



11/06/12

## Technical Report for

**XTO Energy**

**PCU 297-10B**

**1105-20A**

**Accutest Job Number: D40440**

**Sampling Date: 10/29/12**


### Report to:

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ATTN: Dwayne Knudson

**Total number of pages in report: 37**



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: D40440

PCU 297-10B

Project No: 1105-20A

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D40440-1	10/29/12	13:45	DS	10/31/12	SO	Soil	FW NORTH HALF (-13') COMP

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



## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** XTO Energy

**Job No** D40440

**Site:** PCU 297-10B

**Report Date** 11/6/2012 12:57:47 PM

On 10/31/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.5 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D40440 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:** GGB1000

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40436-1MS, D40436-1MSD were used as the QC samples indicated.

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

**Matrix** SO

**Batch ID:** OP6912

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40494-1MS, D40494-1MSD were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) of TPH-DRO (C10-C28) are outside control limits. Outside control limits due to high level in sample relative to spike amount.

### Wet Chemistry By Method SM19 2540B M

**Matrix** SO

**Batch ID:** GN17501

- 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.

Summary of Hits

Job Number: D40440  
Account: XTO Energy  
Project: PCU 297-10B  
Collected: 10/29/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						
D40440-1	FW NORTH HALF (-13') COMP					
TPH-DRO (C10-C28)		417	16	10	mg/kg	SW846-8015B

Sample Results

Report of Analysis

Accutest Laboratories

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	FW NORTH HALF (-13') COMP					<b>Date Sampled:</b>	10/29/12
<b>Lab Sample ID:</b>	D40440-1					<b>Date Received:</b>	10/31/12
<b>Matrix:</b>	SO - Soil					<b>Percent Solids:</b>	85.7
<b>Method:</b>	SW846 8015B						
<b>Project:</b>	PCU 297-10B						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB18314.D	1	11/01/12	SK	n/a	n/a	GGB1000
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.6	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	99%		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

<b>Client Sample ID:</b>	FW NORTH HALF (-13') COMP			<b>Date Sampled:</b>	10/29/12
<b>Lab Sample ID:</b>	D40440-1			<b>Date Received:</b>	10/31/12
<b>Matrix:</b>	SO - Soil			<b>Percent Solids:</b>	85.7
<b>Method:</b>	SW846-8015B SW846 3546				
<b>Project:</b>	PCU 297-10B				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD19188.D	1	11/06/12	AV	11/05/12	OP6912	GFD968
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	417	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	114%		35-130%		

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



## Misc. Forms

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### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



## Accutest Laboratories Sample Receipt Summary

**Accutest Job Number:** D40440

**Client:**
**Immediate Client Services Action Required:** No

**Date / Time Received:** 10/31/2012 3:45:00 PM

**No. Coolers:** 1

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

**Project:**
**Airbill #'s:** hdco

<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

## 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:** D40440  
**Account:** XTOKRWR XTO Energy  
**Project:** PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1000-MB	GB18306.D	1	11/01/12	SK	n/a	n/a	GGB1000

The QC reported here applies to the following samples:

Method: SW846 8015B

D40440-1

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	88% 60-140%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D40440

**Account:** XTOKRWR XTO Energy

**Project:** PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1000-BS	GB18307.D	1	11/01/12	SK	n/a	n/a	GGB1000

The QC reported here applies to the following samples:

Method: SW846 8015B

D40440-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	124	113	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	105%	60-140%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D40440  
**Account:** XTOKRWR XTO Energy  
**Project:** PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D40436-1MS	GB18309.D	1	11/01/12	SK	n/a	n/a	GGB1000
D40436-1MSD	GB18310.D	1	11/01/12	SK	n/a	n/a	GGB1000
D40436-1	GB18308.D	1	11/01/12	SK	n/a	n/a	GGB1000

The QC reported here applies to the following samples:

Method: SW846 8015B

D40440-1

CAS No.	Compound	D40436-1 mg/kg	Spike Q	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	125	141	112	137	109	3	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D40436-1	Limits
120-82-1	1,2,4-Trichlorobenzene	105%	97%	89%	60-140%

\* = Outside of Control Limits.

GC Volatiles

Raw Data

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Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110112\GB18314.D\FID1A.CH Vial: 11  
 Signal #2 : Y:\1\DATA\110112\GB18314.D\FID2B.CH  
 Acq On : 1 Nov 2012 9:57 pm Operator: StephK  
 Sample : D40440-1, 50X Inst : GC/MS Ins  
 Misc : GC3218,GGB1000,5.026,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Nov 02 08:41:08 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Thu Nov 01 17:08:46 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

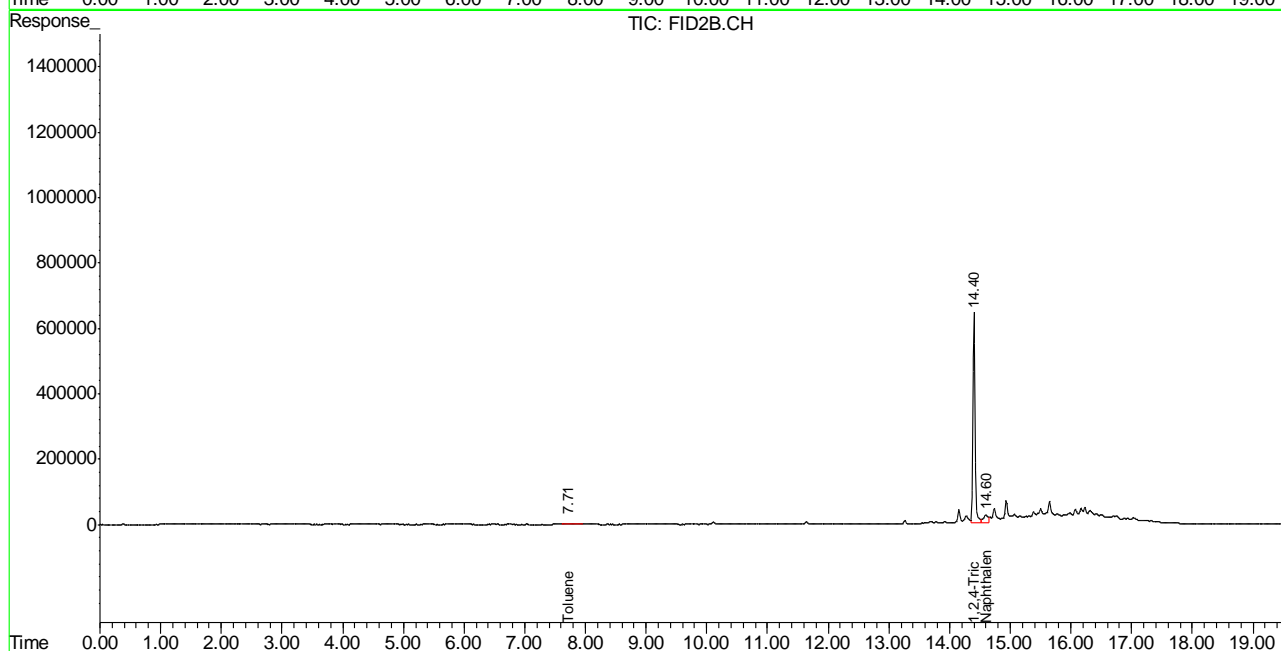
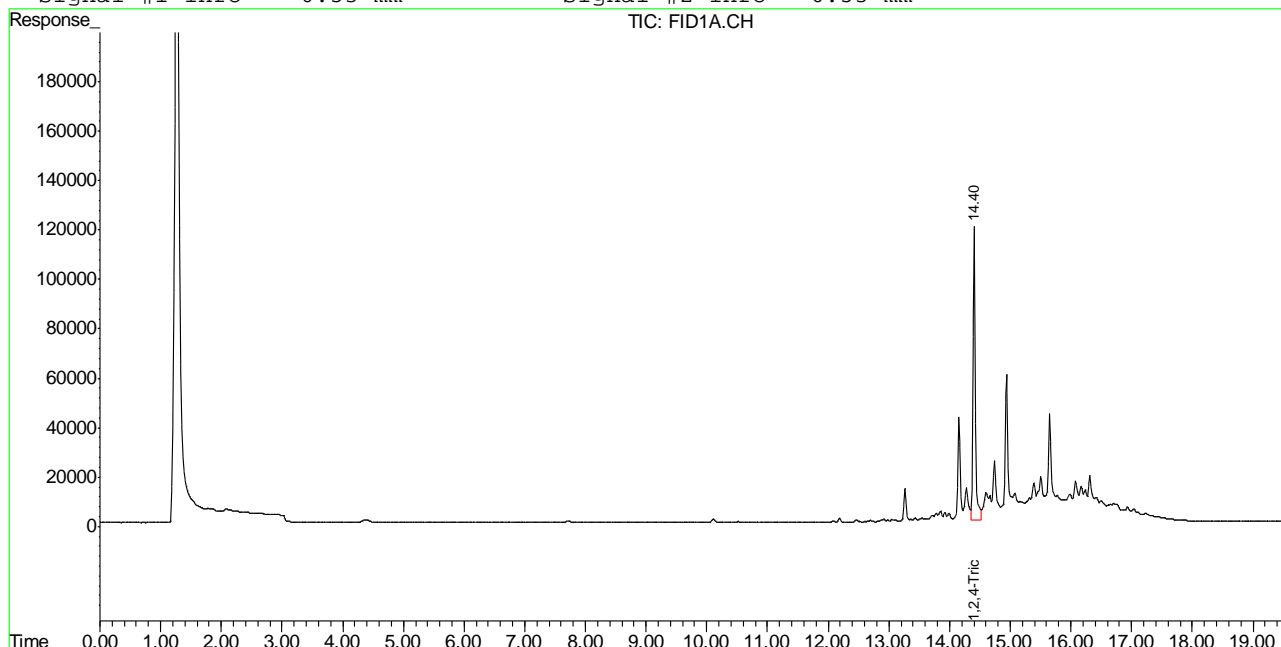
Compound	R.T.	Response	Conc	Units
-----				
System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.40	3092370	98.691 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.40	15644285	96.256 %	
Target Compounds				
1) H TVH-Gasoline	7.23	3825535	<MDL	mg/L
4) T Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T Benzene	0.00	0	N.D.	ug/L d
6) T Toluene	7.71	141077	0.356	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	14.60	1314551	6.662	ug/L

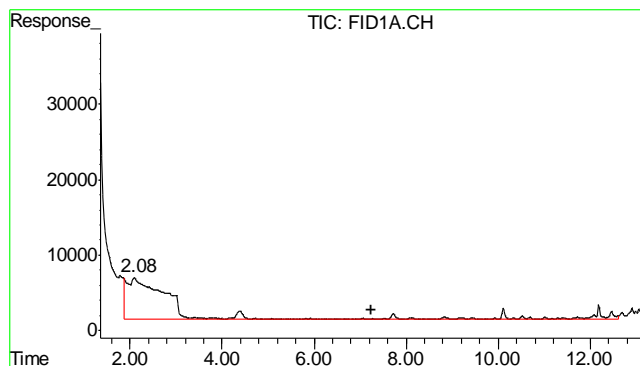
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110112\GB18314.D\FID1A.CH Vial: 11  
 Signal #2 : Y:\1\DATA\110112\GB18314.D\FID2B.CH  
 Acq On : 1 Nov 2012 9:57 pm Operator: StephK  
 Sample : D40440-1, 50X Inst : GC/MS Ins  
 Misc : GC3218,GGB1000,5.026,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Nov 2 8:55 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Thu Nov 01 17:08:46 2012  
 Response via : Multiple Level Calibration  
 DataAcq Meth : TVB4.M

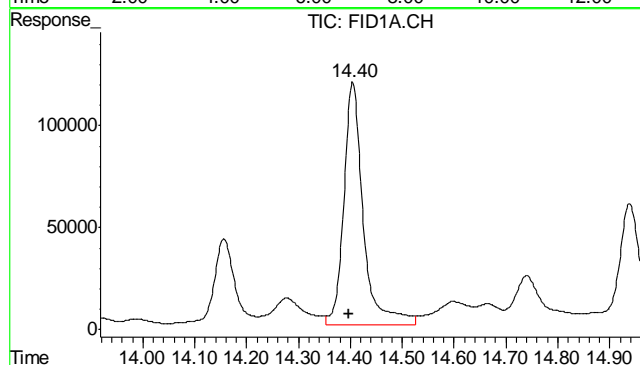
Volume Inj. :  
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





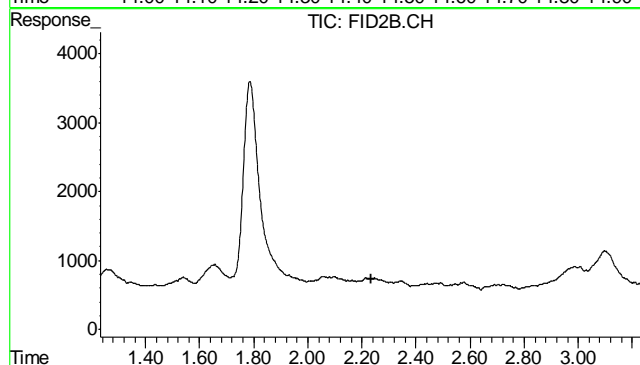
#1 TVH-Gasoline

R.T.: 7.230 min  
Delta R.T.: 0.000 min  
Response: 3825535  
Conc: N.D.



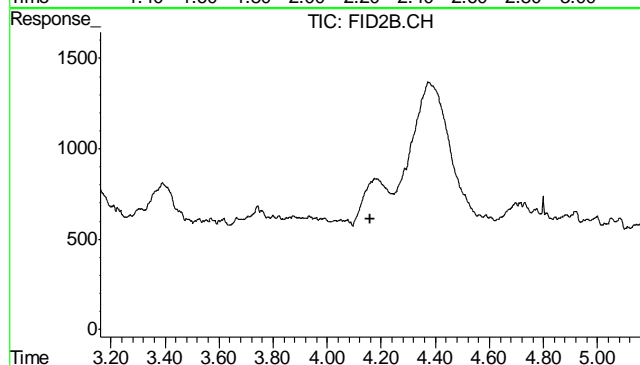
#2 1,2,4-Trichlorobenzene

R.T.: 14.404 min  
Delta R.T.: 0.006 min  
Response: 3092370  
Conc: 98.69 % m



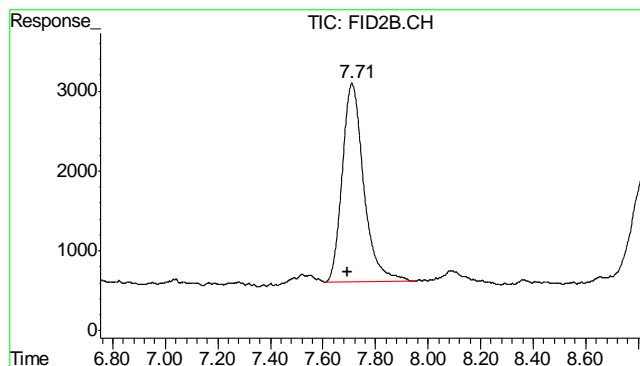
#4 Methyl-t-butyl-ether

R.T.: 0.000 min  
Exp R.T.: 2.233 min  
Response: 0  
Conc: N.D.

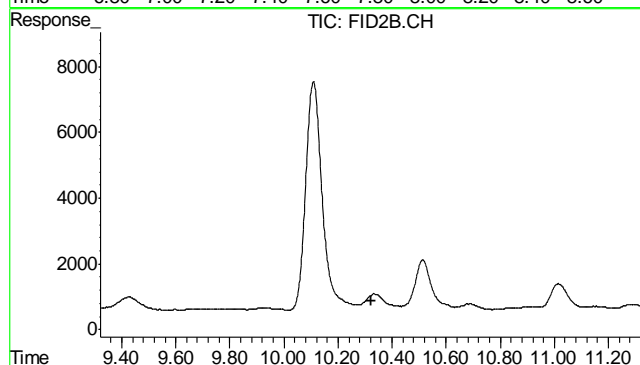


#5 Benzene

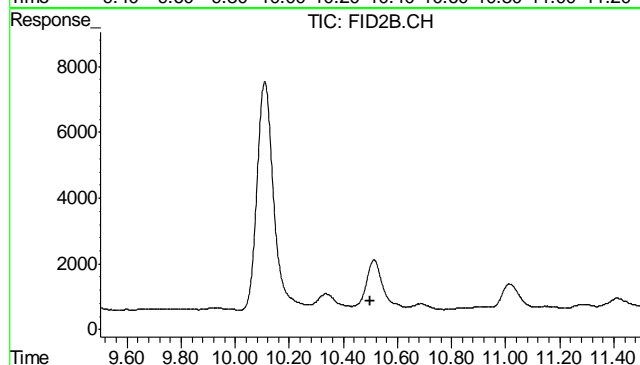
R.T.: 0.000 min  
Exp R.T.: 4.161 min  
Response: 0  
Conc: N.D.



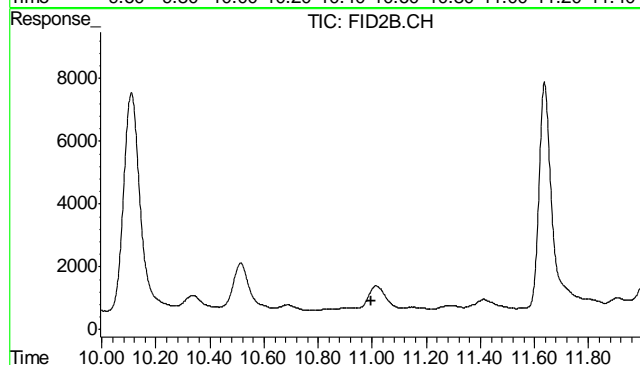
#6 Toluene  
R.T.: 7.710 min  
Delta R.T.: 0.015 min  
Response: 141077  
Conc: 0.36 ug/L



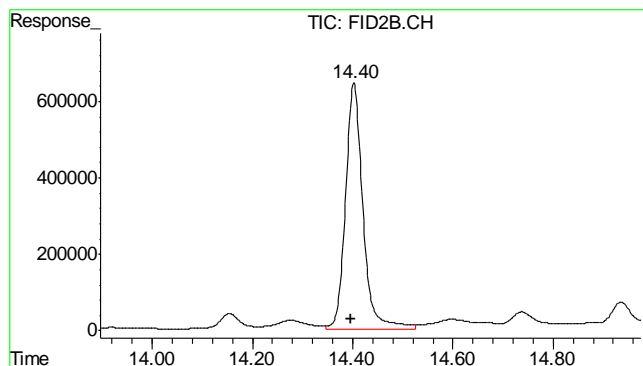
#7 Ethylbenzene  
R.T.: 0.000 min  
Exp R.T.: 10.322 min  
Response: 0  
Conc: N.D.



#8 m,p-Xylene  
R.T.: 0.000 min  
Exp R.T.: 10.501 min  
Response: 0  
Conc: N.D.

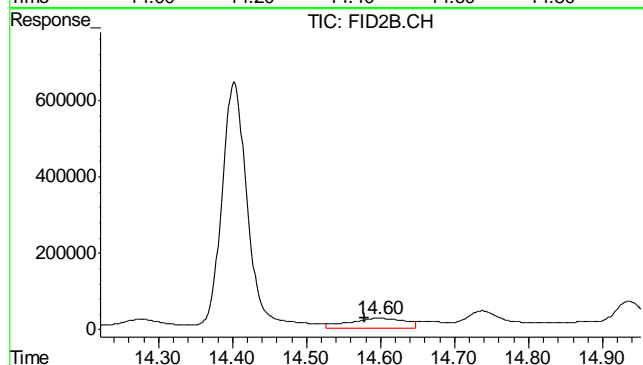


#9 o-Xylene  
R.T.: 0.000 min  
Exp R.T.: 10.995 min  
Response: 0  
Conc: N.D.



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

R.T.: 14.402 min  
Delta R.T.: 0.006 min  
Response: 15644285  
Conc: 96.26 %



#11 Naphthalene

R.T.: 14.598 min  
Delta R.T.: 0.019 min  
Response: 1314551  
Conc: 6.66 ug/L

7.1.1  
7

## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110112\GB18306.D\FID1A.CH Vial: 3  
 Signal #2 : Y:\1\DATA\110112\GB18306.D\FID2B.CH  
 Acq On : 1 Nov 2012 5:13 pm Operator: StephK  
 Sample : MB Inst : GC/MS Ins  
 Misc : GC3218,GGB1000,5.000,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Nov 02 08:40:36 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Thu Nov 01 17:08:46 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	14.39	2744573	87.591	%
10) S	1,2,4-Trichlorobenzene (P)	14.39	14699109	90.441	%
Target Compounds					
1) H	TVH-Gasoline	7.23	4085168	<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	7.70	190497	0.481	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	14.57	180343	0.914	ug/L

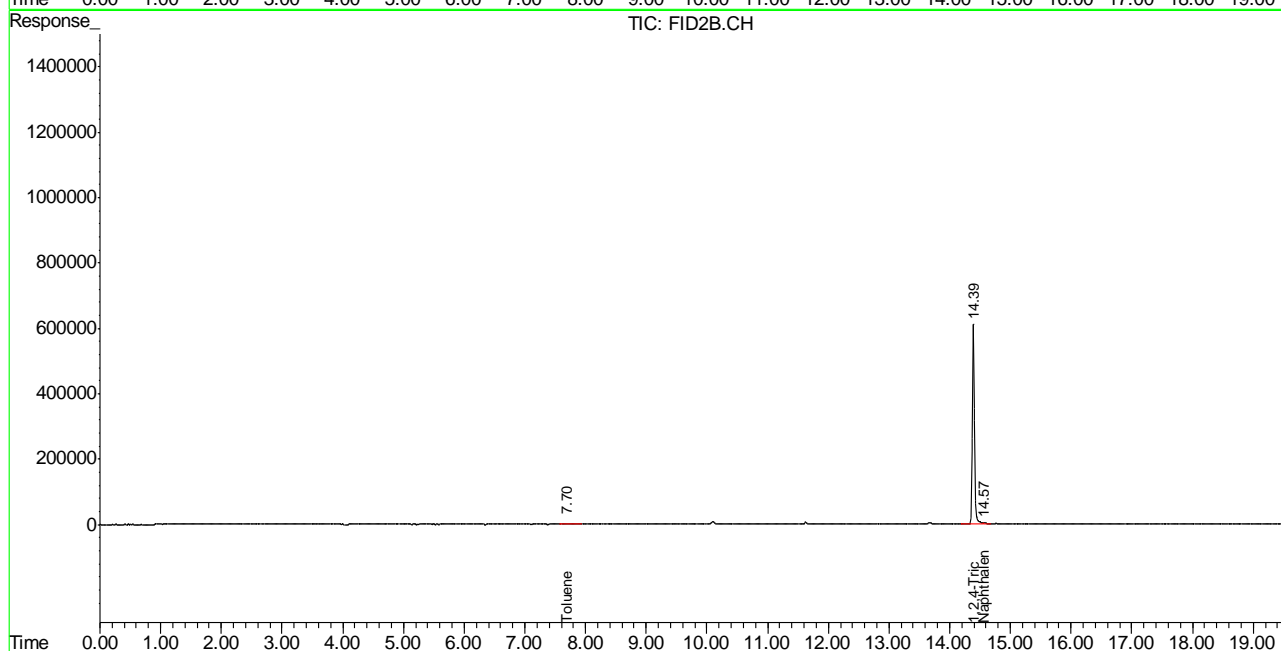
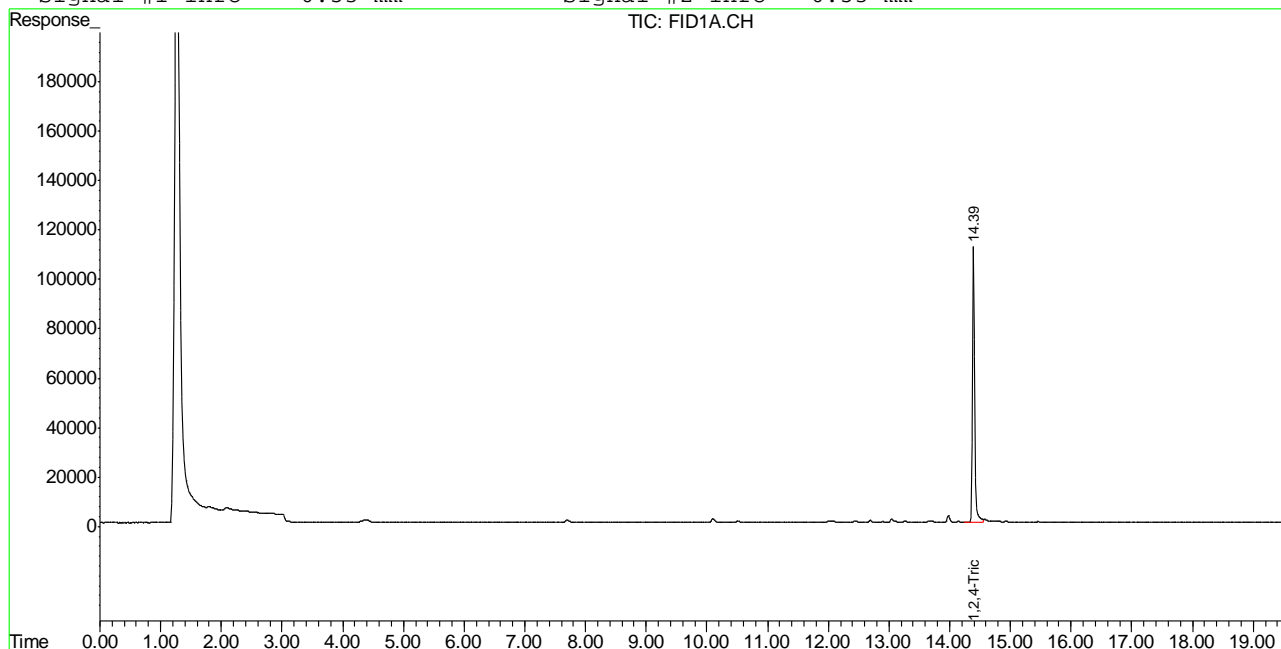
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 (f)=RT Delta > 1/2 Window (m)=manual int.  
 GB18306.D TB868GB868SOIL.M Fri Nov 02 08:49:22 2012 GC

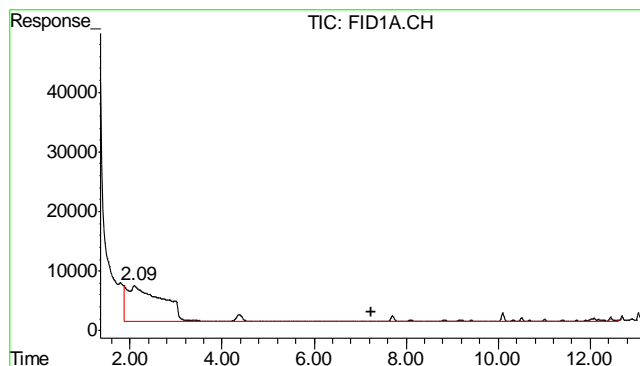
## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\110112\GB18306.D\FID1A.CH Vial: 3  
Signal #2 : Y:\1\DATA\110112\GB18306.D\FID2B.CH  
Acq On : 1 Nov 2012 5:13 pm Operator: StephK  
Sample : MB Inst : GC/MS Ins  
Misc : GC3218,GGB1000,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Nov 2 8:53 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Thu Nov 01 17:08:46 2012  
Response via : Multiple Level Calibration  
DataAcq Meth : TVB4.M

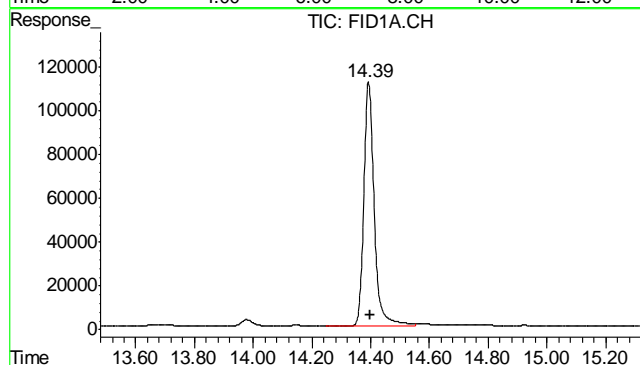
Volume Inj. :  
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





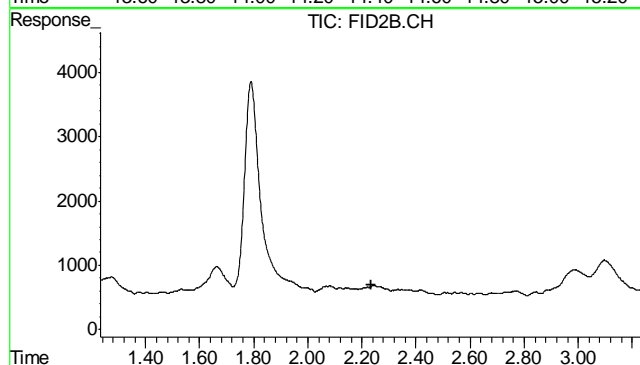
#1 TVH-Gasoline

R.T.: 7.230 min  
Delta R.T.: 0.000 min  
Response: 4085168  
Conc: N.D.



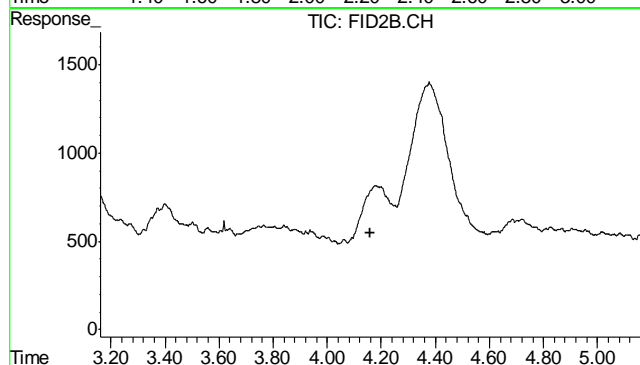
#2 1,2,4-Trichlorobenzene

R.T.: 14.393 min  
Delta R.T.: -0.005 min  
Response: 2744573  
Conc: 87.59 %



#4 Methyl-t-butyl-ether

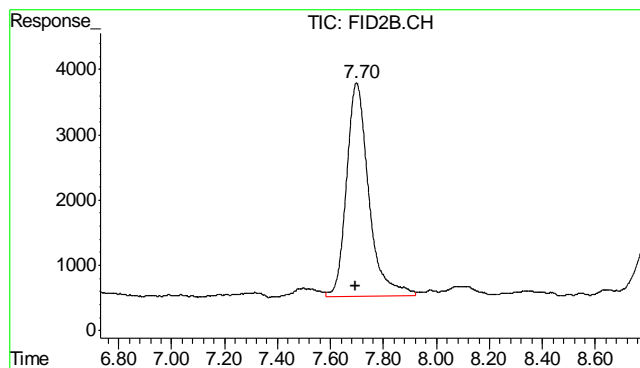
R.T.: 0.000 min  
Exp R.T. : 2.233 min  
Response: 0  
Conc: N.D.



#5 Benzene

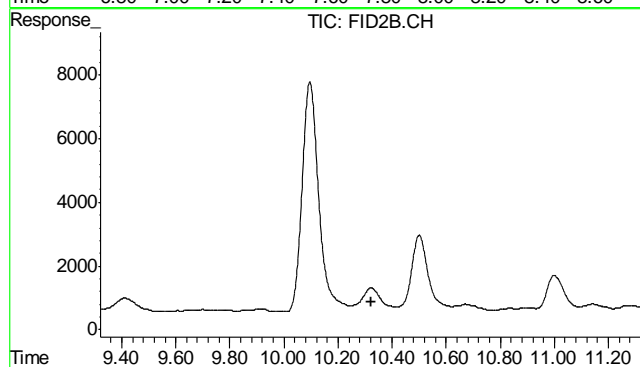
R.T.: 0.000 min  
Exp R.T. : 4.161 min  
Response: 0  
Conc: N.D.





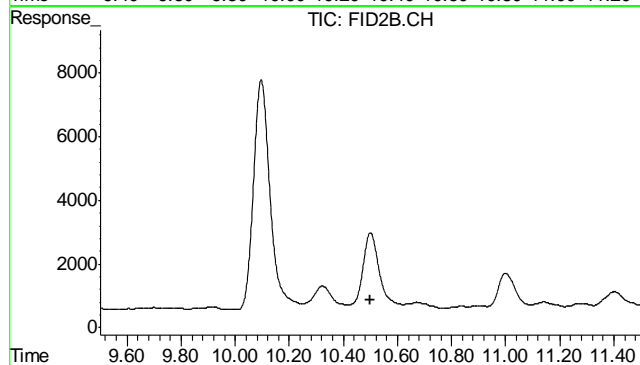
#6 Toluene

R.T.: 7.698 min  
Delta R.T.: 0.003 min  
Response: 190497  
Conc: 0.48 ug/L



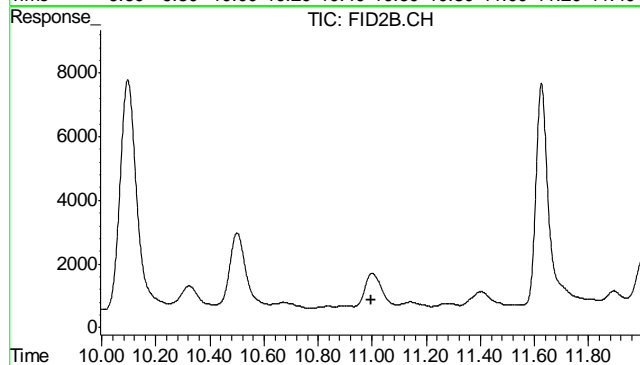
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T. : 10.322 min  
Response: 0  
Conc: N.D.



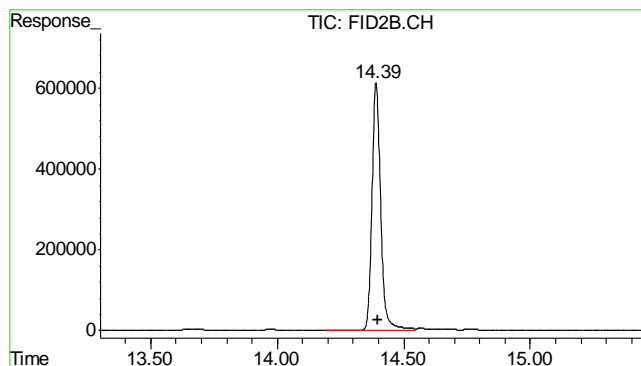
#8 m,p-Xylene

R.T.: 0.000 min  
Exp R.T. : 10.501 min  
Response: 0  
Conc: N.D.



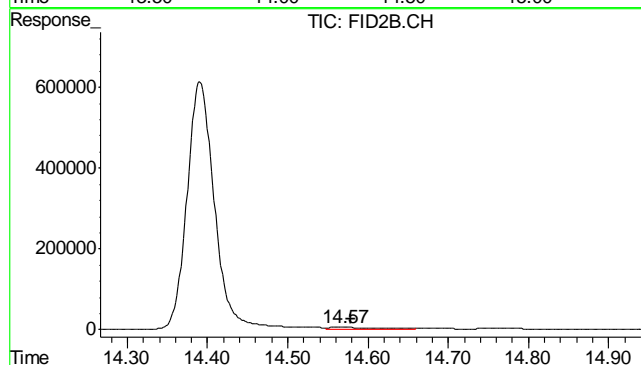
#9 o-Xylene

R.T.: 0.000 min  
Exp R.T. : 10.995 min  
Response: 0  
Conc: N.D.



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

R.T.: 14.391 min  
Delta R.T.: -0.005 min  
Response: 14699109  
Conc: 90.44 %



#11 Naphthalene

R.T.: 14.570 min  
Delta R.T.: -0.009 min  
Response: 180343  
Conc: 0.91 ug/L

7.2.1

7

## GC Semi-volatiles

### 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:** D40440  
**Account:** XTOKRWR XTO Energy  
**Project:** PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6912-MB	FD19165.D	1	11/05/12	AV	11/05/12	OP6912	GFD968

The QC reported here applies to the following samples:

Method: SW846-8015B

D40440-1

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	108% 35-130%

8.1.1

8

## Blank Spike Summary

Page 1 of 1

**Job Number:** D40440  
**Account:** XTOKRWR XTO Energy  
**Project:** PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6912-BS	FD19166.D	1	11/05/12	AV	11/05/12	OP6912	GFD968

The QC reported here applies to the following samples:

Method: SW846-8015B

D40440-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	611	92	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	104%	35-130%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D40440  
**Account:** XTOKRWR XTO Energy  
**Project:** PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6912-MS	FD19172.D	20	11/05/12	AV	11/05/12	OP6912	GFD968
OP6912-MSD	FD19173.D	20	11/05/12	AV	11/05/12	OP6912	GFD968
D40494-1	FD19174.D	20	11/05/12	AV	11/05/12	OP6912	GFD968

The QC reported here applies to the following samples:

Method: SW846-8015B

D40440-1

CAS No.	Compound	D40494-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	9240		747	7870	-183* a	9440	27	18	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D40494-1	Limits
84-15-1	o-Terphenyl	93%	121%	113%	35-130%

(a) Outside control limits due to high level in sample relative to spike amount.

\* = Outside of Control Limits.

GC Semi-volatiles

Raw Data

6

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD110512\FD19188.D Vial: 25  
Acq On : 11-6-2012 01:52:58 AM Operator: ashleyv  
Sample : D40440-1 Inst : FID5  
Misc : OP6912,GFD968,30.02,,,2,1 Multiplr: 1.00  
IntFile : autoint1.e  
Quant Time: Nov 06 09:36:13 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Thu Nov 01 16:47:14 2012  
Response via : Initial Calibration  
DataAcq Meth : DRO\_FR.M

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

Compound	R.T.	Response	Conc Units
-----			
System Monitoring Compounds			
1) S O-Terphenyl	8.95	53802511	1138.954 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.08	206457054	5361.786 mg/L

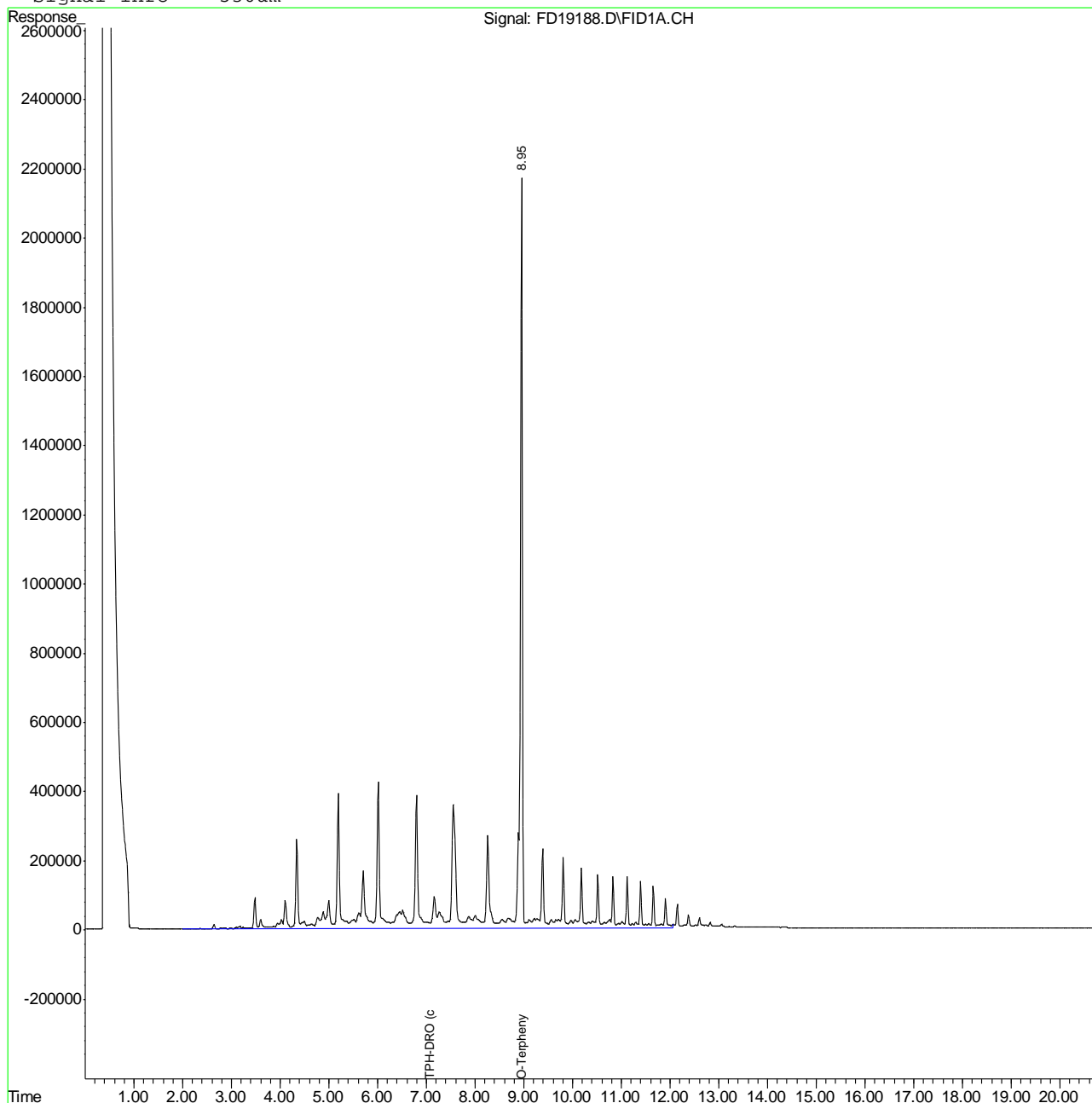


Quantitation Report (QT Reviewed)

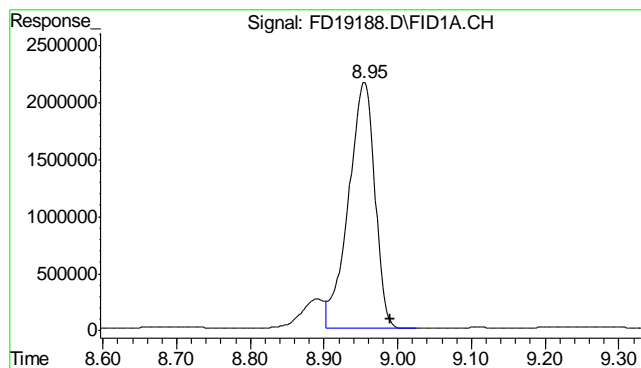
Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD110512\FD19188.D Vial: 25  
 Acq On : 11-6-2012 01:52:58 AM Operator: ashleyv  
 Sample : D40440-1 Inst : FID5  
 Misc : OP6912,GFD968,30.02,,,2,1 Multiplr: 1.00  
 IntFile : autoint1.e  
 Quant Time: Nov 6 9:45 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)  
 Title : 8015B TEH  
 Last Update : Thu Nov 01 16:47:14 2012  
 Response via : Multiple Level Calibration  
 DataAcq Meth : DRO\_FR.M

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

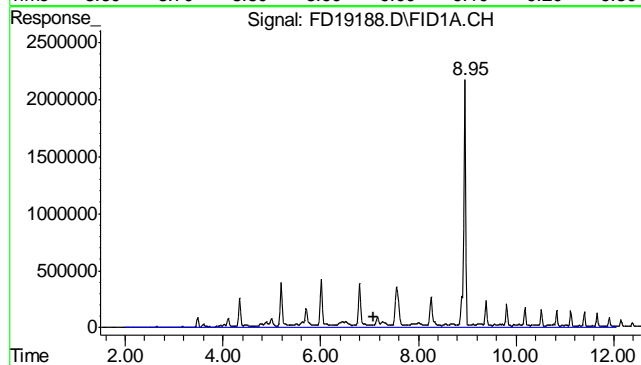


9.1.1  
9



#1 O-Terphenyl

R.T.: 8.955 min  
 Delta R.T.: -0.035 min  
 Response: 53802511  
 Conc: 1138.95 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.075 min  
 Delta R.T.: 0.000 min  
 Response: 206457054  
 Conc: 5361.79 mg/L m

9.1.1  
**9**

## Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD110512\FD19165.D Vial: 3  
Acq On : 11-5-2012 03:10:23 PM Operator: ashleyv  
Sample : OP6912-MB Inst : FID5  
Misc : OP6912,GFD968,30.00,,,2,1 Multiplr: 1.00  
IntFile : autoint1.e  
Quant Time: Nov 05 17:15:20 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Thu Nov 01 16:47:14 2012  
Response via : Initial Calibration  
DataAcq Meth : DRO\_FR.M

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

Compound	R.T.	Response	Conc Units
-----			
System Monitoring Compounds			
1) S O-Terphenyl	8.98	50988063	1079.374 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.08	606347	15.747 mg/L

9.2.1

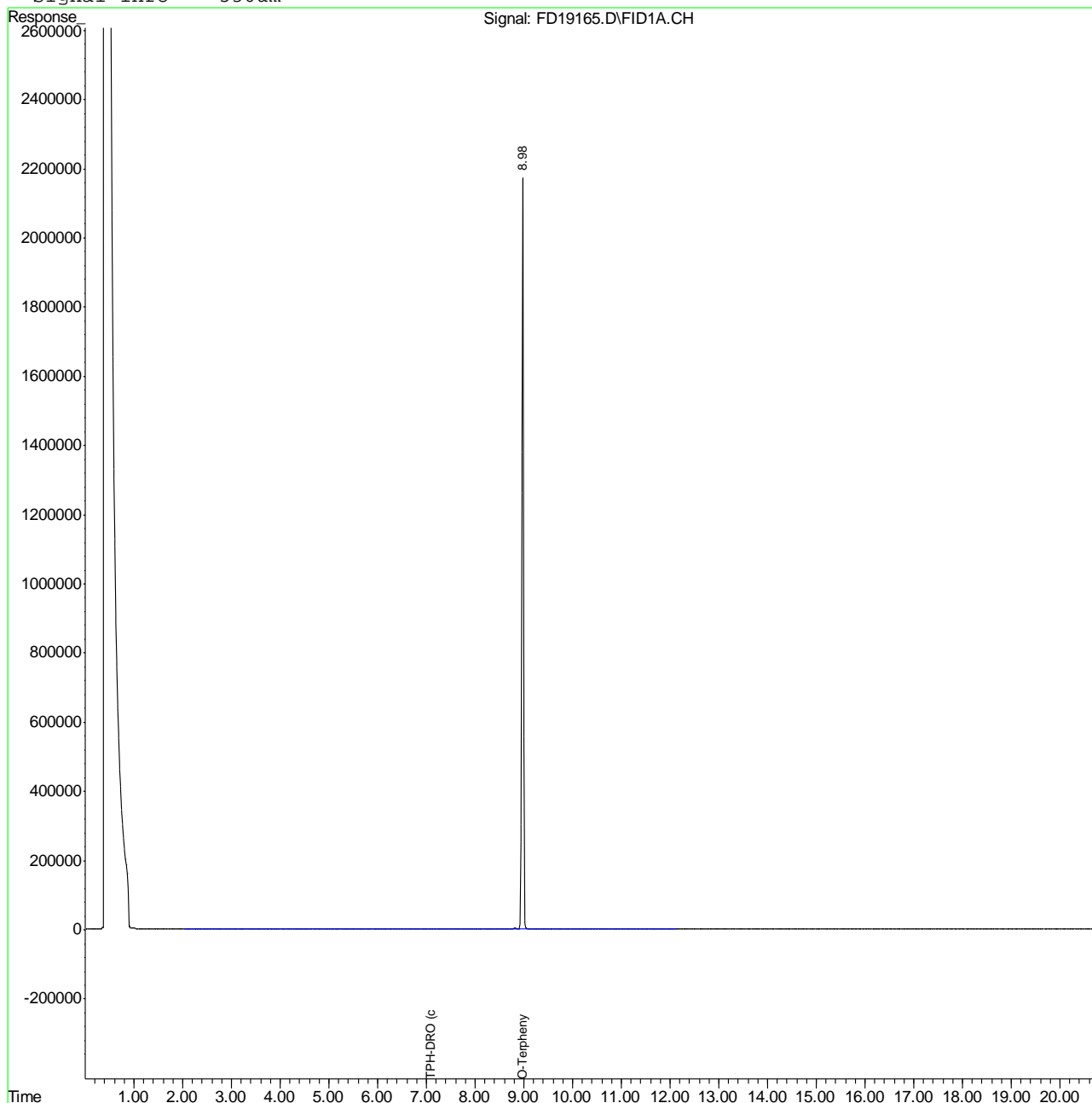
9

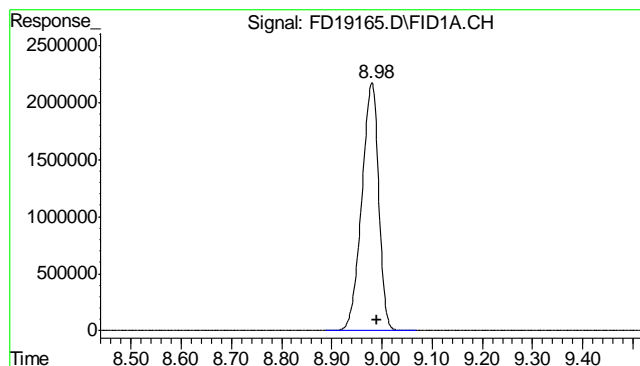
## Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD110512\FD19165.D Vial: 3  
Acq On : 11-5-2012 03:10:23 PM Operator: ashleyv  
Sample : OP6912-MB Inst : FID5  
Misc : OP6912,GFD968,30.00,,,2,1 Multiplr: 1.00  
IntFile : autoint1.e  
Quant Time: Nov 5 17:15 2012 Quant Results File: DRO-GFD823F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD823F.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Thu Nov 01 16:47:14 2012  
Response via : Multiple Level Calibration  
DataAcq Meth : DRO\_FR.M

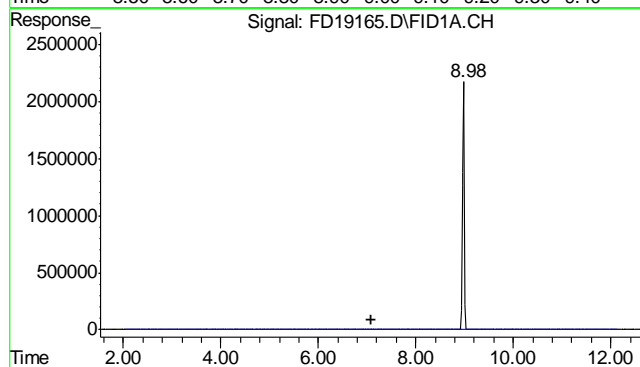
Volume Inj. : 1ul  
Signal Phase : RTX-5  
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.980 min  
Delta R.T.: -0.010 min  
Response: 50988063  
Conc: 1079.37 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.075 min  
Delta R.T.: 0.000 min  
Response: 606347  
Conc: 15.75 mg/L m

9.2.1

9