Mountain States ACCUTEST LABORATORIES

04/20/12

Technical Report for

XTO Energy

PCU 296-7A

1007-02

Accutest Job Number: D33671

Sampling Date: 04/12/12

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**

ACCREDITED IN ACCORDANCE WITH nelac

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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Sections: 1 2 3 4 5 6 7 8

Table of Contents

-1-

Sample Summary

XTO Energy

Job No: D33671

PCU 296-7A
Project No: 1007-02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D33671-1	04/12/12	13:45	CB	04/14/12	SO	Soil	RP-2 COMPOSITE

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	XTO Energy	**Job No**	D33671
Site:	PCU 296-7A	**Report Date**	4/20/2012 12:11:04 PM

On 04/14/2012, 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 D33671 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:** GGB877

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33658-1MS, D33658-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP5724

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33661-1MS, D33661-1MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO **Batch ID:** GN14541

- 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.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	RP-2 COMPOSITE		
Lab Sample ID:	D33671-1	**Date Sampled:**	04/12/12
Matrix:	SO - Soil	**Date Received:**	04/14/12
Method:	SW846 8015B	**Percent Solids:**	88.2
Project:	PCU 296-7A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15734.D	1	04/16/12	SK	n/a	n/a	GGB877
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	6.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	100%		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

Client Sample ID: RP-2 COMPOSITE
Lab Sample ID: D33671-1
Matrix: SO - Soil
Method: SW846-8015B SW846 3546
Project: PCU 296-7A

Date Sampled: 04/12/12
Date Received: 04/14/12
Percent Solids: 88.2

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH003471.D	1	04/19/12	AV	04/16/12	OP5724	GFH186
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	32.4	15	9.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	80%		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

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST LABORATORIES

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

PAGE 1 OF 1

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: D33671

Client / Reporting Information

Company Name: KRW Consulting Inc
Street Address: 8000 W. 14th Ave Ste 200
City: Lakewood State: CO Zip: 80214
Project Contact: Dwayne Knudson E-mail:
Phone #: 970 488 1048 Fax #:
Sampler(s) Name(s): Craig Bourger Phone #: 970488 1048

Project Information

Project Name: XTO PCU 296-7A
Street:
City:
Project#: 100702
Client PO#:
Project Manager: Joe Hall

Billing Information (If different from Report to)

Company Name: XTO Energy
Street Address: 21459 CR 5
City: Rifle State: CO Zip: 81650
Attention: Jessica Dooling PO#:

Requested Analysis (see TEST CODE sheet)

TPH (DRO/GRO)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bisulfate	LAB USE ONLY
	RP-2 Composite		4/12/12	13:45	CAB	SO	2					2					01

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] Commercial "B" +Narrative
- [ ] FULLT1 (Level 3+4)
- [ ] State Forms
- [ ] EDD Format
- [x] PDF

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary

Comments / Special Instructions

Please email results to KRW
Preamble Cr Team

Turnaround Time (Business days)

Approved By (Accutest PM): / Date:

- [ ] Std. 10 Business Days
- [x] Std. 5 Business Days (By Contract only)
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		4/13/12 1430	Rifle Service Center	2		2 FedEx
3			3	4		4
5			5			

Custody Seal # FedEx | Intact | Not Intact | Preserved where applicable | On Ice | Cooler Temp. 4.0

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D33671 **Client:** KRW CONSULTING, INC **Immediate Client Services Action Required:** No

Date / Time Received: 4/14/2012 11:10:00 AM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: XTO PCU 296-7A **Airbill #'s:** HD

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	
2. Trip Blank listed on COC:	☐		☐	
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume rec'd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www/accutest.com

D33671: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D33671
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB877-MB	GB15725.D	1	04/16/12	SK	n/a	n/a	GGB877

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

D33671-1

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	93%	60-140%

Blank Spike Summary

Job Number: D33671
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB877-BS	GB15726.D	1	04/16/12	SK	n/a	n/a	GGB877

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

D33671-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	118	107	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: D33671
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D33658-1MS	GB15728.D	1	04/16/12	SK	n/a	n/a	GGB877
D33658-1MSD	GB15729.D	1	04/16/12	SK	n/a	n/a	GGB877
D33658-1	GB15727.D	1	04/16/12	SK	n/a	n/a	GGB877

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

D33671-1

CAS No.	Compound	D33658-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		117	134	114	133	114	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D33658-1	Limits
120-82-1	1,2,4-Trichlorobenzene	102%	102%	96%	60-140%

Mountain States ACCUTEST LABORATORIES

GC Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\041612\GB15734.D\FID1A.CH Vial: 13
Signal #2 : Y:\1\DATA\041612\GB15734.D\FID2B.CH
Acq On : 16 Apr 2012 5:27 pm Operator: StephK
Sample : D33671-1, 50X Inst : GC/MS Ins
Misc : GC2758,GGB877,5.020,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Apr 17 08:40:06 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Apr 12 09:39:07 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	3143411	100.319	%
10) S	1,2,4-Trichlorobenzene (P)	14.34	16542454	101.782	%
	Target Compounds				
1) H	TVH-Gasoline	7.23	3479747	<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	0.00	0	N.D.	ug/L d
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	279103	1.415	ug/L

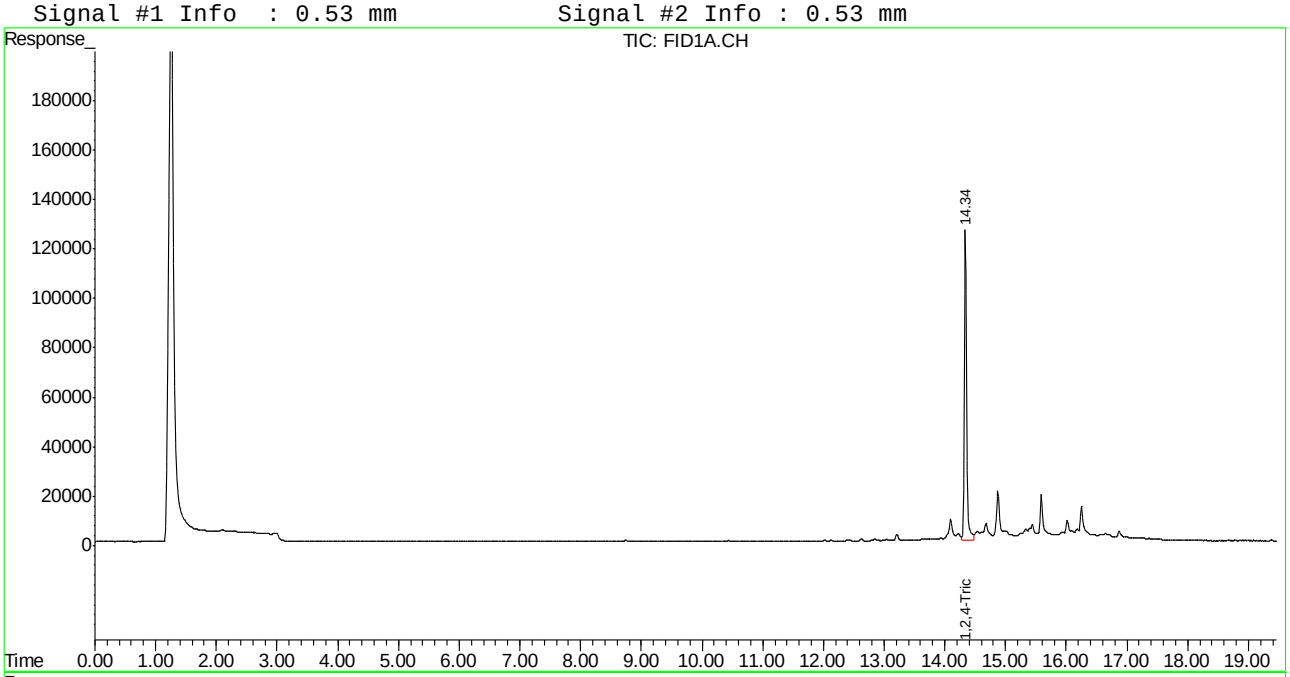
(f)=RT Delta > 1/2 Window (m)=manual int.
GB15734.D TB868GB868SOIL.M Tue Apr 17 09:09:55 2012 GC Page 1

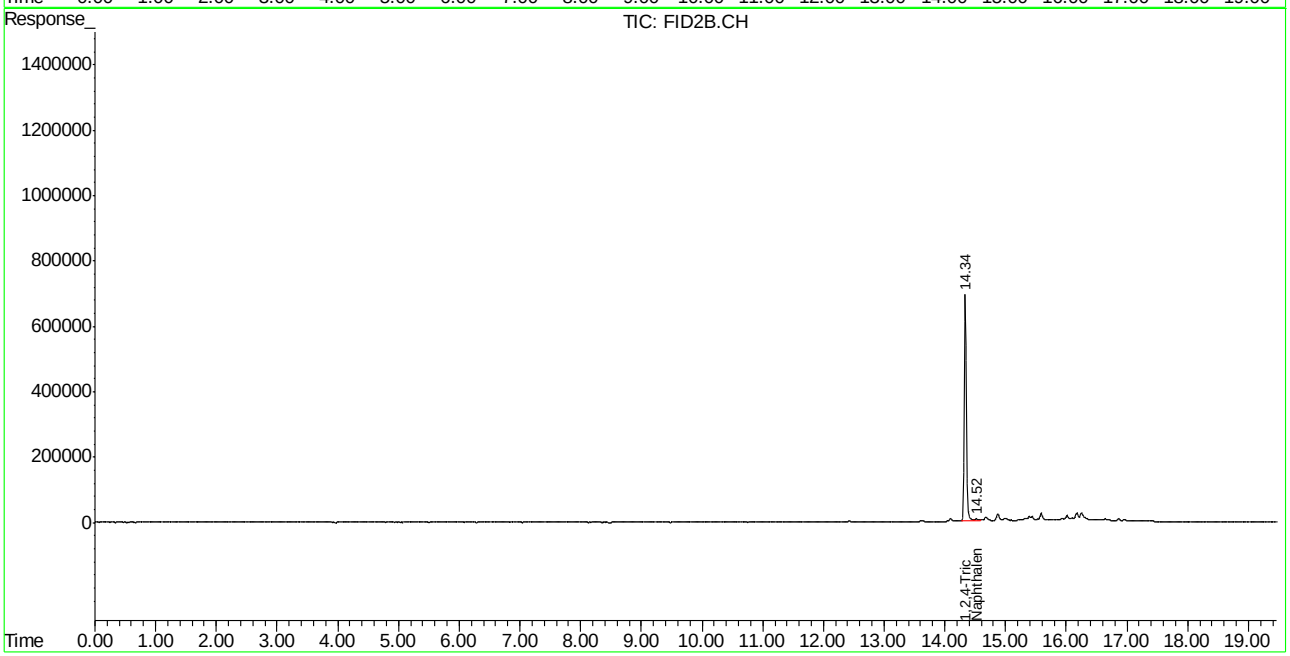
Quantitation Report (QT Reviewed)

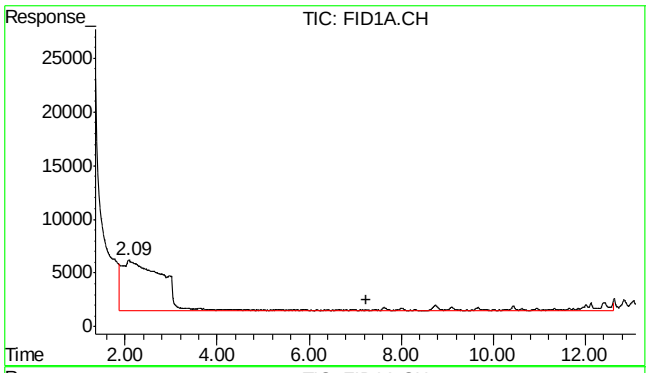
Signal #1 : Y:\1\DATA\041612\GB15734.D\FID1A.CH Vial: 13
Signal #2 : Y:\1\DATA\041612\GB15734.D\FID2B.CH
Acq On : 16 Apr 2012 5:27 pm Operator: StephK
Sample : D33671-1, 50X Inst : GC/MS Ins
Misc : GC2758,GGB877,5.020,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Apr 17 6:54 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Apr 12 09:39:07 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

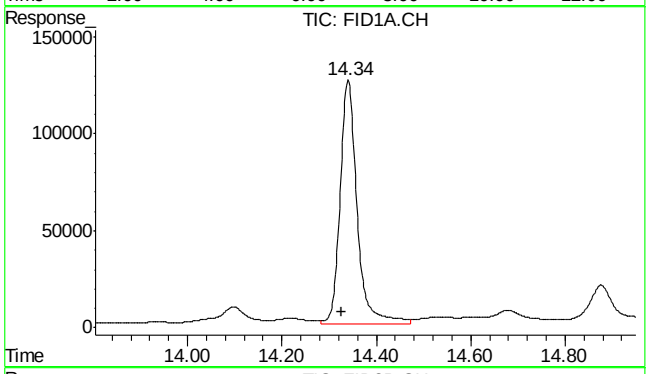






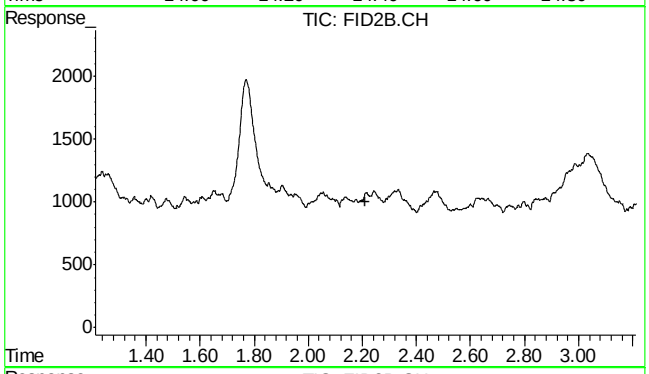
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 3479747
Conc: N.D.



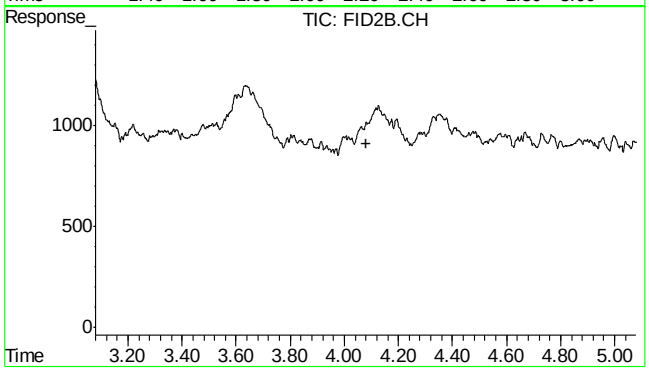
#2 1,2,4-Trichlorobenzene

R.T.: 14.341 min
Delta R.T.: 0.015 min
Response: 3143411
Conc: 100.32 %



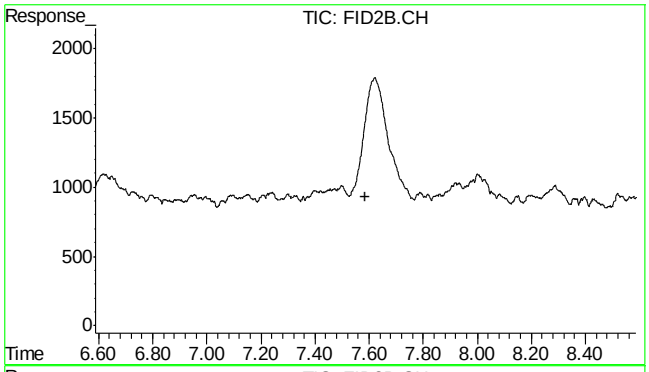
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.212 min
Response: 0
Conc: N.D.



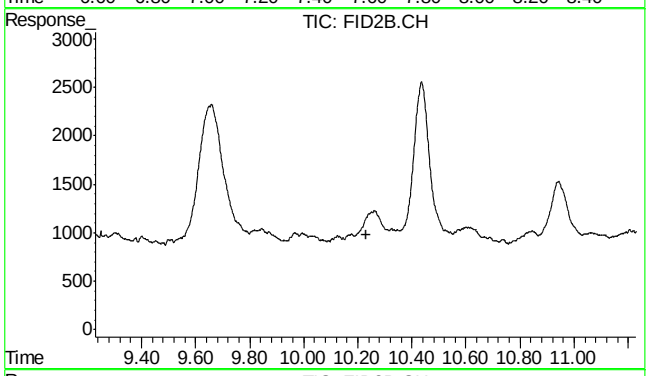
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.079 min
Response: 0
Conc: N.D.



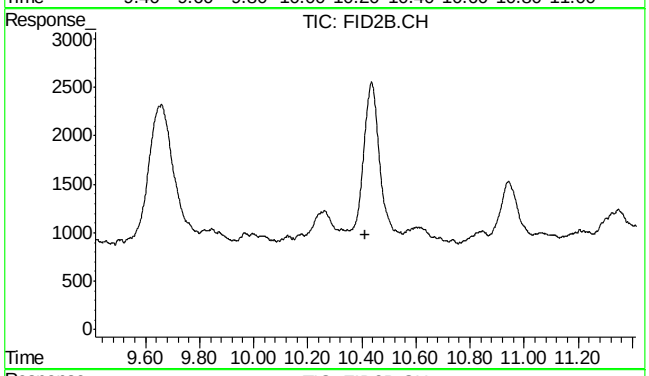
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 7.587 min
Response: 0
Conc: N.D.



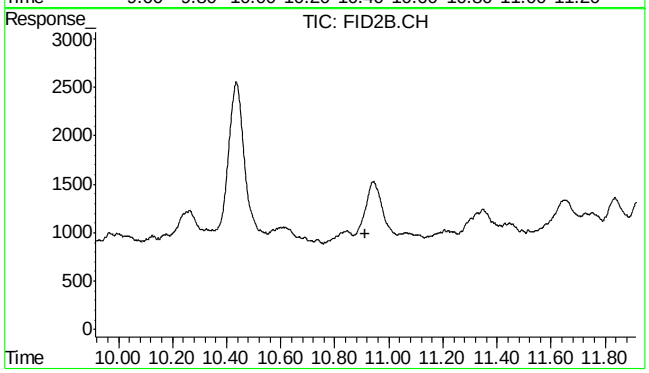
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.230 min
Response: 0
Conc: N.D.



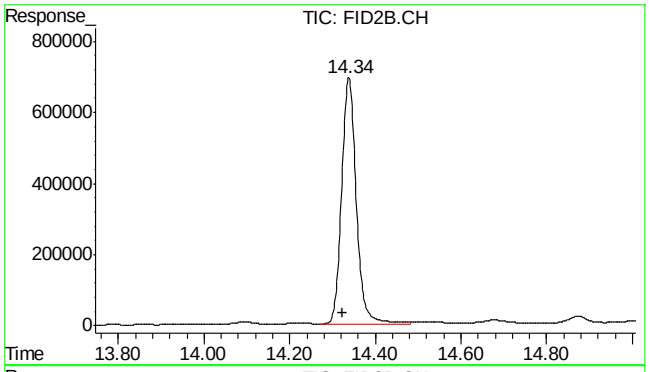
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.414 min
Response: 0
Conc: N.D.



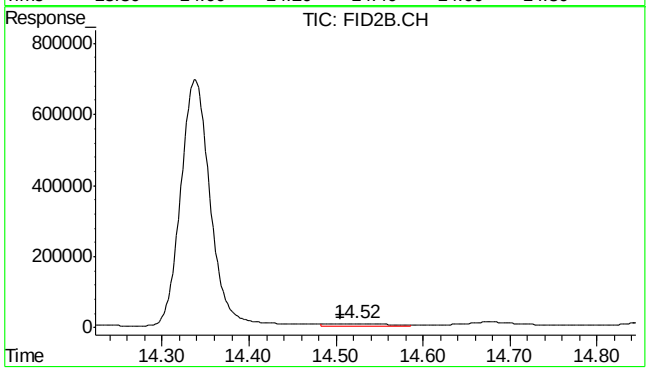
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.914 min
Response: 0
Conc: N.D.



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

R.T.: 14.338 min
Delta R.T.: 0.014 min
Response: 16542454
Conc: 101.78 %



#11 Naphthalene

R.T.: 14.523 min
Delta R.T.: 0.018 min
Response: 279103
Conc: 1.41 ug/L

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 04/17/12 11:29

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\041612\GB15725.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\041612\GB15725.D\FID2B.CH
Acq On : 16 Apr 2012 12:07 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2758,GGB877,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Apr 16 13:26:01 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Apr 12 09:39:07 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	2905230	92.718	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.32	15643897	96.254	%	
	Target Compounds					
1) H	TVH-Gasoline	7.23	3839622	<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	108790	0.275	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	227054	1.151	ug/L	

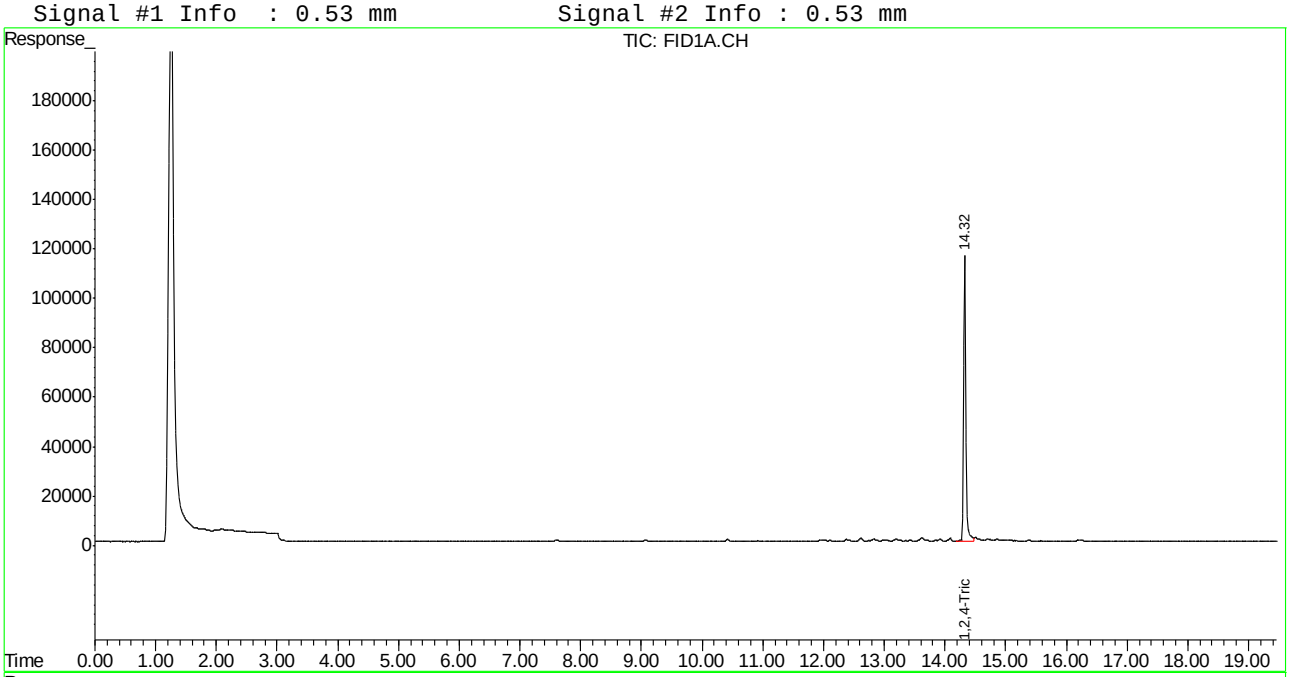
(f)=RT Delta > 1/2 Window (m)=manual int.

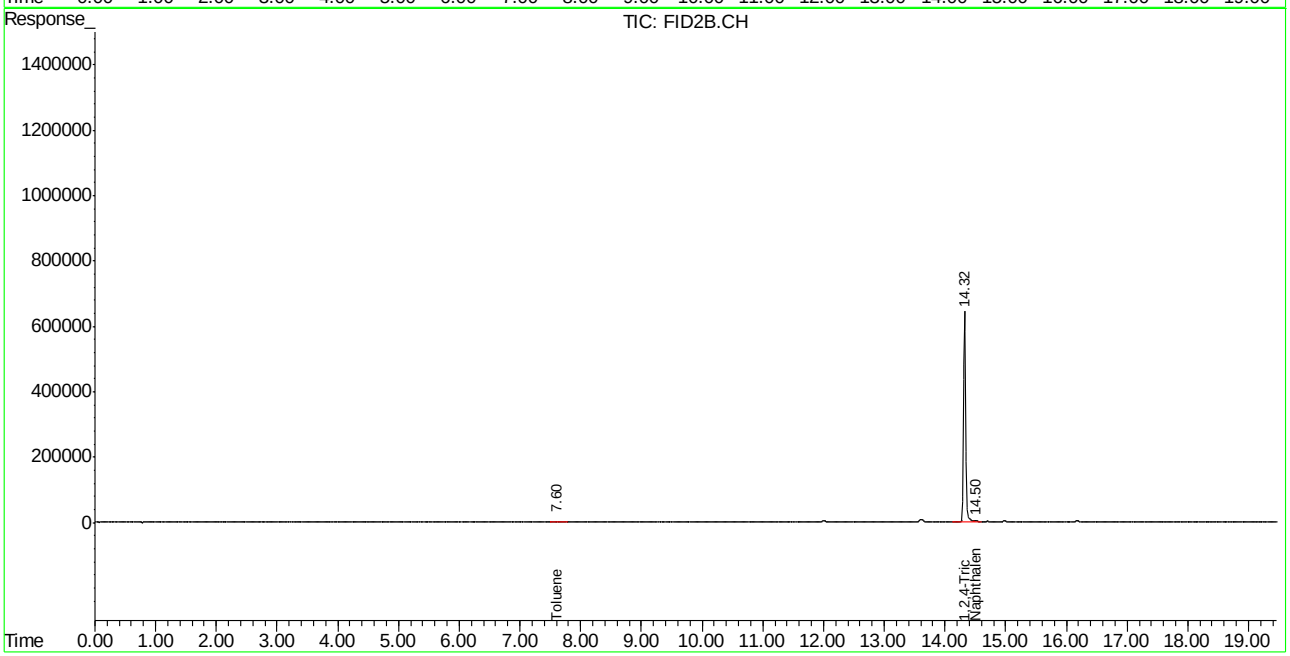
Quantitation Report (QT Reviewed)

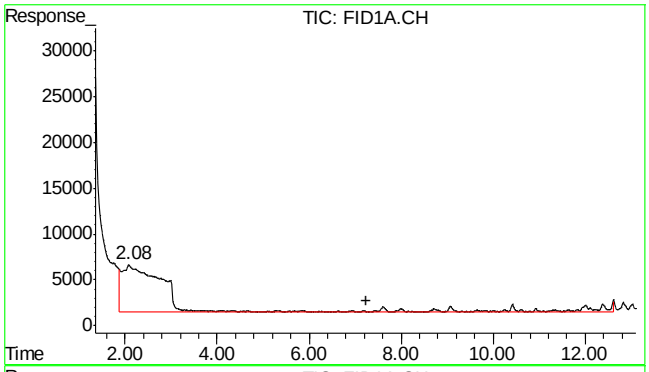
Signal #1 : Y:\1\DATA\041612\GB15725.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\041612\GB15725.D\FID2B.CH
Acq On : 16 Apr 2012 12:07 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2758,GGB877,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Apr 16 11:34 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Apr 12 09:39:07 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

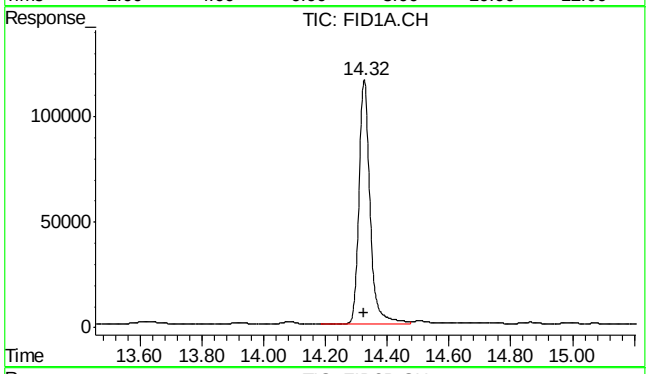






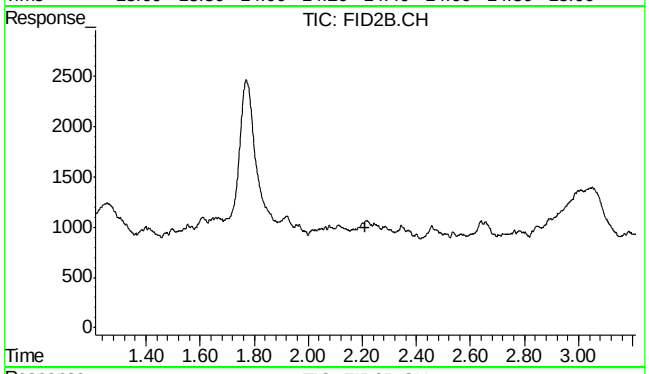
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 3839622
Conc: N.D.



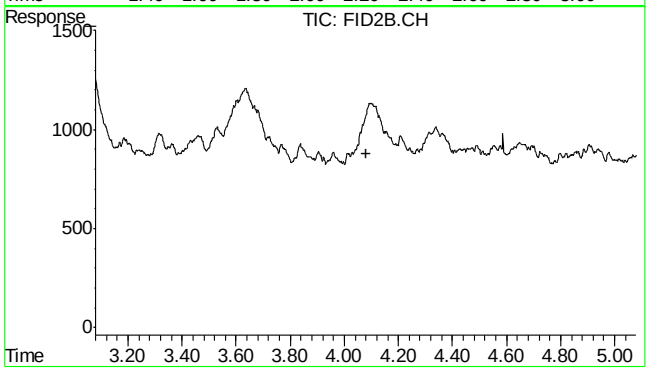
#2 1,2,4-Trichlorobenzene

R.T.: 14.325 min
Delta R.T.: 0.000 min
Response: 2905230
Conc: 92.72 % m



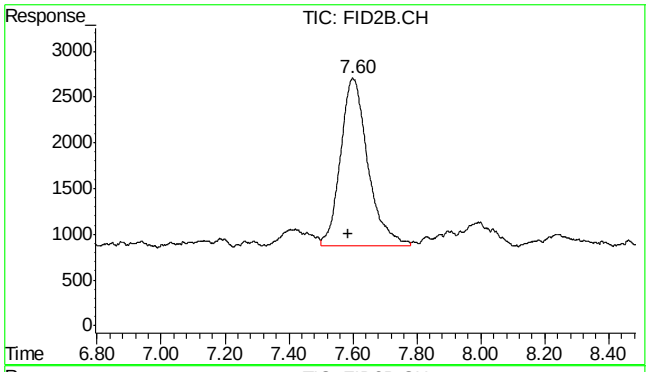
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.212 min
Response: 0
Conc: N.D.



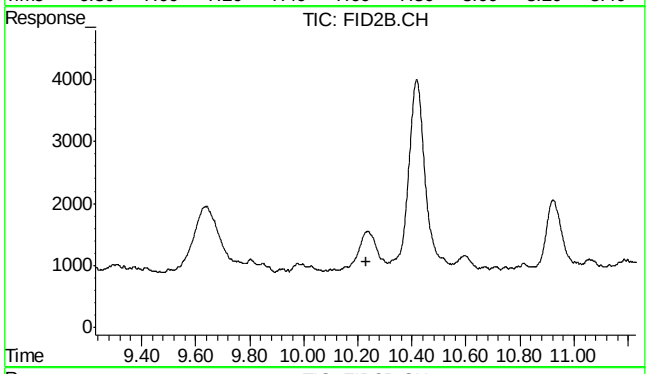
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.079 min
Response: 0
Conc: N.D.



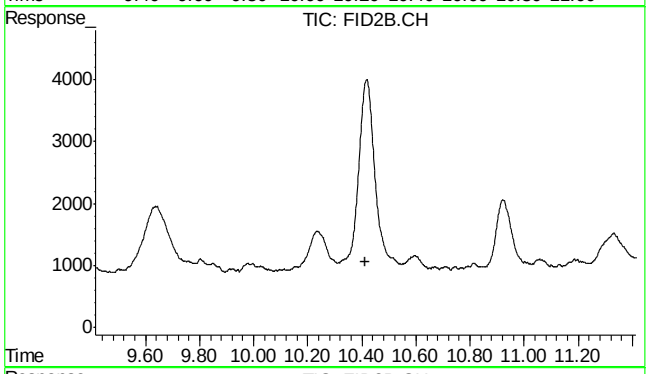
#6 Toluene

R.T.: 7.600 min
Delta R.T.: 0.012 min
Response: 108790
Conc: 0.27 ug/L



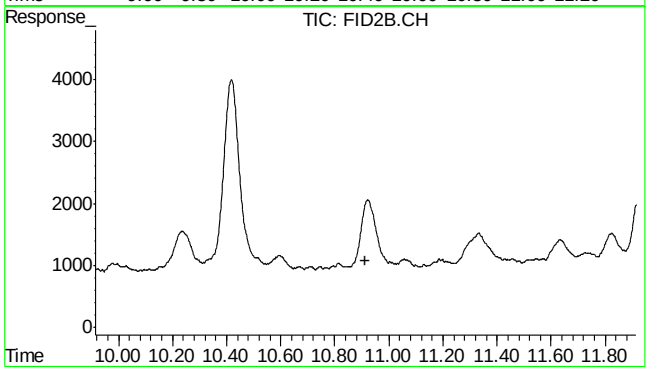
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.230 min
Response: 0
Conc: N.D.



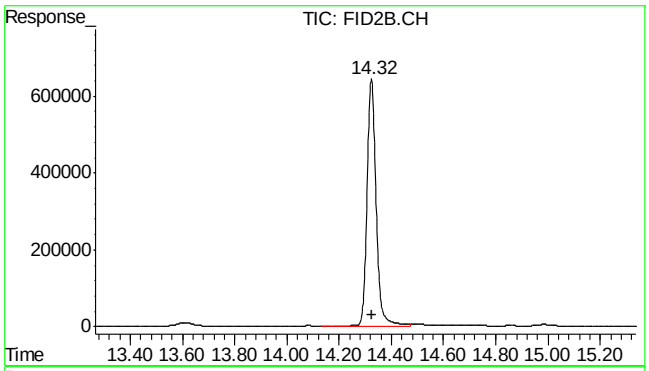
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.414 min
Response: 0
Conc: N.D.



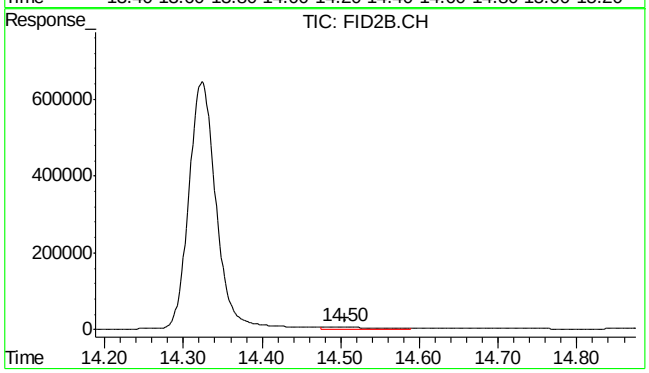
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.914 min
Response: 0
Conc: N.D.



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

R.T.:	14.324 min
Delta R.T.:	0.000 min
Response:	15643897
Conc:	96.25 %



#11 Naphthalene

R.T.:	14.503 min
Delta R.T.:	-0.002 min
Response:	227054
Conc:	1.15 ug/L

Mountain States ACCUTEST LABORATORIES

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

Job Number: D33671
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5724-MB	FH003447.D	1	04/19/12	AV	04/16/12	OP5724	GFH186

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

D33671-1

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	107%	43-136%

Blank Spike Summary

Job Number: D33671
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5724-BS	FH003451.D	1	04/19/12	AV	04/16/12	OP5724	GFH186

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

D33671-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	574	86	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	106%	43-136%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D33671
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5724-MS	FH003453.D	1	04/19/12	AV	04/16/12	OP5724	GFH186
OP5724-MSD	FH003455.D	1	04/19/12	AV	04/16/12	OP5724	GFH186
D33661-1	FH003469.D	1	04/19/12	AV	04/16/12	OP5724	GFH186

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

D33671-1

CAS No.	Compound	D33661-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	33.3		699	433	57	483	64	11	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D33661-1	Limits
84-15-1	o-Terphenyl	66%	72%	41%* [a]	43-136%

(a) Outside control limits due to possible matrix interference. Sample being re-extracted.

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH041912\
Data File : FH003471.D
Signal(s) : FID1A.ch
Acq On : 19 Apr 2012 6:38 pm
Operator : ashleyv
Sample : D33671-1
Misc : OP5724,GFH186,30.07,,,2.00,1
ALS Vial : 14 Sample Multiplier: 1

Integration File: events.e
Quant Time: Apr 20 09:03:58 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH160F.M
Quant Title : DRO-ORO FRONT
QLast Update : Mon Apr 09 09:27:25 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	12.372	739958149	799.713 ug/ml
Target Compounds				
1) H	TPH-DRO (C10-C28)	9.890	424451338	430.254 ug/ml

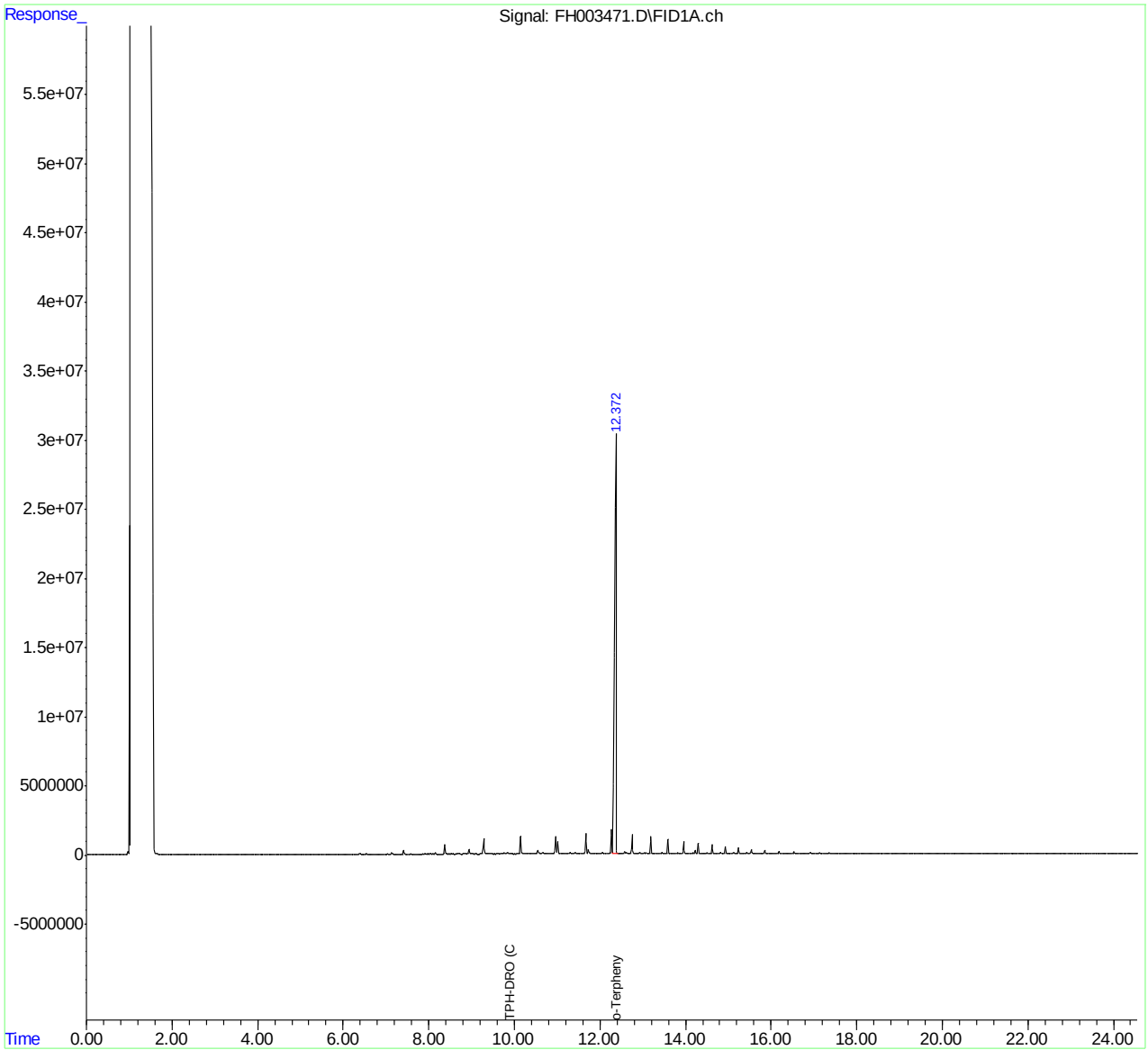
(f)=RT Delta > 1/2 Window (m)=manual int.

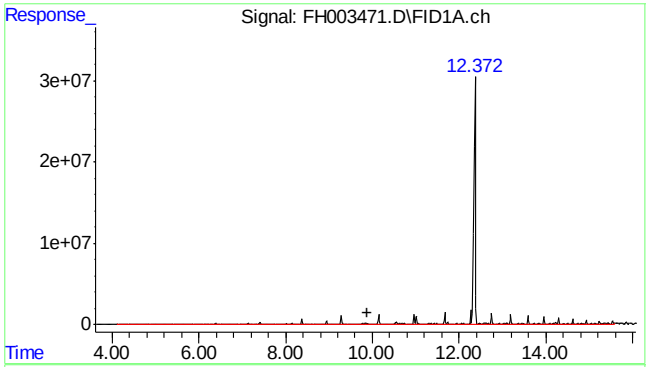
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH041912\
Data File : FH003471.D
Signal(s) : FID1A.ch
Acq On : 19 Apr 2012 6:38 pm
Operator : ashleyv
Sample : D33671-1
Misc : OP5724,GFH186,30.07,,,2.00,1
ALS Vial : 14 Sample Multiplier: 1

Integration File: events.e
Quant Time: Apr 20 09:03:58 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH160F.M
Quant Title : DRO-ORO FRONT
QLast Update : Mon Apr 09 09:27:25 2012
Response via : Initial Calibration
Integrator: ChemStation

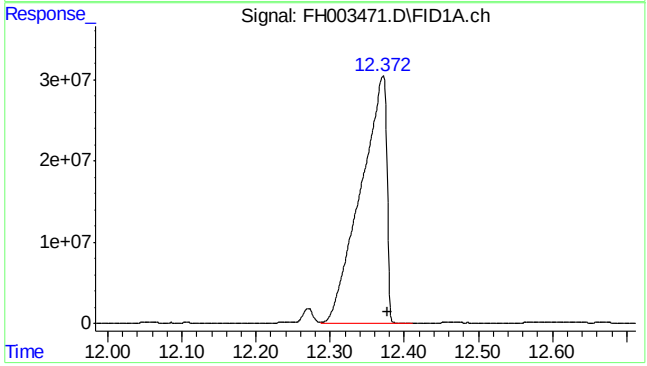
Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.890 min
Delta R.T.: 0.000 min
Response: 424451338
Conc: 430.25 ug/ml m



#2 o-Terphenyl

R.T.: 12.372 min
Delta R.T.: -0.005 min
Response: 739958149
Conc: 799.71 ug/ml

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH041912\
Data File : FH003447.D
Signal(s) : FID1A.ch
Acq On : 19 Apr 2012 11:51 am
Operator : ashleyv
Sample : OP5724-MB
Misc : OP5724,GFH186,30.00,,,2.00,1
ALS Vial : 3 Sample Multiplier: 1

Integration File: events.e
Quant Time: Apr 20 08:25:37 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH160F.M
Quant Title : DRO-ORO FRONT
QLast Update : Mon Apr 09 09:27:25 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	12.383	985860041	1065.473 ug/ml
Target Compounds				
1) H	TPH-DRO (C10-C28)	9.890	25006040	25.348 ug/ml

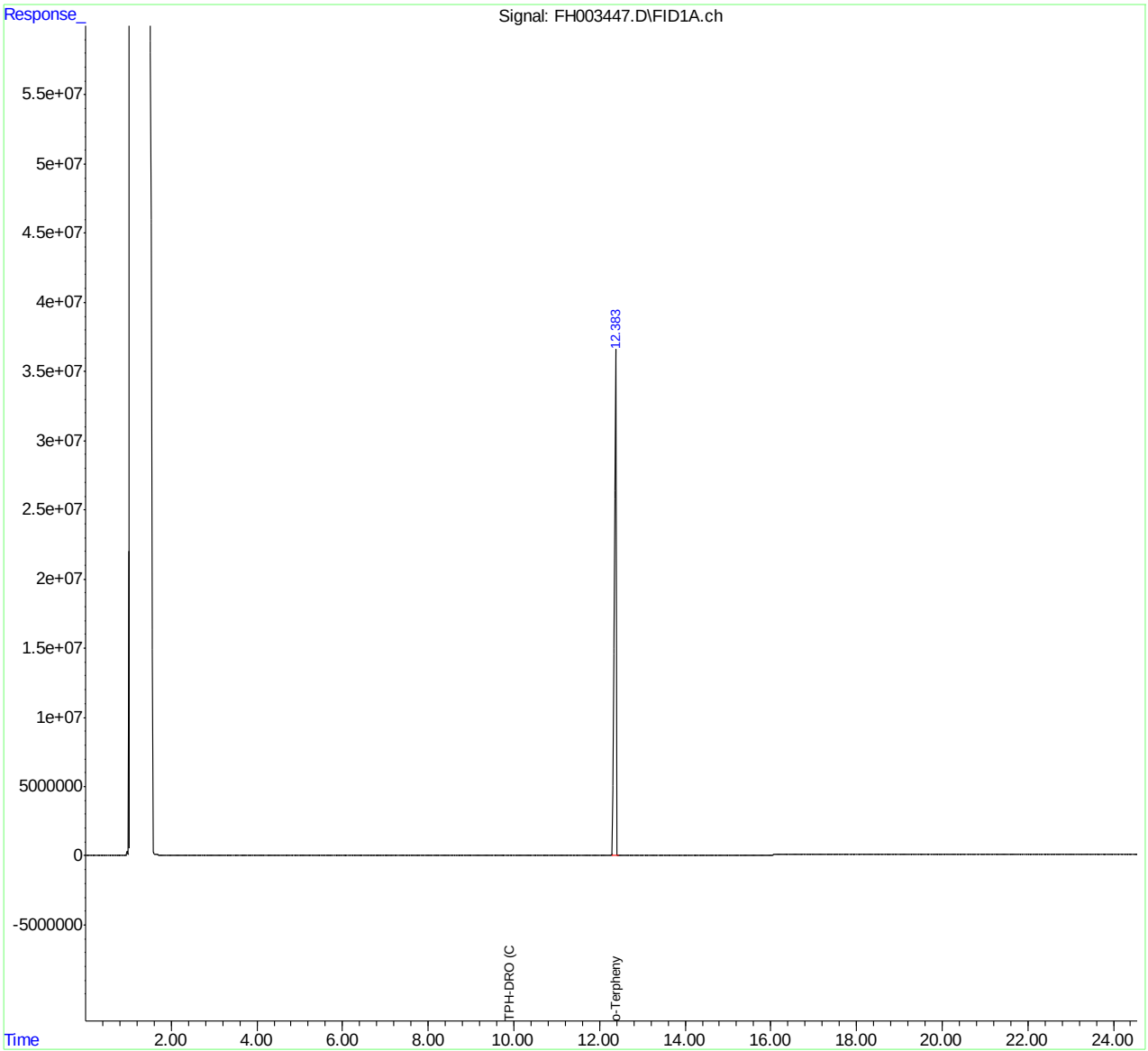
(f)=RT Delta > 1/2 Window (m)=manual int.

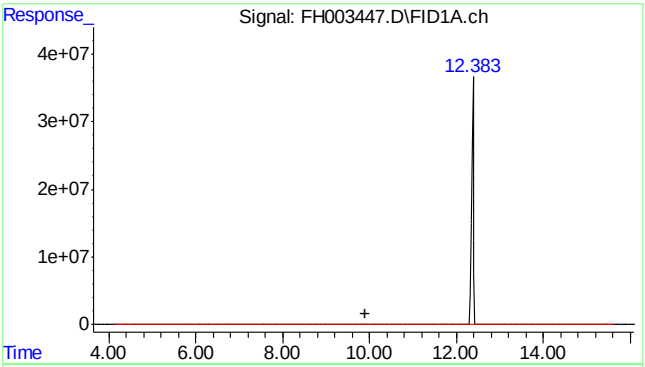
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH041912\
Data File : FH003447.D
Signal(s) : FID1A.ch
Acq On : 19 Apr 2012 11:51 am
Operator : ashleyv
Sample : OP5724-MB
Misc : OP5724,GFH186,30.00,,,2.00,1
ALS Vial : 3 Sample Multiplier: 1

Integration File: events.e
Quant Time: Apr 20 08:25:37 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH160F.M
Quant Title : DRO-ORO FRONT
QLast Update : Mon Apr 09 09:27:25 2012
Response via : Initial Calibration
Integrator: ChemStation

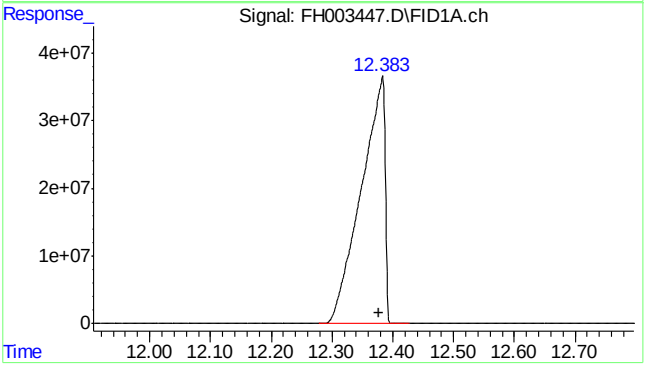
Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.890 min
Delta R.T.: 0.000 min
Response: 25006040
Conc: 25.35 ug/ml m



#2 o-Terphenyl

R.T.: 12.383 min
Delta R.T.: 0.006 min
Response: 985860041
Conc: 1065.47 ug/ml