August 11, 2011

ExxonMobil Production Company
Corp-MI-3011
PO Box 4358
Houston, TX77210-4358

Attention: J.D. McElhaney

Subject: **Assessment Report**
Bunker Tank Project
PCU T45X-18G
NESW, Section 18, Township 2 South, Range 96 West
Piceance Creek Development Project; Rio Blanco County, Colorado
KRW Project No. 1106-04

Dear Mr. McElhaney:

As requested we have completed the environmental sampling and assessment activities at the subject site. The following report documents these activities.

Background

A buried bunker tank was located on the site. The bunker tank has been removed from the location. An excavation, approximately 4-feet in depth below ground surface, was remnant following removal of the tank.

Environmental Assessment

KRW personnel collected a representative composite soil sample on July 6, 2011 at the base of the excavation utilizing a backhoe to mitigate potential confined space entry into the hole. Also, use of the backhoe allowed deeper exploration into the subsurface than would have been possible using hand tools. During sample collection activities, a shallow test pit was advanced approximately one-foot beneath the base of the original excavation to a total depth of approximately five feet below ground surface, where bedrock was encountered. This collected composite sample was analyzed for the full Table 910-1 analyses.

Additionally, five shallow background samples were collected at this same time for arsenic. These samples were collected adjacent to the subject location, but away from any potential surface influences from the location.

The analytical results from the composite sample collected at the base of the excavation indicate a total petroleum hydrocarbon (TPH) concentration of 54.9 mg/kg, below the COGCC allowable level of 500 mg/kg for TPH. Arsenic from this base sample was detected at 4.3 mg/kg, above COGCC's stated level of 0.39 mg/kg, but below the maximum allowable level (7.04 mg/kg) based on background samples.

(Note that COGCC allows the determination of background concentrations based on a 10% variability factor, where the maximum allowable level is computed by multiplying the highest detected background value by 1.1 (e.g. 6.4 x 1.1 = 7.04 mg/kg). It should also be noted that the pH level (9.27) is outside the stated COGCC allowable levels (6 to 9). However, COGCC allows elevated pH levels in soils that are to be covered by at least three-feet of clean soil. The remnant excavation will be backfilled with clean soil thus the remaining elevated pH should not be an issue. No other elevated Table 910-1 constituents were identified. Refer to Table 1 for a summary of the laboratory data and to Appendix A for the complete laboratory reports.

Post Remediation Sampling Results and Conclusions

Based on these assessment findings, no additional investigation or remediation regarding the removed bunker tank at the subject site is required.

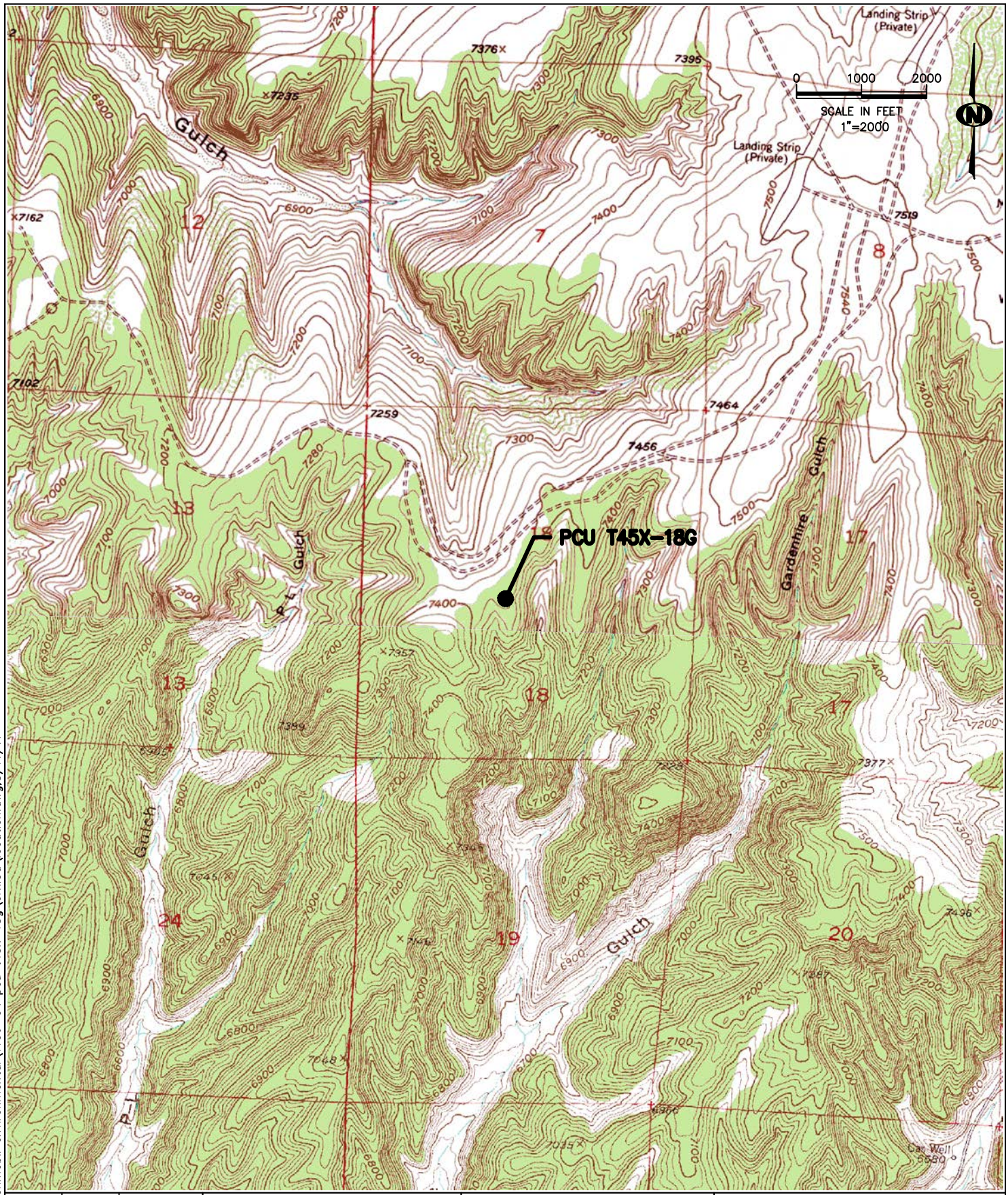
Respectfully Submitted,

Craig Burger, P.E.
Field Engineer

Dwayne Knudson
Assistant Project Manager

Attachments
Figure 1 – Site Location Map
Table 1 – Summary of Laboratory Findings
Laboratory Reports: PCU T45X-18G Background Lab Data; PCU T45X-18G Bottom of Excavation Lab Data

CC: Tommee Lynn Lambert – ExxonMobil
Nedra Kelly – ExxonMobil



DESIGNED: –	CHECKED: JH	FIGURE 1	NOTES:
DATE: 8/11/11	DRAWN: DRF		
FILE NAME: location		SHEET NO. 1 of 1	DATE / REVISIONS
PROJECT NO. 1106-04		SCALE: 1"=2000'	

KRW CONSULTING, INC.
8000 W. 14TH AVENUE, SUITE 200
LAKEWOOD, COLORADO
(303) 239-9011

FIGURE 1
PICEANCE CREEK
PCU T45X-18G
SITE LOCATION MAP

PREPARED FOR EXXONMOBIL

\\file\sdsk\proj\exxonmobil environmental\1106-04 pcu t45x-18g\civil3d\location.dwg,8/11/11

TABLE 1

PCU T45X-18G Former Buried Bunker Tank and Background Sampling Summary

Analytical Parameter (with units)	Bottom of excavation samples (7/6/11)	BACKGROUND SAMPLES					COGCC *Table 910-1 Allowable Levels (Soils Only)*	Maximum Allowable Level (based on background)
		Background #1	Background #2	Background #3	Background #4	Background #5		
TPH (GRO) (mg/kg)	ND	-	-	-	-	-	-	-
TPH (DRO) (mg/kg)	54.90	-	-	-	-	-	-	-
TPH (GRO+DRO) (mg/kg)	54.90	-	-	-	-	-	500	-
Benzene (mg/kg)	ND	-	-	-	-	-	0.17	-
Toluene (mg/kg)	ND	-	-	-	-	-	85	-
Ethylbenzene (mg/kg)	ND	-	-	-	-	-	100	-
Xylenes (total) (mg/kg)	ND	-	-	-	-	-	175	-
Acenaphthene (mg/kg)	ND	-	-	-	-	-	1,000	-
Anthracene (mg/kg)	ND	-	-	-	-	-	1,000	-
Benzo(A)anthracene (mg/kg)	ND	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/kg)	ND	-	-	-	-	-	0.22	-
Benzo(K)fuoranthene (mg/kg)	ND	-	-	-	-	-	2.2	-
Benzo(A)pyrene (mg/kg)	ND	-	-	-	-	-	0.022	-
Chrysene (mg/kg)	0.10	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/kg)	ND	-	-	-	-	-	0.022	-
Fluoranthene (mg/kg)	0.16	-	-	-	-	-	1,000	-
Fluorene (mg/kg)	ND	-	-	-	-	-	1,000	-
Indeno(1,2,3,C,D)pyrene (mg/kg)	ND	-	-	-	-	-	0.22	-
Naphthalene (mg/kg)	ND	-	-	-	-	-	23	-
Pyrene (mg/kg)	0.14	-	-	-	-	-	1,000	-
Electrical Conductivity (mmhos/cm)	0.19	-	-	-	-	-	<4or 2X Bckgrnd	-
Sodium Adsorption Ratio (SAR)	1.3	-	-	-	-	-	<12	-
pH	9.27	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	4.3	5	5.1	5.8	6.4	5.8	0.39	7.04
Barium (mg/kg)	227.0	-	-	-	-	-	15,000	-
Cadmium (mg/kg)	<1.2	-	-	-	-	-	70	-
Chromium (III) (mg/kg)	31.9	-	-	-	-	-	120,000	-
Chromium (VI) (mg/kg)	<0.45	-	-	-	-	-	23	-
Copper (mg/kg)	8.3	-	-	-	-	-	3,100	-
Lead (inorganic) (mg/kg)	18.0	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.10	-	-	-	-	-	23	-
Nickel (mg/kg)	13.5	-	-	-	-	-	1,600	-
Selenium (mg/kg)	<5.8	-	-	-	-	-	390	-
Silver (mg/kg)	<3.5	-	-	-	-	-	390	-
Zinc (mg/kg)	49.1	-	-	-	-	-	23,000	-

Notes:

1) ND = not detectible to the laboratory detection limit.

2) Results highlighted in yellow exceed Table 910-1 parameters. Results highlighted in gray exceed Table 910-1, but are below maximum allowable levels based on background.

3) "-" indicates no tests were performed.

Mountain States ACCUTEST LABORATORIES

07/14/11

Technical Report for

KRW Consulting, Inc.

PCU T45X-18G

1106-04

Accutest Job Number: D25217

Sampling Date: 07/06/11

Report to:

KRW Consulting, Inc.
8000 West 14th Avenue Suite 200
Lakewood, CO 80214
bberger@krwconsulting.com; gknell@krwconsulting.com;
dknudson@krwconsulting.com; jhess@krwconsulting.com;
ATTN: Dwayne Knudson

Total number of pages in report: **139**

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.

John Hamilton
Laboratory Director

Client Service contact: 303-425-6021

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

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Test results relate only to samples analyzed.

Accutest Laboratories is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.

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Accutest Laboratories

Sample Summary

KRW Consulting, Inc.

Job No: D25217

PCU T45X-18G
Project No: 1106-04

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D25217-1	07/06/11	10:45	CB	07/07/11	SO	Soil	45-18 4 TO 5 FEET
D25217-1A	07/06/11	10:45	CB	07/07/11	SO	Soil	45-18 4 TO 5 FEET

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	KRW Consulting, Inc.	**Job No**	D25217
Site:	PCU T45X-18G	**Report Dat**	7/14/2011 12:52:34 PM

On 07/07/2011, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D25217 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 GCMS By Method SW846 8260B

Matrix SO **Batch ID:** V6V363

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D25217-1MS, D25217-1MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP4053

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) D25217-1MS, D25217-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The matrix spike and matrix spike duplicate (MS/MSD) recovery(s) of multiple analytes are outside control limits. Outside control limits due to dilution.

Volatiles by GC By Method SW846 8015B

Matrix SO **Batch ID:** GGB674

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D25178-2MS, D25178-2MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP4028

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) D25222-3MS, D25222-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010B

Matrix AQ	Batch ID: MP5156

- All samples were digested 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) D25072-4AMS, D25072-4AMSD were used as the QC samples for the metals analysis.

Matrix SO	Batch ID: MP5153

- All samples were digested 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) D25217-1MS, D25217-1MSD, D25217-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Zinc are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- The matrix spike duplicate (MSD) recovery(s) of Zinc are outside control limits. Probable cause due to matrix interference.
- The RPD(s) for the MS and MSD recoveries of Zinc are outside control limits for sample MP5153-S2. High RPD due to possible sample nonhomogeneity.
- The serial dilution RPD(s) for Cadmium, Selenium, Silver are outside control limits for sample MP5153-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- The serial dilution RPD(s) for Barium, Chromium, Nickel, Zinc are outside control limits for sample MP5153-SD1. Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020

Matrix SO	Batch ID: MP5154

- All samples were digested 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) D25217-1MS, D25217-1MSD, D25217-1SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471A

Matrix SO	Batch ID: MP5161

- All samples were digested 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) D25072-1MS, D25072-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO	Batch ID: GN10433

- Sample(s) D25174-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method DEPT.OF AG, BOOK N9

Matrix SO	Batch ID: GP4896

- All samples were prepared 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.

Wet Chemistry By Method SM19 2540B M

Matrix	SO	**Batch ID:**	GN10455

- The data for SM19 2540B M meets quality control requirements.

Wet Chemistry By Method SW846 3060/7196A M

Matrix	SO	**Batch ID:**	R8381

- The data for SW846 3060/7196A M meets quality control requirements.
- D25217-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A

Matrix	SO	**Batch ID:**	M:GP13230

- The data for SW846 3060A/7196A meets quality control requirements.
- D25217-1 for Chromium, Hexavalent: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method USDA HANDBOOK 60

Matrix	SO	**Batch ID:**	MP5156

- D25217-1A for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

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 DELIVERY GROUP CASE NARRATIVE

Client:	Accutest Mountain States	**Job No**	D25217
Site:	KRWCCOL: PCU T45X-18G	**Report Date**	7/14/2011 8:40:33 AM

1 Sample was collected on 07/06/2011 and were received at Accutest on 07/07/2011 properly preserved, at 2.0 Deg. C and intact. These Samples received an Accutest job number of D25217. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO **Batch ID:** GP13230

- All samples were distilled 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) D25106-1MS, D25106-1DUP were used as the QC samples for Chromium, Hexavalent.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP13230-D1. RPD acceptable due to low duplicate and sample concentrations.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(D25217).

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	45-18 4 TO 5 FEET		
Lab Sample ID:	D25217-1	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
Method:	SW846 8260B	**Percent Solids:**	88.1
Project:	PCU T45X-18G		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6V07023.D	1	07/10/11	BR	n/a	n/a	V6V363
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.02 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	63	28	ug/kg	
108-88-3	Toluene	ND	130	63	ug/kg	
100-41-4	Ethylbenzene	ND	130	32	ug/kg	
1330-20-7	Xylene (total)	ND	250	130	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	95%		61-130%
460-00-4	4-Bromofluorobenzene	107%		53-131%
17060-07-0	1,2-Dichloroethane-D4	116%		62-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	45-18 4 TO 5 FEET		
Lab Sample ID:	D25217-1	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	88.1
Project:	PCU T45X-18G		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G04988.D	10	07/13/11	TMB	07/12/11	OP4053	E3G183
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	76	61	ug/kg	
120-12-7	Anthracene	ND	76	68	ug/kg	
56-55-3	Benzo(a)anthracene	ND	190	98	ug/kg	
50-32-8	Benzo(a)pyrene	ND	190	140	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	190	140	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	190	83	ug/kg	
218-01-9	Chrysene	100	190	83	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	190	140	ug/kg	
206-44-0	Fluoranthene	155	76	76	ug/kg	
86-73-7	Fluorene	ND	76	64	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	230	210	ug/kg	
91-20-3	Naphthalene	ND	76	72	ug/kg	
129-00-0	Pyrene	139	76	72	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	60%		10-193%
321-60-8	2-Fluorobiphenyl	64%		20-138%
1718-51-0	Terphenyl-d14	76%		17-174%

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:	45-18 4 TO 5 FEET		
Lab Sample ID:	D25217-1	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
Method:	SW846 8015B	**Percent Solids:**	88.1
Project:	PCU T45X-18G		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB11730.D	1	07/08/11	SK	n/a	n/a	GGB674
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	74%		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:	45-18 4 TO 5 FEET		
Lab Sample ID:	D25217-1	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
Method:	SW846-8015B SW846 3546	**Percent Solids:**	88.1
Project:	PCU T45X-18G		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD07686.D	1	07/09/11	JB	07/08/11	OP4028	GFD337
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)	54.9	15	9.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	74%		61-142%

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

Report of Analysis

Client Sample ID:	45-18 4 TO 5 FEET		
Lab Sample ID:	D25217-1	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
		Percent Solids:	88.1
Project:	PCU T45X-18G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.3	0.46	mg/kg	5	07/08/11	07/08/11	GJ	SW846 6020 [2]	SW846 3050B [6]
Barium	227	1.2	mg/kg	1	07/08/11	07/08/11	JB	SW846 6010B [1]	SW846 3050B [5]
Cadmium	< 1.2	1.2	mg/kg	1	07/08/11	07/08/11	JB	SW846 6010B [1]	SW846 3050B [5]
Chromium	31.9	1.2	mg/kg	1	07/08/11	07/08/11	JB	SW846 6010B [1]	SW846 3050B [5]
Copper	8.3	1.2	mg/kg	1	07/08/11	07/12/11	JB	SW846 6010B [4]	SW846 3050B [5]
Lead	18.0	5.8	mg/kg	1	07/08/11	07/08/11	JB	SW846 6010B [1]	SW846 3050B [5]
Mercury	< 0.10	0.10	mg/kg	1	07/11/11	07/11/11	JB	SW846 7471A [3]	SW846 7471A [7]
Nickel	13.5	3.5	mg/kg	1	07/08/11	07/08/11	JB	SW846 6010B [1]	SW846 3050B [5]
Selenium	< 5.8	5.8	mg/kg	1	07/08/11	07/08/11	JB	SW846 6010B [1]	SW846 3050B [5]
Silver	< 3.5	3.5	mg/kg	1	07/08/11	07/08/11	JB	SW846 6010B [1]	SW846 3050B [5]
Zinc	49.1	3.5	mg/kg	1	07/08/11	07/08/11	JB	SW846 6010B [1]	SW846 3050B [5]

(1) Instrument QC Batch: MA1656
(2) Instrument QC Batch: MA1659
(3) Instrument QC Batch: MA1661
(4) Instrument QC Batch: MA1663
(5) Prep QC Batch: MP5153
(6) Prep QC Batch: MP5154
(7) Prep QC Batch: MP5161

RL = Reporting Limit

Report of Analysis

Client Sample ID:	45-18 4 TO 5 FEET		
Lab Sample ID:	D25217-1	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
		Percent Solids:	88.1
Project:	PCU T45X-18G		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	< 0.45	0.45	mg/kg	1	07/13/11 14:33	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	31.9	1.7	mg/kg	1	07/13/11 14:33	AMA	SW846 3060/7196A M
Redox Potential Vs H2	317		mv	1	07/07/11 12:00	CB	ASTM D1498-76M
Solids, Percent	88.1		%	1	07/08/11	RC	SM19 2540B M
Specific Conductivity	188	1.0	umhos/cm	1	07/12/11	JK	DEPT.OF AG, BOOK N9
pH	9.27		su	1	07/07/11 15:15	JD	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	45-18 4 TO 5 FEET		
Lab Sample ID:	D25217-1A	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
		Percent Solids:	88.1
Project:	PCU T45X-18G		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	16.7	2.0	mg/l	1	07/08/11	07/08/11	JB	SW846 6010B [1]	EPA 200.7 [2]
Magnesium	4.91	1.0	mg/l	1	07/08/11	07/08/11	JB	SW846 6010B [1]	EPA 200.7 [2]
Sodium	23.5	2.0	mg/l	1	07/08/11	07/08/11	JB	SW846 6010B [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA1656
(2) Prep QC Batch: MP5156

RL = Reporting Limit

Report of Analysis

Client Sample ID:	45-18 4 TO 5 FEET		
Lab Sample ID:	D25217-1A	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
		Percent Solids:	88.1
Project:	PCU T45X-18G		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	1.30		ratio	1	07/08/11 20:54	JB	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES

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 #: D25217

Client / Reporting Information

Company Name: KRW Consulting
Street Address: 8000 W. 14th Ave Ste 200
City: Lakewood State: CO Zip: 80214
Project Contact: Dwayne Knudson E-mail:
Phone #: 970 675 4066 Fax #:
Sampler(s) Name(s): Craig Burger Phone #: 970 756 2993

Project Information

Project Name: PCH T45X-18 G
Street:
City:
Project#: 1106-04
Client PO#:
Project Manager:

Billing Information (If different from Report to)

Company Name:
Street Address:
City State Zip:
Attention: PO#:

Requested Analysis (see TEST CODE sheet): Table 910-1

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	Bisulfate	Table 910-1	LAB USE ONLY
	45-18 4 to 5 feet		7-6-11	10:45	CAB	SO	5					5					X	01

RW 7/7/11

Data Deliverable Information

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

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

- [ ] 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
Please Check XOM 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	7/6/11 17:30	1	2		2 7/7/11 14:15
3		3	4		4
5		5			

Custody Seal #: [x] Intact [ ] Not Intact | Preserved where applicable: N/A | On Ice: [x] | Cooler Temp: 4.7 C

4.1 4

D25217: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D25217 **Client:** KRW CONSULTING **Immediate Client Services Action Required:** No

Date / Time Received: 7/7/2011 2:15:00 PM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: PCU T45X 18G **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

D25217: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

GC/MS 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: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V6V363-MB	6V07021.D	1	07/10/11	BR	n/a	n/a	V6V363

The QC reported here applies to the following samples: **Method:** SW846 8260B

D25217-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	22	ug/kg	
100-41-4	Ethylbenzene	ND	100	25	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries		Limits
2037-26-5	Toluene-D8	102%	61-130%
460-00-4	4-Bromofluorobenzene	96%	53-131%
17060-07-0	1,2-Dichloroethane-D4	125%	62-130%

Blank Spike Summary

Job Number: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V6V363-BS	6V07022.D	1	07/10/11	BR	n/a	n/a	V6V363

The QC reported here applies to the following samples: **Method:** SW846 8260B

D25217-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	51.3	103	70-130
100-41-4	Ethylbenzene	50	46.4	93	70-130
108-88-3	Toluene	50	48.6	97	70-130
1330-20-7	Xylene (total)	100	81.5	82	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	95%	61-130%
460-00-4	4-Bromofluorobenzene	97%	53-131%
17060-07-0	1,2-Dichloroethane-D4	126%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D25217-1MS	6V07024.D	1	07/10/11	BR	n/a	n/a	V6V363
D25217-1MSD	6V07025.D	1	07/10/11	BR	n/a	n/a	V6V363
D25217-1	6V07023.D	1	07/10/11	BR	n/a	n/a	V6V363

The QC reported here applies to the following samples: **Method:** SW846 8260B

D25217-1

CAS No.	Compound	D25217-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3160	3370	107	3200	101	5	70-134/30
100-41-4	Ethylbenzene	ND		3160	3260	103	3010	95	8	70-137/30
108-88-3	Toluene	ND		3160	3170	100	2960	94	7	70-130/30
1330-20-7	Xylene (total)	ND		6320	5760	91	5250	83	9	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D25217-1	Limits
2037-26-5	Toluene-D8	94%	94%	95%	61-130%
460-00-4	4-Bromofluorobenzene	110%	109%	107%	53-131%
17060-07-0	1,2-Dichloroethane-D4	115%	117%	116%	62-130%

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Koroush Vaziri
07/13/11 11:50

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V6071011\
Data File : 6V07023.D
Acq On : 10 Jul 2011 10:18 am
Operator : BrianR
Sample : D25217-1, 50X
Misc : MS2405,V6V363,5.024,,100,5,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 12 17:09:28 2011
Quant Method : C:\msdchem\1\METHODS\V6HSL354TVH354soil.M
Quant Title : 8260
QLast Update : Thu Jul 07 09:54:50 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
2) Pentafluorobenzene	11.281	168	271355	50.00 ug/l	0.00
32) 1,4-Difluorobenzene	12.075	114	380852	50.00 ug/l	0.00
48) Chlorobenzene-d5	14.720	117	462672	50.00 ug/l	0.00
63) 1,4-Dichlorobenzene-d4	16.653	152	334663	50.00 ug/l	0.00
System Monitoring Compounds					
30) 1,2-Dichloroethane-d4	11.649	102	24169	58.06 ug/l	-0.01
Spiked Amount 50.000	Range 70 - 130		Recovery = 116.12%		
55) Toluene-d8	13.475	98	609944	47.54 ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 95.08%		
59) 4-Bromofluorobenzene	15.657	95	349029	53.57 ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 107.14%		

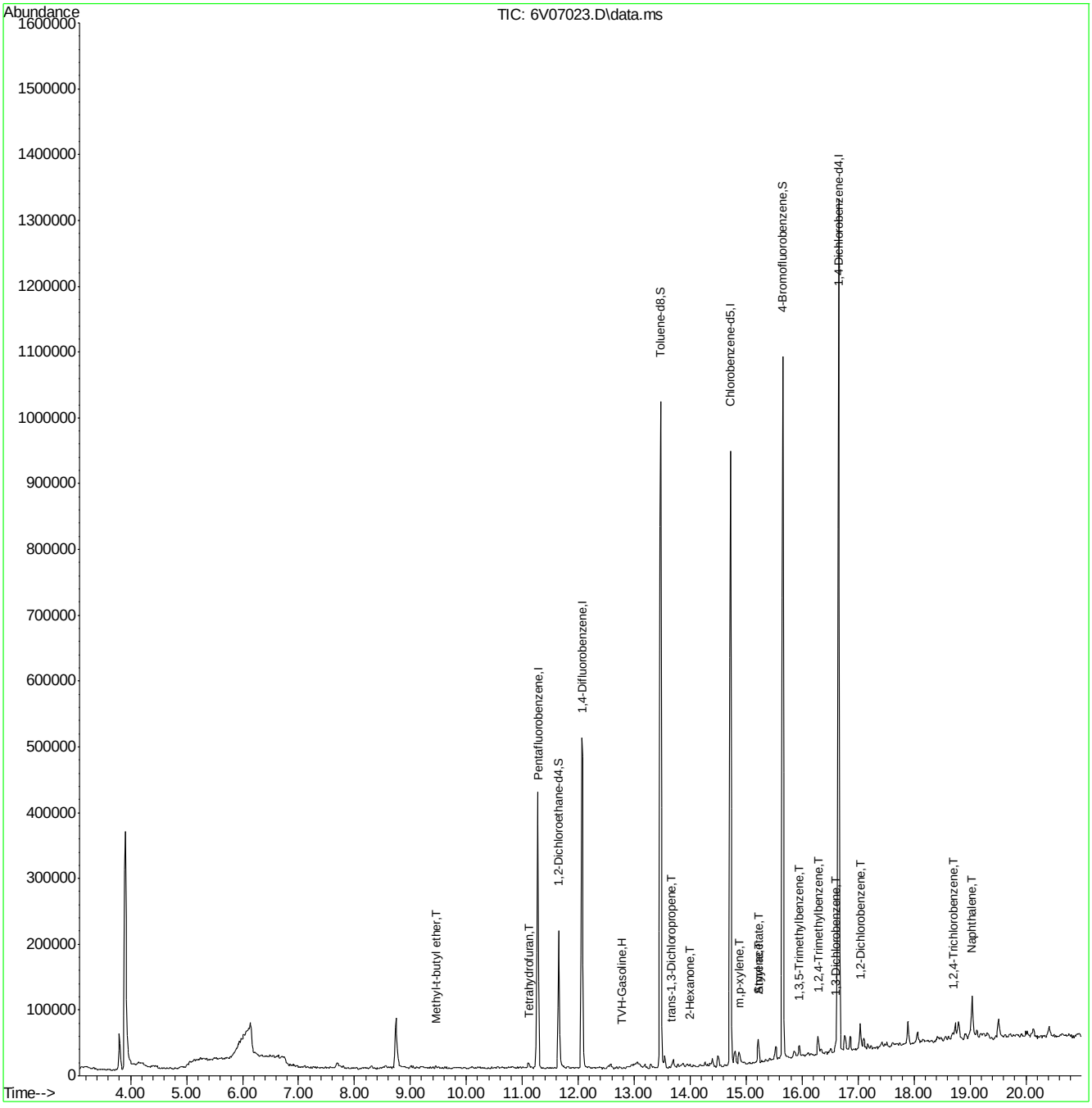
Target Compounds					Qvalue
1) TVH-Gasoline	12.776	TIC	325306m	16.00 ug/l	
20) Methyl-t-butyl ether	9.467	73	2450	0.38 ug/l #	77
28) Tetrahydrofuran	11.115	42	8310	6.86 ug/l #	70
42) trans-1,3-Dichloropropene	13.664	75	1788	0.42 ug/l #	87
50) 2-Hexanone	13.997	43	3489	0.76 ug/l #	72
52) Amyl acetate	15.218	70	2957	0.97 ug/l #	63
60) Styrene	15.218	104	5956	0.43 ug/l	81
61) m,p-xylene	14.874	106	4690	0.48 ug/l #	82
66) 1,3,5-Trimethylbenzene	15.953	105	9903m	0.45 ug/l	
67) 1,2,4-Trimethylbenzene	16.285	105	15117	1.15 ug/l	99
68) 1,3-Dichlorobenzene	16.605	146	7379	0.68 ug/l	95
70) 1,2-Dichlorobenzene	17.044	146	15885	1.53 ug/l	93
71) 1,2,4-Trichlorobenzene	18.704	180	3601	0.40 ug/l	91
72) Naphthalene	19.036	128	37048	1.60 ug/l	100

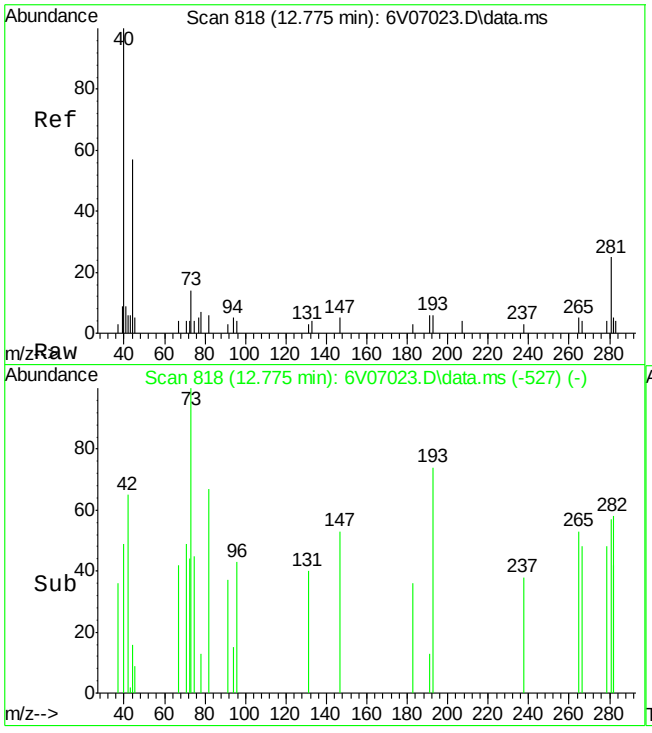
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V6071011\
Data File : 6V07023.D
Acq On : 10 Jul 2011 10:18 am
Operator : BrianR
Sample : D25217-1, 50X
Misc : MS2405,V6V363,5.024,,100,5,1
ALS Vial : 6 Sample Multiplier: 1

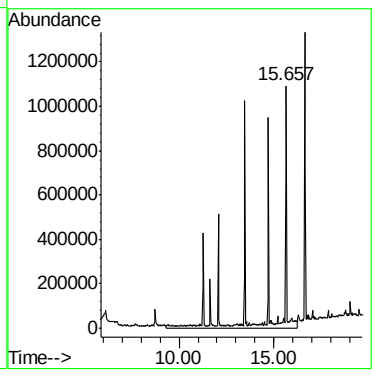
Quant Time: Jul 12 17:09:28 2011
Quant Method : C:\msdchem\1\METHODS\V6HSL354TVH354soil.M
Quant Title : 8260
QLast Update : Thu Jul 07 09:54:50 2011
Response via : Initial Calibration

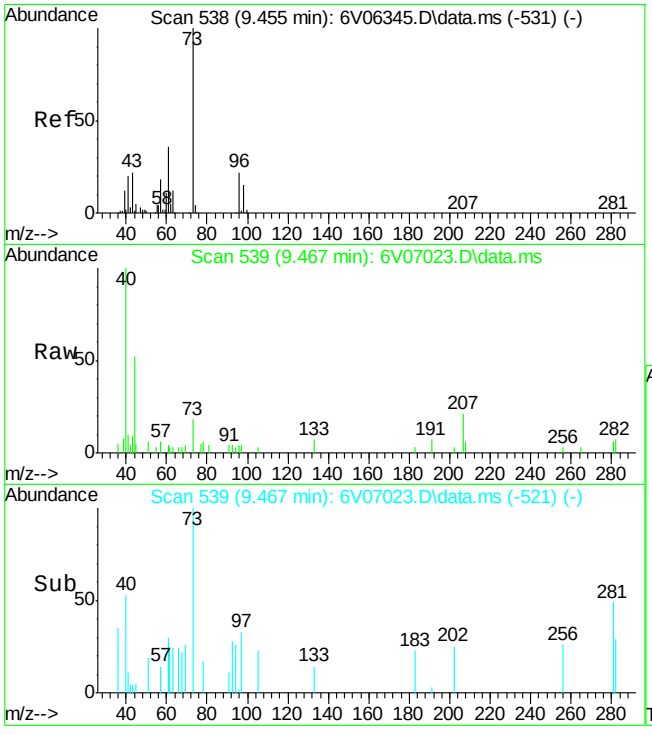




#1
TVH-Gasoline
Concen: 16.00 ug/l m
RT: 12.776 min Scan# 818
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion:TIC Resp: 325306

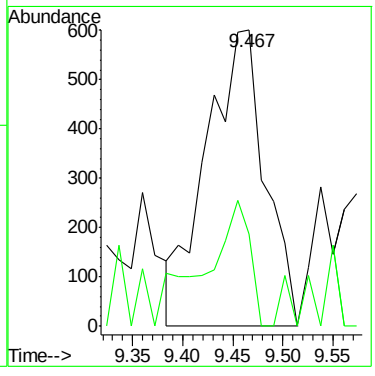


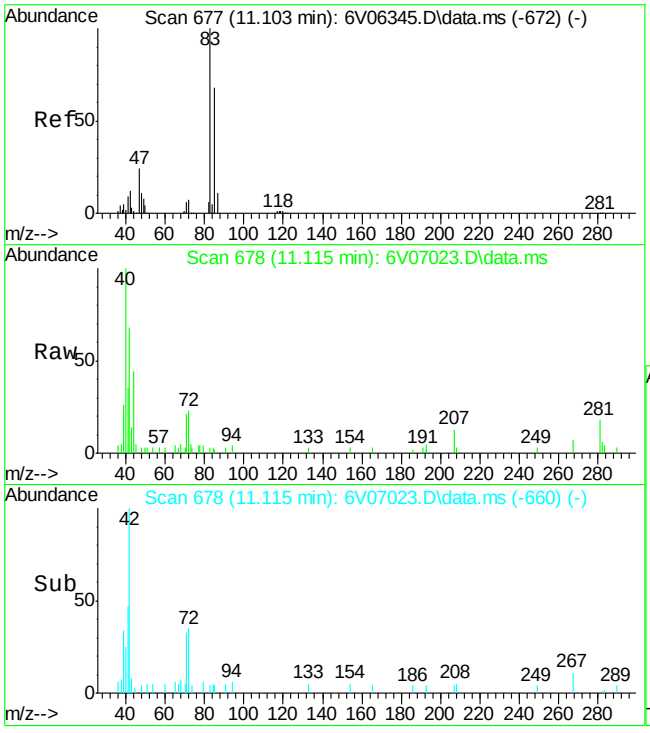


#20
Methyl-t-butyl ether
Concen: 0.38 ug/l
RT: 9.467 min Scan# 539
Delta R.T. 0.012 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion: 73 Resp: 2450

Ion	Ratio	Lower	Upper
73	100		
57	33.2	17.7	26.5#

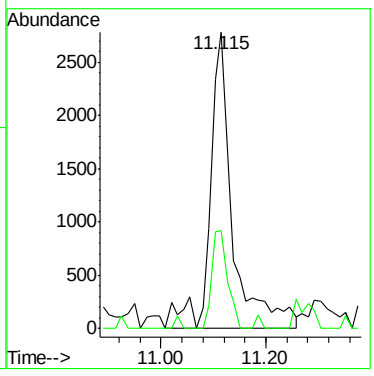


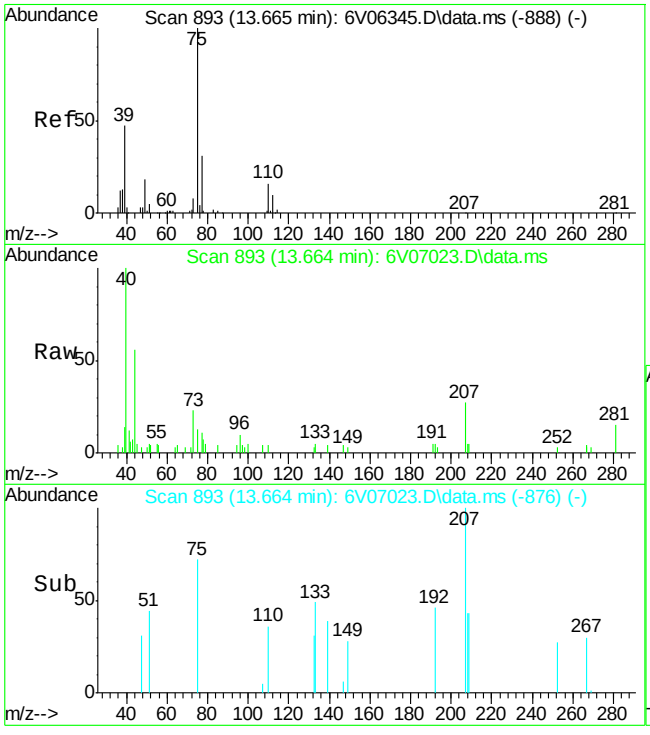


#28
Tetrahydrofuran
Concen: 6.86 ug/l
RT: 11.115 min Scan# 678
Delta R.T. 0.013 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion: 42 Resp: 8310

Ion	Ratio	Lower	Upper
42	100		
72	23.2	33.5	50.3#

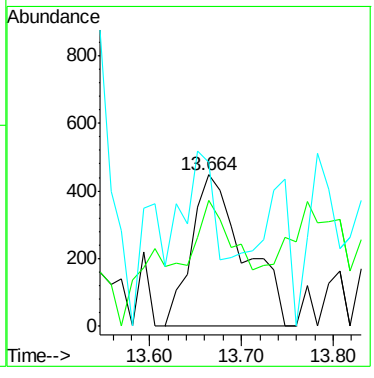


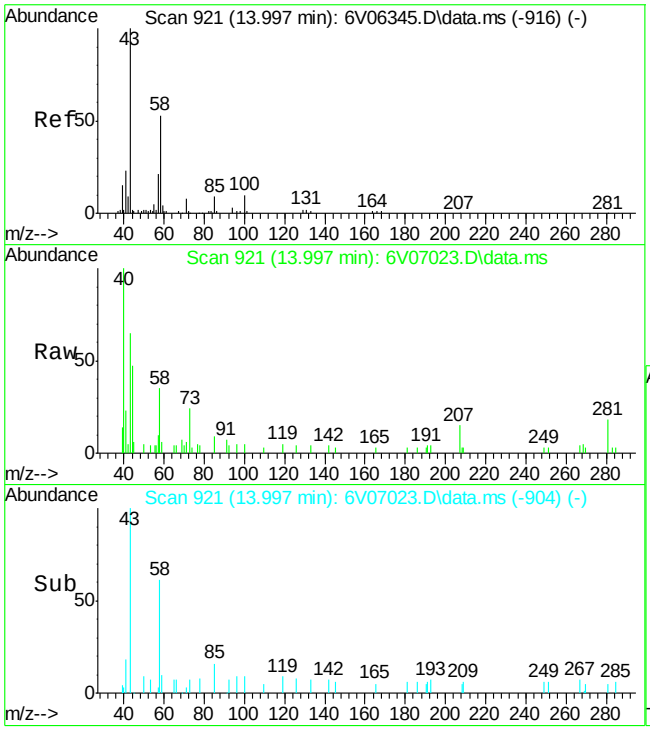


#42
trans-1,3-Dichloropropene
Concen: 0.42 ug/l
RT: 13.664 min Scan# 893
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion: 75 Resp: 1788

Ion	Ratio	Lower	Upper
75	100		
77	45.7	24.2	36.2#
39	58.7	44.6	66.8

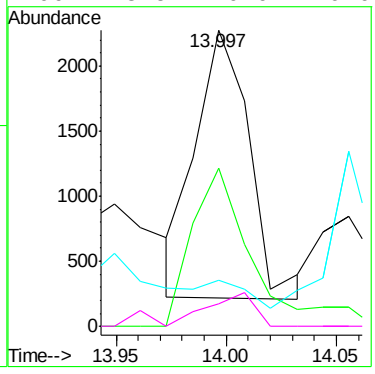


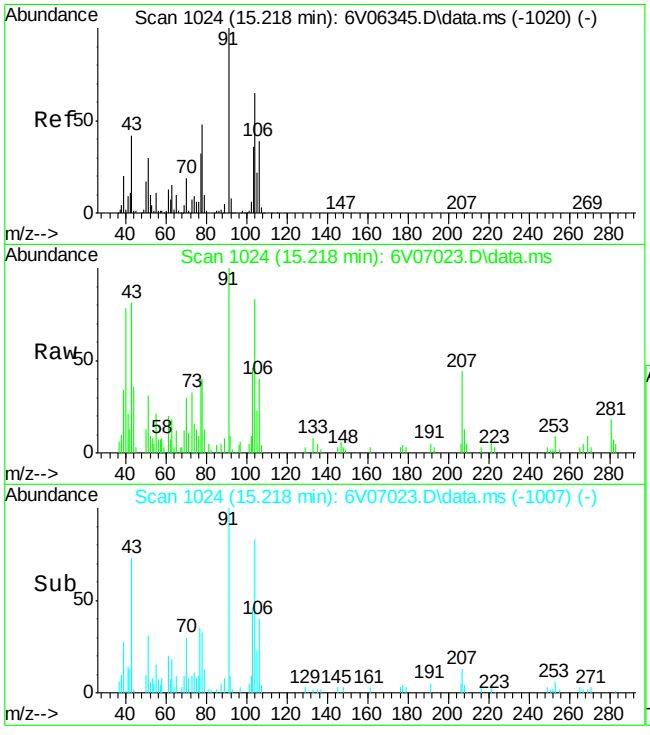


#50
2-Hexanone
Concen: 0.76 ug/l
RT: 13.997 min Scan# 921
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion: 43 Resp: 3489

Ion	Ratio	Lower	Upper
43	100		
58	67.4	29.8	69.8
57	0.0	0.0	38.8
100	13.5	0.0	29.0

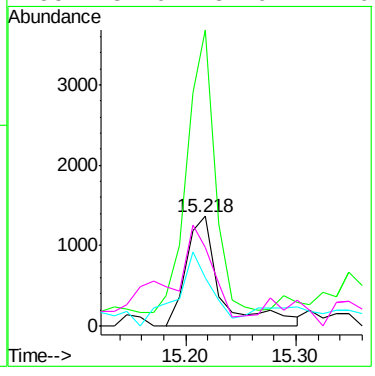


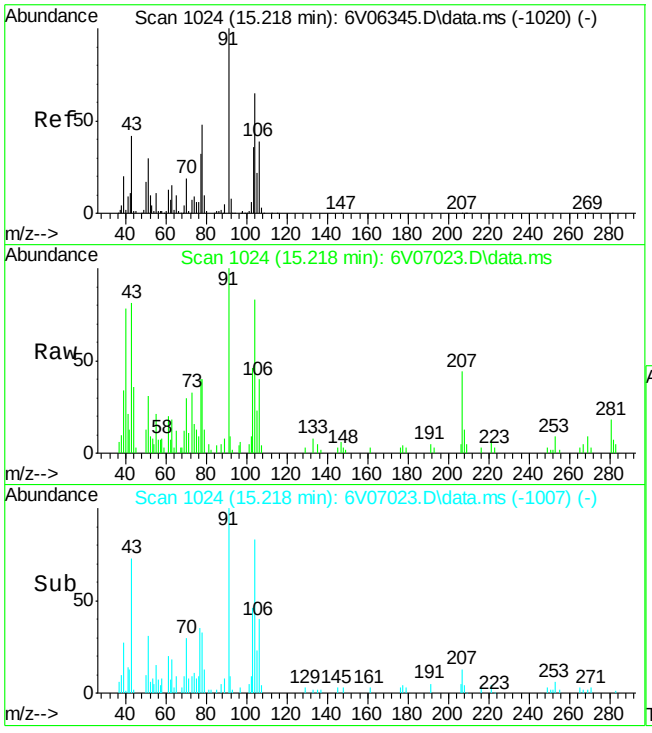


#52
Amyl acetate
Concen: 0.97 ug/l
RT: 15.218 min Scan# 1024
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion: 70 Resp: 2957

Ion	Ratio	Lower	Upper
70	100		
43	209.1	242.6	282.6#
42	70.2	47.2	87.2
55	137.6	37.9	77.9#

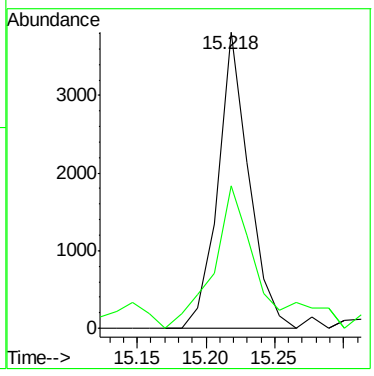


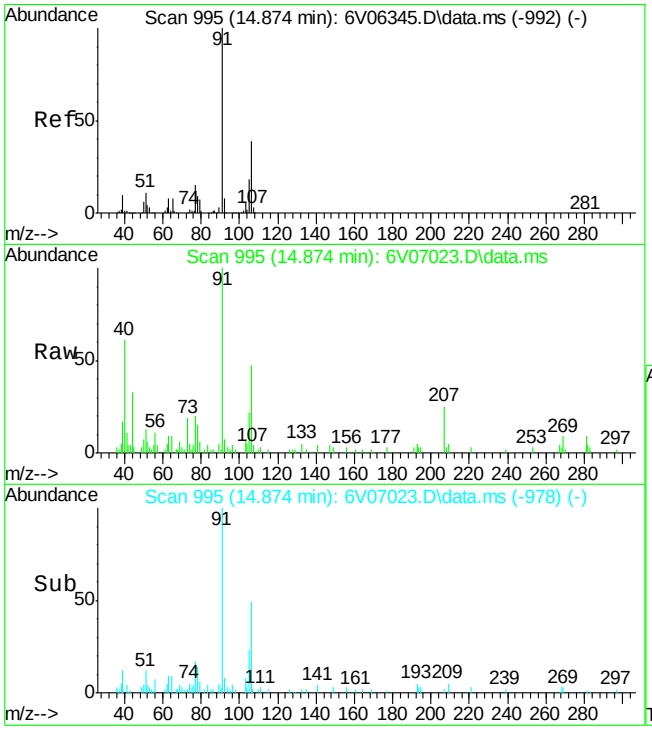


#60
Styrene
Concen: 0.43 ug/l
RT: 15.218 min Scan# 1024
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion:104 Resp: 5956

Ion	Ratio	Lower	Upper
104	100		
78	70.7	36.6	76.6

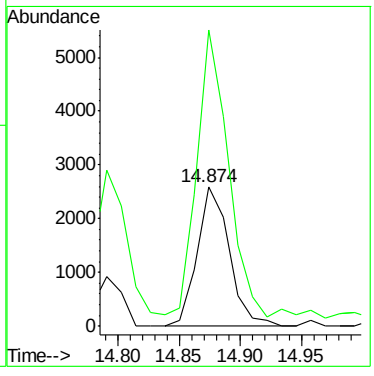


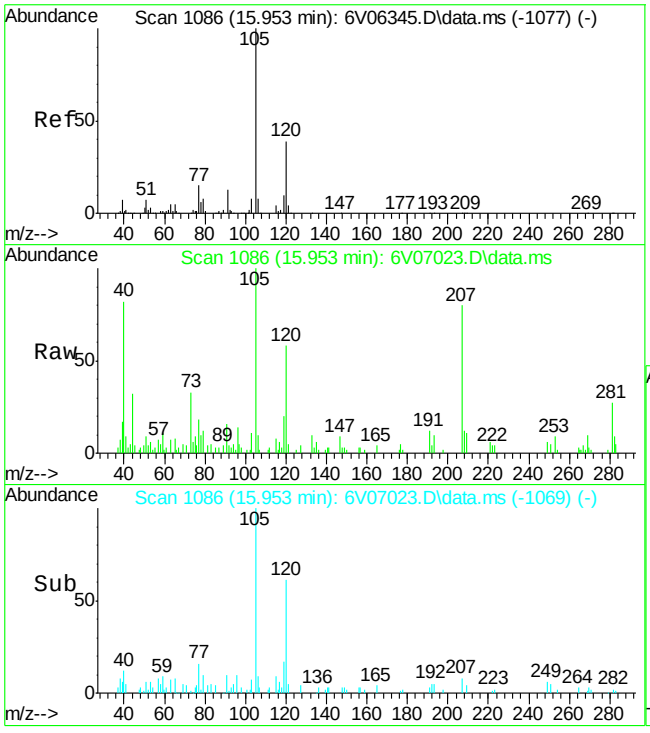


#61
m,p-xylene
Concen: 0.48 ug/l
RT: 14.874 min Scan# 995
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion:106 Resp: 4690

Ion	Ratio	Lower	Upper
106	100		
91	243.5	195.4	235.4#

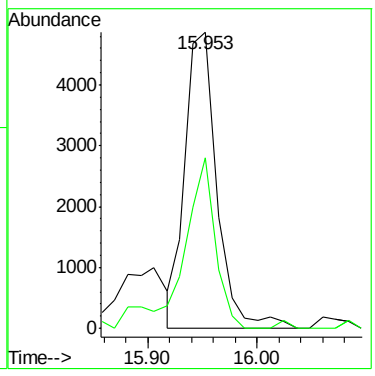


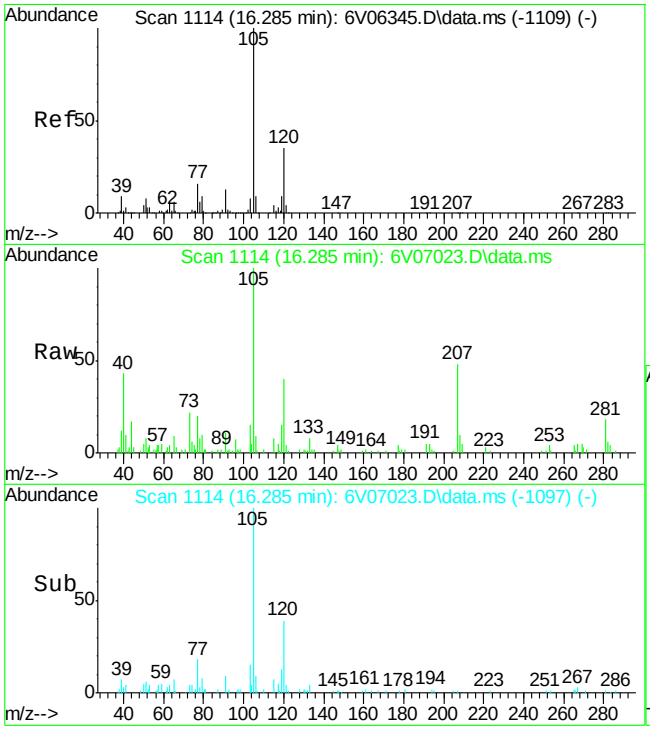


#66
1,3,5-Trimethylbenzene
Concen: 0.45 ug/l m
RT: 15.953 min Scan# 1086
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion:105 Resp: 9903

Ion	Ratio	Lower	Upper
105	100		
120	59.5	37.0	55.4#

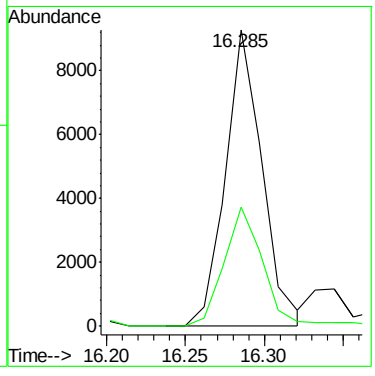


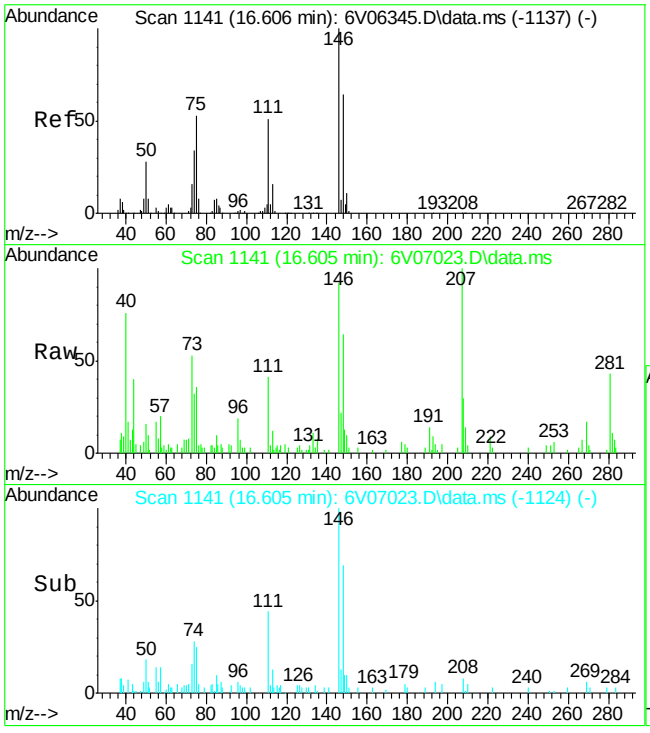


#67
1,2,4-Trimethylbenzene
Concen: 1.15 ug/l
RT: 16.285 min Scan# 1114
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion:105 Resp: 15117

Ion	Ratio	Lower	Upper
105	100		
120	43.6	34.6	52.0

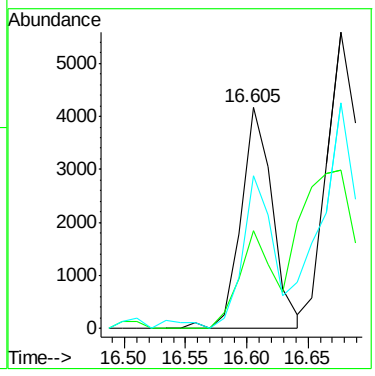


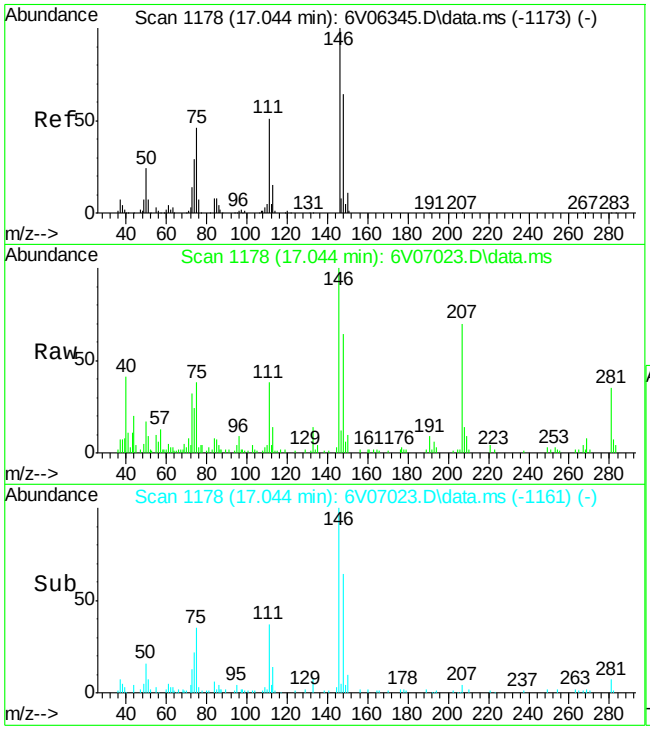


#68
1,3-Dichlorobenzene
Concen: 0.68 ug/l
RT: 16.605 min Scan# 1141
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion:146 Resp: 7379

Ion	Ratio	Lower	Upper
146	100		
111	47.9	32.1	48.1
148	65.5	52.1	78.1

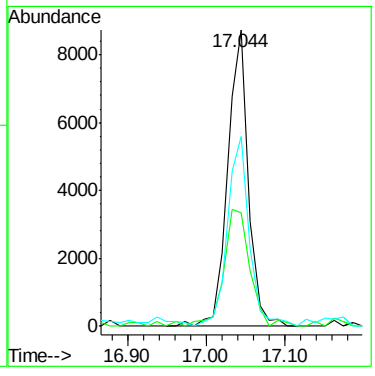


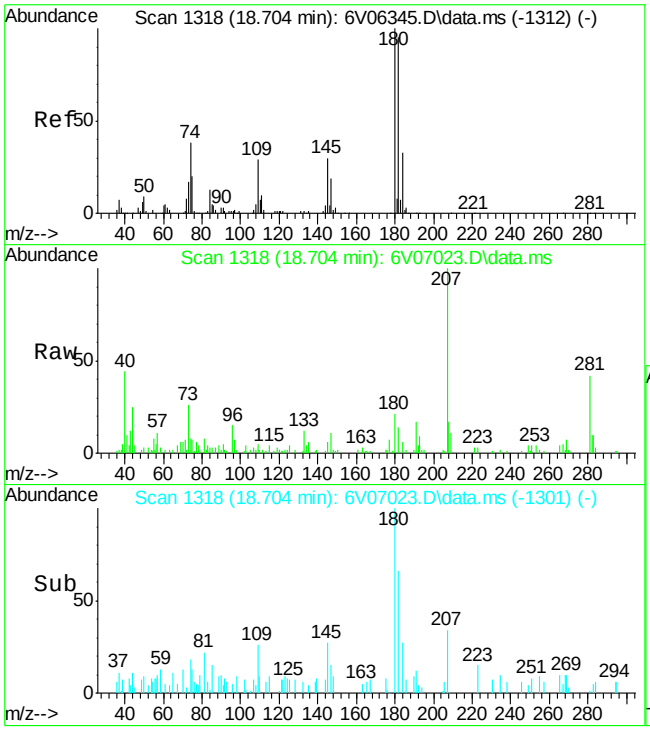


#70
1,2-Dichlorobenzene
Concen: 1.53 ug/l
RT: 17.044 min Scan# 1178
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion:146 Resp: 15885

Ion	Ratio	Lower	Upper
146	100		
111	49.7	33.2	49.8
148	67.6	51.8	77.6

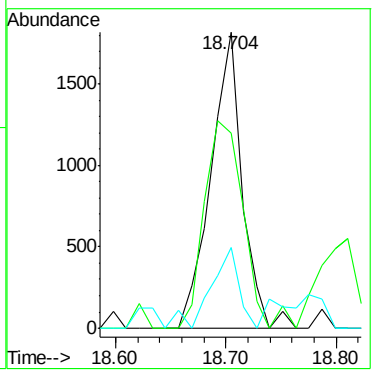


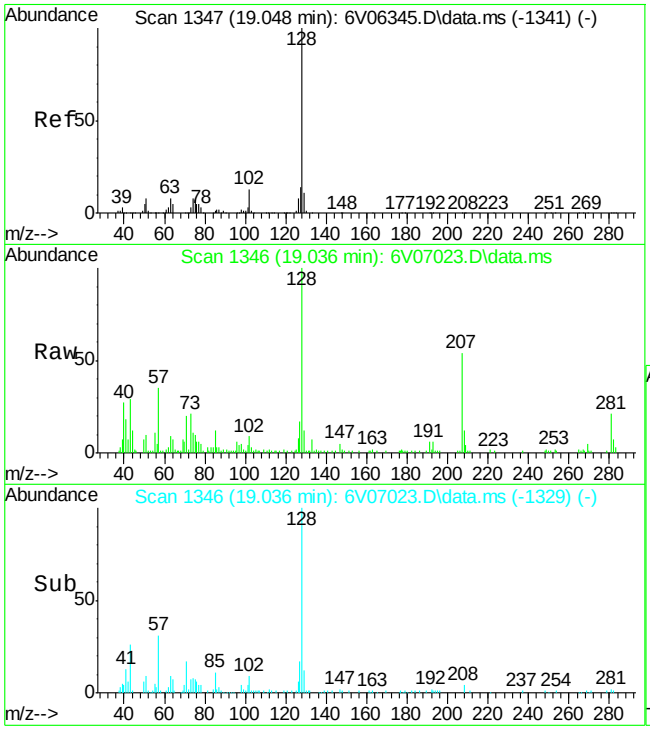


#71
1,2,4-Trichlorobenzene
Concen: 0.40 ug/l
RT: 18.704 min Scan# 1318
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion:180 Resp: 3601

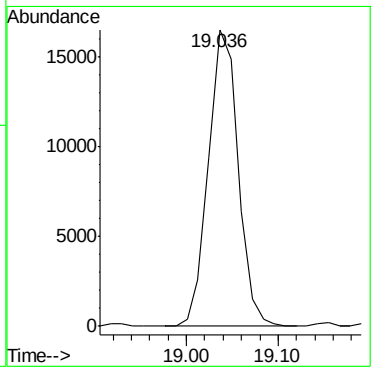
Ion	Ratio	Lower	Upper
180	100		
182	84.7	75.8	113.6
145	24.7	22.6	33.8





#72
Naphthalene
Concen: 1.60 ug/l
RT: 19.036 min Scan# 1346
Delta R.T. 0.000 min
Lab File: 6V07023.D
Acq: 10 Jul 2011 10:18 am

Tgt Ion:128 Resp: 37048



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V6071011\
Data File : 6V07021.D
Acq On : 10 Jul 2011 8:35 am
Operator : BrianR
Sample : MB
Misc : MS2405,V6V363,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 12 16:58:55 2011
Quant Method : C:\msdchem\1\METHODS\V6HSL354TVH354soil.M
Quant Title : 8260
QLast Update : Thu Jul 07 09:54:50 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.281	168	380372	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.075	114	581025	50.00	ug/l	0.00
48) Chlorobenzene-d5	14.720	117	579201	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	16.653	152	335043	50.00	ug/l	0.00

System Monitoring Compounds

30) 1,2-Dichloroethane-d4	11.660	102	36558	62.74	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 125.48%			
55) Toluene-d8	13.475	98	819082	50.99	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 101.98%			
59) 4-Bromofluorobenzene	15.657	95	391176	47.96	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 95.92%			

Target Compounds

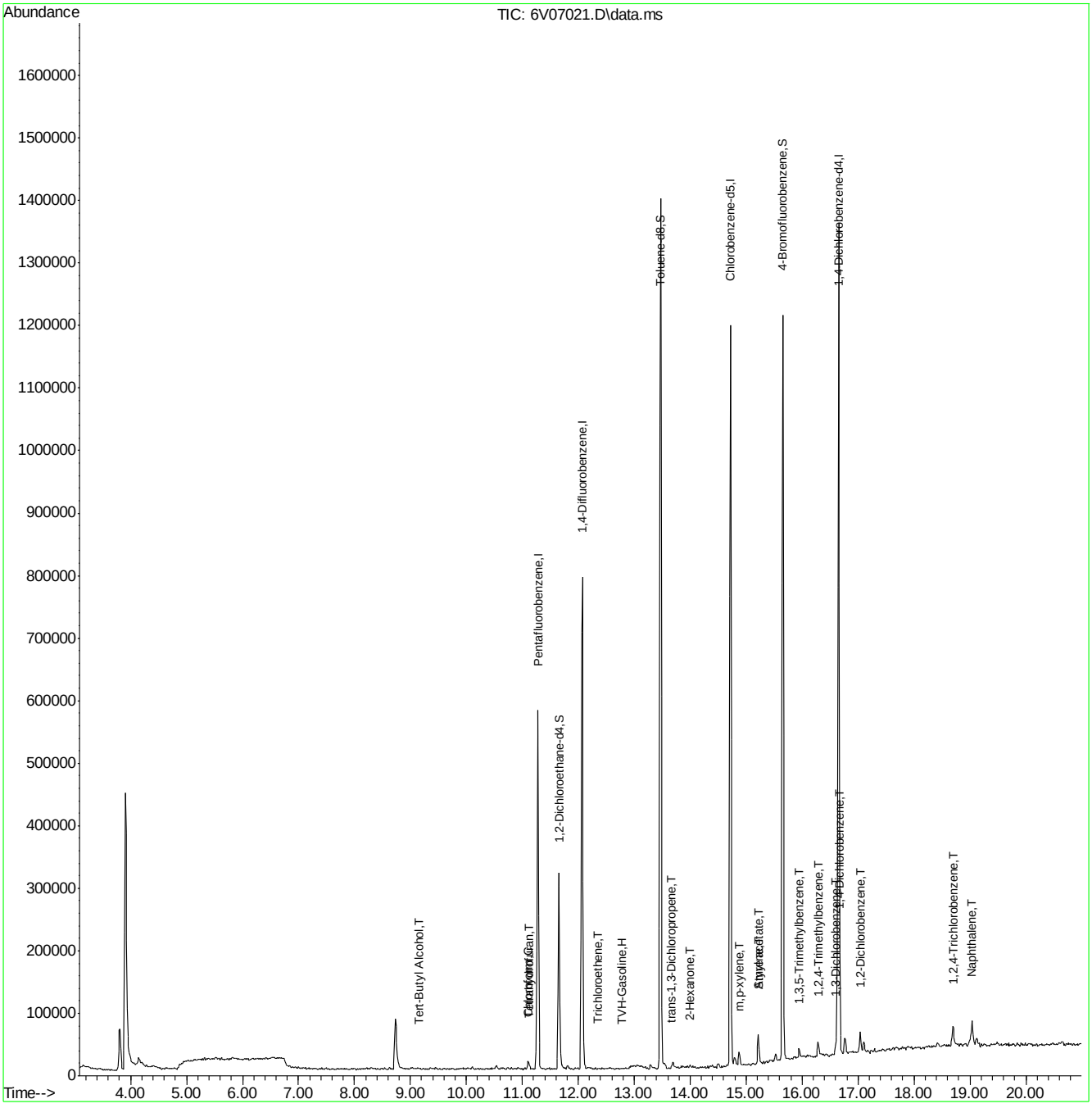
						Qvalue
1) TVH-Gasoline	12.776	TIC	397762m	19.56	ug/l	
17) Tert-Butyl Alcohol	9.146	59	2027	0.52	ug/l #	75
27) Chloroform	11.103	83	1662	0.33	ug/l	93
28) Tetrahydrofuran	11.115	42	9470	4.71	ug/l	99
42) trans-1,3-Dichloropropene	13.664	75	2536	0.39	ug/l #	55
43) Trichloroethene	12.360	95	1349	0.32	ug/l #	51
50) 2-Hexanone	13.997	43	5477	1.10	ug/l	81
52) Amyl acetate	15.218	70	4918	1.29	ug/l #	84
60) Styrene	15.218	104	7236	0.42	ug/l	94
61) m,p-xylene	14.886	106	5083	0.41	ug/l #	76
66) 1,3,5-Trimethylbenzene	15.941	105	10789	0.49	ug/l	92
67) 1,2,4-Trimethylbenzene	16.285	105	15574	1.17	ug/l	89
68) 1,3-Dichlorobenzene	16.605	146	7671	0.71	ug/l	96
69) 1,4-Dichlorobenzene	16.677	146	10700	0.97	ug/l #	64
70) 1,2-Dichlorobenzene	17.044	146	13572	1.31	ug/l	95
71) 1,2,4-Trichlorobenzene	18.704	180	11188	1.20	ug/l	94
72) Naphthalene	19.036	128	30574	1.30	ug/l	100

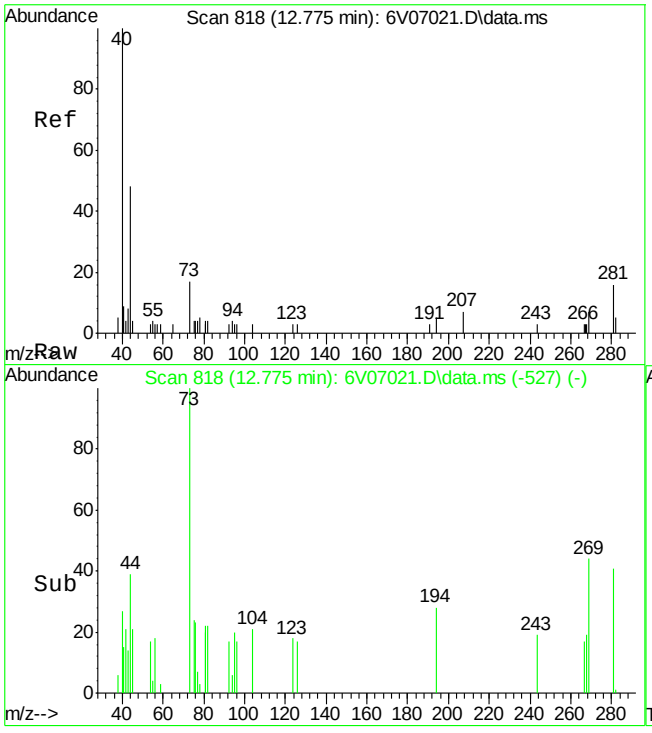
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V6071011\
Data File : 6V07021.D
Acq On : 10 Jul 2011 8:35 am
Operator : BrianR
Sample : MB
Misc : MS2405,V6V363,,,,,1
ALS Vial : 4 Sample Multiplier: 1

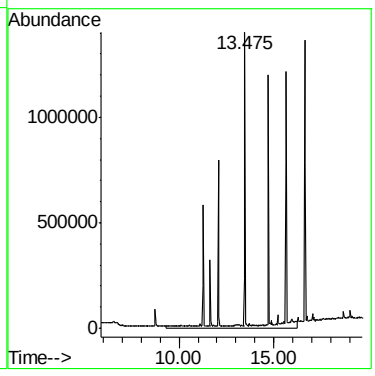
Quant Time: Jul 12 16:58:55 2011
Quant Method : C:\msdchem\1\METHODS\V6HSL354TVH354soil.M
Quant Title : 8260
QLast Update : Thu Jul 07 09:54:50 2011
Response via : Initial Calibration

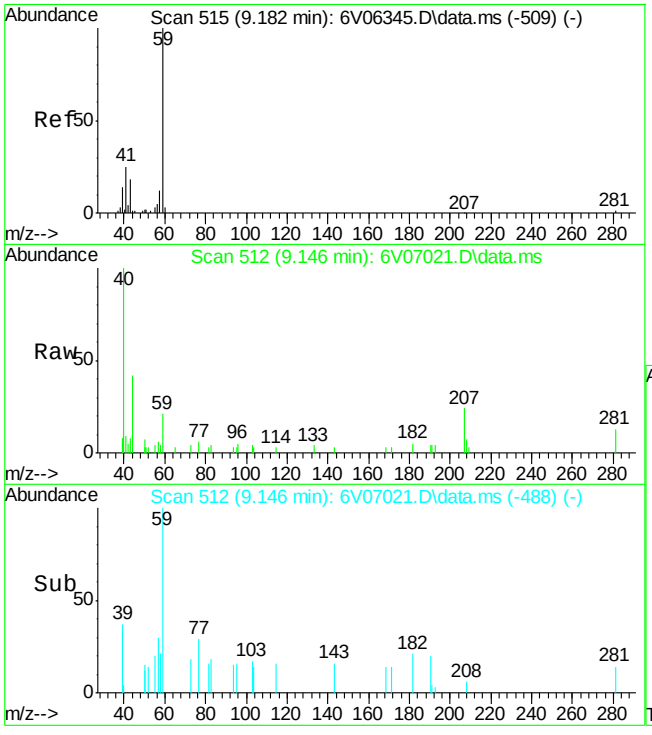




#1
TVH-Gasoline
Concen: 19.56 ug/l m
RT: 12.776 min Scan# 818
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion:TIC Resp: 397762

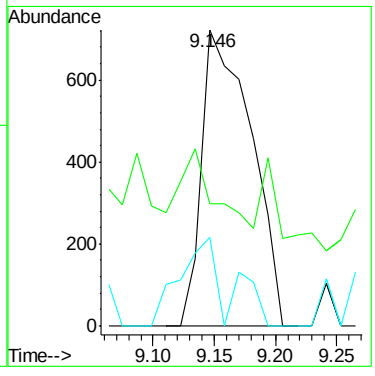


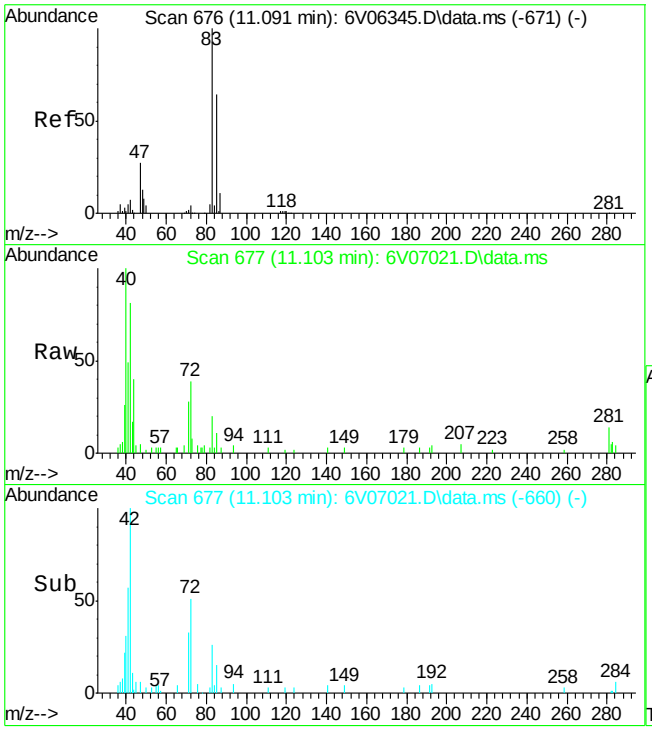


#17
Tert-Butyl Alcohol
Concen: 0.52 ug/l
RT: 9.146 min Scan# 512
Delta R.T. -0.012 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion: 59 Resp: 2027

Ion	Ratio	Lower	Upper
59	100		
41	16.4	18.6	27.8#
57	29.7	9.8	14.8#

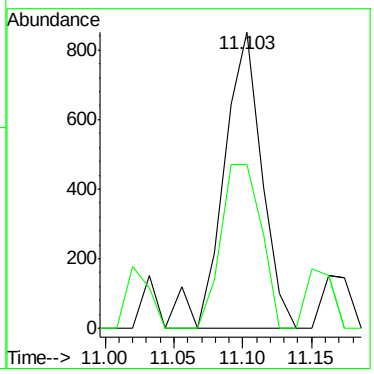


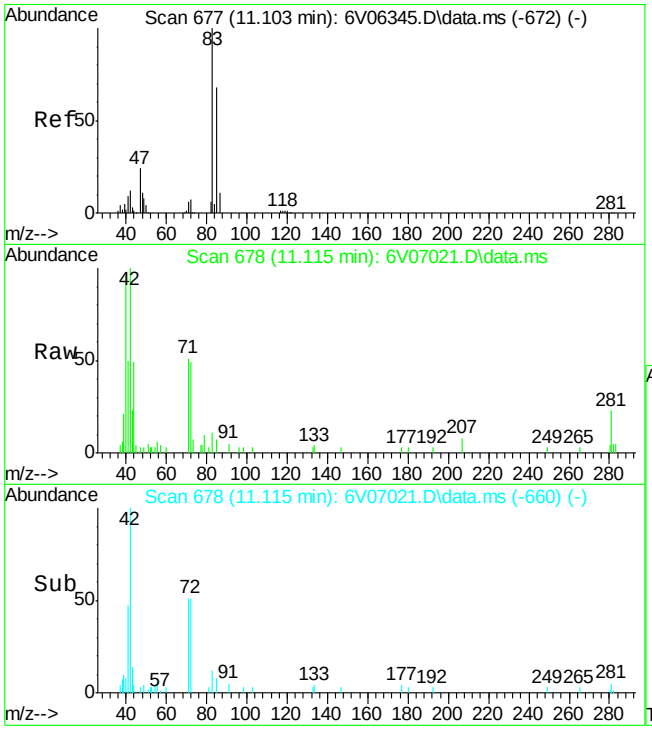


#27
Chloroform
Concen: 0.33 ug/l
RT: 11.103 min Scan# 677
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion: 83 Resp: 1662

Ion	Ratio	Lower	Upper
83	100		
85	57.9	43.4	83.4

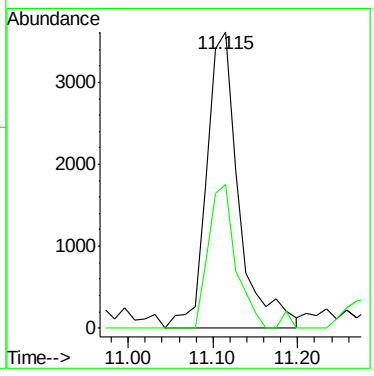


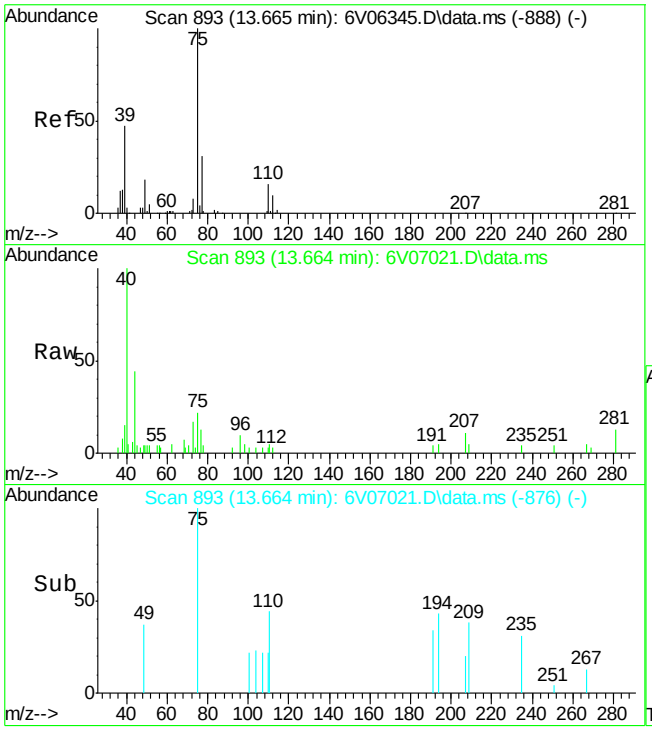


#28
Tetrahydrofuran
Concen: 4.71 ug/l
RT: 11.115 min Scan# 678
Delta R.T. 0.013 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion: 42 Resp: 9470

Ion	Ratio	Lower	Upper
42	100		
72	41.2	33.5	50.3

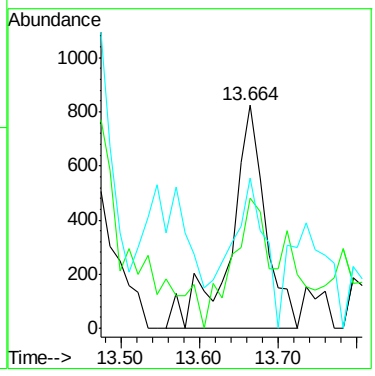


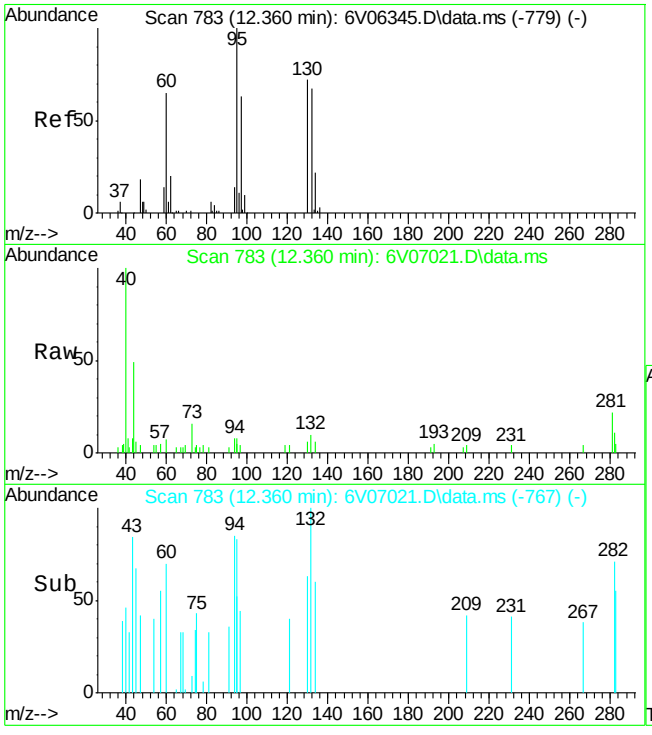


#42
trans-1,3-Dichloropropene
Concen: 0.39 ug/l
RT: 13.664 min Scan# 893
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion: 75 Resp: 2536

Ion	Ratio	Lower	Upper
75	100		
77	85.9	24.2	36.2#
39	66.0	44.6	66.8

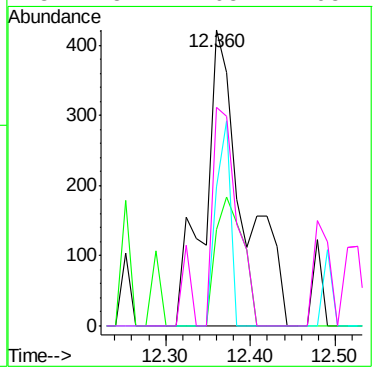


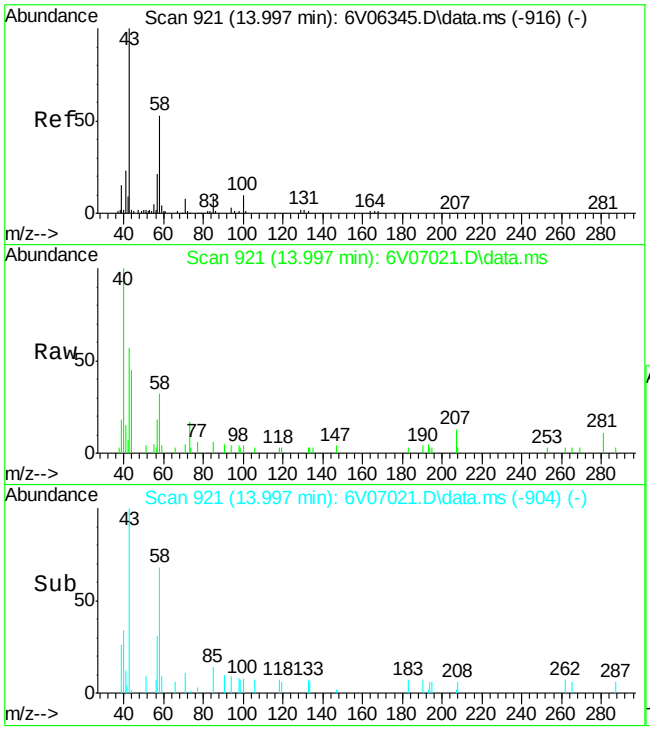


#43
Trichloroethene
Concen: 0.32 ug/l
RT: 12.360 min Scan# 783
Delta R.T. -0.012 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion: 95 Resp: 1349

Ion	Ratio	Lower	Upper
95	100		
97	30.5	41.7	81.7#
130	25.9	68.2	108.2#
132	51.7	65.1	105.1#

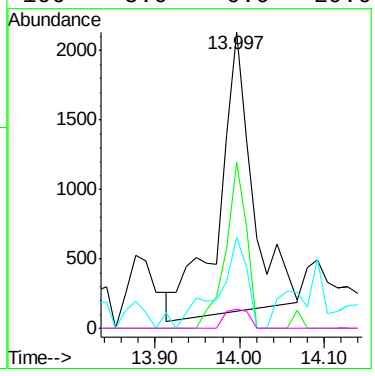


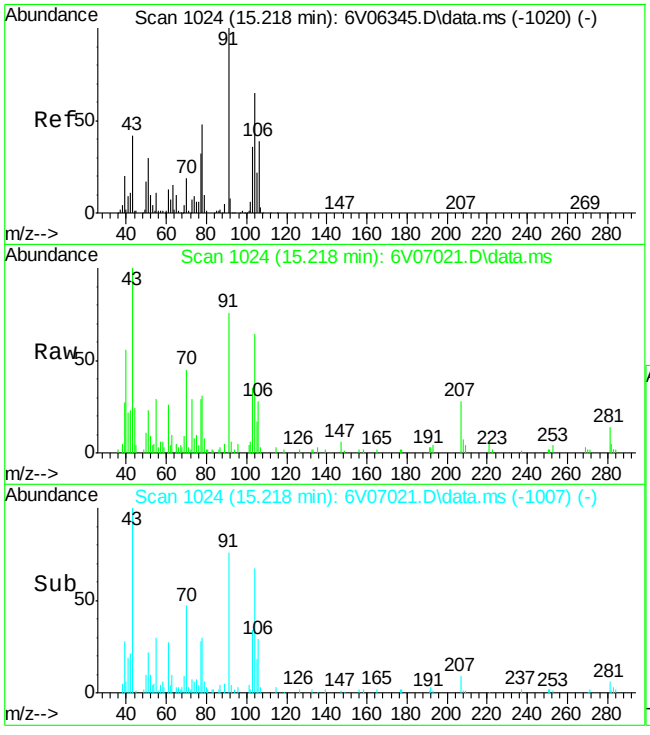


#50
2-Hexanone
Concen: 1.10 ug/l
RT: 13.997 min Scan# 921
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion: 43 Resp: 5477

Ion	Ratio	Lower	Upper
43	100		
58	37.0	29.8	69.8
57	29.4	0.0	38.8
100	5.0	0.0	29.0

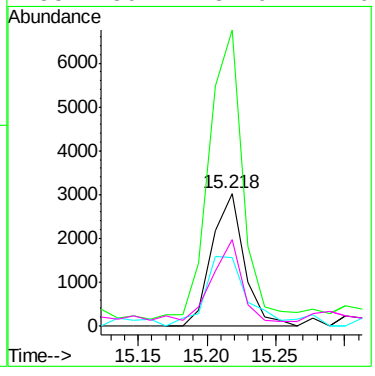


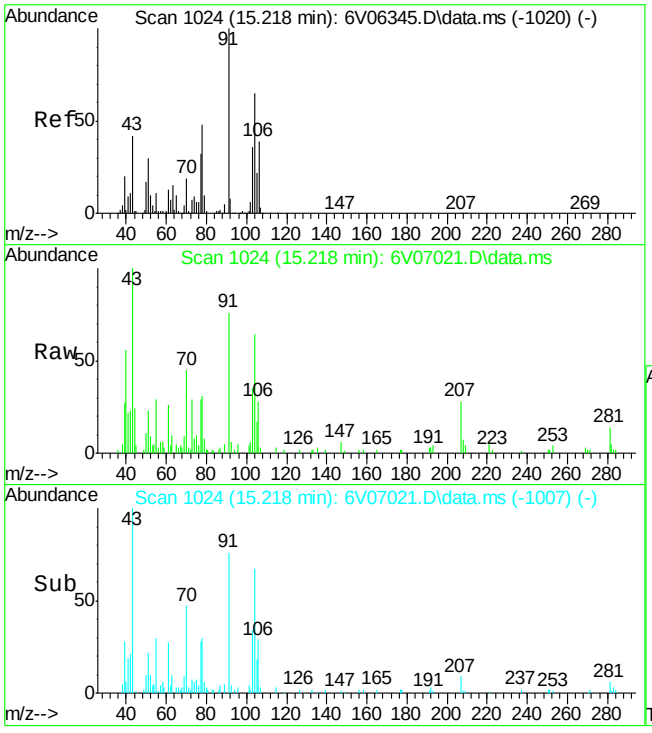


#52
Amyl acetate
Concen: 1.29 ug/l
RT: 15.218 min Scan# 1024
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion: 70 Resp: 4918

Ion	Ratio	Lower	Upper
70	100		
43	225.3	242.6	282.6#
42	72.8	47.2	87.2
55	56.1	37.9	77.9

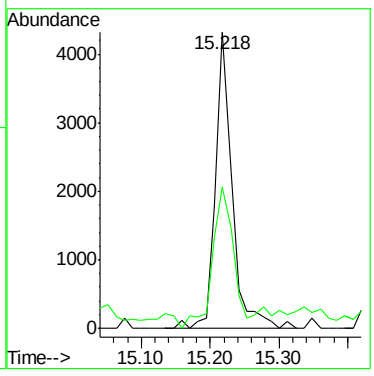


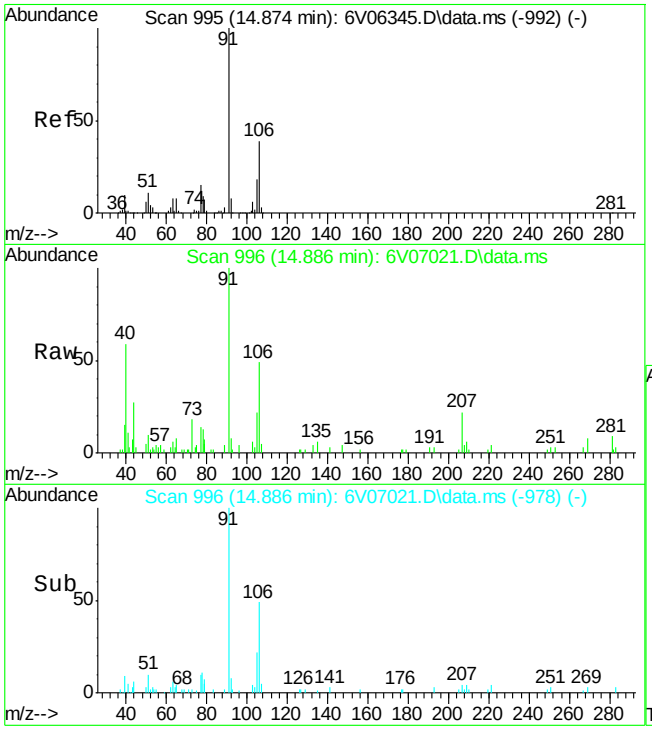


#60
Styrene
Concen: 0.42 ug/l
RT: 15.218 min Scan# 1024
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion:104 Resp: 7236

Ion	Ratio	Lower	Upper
104	100		
78	61.3	36.6	76.6

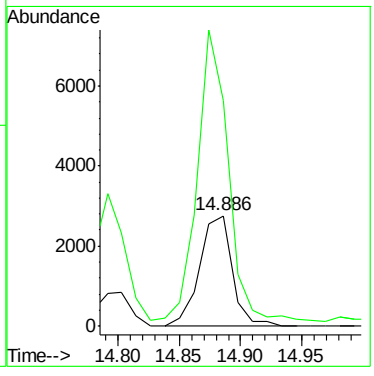


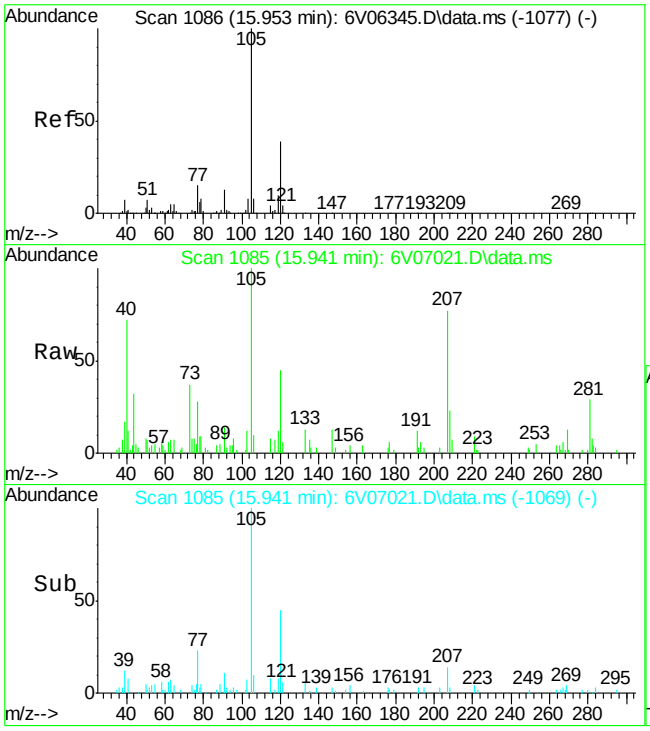


#61
m,p-xylene
Concen: 0.41 ug/l
RT: 14.886 min Scan# 996
Delta R.T. 0.012 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion:106 Resp: 5083

Ion	Ratio	Lower	Upper
106	100		
91	253.4	195.4	235.4#

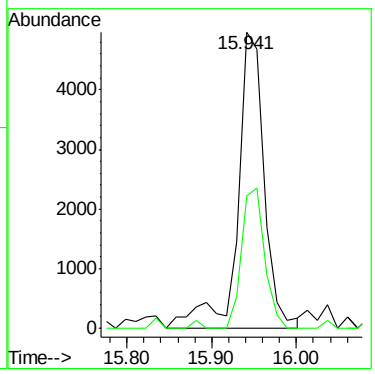


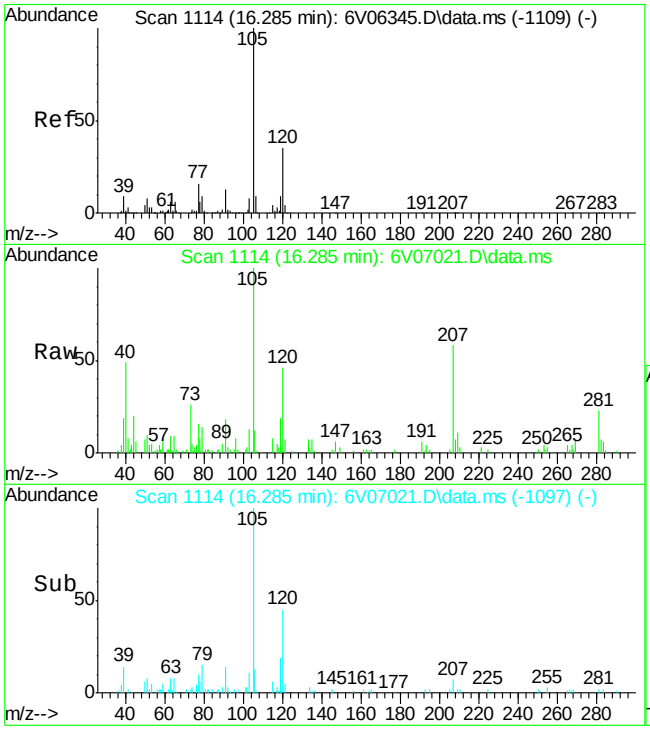


#66
1,3,5-Trimethylbenzene
Concen: 0.49 ug/l
RT: 15.941 min Scan# 1085
Delta R.T. -0.012 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion:105 Resp: 10789

Ion	Ratio	Lower	Upper
105	100		
120	41.0	37.0	55.4

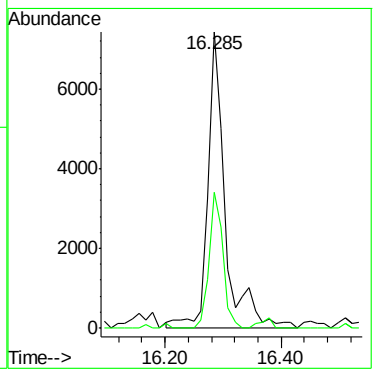


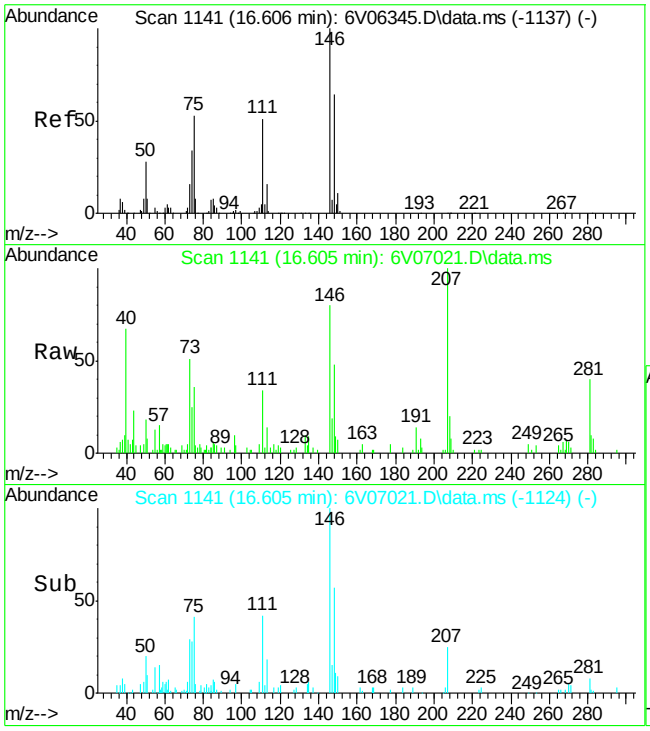


#67
1,2,4-Trimethylbenzene
Concen: 1.17 ug/l
RT: 16.285 min Scan# 1114
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion:105 Resp: 15574

Ion	Ratio	Lower	Upper
105	100		
120	36.5	34.6	52.0

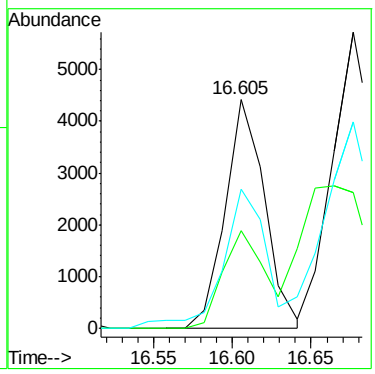


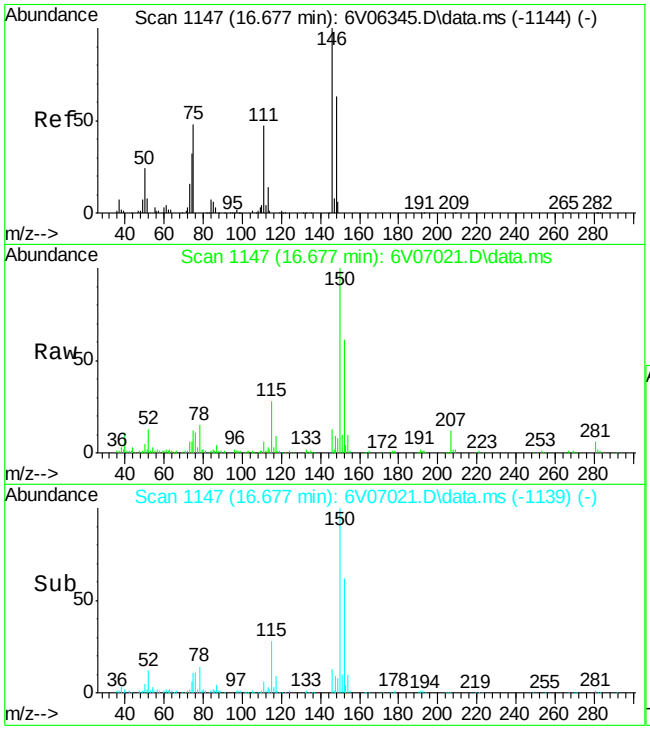


#68
1,3-Dichlorobenzene
Concen: 0.71 ug/l
RT: 16.605 min Scan# 1141
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion:146 Resp: 7671

Ion	Ratio	Lower	Upper
146	100		
111	46.1	32.1	48.1
148	65.5	52.1	78.1

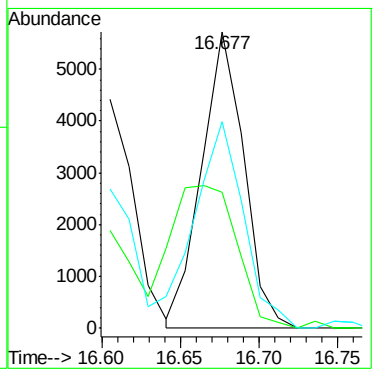


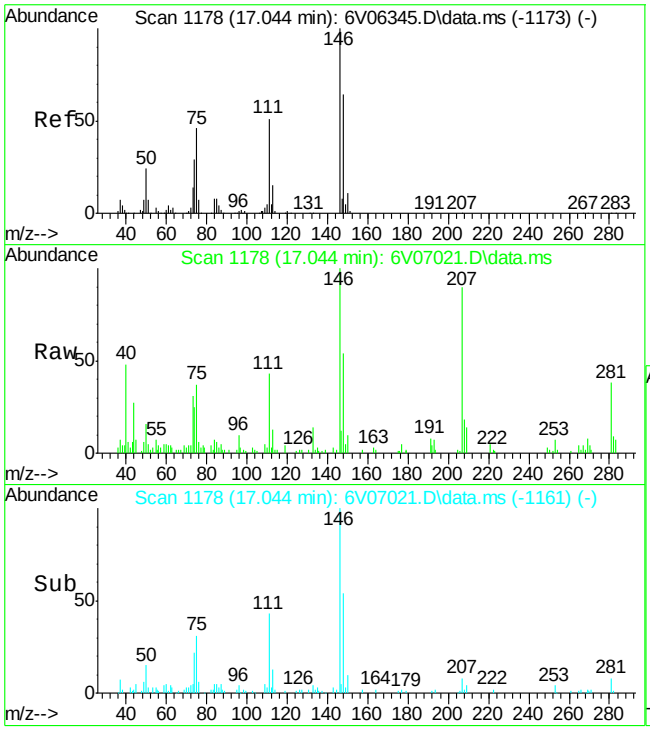


#69
1,4-Dichlorobenzene
Concen: 0.97 ug/l
RT: 16.677 min Scan# 1147
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion:146 Resp: 10700

Ion	Ratio	Lower	Upper
146	100		
111	75.3	31.4	47.0#
148	81.8	52.0	78.0#

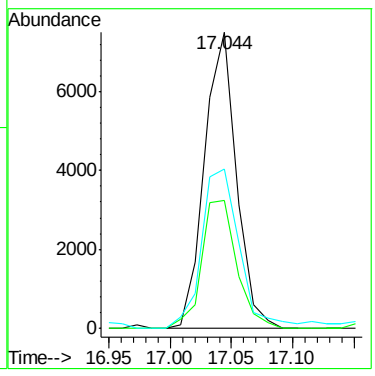


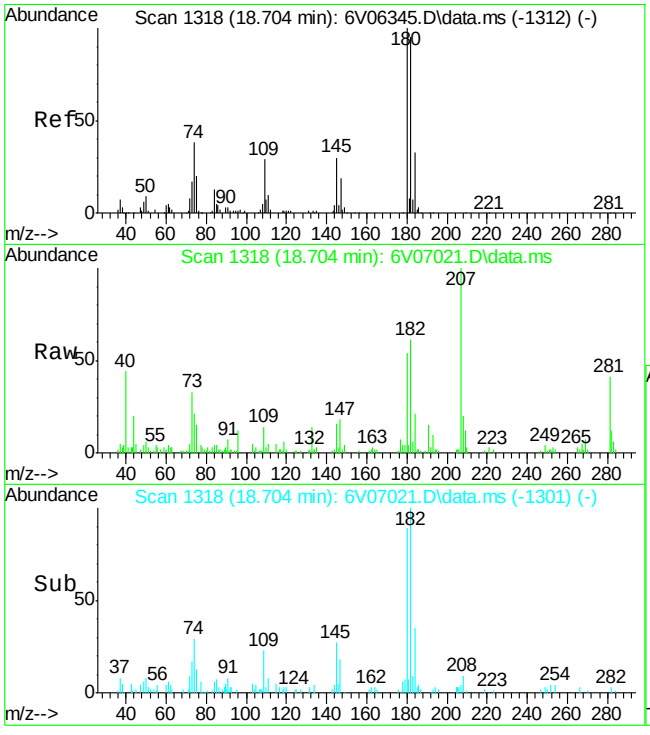


#70
1,2-Dichlorobenzene
Concen: 1.31 ug/l
RT: 17.044 min Scan# 1178
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion:146 Resp: 13572

Ion	Ratio	Lower	Upper
146	100		
111	47.7	33.2	49.8
148	65.8	51.8	77.6

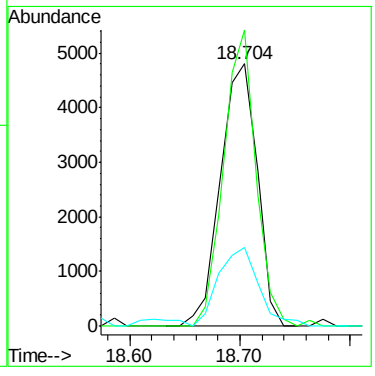


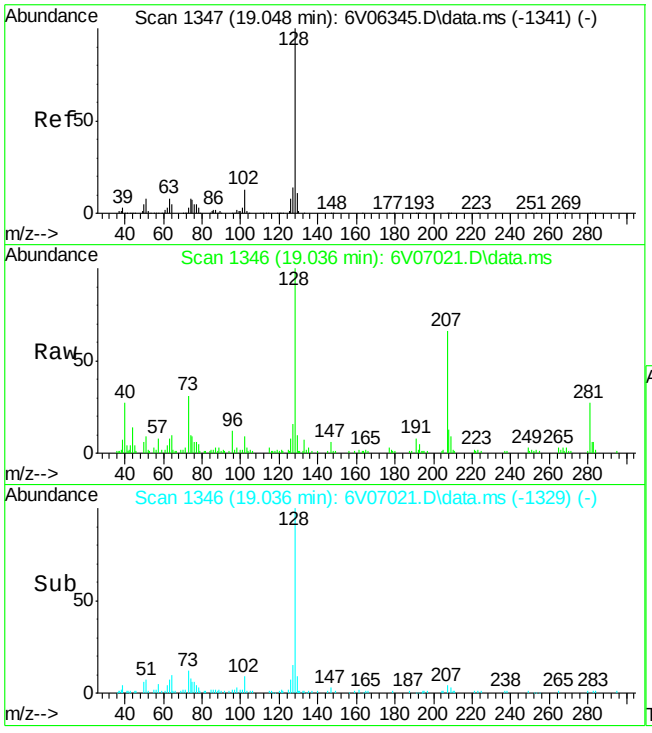


#71
1,2,4-Trichlorobenzene
Concen: 1.20 ug/l
RT: 18.704 min Scan# 1318
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion:180 Resp: 11188

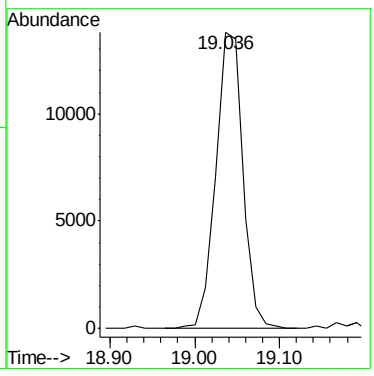
Ion	Ratio	Lower	Upper
180	100		
182	99.8	75.8	113.6
145	33.0	22.6	33.8





#72
Naphthalene
Concen: 1.30 ug/l
RT: 19.036 min Scan# 1346
Delta R.T. 0.000 min
Lab File: 6V07021.D
Acq: 10 Jul 2011 8:35 am

Tgt Ion:128 Resp: 30574



Mountain States ACCUTEST LABORATORIES

GC/MS 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: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4053-MB	3G04986.D	1	07/13/11	TMB	07/12/11	OP4053	E3G183

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D25217-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	5.3	ug/kg	
120-12-7	Anthracene	ND	6.7	6.0	ug/kg	
56-55-3	Benzo(a)anthracene	ND	17	8.7	ug/kg	
50-32-8	Benzo(a)pyrene	ND	17	12	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	17	12	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	17	7.3	ug/kg	
218-01-9	Chrysene	ND	17	7.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	17	12	ug/kg	
206-44-0	Fluoranthene	ND	6.7	6.7	ug/kg	
86-73-7	Fluorene	ND	6.7	5.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	20	18	ug/kg	
91-20-3	Naphthalene	ND	6.7	6.3	ug/kg	
129-00-0	Pyrene	ND	6.7	6.3	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	83%	10-193%
321-60-8	2-Fluorobiphenyl	80%	20-138%
1718-51-0	Terphenyl-d14	89%	17-174%

Blank Spike Summary

Job Number: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4053-BS	3G04987.D	1	07/13/11	TMB	07/12/11	OP4053	E3G183

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D25217-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	71.7	86	40-136
120-12-7	Anthracene	83.3	74.8	90	40-141
56-55-3	Benzo(a)anthracene	83.3	71.1	85	38-143
50-32-8	Benzo(a)pyrene	83.3	71.9	86	39-145
205-99-2	Benzo(b)fluoranthene	83.3	72.6	87	38-151
207-08-9	Benzo(k)fluoranthene	83.3	72.7	87	38-147
218-01-9	Chrysene	83.3	74.8	90	39-137
53-70-3	Dibenzo(a,h)anthracene	83.3	76.5	92	35-139
206-44-0	Fluoranthene	83.3	70.8	85	34-132
86-73-7	Fluorene	83.3	71.2	85	41-136
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	70.6	85	31-144
91-20-3	Naphthalene	83.3	74.7	90	36-130
129-00-0	Pyrene	83.3	75.4	90	29-157

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	85%	10-193%
321-60-8	2-Fluorobiphenyl	80%	20-138%
1718-51-0	Terphenyl-d14	87%	17-174%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4053-MS	3G04989.D	10	07/13/11	TMB	07/12/11	OP4053	E3G183
OP4053-MSD	3G04990.D	10	07/13/11	TMB	07/12/11	OP4053	E3G183
D25217-1	3G04988.D	10	07/13/11	TMB	07/12/11	OP4053	E3G183

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D25217-1

CAS No.	Compound	D25217-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		94.5	71.8	76	74.4	79	4	20-151/30
120-12-7	Anthracene	ND		94.5	74.2	79	78.3	83	5	25-149/30
56-55-3	Benzo(a)anthracene	ND		94.5	ND	0* [a]	ND	0* [a]	nc	22-157/30
50-32-8	Benzo(a)pyrene	ND		94.5	ND	0* [a]	ND	0* [a]	nc	23-153/30
205-99-2	Benzo(b)fluoranthene	ND		94.5	ND	0* [a]	ND	0* [a]	nc	22-161/30
207-08-9	Benzo(k)fluoranthene	ND		94.5	89.7	95	83.6	88	7	17-161/30
218-01-9	Chrysene	100	J	94.5	102	2* [a]	94.5	-6* [a]	8	16-159/30
53-70-3	Dibenzo(a,h)anthracene	ND		94.5	ND	0* [a]	ND	0* [a]	nc	21-154/30
206-44-0	Fluoranthene	155		94.5	116	-41* [a]	107	-51* [a]	8	16-140/30
86-73-7	Fluorene	ND		94.5	71.3	75	72.2	76	1	15-153/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		94.5	ND	0* [a]	ND	0* [a]	nc	21-159/30
91-20-3	Naphthalene	ND		94.5	ND	0* [a]	ND	0* [a]	nc	10-176/30
129-00-0	Pyrene	139		94.5	111	-30* [a]	101	-40* [a]	9	10-200/30

CAS No.	Surrogate Recoveries	MS	MSD	D25217-1	Limits
4165-60-0	Nitrobenzene-d5	68%	66%	60%	10-193%
321-60-8	2-Fluorobiphenyl	75%	71%	64%	20-138%
1718-51-0	Terphenyl-d14	78%	76%	76%	17-174%

(a) Outside control limits due to dilution.

Mountain States ACCUTEST LABORATORIES

GC/MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson
07/14/11 10:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\071211\
Data File : 3g04988.D
Acq On : 13 Jul 2011 1:55 pm
Operator : TamiB
Sample : D25217-1,10x
Misc : OP4053,E3G183,30.01,,,1,10
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 13 14:25:05 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G183.M
Quant Title : PAHSIM BASE
QLast Update : Wed Jul 13 10:00:03 2011
Response via : Initial Calibration

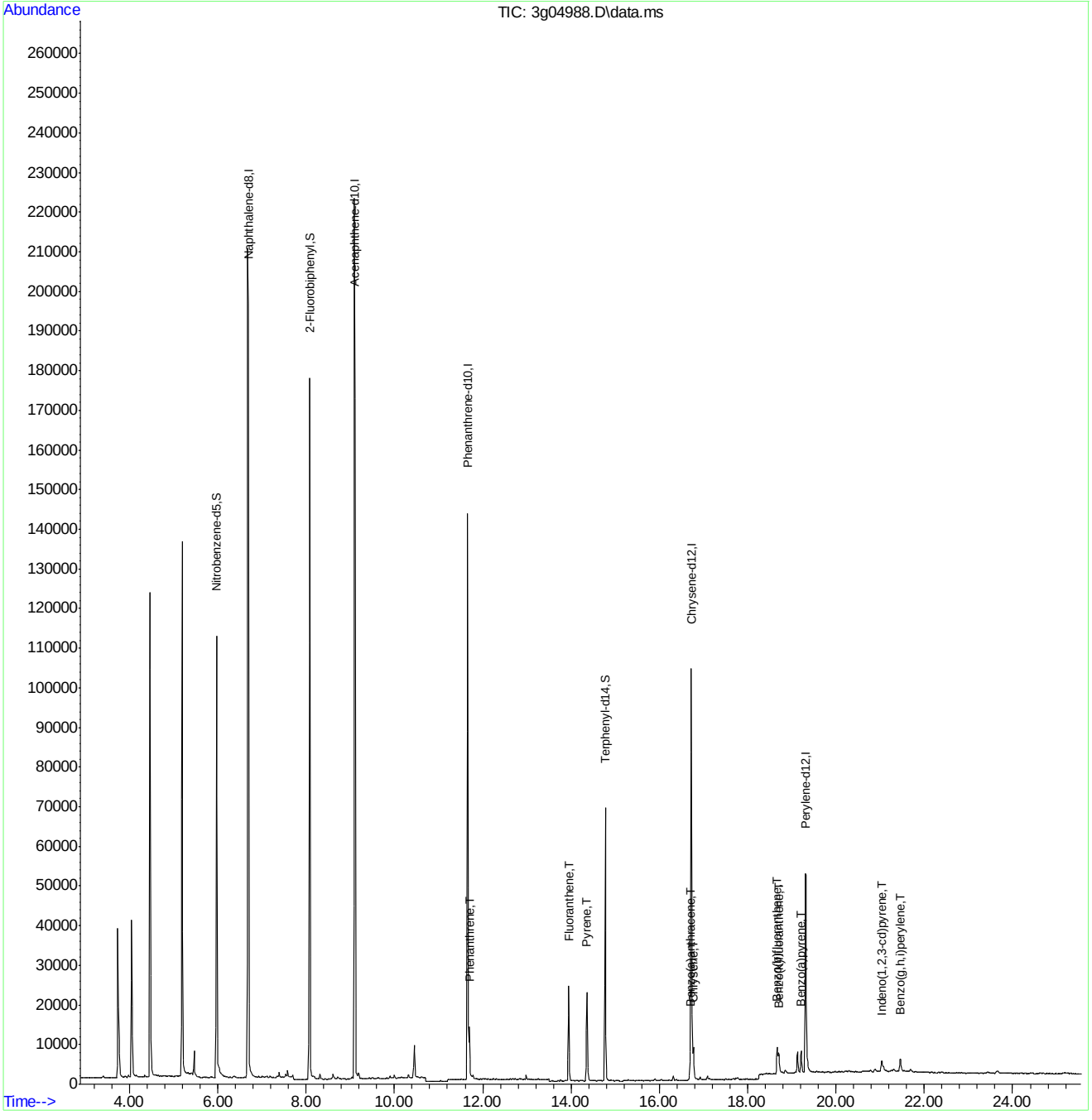
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.693	136	252658	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.097	164	133006	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.657	188	141375	4.00	ug/mL	0.00
18) Chrysene-d12	16.723	240	94755	4.00	ug/mL	0.00
23) Perylene-d12	19.309	264	70818	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	5.970	82	69831	2.98	ug/mL	0.00
7) 2-Fluorobiphenyl	8.081	172	160588	3.19	ug/mL	0.00
20) Terphenyl-d14	14.775	244	65067	3.82	ug/mL	0.00
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	0.000		0	N.D.	d	
8) 2-Methylnaphthalene	0.000		0	N.D.	d	
9) 1-Methylnaphthalene	0.000		0	N.D.	d	
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	0.000		0	N.D.	d	
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	11.696	178	11877	0.23	ug/mL	98
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	13.944	202	17210	0.41	ug/mL	99
19) Pyrene	14.355	202	15735	0.37	ug/mL	96
21) Benzo(a)anthracene	16.697	228	5474	0.18	ug/mL	93
22) Chrysene	16.769	228	8249	0.27	ug/mL	99
24) Benzo(b)fluoranthene	18.667	252	6041m	0.23	ug/mL	
25) Benzo(k)fluoranthene	18.699	252	4781m	0.17	ug/mL	
26) Benzo(a)pyrene	19.214	252	4717	0.20	ug/mL	93
27) Indeno(1,2,3-cd)pyrene	21.044	276	2697m	0.14	ug/mL	
28) Dibenz(a,h)anthracene	0.000		0	N.D.	d	
29) Benzo(g,h,i)perylene	21.465	276	3047	0.14	ug/mL	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

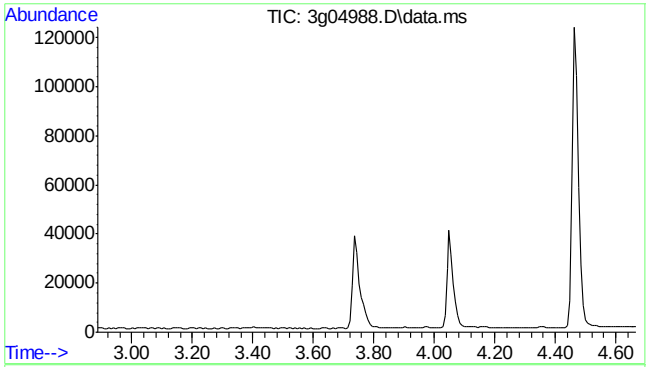
Data Path : C:\msdchem\1\DATA\071211\
Data File : 3g04988.D
Acq On : 13 Jul 2011 1:55 pm
Operator : TamiB
Sample : D25217-1,10x
Misc : OP4053,E3G183,30.01,,,1,10
ALS Vial : 15 Sample Multiplier: 1

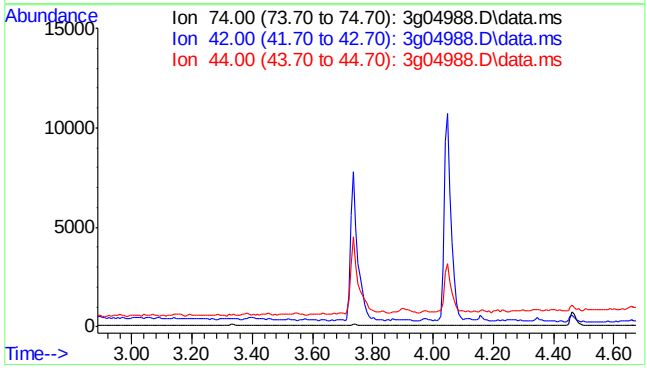
Quant Time: Jul 13 14:25:05 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G183.M
Quant Title : PAHSIM BASE
QLast Update : Wed Jul 13 10:00:03 2011
Response via : Initial Calibration



SIMPE3G183.M Thu Jul 14 09:43:49 2011 3G

Page: 2



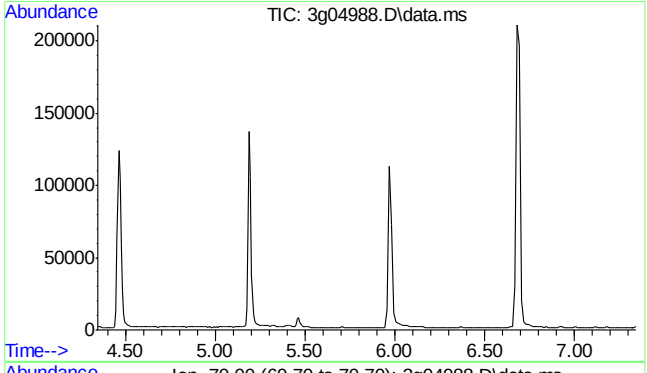


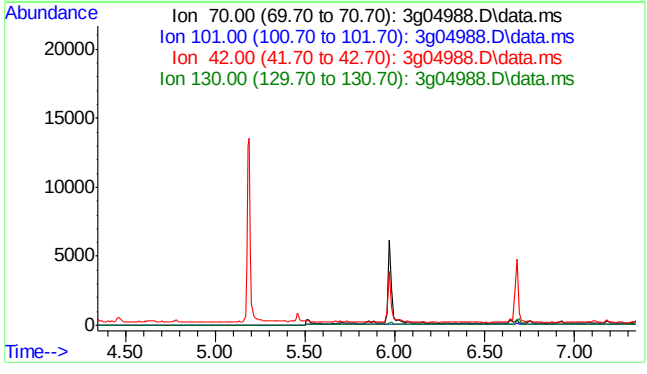
#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 3.17 min

Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 74

Sig	Exp Ratio
74	100
42	67.0
44	5.7



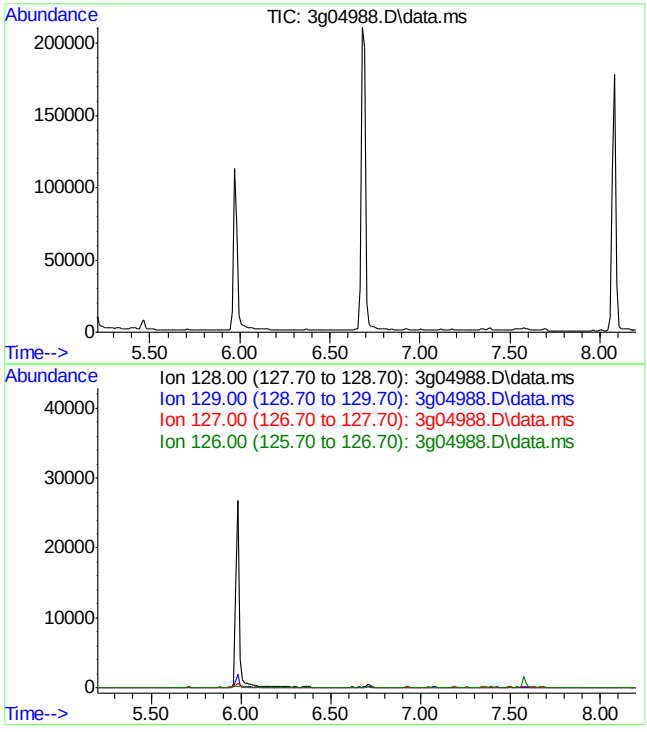


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.84 min

Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 70

Sig	Exp Ratio
70	100
101	11.6
42	68.1
130	27.5

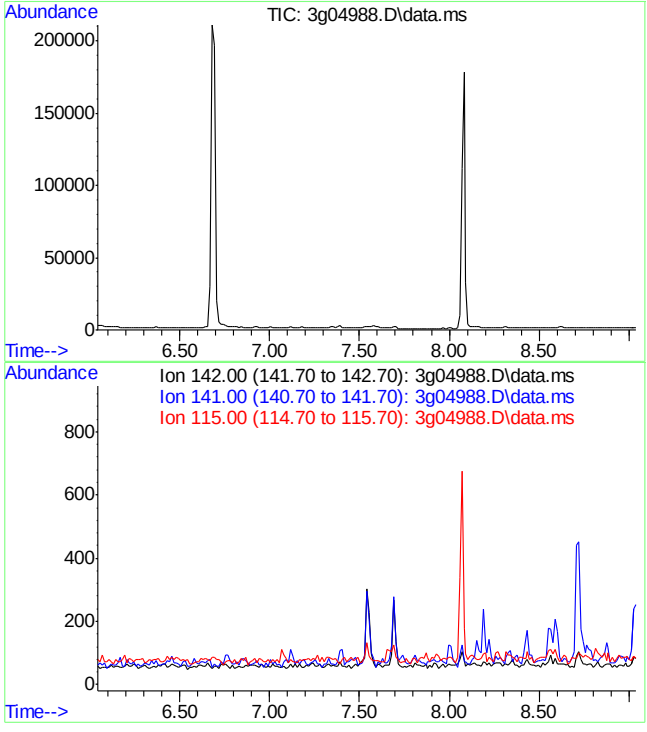


#5
Naphthalene
Concen: N.D. ug/mL
Expected RT: 6.71 min

Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 128

Sig	Exp Ratio
128	100
129	10.9
127	12.0
126	6.8

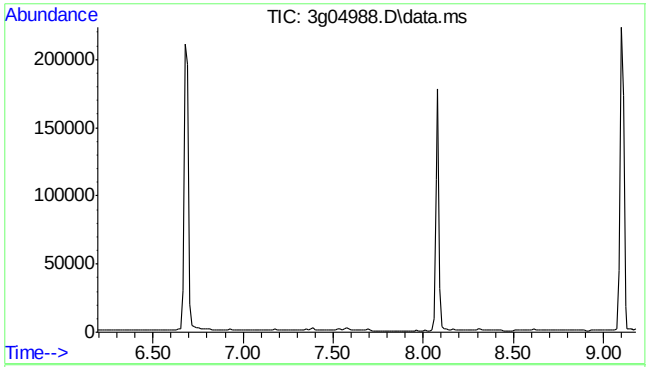


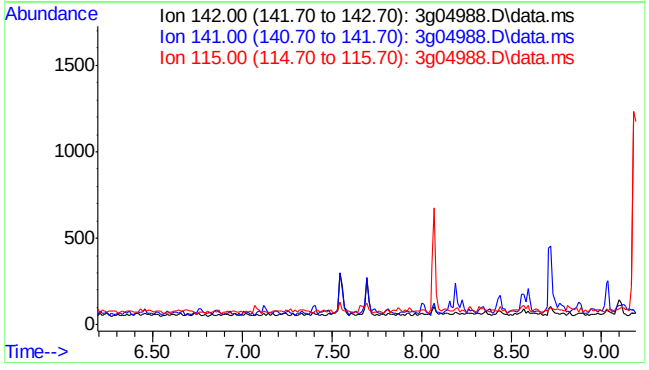
#8
2-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.54 min

Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 142

Sig	Exp Ratio
142	100
141	83.1
115	24.4



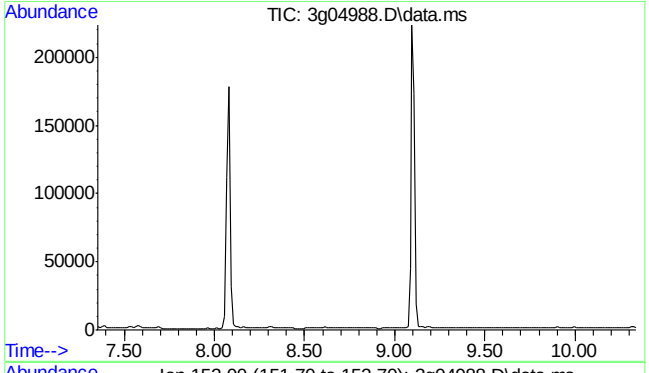


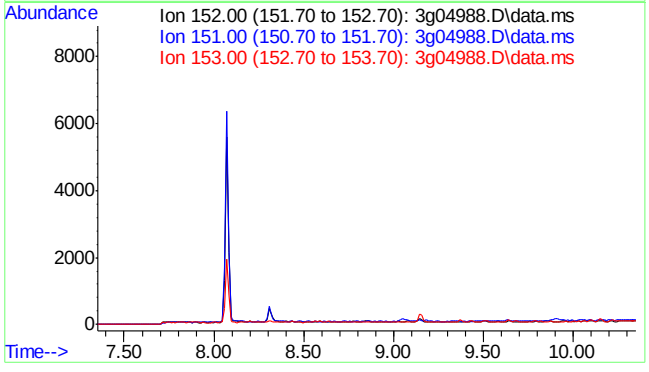
#9
1-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.69 min

Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 142

Sig	Exp Ratio
142	100
141	86.1
115	25.4



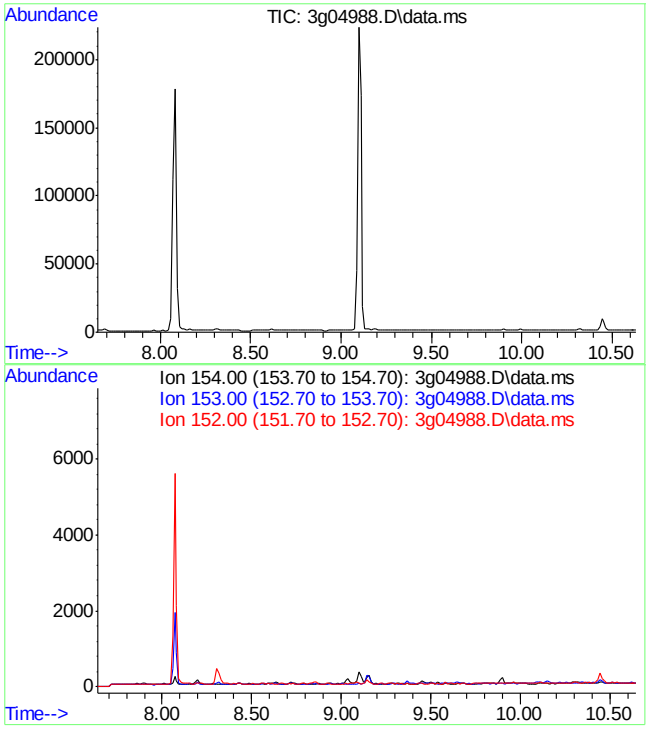


#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 8.85 min

Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 152

Sig	Exp Ratio
152	100
151	18.4
153	13.0

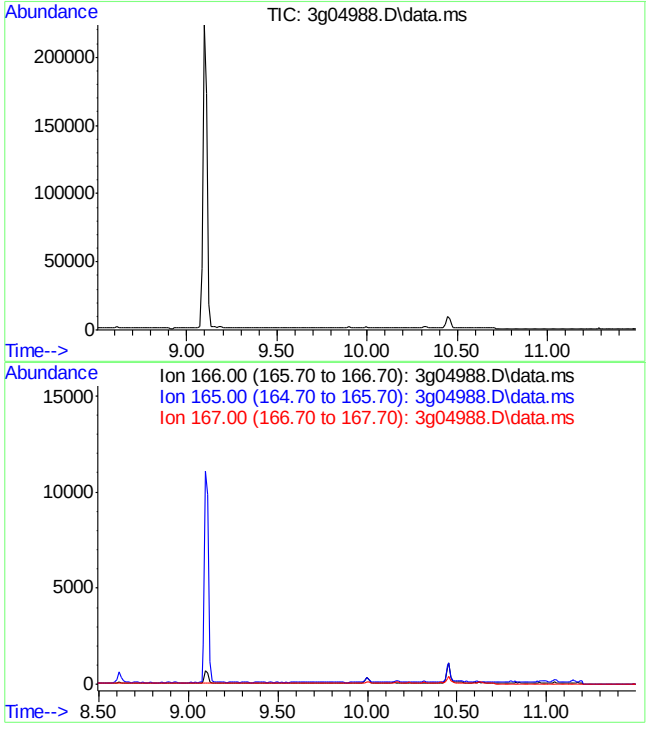


#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 9.14 min

Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 154

Sig	Exp Ratio
154	100
153	104.2
152	48.2

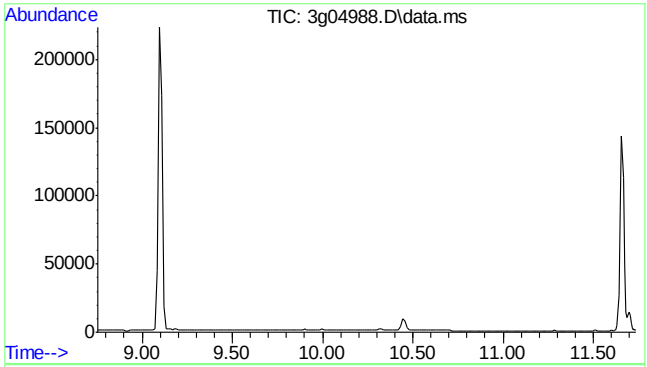


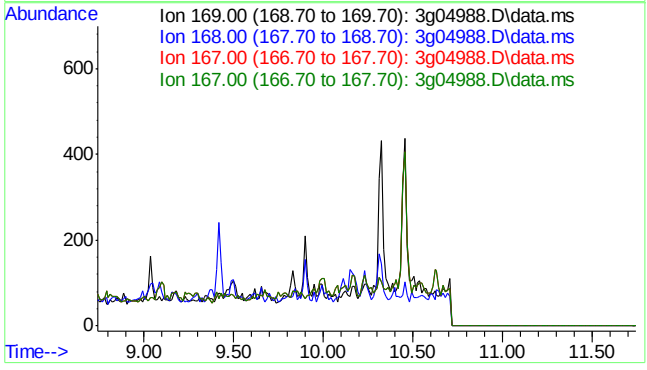
#12
Fluorene
Concen: N.D. ug/mL
Expected RT: 10.00 min

Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 166

Sig	Exp Ratio
166	100
165	90.0
167	11.9



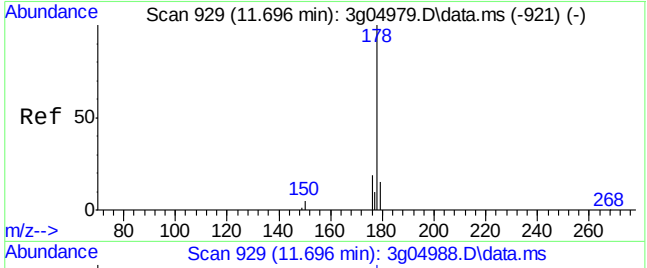


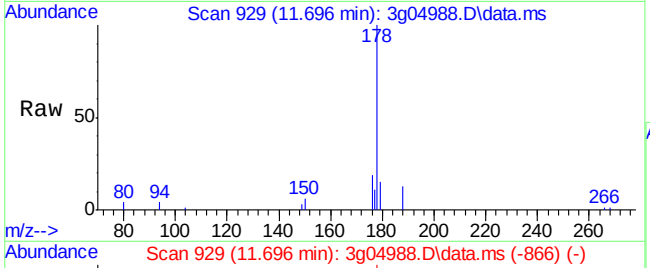
#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 10.24 min

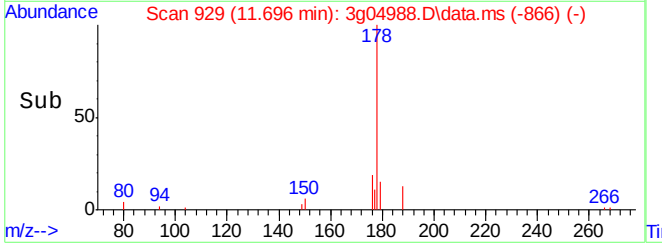
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 169

Sig	Exp Ratio
169	100
168	61.4
167	32.9
167	32.9



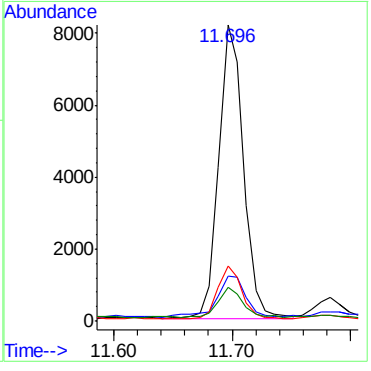


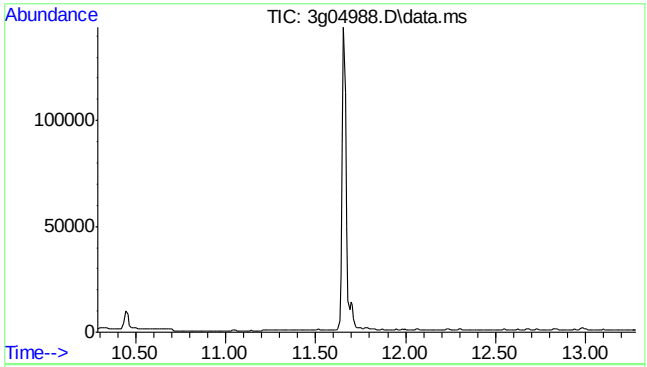


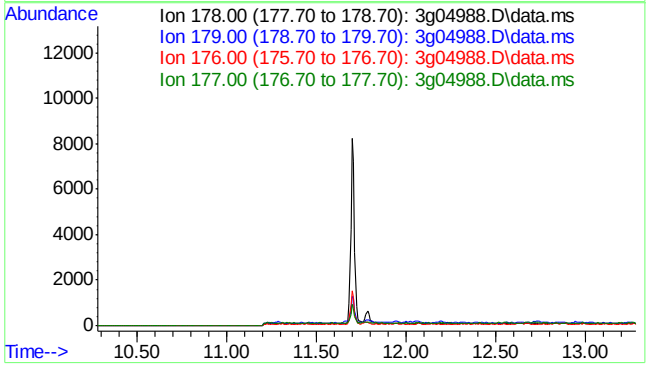
#15
Phenanthrene
Concen: 0.23 ug/mL
RT: 11.696 min Scan# 929
Delta R.T. 0.000 min
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion:178 Resp: 11877

Ion	Ratio	Lower	Upper
178	100		
179	17.1	0.0	35.1
176	17.6	0.0	38.0
177	10.2	0.0	29.8





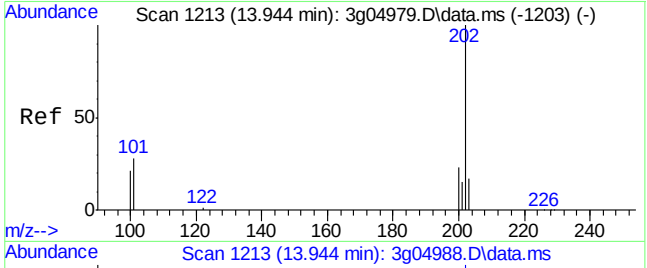


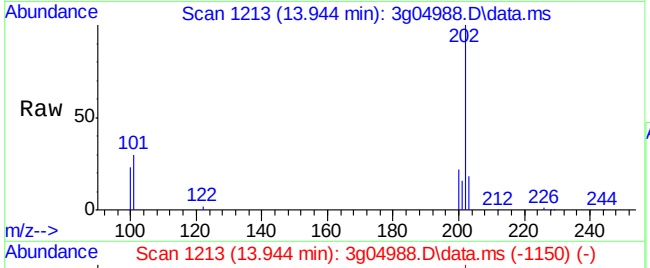
#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 11.78 min

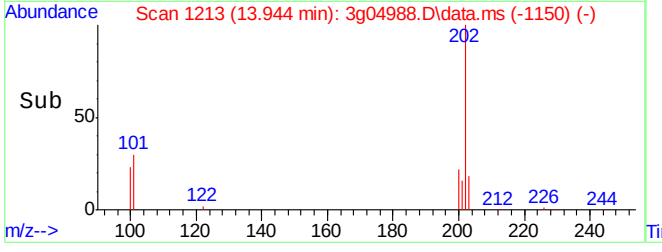
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 178

Sig	Exp Ratio
178	100
179	15.0
176	17.3
177	8.2



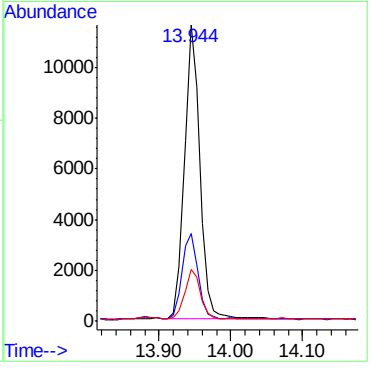


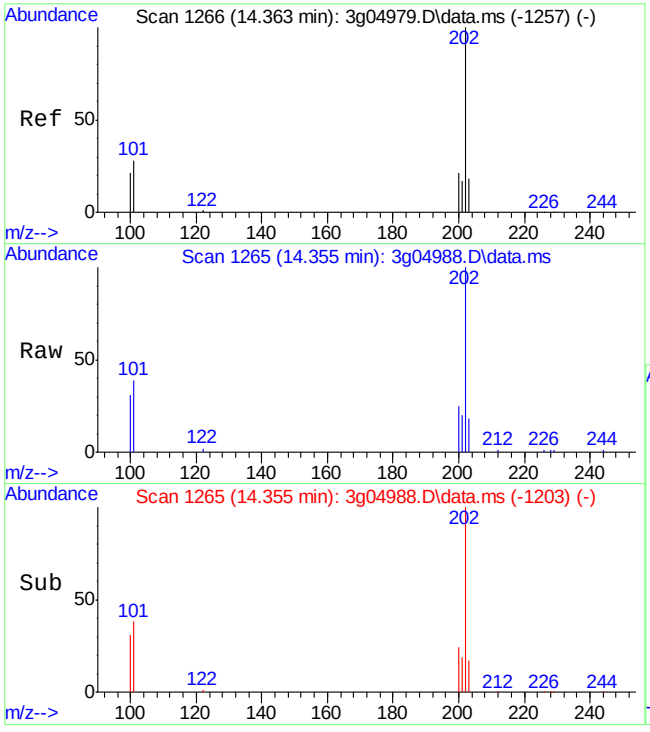


#17
Fluoranthene
Concen: 0.41 ug/mL
RT: 13.944 min Scan# 1213
Delta R.T. 0.000 min
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion:202 Resp: 17210

Ion	Ratio	Lower	Upper
202	100		
101	29.3	8.2	48.2
203	17.0	0.0	37.3

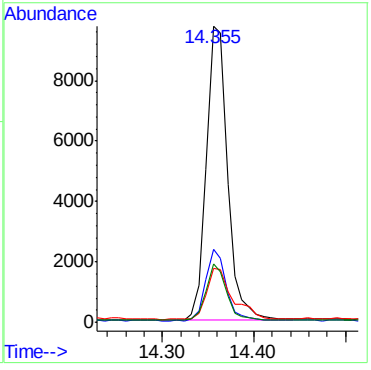


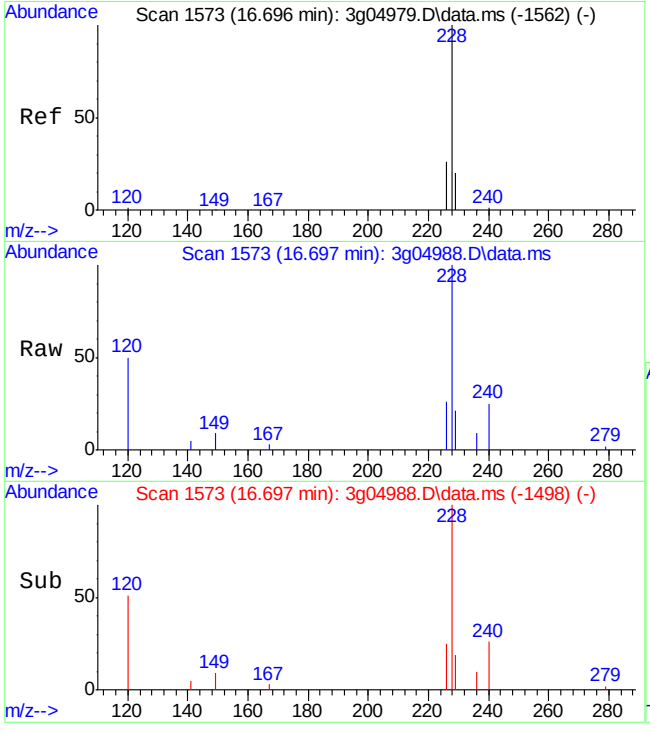


#19
Pyrene
Concen: 0.37 ug/mL
RT: 14.355 min Scan# 1265
Delta R.T. -0.008 min
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion:202 Resp: 15735

Ion	Ratio	Lower	Upper
202	100		
200	23.5	2.5	42.5
203	21.6	0.0	37.8
201	18.6	0.0	38.2

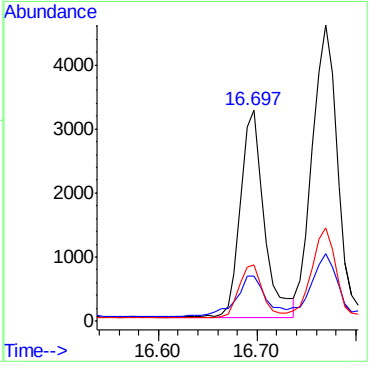


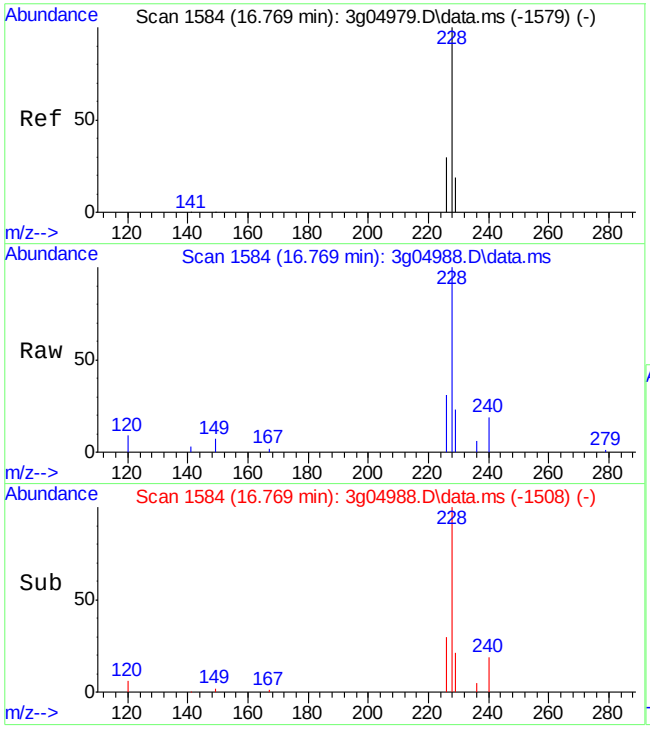


#21
Benzo(a)anthracene
Concen: 0.18 ug/mL
RT: 16.697 min Scan# 1573
Delta R.T. 0.000 min
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion:228 Resp: 5474

Ion	Ratio	Lower	Upper
228	100		
229	25.3	0.0	39.4
226	24.9	6.2	46.2

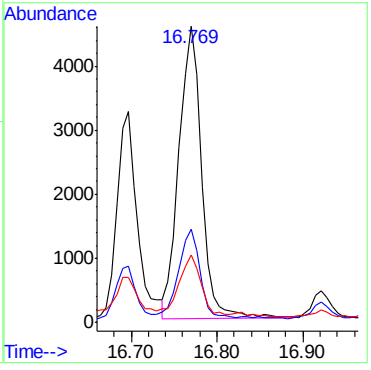


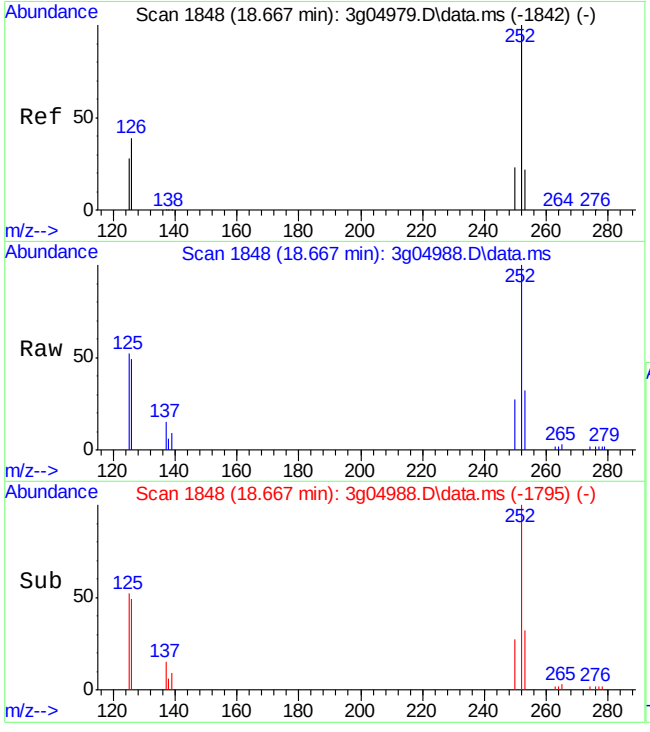


#22
Chrysene
Concen: 0.27 ug/mL
RT: 16.769 min Scan# 1584
Delta R.T. 0.000 min
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion:228 Resp: 8249

Ion	Ratio	Lower	Upper
228	100		
226	28.0	8.9	48.9
229	19.6	0.0	39.1

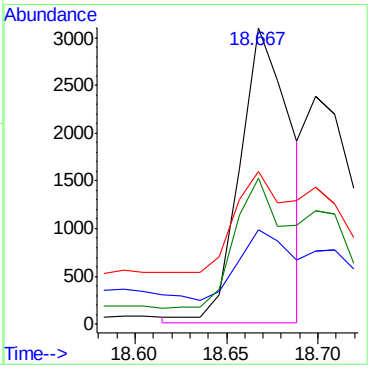


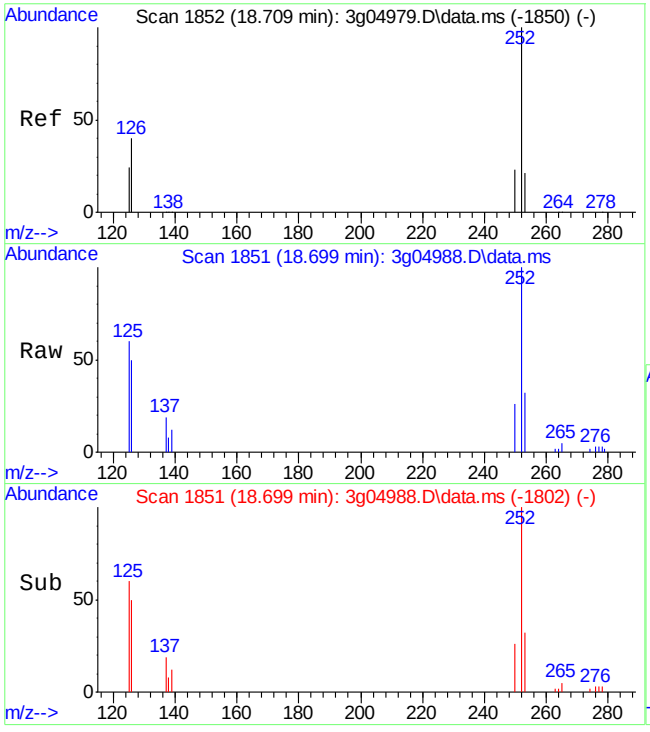


#24
Benzo(b)fluoranthene
Concen: 0.23 ug/mL m
RT: 18.667 min Scan# 1848
Delta R.T. 0.000 min
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion:252 Resp: 6041

Ion	Ratio	Lower	Upper
252	100		
253	46.1	1.6	41.6#
125	58.6	10.5	50.5#
126	44.8	22.5	62.5

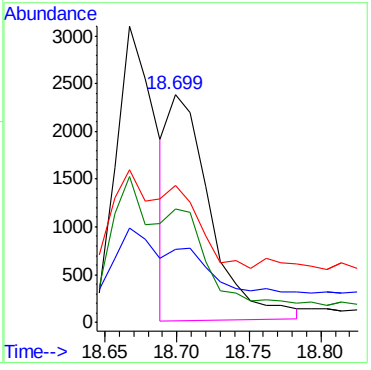


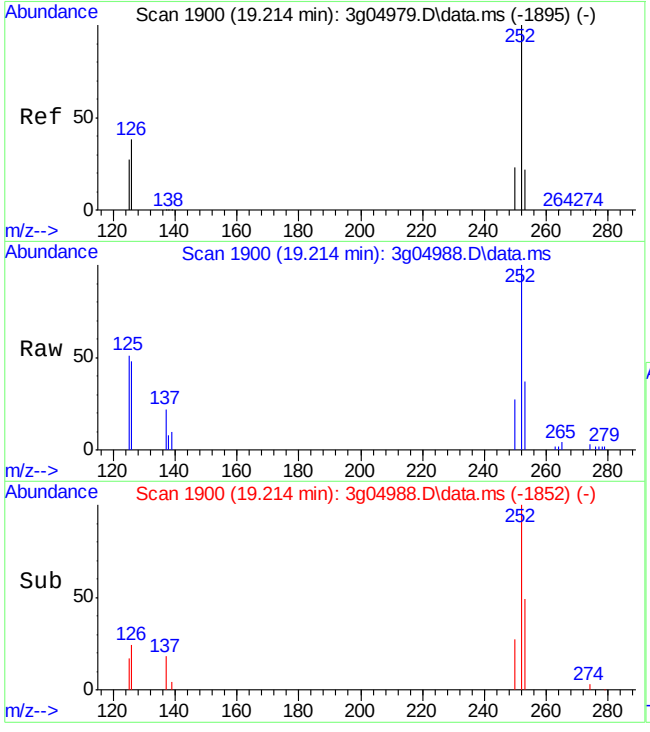


#25
Benzo(k)fluoranthene
Concen: 0.17 ug/mL m
RT: 18.699 min Scan# 1851
Delta R.T. -0.010 min
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion:252 Resp: 4781

Ion	Ratio	Lower	Upper
252	100		
253	58.2	1.7	41.7#
125	74.1	6.9	46.9#
126	56.6	21.7	61.7

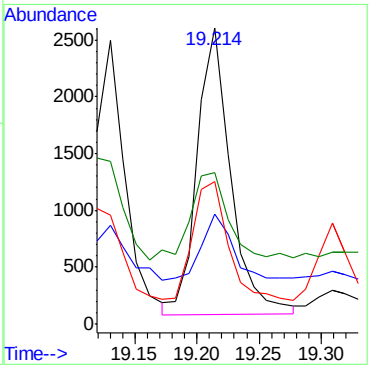


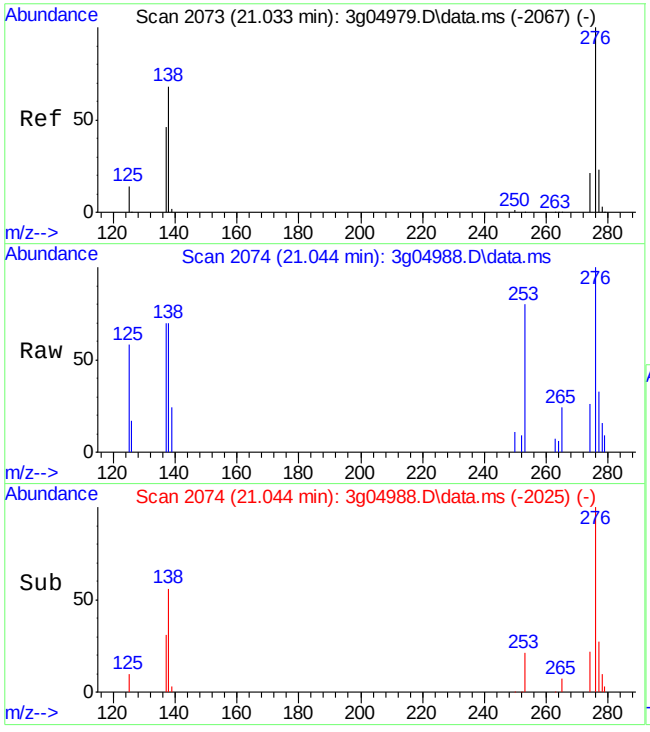


#26
Benzo(a)pyrene
Concen: 0.20 ug/mL
RT: 19.214 min Scan# 1900
Delta R.T. 0.000 min
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion:252 Resp: 4717

Ion	Ratio	Lower	Upper
252	100		
253	24.5	1.0	41.0
126	44.0	22.2	62.2
125	39.6	12.1	52.1

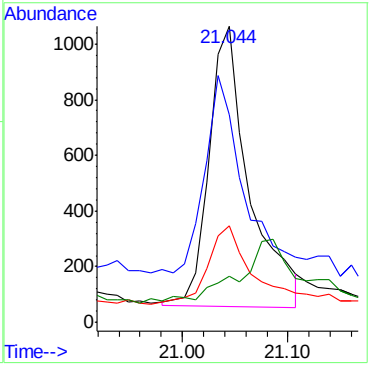


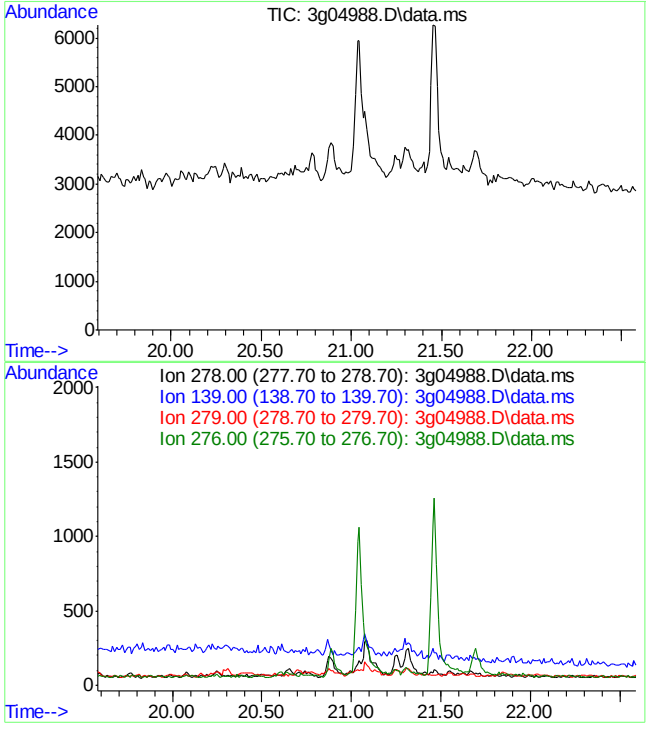


#27
Indeno(1,2,3-cd)pyrene
Concen: 0.14 ug/mL m
RT: 21.044 min Scan# 2074
Delta R.T. 0.011 min
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion:276 Resp: 2697

Ion	Ratio	Lower	Upper
276	100		
138	10.3	41.3	81.3#
277	4.0	13.0	53.0#
278	18.5	85.3	125.3#



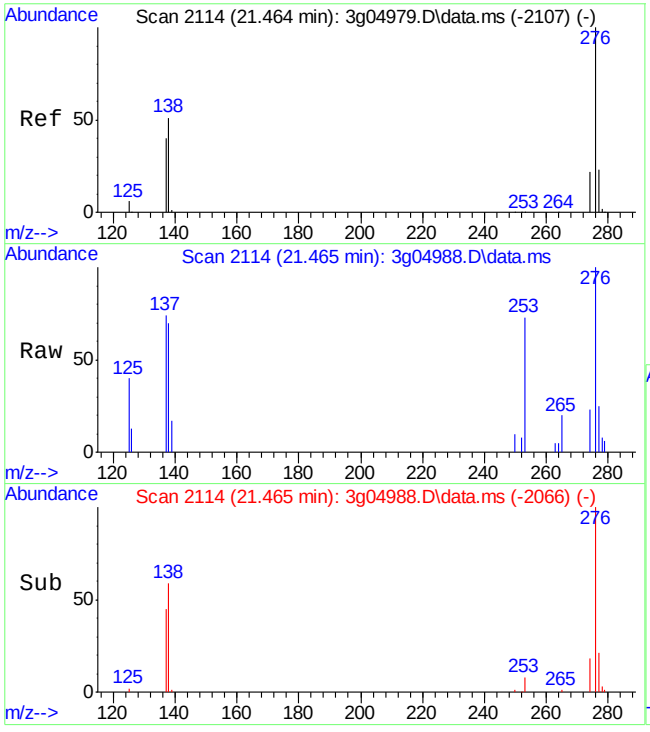


#28
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 21.09 min

Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion: 278

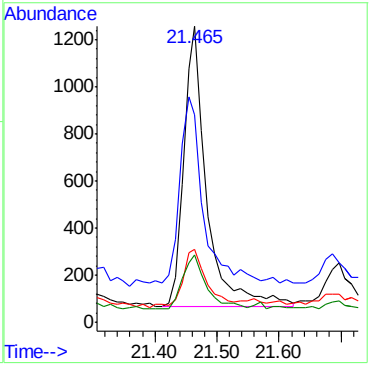
Sig	Exp Ratio
278	100
139	53.0
279	22.9
276	127.5



#29
Benzo(g,h,i)perylene
Concen: 0.14 ug/mL
RT: 21.465 min Scan# 2114
Delta R.T. 0.000 min
Lab File: 3g04988.D
Acq: 13 Jul 11 1:55 pm

Tgt Ion:276 Resp: 3047

Ion	Ratio	Lower	Upper
276	100		
138	79.0	47.1	87.1
277	23.0	3.0	43.0
274	20.1	1.9	41.9



8.1.1
8

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\071211\
Data File : 3g04986.D
Acq On : 13 Jul 2011 12:34 pm
Operator : TamiB
Sample : OP4053-MB
Misc : OP4053,E3G183,30,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 13 14:02:55 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G183.M
Quant Title : PAHSIM BASE
QLast Update : Wed Jul 13 10:00:03 2011
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.693	136	306316	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.097	164	159500	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.657	188	188694	4.00	ug/mL	0.00
18) Chrysene-d12	16.723	240	130514	4.00	ug/mL	0.00
23) Perylene-d12	19.309	264	104254	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	5.970	82	1181963	41.59	ug/mL	0.00
7) 2-Fluorobiphenyl	8.081	172	2412883	40.00	ug/mL	0.00
20) Terphenyl-d14	14.783	244	1045779	44.61	ug/mL	0.00
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	0.000		0	N.D.	d	
8) 2-Methylnaphthalene	0.000		0	N.D.	d	
9) 1-Methylnaphthalene	0.000		0	N.D.	d	
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	0.000		0	N.D.	d	
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	0.000		0	N.D.	d	
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	0.000		0	N.D.	d	
21) Benzo(a)anthracene	0.000		0	N.D.	d	
22) Chrysene	0.000		0	N.D.	d	
24) Benzo(b)fluoranthene	0.000		0	N.D.	d	
25) Benzo(k)fluoranthene	0.000		0	N.D.	d	
26) Benzo(a)pyrene	0.000		0	N.D.	d	
27) Indeno(1,2,3-cd)pyrene	0.000		0	N.D.	d	
28) Dibenz(a,h)anthracene	0.000		0	N.D.	d	
29) Benzo(g,h,i)perylene	0.000		0	N.D.	d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

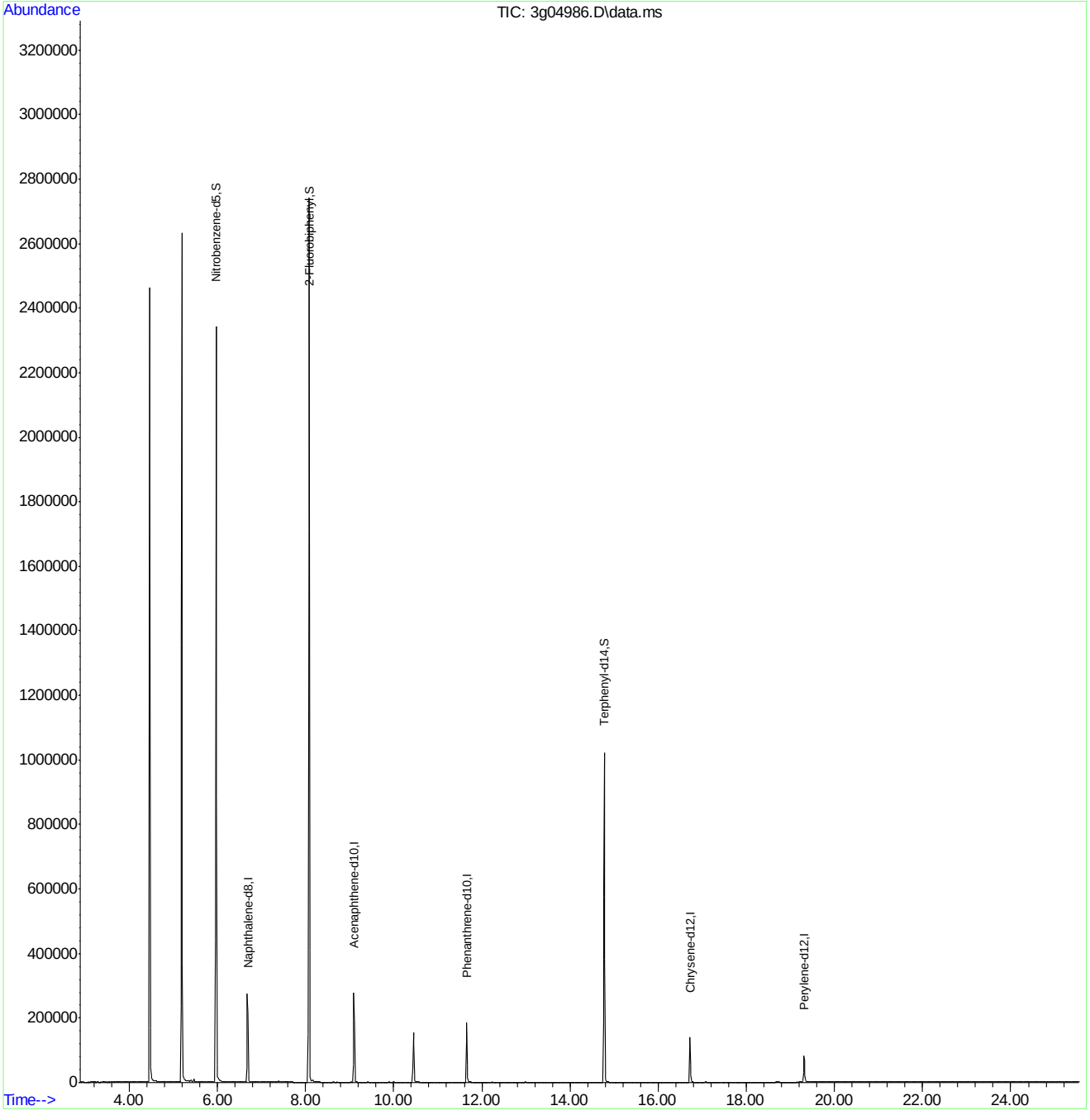
8.2.1

8

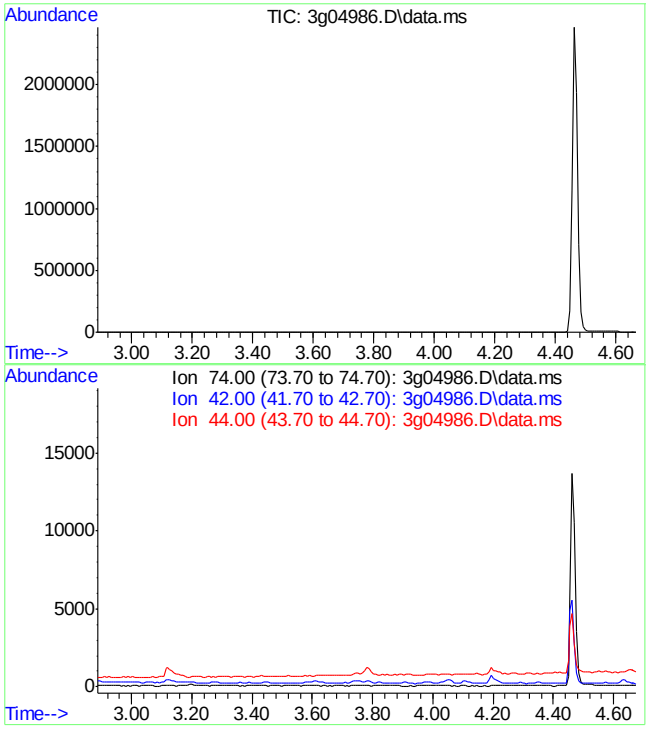
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\071211\
Data File : 3g04986.D
Acq On : 13 Jul 2011 12:34 pm
Operator : TamiB
Sample : OP4053-MB
Misc : OP4053,E3G183,30,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 13 14:02:55 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G183.M
Quant Title : PAHSIM BASE
QLast Update : Wed Jul 13 10:00:03 2011
Response via : Initial Calibration



SIMPE3G183.M Thu Jul 14 09:43:41 2011 3G

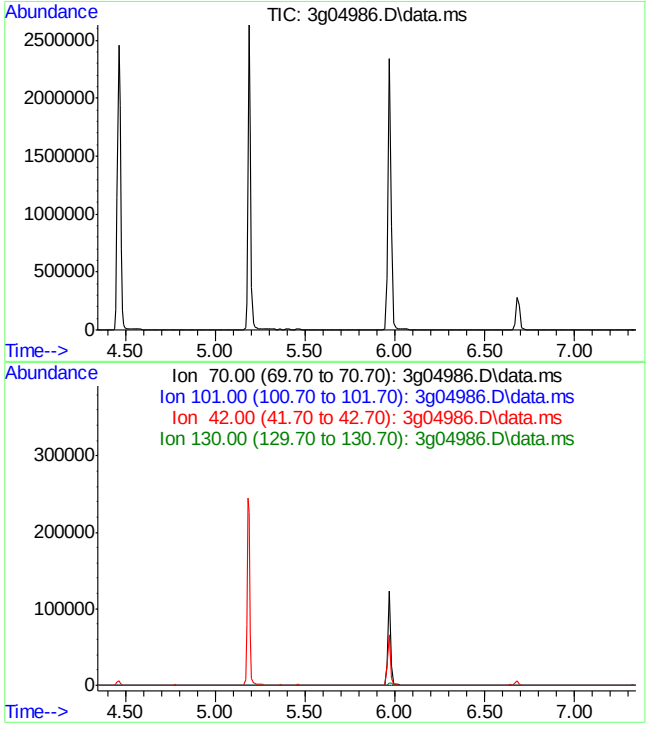


#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 3.17 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 74

Sig	Exp Ratio
74	100
42	67.0
44	5.7

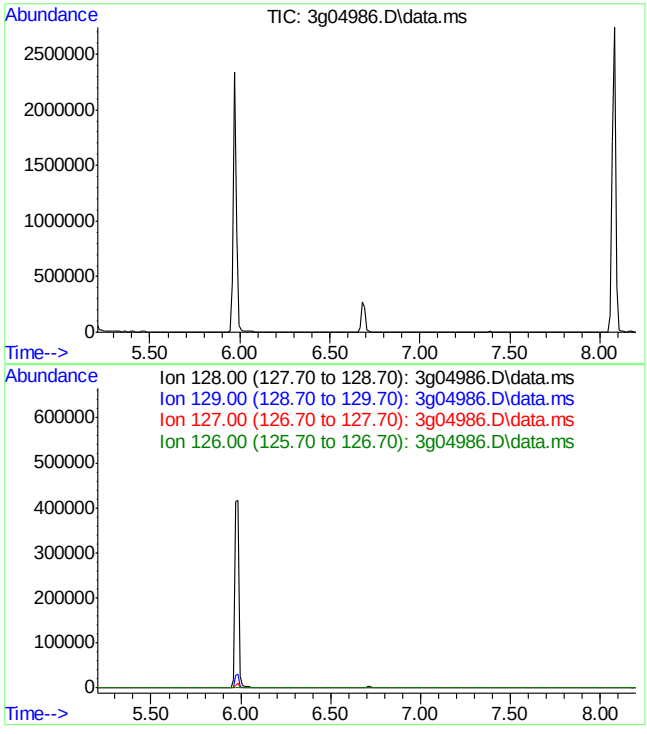


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.84 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 70

Sig	Exp Ratio
70	100
101	11.6
42	68.1
130	27.5

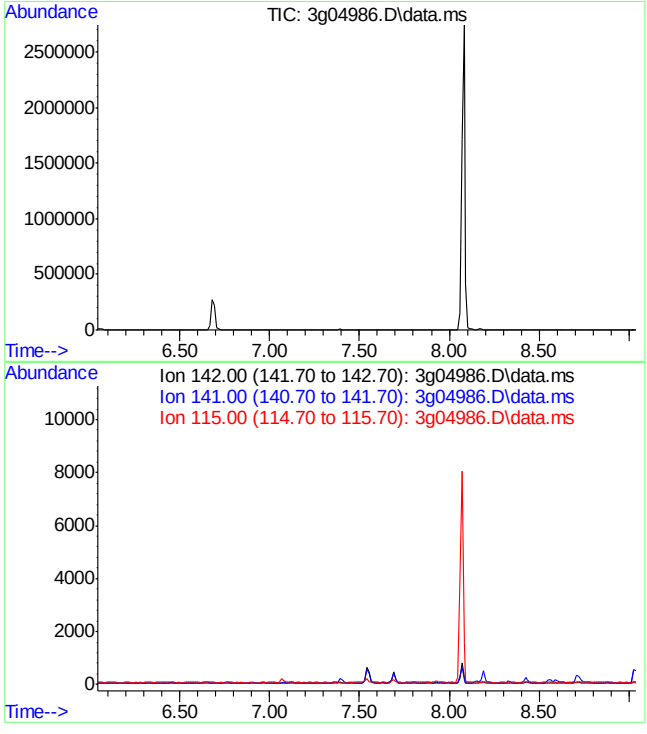


#5
Naphthalene
Concen: N.D. ug/mL
Expected RT: 6.71 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 128

Sig	Exp Ratio
128	100
129	10.9
127	12.0
126	6.8

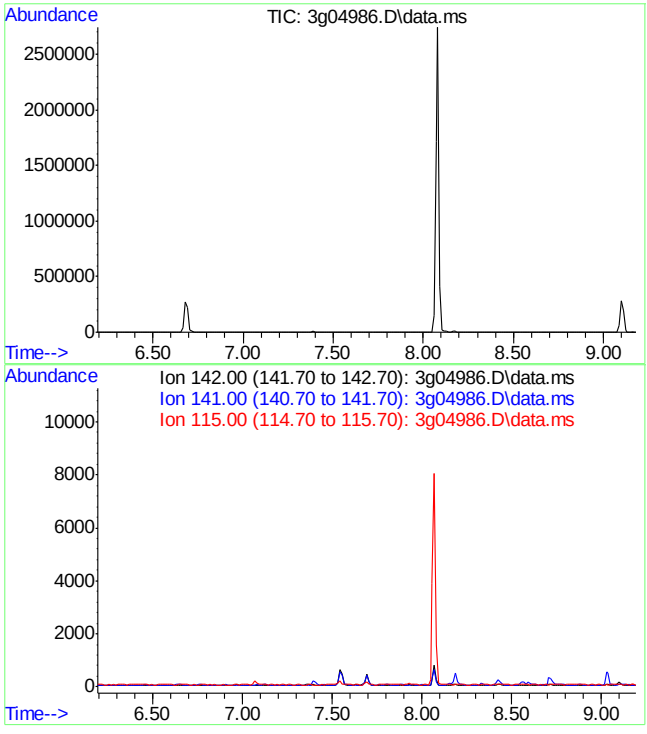


#8
2-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.54 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 142

Sig	Exp Ratio
142	100
141	83.1
115	24.4

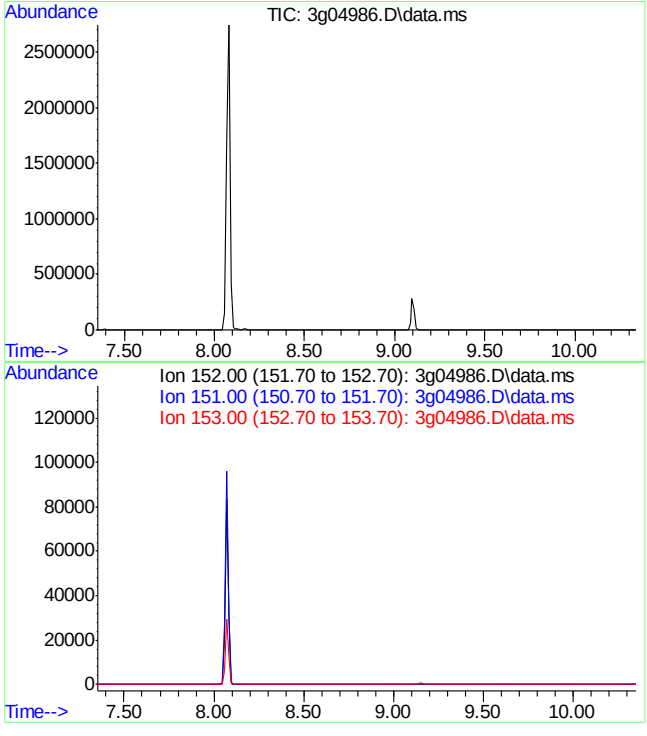


#9
1-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.69 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 142

Sig	Exp Ratio
142	100
141	86.1
115	25.4

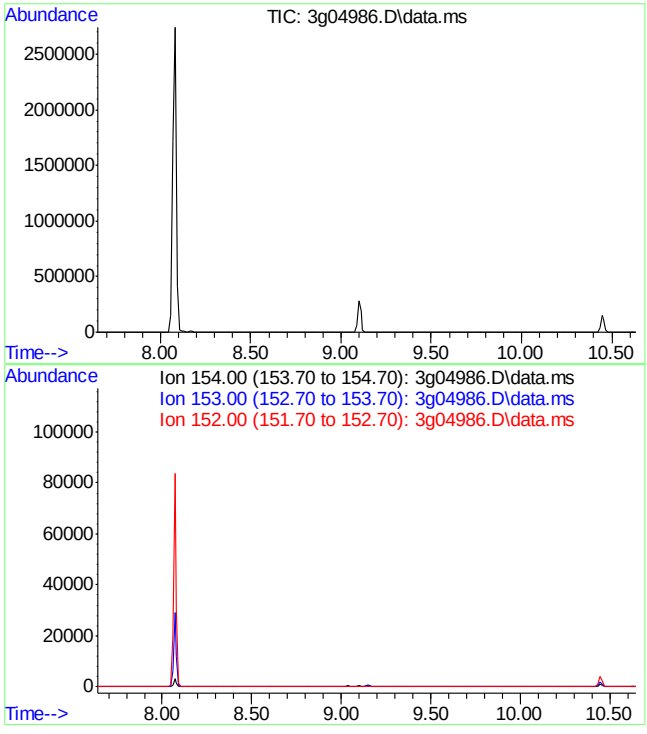


#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 8.85 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 152

Sig	Exp Ratio
152	100
151	18.4
153	13.0

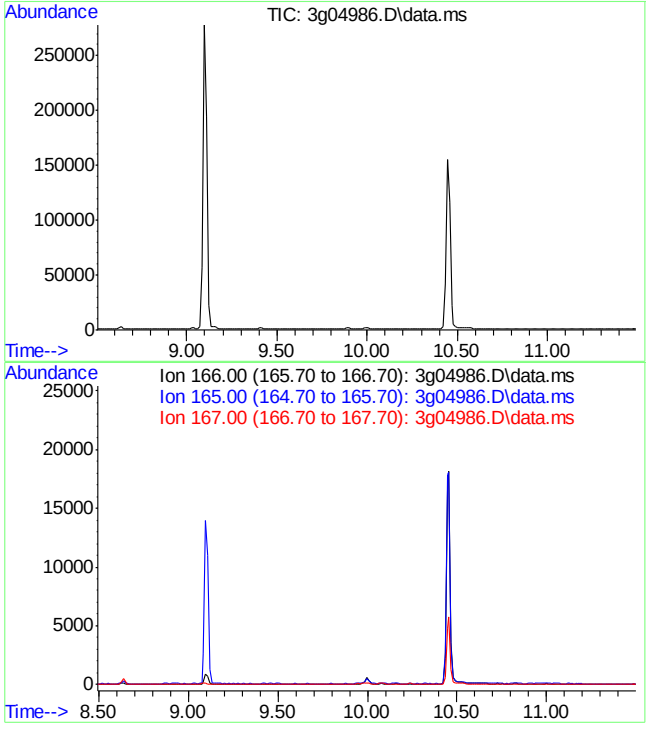


#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 9.14 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 154

Sig	Exp Ratio
154	100
153	104.2
152	48.2

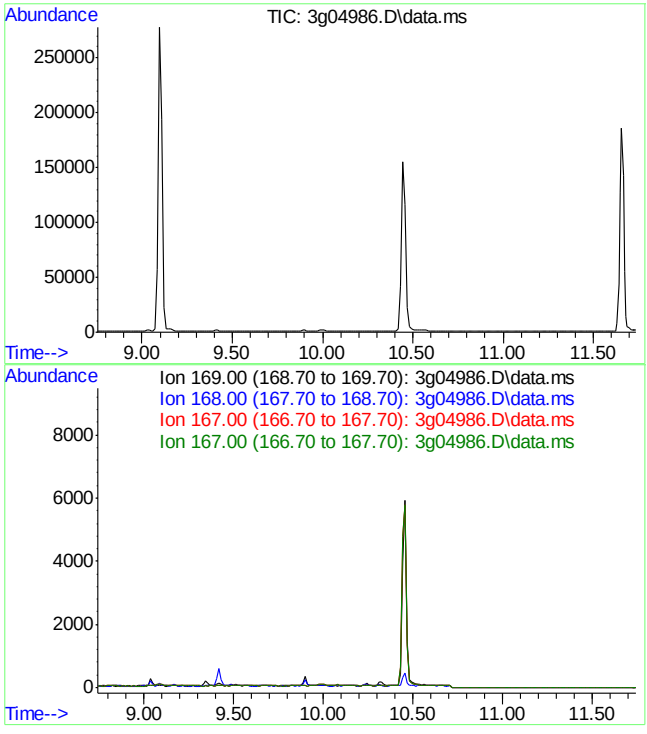


#12
Fluorene
Concen: N.D. ug/mL
Expected RT: 10.00 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 166

Sig	Exp Ratio
166	100
165	90.0
167	11.9

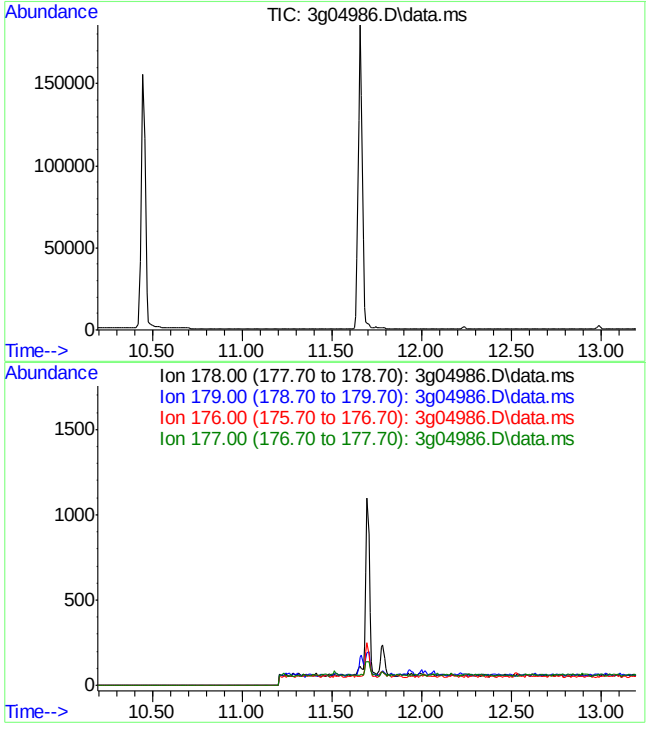


#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 10.24 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 169

Sig	Exp Ratio
169	100
168	61.4
167	32.9
167	32.9

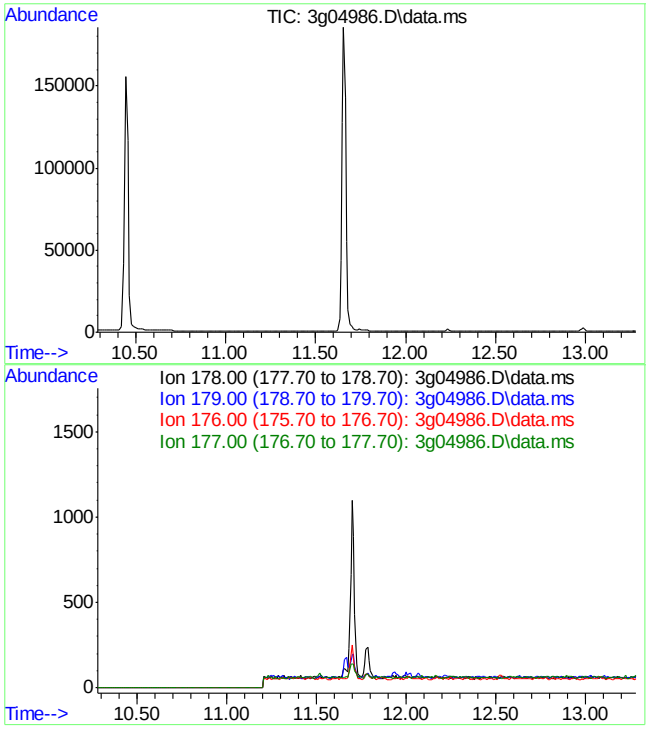


#15
Phenanthrene
Concen: N.D. ug/mL
Expected RT: 11.70 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 178

Sig	Exp Ratio
178	100
179	15.1
176	18.0
177	9.8

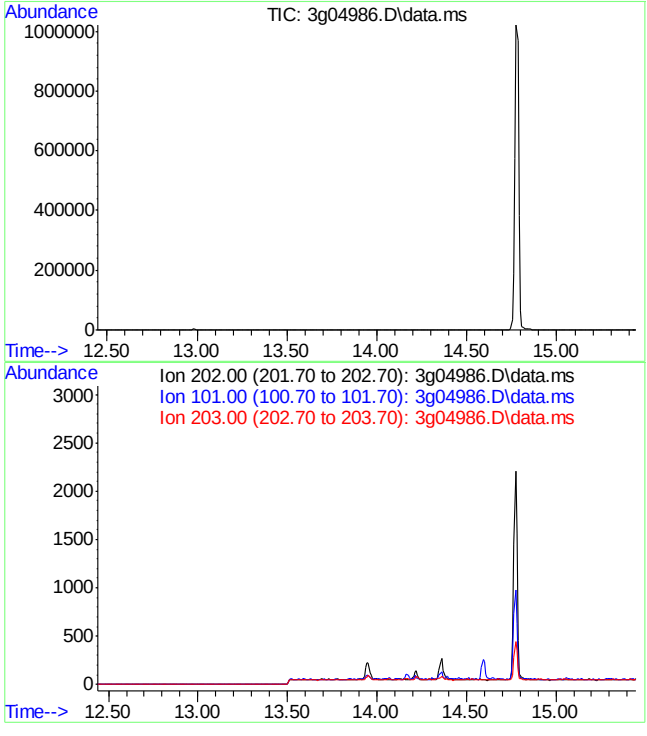


#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 11.78 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 178

Sig	Exp Ratio
178	100
179	15.0
176	17.3
177	8.2

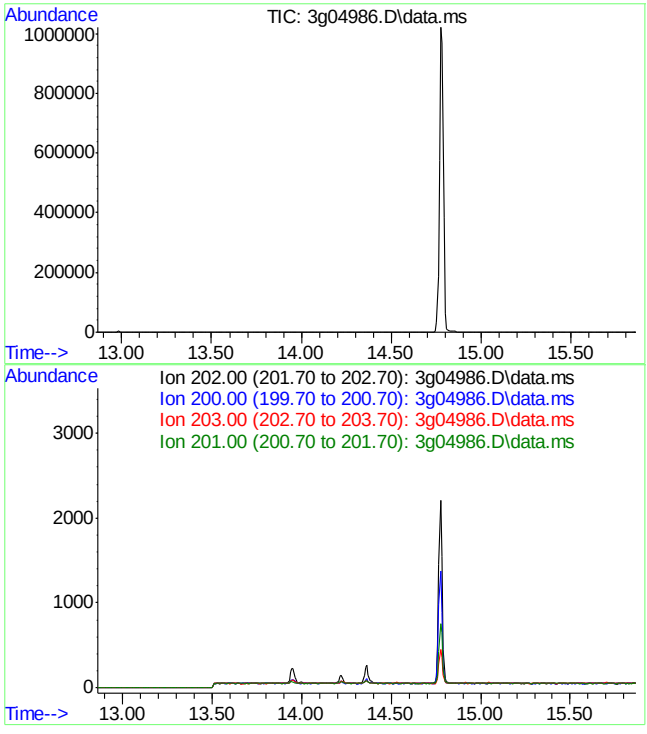


#17
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 13.94 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 202

Sig	Exp Ratio
202	100
101	28.2
203	17.3

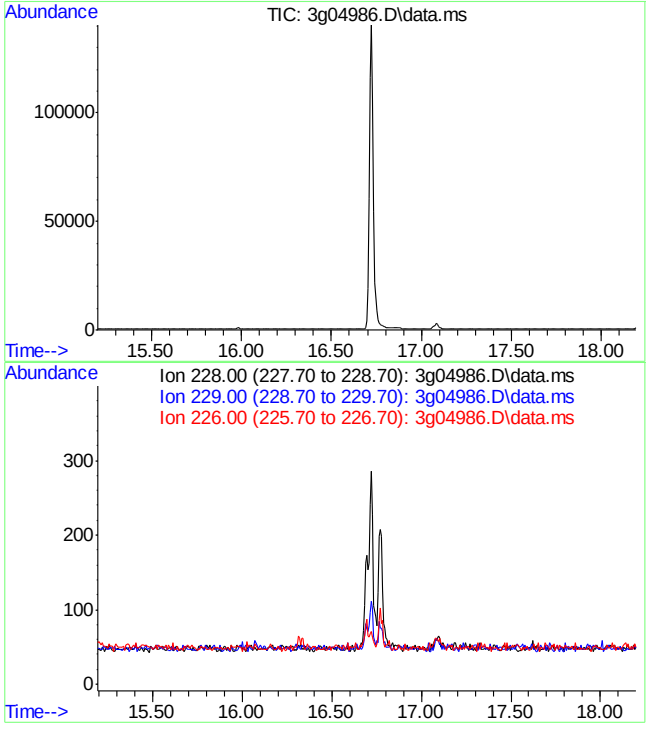


#19
Pyrene
Concen: N.D. ug/mL
Expected RT: 14.36 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 202

Sig	Exp Ratio
202	100
200	22.5
203	17.8
201	18.2

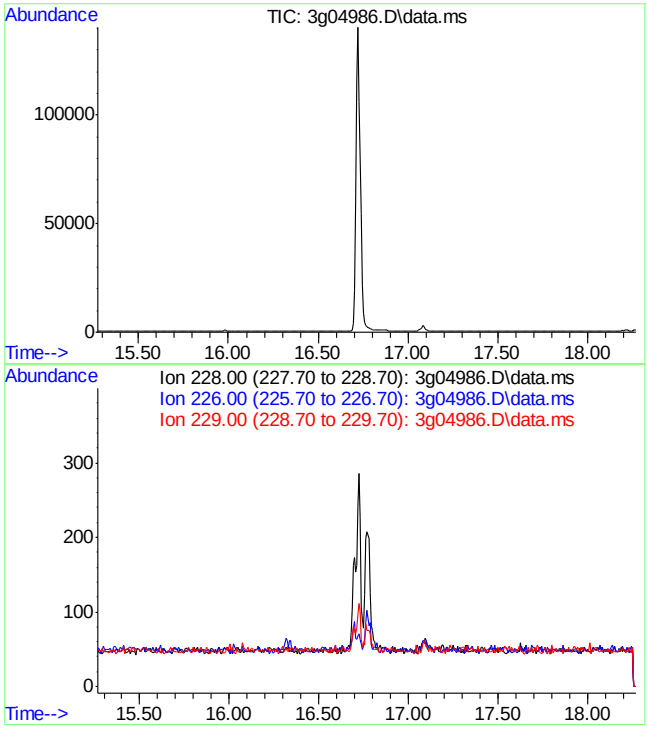


#21
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 16.70 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 228

Sig	Exp Ratio
228	100
229	19.4
226	26.2

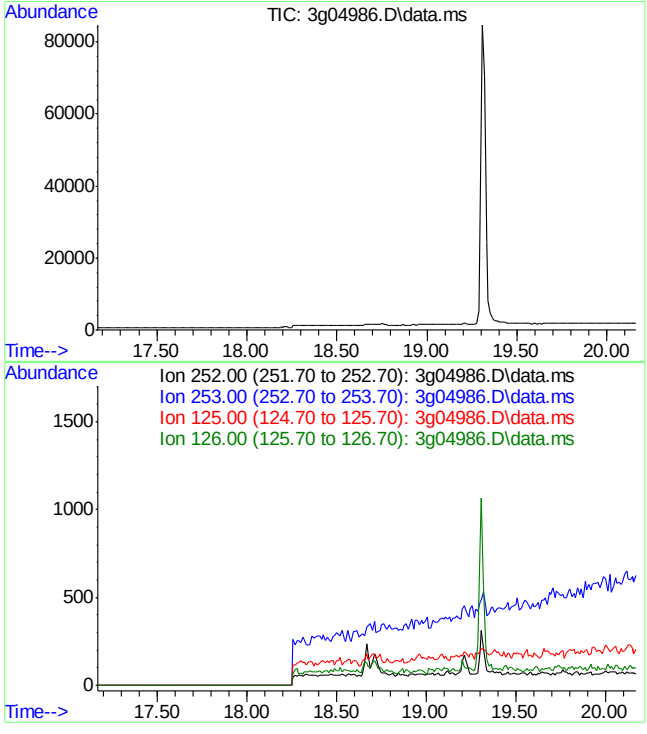


#22
Chrysene
Concen: N.D. ug/mL
Expected RT: 16.77 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 228

Sig	Exp Ratio
228	100
226	28.9
229	19.1

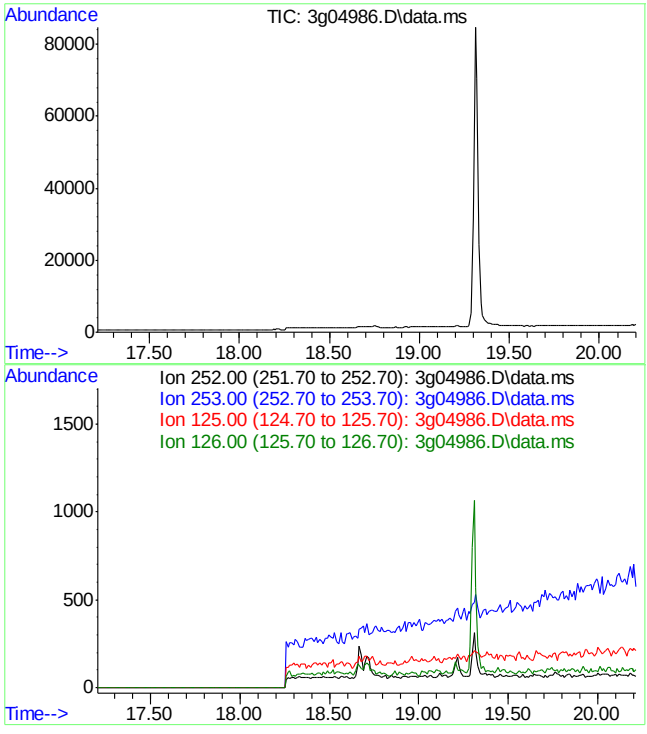


#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.67 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	21.6
125	30.5
126	42.5

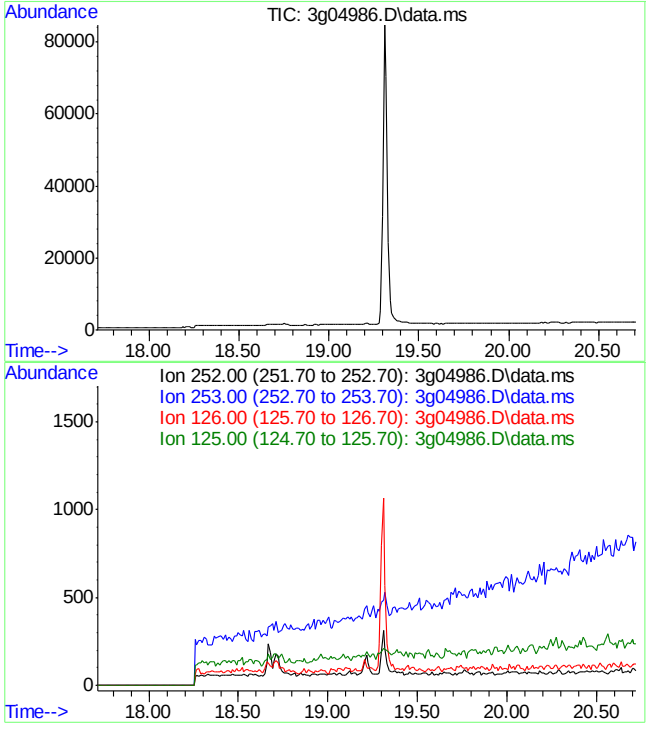


#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.71 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	21.7
125	26.9
126	41.7

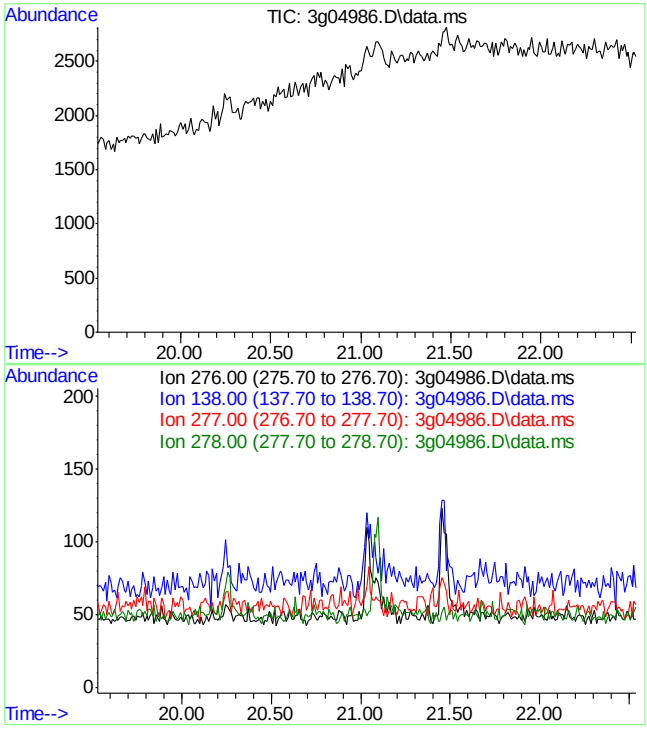


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 19.21 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	21.0
126	42.2
125	32.1

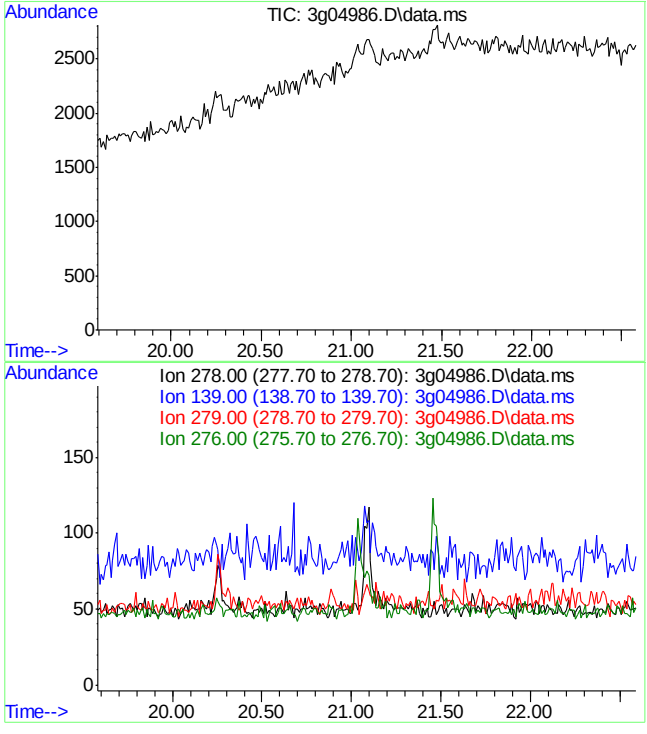


#27
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 21.03 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	61.3
277	33.0
278	105.3

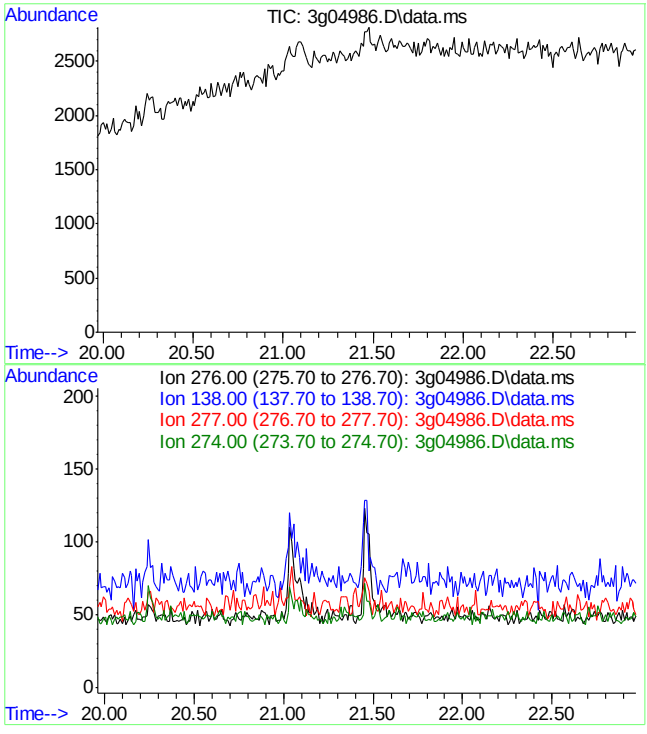


#28
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 21.09 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 278

Sig	Exp Ratio
278	100
139	53.0
279	22.9
276	127.5



#29
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 21.46 min

Lab File: 3g04986.D
Acq: 13 Jul 11 12:34 pm

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	67.1
277	23.0
274	21.9

8.2.1

8

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: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB674-MB	GB11723.D	1	07/08/11	SK	n/a	n/a	GGB674

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

D25217-1

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	74%	60-140%

Blank Spike Summary

Job Number: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB674-BS	GB11724.D	1	07/08/11	SK	n/a	n/a	GGB674

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

D25217-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	115	105	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	91%	60-140%

9.2.1

9

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D25178-2MS	GB11726.D	1	07/08/11	SK	n/a	n/a	GGB674
D25178-2MSD	GB11727.D	1	07/08/11	SK	n/a	n/a	GGB674
D25178-2	GB11725.D	1	07/08/11	SK	n/a	n/a	GGB674

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

D25217-1

CAS No.	Compound	D25178-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	109		178	275	93	273	92	1	62-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D25178-2	Limits
120-82-1	1,2,4-Trichlorobenzene	104%	102%	97%	60-140%

9.3.1

9

Mountain States ACCUTEST LABORATORIES

GC Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\070711\GB11730.D\FID1A.CH Vial: 11
Signal #2 : Y:\1\DATA\070711\GB11730.D\FID2B.CH
Acq On : 8 Jul 2011 10:54 pm Operator: StephK
Sample : D25217-1, 50X Inst : GC/MS Ins
Misc : GC2034,GGB674,5.024,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jul 11 11:47:47 2011 Quant Results File: TB630GB630.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB630GB630.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 23 08:27:03 2011
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	14.28	2854749	73.755	%
10) S	1,2,4-Trichlorobenzene (P)	14.27	25189556	73.778	%
	Target Compounds				
1) H	TVH-Gasoline	7.21	2525604	N.D.	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	7.48	105839	0.162	ug/L
7) T	Ethylbenzene	10.14	109677	0.191	ug/L
8) T	m,p-Xylene	10.33	362187	0.535	ug/L
9) T	o-Xylene	10.84	199357	0.351	ug/L
11) T	Naphthalene	14.41	911800	2.848	ug/L

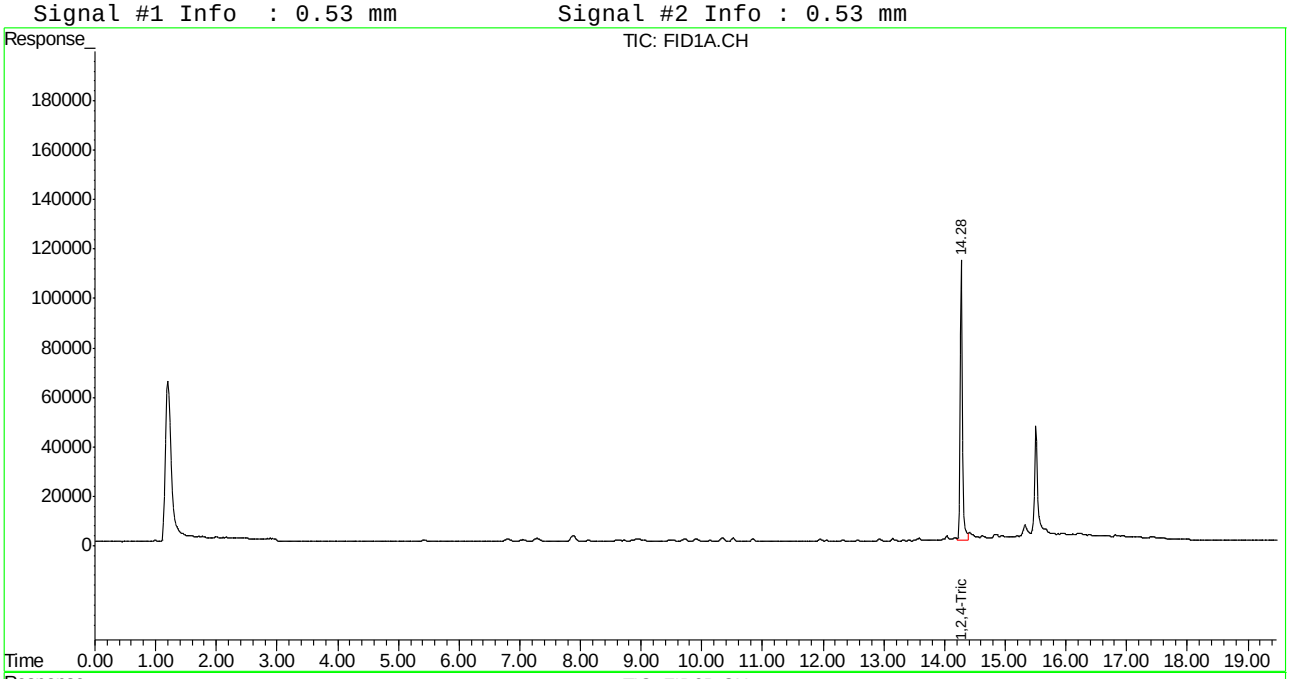
(f)=RT Delta > 1/2 Window (m)=manual int.
GB11730.D TB630GB630.M Mon Jul 11 12:12:22 2011 GC

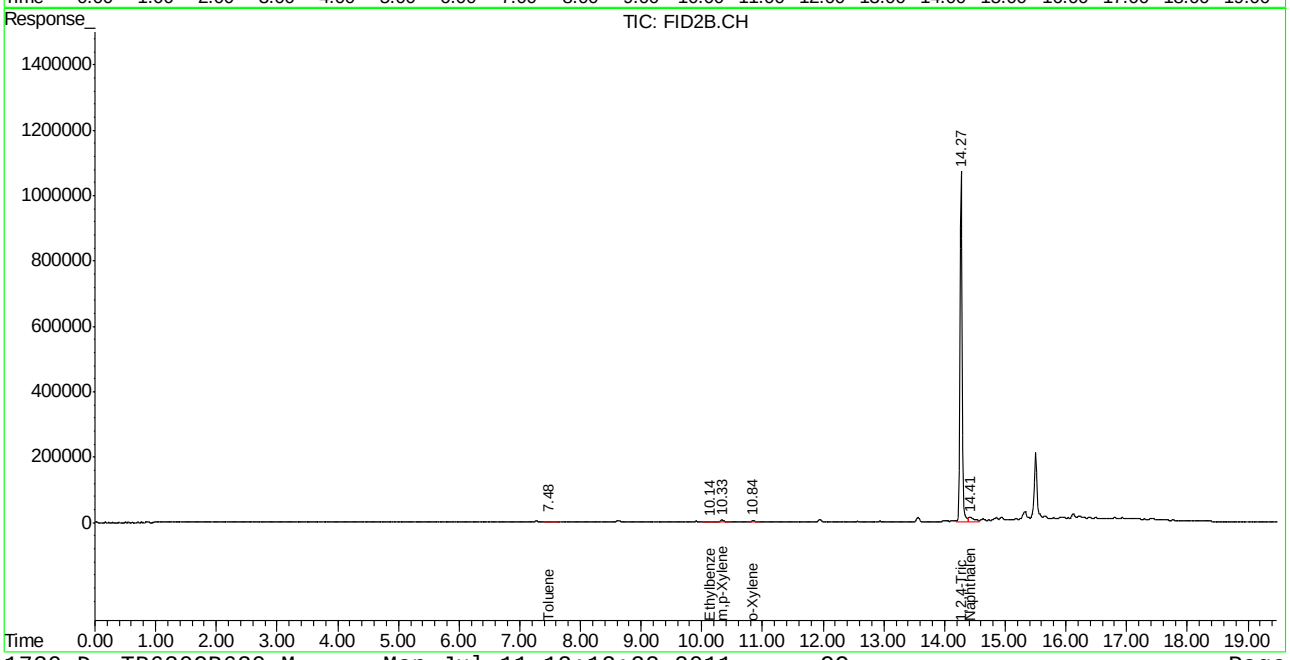
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\070711\GB11730.D\FID1A.CH Vial: 11
Signal #2 : Y:\1\DATA\070711\GB11730.D\FID2B.CH
Acq On : 8 Jul 2011 10:54 pm Operator: StephK
Sample : D25217-1, 50X Inst : GC/MS Ins
Misc : GC2034,GGB674,5.024,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jul 11 6:47 2011 Quant Results File: TB630GB630.RES

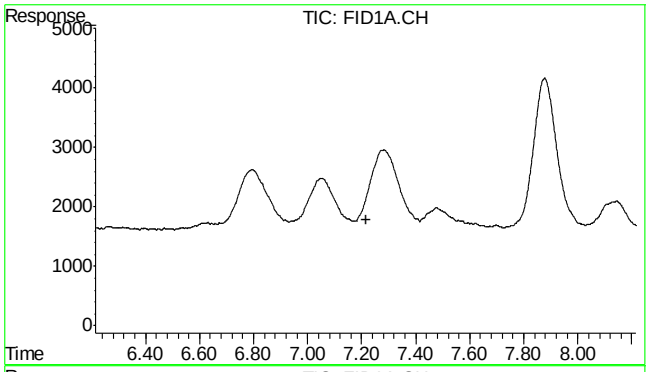
Quant Method : C:\MSDCHEM\1\METHODS\TB630GB630.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 23 08:27:03 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

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



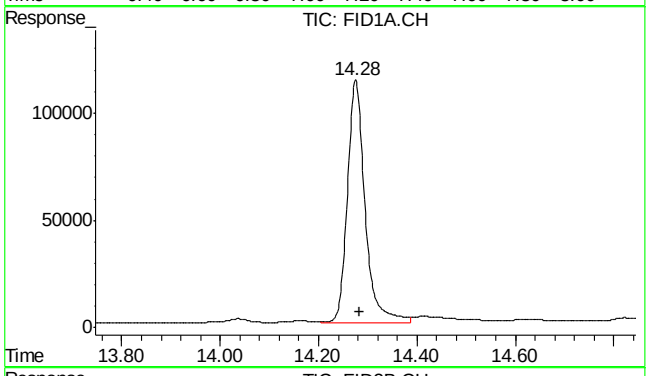


GB11730.D TB630GB630.M Mon Jul 11 12:12:22 2011 GC Page 2



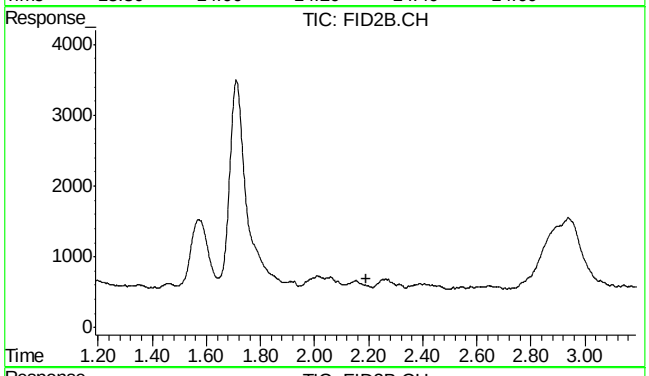
#1 TVH-Gasoline

R.T.: 7.215 min
Delta R.T.: 0.000 min
Response: 2525604
Conc: N.D.



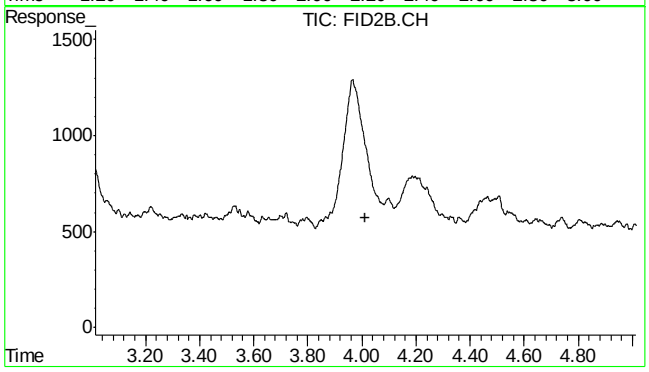
#2 1,2,4-Trichlorobenzene

R.T.: 14.276 min
Delta R.T.: -0.008 min
Response: 2854749
Conc: 73.76 %



#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.190 min
Response: 0
Conc: N.D.

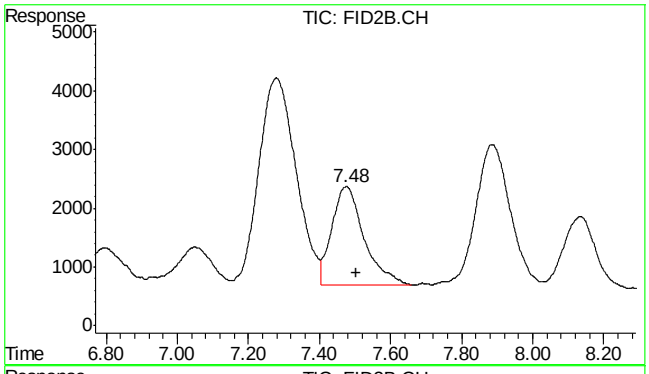


#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.013 min
Response: 0
Conc: N.D.

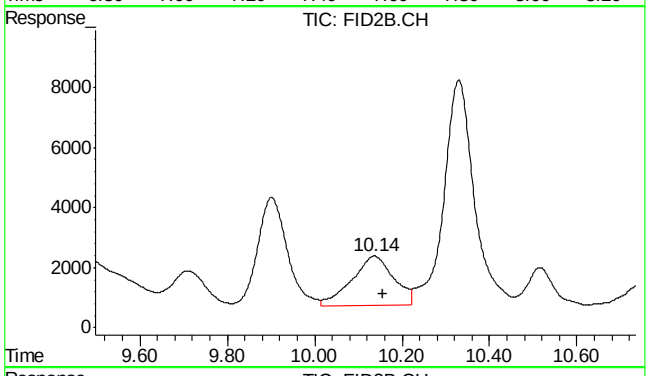
10.1.1

10



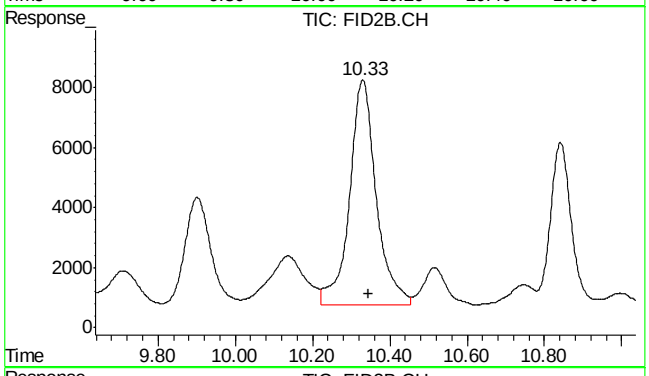
#6 Toluene

R.T.: 7.476 min
Delta R.T.: -0.026 min
Response: 105839
Conc: 0.16 ug/L



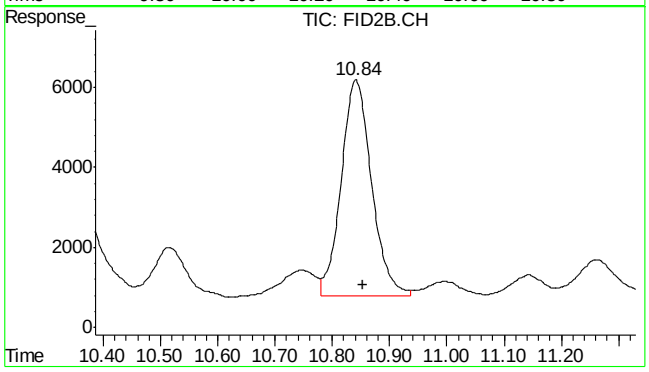
#7 Ethylbenzene

R.T.: 10.137 min
Delta R.T.: -0.020 min
Response: 109677
Conc: 0.19 ug/L



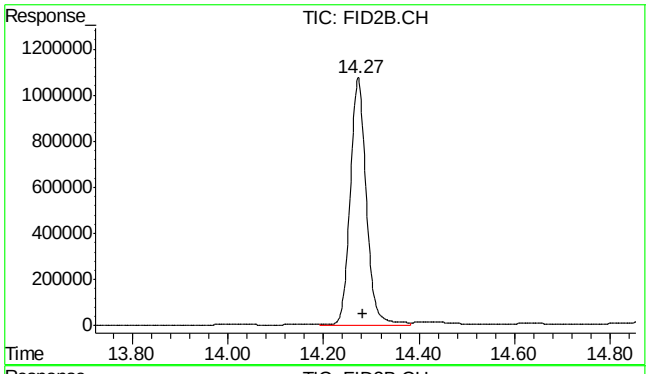
#8 m,p-Xylene

R.T.: 10.330 min
Delta R.T.: -0.014 min
Response: 362187
Conc: 0.53 ug/L



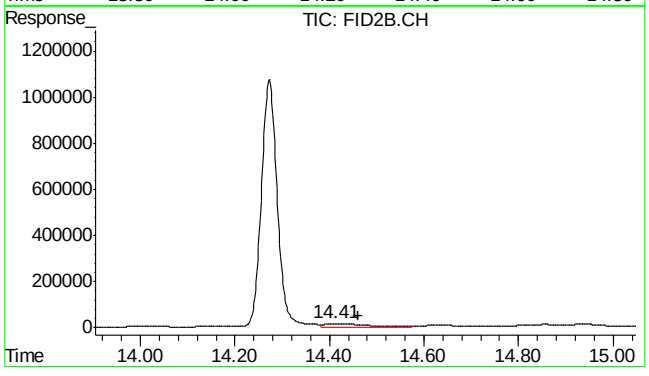
#9 o-Xylene

R.T.: 10.841 min
Delta R.T.: -0.012 min
Response: 199357
Conc: 0.35 ug/L



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

```
      R.T.:  14.273 min
Delta R.T.:  -0.009 min
  Response:  25189556
      Conc:  73.78 %
```



#11 Naphthalene

```
      R.T.:  14.413 min
Delta R.T.:  -0.049 min
  Response:    911800
      Conc:   2.85 ug/L
```

10.1.1

10

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\070711\GB11723.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\070711\GB11723.D\FID2B.CH
Acq On : 8 Jul 2011 6:44 pm Operator: StephK
Sample : MB, S Inst : GC/MS Ins
Misc : GC2034,GGB674,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jul 11 11:47:19 2011 Quant Results File: TB630GB630.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB630GB630.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 23 08:27:03 2011
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	14.28	2848984	73.607	%
10) S	1,2,4-Trichlorobenzene (P)	14.28	25475821	74.736	%
	Target Compounds				
1) H	TVH-Gasoline	7.21	2509857	N.D.	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	3.97	261913	0.386	ug/L
6) T	Toluene	7.48	150388	0.230	ug/L
7) T	Ethylbenzene	10.14	115974	0.202	ug/L
8) T	m,p-Xylene	10.33	350559	0.517	ug/L
9) T	o-Xylene	10.85	214158	0.377	ug/L
11) T	Naphthalene	14.46	740403	2.313	ug/L

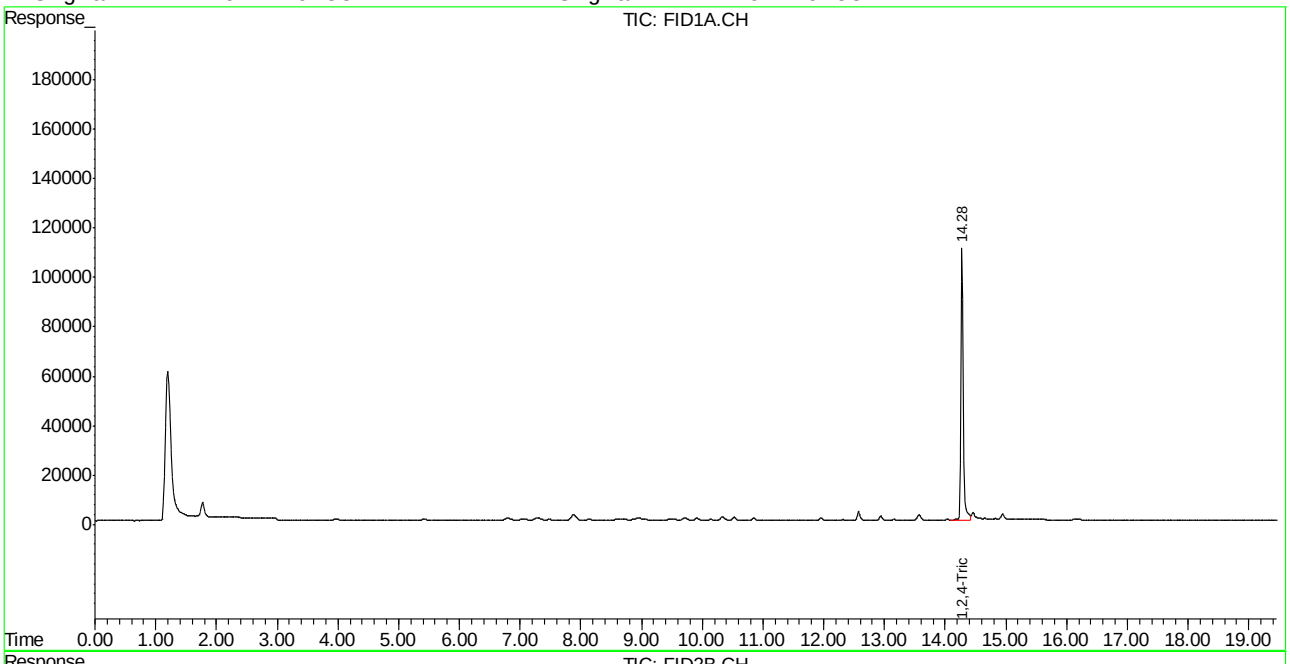
(f)=RT Delta > 1/2 Window (m)=manual int.
GB11723.D TB630GB630.M Mon Jul 11 12:12:01 2011 GC

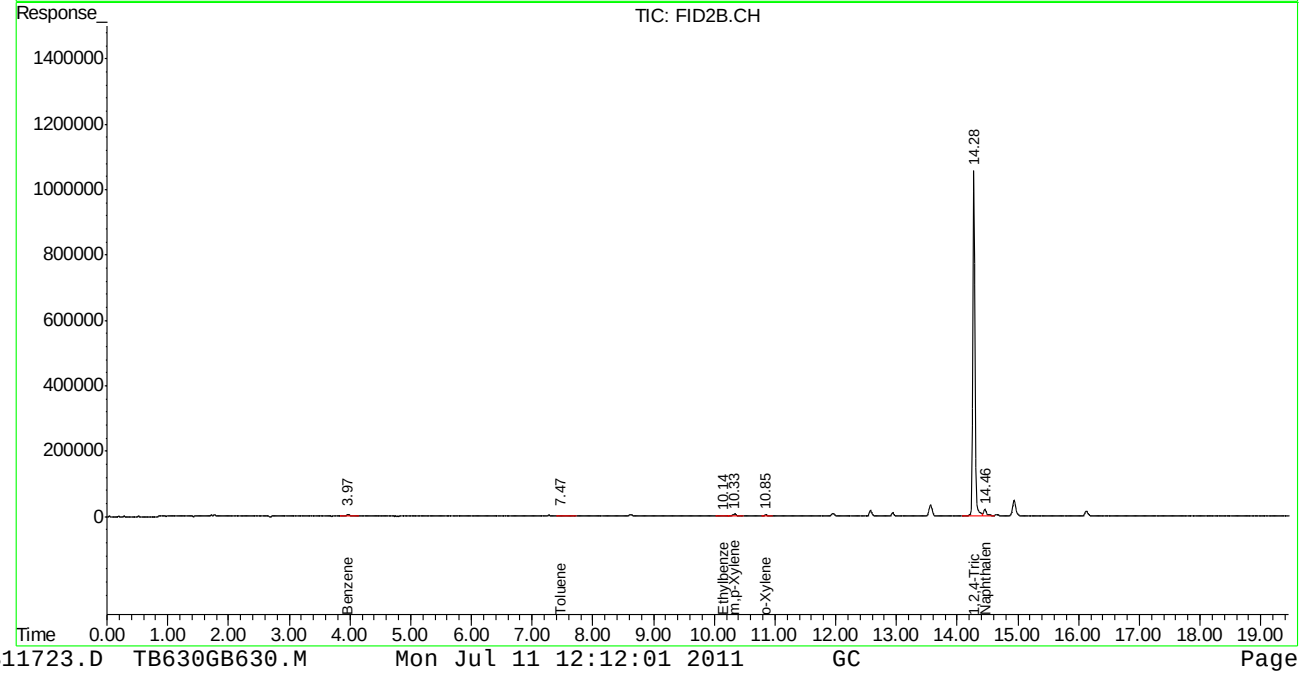
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\070711\GB11723.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\070711\GB11723.D\FID2B.CH
Acq On : 8 Jul 2011 6:44 pm Operator: StephK
Sample : MB, S Inst : GC/MS Ins
Misc : GC2034,GGB674,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jul 11 6:45 2011 Quant Results File: TB630GB630.RES

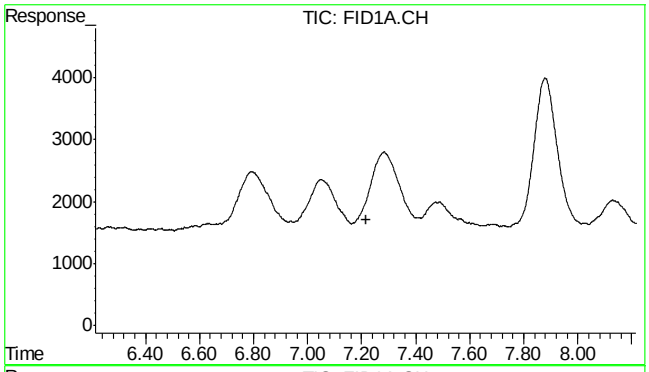
Quant Method : C:\MSDCHEM\1\METHODS\TB630GB630.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 23 08:27:03 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

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



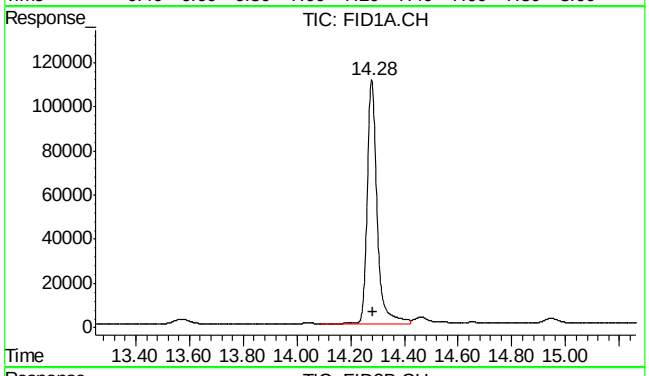


GB11723.D TB630GB630.M Mon Jul 11 12:12:01 2011 GC Page 2



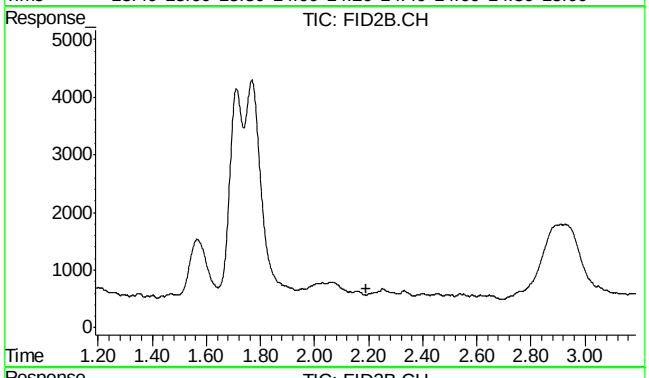
#1 TVH-Gasoline

R.T.: 7.215 min
Delta R.T.: 0.000 min
Response: 2509857
Conc: N.D.



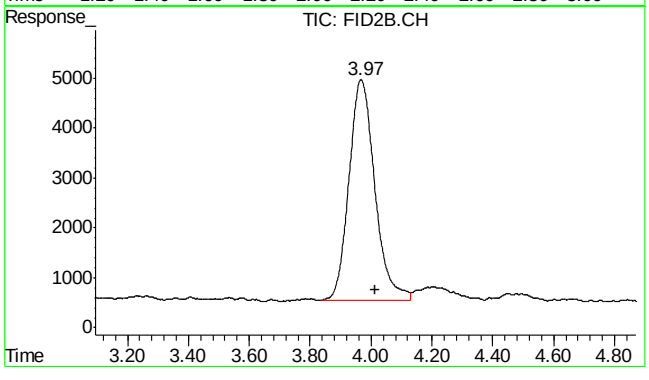
#2 1,2,4-Trichlorobenzene

R.T.: 14.279 min
Delta R.T.: -0.005 min
Response: 2848984
Conc: 73.61 %



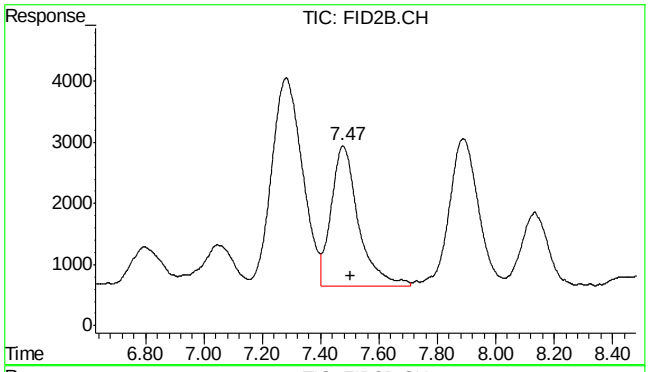
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.190 min
Response: 0
Conc: N.D.



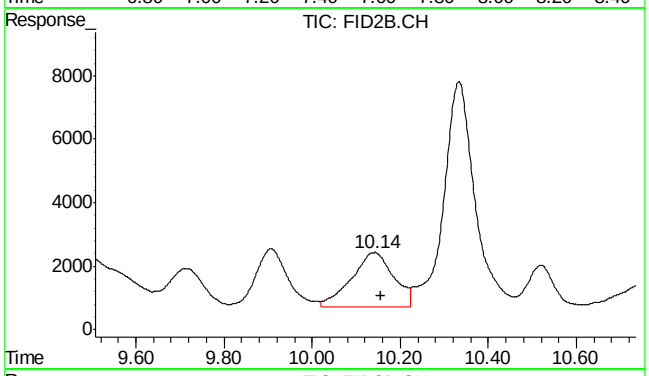
#5 Benzene

R.T.: 3.968 min
Delta R.T.: -0.046 min
Response: 261913
Conc: 0.39 ug/L



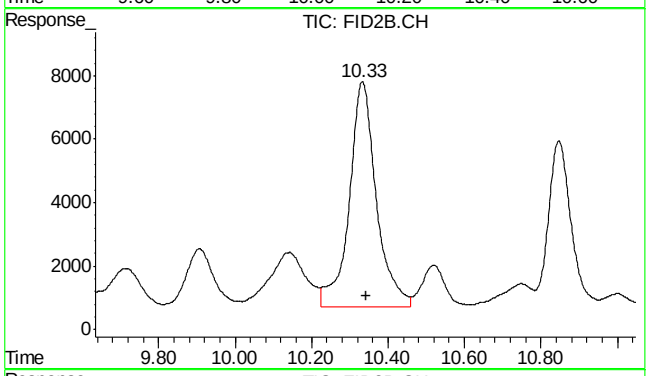
#6 Toluene

R.T.: 7.477 min
Delta R.T.: -0.025 min
Response: 150388
Conc: 0.23 ug/L



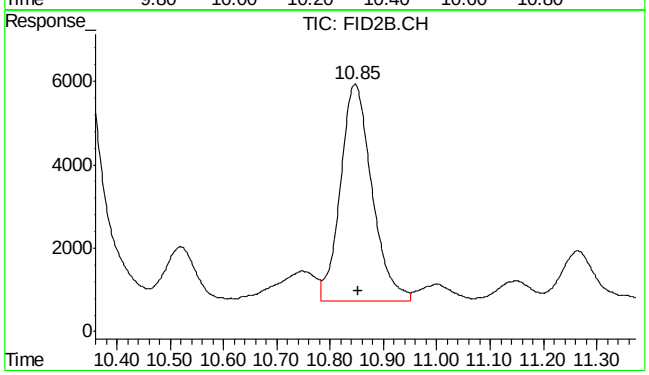
#7 Ethylbenzene

R.T.: 10.141 min
Delta R.T.: -0.016 min
Response: 115974
Conc: 0.20 ug/L



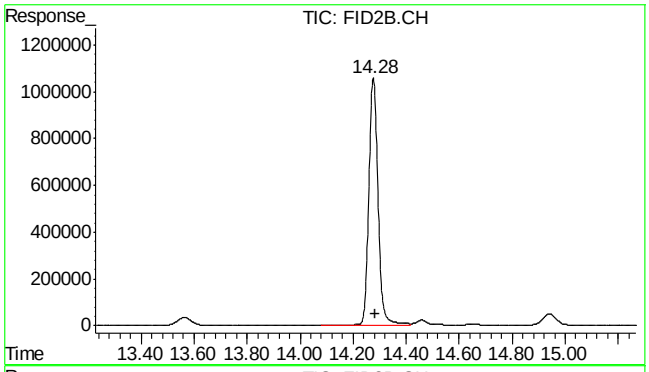
#8 m,p-Xylene

R.T.: 10.333 min
Delta R.T.: -0.011 min
Response: 350559
Conc: 0.52 ug/L



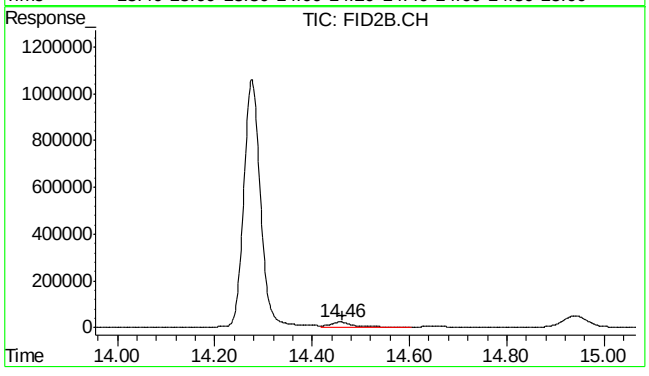
#9 o-Xylene

R.T.: 10.847 min
Delta R.T.: -0.006 min
Response: 214158
Conc: 0.38 ug/L



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

```
      R.T.:  14.277 min
Delta R.T.:  -0.005 min
  Response:  25475821
      Conc:  74.74 %
```



#11 Naphthalene

```
      R.T.:  14.459 min
Delta R.T.:  -0.004 min
  Response:    740403
      Conc:   2.31 ug/L
```

10.2.1

10

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: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4028-MB	FD07664.D	1	07/08/11	JB	07/08/11	OP4028	GFD337

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

D25217-1

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	80%	61-142%

Blank Spike Summary

Job Number: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4028-BS	FD07665.D	1	07/08/11	JB	07/08/11	OP4028	GFD337

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

D25217-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	490	73	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	82%	61-142%

11.2.1

11

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D25217
Account: KRWCCOL KRW Consulting, Inc.
Project: PCU T45X-18G

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4028-MS	FD07666.D	1	07/08/11	JB	07/08/11	OP4028	GFD337
OP4028-MSD	FD07667.D	1	07/08/11	JB	07/08/11	OP4028	GFD337
D25222-3	FD07670.D	1	07/08/11	JB	07/08/11	OP4028	GFD337

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

D25217-1

CAS No.	Compound	D25222-3 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		798	524	66	517	65	1	24-157/35

CAS No.	Surrogate Recoveries	MS	MSD	D25222-3	Limits
84-15-1	o-Terphenyl	73%	73%	73%	61-142%

11.3.1

11

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

Raw Data

Manual Integrations
APPROVED
(compounds with "m" flag)
Judy Melson
07/11/11 15:28

Quantitation Report (QT Reviewed)

```
Data File : C:\MSDCHEM\2\DATA\FD070811\FD07686.D          Vial: 30
Acq On    : 7-9-2011 02:14:32 AM                      Operator: jacobb
Sample    : D25217-1                                  Inst    : FID5
Misc      : OP4028,GFD337,30.05,,,2,1                 Multiplr: 1.00
IntFile   : DF-GFC101.E
Quant Time: Jul 11 09:38:32 2011  Quant Results File: DR-GFD328.RES

Quant Method : C:\MSDCHEM\2\METHODS\DR-GFD328.M (Chemstation Integrator)
Title        : 8015B TEH
Last Update  : Tue Jul 05 11:02:59 2011
Response via : Initial Calibration
DataAcq Meth : RR_BASE4.M

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

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) S O-Terphenyl	9.61	34166525	738.082 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.43	37394342	727.252 mg/L

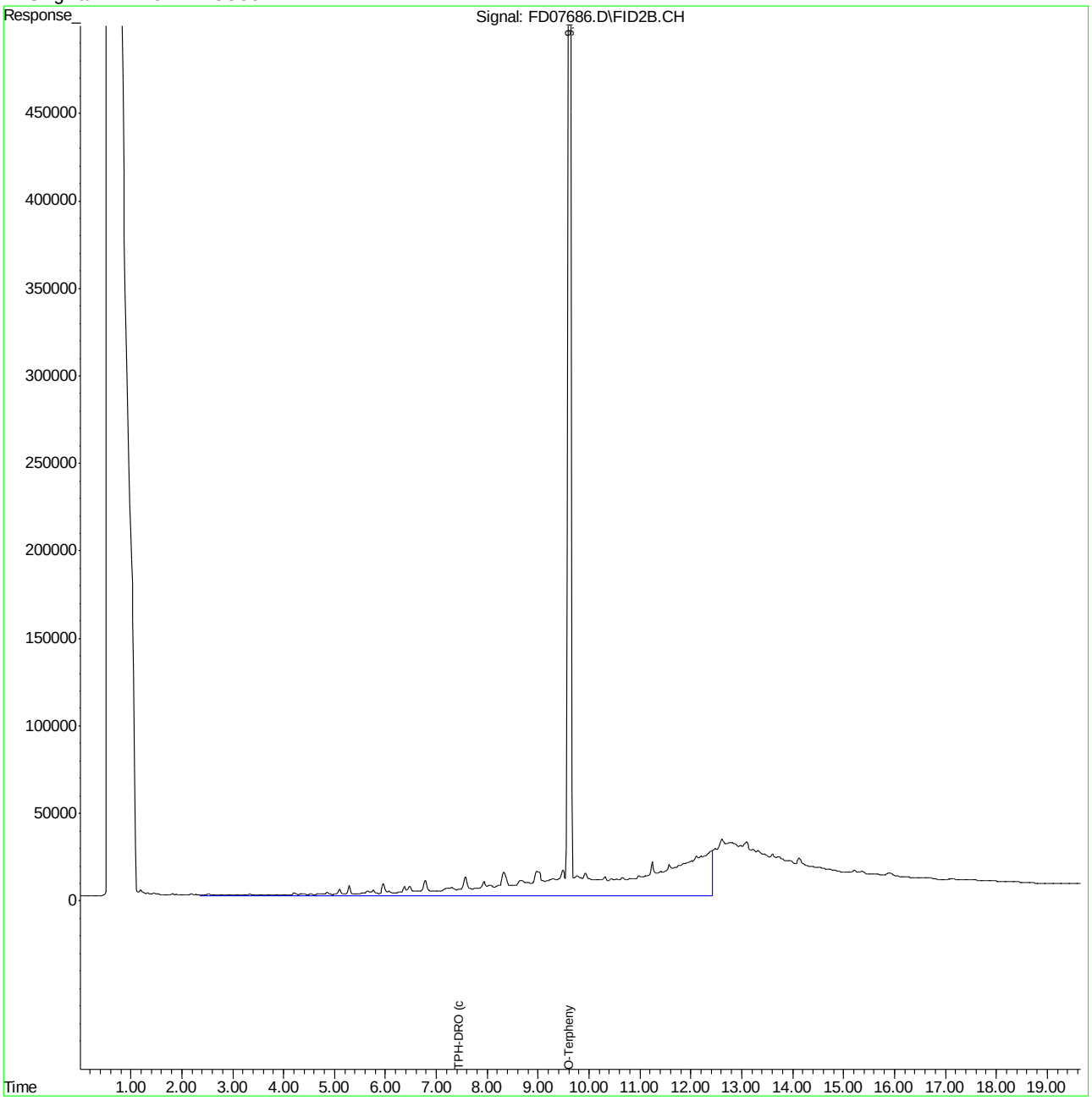
(f)=RT Delta > 1/2 Window (m)=manual int.

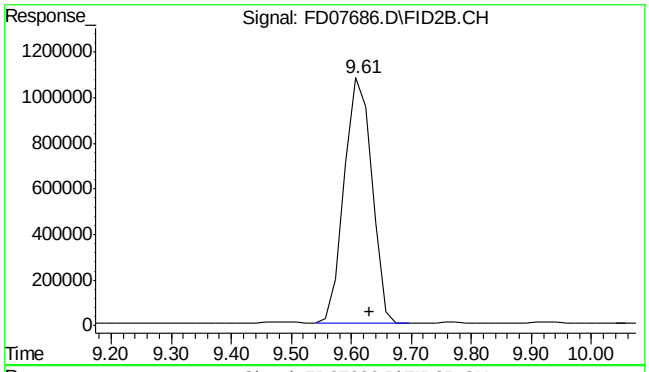
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\FD070811\FD07686.D Vial: 30
Acq On : 7-9-2011 02:14:32 AM Operator: jacobb
Sample : D25217-1 Inst : FID5
Misc : OP4028,GFD337,30.05,,,2,1 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Jul 11 14:21 2011 Quant Results File: DR-GFD328.RES

Quant Method : C:\MSDCHEM\2\METHODS\DR-GFD328.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Jul 05 11:02:59 2011
Response via : Multiple Level Calibration
DataAcq Meth : RR_BASE4.M

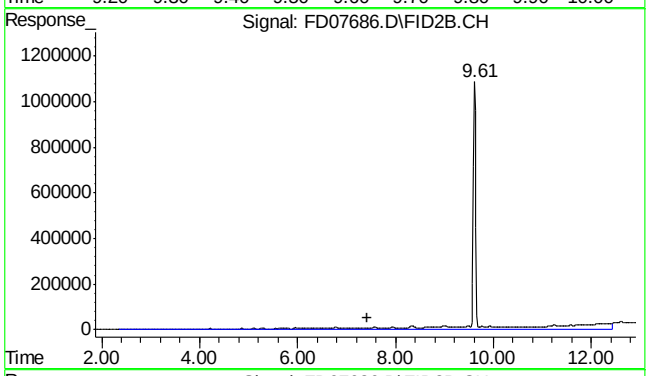
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





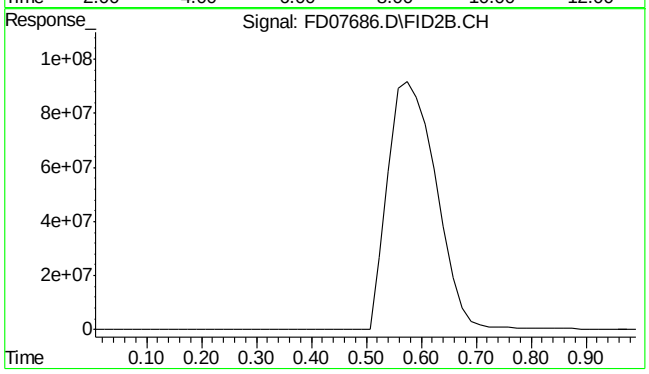
#1 O-Terphenyl

R.T.: 9.611 min
Delta R.T.: -0.019 min
Response: 34166525
Conc: 738.08 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 7.435 min
Delta R.T.: 0.000 min
Response: 37394342
Conc: 727.25 mg/L m



#9 5a-Androstane

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

12.1.1

12

Manual Integrations
APPROVED
(compounds with "m" flag)
Judy Melson
07/11/11 15:28

Quantitation Report (QT Reviewed)

```
Data File : C:\MSDCHEM\2\DATA\FD070811\FD07664.D          Vial: 8
Acq On    : 7-8-2011 04:53:45 PM                      Operator: jacobb
Sample    : OP4028-MB                                 Inst    : FID5
Misc      : OP4028,GFD337,30.00,,,2,1                 Multiplr: 1.00
IntFile   : DF-GFC101.E
Quant Time: Jul 11 09:38:11 2011  Quant Results File: DR-GFD328.RES

Quant Method : C:\MSDCHEM\2\METHODS\DR-GFD328.M (Chemstation Integrator)
Title        : 8015B TEH
Last Update  : Tue Jul 05 11:02:59 2011
Response via : Initial Calibration
DataAcq Meth : RR_BASE4.M

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

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) S O-Terphenyl	9.62	37089105	801.217 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.43	5522160	19.914 mg/L

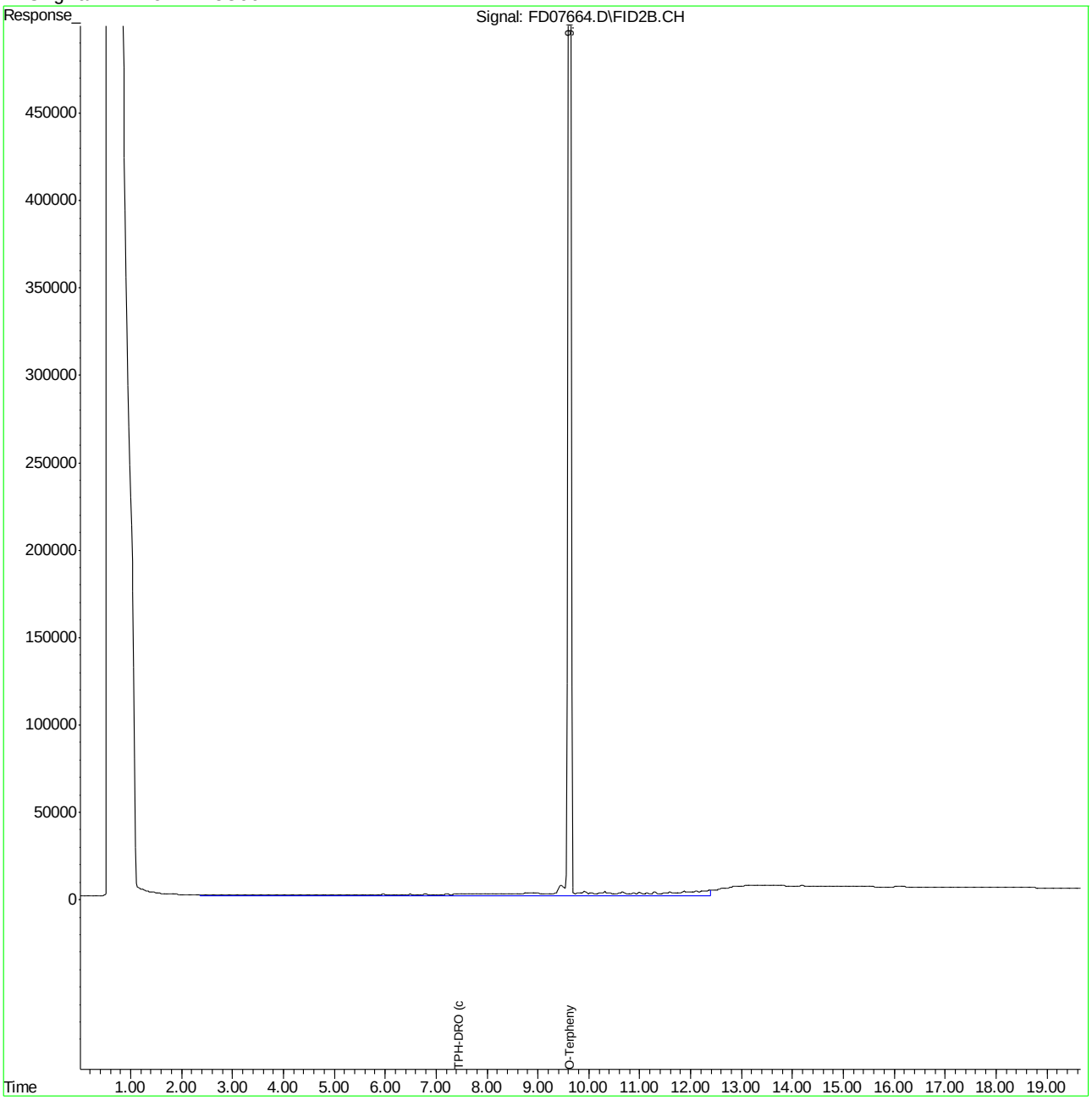
(f)=RT Delta > 1/2 Window (m)=manual int.
FD07664.D DR-GFD328.M Mon Jul 11 14:22:12 2011 GC

Quantitation Report (QT Reviewed)

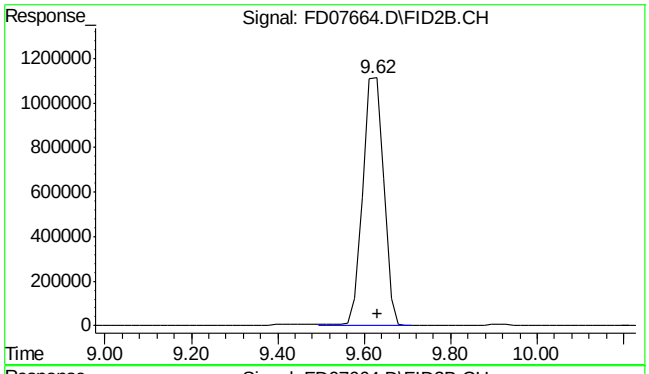
Data File : C:\MSDCHEM\2\DATA\FD070811\FD07664.D Vial: 8
Acq On : 7-8-2011 04:53:45 PM Operator: jacobb
Sample : OP4028-MB Inst : FID5
Misc : OP4028,GFD337,30.00,,,2,1 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Jul 11 14:15 2011 Quant Results File: DR-GFD328.RES

Quant Method : C:\MSDCHEM\2\METHODS\DR-GFD328.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Jul 05 11:02:59 2011
Response via : Multiple Level Calibration
DataAcq Meth : RR_BASE4.M

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

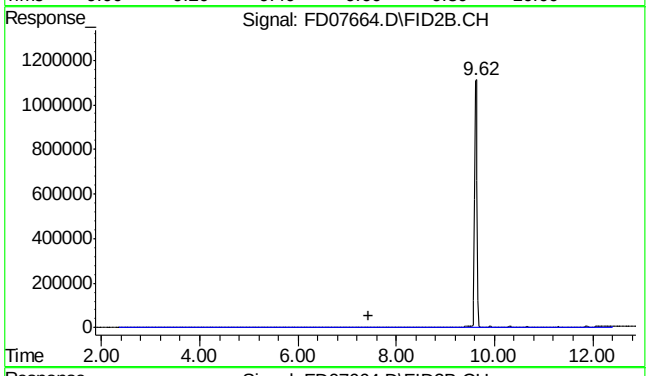


FD07664.D DR-GFD328.M Mon Jul 11 14:22:12 2011 GC Page 2



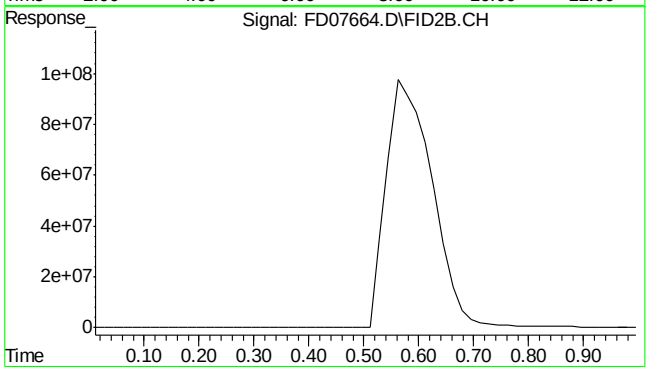
#1 O-Terphenyl

R.T.: 9.620 min
Delta R.T.: -0.010 min
Response: 37089105
Conc: 801.22 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 7.435 min
Delta R.T.: 0.000 min
Response: 5522160
Conc: 19.91 mg/L m



#9 5a-Androstane

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

12.2.1

12

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5153
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 07/08/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.59	.59		
Antimony	3.0	.31	.31		
Arsenic	2.5	.59	.59		
Barium	1.0	.11	.11	0.18	<1.0
Beryllium	1.0	.044	.1		
Boron	5.0	.48	.48		
Cadmium	1.0	.027	.27	0.010	<1.0
Calcium	40	.96	1.1		
Chromium	1.0	.018	.031	0.15	<1.0
Cobalt	0.50	.035	.035		
Copper	1.0	.085	.16	-0.070	<1.0
Iron	7.0	.34	2		
Lead	5.0	.16	.21	-0.14	<5.0
Lithium	0.20	.028	.031		
Magnesium	20	.58	1.4		
Manganese	0.50	.0053	.012		
Molybdenum	1.0	.045	.054		
Nickel	3.0	.043	.099	-0.020	<3.0
Phosphorus	10	1.1	1.2		
Potassium	200	5.5	9.2		
Selenium	5.0	.38	.5	0.64	<5.0
Silicon	5.0	.38	.51		
Silver	3.0	.018	.051	0.0	<3.0
Sodium	40	11	11		
Strontium	5.0		.017		
Thallium	1.0	.29	.34		
Tin	5.0	.55	1.3		
Titanium	1.0	.011	.1		
Uranium	5.0	.15	.2		
Vanadium	1.0	.016	.025		
Zinc	3.0	.028	.06	-0.18	<3.0

Associated samples MP5153: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5153
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

13.1.1
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5153
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 07/08/11

Metal	D25217-1 Original	MS	Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	227	423	234	83.7	75-125
Beryllium					
Boron					
Cadmium	0.24	49.6	58.5	84.4	75-125
Calcium	anr				
Chromium	31.9	77.3	58.5	77.6	75-125
Cobalt					
Copper	8.3	60.7	58.5	89.6	75-125
Iron					
Lead	18.0	114	117	82.0	75-125
Lithium					
Magnesium	anr				
Manganese					
Molybdenum					
Nickel	13.5	58.7	58.5	77.3	75-125
Phosphorus					
Potassium	anr				
Selenium	0.51	94.2	117	80.1	75-125
Silicon					
Silver	0.15	19.9	23.4	84.4	75-125
Sodium	anr				
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	49.1	141	58.5	157.1N(a	75-125

Associated samples MP5153: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5153
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5153
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 07/08/11

Metal	D25217-1 Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	227	408	216	83.7	3.6	20
Beryllium						
Boron						
Cadmium	0.24	46.4	54.1	85.4	6.7	20
Calcium	anr					
Chromium	31.9	77.2	54.1	83.8	0.1	20
Cobalt						
Copper	8.3	57.7	54.1	91.4	5.1	20
Iron						
Lead	18.0	109	108	84.2	4.5	20
Lithium						
Magnesium	anr					
Manganese						
Molybdenum						
Nickel	13.5	55.4	54.1	77.5	5.8	20
Phosphorus						
Potassium	anr					
Selenium	0.51	89.2	108	82.0	5.5	20
Silicon						
Silver	0.15	18.5	21.6	84.9	7.3	20
Sodium	anr					
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	49.1	89.6	54.1	74.9N(a)	44.6 (b)	20

Associated samples MP5153: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5153
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
(b) High RPD due to possible sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5153
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 07/08/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	181	200	90.5	80-120
Beryllium				
Boron				
Cadmium	48.2	50	96.4	80-120
Calcium	anr			
Chromium	48.3	50	96.6	80-120
Cobalt				
Copper	50.5	50	101.0	80-120
Iron				
Lead	95.9	100	95.9	80-120
Lithium				
Magnesium	anr			
Manganese				
Molybdenum				
Nickel	47.2	50	94.4	80-120
Phosphorus				
Potassium	anr			
Selenium	92.9	100	92.9	80-120
Silicon				
Silver	19.4	20	97.0	80-120
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	47.3	50	94.6	80-120

Associated samples MP5153: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5153
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

13.1.3

13

SERIAL DILUTION RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5153
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/08/11

Metal	D25217-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	1960	2240	14.4*(a)	0-10
Beryllium				
Boron				
Cadmium	2.10	0.00	100.0(b)	0-10
Calcium	anr			
Chromium	276	320	15.9*(a)	0-10
Cobalt				
Copper	65.6	67.5	5.6	0-10
Iron				
Lead	155	168	8.4	0-10
Lithium				
Magnesium	anr			
Manganese				
Molybdenum				
Nickel	117	139	18.9*(a)	0-10
Phosphorus				
Potassium	anr			
Selenium	4.40	0.00	100.0(b)	0-10
Silicon				
Silver	1.30	3.00	130.8(b)	0-10
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	424	516	21.6*(a)	0-10

Associated samples MP5153: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5153
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5154
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/08/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.25	<0.40
Barium	1.0	.0035	.1		
Beryllium	0.10	.0075	.014		
Boron	20	.97	1		
Cadmium	0.050	.023	.048		
Calcium	200	1.8	8.2		
Chromium	1.0	.021	.24		
Cobalt	0.10	.0033	.003		
Copper	1.0	.011	.063		
Iron	20	.81	3.7		
Lead	0.25	.0012	.015		
Magnesium	50	.067	2.6		
Manganese	0.50	.007	.029		
Molybdenum	0.50	.0044	.023		
Nickel	1.0	.0029	.031		
Phosphorus	30	1.8	3.5		
Potassium	100	2	3.2		
Selenium	0.20	.075	.19		
Silver	0.050	.0008	.002		
Sodium	250	.8	4.4		
Strontium	10	.004	.04		
Thallium	0.10	.015	.02		
Tin	5.0	.006	.028		
Titanium	1.0	.035	.062		
Uranium	0.25	.00038	.0009		
Vanadium	2.0	.052	.29		
Zinc	5.0	.039	.12		

Associated samples MP5154: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5154
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/08/11

Metal	D25217-1 Original	MS	Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	4.3	113	117	92.9	60-119
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP5154: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5154
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/08/11

Metal	D25217-1 Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	4.3	106	108	94.1	6.4	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP5154: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5154
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/08/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	107	100	107.0	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5154: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5154
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 07/08/11

Metal	D25217-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	36.7	38.5	4.8	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5154: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5156
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date: 07/08/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	30	30		
Antimony	150	16	16		
Arsenic	130	30	30		
Barium	50	5.5	5.5		
Beryllium	50	2.2	2.5		
Boron	250	24	24		
Cadmium	50	1.4	1.4		
Calcium	2000	48	75	13.0	<2000
Chromium	50	.9	4		
Cobalt	25	1.8	1.8		
Copper	50	4.3	14		
Iron	350	17	65		
Lead	250	8	11		
Lithium	10	1.4	6		
Magnesium	1000	29	50	17.5	<1000
Manganese	25	.27	1.6		
Molybdenum	50	2.3	4.4		
Nickel	150	2.2	5		
Phosphorus	500	55	100		
Potassium	5000	280	280		
Selenium	250	19	19		
Silicon	250	19	19		
Silver	150	.9	1.6		
Sodium	2000	570	570	-290	<2000
Strontium	25		1.3		
Thallium	50	15	15		
Tin	250	28	50		
Titanium	50	.55	1.6		
Uranium	250	7.5	18		
Vanadium	50	.8	1.1		
Zinc	150	1.4	9		

Associated samples MP5156: D25217-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5156
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

13.3.1

13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5156
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date: 07/08/11

Metal	D25072-4A Original MS		Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	24500	157000	125000	106.0	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	8470	142000	125000	106.8	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	16000	150000	125000	107.2	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP5156: D25217-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5156
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5156
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date: 07/08/11

Metal	D25072-4A Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	24500	155000	125000	104.4	1.3	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	8470	140000	125000	105.2	1.4	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	16000	147000	125000	104.8	2.0	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP5156: D25217-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5156
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5156
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date: 07/08/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	135000	125000	108.0	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	134000	125000	107.2	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	133000	125000	106.4	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5156: D25217-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5156
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

13.3.3

13

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5161
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 07/11/11

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.10	.0011	.013	-0.0016	<0.10

Associated samples MP5161: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

13.4.1
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5161
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 07/11/11

Metal	D25072-1 Original	MS	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.017	0.54	0.502	104.2	85-115

Associated samples MP5161: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5161
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 07/11/11

Metal	D25072-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.017	0.48	0.435	106.4	11.8	20

Associated samples MP5161: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

13.4.2
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5161
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 07/11/11

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.43	0.4	107.5	80-120

Associated samples MP5161: D25217-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

13.4.3

13

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP4896/GN10504	1.0	<1.0	umhos/cm	9986	9730	97.4	90-110%
pH	GN10439			su	8.00	7.96	99.5	99.3-100.7%

Associated Samples:
Batch GN10439: D25217-1
Batch GP4896: D25217-1
(*) Outside of QC limits

14.1
14

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D25217
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Redox Potential Vs H2	GN10433	D25174-1	mv	399	411	6.9	0-20%

Associated Samples:
Batch GN10433: D25217-1
(*) Outside of QC limits

14.2
14

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

Accutest Job #:	D25217
Accutest Quote #:	0
AMS P.O. #:	
Project No.:	

Client Information			Subcontract Laboratory Information		
Name: Accutest Mountain States (AMS)			Name: Accutest - New England		
Address: 4036 Youngfield St.			Address: 495 Technology Center West, BLDG C		
City: Wheat Ridge,	State: CO	Zip: 80033	City: Marlborough	State: MA	Zip: 01752
Send Report to: Tiffany Pham			Contact: Sample Management		
Any questions contact: Shea Greiner					
Phone/Fax #: (303) 425-6021; (303)425-6854			Phone: (508) 481-6200		

Field ID / Point of Collection	Collection Date	Collection Time		Matrix	# of bottles	Preservation HCL	NaOH	HNO3	H2SO4	None	XCRA					Comments
D25217 -1	7/6/11	10:45 AM		Soil	1						X					
																13c
																2°c

Turnaround Information

- [X] 3 - 5 Business Day Rush
- [ ] Other _____ (Days)

Approved By: _____

10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Commercial "BN"
- [ ] Reduced Tier 1
- [ ] Full Tier 1
- [ ] PDF
- [ ] Compact Disk Deliverable
- [ ] Electronic Delivery: _____
- [ ] State Forms
- [ ] Other (Specify) _____

Comments / Remarks

Please use Colorado regulations and RLs.

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

Relinquished by:	Date & Time:	Received By:	Date & Time:
1	7/8/11	1	1
2	7-9-11 10	2	2
3		3	3

For Subcontract Laborartory Use Only

Seal #: _____ Headspace: Yes [ ] No [ ] NA [ ]

Preserved where applicable: [ ]

Temperature °C _____ On Ice [ ]

D25217: Chain of Custody
Page 1 of 1
Accutest Labs of New England, Inc.

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D25217
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: PCU T45X-18G

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP13230/GN35483	0.40	0.0	mg/kg	12	11.5	95.8	80-120%
Chromium, Hexavalent	GP13230/GN35483			mg/kg	921	962	104.5	80-120%

Associated Samples:
Batch GP13230: D25217-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D25217
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: PCU T45X-18G

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP13230/GN35483	D25106-1	mg/kg	0.42	0.0	200.0(a)	0-20%

Associated Samples:
Batch GP13230: D25217-1
(*) Outside of QC limits
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D25217
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: PCU T45X-18G

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP13230/GN35483	D25106-1	mg/kg	0.42	12.9	9.8	76.0	75-125%
Chromium, Hexavalent	GP13230/GN35483	D25106-1	mg/kg	0.42	846	836	98.8	75-125%

Associated Samples:
Batch GP13230: D25217-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Mountain States ACCUTEST LABORATORIES

07/12/11

Technical Report for

KRW Consulting, Inc.

PCU T45X-18G

1106-04

Accutest Job Number: D25218

Sampling Date: 07/06/11

Report to:

KRW Consulting, Inc.
8000 West 14th Avenue Suite 200
Lakewood, CO 80214
bberger@krwconsulting.com; gknell@krwconsulting.com;
dknudson@krwconsulting.com; jhess@krwconsulting.com;
ATTN: Dwayne Knudson

Total number of pages in report: **19**

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.

John Hamilton
Laboratory Director

Client Service contact: 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.

Accutest Laboratories is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.

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Sample Summary

KRW Consulting, Inc.

Job No: D25218

PCU T45X-18G
Project No: 1106-04

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D25218-1	07/06/11	11:50	CB	07/07/11	SO	Soil	BACKGROUND 1
D25218-2	07/06/11	12:00	CB	07/07/11	SO	Soil	BACKGROUND 2
D25218-3	07/06/11	12:10	CB	07/07/11	SO	Soil	BACKGROUND 3
D25218-4	07/06/11	12:20	CB	07/07/11	SO	Soil	BACKGROUND 4
D25218-5	07/06/11	12:30	CB	07/07/11	SO	Soil	BACKGROUND 5

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	KRW Consulting, Inc.	**Job No**	D25218
Site:	PCU T45X-18G	**Report Dat**	7/12/2011 12:15:03 PM

On 07/07/2011, 5 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D25218 was assigned to the project. The lab sample IDs, client sample IDs, and dates 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.

Metals By Method SW846 6020

Matrix SO **Batch ID:** MP5154

- All samples were digested 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) D25217-1MS, D25217-1MSD, D25217-1SDL were used as the QC samples for the metals analysis.

Wet Chemistry By Method SM19 2540B M

Matrix SO **Batch ID:** GN10455

- The data for SM19 2540B M meets quality control requirements.

Matrix SO **Batch ID:** GN10465

- 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

Report of Analysis

Client Sample ID:	BACKGROUND 1		
Lab Sample ID:	D25218-1	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
		Percent Solids:	92.8
Project:	PCU T45X-18G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By		Method	Prep Method
Arsenic	5.0	0.43	mg/kg	5	07/08/11	07/08/11	GJ	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA1659
(2) Prep QC Batch: MP5154

RL = Reporting Limit

Report of Analysis

Client Sample ID:	BACKGROUND 2		
Lab Sample ID:	D25218-2	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
		Percent Solids:	92.6
Project:	PCU T45X-18G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By		Method	Prep Method
Arsenic	5.1	0.42	mg/kg	5	07/08/11	07/08/11	GJ	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA1659
(2) Prep QC Batch: MP5154

RL = Reporting Limit

Report of Analysis

Client Sample ID:	BACKGROUND 3		
Lab Sample ID:	D25218-3	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
		Percent Solids:	92.6
Project:	PCU T45X-18G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By		Method	Prep Method
Arsenic	5.8	0.45	mg/kg	5	07/08/11	07/08/11	GJ	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA1659
(2) Prep QC Batch: MP5154

RL = Reporting Limit

Report of Analysis

Client Sample ID:	BACKGROUND 4		
Lab Sample ID:	D25218-4	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
		Percent Solids:	89.8
Project:	PCU T45X-18G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By		Method	Prep Method
Arsenic	6.4	0.45	mg/kg	5	07/08/11	07/08/11	GJ	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA1659
(2) Prep QC Batch: MP5154

RL = Reporting Limit

Report of Analysis

Client Sample ID:	BACKGROUND 5		
Lab Sample ID:	D25218-5	**Date Sampled:**	07/06/11
Matrix:	SO - Soil	**Date Received:**	07/07/11
		Percent Solids:	91.3
Project:	PCU T45X-18G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By		Method	Prep Method
Arsenic	5.8	0.45	mg/kg	5	07/08/11	07/08/11	GJ	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA1659
(2) Prep QC Batch: MP5154

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES

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

PAGE 1 OF 1

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: D25218

Client / Reporting Information

Company Name: KRW Consulting
Street Address: 8000 W 14th Ave Ste 200
City: Lakewood State: CO Zip: 80214
Project Contact: Dwayne Knudson E-mail:
Phone #: 970 675 4066 Fax #:
Sampler(s) Name(s): Craig Burger Phone #: 970 756 2993

Project Information

Project Name: PCU T45X-18G
Street:
City:
Project#: 1106-04
Client PO#:
Project Manager:

Billing Information (If different from Report to)

Company Name:
Street Address:
City State Zip:
Attention: PO#:

Requested Analysis (see TEST CODE sheet)

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	Bisulfate	Arsenic	LAB USE ONLY
	Background 1		7-6-11	1150	CMB	SO	1										X	01
	Background 2			1200													X	02
	Background 3			1210													X	03
	Background 4			1220													X	04
	Background 5			1230													X	05
																		TK

Turnaround Time (Business days)

- ☐ Std. 10 Business Days
- ☒ 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

Approved By (Accutest PM): / Date:

Data Deliverable Information

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

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

Comments / Special Instructions

Please email results to KRW
Piceance Creek XDM 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	7/6/2011 1730	1	2		2 7/7/11 1445
3		3	4		4
5		5			

Custody Seal #: ☒ Intact ☐ Not intact
Preserved where applicable: ☐ N/A
On Ice: ☒
Cooler Temp. 4.7°C

D25218: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D25218 **Client:** KRW CONSULTING **Immediate Client Services Action Required:** No

Date / Time Received: 7/7/2011 2:15:00 PM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: PCU T45X -18G **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

D25218: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D25218
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5154
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/08/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.25	<0.40
Barium	1.0	.0035	.1		
Beryllium	0.10	.0075	.014		
Boron	20	.97	1		
Cadmium	0.050	.023	.048		
Calcium	200	1.8	8.2		
Chromium	1.0	.021	.24		
Cobalt	0.10	.0033	.003		
Copper	1.0	.011	.063		
Iron	20	.81	3.7		
Lead	0.25	.0012	.015		
Magnesium	50	.067	2.6		
Manganese	0.50	.007	.029		
Molybdenum	0.50	.0044	.023		
Nickel	1.0	.0029	.031		
Phosphorus	30	1.8	3.5		
Potassium	100	2	3.2		
Selenium	0.20	.075	.19		
Silver	0.050	.0008	.002		
Sodium	250	.8	4.4		
Strontium	10	.004	.04		
Thallium	0.10	.015	.02		
Tin	5.0	.006	.028		
Titanium	1.0	.035	.062		
Uranium	0.25	.00038	.0009		
Vanadium	2.0	.052	.29		
Zinc	5.0	.039	.12		

Associated samples MP5154: D25218-1, D25218-2, D25218-3, D25218-4, D25218-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25218
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5154
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/08/11

Metal	D25217-1 Original	MS	Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	4.3	113	117	92.9	60-119
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP5154: D25218-1, D25218-2, D25218-3, D25218-4, D25218-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25218
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5154
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/08/11

Metal	D25217-1 Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	4.3	106	108	94.1	6.4	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP5154: D25218-1, D25218-2, D25218-3, D25218-4, D25218-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25218
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5154
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/08/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	107	100	107.0	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5154: D25218-1, D25218-2, D25218-3, D25218-4, D25218-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D25218
Account: KRWCCOL - KRW Consulting, Inc.
Project: PCU T45X-18G

QC Batch ID: MP5154
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 07/08/11

Metal	D25217-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	36.7	38.5	4.8	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5154: D25218-1, D25218-2, D25218-3, D25218-4, D25218-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested