



02/20/12

Technical Report for

XTO Energy

FRU 197-33A

1103-03A

Accutest Job Number: D31900

Sampling Date: 02/14/12

Report to:

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

Total number of pages in report: 46



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.


Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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

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Sample Summary

XTO Energy

Job No: D31900

FRU 197-33A

Project No: 1103-03A

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D31900-1	02/14/12	13:15	CB	02/15/12	SO	Soil	CUT 1 MB DAY 1 2/10
D31900-2	02/14/12	13:30	CB	02/15/12	SO	Soil	CUT 1 MB DAY 2 2/14

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: XTO Energy**Job No** D31900**Site:** FRU 197-33A**Report Date** 2/20/2012 6:42:36 PM

On 02/15/2012, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.5 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D31900 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8015B

Matrix: SO**Batch ID:** GGB841

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

Extractables by GC By Method SW846-8015B

Matrix: SO**Batch ID:** OP5373

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

Wet Chemistry By Method SM19 2540B M

Matrix: SO**Batch ID:** GN13709

- 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

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Client Sample ID:	CUT 1 MB DAY 1 2/10	
Lab Sample ID:	D31900-1	Date Sampled: 02/14/12
Matrix:	SO - Soil	Date Received: 02/15/12
Method:	SW846 8015B	Percent Solids: 86.4
Project:	FRU 197-33A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB14934.D	1	02/16/12	SK	n/a	n/a	GGB841
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)	12.8	13	6.6	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	110%		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

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Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 1 MB DAY 1 2/10			Date Sampled:	02/14/12
Lab Sample ID:	D31900-1			Date Received:	02/15/12
Matrix:	SO - Soil			Percent Solids:	86.4
Method:	SW846-8015B SW846 3546				
Project:	FRU 197-33A				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH001413.D	1	02/18/12	TR	02/15/12	OP5373	GFH68
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)	107	15	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	82%		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

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID: CUT 1 MB DAY 2 2/14
Lab Sample ID: D31900-2
Matrix: SO - Soil
Method: SW846 8015B
Project: FRU 197-33A

Date Sampled: 02/14/12
Date Received: 02/15/12
Percent Solids: 86.0

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB14935.D	1	02/16/12	SK	n/a	n/a	GGB841
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)	14.7	13	6.6	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	101%		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:	CUT 1 MB DAY 2 2/14	
Lab Sample ID:	D31900-2	Date Sampled: 02/14/12
Matrix:	SO - Soil	Date Received: 02/15/12
Method:	SW846-8015B SW846 3546	Percent Solids: 86.0
Project:	FRU 197-33A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH001371.D	1	02/17/12	TR	02/15/12	OP5373	GFH64
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)	230	15	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	73%		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 # D31900

Client / Reporting Information	Project Information	Requested Analysis (see TEST CODE sheet)	Matrix Codes
Company Name KRW Consulting Inc Street Address 8000 W. 14th Ave Ste 200 City State Zip Lakewood CO 80214 Project Contact Dwayne Kinnison Phone # 970 488 1098 Fax # 970 488 1098 Sampler(s) Name(s) Craig Burger Phone # 970 488 1098	Project Name XTO FRU 197-33A Street 1103-03A City 1103-03A Project PO# Joe Hess Project Manager Joe Hess Billing Information (if different from Report to) Company Name XTO Energy Street Address 21459 CR 5 City State Zip Rifle CO 81650 Attention Jessica Pooling PO#	Requested Analysis (see TEST CODE sheet) TPH (6120/1220)	Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank LAB USE ONLY 01 02 03

Accutest Sample #	Field ID / Point of Collection	MECH/DI Vial #	Collection	Matrix	# of bottles	Number of preserved bottles	Analysis
	Cut 1 MB Day 1 2/10		2-14-12 13:15	50	2	2	X
	Cut 1 MB Day 2 2/14		2-14-12 13:30	5	2	2	X

Turnaround Time (Business days)	Approved By (Accutest PM) / Date:	Data Deliverable Information	Comments / Special Instructions
<input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> Std. 5 Business Days (By Contract only) <input type="checkbox"/> 5 Day # SH <input checked="" 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) Commercial "A" = Results Only Commercial "B" = Results + QC Summary	Please email results to KRW Picance Cr Team

Relinquished by Sampler	Date Time	Received By	Date Time	Relinquished by	Date Time	Received By	Date Time
1 L.A.B.	2/14/12 1700	1 CWD		2 CWD		2 Food & American Center	
3		3		4 CO		4 706 2-15-12 1276	
5		5		Custody Seal # CO		On Ice <input checked="" type="checkbox"/> Cooler Temp. 2.5	

D31900: Chain of Custody

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Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D31900

Client: KRW

Immediate Client Services Action Required: No

Date / Time Received: 2/15/2012 12:30:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: FRU

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

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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: D31900
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

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

The QC reported here applies to the following samples:

Method: SW846 8015B

D31900-1, D31900-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	113% 60-140%

Blank Spike Summary

Job Number: D31900
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

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

The QC reported here applies to the following samples:

Method: SW846 8015B

D31900-1, D31900-2

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

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

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D31900
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

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

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

D31900-1, D31900-2

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

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

GC Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\021612\GB14934.D\FID1A.CH Vial: 10
Signal #2 : Y:\1\DATA\021612\GB14934.D\FID2B.CH
Acq On : 16 Feb 2012 4:02 pm Operator: StephK
Sample : D31900-1, 50X Inst : GC/MS Ins
Misc : GC2613,GGB841,5.020,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 16 17:30:39 2012 Quant Results File: TB791GB791SOIL.RES

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

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

	Compound	R.T.	Response	Conc	Units	

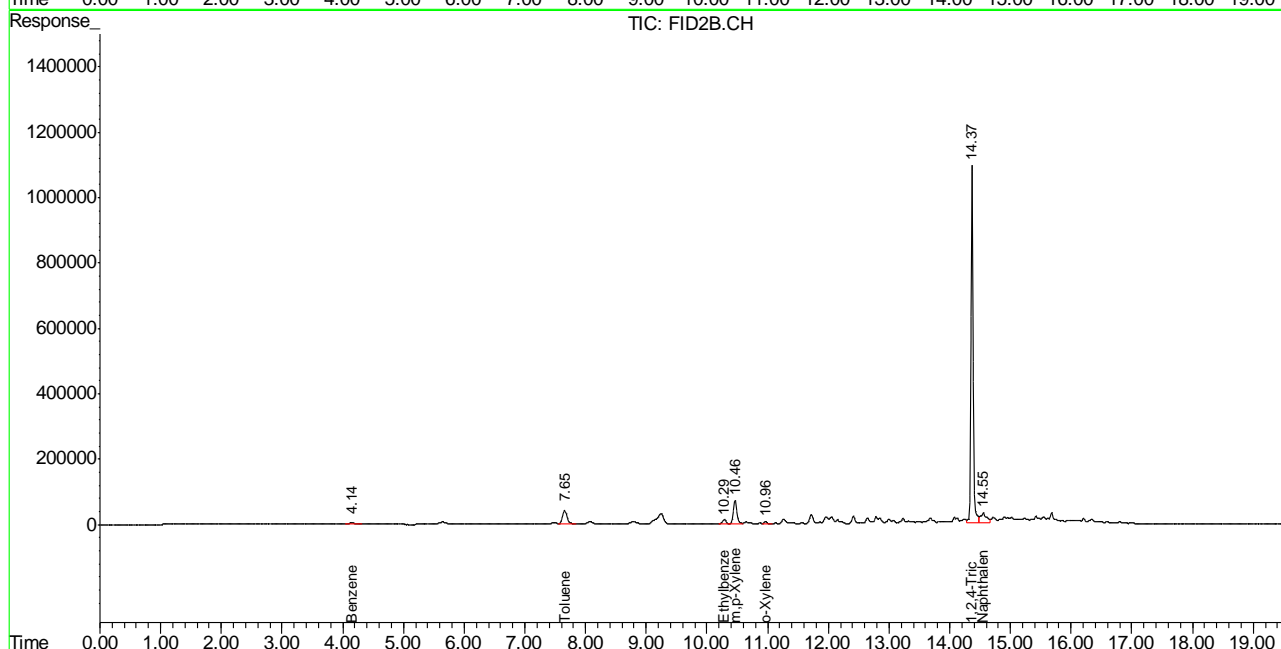
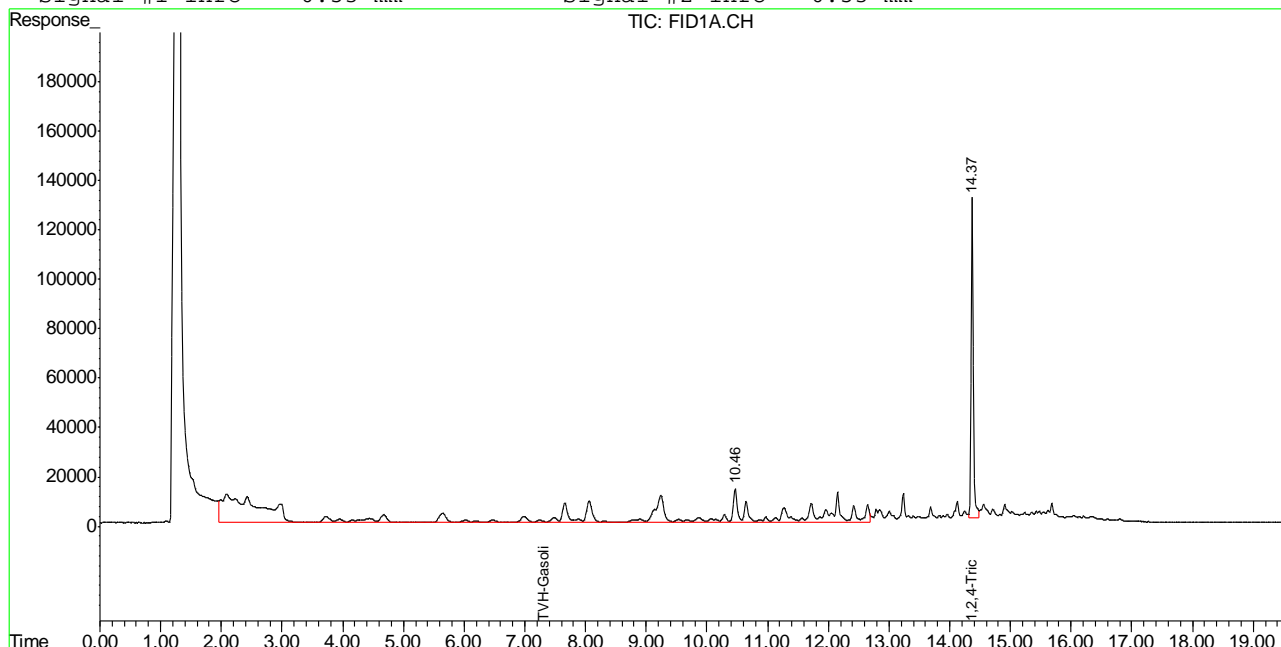
System Monitoring Compounds						
2) S	1,2,4-Trichlorobenzene	14.37	3218082	110.001 %	m	
10) S	1,2,4-Trichlorobenzene (P)	14.37	26640048	115.907 %		
Target Compounds						
1) H	TVH-Gasoline	7.32	13870767	0.195 mg/L		
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d	
5) T	Benzene	4.15	312455	0.546 ug/L		
6) T	Toluene	7.66	2388157	4.214 ug/L		
7) T	Ethylbenzene	10.29	581367	1.193 ug/L		
8) T	m,p-Xylene	10.46	2997509	4.946 ug/L		
9) T	o-Xylene	10.96	323684	0.403 ug/L		
11) T	Naphthalene	14.55	2043902	7.941 ug/L		

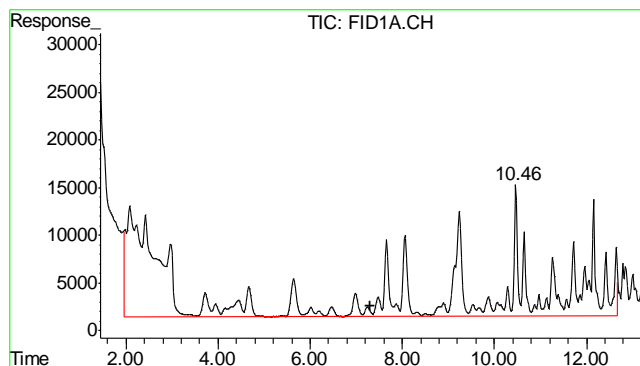
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\021612\GB14934.D\FID1A.CH Vial: 10
 Signal #2 : Y:\1\DATA\021612\GB14934.D\FID2B.CH
 Acq On : 16 Feb 2012 4:02 pm Operator: StephK
 Sample : D31900-1, 50X Inst : GC/MS Ins
 Misc : GC2613,GGB841,5.020,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Feb 16 16:31 2012 Quant Results File: TB791GB791SOIL.RES

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

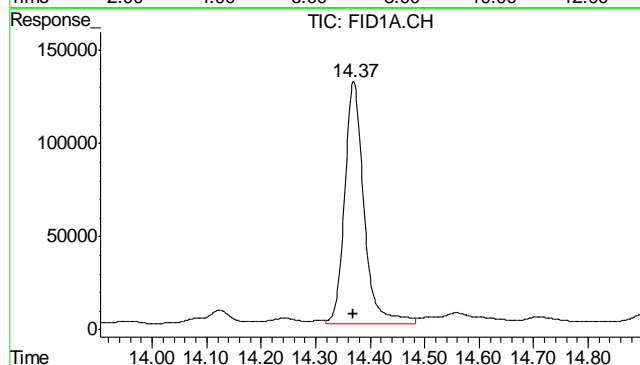
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





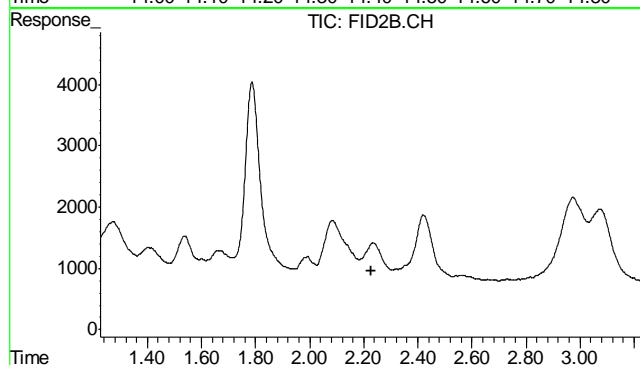
#1 TVH-Gasoline

R.T.: 7.315 min
Delta R.T.: 0.000 min
Response: 13870767
Conc: 0.19 mg/L m



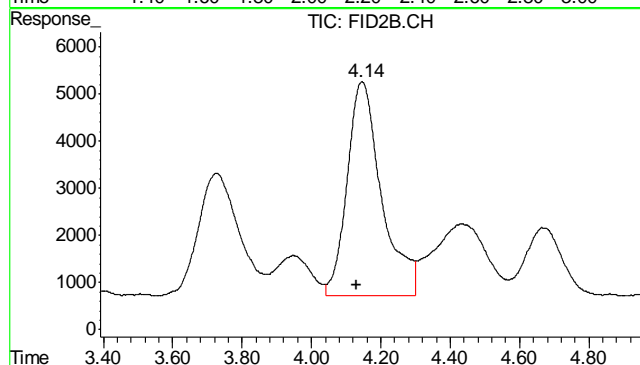
#2 1,2,4-Trichlorobenzene

R.T.: 14.369 min
Delta R.T.: 0.000 min
Response: 3218082
Conc: 110.00 % m



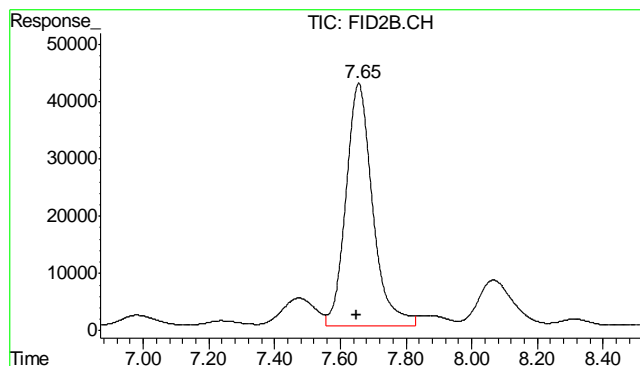
#4 Methyl-t-butyl-ether

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



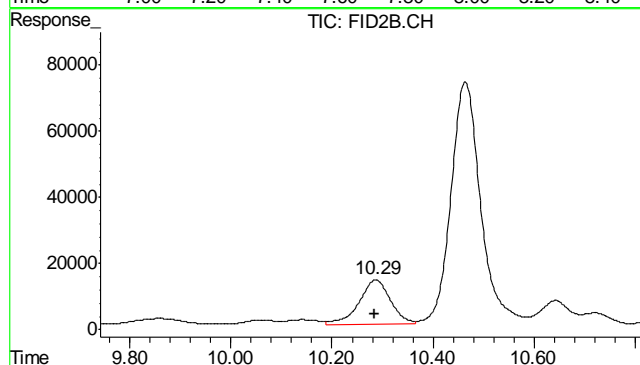
#5 Benzene

R.T.: 4.145 min
Delta R.T.: 0.015 min
Response: 312455
Conc: 0.55 ug/L



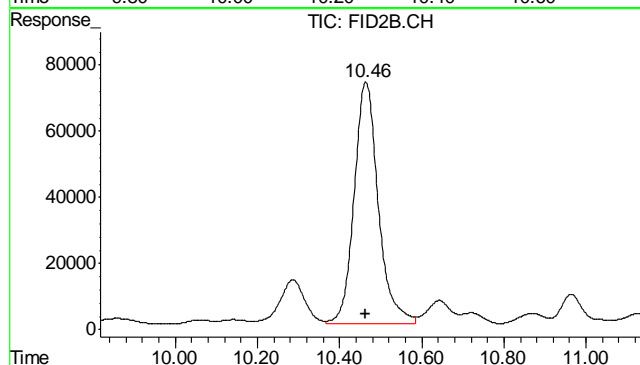
#6 Toluene

R.T.: 7.656 min
Delta R.T.: 0.005 min
Response: 2388157
Conc: 4.21 ug/L



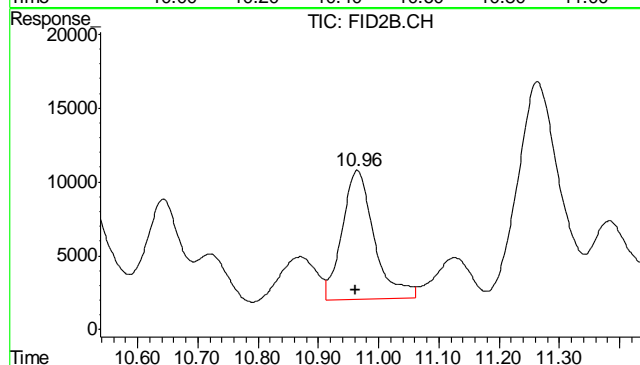
#7 Ethylbenzene

R.T.: 10.287 min
Delta R.T.: 0.003 min
Response: 581367
Conc: 1.19 ug/L



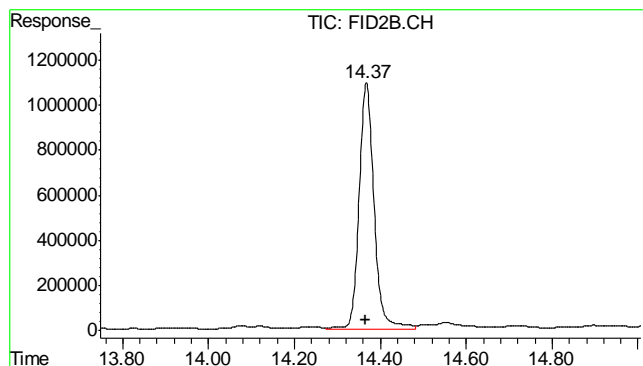
#8 m,p-Xylene

R.T.: 10.464 min
Delta R.T.: 0.000 min
Response: 2997509
Conc: 4.95 ug/L



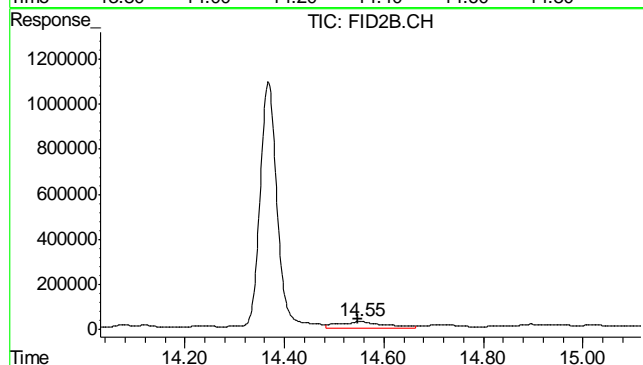
#9 o-Xylene

R.T.: 10.964 min
Delta R.T.: 0.003 min
Response: 323684
Conc: 0.40 ug/L



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

R.T.: 14.368 min
Delta R.T.: 0.002 min
Response: 26640048
Conc: 115.91 %



#11 Naphthalene

R.T.: 14.552 min
Delta R.T.: 0.005 min
Response: 2043902
Conc: 7.94 ug/L

6.1.1

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Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\021612\GB14935.D\FID1A.CH Vial: 11
 Signal #2 : Y:\1\DATA\021612\GB14935.D\FID2B.CH
 Acq On : 16 Feb 2012 4:37 pm Operator: StephK
 Sample : D31900-2, 50X Inst : GC/MS Ins
 Misc : GC2613,GGB841,5.005,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Feb 16 17:30:43 2012 Quant Results File: TB791GB791SOIL.RES

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

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

	Compound	R.T.	Response	Conc	Units

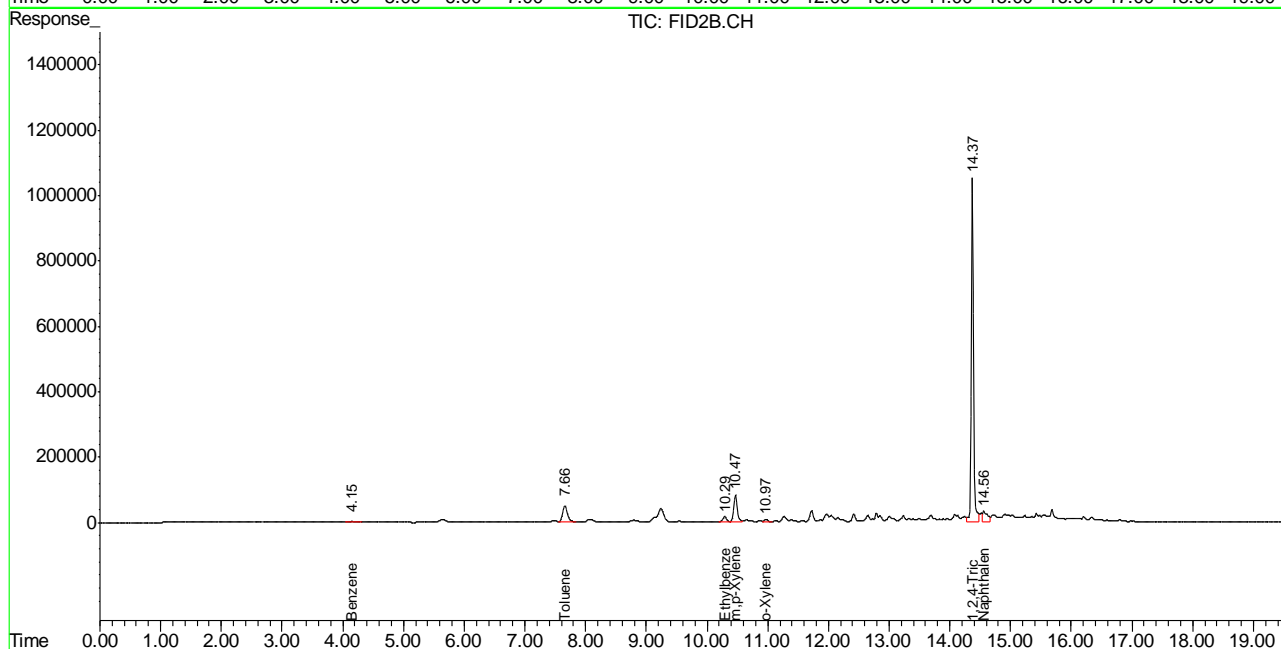
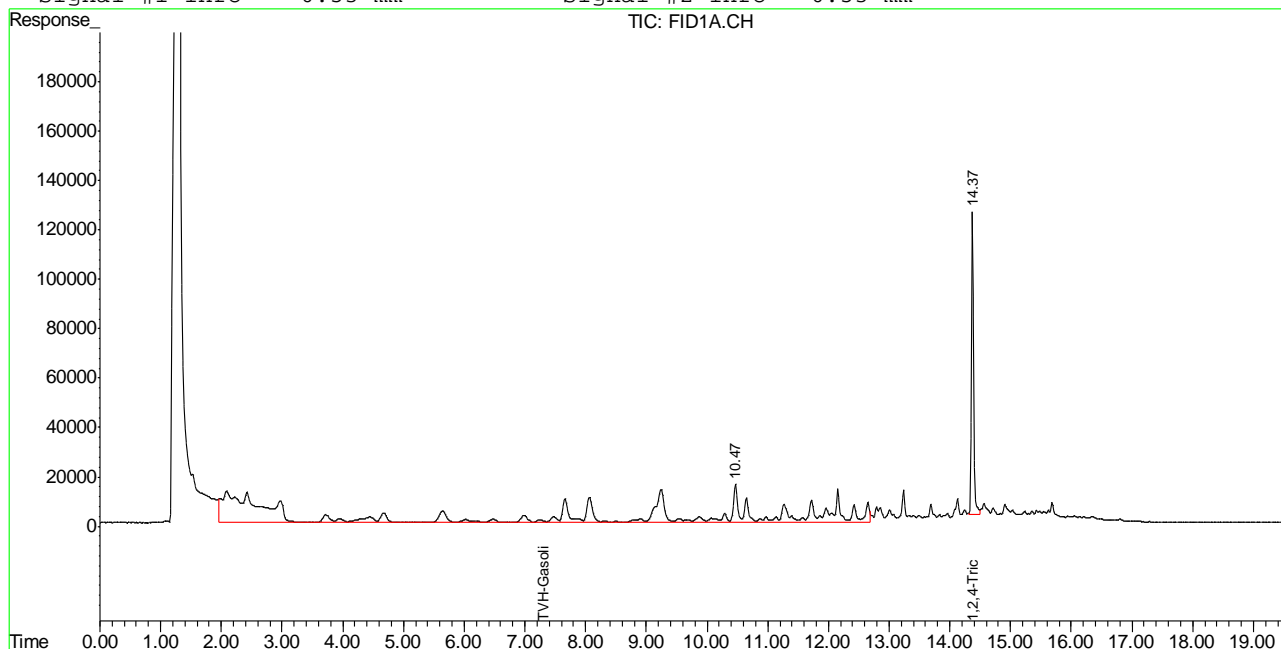
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.37	2963042	101.283 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.37	26255468	114.234 %	
Target Compounds					
1) H	TVH-Gasoline	7.32	15778841	0.222 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.15	250835	0.438 ug/L	
6) T	Toluene	7.66	2883875	5.089 ug/L	
7) T	Ethylbenzene	10.29	738253	1.515 ug/L	
8) T	m,p-Xylene	10.47	3404008	5.677 ug/L	
9) T	o-Xylene	10.97	353803	0.468 ug/L	
11) T	Naphthalene	14.56	1896449	7.368 ug/L	

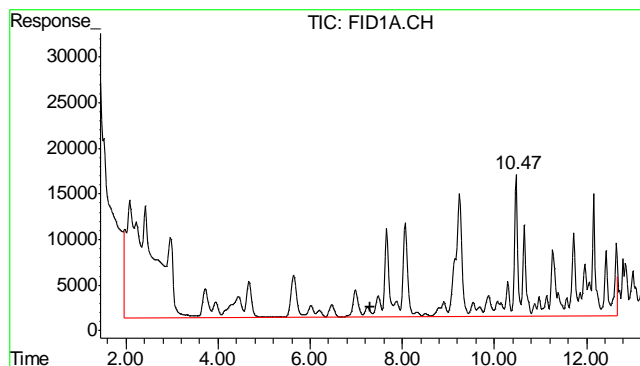
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\021612\GB14935.D\FID1A.CH Vial: 11
Signal #2 : Y:\1\DATA\021612\GB14935.D\FID2B.CH
Acq On : 16 Feb 2012 4:37 pm Operator: StephK
Sample : D31900-2, 50X Inst : GC/MS Ins
Misc : GC2613,GGB841,5.005,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 16 16:32 2012 Quant Results File: TB791GB791SOIL.RES

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

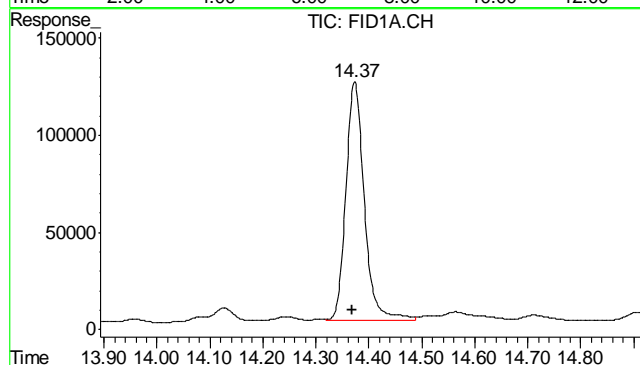
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





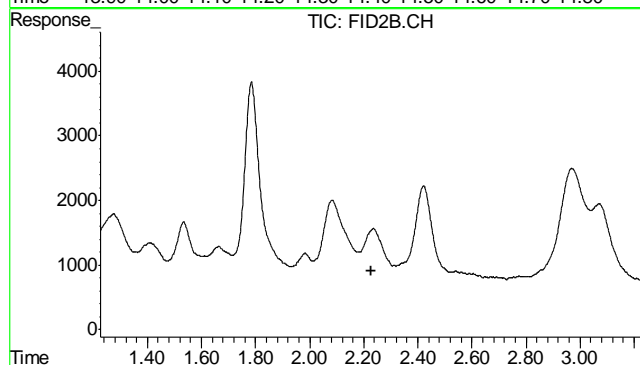
#1 TVH-Gasoline

R.T.: 7.315 min
Delta R.T.: 0.000 min
Response: 15778841
Conc: 0.22 mg/L m



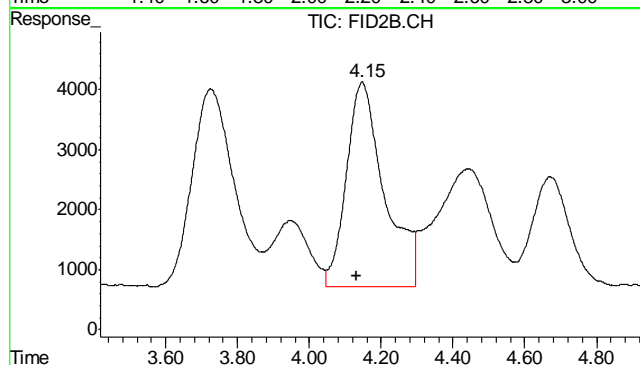
#2 1,2,4-Trichlorobenzene

R.T.: 14.373 min
Delta R.T.: 0.005 min
Response: 2963042
Conc: 101.28 % m



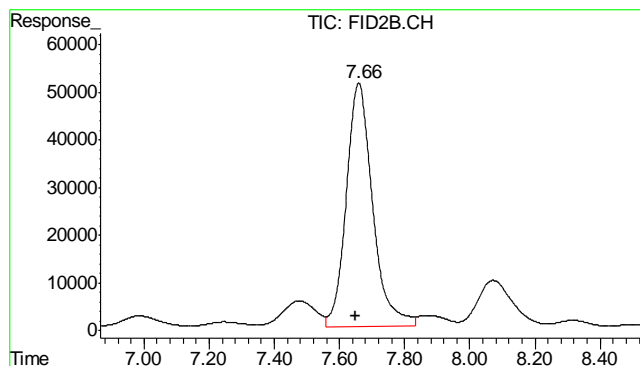
#4 Methyl-t-butyl-ether

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



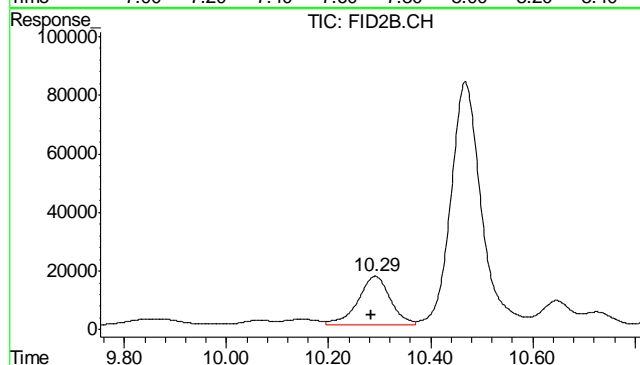
#5 Benzene

R.T.: 4.148 min
Delta R.T.: 0.017 min
Response: 250835
Conc: 0.44 ug/L



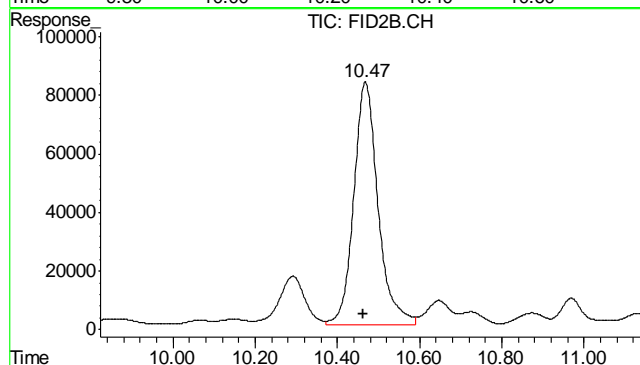
#6 Toluene

R.T.: 7.659 min
Delta R.T.: 0.008 min
Response: 2883875
Conc: 5.09 ug/L



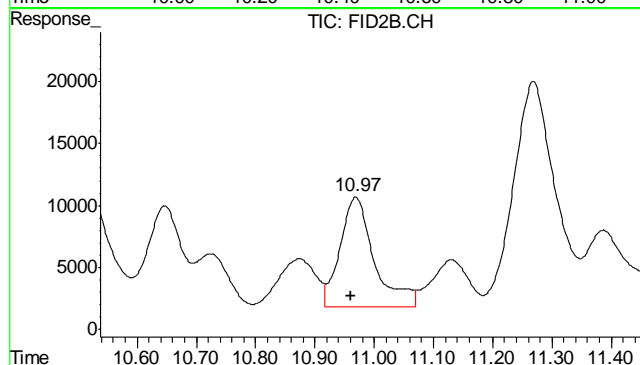
#7 Ethylbenzene

R.T.: 10.291 min
Delta R.T.: 0.007 min
Response: 738253
Conc: 1.51 ug/L



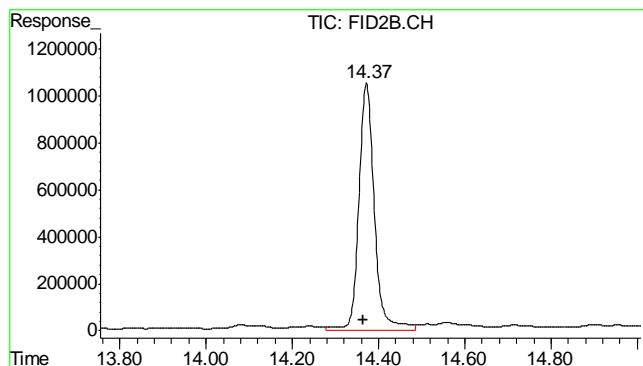
#8 m,p-Xylene

R.T.: 10.468 min
Delta R.T.: 0.004 min
Response: 3404008
Conc: 5.68 ug/L



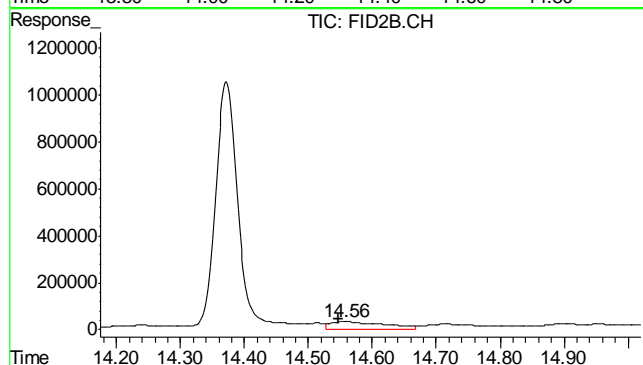
#9 o-Xylene

R.T.: 10.969 min
Delta R.T.: 0.007 min
Response: 353803
Conc: 0.47 ug/L



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

R.T.: 14.372 min
Delta R.T.: 0.006 min
Response: 26255468
Conc: 114.23 %



#11 Naphthalene

R.T.: 14.558 min
Delta R.T.: 0.010 min
Response: 1896449
Conc: 7.37 ug/L

6.12
6

Quantitation Report (QT Reviewed)

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

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

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

	Compound	R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.36	3312854	113.240	%
10) S	1,2,4-Trichlorobenzene (P)	14.36	27239671	118.516	%
Target Compounds					
1) H	TVH-Gasoline	7.32	5125510	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	7.64	158099	0.279	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	14.54	436467	1.696	ug/L

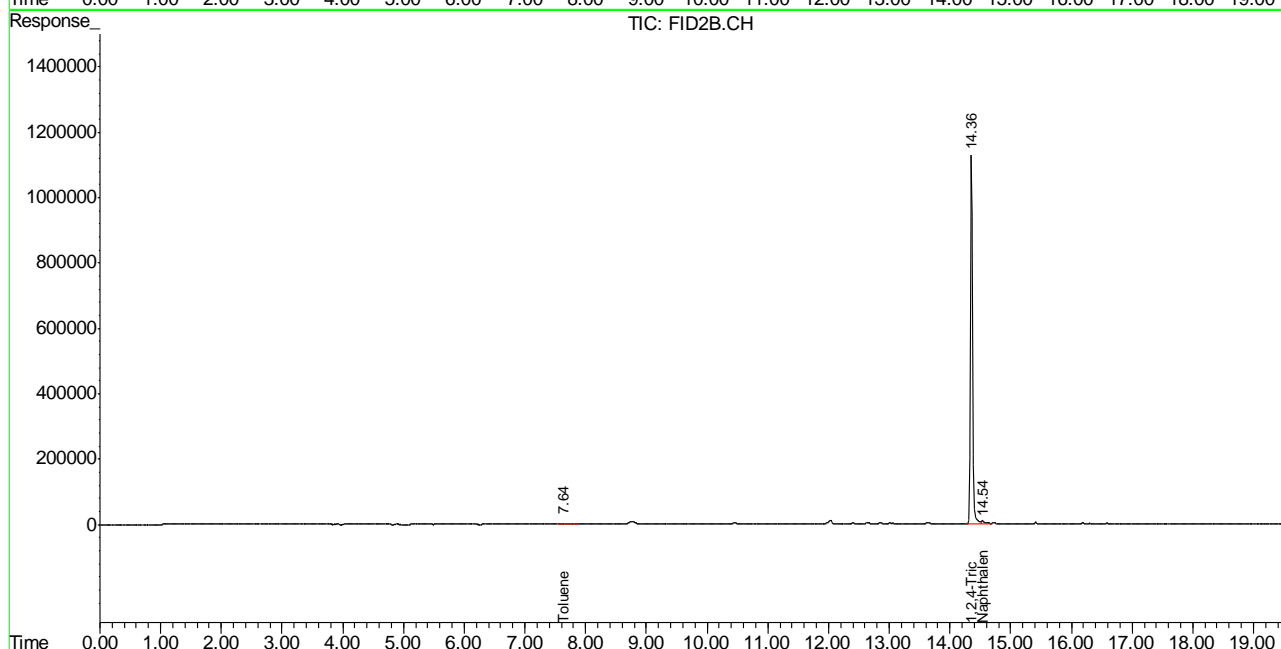
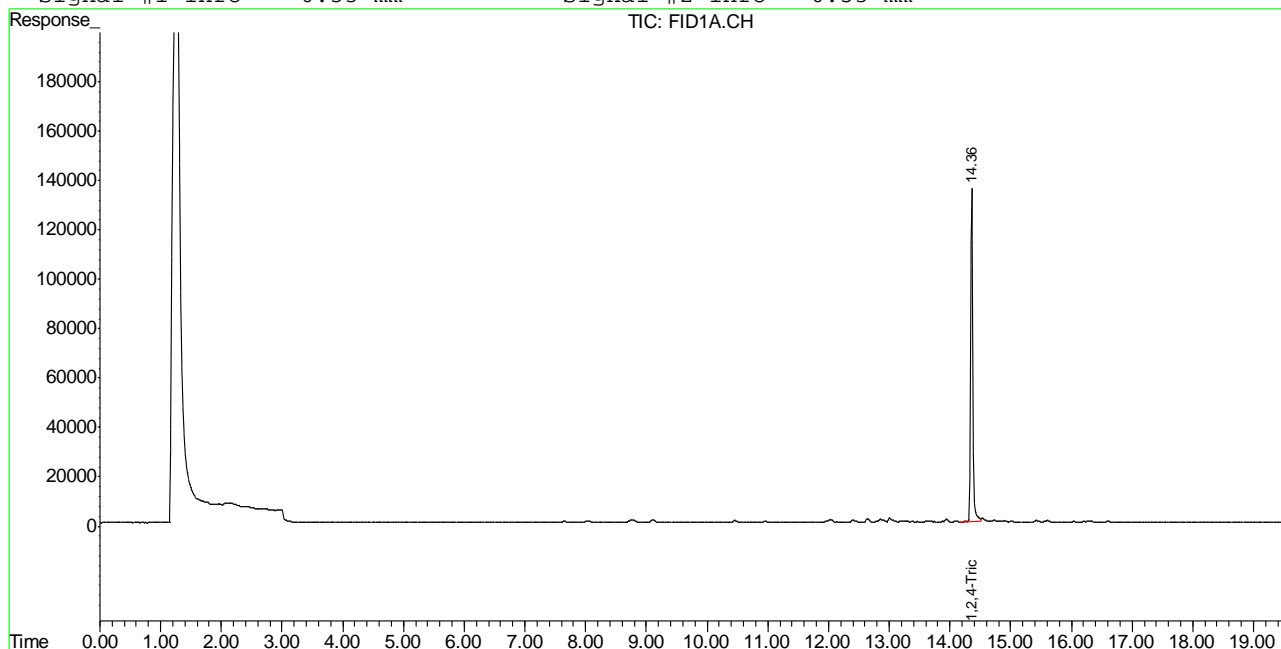
 (f)=RT Delta > 1/2 Window (m)=manual int.
 GB14928.D TB791GB791SOIL.M Fri Feb 17 09:15:02 2012 GC

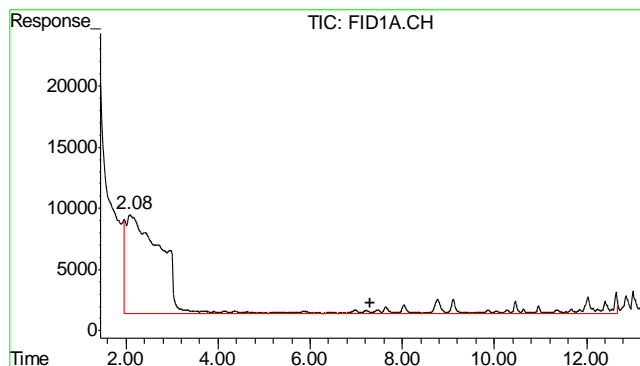
Quantitation Report (QT Reviewed)

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

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

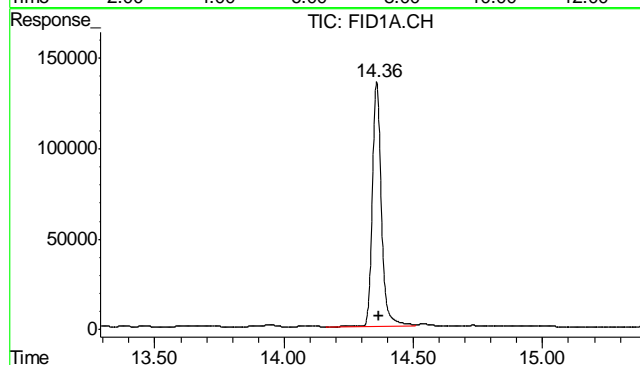
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





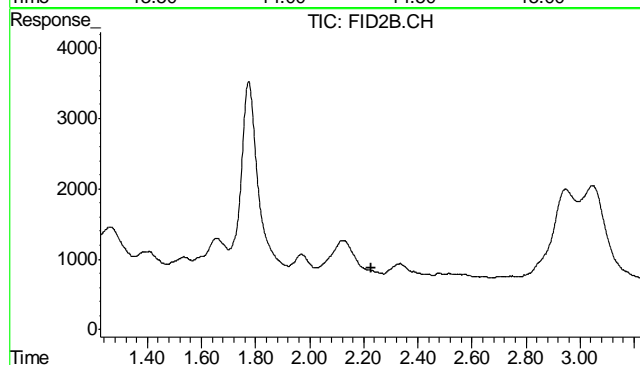
#1 TVH-Gasoline

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



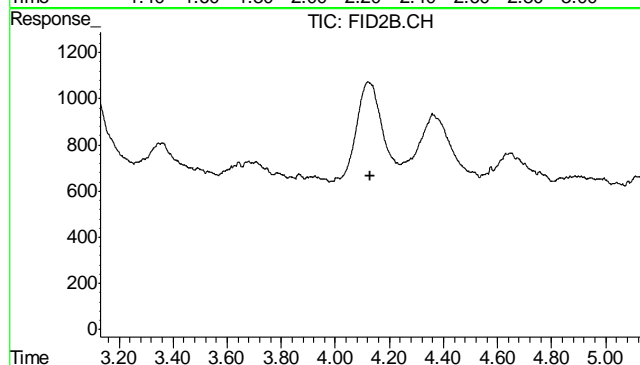
#2 1,2,4-Trichlorobenzene

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



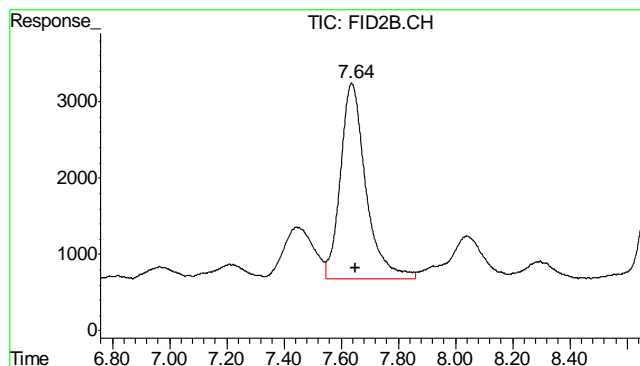
#4 Methyl-t-butyl-ether

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



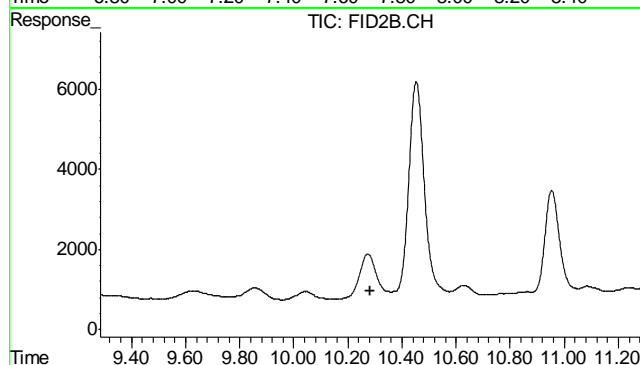
#5 Benzene

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



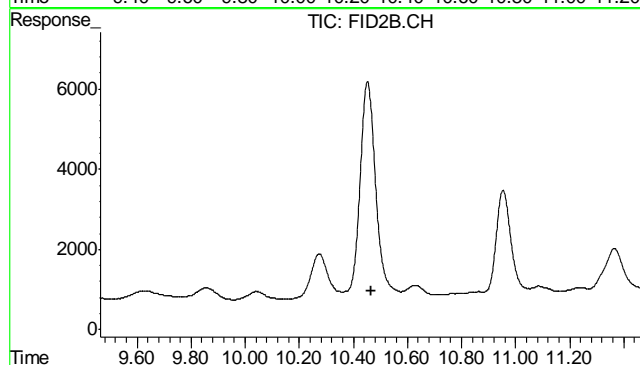
#6 Toluene

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



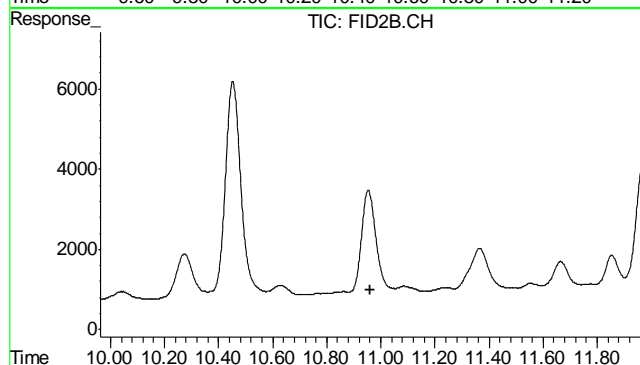
#7 Ethylbenzene

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



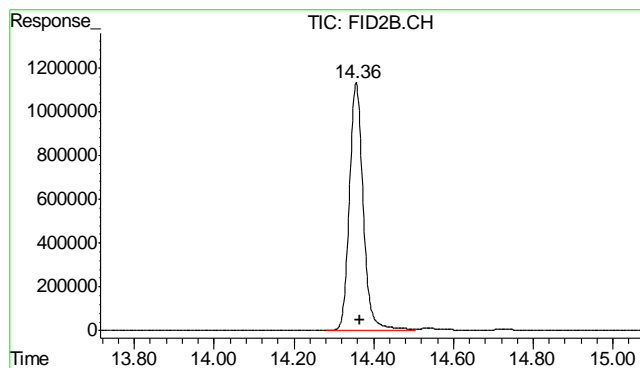
#8 m,p-Xylene

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



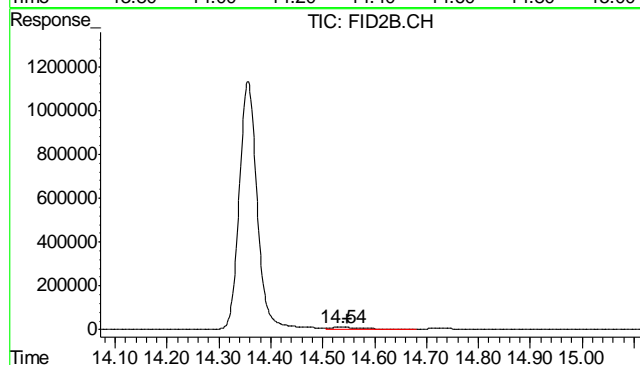
#9 o-Xylene

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



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

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



#11 Naphthalene

R.T.: 14.537 min
Delta R.T.: -0.011 min
Response: 436467
Conc: 1.70 ug/L

6.2.1

6

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D31900
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

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

The QC reported here applies to the following samples:

Method: SW846-8015B

D31900-1, D31900-2

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

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

Blank Spike Summary

Job Number: D31900
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

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

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

D31900-1, D31900-2

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

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

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D31900
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

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

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

D31900-1, D31900-2

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

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

GC Semi-volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH021812\
 Data File : FH001413.D
 Signal(s) : FID1A.ch
 Acq On : 18 Feb 2012 4:55 pm
 Operator : tedr
 Sample : D31900-1, rr
 Misc : OP5373,GFH68,30.00,,,2,1
 ALS Vial : 51 Sample Multiplier: 1

Integration File: events.e
 Quant Time: Feb 18 17:23:07 2012
 Quant Method : C:\msdchem\1\METHODS\DRO-GFH34F.M
 Quant Title : DRO-ORO FRONT
 QLast Update : Tue Jan 31 13:20:35 2012
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) s o-Terphenyl	12.470	1201353334	817.203 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	10.011	1691339512	1387.440 ug/ml

(f)=RT Delta > 1/2 Window

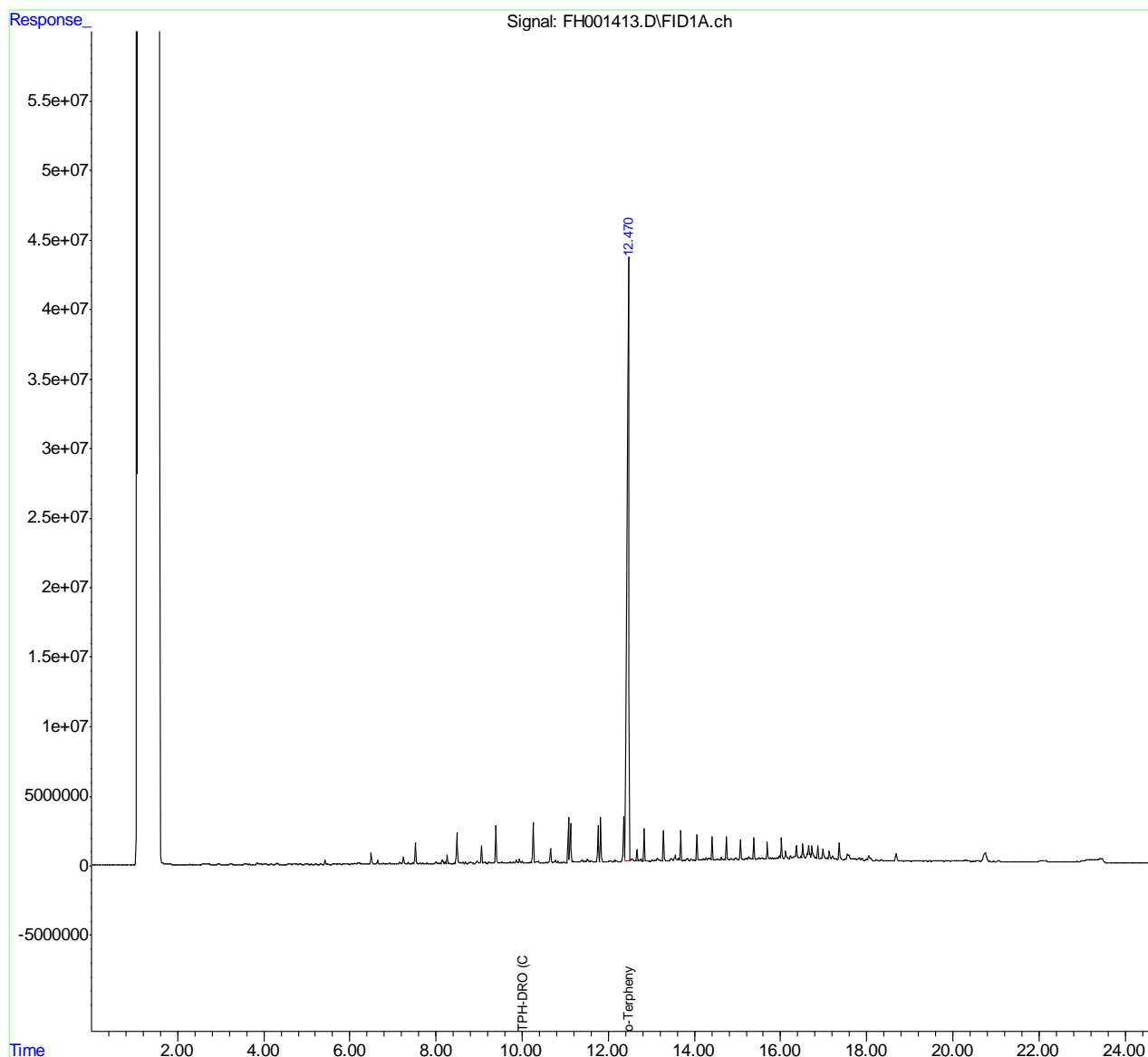
(m)=manual int.

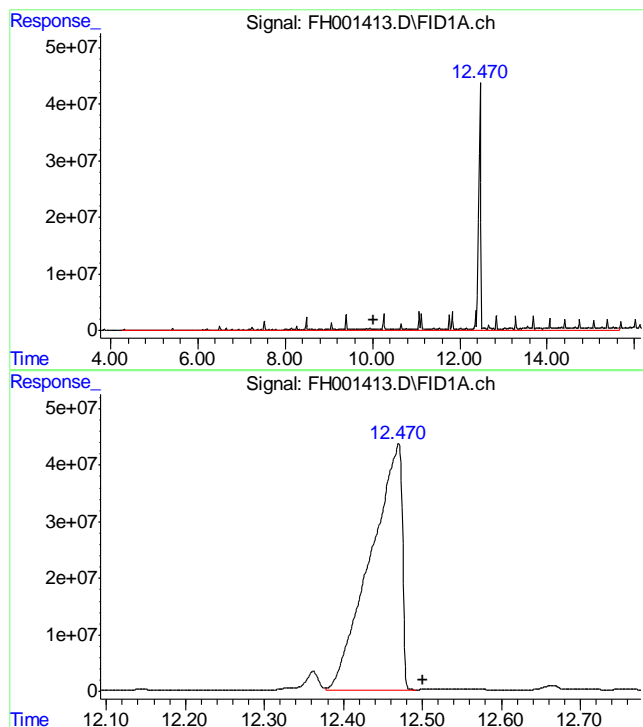
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH021812\
Data File : FH001413.D
Signal(s) : FID1A.ch
Acq On : 18 Feb 2012 4:55 pm
Operator : tedr
Sample : D31900-1, rr
Misc : OP5373,GFH68,30.00,,,2,1
ALS Vial : 51 Sample Multiplier: 1

Integration File: events.e
Quant Time: Feb 18 17:23:07 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH34F.M
Quant Title : DRO-ORO FRONT
QLast Update : Tue Jan 31 13:20:35 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 10.011 min

Delta R.T.: 0.000 min

Response: 1691339512

Conc: 1387.44 ug/ml m

#2 o-Terphenyl

R.T.: 12.470 min

Delta R.T.: -0.030 min

Response: 1201353334

Conc: 817.20 ug/ml

8.1.1

8

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH021712\
 Data File : FH001371.D
 Signal(s) : FID1A.ch
 Acq On : 17 Feb 2012 8:17 pm
 Operator : tedr
 Sample : D31900-2
 Misc : OP5373,GFH64,30.08,,,2,1
 ALS Vial : 58 Sample Multiplier: 1

Integration File: events.e
 Quant Time: Feb 18 16:23:34 2012
 Quant Method : C:\msdchem\1\METHODS\DRO-GFH34F.M
 Quant Title : DRO-ORO FRONT
 QLast Update : Tue Jan 31 13:20:35 2012
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) s o-Terphenyl	12.457	1079787950	734.510 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	10.011	3622646227	2971.730 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

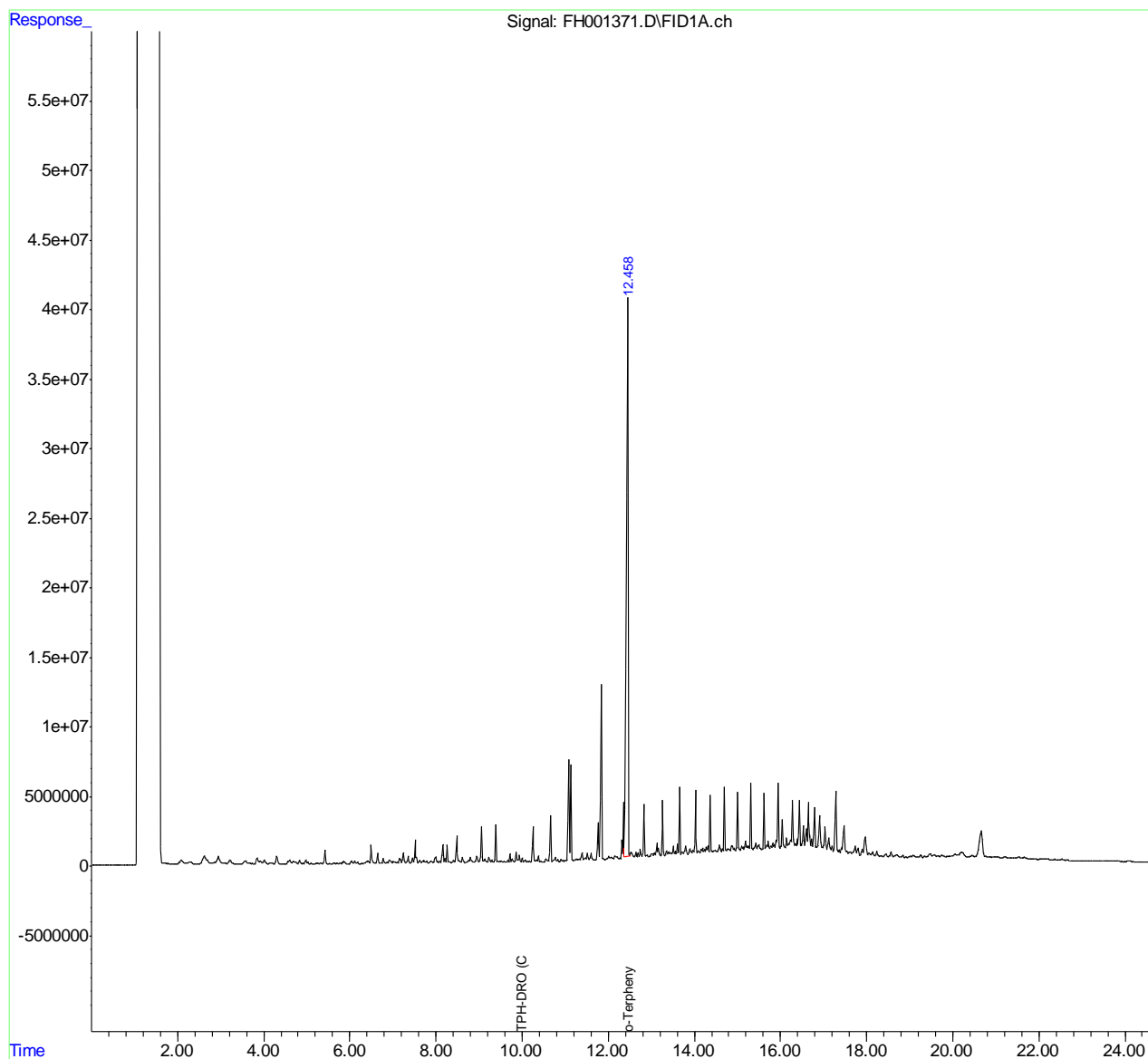
8.12
8

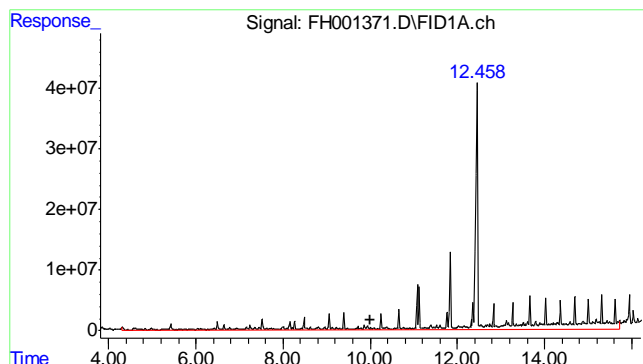
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH021712\
Data File : FH001371.D
Signal(s) : FID1A.ch
Acq On : 17 Feb 2012 8:17 pm
Operator : tedr
Sample : D31900-2
Misc : OP5373,GFH64,30.08,,,2,1
ALS Vial : 58 Sample Multiplier: 1

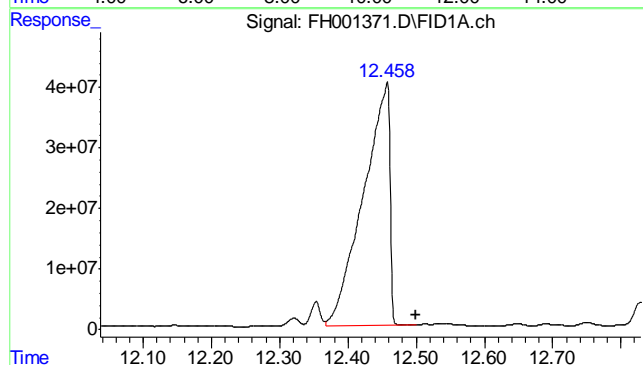
Integration File: events.e
Quant Time: Feb 18 16:23:34 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH34F.M
Quant Title : DRO-ORO FRONT
QLast Update : Tue Jan 31 13:20:35 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)
 R.T.: 10.011 min
 Delta R.T.: 0.000 min
 Response: 3622646227
 Conc: 2971.73 ug/ml m



#2 o-Terphenyl
 R.T.: 12.457 min
 Delta R.T.: -0.043 min
 Response: 1079787950
 Conc: 734.51 ug/ml

8.12
8

Quantitation Report (QT Reviewed)

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

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

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) s o-Terphenyl	12.465	1333828445	907.317 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	10.011	27311873	22.404 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

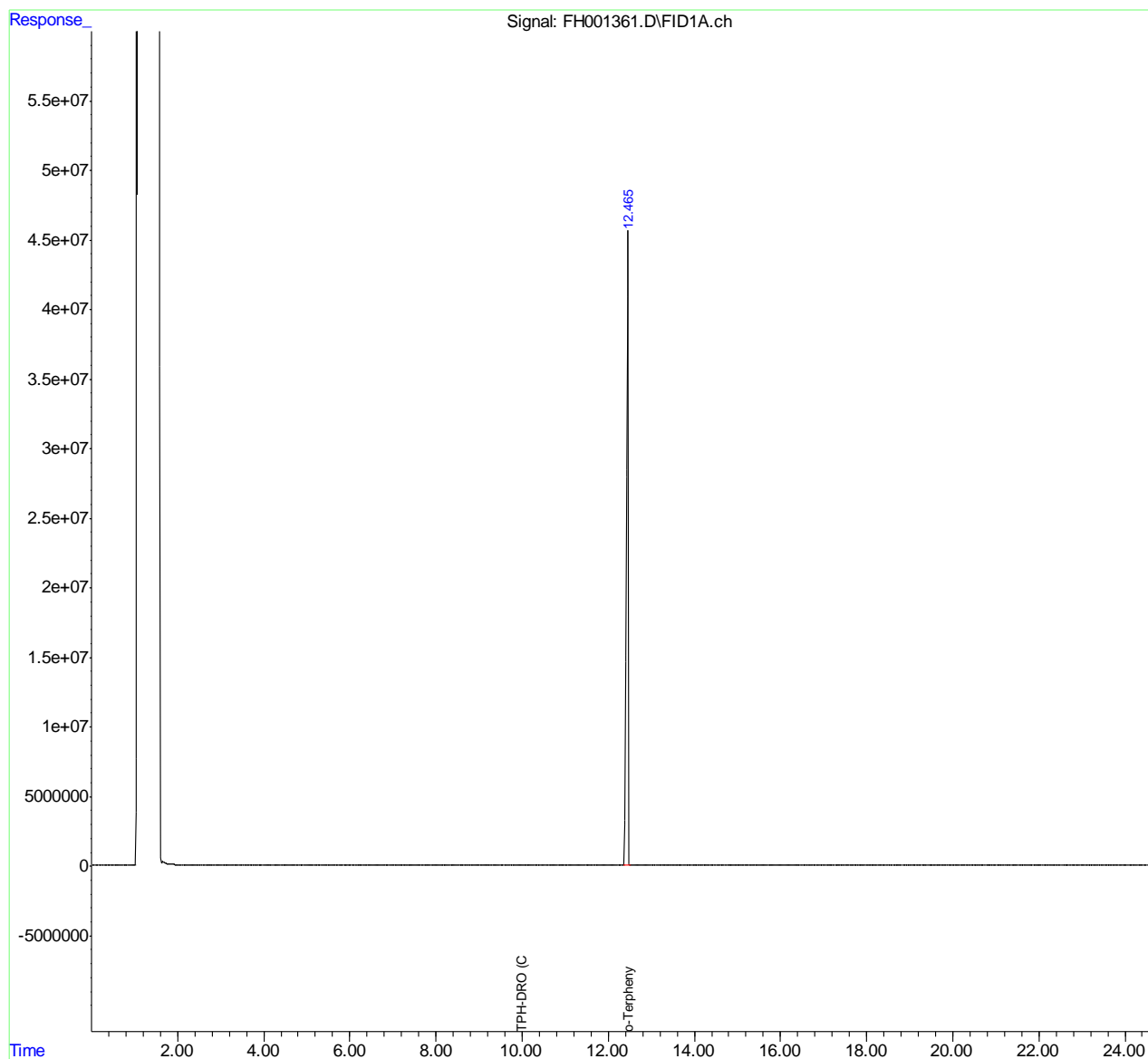
8.2.1
8

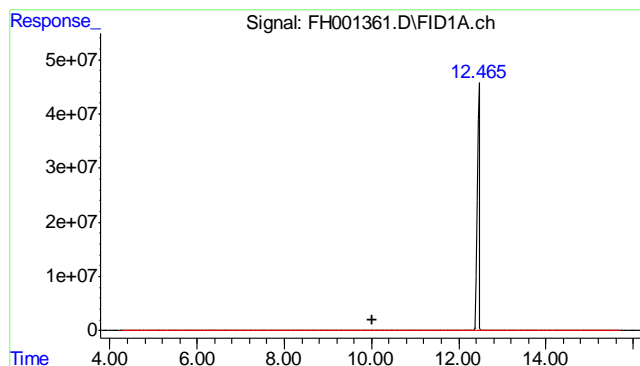
Quantitation Report (QT Reviewed)

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

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

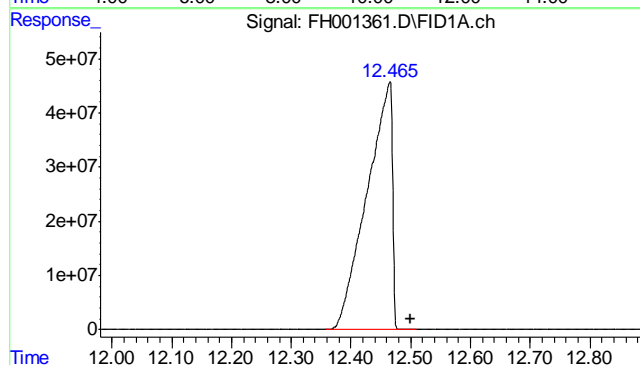
Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

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



#2 o-Terphenyl

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

8.2.1

8