Mountain States ACCUTEST LABORATORIES

07/02/12

Technical Report for

XTO Energy

PCU 296-7A

1007-02

Accutest Job Number: D35850

Sampling Date: 06/25/12

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**

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)

Test results relate only to samples analyzed.

Sections: 1 2 3 4 5 6 7 8

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Sample Summary

XTO Energy

Job No: D35850

PCU 296-7A
Project No: 1007-02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D35850-1	06/25/12	11:55	CB	06/26/12	SO	Soil	RP CRUSHED DAY 3 MB (6/21)

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	XTO Energy	**Job No**	D35850
Site:	PCU 296-7A	**Report Date**	7/2/2012 12:05:09 PM

On 06/26/2012, 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 D35850 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:** GGB913

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35850-1MS, D35850-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP6147

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35850-1MS, D35850-1MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO **Batch ID:** GN15602

- 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 CRUSHED DAY 3 MB (6/21)		
Lab Sample ID:	D35850-1	**Date Sampled:**	06/25/12
Matrix:	SO - Soil	**Date Received:**	06/26/12
Method:	SW846 8015B	**Percent Solids:**	91.5
Project:	PCU 296-7A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB16459.D	1	06/27/12	SK	n/a	n/a	GGB913
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	5.9	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	93%		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 CRUSHED DAY 3 MB (6/21)
Lab Sample ID: D35850-1
Matrix: SO - Soil
Method: SW846-8015B SW846 3546
Project: PCU 296-7A

Date Sampled: 06/25/12
Date Received: 06/26/12
Percent Solids: 91.5

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH005500.D	1	06/28/12	AW	06/27/12	OP6147	GFH301
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)	462	15	9.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	75%		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
4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking # | Bottle Order Control #
Accutest Quote # | Accutest Job # D35850

Client / Reporting Information

Company Name: KRW Consulting
Street Address: 8000 West 14th Street; Suite 200
City: Lakewood, CO 80214
Project Contact: Dwayne Knudson
Phone #: (970) 488-1098
Sampler(s) Name(s): Craig Burger

Project Information

Project Name: XTO PCU 296-7A
Street:
City: State:
Project #: 1007-02
Client Purchase Order #:
Project Manager: Joe Hess

Billing Information (If different from Report to)

Company Name: XTO Energy
Street Address: 21459 CR5
City: Rifle, CO 81650
Attention: Jessica Dooling

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	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	TPH (DRO/GRO)	LAB USE ONLY
	RP Crushed Day 3 1113 (6/21)		6/25/12	11:55	MAB	SO	2					2				X	01
																	02 6/26/12

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [ ] Std. 10 Business Days
- [X] 5 Day by contract
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ]

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [X] Report by PDF ONLY
- [ ] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

Please Email Results to KRW Piceance Team

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	MAB	6-25-12 1510	6/25/12			6/26/12 1342
2						
3						
4						
5						

Custody Seal # HDICO Intact / Not intact | Preserved where applicable: X | On Ice: X | Cooler Temp. 3.4

D35850: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D35850 **Client:** KRW CONSULTING **Immediate Client Services Action Required:** No

Date / Time Received: 6/26/2012 1:42:00 PM **No. Coolers:** 1 **Client Service Action Required at Login:** No

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

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

D35850: Chain of Custody
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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: D35850
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB913-MB	GB16457.D	1	06/27/12	SK	n/a	n/a	GGB913

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

D35850-1

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	102%	60-140%

Blank Spike Summary

Job Number: D35850
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB913-BS	GB16458.D	1	06/27/12	SK	n/a	n/a	GGB913

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

D35850-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	119	108	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	106%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D35850
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D35850-1MS	GB16460.D	1	06/27/12	SK	n/a	n/a	GGB913
D35850-1MSD	GB16461.D	1	06/27/12	SK	n/a	n/a	GGB913
D35850-1	GB16459.D	1	06/27/12	SK	n/a	n/a	GGB913

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

D35850-1

CAS No.	Compound	D35850-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		129	137	106	139	108	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D35850-1	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	101%	93%	60-140%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 06/28/12 10:30

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\062712\GB16459.D\FID1A.CH Vial: 6
Signal #2 : Y:\1\DATA\062712\GB16459.D\FID2B.CH
Acq On : 27 Jun 2012 1:40 pm Operator: StephK
Sample : D35850-1, 50X Inst : GC/MS Ins
Misc : GC2942,GGB913,5.067,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 27 13:59:45 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jun 27 13:19:38 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	14.38	2923670	93.307	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.38	18753135	115.384	%	
	Target Compounds					
1) H	TVH-Gasoline	7.23	4807358	<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	7.67	202547	0.511	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	3820390	19.362	ug/L	

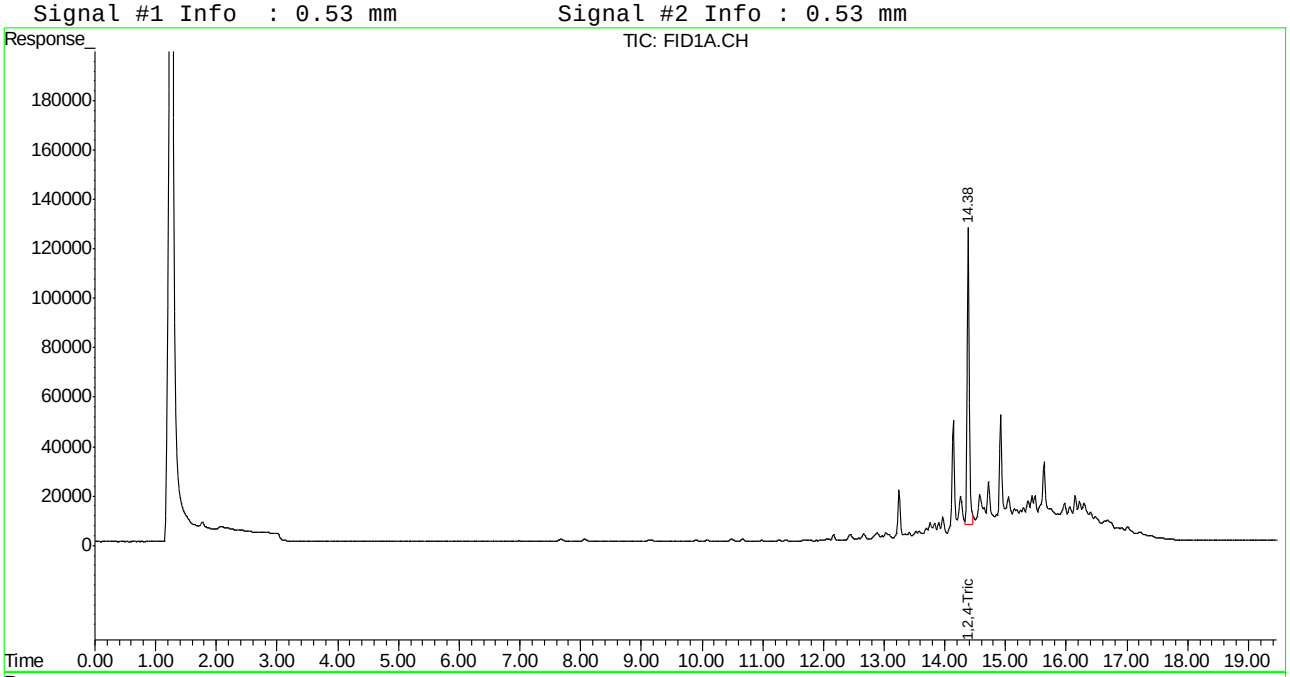
(f)=RT Delta > 1/2 Window (m)=manual int.
GB16459.D TB868GB868SOIL.M Thu Jun 28 08:45:58 2012 GC Page 1

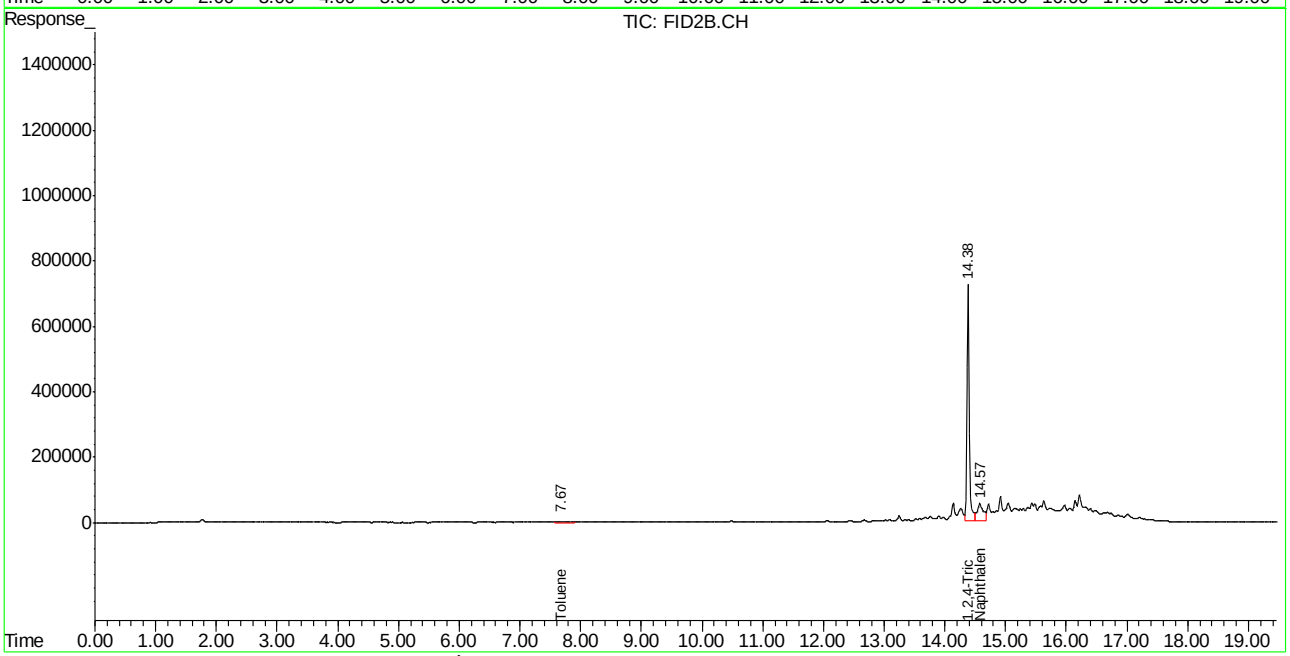
Quantitation Report (QT Reviewed)

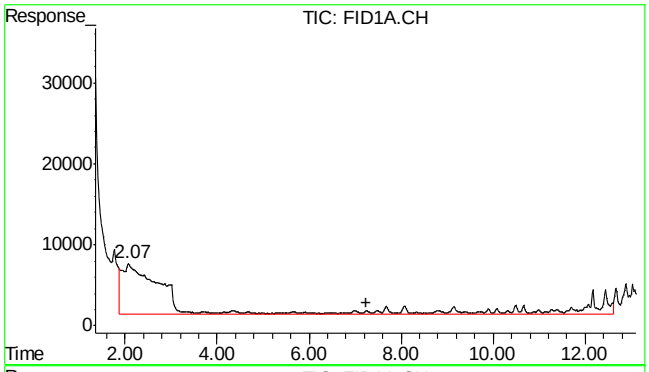
Signal #1 : Y:\1\DATA\062712\GB16459.D\FID1A.CH Vial: 6
Signal #2 : Y:\1\DATA\062712\GB16459.D\FID2B.CH
Acq On : 27 Jun 2012 1:40 pm Operator: StephK
Sample : D35850-1, 50X Inst : GC/MS Ins
Misc : GC2942,GGB913,5.067,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 27 13:02 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jun 27 13:19:38 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

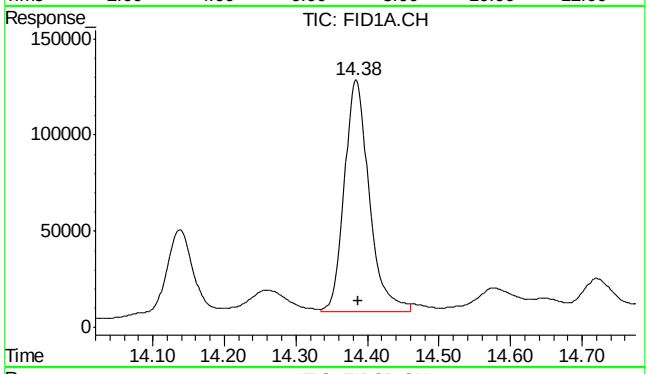






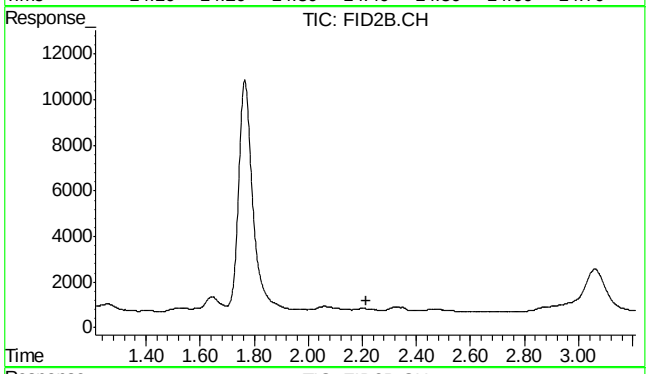
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 4807358
Conc: N.D.



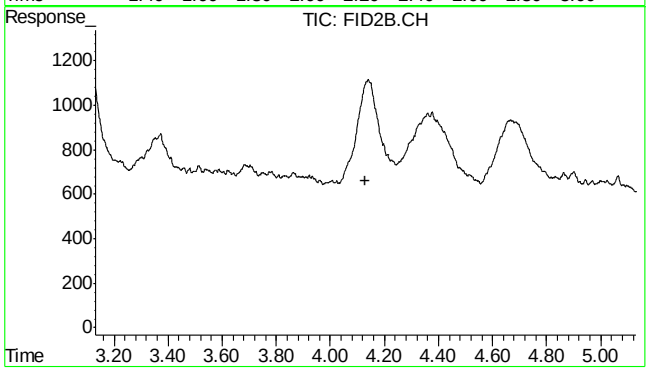
#2 1,2,4-Trichlorobenzene

R.T.: 14.384 min
Delta R.T.: -0.004 min
Response: 2923670
Conc: 93.31 % m



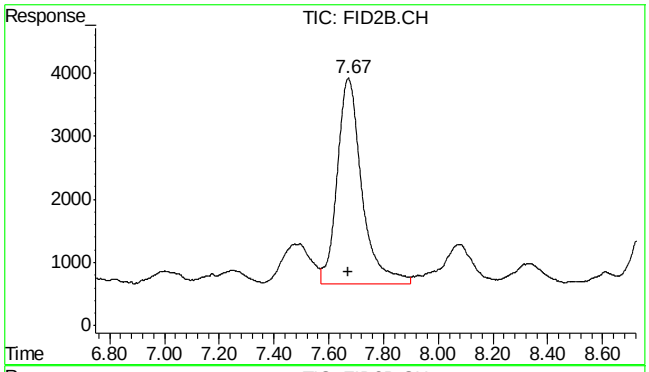
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.213 min
Response: 0
Conc: N.D.



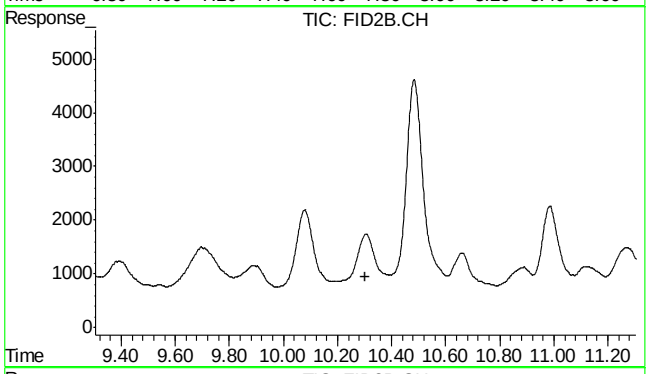
#5 Benzene

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



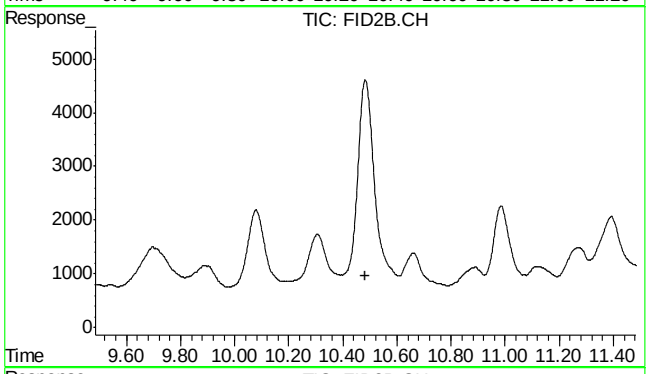
#6 Toluene

R.T.: 7.672 min
Delta R.T.: 0.001 min
Response: 202547
Conc: 0.51 ug/L



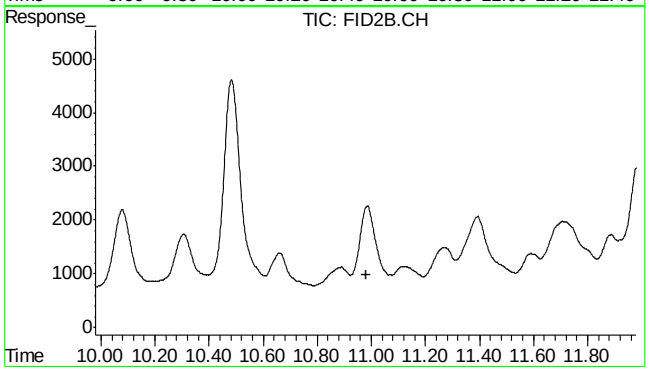
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.304 min
Response: 0
Conc: N.D.



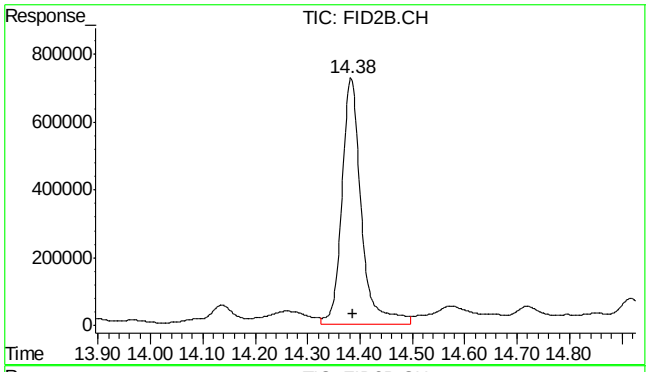
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.484 min
Response: 0
Conc: N.D.



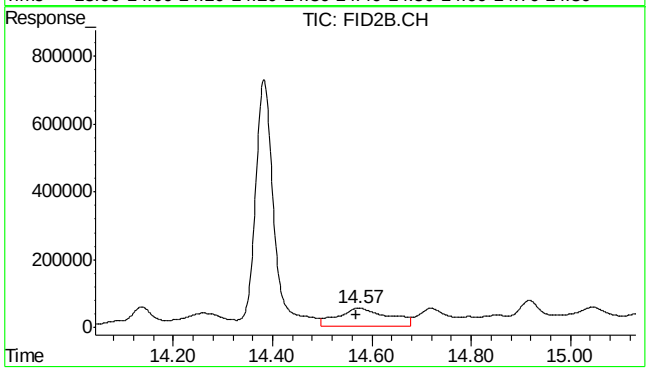
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.980 min
Response: 0
Conc: N.D.



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

R.T.: 14.383 min
Delta R.T.: -0.002 min
Response: 18753135
Conc: 115.38 %



#11 Naphthalene

R.T.: 14.574 min
Delta R.T.: 0.006 min
Response: 3820390
Conc: 19.36 ug/L

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\062712\GB16457.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\062712\GB16457.D\FID2B.CH
Acq On : 27 Jun 2012 12:30 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2942,GGB913,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 27 13:19:52 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jun 27 13:19:38 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	14.38	3209237	102.420	%	
10) S	1,2,4-Trichlorobenzene (P)	14.38	18277948	112.461	%	
	Target Compounds					
1) H	TVH-Gasoline	7.23	4834751	<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	7.67	173633	0.438	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	14.56	236056	1.196	ug/L	

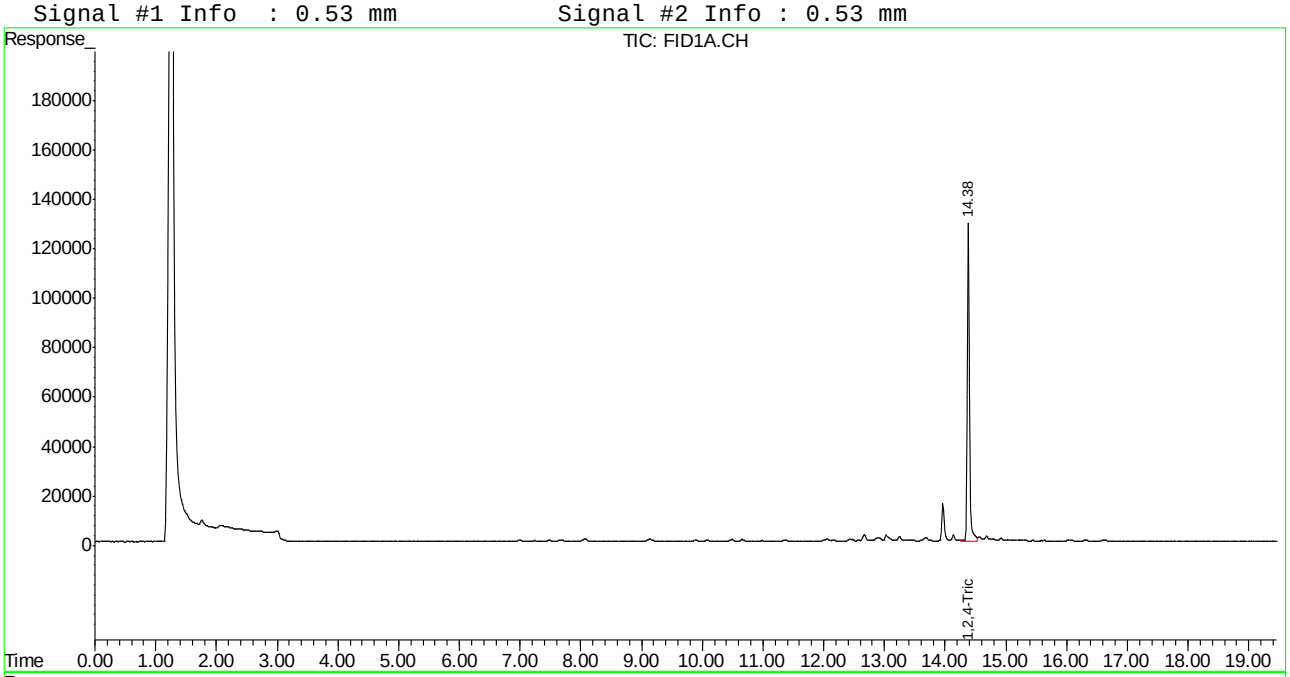
(f)=RT Delta > 1/2 Window (m)=manual int.

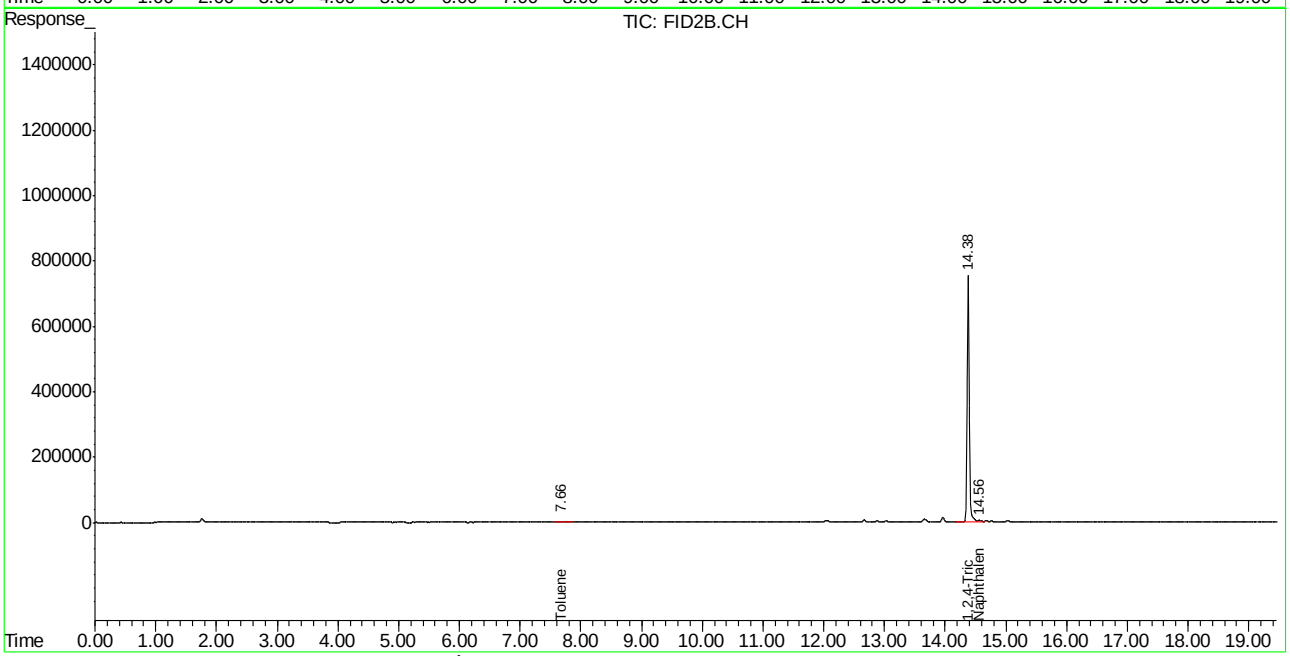
Quantitation Report (QT Reviewed)

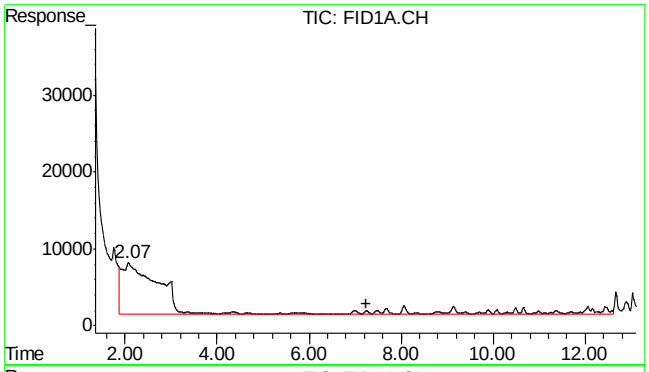
Signal #1 : Y:\1\DATA\062712\GB16457.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\062712\GB16457.D\FID2B.CH
Acq On : 27 Jun 2012 12:30 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2942,GGB913,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 27 12:22 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jun 27 13:19:38 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

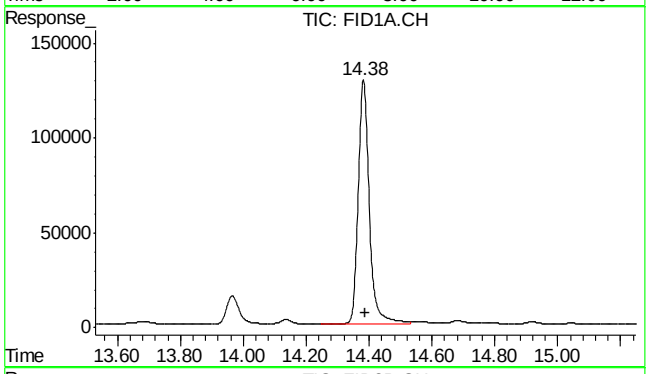






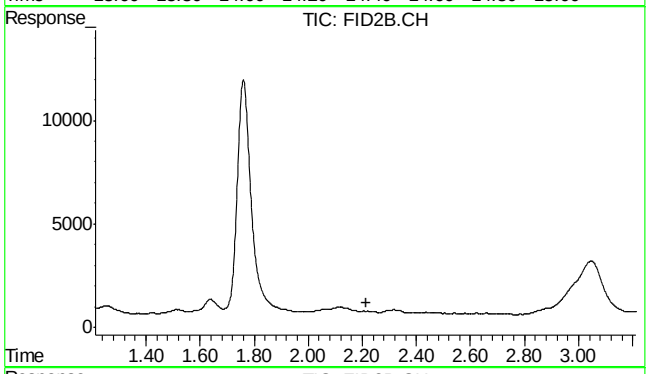
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 4834751
Conc: N.D.



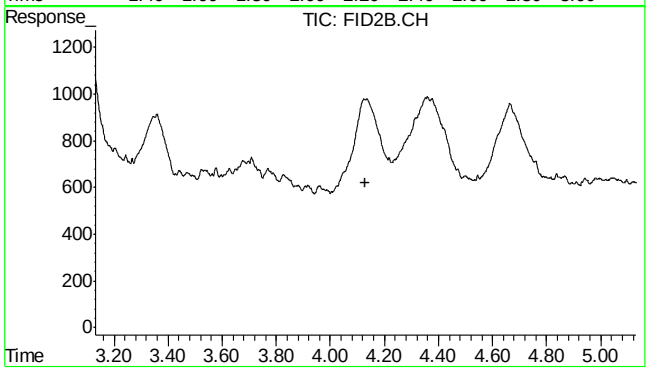
#2 1,2,4-Trichlorobenzene

R.T.: 14.382 min
Delta R.T.: -0.005 min
Response: 3209237
Conc: 102.42 %



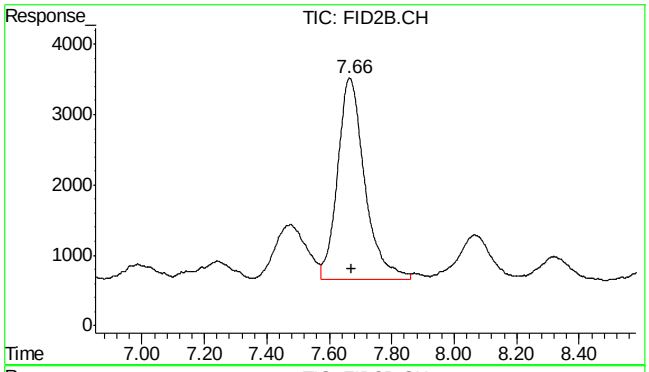
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.213 min
Response: 0
Conc: N.D.



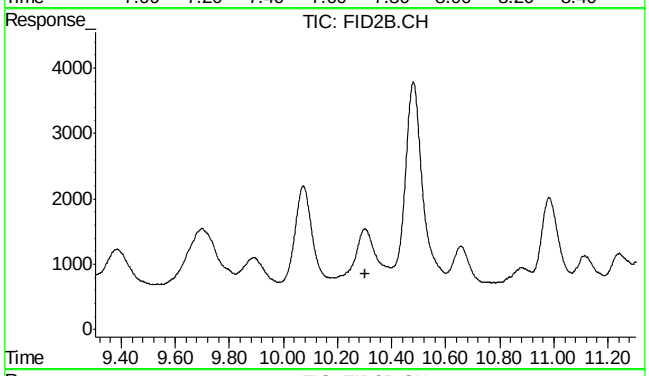
#5 Benzene

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



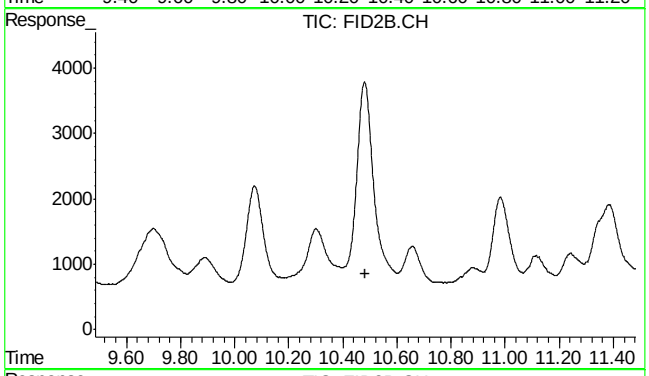
#6 Toluene

R.T.: 7.665 min
Delta R.T.: -0.005 min
Response: 173633
Conc: 0.44 ug/L



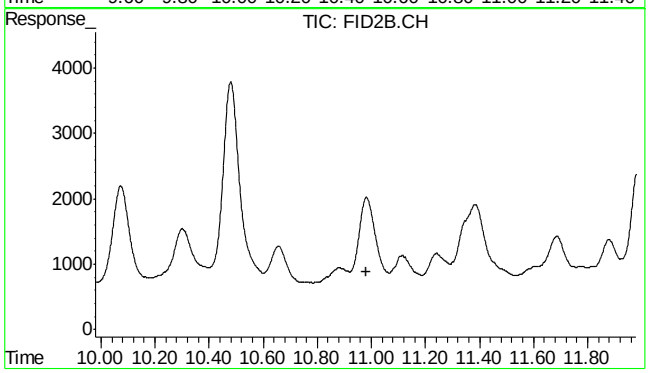
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.304 min
Response: 0
Conc: N.D.



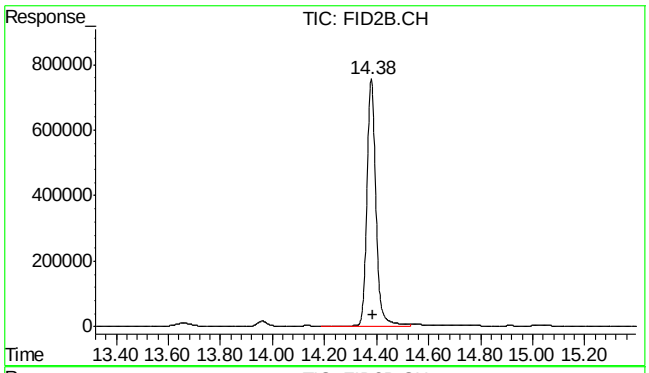
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.484 min
Response: 0
Conc: N.D.



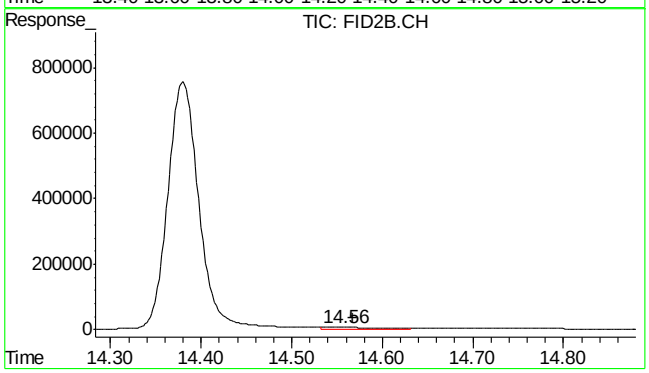
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.980 min
Response: 0
Conc: N.D.



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

R.T.: 14.380 min
Delta R.T.: -0.005 min
Response: 18277948
Conc: 112.46 %



#11 Naphthalene

R.T.: 14.558 min
Delta R.T.: -0.010 min
Response: 236056
Conc: 1.20 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: D35850
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6147-MB	FH005492.D	1	06/28/12	AW	06/27/12	OP6147	GFH301

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

D35850-1

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	111%	43-136%

Blank Spike Summary

Job Number: D35850
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6147-BS	FH005494.D	1	06/28/12	AW	06/27/12	OP6147	GFH301

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

D35850-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	565	85	58-130

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

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D35850
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6147-MS	FH005496.D	1	06/28/12	AW	06/27/12	OP6147	GFH301
OP6147-MSD	FH005498.D	1	06/28/12	AW	06/27/12	OP6147	GFH301
D35850-1	FH005500.D	1	06/28/12	AW	06/27/12	OP6147	GFH301

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

D35850-1

CAS No.	Compound	D35850-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	462		725	942	66	1030	78	9	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D35850-1	Limits
84-15-1	o-Terphenyl	68%	80%	75%	43-136%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH062812.SEC\
Data File : FH005500.D
Signal(s) : FID2B.ch
Acq On : 28 Jun 2012 6:03 pm
Operator : alexw1
Sample : D35850-1
Misc : OP6147,GFH301,30.10,,,2,1
ALS Vial : 57 Sample Multiplier: 1

Integration File: events.e
Quant Time: Jun 29 09:33:06 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH281R.M
Quant Title : DRO-ORO REAR
QLast Update : Tue Jun 05 12:21:36 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	11.641	892378459	754.693	ug/ml
Target Compounds					
1) H	TPH-DRO (C10-C28)	9.333	7785106002	6364.312	ug/ml

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

8.1.1

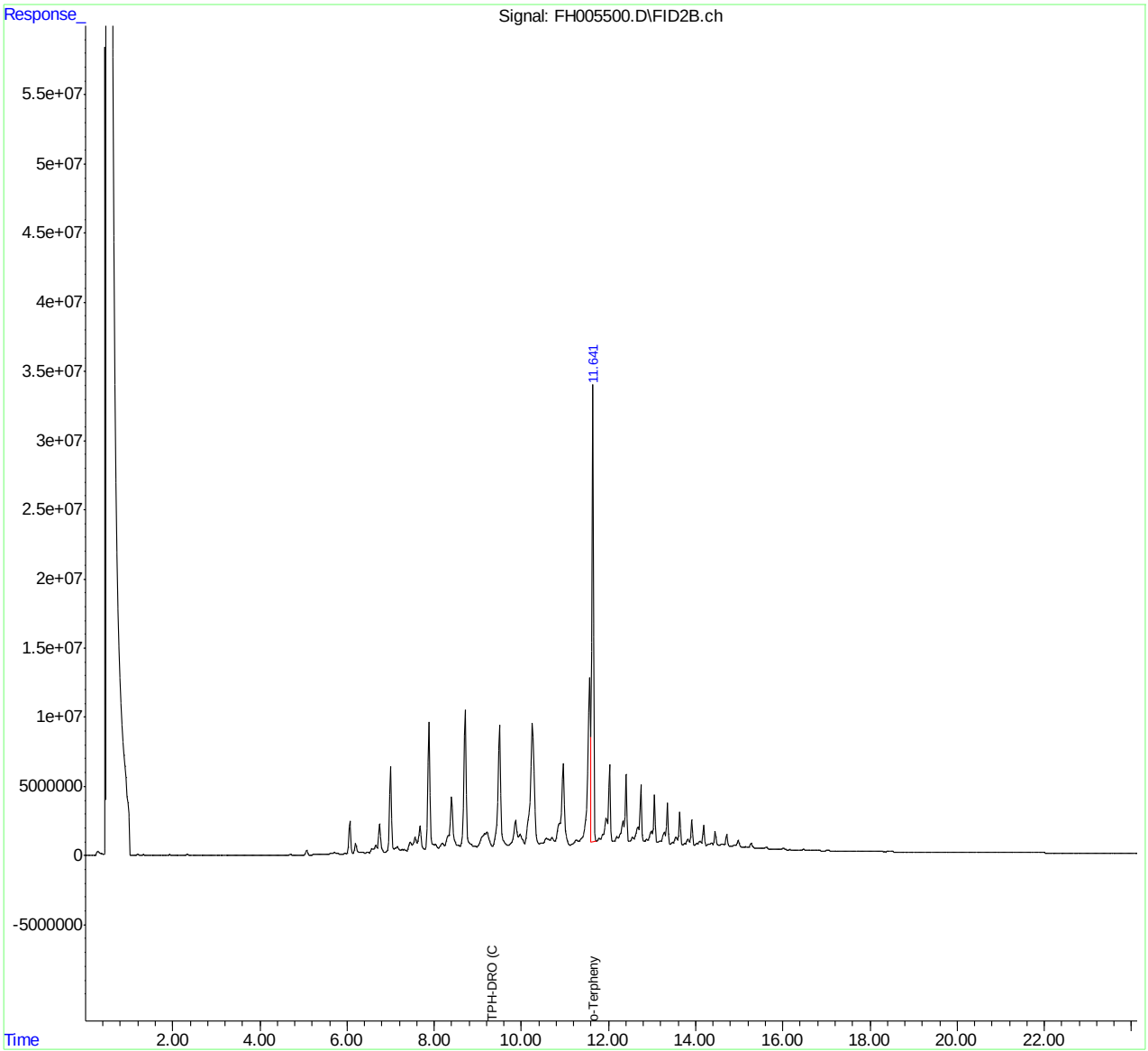
8

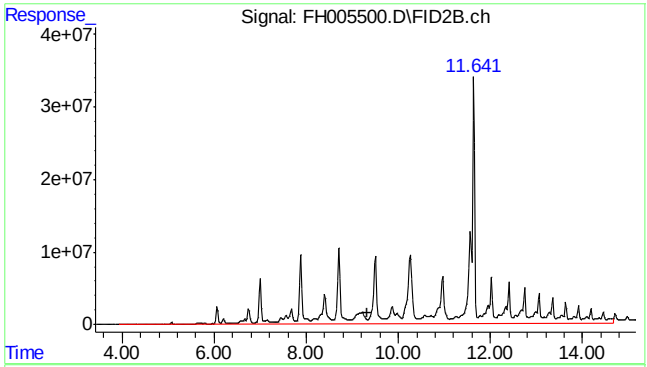
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH062812.SEC\
Data File : FH005500.D
Signal(s) : FID2B.ch
Acq On : 28 Jun 2012 6:03 pm
Operator : alexw1
Sample : D35850-1
Misc : OP6147,GFH301,30.10,,,2,1
ALS Vial : 57 Sample Multiplier: 1

Integration File: events.e
Quant Time: Jun 29 09:33:06 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH281R.M
Quant Title : DRO-ORO REAR
QLast Update : Tue Jun 05 12:21:36 2012
Response via : Initial Calibration
Integrator: ChemStation

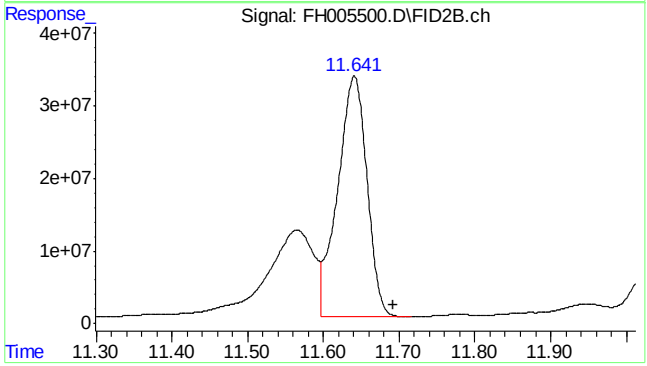
Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.333 min
Delta R.T.: 0.000 min
Response: 7785106002
Conc: 6364.31 ug/ml m



#2 o-Terphenyl

R.T.: 11.641 min
Delta R.T.: -0.051 min
Response: 892378459
Conc: 754.69 ug/ml

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH062812.SEC\
Data File : FH005492.D
Signal(s) : FID2B.ch
Acq On : 28 Jun 2012 12:16 pm
Operator : alexw1
Sample : OP6147-MB
Misc : OP6147,GFH301,30.00,,,2,1
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e
Quant Time: Jun 29 09:27:48 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH281R.M
Quant Title : DRO-ORO REAR
QLast Update : Tue Jun 05 12:21:36 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	11.646	1312256632	1109.788	ug/ml
Target Compounds					
1) H	TPH-DRO (C10-C28)	9.333	65582546	53.614	ug/ml

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

8.2.1

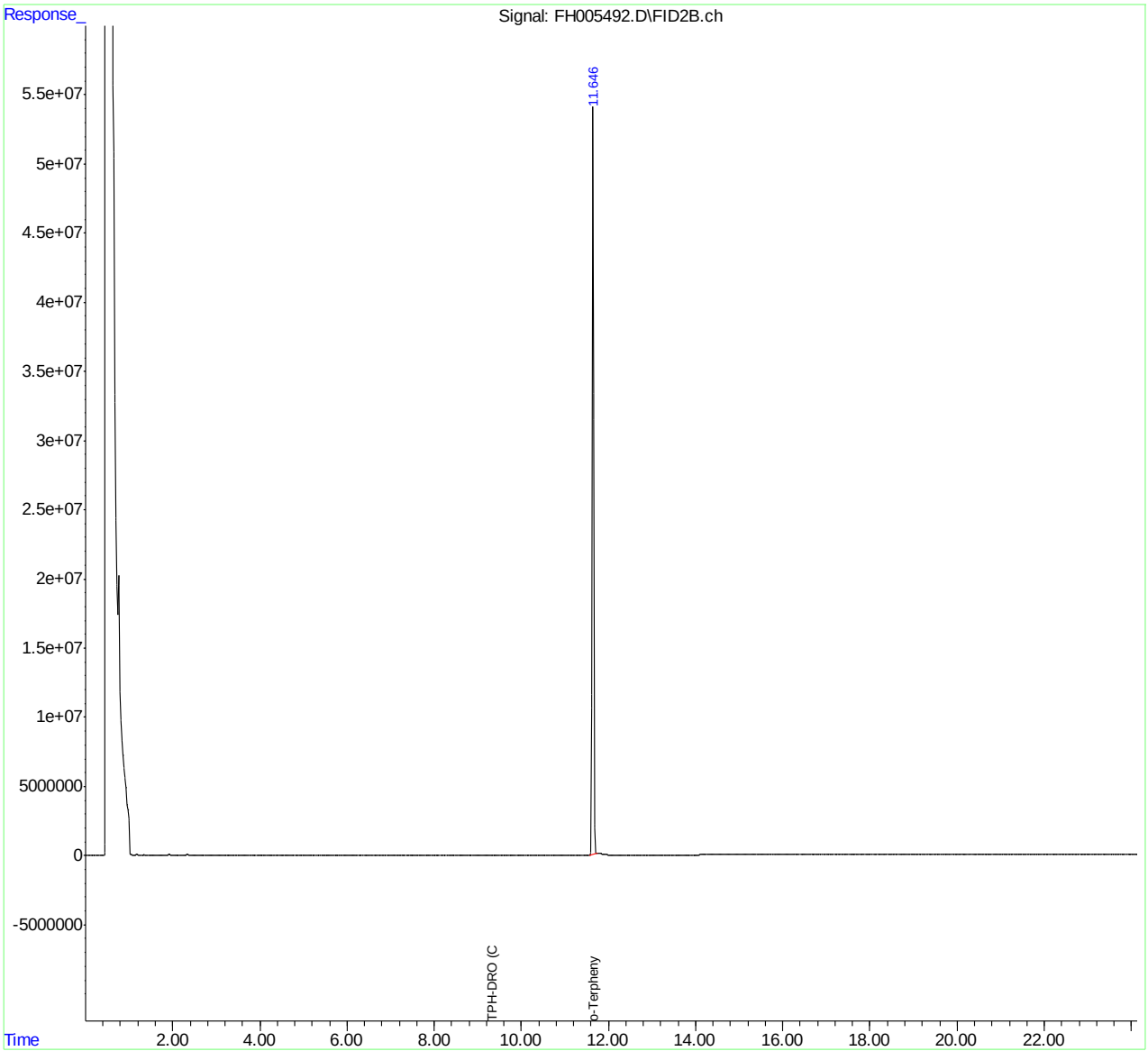
8

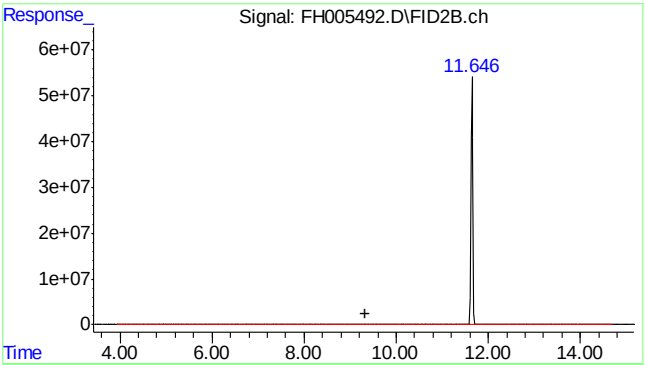
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH062812.SEC\
Data File : FH005492.D
Signal(s) : FID2B.ch
Acq On : 28 Jun 2012 12:16 pm
Operator : alexw1
Sample : OP6147-MB
Misc : OP6147,GFH301,30.00,,,2,1
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e
Quant Time: Jun 29 09:27:48 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH281R.M
Quant Title : DRO-ORO REAR
QLast Update : Tue Jun 05 12:21:36 2012
Response via : Initial Calibration
Integrator: ChemStation

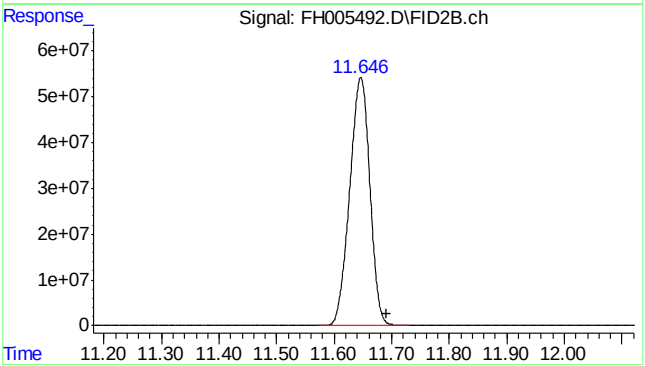
Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.333 min
Delta R.T.: 0.000 min
Response: 65582546
Conc: 53.61 ug/ml m



#2 o-Terphenyl

R.T.: 11.646 min
Delta R.T.: -0.046 min
Response: 1312256632
Conc: 1109.79 ug/ml