



06/19/12

Technical Report for

XTO Energy

FRU 297-8B

1106-06

Accutest Job Number: D35344

Sampling Date: 06/11/12


Report to:

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

Total number of pages in report: 72



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


Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

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

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Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Sample Results	5
3.1: D35344-1: CUT #1 MIX BLEND DAY 1 (6/7)	6
Section 4: Misc. Forms	9
4.1: Chain of Custody	10
Section 5: GC/MS Volatiles - QC Data Summaries	12
5.1: Method Blank Summary	13
5.2: Blank Spike Summary	14
5.3: Matrix Spike/Matrix Spike Duplicate Summary	15
Section 6: GC/MS Volatiles - Raw Data	16
6.1: Samples	17
6.2: Method Blanks	35
Section 7: GC Volatiles - QC Data Summaries	47
7.1: Method Blank Summary	48
7.2: Blank Spike Summary	49
7.3: Matrix Spike/Matrix Spike Duplicate Summary	50
Section 8: GC Volatiles - Raw Data	51
8.1: Samples	52
8.2: Method Blanks	57
Section 9: GC Semi-volatiles - QC Data Summaries	62
9.1: Method Blank Summary	63
9.2: Blank Spike Summary	64
9.3: Matrix Spike/Matrix Spike Duplicate Summary	65
Section 10: GC Semi-volatiles - Raw Data	66
10.1: Samples	67
10.2: Method Blanks	70



Sample Summary

XTO Energy

Job No: D35344

FRU 297-8B
Project No: 1106-06

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D35344-1	06/11/12	11:15	CB	06/12/12	SO	Soil	CUT #1 MIX BLEND DAY 1 (6/7)

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



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: XTO Energy

Job No D35344

Site: FRU 297-8B

Report Date 6/19/2012 10:01:01 AM

On 06/12/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.0 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D35344 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: V5V1338

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35276-15MS, D35276-15MSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8015B

Matrix SO

Batch ID: GGB907

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35344-1MS, D35344-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO

Batch ID: OP6047

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35286-2MS, D35286-2MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO

Batch ID: GN15391

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

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 Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT #1 MIX BLEND DAY 1 (6/7)	
Lab Sample ID:	D35344-1	Date Sampled: 06/11/12
Matrix:	SO - Soil	Date Received: 06/12/12
Method:	SW846 8260B	Percent Solids: 87.3
Project:	FRU 297-8B	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V21883.D	1	06/14/12	BD	n/a	n/a	V5V1338
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.0375	0.064	0.024	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	90%		61-130%
460-00-4	4-Bromofluorobenzene	93%		53-131%
17060-07-0	1,2-Dichloroethane-D4	98%		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

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT #1 MIX BLEND DAY 1 (6/7)	Date Sampled:	06/11/12
Lab Sample ID:	D35344-1	Date Received:	06/12/12
Matrix:	SO - Soil	Percent Solids:	87.3
Method:	SW846 8015B		
Project:	FRU 297-8B		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB16330.D	1	06/14/12	SK	n/a	n/a	GGB907
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	63.2	13	6.4	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	86%		60-140%		

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

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

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT #1 MIX BLEND DAY 1 (6/7)	Date Sampled:	06/11/12
Lab Sample ID:	D35344-1	Date Received:	06/12/12
Matrix:	SO - Soil	Percent Solids:	87.3
Method:	SW846-8015B SW846 3546		
Project:	FRU 297-8B		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD14261.D	1	06/14/12	AV	06/13/12	OP6047	GFD750
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	256	7.6	5.0	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	71%		43-136%		

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

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

PAGE 1 OF 1

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

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # D35344

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)												Matrix Codes	
Company Name KRW Consulting		Project Name XTO FRU 297-83		TPH (DRO / GAO) Benzene												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 8000 West 14th Street, Suite 200		Street															
City Lakewood, CO 80214		City State															
Project Contact Dwayne Knudson		Project # 1106-06															
Phone # 970-488-1098		Client Purchase Order #															
Sampler(s) Name(s) Craig Burger		Project Manager Joe Hess		Street Address 21459 CR 5		City Rifle, CO 81650		Attention: Jessica Dooling		Number of preserved bottles		LAB USE ONLY					
Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNCO	H2SO4	NONE	D1 Water	MCHN	ENCORE	Biohazard	
	Cut #1 Mix Blend Day 1 (6/7)		6/11/12	11:15	AB	SO	3					3					X
Turnaround Time (Business days)		Approved By (Accutest PM): / Date:		Data Deliverable Information												Comments / Special Instructions	
<input type="checkbox"/> Std. 10 Business Days <input checked="" type="checkbox"/> Std. 5 Business Days (By contract only) <input type="checkbox"/> 3 Day Emergency <input type="checkbox"/> 2 Day Emergency <input type="checkbox"/> 1 Day Emergency		<input type="checkbox"/> Commercial "A" (Level 1) <input checked="" type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> COMMBN <input type="checkbox"/> COMMBN+ Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial BN = Results/QC/Narrative (+ = chromatograms)		<input type="checkbox"/> State Forms Required <input type="checkbox"/> Send Forms to State <input type="checkbox"/> Report by Fax <input checked="" type="checkbox"/> Report by PDF ONLY <input type="checkbox"/> EDD Format												Please email to: KRW Piceance Team	
Emergency & Rush T/A data available VIA Lablink																	
Sample Custody must be documented below each time samples change possession, including courier delivery.																	
Relinquished by Sampler:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:
1 [Signature]	6/11/12 3:00 PM	1 [Signature]	6/11/12	2		2 [Signature]		3		3 [Signature]		4		4 [Signature]		5	
Relinquished by Sampler:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:
3		3		4		4		5		5		6		6		7	
Relinquished by:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:
5		5		6		6		7		7		8		8		9	
Custody Seal # 10 <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact Preserved where applicable <input type="checkbox"/> On Ice <input checked="" type="checkbox"/> Cooler Temp. 4.0																	

D35344: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D35344

Client: KRW

Immediate Client Services Action Required: No

Date / Time Received: 6/12/2012 1:15:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XTO

Airbill #'s: CO

Cooler Security

Y or N

Y or N

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

Cooler Temperature

Y or N

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

Quality Control Preservation

Y or N

N/A

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

Sample Integrity - Documentation

Y or N

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

Sample Integrity - Condition

Y or N

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

Sample Integrity - Instructions

Y or N N/A

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

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www.accutest.com

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

Page 1 of 1

Job Number: D35344
Account: XTOKRWR XTO Energy
Project: FRU 297-8B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1338-MB	5V21872.D	1	06/13/12	BD	n/a	n/a	V5V1338

The QC reported here applies to the following samples:

Method: SW846 8260B

D35344-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	19	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	91% 61-130%
460-00-4	4-Bromofluorobenzene	84% 53-131%
17060-07-0	1,2-Dichloroethane-D4	95% 62-130%

Blank Spike Summary

Page 1 of 1

Job Number: D35344

Account: XTOKRWR XTO Energy

Project: FRU 297-8B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1338-BS	5V21874.D	1	06/14/12	BD	n/a	n/a	V5V1338

The QC reported here applies to the following samples:

Method: SW846 8260B

D35344-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	50.0	100	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	92%	61-130%
460-00-4	4-Bromofluorobenzene	99%	53-131%
17060-07-0	1,2-Dichloroethane-D4	96%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D35344
Account: XTOKRWR XTO Energy
Project: FRU 297-8B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D35276-15MS	5V21880.D	1	06/14/12	BD	n/a	n/a	V5V1338
D35276-15MSD	5V21881.D	1	06/14/12	BD	n/a	n/a	V5V1338
D35276-15	5V21879.D	1	06/14/12	BD	n/a	n/a	V5V1338

The QC reported here applies to the following samples:

Method: SW846 8260B

D35344-1

CAS No.	Compound	D35276-15 ug/kg	Spike Q	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	2570	2480	96	2500	97	1	70-134/30

CAS No.	Surrogate Recoveries	MS	MSD	D35276-15	Limits
2037-26-5	Toluene-D8	89%	86%	90%	61-130%
460-00-4	4-Bromofluorobenzene	104%	101%	91%	53-131%
17060-07-0	1,2-Dichloroethane-D4	94%	92%	96%	62-130%

GC/MS Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5061312.S\
 Data File : 5V21883.D
 Acq On : 14 Jun 2012 4:57 am
 Operator : BRETD
 Sample : D35344-1
 Misc : MS4095,V5V1338,5.070,,100,5,1
 ALS Vial : 38 Sample Multiplier: 1

Quant Time: Jun 14 10:17:13 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1304TVH1304.M
 Quant Title : 8260
 QLast Update : Thu May 24 07:55:17 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	192658	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	301400	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	378160	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	260245	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	28956	48.98	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	97.96%
61) Toluene-d8	13.850	98	573586	44.88	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	89.76%
69) 4-Bromofluorobenzene	16.042	95	243890	46.58	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	93.16%

Target Compounds

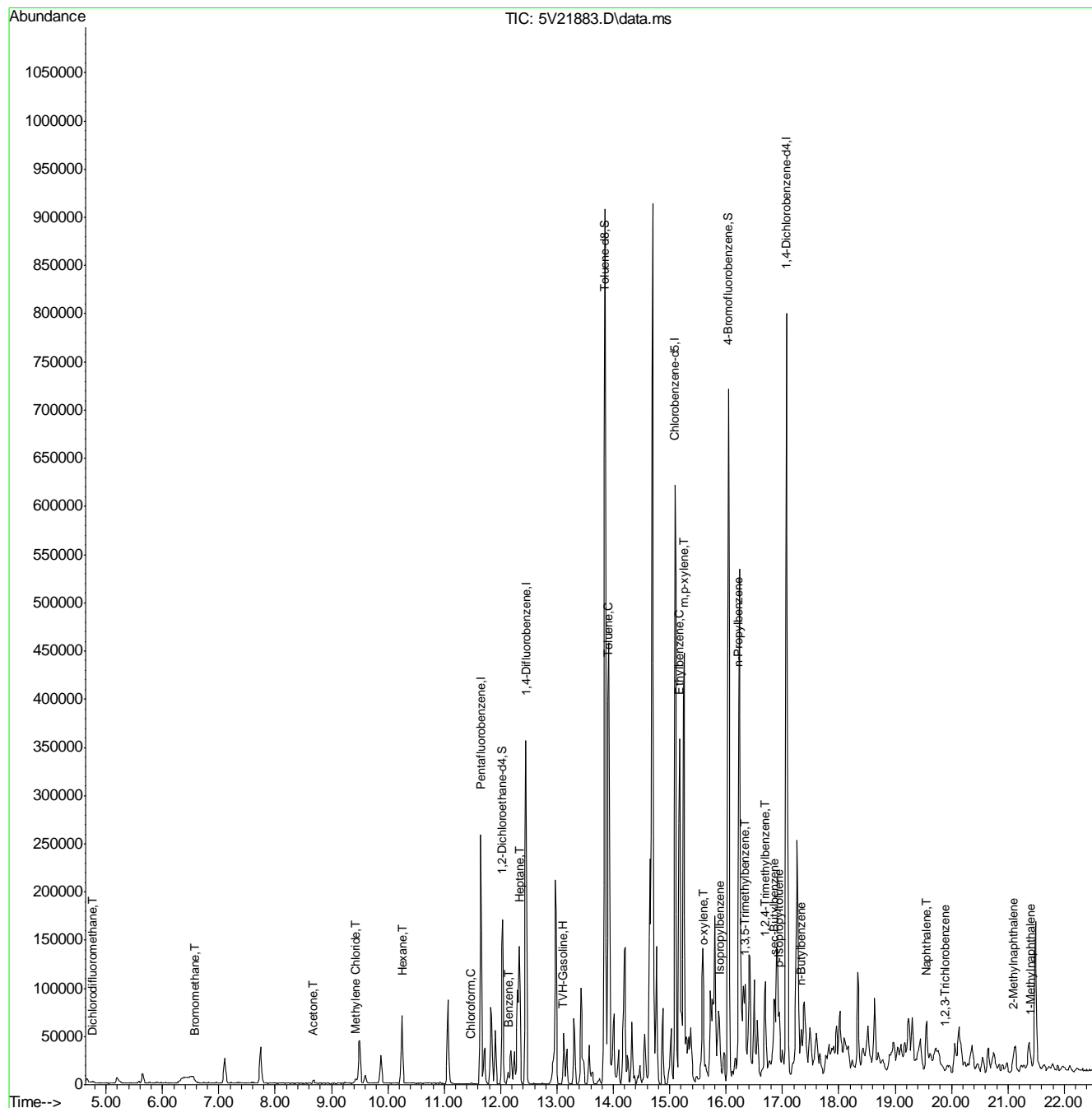
						Qvalue
1) TVH-Gasoline	13.102	TIC	12007723m	600.29	ug/l	
3) Dichlorodifluoromethane	4.762	85	1875	1.00	ug/l #	63
6) Bromomethane	6.578	94	1543	0.23	ug/l #	61
15) Acetone	8.678	58	1545	3.25	ug/l #	86
17) Methylene Chloride	9.421	84	2540	0.79	ug/l #	85
29) Chloroform	11.476	83	504	0.10	ug/l #	70
41) Hexane	10.254	57	36770	8.81	ug/l	100
43) Heptane	12.332	43	52485	11.76	ug/l	82
50) Benzene	12.138	78	7357	0.59	ug/l	100
62) Toluene	13.907	92	148410	15.09	ug/l	98
66) Ethylbenzene	15.175	91	95327	5.23	ug/l	98
68) Isopropylbenzene	15.883	105	4755	0.26	ug/l	97
72) m,p-xylene	15.255	106	142991	19.63	ug/l	95
73) o-xylene	15.597	106	12991	1.85	ug/l	96
77) n-Propylbenzene	16.225	91	31752	1.36	ug/l	100
80) 1,3,5-Trimethylbenzene	16.328	105	6107m	0.37	ug/l	
82) 1,2,4-Trimethylbenzene	16.693	105	37614	2.24	ug/l	92
83) sec-Butylbenzene	16.853	105	3429	0.15	ug/l	96
86) p-Isopropyltoluene	16.944	119	30082	1.59	ug/l	98
88) n-Butylbenzene	17.333	91	16531	0.95	ug/l	93
91) Naphthalene	19.559	128	23552	2.34	ug/l	100
93) 1,2,3-Trichlorobenzene	19.878	180	1497	0.24	ug/l #	61
94) 2-Methylnaphthalene	21.100	142	14122	3.94	ug/l #	92
95) 1-Methylnaphthalene	21.408	142	7624	2.60	ug/l #	78

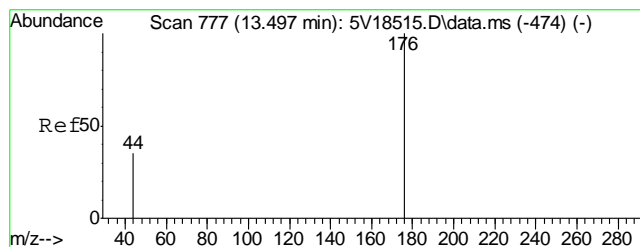
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5061312.S\
Data File : 5V21883.D
Acq On : 14 Jun 2012 4:57 am
Operator : BRETD
Sample : D35344-1
Misc : MS4095,V5V1338,5.070,,100,5,1
ALS Vial : 38 Sample Multiplier: 1

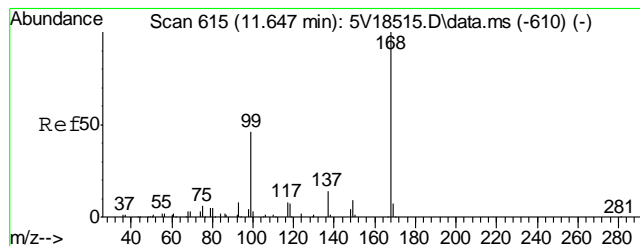
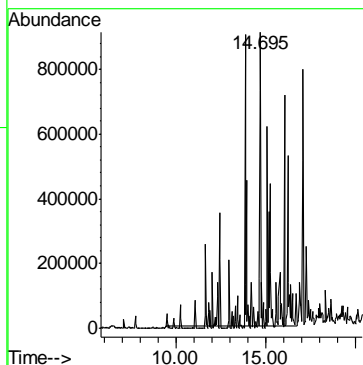
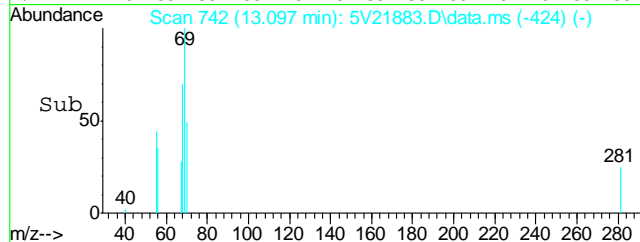
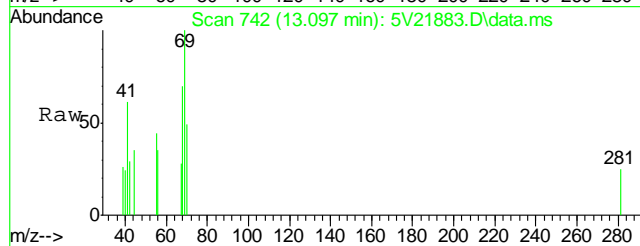
Quant Time: Jun 14 10:17:13 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1304TVH1304.M
Quant Title : 8260
QLast Update : Thu May 24 07:55:17 2012
Response via : Initial Calibration





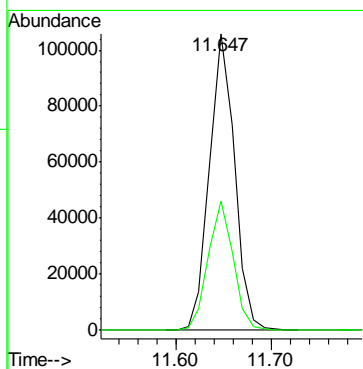
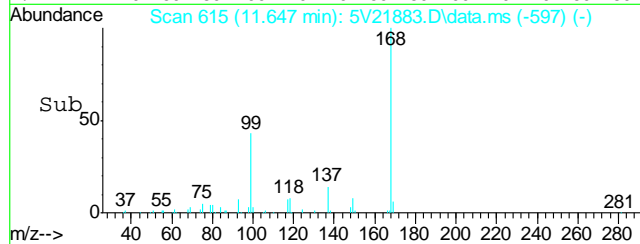
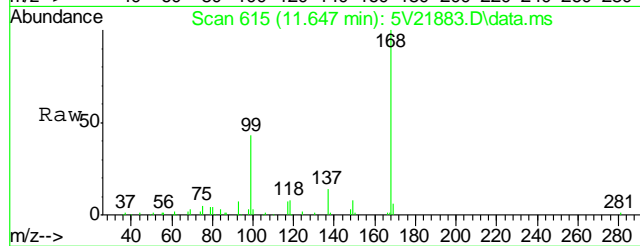
#1
TVH-Gasoline
Concen: 600.29 ug/l m
RT: 13.102 min Scan# 742
Delta R.T. 0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

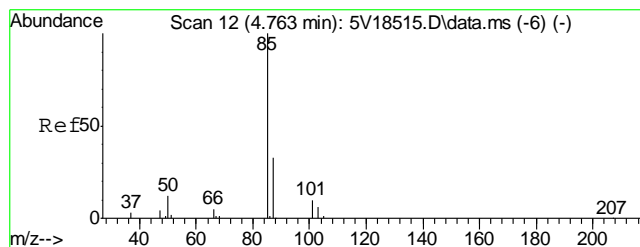
Tgt Ion:TIC Resp:12007723



#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.647 min Scan# 615
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

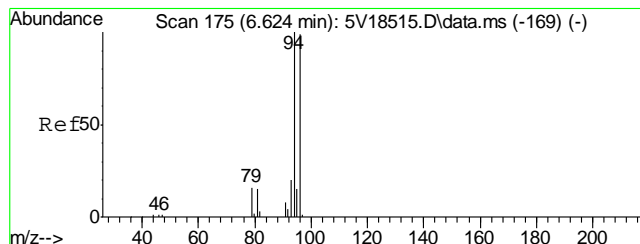
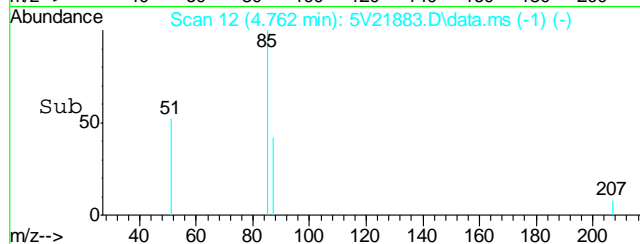
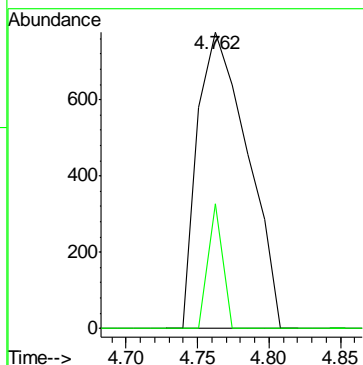
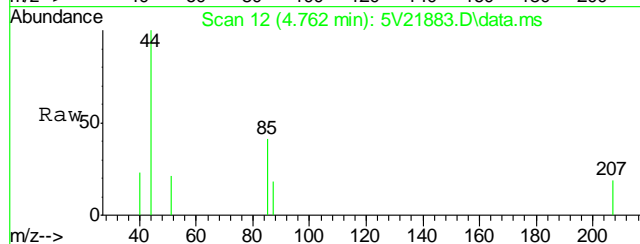
Tgt Ion:168 Resp: 192658
Ion Ratio Lower Upper
168 100
99 42.9 37.4 56.2





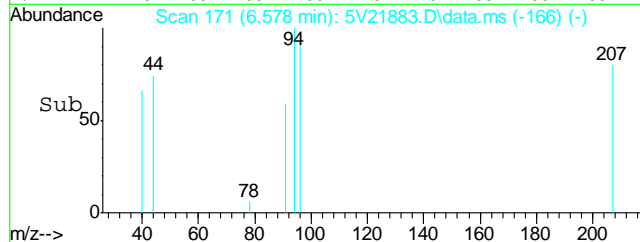
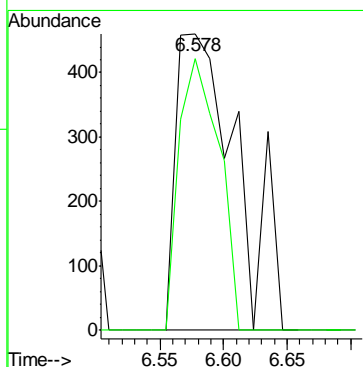
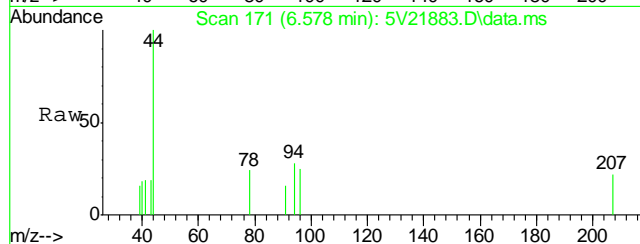
#3
Dichlorodifluoromethane
Concen: 1.00 ug/l
RT: 4.762 min Scan# 12
Delta R.T. 0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

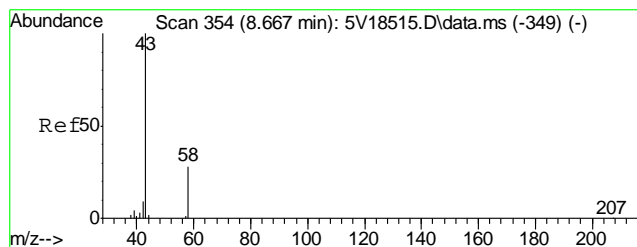
Tgt Ion: 85 Resp: 1875
Ion Ratio Lower Upper
85 100
87 12.0 12.9 52.9#



#6
Bromomethane
Concen: 0.23 ug/l
RT: 6.578 min Scan# 171
Delta R.T. -0.045 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

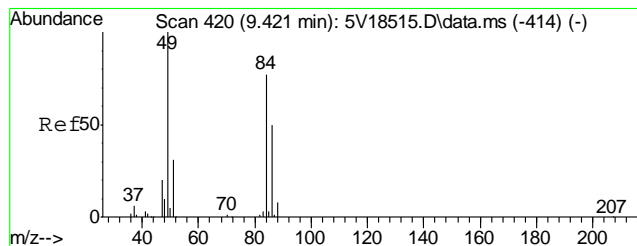
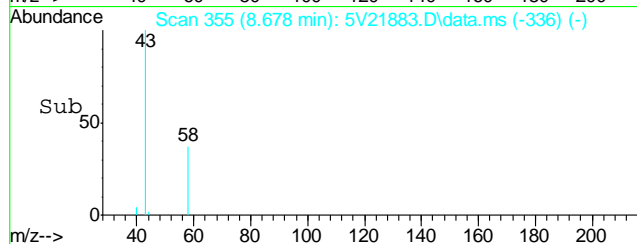
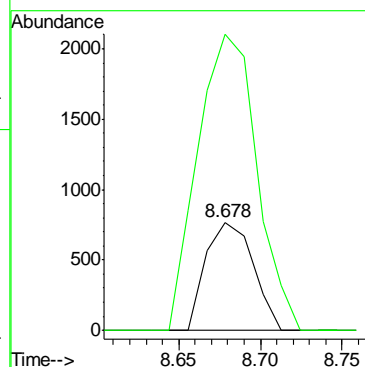
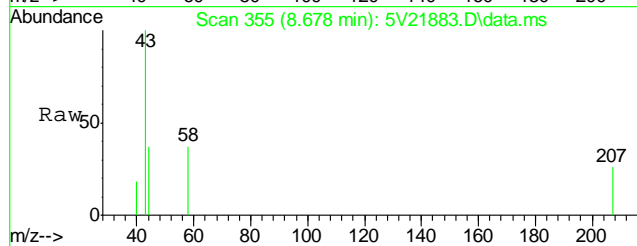
Tgt Ion: 94 Resp: 1543
Ion Ratio Lower Upper
94 100
96 59.8 78.0 118.0#





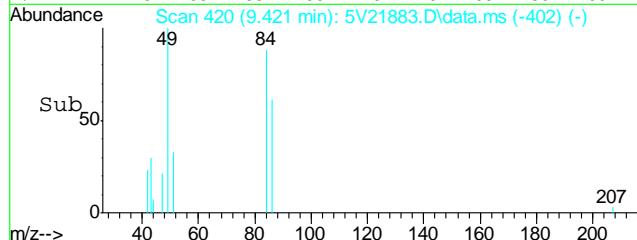
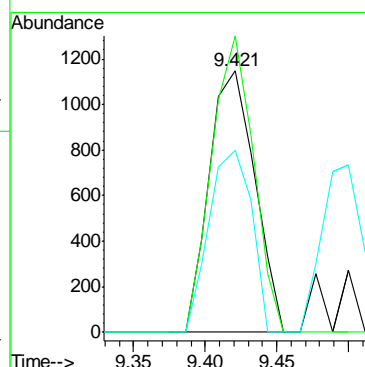
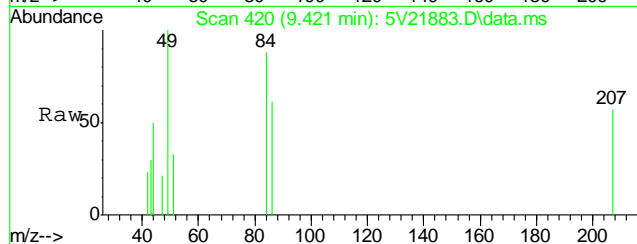
#15
Acetone
Concen: 3.25 ug/l
RT: 8.678 min Scan# 355
Delta R.T. 0.011 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

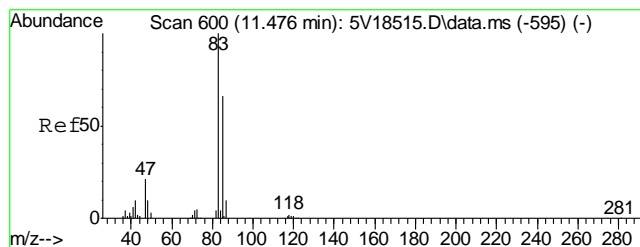
Tgt Ion: 58 Resp: 1545
Ion Ratio Lower Upper
58 100
43 341.4 353.6 393.6#



#17
Methylene Chloride
Concen: 0.79 ug/l
RT: 9.421 min Scan# 420
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

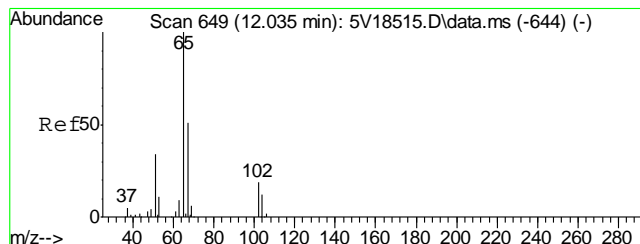
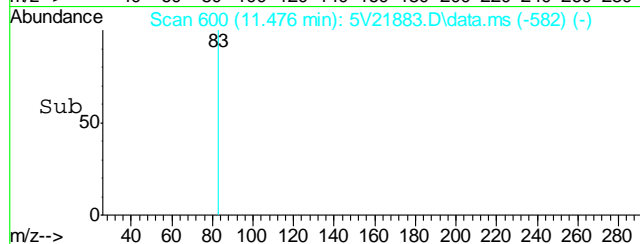
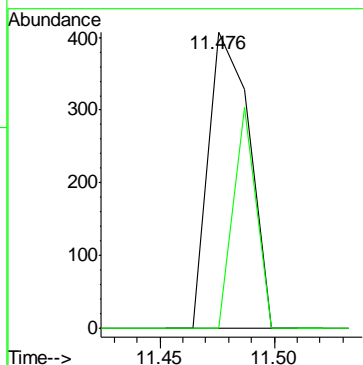
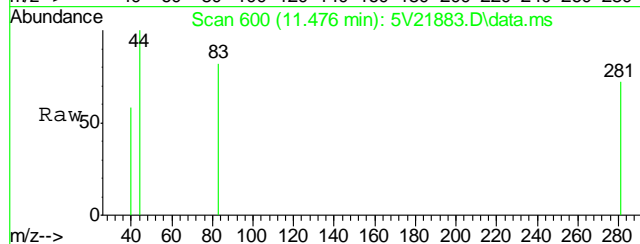
Tgt Ion: 84 Resp: 2540
Ion Ratio Lower Upper
84 100
49 104.0 110.4 150.4#
86 64.7 44.0 84.0





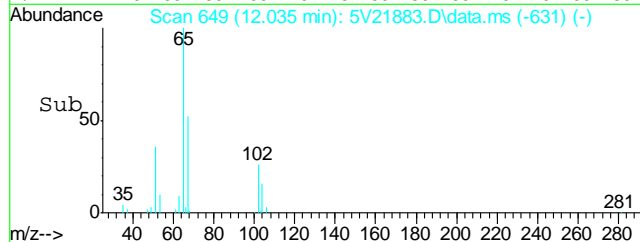
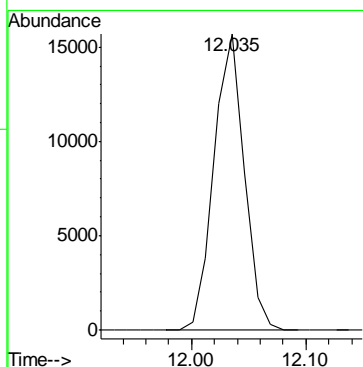
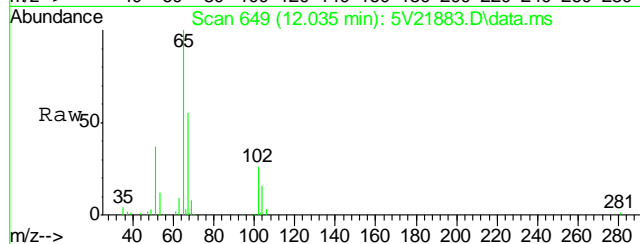
#29
Chloroform
Concen: 0.10 ug/l
RT: 11.476 min Scan# 600
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

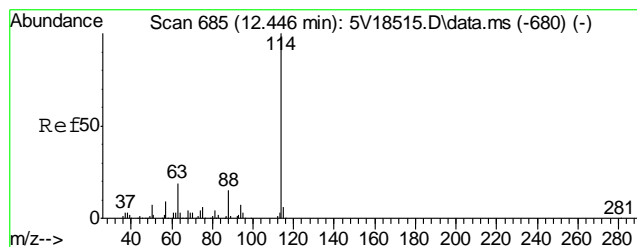
Tgt Ion: 83 Resp: 504
Ion Ratio Lower Upper
83 100
85 41.3 44.9 84.9#



#33
1,2-Dichloroethane-d4
Concen: 48.98 ug/l
RT: 12.035 min Scan# 649
Delta R.T. 0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

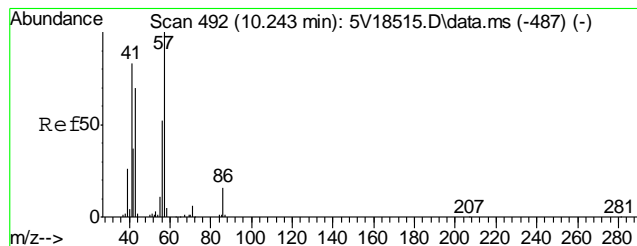
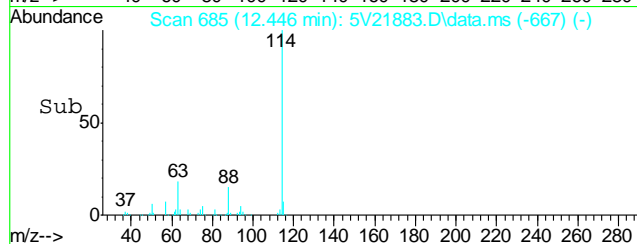
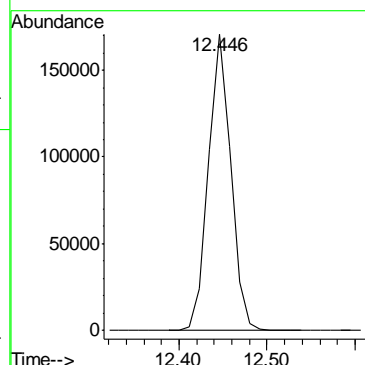
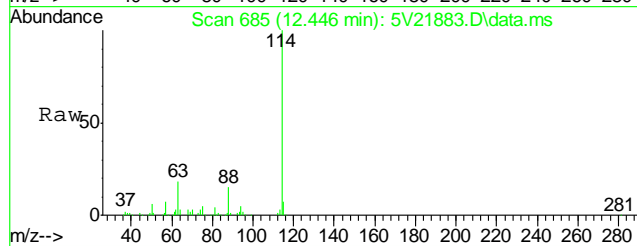
Tgt Ion: 102 Resp: 28956





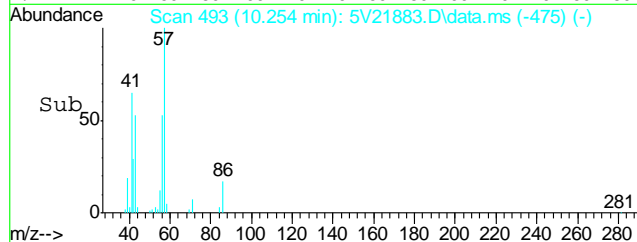
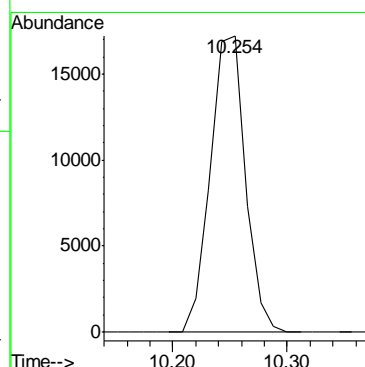
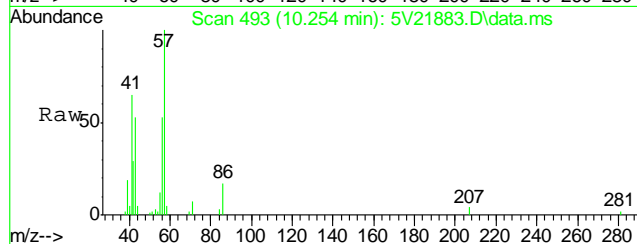
#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.446 min Scan# 685
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

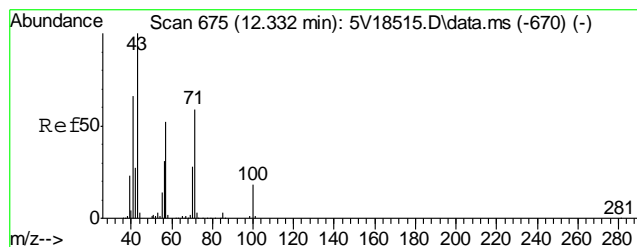
Tgt Ion: 114 Resp: 301400



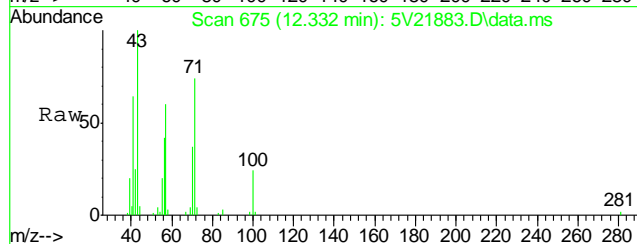
#41
Hexane
Concen: 8.81 ug/l
RT: 10.254 min Scan# 493
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

Tgt Ion: 57 Resp: 36770

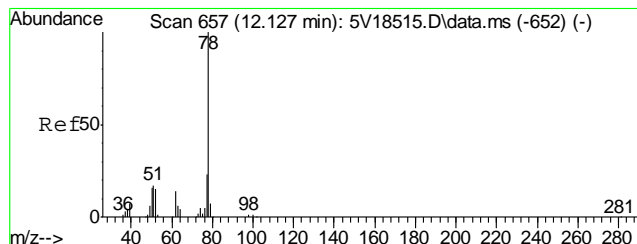
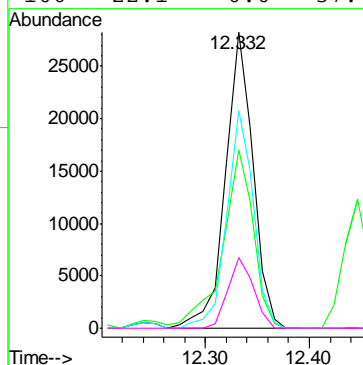
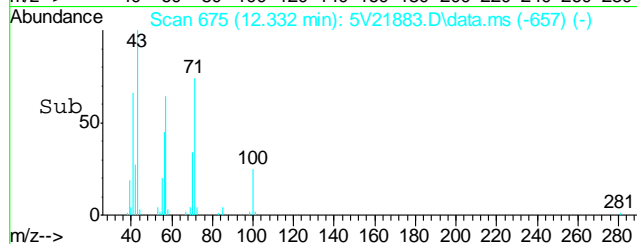




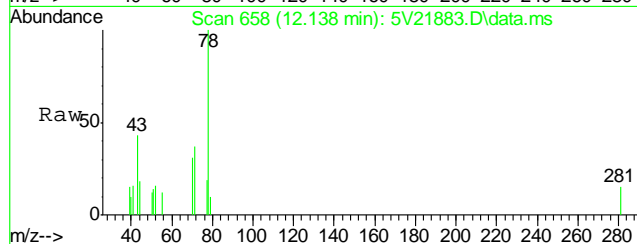
#43
Heptane
Concen: 11.76 ug/l
RT: 12.332 min Scan# 675
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am



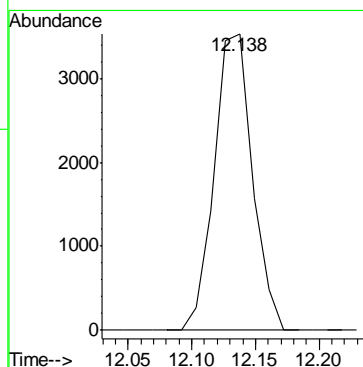
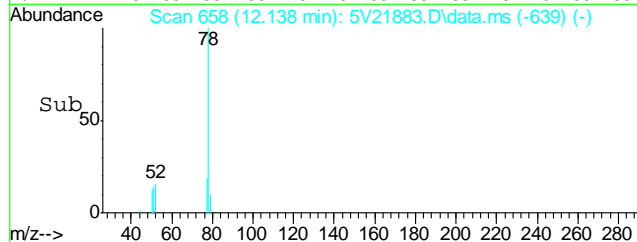
Tgt Ion	Ratio	Lower	Upper
43	100		
57	66.0	30.6	70.6
71	71.0	38.9	78.9
100	22.1	0.0	37.4

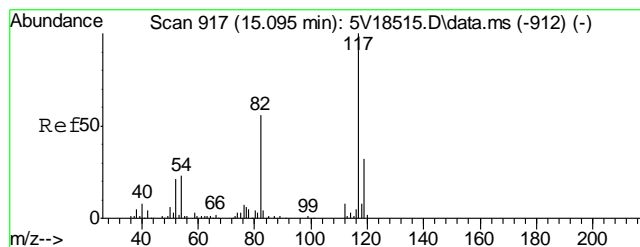


#50
Benzene
Concen: 0.59 ug/l
RT: 12.138 min Scan# 658
Delta R.T. 0.011 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am



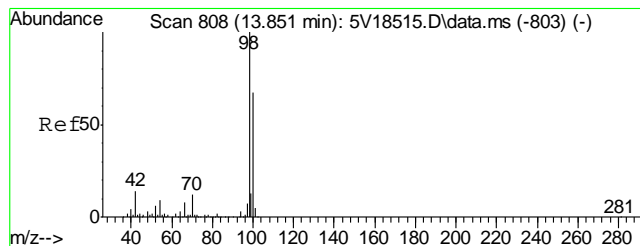
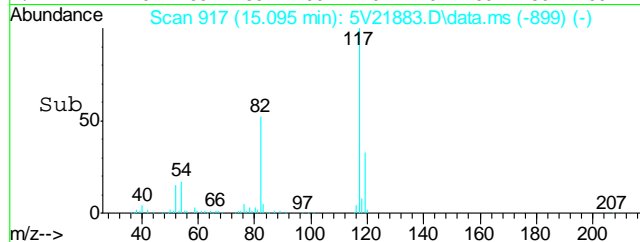
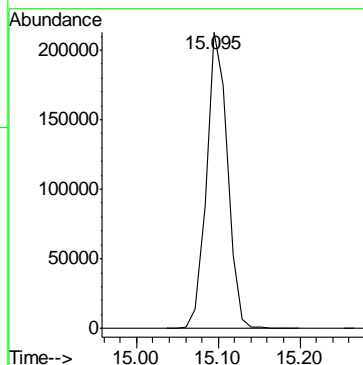
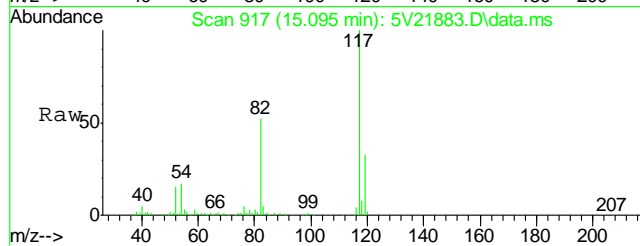
Tgt Ion: 78 Resp: 7357





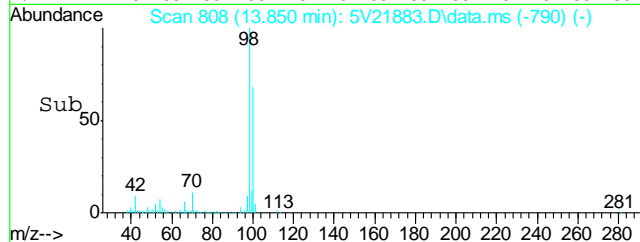
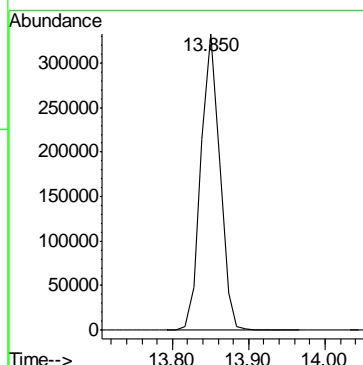
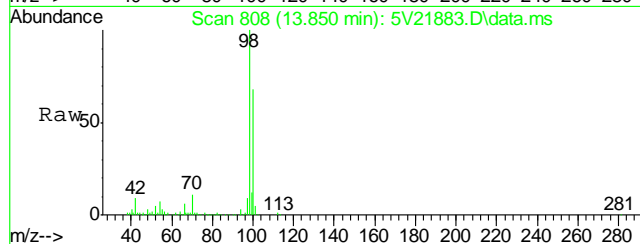
#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.095 min Scan# 917
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

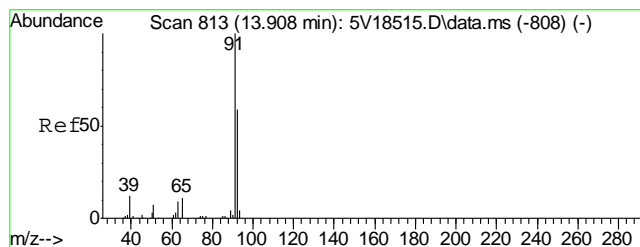
Tgt Ion:117 Resp: 378160



#61
Toluene-d8
Concen: 44.88 ug/l
RT: 13.850 min Scan# 808
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

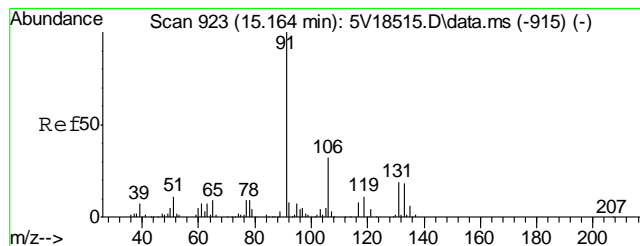
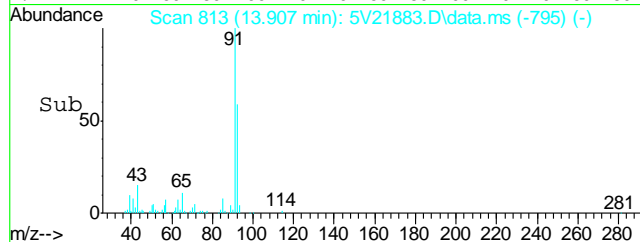
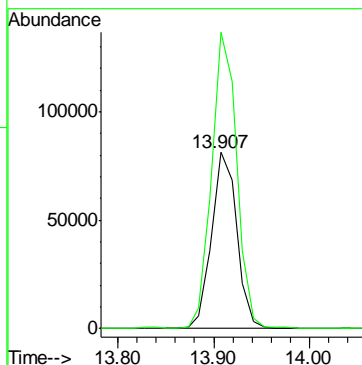
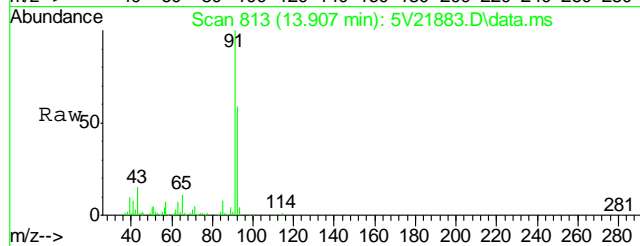
Tgt Ion: 98 Resp: 573586





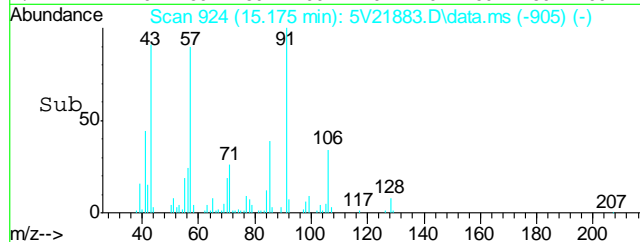
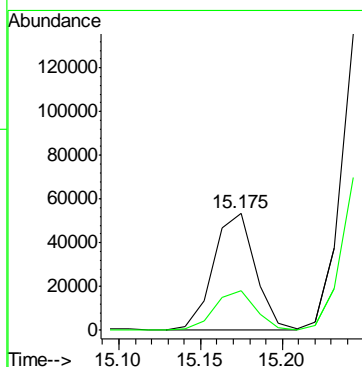
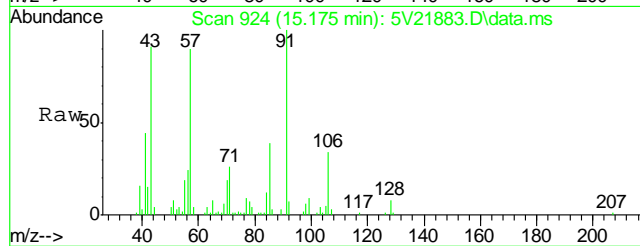
#62
Toluene
Concen: 15.09 ug/l
RT: 13.907 min Scan# 813
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

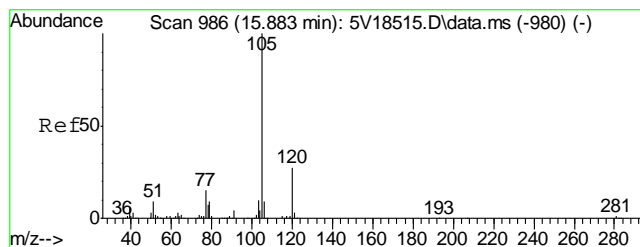
Tgt Ion	Resp	Lower	Upper
92	148410		
91	167.4	149.8	189.8



#66
Ethylbenzene
Concen: 5.23 ug/l
RT: 15.175 min Scan# 924
Delta R.T. 0.011 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

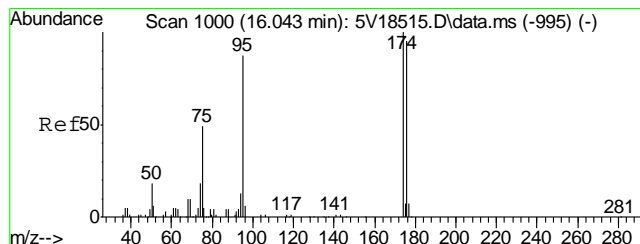
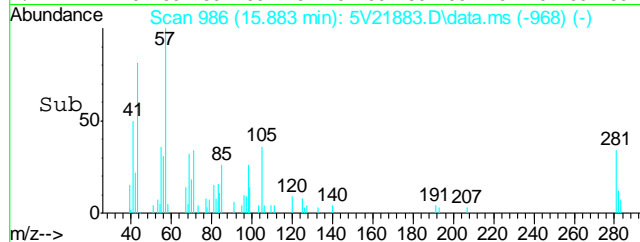
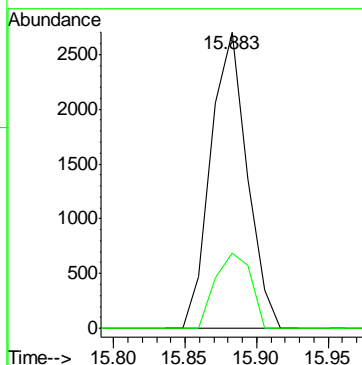
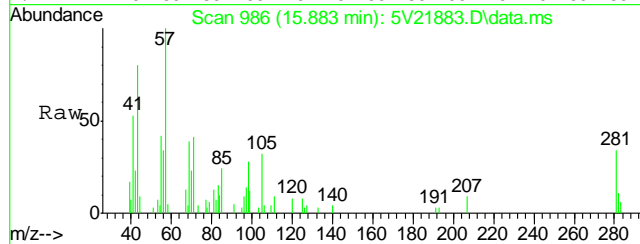
Tgt Ion	Resp	Lower	Upper
91	95327		
106	32.9	11.7	51.7





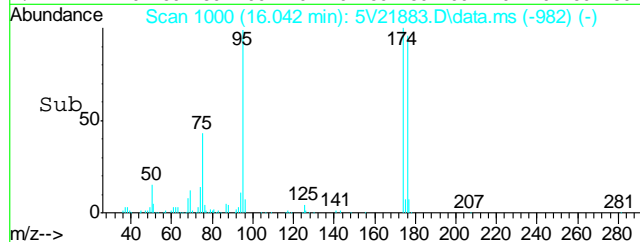
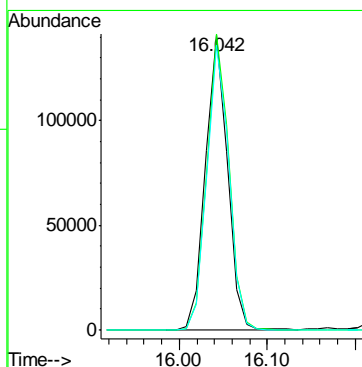
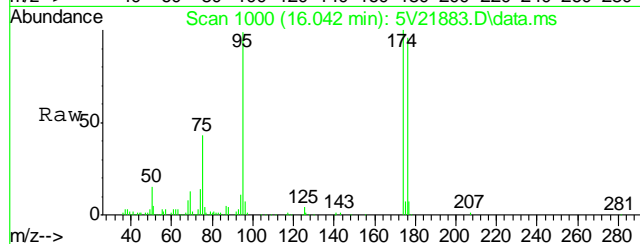
#68
Isopropylbenzene
Concen: 0.26 ug/l
RT: 15.883 min Scan# 986
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

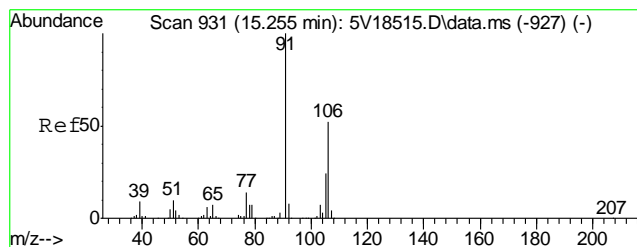
Tgt Ion	Ratio	Lower	Upper
105	100		
120	24.9	21.0	31.4



#69
4-Bromofluorobenzene
Concen: 46.58 ug/l
RT: 16.042 min Scan# 1000
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

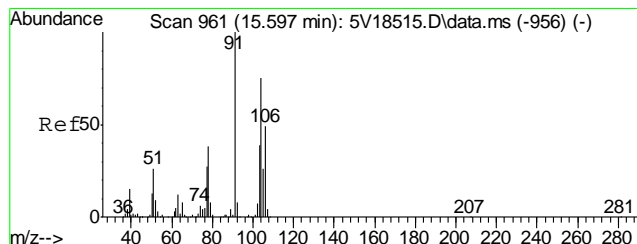
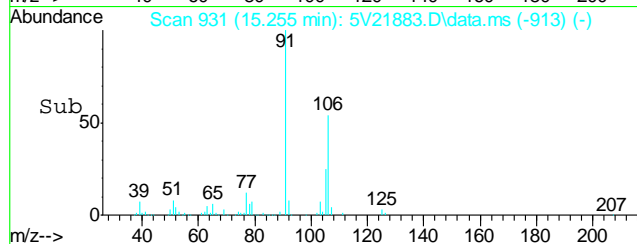
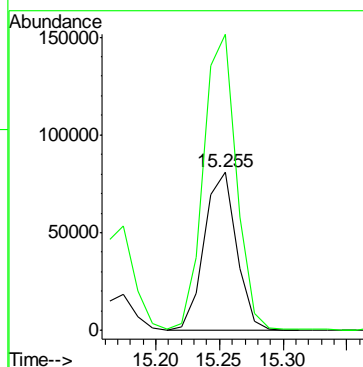
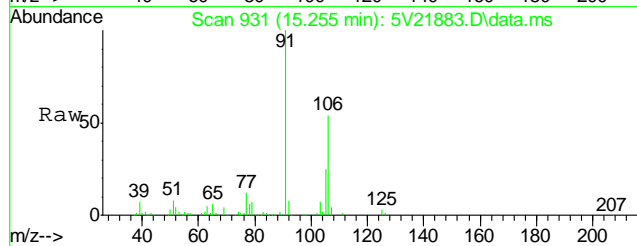
Tgt Ion	Ratio	Lower	Upper
95	100		
174	100.2	77.1	117.1
176	97.2	73.4	113.4





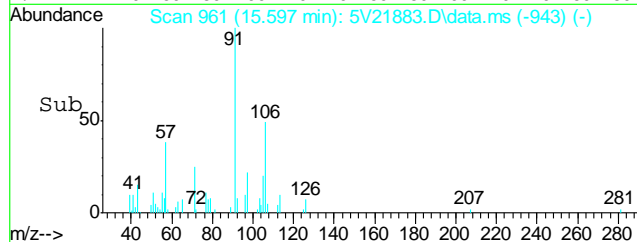
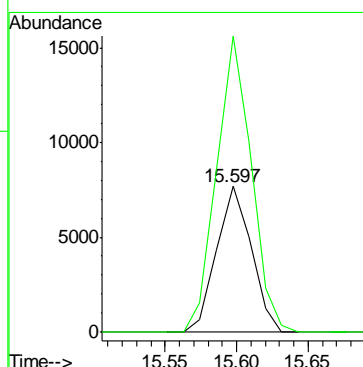
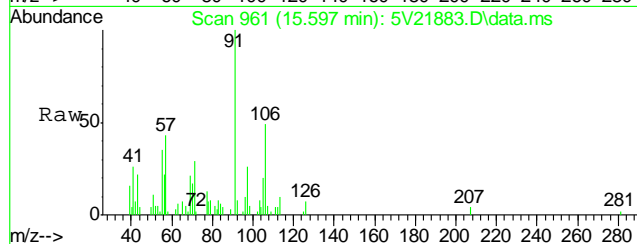
#72
m,p-xylene
Concen: 19.63 ug/l
RT: 15.255 min Scan# 931
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

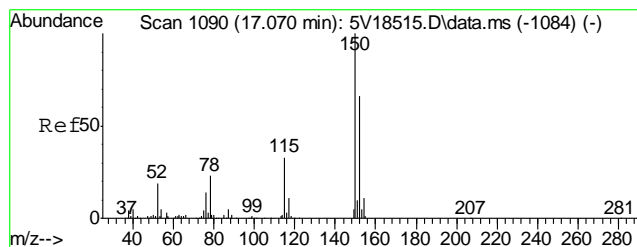
Tgt Ion	Ratio	Lower	Upper
106	100		
91	189.7	177.1	217.1



#73
o-xylene
Concen: 1.85 ug/l
RT: 15.597 min Scan# 961
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

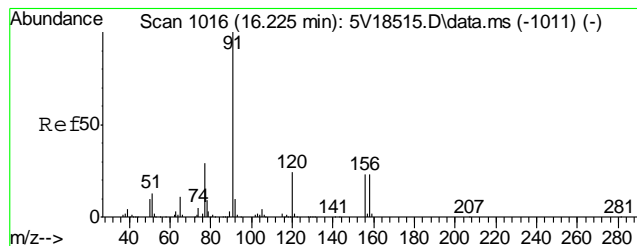
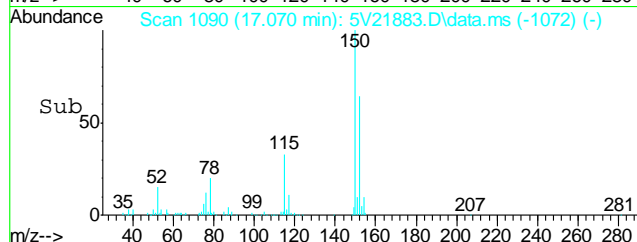
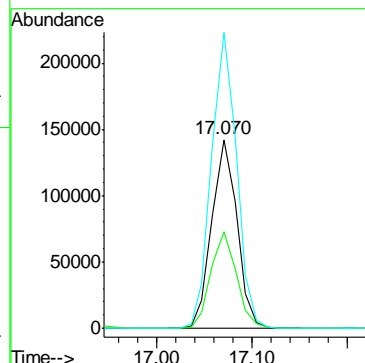
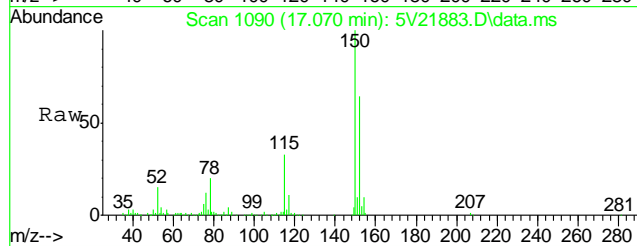
Tgt Ion	Ratio	Lower	Upper
106	100		
91	202.6	166.6	249.8





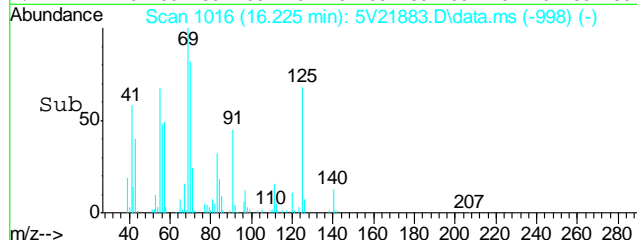
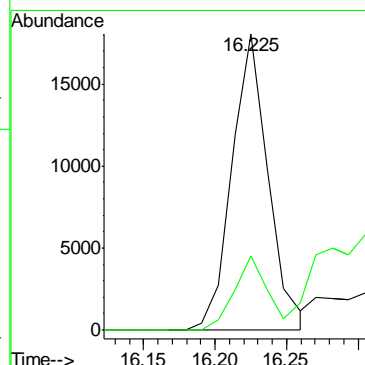
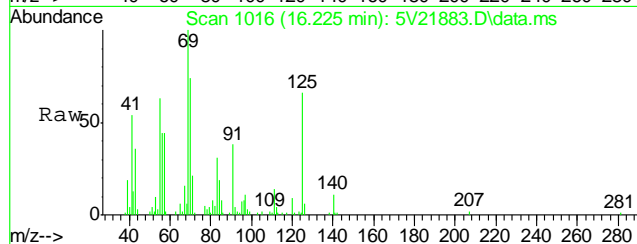
#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.070 min Scan# 1090
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

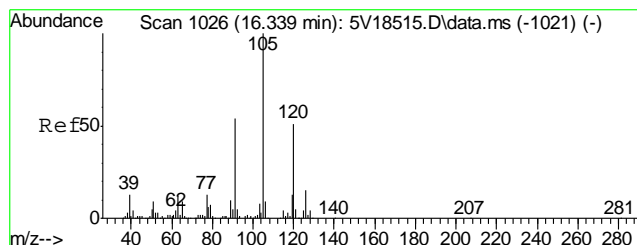
Tgt Ion	Ratio	Lower	Upper
152	100		
115	52.4	41.4	62.0
150	156.9	153.9	230.9



#77
n-Propylbenzene
Concen: 1.36 ug/l
RT: 16.225 min Scan# 1016
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

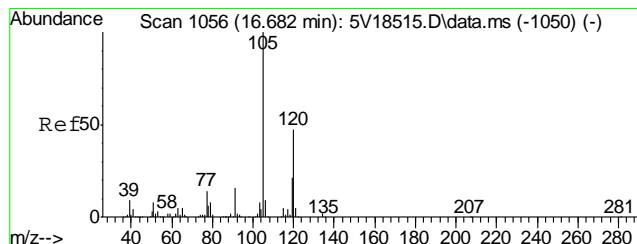
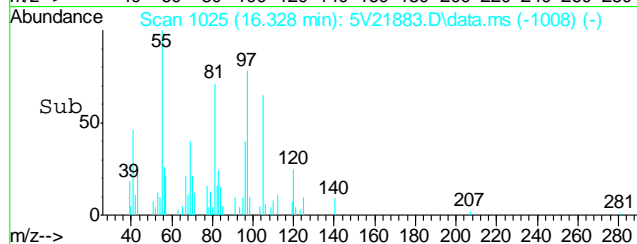
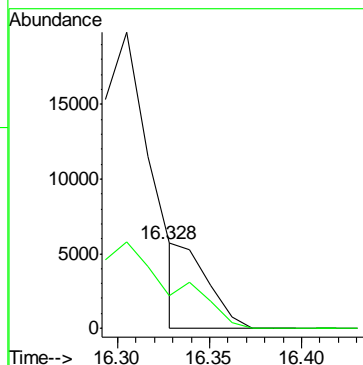
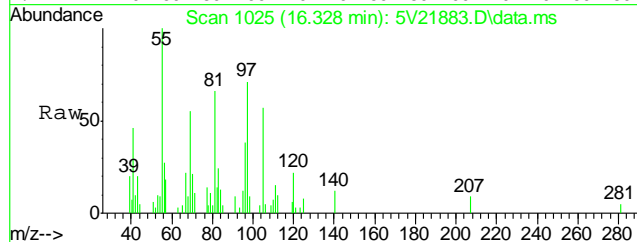
Tgt Ion	Ratio	Lower	Upper
91	100		
120	23.0	18.6	27.8





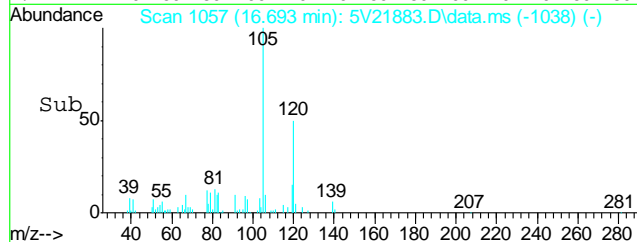
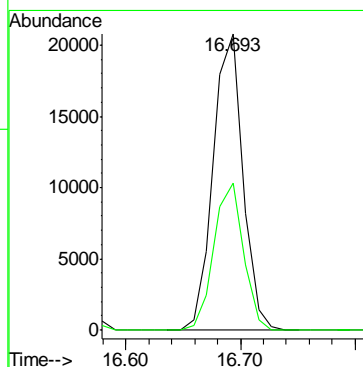
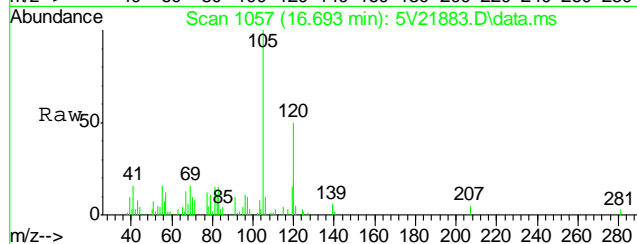
#80
1,3,5-Trimethylbenzene
Concen: 0.37 ug/l m
RT: 16.328 min Scan# 1025
Delta R.T. -0.012 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

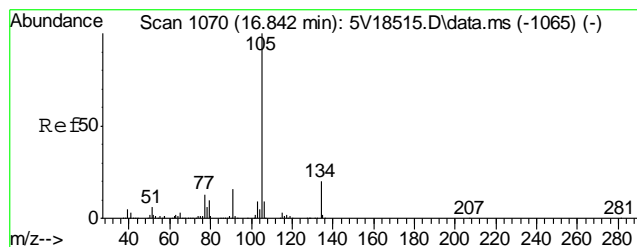
Tgt Ion:105 Resp: 6107
Ion Ratio Lower Upper
105 100
120 372.9 40.1 60.1#



#82
1,2,4-Trimethylbenzene
Concen: 2.24 ug/l
RT: 16.693 min Scan# 1057
Delta R.T. 0.011 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

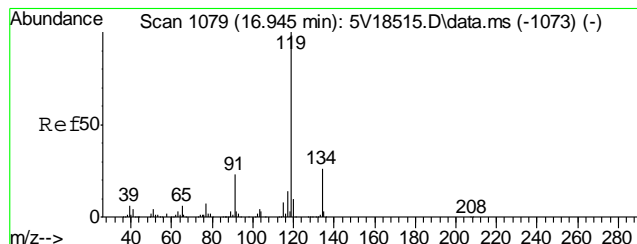
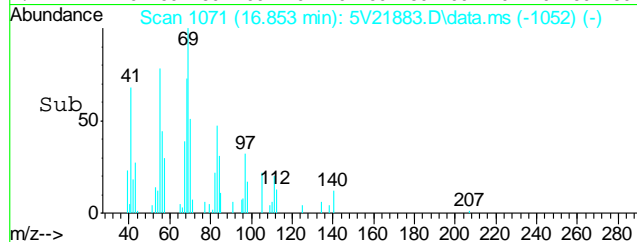
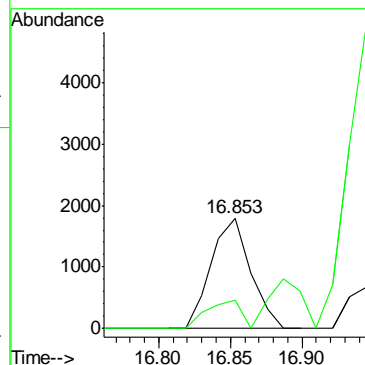
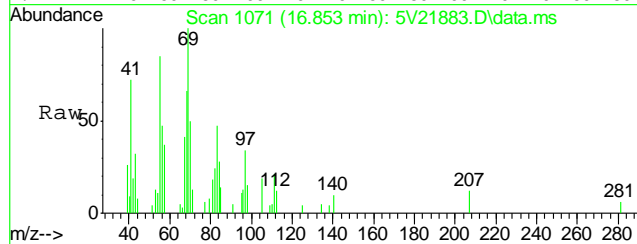
Tgt Ion:105 Resp: 37614
Ion Ratio Lower Upper
105 100
120 49.2 43.8 65.8





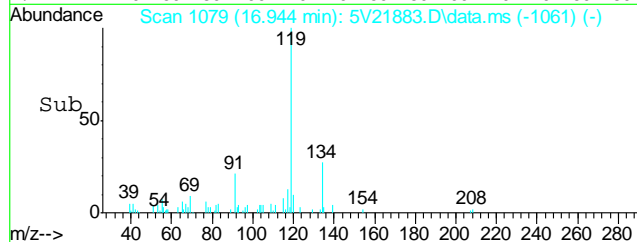
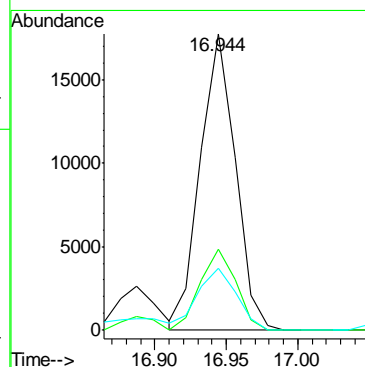
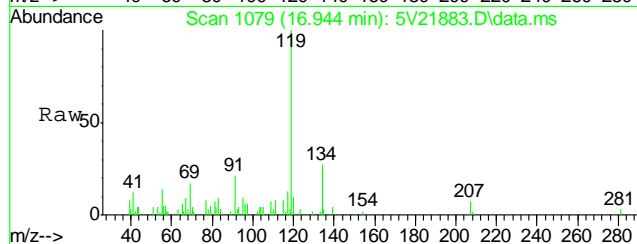
#83
 sec-Butylbenzene
 Concen: 0.15 ug/l
 RT: 16.853 min Scan# 1071
 Delta R.T. 0.011 min
 Lab File: 5V21883.D
 Acq: 14 Jun 2012 4:57 am

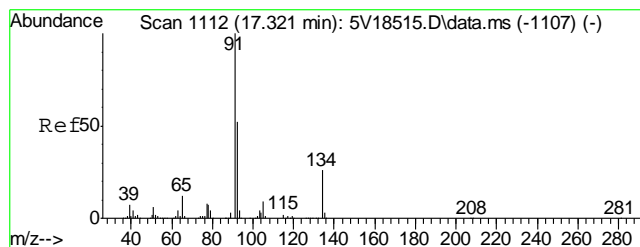
Tgt Ion	Ratio	Lower	Upper
105	100		
134	22.4	16.5	24.7



#86
 p-Isopropyltoluene
 Concen: 1.59 ug/l
 RT: 16.944 min Scan# 1079
 Delta R.T. -0.000 min
 Lab File: 5V21883.D
 Acq: 14 Jun 2012 4:57 am

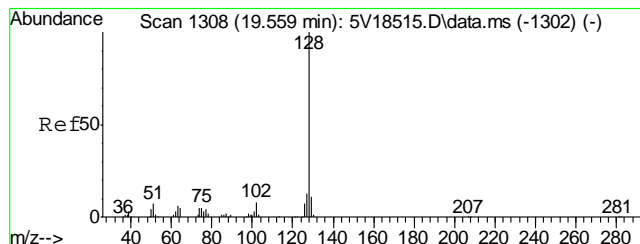
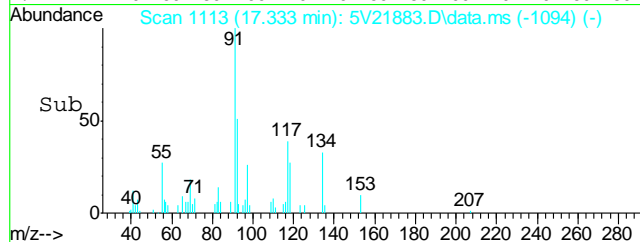
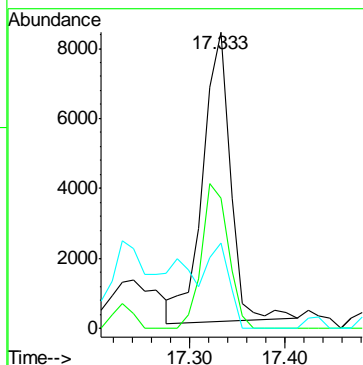
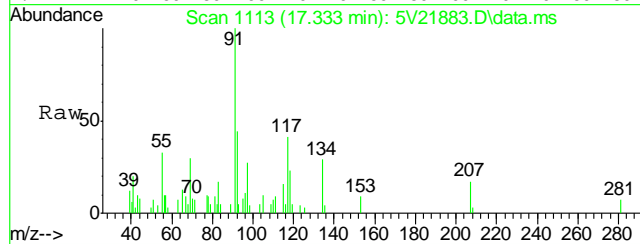
Tgt Ion	Ratio	Lower	Upper
119	100		
134	27.8	21.3	31.9
91	23.3	19.0	28.6





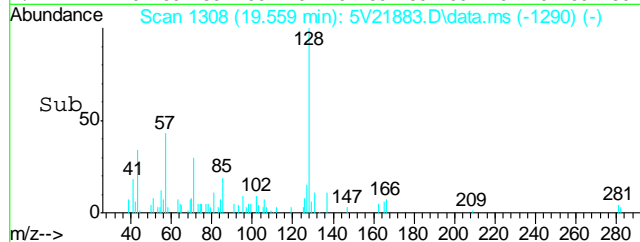
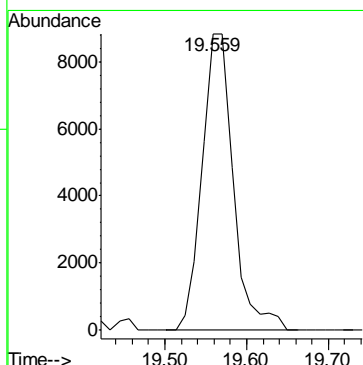
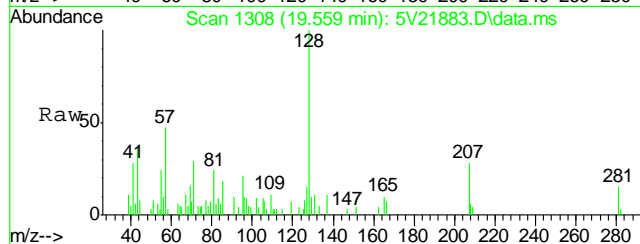
#88
n-Butylbenzene
Concen: 0.95 ug/l
RT: 17.333 min Scan# 1113
Delta R.T. 0.011 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

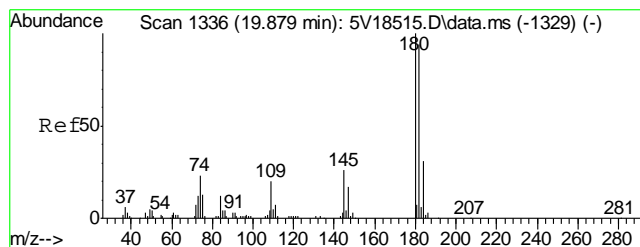
Tgt Ion:	91	Resp:	16531
Ion Ratio	Lower	Upper	
91	100		
92	48.4	42.2	63.4
134	23.0	21.4	32.2



#91
Naphthalene
Concen: 2.34 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.001 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

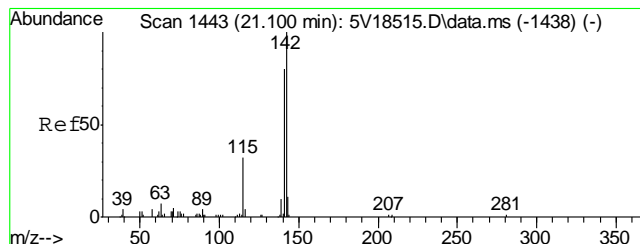
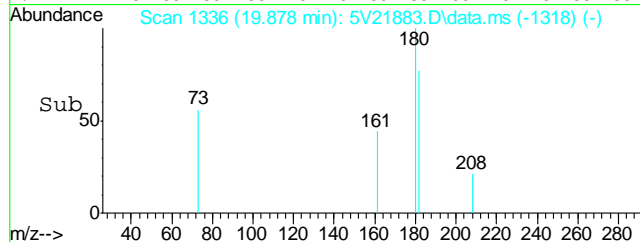
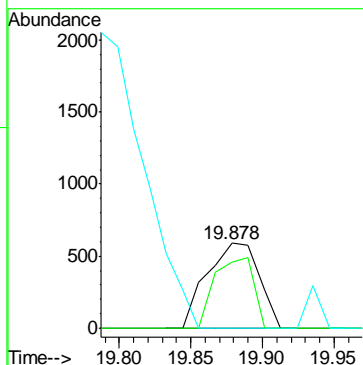
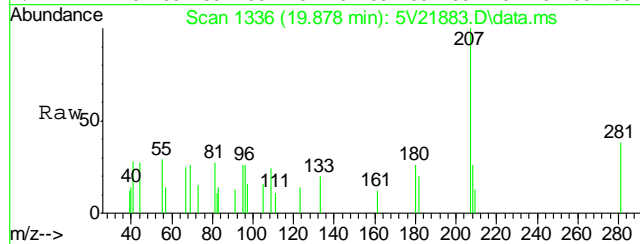
Tgt Ion: 128 Resp: 23552





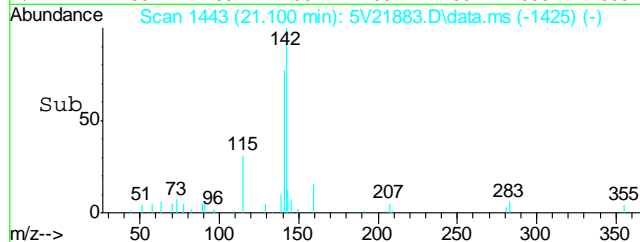
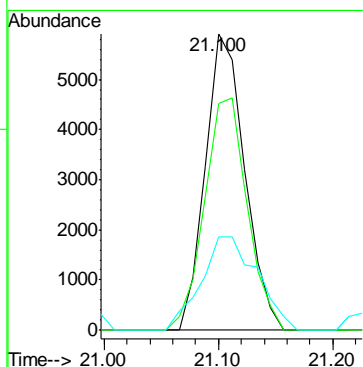
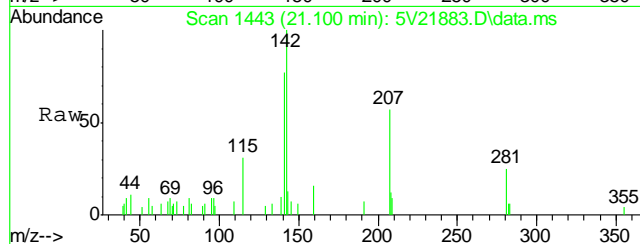
#93
1,2,3-Trichlorobenzene
Concen: 0.24 ug/l
RT: 19.878 min Scan# 1336
Delta R.T. -0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

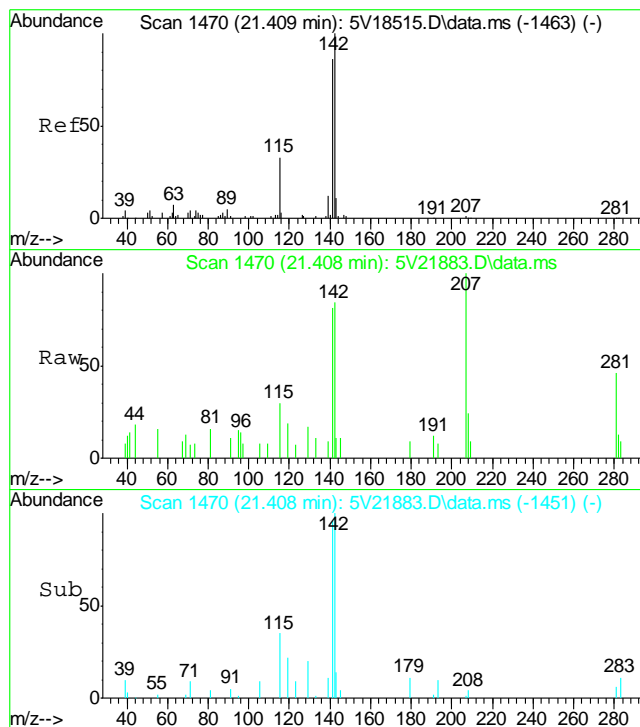
Tgt Ion	Ratio	Lower	Upper
180	100		
182	61.1	76.0	114.0#
145	0.0	21.4	32.0#



#94
2-Methylnaphthalene
Concen: 3.94 ug/l
RT: 21.100 min Scan# 1443
Delta R.T. 0.000 min
Lab File: 5V21883.D
Acq: 14 Jun 2012 4:57 am

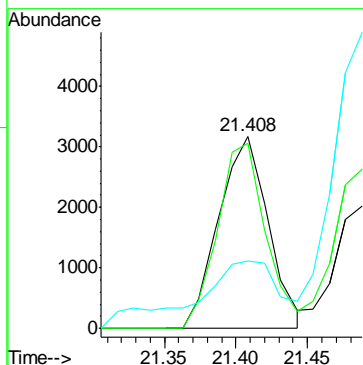
Tgt Ion	Ratio	Lower	Upper
142	100		
141	85.3	66.2	99.4
115	45.1	25.9	38.9#





#95
 1-Methylnaphthalene
 Concen: 2.60 ug/l
 RT: 21.408 min Scan# 1470
 Delta R.T. 0.011 min
 Lab File: 5V21883.D
 Acq: 14 Jun 2012 4:57 am

Tgt Ion:	142	Resp:	7624
Ion Ratio	Lower	Upper	
142	100		
141	94.1	68.9	103.3
115	65.0	27.3	40.9#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5061312.S\
 Data File : 5V21872.D
 Acq On : 13 Jun 2012 11:11 pm
 Operator : BRETD
 Sample : MB
 Misc : MS4095,V5V1338,5.00,,100,5,1
 ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 14 10:02:40 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1304TVH1304.M
 Quant Title : 8260
 QLast Update : Thu May 24 07:55:17 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	226877	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	352773	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	415450	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	264148	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	33266	47.72	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	95.44%
61) Toluene-d8	13.851	98	636055	45.30	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	90.60%
69) 4-Bromofluorobenzene	16.043	95	241334	41.96	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	83.92%

Target Compounds

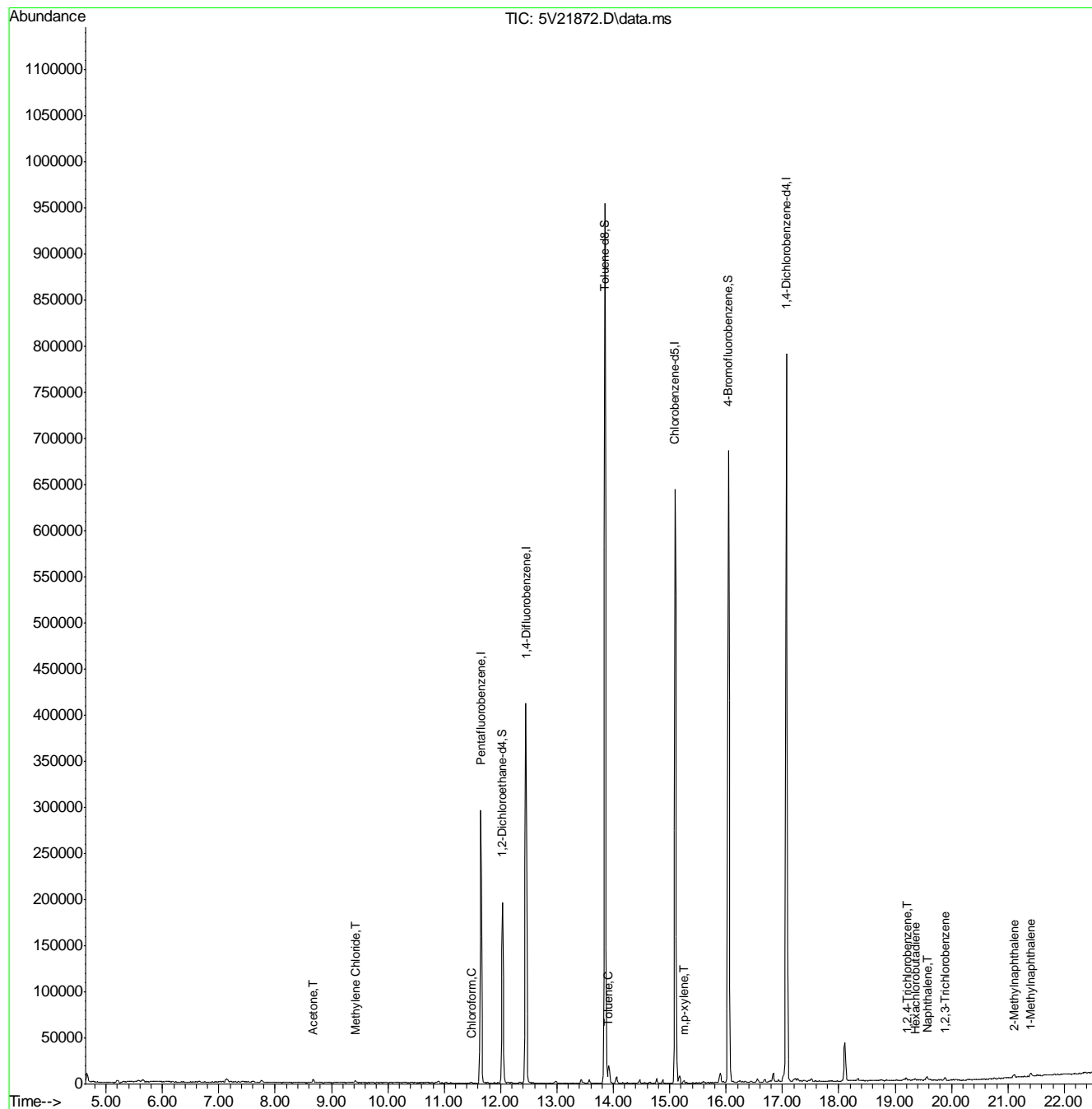
					Qvalue
1) TVH-Gasoline	13.102	TIC	-11175m	0.85	ug/l
15) Acetone	8.667	58	1610	2.65	ug/l # 81
17) Methylene Chloride	9.421	84	1693	0.45	ug/l # 81
29) Chloroform	11.487	83	759	0.13	ug/l 90
62) Toluene	13.908	92	3609	0.33	ug/l 98
72) m,p-xylene	15.255	106	1416	0.18	ug/l # 79
90) 1,2,4-Trichlorobenzene	19.205	180	1612	0.23	ug/l # 85
91) Naphthalene	19.570	128	5677	1.01	ug/l 100
92) Hexachlorobutadiene	19.353	225	849	0.16	ug/l # 81
93) 1,2,3-Trichlorobenzene	19.879	180	2250	0.35	ug/l # 83
94) 2-Methylnaphthalene	21.112	142	2631	1.82	ug/l 95
95) 1-Methylnaphthalene	21.397	142	2873	1.72	ug/l 85

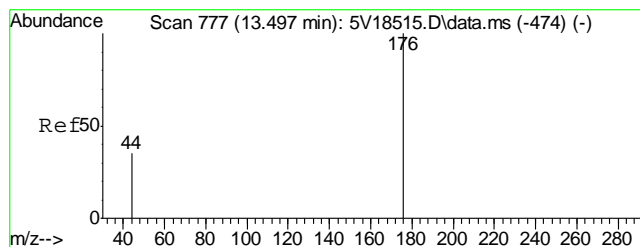
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5061312.S\
Data File : 5V21872.D
Acq On : 13 Jun 2012 11:11 pm
Operator : BRETD
Sample : MB
Misc : MS4095,V5V1338,5.00,,100,5,1
ALS Vial : 27 Sample Multiplier: 1

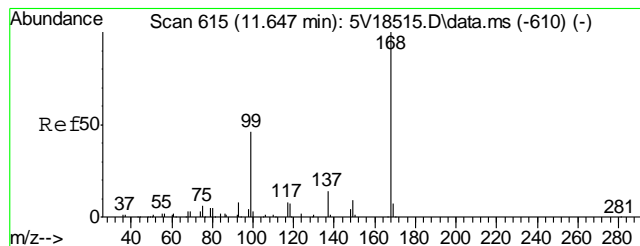
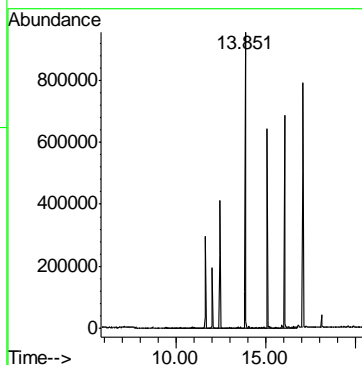
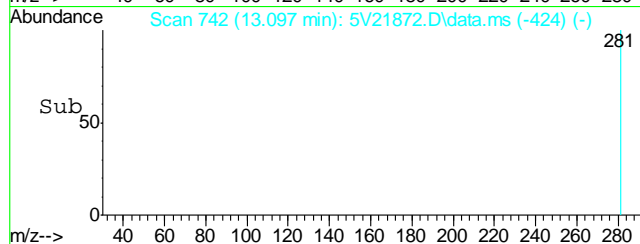
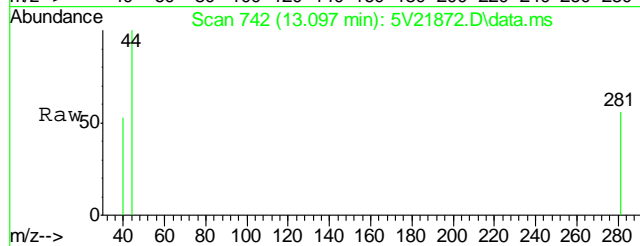
Quant Time: Jun 14 10:02:40 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1304TVH1304.M
Quant Title : 8260
QLast Update : Thu May 24 07:55:17 2012
Response via : Initial Calibration





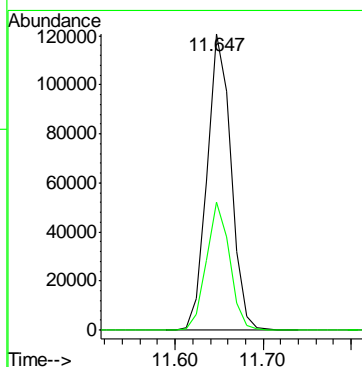
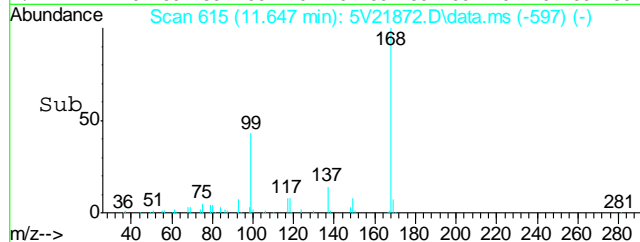
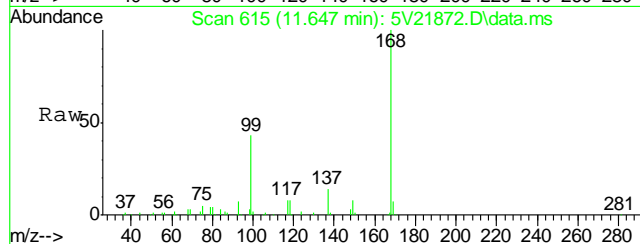
#1
TVH-Gasoline
Concen: 0.85 ug/l m
RT: 13.102 min Scan# 742
Delta R.T. 0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

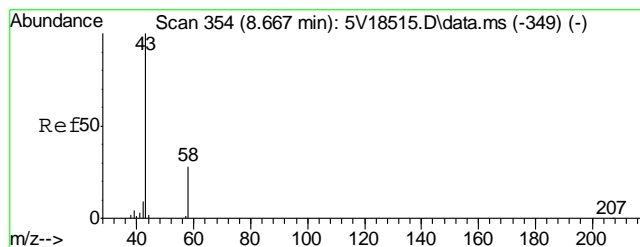
Tgt Ion:TIC Resp: -11175



#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.647 min Scan# 615
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

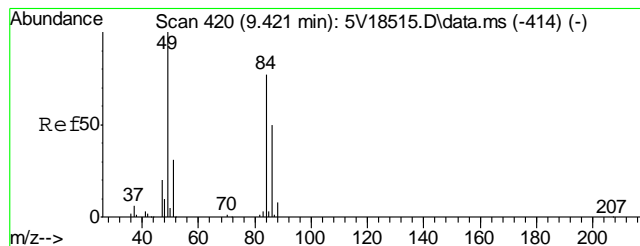
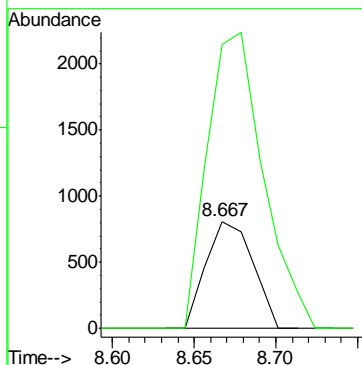
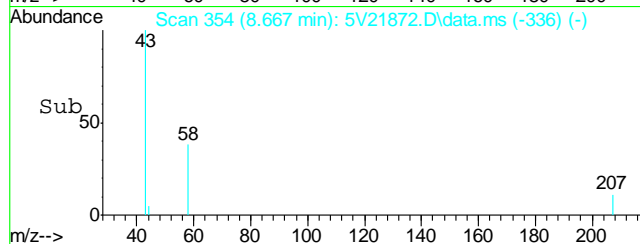
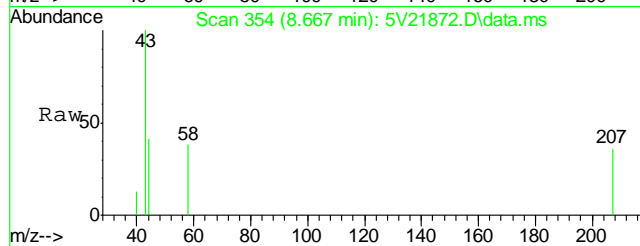
Tgt Ion:168 Resp: 226877
Ion Ratio Lower Upper
168 100
99 42.0 37.4 56.2





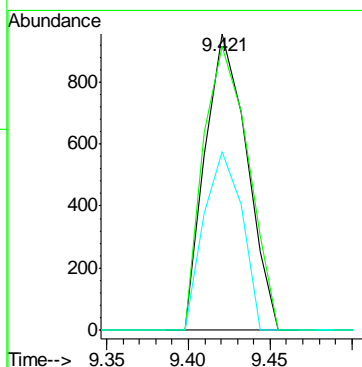
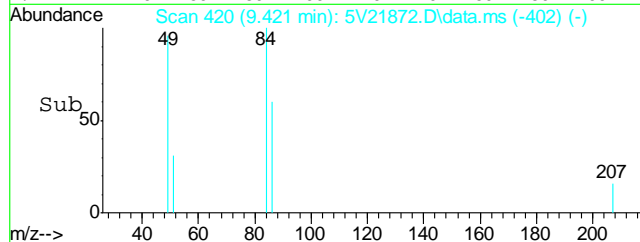
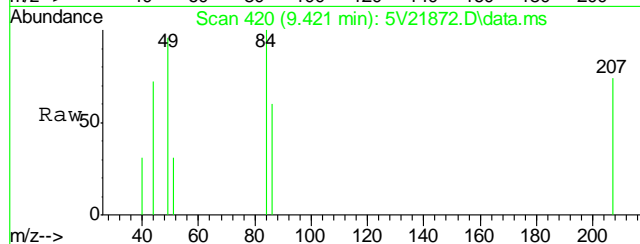
#15
Acetone
Concen: 2.65 ug/l
RT: 8.667 min Scan# 354
Delta R.T. 0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

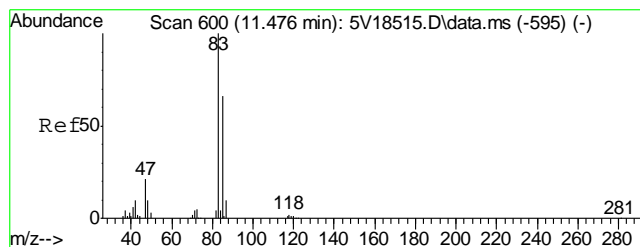
Tgt Ion: 58 Resp: 1610
Ion Ratio Lower Upper
58 100
43 330.5 353.6 393.6#



#17
Methylene Chloride
Concen: 0.45 ug/l
RT: 9.421 min Scan# 420
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

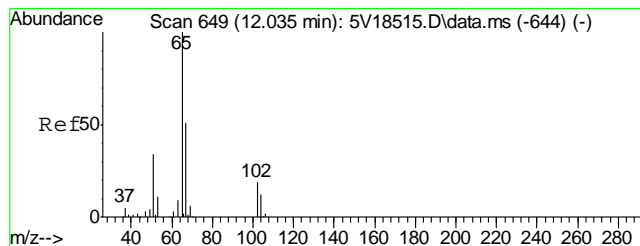
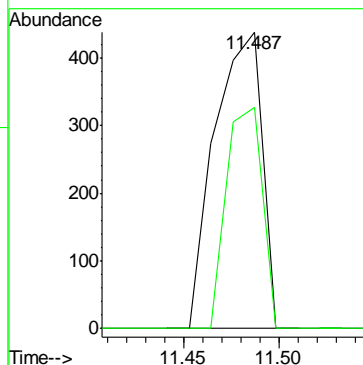
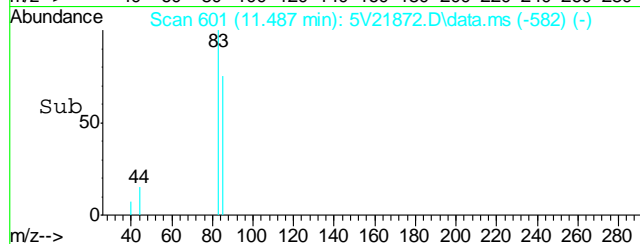
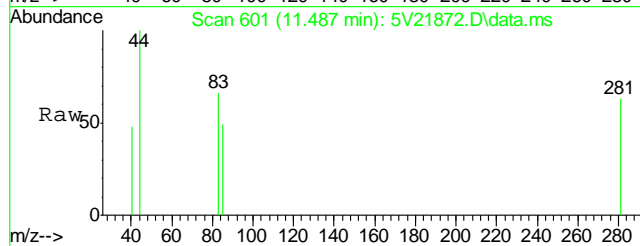
Tgt Ion: 84 Resp: 1693
Ion Ratio Lower Upper
84 100
49 103.7 110.4 150.4#
86 54.9 44.0 84.0





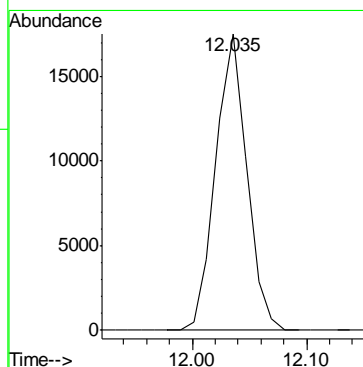
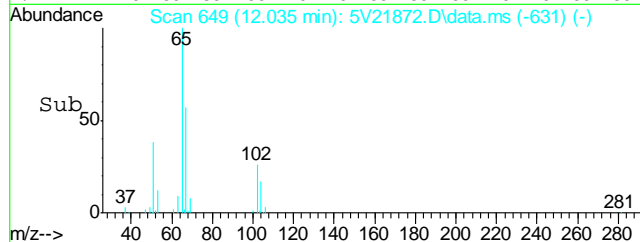
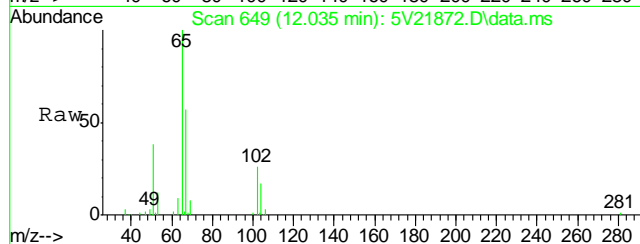
#29
Chloroform
Concen: 0.13 ug/l
RT: 11.487 min Scan# 601
Delta R.T. 0.011 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

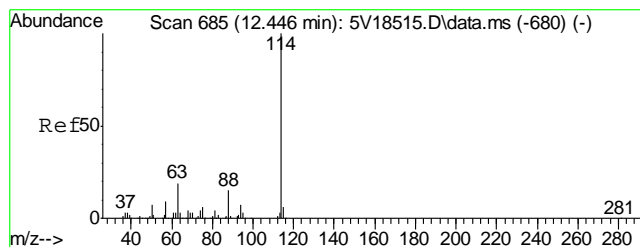
Tgt Ion: 83 Resp: 759
Ion Ratio Lower Upper
83 100
85 57.2 44.9 84.9



#33
1,2-Dichloroethane-d4
Concen: 47.72 ug/l
RT: 12.035 min Scan# 649
Delta R.T. 0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

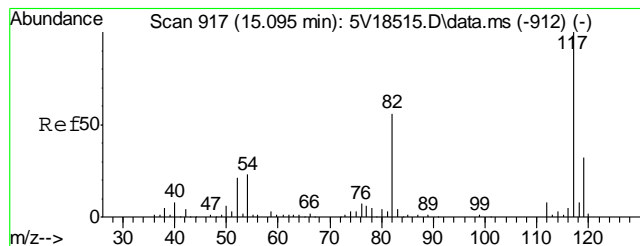
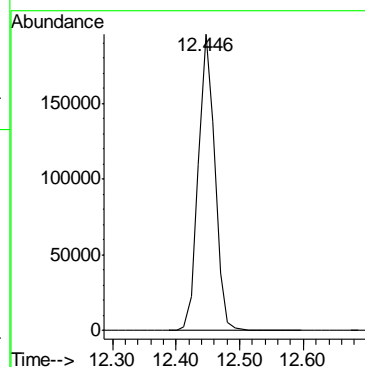
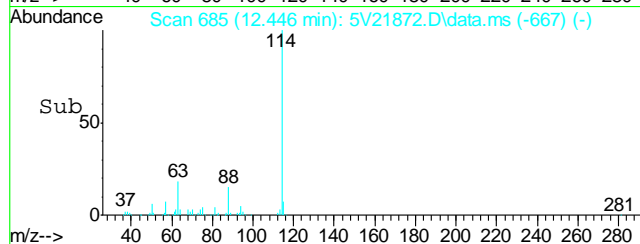
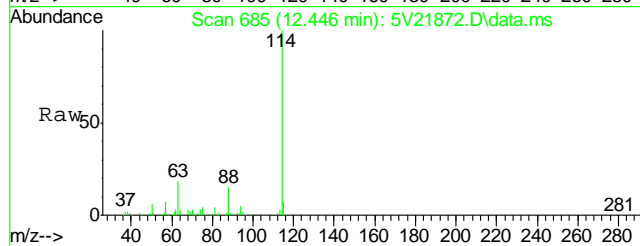
Tgt Ion: 102 Resp: 33266





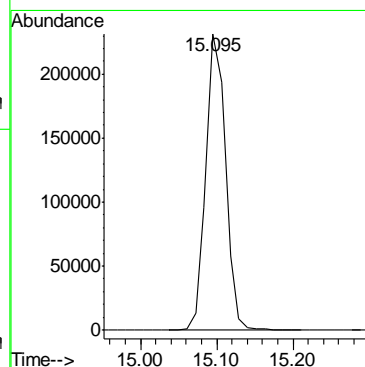
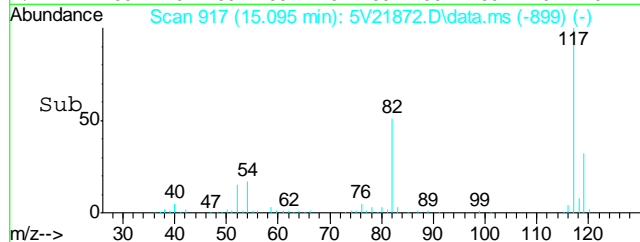
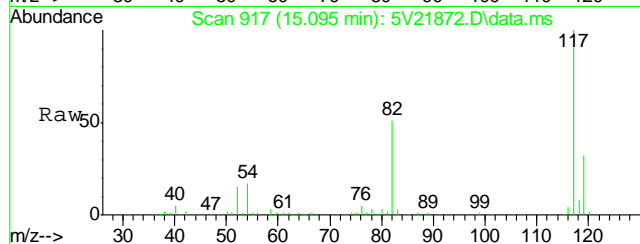
#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.446 min Scan# 685
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

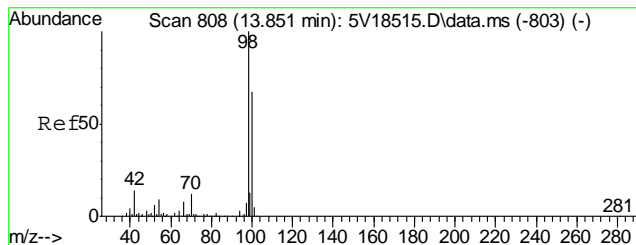
Tgt Ion:114 Resp: 352773



#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.095 min Scan# 917
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

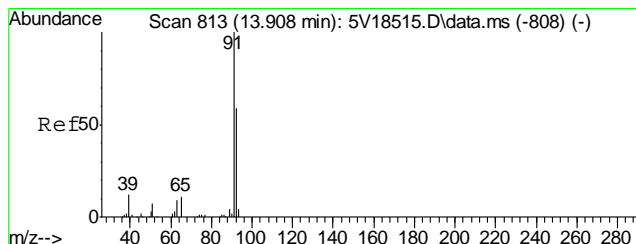
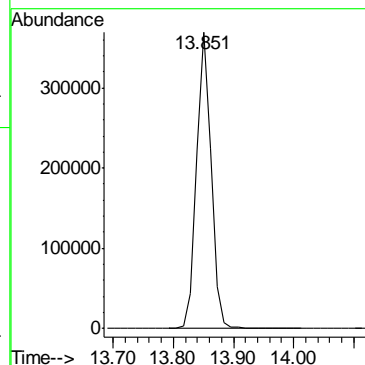
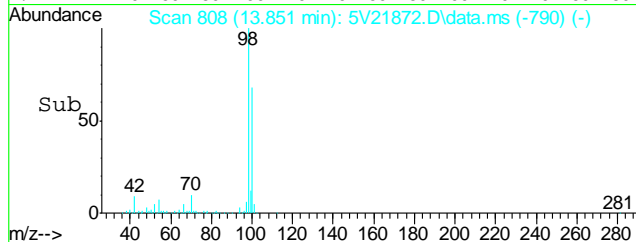
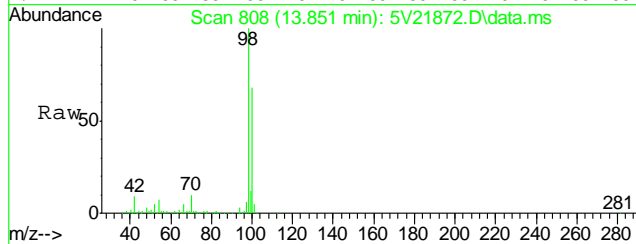
Tgt Ion:117 Resp: 415450





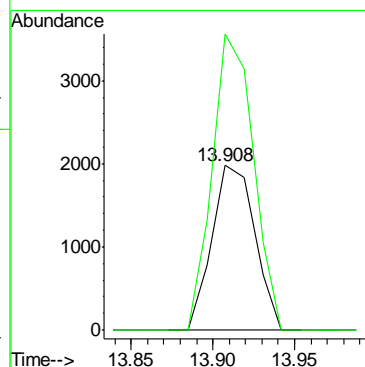
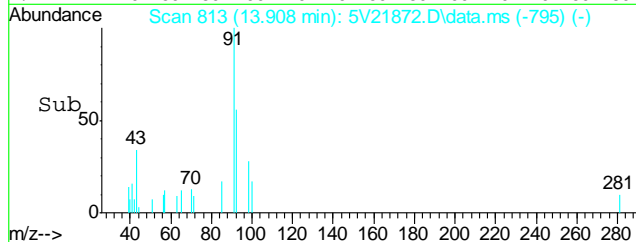
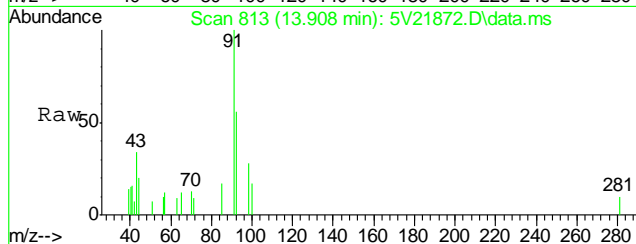
#61
Toluene-d8
Concen: 45.30 ug/l
RT: 13.851 min Scan# 808
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

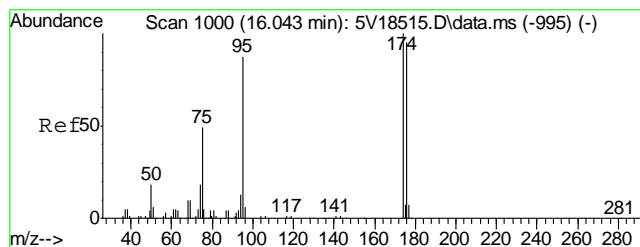
Tgt Ion: 98 Resp: 636055



#62
Toluene
Concen: 0.33 ug/l
RT: 13.908 min Scan# 813
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

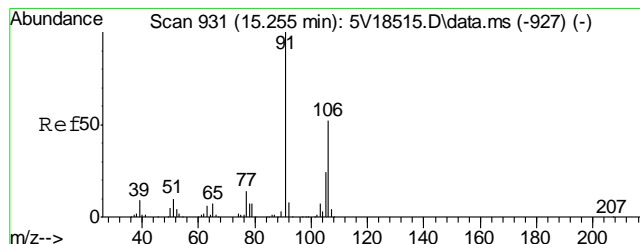
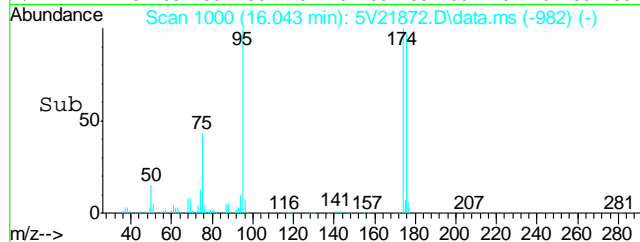
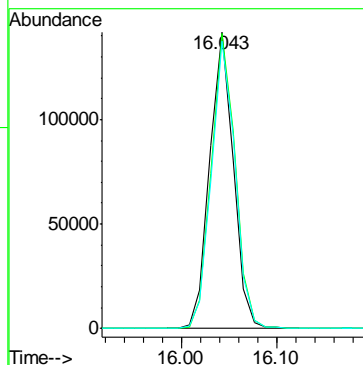
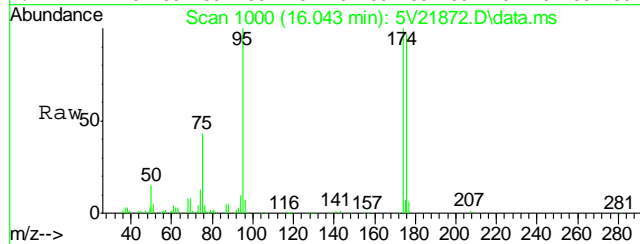
Tgt Ion: 92 Resp: 3609
Ion Ratio Lower Upper
92 100
91 172.7 149.8 189.8





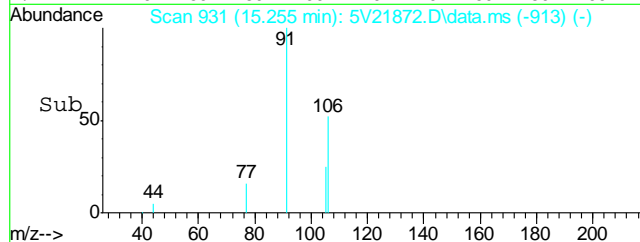
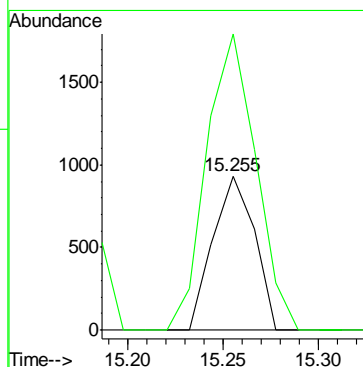
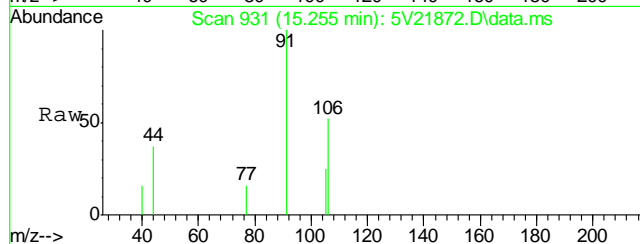
#69
4-Bromofluorobenzene
Concen: 41.96 ug/l
RT: 16.043 min Scan# 1000
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

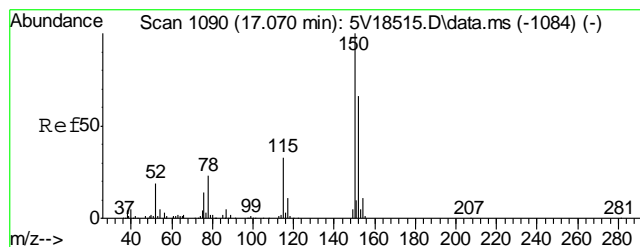
Tgt Ion	Ratio	Lower	Upper
95	100		
174	101.0	77.1	117.1
176	97.7	73.4	113.4



#72
m,p-xylene
Concen: 0.18 ug/l
RT: 15.255 min Scan# 931
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

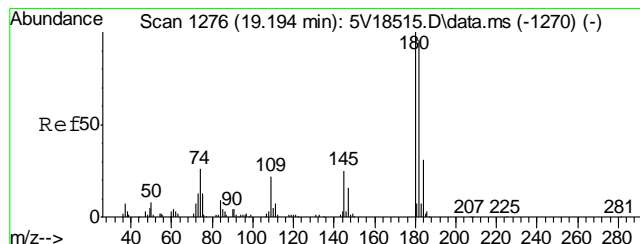
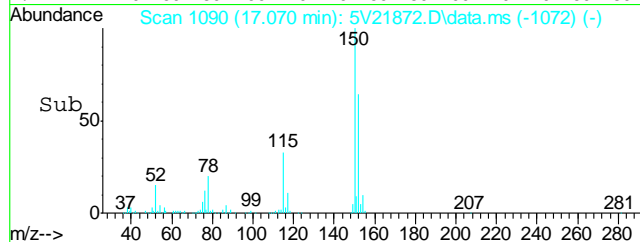
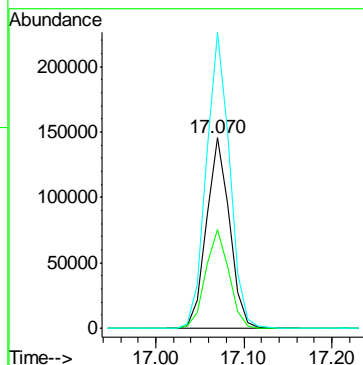
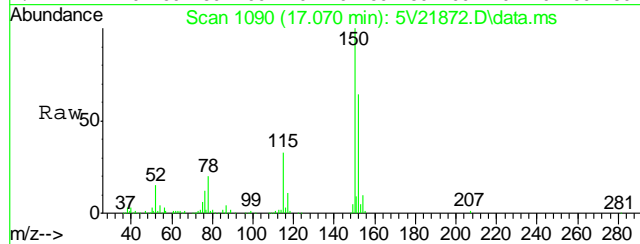
Tgt Ion	Ratio	Lower	Upper
106	100		
91	228.4	177.1	217.1#





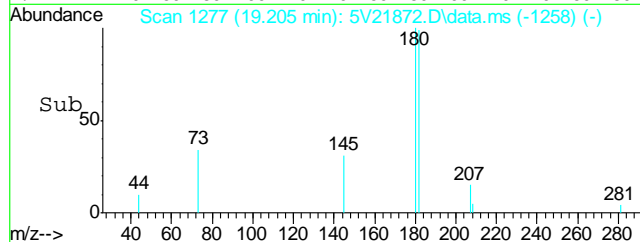
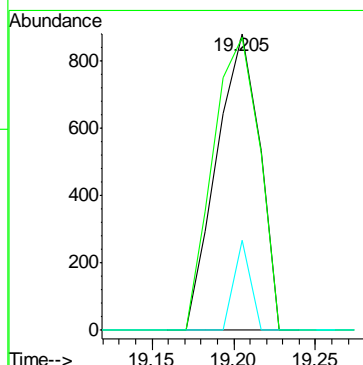
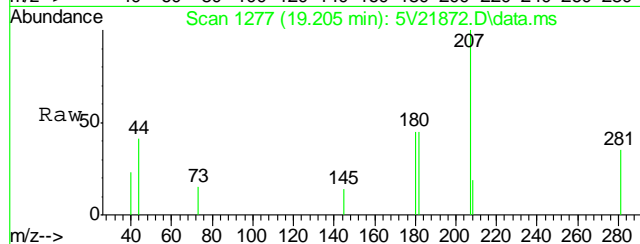
#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.070 min Scan# 1090
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

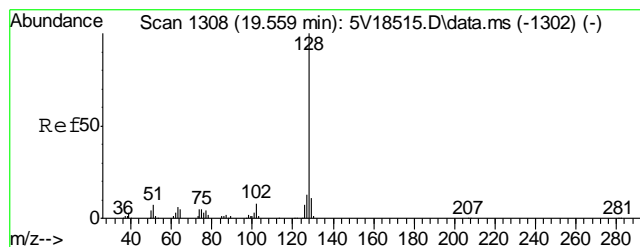
Tgt Ion	Ratio	Lower	Upper
152	100		
115	52.4	41.4	62.0
150	156.4	153.9	230.9



#90
1,2,4-Trichlorobenzene
Concen: 0.23 ug/l
RT: 19.205 min Scan# 1277
Delta R.T. 0.011 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

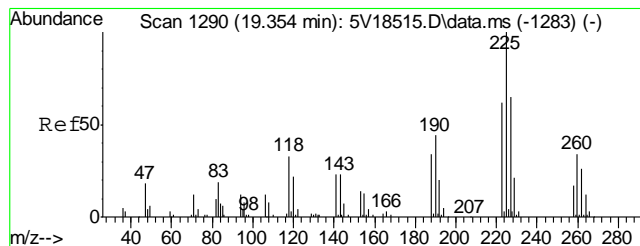
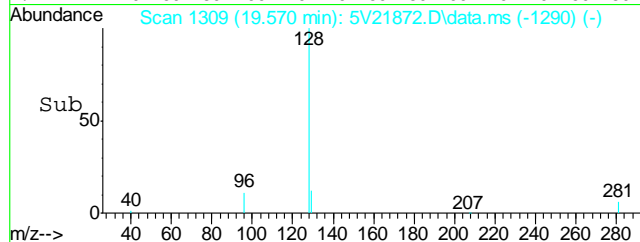
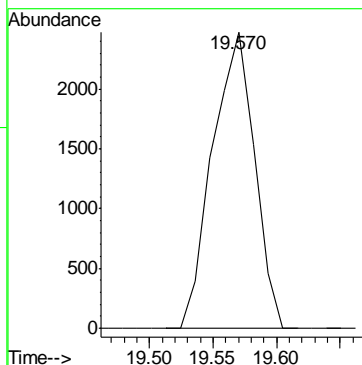
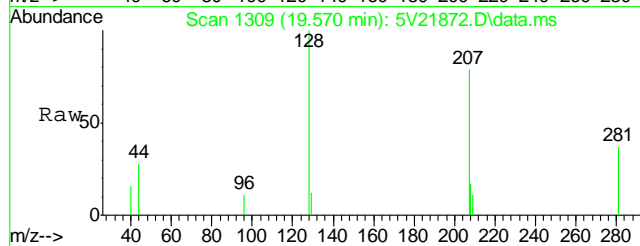
Tgt Ion	Ratio	Lower	Upper
180	100		
182	106.3	76.2	114.4
145	11.4	20.1	30.1#





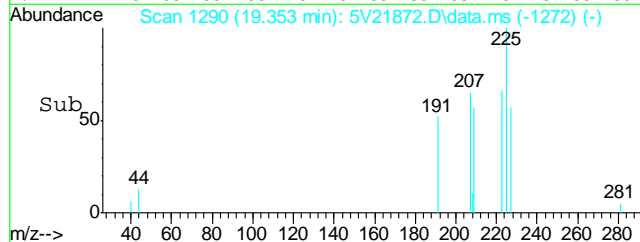
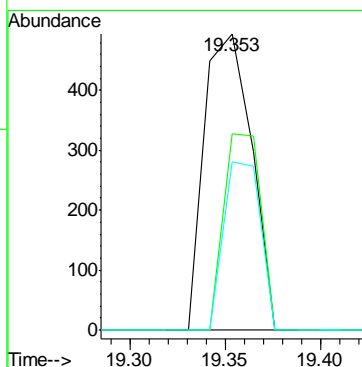
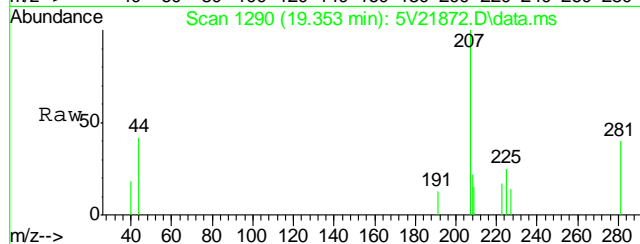
#91
Naphthalene
Concen: 1.01 ug/l
RT: 19.570 min Scan# 1309
Delta R.T. 0.012 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

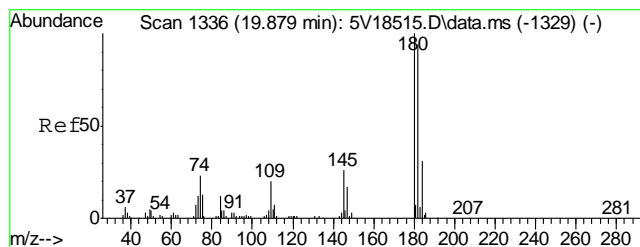
Tgt Ion:128 Resp: 5677



#92
Hexachlorobutadiene
Concen: 0.16 ug/l
RT: 19.353 min Scan# 1290
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

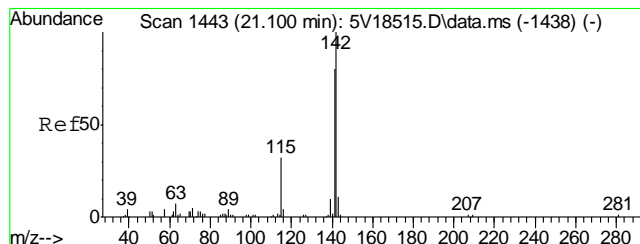
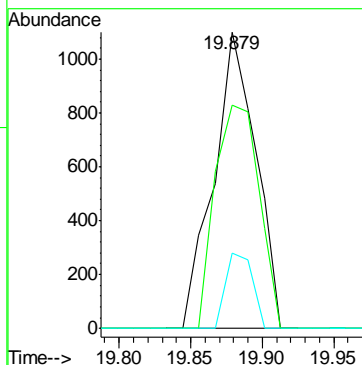
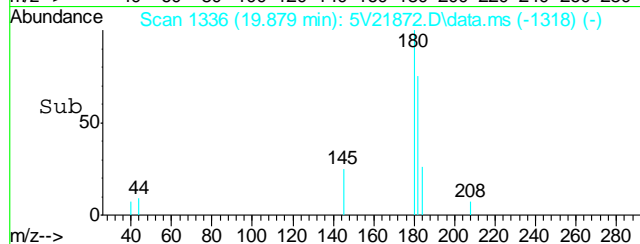
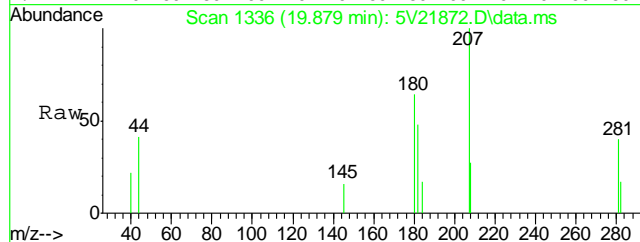
Tgt Ion:225 Resp: 849
Ion Ratio Lower Upper
225 100
223 52.5 49.5 74.3
227 44.6 51.1 76.7#





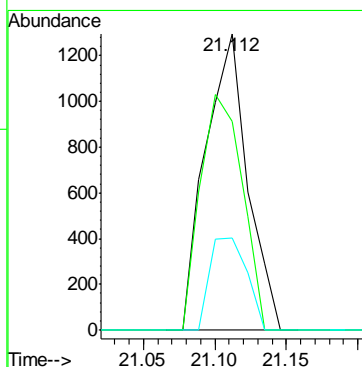
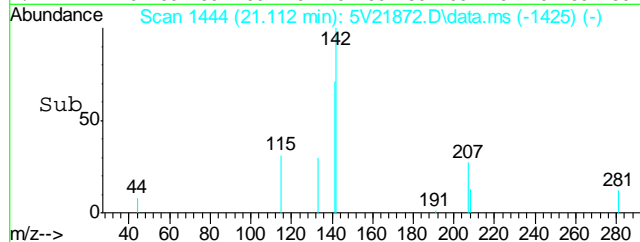
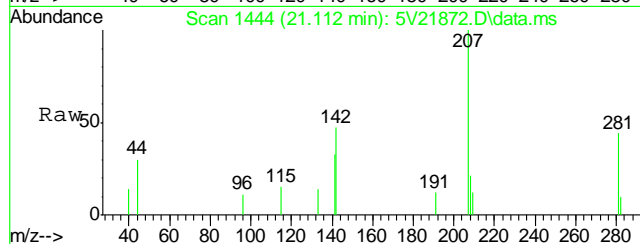
#93
1,2,3-Trichlorobenzene
Concen: 0.35 ug/l
RT: 19.879 min Scan# 1336
Delta R.T. -0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

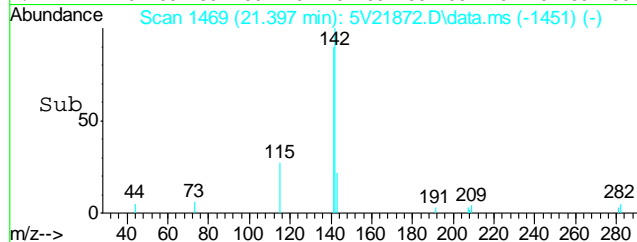
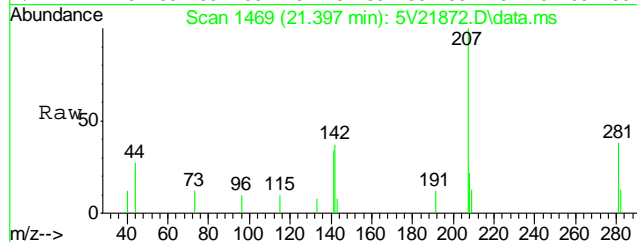
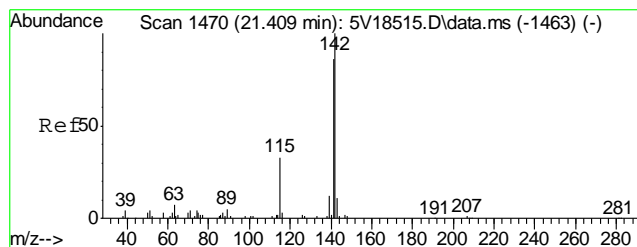
Tgt Ion	Ratio	Lower	Upper
180	100		
182	78.9	76.0	114.0
145	16.2	21.4	32.0



#94
2-Methylnaphthalene
Concen: 1.82 ug/l
RT: 21.112 min Scan# 1444
Delta R.T. 0.012 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

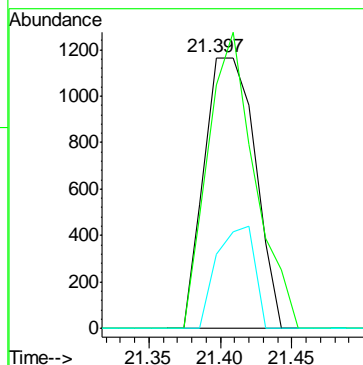
Tgt Ion	Ratio	Lower	Upper
142	100		
141	79.1	66.2	99.4
115	27.4	25.9	38.9





#95
1-Methylnaphthalene
Concen: 1.72 ug/l
RT: 21.397 min Scan# 1469
Delta R.T. 0.000 min
Lab File: 5V21872.D
Acq: 13 Jun 2012 11:11 pm

Tgt Ion	Ratio	Lower	Upper
142	100		
141	101.0	68.9	103.3
115	27.9	27.3	40.9



GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D35344

Account: XTOKRWR XTO Energy

Project: FRU 297-8B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB907-MB	GB16328.D	1	06/14/12	SK	n/a	n/a	GGB907

The QC reported here applies to the following samples:

Method: SW846 8015B

D35344-1

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	90% 60-140%

Blank Spike Summary

Page 1 of 1

Job Number: D35344

Account: XTOKRWR XTO Energy

Project: FRU 297-8B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB907-BS	GB16329.D	1	06/14/12	SK	n/a	n/a	GGB907

The QC reported here applies to the following samples:

Method: SW846 8015B

D35344-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	128	116	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	100%	60-140%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D35344
Account: XTOKRWR XTO Energy
Project: FRU 297-8B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D35344-1MS	GB16331.D	1	06/14/12	SK	n/a	n/a	GGB907
D35344-1MSD	GB16332.D	1	06/14/12	SK	n/a	n/a	GGB907
D35344-1	GB16330.D	1	06/14/12	SK	n/a	n/a	GGB907

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

D35344-1

CAS No.	Compound	D35344-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	63.2		140	219	111	215	108	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D35344-1	Limits
120-82-1	1,2,4-Trichlorobenzene	90%	91%	86%	60-140%

GC Volatiles

Raw Data



Judy Melson
06/15/12 15:56

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061412\GB16330.D\FID1A.CH Vial: 6
 Signal #2 : Y:\1\DATA\061412\GB16330.D\FID2B.CH
 Acq On : 14 Jun 2012 12:17 pm Operator: StephK
 Sample : D35344-1, 50X Inst : GC/MS Ins
 Misc : GC2911,GGB907,5.070,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jun 14 13:26:21 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed Jun 13 13:43:02 2012
 Response via : Initial Calibration
 DataAcq Meth : TVB4.M

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

Compound	R.T.	Response	Conc	Units

System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.33	2686152	85.726 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.33	20325973	125.062 %	
Target Compounds				
1) H TVH-Gasoline	7.23	64384334	0.991 mg/L	
4) T Methyl-t-butyl-ether	2.21	149456	1.151 ug/L	
5) T Benzene	4.09	346021	0.859 ug/L	
6) T Toluene	7.59	8998281	22.707 ug/L	
7) T Ethylbenzene	10.23	3309521	9.784 ug/L	
8) T m,p-Xylene	10.41	12701221	34.425 ug/L	
9) T o-Xylene	10.92	1501678	4.573 ug/L	
11) T Naphthalene	14.51	6046987	30.647 ug/L	

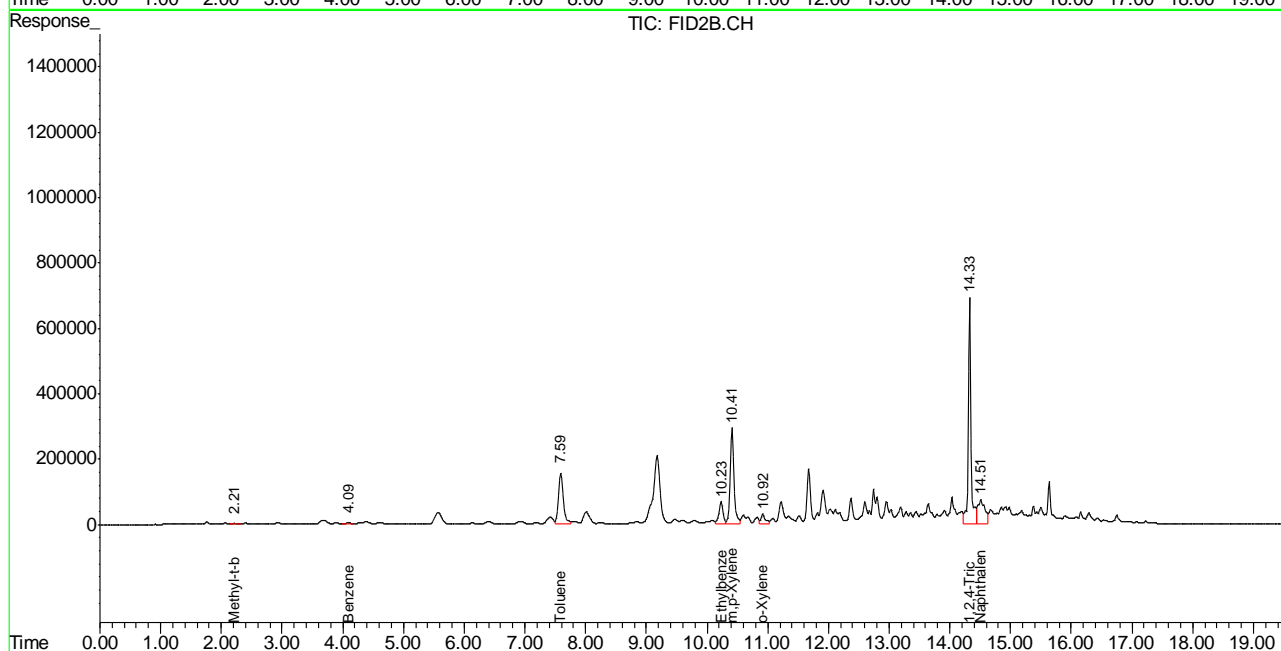
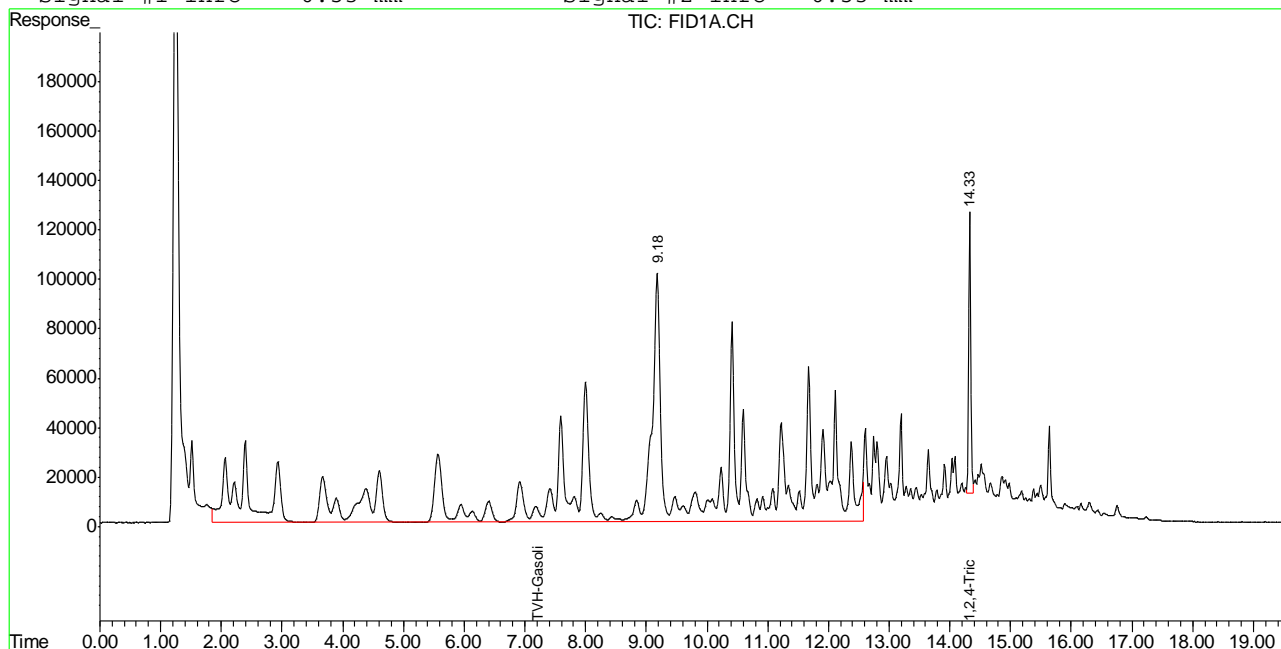
(f)=RT Delta > 1/2 Window (m)=manual int.
 GB16330.D TB868GB868SOIL.M Fri Jun 15 09:02:07 2012 GC

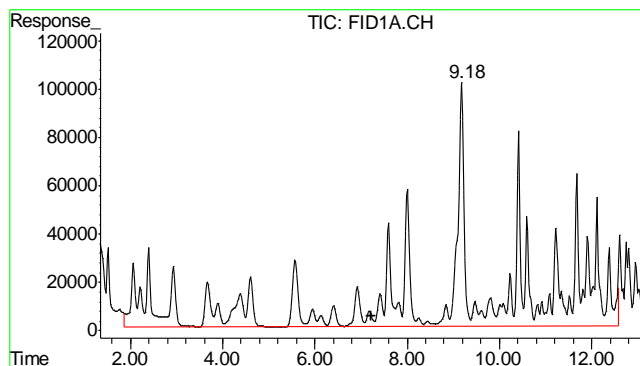
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061412\GB16330.D\FID1A.CH Vial: 6
 Signal #2 : Y:\1\DATA\061412\GB16330.D\FID2B.CH
 Acq On : 14 Jun 2012 12:17 pm Operator: StephK
 Sample : D35344-1, 50X Inst : GC/MS Ins
 Misc : GC2911,GGB907,5.070,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jun 14 12:29 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed Jun 13 13:43:02 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

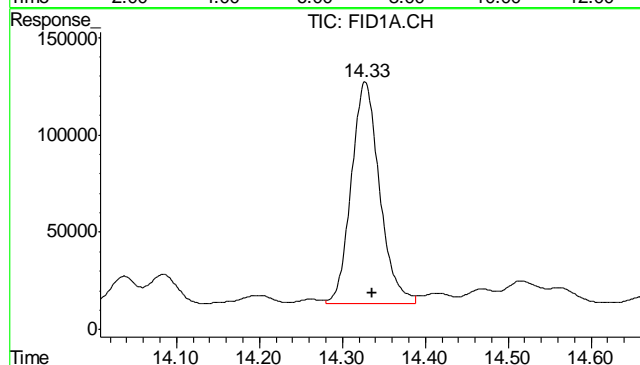
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





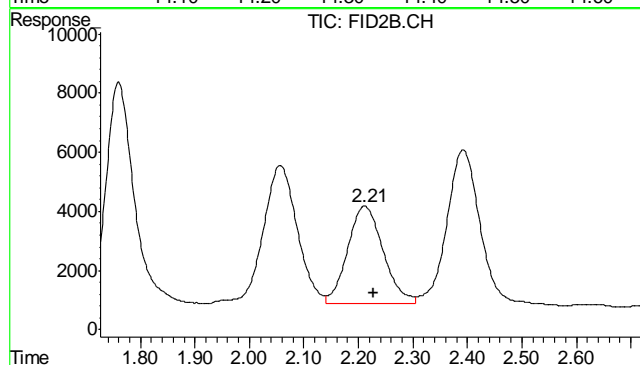
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 64384334
Conc: 0.99 mg/L m



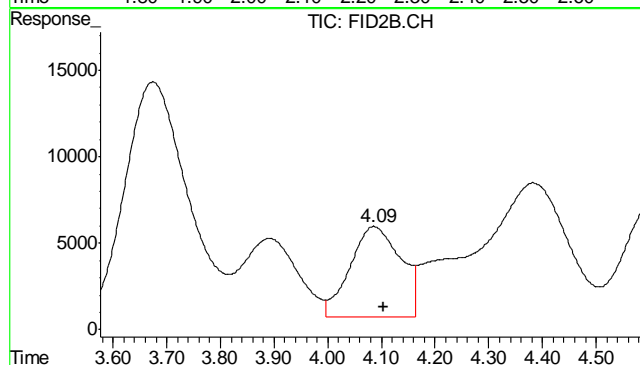
#2 1,2,4-Trichlorobenzene

R.T.: 14.327 min
Delta R.T.: -0.010 min
Response: 2686152
Conc: 85.73 % m



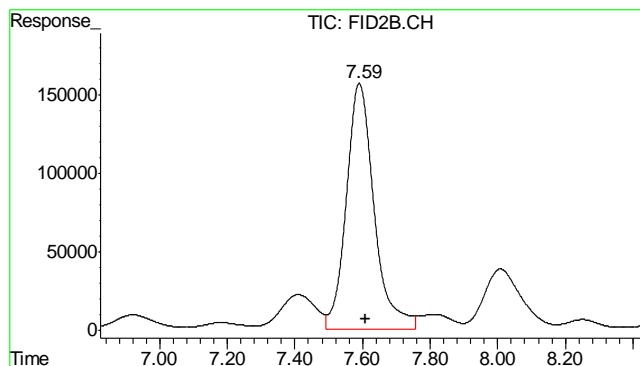
#4 Methyl-t-butyl-ether

R.T.: 2.211 min
Delta R.T.: -0.016 min
Response: 149456
Conc: 1.15 ug/L



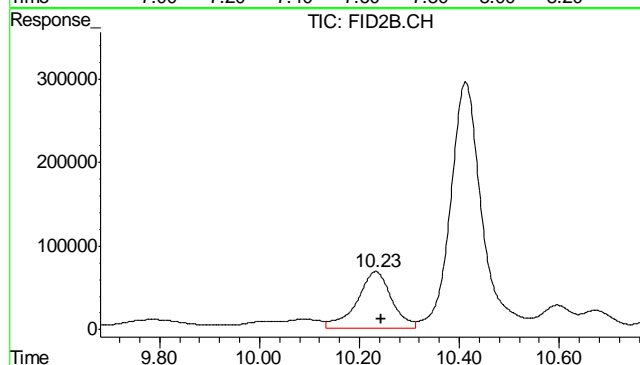
#5 Benzene

R.T.: 4.086 min
Delta R.T.: -0.019 min
Response: 346021
Conc: 0.86 ug/L



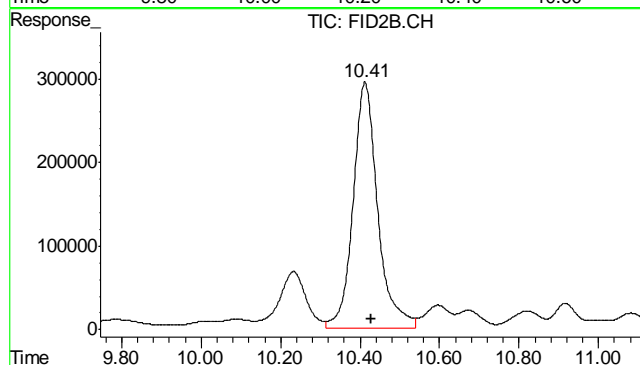
#6 Toluene

R.T.: 7.590 min
Delta R.T.: -0.019 min
Response: 8998281
Conc: 22.71 ug/L



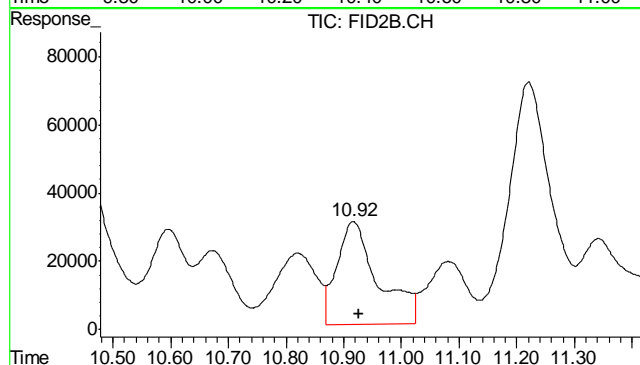
#7 Ethylbenzene

R.T.: 10.232 min
Delta R.T.: -0.012 min
Response: 3309521
Conc: 9.78 ug/L



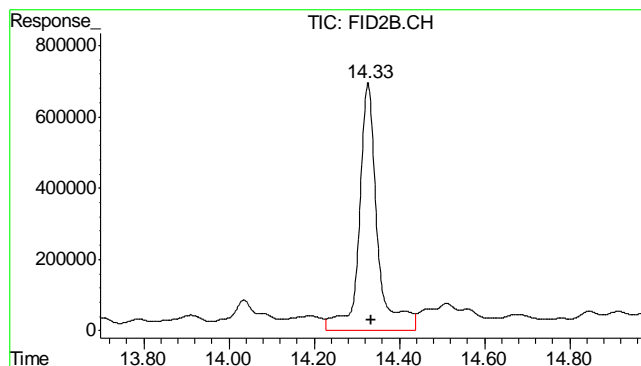
#8 m,p-Xylene

R.T.: 10.413 min
Delta R.T.: -0.014 min
Response: 12701221
Conc: 34.43 ug/L



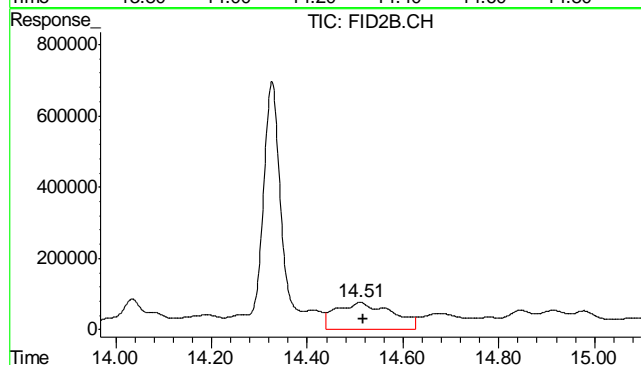
#9 o-Xylene

R.T.: 10.917 min
Delta R.T.: -0.010 min
Response: 1501678
Conc: 4.57 ug/L



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

R.T.: 14.326 min
 Delta R.T.: -0.008 min
 Response: 20325973
 Conc: 125.06 %



#11 Naphthalene

R.T.: 14.510 min
 Delta R.T.: -0.006 min
 Response: 6046987
 Conc: 30.65 ug/L

8.1.1

8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061412\GB16328.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\061412\GB16328.D\FID2B.CH
Acq On : 14 Jun 2012 11:06 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2911,GGB907,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 14 11:38:19 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jun 13 13:43:02 2012
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

Compound	R.T.	Response	Conc	Units

System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.33	2809092	89.650	%
10) S 1,2,4-Trichlorobenzene (P)	14.33	15959745	98.197	%
Target Compounds				
1) H TVH-Gasoline	7.23	5311946	<MDL	mg/L
4) T Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T Benzene	0.00	0	N.D.	ug/L d
6) T Toluene	7.60	168268	0.425	ug/L
7) T Ethylbenzene	0.00	0	N.D.	ug/L d
8) T m,p-Xylene	0.00	0	N.D.	ug/L d
9) T o-Xylene	0.00	0	N.D.	ug/L d
11) T Naphthalene	14.51	224643	1.139	ug/L

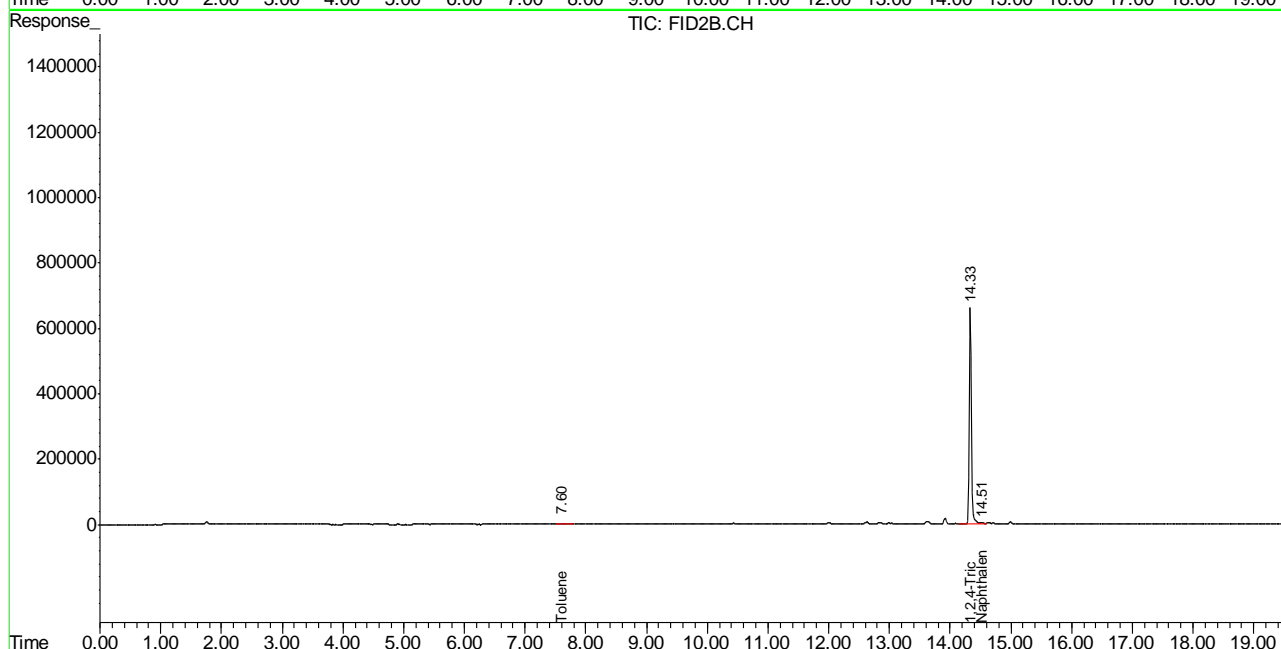
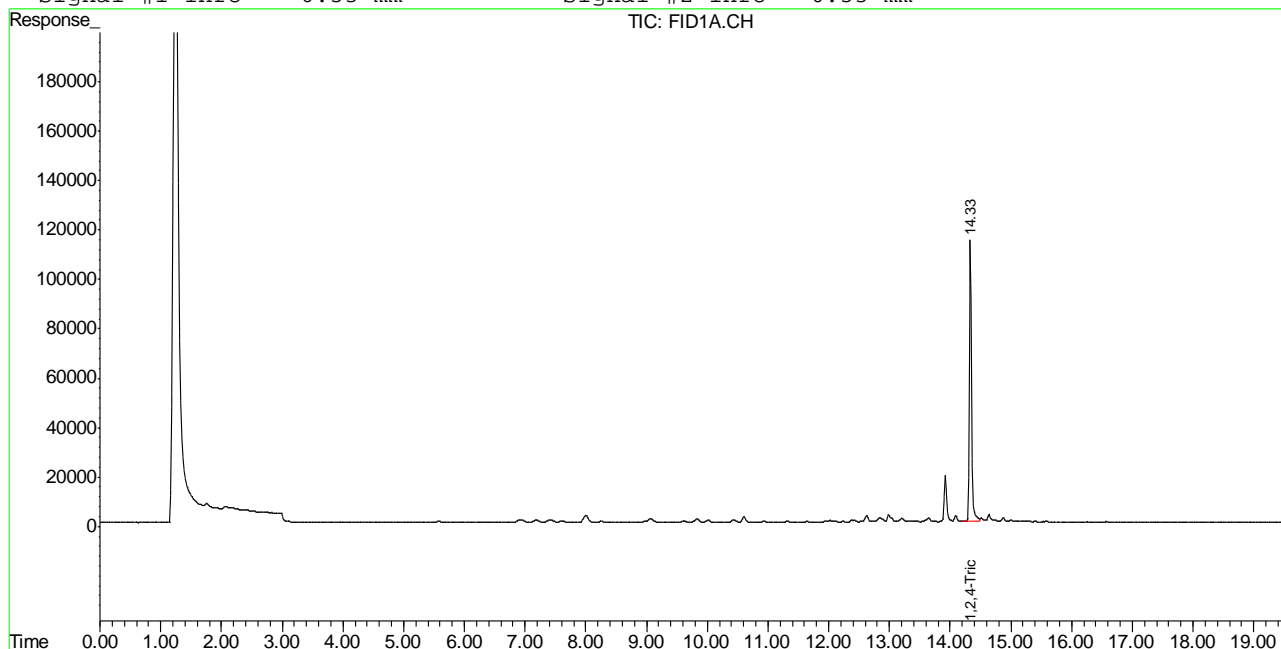
(f)=RT Delta > 1/2 Window (m)=manual int.
GB16328.D TB868GB868SOIL.M Fri Jun 15 09:02:01 2012 GC

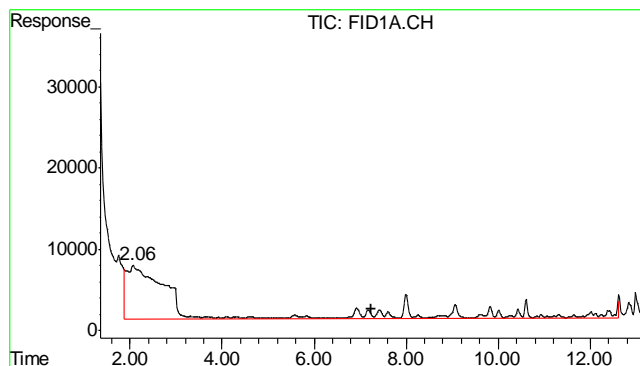
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061412\GB16328.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\061412\GB16328.D\FID2B.CH
Acq On : 14 Jun 2012 11:06 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2911,GGB907,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 14 10:41 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jun 13 13:43:02 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

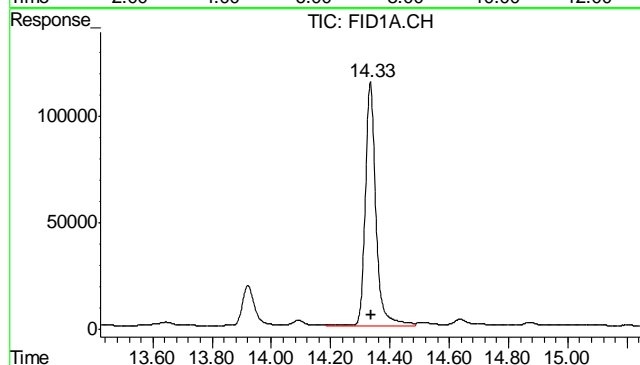
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





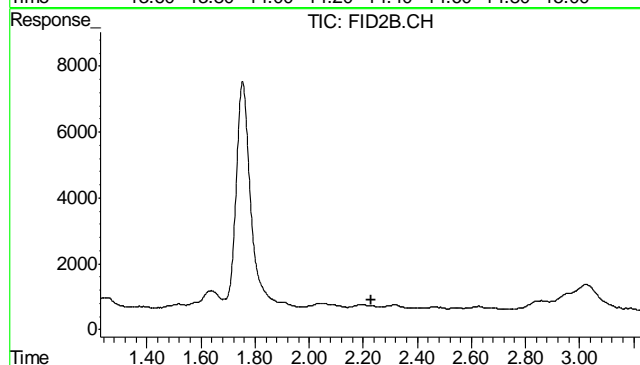
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 5311946
Conc: N.D.



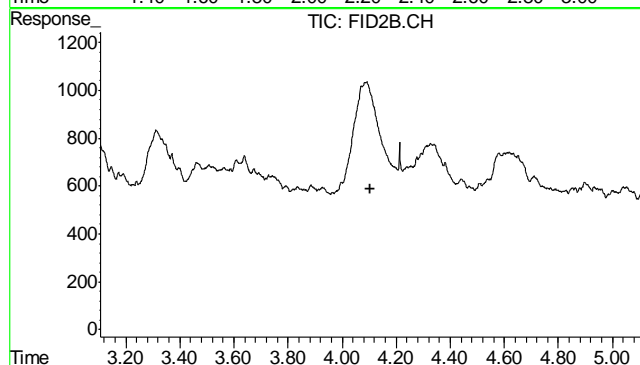
#2 1,2,4-Trichlorobenzene

R.T.: 14.334 min
Delta R.T.: -0.003 min
Response: 2809092
Conc: 89.65 %



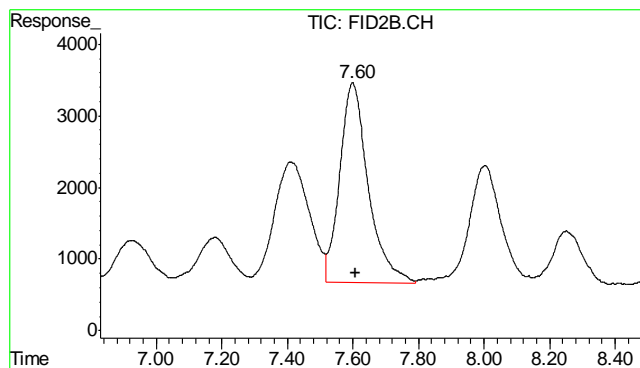
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.228 min
Response: 0
Conc: N.D.



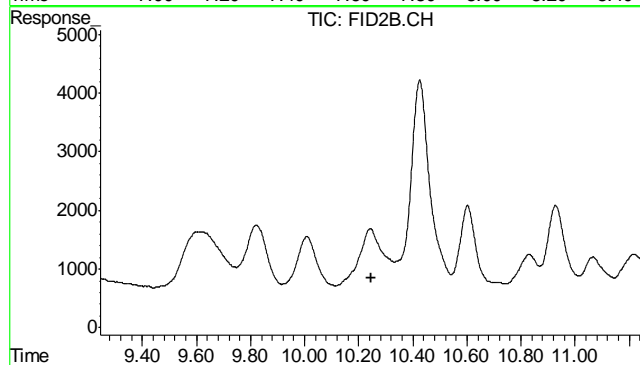
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.105 min
Response: 0
Conc: N.D.



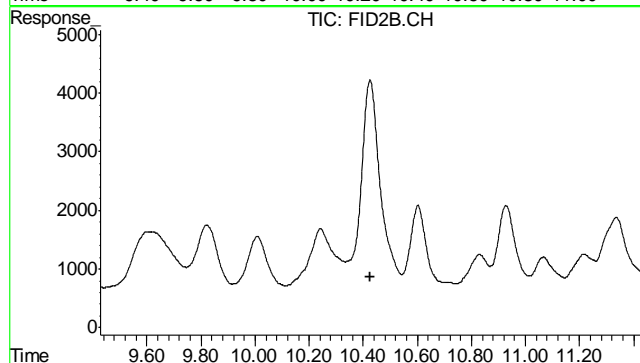
#6 Toluene

R.T.: 7.599 min
Delta R.T.: -0.011 min
Response: 168268
Conc: 0.42 ug/L



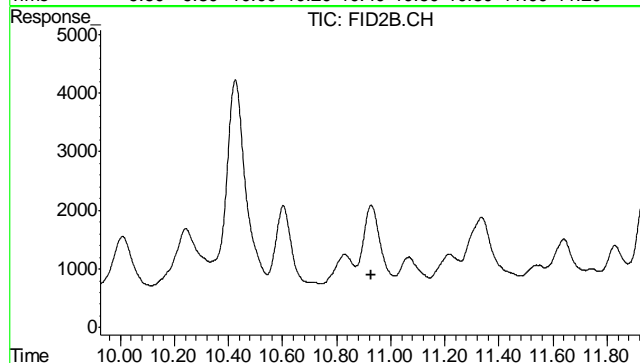
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.245 min
Response: 0
Conc: N.D.



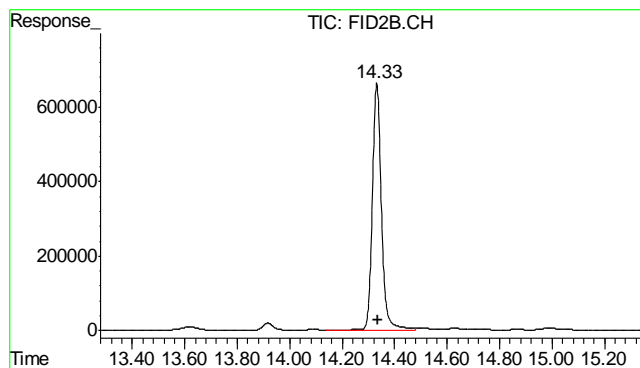
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T.: 10.427 min
Response: 0
Conc: N.D.



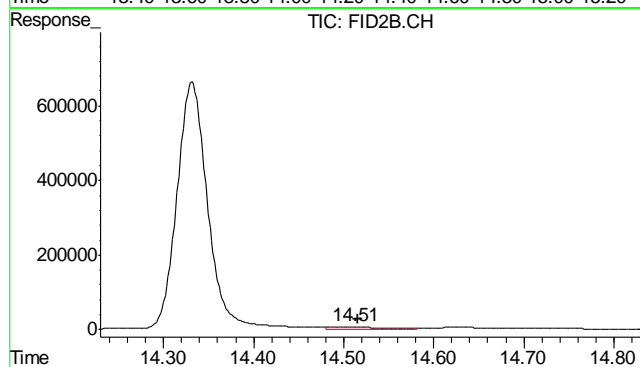
#9 o-Xylene

R.T.: 0.000 min
Exp R.T.: 10.926 min
Response: 0
Conc: N.D.



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

R.T.: 14.332 min
Delta R.T.: -0.003 min
Response: 15959745
Conc: 98.20 %



#11 Naphthalene

R.T.: 14.510 min
Delta R.T.: -0.006 min
Response: 224643
Conc: 1.14 ug/L

8.2.1

8

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D35344
Account: XTOKRWR XTO Energy
Project: FRU 297-8B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6047-MB	FD14227.D	1	06/14/12	AV	06/13/12	OP6047	GFD750

The QC reported here applies to the following samples:

Method: SW846-8015B

D35344-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	6.7	4.3	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	79% 43-136%

9.1.1

6

Blank Spike Summary

Page 1 of 1

Job Number: D35344

Account: XTOKRWR XTO Energy

Project: FRU 297-8B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6047-BS	FD14229.D	1	06/14/12	AV	06/13/12	OP6047	GFD750

The QC reported here applies to the following samples:

Method: SW846-8015B

D35344-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	417	63	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	70%	43-136%

9.2.1

9

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D35344
Account: XTOKRWR XTO Energy
Project: FRU 297-8B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6047-MS	FD14231.D	1	06/14/12	AV	06/13/12	OP6047	GFD750
OP6047-MSD	FD14233.D	1	06/14/12	AV	06/13/12	OP6047	GFD750
D35286-2	FD14235.D	1	06/14/12	AV	06/13/12	OP6047	GFD750

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

D35344-1

CAS No.	Compound	D35286-2 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	7.99	756	450	58	370	48	20	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D35286-2	Limits
84-15-1	o-Terphenyl	65%	59%	70%	43-136%

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14261.D Vial: 20
Acq On : 6-14-2012 08:25:09 PM Operator: ashleyv
Sample : D35344-1 Inst : FID5
Misc : OP6047,GFD750,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 15 09:00:08 2012 Quant Results File: DRO-GFD740F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD740F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Jun 11 09:22:41 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

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

Compound	R.T.	Response	Conc Units

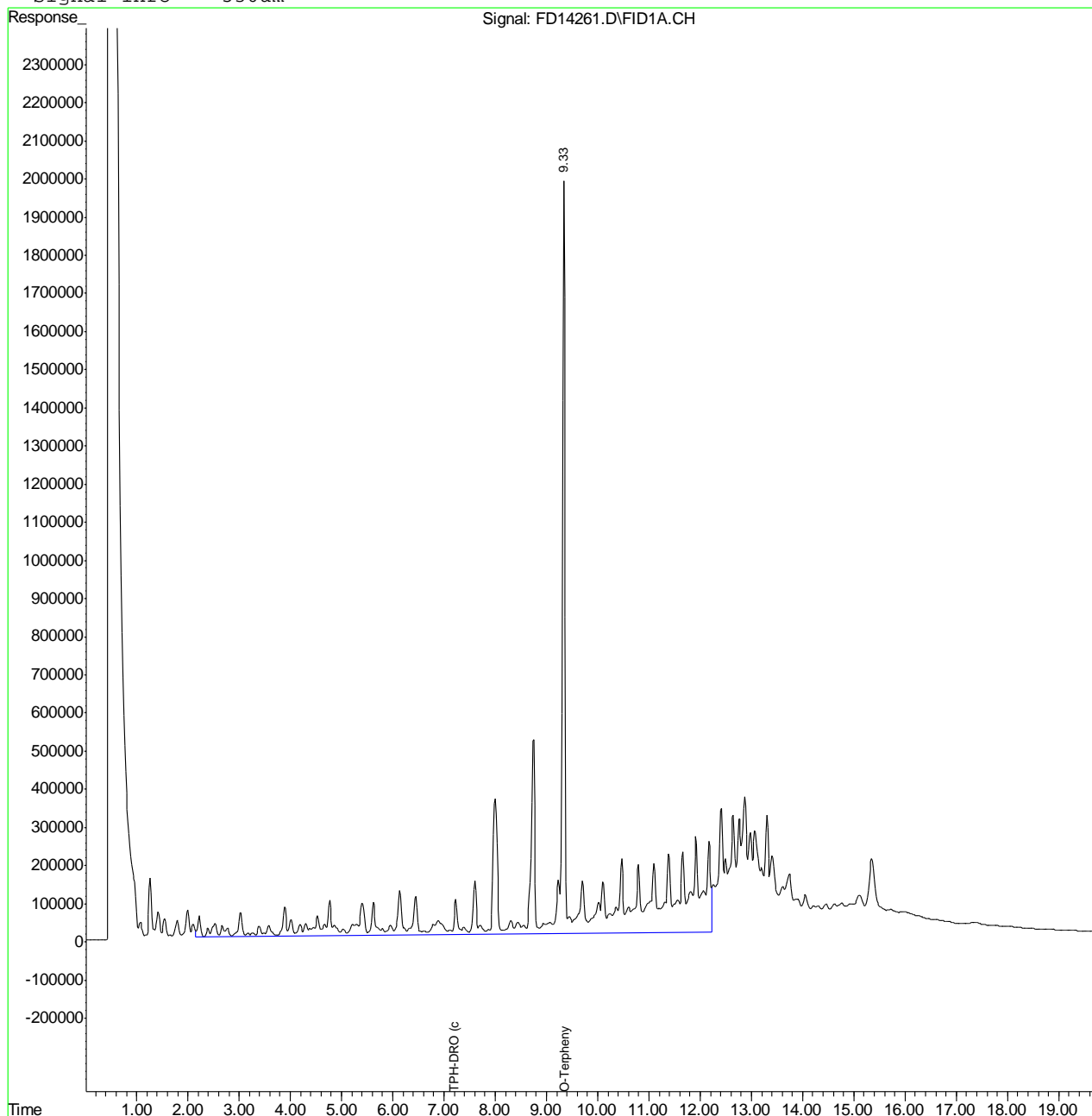
System Monitoring Compounds			
1) S O-Terphenyl	9.34	67104375	1425.908 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.19	286062436	6691.833 mg/L

Quantitation Report (QT Reviewed)

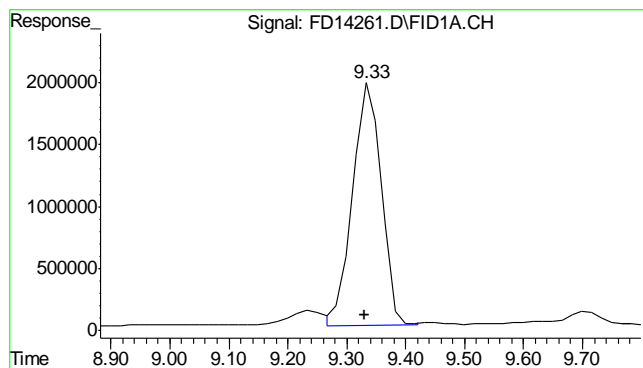
Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14261.D Vial: 20
 Acq On : 6-14-2012 08:25:09 PM Operator: ashleyv
 Sample : D35344-1 Inst : FID5
 Misc : OP6047,GFD750,30.00,,,1,1 Multiplr: 1.00
 IntFile : autoint1.e
 Quant Time: Jun 15 9:00 2012 Quant Results File: DRO-GFD740F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD740F.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Mon Jun 11 09:22:41 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : DRODUAL.M

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

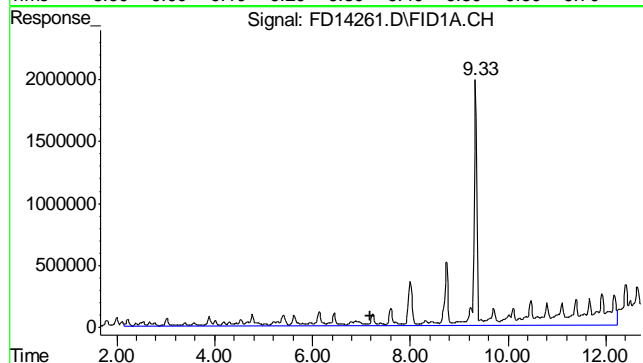


10.1.1
10



#1 O-Terphenyl

R.T.: 9.342 min
 Delta R.T.: 0.012 min
 Response: 67104375
 Conc: 1425.91 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.190 min
 Delta R.T.: 0.000 min
 Response: 286062436
 Conc: 6691.83 mg/L m

10.1.1
 10

Judy Melson
06/15/12 10:37

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14227.D Vial: 3
Acq On : 14 Jun 2012 12:48 pm Operator: ashleyv
Sample : OP6047-MB Inst : FID5
Misc : OP6047,GFD750,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 14 15:34:59 2012 Quant Results File: DRO-GFD740F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD740F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Jun 11 09:22:41 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

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

Compound	R.T.	Response	Conc Units

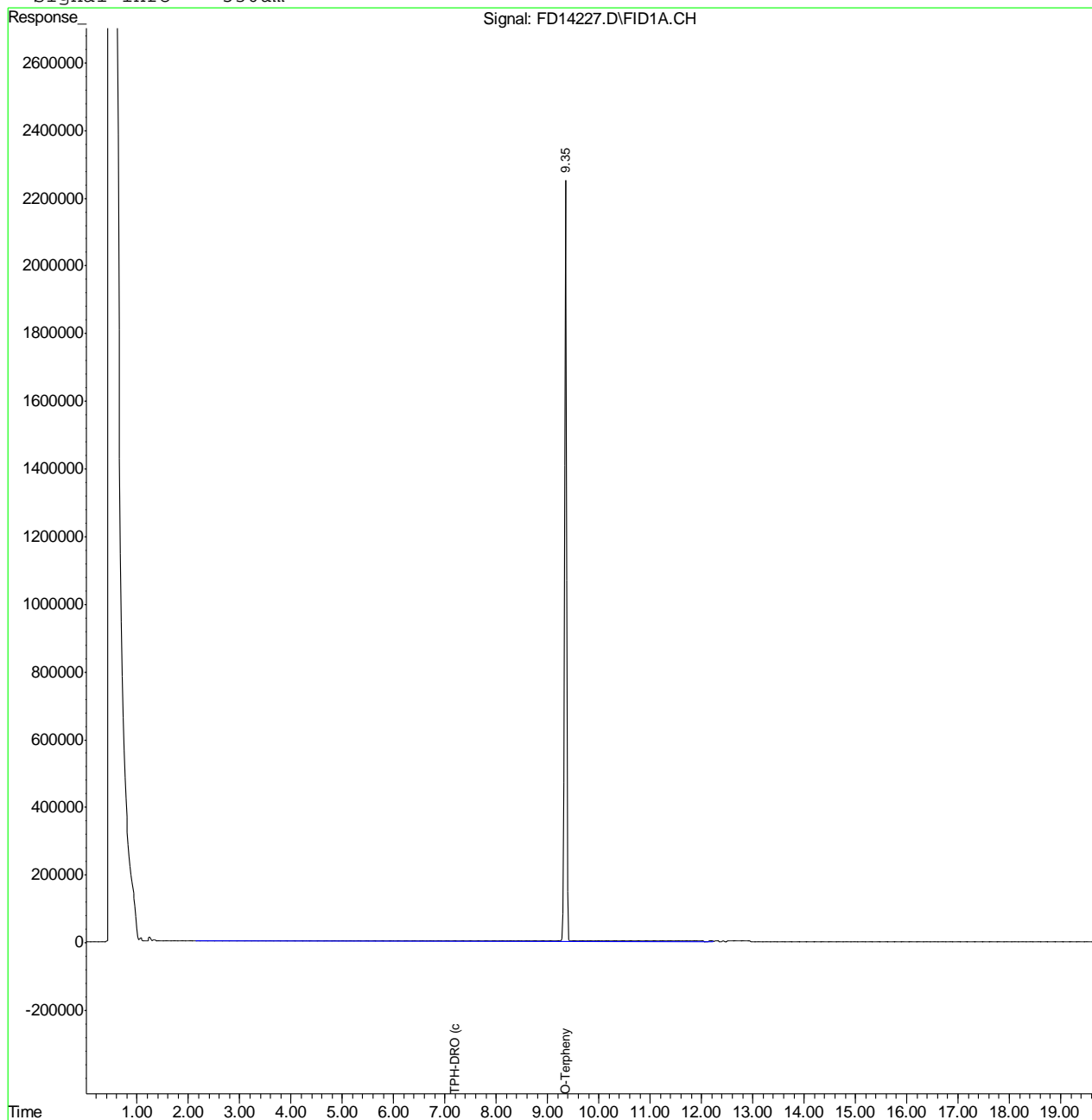
System Monitoring Compounds			
1) S O-Terphenyl	9.35	74347937	1579.827 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.19	2239439	52.387 mg/L

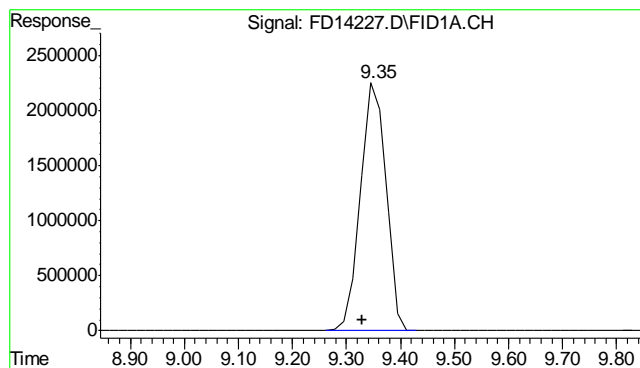
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14227.D Vial: 3
Acq On : 14 Jun 2012 12:48 pm Operator: ashleyv
Sample : OP6047-MB Inst : FID5
Misc : OP6047,GFD750,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 14 15:35 2012 Quant Results File: DRO-GFD740F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD740F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Jun 11 09:22:41 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

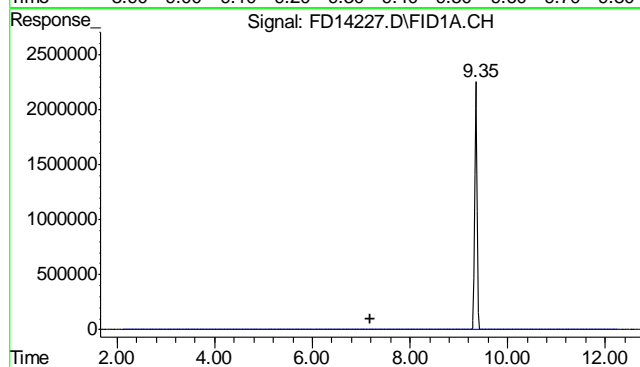
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 9.349 min
Delta R.T.: 0.019 min
Response: 74347937
Conc: 1579.83 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 7.190 min
Delta R.T.: 0.000 min
Response: 2239439
Conc: 52.39 mg/L m

10.2.1
10