total)	2.34	0.28	0.14	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	102%		64-130%
460-00-4	4-Bromofluorobenzene	102%		62-131%
17060-07-0	1,2-Dichloroethane-D4	98%		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

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Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-2	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.1
Method:	SW846 8270C BY SIM SW846 3546		
Project:	PCU 296-6A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G12010.D	1	11/09/12	DC	11/09/12	OP6941	E3G567
Run #2							

Run #	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	0.0052	mg/kg	
120-12-7	Anthracene	ND	0.010	0.0052	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.010	0.0052	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.010	0.0052	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.010	0.0052	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.010	0.0052	mg/kg	
218-01-9	Chrysene	0.0616	0.010	0.0052	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.010	0.0052	mg/kg	
206-44-0	Fluoranthene	0.0223	0.010	0.0052	mg/kg	
86-73-7	Fluorene	0.113	0.010	0.0052	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.010	0.0052	mg/kg	
91-20-3	Naphthalene	0.659	0.014	0.012	mg/kg	
129-00-0	Pyrene	0.0432	0.010	0.0052	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	65%		10-159%
321-60-8	2-Fluorobiphenyl	71%		19-131%
1718-51-0	Terphenyl-d14	84%		18-150%

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

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Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-2	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.1
Method:	SW846 8015B		
Project:	PCU 296-6A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB18387.D	1	11/08/12	SK	n/a	n/a	GGB1004
Run #2							

Run #	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)	9.39	14	6.9	mg/kg	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	94%		60-140%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	CUT 2 POST SOLIDIFICATION				Date Sampled:	11/06/12
Lab Sample ID:	D40712-2				Date Received:	11/08/12
Matrix:	SO - Soil				Percent Solids:	83.1
Method:	SW846-8015B SW846 3546					
Project:	PCU 296-6A					

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD19398.D	1	11/12/12	AV	11/09/12	OP6942	GFD977
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	350	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	80%		35-130%		

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

Report of Analysis

Client Sample ID: CUT 2 POST SOLIDIFICATION

Lab Sample ID: D40712-2

Matrix: SO - Soil

Project: PCU 296-6A

Date Sampled: 11/06/12

Date Received: 11/08/12

Percent Solids: 83.1

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	12.6	0.12	mg/kg	5	11/09/12	11/14/12 JB	SW846 6020A ⁴	SW846 3050B ⁶
Barium	8180	6.0	mg/kg	5	11/09/12	11/13/12 JM	SW846 6010C ³	SW846 3050B ⁵
Cadmium	< 1.2	1.2	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Chromium	12.5	1.2	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Copper	29.5	1.2	mg/kg	1	11/09/12	11/13/12 JM	SW846 6010C ³	SW846 3050B ⁵
Lead	19.5	6.0	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Mercury	< 0.094	0.094	mg/kg	1	11/13/12	11/13/12 JM	SW846 7471B ²	SW846 7471B ⁷
Nickel	12.9	3.6	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Selenium	< 6.0	6.0	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Silver	< 3.6	3.6	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Zinc	36.8	3.6	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵

(1) Instrument QC Batch: MA2986

(2) Instrument QC Batch: MA2991

(3) Instrument QC Batch: MA2995

(4) Instrument QC Batch: MA2996

(5) Prep QC Batch: MP8856

(6) Prep QC Batch: MP8857

(7) Prep QC Batch: MP8871

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-2	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.1
Project:	PCU 296-6A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	4640	1.0	umhos/cm	1	11/09/12	JD	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	11/12/12	KB	SW846 3060A/7196A
Chromium, Trivalent ^a	12.5	2.2	mg/kg	1	11/12/12	KB	SW846 3060/7196A M
Redox Potential Vs H2	115		mv	1	11/08/12	JD	ASTM D1498-76M
Solids, Percent	83.1		%	1	11/09/12	SWT	SM19 2540B M
pH	11.46		su	1	11/08/12 15:15	JK	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-2A	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.1
Project:	PCU 296-6A		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	22.0	2.0	mg/l	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	< 1.0	1.0	mg/l	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3010A/M ²
Sodium	965	2.0	mg/l	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3010A/M ²

- (1) Instrument QC Batch: MA2986
(2) Prep QC Batch: MP8858

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-2A	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	83.1
Project:	PCU 296-6A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	56.6		ratio	1	11/09/12 15:54	JM	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

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Client Sample ID:	CUT 3 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-3	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	84.0
Method:	SW846 8260B		
Project:	PCU 296-6A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V24604.D	1	11/14/12	BD	n/a	n/a	V5V1501
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.939	0.069	0.034	mg/kg	
108-88-3	Toluene	3.78	0.14	0.069	mg/kg	
100-41-4	Ethylbenzene	0.779	0.14	0.026	mg/kg	
1330-20-7	Xylene (total)	4.24	0.28	0.14	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	103%		64-130%
460-00-4	4-Bromofluorobenzene	104%		62-131%
17060-07-0	1,2-Dichloroethane-D4	95%		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

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Client Sample ID:	CUT 3 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-3	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	84.0
Method:	SW846 8270C BY SIM SW846 3546		
Project:	PCU 296-6A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G12011.D	1	11/09/12	DC	11/09/12	OP6941	E3G567
Run #2							

Run #	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	0.0099	0.0051	mg/kg	
120-12-7	Anthracene	ND	0.0099	0.0051	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0099	0.0051	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0099	0.0051	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0099	0.0051	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0099	0.0051	mg/kg	
218-01-9	Chrysene	0.0435	0.0099	0.0051	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0099	0.0051	mg/kg	
206-44-0	Fluoranthene	ND	0.0099	0.0051	mg/kg	
86-73-7	Fluorene	0.0783	0.0099	0.0051	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0099	0.0051	mg/kg	
91-20-3	Naphthalene	0.522	0.014	0.012	mg/kg	
129-00-0	Pyrene	0.0457	0.0099	0.0051	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	73%		10-159%
321-60-8	2-Fluorobiphenyl	79%		19-131%
1718-51-0	Terphenyl-d14	81%		18-150%

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

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Report of Analysis

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Client Sample ID:	CUT 3 POST SOLIDIFICATION	Date Sampled:	11/06/12
Lab Sample ID:	D40712-3	Date Received:	11/08/12
Matrix:	SO - Soil	Percent Solids:	84.0
Method:	SW846 8015B		
Project:	PCU 296-6A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB18388.D	1	11/08/12	SK	n/a	n/a	GGB1004
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	11.7	14	6.9	mg/kg	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	91%		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

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Client Sample ID:	CUT 3 POST SOLIDIFICATION					Date Sampled:	11/06/12
Lab Sample ID:	D40712-3					Date Received:	11/08/12
Matrix:	SO - Soil					Percent Solids:	84.0
Method:	SW846-8015B SW846 3546						
Project:	PCU 296-6A						

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD19399.D	1	11/12/12	AV	11/09/12	OP6942	GFD977
Run #2							

Run #	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)	545	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	100%		35-130%		

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

Report of Analysis

Client Sample ID: CUT 3 POST SOLIDIFICATION

Lab Sample ID: D40712-3

Matrix: SO - Soil

Project: PCU 296-6A

Date Sampled: 11/06/12

Date Received: 11/08/12

Percent Solids: 84.0

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	13.9	0.12	mg/kg	5	11/09/12	11/14/12 JB	SW846 6020A ⁴	SW846 3050B ⁶
Barium	5840	6.1	mg/kg	5	11/09/12	11/13/12 JM	SW846 6010C ³	SW846 3050B ⁵
Cadmium	< 1.2	1.2	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Chromium	14.9	1.2	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Copper	30.1	1.2	mg/kg	1	11/09/12	11/13/12 JM	SW846 6010C ³	SW846 3050B ⁵
Lead	18.0	6.1	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Mercury	< 0.10	0.10	mg/kg	1	11/13/12	11/13/12 JM	SW846 7471B ²	SW846 7471B ⁷
Nickel	14.5	3.6	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Selenium	< 6.1	6.1	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Silver	< 3.6	3.6	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵
Zinc	43.5	3.6	mg/kg	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3050B ⁵

(1) Instrument QC Batch: MA2986

(2) Instrument QC Batch: MA2991

(3) Instrument QC Batch: MA2995

(4) Instrument QC Batch: MA2996

(5) Prep QC Batch: MP8856

(6) Prep QC Batch: MP8857

(7) Prep QC Batch: MP8871

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT 3 POST SOLIDIFICATION

Lab Sample ID: D40712-3

Matrix: SO - Soil

Project: PCU 296-6A

Date Sampled: 11/06/12

Date Received: 11/08/12

Percent Solids: 84.0

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	5090	1.0	umhos/cm	1	11/09/12	JD	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	11/12/12	KB	SW846 3060A/7196A
Chromium, Trivalent ^a	14.9	2.2	mg/kg	1	11/12/12	KB	SW846 3060/7196A M
Redox Potential Vs H2	121		mv	1	11/08/12	JD	ASTM D1498-76M
Solids, Percent	84		%	1	11/09/12	SWT	SM19 2540B M
pH	11.40		su	1	11/08/12 15:15	JK	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT 3 POST SOLIDIFICATION

Lab Sample ID: D40712-3A

Matrix: SO - Soil

Project: PCU 296-6A

Date Sampled: 11/06/12

Date Received: 11/08/12

Percent Solids: 84.0

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	8.91	2.0	mg/l	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	< 1.0	1.0	mg/l	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3010A/M ²
Sodium	1090	2.0	mg/l	1	11/09/12	11/09/12 JM	SW846 6010C ¹	SW846 3010A/M ²

(1) Instrument QC Batch: MA2986

(2) Prep QC Batch: MP8858

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT 3 POST SOLIDIFICATION
Lab Sample ID: D40712-3A
Matrix: SO - Soil
Project: PCU 296-6A

Date Sampled: 11/06/12
Date Received: 11/08/12
Percent Solids: 84.0

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	97.4		ratio	1	11/09/12 16:00	JM	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: D40712

Client: KRW CONSULTING

Immediate Client Services Action Required: No

Date / Time Received: 11/8/2012 12:30:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XTO PCU 296-6A

Airbill #'s: HDCO

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: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1501-MB	5V24597.D	1	11/14/12	BD	n/a	n/a	V5V1501

The QC reported here applies to the following samples:

Method: SW846 8260B

D40712-1, D40712-2, D40712-3

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	103% 64-130%
460-00-4	4-Bromofluorobenzene	92% 62-131%
17060-07-0	1,2-Dichloroethane-D4	96% 70-130%

Blank Spike Summary

Page 1 of 1

Job Number: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1501-BS	5V24598.D	1	11/14/12	BD	n/a	n/a	V5V1501

The QC reported here applies to the following samples:

Method: SW846 8260B

D40712-1, D40712-2, D40712-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	43.6	87	70-130
100-41-4	Ethylbenzene	50	45.0	90	70-130
108-88-3	Toluene	50	44.2	88	70-130
1330-20-7	Xylene (total)	150	138	92	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	103%	64-130%
460-00-4	4-Bromofluorobenzene	97%	62-131%
17060-07-0	1,2-Dichloroethane-D4	100%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D40713-1MS	5V24600.D	1	11/14/12	BD	n/a	n/a	V5V1501
D40713-1MSD	5V24601.D	1	11/14/12	BD	n/a	n/a	V5V1501
D40713-1	5V24599.D	1	11/14/12	BD	n/a	n/a	V5V1501

The QC reported here applies to the following samples:

Method: SW846 8260B

D40712-1, D40712-2, D40712-3

CAS No.	Compound	D40713-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3170	2820	89	2670	84	5	64-139/30
100-41-4	Ethylbenzene	ND		3170	2950	93	2740	86	7	68-136/30
108-88-3	Toluene	ND		3170	2870	91	2710	86	6	60-130/30
1330-20-7	Xylene (total)	ND		9510	9070	95	8450	89	7	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D40713-1	Limits
2037-26-5	Toluene-D8	103%	102%	101%	64-130%
460-00-4	4-Bromofluorobenzene	105%	104%	99%	62-131%
17060-07-0	1,2-Dichloroethane-D4	97%	97%	99%	70-130%

* = Outside of Control Limits.

GC/MS Volatiles

Raw Data

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111312.S\
 Data File : 5V24602.D
 Acq On : 14 Nov 2012 5:54 am
 Operator : BRETD
 Sample : D40712-1
 Misc : MS4956,V5V1501,5.074,,100,5,1
 ALS Vial : 31 Sample Multiplier: 1

Quant Time: Nov 15 08:38:35 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
 Quant Title : 8260
 QLast Update : Wed Nov 14 09:56:27 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.624	168	441203	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.424	114	544446	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.072	117	503848	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.036	152	361920	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.024	102	36198	48.20	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	96.40%
61) Toluene-d8	13.816	98	615997	51.61	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	103.22%
69) 4-Bromofluorobenzene	16.020	95	260387	50.61	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	101.22%

Target Compounds

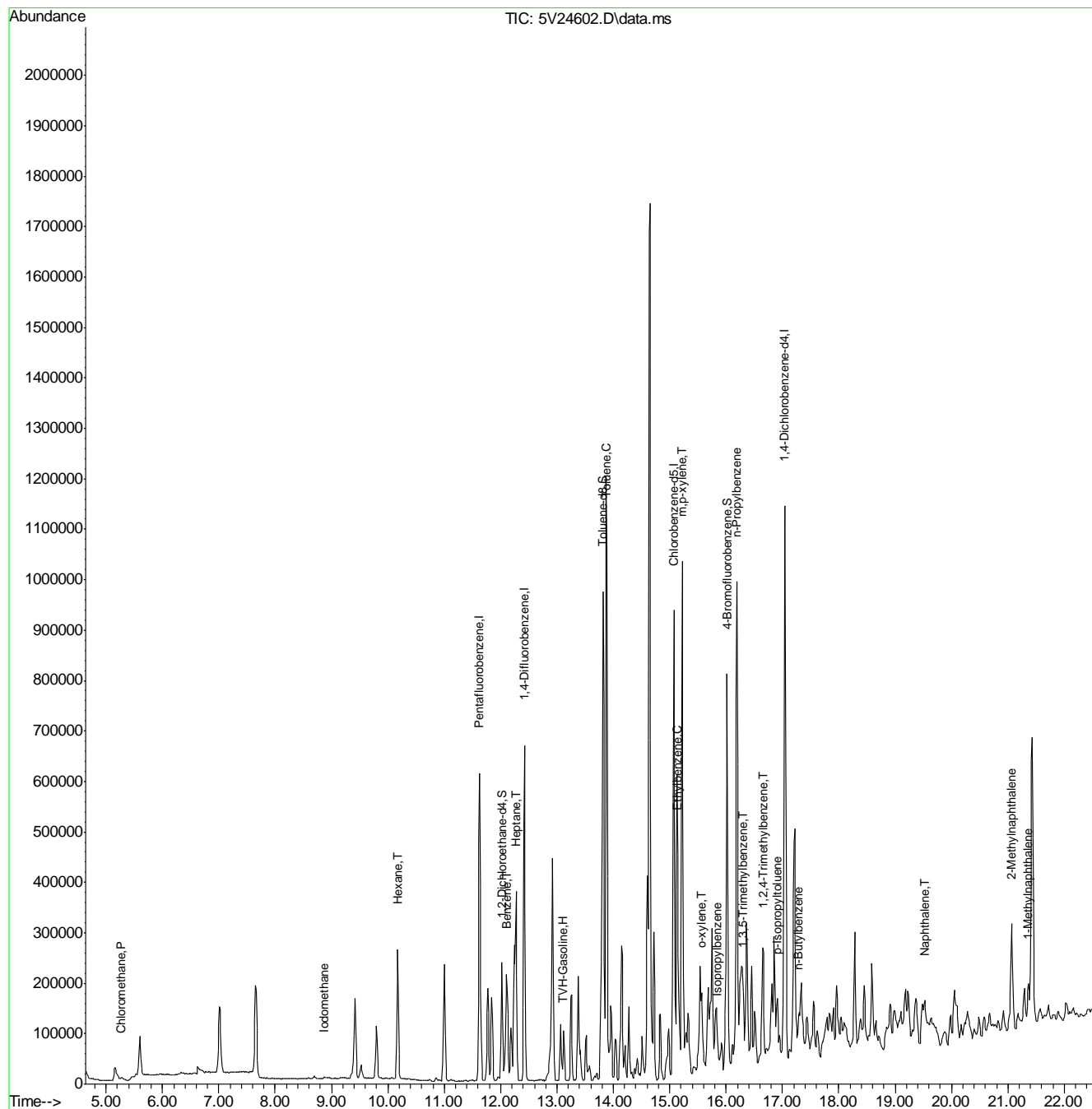
						Qvalue
1) TVH-Gasoline	13.102	TIC	26879078m	644.16	ug/l	
4) Chloromethane	5.265	50	2578	0.52	ug/l	83
12) Iodomethane	8.873	142	6232	1.50	ug/l	# 83
41) Hexane	10.174	57	125465	25.42	ug/l	100
43) Heptane	12.275	43	143816	25.35	ug/l	88
50) Benzene	12.104	78	168519	11.66	ug/l	100
62) Toluene	13.885	92	393447	42.27	ug/l	96
66) Ethylbenzene	15.141	91	170145	9.58	ug/l	98
68) Isopropylbenzene	15.849	105	12904	0.71	ug/l	99
72) m,p-xylene	15.221	106	297867	41.76	ug/l	97
73) o-xylene	15.563	106	34960	4.94	ug/l	100
77) n-Propylbenzene	16.191	91	59059	2.73	ug/l	99
80) 1,3,5-Trimethylbenzene	16.305	105	21357m	1.30	ug/l	
82) 1,2,4-Trimethylbenzene	16.659	105	103565	6.00	ug/l	91
86) p-Isopropyltoluene	16.910	119	65117	3.27	ug/l	99
88) n-Butylbenzene	17.287	91	30178m	1.63	ug/l	
91) Naphthalene	19.525	128	82010	4.57	ug/l	100
94) 2-Methylnaphthalene	21.066	142	101623	14.22	ug/l	94
95) 1-Methylnaphthalene	21.363	142	53607	6.68	ug/l	96

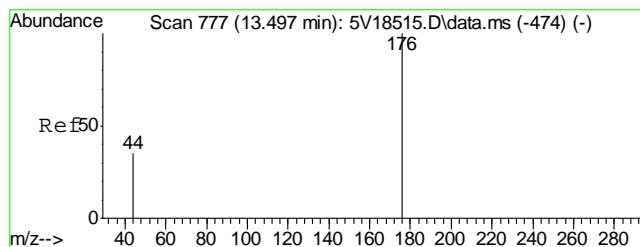
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111312.S\
Data File : 5V24602.D
Acq On : 14 Nov 2012 5:54 am
Operator : BRETD
Sample : D40712-1
Misc : MS4956,V5V1501,5.074,,100,5,1
ALS Vial : 31 Sample Multiplier: 1

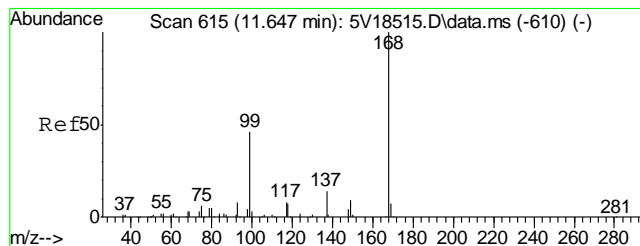
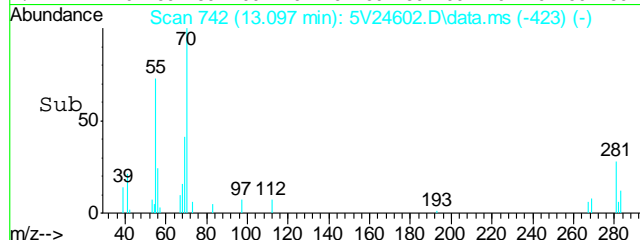
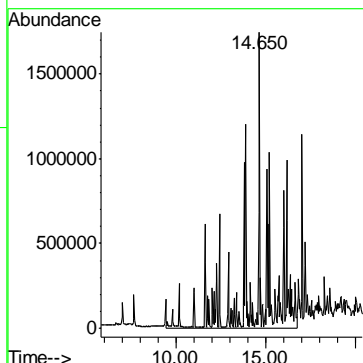
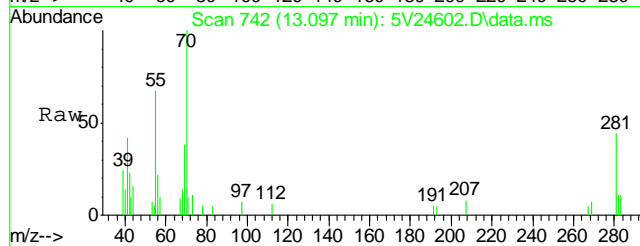
Quant Time: Nov 15 08:38:35 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:56:27 2012
Response via : Initial Calibration





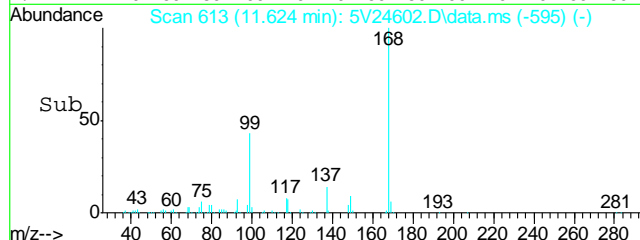
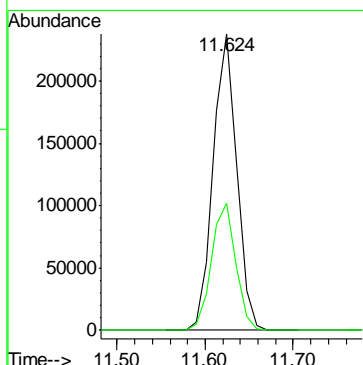
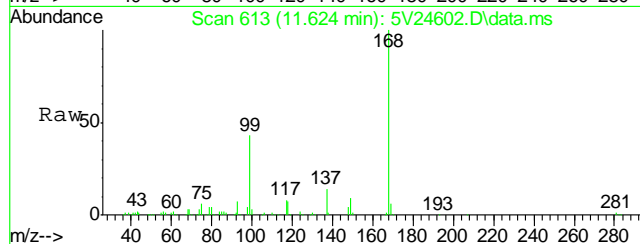
#1
TVH-Gasoline
Concen: 644.16 ug/l m
RT: 13.102 min Scan# 742
Delta R.T. 0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

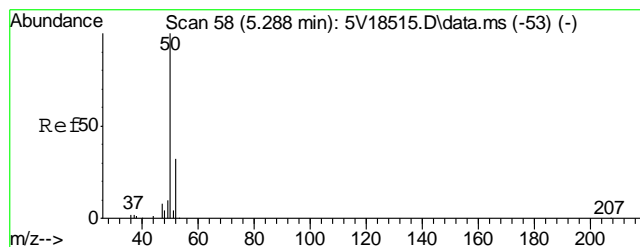
Tgt Ion:TIC Resp:26879078



#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.624 min Scan# 613
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

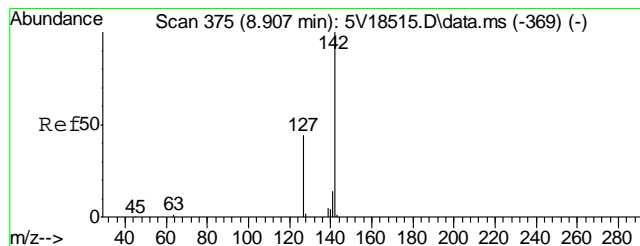
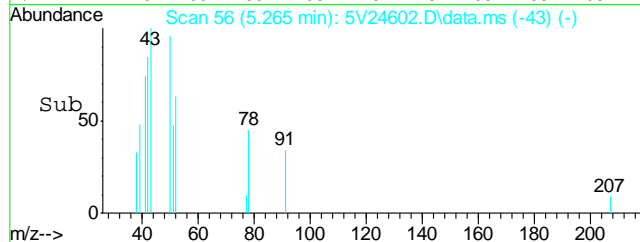
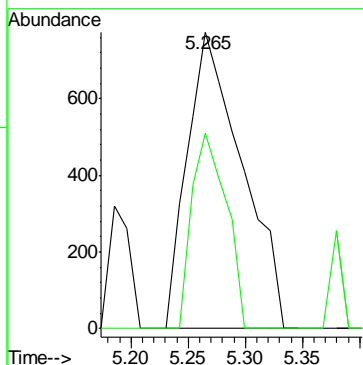
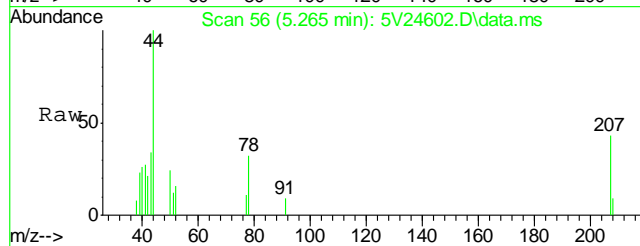
Tgt Ion:168 Resp: 441203
Ion Ratio Lower Upper
168 100
99 43.9 37.4 56.2





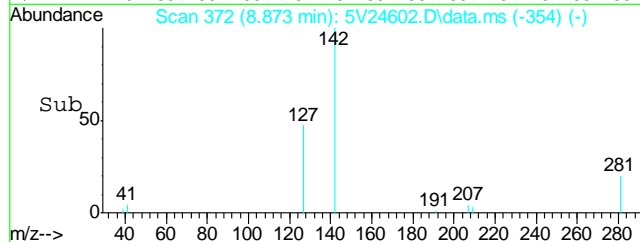
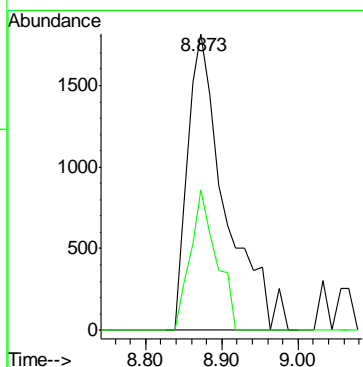
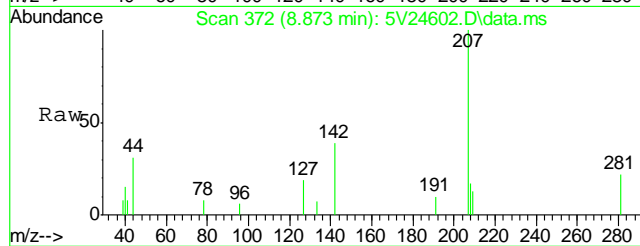
#4
Chloromethane
Concen: 0.52 ug/l
RT: 5.265 min Scan# 56
Delta R.T. 0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

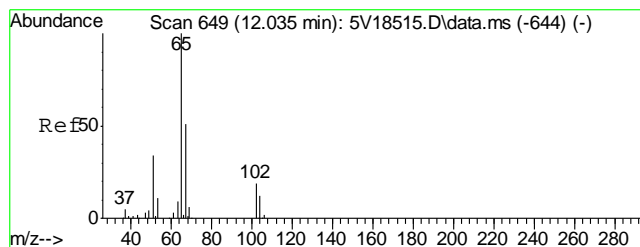
Tgt Ion: 50 Resp: 2578
Ion Ratio Lower Upper
50 100
52 41.6 12.1 52.1



#12
Iodomethane
Concen: 1.50 ug/l
RT: 8.873 min Scan# 372
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

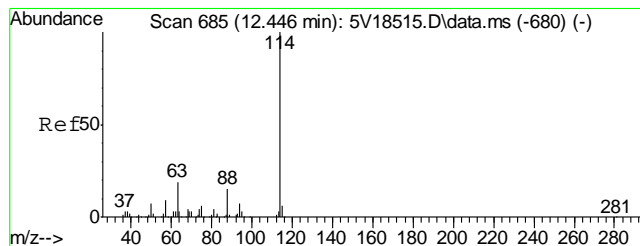
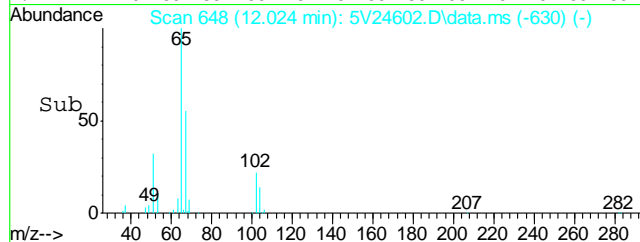
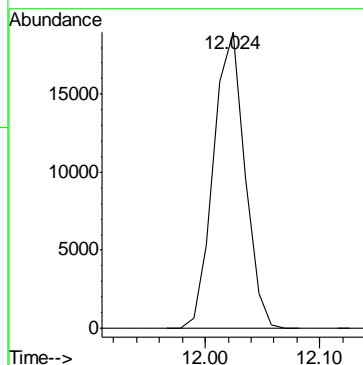
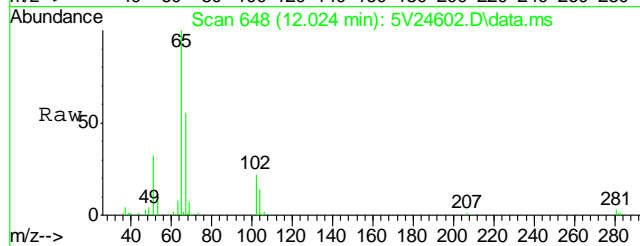
Tgt Ion: 142 Resp: 6232
Ion Ratio Lower Upper
142 100
127 32.9 35.4 53.0#





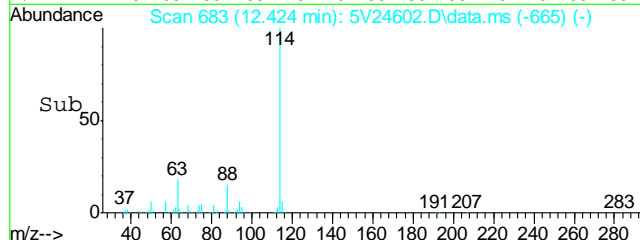
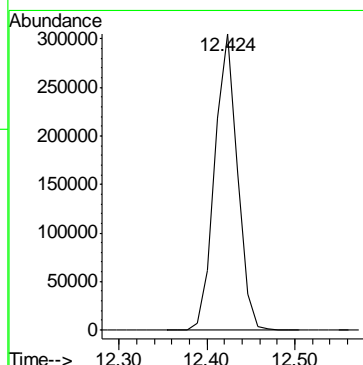
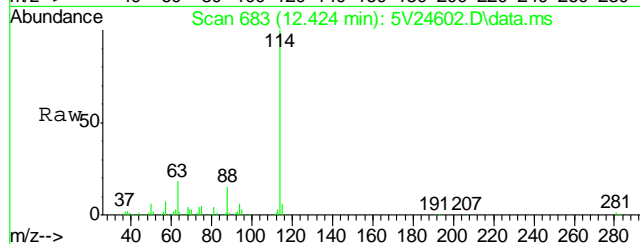
#33
1,2-Dichloroethane-d4
Concen: 48.20 ug/l
RT: 12.024 min Scan# 648
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

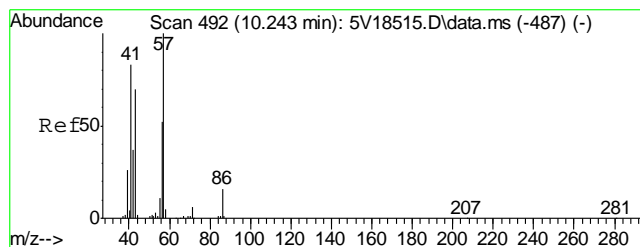
Tgt Ion:102 Resp: 36198



#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.424 min Scan# 683
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

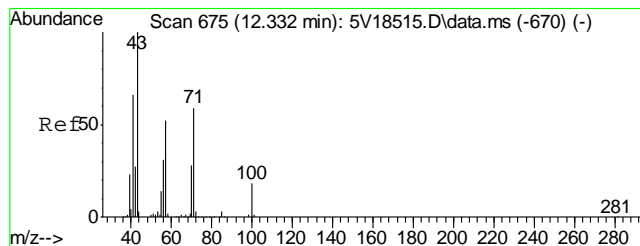
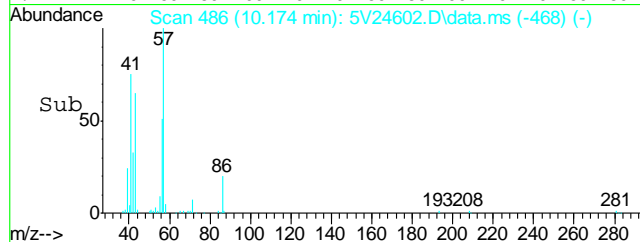
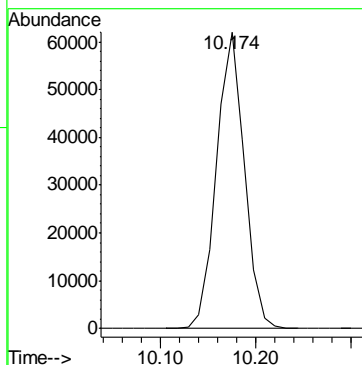
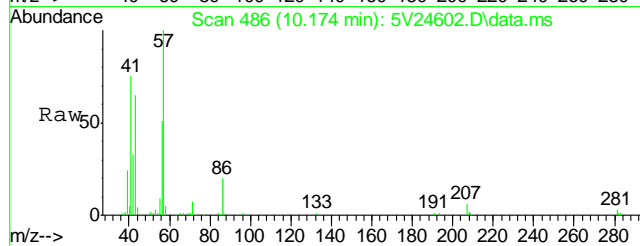
Tgt Ion:114 Resp: 544446





#41
Hexane
Concen: 25.42 ug/l
RT: 10.174 min Scan# 486
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

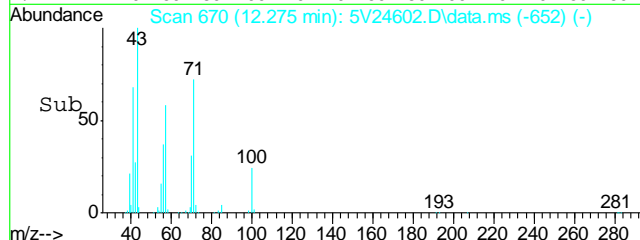
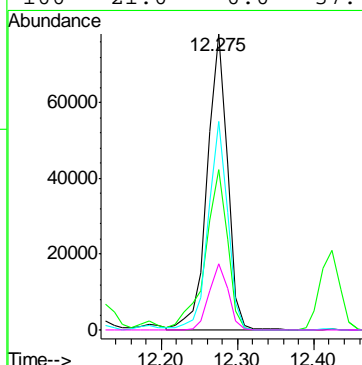
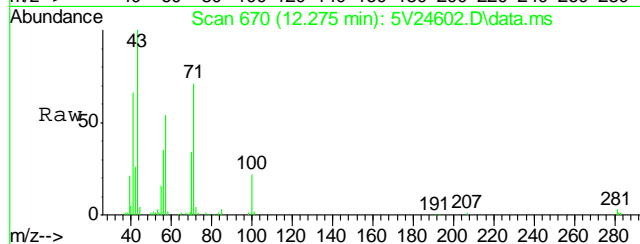
Tgt Ion: 57 Resp: 125465

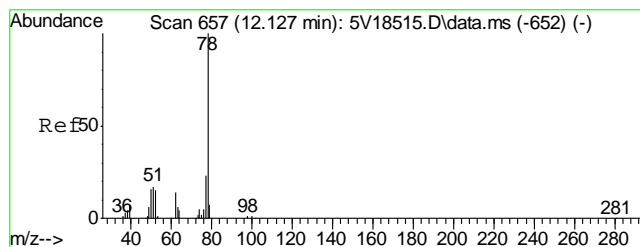


#43
Heptane
Concen: 25.35 ug/l
RT: 12.275 min Scan# 670
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

Tgt Ion: 43 Resp: 143816

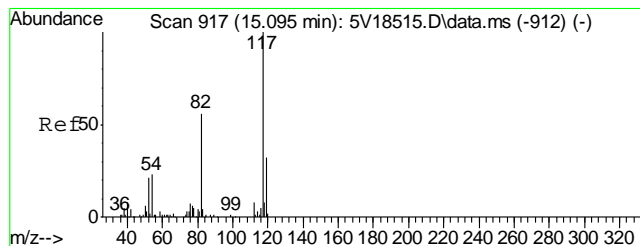
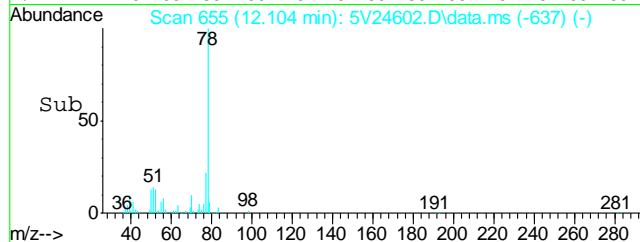
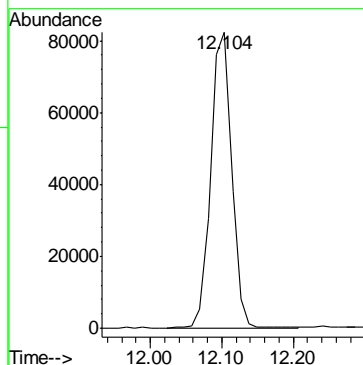
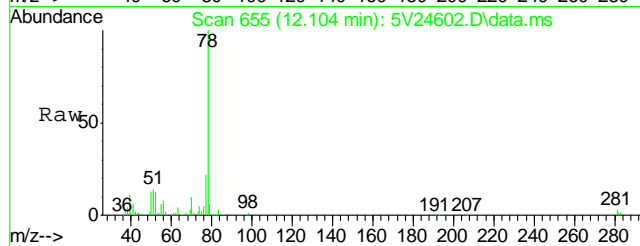
Ion	Ratio	Lower	Upper
43	100		
57	59.6	30.6	70.6
71	67.5	38.9	78.9
100	21.0	0.0	37.4





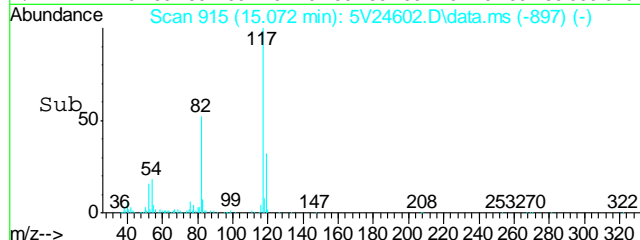
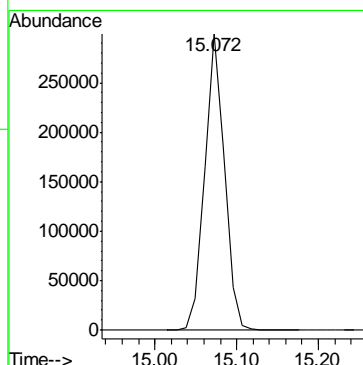
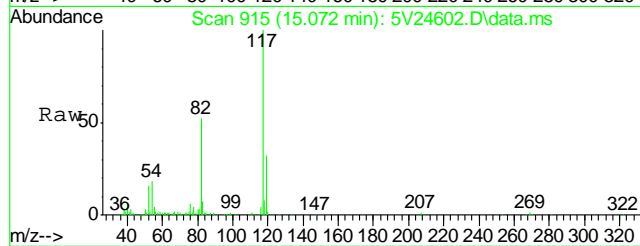
#50
Benzene
Concen: 11.66 ug/l
RT: 12.104 min Scan# 655
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

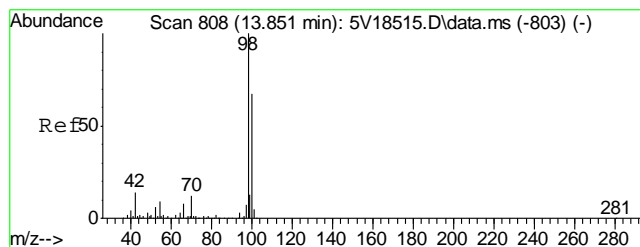
Tgt Ion: 78 Resp: 168519



#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.072 min Scan# 915
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

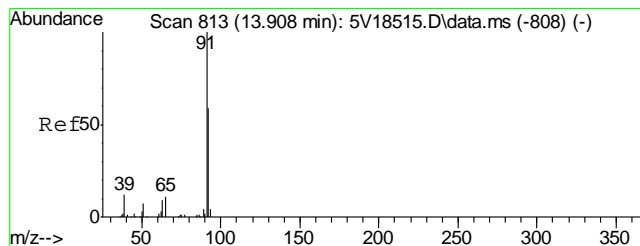
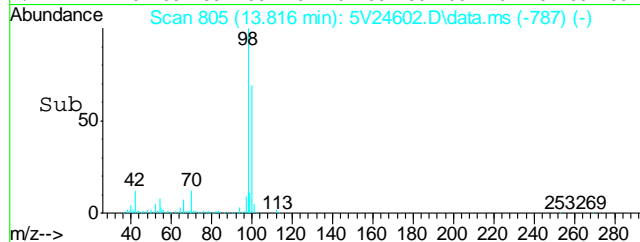
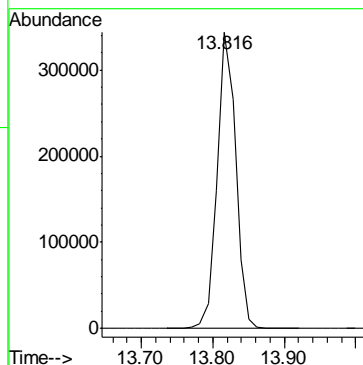
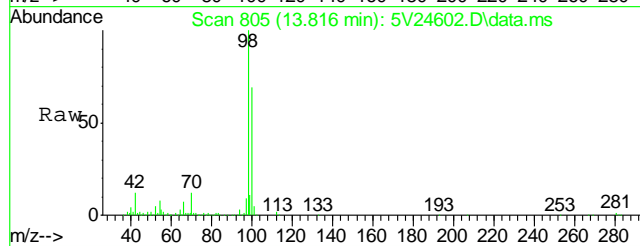
Tgt Ion: 117 Resp: 503848





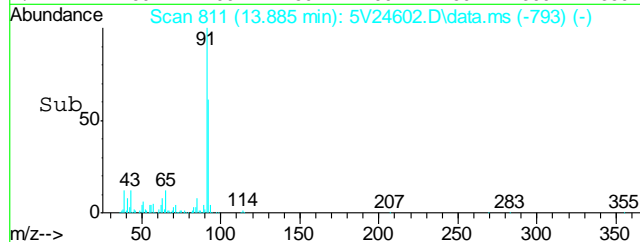
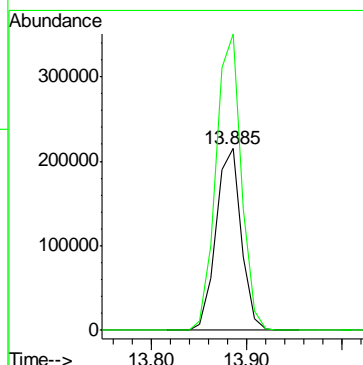
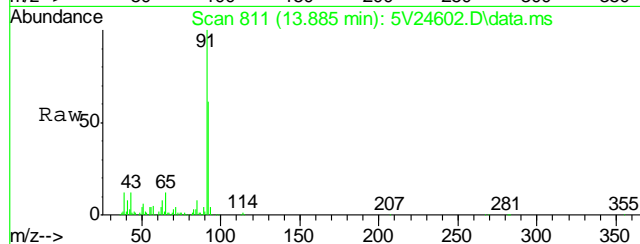
#61
Toluene-d8
Concen: 51.61 ug/l
RT: 13.816 min Scan# 805
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

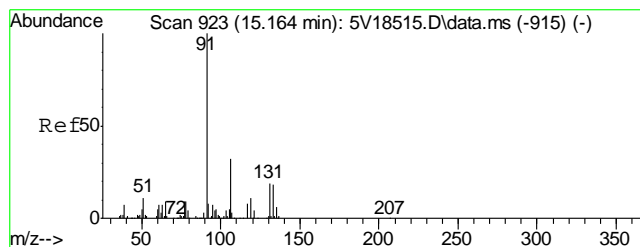
Tgt Ion: 98 Resp: 615997



#62
Toluene
Concen: 42.27 ug/l
RT: 13.885 min Scan# 811
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

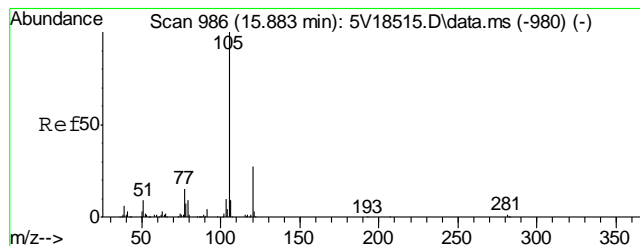
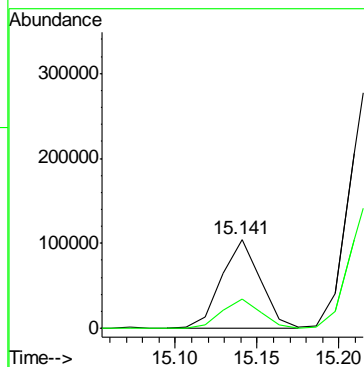
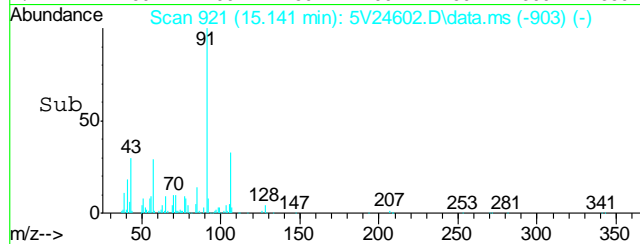
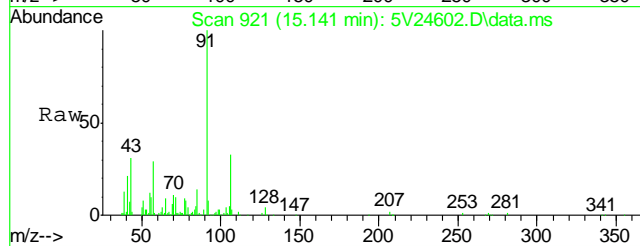
Tgt Ion: 92 Resp: 393447
Ion Ratio Lower Upper
92 100
91 163.8 149.8 189.8





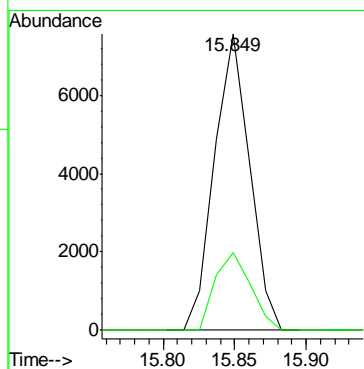
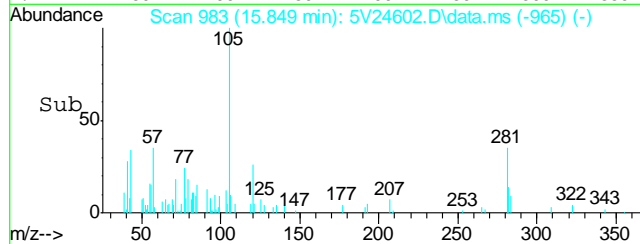
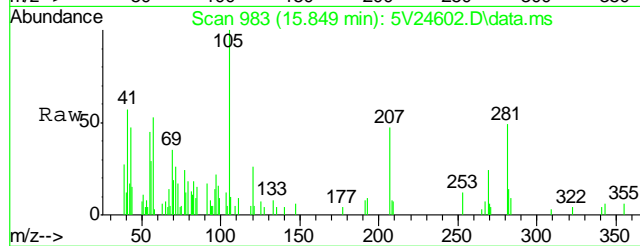
#66
Ethylbenzene
Concen: 9.58 ug/l
RT: 15.141 min Scan# 921
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

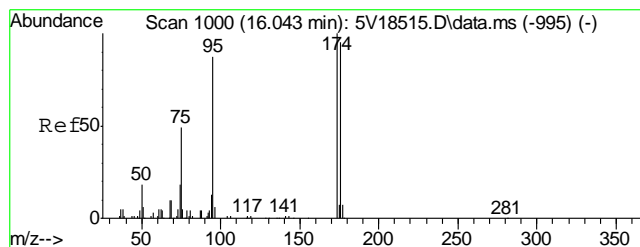
Tgt Ion	Ratio	Lower	Upper
91	100		
106	32.7	11.7	51.7



#68
Isopropylbenzene
Concen: 0.71 ug/l
RT: 15.849 min Scan# 983
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

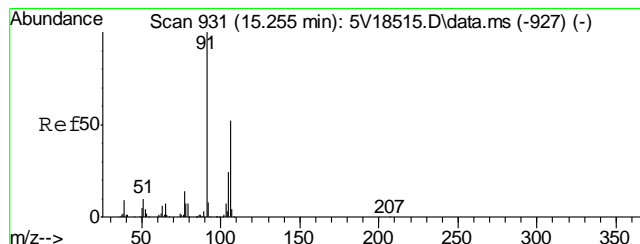
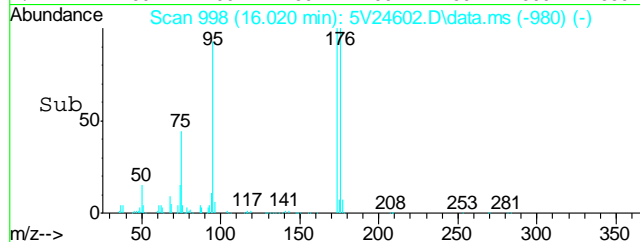
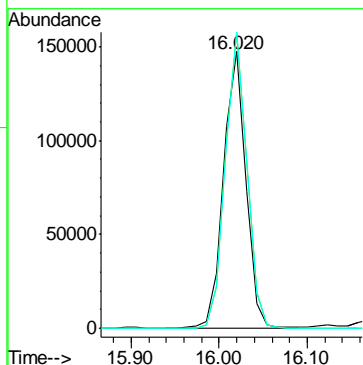
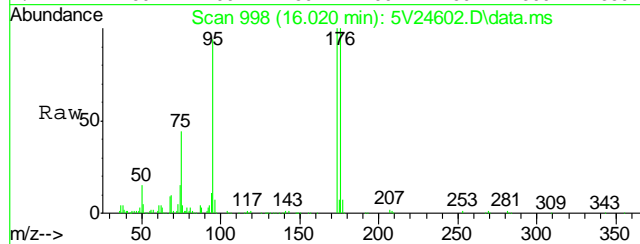
Tgt Ion	Ratio	Lower	Upper
105	100		
120	26.5	21.0	31.4





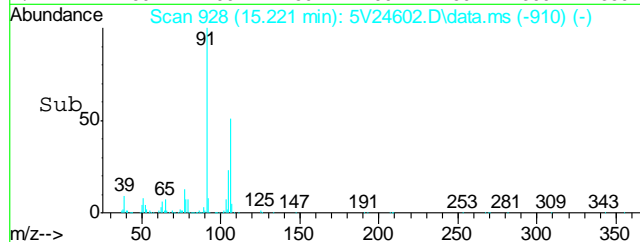
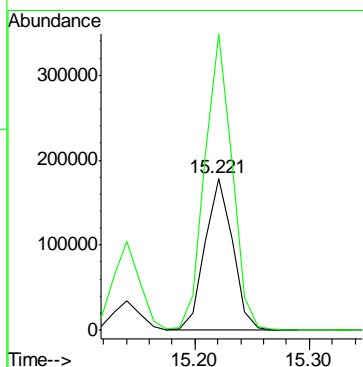
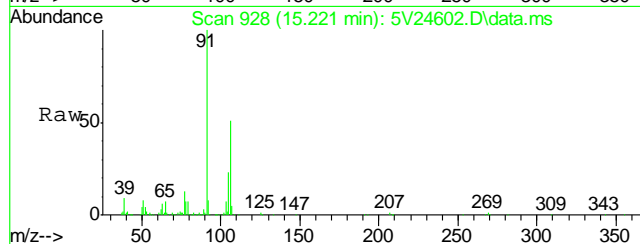
#69
4-Bromofluorobenzene
Concen: 50.61 ug/l
RT: 16.020 min Scan# 998
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

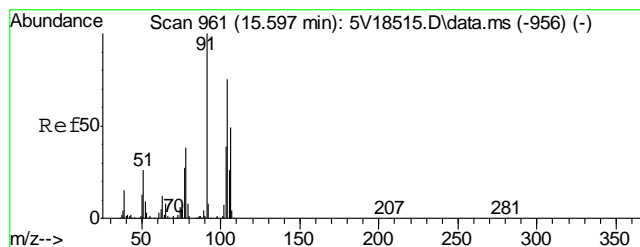
Tgt Ion:	95	Resp:	260387
Ion Ratio	Lower	Upper	
95	100		
174	103.4	77.1	117.1
176	103.0	73.4	113.4



#72
m,p-xylene
Concen: 41.76 ug/l
RT: 15.221 min Scan# 928
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

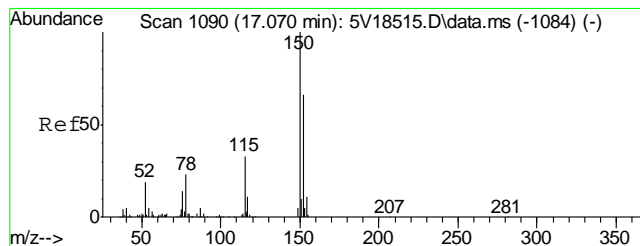
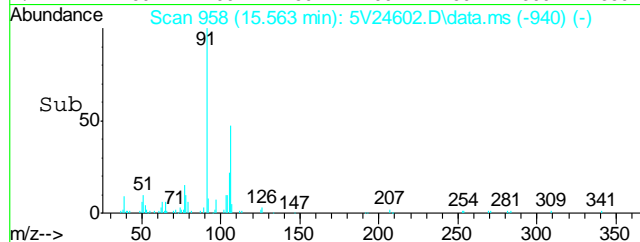
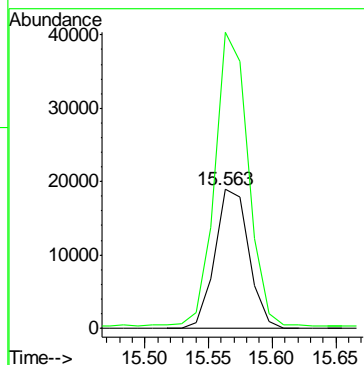
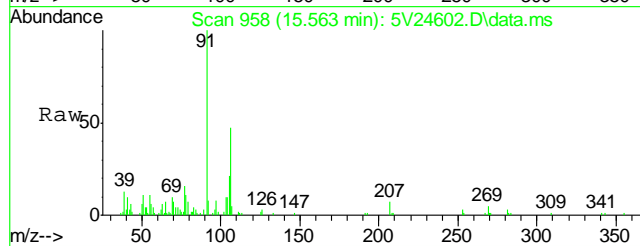
Tgt Ion:	106	Resp:	297867
Ion Ratio	Lower	Upper	
106	100		
91	192.7	177.1	217.1





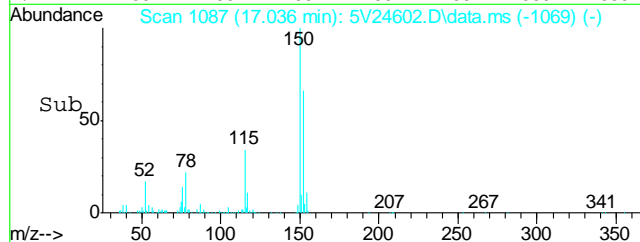
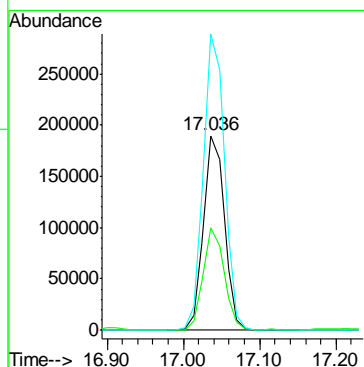
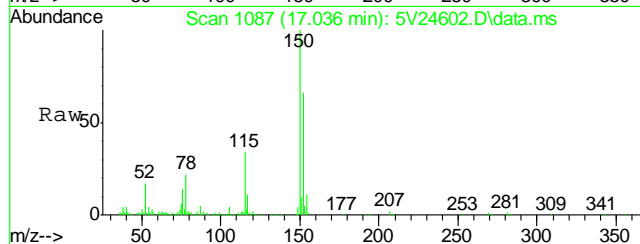
#73
o-xylene
Concen: 4.94 ug/l
RT: 15.563 min Scan# 958
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

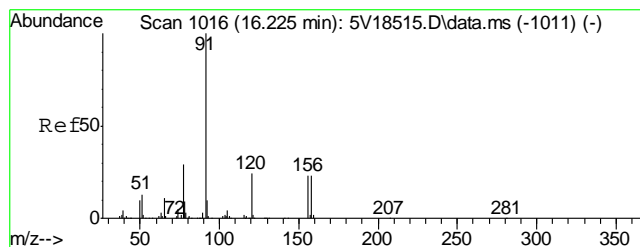
Tgt Ion:106 Resp: 34960
Ion Ratio Lower Upper
106 100
91 207.5 166.6 249.8



#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.036 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

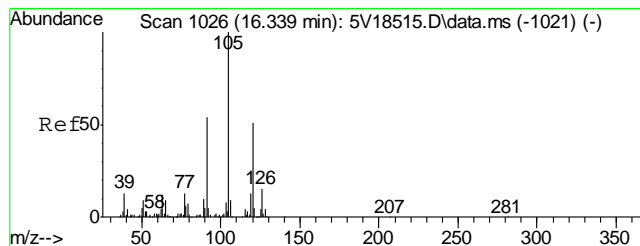
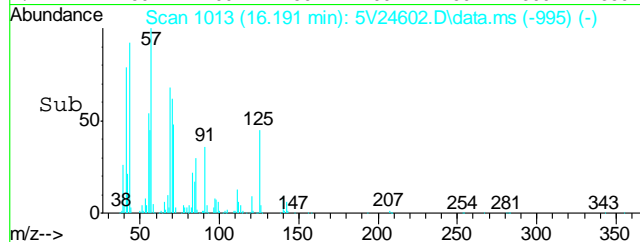
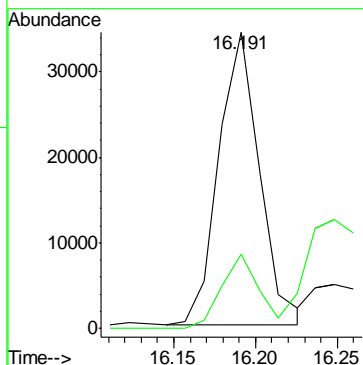
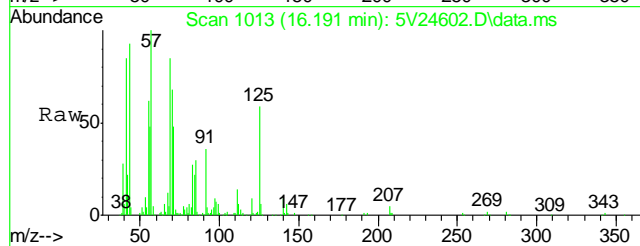
Tgt Ion:152 Resp: 361920
Ion Ratio Lower Upper
152 100
115 53.4 41.4 62.0
150 153.1 153.9 230.9#





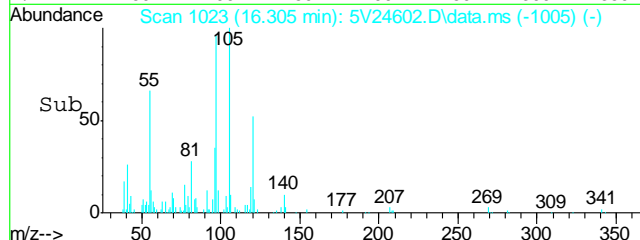
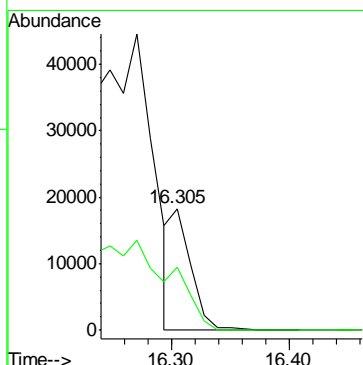
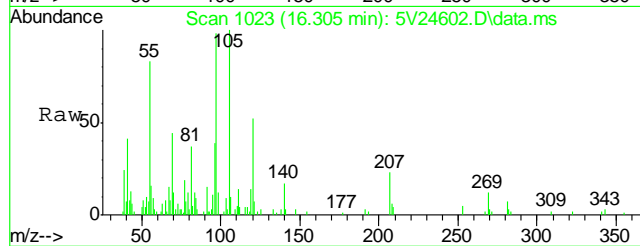
#77
n-Propylbenzene
Concen: 2.73 ug/l
RT: 16.191 min Scan# 1013
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

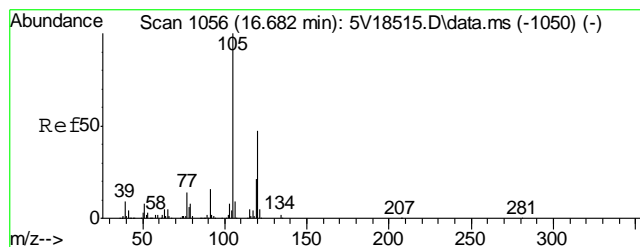
Tgt Ion: 91 Resp: 59059
Ion Ratio Lower Upper
91 100
120 23.6 18.6 27.8



#80
1,3,5-Trimethylbenzene
Concen: 1.30 ug/l m
RT: 16.305 min Scan# 1023
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

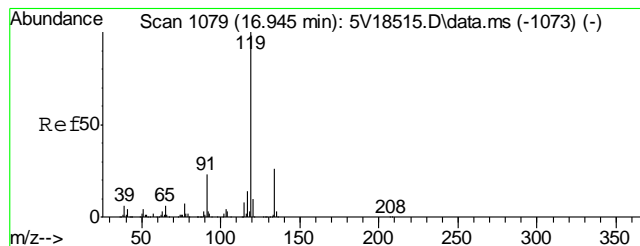
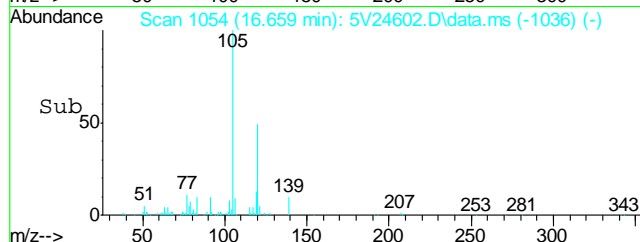
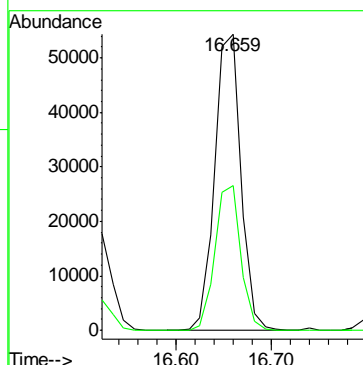
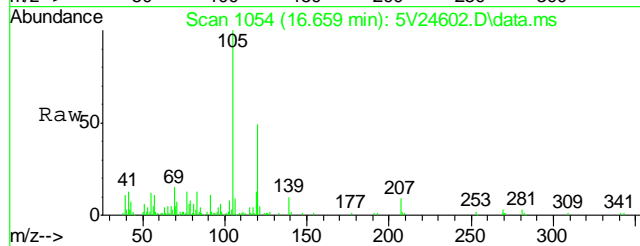
Tgt Ion: 105 Resp: 21357
Ion Ratio Lower Upper
105 100
120 274.8 40.1 60.1#





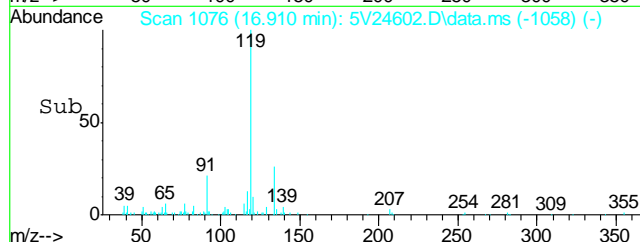
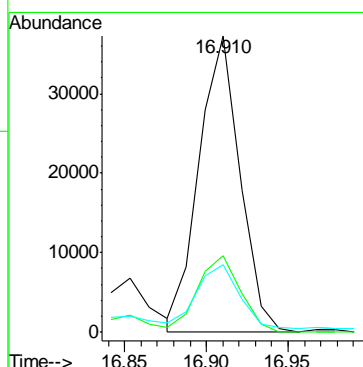
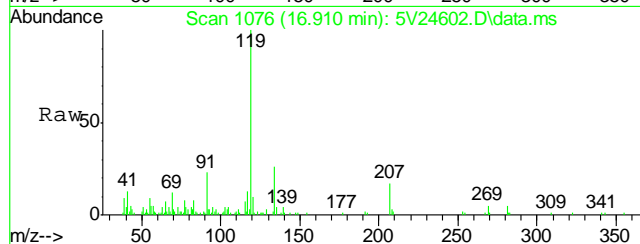
#82
1,2,4-Trimethylbenzene
Concen: 6.00 ug/l
RT: 16.659 min Scan# 1054
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

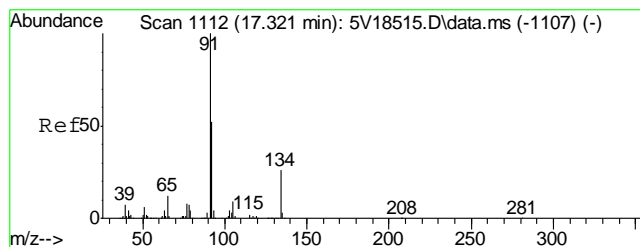
Tgt Ion	Ratio	Lower	Upper
105	100		
120	48.3	43.8	65.8



#86
p-Isopropyltoluene
Concen: 3.27 ug/l
RT: 16.910 min Scan# 1076
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

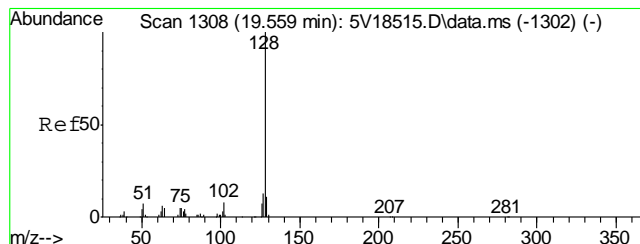
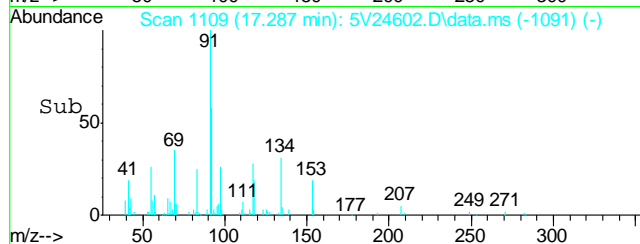
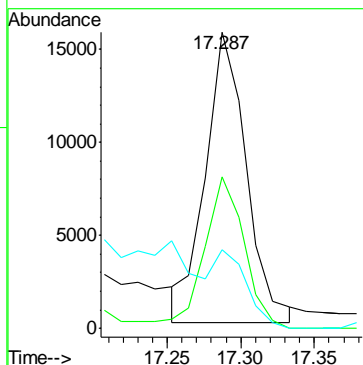
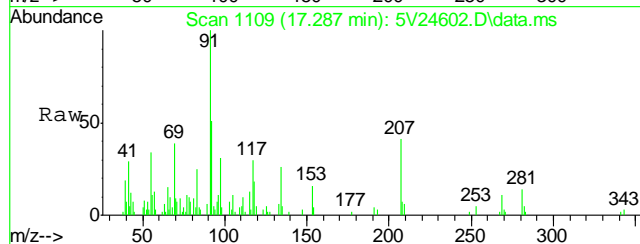
Tgt Ion	Ratio	Lower	Upper
119	100		
134	26.9	21.3	31.9
91	22.6	19.0	28.6





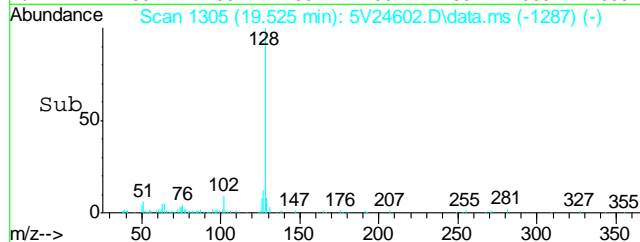
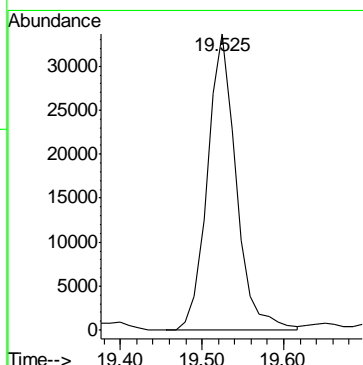
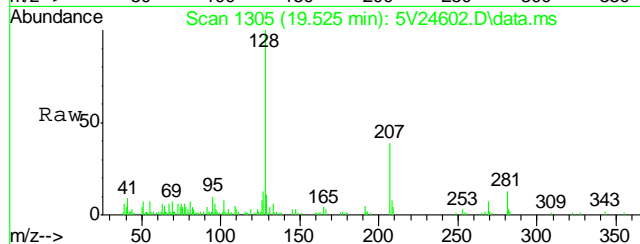
#88
n-Butylbenzene
Concen: 1.63 ug/l m
RT: 17.287 min Scan# 1109
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

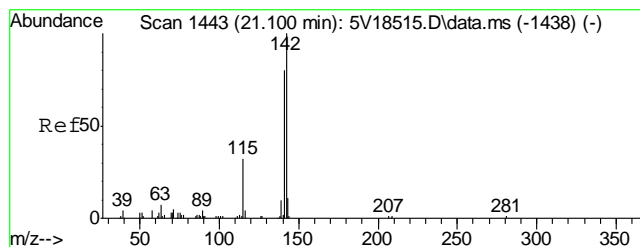
Tgt Ion	Ratio	Lower	Upper
91	100		
92	51.5	42.2	63.4
134	0.0	21.4	32.2#



#91
Naphthalene
Concen: 4.57 ug/l
RT: 19.525 min Scan# 1305
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

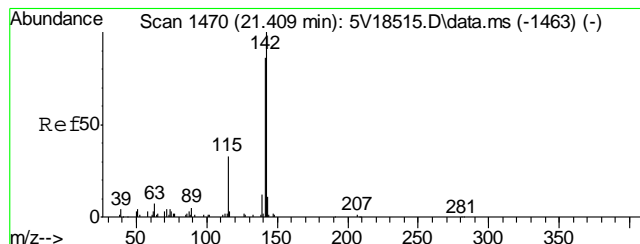
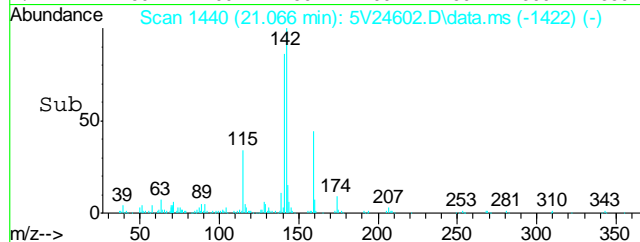
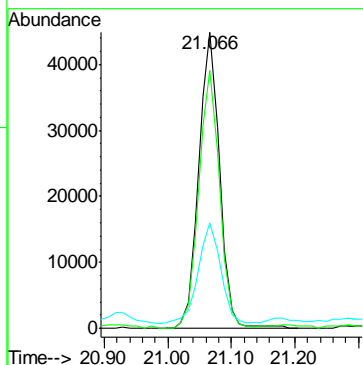
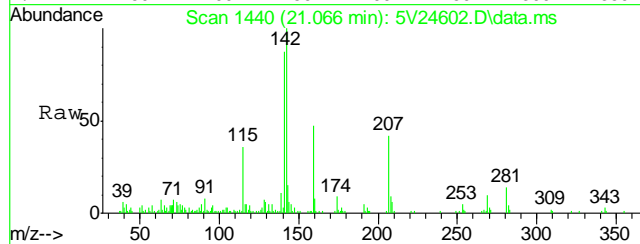
Tgt Ion: 128 Resp: 82010





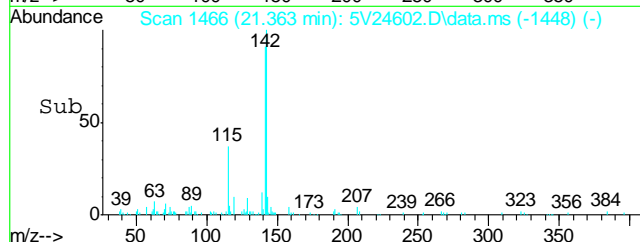
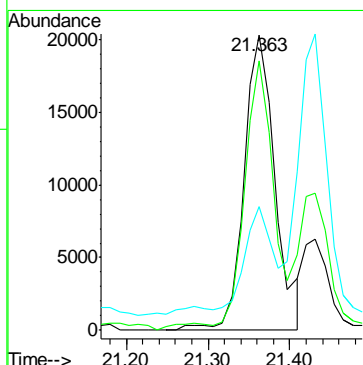
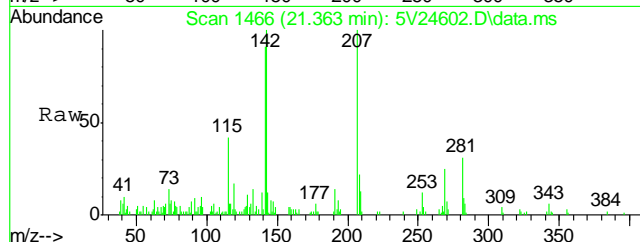
#94
2-Methylnaphthalene
Concen: 14.22 ug/l
RT: 21.066 min Scan# 1440
Delta R.T. 0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

Tgt Ion	Ratio	Lower	Upper
142	100		
141	87.4	66.2	99.4
115	36.7	25.9	38.9



#95
1-Methylnaphthalene
Concen: 6.68 ug/l
RT: 21.363 min Scan# 1466
Delta R.T. -0.000 min
Lab File: 5V24602.D
Acq: 14 Nov 2012 5:54 am

Tgt Ion	Ratio	Lower	Upper
142	100		
141	81.8	68.9	103.3
115	34.6	27.3	40.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111312.S\
 Data File : 5V24603.D
 Acq On : 14 Nov 2012 6:29 am
 Operator : BRETD
 Sample : D40712-2
 Misc : MS4956,V5V1501,5.076,,100,5,1
 ALS Vial : 32 Sample Multiplier: 1

Quant Time: Nov 14 16:23:59 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
 Quant Title : 8260
 QLast Update : Wed Nov 14 09:56:27 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.624	168	432978	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.423	114	536015	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.072	117	495167	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.036	152	365611	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.024	102	36083	48.96	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	97.92%
61) Toluene-d8	13.816	98	598330	51.01	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	102.02%
69) 4-Bromofluorobenzene	16.020	95	259088	51.25	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	102.50%

Target Compounds

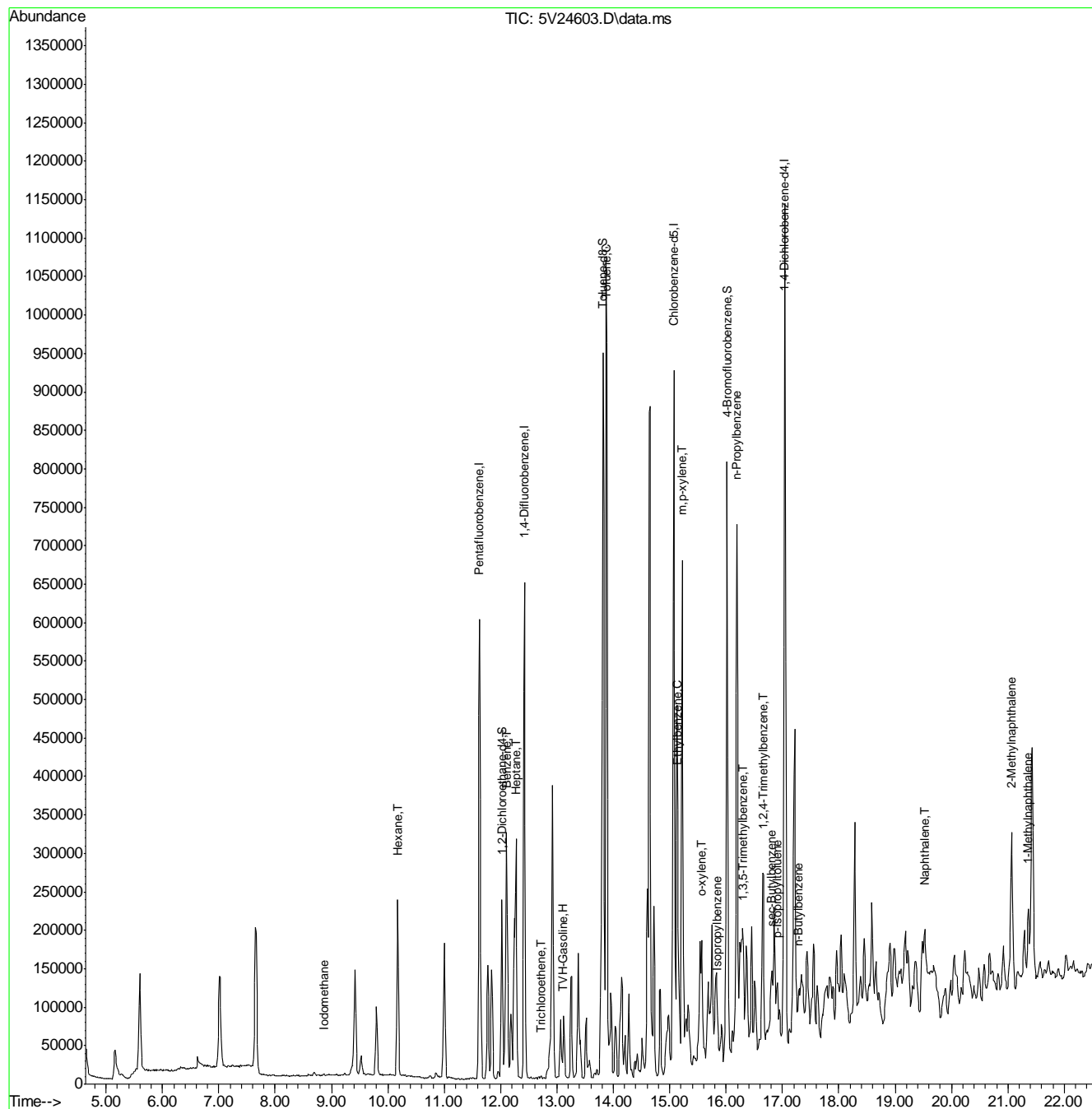
					Qvalue
1) TVH-Gasoline	13.102	TIC	20129676m	399.11	ug/l
12) Iodomethane	8.873	142	3043	0.78	ug/l # 74
41) Hexane	10.174	57	112030	23.06	ug/l 100
43) Heptane	12.275	43	118169	21.15	ug/l 89
48) Trichloroethene	12.709	95	690	0.18	ug/l # 73
50) Benzene	12.104	78	277540	19.50	ug/l 100
62) Toluene	13.885	92	367653	40.19	ug/l 98
66) Ethylbenzene	15.141	91	124608	7.14	ug/l 96
68) Isopropylbenzene	15.848	105	17498	0.98	ug/l 98
72) m,p-xylene	15.220	106	195037	27.82	ug/l 97
73) o-xylene	15.563	106	40536	5.83	ug/l 100
77) n-Propylbenzene	16.191	91	55135	2.52	ug/l 99
80) 1,3,5-Trimethylbenzene	16.305	105	26409m	1.59	ug/l
82) 1,2,4-Trimethylbenzene	16.659	105	119067	6.83	ug/l 89
83) sec-Butylbenzene	16.807	105	16043	0.71	ug/l # 72
86) p-Isopropyltoluene	16.910	119	44004	2.19	ug/l 98
88) n-Butylbenzene	17.287	91	24767m	1.32	ug/l
91) Naphthalene	19.525	128	103794	5.73	ug/l 100
94) 2-Methylnaphthalene	21.066	142	106441	14.56	ug/l 94
95) 1-Methylnaphthalene	21.363	142	58700	7.16	ug/l 96

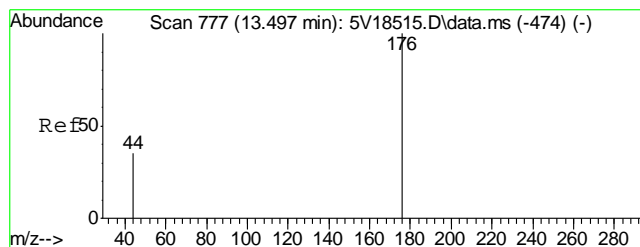
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111312.S\
Data File : 5V24603.D
Acq On : 14 Nov 2012 6:29 am
Operator : BRETD
Sample : D40712-2
Misc : MS4956,V5V1501,5.076,,100,5,1
ALS Vial : 32 Sample Multiplier: 1

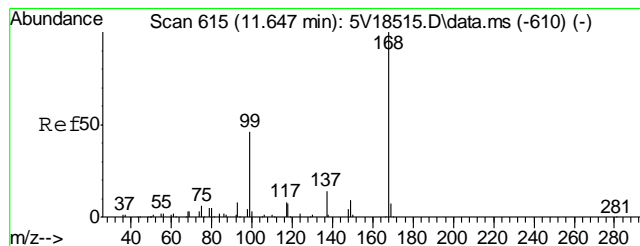
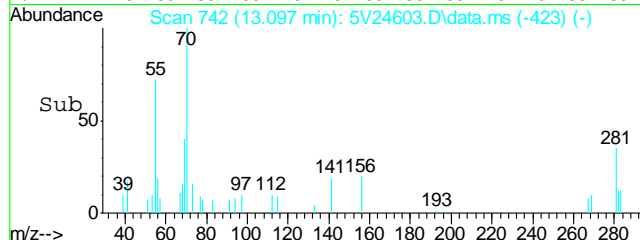
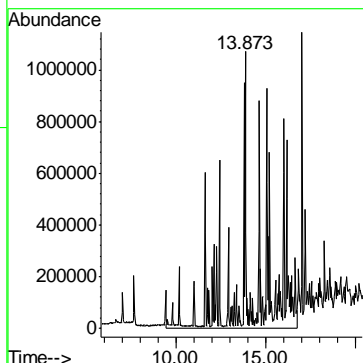
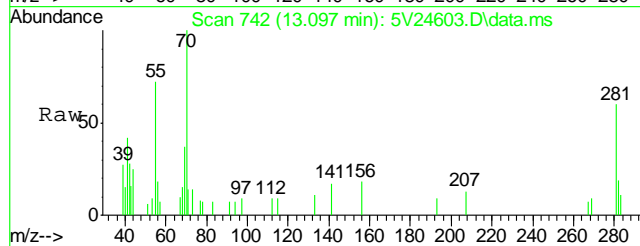
Quant Time: Nov 14 16:23:59 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:56:27 2012
Response via : Initial Calibration





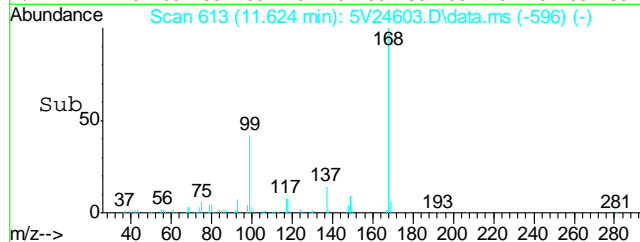
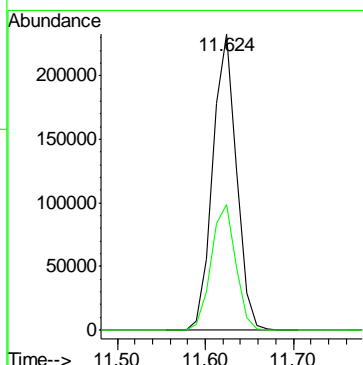
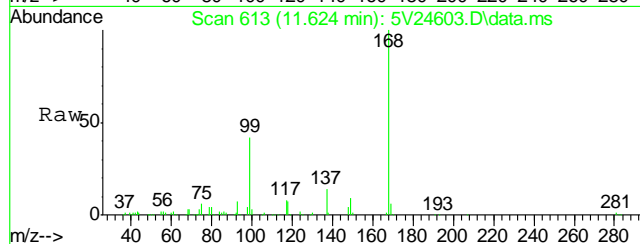
#1
TVH-Gasoline
Concen: 399.11 ug/l m
RT: 13.102 min Scan# 742
Delta R.T. 0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

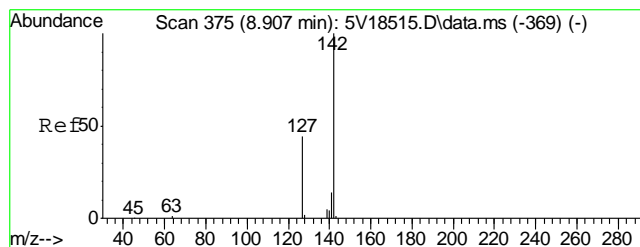
Tgt Ion:TIC Resp:20129676



#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.624 min Scan# 613
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

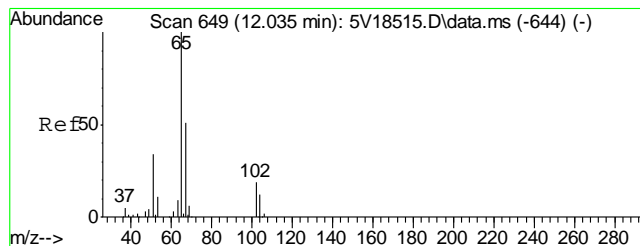
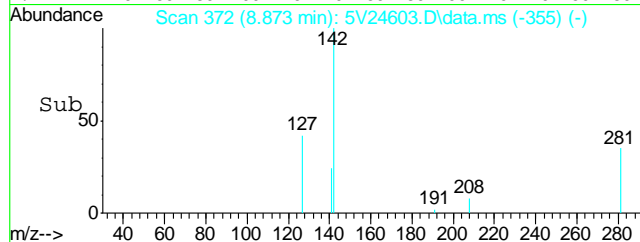
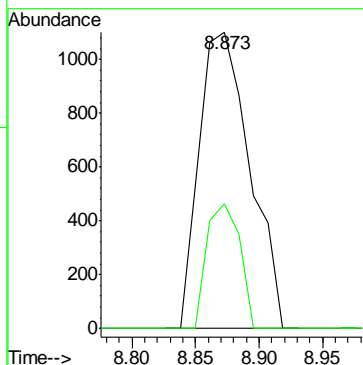
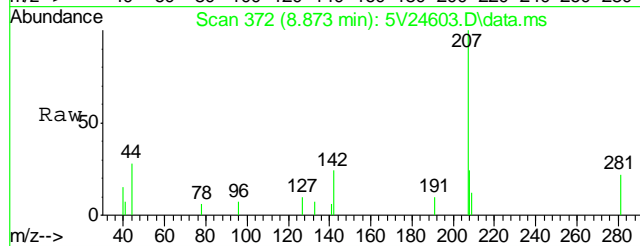
Tgt Ion:168 Resp: 432978
Ion Ratio Lower Upper
168 100
99 43.9 37.4 56.2





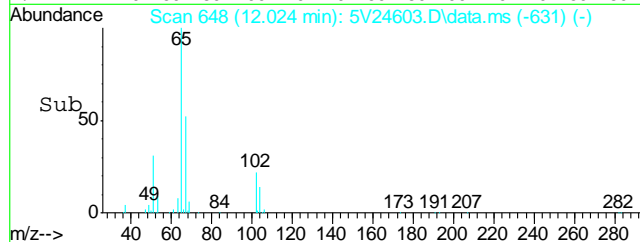
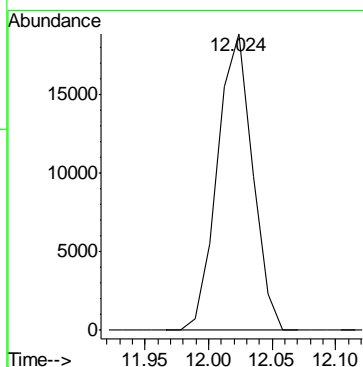
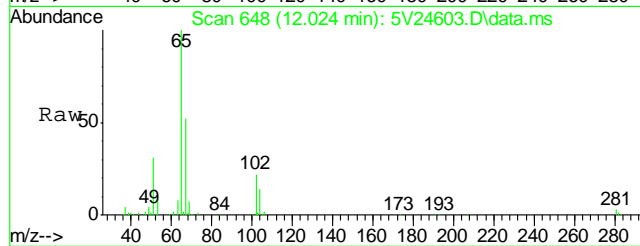
#12
Iodomethane
Concen: 0.78 ug/l
RT: 8.873 min Scan# 372
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

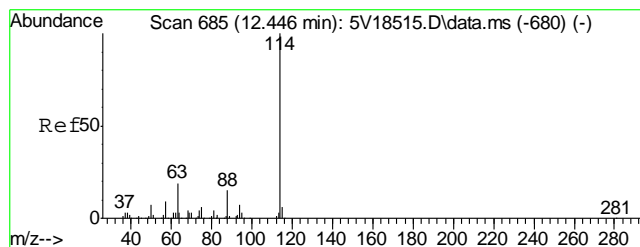
Tgt Ion:142 Resp: 3043
Ion Ratio Lower Upper
142 100
127 27.4 35.4 53.0#



#33
1,2-Dichloroethane-d4
Concen: 48.96 ug/l
RT: 12.024 min Scan# 648
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

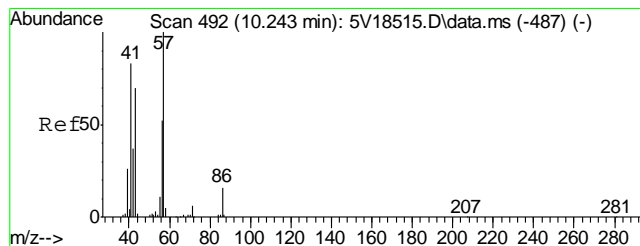
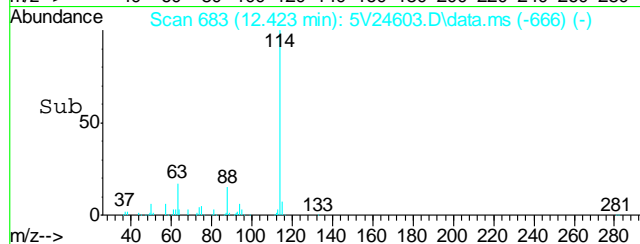
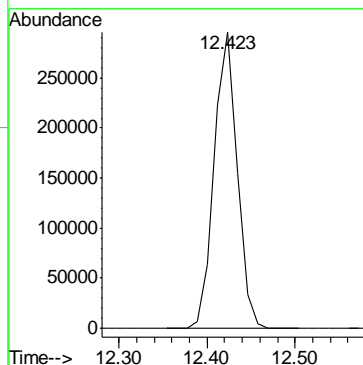
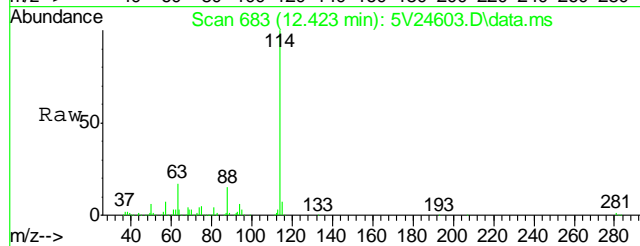
Tgt Ion:102 Resp: 36083





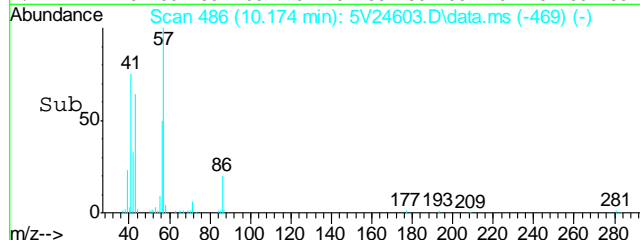
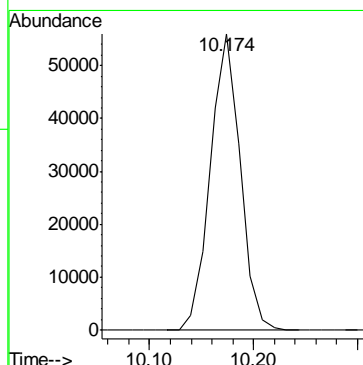
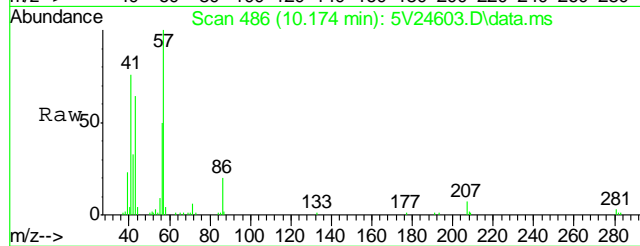
#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.423 min Scan# 683
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

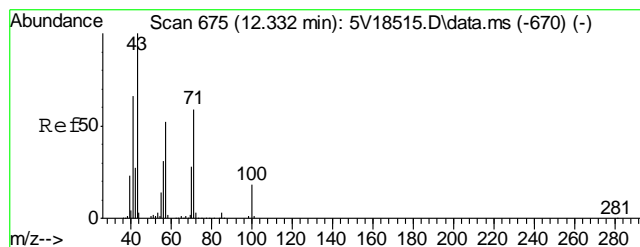
Tgt Ion:114 Resp: 536015



#41
Hexane
Concen: 23.06 ug/l
RT: 10.174 min Scan# 486
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

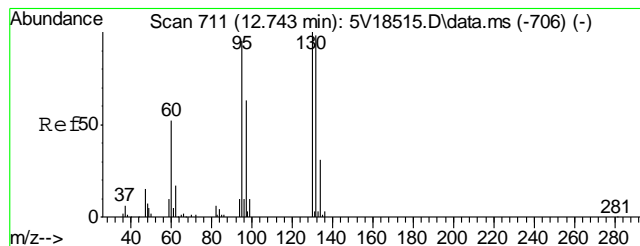
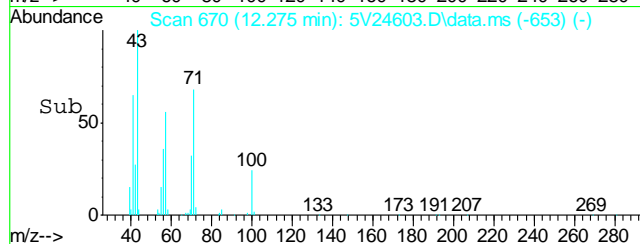
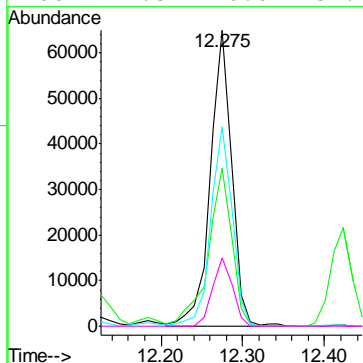
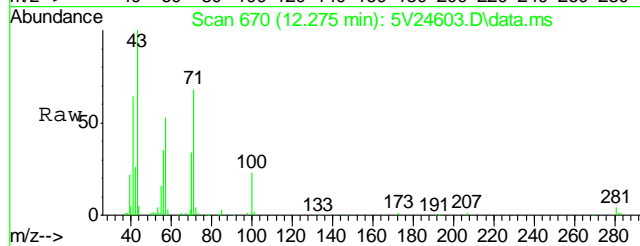
Tgt Ion: 57 Resp: 112030





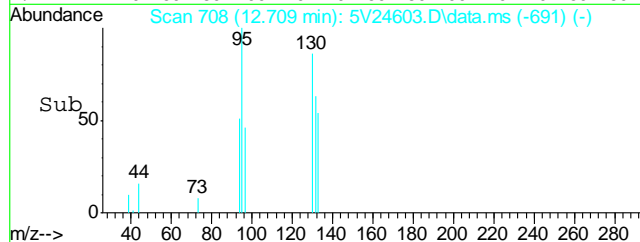
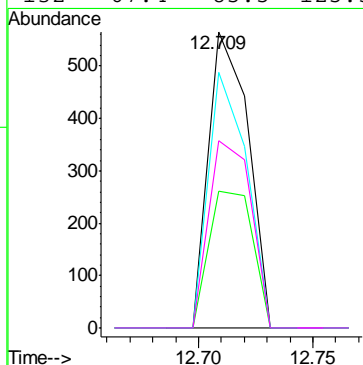
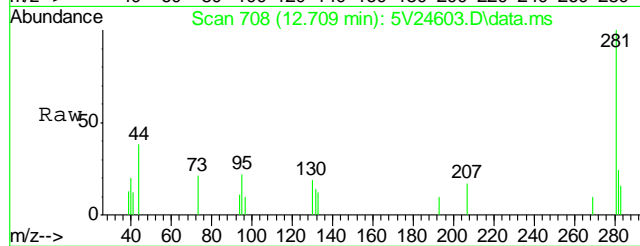
#43
Heptane
Concen: 21.15 ug/l
RT: 12.275 min Scan# 670
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

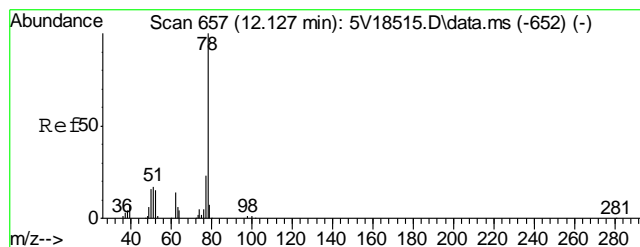
Tgt Ion:	43	Resp:	118169
Ion Ratio	Lower	Upper	
43	100		
57	58.7	30.6	70.6
71	67.8	38.9	78.9
100	21.3	0.0	37.4



#48
Trichloroethene
Concen: 0.18 ug/l
RT: 12.709 min Scan# 708
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

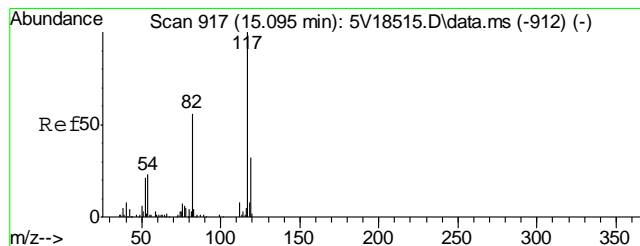
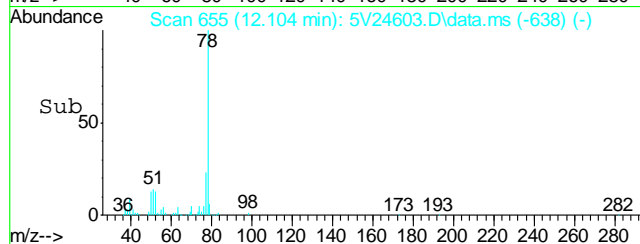
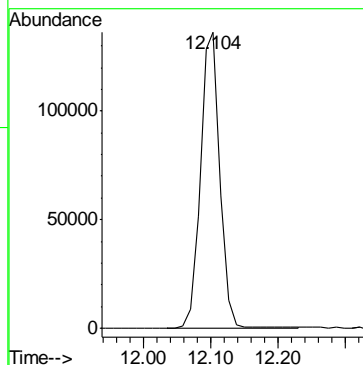
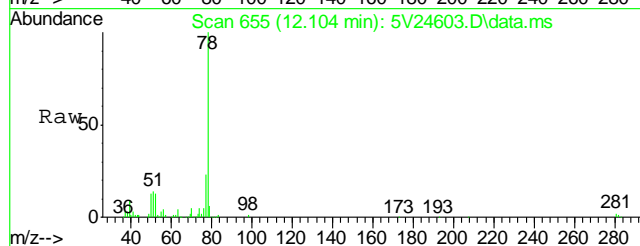
Tgt Ion:	95	Resp:	690
Ion Ratio	Lower	Upper	
95	100		
97	51.0	47.1	87.1
130	82.8	85.2	125.2#
132	67.4	85.5	125.5#





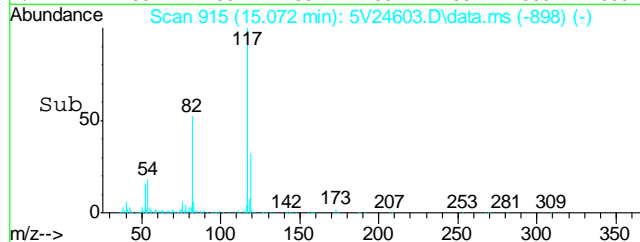
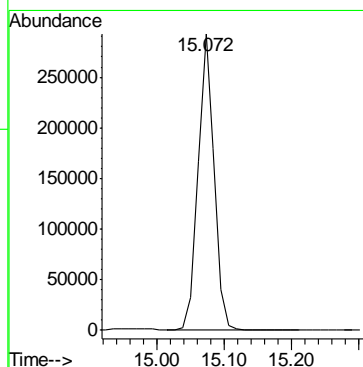
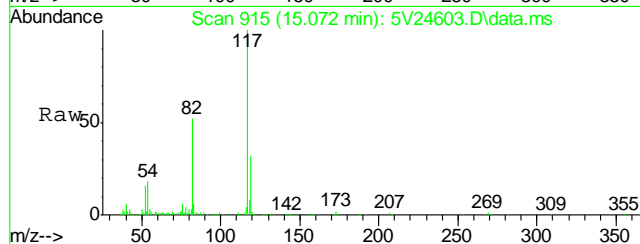
#50
Benzene
Concen: 19.50 ug/l
RT: 12.104 min Scan# 655
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

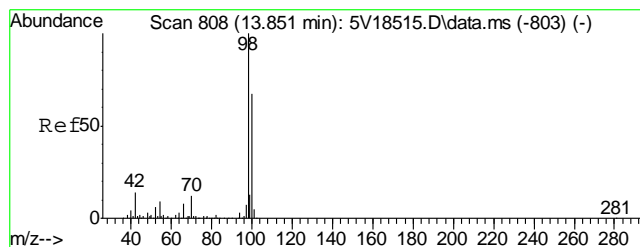
Tgt Ion: 78 Resp: 277540



#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.072 min Scan# 915
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

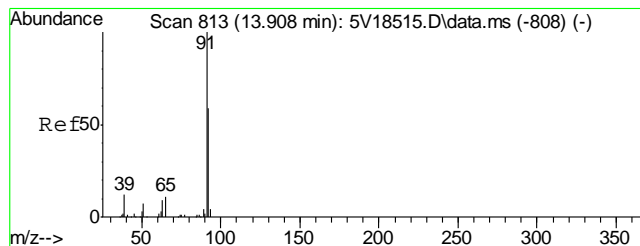
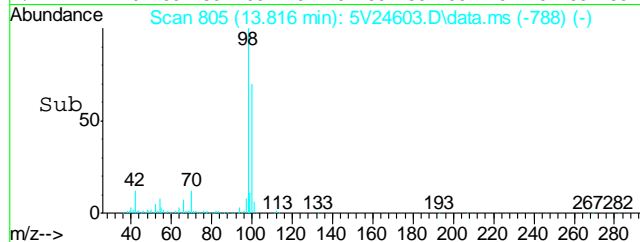
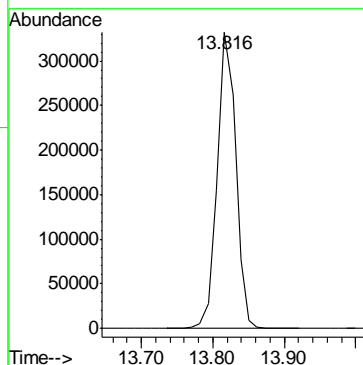
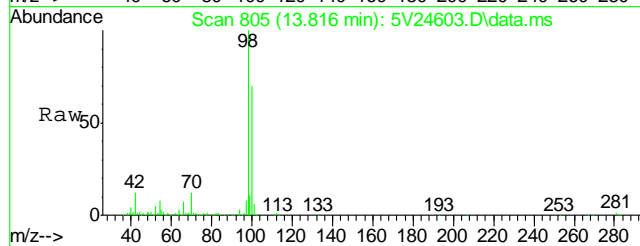
Tgt Ion: 117 Resp: 495167





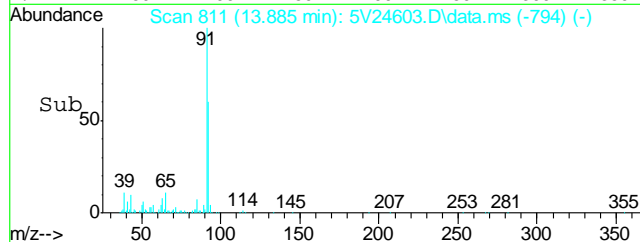
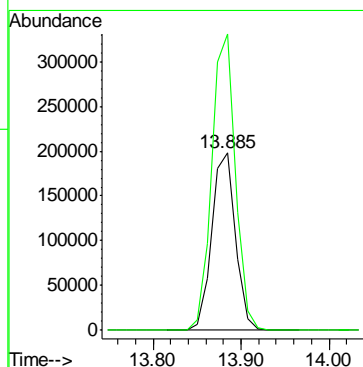
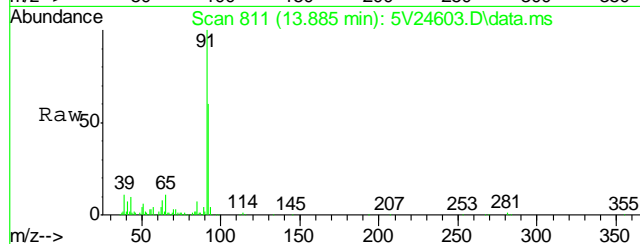
#61
Toluene-d8
Concen: 51.01 ug/l
RT: 13.816 min Scan# 805
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

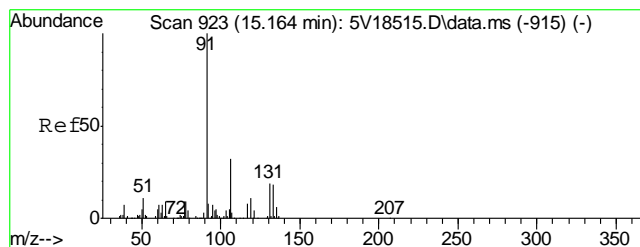
Tgt Ion: 98 Resp: 598330



#62
Toluene
Concen: 40.19 ug/l
RT: 13.885 min Scan# 811
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

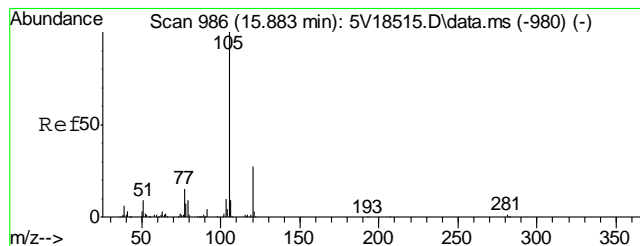
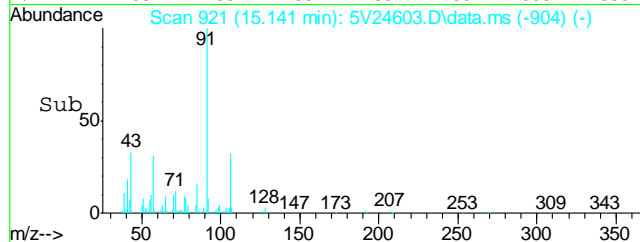
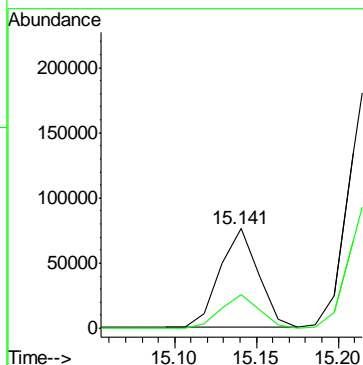
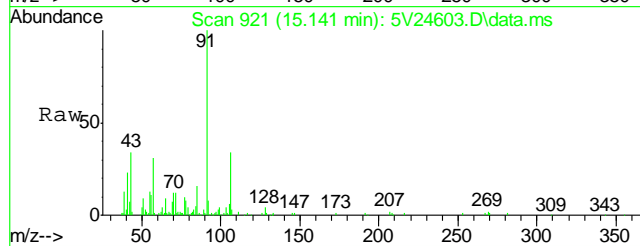
Tgt Ion: 92 Resp: 367653
Ion Ratio Lower Upper
92 100
91 166.5 149.8 189.8





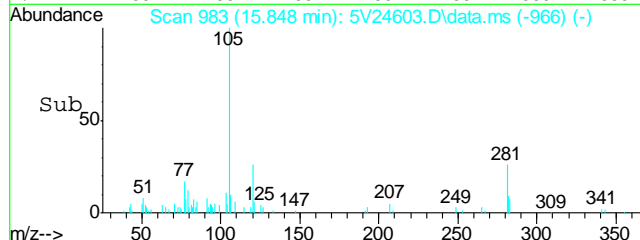
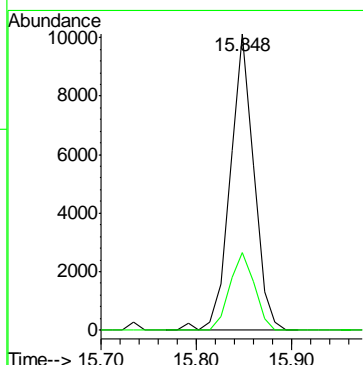
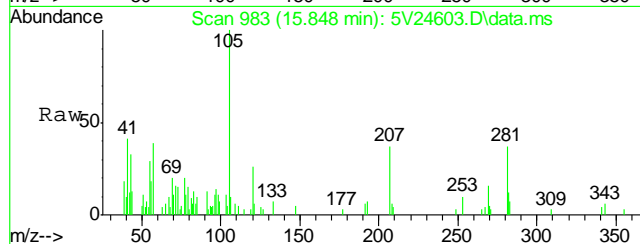
#66
Ethylbenzene
Concen: 7.14 ug/l
RT: 15.141 min Scan# 921
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

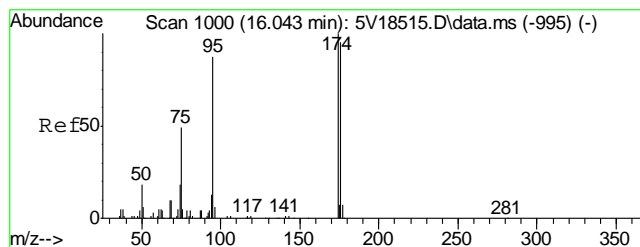
Tgt Ion: 91 Resp: 124608
Ion Ratio Lower Upper
91 100
106 33.9 11.7 51.7



#68
Isopropylbenzene
Concen: 0.98 ug/l
RT: 15.848 min Scan# 983
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

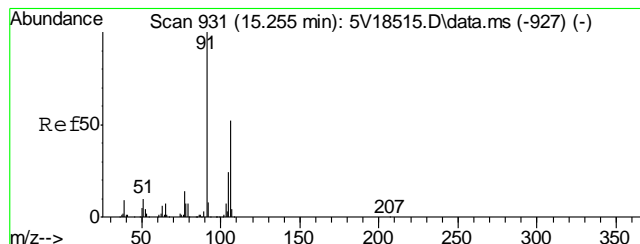
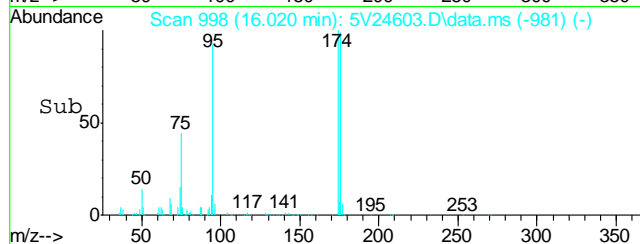
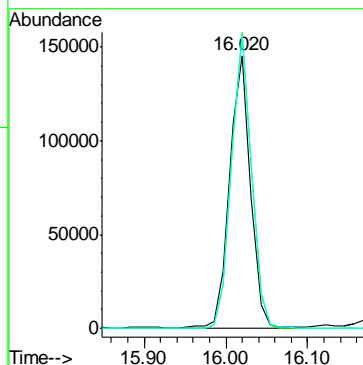
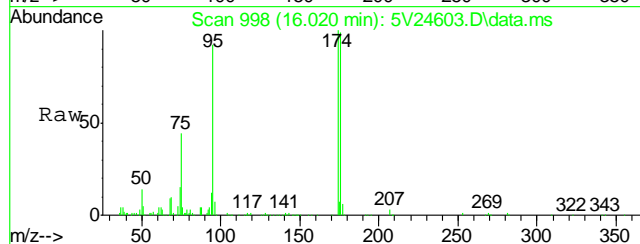
Tgt Ion: 105 Resp: 17498
Ion Ratio Lower Upper
105 100
120 27.2 21.0 31.4





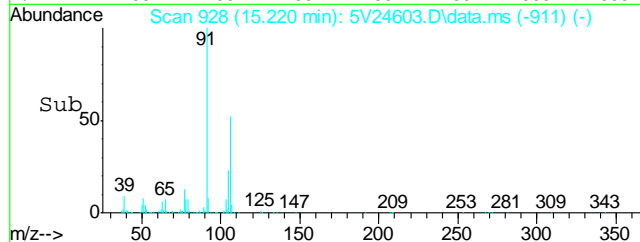
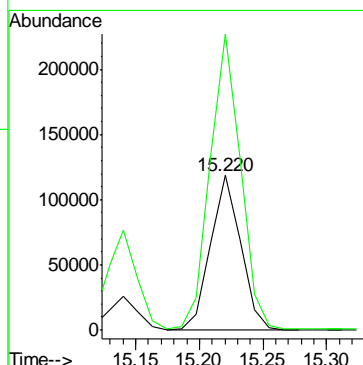
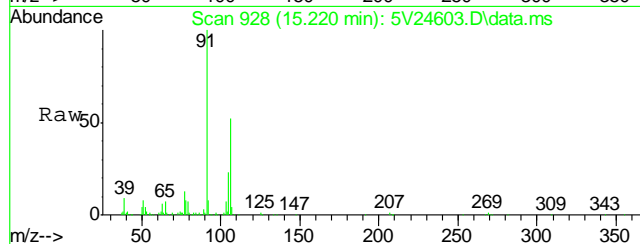
#69
4-Bromofluorobenzene
Concen: 51.25 ug/l
RT: 16.020 min Scan# 998
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

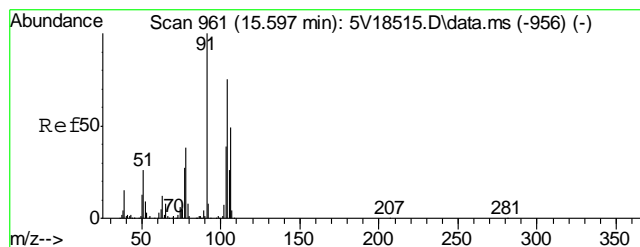
Tgt Ion	Resp	Lower	Upper
95	259088		
174	104.4	77.1	117.1
176	103.6	73.4	113.4



#72
m,p-xylene
Concen: 27.82 ug/l
RT: 15.220 min Scan# 928
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

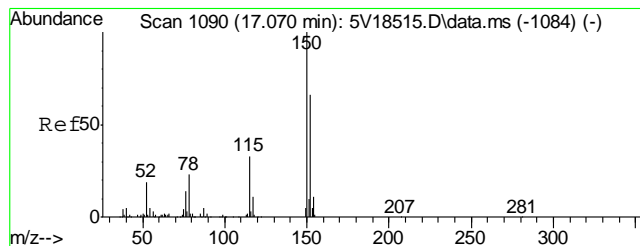
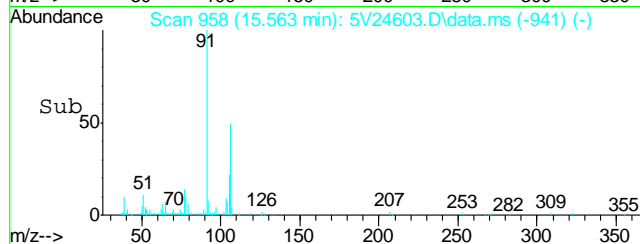
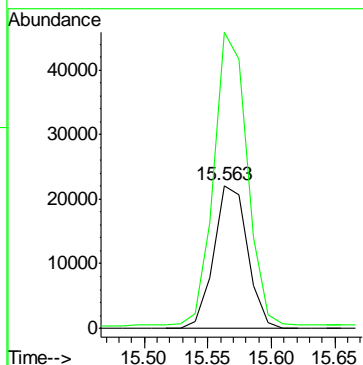
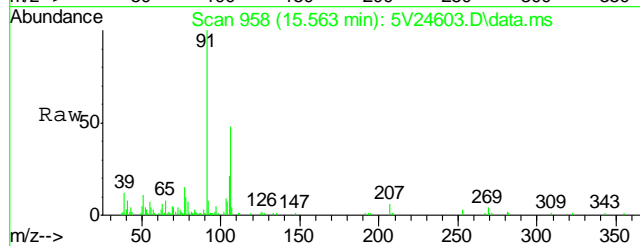
Tgt Ion	Resp	Lower	Upper
106	195037		
91	193.2	177.1	217.1





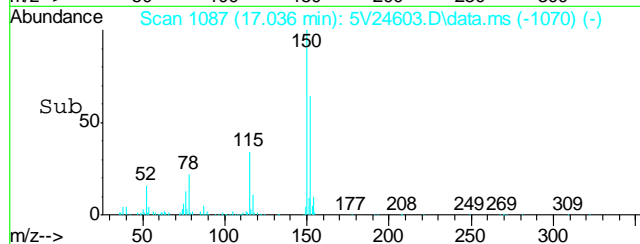
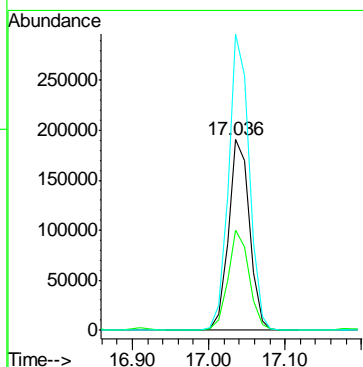
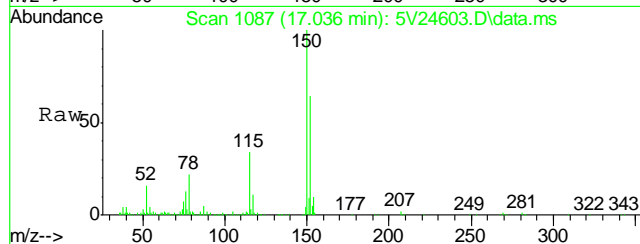
#73
o-xylene
Concen: 5.83 ug/l
RT: 15.563 min Scan# 958
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

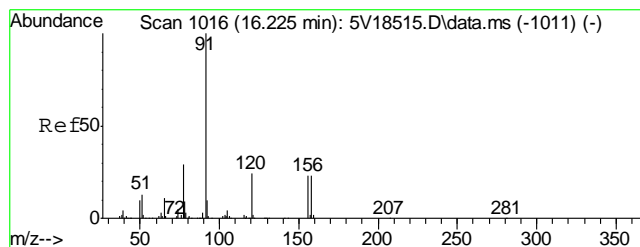
Tgt Ion	Ratio	Lower	Upper
106	100		
91	207.5	166.6	249.8



#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.036 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

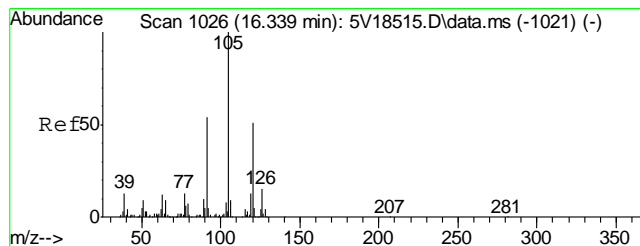
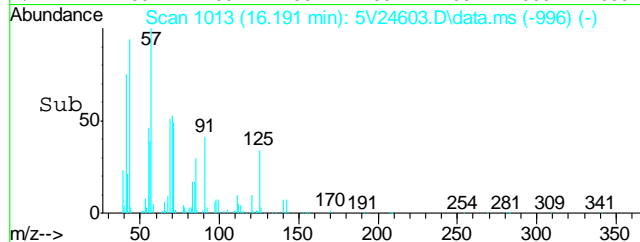
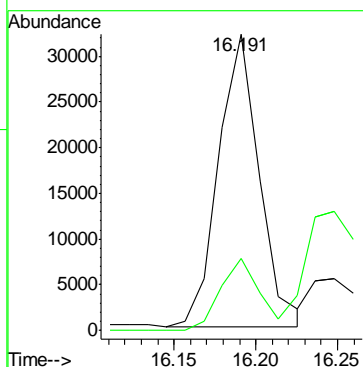
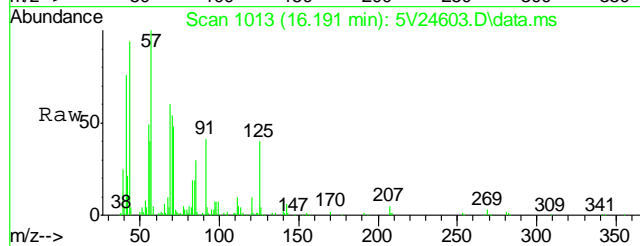
Tgt Ion	Ratio	Lower	Upper
152	100		
115	53.1	41.4	62.0
150	153.1	153.9	230.9#





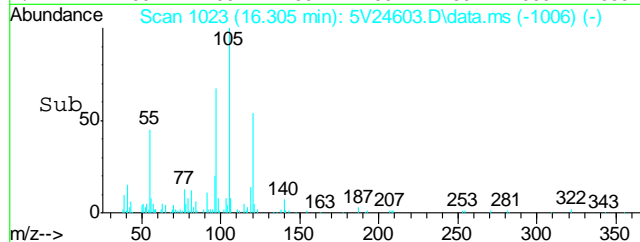
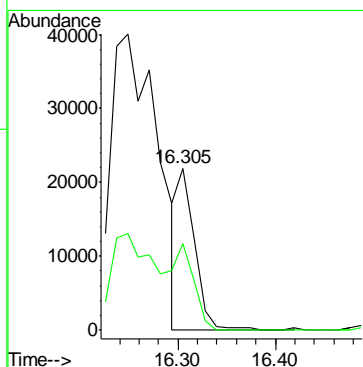
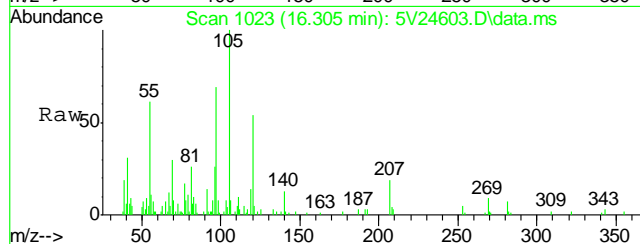
#77
n-Propylbenzene
Concen: 2.52 ug/l
RT: 16.191 min Scan# 1013
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

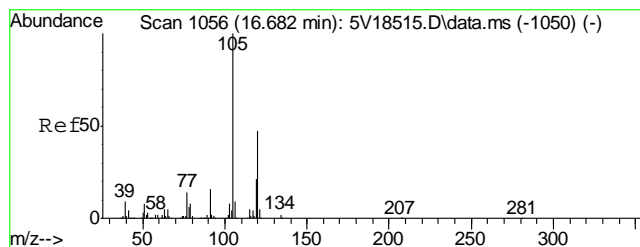
Tgt Ion: 91 Resp: 55135
Ion Ratio Lower Upper
91 100
120 23.9 18.6 27.8



#80
1,3,5-Trimethylbenzene
Concen: 1.59 ug/l m
RT: 16.305 min Scan# 1023
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

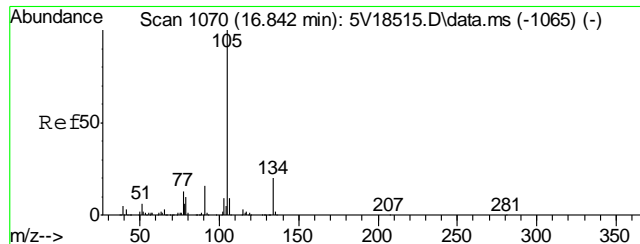
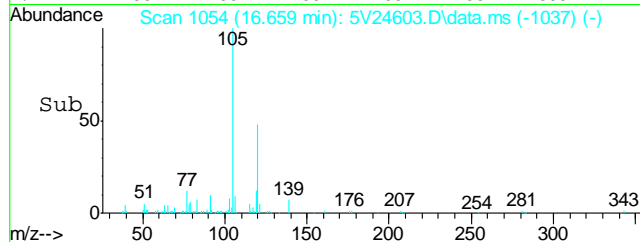
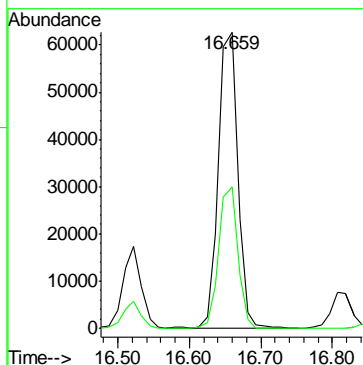
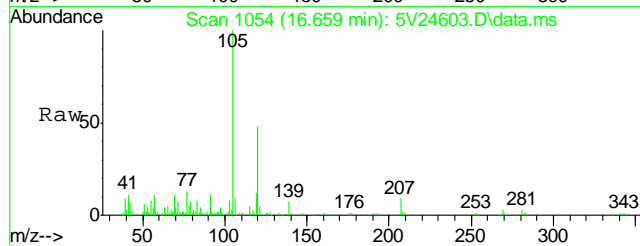
Tgt Ion: 105 Resp: 26409
Ion Ratio Lower Upper
105 100
120 219.8 40.1 60.1#





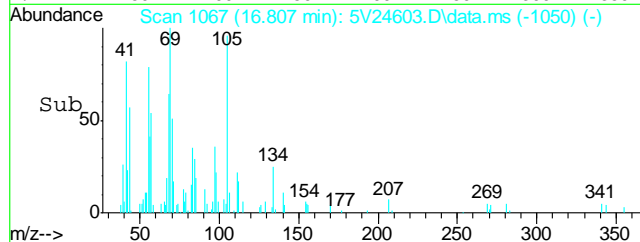
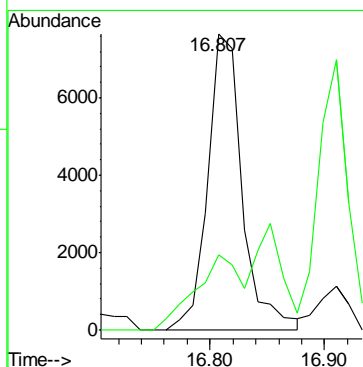
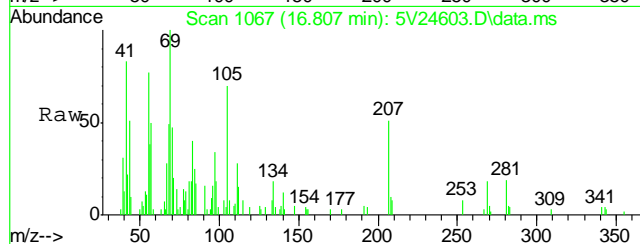
#82
1,2,4-Trimethylbenzene
Concen: 6.83 ug/l
RT: 16.659 min Scan# 1054
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

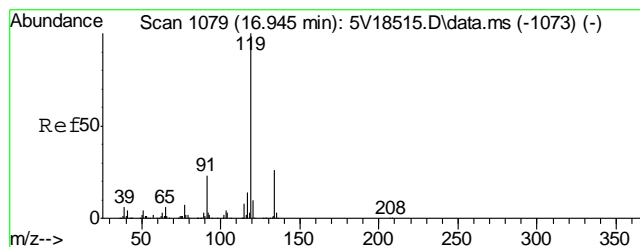
Tgt Ion	Ratio	Lower	Upper
105	100		
120	46.8	43.8	65.8



#83
sec-Butylbenzene
Concen: 0.71 ug/l
RT: 16.807 min Scan# 1067
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

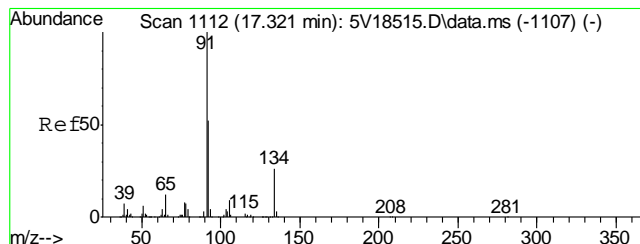
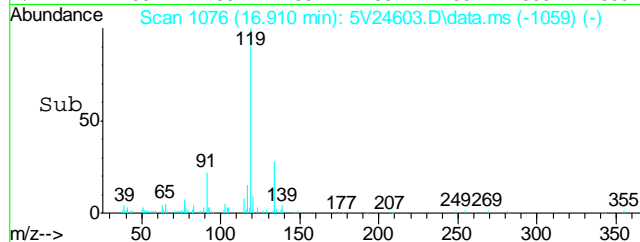
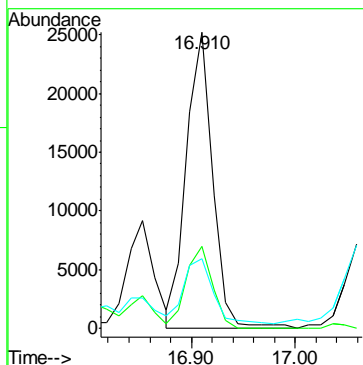
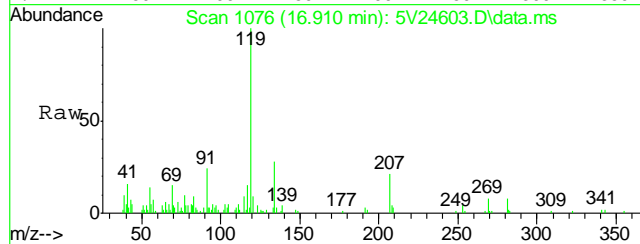
Tgt Ion	Ratio	Lower	Upper
105	100		
134	33.6	16.5	24.7#





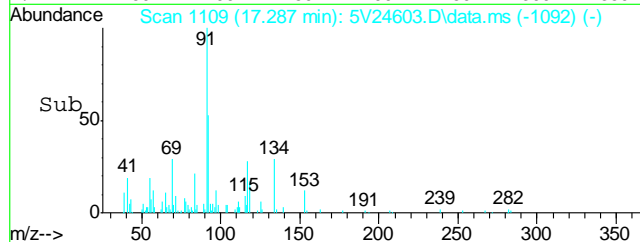
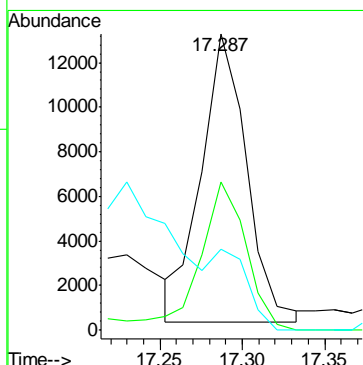
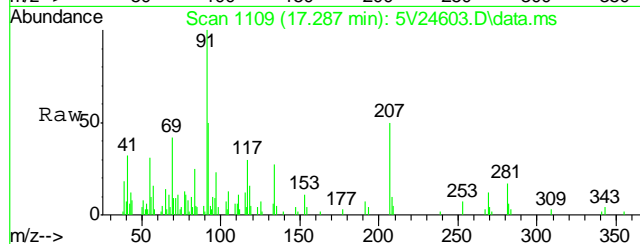
#86
p-Isopropyltoluene
Concen: 2.19 ug/l
RT: 16.910 min Scan# 1076
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

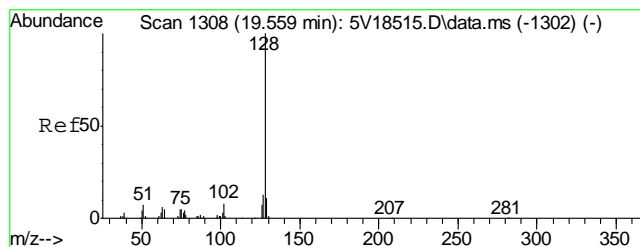
Tgt Ion: 119	Resp: 44004
Ion Ratio	Lower Upper
119 100	
134 27.8	21.3 31.9
91 24.8	19.0 28.6



#88
n-Butylbenzene
Concen: 1.32 ug/l m
RT: 17.287 min Scan# 1109
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

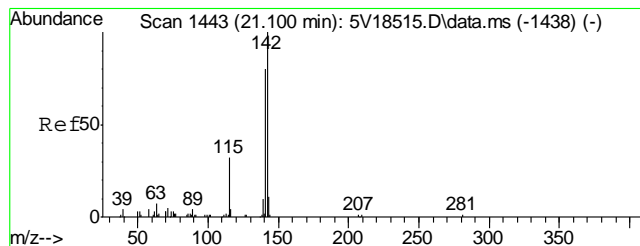
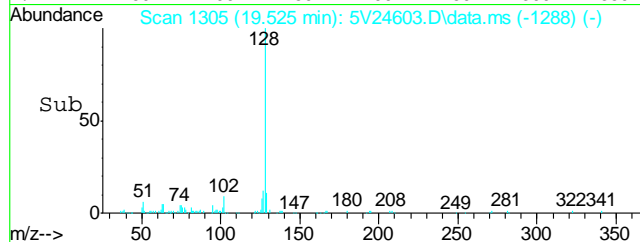
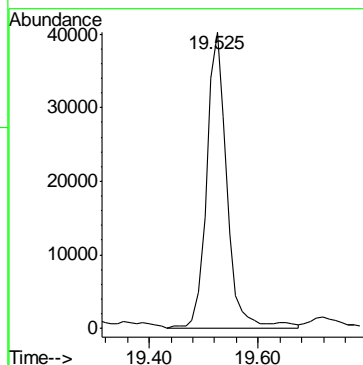
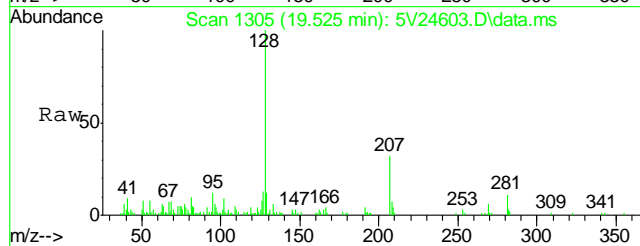
Tgt Ion: 91	Resp: 24767
Ion Ratio	Lower Upper
91 100	
92 52.5	42.2 63.4
134 0.0	21.4 32.2#





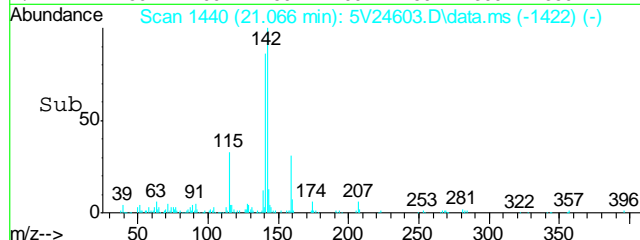
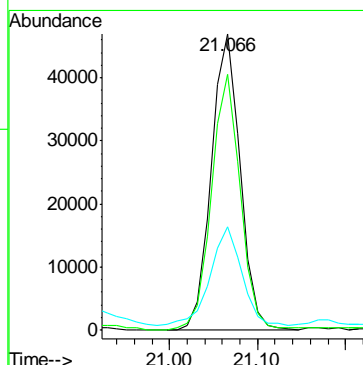
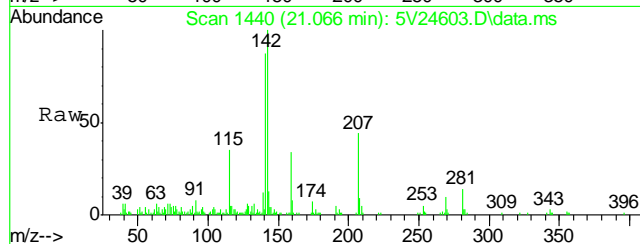
#91
Naphthalene
Concen: 5.73 ug/l
RT: 19.525 min Scan# 1305
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

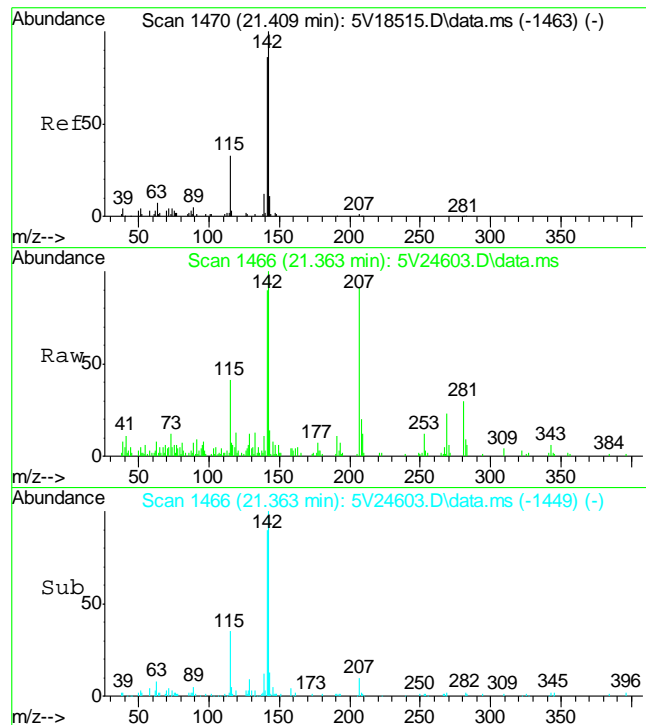
Tgt Ion:128 Resp: 103794



#94
2-Methylnaphthalene
Concen: 14.56 ug/l
RT: 21.066 min Scan# 1440
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

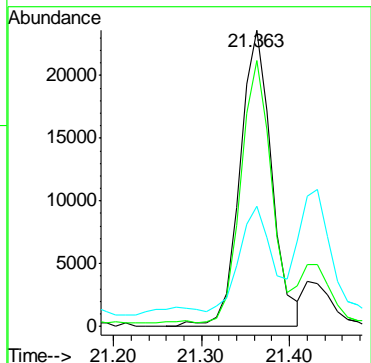
Tgt Ion:142 Resp: 106441
Ion Ratio Lower Upper
142 100
141 88.0 66.2 99.4
115 36.0 25.9 38.9





#95
1-Methylnaphthalene
Concen: 7.16 ug/l
RT: 21.363 min Scan# 1466
Delta R.T. -0.000 min
Lab File: 5V24603.D
Acq: 14 Nov 2012 6:29 am

Tgt Ion:142	Resp:	58700
Ion Ratio	Lower	Upper
142	100	
141	87.8	68.9 103.3
115	39.6	27.3 40.9



7.1.2
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111312.S\
 Data File : 5V24604.D
 Acq On : 14 Nov 2012 7:04 am
 Operator : BRETD
 Sample : D40712-3
 Misc : MS4956,V5V1501,5.019,,100,5,1
 ALS Vial : 33 Sample Multiplier: 1

Quant Time: Nov 14 16:31:13 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
 Quant Title : 8260
 QLast Update : Wed Nov 14 09:56:27 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.624	168	352060	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.423	114	428407	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.072	117	394374	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.036	152	303786	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.024	102	28350	47.31	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	94.62%
61) Toluene-d8	13.816	98	482508	51.65	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	103.30%
69) 4-Bromofluorobenzene	16.020	95	209417	52.01	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	104.02%

Target Compounds

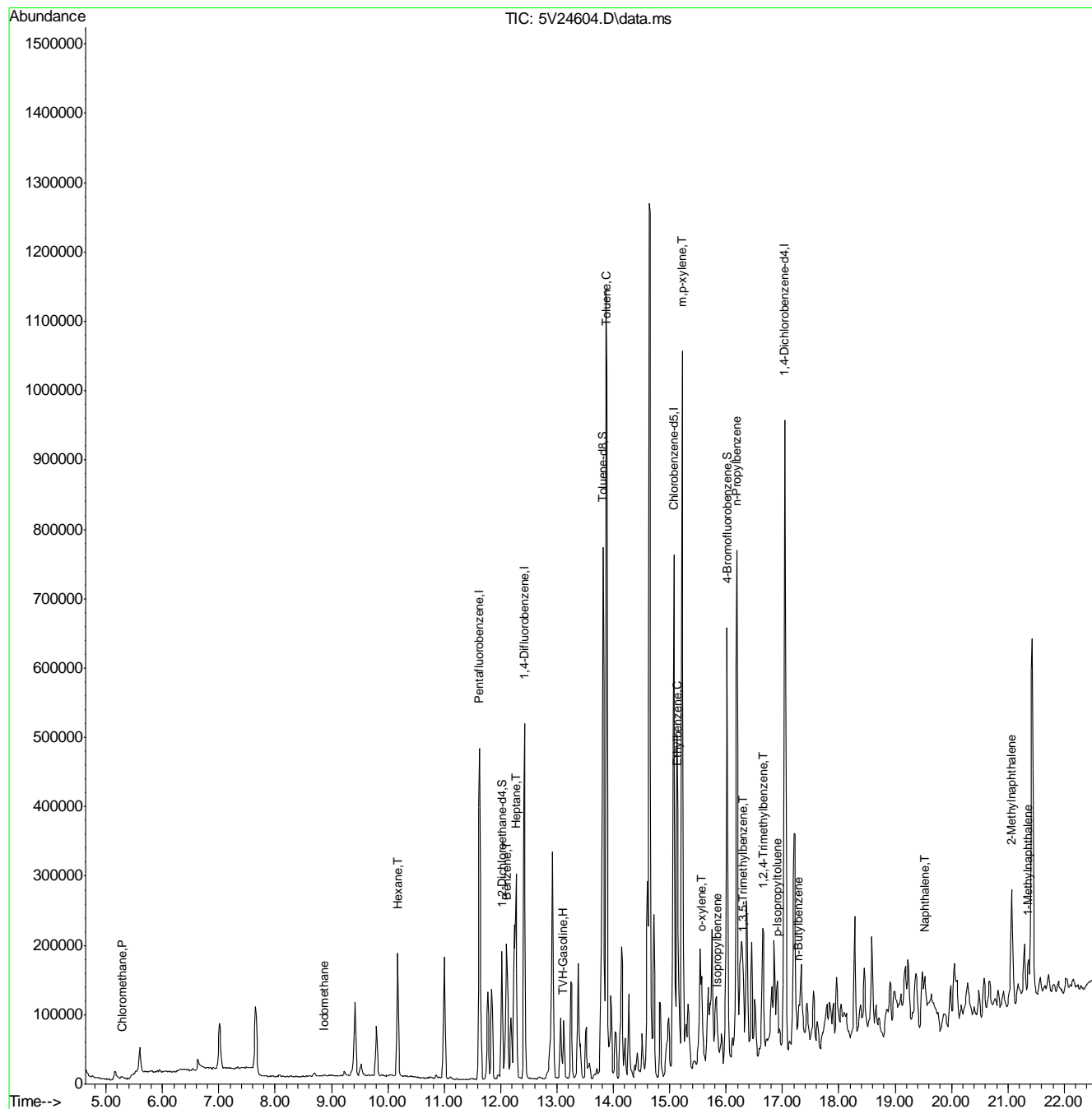
						Qvalue
1) TVH-Gasoline	13.102	TIC	22194556m	474.08	ug/l	
4) Chloromethane	5.276	50	1621	0.41	ug/l	74
12) Iodomethane	8.873	142	2390	0.76	ug/l	# 76
41) Hexane	10.174	57	87022	22.41	ug/l	100
43) Heptane	12.275	43	112925	25.29	ug/l	89
50) Benzene	12.104	78	155141	13.64	ug/l	100
62) Toluene	13.885	92	400141	54.92	ug/l	96
66) Ethylbenzene	15.141	91	157417	11.32	ug/l	99
68) Isopropylbenzene	15.849	105	10757	0.76	ug/l	99
72) m,p-xylene	15.221	106	312157	55.91	ug/l	95
73) o-xylene	15.563	106	31773	5.74	ug/l	90
77) n-Propylbenzene	16.191	91	44133	2.43	ug/l	99
80) 1,3,5-Trimethylbenzene	16.305	105	20758m	1.50	ug/l	
82) 1,2,4-Trimethylbenzene	16.659	105	85789	5.92	ug/l	91
86) p-Isopropyltoluene	16.910	119	56785	3.40	ug/l	100
88) n-Butylbenzene	17.287	91	20014m	1.28	ug/l	
91) Naphthalene	19.525	128	68664	4.56	ug/l	100
94) 2-Methylnaphthalene	21.066	142	80013	13.65	ug/l	93
95) 1-Methylnaphthalene	21.363	142	32420	5.08	ug/l	96

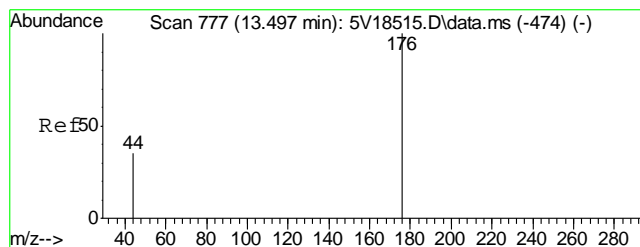
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111312.S\
Data File : 5V24604.D
Acq On : 14 Nov 2012 7:04 am
Operator : BRETD
Sample : D40712-3
Misc : MS4956,V5V1501,5.019,,100,5,1
ALS Vial : 33 Sample Multiplier: 1

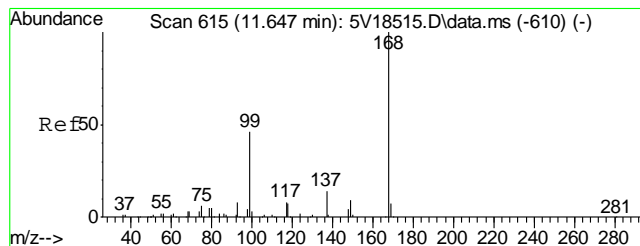
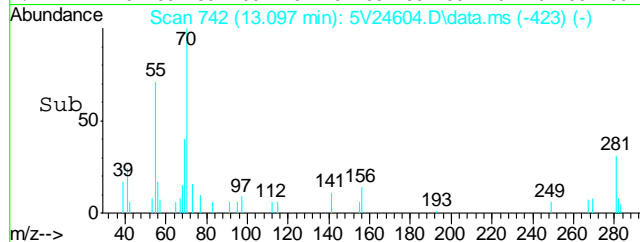
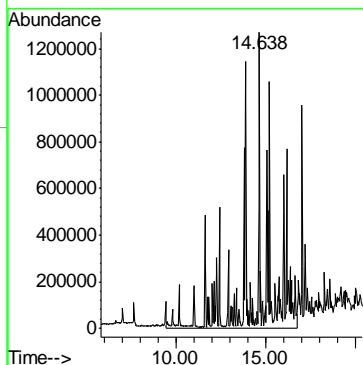
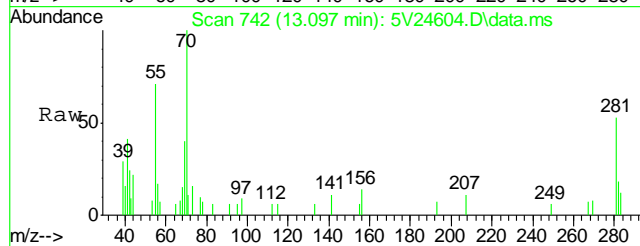
Quant Time: Nov 14 16:31:13 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:56:27 2012
Response via : Initial Calibration





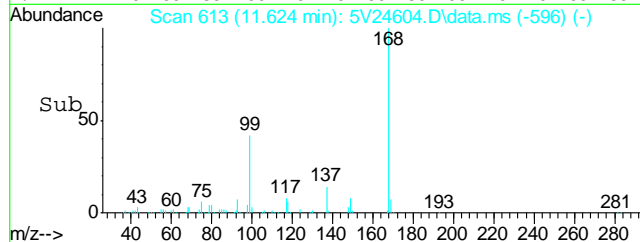
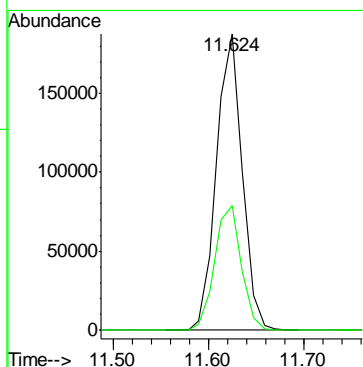
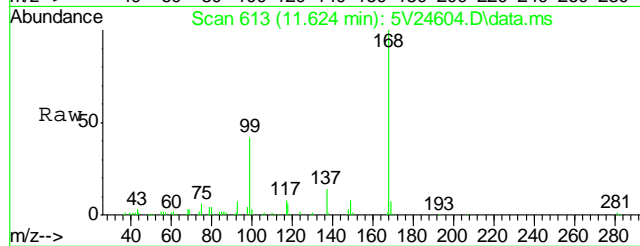
#1
TVH-Gasoline
Concen: 474.08 ug/l m
RT: 13.102 min Scan# 742
Delta R.T. 0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

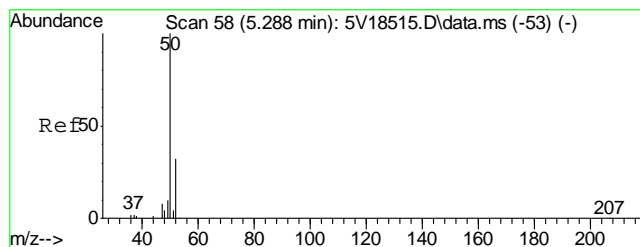
Tgt Ion:TIC Resp:22194556



#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.624 min Scan# 613
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

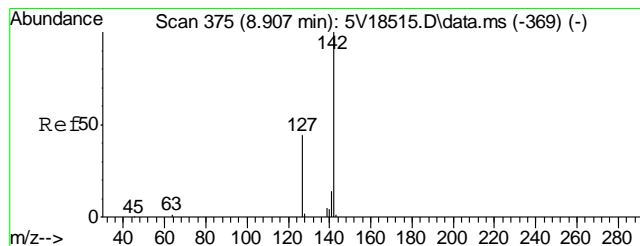
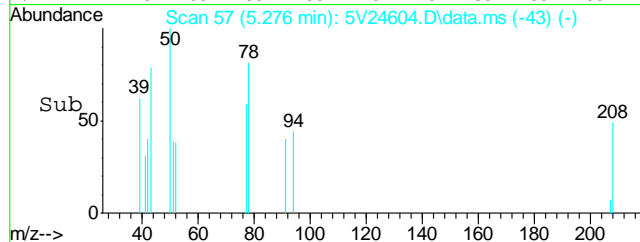
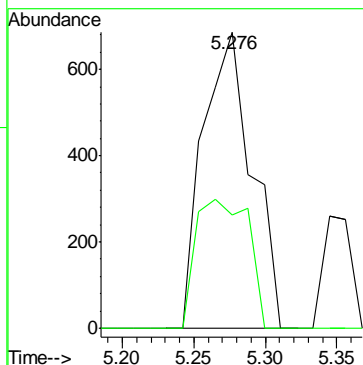
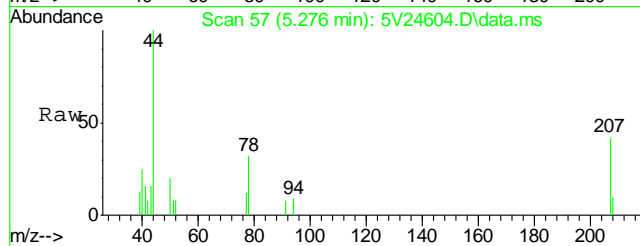
Tgt Ion:168 Resp: 352060
Ion Ratio Lower Upper
168 100
99 43.5 37.4 56.2





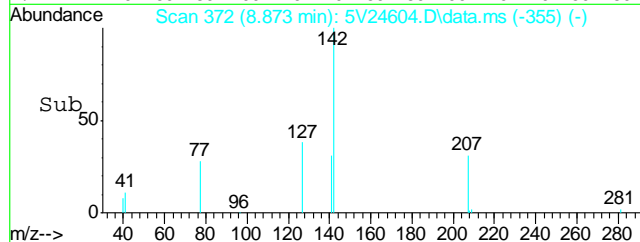
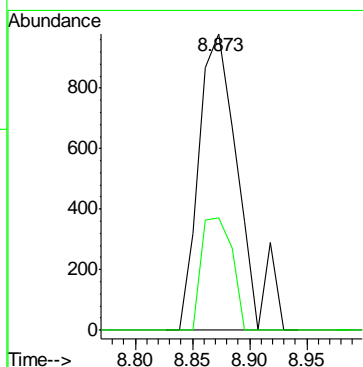
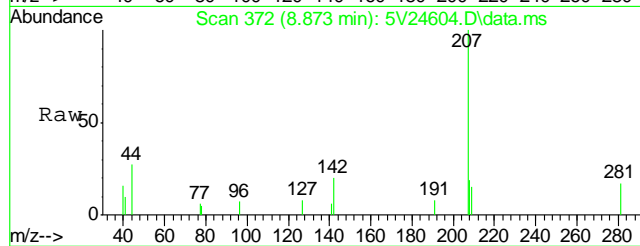
#4
Chloromethane
Concen: 0.41 ug/l
RT: 5.276 min Scan# 57
Delta R.T. 0.011 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

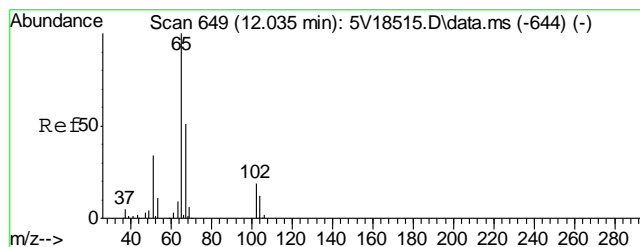
Tgt Ion	Ratio	Lower	Upper
50	100		
52	46.8	12.1	52.1



#12
Iodomethane
Concen: 0.76 ug/l
RT: 8.873 min Scan# 372
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

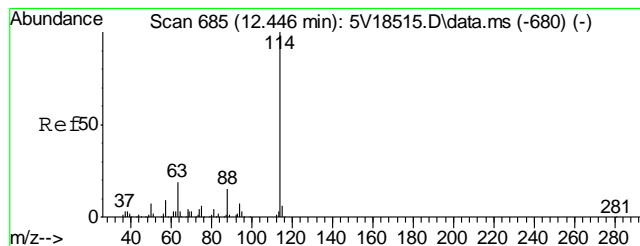
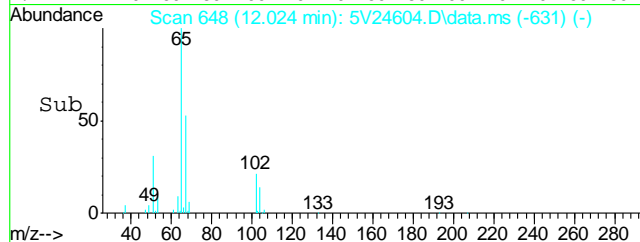
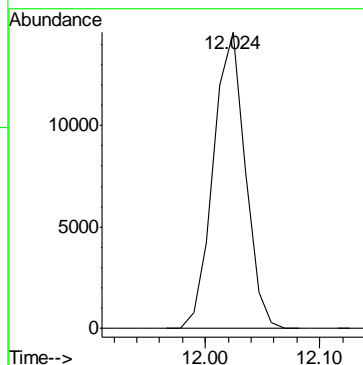
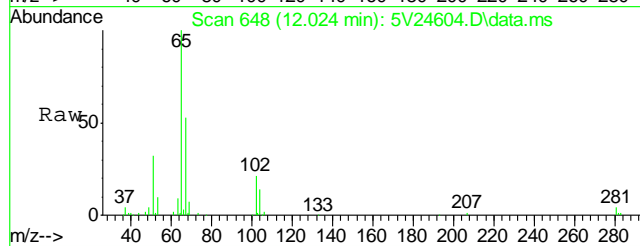
Tgt Ion	Ratio	Lower	Upper
142	100		
127	28.8	35.4	53.0#





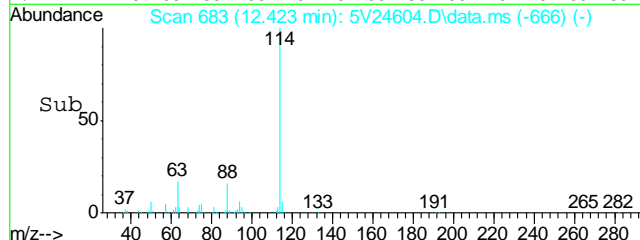
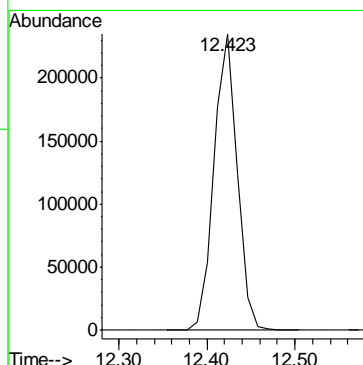
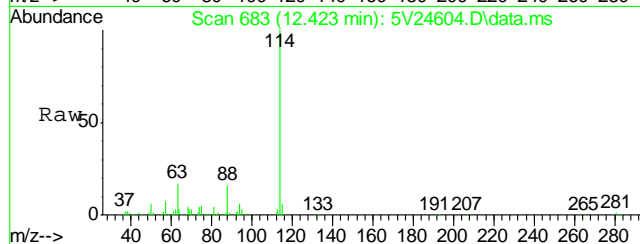
#33
1,2-Dichloroethane-d4
Concen: 47.31 ug/l
RT: 12.024 min Scan# 648
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

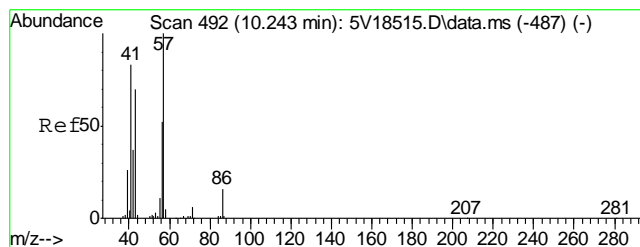
Tgt Ion:102 Resp: 28350



#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.423 min Scan# 683
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

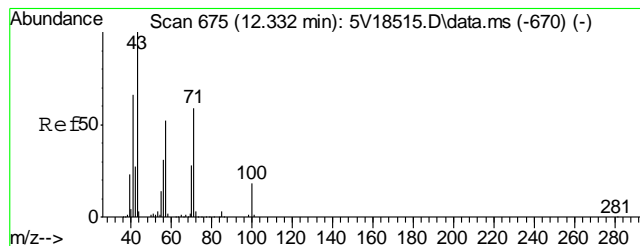
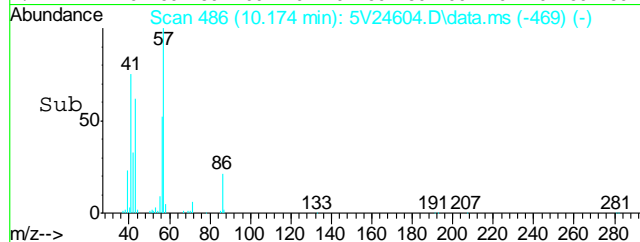
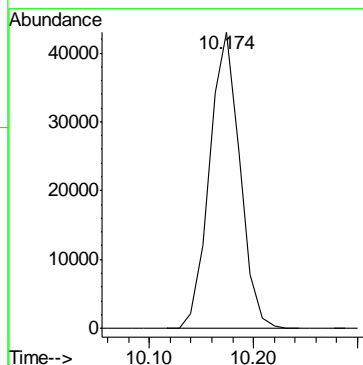
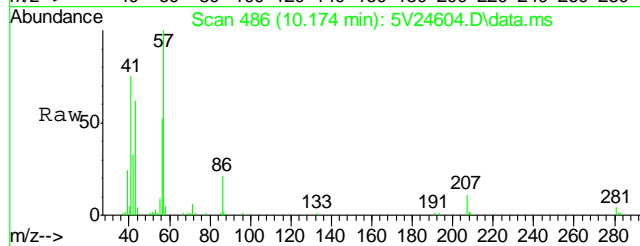
Tgt Ion:114 Resp: 428407





#41
Hexane
Concen: 22.41 ug/l
RT: 10.174 min Scan# 486
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

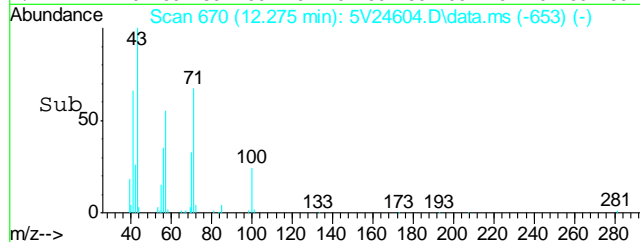
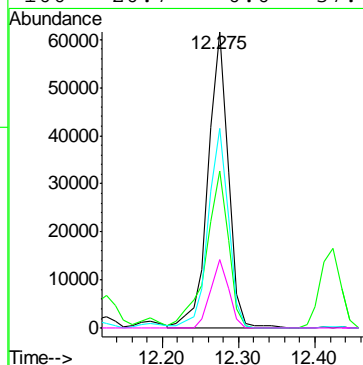
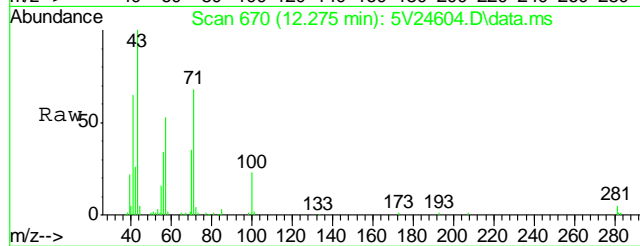
Tgt Ion: 57 Resp: 87022

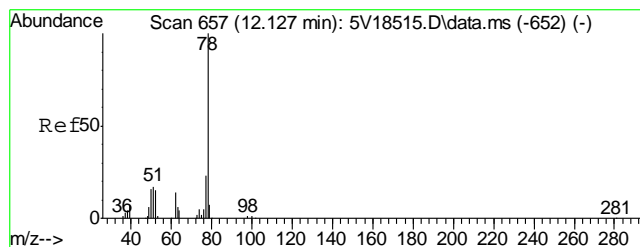


#43
Heptane
Concen: 25.29 ug/l
RT: 12.275 min Scan# 670
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

Tgt Ion: 43 Resp: 112925

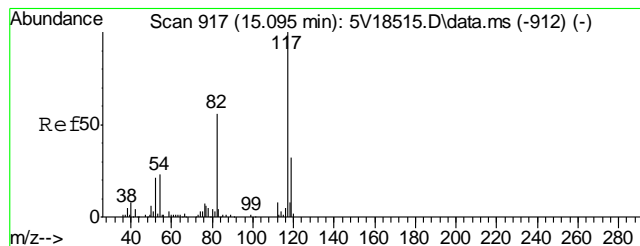
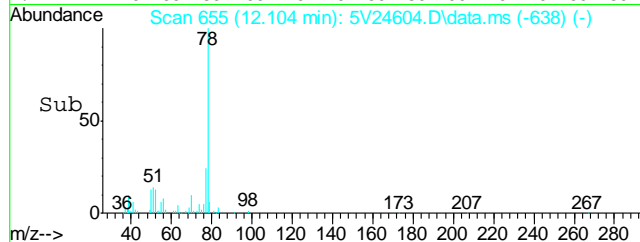
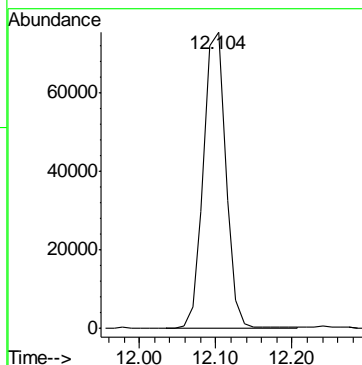
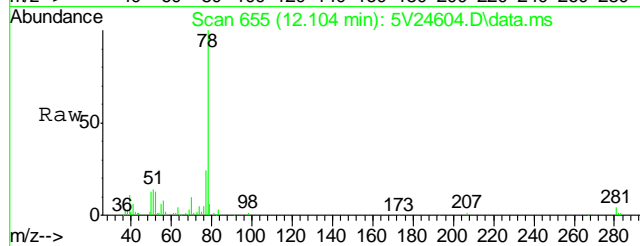
Ion	Ratio	Lower	Upper
43	100		
57	59.2	30.6	70.6
71	67.2	38.9	78.9
100	20.7	0.0	37.4





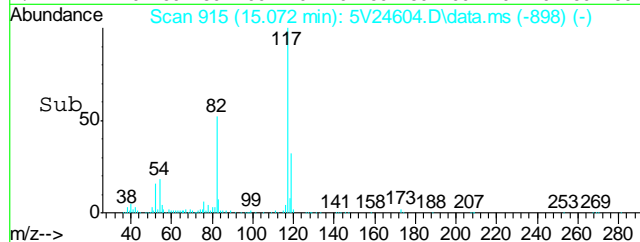
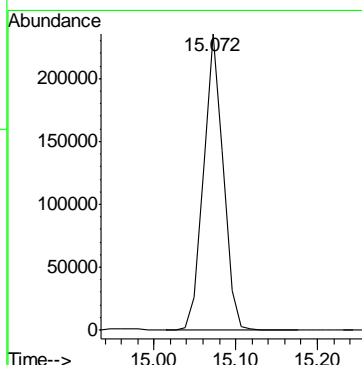
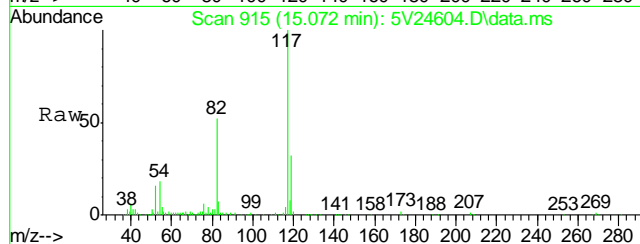
#50
Benzene
Concen: 13.64 ug/l
RT: 12.104 min Scan# 655
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

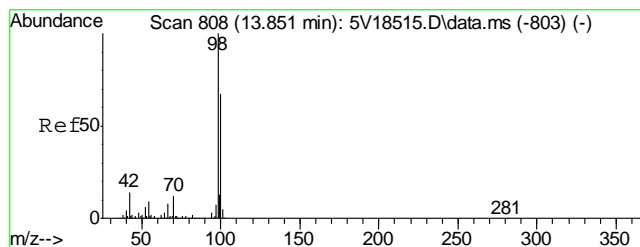
Tgt Ion: 78 Resp: 155141



#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.072 min Scan# 915
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

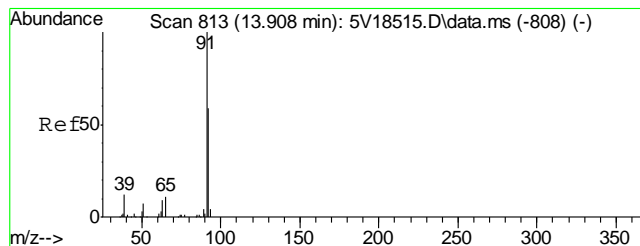
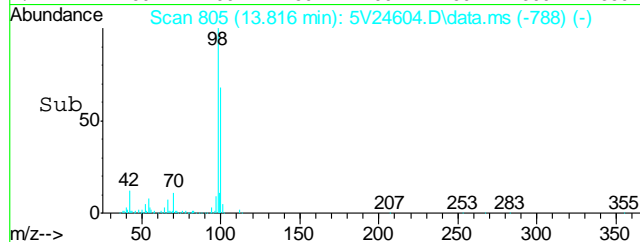
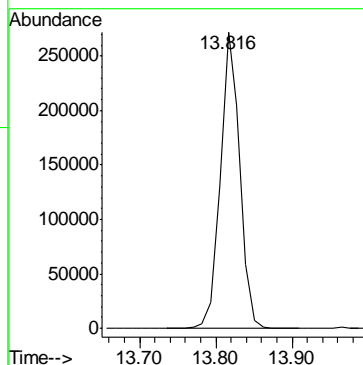
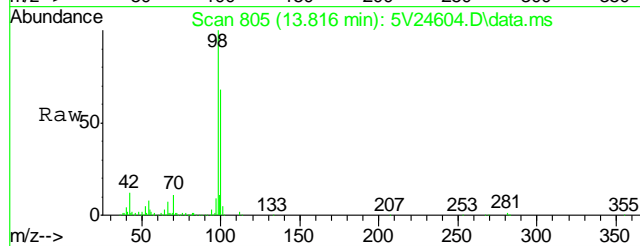
Tgt Ion: 117 Resp: 394374





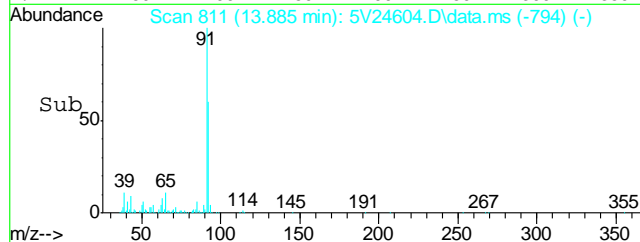
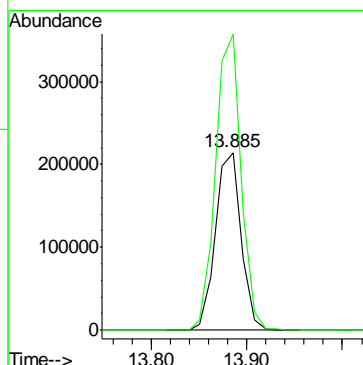
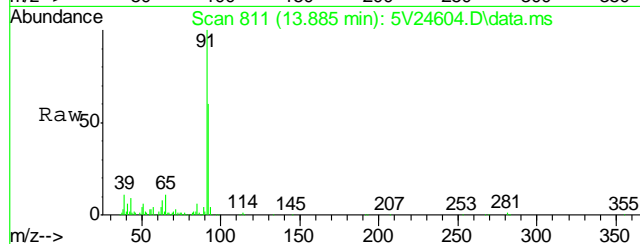
#61
Toluene-d8
Concen: 51.65 ug/l
RT: 13.816 min Scan# 805
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

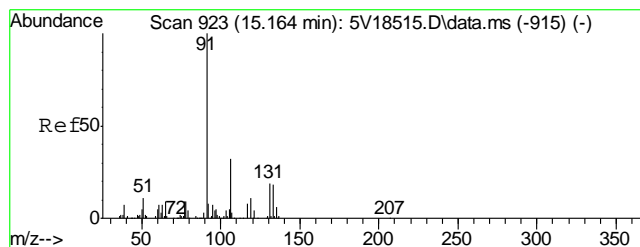
Tgt Ion: 98 Resp: 482508



#62
Toluene
Concen: 54.92 ug/l
RT: 13.885 min Scan# 811
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

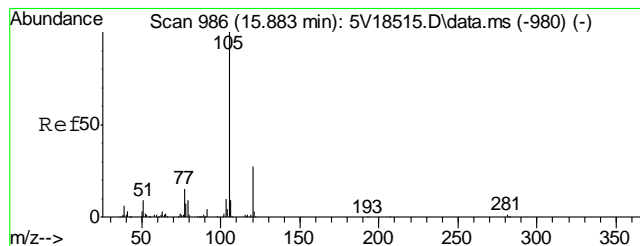
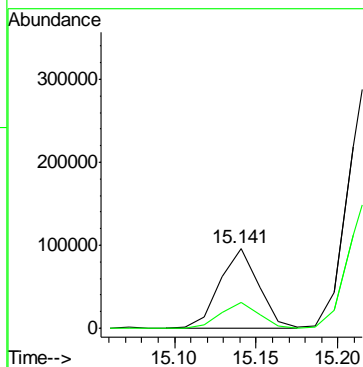
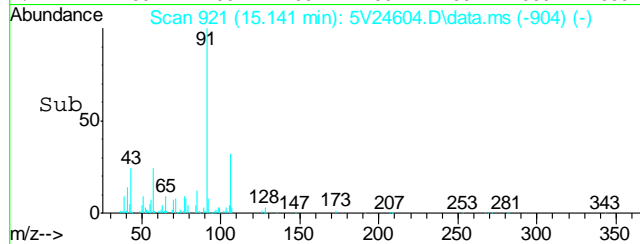
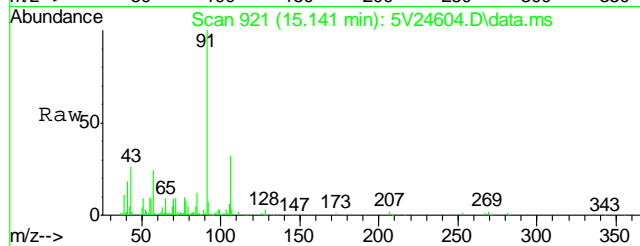
Tgt Ion: 92 Resp: 400141
Ion Ratio Lower Upper
92 100
91 165.0 149.8 189.8





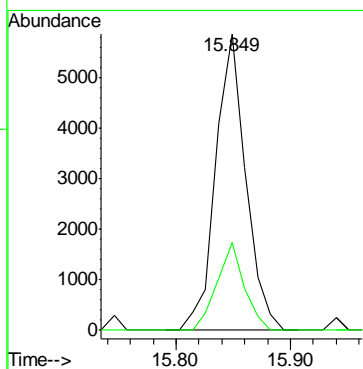
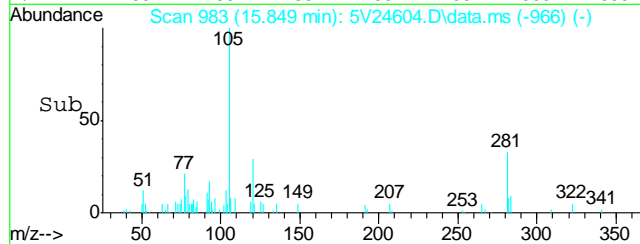
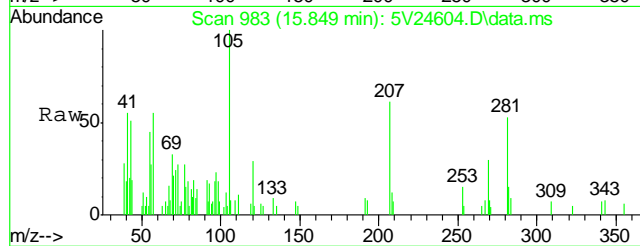
#66
Ethylbenzene
Concen: 11.32 ug/l
RT: 15.141 min Scan# 921
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

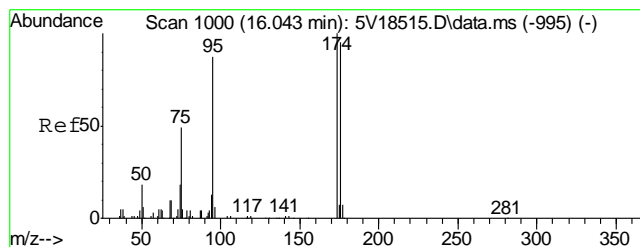
Tgt Ion	Ratio	Lower	Upper
91	100		
106	32.5	11.7	51.7



#68
Isopropylbenzene
Concen: 0.76 ug/l
RT: 15.849 min Scan# 983
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

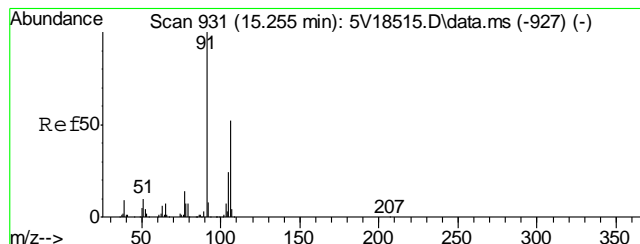
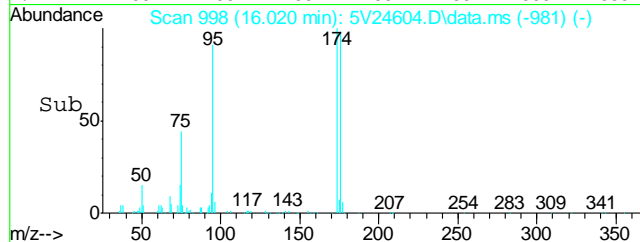
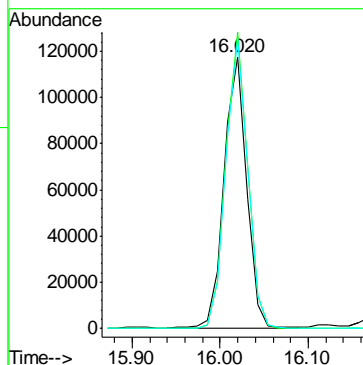
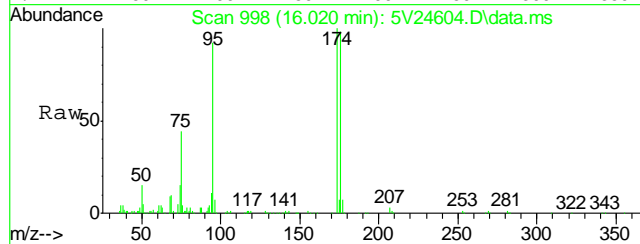
Tgt Ion	Ratio	Lower	Upper
105	100		
120	26.5	21.0	31.4





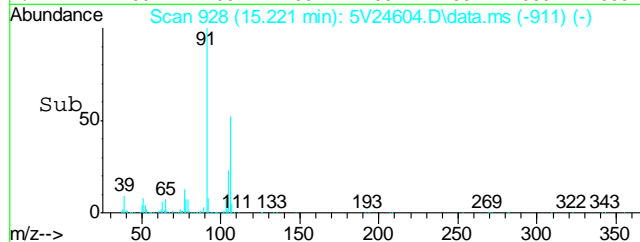
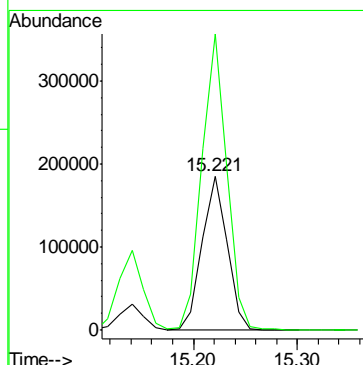
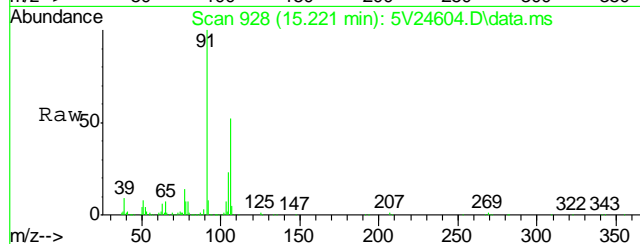
#69
4-Bromofluorobenzene
Concen: 52.01 ug/l
RT: 16.020 min Scan# 998
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

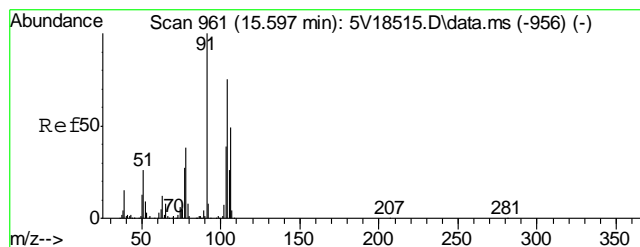
Tgt Ion	Resp	Lower	Upper
95	209417		
174	105.0	77.1	117.1
176	103.5	73.4	113.4



#72
m,p-xylene
Concen: 55.91 ug/l
RT: 15.221 min Scan# 928
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

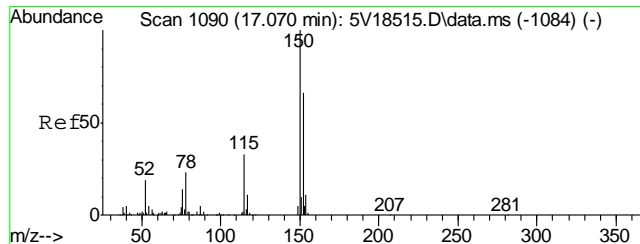
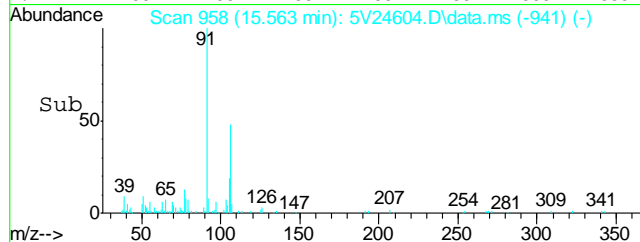
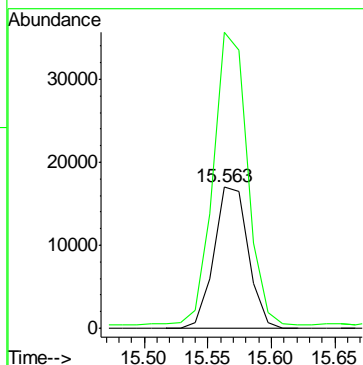
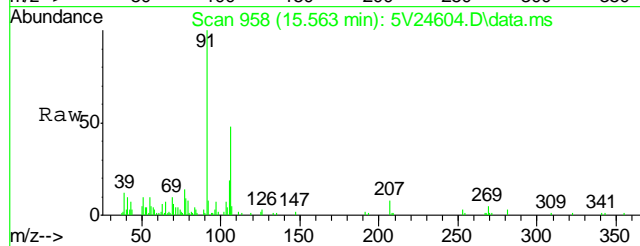
Tgt Ion	Resp	Lower	Upper
106	312157		
91	189.1	177.1	217.1





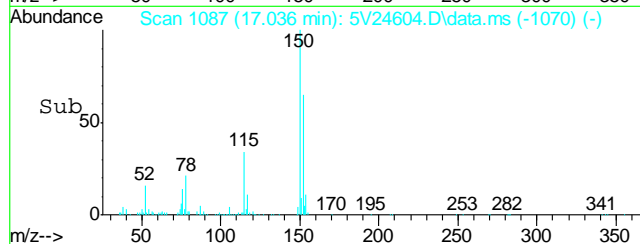
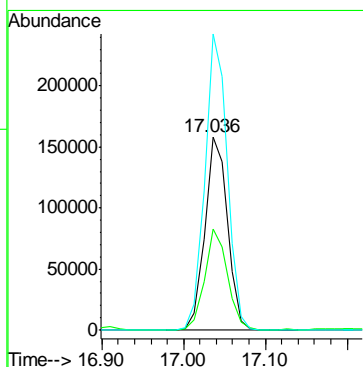
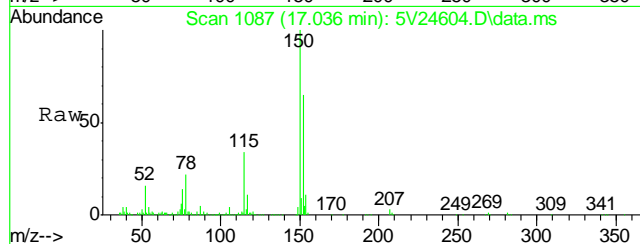
#73
o-xylene
Concen: 5.74 ug/l
RT: 15.563 min Scan# 958
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

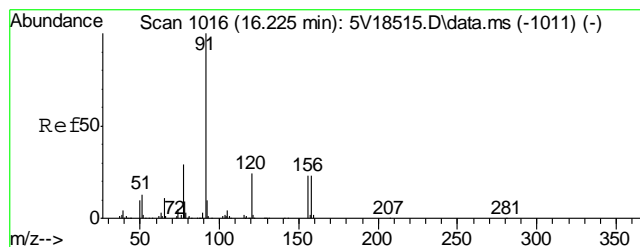
Tgt Ion	Ratio	Lower	Upper
106	100		
91	223.5	166.6	249.8



#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.036 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

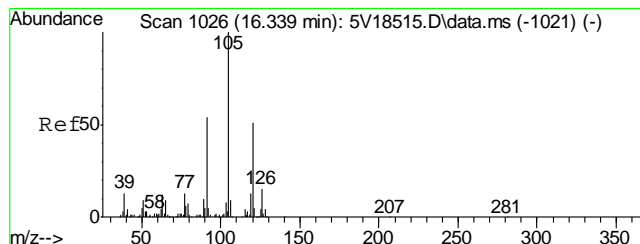
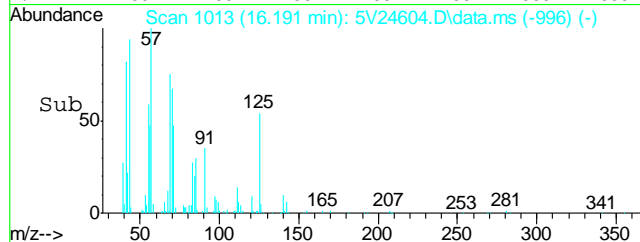
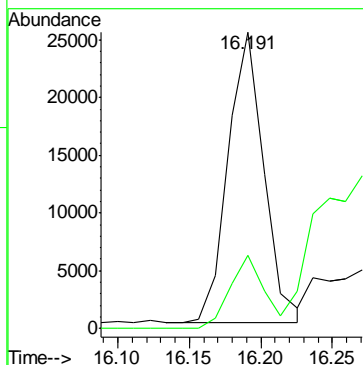
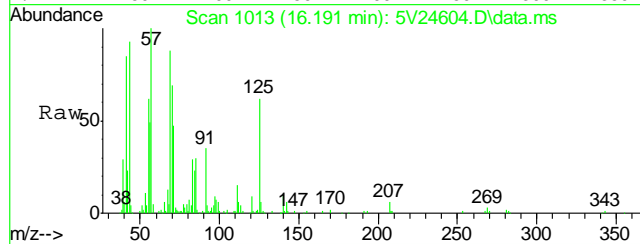
Tgt Ion	Ratio	Lower	Upper
152	100		
115	52.3	41.4	62.0
150	151.4	153.9	230.9#





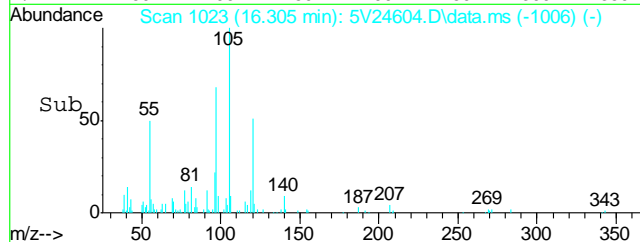
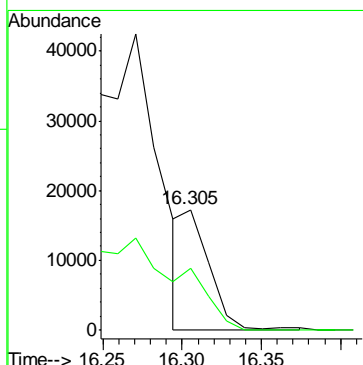
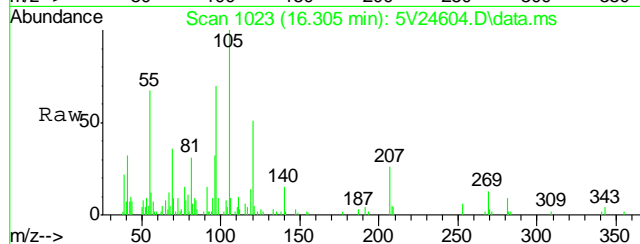
#77
n-Propylbenzene
Concen: 2.43 ug/l
RT: 16.191 min Scan# 1013
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

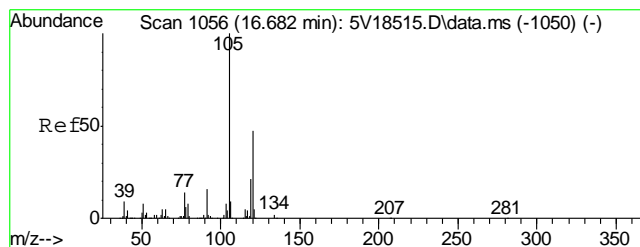
Tgt Ion: 91 Resp: 44133
Ion Ratio Lower Upper
91 100
120 23.8 18.6 27.8



#80
1,3,5-Trimethylbenzene
Concen: 1.50 ug/l m
RT: 16.305 min Scan# 1023
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

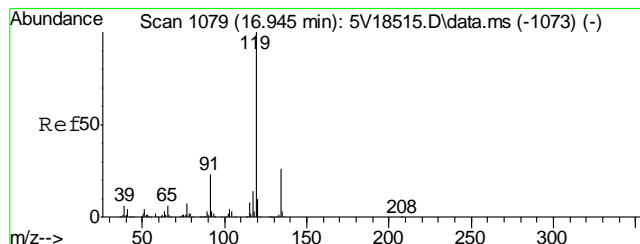
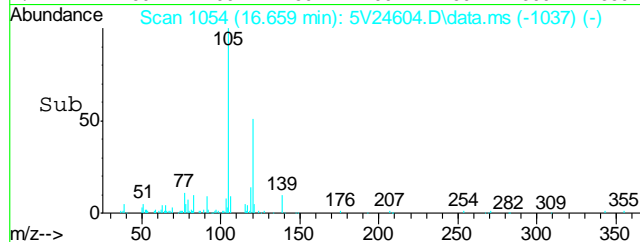
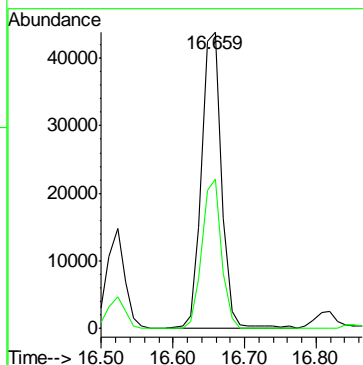
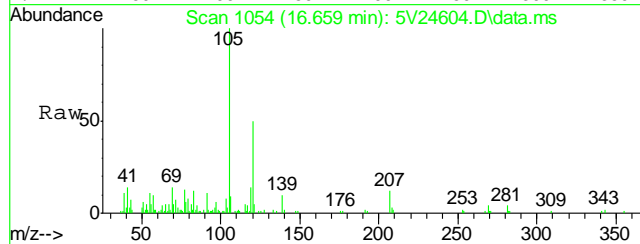
Tgt Ion: 105 Resp: 20758
Ion Ratio Lower Upper
105 100
120 261.8 40.1 60.1#





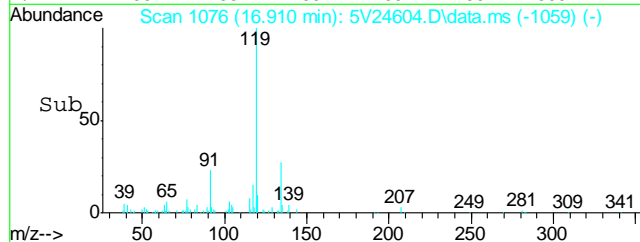
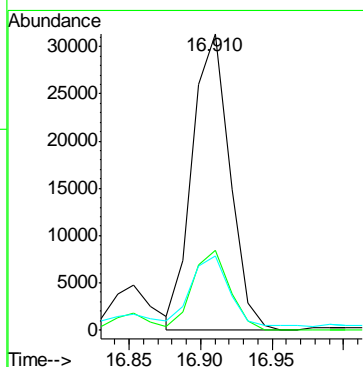
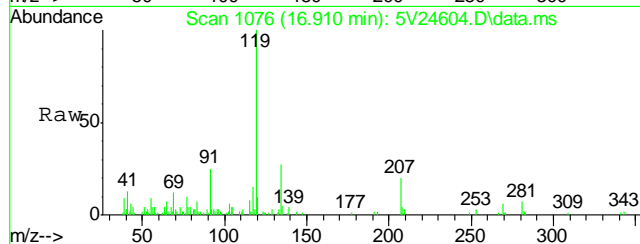
#82
1,2,4-Trimethylbenzene
Concen: 5.92 ug/l
RT: 16.659 min Scan# 1054
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

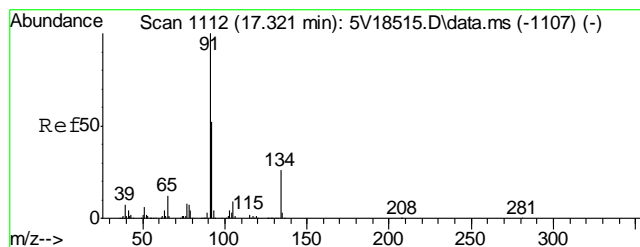
Tgt Ion:105 Resp: 85789
Ion Ratio Lower Upper
105 100
120 48.3 43.8 65.8



#86
p-Isopropyltoluene
Concen: 3.40 ug/l
RT: 16.910 min Scan# 1076
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

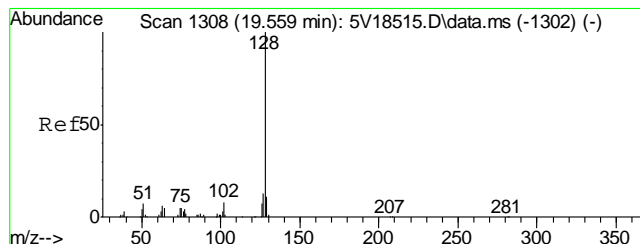
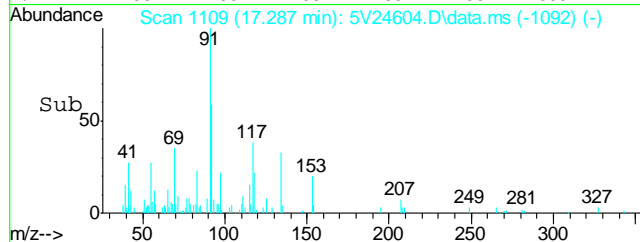
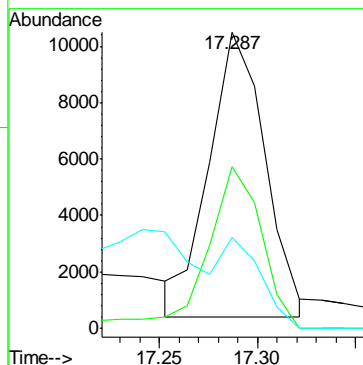
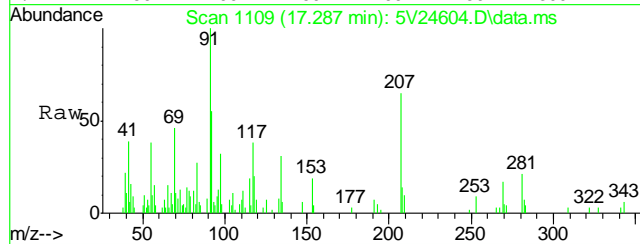
Tgt Ion:119 Resp: 56785
Ion Ratio Lower Upper
119 100
134 26.6 21.3 31.9
91 24.1 19.0 28.6





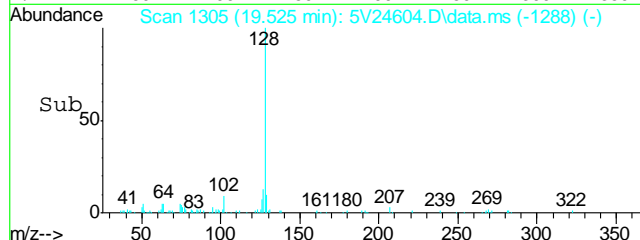
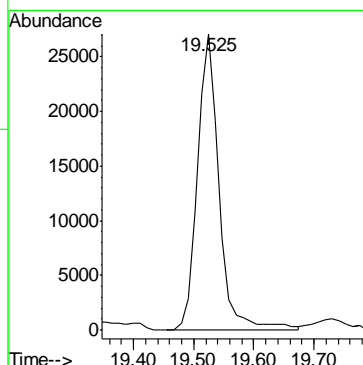
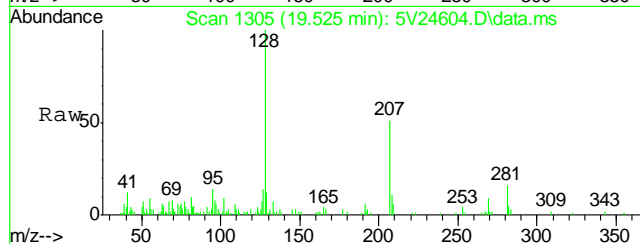
#88
n-Butylbenzene
Concen: 1.28 ug/l m
RT: 17.287 min Scan# 1109
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

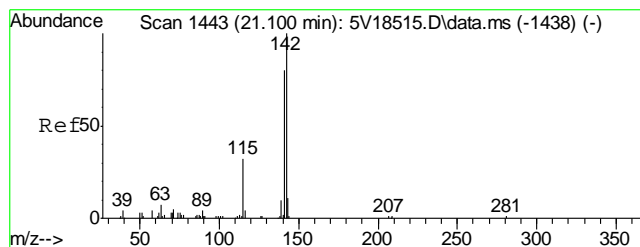
Tgt Ion: 91 Resp: 20014
Ion Ratio Lower Upper
91 100
92 54.2 42.2 63.4
134 0.0 21.4 32.2#



#91
Naphthalene
Concen: 4.56 ug/l
RT: 19.525 min Scan# 1305
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

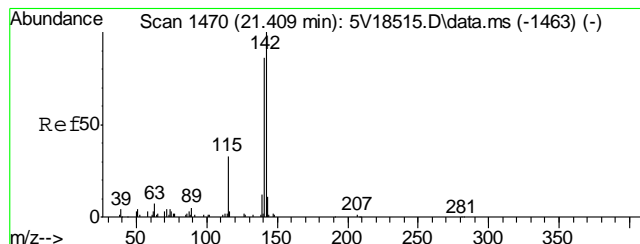
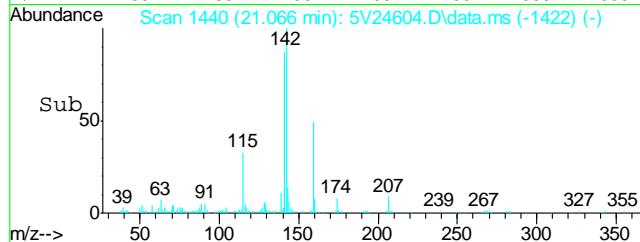
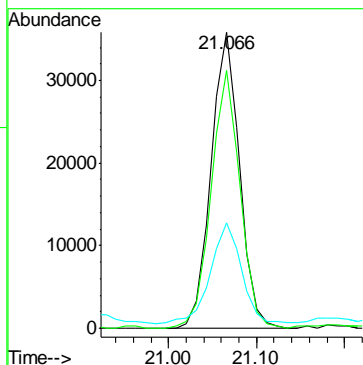
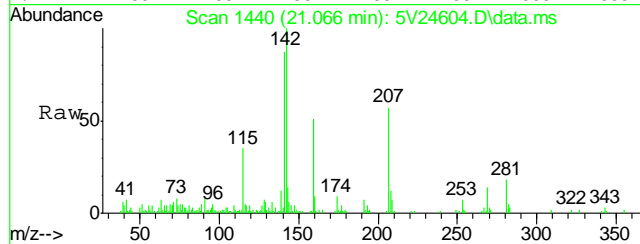
Tgt Ion: 128 Resp: 68664





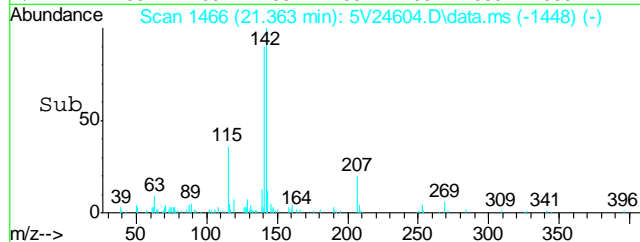
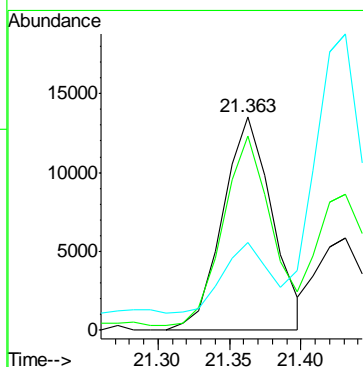
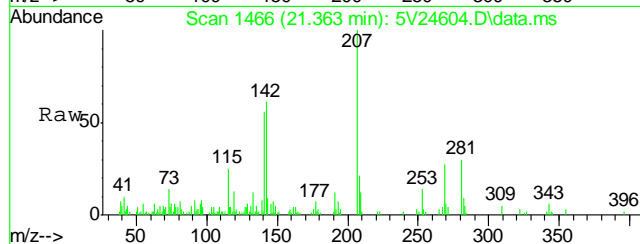
#94
2-Methylnaphthalene
Concen: 13.65 ug/l
RT: 21.066 min Scan# 1440
Delta R.T. 0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

Tgt Ion	Ratio	Lower	Upper
142	100		
141	88.4	66.2	99.4
115	36.9	25.9	38.9



#95
1-Methylnaphthalene
Concen: 5.08 ug/l
RT: 21.363 min Scan# 1466
Delta R.T. -0.000 min
Lab File: 5V24604.D
Acq: 14 Nov 2012 7:04 am

Tgt Ion	Ratio	Lower	Upper
142	100		
141	90.2	68.9	103.3
115	35.1	27.3	40.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111312.S\
 Data File : 5V24597.D
 Acq On : 14 Nov 2012 3:00 am
 Operator : BRETD
 Sample : MB
 Misc : MS4956,V5V1501,5.00,,100,5,1
 ALS Vial : 26 Sample Multiplier: 1

Quant Time: Nov 14 15:14:20 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
 Quant Title : 8260
 QLast Update : Wed Nov 14 09:56:27 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.625	168	466596	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.424	114	566385	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.072	117	516924	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.036	152	338090	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.024	102	38234	48.14	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	96.28%
61) Toluene-d8	13.817	98	630619	51.50	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	103.00%
69) 4-Bromofluorobenzene	16.020	95	243711	46.17	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	92.34%

Target Compounds

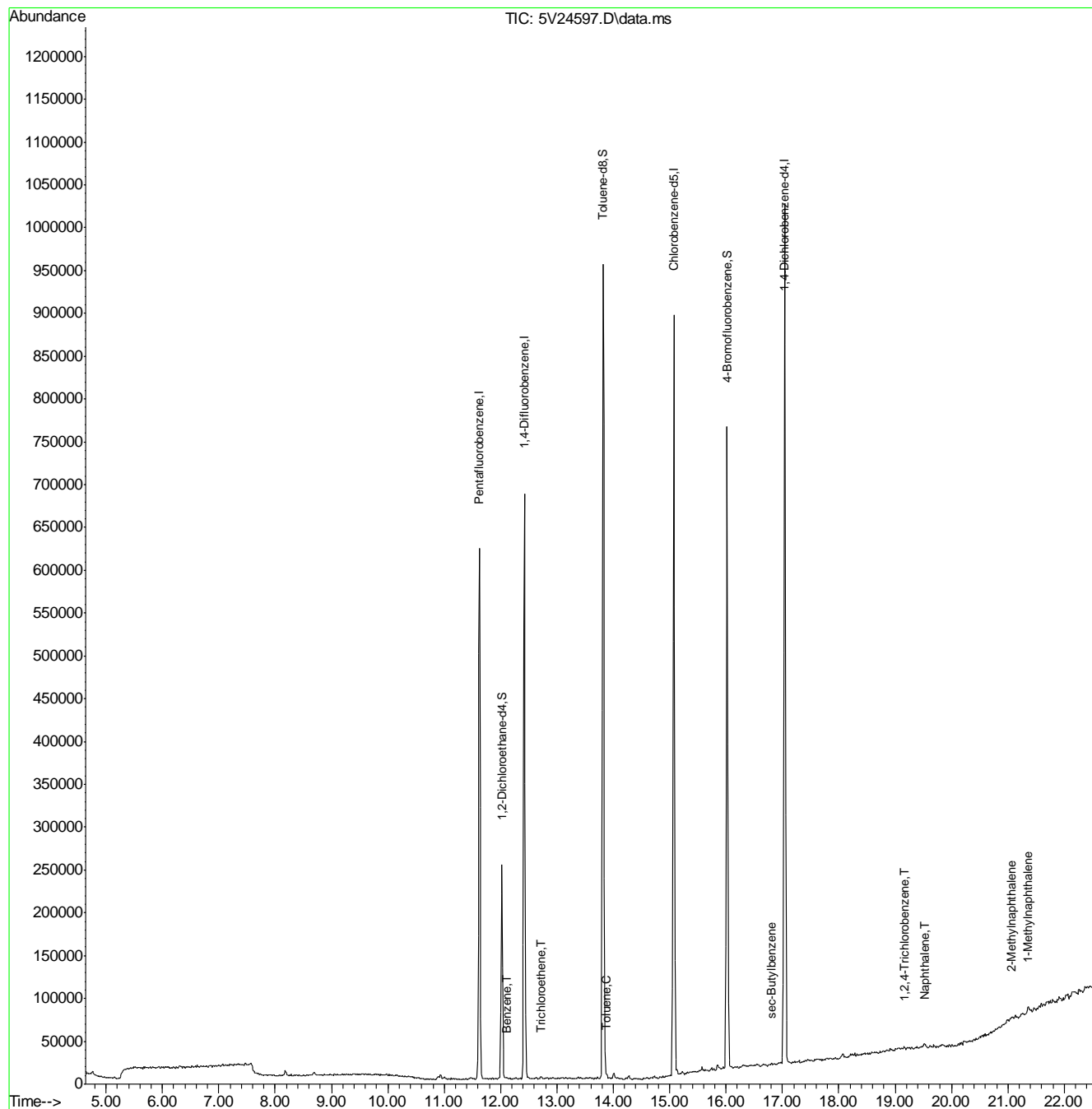
					Qvalue
1) TVH-Gasoline	13.102	TIC	141616m	Below Cal	
48) Trichloroethene	12.721	95	565	0.14 ug/l	88
50) Benzene	12.104	78	1340	0.09 ug/l	100
62) Toluene	13.874	92	854	0.09 ug/l #	63
83) sec-Butylbenzene	16.808	105	1026	0.05 ug/l	97
90) 1,2,4-Trichlorobenzene	19.160	180	1663	0.18 ug/l #	79
91) Naphthalene	19.525	128	5416	0.32 ug/l	100
94) 2-Methylnaphthalene	21.066	142	2952	5.30 ug/l #	67
95) 1-Methylnaphthalene	21.363	142	3770	1.39 ug/l #	94

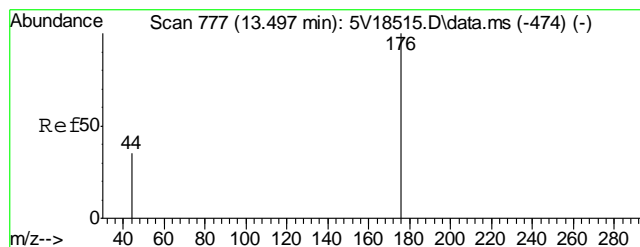
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111312.S\
Data File : 5V24597.D
Acq On : 14 Nov 2012 3:00 am
Operator : BRETD
Sample : MB
Misc : MS4956,V5V1501,5.00,,100,5,1
ALS Vial : 26 Sample Multiplier: 1

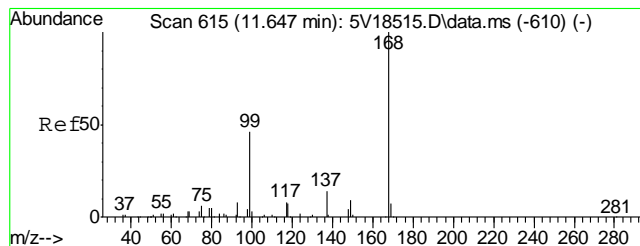
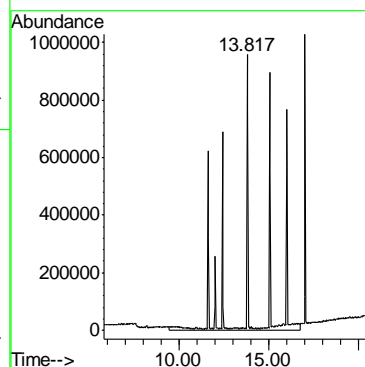
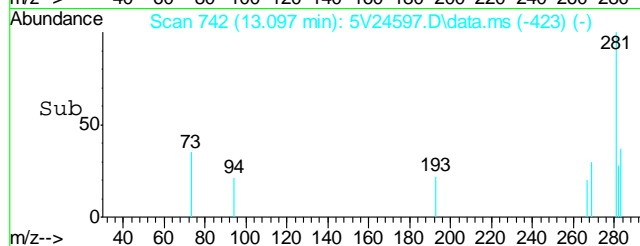
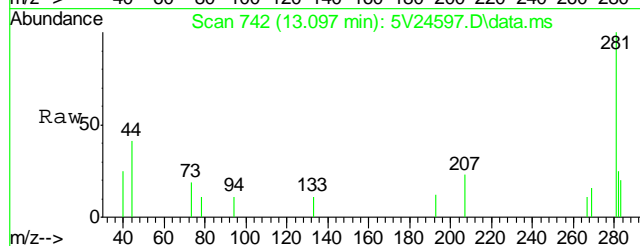
Quant Time: Nov 14 15:14:20 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:56:27 2012
Response via : Initial Calibration





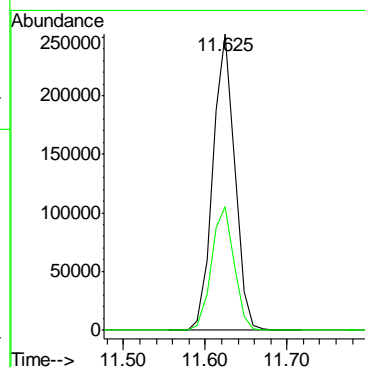
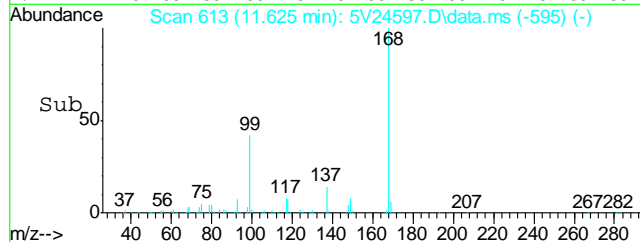
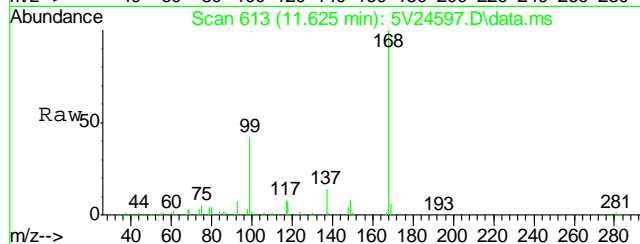
#1
TVH-Gasoline
Concen: Below Cal m
RT: 13.102 min Scan# 742
Delta R.T. 0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

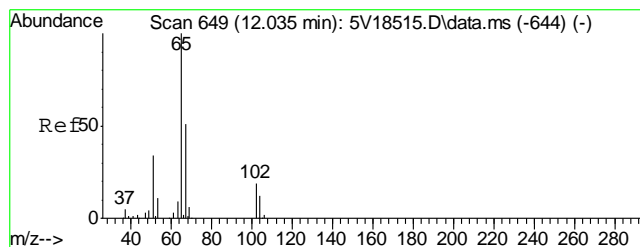
Tgt Ion:TIC Resp: 141616



#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.625 min Scan# 613
Delta R.T. -0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

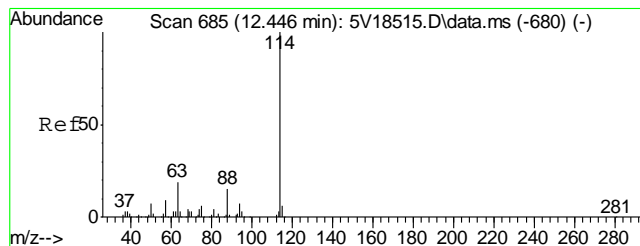
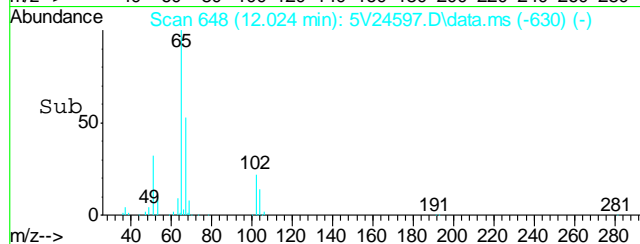
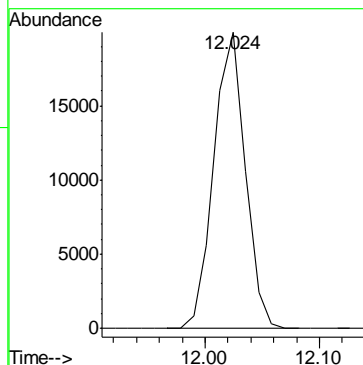
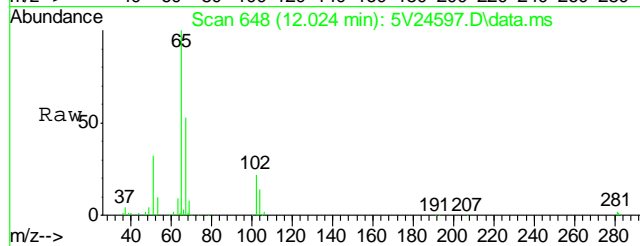
Tgt Ion:168 Resp: 466596
Ion Ratio Lower Upper
168 100
99 43.1 37.4 56.2





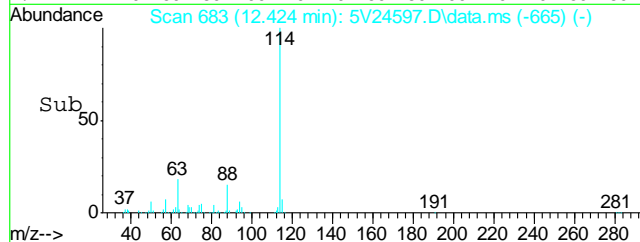
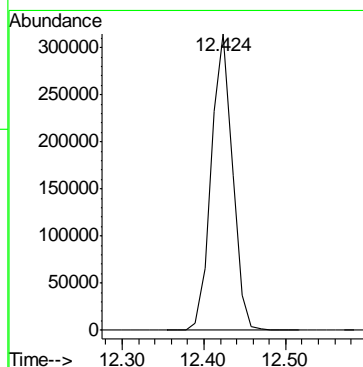
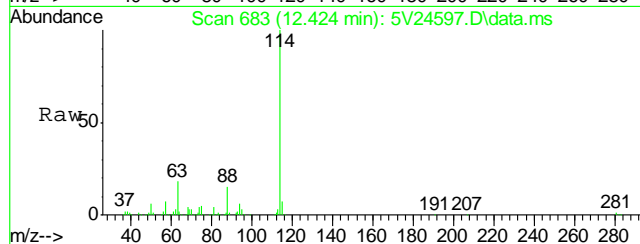
#33
1,2-Dichloroethane-d4
Concen: 48.14 ug/l
RT: 12.024 min Scan# 648
Delta R.T. -0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

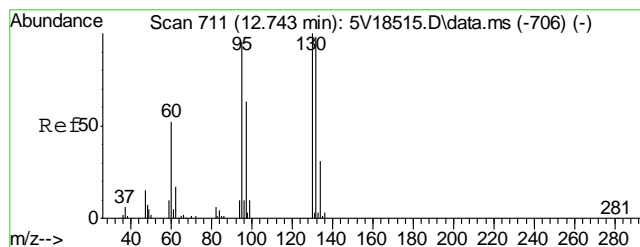
Tgt Ion:102 Resp: 38234



#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.424 min Scan# 683
Delta R.T. -0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

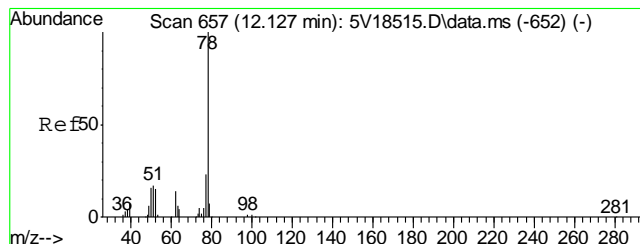
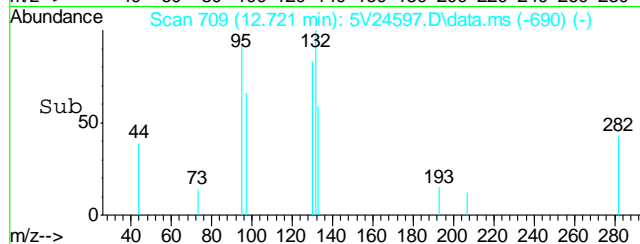
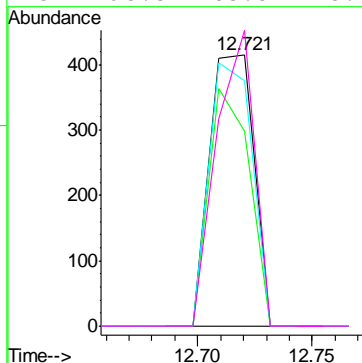
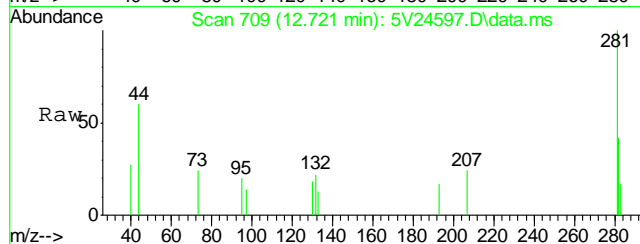
Tgt Ion:114 Resp: 566385





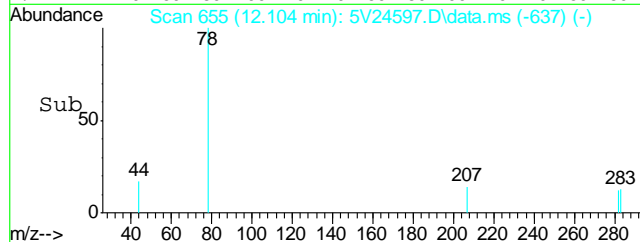
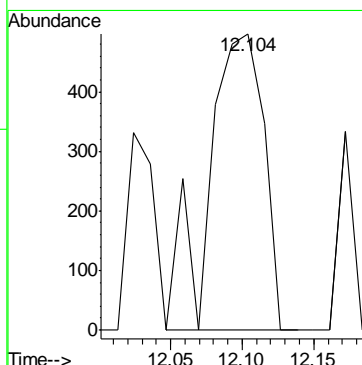
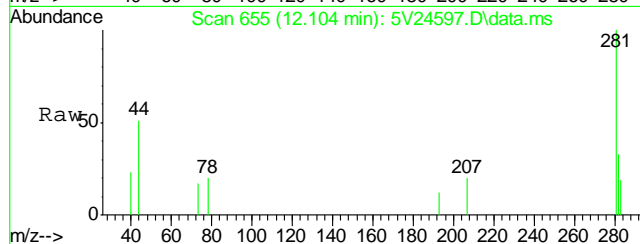
#48
Trichloroethene
Concen: 0.14 ug/l
RT: 12.721 min Scan# 709
Delta R.T. 0.011 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

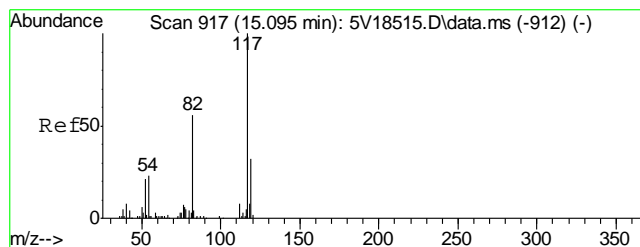
Tgt Ion:	95	Resp:	565
Ion Ratio	Lower	Upper	
95	100		
97	80.2	47.1	87.1
130	94.3	85.2	125.2
132	93.5	85.5	125.5



#50
Benzene
Concen: 0.09 ug/l
RT: 12.104 min Scan# 655
Delta R.T. -0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

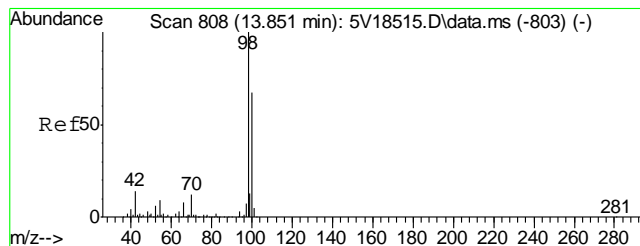
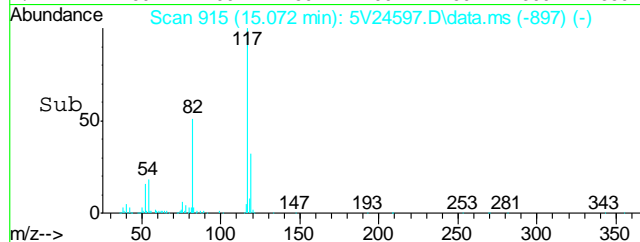
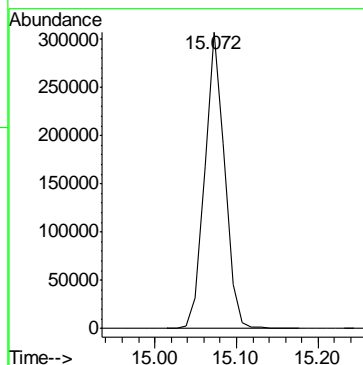
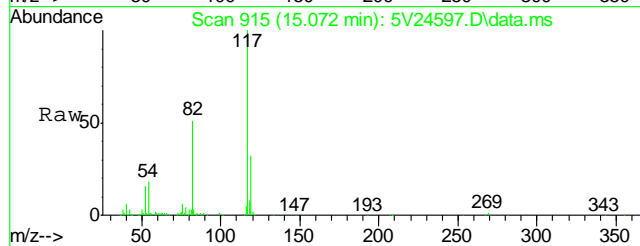
Tgt Ion: 78 Resp: 1340





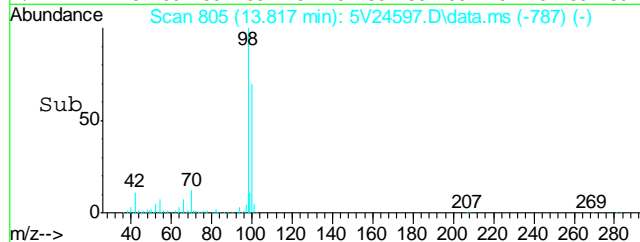
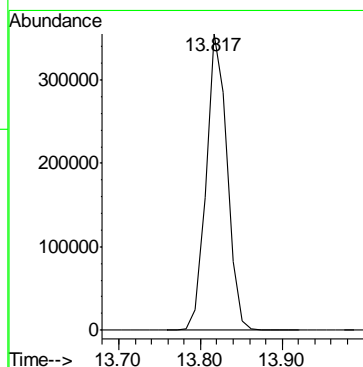
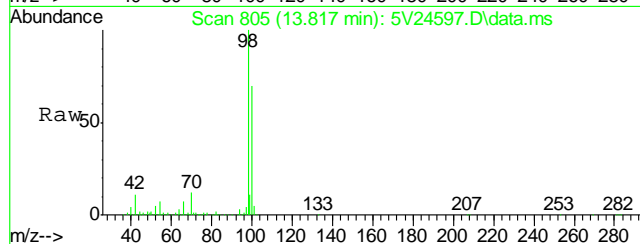
#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.072 min Scan# 915
Delta R.T. -0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

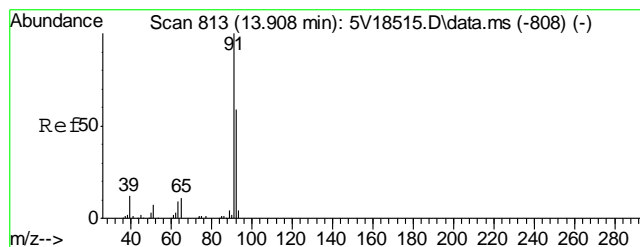
Tgt Ion:117 Resp: 516924



#61
Toluene-d8
Concen: 51.50 ug/l
RT: 13.817 min Scan# 805
Delta R.T. 0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

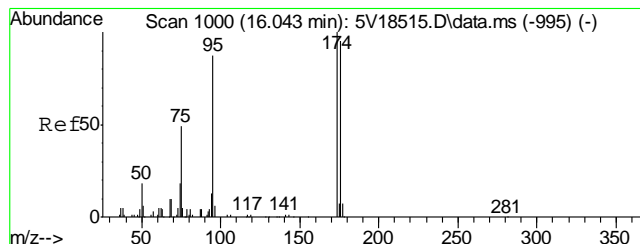
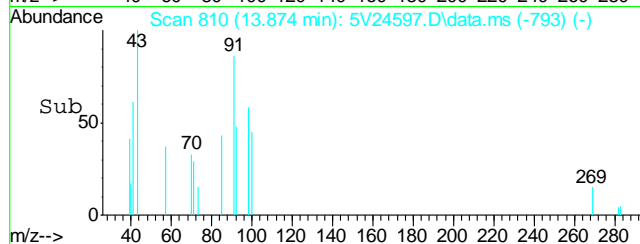
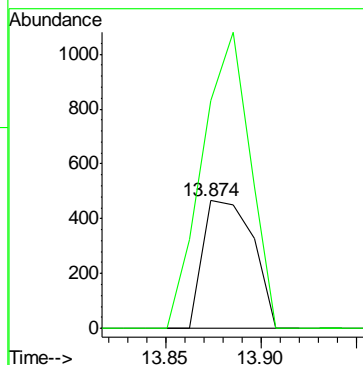
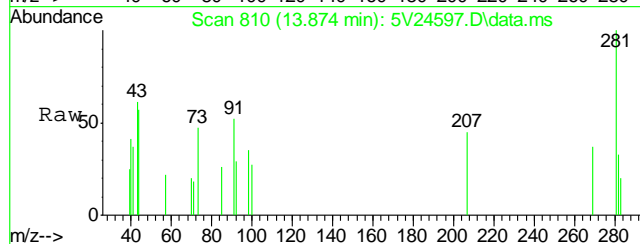
Tgt Ion: 98 Resp: 630619





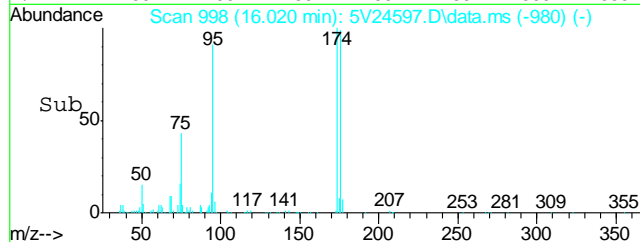
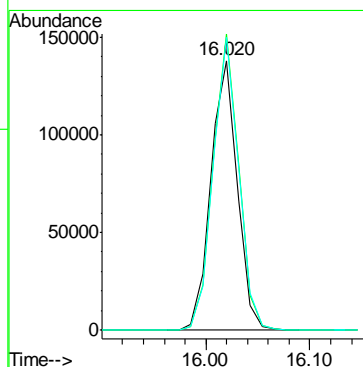
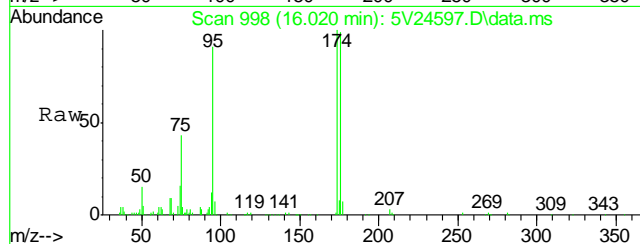
#62
Toluene
Concen: 0.09 ug/l
RT: 13.874 min Scan# 810
Delta R.T. -0.011 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

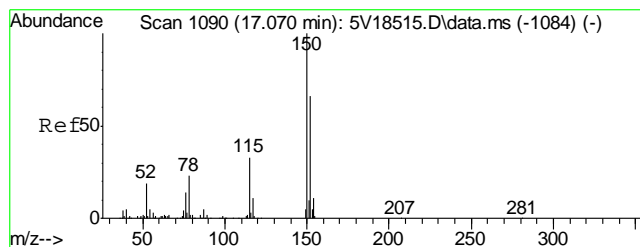
Tgt Ion: 92 Resp: 854
Ion Ratio Lower Upper
92 100
91 220.4 149.8 189.8#



#69
4-Bromofluorobenzene
Concen: 46.17 ug/l
RT: 16.020 min Scan# 998
Delta R.T. -0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

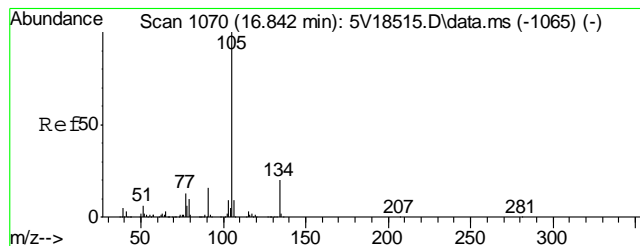
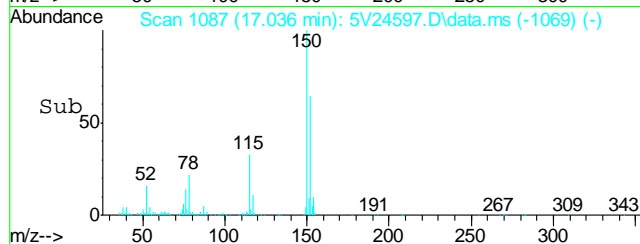
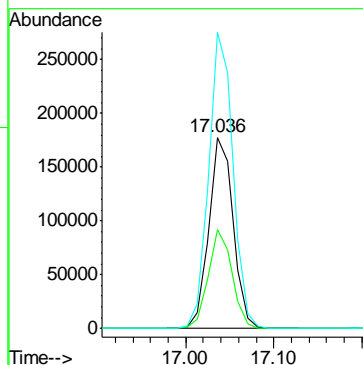
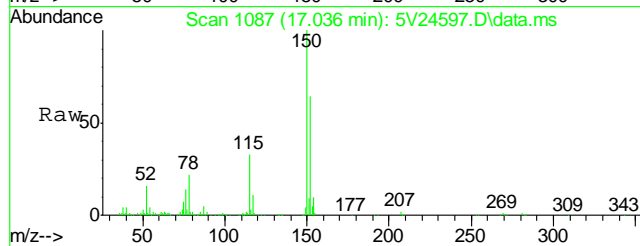
Tgt Ion: 95 Resp: 243711
Ion Ratio Lower Upper
95 100
174 106.8 77.1 117.1
176 105.9 73.4 113.4





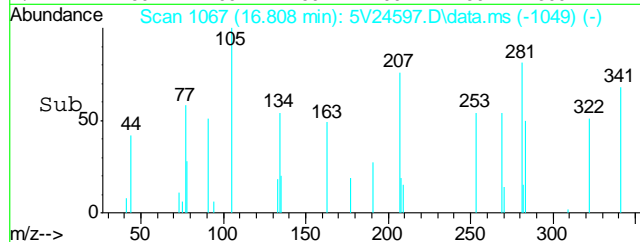
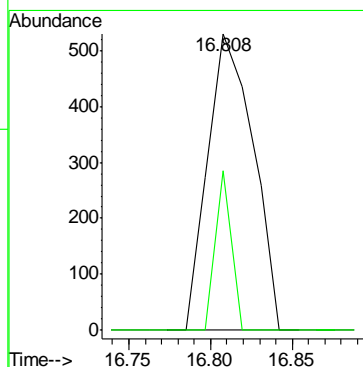
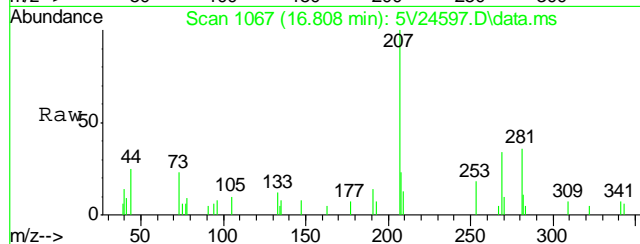
#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.036 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

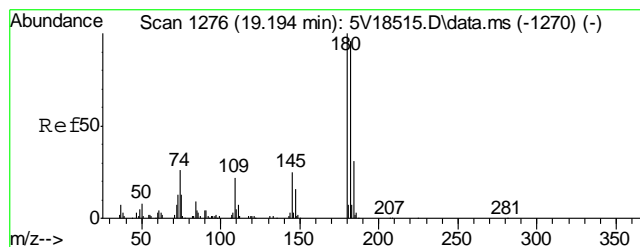
Tgt Ion:	152	Resp:	338090
Ion Ratio	Lower	Upper	
152	100		
115	50.8	41.4	62.0
150	154.6	153.9	230.9



#83
sec-Butylbenzene
Concen: 0.05 ug/l
RT: 16.808 min Scan# 1067
Delta R.T. -0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

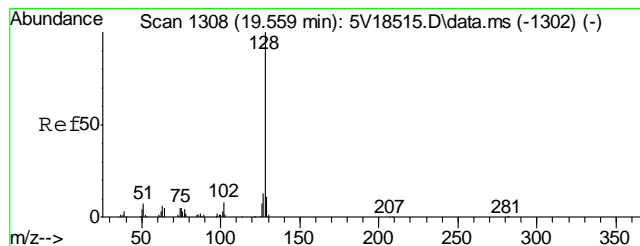
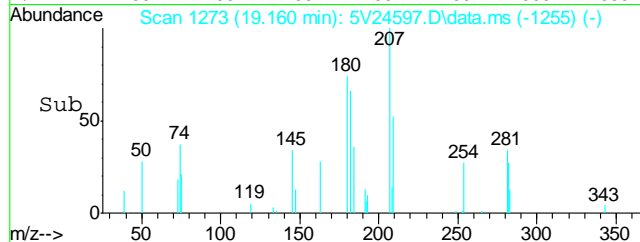
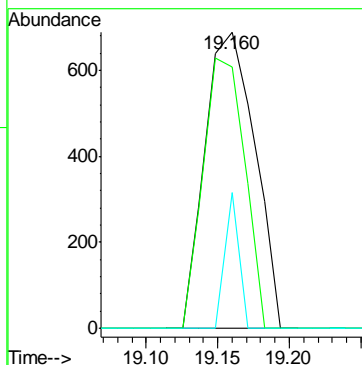
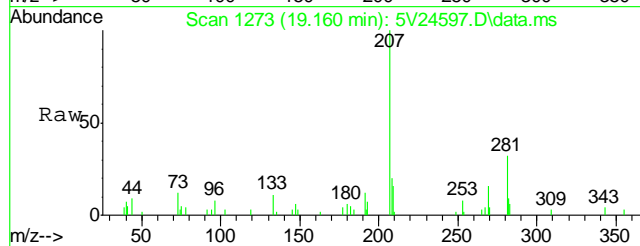
Tgt Ion:	105	Resp:	1026
Ion Ratio	Lower	Upper	
105	100		
134	19.1	16.5	24.7





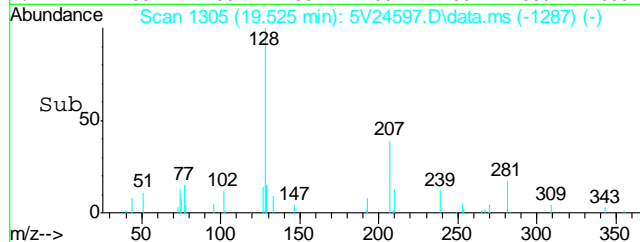
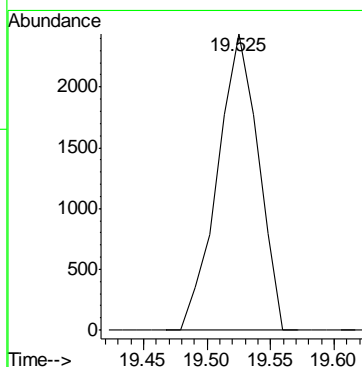
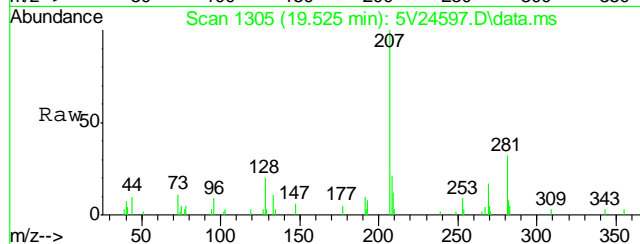
#90
1,2,4-Trichlorobenzene
Concen: 0.18 ug/l
RT: 19.160 min Scan# 1273
Delta R.T. -0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

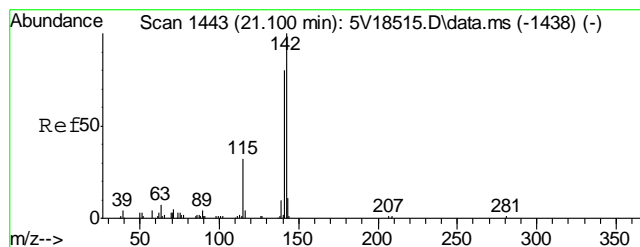
Tgt Ion:	180	Resp:	1663
Ion Ratio	Lower	Upper	
180	100		
182	76.2	76.2	114.4#
145	13.0	20.1	30.1#



#91
Naphthalene
Concen: 0.32 ug/l
RT: 19.525 min Scan# 1305
Delta R.T. -0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

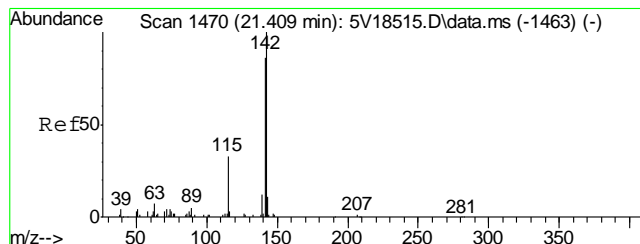
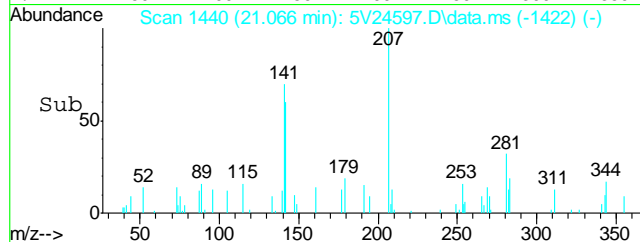
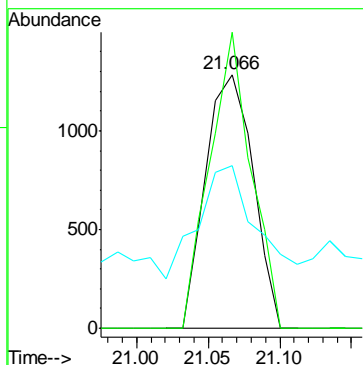
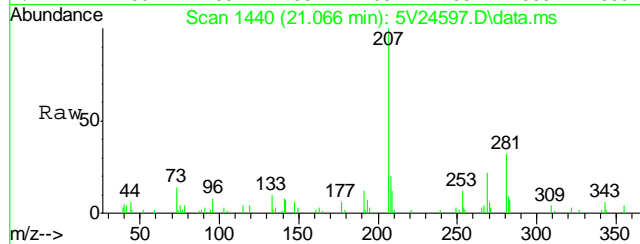
Tgt Ion:	128	Resp:	5416
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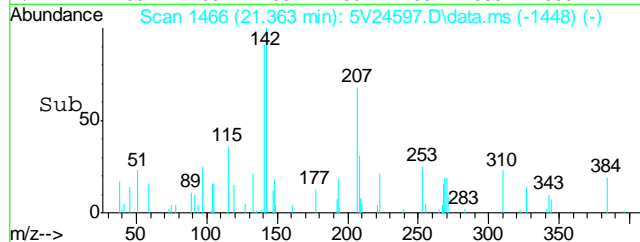
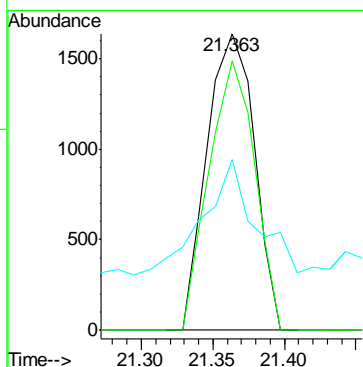
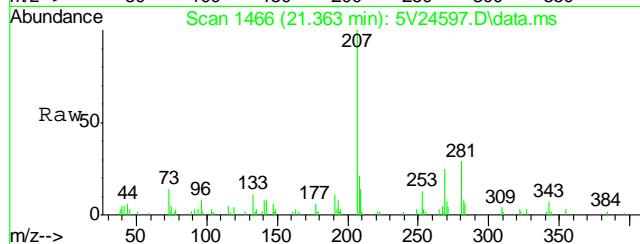
#94
2-Methylnaphthalene
Concen: 5.30 ug/l
RT: 21.066 min Scan# 1440
Delta R.T. 0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

Tgt Ion:	142	Resp:	2952
Ion Ratio	Lower	Upper	
142	100		
141	102.1	66.2	99.4#
115	66.7	25.9	38.9#



#95
1-Methylnaphthalene
Concen: 1.39 ug/l
RT: 21.363 min Scan# 1466
Delta R.T. 0.000 min
Lab File: 5V24597.D
Acq: 14 Nov 2012 3:00 am

Tgt Ion:	142	Resp:	3770
Ion Ratio	Lower	Upper	
142	100		
141	87.6	68.9	103.3
115	44.2	27.3	40.9#



GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6941-MB	3G11997.D	1	11/09/12	DC	11/09/12	OP6941	E3G567

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D40712-1, D40712-2, D40712-3

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	
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	
50-32-8	Benzo(a)pyrene	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	99% 10-159%
321-60-8	2-Fluorobiphenyl	100% 19-131%
1718-51-0	Terphenyl-d14	120% 18-150%

8.1.1

8

Blank Spike Summary

Page 1 of 1

Job Number: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6941-BS	3G11998.D	1	11/09/12	DC	11/09/12	OP6941	E3G567

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D40712-1, D40712-2, D40712-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	79.2	95	68-130
120-12-7	Anthracene	83.3	76.5	92	67-130
56-55-3	Benzo(a)anthracene	83.3	74.8	90	65-130
205-99-2	Benzo(b)fluoranthene	83.3	79.3	95	44-130
207-08-9	Benzo(k)fluoranthene	83.3	103	124	56-131
50-32-8	Benzo(a)pyrene	83.3	101	121	62-130
218-01-9	Chrysene	83.3	89.0	107	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	79.5	95	55-130
206-44-0	Fluoranthene	83.3	71.6	86	70-130
86-73-7	Fluorene	83.3	78.6	94	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	83.5	100	56-130
91-20-3	Naphthalene	83.3	80.5	97	70-130
129-00-0	Pyrene	83.3	88.2	106	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	91%	10-159%
321-60-8	2-Fluorobiphenyl	85%	19-131%
1718-51-0	Terphenyl-d14	105%	18-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6941-MS	3G12000.D	1	11/09/12	DC	11/09/12	OP6941	E3G567
OP6941-MSD	3G12001.D	1	11/09/12	DC	11/09/12	OP6941	E3G567
D40713-1	3G11999.D	1	11/09/12	DC	11/09/12	OP6941	E3G567

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D40712-1, D40712-2, D40712-3

CAS No.	Compound	D40713-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		94.7	81.7	86	79.3	84	3	25-151/30
120-12-7	Anthracene	ND		94.7	82.1	87	86.9	92	6	39-159/30
56-55-3	Benzo(a)anthracene	ND		94.7	91.0	96	98.4	104	8	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		94.7	88.3	93	99.4	105	12	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		94.7	111	117	115	122	4	10-188/30
50-32-8	Benzo(a)pyrene	ND		94.7	105	111	116	123	10	32-144/30
218-01-9	Chrysene	ND		94.7	91.1	96	99.3	105	9	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		94.7	92.7	98	103	109	11	21-152/30
206-44-0	Fluoranthene	ND		94.7	81.6	86	88.0	93	8	36-157/30
86-73-7	Fluorene	ND		94.7	84.4	89	83.8	89	1	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		94.7	94.5	100	107	114	12	20-154/30
91-20-3	Naphthalene	ND		94.7	83.1	88	81.3	86	2	10-163/30
129-00-0	Pyrene	ND		94.7	94.3	100	98.1	104	4	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D40713-1	Limits
4165-60-0	Nitrobenzene-d5	80%	80%	74%	10-159%
321-60-8	2-Fluorobiphenyl	74%	76%	68%	19-131%
1718-51-0	Terphenyl-d14	86%	95%	90%	18-150%

* = Outside of Control Limits.

GC/MS Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\110912\
 Data File : 3g12009.D
 Acq On : 9 Nov 2012 7:57 pm
 Operator : DONC
 Sample : D40712-1
 Misc : OP6941,E3G567,30.12,,,1,1
 ALS Vial : 24 Sample Multiplier: 1

Quant Time: Nov 12 09:06:34 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G567.M
 Quant Title : PAHSIM BASE
 QLast Update : Fri Nov 09 15:41:30 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.789	136	191348	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.507	164	100586	4.0000	ug/mL	0.00
15) Phenanthrene-d10	8.995	188	148841	4.0000	ug/mL	0.00
19) Chrysene-d12	11.636	240	89578	4.0000	ug/mL	0.00
24) Perylene-d12	13.046	264	49618	4.0000	ug/mL	0.01

System Monitoring Compounds

2) Nitrobenzene-d5	5.103	82	632104	37.9218	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	75.84%		
7) 2-Fluorobiphenyl	6.846	172	1464786	38.6914	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	77.38%		
21) Terphenyl-d14	10.586	244	507568	41.2336	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	82.46%		

Target Compounds

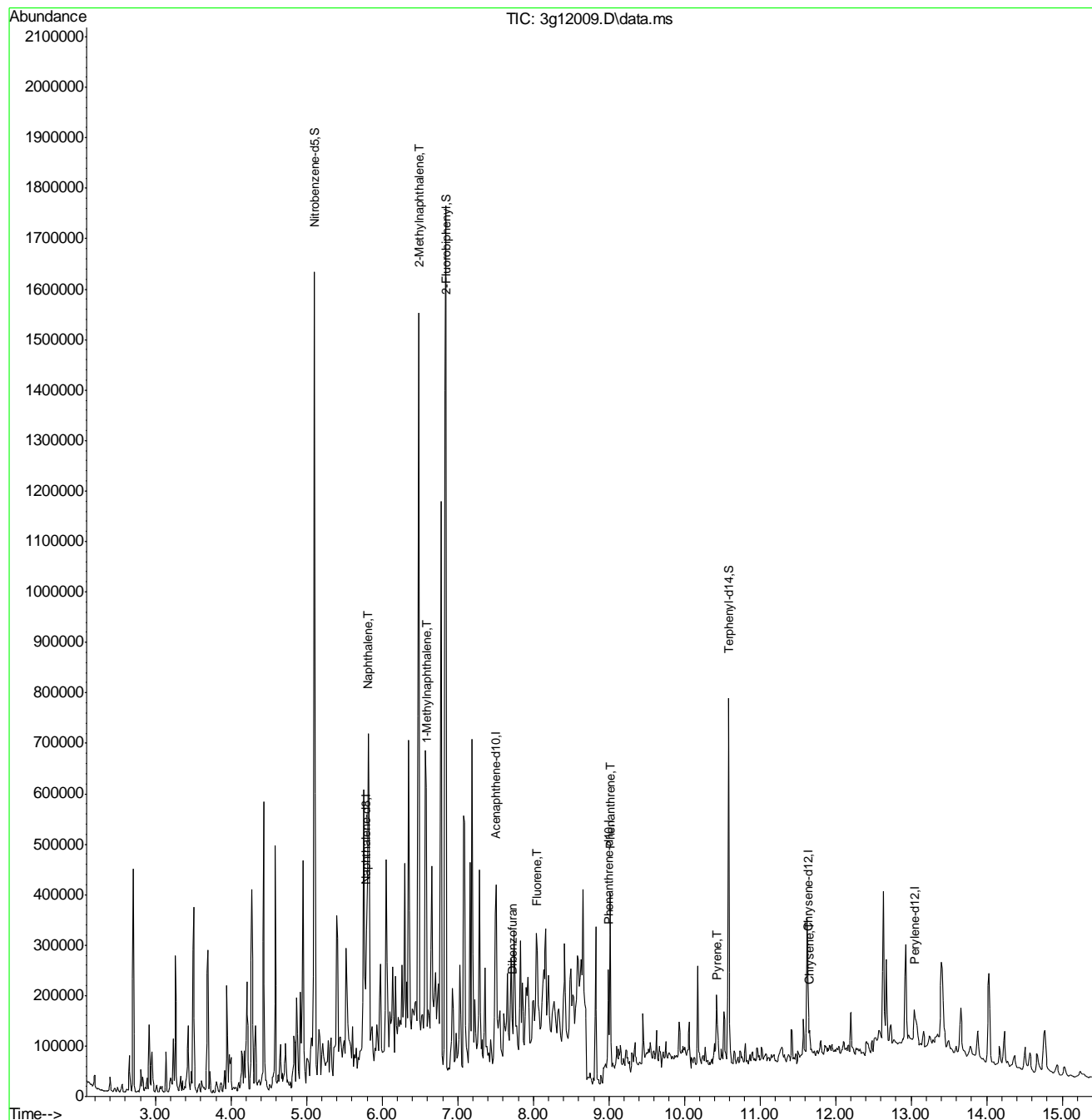
						Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.814	128	533269	10.9830	ug/mL	82
8) 2-Methylnaphthalene	6.487	142	714700	23.7288	ug/mL	97
9) 1-Methylnaphthalene	6.587	142	328872	11.8837	ug/mL	91
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.720	168	43788m	0.9455	ug/mL	
13) Fluorene	8.051	166	66356	1.7831	ug/mL#	59
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	9.019	178	225546	4.1172	ug/mL	87
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	0.000	202	0	N.D.	d	
20) Pyrene	10.436	202	38634m	0.8328	ug/mL	
22) Benzo(a)anthracene	0.000	228	0	N.D.	d	
23) Chrysene	11.656	228	40346	0.9479	ug/mL#	68
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	

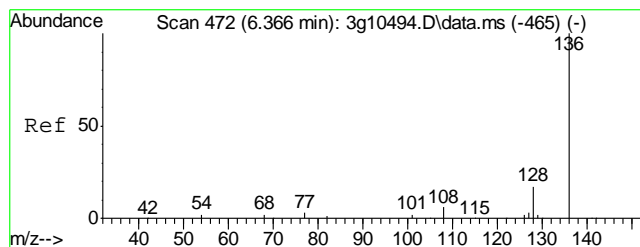
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\110912\
Data File : 3g12009.D
Acq On : 9 Nov 2012 7:57 pm
Operator : DONC
Sample : D40712-1
Misc : OP6941,E3G567,30.12,,,1,1
ALS Vial : 24 Sample Multiplier: 1

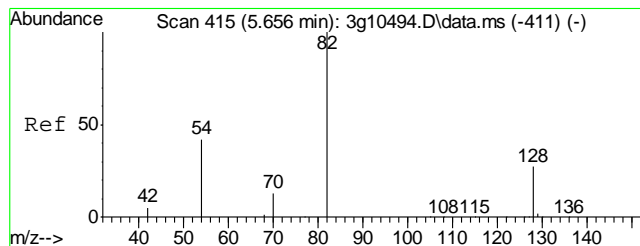
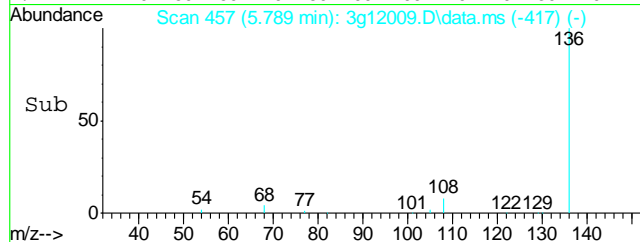
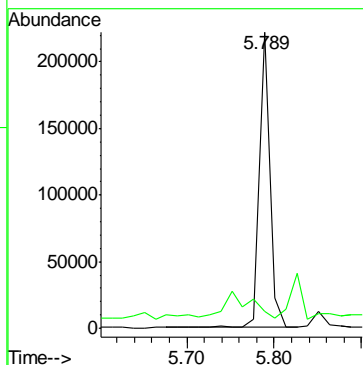
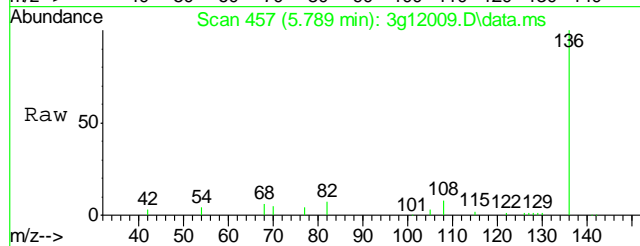
Quant Time: Nov 12 09:06:34 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G567.M
Quant Title : PAHSIM BASE
QLast Update : Fri Nov 09 15:41:30 2012
Response via : Initial Calibration





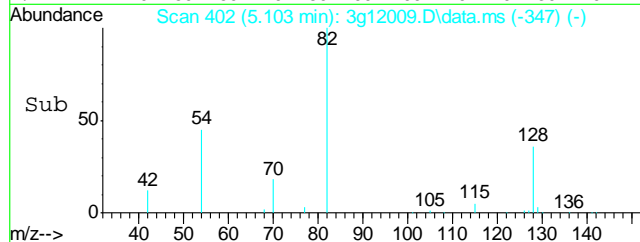
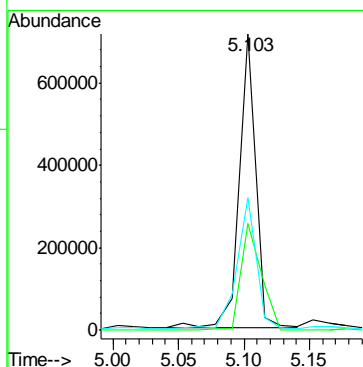
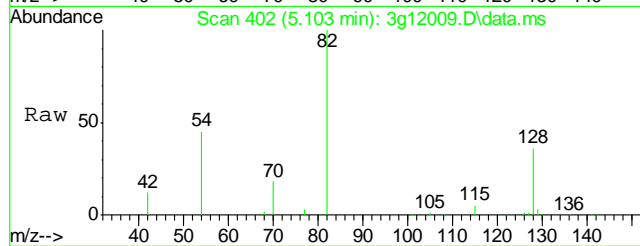
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.789 min Scan# 457
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

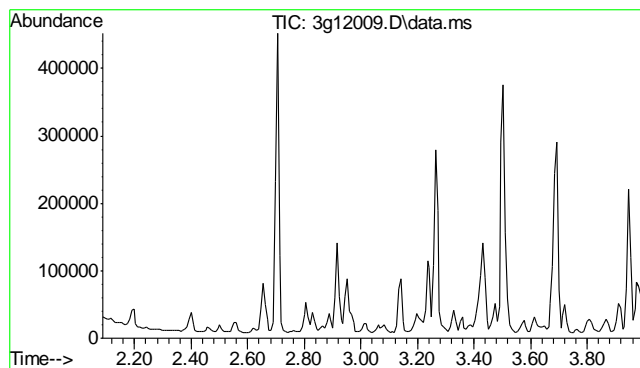
Tgt Ion	Ratio	Lower	Upper
136	100		
68	21.0	0.0	26.5



#2
Nitrobenzene-d5
Concen: 37.9218 ug/mL
RT: 5.103 min Scan# 402
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

Tgt Ion	Ratio	Lower	Upper
82	100		
128	44.5	26.7	66.7
54	52.5	29.0	69.0

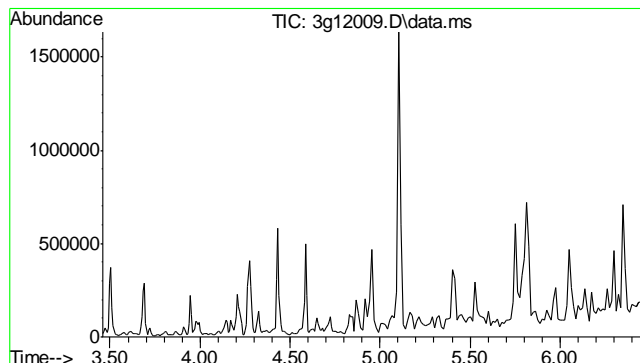
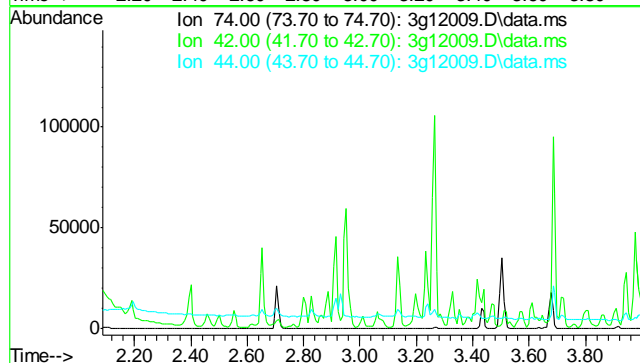




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.49 min

Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

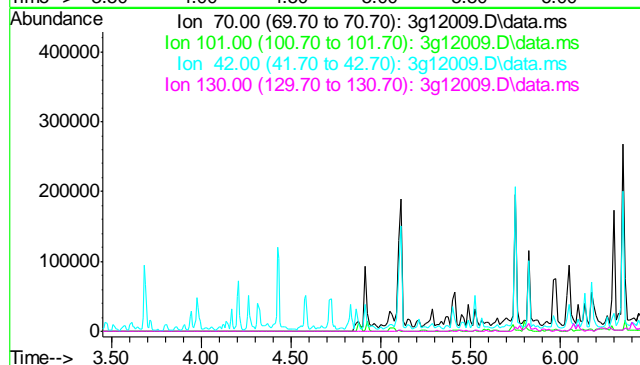
Tgt Ion	Exp Ratio
74	100
42	73.4
44	3.7

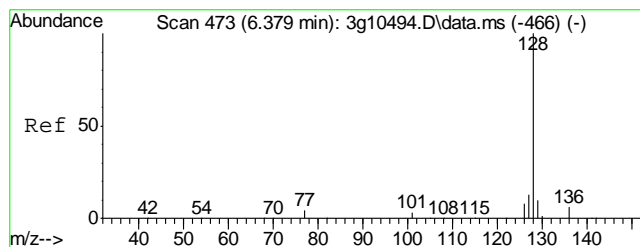


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.95 min

Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

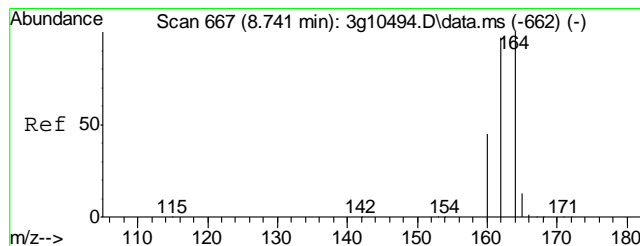
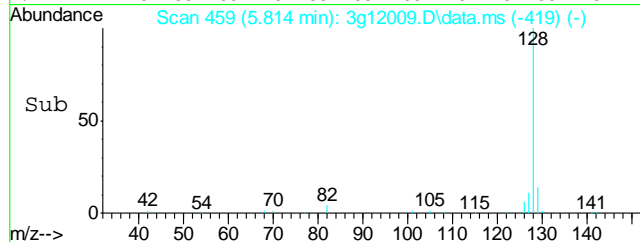
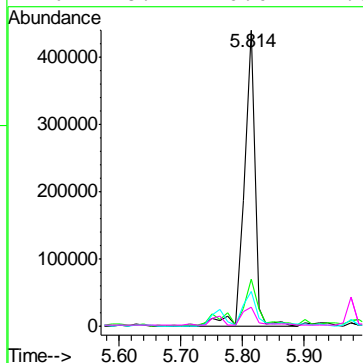
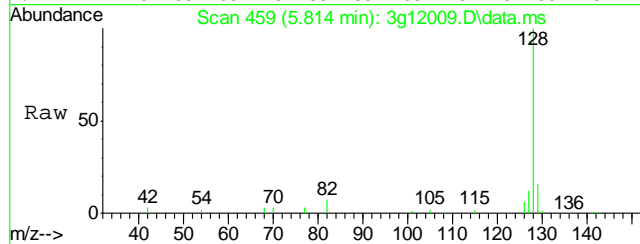
Tgt Ion	Exp Ratio
70	100
101	11.6
42	63.1
130	33.5





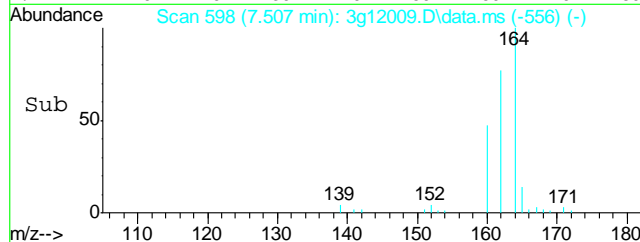
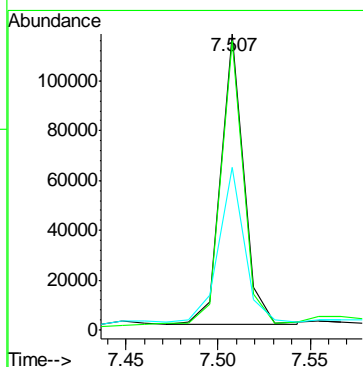
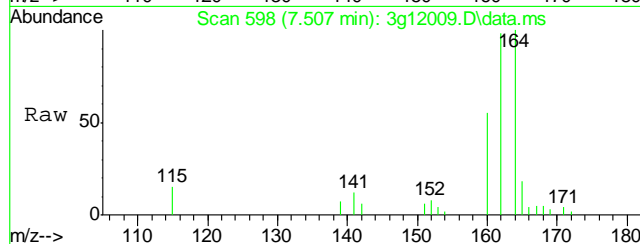
#5
Naphthalene
Concen: 10.9830 ug/mL
RT: 5.814 min Scan# 459
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

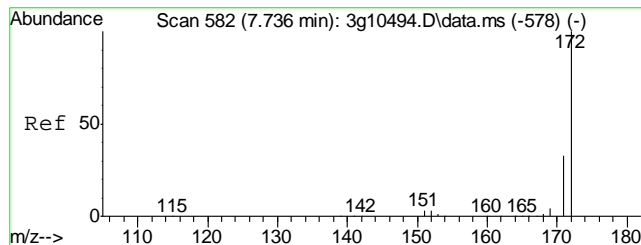
Tgt Ion	128	Ratio	100	Lower	Upper
128	100				
129	27.1		0.0	31.0	
127	14.5		0.0	32.5	
126	8.7		0.0	27.3	



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.507 min Scan# 598
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

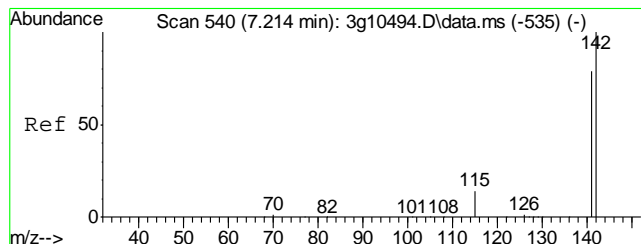
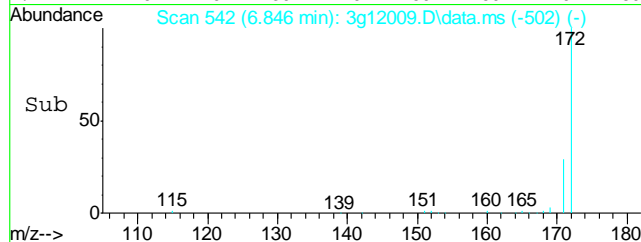
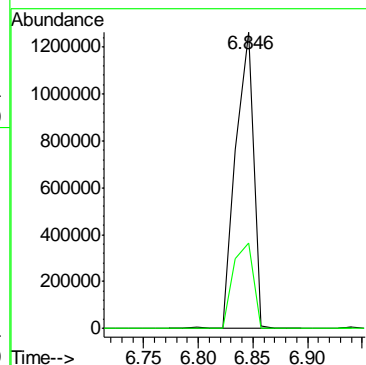
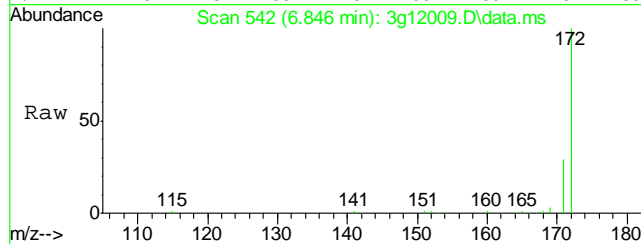
Tgt Ion	164	Ratio	100	Lower	Upper
164	100				
162	101.3		74.5	114.5	
160	59.6		24.7	64.7	





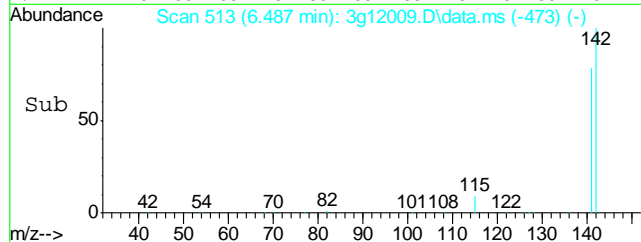
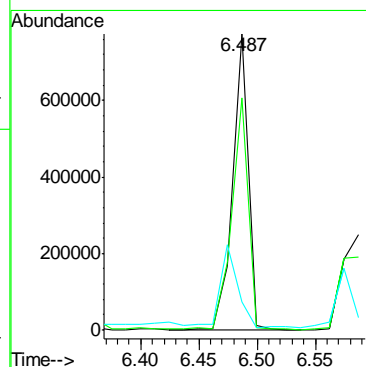
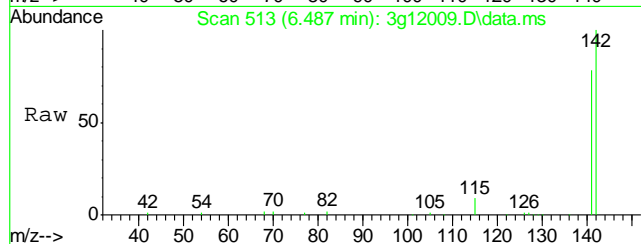
#7
2-Fluorobiphenyl
Concen: 38.6914 ug/mL
RT: 6.846 min Scan# 542
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

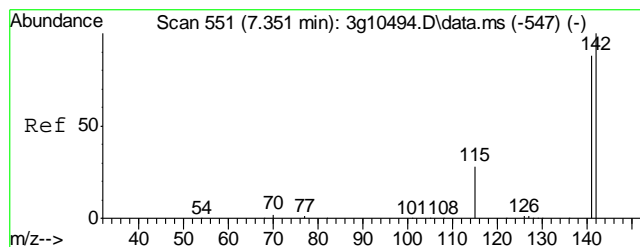
Tgt Ion:172 Resp: 1464786
Ion Ratio Lower Upper
172 100
171 32.9 13.2 53.2



#8
2-Methylnaphthalene
Concen: 23.7288 ug/mL
RT: 6.487 min Scan# 513
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

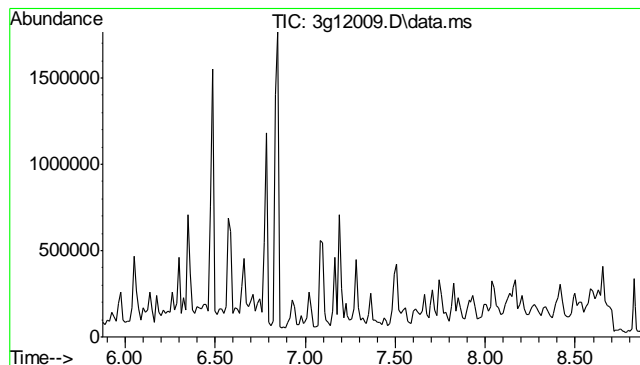
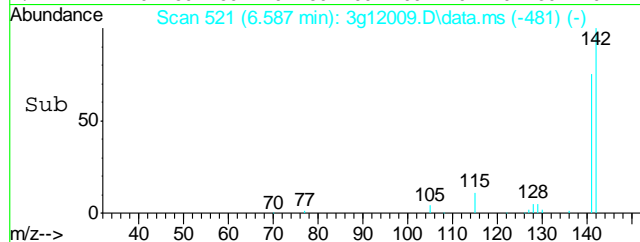
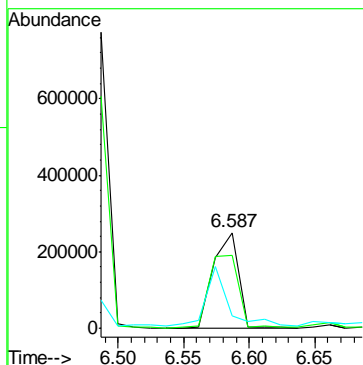
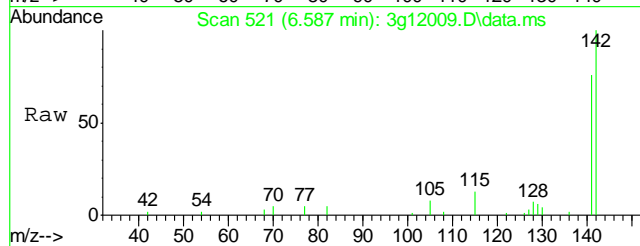
Tgt Ion:142 Resp: 714700
Ion Ratio Lower Upper
142 100
141 83.4 62.6 102.6
115 31.2 15.3 55.3





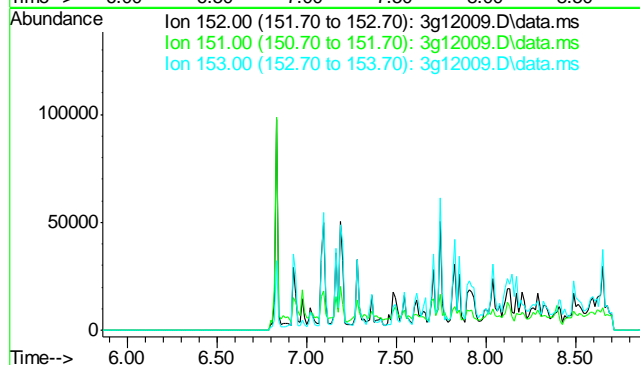
#9
1-Methylnaphthalene
Concen: 11.8837 ug/mL
RT: 6.587 min Scan# 521
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

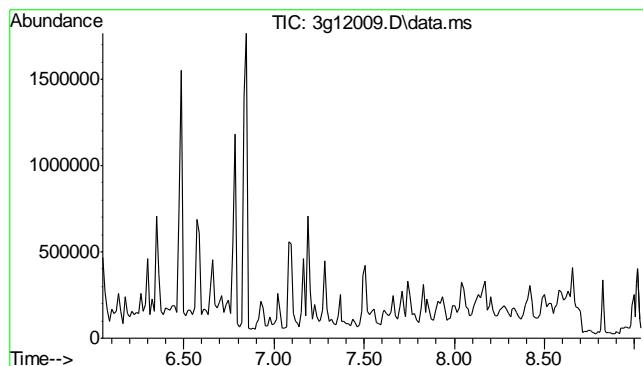
Tgt Ion	Ratio	Lower	Upper
142	100		
141	88.6	66.1	106.1
115	51.1	16.3	56.3



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.37 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

Tgt Ion	Sig	Exp Ratio
152	100	
151		19.1
153		13.0

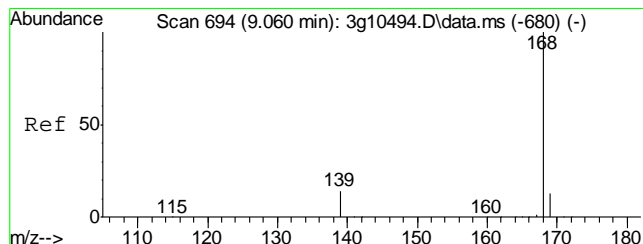
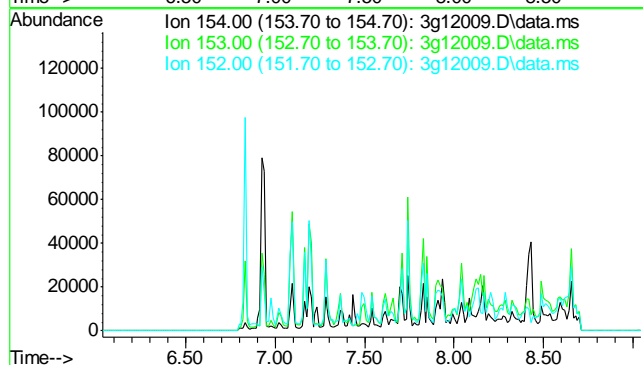




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.54 min

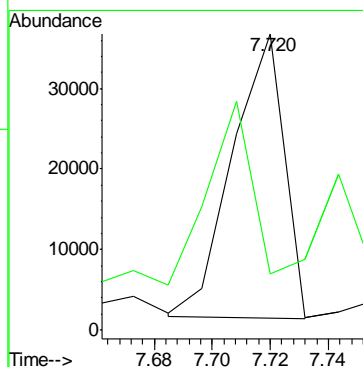
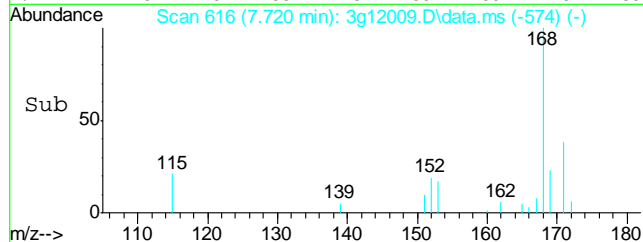
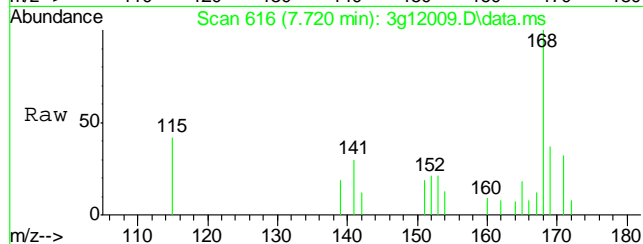
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

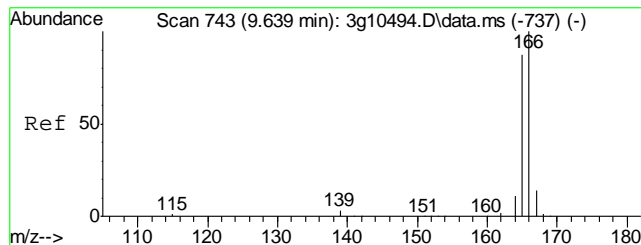
Tgt Ion: 154
Sig Exp Ratio
154 100
153 103.2
152 49.5



#12
Dibenzofuran
Concen: 0.9455 ug/mL m
RT: 7.720 min Scan# 616
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

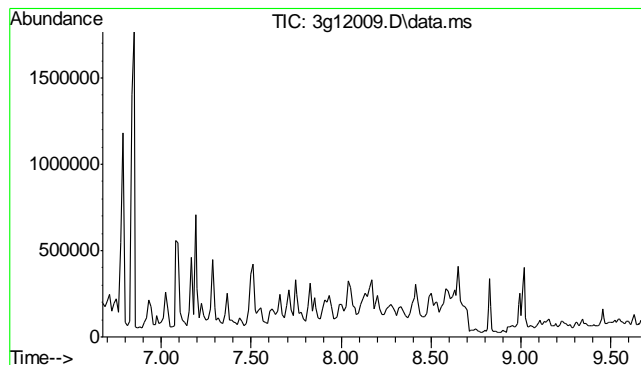
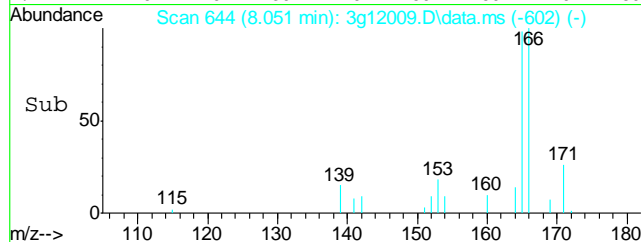
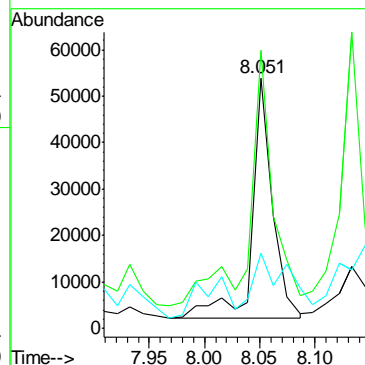
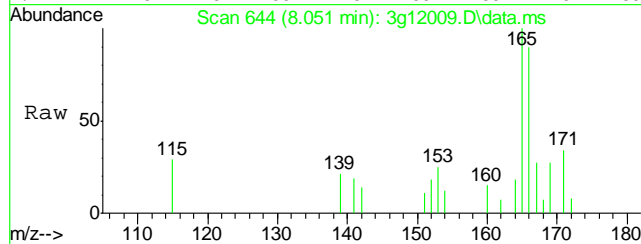
Tgt Ion: 168 Resp: 43788
Ion Ratio Lower Upper
168 100
139 20.5 13.9 53.9





#13
Fluorene
Concen: 1.7831 ug/mL
RT: 8.051 min Scan# 644
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

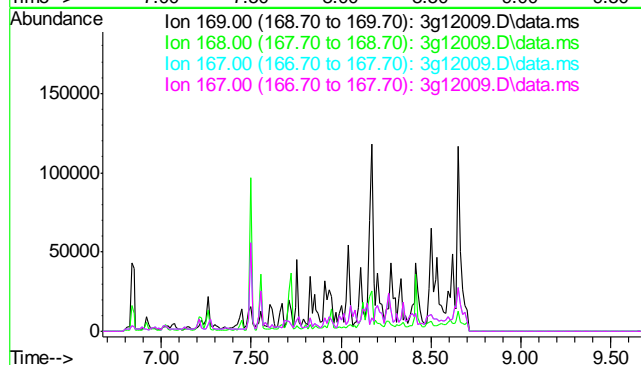
Tgt Ion: 166	Resp: 66356
Ion Ratio	Lower Upper
166	100
165	126.9 71.8 111.8#
167	40.7 0.0 33.2#

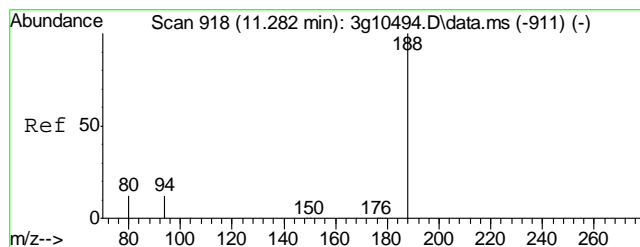


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.17 min

Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

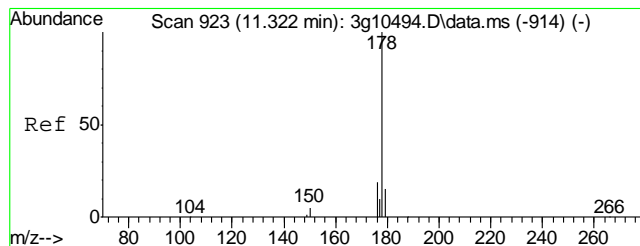
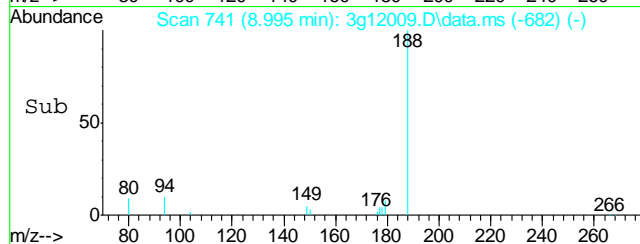
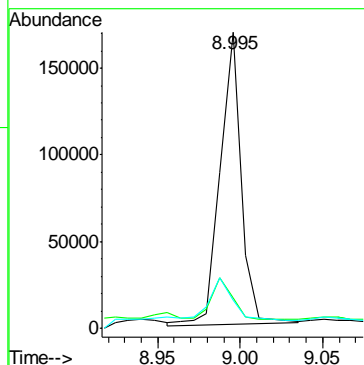
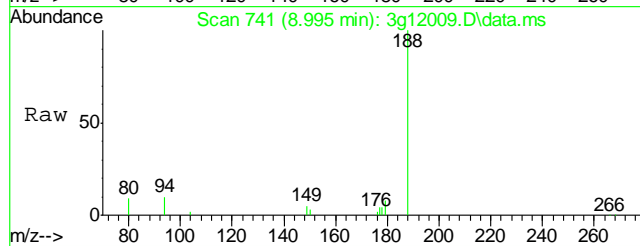
Tgt Ion: 169	
Sig	Exp Ratio
169	100
168	61.7
167	33.9
167	33.9





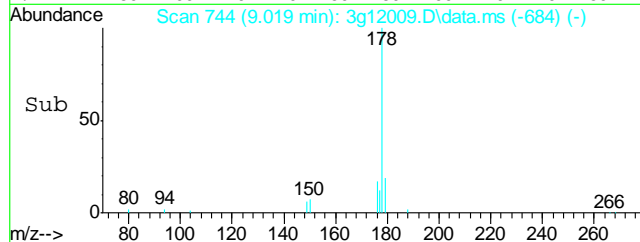
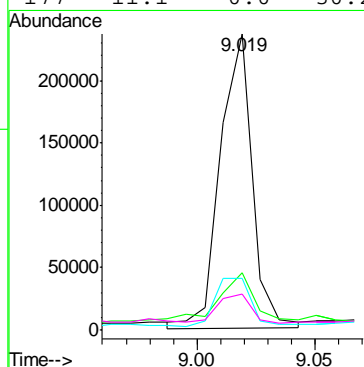
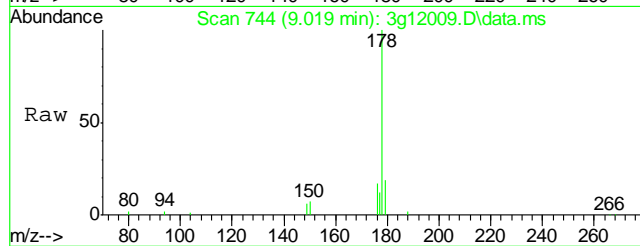
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.995 min Scan# 741
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

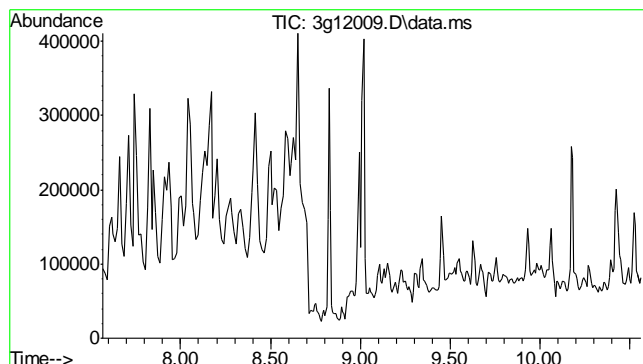
Tgt Ion:188	Resp:	148841
Ion Ratio	Lower	Upper
188	100	
94	15.2	0.0 31.9
80	37.3	0.0 32.4#



#16
Phenanthrene
Concen: 4.1172 ug/mL
RT: 9.019 min Scan# 744
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

Tgt Ion:178	Resp:	225546
Ion Ratio	Lower	Upper
178	100	
179	29.7	0.0 35.1
176	19.2	0.0 39.0
177	11.1	0.0 30.2

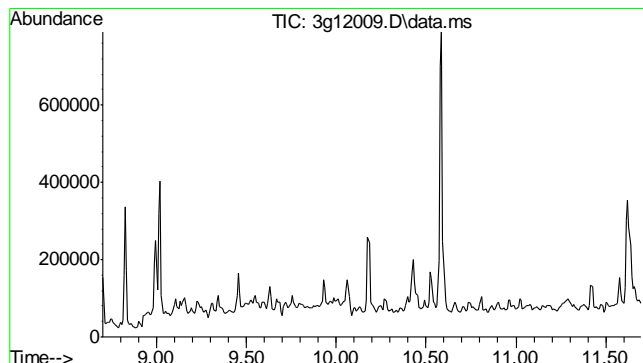
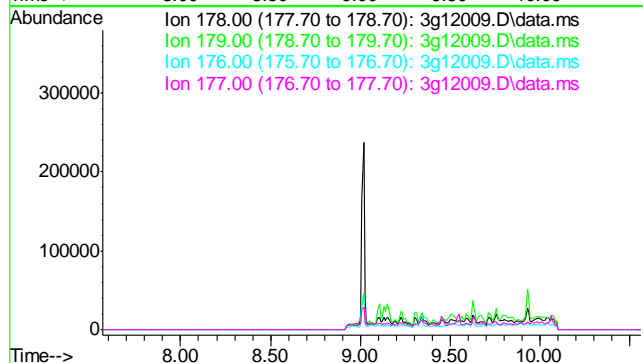




#17
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 9.07 min

 Lab File: 3g12009.D
 Acq: 9 Nov 12 7:57 pm

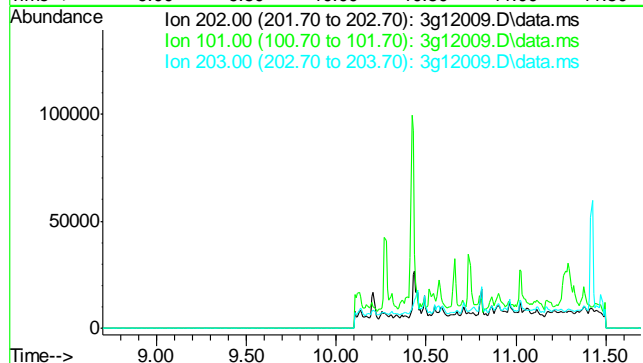
Tgt Ion	Sig	Exp Ratio
178	100	
179	14.9	
176	18.1	
177	8.7	

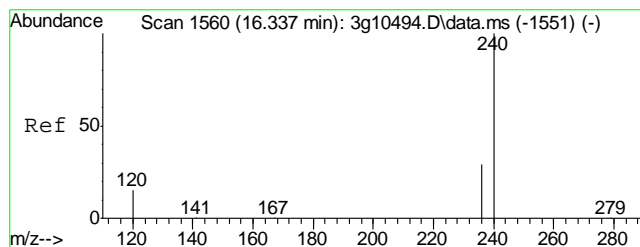


#18
 Fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 10.20 min

 Lab File: 3g12009.D
 Acq: 9 Nov 12 7:57 pm

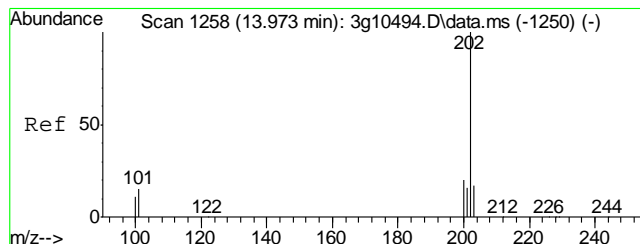
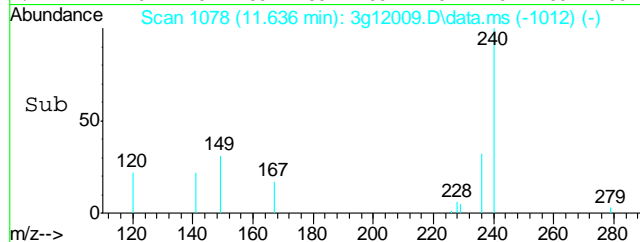
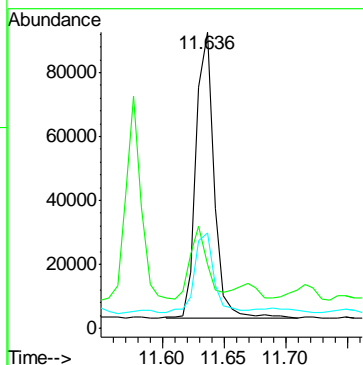
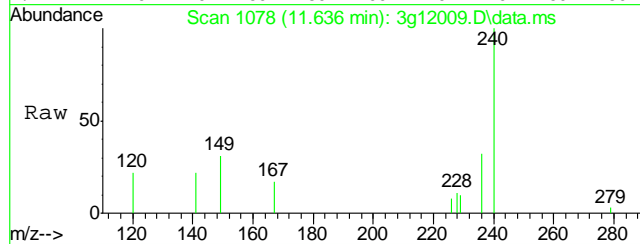
Tgt Ion	Sig	Exp Ratio
202	100	
101	12.8	
203	17.2	





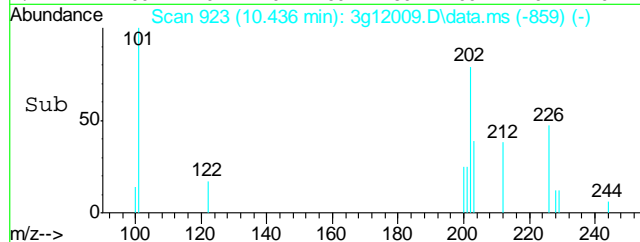
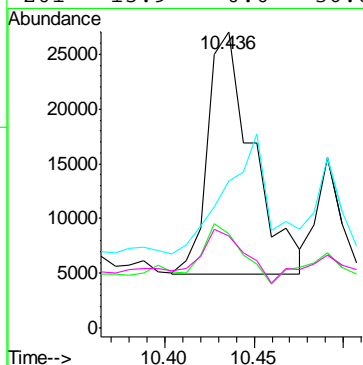
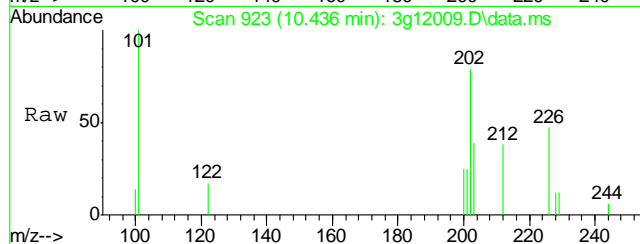
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.636 min Scan# 1078
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

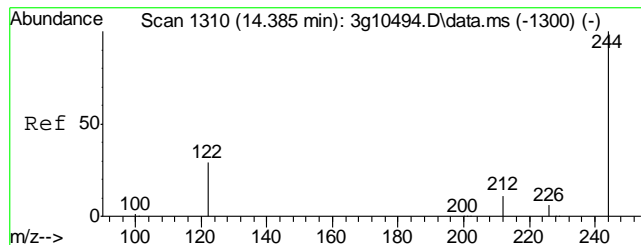
Tgt Ion	Ratio	Lower	Upper
240	100		
120	25.2	1.2	41.2
236	30.8	10.2	50.2



#20
Pyrene
Concen: 0.8328 ug/mL m
RT: 10.436 min Scan# 923
Delta R.T. 0.008 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

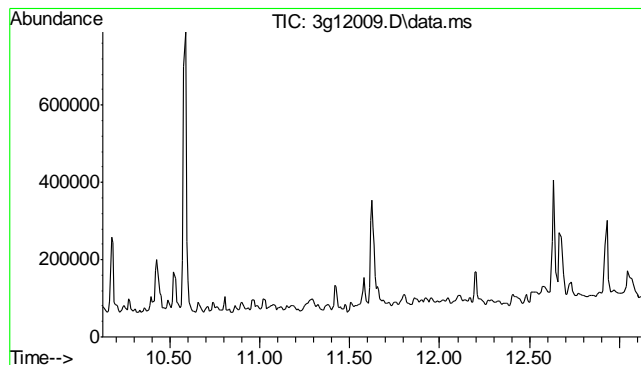
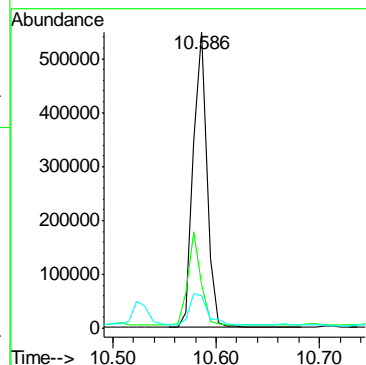
Tgt Ion	Ratio	Lower	Upper
202	100		
200	8.5	0.3	40.3
203	12.5	0.0	37.8
201	15.9	0.0	36.8





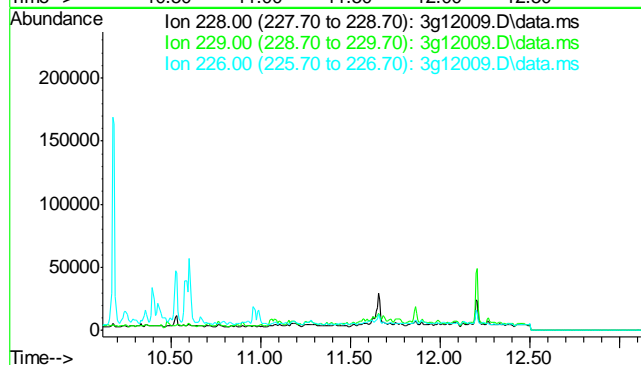
#21
Terphenyl-d14
Concen: 41.2336 ug/mL
RT: 10.586 min Scan# 942
Delta R.T. 0.000 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

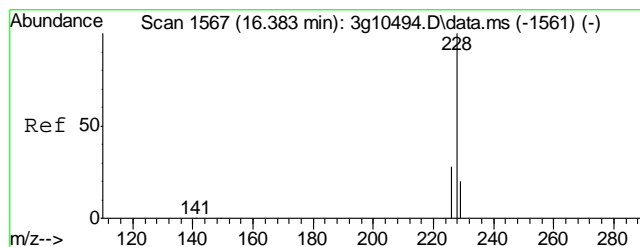
Tgt Ion	Ratio	Lower	Upper
244	100		
122	30.3	7.3	47.3
212	14.6	0.0	32.5



#22
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 11.62 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

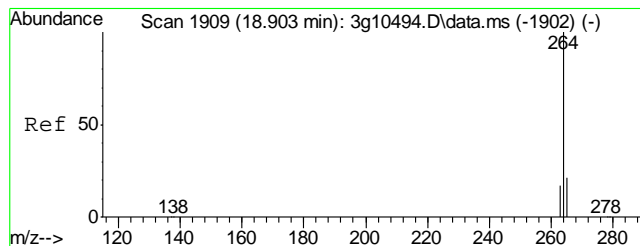
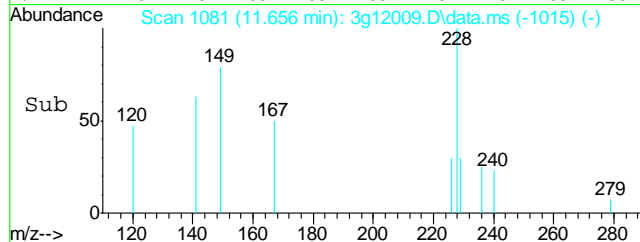
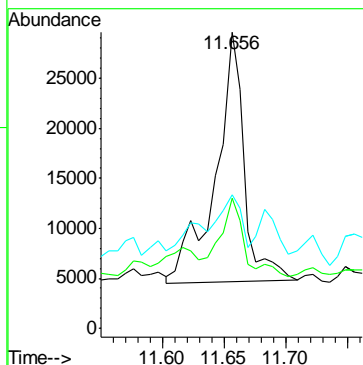
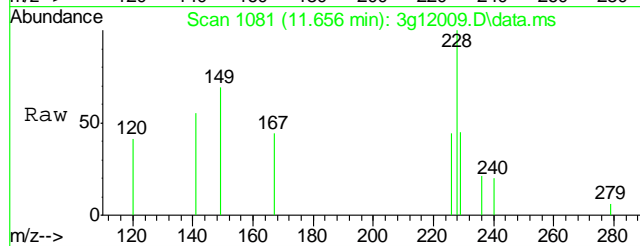
Tgt Ion	Sig	Exp Ratio
228	100	
229	19.3	
226	26.7	





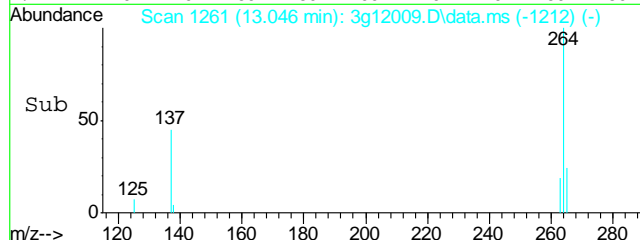
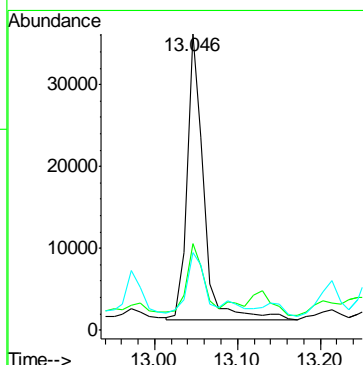
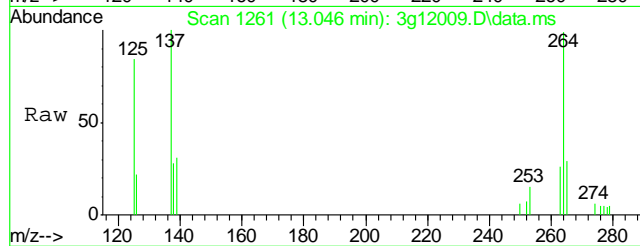
#23
Chrysene
Concen: 0.9479 ug/mL
RT: 11.656 min Scan# 1081
Delta R.T. -0.006 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

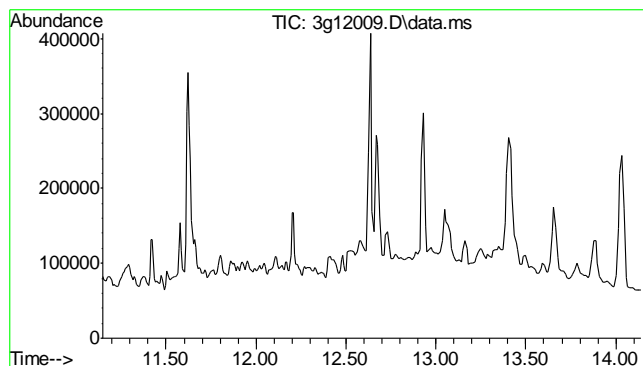
Tgt Ion:	228	Resp:	40346
Ion Ratio	Lower	Upper	
228	100		
226	27.1	8.3	48.3
229	53.4	0.0	39.4#



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.046 min Scan# 1261
Delta R.T. 0.011 min
Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

Tgt Ion:	264	Resp:	49618
Ion Ratio	Lower	Upper	
264	100		
265	25.6	0.8	40.8
263	24.7	0.4	40.4

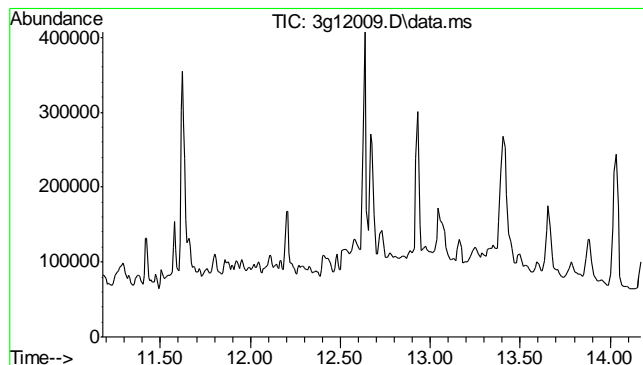
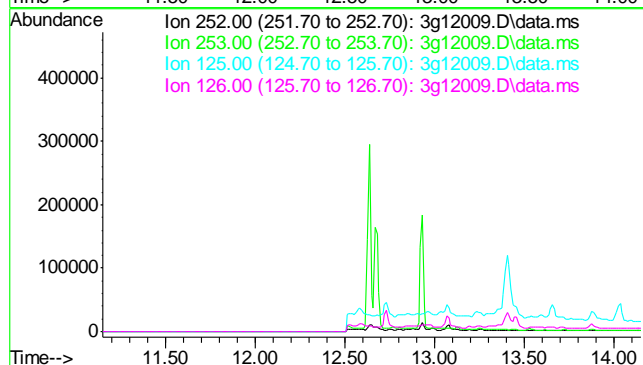




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.65 min

Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

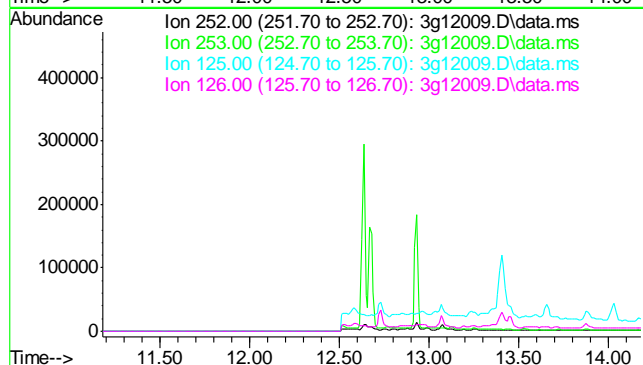
Tgt Ion	Sig	Exp Ratio
252	100	
253	53.4	
125	35.2	
126	51.6	

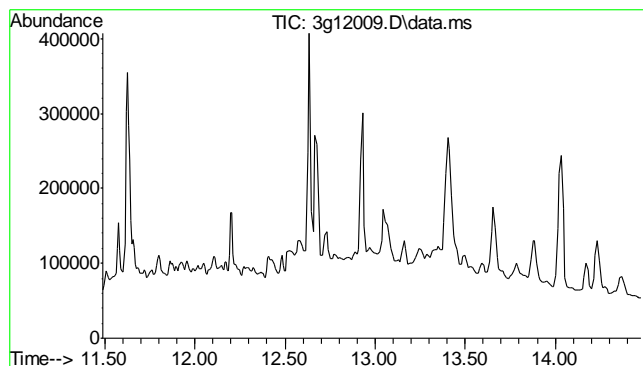


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.68 min

Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

Tgt Ion	Sig	Exp Ratio
252	100	
253	36.5	
125	24.1	
126	35.3	

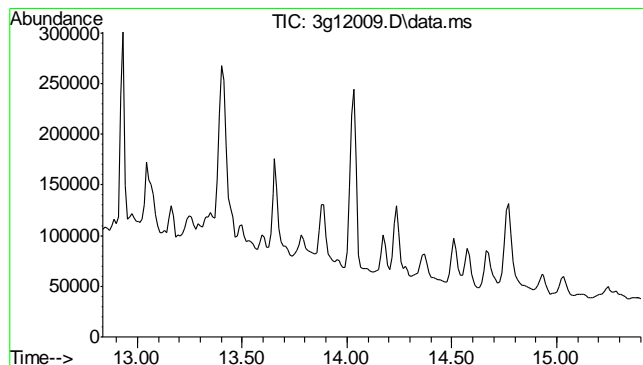
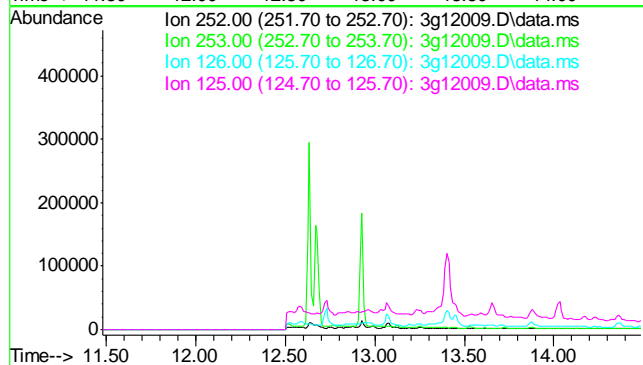




#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 12.98 min

Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

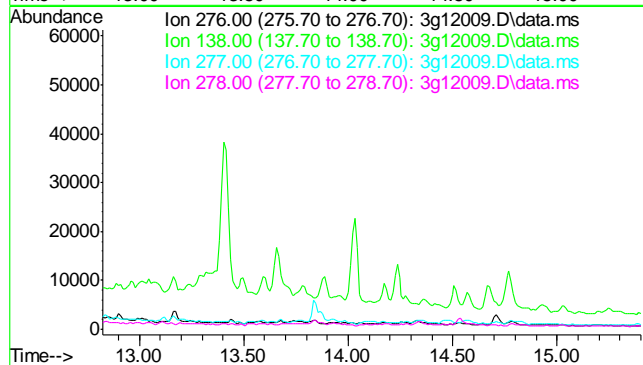
Tgt Ion	Sig	Exp Ratio
252	100	
253	21.3	
126	20.8	
125	15.4	

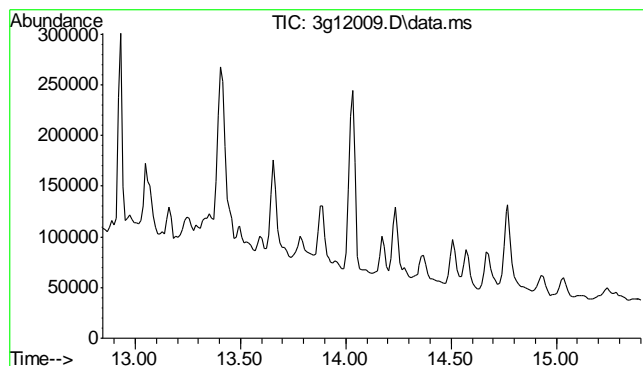


#28
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 14.33 min

Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

Tgt Ion	Sig	Exp Ratio
276	100	
138	44.3	
277	24.7	
278	71.8	

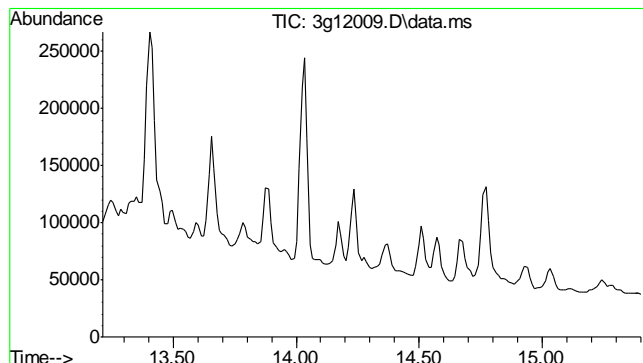
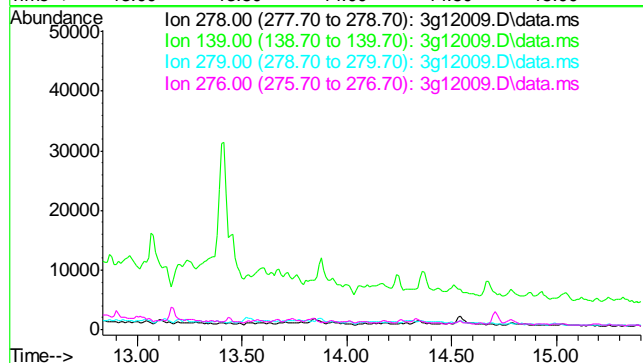




#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.34 min

Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

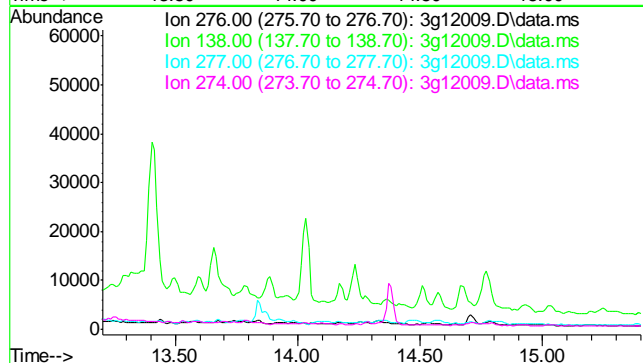
Tgt Ion	Exp Ratio
278	100
139	35.0
279	22.9
276	139.3



#30
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 14.71 min

Lab File: 3g12009.D
Acq: 9 Nov 12 7:57 pm

Tgt Ion	Exp Ratio
276	100
138	38.8
277	22.5
274	21.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\110912\
 Data File : 3g12010.D
 Acq On : 9 Nov 2012 8:21 pm
 Operator : DONC
 Sample : D40712-2
 Misc : OP6941,E3G567,30.05,,,1,1
 ALS Vial : 25 Sample Multiplier: 1

Quant Time: Nov 12 09:08:47 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G567.M
 Quant Title : PAHSIM BASE
 QLast Update : Fri Nov 09 15:41:30 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.789	136	224680	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.507	164	122573	4.0000	ug/mL	0.00
15) Phenanthrene-d10	8.995	188	191129	4.0000	ug/mL	0.00
19) Chrysene-d12	11.637	240	103572	4.0000	ug/mL	0.00
24) Perylene-d12	13.046	264	55495	4.0000	ug/mL	0.01

System Monitoring Compounds

2) Nitrobenzene-d5	5.103	82	635306	32.4596	ug/mL	0.00
Spiked Amount 50.000	Range	25 - 135	Recovery	=	64.92%	
7) 2-Fluorobiphenyl	6.846	172	1645370	35.6653	ug/mL	0.00
Spiked Amount 50.000	Range	25 - 135	Recovery	=	71.34%	
21) Terphenyl-d14	10.586	244	595801	41.8618	ug/mL	0.00
Spiked Amount 50.000	Range	25 - 135	Recovery	=	83.72%	

Target Compounds

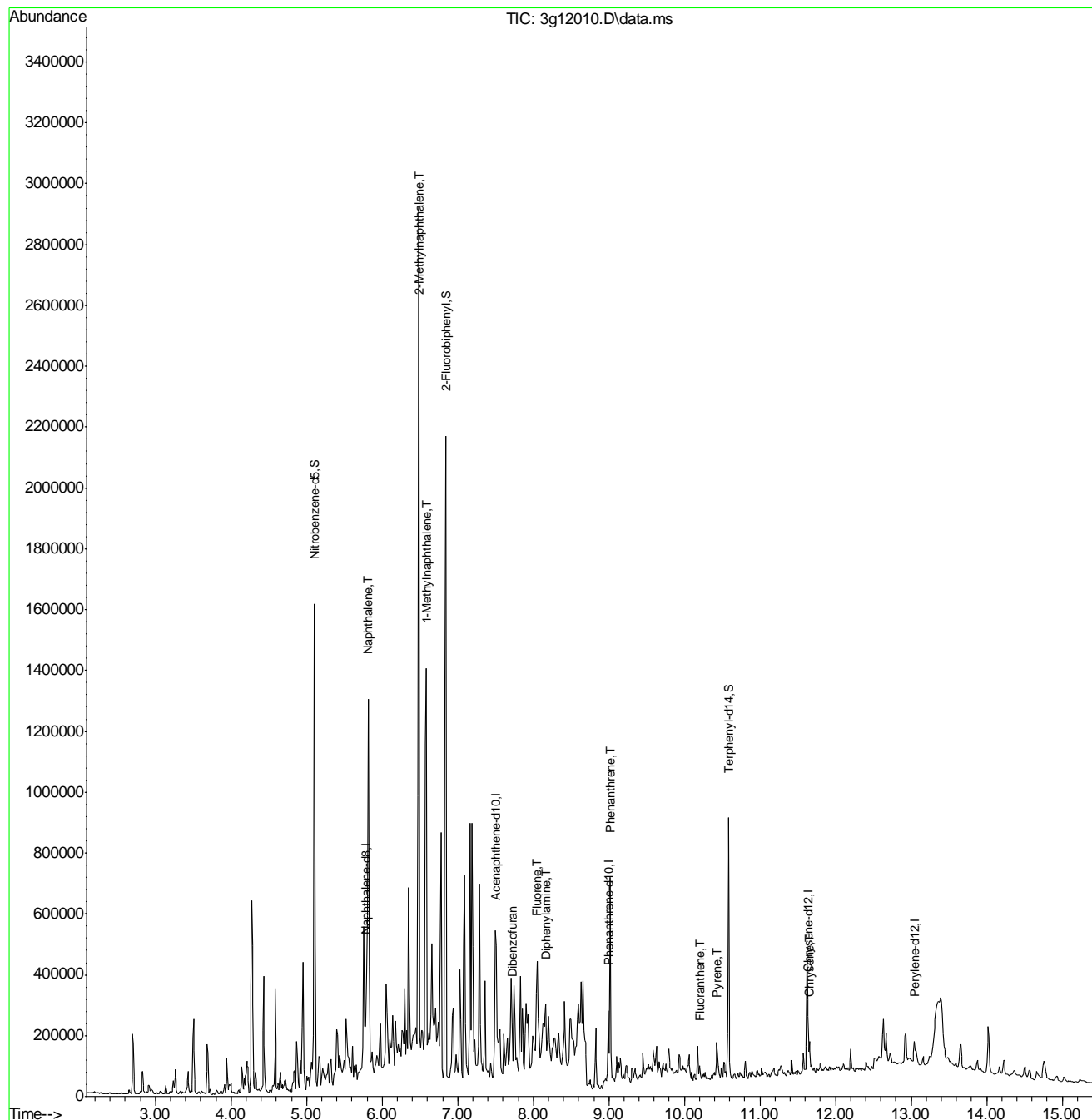
						Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.814	128	938291	16.4578	ug/mL	92
8) 2-Methylnaphthalene	6.487	142	1262881	34.4079	ug/mL	96
9) 1-Methylnaphthalene	6.587	142	726420	21.5405	ug/mL	96
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.720	168	120089	2.1280	ug/mL	77
13) Fluorene	8.051	166	128278	2.8288	ug/mL#	70
14) Diphenylamine	8.169	169	133754	3.5540	ug/mL#	56
16) Phenanthrene	9.019	178	416616	5.9224	ug/mL	93
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	10.206	202	38049	0.5575	ug/mL#	39
20) Pyrene	10.428	202	57810	1.0778	ug/mL#	79
22) Benzo(a)anthracene	0.000	228	0	N.D.	d	
23) Chrysene	11.656	228	75712	1.5384	ug/mL#	56
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	

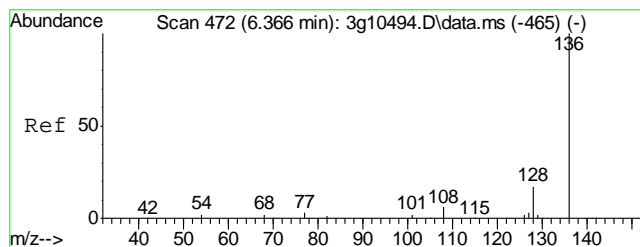
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\110912\
Data File : 3g12010.D
Acq On : 9 Nov 2012 8:21 pm
Operator : DONC
Sample : D40712-2
Misc : OP6941,E3G567,30.05,,,1,1
ALS Vial : 25 Sample Multiplier: 1

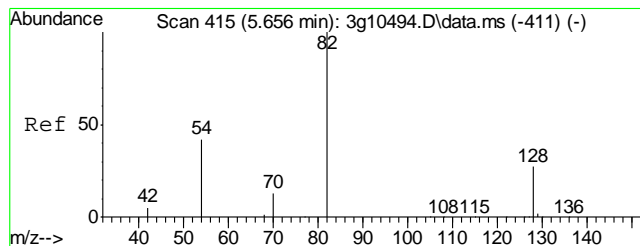
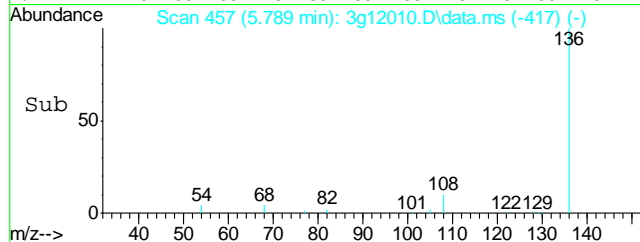
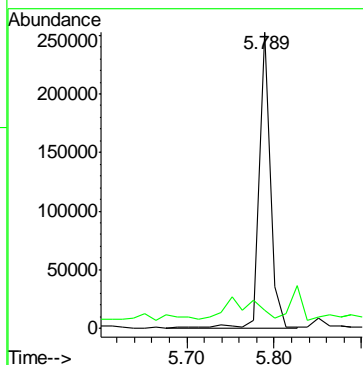
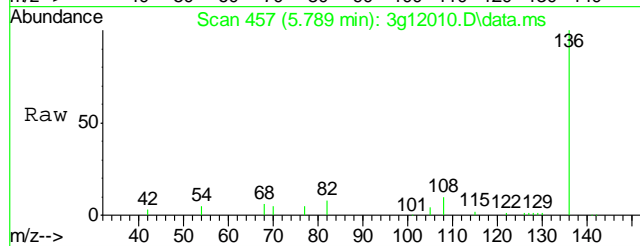
Quant Time: Nov 12 09:08:47 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G567.M
Quant Title : PAHSIM BASE
QLast Update : Fri Nov 09 15:41:30 2012
Response via : Initial Calibration





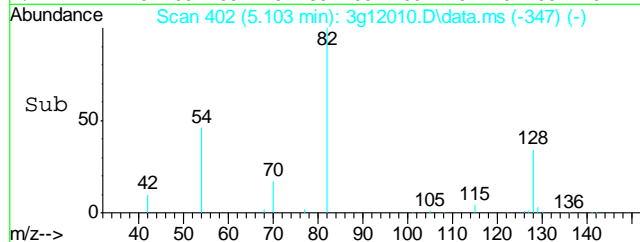
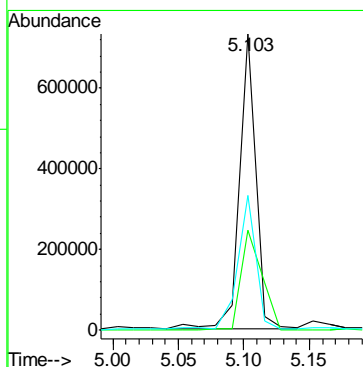
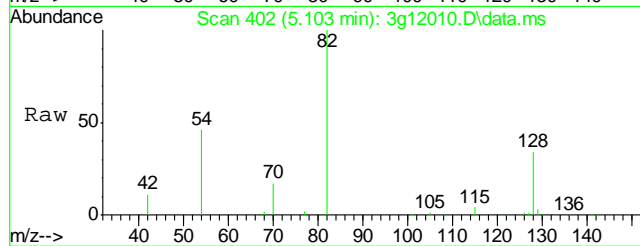
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.789 min Scan# 457
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

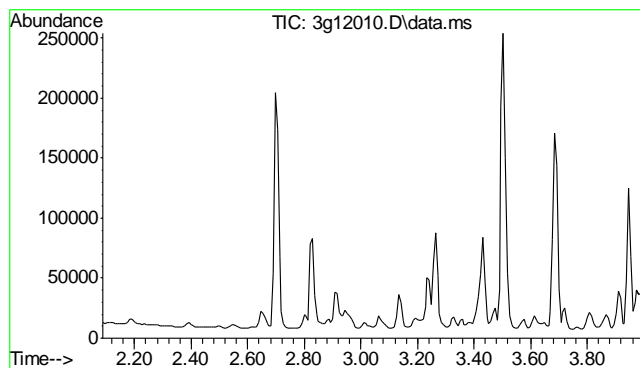
Tgt Ion	Ratio	Lower	Upper
136	100		
68	23.0	0.0	26.5



#2
Nitrobenzene-d5
Concen: 32.4596 ug/mL
RT: 5.103 min Scan# 402
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

Tgt Ion	Ratio	Lower	Upper
82	100		
128	43.7	26.7	66.7
54	51.5	29.0	69.0

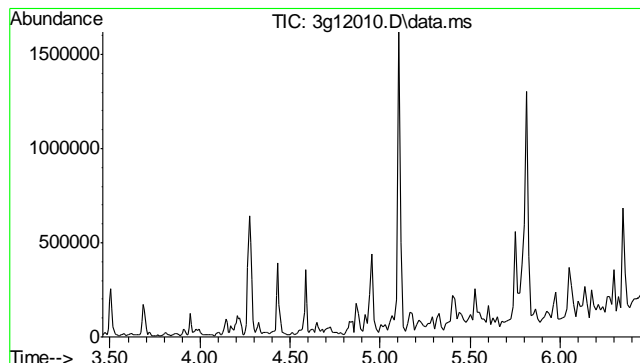
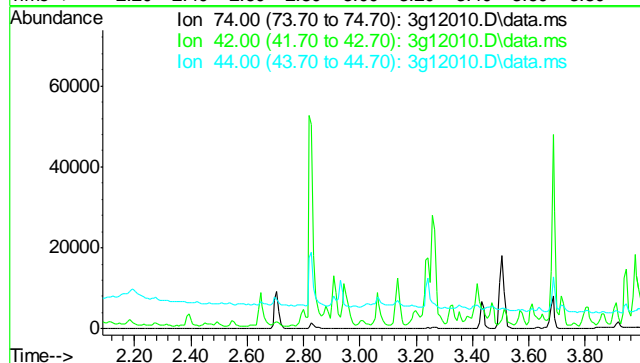




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.49 min

Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

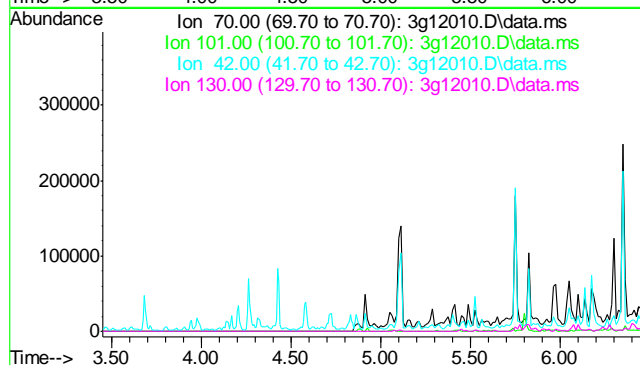
Tgt Ion	Exp Ratio
74	100
42	73.4
44	3.7

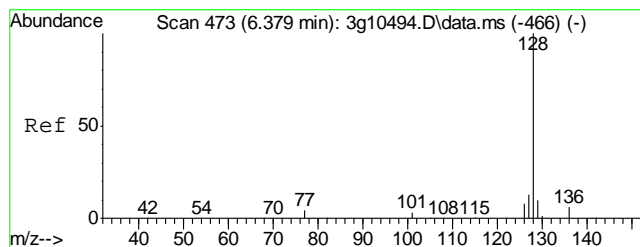


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.95 min

Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

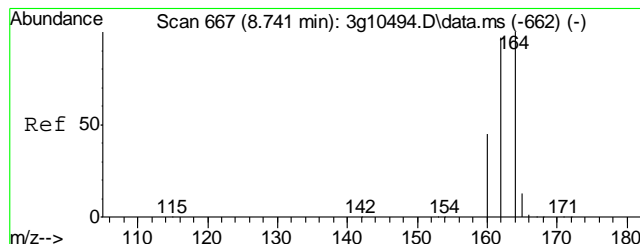
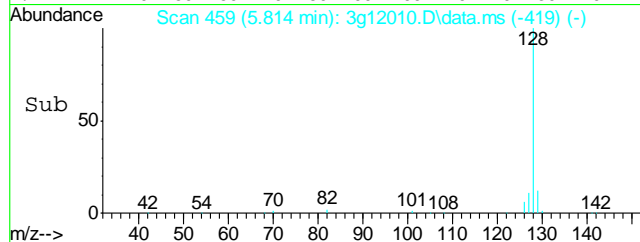
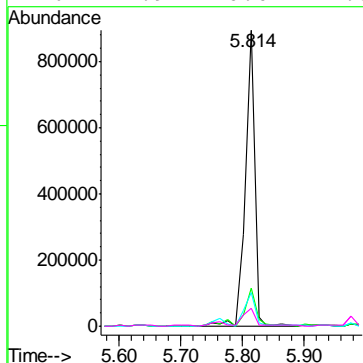
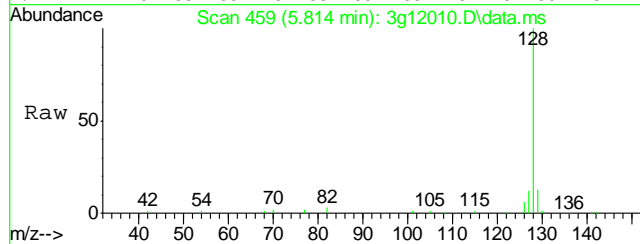
Tgt Ion	Exp Ratio
70	100
101	11.6
42	63.1
130	33.5





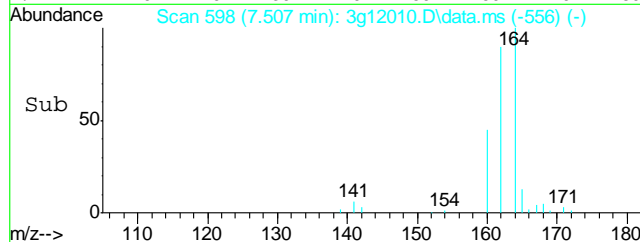
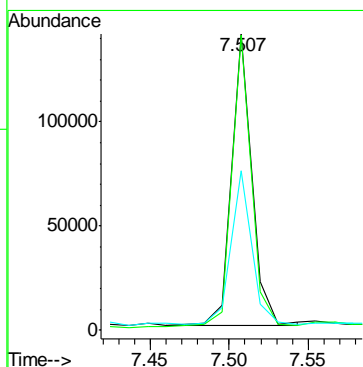
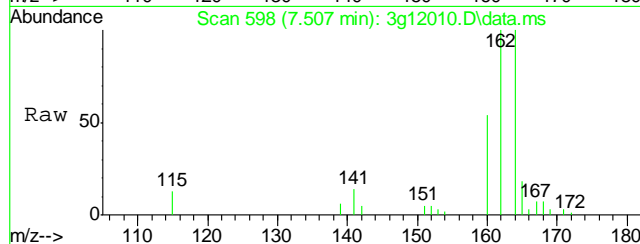
#5
Naphthalene
Concen: 16.4578 ug/mL
RT: 5.814 min Scan# 459
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

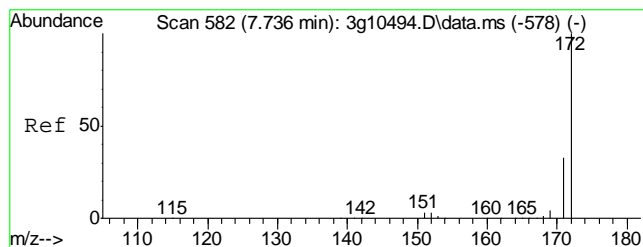
Tgt Ion	128	Ratio	100	Resp	938291
Ion	128	100			
	129	18.4	0.0	31.0	
	127	13.5	0.0	32.5	
	126	7.9	0.0	27.3	



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.507 min Scan# 598
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

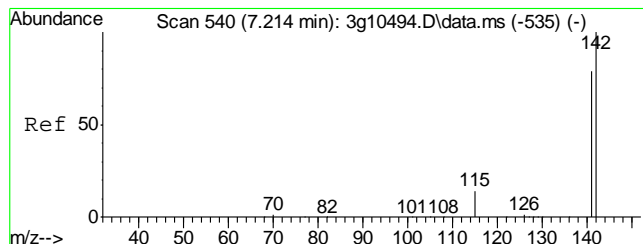
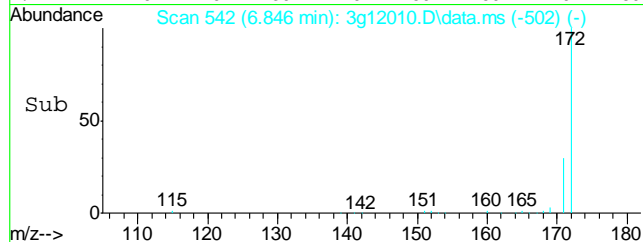
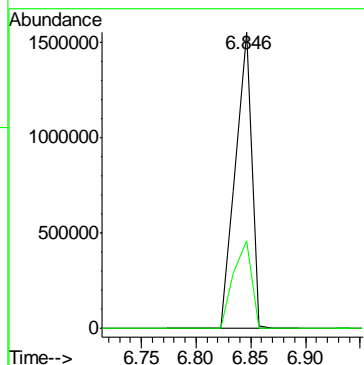
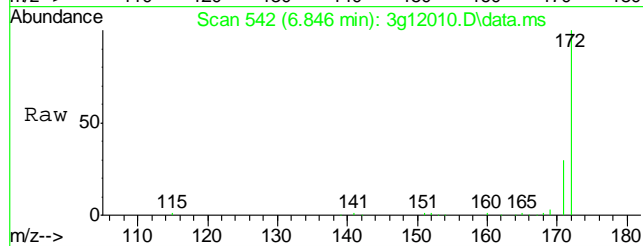
Tgt Ion	164	Ratio	100	Resp	122573
Ion	164	100			
	162	99.2	74.5	114.5	
	160	54.7	24.7	64.7	





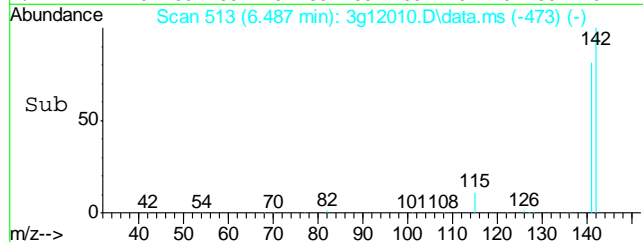
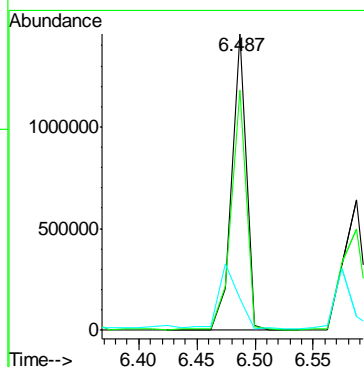
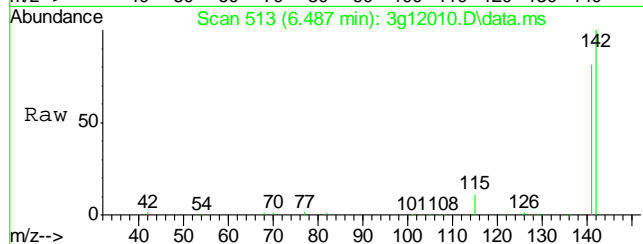
#7
2-Fluorobiphenyl
Concen: 35.6653 ug/mL
RT: 6.846 min Scan# 542
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

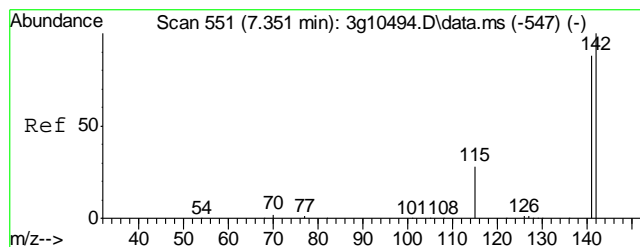
Tgt Ion:172 Resp: 1645370
Ion Ratio Lower Upper
172 100
171 33.2 13.2 53.2



#8
2-Methylnaphthalene
Concen: 34.4079 ug/mL
RT: 6.487 min Scan# 513
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

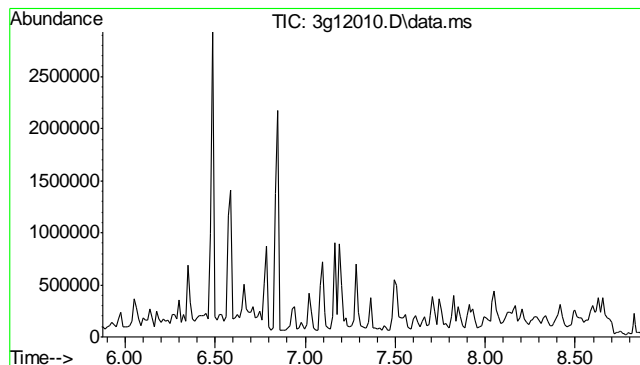
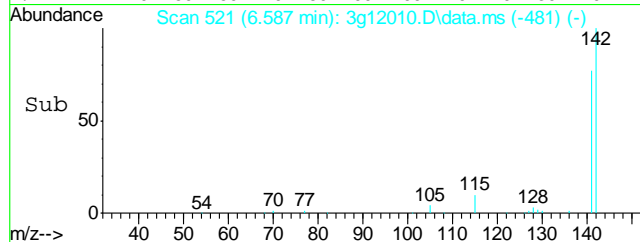
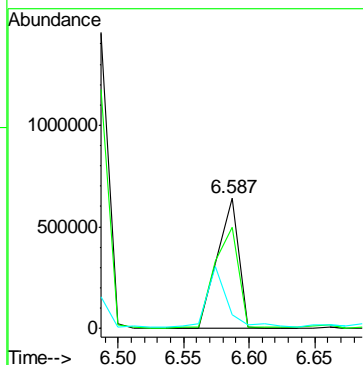
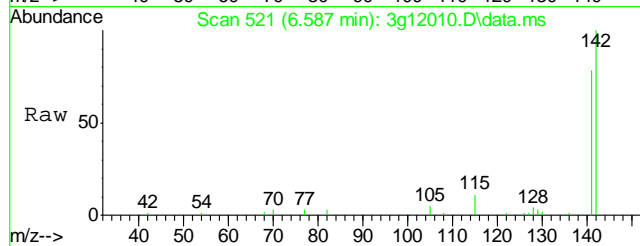
Tgt Ion:142 Resp: 1262881
Ion Ratio Lower Upper
142 100
141 84.1 62.6 102.6
115 28.8 15.3 55.3





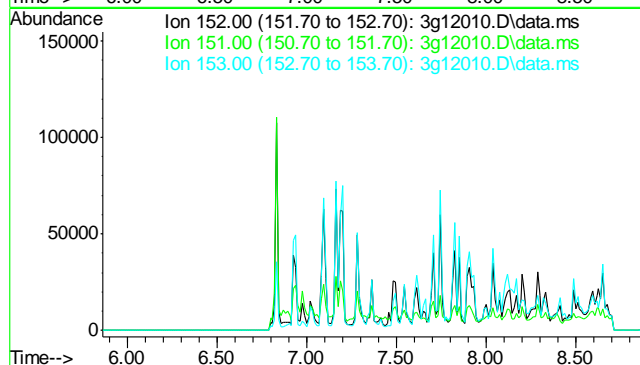
#9
1-Methylnaphthalene
Concen: 21.5405 ug/mL
RT: 6.587 min Scan# 521
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

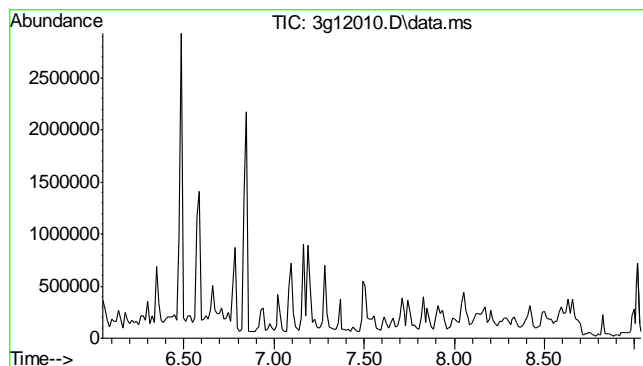
Tgt Ion	Ratio	Lower	Upper
142	100		
141	87.2	66.1	106.1
115	41.6	16.3	56.3



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.37 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

Tgt Ion	Sig	Exp Ratio
152	100	
151	19.1	
153	13.0	

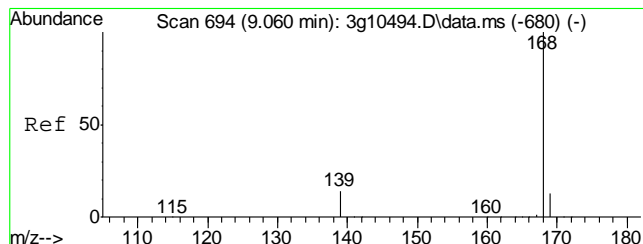
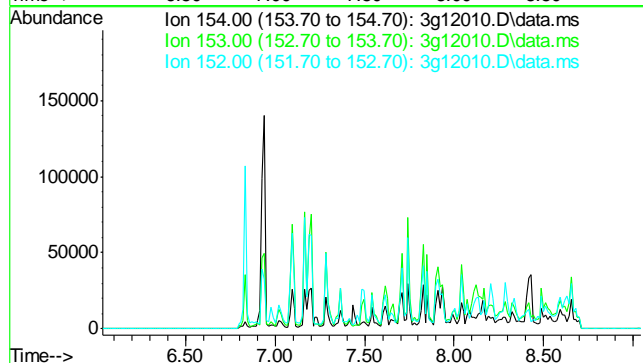




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.54 min

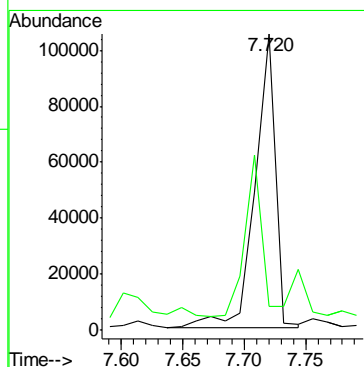
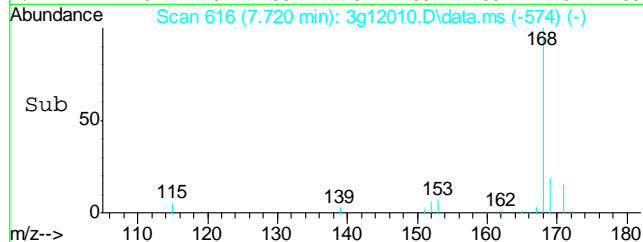
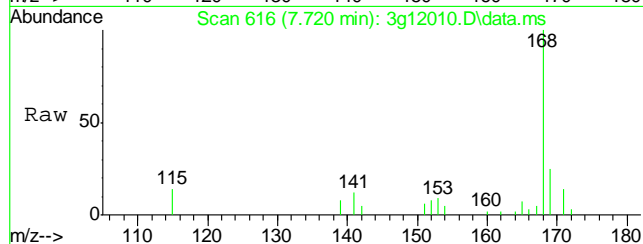
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

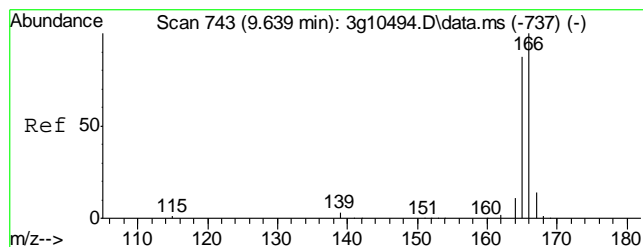
Tgt Ion: 154
Sig Exp Ratio
154 100
153 103.2
152 49.5



#12
Dibenzofuran
Concen: 2.1280 ug/mL
RT: 7.720 min Scan# 616
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

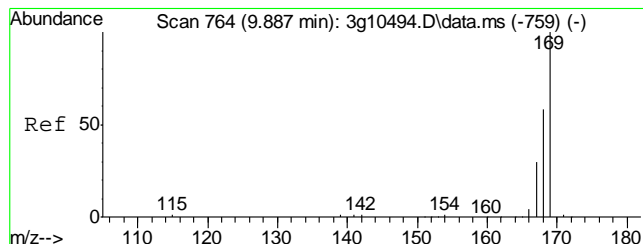
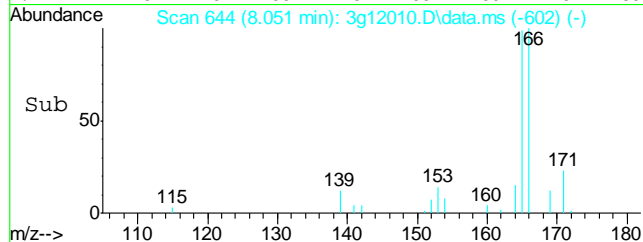
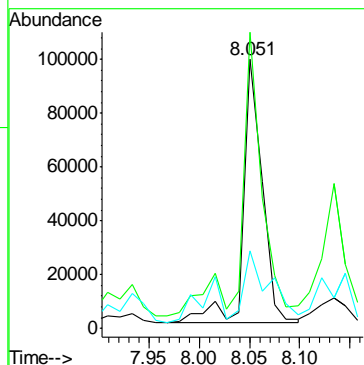
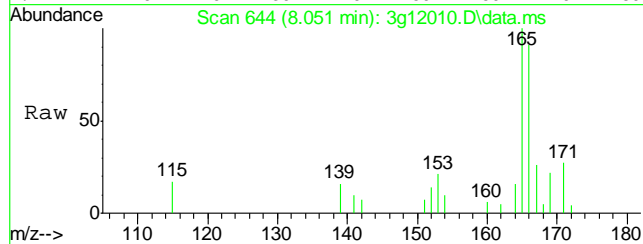
Tgt Ion: 168 Resp: 120089
Ion Ratio Lower Upper
168 100
139 46.9 13.9 53.9





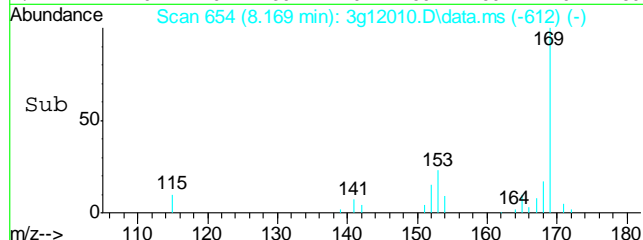
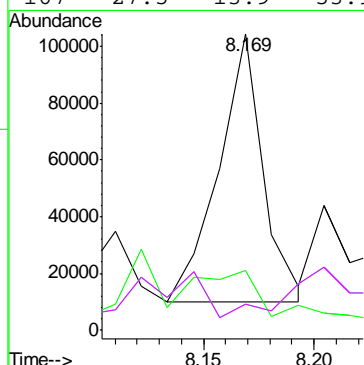
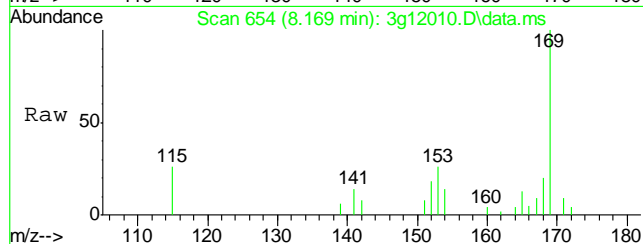
#13
Fluorene
Concen: 2.8288 ug/mL
RT: 8.051 min Scan# 644
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

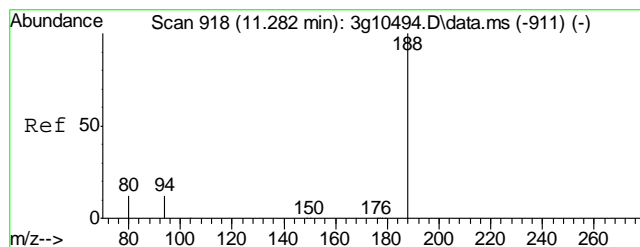
Tgt Ion:	166	Resp:	128278
Ion Ratio	Lower	Upper	
166	100		
165	117.0	71.8	111.8#
167	34.6	0.0	33.2#



#14
Diphenylamine
Concen: 3.5540 ug/mL
RT: 8.169 min Scan# 654
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

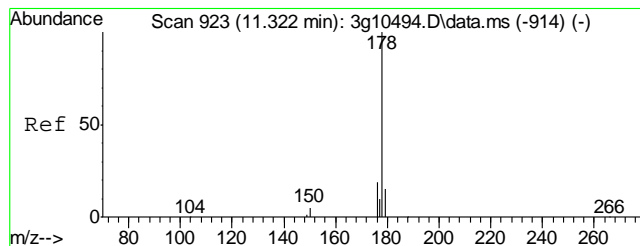
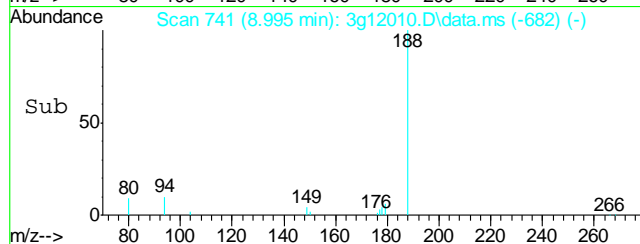
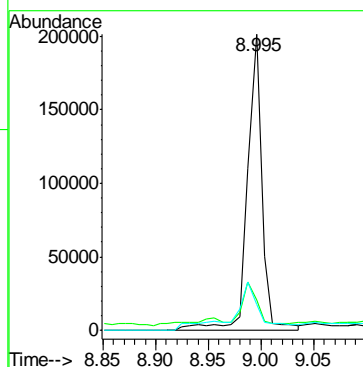
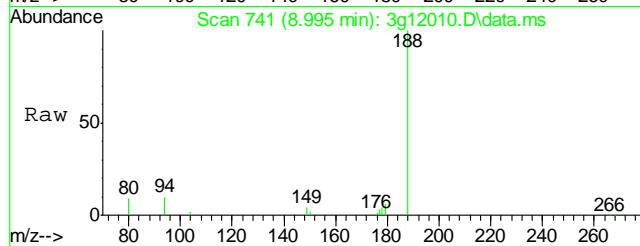
Tgt Ion:	169	Resp:	133754
Ion Ratio	Lower	Upper	
169	100		
168	0.0	41.7	81.7#
167	27.5	13.9	53.9
167	27.5	13.9	53.9





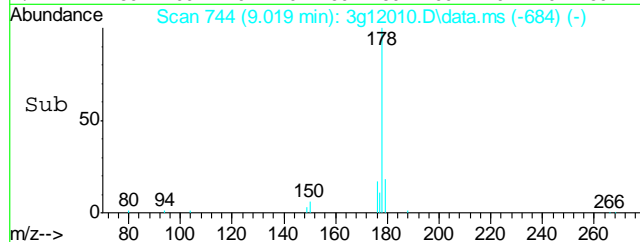
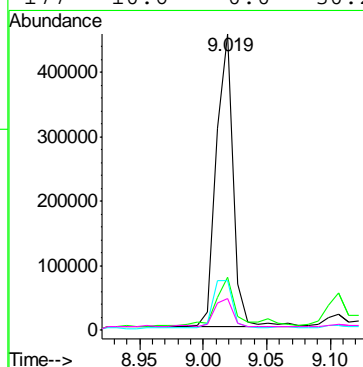
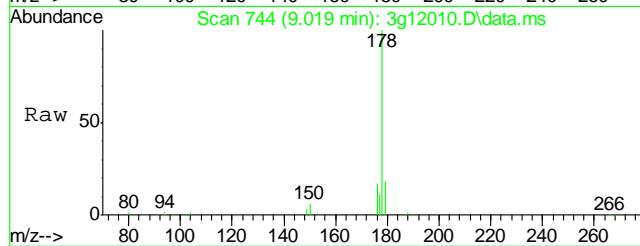
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.995 min Scan# 741
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

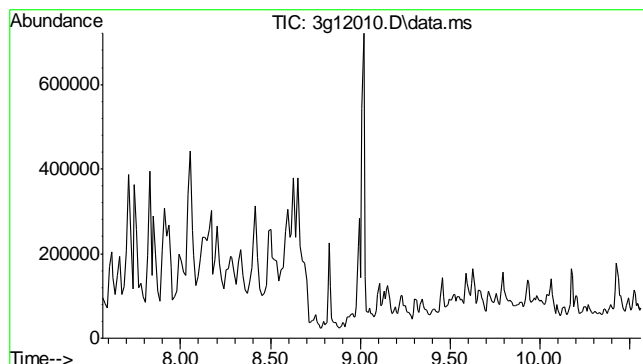
Tgt Ion:188	Resp:	191129
Ion Ratio	Lower	Upper
188	100	
94	13.9	0.0 31.9
80	29.3	0.0 32.4



#16
Phenanthrene
Concen: 5.9224 ug/mL
RT: 9.019 min Scan# 744
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

Tgt Ion:178	Resp:	416616
Ion Ratio	Lower	Upper
178	100	
179	23.4	0.0 35.1
176	19.3	0.0 39.0
177	10.6	0.0 30.2

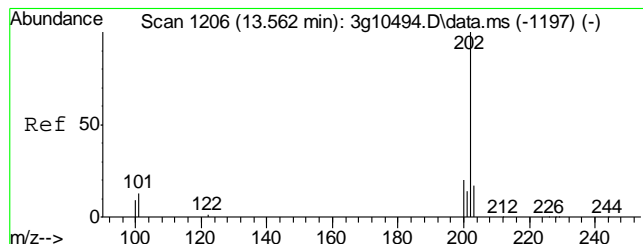
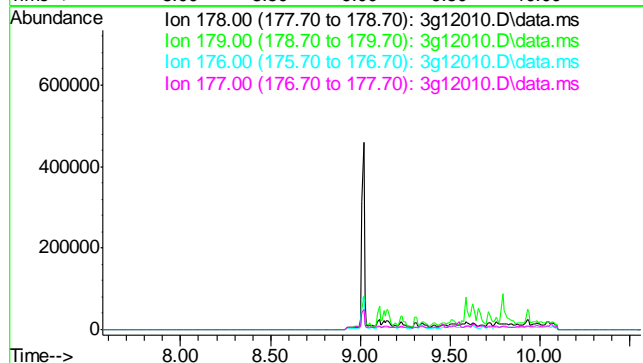




#17
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 9.07 min

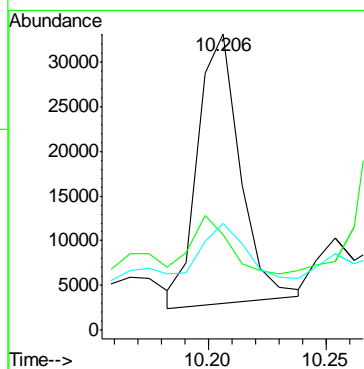
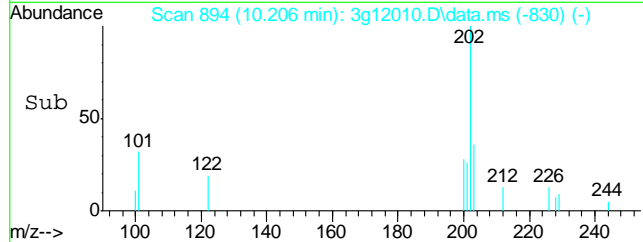
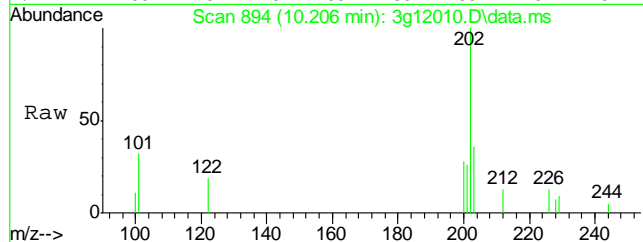
 Lab File: 3g12010.D
 Acq: 9 Nov 12 8:21 pm

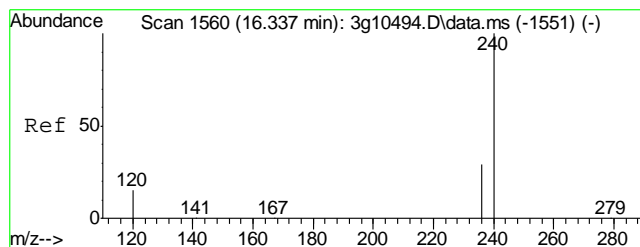
Tgt Ion: 178
 Sig Exp Ratio
 178 100
 179 14.9
 176 18.1
 177 8.7



#18
 Fluoranthene
 Concen: 0.5575 ug/mL
 RT: 10.206 min Scan# 894
 Delta R.T. 0.008 min
 Lab File: 3g12010.D
 Acq: 9 Nov 12 8:21 pm

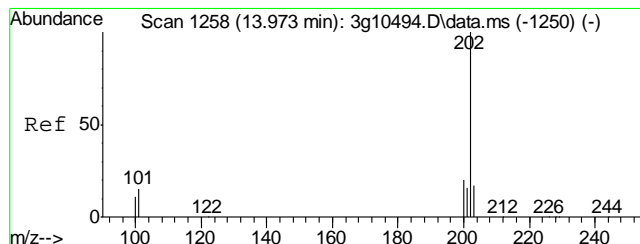
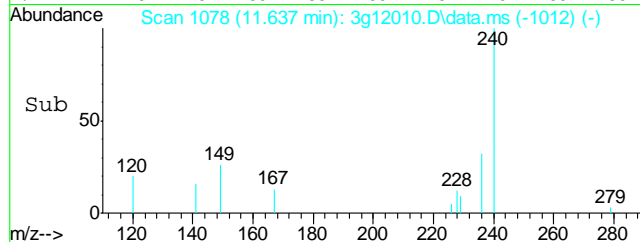
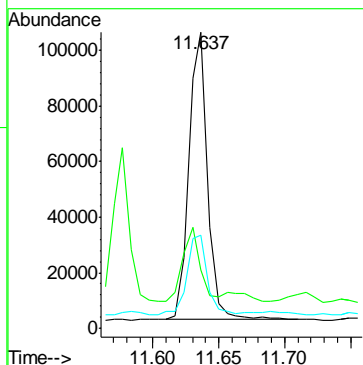
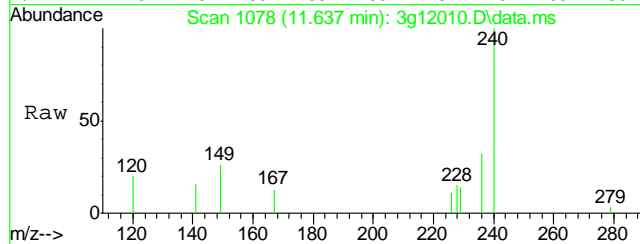
Tgt Ion: 202 Resp: 38049
 Ion Ratio Lower Upper
 202 100
 101 43.6 0.0 32.8#
 203 38.2 0.0 37.2#





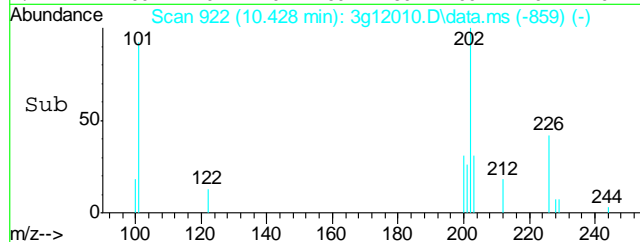
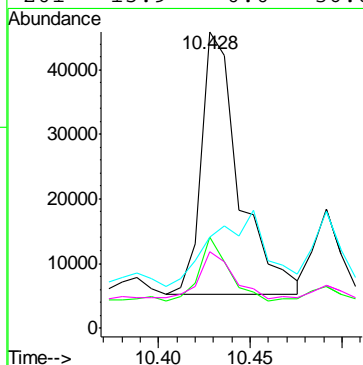
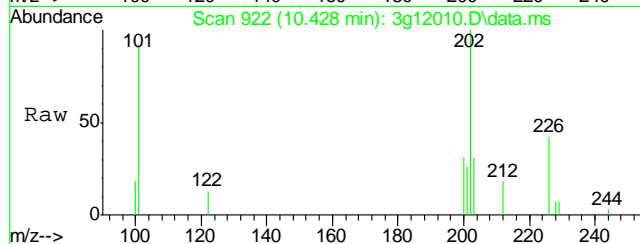
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.637 min Scan# 1078
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

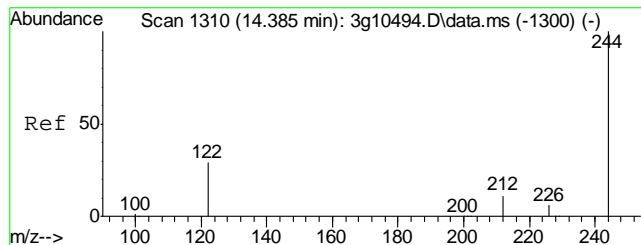
Tgt Ion	Ratio	Lower	Upper
240	100		
120	25.4	1.2	41.2
236	29.5	10.2	50.2



#20
Pyrene
Concen: 1.0778 ug/mL
RT: 10.428 min Scan# 922
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

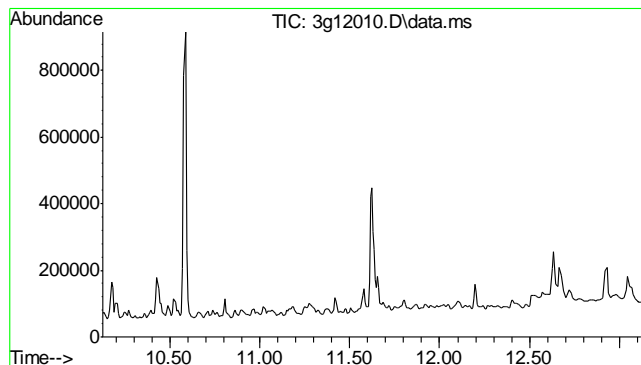
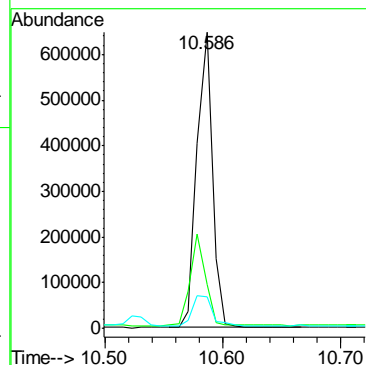
Tgt Ion	Ratio	Lower	Upper
202	100		
200	18.9	0.3	40.3
203	43.3	0.0	37.8
201	15.9	0.0	36.8





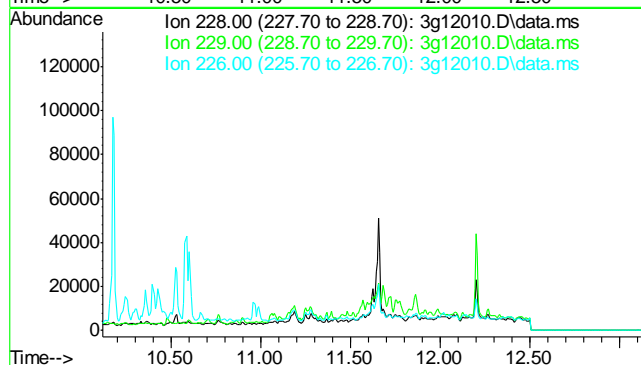
#21
Terphenyl-d14
Concen: 41.8618 ug/mL
RT: 10.586 min Scan# 942
Delta R.T. 0.000 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

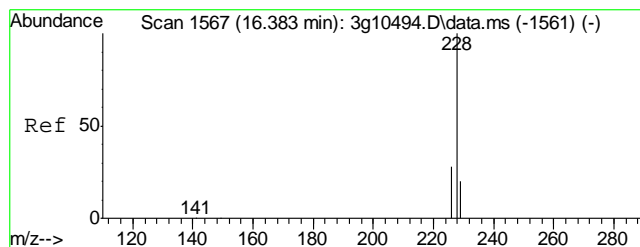
Tgt Ion	Ratio	Lower	Upper
244	100		
122	30.7	7.3	47.3
212	13.0	0.0	32.5



#22
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 11.62 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

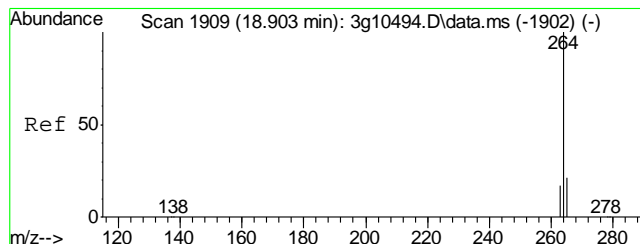
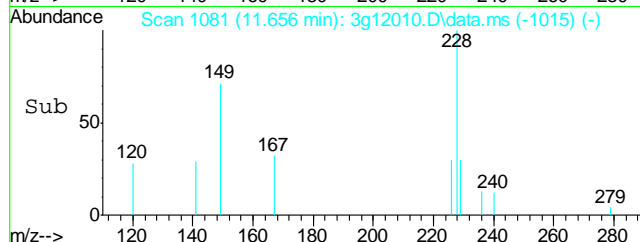
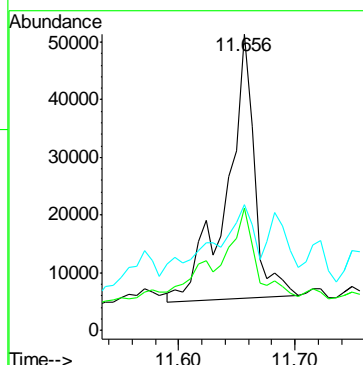
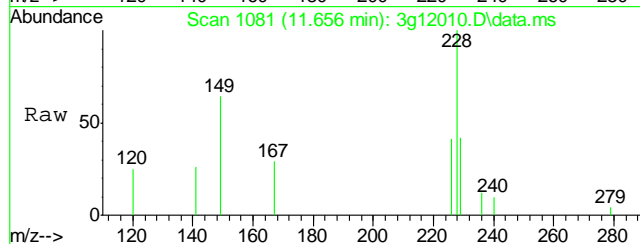
Tgt Ion	Sig	Exp Ratio
228	100	
229	19.3	
226	26.7	





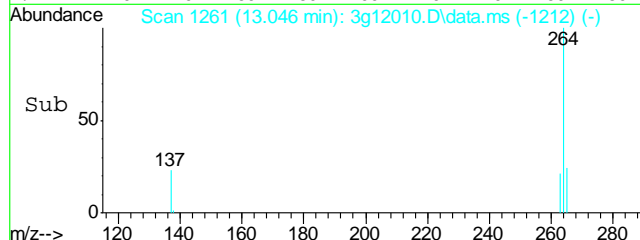
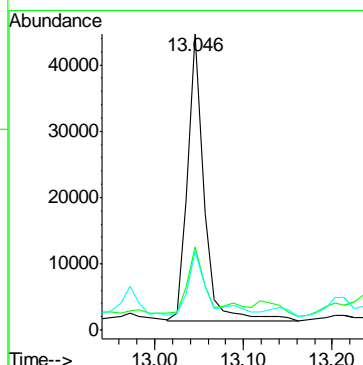
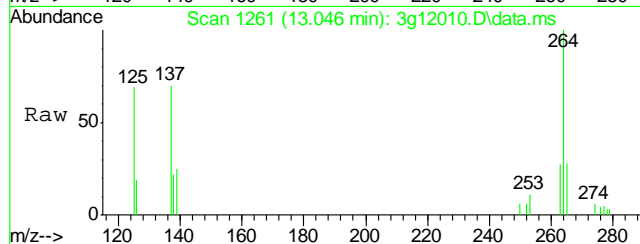
#23
Chrysene
Concen: 1.5384 ug/mL
RT: 11.656 min Scan# 1081
Delta R.T. -0.006 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

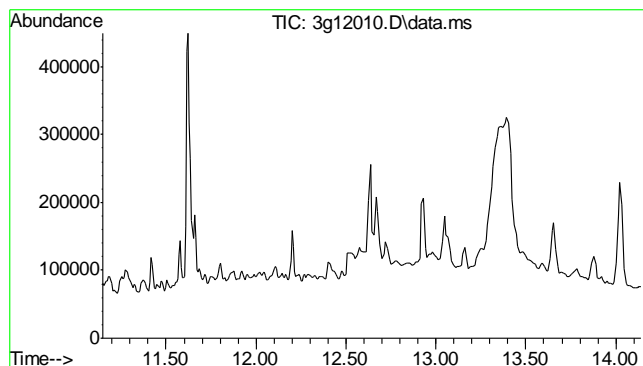
Tgt Ion	Ratio	Lower	Upper
228	100		
226	32.2	8.3	48.3
229	63.4	0.0	39.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.046 min Scan# 1261
Delta R.T. 0.011 min
Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

Tgt Ion	Ratio	Lower	Upper
264	100		
265	26.4	0.8	40.8
263	29.4	0.4	40.4

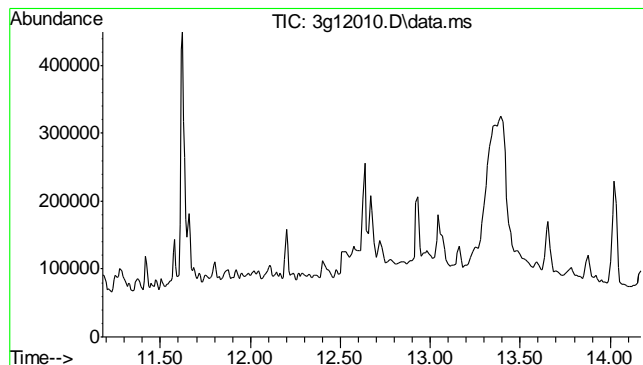
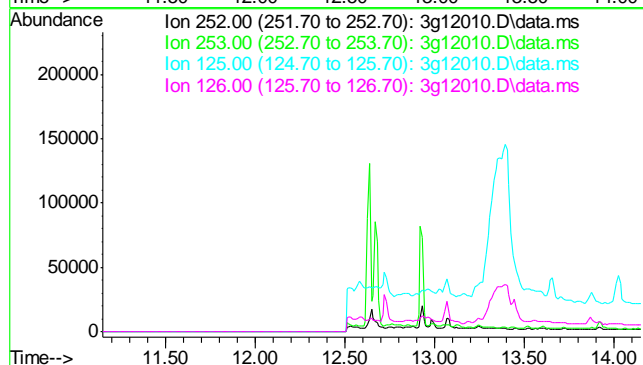




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.65 min

Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

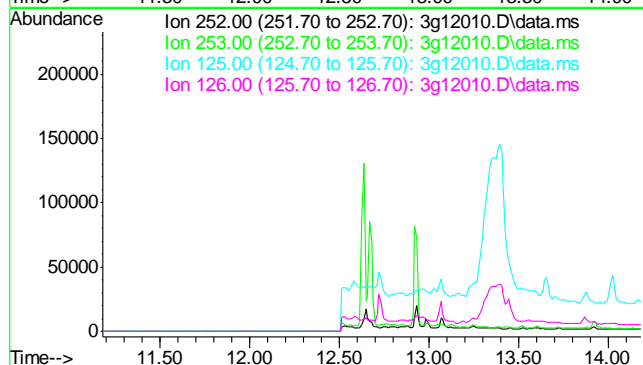
Tgt Ion	Sig	Exp Ratio
252	100	
253	53.4	
125	35.2	
126	51.6	

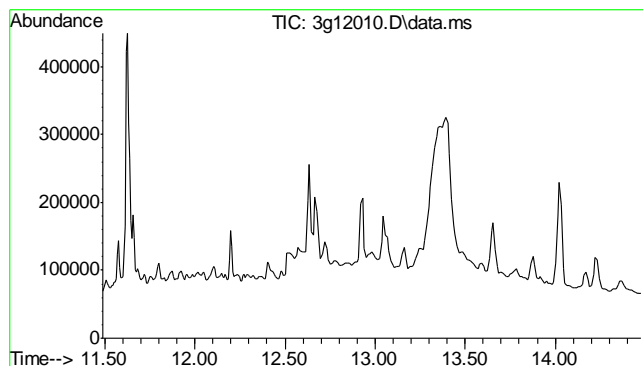


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.68 min

Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

Tgt Ion	Sig	Exp Ratio
252	100	
253	36.5	
125	24.1	
126	35.3	

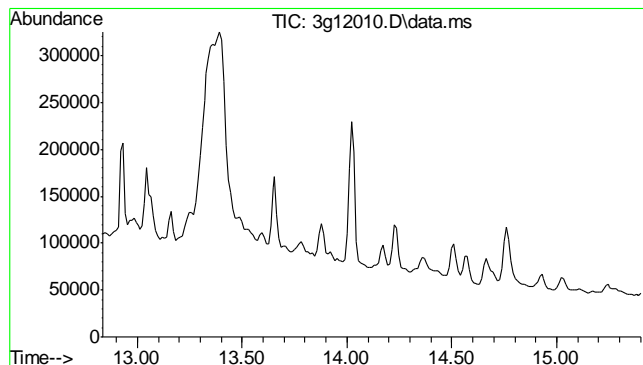
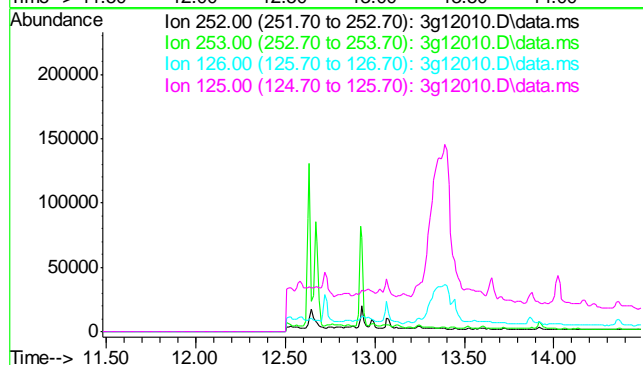




#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 12.98 min

Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

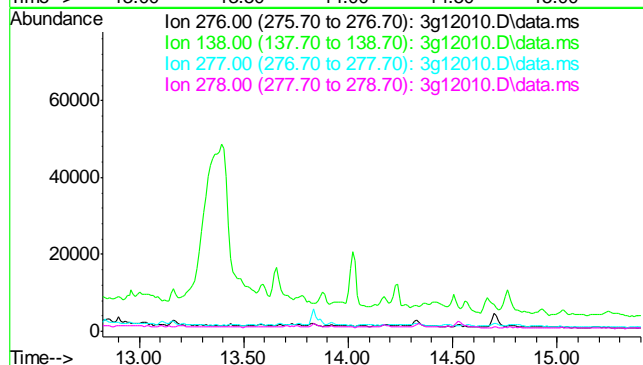
Tgt Ion	Exp Ratio
252	100
253	21.3
126	20.8
125	15.4

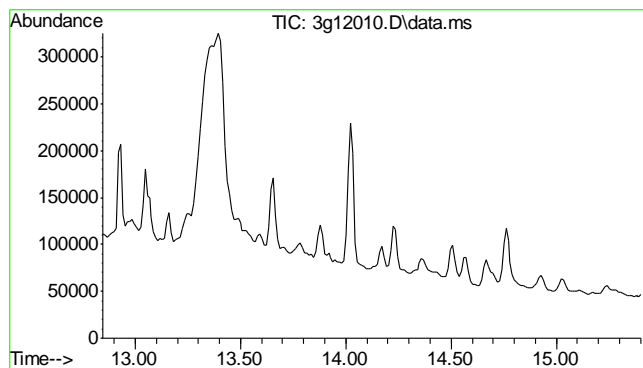


#28
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 14.33 min

Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

Tgt Ion	Exp Ratio
276	100
138	44.3
277	24.7
278	71.8

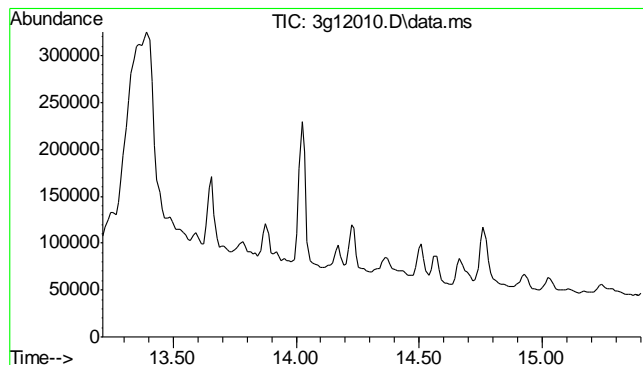
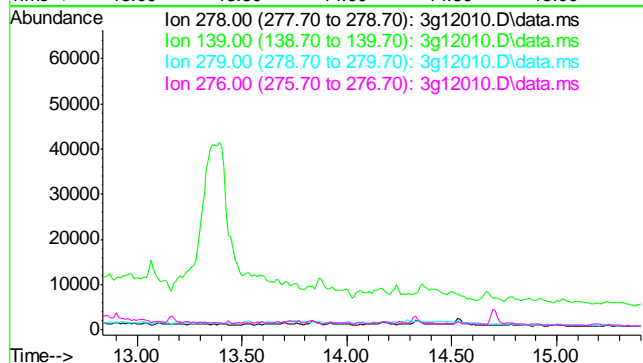




#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.34 min

Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

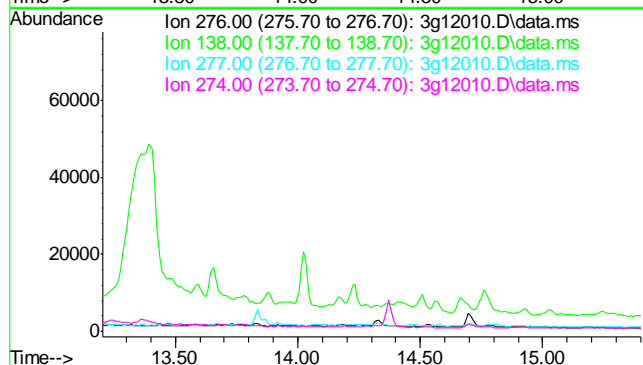
Tgt Ion	Exp Ratio
278	100
139	35.0
279	22.9
276	139.3



#30
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 14.71 min

Lab File: 3g12010.D
Acq: 9 Nov 12 8:21 pm

Tgt Ion	Exp Ratio
276	100
138	38.8
277	22.5
274	21.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\110912\
 Data File : 3g12011.D
 Acq On : 9 Nov 2012 8:45 pm
 Operator : DONC
 Sample : D40712-3
 Misc : OP6941,E3G567,30.12,,,1,1
 ALS Vial : 26 Sample Multiplier: 1

Quant Time: Nov 12 09:11:55 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G567.M
 Quant Title : PAHSIM BASE
 QLast Update : Fri Nov 09 15:41:30 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.789	136	219578	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.507	164	112113	4.0000	ug/mL	0.00
15) Phenanthrene-d10	8.995	188	164566	4.0000	ug/mL	0.00
19) Chrysene-d12	11.636	240	92922	4.0000	ug/mL	0.00
24) Perylene-d12	13.056	264	45364	4.0000	ug/mL	0.02

System Monitoring Compounds

2) Nitrobenzene-d5	5.103	82	696737	36.4254	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	72.86%		
7) 2-Fluorobiphenyl	6.846	172	1659517	39.3281	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	78.66%		
21) Terphenyl-d14	10.586	244	517670	40.5409	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	81.08%		

Target Compounds

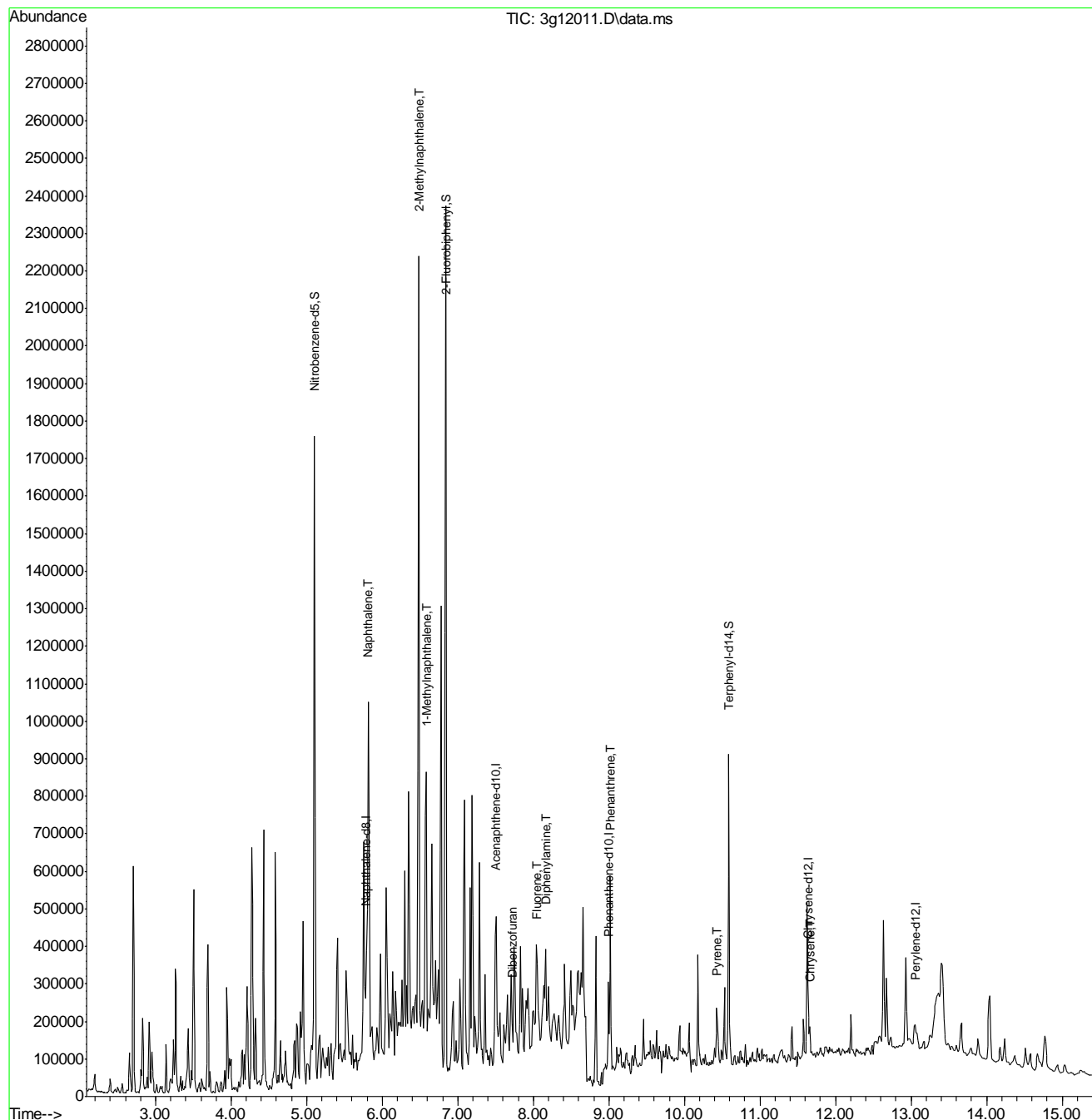
						Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.814	128	736423	13.2171	ug/mL	90
8) 2-Methylnaphthalene	6.487	142	957614	28.5249	ug/mL	97
9) 1-Methylnaphthalene	6.586	142	413672	13.4111	ug/mL	93
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.720	168	59566	1.1540	ug/mL	66
13) Fluorene	8.051	166	82188	1.9815	ug/mL#	54
14) Diphenylamine	8.169	169	170221	4.9450	ug/mL	73
16) Phenanthrene	9.019	178	303257	5.0068	ug/mL	91
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	0.000	202	0	N.D.	d	
20) Pyrene	10.436	202	55582	1.1551	ug/mL#	79
22) Benzo(a)anthracene	0.000	228	0	N.D.	d	
23) Chrysene	11.663	228	48564	1.0999	ug/mL#	73
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	

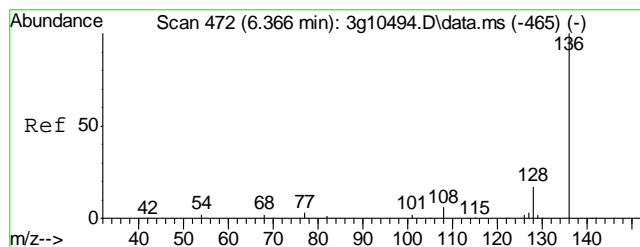
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\110912\
Data File : 3g12011.D
Acq On : 9 Nov 2012 8:45 pm
Operator : DONC
Sample : D40712-3
Misc : OP6941,E3G567,30.12,,,1,1
ALS Vial : 26 Sample Multiplier: 1

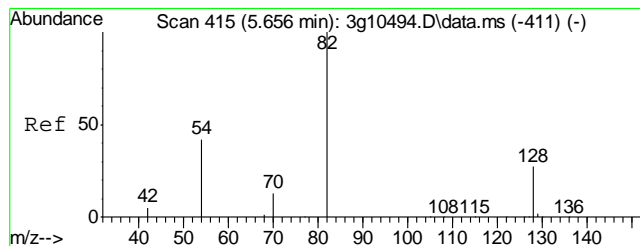
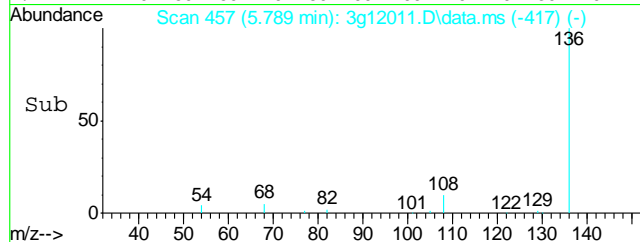
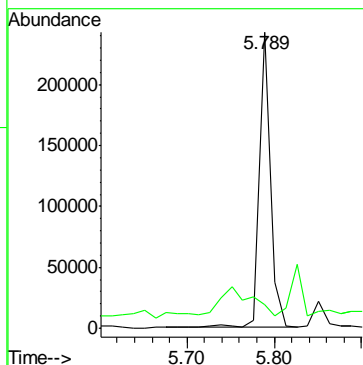
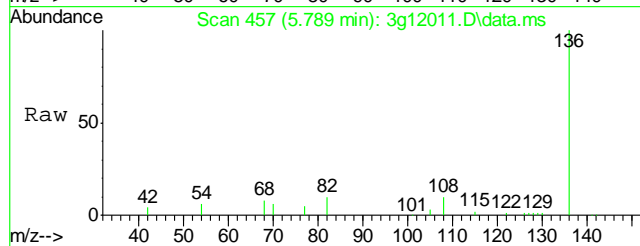
Quant Time: Nov 12 09:11:55 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G567.M
Quant Title : PAHSIM BASE
QLast Update : Fri Nov 09 15:41:30 2012
Response via : Initial Calibration





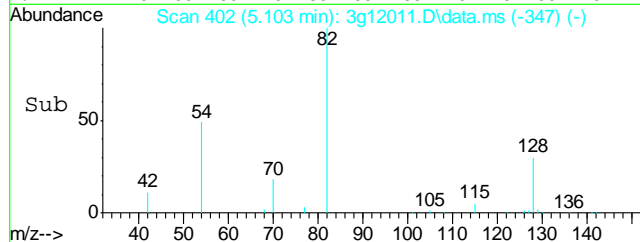
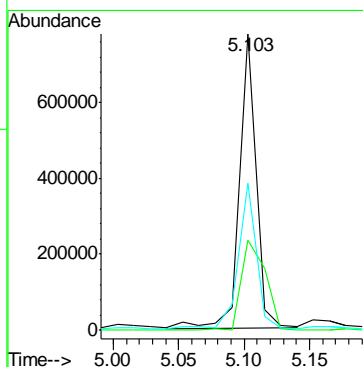
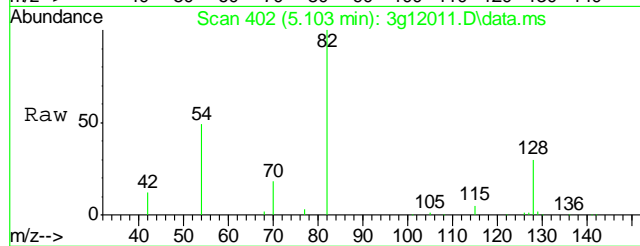
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.789 min Scan# 457
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

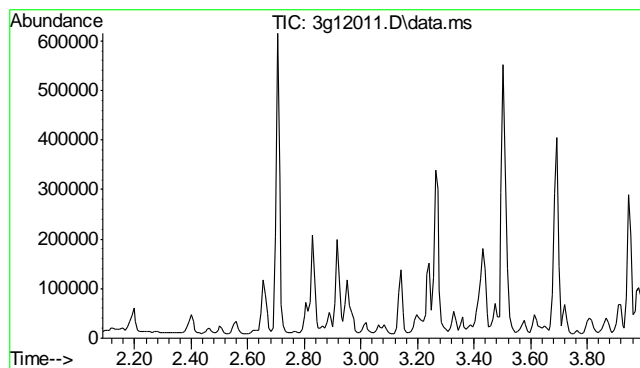
Tgt Ion	Ratio	Lower	Upper
136	100		
68	25.7	0.0	26.5



#2
Nitrobenzene-d5
Concen: 36.4254 ug/mL
RT: 5.103 min Scan# 402
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

Tgt Ion	Ratio	Lower	Upper
82	100		
128	43.8	26.7	66.7
54	53.2	29.0	69.0

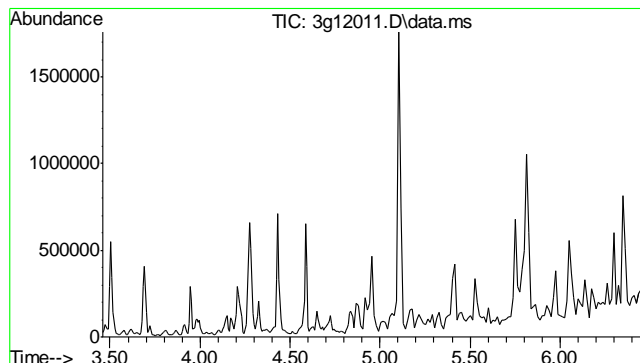
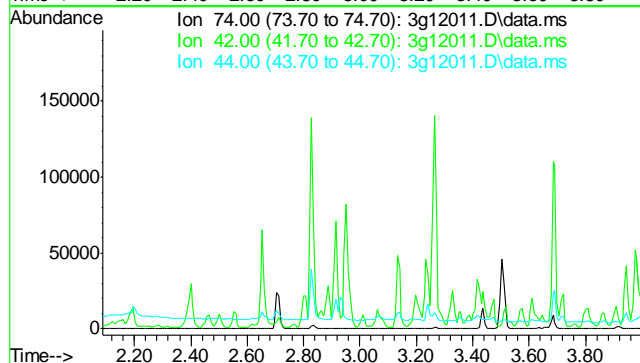




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.49 min

Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

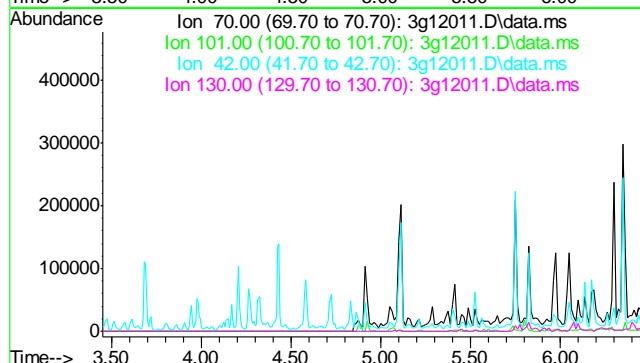
Tgt Ion	Exp Ratio
74	100
42	73.4
44	3.7

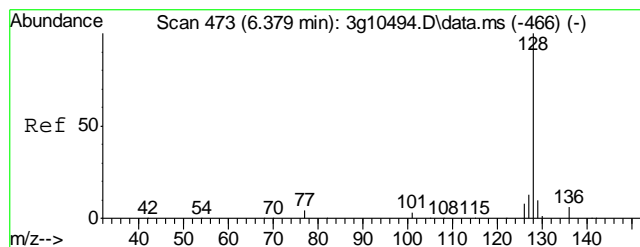


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.95 min

Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

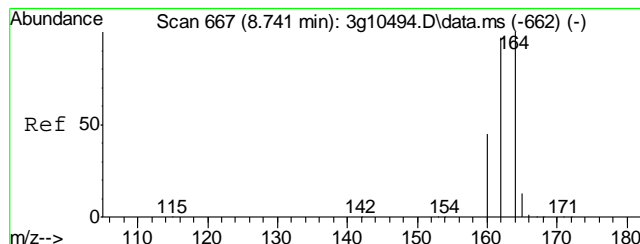
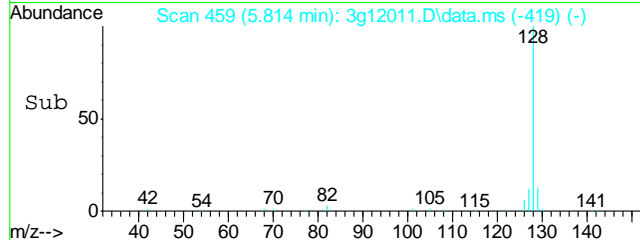
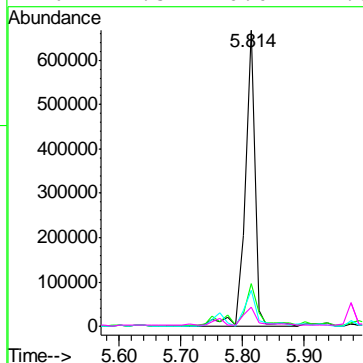
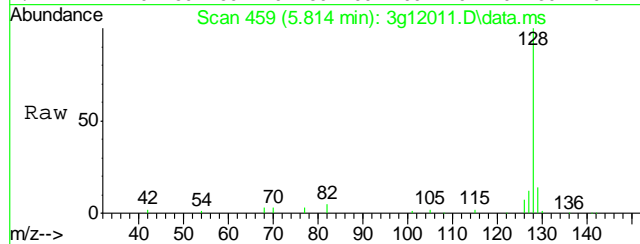
Tgt Ion	Exp Ratio
70	100
101	11.6
42	63.1
130	33.5





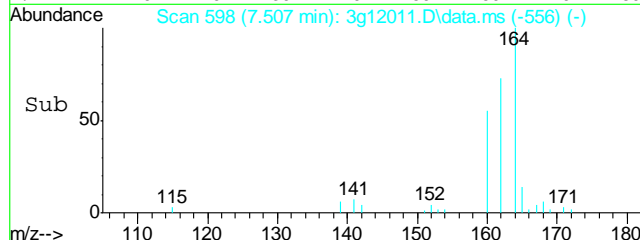
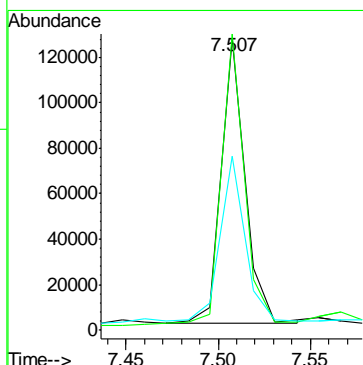
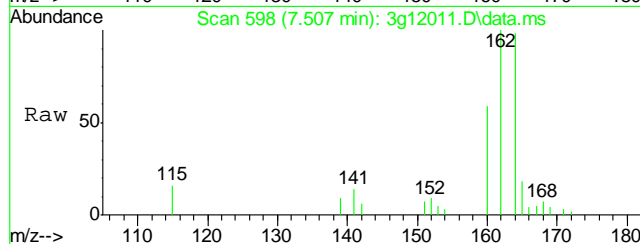
#5
Naphthalene
Concen: 13.2171 ug/mL
RT: 5.814 min Scan# 459
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

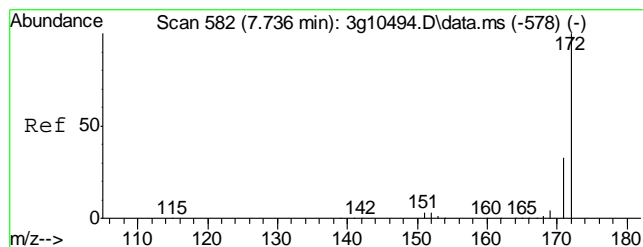
Tgt Ion	Ratio	Lower	Upper
128	100		
129	17.2	0.0	31.0
127	16.3	0.0	32.5
126	7.5	0.0	27.3



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.507 min Scan# 598
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

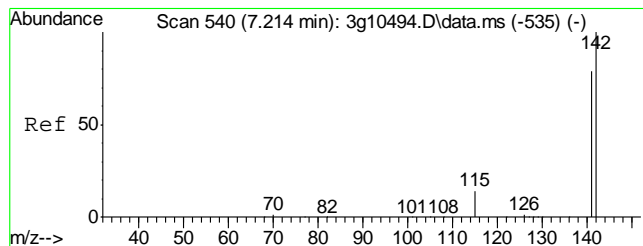
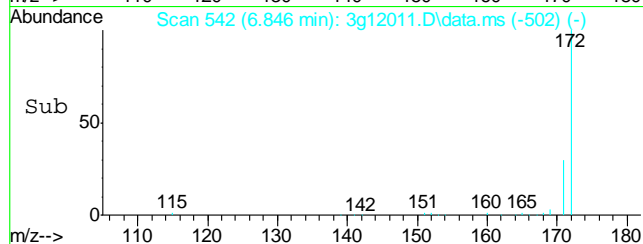
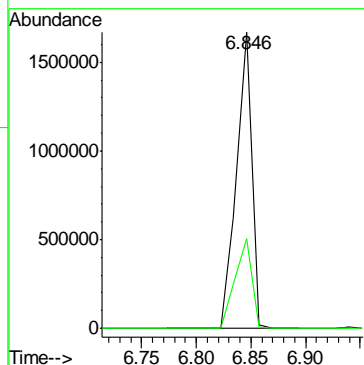
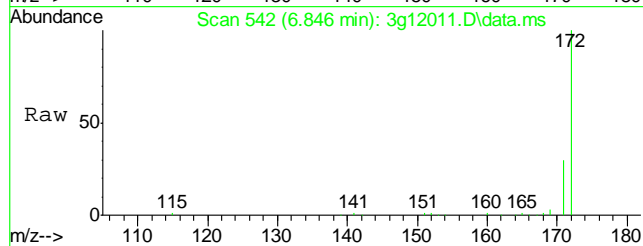
Tgt Ion	Ratio	Lower	Upper
164	100		
162	101.9	74.5	114.5
160	65.2	24.7	64.7#





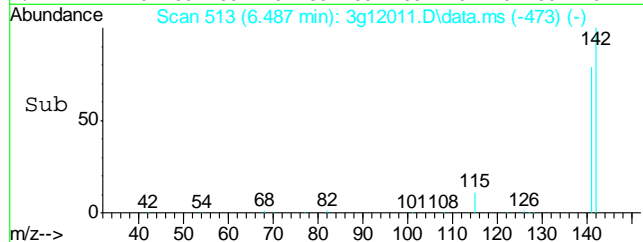
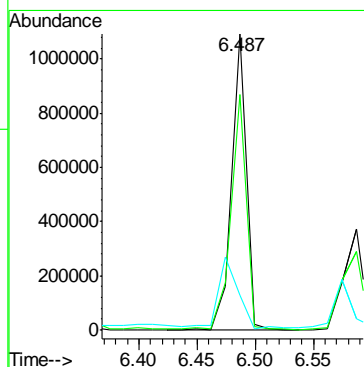
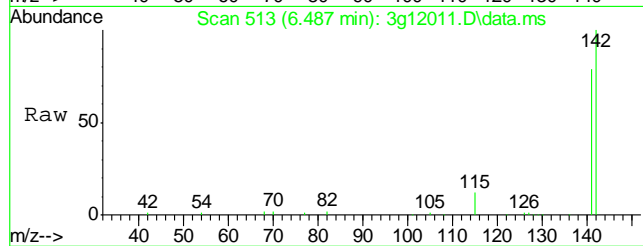
#7
2-Fluorobiphenyl
Concen: 39.3281 ug/mL
RT: 6.846 min Scan# 542
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

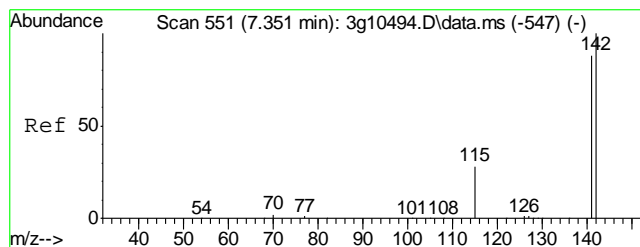
Tgt Ion:172 Resp: 1659517
Ion Ratio Lower Upper
172 100
171 33.2 13.2 53.2



#8
2-Methylnaphthalene
Concen: 28.5249 ug/mL
RT: 6.487 min Scan# 513
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

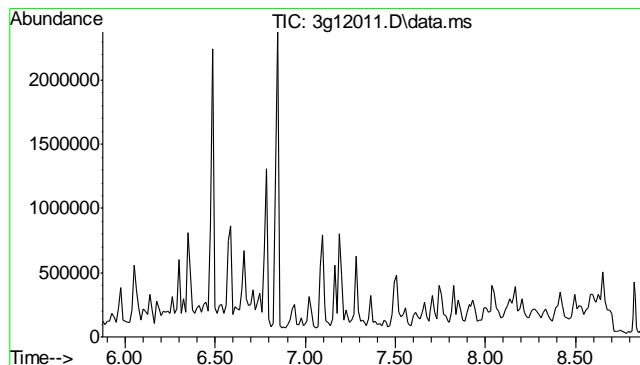
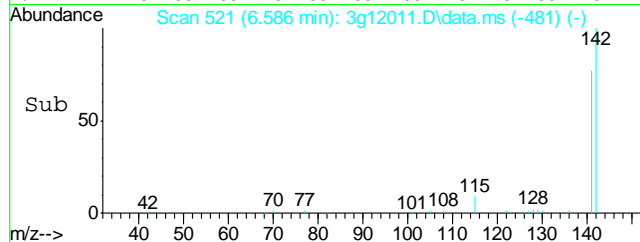
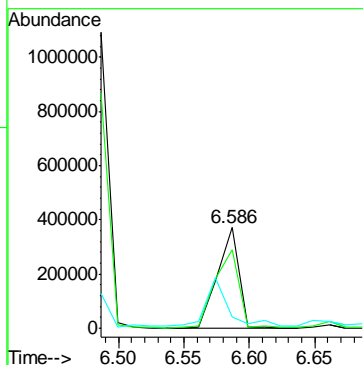
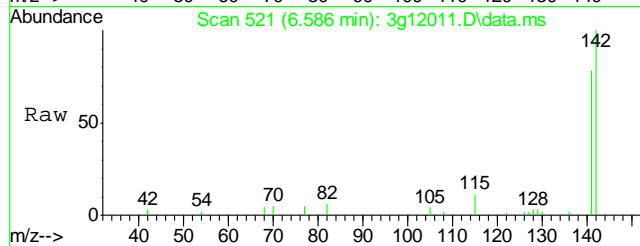
Tgt Ion:142 Resp: 957614
Ion Ratio Lower Upper
142 100
141 83.3 62.6 102.6
115 30.8 15.3 55.3





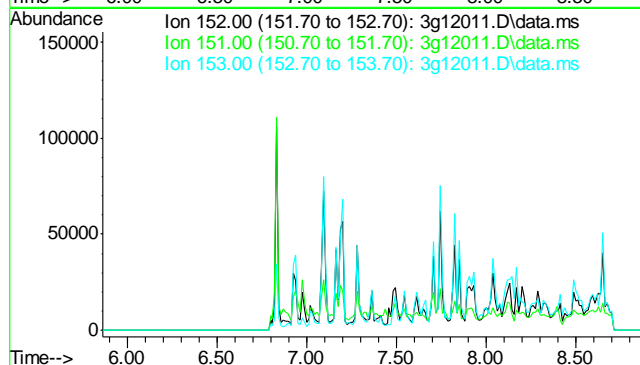
#9
1-Methylnaphthalene
Concen: 13.4111 ug/mL
RT: 6.586 min Scan# 521
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

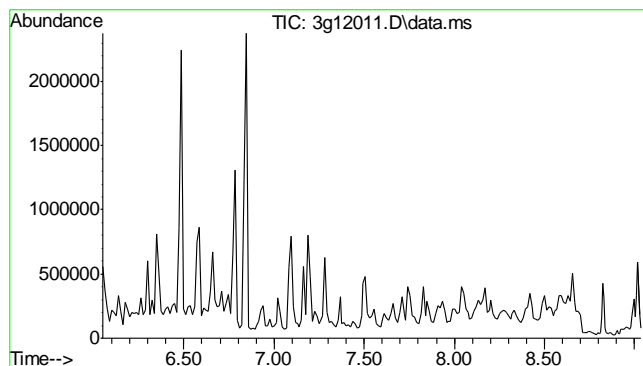
Tgt Ion	Ratio	Lower	Upper
142	100		
141	88.2	66.1	106.1
115	46.6	16.3	56.3



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.37 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

Tgt Ion	Sig	Exp Ratio
152	100	
151	19.1	
153	13.0	

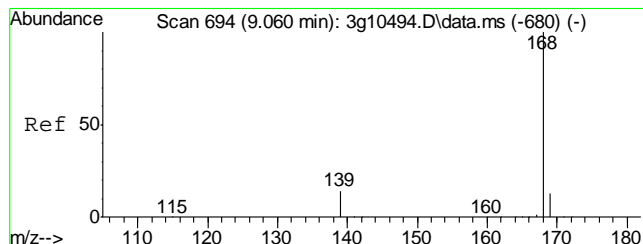
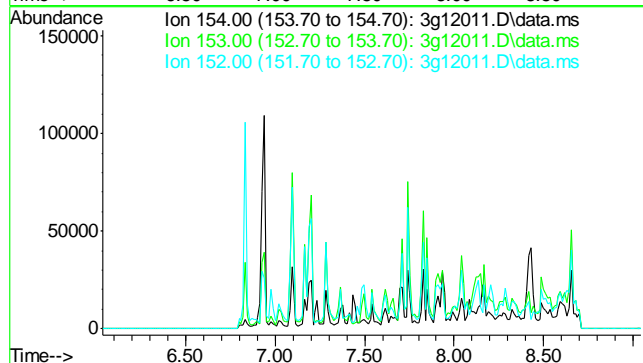




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.54 min

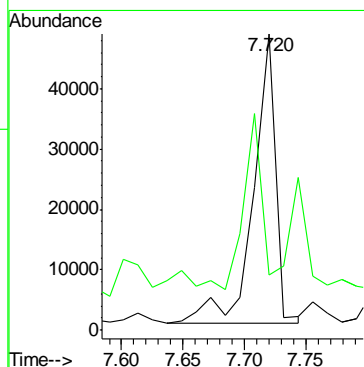
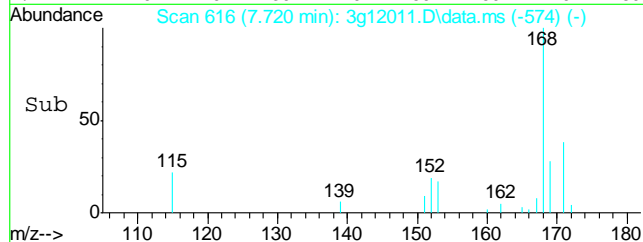
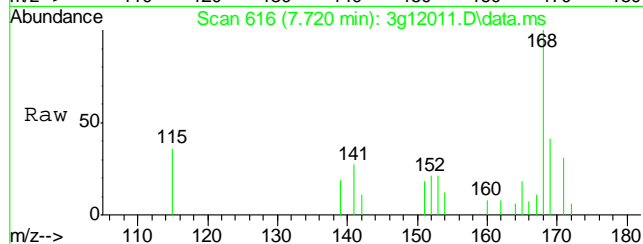
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

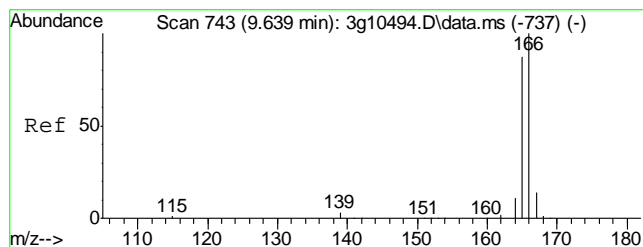
Tgt Ion: 154
Sig Exp Ratio
154 100
153 103.2
152 49.5



#12
Dibenzofuran
Concen: 1.1540 ug/mL
RT: 7.720 min Scan# 616
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

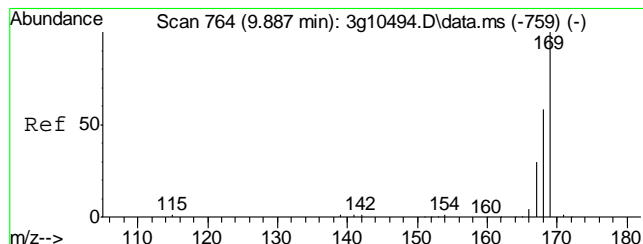
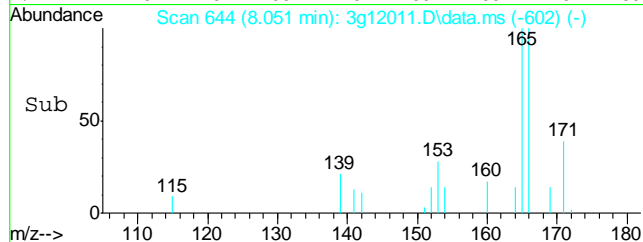
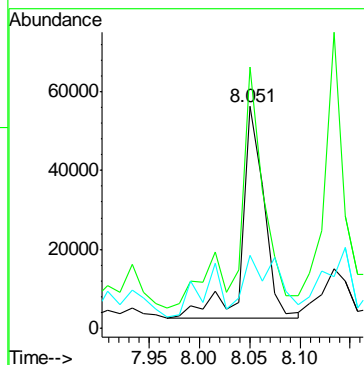
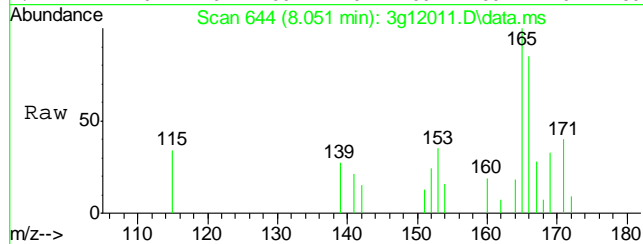
Tgt Ion: 168 Resp: 59566
Ion Ratio Lower Upper
168 100
139 53.5 13.9 53.9





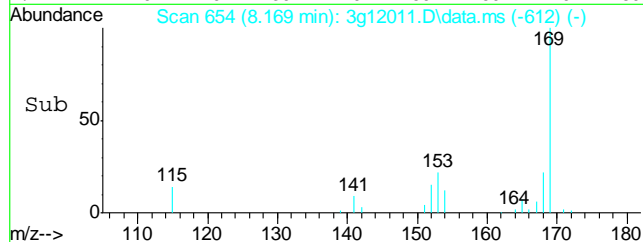
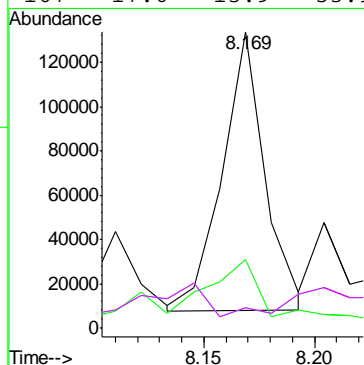
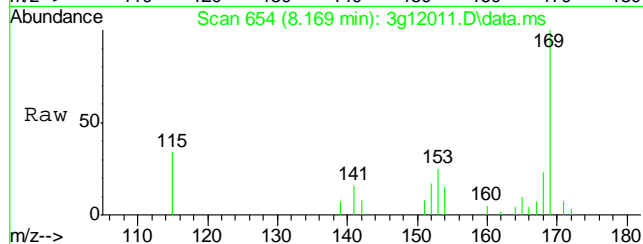
#13
Fluorene
Concen: 1.9815 ug/mL
RT: 8.051 min Scan# 644
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

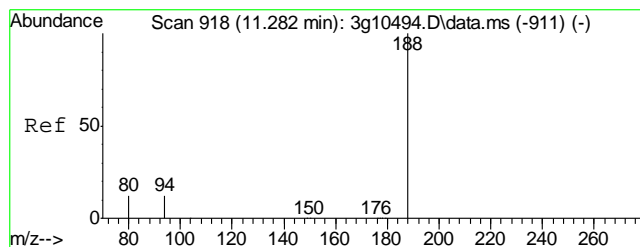
Tgt Ion	Ratio	Lower	Upper
166	100		
165	131.6	71.8	111.8#
167	43.9	0.0	33.2#



#14
Diphenylamine
Concen: 4.9450 ug/mL
RT: 8.169 min Scan# 654
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

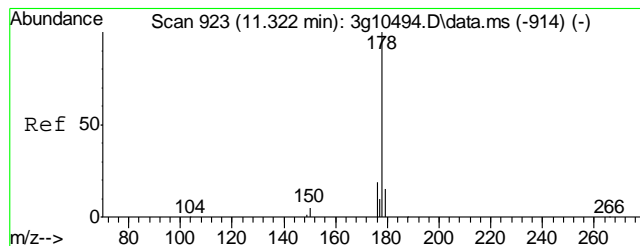
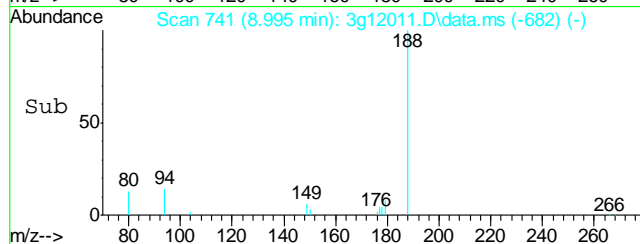
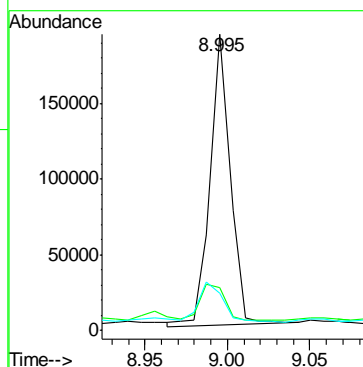
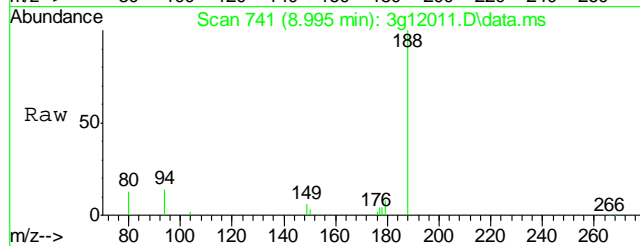
Tgt Ion	Ratio	Lower	Upper
169	100		
168	42.1	41.7	81.7
167	17.6	13.9	53.9
167	17.6	13.9	53.9





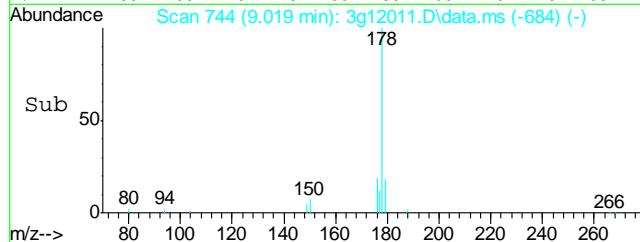
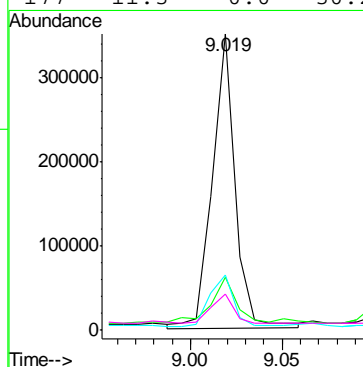
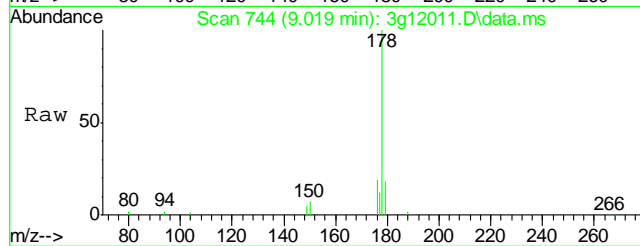
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.995 min Scan# 741
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

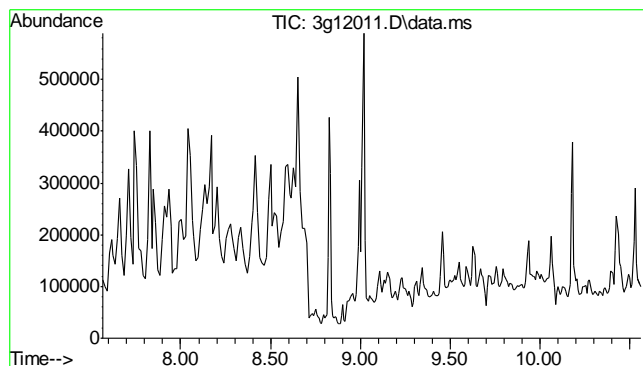
Tgt Ion:188	Resp:	164566
Ion Ratio	Lower	Upper
188	100	
94	15.6	0.0 31.9
80	42.9	0.0 32.4#



#16
Phenanthrene
Concen: 5.0068 ug/mL
RT: 9.019 min Scan# 744
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

Tgt Ion:178	Resp:	303257
Ion Ratio	Lower	Upper
178	100	
179	25.4	0.0 35.1
176	19.2	0.0 39.0
177	11.3	0.0 30.2

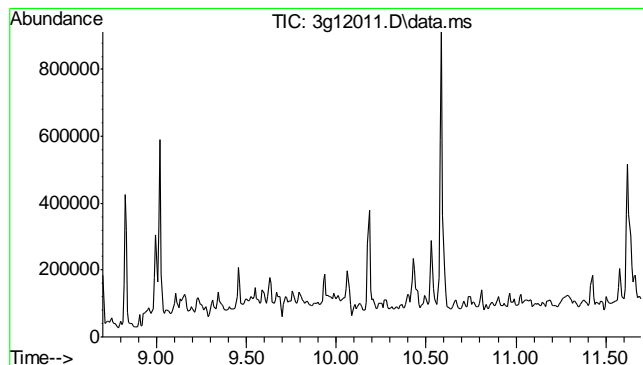
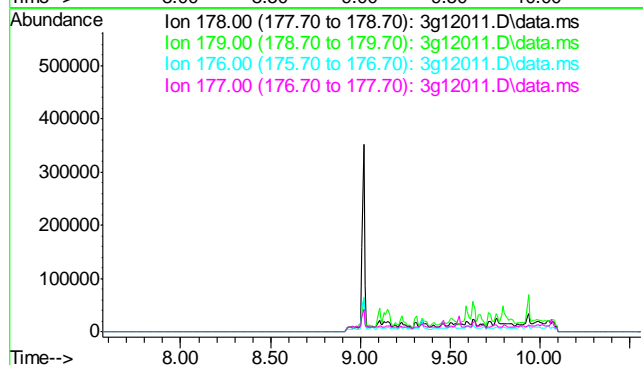




#17
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 9.07 min

 Lab File: 3g12011.D
 Acq: 9 Nov 12 8:45 pm

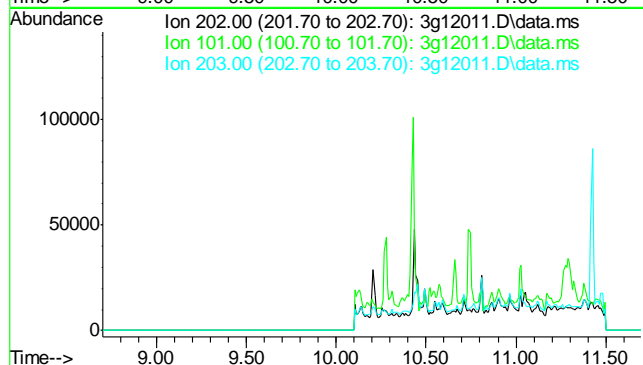
Tgt Ion	Sig	Exp Ratio
178	100	
179	14.9	
176	18.1	
177	8.7	

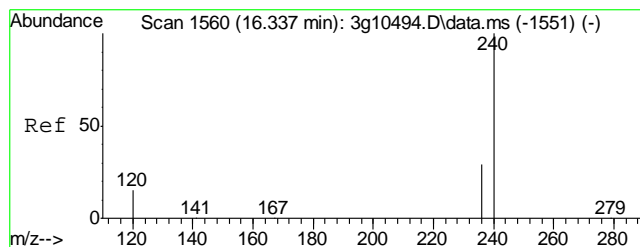


#18
 Fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 10.20 min

 Lab File: 3g12011.D
 Acq: 9 Nov 12 8:45 pm

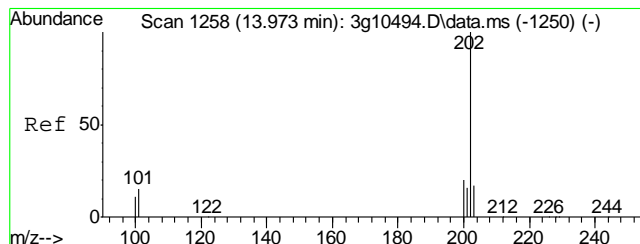
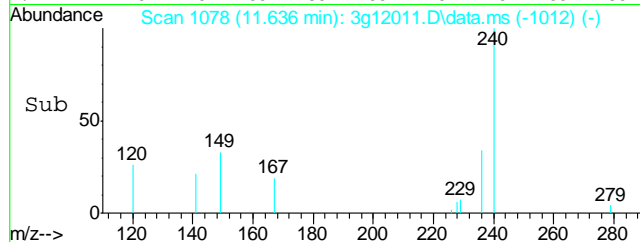
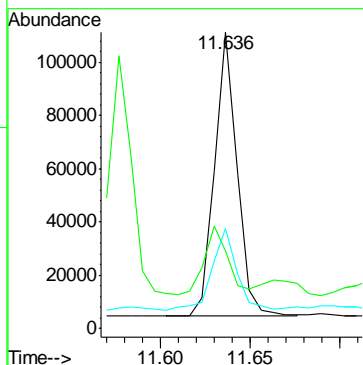
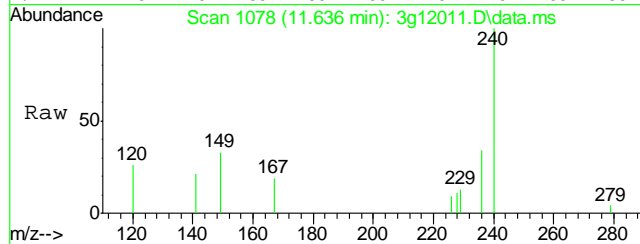
Tgt Ion	Sig	Exp Ratio
202	100	
101	12.8	
203	17.2	





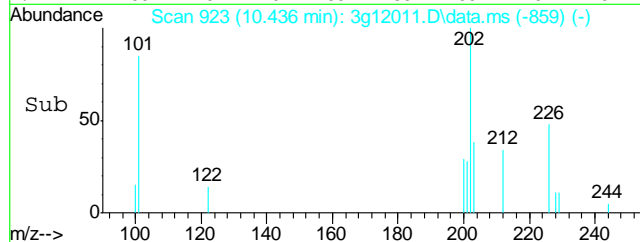
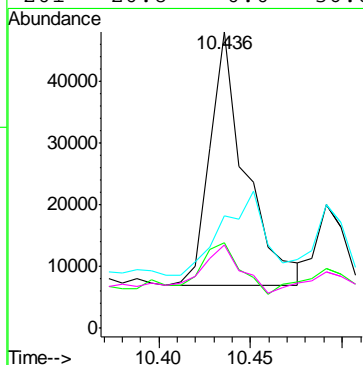
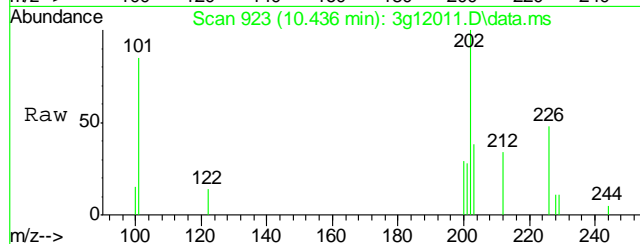
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.636 min Scan# 1078
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

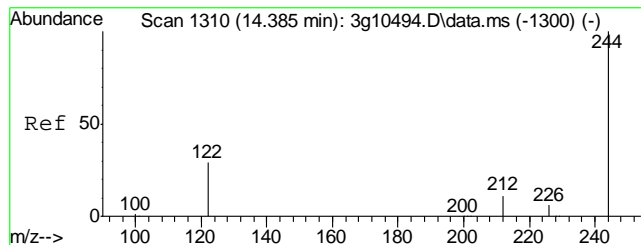
Tgt Ion:	240	Resp:	92922
Ion Ratio	Lower	Upper	
240	100		
120	27.4	1.2	41.2
236	31.9	10.2	50.2



#20
Pyrene
Concen: 1.1551 ug/mL
RT: 10.436 min Scan# 923
Delta R.T. 0.008 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

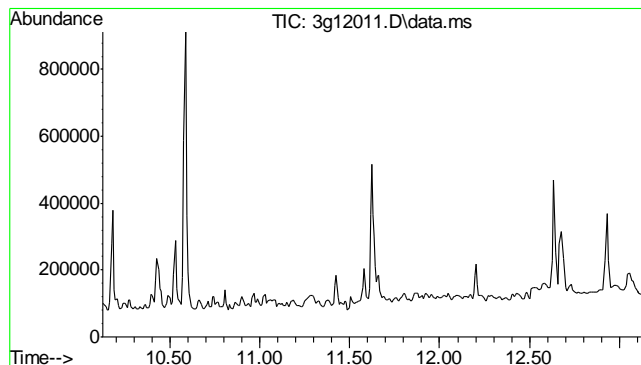
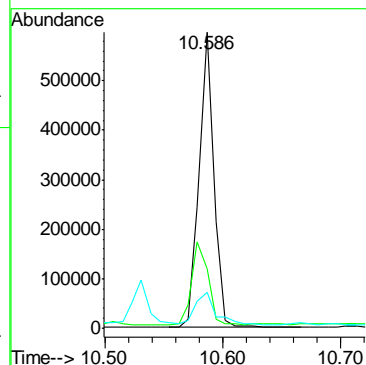
Tgt Ion:	202	Resp:	55582
Ion Ratio	Lower	Upper	
202	100		
200	23.2	0.3	40.3
203	39.7	0.0	37.8#
201	20.8	0.0	36.8





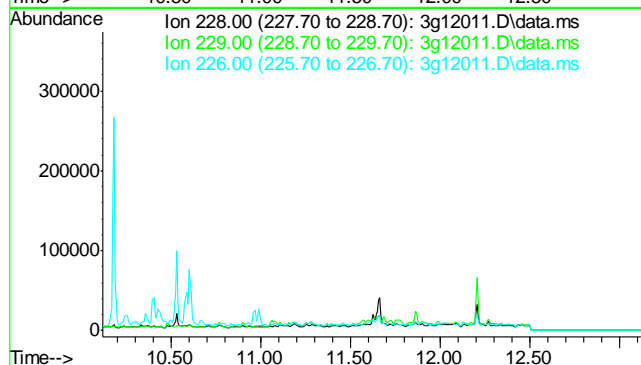
#21
Terphenyl-d14
Concen: 40.5409 ug/mL
RT: 10.586 min Scan# 942
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

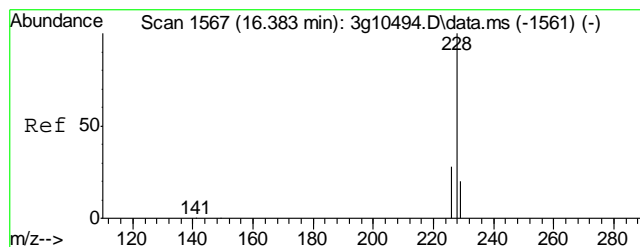
Tgt Ion	Ratio	Lower	Upper
244	100		
122	31.2	7.3	47.3
212	15.4	0.0	32.5



#22
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 11.62 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

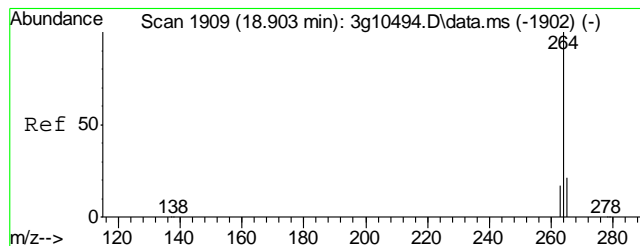
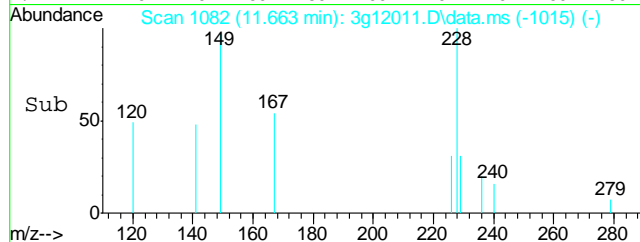
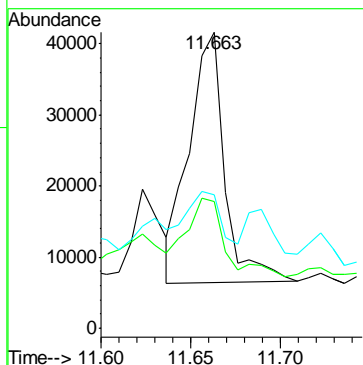
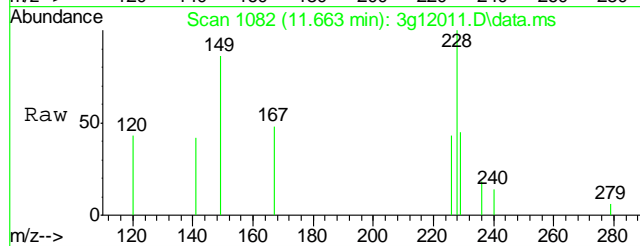
Tgt Ion	Sig	Exp Ratio
228	100	
229	19.3	
226	26.7	





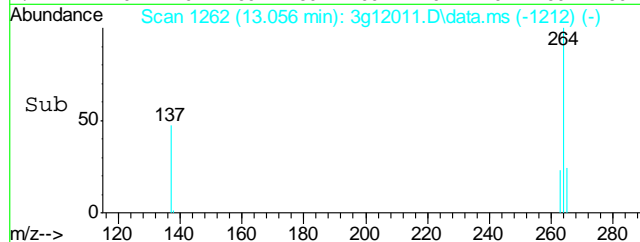
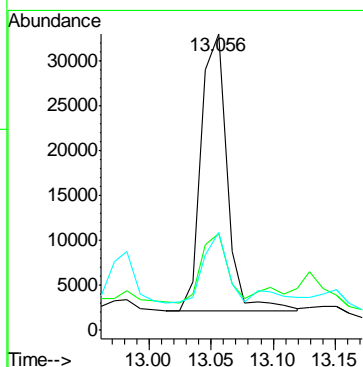
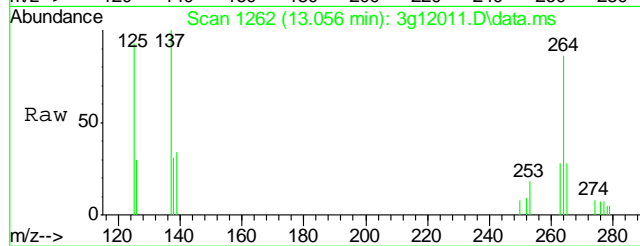
#23
Chrysene
Concen: 1.0999 ug/mL
RT: 11.663 min Scan# 1082
Delta R.T. 0.000 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

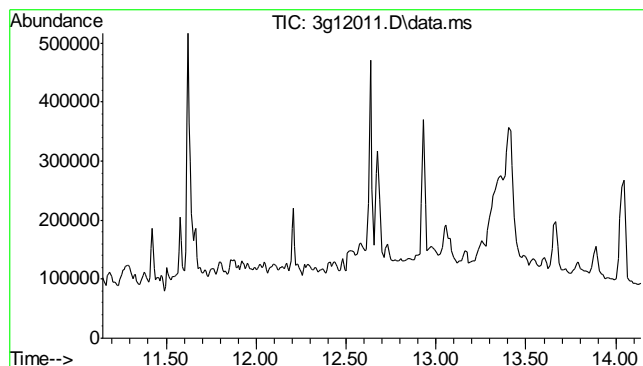
Tgt Ion:	228	Resp:	48564
Ion Ratio	100	Lower	Upper
228	100		
226	34.9	8.3	48.3
229	41.2	0.0	39.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.056 min Scan# 1262
Delta R.T. 0.021 min
Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

Tgt Ion:	264	Resp:	45364
Ion Ratio	100	Lower	Upper
264	100		
265	24.9	0.8	40.8
263	27.2	0.4	40.4

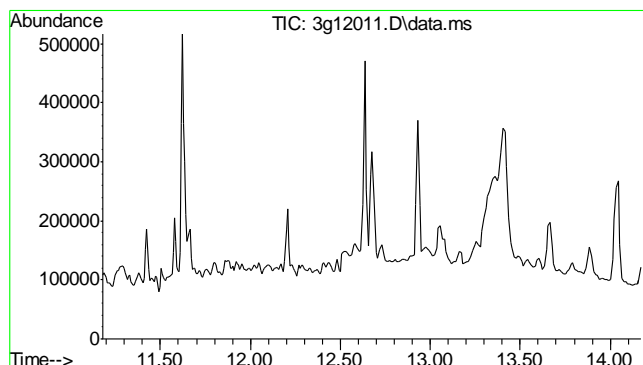
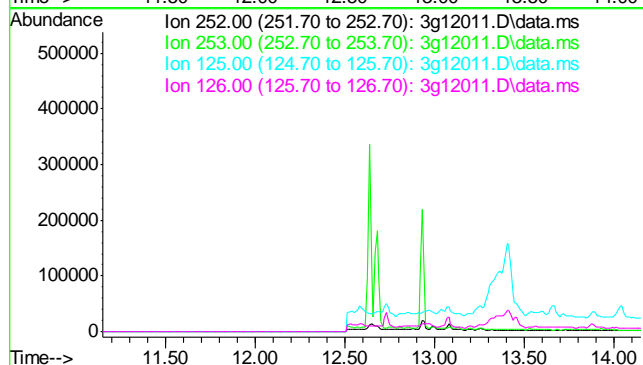




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.65 min

Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

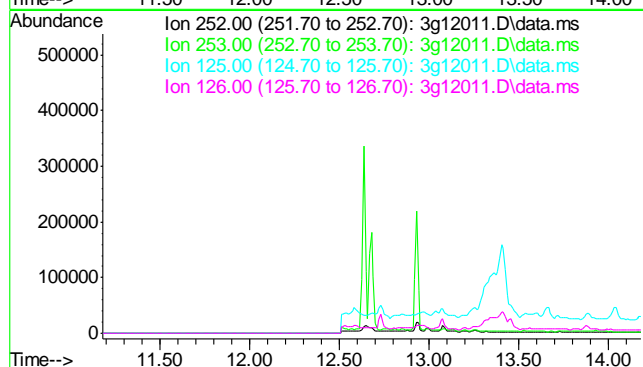
Tgt Ion	Sig	Exp Ratio
252	100	
253	53.4	
125	35.2	
126	51.6	

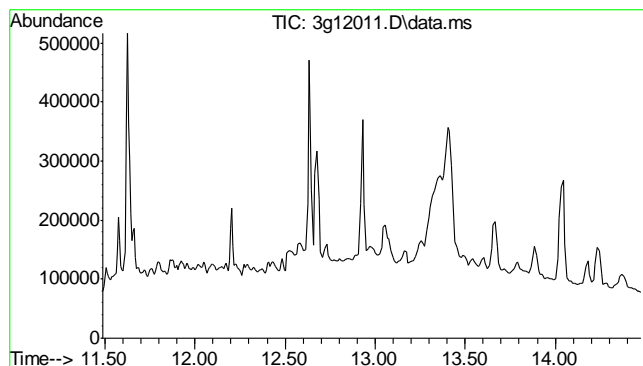


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.68 min

Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

Tgt Ion	Sig	Exp Ratio
252	100	
253	36.5	
125	24.1	
126	35.3	

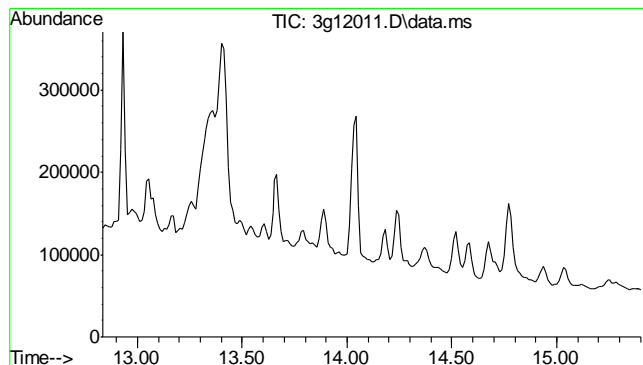
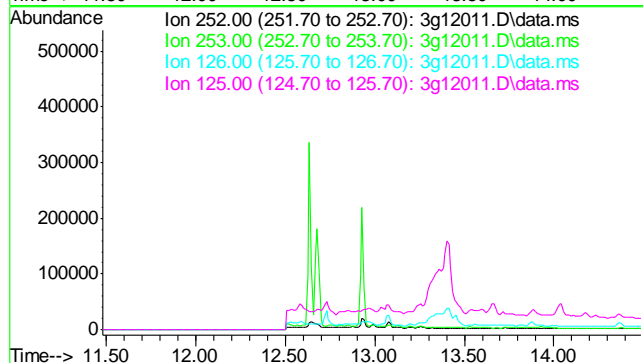




#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 12.98 min

Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

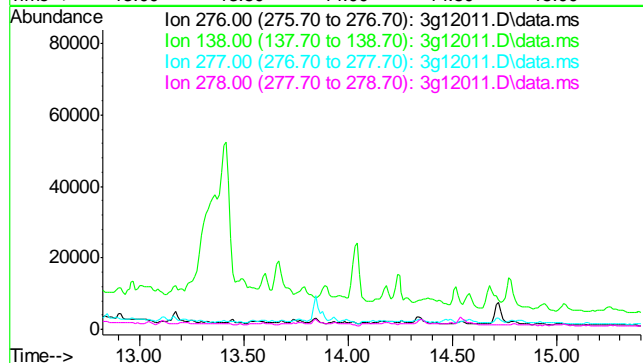
Tgt Ion	Sig	Exp Ratio
252	100	
253	21.3	
126	20.8	
125	15.4	

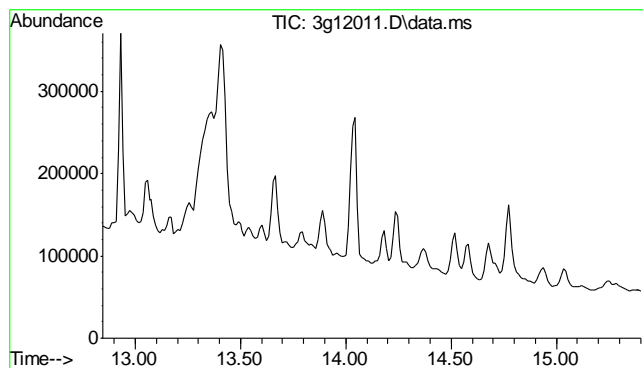


#28
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 14.33 min

Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

Tgt Ion	Sig	Exp Ratio
276	100	
138	44.3	
277	24.7	
278	71.8	

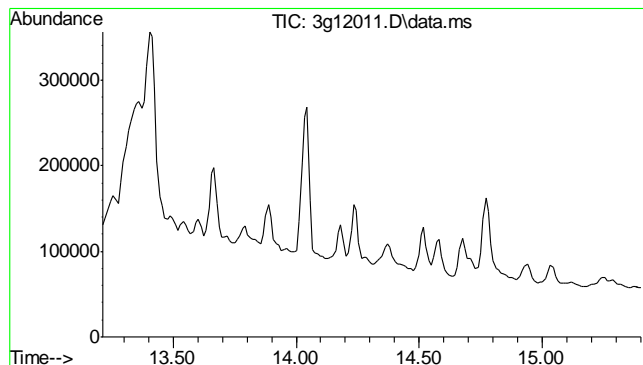
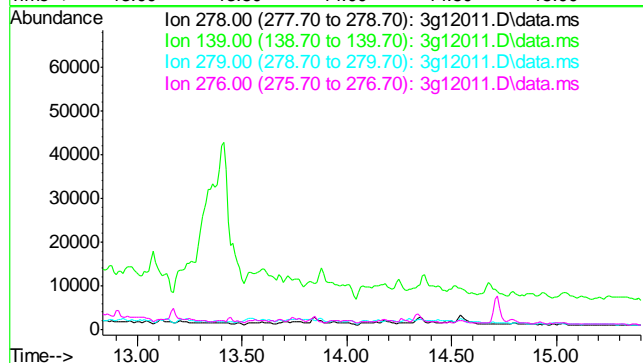




#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.34 min

Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

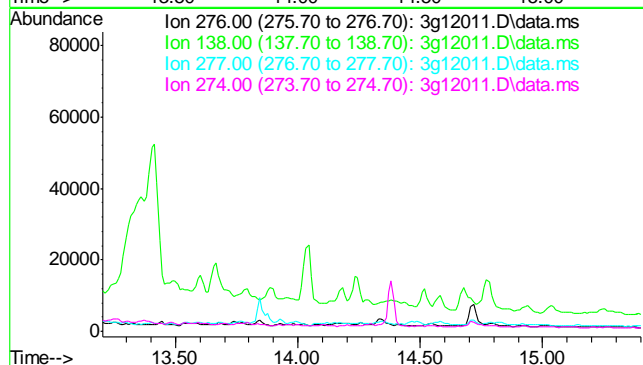
Tgt Ion	Exp Ratio
278	100
139	35.0
279	22.9
276	139.3



#30
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 14.71 min

Lab File: 3g12011.D
Acq: 9 Nov 12 8:45 pm

Tgt Ion	Exp Ratio
276	100
138	38.8
277	22.5
274	21.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\110912\
 Data File : 3g11997.D
 Acq On : 9 Nov 2012 3:09 pm
 Operator : DONC
 Sample : OP6941-MB
 Misc : OP6941,E3G567,30.00,,,1,1
 ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 09 15:52:38 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G567.M
 Quant Title : PAHSIM BASE
 QLast Update : Fri Nov 09 15:41:30 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.789	136	160803	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.507	164	95095	4.0000	ug/mL	0.00
15) Phenanthrene-d10	8.995	188	145499	4.0000	ug/mL	0.00
19) Chrysene-d12	11.636	240	88767	4.0000	ug/mL	0.00
24) Perylene-d12	13.045	264	37259	4.0000	ug/mL	0.01

System Monitoring Compounds

2) Nitrobenzene-d5	5.103	82	695853	49.6762	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	99.36%		
7) 2-Fluorobiphenyl	6.846	172	1787932	49.9540	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	99.90%		
21) Terphenyl-d14	10.586	244	730357	59.8746	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	119.74%		

Target Compounds

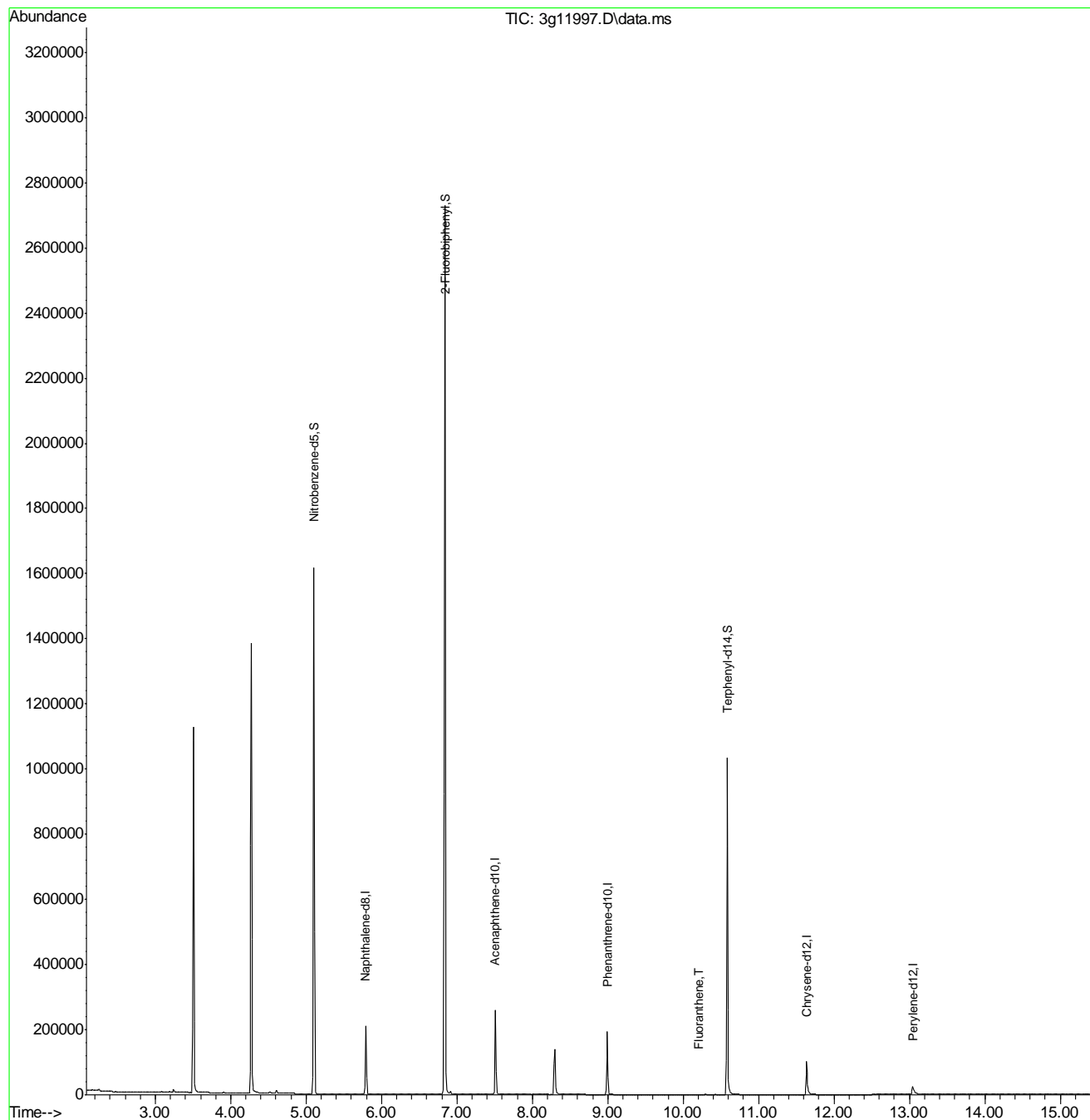
					Qvalue
3) N-Nitrosodimethylamine	2.501	74	17	N.D.	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D. d	
5) Naphthalene	5.814	128	663	N.D.	
8) 2-Methylnaphthalene	6.487	142	476	N.D.	
9) 1-Methylnaphthalene	6.586	142	255	N.D.	
10) Acenaphthylene	7.365	152	253	N.D.	
11) Acenaphthene	7.507	154	601	N.D.	
12) Dibenzofuran	7.720	168	394	N.D.	
13) Fluorene	0.000	166	0	N.D. d	
14) Diphenylamine	0.000	169	0	N.D. d	
16) Phenanthrene	9.019	178	709	N.D.	
17) Anthracene	9.066	178	335	N.D.	
18) Fluoranthene	10.206	202	332m	0.0534	ug/mL
20) Pyrene	10.428	202	354	N.D.	
22) Benzo(a)anthracene	11.550	228	53	N.D.	
23) Chrysene	11.550	228	53	N.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	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	

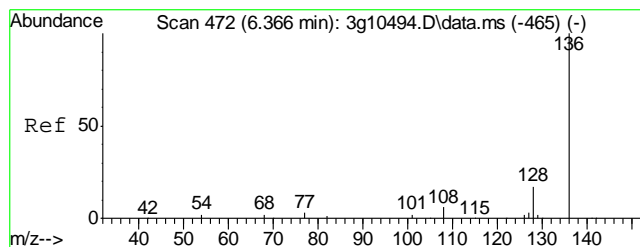
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\110912\
Data File : 3g11997.D
Acq On : 9 Nov 2012 3:09 pm
Operator : DONC
Sample : OP6941-MB
Misc : OP6941,E3G567,30.00,,,1,1
ALS Vial : 12 Sample Multiplier: 1

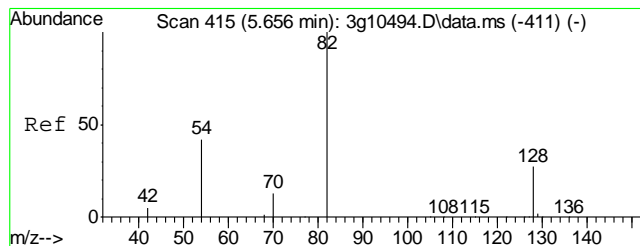
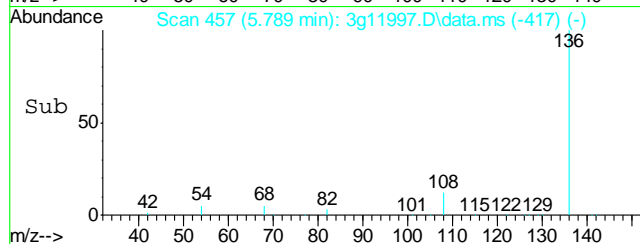
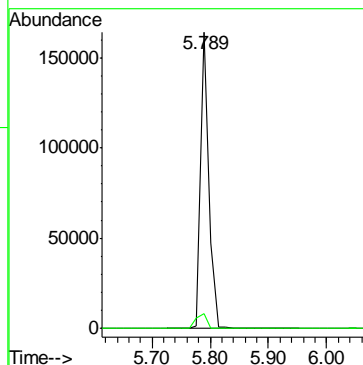
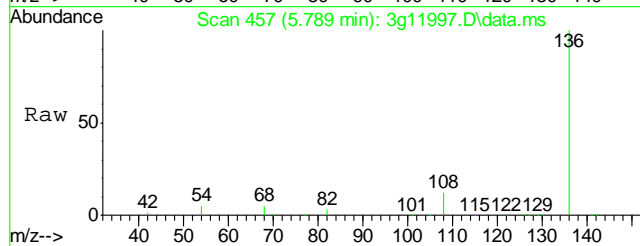
Quant Time: Nov 09 15:52:38 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G567.M
Quant Title : PAHSIM BASE
QLast Update : Fri Nov 09 15:41:30 2012
Response via : Initial Calibration





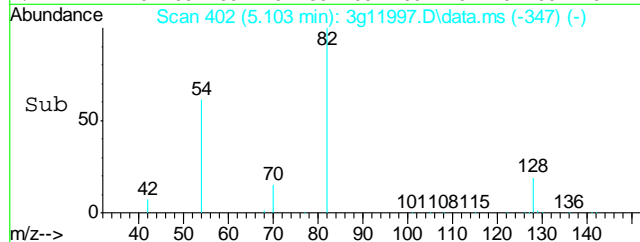
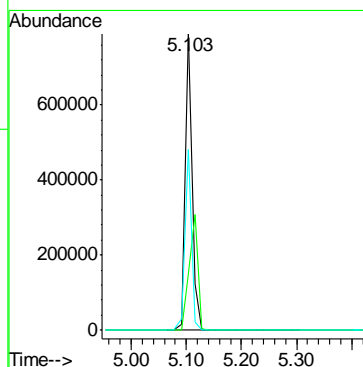
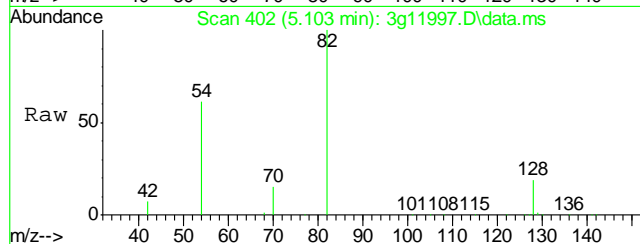
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.789 min Scan# 457
Delta R.T. 0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

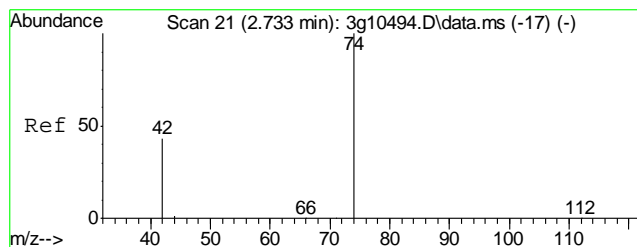
Tgt Ion: 136 Resp: 160803
Ion Ratio Lower Upper
136 100
68 6.6 0.0 26.5



#2
Nitrobenzene-d5
Concen: 49.6762 ug/mL
RT: 5.103 min Scan# 402
Delta R.T. -0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

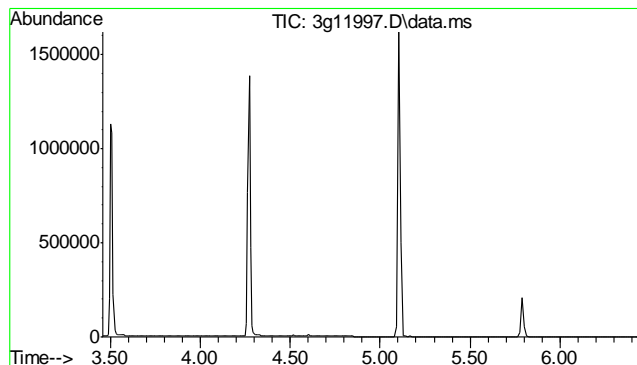
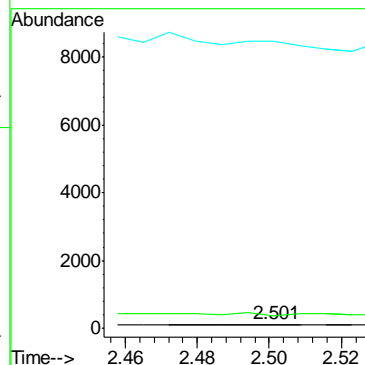
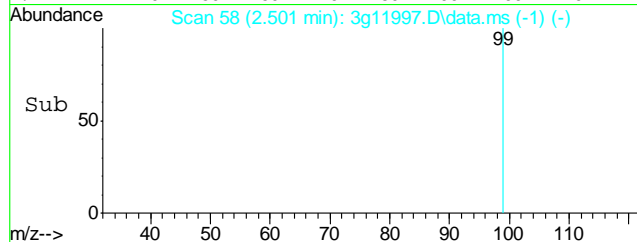
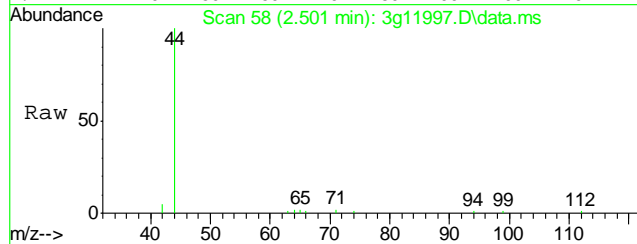
Tgt Ion: 82 Resp: 695853
Ion Ratio Lower Upper
82 100
128 49.6 26.7 66.7
54 57.1 29.0 69.0





#3
N-Nitrosodimethylamine
Concen: Below ug/mL
RT: 2.501 min Scan# 58
Delta R.T. 0.007 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

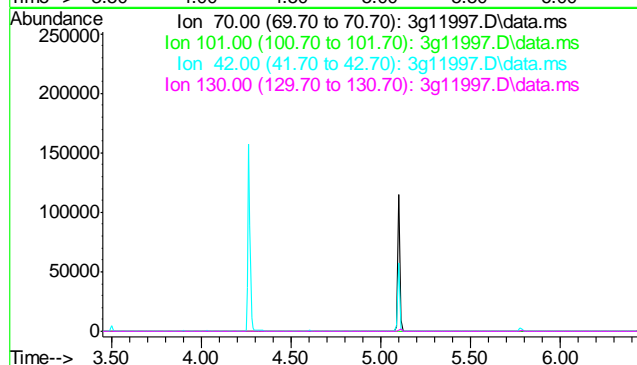
Tgt Ion: 74 Resp: 17
Ion Ratio Lower Upper
74 100
42 952.9 53.4 93.4#
44 0.0 0.0 23.7

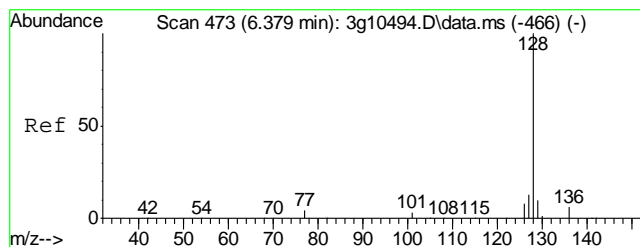


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.95 min

Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

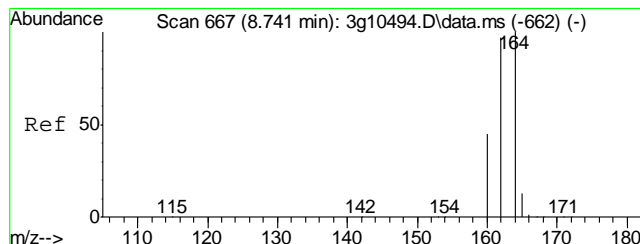
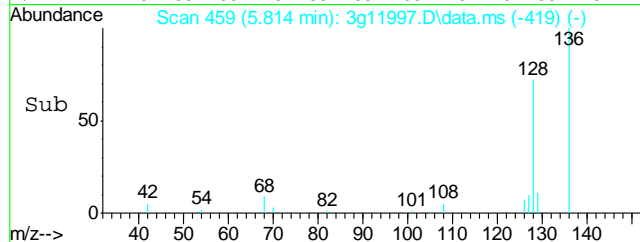
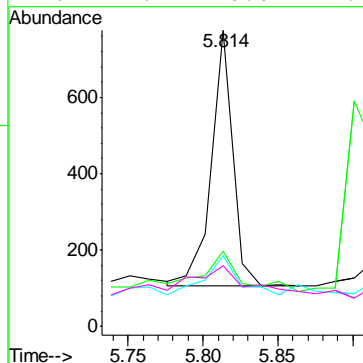
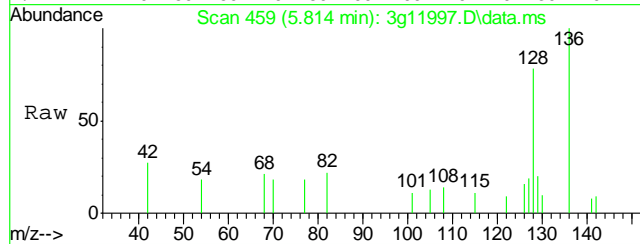
Tgt Ion: 70
Sig Exp Ratio
70 100
101 11.6
42 63.1
130 33.5





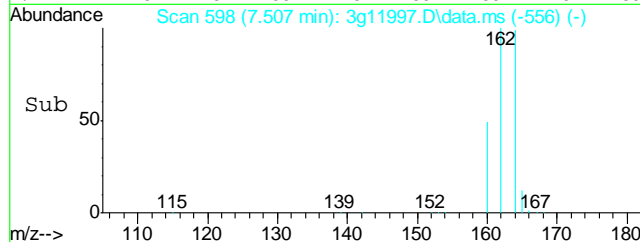
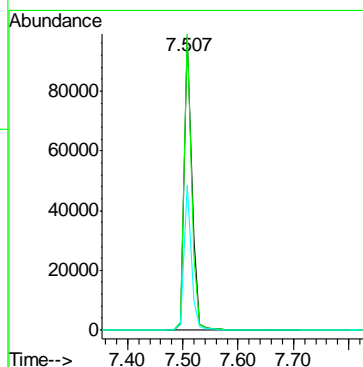
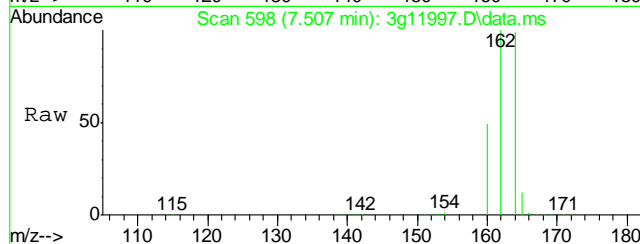
#5
Naphthalene
Concen: Below ug/mL
RT: 5.814 min Scan# 459
Delta R.T. 0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

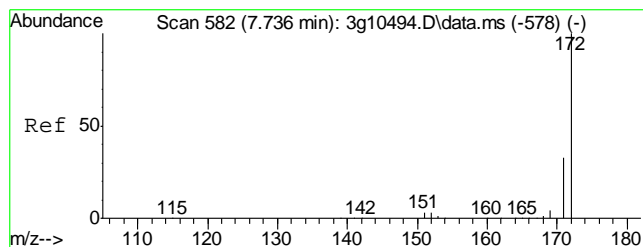
Tgt Ion	Ratio	Lower	Upper
128	100		
129	33.8	0.0	31.0#
127	30.2	0.0	32.5
126	42.4	0.0	27.3#



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.507 min Scan# 598
Delta R.T. 0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

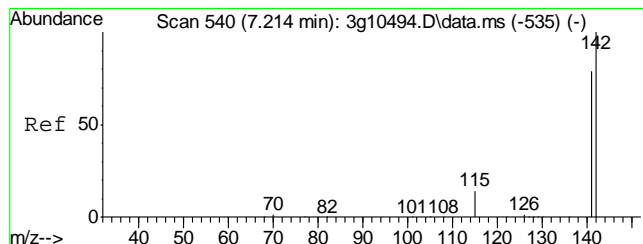
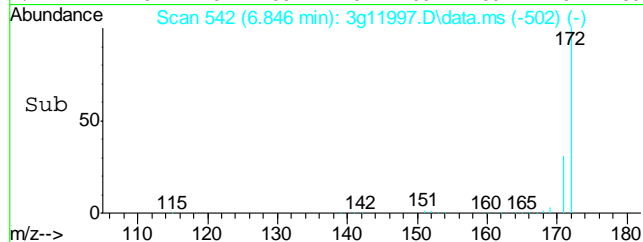
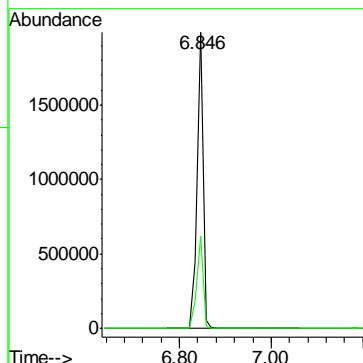
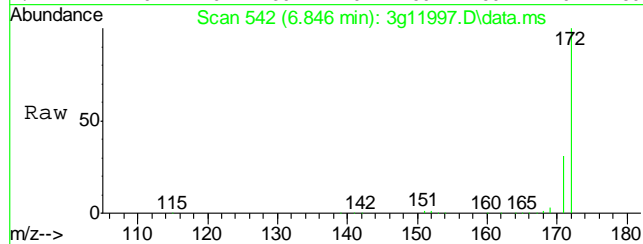
Tgt Ion	Ratio	Lower	Upper
164	100		
162	96.6	74.5	114.5
160	46.3	24.7	64.7





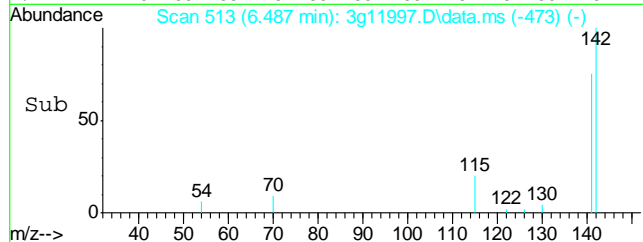
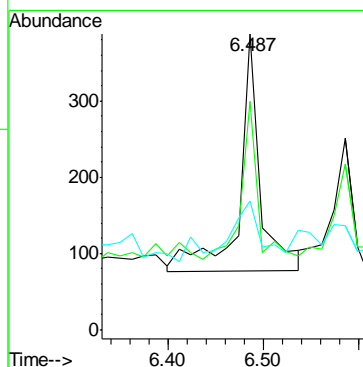
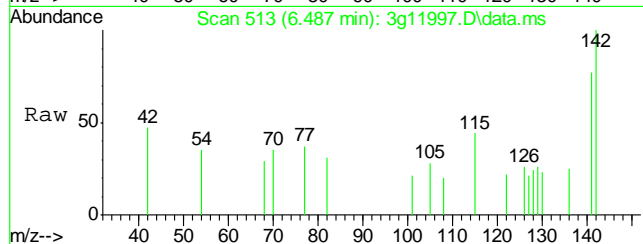
#7
2-Fluorobiphenyl
Concen: 49.9540 ug/mL
RT: 6.846 min Scan# 542
Delta R.T. -0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

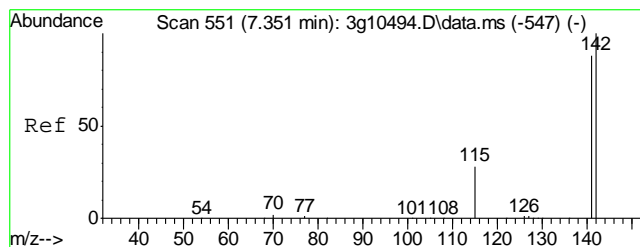
Tgt Ion:172 Resp: 1787932
Ion Ratio Lower Upper
172 100
171 32.8 13.2 53.2



#8
2-Methylnaphthalene
Concen: Below ug/mL
RT: 6.487 min Scan# 513
Delta R.T. -0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

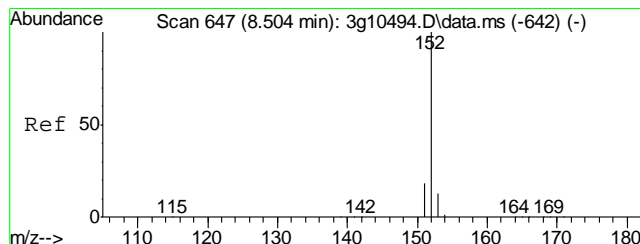
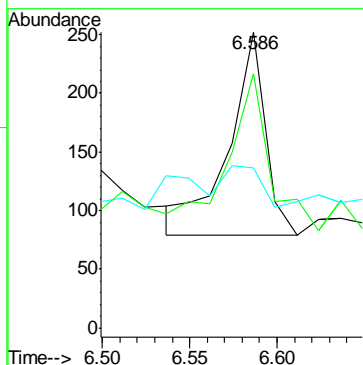
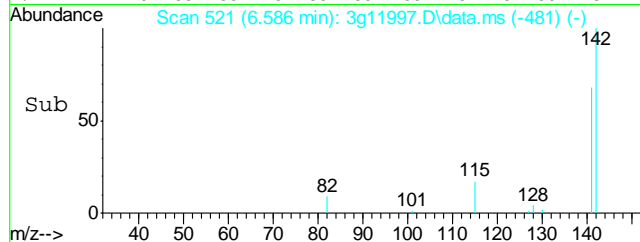
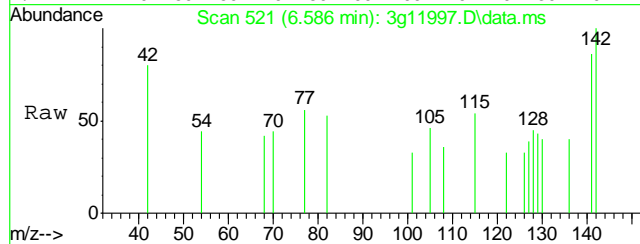
Tgt Ion:142 Resp: 476
Ion Ratio Lower Upper
142 100
141 67.4 62.6 102.6
115 0.0 15.3 55.3#





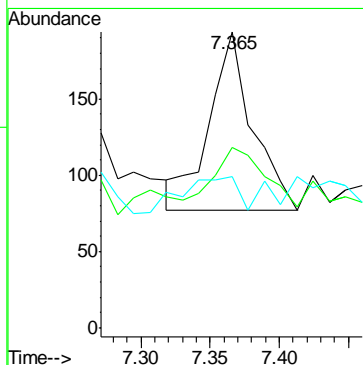
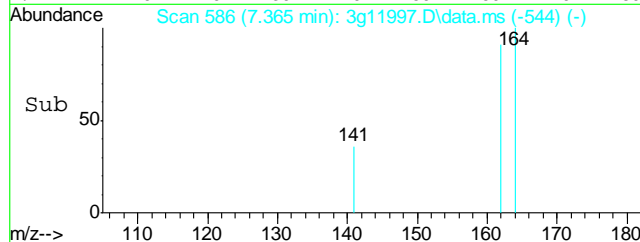
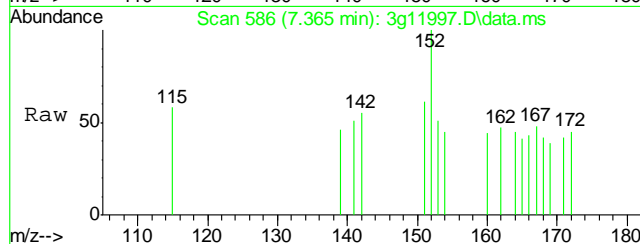
#9
1-Methylnaphthalene
Concen: Below ug/mL
RT: 6.586 min Scan# 521
Delta R.T. -0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

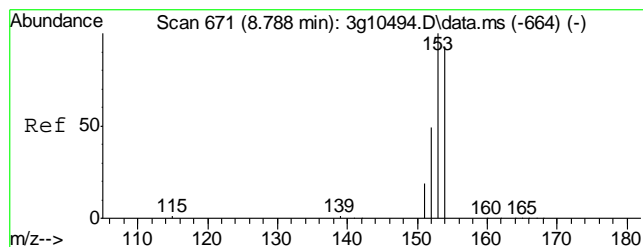
Tgt Ion: 142	Resp: 255
Ion Ratio	Lower Upper
142	100
141	88.2 66.1 106.1
115	0.0 16.3 56.3



#10
Acenaphthylene
Concen: Below ug/mL
RT: 7.365 min Scan# 586
Delta R.T. -0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

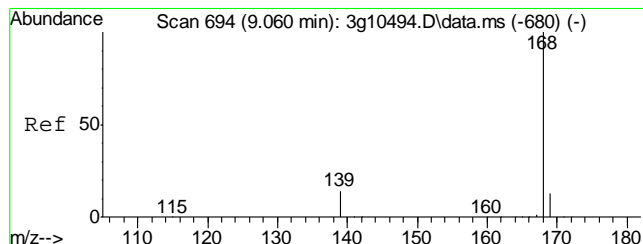
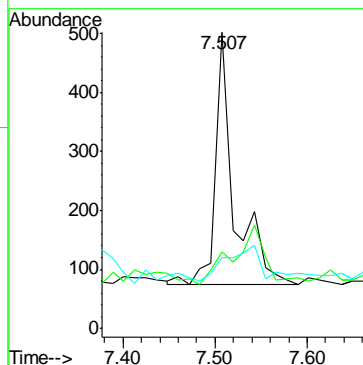
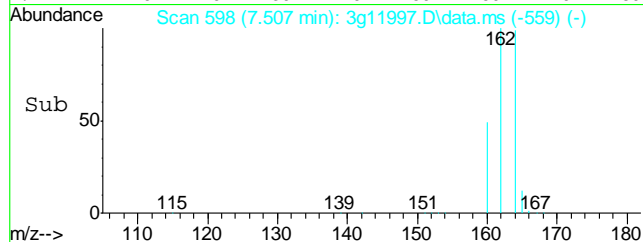
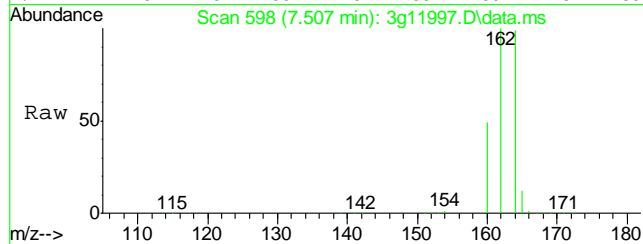
Tgt Ion: 152	Resp: 253
Ion Ratio	Lower Upper
152	100
151	38.3 0.0 39.1
153	26.9 0.0 33.0





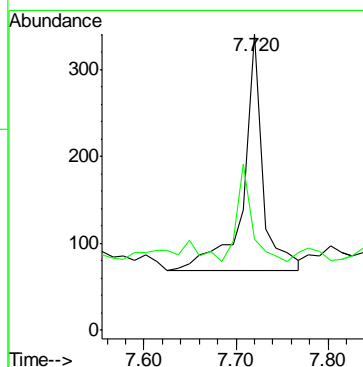
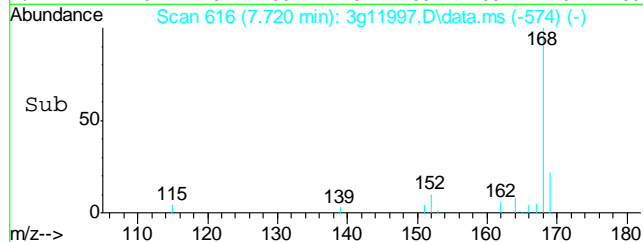
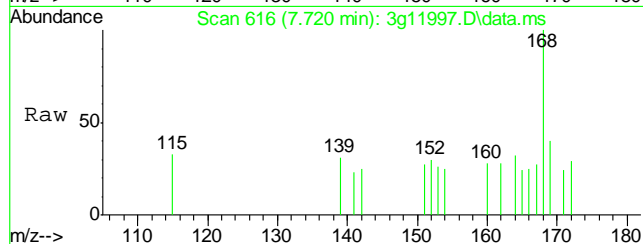
#11
Acenaphthene
Concen: Below ug/mL
RT: 7.507 min Scan# 598
Delta R.T. -0.035 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

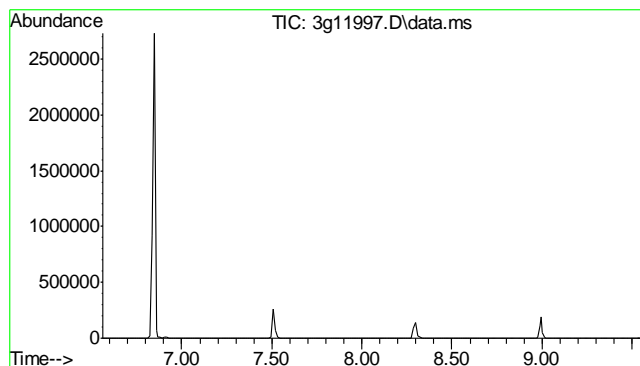
Tgt Ion:	154	Resp:	601
Ion Ratio	Lower	Upper	
154	100		
153	39.9	83.2	123.2#
152	26.5	29.5	69.5#



#12
Dibenzofuran
Concen: Below ug/mL
RT: 7.720 min Scan# 616
Delta R.T. -0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

Tgt Ion:	168	Resp:	394
Ion Ratio	Lower	Upper	
168	100		
139	32.2	13.9	53.9

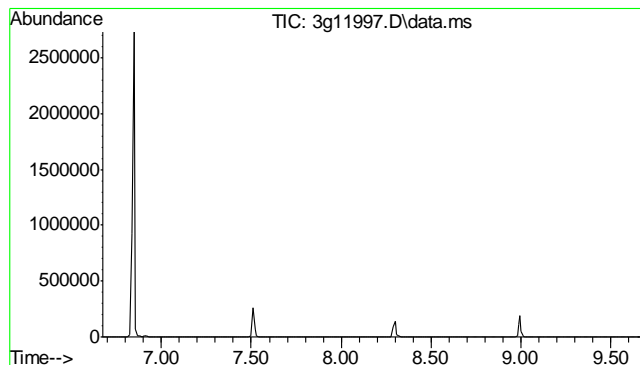
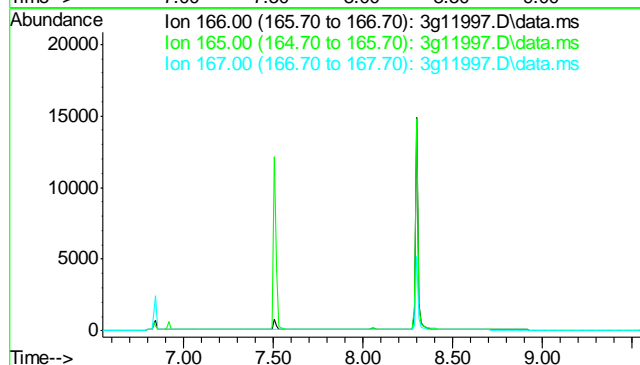




#13
Fluorene
Concen: N.D. ug/mL
Expected RT: 8.05 min

Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

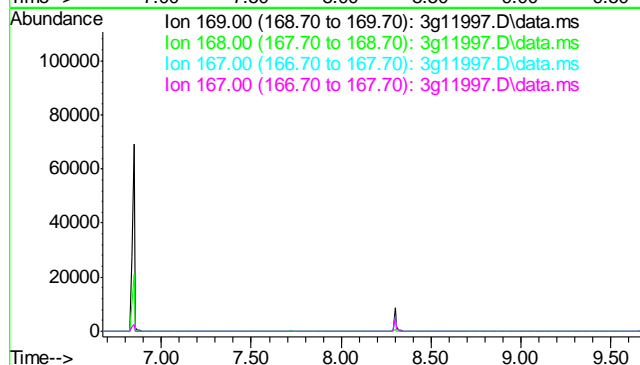
Tgt Ion	166
Sig	Exp Ratio
166	100
165	91.8
167	13.2

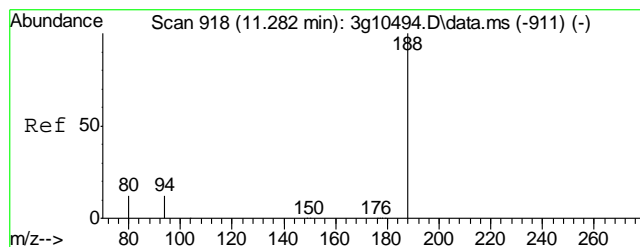


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.17 min

Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

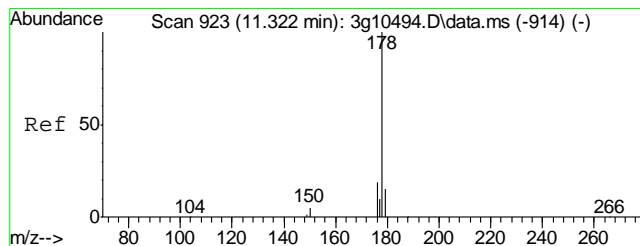
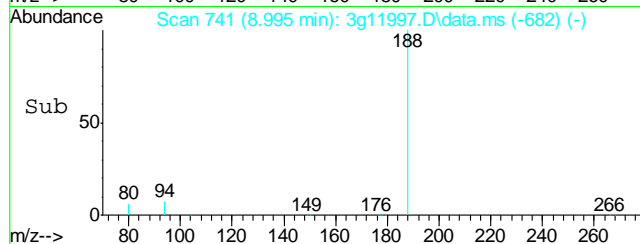
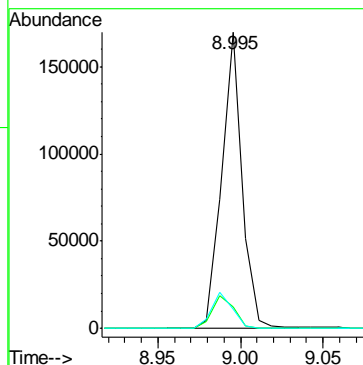
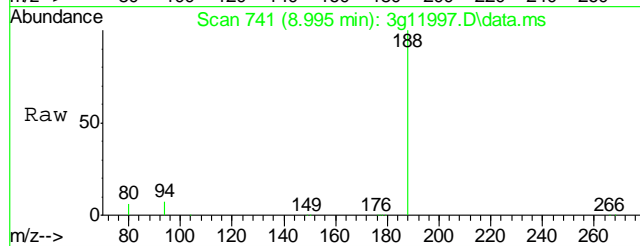
Tgt Ion	169
Sig	Exp Ratio
169	100
168	61.7
167	33.9
167	33.9





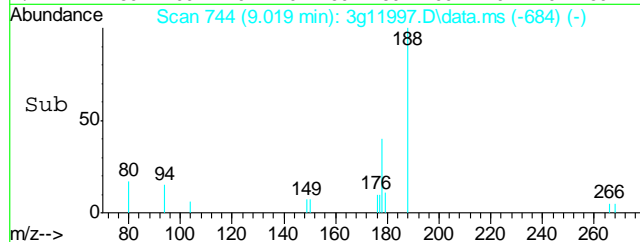
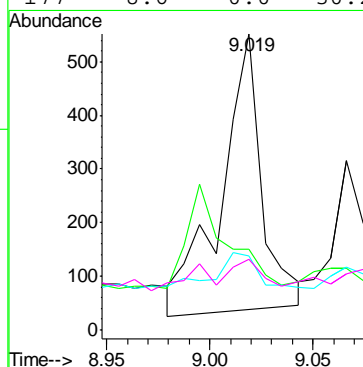
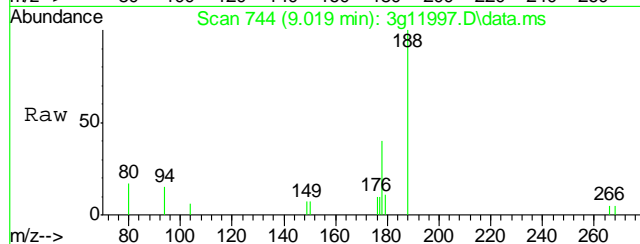
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.995 min Scan# 741
Delta R.T. -0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

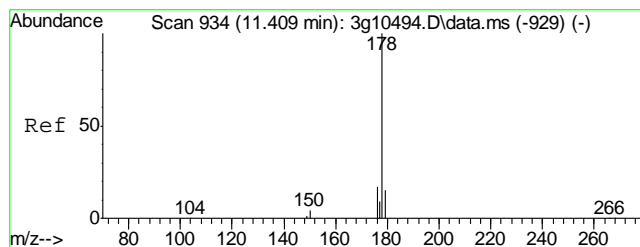
Tgt Ion	Ratio	Lower	Upper
188	100		
94	12.0	0.0	31.9
80	12.4	0.0	32.4



#16
Phenanthrene
Concen: Below ug/mL
RT: 9.019 min Scan# 744
Delta R.T. -0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

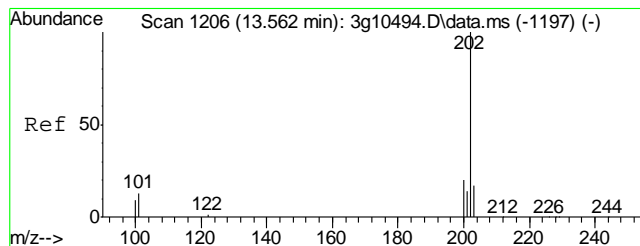
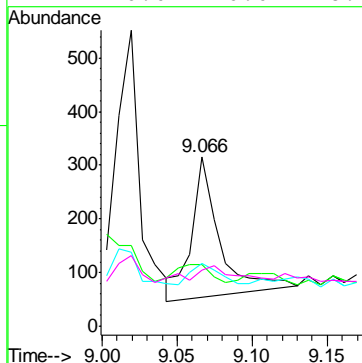
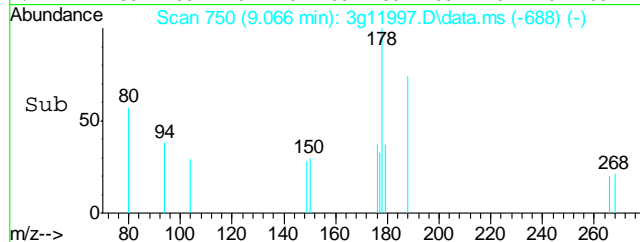
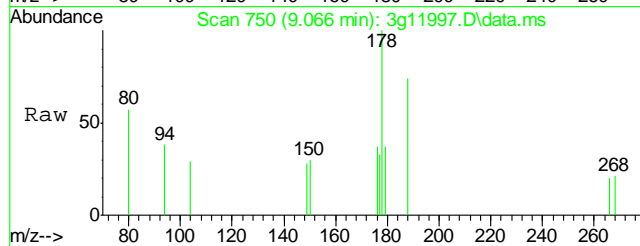
Tgt Ion	Ratio	Lower	Upper
178	100		
179	54.2	0.0	35.1#
176	22.8	0.0	39.0
177	8.6	0.0	30.2





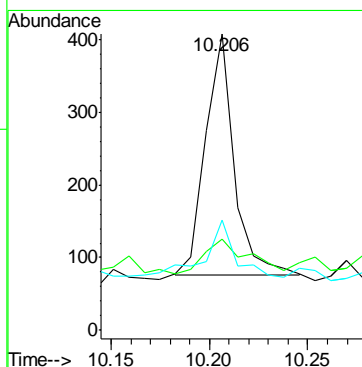
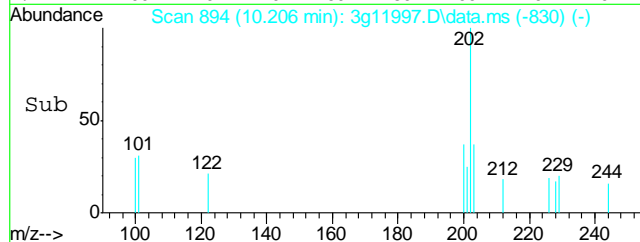
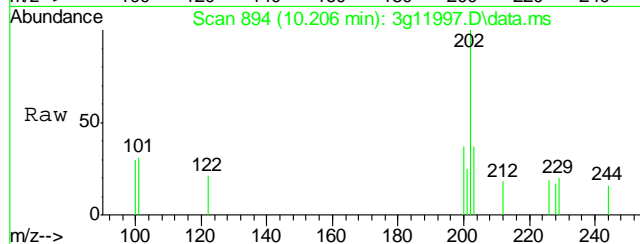
#17
Anthracene
Concen: Below ug/mL
RT: 9.066 min Scan# 750
Delta R.T. 0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

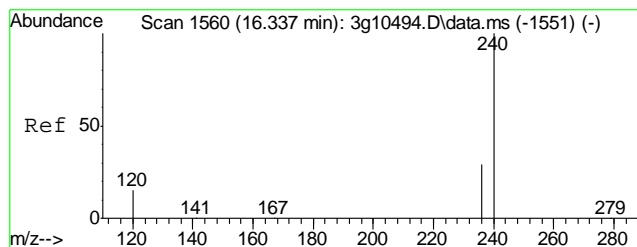
Tgt Ion	178	179	176	177
Resp	335	21.2	23.0	0.0
Ratio	100	0.0	0.0	0.0
Lower		0.0	0.0	0.0
Upper		34.9	38.1	28.7



#18
Fluoranthene
Concen: 0.0534 ug/mL m
RT: 10.206 min Scan# 894
Delta R.T. 0.008 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

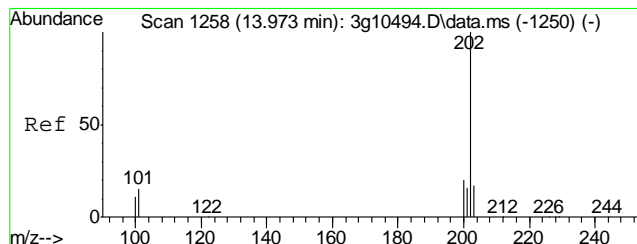
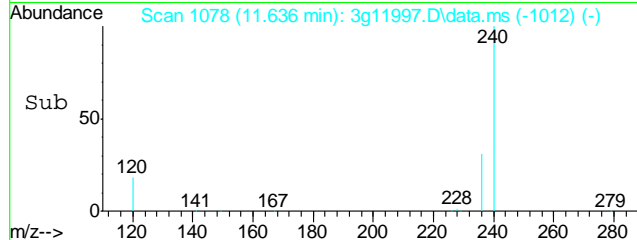
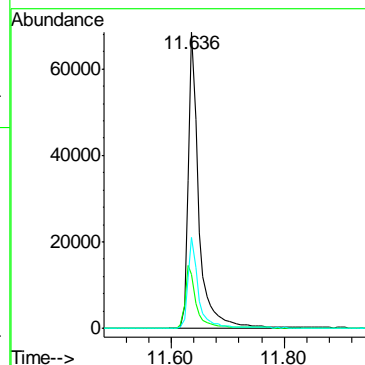
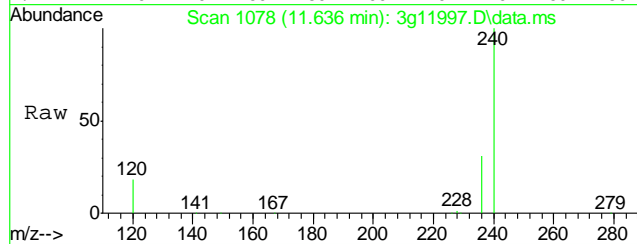
Tgt Ion	202	101	203
Resp	332	22.9	51.5
Ratio	100	0.0	0.0
Lower		0.0	0.0
Upper		32.8	37.2#





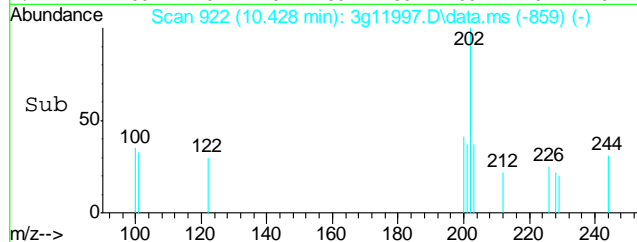
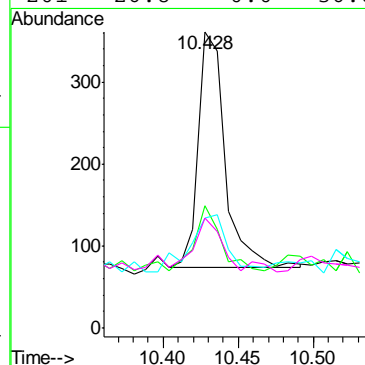
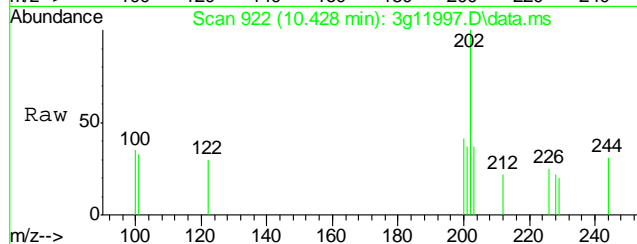
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.636 min Scan# 1078
Delta R.T. -0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

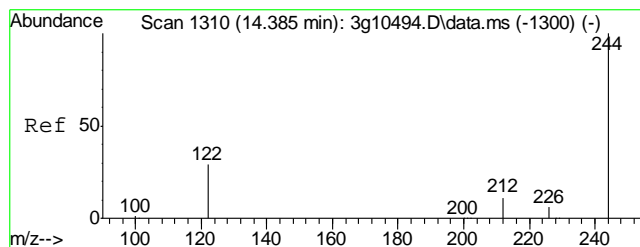
Tgt Ion:	240	Resp:	88767
Ion Ratio	Lower	Upper	
240	100		
120	22.1	1.2	41.2
236	30.3	10.2	50.2



#20
Pyrene
Concen: Below ug/mL
RT: 10.428 min Scan# 922
Delta R.T. -0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

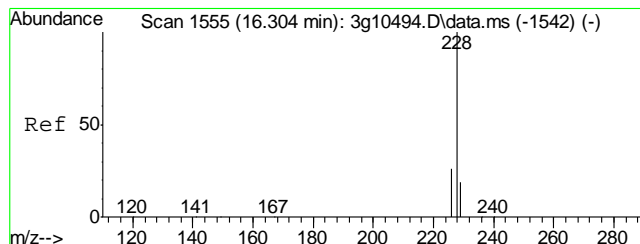
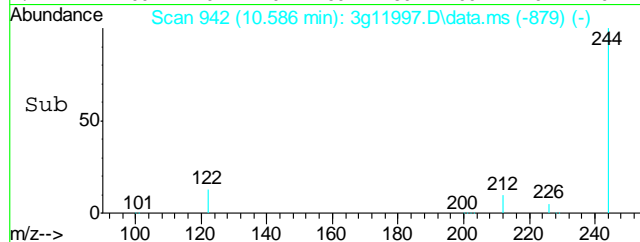
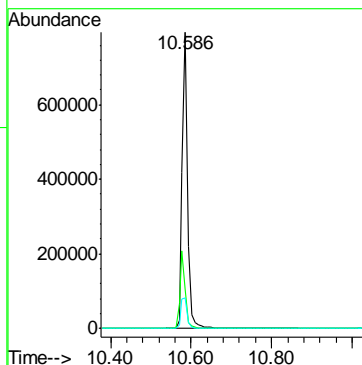
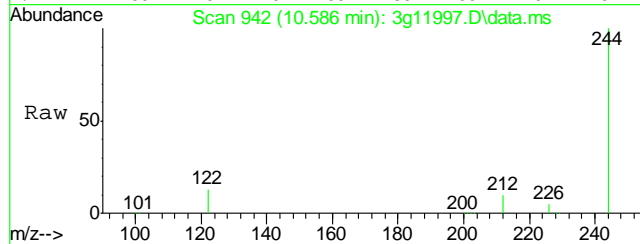
Tgt Ion:	202	Resp:	354
Ion Ratio	Lower	Upper	
202	100		
200	26.3	0.3	40.3
203	34.2	0.0	37.8
201	26.8	0.0	36.8





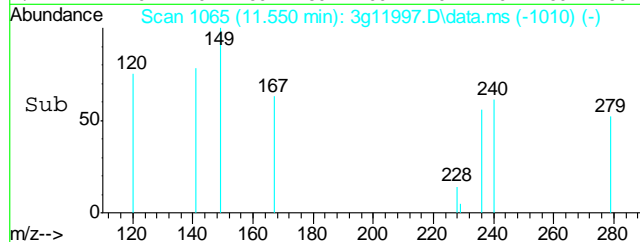
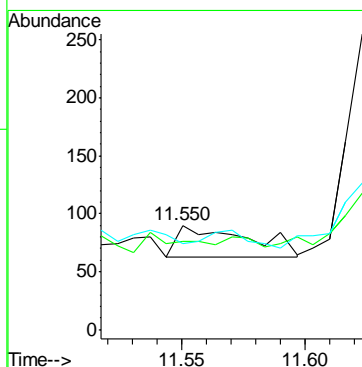
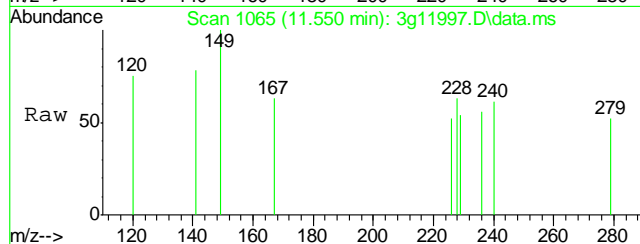
#21
Terphenyl-d14
Concen: 59.8746 ug/mL
RT: 10.586 min Scan# 942
Delta R.T. 0.000 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

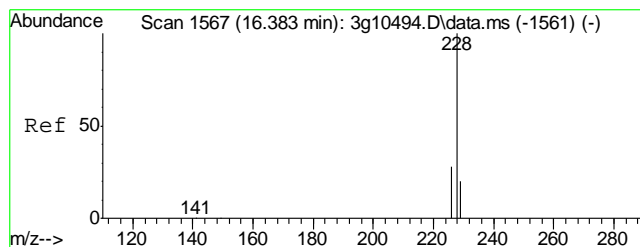
Tgt Ion:	244	Resp:	730357
Ion Ratio	Lower	Upper	
244	100		
122	26.8	7.3	47.3
212	12.4	0.0	32.5



#22
Benzo(a)anthracene
Concen: Below ug/mL
RT: 11.550 min Scan# 1065
Delta R.T. -0.073 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

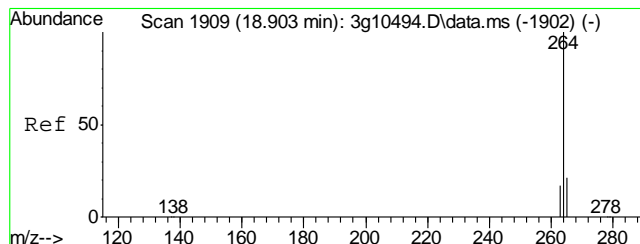
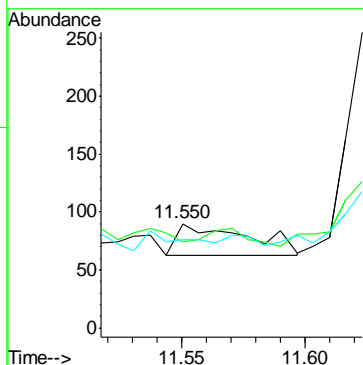
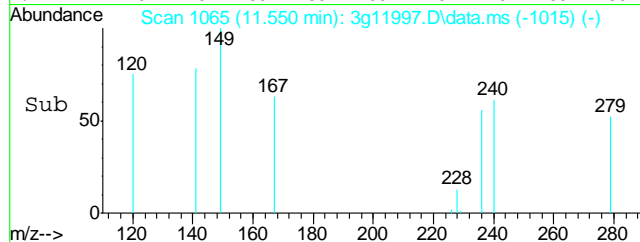
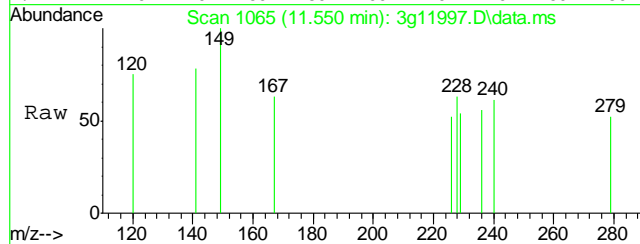
Tgt Ion:	228	Resp:	53
Ion Ratio	Lower	Upper	
228	100		
229	26.4	0.0	39.3
226	34.0	6.7	46.7





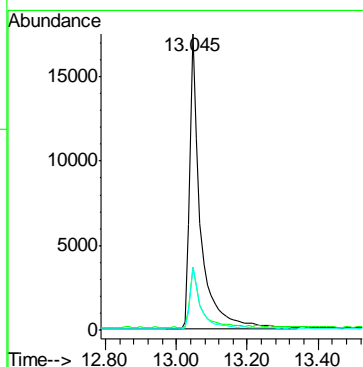
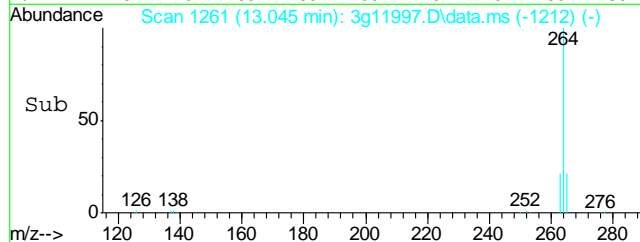
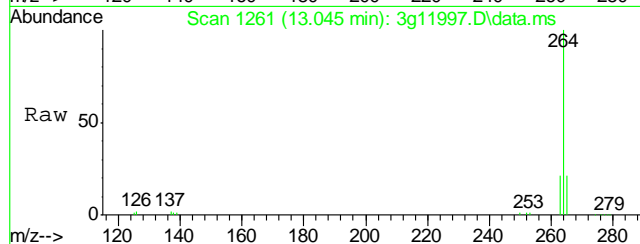
#23
Chrysene
Concen: Below ug/mL
RT: 11.550 min Scan# 1065
Delta R.T. -0.112 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

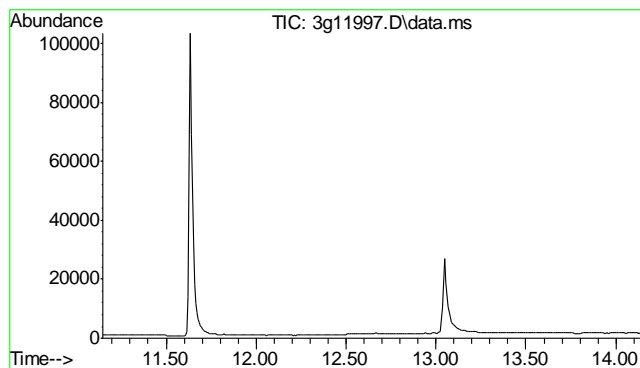
Tgt Ion:	228	Resp:	53
Ion Ratio	Lower	Upper	
228	100		
226	34.0	8.3	48.3
229	26.4	0.0	39.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.045 min Scan# 1261
Delta R.T. 0.010 min
Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

Tgt Ion:	264	Resp:	37259
Ion Ratio	Lower	Upper	
264	100		
265	20.2	0.8	40.8
263	21.3	0.4	40.4

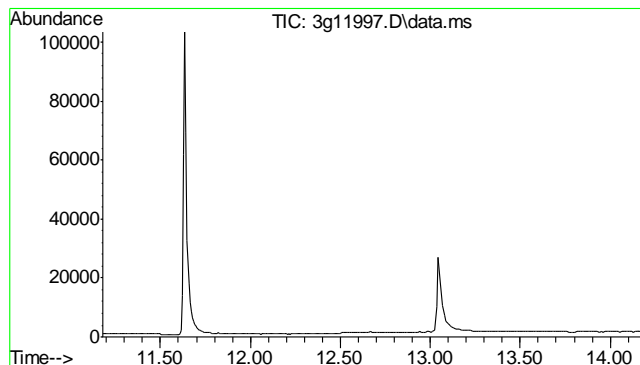
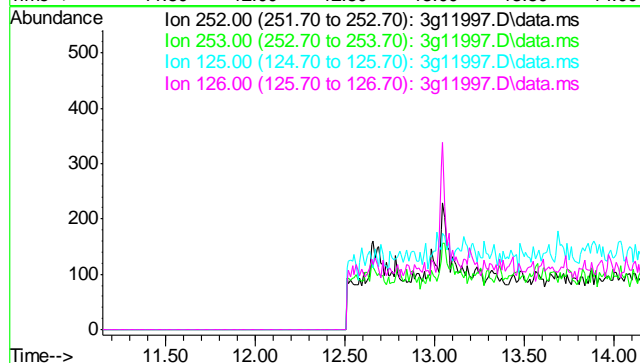




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.65 min

Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

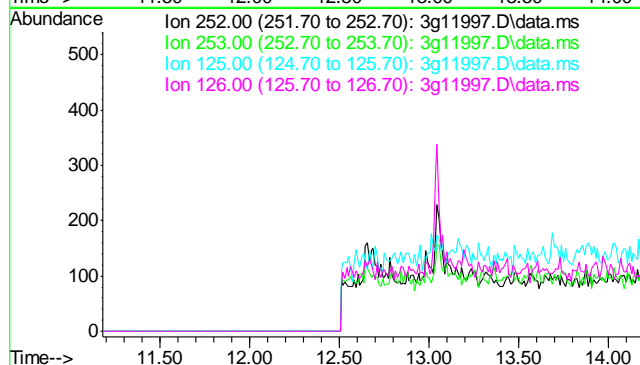
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	53.4
125	35.2
126	51.6

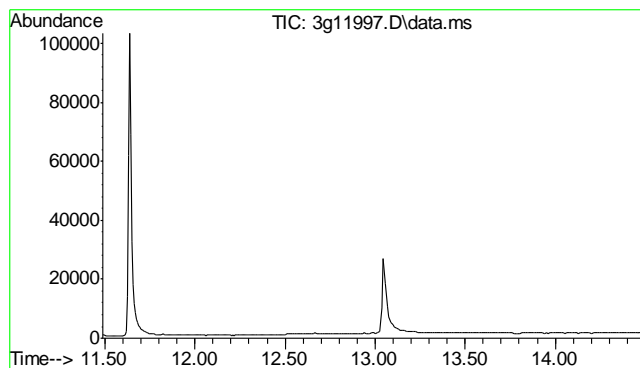


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.68 min

Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	36.5
125	24.1
126	35.3

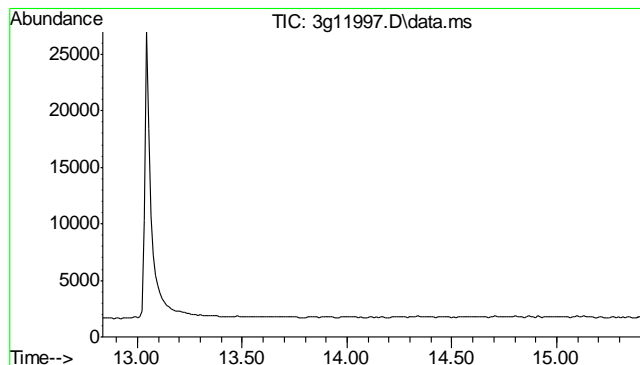
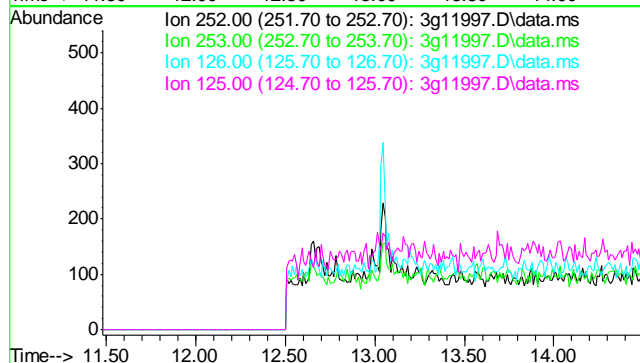




#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 12.98 min

Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

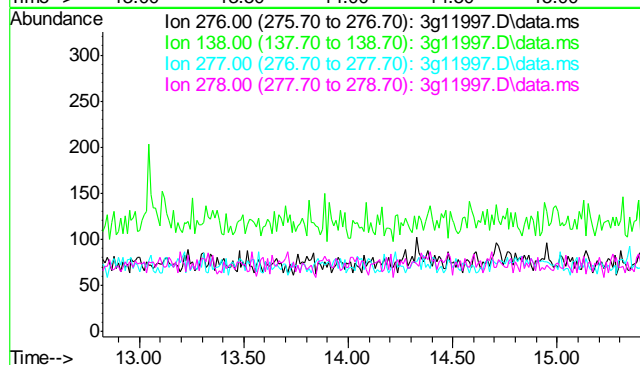
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.3
126	20.8
125	15.4

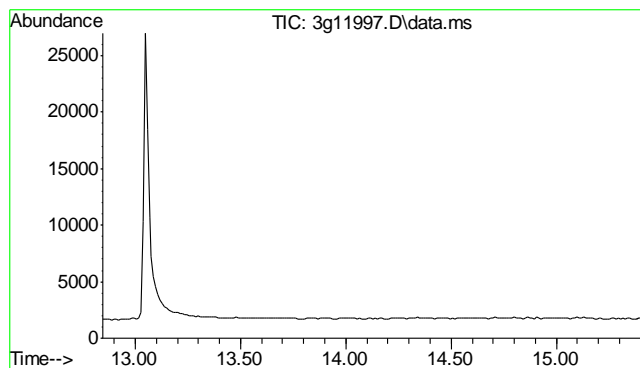


#28
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 14.33 min

Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

Tgt Ion:	276
Sig	Exp Ratio
276	100
138	44.3
277	24.7
278	71.8

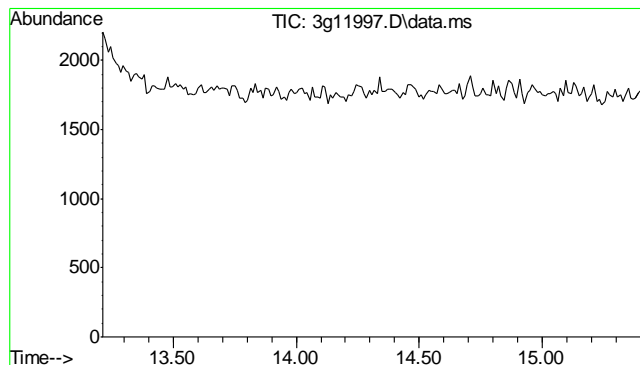
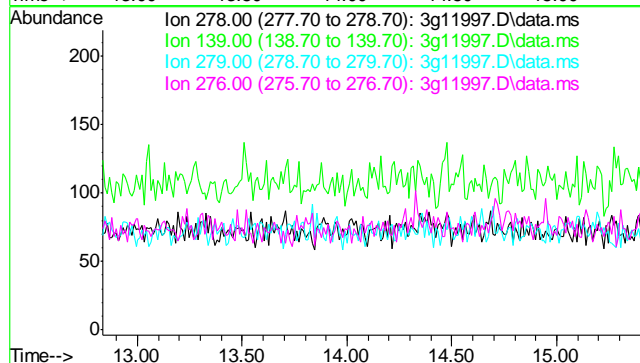




#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.34 min

Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

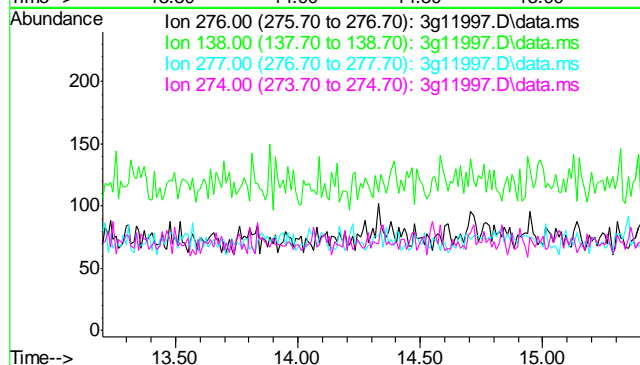
Tgt Ion:	278
Sig	Exp Ratio
278	100
139	35.0
279	22.9
276	139.3



#30
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 14.71 min

Lab File: 3g11997.D
Acq: 9 Nov 12 3:09 pm

Tgt Ion:	276
Sig	Exp Ratio
276	100
138	38.8
277	22.5
274	21.8



GC 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: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1004-MB	GB18381.D	1	11/08/12	SK	n/a	n/a	GGB1004

The QC reported here applies to the following samples:

Method: SW846 8015B

D40712-1, D40712-2, D40712-3

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	88% 60-140%

10.1.1
10

Blank Spike Summary

Job Number: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1004-BS	GB18382.D	1	11/08/12	SK	n/a	n/a	GGB1004

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

D40712-1, D40712-2, D40712-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	122	111	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	108%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D40718-1MS	GB18384.D	1	11/08/12	SK	n/a	n/a	GGB1004
D40718-1MSD	GB18385.D	1	11/08/12	SK	n/a	n/a	GGB1004
D40718-1	GB18383.D	1	11/08/12	SK	n/a	n/a	GGB1004

The QC reported here applies to the following samples:

Method: SW846 8015B

D40712-1, D40712-2, D40712-3

CAS No.	Compound	D40718-1 mg/kg	Spike Q	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	134	143	107	143	107	0	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D40718-1	Limits
120-82-1	1,2,4-Trichlorobenzene	104%	103%	92%	60-140%

* = Outside of Control Limits.

GC Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110812\GB18386.D\FID1A.CH Vial: 8
Signal #2 : Y:\1\DATA\110812\GB18386.D\FID2B.CH
Acq On : 8 Nov 2012 7:58 pm Operator: StephK
Sample : D40712-1, 50X Inst : GC/MS Ins
Misc : GC3228,GGB1004,5.074,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 09 08:26:46 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Nov 09 08:26:05 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

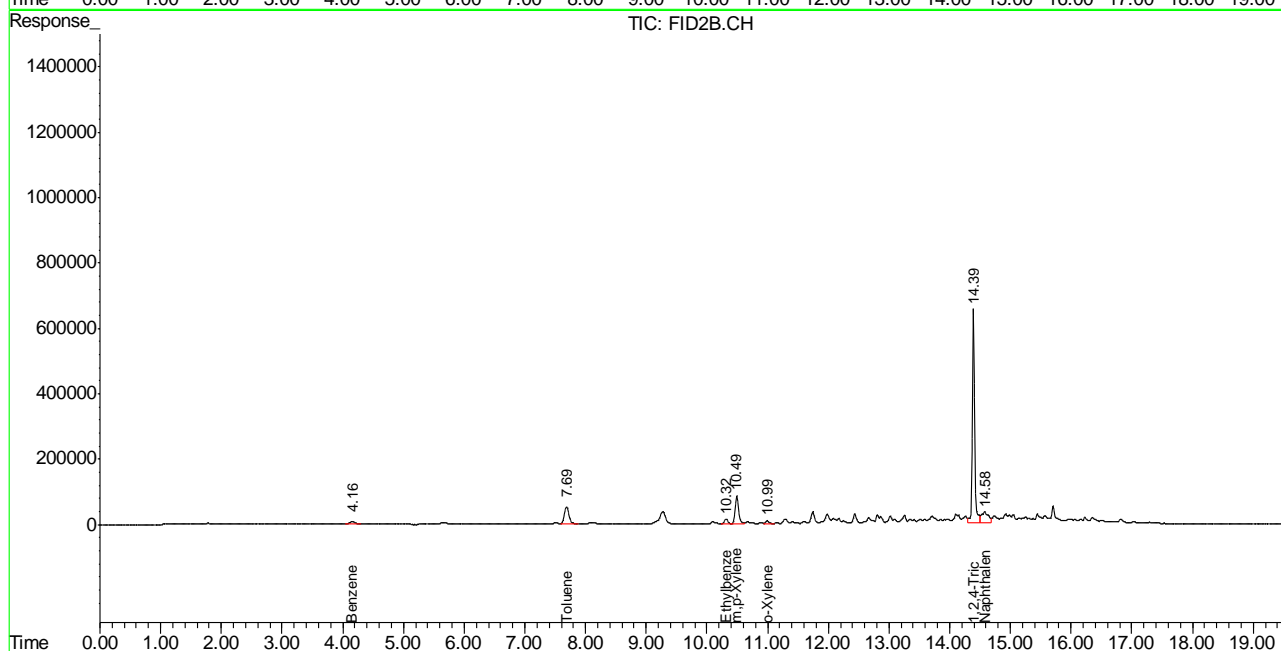
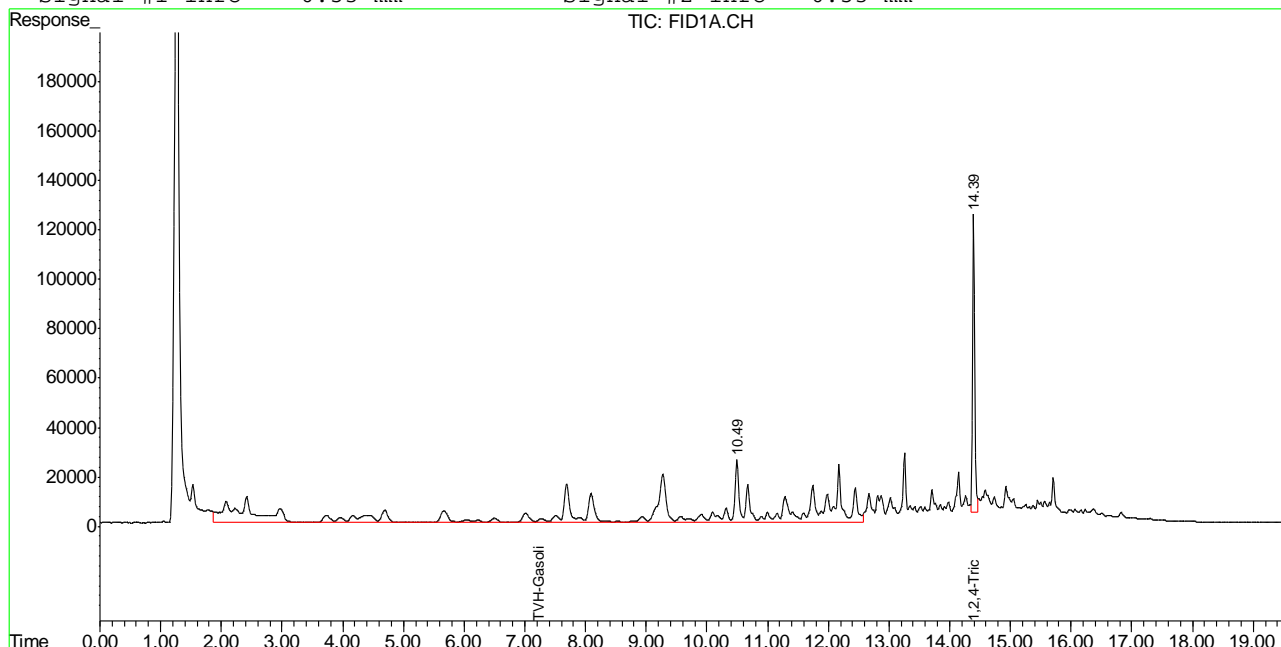
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.39	2957417	94.384 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.39	17037656	104.829 %	
Target Compounds					
1) H	TVH-Gasoline	7.23	18218022	0.256 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.16	620871	1.541 ug/L	
6) T	Toluene	7.69	2971422	7.498 ug/L	
7) T	Ethylbenzene	10.32	673598	1.991 ug/L	
8) T	m,p-Xylene	10.49	3467036	9.125 ug/L	
9) T	o-Xylene	10.99	420752	1.281 ug/L	
11) T	Naphthalene	14.58	2722941	13.800 ug/L	

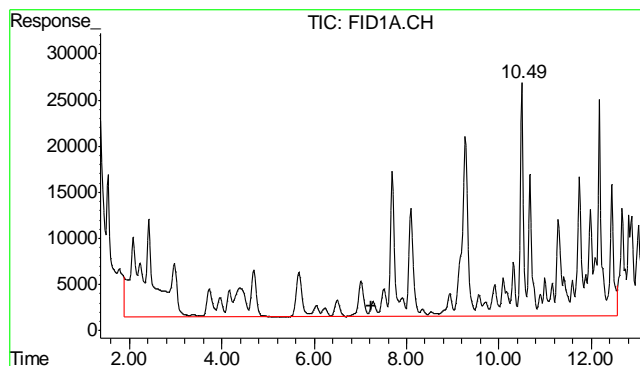
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110812\GB18386.D\FID1A.CH Vial: 8
 Signal #2 : Y:\1\DATA\110812\GB18386.D\FID2B.CH
 Acq On : 8 Nov 2012 7:58 pm Operator: StephK
 Sample : D40712-1, 50X Inst : GC/MS Ins
 Misc : GC3228,GGB1004,5.074,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Nov 9 8:39 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Nov 09 08:26:05 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

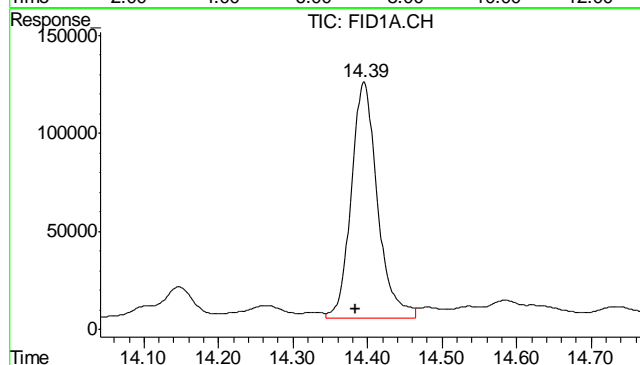
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





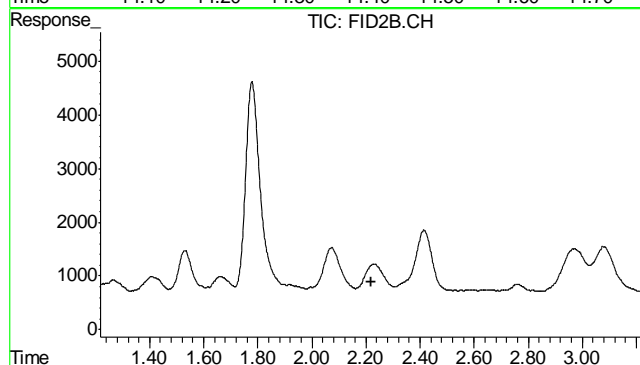
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 18218022
Conc: 0.26 mg/L m



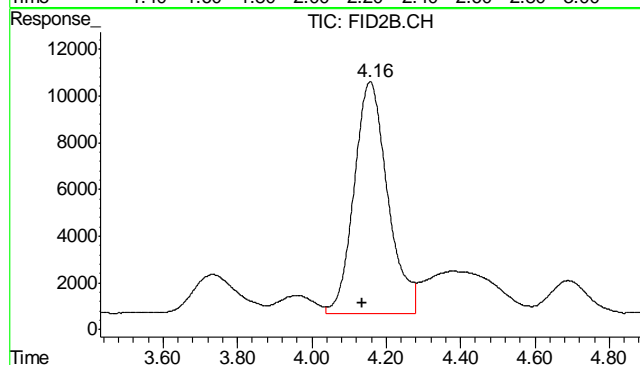
#2 1,2,4-Trichlorobenzene

R.T.: 14.395 min
Delta R.T.: 0.010 min
Response: 2957417
Conc: 94.38 % m



#4 Methyl-t-butyl-ether

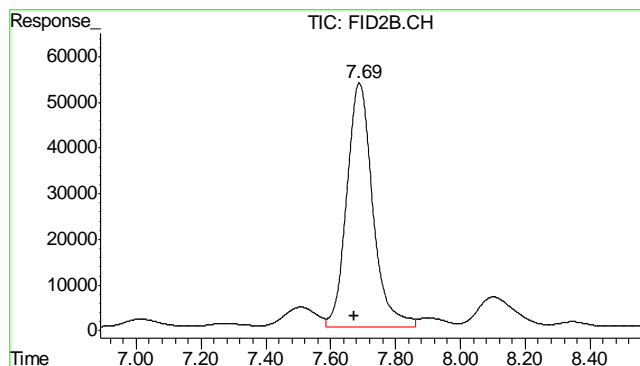
R.T.: 0.000 min
Exp R.T.: 2.218 min
Response: 0
Conc: N.D.



#5 Benzene

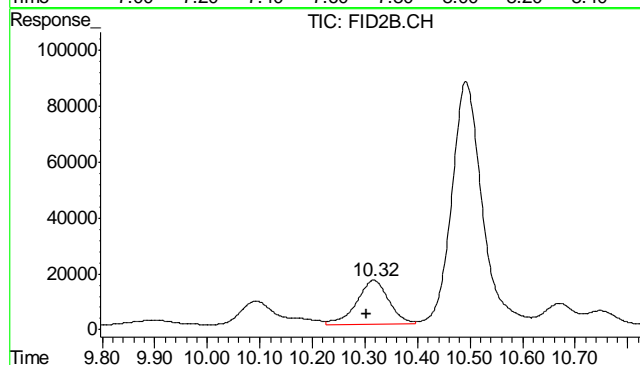
R.T.: 4.158 min
Delta R.T.: 0.021 min
Response: 620871
Conc: 1.54 ug/L

11.11



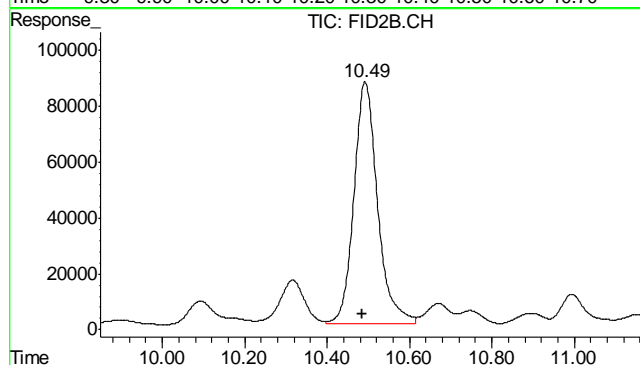
#6 Toluene

R.T.: 7.689 min
Delta R.T.: 0.015 min
Response: 2971422
Conc: 7.50 ug/L



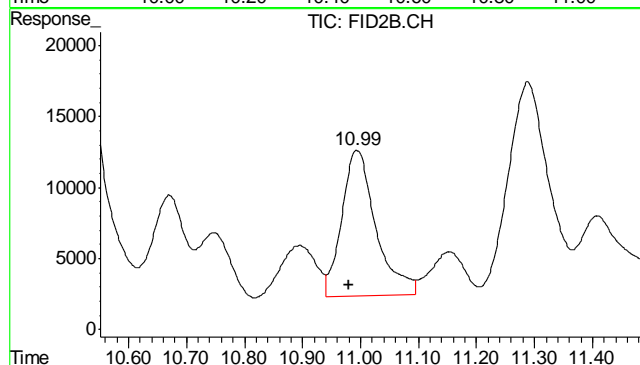
#7 Ethylbenzene

R.T.: 10.317 min
Delta R.T.: 0.012 min
Response: 673598
Conc: 1.99 ug/L



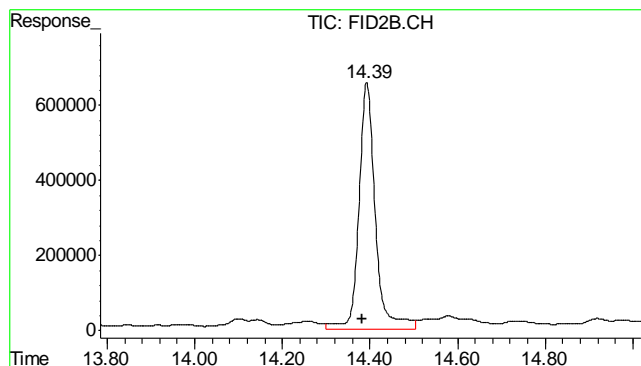
#8 m,p-Xylene

R.T.: 10.493 min
Delta R.T.: 0.008 min
Response: 3467036
Conc: 9.13 ug/L



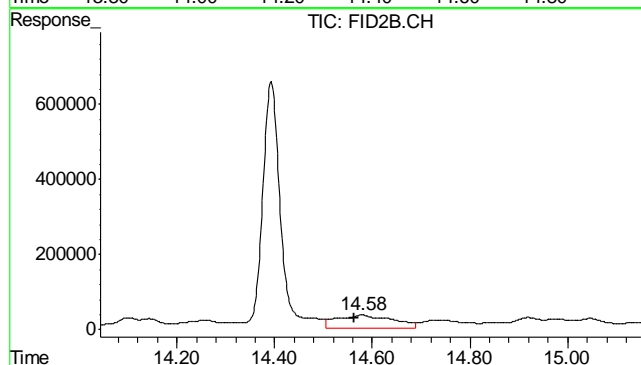
#9 o-Xylene

R.T.: 10.994 min
Delta R.T.: 0.015 min
Response: 420752
Conc: 1.28 ug/L



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

R.T.: 14.393 min
 Delta R.T.: 0.011 min
 Response: 17037656
 Conc: 104.83 %



#11 Naphthalene

R.T.: 14.579 min
 Delta R.T.: 0.014 min
 Response: 2722941
 Conc: 13.80 ug/L

11.1.1

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110812\GB18387.D\FID1A.CH Vial: 9
Signal #2 : Y:\1\DATA\110812\GB18387.D\FID2B.CH
Acq On : 8 Nov 2012 8:33 pm Operator: StephK
Sample : D40712-2, 50X Inst : GC/MS Ins
Misc : GC3228,GGB1004,5.076,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 09 08:26:50 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Nov 09 08:26:05 2012
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.40	2934769	93.661 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.40	16041598	98.701 %	
Target Compounds					
1) H	TVH-Gasoline	7.23	10607814	0.135 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.17	366336	0.909 ug/L	
6) T	Toluene	7.70	1275223	3.218 ug/L	
7) T	Ethylbenzene	10.32	286433	0.847 ug/L	
8) T	m,p-Xylene	10.50	1354401	3.337 ug/L	
9) T	o-Xylene	11.00	234705	0.715 ug/L	
11) T	Naphthalene	14.59	1639455	8.309 ug/L	

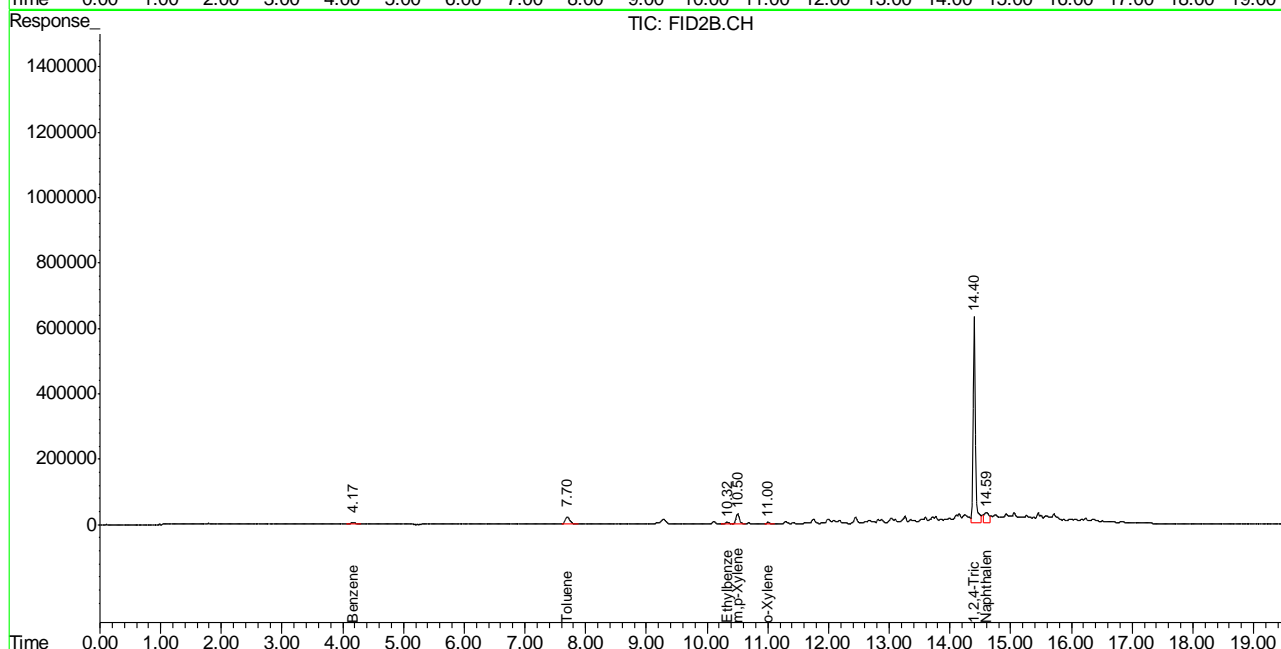
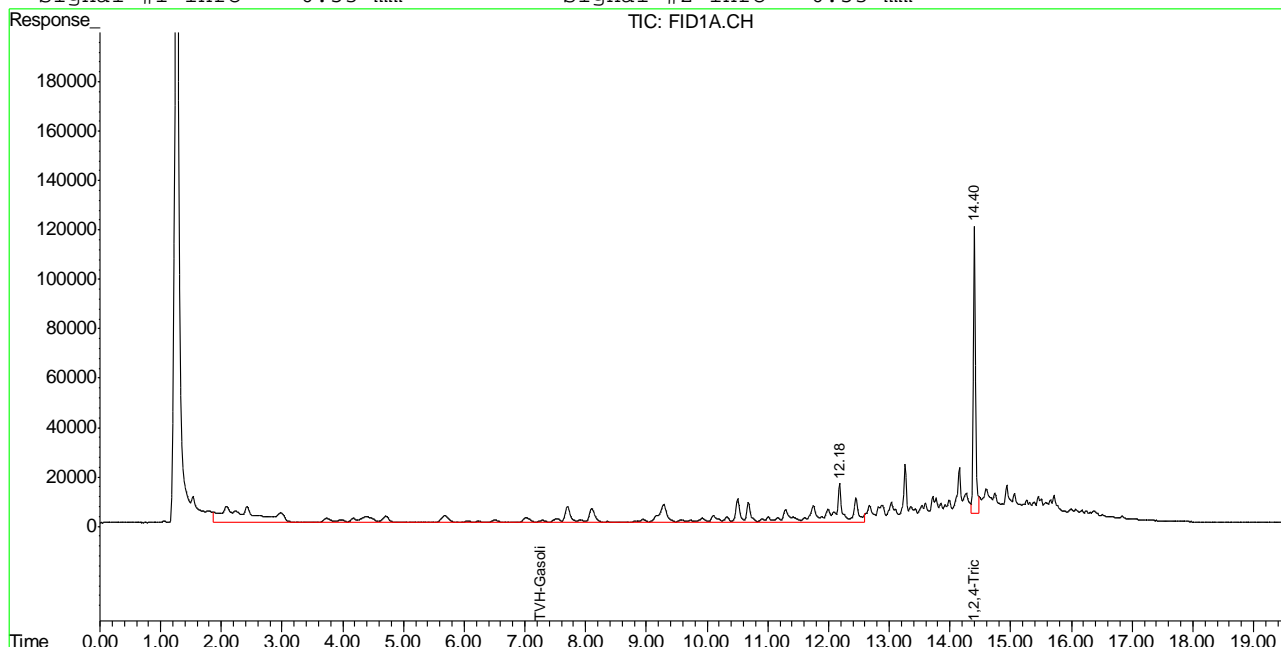
11.12
11

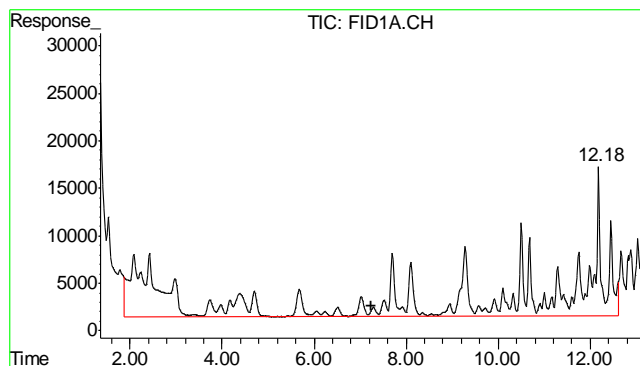
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110812\GB18387.D\FID1A.CH Vial: 9
 Signal #2 : Y:\1\DATA\110812\GB18387.D\FID2B.CH
 Acq On : 8 Nov 2012 8:33 pm Operator: StephK
 Sample : D40712-2, 50X Inst : GC/MS Ins
 Misc : GC3228,GGB1004,5.076,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Nov 9 8:40 2012 Quant Results File: TB868GB868SOIL.RES

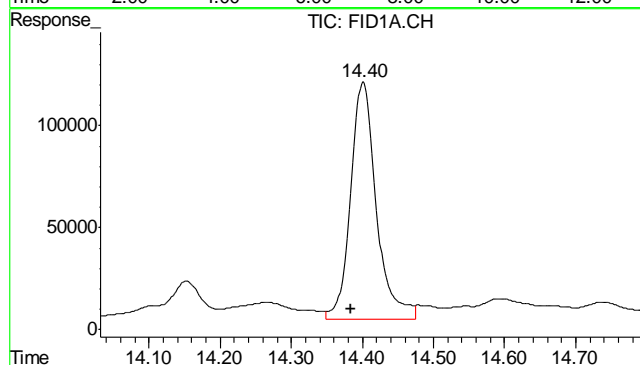
Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Nov 09 08:26:05 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

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

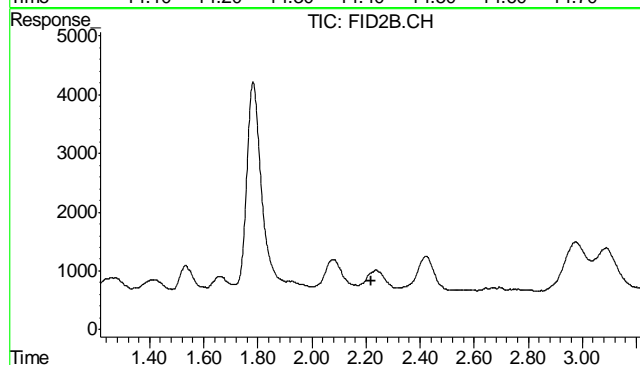




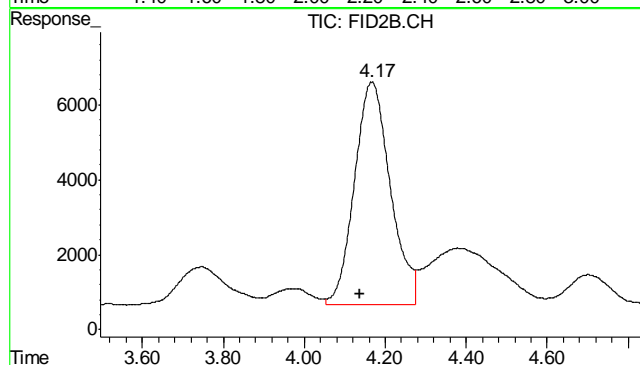
#1 TVH-Gasoline
 R.T.: 7.230 min
 Delta R.T.: 0.000 min
 Response: 10607814
 Conc: 0.14 mg/L m



#2 1,2,4-Trichlorobenzene
 R.T.: 14.400 min
 Delta R.T.: 0.016 min
 Response: 2934769
 Conc: 93.66 % m

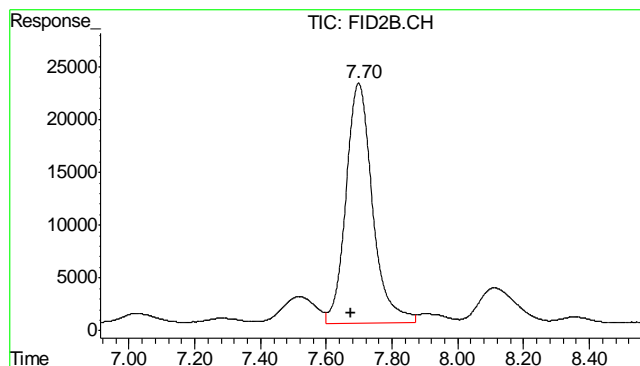


#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T.: 2.218 min
 Response: 0
 Conc: N.D.



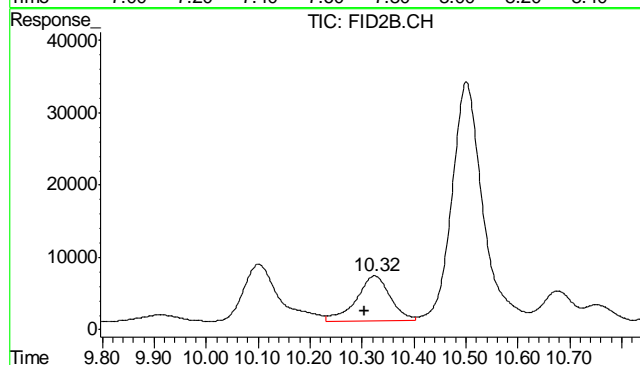
#5 Benzene
 R.T.: 4.169 min
 Delta R.T.: 0.032 min
 Response: 366336
 Conc: 0.91 ug/L

11.12
11



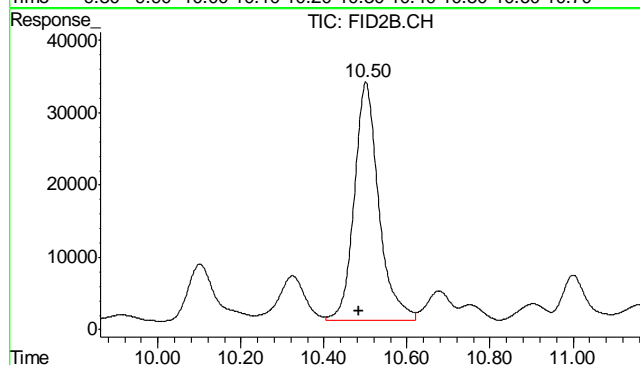
#6 Toluene

R.T.: 7.698 min
Delta R.T.: 0.025 min
Response: 1275223
Conc: 3.22 ug/L



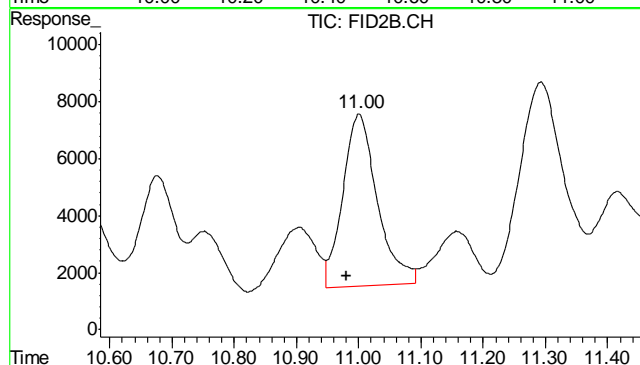
#7 Ethylbenzene

R.T.: 10.324 min
Delta R.T.: 0.020 min
Response: 286433
Conc: 0.85 ug/L



#8 m,p-Xylene

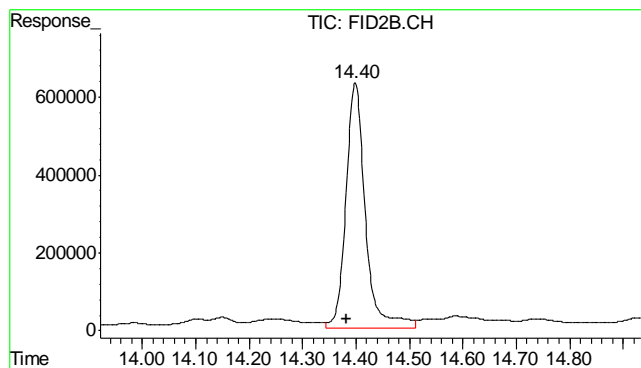
R.T.: 10.501 min
Delta R.T.: 0.017 min
Response: 1354401
Conc: 3.34 ug/L



#9 o-Xylene

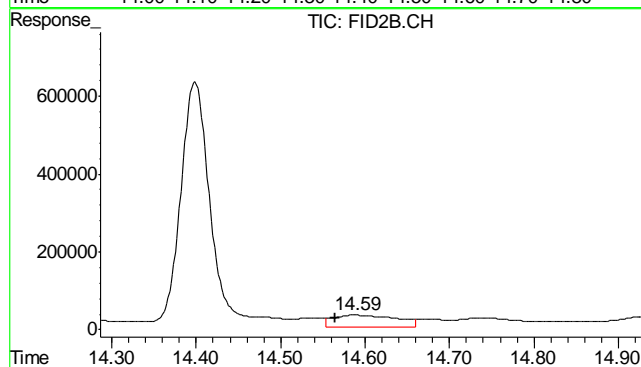
R.T.: 11.000 min
Delta R.T.: 0.021 min
Response: 234705
Conc: 0.71 ug/L

11.1.2
11



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

R.T.: 14.399 min
 Delta R.T.: 0.017 min
 Response: 16041598
 Conc: 98.70 %



#11 Naphthalene

R.T.: 14.588 min
 Delta R.T.: 0.023 min
 Response: 1639455
 Conc: 8.31 ug/L

11.1.2
11

Judy Melson
11/09/12 14:03

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110812\GB18388.D\FID1A.CH Vial: 10
 Signal #2 : Y:\1\DATA\110812\GB18388.D\FID2B.CH
 Acq On : 8 Nov 2012 9:09 pm Operator: StephK
 Sample : D40712-3, 50X Inst : GC/MS Ins
 Misc : GC3228,GGB1004,5.019,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Nov 09 08:26:54 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Nov 09 08:26:05 2012
 Response via : Initial Calibration
 DataAcq Meth : TVB4.M

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

	Compound	R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.40	2859617	91.262 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.40	15982278	98.336 %	
Target Compounds					
1) H	TVH-Gasoline	7.23	12810152	0.170 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.16	362546	0.900 ug/L	
6) T	Toluene	7.69	1819950	4.593 ug/L	
7) T	Ethylbenzene	10.32	434397	1.284 ug/L	
8) T	m,p-Xylene	10.50	2466950	6.385 ug/L	
9) T	o-Xylene	11.00	238235	0.726 ug/L	
11) T	Naphthalene	14.58	1495527	7.580 ug/L	

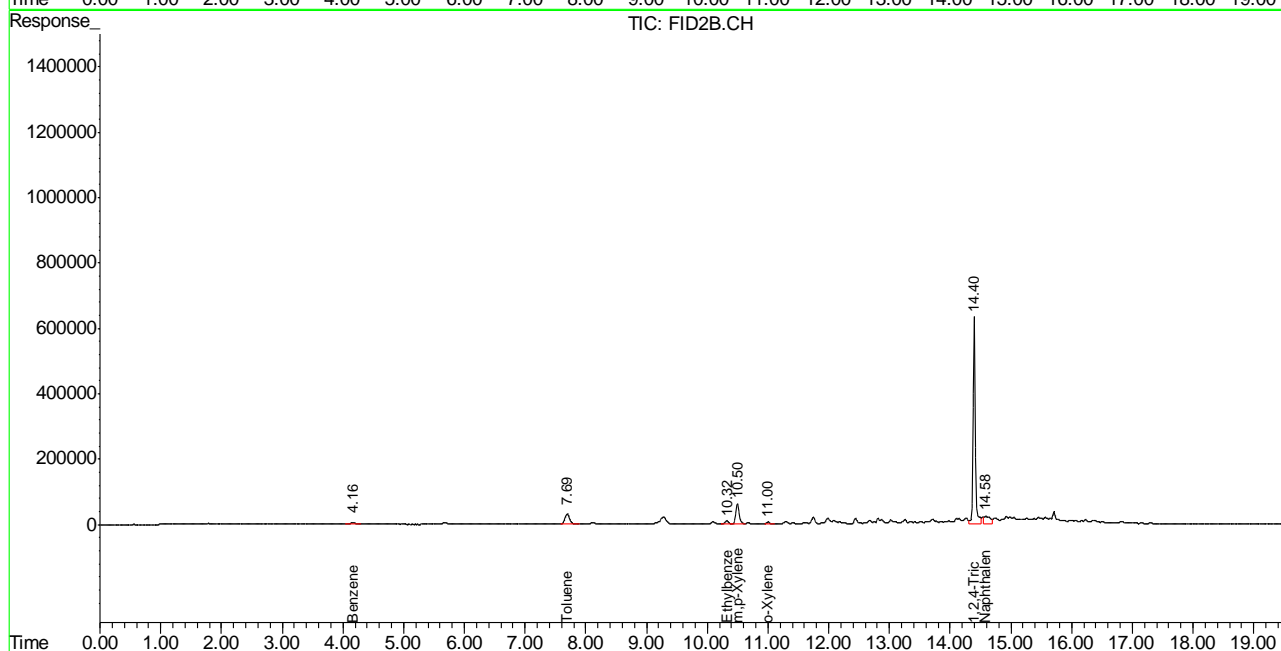
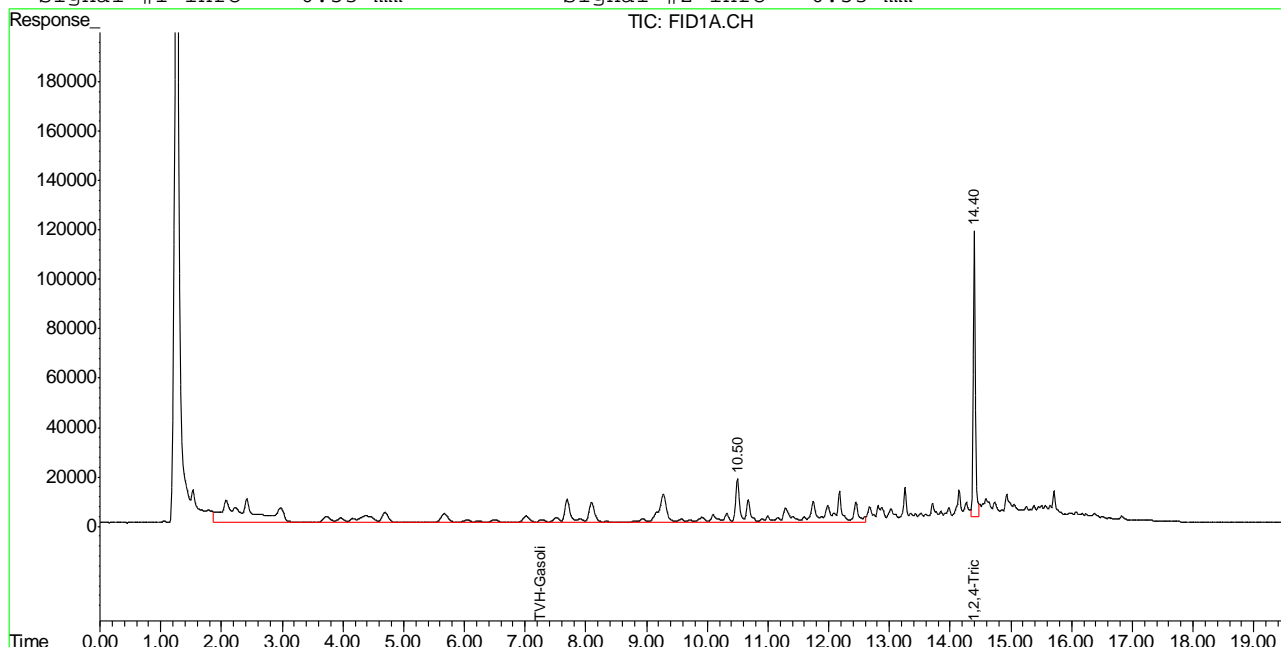
(f)=RT Delta > 1/2 Window (m)=manual int.
 GB18388.D TB868GB868SOIL.M Fri Nov 09 08:42:57 2012 GC

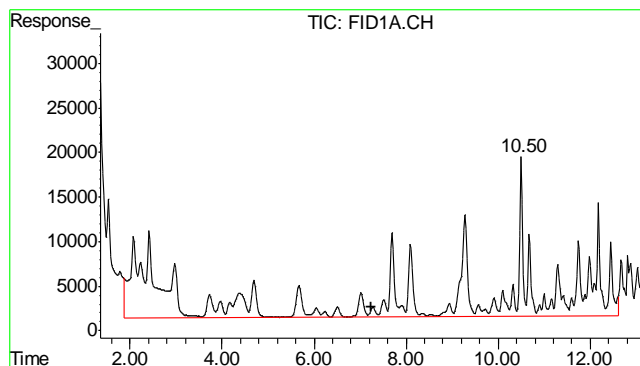
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110812\GB18388.D\FID1A.CH Vial: 10
 Signal #2 : Y:\1\DATA\110812\GB18388.D\FID2B.CH
 Acq On : 8 Nov 2012 9:09 pm Operator: StephK
 Sample : D40712-3, 50X Inst : GC/MS Ins
 Misc : GC3228,GGB1004,5.019,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Nov 9 8:40 2012 Quant Results File: TB868GB868SOIL.RES

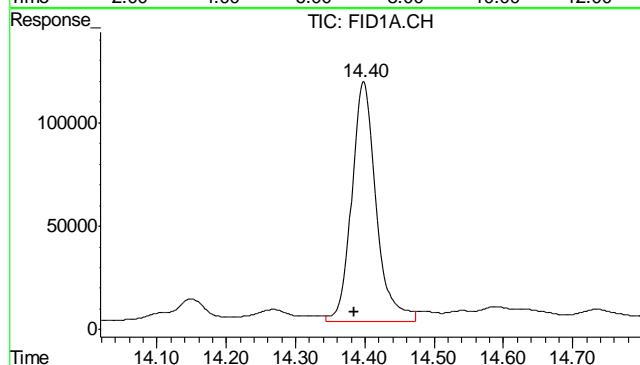
Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Nov 09 08:26:05 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

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

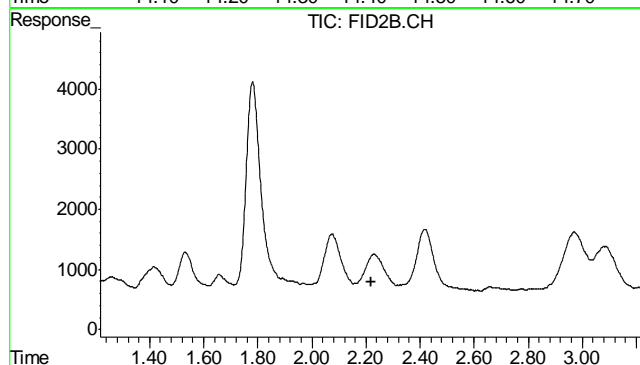




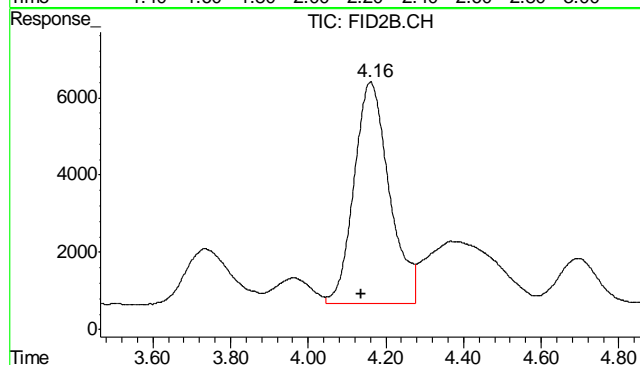
#1 TVH-Gasoline
 R.T.: 7.230 min
 Delta R.T.: 0.000 min
 Response: 12810152
 Conc: 0.17 mg/L m



#2 1,2,4-Trichlorobenzene
 R.T.: 14.397 min
 Delta R.T.: 0.013 min
 Response: 2859617
 Conc: 91.26 % m

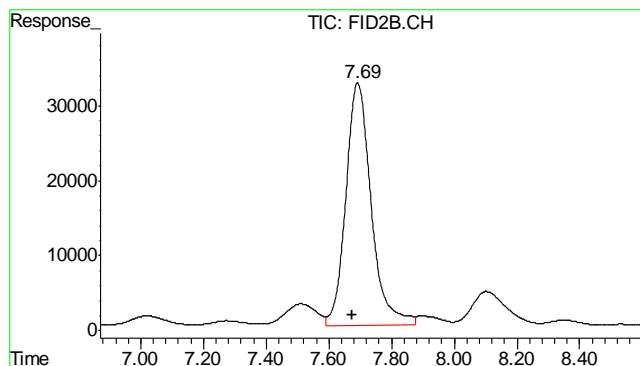


#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T.: 2.218 min
 Response: 0
 Conc: N.D.



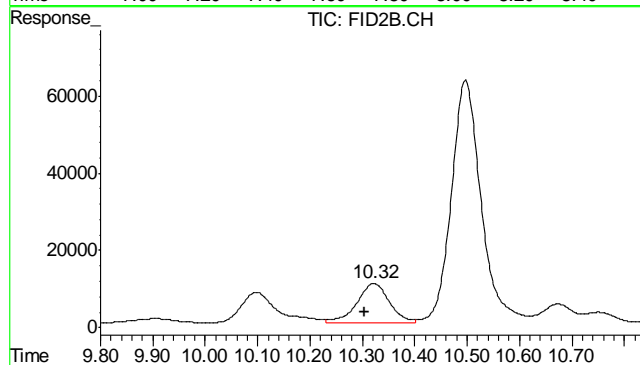
#5 Benzene
 R.T.: 4.161 min
 Delta R.T.: 0.024 min
 Response: 362546
 Conc: 0.90 ug/L

11.13
11



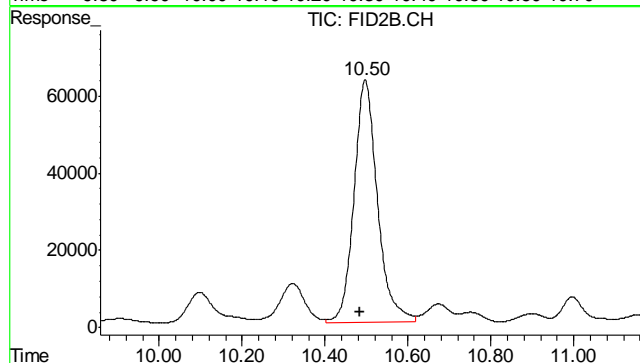
#6 Toluene

R.T.: 7.692 min
Delta R.T.: 0.018 min
Response: 1819950
Conc: 4.59 ug/L



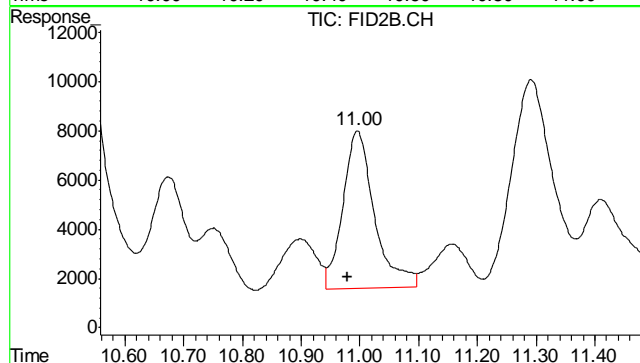
#7 Ethylbenzene

R.T.: 10.322 min
Delta R.T.: 0.017 min
Response: 434397
Conc: 1.28 ug/L



#8 m,p-Xylene

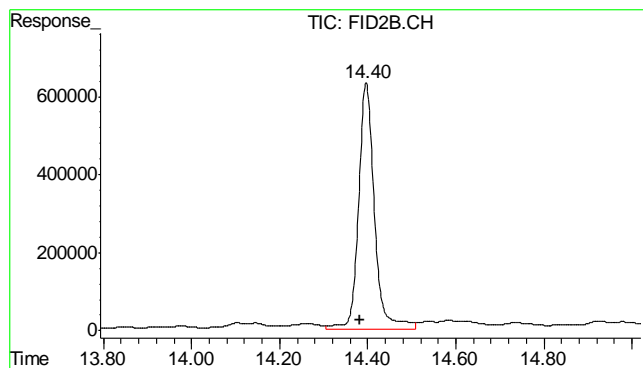
R.T.: 10.497 min
Delta R.T.: 0.013 min
Response: 2466950
Conc: 6.39 ug/L



#9 o-Xylene

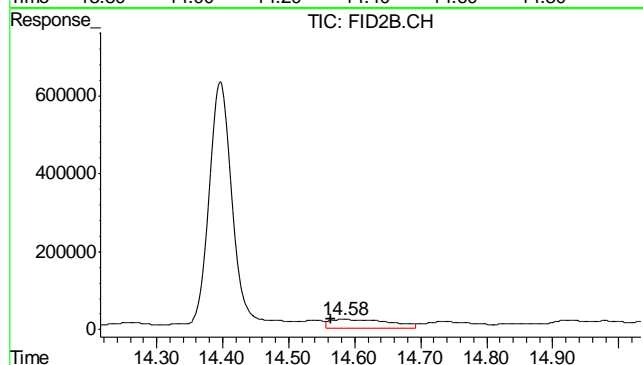
R.T.: 10.996 min
Delta R.T.: 0.017 min
Response: 238235
Conc: 0.73 ug/L

11.13
11



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

R.T.: 14.397 min
 Delta R.T.: 0.015 min
 Response: 15982278
 Conc: 98.34 %



#11 Naphthalene

R.T.: 14.584 min
 Delta R.T.: 0.020 min
 Response: 1495527
 Conc: 7.58 ug/L

11.1.3
11

Judy Melson
11/09/12 14:03

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110812\GB18381.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\110812\GB18381.D\FID2B.CH
Acq On : 8 Nov 2012 5:00 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3228,GGB1004,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 09 08:26:26 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Nov 09 08:26:05 2012
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.40	2753326	87.870 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.40	14864466	91.458 %	
Target Compounds					
1) H	TVH-Gasoline	7.23	3530497	<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	7.70	145391	0.367	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	0.00	0	N.D.	ug/L d

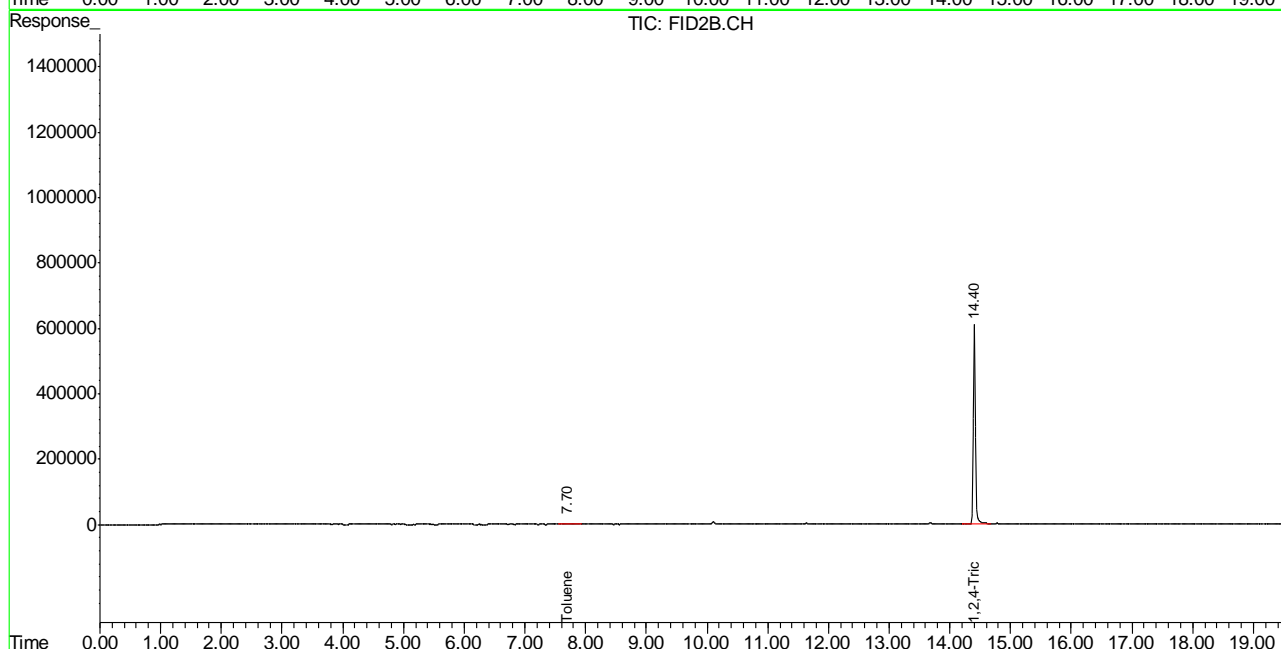
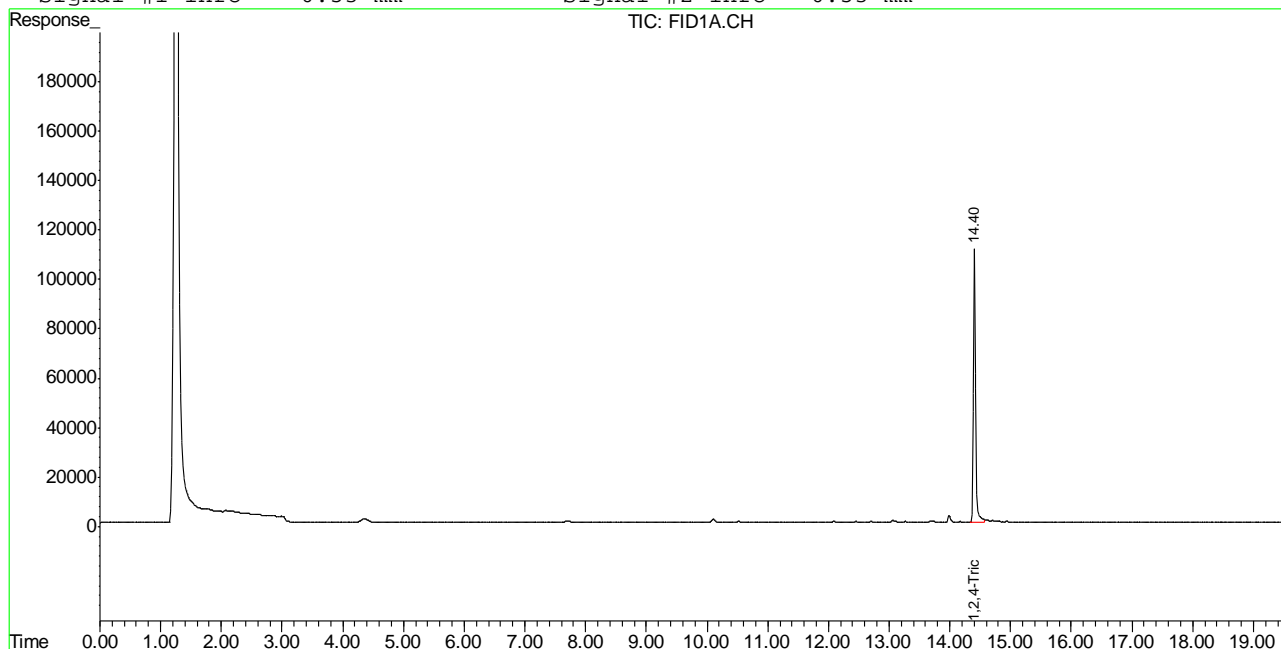
(f)=RT Delta > 1/2 Window (m)=manual int.
GB18381.D TB868GB868SOIL.M Fri Nov 09 08:42:36 2012 GC

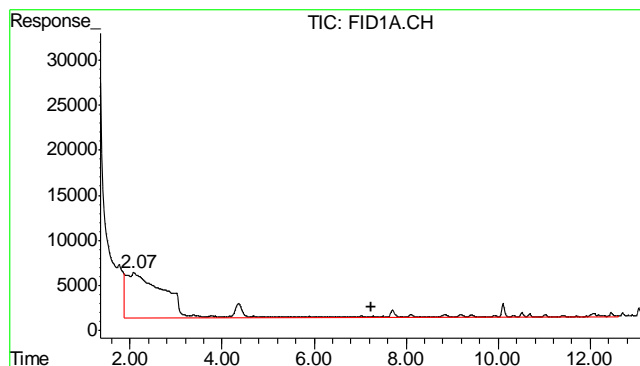
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110812\GB18381.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\110812\GB18381.D\FID2B.CH
Acq On : 8 Nov 2012 5:00 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3228,GGB1004,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 9 8:38 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Nov 09 08:26:05 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

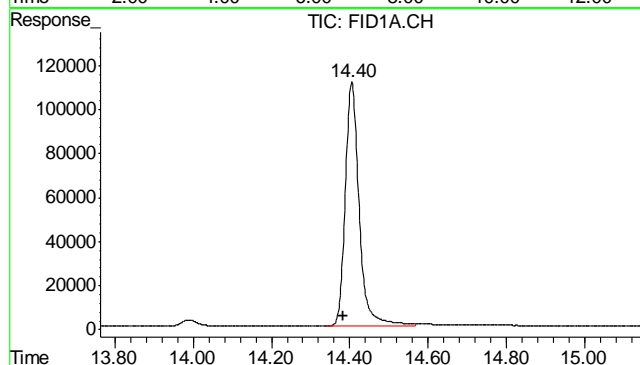
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





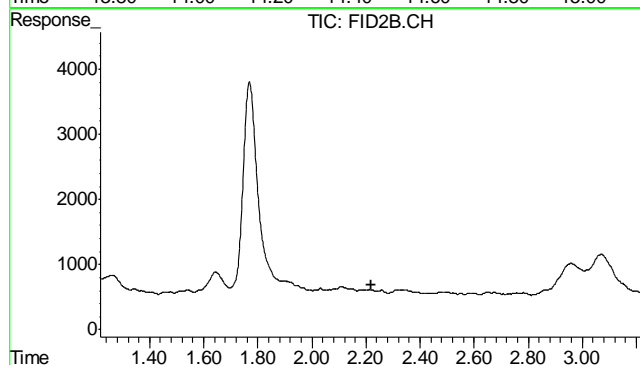
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 3530497
Conc: N.D.



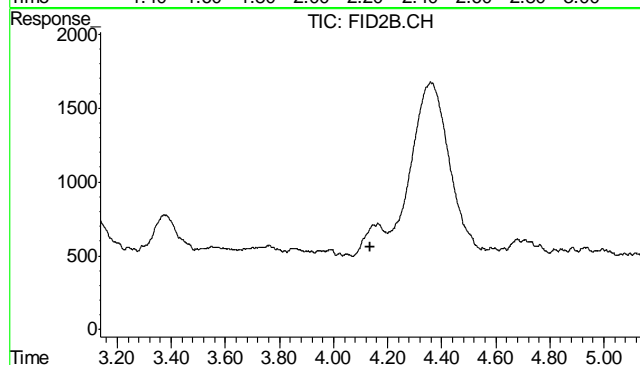
#2 1,2,4-Trichlorobenzene

R.T.: 14.405 min
Delta R.T.: 0.020 min
Response: 2753326
Conc: 87.87 % m



#4 Methyl-t-butyl-ether

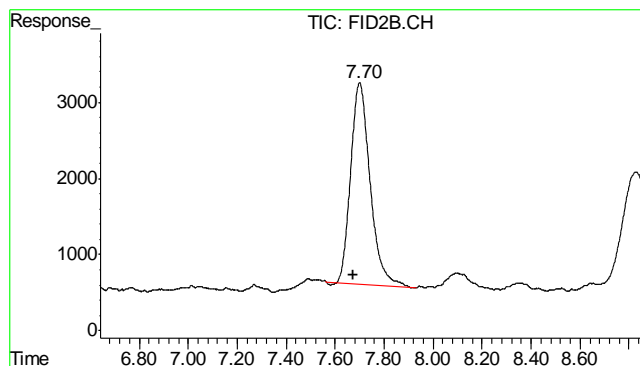
R.T.: 0.000 min
Exp R.T.: 2.218 min
Response: 0
Conc: N.D.



#5 Benzene

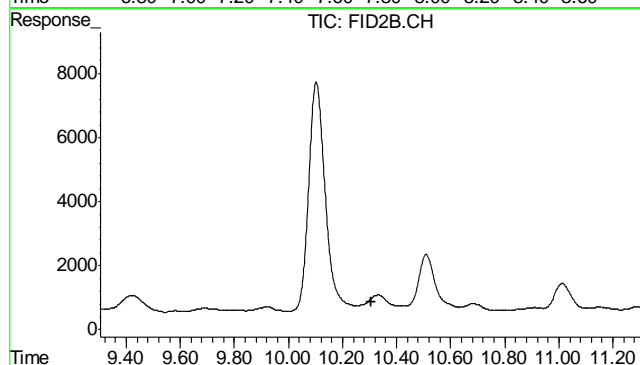
R.T.: 0.000 min
Exp R.T.: 4.137 min
Response: 0
Conc: N.D.

11.21
11



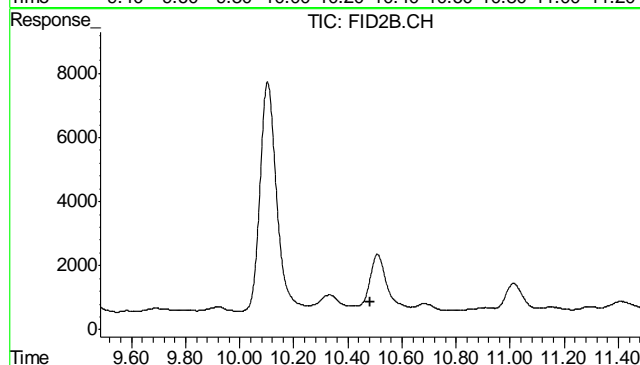
#6 Toluene

R.T.: 7.700 min
Delta R.T.: 0.027 min
Response: 145391
Conc: 0.37 ug/L



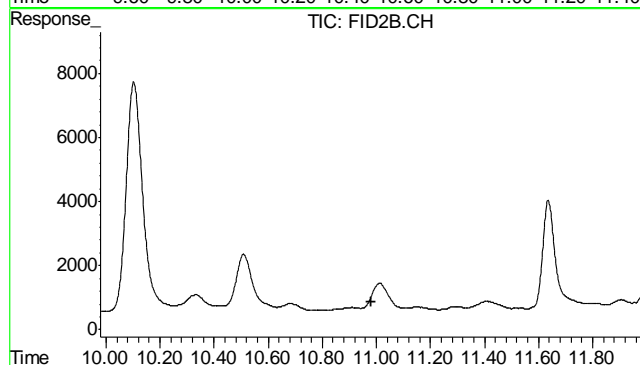
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.304 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

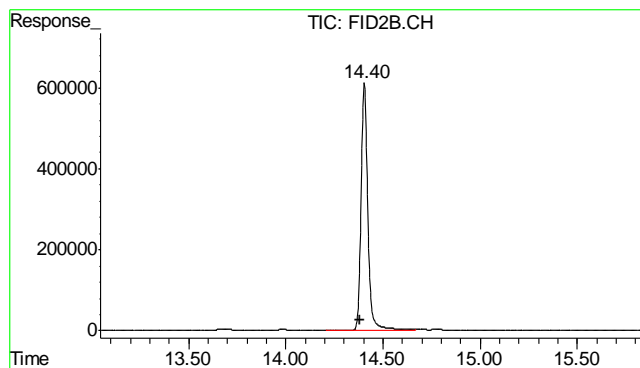
R.T.: 0.000 min
Exp R.T. : 10.484 min
Response: 0
Conc: N.D.



#9 o-Xylene

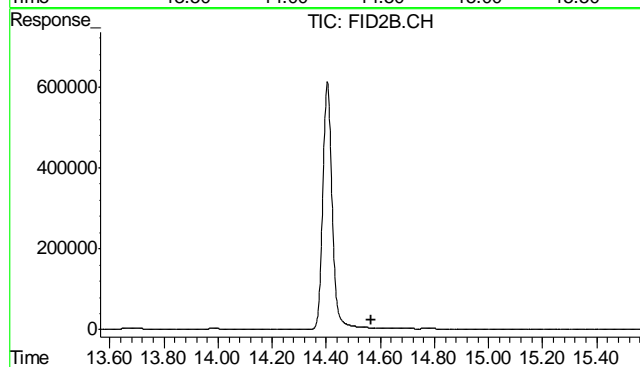
R.T.: 0.000 min
Exp R.T. : 10.980 min
Response: 0
Conc: N.D.

11.21
11



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

R.T.: 14.404 min
Delta R.T.: 0.022 min
Response: 14864466
Conc: 91.46 %



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.565 min
Response: 0
Conc: N.D.

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

Page 1 of 1

Job Number: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6942-MB	FD19331.D	1	11/09/12	AV	11/09/12	OP6942	GFD975

The QC reported here applies to the following samples:

Method: SW846-8015B

D40712-1, D40712-2, D40712-3

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	96% 35-130%

12.1.1
12

Blank Spike Summary

Page 1 of 1

Job Number: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6942-BS	FD19333.D	1	11/09/12	AV	11/09/12	OP6942	GFD975

The QC reported here applies to the following samples:

Method: SW846-8015B

D40712-1, D40712-2, D40712-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	600	90	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	106%	35-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D40712
Account: XTOKRWR XTO Energy
Project: PCU 296-6A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6942-MS	FD19334.D	1	11/09/12	AV	11/09/12	OP6942	GFD975
OP6942-MSD	FD19335.D	1	11/09/12	AV	11/09/12	OP6942	GFD975
D40713-1	FD19393.D	1	11/12/12	AV	11/09/12	OP6942	GFD977

The QC reported here applies to the following samples:

Method: SW846-8015B

D40712-1, D40712-2, D40712-3

CAS No.	Compound	D40713-1 mg/kg	Spike Q	mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		756	682	88	556	72	20	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D40713-1	Limits
84-15-1	o-Terphenyl	87%	78%	81%	35-130%

* = Outside of Control Limits.

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111112\FD19397.D Vial: 6
Acq On : 11-12-2012 01:06:38 PM Operator: ashleyv
Sample : D40712-1 Inst : FID5
Misc : OP6942,GFD977,30.05,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 12 15:18:30 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Nov 01 16:47:14 2012
Response via : Initial Calibration
DataAcq Meth : DRO_FR.M

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

Compound	R.T.	Response	Conc Units

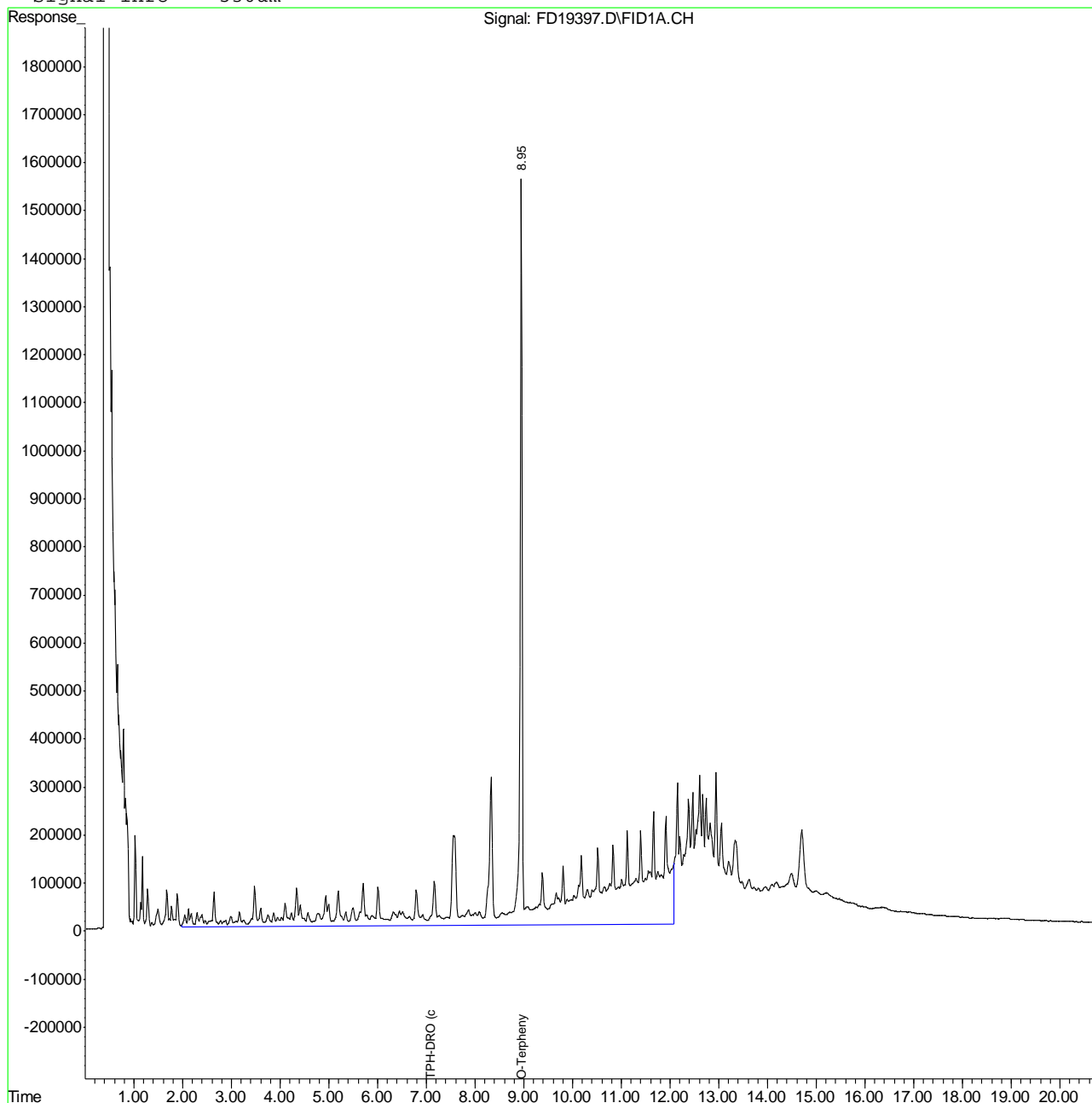
System Monitoring Compounds			
1) S O-Terphenyl	8.95	40938766	866.639 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.08	258648601	6717.225 mg/L

Quantitation Report (QT Reviewed)

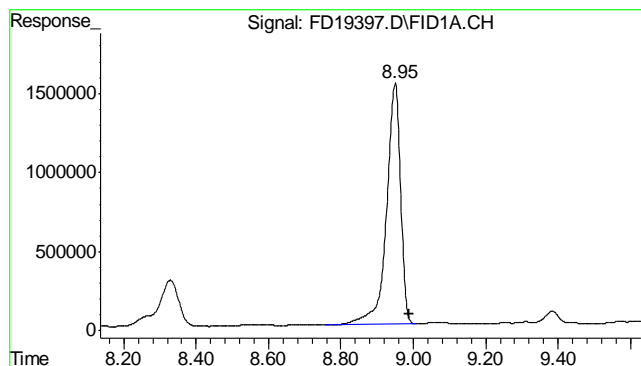
Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111112\FD19397.D Vial: 6
 Acq On : 11-12-2012 01:06:38 PM Operator: ashleyv
 Sample : D40712-1 Inst : FID5
 Misc : OP6942,GFD977,30.05,,,2,1 Multiplr: 1.00
 IntFile : autoint1.e
 Quant Time: Nov 12 15:22 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Thu Nov 01 16:47:14 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : DRO_FR.M

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

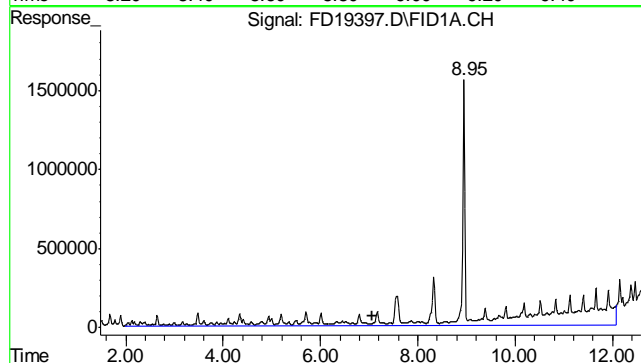


13.1.1
13



#1 O-Terphenyl

R.T.: 8.950 min
 Delta R.T.: -0.040 min
 Response: 40938766
 Conc: 866.64 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.075 min
 Delta R.T.: 0.000 min
 Response: 258648601
 Conc: 6717.22 mg/L m

13.1.1
 13

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111112\FD19398.D Vial: 7
Acq On : 11-12-2012 01:33:54 PM Operator: ashleyv
Sample : D40712-2 Inst : FID5
Misc : OP6942,GFD977,30.15,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 12 15:18:31 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Nov 01 16:47:14 2012
Response via : Initial Calibration
DataAcq Meth : DRO_FR.M

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

Compound	R.T.	Response	Conc Units

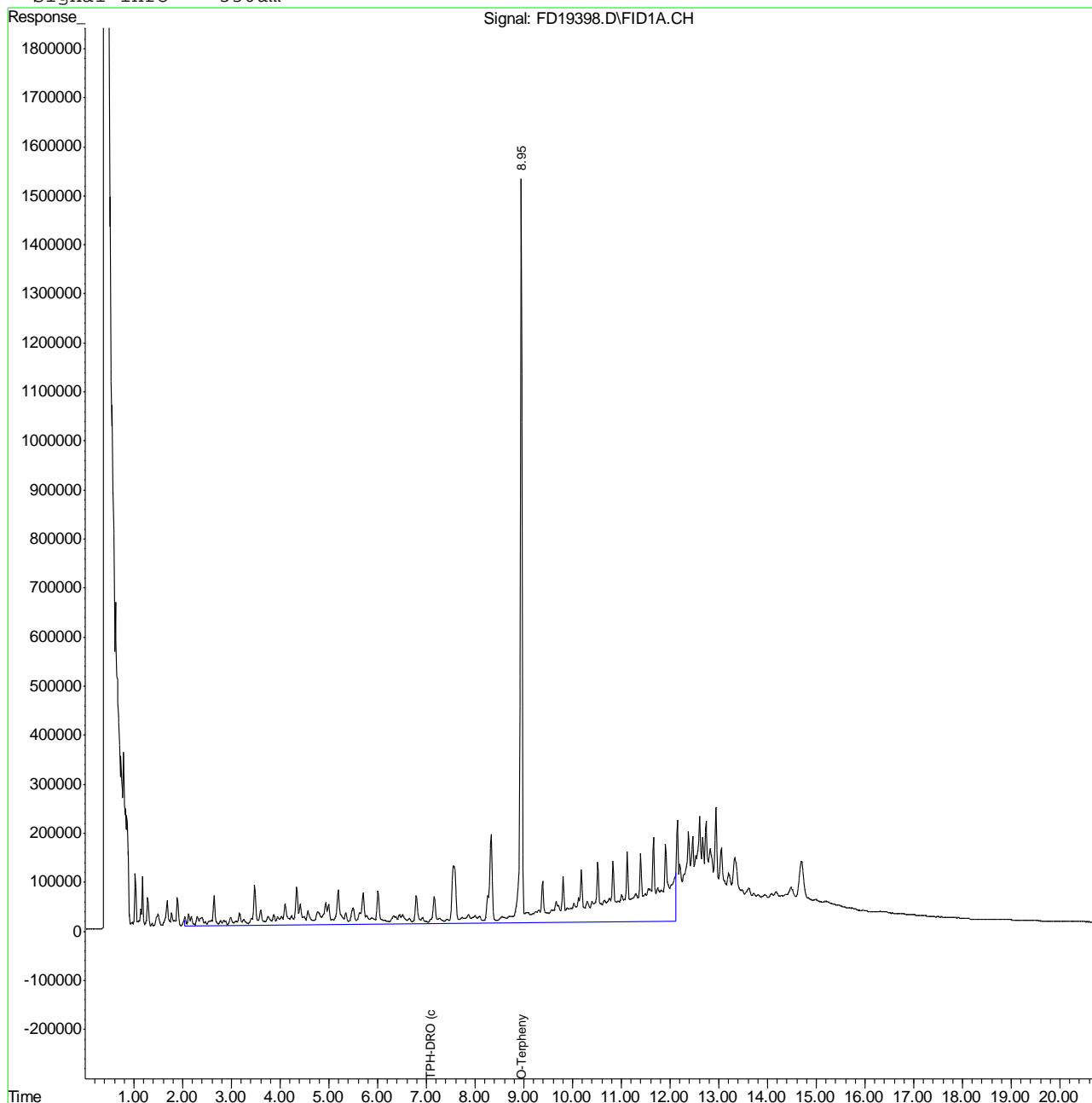
System Monitoring Compounds			
1) S O-Terphenyl	8.95	37983386	804.076 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.08	168596002	4378.517 mg/L

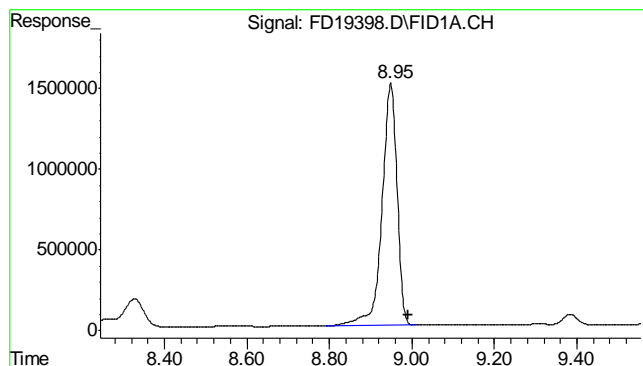
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111112\FD19398.D Vial: 7
 Acq On : 11-12-2012 01:33:54 PM Operator: ashleyv
 Sample : D40712-2 Inst : FID5
 Misc : OP6942,GFD977,30.15,,,2,1 Multiplr: 1.00
 IntFile : autoint1.e
 Quant Time: Nov 12 15:18 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Thu Nov 01 16:47:14 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : DRO_FR.M

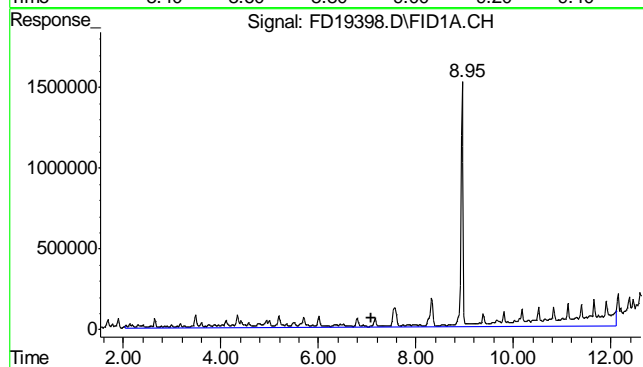
Volume Inj. : 1ul
 Signal Phase : RTX-5
 Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.949 min
 Delta R.T.: -0.041 min
 Response: 37983386
 Conc: 804.08 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.075 min
 Delta R.T.: 0.000 min
 Response: 168596002
 Conc: 4378.52 mg/L m

13.1.2
13

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111112\FD19399.D Vial: 8
Acq On : 11-12-2012 02:01:09 PM Operator: ashleyv
Sample : D40712-3 Inst : FID5
Misc : OP6942,GFD977,30.04,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 12 15:18:32 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Nov 01 16:47:14 2012
Response via : Initial Calibration
DataAcq Meth : DRO_FR.M

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

Compound	R.T.	Response	Conc Units

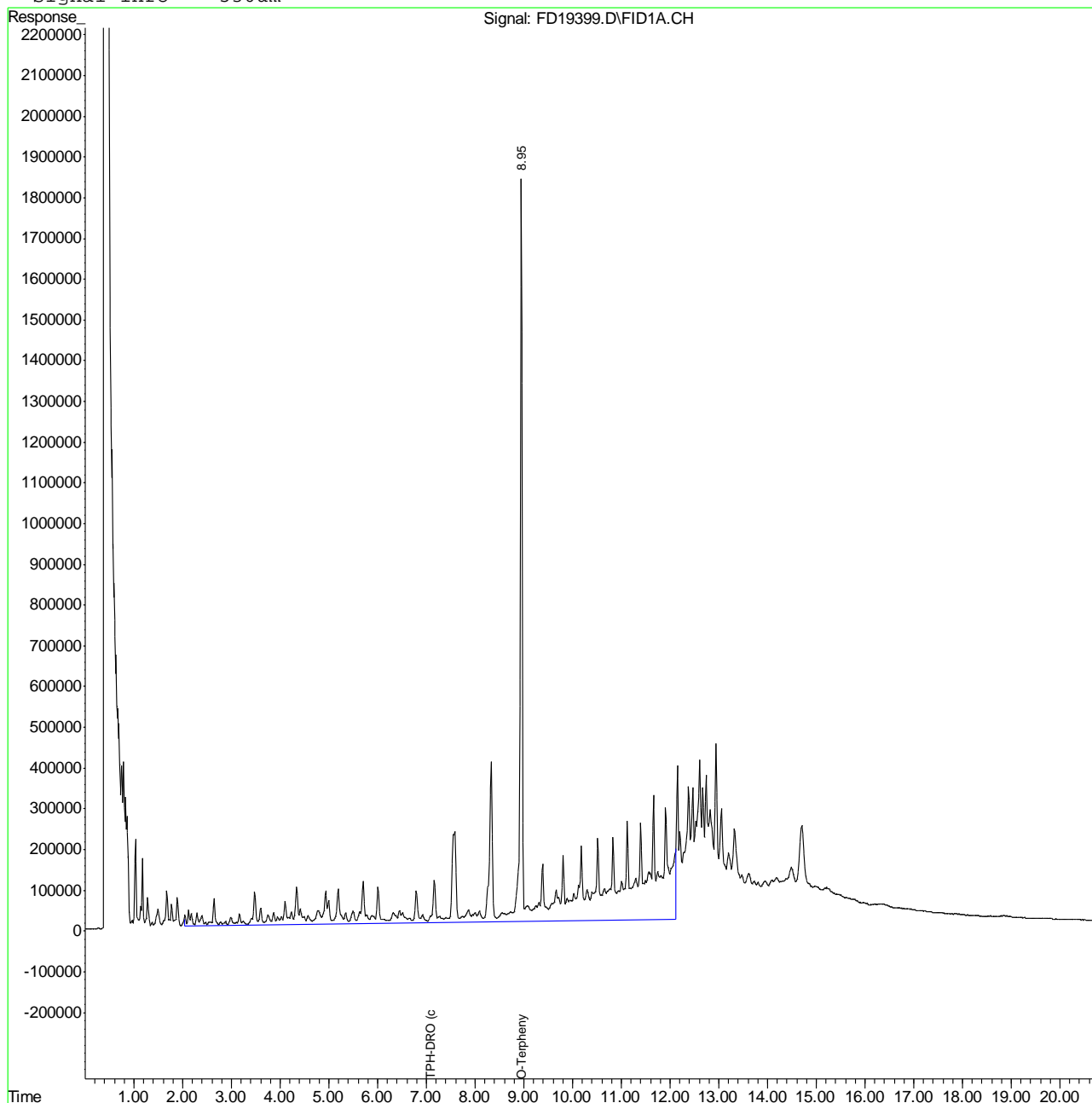
System Monitoring Compounds			
1) S O-Terphenyl	8.95	47167505	998.496 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.08	264693863	6874.223 mg/L

Quantitation Report (QT Reviewed)

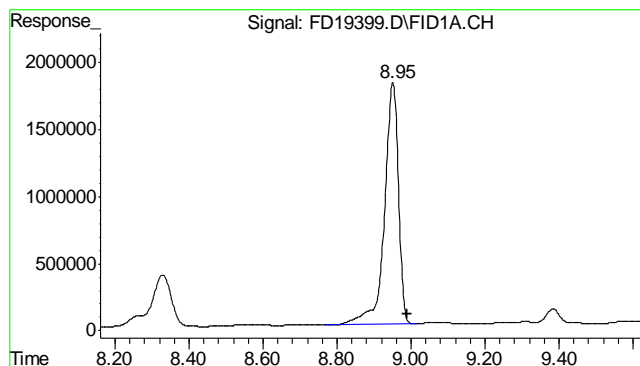
Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111112\FD19399.D Vial: 8
 Acq On : 11-12-2012 02:01:09 PM Operator: ashleyv
 Sample : D40712-3 Inst : FID5
 Misc : OP6942,GFD977,30.04,,,2,1 Multiplr: 1.00
 IntFile : autoint1.e
 Quant Time: Nov 12 15:18 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Thu Nov 01 16:47:14 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : DRO_FR.M

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

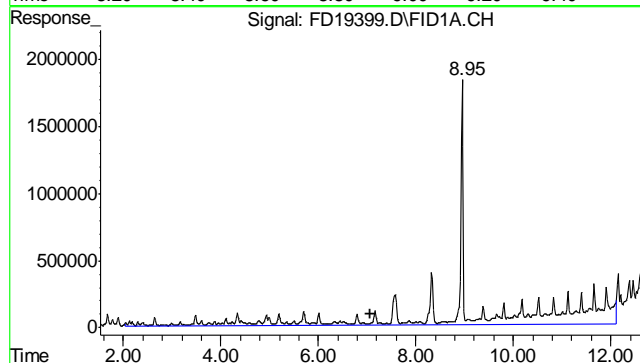


13.13
13



#1 O-Terphenyl

R.T.: 8.951 min
 Delta R.T.: -0.039 min
 Response: 47167505
 Conc: 998.50 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.075 min
 Delta R.T.: 0.000 min
 Response: 264693863
 Conc: 6874.22 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD110912\FD19331.D Vial: 3
Acq On : 09 Nov 2012 11:16 am Operator: ashleyv
Sample : OP6942-MB Inst : FID5
Misc : OP6942,GFD975,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 09 14:55:22 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Nov 01 16:47:14 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	9.00	45116259	955.073 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.08	1254128	32.570 mg/L

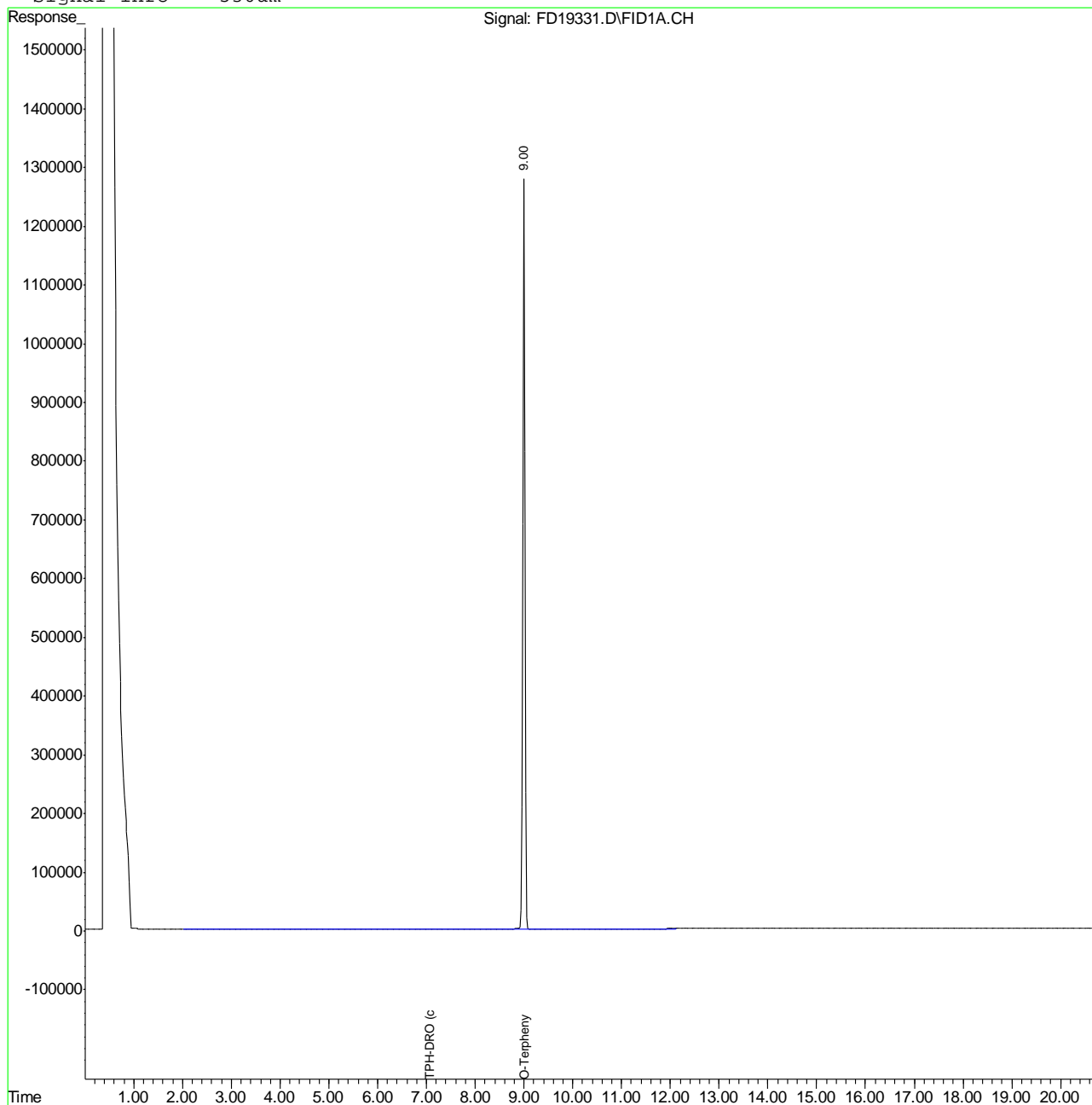
(f)=RT Delta > 1/2 Window (m)=manual int.
FD19331.D DRO-GFD823F.M Mon Nov 12 09:55:12 2012 GC

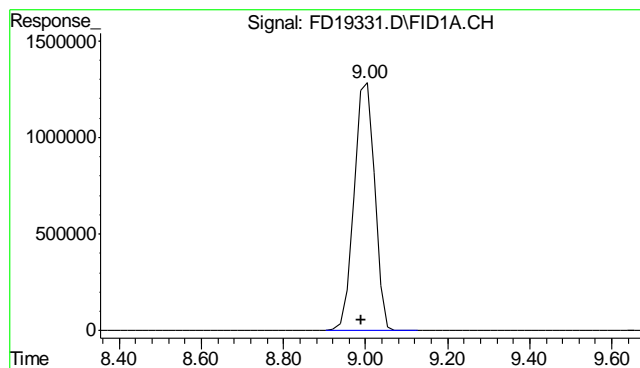
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD110912\FD19331.D Vial: 3
Acq On : 09 Nov 2012 11:16 am Operator: ashleyv
Sample : OP6942-MB Inst : FID5
Misc : OP6942,GFD975,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 9 14:55 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Nov 01 16:47:14 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

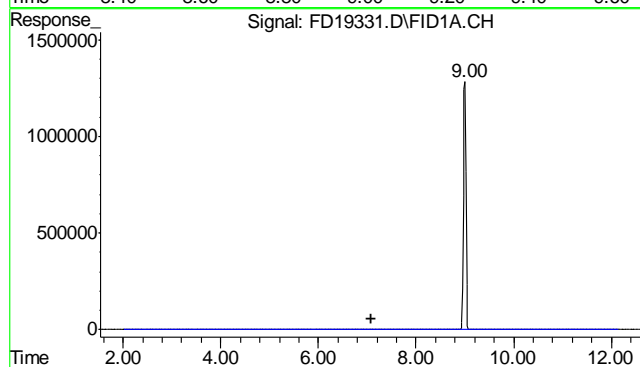
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 9.004 min
Delta R.T.: 0.014 min
Response: 45116259
Conc: 955.07 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.075 min
Delta R.T.: 0.000 min
Response: 1254128
Conc: 32.57 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: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8856
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 11/09/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.96	.57		
Antimony	3.0	.17	.12		
Arsenic	2.5	.44	.56		
Barium	1.0	.01	.11	2.2	* (a)
Beryllium	1.0	.13	.15		
Boron	5.0	.1	.06		
Cadmium	1.0	.06	.036	-0.010	<1.0
Calcium	40	.54	9		
Chromium	1.0	.03	.03	0.12	<1.0
Cobalt	0.50	.04	.07		
Copper	1.0	.12	.15	-0.050	<1.0
Iron	7.0	.12	.87		
Lead	5.0	.19	.24	-0.19	<5.0
Lithium	0.20	.05	.054		
Magnesium	20	.65	.98		
Manganese	0.50	.12	.022		
Molybdenum	1.0	.21	.08		
Nickel	3.0	.05	.026	0.15	<3.0
Phosphorus	10	1.4	1.9		
Potassium	200	6.1	7		
Selenium	5.0	.48	.36	0.24	<5.0
Silicon	5.0	.29	.37		
Silver	3.0	.04	.06	0.020	<3.0
Sodium	40	.59	1.9		
Strontium	5.0	.004	.017		
Thallium	1.0	.29	.53		
Tin	5.0	1.2	2		
Titanium	1.0	.01	.038		
Uranium	5.0	.22	.26		
Vanadium	1.0	.02	.036		
Zinc	3.0	.05	.37	0.20	<3.0

Associated samples MP8856: D40712-1, D40712-2, D40712-3

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8856
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

(a) All sample results >10x method blank concentration.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8856
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 11/09/12

Metal	D40712-1 Original MS		Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	8010	9680	237	1213.0(a)	75-125
Beryllium					
Boron					
Cadmium	0.0	47.5	59.4	80.0	75-125
Calcium					
Chromium	22.2	58.9	59.4	68.1N(b)	75-125
Cobalt					
Copper	28.0	81.4	59.4	90.0	75-125
Iron					
Lead	14.0	124	119	92.7	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	12.5	56.4	59.4	74.0N(c)	75-125
Phosphorus					
Potassium					
Selenium	1.3	99.1	119	82.4	75-125
Silicon					
Silver	0.0	20.5	23.7	86.3	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	51.3	83.4	59.4	61.0N(b)	75-125

Associated samples MP8856: D40712-1, D40712-2, D40712-3

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8856
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 and/or sample nonhomogeneity.
- (c) Spike recovery indicates possible matrix interference.

14.1.2
14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8856
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 11/09/12

Metal	D40712-1 Original	MSD	Spikelot ICPAL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	8010	9550	242	1135.3(a)	12.3	20
Beryllium						
Boron						
Cadmium	0.0	48.2	60.6	79.6	1.5	20
Calcium						
Chromium	22.2	64.8	60.6	76.5	9.5	20
Cobalt						
Copper	28.0	85.6	60.6	95.1	5.0	20
Iron						
Lead	14.0	111	121	80.1	11.1	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	12.5	57.2	60.6	73.8N(b)	1.4	20
Phosphorus						
Potassium						
Selenium	1.3	101	121	82.3	1.9	20
Silicon						
Silver	0.0	20.8	24.2	85.9	1.5	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	51.3	95.0	60.6	78.9	13.0	20

Associated samples MP8856: D40712-1, D40712-2, D40712-3

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8856
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.

14.1.2
14

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40712
 Account: XTOKRWR - XTO Energy
 Project: PCU 296-6A

QC Batch ID: MP8856
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 11/09/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	186	200	93.0	80-120
Beryllium				
Boron				
Cadmium	42.9	50	85.8	80-120
Calcium				
Chromium	45.5	50	91.0	80-120
Cobalt				
Copper	47.1	50	94.2	80-120
Iron				
Lead	88.6	100	88.6	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	43.4	50	86.8	80-120
Phosphorus				
Potassium				
Selenium	87.1	100	87.1	80-120
Silicon				
Silver	18.0	20	90.0	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	44.3	50	88.6	80-120

Associated samples MP8856: D40712-1, D40712-2, D40712-3

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8856
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8856
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 11/09/12

Metal	D40712-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	58400	66100	13.1*(a)	0-10
Beryllium				
Boron				
Cadmium	0.00	0.00	NC	0-10
Calcium				
Chromium	191	176	10.5*(a)	0-10
Cobalt				
Copper	241	238	1.1	0-10
Iron				
Lead	120	118	2.0	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	115	120	11.7*(a)	0-10
Phosphorus				
Potassium				
Selenium	11.0	0.00	100.0(b)	0-10
Silicon				
Silver	0.00	2.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	441	474	17.0*(a)	0-10

Associated samples MP8856: D40712-1, D40712-2, D40712-3

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8856
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

(a) Serial dilution indicates possible matrix interference.

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

14.1.4
14

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8857
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/09/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.22	.31		
Antimony	0.20	.0018	.0075		
Arsenic	0.10	.006	.06	0.0095	<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 MP8857: D40712-1, D40712-2, D40712-3

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: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8857
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/09/12

Metal	D40712-1 Original MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	9.6	111	119	85.4
Barium				75-125
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 MP8857: D40712-1, D40712-2, D40712-3

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: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8857
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/09/12

Metal	D40712-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	9.6	137	121	105.2	21.0 (a)	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 MP8857: D40712-1, D40712-2, D40712-3

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) High RPD due to possible sample matrix or nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8857
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/09/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	103	100	103.0	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 MP8857: D40712-1, D40712-2, D40712-3

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

14.2.3
14

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40712
 Account: XTOKRWR - XTO Energy
 Project: PCU 296-6A

QC Batch ID: MP8857
 Matrix Type: SOLID

Methods: SW846 6020A
 Units: ug/l

Prep Date: 11/09/12

Metal	D40712-1			QC	
	Original	SDL 5:25	%DIF	Limits	
Aluminum					
Antimony					
Arsenic	82.6	82.5	0.1	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 MP8857: D40712-1, D40712-2, D40712-3

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

14.2.4
14

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8858
Matrix Type: AQUEOUS

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

Prep Date: 11/09/12

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	28.5	<2000
Chromium	50	1.5	2.8		
Cobalt	25	2	2.1		
Copper	50	6	15		
Iron	350	6	100		
Lead	250	9.5	15		
Lithium	10	2.5			
Magnesium	1000	33	110	-17	<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	349	<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 MP8858: D40712-1A, D40712-2A, D40712-3A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8858
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8858
Matrix Type: AQUEOUS

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

Prep Date: 11/09/12

Metal	D40714-1A Original MS		Spikelot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	15500	149000	125000	106.8	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	432	127000	125000	101.3	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	258000	390000	125000	105.6	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP8858: D40712-1A, D40712-2A, D40712-3A

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

14.3.2
14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8858
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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8858
Matrix Type: AQUEOUS

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

Prep Date: 11/09/12

Metal	D40714-1A Original	MSD	SpikeLot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	15500	146000	125000	104.4	2.0	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	432	124000	125000	98.9	2.4	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	258000	385000	125000	101.6	1.3	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP8858: D40712-1A, D40712-2A, D40712-3A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8858
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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8858
Matrix Type: AQUEOUS

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

Prep Date: 11/09/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	130000	125000	104.0	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	120000	125000	96.0	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	122000	125000	97.6	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8858: D40712-1A, D40712-2A, D40712-3A

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8858
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: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8858
Matrix Type: AQUEOUS

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

Prep Date: 11/09/12

D40714-1A		QC	
Metal	Original	SDL 1:5	%DIF Limits
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Boron			
Cadmium			
Calcium	3090	3090	0.1 0-10
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium	86.3	68.0	21.2 (a) 0-10
Manganese			
Molybdenum			
Nickel			
Phosphorus			
Potassium			
Selenium			
Silicon			
Silver			
Sodium	51600	58700	13.6*(b) 0-10
Strontium			
Thallium			
Tin			
Titanium			
Uranium			
Vanadium			
Zinc			

Associated samples MP8858: D40712-1A, D40712-2A, D40712-3A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8858
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).
(b) Serial dilution indicates possible matrix interference.

14.3.4
14

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

QC Batch ID: MP8871
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/13/12

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.083	.00088	.00075	-0.00024	<0.083

Associated samples MP8871: D40712-1, D40712-2, D40712-3

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: D40712
 Account: XTOKRWR - XTO Energy
 Project: PCU 296-6A

QC Batch ID: MP8871
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 11/13/12

Metal	D40797-1 Original MS	Spikelot HGWSR1	% Rec	QC Limits
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Mercury	0.080	0.43	0.377	92.9	75-125
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Associated samples MP8871: D40712-1, D40712-2, D40712-3

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: D40712
 Account: XTOKRWR - XTO Energy
 Project: PCU 296-6A

QC Batch ID: MP8871
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 11/13/12

Metal	D40797-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.080	0.40	0.371	86.3	7.2	20

Associated samples MP8871: D40712-1, D40712-2, D40712-3

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: D40712
 Account: XTOKRWR - XTO Energy
 Project: PCU 296-6A

QC Batch ID: MP8871
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 11/13/12

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.33	0.333	99.0	80-120

Associated samples MP8871: D40712-1, D40712-2, D40712-3

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

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: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP8655/GN17636	1.0	0.0	mg/kg	176	161	91.5	80-120%
Specific Conductivity	GP8649/GN17613			umhos/cm	9992	9800	98.1	90-110%
pH	GN17604			su	8.00	8.04	100.5	99.3-100.7%

Associated Samples:
Batch GP8649: D40712-1, D40712-2, D40712-3
Batch GP8655: D40712-1, D40712-2, D40712-3
Batch GN17604: D40712-1, D40712-2, D40712-3
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP8655/GN17636	D40715-1	mg/kg	0.0	0.0	0.0	0-20%
Redox Potential Vs H2	GN17603	D40617-1	mv	242	250	3.2	0-20%

Associated Samples:

Batch GP8655: D40712-1, D40712-2, D40712-3

Batch GN17603: D40712-1, D40712-2, D40712-3

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP8655/GN17636	D40715-1	mg/kg	0.0	40	33.0	82.0	75-125%

Associated Samples:

Batch GP8655: D40712-1, D40712-2, D40712-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40712
Account: XTOKRWR - XTO Energy
Project: PCU 296-6A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GP8655/GN17636	D40715-1	mg/kg	0.0	40	33.7	2.2	20%

Associated Samples:
Batch GP8655: D40712-1, D40712-2, D40712-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits