

Technical Report for

KRW Consulting, Inc.

XOM PCU 297-12A

1105-16

Accutest Job Number: D26396

Sampling Date: 08/09/11

Report to:

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Total number of pages in report: 135



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.

John Hamilton
Laboratory Director

Client Service contact: 303-425-6021

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

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

KRW Consulting, Inc.

Job No: D26396

XOM PCU 297-12A
Project No: 1105-16

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D26396-1	08/09/11	15:00 CB	08/10/11	SO	Soil	CUTTINGS PIT #1 CONTENTS
D26396-1A	08/09/11	15:00 CB	08/10/11	SO	Soil	CUTTINGS PIT #1 CONTENTS

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: KRW Consulting, Inc.

Job No D26396

Site: XOM PCU 297-12A

Report Dat 8/24/2011 4:11:09 PM

On 08/10/2011, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.2 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D26396 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: V5V1004
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) D26396-1MS, D26396-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO	Batch ID: OP4232
------------------	-------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D26355-2MS, D26355-2MSD were used as the QC samples indicated.
- The matrix spike (MS) and matrix spike duplicate (MSD) recovery(s) of multiple analytes are outside control limits. Outside control limits due to dilution.
- The RPD(s) for the MS and MSD recoveries of Pyrene are outside control limits for sample OP4232-MSD. Probable cause due to sample homogeneity.
- Sample(s) D26396-1 have surrogates outside control limits. Outside control limits due to dilution.
- D26396-1: Elevated RL due to matrix interference.

Volatiles by GC By Method SW846 8015B

Matrix SO	Batch ID: GGB705
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D26288-7MS, D26288-7MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO	Batch ID: OP4230
------------------	-------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) D26429-4MS, D26429-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- D26396-1 for o-Terphenyl: Outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

Matrix SO	Batch ID: OP4297
------------------	-------------------------

- The data for SW846-8015B meets quality control requirements.
- D26396-1: Confirmation run.

Metals By Method SW846 6010B

Matrix AQ	Batch ID: MP5487
------------------	-------------------------

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D26396-1AMS, D26396-1AMSD were used as the QC samples for the metals analysis.

Matrix SO	Batch ID: MP5445
------------------	-------------------------

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D26479-1MS, D26479-1MSD, D26479-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Cadmium, Selenium, Silver are outside control limits for sample MP5445-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- The serial dilution RPD(s) for Barium, Chromium, Lead, Nickel, Zinc are outside control limits for sample MP5445-SD1. Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020

Matrix SO	Batch ID: MP5446
------------------	-------------------------

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D26479-1MS, D26479-1MSD, D26479-1SDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Arsenic are outside control limits for sample MP5446-SD1. Serial dilution indicates possible matrix interference.

Metals By Method SW846 7471A

Matrix SO	Batch ID: MP5540
------------------	-------------------------

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D26397-1MS, D26397-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO	Batch ID: GN11018
------------------	--------------------------

- Sample(s) D26479-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM19 2540B M

Matrix SO	Batch ID: GN11027
------------------	--------------------------

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

Wet Chemistry By Method SW846 3060/7196A M

Matrix SO	Batch ID: R9233
------------------	------------------------

- The data for SW846 3060/7196A M meets quality control requirements.
- D26396-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO	Batch ID: M:GP13366
------------------	----------------------------

- The data for SW846 3060A/7196A meets quality control requirements.
- D26396-1 for Chromium, Hexavalent: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method SW846 9045C

Matrix SO	Batch ID: GN11016
------------------	--------------------------

- The following sample was run outside of holding time for method SW846 9045C: D26396-1.

Wet Chemistry By Method USDA HANDBOOK 60

Matrix SO	Batch ID: MP5487
------------------	-------------------------

- D26396-1A 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 D26396

Site: KRWCCOL: XOM PCU 297-12A

Report Date 8/23/2011 11:25:51 AM

1 Sample(s) was collected on 08/09/2011 and was received at Accutest on 08/10/2011 properly preserved, at XXXXNO TEMPERATURE FOUNDXXXX Deg. C and intact. These Samples received an Accutest job number of D26396. 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: GP13366

- 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) D26246-1DUP, D26246-1MS 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(D26396).



Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

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Client Sample ID:	CUTTINGS PIT #1 CONTENTS		
Lab Sample ID:	D26396-1	Date Sampled:	08/09/11
Matrix:	SO - Soil	Date Received:	08/10/11
Method:	SW846 8260B	Percent Solids:	88.2
Project:	XOM PCU 297-12A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V16961.D	1	08/11/11	DC	n/a	n/a	V5V1004
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	92.9	63	28	ug/kg	
108-88-3	Toluene	1210	130	63	ug/kg	
100-41-4	Ethylbenzene	384	130	32	ug/kg	
1330-20-7	Xylene (total)	1800	250	130	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	110%		61-130%
460-00-4	4-Bromofluorobenzene	111%		53-131%
17060-07-0	1,2-Dichloroethane-D4	101%		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:	CUTTINGS PIT #1 CONTENTS		
Lab Sample ID:	D26396-1	Date Sampled:	08/09/11
Matrix:	SO - Soil	Date Received:	08/10/11
Method:	SW846 8270C BY SIM SW846 3546	Percent Solids:	88.2
Project:	XOM PCU 297-12A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3G05451.D	25	08/15/11	TMB	08/10/11	OP4232	E3G199
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	190	150	ug/kg	
120-12-7	Anthracene	ND	190	170	ug/kg	
56-55-3	Benzo(a)anthracene	ND	470	250	ug/kg	
50-32-8	Benzo(a)pyrene	ND	470	340	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	470	350	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	470	210	ug/kg	
218-01-9	Chrysene	ND	470	210	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	470	350	ug/kg	
206-44-0	Fluoranthene	ND	190	190	ug/kg	
86-73-7	Fluorene	ND	190	160	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	570	520	ug/kg	
91-20-3	Naphthalene	ND	190	180	ug/kg	
129-00-0	Pyrene	ND	190	180	ug/kg	

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

(a) Elevated RL due to matrix interference.

(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUTTINGS PIT #1 CONTENTS		
Lab Sample ID:	D26396-1	Date Sampled:	08/09/11
Matrix:	SO - Soil	Date Received:	08/10/11
Method:	SW846 8015B	Percent Solids:	88.2
Project:	XOM PCU 297-12A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB12390.D	1	08/15/11	SK	n/a	n/a	GGB705
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)	73.3	13	6.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	82%		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:	CUTTINGS PIT #1 CONTENTS		
Lab Sample ID:	D26396-1	Date Sampled:	08/09/11
Matrix:	SO - Soil	Date Received:	08/10/11
Method:	SW846-8015B SW846 3546	Percent Solids:	88.2
Project:	XOM PCU 297-12A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD09046.D	1	08/13/11	CS	08/11/11	OP4230	GFD389
Run #2 ^a	FD09322.D	1	08/19/11	KV	08/18/11	OP4297	GFD401

	Initial Weight	Final Volume
Run #1	30.0 g	2.0 ml
Run #2	30.1 g	2.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	408	15	9.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	50% ^b	58%	61-142%

(a) Confirmation run.

(b) Outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

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

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

Report of Analysis

Client Sample ID: CUTTINGS PIT #1 CONTENTS	Date Sampled: 08/09/11
Lab Sample ID: D26396-1	Date Received: 08/10/11
Matrix: SO - Soil	Percent Solids: 88.2
Project: XOM PCU 297-12A	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	10.0	0.42	mg/kg	5	08/12/11	08/12/11 GJ	SW846 6020 ¹	SW846 3050B ⁵
Barium	2090	1.1	mg/kg	1	08/12/11	08/13/11 JM	SW846 6010B ²	SW846 3050B ⁴
Cadmium	1.5	1.1	mg/kg	1	08/12/11	08/13/11 JM	SW846 6010B ²	SW846 3050B ⁴
Chromium	14.8	1.1	mg/kg	1	08/12/11	08/13/11 JM	SW846 6010B ²	SW846 3050B ⁴
Copper	25.1	1.1	mg/kg	1	08/12/11	08/13/11 JM	SW846 6010B ²	SW846 3050B ⁴
Lead	12.9	5.3	mg/kg	1	08/12/11	08/13/11 JM	SW846 6010B ²	SW846 3050B ⁴
Mercury	< 0.098	0.098	mg/kg	1	08/23/11	08/23/11 JM	SW846 7471A ³	SW846 7471A ⁶
Nickel	14.9	3.2	mg/kg	1	08/12/11	08/13/11 JM	SW846 6010B ²	SW846 3050B ⁴
Selenium	< 5.3	5.3	mg/kg	1	08/12/11	08/13/11 JM	SW846 6010B ²	SW846 3050B ⁴
Silver	< 3.2	3.2	mg/kg	1	08/12/11	08/13/11 JM	SW846 6010B ²	SW846 3050B ⁴
Zinc	51.9	3.2	mg/kg	1	08/12/11	08/13/11 JM	SW846 6010B ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA1744
- (2) Instrument QC Batch: MA1745
- (3) Instrument QC Batch: MA1769
- (4) Prep QC Batch: MP5445
- (5) Prep QC Batch: MP5446
- (6) Prep QC Batch: MP5540

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUTTINGS PIT #1 CONTENTS	Date Sampled: 08/09/11
Lab Sample ID: D26396-1	Date Received: 08/10/11
Matrix: SO - Soil	Percent Solids: 88.2
Project: XOM PCU 297-12A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	< 0.45	0.45	mg/kg	1	08/18/11 14:59	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	14.8	1.6	mg/kg	1	08/18/11 14:59	AMA	SW846 3060/7196A M
Redox Potential Vs H2	138		mv	1	08/12/11	JD	ASTM D1498-76M
Solids, Percent	88.2		%	1	08/15/11	SWT	SM19 2540B M
Specific Conductivity	2520	1.0	umhos/cm	1	08/18/11	CJ	DEPT.OF AG, BOOK N9
pH	11.55		su	1	08/12/11 14:35	JK	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: CUTTINGS PIT #1 CONTENTS	Date Sampled: 08/09/11
Lab Sample ID: D26396-1A	Date Received: 08/10/11
Matrix: SO - Soil	Percent Solids: 88.2
Project: XOM PCU 297-12A	

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	7.90	2.0	mg/l	1	08/17/11	08/17/11 JM	SW846 6010B ¹	EPA 200.7 ²
Magnesium	< 1.0	1.0	mg/l	1	08/17/11	08/17/11 JM	SW846 6010B ¹	EPA 200.7 ²
Sodium	469	2.0	mg/l	1	08/17/11	08/17/11 JM	SW846 6010B ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1757

(2) Prep QC Batch: MP5487

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUTTINGS PIT #1 CONTENTS	Date Sampled: 08/09/11
Lab Sample ID: D26396-1A	Date Received: 08/10/11
Matrix: SO - Soil	Percent Solids: 88.2
Project: XOM PCU 297-12A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	43.2		ratio	1	08/17/11 17:41	JM	USDA HANDBOOK 60

(a) Calculated as: $(Na \text{ meq/L}) / \sqrt{[(Ca \text{ meq/L}) + (Mg \text{ meq/L})/2]}$

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

FED EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # <u>D26396</u>

Client / Reporting Information			Project Information					Requested Analysis (see TEST CODE sheet)										Matrix Codes				
Company Name <u>KRW Consulting</u>			Project Name <u>XOM PCU 297-12A</u>															DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank				
Street Address <u>8000 W. 14th Ave Ste 200</u>			Street:																			
City State Zip <u>Lakewood CO 80214</u>			City:																			
Project Contact <u>Dwayne Kundson</u>			Project # <u>1105-16</u>																			
Phone # <u>970 675 4066</u>			Client PO#																			
Sampler(s) Name(s) <u>Cathy Burger</u>			Project Manager <u>Joe Hess</u>																			
Phone # <u>970 756 2993</u>			Attention:																			
PO#			PO#																			
Accutest Sample #	Field ID / Point of Collection	MECH/ID/ Vial #	Collection			Matrix	# of bottles	Number of preserved Bottles										LAB USE ONLY				
			Date	Time	Sampled by			ICI	MESH	HM03	HUS04	NONE	D/ Vial	MECH	EN-CORE	Blank						
	<u>Cuttings Pit #1 Contents</u>		<u>8-9-11</u>	<u>15:00</u>	<u>CB</u>	<u>SO</u>	<u>5</u>															<u>01</u>
																						<u>Sp</u>

4.1
4

Table 910-1

LAB USE ONLY
01
Sp

Turnaround Time (Business days) <input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> Std. 5 Business Days (By Contract only) <input type="checkbox"/> 5 Day F/ SH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <small>Emergency & Rush T/A data available VIA Lablink</small>	Approved By (Accutest PM): / Date: _____ _____ _____	<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> Commercial "B" - Narrative <input type="checkbox"/> FULLTI (Level 3-4) Commercial "A" = Results Only Commercial "B" = Results + QC Summary	<input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input checked="" type="checkbox"/> PDF Comments / Special Instructions <u>Please email results to KRW</u> <u>Presence XOM Team</u>
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Sample Custody must be documented below, each time samples change possession, including courier delivery.

Relinquished by Sampler: <u>RRR-B</u>	Date Time: <u>8/10/11</u>	Received By: <u>[Signature]</u>	Date Time: <u>8/10/11</u>	Relinquished By: <u>[Signature]</u>	Date Time: <u>8/10/11</u>	Received By: <u>[Signature]</u>
Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:
Relinquished by:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:
Relinquished by:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1004-MB	5V16959.D	1	08/11/11	DC	n/a	n/a	V5V1004

The QC reported here applies to the following samples:

Method: SW846 8260B

D26396-1

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	113%	61-130%
460-00-4	4-Bromofluorobenzene	104%	53-131%
17060-07-0	1,2-Dichloroethane-D4	101%	62-130%

Blank Spike Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1004-BS	5V16960.D	1	08/11/11	DC	n/a	n/a	V5V1004

The QC reported here applies to the following samples:

Method: SW846 8260B

D26396-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	51.3	103	70-130
100-41-4	Ethylbenzene	50	52.0	104	70-130
108-88-3	Toluene	50	50.8	102	70-130
1330-20-7	Xylene (total)	150	156	104	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	108%	61-130%
460-00-4	4-Bromofluorobenzene	110%	53-131%
17060-07-0	1,2-Dichloroethane-D4	101%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D26396-1MS	5V16962.D	1	08/11/11	DC	n/a	n/a	V5V1004
D26396-1MSD	5V16963.D	1	08/11/11	DC	n/a	n/a	V5V1004
D26396-1	5V16961.D	1	08/11/11	DC	n/a	n/a	V5V1004

The QC reported here applies to the following samples:

Method: SW846 8260B

D26396-1

CAS No.	Compound	D26396-1 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	92.9	3150	3380	104	3210	99	5	70-134/30
100-41-4	Ethylbenzene	384	3150	3630	103	3480	98	4	70-137/30
108-88-3	Toluene	1210	3150	4270	97	4040	90	6	70-130/30
1330-20-7	Xylene (total)	1800	9450	11700	105	11000	97	6	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D26396-1	Limits
2037-26-5	Toluene-D8	110%	99%	110%	61-130%
460-00-4	4-Bromofluorobenzene	123%	112%	111%	53-131%
17060-07-0	1,2-Dichloroethane-D4	105%	93%	101%	62-130%

5.3.1
5

GC/MS Volatiles

Raw Data

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5081111.S\
Data File : 5V16961.D
Acq On : 11 Aug 2011 12:40 pm
Operator : DONC
Sample : D26396-1, 50x
Misc : MS2556,V5V1004,5.030,,100,5,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 12 12:15:19 2011
Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
Quant Title : 8260
QLast Update : Wed Aug 10 06:49:20 2011
Response via : Initial Calibration

Table with 7 columns: Internal Standards, R.T., QIon, Response, Conc, Units, Dev(Min). Rows include Pentafluorobenzene, 1,4-Difluorobenzene, Chlorobenzene-d5, and 1,4-Dichlorobenzene-d4.

Table with 7 columns: System Monitoring Compounds, R.T., QIon, Response, Conc, Units, Dev(Min). Rows include 1,2-Dichloroethane-d4, Toluene-d8, and 4-Bromofluorobenzene with Spiked Amount and Recovery data.

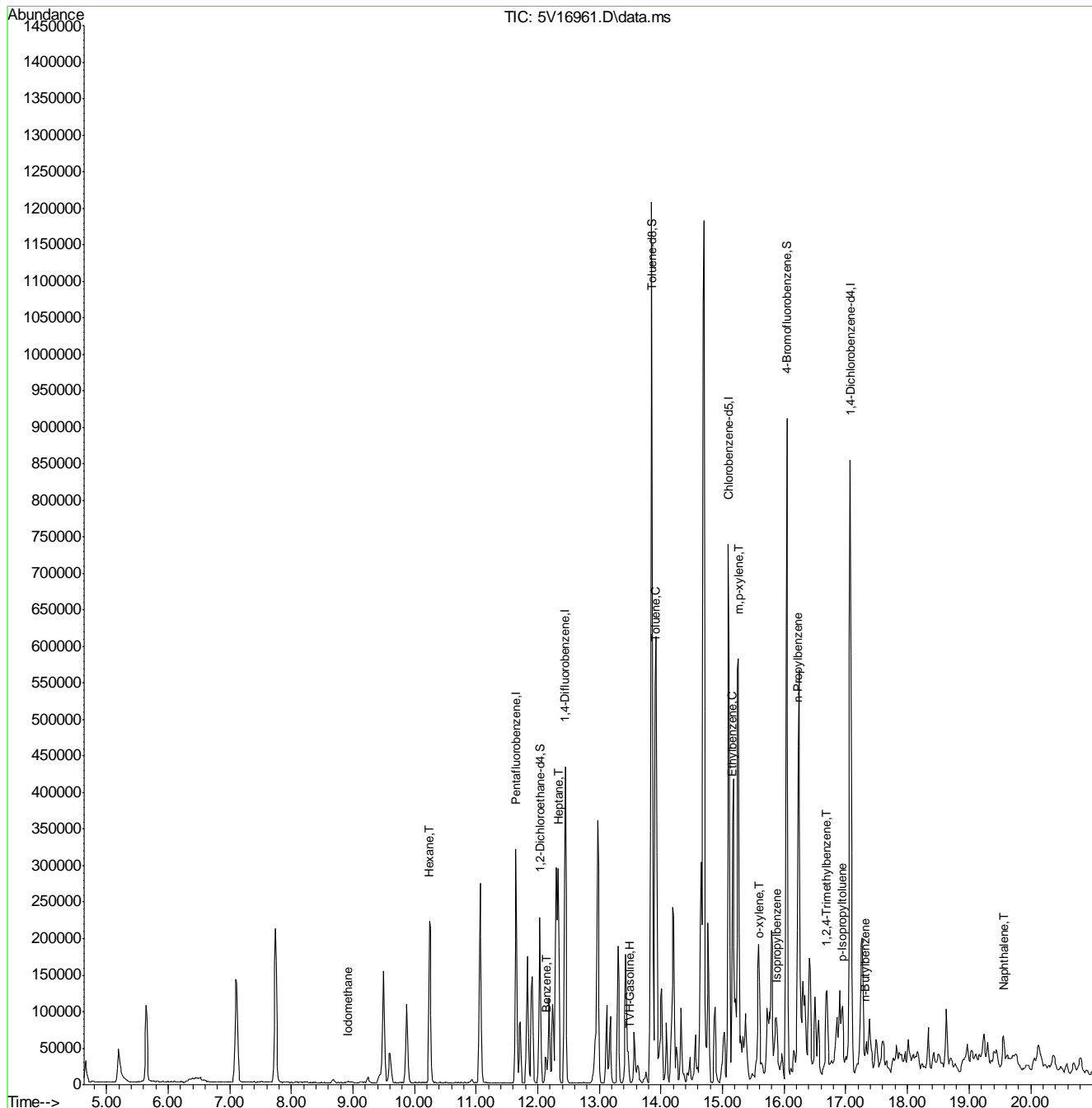
Table with 7 columns: Target Compounds, R.T., QIon, Response, Conc, Units, Qvalue. Lists various hydrocarbons like TVH-Gasoline, Iodomethane, Hexane, Heptane, Benzene, Toluene, Ethylbenzene, Isopropylbenzene, m,p-xylene, o-xylene, n-Propylbenzene, 1,2,4-Trimethylbenzene, p-Isopropyltoluene, n-Butylbenzene, and Naphthalene.

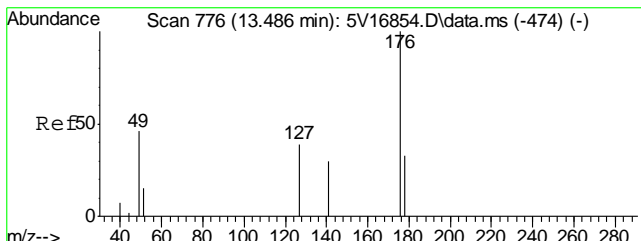
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

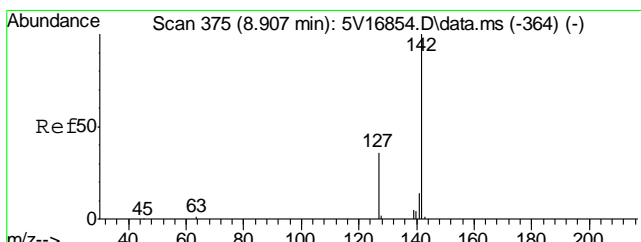
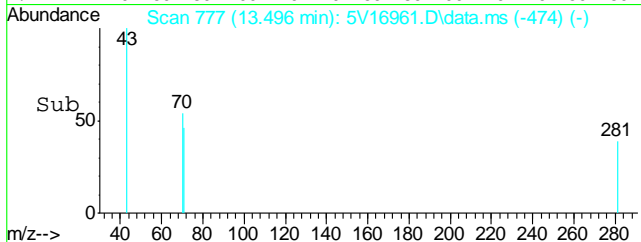
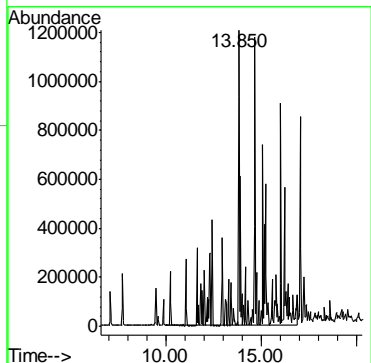
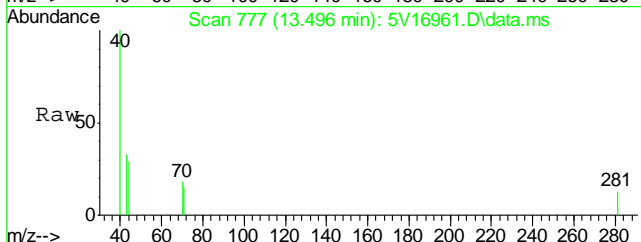
Data Path : C:\msdchem\1\DATA\V5081111.S\
 Data File : 5V16961.D
 Acq On : 11 Aug 2011 12:40 pm
 Operator : DONC
 Sample : D26396-1, 50x
 Misc : MS2556,V5V1004,5.030,,100,5,1
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 12 12:15:19 2011
 Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
 Quant Title : 8260
 QLast Update : Wed Aug 10 06:49:20 2011
 Response via : Initial Calibration

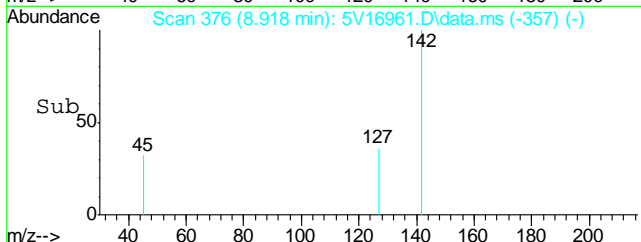
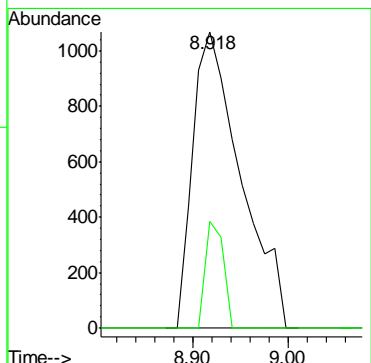
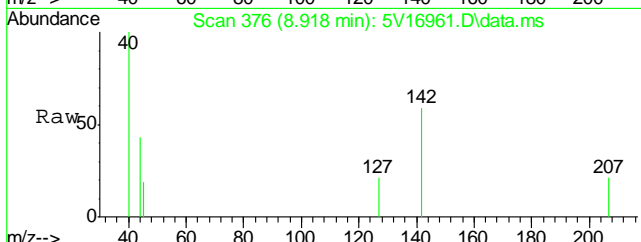


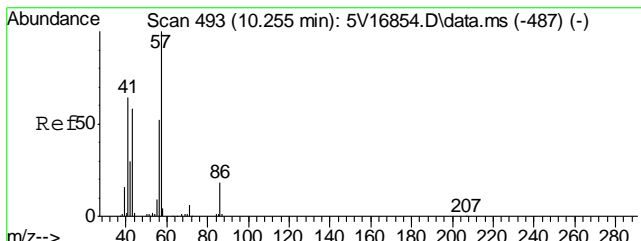


#1
 TVH-Gasoline
 Concen: 863.34 ug/l m
 RT: 13.491 min Scan# 777
 Delta R.T. 0.000 min
 Lab File: 5V16961.D
 Acq: 11 Aug 2011 12:40 pm
 Tgt Ion:TIC Resp:18498353

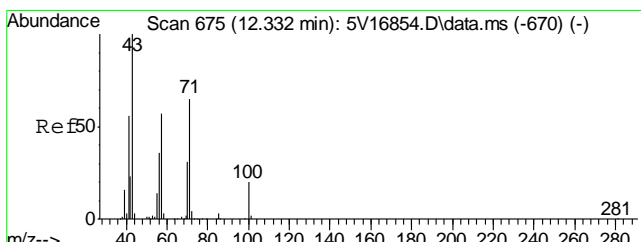
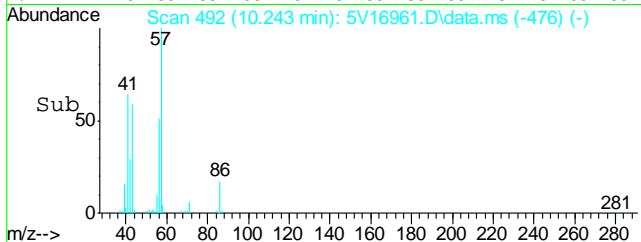
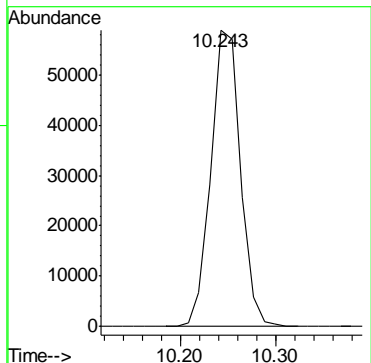
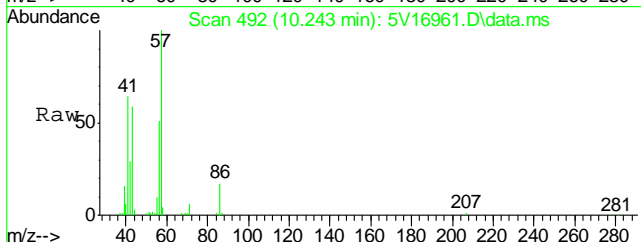


#12
 Iodomethane
 Concen: 2.13 ug/l
 RT: 8.918 min Scan# 376
 Delta R.T. 0.011 min
 Lab File: 5V16961.D
 Acq: 11 Aug 2011 12:40 pm
 Tgt Ion:142 Resp: 3741
 Ion Ratio Lower Upper
 142 100
 127 13.0 32.0 48.0#

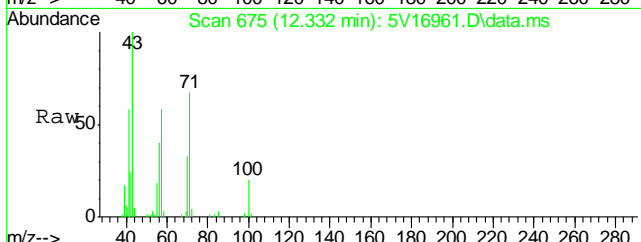




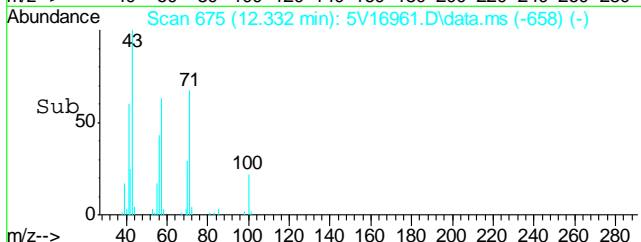
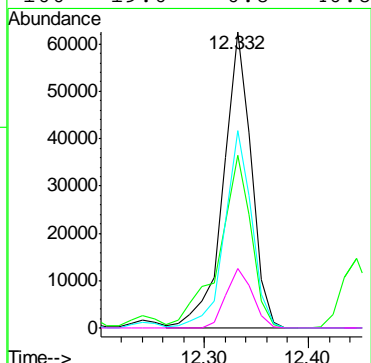
#41
Hexane
Concen: 25.63 ug/l
RT: 10.243 min Scan# 492
Delta R.T. -0.012 min
Lab File: 5V16961.D
Acq: 11 Aug 2011 12:40 pm
Tgt Ion: 57 Resp: 126329

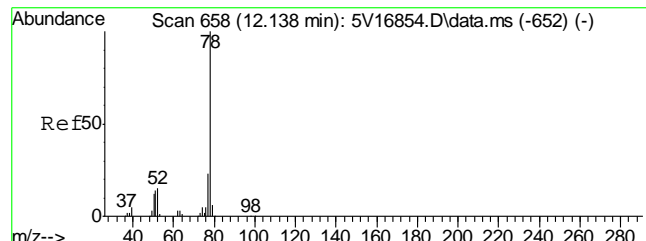


#43
Heptane
Concen: 21.55 ug/l
RT: 12.332 min Scan# 675
Delta R.T. -0.001 min
Lab File: 5V16961.D
Acq: 11 Aug 2011 12:40 pm
Tgt Ion: 43 Resp: 117201

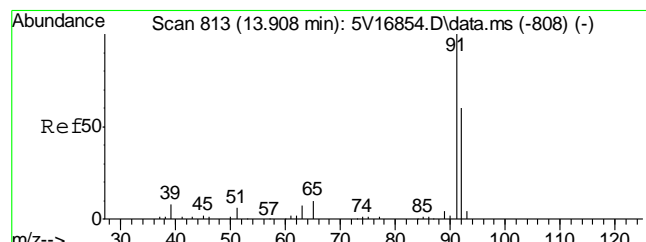
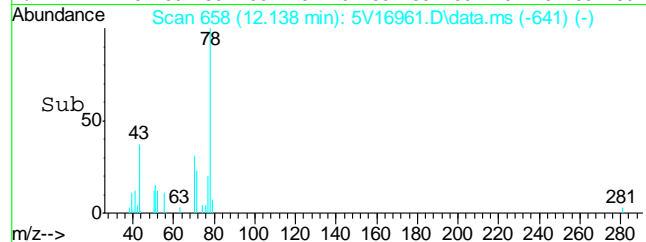
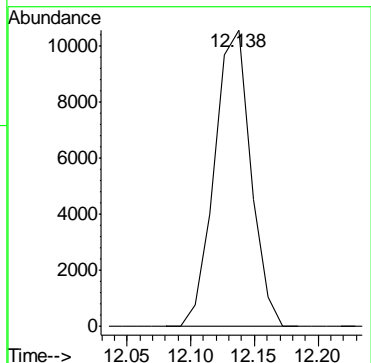
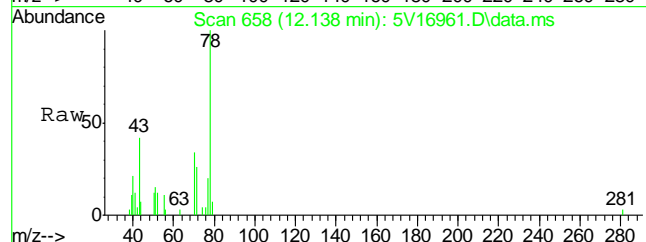


Ion	Ratio	Lower	Upper
43	100		
57	66.8	37.4	77.4
71	64.7	46.4	86.4
100	19.0	0.8	40.8

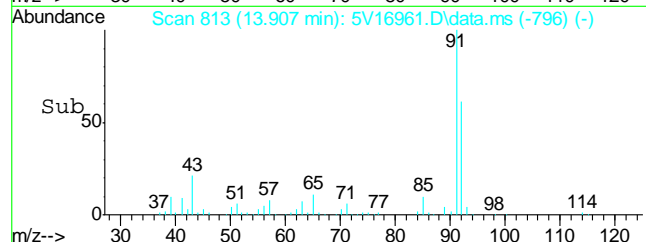
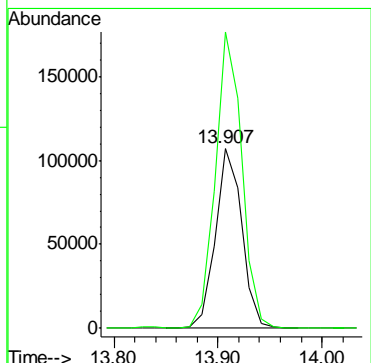
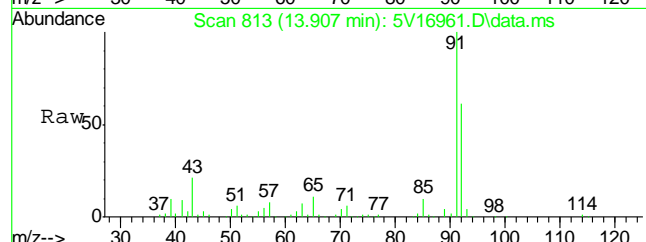


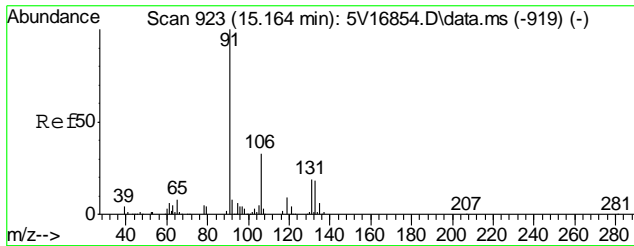


#50
Benzene
Concen: 1.47 ug/l
RT: 12.138 min Scan# 658
Delta R.T. -0.000 min
Lab File: 5V16961.D
Acq: 11 Aug 2011 12:40 pm
Tgt Ion: 78 Resp: 20932



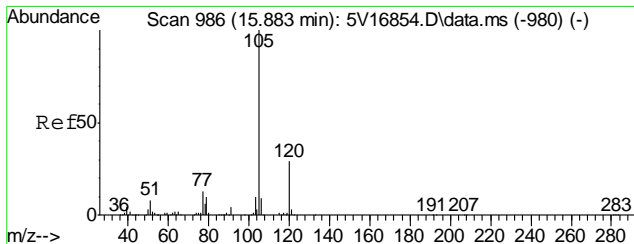
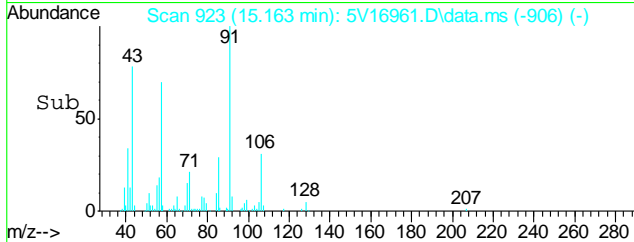
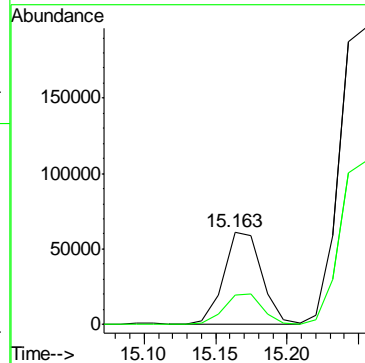
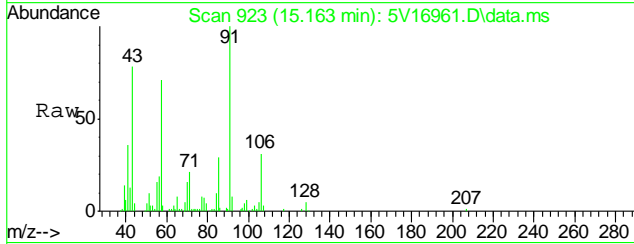
#62
Toluene
Concen: 19.17 ug/l
RT: 13.907 min Scan# 813
Delta R.T. -0.001 min
Lab File: 5V16961.D
Acq: 11 Aug 2011 12:40 pm
Tgt Ion: 92 Resp: 188748
Ion Ratio Lower Upper
92 100
91 166.0 146.1 186.1





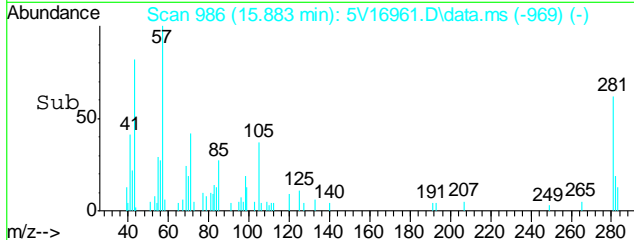
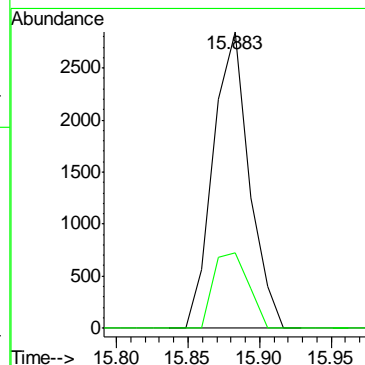
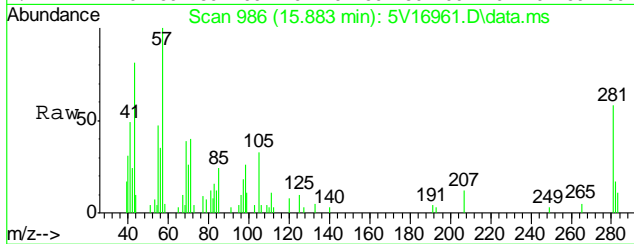
#66
Ethylbenzene
Concen: 6.10 ug/l
RT: 15.163 min Scan# 923
Delta R.T. -0.000 min
Lab File: 5V16961.D
Acq: 11 Aug 2011 12:40 pm

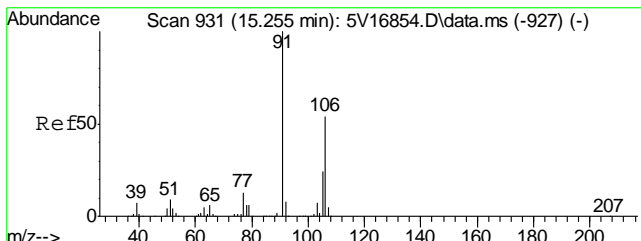
Tgt Ion: 91 Resp: 112452
Ion Ratio Lower Upper
91 100
106 33.3 13.0 53.0



#68
Isopropylbenzene
Concen: 0.27 ug/l
RT: 15.883 min Scan# 986
Delta R.T. -0.000 min
Lab File: 5V16961.D
Acq: 11 Aug 2011 12:40 pm

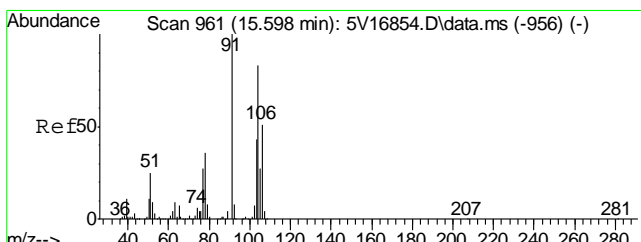
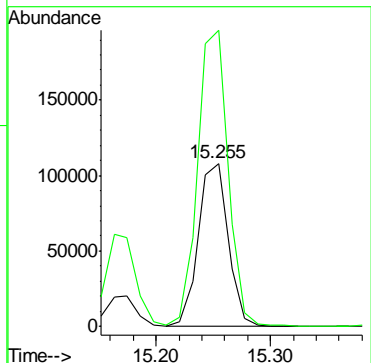
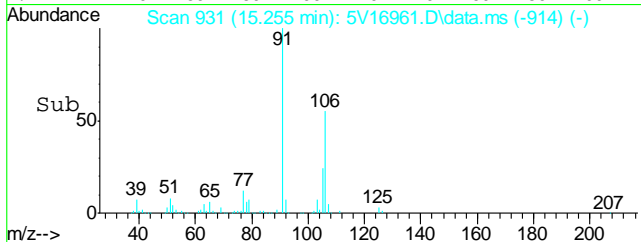
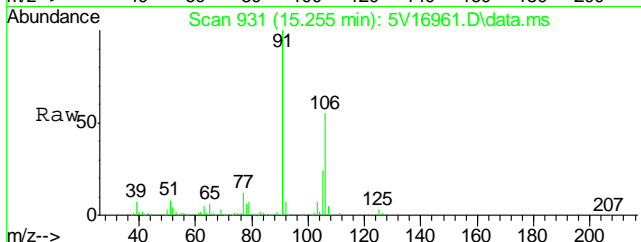
Tgt Ion: 105 Resp: 4974
Ion Ratio Lower Upper
105 100
120 24.4 22.6 33.8





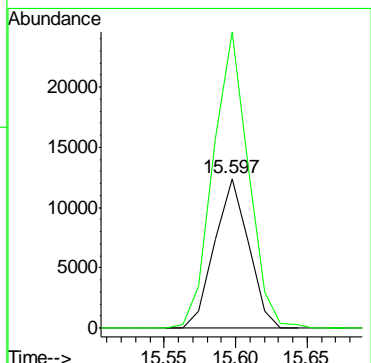
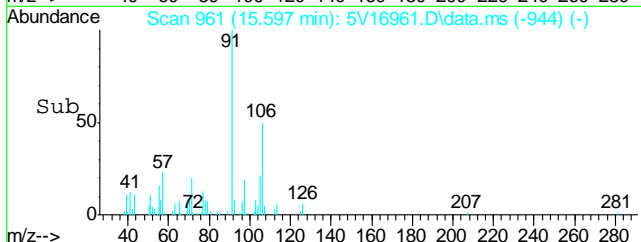
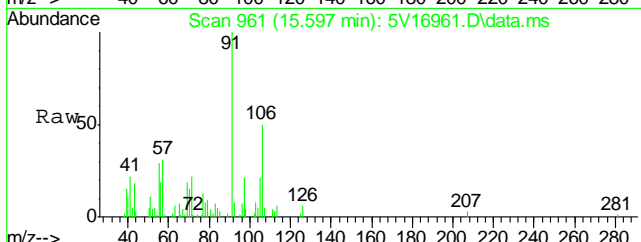
#72
 m,p-xylene
 Concen: 25.75 ug/l
 RT: 15.255 min Scan# 931
 Delta R.T. -0.000 min
 Lab File: 5V16961.D
 Acq: 11 Aug 2011 12:40 pm

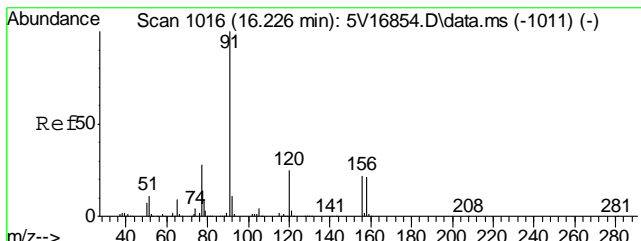
Tgt Ion	Resp	Lower	Upper
106	195860		
106	100		
91	183.8	165.9	205.9



#73
 o-xylene
 Concen: 2.74 ug/l
 RT: 15.597 min Scan# 961
 Delta R.T. -0.000 min
 Lab File: 5V16961.D
 Acq: 11 Aug 2011 12:40 pm

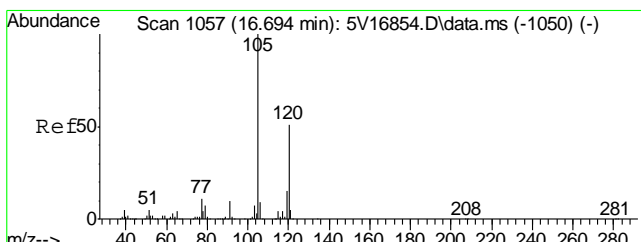
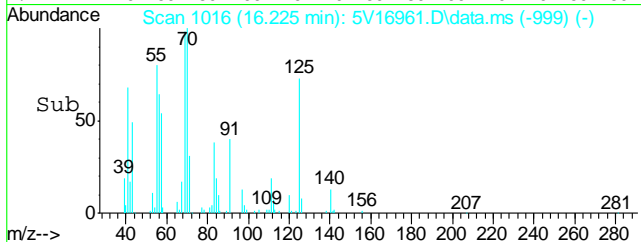
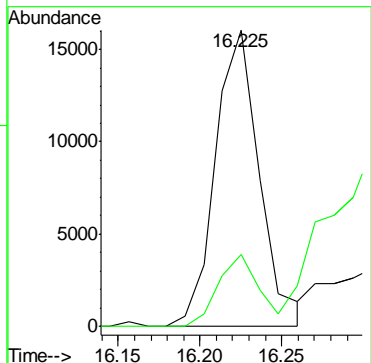
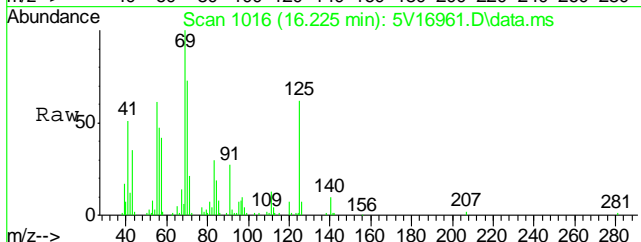
Tgt Ion	Resp	Lower	Upper
106	20375		
106	100		
91	206.1	157.4	236.2





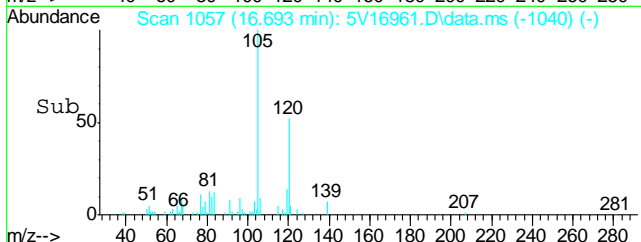
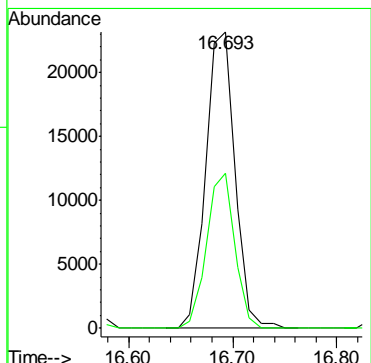
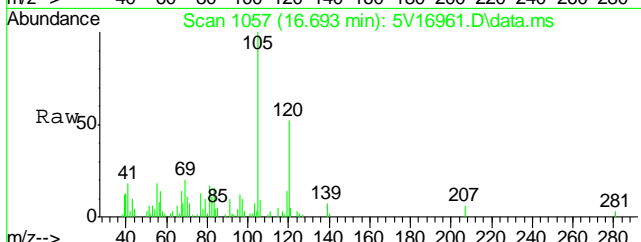
#77
 n-Propylbenzene
 Concen: 1.28 ug/l
 RT: 16.225 min Scan# 1016
 Delta R.T. -0.000 min
 Lab File: 5V16961.D
 Acq: 11 Aug 2011 12:40 pm

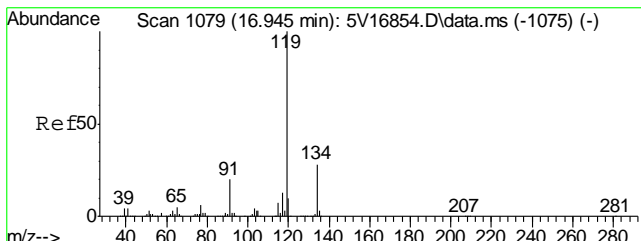
Tgt Ion	Resp	Lower	Upper
91	29964	100	
120	22.8	19.9	29.9



#82
 1,2,4-Trimethylbenzene
 Concen: 2.65 ug/l
 RT: 16.693 min Scan# 1057
 Delta R.T. -0.000 min
 Lab File: 5V16961.D
 Acq: 11 Aug 2011 12:40 pm

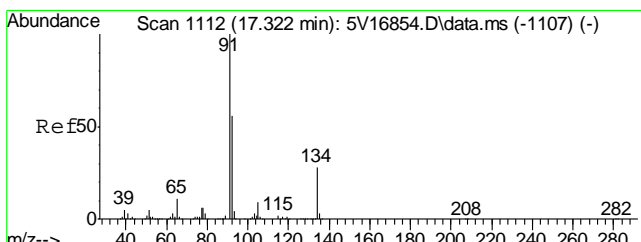
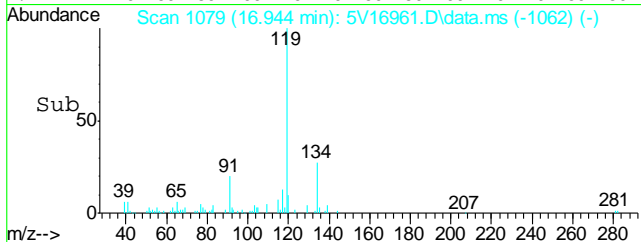
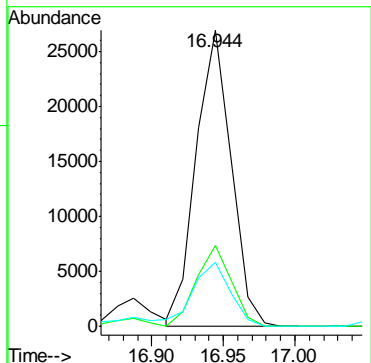
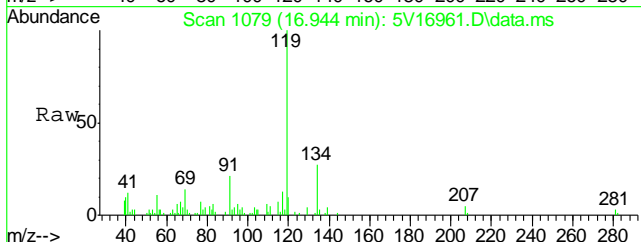
Tgt Ion	Resp	Lower	Upper
105	45230	100	
120	50.3	46.8	70.2





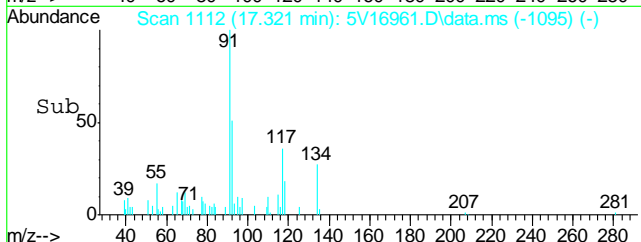
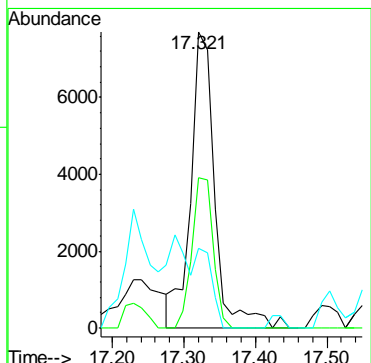
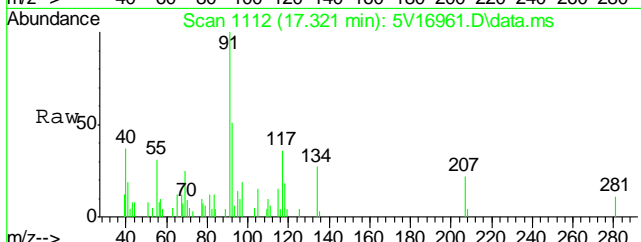
#86
 p-Isopropyltoluene
 Concen: 2.42 ug/l
 RT: 16.944 min Scan# 1079
 Delta R.T. -0.000 min
 Lab File: 5V16961.D
 Acq: 11 Aug 2011 12:40 pm

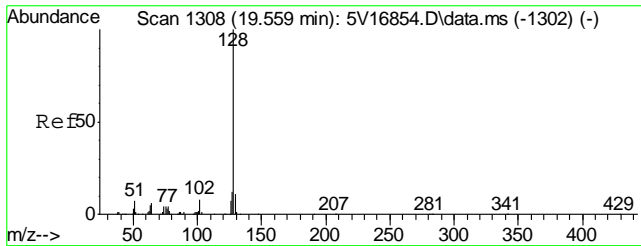
Tgt Ion	Resp	Lower	Upper
119	45747		
134	27.2	22.1	33.1
91	26.2	15.9	23.9#



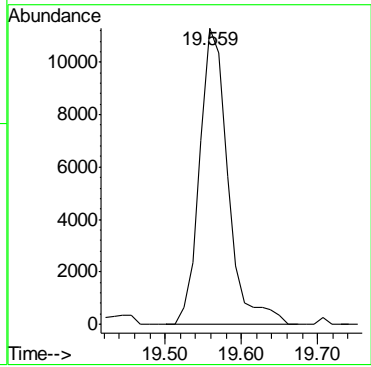
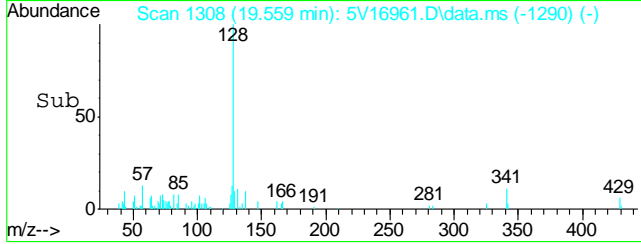
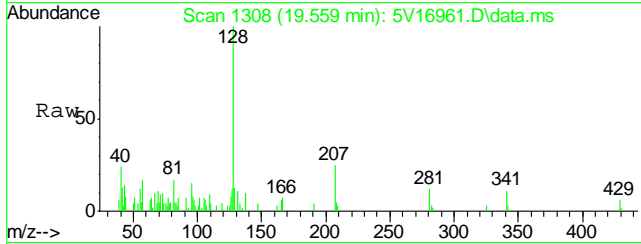
#88
 n-Butylbenzene
 Concen: 1.01 ug/l
 RT: 17.321 min Scan# 1112
 Delta R.T. -0.000 min
 Lab File: 5V16961.D
 Acq: 11 Aug 2011 12:40 pm

Tgt Ion	Resp	Lower	Upper
91	17892		
92	44.8	44.6	67.0
134	46.8	23.4	35.0#





#91
Naphthalene
Concen: 2.67 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. -0.000 min
Lab File: 5V16961.D
Acq: 11 Aug 2011 12:40 pm
Tgt Ion:128 Resp: 29134



6.1.1
6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5081111.S\
 Data File : 5V16959.D
 Acq On : 11 Aug 2011 11:37 am
 Operator : DONC
 Sample : MB
 Misc : MS2556,V5V1004,5,,100,5,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 12 12:11:59 2011
 Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
 Quant Title : 8260
 QLast Update : Wed Aug 10 06:49:20 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	273302	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	415165	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	451529	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	278880	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	44264	50.35	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	100.70%
61) Toluene-d8	13.850	98	845576	56.64	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	113.28%
69) 4-Bromofluorobenzene	16.043	95	317653	51.85	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	103.70%

Target Compounds

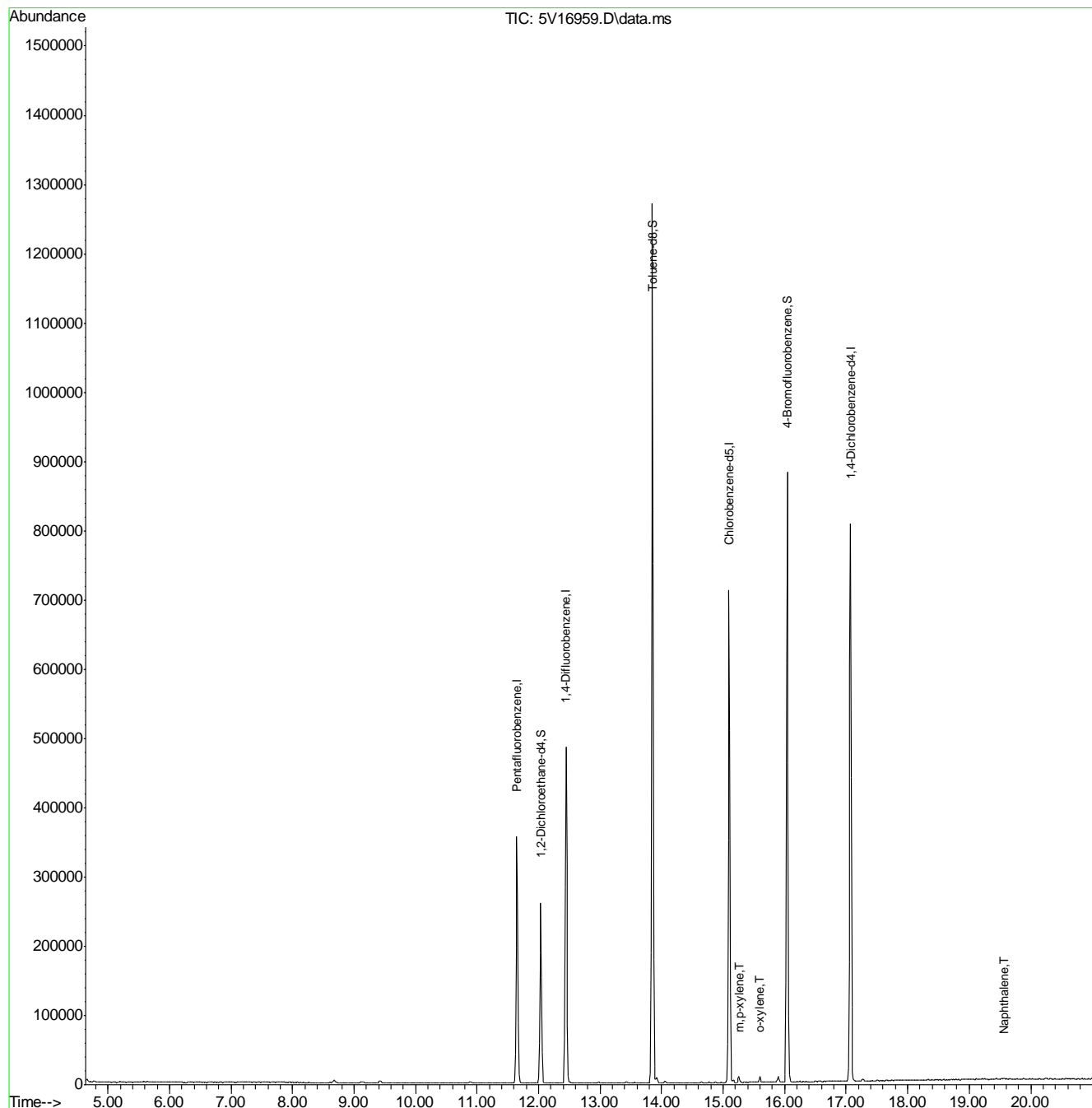
						Qvalue
72) m,p-xylene	15.255	106	3304	0.40	ug/l	98
73) o-xylene	15.597	106	2395	0.30	ug/l	90
91) Naphthalene	19.559	128	884	0.70	ug/l	100

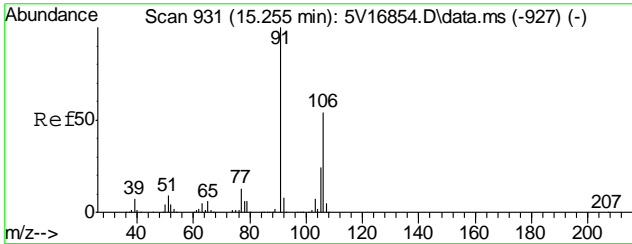
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5081111.S\
 Data File : 5V16959.D
 Acq On : 11 Aug 2011 11:37 am
 Operator : DONC
 Sample : MB
 Misc : MS2556,V5V1004,5,,100,5,1
 ALS Vial : 4 Sample Multiplier: 1

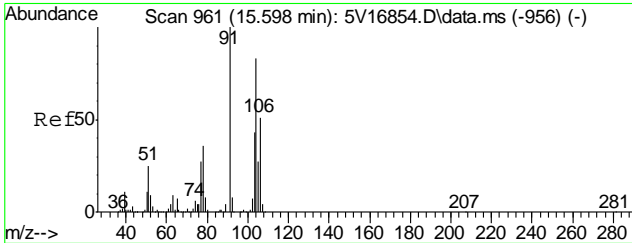
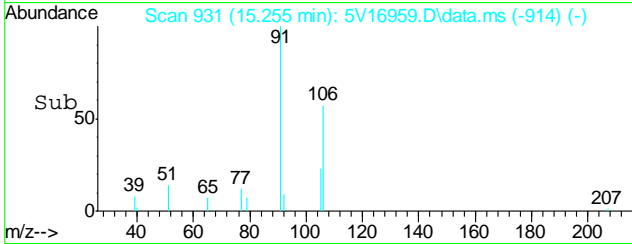
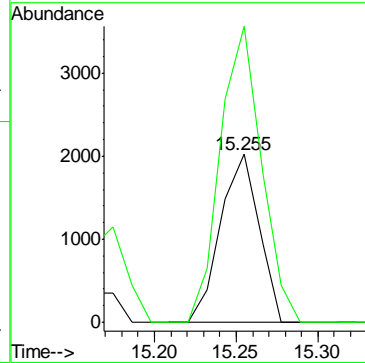
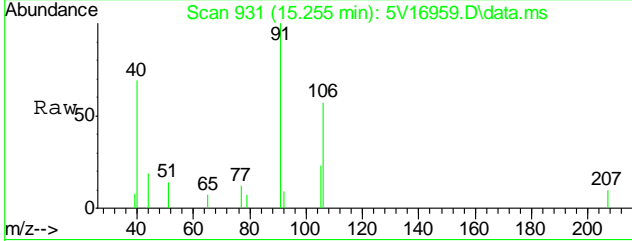
Quant Time: Aug 12 12:11:59 2011
 Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
 Quant Title : 8260
 QLast Update : Wed Aug 10 06:49:20 2011
 Response via : Initial Calibration





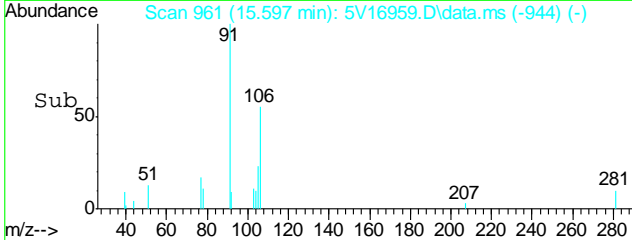
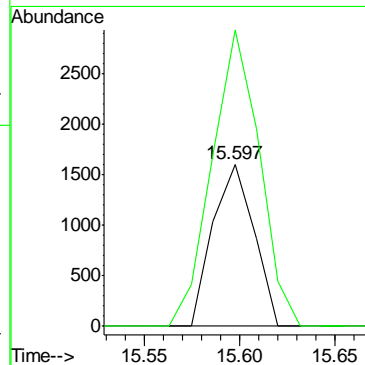
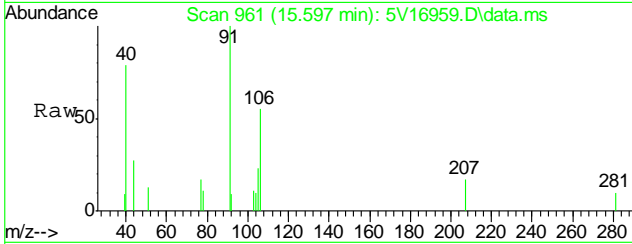
#72
 m,p-xylene
 Concen: 0.40 ug/l
 RT: 15.255 min Scan# 931
 Delta R.T. -0.000 min
 Lab File: 5V16959.D
 Acq: 11 Aug 2011 11:37 am

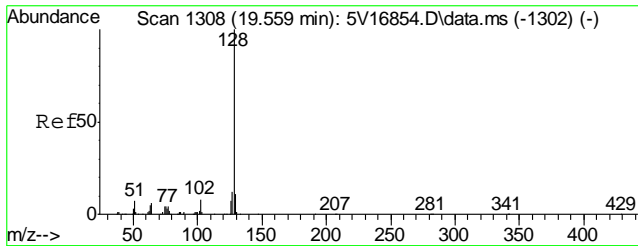
Tgt Ion:106 Resp: 3304
 Ion Ratio Lower Upper
 106 100
 91 189.0 165.9 205.9



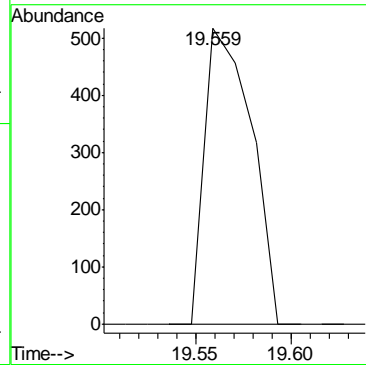
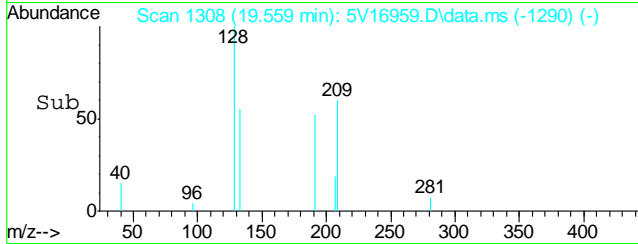
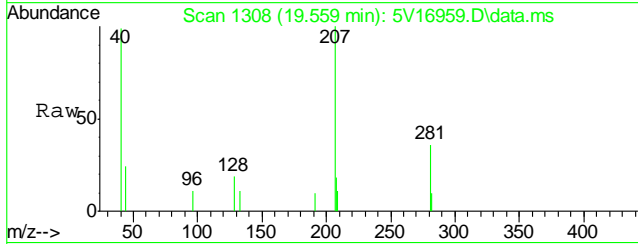
#73
 o-xylene
 Concen: 0.30 ug/l
 RT: 15.597 min Scan# 961
 Delta R.T. -0.000 min
 Lab File: 5V16959.D
 Acq: 11 Aug 2011 11:37 am

Tgt Ion:106 Resp: 2395
 Ion Ratio Lower Upper
 106 100
 91 212.2 157.4 236.2





#91
Naphthalene
Concen: 0.70 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. -0.000 min
Lab File: 5V16959.D
Acq: 11 Aug 2011 11:37 am
Tgt Ion:128 Resp: 884



GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4232-MB	3G05443.D	1	08/15/11	TMB	08/10/11	OP4232	E3G199

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D26396-1

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	88%	10-145%
321-60-8	2-Fluorobiphenyl	89%	10-130%
1718-51-0	Terphenyl-d14	92%	22-130%

Blank Spike Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4232-BS	3G05444.D	1	08/15/11	TMB	08/10/11	OP4232	E3G199

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D26396-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	62.4	75	34-130
120-12-7	Anthracene	83.3	61.8	74	35-130
56-55-3	Benzo(a)anthracene	83.3	62.4	75	36-130
50-32-8	Benzo(a)pyrene	83.3	62.0	74	36-130
205-99-2	Benzo(b)fluoranthene	83.3	67.6	81	35-130
207-08-9	Benzo(k)fluoranthene	83.3	62.3	75	37-130
218-01-9	Chrysene	83.3	67.2	81	40-130
53-70-3	Dibenzo(a,h)anthracene	83.3	56.0	67	32-130
206-44-0	Fluoranthene	83.3	60.5	73	38-130
86-73-7	Fluorene	83.3	59.4	71	35-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	56.7	68	28-130
91-20-3	Naphthalene	83.3	64.4	77	35-130
129-00-0	Pyrene	83.3	60.8	73	37-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	83%	10-145%
321-60-8	2-Fluorobiphenyl	84%	10-130%
1718-51-0	Terphenyl-d14	85%	22-130%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4232-MS ^a	3G05448.D	25	08/15/11	TMB	08/10/11	OP4232	E3G199
OP4232-MSD ^a	3G05449.D	25	08/15/11	TMB	08/10/11	OP4232	E3G199
D26355-2	3G05447.D	25	08/15/11	TMB	08/10/11	OP4232	E3G199

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D26396-1

CAS No.	Compound	D26355-2 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND	103	ND	0*	ND	0*	nc	10-155/30
120-12-7	Anthracene	ND	103	ND	0*	ND	0*	nc	10-155/30
56-55-3	Benzo(a)anthracene	ND	103	ND	0*	ND	0*	nc	10-175/30
50-32-8	Benzo(a)pyrene	ND	103	ND	0*	ND	0*	nc	10-164/30
205-99-2	Benzo(b)fluoranthene	ND	103	ND	0*	ND	0*	nc	10-165/30
207-08-9	Benzo(k)fluoranthene	ND	103	ND	0*	ND	0*	nc	10-178/30
218-01-9	Chrysene	ND	103	ND	0*	ND	0*	nc	10-147/30
53-70-3	Dibenzo(a,h)anthracene	ND	103	ND	0*	ND	0*	nc	10-144/30
206-44-0	Fluoranthene	ND	103	ND	0*	ND	0*	nc	10-207/30
86-73-7	Fluorene	284	103	382	95	354	68	8	10-163/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND	103	ND	0*	ND	0*	nc	10-180/30
91-20-3	Naphthalene	360	103	540	175	470	107	14	10-198/30
129-00-0	Pyrene	ND	103	228	222*	ND	0*	200*	10-189/30

CAS No.	Surrogate Recoveries	MS	MSD	D26355-2	Limits
4165-60-0	Nitrobenzene-d5	45%	41%	44%	10-145%
321-60-8	2-Fluorobiphenyl	53%	44%	39%	10-130%
1718-51-0	Terphenyl-d14	75%	67%	66%	22-130%

(a) Outside control limits due to dilution.

7.3.1
7

GC/MS Semi-volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\081511\
 Data File : 3g05451.D
 Acq On : 15 Aug 2011 11:27 pm
 Operator : TamiB
 Sample : D26396-1,25x
 Misc : OP4232,E3G199,30,,,1,25
 ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 16 09:24:42 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G198.M
 Quant Title : PAHSIM BASE
 QLast Update : Tue Aug 09 09:37:56 2011
 Response via : Initial Calibration

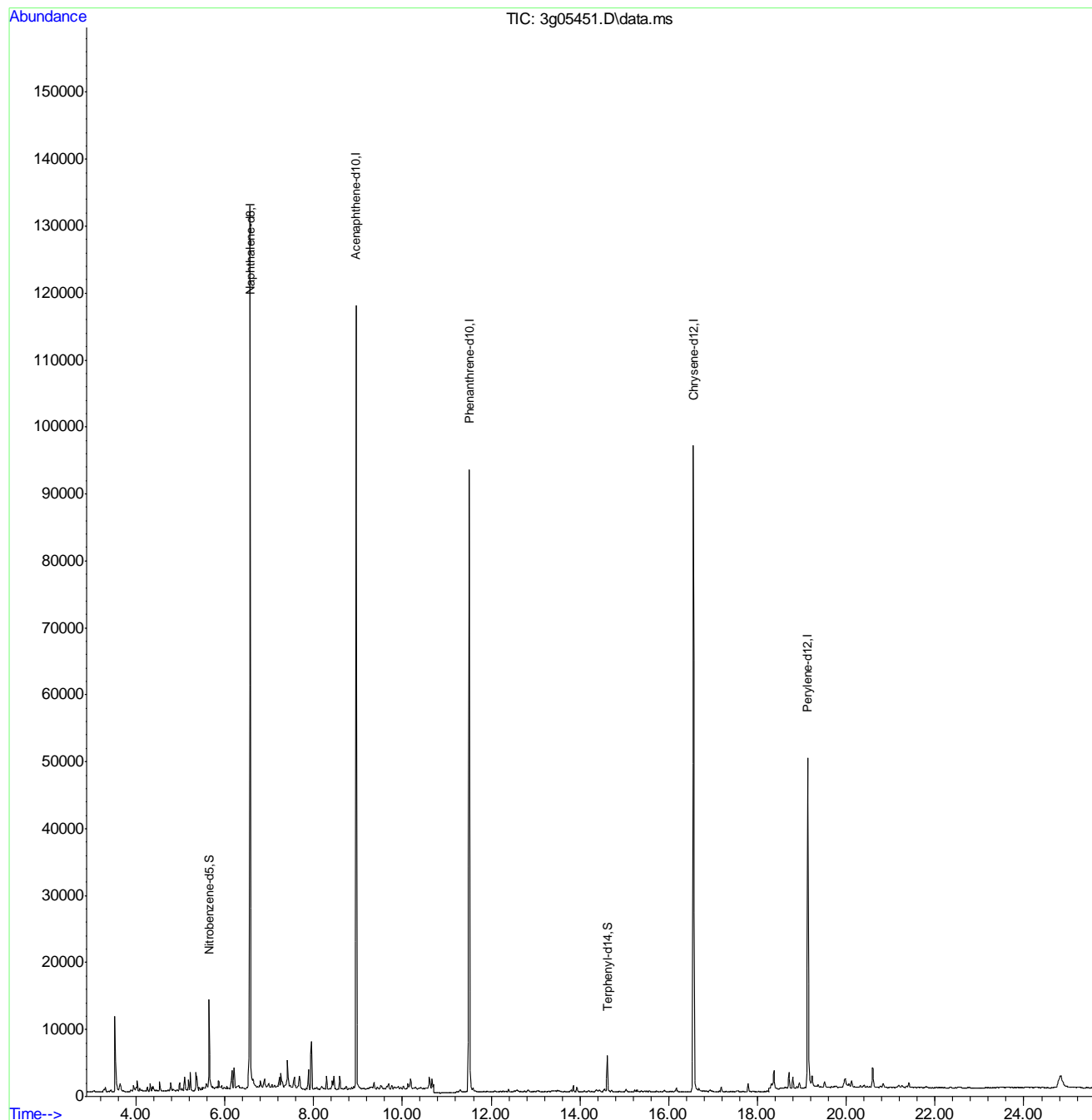
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.568	136	131578	4.00	ug/mL	0.00
6) Acenaphthene-d10	8.956	164	69805	4.00	ug/mL	-0.01
14) Phenanthrene-d10	11.506	188	107320	4.00	ug/mL	0.00
18) Chrysene-d12	16.558	240	97909	4.00	ug/mL	0.00
23) Perylene-d12	19.130	264	63841	4.00	ug/mL	-0.01
System Monitoring Compounds						
2) Nitrobenzene-d5	5.646	82	10518	1.02	ug/mL	-0.21
7) 2-Fluorobiphenyl	0.000	172	0d	0.00	ug/mL	
20) Terphenyl-d14	14.617	244	6155	0.36	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	6.593	128	1411	Below Cal		82
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	9.003	154	65	Below Cal		86
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

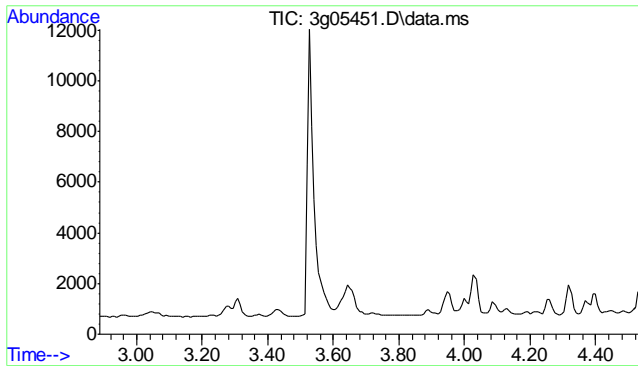
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\081511\
 Data File : 3g05451.D
 Acq On : 15 Aug 2011 11:27 pm
 Operator : TamiB
 Sample : D26396-1,25x
 Misc : OP4232,E3G199,30,,,1,25
 ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 16 09:24:42 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G198.M
 Quant Title : PAHSIM BASE
 QLast Update : Tue Aug 09 09:37:56 2011
 Response via : Initial Calibration



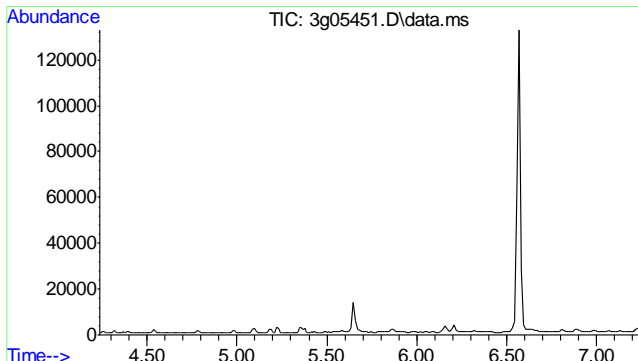
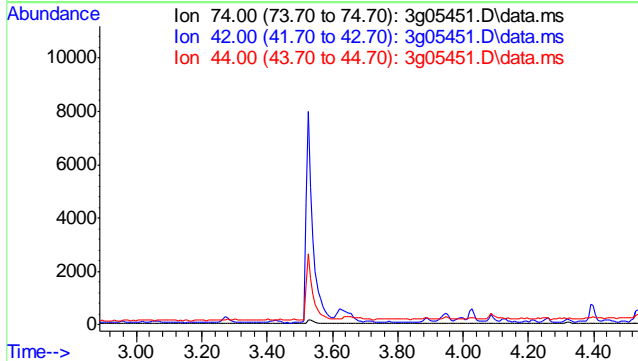
8.1.1
8



#3
 N-Nitrosodimethylamine
 Concen: N.D. ug/mL
 Expected RT: 3.03 min

Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

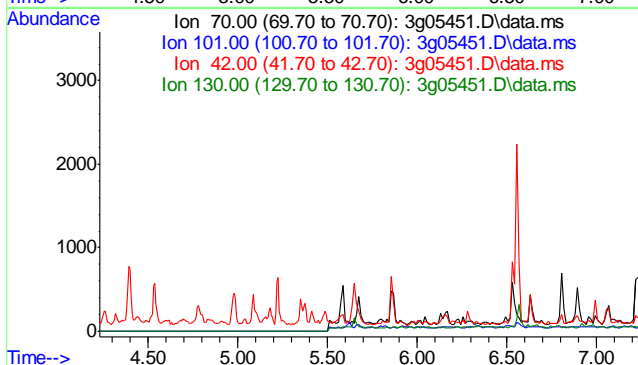
Tgt Ion:	74
Sig	Exp Ratio
74	100
42	59.7
44	5.1



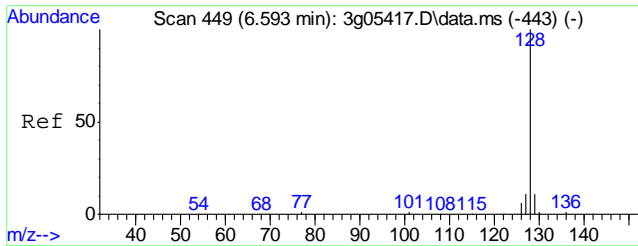
#4
 N-Nitrosodi-propylamine
 Concen: N.D. ug/mL
 Expected RT: 5.73 min

Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion:	70
Sig	Exp Ratio
70	100
101	14.4
42	63.2
130	37.8

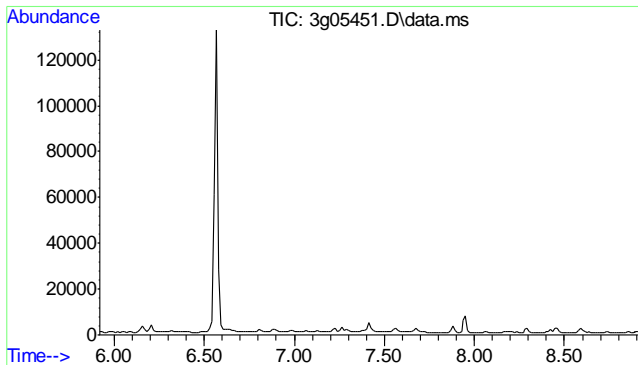
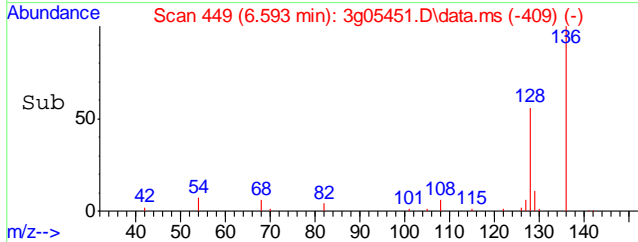
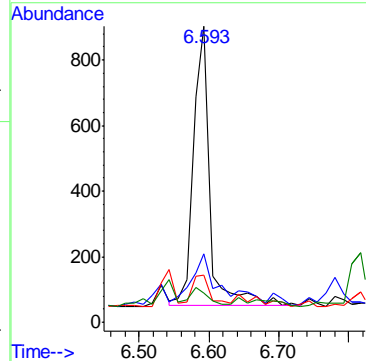
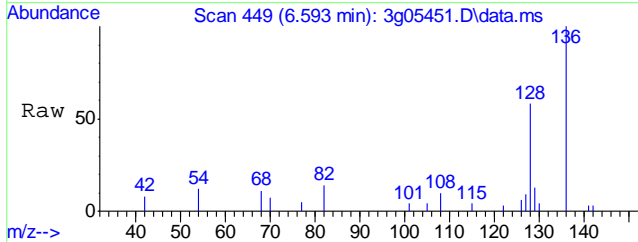


8.1.1
 8



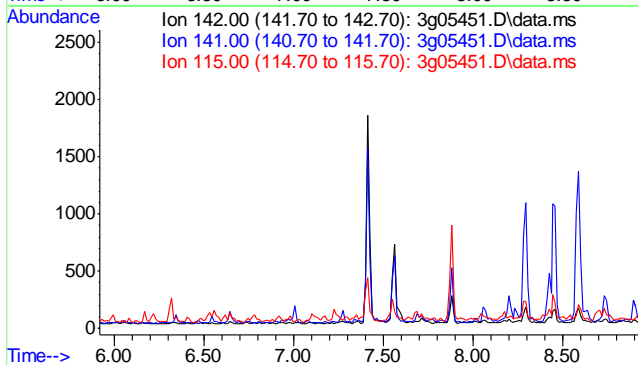
#5
 Naphthalene
 Concen: Below ug/mL
 RT: 6.593 min Scan# 449
 Delta R.T. -0.000 min
 Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion	Resp	Lower	Upper
128	100		
129	28.1	0.0	30.8
127	12.1	0.0	31.6
126	5.7	0.0	26.4

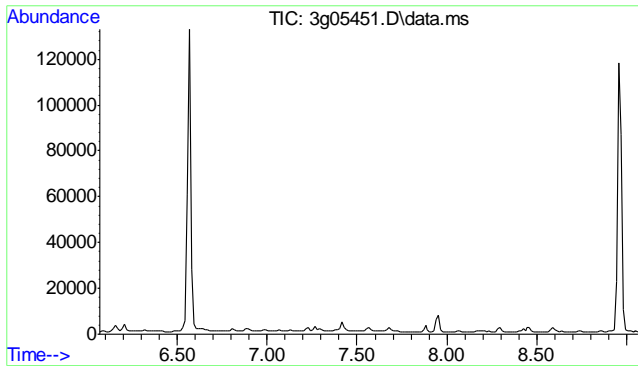


#8
 2-Methylnaphthalene
 Concen: N.D. ug/mL
 Expected RT: 7.42 min
 Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion	Exp Ratio
142	100
141	80.1
115	22.7



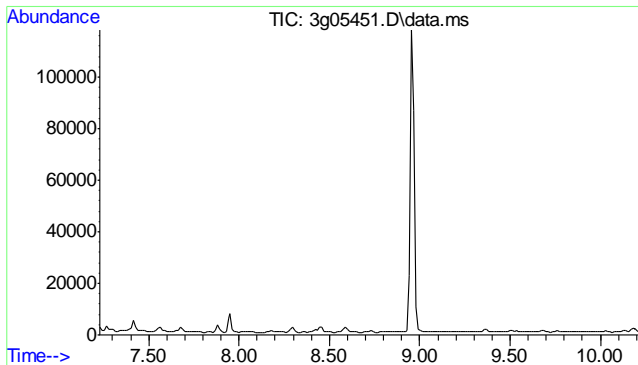
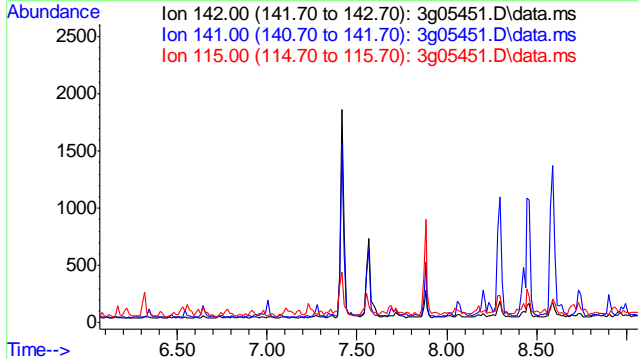
8.1.1
 8



#9
 1-Methylnaphthalene
 Concen: N.D. ug/mL
 Expected RT: 7.57 min

Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

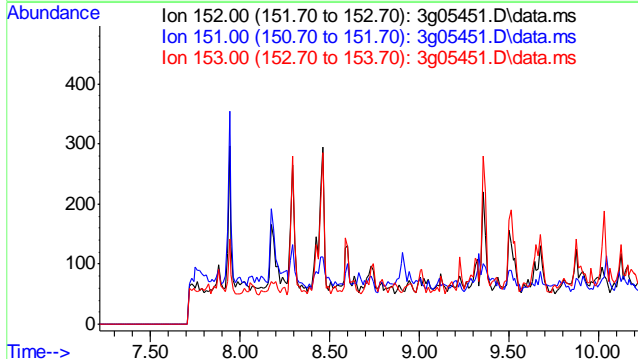
Tgt Ion	Exp Ratio
142	100
141	83.6
115	23.7



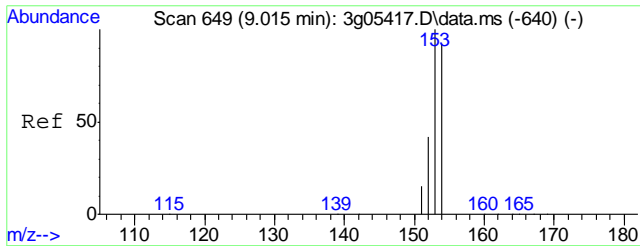
#10
 Acenaphthylene
 Concen: N.D. ug/mL
 Expected RT: 8.72 min

Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion	Exp Ratio
152	100
151	18.1
153	13.0

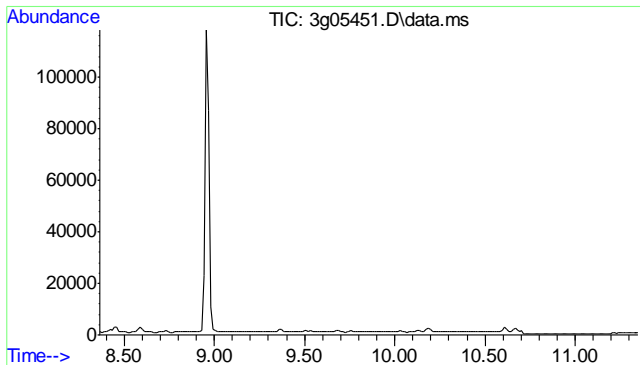
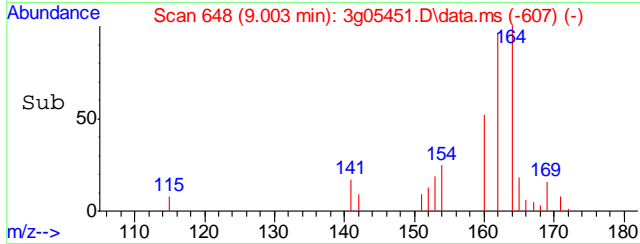
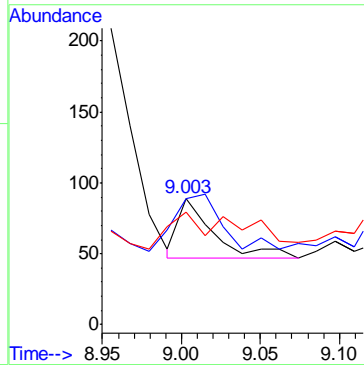
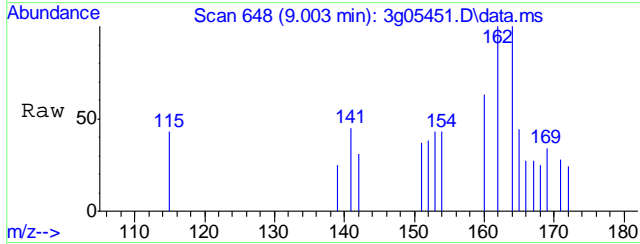


8.1.1
 8



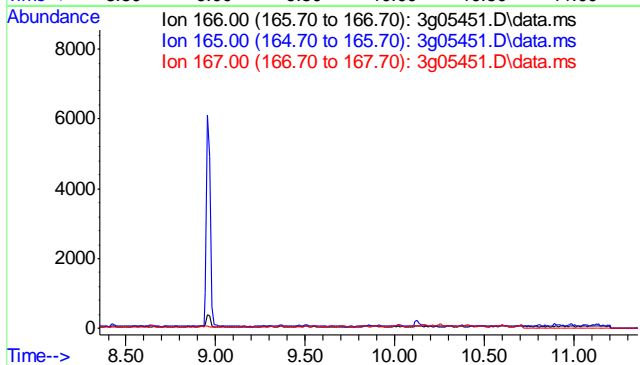
#11
 Acenaphthene
 Concen: Below ug/mL
 RT: 9.003 min Scan# 648
 Delta R.T. -0.012 min
 Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion	Resp	Lower	Upper
154	100		
153	130.8	93.1	133.1
152	56.9	31.9	71.9

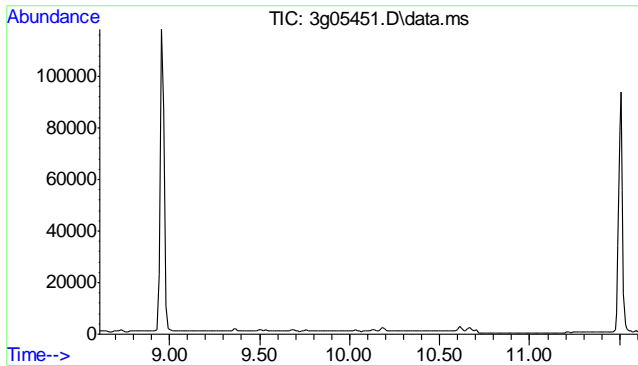


#12
 Fluorene
 Concen: N.D. ug/mL
 Expected RT: 9.85 min
 Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion	Exp Ratio
166	100
165	88.3
167	13.3



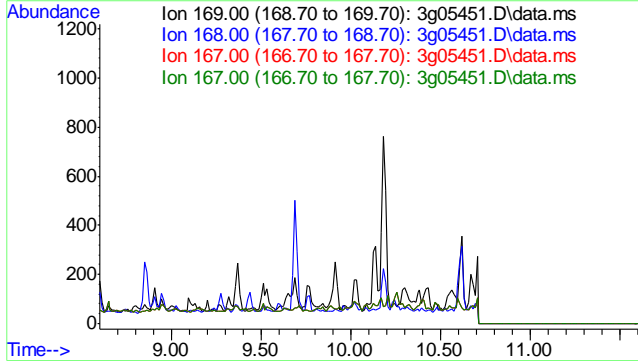
8.1.1
 8



#13
 Diphenylamine
 Concen: N.D. ug/mL
 Expected RT: 10.10 min

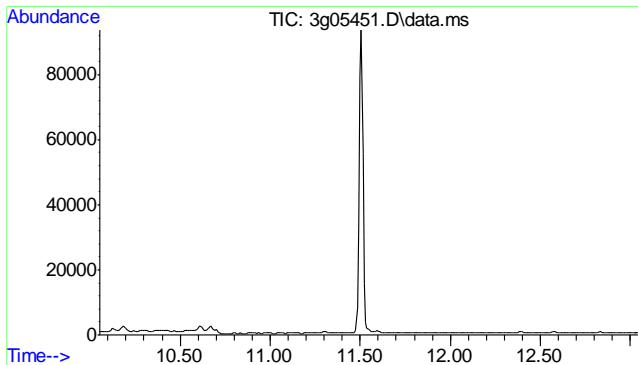
Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion:	169
Sig	Exp Ratio
169	100
168	59.4
167	31.9
167	31.9



Ion 169.00 (168.70 to 169.70): 3g05451.D\data.ms
 Ion 168.00 (167.70 to 168.70): 3g05451.D\data.ms
 Ion 167.00 (166.70 to 167.70): 3g05451.D\data.ms
 Ion 167.00 (166.70 to 167.70): 3g05451.D\data.ms

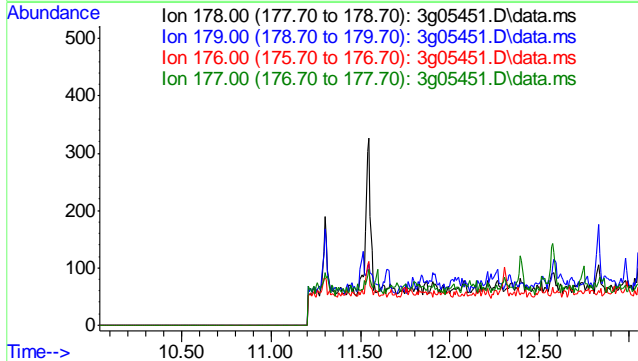
8.1.1
 8



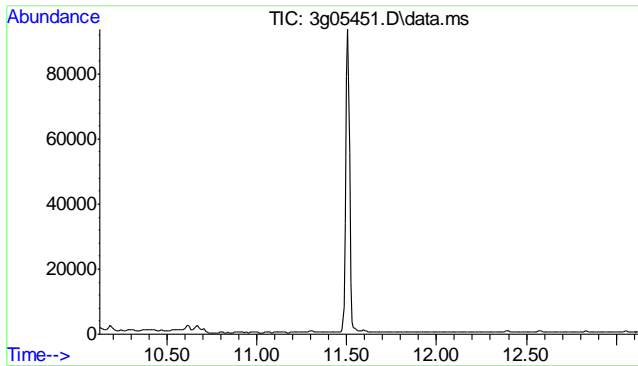
#15
 Phenanthrene
 Concen: N.D. ug/mL
 Expected RT: 11.55 min

Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion:	178
Sig	Exp Ratio
178	100
179	15.1
176	17.1
177	9.5



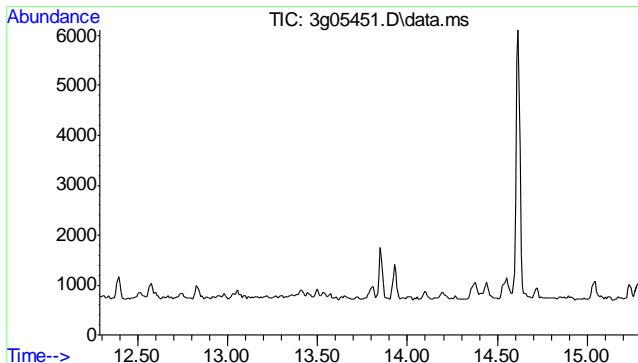
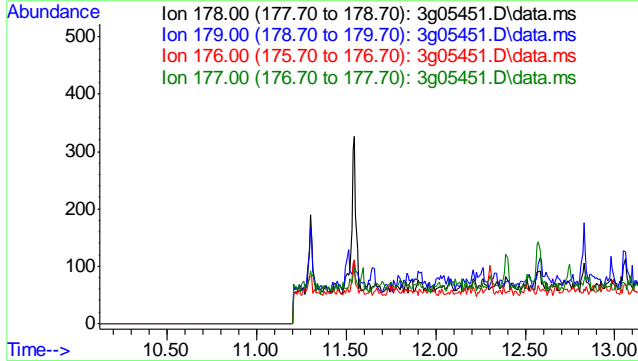
Ion 178.00 (177.70 to 178.70): 3g05451.D\data.ms
 Ion 179.00 (178.70 to 179.70): 3g05451.D\data.ms
 Ion 176.00 (175.70 to 176.70): 3g05451.D\data.ms
 Ion 177.00 (176.70 to 177.70): 3g05451.D\data.ms



#16
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 11.63 min

Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

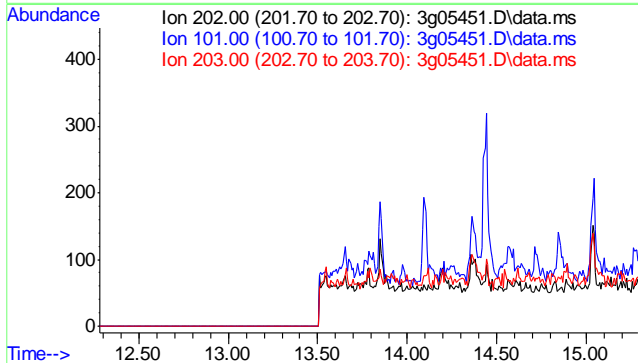
Tgt Ion:	178
Sig	Exp Ratio
178	100
179	14.9
176	16.8
177	8.1



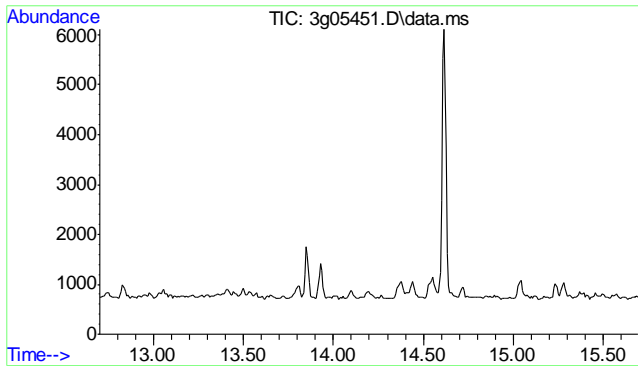
#17
 Fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 13.79 min

Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion:	202
Sig	Exp Ratio
202	100
101	21.6
203	17.0

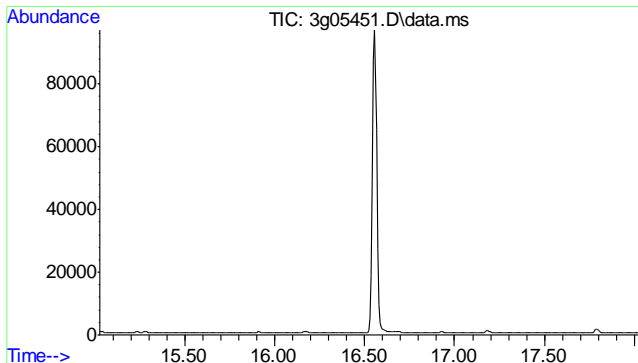
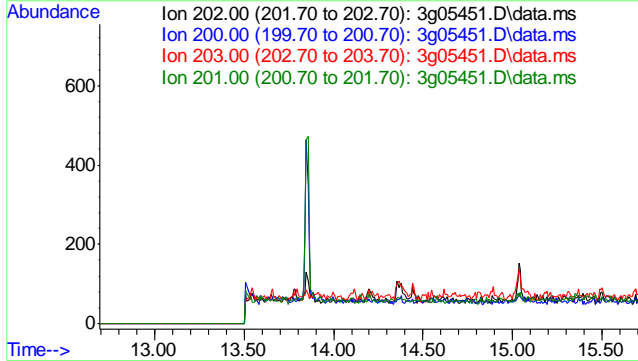


8.1.1
 8



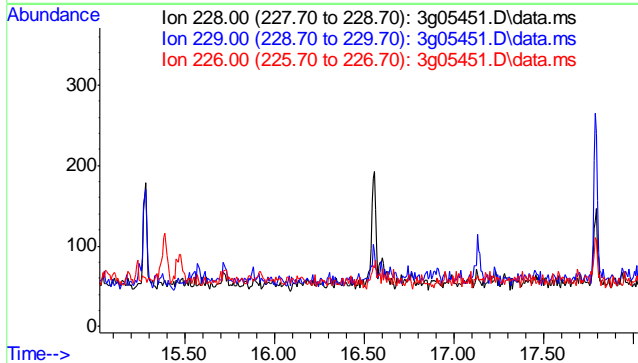
#19
 Pyrene
 Concen: N.D. ug/mL
 Expected RT: 14.20 min
 Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm
 Tgt Ion: 202

Sig	Exp Ratio
202	100
200	18.6
203	17.4
201	15.6

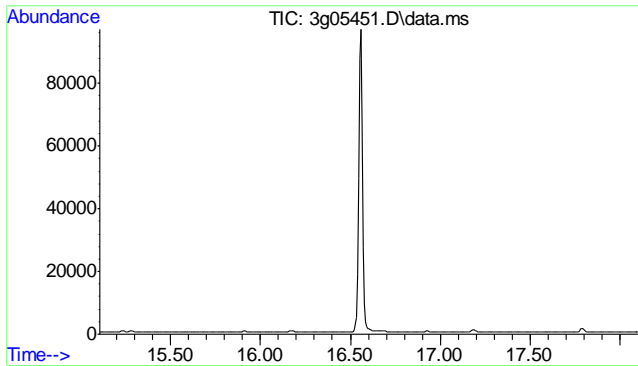


#21
 Benzo(a)anthracene
 Concen: N.D. ug/mL
 Expected RT: 16.52 min
 Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm
 Tgt Ion: 228

Sig	Exp Ratio
228	100
229	19.2
226	24.4



8.1.1
 8

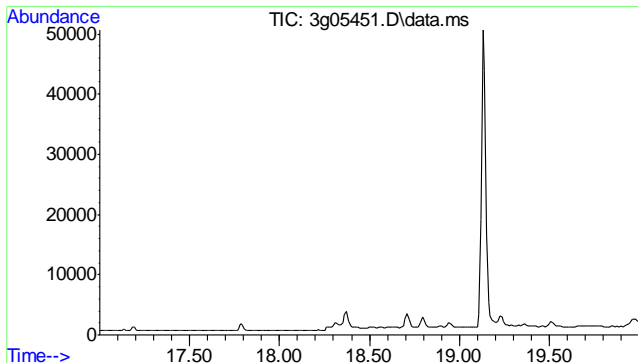
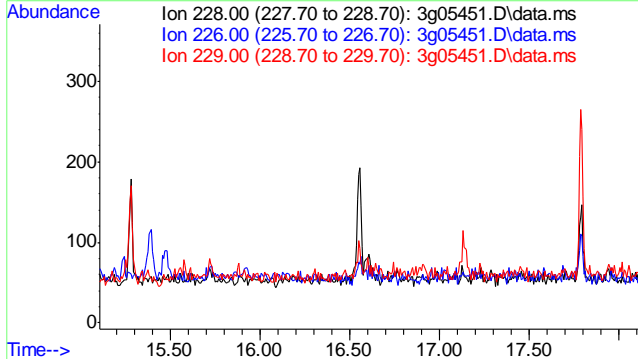


#22
 Chrysene
 Concen: N.D. ug/mL
 Expected RT: 16.60 min

 Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

 Tgt Ion: 228

Sig	Exp Ratio
228	100
226	26.6
229	19.2

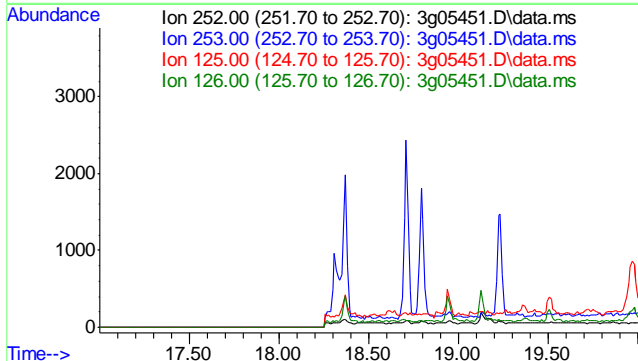


#24
 Benzo(b)fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 18.50 min

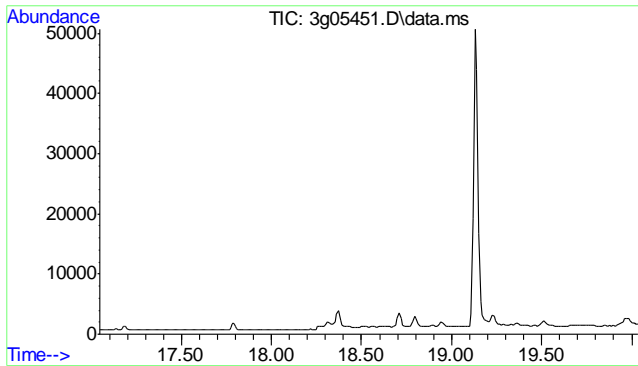
 Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

 Tgt Ion: 252

Sig	Exp Ratio
252	100
253	21.8
125	19.5
126	26.9



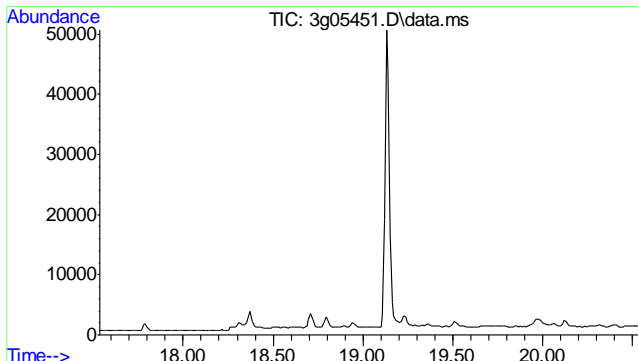
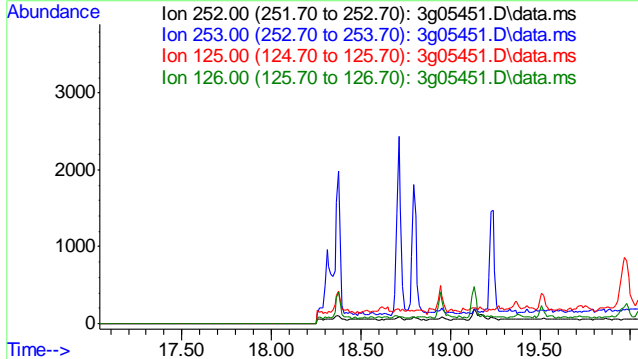
8.1.1
 8



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

 Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

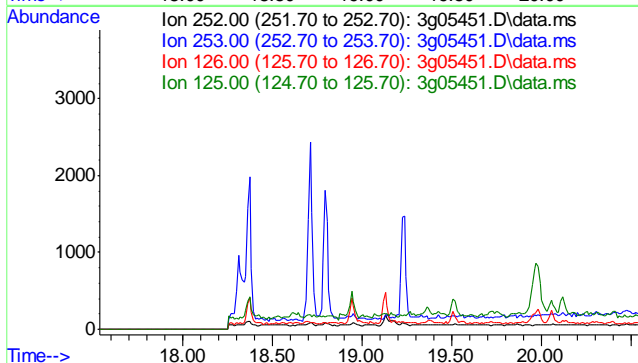
Tgt Ion	Sig	Exp Ratio
252	100	
253	21.7	
125	22.5	
126	34.6	

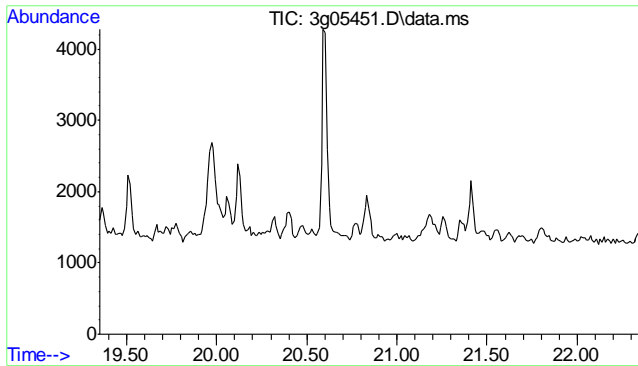


#26
 Benzo(a)pyrene
 Concen: N.D. ug/mL
 Expected RT: 19.04 min

 Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion	Sig	Exp Ratio
252	100	
253	21.4	
126	30.2	
125	21.8	

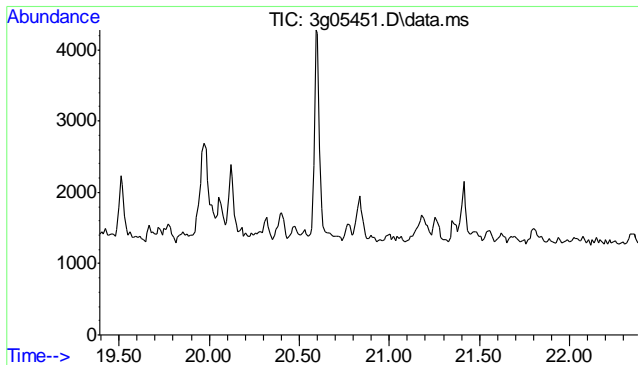
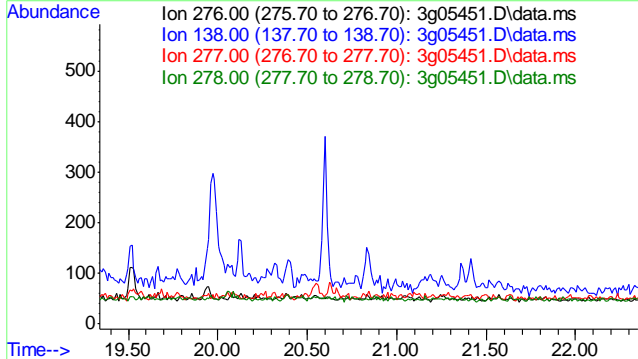




#27
 Indeno(1,2,3-cd)pyrene
 Concen: N.D. ug/mL
 Expected RT: 20.84 min

Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

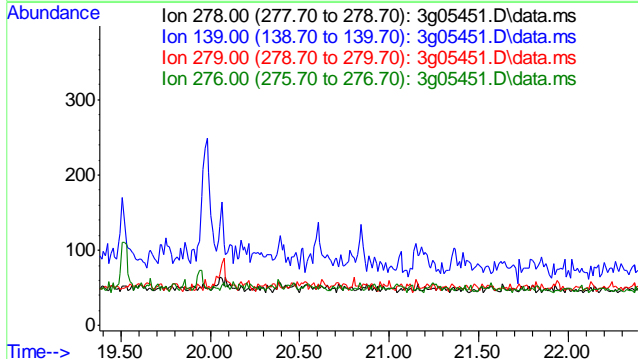
Tgt Ion	Exp Ratio
276	100
138	46.3
277	32.4
278	0.0



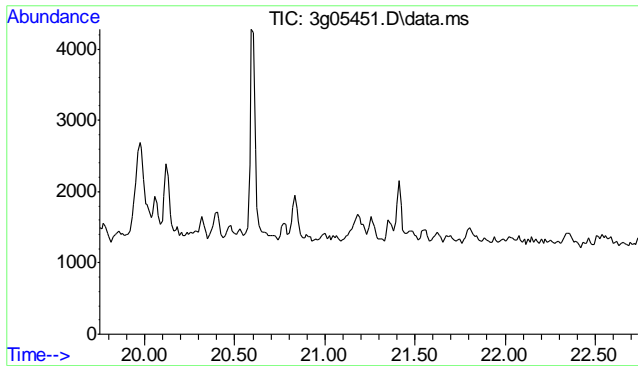
#28
 Dibenz(a,h)anthracene
 Concen: N.D. ug/mL
 Expected RT: 20.89 min

Lab File: 3g05451.D
 Acq: 15 Aug 11 11:27 pm

Tgt Ion	Exp Ratio
278	100
139	38.1
279	23.1
276	119.7



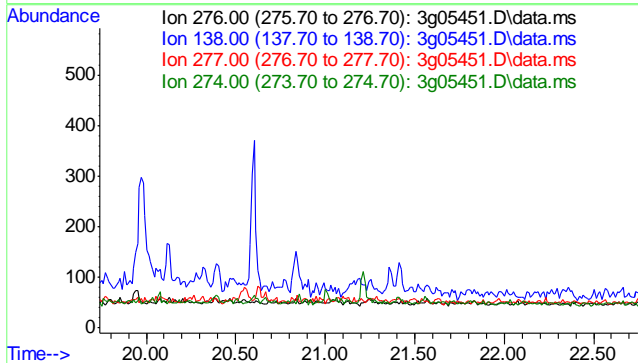
8.1.1
 8



#29
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 21.24 min

Lab File: 3g05451.D
Acq: 15 Aug 11 11:27 pm

Tgt Ion	Sig	Exp Ratio
276	100	
138	49.0	
277	23.1	
274	19.4	



8.1.1
8

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\081511\
 Data File : 3g05443.D
 Acq On : 15 Aug 2011 6:17 pm
 Operator : TamiB
 Sample : OP4232-MB
 Misc :
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 16 09:18:39 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G198.M
 Quant Title : PAHSIM BASE
 QLast Update : Tue Aug 09 09:37:56 2011
 Response via : Initial Calibration

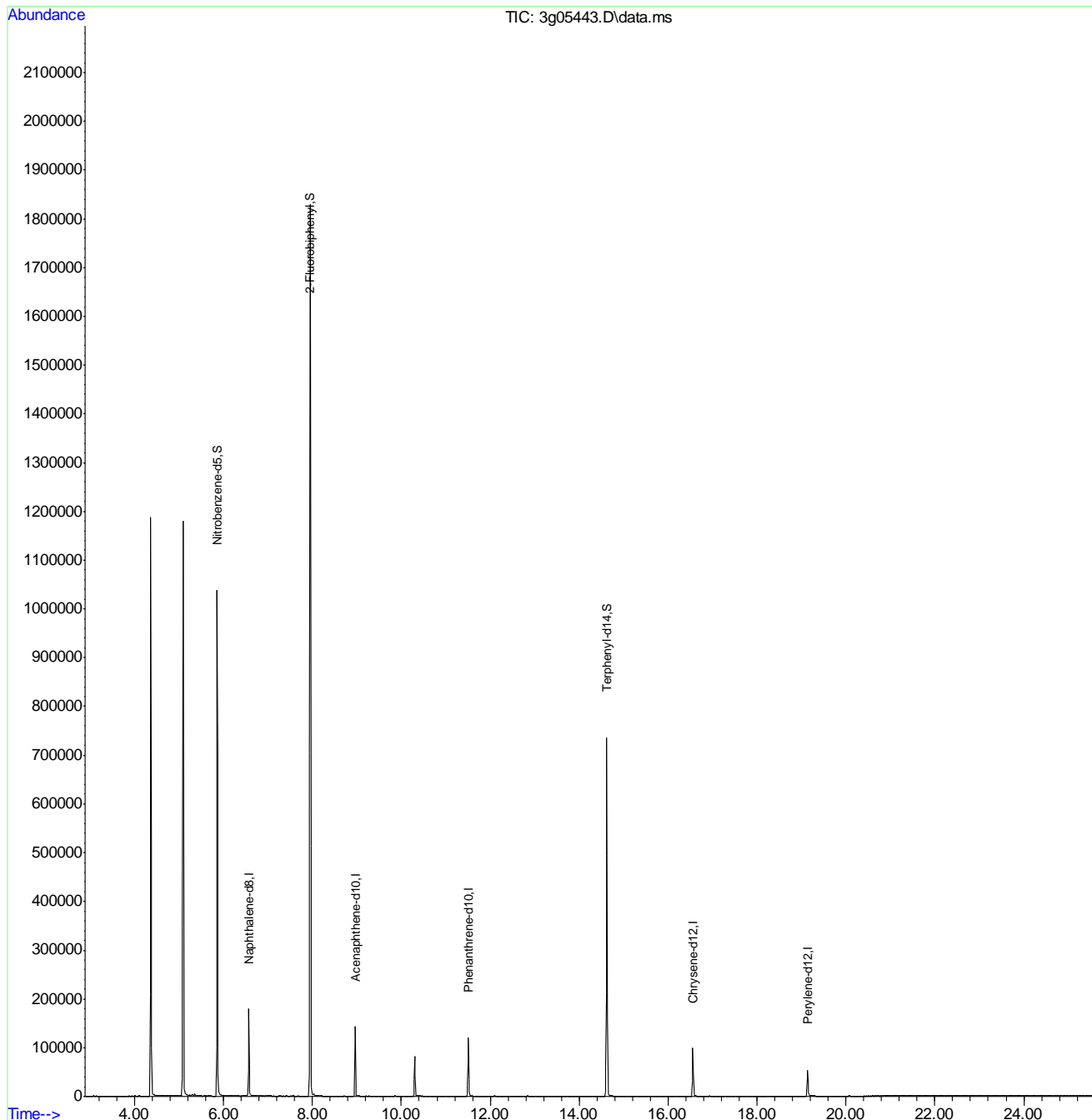
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.568	136	173015	4.00	ug/mL	0.00
6) Acenaphthene-d10	8.967	164	89509	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.506	188	128276	4.00	ug/mL	0.00
18) Chrysene-d12	16.558	240	94773	4.00	ug/mL	0.00
23) Perylene-d12	19.140	264	66000	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	5.857	82	592018	43.85	ug/mL	0.00
7) 2-Fluorobiphenyl	7.951	172	1505036	44.62	ug/mL	0.00
20) Terphenyl-d14	14.624	244	760541	46.05	ug/mL	0.00
Target Compounds						
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	6.593	128	2389	Below Cal		95
8) 2-Methyl-naphthalene	7.416	142	380	Below Cal		90
9) 1-Methyl-naphthalene	7.565	142	241	Below Cal	#	89
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	9.015	154	167	Below Cal	#	78
12) Fluorene	0.000		0	N.D.	d	
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	11.546	178	469	Below Cal		96
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	16.604	228	244	Below Cal		96
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	20.855	276	138	Below Cal		81

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

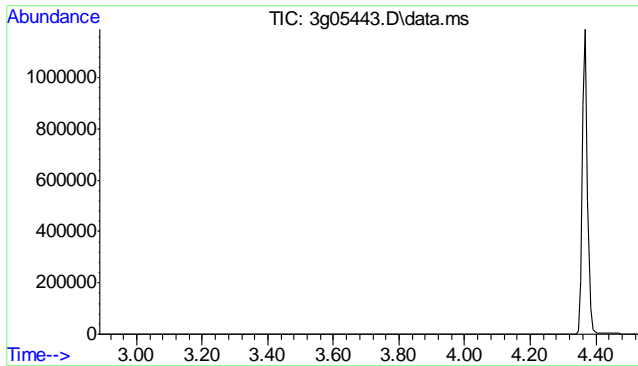
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\081511\
 Data File : 3g05443.D
 Acq On : 15 Aug 2011 6:17 pm
 Operator : TamiB
 Sample : OP4232-MB
 Misc :
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 16 09:18:39 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G198.M
 Quant Title : PAHSIM BASE
 QLast Update : Tue Aug 09 09:37:56 2011
 Response via : Initial Calibration



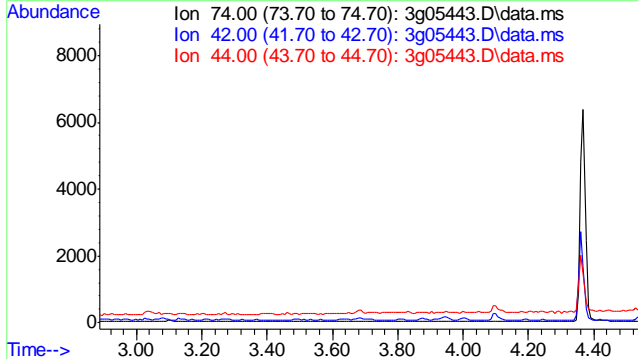
8.2.1
8



#3
 N-Nitrosodimethylamine
 Concen: N.D. ug/mL
 Expected RT: 3.03 min

Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

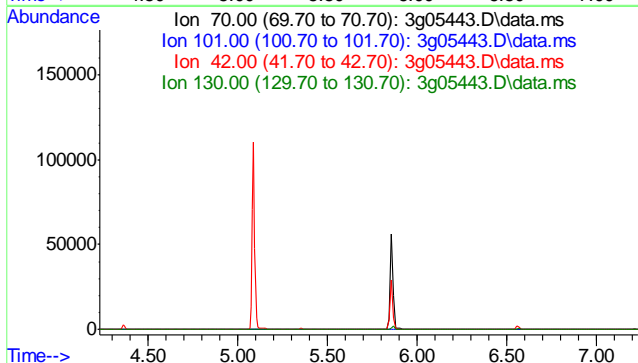
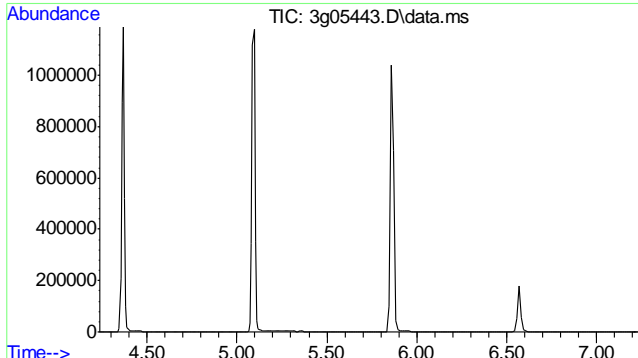
Tgt Ion:	74
Sig	Exp Ratio
74	100
42	59.7
44	5.1



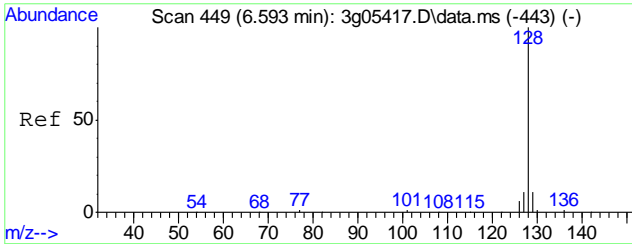
#4
 N-Nitrosodi-propylamine
 Concen: N.D. ug/mL
 Expected RT: 5.73 min

Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

Tgt Ion:	70
Sig	Exp Ratio
70	100
101	14.4
42	63.2
130	37.8

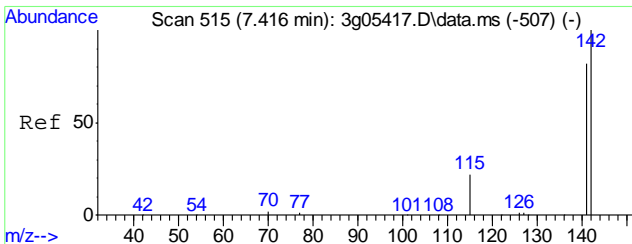
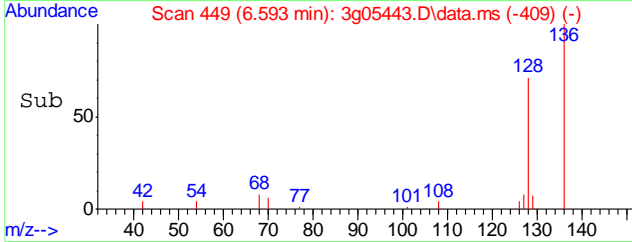
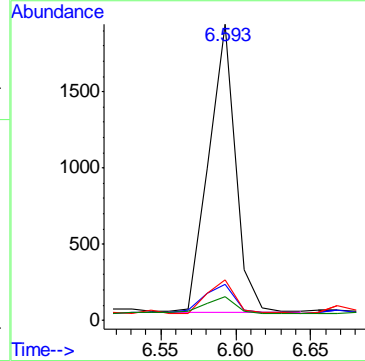
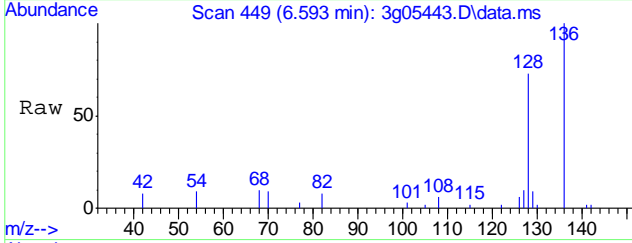


8.2.1
 8



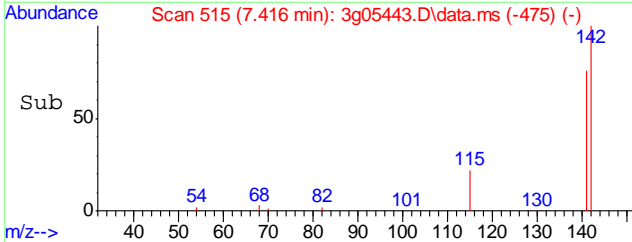
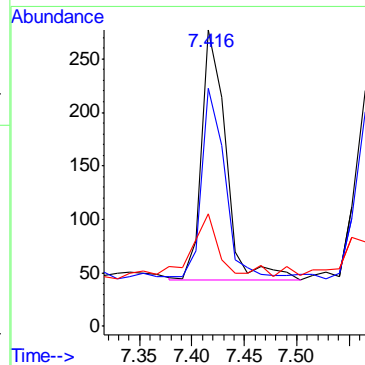
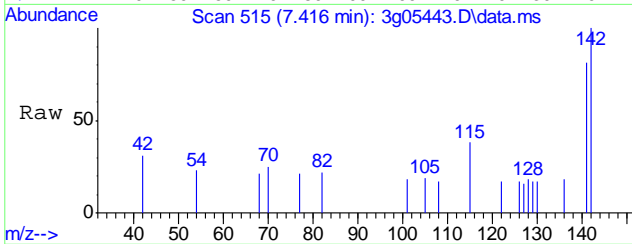
#5
Naphthalene
Concen: Below ug/mL
RT: 6.593 min Scan# 449
Delta R.T. -0.000 min
Lab File: 3g05443.D
Acq: 15 Aug 11 6:17 pm

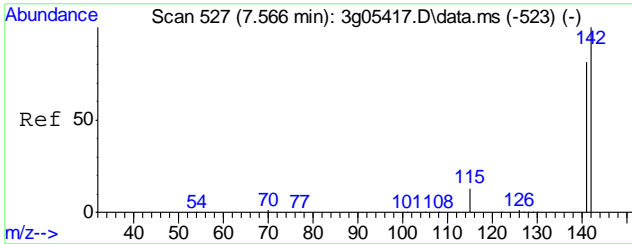
Tgt Ion	Resp	Lower	Upper
128	100		
129	12.6	0.0	30.8
127	13.9	0.0	31.6
126	7.8	0.0	26.4



#8
2-Methylnaphthalene
Concen: Below ug/mL
RT: 7.416 min Scan# 515
Delta R.T. -0.000 min
Lab File: 3g05443.D
Acq: 15 Aug 11 6:17 pm

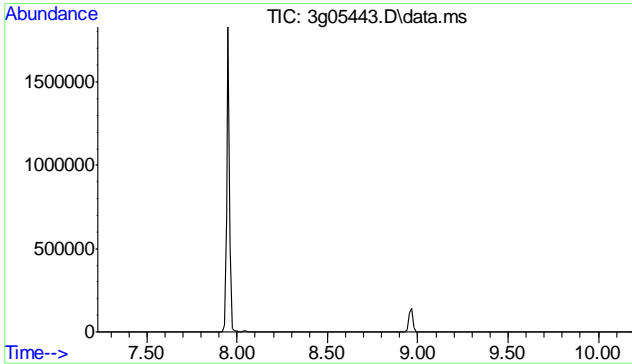
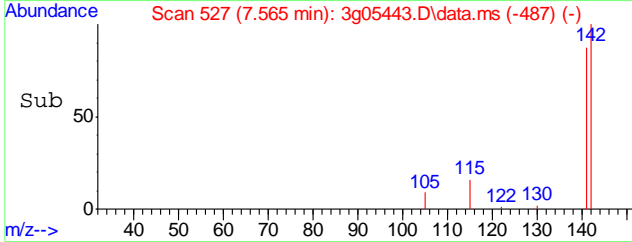
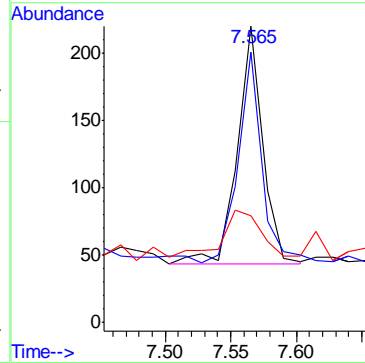
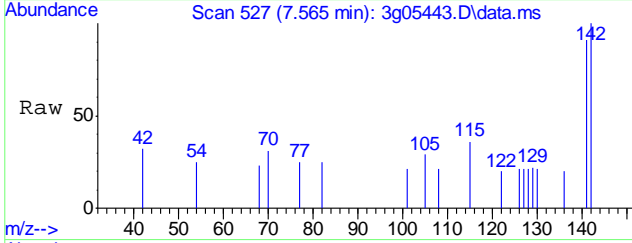
Tgt Ion	Resp	Lower	Upper
142	100		
141	73.9	60.1	100.1
115	33.4	2.7	42.7





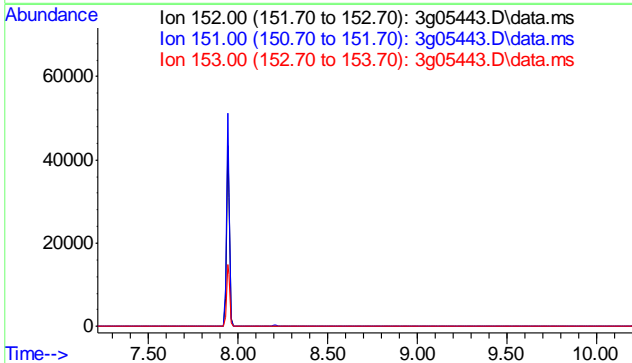
#9
 1-Methylnaphthalene
 Concen: Below ug/mL
 RT: 7.565 min Scan# 527
 Delta R.T. -0.000 min
 Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

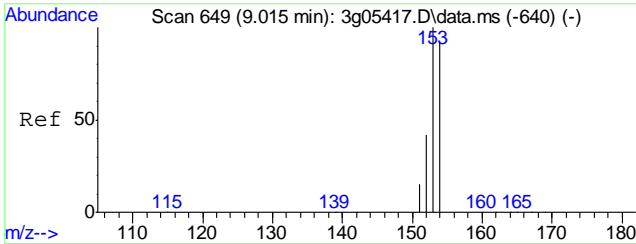
Tgt Ion	Resp	Lower	Upper
142	241	100	
141	83.0	66.9	100.3
115	0.0	19.0	28.4#



#10
 Acenaphthylene
 Concen: N.D. ug/mL
 Expected RT: 8.72 min
 Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

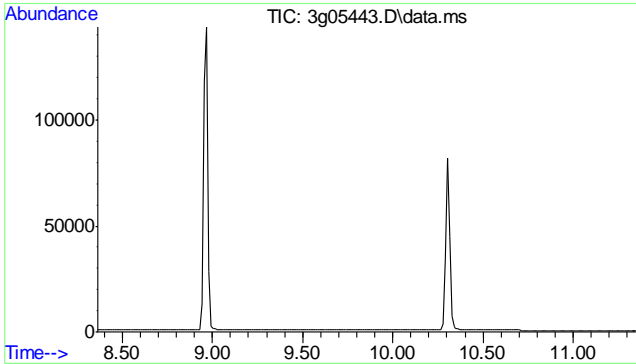
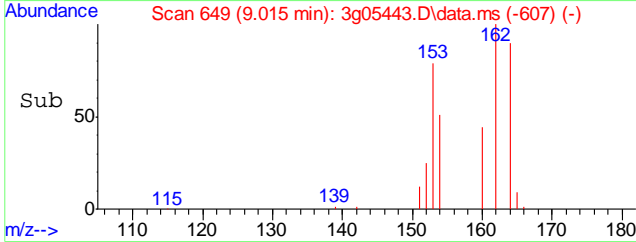
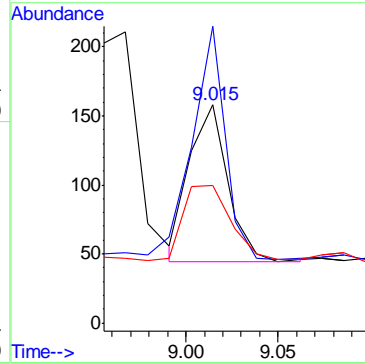
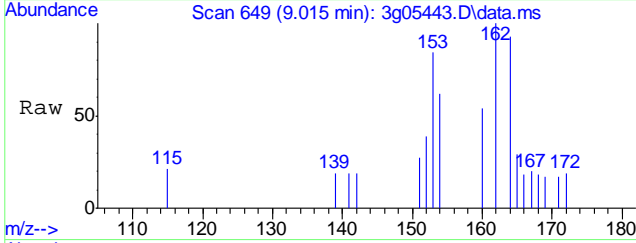
Tgt Ion	Exp Ratio
152	100
151	18.1
153	13.0





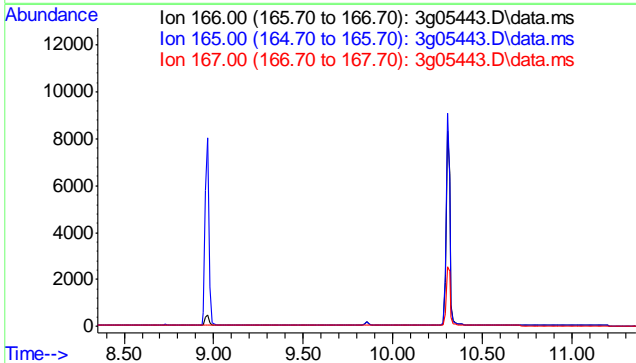
#11
 Acenaphthene
 Concen: Below ug/mL
 RT: 9.015 min Scan# 649
 Delta R.T. -0.000 min
 Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

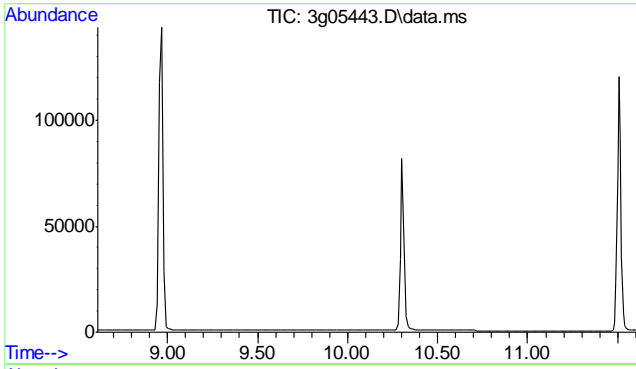
Tgt Ion	Resp	Lower	Upper
154	100		
153	142.5	93.1	133.1#
152	59.3	31.9	71.9



#12
 Fluorene
 Concen: N.D. ug/mL
 Expected RT: 9.85 min
 Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

Tgt Ion	Exp Ratio
166	100
165	88.3
167	13.3

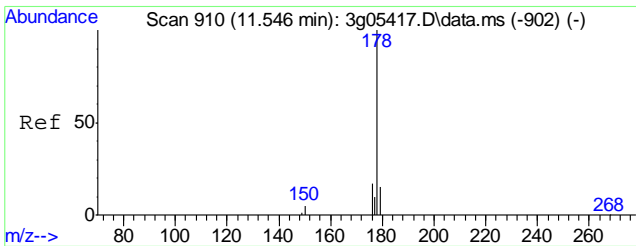
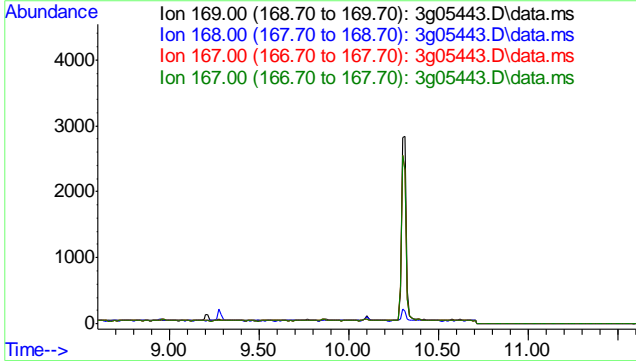




#13
 Diphenylamine
 Concen: N.D. ug/mL
 Expected RT: 10.10 min

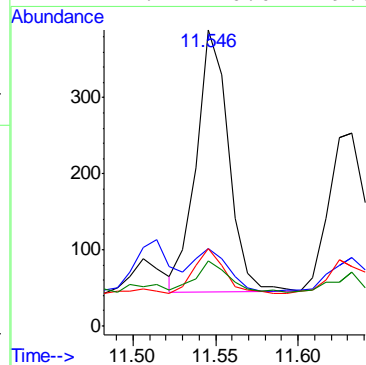
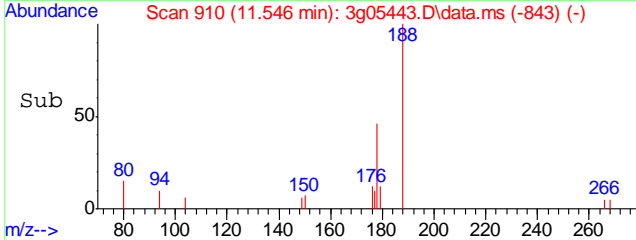
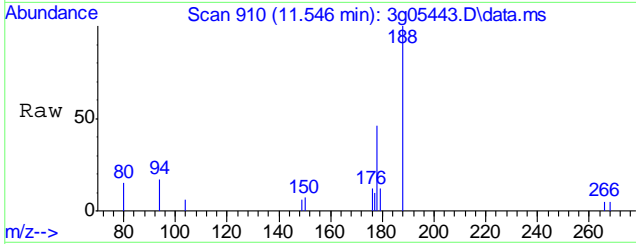
Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

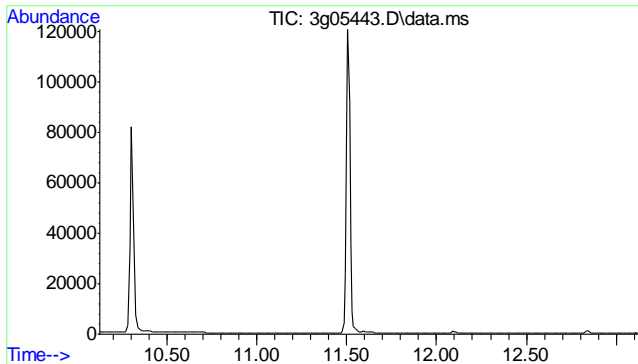
Tgt Ion	Sig	Exp Ratio
169	100	
168	59.4	
167	31.9	
167	31.9	



#15
 Phenanthrene
 Concen: Below ug/mL
 RT: 11.546 min Scan# 910
 Delta R.T. -0.000 min
 Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

Tgt Ion	Resp	Lower	Upper
178	469		
178	100		
179	17.1	0.0	35.1
176	16.4	0.0	37.1
177	12.4	0.0	29.5

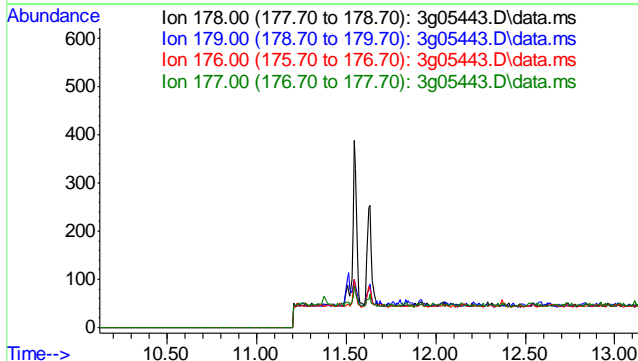




#16
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 11.63 min

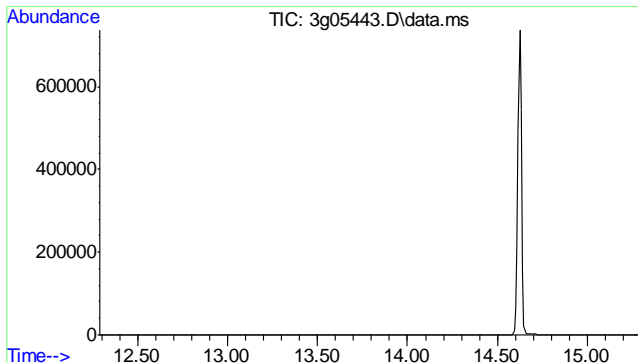
Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

Tgt Ion:	178
Sig	Exp Ratio
178	100
179	14.9
176	16.8
177	8.1



Ion 178.00 (177.70 to 178.70): 3g05443.D\data.ms
 Ion 179.00 (178.70 to 179.70): 3g05443.D\data.ms
 Ion 176.00 (175.70 to 176.70): 3g05443.D\data.ms
 Ion 177.00 (176.70 to 177.70): 3g05443.D\data.ms

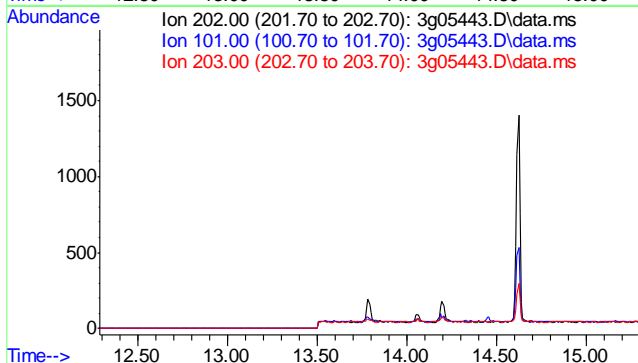
8.2.1
 8



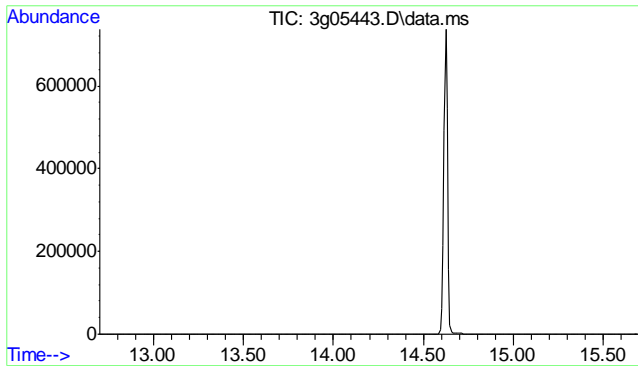
#17
 Fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 13.79 min

Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

Tgt Ion:	202
Sig	Exp Ratio
202	100
101	21.6
203	17.0



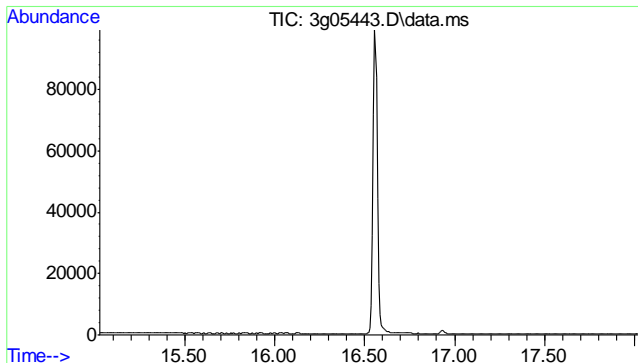
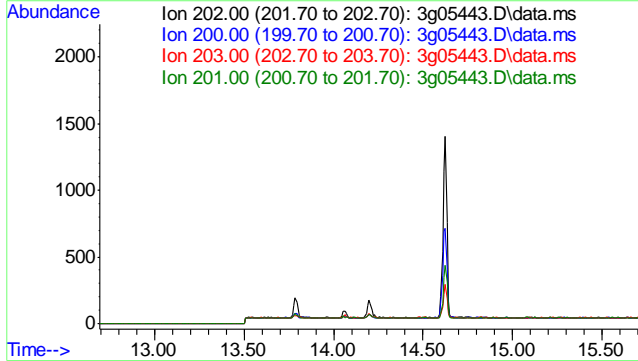
Ion 202.00 (201.70 to 202.70): 3g05443.D\data.ms
 Ion 101.00 (100.70 to 101.70): 3g05443.D\data.ms
 Ion 203.00 (202.70 to 203.70): 3g05443.D\data.ms



#19
 Pyrene
 Concen: N.D. ug/mL
 Expected RT: 14.20 min

Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

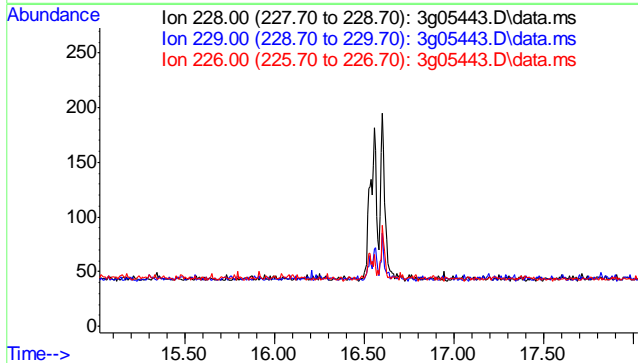
Tgt Ion	Exp Ratio
202	100
200	18.6
203	17.4
201	15.6



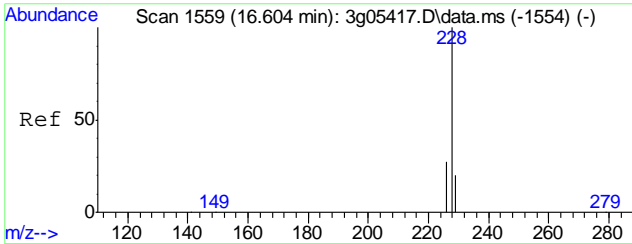
#21
 Benzo(a)anthracene
 Concen: N.D. ug/mL
 Expected RT: 16.52 min

Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

Tgt Ion	Exp Ratio
228	100
229	19.2
226	24.4

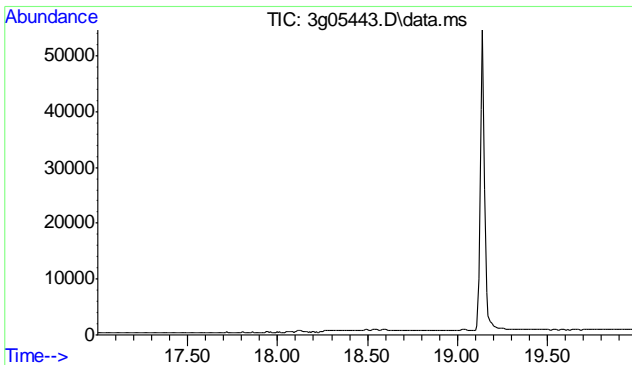
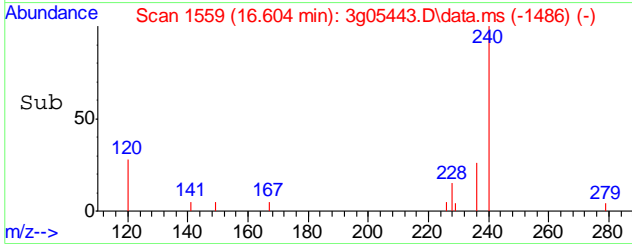
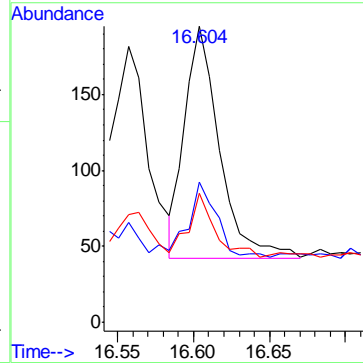
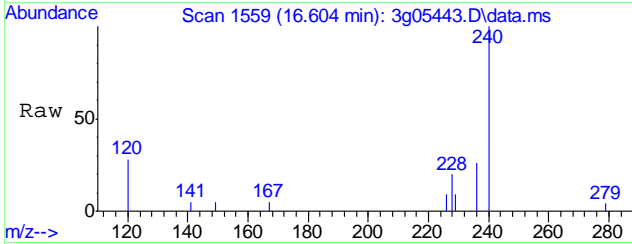


8.2.1
 8



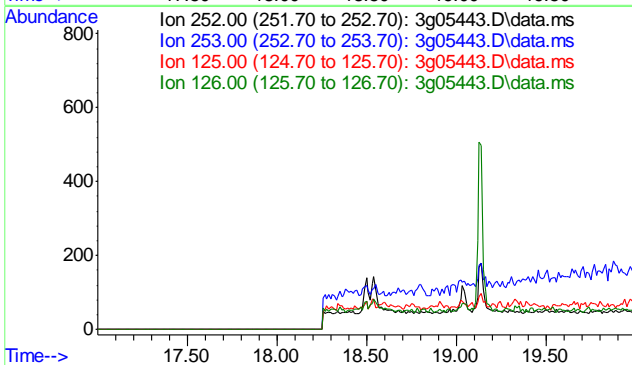
#22
 Chrysene
 Concen: Below ug/mL
 RT: 16.604 min Scan# 1559
 Delta R.T. -0.000 min
 Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

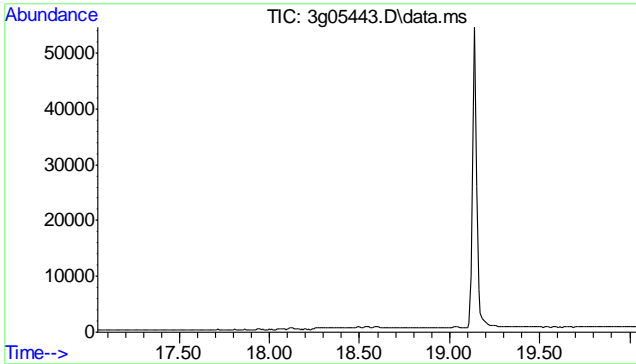
Tgt Ion	Resp	Lower	Upper
228	100		
226	27.0	6.6	46.6
229	22.5	0.0	39.2



#24
 Benzo(b)fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 18.50 min
 Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

Tgt Ion	Exp Ratio
252	100
253	21.8
125	19.5
126	26.9

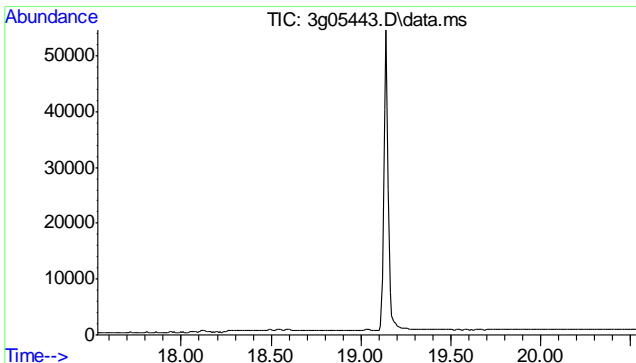
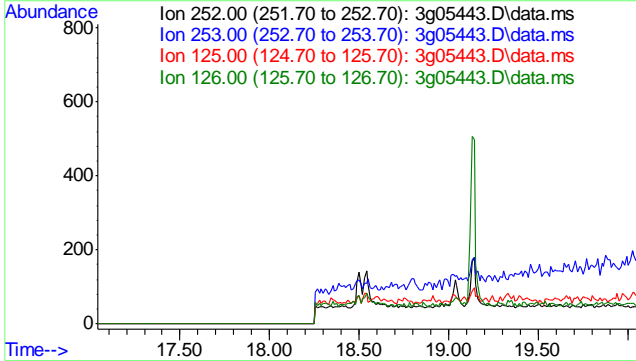




#25
 Benzo(k)fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 18.54 min

Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

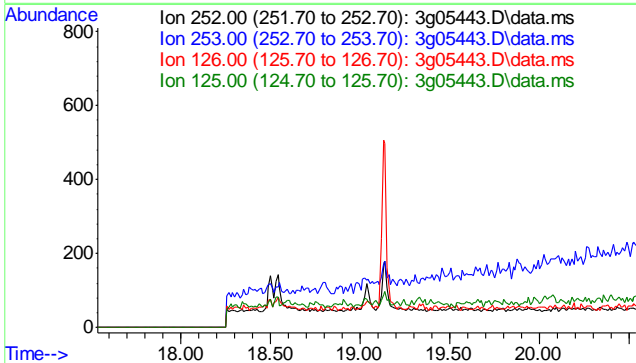
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.7
125	22.5
126	34.6

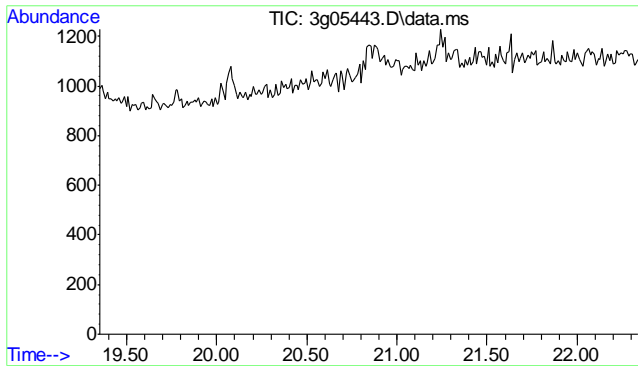


#26
 Benzo(a)pyrene
 Concen: N.D. ug/mL
 Expected RT: 19.04 min

Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.4
126	30.2
125	21.8

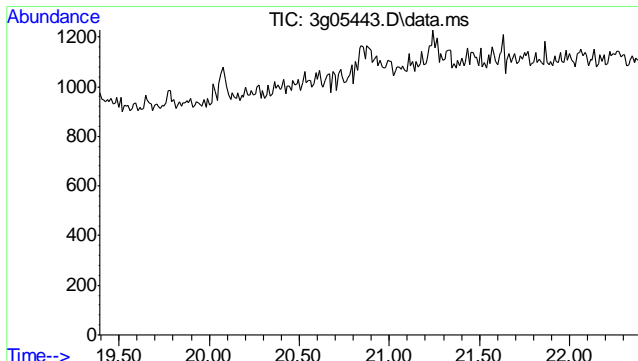
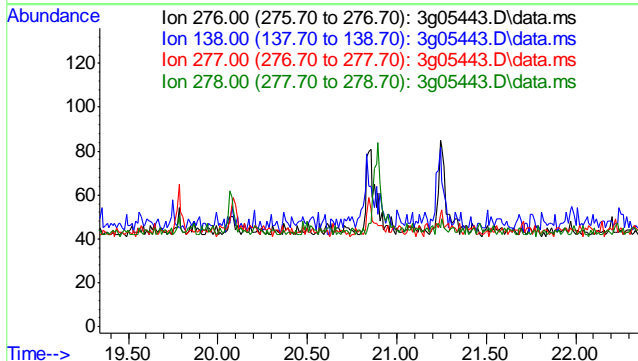




#27
 Indeno(1,2,3-cd)pyrene
 Concen: N.D. ug/mL
 Expected RT: 20.84 min

Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

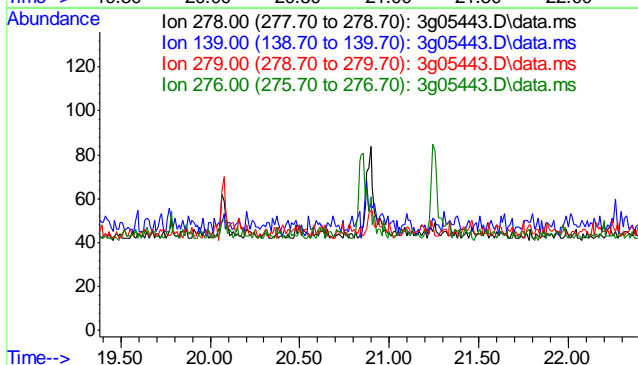
Tgt Ion:	276
Sig	Exp Ratio
276	100
138	46.3
277	32.4
278	0.0

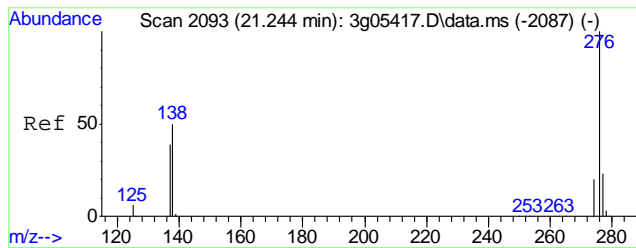


#28
 Dibenz(a,h)anthracene
 Concen: N.D. ug/mL
 Expected RT: 20.89 min

Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

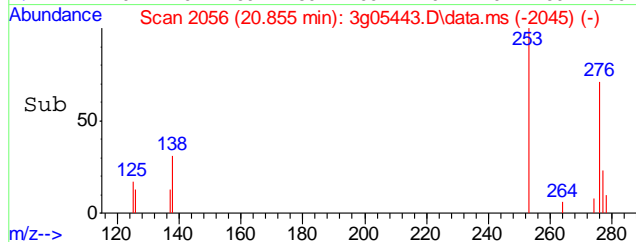
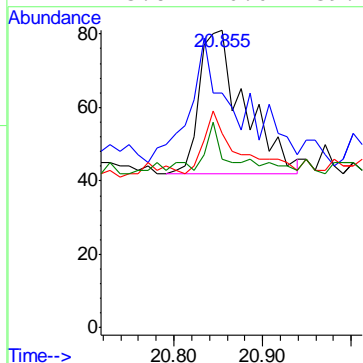
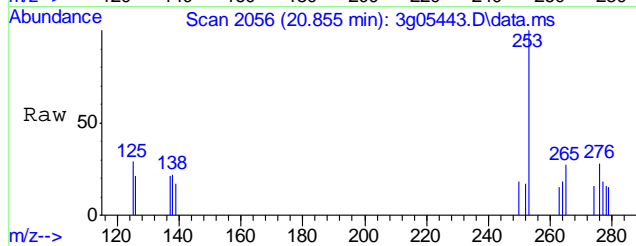
Tgt Ion:	278
Sig	Exp Ratio
278	100
139	38.1
279	23.1
276	119.7





#29
 Benzo(g,h,i)perylene
 Concen: Below ug/mL
 RT: 20.855 min Scan# 2056
 Delta R.T. -0.388 min
 Lab File: 3g05443.D
 Acq: 15 Aug 11 6:17 pm

Tgt Ion	Resp	Lower	Upper
276	100		
138	63.8	29.0	69.0
277	32.6	3.1	43.1
274	13.8	0.0	39.4



8.2.1
 8

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB705-MB	GB12368.D	1	08/14/11	SK	n/a	n/a	GGB705

The QC reported here applies to the following samples:

Method: SW846 8015B

D26396-1

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	89% 60-140%

Blank Spike Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB705-BS	GB12369.D	1	08/14/11	SK	n/a	n/a	GGB705

The QC reported here applies to the following samples:

Method: SW846 8015B

D26396-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	113	103	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	101%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D26288-7MS	GB12371.D	1	08/14/11	SK	n/a	n/a	GGB705
D26288-7MSD	GB12372.D	1	08/14/11	SK	n/a	n/a	GGB705
D26288-7	GB12370.D	1	08/14/11	SK	n/a	n/a	GGB705

The QC reported here applies to the following samples:

Method: SW846 8015B

D26396-1

CAS No.	Compound	D26288-7 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	137	147	107	148	108	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D26288-7	Limits
120-82-1	1,2,4-Trichlorobenzene	98%	98%	83%	60-140%

9.3.1
9



GC Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\081411\GB12390.D\FID1A.CH Vial: 25
 Signal #2 : Y:\1\DATA\081411\GB12390.D\FID2B.CH
 Acq On : 15 Aug 2011 6:51 am Operator: StephK
 Sample : D26396-1, 50X Inst : GC/MS Ins
 Misc : GC2136,GGB705,5.030,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Aug 15 08:38:46 2011 Quant Results File: TB630GB630SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB630GB630SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Tue Aug 09 08:19:25 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	14.31	3168612	81.864 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.31	32695536	98.900 %	
Target Compounds				
1) H TVH-Gasoline	7.21	80353201	1.163	mg/L
4) T Methyl-t-butyl-ether	2.18	641569	2.717	ug/L
5) T Benzene	4.03	2137958	3.152	ug/L
6) T Toluene	7.53	21558002	33.011	ug/L
7) T Ethylbenzene	10.19	6607974	11.526	ug/L
8) T m,p-Xylene	10.37	26954688	39.782	ug/L
9) T o-Xylene	10.88	2554424	4.497	ug/L
11) T Naphthalene	14.54	7390450	23.083	ug/L

10.1.1
10

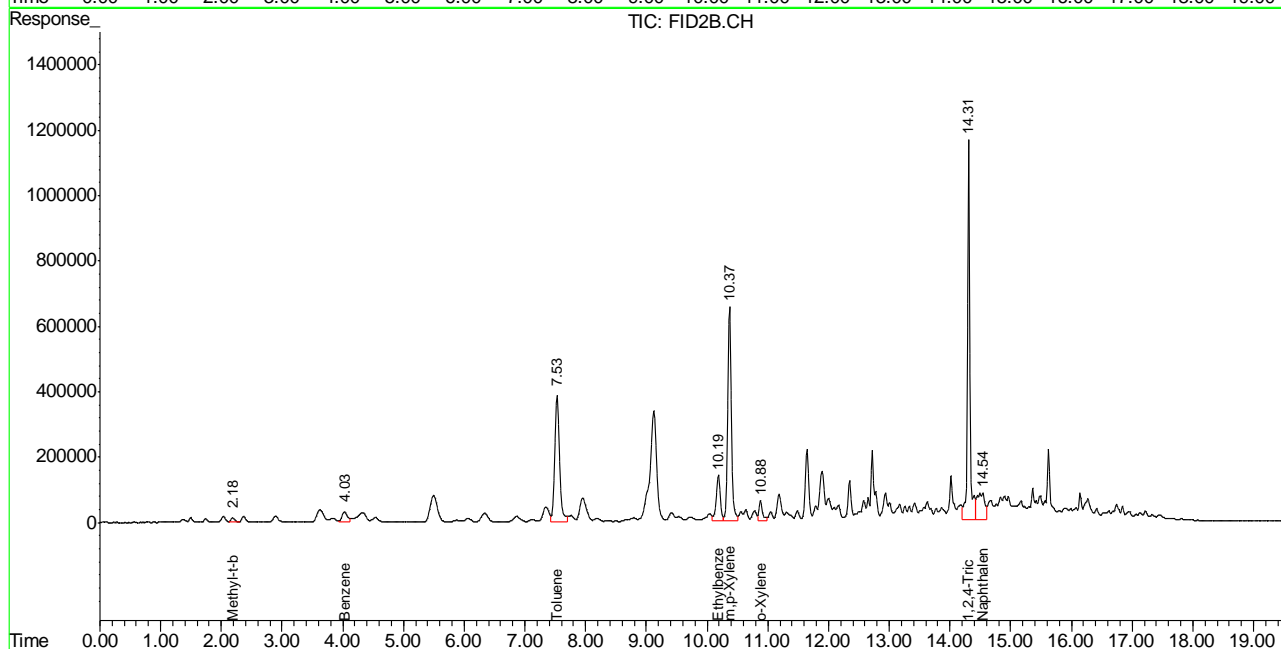
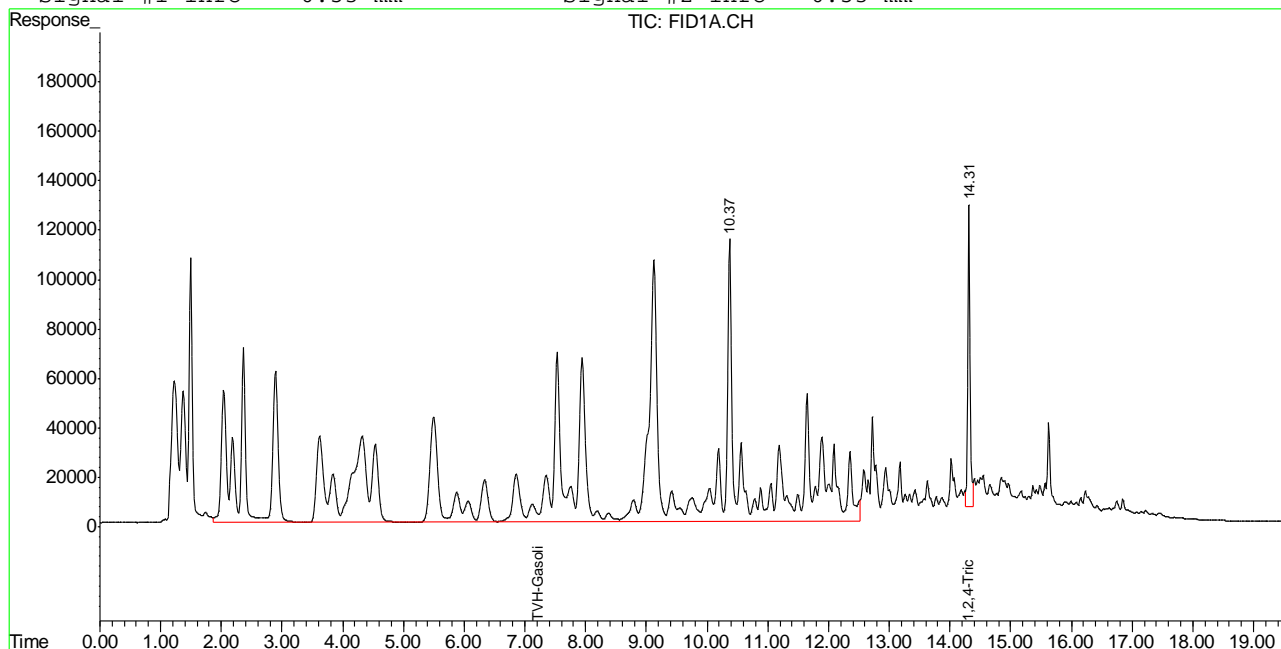
(f)=RT Delta > 1/2 Window (m)=manual int.
 GB12390.D TB630GB630SOIL.M Mon Aug 15 09:04:55 2011 GC

Quantitation Report (QT Reviewed)

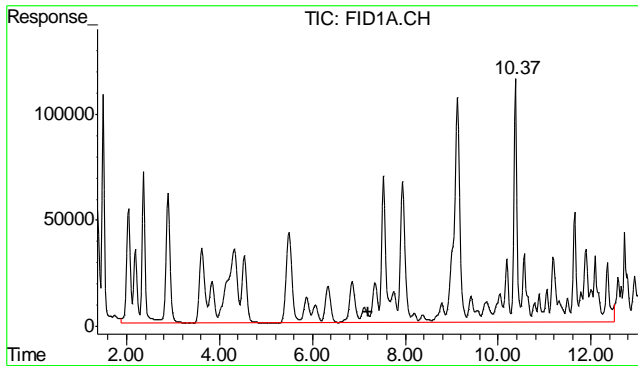
Signal #1 : Y:\1\DATA\081411\GB12390.D\FID1A.CH Vial: 25
 Signal #2 : Y:\1\DATA\081411\GB12390.D\FID2B.CH
 Acq On : 15 Aug 2011 6:51 am Operator: StephK
 Sample : D26396-1, 50X Inst : GC/MS Ins
 Misc : GC2136,GGB705,5.030,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Aug 15 7:48 2011 Quant Results File: TB630GB630SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB630GB630SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Tue Aug 09 08:19:25 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

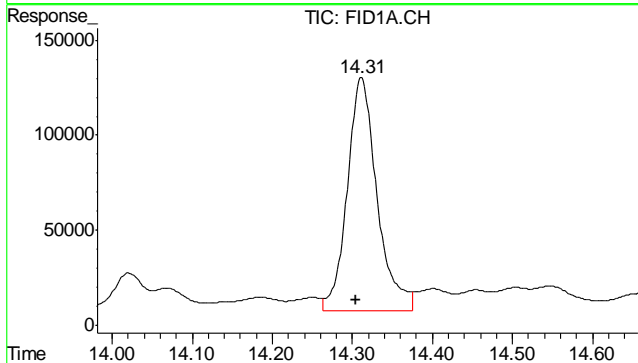
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm



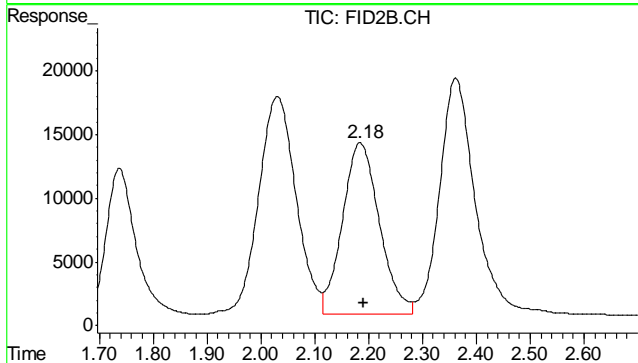
10.1.1 10



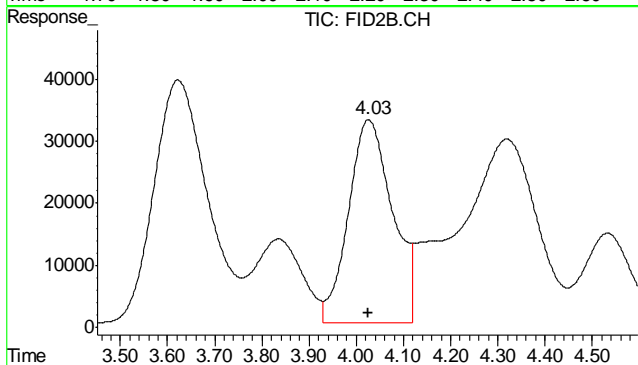
#1 TVH-Gasoline
 R.T.: 7.215 min
 Delta R.T.: 0.000 min
 Response: 80353201
 Conc: 1.16 mg/L m



#2 1,2,4-Trichlorobenzene
 R.T.: 14.311 min
 Delta R.T.: 0.006 min
 Response: 3168612
 Conc: 81.86 % m

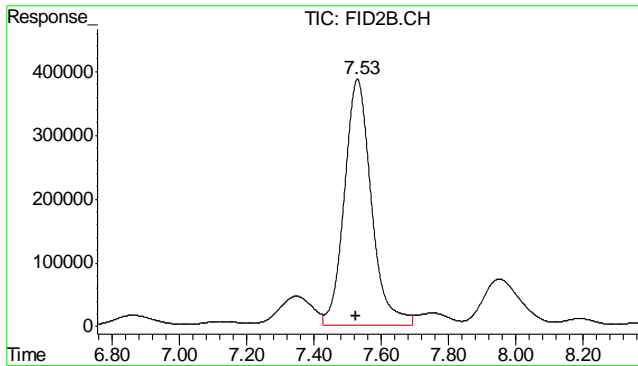


#4 Methyl-t-butyl-ether
 R.T.: 2.185 min
 Delta R.T.: -0.006 min
 Response: 641569
 Conc: 2.72 ug/L

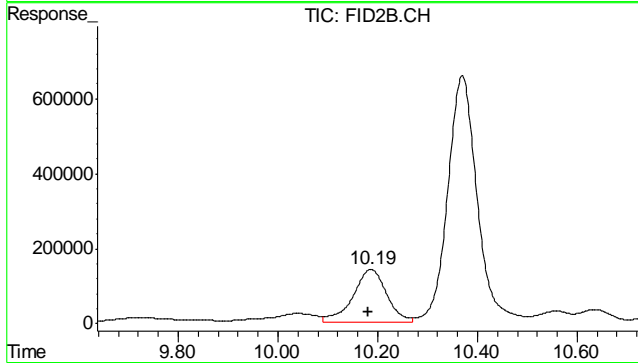


#5 Benzene
 R.T.: 4.026 min
 Delta R.T.: 0.002 min
 Response: 2137958
 Conc: 3.15 ug/L

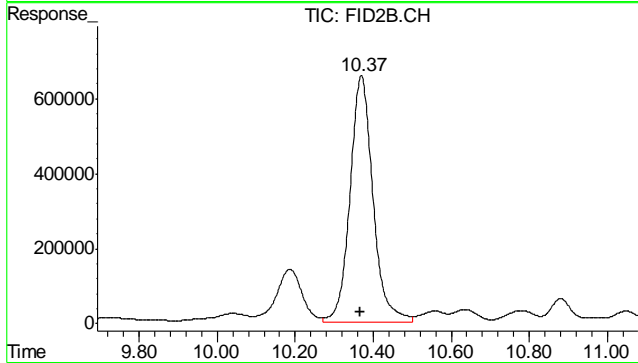
10.1.1
 10



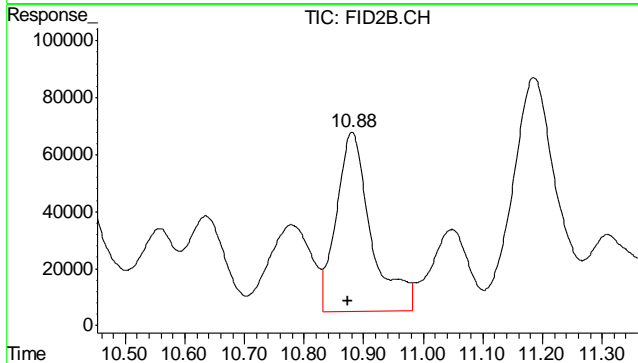
#6 Toluene
 R.T.: 7.529 min
 Delta R.T.: 0.004 min
 Response: 21558002
 Conc: 33.01 ug/L



#7 Ethylbenzene
 R.T.: 10.186 min
 Delta R.T.: 0.006 min
 Response: 6607974
 Conc: 11.53 ug/L

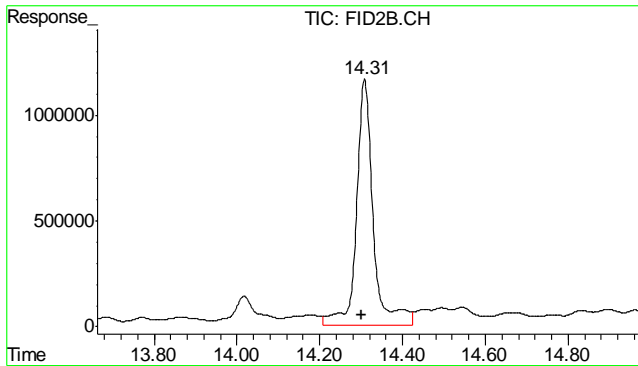


#8 m,p-Xylene
 R.T.: 10.370 min
 Delta R.T.: 0.003 min
 Response: 26954688
 Conc: 39.78 ug/L

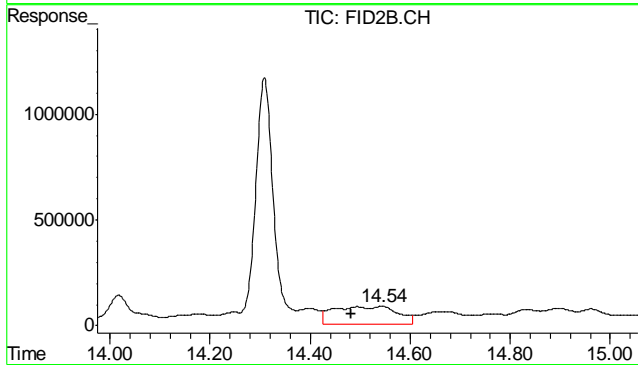


#9 o-Xylene
 R.T.: 10.881 min
 Delta R.T.: 0.007 min
 Response: 2554424
 Conc: 4.50 ug/L

10.1.1
10



#10 1,2,4-Trichlorobenzene (P)
 R.T.: 14.309 min
 Delta R.T.: 0.008 min
 Response: 32695536
 Conc: 98.90 %



#11 Naphthalene
 R.T.: 14.542 min
 Delta R.T.: 0.059 min
 Response: 7390450
 Conc: 23.08 ug/L

10.1.1
 10

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\081411\GB12368.D\FID1A.CH Vial: 3
 Signal #2 : Y:\1\DATA\081411\GB12368.D\FID2B.CH
 Acq On : 14 Aug 2011 5:43 pm Operator: StephK
 Sample : MB, S Inst : GC/MS Ins
 Misc : GC2136,GGB705,5.000,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Aug 15 08:37:18 2011 Quant Results File: TB630GB630SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB630GB630SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Tue Aug 09 08:19:25 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	14.32	3431760	88.663 %
10) S 1,2,4-Trichlorobenzene (P)	14.32	30644296	92.035 %
Target Compounds			
1) H TVH-Gasoline	7.21	2547962	N.D. 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	7.55	220688	0.338 ug/L
7) T Ethylbenzene	10.21	87893	0.153 ug/L
8) T m,p-Xylene	10.39	404826	0.597 ug/L
9) T o-Xylene	10.90	274791	0.484 ug/L
11) T Naphthalene	14.50	426955	1.334 ug/L

10.2.1 10

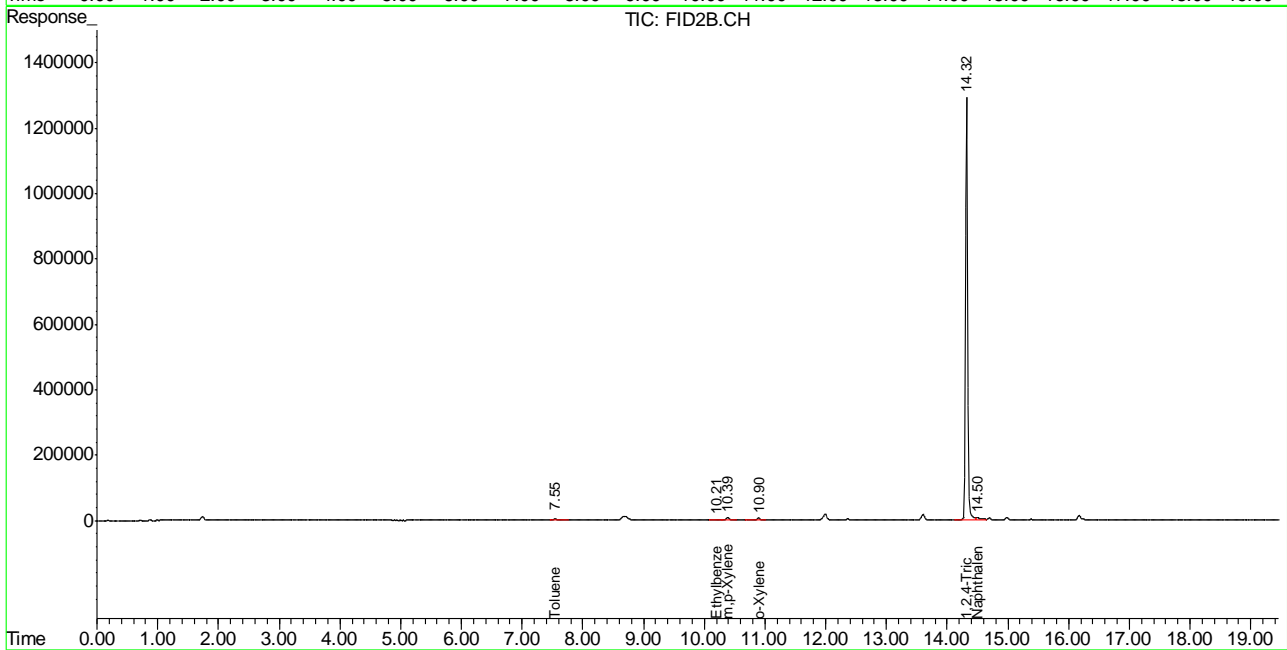
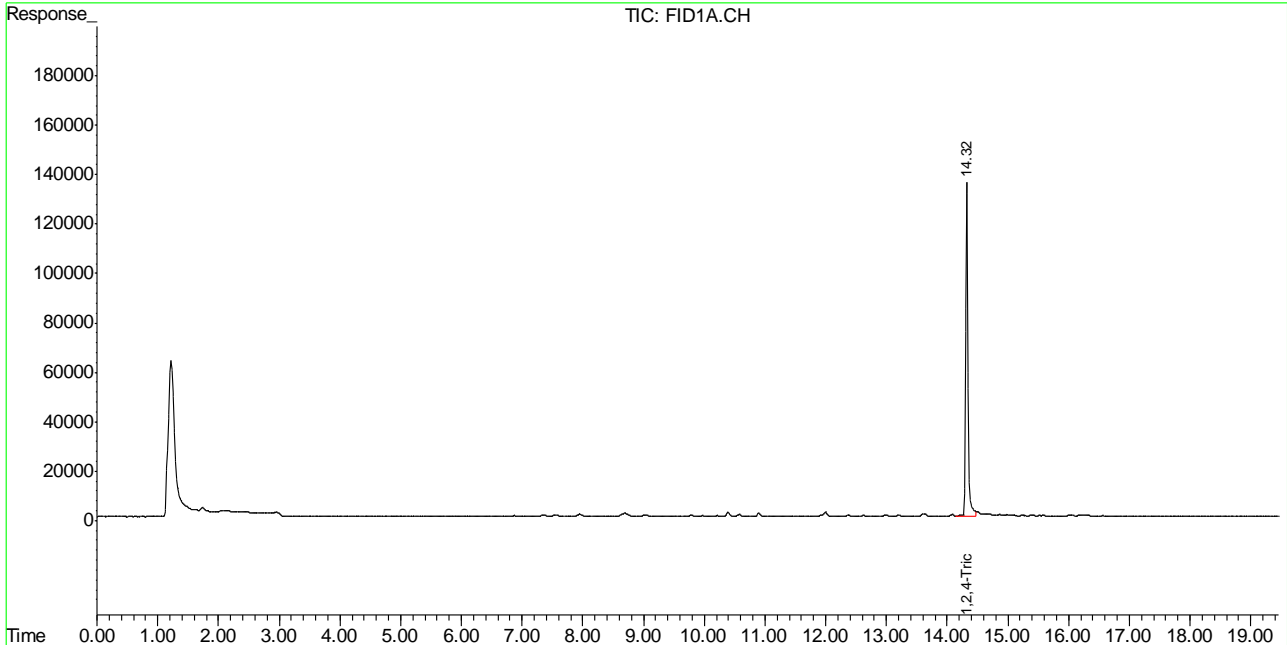
(f)=RT Delta > 1/2 Window (m)=manual int.
 GB12368.D TB630GB630SOIL.M Mon Aug 15 09:03:49 2011 GC

Quantitation Report (QT Reviewed)

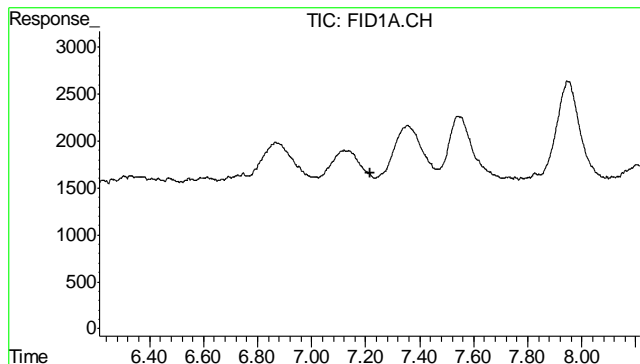
Signal #1 : Y:\1\DATA\081411\GB12368.D\FID1A.CH Vial: 3
 Signal #2 : Y:\1\DATA\081411\GB12368.D\FID2B.CH
 Acq On : 14 Aug 2011 5:43 pm Operator: StephK
 Sample : MB, S Inst : GC/MS Ins
 Misc : GC2136,GGB705,5.000,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Aug 15 7:39 2011 Quant Results File: TB630GB630SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB630GB630SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Tue Aug 09 08:19:25 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

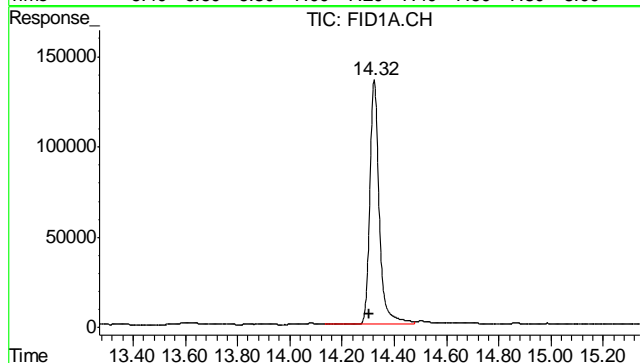
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm



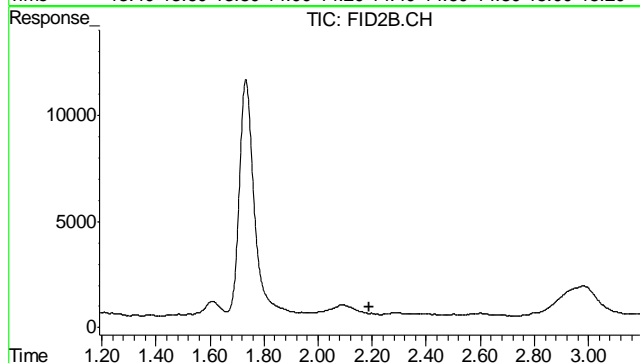
10.2.1 10



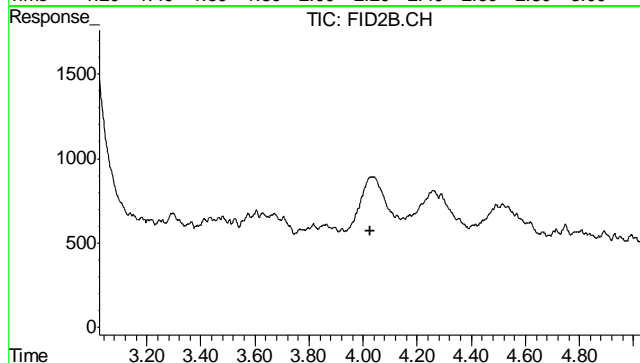
#1 TVH-Gasoline
 R.T.: 7.215 min
 Delta R.T.: 0.000 min
 Response: 2547962
 Conc: N.D.



#2 1,2,4-Trichlorobenzene
 R.T.: 14.323 min
 Delta R.T.: 0.019 min
 Response: 3431760
 Conc: 88.66 %

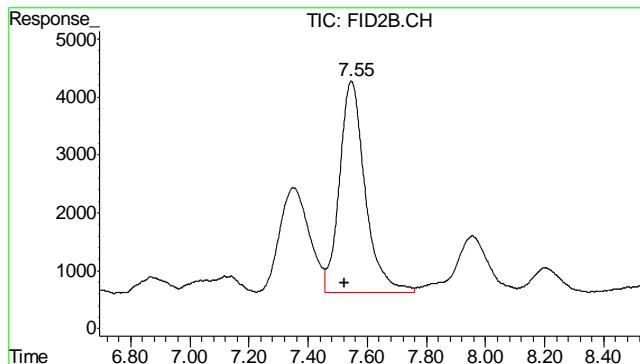


#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T. : 2.190 min
 Response: 0
 Conc: N.D.

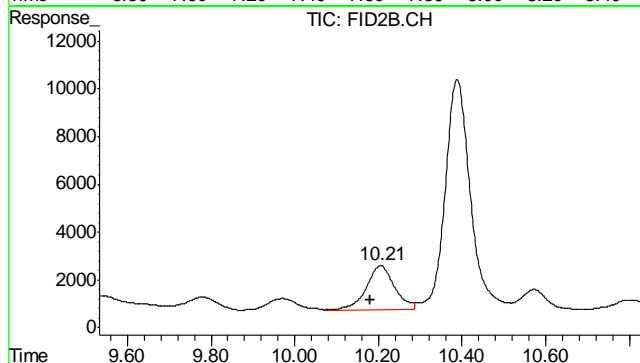


#5 Benzene
 R.T.: 0.000 min
 Exp R.T. : 4.024 min
 Response: 0
 Conc: N.D.

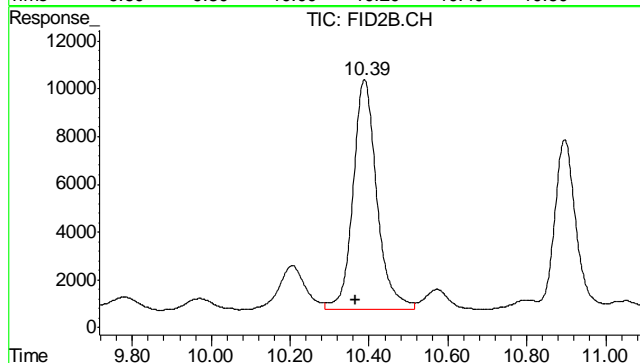
10.2.1
 10



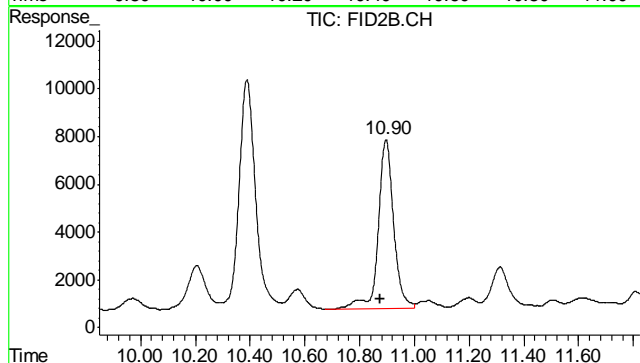
#6 Toluene
 R.T.: 7.546 min
 Delta R.T.: 0.022 min
 Response: 220688
 Conc: 0.34 ug/L



#7 Ethylbenzene
 R.T.: 10.206 min
 Delta R.T.: 0.025 min
 Response: 87893
 Conc: 0.15 ug/L

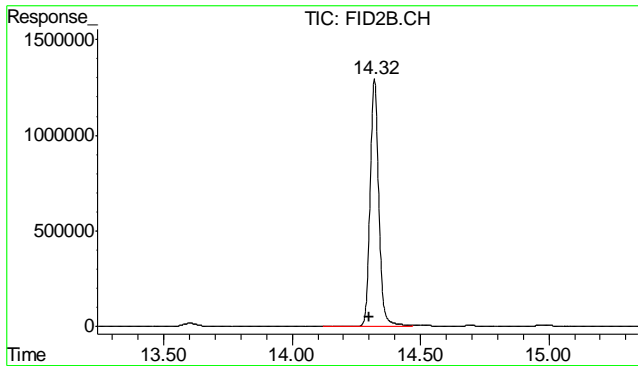


#8 m,p-Xylene
 R.T.: 10.388 min
 Delta R.T.: 0.022 min
 Response: 404826
 Conc: 0.60 ug/L



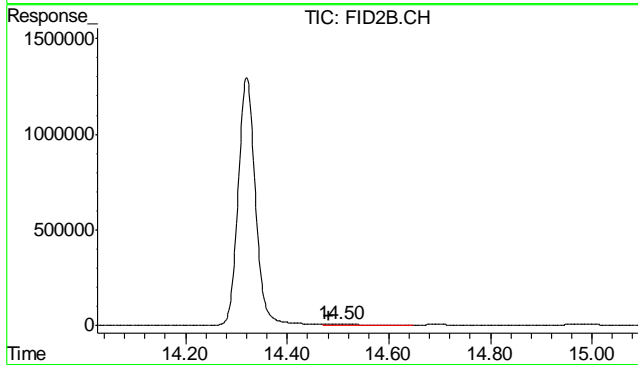
#9 o-Xylene
 R.T.: 10.896 min
 Delta R.T.: 0.022 min
 Response: 274791
 Conc: 0.48 ug/L

10.2.1
 10



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

R.T.: 14.320 min
Delta R.T.: 0.020 min
Response: 30644296
Conc: 92.03 %



#11 Naphthalene

R.T.: 14.501 min
Delta R.T.: 0.019 min
Response: 426955
Conc: 1.33 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: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4230-MB	FD09030.D	1	08/12/11	CS	08/12/11	OP4230	GFD389

The QC reported here applies to the following samples:

Method: SW846-8015B

D26396-1

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	106% 61-142%

11.1.1
11

Blank Spike Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4230-BS	FD09031.D	1	08/12/11	CS	08/12/11	OP4230	GFD389

The QC reported here applies to the following samples:

Method: SW846-8015B

D26396-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	521	78	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	88%	61-142%

11.21
11

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D26396
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4230-MS	FD09032.D	1	08/12/11	CS	08/12/11	OP4230	GFD389
OP4230-MSD	FD09033.D	1	08/12/11	CS	08/12/11	OP4230	GFD389
D26429-4	FD09038.D	1	08/13/11	CS	08/11/11	OP4230	GFD389

The QC reported here applies to the following samples:

Method: SW846-8015B

D26396-1

CAS No.	Compound	D26429-4 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	46.3	741	538	66	602	75	11	24-157/35

CAS No.	Surrogate Recoveries	MS	MSD	D26429-4	Limits
84-15-1	o-Terphenyl	73%	80%	87%	61-142%

11.3.1
11

GC Semi-volatiles

Raw Data

Manual Integrations
APPROVED
(compounds with "m" flag)
Judy Melson
08/24/11 15:57

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\AUG\FD081211\FD09046.D Vial: 46
Acq On : 8-13-2011 05:30:45 AM Operator: CHAVALIT
Sample : D26396-1 Inst : FID5
Misc : OP4230,GFD389,30.01,,,2,1 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Aug 13 13:27:55 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Aug 11 11:51:33 2011
Response via : Initial Calibration
DataAcq Meth : JH080911.M

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

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) S O-Terphenyl	9.47	22964318	502.254 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.43	237677942	5402.778 mg/L

12.1.1
12

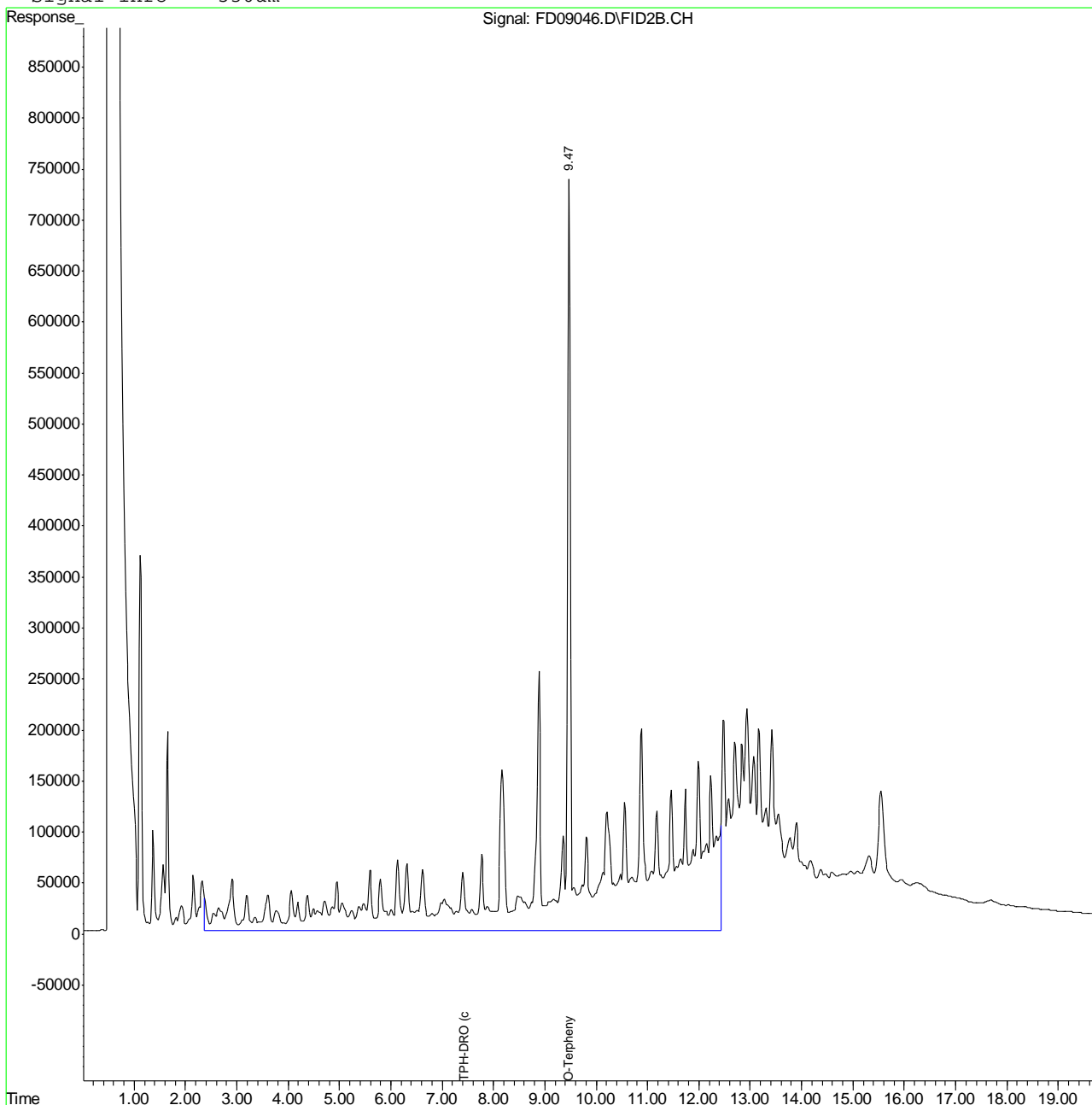
(f)=RT Delta > 1/2 Window (m)=manual int.
FD09046.D GFD356.M Wed Aug 24 15:37:18 2011 GC

Quantitation Report (QT Reviewed)

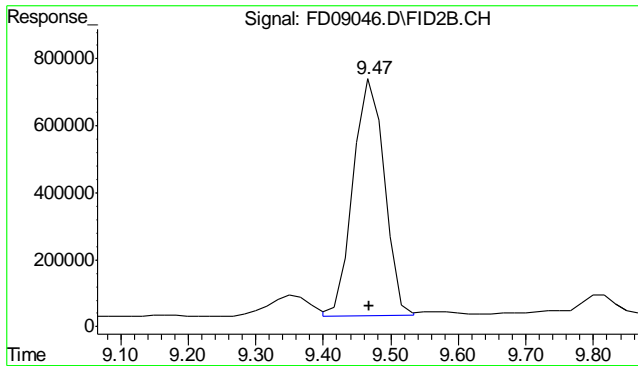
Data File : C:\MSDCHEM\2\DATA\2011\AUG\FD081211\FD09046.D Vial: 46
 Acq On : 8-13-2011 05:30:45 AM Operator: CHAVALIT
 Sample : D26396-1 Inst : FID5
 Misc : OP4230,GFD389,30.01,,,2,1 Multiplr: 1.00
 IntFile : DF-GFC101.E
 Quant Time: Aug 13 13:28 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Thu Aug 11 11:51:33 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : JH080911.M

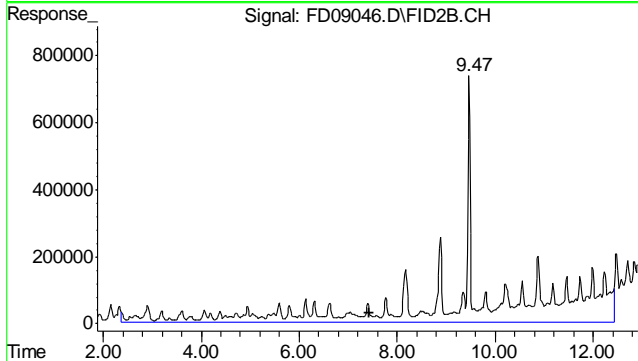
Volume Inj. : 1ul
 Signal Phase : RTX-5
 Signal Info : 530um



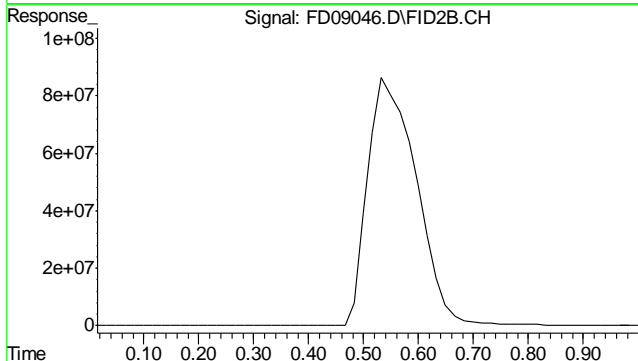
12.1.1
12



#1 O-Terphenyl
 R.T.: 9.467 min
 Delta R.T.: 0.000 min
 Response: 22964318
 Conc: 502.25 mg/L m



#2 TPH-DRO (c10-c28)
 R.T.: 7.435 min
 Delta R.T.: 0.000 min
 Response: 237677942
 Conc: 5402.78 mg/L m



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

12.1.1
12

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\AUG\FD081911\FD09322.D Vial: 7
 Acq On : 8-19-2011 02:11:49 PM Operator: koroushv
 Sample : D26396-1CF Inst : FID5
 Misc : OP4297,GFD401,30.07,,,2,1 Multiplr: 1.00
 IntFile : DF-GFC101.E
 Quant Time: Aug 19 15:20:08 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Thu Aug 11 11:51:33 2011
 Response via : Initial Calibration
 DataAcq Meth : JH080911.M

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

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	9.46	26447485	578.435 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.43	258940387	5886.106 mg/L

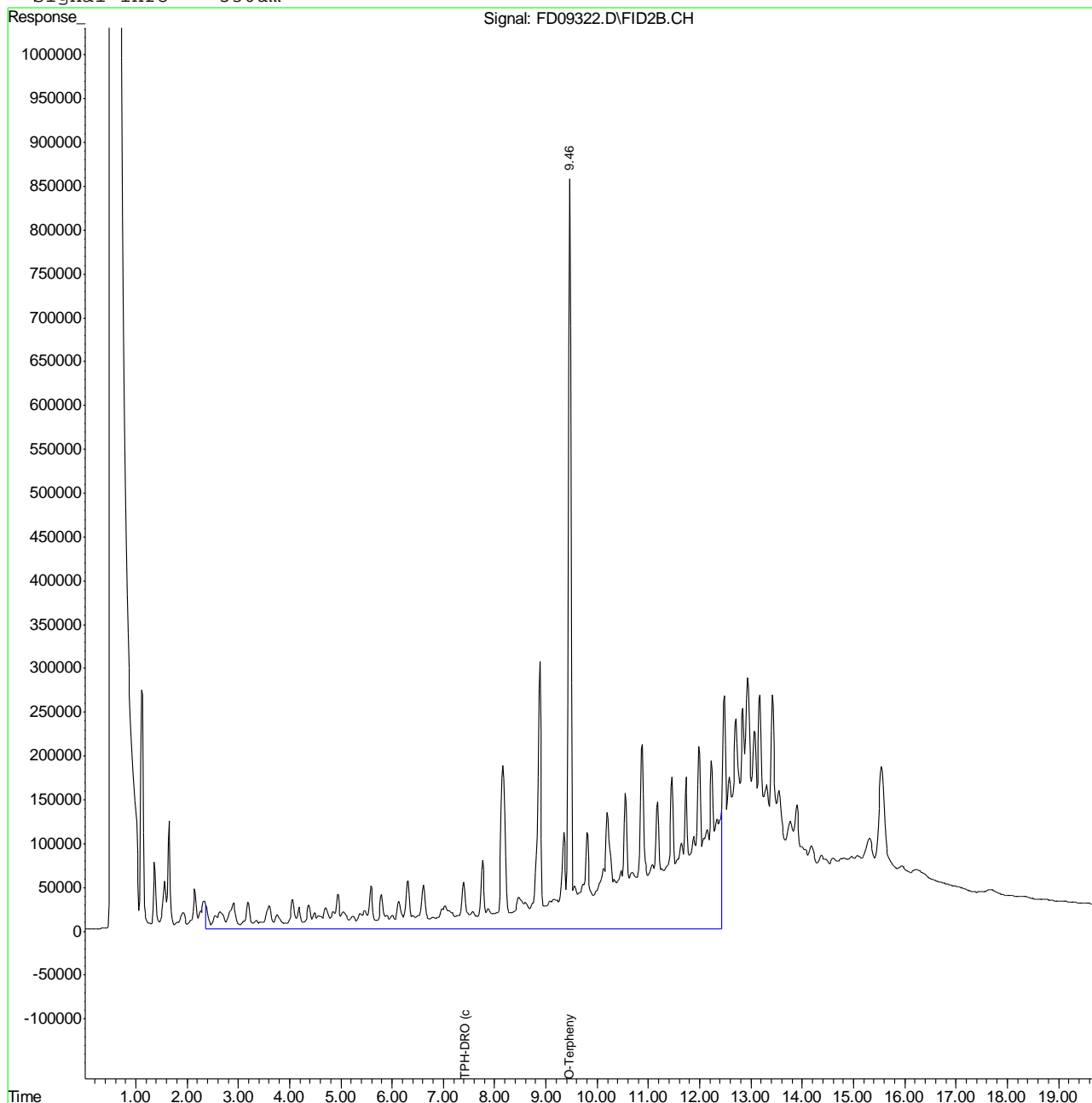
12.1.2
12

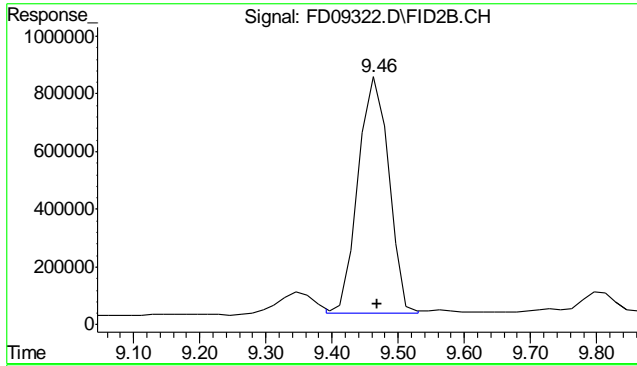
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\AUG\FD081911\FD09322.D Vial: 7
Acq On : 8-19-2011 02:11:49 PM Operator: koroushv
Sample : D26396-1CF Inst : FID5
Misc : OP4297,GFD401,30.07,,,2,1 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Aug 19 15:20 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Aug 11 11:51:33 2011
Response via : Multiple Level Calibration
DataAcq Meth : JH080911.M

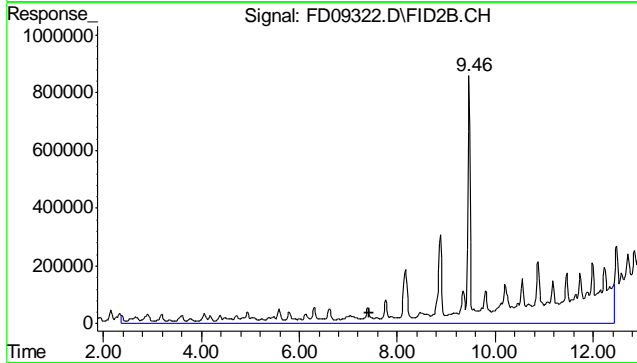
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





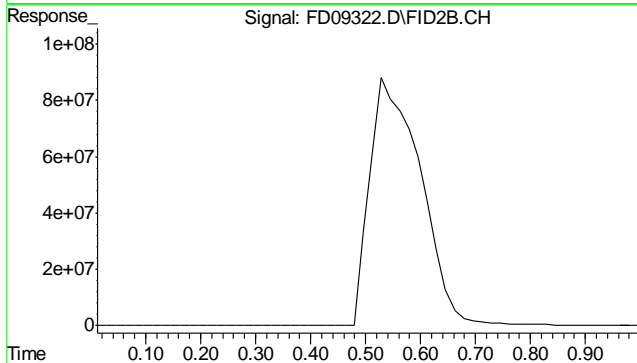
#1 O-Terphenyl

R.T.: 9.463 min
 Delta R.T.: -0.005 min
 Response: 26447485
 Conc: 578.43 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 7.435 min
 Delta R.T.: 0.000 min
 Response: 258940387
 Conc: 5886.11 mg/L m



#9 5a-Androstane

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

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\FD081211\FD09030.D Vial: 30
 Acq On : 12 Aug 2011 10:43 pm Operator: CHAVALIT
 Sample : OP4230-MB Inst : FID5
 Misc : OP4230,GFD389,30.00,,,2,1 Multiplr: 1.00
 IntFile : DF-GFC101.E
 Quant Time: Aug 13 13:19:07 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Thu Aug 11 11:51:33 2011
 Response via : Initial Calibration
 DataAcq Meth : JH080911.M

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

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	9.47	48321153	1056.835 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.43	4985671	113.332 mg/L

12.2.1
12

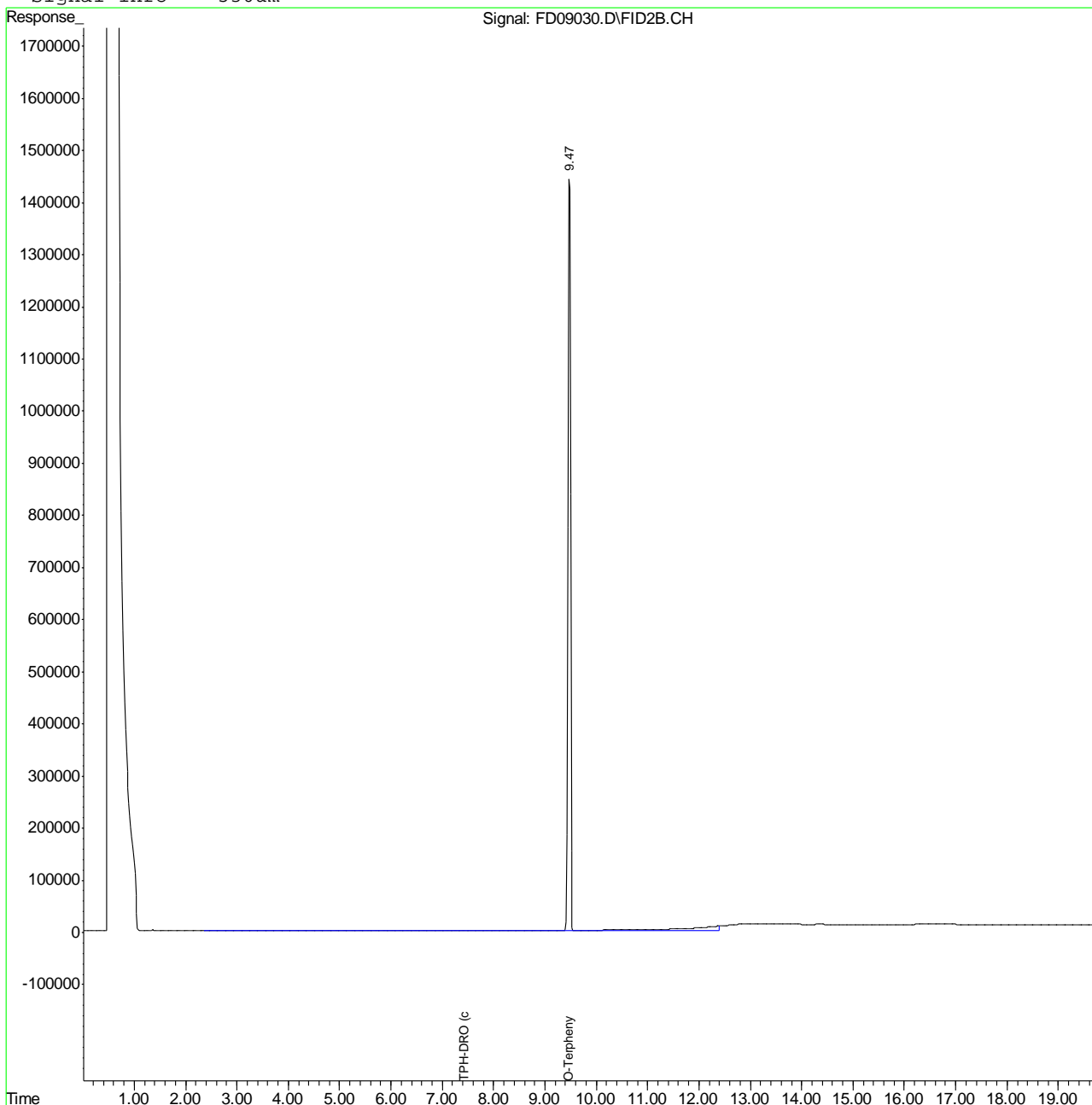
 (f)=RT Delta > 1/2 Window (m)=manual int.
 FD09030.D GFD356.M Sat Aug 13 13:19:39 2011 GC

Quantitation Report (QT Reviewed)

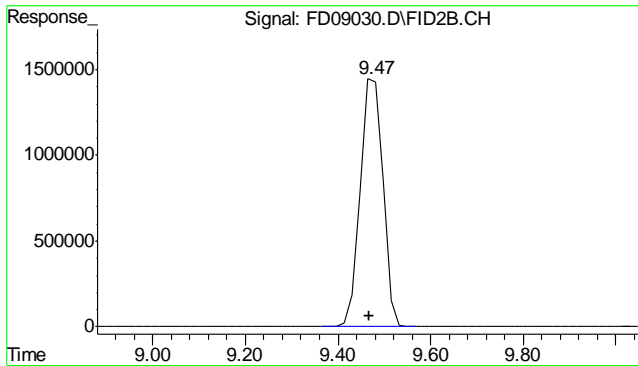
Data File : C:\MSDCHEM\2\DATA\FD081211\FD09030.D Vial: 30
 Acq On : 12 Aug 2011 10:43 pm Operator: CHAVALIT
 Sample : OP4230-MB Inst : FID5
 Misc : OP4230,GFD389,30.00,,,2,1 Multiplr: 1.00
 IntFile : DF-GFC101.E
 Quant Time: Aug 13 13:19 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Thu Aug 11 11:51:33 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : JH080911.M

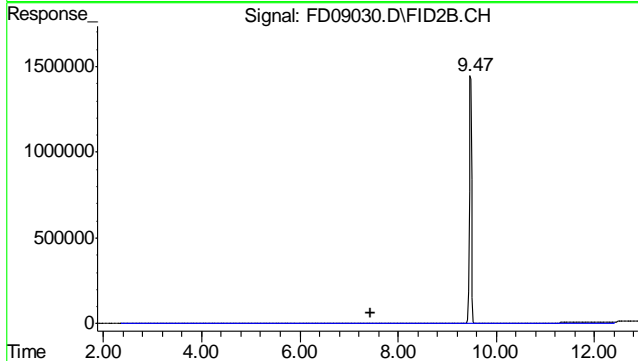
Volume Inj. : 1ul
 Signal Phase : RTX-5
 Signal Info : 530um



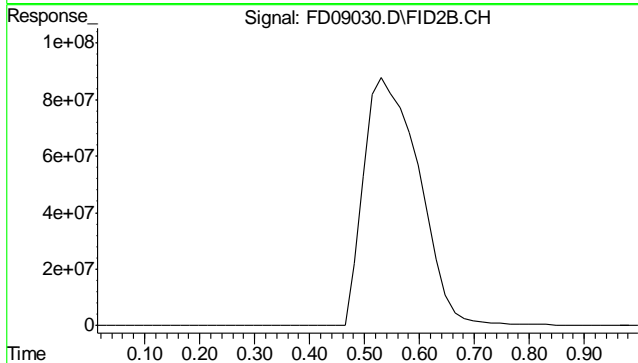
12.2.1
12



#1 O-Terphenyl
 R.T.: 9.472 min
 Delta R.T.: 0.004 min
 Response: 48321153
 Conc: 1056.83 mg/L m



#2 TPH-DRO (c10-c28)
 R.T.: 7.435 min
 Delta R.T.: 0.000 min
 Response: 4985671
 Conc: 113.33 mg/L m



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

12.2.1
12

Metals Analysis

QC Data Summaries

Includes the following where applicable:

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5445
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 08/12/11

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	0.070	<1.0
Beryllium	1.0	.044	.1		
Boron	5.0	.48	.48		
Cadmium	1.0	.027	.27	0.030	<1.0
Calcium	40	.96	1.1		
Chromium	1.0	.018	.031	0.060	<1.0
Cobalt	0.50	.035	.035		
Copper	1.0	.085	.16	-0.040	<1.0
Iron	14	.34	2		
Lead	5.0	.16	.21	-0.020	<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	-0.040	<3.0
Phosphorus	10	1.1	1.2		
Potassium	200	5.5	9.2		
Selenium	5.0	.38	.5	0.020	<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	0.27	<3.0

Associated samples MP5445: D26396-1

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

13.11
13

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5445
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5445
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 08/12/11

Metal	D26479-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum	anr				
Antimony					
Arsenic	anr				
Barium	1440	1860	213	196.8(a)	75-125
Beryllium					
Boron	anr				
Cadmium	0.14	47.4	53.3	88.6	75-125
Calcium					
Chromium	41.7	84.5	53.3	80.2	75-125
Cobalt					
Copper	15.9	63.5	53.3	89.2	75-125
Iron	anr				
Lead	12.1	100	107	82.4	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum	anr				
Nickel	20.7	62.0	53.3	77.4	75-125
Phosphorus					
Potassium	anr				
Selenium	1.9	91.4	107	83.9	75-125
Silicon					
Silver	0.17	19.7	21.3	91.5	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	45.5	85.7	53.3	75.4	75-125

Associated samples MP5445: D26396-1

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

13.12
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5445
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.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5445
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 08/12/11

Metal	D26479-1 Original MSD		SpikeLot MPICPAL % Rec		MSD RPD	QC Limit
Aluminum	anr					
Antimony						
Arsenic	anr					
Barium	1440	1760	205	155.9(a)	5.5	20
Beryllium						
Boron	anr					
Cadmium	0.14	45.9	51.3	89.2	3.2	20
Calcium						
Chromium	41.7	85.1	51.3	84.6	0.7	20
Cobalt						
Copper	15.9	61.5	51.3	88.9	3.2	20
Iron	anr					
Lead	12.1	97.0	103	82.7	3.0	20
Lithium						
Magnesium						
Manganese						
Molybdenum	anr					
Nickel	20.7	59.8	51.3	76.2	3.6	20
Phosphorus						
Potassium	anr					
Selenium	1.9	88.7	103	84.6	3.0	20
Silicon						
Silver	0.17	19.0	20.5	91.7	3.6	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	45.5	87.4	51.3	81.7	2.0	20

Associated samples MP5445: D26396-1

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

13.12
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5445
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.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5445
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 08/12/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum	anr			
Antimony				
Arsenic	anr			
Barium	190	200	95.0	80-120
Beryllium				
Boron	anr			
Cadmium	48.5	50	97.0	80-120
Calcium				
Chromium	48.5	50	97.0	80-120
Cobalt				
Copper	48.0	50	96.0	80-120
Iron	anr			
Lead	96.5	100	96.5	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum	anr			
Nickel	46.8	50	93.6	80-120
Phosphorus				
Potassium	anr			
Selenium	93.3	100	93.3	80-120
Silicon				
Silver	20.2	20	101.0	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	47.4	50	94.8	80-120

Associated samples MP5445: D26396-1

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

13.1.3
 13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5445
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5445
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: ug/l

Prep Date: 08/12/11

Metal	D26479-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony				
Arsenic	anr			
Barium	14300	17000	19.1*(a)	0-10
Beryllium				
Boron	anr			
Cadmium	1.40	0.00	100.0(b)	0-10
Calcium				
Chromium	414	495	19.6*(a)	0-10
Cobalt				
Copper	158	166	5.1	0-10
Iron	anr			
Lead	120	133	10.7*(a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum	anr			
Nickel	206	253	23.1*(a)	0-10
Phosphorus				
Potassium	anr			
Selenium	18.5	0.00	100.0(b)	0-10
Silicon				
Silver	1.70	5.50	223.5(b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	452	577	27.5*(a)	0-10

Associated samples MP5445: D26396-1

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

13.1.4
 13

SERIAL DILUTION RESULTS SUMMARY

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5445
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: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5446
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 08/12/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.067	<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 MP5446: D26396-1

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

13.21
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5446
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 08/12/11

Metal	D26479-1 Original MS		SpikeLot MPICPAL % Rec	QC Limits
Aluminum				
Antimony				
Arsenic	2.7	108	107	98.7 60-119
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5446: D26396-1

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

13.22
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5446
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 08/12/11

Metal	D26479-1 Original MSD		SpikeLot MPICPALL % Rec	MSD RPD	QC Limit	
Aluminum						
Antimony						
Arsenic	2.7	97.4	103	92.3	10.3	20
Barium	anr					
Beryllium						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper						
Iron						
Lead	anr					
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP5446: D26396-1

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

13.22
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5446
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 08/12/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	106	100	106.0	80-120
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5446: D26396-1

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

13.23
 13

SERIAL DILUTION RESULTS SUMMARY

Login Number: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5446
 Matrix Type: SOLID

Methods: SW846 6020
 Units: ug/l

Prep Date: 08/12/11

Metal	D26479-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	27.0	31.2	15.5*(a)	0-10
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5446: D26396-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Serial dilution indicates possible matrix interference.

13.24
 13

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5487
Matrix Type: AQUEOUS

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

Prep Date: 08/17/11

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	-11	<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	42.5	<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	-320	<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 MP5487: D26396-1A

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

13.3.1
13

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5487
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

13.3.1
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5487
 Matrix Type: AQUEOUS

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

Prep Date: 08/17/11

Metal	D26396-1A Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	7900	151000	125000	114.5	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	617	128000	125000	101.9	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	469000	580000	125000	88.8	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP5487: D26396-1A

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

13.32
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5487
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: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5487
 Matrix Type: AQUEOUS

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

Prep Date: 08/17/11

Metal	D26396-1A Original MSD		SpikeLot MPICPAL % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	7900	149000	125000	112.9	1.3	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	617	127000	125000	101.1	0.8	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	469000	562000	125000	74.4N(a)	3.2	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP5487: D26396-1A

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

13.32
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5487
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 recovery indicates possible matrix interference.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5487
 Matrix Type: AQUEOUS

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

Prep Date: 08/17/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	145000	125000	116.0	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	127000	125000	101.6	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	124000	125000	99.2	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5487: D26396-1A

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

13.33
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5487
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

13.3.3
13

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5540
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 08/23/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.013	-0.0020	<0.10

Associated samples MP5540: D26396-1

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: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5540
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 08/23/11

Metal	D26397-1 Original MS	Spike HGWSR1	lot % Rec	QC Limits
-------	-------------------------	-----------------	--------------	--------------

Mercury 0.0062 0.47 0.463 100.2 85-115

Associated samples MP5540: D26396-1

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: D26396
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM PCU 297-12A

QC Batch ID: MP5540
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 08/23/11

Metal	D26397-1 Original MSD	Spike HGWSR1	lot % Rec	MSD RPD	QC Limit	
Mercury	0.0062	0.46	0.454	100.0	2.2	20

Associated samples MP5540: D26396-1

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: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

QC Batch ID: MP5540
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 08/23/11

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

Associated samples MP5540: D26396-1

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

13.4.3
13

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: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP5232/GN11123			umhos/cm	9986	9930	99.4	90-110%
pH	GN11016			su	8.00	8.00	100.0	99.3-100.7%

Associated Samples:
Batch GN11016: D26396-1
Batch GP5232: D26396-1
(*) Outside of QC limits

14.1
14

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D26396
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM PCU 297-12A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Redox Potential Vs H2	GN11018	D26479-1	mv	414	412	0.5	0-20%

Associated Samples:
Batch GN11018: D26396-1
(*) Outside of QC limits

14.2
14

Misc. Forms

Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

4036 Youngfield St., Wheat Ridge, CO 80033
 303-425-6021 FAX: 303-425-6854

Accutest Job #:	D26396
Accutest Quote #:	0
AMS P.O. #:	
Project No.:	

Client Information			Subcontract Laboratory Information						Analytical Information				
Name Accutest Mountain States (AMS)			Name Accutest - New England										
Address 4036 Youngfield St.			Address 495 Technology Center West, BLDG C										
City Wheat Ridge,	State CO	Zip 80033	City Marlborough	State MA	Zip 01752								
Send Report to: Tiffany Pham			Contact: Sample Management										
Any questions contact: Shea Greiner			Phone: (508) 481-6200										
Phone/Fax #: (303) 425-6021; (303) 425-6854													
Field ID / Point of Collection		Collection			Matrix	# of bottles	Preservation				XCRA	Comments	
		Date	Time				HCl	NaOH	HNO3	H2SO4			None
D26396 -1		8/9/11	3:00 PM		Soil	1					X		
Turnaround Information			Data Deliverable Information						Comments / Remarks				
<input checked="" type="checkbox"/> 10 Business Day Standard <input type="checkbox"/> Other _____ (Days)			Approved By: _____			<input type="checkbox"/> Commercial "A" <input type="checkbox"/> Commercial "B" <input type="checkbox"/> Commercial "BN" <input type="checkbox"/> Reduced Tier 1 <input type="checkbox"/> Full Tier 1		<input type="checkbox"/> PDF <input type="checkbox"/> Compact Disk Deliverable <input type="checkbox"/> Electronic Delivery: <input type="checkbox"/> State Forms <input type="checkbox"/> Other (Specify) _____		Please use Colorado regulations and RLs. 12F			
10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.													
Sample Custody must be documented below each time samples change possession, including courier delivery.						For Subcontract Laboratory Use Only							
Relinquished by: 1	Date & Time: 8/12/11	Received By: 1	Date & Time: 1	Seal #:	Headspace: Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>								
Relinquished by: 2	Date & Time: 8-13-11 1046	Received By: 2	Date & Time: 2	Preserved where applicable: <input type="checkbox"/>									
Relinquished by: 3	Date & Time:	Received By: 3	Date & Time: 3	Temperature °C 22°	On Ice <input type="checkbox"/>								

D26396: Chain of Custody
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Accutest Labs of New England, Inc.

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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: D26396
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM PCU 297-12A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP13366/GN35813	0.40	0.0	mg/kg	40	44.6	111.5	80-120%
Chromium, Hexavalent	GP13366/GN35813			mg/kg	741	883	119.2	80-120%

Associated Samples:
Batch GP13366: D26396-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D26396
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM PCU 297-12A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP13366/GN35813	D26246-1	mg/kg	0.0	0.0	0.0	0-20%

Associated Samples:
Batch GP13366: D26396-1
(*) Outside of QC limits

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MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D26396
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM PCU 297-12A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP13366/GN35813	D26246-1	mg/kg	0.0	40.9	47.3	115.7	75-125%
Chromium, Hexavalent	GP13366/GN35813	D26246-1	mg/kg	0.0	962	1180	122.7	75-125%

Associated Samples:
Batch GP13366: D26396-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

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