



06/18/12

## Technical Report for

**XTO Energy**

**FRU 297-17A**

**1108-13A**

**Accutest Job Number: D35286**

**Sampling Date: 06/07/12**

### Report to:

**KRW Consulting, Inc.**  
**8000 West 14th Avenue**  
**Lakewood, CO 80214**  
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**ATTN: Dwayne Knudson**

**Total number of pages in report: 46**



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

  
**Brad Madadian**  
**Laboratory Director**

**Client Service contact: Renea Jackson 303-425-6021**

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

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Test results relate only to samples analyzed.

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Sample Summary

XTO Energy

Job No: D35286

FRU 297-17A

Project No: 1108-13A

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D35286-1	06/07/12	12:25	CB	06/09/12	SO	Soil	RP SUBLINER - 2FT CENTER
D35286-2	06/07/12	12:35	CB	06/09/12	SO	Soil	RP SUBLINER - 2FT SOUTHWEST

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



## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** XTO Energy

**Job No** D35286

**Site:** FRU 297-17A

**Report Date** 6/15/2012 4:07:55 PM

On 06/09/2012, 2 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 D35286 was assigned to the project. The lab sample IDs, client sample IDs, 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 GC By Method SW846 8015B

**Matrix** SO

**Batch ID:** GGB906

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35276-12MS, D35276-12MSD 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:** GN15369

- 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:	RP SUBLINER - 2FT CENTER			Date Sampled:	06/07/12
Lab Sample ID:	D35286-1			Date Received:	06/09/12
Matrix:	SO - Soil			Percent Solids:	85.6
Method:	SW846 8015B				
Project:	FRU 297-17A				

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB16306.D	1	06/11/12	SK	n/a	n/a	GGB906
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)	ND	13	6.6	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	103%		60-140%		

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

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

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## Report of Analysis

Page 1 of 1

Client Sample ID:	RP SUBLINER - 2FT CENTER				Date Sampled:	06/07/12
Lab Sample ID:	D35286-1				Date Received:	06/09/12
Matrix:	SO - Soil				Percent Solids:	85.6
Method:	SW846-8015B SW846 3546					
Project:	FRU 297-17A					

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD14251.D	1	06/14/12	AV	06/13/12	OP6047	GFD750
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	7.8	5.1	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	69%		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

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## Report of Analysis

Page 1 of 1

Client Sample ID:	RP SUBLINER - 2FT SOUTHWEST					Date Sampled:	06/07/12
Lab Sample ID:	D35286-2					Date Received:	06/09/12
Matrix:	SO - Soil					Percent Solids:	88.2
Method:	SW846 8015B						
Project:	FRU 297-17A						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB16307.D	1	06/11/12	SK	n/a	n/a	GGB906
Run #2							

	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)	ND	13	6.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	104%		60-140%		

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

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



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## Report of Analysis

Page 1 of 1

Client Sample ID:	RP SUBLINER - 2FT SOUTHWEST			Date Sampled:	06/07/12
Lab Sample ID:	D35286-2			Date Received:	06/09/12
Matrix:	SO - Soil			Percent Solids:	88.2
Method:	SW846-8015B SW846 3546				
Project:	FRU 297-17A				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD14235.D	1	06/14/12	AV	06/13/12	OP6047	GFD750
Run #2							

	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)	7.99	7.6	4.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	70%		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

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**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 # <b>D35286</b>	
Client / Reporting Information		Project Information	
Company Name <b>KRW Consulting</b>		Project Name <b>XTO FRU 297-17A</b>	
Street Address <b>8000 West 14th Street; Suite 200</b>		Street	
City <b>Lakewood, CO 80214</b>		City State	
Project Contact <b>Dwayne Knudson</b>		Billing Information (if different from Report to)	
Phone # <b>970-488-1098</b>		Company Name <b>XTO Energy</b>	
Sampler(s) Name(s) <b>Craig Burger</b>		Street Address <b>21459 CR 5</b>	
970-488-1098		City <b>Rifle, CO 81660</b>	
Project Manager <b>Joe Hess</b>		Attention: <b>Jessica Dooling</b>	
Collection		Number of preserved Bottles	
Accutest Sample #	Field ID / Point of Collection	MECH/DI Vial #	Date
		Time	Sampled by
		Matrix	# of bottles
			HQ
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# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D35286

Client: KRW CONSULTING

Immediate Client Services Action Required: No

Date / Time Received: 6/9/2012 9:15:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XTO FRU 297-17A

Airbill #'s: FedEx

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

## GC Volatiles

5

## QC Data Summaries

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**Includes the following where applicable:**

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

**Method Blank Summary**

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**Job Number:** D35286  
**Account:** XTOKRWR XTO Energy  
**Project:** FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB906-MB	GB16294.D	1	06/11/12	SK	n/a	n/a	GGB906

The QC reported here applies to the following samples:

Method: SW846 8015B

D35286-1, D35286-2

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

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

## Blank Spike Summary

Page 1 of 1

Job Number: D35286  
Account: XTOKRWR XTO Energy  
Project: FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB906-BS	GB16295.D	1	06/11/12	SK	n/a	n/a	GGB906

The QC reported here applies to the following samples:

Method: SW846 8015B

D35286-1, D35286-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	123	112	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	121%	60-140%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D35286

Account: XTOKRWR XTO Energy

Project: FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D35276-12MS	GB16297.D	1	06/11/12	SK	n/a	n/a	GGB906
D35276-12MSD	GB16298.D	1	06/11/12	SK	n/a	n/a	GGB906
D35276-12	GB16296.D	1	06/11/12	SK	n/a	n/a	GGB906

The QC reported here applies to the following samples:

Method: SW846 8015B

D35286-1, D35286-2

CAS No.	Compound	D35276-12 mg/kg	Spike Q	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	170	184	108	194	114	5	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D35276-12	Limits
120-82-1	1,2,4-Trichlorobenzene	108%	110%	103%	60-140%



## GC Volatiles

## Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061112\GB16306.D\FID1A.CH Vial: 17  
Signal #2 : Y:\1\DATA\061112\GB16306.D\FID2B.CH  
Acq On : 11 Jun 2012 7:54 pm Operator: StephK  
Sample : D35286-1, 50X Inst : GC/MS Ins  
Misc : GC2904,GGB906,5.056,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Jun 12 08:46:04 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Tue Jun 12 08:45:42 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

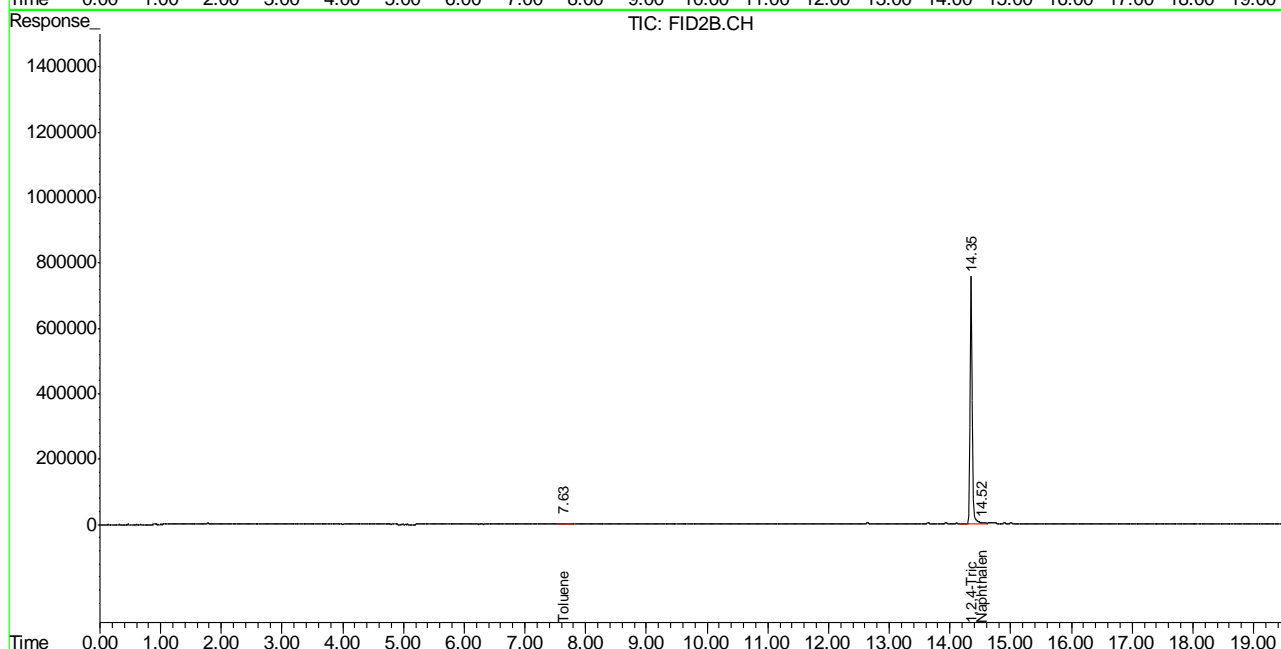
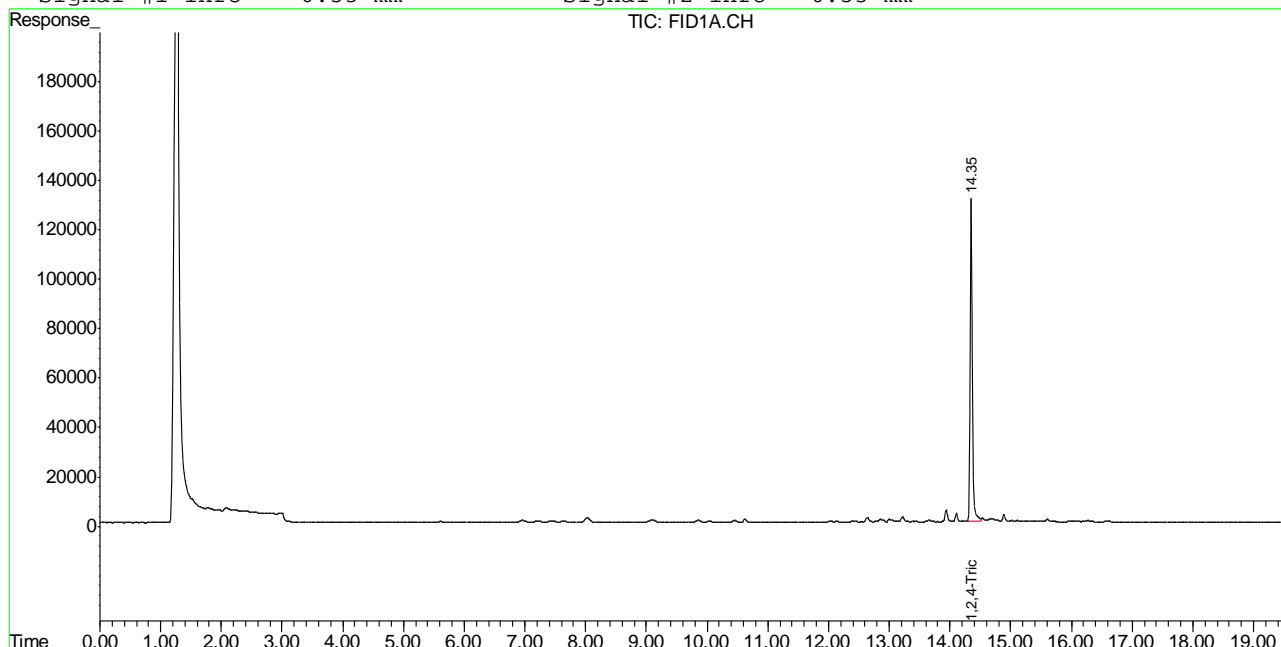
Compound	R.T.	Response	Conc	Units
-----				
System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.35	3222770	102.852 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.35	18177078	111.840 %	
Target Compounds				
1) H TVH-Gasoline	7.23	4595299	<MDL	mg/L
4) T Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T Benzene	0.00	0	N.D.	ug/L d
6) T Toluene	7.63	159637	0.403	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	14.52	197799	1.002	ug/L

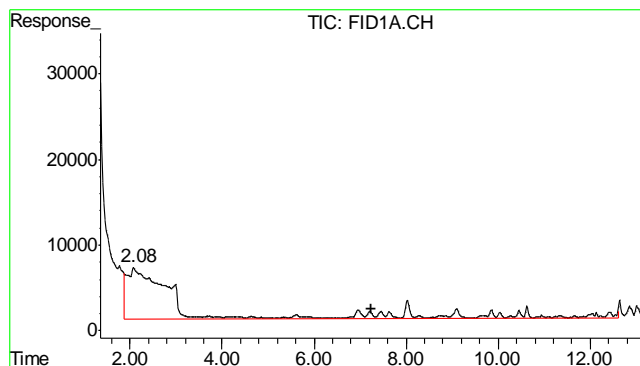
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061112\GB16306.D\FID1A.CH Vial: 17  
 Signal #2 : Y:\1\DATA\061112\GB16306.D\FID2B.CH  
 Acq On : 11 Jun 2012 7:54 pm Operator: StephK  
 Sample : D35286-1, 50X Inst : GC/MS Ins  
 Misc : GC2904,GGB906,5.056,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Jun 12 7:51 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Tue Jun 12 08:45:42 2012  
 Response via : Multiple Level Calibration  
 DataAcq Meth : TVB4.M

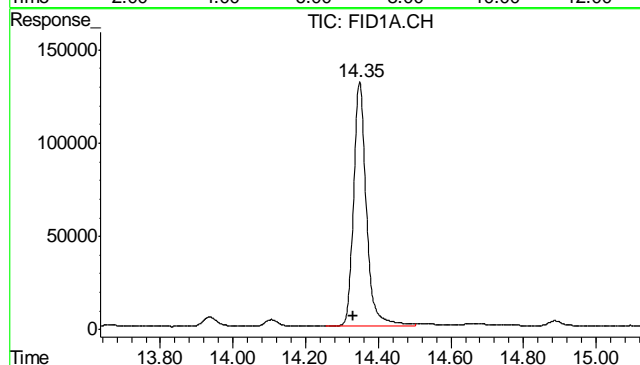
Volume Inj. :  
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





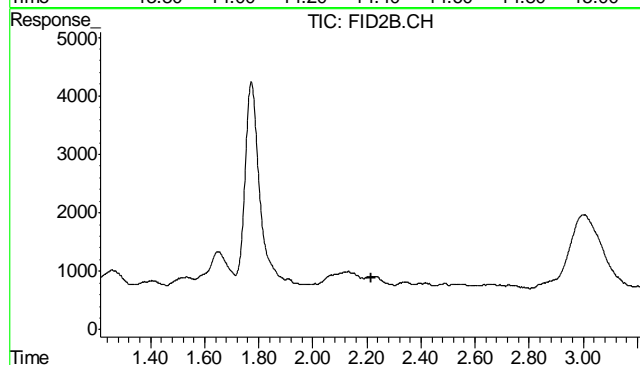
#1 TVH-Gasoline

R.T.: 7.230 min  
Delta R.T.: 0.000 min  
Response: 4595299  
Conc: N.D.



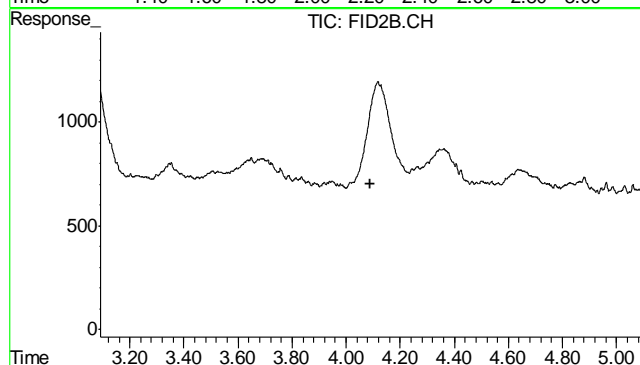
#2 1,2,4-Trichlorobenzene

R.T.: 14.348 min  
Delta R.T.: 0.017 min  
Response: 3222770  
Conc: 102.85 % m



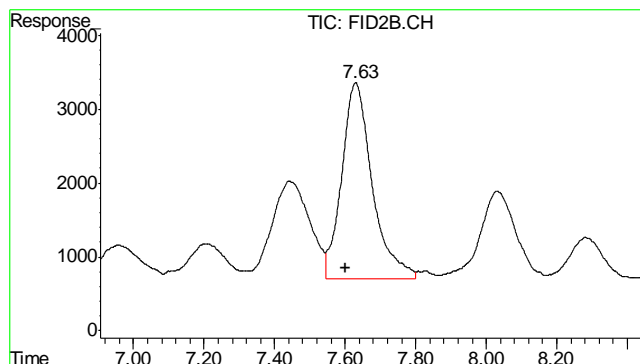
#4 Methyl-t-butyl-ether

R.T.: 0.000 min  
Exp R.T.: 2.215 min  
Response: 0  
Conc: N.D.



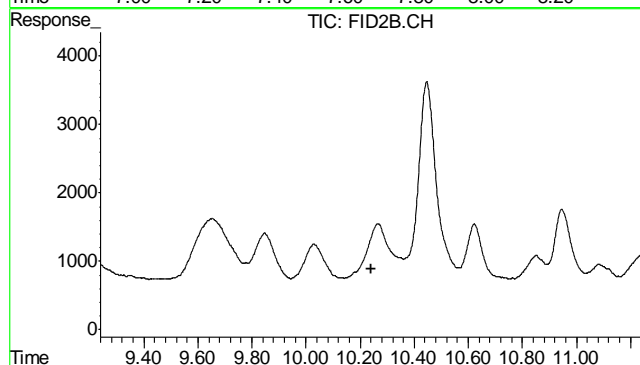
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.090 min  
Response: 0  
Conc: N.D.



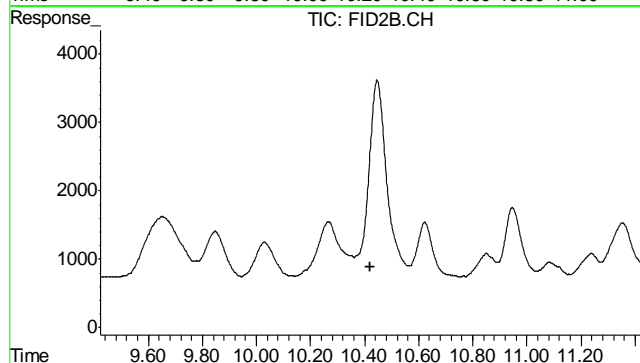
#6 Toluene

R.T.: 7.630 min  
Delta R.T.: 0.028 min  
Response: 159637  
Conc: 0.40 ug/L



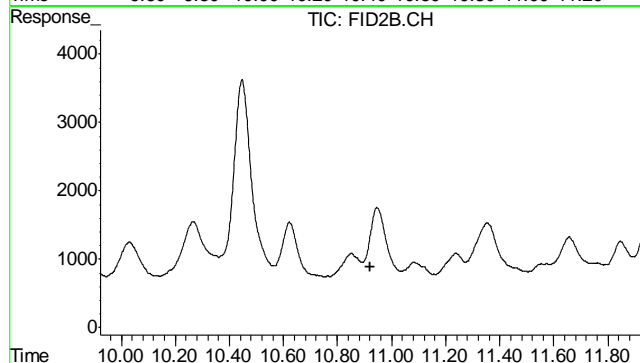
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T.: 10.240 min  
Response: 0  
Conc: N.D.



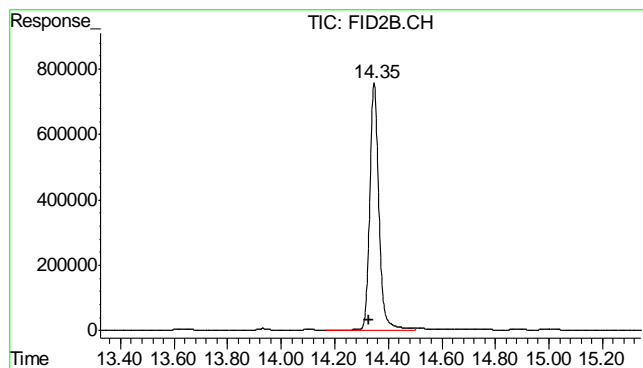
#8 m,p-Xylene

R.T.: 0.000 min  
Exp R.T.: 10.422 min  
Response: 0  
Conc: N.D.



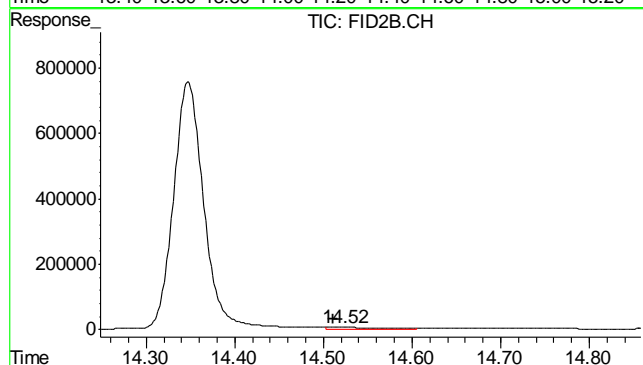
#9 o-Xylene

R.T.: 0.000 min  
Exp R.T.: 10.922 min  
Response: 0  
Conc: N.D.



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

R.T.: 14.348 min  
Delta R.T.: 0.018 min  
Response: 18177078  
Conc: 111.84 %



#11 Naphthalene

R.T.: 14.523 min  
Delta R.T.: 0.011 min  
Response: 197799  
Conc: 1.00 ug/L

6.1.1

6

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061112\GB16307.D\FID1A.CH Vial: 18  
Signal #2 : Y:\1\DATA\061112\GB16307.D\FID2B.CH  
Acq On : 11 Jun 2012 8:29 pm Operator: StephK  
Sample : D35286-2, 50X Inst : GC/MS Ins  
Misc : GC2904,GGB906,5.065,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Jun 12 08:46:08 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Tue Jun 12 08:45:42 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

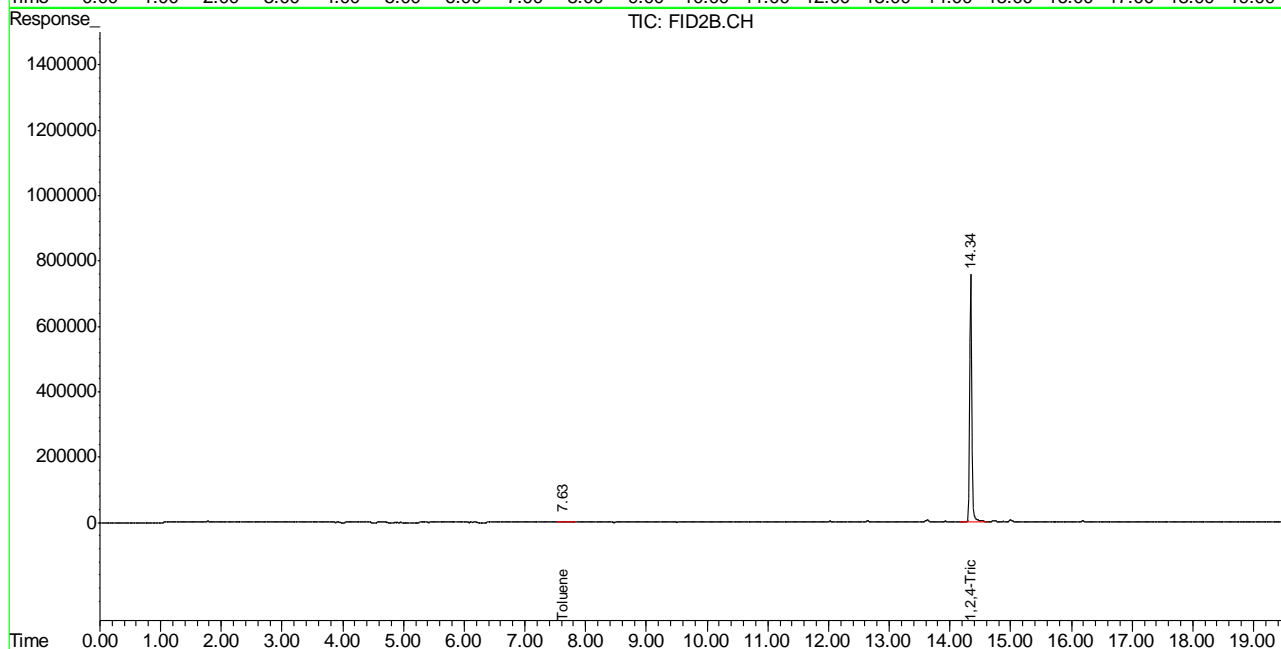
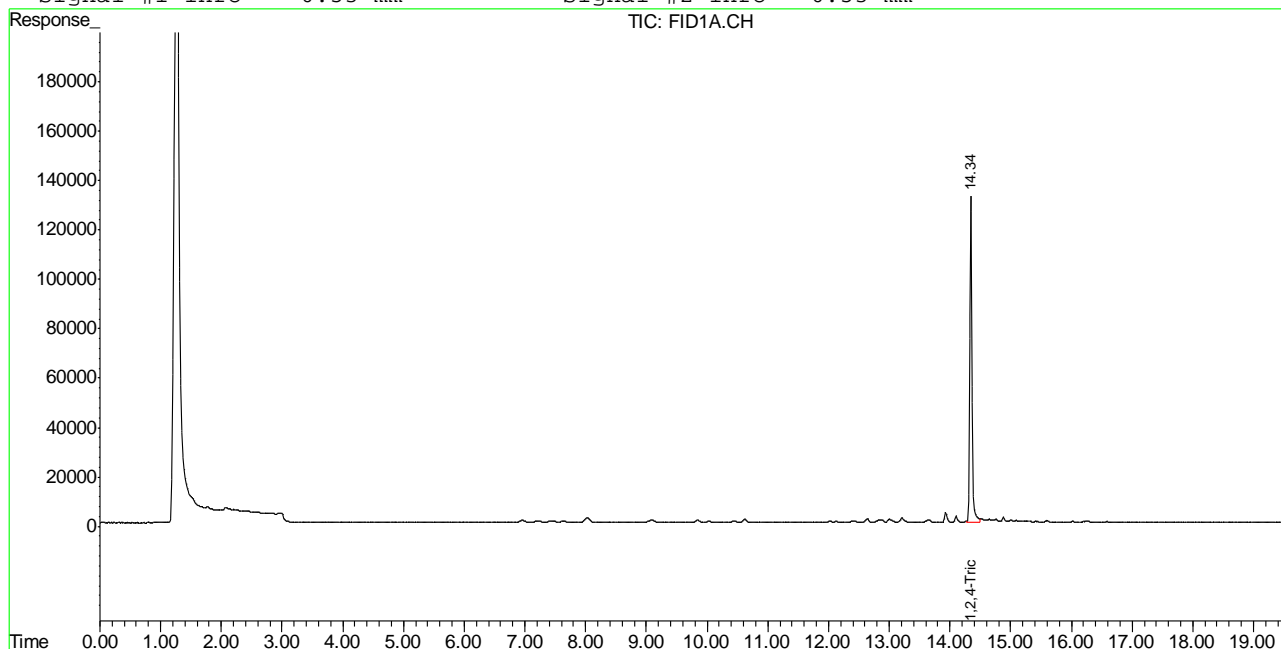
Compound	R.T.	Response	Conc	Units
-----				
System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.34	3264348	104.179 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.34	18446434	113.497 %	
Target Compounds				
1) H TVH-Gasoline	7.23	4587974	<MDL	mg/L
4) T Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T Benzene	0.00	0	N.D.	ug/L d
6) T Toluene	7.63	156231	0.394	ug/L
7) T Ethylbenzene	0.00	0	N.D.	ug/L d
8) T m,p-Xylene	0.00	0	N.D.	ug/L d
9) T o-Xylene	0.00	0	N.D.	ug/L d
11) T Naphthalene	0.00	0	N.D.	ug/L d

Quantitation Report (QT Reviewed)

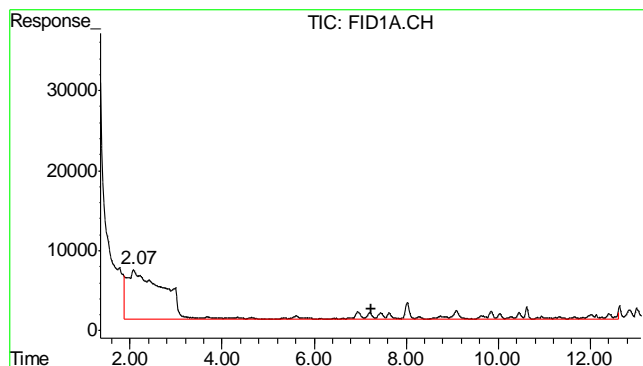
Signal #1 : Y:\1\DATA\061112\GB16307.D\FID1A.CH Vial: 18  
 Signal #2 : Y:\1\DATA\061112\GB16307.D\FID2B.CH  
 Acq On : 11 Jun 2012 8:29 pm Operator: StephK  
 Sample : D35286-2, 50X Inst : GC/MS Ins  
 Misc : GC2904,GGB906,5.065,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Jun 12 7:51 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Tue Jun 12 08:45:42 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

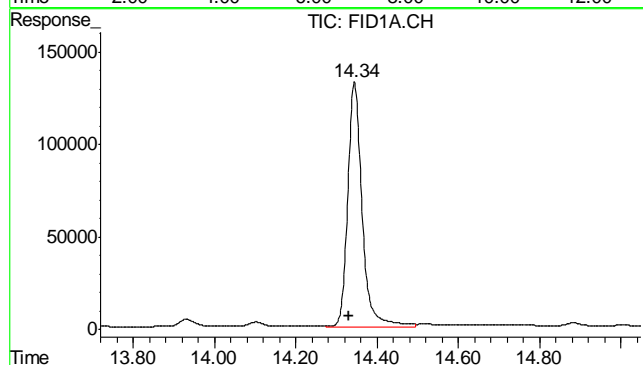






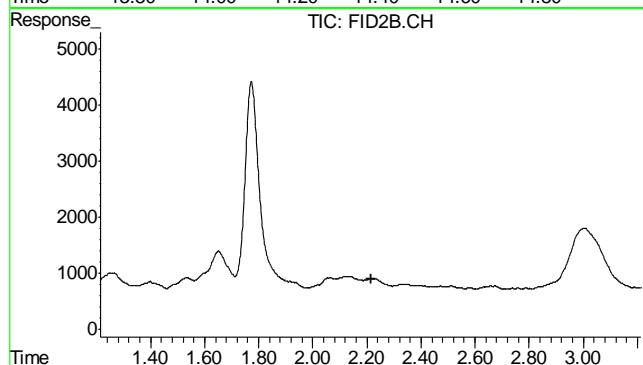
#1 TVH-Gasoline

R.T.: 7.230 min  
Delta R.T.: 0.000 min  
Response: 4587974  
Conc: N.D.



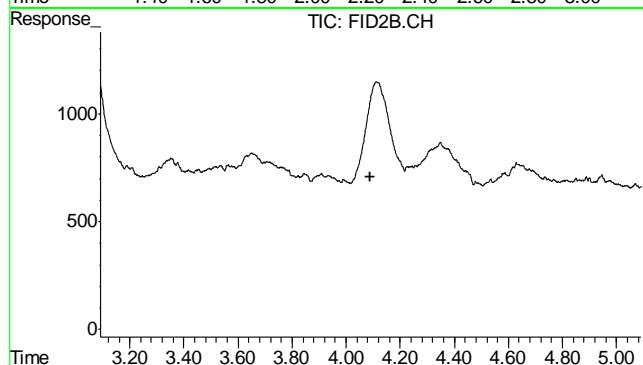
#2 1,2,4-Trichlorobenzene

R.T.: 14.344 min  
Delta R.T.: 0.012 min  
Response: 3264348  
Conc: 104.18 % m



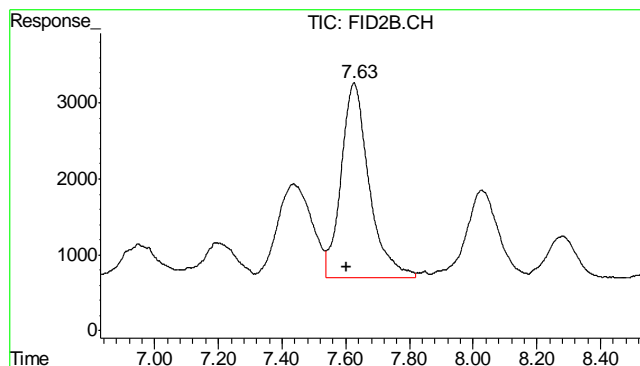
#4 Methyl-t-butyl-ether

R.T.: 0.000 min  
Exp R.T.: 2.215 min  
Response: 0  
Conc: N.D.



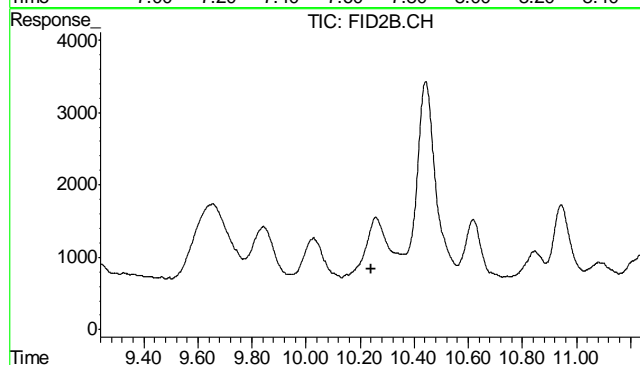
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.090 min  
Response: 0  
Conc: N.D.



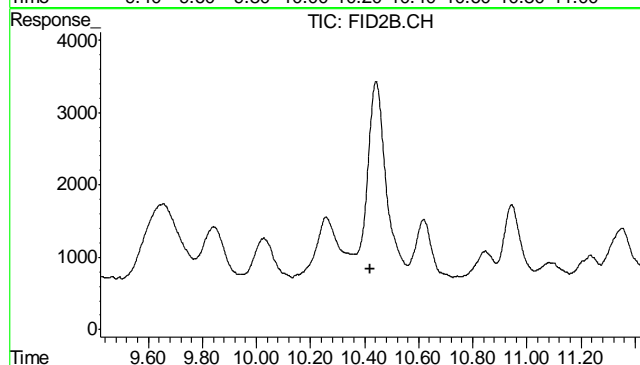
#6 Toluene

R.T.: 7.626 min  
Delta R.T.: 0.024 min  
Response: 156231  
Conc: 0.39 ug/L



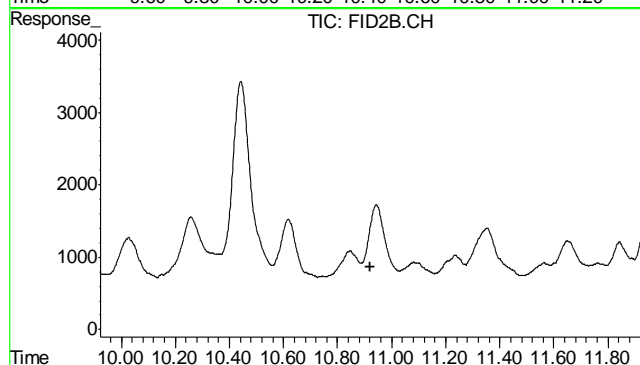
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T.: 10.240 min  
Response: 0  
Conc: N.D.



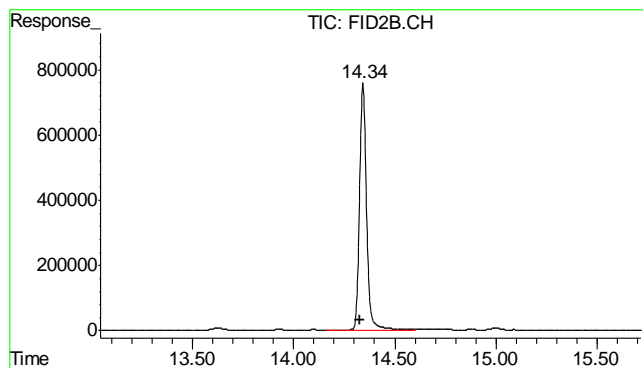
#8 m,p-Xylene

R.T.: 0.000 min  
Exp R.T.: 10.422 min  
Response: 0  
Conc: N.D.



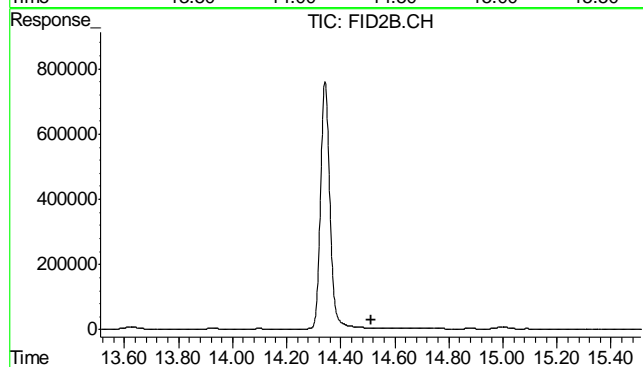
#9 o-Xylene

R.T.: 0.000 min  
Exp R.T.: 10.922 min  
Response: 0  
Conc: N.D.



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

R.T.: 14.342 min  
 Delta R.T.: 0.013 min  
 Response: 18446434  
 Conc: 113.50 %



#11 Naphthalene

R.T.: 0.000 min  
 Exp R.T. : 14.511 min  
 Response: 0  
 Conc: N.D.

6.1.2

6

Judy Melson  
06/12/12 09:24

## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061112\GB16294.D\FID1A.CH Vial: 5  
Signal #2 : Y:\1\DATA\061112\GB16294.D\FID2B.CH  
Acq On : 11 Jun 2012 12:51 pm Operator: StephK  
Sample : MB Inst : GC/MS Ins  
Misc : GC2904,GGB906,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Jun 11 13:08:10 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Mon Jun 11 13:03:48 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

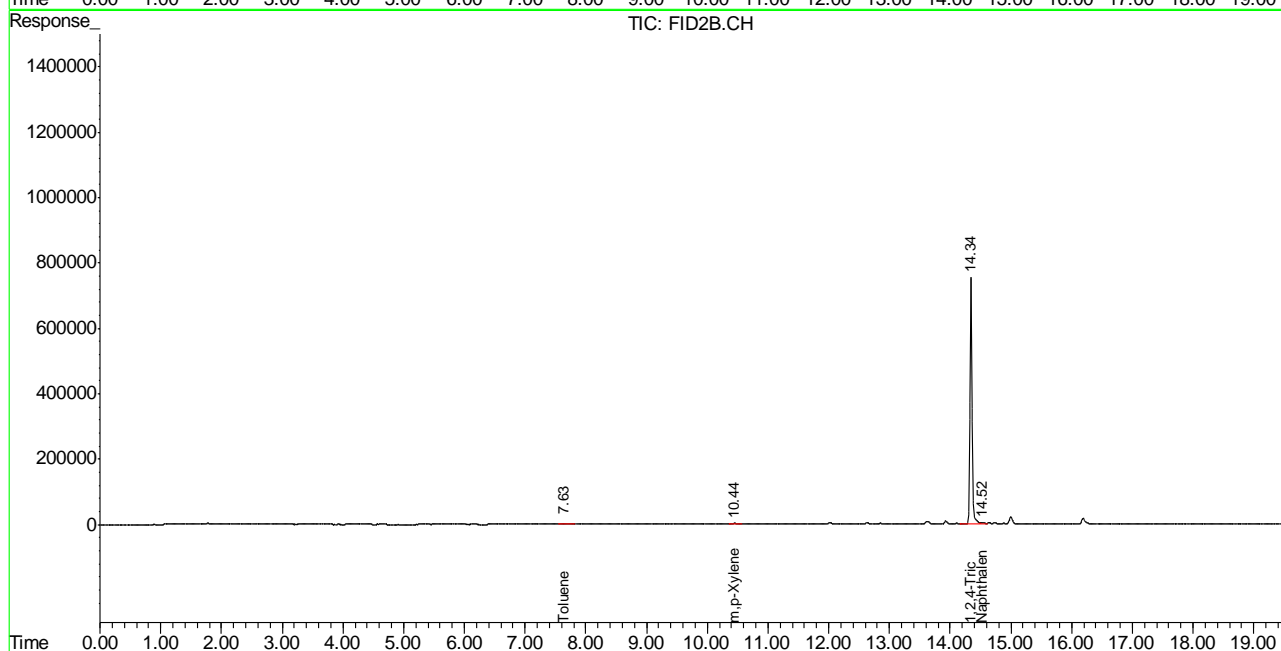
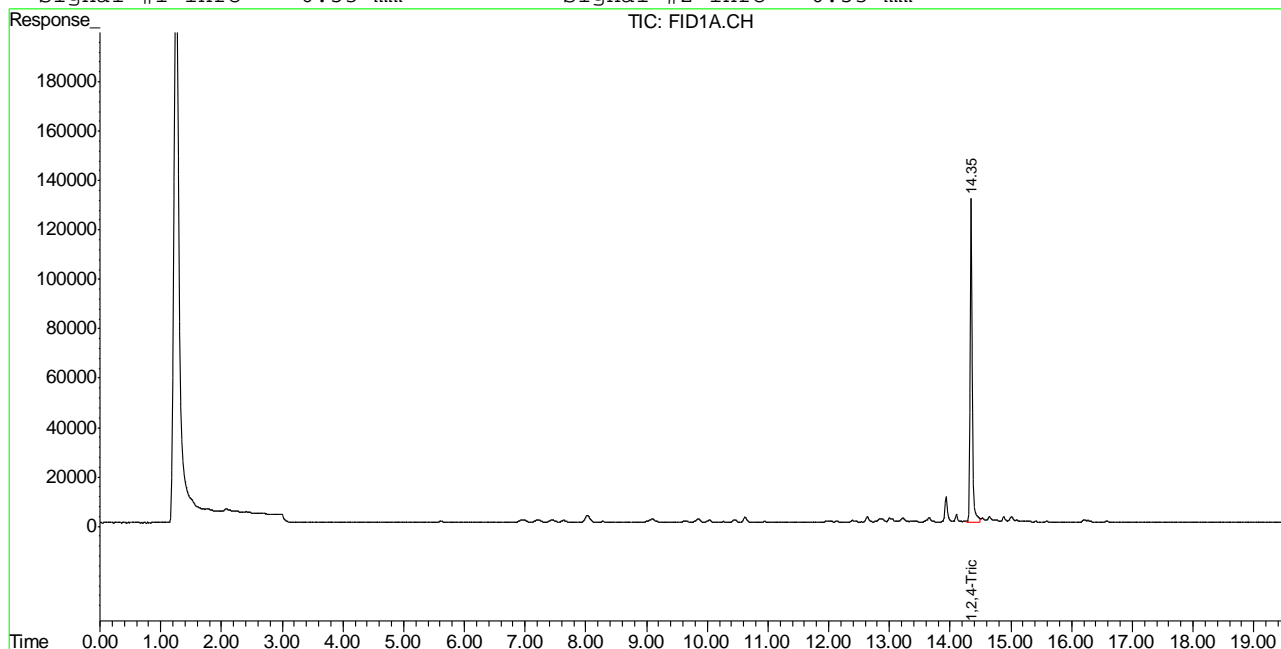
Compound		R.T.	Response	Conc	Units
-----					
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.35	3244057	103.531 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.34	18276099	112.449 %	
Target Compounds					
1) H	TVH-Gasoline	7.23	4675842	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	7.63	181555	0.458	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	10.44	181324	0.123	ug/L
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	14.52	215354	1.091	ug/L

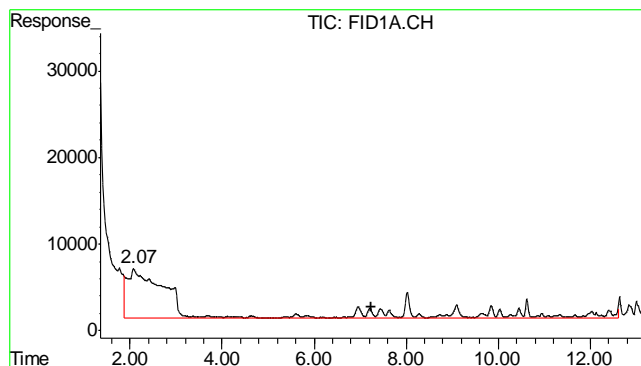
## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061112\GB16294.D\FID1A.CH Vial: 5  
Signal #2 : Y:\1\DATA\061112\GB16294.D\FID2B.CH  
Acq On : 11 Jun 2012 12:51 pm Operator: StephK  
Sample : MB Inst : GC/MS Ins  
Misc : GC2904,GGB906,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Jun 11 12:11 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Mon Jun 11 13:03:48 2012  
Response via : Multiple Level Calibration  
DataAcq Meth : TVB4.M

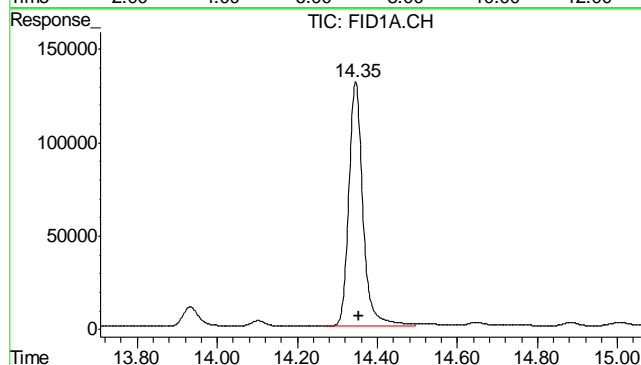
Volume Inj. :  
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





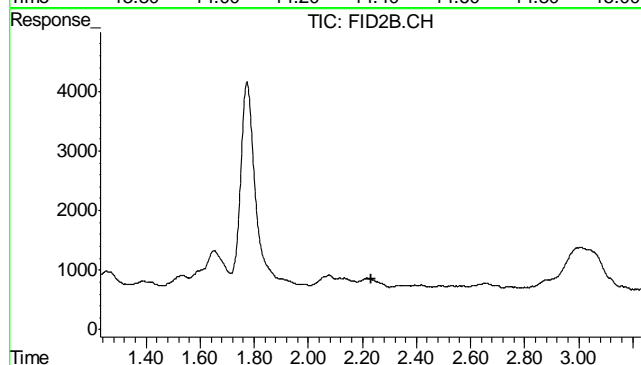
#1 TVH-Gasoline

R.T.: 7.230 min  
Delta R.T.: 0.000 min  
Response: 4675842  
Conc: N.D.



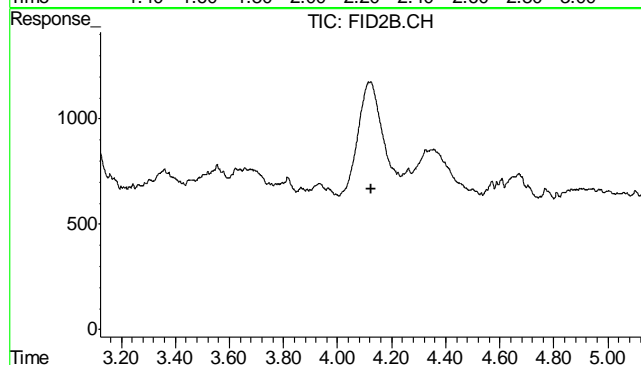
#2 1,2,4-Trichlorobenzene

R.T.: 14.345 min  
Delta R.T.: -0.008 min  
Response: 3244057  
Conc: 103.53 % m



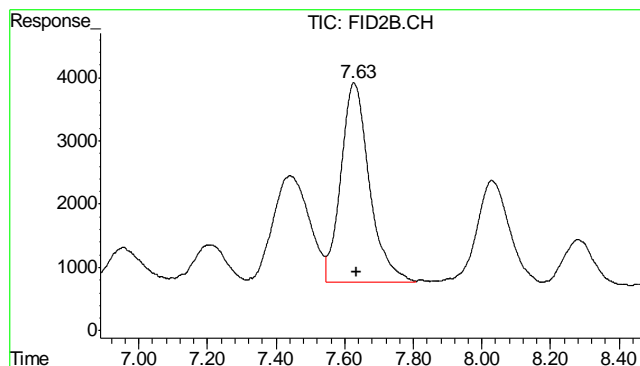
#4 Methyl-t-butyl-ether

R.T.: 0.000 min  
Exp R.T.: 2.231 min  
Response: 0  
Conc: N.D.



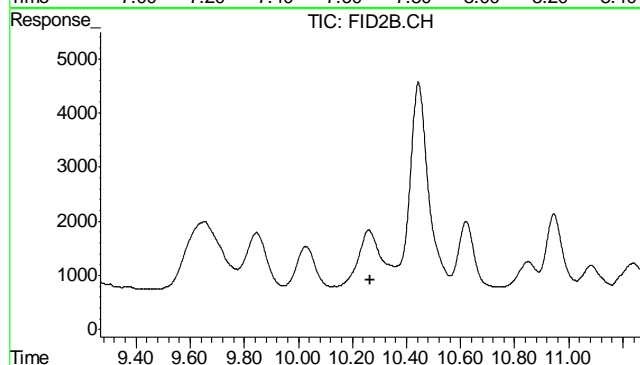
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.123 min  
Response: 0  
Conc: N.D.



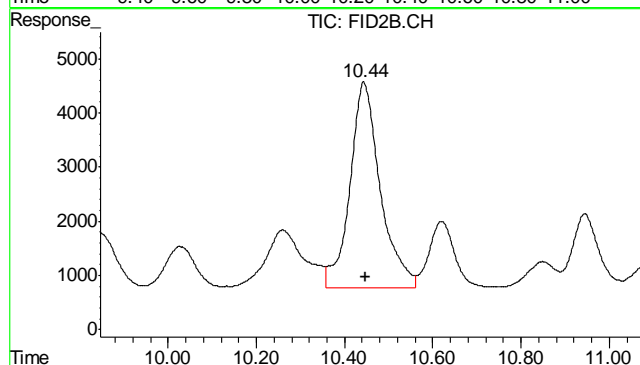
#6 Toluene

R.T.: 7.627 min  
Delta R.T.: -0.009 min  
Response: 181555  
Conc: 0.46 ug/L



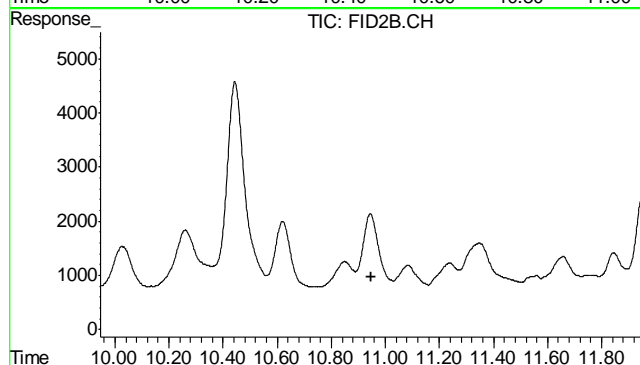
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T.: 10.267 min  
Response: 0  
Conc: N.D.



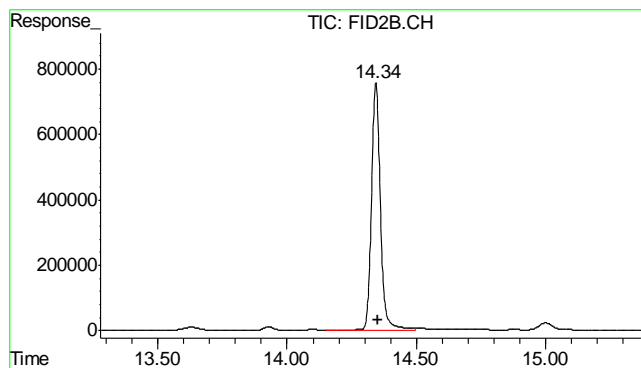
#8 m,p-Xylene

R.T.: 10.444 min  
Delta R.T.: -0.004 min  
Response: 181324  
Conc: 0.12 ug/L



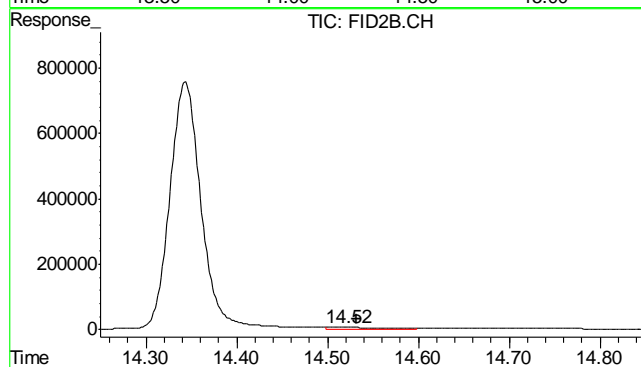
#9 o-Xylene

R.T.: 0.000 min  
Exp R.T.: 10.946 min  
Response: 0  
Conc: N.D.



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

R.T.: 14.344 min  
Delta R.T.: -0.007 min  
Response: 18276099  
Conc: 112.45 %



#11 Naphthalene

R.T.: 14.521 min  
Delta R.T.: -0.011 min  
Response: 215354  
Conc: 1.09 ug/L

6.2.1

6



## 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: D35286  
Account: XTOKRWR XTO Energy  
Project: FRU 297-17A

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

D35286-1, D35286-2

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%

## Blank Spike Summary

Page 1 of 1

Job Number: D35286

Account: XTOKRWR XTO Energy

Project: FRU 297-17A

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

D35286-1, D35286-2

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%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D35286  
Account: XTOKRWR XTO Energy  
Project: FRU 297-17A

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

D35286-1, D35286-2

CAS No.	Compound	D35286-2 mg/kg	Q	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%			

7.3.1  
7

**GC Semi-volatiles**

**Raw Data**



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14251.D Vial: 15  
Acq On : 6-14-2012 06:14:06 PM Operator: ashleyv  
Sample : D35286-1 Inst : FID5  
Misc : OP6047,GFD750,30.06,,,1,1 Multiplr: 1.00  
IntFile : autoint1.e  
Quant Time: Jun 15 08:55:09 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	64953887	1380.212 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.19	5410686	126.572 mg/L

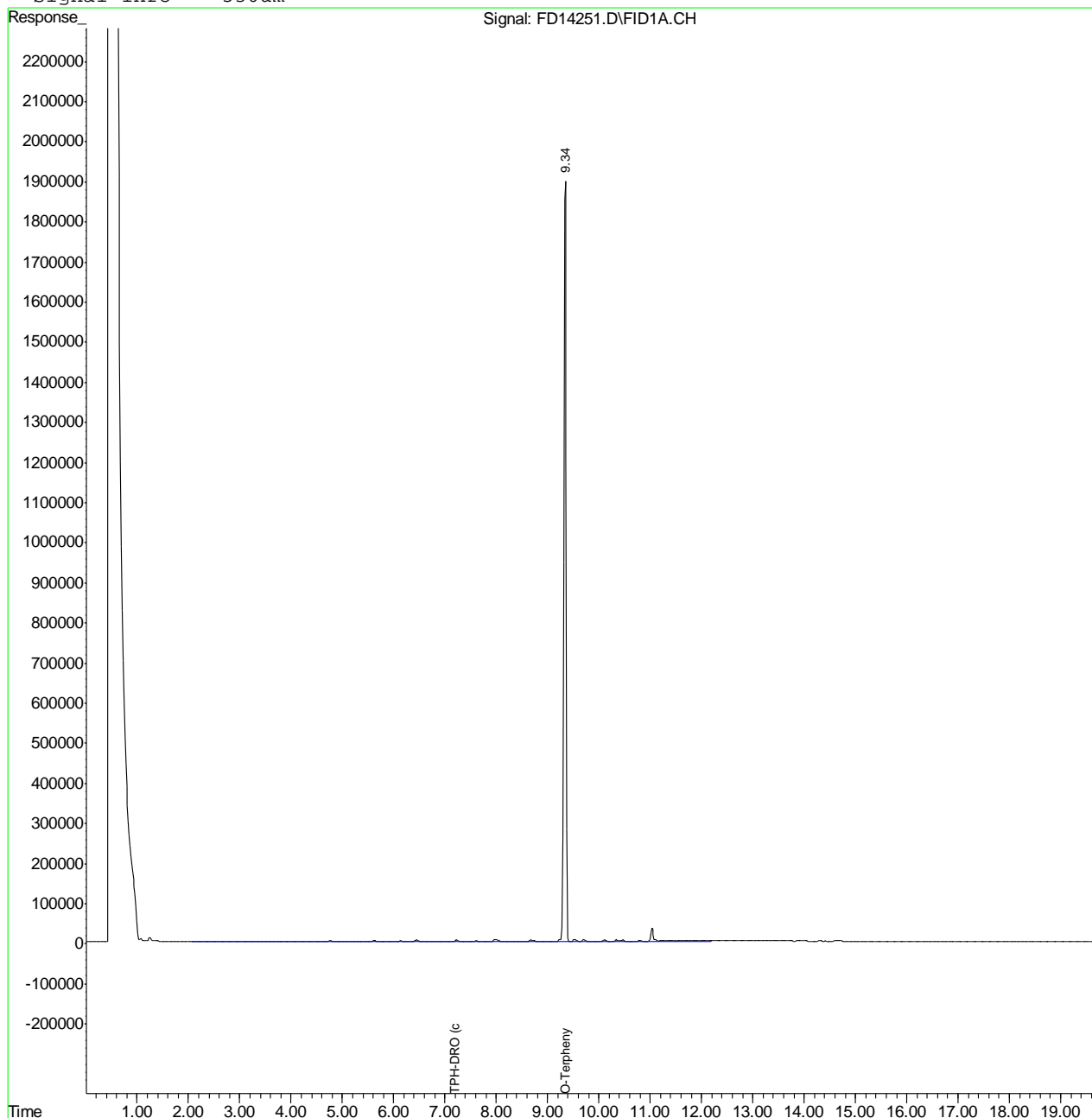
8.1.1  
8

Quantitation Report (QT Reviewed)

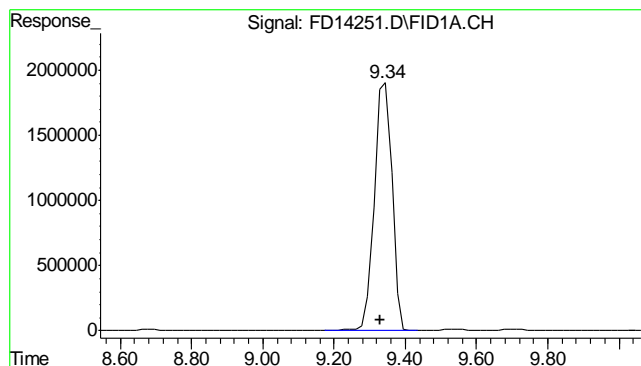
Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14251.D Vial: 15  
 Acq On : 6-14-2012 06:14:06 PM Operator: ashleyv  
 Sample : D35286-1 Inst : FID5  
 Misc : OP6047,GFD750,30.06,,,1,1 Multiplr: 1.00  
 IntFile : autoint1.e  
 Quant Time: Jun 15 8:55 2012 Quant Results File: DRO-GFD740F.RES

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

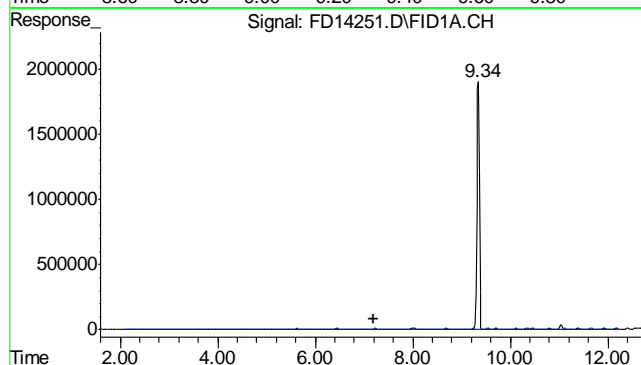


8.1.1  
8



#1 O-Terphenyl

R.T.: 9.345 min  
 Delta R.T.: 0.015 min  
 Response: 64953887  
 Conc: 1380.21 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.190 min  
 Delta R.T.: 0.000 min  
 Response: 5410686  
 Conc: 126.57 mg/L m

8.1.1

8



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14235.D Vial: 7  
Acq On : 6-14-2012 02:40:19 PM Operator: ashleyv  
Sample : D35286-2 Inst : FID5  
Misc : OP6047,GFD750,30.00,,,1,1 Multiplr: 1.00  
IntFile : autoint1.e  
Quant Time: Jun 14 15:37:36 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	65890364	1400.111 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.19	9033504	211.320 mg/L

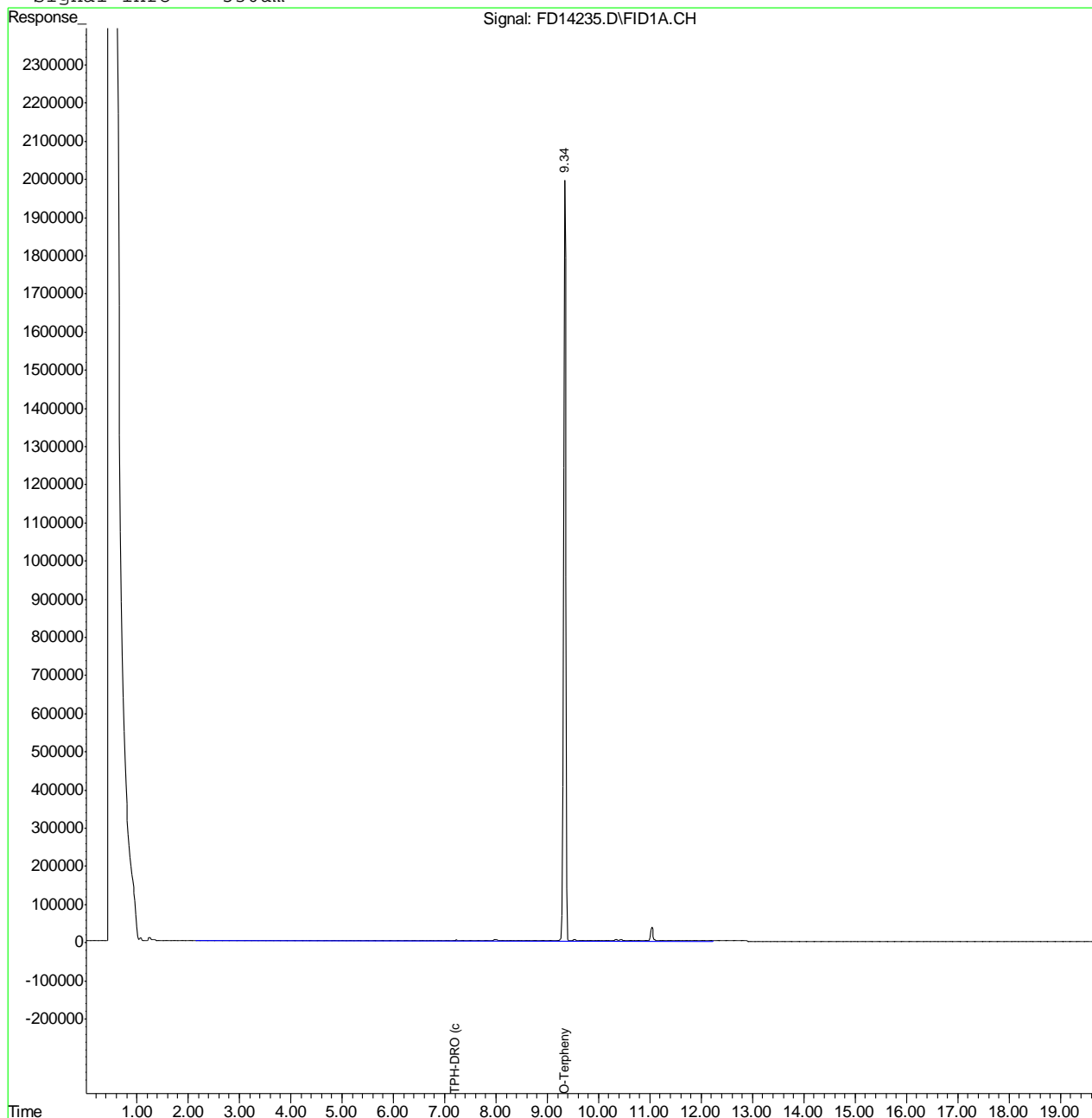
8.12  
8

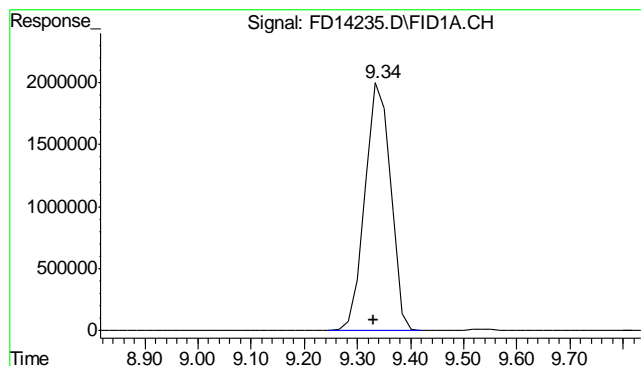
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14235.D Vial: 7  
 Acq On : 6-14-2012 02:40:19 PM Operator: ashleyv  
 Sample : D35286-2 Inst : FID5  
 Misc : OP6047,GFD750,30.00,,,1,1 Multiplr: 1.00  
 IntFile : autoint1.e  
 Quant Time: Jun 14 15:37 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

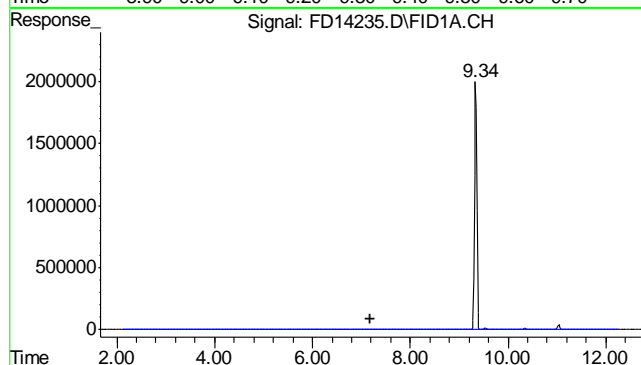
Volume Inj. : 1ul  
 Signal Phase : RTX-5  
 Signal Info : 530um





#1 O-Terphenyl

R.T.: 9.338 min  
 Delta R.T.: 0.008 min  
 Response: 65890364  
 Conc: 1400.11 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 7.190 min  
 Delta R.T.: 0.000 min  
 Response: 9033504  
 Conc: 211.32 mg/L m

8.12  
8

## 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

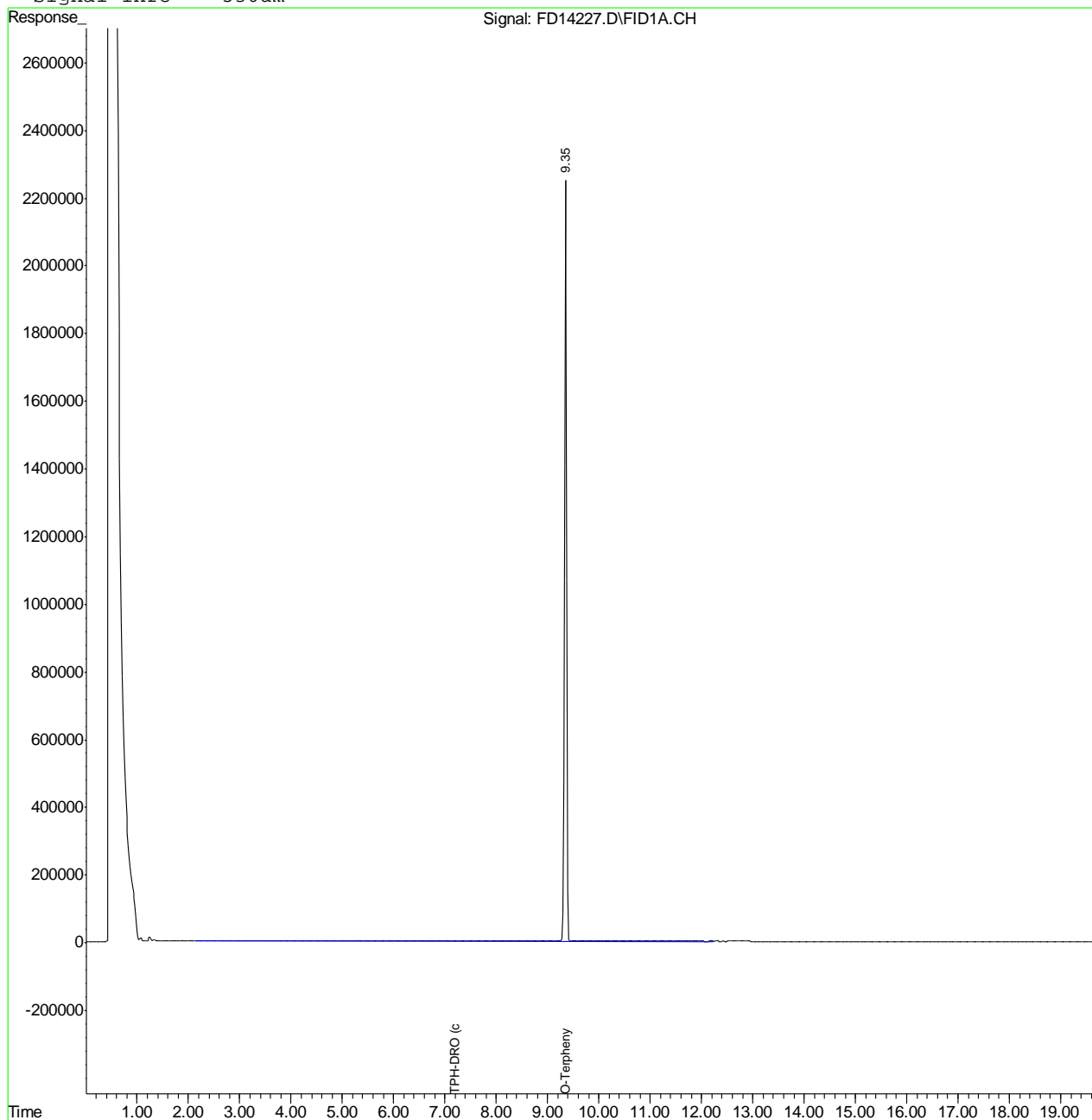
Compound	R.T.	Response	Conc Units
-----			
System Monitoring Compounds			
1) S O-Terphenyl	9.35	74347937	1579.827 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.19	2239439	52.387 mg/L

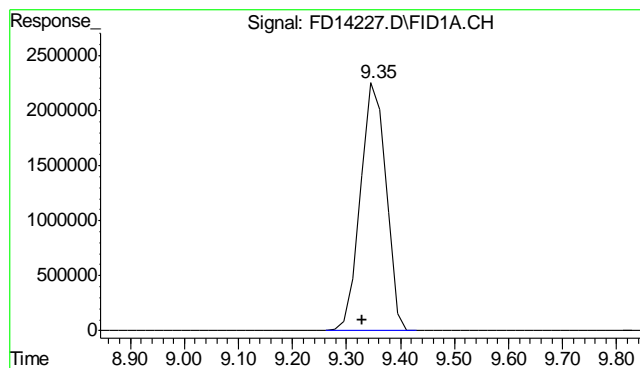
## Quantitation Report (QT Reviewed)

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

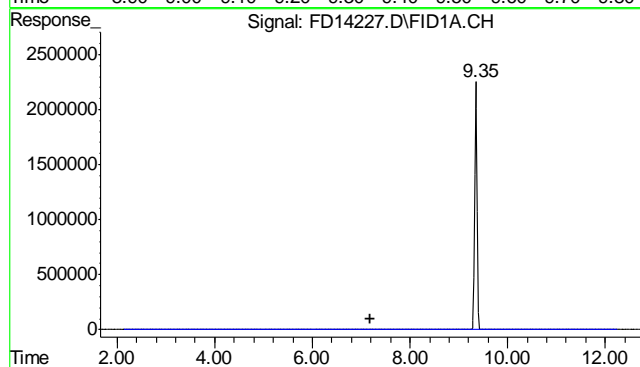
Volume Inj. : 1ul  
Signal Phase : RTX-5  
Signal Info : 530um





#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

8.2.1

8