



02/20/12

## Technical Report for

**XTO Energy**

**FRU 297-28C**

**1108-08A**

**Accutest Job Number: D31745**

**Sampling Date: 02/08/12**

### Report to:

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

**Total number of pages in report: 36**



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)

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

# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Case Narrative/Conformance Summary .....</b>	<b>4</b>
<b>Section 3: Sample Results .....</b>	<b>5</b>
<b>3.1: D31745-1: FRESHWATER SUBLINER-1'-2' .....</b>	<b>6</b>
<b>Section 4: Misc. Forms .....</b>	<b>8</b>
<b>4.1: Chain of Custody .....</b>	<b>9</b>
<b>Section 5: GC Volatiles - QC Data Summaries .....</b>	<b>11</b>
<b>5.1: Method Blank Summary .....</b>	<b>12</b>
<b>5.2: Blank Spike Summary .....</b>	<b>13</b>
<b>5.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>14</b>
<b>Section 6: GC Volatiles - Raw Data .....</b>	<b>15</b>
<b>6.1: Samples .....</b>	<b>16</b>
<b>6.2: Method Blanks .....</b>	<b>21</b>
<b>Section 7: GC Semi-volatiles - QC Data Summaries .....</b>	<b>26</b>
<b>7.1: Method Blank Summary .....</b>	<b>27</b>
<b>7.2: Blank Spike Summary .....</b>	<b>28</b>
<b>7.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>29</b>
<b>Section 8: GC Semi-volatiles - Raw Data .....</b>	<b>30</b>
<b>8.1: Samples .....</b>	<b>31</b>
<b>8.2: Method Blanks .....</b>	<b>34</b>



Sample Summary

XTO Energy

Job No: D31745

FRU 297-28C

Project No: 1108-08A

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D31745-1	02/08/12	11:55 CB	02/09/12	SO	Soil	FRESHWATER SUBLINER-1'-2'

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

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** XTO Energy**Job No** D31745**Site:** FRU 297-28C**Report Date** 2/20/2012 6:35:15 PM

On 02/09/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D31745 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 GC By Method SW846 8015B

**Matrix:** SO**Batch ID:** GGB841

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31745-1MS, D31745-1MSD were used as the QC samples indicated.

### Extractables by GC By Method SW846-8015B

**Matrix:** SO**Batch ID:** OP5373

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31900-1MS, D31900-1MSD were used as the QC samples indicated.

### Wet Chemistry By Method SM19 2540B M

**Matrix:** SO**Batch ID:** GN13717

- 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:	FRESHWATER SUBLINER-1'-2'	Date Sampled:	02/08/12
Lab Sample ID:	D31745-1	Date Received:	02/09/12
Matrix:	SO - Soil	Percent Solids:	88.3
Method:	SW846 8015B		
Project:	FRU 297-28C		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB14930.D	1	02/16/12	SK	n/a	n/a	GGB841
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	113%		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:	FRESHWATER SUBLINER-1'-2'	Date Sampled:	02/08/12
Lab Sample ID:	D31745-1	Date Received:	02/09/12
Matrix:	SO - Soil	Percent Solids:	88.3
Method:	SW846-8015B SW846 3546		
Project:	FRU 297-28C		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH001393.D	1	02/18/12	TR	02/15/12	OP5373	GFH64
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	18.4	15	9.8	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	87%		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



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

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # <b>D31745</b>

[illegible]

		Data Deliverable Information		Comments / Special Instructions			
Turnaround Time ( Business days) <input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> Std. 5 Business Days (By Contract only) <input type="checkbox"/> 5 Day <i>RP SH</i> <input type="checkbox"/> 3 Day <i>EMERGENCY</i> <input type="checkbox"/> 2 Day <i>EMERGENCY</i> <input type="checkbox"/> 1 Day <i>EMERGENCY</i>		Approved By (Accusnet PM): Date: _____ _____ _____		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> Commercial "B" + Narrative <input type="checkbox"/> FULLT1 (Level 3+4)  Commercial "A" = Results Only Commercial "B" = Results + QC Summary		<input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input checked="" type="checkbox"/> PDF  <i>Please email results to KRW Pilgrimage &amp; Team</i> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">Hold</div>	

Sample Custody must be documented below each time samples change possession, including courier delivery.									
1 Relinquished by Sampler:	Date Time: 2/8/12 1800	Received By: Rifle Service Center	2 Relinquished By:	Date Time:	2 Received By: American Courier				
3 Relinquished by Sampler:	Date Time:	Received By:	4 Relinquished By:	Date Time:	4 Received By: Jacob Patton				
5 Relinquished by:	Date Time:	Received By:	Custody Seal # HD/10	Intact <input checked="" type="checkbox"/> Not Intact <input type="checkbox"/>	Preserved where applicable <input checked="" type="checkbox"/>	On Ice <input checked="" type="checkbox"/> Cooler Temp. 4.0			

## Accutest Laboratories Sample Receipt Summary

**Accutest Job Number:** D31745

**Client:** KRW

**Immediate Client Services Action Required:** No

**Date / Time Received:** 2/9/2012 1:30:00 PM

**No. Coolers:** 1

**Client Service Action Required at Login:** No

**Project:** FRU 297-28C

**Airbill #'s:** CO

<b>Cooler Security</b>	<b>Y</b>	<b>or</b>	<b>N</b>		<b>Y</b>	<b>or</b>	<b>N</b>
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"/>

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

<b>Quality Control Preservation</b>	<b>Y</b>	<b>or</b>	<b>N</b>	<b>N/A</b>
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"/>

<b>Sample Integrity - Documentation</b>	<b>Y</b>	<b>or</b>	<b>N</b>
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"/>

<b>Sample Integrity - Condition</b>	<b>Y</b>	<b>or</b>	<b>N</b>
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

<b>Sample Integrity - Instructions</b>	<b>Y</b>	<b>or</b>	<b>N</b>	<b>N/A</b>
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 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**

Page 1 of 1

**Job Number:** D31745  
**Account:** XTOKRWR XTO Energy  
**Project:** FRU 297-28C

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB841-MB	GB14928.D	1	02/16/12	SK	n/a	n/a	GGB841

The QC reported here applies to the following samples:

Method: SW846 8015B

D31745-1

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	113% 60-140%

## Blank Spike Summary

Page 1 of 1

Job Number: D31745  
Account: XTOKRWR XTO Energy  
Project: FRU 297-28C

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB841-BS	GB14929.D	1	02/16/12	SK	n/a	n/a	GGB841

The QC reported here applies to the following samples:

Method: SW846 8015B

D31745-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	108	98	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	123%	60-140%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D31745  
Account: XTOKRWR XTO Energy  
Project: FRU 297-28C

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D31745-1MS	GB14931.D	1	02/16/12	SK	n/a	n/a	GGB841
D31745-1MSD	GB14932.D	1	02/16/12	SK	n/a	n/a	GGB841
D31745-1	GB14930.D	1	02/16/12	SK	n/a	n/a	GGB841

The QC reported here applies to the following samples:

Method: SW846 8015B

D31745-1

CAS No.	Compound	D31745-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		138	130	94	128	93	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D31745-1	Limits
120-82-1	1,2,4-Trichlorobenzene	119%	121%	113%	60-140%

## GC Volatiles

## Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\021612\GB14930.D\FID1A.CH Vial: 6  
Signal #2 : Y:\1\DATA\021612\GB14930.D\FID2B.CH  
Acq On : 16 Feb 2012 1:38 pm Operator: StephK  
Sample : D31745-1, 50X Inst : GC/MS Ins  
Misc : GC2613,GGB841,5.040,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Feb 16 17:29:58 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Thu Feb 16 10:13:29 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	14.36	3305232	112.979	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.36	26671489	116.044	%	
Target Compounds						
1) H	TVH-Gasoline	7.32	4830968	<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	7.65	149103	0.263	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	14.54	1140679	4.432	ug/L	

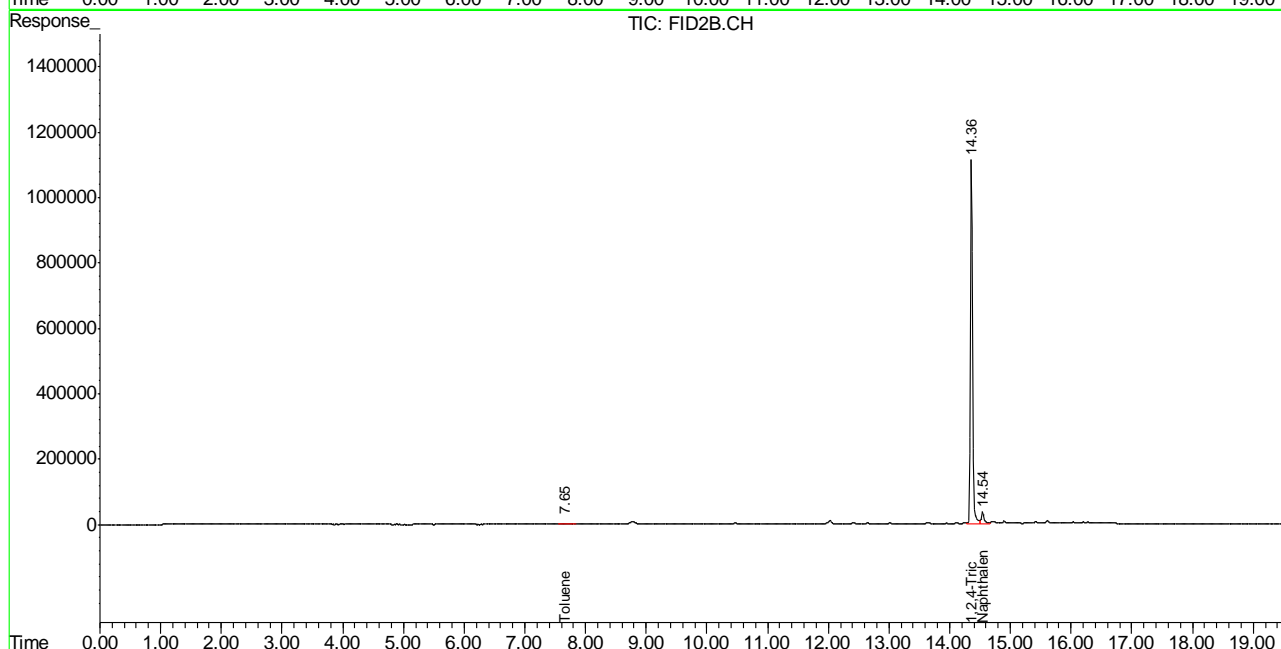
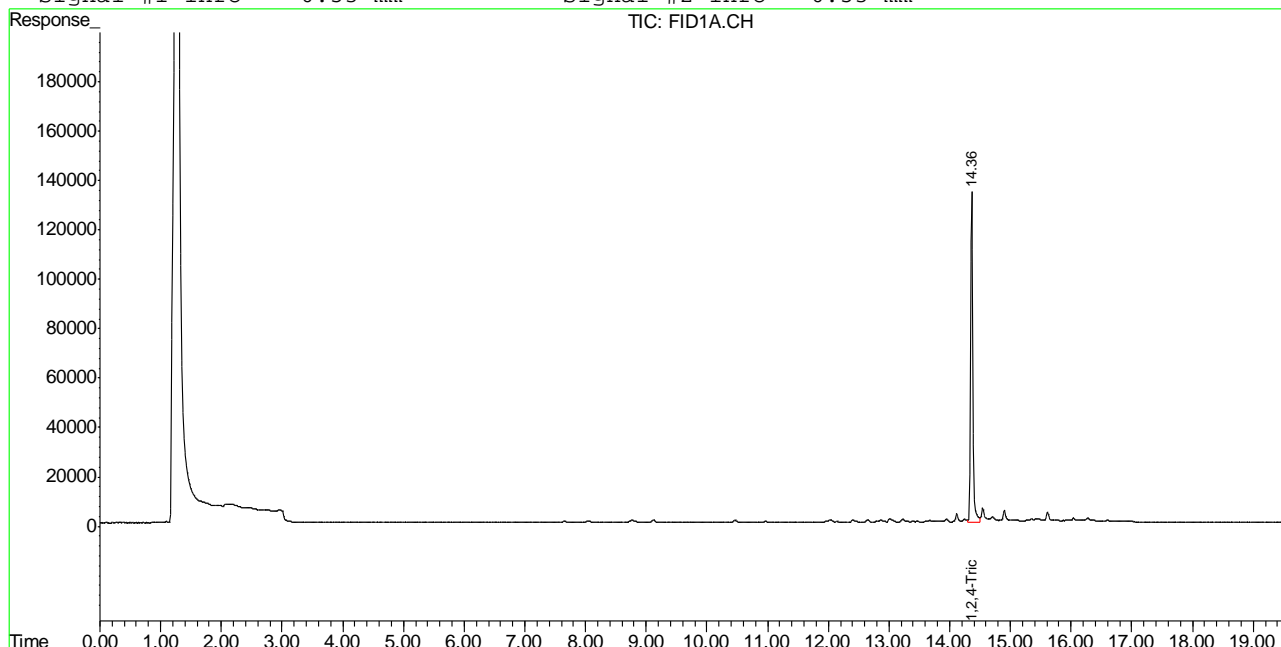


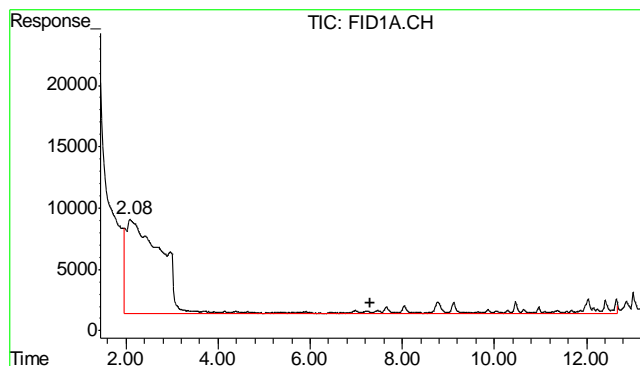
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\021612\GB14930.D\FID1A.CH Vial: 6  
 Signal #2 : Y:\1\DATA\021612\GB14930.D\FID2B.CH  
 Acq On : 16 Feb 2012 1:38 pm Operator: StephK  
 Sample : D31745-1, 50X Inst : GC/MS Ins  
 Misc : GC2613,GGB841,5.040,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Feb 16 16:30 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Thu Feb 16 10:13:29 2012  
 Response via : Multiple Level Calibration  
 DataAcq Meth : TVB4.M

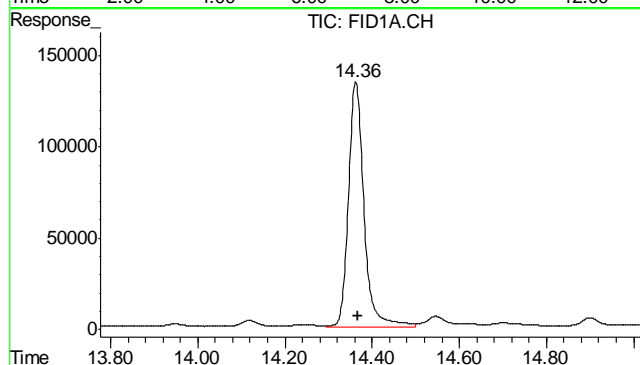
Volume Inj. :  
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





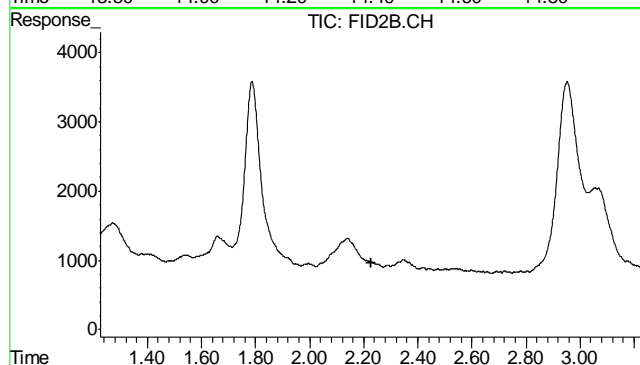
#1 TVH-Gasoline

R.T.: 7.315 min  
Delta R.T.: 0.000 min  
Response: 4830968  
Conc: N.D.



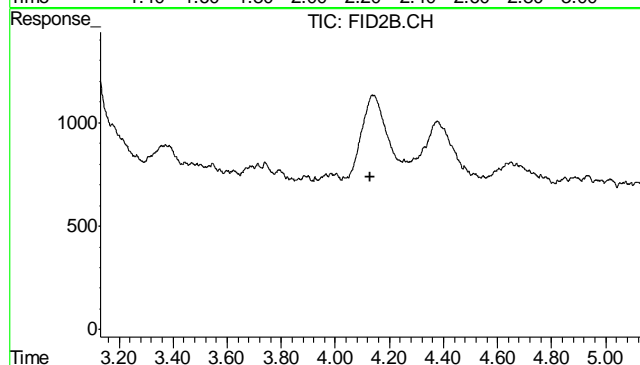
#2 1,2,4-Trichlorobenzene

R.T.: 14.362 min  
Delta R.T.: -0.007 min  
Response: 3305232  
Conc: 112.98 % m



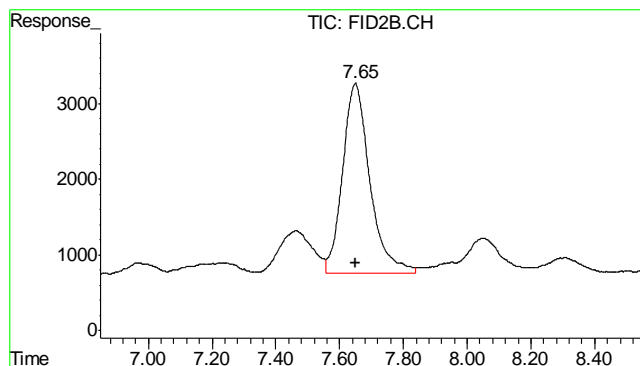
#4 Methyl-t-butyl-ether

R.T.: 0.000 min  
Exp R.T.: 2.226 min  
Response: 0  
Conc: N.D.



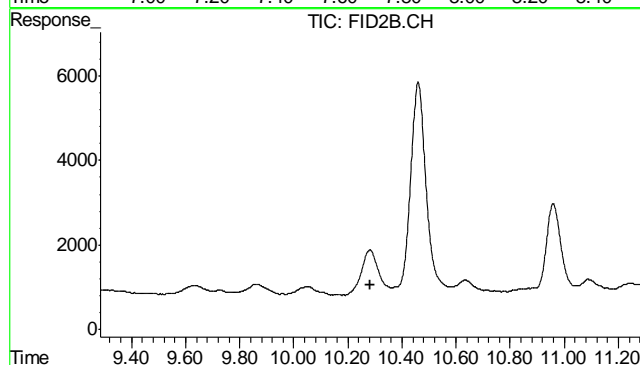
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.130 min  
Response: 0  
Conc: N.D.



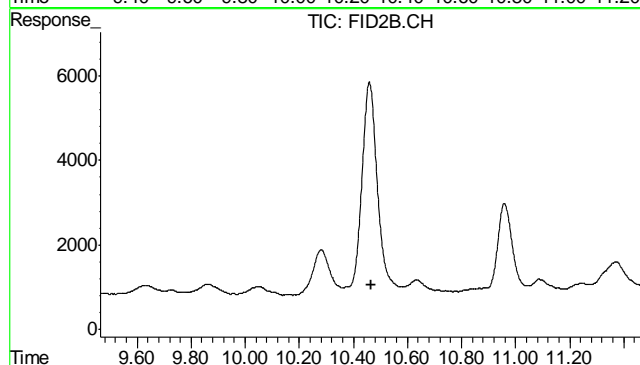
#6 Toluene

R.T.: 7.650 min  
Delta R.T.: -0.001 min  
Response: 149103  
Conc: 0.26 ug/L



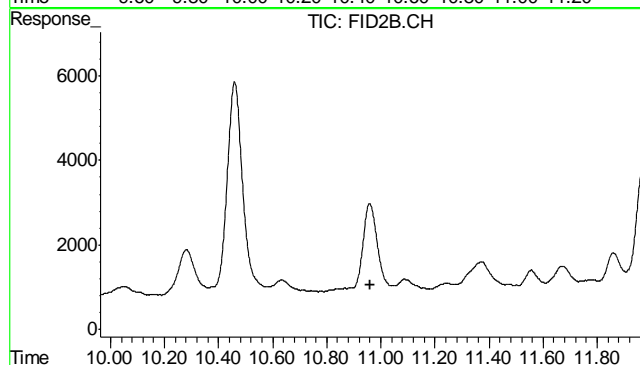
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T. : 10.284 min  
Response: 0  
Conc: N.D.



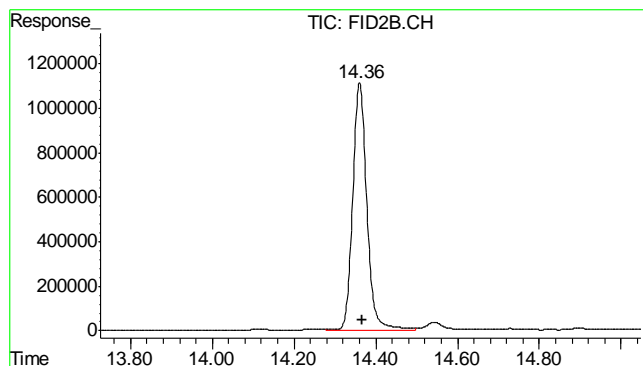
#8 m,p-Xylene

R.T.: 0.000 min  
Exp R.T. : 10.464 min  
Response: 0  
Conc: N.D.



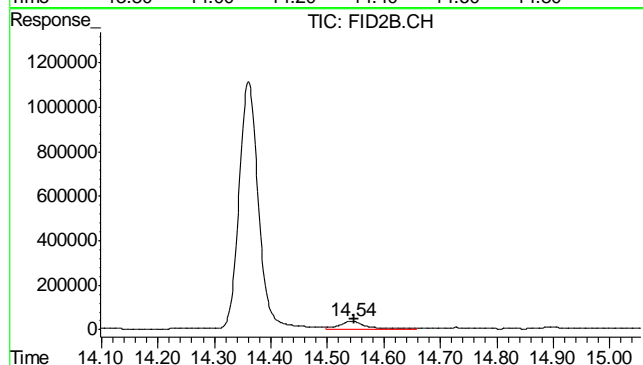
#9 o-Xylene

R.T.: 0.000 min  
Exp R.T. : 10.962 min  
Response: 0  
Conc: N.D.



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

R.T.: 14.361 min  
Delta R.T.: -0.005 min  
Response: 26671489  
Conc: 116.04 %



#11 Naphthalene

R.T.: 14.543 min  
Delta R.T.: -0.005 min  
Response: 1140679  
Conc: 4.43 ug/L

6.1.1  
6

## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\021612\GB14928.D\FID1A.CH Vial: 4  
Signal #2 : Y:\1\DATA\021612\GB14928.D\FID2B.CH  
Acq On : 16 Feb 2012 12:19 pm Operator: StephK  
Sample : MB, S Inst : GC/MS Ins  
Misc : GC2613,GGB841,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Feb 16 17:29:50 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Thu Feb 16 10:13:29 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	14.36	3312854	113.240	%
10) S	1,2,4-Trichlorobenzene (P)	14.36	27239671	118.516	%
Target Compounds					
1) H	TVH-Gasoline	7.32	5125510	<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	7.64	158099	0.279	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	14.54	436467	1.696	ug/L

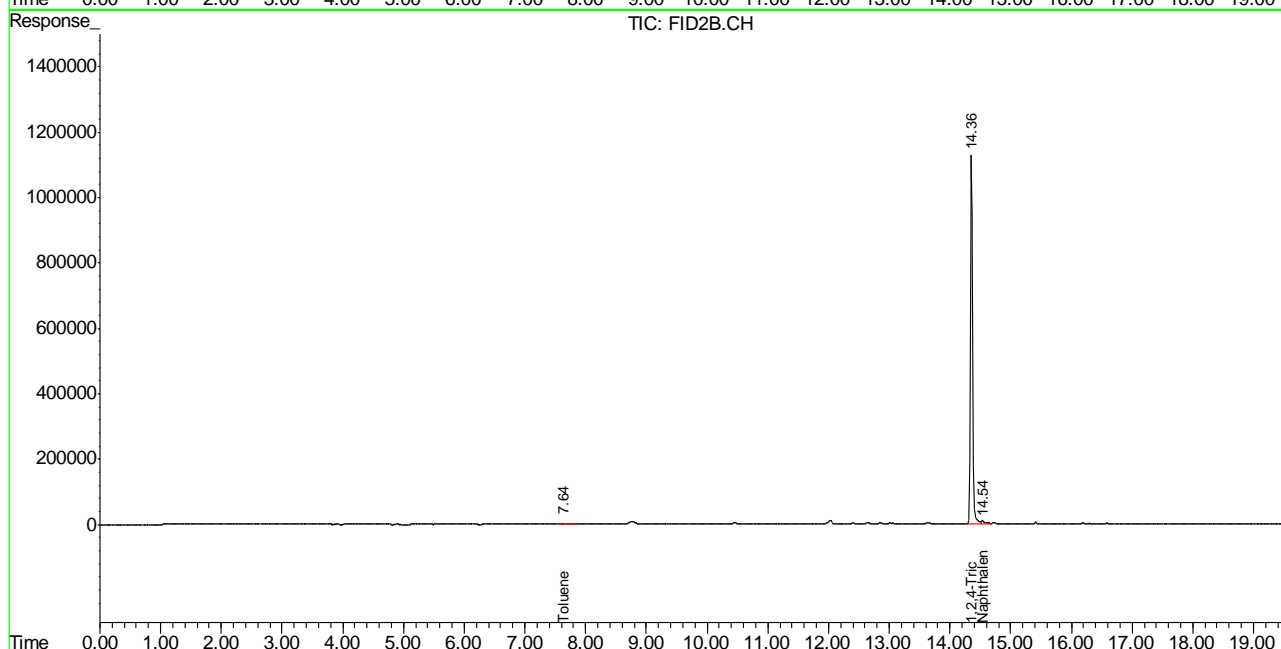
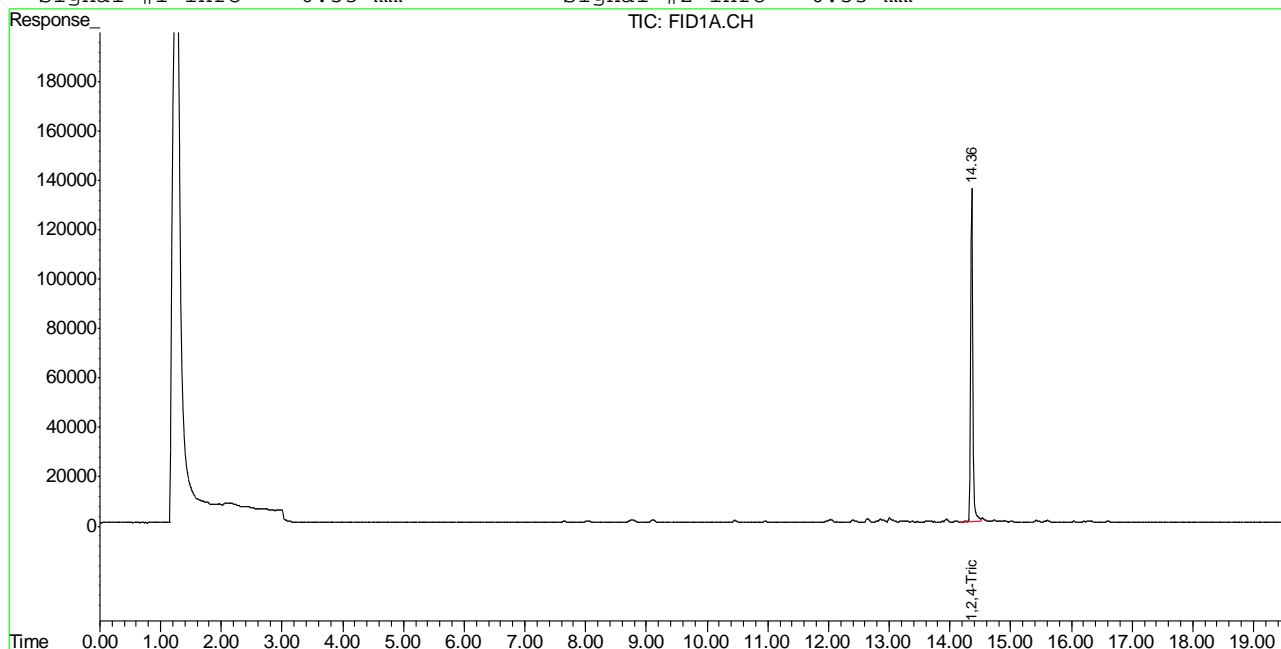
-----  
(f)=RT Delta > 1/2 Window (m)=manual int.  
GB14928.D TB791GB791SOIL.M Fri Feb 17 09:15:02 2012 GC

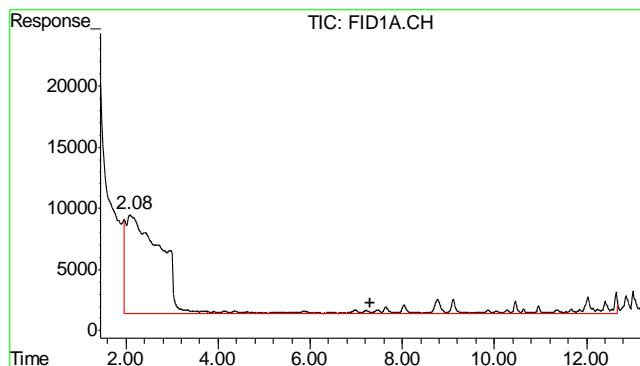
## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\021612\GB14928.D\FID1A.CH Vial: 4  
Signal #2 : Y:\1\DATA\021612\GB14928.D\FID2B.CH  
Acq On : 16 Feb 2012 12:19 pm Operator: StephK  
Sample : MB, S Inst : GC/MS Ins  
Misc : GC2613,GGB841,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Feb 16 16:29 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Thu Feb 16 10:13:29 2012  
Response via : Multiple Level Calibration  
DataAcq Meth : TVB4.M

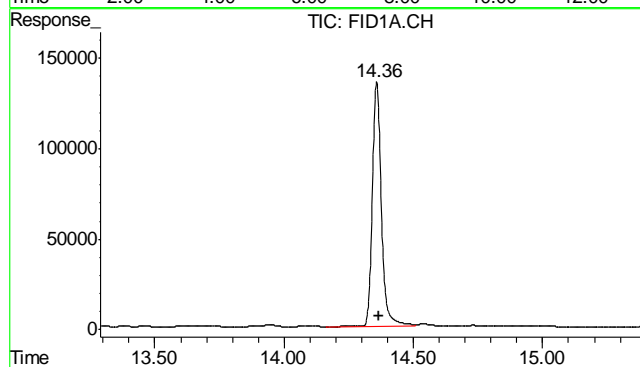
Volume Inj. :  
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





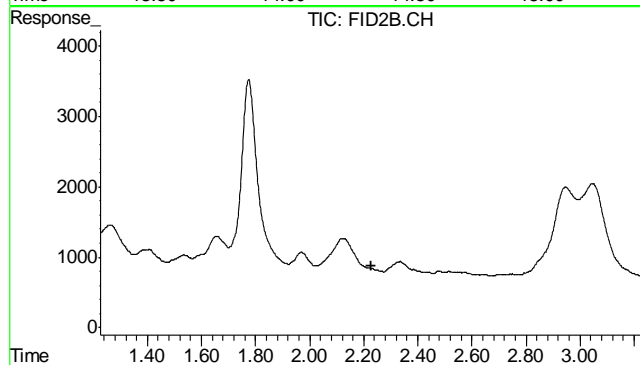
#1 TVH-Gasoline

R.T.: 7.315 min  
Delta R.T.: 0.000 min  
Response: 5125510  
Conc: N.D.



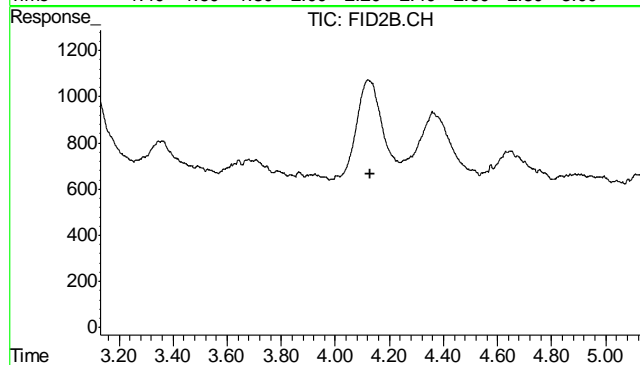
#2 1,2,4-Trichlorobenzene

R.T.: 14.358 min  
Delta R.T.: -0.010 min  
Response: 3312854  
Conc: 113.24 %



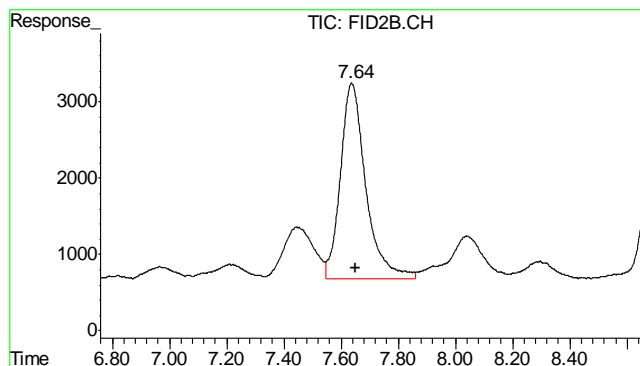
#4 Methyl-t-butyl-ether

R.T.: 0.000 min  
Exp R.T.: 2.226 min  
Response: 0  
Conc: N.D.



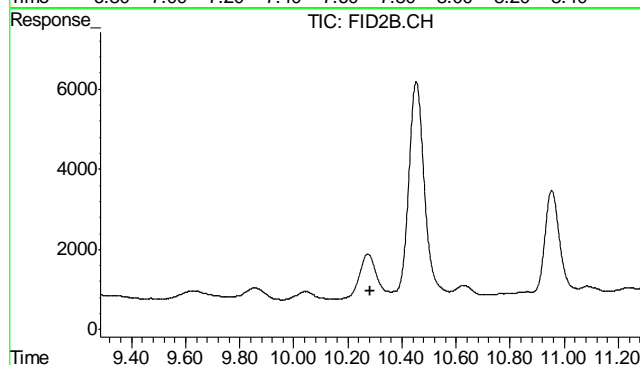
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.130 min  
Response: 0  
Conc: N.D.



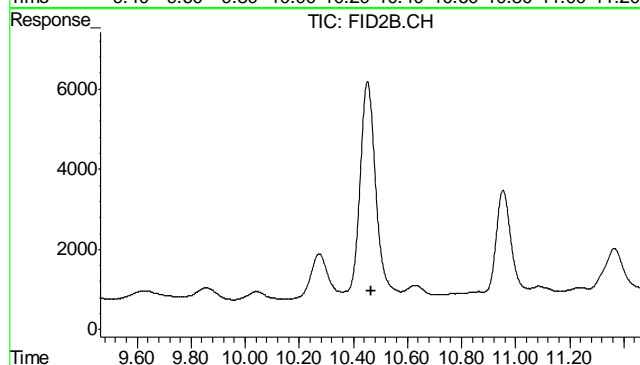
#6 Toluene

R.T.: 7.637 min  
Delta R.T.: -0.014 min  
Response: 158099  
Conc: 0.28 ug/L



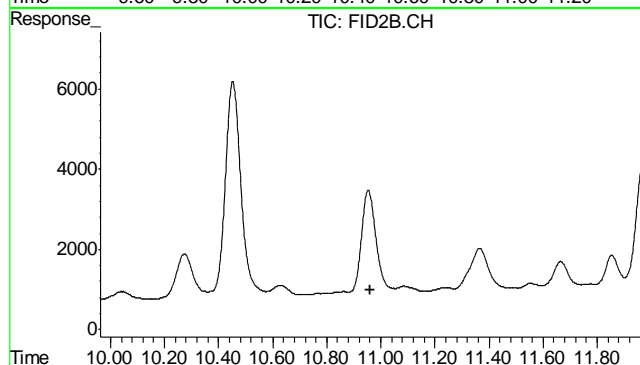
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T. : 10.284 min  
Response: 0  
Conc: N.D.



#8 m,p-Xylene

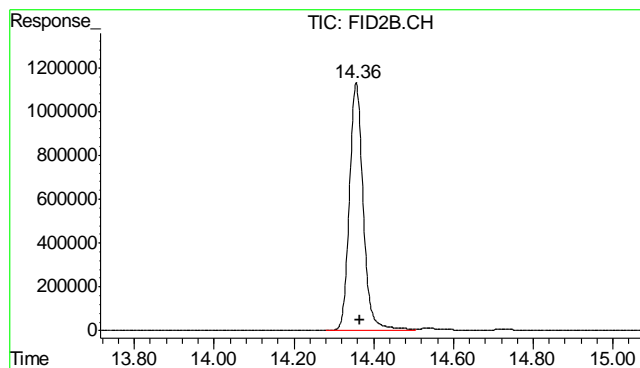
R.T.: 0.000 min  
Exp R.T. : 10.464 min  
Response: 0  
Conc: N.D.



#9 o-Xylene

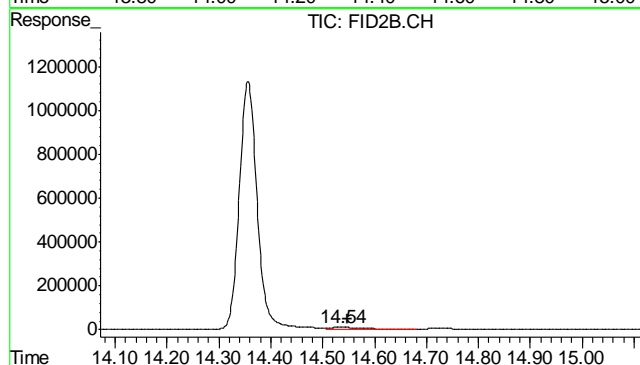
R.T.: 0.000 min  
Exp R.T. : 10.962 min  
Response: 0  
Conc: N.D.





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

R.T.: 14.356 min  
Delta R.T.: -0.010 min  
Response: 27239671  
Conc: 118.52 %



#11 Naphthalene

R.T.: 14.537 min  
Delta R.T.: -0.011 min  
Response: 436467  
Conc: 1.70 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:** D31745  
**Account:** XTOKRWR XTO Energy  
**Project:** FRU 297-28C

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5373-MB	FH001361.D	1	02/17/12	TR	02/15/12	OP5373	GFH64

The QC reported here applies to the following samples:

Method: SW846-8015B

D31745-1

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

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	91% 43-136%

## Blank Spike Summary

Page 1 of 1

Job Number: D31745  
Account: XTOKRWR XTO Energy  
Project: FRU 297-28C

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5373-BS	FH001363.D	1	02/17/12	TR	02/15/12	OP5373	GFH64

The QC reported here applies to the following samples:

Method: SW846-8015B

D31745-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	554	83	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	89%	43-136%

7.2.1

7

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D31745  
Account: XTOKRWR XTO Energy  
Project: FRU 297-28C

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5373-MS	FH001365.D	1	02/17/12	TR	02/15/12	OP5373	GFH64
OP5373-MSD	FH001367.D	1	02/17/12	TR	02/15/12	OP5373	GFH64
D31900-1	FH001413.D	1	02/18/12	TR	02/15/12	OP5373	GFH68

The QC reported here applies to the following samples:

Method: SW846-8015B

D31745-1

CAS No.	Compound	D31900-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	107		771	584	62	679	74	15	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D31900-1	Limits
84-15-1	o-Terphenyl	75%	82%	82%	43-136%

7.3.1

7

**GC Semi-volatiles**

**Raw Data**

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH021712\  
 Data File : FH001393.D  
 Signal(s) : FID1A.ch  
 Acq On : 18 Feb 2012 2:47 am  
 Operator : tedr  
 Sample : D31745-1  
 Misc : OP5373,GFH64,30.01,,,2,1  
 ALS Vial : 69 Sample Multiplier: 1

Integration File: events.e  
 Quant Time: Feb 20 11:50:30 2012  
 Quant Method : C:\msdchem\1\METHODS\DRO-GFH34F.M  
 Quant Title : DRO-ORO FRONT  
 QLast Update : Tue Jan 31 13:20:35 2012  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. :  
 Signal Phase :  
 Signal Info :

Compound	R.T.	Response	Conc Units
-----			
System Monitoring Compounds			
2) s o-Terphenyl	12.462	1272484169	865.588 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	10.011	296399501	243.143 ug/ml
-----			

(f)=RT Delta > 1/2 Window

(m)=manual int.

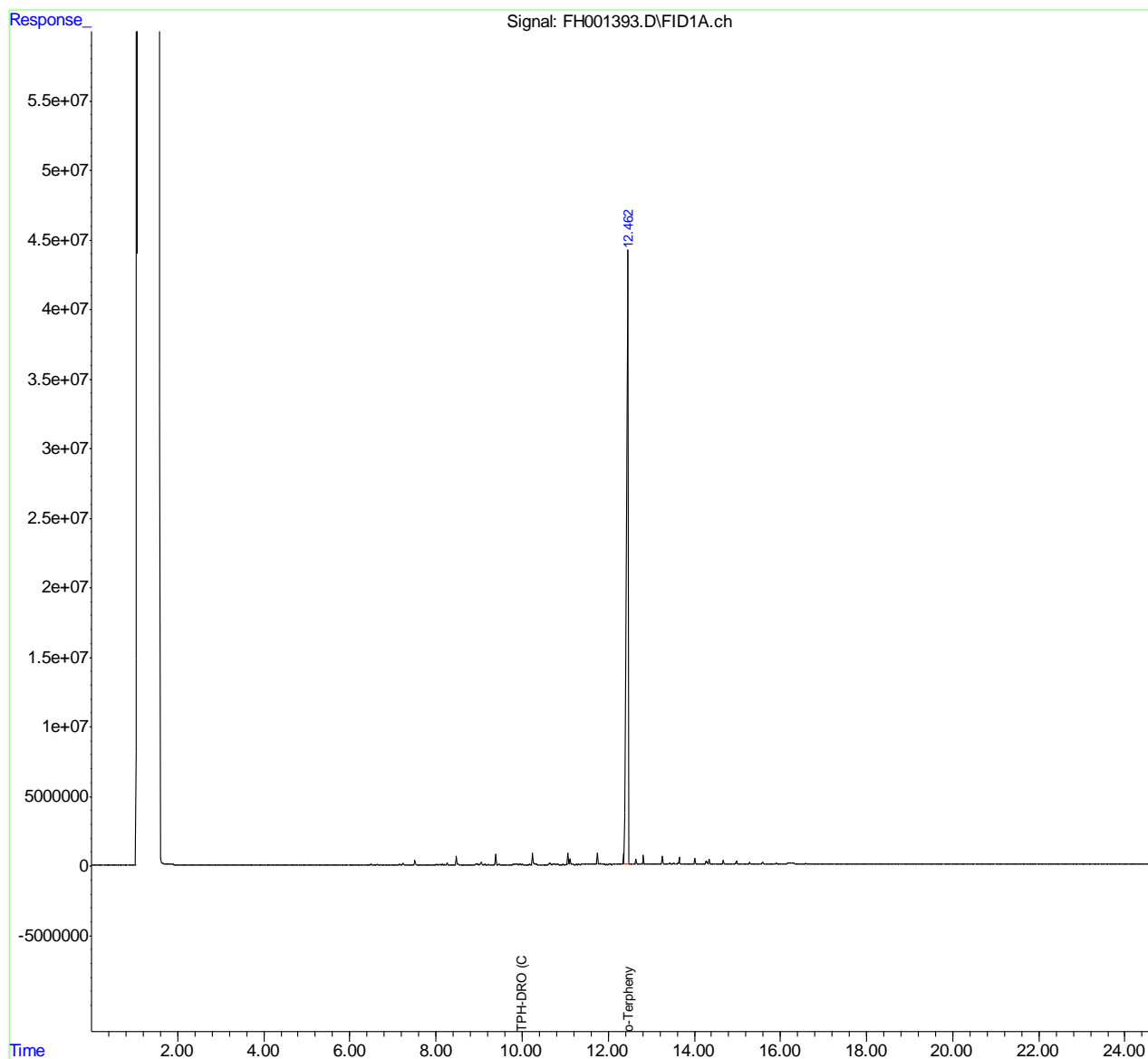
8.1.1  
8

## Quantitation Report (QT Reviewed)

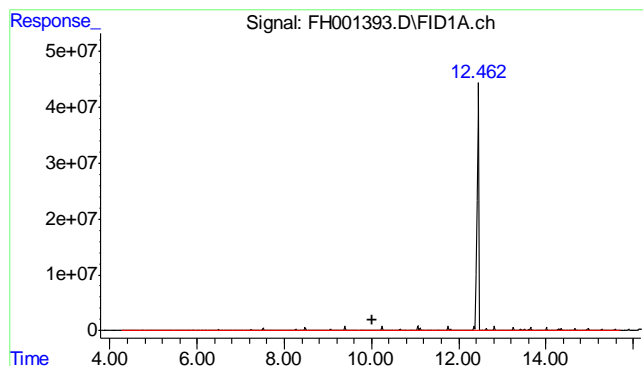
Data Path : C:\msdchem\1\DATA\FH021712\  
Data File : FH001393.D  
Signal(s) : FID1A.ch  
Acq On : 18 Feb 2012 2:47 am  
Operator : tedr  
Sample : D31745-1  
Misc : OP5373,GFH64,30.01,,,2,1  
ALS Vial : 69 Sample Multiplier: 1

Integration File: events.e  
Quant Time: Feb 20 11:50:30 2012  
Quant Method : C:\msdchem\1\METHODS\DRO-GFH34F.M  
Quant Title : DRO-ORO FRONT  
QLast Update : Tue Jan 31 13:20:35 2012  
Response via : Initial Calibration  
Integrator: ChemStation

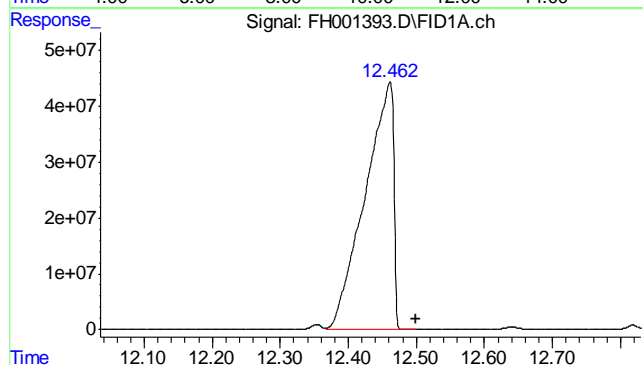
Volume Inj. :  
Signal Phase :  
Signal Info :







#1 TPH-DRO (C10-C28)  
 R.T.: 10.011 min  
 Delta R.T.: 0.000 min  
 Response: 296399501  
 Conc: 243.14 ug/ml m



#2 o-Terphenyl  
 R.T.: 12.462 min  
 Delta R.T.: -0.038 min  
 Response: 1272484169  
 Conc: 865.59 ug/ml

8.1.1

8

## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH021712\  
Data File : FH001361.D  
Signal(s) : FID1A.ch  
Acq On : 17 Feb 2012 5:20 pm  
Operator : tedr  
Sample : OP5373-MB  
Misc : OP5373,GFH64,30.00,,,2,1  
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e  
Quant Time: Feb 18 16:22:59 2012  
Quant Method : C:\msdchem\1\METHODS\DRO-GFH34F.M  
Quant Title : DRO-ORO FRONT  
QLast Update : Tue Jan 31 13:20:35 2012  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. :  
Signal Phase :  
Signal Info :

Compound	R.T.	Response	Conc Units
-----			
System Monitoring Compounds			
2) s o-Terphenyl	12.465	1333828445	907.317 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	10.011	27311873	22.404 ug/ml
-----			

(f)=RT Delta > 1/2 Window

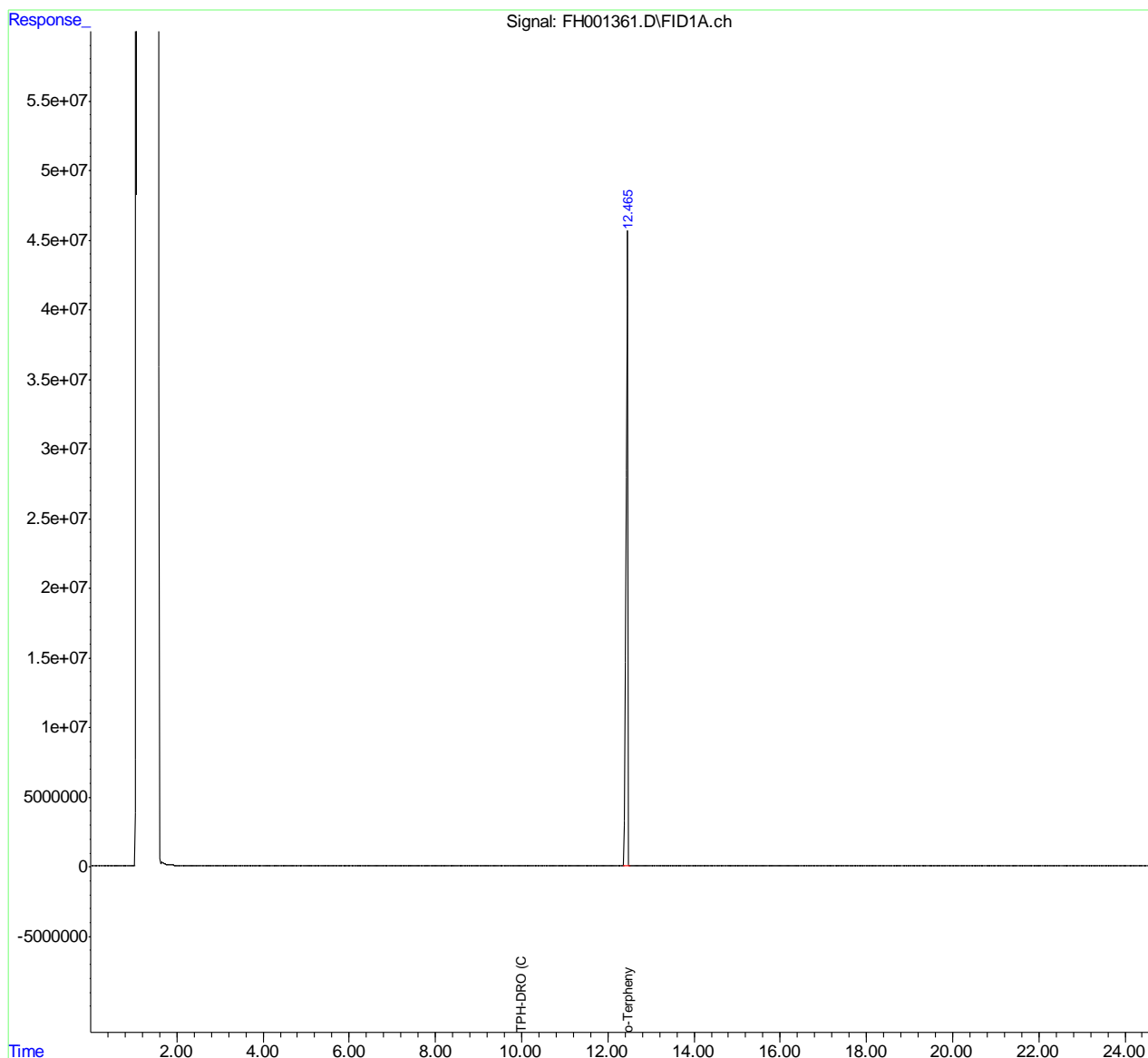
(m)=manual int.

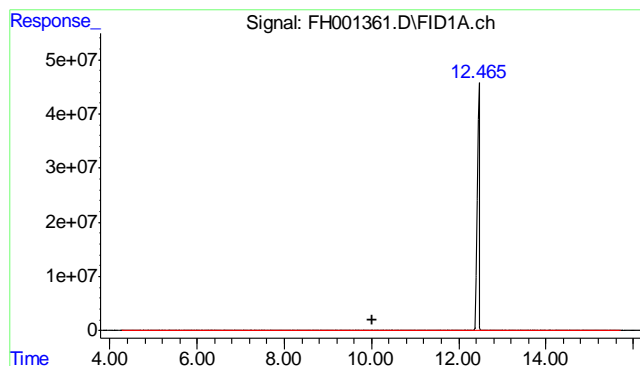
## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH021712\  
Data File : FH001361.D  
Signal(s) : FID1A.ch  
Acq On : 17 Feb 2012 5:20 pm  
Operator : tedr  
Sample : OP5373-MB  
Misc : OP5373,GFH64,30.00,,,2,1  
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e  
Quant Time: Feb 18 16:22:59 2012  
Quant Method : C:\msdchem\1\METHODS\DRO-GFH34F.M  
Quant Title : DRO-ORO FRONT  
QLast Update : Tue Jan 31 13:20:35 2012  
Response via : Initial Calibration  
Integrator: ChemStation

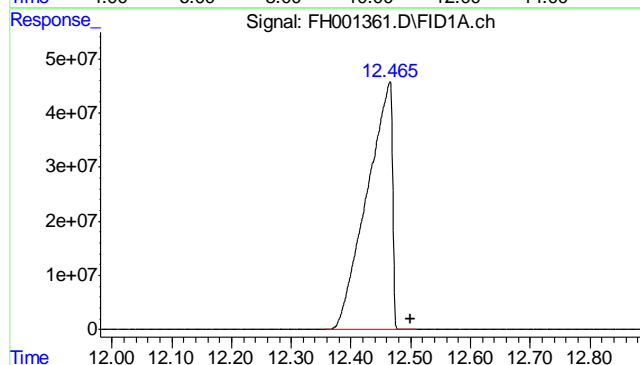
Volume Inj. :  
Signal Phase :  
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 10.011 min  
Delta R.T.: 0.000 min  
Response: 27311873  
Conc: 22.40 ug/ml m



#2 o-Terphenyl

R.T.: 12.465 min  
Delta R.T.: -0.035 min  
Response: 1333828445  
Conc: 907.32 ug/ml

8.2.1

8