Mountain States ACCUTEST LABORATORIES

11/26/12

Technical Report for

XTO Energy

NPU 197-19B

1202-08

Accutest Job Number: D40911

Sampling Date: 11/12/12

Report to:

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Total number of pages in report: **196**

ACCREDITED IN ACCORDANCE WITH nelac

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

Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

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

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Sample Summary

XTO Energy

Job No: D40911

NPU 197-19B
Project No: 1202-08

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
D40911-1	11/12/12	14:10	DS	11/14/12	SO	Soil	CUTTINGS POST SOLIDIFICATION
D40911-1A	11/12/12	14:10	DS	11/14/12	SO	Soil	CUTTINGS POST SOLIDIFICATION
D40911-2	11/12/12	14:15	DS	11/14/12	SO	Soil	RP POST SOLIDIFICATION
D40911-2A	11/12/12	14:15	DS	11/14/12	SO	Soil	RP 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**	D40911
Site:	NPU 197-19B	**Report Date**	11/26/2012 12:54:28 P

On 11/14/2012, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.1 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D40911 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:** V5V1503

- All samples were analyzed within the recommended method holding time.
- Sample(s) D40910-1MS, D40910-1MSD 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:** OP6973

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D40910-1MS, D40910-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Volatiles by GC By Method SW846 8015B

Matrix: SO **Batch ID:** GGB1008

- All samples were analyzed within the recommended method holding time.
- Sample(s) D40868-1MS, D40868-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix: SO **Batch ID:** OP6966

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D40875-4MS, D40875-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010C

Matrix: AQ **Batch ID:** MP8908

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40910-1AMS, D40910-1AMSD, D40910-1ASDL were used as the QC samples for the metals analysis.

Matrix: SO **Batch ID:** MP8890

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40910-1MSD, D40910-1MS, D40910-1MSD, D40910-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Lead, Nickel are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- 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 Cadmium, Selenium, Silver, are outside control limits for sample MP8890-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP8890-SD1 for Barium, Chromium, Nickel, Zinc: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020A

Matrix: SO **Batch ID:** MP8891

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40910-1MS, D40910-1MSD, D40910-1SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471B

Matrix: SO **Batch ID:** MP8899

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40848-1MS, D40848-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix: SO **Batch ID:** GN17722

- Sample(s) D41014-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM19 2540B M

Matrix: SO **Batch ID:** GN17668

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

Wet Chemistry By Method SW846 3060/7196A M

Matrix: SO **Batch ID:** R15178

- The data for SW846 3060/7196A M meets quality control requirements.
- D40911-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO **Batch ID:** R15179

- The data for SW846 3060/7196A M meets quality control requirements.
- D40911-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A

Matrix:	SO	Batch ID:	GP8688

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40911-1DUP, D40911-1MS, D40911-1MSD were used as the QC samples for the Chromium, Hexavalent analysis.

Wet Chemistry By Method SW846 9045D

Matrix:	SO	Batch ID:	GN17696

- The following samples were run outside of holding time for method SW846 9045D: D40911-1, D40911-2

Wet Chemistry By Method USDA HANDBOOK 60

Matrix:	SO	Batch ID:	MP8908

- D40911-1A, -2A for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

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

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

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

Summary of Hits

Job Number: D40911
Account: XTO Energy
Project: NPU 197-19B
Collected: 11/12/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D40911-1	**CUTTINGS POST SOLIDIFICATION**					
Benzene		0.221	0.073	0.037	mg/kg	SW846 8260B
Toluene		0.928	0.15	0.073	mg/kg	SW846 8260B
Ethylbenzene		0.218	0.15	0.028	mg/kg	SW846 8260B
Xylene (total)		1.11	0.29	0.15	mg/kg	SW846 8260B
Chrysene		0.0155	0.010	0.0054	mg/kg	SW846 8270C BY SIM
Fluoranthene		0.0095 J	0.010	0.0054	mg/kg	SW846 8270C BY SIM
Fluorene		0.0431	0.010	0.0054	mg/kg	SW846 8270C BY SIM
Naphthalene		0.240	0.014	0.013	mg/kg	SW846 8270C BY SIM
Pyrene		0.0220	0.010	0.0054	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)		15.1	15	7.3	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		298	16	11	mg/kg	SW846-8015B
Arsenic		7.7	0.12		mg/kg	SW846 6020A
Barium		6210	6.1		mg/kg	SW846 6010C
Chromium		18.7	1.2		mg/kg	SW846 6010C
Copper		24.4	1.2		mg/kg	SW846 6010C
Lead		16.7	6.1		mg/kg	SW846 6010C
Nickel		55.7	3.7		mg/kg	SW846 6010C
Zinc		43.5	3.7		mg/kg	SW846 6010C
Specific Conductivity		7910	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent [a]		18.7	2.2		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2		43.3			mv	ASTM D1498-76M
pH		12.41			su	SW846 9045D
D40911-1A	**CUTTINGS POST SOLIDIFICATION**					
Calcium		439	2.0		mg/l	SW846 6010C
Sodium		1410	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio [b]		18.5			ratio	USDA HANDBOOK 60
D40911-2	**RP POST SOLIDIFICATION**					
Benzene		0.0779 J	0.096	0.048	mg/kg	SW846 8260B
Toluene		1.84	0.19	0.096	mg/kg	SW846 8260B
Ethylbenzene		0.838	0.19	0.036	mg/kg	SW846 8260B
Xylene (total)		18.2	0.38	0.19	mg/kg	SW846 8260B
Chrysene		0.0365	0.012	0.0063	mg/kg	SW846 8270C BY SIM
Fluoranthene		0.0380	0.012	0.0063	mg/kg	SW846 8270C BY SIM
Fluorene		0.432	0.012	0.0063	mg/kg	SW846 8270C BY SIM
Naphthalene		2.33	0.017	0.015	mg/kg	SW846 8270C BY SIM
Pyrene		0.0459	0.012	0.0063	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)		306	19	9.6	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		2300	19	13	mg/kg	SW846-8015B
Arsenic		4.8	0.14		mg/kg	SW846 6020A

Summary of Hits

Job Number: D40911
Account: XTO Energy
Project: NPU 197-19B
Collected: 11/12/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Barium		9410	7.2		mg/kg	SW846 6010C
Chromium		15.8	1.4		mg/kg	SW846 6010C
Copper		14.6	1.4		mg/kg	SW846 6010C
Nickel		128	4.3		mg/kg	SW846 6010C
Zinc		23.7	4.3		mg/kg	SW846 6010C
Specific Conductivity		12300	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent [a]		15.8	2.4		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2		3.5			mv	ASTM D1498-76M
pH		12.44			su	SW846 9045D
D40911-2A	**RP POST SOLIDIFICATION**					
Calcium		1000	2.0		mg/l	SW846 6010C
Sodium		1360	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio [b]		11.8			ratio	USDA HANDBOOK 60

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

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	CUTTINGS POST SOLIDIFICATION		
Lab Sample ID:	D40911-1	**Date Sampled:**	11/12/12
Matrix:	SO - Soil	**Date Received:**	11/14/12
Method:	SW846 8260B	**Percent Solids:**	80.7
Project:	NPU 197-19B		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V24630.D	1	11/15/12	BD	n/a	n/a	V5V1503
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.04 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.221	0.073	0.037	mg/kg	
108-88-3	Toluene	0.928	0.15	0.073	mg/kg	
100-41-4	Ethylbenzene	0.218	0.15	0.028	mg/kg	
1330-20-7	Xylene (total)	1.11	0.29	0.15	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	102%		64-130%
460-00-4	4-Bromofluorobenzene	103%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CUTTINGS POST SOLIDIFICATION		
Lab Sample ID:	D40911-1	**Date Sampled:**	11/12/12
Matrix:	SO - Soil	**Date Received:**	11/14/12
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	80.7
Project:	NPU 197-19B		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G12211.D	1	11/21/12	SM	11/16/12	OP6973	E3G576
Run #2							

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.010	0.0054	mg/kg	
120-12-7	Anthracene	ND	0.010	0.0054	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.010	0.0054	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.010	0.0054	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.010	0.0054	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.010	0.0054	mg/kg	
218-01-9	Chrysene	0.0155	0.010	0.0054	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.010	0.0054	mg/kg	
206-44-0	Fluoranthene	0.0095	0.010	0.0054	mg/kg	J
86-73-7	Fluorene	0.0431	0.010	0.0054	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.010	0.0054	mg/kg	
91-20-3	Naphthalene	0.240	0.014	0.013	mg/kg	
129-00-0	Pyrene	0.0220	0.010	0.0054	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	70%		10-159%
321-60-8	2-Fluorobiphenyl	75%		19-131%
1718-51-0	Terphenyl-d14	88%		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

Client Sample ID:	CUTTINGS POST SOLIDIFICATION		
Lab Sample ID:	D40911-1	**Date Sampled:**	11/12/12
Matrix:	SO - Soil	**Date Received:**	11/14/12
Method:	SW846 8015B	**Percent Solids:**	80.7
Project:	NPU 197-19B		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB18471.D	1	11/14/12	SK	n/a	n/a	GGB1008
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	15.1	15	7.3	mg/kg	

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

Client Sample ID: CUTTINGS POST SOLIDIFICATION
Lab Sample ID: D40911-1
Matrix: SO - Soil
Method: SW846-8015B SW846 3546
Project: NPU 197-19B

Date Sampled: 11/12/12
Date Received: 11/14/12
Percent Solids: 80.7

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD19661.D	1	11/17/12	AV	11/15/12	OP6966	GFD986
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	298	16	11	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	84%		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: CUTTINGS POST SOLIDIFICATION
Lab Sample ID: D40911-1
Matrix: SO - Soil
Project: NPU 197-19B

Date Sampled: 11/12/12
Date Received: 11/14/12
Percent Solids: 80.7

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	7.7	0.12	mg/kg	5	11/15/12	11/17/12	JM	SW846 6020A [3]	SW846 3050B [5]
Barium	6210	6.1	mg/kg	5	11/15/12	11/17/12	JM	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 1.2	1.2	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Chromium	18.7	1.2	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Copper	24.4	1.2	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Lead	16.7	6.1	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.095	0.095	mg/kg	1	11/16/12	11/16/12	JM	SW846 7471B [1]	SW846 7471B [6]
Nickel	55.7	3.7	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 6.1	6.1	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Silver	< 3.7	3.7	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Zinc	43.5	3.7	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA3005
(2) Instrument QC Batch: MA3006
(3) Instrument QC Batch: MA3008
(4) Prep QC Batch: MP8890
(5) Prep QC Batch: MP8891
(6) Prep QC Batch: MP8899

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUTTINGS POST SOLIDIFICATION
Lab Sample ID: D40911-1
Matrix: SO - Soil
Project: NPU 197-19B

Date Sampled: 11/12/12
Date Received: 11/14/12
Percent Solids: 80.7

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	7910	1.0	umhos/cm	1	11/19/12	JD	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	11/15/12	KB	SW846 3060A/7196A
Chromium, Trivalent [a]	18.7	2.2	mg/kg	1	11/16/12 16:09	JM	SW846 3060/7196A M
Redox Potential Vs H2	43.3		mv	1	11/16/12	CT	ASTM D1498-76M
Solids, Percent	80.7		%	1	11/14/12	SWT	SM19 2540B M
pH	12.41		su	1	11/15/12 16:00	CT	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUTTINGS POST SOLIDIFICATION
Lab Sample ID: D40911-1A
Matrix: SO - Soil
Project: NPU 197-19B

Date Sampled: 11/12/12
Date Received: 11/14/12
Percent Solids: 80.7

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	439	2.0	mg/l	1	11/16/12	11/16/12	JM	SW846 6010C [1]	SW846 3010A/M [2]
Magnesium	< 1.0	1.0	mg/l	1	11/16/12	11/16/12	JM	SW846 6010C [1]	SW846 3010A/M [2]
Sodium	1410	2.0	mg/l	1	11/16/12	11/16/12	JM	SW846 6010C [1]	SW846 3010A/M [2]

(1) Instrument QC Batch: MA3006
(2) Prep QC Batch: MP8908

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUTTINGS POST SOLIDIFICATION		
Lab Sample ID:	D40911-1A	**Date Sampled:**	11/12/12
Matrix:	SO - Soil	**Date Received:**	11/14/12
		Percent Solids:	80.7
Project:	NPU 197-19B		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	18.5		ratio	1	11/16/12 18:59	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

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D40911-2	**Date Sampled:**	11/12/12
Matrix:	SO - Soil	**Date Received:**	11/14/12
Method:	SW846 8260B	**Percent Solids:**	68.5
Project:	NPU 197-19B		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V24631.D	1	11/15/12	BD	n/a	n/a	V5V1503
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.03 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.0779	0.096	0.048	mg/kg	J
108-88-3	Toluene	1.84	0.19	0.096	mg/kg	
100-41-4	Ethylbenzene	0.838	0.19	0.036	mg/kg	
1330-20-7	Xylene (total)	18.2	0.38	0.19	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	109%		64-130%
460-00-4	4-Bromofluorobenzene	114%		62-131%
17060-07-0	1,2-Dichloroethane-D4	94%		70-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D40911-2	**Date Sampled:**	11/12/12
Matrix:	SO - Soil	**Date Received:**	11/14/12
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	68.5
Project:	NPU 197-19B		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G12212.D	1	11/21/12	SM	11/16/12	OP6973	E3G576
Run #2							

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.012	0.0063	mg/kg	
120-12-7	Anthracene	ND	0.012	0.0063	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.012	0.0063	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.012	0.0063	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.012	0.0063	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.012	0.0063	mg/kg	
218-01-9	Chrysene	0.0365	0.012	0.0063	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.012	0.0063	mg/kg	
206-44-0	Fluoranthene	0.0380	0.012	0.0063	mg/kg	
86-73-7	Fluorene	0.432	0.012	0.0063	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.012	0.0063	mg/kg	
91-20-3	Naphthalene	2.33	0.017	0.015	mg/kg	
129-00-0	Pyrene	0.0459	0.012	0.0063	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	104%		10-159%
321-60-8	2-Fluorobiphenyl	55%		19-131%
1718-51-0	Terphenyl-d14	80%		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

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D40911-2	**Date Sampled:**	11/12/12
Matrix:	SO - Soil	**Date Received:**	11/14/12
Method:	SW846 8015B	**Percent Solids:**	68.5
Project:	NPU 197-19B		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB18472.D	1	11/14/12	SK	n/a	n/a	GGB1008
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	306	19	9.6	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	116%		60-140%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D40911-2	**Date Sampled:**	11/12/12
Matrix:	SO - Soil	**Date Received:**	11/14/12
Method:	SW846-8015B SW846 3546	**Percent Solids:**	68.5
Project:	NPU 197-19B		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD19663.D	1	11/17/12	AV	11/15/12	OP6966	GFD986
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	2300	19	13	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	94%		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: RP POST SOLIDIFICATION
Lab Sample ID: D40911-2
Matrix: SO - Soil
Project: NPU 197-19B

Date Sampled: 11/12/12
Date Received: 11/14/12
Percent Solids: 68.5

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.8	0.14	mg/kg	5	11/15/12	11/17/12	JM	SW846 6020A [3]	SW846 3050B [5]
Barium	9410	7.2	mg/kg	5	11/15/12	11/17/12	JM	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 1.4	1.4	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Chromium	15.8	1.4	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Copper	14.6	1.4	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Lead	< 7.2	7.2	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.11	0.11	mg/kg	1	11/16/12	11/16/12	JM	SW846 7471B [1]	SW846 7471B [6]
Nickel	128	4.3	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 7.2	7.2	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Silver	< 4.3	4.3	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]
Zinc	23.7	4.3	mg/kg	1	11/15/12	11/16/12	JM	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA3005
(2) Instrument QC Batch: MA3006
(3) Instrument QC Batch: MA3008
(4) Prep QC Batch: MP8890
(5) Prep QC Batch: MP8891
(6) Prep QC Batch: MP8899

RL = Reporting Limit

Report of Analysis

Client Sample ID: RP POST SOLIDIFICATION
Lab Sample ID: D40911-2
Matrix: SO - Soil
Project: NPU 197-19B

Date Sampled: 11/12/12
Date Received: 11/14/12
Percent Solids: 68.5

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	12300	1.0	umhos/cm	1	11/19/12	JD	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	11/15/12	KB	SW846 3060A/7196A
Chromium, Trivalent [a]	15.8	2.4	mg/kg	1	11/16/12 16:19	JM	SW846 3060/7196A M
Redox Potential Vs H2	3.5		mv	1	11/16/12	CT	ASTM D1498-76M
Solids, Percent	68.5		%	1	11/14/12	SWT	SM19 2540B M
pH	12.44		su	1	11/15/12 16:00	CT	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: RP POST SOLIDIFICATION
Lab Sample ID: D40911-2A
Matrix: SO - Soil
Project: NPU 197-19B

Date Sampled: 11/12/12
Date Received: 11/14/12
Percent Solids: 68.5

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	1000	2.0	mg/l	1	11/16/12	11/16/12	JM	SW846 6010C [1]	SW846 3010A/M [2]
Magnesium	< 1.0	1.0	mg/l	1	11/16/12	11/16/12	JM	SW846 6010C [1]	SW846 3010A/M [2]
Sodium	1360	2.0	mg/l	1	11/16/12	11/16/12	JM	SW846 6010C [1]	SW846 3010A/M [2]

(1) Instrument QC Batch: MA3006
(2) Prep QC Batch: MP8908

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D40911-2A	**Date Sampled:**	11/12/12
Matrix:	SO - Soil	**Date Received:**	11/14/12
		Percent Solids:	68.5
Project:	NPU 197-19B		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	11.8		ratio	1	11/16/12 19:09	JM	USDA HANDBOOK 60

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

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

PAGE 1 OF 1

ACCUTEST LABORATORIES

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

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: D40911

Client / Reporting Information

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

Project Information

Project Name: XTO NPL 197-19B
Street:
City: State:
Project #: 1202-08
Client Purchase Order #:
Project Manager: Joe Hess

Billing Information (if different from Report to)

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

Requested Analysis (see TEST CODE sheet)

T-910

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

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bisulfate	T-910	LAB USE ONLY
	CUTTINGS POST SOLIDIFICATN		11-12-12	14:10	DS	SO	5					X					X	01
	RP POST SOLIDIFICATION		11-12-12	14:15	DS	SO	5					X					X	02

DR 11/14

Turnaround Time (Business days)

- [ ] Std. 10 Business Days
- [x] Std. 5 Business Days (By contract only)
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ] Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

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

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

Comments / Special Instructions

Please email to: KRW Piceance Team

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

1 Relinquished by Sampler: Tori Allison	Date Time: 11/13/12 16:30	Received By: 1 Rifle Service Center	2 Relinquished By:	Date Time:	Received By: 2	4/14 1200
3 Relinquished by Sampler:	Date Time:	Received By: 3	4 Relinquished By:	Date Time:	Received By: 4	
5 Relinquished by:	Date Time:	Received By: 5	Custody Seal # 4060	[x] Intact [ ] Not Intact	Preserved where applicable [ ]	On Ice [x]	Cooler Temp. 3.1

D40911: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D40911 **Client:** KRW CONSULTING **Immediate Client Services Action Required:** No

Date / Time Received: 11/14/2012 12:00:00 P **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: XTO NPU 197-19B **Airbill #'s:** HDCO

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

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

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

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

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

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

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www/accutest.com

D40911: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1503-MB	5V24624.D	1	11/15/12	BD	n/a	n/a	V5V1503

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

D40911-1, D40911-2

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

CAS No.	Surrogate Recoveries		Limits
2037-26-5	Toluene-D8	102%	64-130%
460-00-4	4-Bromofluorobenzene	95%	62-131%
17060-07-0	1,2-Dichloroethane-D4	97%	70-130%

Blank Spike Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1503-BS	5V24625.D	1	11/15/12	BD	n/a	n/a	V5V1503

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

D40911-1, D40911-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.1	96	70-130
100-41-4	Ethylbenzene	50	50.8	102	70-130
108-88-3	Toluene	50	49.4	99	70-130
1330-20-7	Xylene (total)	150	156	104	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	102%	64-130%
460-00-4	4-Bromofluorobenzene	98%	62-131%
17060-07-0	1,2-Dichloroethane-D4	98%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D40910-1MS	5V24627.D	1	11/15/12	BD	n/a	n/a	V5V1503
D40910-1MSD	5V24628.D	1	11/15/12	BD	n/a	n/a	V5V1503
D40910-1	5V24626.D	1	11/15/12	BD	n/a	n/a	V5V1503

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

D40911-1, D40911-2

CAS No.	Compound	D40910-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	162		3570	3350	89	3520	94	5	64-139/30
100-41-4	Ethylbenzene	197		3570	3570	95	3740	99	5	68-136/30
108-88-3	Toluene	845		3570	3970	88	4100	91	3	60-130/30
1330-20-7	Xylene (total)	926		10700	11200	96	11800	102	5	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D40910-1	Limits
2037-26-5	Toluene-D8	101%	100%	102%	64-130%
460-00-4	4-Bromofluorobenzene	106%	108%	102%	62-131%
17060-07-0	1,2-Dichloroethane-D4	97%	96%	94%	70-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 11/19/12 10:00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
Data File : 5V24630.D
Acq On : 15 Nov 2012 5:07 pm
Operator : BRETD
Sample : D40911-1
Misc : MS4976,V5V1503,5.041,,100,5,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 16 09:40:32 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:54:38 2012
Response via : Initial Calibration

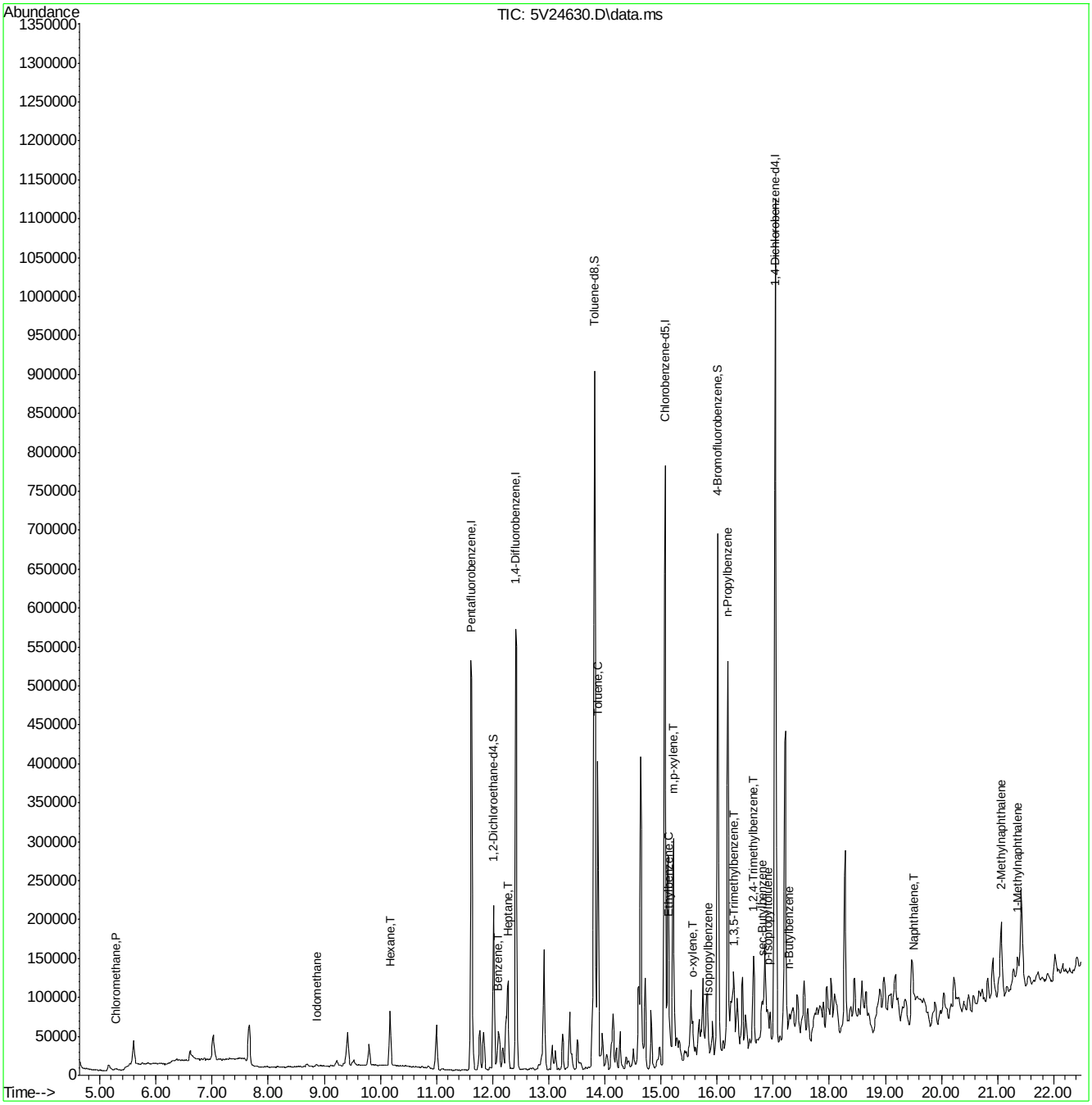
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.624	168	417400	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.412	114	512006	50.00	ug/l	-0.01
53) Chlorobenzene-d5	15.072	117	466386	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.036	152	353315	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.012	102	33971	47.82	ug/l	-0.01
Spiked Amount 50.000	Range 70 - 130		Recovery = 95.64%			
61) Toluene-d8	13.816	98	564826	51.12	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 102.24%			
69) 4-Bromofluorobenzene	16.008	95	246056	51.67	ug/l	-0.01
Spiked Amount 50.000	Range 70 - 130		Recovery = 103.34%			
Target Compounds						Qvalue
4) Chloromethane	5.276	50	1371	0.29	ug/l	82
12) Iodomethane	8.873	142	2742	0.73	ug/l #	79
41) Hexane	10.174	57	35803	7.71	ug/l	100
43) Heptane	12.275	43	46354	8.69	ug/l	89
50) Benzene	12.092	78	40926	3.01	ug/l	100
62) Toluene	13.873	92	108914	12.64	ug/l	98
66) Ethylbenzene	15.141	91	48734	2.96	ug/l	97
68) Isopropylbenzene	15.849	105	4421	0.26	ug/l	98
72) m,p-xylene	15.221	106	88483	13.40	ug/l	97
73) o-xylene	15.563	106	11557	1.77	ug/l	88
77) n-Propylbenzene	16.191	91	18689	0.88	ug/l	100
80) 1,3,5-Trimethylbenzene	16.305	105	24530m	1.52	ug/l	
82) 1,2,4-Trimethylbenzene	16.648	105	56691	3.36	ug/l	91
83) sec-Butylbenzene	16.808	105	5290	0.24	ug/l #	75
86) p-Isopropyltoluene	16.899	119	22912m	1.18	ug/l	
88) n-Butylbenzene	17.287	91	12442m	0.69	ug/l	
91) Naphthalene	19.513	128	30872	1.76	ug/l	100
94) 2-Methylnaphthalene	21.055	142	44018	9.10	ug/l #	91
95) 1-Methylnaphthalene	21.351	142	23028m	3.48	ug/l	

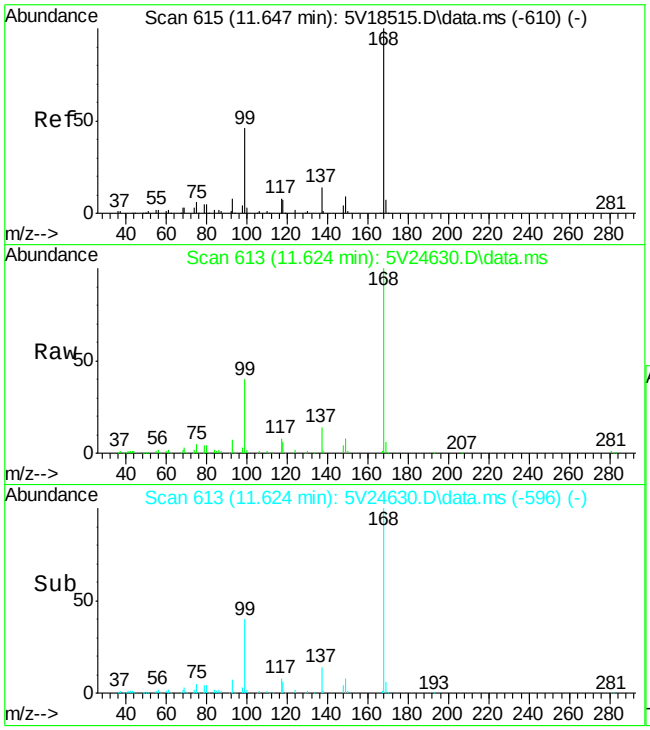
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
Data File : 5V24630.D
Acq On : 15 Nov 2012 5:07 pm
Operator : BRETD
Sample : D40911-1
Misc : MS4976,V5V1503,5.041,,100,5,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 16 09:40:32 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:54:38 2012
Response via : Initial Calibration

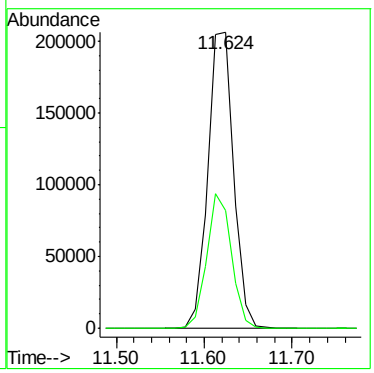


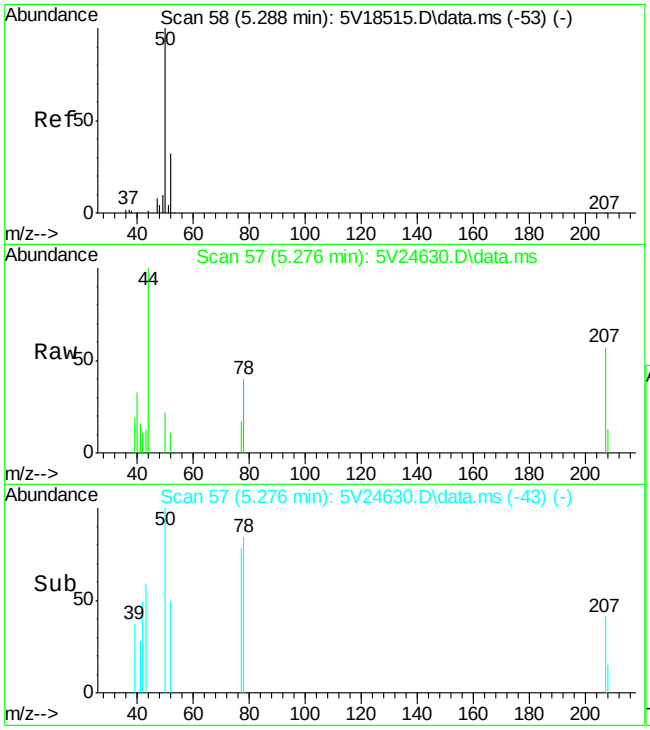


#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.624 min Scan# 613
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:168 Resp: 417400

Ion	Ratio	Lower	Upper
168	100		
99	43.4	37.4	56.2

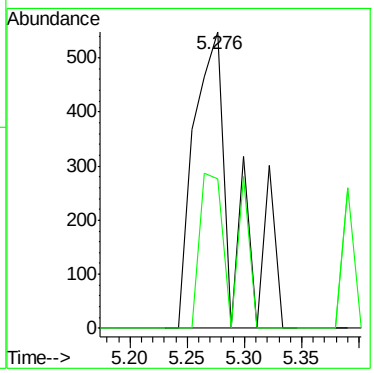


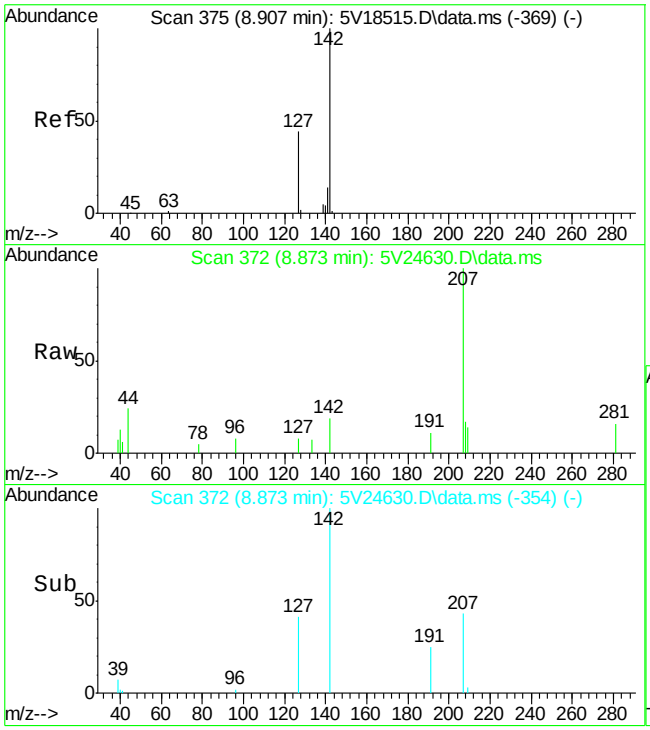


#4
Chloromethane
Concen: 0.29 ug/l
RT: 5.276 min Scan# 57
Delta R.T. 0.011 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion: 50 Resp: 1371

Ion	Ratio	Lower	Upper
50	100		
52	42.2	12.1	52.1

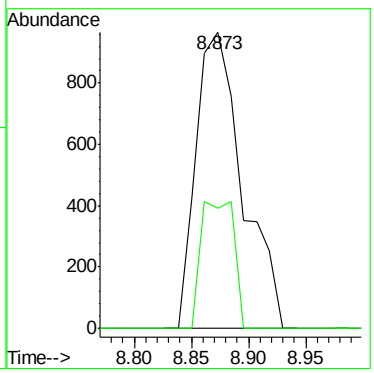


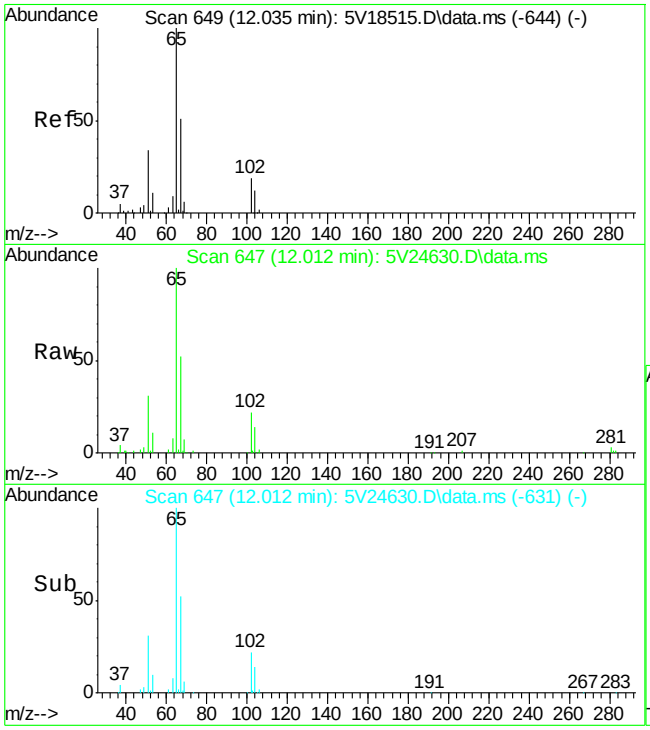


#12
Iodomethane
Concen: 0.73 ug/l
RT: 8.873 min Scan# 372
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:142 Resp: 2742

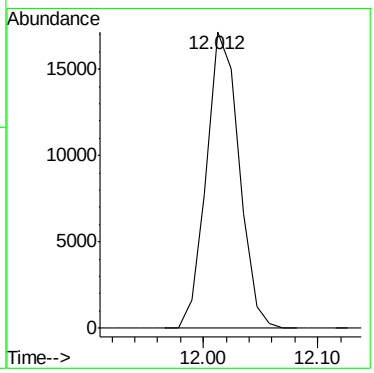
Ion	Ratio	Lower	Upper
142	100		
127	30.6	35.4	53.0#

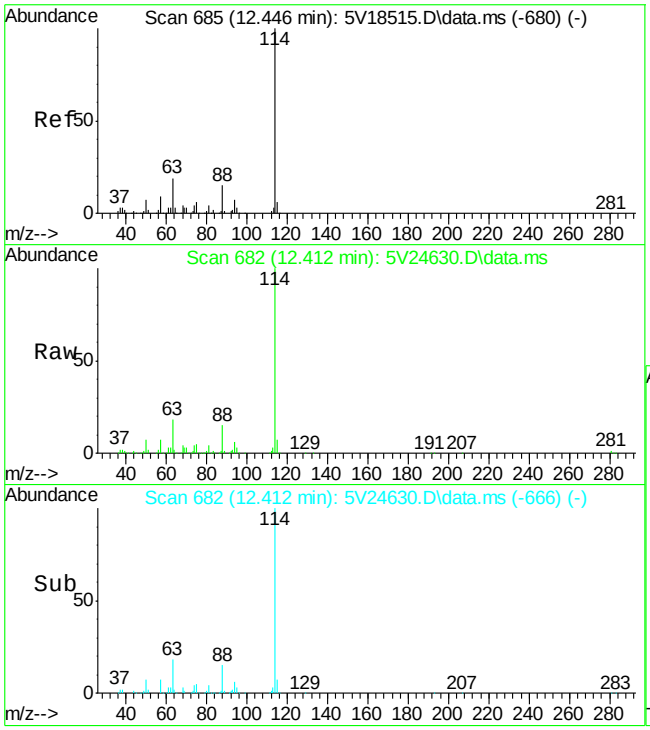




#33
1,2-Dichloroethane-d4
Concen: 47.82 ug/l
RT: 12.012 min Scan# 647
Delta R.T. -0.012 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

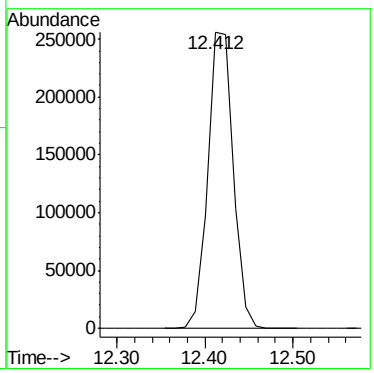
Tgt Ion:102 Resp: 33971

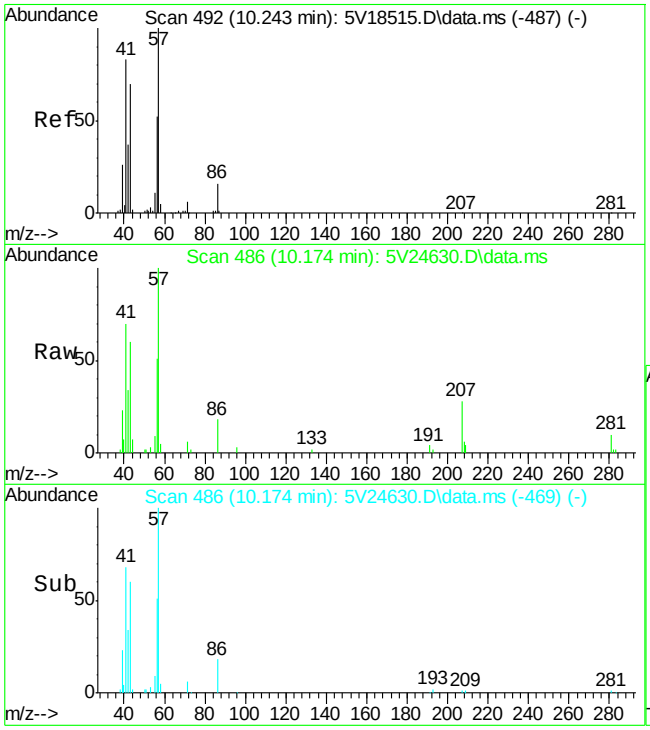




#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.412 min Scan# 682
Delta R.T. -0.012 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

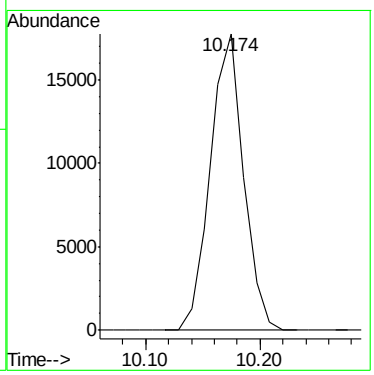
Tgt Ion:114 Resp: 512006

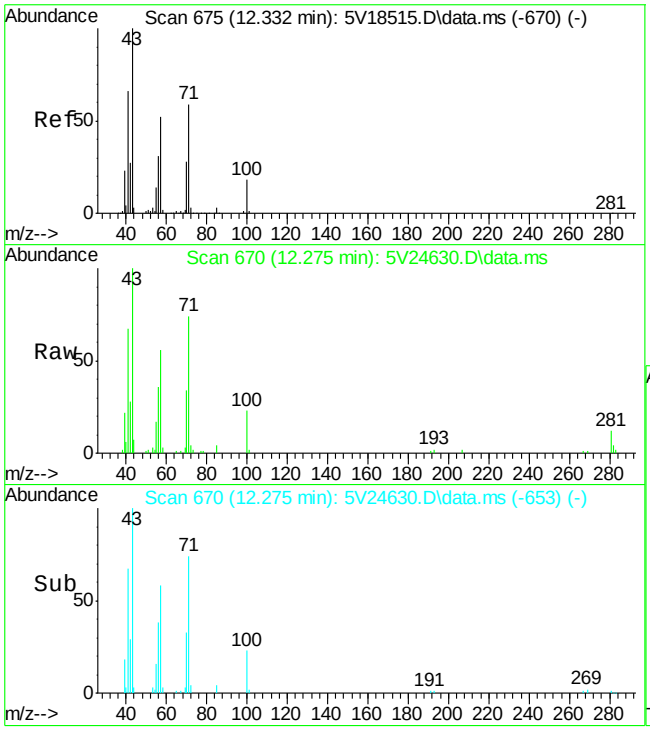




#41
Hexane
Concen: 7.71 ug/l
RT: 10.174 min Scan# 486
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion: 57 Resp: 35803

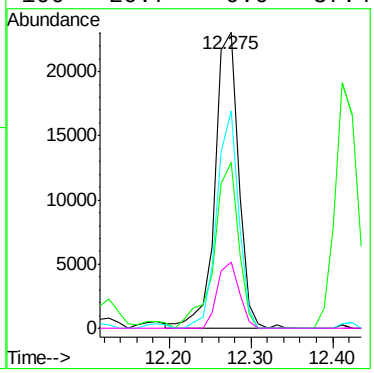


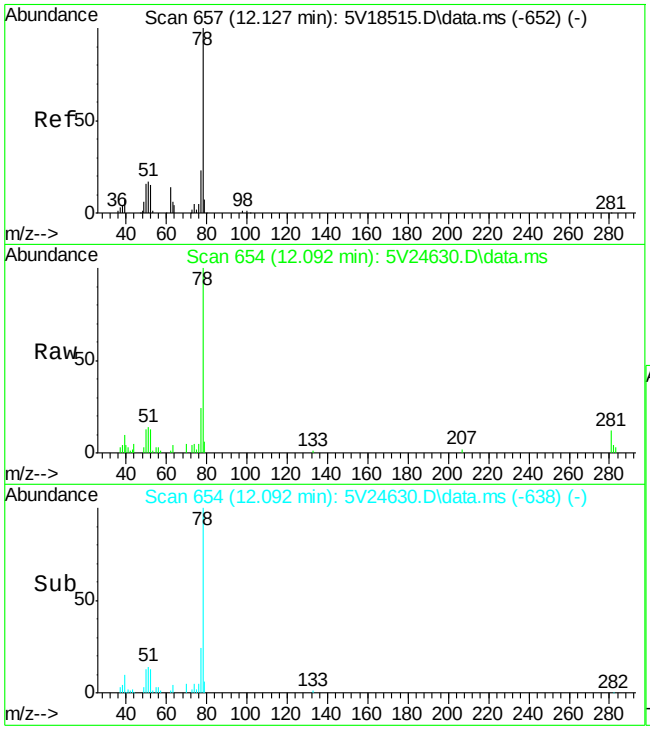


#43
Heptane
Concen: 8.69 ug/l
RT: 12.275 min Scan# 670
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion: 43 Resp: 46354

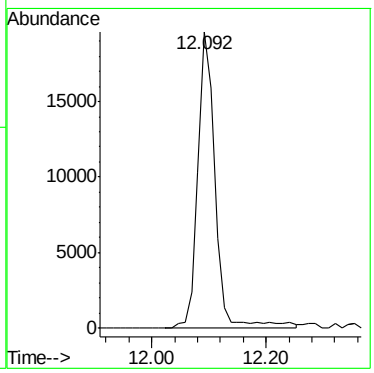
Ion	Ratio	Lower	Upper
43	100		
57	58.0	30.6	70.6
71	67.8	38.9	78.9
100	20.7	0.0	37.4

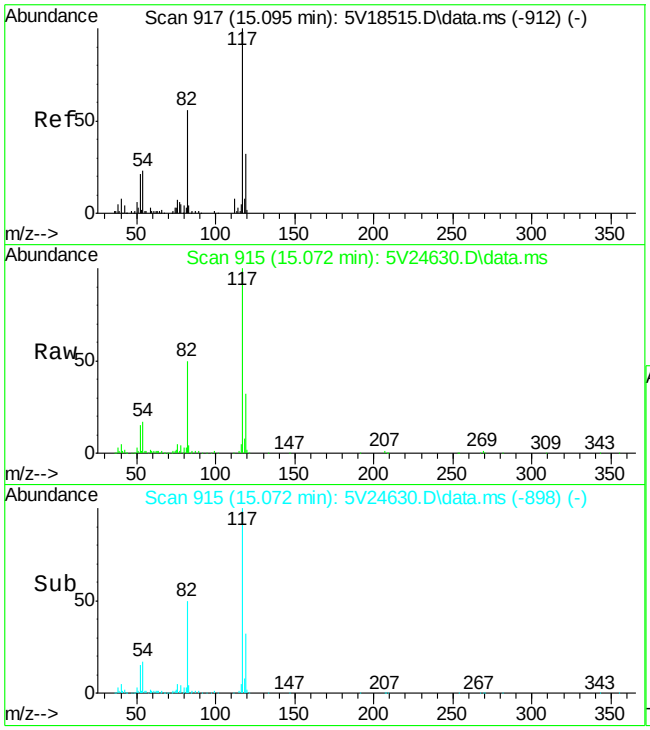




#50
Benzene
Concen: 3.01 ug/l
RT: 12.092 min Scan# 654
Delta R.T. -0.012 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

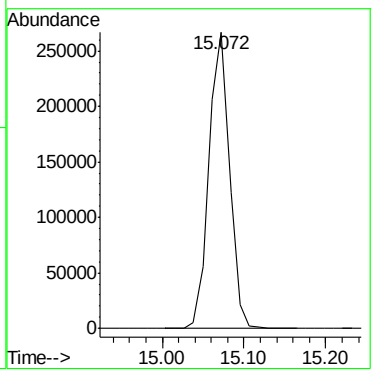
Tgt Ion: 78 Resp: 40926

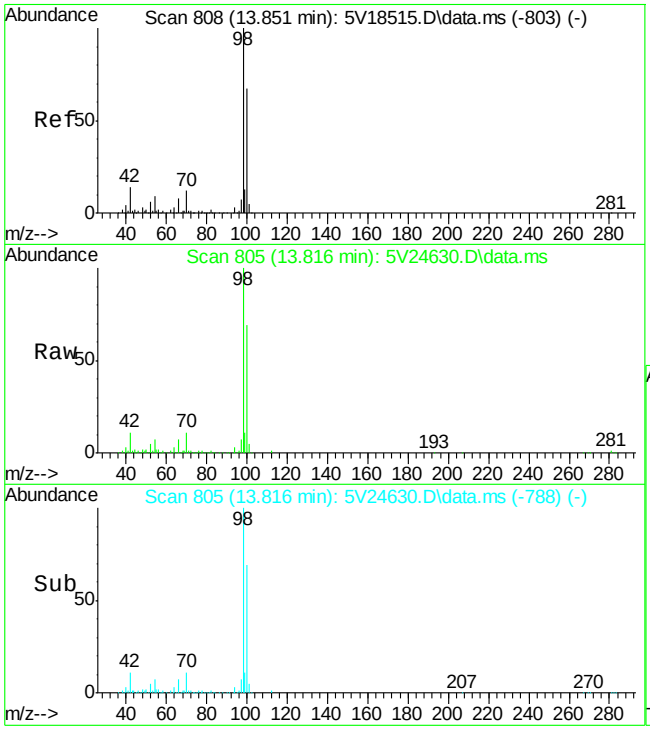




#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.072 min Scan# 915
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

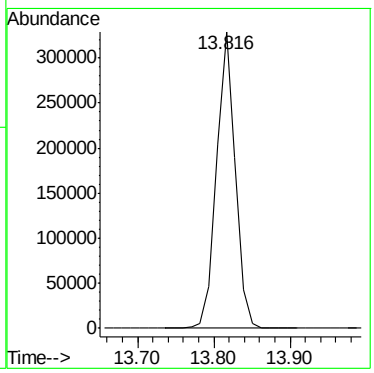
Tgt Ion:117 Resp: 466386

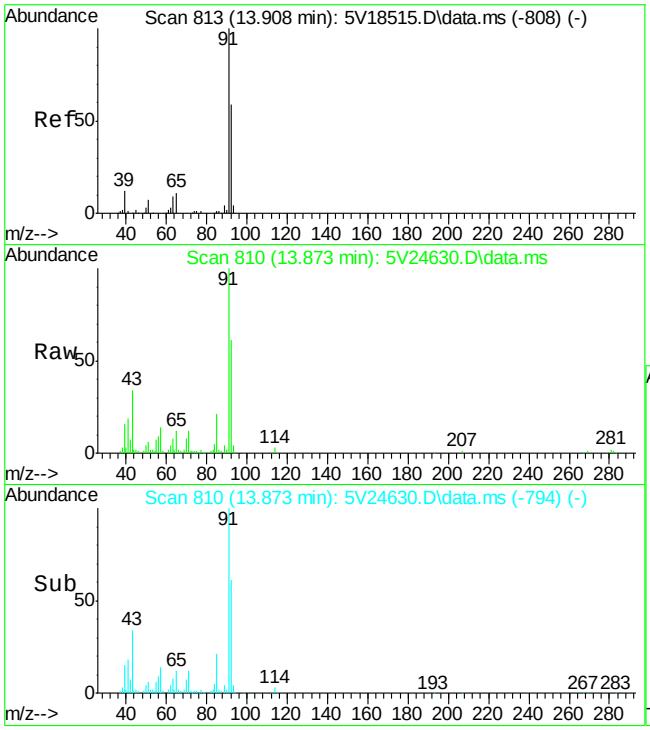




#61
Toluene-d8
Concen: 51.12 ug/l
RT: 13.816 min Scan# 805
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion: 98 Resp: 564826

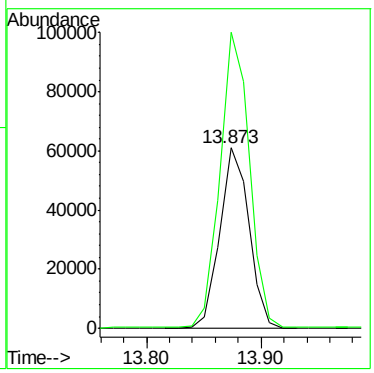


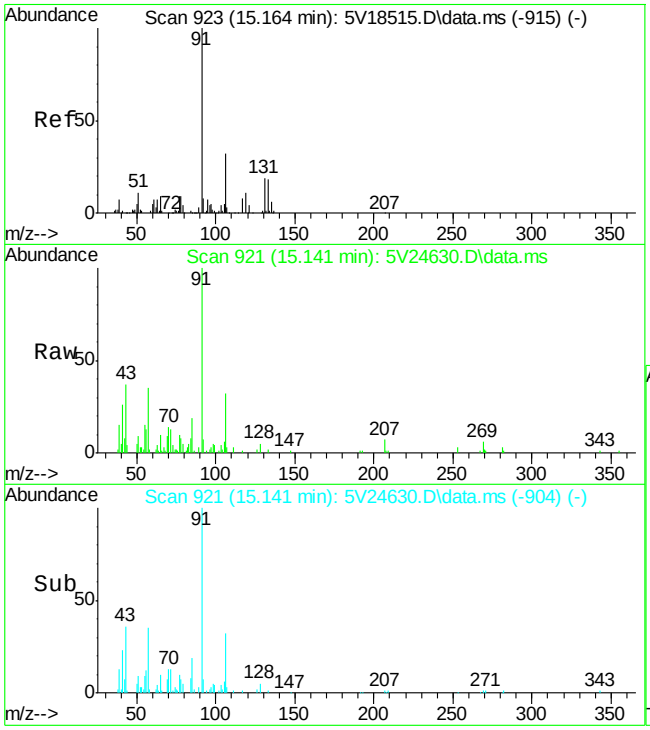


#62
Toluene
Concen: 12.64 ug/l
RT: 13.873 min Scan# 810
Delta R.T. -0.012 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion: 92 Resp: 108914

Ion	Ratio	Lower	Upper
92	100		
91	167.4	149.8	189.8

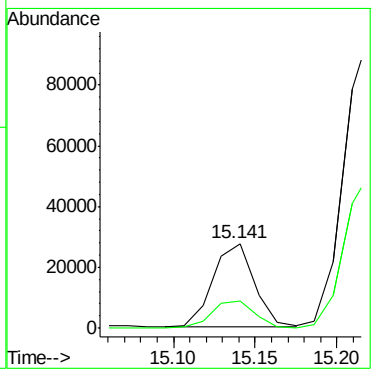


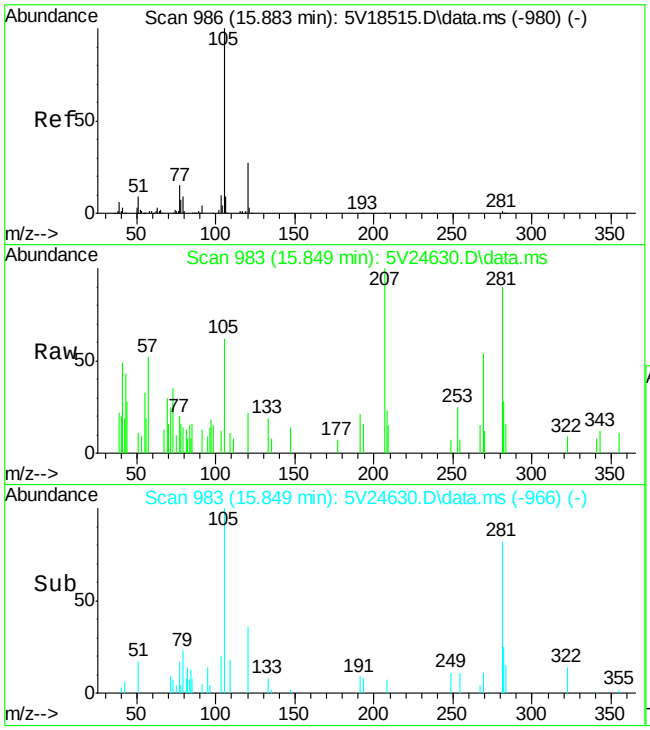


#66
Ethylbenzene
Concen: 2.96 ug/l
RT: 15.141 min Scan# 921
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion: 91 Resp: 48734

Ion	Ratio	Lower	Upper
91	100		
106	33.5	11.7	51.7

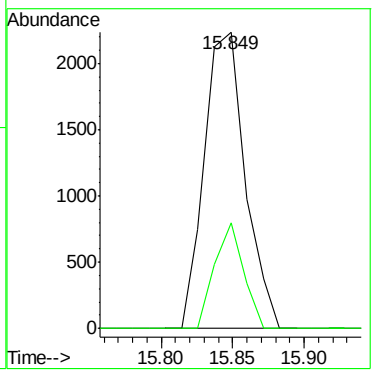


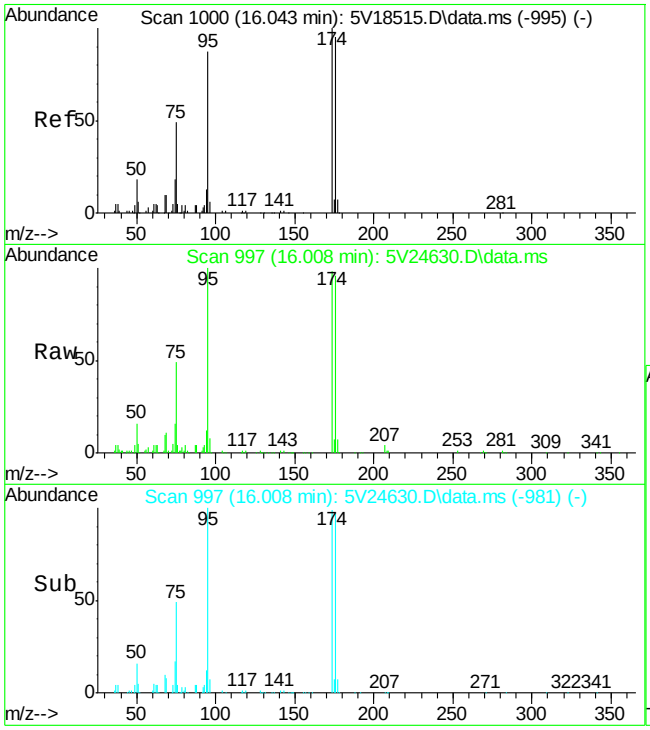


#68
Isopropylbenzene
Concen: 0.26 ug/l
RT: 15.849 min Scan# 983
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:105 Resp: 4421

Ion	Ratio	Lower	Upper
105	100		
120	25.3	21.0	31.4

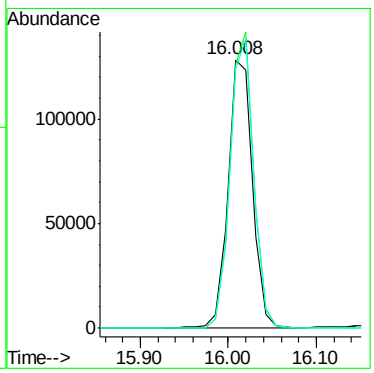


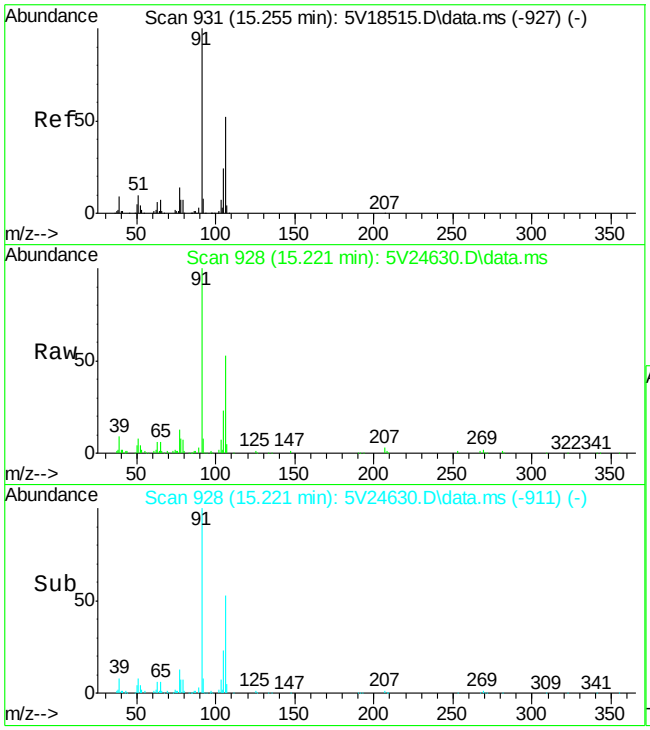


#69
4-Bromofluorobenzene
Concen: 51.67 ug/l
RT: 16.008 min Scan# 997
Delta R.T. -0.012 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion: 95 Resp: 246056

Ion	Ratio	Lower	Upper
95	100		
174	105.8	77.1	117.1
176	104.1	73.4	113.4

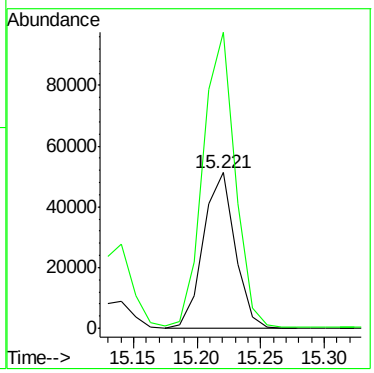


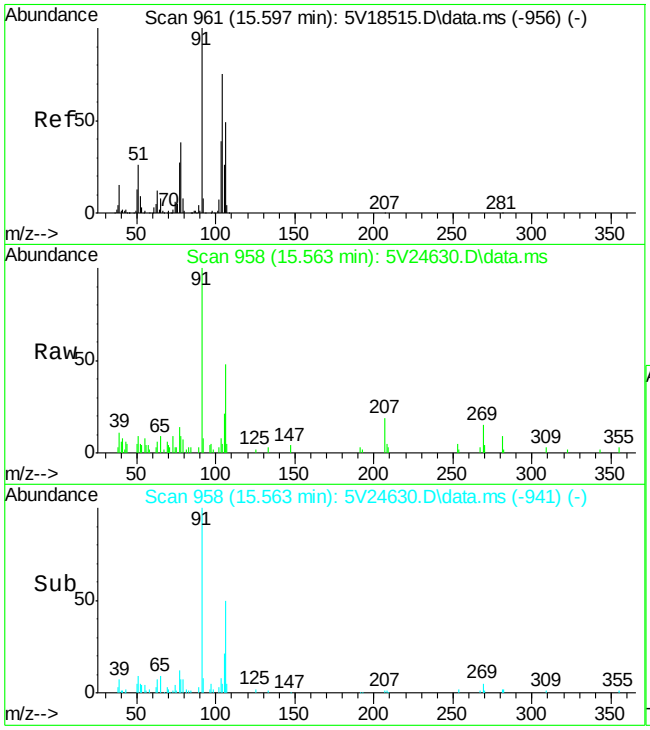


#72
m,p-xylene
Concen: 13.40 ug/l
RT: 15.221 min Scan# 928
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:106 Resp: 88483

Ion	Ratio	Lower	Upper
106	100		
91	192.3	177.1	217.1

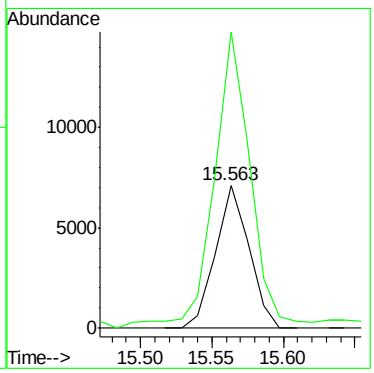


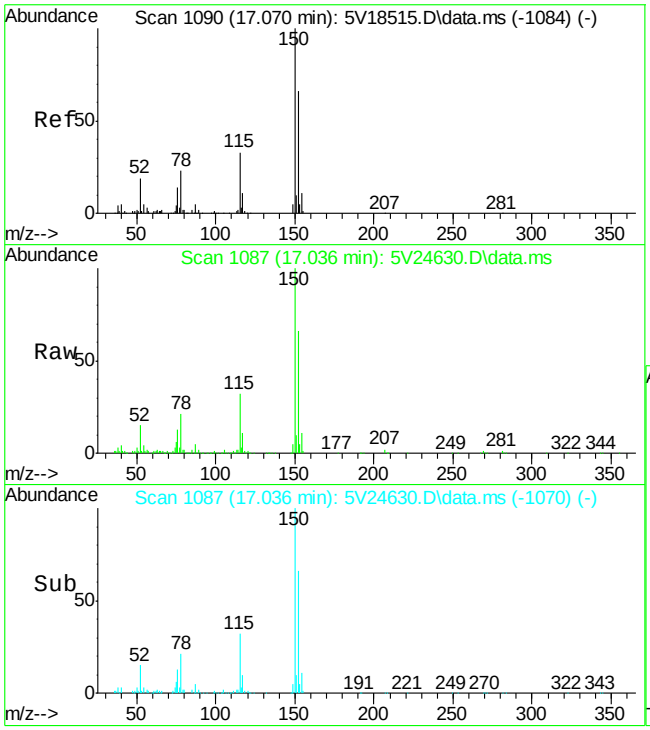


#73
o-xylene
Concen: 1.77 ug/l
RT: 15.563 min Scan# 958
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:106 Resp: 11557

Ion	Ratio	Lower	Upper
106	100		
91	226.9	166.6	249.8

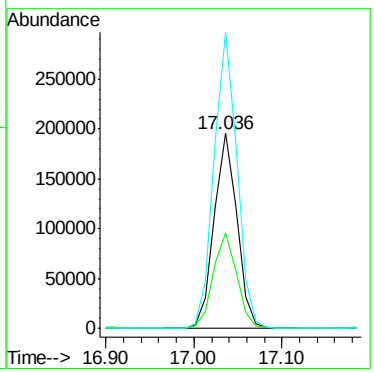


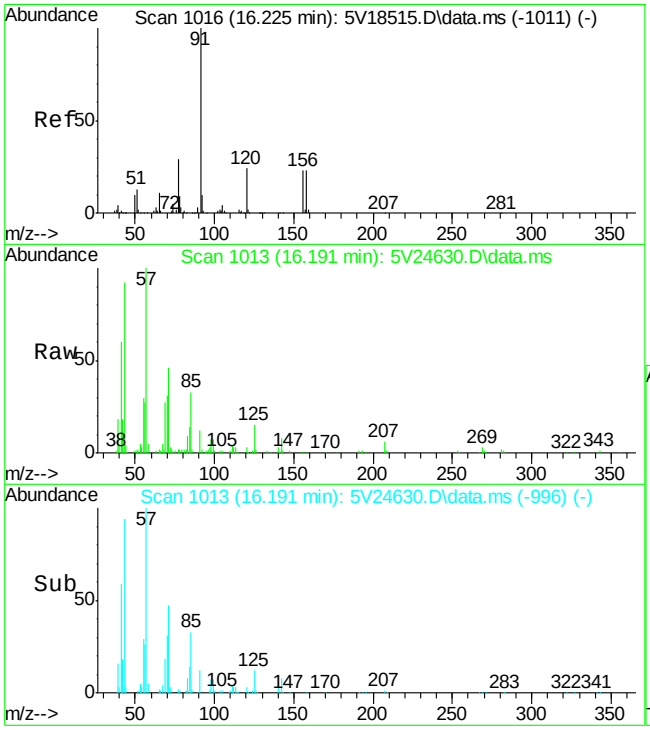


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.036 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:152 Resp: 353315

Ion	Ratio	Lower	Upper
152	100		
115	50.8	41.4	62.0
150	152.4	153.9	230.9#

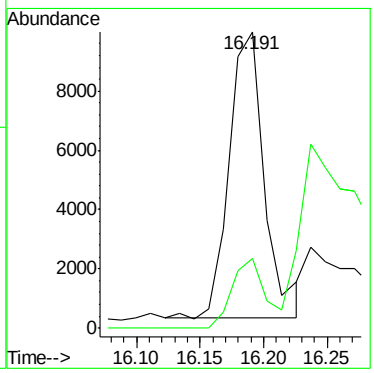


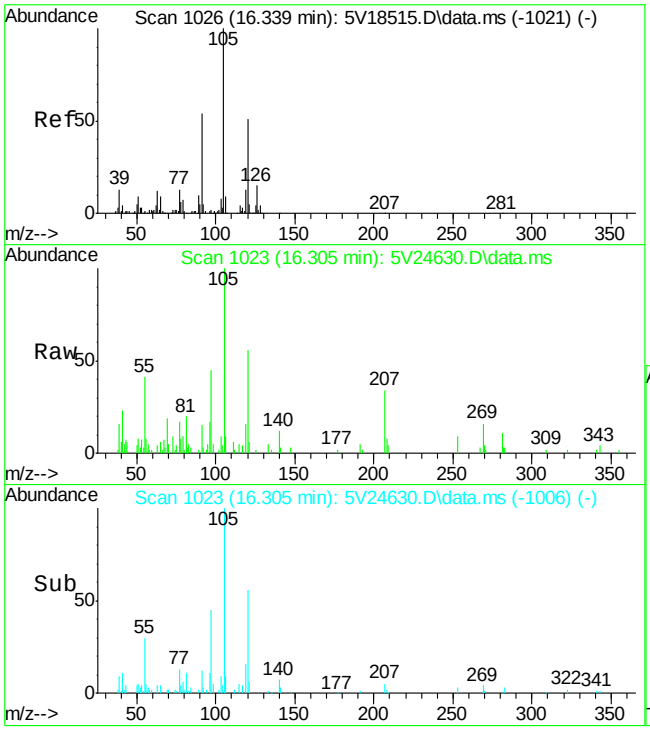


#77
n-Propylbenzene
Concen: 0.88 ug/l
RT: 16.191 min Scan# 1013
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion: 91 Resp: 18689

Ion	Ratio	Lower	Upper
91	100		
120	23.1	18.6	27.8

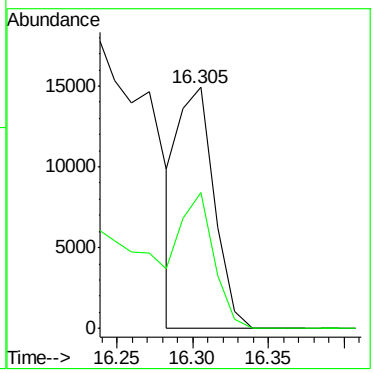


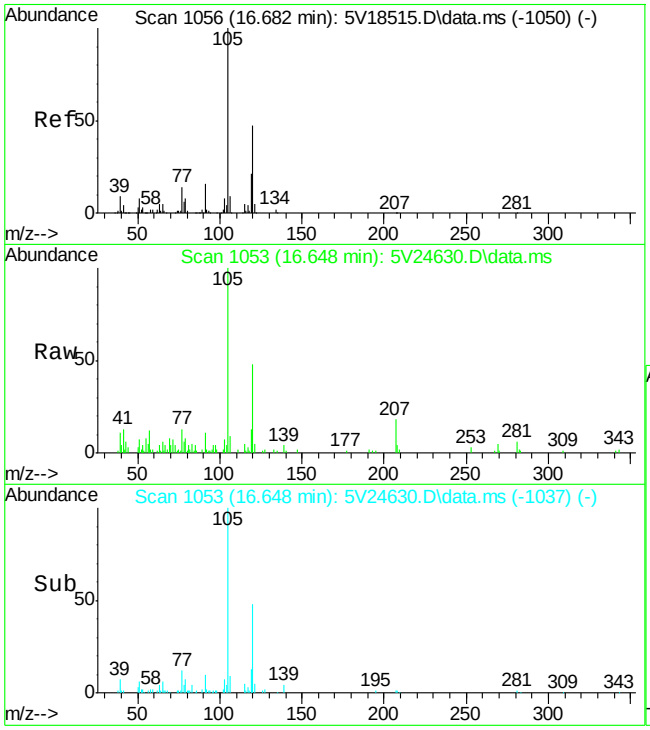


#80
1,3,5-Trimethylbenzene
Concen: 1.52 ug/l m
RT: 16.305 min Scan# 1023
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:105 Resp: 24530

Ion	Ratio	Lower	Upper
105	100		
120	76.3	40.1	60.1#

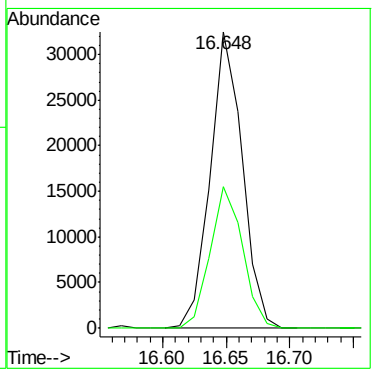


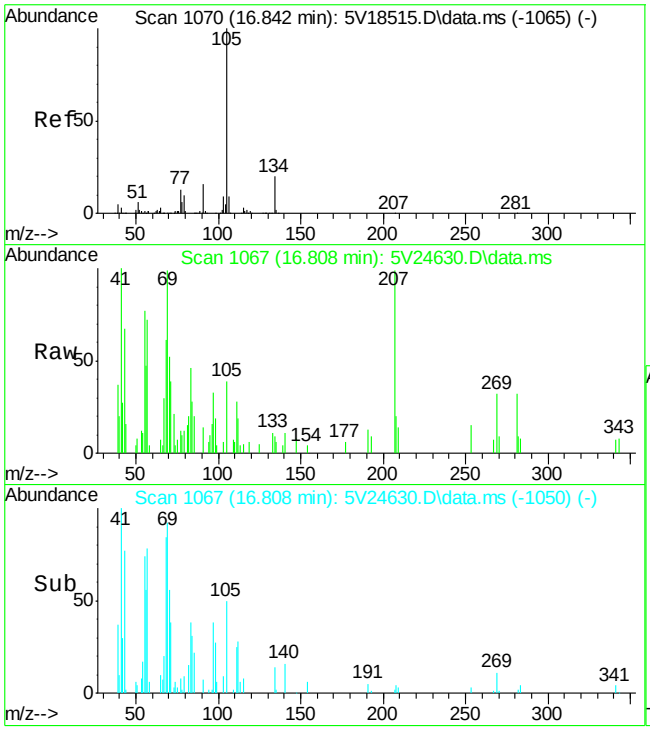


#82
1,2,4-Trimethylbenzene
Concen: 3.36 ug/l
RT: 16.648 min Scan# 1053
Delta R.T. -0.012 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:105 Resp: 56691

Ion	Ratio	Lower	Upper
105	100		
120	48.1	43.8	65.8

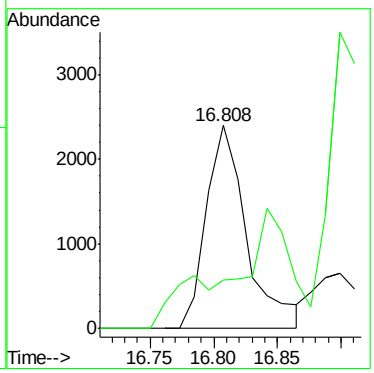


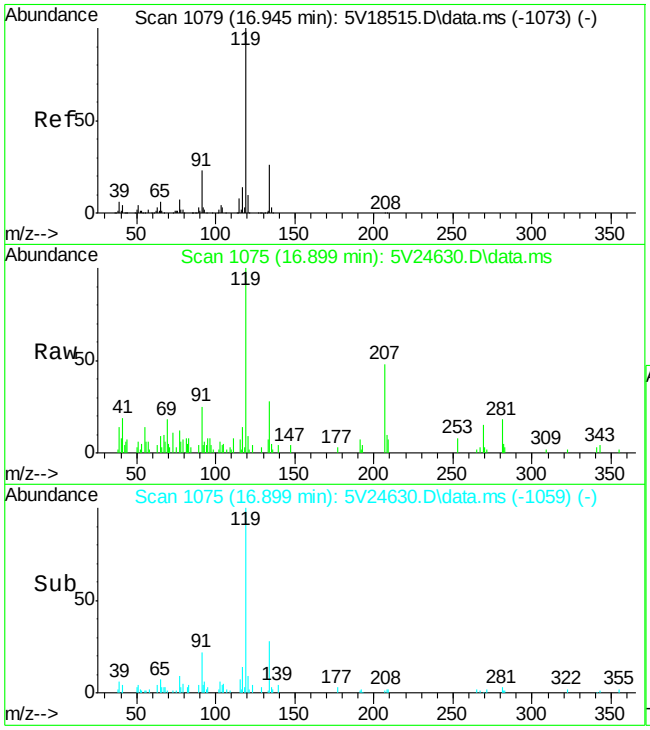


#83
sec-Butylbenzene
Concen: 0.24 ug/l
RT: 16.808 min Scan# 1067
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:105 Resp: 5290

Ion	Ratio	Lower	Upper
105	100		
134	32.2	16.5	24.7#

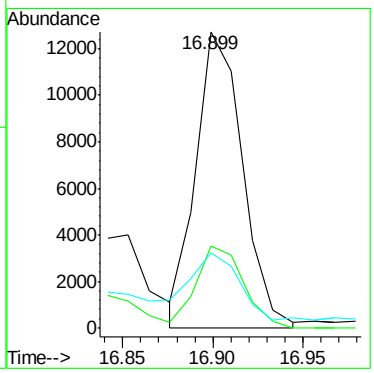


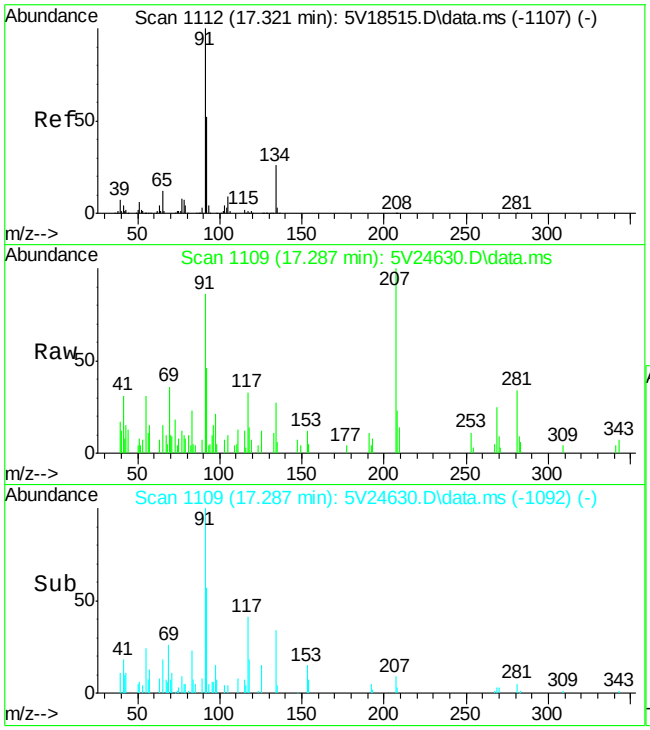


#86
p-Isopropyltoluene
Concen: 1.18 ug/l m
RT: 16.899 min Scan# 1075
Delta R.T. -0.012 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:119 Resp: 22912

Ion	Ratio	Lower	Upper
119	100		
134	28.0	21.3	31.9
91	25.8	19.0	28.6

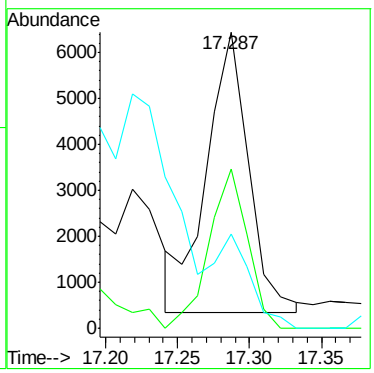


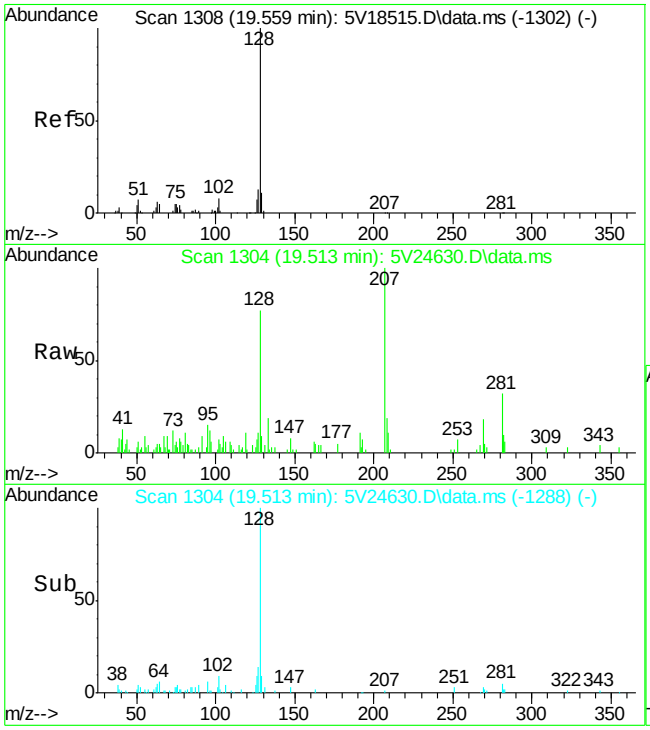


#88
n-Butylbenzene
Concen: 0.69 ug/l m
RT: 17.287 min Scan# 1109
Delta R.T. -0.000 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion: 91 Resp: 12442

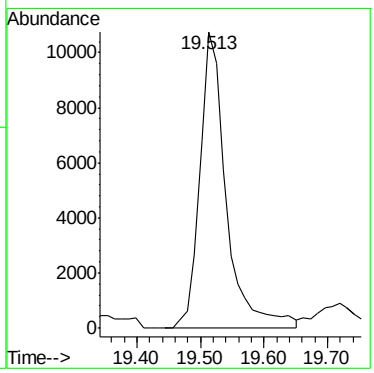
Ion	Ratio	Lower	Upper
91	100		
92	51.6	42.2	63.4
134	0.0	21.4	32.2#

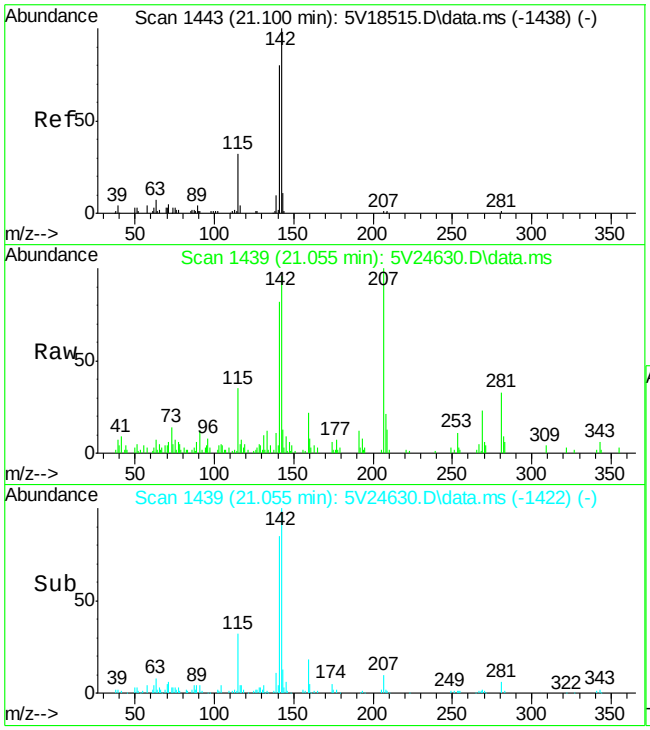




#91
Naphthalene
Concen: 1.76 ug/l
RT: 19.513 min Scan# 1304
Delta R.T. -0.012 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:128 Resp: 30872

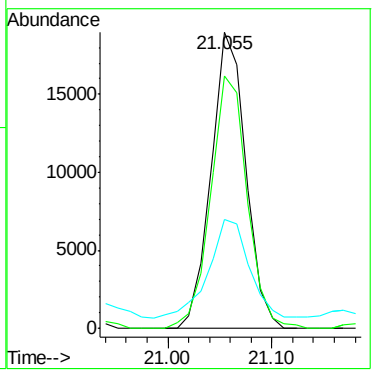


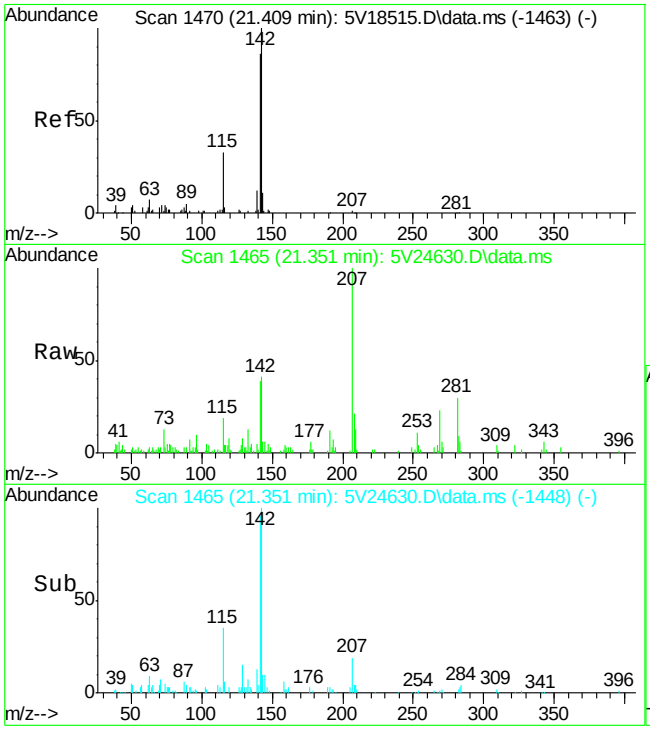


#94
2-Methylnaphthalene
Concen: 9.10 ug/l
RT: 21.055 min Scan# 1439
Delta R.T. -0.011 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:142 Resp: 44018

Ion	Ratio	Lower	Upper
142	100		
141	90.0	66.2	99.4
115	39.5	25.9	38.9#

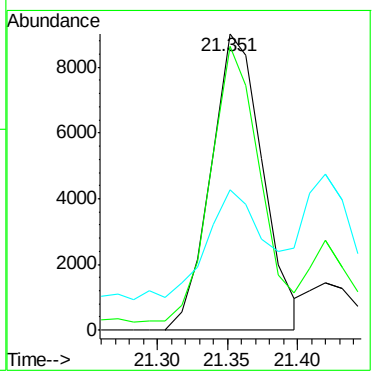




#95
1-Methylnaphthalene
Concen: 3.48 ug/l m
RT: 21.351 min Scan# 1465
Delta R.T. -0.012 min
Lab File: 5V24630.D
Acq: 15 Nov 2012 5:07 pm

Tgt Ion:142 Resp: 23028

Ion	Ratio	Lower	Upper
142	100		
141	95.9	68.9	103.3
115	47.3	27.3	40.9#



Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 11/19/12 10:00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
Data File : 5V24631.D
Acq On : 15 Nov 2012 5:40 pm
Operator : BRETD
Sample : D40911-2
Misc : MS4976,V5V1503,5.033,,100,5,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 16 09:55:42 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:54:38 2012
Response via : Initial Calibration

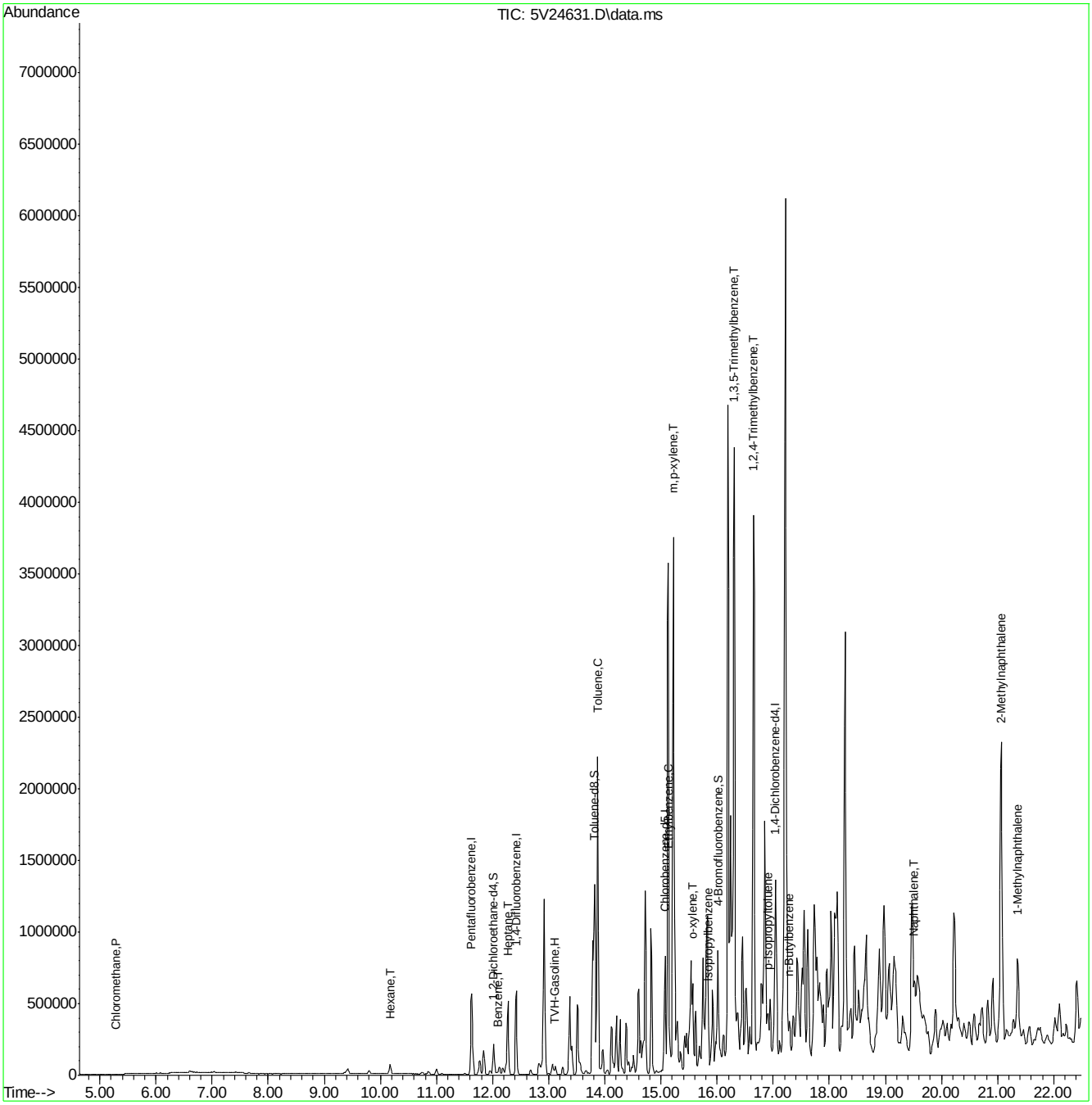
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.624	168	423945	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.424	114	513814	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.072	117	487248	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.036	152	399305	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.012	102	34088	47.24	ug/l	-0.01
Spiked Amount 50.000	Range 70 - 130		Recovery = 94.48%			
61) Toluene-d8	13.816	98	631599	54.72	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 109.44%			
69) 4-Bromofluorobenzene	16.020	95	283851m	57.06	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 114.12%			
Target Compounds						Qvalue
1) TVH-Gasoline	13.102	TIC	75967446m	2426.37	ug/l	
4) Chloromethane	5.277	50	1493	0.32	ug/l	87
41) Hexane	10.174	57	33490	7.19	ug/l	100
43) Heptane	12.275	43	194648	36.35	ug/l	88
50) Benzene	12.092	78	11127	0.82	ug/l	100
62) Toluene	13.873	92	173652	19.29	ug/l	98
66) Ethylbenzene	15.141	91	150716	8.77	ug/l	97
68) Isopropylbenzene	15.849	105	70232	3.99	ug/l	99
72) m,p-xylene	15.221	106	1142159	165.58	ug/l	96
73) o-xylene	15.563	106	171099	25.02	ug/l	97
80) 1,3,5-Trimethylbenzene	16.305	105	2437173	133.95	ug/l	98
82) 1,2,4-Trimethylbenzene	16.648	105	2372133	124.54	ug/l	93
86) p-Isopropyltoluene	16.910	119	171177	7.80	ug/l	97
88) n-Butylbenzene	17.287	91	96843	4.73	ug/l #	76
91) Naphthalene	19.513	128	488389	24.67	ug/l	100
94) 2-Methylnaphthalene	21.055	142	1335512	114.69	ug/l	98
95) 1-Methylnaphthalene	21.352	142	324023	32.29	ug/l #	93

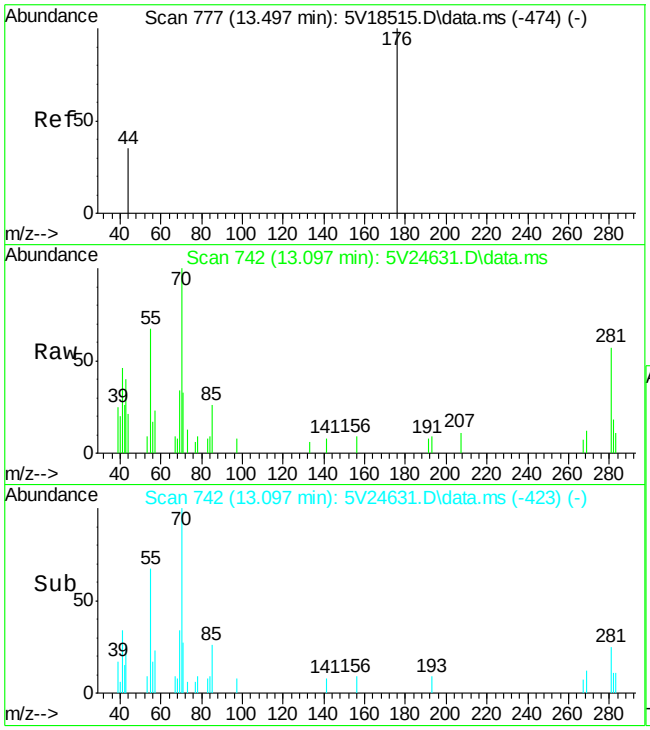
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
Data File : 5V24631.D
Acq On : 15 Nov 2012 5:40 pm
Operator : BRETD
Sample : D40911-2
Misc : MS4976,V5V1503,5.033,,100,5,1
ALS Vial : 15 Sample Multiplier: 1

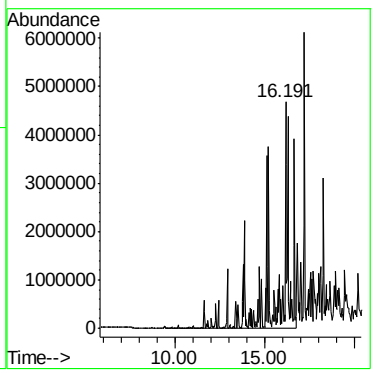
Quant Time: Nov 16 09:55:42 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:54:38 2012
Response via : Initial Calibration

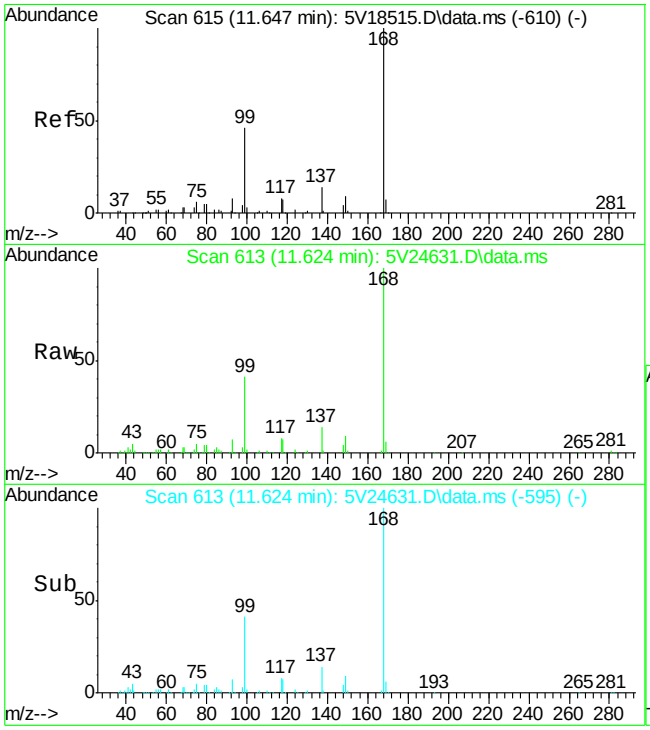




#1
TVH-Gasoline
Concen: 2426.37 ug/l m
RT: 13.102 min Scan# 742
Delta R.T. 0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:TIC Resp:75967446

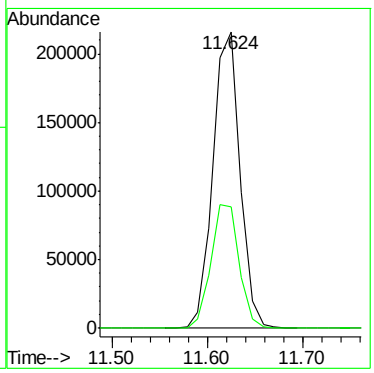


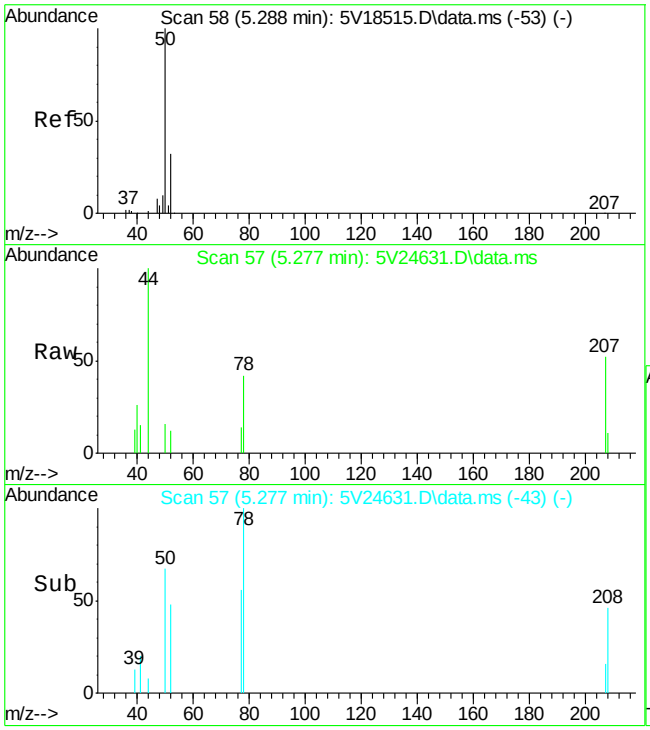


#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.624 min Scan# 613
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:168 Resp: 423945

Ion	Ratio	Lower	Upper
168	100		
99	43.4	37.4	56.2

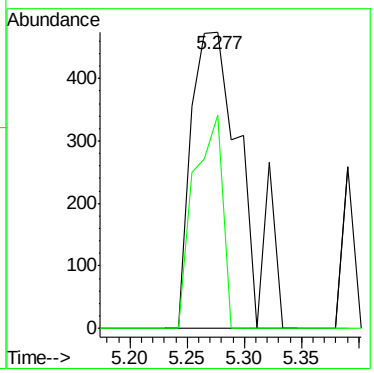


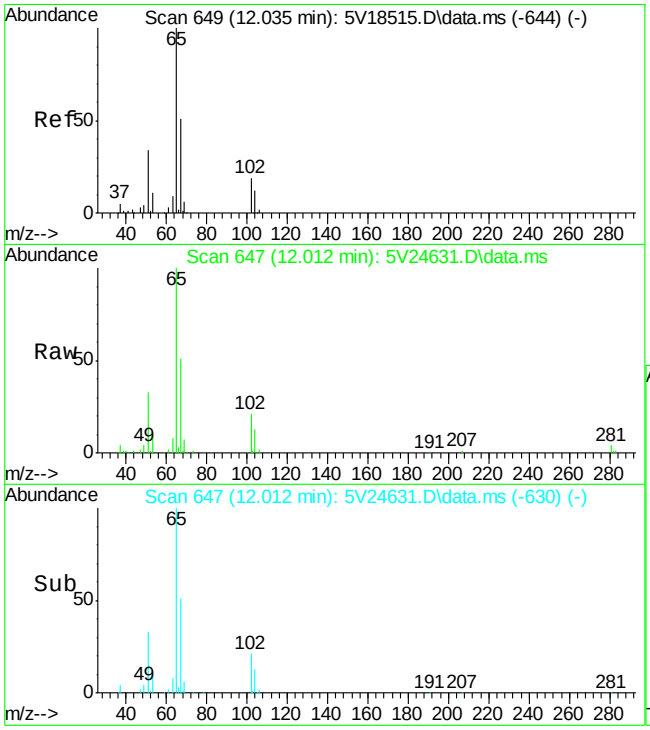


#4
Chloromethane
Concen: 0.32 ug/l
RT: 5.277 min Scan# 57
Delta R.T. 0.012 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion: 50 Resp: 1493

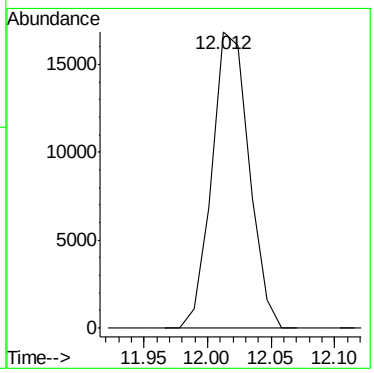
Ion	Ratio	Lower	Upper
50	100		
52	39.6	12.1	52.1

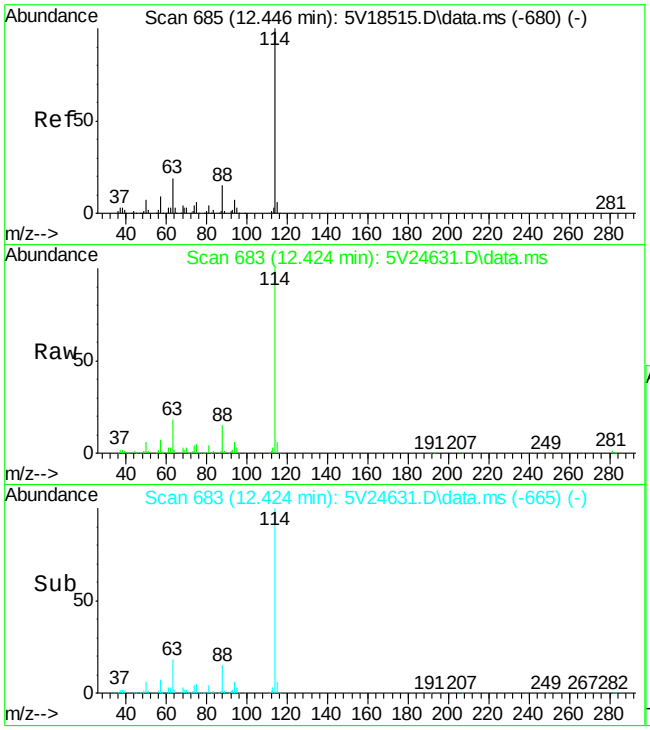




#33
1,2-Dichloroethane-d4
Concen: 47.24 ug/l
RT: 12.012 min Scan# 647
Delta R.T. -0.012 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

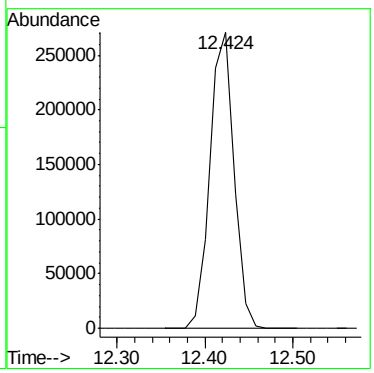
Tgt Ion:102 Resp: 34088

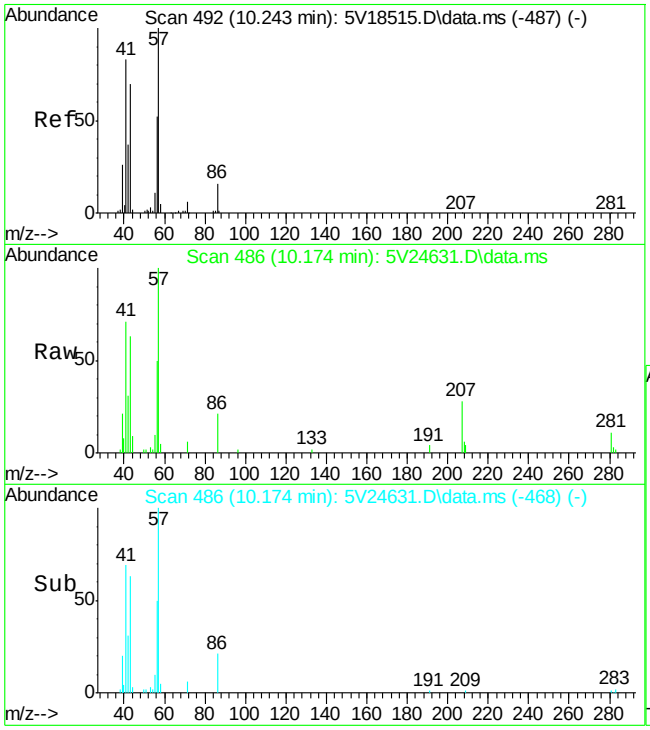




#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.424 min Scan# 683
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

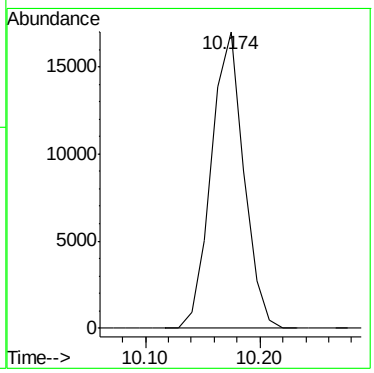
Tgt Ion:114 Resp: 513814

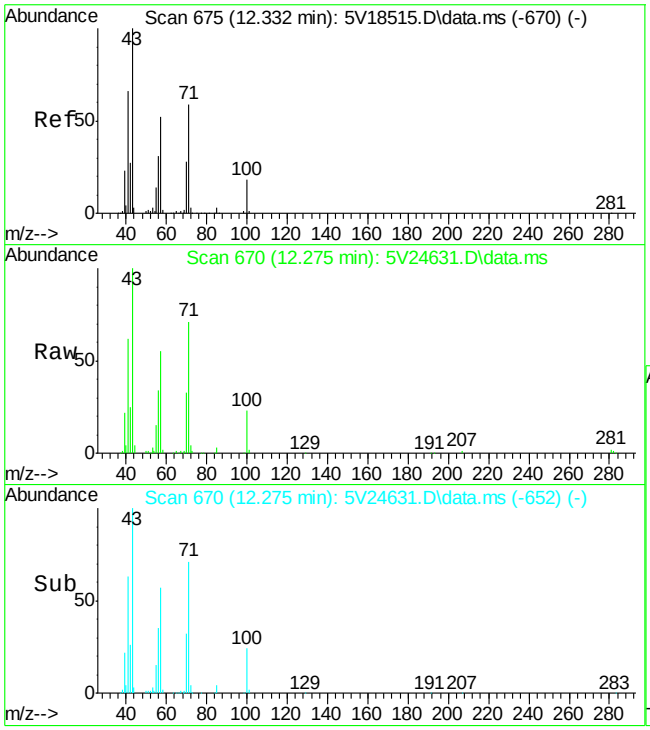




#41
Hexane
Concen: 7.19 ug/l
RT: 10.174 min Scan# 486
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion: 57 Resp: 33490

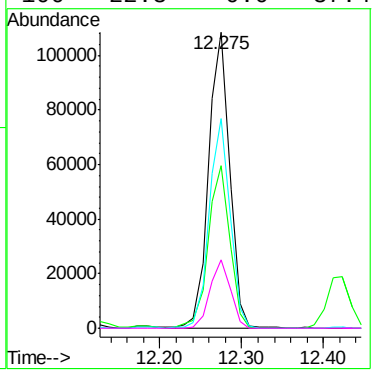


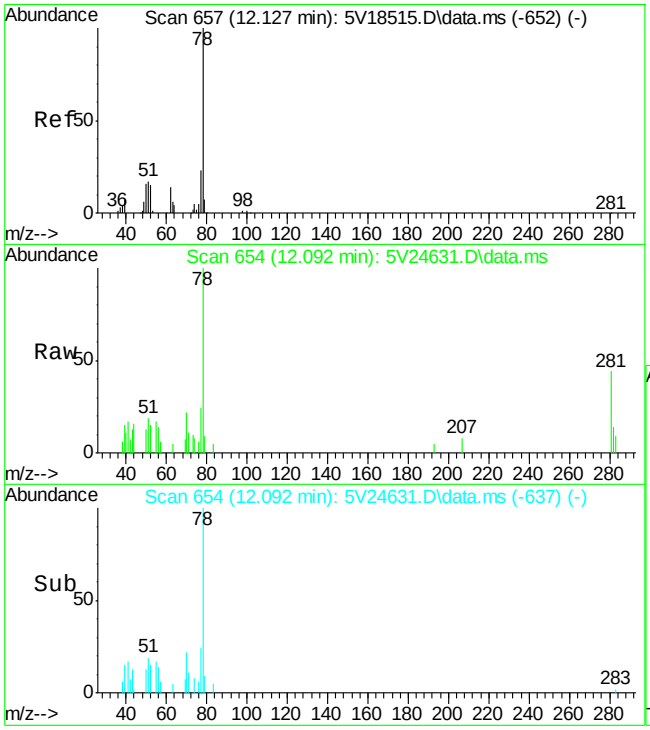


#43
Heptane
Concen: 36.35 ug/l
RT: 12.275 min Scan# 670
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion: 43 Resp: 194648

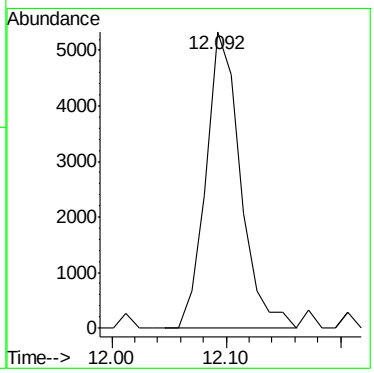
Ion	Ratio	Lower	Upper
43	100		
57	56.3	30.6	70.6
71	69.9	38.9	78.9
100	22.3	0.0	37.4

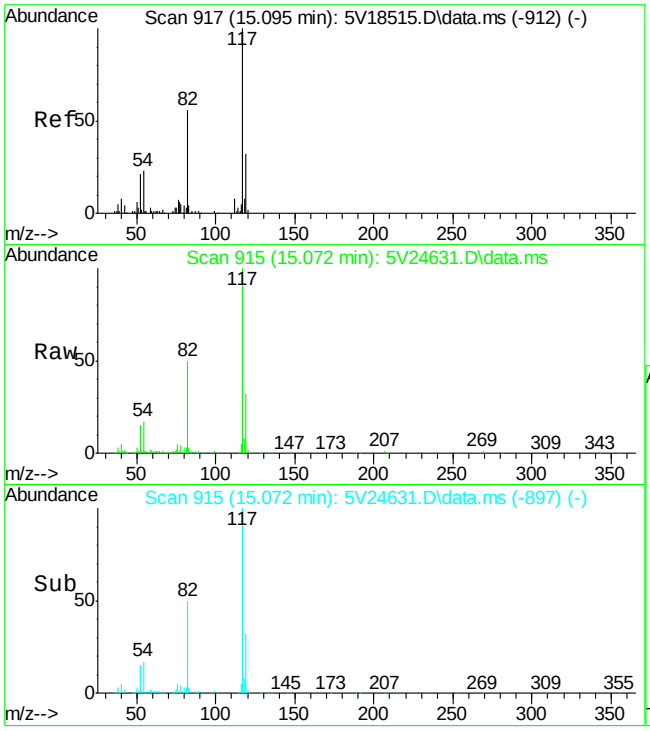




#50
Benzene
Concen: 0.82 ug/l
RT: 12.092 min Scan# 654
Delta R.T. -0.012 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

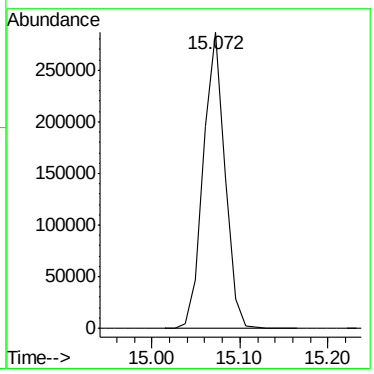
Tgt Ion: 78 Resp: 11127

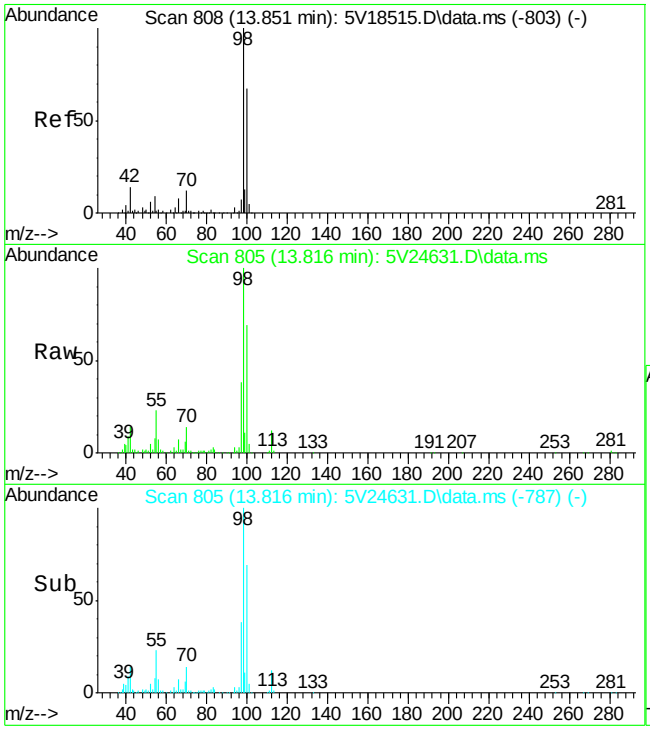




#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.072 min Scan# 915
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

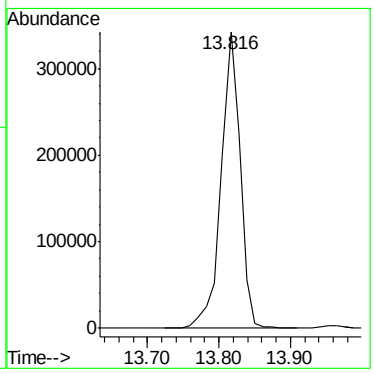
Tgt Ion:117 Resp: 487248

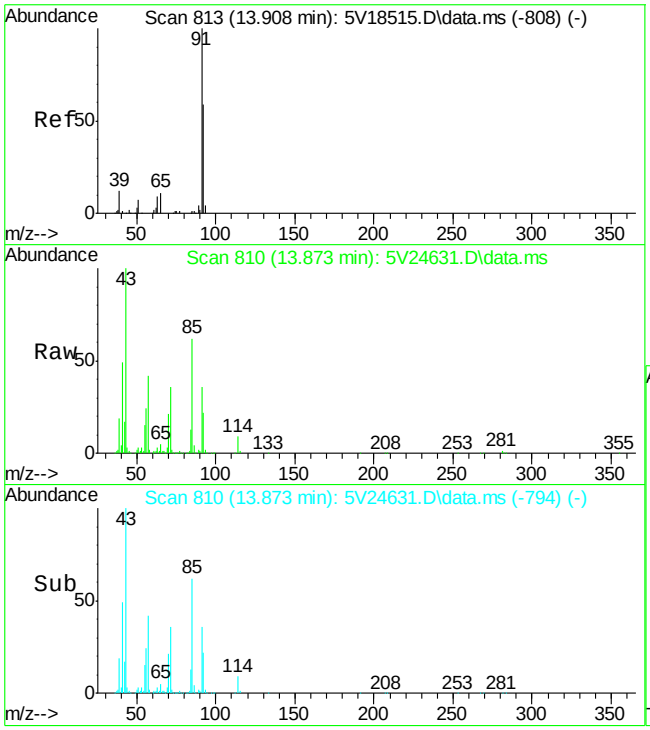




#61
Toluene-d8
Concen: 54.72 ug/l
RT: 13.816 min Scan# 805
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion: 98 Resp: 631599

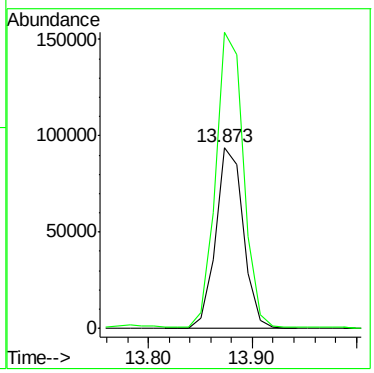


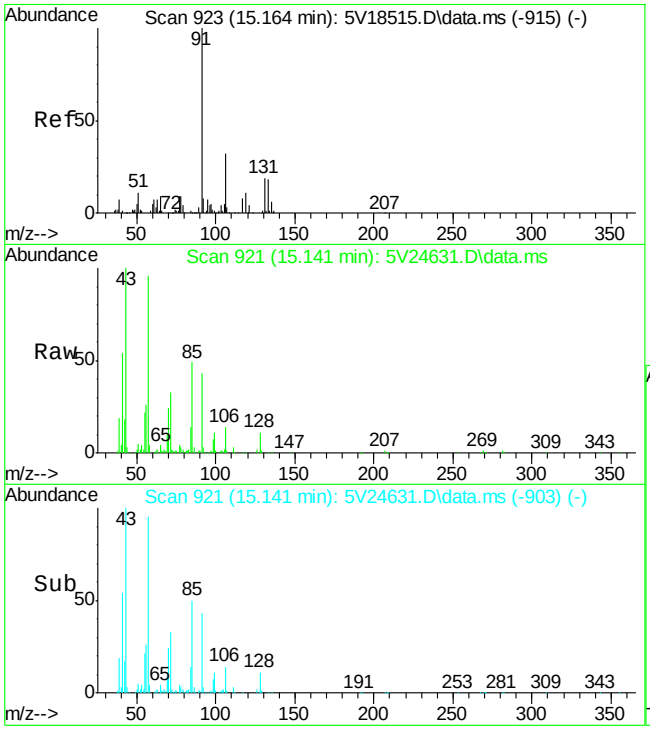


#62
Toluene
Concen: 19.29 ug/l
RT: 13.873 min Scan# 810
Delta R.T. -0.012 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion: 92 Resp: 173652

Ion	Ratio	Lower	Upper
92	100		
91	167.1	149.8	189.8

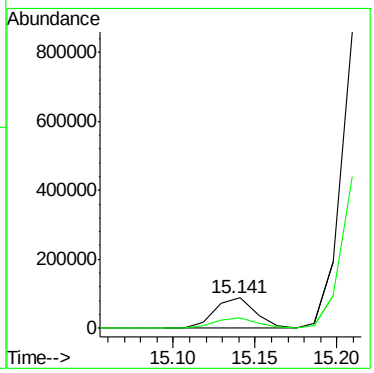


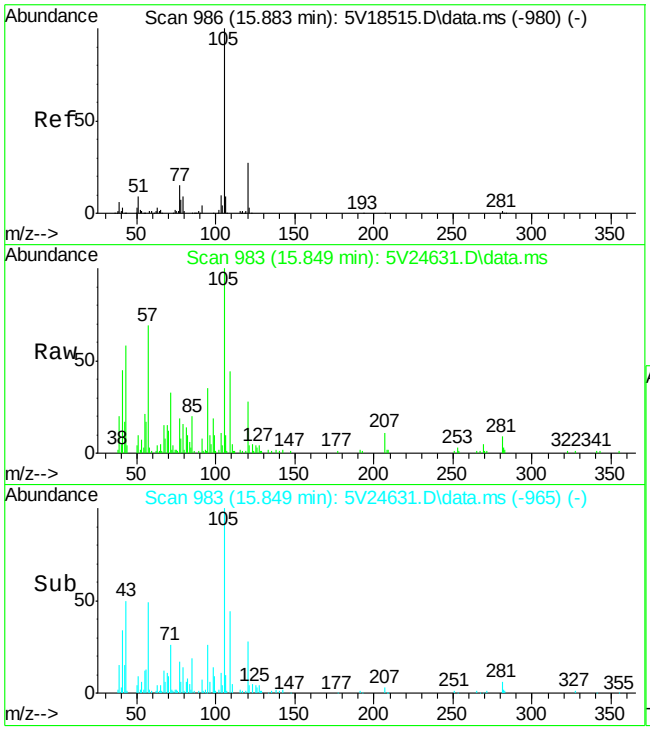


#66
Ethylbenzene
Concen: 8.77 ug/l
RT: 15.141 min Scan# 921
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion: 91 Resp: 150716

Ion	Ratio	Lower	Upper
91	100		
106	33.4	11.7	51.7

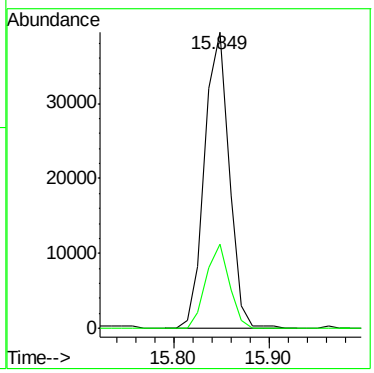


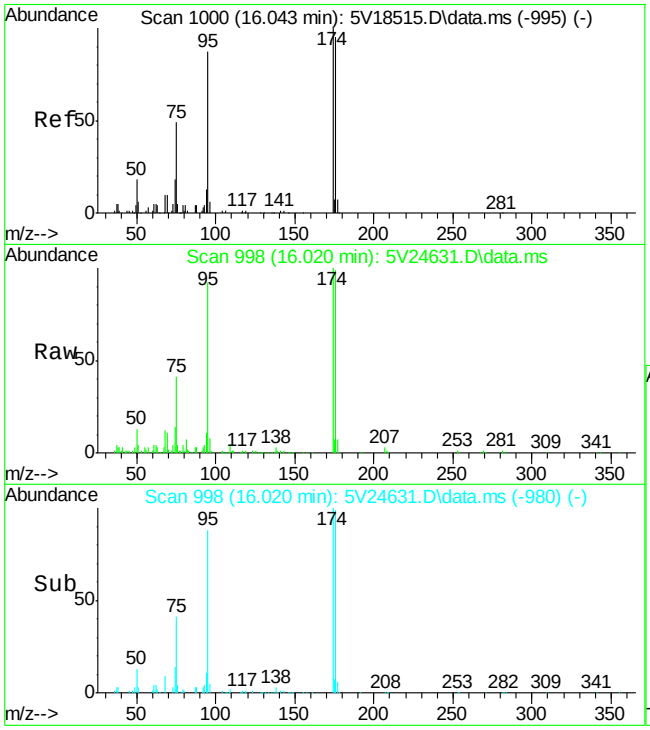


#68
Isopropylbenzene
Concen: 3.99 ug/l
RT: 15.849 min Scan# 983
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:105 Resp: 70232

Ion	Ratio	Lower	Upper
105	100		
120	26.9	21.0	31.4

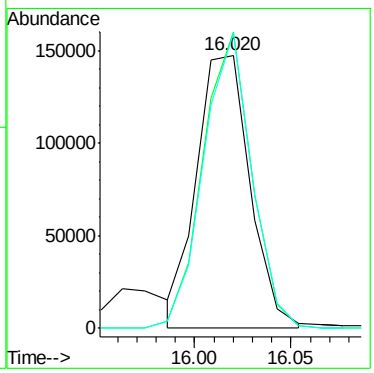


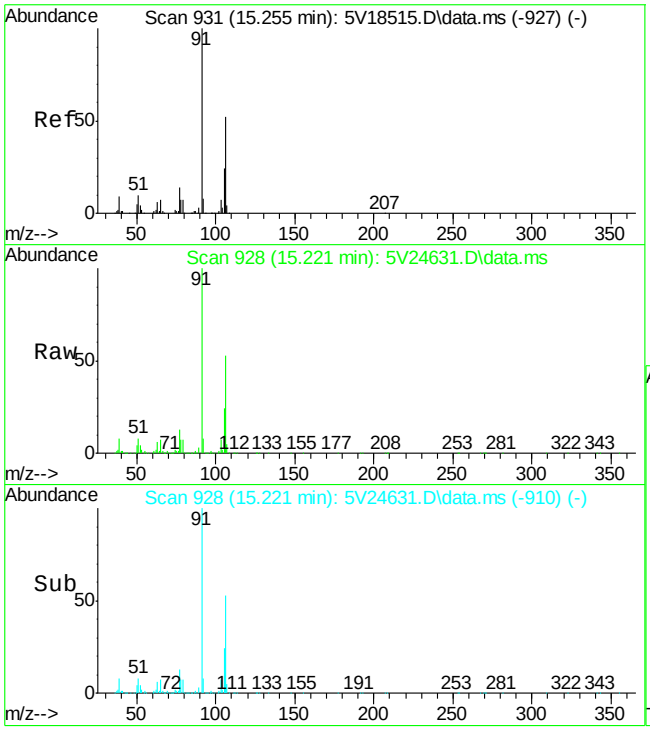


#69
4-Bromofluorobenzene
Concen: 57.06 ug/l m
RT: 16.020 min Scan# 998
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion: 95 Resp: 283851

Ion	Ratio	Lower	Upper
95	100		
174	99.1	77.1	117.1
176	97.7	73.4	113.4

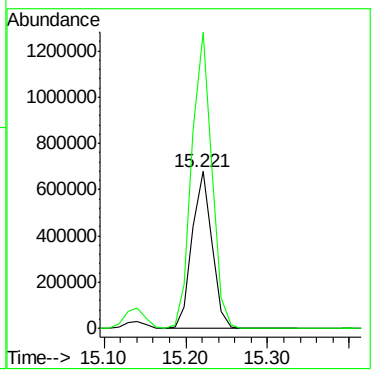


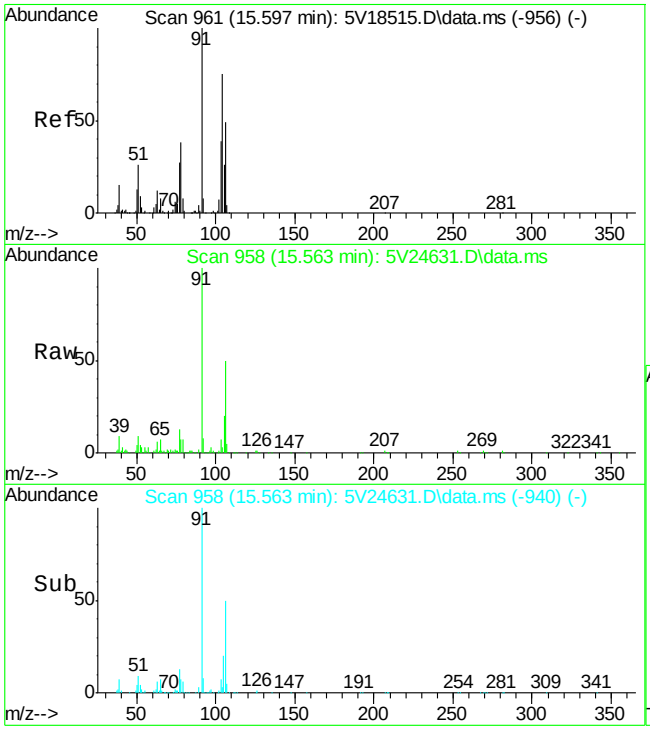


#72
m,p-xylene
Concen: 165.58 ug/l
RT: 15.221 min Scan# 928
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:106 Resp: 1142159

Ion	Ratio	Lower	Upper
106	100		
91	190.4	177.1	217.1

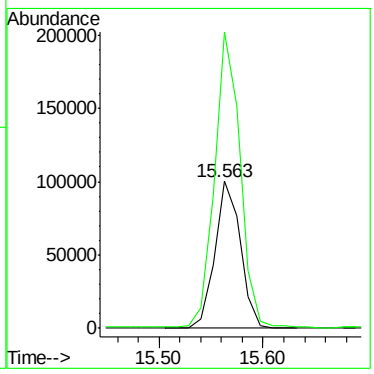


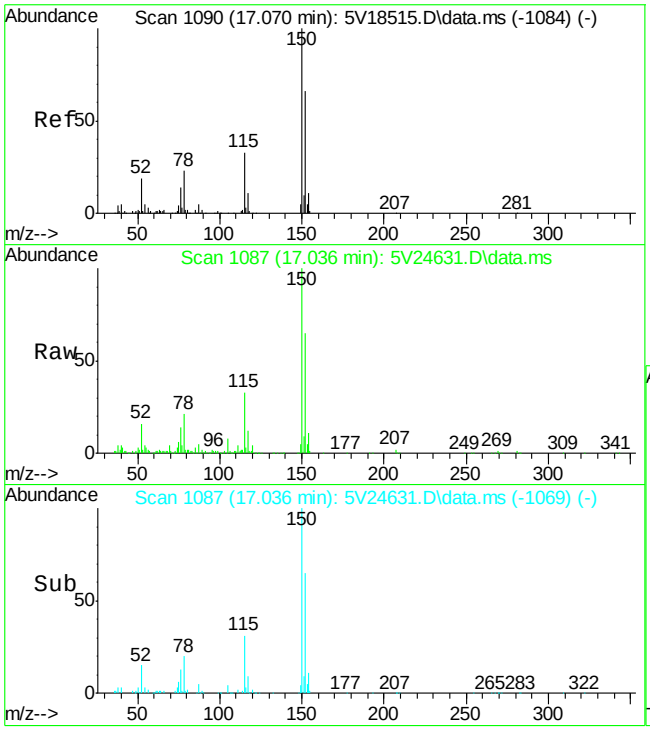


#73
o-xylene
Concen: 25.02 ug/l
RT: 15.563 min Scan# 958
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:106 Resp: 171099

Ion	Ratio	Lower	Upper
106	100		
91	203.0	166.6	249.8

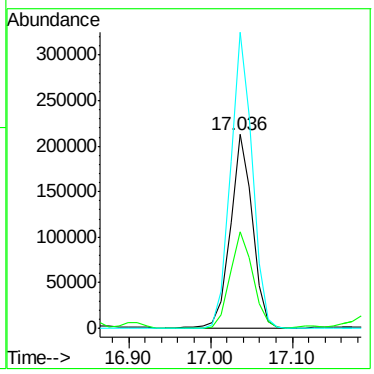


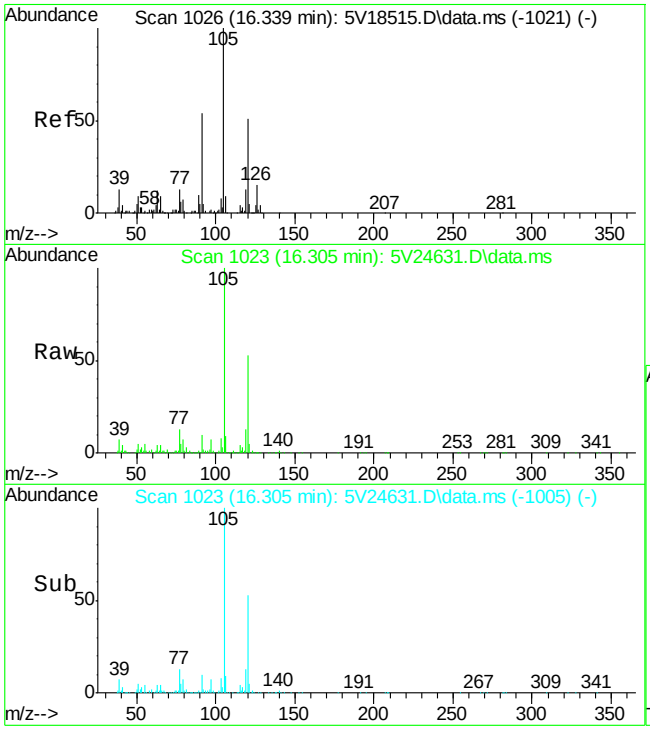


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.036 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:152 Resp: 399305

Ion	Ratio	Lower	Upper
152	100		
115	51.7	41.4	62.0
150	149.5	153.9	230.9#

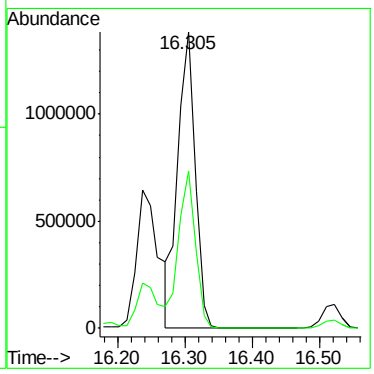


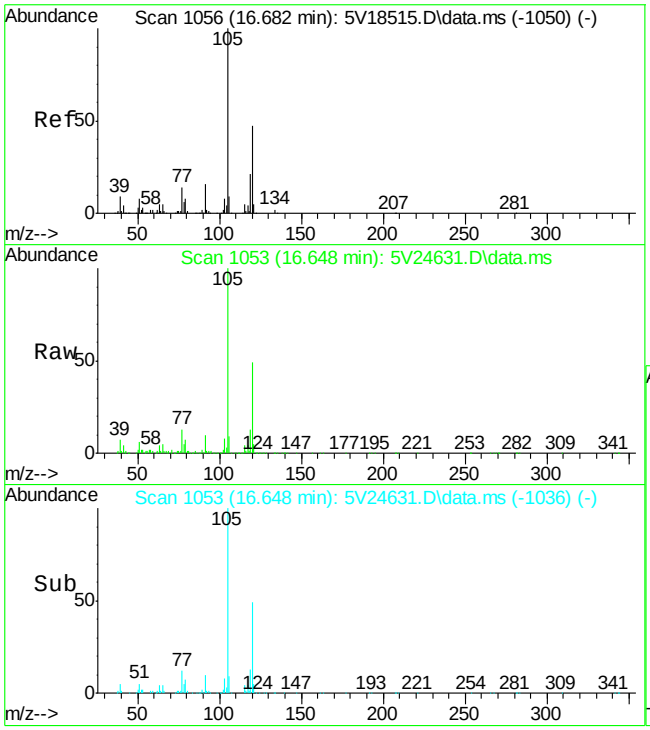


#80
1,3,5-Trimethylbenzene
Concen: 133.95 ug/l
RT: 16.305 min Scan# 1023
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:105 Resp: 2437173

Ion	Ratio	Lower	Upper
105	100		
120	51.6	40.1	60.1

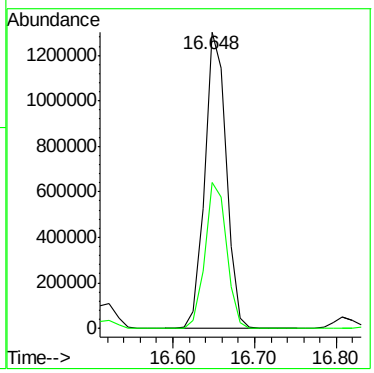


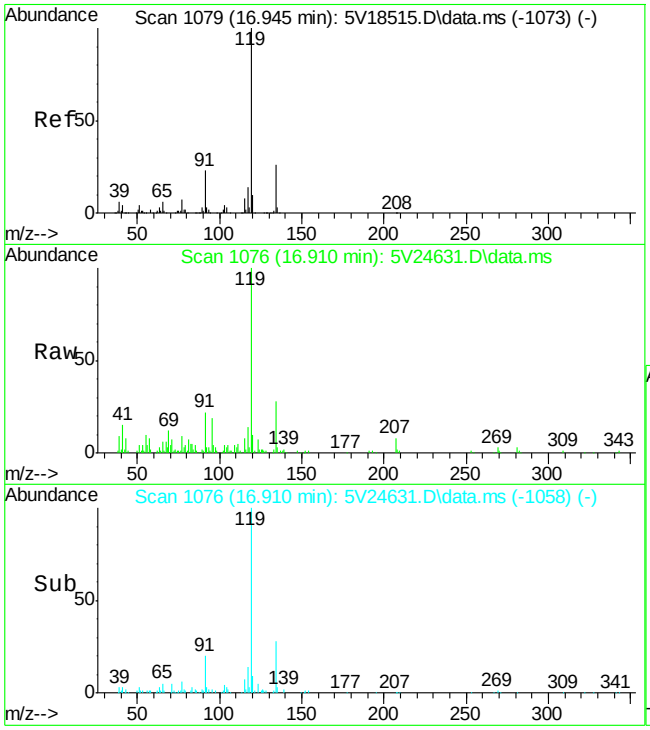


#82
1,2,4-Trimethylbenzene
Concen: 124.54 ug/l
RT: 16.648 min Scan# 1053
Delta R.T. -0.012 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:105 Resp: 2372133

Ion	Ratio	Lower	Upper
105	100		
120	49.5	43.8	65.8

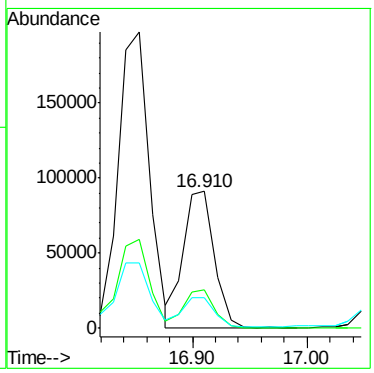


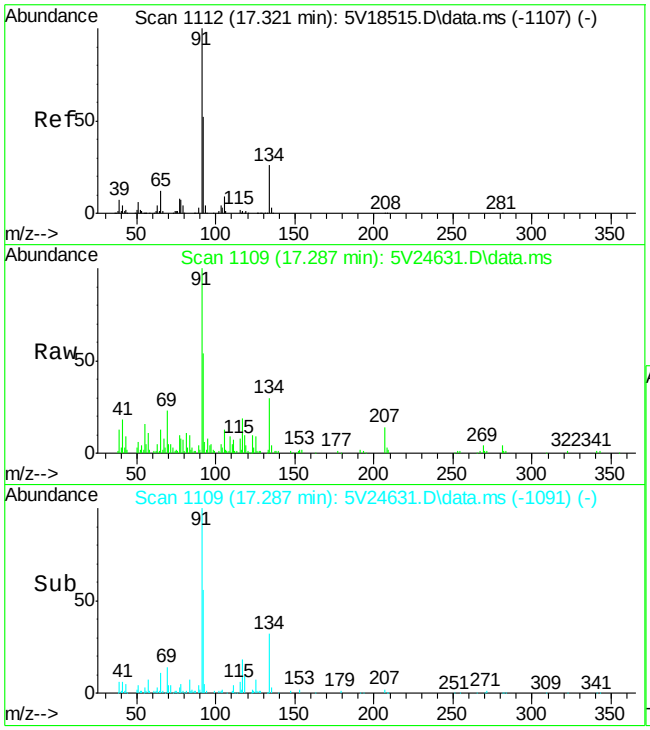


#86
p-Isopropyltoluene
Concen: 7.80 ug/l
RT: 16.910 min Scan# 1076
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:119 Resp: 171177

Ion	Ratio	Lower	Upper
119	100		
134	27.7	21.3	31.9
91	22.4	19.0	28.6

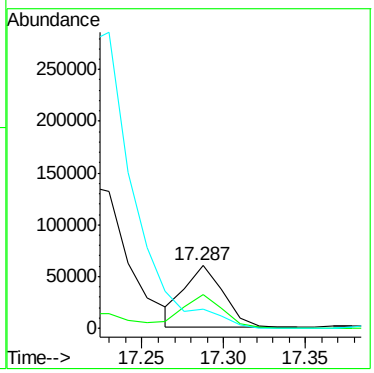


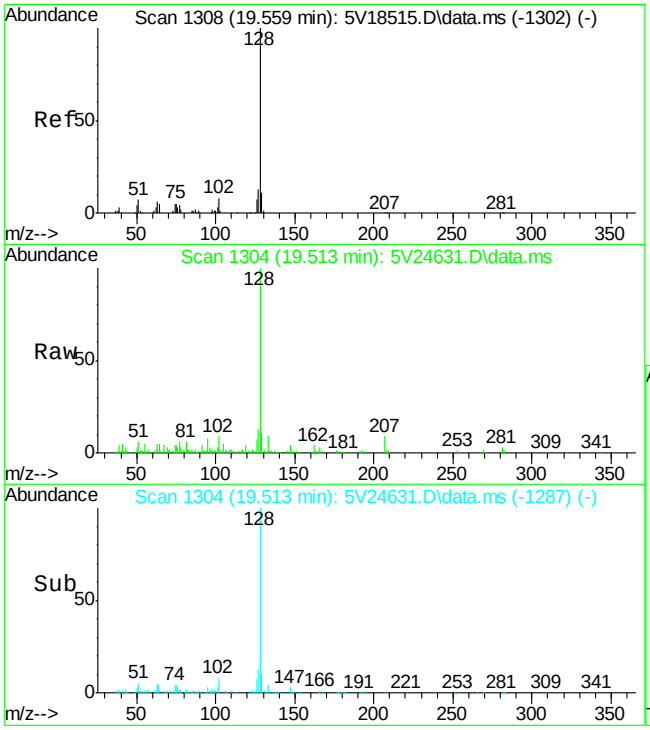


#88
n-Butylbenzene
Concen: 4.73 ug/l
RT: 17.287 min Scan# 1109
Delta R.T. -0.000 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion: 91 Resp: 96843

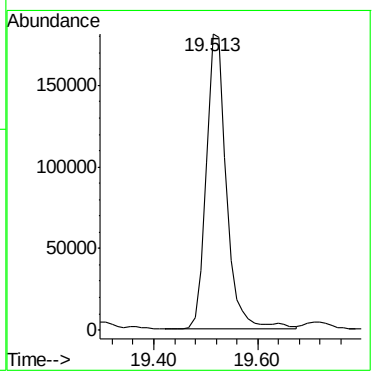
Ion	Ratio	Lower	Upper
91	100		
92	59.7	42.2	63.4
134	0.0	21.4	32.2#

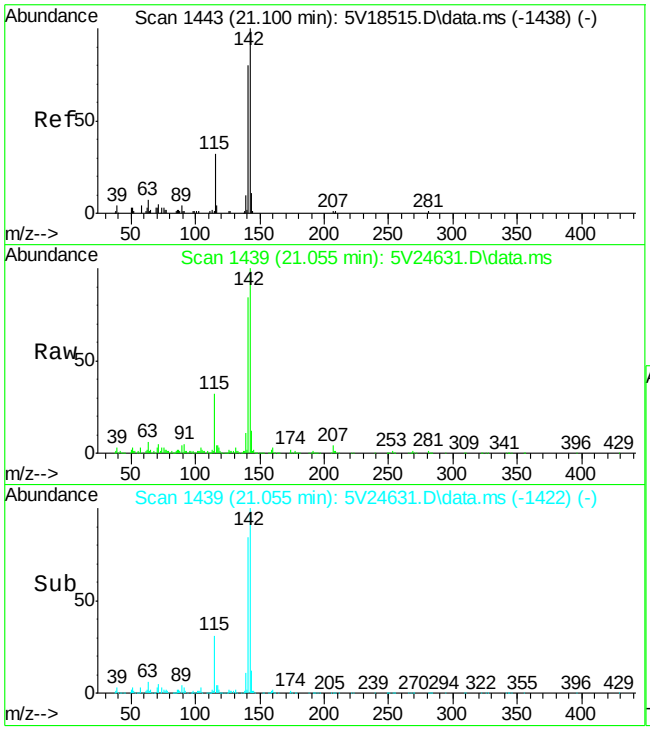




#91
Naphthalene
Concen: 24.67 ug/l
RT: 19.513 min Scan# 1304
Delta R.T. -0.012 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:128 Resp: 488389

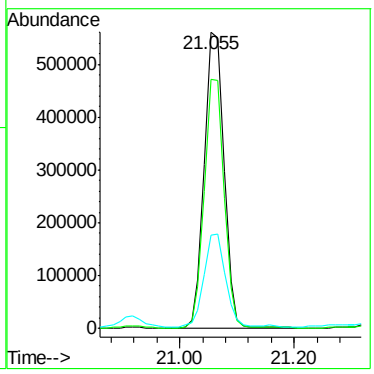


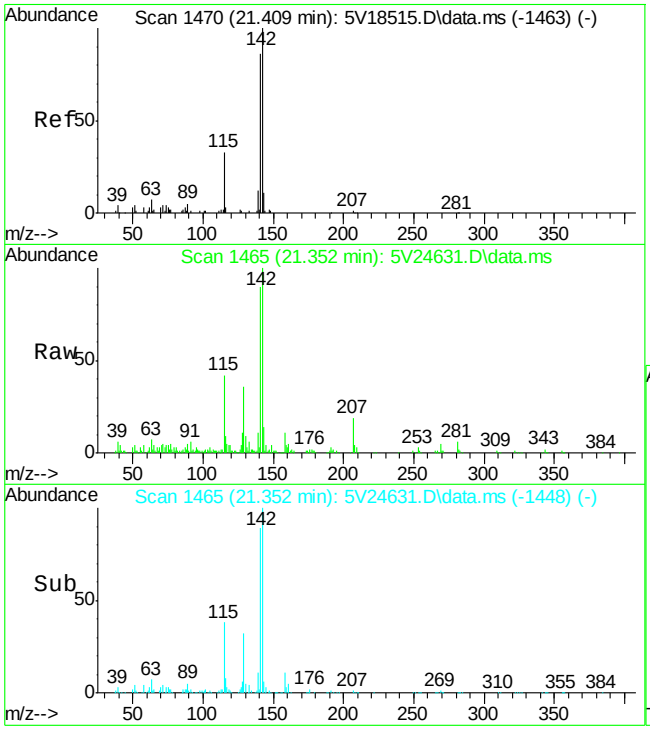


#94
2-Methylnaphthalene
Concen: 114.69 ug/l
RT: 21.055 min Scan# 1439
Delta R.T. -0.011 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:142 Resp: 1335512

Ion	Ratio	Lower	Upper
142	100		
141	84.5	66.2	99.4
115	34.2	25.9	38.9

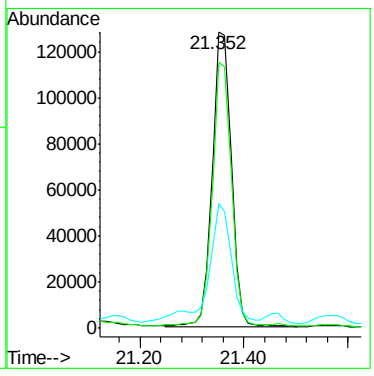




#95
1-Methylnaphthalene
Concen: 32.29 ug/l
RT: 21.352 min Scan# 1465
Delta R.T. -0.011 min
Lab File: 5V24631.D
Acq: 15 Nov 2012 5:40 pm

Tgt Ion:142 Resp: 324023

Ion	Ratio	Lower	Upper
142	100		
141	88.9	68.9	103.3
115	44.7	27.3	40.9#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
Data File : 5V24624.D
Acq On : 15 Nov 2012 1:43 pm
Operator : BRETD
Sample : MB
Misc : MS4976,V5V1503,5.00,,100,5,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 16 15:51:40 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:54:38 2012
Response via : Initial Calibration

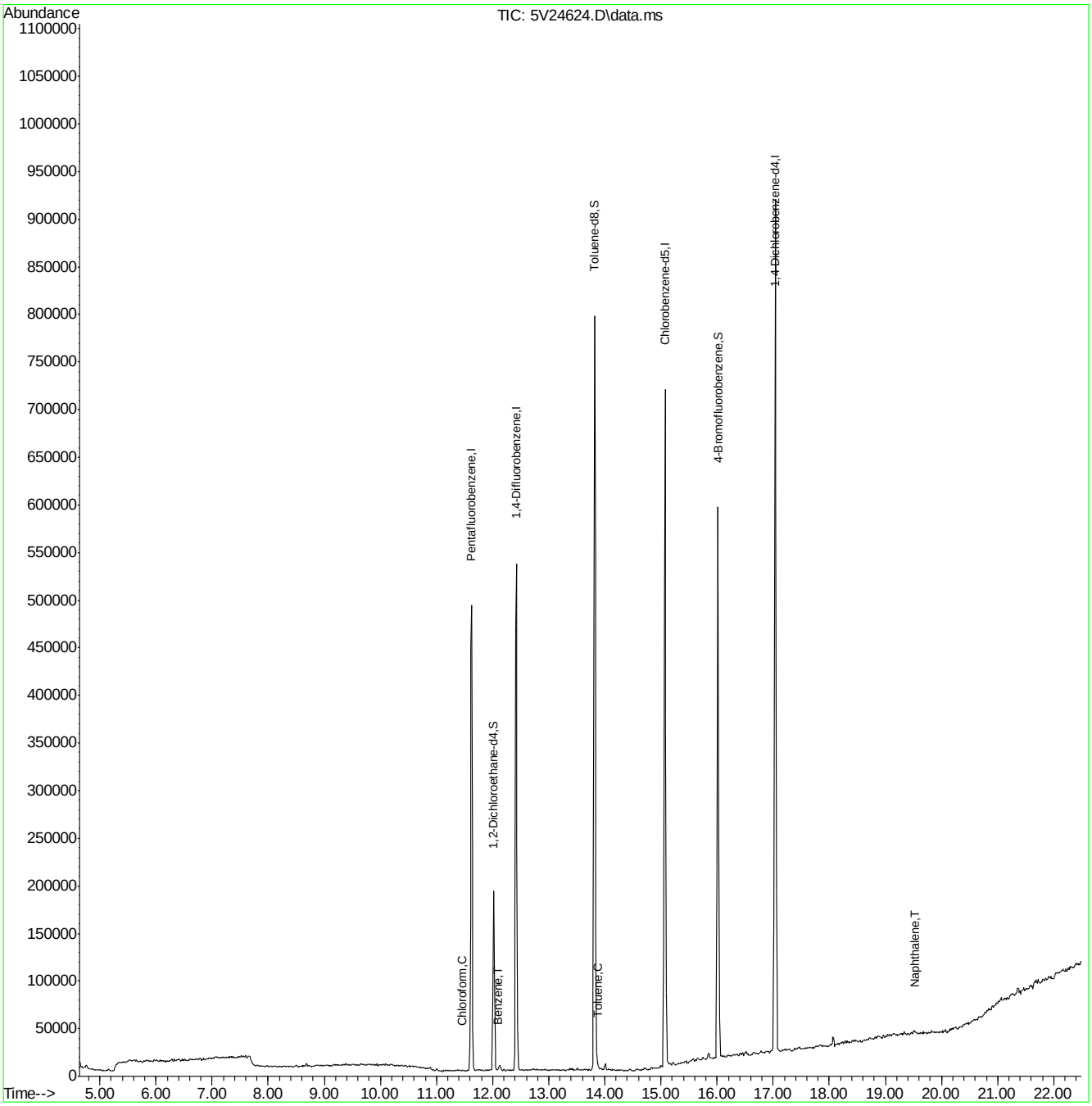
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.624	168	384332	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.423	114	464457	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.072	117	422151	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.036	152	289135	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.012	102	31697	48.46	ug/l	-0.01
Spiked Amount 50.000	Range 70 - 130		Recovery = 96.92%			
61) Toluene-d8	13.816	98	511967	51.19	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 102.38%			
69) 4-Bromofluorobenzene	16.020	95	203738	47.27	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 94.54%			
Target Compounds						Qvalue
1) TVH-Gasoline	13.102	TIC	183808m	Below Cal		
29) Chloroform	11.453	83	359	0.06	ug/l	84
50) Benzene	12.092	78	1456	0.12	ug/l	100
62) Toluene	13.873	92	2163	0.28	ug/l	85
91) Naphthalene	19.525	128	4487	0.31	ug/l	100

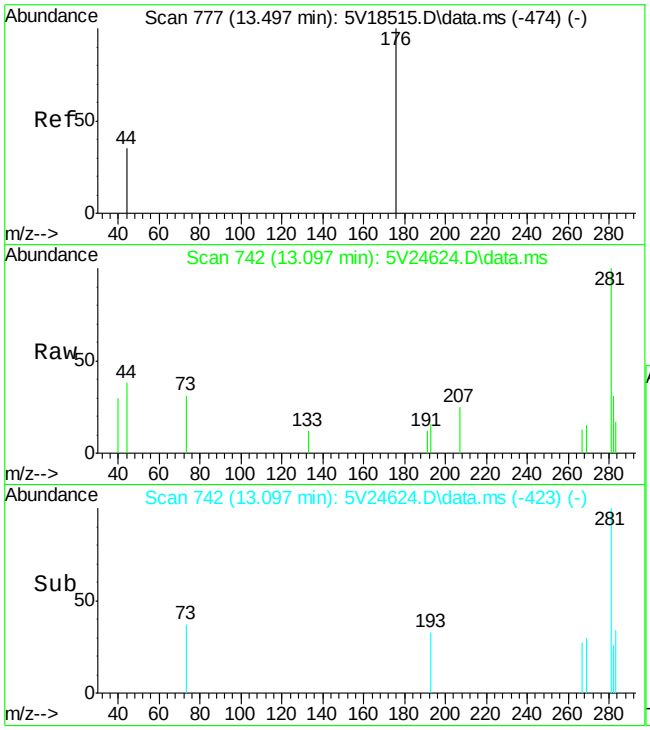
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
Data File : 5V24624.D
Acq On : 15 Nov 2012 1:43 pm
Operator : BRETD
Sample : MB
Misc : MS4976,V5V1503,5.00,,100,5,1
ALS Vial : 8 Sample Multiplier: 1

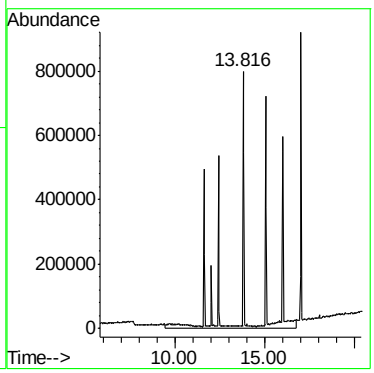
Quant Time: Nov 16 15:51:40 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:54:38 2012
Response via : Initial Calibration

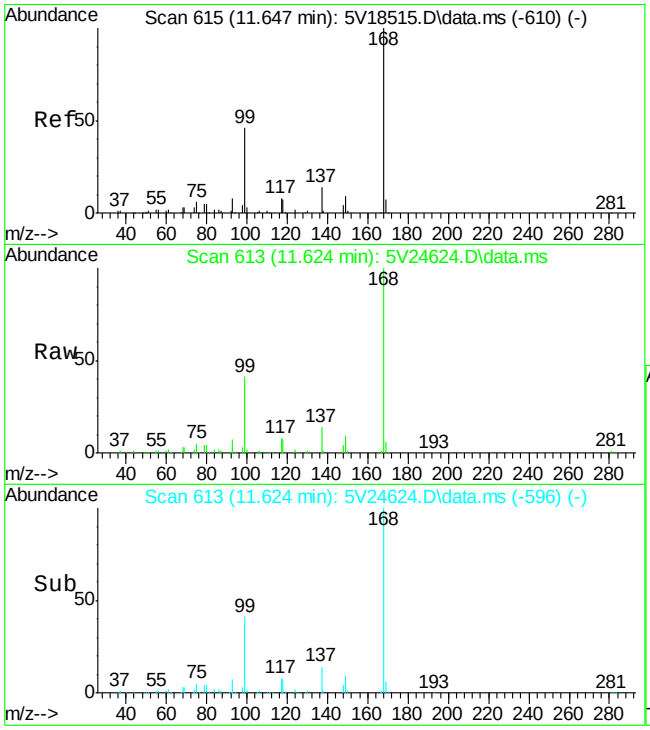




#1
TVH-Gasoline
Concen: Below Cal m
RT: 13.102 min Scan# 742
Delta R.T. 0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

Tgt Ion:TIC Resp: 183808

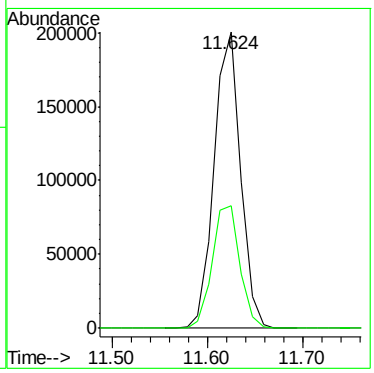


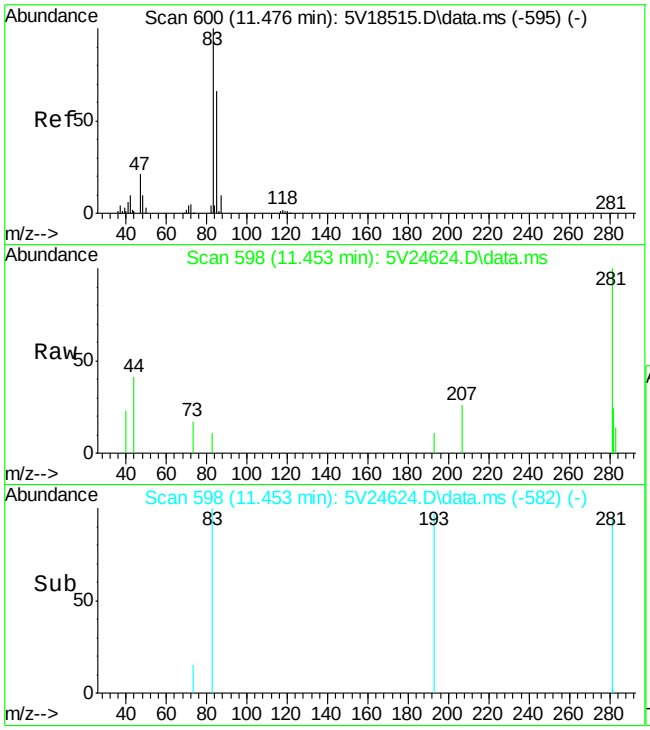


#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.624 min Scan# 613
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

Tgt Ion:168 Resp: 384332

Ion	Ratio	Lower	Upper
168	100		
99	43.3	37.4	56.2

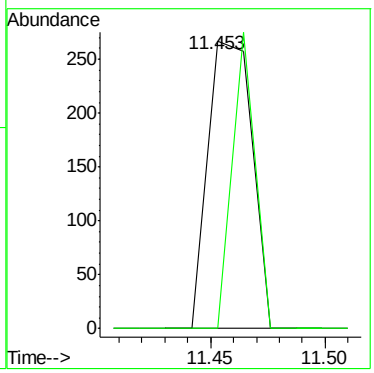


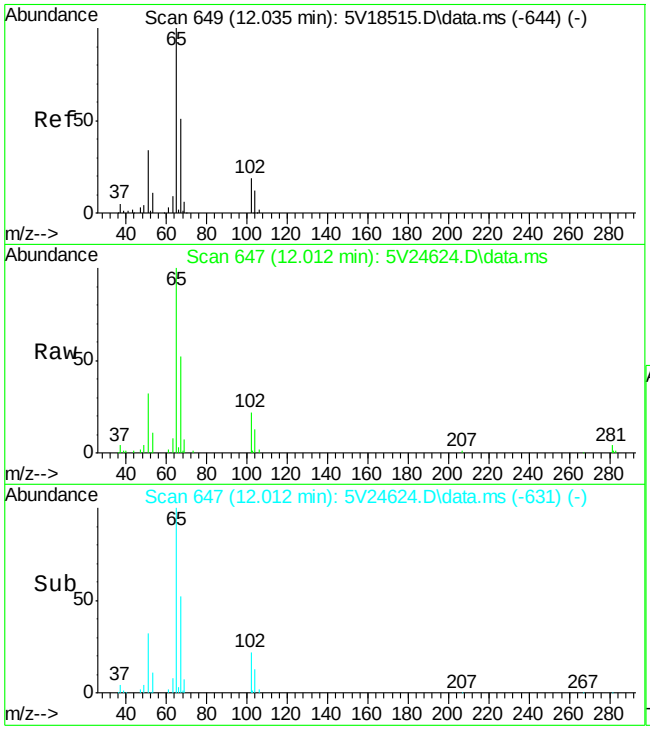


#29
Chloroform
Concen: 0.06 ug/l
RT: 11.453 min Scan# 598
Delta R.T. -0.012 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

Tgt Ion: 83 Resp: 359

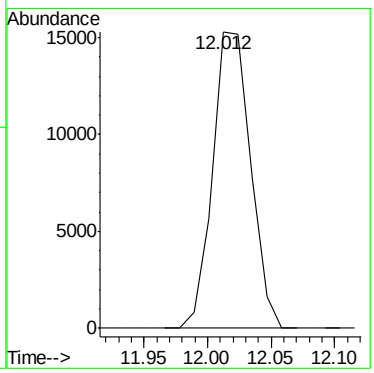
Ion	Ratio	Lower	Upper
83	100		
85	52.4	44.9	84.9

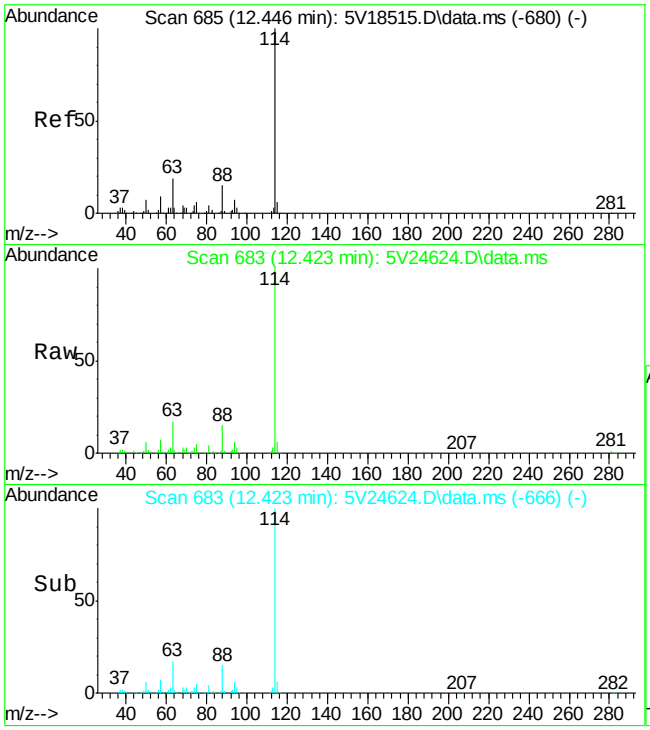




#33
1,2-Dichloroethane-d4
Concen: 48.46 ug/l
RT: 12.012 min Scan# 647
Delta R.T. -0.012 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

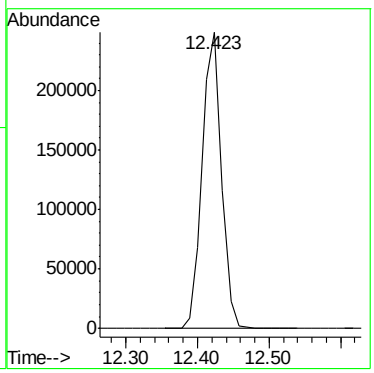
Tgt Ion:102 Resp: 31697

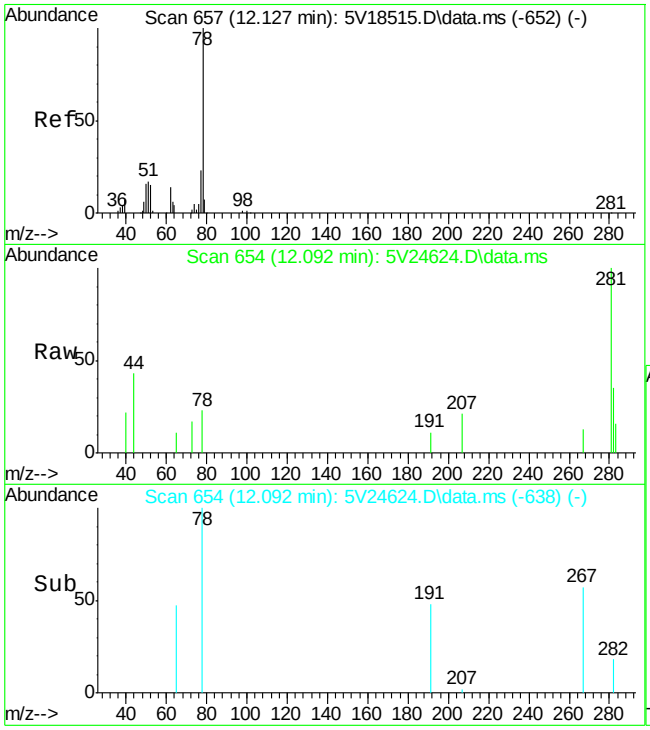




#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.423 min Scan# 683
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

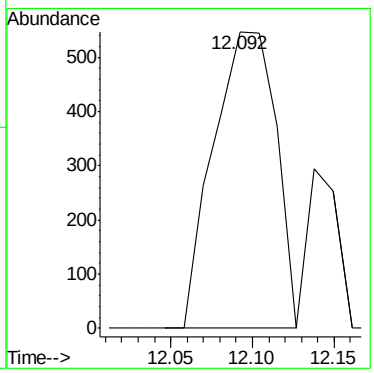
Tgt Ion:114 Resp: 464457

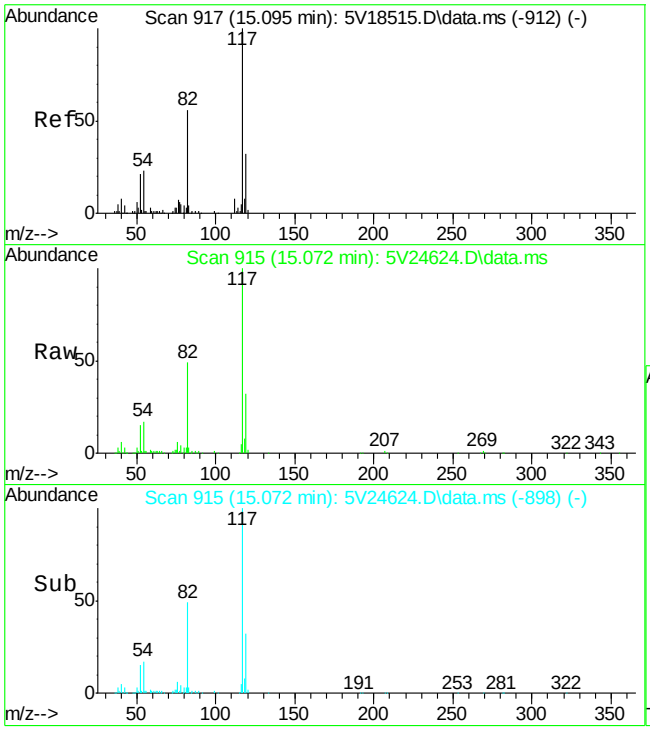




#50
Benzene
Concen: 0.12 ug/l
RT: 12.092 min Scan# 654
Delta R.T. -0.012 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

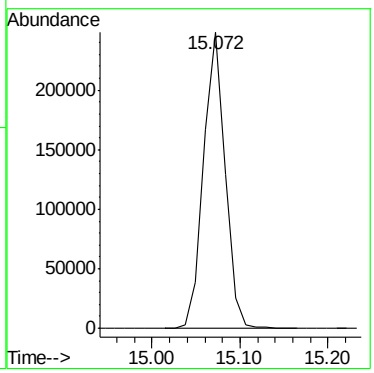
Tgt Ion: 78 Resp: 1456

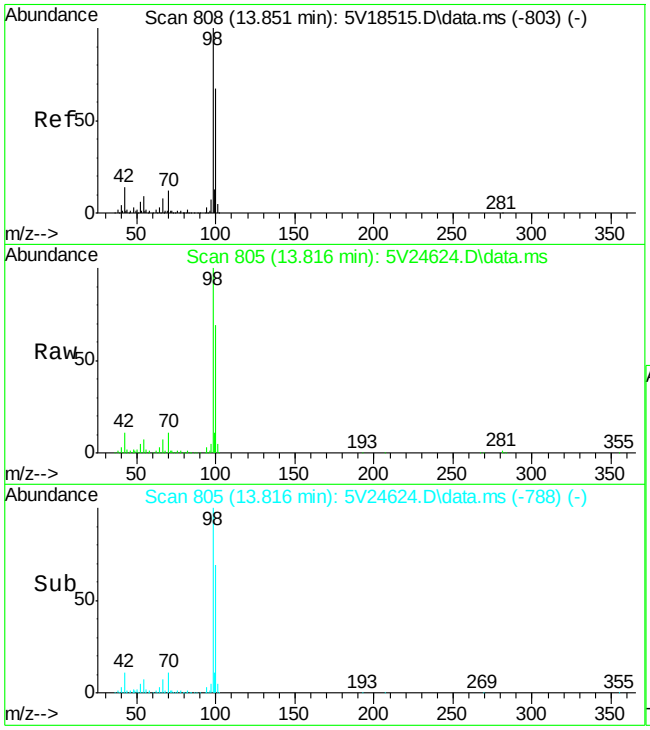




#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.072 min Scan# 915
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

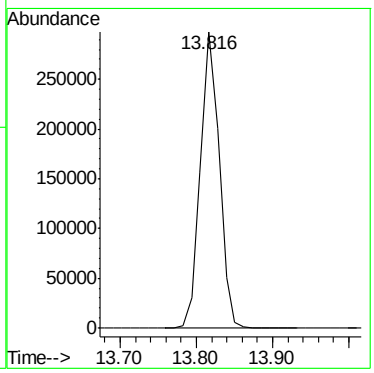
Tgt Ion:117 Resp: 422151

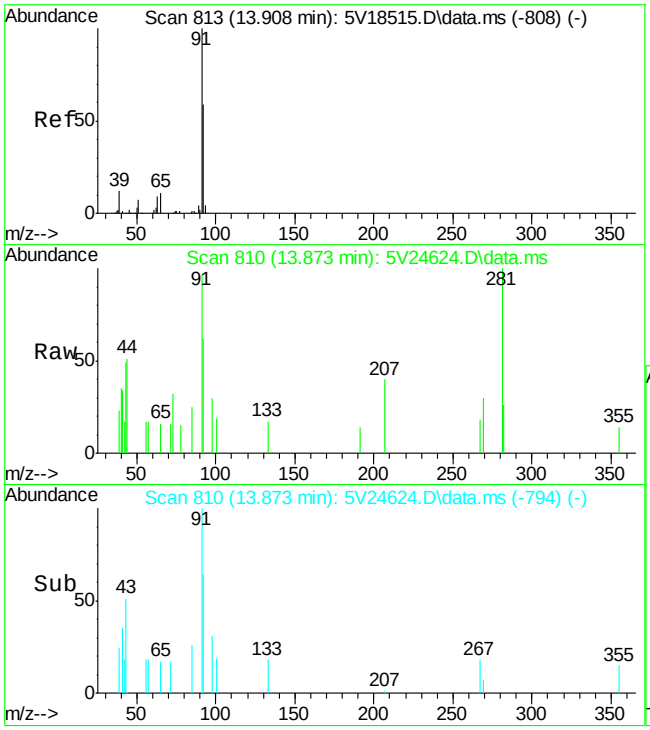




#61
Toluene-d8
Concen: 51.19 ug/l
RT: 13.816 min Scan# 805
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

Tgt Ion: 98 Resp: 511967

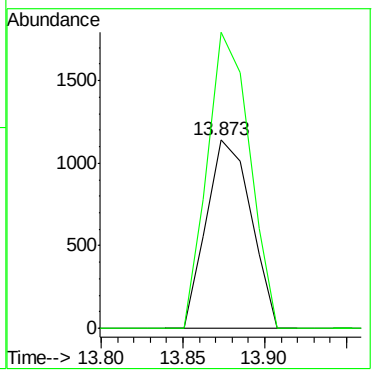


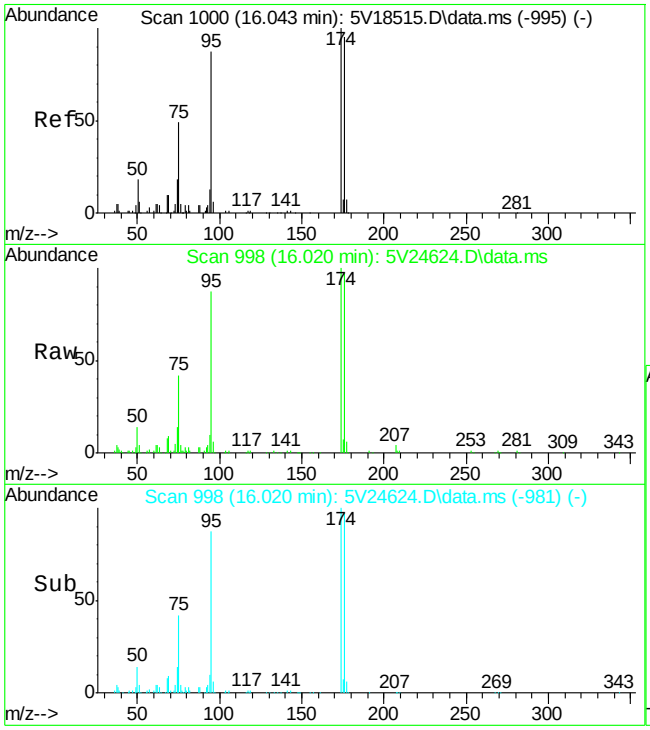


#62
Toluene
Concen: 0.28 ug/l
RT: 13.873 min Scan# 810
Delta R.T. -0.012 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

Tgt Ion: 92 Resp: 2163

Ion	Ratio	Lower	Upper
92	100		
91	149.8	149.8	189.8

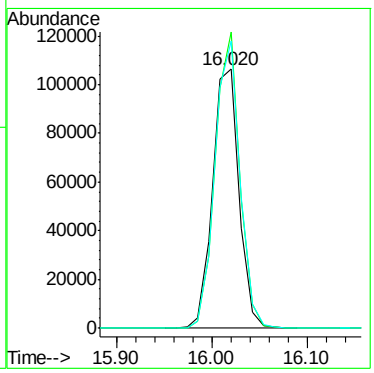


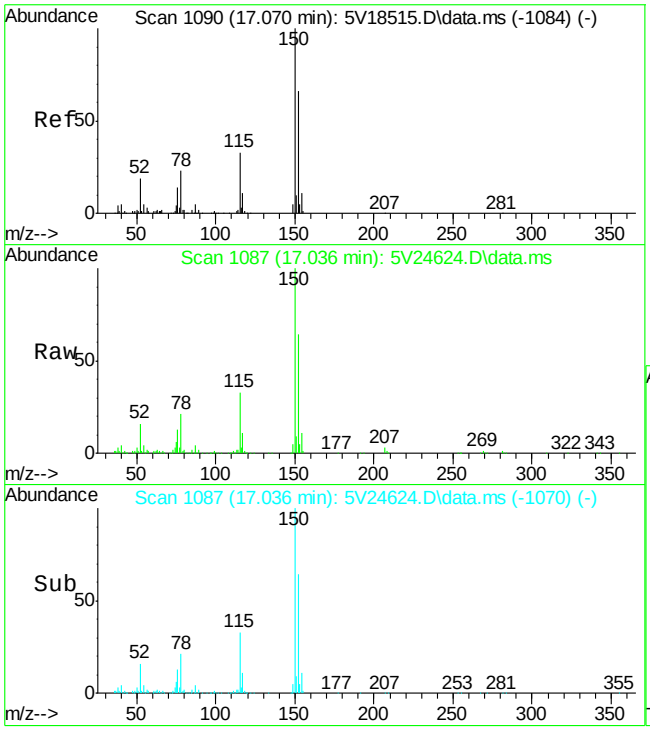


#69
4-Bromofluorobenzene
Concen: 47.27 ug/l
RT: 16.020 min Scan# 998
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

Tgt Ion: 95 Resp: 203738

Ion	Ratio	Lower	Upper
95	100		
174	106.4	77.1	117.1
176	105.5	73.4	113.4

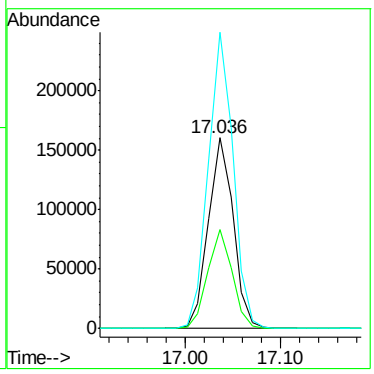


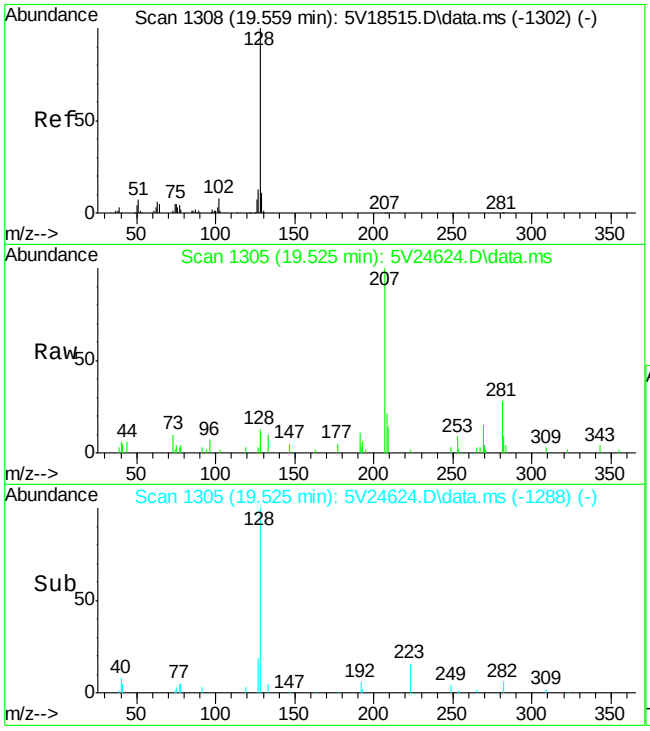


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.036 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

Tgt Ion:152 Resp: 289135

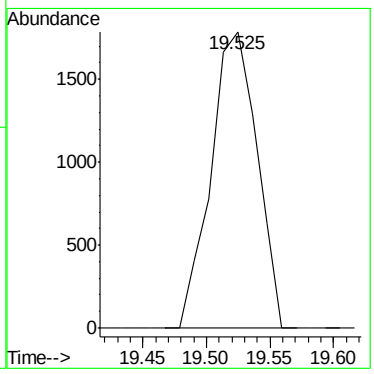
Ion	Ratio	Lower	Upper
152	100		
115	51.0	41.4	62.0
150	155.1	153.9	230.9





#91
Naphthalene
Concen: 0.31 ug/l
RT: 19.525 min Scan# 1305
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

Tgt Ion:128 Resp: 4487



Mountain States ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6973-MB	3G12193.D	1	11/21/12	SM	11/16/12	OP6973	E3G576

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

D40911-1, D40911-2

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	8.3	4.3	ug/kg	
120-12-7	Anthracene	ND	8.3	4.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	8.3	4.3	ug/kg	
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	88%	10-159%
321-60-8	2-Fluorobiphenyl	89%	19-131%
1718-51-0	Terphenyl-d14	90%	18-150%

Blank Spike Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6973-BS	3G12194.D	1	11/21/12	SM	11/16/12	OP6973	E3G576

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

D40911-1, D40911-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	89.1	107	68-130
120-12-7	Anthracene	83.3	80.8	97	67-130
56-55-3	Benzo(a)anthracene	83.3	79.9	96	65-130
205-99-2	Benzo(b)fluoranthene	83.3	72.0	86	44-130
207-08-9	Benzo(k)fluoranthene	83.3	75.1	90	56-131
50-32-8	Benzo(a)pyrene	83.3	79.8	96	62-130
218-01-9	Chrysene	83.3	74.4	89	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	81.4	98	55-130
206-44-0	Fluoranthene	83.3	78.6	94	70-130
86-73-7	Fluorene	83.3	78.1	94	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	81.0	97	56-130
91-20-3	Naphthalene	83.3	73.9	89	70-130
129-00-0	Pyrene	83.3	76.9	92	70-130

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

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6973-MS	3G12208.D	1	11/21/12	SM	11/16/12	OP6973	E3G576
OP6973-MSD	3G12209.D	1	11/21/12	SM	11/16/12	OP6973	E3G576
D40910-1	3G12207.D	1	11/21/12	SM	11/16/12	OP6973	E3G576
D40910-1	3G12196.D	4	11/21/12	SM	11/16/12	OP6973	E3G576

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

D40911-1, D40911-2

CAS No.	Compound	D40910-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND [a]		102	102	100	109	107	7	25-151/30
120-12-7	Anthracene	ND		102	103	101	107	105	4	39-159/30
56-55-3	Benzo(a)anthracene	9.7	J	102	105	94	116	105	10	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		102	91.8	90	123	121	29	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		102	104	102	91.1	90	13	10-188/30
50-32-8	Benzo(a)pyrene	9.2	J	102	93.5	83	98.8	88	6	32-144/30
218-01-9	Chrysene	25.4		102	101	74	111	84	9	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		102	75.1	74	79.5	78	6	21-152/30
206-44-0	Fluoranthene	14.7		102	113	97	117	101	3	36-157/30
86-73-7	Fluorene	49.8 [a]		102	144	93	153	102	6	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		102	71.0	70	75.2	74	6	20-154/30
91-20-3	Naphthalene	331 [a]		102	473	140	492	159	4	10-163/30
129-00-0	Pyrene	27.8		102	128	99	149	119	15	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D40910-1	D40910-1	Limits
4165-60-0	Nitrobenzene-d5	80%	81%	80%	73%	10-159%
321-60-8	2-Fluorobiphenyl	77%	82%	79%	84%	19-131%
1718-51-0	Terphenyl-d14	91%	100%	88%	88%	18-150%

(a) Result is from Run #2.

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC/MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
John Hamilton 11/26/12 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
Data File : 3g12211.D
Acq On : 21 Nov 2012 8:30 pm
Operator : SARAHM1
Sample : D40911-1
Misc : OP6973,E3G576,30.08,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 26 09:09:19 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 21 08:48:23 2012
Response via : Initial Calibration

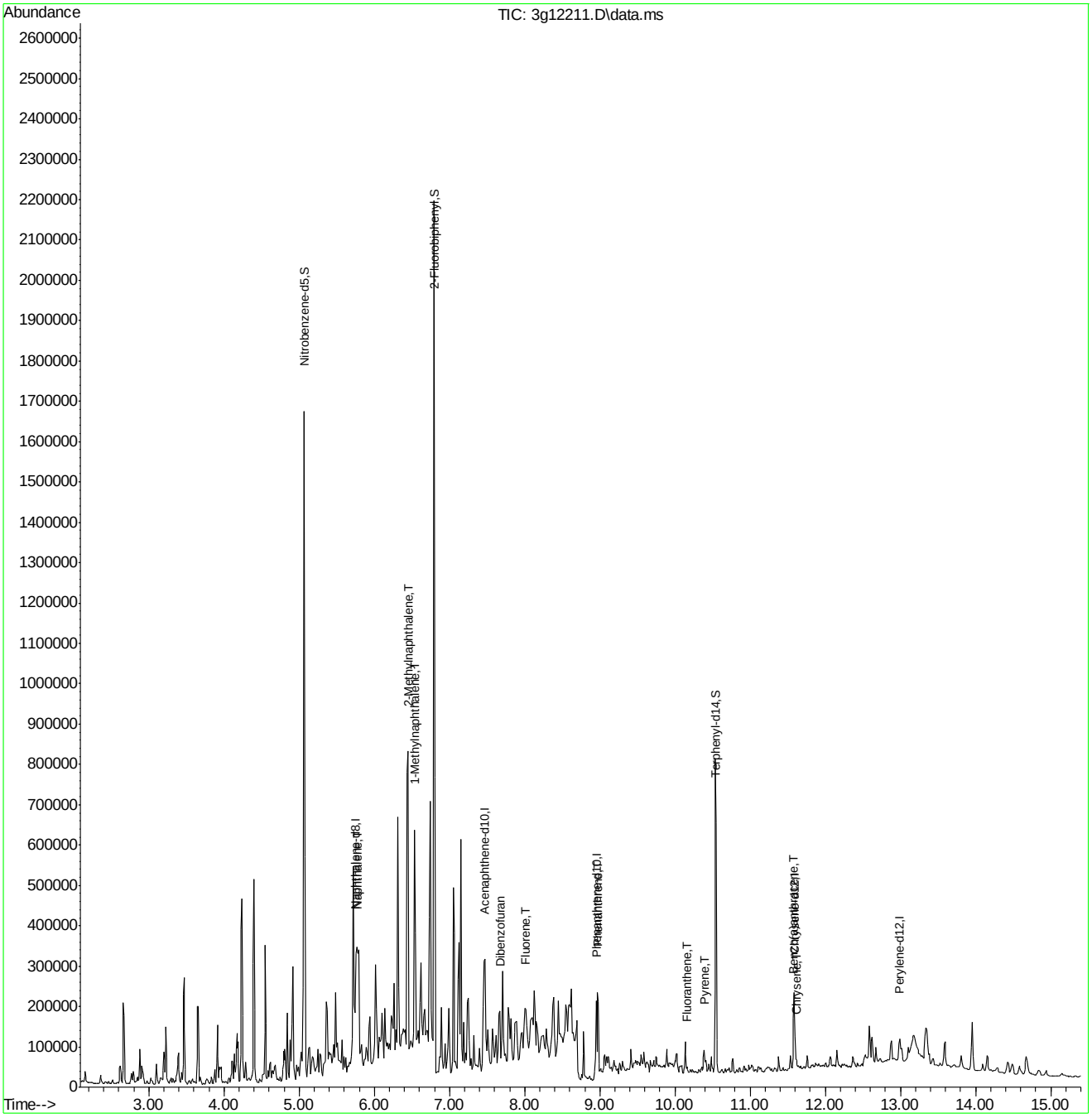
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.751	136	198046	4.0000	ug/mL	-0.04
6) Acenaphthene-d10	7.472	164	101409	4.0000	ug/mL	-0.04
15) Phenanthrene-d10	8.956	188	150629	4.0000	ug/mL	-0.03
19) Chrysene-d12	11.590	240	90947	4.0000	ug/mL	-0.04
24) Perylene-d12	12.993	264	44455	4.0000	ug/mL	-0.04
System Monitoring Compounds						
2) Nitrobenzene-d5	5.066	82	670740	35.2267	ug/mL	-0.04
Spiked Amount 50.000	Range 25 - 135		Recovery = 70.46%			
7) 2-Fluorobiphenyl	6.798	172	1396152	37.7413	ug/mL	-0.03
Spiked Amount 50.000	Range 25 - 135		Recovery = 75.48%			
21) Terphenyl-d14	10.547	244	518977	43.7828	ug/mL	-0.03
Spiked Amount 50.000	Range 25 - 135		Recovery = 87.56%			
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	5.776	128	302398	5.8376	ug/mL	80
8) 2-Methylnaphthalene	6.449	142	480615	15.1802	ug/mL	95
9) 1-Methylnaphthalene	6.537	142	240073m	8.1329	ug/mL	
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.673	168	29321	0.5782	ug/mL	64
13) Fluorene	8.015	166	43358	1.0464	ug/mL#	65
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	8.972	178	146882	2.8435	ug/mL	78
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	10.159	202	13630	0.2311	ug/mL#	1
20) Pyrene	10.388	202	26635	0.5335	ug/mL#	72
22) Benzo(a)anthracene	11.577	228	4633m	0.1142	ug/mL	
23) Chrysene	11.617	228	16662m	0.3766	ug/mL	
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	14.244	276	1031	N.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	

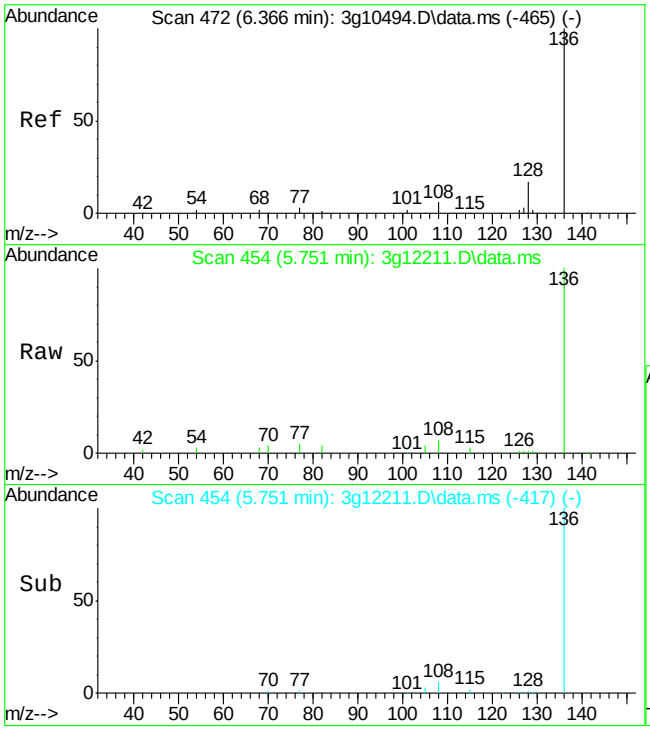
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
Data File : 3g12211.D
Acq On : 21 Nov 2012 8:30 pm
Operator : SARAHM1
Sample : D40911-1
Misc : OP6973,E3G576,30.08,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 26 09:09:19 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 21 08:48:23 2012
Response via : Initial Calibration

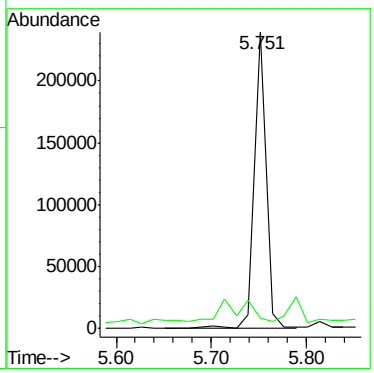


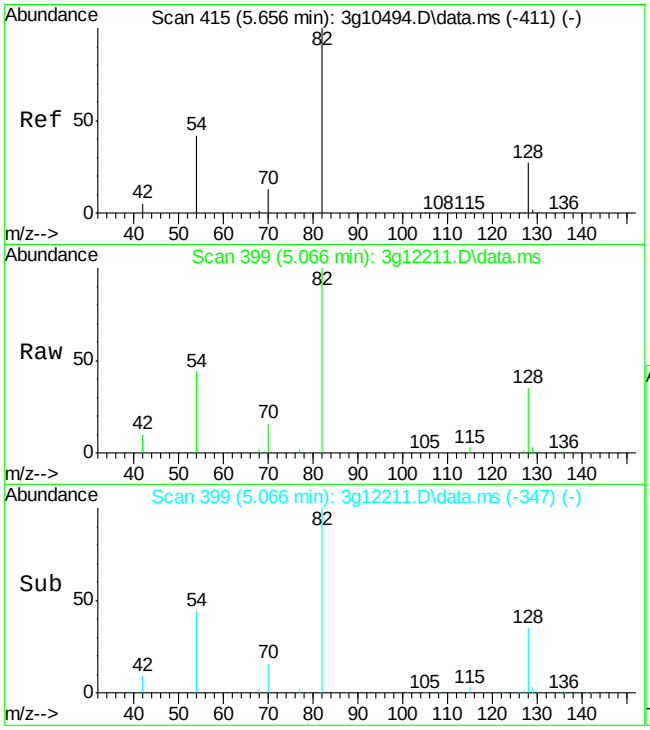


#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.751 min Scan# 454
Delta R.T. -0.037 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:136 Resp: 198046

Ion	Ratio	Lower	Upper
136	100		
68	9.5	0.0	27.8

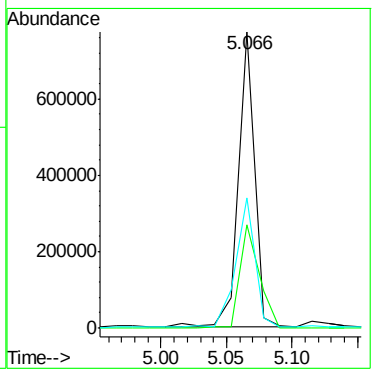


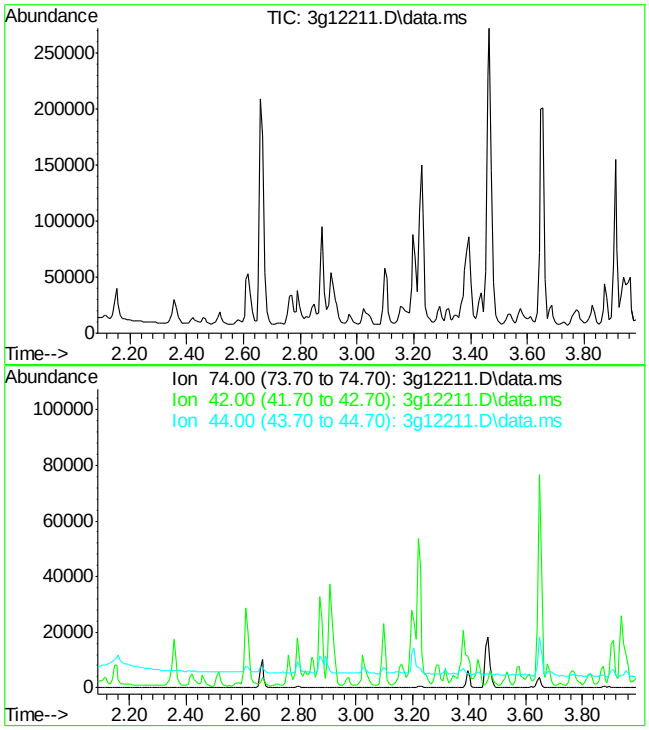


#2
Nitrobenzene-d5
Concen: 35.2267 ug/mL
RT: 5.066 min Scan# 399
Delta R.T. -0.037 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 82 Resp: 670740

Ion	Ratio	Lower	Upper
82	100		
128	41.6	30.7	70.7
54	53.2	36.8	76.8



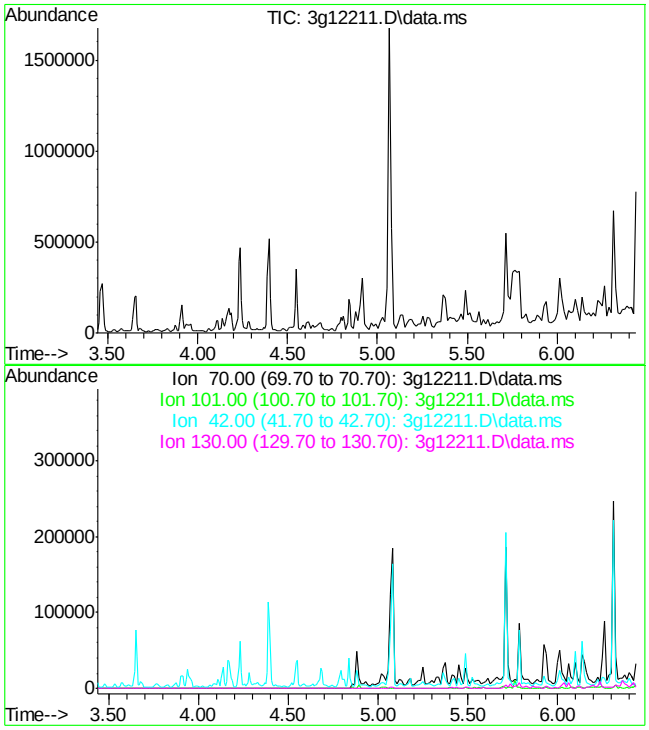


#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.49 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 74

Sig	Exp Ratio
74	100
42	73.9
44	4.2

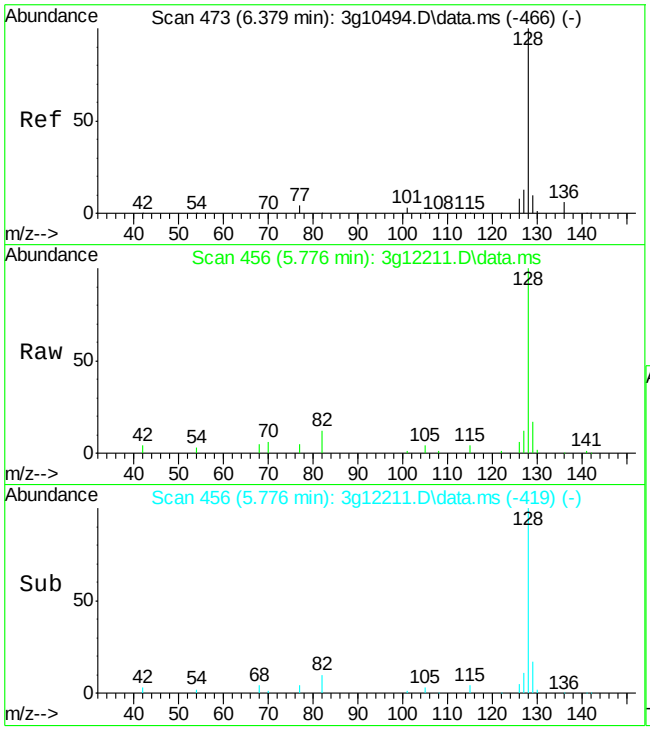


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.94 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 70

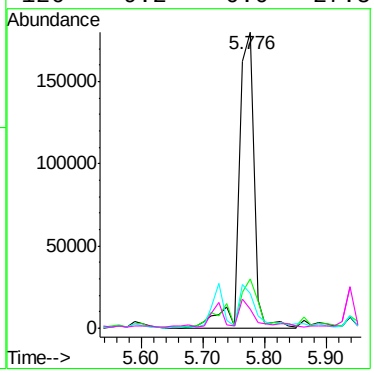
Sig	Exp Ratio
70	100
101	13.9
42	52.4
130	27.1

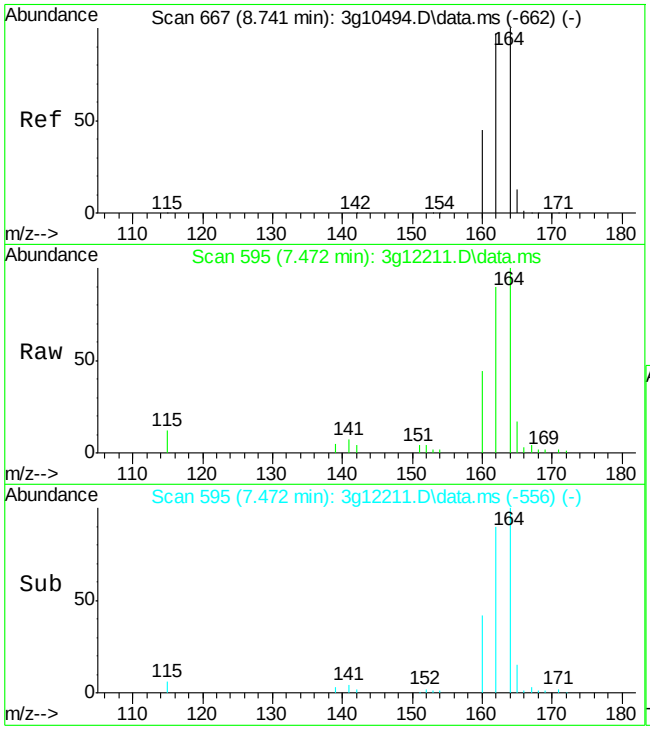


#5
Naphthalene
Concen: 5.8376 ug/mL
RT: 5.776 min Scan# 456
Delta R.T. -0.037 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:128 Resp: 302398

Ion	Ratio	Lower	Upper
128	100		
129	28.4	0.0	31.0
127	15.7	0.0	32.8
126	9.2	0.0	27.5

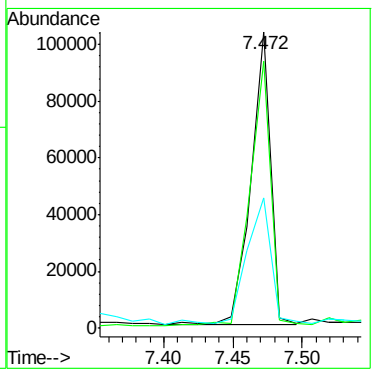


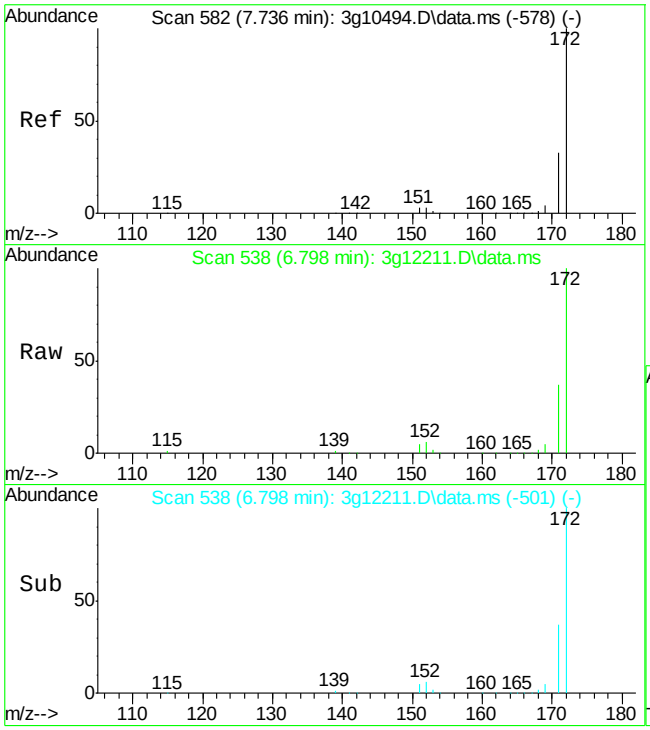


#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.472 min Scan# 595
Delta R.T. -0.035 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:164 Resp: 101409

Ion	Ratio	Lower	Upper
164	100		
162	97.1	78.1	118.1
160	52.4	28.0	68.0

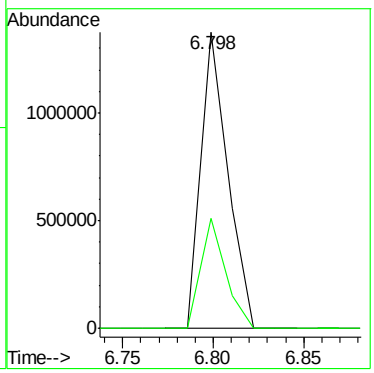


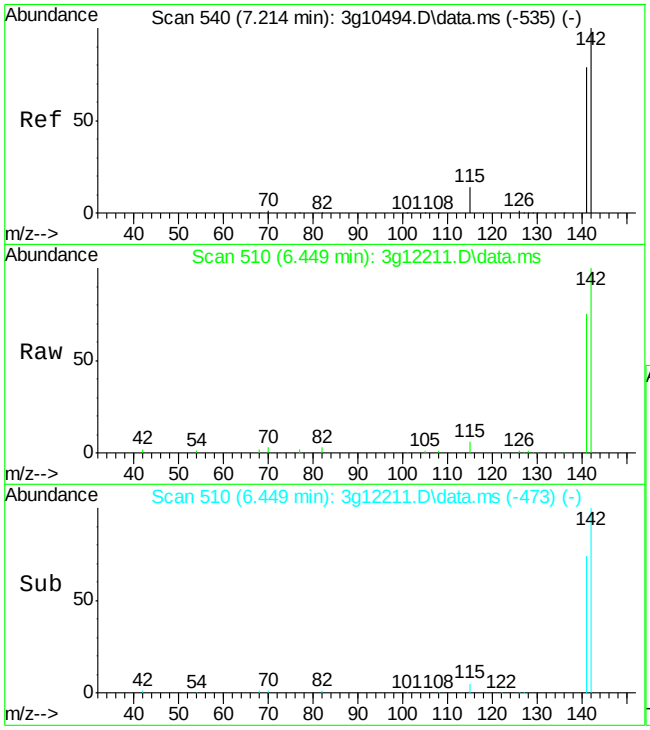


#7
2-Fluorobiphenyl
Concen: 37.7413 ug/mL
RT: 6.798 min Scan# 538
Delta R.T. -0.035 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:172 Resp: 1396152

Ion	Ratio	Lower	Upper
172	100		
171	34.2	12.6	52.6

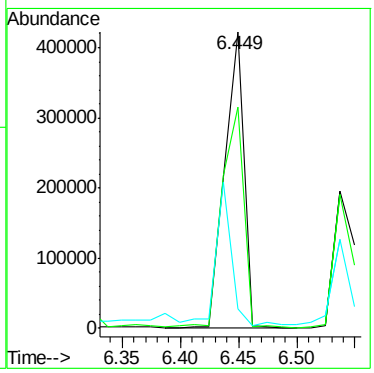


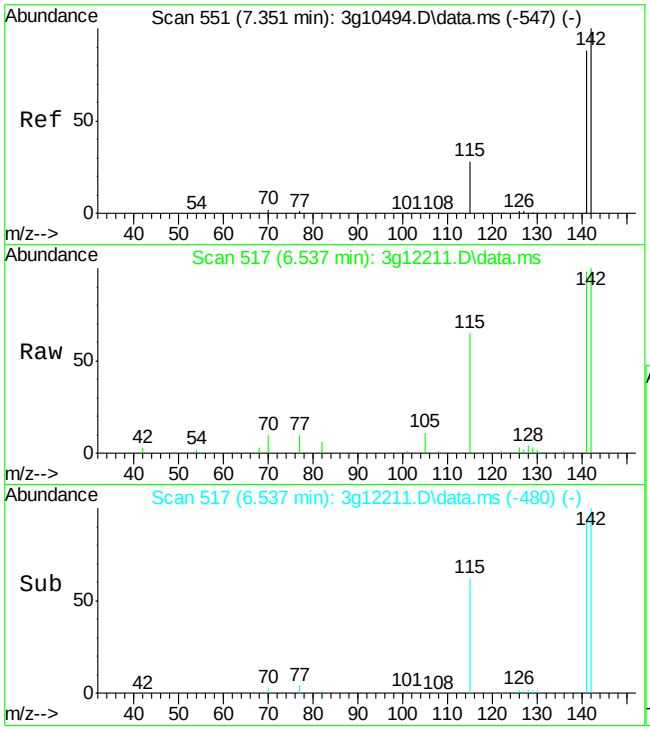


#8
2-Methylnaphthalene
Concen: 15.1802 ug/mL
RT: 6.449 min Scan# 510
Delta R.T. -0.037 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:142 Resp: 480615

Ion	Ratio	Lower	Upper
142	100		
141	84.4	64.0	104.0
115	37.7	7.1	47.1

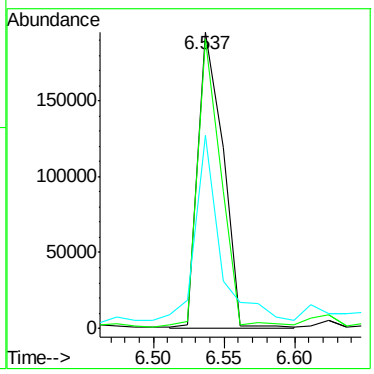


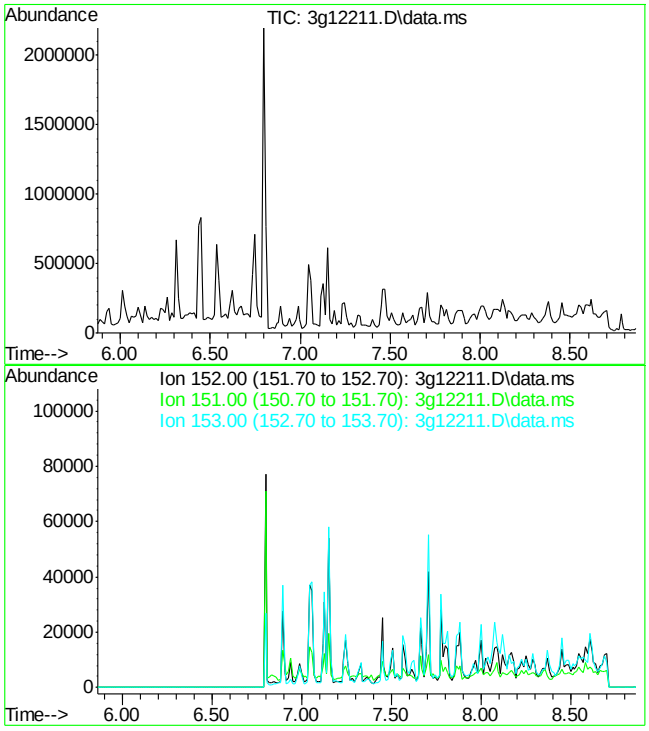


#9
1-Methylnaphthalene
Concen: 8.1329 ug/mL m
RT: 6.537 min Scan# 517
Delta R.T. -0.037 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:142 Resp: 240073

Ion	Ratio	Lower	Upper
142	100		
141	169.1	65.4	105.4#
115	75.4	9.7	49.7#



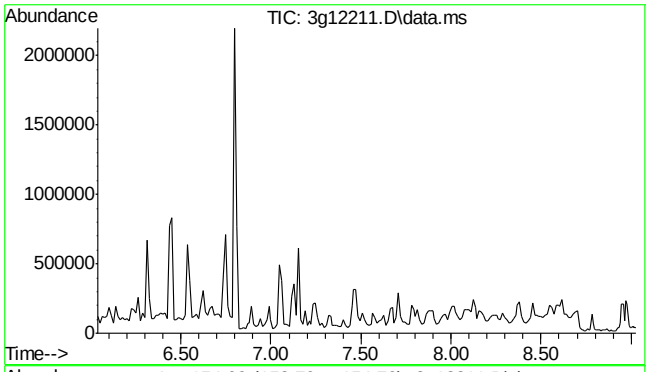


#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.37 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 152

Sig	Exp Ratio
152	100
151	19.3
153	12.8

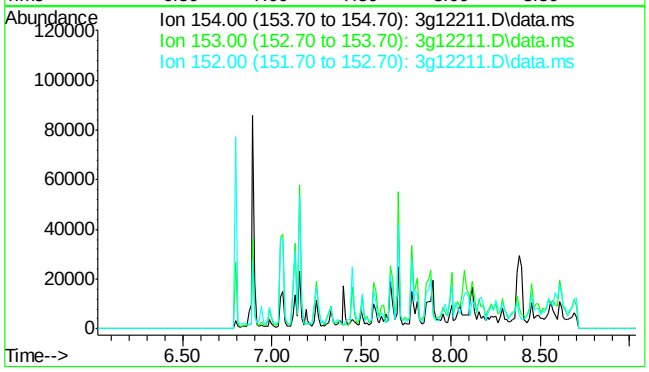


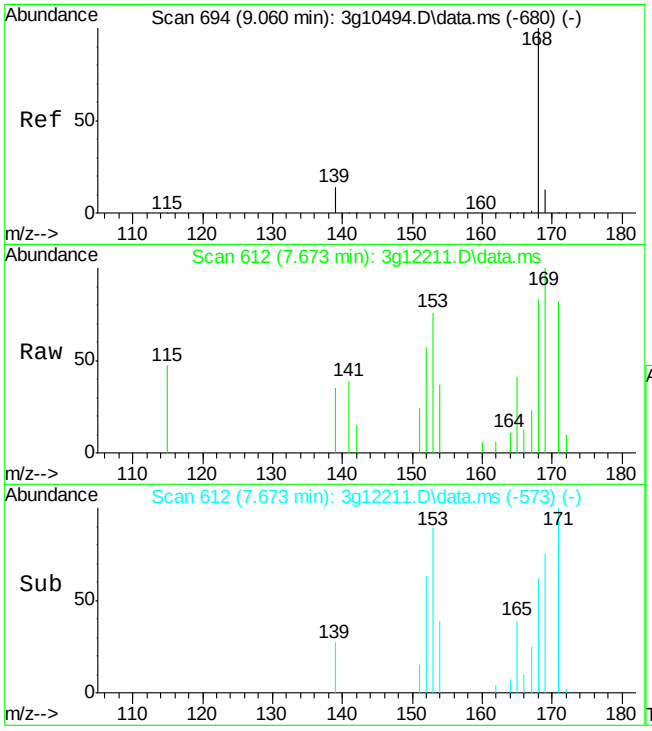
#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.53 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 154

Sig	Exp Ratio
154	100
153	104.1
152	50.2

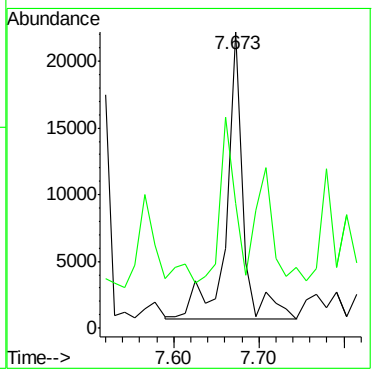


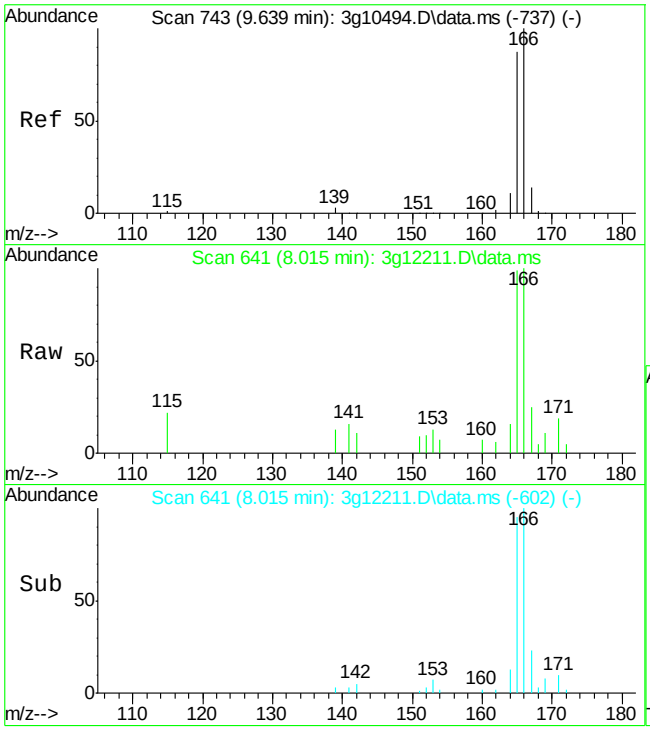


#12
Dibenzofuran
Concen: 0.5782 ug/mL
RT: 7.673 min Scan# 612
Delta R.T. -0.035 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:168 Resp: 29321

Ion	Ratio	Lower	Upper
168	100		
139	50.6	10.9	50.9

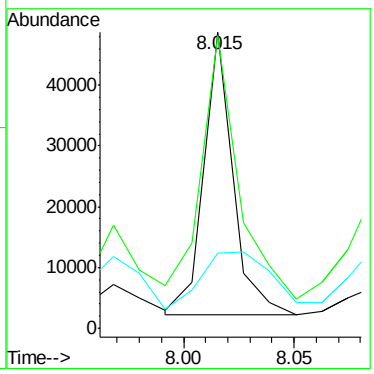


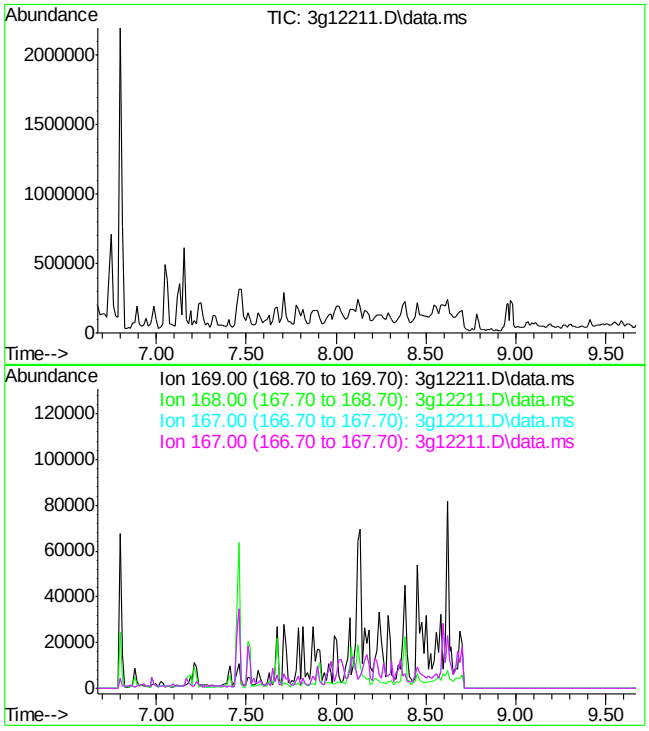


#13
Fluorene
Concen: 1.0464 ug/mL
RT: 8.015 min Scan# 641
Delta R.T. -0.035 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:166 Resp: 43358

Ion	Ratio	Lower	Upper
166	100		
165	115.2	69.6	109.6#
167	49.7	0.0	33.5#



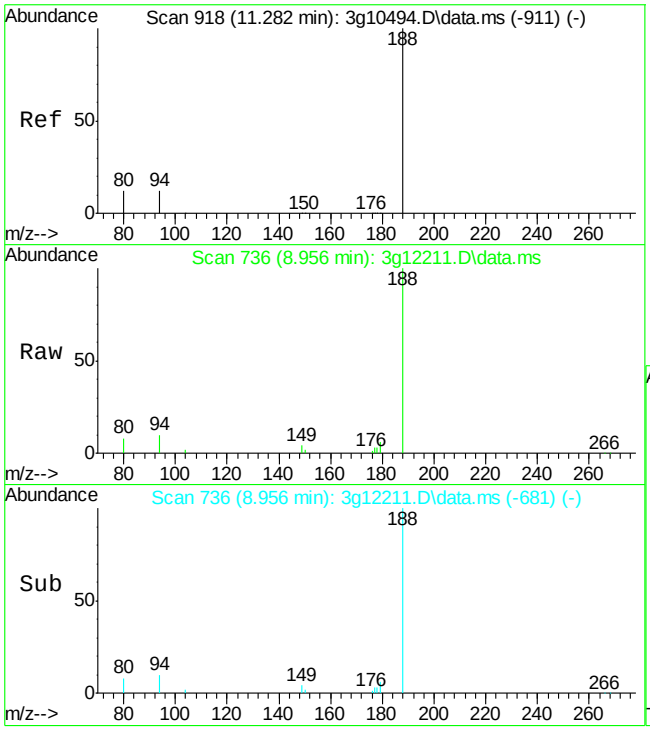


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.17 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 169

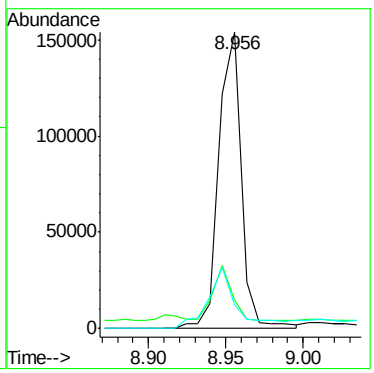
Sig	Exp Ratio
169	100
168	60.9
167	33.6
167	33.6

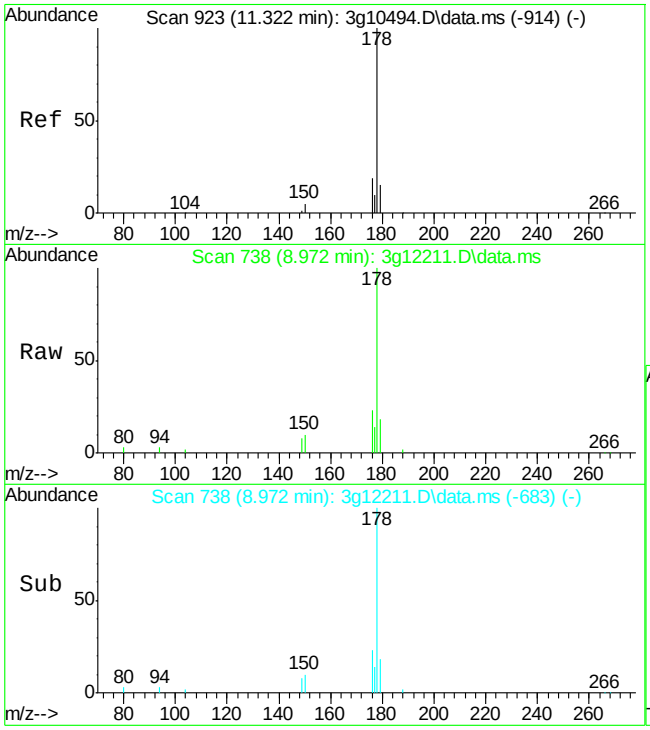


#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.956 min Scan# 736
Delta R.T. -0.032 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:188 Resp: 150629

Ion	Ratio	Lower	Upper
188	100		
94	16.6	0.0	31.6
80	26.5	0.0	32.0

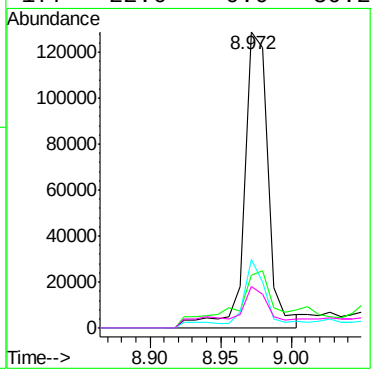


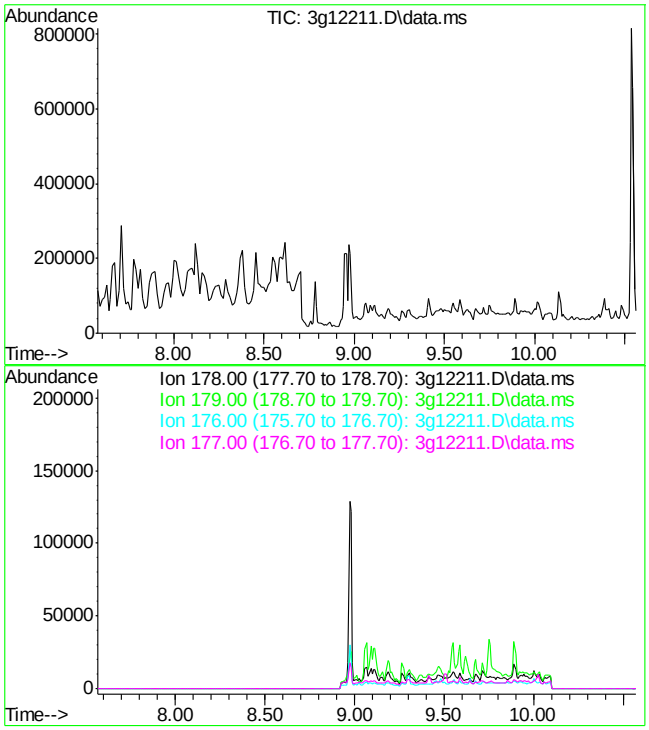


#16
Phenanthrene
Concen: 2.8435 ug/mL
RT: 8.972 min Scan# 738
Delta R.T. -0.039 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:178 Resp: 146882

Ion	Ratio	Lower	Upper
178	100		
179	31.7	0.0	35.2
176	19.0	0.0	38.7
177	22.6	0.0	30.2



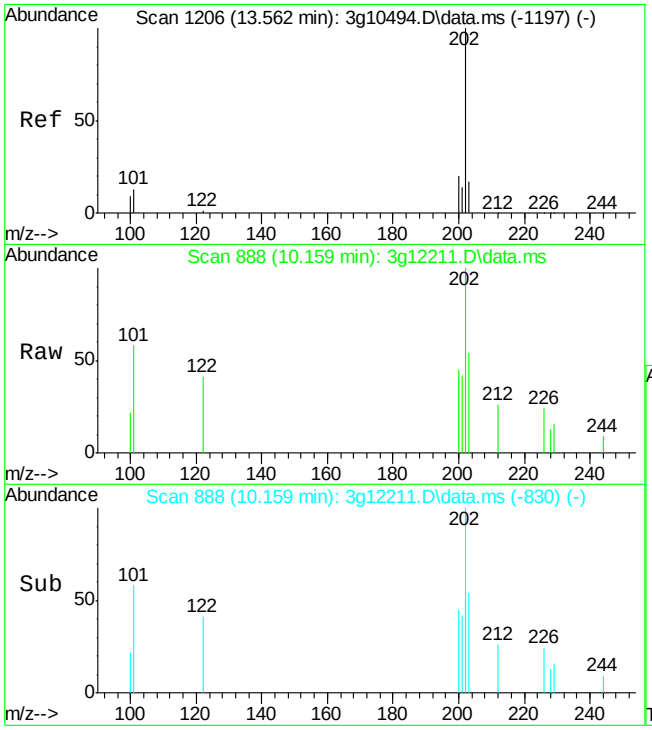


#17
Anthracene
Concen: N.D. ug/mL
Expected RT: 9.07 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 178

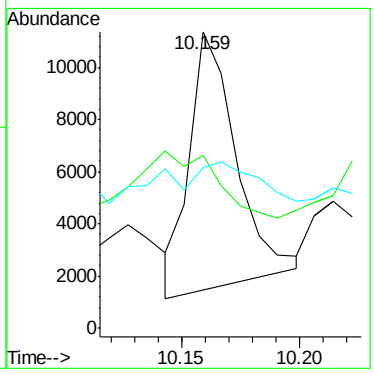
Sig	Exp Ratio
178	100
179	15.3
176	18.0
177	8.7

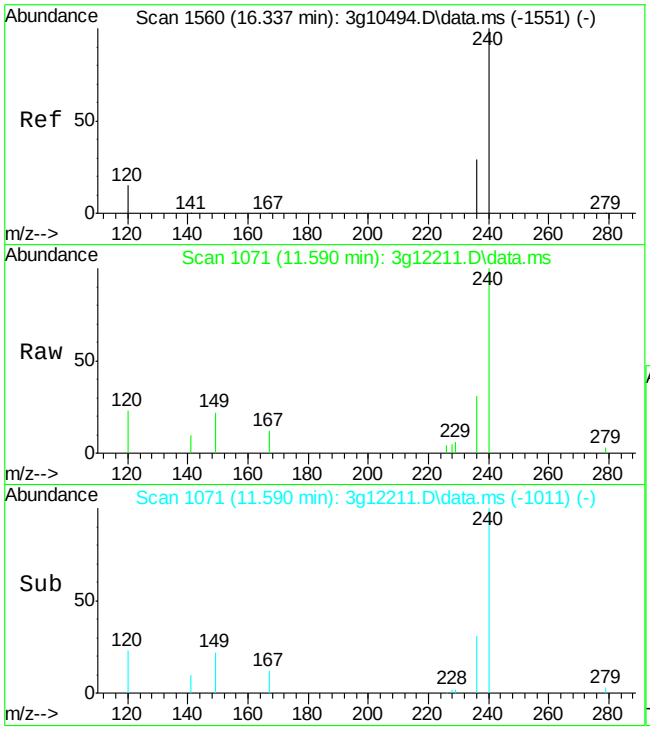


#18
Fluoranthene
Concen: 0.2311 ug/mL
RT: 10.159 min Scan# 888
Delta R.T. -0.040 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:202 Resp: 13630

Ion	Ratio	Lower	Upper
202	100		
101	223.9	0.0	31.8#
203	0.0	0.0	37.3

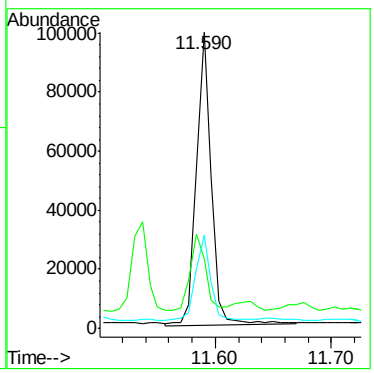


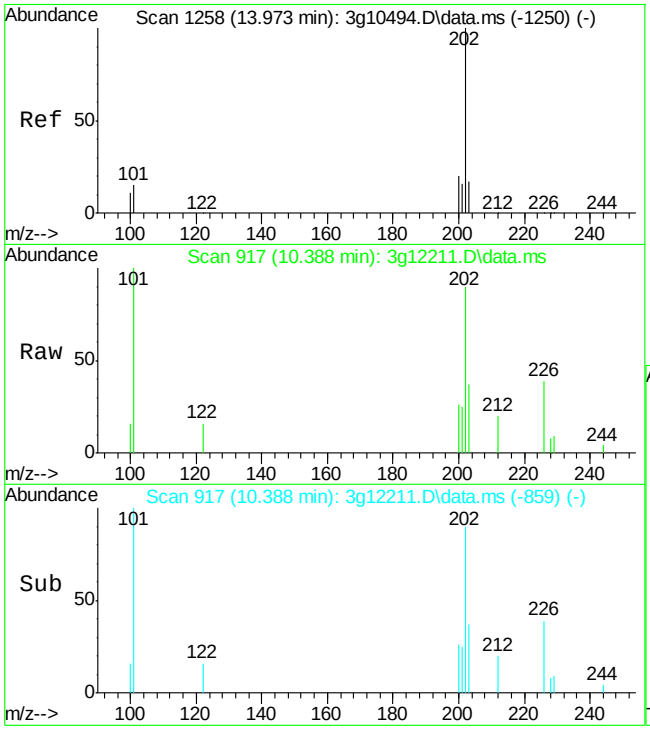


#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.590 min Scan# 1071
Delta R.T. -0.040 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:240 Resp: 90947

Ion	Ratio	Lower	Upper
240	100		
120	35.8	0.0	38.3
236	31.2	10.7	50.7

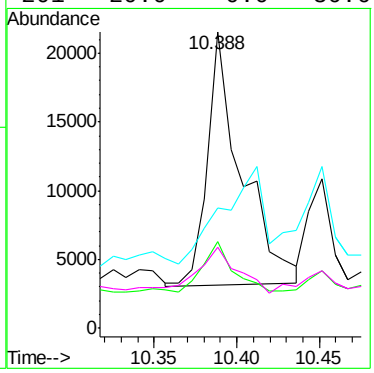


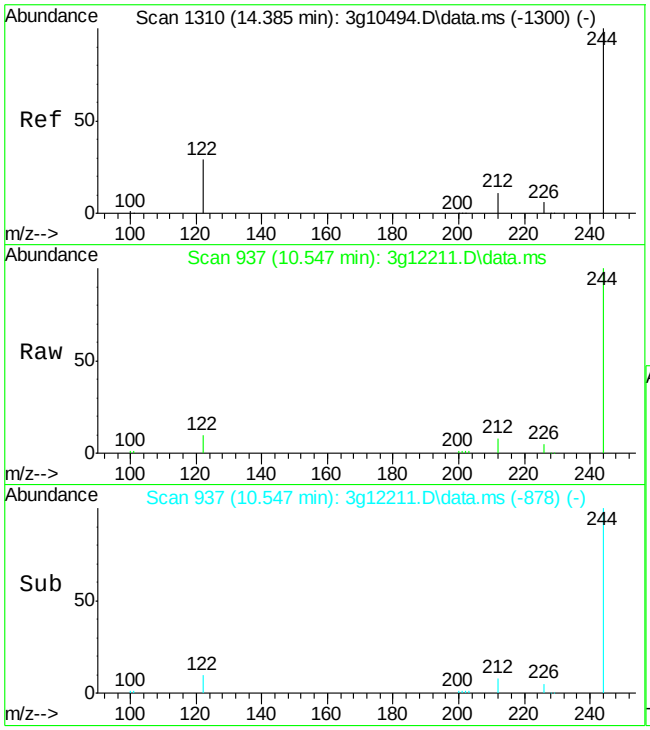


#20
Pyrene
Concen: 0.5335 ug/mL
RT: 10.388 min Scan# 917
Delta R.T. -0.040 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:202 Resp: 26635

Ion	Ratio	Lower	Upper
202	100		
200	17.4	0.3	40.3
203	49.6	0.0	37.8#
201	20.0	0.0	36.6

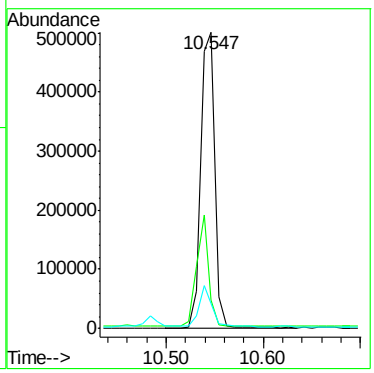


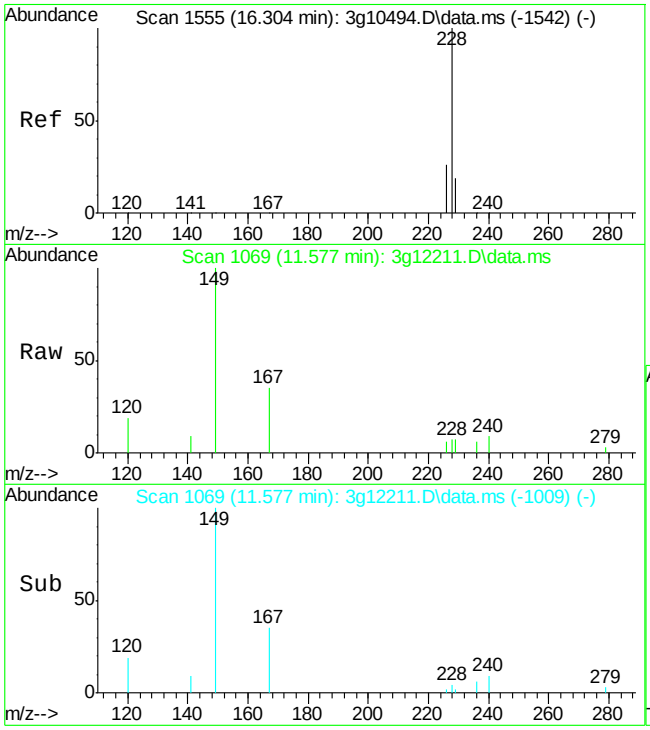


#21
Terphenyl-d14
Concen: 43.7828 ug/mL
RT: 10.547 min Scan# 937
Delta R.T. -0.032 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:244 Resp: 518977

Ion	Ratio	Lower	Upper
244	100		
122	31.8	4.9	44.9
212	12.8	0.0	32.5

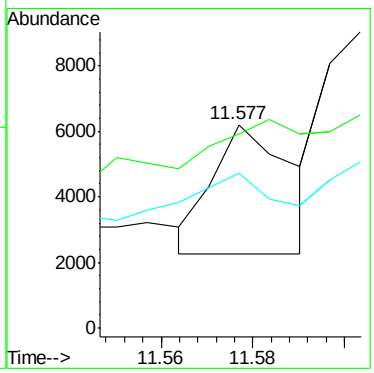


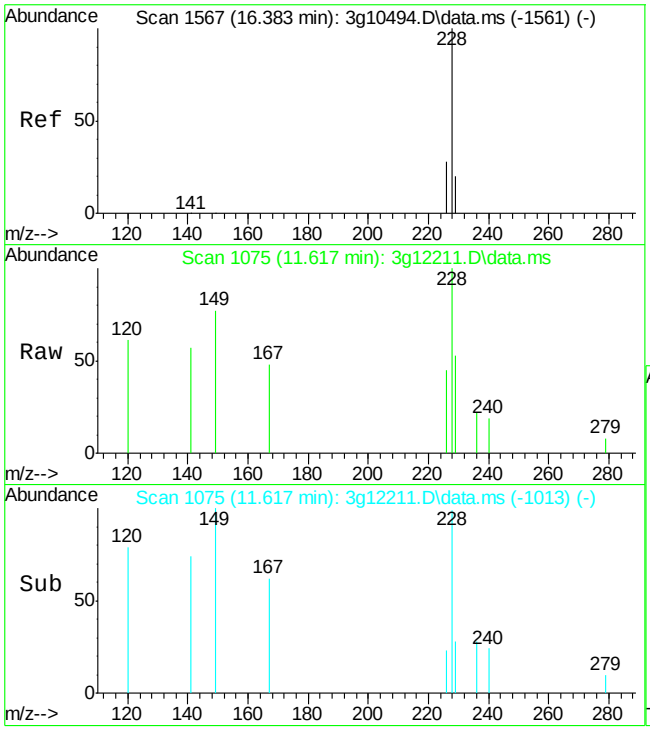


#22
Benzo(a)anthracene
Concen: 0.1142 ug/mL m
RT: 11.577 min Scan# 1069
Delta R.T. -0.040 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:228 Resp: 4633

Ion	Ratio	Lower	Upper
228	100		
229	124.5	0.0	39.5#
226	113.6	6.8	46.8#

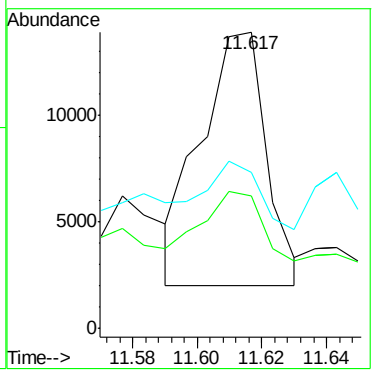


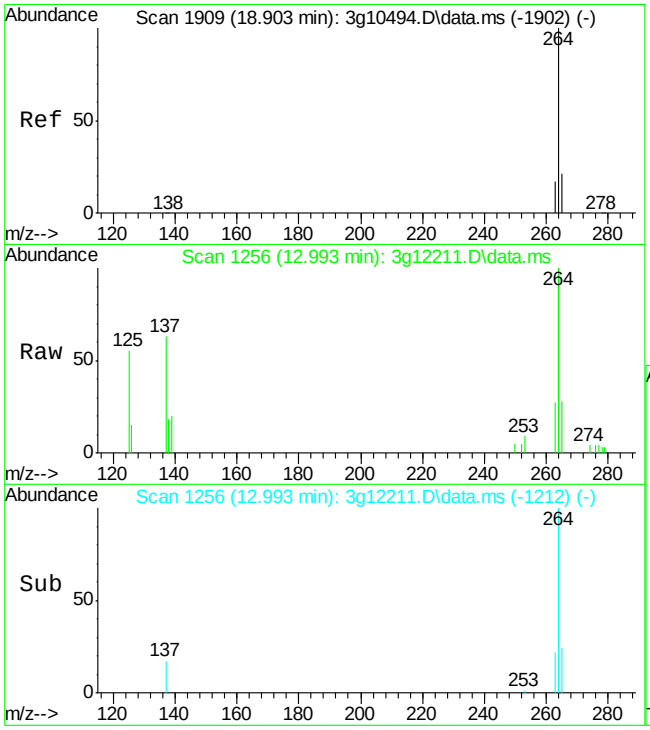


#23
Chrysene
Concen: 0.3766 ug/mL m
RT: 11.617 min Scan# 1075
Delta R.T. -0.033 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:228 Resp: 16662

Ion	Ratio	Lower	Upper
228	100		
226	31.8	8.9	48.9
229	43.1	0.0	39.4#

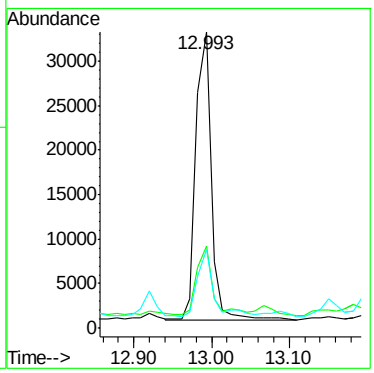


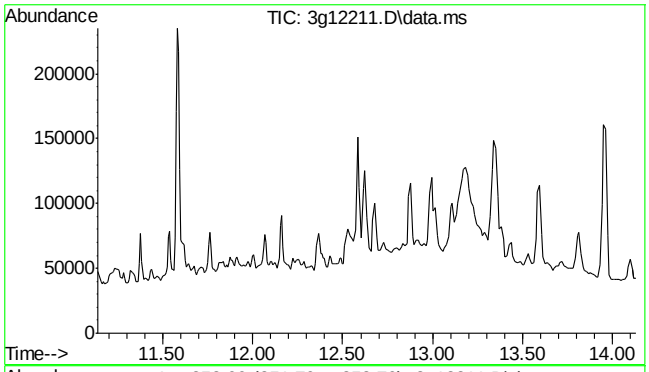


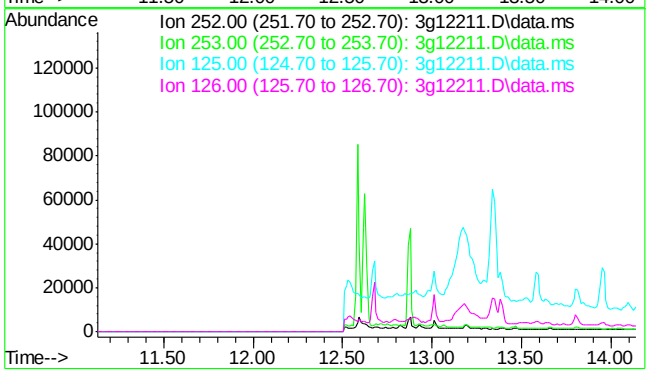
#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 12.993 min Scan# 1256
Delta R.T. -0.042 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:264 Resp: 44455

Ion	Ratio	Lower	Upper
264	100		
265	24.5	1.5	41.5
263	24.3	0.0	39.4





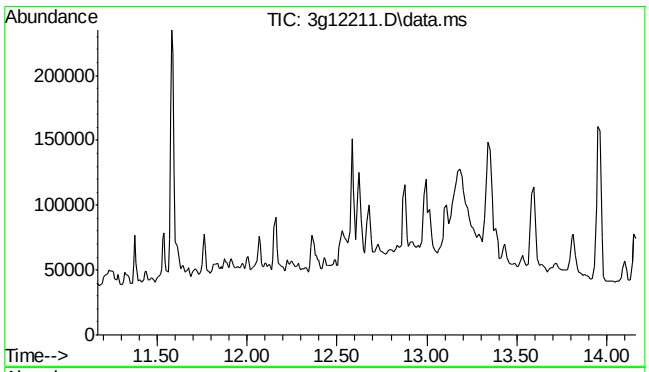


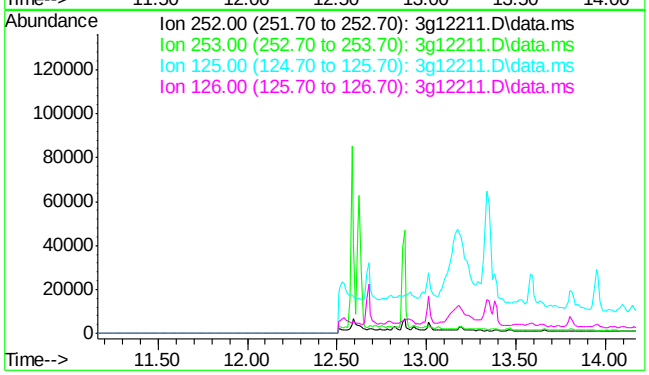
#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.64 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	46.7
125	13.5
126	18.7



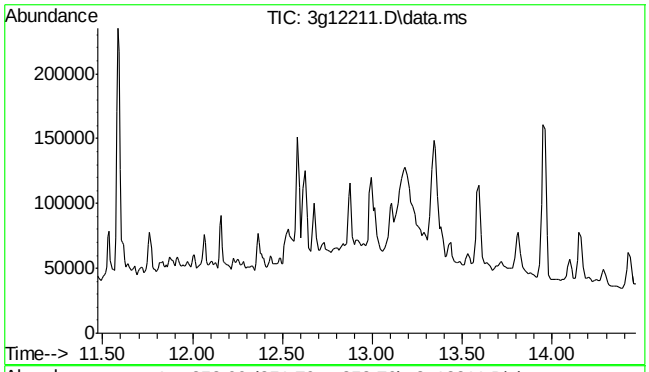


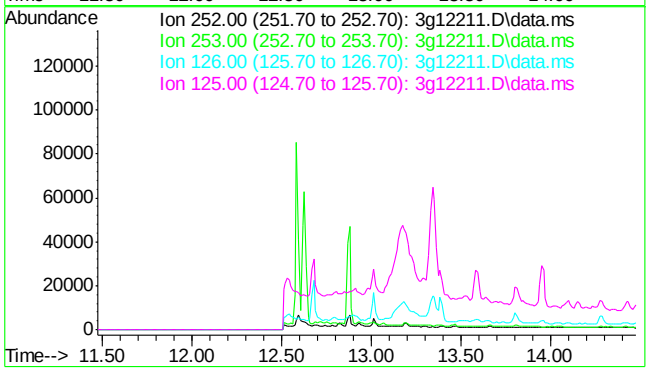
#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.67 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	40.8
125	11.8
126	16.4



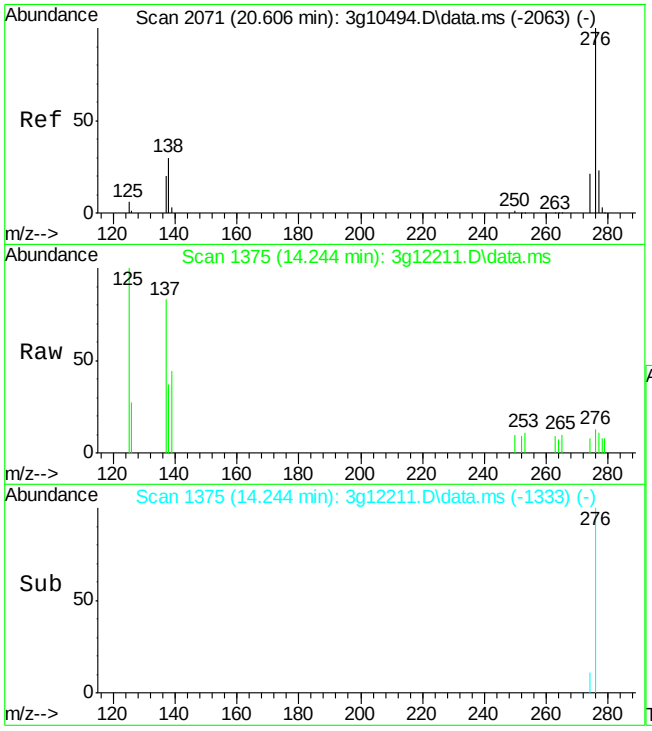


#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 12.97 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 252

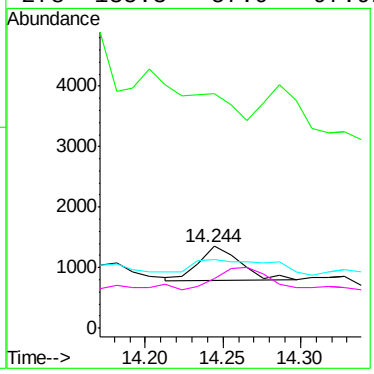
Sig	Exp Ratio
252	100
253	21.8
126	18.6
125	13.5

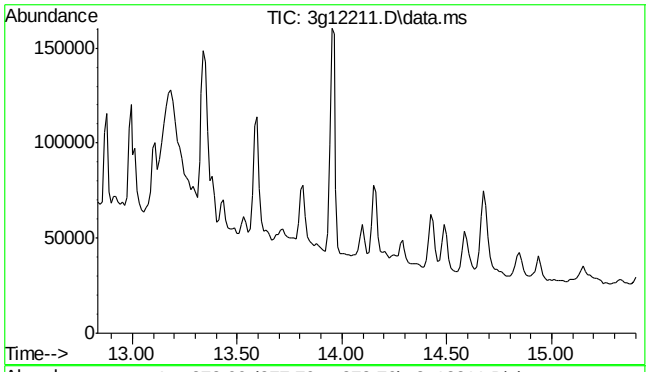


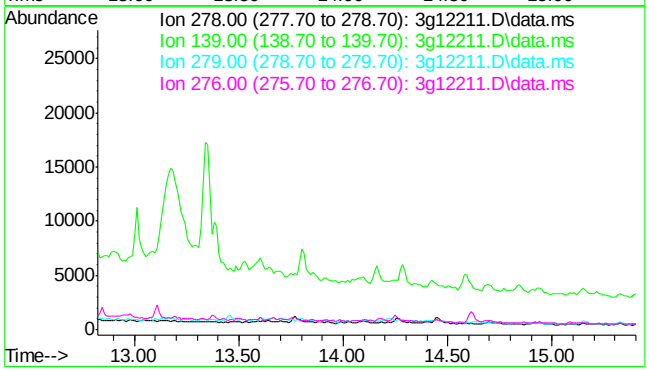
#28
Indeno(1,2,3-cd)pyrene
Concen: Below ug/mL
RT: 14.244 min Scan# 1375
Delta R.T. -0.063 min
Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion:276 Resp: 1031

Ion	Ratio	Lower	Upper
276	100		
138	157.9	16.6	56.6#
277	90.7	4.7	44.7#
278	135.3	57.9	97.9#





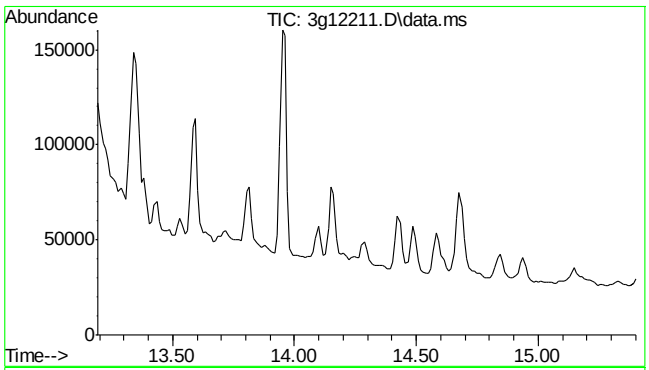


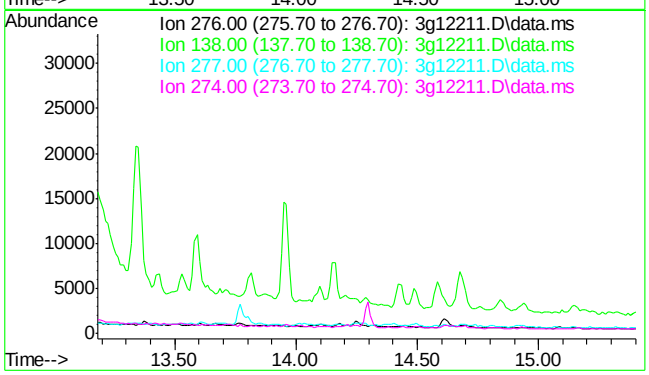
#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.33 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 278

Sig	Exp Ratio
278	100
139	27.8
279	22.3
276	128.4





#30
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 14.69 min

Lab File: 3g12211.D
Acq: 21 Nov 12 8:30 pm

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	31.5
277	22.9
274	21.9

Manual Integrations APPROVED (compounds with "m" flag)
John Hamilton 11/26/12 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
Data File : 3g12212.D
Acq On : 21 Nov 2012 8:54 pm
Operator : SARAHM1
Sample : D40911-2
Misc : OP6973,E3G576,30.03,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 26 09:13:27 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 21 08:48:23 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.764	136	76978m	4.0000	ug/mL	-0.02
6) Acenaphthene-d10	7.472	164	115389m	4.0000	ug/mL	-0.04
15) Phenanthrene-d10	8.964	188	118402m	4.0000	ug/mL	-0.02
19) Chrysene-d12	11.597	240	72038	4.0000	ug/mL	-0.03
24) Perylene-d12	12.993	264	38654	4.0000	ug/mL	-0.04
System Monitoring Compounds						
2) Nitrobenzene-d5	5.066	82	386411m	52.2115	ug/mL	-0.04
Spiked Amount 50.000	Range 25 - 135		Recovery = 104.42%			
7) 2-Fluorobiphenyl	6.810	172	1155632	27.4163	ug/mL	-0.02
Spiked Amount 50.000	Range 25 - 135		Recovery = 54.84%			
21) Terphenyl-d14	10.555	244	376425	40.0922	ug/mL	-0.02
Spiked Amount 50.000	Range 25 - 135		Recovery = 80.18%			
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	5.776	128	965782	47.9663	ug/mL#	52
8) 2-Methylnaphthalene	6.449	142	2113446	58.6658	ug/mL	95
9) 1-Methylnaphthalene	6.549	142	720413m	21.4484	ug/mL	
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.673	168	76603	1.3275	ug/mL	74
13) Fluorene	8.027	166	419364m	8.8943	ug/mL	
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	8.987	178	538181	13.4267	ug/mL	76
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	10.175	202	36213m	0.7813	ug/mL	
20) Pyrene	10.396	202	37369	0.9449	ug/mL#	60
22) Benzo(a)anthracene	11.590	228	3676m	0.1144	ug/mL	
23) Chrysene	11.623	228	26335m	0.7515	ug/mL	
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	14.244	276	739	N.D.		
29) Dibenz(a,h)anthracene	14.265	278	730	N.D.		
30) Benzo(g,h,i)perylene	14.613	276	1565	0.0589	ug/mL#	6

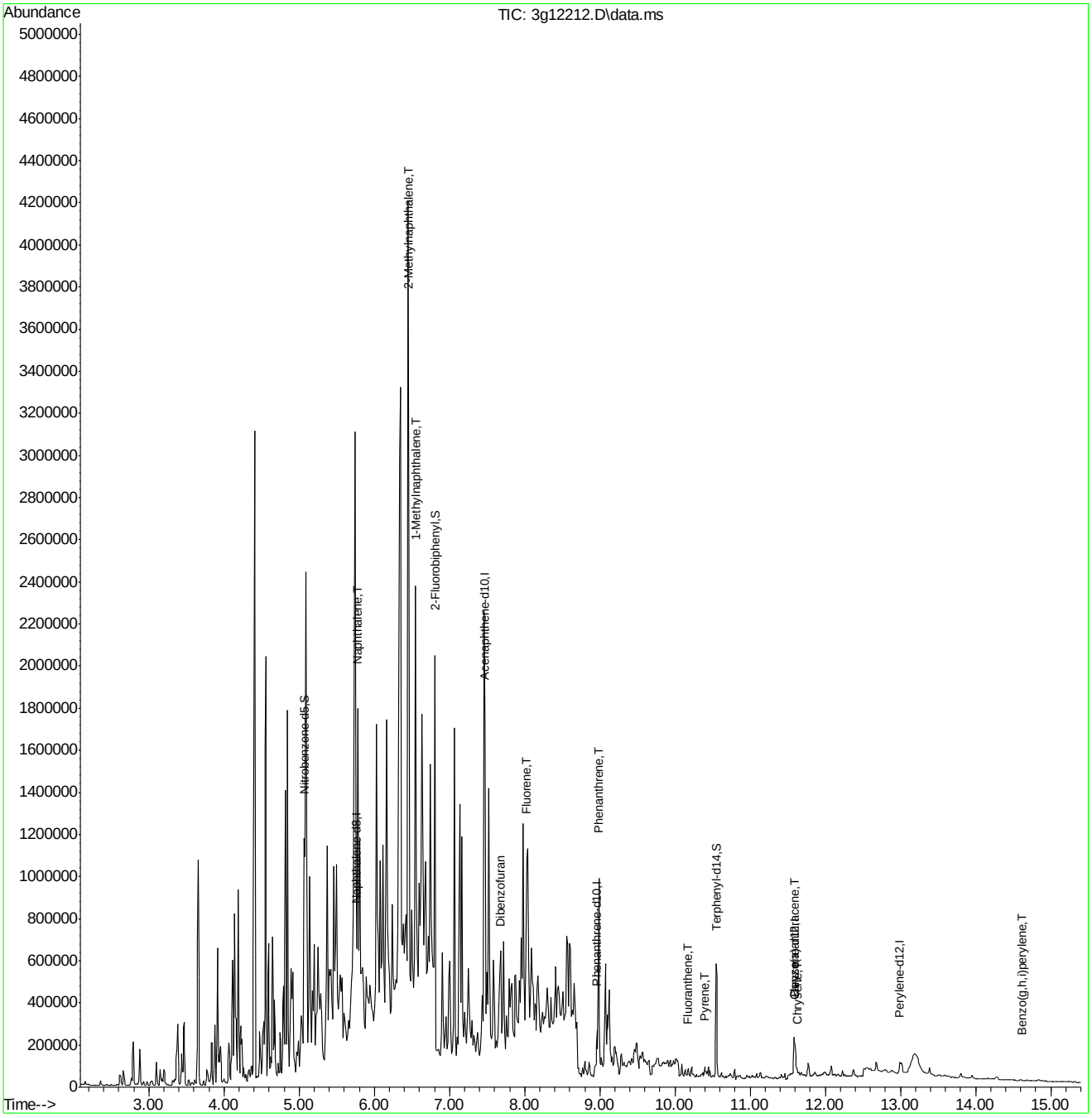
(#) = qualifier out of range (m) = manual integration (+) = signals summed

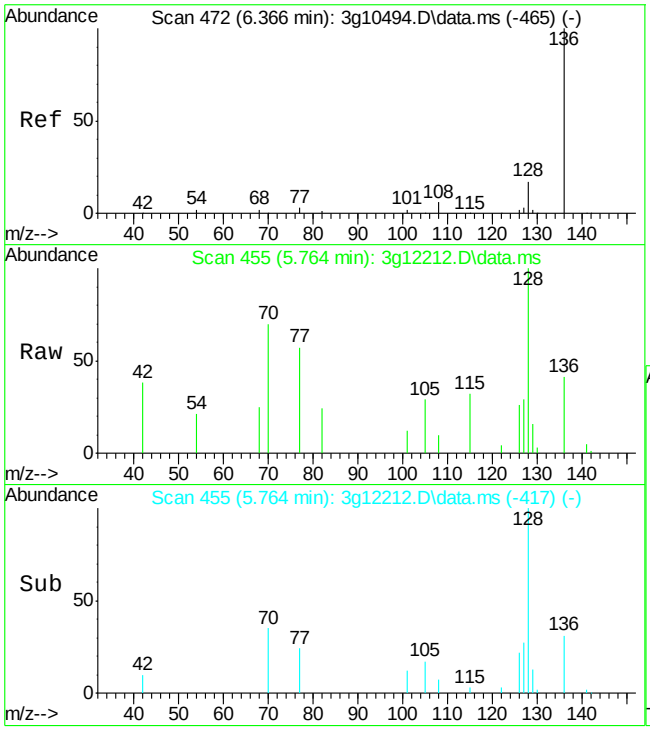
9.1.2
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
Data File : 3g12212.D
Acq On : 21 Nov 2012 8:54 pm
Operator : SARAHM1
Sample : D40911-2
Misc : OP6973,E3G576,30.03,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 26 09:13:27 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 21 08:48:23 2012
Response via : Initial Calibration

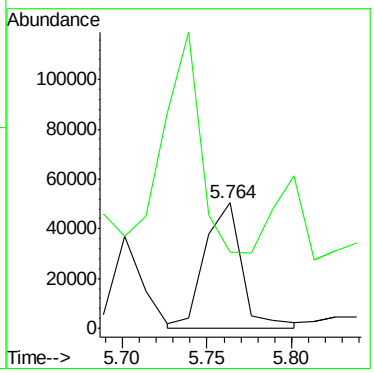


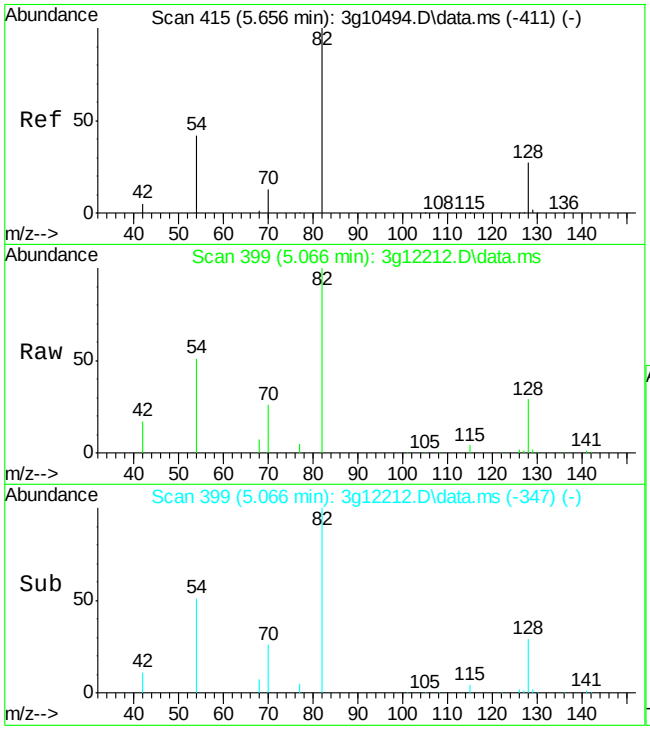


#1
Naphthalene-d8
Concen: 4.0000 ug/mL m
RT: 5.764 min Scan# 455
Delta R.T. -0.025 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:136 Resp: 76978

Ion	Ratio	Lower	Upper
136	100		
68	47.8	0.0	27.8#

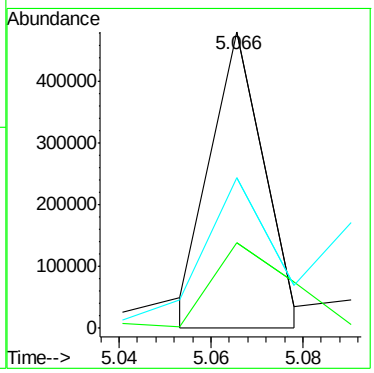


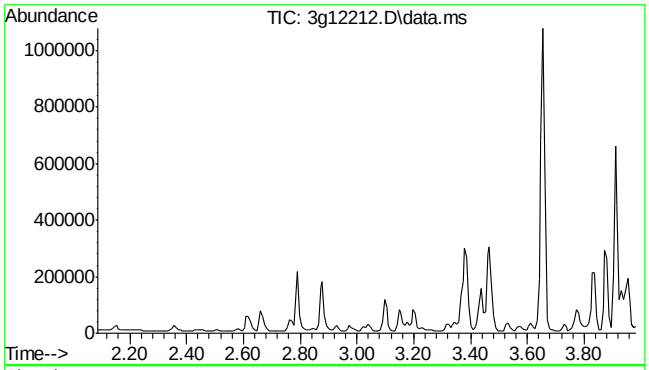


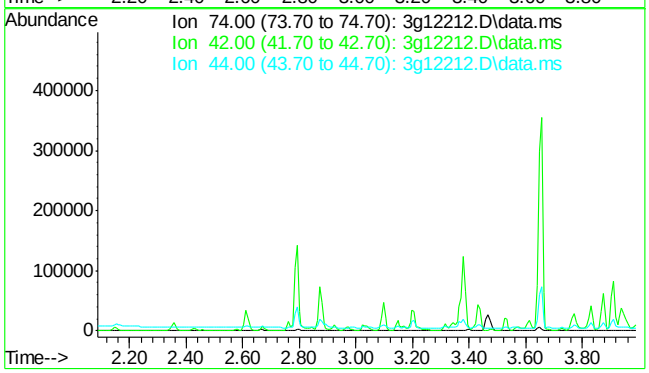
#2
Nitrobenzene-d5
Concen: 52.2115 ug/mL m
RT: 5.066 min Scan# 399
Delta R.T. -0.037 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion: 82 Resp: 386411

Ion	Ratio	Lower	Upper
82	100		
128	3.0	30.7	70.7#
54	0.0	36.8	76.8#





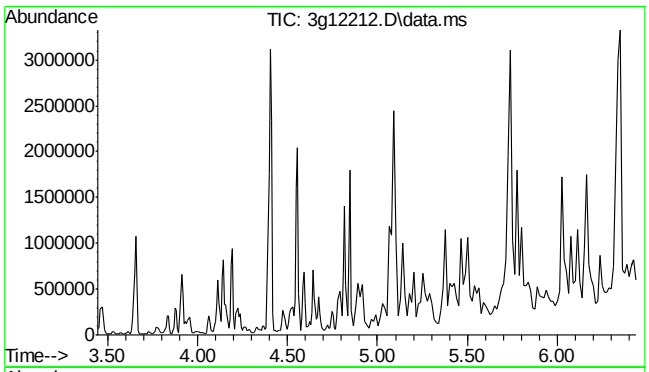


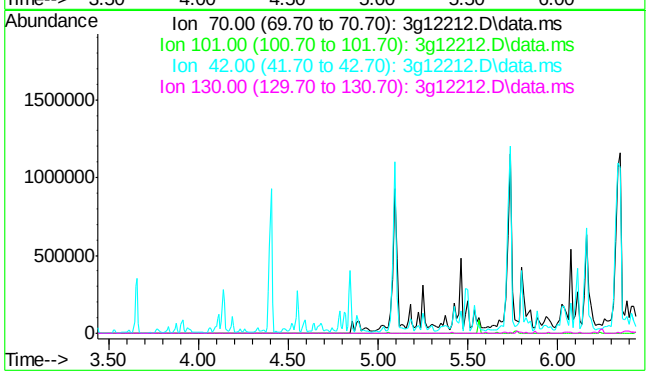
#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.49 min

Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion: 74

Sig	Exp Ratio
74	100
42	73.9
44	4.2



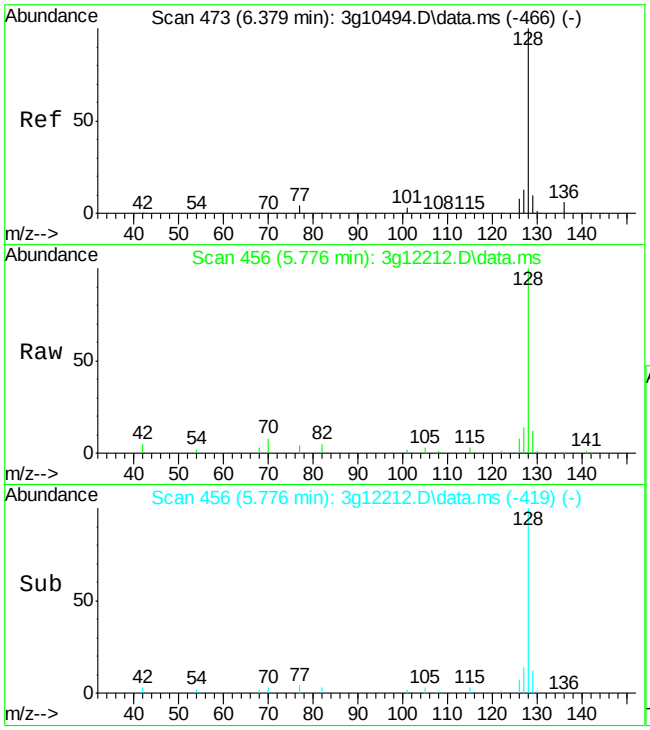


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.94 min

Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion: 70

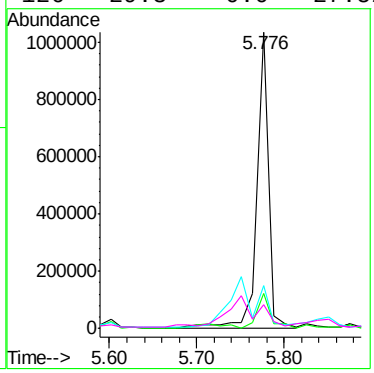
Sig	Exp Ratio
70	100
101	13.9
42	52.4
130	27.1

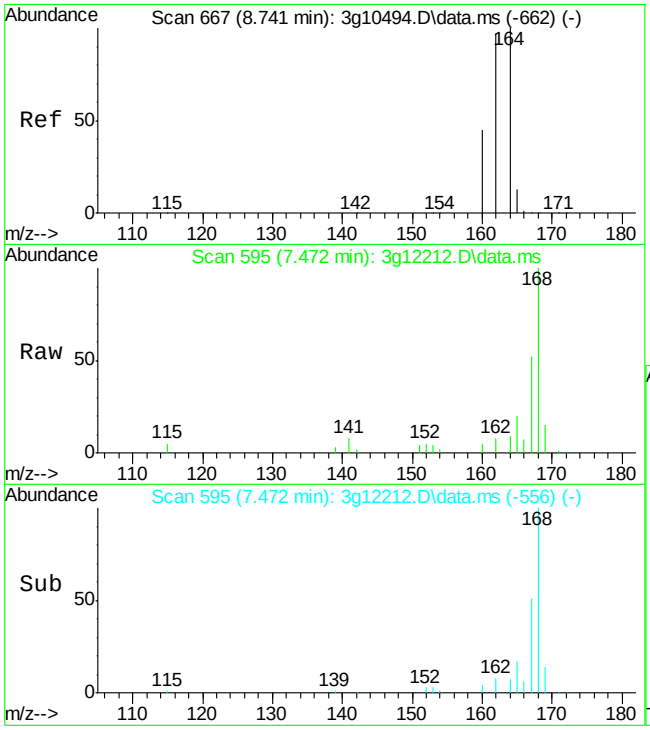


#5
Naphthalene
Concen: 47.9663 ug/mL
RT: 5.776 min Scan# 456
Delta R.T. -0.037 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:128 Resp: 965782

Ion	Ratio	Lower	Upper
128	100		
129	13.6	0.0	31.0
127	42.7	0.0	32.8#
126	29.3	0.0	27.5#

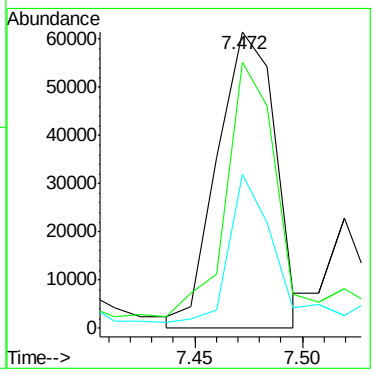


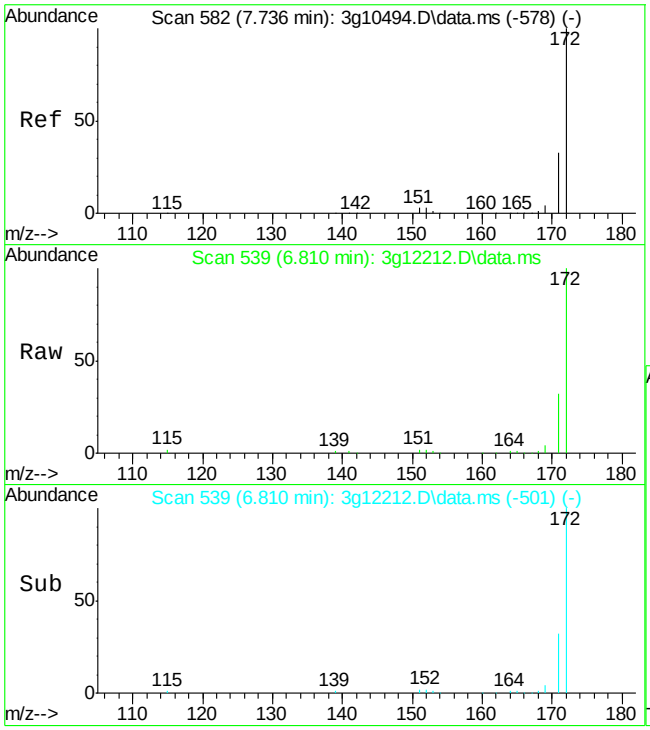


#6
Acenaphthene-d10
Concen: 4.0000 ug/mL m
RT: 7.472 min Scan# 595
Delta R.T. -0.035 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:164 Resp: 115389

Ion	Ratio	Lower	Upper
164	100		
162	14.3	78.1	118.1#
160	0.0	28.0	68.0#

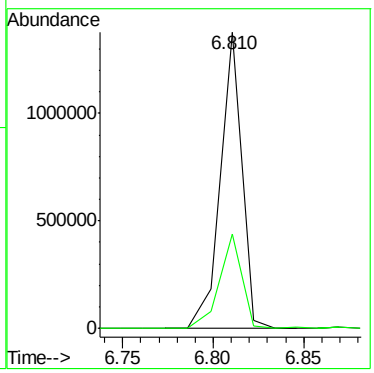


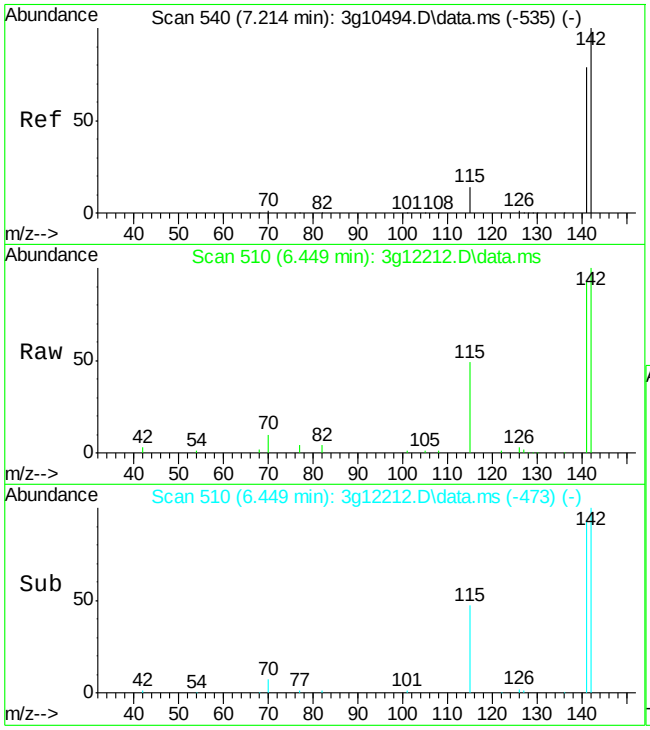


#7
2-Fluorobiphenyl
Concen: 27.4163 ug/mL
RT: 6.810 min Scan# 539
Delta R.T. -0.023 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:172 Resp: 1155632

Ion	Ratio	Lower	Upper
172	100		
171	33.4	12.6	52.6

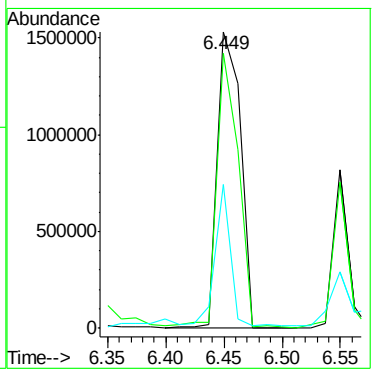


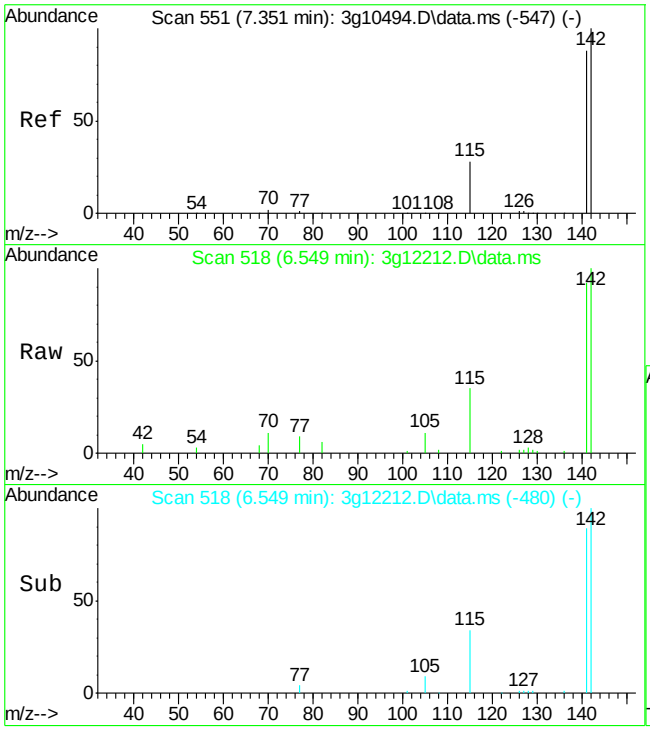


#8
2-Methylnaphthalene
Concen: 58.6658 ug/mL
RT: 6.449 min Scan# 510
Delta R.T. -0.037 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:142 Resp: 2113446

Ion	Ratio	Lower	Upper
142	100		
141	85.6	64.0	104.0
115	35.0	7.1	47.1

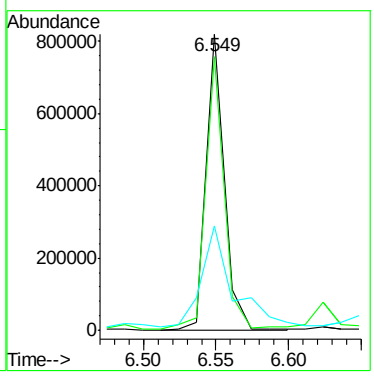


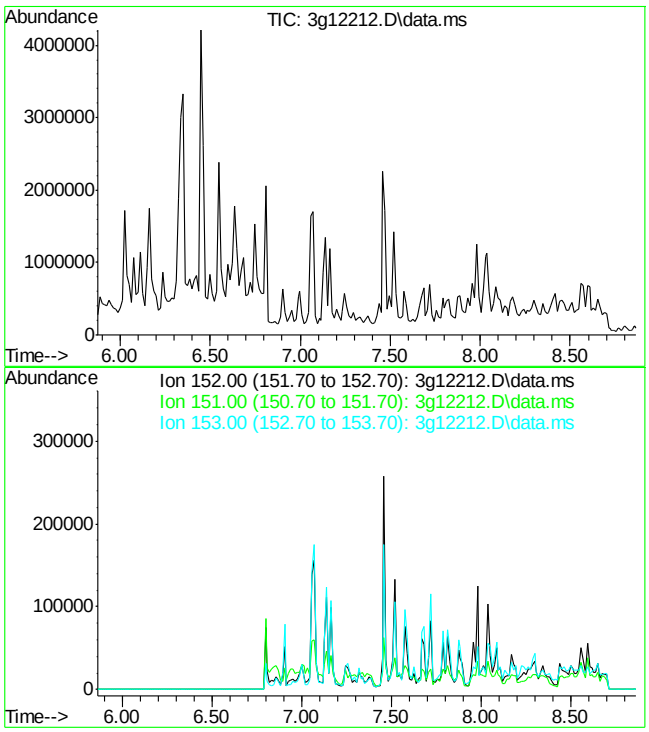


#9
1-Methylnaphthalene
Concen: 21.4484 ug/mL m
RT: 6.549 min Scan# 518
Delta R.T. -0.025 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:142 Resp: 720413

Ion	Ratio	Lower	Upper
142	100		
141	251.2	65.4	105.4#
115	102.7	9.7	49.7#



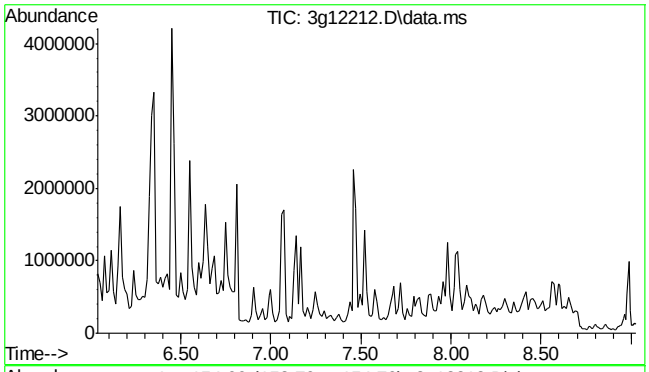


#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.37 min

Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion: 152

Sig	Exp Ratio
152	100
151	19.3
153	12.8

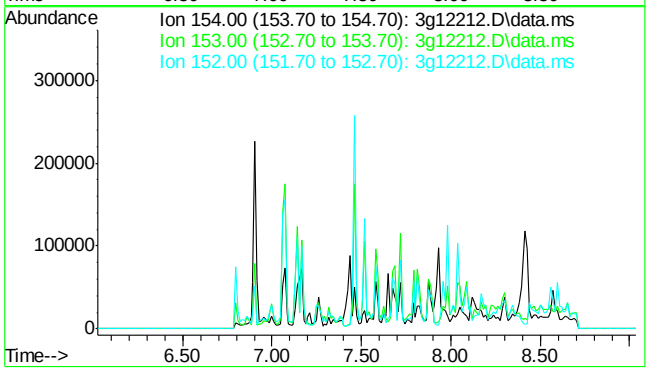


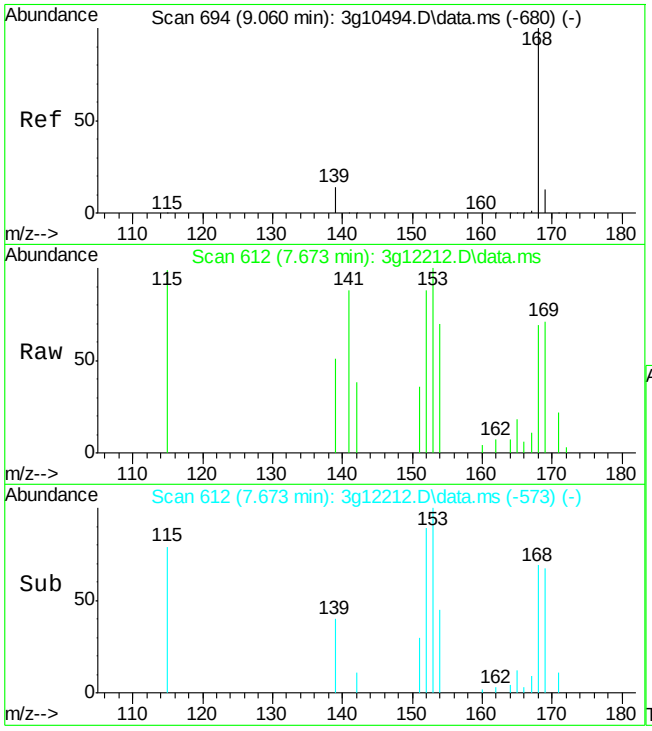
#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.53 min

Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion: 154

Sig	Exp Ratio
154	100
153	104.1
152	50.2

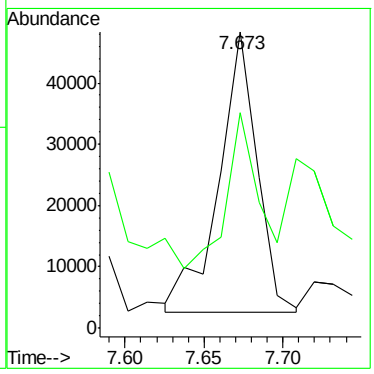


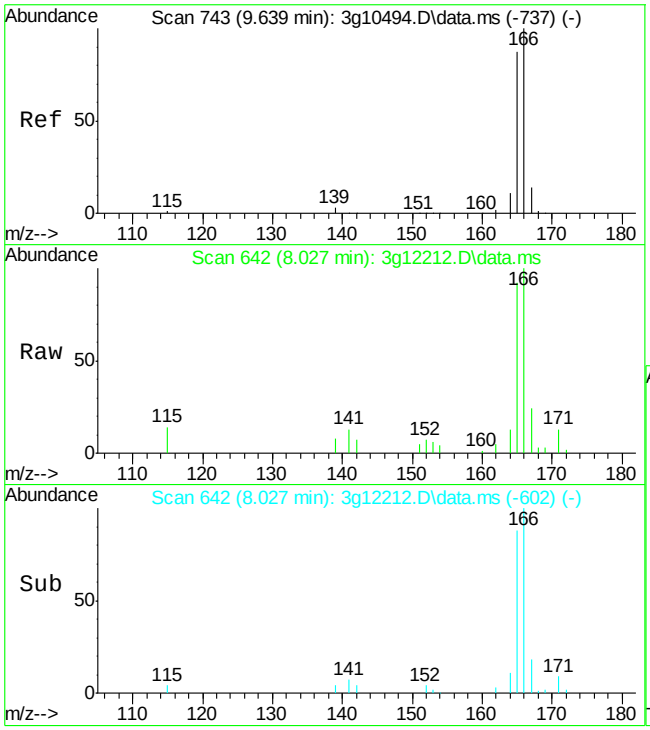


#12
Dibenzofuran
Concen: 1.3275 ug/mL
RT: 7.673 min Scan# 612
Delta R.T. -0.035 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:168 Resp: 76603

Ion	Ratio	Lower	Upper
168	100		
139	45.1	10.9	50.9

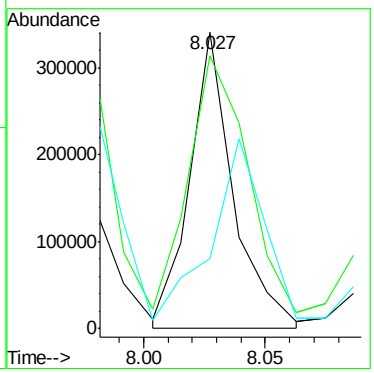


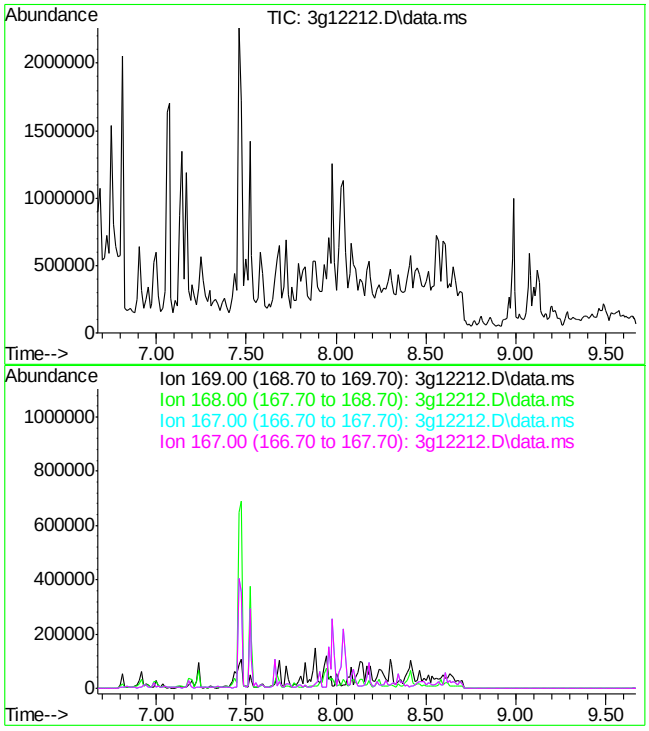


#13
Fluorene
Concen: 8.8943 ug/mL m
RT: 8.027 min Scan# 642
Delta R.T. -0.024 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:166 Resp: 419364

Ion	Ratio	Lower	Upper
166	100		
165	43.4	69.6	109.6#
167	21.9	0.0	33.5



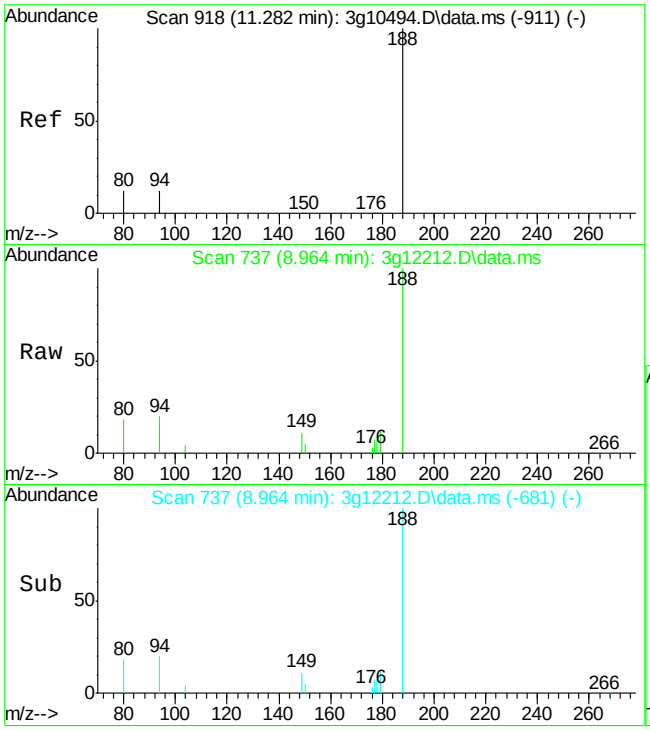


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.17 min

Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion: 169

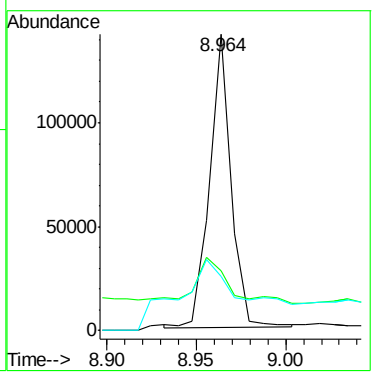
Sig	Exp Ratio
169	100
168	60.9
167	33.6
167	33.6

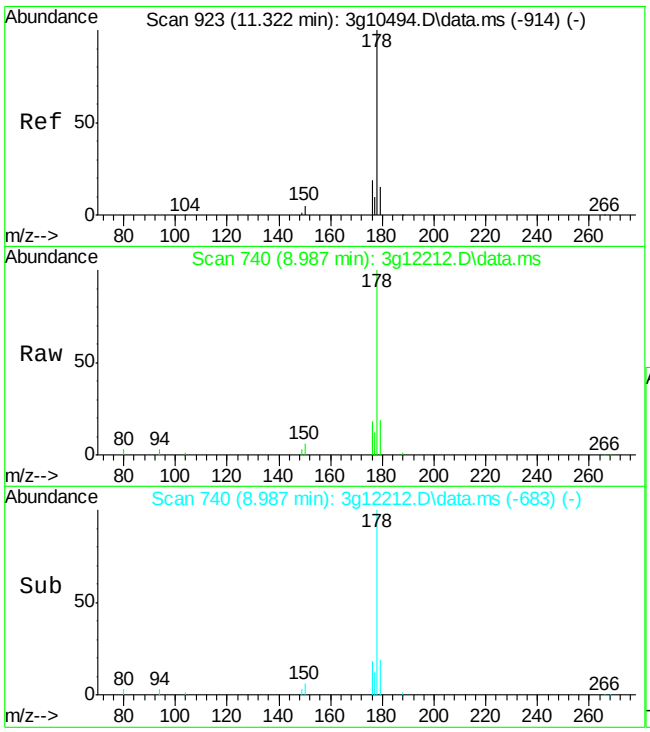


#15
Phenanthrene-d10
Concen: 4.0000 ug/mL m
RT: 8.964 min Scan# 737
Delta R.T. -0.024 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:188 Resp: 118402

Ion	Ratio	Lower	Upper
188	100		
94	4.8	0.0	31.6
80	0.0	0.0	32.0

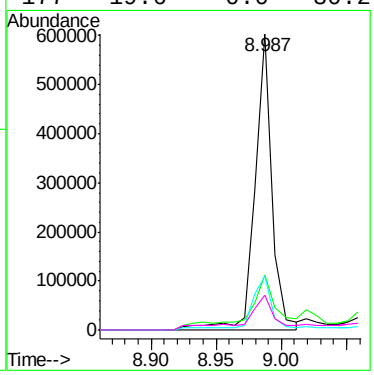


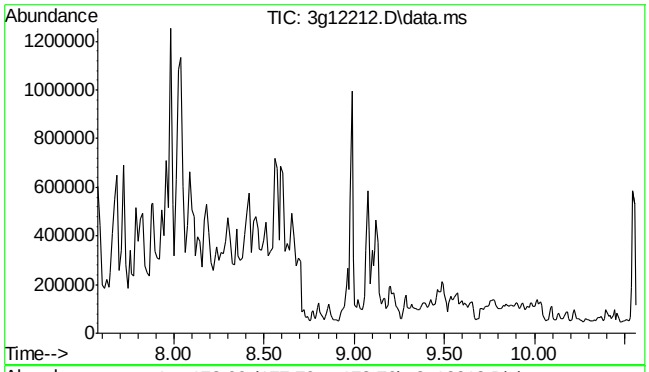


#16
Phenanthrene
Concen: 13.4267 ug/mL
RT: 8.987 min Scan# 740
Delta R.T. -0.024 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:178 Resp: 538181

Ion	Ratio	Lower	Upper
178	100		
179	31.7	0.0	35.2
176	23.6	0.0	38.7
177	19.6	0.0	30.2



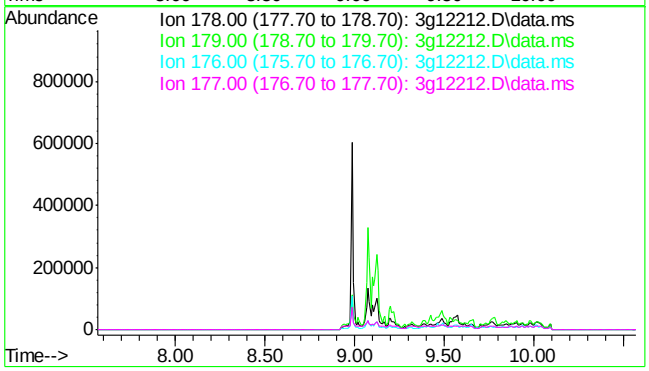


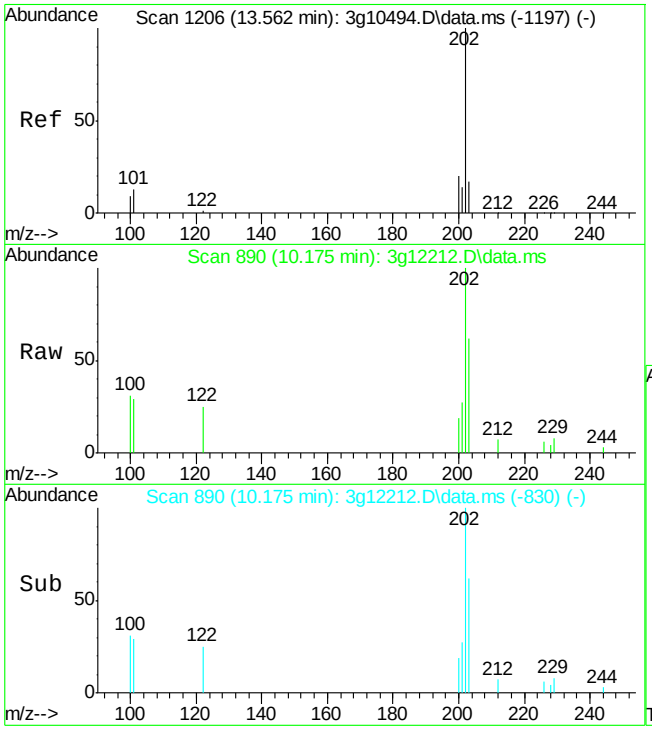
#17
Anthracene
Concen: N.D. ug/mL
Expected RT: 9.07 min

Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion: 178

Sig	Exp Ratio
178	100
179	15.3
176	18.0
177	8.7

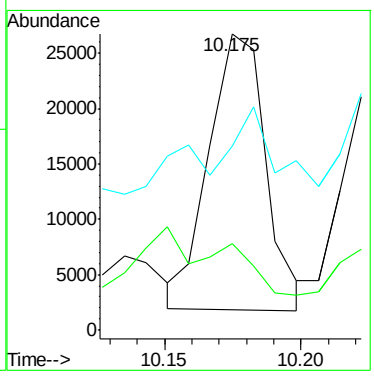


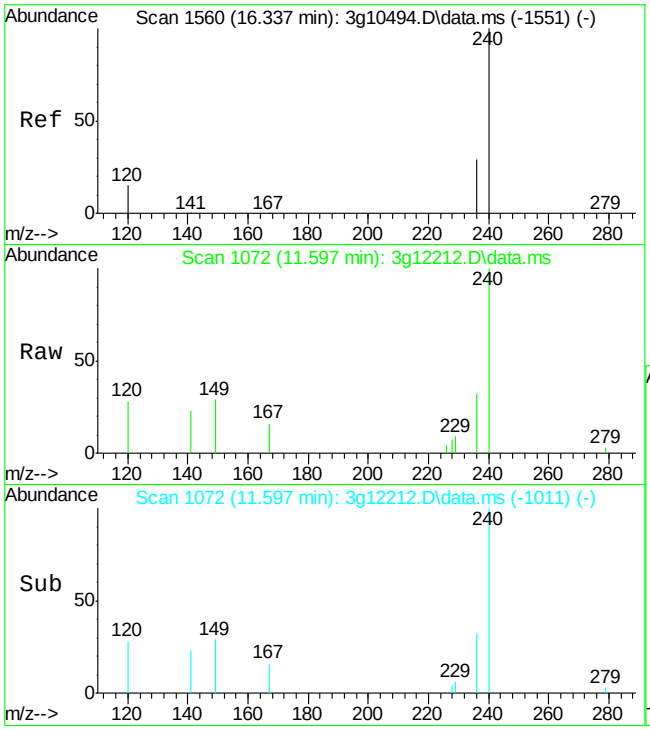


#18
Fluoranthene
Concen: 0.7813 ug/mL m
RT: 10.175 min Scan# 890
Delta R.T. -0.024 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:202 Resp: 36213

Ion	Ratio	Lower	Upper
202	100		
101	6.5	0.0	31.8
203	49.8	0.0	37.3#

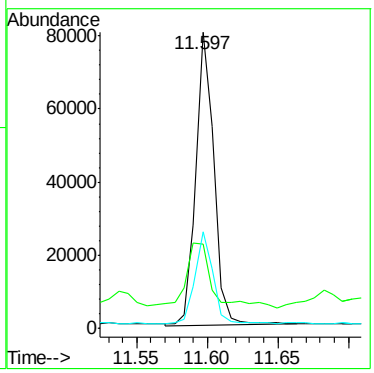


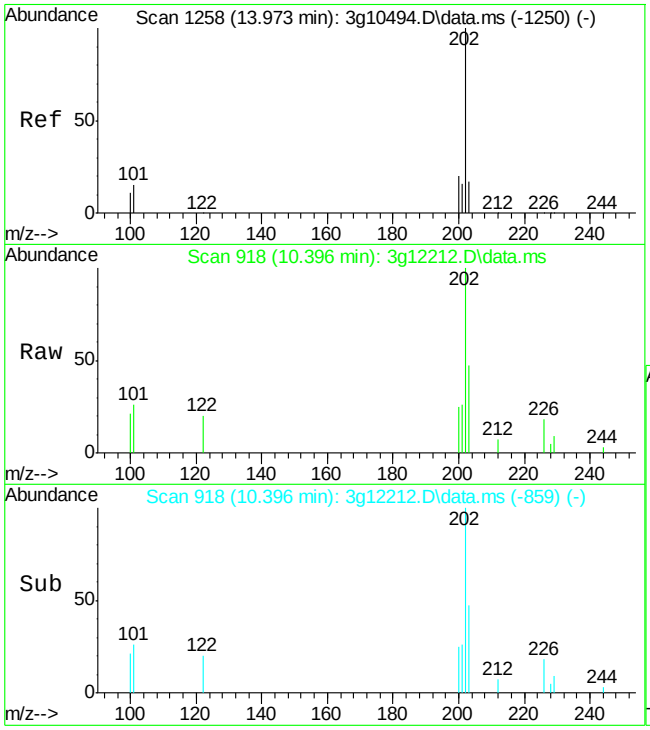


#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.597 min Scan# 1072
Delta R.T. -0.033 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:240 Resp: 72038

Ion	Ratio	Lower	Upper
240	100		
120	30.0	0.0	38.3
236	32.7	10.7	50.7

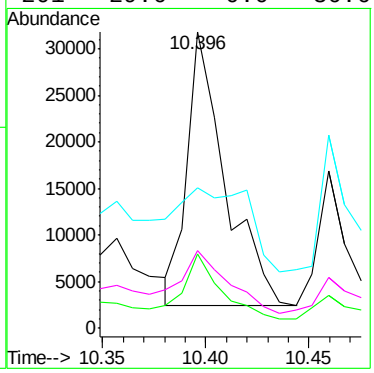


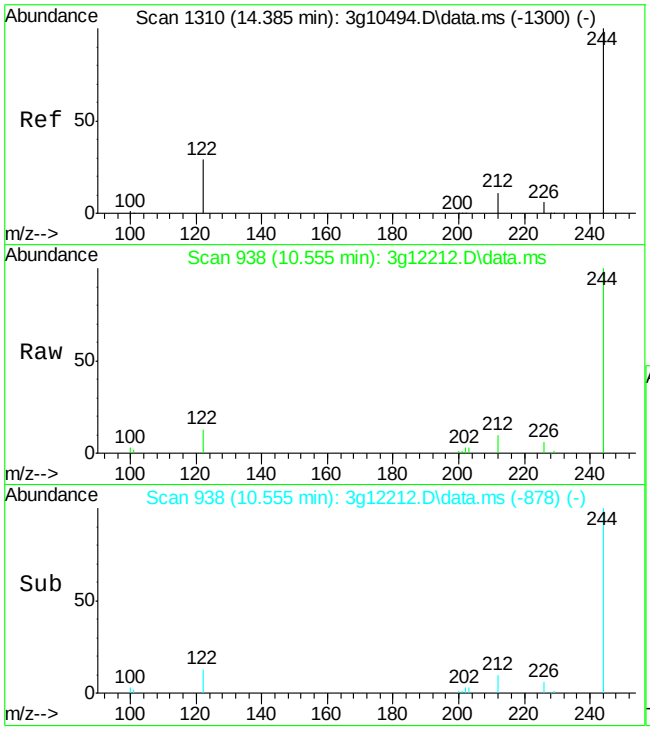


#20
Pyrene
Concen: 0.9449 ug/mL
RT: 10.396 min Scan# 918
Delta R.T. -0.032 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:202 Resp: 37369

Ion	Ratio	Lower	Upper
202	100		
200	23.9	0.3	40.3
203	55.3	0.0	37.8#
201	29.6	0.0	36.6

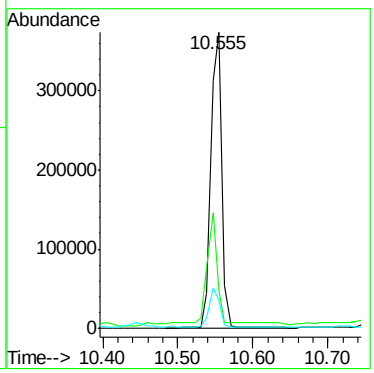


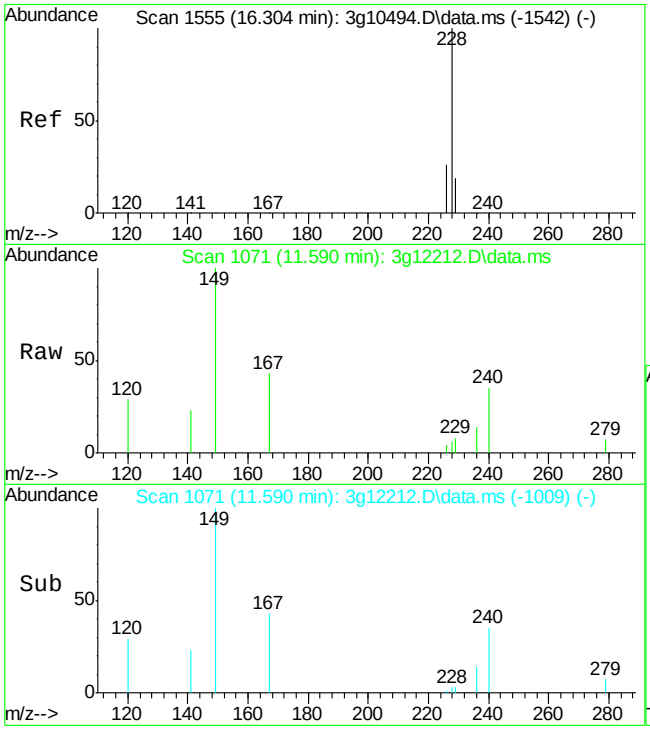


#21
Terphenyl-d14
Concen: 40.0922 ug/mL
RT: 10.555 min Scan# 938
Delta R.T. -0.024 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:244 Resp: 376425

Ion	Ratio	Lower	Upper
244	100		
122	34.0	4.9	44.9
212	12.5	0.0	32.5

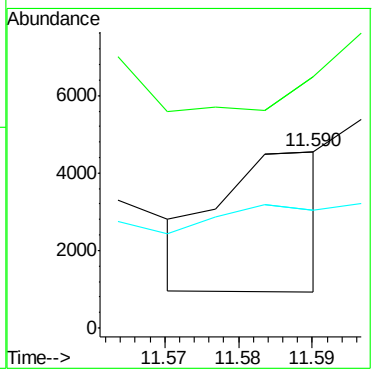


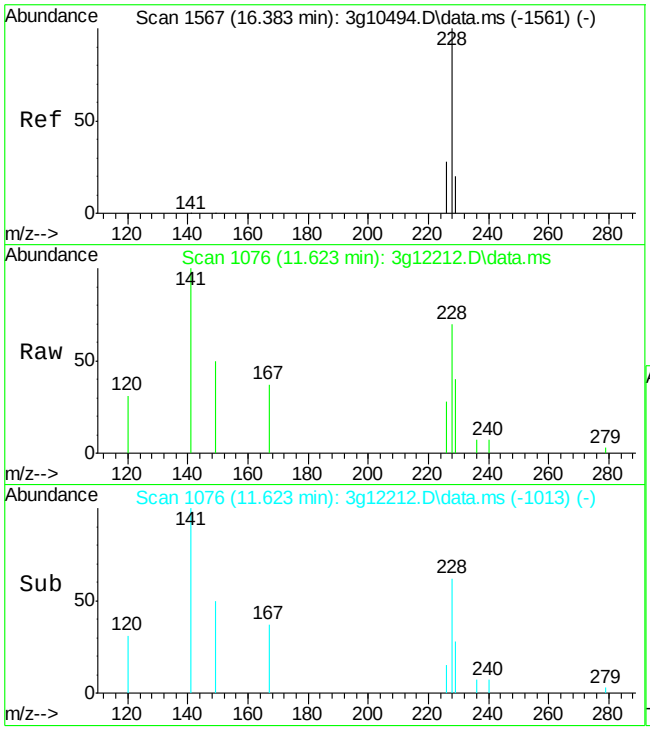


#22
Benzo(a)anthracene
Concen: 0.1144 ug/mL m
RT: 11.590 min Scan# 1071
Delta R.T. -0.026 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:228 Resp: 3676

Ion	Ratio	Lower	Upper
228	100		
229	294.5	0.0	39.5#
226	253.7	6.8	46.8#

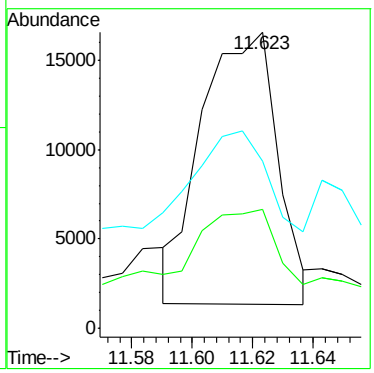


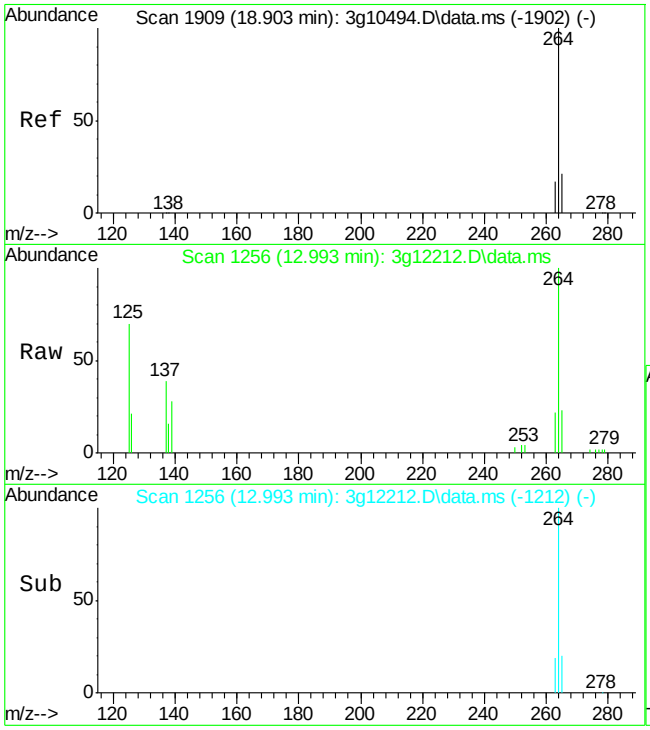


#23
Chrysene
Concen: 0.7515 ug/mL m
RT: 11.623 min Scan# 1076
Delta R.T. -0.026 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:228 Resp: 26335

Ion	Ratio	Lower	Upper
228	100		
226	38.5	8.9	48.9
229	41.1	0.0	39.4#

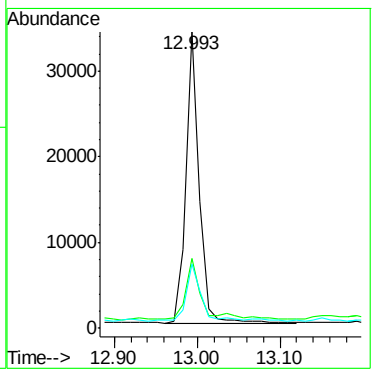


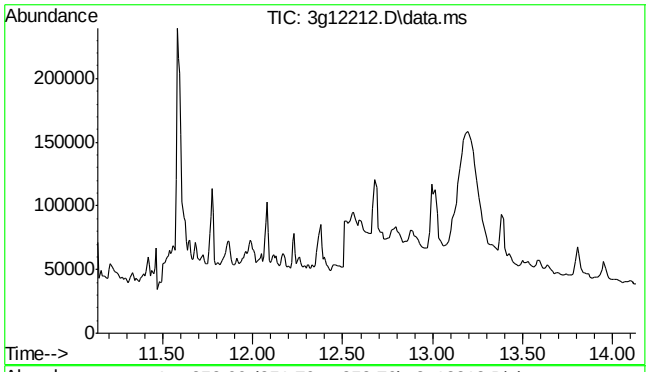


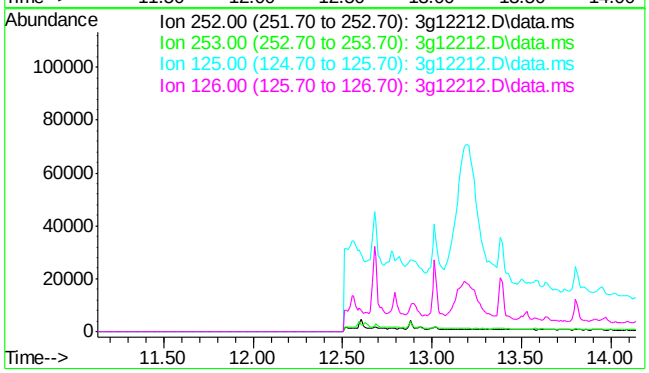
#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 12.993 min Scan# 1256
Delta R.T. -0.042 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:264 Resp: 38654

Ion	Ratio	Lower	Upper
264	100		
265	20.3	1.5	41.5
263	23.3	0.0	39.4





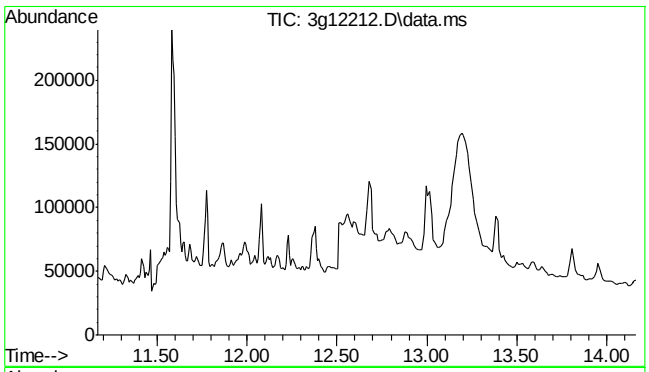


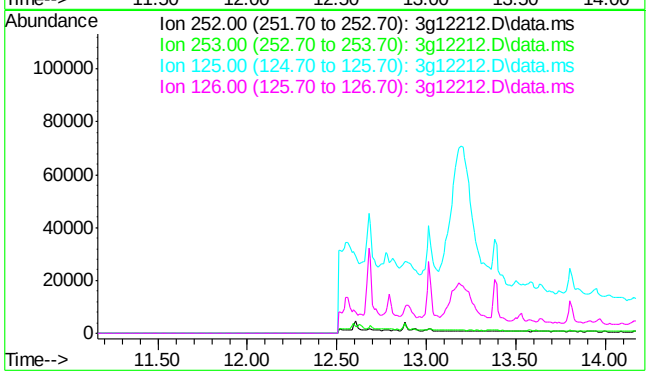
#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.64 min

Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	46.7
125	13.5
126	18.7



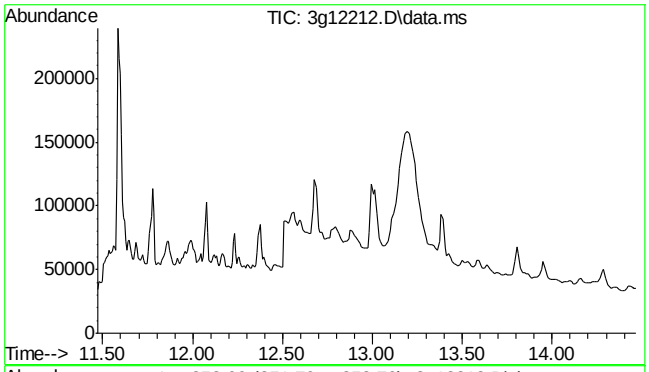


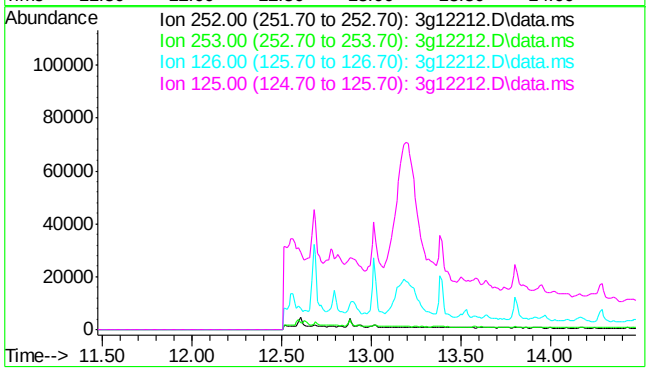
#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.67 min

Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	40.8
125	11.8
126	16.4



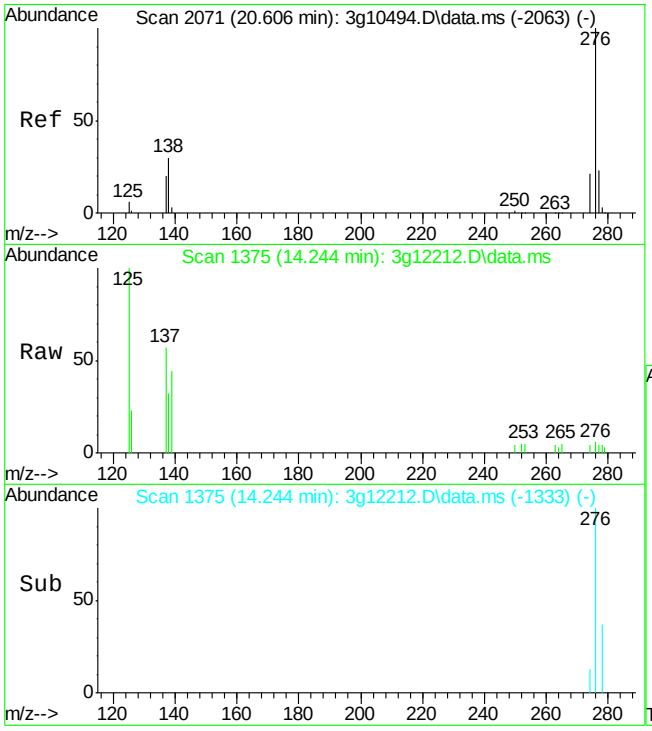


#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 12.97 min

Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion: 252

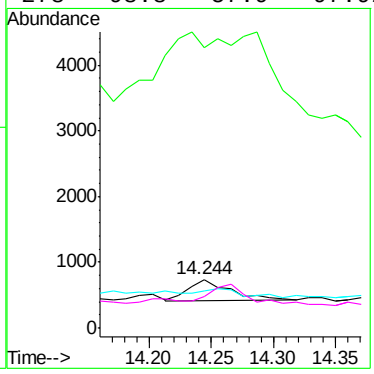
Sig	Exp Ratio
252	100
253	21.8
126	18.6
125	13.5

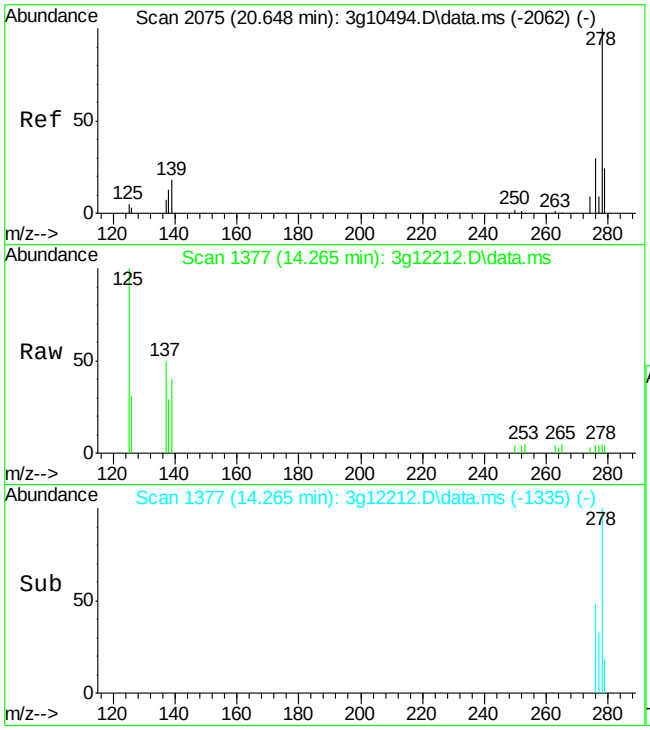


#28
Indeno(1,2,3-cd)pyrene
Concen: Below ug/mL
RT: 14.244 min Scan# 1375
Delta R.T. -0.063 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:276 Resp: 739

Ion	Ratio	Lower	Upper
276	100		
138	257.1	16.6	56.6#
277	43.4	4.7	44.7
278	98.8	57.9	97.9#

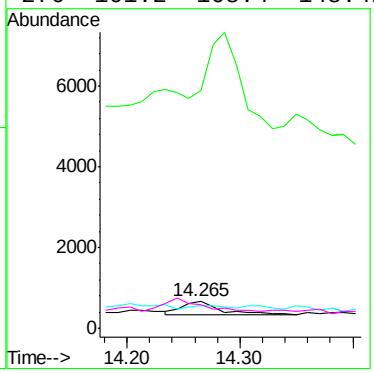


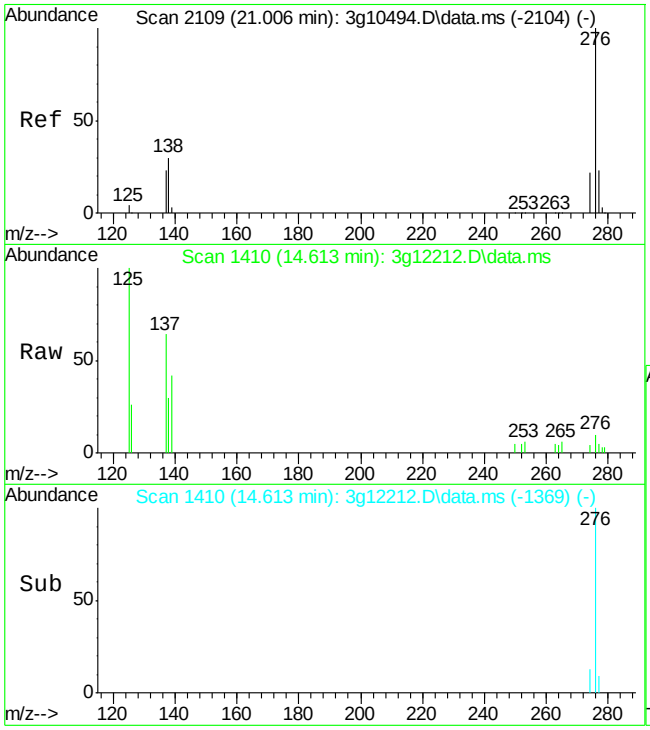


#29
Dibenz(a,h)anthracene
Concen: Below ug/mL
RT: 14.265 min Scan# 1377
Delta R.T. -0.063 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:278 Resp: 730

Ion	Ratio	Lower	Upper
278	100		
139	676.0	7.8	47.8#
279	11.4	2.3	42.3
276	101.2	108.4	148.4#

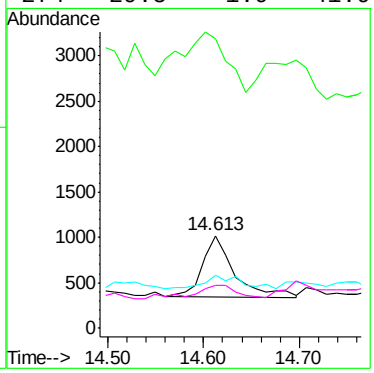




#30
Benzo(g,h,i)perylene
Concen: 0.0589 ug/mL
RT: 14.613 min Scan# 1410
Delta R.T. -0.074 min
Lab File: 3g12212.D
Acq: 21 Nov 12 8:54 pm

Tgt Ion:276 Resp: 1565

Ion	Ratio	Lower	Upper
276	100		
138	147.5	11.5	51.5#
277	18.5	2.9	42.9
274	29.5	1.9	41.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
Data File : 3g12193.D
Acq On : 21 Nov 2012 1:15 pm
Operator : SARAHM1
Sample : OP6973-MB
Misc : OP6973,E3G576,30.00,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 21 14:21:47 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 21 08:48:23 2012
Response via : Initial Calibration

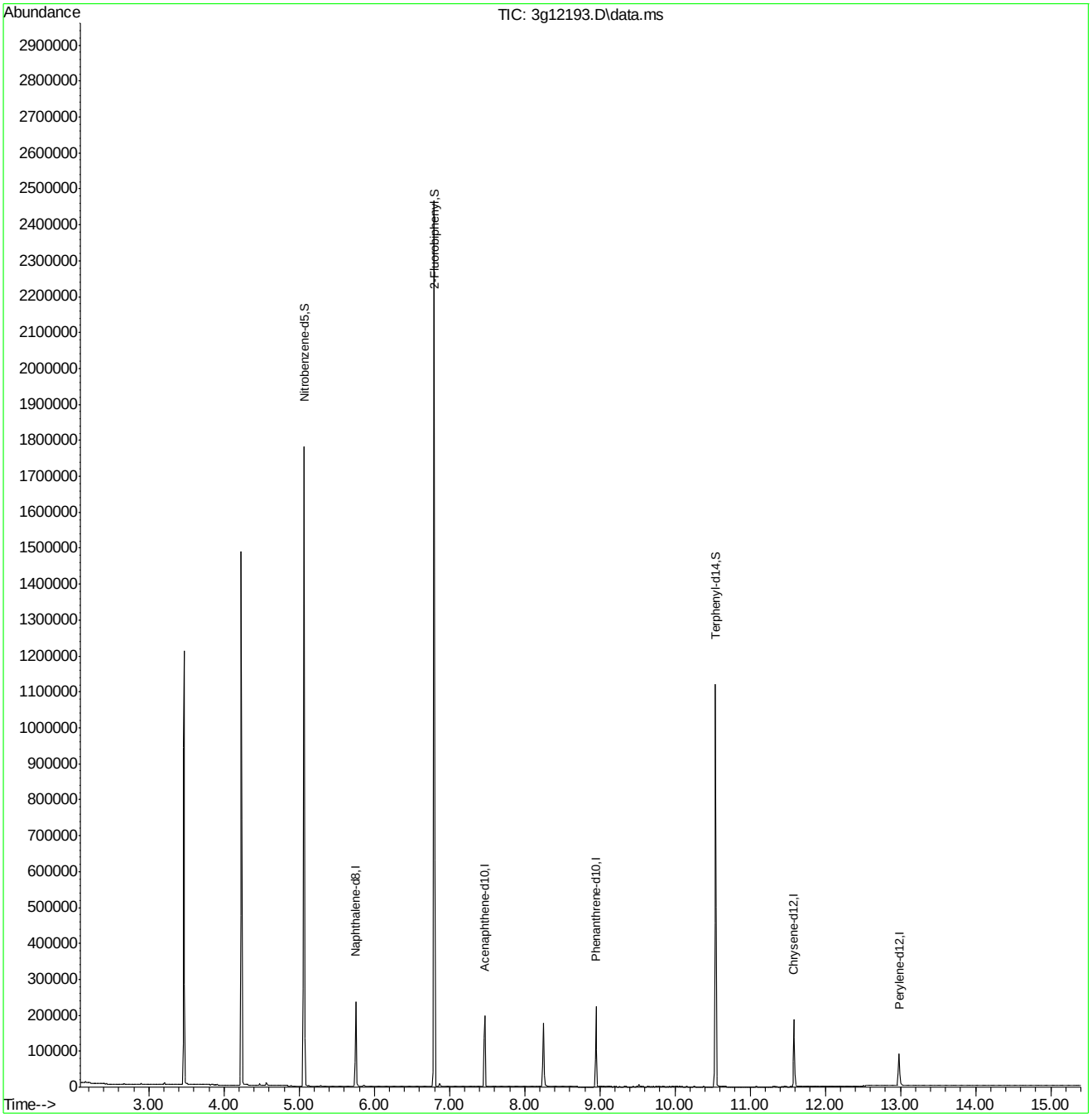
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.751	136	177222	4.0000	ug/mL	-0.04
6) Acenaphthene-d10	7.472	164	92844	4.0000	ug/mL	-0.04
15) Phenanthrene-d10	8.948	188	149278	4.0000	ug/mL	-0.04
19) Chrysene-d12	11.584	240	117782	4.0000	ug/mL	-0.05
24) Perylene-d12	12.982	264	72955	4.0000	ug/mL	-0.05
System Monitoring Compounds						
2) Nitrobenzene-d5	5.066	82	746977	43.8402	ug/mL	-0.04
Spiked Amount 50.000	Range 25 - 135		Recovery = 87.68%			
7) 2-Fluorobiphenyl	6.798	172	1508935	44.5784	ug/mL	-0.03
Spiked Amount 50.000	Range 25 - 135		Recovery = 89.16%			
21) Terphenyl-d14	10.539	244	691533	45.0482	ug/mL	-0.04
Spiked Amount 50.000	Range 25 - 135		Recovery = 90.10%			
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	2.494	74	12	N.D.		
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.764	128	617	N.D.		
8) 2-Methylnaphthalene	6.449	142	221	N.D.		
9) 1-Methylnaphthalene	6.537	142	121	N.D.		
10) Acenaphthylene	7.330	152	128	N.D.		
11) Acenaphthene	7.460	154	567	Below Cal # 20		
12) Dibenzofuran	7.673	168	124	N.D.		
13) Fluorene	0.000	166	0	N.D.	d	
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	8.972	178	1009	Below Cal # 4		
17) Anthracene	9.027	178	239	N.D.		
18) Fluoranthene	10.388	202	526	N.D.		
20) Pyrene	10.388	202	526	N.D.		
22) Benzo(a)anthracene	11.577	228	833	N.D.		
23) Chrysene	11.577	228	833	N.D.		
25) Benzo(b)fluoranthene	0.000	252	0	N.D.	d	
26) Benzo(k)fluoranthene	12.593	252	1158	N.D.		
27) Benzo(a)pyrene	12.919	252	449	N.D.		
28) Indeno(1,2,3-cd)pyrene	14.234	276	561	N.D.		
29) Dibenz(a,h)anthracene	14.255	278	296	N.D.		
30) Benzo(g,h,i)perylene	14.602	276	331	N.D.		

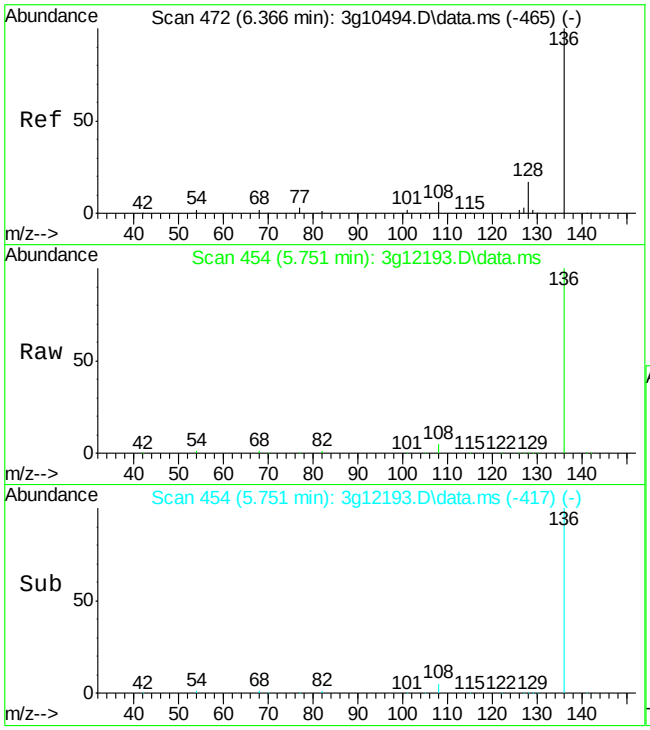
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
Data File : 3g12193.D
Acq On : 21 Nov 2012 1:15 pm
Operator : SARAHM1
Sample : OP6973-MB
Misc : OP6973,E3G576,30.00,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 21 14:21:47 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 21 08:48:23 2012
Response via : Initial Calibration

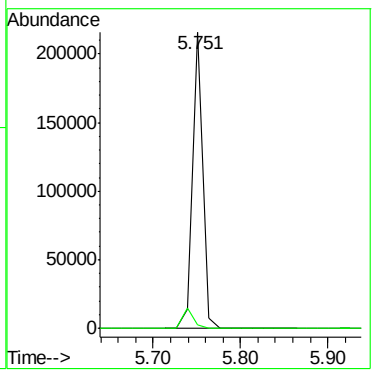


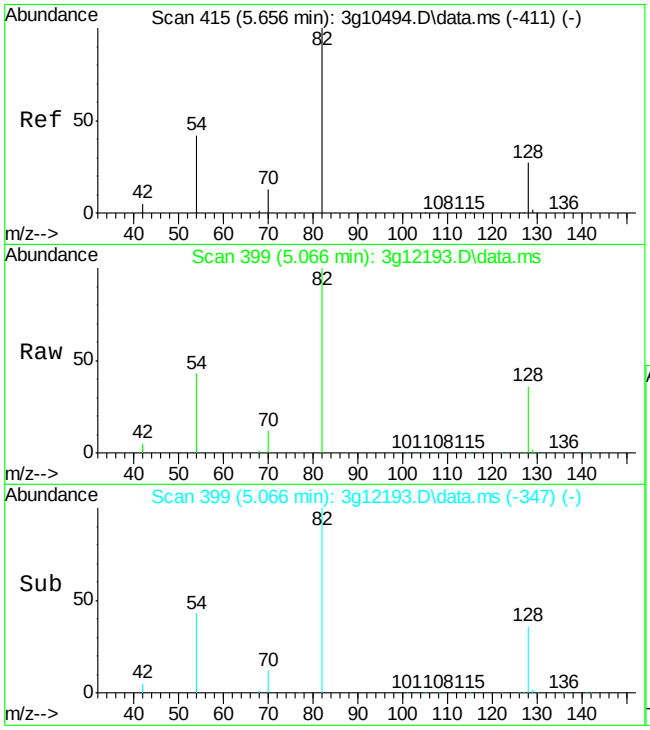


#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.751 min Scan# 454
Delta R.T. -0.037 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:136 Resp: 177222

Ion	Ratio	Lower	Upper
136	100		
68	7.5	0.0	27.8

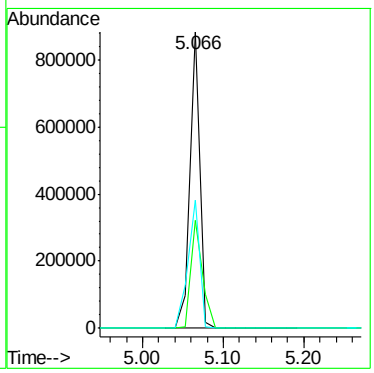


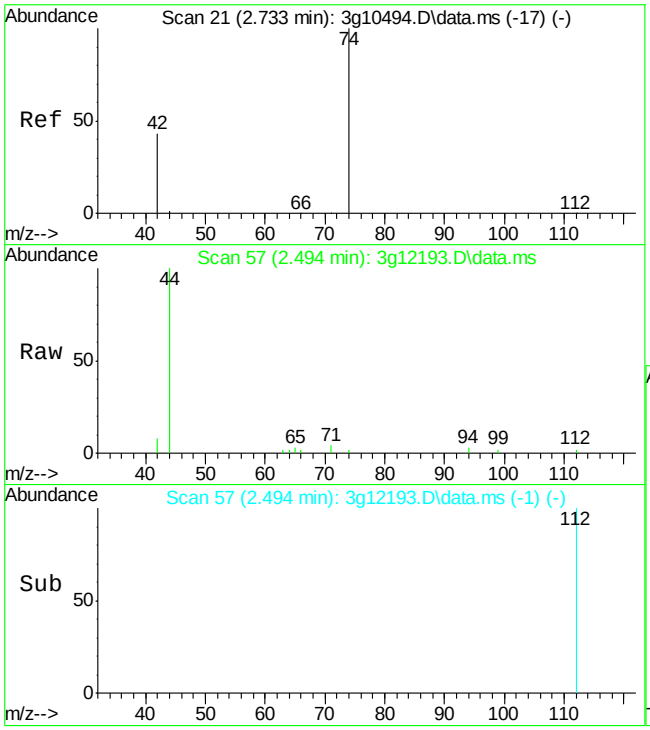


#2
Nitrobenzene-d5
Concen: 43.8402 ug/mL
RT: 5.066 min Scan# 399
Delta R.T. -0.037 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion: 82 Resp: 746977

Ion	Ratio	Lower	Upper
82	100		
128	42.6	30.7	70.7
54	51.4	36.8	76.8

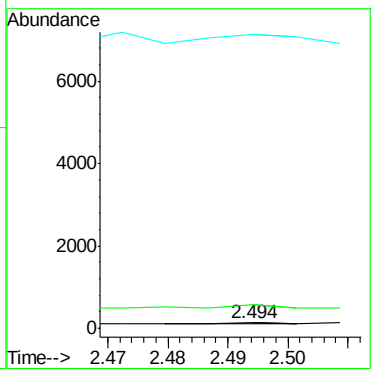


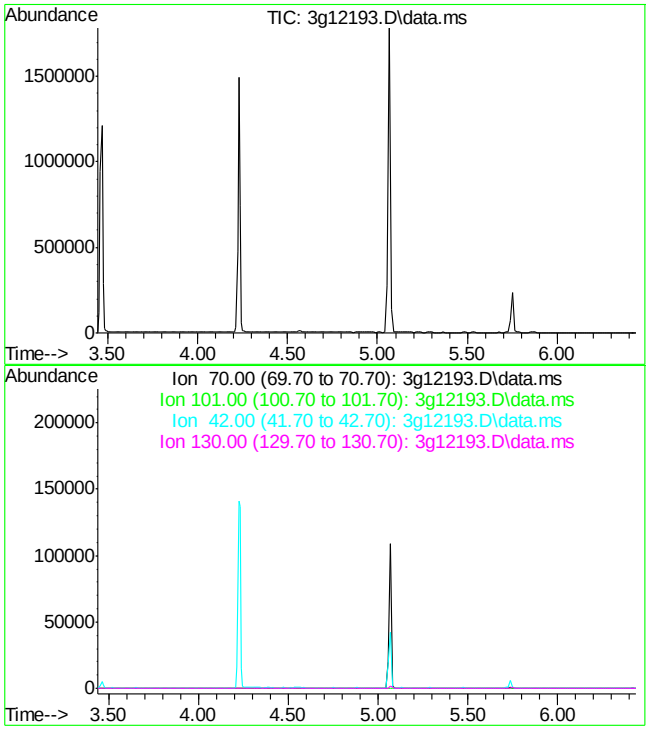


#3
N-Nitrosodimethylamine
Concen: Below ug/mL
RT: 2.494 min Scan# 57
Delta R.T. 0.007 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion: 74 Resp: 12

Ion	Ratio	Lower	Upper
74	100		
42	716.7	53.9	93.9#
44	0.0	0.0	24.2



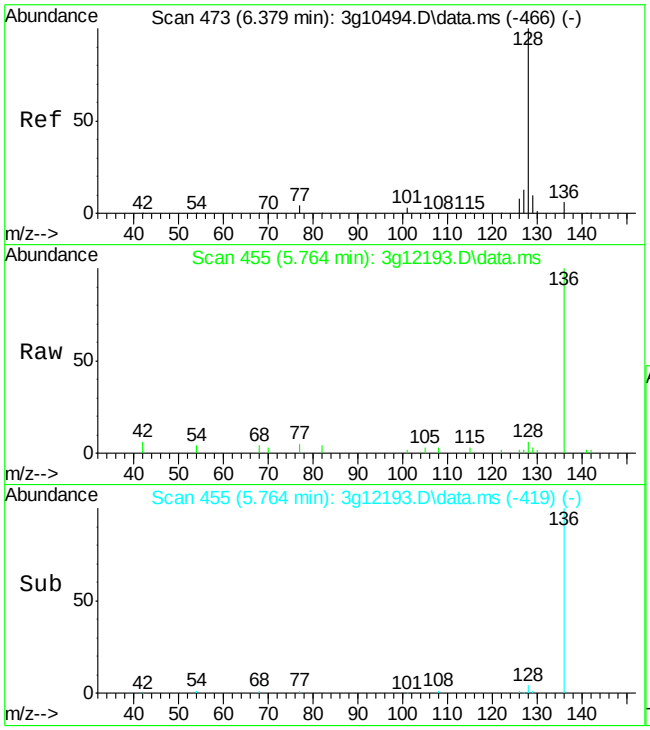


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.94 min

Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion: 70

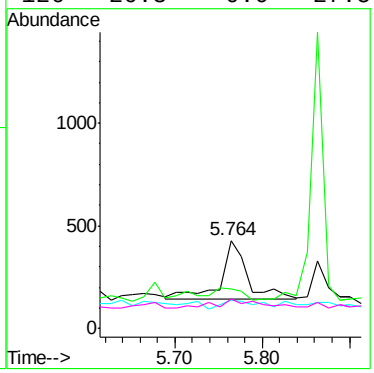
Sig	Exp Ratio
70	100
101	13.9
42	52.4
130	27.1

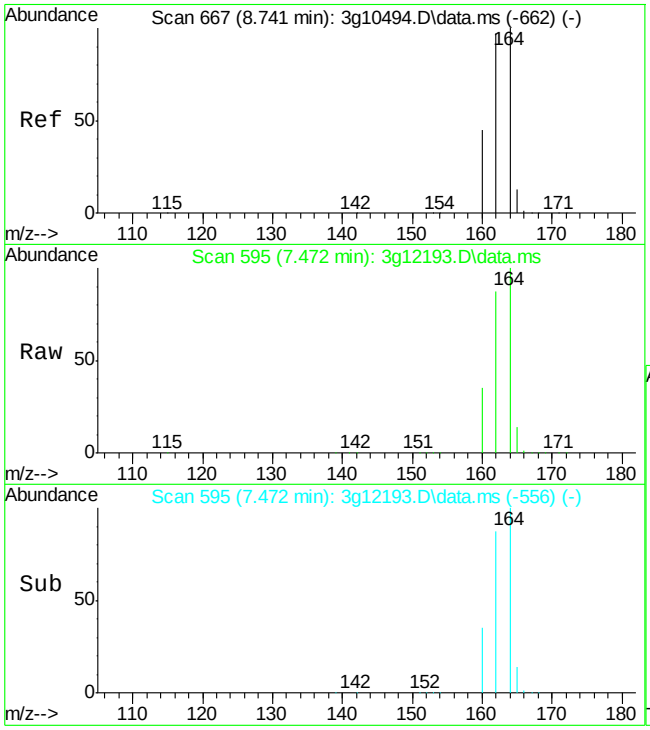


#5
Naphthalene
Concen: Below ug/mL
RT: 5.764 min Scan# 455
Delta R.T. -0.050 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:128 Resp: 617

Ion	Ratio	Lower	Upper
128	100		
129	18.0	0.0	31.0
127	18.5	0.0	32.8
126	26.3	0.0	27.5

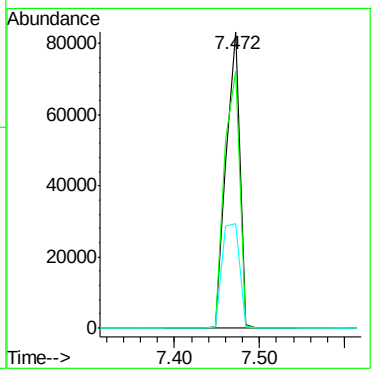


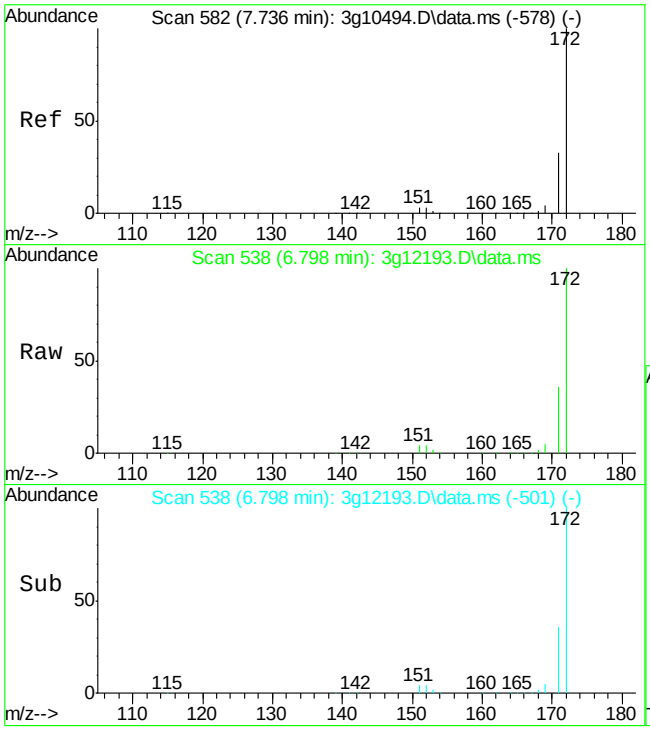


#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.472 min Scan# 595
Delta R.T. -0.035 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:164 Resp: 92844

Ion	Ratio	Lower	Upper
164	100		
162	96.3	78.1	118.1
160	44.7	28.0	68.0

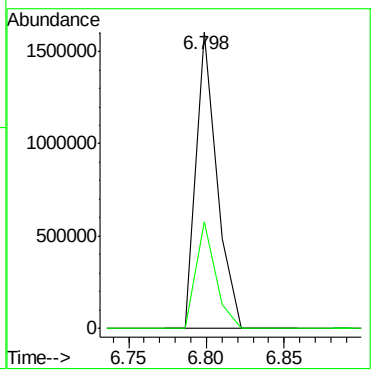


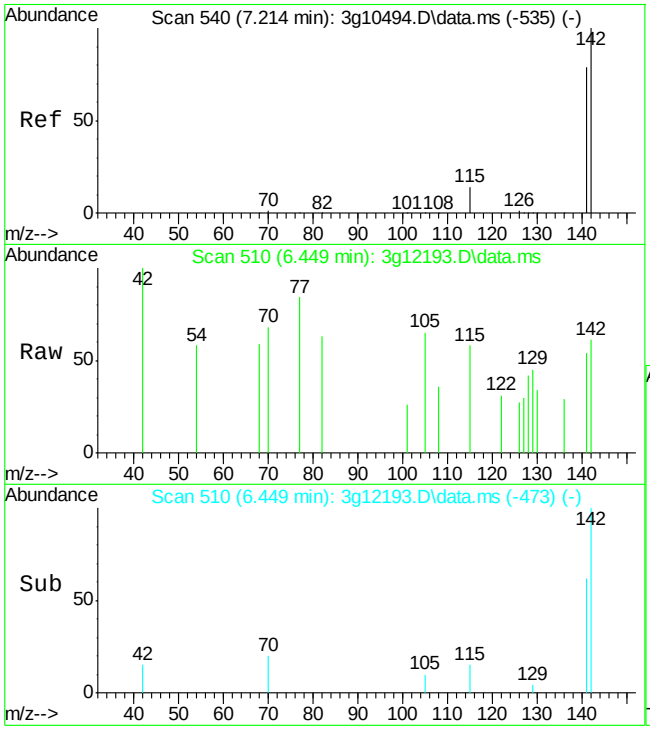


#7
2-Fluorobiphenyl
Concen: 44.5784 ug/mL
RT: 6.798 min Scan# 538
Delta R.T. -0.035 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:172 Resp: 1508935

Ion	Ratio	Lower	Upper
172	100		
171	33.8	12.6	52.6

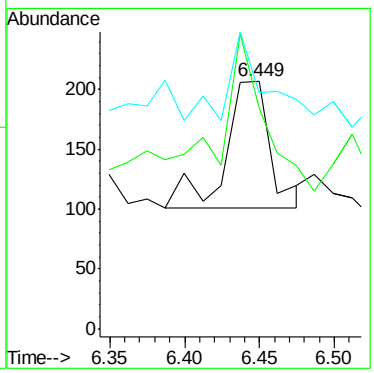


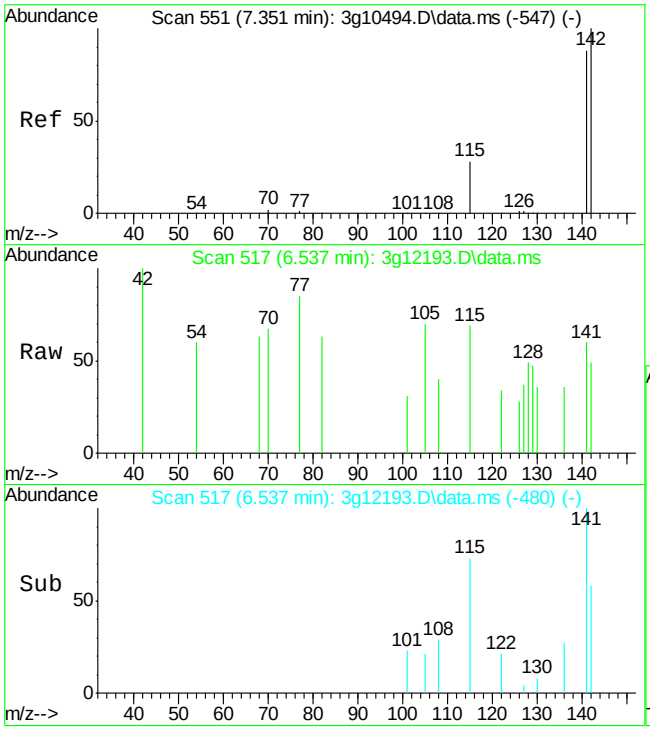


#8
2-Methylnaphthalene
Concen: Below ug/mL
RT: 6.449 min Scan# 510
Delta R.T. -0.037 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:142 Resp: 221

Ion	Ratio	Lower	Upper
142	100		
141	147.1	64.0	104.0#
115	77.4	7.1	47.1#

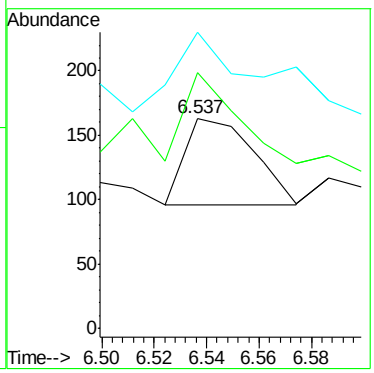


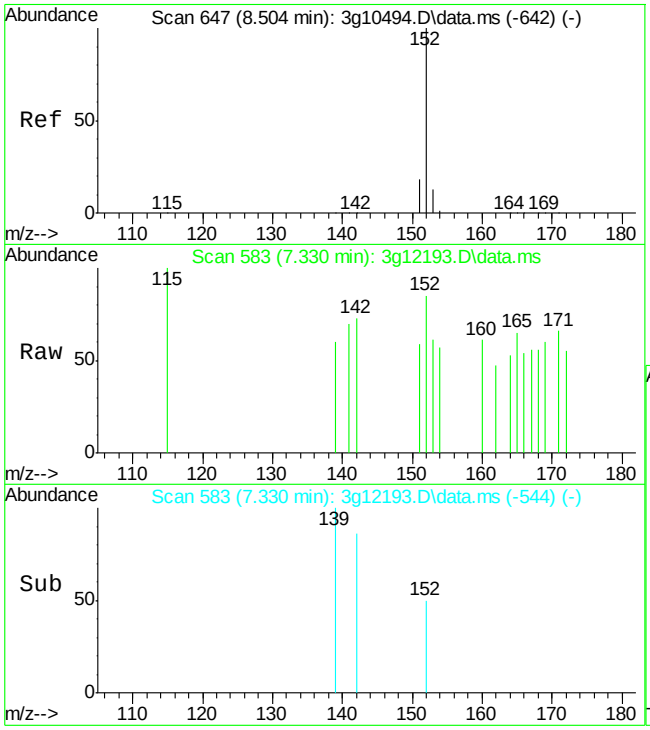


#9
1-Methylnaphthalene
Concen: Below ug/mL
RT: 6.537 min Scan# 517
Delta R.T. -0.037 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:142 Resp: 121

Ion	Ratio	Lower	Upper
142	100		
141	180.2	65.4	105.4#
115	121.5	9.7	49.7#

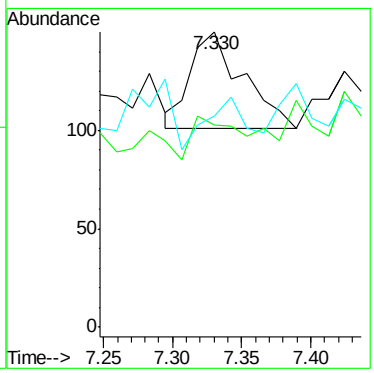


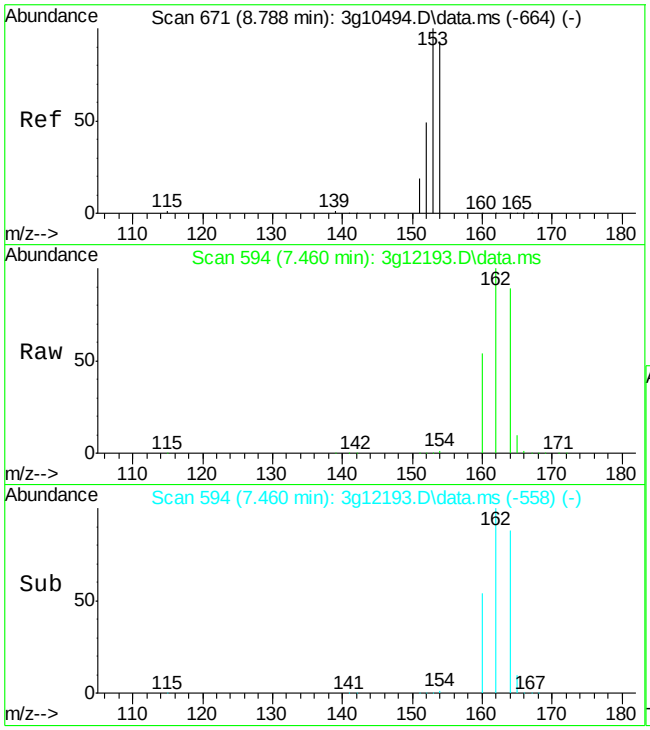


#10
Acenaphthylene
Concen: Below ug/mL
RT: 7.330 min Scan# 583
Delta R.T. -0.035 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:152 Resp: 128

Ion	Ratio	Lower	Upper
152	100		
151	38.3	0.0	39.3
153	43.0	0.0	32.8#

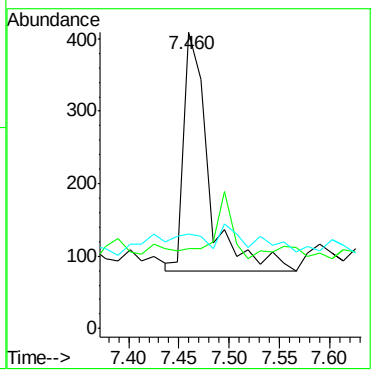


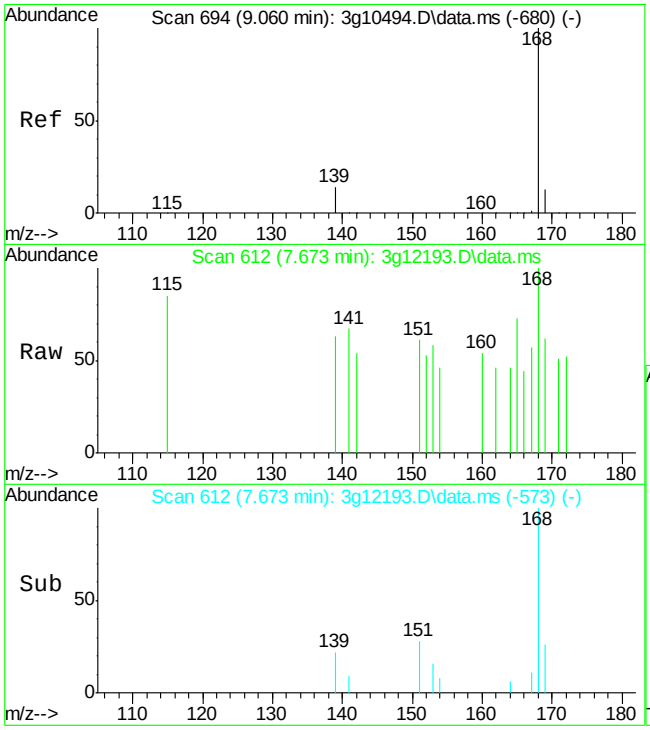


#11
Acenaphthene
Concen: Below ug/mL
RT: 7.460 min Scan# 594
Delta R.T. -0.071 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:154 Resp: 567

Ion	Ratio	Lower	Upper
154	100		
153	3.9	84.1	124.1#
152	21.3	30.2	70.2#

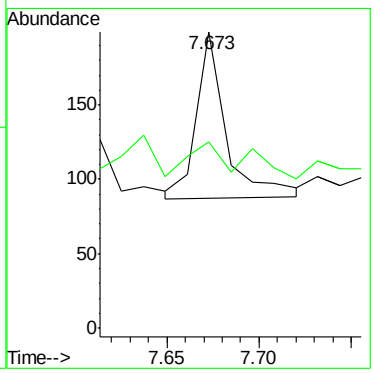


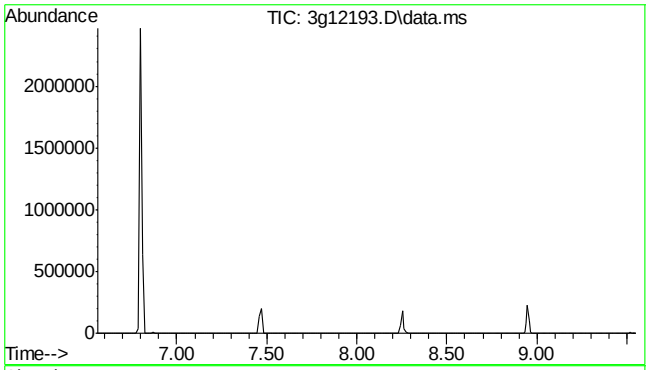


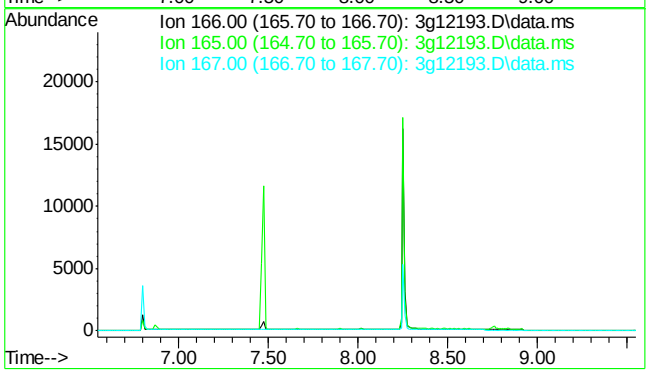
#12
Dibenzofuran
Concen: Below ug/mL
RT: 7.673 min Scan# 612
Delta R.T. -0.035 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:168 Resp: 124

Ion	Ratio	Lower	Upper
168	100		
139	0.0	10.9	50.9#





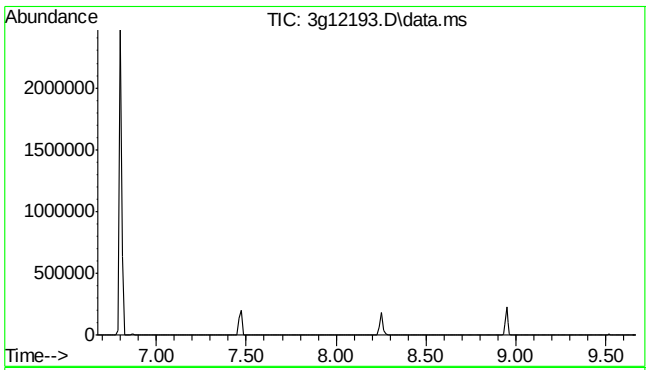


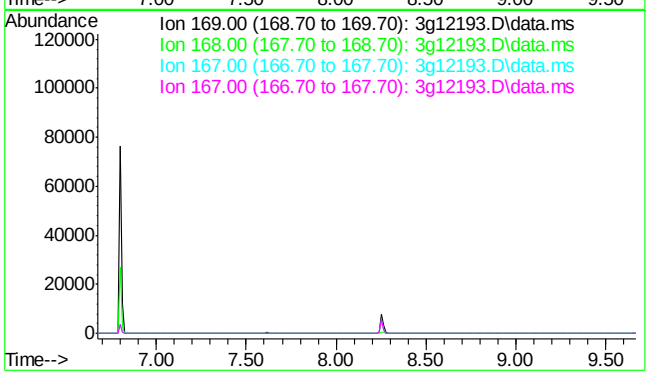
#13
Fluorene
Concen: N.D. ug/mL
Expected RT: 8.05 min

Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion: 166

Sig	Exp Ratio
166	100
165	89.6
167	13.5



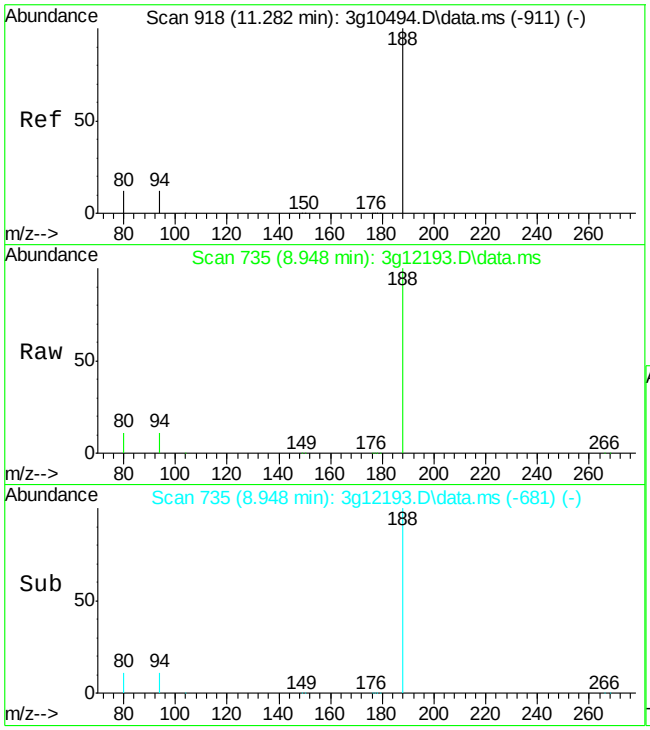


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.17 min

Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion: 169

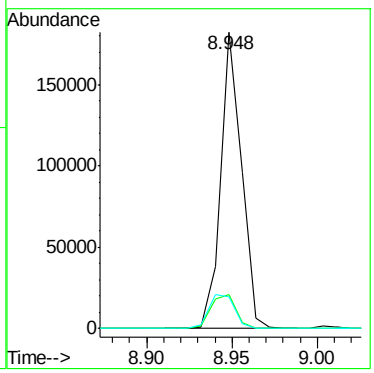
Sig	Exp Ratio
169	100
168	60.9
167	33.6
167	33.6

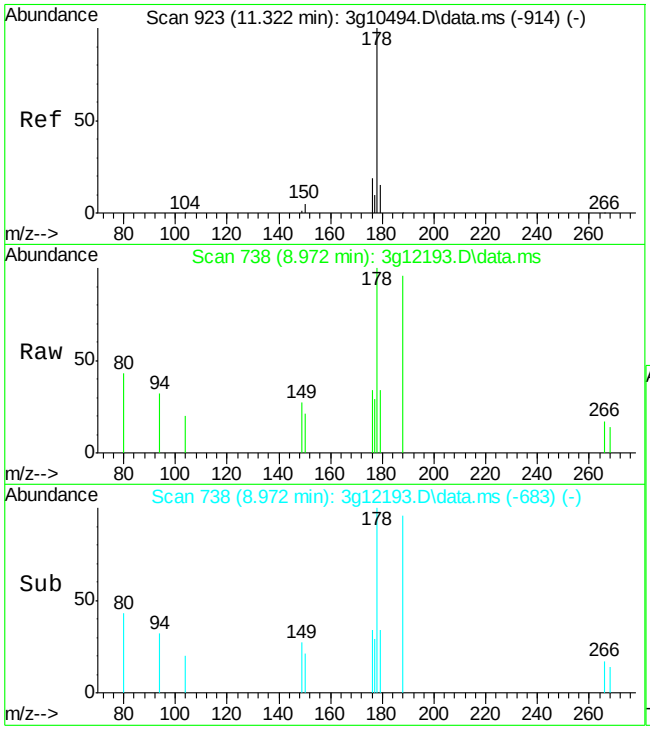


#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.948 min Scan# 735
Delta R.T. -0.040 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:188 Resp: 149278

Ion	Ratio	Lower	Upper
188	100		
94	13.3	0.0	31.6
80	14.3	0.0	32.0

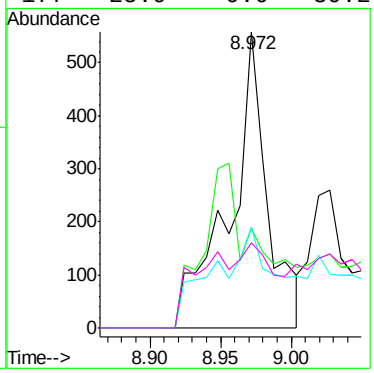


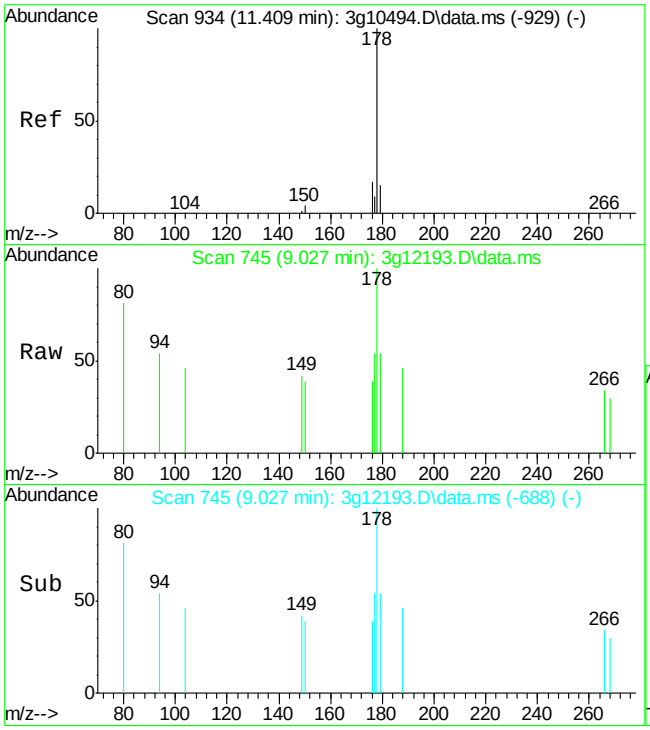


#16
Phenanthrene
Concen: Below ug/mL
RT: 8.972 min Scan# 738
Delta R.T. -0.039 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:178 Resp: 1009

Ion	Ratio	Lower	Upper
178	100		
179	82.7	0.0	35.2#
176	51.1	0.0	38.7#
177	25.9	0.0	30.2

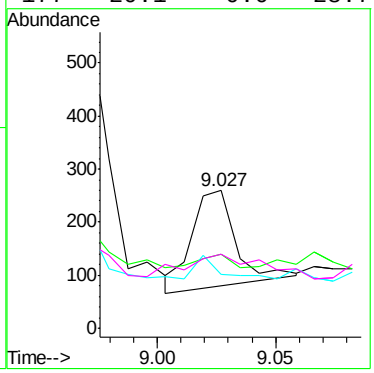


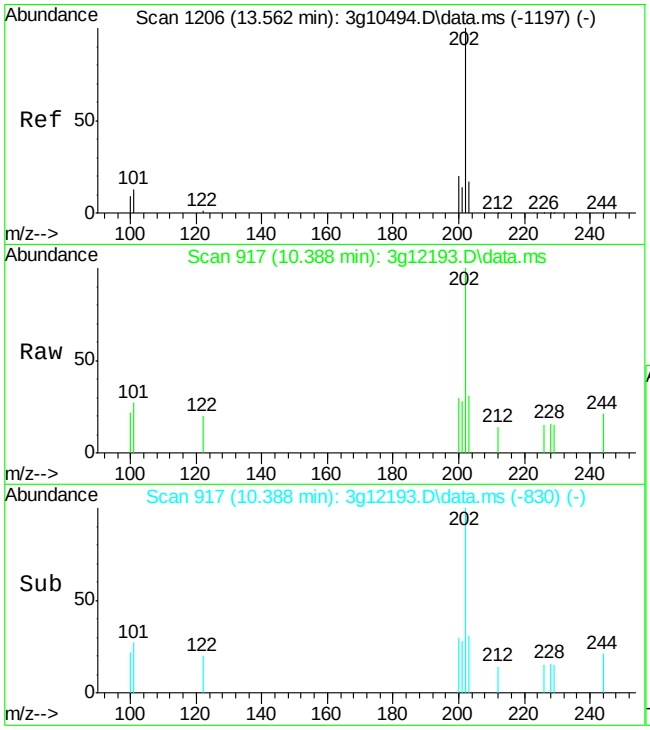


#17
Anthracene
Concen: Below ug/mL
RT: 9.027 min Scan# 745
Delta R.T. -0.040 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:178 Resp: 239

Ion	Ratio	Lower	Upper
178	100		
179	0.0	0.0	35.3
176	0.0	0.0	38.0
177	20.1	0.0	28.7

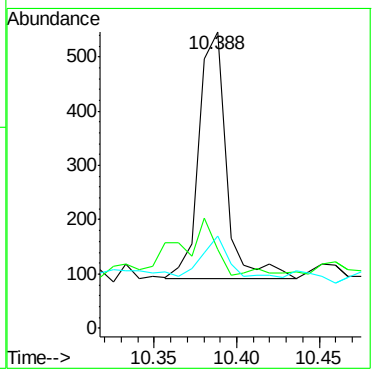


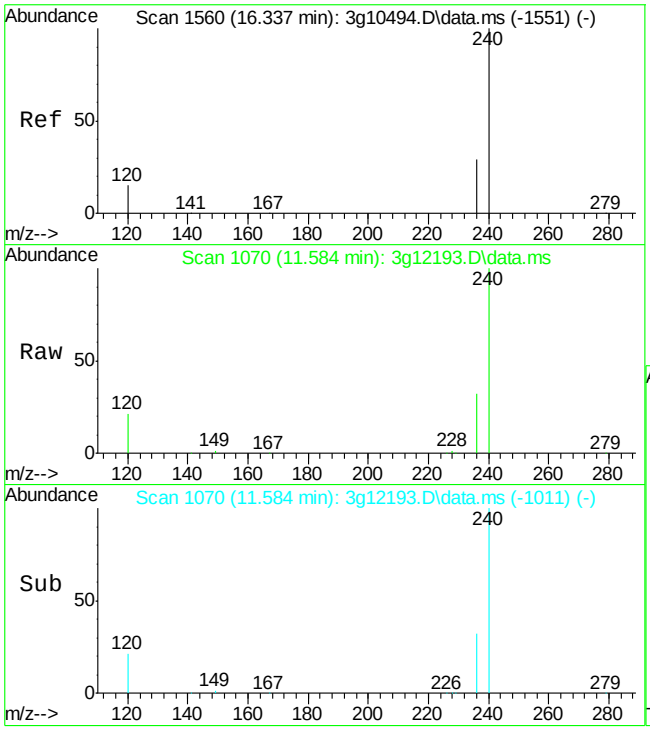


#18
Fluoranthene
Concen: Below ug/mL
RT: 10.388 min Scan# 917
Delta R.T. 0.190 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:202 Resp: 526

Ion	Ratio	Lower	Upper
202	100		
101	27.0	0.0	31.8
203	14.1	0.0	37.3

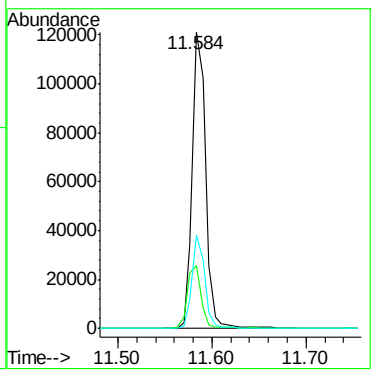


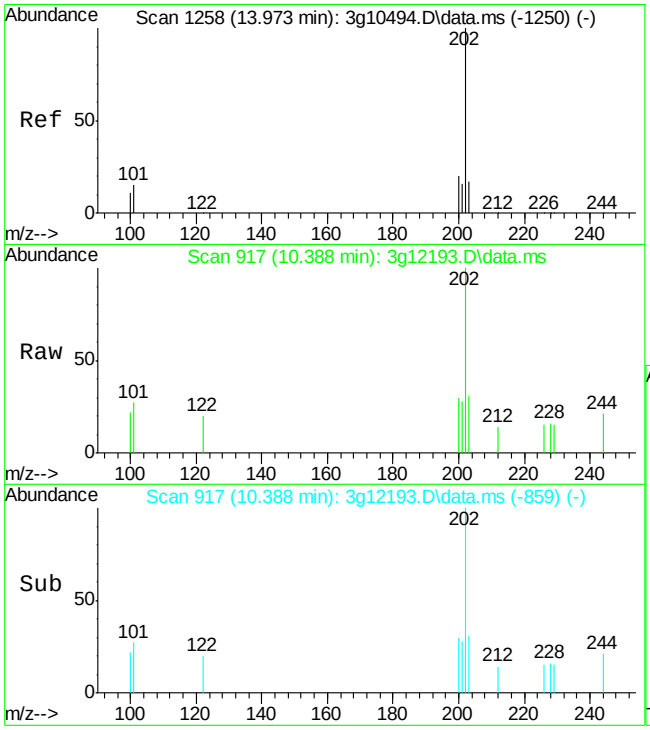


#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.584 min Scan# 1070
Delta R.T. -0.046 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:240 Resp: 117782

Ion	Ratio	Lower	Upper
240	100		
120	21.6	0.0	38.3
236	29.9	10.7	50.7

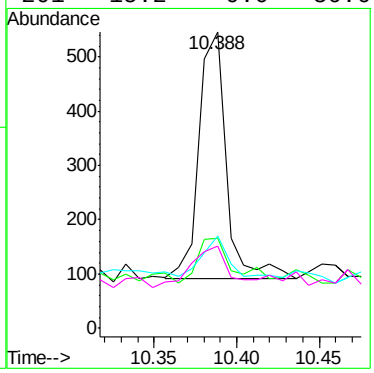


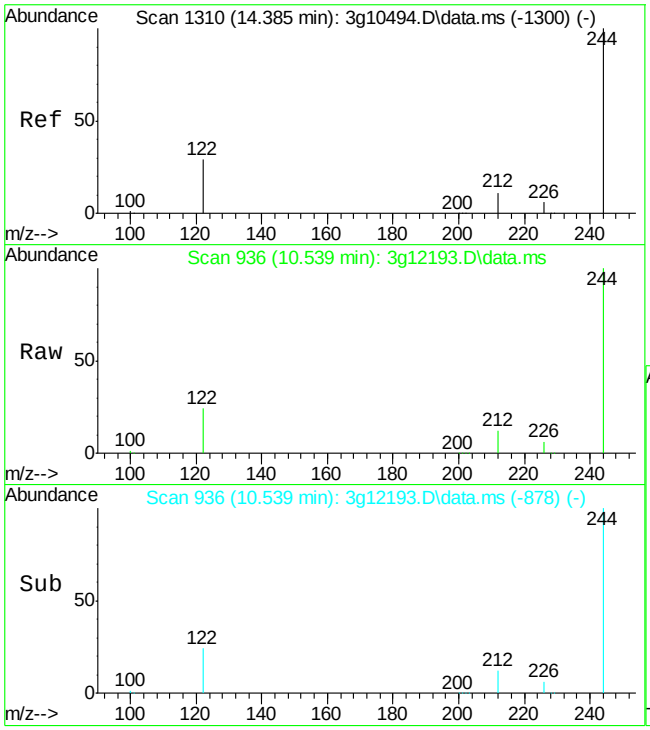


#20
Pyrene
Concen: Below ug/mL
RT: 10.388 min Scan# 917
Delta R.T. -0.040 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:202 Resp: 526

Ion	Ratio	Lower	Upper
202	100		
200	23.8	0.3	40.3
203	14.1	0.0	37.8
201	15.2	0.0	36.6

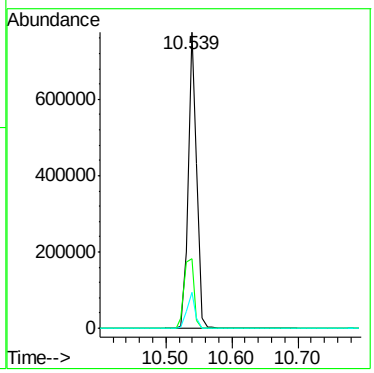


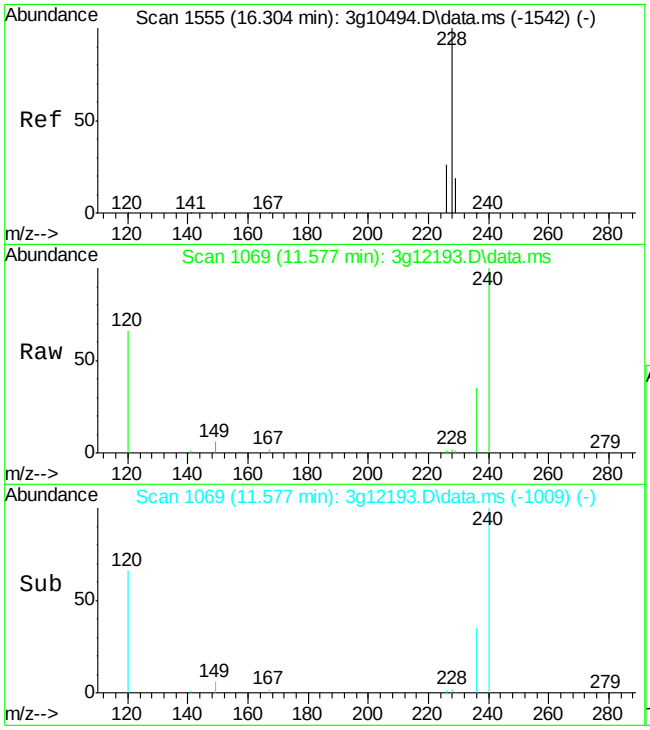


#21
Terphenyl-d14
Concen: 45.0482 ug/mL
RT: 10.539 min Scan# 936
Delta R.T. -0.040 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:244 Resp: 691533

Ion	Ratio	Lower	Upper
244	100		
122	28.1	4.9	44.9
212	11.8	0.0	32.5

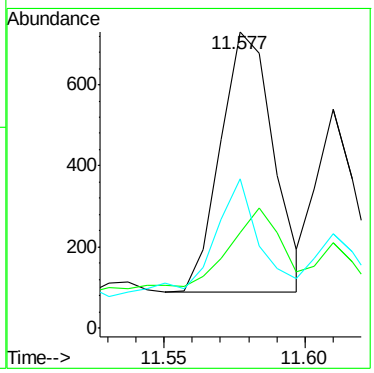


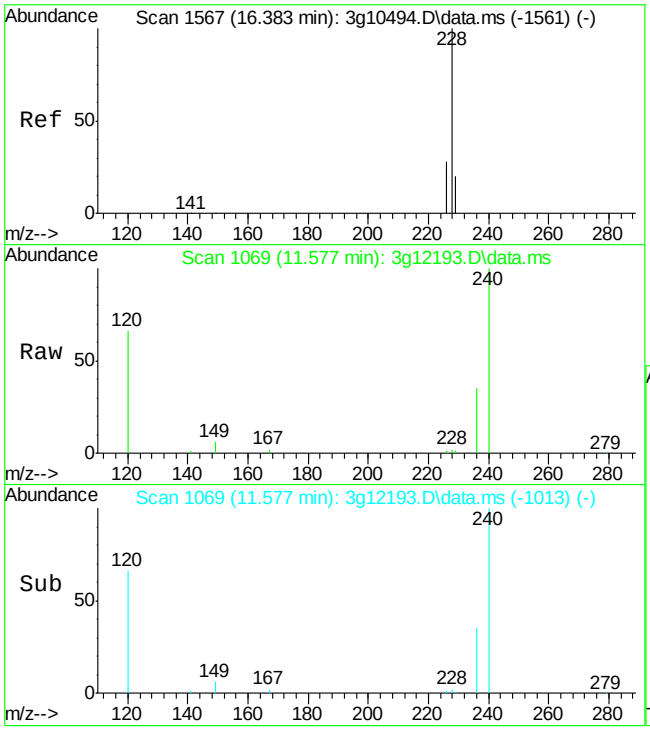


#22
Benzo(a)anthracene
Concen: Below ug/mL
RT: 11.577 min Scan# 1069
Delta R.T. -0.040 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:228 Resp: 833

Ion	Ratio	Lower	Upper
228	100		
229	37.0	0.0	39.5
226	41.9	6.8	46.8

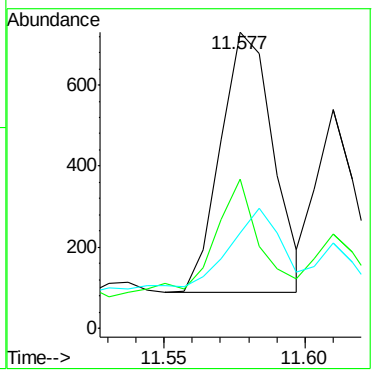


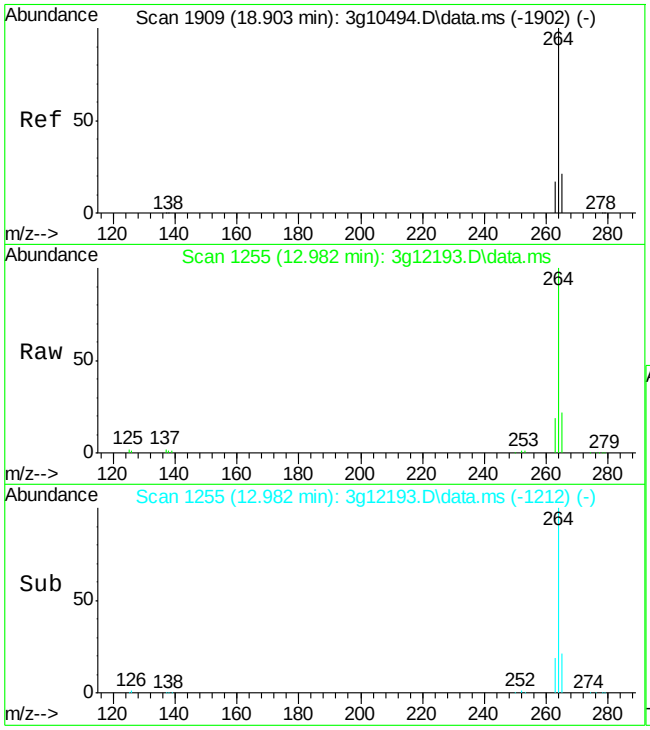


#23
Chrysene
Concen: Below ug/mL
RT: 11.577 min Scan# 1069
Delta R.T. -0.073 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:228 Resp: 833

Ion	Ratio	Lower	Upper
228	100		
226	41.9	8.9	48.9
229	36.4	0.0	39.4

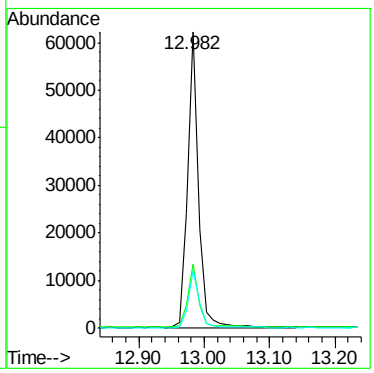


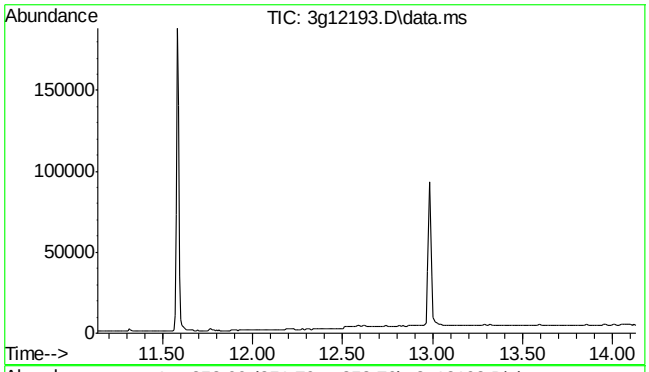


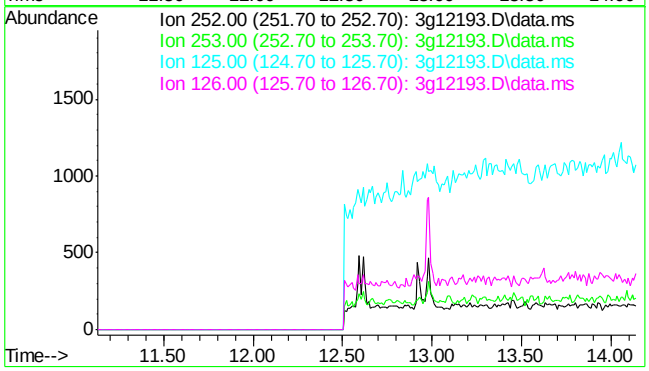
#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 12.982 min Scan# 1255
Delta R.T. -0.053 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:264 Resp: 72955

Ion	Ratio	Lower	Upper
264	100		
265	21.0	1.5	41.5
263	19.9	0.0	39.4





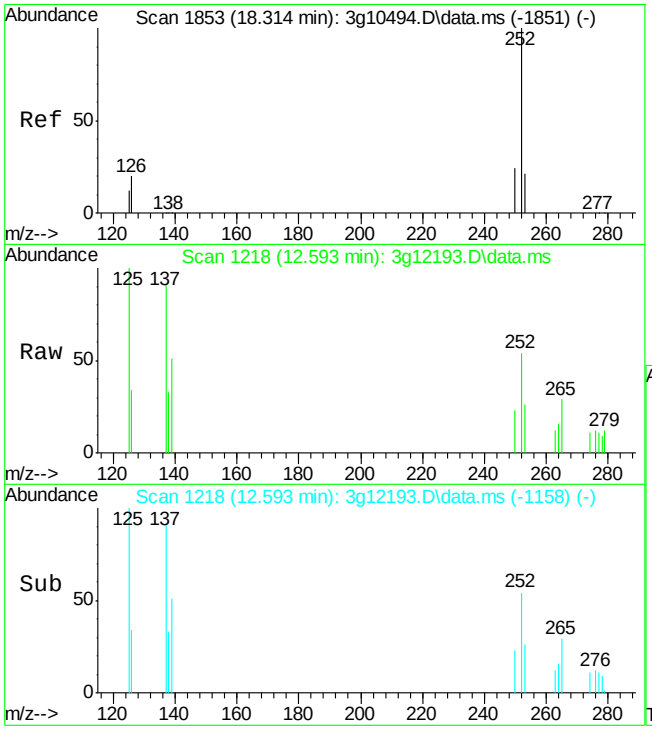


#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.64 min

Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion: 252

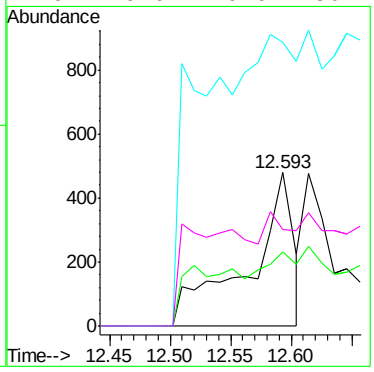
Sig	Exp Ratio
252	100
253	46.7
125	13.5
126	18.7

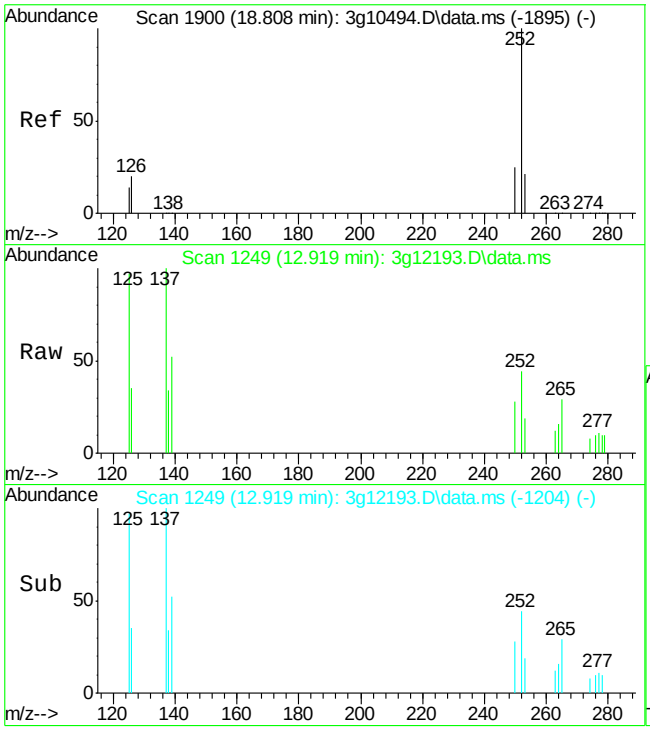


#26
Benzo(k)fluoranthene
Concen: Below ug/mL
RT: 12.593 min Scan# 1218
Delta R.T. -0.074 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:252 Resp: 1158

Ion	Ratio	Lower	Upper
252	100		
253	33.2	20.8	60.8
125	0.0	0.0	31.8
126	0.0	0.0	36.4

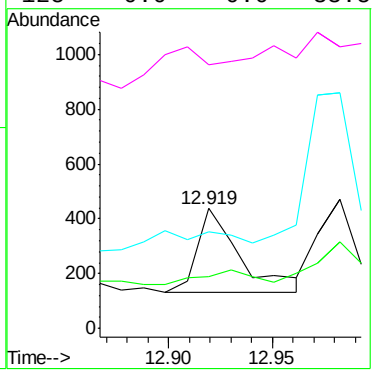


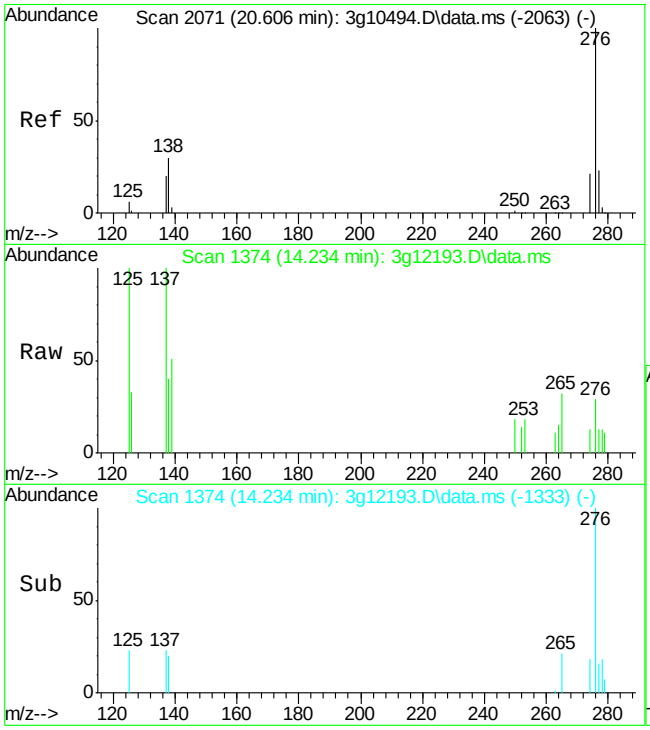


#27
Benzo(a)pyrene
Concen: Below ug/mL
RT: 12.919 min Scan# 1249
Delta R.T. -0.053 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:252 Resp: 449

Ion	Ratio	Lower	Upper
252	100		
253	20.9	1.8	41.8
126	0.0	0.0	38.6
125	0.0	0.0	33.5

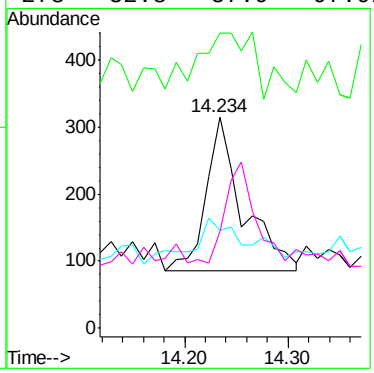


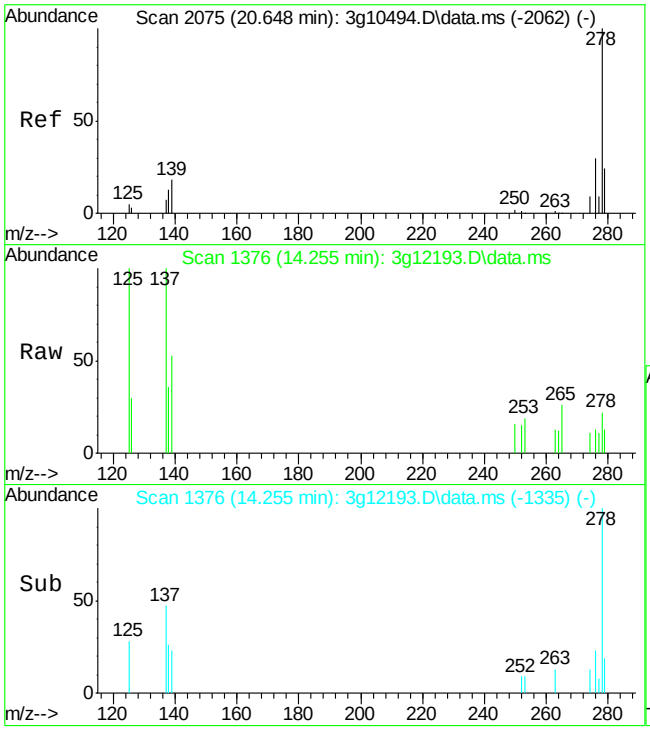


#28
Indeno(1,2,3-cd)pyrene
Concen: Below ug/mL
RT: 14.234 min Scan# 1374
Delta R.T. -0.074 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:276 Resp: 561

Ion	Ratio	Lower	Upper
276	100		
138	64.7	16.6	56.6#
277	45.3	4.7	44.7#
278	52.8	57.9	97.9#

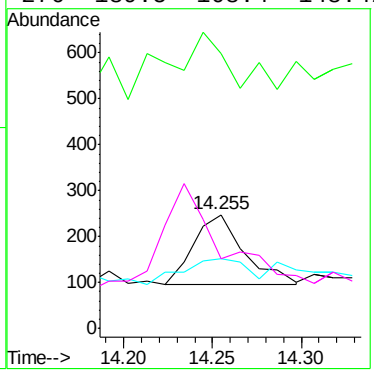


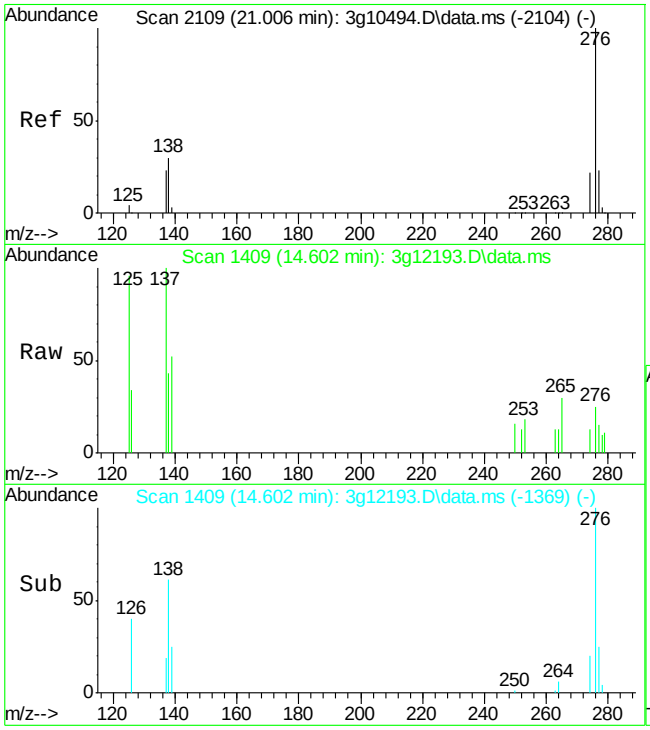


#29
Dibenz(a,h)anthracene
Concen: Below ug/mL
RT: 14.255 min Scan# 1376
Delta R.T. -0.074 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:278 Resp: 296

Ion	Ratio	Lower	Upper
278	100		
139	109.1	7.8	47.8#
279	47.0	2.3	42.3#
276	189.5	108.4	148.4#

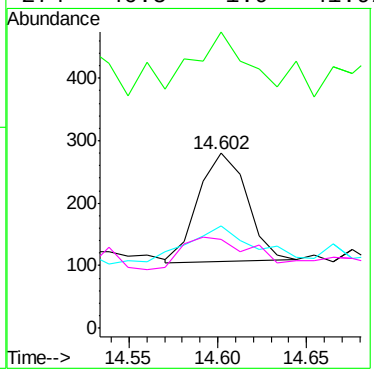




#30
Benzo(g,h,i)perylene
Concen: Below ug/mL
RT: 14.602 min Scan# 1409
Delta R.T. -0.084 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:276 Resp: 331

Ion	Ratio	Lower	Upper
276	100		
138	108.5	11.5	51.5#
277	57.1	2.9	42.9#
274	46.5	1.9	41.9#



Mountain States ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1008-MB	GB18455.D	1	11/14/12	SK	n/a	n/a	GGB1008

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

D40911-1, D40911-2

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

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	87%	60-140%

Blank Spike Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1008-BS	GB18456.D	1	11/14/12	SK	n/a	n/a	GGB1008

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

D40911-1, D40911-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	121	110	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	104%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D40868-1MS	GB18458.D	1	11/14/12	SK	n/a	n/a	GGB1008
D40868-1MSD	GB18459.D	1	11/14/12	SK	n/a	n/a	GGB1008
D40868-1	GB18457.D	1	11/14/12	SK	n/a	n/a	GGB1008

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

D40911-1, D40911-2

CAS No.	Compound	D40868-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		139	153	110	152	109	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D40868-1	Limits
120-82-1	1,2,4-Trichlorobenzene	101%	96%	88%	60-140%

10.3.1
10

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 11/15/12 08:53

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111412\GB18471.D\FID1A.CH Vial: 19
Signal #2 : Y:\1\DATA\111412\GB18471.D\FID2B.CH
Acq On : 14 Nov 2012 8:34 pm Operator: StephK
Sample : D40911-1, 50X Inst : GC/MS Ins
Misc : GC3237,GGB1008,5.041,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 15 08:26:01 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Nov 15 08:25:26 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	2866579	91.485	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.39	15762242	96.982	%	
	Target Compounds					
1) H	TVH-Gasoline	7.23	15061409	0.206	mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5) T	Benzene	4.18	200952	0.499	ug/L	
6) T	Toluene	7.70	1140494	2.878	ug/L	
7) T	Ethylbenzene	10.32	318513	0.942	ug/L	
8) T	m,p-Xylene	10.50	1697421	4.277	ug/L	
9) T	o-Xylene	11.00	222796	0.678	ug/L	
11) T	Naphthalene	14.58	1414129	7.167	ug/L	

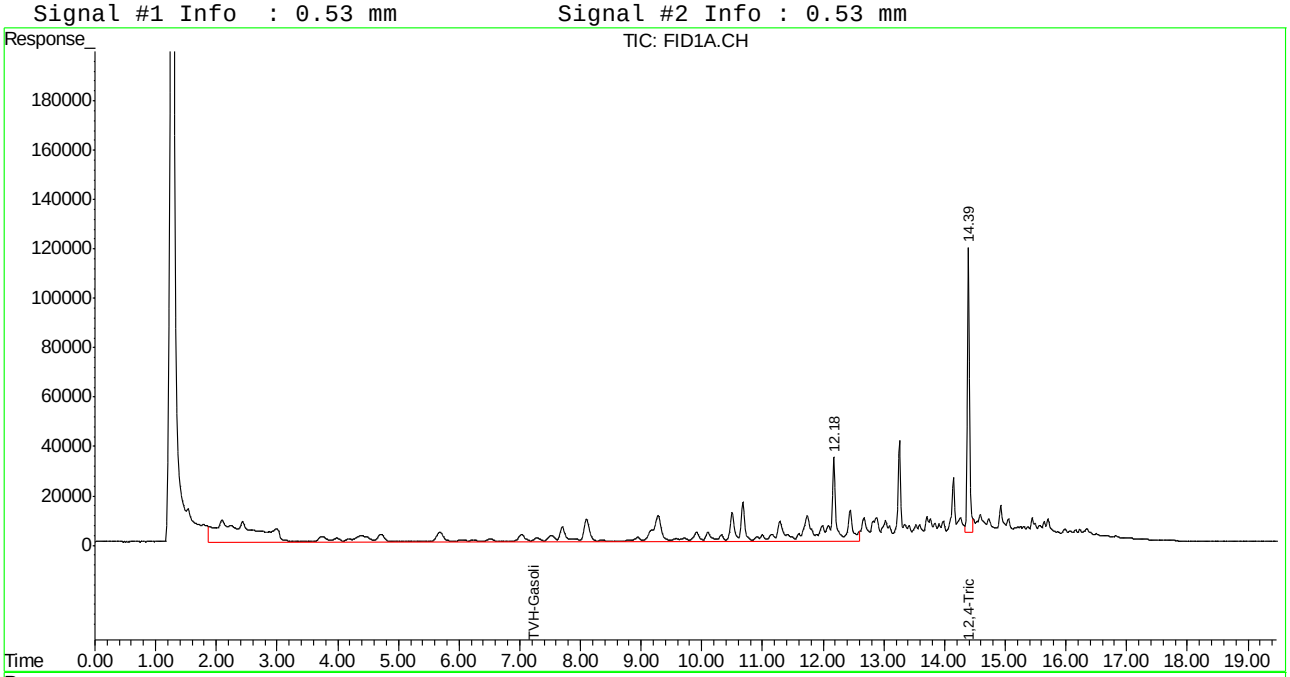
(f)=RT Delta > 1/2 Window (m)=manual int.

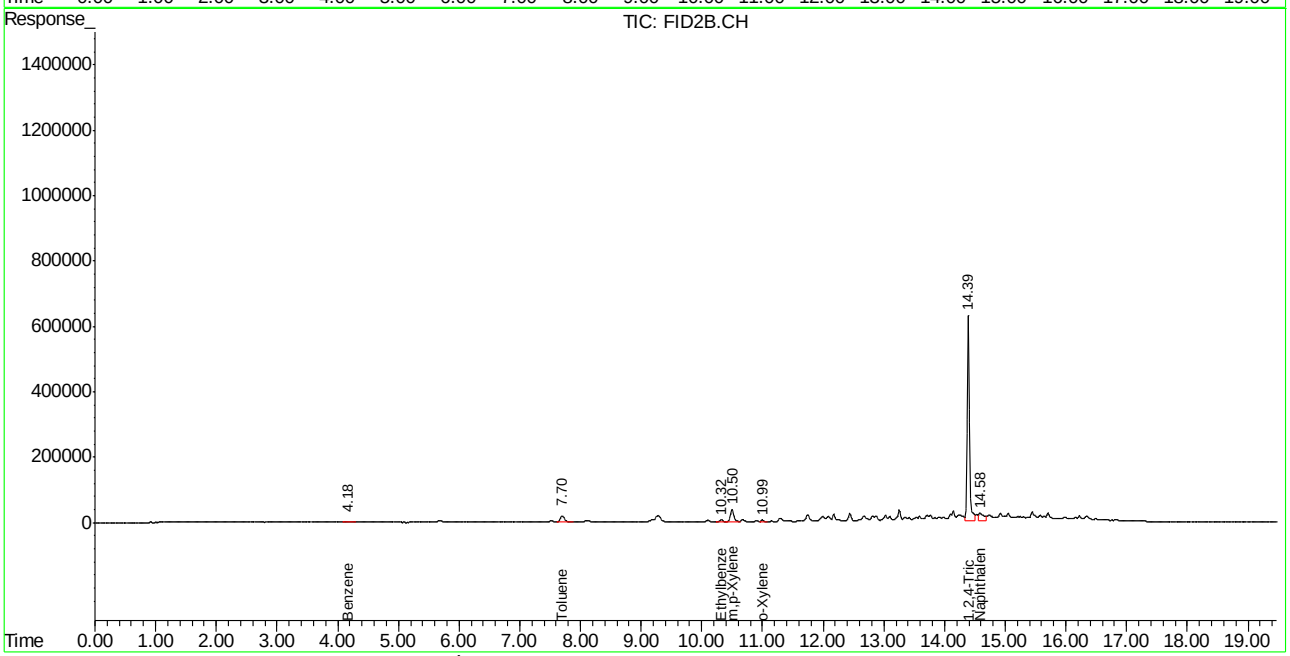
Quantitation Report (QT Reviewed)

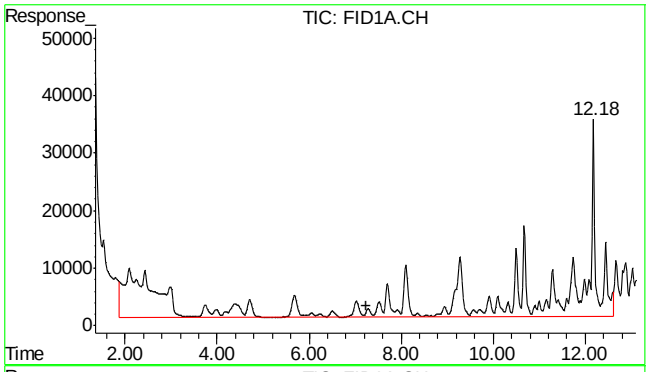
Signal #1 : Y:\1\DATA\111412\GB18471.D\FID1A.CH Vial: 19
Signal #2 : Y:\1\DATA\111412\GB18471.D\FID2B.CH
Acq On : 14 Nov 2012 8:34 pm Operator: StephK
Sample : D40911-1, 50X Inst : GC/MS Ins
Misc : GC3237,GGB1008,5.041,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 15 8:28 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Nov 15 08:25:26 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

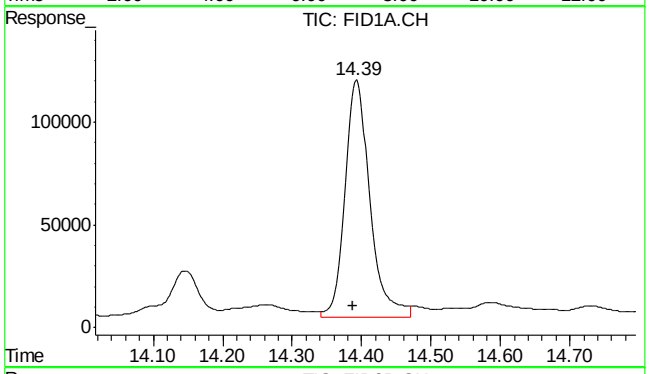






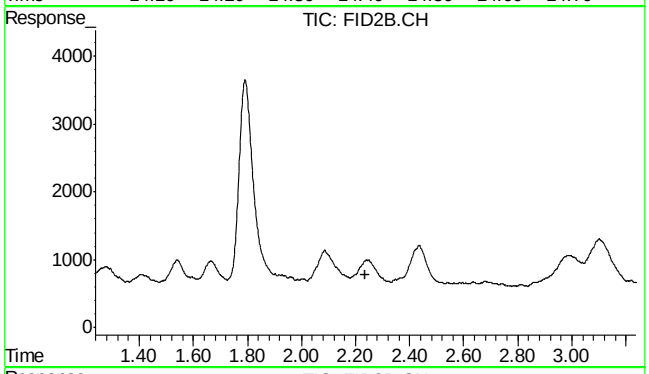
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 15061409
Conc: 0.21 mg/L m



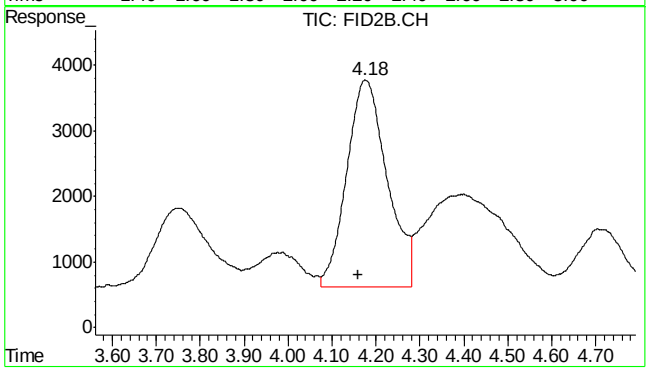
#2 1,2,4-Trichlorobenzene

R.T.: 14.393 min
Delta R.T.: 0.006 min
Response: 2866579
Conc: 91.48 % m



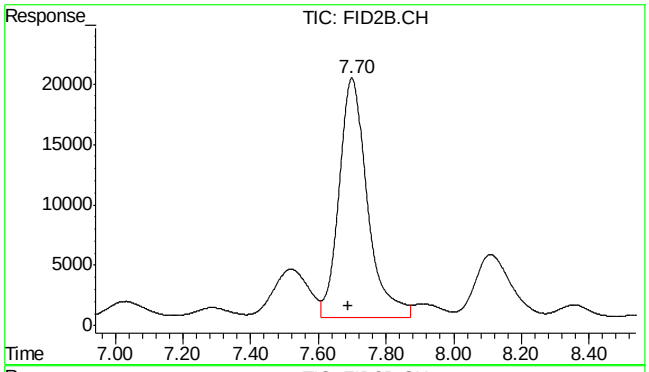
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.237 min
Response: 0
Conc: N.D.



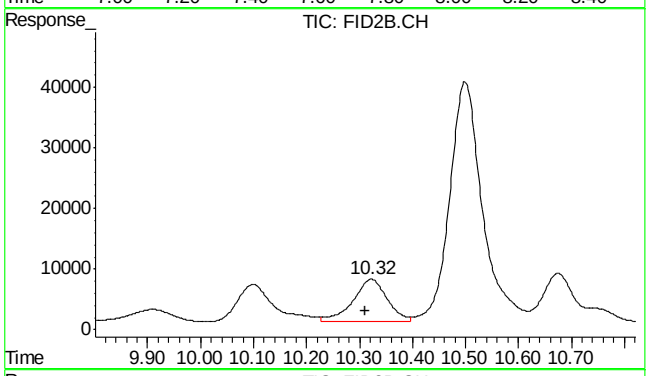
#5 Benzene

R.T.: 4.176 min
Delta R.T.: 0.017 min
Response: 200952
Conc: 0.50 ug/L



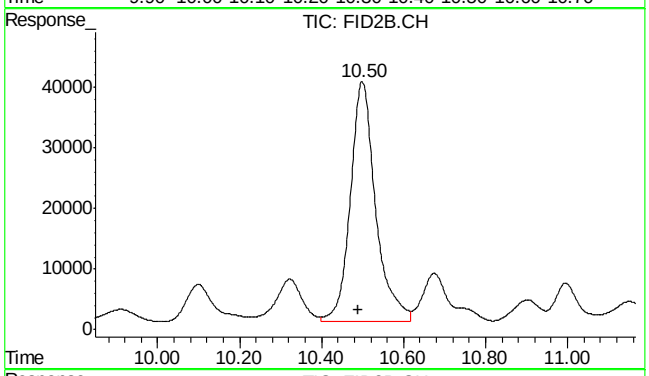
#6 Toluene

R.T.: 7.700 min
Delta R.T.: 0.013 min
Response: 1140494
Conc: 2.88 ug/L



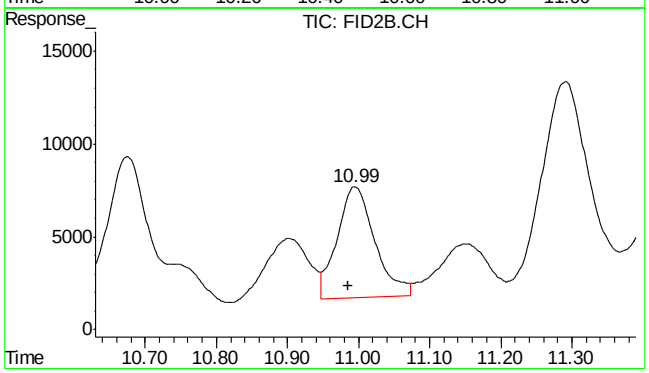
#7 Ethylbenzene

R.T.: 10.322 min
Delta R.T.: 0.011 min
Response: 318513
Conc: 0.94 ug/L



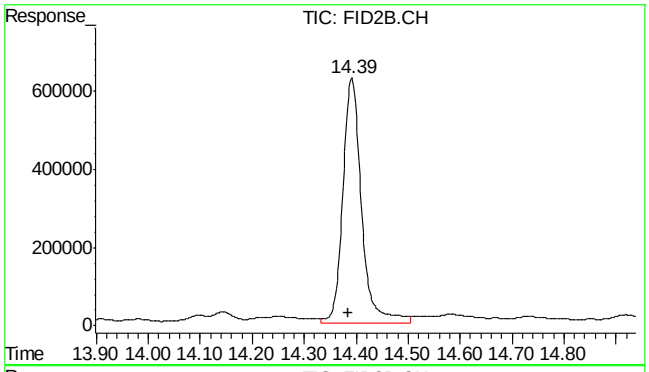
#8 m,p-Xylene

R.T.: 10.499 min
Delta R.T.: 0.009 min
Response: 1697421
Conc: 4.28 ug/L



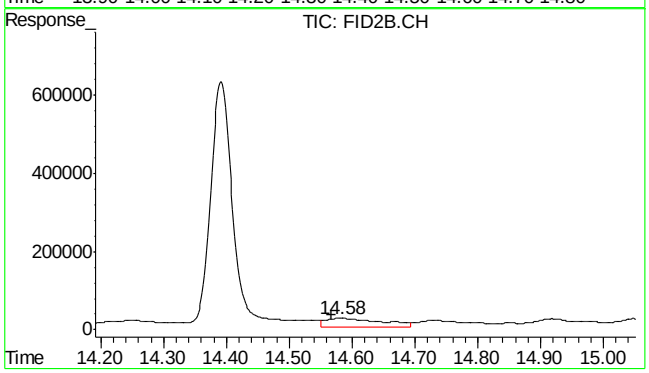
#9 o-Xylene

R.T.: 10.995 min
Delta R.T.: 0.010 min
Response: 222796
Conc: 0.68 ug/L



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

R.T.:	14.392 min
Delta R.T.:	0.007 min
Response:	15762242
Conc:	96.98 %



#11 Naphthalene

R.T.:	14.582 min
Delta R.T.:	0.016 min
Response:	1414129
Conc:	7.17 ug/L

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 11/15/12 08:53

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111412\GB18472.D\FID1A.CH Vial: 20
Signal #2 : Y:\1\DATA\111412\GB18472.D\FID2B.CH
Acq On : 14 Nov 2012 9:10 pm Operator: StephK
Sample : D40911-2, 50X Inst : GC/MS Ins
Misc : GC3237,GGB1008,5.033,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 15 08:26:05 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Nov 15 08:25:26 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

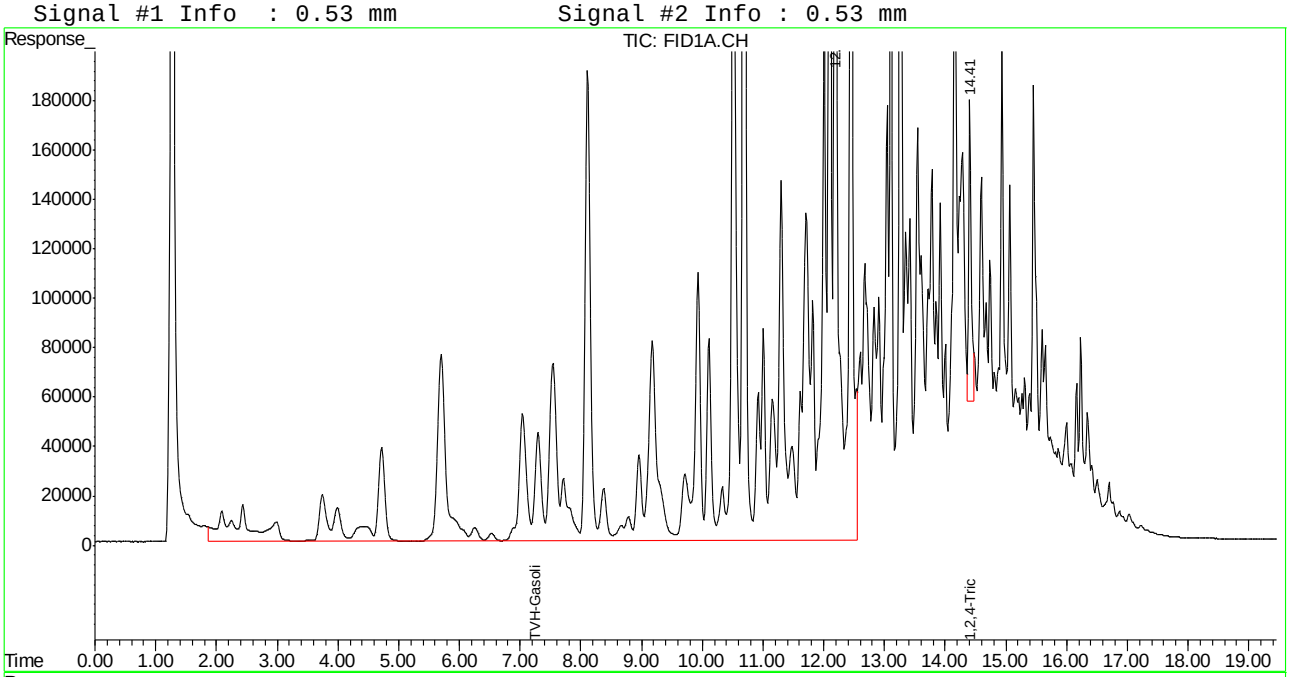
	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.41	3637069	116.074	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.40	31614985	194.521	%	
	Target Compounds					
1) H	TVH-Gasoline	7.23	203634200	3.207	mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5) T	Benzene	4.18	179680	0.446	ug/L	
6) T	Toluene	7.71	5950890	15.017	ug/L	
7) T	Ethylbenzene	10.33	3022950	8.937	ug/L	
8) T	m,p-Xylene	10.51	46472451	126.951	ug/L	
9) T	o-Xylene	11.00	7981331	24.306	ug/L	
11) T	Naphthalene	14.59	29809462	151.080	ug/L	

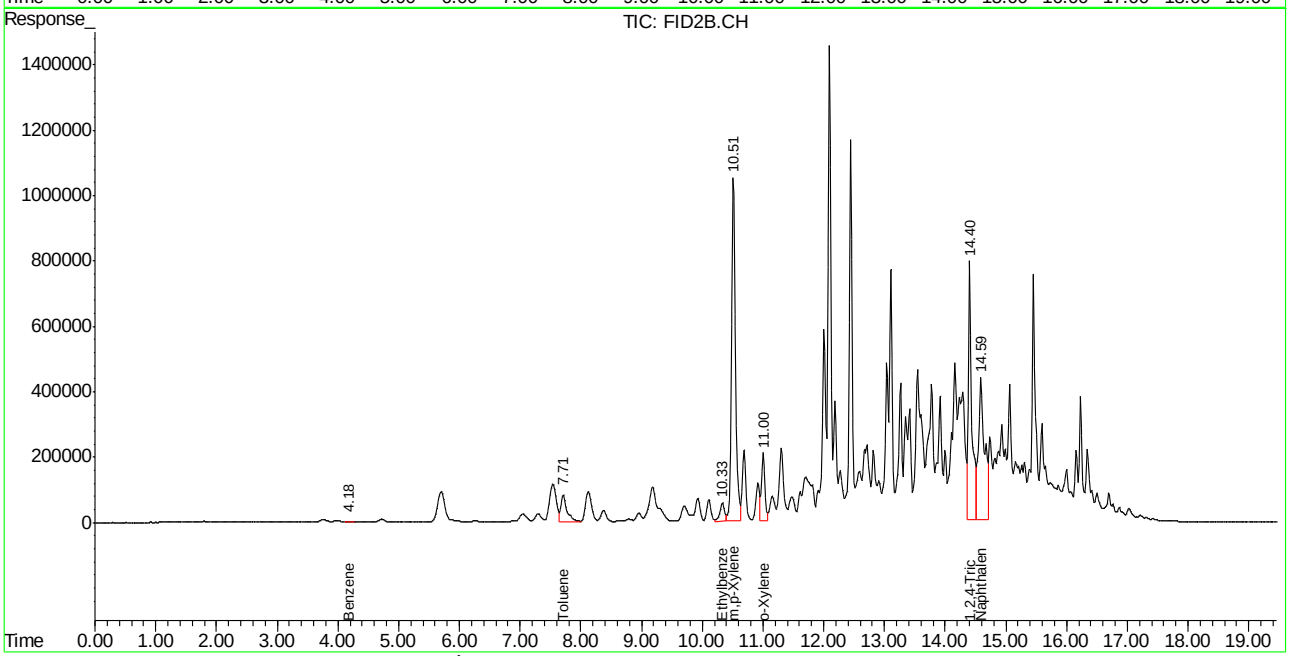
Quantitation Report (QT Reviewed)

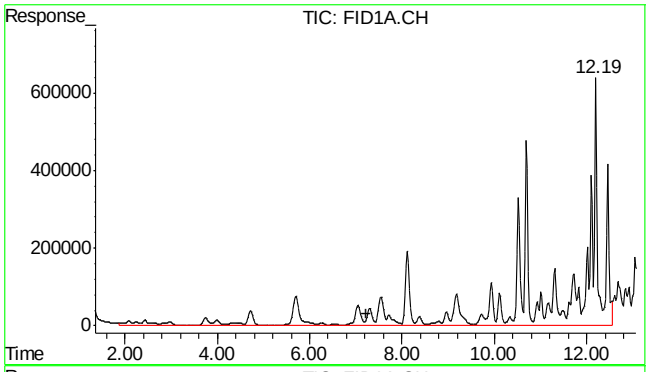
Signal #1 : Y:\1\DATA\111412\GB18472.D\FID1A.CH Vial: 20
Signal #2 : Y:\1\DATA\111412\GB18472.D\FID2B.CH
Acq On : 14 Nov 2012 9:10 pm Operator: StephK
Sample : D40911-2, 50X Inst : GC/MS Ins
Misc : GC3237,GGB1008,5.033,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 15 8:29 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Nov 15 08:25:26 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

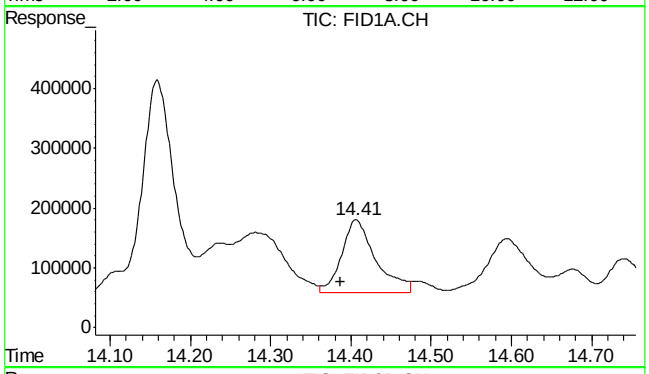






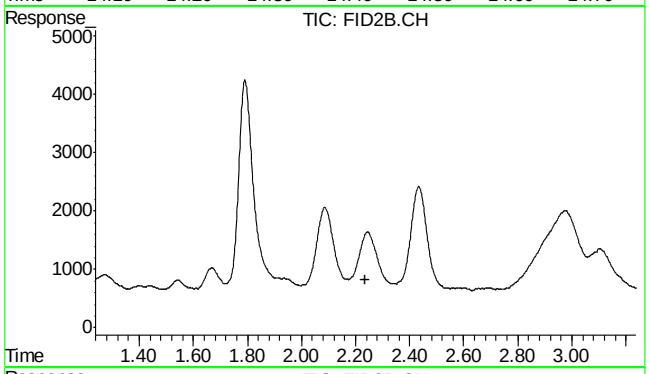
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 203634200
Conc: 3.21 mg/L m



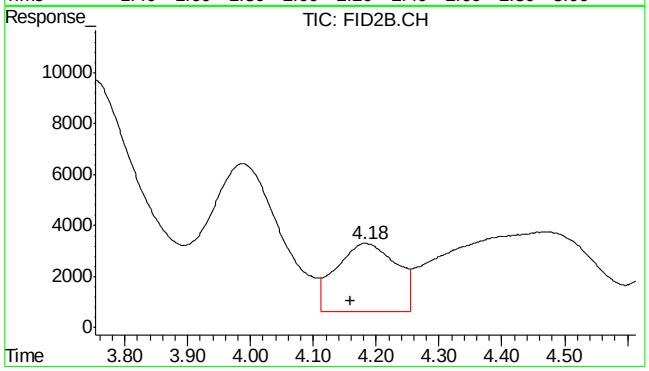
#2 1,2,4-Trichlorobenzene

R.T.: 14.406 min
Delta R.T.: 0.019 min
Response: 3637069
Conc: 116.07 % m



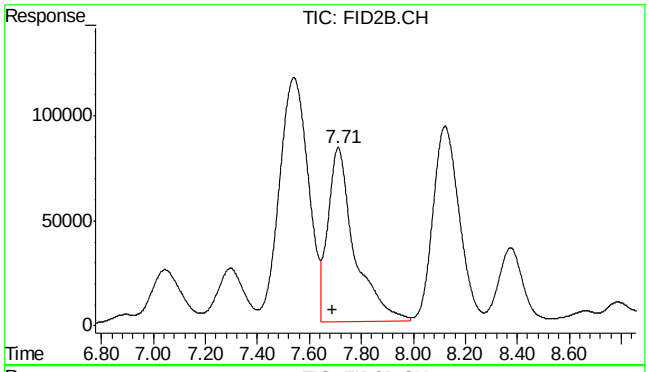
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.237 min
Response: 0
Conc: N.D.



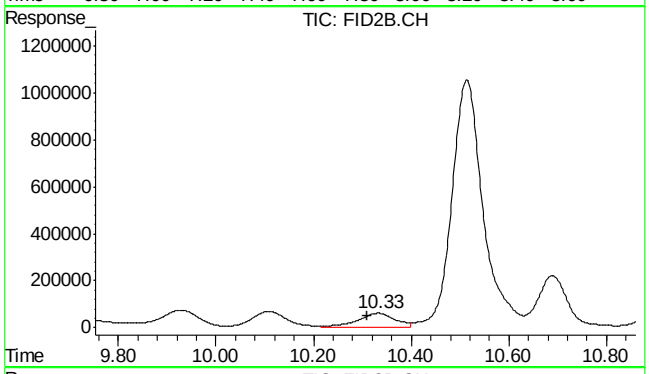
#5 Benzene

R.T.: 4.183 min
Delta R.T.: 0.024 min
Response: 179680
Conc: 0.45 ug/L



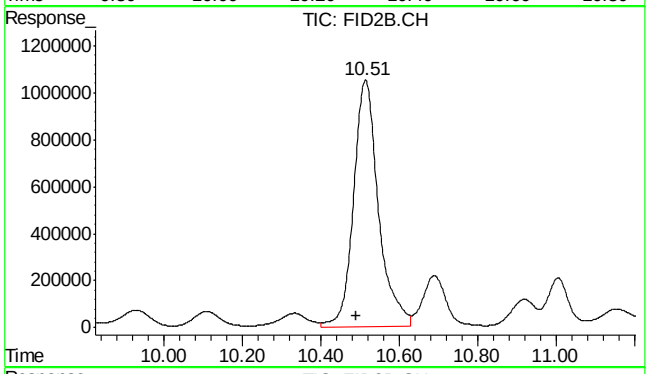
#6 Toluene

R.T.: 7.711 min
Delta R.T.: 0.024 min
Response: 5950890
Conc: 15.02 ug/L



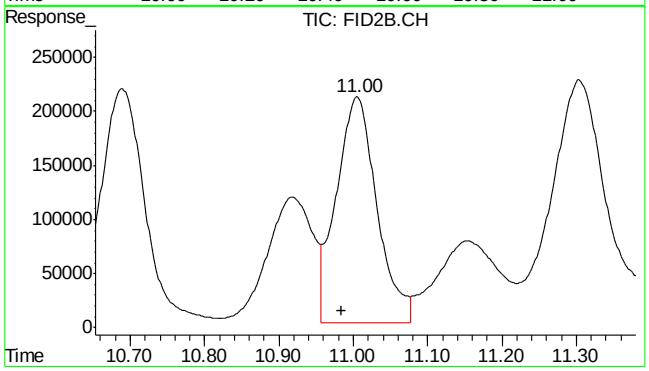
#7 Ethylbenzene

R.T.: 10.331 min
Delta R.T.: 0.020 min
Response: 3022950
Conc: 8.94 ug/L



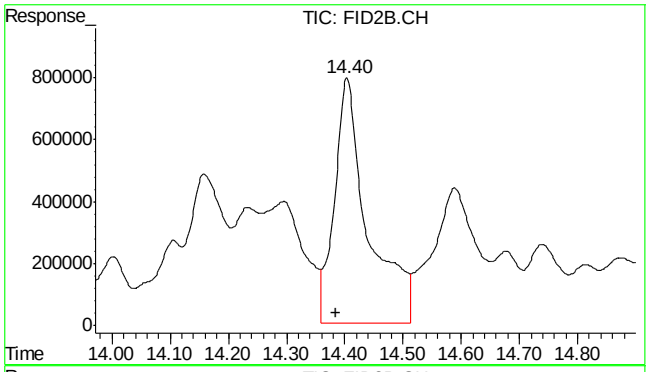
#8 m,p-Xylene

R.T.: 10.514 min
Delta R.T.: 0.023 min
Response: 46472451
Conc: 126.95 ug/L



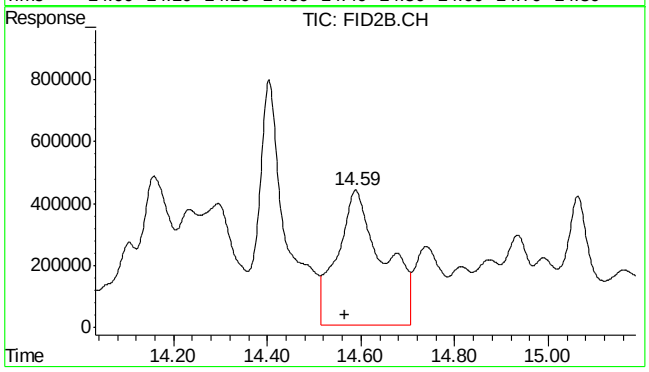
#9 o-Xylene

R.T.: 11.005 min
Delta R.T.: 0.020 min
Response: 7981331
Conc: 24.31 ug/L



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

R.T.: 14.405 min
Delta R.T.: 0.020 min
Response: 31614985
Conc: 194.52 %



#11 Naphthalene

R.T.: 14.589 min
Delta R.T.: 0.023 min
Response: 29809462
Conc: 151.08 ug/L

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 11/15/12 08:53

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111412\GB18455.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\111412\GB18455.D\FID2B.CH
Acq On : 14 Nov 2012 11:09 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3237,GGB1008,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 14 12:11:50 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Nov 14 12:11:33 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	14.38	2725437	86.980	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.38	14555844	89.559	%	
	Target Compounds					
1) H	TVH-Gasoline	7.23	5101069	<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	7.68	208741	0.527	ug/L	
7) T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L	d
9) T	o-Xylene	0.00	0	N.D.	ug/L	d
11) T	Naphthalene	14.56	178471	0.905	ug/L	

11.2.1

11

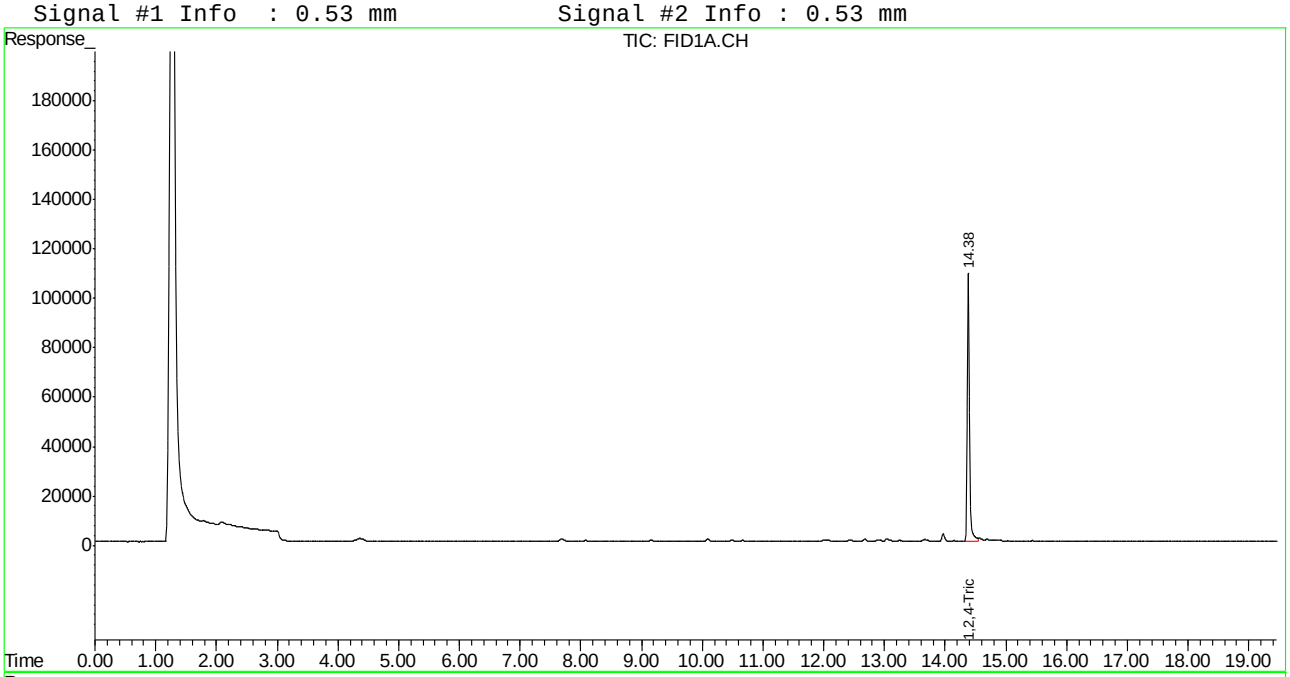
(f)=RT Delta > 1/2 Window (m)=manual int.

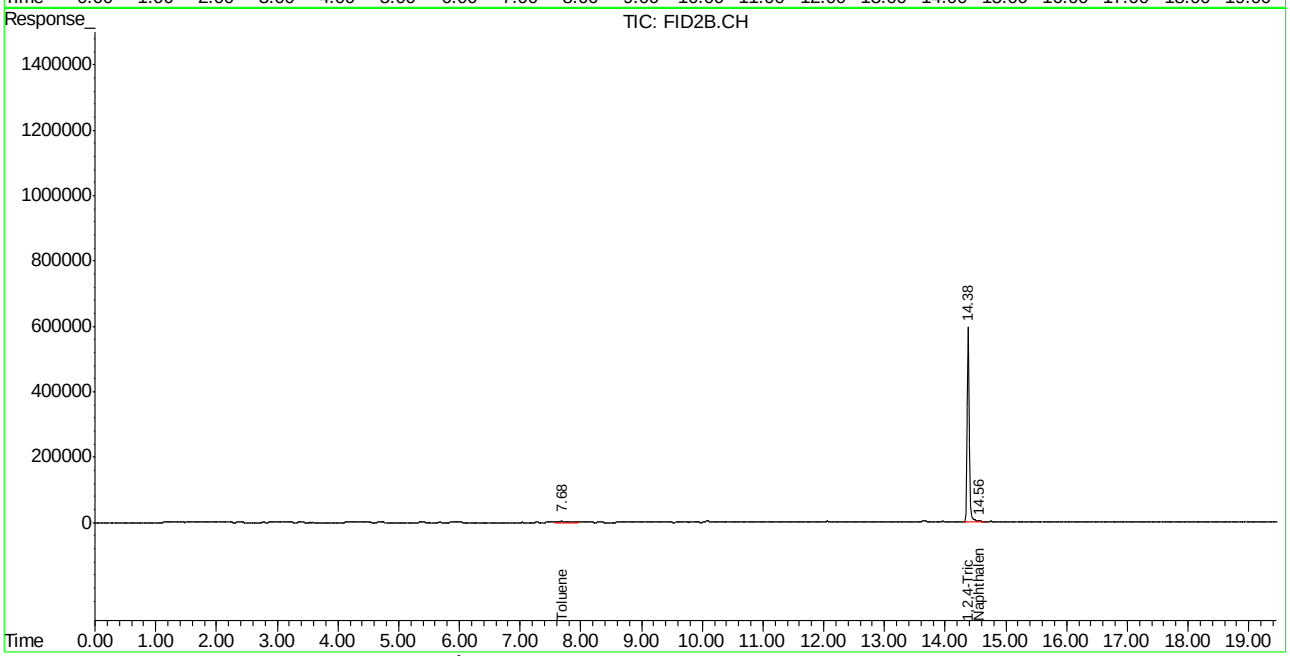
Quantitation Report (QT Reviewed)

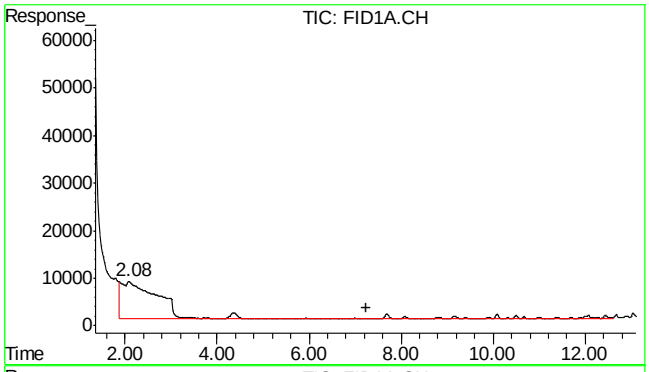
Signal #1 : Y:\1\DATA\111412\GB18455.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\111412\GB18455.D\FID2B.CH
Acq On : 14 Nov 2012 11:09 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3237,GGB1008,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 14 12:12 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Nov 14 12:11:33 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

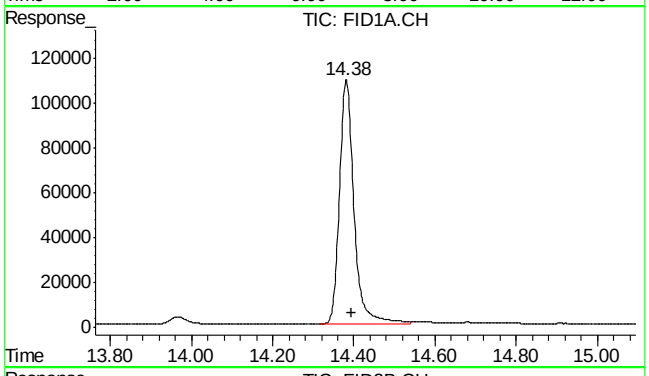






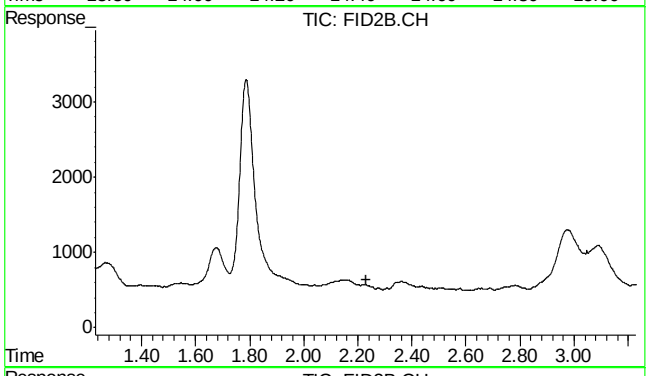
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 5101069
Conc: N.D.



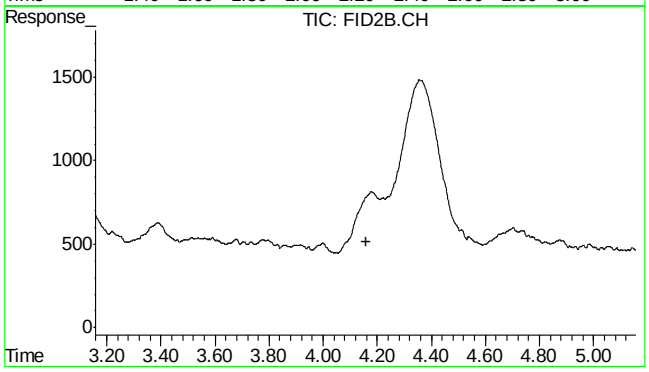
#2 1,2,4-Trichlorobenzene

R.T.: 14.381 min
Delta R.T.: -0.014 min
Response: 2725437
Conc: 86.98 % m



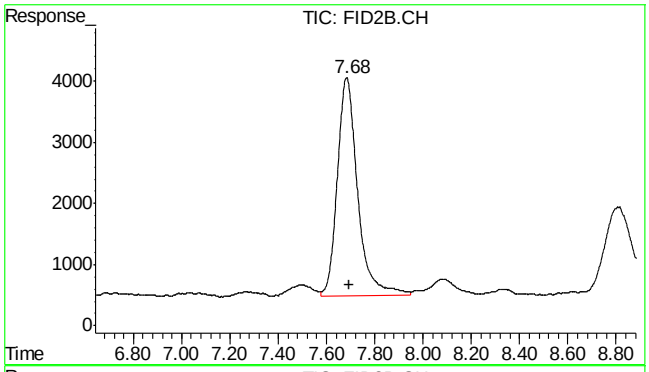
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.230 min
Response: 0
Conc: N.D.



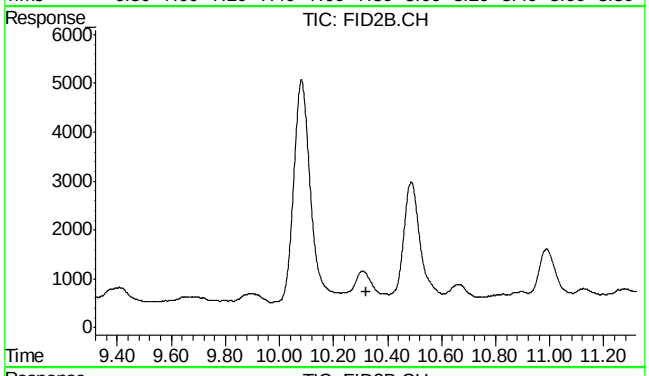
#5 Benzene

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



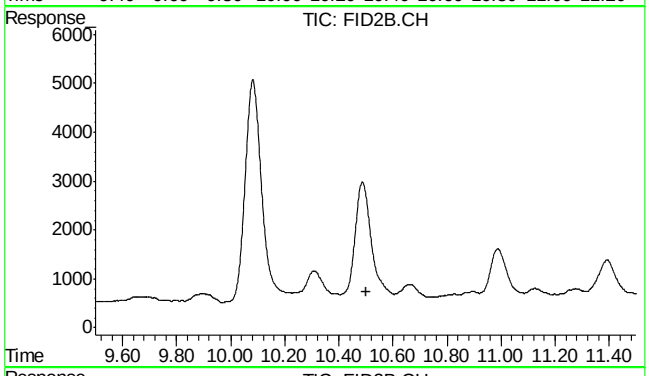
#6 Toluene

R.T.: 7.683 min
Delta R.T.: -0.010 min
Response: 208741
Conc: 0.53 ug/L



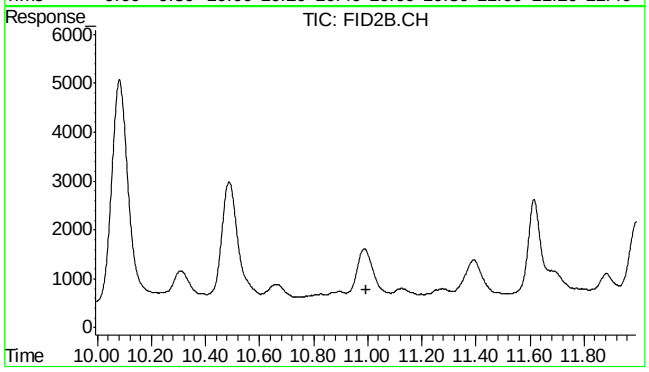
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.320 min
Response: 0
Conc: N.D.



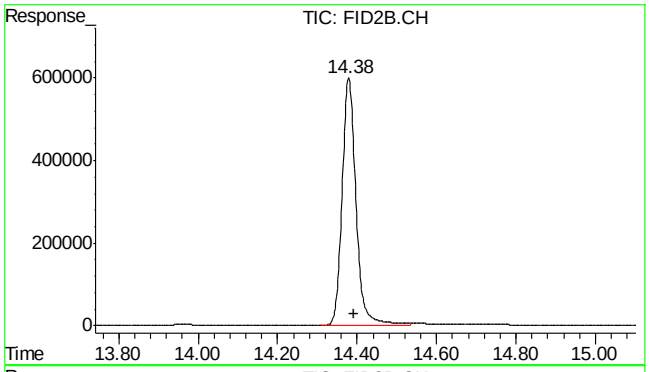
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.499 min
Response: 0
Conc: N.D.



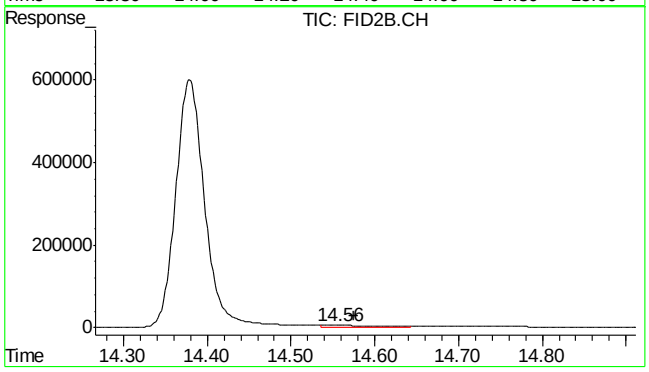
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.993 min
Response: 0
Conc: N.D.



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

R.T.:	14.379 min
Delta R.T.:	-0.013 min
Response:	14555844
Conc:	89.56 %



#11 Naphthalene

R.T.:	14.557 min
Delta R.T.:	-0.018 min
Response:	178471
Conc:	0.90 ug/L

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6966-MB	FD19619.D	1	11/16/12	AV	11/15/12	OP6966	GFD986

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

D40911-1, D40911-2

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

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	85%	35-130%

Blank Spike Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6966-BS	FD19621.D	1	11/16/12	AV	11/15/12	OP6966	GFD986

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

D40911-1, D40911-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	669	100	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	93%	35-130%

12.2.1
12

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D40911
Account: XTOKRWR XTO Energy
Project: NPU 197-19B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6966-MS	FD19623.D	1	11/16/12	AV	11/15/12	OP6966	GFD986
OP6966-MSD	FD19625.D	1	11/16/12	AV	11/15/12	OP6966	GFD986
D40875-4	FD19643.D	1	11/16/12	AV	11/15/12	OP6966	GFD986

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

D40911-1, D40911-2

CAS No.	Compound	D40875-4 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	168		799	584	52	562	49	4	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D40875-4	Limits
84-15-1	o-Terphenyl	64%	65%	73%	35-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19661.D Vial: 25
Acq On : 11-17-2012 03:31:42 AM Operator: ashleyv
Sample : D40911-1 Inst : FID5
Misc : OP6966,GFD986,30.10,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 08:25:55 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 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	8.95	46694813	843.927	mg/L
	Target Compounds				
2) H	TPH-DRO (c10-c28)	6.89	137584564	3622.965	mg/L

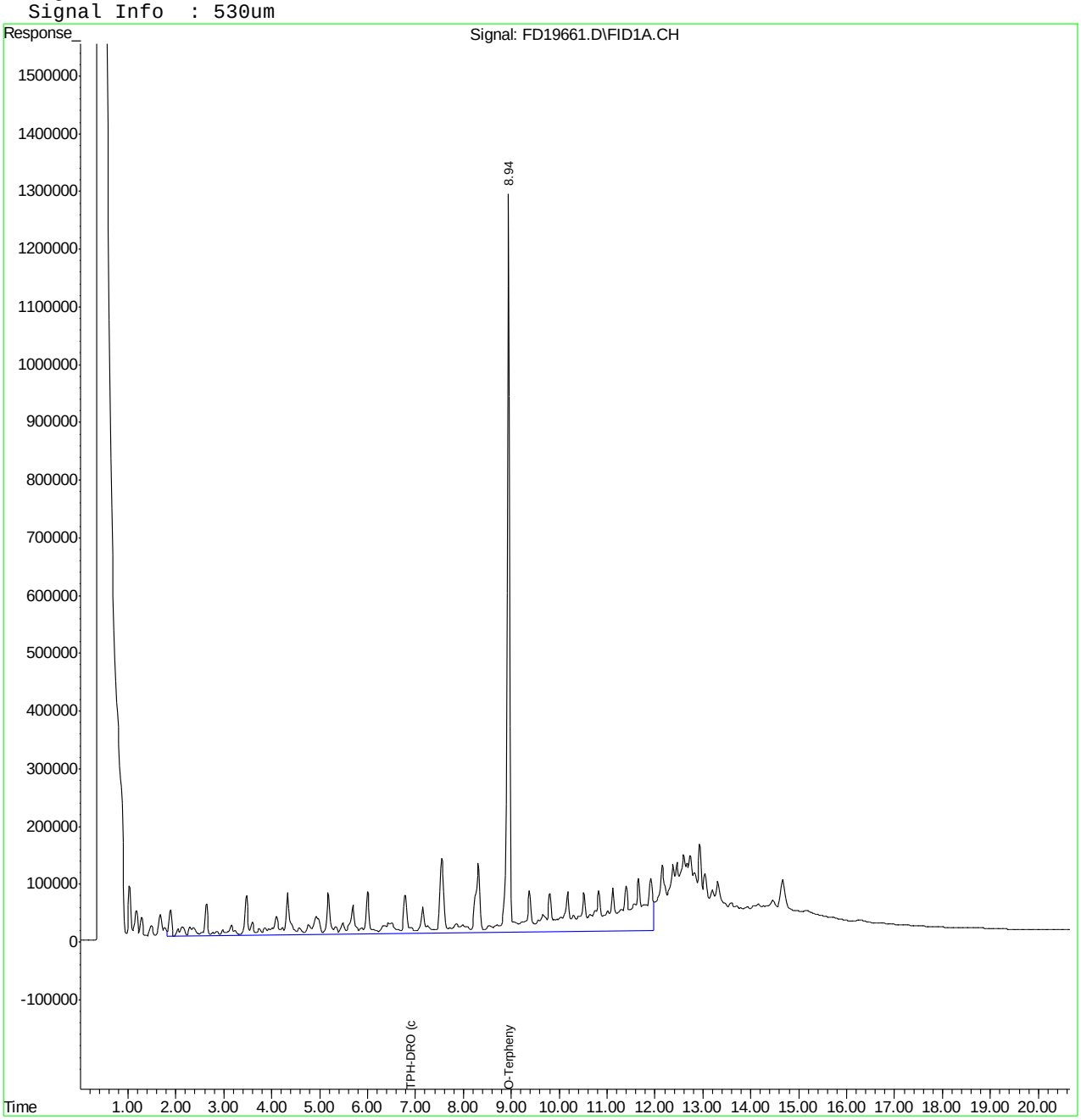
(f)=RT Delta > 1/2 Window (m)=manual int.
FD19661.D DRO-GFD982F.M Mon Nov 19 08:38:19 2012 GC Page 1

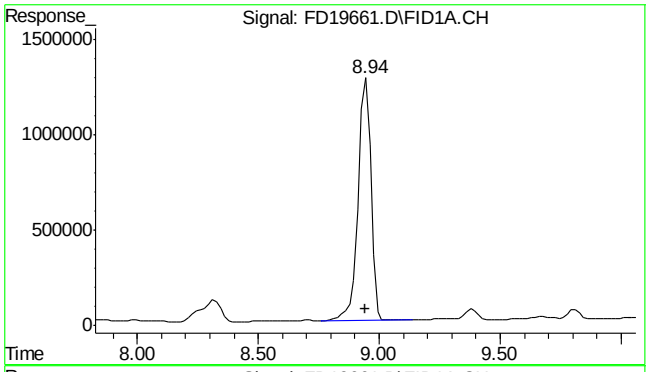
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19661.D Vial: 25
Acq On : 11-17-2012 03:31:42 AM Operator: ashleyv
Sample : D40911-1 Inst : FID5
Misc : OP6966,GFD986,30.10,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 8:25 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

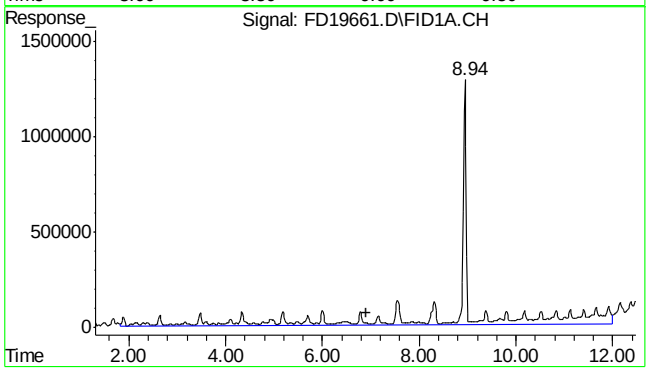
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.948 min
Delta R.T.: 0.008 min
Response: 46694813
Conc: 843.93 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 6.895 min
Delta R.T.: 0.000 min
Response: 137584564
Conc: 3622.96 mg/L m

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 11/19/12 10:09

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19663.D Vial: 26
Acq On : 11-17-2012 03:58:35 AM Operator: ashleyv
Sample : D40911-2 Inst : FID5
Misc : OP6966,GFD986,30.08,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 08:25:56 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 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	8.93	52243892	944.217	mg/L m
	Target Compounds				
2) H	TPH-DRO (c10-c28)	6.89	901806366	23746.942	mg/L

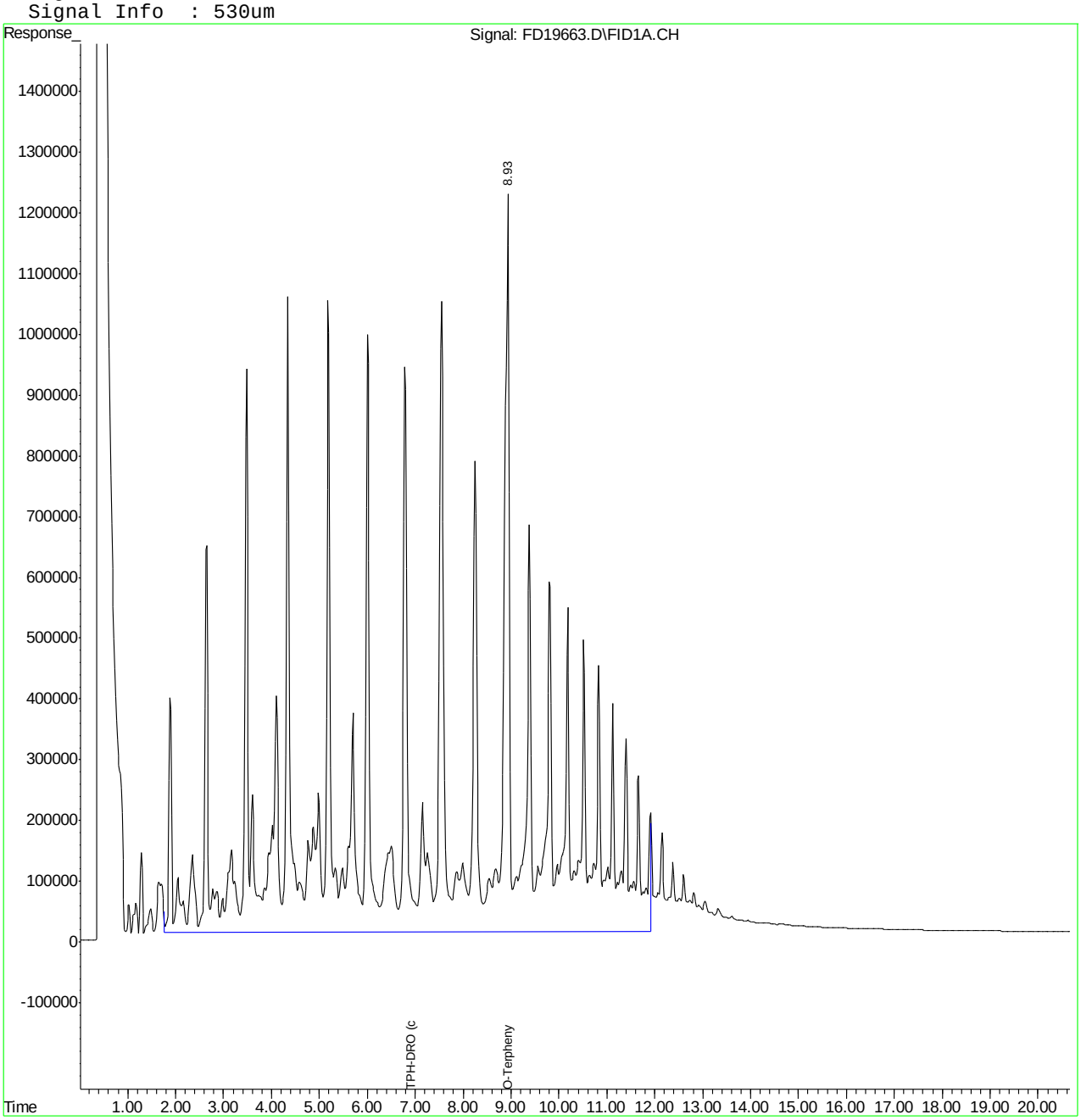
(f)=RT Delta > 1/2 Window (m)=manual int.
FD19663.D DRO-GFD982F.M Mon Nov 19 08:38:20 2012 GC Page 1

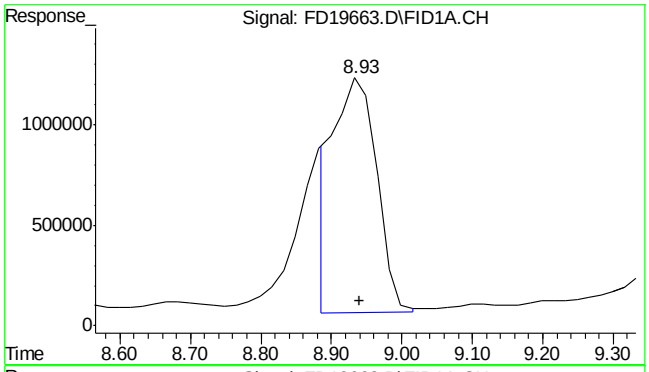
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19663.D Vial: 26
Acq On : 11-17-2012 03:58:35 AM Operator: ashleyv
Sample : D40911-2 Inst : FID5
Misc : OP6966,GFD986,30.08,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 8:37 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

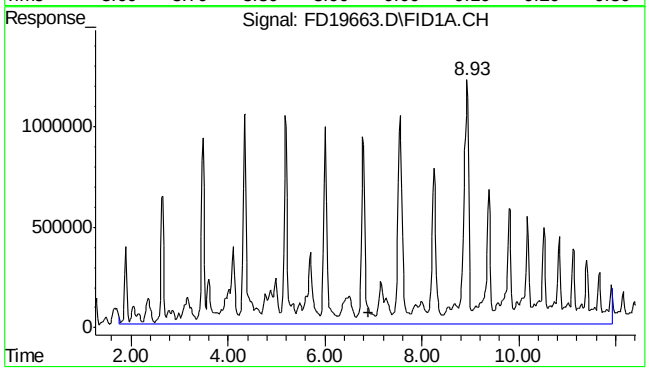
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.935 min
Delta R.T.: -0.005 min
Response: 52243892
Conc: 944.22 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 6.895 min
Delta R.T.: 0.000 min
Response: 901806366
Conc: 23746.94 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19619.D Vial: 4
Acq On : 11-16-2012 06:06:11 PM Operator: ashleyv
Sample : OP6966-MB Inst : FID5
Misc : OP6966,GFD986,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 08:25:35 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 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	8.95	47024008	849.877	mg/L
	Target Compounds				
2) H	TPH-DRO (c10-c28)	6.89	941886	24.802	mg/L

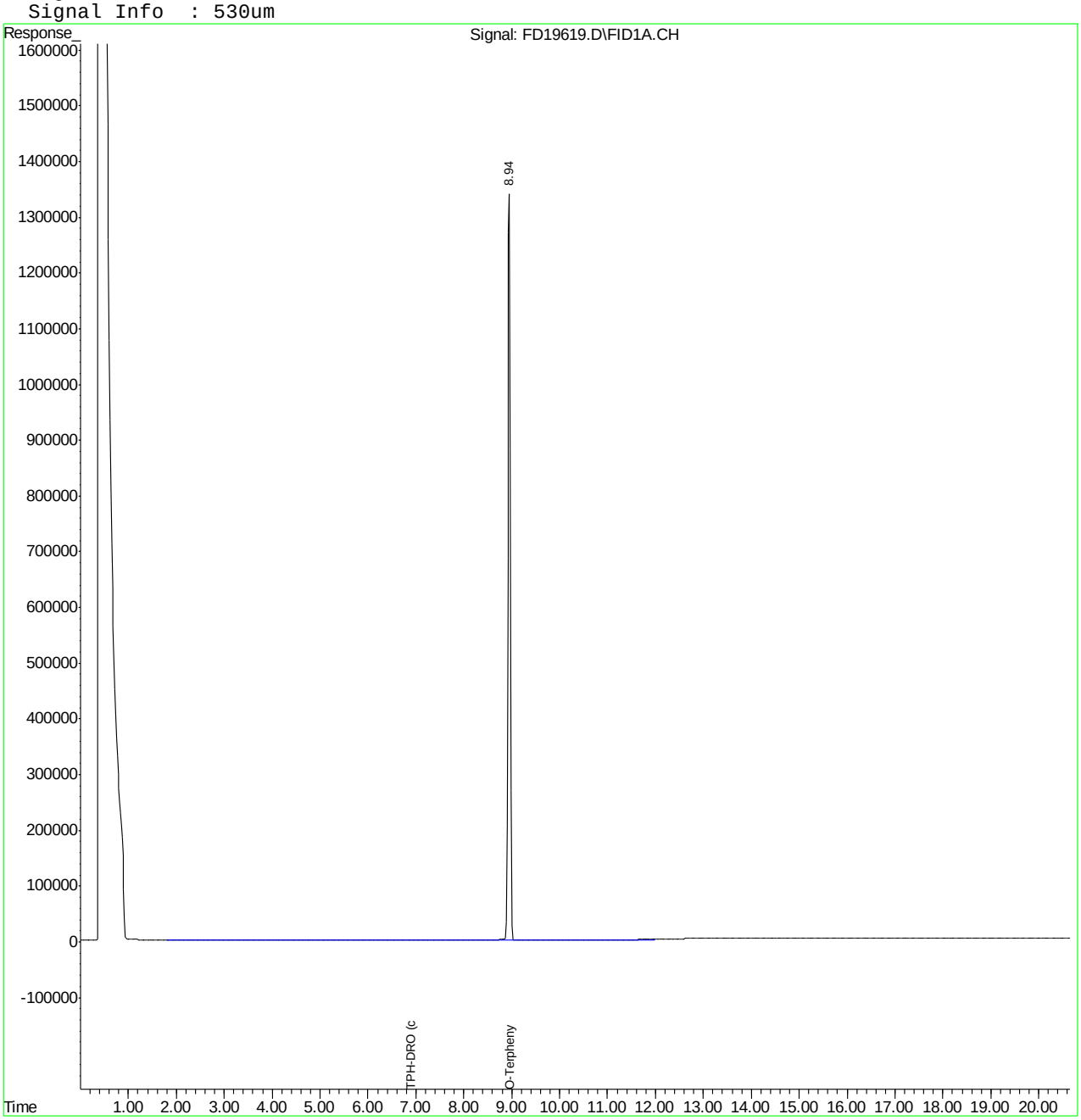
(f)=RT Delta > 1/2 Window (m)=manual int.

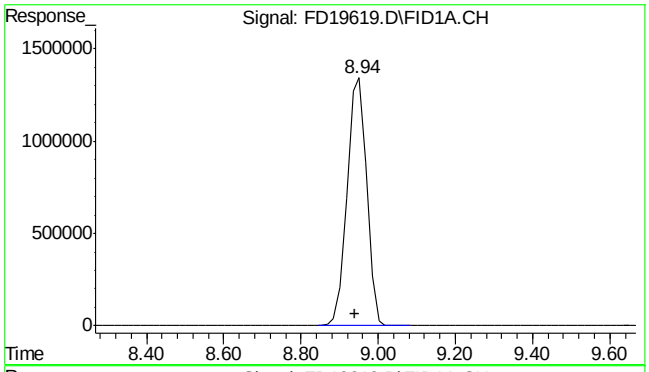
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19619.D Vial: 4
Acq On : 11-16-2012 06:06:11 PM Operator: ashleyv
Sample : OP6966-MB Inst : FID5
Misc : OP6966,GFD986,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 8:25 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

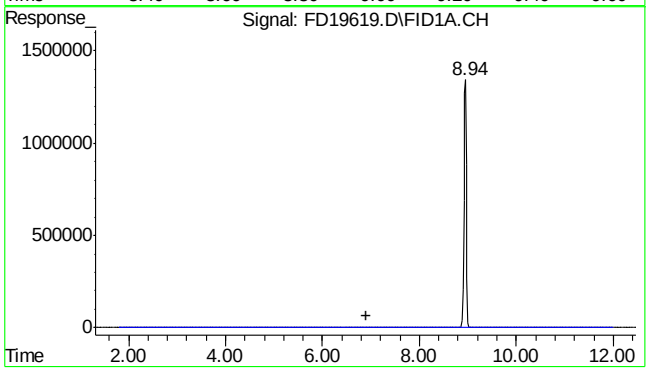
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.952 min
Delta R.T.: 0.012 min
Response: 47024008
Conc: 849.88 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 6.895 min
Delta R.T.: 0.000 min
Response: 941886
Conc: 24.80 mg/L m

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 11/15/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.96	.57		
Antimony	3.0	.17	.12		
Arsenic	2.5	.44	.56		
Barium	1.0	.01	.11	0.050	<1.0
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	0.040	<1.0
Cobalt	0.50	.04	.07		
Copper	1.0	.12	.15	0.030	<1.0
Iron	7.0	.12	.87		
Lead	5.0	.19	.24	0.13	<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	0.050	<3.0
Phosphorus	10	1.4	1.9		
Potassium	200	6.1	7		
Selenium	5.0	.48	.36	0.31	<5.0
Silicon	5.0	.29	.37		
Silver	3.0	.04	.06	-0.010	<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	0.33	<3.0

Associated samples MP8890: D40911-1, D40911-2

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 11/15/12

Metal	D40910-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	4180	5160	254	385.7(a)	75-125
Beryllium	anr				
Boron					
Cadmium	0.35	49.0	63.5	76.6	75-125
Calcium	anr				
Chromium	21.7	71.5	63.5	78.4	75-125
Cobalt	anr				
Copper	18.2	70.8	63.5	82.8	75-125
Iron	anr				
Lead	17.9	113	127	74.9N(b)	75-125
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum	anr				
Nickel	12.6	59.2	63.5	73.4N(b)	75-125
Phosphorus	anr				
Potassium	anr				
Selenium	2.4	102	127	78.4	75-125
Silicon					
Silver	0.060	20.6	25.4	80.8	75-125
Sodium	anr				
Strontium					
Thallium	anr				
Tin					
Titanium					
Uranium					
Vanadium	anr				
Zinc	39.3	88.0	63.5	76.7	75-125

Associated samples MP8890: D40911-1, D40911-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8890
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.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8890 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/15/12

Metal	D40910-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	4180	6100	251	763.6(a)	16.7	20
Beryllium	anr					
Boron						
Cadmium	0.35	52.5	62.9	83.0	6.9	20
Calcium	anr					
Chromium	21.7	72.1	62.9	80.2	0.8	20
Cobalt	anr					
Copper	18.2	76.9	62.9	93.4	8.3	20
Iron	anr					
Lead	17.9	138	126	95.5	19.9	20
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	12.6	61.5	62.9	77.8	3.8	20
Phosphorus	anr					
Potassium	anr					
Selenium	2.4	108	126	84.0	5.7	20
Silicon						
Silver	0.060	22.1	25.1	87.7	7.0	20
Sodium	anr					
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium						
Vanadium	anr					
Zinc	39.3	96.1	62.9	90.4	8.8	20

Associated samples MP8890: D40911-1, D40911-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 11/15/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	203	200	101.5	80-120
Beryllium	anr			
Boron				
Cadmium	46.9	50	93.8	80-120
Calcium	anr			
Chromium	49.2	50	98.4	80-120
Cobalt	anr			
Copper	47.6	50	95.2	80-120
Iron	anr			
Lead	95.2	100	95.2	80-120
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	46.6	50	93.2	80-120
Phosphorus	anr			
Potassium	anr			
Selenium	93.6	100	93.6	80-120
Silicon				
Silver	19.7	20	98.5	80-120
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	48.2	50	96.4	80-120

Associated samples MP8890: D40911-1, D40911-2

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 11/15/12

Metal	D40910-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	31100	30000	13.4*(a)	0-10
Beryllium	anr			
Boron				
Cadmium	0.00	0.00	NC (b)	0-10
Calcium	anr			
Chromium	180	206	14.8*(a)	0-10
Cobalt	anr			
Copper	151	149	1.5	0-10
Iron	anr			
Lead	154	158	6.8	0-10
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	104	122	16.7*(a)	0-10
Phosphorus	anr			
Potassium	anr			
Selenium	0.00	0.00	NC (b)	0-10
Silicon				
Silver	3.00	2.50	400.0(b)	0-10
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	393	403	23.5*(a)	0-10

Associated samples MP8890: D40911-1, D40911-2

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8891
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/15/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.22	.31		
Antimony	0.20	.0018	.0075		
Arsenic	0.10	.006	.06	0.015	<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 MP8891: D40911-1, D40911-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8891
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/15/12

Metal	D40910-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	6.6	117	127	86.9	75-125
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP8891: D40911-1, D40911-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8891 Methods: SW846 6020A
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/15/12

Metal	D40910-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	6.6	112	126	83.8	4.4	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP8891: D40911-1, D40911-2

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8891
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/15/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	91.5	100	91.5	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 MP8891: D40911-1, D40911-2

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8891
Matrix Type: SOLID

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/15/12

Metal	D40910-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	54.3	53.0	2.4	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 MP8891: D40911-1, D40911-2

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8899 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/16/12

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.083	.00088	.00075	-0.0016	<0.083

Associated samples MP8899: D40911-1, D40911-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8899
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/16/12

Metal	D40848-1 Original	MS	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.44	2.4	1.94	101.2	75-125

Associated samples MP8899: D40911-1, D40911-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8899 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/16/12

Metal	D40848-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.44	2.4	1.78	109.9	0.0	20

Associated samples MP8899: D40911-1, D40911-2

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8899
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/16/12

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

Associated samples MP8899: D40911-1, D40911-2

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date: 11/16/12

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	32.0	<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	6.5	<1000
Manganese	25	6	6		
Molybdenum	50	11	11		
Nickel	150	2.5	2.9		
Phosphorus	500	70	300		
Potassium	5000	310	750		
Selenium	250	24	55		
Silicon	250	15			
Silver	150	2	4.9		
Sodium	2000	30	490	-120	<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 MP8908: D40911-1A, D40911-2A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8908
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: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date: 11/16/12

Metal	D40910-1A Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	318000	446000	125000	102.4	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	92100	217000	125000	99.9	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	1810000	1940000	125000	104.0	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP8908: D40911-1A, D40911-2A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8908
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: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date: 11/16/12

Metal	D40910-1A Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	318000	445000	125000	101.6	0.2	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	92100	213000	125000	96.7	1.9	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	1810000	1900000	125000	72.0 (a)	2.1	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP8908: D40911-1A, D40911-2A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date:

Metal

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date: 11/16/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	139000	125000	111.2	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	126000	125000	100.8	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	126000	125000	100.8	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8908: D40911-1A, D40911-2A

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8908
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: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date: 11/16/12

Metal	D40910-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	63700	65100	2.1	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	18400	18900	2.6	0-10
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	362000	377000	4.0	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8908: D40911-1A, D40911-2A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP8688/GN17692	1.0	0.0	mg/kg	176.0	162	92.0	80-120%
Specific Conductivity	GP8712/GN17742			umhos/cm	9991	9990	100.0	90-110%
pH	GN17696			su	8.00	7.96	99.5	99.3-100.7%

Associated Samples:
Batch GP8688: D40911-1, D40911-2
Batch GP8712: D40911-1, D40911-2
Batch GN17696: D40911-1, D40911-2
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP8688/GN17692	D40911-1	mg/kg	0.0	0.0	0.0	0-20%
Redox Potential Vs H2	GN17722	D41014-1	mv	94.2	93.7	0.5	0-20%

Associated Samples:
Batch GP8688: D40911-1, D40911-2
Batch GN17722: D40911-1, D40911-2
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP8688/GN17692	D40911-1	mg/kg	0.0	40.0	33.0	82.5	75-125%

Associated Samples:
Batch GP8688: D40911-1, D40911-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40911
Account: XTOKRWR - XTO Energy
Project: NPU 197-19B

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GP8688/GN17692	D40911-1	mg/kg	0.0	40.0	32.2	2.3	20%

Associated Samples:
Batch GP8688: D40911-1, D40911-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits