



06/14/12

Technical Report for

XTO Energy

PCU 296-7A

1007-02

Accutest Job Number: D35266

Sampling Date: 06/07/12

Report to:

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

Total number of pages in report: 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), TX (T104704511-12-1)

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-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Sample Results	5
3.1: D35266-1: RP CRUSHED DAY 5 MB (6/6)	6
Section 4: Misc. Forms	8
4.1: Chain of Custody	9
Section 5: GC Volatiles - QC Data Summaries	11
5.1: Method Blank Summary	12
5.2: Blank Spike Summary	13
5.3: Matrix Spike/Matrix Spike Duplicate Summary	14
Section 6: GC Volatiles - Raw Data	15
6.1: Samples	16
6.2: Method Blanks	21
Section 7: GC Semi-volatiles - QC Data Summaries	26
7.1: Method Blank Summary	27
7.2: Blank Spike Summary	28
7.3: Matrix Spike/Matrix Spike Duplicate Summary	29
Section 8: GC Semi-volatiles - Raw Data	30
8.1: Samples	31
8.2: Method Blanks	34



Sample Summary

XTO Energy

Job No: D35266

PCU 296-7A
Project No: 1007-02

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D35266-1	06/07/12	09:40	DS	06/08/12	SO	Soil	RP CRUSHED DAY 5 MB (6/6)

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



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: XTO Energy

Job No D35266

Site: PCU 296-7A

Report Date 6/14/2012 3:57:14 PM

On 06/08/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.0 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D35266 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: GGB905

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35204-1MS, D35204-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO

Batch ID: OP6034

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35261-1MS, D35261-1MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO

Batch ID: GN15340

- 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 CRUSHED DAY 5 MB (6/6)					Date Sampled:	06/07/12
Lab Sample ID:	D35266-1					Date Received:	06/08/12
Matrix:	SO - Soil					Percent Solids:	91.3
Method:	SW846 8015B						
Project:	PCU 296-7A						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB16278.D	1	06/08/12	SK	n/a	n/a	GGB905
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)	6.31	12	5.9	mg/kg	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	102%		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:	RP CRUSHED DAY 5 MB (6/6)				Date Sampled:	06/07/12
Lab Sample ID:	D35266-1				Date Received:	06/08/12
Matrix:	SO - Soil				Percent Solids:	91.3
Method:	SW846-8015B SW846 3546					
Project:	PCU 296-7A					

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD14194.D	1	06/13/12	AV	06/12/12	OP6034	GFD747
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)	286	7.3	4.7	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	89%		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 # D35266	
Client / Reporting Information		Project Information	
Company Name KRW CONSULTING		Project Name XTO PCU 296-7A	
Street Address 8000 W 14TH AVE STE 200		Street XTO ENERGY	
City State Zip LAKEWOOD CO 80214		Billing Information (If different from Report to)	
Project Contact DWAYNE KNUTSON		Company Name XTO ENERGY	
E-mail		Street Address 21459 CRS	
Phone # 970 488 1098		City State Zip RIFLE CO 81650	
Fax #		Attention: JESSICA DORLING	
Sampler(s) Name(s) DAVID SANDERS		Project Manager JOE HESS	
Phone # 970 488 1098		PO#	
Field ID / Point of Collection RP CRUSHED DAY 5 MB(6/6)		Collection	
MEOH(DI Vol) #		Date Time 6/7/12 9:40	
Sampled by DJS		Matrix SO	
Number of bottles 2		Number of preserved bottles	
HCl		NiOH	
HNO3		H2SO4	
NONE		DI Water	
MEOH		ENCORE	
Biolab		Biolab	
LAB USE ONLY		LAB USE ONLY	
C1		C1	
Comments / Special Instructions		Comments / Special Instructions	
Turnaround Time (Business days)		Turnaround Time (Business days)	
<input type="checkbox"/> Std. 10 Business Days <input checked="" type="checkbox"/> Std. 5 Business Days (By Contract only) <input type="checkbox"/> 5 Day R/SH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> Commercial "B" + Narrative <input type="checkbox"/> FULLT1 (Level 3+4)	
Approved By (Accutest PMI) / Date:		State Forms	
		EDD Format	
		<input checked="" type="checkbox"/> PDF	
Emergency & Rush T/A data available VIA Lablink		Commercial "A" = Results Only Commercial "B" = Results + QC Summary	
Sample Custody must be documented below each time samples change possession, including courier delivery.		Sample Custody must be documented below each time samples change possession, including courier delivery.	
Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [Signature]	6/7/12	1 [Signature]	6/7/12
Relinquished by Sampler:	Date Time:	Received By:	Date Time:
3		3	
Relinquished by:	Date Time:	Received By:	Date Time:
5		5	
Custody Seal #	Intact	Preserved where applicable	On Ice
	<input type="checkbox"/> Not Intact	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
			Cooler Temp. 4.0

D35266: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D35266

Client: KRW

Immediate Client Services Action Required: No

Date / Time Received: 6/8/2012 12:15:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XTO

Airbill #'s: CO

Cooler Security

Y or N

Y or N

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

Cooler Temperature

Y or N

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

Quality Control Preservation

Y or N

N/A

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

Sample Integrity - Documentation

Y or N

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

Sample Integrity - Condition

Y or N

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

Sample Integrity - Instructions

Y or N N/A

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

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www.accutest.com

GC Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D35266

Account: XTOKRWR XTO Energy

Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB905-MB	GB16263.D	1	06/08/12	SK	n/a	n/a	GGB905

The QC reported here applies to the following samples:

Method: SW846 8015B

D35266-1

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	96% 60-140%

Blank Spike Summary

Page 1 of 1

Job Number: D35266
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB905-BS	GB16264.D	1	06/08/12	SK	n/a	n/a	GGB905

The QC reported here applies to the following samples:

Method: SW846 8015B

D35266-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	127	115	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	102%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D35266
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D35204-1MS	GB16266.D	1	06/08/12	SK	n/a	n/a	GGB905
D35204-1MSD	GB16267.D	1	06/08/12	SK	n/a	n/a	GGB905
D35204-1	GB16265.D	1	06/08/12	SK	n/a	n/a	GGB905

The QC reported here applies to the following samples:

Method: SW846 8015B

D35266-1

CAS No.	Compound	D35204-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	11.3	J	144	172	112	173	112	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D35204-1	Limits
120-82-1	1,2,4-Trichlorobenzene	100%	102%	89%	60-140%

GC Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\060812\GB16278.D\FID1A.CH Vial: 19
 Signal #2 : Y:\1\DATA\060812\GB16278.D\FID2B.CH
 Acq On : 8 Jun 2012 7:51 pm Operator: StephK
 Sample : D35266-1, 50X Inst : GC/MS Ins
 Misc : GC2896,GGB905,5.030,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jun 11 09:23:08 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Jun 08 10:53:54 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	

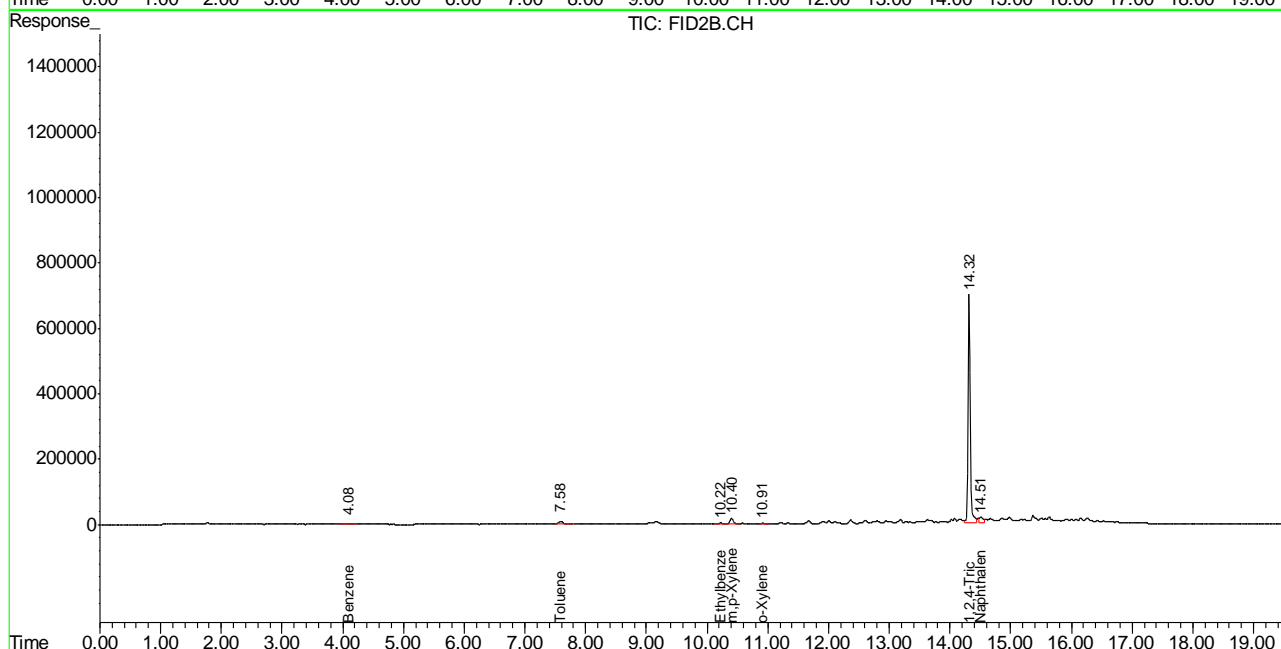
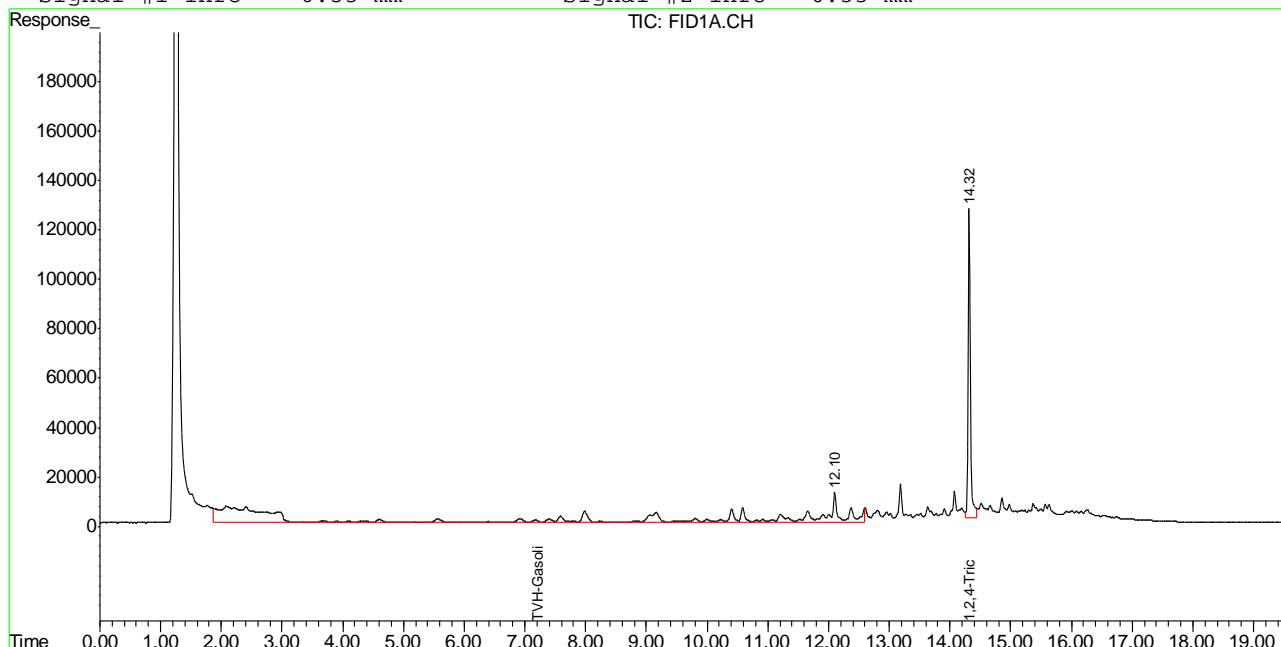
System Monitoring Compounds						
2) S	1,2,4-Trichlorobenzene	14.32	3187088	101.713 %	m	
10) S	1,2,4-Trichlorobenzene (P)	14.32	17117695	105.322 %		
Target Compounds						
1) H	TVH-Gasoline	7.23	8803411	0.107 mg/L		
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d	
5) T	Benzene	4.09	87989	0.218 ug/L		
6) T	Toluene	7.58	535782	1.352 ug/L		
7) T	Ethylbenzene	10.22	165205	0.488 ug/L		
8) T	m,p-Xylene	10.40	801512	1.822 ug/L		
9) T	o-Xylene	10.91	121438	0.370 ug/L		
11) T	Naphthalene	14.51	821180	4.162 ug/L		

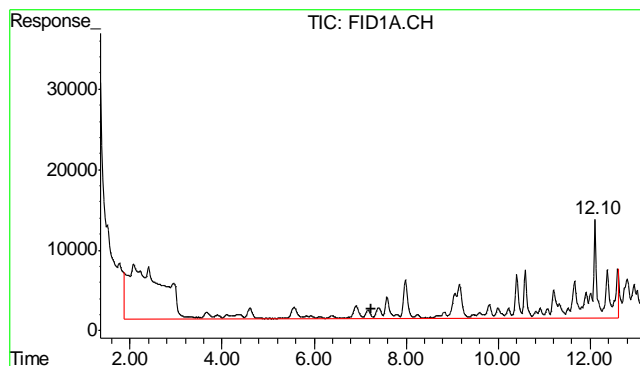
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\060812\GB16278.D\FID1A.CH Vial: 19
 Signal #2 : Y:\1\DATA\060812\GB16278.D\FID2B.CH
 Acq On : 8 Jun 2012 7:51 pm Operator: StephK
 Sample : D35266-1, 50X Inst : GC/MS Ins
 Misc : GC2896,GGB905,5.030,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jun 11 8:28 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Jun 08 10:53:54 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

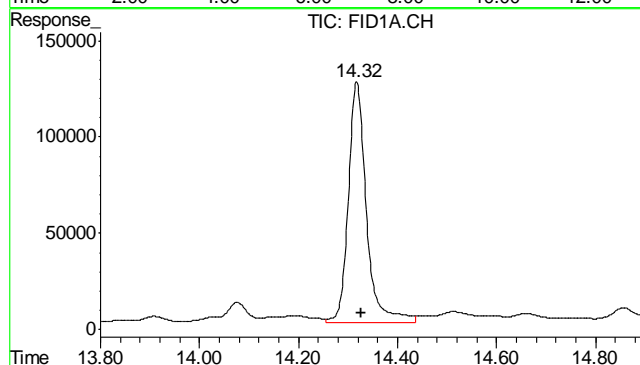
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





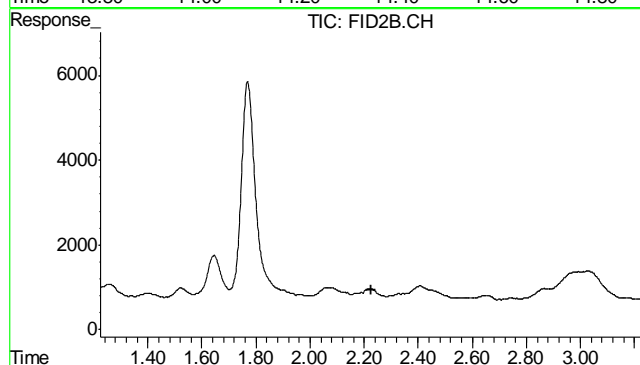
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 8803411
Conc: 0.11 mg/L m



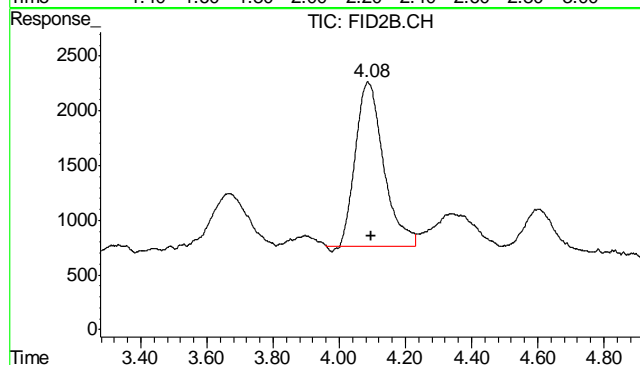
#2 1,2,4-Trichlorobenzene

R.T.: 14.317 min
Delta R.T.: -0.010 min
Response: 3187088
Conc: 101.71 % m



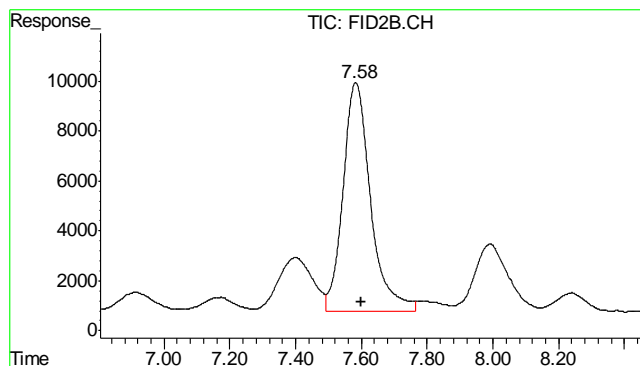
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.225 min
Response: 0
Conc: N.D.



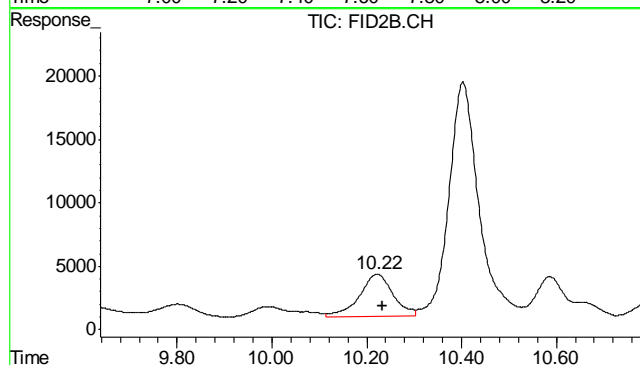
#5 Benzene

R.T.: 4.086 min
Delta R.T.: -0.010 min
Response: 87989
Conc: 0.22 ug/L



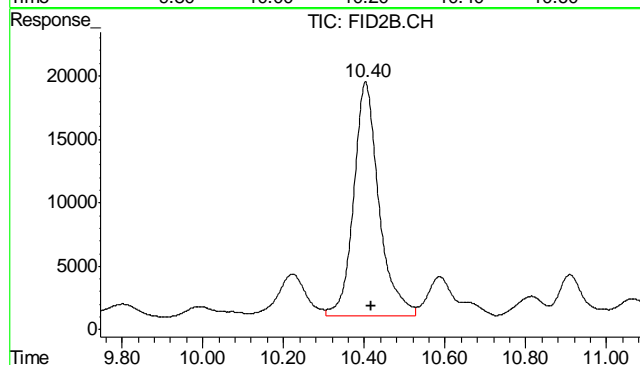
#6 Toluene

R.T.: 7.583 min
Delta R.T.: -0.014 min
Response: 535782
Conc: 1.35 ug/L



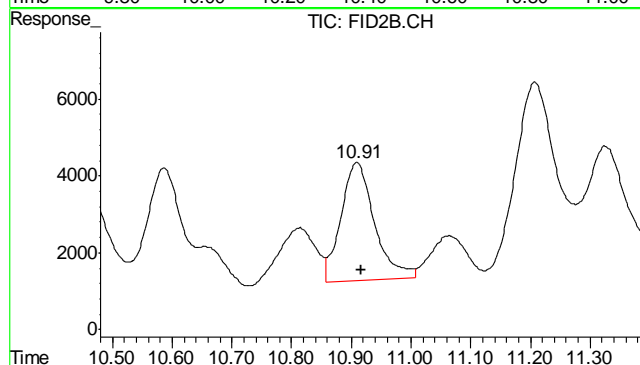
#7 Ethylbenzene

R.T.: 10.222 min
Delta R.T.: -0.012 min
Response: 165205
Conc: 0.49 ug/L



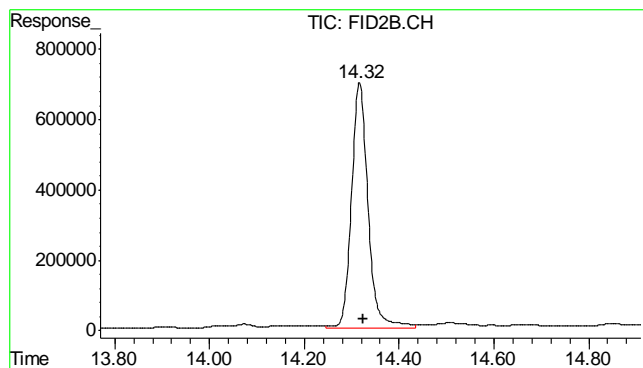
#8 m,p-Xylene

R.T.: 10.403 min
Delta R.T.: -0.014 min
Response: 801512
Conc: 1.82 ug/L



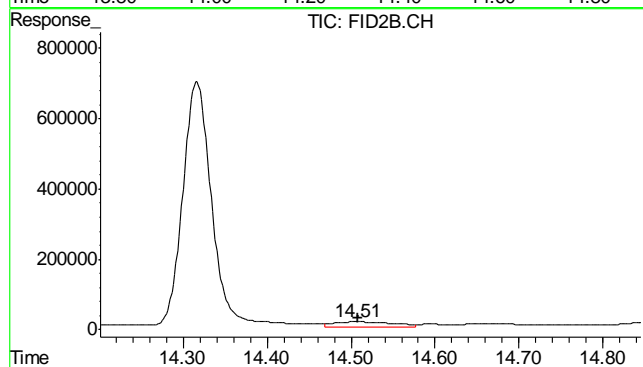
#9 o-Xylene

R.T.: 10.909 min
Delta R.T.: -0.008 min
Response: 121438
Conc: 0.37 ug/L



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

R.T.: 14.317 min
 Delta R.T.: -0.009 min
 Response: 17117695
 Conc: 105.32 %



#11 Naphthalene

R.T.: 14.507 min
 Delta R.T.: 0.000 min
 Response: 821180
 Conc: 4.16 ug/L

6.1.1

6

Judy Melson
06/11/12 13:17

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\060812\GB16263.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\060812\GB16263.D\FID2B.CH
Acq On : 8 Jun 2012 10:29 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2896,GGB905,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 08 10:54:16 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Jun 08 10:53:54 2012
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.33	2996643	95.635 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.32	16591919	102.087 %	
Target Compounds					
1) H	TVH-Gasoline	7.23	5672093	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	7.60	165566	0.418	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	14.50	220389	1.117	ug/L

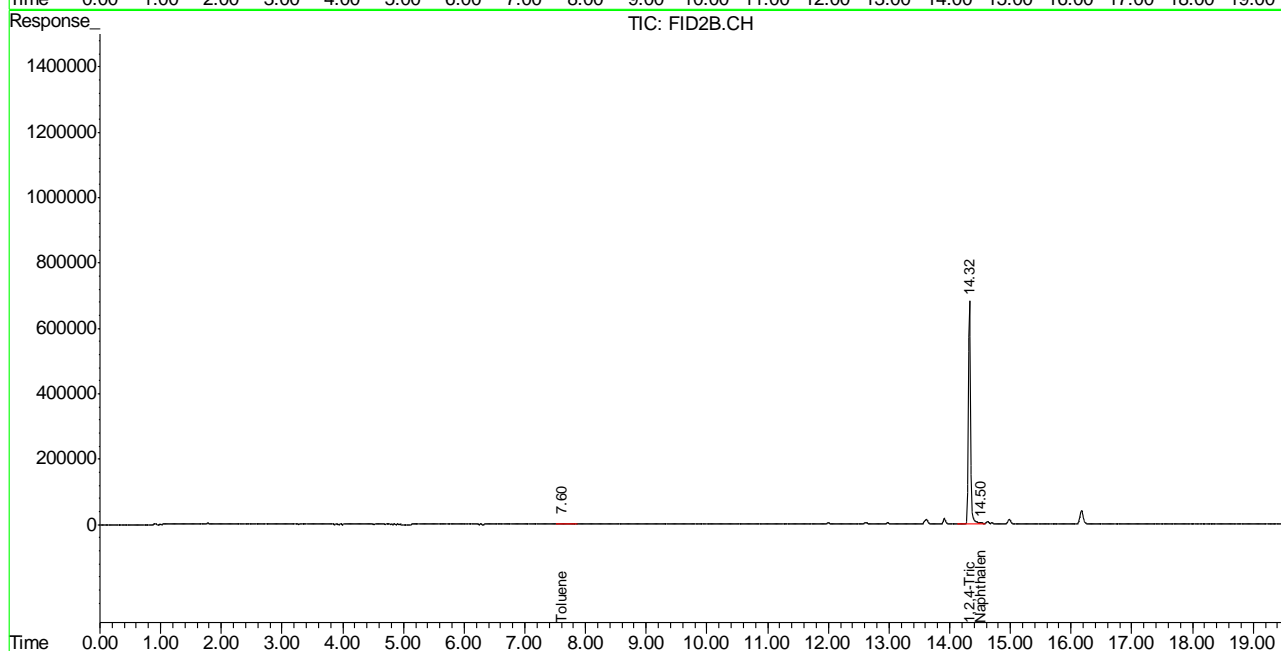
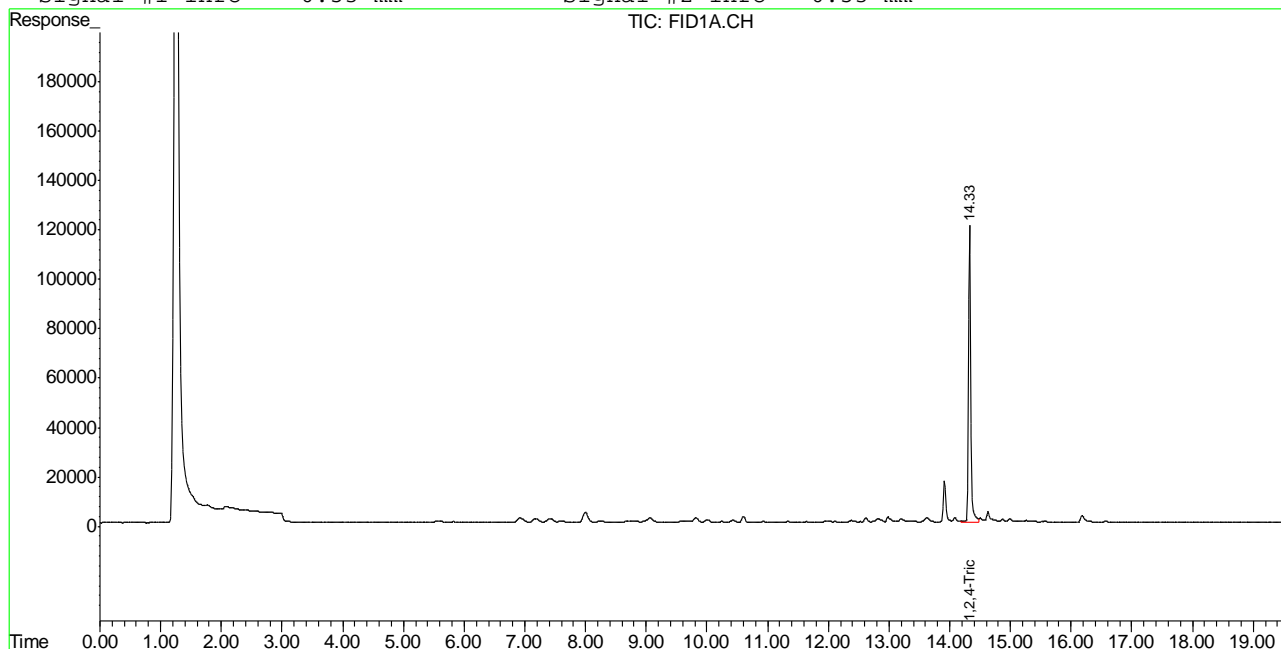
(f)=RT Delta > 1/2 Window (m)=manual int.
GB16263.D TB868GB868SOIL.M Mon Jun 11 09:27:49 2012 GC

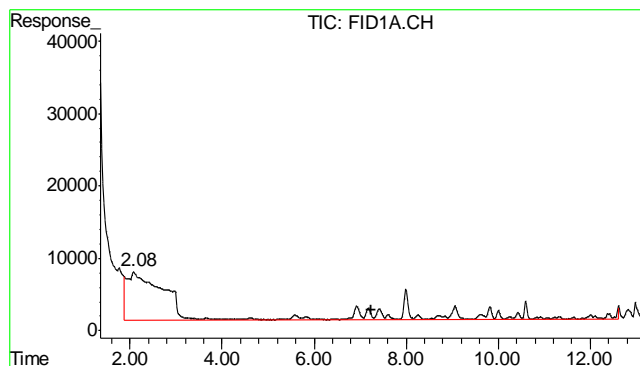
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\060812\GB16263.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\060812\GB16263.D\FID2B.CH
Acq On : 8 Jun 2012 10:29 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2896,GGB905,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 8 9:57 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Jun 08 10:53:54 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

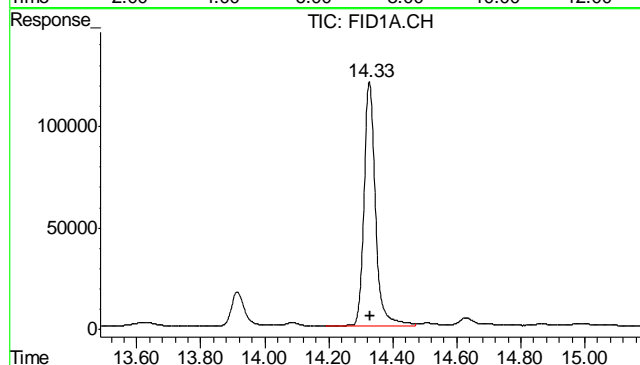
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





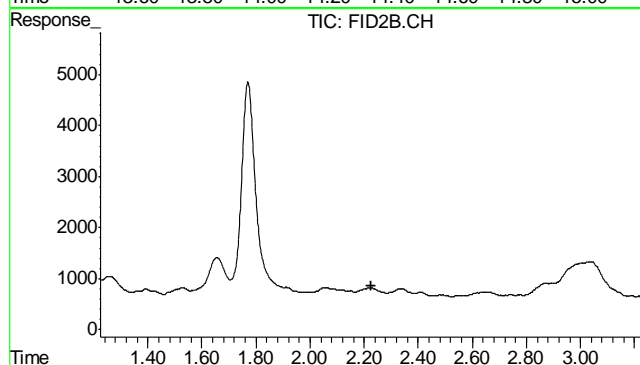
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 5672093
Conc: N.D.



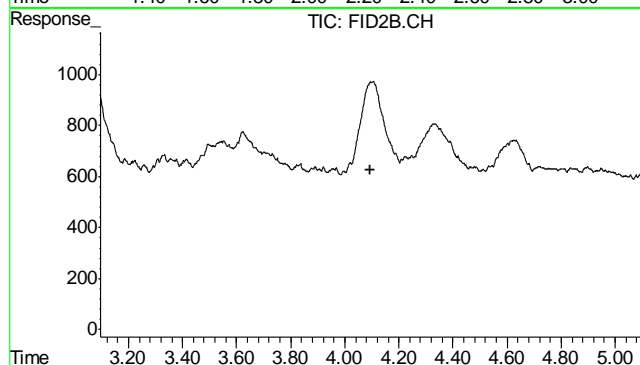
#2 1,2,4-Trichlorobenzene

R.T.: 14.327 min
Delta R.T.: 0.000 min
Response: 2996643
Conc: 95.64 % m



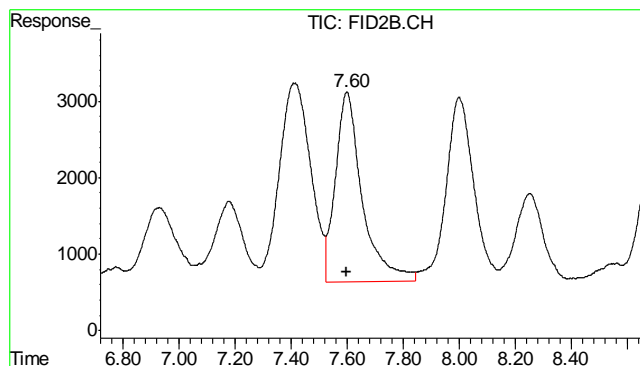
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.225 min
Response: 0
Conc: N.D.



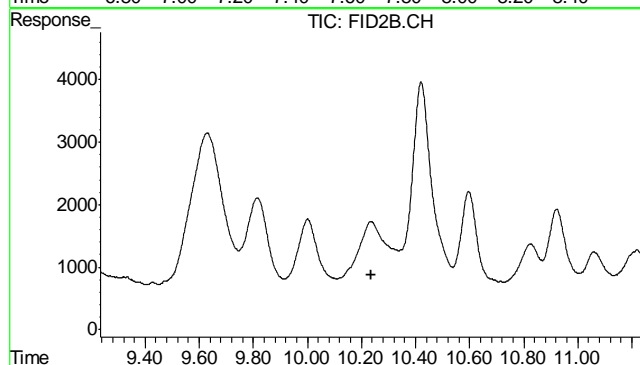
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.095 min
Response: 0
Conc: N.D.



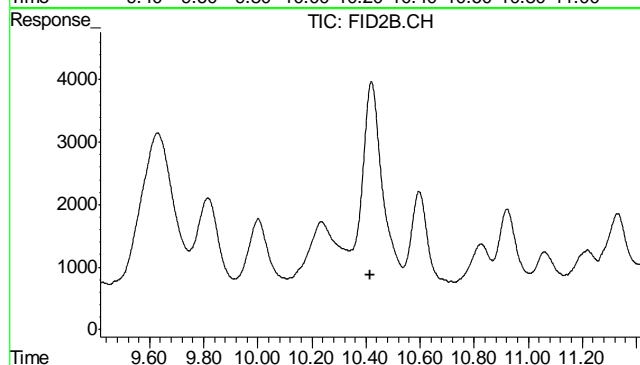
#6 Toluene

R.T.: 7.598 min
Delta R.T.: 0.000 min
Response: 165566
Conc: 0.42 ug/L



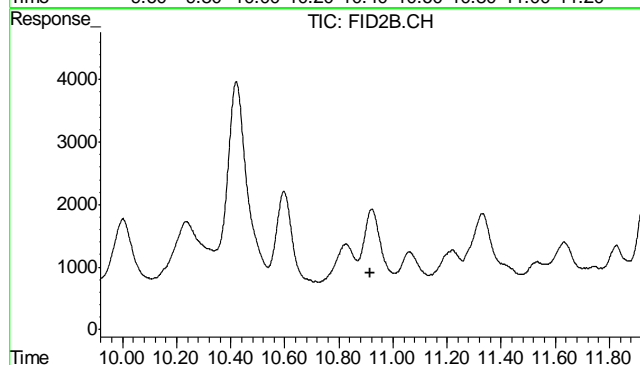
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.234 min
Response: 0
Conc: N.D.



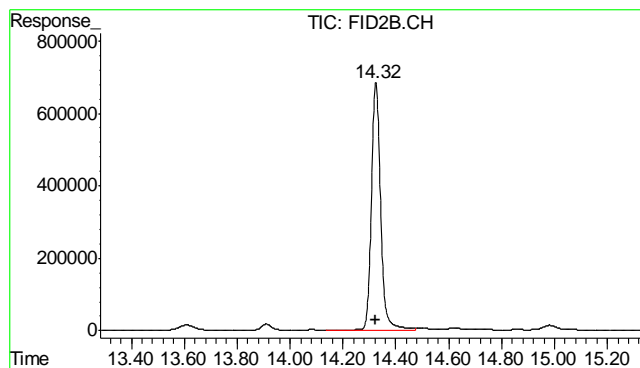
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.417 min
Response: 0
Conc: N.D.



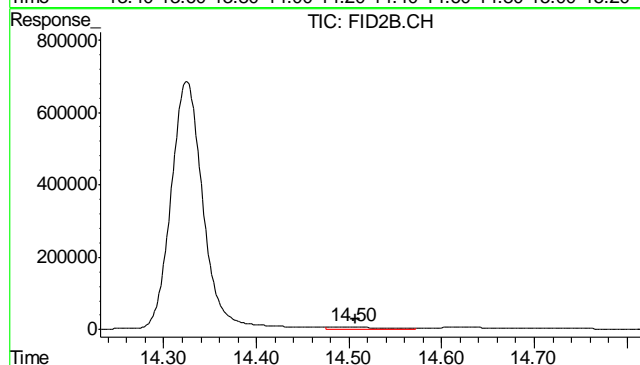
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.917 min
Response: 0
Conc: N.D.



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

R.T.: 14.325 min
Delta R.T.: 0.000 min
Response: 16591919
Conc: 102.09 %



#11 Naphthalene

R.T.: 14.503 min
Delta R.T.: -0.005 min
Response: 220389
Conc: 1.12 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: D35266
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6034-MB	FD14170.D	1	06/13/12	AV	06/12/12	OP6034	GFD747

The QC reported here applies to the following samples:

Method: SW846-8015B

D35266-1

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

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

Blank Spike Summary

Page 1 of 1

Job Number: D35266

Account: XTOKRWR XTO Energy

Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6034-BS	FD14172.D	1	06/13/12	AV	06/12/12	OP6034	GFD747

The QC reported here applies to the following samples:

Method: SW846-8015B

D35266-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	485	73	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	87%	43-136%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D35266
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6034-MS	FD14174.D	2	06/13/12	AV	06/12/12	OP6034	GFD747
OP6034-MSD	FD14176.D	2	06/13/12	AV	06/12/12	OP6034	GFD747
D35261-1	FD14178.D	2	06/13/12	AV	06/12/12	OP6034	GFD747

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

D35266-1

CAS No.	Compound	D35261-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	155		772	601	58	548	51	9	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D35261-1	Limits
84-15-1	o-Terphenyl	72%	65%	74%	43-136%

7.3.1
7

GC Semi-volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061312.SEC\FD14194.D Vial: 65
Acq On : 13 Jun 2012 10:03 pm Operator: ashleyv
Sample : D35266-1 Inst : FID5
Misc : OP6034,GFD747,30.01,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 14 10:47:02 2012 Quant Results File: DRO-GFD743R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD743R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Jun 12 11:16:41 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	9.60	76945136	1772.263 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.40	325882292	7847.764 mg/L

8.1.1

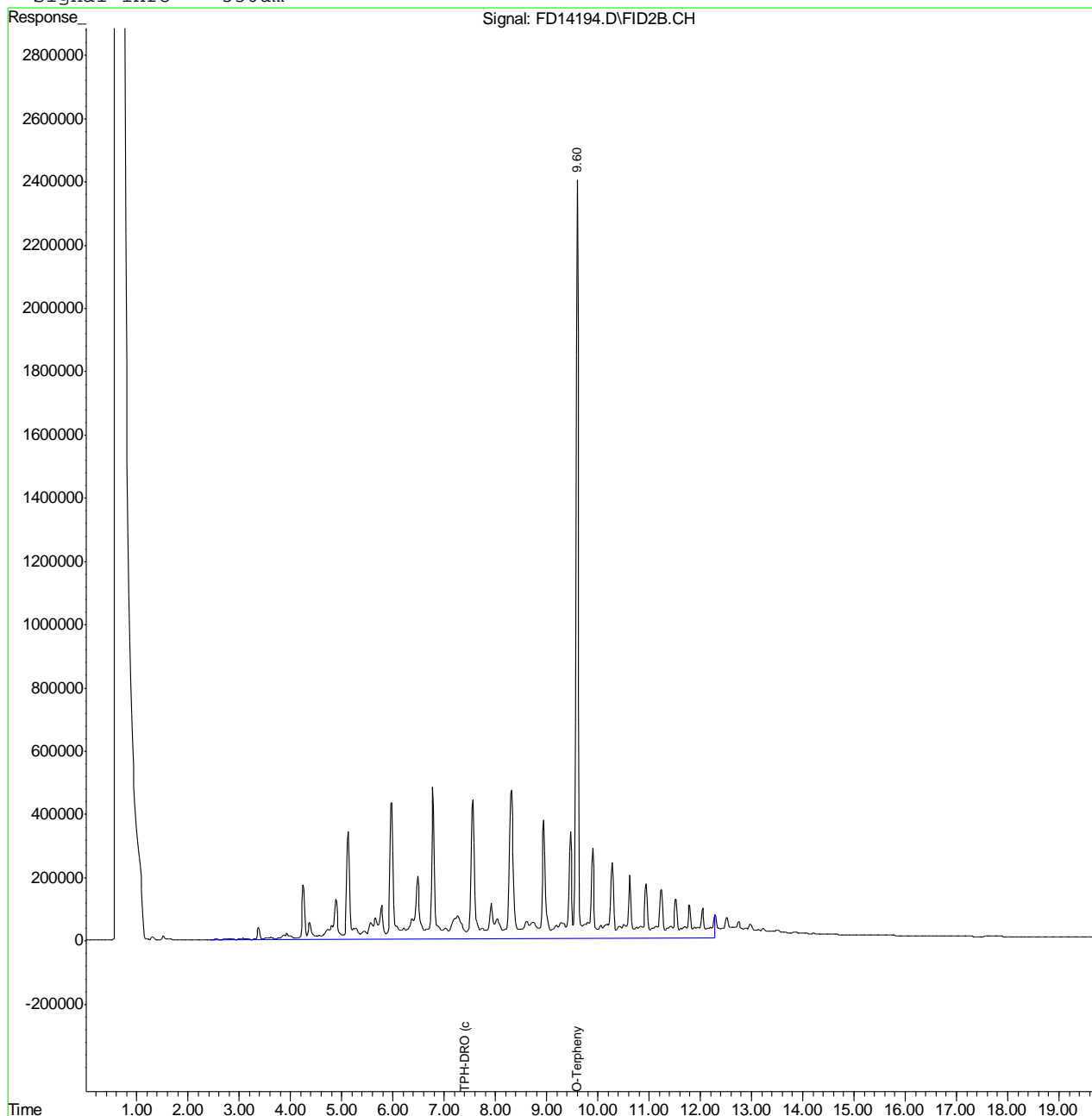
8

Quantitation Report (QT Reviewed)

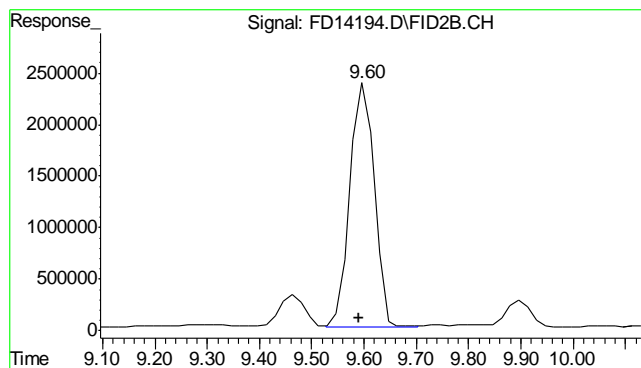
Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061312.SEC\FD14194.D Vial: 65
 Acq On : 13 Jun 2012 10:03 pm Operator: ashleyv
 Sample : D35266-1 Inst : FID5
 Misc : OP6034,GFD747,30.01,,,1,1 Multiplr: 1.00
 IntFile : autoint1.e
 Quant Time: Jun 14 10:47 2012 Quant Results File: DRO-GFD743R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD743R.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Tue Jun 12 11:16:41 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : DRODUAL.M

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

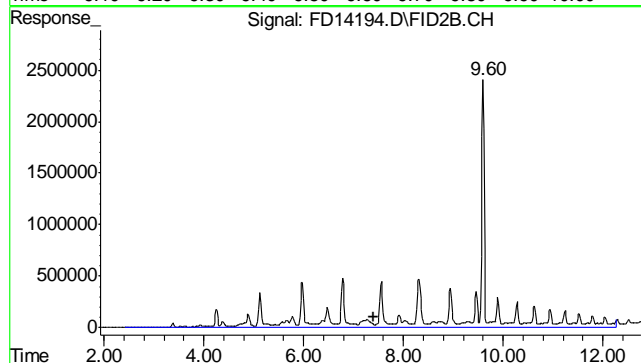


8.1.1
8



#1 O-Terphenyl

R.T.: 9.604 min
 Delta R.T.: 0.014 min
 Response: 76945136
 Conc: 1772.26 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.400 min
 Delta R.T.: 0.000 min
 Response: 325882292
 Conc: 7847.76 mg/L m

8.1.1

8

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061312.SEC\FD14170.D Vial: 53
Acq On : 6-13-2012 04:47:59 PM Operator: ashleyv
Sample : OP6034-MB Inst : FID5
Misc : OP6034,GFD747,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 14 09:46:50 2012 Quant Results File: DRO-GFD743R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD743R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Jun 12 11:16:41 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	9.60	77628815	1788.010 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.40	3071240	73.960 mg/L

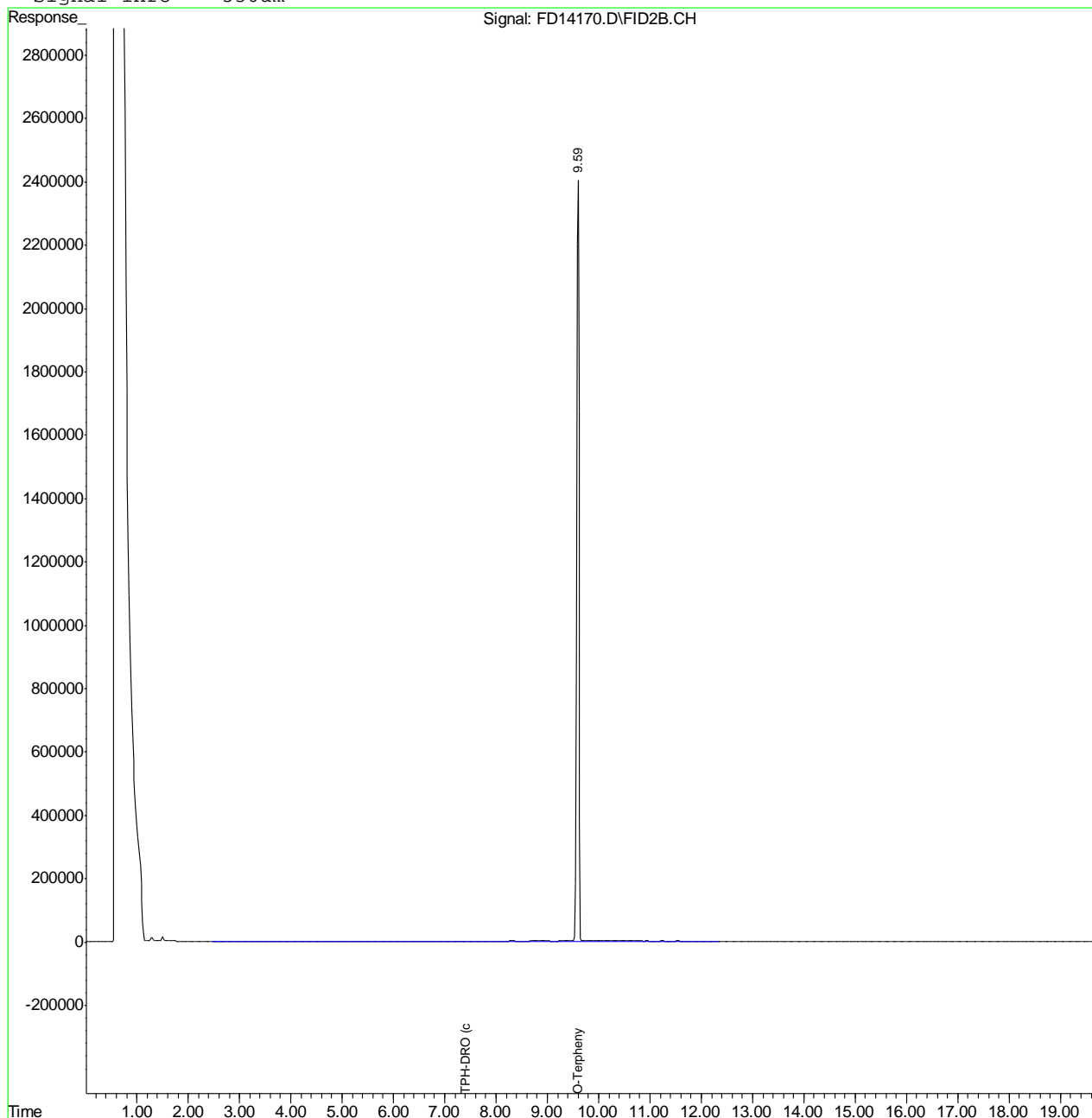
(f)=RT Delta > 1/2 Window (m)=manual int.
FD14170.D DRO-GFD743R.M Thu Jun 14 11:05:36 2012 GC

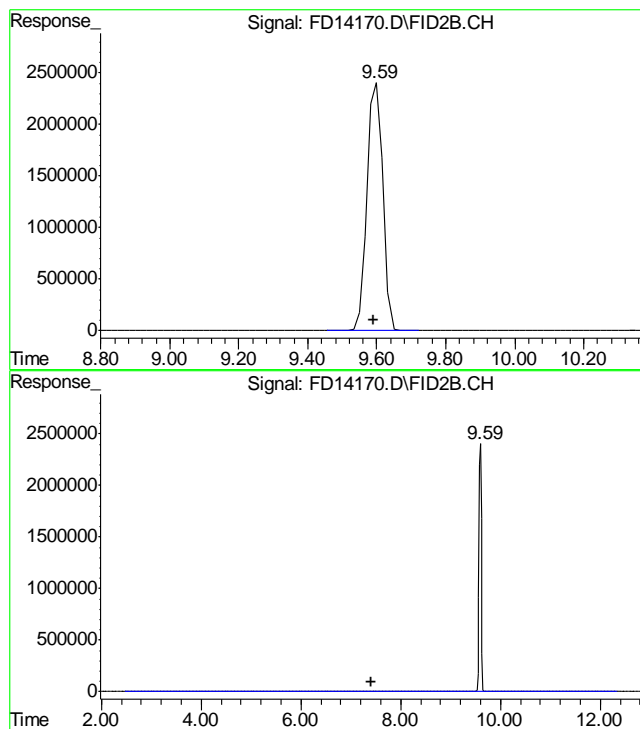
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061312.SEC\FD14170.D Vial: 53
Acq On : 6-13-2012 04:47:59 PM Operator: ashleyv
Sample : OP6034-MB Inst : FID5
Misc : OP6034,GFD747,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 14 9:46 2012 Quant Results File: DRO-GFD743R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD743R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Jun 12 11:16:41 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.: 9.601 min
Delta R.T.: 0.011 min
Response: 77628815
Conc: 1788.01 mg/L

#2 TPH-DRO (c10-c28)

R.T.: 7.400 min
Delta R.T.: 0.000 min
Response: 3071240
Conc: 73.96 mg/L m

8.2.1

8