



11/18/11

Technical Report for

KRW Consulting, Inc.

XOM FRU 297-17A

1108-13A

Accutest Job Number: D29396

Sampling Date: 11/10/11

Report to:

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Total number of pages in report: 143



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: 303-425-6021

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

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Test results relate only to samples analyzed.

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Sample Summary

KRW Consulting, Inc.

Job No: D29396

XOM FRU 297-17A
Project No: 1108-13A

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D29396-1	11/10/11	09:50	RR	11/11/11	SO	Soil	RESERVE PIT MIX/BLEND
D29396-1A	11/10/11	09:50	RR	11/11/11	SO	Soil	RESERVE PIT MIX/BLEND

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: KRW Consulting, Inc.

Job No D29396

Site: XOM FRU 297-17A

Report Dat 11/18/2011 9:41:44 AM

On 11/11/2011, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D29396 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: V3V839

- All samples were analyzed within the recommended method holding time.
- Sample(s) D29198-4MS, D29198-4MSD 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: OP4843

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29397-1MS, D29397-1MSD were used as the QC samples indicated.
- The blank spike (BS) recovery(s) of Benzo(b)fluoranthene, Indeno(1,2,3-cd)pyrene are outside control limits. Compound ND in associated samples.
- The matrix spike (MS) and matrix spike duplicate (MSD) recovery(s) of multiple analytes are outside control limits. Due to possible matrix interference.
- Sample(s) OP4843-MS, OP4843-MSD have surrogates outside control limits. Probable cause due to matrix interference.
- OP4843-MS and OP4843-MSD: ISTD outside control limits due to possible matrix interference. Confirmed by reanalysis.
- D29396-1: Elevated RL due to matrix interference.

Volatiles by GC By Method SW846 8015B

Matrix SO

Batch ID: GGB787

- All samples were analyzed within the recommended method holding time.
- Sample(s) D29362-1MS, D29362-1MSD 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: OP4840

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29416-2MS, D29416-2MSD were used as the QC samples indicated.

Metals By Method SW846 6010B

Matrix AQ

Batch ID: MP6269

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29403-1AMS, D29403-1AMSD were used as the QC samples for the metals analysis.
- The matrix spike duplicate (MSD) recovery of Sodium is outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

Matrix SO

Batch ID: MP6253

- All samples were digested and analyzed within the recommended method holding time.
- Sample(s) D29399-1MS, D29399-1MSD, D29399-1SDL were used as the QC samples for the metals analysis.
- The matrix spike duplicate (MSD) recovery(s) of Nickel, Zinc are outside control limits. Probable cause due to matrix interference.
- The serial dilution RPD(s) for Selenium, Silver are outside control limits for sample MP6253-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP6253-MB1 for Barium: All sample results >10x method blank concentration.
- The serial dilution RPD(s) for Barium, Nickel, Zinc are outside control limits for sample MP6253-SD1. Serial dilution indicates possible matrix interference.
- D29396-1 for Selenium: Elevated detection limit due to dilution required for possible matrix interference.

Metals By Method SW846 6020

Matrix SO

Batch ID: MP6254

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29399-1MS, D29399-1MSD, D29399-1SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471A

Matrix SO

Batch ID: MP6259

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29400-1MS, D29400-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO

Batch ID: GN12483

- The data for ASTM D1498-76M meets quality control requirements.

Wet Chemistry By Method SM19 2540B M

Matrix SO

Batch ID: GN12484

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

Wet Chemistry By Method SW846 3060/7196A M

Matrix SO

Batch ID: R10782

- The data for SW846 3060/7196A M meets quality control requirements.
- D29396-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A**Matrix** SO**Batch ID:** M:GP13807

- The data for SW846 3060A/7196A meets quality control requirements.
- D29396-1 for Chromium, Hexavalent: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method USDA HANDBOOK 60**Matrix** SO**Batch ID:** MP6269

- D29396-1A for Sodium Adsorption Ratio: Calculated as: $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

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

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

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Accutest Mountain States**Job No** D29396**Site:** KRWCCOL: XOM FRU 297-17A**Report Date** 11/18/2011 9:04:07 AM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 11/10/2011 and were received at Accutest on 11/11/2011 properly preserved, at XXXXNO TEMPERATURE FOUNDXXXX Deg. C and intact. These Samples received an Accutest job number of D29396. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO**Batch ID:** GP13807

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29398-1DUP, D29398-1MS were used as the QC samples for Chromium, Hexavalent.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(D29396).

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

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Client Sample ID:	RESERVE PIT MIX/BLEND	Date Sampled:	11/10/11
Lab Sample ID:	D29396-1	Date Received:	11/11/11
Matrix:	SO - Soil	Percent Solids:	74.8
Method:	SW846 8260B		
Project:	XOM FRU 297-17A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V14564.D	1	11/11/11	DC	n/a	n/a	V3V839
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	84	37	ug/kg	
108-88-3	Toluene	ND	170	84	ug/kg	
100-41-4	Ethylbenzene	ND	170	42	ug/kg	
1330-20-7	Xylene (total)	ND	330	170	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	103%		61-130%
460-00-4	4-Bromofluorobenzene	103%		53-131%
17060-07-0	1,2-Dichloroethane-D4	100%		62-130%

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

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

Report of Analysis

Client Sample ID:	RESERVE PIT MIX/BLEND	Date Sampled:	11/10/11
Lab Sample ID:	D29396-1	Date Received:	11/11/11
Matrix:	SO - Soil	Percent Solids:	74.8
Method:	SW846 8270C BY SIM SW846 3546		
Project:	XOM FRU 297-17A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3G06941.D	25	11/16/11	TMB	11/14/11	OP4843	E3G256
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	220	180	ug/kg	
120-12-7	Anthracene	ND	220	200	ug/kg	
56-55-3	Benzo(a)anthracene	ND	560	290	ug/kg	
50-32-8	Benzo(a)pyrene	ND	560	400	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	560	410	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	560	240	ug/kg	
218-01-9	Chrysene	ND	560	240	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	560	410	ug/kg	
206-44-0	Fluoranthene	ND	220	220	ug/kg	
86-73-7	Fluorene	ND	220	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	670	610	ug/kg	
91-20-3	Naphthalene	ND	220	210	ug/kg	
129-00-0	Pyrene	ND	220	210	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	11%		10-145%
321-60-8	2-Fluorobiphenyl	55%		10-130%
1718-51-0	Terphenyl-d14	52%		22-130%

(a) Elevated RL due to matrix interference.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	RESERVE PIT MIX/BLEND			Date Sampled:	11/10/11
Lab Sample ID:	D29396-1			Date Received:	11/11/11
Matrix:	SO - Soil			Percent Solids:	74.8
Method:	SW846 8015B				
Project:	XOM FRU 297-17A				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB13860.D	1	11/12/11	SK	n/a	n/a	GGB787
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)	19.7	17	8.4	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	107%		60-140%		

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

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

Accutest Laboratories

Report of Analysis

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Client Sample ID:	RESERVE PIT MIX/BLEND					Date Sampled:	11/10/11
Lab Sample ID:	D29396-1					Date Received:	11/11/11
Matrix:	SO - Soil					Percent Solids:	74.8
Method:	SW846-8015B SW846 3546						
Project:	XOM FRU 297-17A						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI04479.D	1	11/15/11	CS	11/14/11	OP4840	GFI327
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	1010	18	12	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	115%		61-142%		

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: RESERVE PIT MIX/BLEND**Lab Sample ID:** D29396-1**Matrix:** SO - Soil**Project:** XOM FRU 297-17A**Date Sampled:** 11/10/11**Date Received:** 11/11/11**Percent Solids:** 74.8**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.3	0.52	mg/kg	5	11/14/11	11/15/11 GJ	SW846 6020 ²	SW846 3050B ⁵
Barium	10200	13	mg/kg	10	11/14/11	11/15/11 JB	SW846 6010B ³	SW846 3050B ⁴
Cadmium	< 1.3	1.3	mg/kg	1	11/14/11	11/15/11 JB	SW846 6010B ³	SW846 3050B ⁴
Chromium	23.7	1.3	mg/kg	1	11/14/11	11/15/11 JB	SW846 6010B ³	SW846 3050B ⁴
Copper	15.3	1.3	mg/kg	1	11/14/11	11/15/11 JB	SW846 6010B ³	SW846 3050B ⁴
Lead	16.1	6.6	mg/kg	1	11/14/11	11/15/11 JB	SW846 6010B ³	SW846 3050B ⁴
Mercury	< 0.13	0.13	mg/kg	1	11/14/11	11/15/11 JB	SW846 7471A ¹	SW846 7471A ⁶
Nickel	14.2	3.9	mg/kg	1	11/14/11	11/15/11 JB	SW846 6010B ³	SW846 3050B ⁴
Selenium ^a	< 66	66	mg/kg	10	11/14/11	11/15/11 JB	SW846 6010B ³	SW846 3050B ⁴
Silver	< 3.9	3.9	mg/kg	1	11/14/11	11/15/11 JB	SW846 6010B ³	SW846 3050B ⁴
Zinc	43.3	3.9	mg/kg	1	11/14/11	11/15/11 JB	SW846 6010B ³	SW846 3050B ⁴

(1) Instrument QC Batch: MA1972

(2) Instrument QC Batch: MA1974

(3) Instrument QC Batch: MA1975

(4) Prep QC Batch: MP6253

(5) Prep QC Batch: MP6254

(6) Prep QC Batch: MP6259

(a) Elevated detection limit due to dilution required for possible matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: RESERVE PIT MIX/BLEND**Lab Sample ID:** D29396-1**Matrix:** SO - Soil**Project:** XOM FRU 297-17A**Date Sampled:** 11/10/11**Date Received:** 11/11/11**Percent Solids:** 74.8

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	0.55	0.53	mg/kg	1	11/16/11 15:34	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	23.2	1.8	mg/kg	1	11/16/11 15:34	AMA	SW846 3060/7196A M
Redox Potential Vs H2	250		mv	1	11/13/11 09:25	JK	ASTM D1498-76M
Solids, Percent	74.8		%	1	11/14/11	SWT	SM19 2540B M
Specific Conductivity	6500	1.0	umhos/cm	1	11/15/11	CJ	DEPT.OF AG, BOOK N9
pH	12.62		su	1	11/11/11 14:25	JD	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RESERVE PIT MIX/BLEND	Date Sampled:	11/10/11
Lab Sample ID:	D29396-1A	Date Received:	11/11/11
Matrix:	SO - Soil	Percent Solids:	74.8
Project:	XOM FRU 297-17A		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	233	2.0	mg/l	1	11/15/11	11/15/11 JB	SW846 6010B ¹	EPA 200.7 ²
Magnesium	< 1.0	1.0	mg/l	1	11/15/11	11/15/11 JB	SW846 6010B ¹	EPA 200.7 ²
Sodium	527	2.0	mg/l	1	11/15/11	11/15/11 JB	SW846 6010B ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1975
(2) Prep QC Batch: MP6269

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RESERVE PIT MIX/BLEND	Date Sampled:	11/10/11
Lab Sample ID:	D29396-1A	Date Received:	11/11/11
Matrix:	SO - Soil	Percent Solids:	74.8
Project:	XOM FRU 297-17A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	9.49		ratio	1	11/15/11 15:32	JB	USDA HANDBOOK 60

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

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL 303-425-6021 877-737-4521
FAX 303-425-6021

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # D29396

[illegible]

D29396: Chain of Custody

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Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D29396

Client: KRW

Immediate Client Services Action Required: No

Date / Time Received: 11/11/2011 12:20:00 P

No. Coolers: 1

Client Service Action Required at Login: No

Project: FRU

Airbill #'s: CO

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

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

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

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

Sample Integrity - Condition

Y or N

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

Sample Integrity - Instructions

Y or N N/A

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

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www.accutest.com

D29396: Chain of Custody
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GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D29396**Account:** KRWCCOL KRW Consulting, Inc.**Project:** XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V839-MB	3V14548A.D 1		11/11/11	DC	n/a	n/a	V3V839

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

D29396-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	22	ug/kg	
100-41-4	Ethylbenzene	ND	100	25	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	106% 61-130%
460-00-4	4-Bromofluorobenzene	100% 53-131%
17060-07-0	1,2-Dichloroethane-D4	103% 62-130%

Blank Spike Summary

Page 1 of 1

Job Number: D29396

Account: KRWCCOL KRW Consulting, Inc.

Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V839-BS	3V14551A.D 1		11/11/11	DC	n/a	n/a	V3V839

The QC reported here applies to the following samples:

Method: SW846 8260B

D29396-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	54.9	110	70-130
100-41-4	Ethylbenzene	50	54.9	110	70-130
108-88-3	Toluene	50	52.5	105	70-130
1330-20-7	Xylene (total)	150	168	112	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	102%	61-130%
460-00-4	4-Bromofluorobenzene	106%	53-131%
17060-07-0	1,2-Dichloroethane-D4	107%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D29396

Account: KRWCCOL KRW Consulting, Inc.

Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D29198-4MS	3V14556.D	1	11/11/11	DC	n/a	n/a	V3V839
D29198-4MSD	3V14557.D	1	11/11/11	DC	n/a	n/a	V3V839
D29198-4	3V14555.D	1	11/11/11	DC	n/a	n/a	V3V839

The QC reported here applies to the following samples:

Method: SW846 8260B

D29396-1

CAS No.	Compound	D29198-4 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3100	3320	107	3490	113	5	70-134/30
100-41-4	Ethylbenzene	ND		3100	3230	104	3450	111	7	70-137/30
108-88-3	Toluene	ND		3100	3150	102	3350	108	6	70-130/30
1330-20-7	Xylene (total)	ND		9290	9950	107	10700	115	7	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D29198-4	Limits
2037-26-5	Toluene-D8	104%	103%	103%	61-130%
460-00-4	4-Bromofluorobenzene	110%	114%	103%	53-131%
17060-07-0	1,2-Dichloroethane-D4	100%	104%	107%	62-130%

GC/MS Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3111111.S\
 Data File : 3V14564.D
 Acq On : 11 Nov 2011 7:40 pm
 Operator : DONC
 Sample : D29396-1, 50x
 Misc : MS2945,V3V839,5.007,,100,5,1
 ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 14 10:09:13 2011
 Quant Method : C:\msdchem\1\METHODS\V3AP830TVH830.M
 Quant Title : 8260
 QLast Update : Mon Nov 07 14:42:41 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.889	168	347961	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.681	114	564740	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.316	117	505143	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.315	152	259422	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.280	102	45812	49.84	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	99.68%
61) Toluene-d8	14.074	98	775149	51.44	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	102.88%
69) 4-Bromofluorobenzene	16.266	95	252553	51.51	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	103.02%

Target Compounds

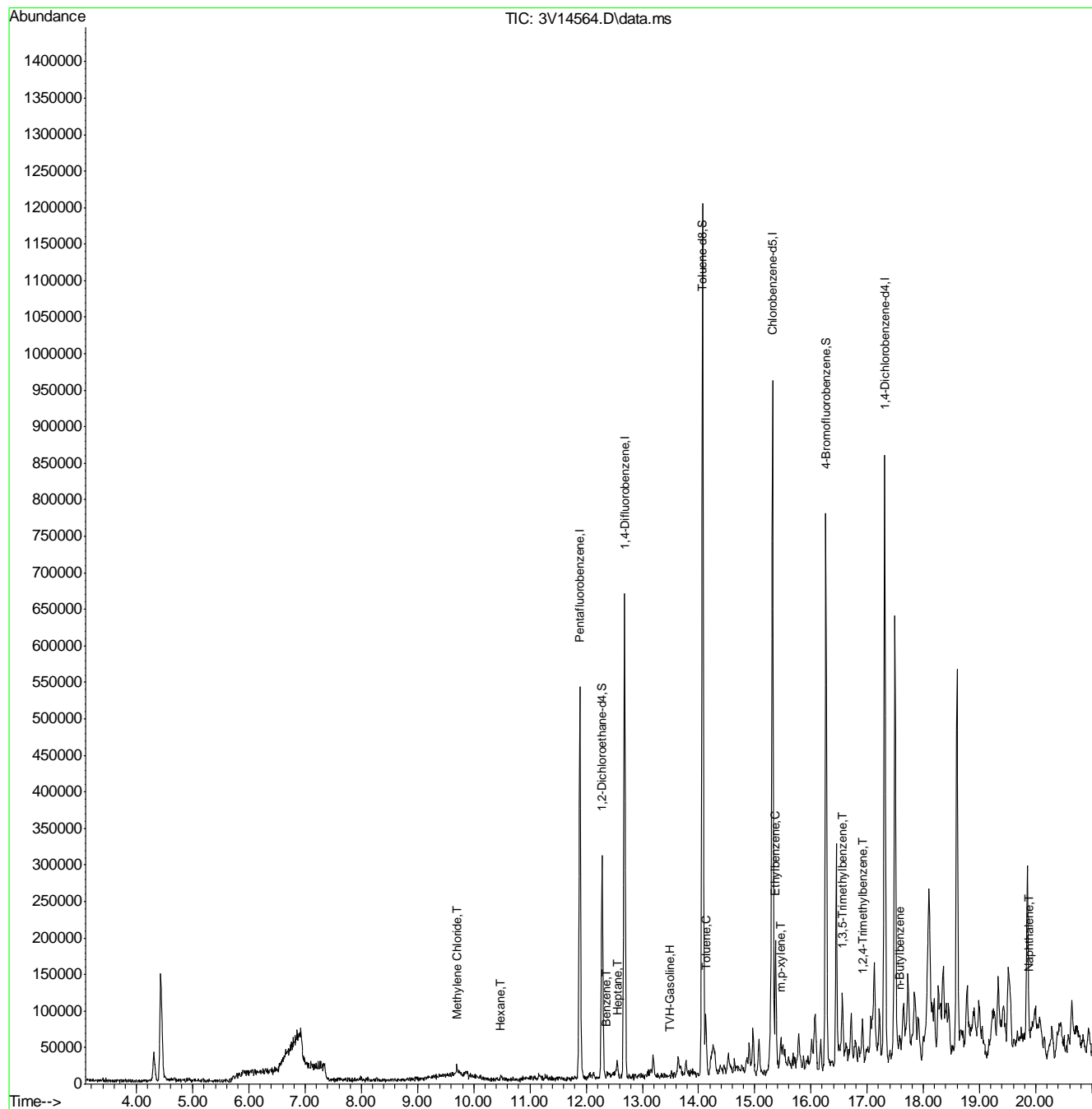
						Qvalue
1) TVH-Gasoline	13.491	TIC	3128538m	189.79	ug/l	
17) Methylene Chloride	9.697	84	4484	0.22	ug/l #	78
41) Hexane	10.490	57	2392	0.49	ug/l	100
43) Heptane	12.550	43	7435	1.38	ug/l #	66
50) Benzene	12.370	78	4580	0.30	ug/l	100
62) Toluene	14.135	92	7903	0.77	ug/l	91
66) Ethylbenzene	15.380	91	5536	0.24	ug/l	94
72) m,p-xylene	15.463	106	11265	1.48	ug/l	92
80) 1,3,5-Trimethylbenzene	16.561	105	25226	1.85	ug/l	93
82) 1,2,4-Trimethylbenzene	16.917	105	25793	1.64	ug/l #	84
88) n-Butylbenzene	17.575	91	4288	0.28	ug/l #	90
91) Naphthalene	19.892	128	25330	1.77	ug/l	100

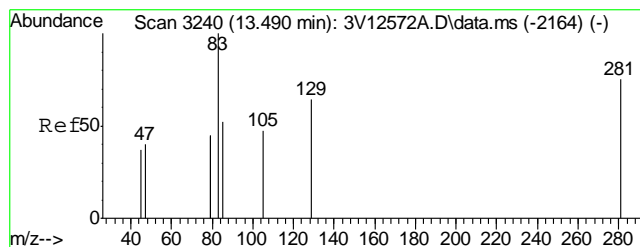
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3111111.S\
Data File : 3V14564.D
Acq On : 11 Nov 2011 7:40 pm
Operator : DONC
Sample : D29396-1, 50x
Misc : MS2945,V3V839,5.007,,100,5,1
ALS Vial : 20 Sample Multiplier: 1

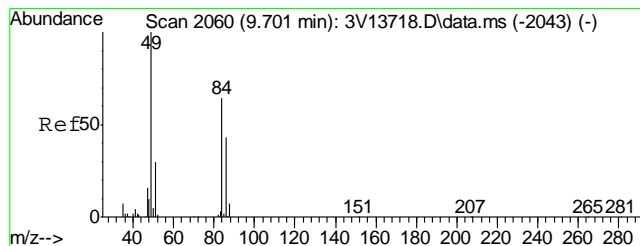
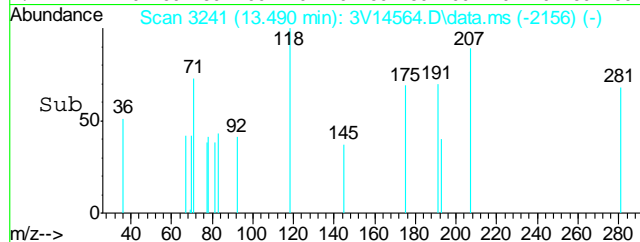
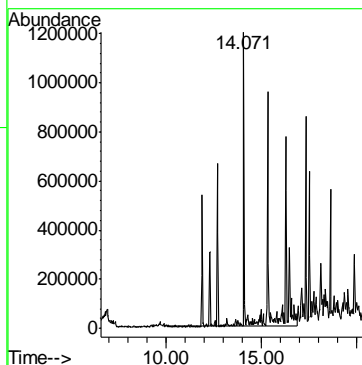
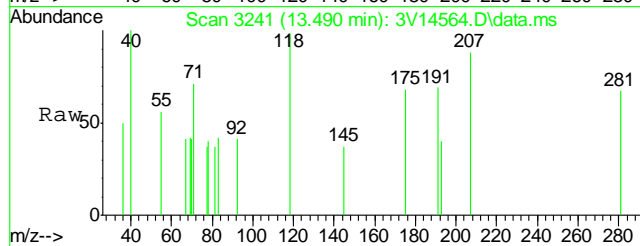
Quant Time: Nov 14 10:09:13 2011
Quant Method : C:\msdchem\1\METHODS\V3AP830TVH830.M
Quant Title : 8260
QLast Update : Mon Nov 07 14:42:41 2011
Response via : Initial Calibration





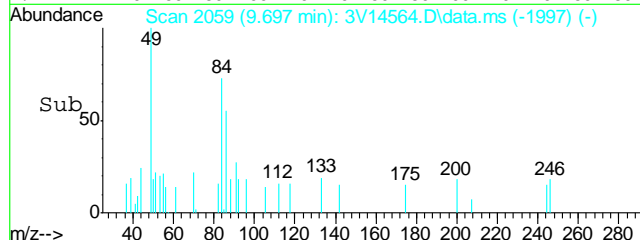
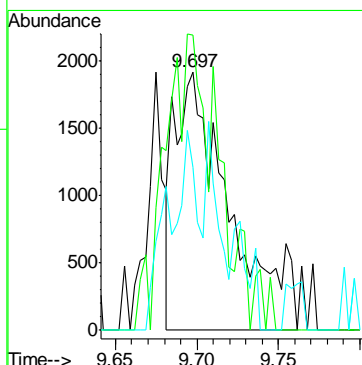
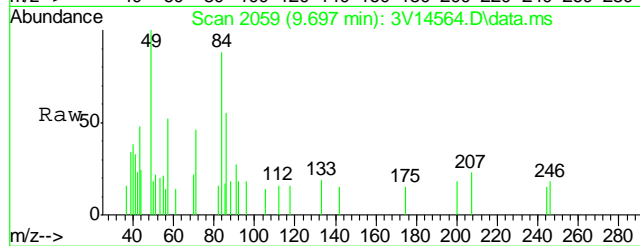
#1
TVH-Gasoline
Concen: 189.79 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

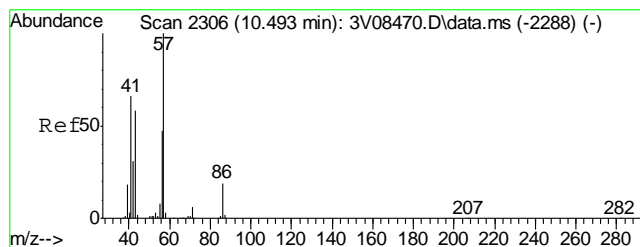
Tgt Ion:TIC Resp: 3128538



#17
Methylene Chloride
Concen: 0.22 ug/l
RT: 9.697 min Scan# 2059
Delta R.T. 0.000 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

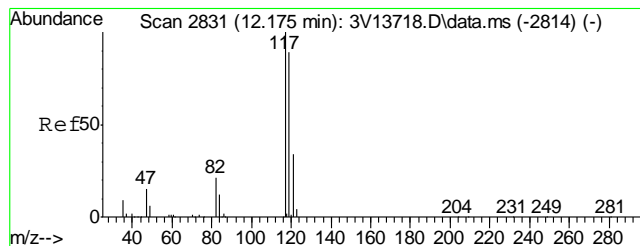
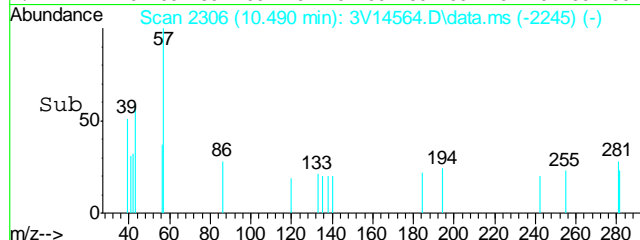
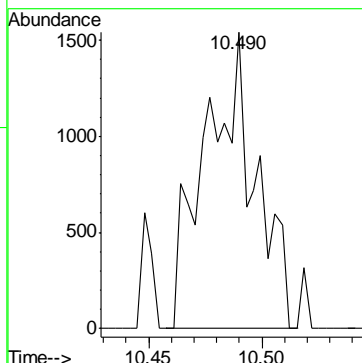
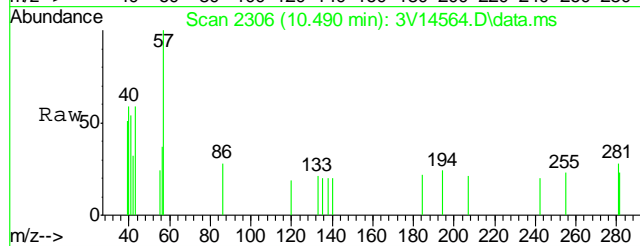
Tgt Ion: 84 Resp: 4484
Ion Ratio Lower Upper
84 100
49 109.3 94.9 134.9
86 21.9 43.4 83.4#





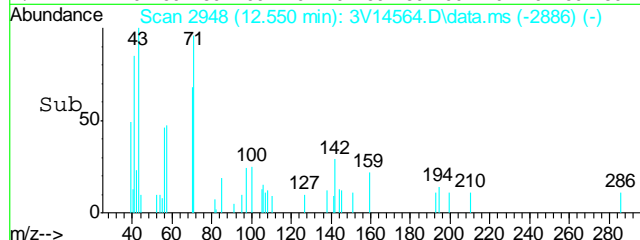
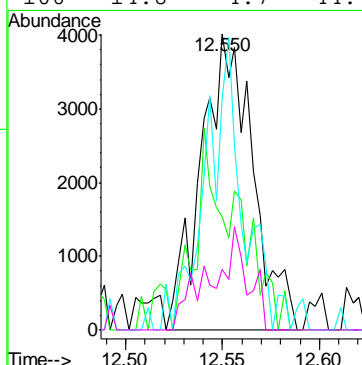
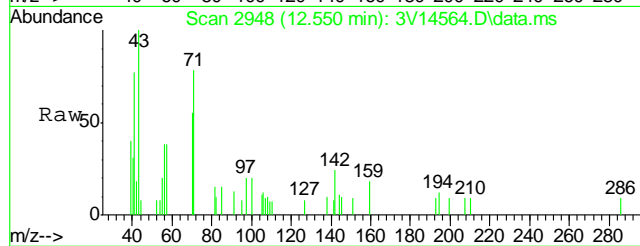
#41
Hexane
Concen: 0.49 ug/l
RT: 10.490 min Scan# 2306
Delta R.T. -0.003 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

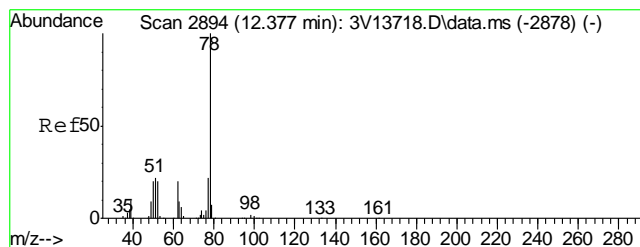
Tgt Ion: 57 Resp: 2392



#43
Heptane
Concen: 1.38 ug/l
RT: 12.550 min Scan# 2948
Delta R.T. -0.000 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

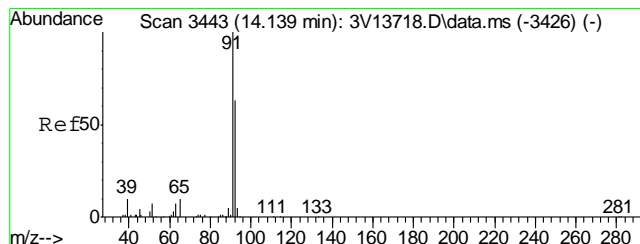
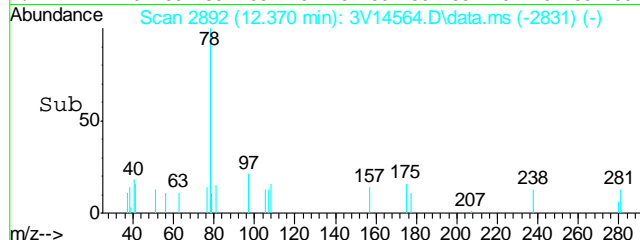
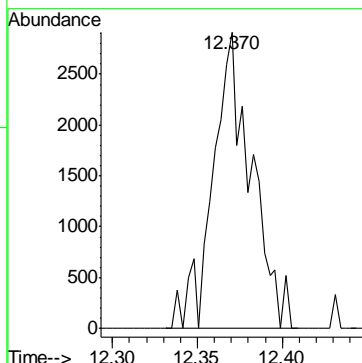
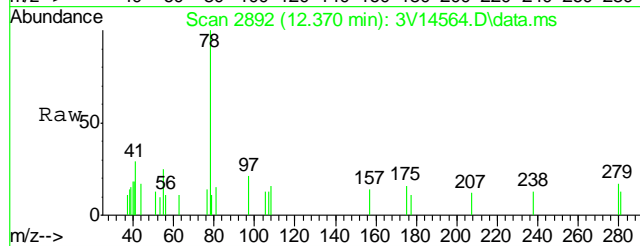
Tgt Ion: 43 Resp: 7435
Ion Ratio Lower Upper
43 100
57 0.0 33.4 73.4#
71 71.6 46.9 86.9
100 14.8 4.7 44.7





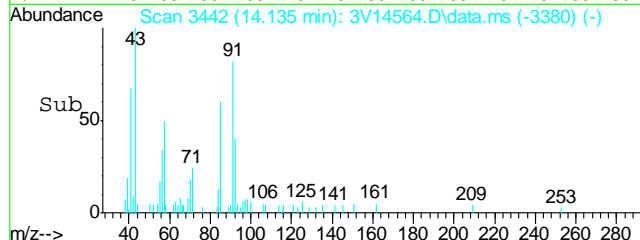
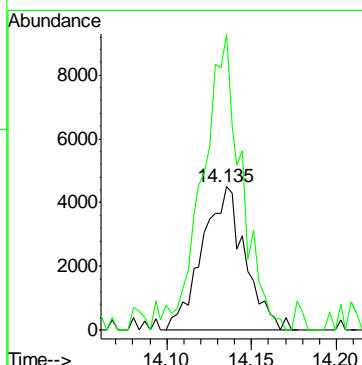
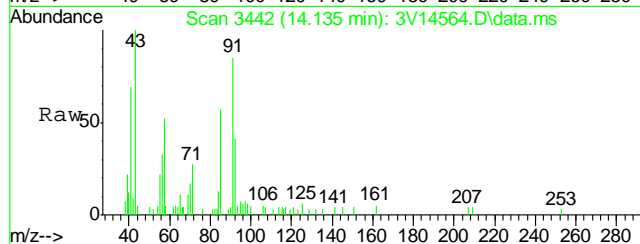
#50
Benzene
Concen: 0.30 ug/l
RT: 12.370 min Scan# 2892
Delta R.T. -0.003 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

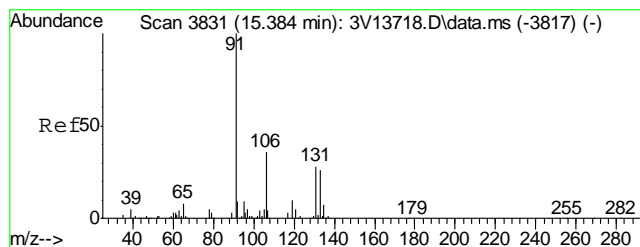
Tgt Ion: 78 Resp: 4580



#62
Toluene
Concen: 0.77 ug/l
RT: 14.135 min Scan# 3442
Delta R.T. -0.000 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

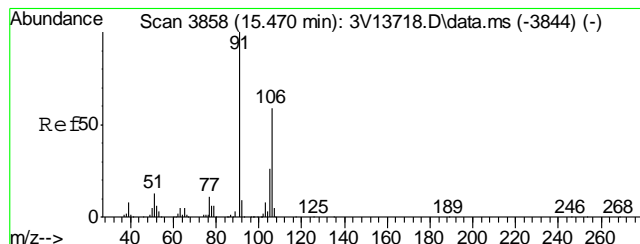
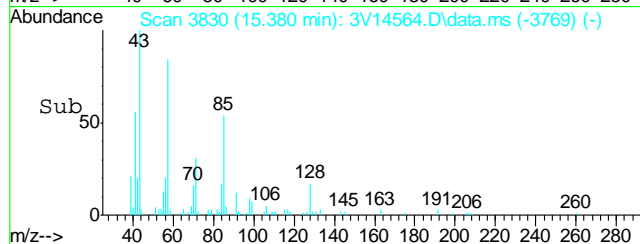
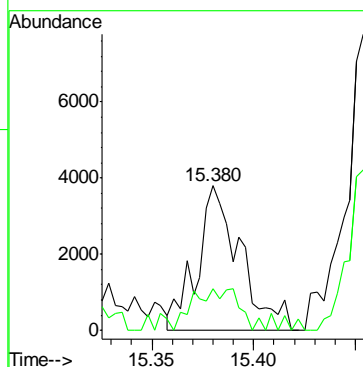
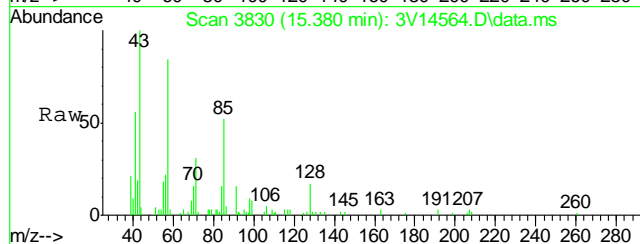
Tgt Ion: 92 Resp: 7903
Ion Ratio Lower Upper
92 100
91 189.0 156.8 196.8





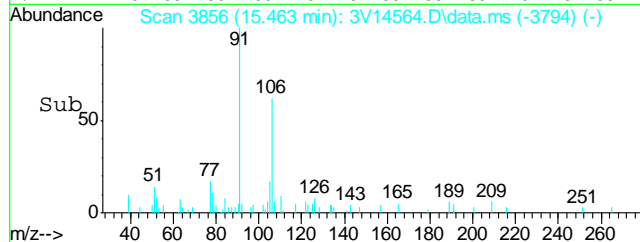
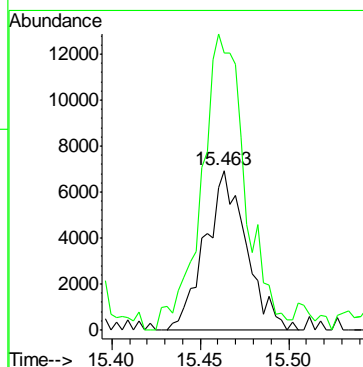
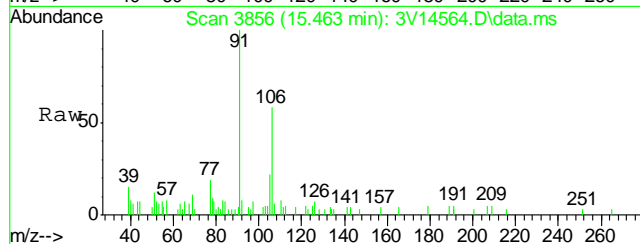
#66
Ethylbenzene
Concen: 0.24 ug/l
RT: 15.380 min Scan# 3830
Delta R.T. -0.003 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

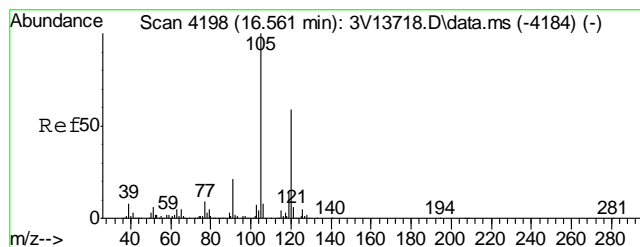
Tgt Ion: 91 Resp: 5536
Ion Ratio Lower Upper
91 100
106 30.1 13.3 53.3



#72
m,p-xylene
Concen: 1.48 ug/l
RT: 15.463 min Scan# 3856
Delta R.T. -0.003 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

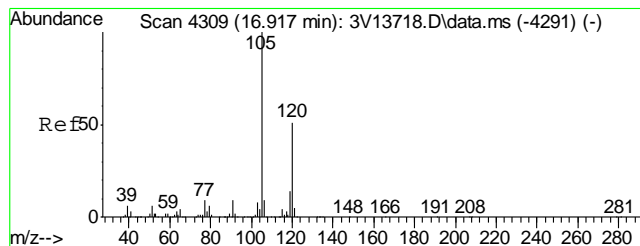
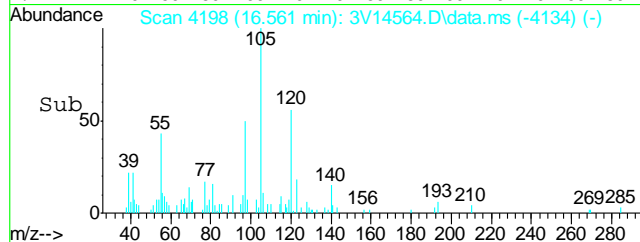
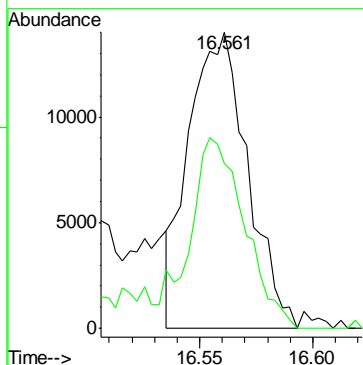
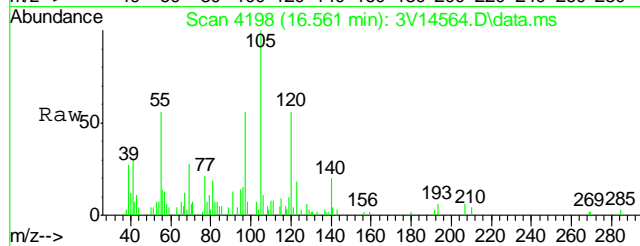
Tgt Ion: 106 Resp: 11265
Ion Ratio Lower Upper
106 100
91 196.7 164.7 204.7





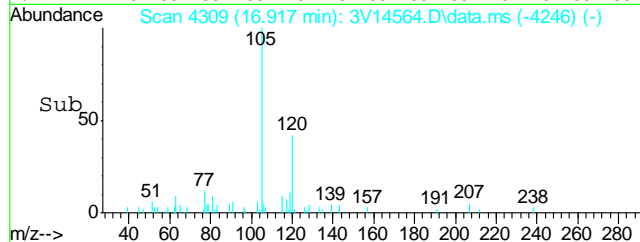
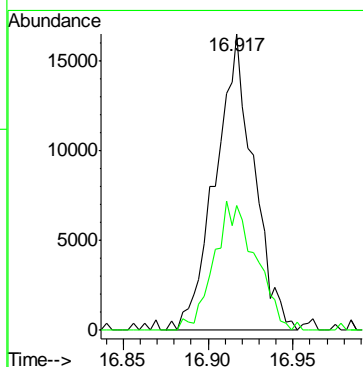
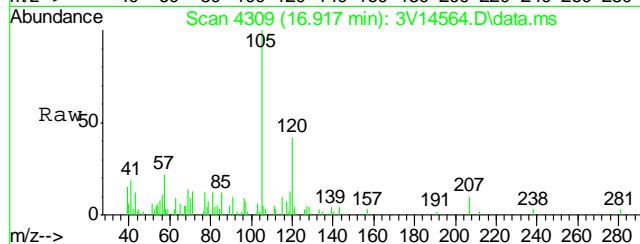
#80
1,3,5-Trimethylbenzene
Concen: 1.85 ug/l
RT: 16.561 min Scan# 4198
Delta R.T. 0.004 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

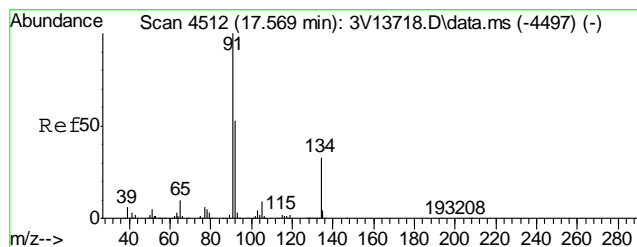
Tgt Ion	Ratio	Lower	Upper
105	100		
120	59.8	43.8	65.8



#82
1,2,4-Trimethylbenzene
Concen: 1.64 ug/l
RT: 16.917 min Scan# 4309
Delta R.T. 0.003 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

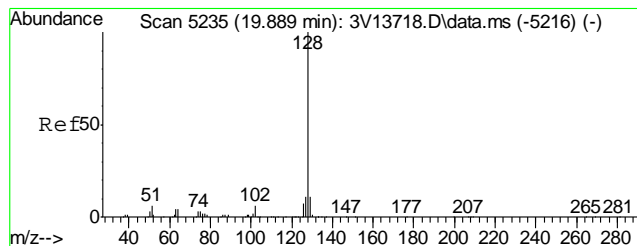
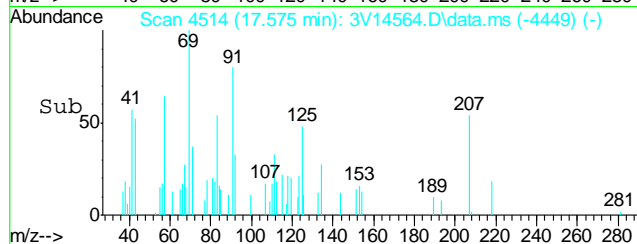
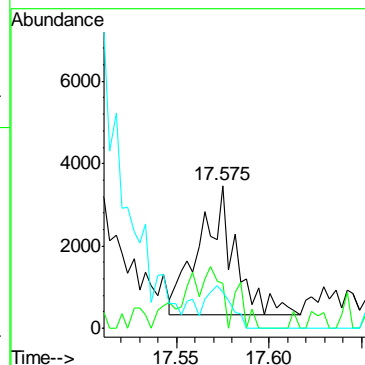
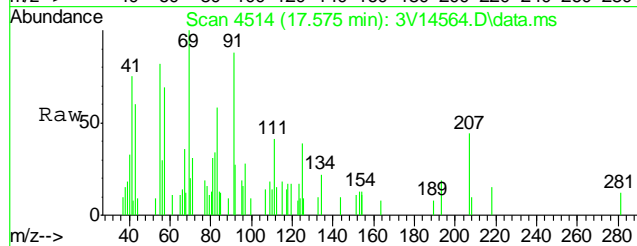
Tgt Ion	Ratio	Lower	Upper
105	100		
120	47.6	47.8	71.6#





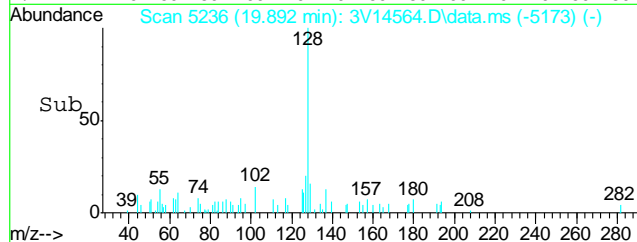
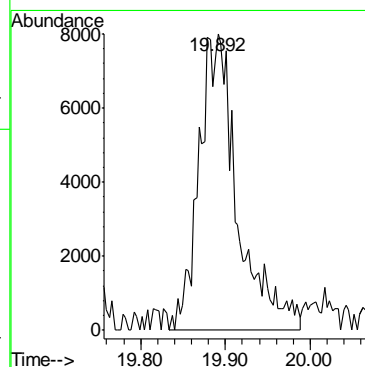
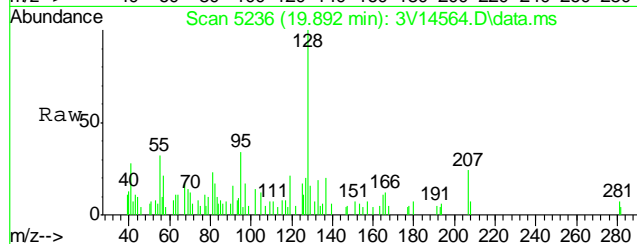
#88
n-Butylbenzene
Concen: 0.28 ug/l
RT: 17.575 min Scan# 4514
Delta R.T. 0.009 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

Tgt Ion	Ratio	Lower	Upper
91	100		
92	47.9	41.5	62.3
134	22.0	25.4	38.0



#91
Naphthalene
Concen: 1.77 ug/l
RT: 19.892 min Scan# 5236
Delta R.T. 0.003 min
Lab File: 3V14564.D
Acq: 11 Nov 2011 7:40 pm

Tgt Ion: 128 Resp: 25330



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3111111.S\
Data File : 3V14548A.D
Acq On : 11 Nov 2011 11:25 am
Operator : DONC
Sample : MB
Misc : MS2945,V3V839,5,,100,5,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 14 09:43:38 2011
Quant Method : C:\msdchem\1\METHODS\V3AP830TVH830.M
Quant Title : 8260
QLast Update : Mon Nov 07 14:42:41 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.886	168	269387	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.682	114	435431	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.316	117	373190	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.312	152	192462	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.284	102	36756	51.65	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	103.30%
61) Toluene-d8	14.071	98	589415	52.95	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	105.90%
69) 4-Bromofluorobenzene	16.263	95	180574	49.85	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	99.70%

Target Compounds

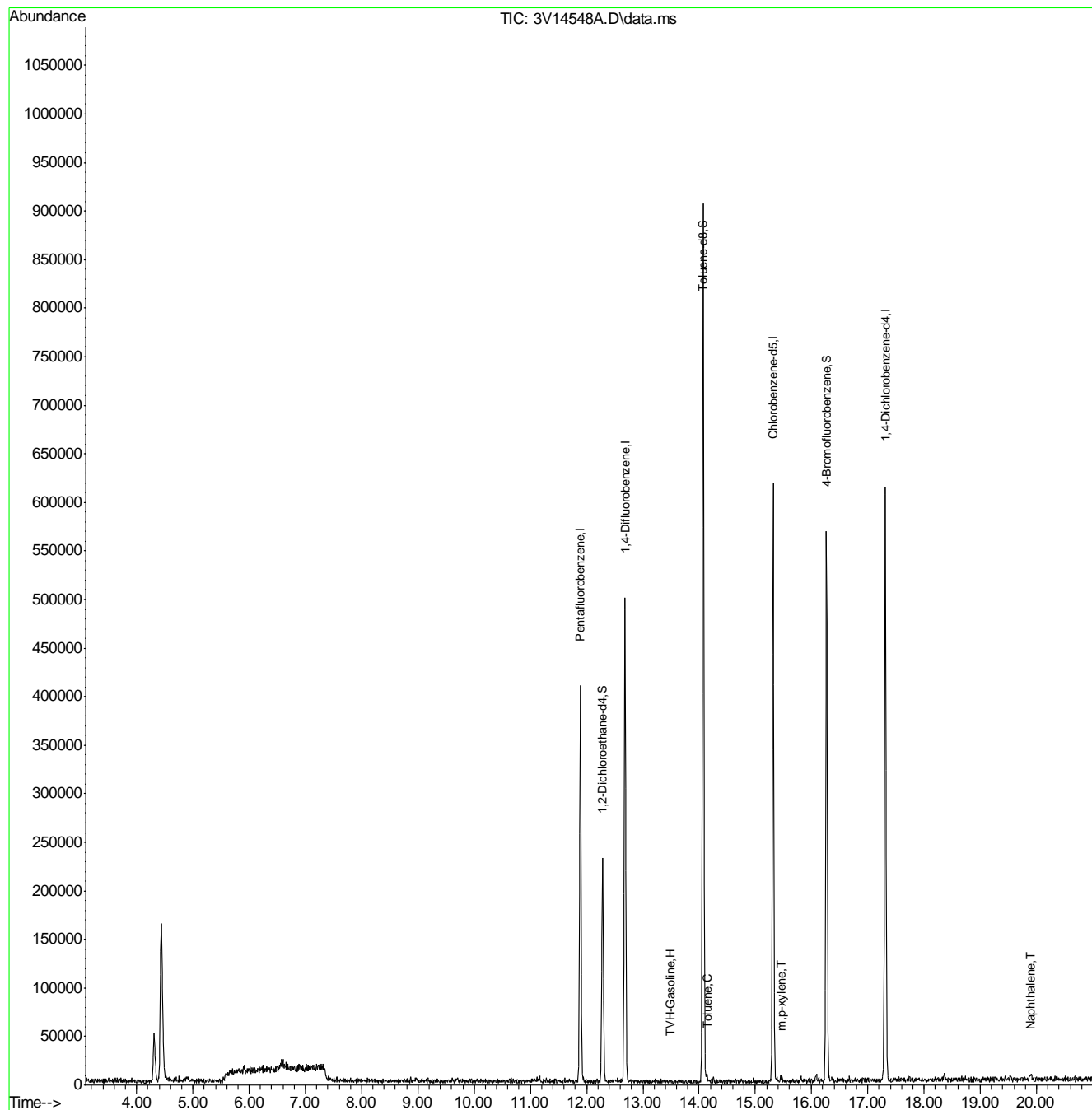
					Qvalue
1) TVH-Gasoline	13.491	TIC	143135m	20.49	ug/l
62) Toluene	14.135	92	1934	0.25	ug/l
72) m,p-xylene	15.460	106	2009	0.25	ug/l
91) Naphthalene	19.885	128	5624	0.53	ug/l

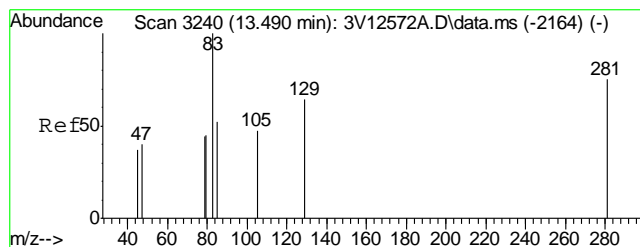
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3111111.S\
Data File : 3V14548A.D
Acq On : 11 Nov 2011 11:25 am
Operator : DONC
Sample : MB
Misc : MS2945,V3V839,5,,100,5,1
ALS Vial : 4 Sample Multiplier: 1

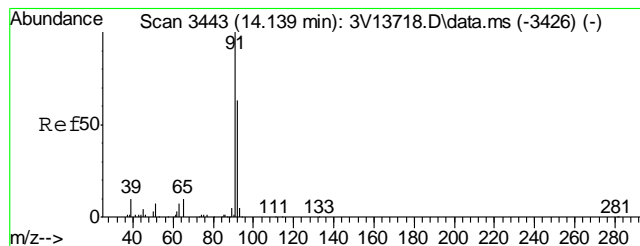
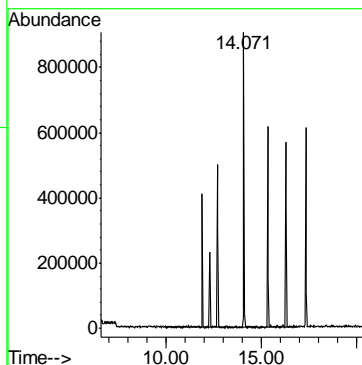
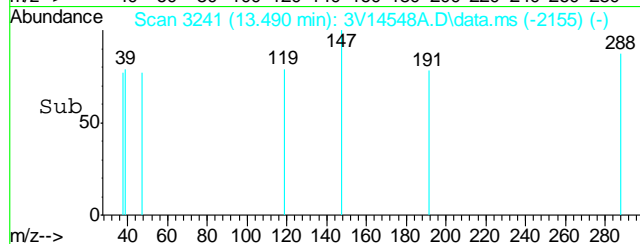
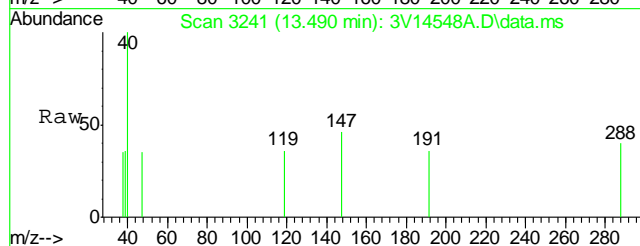
Quant Time: Nov 14 09:43:38 2011
Quant Method : C:\msdchem\1\METHODS\V3AP830TVH830.M
Quant Title : 8260
QLast Update : Mon Nov 07 14:42:41 2011
Response via : Initial Calibration





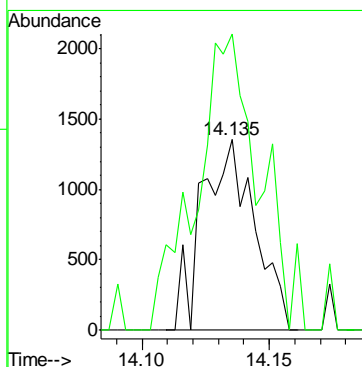
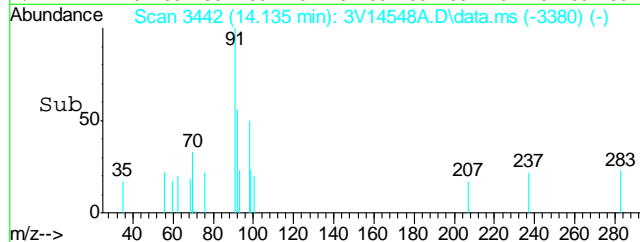
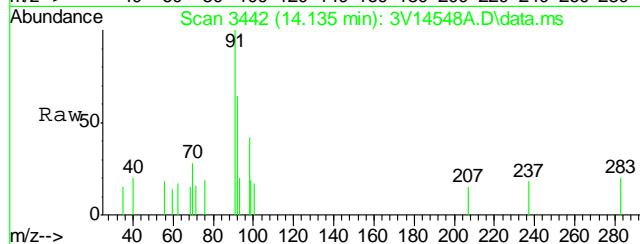
#1
TVH-Gasoline
Concen: 20.49 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V14548A.D
Acq: 11 Nov 2011 11:25 am

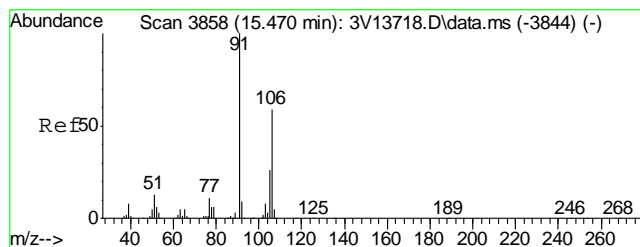
Tgt Ion:TIC Resp: 143135



#62
Toluene
Concen: 0.25 ug/l
RT: 14.135 min Scan# 3442
Delta R.T. -0.000 min
Lab File: 3V14548A.D
Acq: 11 Nov 2011 11:25 am

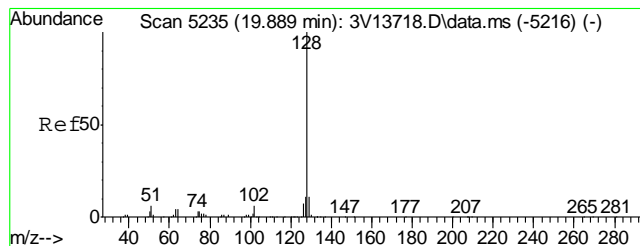
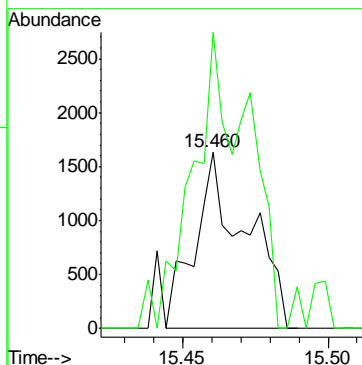
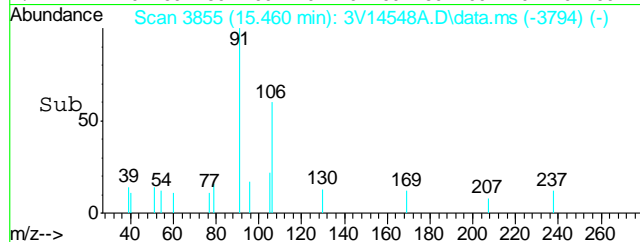
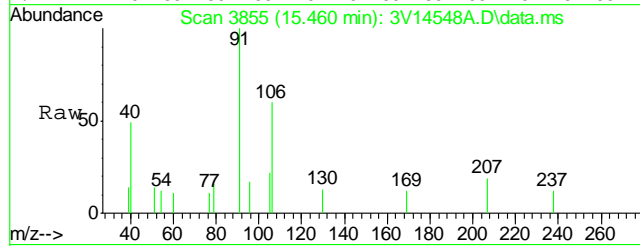
Tgt Ion: 92 Resp: 1934
Ion Ratio Lower Upper
92 100
91 189.6 156.8 196.8





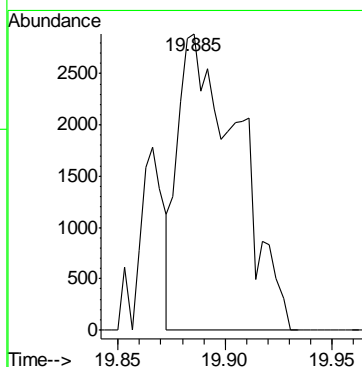
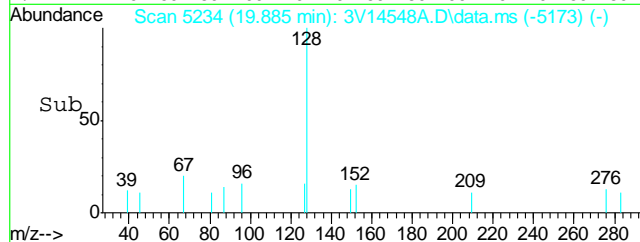
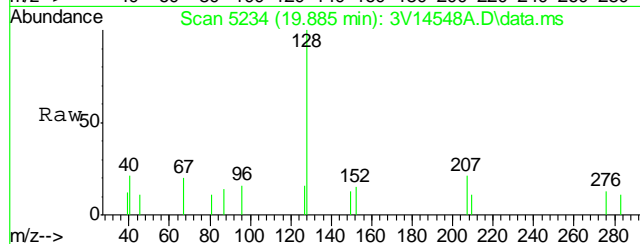
#72
m,p-xylene
Concen: 0.25 ug/l
RT: 15.460 min Scan# 3855
Delta R.T. -0.006 min
Lab File: 3V14548A.D
Acq: 11 Nov 2011 11:25 am

Tgt Ion:106 Resp: 2009
Ion Ratio Lower Upper
106 100
91 181.7 164.7 204.7



#91
Naphthalene
Concen: 0.53 ug/l
RT: 19.885 min Scan# 5234
Delta R.T. -0.003 min
Lab File: 3V14548A.D
Acq: 11 Nov 2011 11:25 am

Tgt Ion:128 Resp: 5624



GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D29396**Account:** KRWCCOL KRW Consulting, Inc.**Project:** XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4843-MB	3G06899.D	1	11/15/11	TMB	11/14/11	OP4843	E3G255

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

D29396-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	5.3	ug/kg	
120-12-7	Anthracene	ND	6.7	6.0	ug/kg	
56-55-3	Benzo(a)anthracene	ND	17	8.7	ug/kg	
50-32-8	Benzo(a)pyrene	ND	17	12	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	17	12	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	17	7.3	ug/kg	
218-01-9	Chrysene	ND	17	7.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	17	12	ug/kg	
206-44-0	Fluoranthene	ND	6.7	6.7	ug/kg	
86-73-7	Fluorene	ND	6.7	5.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	20	18	ug/kg	
91-20-3	Naphthalene	ND	6.7	6.3	ug/kg	
129-00-0	Pyrene	ND	6.7	6.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	118% 10-145%
321-60-8	2-Fluorobiphenyl	84% 10-130%
1718-51-0	Terphenyl-d14	99% 22-130%

Blank Spike Summary

Page 1 of 1

Job Number: D29396

Account: KRWCCOL KRW Consulting, Inc.

Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4843-BS	3G06900.D	1	11/15/11	TMB	11/14/11	OP4843	E3G255

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D29396-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	67.1	81	34-130
120-12-7	Anthracene	83.3	79.1	95	35-130
56-55-3	Benzo(a)anthracene	83.3	97.8	117	36-130
50-32-8	Benzo(a)pyrene	83.3	100	120	36-130
205-99-2	Benzo(b)fluoranthene	83.3	109	131* a	35-130
207-08-9	Benzo(k)fluoranthene	83.3	70.5	85	37-130
218-01-9	Chrysene	83.3	68.8	83	40-130
53-70-3	Dibenzo(a,h)anthracene	83.3	94.6	114	32-130
206-44-0	Fluoranthene	83.3	82.8	99	38-130
86-73-7	Fluorene	83.3	81.4	98	35-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	142	170* a	28-130
91-20-3	Naphthalene	83.3	70.1	84	35-130
129-00-0	Pyrene	83.3	74.5	89	37-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	120%	10-145%
321-60-8	2-Fluorobiphenyl	79%	10-130%
1718-51-0	Terphenyl-d14	97%	22-130%

(a) Compound ND in associated samples.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D29396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4843-MS ^a	3G06905.D	5	11/15/11	TMB	11/14/11	OP4843	E3G255
OP4843-MSD ^a	3G06906.D	5	11/15/11	TMB	11/14/11	OP4843	E3G255
D29397-1 ^a	3G06904.D	5	11/15/11	TMB	11/14/11	OP4843	E3G255
D29397-1 ^b	3G06929.D	10	11/16/11	TMB	11/14/11	OP4843	E3G256

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D29396-1

CAS No.	Compound	D29397-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		93.6	265	283* ^c	279	298* ^c	5	10-155/30
120-12-7	Anthracene	ND		93.6	74.3	79	71.8	77	3	10-155/30
56-55-3	Benzo(a)anthracene	ND		93.6	104	111	109	116	5	10-175/30
50-32-8	Benzo(a)pyrene	ND		93.6	121	129	123	131	2	10-164/30
205-99-2	Benzo(b)fluoranthene	ND		93.6	161	172* ^c	164	175* ^c	2	10-165/30
207-08-9	Benzo(k)fluoranthene	ND		93.6	84.5	90	76.8	82	10	10-178/30
218-01-9	Chrysene	70.3	J	93.6	162	98	183	120	12	10-147/30
53-70-3	Dibenzo(a,h)anthracene	ND		93.6	112	120	121	129	8	10-144/30
206-44-0	Fluoranthene	ND		93.6	75.1	80	72.7	78	3	10-207/30
86-73-7	Fluorene	271		93.6	390	127	417	156	7	10-163/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		93.6	224	239* ^c	230	245* ^c	3	10-180/30
91-20-3	Naphthalene	ND		93.6	87.8	94	91.3	97	4	10-198/30
129-00-0	Pyrene	46.3		93.6	116	74	114	72	2	10-189/30

CAS No.	Surrogate Recoveries	MS	MSD	D29397-1	D29397-1	Limits
4165-60-0	Nitrobenzene-d5	177%* ^e	198%* ^e	163%* ^d	93%	10-145%
321-60-8	2-Fluorobiphenyl	76%	76%	92%	97%	10-130%
1718-51-0	Terphenyl-d14	66%	73%	69%	76%	22-130%

(a) ISTD outside control limits due to possible matrix interference. Confirmed by reanalysis.

(b) Confirmation run.

(c) Outside control limits due to matrix interference. Refer to Blank Spike.

(d) Outside control limits due to matrix interference. Confirmed by MS/MSD.

(e) Outside control limits due to possible matrix interference.

GC/MS Semi-volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\111511\
 Data File : 3g06941.D
 Acq On : 16 Nov 2011 10:45 am
 Operator : TamiB
 Sample : D29396-1,25x
 Misc : OP4843,E3G256,30.02,,,1,25
 ALS Vial : 25 Sample Multiplier: 1

Quant Time: Nov 16 12:30:14 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G256.M
 Quant Title : PAHSIM BASE
 QLast Update : Wed Nov 16 10:25:28 2011
 Response via : Initial Calibration

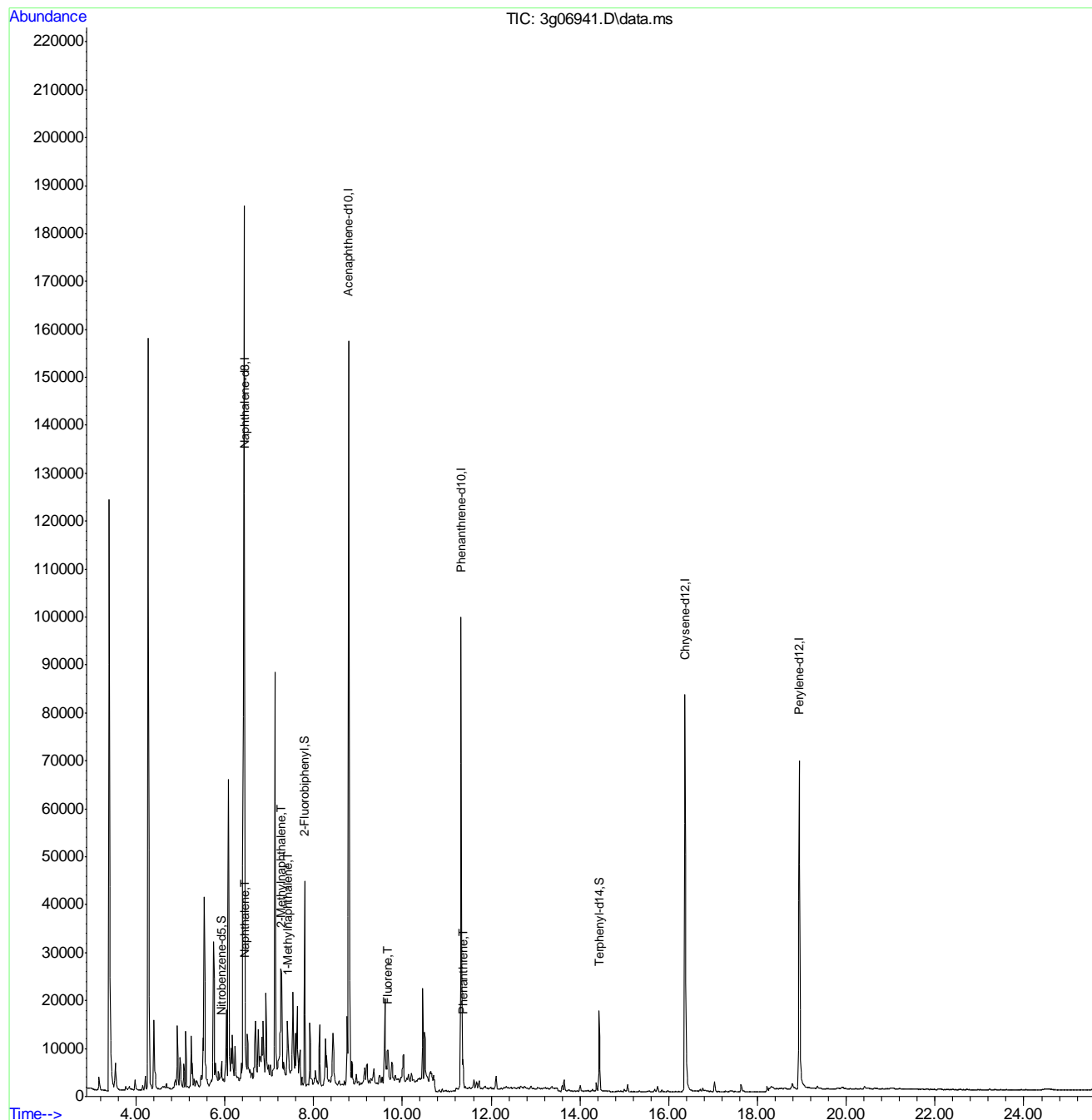
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.444	136	169192	4.00	ug/mL	0.00
6) Acenaphthene-d10	8.790	164	90980	4.00	ug/mL	-0.01
14) Phenanthrene-d10	11.324	188	114124	4.00	ug/mL	0.00
18) Chrysene-d12	16.373	240	102196	4.00	ug/mL	0.00
23) Perylene-d12	18.941	264	90782	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	5.932	82	1137	0.22	ug/mL	0.19
7) 2-Fluorobiphenyl	7.798	172	35369	1.10	ug/mL	0.00
20) Terphenyl-d14	14.435	244	19316	1.05	ug/mL	0.00
Target Compounds						
					Qvalue	
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	6.456	128	6410	0.13	ug/mL#	25
8) 2-Methylnaphthalene	7.279	142	12523	0.45	ug/mL	84
9) 1-Methylnaphthalene	7.416	142	4475	0.17	ug/mL#	72
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	9.676	166	3535	0.13	ug/mL#	24
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	11.364	178	5672	0.16	ug/mL	85
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	0.000		0	N.D.	d	
21) Benzo(a)anthracene	0.000		0	N.D.	d	
22) Chrysene	0.000		0	N.D.	d	
24) Benzo(b)fluoranthene	0.000		0	N.D.	d	
25) Benzo(k)fluoranthene	0.000		0	N.D.	d	
26) Benzo(a)pyrene	0.000		0	N.D.	d	
27) Indeno(1,2,3-cd)pyrene	0.000		0	N.D.	d	
28) Dibenz(a,h)anthracene	0.000		0	N.D.	d	
29) Benzo(g,h,i)perylene	0.000		0	N.D.	d	

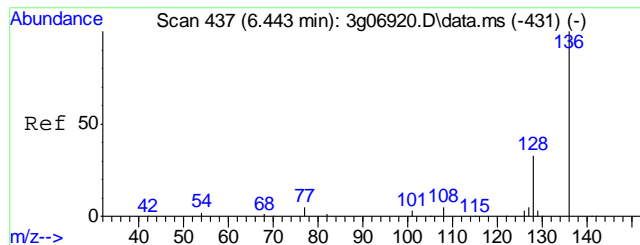
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\111511\
Data File : 3g06941.D
Acq On : 16 Nov 2011 10:45 am
Operator : TamiB
Sample : D29396-1,25x
Misc : OP4843,E3G256,30.02,,,1,25
ALS Vial : 25 Sample Multiplier: 1

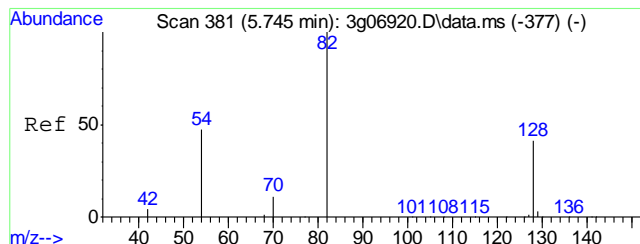
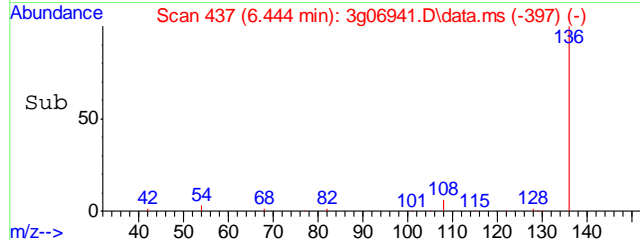
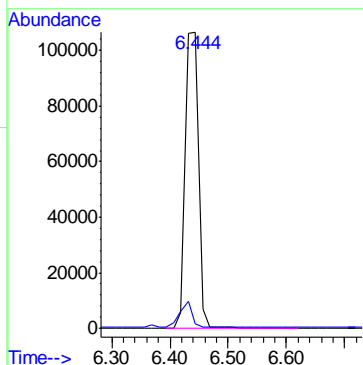
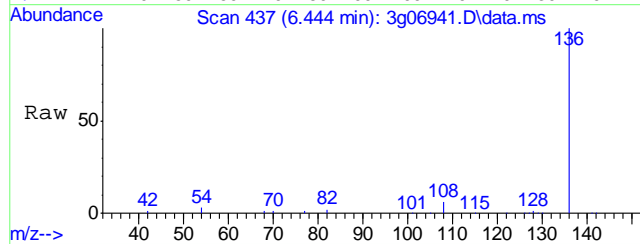
Quant Time: Nov 16 12:30:14 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G256.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 16 10:25:28 2011
Response via : Initial Calibration





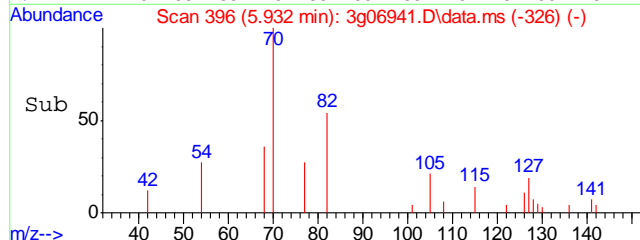
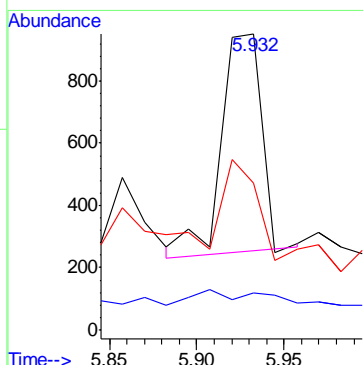
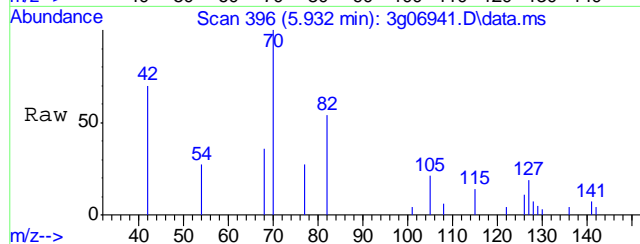
#1
Naphthalene-d8
Concen: 4.00 ug/mL
RT: 6.444 min Scan# 437
Delta R.T. 0.000 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

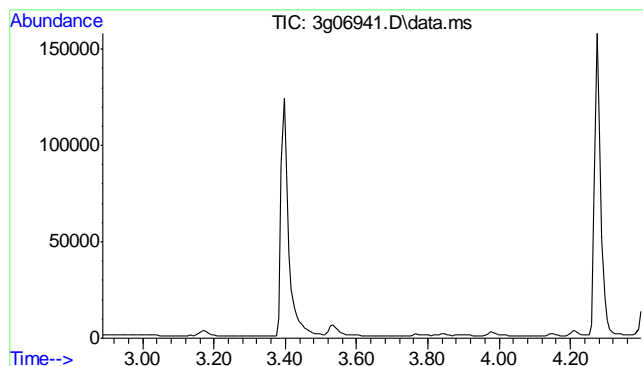
Tgt Ion: 136 Resp: 169192
Ion Ratio Lower Upper
136 100
68 8.4 0.0 27.9



#2
Nitrobenzene-d5
Concen: 0.22 ug/mL
RT: 5.932 min Scan# 396
Delta R.T. 0.187 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

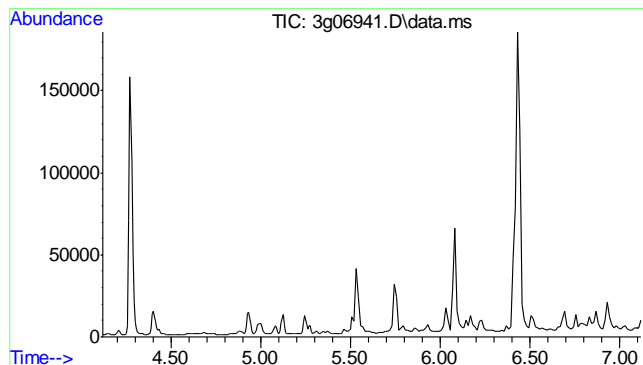
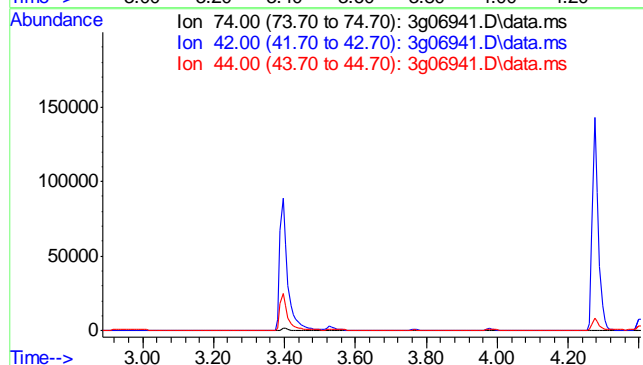
Tgt Ion: 82 Resp: 1137
Ion Ratio Lower Upper
82 100
128 21.5 21.1 61.1
54 55.0 38.7 78.7





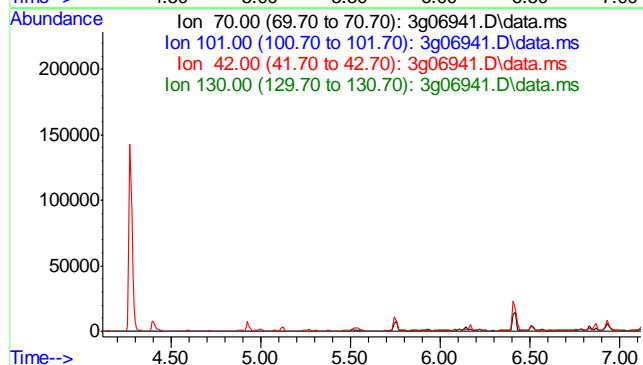
#3
 N-Nitrosodimethylamine
 Concen: N.D. ug/mL
 Expected RT: 2.90 min
 Lab File: 3g06941.D
 Acq: 16 Nov 11 10:45 am

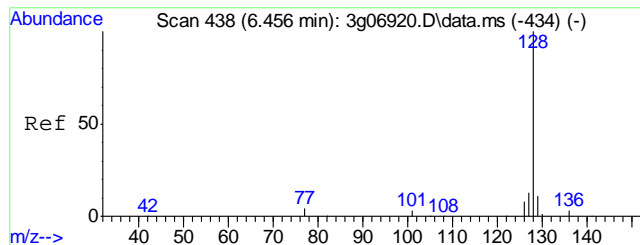
Tgt Ion	Exp Ratio
74	100
42	0.0
44	0.0



#4
 N-Nitrosodi-propylamine
 Concen: N.D. ug/mL
 Expected RT: 5.62 min
 Lab File: 3g06941.D
 Acq: 16 Nov 11 10:45 am

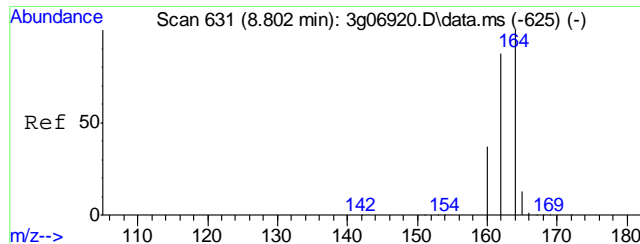
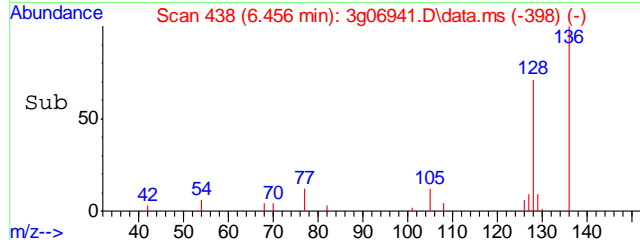
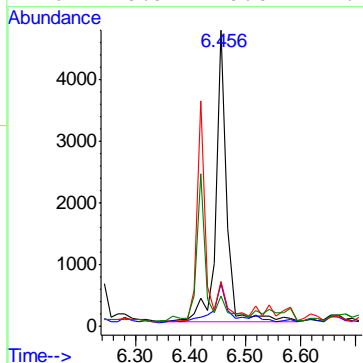
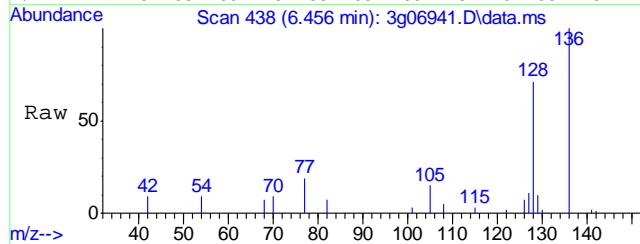
Tgt Ion	Exp Ratio
70	100
101	11.9
42	59.2
130	22.7





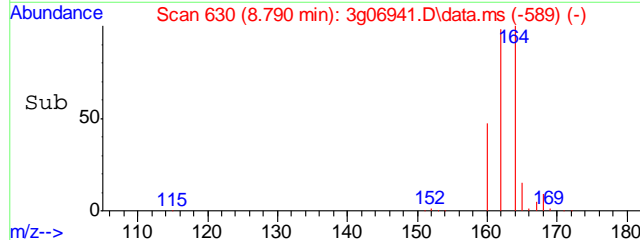
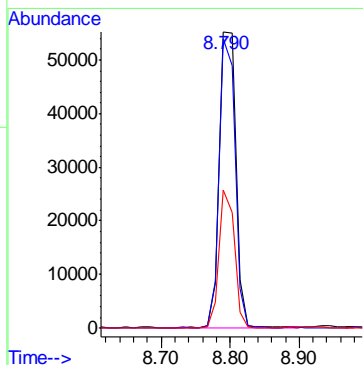
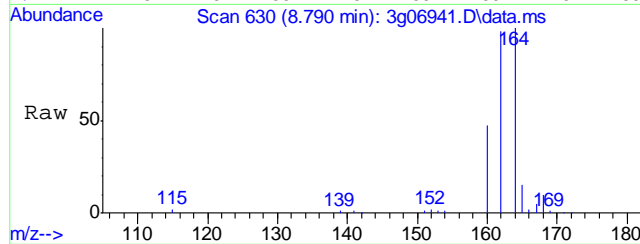
#5
Naphthalene
Concen: 0.13 ug/mL
RT: 6.456 min Scan# 438
Delta R.T. 0.000 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

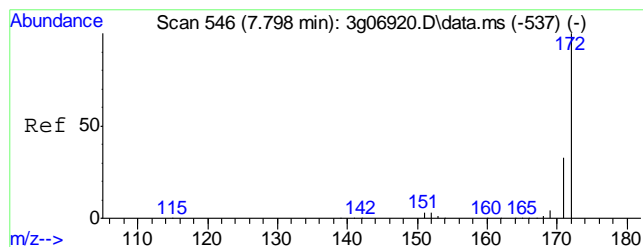
Tgt Ion	Ratio	Lower	Upper
128	100		
129	18.4	0.0	31.0
127	56.9	0.0	32.8#
126	40.9	0.0	27.4#



#6
Acenaphthene-d10
Concen: 4.00 ug/mL
RT: 8.790 min Scan# 630
Delta R.T. -0.012 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

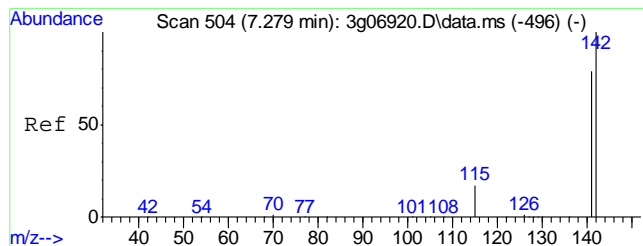
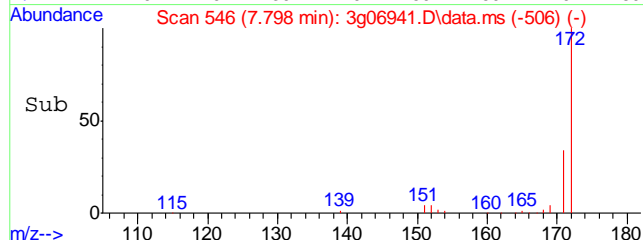
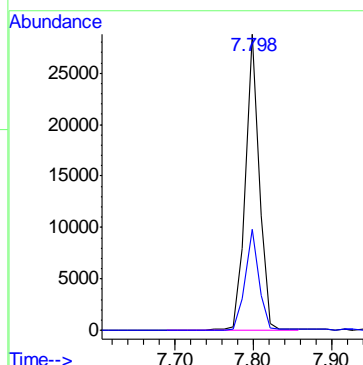
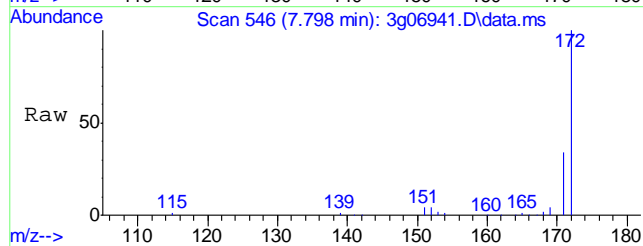
Tgt Ion	Ratio	Lower	Upper
164	100		
162	93.1	71.7	111.7
160	42.9	21.5	61.5





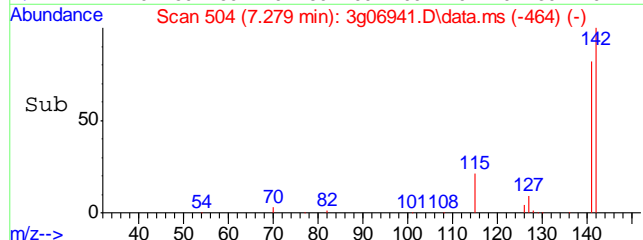
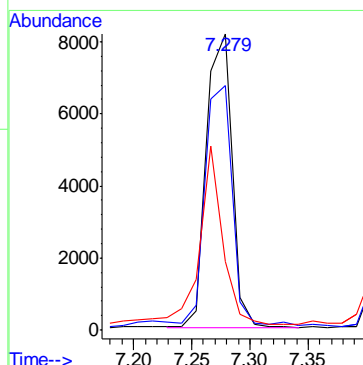
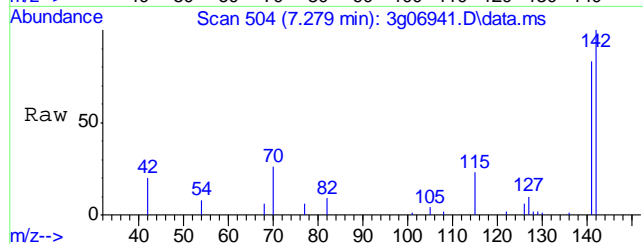
#7
2-Fluorobiphenyl
Concen: 1.10 ug/mL
RT: 7.798 min Scan# 546
Delta R.T. 0.000 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

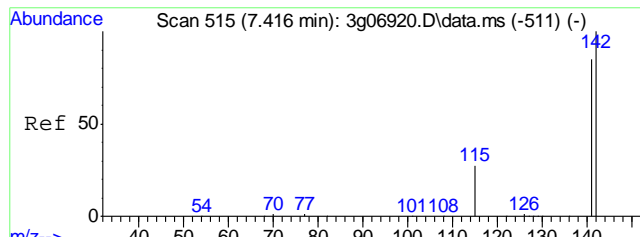
Tgt Ion	Ratio	Lower	Upper
172	100		
171	33.0	13.0	53.0



#8
2-Methylnaphthalene
Concen: 0.45 ug/mL
RT: 7.279 min Scan# 504
Delta R.T. 0.000 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

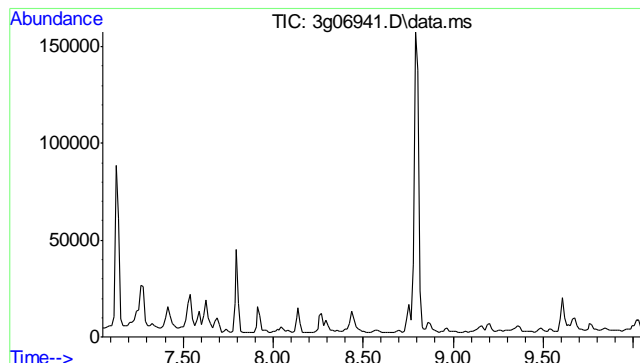
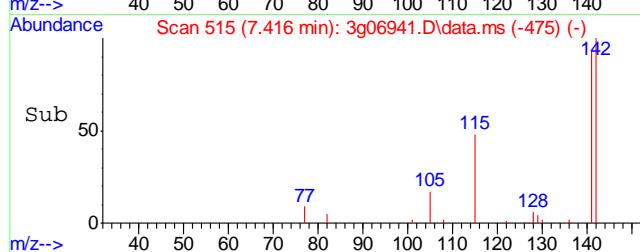
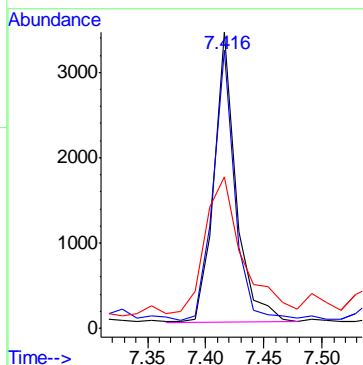
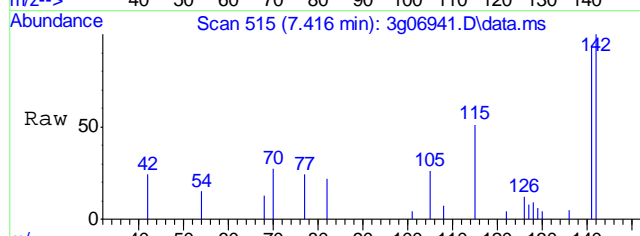
Tgt Ion	Ratio	Lower	Upper
142	100		
141	91.2	63.1	103.1
115	56.2	17.2	57.2





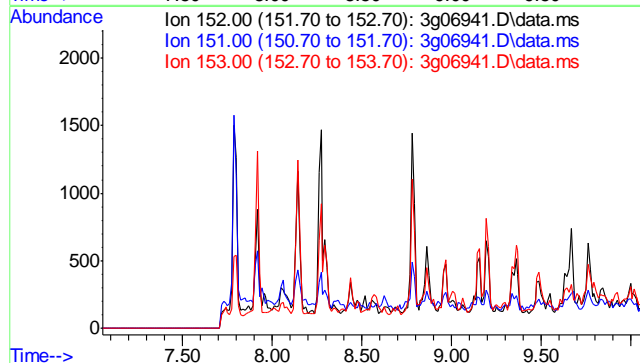
#9
1-Methylnaphthalene
Concen: 0.17 ug/mL
RT: 7.416 min Scan# 515
Delta R.T. 0.000 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

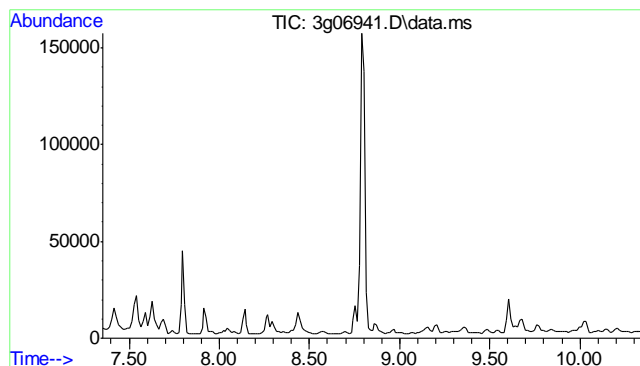
Tgt Ion	Ratio	Lower	Upper
142	100		
141	91.8	68.8	103.2
115	85.2	31.0	46.4



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 8.55 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

Tgt Ion	Sig	Exp Ratio
152	100	
151	19.2	
153	12.9	

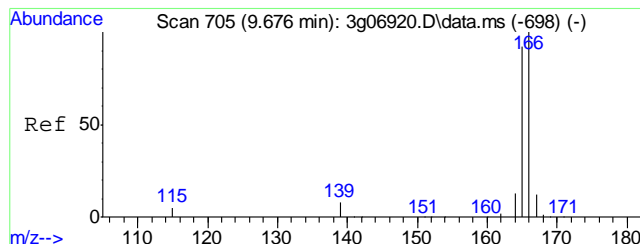
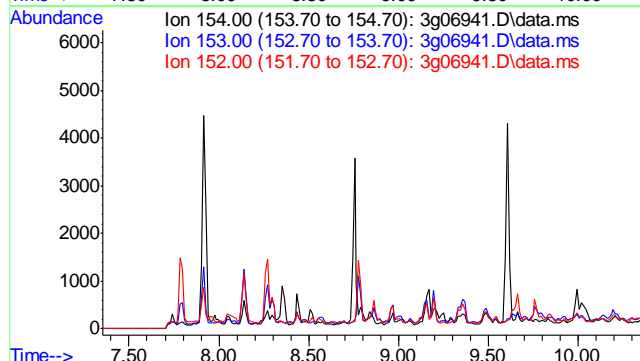




#11
 Acenaphthene
 Concen: N.D. ug/mL
 Expected RT: 8.85 min

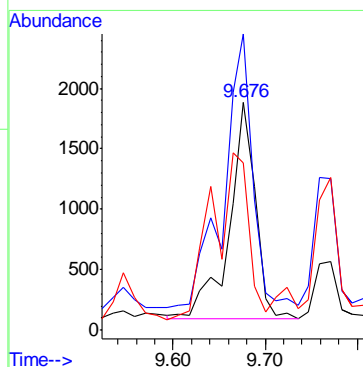
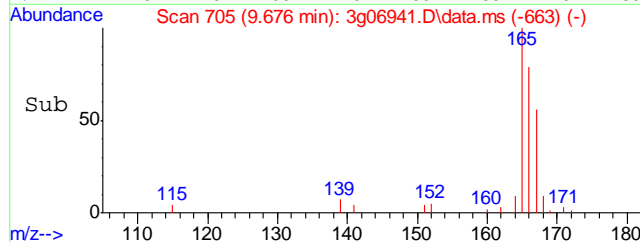
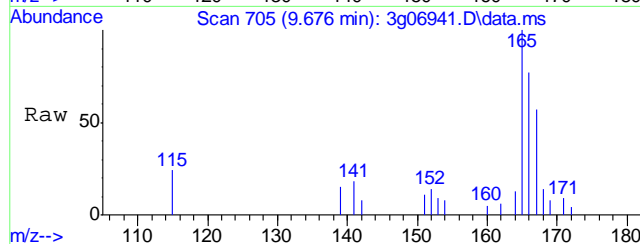
 Lab File: 3g06941.D
 Acq: 16 Nov 11 10:45 am

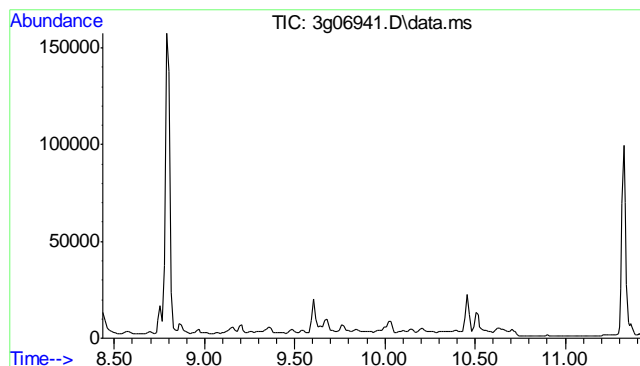
Tgt Ion: 154
 Sig Exp Ratio
 154 100
 153 103.9
 152 49.5



#12
 Fluorene
 Concen: 0.13 ug/mL
 RT: 9.676 min Scan# 705
 Delta R.T. 0.000 min
 Lab File: 3g06941.D
 Acq: 16 Nov 11 10:45 am

Tgt Ion: 166 Resp: 3535
 Ion Ratio Lower Upper
 166 100
 165 140.1 69.4 109.4#
 167 106.3 0.0 32.2#

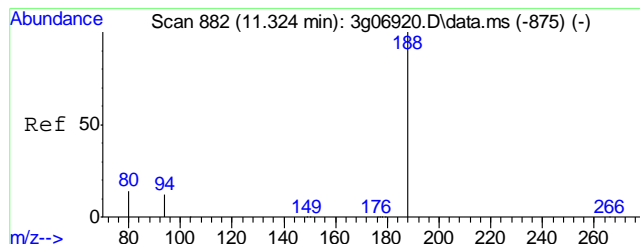
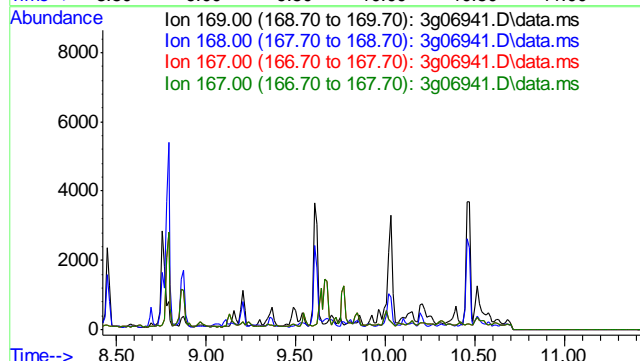




#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 9.92 min

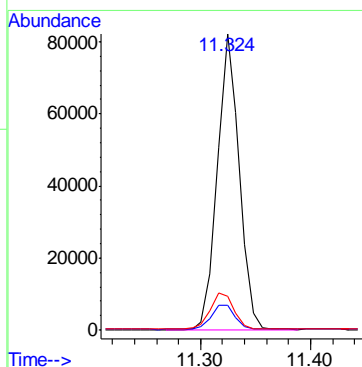
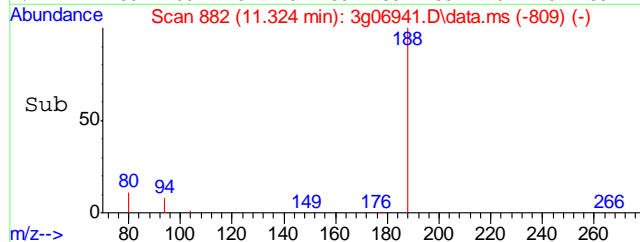
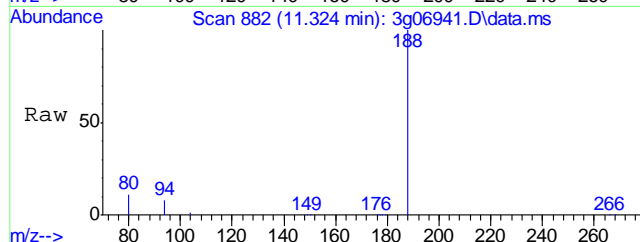
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

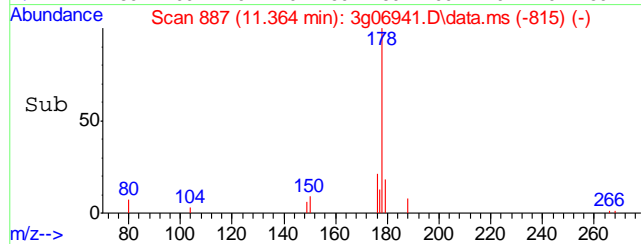
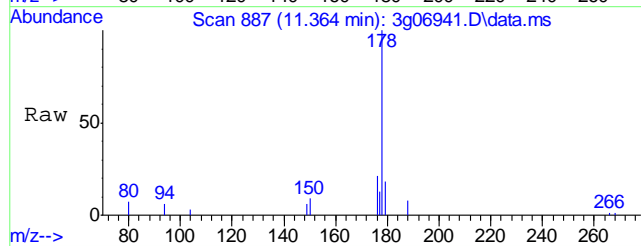
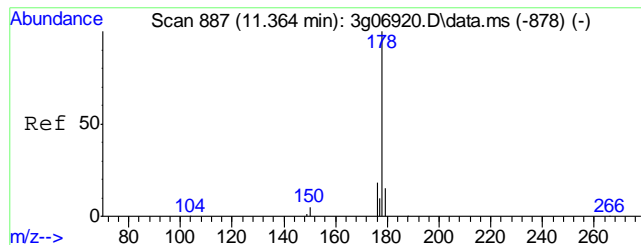
Tgt Ion: 169
Sig Exp Ratio
169 100
168 61.4
167 33.1
167 33.1



#14
Phenanthrene-d10
Concen: 4.00 ug/mL
RT: 11.324 min Scan# 882
Delta R.T. 0.000 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

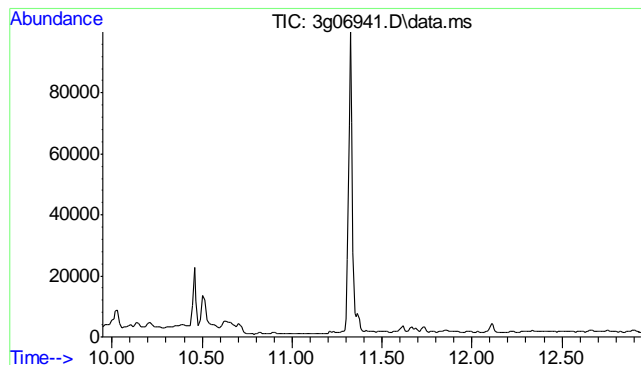
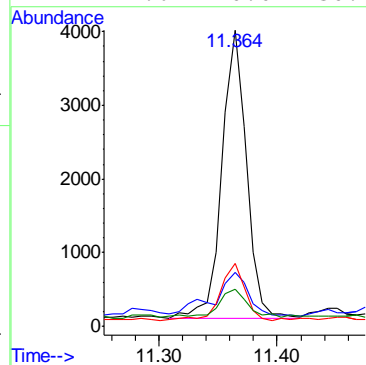
Tgt Ion: 188 Resp: 114124
Ion Ratio Lower Upper
188 100
94 9.0 0.0 32.9
80 13.6 0.0 35.5





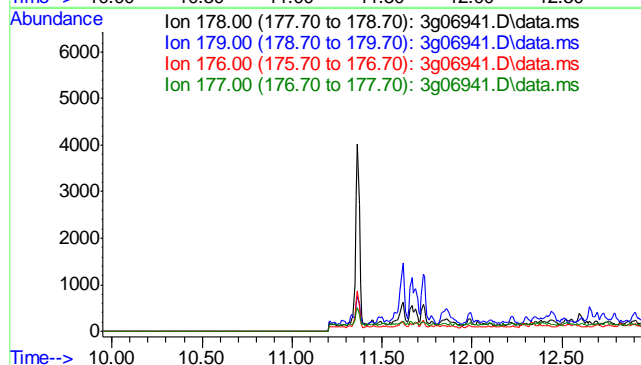
#15
Phenanthrene
Concen: 0.16 ug/mL
RT: 11.364 min Scan# 887
Delta R.T. 0.000 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

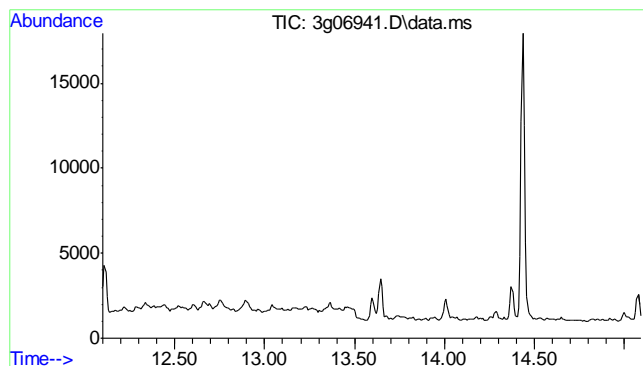
Tgt Ion: 178 Resp: 5672
Ion Ratio Lower Upper
178 100
179 28.9 0.0 35.2
176 20.1 0.0 38.2
177 12.6 0.0 30.2



#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 11.44 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

Tgt Ion: 178
Sig Exp Ratio
178 100
179 15.2
176 17.8
177 8.6

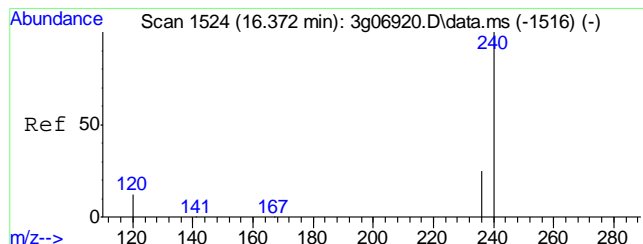
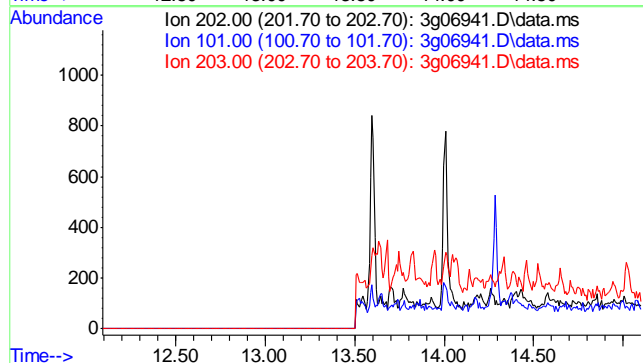




#17
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 13.60 min

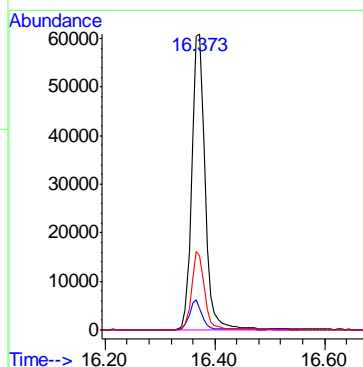
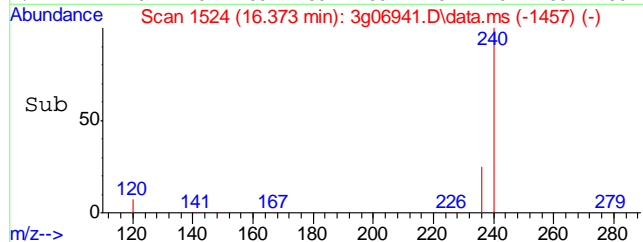
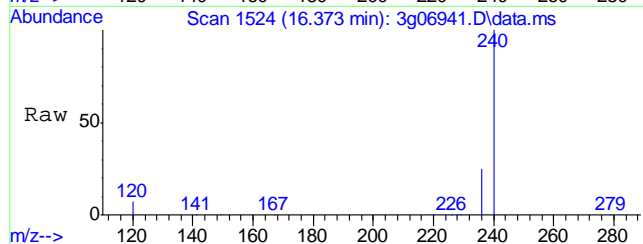
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

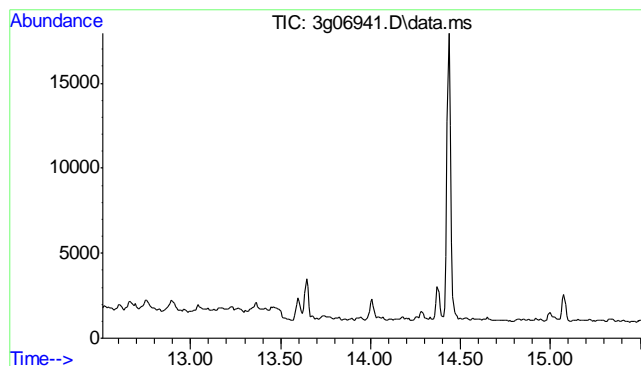
Tgt Ion: 202
Sig Exp Ratio
202 100
101 16.3
203 17.2



#18
Chrysene-d12
Concen: 4.00 ug/mL
RT: 16.373 min Scan# 1524
Delta R.T. 0.000 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

Tgt Ion: 240 Resp: 102196
Ion Ratio Lower Upper
240 100
120 9.5 0.0 35.2
236 25.5 4.7 44.7

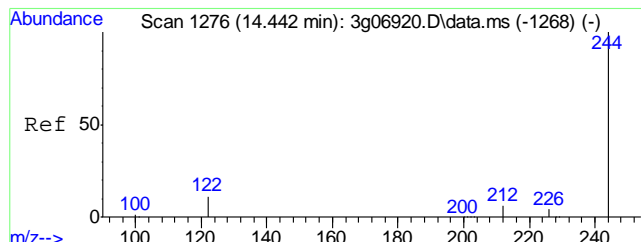
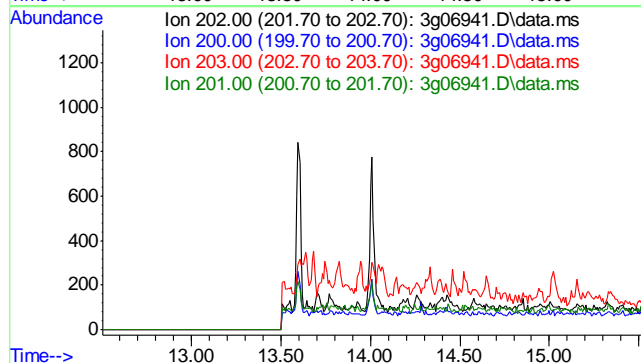




#19
 Pyrene
 Concen: N.D. ug/mL
 Expected RT: 14.01 min

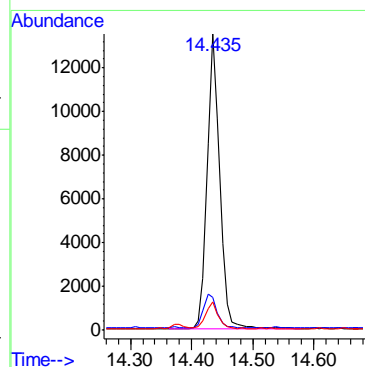
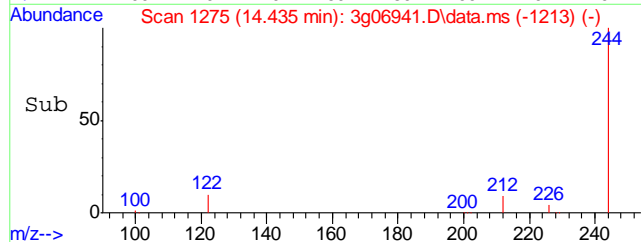
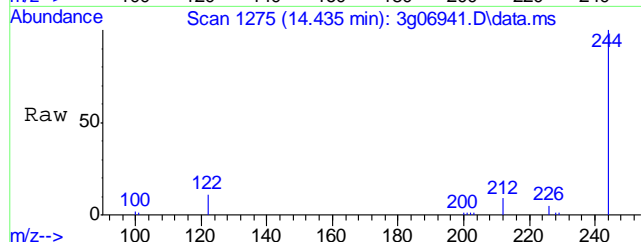
 Lab File: 3g06941.D
 Acq: 16 Nov 11 10:45 am

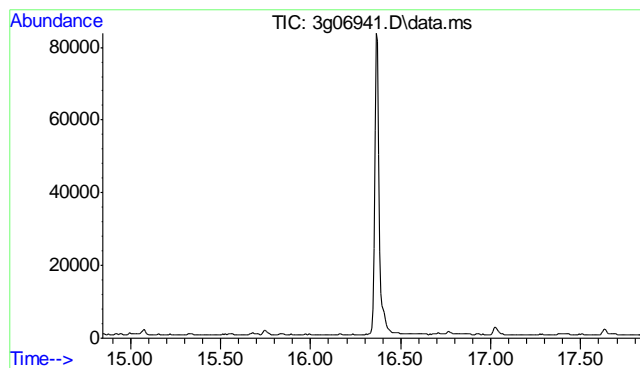
Tgt Ion	Exp Ratio
202	100
200	22.2
203	17.8
201	18.3



#20
 Terphenyl-d14
 Concen: 1.05 ug/mL
 RT: 14.435 min Scan# 1275
 Delta R.T. -0.008 min
 Lab File: 3g06941.D
 Acq: 16 Nov 11 10:45 am

Tgt Ion	Ratio	Lower	Upper
244	100		
122	12.3	0.0	37.6
212	8.7	0.0	27.3

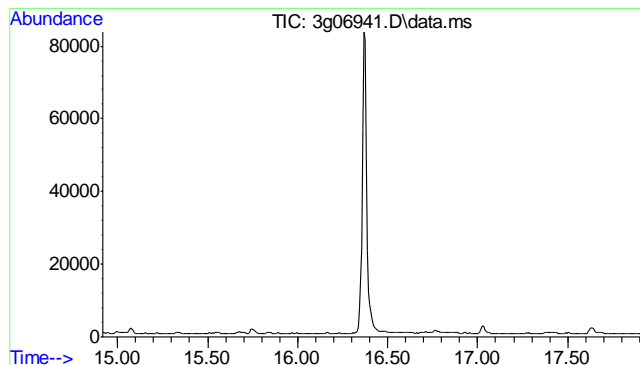
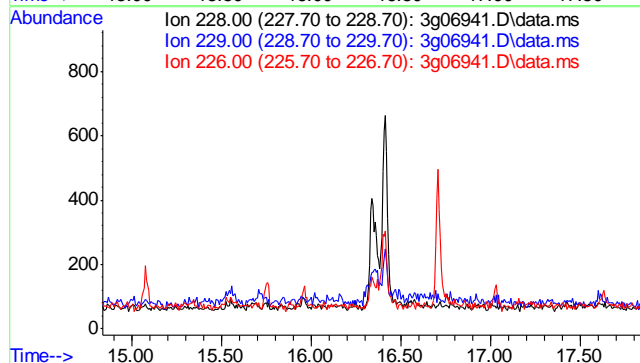




#21
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 16.34 min

Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

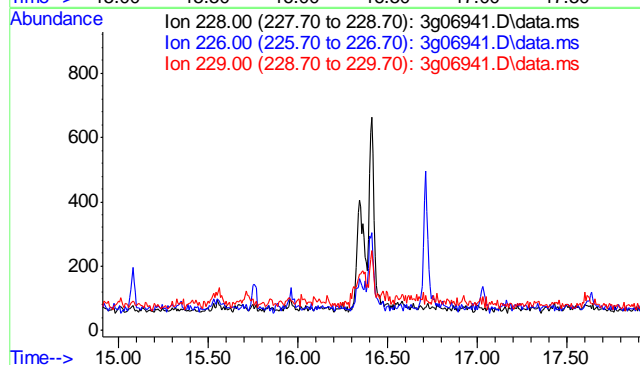
Tgt Ion	Exp Ratio
228	100
229	19.3
226	25.6

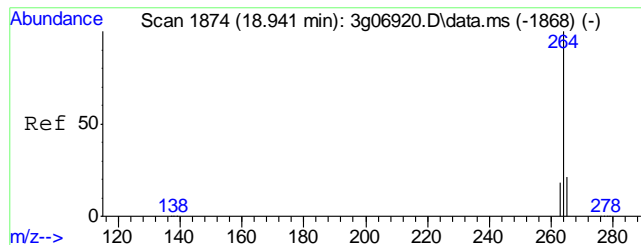


#22
Chrysene
Concen: N.D. ug/mL
Expected RT: 16.41 min

Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

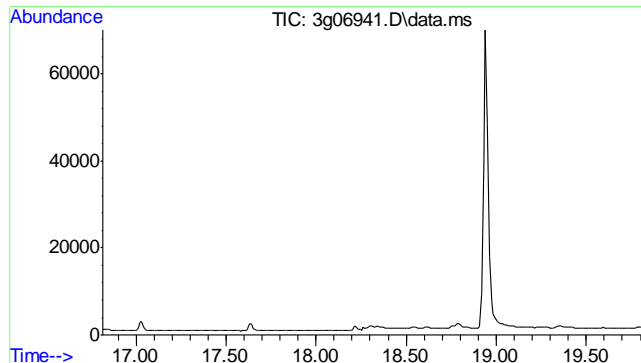
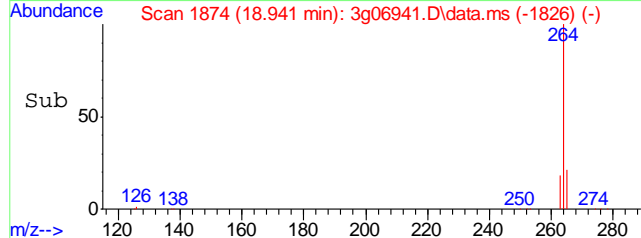
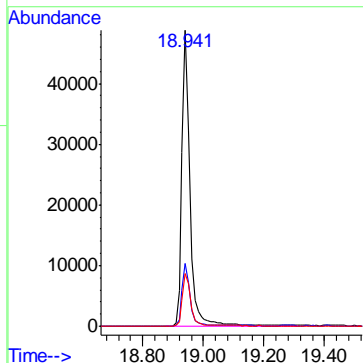
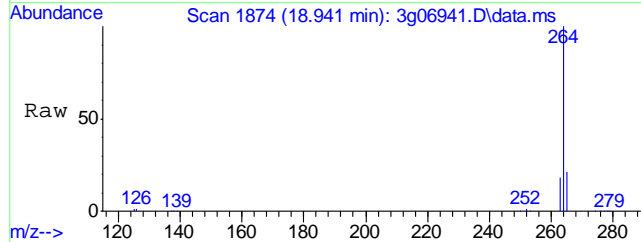
Tgt Ion	Exp Ratio
228	100
226	28.4
229	19.7





#23
Perylene-d12
Concen: 4.00 ug/mL
RT: 18.941 min Scan# 1874
Delta R.T. 0.000 min
Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

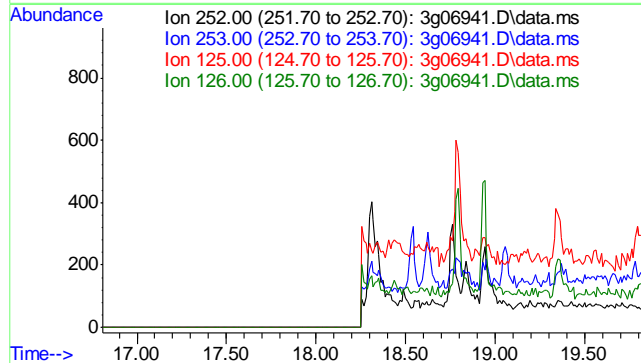
Tgt Ion:	264	Resp:	90782
Ion Ratio	Lower	Upper	
264	100		
265	21.0	0.8	40.8
263	18.8	0.0	38.5

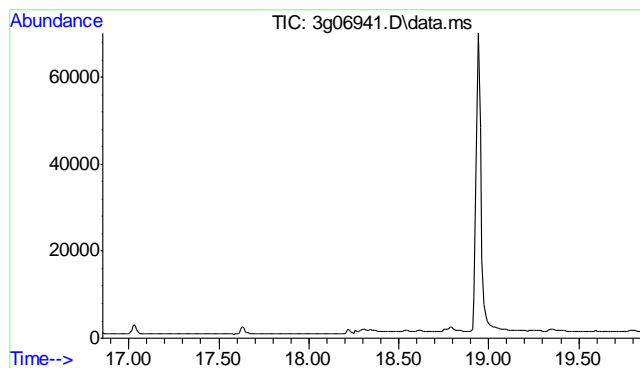


#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.31 min

Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.8
125	10.7
126	14.2

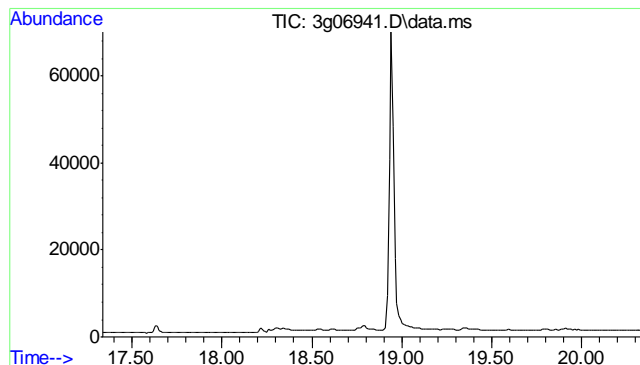
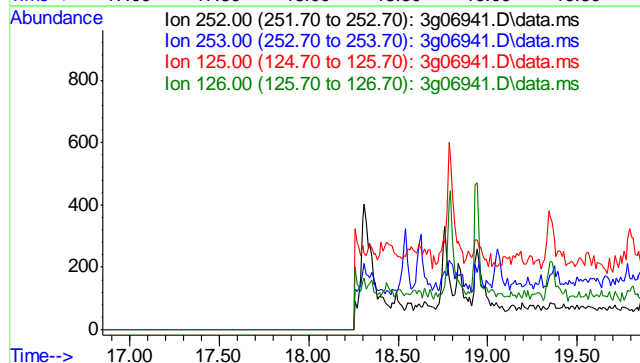




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.35 min

Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

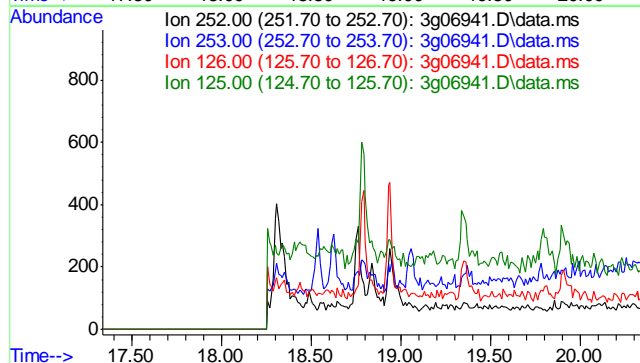
Tgt Ion	Exp Ratio
252	100
253	22.0
125	12.4
126	18.6

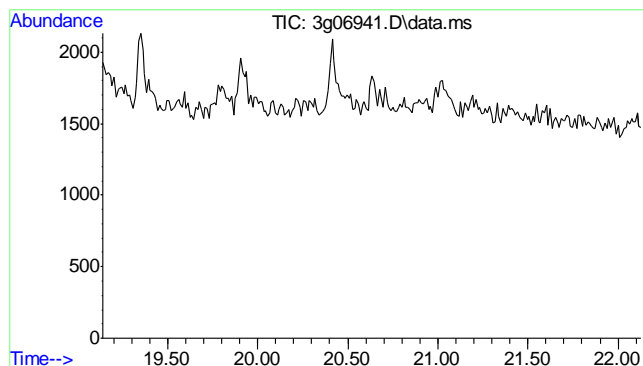


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 18.84 min

Lab File: 3g06941.D
Acq: 16 Nov 11 10:45 am

Tgt Ion	Exp Ratio
252	100
253	20.2
126	14.8
125	12.2

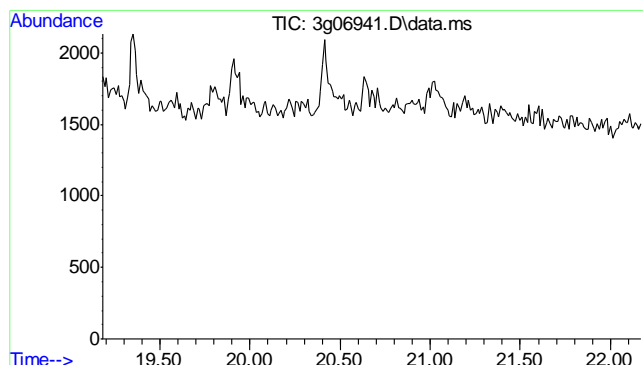
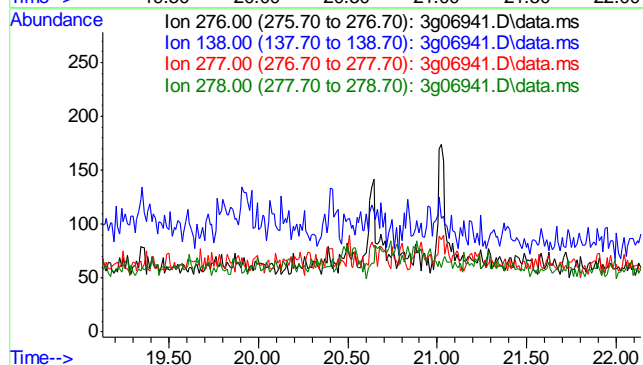




#27
 Indeno(1,2,3-cd)pyrene
 Concen: N.D. ug/mL
 Expected RT: 20.63 min

 Lab File: 3g06941.D
 Acq: 16 Nov 11 10:45 am

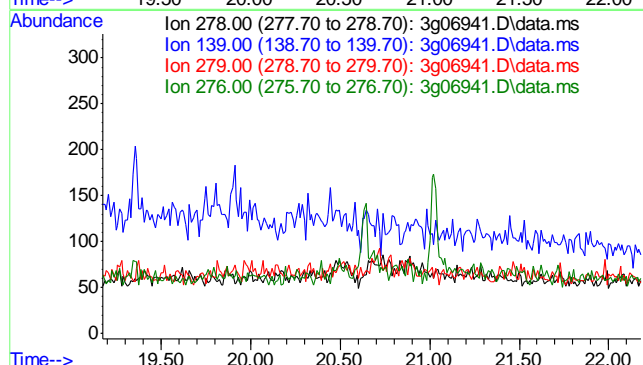
Tgt Ion	Exp Ratio
276	100
138	19.9
277	36.8
278	0.0

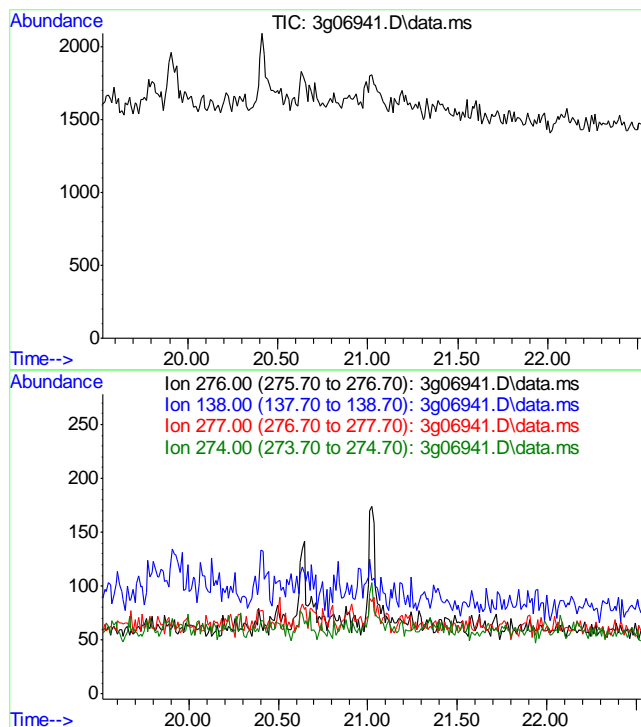


#28
 Dibenz(a,h)anthracene
 Concen: N.D. ug/mL
 Expected RT: 20.68 min

 Lab File: 3g06941.D
 Acq: 16 Nov 11 10:45 am

Tgt Ion	Exp Ratio
278	100
139	16.1
279	23.1
276	124.3





#29
 Benzo(g,h,i)perylene
 Concen: N.D. ug/mL
 Expected RT: 21.02 min
 Lab File: 3g06941.D
 Acq: 16 Nov 11 10:45 am
 Tgt Ion: 276

Sig	Exp Ratio
276	100
138	20.2
277	23.2
274	20.3

8.1.1
 8

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\111411\
 Data File : 3g06899.D
 Acq On : 15 Nov 2011 6:27 am
 Operator : TamiB
 Sample : OP4843-MB
 Misc : OP4843,E3G255,30,,,1,1
 ALS Vial : 22 Sample Multiplier: 1

Quant Time: Nov 15 11:57:39 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G255.M
 Quant Title : PAHSIM BASE
 QLast Update : Tue Nov 15 11:12:03 2011
 Response via : Initial Calibration

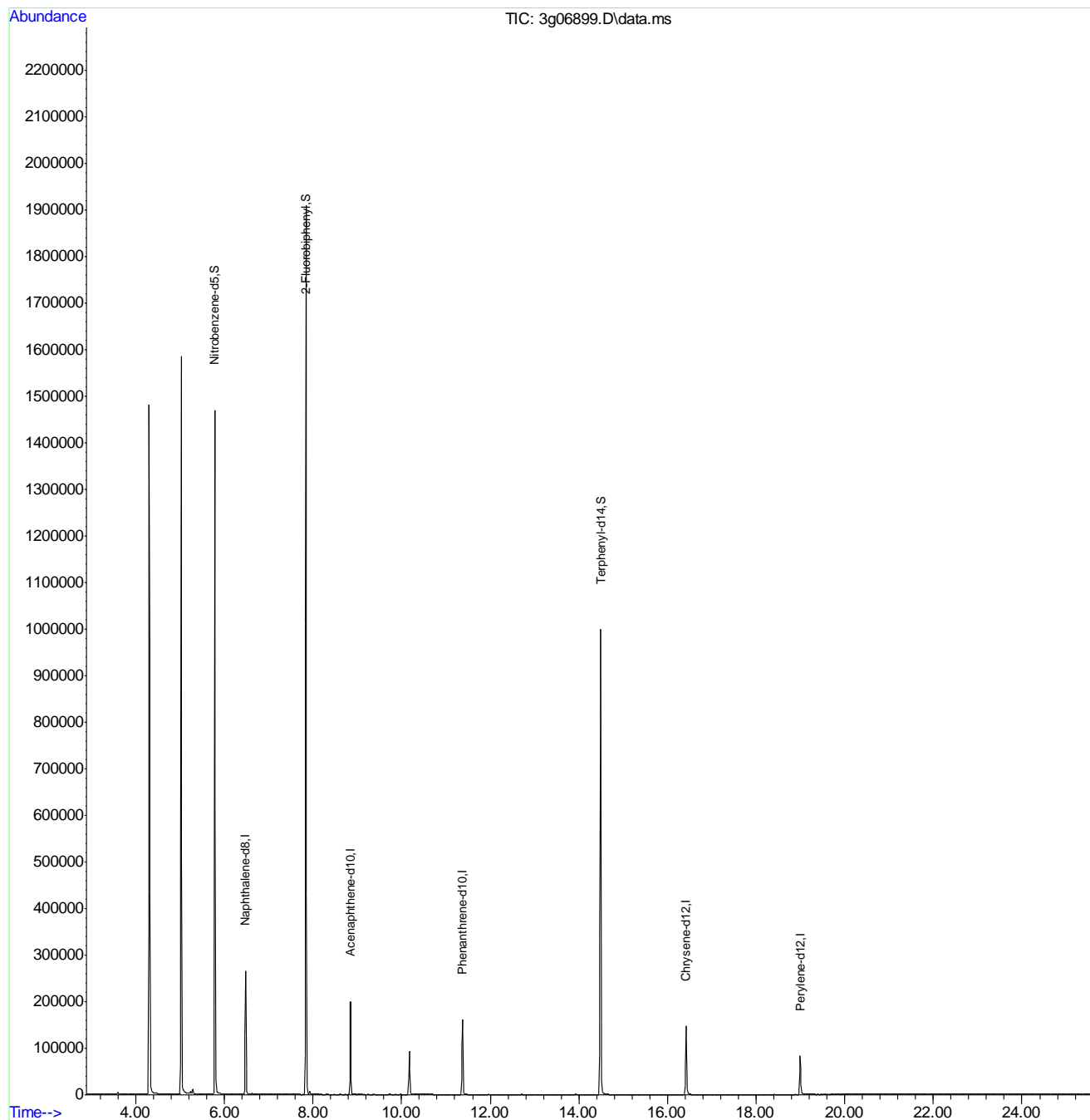
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.481	136	236593	4.00	ug/mL	0.00
6) Acenaphthene-d10	8.849	164	132439	4.00	ug/mL	0.01
14) Phenanthrene-d10	11.372	188	185749	4.00	ug/mL	0.00
18) Chrysene-d12	16.419	240	169891	4.00	ug/mL	0.00
23) Perylene-d12	18.993	264	111540	4.00	ug/mL	-0.01
System Monitoring Compounds						
2) Nitrobenzene-d5	5.783	82	775059	58.98	ug/mL	0.00
7) 2-Fluorobiphenyl	7.845	172	1617935	42.04	ug/mL	0.00
20) Terphenyl-d14	14.490	244	1109819	49.62	ug/mL	0.00
Target Compounds						
						Qvalue
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	0.000		0	N.D.	d	
8) 2-Methylnaphthalene	0.000		0	N.D.	d	
9) 1-Methylnaphthalene	0.000		0	N.D.	d	
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	0.000		0	N.D.	d	
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	0.000		0	N.D.	d	
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	0.000		0	N.D.	d	
21) Benzo(a)anthracene	0.000		0	N.D.	d	
22) Chrysene	0.000		0	N.D.	d	
24) Benzo(b)fluoranthene	0.000		0	N.D.	d	
25) Benzo(k)fluoranthene	0.000		0	N.D.	d	
26) Benzo(a)pyrene	0.000		0	N.D.	d	
27) Indeno(1,2,3-cd)pyrene	0.000		0	N.D.	d	
28) Dibenz(a,h)anthracene	0.000		0	N.D.	d	
29) Benzo(g,h,i)perylene	0.000		0	N.D.	d	

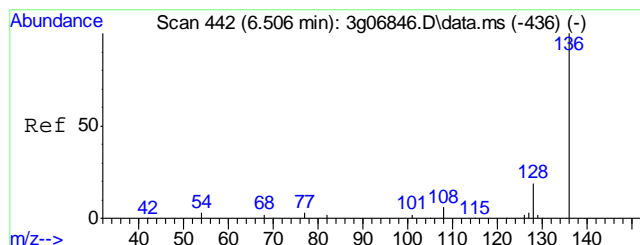
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\111411\
Data File : 3g06899.D
Acq On : 15 Nov 2011 6:27 am
Operator : TamiB
Sample : OP4843-MB
Misc : OP4843,E3G255,30,,,1,1
ALS Vial : 22 Sample Multiplier: 1

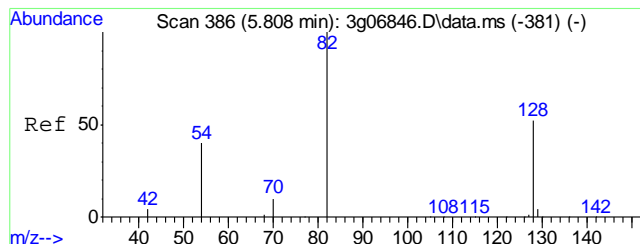
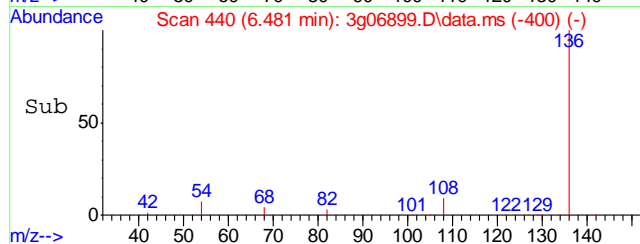
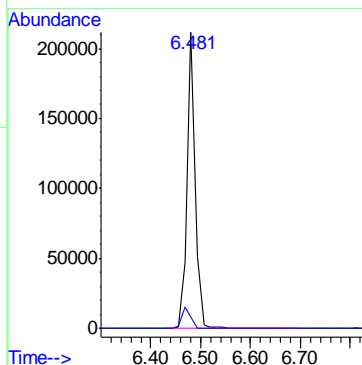
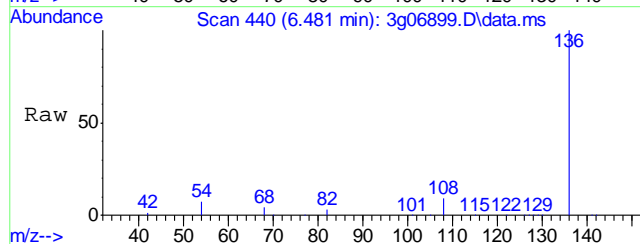
Quant Time: Nov 15 11:57:39 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G255.M
Quant Title : PAHSIM BASE
QLast Update : Tue Nov 15 11:12:03 2011
Response via : Initial Calibration





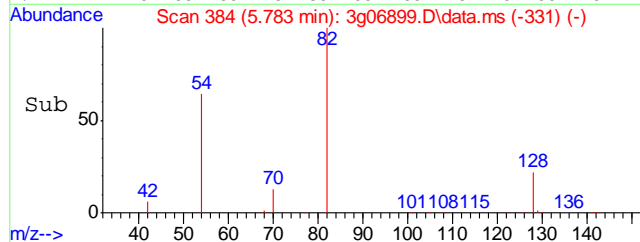
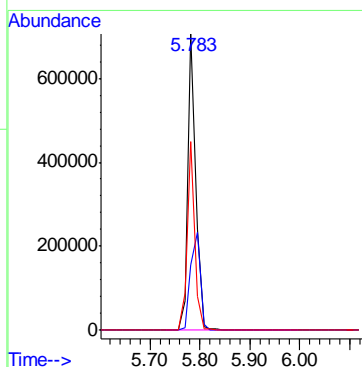
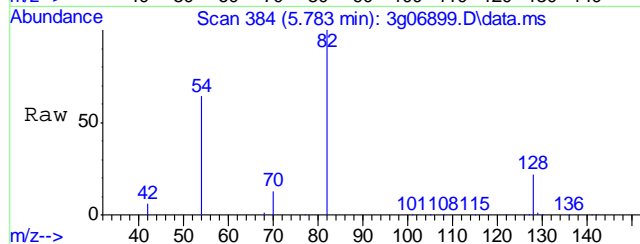
#1
Naphthalene-d8
Concen: 4.00 ug/mL
RT: 6.481 min Scan# 440
Delta R.T. 0.000 min
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

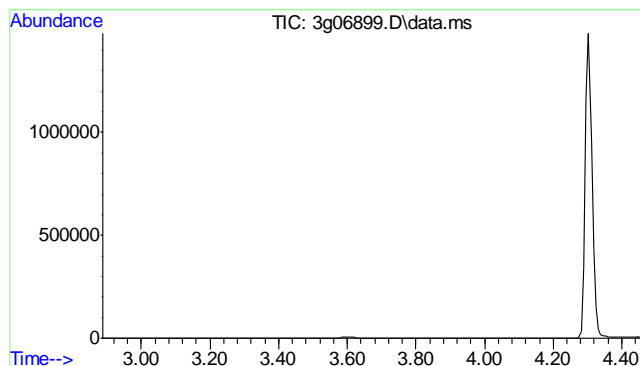
Tgt Ion: 136 Resp: 236593
Ion Ratio Lower Upper
136 100
68 8.2 0.0 28.8



#2
Nitrobenzene-d5
Concen: 58.98 ug/mL
RT: 5.783 min Scan# 384
Delta R.T. 0.000 min
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion: 82 Resp: 775059
Ion Ratio Lower Upper
82 100
128 39.3 16.8 56.8
54 60.7 31.8 71.8

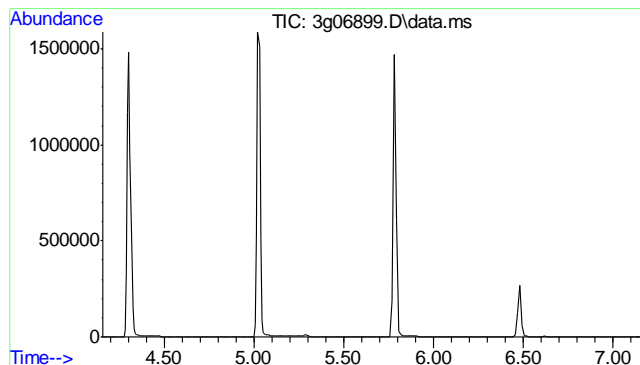
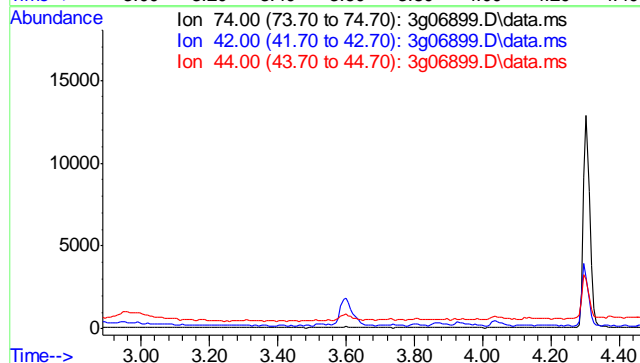




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.96 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

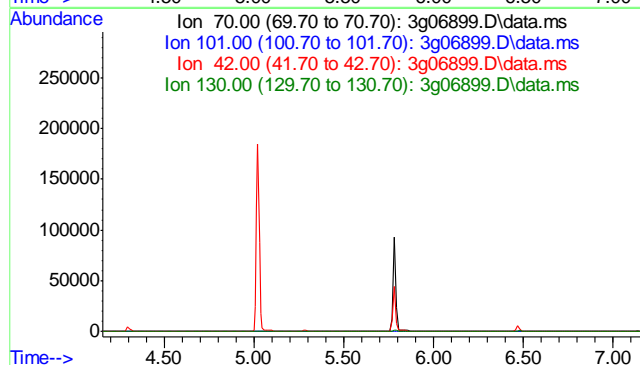
Tgt Ion:	74
Sig	Exp Ratio
74	100
42	56.0
44	5.1

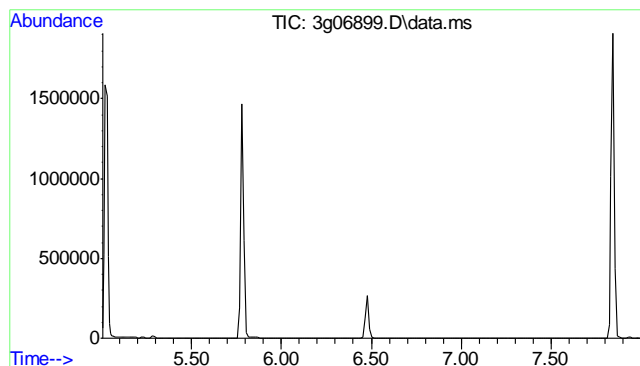


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.66 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion:	70
Sig	Exp Ratio
70	100
101	11.1
42	49.1
130	22.3

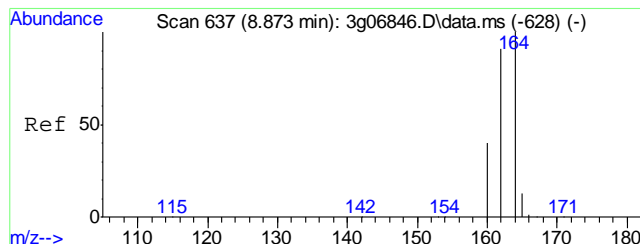
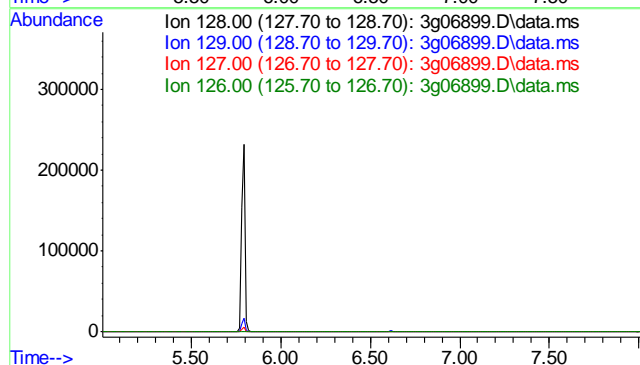




#5
Naphthalene
Concen: N.D. ug/mL
Expected RT: 6.51 min

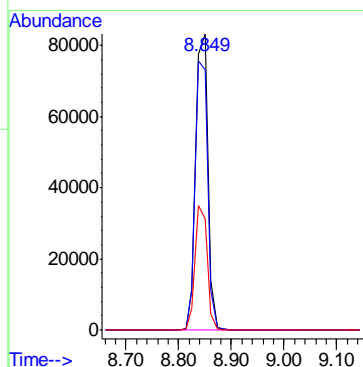
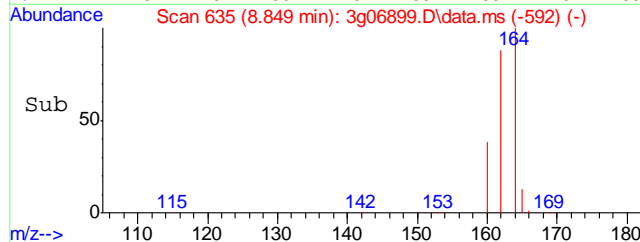
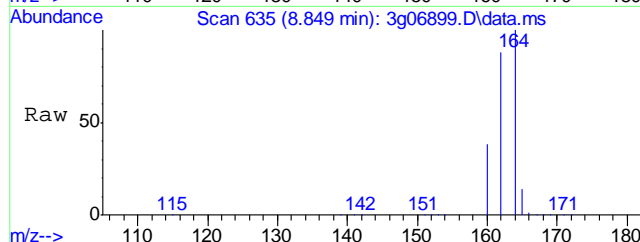
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

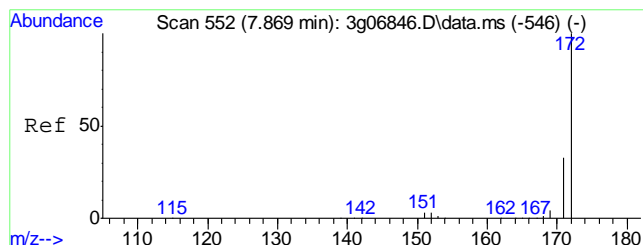
Tgt Ion: 128
Sig Exp Ratio
128 100
129 10.9
127 12.5
126 7.3



#6
Acenaphthene-d10
Concen: 4.00 ug/mL
RT: 8.849 min Scan# 635
Delta R.T. 0.012 min
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

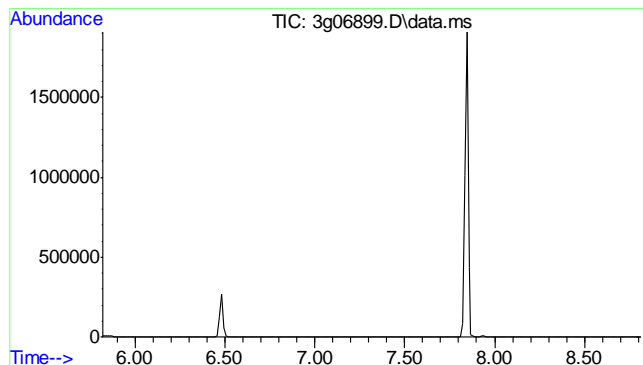
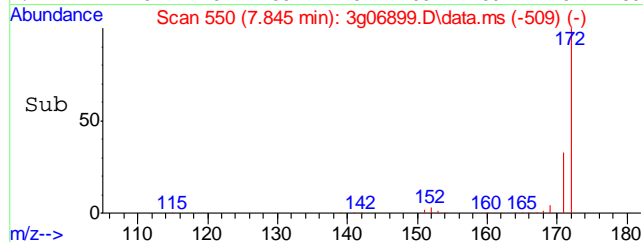
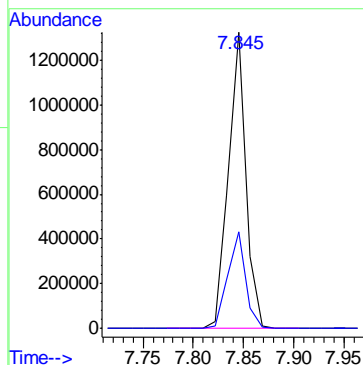
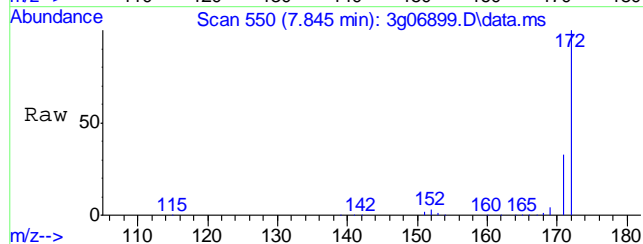
Tgt Ion: 164 Resp: 132439
Ion Ratio Lower Upper
164 100
162 92.4 72.2 112.2
160 41.5 22.0 62.0





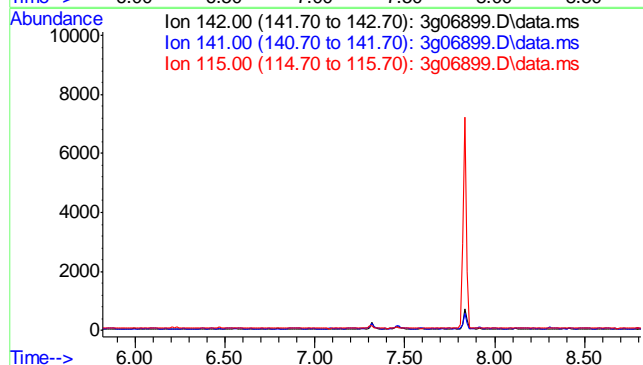
#7
2-Fluorobiphenyl
Concen: 42.04 ug/mL
RT: 7.845 min Scan# 550
Delta R.T. 0.000 min
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

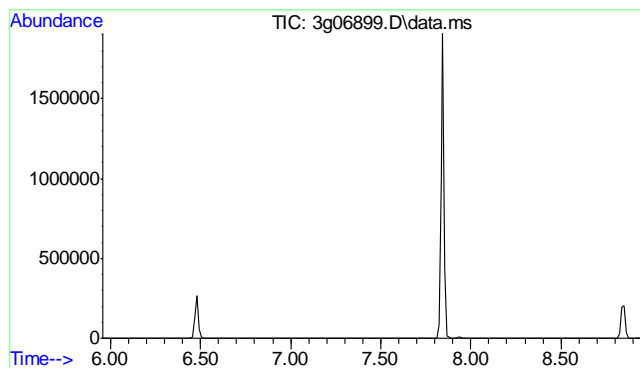
Tgt Ion: 172 Resp: 1617935
Ion Ratio Lower Upper
172 100
171 33.1 12.6 52.6



#8
2-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.32 min
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion: 142
Sig Exp Ratio
142 100
141 81.8
115 34.8

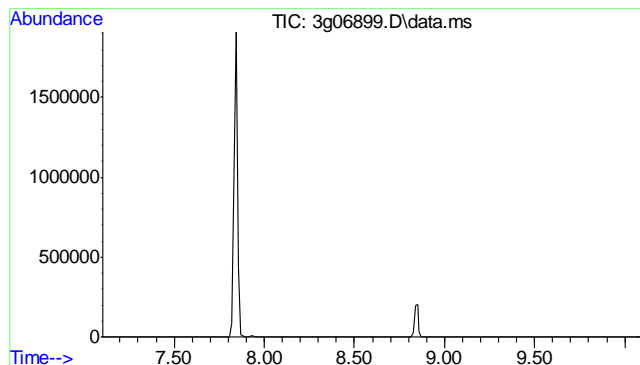
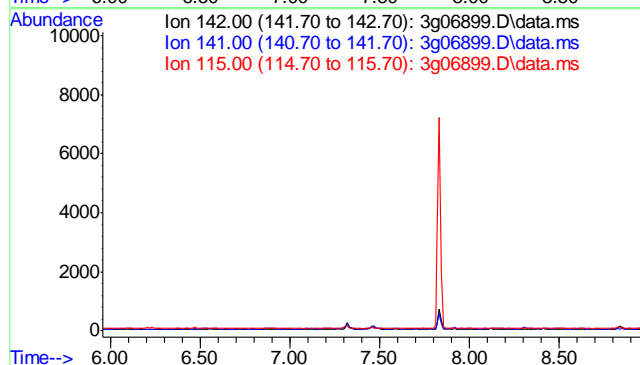




#9
1-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.45 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

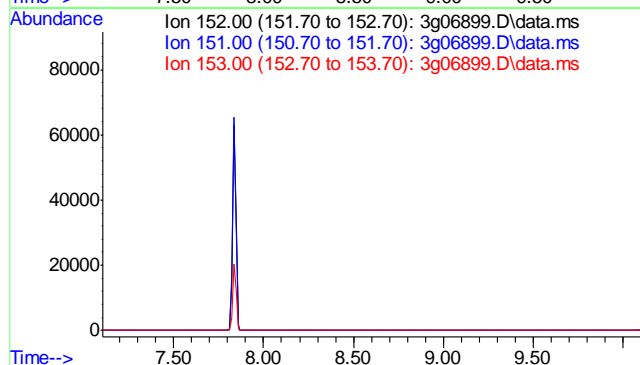
Tgt Ion: 142
Sig Exp Ratio
142 100
141 85.5
115 38.1

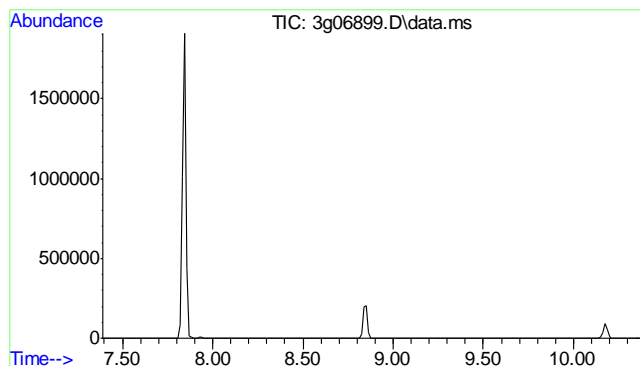


#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 8.60 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion: 152
Sig Exp Ratio
152 100
151 18.8
153 12.8

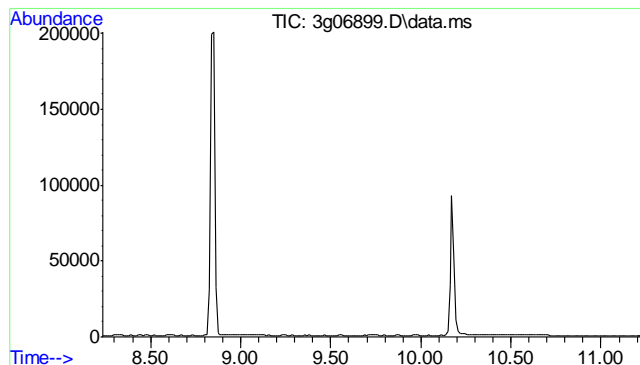
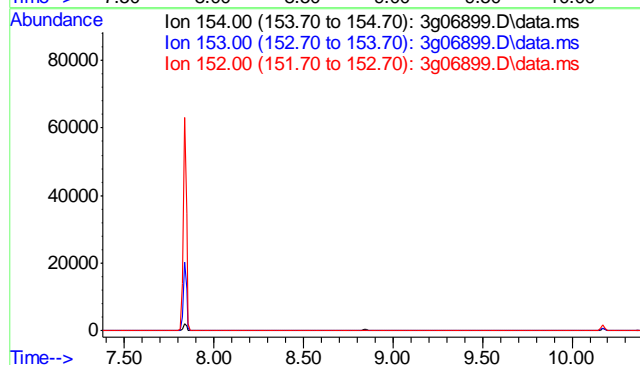




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 8.88 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

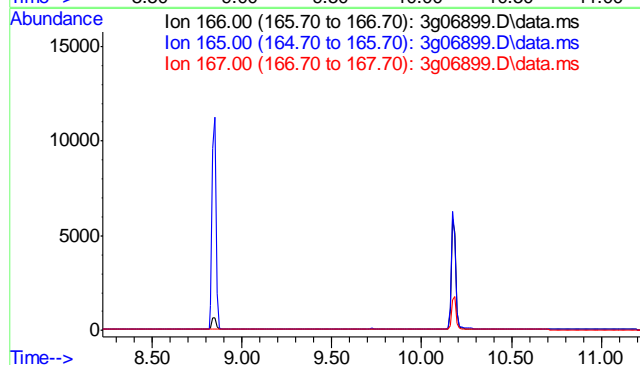
Tgt Ion: 154
Sig Exp Ratio
154 100
153 102.7
152 49.3

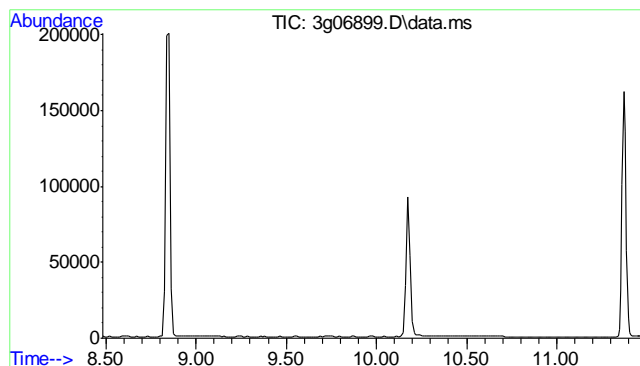


#12
Fluorene
Concen: N.D. ug/mL
Expected RT: 9.72 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion: 166
Sig Exp Ratio
166 100
165 89.2
167 12.2

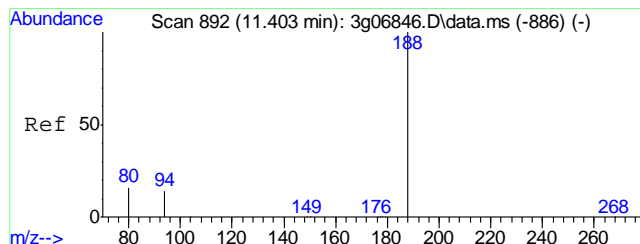
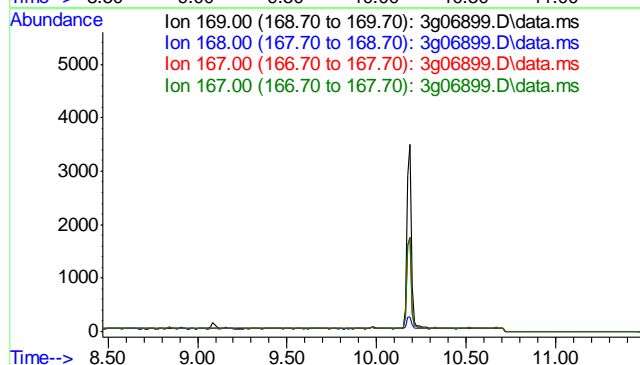




#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 9.97 min

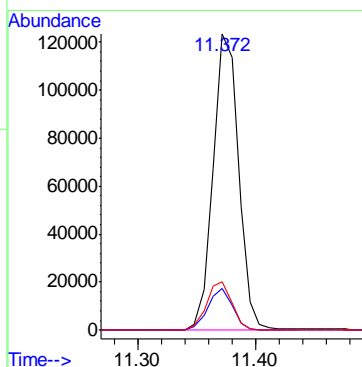
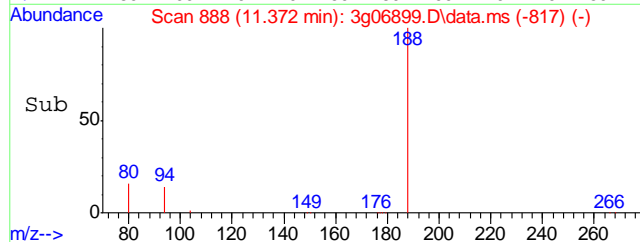
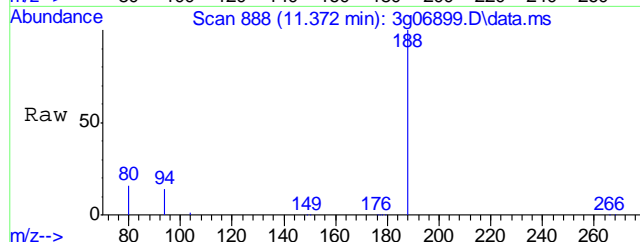
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

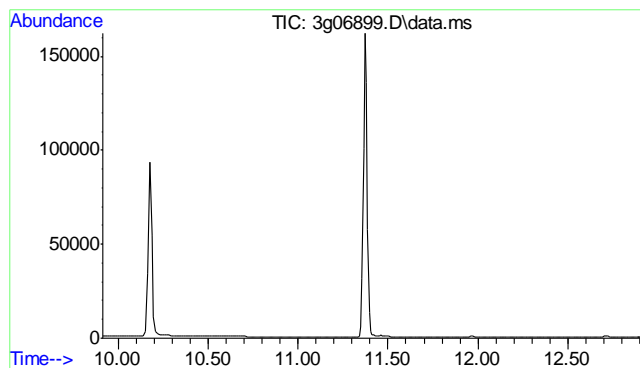
Tgt Ion: 169
Sig Exp Ratio
169 100
168 59.8
167 32.1
167 32.1



#14
Phenanthrene-d10
Concen: 4.00 ug/mL
RT: 11.372 min Scan# 888
Delta R.T. 0.000 min
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion: 188 Resp: 185749
Ion Ratio Lower Upper
188 100
94 13.4 0.0 36.5
80 16.2 0.0 38.9

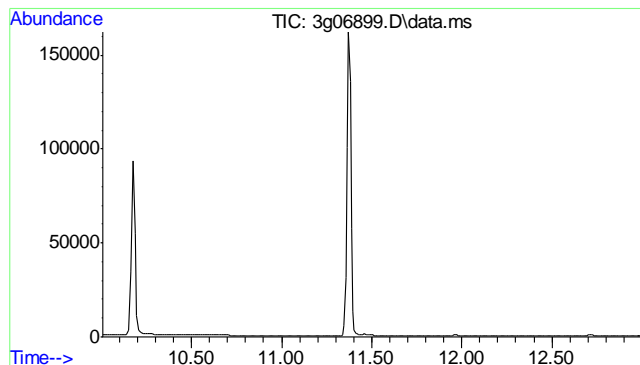
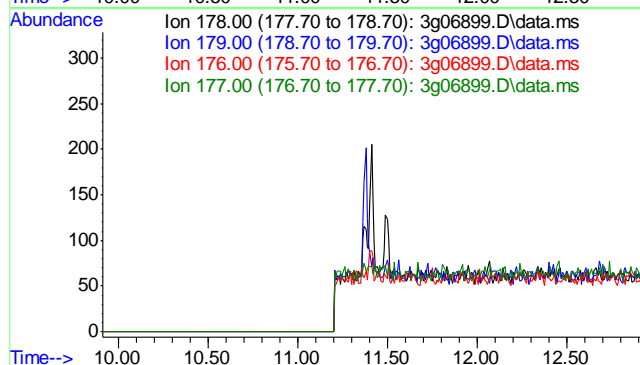




#15
Phenanthrene
Concen: N.D. ug/mL
Expected RT: 11.41 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

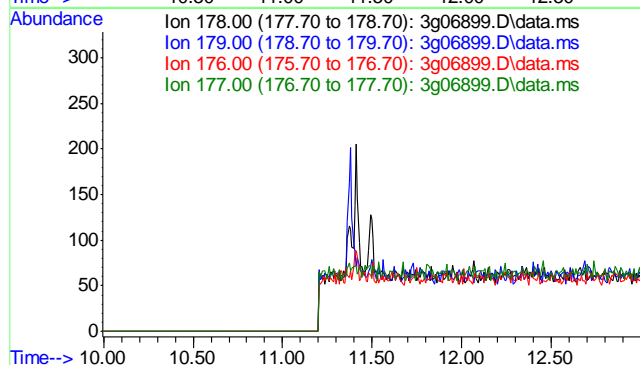
Tgt Ion:	178
Sig	Exp Ratio
178	100
179	15.2
176	18.3
177	10.2

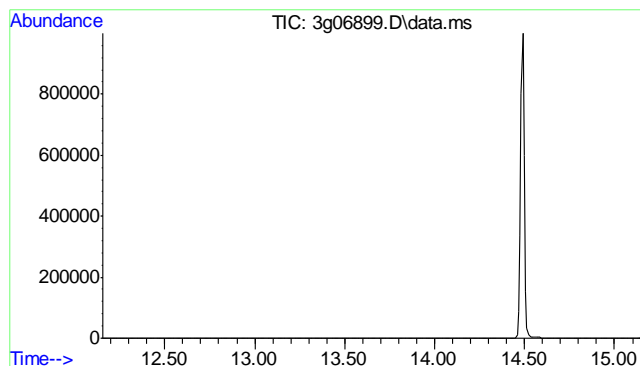


#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 11.50 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion:	178
Sig	Exp Ratio
178	100
179	15.1
176	17.5
177	8.6

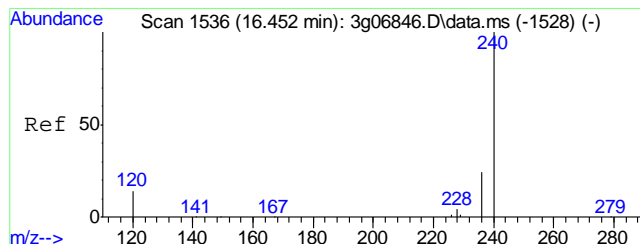
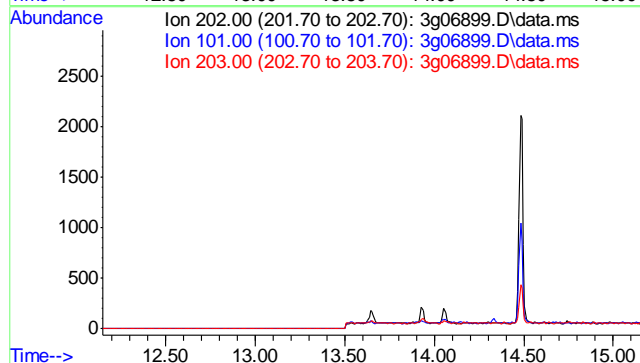




#17
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 13.65 min

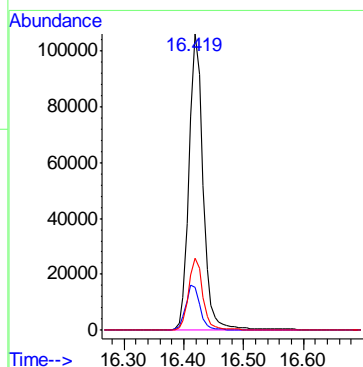
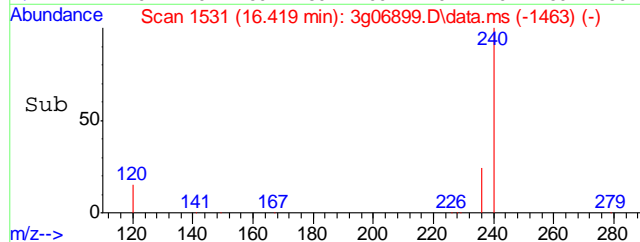
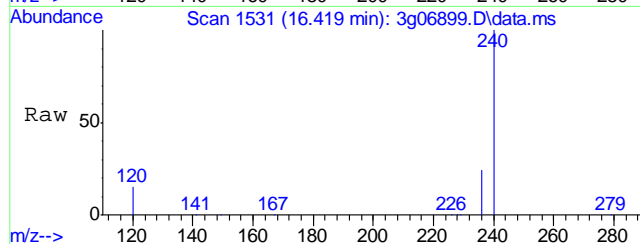
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

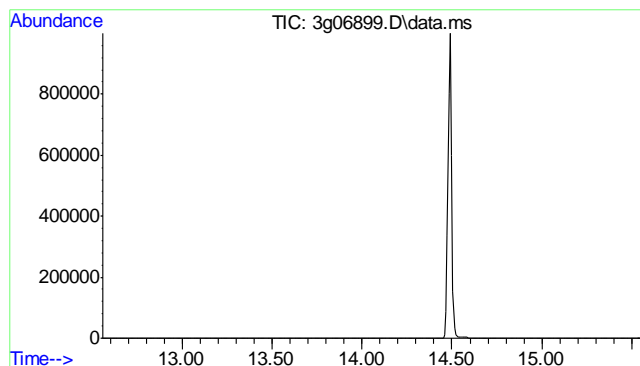
Tgt Ion: 202
Sig Exp Ratio
202 100
101 19.1
203 17.3



#18
Chrysene-d12
Concen: 4.00 ug/mL
RT: 16.419 min Scan# 1531
Delta R.T. -0.007 min
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion: 240 Resp: 169891
Ion Ratio Lower Upper
240 100
120 15.5 0.0 39.1
236 24.5 4.7 44.7

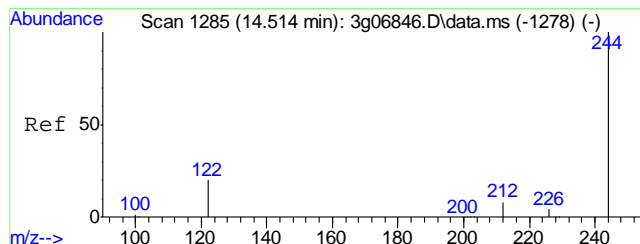
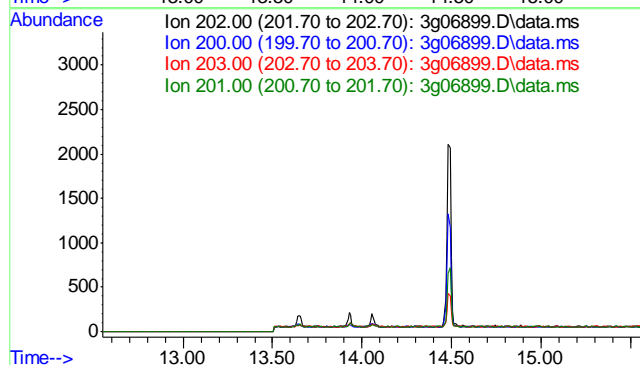




#19
Pyrene
Concen: N.D. ug/mL
Expected RT: 14.05 min

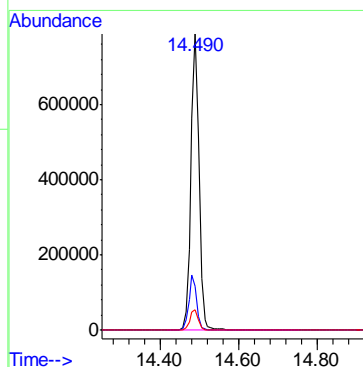
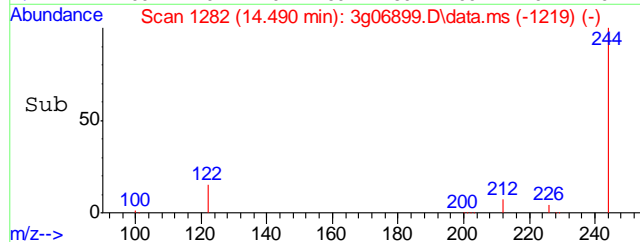
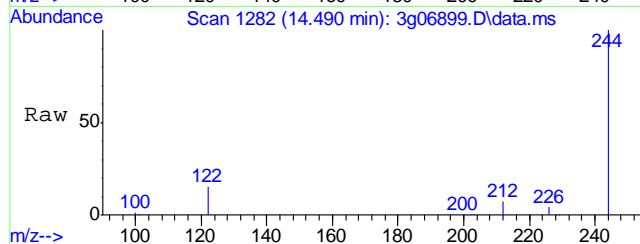
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

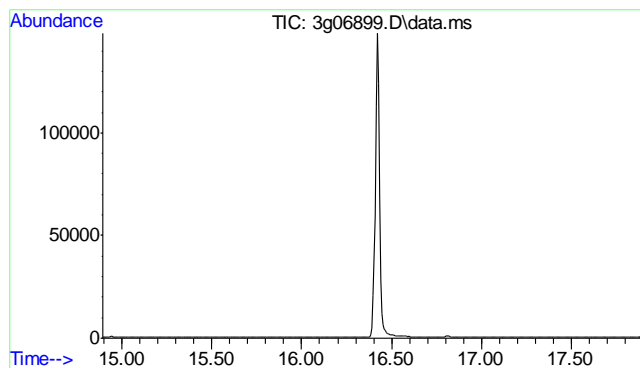
Tgt Ion: 202
Sig Exp Ratio
202 100
200 21.7
203 17.8
201 17.9



#20
Terphenyl-d14
Concen: 49.62 ug/mL
RT: 14.490 min Scan# 1282
Delta R.T. 0.000 min
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion: 244 Resp: 1109819
Ion Ratio Lower Upper
244 100
122 18.2 2.7 42.7
212 7.2 0.0 27.4

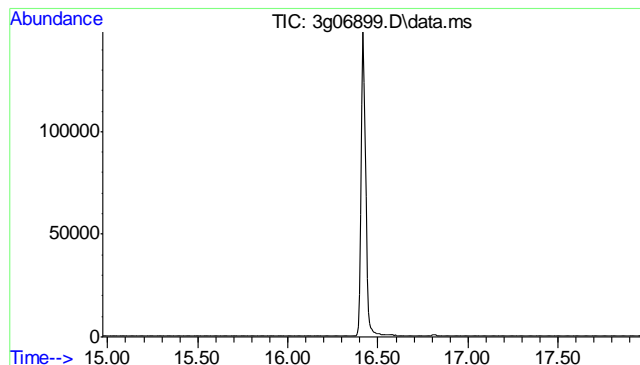
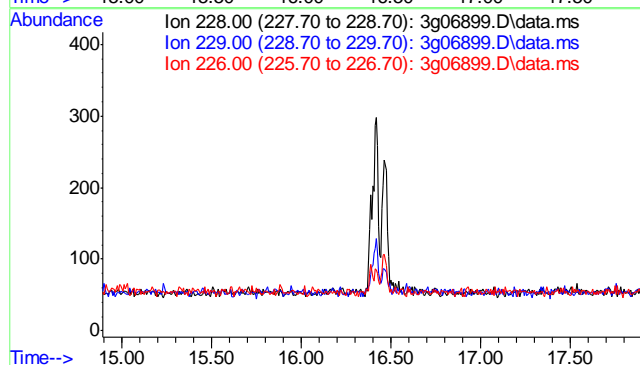




#21
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 16.39 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

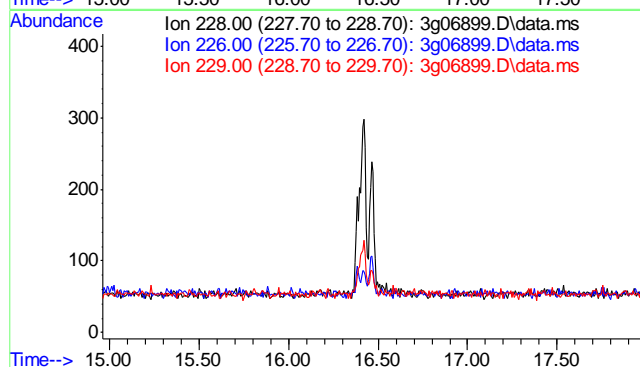
Tgt Ion:	228
Sig	Exp Ratio
228	100
229	19.4
226	25.8

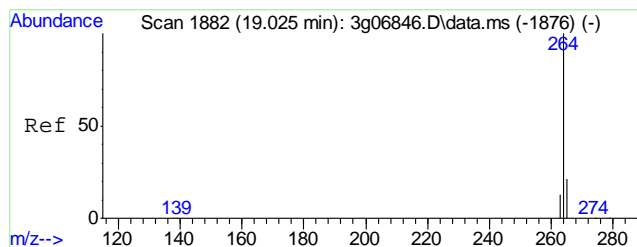


#22
Chrysene
Concen: N.D. ug/mL
Expected RT: 16.47 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

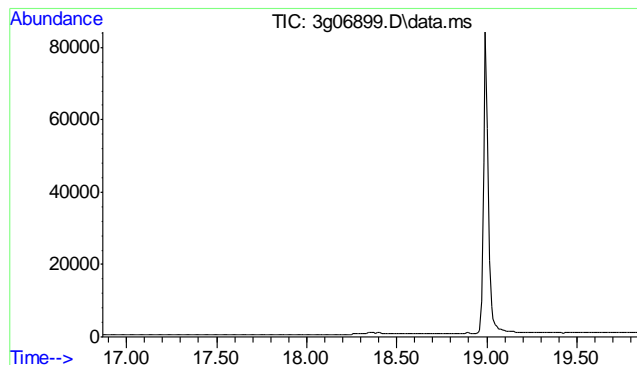
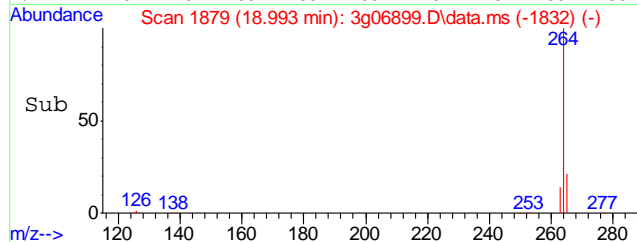
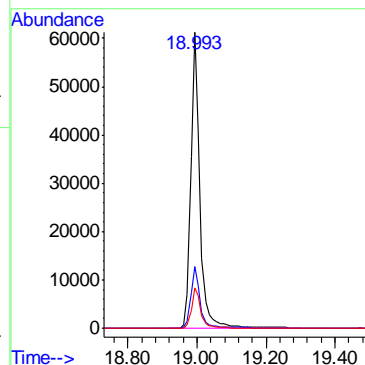
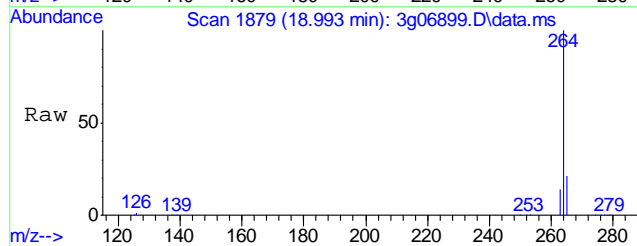
Tgt Ion:	228
Sig	Exp Ratio
228	100
226	27.6
229	19.0





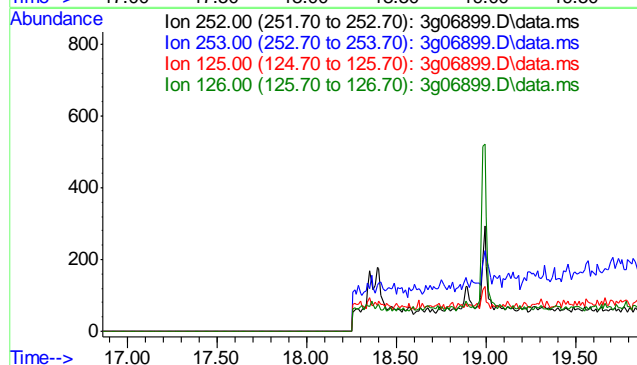
#23
Perylene-d12
Concen: 4.00 ug/mL
RT: 18.993 min Scan# 1879
Delta R.T. -0.010 min
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

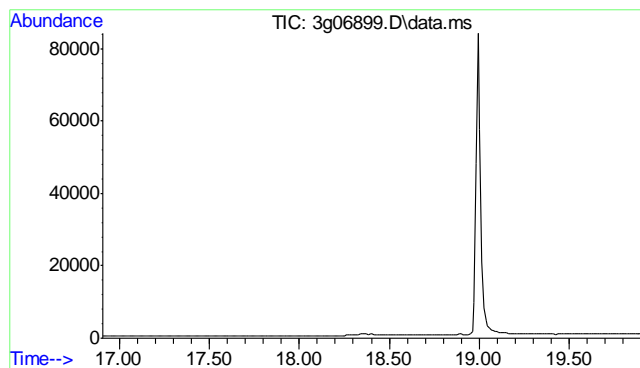
Tgt Ion	Ratio	Lower	Upper
264	100		
265	21.2	0.6	40.6
263	13.9	0.0	34.4



#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.36 min
Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion	Sig	Exp Ratio
252	100	
253	20.9	
125	12.3	
126	16.2	

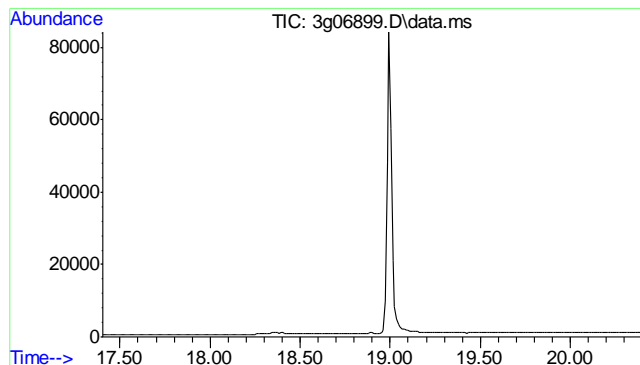
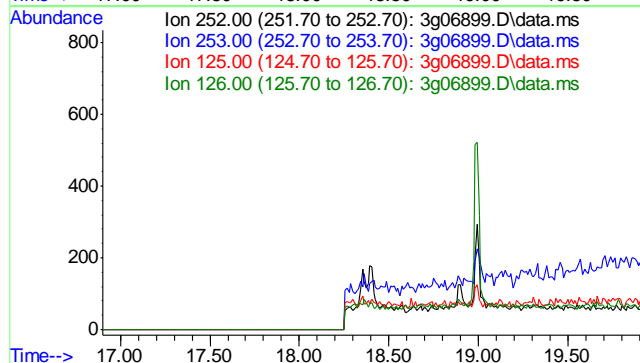




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.40 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

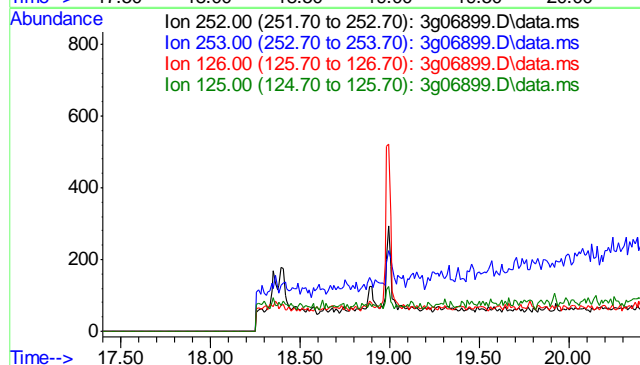
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.1
125	13.5
126	21.2

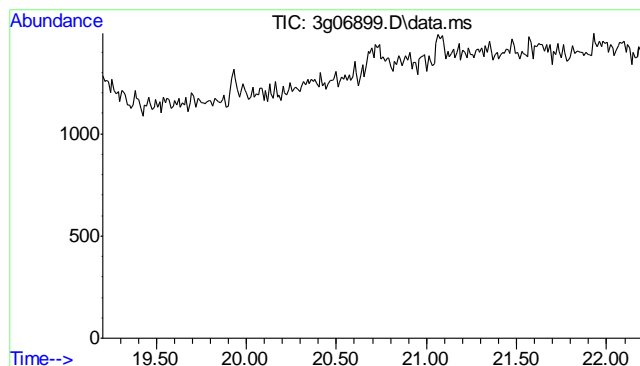


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 18.90 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	22.0
126	19.5
125	14.6

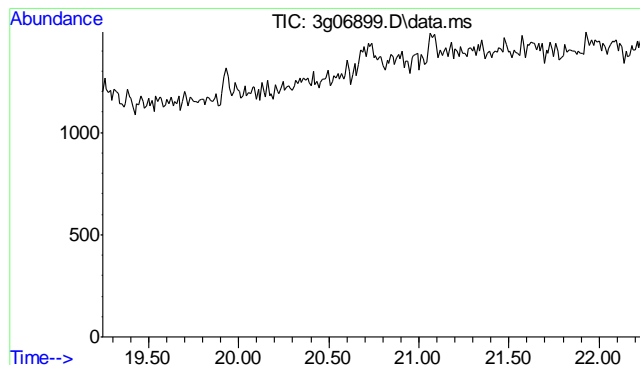
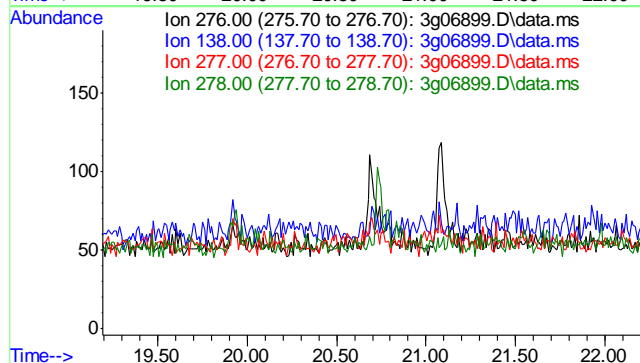




#27
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 20.70 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

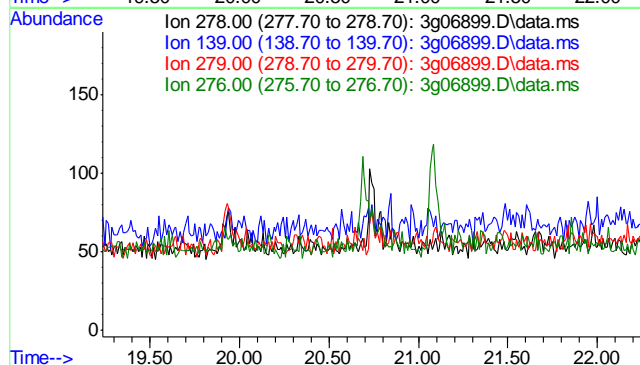
Tgt Ion:	276
Sig	Exp Ratio
276	100
138	25.7
277	23.7
278	0.0

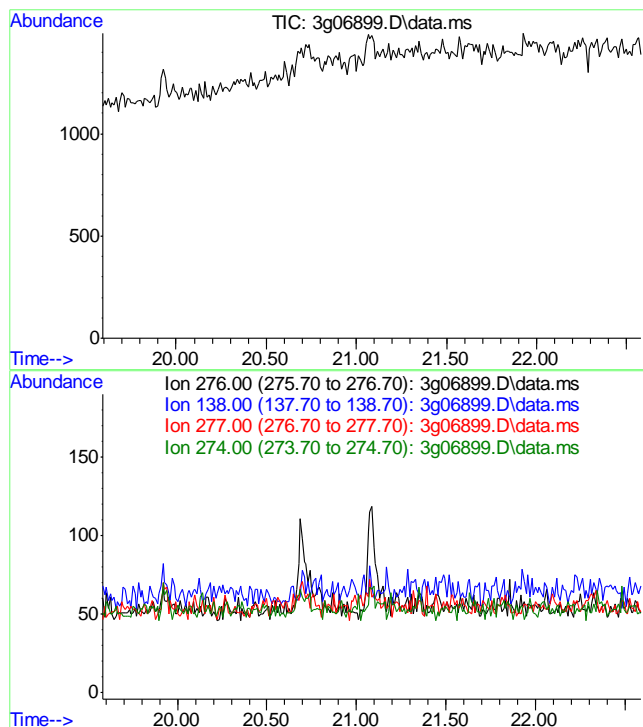


#28
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 20.74 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion:	278
Sig	Exp Ratio
278	100
139	22.8
279	22.9
276	48.9





#29
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 21.09 min

Lab File: 3g06899.D
Acq: 15 Nov 11 6:27 am

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	28.9
277	22.3
274	20.6

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: D29396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB787-MB	GB13840.D	1	11/11/11	SK	n/a	n/a	GGB787

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

D29396-1

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

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

9.1.1
9

Blank Spike Summary

Job Number: D29396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB787-BS	GB13841.D	1	11/11/11	SK	n/a	n/a	GGB787

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

D29396-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	114	104	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	106%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D29396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D29362-1MS	GB13843.D	1	11/11/11	SK	n/a	n/a	GGB787
D29362-1MSD	GB13844.D	1	11/11/11	SK	n/a	n/a	GGB787
D29362-1	GB13842.D	1	11/11/11	SK	n/a	n/a	GGB787

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

D29396-1

CAS No.	Compound	D29362-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		135	125	93	134	99	7	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D29362-1	Limits
120-82-1	1,2,4-Trichlorobenzene	92%	93%	92%	60-140%

9.3.1
6

GC Volatiles

Raw Data

Koroush Vaziri
11/14/11 15:48

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111111\GB13860.D\FID1A.CH Vial: 32
 Signal #2 : Y:\1\DATA\111111\GB13860.D\FID2B.CH
 Acq On : 12 Nov 2011 7:05 am Operator: StephK
 Sample : D29396-1, 50X Inst : GC/MS Ins
 Misc : GC2401,GGB787,5.007,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Nov 14 15:15:34 2011 Quant Results File: TB785GB785SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB785GB785SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Nov 14 15:15:14 2011
 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	14.44	3026666	106.663 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.44	24627768	122.461 %	
Target Compounds				
1) H TVH-Gasoline	7.33	16601384	0.235 mg/L	
4) T Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T Benzene	4.21	127984	0.270 ug/L	
6) T Toluene	7.75	546525	1.169 ug/L	
7) T Ethylbenzene	10.37	199225	0.484 ug/L	
8) T m,p-Xylene	10.55	1433890	2.834 ug/L	
9) T o-Xylene	11.05	373187	0.903 ug/L	
11) T Naphthalene	14.63	11465116	50.334 ug/L	

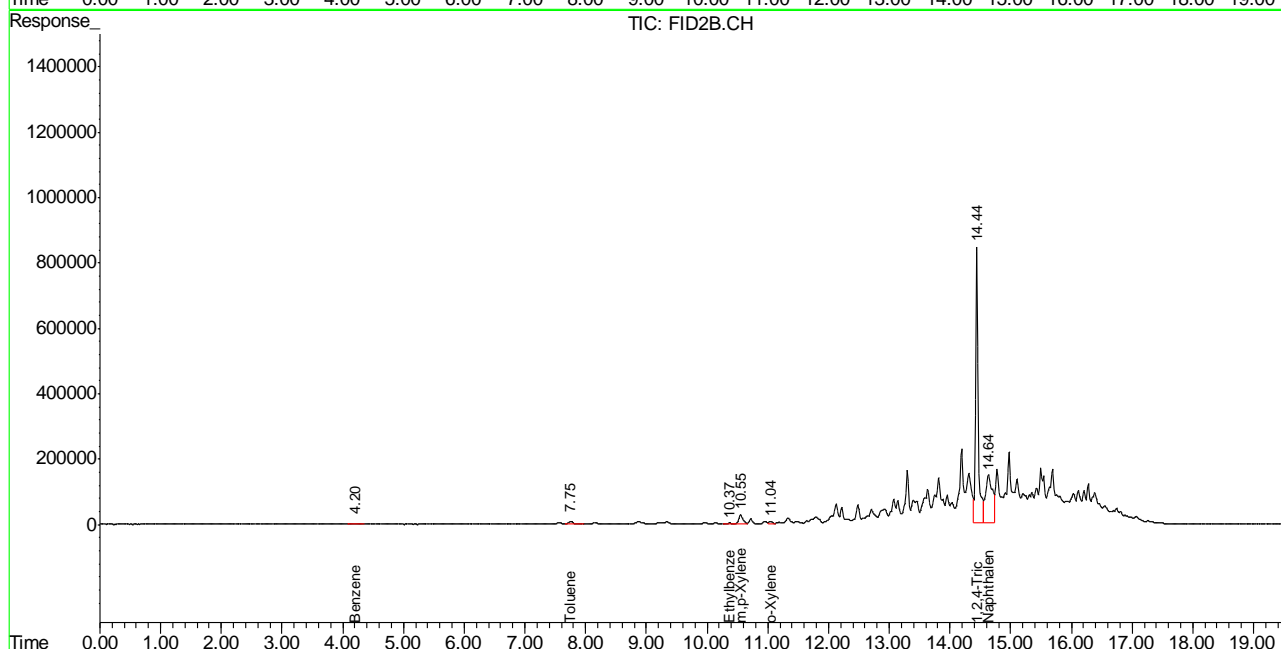
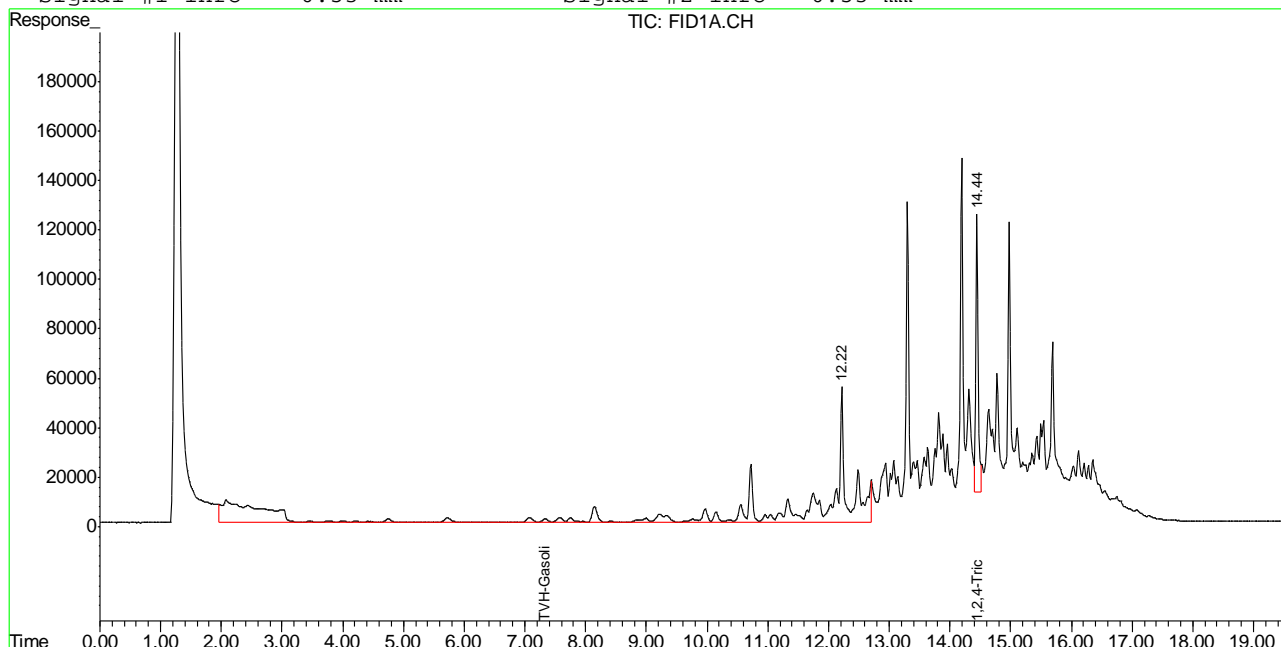
(f)=RT Delta > 1/2 Window (m)=manual int.
 GB13860.D TB785GB785SOIL.M Mon Nov 14 15:29:39 2011 GC

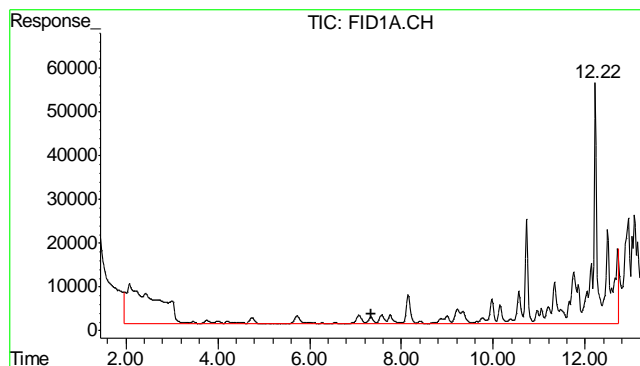
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111111\GB13860.D\FID1A.CH Vial: 32
 Signal #2 : Y:\1\DATA\111111\GB13860.D\FID2B.CH
 Acq On : 12 Nov 2011 7:05 am Operator: StephK
 Sample : D29396-1, 50X Inst : GC/MS Ins
 Misc : GC2401,GGB787,5.007,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Nov 14 15:21 2011 Quant Results File: TB785GB785SOIL.RES

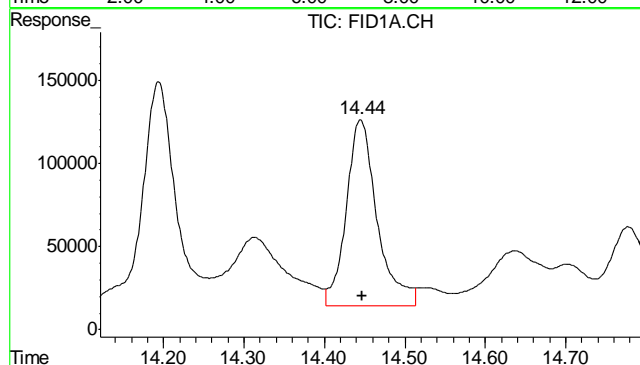
Quant Method : C:\MSDCHEM\1...\TB785GB785SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Nov 14 15:15:14 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

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

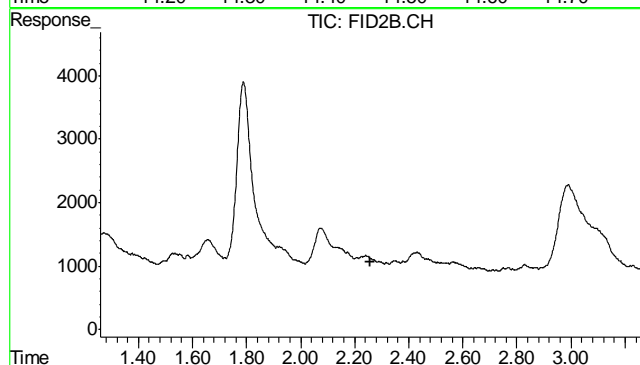




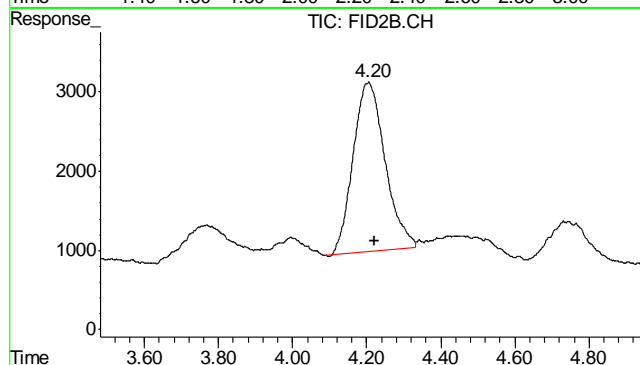
#1 TVH-Gasoline
 R.T.: 7.330 min
 Delta R.T.: 0.000 min
 Response: 16601384
 Conc: 0.24 mg/L m



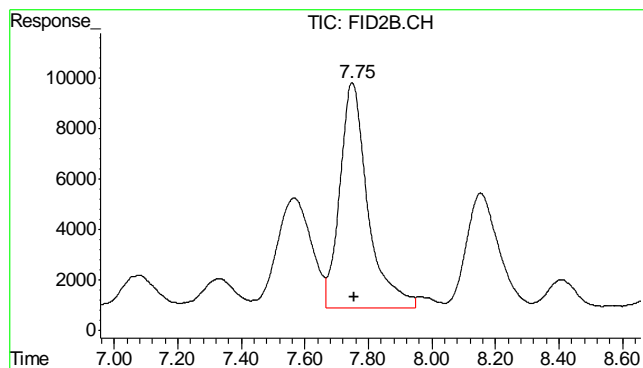
#2 1,2,4-Trichlorobenzene
 R.T.: 14.445 min
 Delta R.T.: -0.002 min
 Response: 3026666
 Conc: 106.66 % m



#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T.: 2.259 min
 Response: 0
 Conc: N.D.

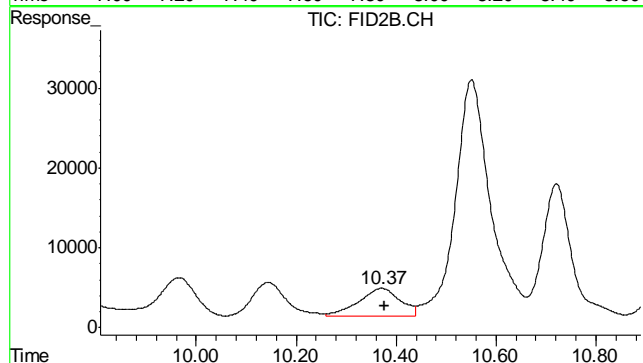


#5 Benzene
 R.T.: 4.205 min
 Delta R.T.: -0.016 min
 Response: 127984
 Conc: 0.27 ug/L



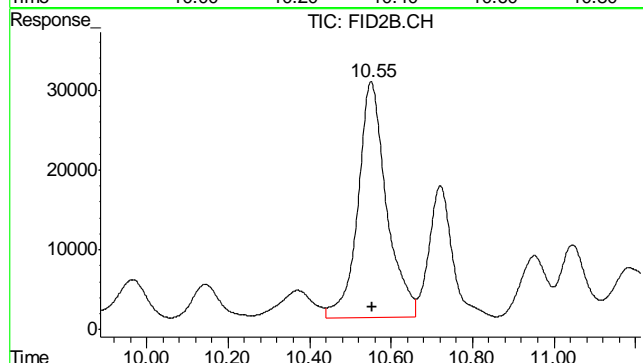
#6 Toluene

R.T.: 7.749 min
Delta R.T.: -0.009 min
Response: 546525
Conc: 1.17 ug/L



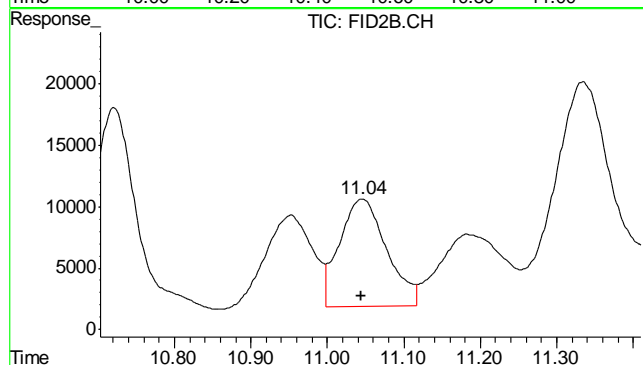
#7 Ethylbenzene

R.T.: 10.371 min
Delta R.T.: -0.006 min
Response: 199225
Conc: 0.48 ug/L



#8 m,p-Xylene

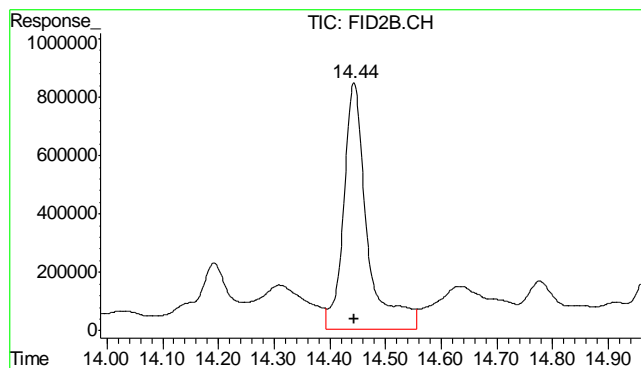
R.T.: 10.551 min
Delta R.T.: -0.002 min
Response: 1433890
Conc: 2.83 ug/L



#9 o-Xylene

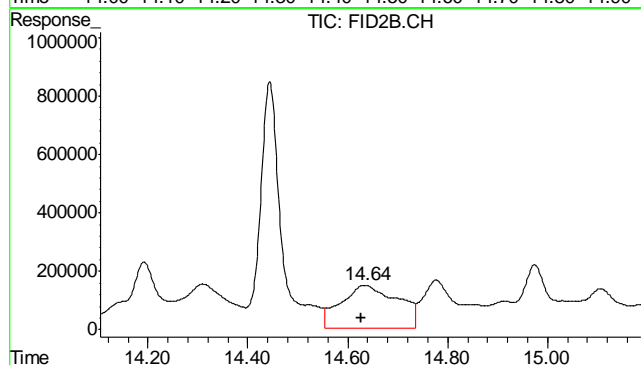
R.T.: 11.046 min
Delta R.T.: 0.002 min
Response: 373187
Conc: 0.90 ug/L

10.1.1
10



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

R.T.: 14.444 min
Delta R.T.: 0.000 min
Response: 24627768
Conc: 122.46 %



#11 Naphthalene

R.T.: 14.635 min
Delta R.T.: 0.008 min
Response: 11465116
Conc: 50.33 ug/L

10.1.1
10

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111111\GB13840.D\FID1A.CH Vial: 12
 Signal #2 : Y:\1\DATA\111111\GB13840.D\FID2B.CH
 Acq On : 11 Nov 2011 7:09 pm Operator: StephK
 Sample : MB, S Inst : GC/MS Ins
 Misc : GC2401,GGB787,5.000,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Nov 14 15:12:45 2011 Quant Results File: TB785GB785SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB785GB785SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Nov 14 15:12:10 2011
 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	14.46	2648298	93.329	%
10) S	1,2,4-Trichlorobenzene (P)	14.45	19315288	96.045	%
Target Compounds					
1) H	TVH-Gasoline	7.33	5256725	<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	7.78	166698	0.357	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	10.57	224134	0.443	ug/L
9) T	o-Xylene	11.06	113491	0.275	ug/L
11) T	Naphthalene	14.64	836237	3.187	ug/L

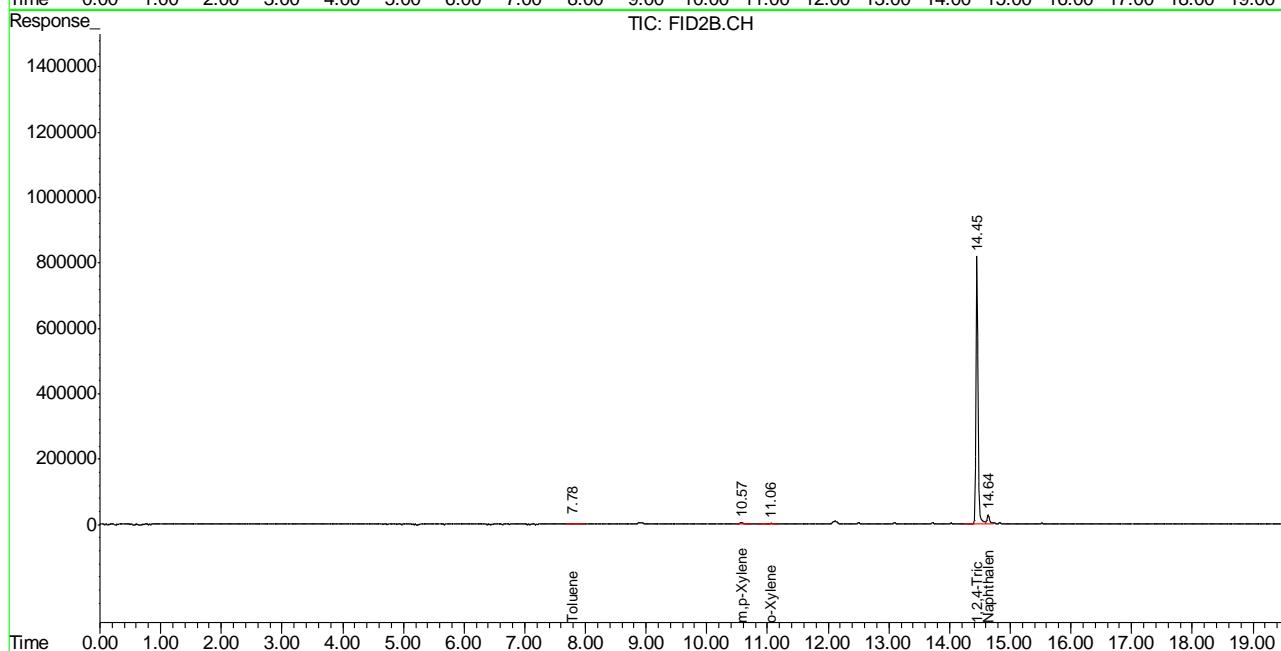
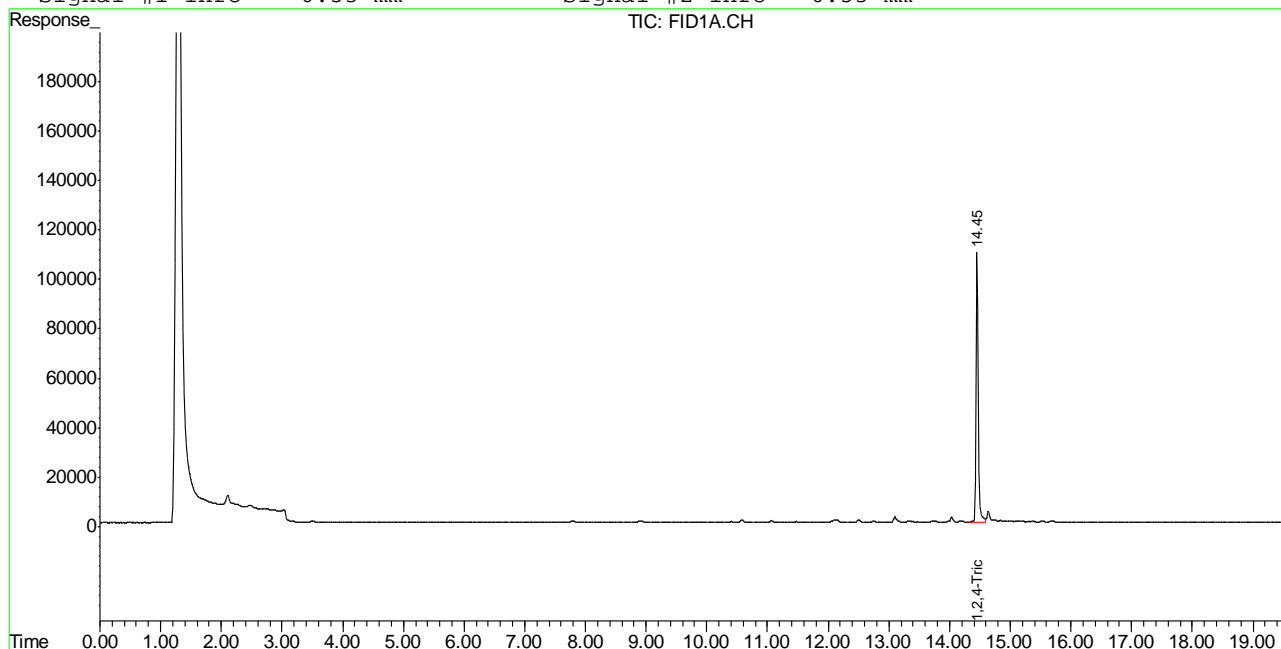
 (f)=RT Delta > 1/2 Window (m)=manual int.
 GB13840.D TB785GB785SOIL.M Mon Nov 14 15:28:59 2011 GC

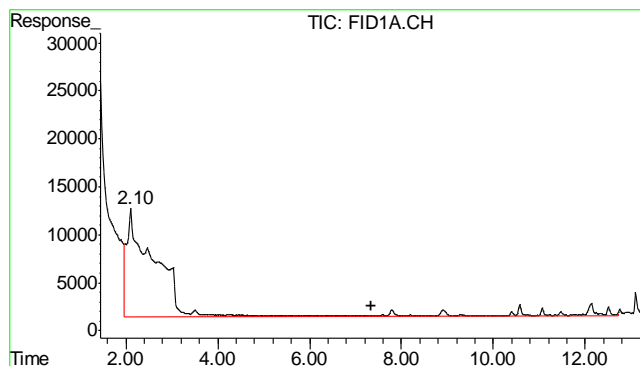
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111111\GB13840.D\FID1A.CH Vial: 12
Signal #2 : Y:\1\DATA\111111\GB13840.D\FID2B.CH
Acq On : 11 Nov 2011 7:09 pm Operator: StephK
Sample : MB, S Inst : GC/MS Ins
Misc : GC2401,GGB787,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 14 15:16 2011 Quant Results File: TB785GB785SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB785GB785SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Nov 14 15:12:10 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

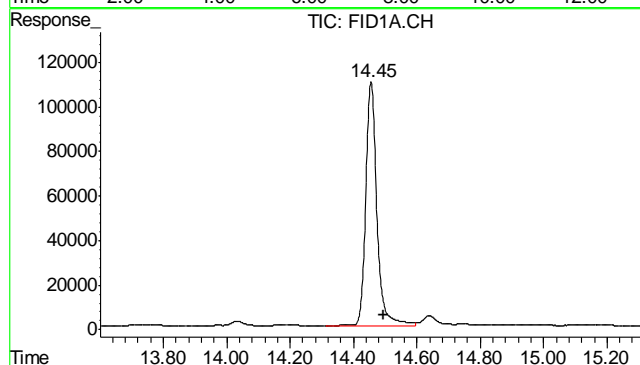
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





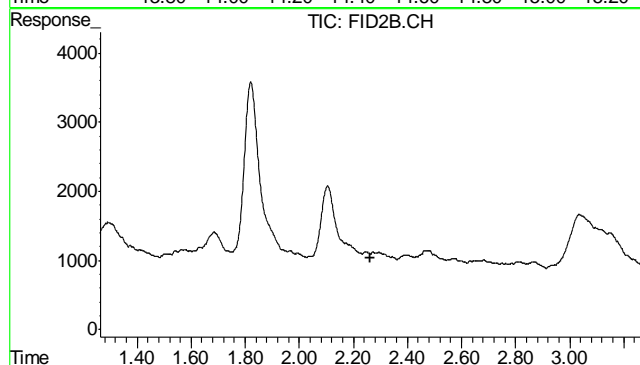
#1 TVH-Gasoline

R.T.: 7.330 min
Delta R.T.: 0.000 min
Response: 5256725
Conc: N.D.



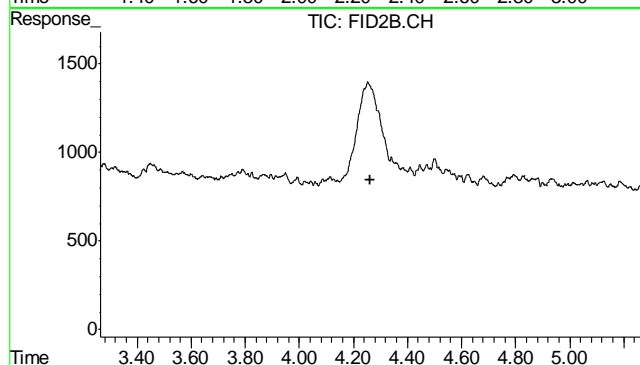
#2 1,2,4-Trichlorobenzene

R.T.: 14.456 min
Delta R.T.: -0.038 min
Response: 2648298
Conc: 93.33 %



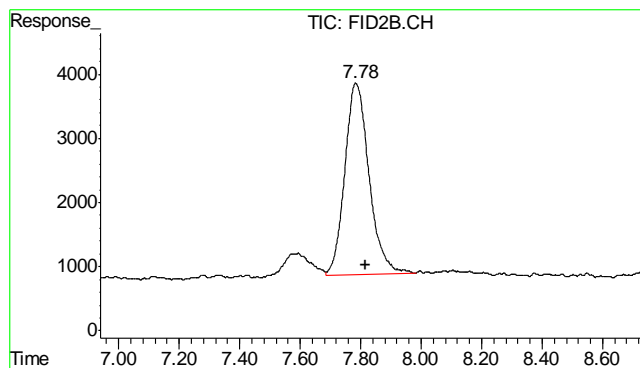
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.263 min
Response: 0
Conc: N.D.



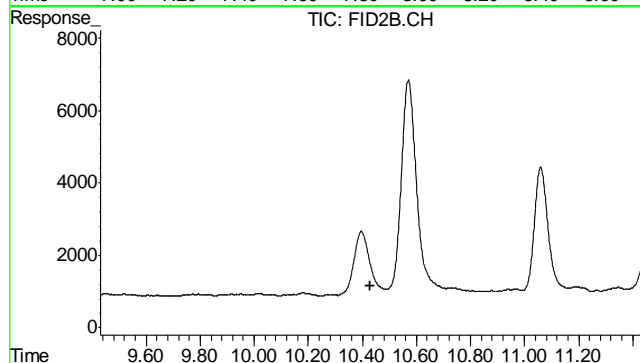
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.263 min
Response: 0
Conc: N.D.



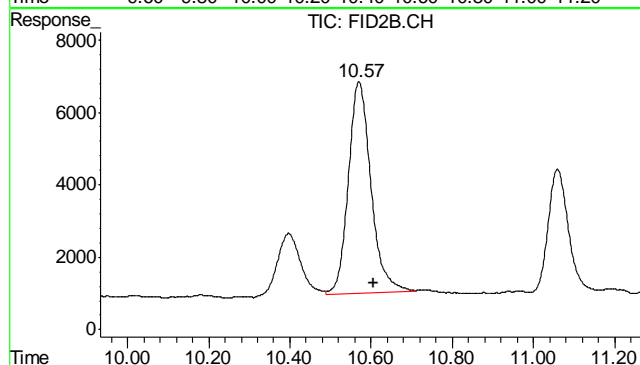
#6 Toluene

R.T.: 7.784 min
Delta R.T.: -0.034 min
Response: 166698
Conc: 0.36 ug/L



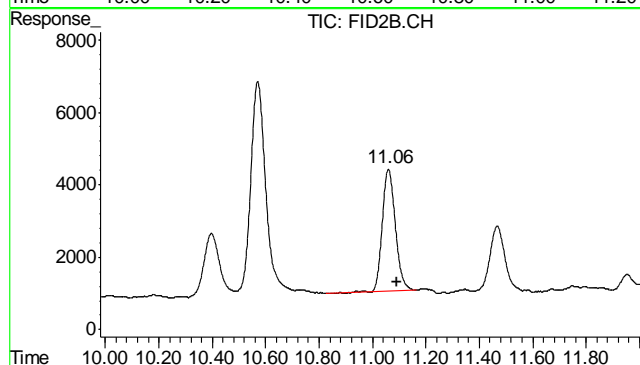
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.430 min
Response: 0
Conc: N.D.



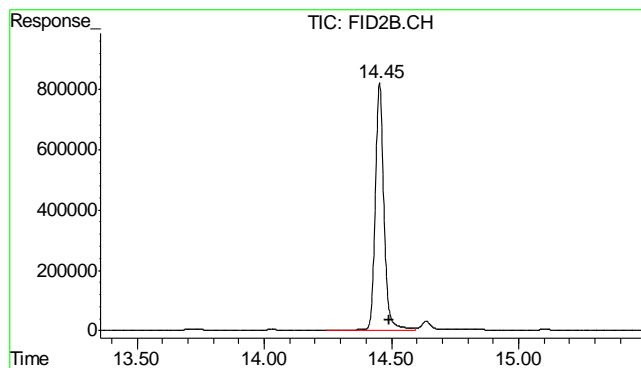
#8 m,p-Xylene

R.T.: 10.571 min
Delta R.T.: -0.035 min
Response: 224134
Conc: 0.44 ug/L



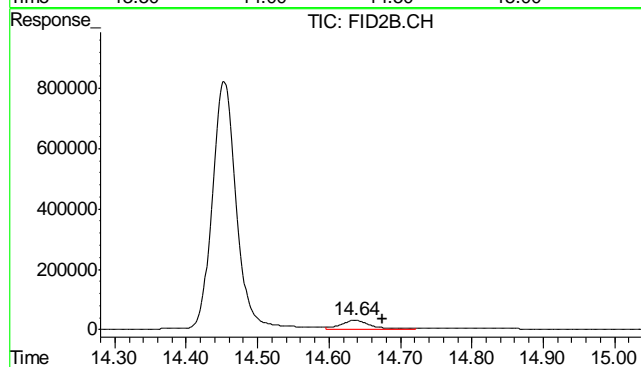
#9 o-Xylene

R.T.: 11.060 min
Delta R.T.: -0.033 min
Response: 113491
Conc: 0.27 ug/L



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

R.T.: 14.453 min
Delta R.T.: -0.038 min
Response: 19315288
Conc: 96.04 %



#11 Naphthalene

R.T.: 14.637 min
Delta R.T.: -0.038 min
Response: 836237
Conc: 3.19 ug/L

10.2.1
10

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D29396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4840-MB	FI04460.D	1	11/14/11	CS	11/14/11	OP4840	GFI327

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

D29396-1

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

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	119% 61-142%

11.1.1
11

Blank Spike Summary

Page 1 of 1

Job Number: D29396

Account: KRWCCOL KRW Consulting, Inc.

Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4840-BS	FI04461.D	1	11/14/11	CS	11/14/11	OP4840	GFI327

The QC reported here applies to the following samples:

Method: SW846-8015B

D29396-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	593	89	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	121%	61-142%

11.2.1
11

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D29396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4840-MS	FI04462.D	1	11/14/11	CS	11/14/11	OP4840	GFI327
OP4840-MSD	FI04463.D	1	11/14/11	CS	11/14/11	OP4840	GFI327
D29416-2	FI04464.D	1	11/14/11	CS	11/14/11	OP4840	GFI327

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

D29396-1

CAS No.	Compound	D29416-2 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND	688	539	78	473	69	13	24-157/35

CAS No.	Surrogate Recoveries	MS	MSD	D29416-2	Limits
84-15-1	o-Terphenyl	109%	99%	116%	61-142%

11.3.1
11

GC Semi-volatiles

Raw Data

Manual Integrations
APPROVED
(compounds with "m" flag)
Judy Melson
11/15/11 12:40

Quantitation Report (QT Reviewed)

Data File : E:\DATA\FI111411\FI04479.D Vial: 24
Acq On : 15 Nov 2011 1:44 am Operator: CHAVALIT
Sample : D29396-1 Inst : FID6
Misc : OP4840,GFI327,30.01,,,2,1 Multiplr: 1.00
IntFile : DF-GFE136.E
Quant Time: Nov 15 11:54:00 2011 Quant Results File: DF-GFI308.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI308.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Nov 14 09:02:05 2011
Response via : Initial Calibration
DataAcq Meth : FR_BASE2.M

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

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	13.59	63712723	1145.107 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	11.79	720224230	11313.363 mg/L

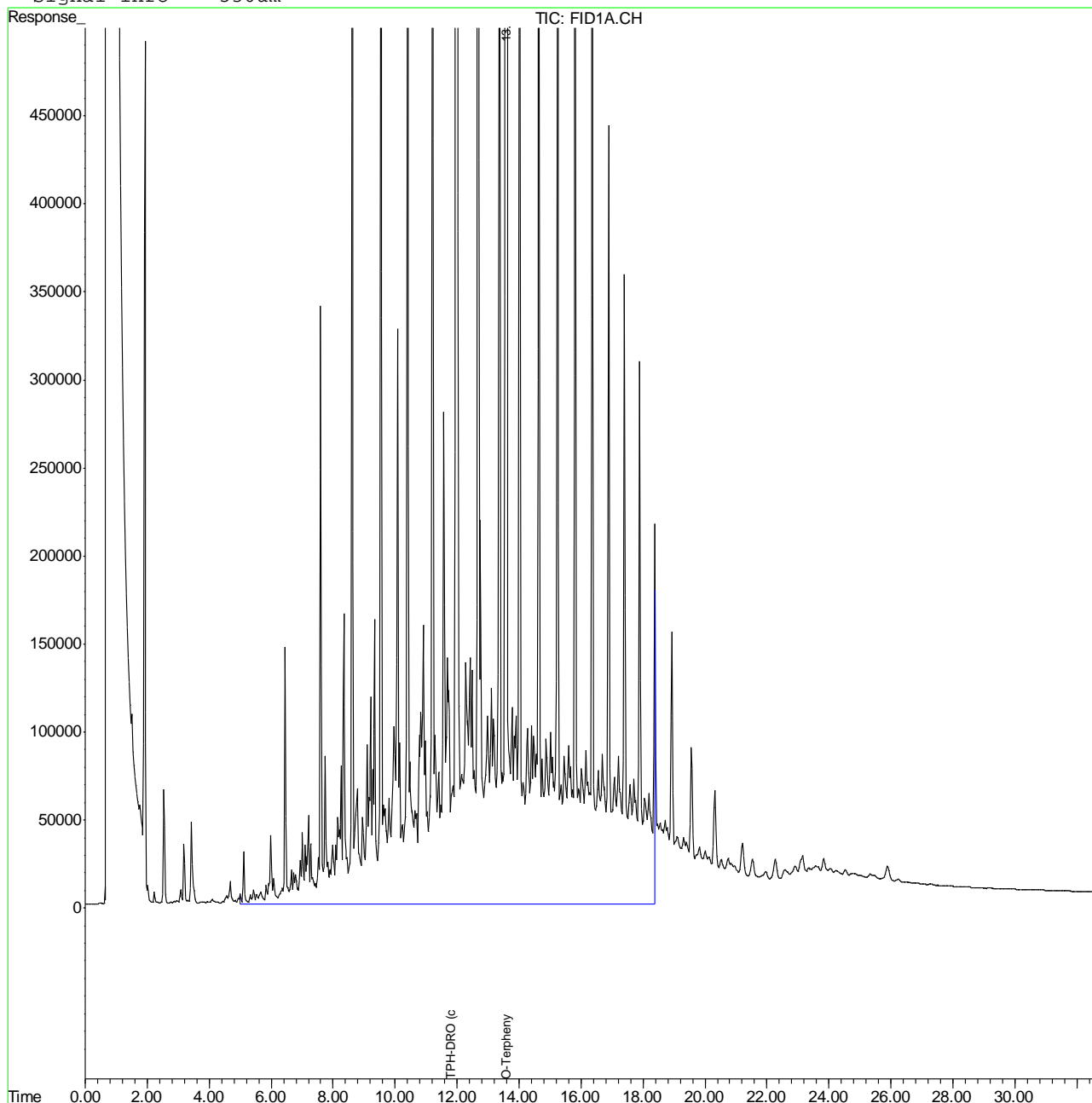
12.1.1
12

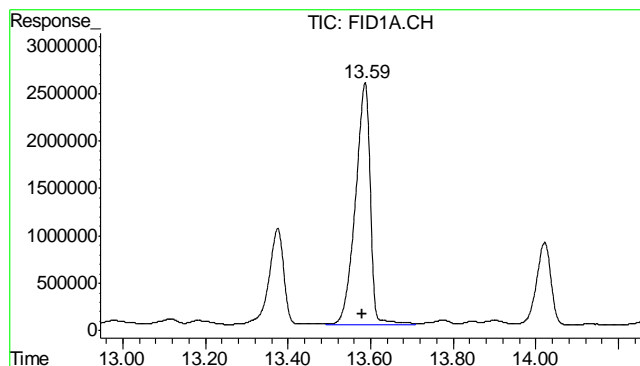
Quantitation Report (QT Reviewed)

Data File : E:\DATA\FI111411\FI04479.D Vial: 24
Acq On : 15 Nov 2011 1:44 am Operator: CHAVALIT
Sample : D29396-1 Inst : FID6
Misc : OP4840,GFI327,30.01,,,2,1 Multiplr: 1.00
IntFile : DF-GFE136.E
Quant Time: Nov 15 11:55 2011 Quant Results File: DF-GFI308.RES

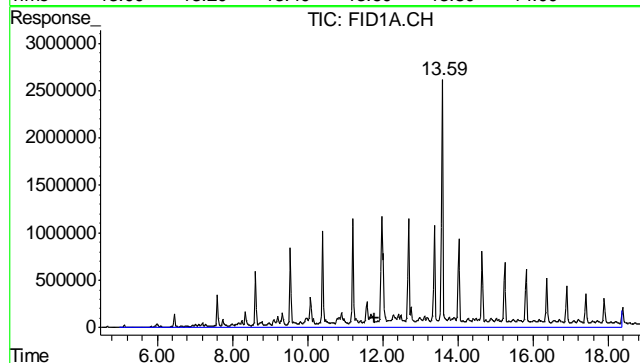
Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI308.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Nov 14 09:02:05 2011
Response via : Multiple Level Calibration
DataAcq Meth : FR_BASE2.M

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

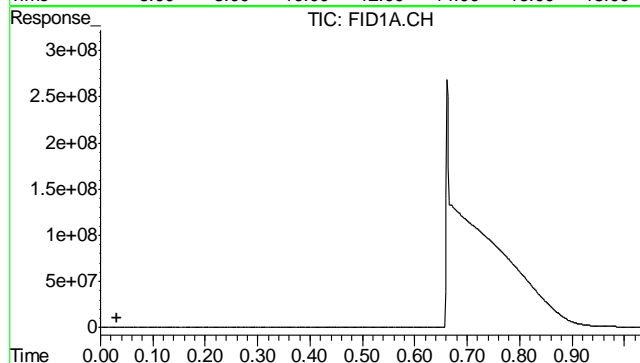




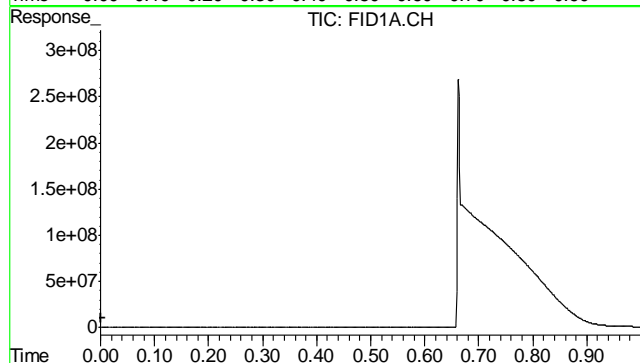
#1 O-Terphenyl
 R.T.: 13.586 min
 Delta R.T.: 0.006 min
 Response: 63712723
 Conc: 1145.11 mg/L m



#2 TPH-DRO (c10-c28)
 R.T.: 11.790 min
 Delta R.T.: 0.000 min
 Response: 720224230
 Conc: 11313.36 mg/L m

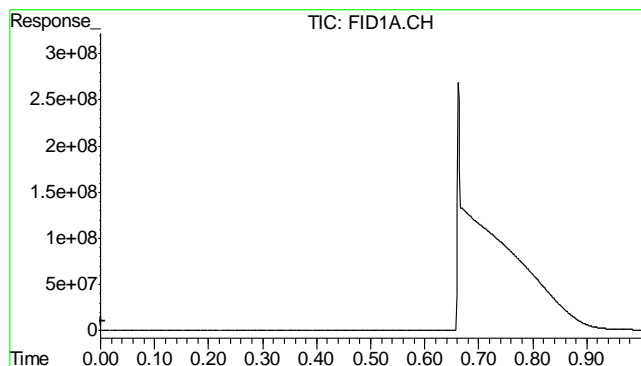


#9 5a-Androstane
 R.T.: 0.000 min
 Exp R.T.: 0.032 min
 Response: 0
 Conc: N.D.

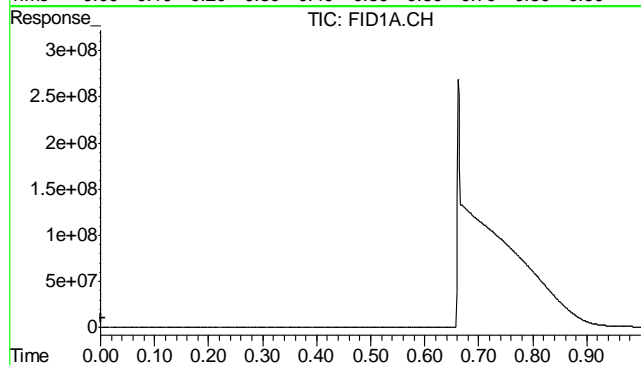


#10 2-Fluorophenol
 R.T.: 0.000 min
 Exp R.T.: 0.000 min
 Response: 0
 Conc: N.D.

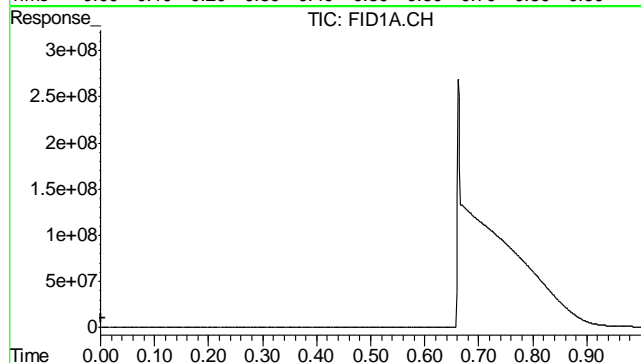
12.1.1
 12



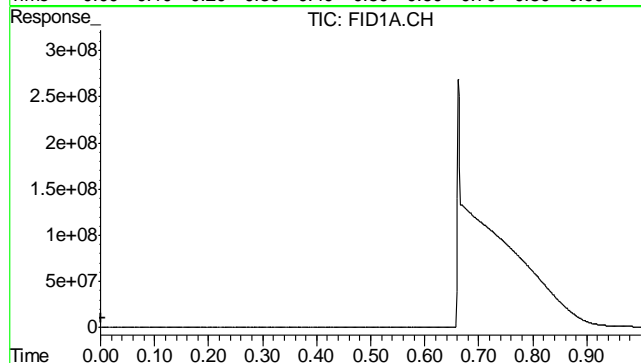
#11 Phenol-d5
 R.T.: 0.000 min
 Exp R.T. : 0.000 min
 Response: 0
 Conc: N.D.



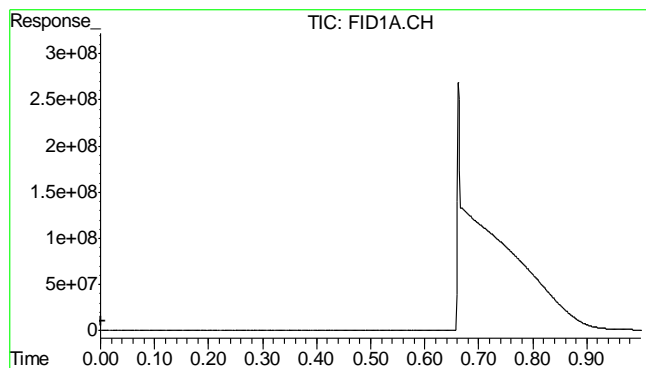
#12 Nitrobenzene-d5
 R.T.: 0.000 min
 Exp R.T. : 0.000 min
 Response: 0
 Conc: N.D.



#13 2-Fluorobiphenyl
 R.T.: 0.000 min
 Exp R.T. : 0.000 min
 Response: 0
 Conc: N.D.



#14 2,4,6-Tribromophenol
 R.T.: 0.000 min
 Exp R.T. : 0.000 min
 Response: 0
 Conc: N.D.



#15 Terphenyl-d14

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

12.1.1
12

Judy Melson
11/15/11 12:40

Quantitation Report (QT Reviewed)

Data File : E:\DATA\FI111411\FI04460.D Vial: 6
Acq On : 14 Nov 2011 12:56 pm Operator: CHAVALIT
Sample : OP4840-MB Inst : FID6
Misc : OP4840,GFI327,30.00,,,2,1 Multiplr: 1.00
IntFile : DF-GFE136.E
Quant Time: Nov 15 11:11:27 2011 Quant Results File: DF-GFI308.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI308.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Nov 14 09:02:05 2011
Response via : Initial Calibration
DataAcq Meth : FR_BASE2.M

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

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	13.59	65955466	1185.416 mg/L m

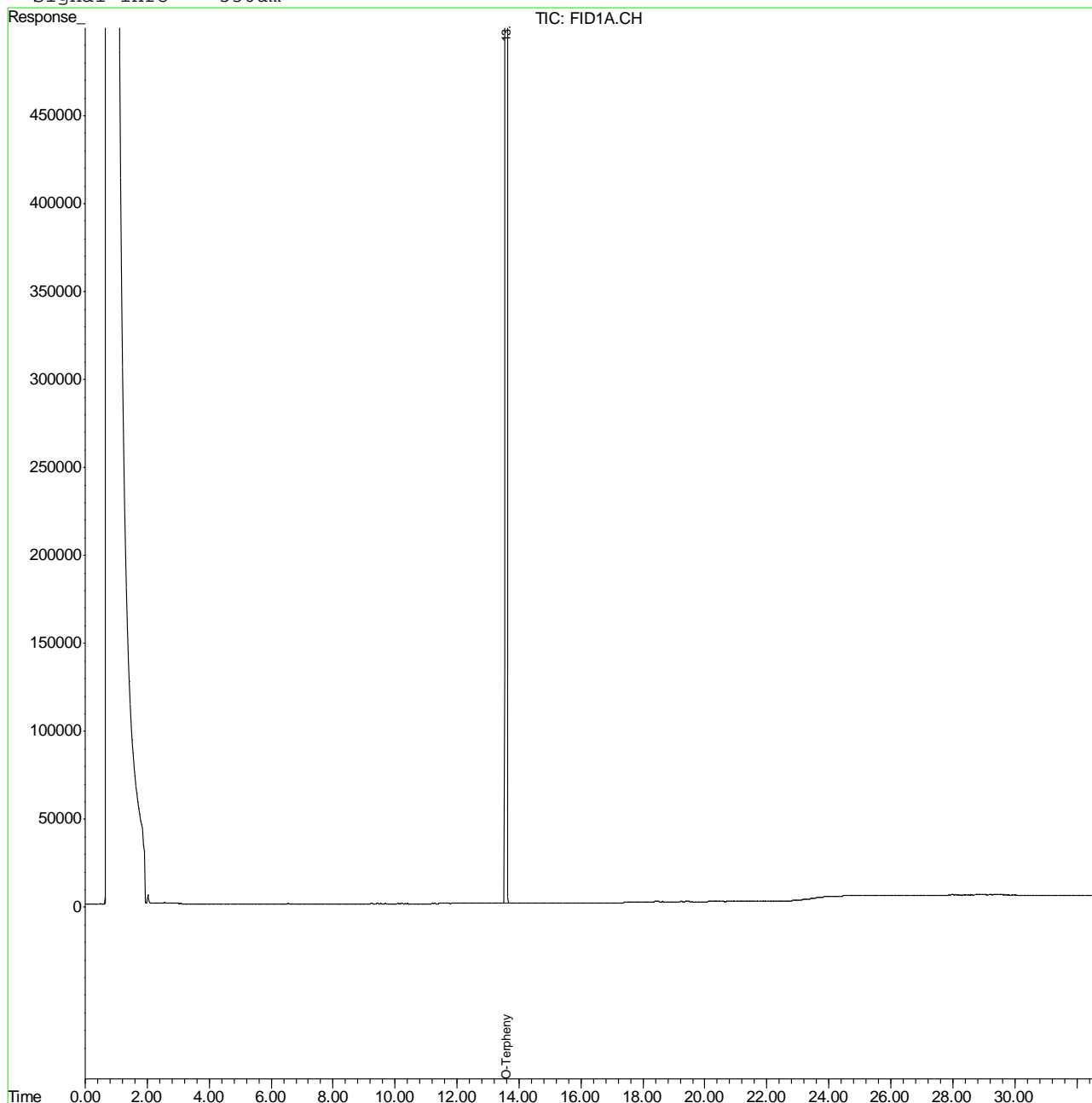
Target Compounds

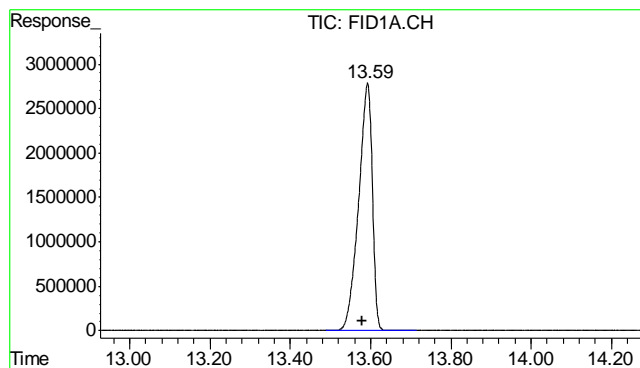
Quantitation Report (QT Reviewed)

Data File : E:\DATA\FI111411\FI04460.D Vial: 6
Acq On : 14 Nov 2011 12:56 pm Operator: CHAVALIT
Sample : OP4840-MB Inst : FID6
Misc : OP4840,GFI327,30.00,,,2,1 Multiplr: 1.00
IntFile : DF-GFE136.E
Quant Time: Nov 15 11:13 2011 Quant Results File: DF-GFI308.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI308.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Nov 14 09:02:05 2011
Response via : Multiple Level Calibration
DataAcq Meth : FR_BASE2.M

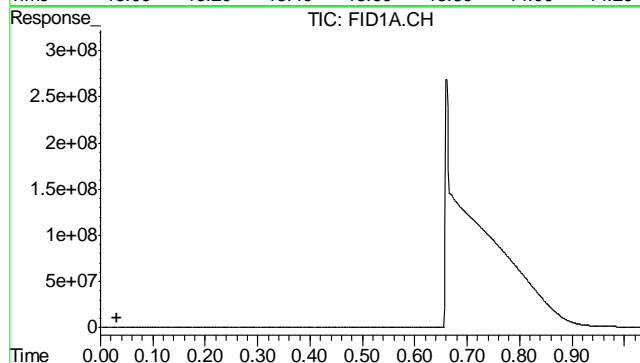
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





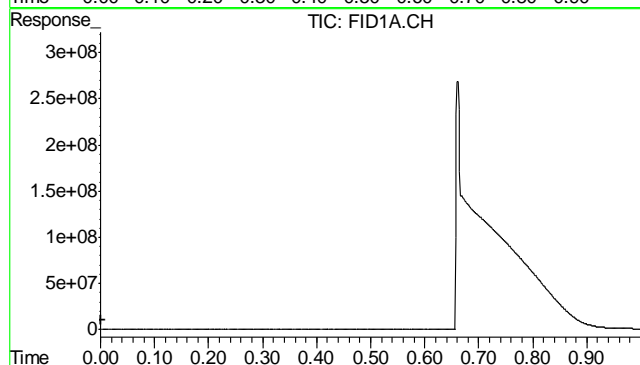
#1 O-Terphenyl

R.T.: 13.593 min
Delta R.T.: 0.013 min
Response: 65955466
Conc: 1185.42 mg/L m



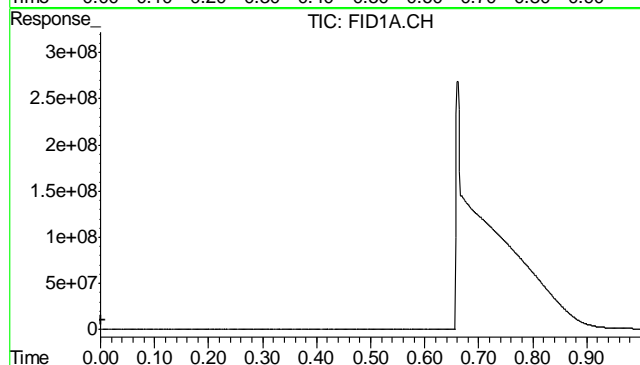
#9 5a-Androstane

R.T.: 0.000 min
Exp R.T.: 0.032 min
Response: 0
Conc: N.D.



#10 2-Fluorophenol

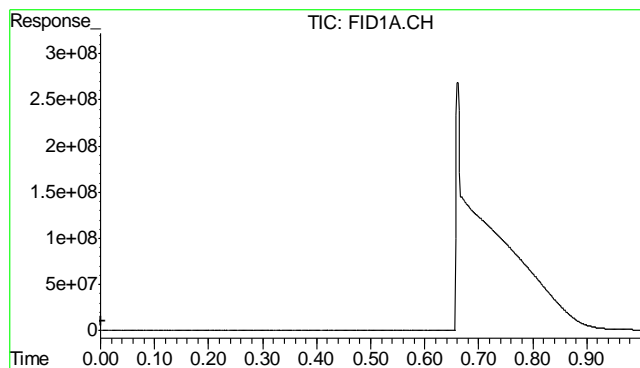
R.T.: 0.000 min
Exp R.T.: 0.000 min
Response: 0
Conc: N.D.



#11 Phenol-d5

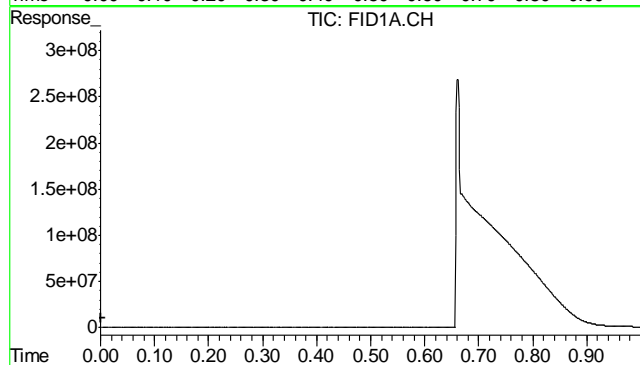
R.T.: 0.000 min
Exp R.T.: 0.000 min
Response: 0
Conc: N.D.

12.2.1
12



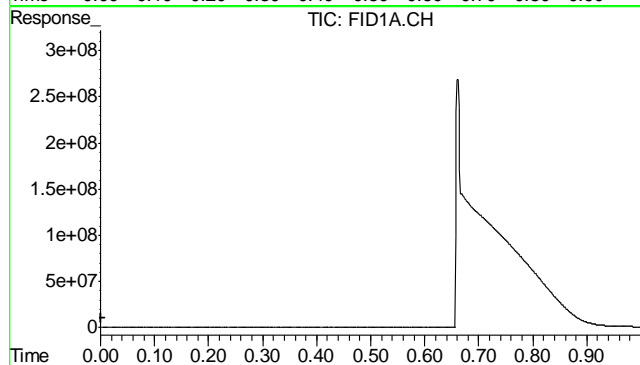
#12 Nitrobenzene-d5

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



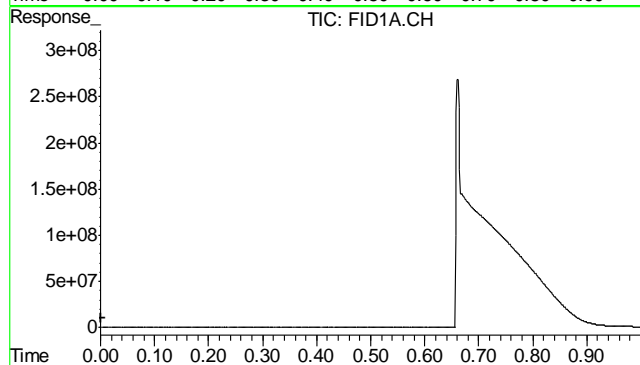
#13 2-Fluorobiphenyl

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



#14 2,4,6-Tribromophenol

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



#15 Terphenyl-d14

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

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: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6253
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/14/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.59	.59		
Antimony	3.0	.31	.31		
Arsenic	2.5	.59	.59		
Barium	1.0	.11	.11	1.2	* (a)
Beryllium	1.0	.044	.1		
Boron	5.0	.48	.48		
Cadmium	1.0	.027	.27	0.020	<1.0
Calcium	40	.96	1.1		
Chromium	1.0	.018	.031	0.10	<1.0
Cobalt	0.50	.035	.035		
Copper	1.0	.085	.16	0.14	<1.0
Iron	7.0	.34	2		
Lead	5.0	.16	.21	-0.080	<5.0
Lithium	0.20	.028	.031		
Magnesium	20	.58	1.4		
Manganese	0.50	.0053	.012		
Molybdenum	1.0	.045	.054		
Nickel	3.0	.043	.099	0.10	<3.0
Phosphorus	10	1.1	1.2		
Potassium	200	5.5	9.2		
Selenium	5.0	.38	.5	-0.47	<5.0
Silicon	5.0	.38	.51		
Silver	3.0	.018	.051	0.010	<3.0
Sodium	40	11	11		
Strontium	5.0		.017		
Thallium	1.0	.29	.34		
Tin	5.0	.55	1.3		
Titanium	1.0	.011	.1		
Uranium	5.0	.15	.2		
Vanadium	1.0	.016	.025		
Zinc	3.0	.028	.06	0.57	<3.0

Associated samples MP6253: D29396-1

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6253
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested
(a) All sample results >10x method blank concentration.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6253
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/14/11

Metal	D29399-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum	anr				
Antimony					
Arsenic	anr				
Barium	1880	2190	266	116.7	75-125
Beryllium					
Boron					
Cadmium	2.0	61.5	66.4	89.6	75-125
Calcium					
Chromium	18.0	73.6	66.4	83.7	75-125
Cobalt					
Copper	29.6	95.1	66.4	98.6	75-125
Iron	anr				
Lead	19.8	134	133	86.0	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum	anr				
Nickel	18.6	72.2	66.4	80.7	75-125
Phosphorus					
Potassium	anr				
Selenium	8.8	131	133	92.0	75-125
Silicon					
Silver	0.026	25.5	26.6	95.9	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	56.5	114	66.4	86.6	75-125

Associated samples MP6253: D29396-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6253
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

13.1.2
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6253
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/14/11

Metal	D29399-1 Original MSD		Spikelot MPICPAL % Rec	MSD RPD	QC Limit
Aluminum	anr				
Antimony					
Arsenic	anr				
Barium	1880	2070	271	70.0 (a)	5.6 20
Beryllium					
Boron					
Cadmium	2.0	58.7	67.8	83.6	4.7 20
Calcium					
Chromium	18.0	69.6	67.8	76.1	5.6 20
Cobalt					
Copper	29.6	85.8	67.8	82.9	10.3 20
Iron	anr				
Lead	19.8	127	136	79.0	5.4 20
Lithium					
Magnesium					
Manganese					
Molybdenum	anr				
Nickel	18.6	67.7	67.8	72.4N(b)	6.4 20
Phosphorus					
Potassium	anr				
Selenium	8.8	125	136	85.7	4.7 20
Silicon					
Silver	0.026	24.3	27.1	89.5	4.8 20
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	56.5	107	67.8	74.5N(b)	6.3 20

Associated samples MP6253: D29396-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6253
Matrix Type: SOLID

Methods: SW846 6010B
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.

13.1.2
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6253
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/14/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum	anr			
Antimony				
Arsenic	anr			
Barium	181	200	90.5	80-120
Beryllium				
Boron				
Cadmium	44.9	50	89.8	80-120
Calcium				
Chromium	45.8	50	91.6	80-120
Cobalt				
Copper	45.2	50	90.4	80-120
Iron	anr			
Lead	92.3	100	92.3	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum	anr			
Nickel	44.3	50	88.6	80-120
Phosphorus				
Potassium	anr			
Selenium	90.0	100	90.0	80-120
Silicon				
Silver	18.9	20	94.5	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	45.5	50	91.0	80-120

Associated samples MP6253: D29396-1

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6253
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D29396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6253
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: ug/l

Prep Date: 11/14/11

Metal	D29399-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony				
Arsenic	anr			
Barium	14600	16100	10.4*(a)	0-10
Beryllium				
Boron				
Cadmium	15.4	15.0	2.0	0-10
Calcium				
Chromium	139	152	8.7	0-10
Cobalt				
Copper	222	227	1.0	0-10
Iron	anr			
Lead	153	156	1.6	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum	anr			
Nickel	145	164	13.1*(a)	0-10
Phosphorus				
Potassium	anr			
Selenium	61.7	117	70.1 (b)	0-10
Silicon				
Silver	0.600	2.00	900.0(b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	445	529	20.6*(a)	0-10

Associated samples MP6253: D29396-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6253
Matrix Type: SOLID

Methods: SW846 6010B
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: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6254
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/14/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.19	<0.40
Barium	1.0	.0035	.1		
Beryllium	0.10	.0075	.014		
Boron	20	.97	1		
Cadmium	0.050	.023	.048		
Calcium	200	1.8	8.2		
Chromium	1.0	.021	.24		
Cobalt	0.10	.0033	.003		
Copper	1.0	.011	.063		
Iron	20	.81	3.7		
Lead	0.25	.0012	.015		
Magnesium	50	.067	2.6		
Manganese	0.50	.007	.029		
Molybdenum	0.50	.0044	.023		
Nickel	1.0	.0029	.031		
Phosphorus	30	1.8	3.5		
Potassium	100	2	3.2		
Selenium	0.20	.075	.19		
Silver	0.050	.0008	.002		
Sodium	250	.8	4.4		
Strontium	10	.004	.04		
Thallium	0.10	.015	.02		
Tin	5.0	.006	.028		
Titanium	1.0	.035	.062		
Uranium	0.25	.00038	.0009		
Vanadium	2.0	.052	.29		
Zinc	5.0	.039	.12		

Associated samples MP6254: D29396-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6254
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 11/14/11

Metal	D29399-1 Original MS		Spikelot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	14.8	160	133	109.3	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 MP6254: D29396-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6254
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/14/11

Metal	D29399-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	14.8	143	136	94.5	11.2	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 MP6254: D29396-1

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6254
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/14/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	102	100	102.0	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP6254: D29396-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6254
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 11/14/11

Metal	D29399-1			QC	
	Original	SDL 5:25	%DIF	Limits	
Aluminum					
Antimony					
Arsenic	115	121	5.6	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 MP6254: D29396-1

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

13.2.4
13

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6259
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/14/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.013	0.0015	<0.10

Associated samples MP6259: D29396-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6259
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 11/14/11

Metal	D29400-1 Original MS	Spikelot HGWSR1	% Rec	QC Limits
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Mercury	0.037	0.68	0.614	104.8	85-115
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Associated samples MP6259: D29396-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6259
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 11/14/11

Metal	D29400-1 Original MSD		Spikelot HGWSR1 % Rec		MSD RPD	QC Limit
Mercury	0.037	0.64	0.567	106.3	6.1	20

Associated samples MP6259: D29396-1

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6259
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 11/14/11

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
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Mercury	0.36	0.4	90.0	80-120
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Associated samples MP6259: D29396-1

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6269
Matrix Type: AQUEOUS

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

Prep Date: 11/15/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	30	30		
Antimony	150	16	16		
Arsenic	130	30	30		
Barium	50	5.5	5.5		
Beryllium	50	2.2	2.5		
Boron	250	24	24		
Cadmium	50	1.4	1.4		
Calcium	2000	48	75	-34	<2000
Chromium	50	.9	4		
Cobalt	25	1.8	1.8		
Copper	50	4.3	14		
Iron	350	17	65		
Lead	250	8	11		
Lithium	10	1.4	6		
Magnesium	1000	29	50	21.5	<1000
Manganese	25	.27	1.6		
Molybdenum	50	2.3	4.4		
Nickel	150	2.2	5		
Phosphorus	500	55	100		
Potassium	5000	280	280		
Selenium	250	19	19		
Silicon	250	19	19		
Silver	150	.9	1.6		
Sodium	2000	570	570	-88	<2000
Strontium	25		1.3		
Thallium	50	15	15		
Tin	250	28	50		
Titanium	50	.55	1.6		
Uranium	250	7.5	18		
Vanadium	50	.8	1.1		
Zinc	150	1.4	9		

Associated samples MP6269: D29396-1A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6269
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6269
Matrix Type: AQUEOUS

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

Prep Date: 11/15/11

Metal	D29403-1A Original MS		Spikelot MPICPAL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	6380	144000	125000	110.1	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	157	130000	125000	103.9	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	1290000	1390000	125000	80.0	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP6269: D29396-1A

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

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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6269
Matrix Type: AQUEOUS

Methods: SW846 6010B, 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: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6269
Matrix Type: AQUEOUS

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

Prep Date: 11/15/11

Metal	D29403-1A Original MSD		Spikelot MPICPALL % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	6380	145000	125000	110.9	0.7	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	157	130000	125000	103.9	0.0	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	1290000	1380000	125000	72.0 (a)	0.7	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP6269: D29396-1A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6269
Matrix Type: AQUEOUS

Methods: SW846 6010B, 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: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6269
Matrix Type: AQUEOUS

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

Prep Date: 11/15/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	137000	125000	109.6	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	131000	125000	104.8	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	129000	125000	103.2	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP6269: D29396-1A

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6269
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP5944/GN12506			umhos/cm	10008	9980	99.7	90-110%
pH	GN12476			su	8.00	8.02	100.2	99.3-100.7%

Associated Samples:
Batch GN12476: D29396-1
Batch GP5944: D29396-1
(*) Outside of QC limits

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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
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Associated Samples:
Batch GN12483: D29396-1
(*) Outside of QC limits

Misc. Forms

Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D29396

Client: AMS

Immediate Client Services Action Required: No

Date / Time Received: 11/12/2011

Delivery Method:

Client Service Action Required at Login: No

Project:

No. Coolers: 1

Airbill #'s:

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

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

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

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

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

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

Comments

General Chemistry

QC Data Summaries

(Accutest Labs of New England, Inc.)

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: D29396
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 297-17A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP13807/GN36907	0.40	0.32	mg/kg	40	42.7	106.8	80-120%
Chromium, Hexavalent	GP13807/GN36907			mg/kg	895	1040	116.2	80-120%

Associated Samples:
Batch GP13807: D29396-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29396
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 297-17A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP13807/GN36907	D29398-1	mg/kg	0.45	0.45	0.0	0-20%

Associated Samples:
Batch GP13807: D29396-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29396
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 297-17A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP13807/GN36907	D29398-1	mg/kg	0.45	46.2	50.5	108.3	75-125%
Chromium, Hexavalent	GP13807/GN36907	D29398-1	mg/kg	0.45	1420	1510	106.7	75-125%

Associated Samples:
Batch GP13807: D29396-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits