New Jersey
ACCUTEST LABORATORIES

03/29/13

Technical Report for

Aquaterra Technologies, Inc.

Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

AOI-4 Soil Sampling

Accutest Job Number: JB30425

Sampling Date: 03/05/13

Report to:

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Total number of pages in report: **665**

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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.

Nancy T. Cole
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Laboratory Director

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Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC, OH VAP (CL0056), PA, RI, SC, TN, VA, WV

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Sample Summary

Aquaterra Technologies, Inc.

Job No: JB30425

Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: AOI-4 Soil Sampling

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JB30425-1	03/05/13	08:00	LM	03/05/13	SO	Soil	S-367_0-2'
JB30425-3	03/05/13	13:15	LM	03/05/13	SO	Soil	AOI5_BH-13-37-2.5-3_030513
JB30425-4	03/05/13	08:05	LM	03/05/13	SO	Soil	AOI4_S-366_0-1_30513
JB30425-5	03/05/13	08:40	LM	03/05/13	SO	Soil	AOI4_S-366_4.5-5.5_30513
JB30425-6	03/05/13	10:05	LM	03/05/13	SO	Soil	AOI4_S-368_0-1_30513
JB30425-7	03/05/13	10:40	LM	03/05/13	SO	Soil	AOI4_S-368_6-7_30513
JB30425-8	03/05/13	08:45	LM	03/05/13	SO	Soil	BH-13-43-1.5-2_030513
JB30425-9	03/05/13	09:00	LM	03/05/13	SO	Soil	BH-13-43-2-2.5_030513
JB30425-10	03/05/13	10:00	LM	03/05/13	SO	Soil	AOI5_BH-13-38_1.5-2_030513
JB30425-11	03/05/13	10:30	LM	03/05/13	SO	Soil	AOI5_BH-13-38_3.5-4_030513
JB30425-12	03/05/13	11:00	LM	03/05/13	SO	Soil	AOI5_BH-13-39_1.5-2_030513
JB30425-13	03/05/13	11:10	LM	03/05/13	SO	Soil	AOI5_BH-13-39_2-2.5_030513
JB30425-14	03/05/13	11:15	LM	03/05/13	SO	Soil	AOI5_BH-13-39_2.5-3_030513

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

Sample Summary
(continued)

Aquaterra Technologies, Inc.

Job No: JB30425

Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: AOI-4 Soil Sampling

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JB30425-15	03/05/13	13:00	LM	03/05/13	SO	Soil	AOI5_BH-13-37_1.5-2_030513

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Aquaterra Technologies, Inc.	**Job No**	JB30425
Site:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, P	**Report Date**	3/29/2013 5:17:14 PM

On 03/05/2013, 14 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at Accutest Laboratories at a temperature of 2.3 C. Samples were intact and chemically preserved, unless noted below. An Accutest Job Number of JB30425 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

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:** VA7246

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB30109-9MS, JB30109-9MSD were used as the QC samples indicated.
- RPD(s) for MSD for 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Xylene (total) are outside control limits for sample JB30109-9MSD. Outside control limits due to matrix interference.
- JB30425-1 for 1,2-Dichloroethane-D4: Outside control limits due to matrix interference. Confirmed by reanalysis.

Matrix: SO **Batch ID:** VA7248

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB30082-2MS, JB30082-2MSD were used as the QC samples indicated.
- JB30425-1: Confirmation run for surrogate recoveries.

Matrix: SO **Batch ID:** VC6455

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB30425-7MS, JB30425-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JB30425-7: Dilution required due to matrix interference.

Matrix: SO **Batch ID:** VD8426

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB31160-55MS, JB31160-55MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Toluene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- JB30425-13: Dilution required due to matrix interference.

Matrix: SO **Batch ID:** VX5805

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB31197-9MS, JB31197-8DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for Duplicate for Benzene, Isopropylbenzene are outside control limits for sample JB31197-8DUP. High RPD due to low concentration of hit

Extractables by GCMS By Method SW846 8270D

Matrix: SO	**Batch ID:** OP64440

- Sample(s) JB30423-1MS, JB30423-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JB30425-4: Confirmation run.
- JB30425-8: Confirmation run.
- JB30425-1: Confirmation run.
- JB30425-9: Confirmation run.
- JB30425-12: Confirmation run.
- JB30425-7: Diluted due to matrix.
- JB30425-7: Confirmation run.
- JB30425-5: Confirmation run.
- JB30425-3: Confirmation run.
- JB30425-15: Confirmation run.
- JB30425-14: Confirmation run.
- JB30425-13: Confirmation run.
- JB30425-10: Confirmation run.
- JB30425-11: Confirmation run.
- JB30425-6: Confirmation run.
- JB30425-7 for 2-Fluorobiphenyl: Outside control limits biased low. Results confirmed by re-extraction outside the holding time.
- JB30425-7 for Terphenyl-d14: Outside control limits biased low. Results confirmed by re-extraction outside the holding time.
- OP64440-MB1 for 2-Fluorobiphenyl: Outside control limits biased low. Sample results confirmed by reanalysis outside the holding time.
- OP64440-MB1 for Nitrobenzene-d5: Outside control limits biased low. Sample results confirmed by reanalysis outside the holding time.

Metals By Method SW846 6010C

Matrix: SO	**Batch ID:** MP70431

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB30425-6MS, JB30425-6MSD, JB30425-6SDL were used as the QC samples for metals.
- JB30425-4 for Lead: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JB30425-10 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JB30425-14 for Lead: Elevated detection limit due to dilution required for high interfering element.

Wet Chemistry By Method SM2540 G-97

Matrix: SO	**Batch ID:** GN81513

- The data for SM2540 G-97 meets quality control requirements.

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest'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.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover

Summary of Hits

Job Number: JB30425
Account: Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 03/05/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JB30425-1	**S-367_0-2'**					
Toluene		0.00067	0.00055		mg/kg	SW846 8260B
Ethylbenzene		0.00081	0.00055		mg/kg	SW846 8260B
Xylene (total)		0.0050	0.00055		mg/kg	SW846 8260B
Isopropylbenzene		0.0135	0.0028		mg/kg	SW846 8260B
Anthracene		0.209	0.036		mg/kg	SW846 8270D
Benzo(a)anthracene		0.468	0.036		mg/kg	SW846 8270D
Benzo(a)pyrene		0.402	0.036		mg/kg	SW846 8270D
Benzo(b)fluoranthene		0.409	0.036		mg/kg	SW846 8270D
Benzo(g,h,i)perylene		0.346	0.036		mg/kg	SW846 8270D
Chrysene		0.729	0.036		mg/kg	SW846 8270D
Fluorene		0.394	0.036		mg/kg	SW846 8270D
Phenanthrene		0.839	0.036		mg/kg	SW846 8270D
Pyrene		1.04	0.036		mg/kg	SW846 8270D
Lead		258	2.3		mg/kg	SW846 6010C
JB30425-3	**AOI5_BH-13-37-2.5-3_030513**					
Anthracene		0.328	0.042		mg/kg	SW846 8270D
Benzo(a)anthracene		0.921	0.042		mg/kg	SW846 8270D
Benzo(a)pyrene		0.747	0.042		mg/kg	SW846 8270D
Benzo(b)fluoranthene		0.717	0.042		mg/kg	SW846 8270D
Benzo(g,h,i)perylene		0.451	0.042		mg/kg	SW846 8270D
Chrysene		0.899	0.042		mg/kg	SW846 8270D
Fluorene		0.0746	0.042		mg/kg	SW846 8270D
Naphthalene		0.0579	0.042		mg/kg	SW846 8270D
Phenanthrene		1.05	0.042		mg/kg	SW846 8270D
Pyrene		1.43	0.042		mg/kg	SW846 8270D
Lead		1000	2.8		mg/kg	SW846 6010C
JB30425-4	**AOI4_S-366_0-1_30513**					
Lead [a]		14.2	11		mg/kg	SW846 6010C
JB30425-5	**AOI4_S-366_4.5-5.5_30513**					
Lead		10.9	2.7		mg/kg	SW846 6010C
JB30425-6	**AOI4_S-368_0-1_30513**					
Benzo(a)pyrene		0.0368	0.036		mg/kg	SW846 8270D
Benzo(b)fluoranthene		0.0379	0.036		mg/kg	SW846 8270D
Pyrene		0.0401	0.036		mg/kg	SW846 8270D
Lead		44.3	2.2		mg/kg	SW846 6010C

Summary of Hits

Job Number: JB30425
Account: Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 03/05/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JB30425-7	**AOI4_S-368_6-7_30513**					
Lead		64.0	2.3		mg/kg	SW846 6010C
JB30425-8	**BH-13-43-1.5-2_030513**					
Anthracene		0.137	0.042		mg/kg	SW846 8270D
Benzo(a)anthracene		0.617	0.042		mg/kg	SW846 8270D
Benzo(a)pyrene		0.799	0.042		mg/kg	SW846 8270D
Benzo(b)fluoranthene		0.910	0.042		mg/kg	SW846 8270D
Benzo(g,h,i)perylene		0.719	0.042		mg/kg	SW846 8270D
Chrysene		0.695	0.042		mg/kg	SW846 8270D
Fluorene		0.0517	0.042		mg/kg	SW846 8270D
Naphthalene		0.109	0.042		mg/kg	SW846 8270D
Phenanthrene		0.356	0.042		mg/kg	SW846 8270D
Pyrene		0.698	0.042		mg/kg	SW846 8270D
Lead		1080	2.6		mg/kg	SW846 6010C
JB30425-9	**BH-13-43-2-2.5_030513**					
Anthracene		0.0959	0.042		mg/kg	SW846 8270D
Benzo(a)anthracene		0.224	0.042		mg/kg	SW846 8270D
Benzo(a)pyrene		0.381	0.042		mg/kg	SW846 8270D
Benzo(b)fluoranthene		0.339	0.042		mg/kg	SW846 8270D
Benzo(g,h,i)perylene		0.524	0.042		mg/kg	SW846 8270D
Chrysene		0.312	0.042		mg/kg	SW846 8270D
Fluorene		0.0617	0.042		mg/kg	SW846 8270D
Naphthalene		0.0830	0.042		mg/kg	SW846 8270D
Phenanthrene		0.159	0.042		mg/kg	SW846 8270D
Pyrene		0.269	0.042		mg/kg	SW846 8270D
Lead		878	2.7		mg/kg	SW846 6010C
JB30425-10	**AOI5_BH-13-38_1.5-2_030513**					
Benzo(a)anthracene		0.233	0.045		mg/kg	SW846 8270D
Benzo(a)pyrene		0.224	0.045		mg/kg	SW846 8270D
Benzo(b)fluoranthene		0.263	0.045		mg/kg	SW846 8270D
Benzo(g,h,i)perylene		0.137	0.045		mg/kg	SW846 8270D
Chrysene		0.245	0.045		mg/kg	SW846 8270D
Phenanthrene		0.141	0.045		mg/kg	SW846 8270D
Pyrene		0.289	0.045		mg/kg	SW846 8270D
Lead [b]		3600	7.9		mg/kg	SW846 6010C

Summary of Hits

Job Number: JB30425
Account: Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 03/05/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JB30425-11	**AOI5_BH-13-38_3.5-4_030513**					
Anthracene		0.897	0.053		mg/kg	SW846 8270D
Benzo(a)anthracene		2.38	0.053		mg/kg	SW846 8270D
Benzo(a)pyrene		2.10	0.053		mg/kg	SW846 8270D
Benzo(b)fluoranthene		2.32	0.053		mg/kg	SW846 8270D
Benzo(g,h,i)perylene		1.19	0.053		mg/kg	SW846 8270D
Chrysene		2.40	0.053		mg/kg	SW846 8270D
Fluorene		0.395	0.053		mg/kg	SW846 8270D
Naphthalene		0.208	0.053		mg/kg	SW846 8270D
Phenanthrene		3.35	0.053		mg/kg	SW846 8270D
Pyrene		3.67	0.053		mg/kg	SW846 8270D
Lead		2950	3.2		mg/kg	SW846 6010C
JB30425-12	**AOI5_BH-13-39_1.5-2_030513**					
Anthracene		0.209	0.044		mg/kg	SW846 8270D
Benzo(a)anthracene		0.685	0.044		mg/kg	SW846 8270D
Benzo(a)pyrene		0.756	0.044		mg/kg	SW846 8270D
Benzo(b)fluoranthene		0.710	0.044		mg/kg	SW846 8270D
Benzo(g,h,i)perylene		0.556	0.044		mg/kg	SW846 8270D
Chrysene		0.713	0.044		mg/kg	SW846 8270D
Naphthalene		0.0511	0.044		mg/kg	SW846 8270D
Phenanthrene		0.611	0.044		mg/kg	SW846 8270D
Pyrene		0.925	0.044		mg/kg	SW846 8270D
Lead		1120	2.8		mg/kg	SW846 6010C
JB30425-13	**AOI5_BH-13-39_2-2.5_030513**					
Benzene [c]		0.210	0.098		mg/kg	SW846 8260B
Toluene [c]		0.372	0.098		mg/kg	SW846 8260B
Ethylbenzene [c]		0.168	0.098		mg/kg	SW846 8260B
Xylene (total) [c]		0.835	0.098		mg/kg	SW846 8260B
Anthracene		0.335	0.045		mg/kg	SW846 8270D
Benzo(a)anthracene		0.884	0.045		mg/kg	SW846 8270D
Benzo(a)pyrene		0.855	0.045		mg/kg	SW846 8270D
Benzo(b)fluoranthene		1.02	0.045		mg/kg	SW846 8270D
Benzo(g,h,i)perylene		0.605	0.045		mg/kg	SW846 8270D
Chrysene		0.991	0.045		mg/kg	SW846 8270D
Fluorene		0.473	0.045		mg/kg	SW846 8270D
Naphthalene		0.132	0.045		mg/kg	SW846 8270D
Phenanthrene		1.12	0.045		mg/kg	SW846 8270D
Pyrene		1.53	0.045		mg/kg	SW846 8270D
Lead		1440	2.9		mg/kg	SW846 6010C

Summary of Hits

Job Number: JB30425
Account: Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 03/05/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JB30425-14	**AOI5_BH-13-39_2.5-3_030513**					
Toluene		0.0014	0.00099		mg/kg	SW846 8260B
Xylene (total)		0.0022	0.00099		mg/kg	SW846 8260B
Anthracene		0.0830	0.045		mg/kg	SW846 8270D
Benzo(a)anthracene		0.146	0.045		mg/kg	SW846 8270D
Benzo(a)pyrene		0.275	0.045		mg/kg	SW846 8270D
Benzo(b)fluoranthene		0.307	0.045		mg/kg	SW846 8270D
Benzo(g,h,i)perylene		0.288	0.045		mg/kg	SW846 8270D
Chrysene		0.190	0.045		mg/kg	SW846 8270D
Naphthalene		0.111	0.045		mg/kg	SW846 8270D
Phenanthrene		0.152	0.045		mg/kg	SW846 8270D
Pyrene		0.178	0.045		mg/kg	SW846 8270D
Lead [b]		1740	14		mg/kg	SW846 6010C
JB30425-15	**AOI5_BH-13-37_1.5-2_030513**					
Benzene		0.0021	0.00081		mg/kg	SW846 8260B
Anthracene		0.0396	0.035		mg/kg	SW846 8270D
Benzo(a)anthracene		0.182	0.035		mg/kg	SW846 8270D
Benzo(a)pyrene		0.192	0.035		mg/kg	SW846 8270D
Benzo(b)fluoranthene		0.205	0.035		mg/kg	SW846 8270D
Benzo(g,h,i)perylene		0.120	0.035		mg/kg	SW846 8270D
Chrysene		0.194	0.035		mg/kg	SW846 8270D
Phenanthrene		0.158	0.035		mg/kg	SW846 8270D
Pyrene		0.270	0.035		mg/kg	SW846 8270D
Lead		284	2.4		mg/kg	SW846 6010C

(a) Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
(b) Elevated detection limit due to dilution required for high interfering element.
(c) Dilution required due to matrix interference.

New Jersey

ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	S-367_0-2'		
Lab Sample ID:	JB30425-1	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	88.1
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192405.D	1	03/08/13	OTR	n/a	n/a	VA7246
Run #2 [a]	A192481.D	1	03/11/13	OTR	n/a	n/a	VA7248

	Initial Weight
Run #1	10.3 g
Run #2	9.0 g

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.00055	mg/kg	
108-88-3	Toluene	0.00067	0.00055	mg/kg	
100-41-4	Ethylbenzene	0.00081	0.00055	mg/kg	
1330-20-7	Xylene (total)	0.0050	0.00055	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.00055	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.00055	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.00055	mg/kg	
98-82-8	Isopropylbenzene	0.0135	0.0028	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0028	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0028	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%	110%	70-130%
17060-07-0	1,2-Dichloroethane-D4	139% [c]	131% [b]	70-122%
2037-26-5	Toluene-D8	123%	120%	81-127%
460-00-4	4-Bromofluorobenzene	120%	117%	66-132%

(a) Confirmation run for surrogate recoveries.
(b) Outside control limits due to matrix interference.
(c) Outside control limits due to matrix interference. Confirmed by reanalysis.

ND = Not detected
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:	S-367_0-2'		
Lab Sample ID:	JB30425-1	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	88.1
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21238.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21382.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	31.6 g	1.0 ml
Run #2	35.7 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	0.209	0.036	mg/kg	
56-55-3	Benzo(a)anthracene	0.468	0.036	mg/kg	
50-32-8	Benzo(a)pyrene	0.402	0.036	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.409	0.036	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.346	0.036	mg/kg	
218-01-9	Chrysene	0.729	0.036	mg/kg	
86-73-7	Fluorene	0.394	0.036	mg/kg	
91-20-3	Naphthalene	ND	0.036	mg/kg	
85-01-8	Phenanthrene	0.839	0.036	mg/kg	
129-00-0	Pyrene	1.04	0.036	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	74%	73%	21-122%
321-60-8	2-Fluorobiphenyl	75%	72%	30-117%
1718-51-0	Terphenyl-d14	71%	67%	31-129%

(a) Confirmation run.

ND = Not detected
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:	S-367_0-2'		
Lab Sample ID:	JB30425-1	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	88.1
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	258	2.3	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI5_BH-13-37-2.5-3_030513		
Lab Sample ID:	JB30425-3	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	74.2
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192406.D	1	03/08/13	OTR	n/a	n/a	VA7246
Run #2							

	Initial Weight
Run #1	5.2 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0013	mg/kg	
108-88-3	Toluene	ND	0.0013	mg/kg	
100-41-4	Ethylbenzene	ND	0.0013	mg/kg	
1330-20-7	Xylene (total)	ND	0.0013	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0013	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0013	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0013	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0065	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0065	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0065	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
17060-07-0	1,2-Dichloroethane-D4	85%		70-122%
2037-26-5	Toluene-D8	106%		81-127%
460-00-4	4-Bromofluorobenzene	107%		66-132%

ND = Not detected
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:	AOI5_BH-13-37-2.5-3_030513		
Lab Sample ID:	JB30425-3	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	74.2
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21239.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21383.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	31.9 g	1.0 ml
Run #2	31.6 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	0.328	0.042	mg/kg	
56-55-3	Benzo(a)anthracene	0.921	0.042	mg/kg	
50-32-8	Benzo(a)pyrene	0.747	0.042	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.717	0.042	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.451	0.042	mg/kg	
218-01-9	Chrysene	0.899	0.042	mg/kg	
86-73-7	Fluorene	0.0746	0.042	mg/kg	
91-20-3	Naphthalene	0.0579	0.042	mg/kg	
85-01-8	Phenanthrene	1.05	0.042	mg/kg	
129-00-0	Pyrene	1.43	0.042	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	52%	52%	21-122%
321-60-8	2-Fluorobiphenyl	65%	61%	30-117%
1718-51-0	Terphenyl-d14	79%	59%	31-129%

(a) Confirmation run.

ND = Not detected
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:	AOI5_BH-13-37-2.5-3_030513		
Lab Sample ID:	JB30425-3	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	74.2
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	1000	2.8	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI4_S-366_0-1_30513		
Lab Sample ID:	JB30425-4	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	92.7
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192407.D	1	03/08/13	OTR	n/a	n/a	VA7246
Run #2							

	Initial Weight
Run #1	6.0 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.00090	mg/kg	
108-88-3	Toluene	ND	0.00090	mg/kg	
100-41-4	Ethylbenzene	ND	0.00090	mg/kg	
1330-20-7	Xylene (total)	ND	0.00090	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.00090	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.00090	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.00090	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0045	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0045	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0045	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
17060-07-0	1,2-Dichloroethane-D4	83%		70-122%
2037-26-5	Toluene-D8	108%		81-127%
460-00-4	4-Bromofluorobenzene	108%		66-132%

ND = Not detected
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:	AOI4_S-366_0-1_30513		
Lab Sample ID:	JB30425-4	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	92.7
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21233.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21376.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	30.9 g	1.0 ml
Run #2	34.2 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	ND	0.035	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.035	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.035	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.035	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.035	mg/kg	
218-01-9	Chrysene	ND	0.035	mg/kg	
86-73-7	Fluorene	ND	0.035	mg/kg	
91-20-3	Naphthalene	ND	0.035	mg/kg	
85-01-8	Phenanthrene	ND	0.035	mg/kg	
129-00-0	Pyrene	ND	0.035	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	70%	73%	21-122%
321-60-8	2-Fluorobiphenyl	72%	76%	30-117%
1718-51-0	Terphenyl-d14	87%	79%	31-129%

(a) Confirmation run.

ND = Not detected
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:	AOI4_S-366_0-1_30513		
Lab Sample ID:	JB30425-4	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	92.7
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead [a]	14.2	11	mg/kg	5	03/14/13	03/18/13	MET	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30730
(2) Prep QC Batch: MP70431

(a) Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI4_S-366_4.5-5.5_30513		
Lab Sample ID:	JB30425-5	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	78.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192408.D	1	03/08/13	OTR	n/a	n/a	VA7246
Run #2							

	Initial Weight
Run #1	6.0 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0011	mg/kg	
108-88-3	Toluene	ND	0.0011	mg/kg	
100-41-4	Ethylbenzene	ND	0.0011	mg/kg	
1330-20-7	Xylene (total)	ND	0.0011	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0011	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0011	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0011	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0053	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0053	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0053	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
17060-07-0	1,2-Dichloroethane-D4	89%		70-122%
2037-26-5	Toluene-D8	106%		81-127%
460-00-4	4-Bromofluorobenzene	103%		66-132%

ND = Not detected
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:	AOI4_S-366_4.5-5.5_30513		
Lab Sample ID:	JB30425-5	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	78.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21234.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21377.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	31.9 g	1.0 ml
Run #2	33.2 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	ND	0.040	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.040	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.040	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.040	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.040	mg/kg	
218-01-9	Chrysene	ND	0.040	mg/kg	
86-73-7	Fluorene	ND	0.040	mg/kg	
91-20-3	Naphthalene	ND	0.040	mg/kg	
85-01-8	Phenanthrene	ND	0.040	mg/kg	
129-00-0	Pyrene	ND	0.040	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	41%	65%	21-122%
321-60-8	2-Fluorobiphenyl	42%	70%	30-117%
1718-51-0	Terphenyl-d14	85%	78%	31-129%

(a) Confirmation run.

ND = Not detected
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:	AOI4_S-366_4.5-5.5_30513		
Lab Sample ID:	JB30425-5	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	78.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	10.9	2.7	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI4_S-368_0-1_30513		
Lab Sample ID:	JB30425-6	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	87.6
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192409.D	1	03/08/13	OTR	n/a	n/a	VA7246
Run #2							

	Initial Weight
Run #1	5.5 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0010	mg/kg	
108-88-3	Toluene	ND	0.0010	mg/kg	
100-41-4	Ethylbenzene	ND	0.0010	mg/kg	
1330-20-7	Xylene (total)	ND	0.0010	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0010	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0010	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0010	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0052	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0052	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0052	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
17060-07-0	1,2-Dichloroethane-D4	87%		70-122%
2037-26-5	Toluene-D8	106%		81-127%
460-00-4	4-Bromofluorobenzene	107%		66-132%

ND = Not detected
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:	AOI4_S-368_0-1_30513		
Lab Sample ID:	JB30425-6	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	87.6
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21235.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21378.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	31.9 g	1.0 ml
Run #2	34.9 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	ND	0.036	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.036	mg/kg	
50-32-8	Benzo(a)pyrene	0.0368	0.036	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.0379	0.036	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.036	mg/kg	
218-01-9	Chrysene	ND	0.036	mg/kg	
86-73-7	Fluorene	ND	0.036	mg/kg	
91-20-3	Naphthalene	ND	0.036	mg/kg	
85-01-8	Phenanthrene	ND	0.036	mg/kg	
129-00-0	Pyrene	0.0401	0.036	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	57%	74%	21-122%
321-60-8	2-Fluorobiphenyl	60%	78%	30-117%
1718-51-0	Terphenyl-d14	75%	80%	31-129%

(a) Confirmation run.

ND = Not detected
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:	AOI4_S-368_0-1_30513		
Lab Sample ID:	JB30425-6	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	87.6
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	44.3	2.2	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI4_S-368_6-7_30513		
Lab Sample ID:	JB30425-7	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	82.0
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	C180072.D	1	03/14/13	TYG	n/a	n/a	VC6455
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	6.4 g	10.0 ml	100 ul
Run #2			

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.11	mg/kg	
108-88-3	Toluene	ND	0.11	mg/kg	
100-41-4	Ethylbenzene	ND	0.11	mg/kg	
1330-20-7	Xylene (total)	ND	0.11	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.11	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.11	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.11	mg/kg	
98-82-8	Isopropylbenzene	ND	0.53	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.53	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.53	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	87%		70-130%
17060-07-0	1,2-Dichloroethane-D4	87%		70-122%
2037-26-5	Toluene-D8	96%		81-127%
460-00-4	4-Bromofluorobenzene	96%		66-132%

(a) Dilution required due to matrix interference.

ND = Not detected
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:	AOI4_S-368_6-7_30513		
Lab Sample ID:	JB30425-7	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	82.0
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2P21379.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941
Run #2 [b]	2P21371.D	2	03/22/13	AD	03/18/13	OP64440	E2P940

	Initial Weight	Final Volume
Run #1	30.8 g	1.0 ml
Run #2	33.4 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	ND [c]	0.073	mg/kg	
56-55-3	Benzo(a)anthracene	ND [c]	0.073	mg/kg	
50-32-8	Benzo(a)pyrene	ND [c]	0.073	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND [c]	0.073	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND [c]	0.073	mg/kg	
218-01-9	Chrysene	ND [c]	0.073	mg/kg	
86-73-7	Fluorene	ND [c]	0.073	mg/kg	
91-20-3	Naphthalene	ND [c]	0.073	mg/kg	
85-01-8	Phenanthrene	ND [c]	0.073	mg/kg	
129-00-0	Pyrene	ND [c]	0.073	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%	35%	21-122%
321-60-8	2-Fluorobiphenyl	72%	19% [d]	30-117%
1718-51-0	Terphenyl-d14	80%	25% [d]	31-129%

(a) Confirmation run.
(b) Diluted due to matrix.
(c) Result is from Run# 2
(d) Outside control limits biased low. Results confirmed by re-extraction outside the holding time.

ND = Not detected
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:	AOI4_S-368_6-7_30513		
Lab Sample ID:	JB30425-7	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	82.0
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	64.0	2.3	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	BH-13-43-1.5-2_030513		
Lab Sample ID:	JB30425-8	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	77.2
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192410.D	1	03/08/13	OTR	n/a	n/a	VA7246
Run #2							

	Initial Weight
Run #1	6.7 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.00097	mg/kg	
108-88-3	Toluene	ND	0.00097	mg/kg	
100-41-4	Ethylbenzene	ND	0.00097	mg/kg	
1330-20-7	Xylene (total)	ND	0.00097	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.00097	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.00097	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.00097	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0048	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0048	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0048	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
17060-07-0	1,2-Dichloroethane-D4	86%		70-122%
2037-26-5	Toluene-D8	109%		81-127%
460-00-4	4-Bromofluorobenzene	113%		66-132%

ND = Not detected
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:	BH-13-43-1.5-2_030513		
Lab Sample ID:	JB30425-8	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	77.2
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21242.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21384.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	30.8 g	1.0 ml
Run #2	30.5 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	0.137	0.042	mg/kg	
56-55-3	Benzo(a)anthracene	0.617	0.042	mg/kg	
50-32-8	Benzo(a)pyrene	0.799	0.042	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.910	0.042	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.719	0.042	mg/kg	
218-01-9	Chrysene	0.695	0.042	mg/kg	
86-73-7	Fluorene	0.0517	0.042	mg/kg	
91-20-3	Naphthalene	0.109	0.042	mg/kg	
85-01-8	Phenanthrene	0.356	0.042	mg/kg	
129-00-0	Pyrene	0.698	0.042	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	59%	61%	21-122%
321-60-8	2-Fluorobiphenyl	68%	67%	30-117%
1718-51-0	Terphenyl-d14	67%	67%	31-129%

(a) Confirmation run.

ND = Not detected
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:	BH-13-43-1.5-2_030513		
Lab Sample ID:	JB30425-8	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	77.2
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	1080	2.6	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	BH-13-43-2-2.5_030513		
Lab Sample ID:	JB30425-9	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	73.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X133980.D	1	03/18/13	MS	n/a	n/a	VX5805
Run #2							

	Initial Weight
Run #1	6.3 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0011	mg/kg	
108-88-3	Toluene	ND	0.0011	mg/kg	
100-41-4	Ethylbenzene	ND	0.0011	mg/kg	
1330-20-7	Xylene (total)	ND	0.0011	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0011	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0011	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0011	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0054	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0054	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0054	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		70-130%
17060-07-0	1,2-Dichloroethane-D4	100%		70-122%
2037-26-5	Toluene-D8	108%		81-127%
460-00-4	4-Bromofluorobenzene	112%		66-132%

ND = Not detected
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:	BH-13-43-2-2.5_030513		
Lab Sample ID:	JB30425-9	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	73.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21246.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21385.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	32.6 g	1.0 ml
Run #2	32.0 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	0.0959	0.042	mg/kg	
56-55-3	Benzo(a)anthracene	0.224	0.042	mg/kg	
50-32-8	Benzo(a)pyrene	0.381	0.042	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.339	0.042	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.524	0.042	mg/kg	
218-01-9	Chrysene	0.312	0.042	mg/kg	
86-73-7	Fluorene	0.0617	0.042	mg/kg	
91-20-3	Naphthalene	0.0830	0.042	mg/kg	
85-01-8	Phenanthrene	0.159	0.042	mg/kg	
129-00-0	Pyrene	0.269	0.042	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	52%	48%	21-122%
321-60-8	2-Fluorobiphenyl	65%	56%	30-117%
1718-51-0	Terphenyl-d14	65%	56%	31-129%

(a) Confirmation run.

ND = Not detected
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:	BH-13-43-2-2.5_030513		
Lab Sample ID:	JB30425-9	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	73.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	878	2.7	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI5_BH-13-38_1.5-2_030513		
Lab Sample ID:	JB30425-10	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	74.4
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192411.D	1	03/08/13	OTR	n/a	n/a	VA7246
Run #2							

	Initial Weight
Run #1	4.9 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0014	mg/kg	
108-88-3	Toluene	ND	0.0014	mg/kg	
100-41-4	Ethylbenzene	ND	0.0014	mg/kg	
1330-20-7	Xylene (total)	ND	0.0014	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0014	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0014	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0014	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0069	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0069	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0069	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
17060-07-0	1,2-Dichloroethane-D4	86%		70-122%
2037-26-5	Toluene-D8	105%		81-127%
460-00-4	4-Bromofluorobenzene	107%		66-132%

ND = Not detected
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:	AOI5_BH-13-38_1.5-2_030513		
Lab Sample ID:	JB30425-10	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	74.4
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21243.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21386.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2	32.0 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	ND	0.045	mg/kg	
56-55-3	Benzo(a)anthracene	0.233	0.045	mg/kg	
50-32-8	Benzo(a)pyrene	0.224	0.045	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.263	0.045	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.137	0.045	mg/kg	
218-01-9	Chrysene	0.245	0.045	mg/kg	
86-73-7	Fluorene	ND	0.045	mg/kg	
91-20-3	Naphthalene	ND	0.045	mg/kg	
85-01-8	Phenanthrene	0.141	0.045	mg/kg	
129-00-0	Pyrene	0.289	0.045	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	47%	53%	21-122%
321-60-8	2-Fluorobiphenyl	49%	67%	30-117%
1718-51-0	Terphenyl-d14	46%	67%	31-129%

(a) Confirmation run.

ND = Not detected
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:	AOI5_BH-13-38_1.5-2_030513		
Lab Sample ID:	JB30425-10	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	74.4
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead [a]	3600	7.9	mg/kg	3	03/14/13	03/18/13	MET	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30730
(2) Prep QC Batch: MP70431

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI5_BH-13-38_3.5-4_030513		
Lab Sample ID:	JB30425-11	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	61.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192412.D	1	03/08/13	OTR	n/a	n/a	VA7246
Run #2							

	Initial Weight
Run #1	5.8 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0014	mg/kg	
108-88-3	Toluene	ND	0.0014	mg/kg	
100-41-4	Ethylbenzene	ND	0.0014	mg/kg	
1330-20-7	Xylene (total)	ND	0.0014	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0014	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0014	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0014	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0070	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0070	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0070	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
17060-07-0	1,2-Dichloroethane-D4	87%		70-122%
2037-26-5	Toluene-D8	105%		81-127%
460-00-4	4-Bromofluorobenzene	108%		66-132%

ND = Not detected
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:	AOI5_BH-13-38_3.5-4_030513		
Lab Sample ID:	JB30425-11	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	61.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21240.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21387.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	30.7 g	1.0 ml
Run #2	30.4 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	0.897	0.053	mg/kg	
56-55-3	Benzo(a)anthracene	2.38	0.053	mg/kg	
50-32-8	Benzo(a)pyrene	2.10	0.053	mg/kg	
205-99-2	Benzo(b)fluoranthene	2.32	0.053	mg/kg	
191-24-2	Benzo(g,h,i)perylene	1.19	0.053	mg/kg	
218-01-9	Chrysene	2.40	0.053	mg/kg	
86-73-7	Fluorene	0.395	0.053	mg/kg	
91-20-3	Naphthalene	0.208	0.053	mg/kg	
85-01-8	Phenanthrene	3.35	0.053	mg/kg	
129-00-0	Pyrene	3.67	0.053	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	44%	55%	21-122%
321-60-8	2-Fluorobiphenyl	49%	70%	30-117%
1718-51-0	Terphenyl-d14	46%	69%	31-129%

(a) Confirmation run.

ND = Not detected
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:	AOI5_BH-13-38_3.5-4_030513		
Lab Sample ID:	JB30425-11	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	61.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	2950	3.2	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI5_BH-13-39_1.5-2_030513		
Lab Sample ID:	JB30425-12	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	73.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192413.D	1	03/08/13	OTR	n/a	n/a	VA7246
Run #2							

	Initial Weight
Run #1	6.5 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0010	mg/kg	
108-88-3	Toluene	ND	0.0010	mg/kg	
100-41-4	Ethylbenzene	ND	0.0010	mg/kg	
1330-20-7	Xylene (total)	ND	0.0010	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0010	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0010	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0010	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0052	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0052	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0052	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
17060-07-0	1,2-Dichloroethane-D4	87%		70-122%
2037-26-5	Toluene-D8	110%		81-127%
460-00-4	4-Bromofluorobenzene	110%		66-132%

ND = Not detected
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:	AOI5_BH-13-39_1.5-2_030513		
Lab Sample ID:	JB30425-12	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	73.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21241.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21388.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2	30.0 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	0.209	0.044	mg/kg	
56-55-3	Benzo(a)anthracene	0.685	0.044	mg/kg	
50-32-8	Benzo(a)pyrene	0.756	0.044	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.710	0.044	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.556	0.044	mg/kg	
218-01-9	Chrysene	0.713	0.044	mg/kg	
86-73-7	Fluorene	ND	0.044	mg/kg	
91-20-3	Naphthalene	0.0511	0.044	mg/kg	
85-01-8	Phenanthrene	0.611	0.044	mg/kg	
129-00-0	Pyrene	0.925	0.044	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	61%	59%	21-122%
321-60-8	2-Fluorobiphenyl	70%	72%	30-117%
1718-51-0	Terphenyl-d14	63%	66%	31-129%

(a) Confirmation run.

ND = Not detected
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:	AOI5_BH-13-39_1.5-2_030513		
Lab Sample ID:	JB30425-12	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	73.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	1120	2.8	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI5_BH-13-39_2-2.5_030513		
Lab Sample ID:	JB30425-13	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	71.7
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	D206543.D	1	03/15/13	ET	n/a	n/a	VD8426
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	8.9 g	10.0 ml	100 ul
Run #2			

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	0.210	0.098	mg/kg	
108-88-3	Toluene	0.372	0.098	mg/kg	
100-41-4	Ethylbenzene	0.168	0.098	mg/kg	
1330-20-7	Xylene (total)	0.835	0.098	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.098	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.098	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.098	mg/kg	
98-82-8	Isopropylbenzene	ND	0.49	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.49	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.49	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		70-130%
17060-07-0	1,2-Dichloroethane-D4	100%		70-122%
2037-26-5	Toluene-D8	102%		81-127%
460-00-4	4-Bromofluorobenzene	91%		66-132%

(a) Dilution required due to matrix interference.

ND = Not detected
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:	AOI5_BH-13-39_2-2.5_030513		
Lab Sample ID:	JB30425-13	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	71.7
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21244.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21389.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	31.3 g	1.0 ml
Run #2	34.8 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	0.335	0.045	mg/kg	
56-55-3	Benzo(a)anthracene	0.884	0.045	mg/kg	
50-32-8	Benzo(a)pyrene	0.855	0.045	mg/kg	
205-99-2	Benzo(b)fluoranthene	1.02	0.045	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.605	0.045	mg/kg	
218-01-9	Chrysene	0.991	0.045	mg/kg	
86-73-7	Fluorene	0.473	0.045	mg/kg	
91-20-3	Naphthalene	0.132	0.045	mg/kg	
85-01-8	Phenanthrene	1.12	0.045	mg/kg	
129-00-0	Pyrene	1.53	0.045	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%	65%	21-122%
321-60-8	2-Fluorobiphenyl	63%	70%	30-117%
1718-51-0	Terphenyl-d14	63%	66%	31-129%

(a) Confirmation run.

ND = Not detected
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:	AOI5_BH-13-39_2-2.5_030513		
Lab Sample ID:	JB30425-13	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	71.7
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	1440	2.9	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI5_BH-13-39_2.5-3_030513		
Lab Sample ID:	JB30425-14	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	71.2
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192414.D	1	03/08/13	OTR	n/a	n/a	VA7246
Run #2							

	Initial Weight
Run #1	7.1 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.00099	mg/kg	
108-88-3	Toluene	0.0014	0.00099	mg/kg	
100-41-4	Ethylbenzene	ND	0.00099	mg/kg	
1330-20-7	Xylene (total)	0.0022	0.00099	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.00099	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.00099	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.00099	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0049	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0049	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0049	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
17060-07-0	1,2-Dichloroethane-D4	86%		70-122%
2037-26-5	Toluene-D8	107%		81-127%
460-00-4	4-Bromofluorobenzene	109%		66-132%

ND = Not detected
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:	AOI5_BH-13-39_2.5-3_030513		
Lab Sample ID:	JB30425-14	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	71.2
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21245.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21380.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	31.5 g	1.0 ml
Run #2	30.3 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	0.0830	0.045	mg/kg	
56-55-3	Benzo(a)anthracene	0.146	0.045	mg/kg	
50-32-8	Benzo(a)pyrene	0.275	0.045	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.307	0.045	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.288	0.045	mg/kg	
218-01-9	Chrysene	0.190	0.045	mg/kg	
86-73-7	Fluorene	ND	0.045	mg/kg	
91-20-3	Naphthalene	0.111	0.045	mg/kg	
85-01-8	Phenanthrene	0.152	0.045	mg/kg	
129-00-0	Pyrene	0.178	0.045	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	40%	59%	21-122%
321-60-8	2-Fluorobiphenyl	55%	61%	30-117%
1718-51-0	Terphenyl-d14	60%	59%	31-129%

(a) Confirmation run.

ND = Not detected
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:	AOI5_BH-13-39_2.5-3_030513		
Lab Sample ID:	JB30425-14	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	71.2
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead [a]	1740	14	mg/kg	5	03/14/13	03/18/13	MET	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30730
(2) Prep QC Batch: MP70431

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	AOI5_BH-13-37_1.5-2_030513		
Lab Sample ID:	JB30425-15	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8260B	**Percent Solids:**	85.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A192480.D	1	03/11/13	OTR	n/a	n/a	VA7248
Run #2							

	Initial Weight
Run #1	7.2 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	0.0021	0.00081	mg/kg	
108-88-3	Toluene	ND	0.00081	mg/kg	
100-41-4	Ethylbenzene	ND	0.00081	mg/kg	
1330-20-7	Xylene (total)	ND	0.00081	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.00081	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.00081	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.00081	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0041	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0041	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0041	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-130%
17060-07-0	1,2-Dichloroethane-D4	97%		70-122%
2037-26-5	Toluene-D8	109%		81-127%
460-00-4	4-Bromofluorobenzene	109%		66-132%

ND = Not detected
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:	AOI5_BH-13-37_1.5-2_030513		
Lab Sample ID:	JB30425-15	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
Method:	SW846 8270D SW846 3550C	**Percent Solids:**	85.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P21237.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936
Run #2 [a]	2P21381.D	1	03/22/13	ALS	03/21/13	OP64440	E2P941

	Initial Weight	Final Volume
Run #1	33.6 g	1.0 ml
Run #2	32.8 g	1.0 ml

BN Special List

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	0.0396	0.035	mg/kg	
56-55-3	Benzo(a)anthracene	0.182	0.035	mg/kg	
50-32-8	Benzo(a)pyrene	0.192	0.035	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.205	0.035	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.120	0.035	mg/kg	
218-01-9	Chrysene	0.194	0.035	mg/kg	
86-73-7	Fluorene	ND	0.035	mg/kg	
91-20-3	Naphthalene	ND	0.035	mg/kg	
85-01-8	Phenanthrene	0.158	0.035	mg/kg	
129-00-0	Pyrene	0.270	0.035	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%	65%	21-122%
321-60-8	2-Fluorobiphenyl	67%	70%	30-117%
1718-51-0	Terphenyl-d14	80%	71%	31-129%

(a) Confirmation run.

ND = Not detected
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:	AOI5_BH-13-37_1.5-2_030513		
Lab Sample ID:	JB30425-15	**Date Sampled:**	03/05/13
Matrix:	SO - Soil	**Date Received:**	03/05/13
		Percent Solids:	85.3
Project:	Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	284	2.4	mg/kg	1	03/14/13	03/17/13	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA30721
(2) Prep QC Batch: MP70431

RL = Reporting Limit

New Jersey

ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

ACCUTEST LABORATORIES

SLC

CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: JB30425

Client / Reporting Information

Company Name: Aquaterra Tech
Street Address: 122 So Church St
City: Westchester State: PA Zip: 19382
Project Contact: Tiffany Doers E-mail:
Phone #: Fax #:
Sampler(s) Name(s): Luke Mokrycki Phone #:

Project Information

Project Name: PH Refinery AOI-4
Street:
City: State:
Project #: AOI-4 Soil Sampling
Client Purchase Order #:
Project Manager: Jim Oppenheim

Billing Information (if different from Report to)

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

Requested Analysis (see TEST CODE sheet)

LEAD 6010C
BTEX, MTBE, Cumene, EDB, EDC, TMB's 8260B
8270C: Anthracene, benzo (a) anthracene, benzo (ghi) pyrene, benzo (b) fluoranthene, chrysene, fluoranthene, naphthalene, phenanthrene, pyrene

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	LAB USE ONLY
-1	S-367 0-2'	7758/7757 7767	3/5/13	0800	LM	SO	4					1	2	1		E90
-2	S-367 8-10'	8026/7836 7846	3/5/13	1100	LM	SO	4					1	2	1		14L3
-3	AOI5-BH-13-37-2.5-3_030513	8025/7831 7803	3/5/13	1315	LM	SO	4					1	2	1		4963

Field Kits Received
D.I. slurry voc vials frozen storage
Date: 3/5/13 Time: 20:40 Initials: SIA

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other RED T2

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Rec'd at Exton Service Center
3/5

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 Luke Mokrycki	3/5/13 1430	1	2	3/5/13 1700	2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	[ ] Intact [ ] Not Intact	Preserved where applicable [ ]

On Ice: Cooler Temp. 20.3 °C

2A

SIA

JB30425: Chain of Custody
Page 1 of 4

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: JB30425

Client / Reporting Information

Company Name: Alpha Technologies Inc.
Street Address:
City: West Chester State: PA Zip: 19382
Project Contact: Tiffani Doer E-mail:
Phone #: Fax #:
Sampler(s) Name(s): Pat Troy and Eric Dieck Phone #:

Project Information

Project Name: Sunoco Philadelphia Refinery
Street:
City: Philadelphia State: PA
Project #: A014 SI Sampling
Client Purchase Order #:
Project Manager: Jim Oppenheim

Billing Information (if different from Report to)

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

Requested Analysis (see TEST CODE sheet)

LEAD 6010S; STEX, MTBE, Cumene, EDB, EDC 1mg/L 8260B; Anthracene, Pyrene (a) anthracene, Benzo (a) pyrene, Chrysene, Benzo (b) fluoranthene, Benzo (k) fluoranthene, Phenanthrene, Pyrene

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											LAB USE ONLY
1	A014_S-366_0-1_30513	8006/7817 7827	3/5/13	8:05	PT	SO	4					X	X	X							-4					
2	A014_S-366_4.5-5.5_30513	7996/7796 7800	3/5/13	8:40	PT	SO	4					X	X	X							-5					
3	A014_S-368_0-1_30513	7993/7855 7865	3/5/13	10:05	PT	SO	4					X	X	X							-6					
4	A014_S-368_6-7_30513	7983/7874 7838	3/5/13	10:40	PT	SO	4					X	X	X							-7					
5	BH-13-43_1.5-2_030513	8045/7813 7823	3/5/13	8:45	ED	SO	4					X	X	X							-8					
6	BH-13-43_2-2.5_030513	7985/7815 7825	3/5/13	9:00	ED	SO	4					X	X	X							-9					
7	A015-BH-13-38_1.5-2_030513	8046/7797 7807	3/5/13	10:00	ED	SO	4					X	X	X							-10					
8	A015-BH-13-38_3.5-4_030513	8024/7790 7873	3/5/13	10:30	ED	SO	4					X	X	X							-11					
9	A015-BH-13-39_1.5-2_030513	8014/7871 7872	3/5/13	11:00	ED	SO	4					X	X	X							-12					
10	A015_BH-13-39_2-2.5_030513	8026/7816 7826	3/5/13	11:10	ED	SO	4					X	X	X							-13					
11	A015-BH-13-39_2.5-3_030513	8004/7822 7846	3/5/13	11:15	ED	SO	4					X	X	X							-14					
12	A015-BH-13-37_1.5-2_030513	7994/7811 7801	3/5/13	13:00	ED	SO	4					X	X	X							-15					

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other _____

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other RED TO

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Rec'd at Exton Service Center

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 Luke Motsgrich	3/5/13 14:30	1	2	3/5/13 1700	2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # [ ] Intact [ ] Not intact	Preserved where applicable [ ]	On Ice [ ] Cooler Temp: 2.3°C

SLA

5.1 5

JB30425: Chain of Custody
Page 2 of 4

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: JB30425 **Client:** **Project:**

Date / Time Received: 3/5/2013 **Delivery Method:** **Airbill #'s:**

Cooler Temps (Initial/Adjusted): #1: (2.3/2.3); 0

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

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	IR Gun	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	1	

Quality Control Preservation	Y	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	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

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

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

Comments

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www/accutest.com

JB30425: Chain of Custody
Page 3 of 4

Job Change Order: JB30425_3_14_2013

Requested Date:	3/14/2013	**Received Date:**	3/5/2013
Account Name:	Aquaterra Technologies, Inc.	**Due Date:**	3/19/2013
Project	Sun-Philadelphia Refinery, 3144 Passyunk	**Deliverable:**	REDT2
CSR:	kristinb	**TAT (Days):**	14

Sample #: JB30425-2
Dept:

Change:
Please cancel sample.

S-367_8-10'

Above Changes Per: Client / Tiffani Doerr **Date:** 3/14/2013

To Client: This Change Order is confirmation of the revisions, previously discussed with the Accutest Client Service

Internal Sample Tracking Chronicle

Aquaterra Technologies, Inc.

Job No: JB30425

Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: AOI-4 Soil Sampling

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JB30425-1 S-367_0-2'	Collected: 05-MAR-13 08:00 By: LM		Received: 05-MAR-13 By: AS			
JB30425-1	SW846 8260B	08-MAR-13 18:15	OTR			V8260SL
JB30425-1	SW846 8260B	11-MAR-13 15:39	OTR			V8260SL
JB30425-1	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-1	SW846 6010C	17-MAR-13 01:20	ND	14-MAR-13	WWZ	PB
JB30425-1	SW846 8270D	19-MAR-13 19:12	ALS	18-MAR-13	TM	B8270SL
JB30425-1	SW846 8270D	22-MAR-13 12:10	ALS	21-MAR-13	MP	B8270SL
JB30425-3 AOI5_BH-13-37-2.5-3_030513	Collected: 05-MAR-13 13:15 By: LM		Received: 05-MAR-13 By: AS			
JB30425-3	SW846 8260B	08-MAR-13 18:45	OTR			V8260SL
JB30425-3	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-3	SW846 6010C	17-MAR-13 01:26	ND	14-MAR-13	WWZ	PB
JB30425-3	SW846 8270D	19-MAR-13 19:35	ALS	18-MAR-13	TM	B8270SL
JB30425-3	SW846 8270D	22-MAR-13 12:32	ALS	21-MAR-13	MP	B8270SL
JB30425-4 AOI4_S-366_0-1_30513	Collected: 05-MAR-13 08:05 By: LM		Received: 05-MAR-13 By: AS			
JB30425-4	SW846 8260B	08-MAR-13 19:14	OTR			V8260SL
JB30425-4	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-4	SW846 6010C	18-MAR-13 13:03	MET	14-MAR-13	WWZ	PB
JB30425-4	SW846 8270D	19-MAR-13 17:19	ALS	18-MAR-13	TM	B8270SL
JB30425-4	SW846 8270D	22-MAR-13 09:54	ALS	21-MAR-13	MP	B8270SL
JB30425-5 AOI4_S-366_4.5-5.5_30513	Collected: 05-MAR-13 08:40 By: LM		Received: 05-MAR-13 By: AS			
JB30425-5	SW846 8260B	08-MAR-13 19:59	OTR			V8260SL
JB30425-5	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-5	SW846 6010C	17-MAR-13 01:38	ND	14-MAR-13	WWZ	PB
JB30425-5	SW846 8270D	19-MAR-13 17:42	ALS	18-MAR-13	TM	B8270SL
JB30425-5	SW846 8270D	22-MAR-13 10:17	ALS	21-MAR-13	MP	B8270SL
JB30425-6 AOI4_S-368_0-1_30513	Collected: 05-MAR-13 10:05 By: LM		Received: 05-MAR-13 By: AS			

Internal Sample Tracking Chronicle

Aquaterra Technologies, Inc.

Job No: JB30425

Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: AOI-4 Soil Sampling

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JB30425-6	SW846 8260B	08-MAR-13 20:28	OTR			V8260SL
JB30425-6	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-6	SW846 6010C	17-MAR-13 01:09	ND	14-MAR-13	WWZ	PB
JB30425-6	SW846 8270D	19-MAR-13 18:04	ALS	18-MAR-13	TM	B8270SL
JB30425-6	SW846 8270D	22-MAR-13 10:39	ALS	21-MAR-13	MP	B8270SL
JB30425-7 Collected: 05-MAR-13 10:40 By: LM Received: 05-MAR-13 By: AS AOI4_S-368_6-7_30513						
JB30425-7	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-7	SW846 8260B	14-MAR-13 19:41	TYG			V8260SL
JB30425-7	SW846 6010C	17-MAR-13 01:44	ND	14-MAR-13	WWZ	PB
JB30425-7	SW846 8270D	22-MAR-13 00:43	AD	18-MAR-13	TM	B8270SL
JB30425-7	SW846 8270D	22-MAR-13 11:02	ALS	21-MAR-13	MP	B8270SL
JB30425-8 Collected: 05-MAR-13 08:45 By: LM Received: 05-MAR-13 By: AS BH-13-43-1.5-2_030513						
JB30425-8	SW846 8260B	08-MAR-13 20:58	OTR			V8260SL
JB30425-8	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-8	SW846 6010C	17-MAR-13 01:49	ND	14-MAR-13	WWZ	PB
JB30425-8	SW846 8270D	19-MAR-13 20:43	ALS	18-MAR-13	TM	B8270SL
JB30425-8	SW846 8270D	22-MAR-13 12:55	ALS	21-MAR-13	MP	B8270SL
JB30425-9 Collected: 05-MAR-13 09:00 By: LM Received: 05-MAR-13 By: AS BH-13-43-2-2.5_030513						
JB30425-9	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-9	SW846 6010C	17-MAR-13 02:07	ND	14-MAR-13	WWZ	PB
JB30425-9	SW846 8260B	18-MAR-13 12:51	MS			V8260SL
JB30425-9	SW846 8270D	19-MAR-13 22:14	ALS	18-MAR-13	TM	B8270SL
JB30425-9	SW846 8270D	22-MAR-13 13:17	ALS	21-MAR-13	MP	B8270SL
JB30425-10 Collected: 05-MAR-13 10:00 By: LM Received: 05-MAR-13 By: AS AOI5_BH-13-38_1.5-2_030513						
JB30425-10	SW846 8260B	08-MAR-13 21:27	OTR			V8260SL
JB30425-10	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-10	SW846 6010C	18-MAR-13 13:09	MET	14-MAR-13	WWZ	PB
JB30425-10	SW846 8270D	19-MAR-13 21:06	ALS	18-MAR-13	TM	B8270SL

Internal Sample Tracking Chronicle

Aquaterra Technologies, Inc.

Job No: JB30425

Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: AOI-4 Soil Sampling

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JB30425-10	SW846 8270D	22-MAR-13 13:40	ALS	21-MAR-13	MP	B8270SL
JB30425-11 Collected: 05-MAR-13 10:30 By: LM Received: 05-MAR-13 By: AS AOI5_BH-13-38_3.5-4_030513						
JB30425-11	SW846 8260B	08-MAR-13 21:57	OTR			V8260SL
JB30425-11	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-11	SW846 6010C	17-MAR-13 02:19	ND	14-MAR-13	WWZ	PB
JB30425-11	SW846 8270D	19-MAR-13 19:58	ALS	18-MAR-13	TM	B8270SL
JB30425-11	SW846 8270D	22-MAR-13 14:02	ALS	21-MAR-13	MP	B8270SL
JB30425-12 Collected: 05-MAR-13 11:00 By: LM Received: 05-MAR-13 By: AS AOI5_BH-13-39_1.5-2_030513						
JB30425-12	SW846 8260B	08-MAR-13 22:26	OTR			V8260SL
JB30425-12	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-12	SW846 6010C	17-MAR-13 02:25	ND	14-MAR-13	WWZ	PB
JB30425-12	SW846 8270D	19-MAR-13 20:20	ALS	18-MAR-13	TM	B8270SL
JB30425-12	SW846 8270D	22-MAR-13 14:25	ALS	21-MAR-13	MP	B8270SL
JB30425-13 Collected: 05-MAR-13 11:10 By: LM Received: 05-MAR-13 By: AS AOI5_BH-13-39_2-2.5_030513						
JB30425-13	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-13	SW846 8260B	15-MAR-13 17:50	ET			V8260SL
JB30425-13	SW846 6010C	17-MAR-13 02:31	ND	14-MAR-13	WWZ	PB
JB30425-13	SW846 8270D	19-MAR-13 21:29	ALS	18-MAR-13	TM	B8270SL
JB30425-13	SW846 8270D	22-MAR-13 14:48	ALS	21-MAR-13	MP	B8270SL
JB30425-14 Collected: 05-MAR-13 11:15 By: LM Received: 05-MAR-13 By: AS AOI5_BH-13-39_2.5-3_030513						
JB30425-14	SW846 8260B	08-MAR-13 23:11	OTR			V8260SL
JB30425-14	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-14	SW846 6010C	18-MAR-13 13:27	MET	14-MAR-13	WWZ	PB
JB30425-14	SW846 8270D	19-MAR-13 21:51	ALS	18-MAR-13	TM	B8270SL
JB30425-14	SW846 8270D	22-MAR-13 11:24	ALS	21-MAR-13	MP	B8270SL

Internal Sample Tracking Chronicle

Aquaterra Technologies, Inc.

Job No: JB30425

Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: AOI-4 Soil Sampling

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JB30425-15 Collected: 05-MAR-13 13:00 By: LM Received: 05-MAR-13 By: AS AOI5_BH-13-37_1.5-2_030513						
JB30425-15	SW846 8260B	11-MAR-13 15:10	OTR			V8260SL
JB30425-15	SM2540 G-97	14-MAR-13 18:35	WR			%SOL
JB30425-15	SW846 6010C	17-MAR-13 02:42	ND	14-MAR-13	WWZ	PB
JB30425-15	SW846 8270D	19-MAR-13 18:50	ALS	18-MAR-13	TM	B8270SL
JB30425-15	SW846 8270D	22-MAR-13 11:47	ALS	21-MAR-13	MP	B8270SL

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-1.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-1.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-1.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-1.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-1.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-1.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-1.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-1.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-1.1	Secured Storage	Brian Racin	03/21/13 19:08	Retrieve from Storage
JB30425-1.1	Brian Racin	Humaira Janjua	03/21/13 19:10	Custody Transfer
JB30425-1.1	Humaira Janjua	Secured Storage	03/21/13 23:50	Return to Storage
JB30425-1.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-1.1
JB30425-1.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-1.1
JB30425-1.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-1.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-1.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-1.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-1.1
JB30425-1.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-1.1
JB30425-1.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-1.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-1.1
JB30425-1.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-1.1
JB30425-1.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-1.3	Secured Storage	Oksana Treglazova	03/11/13 14:48	Retrieve from Storage
JB30425-1.3	Oksana Treglazova	GCMSA	03/11/13 14:48	Load on Instrument
JB30425-1.3	GCMSA	Oksana Treglazova	03/12/13 09:18	Unload from Instrument
JB30425-1.3	Oksana Treglazova	Secured Storage	03/12/13 09:18	Return to Storage
JB30425-1.4	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-1.4	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-1.4	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument
JB30425-1.4	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage
JB30425-3.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-3.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-3.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-3.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-3.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-3.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-3.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-3.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-3.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-3.1
JB30425-3.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-3.1
JB30425-3.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-3.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-3.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-3.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-3.1
JB30425-3.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-3.1
JB30425-3.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-3.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-3.1
JB30425-3.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-3.1
JB30425-3.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-3.4	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-3.4	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-3.4	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument
JB30425-3.4	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage
JB30425-4.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-4.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-4.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-4.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-4.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-4.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-4.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-4.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-4.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-4.1
JB30425-4.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-4.1
JB30425-4.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-4.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-4.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-4.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-4.1
JB30425-4.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-4.1
JB30425-4.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-4.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-4.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-4.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-4.1
JB30425-4.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-4.1
JB30425-4.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-4.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-4.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-4.4	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-4.4	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-4.4	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument
JB30425-4.4	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage
JB30425-5.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-5.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-5.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-5.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-5.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-5.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-5.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-5.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-5.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-5.1
JB30425-5.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-5.1
JB30425-5.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-5.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-5.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-5.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-5.1
JB30425-5.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-5.1
JB30425-5.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-5.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-5.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-5.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-5.1
JB30425-5.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-5.1
JB30425-5.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-5.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-5.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-5.4	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-5.4	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-5.4	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument
JB30425-5.4	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage
JB30425-6.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-6.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-6.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-6.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-6.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-6.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-6.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-6.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-6.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-6.1
JB30425-6.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-6.1
JB30425-6.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-6.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-6.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-6.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-6.1
JB30425-6.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-6.1
JB30425-6.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-6.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-6.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-6.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-6.1
JB30425-6.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-6.1
JB30425-6.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-6.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-6.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-6.4	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-6.4	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-6.4	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument
JB30425-6.4	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage
JB30425-7.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-7.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-7.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-7.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-7.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-7.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-7.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-7.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-7.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-7.1
JB30425-7.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-7.1
JB30425-7.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-7.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-7.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-7.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-7.1

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-7.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-7.1
JB30425-7.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-7.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-7.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-7.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-7.1
JB30425-7.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-7.1
JB30425-7.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-7.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-7.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-7.2	Secured Storage	Emily Tran	03/11/13 12:06	Retrieve from Storage
JB30425-7.2	Emily Tran	Secured Storage	03/11/13 16:43	Return to Storage
JB30425-8.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-8.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-8.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-8.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-8.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-8.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-8.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-8.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-8.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-8.1
JB30425-8.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-8.1
JB30425-8.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-8.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-8.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-8.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-8.1
JB30425-8.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-8.1
JB30425-8.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-8.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-8.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-8.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-8.1
JB30425-8.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-8.1
JB30425-8.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-8.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-8.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-8.4	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-8.4	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-8.4	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-8.4	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage
JB30425-9.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-9.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-9.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-9.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-9.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-9.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-9.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-9.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-9.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-9.1
JB30425-9.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-9.1
JB30425-9.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-9.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-9.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-9.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-9.1
JB30425-9.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-9.1
JB30425-9.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-9.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-9.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-9.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-9.1
JB30425-9.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-9.1
JB30425-9.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-9.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-9.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-9.2	Secured Storage	Emily Tran	03/11/13 12:06	Retrieve from Storage
JB30425-9.2	Emily Tran	Secured Storage	03/11/13 16:43	Return to Storage
JB30425-9.4	Secured Storage	Margaret Starzec	03/18/13 12:12	Retrieve from Storage
JB30425-9.4	Margaret Starzec	GCMSX	03/18/13 12:12	Load on Instrument
JB30425-9.4	GCMSX	Margaret Starzec	03/19/13 08:24	Unload from Instrument
JB30425-9.4	Margaret Starzec	Secured Storage	03/19/13 08:24	Return to Storage
JB30425-10.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-10.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-10.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-10.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-10.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-10.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-10.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-10.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-10.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-10.1
JB30425-10.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-10.1
JB30425-10.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-10.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-10.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-10.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-10.1
JB30425-10.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-10.1
JB30425-10.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-10.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-10.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-10.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-10.1
JB30425-10.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-10.1
JB30425-10.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-10.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-10.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-10.4	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-10.4	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-10.4	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument
JB30425-10.4	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage
JB30425-11.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-11.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-11.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-11.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-11.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-11.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-11.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-11.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-11.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-11.1
JB30425-11.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-11.1
JB30425-11.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-11.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-11.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-11.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-11.1
JB30425-11.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-11.1
JB30425-11.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-11.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-11.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-11.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-11.1
JB30425-11.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-11.1
JB30425-11.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-11.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-11.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-11.3	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-11.3	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-11.3	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument
JB30425-11.3	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage
JB30425-12.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-12.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-12.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-12.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-12.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-12.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-12.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-12.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-12.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-12.1
JB30425-12.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-12.1
JB30425-12.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-12.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-12.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-12.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-12.1
JB30425-12.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-12.1
JB30425-12.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-12.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-12.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-12.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-12.1
JB30425-12.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-12.1
JB30425-12.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-12.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-12.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-12.4	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-12.4	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-12.4	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument
JB30425-12.4	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-13.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-13.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-13.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-13.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-13.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-13.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-13.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-13.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-13.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-13.1
JB30425-13.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-13.1
JB30425-13.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-13.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-13.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-13.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-13.1
JB30425-13.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-13.1
JB30425-13.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-13.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-13.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-13.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-13.1
JB30425-13.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-13.1
JB30425-13.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-13.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-13.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-13.2	Secured Storage	Emily Tran	03/11/13 12:06	Retrieve from Storage
JB30425-13.2	Emily Tran	Secured Storage	03/11/13 16:43	Return to Storage
JB30425-14.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-14.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-14.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-14.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-14.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-14.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-14.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-14.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-14.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-14.1
JB30425-14.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-14.1
JB30425-14.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-14.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-14.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-14.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-14.1
JB30425-14.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-14.1
JB30425-14.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-14.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-14.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-14.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-14.1
JB30425-14.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-14.1
JB30425-14.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-14.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-14.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-14.4	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-14.4	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-14.4	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument
JB30425-14.4	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage
JB30425-15.1	Secured Storage	Rinku Patel	03/14/13 08:18	Retrieve from Storage
JB30425-15.1	Rinku Patel	Gina Montenegro	03/14/13 12:51	Custody Transfer
JB30425-15.1	Gina Montenegro	Michael Bunza	03/14/13 14:09	Custody Transfer
JB30425-15.1	Michael Bunza	Secured Storage	03/14/13 18:10	Return to Storage
JB30425-15.1	Secured Storage	Tin Marlar	03/18/13 07:49	Retrieve from Storage
JB30425-15.1	Tin Marlar	Secured Storage	03/18/13 11:50	Return to Storage
JB30425-15.1	Secured Storage	Humaira Janjua	03/20/13 15:25	Retrieve from Storage
JB30425-15.1	Humaira Janjua	Secured Storage	03/21/13 15:28	Return to Storage
JB30425-15.1.1	Michael Bunza	Metals Digestion	03/14/13 16:56	Digestate from JB30425-15.1
JB30425-15.1.1	Metals Digestion	Michael Bunza	03/14/13 16:56	Digestate from JB30425-15.1
JB30425-15.1.1	Michael Bunza	Metals Digestate Storage	03/14/13 16:56	Return to Storage
JB30425-15.1.1	Metals Digestate Storage	Rakesh Pathak	03/15/13 13:15	Retrieve from Storage
JB30425-15.1.1	Rakesh Pathak	Metals Digestate Storage	03/15/13 13:41	Return to Storage
JB30425-15.1.2	Tin Marlar	Organics Prep	03/18/13 07:54	Extract from JB30425-15.1
JB30425-15.1.2	Organics Prep	Owen McKenna	03/19/13 17:41	Extract from JB30425-15.1
JB30425-15.1.2	Owen McKenna	Extract Storage	03/19/13 17:41	Return to Storage
JB30425-15.1.2	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage
JB30425-15.1.2	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-15.1.3	Humaira Janjua	Organics Prep	03/20/13 15:26	Extract from JB30425-15.1
JB30425-15.1.3	Organics Prep	Max Ponce	03/21/13 23:41	Extract from JB30425-15.1
JB30425-15.1.3	Max Ponce	Extract Storage	03/21/13 23:41	Return to Storage
JB30425-15.1.3	Extract Storage	Andrew Lee Smith	03/22/13 09:38	Retrieve from Storage

Accutest Internal Chain of Custody

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 03/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB30425-15.1.3	Andrew Lee Smith	GCMS2P	03/22/13 09:38	Load on Instrument
JB30425-15.3	Secured Storage	Oksana Treglazova	03/11/13 14:48	Retrieve from Storage
JB30425-15.3	Oksana Treglazova	GCMSA	03/11/13 14:48	Load on Instrument
JB30425-15.3	GCMSA	Oksana Treglazova	03/12/13 09:18	Unload from Instrument
JB30425-15.3	Oksana Treglazova	Secured Storage	03/12/13 09:18	Return to Storage
JB30425-15.4	Secured Storage	Oksana Treglazova	03/08/13 14:59	Retrieve from Storage
JB30425-15.4	Oksana Treglazova	GCMSA	03/08/13 14:59	Load on Instrument
JB30425-15.4	GCMSA	Oksana Treglazova	03/11/13 11:42	Unload from Instrument
JB30425-15.4	Oksana Treglazova	Secured Storage	03/11/13 11:42	Return to Storage

New Jersey

ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA7246-MB	A192398.D	1	03/08/13	OTR	n/a	n/a	VA7246

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

JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-8, JB30425-10, JB30425-11, JB30425-12, JB30425-14

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	70-130%
17060-07-0	1,2-Dichloroethane-D4	90%	70-122%
2037-26-5	Toluene-D8	105%	81-127%
460-00-4	4-Bromofluorobenzene	110%	66-132%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA7248-MB	A192472.D	1	03/11/13	OTR	n/a	n/a	VA7248

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

JB30425-15

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	106%	70-130%
17060-07-0	1,2-Dichloroethane-D4	97%	70-122%
2037-26-5	Toluene-D8	107%	81-127%
460-00-4	4-Bromofluorobenzene	113%	66-132%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC6455-MB	C180059.D	1	03/14/13	TYG	n/a	n/a	VC6455

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

JB30425-7

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	50	ug/kg	
106-93-4	1,2-Dibromoethane	ND	50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	50	ug/kg	
100-41-4	Ethylbenzene	ND	50	ug/kg	
98-82-8	Isopropylbenzene	ND	250	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	50	ug/kg	
108-88-3	Toluene	ND	50	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	250	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	250	ug/kg	
1330-20-7	Xylene (total)	ND	50	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	91%	70-130%
17060-07-0	1,2-Dichloroethane-D4	94%	70-122%
2037-26-5	Toluene-D8	94%	81-127%
460-00-4	4-Bromofluorobenzene	93%	66-132%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VD8426-MB	D206531.D	1	03/15/13	ET	n/a	n/a	VD8426

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

JB30425-13

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	50	ug/kg	
106-93-4	1,2-Dibromoethane	ND	50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	50	ug/kg	
100-41-4	Ethylbenzene	ND	50	ug/kg	
98-82-8	Isopropylbenzene	ND	250	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	50	ug/kg	
108-88-3	Toluene	ND	50	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	250	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	250	ug/kg	
1330-20-7	Xylene (total)	ND	50	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	92%	70-130%
17060-07-0	1,2-Dichloroethane-D4	103%	70-122%
2037-26-5	Toluene-D8	103%	81-127%
460-00-4	4-Bromofluorobenzene	94%	66-132%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX5805-MB	X133974.D	1	03/18/13	MS	n/a	n/a	VX5805

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

JB30425-9

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	70-130%
17060-07-0	1,2-Dichloroethane-D4	90%	70-122%
2037-26-5	Toluene-D8	105%	81-127%
460-00-4	4-Bromofluorobenzene	104%	66-132%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	3.21	230	ug/kg	JN
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC6455-MB2	C180085.D	1	03/15/13	TYG	n/a	n/a	VC6455

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

JB30425-7MS, JB30425-7MSD

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	50	ug/kg	
106-93-4	1,2-Dibromoethane	ND	50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	50	ug/kg	
100-41-4	Ethylbenzene	ND	50	ug/kg	
98-82-8	Isopropylbenzene	ND	250	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	50	ug/kg	
108-88-3	Toluene	ND	50	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	250	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	250	ug/kg	
1330-20-7	Xylene (total)	ND	50	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	89%	70-130%
17060-07-0	1,2-Dichloroethane-D4	94%	70-122%
2037-26-5	Toluene-D8	95%	81-127%
460-00-4	4-Bromofluorobenzene	93%	66-132%

Blank Spike Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA7246-BS	A192399.D	1	03/08/13	OTR	n/a	n/a	VA7246

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

JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-8, JB30425-10, JB30425-11, JB30425-12, JB30425-14

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.2	96	76-117
106-93-4	1,2-Dibromoethane	50	53.1	106	77-122
107-06-2	1,2-Dichloroethane	50	54.0	108	68-134
100-41-4	Ethylbenzene	50	47.8	96	74-119
98-82-8	Isopropylbenzene	50	47.3	95	71-119
1634-04-4	Methyl Tert Butyl Ether	100	102	102	72-124
108-88-3	Toluene	50	48.5	97	77-121
95-63-6	1,2,4-Trimethylbenzene	50	47.5	95	72-118
108-67-8	1,3,5-Trimethylbenzene	50	47.0	94	69-118
1330-20-7	Xylene (total)	150	144	96	76-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	70-130%
17060-07-0	1,2-Dichloroethane-D4	91%	70-122%
2037-26-5	Toluene-D8	107%	81-127%
460-00-4	4-Bromofluorobenzene	99%	66-132%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA7248-BS	A192473.D	1	03/11/13	OTR	n/a	n/a	VA7248

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

JB30425-15

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	50.4	101	76-117
106-93-4	1,2-Dibromoethane	50	52.0	104	77-122
107-06-2	1,2-Dichloroethane	50	55.9	112	68-134
100-41-4	Ethylbenzene	50	49.1	98	74-119
98-82-8	Isopropylbenzene	50	48.8	98	71-119
1634-04-4	Methyl Tert Butyl Ether	100	100	100	72-124
108-88-3	Toluene	50	49.9	100	77-121
95-63-6	1,2,4-Trimethylbenzene	50	49.1	98	72-118
108-67-8	1,3,5-Trimethylbenzene	50	48.8	98	69-118
1330-20-7	Xylene (total)	150	148	99	76-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	70-130%
17060-07-0	1,2-Dichloroethane-D4	95%	70-122%
2037-26-5	Toluene-D8	108%	81-127%
460-00-4	4-Bromofluorobenzene	100%	66-132%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC6455-BS	C180060.D	1	03/14/13	TYG	n/a	n/a	VC6455

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

JB30425-7

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2610	104	76-117
106-93-4	1,2-Dibromoethane	2500	2450	98	77-122
107-06-2	1,2-Dichloroethane	2500	2770	111	68-134
100-41-4	Ethylbenzene	2500	2540	102	74-119
98-82-8	Isopropylbenzene	2500	2590	104	71-119
1634-04-4	Methyl Tert Butyl Ether	5000	5890	118	72-124
108-88-3	Toluene	2500	2600	104	77-121
95-63-6	1,2,4-Trimethylbenzene	2500	2670	107	72-118
108-67-8	1,3,5-Trimethylbenzene	2500	2540	102	69-118
1330-20-7	Xylene (total)	7500	8270	110	76-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	94%	70-130%
17060-07-0	1,2-Dichloroethane-D4	95%	70-122%
2037-26-5	Toluene-D8	95%	81-127%
460-00-4	4-Bromofluorobenzene	92%	66-132%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VD8426-BS	D206532.D	1	03/15/13	ET	n/a	n/a	VD8426

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

JB30425-13

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2610	104	76-117
106-93-4	1,2-Dibromoethane	2500	2650	106	77-122
107-06-2	1,2-Dichloroethane	2500	2910	116	68-134
100-41-4	Ethylbenzene	2500	2560	102	74-119
98-82-8	Isopropylbenzene	2500	2500	100	71-119
1634-04-4	Methyl Tert Butyl Ether	5000	5280	106	72-124
108-88-3	Toluene	2500	2590	104	77-121
95-63-6	1,2,4-Trimethylbenzene	2500	2380	95	72-118
108-67-8	1,3,5-Trimethylbenzene	2500	2340	94	69-118
1330-20-7	Xylene (total)	7500	7580	101	76-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	94%	70-130%
17060-07-0	1,2-Dichloroethane-D4	101%	70-122%
2037-26-5	Toluene-D8	100%	81-127%
460-00-4	4-Bromofluorobenzene	89%	66-132%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX5805-BS	X133975.D	1	03/18/13	MS	n/a	n/a	VX5805

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

JB30425-9

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.4	97	76-117
106-93-4	1,2-Dibromoethane	50	49.2	98	77-122
107-06-2	1,2-Dichloroethane	50	51.9	104	68-134
100-41-4	Ethylbenzene	50	46.1	92	74-119
98-82-8	Isopropylbenzene	50	47.2	94	71-119
1634-04-4	Methyl Tert Butyl Ether	100	105	105	72-124
108-88-3	Toluene	50	49.8	100	77-121
95-63-6	1,2,4-Trimethylbenzene	50	47.3	95	72-118
108-67-8	1,3,5-Trimethylbenzene	50	46.5	93	69-118
1330-20-7	Xylene (total)	150	146	97	76-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	107%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	70-122%
2037-26-5	Toluene-D8	110%	81-127%
460-00-4	4-Bromofluorobenzene	99%	66-132%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB31197-9MS	X133981.D	1	03/18/13	MS	n/a	n/a	VX5805
JB31197-9	X133978.D	1	03/18/13	MS	n/a	n/a	VX5805

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

JB30425-9

CAS No.	Compound	JB31197-9 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Limits
71-43-2	Benzene	ND		51.6	39.1	76	44-130
106-93-4	1,2-Dibromoethane	ND		51.6	39.1	76	41-139
107-06-2	1,2-Dichloroethane	ND		51.6	38.6	75	43-139
100-41-4	Ethylbenzene	ND		51.6	36.4	71	29-137
98-82-8	Isopropylbenzene	0.33	J	51.6	38.4	74	27-138
1634-04-4	Methyl Tert Butyl Ether	0.99		51.6	42.0	79	51-128
108-88-3	Toluene	ND		51.6	39.4	76	40-135
95-63-6	1,2,4-Trimethylbenzene	1.0	J	51.6	37.8	71	17-142
108-67-8	1,3,5-Trimethylbenzene	0.26	J	51.6	37.5	72	20-140
1330-20-7	Xylene (total)	ND		155	115	74	28-139

CAS No.	Surrogate Recoveries	MS	JB31197-9	Limits
1868-53-7	Dibromofluoromethane	104%	106%	70-130%
17060-07-0	1,2-Dichloroethane-D4	91%	99%	70-122%
2037-26-5	Toluene-D8	108%	107%	81-127%
460-00-4	4-Bromofluorobenzene	101%	104%	66-132%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB30109-9MS	A192400.D	1	03/08/13	OTR	n/a	n/a	VA7246
JB30109-9MSD	A192401.D	1	03/08/13	OTR	n/a	n/a	VA7246
JB30109-9	A192403.D	1	03/08/13	OTR	n/a	n/a	VA7246

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

JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-8, JB30425-10, JB30425-11, JB30425-12, JB30425-14

CAS No.	Compound	JB30109-9 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.58		65.8	61.8	93	57.2	86	8	44-130/21
106-93-4	1,2-Dibromoethane	ND		65.8	57.2	87	52.0	79	10	41-139/21
107-06-2	1,2-Dichloroethane	ND		65.8	59.1	90	56.3	86	5	43-139/19
100-41-4	Ethylbenzene	40.7		65.8	76.6	55	61.6	32	22	29-137/25
98-82-8	Isopropylbenzene	7.2		65.8	66.2	90	51.7	68	25	27-138/26
1634-04-4	Methyl Tert Butyl Ether	ND		65.8	55.7	85	54.1	82	3	51-128/20
108-88-3	Toluene	4.0		65.8	67.2	96	58.8	83	13	40-135/22
95-63-6	1,2,4-Trimethylbenzene	0.38		65.8	88.0	133	37.6	57	80* [a]	17-142/28
108-67-8	1,3,5-Trimethylbenzene	25.6		65.8	80.2	83	56.2	47	35* [a]	20-140/27
1330-20-7	Xylene (total)	48.9		197	233	93	159	56	38* [a]	28-139/25

CAS No.	Surrogate Recoveries	MS	MSD	JB30109-9	Limits
1868-53-7	Dibromofluoromethane	98%	98%	99%	70-130%
17060-07-0	1,2-Dichloroethane-D4	83%	83%	85%	70-122%
2037-26-5	Toluene-D8	107%	110%	107%	81-127%
460-00-4	4-Bromofluorobenzene	104%	102%	105%	66-132%

(a) Outside control limits due to matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB30082-2MS	A192474.D	1	03/11/13	OTR	n/a	n/a	VA7248
JB30082-2MSD	A192475.D	1	03/11/13	OTR	n/a	n/a	VA7248
JB30082-2	A192477.D	1	03/11/13	OTR	n/a	n/a	VA7248

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

JB30425-15

CAS No.	Compound	JB30082-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.6		60.2	61.4	99	60.6	100	1	44-130/21
106-93-4	1,2-Dibromoethane	ND		60.2	50.5	84	46.8	79	8	41-139/21
107-06-2	1,2-Dichloroethane	ND		60.2	57.1	95	55.1	93	4	43-139/19
100-41-4	Ethylbenzene	1.0	J	60.2	61.5	100	60.7	101	1	29-137/25
98-82-8	Isopropylbenzene	0.27	J	60.2	63.2	105	60.4	102	5	27-138/26
1634-04-4	Methyl Tert Butyl Ether	ND		60.2	57.4	95	54.3	92	6	51-128/20
108-88-3	Toluene	ND		60.2	61.7	102	61.5	104	0	40-135/22
95-63-6	1,2,4-Trimethylbenzene	ND		60.2	57.7	96	53.9	91	7	17-142/28
108-67-8	1,3,5-Trimethylbenzene	ND		60.2	60.0	100	55.5	94	8	20-140/27
1330-20-7	Xylene (total)	3.8		181	184	100	181	100	2	28-139/25

CAS No.	Surrogate Recoveries	MS	MSD	JB30082-2	Limits
1868-53-7	Dibromofluoromethane	105%	102%	104%	70-130%
17060-07-0	1,2-Dichloroethane-D4	88%	83%	90%	70-122%
2037-26-5	Toluene-D8	108%	109%	108%	81-127%
460-00-4	4-Bromofluorobenzene	101%	99%	110%	66-132%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB30425-7MS	C180087.D	1	03/15/13	TYG	n/a	n/a	VC6455
JB30425-7MSD	C180088.D	1	03/15/13	TYG	n/a	n/a	VC6455
JB30425-7 [a]	C180072.D	1	03/14/13	TYG	n/a	n/a	VC6455

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

JB30425-7

CAS No.	Compound	JB30425-7 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		5310	5710	107	5670	107	1	44-130/21
106-93-4	1,2-Dibromoethane	ND		5310	4620	87	4460	84	4	41-139/21
107-06-2	1,2-Dichloroethane	ND		5310	4960	93	4810	91	3	43-139/19
100-41-4	Ethylbenzene	ND		5310	5990	113	5990	113	0	29-137/25
98-82-8	Isopropylbenzene	ND		5310	6680	126	6710	126	0	27-138/26
1634-04-4	Methyl Tert Butyl Ether	ND		5310	4940	93	4650	88	6	51-128/20
108-88-3	Toluene	ND		5310	5730	108	5750	108	0	40-135/22
95-63-6	1,2,4-Trimethylbenzene	ND		5310	6610	124	6620	125	0	17-142/28
108-67-8	1,3,5-Trimethylbenzene	ND		5310	6350	120	6410	121	1	20-140/27
1330-20-7	Xylene (total)	ND		15900	19500	122	19500	122	0	28-139/25

CAS No.	Surrogate Recoveries	MS	MSD	JB30425-7	Limits
1868-53-7	Dibromofluoromethane	82%	81%	87%	70-130%
17060-07-0	1,2-Dichloroethane-D4	72%	70%	87%	70-122%
2037-26-5	Toluene-D8	94%	95%	96%	81-127%
460-00-4	4-Bromofluorobenzene	95%	95%	96%	66-132%

(a) Dilution required due to matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB31160-55MS	D206544.D	1	03/15/13	ET	n/a	n/a	VD8426
JB31160-55MSD	D206545.D	1	03/15/13	ET	n/a	n/a	VD8426
JB31160-55	D206533.D	1	03/15/13	ET	n/a	n/a	VD8426
JB31160-55	D206540.D	1	03/15/13	ET	n/a	n/a	VD8426

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

JB30425-13

CAS No.	Compound	JB31160-55 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	699 [a]		2760	3240	92	3150	89	3	44-130/21
106-93-4	1,2-Dibromoethane	ND [a]		2760	2760	100	2730	99	1	41-139/21
107-06-2	1,2-Dichloroethane	ND [a]		2760	2980	108	2980	108	0	43-139/19
100-41-4	Ethylbenzene	659 [a]		2760	3300	96	3150	90	5	29-137/25
98-82-8	Isopropylbenzene	ND [a]		2760	2740	99	2650	96	3	27-138/26
1634-04-4	Methyl Tert Butyl Ether	ND [a]		2760	2700	98	2670	97	1	51-128/20
108-88-3	Toluene	26400 [a]		2760	26100	-11* [b]	22400	-145* [b]	15	40-135/22
95-63-6	1,2,4-Trimethylbenzene	ND [a]		2760	2570	93	2500	91	3	17-142/28
108-67-8	1,3,5-Trimethylbenzene	ND [a]		2760	2660	96	2560	93	4	20-140/27
1330-20-7	Xylene (total)	1070 [a]		8280	9000	96	8760	93	3	28-139/25

CAS No.	Surrogate Recoveries	MS	MSD	JB31160-55	JB31160-55	Limits
1868-53-7	Dibromofluoromethane	92%	93%	92%	91%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	98%	102%	99%	70-122%
2037-26-5	Toluene-D8	102%	102%	102%	101%	81-127%
460-00-4	4-Bromofluorobenzene	91%	90%	91%	92%	66-132%

(a) Result is from Run #2.
(b) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB31197-8DUP	X133979.D	1	03/18/13	MS	n/a	n/a	VX5805
JB31197-8	X133977.D	1	03/18/13	MS	n/a	n/a	VX5805

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

JB30425-9

CAS No.	Compound	JB31197-8 ug/kg	Q	DUP ug/kg	Q	RPD	Limits
71-43-2	Benzene	1.3		0.31	J	123* [a]	15
106-93-4	1,2-Dibromoethane	ND		ND		nc	10
107-06-2	1,2-Dichloroethane	ND		ND		nc	10
100-41-4	Ethylbenzene	ND		ND		nc	29
98-82-8	Isopropylbenzene	ND		0.35	J	200* [a]	23
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	23
108-88-3	Toluene	ND		ND		nc	21
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	10
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	12
1330-20-7	Xylene (total)	ND		ND		nc	26

CAS No.	Surrogate Recoveries	DUP	JB31197-8	Limits
1868-53-7	Dibromofluoromethane	102%	105%	70-130%
17060-07-0	1,2-Dichloroethane-D4	92%	95%	70-122%
2037-26-5	Toluene-D8	109%	109%	81-127%
460-00-4	4-Bromofluorobenzene	106%	104%	66-132%

(a) High RPD due to low concentration of hit

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VA7222-BFB
Lab File ID: A191856.D
Instrument ID: GCMSA
Injection Date: 02/20/13
Injection Time: 12:14

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.95 - 40.0% of mass 95	9740	17.5		Pass
75	30.0 - 60.0% of mass 95	24837	44.5		Pass
95	Base peak, 100% relative abundance	55805	100.0		Pass
96	5.0 - 9.0% of mass 95	3797	6.80		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	51915	93.0		Pass
175	5.0 - 9.0% of mass 174	4176	7.48	(8.04) [a]	Pass
176	95.0 - 101.0% of mass 174	50803	91.0	(97.9) [a]	Pass
177	5.0 - 9.0% of mass 176	3296	5.91	(6.49) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA7222-IC7222	A191857.D	02/20/13	12:54	00:40	Initial cal 0.5
VA7222-IC7222	A191858.D	02/20/13	13:21	01:07	Initial cal 1
VA7222-IC7222	A191859.D	02/20/13	13:53	01:39	Initial cal 2
VA7222-IC7222	A191860.D	02/20/13	14:25	02:11	Initial cal 5
VA7222-IC7222	A191861.D	02/20/13	14:55	02:41	Initial cal 10
VA7222-IC7222	A191862.D	02/20/13	15:24	03:10	Initial cal 20
VA7222-ICC7222	A191863.D	02/20/13	16:09	03:55	Initial cal 50
VA7222-IC7222	A191864.D	02/20/13	16:38	04:24	Initial cal 100
VA7222-IC7222	A191865.D	02/20/13	17:08	04:54	Initial cal 200
VA7222-ICV7222	A191868.D	02/20/13	18:45	06:31	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VA7246-BFB
Lab File ID: A192395.D
Instrument ID: GCMSA
Injection Date: 03/08/13
Injection Time: 11:35

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.95 - 40.0% of mass 95	7470	17.7		Pass
75	30.0 - 60.0% of mass 95	18896	44.7		Pass
95	Base peak, 100% relative abundance	42283	100.0		Pass
96	5.0 - 9.0% of mass 95	2977	7.04		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	41515	98.2		Pass
175	5.0 - 9.0% of mass 174	3451	8.16	(8.31) [a]	Pass
176	95.0 - 101.0% of mass 174	40864	96.6	(98.4) [a]	Pass
177	5.0 - 9.0% of mass 176	2724	6.44	(6.67) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA7246-CC7222	A192397.D	03/08/13	13:54	02:19	Continuing cal 20
VA7246-MB	A192398.D	03/08/13	14:22	02:47	Method Blank
VA7246-BS	A192399.D	03/08/13	14:56	03:21	Blank Spike
JB30109-9MS	A192400.D	03/08/13	15:33	03:58	Matrix Spike
JB30109-9MSD	A192401.D	03/08/13	16:03	04:28	Matrix Spike Duplicate
JB30109-9	A192403.D	03/08/13	17:16	05:41	(used for QC only; not part of job JB30425)
ZZZZZZ	A192404.D	03/08/13	17:46	06:11	(unrelated sample)
JB30425-1	A192405.D	03/08/13	18:15	06:40	S-367_0-2'
JB30425-3	A192406.D	03/08/13	18:45	07:10	AOI5_BH-13-37-2.5-3_030513
JB30425-4	A192407.D	03/08/13	19:14	07:39	AOI4_S-366_0-1_30513
JB30425-5	A192408.D	03/08/13	19:59	08:24	AOI4_S-366_4.5-5.5_30513
JB30425-6	A192409.D	03/08/13	20:28	08:53	AOI4_S-368_0-1_30513
JB30425-8	A192410.D	03/08/13	20:58	09:23	BH-13-43-1.5-2_030513
JB30425-10	A192411.D	03/08/13	21:27	09:52	AOI5_BH-13-38_1.5-2_030513
JB30425-11	A192412.D	03/08/13	21:57	10:22	AOI5_BH-13-38_3.5-4_030513
JB30425-12	A192413.D	03/08/13	22:26	10:51	AOI5_BH-13-39_1.5-2_030513
JB30425-14	A192414.D	03/08/13	23:11	11:36	AOI5_BH-13-39_2.5-3_030513

Instrument Performance Check (BFB)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VA7248-BFB
Lab File ID: A192469.D
Instrument ID: GCMSA
Injection Date: 03/11/13
Injection Time: 08:43

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.95 - 40.0% of mass 95	8782	18.8		Pass
75	30.0 - 60.0% of mass 95	22136	47.4		Pass
95	Base peak, 100% relative abundance	46701	100.0		Pass
96	5.0 - 9.0% of mass 95	2937	6.29		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	45203	96.8		Pass
175	5.0 - 9.0% of mass 174	3659	7.83	(8.09) [a]	Pass
176	95.0 - 101.0% of mass 174	44021	94.3	(97.4) [a]	Pass
177	5.0 - 9.0% of mass 176	3012	6.45	(6.84) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA7248-CC7222	A192471.D	03/11/13	10:11	01:28	Continuing cal 20
VA7248-MB	A192472.D	03/11/13	10:56	02:13	Method Blank
VA7248-BS	A192473.D	03/11/13	11:34	02:51	Blank Spike
JB30082-2MS	A192474.D	03/11/13	12:02	03:19	Matrix Spike
JB30082-2MSD	A192475.D	03/11/13	12:43	04:00	Matrix Spike Duplicate
JB30082-2	A192477.D	03/11/13	13:42	04:59	(used for QC only; not part of job JB30425)
ZZZZZZ	A192478.D	03/11/13	14:11	05:28	(unrelated sample)
ZZZZZZ	A192479.D	03/11/13	14:40	05:57	(unrelated sample)
JB30425-15	A192480.D	03/11/13	15:10	06:27	AOI5_BH-13-37_1.5-2_030513
JB30425-1	A192481.D	03/11/13	15:39	06:56	S-367_0-2'
ZZZZZZ	A192482.D	03/11/13	16:23	07:40	(unrelated sample)
ZZZZZZ	A192483.D	03/11/13	16:55	08:12	(unrelated sample)
ZZZZZZ	A192484.D	03/11/13	17:24	08:41	(unrelated sample)
ZZZZZZ	A192485.D	03/11/13	17:54	09:11	(unrelated sample)
ZZZZZZ	A192486.D	03/11/13	18:29	09:46	(unrelated sample)
ZZZZZZ	A192487.D	03/11/13	18:50	10:07	(unrelated sample)
ZZZZZZ	A192488.D	03/11/13	19:34	10:51	(unrelated sample)
ZZZZZZ	A192489.D	03/11/13	20:04	11:21	(unrelated sample)
ZZZZZZ	A192490.D	03/11/13	20:34	11:51	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VC6448-BFB
Lab File ID: C179991.D
Instrument ID: GCMSC
Injection Date: 03/12/13
Injection Time: 12:07

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12163	16.6		Pass
75	30.0 - 60.0% of mass 95	33312	45.5		Pass
95	Base peak, 100% relative abundance	73157	100.0		Pass
96	5.0 - 9.0% of mass 95	4684	6.40		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	59685	81.6		Pass
175	5.0 - 9.0% of mass 174	4545	6.21	(7.61) [a]	Pass
176	95.0 - 101.0% of mass 174	58018	79.3	(97.2) [a]	Pass
177	5.0 - 9.0% of mass 176	3847	5.26	(6.63) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VC6448-IC6448	C179993.D	03/12/13	13:14	01:07	Initial cal 1
VC6448-IC6448	C179994.D	03/12/13	13:41	01:34	Initial cal 2
VC6448-IC6448	C179995.D	03/12/13	14:08	02:01	Initial cal 5
VC6448-IC6448	C179996.D	03/12/13	14:34	02:27	Initial cal 10
VC6448-IC6448	C179997.D	03/12/13	15:01	02:54	Initial cal 20
VC6448-ICC6448	C179998.D	03/12/13	15:28	03:21	Initial cal 50
VC6448-IC6448	C179999.D	03/12/13	15:55	03:48	Initial cal 100
VC6448-IC6448	C180000.D	03/12/13	16:21	04:14	Initial cal 200
VC6448-IC6448	C180002A.D	03/12/13	17:42	05:35	Initial cal 0.5

Instrument Performance Check (BFB)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VC6455-BFB
Lab File ID: C180056.D
Instrument ID: GCMSC
Injection Date: 03/14/13
Injection Time: 11:55

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12224	18.2		Pass
75	30.0 - 60.0% of mass 95	31973	47.7		Pass
95	Base peak, 100% relative abundance	67037	100.0		Pass
96	5.0 - 9.0% of mass 95	4507	6.72		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	48456	72.3		Pass
175	5.0 - 9.0% of mass 174	3639	5.43	(7.51) [a]	Pass
176	95.0 - 101.0% of mass 174	46965	70.1	(96.9) [a]	Pass
177	5.0 - 9.0% of mass 176	3133	4.67	(6.67) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VC6455-CC6448	C180057.D	03/14/13	12:27	00:32	Continuing cal 20
VC6455-MB	C180059.D	03/14/13	13:29	01:34	Method Blank
VC6455-BS	C180060.D	03/14/13	14:16	02:21	Blank Spike
ZZZZZZ	C180061.D	03/14/13	14:47	02:52	(unrelated sample)
ZZZZZZ	C180062.D	03/14/13	15:14	03:19	(unrelated sample)
ZZZZZZ	C180063.D	03/14/13	15:41	03:46	(unrelated sample)
ZZZZZZ	C180064.D	03/14/13	16:07	04:12	(unrelated sample)
ZZZZZZ	C180065.D	03/14/13	16:34	04:39	(unrelated sample)
ZZZZZZ	C180066.D	03/14/13	17:01	05:06	(unrelated sample)
ZZZZZZ	C180071.D	03/14/13	19:14	07:19	(unrelated sample)
JB30425-7	C180072.D	03/14/13	19:41	07:46	AOI4_S-368_6-7_30513
ZZZZZZ	C180074.D	03/14/13	20:34	08:39	(unrelated sample)
ZZZZZZ	C180075.D	03/14/13	21:01	09:06	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VC6455-BFB
Lab File ID: C180082.D
Instrument ID: GCMSC
Injection Date: 03/15/13
Injection Time: 13:08

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	10830	17.4		Pass
75	30.0 - 60.0% of mass 95	28762	46.1		Pass
95	Base peak, 100% relative abundance	62413	100.0		Pass
96	5.0 - 9.0% of mass 95	4026	6.45		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	47330	75.8		Pass
175	5.0 - 9.0% of mass 174	3562	5.71	(7.53) [a]	Pass
176	95.0 - 101.0% of mass 174	45946	73.6	(97.1) [a]	Pass
177	5.0 - 9.0% of mass 176	3002	4.81	(6.53) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VC6455-CC6448	C180083.D	03/15/13	13:35	00:27	Continuing cal 20
VC6455-MB2	C180085.D	03/15/13	16:55	03:47	Method Blank
VC6455-BS2	C180086.D	03/15/13	17:22	04:14	Blank Spike
JB30425-7MS	C180087.D	03/15/13	17:55	04:47	Matrix Spike
JB30425-7MSD	C180088.D	03/15/13	18:22	05:14	Matrix Spike Duplicate

Instrument Performance Check (BFB)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VD8379-BFB
Lab File ID: D205384.D
Instrument ID: GCMSD
Injection Date: 02/11/13
Injection Time: 20:00

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	13978	18.7		Pass
75	30.0 - 60.0% of mass 95	35656	47.6		Pass
95	Base peak, 100% relative abundance	74890	100.0		Pass
96	5.0 - 9.0% of mass 95	4864	6.49		Pass
173	Less than 2.0% of mass 174	353	0.47	(0.55) [a]	Pass
174	50.0 - 120.0% of mass 95	64189	85.7		Pass
175	5.0 - 9.0% of mass 174	4784	6.39	(7.45) [a]	Pass
176	95.0 - 101.0% of mass 174	62130	83.0	(96.8) [a]	Pass
177	5.0 - 9.0% of mass 176	4120	5.50	(6.63) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VD8379-IC8379	D205385.D	02/11/13	20:29	00:29	Initial cal 0.5
VD8379-IC8379	D205386.D	02/11/13	20:58	00:58	Initial cal 1
VD8379-IC8379	D205387.D	02/11/13	21:28	01:28	Initial cal 2
VD8379-IC8379	D205388.D	02/11/13	21:57	01:57	Initial cal 5
VD8379-IC8379	D205389.D	02/11/13	22:27	02:27	Initial cal 10
VD8379-IC8379	D205390.D	02/11/13	22:56	02:56	Initial cal 20
VD8379-ICC8379	D205391.D	02/11/13	23:26	03:26	Initial cal 50
VD8379-IC8379	D205392.D	02/11/13	23:55	03:55	Initial cal 100
VD8379-IC8379	D205393.D	02/12/13	00:25	04:25	Initial cal 200

Instrument Performance Check (BFB)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VD8426-BFB
Lab File ID: D206528.D
Instrument ID: GCMSD
Injection Date: 03/15/13
Injection Time: 09:27

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	16266	22.6		Pass
75	30.0 - 60.0% of mass 95	38570	53.6		Pass
95	Base peak, 100% relative abundance	71938	100.0		Pass
96	5.0 - 9.0% of mass 95	5033	7.00		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	64842	90.1		Pass
175	5.0 - 9.0% of mass 174	4820	6.70	(7.43) [a]	Pass
176	95.0 - 101.0% of mass 174	63554	88.3	(98.0) [a]	Pass
177	5.0 - 9.0% of mass 176	4081	5.67	(6.42) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VD8426-CC8379	D206529.D	03/15/13	10:01	00:34	Continuing cal 20
VD8426-MB	D206531.D	03/15/13	11:19	01:52	Method Blank
VD8426-BS	D206532.D	03/15/13	11:54	02:27	Blank Spike
JB31160-55	D206533.D	03/15/13	12:34	03:07	(used for QC only; not part of job JB30425)
ZZZZZZ	D206534.D	03/15/13	13:04	03:37	(unrelated sample)
ZZZZZZ	D206535.D	03/15/13	13:33	04:06	(unrelated sample)
ZZZZZZ	D206536.D	03/15/13	14:03	04:36	(unrelated sample)
ZZZZZZ	D206537.D	03/15/13	14:32	05:05	(unrelated sample)
ZZZZZZ	D206538.D	03/15/13	15:05	05:38	(unrelated sample)
ZZZZZZ	D206539.D	03/15/13	15:34	06:07	(unrelated sample)
JB31160-55	D206540.D	03/15/13	16:22	06:55	(used for QC only; not part of job JB30425)
ZZZZZZ	D206541.D	03/15/13	16:51	07:24	(unrelated sample)
JB30425-13	D206543.D	03/15/13	17:50	08:23	AOI5_BH-13-39_2-2.5_030513
JB31160-55MS	D206544.D	03/15/13	18:20	08:53	Matrix Spike
JB31160-55MSD	D206545.D	03/15/13	18:49	09:22	Matrix Spike Duplicate
ZZZZZZ	D206547.D	03/15/13	19:48	10:21	(unrelated sample)
ZZZZZZ	D206548.D	03/15/13	20:17	10:50	(unrelated sample)
ZZZZZZ	D206549.D	03/15/13	20:46	11:19	(unrelated sample)
ZZZZZZ	D206550.D	03/15/13	21:15	11:48	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VX5795-BFB
Lab File ID: X133695.D
Instrument ID: GCMSX
Injection Date: 03/06/13
Injection Time: 16:43

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	5702	16.6		Pass
75	30.0 - 60.0% of mass 95	15939	46.3		Pass
95	Base peak, 100% relative abundance	34411	100.0		Pass
96	5.0 - 9.0% of mass 95	2154	6.26		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	33373	97.0		Pass
175	5.0 - 9.0% of mass 174	2769	8.05	(8.30) [a]	Pass
176	95.0 - 101.0% of mass 174	32680	95.0	(97.9) [a]	Pass
177	5.0 - 9.0% of mass 176	2168	6.30	(6.63) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VX5795-IC5795	X133696.D	03/06/13	17:21	00:38	Initial cal 0.5
VX5795-IC5795	X133697.D	03/06/13	17:50	01:07	Initial cal 1
VX5795-IC5795	X133698.D	03/06/13	18:20	01:37	Initial cal 2
VX5795-IC5795	X133699.D	03/06/13	18:49	02:06	Initial cal 5
VX5795-IC5795	X133700.D	03/06/13	19:19	02:36	Initial cal 10
VX5795-IC5795	X133701.D	03/06/13	19:49	03:06	Initial cal 20
VX5795-ICC5795	X133702.D	03/06/13	20:18	03:35	Initial cal 50
VX5795-IC5795	X133703.D	03/06/13	20:48	04:05	Initial cal 100
VX5795-IC5795	X133704.D	03/06/13	21:17	04:34	Initial cal 200

Instrument Performance Check (BFB)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VX5805-BFB
Lab File ID: X133972.D
Instrument ID: GCMSX
Injection Date: 03/18/13
Injection Time: 08:22

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	8751	16.5		Pass
75	30.0 - 60.0% of mass 95	25840	48.8		Pass
95	Base peak, 100% relative abundance	52984	100.0		Pass
96	5.0 - 9.0% of mass 95	3531	6.66		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	51304	96.8		Pass
175	5.0 - 9.0% of mass 174	4403	8.31	(8.58) [a]	Pass
176	95.0 - 101.0% of mass 174	50728	95.7	(98.9) [a]	Pass
177	5.0 - 9.0% of mass 176	3276	6.18	(6.46) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VX5805-CC5795	X133973.D	03/18/13	09:03	00:41	Continuing cal 20
VX5805-MB	X133974.D	03/18/13	09:45	01:23	Method Blank
VX5805-BS	X133975.D	03/18/13	10:17	01:55	Blank Spike
JB31197-8	X133977.D	03/18/13	11:23	03:01	(used for QC only; not part of job JB30425)
JB31197-9	X133978.D	03/18/13	11:52	03:30	(used for QC only; not part of job JB30425)
JB31197-8DUP	X133979.D	03/18/13	12:21	03:59	Duplicate
JB30425-9	X133980.D	03/18/13	12:51	04:29	BH-13-43-2-2.5_030513
JB31197-9MS	X133981.D	03/18/13	13:20	04:58	Matrix Spike
ZZZZZZ	X133983.D	03/18/13	14:19	05:57	(unrelated sample)
ZZZZZZ	X133984.D	03/18/13	14:48	06:26	(unrelated sample)
ZZZZZZ	X133985.D	03/18/13	15:17	06:55	(unrelated sample)
ZZZZZZ	X133986.D	03/18/13	15:46	07:24	(unrelated sample)
ZZZZZZ	X133987.D	03/18/13	16:16	07:54	(unrelated sample)
ZZZZZZ	X133988.D	03/18/13	16:45	08:23	(unrelated sample)
ZZZZZZ	X133989.D	03/18/13	17:14	08:52	(unrelated sample)
ZZZZZZ	X133990.D	03/18/13	17:44	09:22	(unrelated sample)
ZZZZZZ	X133991.D	03/18/13	18:13	09:51	(unrelated sample)
ZZZZZZ	X133992.D	03/18/13	18:43	10:21	(unrelated sample)
ZZZZZZ	X133993.D	03/18/13	19:12	10:50	(unrelated sample)
ZZZZZZ	X133994.D	03/18/13	19:42	11:20	(unrelated sample)
ZZZZZZ	X133995.D	03/18/13	20:12	11:50	(unrelated sample)

Volatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	VA7246-CC7222	**Injection Date:**	03/08/13
Lab File ID:	A192397.D	**Injection Time:**	13:54
Instrument ID:	GCMSA	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	80935	7.00	214463	9.34	289359	10.29	274489	13.73	162210	16.37
Upper Limit [a]	161870	7.50	428926	9.84	578718	10.79	548978	14.23	324420	16.87
Lower Limit [b]	40468	6.50	107232	8.84	144680	9.79	137245	13.23	81105	15.87

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VA7246-MB	82451	7.00	192336	9.34	261962	10.29	250093	13.74	128472	16.37
VA7246-BS	73513	7.00	202280	9.34	277655	10.29	260593	13.73	156493	16.36
JB30109-9MS	56493	7.00	207104	9.34	279681	10.29	254564	13.73	142386	16.36
JB30109-9MSD	60686	7.00	213539	9.34	291481	10.29	276785	13.73	157203	16.36
JB30109-9	80952	7.00	222302	9.33	303796	10.29	289708	13.73	157642	16.36
ZZZZZZ	72573	7.00	207274	9.34	292090	10.29	278855	13.73	146778	16.36
JB30425-1	71311	7.01	203858	9.34	287630	10.28	249083	13.73	102863	16.37
JB30425-3	81404	7.00	225253	9.34	304799	10.29	282058	13.73	152383	16.37
JB30425-4	79858	7.01	223663	9.34	307390	10.29	295419	13.73	156259	16.36
JB30425-5	84365	7.01	220681	9.34	299192	10.29	276403	13.72	155309	16.36
JB30425-6	76771	7.00	216157	9.33	300389	10.28	280345	13.72	150966	16.36
JB30425-8	66932	7.00	214303	9.33	296262	10.28	280579	13.73	135596	16.36
JB30425-10	84099	7.00	212977	9.33	292515	10.28	265839	13.72	140072	16.36
JB30425-11	78435	7.00	207060	9.33	280577	10.28	260382	13.72	135418	16.36
JB30425-12	77697	7.01	208136	9.33	287068	10.28	272314	13.72	135705	16.36
JB30425-14	73200	7.01	207413	9.33	284836	10.29	268672	13.73	140142	16.36

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	VA7248-CC7222	**Injection Date:**	03/11/13
Lab File ID:	A192471.D	**Injection Time:**	10:11
Instrument ID:	GCMSA	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	66341	6.99	186457	9.32	257679	10.28	240049	13.72	143701	16.35
Upper Limit [a]	132682	7.49	372914	9.82	515358	10.78	480098	14.22	287402	16.85
Lower Limit [b]	33171	6.49	93229	8.82	128840	9.78	120025	13.22	71851	15.85

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VA7248-MB	71630	7.00	157288	9.33	219705	10.28	210444	13.72	105849	16.36
VA7248-BS	71632	7.00	190093	9.33	259812	10.28	247340	13.72	149397	16.36
JB30082-2MS	51206	7.00	185145	9.33	274638	10.28	251922	13.72	145728	16.36
JB30082-2MSD	48431	7.00	190663	9.33	274115	10.28	257104	13.72	148912	16.36
JB30082-2	71914	7.00	199140	9.33	282559	10.28	270748	13.72	141501	16.36
ZZZZZZ	74690	7.00	203848	9.33	289297	10.29	283501	13.73	146508	16.36
ZZZZZZ	83208	7.00	188447	9.33	263786	10.29	259368	13.73	137680	16.36
JB30425-15	76665	6.99	179696	9.34	248820	10.28	245290	13.73	129727	16.37
JB30425-1 [c]	61570	7.01	180056	9.33	260085	10.28	237920	13.73	101712	16.36
ZZZZZZ	72076	7.00	211810	9.34	289035	10.29	268716	13.73	145745	16.36
ZZZZZZ	77188	7.00	212340	9.34	288565	10.29	269897	13.73	145425	16.37
ZZZZZZ	76887	7.00	207519	9.33	283081	10.29	267047	13.73	139379	16.37
ZZZZZZ	73962	7.00	205432	9.34	282112	10.29	278017	13.73	142466	16.36
ZZZZZZ	71555	7.01	189969	9.34	264856	10.29	248536	13.73	131195	16.36
ZZZZZZ	65236	7.00	198256	9.34	273118	10.29	262698	13.73	134153	16.36
ZZZZZZ	70332	7.01	200578	9.34	275618	10.29	264419	13.73	136463	16.36
ZZZZZZ	66645	7.01	184070	9.33	255815	10.29	244040	13.73	124669	16.36
ZZZZZZ	68323	7.00	182838	9.34	253651	10.29	243090	13.73	124615	16.37

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Confirmation run for surrogate recoveries.

Volatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	VC6455-CC6448	**Injection Date:**	03/14/13
Lab File ID:	C180057.D	**Injection Time:**	12:27
Instrument ID:	GCMSC	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	43047	5.48	163699	8.07	237632	9.06	179882	12.14	86494	14.16
Upper Limit [a]	86094	5.98	327398	8.57	475264	9.56	359764	12.64	172988	14.66
Lower Limit [b]	21524	4.98	81850	7.57	118816	8.56	89941	11.64	43247	13.66

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VC6455-MB	33930	5.48	160873	8.07	232362	9.06	171616	12.14	80333	14.16
VC6455-BS	41444	5.49	167163	8.07	241603	9.06	181000	12.13	86449	14.16
ZZZZZZ	32568	5.48	159577	8.07	230756	9.06	172648	12.13	82480	14.16
ZZZZZZ	32748	5.50	160531	8.07	230974	9.06	170974	12.14	79328	14.15
ZZZZZZ	35757	5.51	158663	8.07	228941	9.06	170404	12.13	79537	14.16
ZZZZZZ	35094	5.48	132519	8.07	193767	9.06	145036	12.13	69899	14.16
ZZZZZZ	33301	5.49	139328	8.07	203029	9.06	152363	12.14	73086	14.16
ZZZZZZ	34888	5.51	159121	8.07	227796	9.06	168028	12.14	78401	14.16
ZZZZZZ	34559	5.50	162196	8.07	233511	9.06	172347	12.13	80080	14.16
JB30425-7 [c]	32935	5.51	167231	8.07	239254	9.06	175423	12.13	82868	14.16
ZZZZZZ	34603	5.50	161235	8.07	233294	9.06	170715	12.14	81571	14.16
ZZZZZZ	39179	5.51	155212	8.07	225236	9.06	168242	12.14	81016	14.16

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Dilution required due to matrix interference.

Volatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	VC6455-CC6448	**Injection Date:**	03/15/13
Lab File ID:	C180083.D	**Injection Time:**	13:35
Instrument ID:	GCMSC	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	34982	5.48	164083	8.07	237688	9.06	177595	12.14	85235	14.15
Upper Limit [a]	69964	5.98	328166	8.57	475376	9.56	355190	12.64	170470	14.65
Lower Limit [b]	17491	4.98	82042	7.57	118844	8.56	88798	11.64	42618	13.65

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VC6455-MB2	40767	5.50	152865	8.06	220365	9.05	165422	12.13	76449	14.15
VC6455-BS2	32524	5.47	164695	8.07	236629	9.06	173469	12.13	80953	14.15
JB30425-7MS	25867	5.49	166448	8.07	232863	9.06	165468	12.14	75865	14.16
JB30425-7MSD	23512	5.50	170712	8.07	236379	9.06	167564	12.13	76629	14.16

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	VD8426-CC8379	**Injection Date:**	03/15/13
Lab File ID:	D206529.D	**Injection Time:**	10:01
Instrument ID:	GCMSD	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	123351	8.02	196809	10.25	286738	11.16	271903	14.50	164141	17.09
Upper Limit [a]	246702	8.52	393618	10.75	573476	11.66	543806	15.00	328282	17.59
Lower Limit [b]	61676	7.52	98405	9.75	143369	10.66	135952	14.00	82071	16.59

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VD8426-MB	123146	8.02	199159	10.24	291936	11.16	277873	14.51	160526	17.09
VD8426-BS	123775	8.01	191307	10.25	279207	11.16	257732	14.50	161947	17.09
JB31160-55	120733	8.02	194628	10.25	283451	11.16	269624	14.50	160289	17.09
ZZZZZZ	118735	8.03	201094	10.25	293557	11.17	285818	14.50	163840	17.09
ZZZZZZ	117979	8.02	193915	10.25	286320	11.16	270207	14.50	167525	17.09
ZZZZZZ	116770	8.02	194537	10.25	287091	11.16	283607	14.51	183885	17.09
ZZZZZZ	122496	8.03	202265	10.25	293973	11.16	293465	14.50	192970	17.09
ZZZZZZ	132453	8.04	208709	10.25	303054	11.16	293312	14.50	185309	17.09
ZZZZZZ	129067	8.02	214071	10.25	312786	11.17	305979	14.50	186008	17.09
JB31160-55	124971	8.01	207034	10.24	300657	11.16	281051	14.51	165977	17.09
ZZZZZZ	117133	8.03	203586	10.25	298047	11.16	282164	14.50	169410	17.09
JB30425-13 [c]	127810	8.03	203220	10.25	296627	11.16	285517	14.50	175560	17.09
JB31160-55MS	127879	8.02	206541	10.25	304836	11.16	287531	14.50	176913	17.09
JB31160-55MSD	132283	8.02	205728	10.25	295951	11.16	283127	14.50	176104	17.09
ZZZZZZ	119932	8.02	209340	10.25	302592	11.16	296511	14.51	174026	17.09
ZZZZZZ	117302	8.01	203363	10.25	298797	11.16	295473	14.51	186755	17.09
ZZZZZZ	123881	8.02	201629	10.25	294374	11.16	300185	14.51	189630	17.09
ZZZZZZ	126063	8.02	207521	10.25	299364	11.16	287252	14.50	184340	17.09

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Dilution required due to matrix interference.

Volatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	VX5805-CC5795	**Injection Date:**	03/18/13
Lab File ID:	X133973.D	**Injection Time:**	09:03
Instrument ID:	GCMSX	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	76758	7.03	155849	9.70	223228	10.86	217304	15.10	131834	17.94
Upper Limit [a]	153516	7.53	311698	10.20	446456	11.36	434608	15.60	263668	18.44
Lower Limit [b]	38379	6.53	77925	9.20	111614	10.36	108652	14.60	65917	17.44

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VX5805-MB	42717	7.03	160274	9.70	226824	10.86	206230	15.10	113686	17.94
VX5805-BS	66186	7.03	159285	9.70	223211	10.86	220998	15.10	134270	17.94
JB31197-8	53521	7.03	164303	9.71	228132	10.86	216546	15.10	119739	17.94
JB31197-9	61137	7.03	162976	9.71	228263	10.87	216147	15.11	122116	17.94
JB31197-8DUP	39827	7.03	161946	9.71	224417	10.86	212260	15.11	114492	17.94
JB30425-9	53757	7.03	155486	9.71	218169	10.87	205750	15.11	105090	17.94
JB31197-9MS	50189	7.03	183748	9.71	256010	10.87	249526	15.11	145633	17.94
ZZZZZZ	59109	7.04	182429	9.71	251388	10.87	242340	15.11	127639	17.95
ZZZZZZ	63925	7.04	182652	9.71	256398	10.87	242266	15.11	131885	17.95
ZZZZZZ	58374	7.04	180861	9.72	250626	10.87	243535	15.11	133375	17.95
ZZZZZZ	60167	7.04	167541	9.72	233032	10.87	227296	15.11	123279	17.95
ZZZZZZ	53165	7.04	167142	9.72	233710	10.87	221798	15.11	123925	17.95
ZZZZZZ	61663	7.04	181063	9.72	253254	10.87	243323	15.11	133520	17.95
ZZZZZZ	61792	7.04	181223	9.72	252107	10.87	237040	15.11	129898	17.95
ZZZZZZ	59485	7.03	172091	9.72	238667	10.88	227499	15.11	122879	17.95
ZZZZZZ	65328	7.04	171916	9.72	240588	10.88	230538	15.12	126856	17.95
ZZZZZZ	64300	7.04	167212	9.72	231826	10.88	223086	15.12	122389	17.95
ZZZZZZ	53043	7.04	160661	9.72	223471	10.88	211079	15.12	115968	17.95
ZZZZZZ	55726	7.05	158168	9.72	219009	10.88	213648	15.12	116257	17.95
ZZZZZZ	55948	7.04	145327	9.72	200780	10.87	185805	15.11	86400	17.95
VX5805-MB2	71635	7.04	161062	9.72	222748	10.88	208560	15.12	113239	17.95
ZZZZZZ	54371	7.04	177027	9.72	242923	10.88	222225	15.12	120563	17.95
ZZZZZZ	62053	7.05	172447	9.73	236666	10.88	230105	15.12	125501	17.95
ZZZZZZ	56961	7.06	173271	9.73	241268	10.88	228324	15.12	126173	17.96
ZZZZZZ	52974	7.05	167322	9.73	230885	10.88	220301	15.12	120219	17.96

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8260B **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JB30425-1	A192481.D	110.0	131.0* [a]	120.0	117.0
JB30425-1	A192405.D	107.0	139.0* [b]	123.0	120.0
JB30425-3	A192406.D	100.0	85.0	106.0	107.0
JB30425-4	A192407.D	98.0	83.0	108.0	108.0
JB30425-5	A192408.D	100.0	89.0	106.0	103.0
JB30425-6	A192409.D	101.0	87.0	106.0	107.0
JB30425-7	C180072.D	87.0	87.0	96.0	96.0
JB30425-8	A192410.D	100.0	86.0	109.0	113.0
JB30425-9	X133980.D	109.0	100.0	108.0	112.0
JB30425-10	A192411.D	102.0	86.0	105.0	107.0
JB30425-11	A192412.D	102.0	87.0	105.0	108.0
JB30425-12	A192413.D	102.0	87.0	110.0	110.0
JB30425-13	D206543.D	90.0	100.0	102.0	91.0
JB30425-14	A192414.D	103.0	86.0	107.0	109.0
JB30425-15	A192480.D	106.0	97.0	109.0	109.0
JB30082-2MS	A192474.D	105.0	88.0	108.0	101.0
JB30082-2MSD	A192475.D	102.0	83.0	109.0	99.0
JB30109-9MS	A192400.D	98.0	83.0	107.0	104.0
JB30109-9MSD	A192401.D	98.0	83.0	110.0	102.0
JB30425-7MS	C180087.D	82.0	72.0	94.0	95.0
JB30425-7MSD	C180088.D	81.0	70.0	95.0	95.0
JB31160-55MS	D206544.D	92.0	99.0	102.0	91.0
JB31160-55MSD	D206545.D	93.0	98.0	102.0	90.0
JB31197-8DUP	X133979.D	102.0	92.0	109.0	106.0
JB31197-9MS	X133981.D	104.0	91.0	108.0	101.0
VA7246-BS	A192399.D	101.0	91.0	107.0	99.0
VA7246-MB	A192398.D	99.0	90.0	105.0	110.0
VA7248-BS	A192473.D	103.0	95.0	108.0	100.0
VA7248-MB	A192472.D	106.0	97.0	107.0	113.0
VC6455-BS	C180060.D	94.0	95.0	95.0	92.0
VC6455-MB	C180059.D	91.0	94.0	94.0	93.0
VD8426-BS	D206532.D	94.0	101.0	100.0	89.0
VD8426-MB	D206531.D	92.0	103.0	103.0	94.0
VX5805-BS	X133975.D	107.0	99.0	110.0	99.0
VX5805-MB	X133974.D	103.0	90.0	105.0	104.0
VC6455-MB2	C180085.D	89.0	94.0	95.0	93.0

Surrogate Compounds **Recovery Limits**

Volatile Surrogate Recovery Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8260B **Matrix:** SO

Samples and QC shown here apply to the above method

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = 1,2-Dichloroethane-D4	70-122%
S3 = Toluene-D8	81-127%
S4 = 4-Bromofluorobenzene	66-132%

(a) Outside control limits due to matrix interference.
(b) Outside control limits due to matrix interference. Confirmed by reanalysis.

Initial Calibration Summary

Job Number: JB30425 **Sample:** VA7222-ICC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A191863.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MSA

```
Method       : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title        : SW 846  8260bB ZB624 60m x 0.25mm x 1.4um
Last Update  : Thu Feb 21 08:12:37 2013
Response via : Initial Calibration

Calibration Files
5   =A191860.D   2   =A191859.D   20  =A191862.D   50  =A191863.D
100 =A191864.D   1   =A191858.D   200 =A191865.D   0.5 =A191857.D
10  =A191861.D       =
```

Compound	5	2	20	50	100	1	200	0.5	10	Avg	%RSD
1) I Tert Butyl Alcohol-d9 ----------ISTD----------											
2) 1,4-dioxane	0.073	0.093	0.091	0.098		0.096		0.085		0.089	10.51
3) ethanol										0.000#	-1.00
4) tertiary butyl alcohol	0.985	0.840	0.988	0.966	1.006	1.013		0.952		0.964	6.09
5) I pentafluorobenzene ----------ISTD----------											
6) chlorotrifluoroethene										0.000#	-1.00
7) chlorodifluoromethane	0.279	0.273	0.277	0.269	0.300	0.262	0.307		0.319	0.286	7.08
8) dichlorodifluoromethane	0.392	0.361	0.396	0.362	0.425	0.388	0.391		0.334	0.381	7.23
9) chloromethane	0.516	0.536	0.483	0.471	0.519	0.594	0.501	0.672	0.431	0.525	13.60
10) vinyl chloride	0.476	0.504	0.470	0.448	0.475	0.594	0.470	0.483	0.419	0.482	9.96
11) bromomethane	0.353	0.386	0.324	0.296	0.303	0.423		0.381	0.285	0.344	14.49
12) chloroethane	0.234	0.244	0.235	0.222	0.237	0.255	0.208		0.203	0.230	7.61
13) vinyl bromide										0.000#	-1.00
14) trichlorofluoromethane	0.484	0.489	0.497	0.469	0.517	0.537	0.495		0.424	0.489	6.84
15) pentane	0.728	0.604	0.628	0.608	0.662	0.886	0.647	0.579	0.658	0.667	13.92
16) ethyl ether	0.201	0.179	0.196	0.188	0.190	0.236	0.200		0.176	0.196	9.53
17) Freon 123a										0.000#	-1.00
18) acrolein	0.061	0.067	0.060	0.059		0.067			0.047	0.060	12.08
19) 1,1-dichloroethene	0.298	0.244	0.319	0.308	0.311	0.278	0.316	0.223	0.328	0.292	12.47
20) acetone	0.098		0.068	0.074	0.082	0.092			0.077	0.082	13.70
21) allyl chloride	0.181		0.213	0.215	0.216	0.218			0.218	0.210	6.81
22) acetonitrile	0.019		0.020	0.024	0.026	0.029			0.020	0.023	17.22

----- Linear regression ----- Coefficient = 0.9977

```
                Response Ratio = -0.03162 + 0.02891 *A

23)  iodomethane
           0.625 0.538 0.682 0.668 0.664 0.571 0.683 0.730 0.676   0.649    9.29
24)  iso-butyl alcohol
           0.012       0.010 0.010 0.012       0.014       0.011   0.011   12.56
25)  carbon disulfide
           1.042 0.947 1.198 1.141 1.145 0.927 1.168 1.119 1.170   1.095    9.11
26)  methylene chloride
           0.407 0.401 0.401 0.392 0.391 0.553 0.394       0.401   0.418   13.20
27)  methyl acetate
           0.226       0.192 0.204 0.225       0.249       0.189   0.214   10.77
28)  methyl tert butyl ether
           1.011 0.796 0.997 0.984 0.987 0.918 1.030 1.137 0.934   0.977    9.44
29)  trans-1,2-dichloroethene
           0.322 0.277 0.361 0.343 0.350 0.300 0.352 0.303 0.348   0.328    8.88
30)  di-isopropyl ether
           1.204 1.158 1.253 1.237 1.291 1.103 1.328 1.200 1.245   1.224    5.54
31)  t-butyl formate
           0.253 0.199 0.253 0.261 0.281       0.298       0.240   0.255   12.39
32)  3,3-dimethyl-1-butanol
           0.034 0.025 0.032 0.035 0.039 0.032 0.044       0.030   0.034   17.00
            ----- Linear regression -----  Coefficient =  0.9949
                Response Ratio = -0.03444 + 0.04394 *A

33)  ethyl tert-butyl ether
           1.110 1.026 1.148 1.138 1.179 1.013 1.232 1.045 1.137   1.114    6.60
34)  2-butanone
                       0.028 0.031 0.034       0.038       0.022   0.031   20.07
            ----- Linear regression -----  Coefficient =  0.9977
                Response Ratio = -0.00374 + 0.03753 *A

35)  1,1-dichloroethane
           0.625 0.533 0.678 0.670 0.660 0.563 0.671 0.585 0.668   0.628    8.68
36)  chloroprene
           0.410 0.403 0.456 0.434 0.470 0.374 0.479       0.459   0.436    8.53
37)  acrylonitrile
           0.107       0.092 0.102 0.107       0.116       0.099   0.104    7.94
38)  vinyl acetate
                       0.038 0.045 0.049       0.053       0.026   0.042   25.07
            ----- Linear regression -----  Coefficient =  0.9992
                Response Ratio = -0.00778 + 0.05460 *A

39)  ethyl acetate
           0.034       0.036 0.039 0.043       0.047       0.031   0.038   16.43
            ----- Linear regression -----  Coefficient =  0.9979
                Response Ratio = -0.00498 + 0.04790 *A

40)  ethyl acrylate
                                                                   0.000#  -1.00
41)  2,2-dichloropropane
           0.428 0.352 0.490 0.475 0.469 0.417 0.474 0.536 0.495   0.460   11.63
42)  cis-1,2-dichloroethene
           0.359 0.325 0.397 0.388 0.394 0.335 0.398 0.408 0.394   0.378    7.99
43)  propionitrile
           0.041       0.036 0.040 0.042       0.046       0.037   0.040    9.28
44)  bromochloromethane
           0.188 0.146 0.194 0.197 0.198 0.163 0.204       0.183   0.184   10.79
45)  tetrahydrofuran
           0.163 0.149 0.121 0.121 0.124       0.126       0.124   0.133   12.44
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** VA7222-ICC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A191863.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
46)  chloroform
           0.579 0.503 0.639 0.627 0.630 0.600 0.637 0.680 0.636   0.615    8.15
47)  dibromofluoromethane (s)
           0.391 0.421 0.344 0.343 0.365       0.371       0.369   0.372    7.37
48)  1,2-dichloroethane-d4 (s)
           0.430 0.436 0.379 0.380 0.397 0.511 0.407       0.386   0.416   10.66
49)  freon 113
           0.198 0.191 0.233 0.223 0.234       0.242       0.246   0.224    9.52
50)  methacrylonitrile
           0.152       0.163 0.179 0.188       0.205       0.141   0.171   13.88
51)  cyclohexane
           0.451 0.381 0.517 0.497 0.501 0.448 0.512       0.527   0.479   10.26
52)  1,1,1-trichloroethane
           0.454 0.393 0.509 0.497 0.502 0.400 0.514 0.443 0.515   0.470   10.41
53)  tert-amyl methyl ether
           1.080 1.009 1.081 1.061 1.108 0.989 1.168 0.988 1.064   1.061    5.54

54) I   1,4-difluorobenzene   ----------------ISTD---------------------
55)  Di-isobutylene
                                                                   0.000#  -1.00
56)  epichlorohydrin
           0.021       0.019 0.020 0.022       0.024       0.019   0.021    8.97
57)  n-butyl alcohol
           0.005 0.004 0.006 0.007 0.007       0.009       0.004   0.006#  28.54
            ----- Linear regression -----  Coefficient =  0.9953
              Response Ratio = -0.04971 + 0.00855 *A

58)  carbon tetrachloride
           0.280 0.247 0.320 0.316 0.309 0.272 0.316 0.294 0.312   0.296    8.49
59)  1,1-dichloropropene
           0.295 0.262 0.344 0.333 0.328 0.291 0.335 0.318 0.333   0.315    8.60
60)  hexane
           0.243 0.263 0.258 0.256 0.267 0.245 0.266       0.285   0.260    5.15
61)  benzene
           0.964 0.809 1.042 1.020 1.006 0.926 1.021 1.145 1.034   0.996    9.24
62)  Iso-octane
           0.782 0.735 0.902 0.859 0.900 0.674 0.936 0.685 0.953   0.825   13.15
63)  heptane
           0.156 0.151 0.179 0.172 0.182 0.143 0.188       0.187   0.170   10.17
64)  tert amyl alcohol
           0.012       0.009 0.010 0.010       0.012       0.009   0.010   12.42
65)  isopropyl acetate
           0.405       0.421 0.436 0.469       0.507       0.379   0.436   10.51
66)  1,2-dichloroethane
           0.298 0.231 0.316 0.320 0.314 0.258 0.321 0.338 0.305   0.300   11.37
67)  trichloroethene
           0.217 0.195 0.256 0.246 0.247 0.205 0.249 0.246 0.249   0.234    9.66
68)  2-nitropropane
                                                                   0.000#  -1.00
69)  tert-amyl ethyl ether
           0.348 0.312 0.368 0.386 0.404 0.344 0.417 0.272 0.345   0.355   12.70
70)  methylcyclohexane
           0.338 0.332 0.390 0.371 0.399 0.273 0.411 0.308 0.405   0.358   13.48
71)  2-chloroethyl vinyl ether
           0.130 0.109 0.138 0.143 0.149       0.157       0.130   0.136   11.33
72)  methyl methacrylate
           0.146       0.139 0.146 0.151       0.171       0.127   0.147    9.90
73)  1,2-dichloropropane
           0.266 0.223 0.288 0.290 0.290 0.261 0.297 0.295 0.288   0.278    8.60
74)  dibromomethane
```

```
            0.148 0.108 0.152 0.155 0.154 0.119 0.163       0.144   0.143   13.34
 75)  bromodichloromethane
            0.318 0.272 0.349 0.346 0.350 0.287 0.361 0.363 0.332   0.331    9.82
 76)  cis-1,3-dichloropropene
            0.399 0.328 0.439 0.445 0.441 0.333 0.460 0.459 0.421   0.414   12.29
 77)  toluene-d8 (s)
            0.932 0.936 0.900 0.876 0.926 1.170 0.940       0.917   0.949    9.63
 78)  4-methyl-2-pentanone
            0.084 0.065 0.092 0.095 0.096       0.105       0.083   0.089   14.40
 79)  toluene
            0.577 0.505 0.649 0.639 0.641 0.539 0.664 0.739 0.647   0.622   11.35
 80)  3-methyl-1-butanol
            0.011 0.007 0.010 0.011 0.012       0.014       0.009   0.011   19.65
             ----- Linear regression -----  Coefficient =  0.9962
               Response Ratio = -0.02422 + 0.01377 *A

 81)  trans-1,3-dichloropropene
            0.347 0.284 0.384 0.387 0.387 0.286 0.407 0.326 0.355   0.351   12.84
 82)  ethyl methacrylate
            0.260       0.290 0.304 0.314       0.341       0.258   0.295   10.96
 83)  1,1,2-trichloroethane
            0.192 0.144 0.190 0.191 0.193 0.160 0.204 0.196 0.179   0.183   10.37
 84)  2-hexanone
            0.074       0.073 0.083 0.085       0.098       0.065   0.080   14.49

 85) I   chlorobenzene-d5      ----------------ISTD---------------------
 86)  tetrachloroethene
            0.219 0.205 0.260 0.249 0.249 0.212 0.257 0.237 0.256   0.238    8.87
 87)  1,3-dichloropropane
            0.403 0.331 0.405 0.410 0.410 0.380 0.438 0.456 0.395   0.403    8.72
 88)  butyl acetate
            0.151       0.150 0.159 0.179       0.196       0.137   0.162   13.30
 89)  dibromochloromethane
            0.293 0.237 0.306 0.311 0.320 0.244 0.339 0.309 0.291   0.294   11.44
 90)  1,2-dibromoethane
            0.241 0.184 0.246 0.247 0.256 0.217 0.275 0.208 0.237   0.234   11.69
 91)  n-butyl ether
                                                                    0.000#  -1.00
 92)  chlorobenzene
            0.789 0.680 0.851 0.839 0.847 0.731 0.863 0.977 0.840   0.824   10.27
 93)  1,1,1,2-tetrachloroethane
            0.293 0.248 0.320 0.313 0.320 0.261 0.332 0.349 0.304   0.304   10.72
 94)  ethylbenzene
            1.236 1.062 1.386 1.349 1.376 1.167 1.396 1.439 1.372   1.309    9.61
 95)  m,p-xylene
            0.485 0.425 0.547 0.535 0.542 0.464 0.551 0.579 0.553   0.520    9.70
 96)  o-xylene
            0.502 0.420 0.557 0.543 0.552 0.490 0.567 0.620 0.550   0.533   10.58
 97)  styrene
            0.802 0.668 0.917 0.933 0.953 0.735 0.993 0.858 0.884   0.860   12.41
 98)  bromoform
            0.218 0.172 0.217 0.223 0.230 0.195 0.251 0.245 0.202   0.217   11.34

 99) I   1,4-dichlorobenzene-d ----------------ISTD---------------------
100)  isopropylbenzene
            2.077 1.812 2.368 2.291 2.304 2.029 2.294 2.519 2.327   2.225    9.59
101)  cyclohexanone
            0.017       0.017 0.017 0.017       0.018       0.022   0.018   11.27
102)  4-bromofluorobenzene (s)
            0.731 0.848 0.667 0.644 0.688       0.698       0.692   0.710    9.35
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** VA7222-ICC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A191863.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

103)	bromobenzene										
	0.628	0.557	0.658	0.665	0.666	0.583	0.681	0.725	0.648	0.646	7.84
104)	1,1,2,2-tetrachloroethane										
	0.649	0.533	0.606	0.613	0.621	0.661	0.646	0.861	0.603	0.644	13.93
105)	trans-1,4-dichloro-2-butene										
	0.131	0.119	0.142	0.149	0.153		0.162		0.132	0.141	10.40
106)	1,2,3-trichloropropane										
	0.150	0.111	0.136	0.136	0.140	0.128	0.150	0.171	0.134	0.139	12.02
107)	n-propylbenzene										
	2.469	2.160	2.772	2.716	2.732	2.315	2.713		2.772	2.581	9.17
108)	2-chlorotoluene										
	0.561	0.486	0.622	0.603	0.610	0.518	0.614	0.687	0.610	0.590	10.16
109)	4-chlorotoluene										
	1.634	1.486	1.763	1.758	1.759	1.677	1.773	2.106	1.741	1.744	9.42
110)	p-ethyltoluene										
	2.133	2.085	2.236	2.243	2.391	2.205	2.380	1.943	2.204	2.202	6.34
111)	1,3,5-trimethylbenzene										
	1.898	1.647	2.123	2.058	2.075	1.850	2.051		2.094	1.975	8.29
112)	tert-butylbenzene										
	1.542	1.375	1.761	1.739	1.732	1.506	1.734	1.791	1.731	1.657	8.75
113)	pentachloroethane										
	0.403	0.370	0.444	0.452	0.454	0.380	0.468	0.544	0.426	0.438	11.98
114)	1,2,4-trimethylbenzene										
	1.865	1.673	2.149	2.086	2.070	1.871	2.089	2.402	2.079	2.032	10.20
115)	sec-butylbenzene										
	2.416	2.134	2.744	2.667	2.627	2.455	2.640	3.009	2.741	2.604	9.48
116)	1,3-dichlorobenzene										
	1.177	1.052	1.290	1.270	1.274	1.215	1.300		1.274	1.232	6.77
117)	p-isopropyltoluene										
	2.011	1.774	2.295	2.219	2.224	1.864	2.228	2.520	2.252	2.154	10.73
118)	1,2,3-trimethylbenzene										
										0.000#	-1.00
119)	1,4-dichlorobenzene										
	1.265	1.169	1.330	1.312	1.311	1.356	1.338		1.333	1.302	4.62
120)	p-diethylbenzene										
	1.247	1.243	1.337	1.322	1.425	1.301	1.413	1.097	1.297	1.298	7.58
121)	1,2-dichlorobenzene										
	1.206	1.064	1.254	1.249	1.241	1.187	1.257		1.222	1.210	5.29
122)	n-butylbenzene										
	1.103	0.980	1.274	1.225	1.244	1.058	1.247	1.231	1.273	1.182	9.04
123)	1,2,4,5-tetramethylbenzene										
	1.998	1.952	2.175	2.162	2.266	2.074	2.257	1.730	2.058	2.075	8.14
124)	1,2-dibromo-3-chloropropane										
	0.103	0.071	0.090	0.097	0.096	0.087	0.107		0.089	0.093	12.21
125)	1,3,5-trichlorobenzene										
	0.988	0.890	1.097	1.052	1.038	1.024	1.053		1.073	1.027	6.23
126)	1,2,4-trichlorobenzene										
	0.815	0.736	0.921	0.910	0.901	0.795	0.934		0.881	0.862	8.25
127)	hexachlorobutadiene										
	0.502	0.446	0.574	0.531	0.522	0.509	0.543		0.570	0.525	7.82
128)	naphthalene										
	1.618	1.346	1.687	1.727	1.700	1.604	1.795		1.560	1.630	8.39
129)	1,2,3-trichlorobenzene										
	0.760	0.652	0.838	0.822	0.779	0.767	0.798		0.791	0.776	7.29
130)	hexachloroethane										
	0.372	0.305	0.427	0.427	0.430	0.352	0.440	0.427	0.407	0.399	11.47
131)	Ethylenimine										
										0.000#	-1.00
132)	Bis(chloromethyl)ether										
										0.000#	-1.00

Initial Calibration Summary

Job Number: JB30425 **Sample:** VA7222-ICC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A191863.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
133)  2-methylnaphthalene
                                                                    0.000#  -1.00
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          MA7222.M          Thu Feb 21 08:15:50 2013   MSA
```

Initial Calibration Verification

Job Number: JB30425 **Sample:** VA7222-ICV7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A191868.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\A191868.D Vial: 100
Acq On : 20 Feb 2013 6:45 pm Operator: Oksanat
Sample : icv7222-50 Inst : MSA
Misc : MS43382,VA7222,5,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 08:12:37 2013
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	109	0.00	7.02
2	M	1,4-dioxane	0.089	0.095	-6.7	115	0.00	11.06
3	M	ethanol		----------NA----------				
4	M	tertiary butyl alcohol	0.964	1.061	-10.1	120	-0.01	7.14
5	I	pentafluorobenzene	1.000	1.000	0.0	96	0.00	9.35
6		chlorotrifluoroethene		----------NA----------				
7	M	chlorodifluoromethane	0.286	0.267	6.6	95	0.00	3.70
8	M	dichlorodifluoromethane	0.381	0.344	9.7	91	0.00	3.68
9	M	chloromethane	0.525	0.554	-5.5	113	0.00	3.98
10	M	vinyl chloride	0.482	0.476	1.2	102	0.00	4.23
11	M	bromomethane	0.344	0.339	1.5	110	0.00	4.82
12	M	chloroethane	0.230	0.253	-10.0	109	0.00	4.99
13		vinyl bromide		----------NA----------				
14	M	trichlorofluoromethane	0.489	0.475	2.9	97	0.00	5.48
15	m	pentane	0.667	0.640	4.0	101	0.00	5.52
16	M	ethyl ether	0.196	0.203	-3.6	104	0.00	5.86
17		Freon 123a		----------NA----------				
18	M	acrolein	0.060	0.065	-8.3	105	0.00	6.11
19	M	1,1-dichloroethene	0.292	0.308	-5.5	96	0.00	6.29
20	M	acetone	0.082	0.097	-18.3	125	-0.02	6.36
21	M	allyl chloride	0.210	0.217	-3.3	97	0.00	6.82
		----------	True	Calc.	% Drift	----------		
22	M	acetonitrile	500.000	493.625	1.3	103	0.00	6.81
		----------	AvgRF	CCRF	% Dev	----------		
23	M	iodomethane	0.649	0.677	-4.3	97	0.00	6.56
24	M	iso-butyl alcohol	0.011	0.012	-9.1	112	0.00	9.67
25	M	carbon disulfide	1.095	1.101	-0.5	92	0.00	6.68
26	M	methylene chloride	0.418	0.407	2.6	99	0.00	7.02
27	M	methyl acetate	0.214	0.215	-0.5	101	0.00	6.84
28	M	methyl tert butyl ether	0.977	1.036	-6.0	101	0.00	7.37
29	M	trans-1,2-dichloroethene	0.328	0.347	-5.8	97	0.00	7.41
30	M	di-isopropyl ether	1.224	1.331	-8.7	103	0.00	8.00
31	m	t-butyl formate	0.255	0.304	-19.2	111	0.00	9.20
		----------	True	Calc.	% Drift	----------		
32	m	3,3-dimethyl-1-butanol	500.000	638.717	-27.7#	144	0.00	13.00
		----------	AvgRF	CCRF	% Dev	----------		
33	M	ethyl tert-butyl ether	1.114	1.200	-7.7	101	0.00	8.50

Initial Calibration Verification

Job Number: JB30425 **Sample:** VA7222-ICV7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A191868.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

		----------	True	Calc.	% Drift	----------		
34	M	2-butanone	50.000	53.550	-7.1	111	-0.01	8.78
		----------	AvgRF	CCRF	% Dev	----------		
35	M	1,1-dichloroethane	0.628	0.681	-8.4	97	0.00	8.00
36	M	chloroprene	0.436	0.426	2.3	94	0.00	8.12
37	M	acrylonitrile	0.104	0.118	-13.5	110	0.00	7.37
		----------	True	Calc.	% Drift	----------		
38	M	vinyl acetate	50.000	52.552	-5.1	107	-0.02	8.02
39	M	ethyl acetate	50.000	57.431	-14.9	123	-0.02	8.79
		----------	AvgRF	CCRF	% Dev	----------		
40		ethyl acrylate		----------NA----------				
41	M	2,2-dichloropropane	0.460	0.458	0.4	92	0.00	8.78
42	M	cis-1,2-dichloroethene	0.378	0.404	-6.9	100	0.00	8.79
43	M	propionitrile	0.040	0.047	-17.5	112	0.00	8.85
44	M	bromochloromethane	0.184	0.204	-10.9	99	-0.01	9.11
45	M	tetrahydrofuran	0.133	0.138	-3.8	110	0.00	9.17
46	M	chloroform	0.615	0.650	-5.7	99	0.00	9.17
47	S	dibromofluoromethane (s)	0.372	0.377	-1.3	105	0.00	9.38
48	S	1,2-dichloroethane-d4 (s)	0.416	0.418	-0.5	105	0.00	9.82
49	M	freon 113	0.224	0.192	14.3	83	-0.01	6.25
50	M	methacrylonitrile	0.171	0.189	-10.5	101	0.00	9.05
51		cyclohexane	0.479	0.481	-0.4	93	0.00	9.50
52	M	1,1,1-trichloroethane	0.470	0.495	-5.3	95	0.00	9.42
53	M	tert-amyl methyl ether	1.061	1.162	-9.5	105	-0.01	9.94
54	I	1,4-difluorobenzene	1.000	1.000	0.0	97	0.00	10.30
55	M	Di-isobutylene		----------NA----------				
56	M	epichlorohydrin	0.021	0.024	-14.3	112	0.00	11.64
		----------	True	Calc.	% Drift	----------		
57	M	n-butyl alcohol	2500.000	2685.037	-7.4	120	0.00	10.46
		----------	AvgRF	CCRF	% Dev	----------		
58	M	carbon tetrachloride	0.296	0.304	-2.7	93	0.00	9.64
59	M	1,1-dichloropropene	0.315	0.325	-3.2	95	0.00	9.62
60	M	hexane	0.260	0.228	12.3	86	0.00	7.73
61	M	benzene	0.996	1.041	-4.5	99	0.00	9.89
62	M	Iso-octane	0.825	0.771	6.5	87	0.00	9.91
63	M	heptane	0.170	0.162	4.7	91	0.00	10.09
64	m	tert amyl alcohol	0.010	0.012	-15.0	113	-0.02	9.79
65	M	isopropyl acetate	0.436	0.520	-19.3	115	0.00	9.84
66	M	1,2-dichloroethane	0.300	0.334	-11.3	101	0.00	9.91
67	M	trichloroethene	0.234	0.250	-6.8	98	0.00	10.65
68	M	2-nitropropane		----------NA----------				
69	m	tert-amyl ethyl ether	0.355	0.403	-14.0	101	0.00	10.83
70	m	methylcyclohexane	0.358	0.339	5.3	88	0.00	10.87
71	M	2-chloroethyl vinyl ether	0.136	0.161	-18.4	109	0.00	11.51
72	M	methyl methacrylate	0.147	0.167	-13.6	110	0.00	10.96
73	M	1,2-dichloropropane	0.278	0.301	-8.3	100	0.00	10.92
74	M	dibromomethane	0.143	0.171	-19.6	107	0.00	11.10
75	M	bromodichloromethane	0.331	0.370	-11.8	103	0.00	11.24
76	M	cis-1,3-dichloropropene	0.414	0.439	-6.0	95	0.00	11.74
77	S	toluene-d8 (s)	0.949	0.937	1.3	103	0.00	12.05
78	M	4-methyl-2-pentanone	0.089	0.104	-16.9	106	0.00	11.85
79	M	toluene	0.622	0.642	-3.2	97	0.00	12.13

Initial Calibration Verification

Job Number: JB30425 **Sample:** VA7222-ICV7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A191868.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

			True	Calc.	% Drift			
80	M	3-methyl-1-butanol	1000.000	1056.178	-5.6	115	0.00	11.89

			AvgRF	CCRF	% Dev			
81	M	trans-1,3-dichloropropene	0.351	0.401	-14.2	100	0.00	12.36
82	M	ethyl methacrylate	0.295	0.321	-8.8	102	0.00	12.36
83	M	1,1,2-trichloroethane	0.183	0.208	-13.7	105	0.00	12.59
84	M	2-hexanone	0.080	0.091	-13.7	106	0.00	12.80
85	I	chlorobenzene-d5	1.000	1.000	0.0	95	0.00	13.74
86	M	tetrachloroethene	0.238	0.242	-1.7	93	0.00	12.78
87	M	1,3-dichloropropane	0.403	0.443	-9.9	103	0.00	12.79
88	M	butyl acetate	0.162	0.191	-17.9	115	0.00	12.89
89	M	dibromochloromethane	0.294	0.325	-10.5	100	0.00	13.09
90	M	1,2-dibromoethane	0.234	0.266	-13.7	102	0.00	13.25
91	M	n-butyl ether		----------NA----------				
92	M	chlorobenzene	0.824	0.855	-3.8	97	0.00	13.78
93	M	1,1,1,2-tetrachloroethane	0.304	0.330	-8.6	100	0.00	13.84
94	M	ethylbenzene	1.309	1.360	-3.9	96	0.00	13.84
95	M	m,p-xylene	0.520	0.536	-3.1	96	0.00	13.96
96	M	o-xylene	0.533	0.563	-5.6	99	0.00	14.43
97	M	styrene	0.860	0.950	-10.5	97	0.00	14.45
98	M	bromoform	0.217	0.239	-10.1	102	0.00	14.74
99	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	98	0.00	16.38
100	M	isopropylbenzene	2.225	2.238	-0.6	96	0.00	14.82
101	m	cyclohexanone	0.018	0.017	5.6	99	0.00	15.00
102	S	4-bromofluorobenzene (s)	0.710	0.683	3.8	104	0.00	15.05
103	M	bromobenzene	0.646	0.674	-4.3	99	0.00	15.27
104	M	1,1,2,2-tetrachloroethane	0.644	0.630	2.2	101	0.00	15.17
105	M	trans-1,4-dichloro-2-bute	0.141	0.147	-4.3	96	0.00	15.22
106	M	1,2,3-trichloropropane	0.139	0.145	-4.3	105	0.00	15.25
107	M	n-propylbenzene	2.581	2.695	-4.4	97	0.00	15.28
108	M	2-chlorotoluene	0.590	0.600	-1.7	97	0.00	15.45
109	M	4-chlorotoluene	1.744	1.726	1.0	96	0.00	15.56
110	m	p-ethyltoluene		----------NA----------				
111	M	1,3,5-trimethylbenzene	1.975	1.970	0.3	94	0.00	15.46
112	M	tert-butylbenzene	1.657	1.684	-1.6	95	0.00	15.85
113	M	pentachloroethane	0.438	0.465	-6.2	101	0.00	15.94
114	M	1,2,4-trimethylbenzene	2.032	2.075	-2.1	97	0.00	15.90
115	M	sec-butylbenzene	2.604	2.568	1.4	94	0.00	16.09
116	M	1,3-dichlorobenzene	1.232	1.271	-3.2	98	0.00	16.31
117	M	p-isopropyltoluene	2.154	2.253	-4.6	99	0.00	16.23
118	M	1,2,3-trimethylbenzene		----------NA----------				
119	M	1,4-dichlorobenzene	1.302	1.304	-0.2	97	0.00	16.40
120	m	p-diethylbenzene		----------NA----------				
121	M	1,2-dichlorobenzene	1.210	1.269	-4.9	100	0.00	16.84
122	M	n-butylbenzene	1.182	1.199	-1.4	96	0.00	16.70
123	m	1,2,4,5-tetramethylbenzen		----------NA----------				
124	M	1,2-dibromo-3-chloropropa	0.093	0.105	-12.9	106	0.00	17.70
125	M	1,3,5-trichlorobenzene	1.027	1.001	2.5	93	0.00	17.91
126	M	1,2,4-trichlorobenzene	0.862	0.933	-8.2	100	0.00	18.61
127	M	hexachlorobutadiene	0.525	0.534	-1.7	99	0.00	18.73
128	M	naphthalene	1.630	1.797	-10.2	102	0.00	18.91
129	M	1,2,3-trichlorobenzene	0.776	0.819	-5.5	98	0.00	19.19
130	M	hexachloroethane	0.399	0.425	-6.5	98	0.00	17.13
131		Ethylenimine		----------NA----------				
132		Bis(chloromethyl)ether		----------NA----------				
133		2-methylnaphthalene		----------NA----------				

Initial Calibration Verification

Job Number: JB30425 **Sample:** VA7222-ICV7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A191868.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

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-----------------------------------------------------------------------------

   (#) = Out of Range                SPCC's out = 0  CCC's out = 0
    A191863.D  MA7222.M         Thu Feb 21 08:15:53 2013   MSA
```

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VA7246-CC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A192397.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\1\DATA\A192397.D                    Vial: 100
Acq On    :  8 Mar 2013   1:54 pm                    Operator: Oksanat
Sample    : cc7222-20                                Inst    : MSA
Misc      : MS44144,VA7246,5,,,,1                    Multiplr: 1.00
MS Integration Params: LSCINT.P

Method       : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title        : SW 846  8260bB ZB624 60m x 0.25mm x 1.4um
Last Update  : Thu Feb 21 15:26:34 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.010  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	99	-0.02	7.00
2	M	1,4-dioxane	0.089	0.088	1.1	94	0.00	11.06
3	M	ethanol		----------NA----------				
4	M	tertiary butyl alcohol	0.964	1.087	-12.8	109	0.00	7.14
5	I	pentafluorobenzene	1.000	1.000	0.0	90	-0.02	9.34
6		chlorotrifluoroethene		----------NA----------				
7	M	chlorodifluoromethane	0.286	0.286	0.0	93	0.00	3.69
8	M	dichlorodifluoromethane	0.381	0.370	2.9	84	0.00	3.67
9	M	chloromethane	0.525	0.441	16.0	82	-0.04	3.95
10	M	vinyl chloride	0.482	0.420	12.9	80	-0.04	4.19
11	M	bromomethane	0.344	0.293	14.8	81	-0.01	4.81
12	M	chloroethane	0.230	0.207	10.0	79	0.00	5.00
13		vinyl bromide		----------NA----------				
14	M	trichlorofluoromethane	0.489	0.466	4.7	84	0.00	5.47
15	m	pentane		----------NA----------				
16	M	ethyl ether	0.196	0.176	10.2	81	-0.01	5.85
17		Freon 123a		----------NA----------				
18	M	acrolein	0.060	0.055	8.3	82	0.00	6.11
19	M	1,1-dichloroethene	0.292	0.267	8.6	75	0.00	6.28
20	M	acetone	0.082	0.128	-56.1#	168	0.00	6.38
21	M	allyl chloride	0.210	0.174	17.1	73	0.00	6.82
		----------	True	Calc.	% Drift	----------		
22	M	acetonitrile	200.000	214.260	-7.1	105	0.00	6.82
		----------	AvgRF	CCRF	% Dev	----------		
23	M	iodomethane	0.649	0.613	5.5	81	0.00	6.55
24	M	iso-butyl alcohol	0.011	0.011	0.0	106	0.00	9.68
25	M	carbon disulfide	1.095	0.961	12.2	72	0.00	6.68
26	M	methylene chloride	0.418	0.352	15.8	79	0.00	7.01
27	M	methyl acetate	0.214	0.198	7.5	93	0.00	6.85
28	M	methyl tert butyl ether	0.977	0.974	0.3	88	-0.02	7.36
29	M	trans-1,2-dichloroethene	0.328	0.301	8.2	75	0.00	7.41
30	M	di-isopropyl ether	1.224	1.164	4.9	83	0.00	8.00
31	m	t-butyl formate	0.255	0.284	-11.4	101	0.00	9.21
		----------	True	Calc.	% Drift	----------		
32	m	3,3-dimethyl-1-butanol	200.000	204.654	-2.3	101	0.00	12.99
		----------	AvgRF	CCRF	% Dev	----------		
33	M	ethyl tert-butyl ether	1.114	1.088	2.3	85	-0.02	8.48

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VA7246-CC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A192397.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

		----------	True	Calc.	% Drift	----------		
34	M	2-butanone	20.000	24.105	-20.5#	116	0.01	8.80
		----------	AvgRF	CCRF	% Dev	----------		
35	M	1,1-dichloroethane	0.628	0.567	9.7	75	0.00	8.00
36	M	chloroprene	0.436	0.396	9.2	78	0.00	8.12
37	M	acrylonitrile	0.104	0.090	13.5	87	0.01	7.39
		----------	True	Calc.	% Drift	----------		
38	M	vinyl acetate	20.000	17.549	12.3	67	0.00	8.03
39	M	ethyl acetate	20.000	20.745	-3.7	94	0.00	8.81
		----------	AvgRF	CCRF	% Dev	----------		
40		ethyl acrylate		----------NA----------				
41	M	2,2-dichloropropane	0.460	0.441	4.1	81	-0.02	8.77
42	M	cis-1,2-dichloroethene	0.378	0.336	11.1	76	0.00	8.78
43	M	propionitrile	0.040	0.037	7.5	92	0.00	8.86
44	M	bromochloromethane	0.184	0.179	2.7	83	0.00	9.11
45	M	tetrahydrofuran	0.133	0.124	6.8	92	0.00	9.16
46	M	chloroform	0.615	0.559	9.1	79	0.00	9.17
47	S	dibromofluoromethane (s)	0.372	0.375	-0.8	98	-0.02	9.37
48	S	1,2-dichloroethane-d4 (s)	0.416	0.363	12.7	86	-0.02	9.81
49	M	freon 113	0.224	0.212	5.4	82	0.00	6.26
50	M	methacrylonitrile	0.171	0.163	4.7	90	0.00	9.06
51		cyclohexane	0.479	0.421	12.1	73	0.00	9.49
52	M	1,1,1-trichloroethane	0.470	0.442	6.0	78	0.00	9.42
53	M	tert-amyl methyl ether	1.061	1.007	5.1	84	-0.02	9.93
54	I	1,4-difluorobenzene	1.000	1.000	0.0	86	0.00	10.29
55	M	Di-isobutylene		----------NA----------				
56	M	epichlorohydrin	0.021	0.022	-4.8	99	0.00	11.64
		----------	True	Calc.	% Drift	----------		
57	M	n-butyl alcohol	1000.000	1107.923	-10.8	107	0.00	10.47
		----------	AvgRF	CCRF	% Dev	----------		
58	M	carbon tetrachloride	0.296	0.289	2.4	78	0.00	9.64
59	M	1,1-dichloropropene	0.315	0.289	8.3	72	0.00	9.62
60	M	hexane	0.260	0.241	7.3	80	0.00	7.73
61	M	benzene	0.996	0.874	12.2	72	0.00	9.89
62	M	Iso-octane	0.825	0.834	-1.1	79	0.00	9.89
63	M	heptane	0.170	0.154	9.4	74	0.00	10.08
64	m	tert amyl alcohol		----------NA----------				
65	M	isopropyl acetate	0.436	0.434	0.5	89	0.00	9.84
66	M	1,2-dichloroethane	0.300	0.298	0.7	81	0.00	9.91
67	M	trichloroethene	0.234	0.222	5.1	75	0.00	10.65
68	M	2-nitropropane		----------NA----------				
69	m	tert-amyl ethyl ether		----------NA----------				
70	m	methylcyclohexane	0.358	0.339	5.3	75	0.00	10.87
71	M	2-chloroethyl vinyl ether	0.136	0.135	0.7	84	0.00	11.51
72	M	methyl methacrylate	0.147	0.138	6.1	85	0.00	10.96
73	M	1,2-dichloropropane	0.278	0.255	8.3	76	0.00	10.92
74	M	dibromomethane	0.143	0.150	-4.9	85	0.00	11.09
75	M	bromodichloromethane	0.331	0.325	1.8	80	0.00	11.24
76	M	cis-1,3-dichloropropene	0.414	0.404	2.4	79	0.00	11.74
77	S	toluene-d8 (s)	0.949	1.032	-8.7	98	0.00	12.05
78	M	4-methyl-2-pentanone	0.089	0.095	-6.7	89	0.00	11.85
79	M	toluene	0.622	0.568	8.7	75	0.00	12.13

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VA7246-CC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A192397.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

			True	Calc.	% Drift			
80	M	3-methyl-1-butanol	400.000	425.442	-6.4	96	0.00	11.89

			AvgRF	CCRF	% Dev			
81	M	trans-1,3-dichloropropene	0.351	0.374	-6.6	84	0.00	12.36
82	M	ethyl methacrylate	0.295	0.298	-1.0	88	0.00	12.37
83	M	1,1,2-trichloroethane	0.183	0.188	-2.7	85	0.00	12.59
84	M	2-hexanone	0.080	0.112	-40.0#	132	0.00	12.80
85	I	chlorobenzene-d5	1.000	1.000	0.0	89	0.00	13.73
86	M	tetrachloroethene	0.238	0.217	8.8	75	0.00	12.78
87	M	1,3-dichloropropane	0.403	0.373	7.4	82	0.00	12.79
88	M	butyl acetate	0.162	0.158	2.5	93	0.00	12.89
89	M	dibromochloromethane	0.294	0.293	0.3	86	0.00	13.08
90	M	1,2-dibromoethane	0.234	0.245	-4.7	89	0.00	13.24
91	M	n-butyl ether		----------NA----------				
92	M	chlorobenzene	0.824	0.751	8.9	79	0.00	13.77
93	M	1,1,1,2-tetrachloroethane	0.304	0.286	5.9	80	0.00	13.84
94	M	ethylbenzene	1.309	1.155	11.8	74	0.00	13.83
95	M	m,p-xylene	0.520	0.468	10.0	76	0.00	13.96
96	M	o-xylene	0.533	0.480	9.9	77	0.00	14.43
97	M	styrene	0.860	0.796	7.4	77	0.00	14.45
98	M	bromoform	0.217	0.231	-6.5	95	0.00	14.73
99	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	88	0.00	16.37
100	M	isopropylbenzene	2.225	1.989	10.6	74	0.00	14.81
101	m	cyclohexanone	0.018	0.099	-450.0#	513#	0.00	15.00
102	S	4-bromofluorobenzene (s)	0.710	0.702	1.1	92	0.00	15.05
103	M	bromobenzene	0.646	0.630	2.5	84	0.00	15.26
104	M	1,1,2,2-tetrachloroethane	0.644	0.612	5.0	88	0.00	15.17
105	M	trans-1,4-dichloro-2-bute	0.141	0.138	2.1	85	0.00	15.22
106	M	1,2,3-trichloropropane	0.139	0.137	1.4	88	0.00	15.25
107	M	n-propylbenzene	2.581	2.363	8.4	75	0.00	15.28
108	M	2-chlorotoluene	0.590	0.544	7.8	76	0.00	15.45
109	M	4-chlorotoluene	1.744	1.537	11.9	76	0.00	15.56
110	m	p-ethyltoluene		----------NA----------				
111	M	1,3,5-trimethylbenzene	1.975	1.778	10.0	73	0.00	15.46
112	M	tert-butylbenzene	1.657	1.482	10.6	74	0.00	15.84
113	M	pentachloroethane	0.438	0.420	4.1	83	0.00	15.94
114	M	1,2,4-trimethylbenzene	2.032	1.822	10.3	74	0.00	15.90
115	M	sec-butylbenzene	2.604	2.286	12.2	73	0.00	16.09
116	M	1,3-dichlorobenzene	1.232	1.151	6.6	78	0.00	16.30
117	M	p-isopropyltoluene	2.154	1.968	8.6	75	0.00	16.22
118	M	1,2,3-trimethylbenzene		----------NA----------				
119	M	1,4-dichlorobenzene	1.302	1.185	9.0	78	0.00	16.40
120	m	p-diethylbenzene		----------NA----------				
121	M	1,2-dichlorobenzene	1.210	1.168	3.5	81	0.00	16.84
122	M	n-butylbenzene	1.182	0.984	16.8	68	0.00	16.70
123	m	1,2,4,5-tetramethylbenzen		----------NA----------				
124	M	1,2-dibromo-3-chloropropa	0.093	0.099	-6.5	97	0.00	17.70
125	M	1,3,5-trichlorobenzene	1.027	1.003	2.3	80	0.00	17.91
126	M	1,2,4-trichlorobenzene	0.862	0.795	7.8	76	0.00	18.60
127	M	hexachlorobutadiene	0.525	0.516	1.7	79	0.00	18.72
128	M	naphthalene	1.630	1.473	9.6	76	0.00	18.91
129	M	1,2,3-trichlorobenzene	0.776	0.733	5.5	77	0.00	19.18
130	M	hexachloroethane	0.399	0.397	0.5	81	0.00	17.13
131		Ethylenimine		----------NA----------				
132		Bis(chloromethyl)ether		----------NA----------				
133		2-methylnaphthalene		----------NA----------				

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VA7246-CC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A192397.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
-----------------------------------------------------------------------------

   (#) = Out of Range                SPCC's out = 0  CCC's out = 0
    A191862.D  MA7222.M         Fri Mar 08 16:20:43 2013   MSA
```

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VA7248-CC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A192471.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\1\DATA\A192471.D                    Vial: 100
Acq On    : 11 Mar 2013  10:11 am                    Operator: Oksanat
Sample    : cc7222-20                                Inst    : MSA
Misc      : MS44307,VA7248,5,,,,1                    Multiplr: 1.00
MS Integration Params: LSCINT.P

Method       : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title        : SW 846  8260bB ZB624 60m x 0.25mm x 1.4um
Last Update  : Thu Feb 21 15:26:34 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.010  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	81	-0.04	6.99
2	M	1,4-dioxane	0.089	0.087	2.2	77	-0.02	11.05
3	M	ethanol		----------NA----------				
4	M	tertiary butyl alcohol	0.964	1.101	-14.2	91	-0.02	7.13
5	I	pentafluorobenzene	1.000	1.000	0.0	78	-0.03	9.32
6		chlorotrifluoroethene		----------NA----------				
7	M	chlorodifluoromethane	0.286	0.358	-25.2#	101	-0.02	3.69
8	M	dichlorodifluoromethane	0.381	0.531	-39.4#	105	0.00	3.67
9	M	chloromethane	0.525	0.581	-10.7	94	-0.04	3.94
10	M	vinyl chloride	0.482	0.563	-16.8	93	-0.04	4.19
11	M	bromomethane	0.344	0.370	-7.6	89	-0.03	4.80
12	M	chloroethane	0.230	0.273	-18.7	91	-0.03	4.97
13		vinyl bromide		----------NA----------				
14	M	trichlorofluoromethane	0.489	0.617	-26.2#	97	-0.02	5.45
15	m	pentane		----------NA----------				
16	M	ethyl ether	0.196	0.191	2.6	76	-0.02	5.85
17		Freon 123a		----------NA----------				
18	M	acrolein	0.060	0.054	10.0	70	-0.02	6.10
19	M	1,1-dichloroethene	0.292	0.322	-10.3	79	-0.02	6.26
20	M	acetone	0.082	0.090	-9.8	103	0.00	6.37
21	M	allyl chloride	0.210	0.230	-9.5	84	-0.02	6.80
		----------	True	Calc.	% Drift		----------	
22	M	acetonitrile	200.000	210.532	-5.3	89	-0.01	6.80
		----------	AvgRF	CCRF	% Dev		----------	
23	M	iodomethane	0.649	0.737	-13.6	84	-0.03	6.53
24	M	iso-butyl alcohol	0.011	0.011	0.0	86	-0.01	9.66
25	M	carbon disulfide	1.095	1.205	-10.0	78	-0.02	6.66
26	M	methylene chloride	0.418	0.416	0.5	81	-0.03	7.00
27	M	methyl acetate	0.214	0.178	16.8	72	0.00	6.84
28	M	methyl tert butyl ether	0.977	1.061	-8.6	83	-0.02	7.36
29	M	trans-1,2-dichloroethene	0.328	0.359	-9.5	78	-0.03	7.39
30	M	di-isopropyl ether	1.224	1.314	-7.4	82	-0.02	7.99
31	m	t-butyl formate	0.255	0.316	-23.9#	98	-0.02	9.19
		----------	True	Calc.	% Drift		----------	
32	m	3,3-dimethyl-1-butanol	200.000	205.394	-2.7	88	-0.02	12.99
		----------	AvgRF	CCRF	% Dev		----------	
33	M	ethyl tert-butyl ether	1.114	1.199	-7.6	82	-0.03	8.47

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VA7248-CC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A192471.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

		----------	True	Calc.	% Drift	----------		
34	M	2-butanone	20.000	21.976	-9.9	90	0.00	8.79
		----------	AvgRF	CCRF	% Dev	----------		
35	M	1,1-dichloroethane	0.628	0.696	-10.8	80	-0.02	7.99
36	M	chloroprene	0.436	0.488	-11.9	83	-0.02	8.10
37	M	acrylonitrile	0.104	0.091	12.5	77	-0.01	7.36
		----------	True	Calc.	% Drift	----------		
38	M	vinyl acetate	20.000	20.662	-3.3	75	-0.01	8.02
39	M	ethyl acetate	20.000	22.161	-10.8	89	-0.03	8.79
		----------	AvgRF	CCRF	% Dev	----------		
40		ethyl acrylate		----------NA----------				
41	M	2,2-dichloropropane	0.460	0.555	-20.7#	88	-0.02	8.76
42	M	cis-1,2-dichloroethene	0.378	0.415	-9.8	82	-0.01	8.78
43	M	propionitrile	0.040	0.036	10.0	77	-0.02	8.84
44	M	bromochloromethane	0.184	0.205	-11.4	82	-0.03	9.09
45	M	tetrahydrofuran	0.133	0.127	4.5	82	-0.02	9.15
46	M	chloroform	0.615	0.687	-11.7	84	-0.02	9.16
47	S	dibromofluoromethane (s)	0.372	0.388	-4.3	88	-0.03	9.36
48	S	1,2-dichloroethane-d4 (s)	0.416	0.385	7.5	79	-0.02	9.80
49	M	freon 113	0.224	0.257	-14.7	86	-0.02	6.24
50	M	methacrylonitrile	0.171	0.167	2.3	80	-0.01	9.05
51		cyclohexane	0.479	0.498	-4.0	75	-0.02	9.48
52	M	1,1,1-trichloroethane	0.470	0.562	-19.6	86	-0.02	9.41
53	M	tert-amyl methyl ether	1.061	1.129	-6.4	81	-0.03	9.92
54	I	1,4-difluorobenzene	1.000	1.000	0.0	76	-0.02	10.28
55	M	Di-isobutylene		----------NA----------				
56	M	epichlorohydrin	0.021	0.022	-4.8	88	-0.02	11.63
		----------	True	Calc.	% Drift	----------		
57	M	n-butyl alcohol	1000.000	1021.390	-2.1	85	-0.02	10.45
		----------	AvgRF	CCRF	% Dev	----------		
58	M	carbon tetrachloride	0.296	0.371	-25.3#	89	-0.03	9.62
59	M	1,1-dichloropropene	0.315	0.352	-11.7	78	-0.02	9.61
60	M	hexane	0.260	0.273	-5.0	81	-0.02	7.71
61	M	benzene	0.996	1.053	-5.7	77	-0.02	9.87
62	M	Iso-octane	0.825	0.993	-20.4#	84	-0.02	9.88
63	M	heptane	0.170	0.181	-6.5	77	-0.02	10.08
64	m	tert amyl alcohol		----------NA----------				
65	M	isopropyl acetate	0.436	0.416	4.6	76	-0.02	9.83
66	M	1,2-dichloroethane	0.300	0.358	-19.3	87	-0.02	9.89
67	M	trichloroethene	0.234	0.259	-10.7	77	-0.02	10.63
68	M	2-nitropropane		----------NA----------				
69	m	tert-amyl ethyl ether		----------NA----------				
70	m	methylcyclohexane	0.358	0.402	-12.3	79	-0.02	10.86
71	M	2-chloroethyl vinyl ether	0.136	0.142	-4.4	78	-0.02	11.50
72	M	methyl methacrylate	0.147	0.135	8.2	74	-0.02	10.95
73	M	1,2-dichloropropane	0.278	0.284	-2.2	75	-0.02	10.90
74	M	dibromomethane	0.143	0.159	-11.2	80	-0.02	11.08
75	M	bromodichloromethane	0.331	0.375	-13.3	82	-0.02	11.22
76	M	cis-1,3-dichloropropene	0.414	0.451	-8.9	79	-0.02	11.73
77	S	toluene-d8 (s)	0.949	1.010	-6.4	86	-0.02	12.03
78	M	4-methyl-2-pentanone	0.089	0.092	-3.4	77	-0.02	11.84
79	M	toluene	0.622	0.641	-3.1	76	-0.02	12.12

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VA7248-CC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A192471.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

			True	Calc.	% Drift			
80	M	3-methyl-1-butanol	400.000	413.751	-3.4	83	-0.02	11.88

			AvgRF	CCRF	% Dev			
81	M	trans-1,3-dichloropropene	0.351	0.394	-12.3	78	-0.02	12.35
82	M	ethyl methacrylate	0.295	0.292	1.0	77	-0.02	12.35
83	M	1,1,2-trichloroethane	0.183	0.195	-6.6	79	-0.02	12.58
84	M	2-hexanone	0.080	0.077	3.8	81	0.00	12.80
85	I	chlorobenzene-d5	1.000	1.000	0.0	78	-0.02	13.72
86	M	tetrachloroethene	0.238	0.254	-6.7	76	-0.02	12.77
87	M	1,3-dichloropropane	0.403	0.408	-1.2	79	-0.02	12.78
88	M	butyl acetate	0.162	0.159	1.9	83	-0.01	12.88
89	M	dibromochloromethane	0.294	0.328	-11.6	84	-0.02	13.07
90	M	1,2-dibromoethane	0.234	0.258	-10.3	82	-0.02	13.24
91	M	n-butyl ether		----------NA----------				
92	M	chlorobenzene	0.824	0.856	-3.9	79	-0.02	13.75
93	M	1,1,1,2-tetrachloroethane	0.304	0.335	-10.2	82	-0.02	13.82
94	M	ethylbenzene	1.309	1.356	-3.6	76	-0.02	13.82
95	M	m,p-xylene	0.520	0.535	-2.9	76	-0.02	13.95
96	M	o-xylene	0.533	0.547	-2.6	77	-0.02	14.42
97	M	styrene	0.860	0.892	-3.7	76	-0.02	14.43
98	M	bromoform	0.217	0.245	-12.9	88	-0.02	14.72
99	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	78	-0.02	16.35
100	M	isopropylbenzene	2.225	2.302	-3.5	75	-0.02	14.81
101	m	cyclohexanone	0.018	0.062	-244.4#	285#	-0.02	14.98
102	S	4-bromofluorobenzene (s)	0.710	0.712	-0.3	83	-0.02	15.04
103	M	bromobenzene	0.646	0.699	-8.2	82	-0.01	15.26
104	M	1,1,2,2-tetrachloroethane	0.644	0.620	3.7	79	-0.01	15.16
105	M	trans-1,4-dichloro-2-bute	0.141	0.137	2.8	74	-0.01	15.21
106	M	1,2,3-trichloropropane	0.139	0.148	-6.5	85	-0.02	15.23
107	M	n-propylbenzene	2.581	2.703	-4.7	76	-0.02	15.27
108	M	2-chlorotoluene	0.590	0.634	-7.5	79	-0.02	15.43
109	M	4-chlorotoluene	1.744	1.738	0.3	76	-0.02	15.55
110	m	p-ethyltoluene		----------NA----------				
111	M	1,3,5-trimethylbenzene	1.975	2.048	-3.7	75	-0.02	15.44
112	M	tert-butylbenzene	1.657	1.747	-5.4	77	-0.02	15.84
113	M	pentachloroethane	0.438	0.471	-7.5	82	-0.02	15.93
114	M	1,2,4-trimethylbenzene	2.032	2.078	-2.3	75	-0.01	15.89
115	M	sec-butylbenzene	2.604	2.655	-2.0	75	-0.02	16.08
116	M	1,3-dichlorobenzene	1.232	1.275	-3.5	77	-0.01	16.30
117	M	p-isopropyltoluene	2.154	2.201	-2.2	74	-0.02	16.22
118	M	1,2,3-trimethylbenzene		----------NA----------				
119	M	1,4-dichlorobenzene	1.302	1.310	-0.6	76	-0.02	16.39
120	m	p-diethylbenzene		----------NA----------				
121	M	1,2-dichlorobenzene	1.210	1.270	-5.0	78	-0.02	16.83
122	M	n-butylbenzene	1.182	1.121	5.2	68	-0.02	16.69
123	m	1,2,4,5-tetramethylbenzen		----------NA----------				
124	M	1,2-dibromo-3-chloropropa	0.093	0.104	-11.8	90	0.00	17.70
125	M	1,3,5-trichlorobenzene	1.027	1.090	-6.1	77	-0.02	17.90
126	M	1,2,4-trichlorobenzene	0.862	0.832	3.5	70	-0.02	18.59
127	M	hexachlorobutadiene	0.525	0.607	-15.6	82	-0.02	18.72
128	M	naphthalene	1.630	1.458	10.6	67	-0.02	18.90
129	M	1,2,3-trichlorobenzene	0.776	0.760	2.1	70	-0.02	19.17
130	M	hexachloroethane	0.399	0.466	-16.8	85	-0.02	17.12
131		Ethylenimine		----------NA----------				
132		Bis(chloromethyl)ether		----------NA----------				
133		2-methylnaphthalene		----------NA----------				

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VA7248-CC7222
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** A192471.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

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-----------------------------------------------------------------------------

   (#) = Out of Range                SPCC's out = 0  CCC's out = 0
    A191862.D  MA7222.M         Mon Mar 11 11:19:53 2013   MSA
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** VC6448-ICC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C179998.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MSC

```
Method       : C:\msdchem\1\METHODS\MCS6448.M (RTE Integrator)
Title        : SW846  8260B,ZB624 60m x 0.25mm x 1.4um
Last Update  : Thu Mar 21 15:53:29 2013
Response via : Initial Calibration

Calibration Files
5   =C179995.D   2   =C179994.D   20  =C179997.D   50  =C179998.D
100 =C179999.D   1   =C179993.D   200 =C180000.D   0.5 =C180002A.D
10  =C179996.D       =

 Compound
           5     2     20    50    100   1     200   0.5   10      Avg    %RSD
-------------------------------------------------------------------------------

1)     Tert Butyl Alcohol-d9 ----------------ISTD--------------------
2)  1,4-dioxane
          0.115       0.111 0.125 0.113       0.101       0.115   0.113    6.80
3)  tertiary butyl alcohol
          1.408       1.288 1.400 1.279       1.173       1.332   1.314    6.67
4)  ethanol
                                                                  0.000#  -1.00

5) I   pentafluorobenzene    ----------------ISTD--------------------
6)  chlorotrifluoroethene
                                                                  0.000#  -1.00
7)  chlorodifluoromethane
          0.454 0.487 0.389 0.403 0.392 0.425 0.397       0.395   0.418    8.54
8)  dichlorodifluoromethane
          0.584 0.570 0.520 0.567 0.561 0.408 0.555       0.548   0.539   10.40
9)  chloromethane
          0.601 0.637 0.511 0.536 0.532 0.613 0.533 0.627 0.540   0.570    8.53
10)  vinyl chloride
          0.627 0.664 0.535 0.577 0.555 0.578 0.565 0.569 0.565   0.582    6.80
11)  acetaldehyde
                                                                  0.000#  -1.00
12)  bromomethane
          0.366 0.361 0.318 0.332 0.297 0.293 0.253       0.340   0.320   11.81
13)  chloroethane
          0.351 0.383 0.301 0.325 0.310 0.341 0.285       0.324   0.327    9.37
14)  VINYL BROMIDE
                                                                  0.000#  -1.00
15)  trichlorofluoromethane
          0.753 0.771 0.650 0.696 0.671       0.661       0.691   0.699    6.58
16)  pentane
          0.879 0.794 0.685 0.685 0.735 0.899 0.656 0.816 0.722   0.763   11.52
17)  ethyl ether
          0.259 0.249 0.216 0.232 0.233       0.227       0.228   0.235    6.22
18)  2-chloropropane
          0.924 0.954 0.805 0.773 0.779 0.938 0.761 0.969 0.826   0.859   10.01
19)  acrolein
          0.053 0.044 0.044 0.048 0.047 0.034 0.048       0.044   0.045   12.24
20)  1,1-dichloroethene
          0.454 0.450 0.401 0.396 0.413 0.402 0.401 0.382 0.412   0.412    5.90
21)  isopropyl alcohol
                                                                  0.000#  -1.00
22)  acetone
          0.079       0.060 0.059 0.057       0.066       0.064   0.064   12.19
23)  allyl chloride
```

```
            0.812 0.818 0.673 0.675 0.693 0.811 0.673 0.818 0.694   0.741    9.55
24)  acetonitrile
                        0.010 0.012 0.011       0.011       0.014   0.011   12.34
25)  iodomethane
            0.777 0.755 0.688 0.694 0.712 0.724 0.693 0.617 0.695   0.706    6.46
26)  iso-butyl alcohol
                        0.004 0.004 0.005       0.005       0.004   0.004#   8.40
27)  carbon disulfide
            1.660 1.651 1.446 1.431 1.475 1.591 1.432 1.941 1.472   1.567   10.71
28)  methylene chloride
            0.552 0.517 0.414 0.416 0.425 0.581 0.413       0.435   0.469   14.83
29)  1-chloropropane
                        0.036 0.036 0.038       0.037       0.036   0.036    2.35
30)  methyl acetate
            0.262       0.169 0.191 0.182       0.183       0.189   0.196   16.95
             ----- Linear regression -----  Coefficient =  0.9996
               Response Ratio = 0.00240 + 0.18256 *A

31)  methyl tert butyl ether
            1.116 1.077 0.941 1.031 1.023 1.127 0.997 0.878 0.985   1.019    7.93
32)  trans-1,2-dichloroethene
            0.512 0.509 0.454 0.461 0.473 0.452 0.458 0.496 0.458   0.475    5.13
33)  di-isopropyl ether
            1.549 1.559 1.329 1.444 1.404 1.493 1.400 1.325 1.378   1.431    6.07
34)  ethyl tert-butyl ether
            1.403 1.361 1.189 1.327 1.288 1.352 1.284 1.168 1.242   1.291    6.17
35)  2-butanone
                        0.022 0.029 0.031       0.031       0.019   0.027   20.26
             ----- Linear regression -----  Coefficient =  0.9993
               Response Ratio = -0.00235 + 0.03138 *A

36)  1,1-dichloroethane
            0.889 0.876 0.789 0.795 0.814 0.854 0.796 0.843 0.801   0.829    4.58
37)  chloroprene
            0.753 0.777 0.672 0.716 0.694 0.705 0.689 0.607 0.676   0.699    7.01
38)  acrylonitrile
            0.086 0.077 0.073 0.082 0.081 0.072 0.080       0.076   0.078    5.95
39)  vinyl acetate
            0.034       0.045 0.059 0.058       0.059       0.039   0.049   23.13
             ----- Linear regression -----  Coefficient =  0.9996
               Response Ratio = -0.00327 + 0.05968 *A

40)  ethyl acetate
            0.024       0.030 0.040 0.034       0.035       0.030   0.032   16.69
             ----- Linear regression -----  Coefficient =  0.9976
               Response Ratio = -0.00041 + 0.03500 *A

41)  2,2-dichloropropane
            0.720 0.727 0.609 0.609 0.654 0.675 0.637 0.703 0.617   0.661    7.16
42)  cis-1,2-dichloroethene
            0.512 0.472 0.455 0.468 0.481 0.452 0.466 0.399 0.454   0.462    6.48
43)  methyl acrylate
            0.189       0.187 0.224 0.220       0.221       0.177   0.203   10.34
44)  propionitrile
            0.032 0.028 0.028 0.033 0.032       0.031       0.029   0.030    6.15
45)  bromochloromethane
            0.192 0.179 0.171 0.182 0.185 0.149 0.180       0.173   0.176    7.40
46)  tetrahydrofuran
            0.083       0.070 0.080 0.077       0.076       0.073   0.077    6.26
47)  chloroform
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** VC6448-ICC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C179998.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
            0.813 0.795 0.705 0.711 0.725 0.832 0.701 0.765 0.725   0.753    6.64
48)  t-butyl formate
            0.241 0.226 0.212 0.257 0.252 0.188 0.259       0.225   0.233   10.52
49)  dibromofluoromethane (s)
            0.400 0.491 0.368 0.381 0.374       0.362       0.396   0.396   11.20
50)  1,2-dichloroethane-d4 (s)
            0.384 0.433 0.341 0.360 0.352       0.338       0.373   0.369    8.95
51)  freon 113
            0.313 0.291 0.286 0.309 0.300 0.202 0.298       0.277   0.284   12.47
52)  methacrylonitrile
            0.183       0.158 0.180 0.182       0.183       0.157   0.174    7.29
53)  cyclohexane
            0.794 0.771 0.697 0.667 0.700 0.728 0.679 0.702 0.709   0.716    5.82
54)  1,1,1-trichloroethane
            0.712 0.705 0.624 0.624 0.644 0.696 0.625 0.681 0.634   0.661    5.69
55)  tert-amyl alcohol
            0.019       0.019 0.023 0.022       0.023       0.018   0.020   10.81
56)  tert-amyl methyl ether
            1.223 1.204 1.024 1.170 1.113 1.179 1.119 1.080 1.087   1.133    5.74

57) I   1,4-difluorobenzene   ----------------ISTD---------------------
58)  epichlorohydrin
            0.017       0.014 0.017 0.017       0.017       0.015   0.016    7.82
59)  n-butyl alcohol
            0.004       0.004 0.006 0.005       0.006       0.004   0.005#  15.81
             ----- Linear regression -----  Coefficient =  0.9993
               Response Ratio = -0.01656 + 0.00570 *A

60)  carbon tetrachloride
            0.433 0.451 0.379 0.375 0.395 0.480 0.381 0.535 0.379   0.423   13.33
61)  1,1-dichloropropene
            0.511 0.517 0.443 0.446 0.463 0.528 0.442 0.569 0.447   0.485    9.72
62)  hexane
            0.499 0.504 0.395 0.448 0.449 0.497 0.407 0.449 0.397   0.449    9.72
63)  benzene
            1.474 1.464 1.275 1.287 1.323 1.482 1.259 1.846 1.289   1.411   13.28
64)  heptane
            0.285 0.290 0.241 0.283 0.280 0.235 0.254       0.235   0.263    9.15
65)  isopropyl acetate
            0.114       0.100 0.117 0.114       0.113       0.102   0.110    6.41
66)  1,2-dichloroethane
            0.325 0.307 0.283 0.299 0.301 0.311 0.287 0.288 0.293   0.299    4.43
67)  ethyl acrylate
                                                                    0.000#  -1.00
68)  trichloroethene
            0.355 0.346 0.304 0.311 0.322 0.317 0.305 0.380 0.310   0.328    8.04
69)  2-chloroethyl vinyl ether
            0.088 0.083 0.076 0.090 0.089 0.079 0.090 0.088 0.080   0.085    6.14
70)  methylcyclohexane
            0.570 0.602 0.509 0.534 0.531 0.568 0.514 0.359 0.508   0.522   13.21
71)  tert-amyl ethyl ether
            0.805 0.739 0.689 0.717 0.729 0.755 0.697 0.617 0.714   0.718    7.14
72)  methyl methacrylate
            0.138 0.114 0.125 0.146 0.142       0.138       0.127   0.133    8.44
73)  1,2-dichloropropane
            0.337 0.323 0.290 0.302 0.309 0.334 0.297 0.293 0.296   0.309    5.83
74)  dibromomethane
            0.141 0.131 0.121 0.131 0.134 0.137 0.127       0.124   0.131    5.03
75)  bromodichloromethane
            0.376 0.365 0.335 0.354 0.362 0.396 0.348 0.332 0.333   0.356    6.05
```

```
 76)  cis-1,3-dichloropropene
            0.496 0.477 0.432 0.462 0.468 0.529 0.447 0.492 0.440   0.472    6.53
 77)  toluene-d8 (s)
            1.219 1.377 1.088 1.117 1.106       1.030       1.168   1.158    9.79
 78)  4-methyl-2-pentanone
            0.069 0.053 0.062 0.074 0.072       0.070       0.062   0.066   10.76
 79)  toluene
            0.898 0.898 0.771 0.773 0.791 0.929 0.744       0.785   0.824    8.78
 80)  3-methyl-1-butanol
            0.007 0.006 0.006 0.008 0.008       0.008       0.006   0.007#  12.70
 81)  trans-1,3-dichloropropene
            0.383 0.371 0.333 0.364 0.371 0.431 0.353 0.452 0.337   0.377   10.60
 82)  ethyl methacrylate
            0.298 0.287 0.268 0.304 0.300 0.315 0.288       0.263   0.290    6.12
 83)  1,1,2-trichloroethane
            0.185 0.186 0.162 0.169 0.170 0.226 0.157       0.165   0.177   12.55
 84)  2-hexanone
            0.061       0.059 0.070 0.068       0.067       0.055   0.063    9.66

 85) I   chlorobenzene-d5      ----------------ISTD---------------------
 86)  cyclohexanone
            0.016       0.003 0.004 0.007       0.006       0.003   0.007#  72.60
             ----- Linear regression -----  Coefficient =  0.4378
               Response Ratio = 0.00915 + 0.00361 *A

 87)  tetrachloroethene
            0.487 0.496 0.423 0.429 0.441 0.474 0.406 0.573 0.422   0.461   11.34
 88)  1,3-dichloropropane
            0.506 0.516 0.434 0.464 0.457 0.606 0.441 0.490 0.450   0.485   11.09
 89)  butyl acetate
            0.177 0.166 0.151 0.181 0.173       0.172       0.156   0.168    6.61
 90)  3,3-dimethyl-1-butanol
            0.019 0.019 0.017 0.022 0.022 0.019 0.023       0.018   0.020   11.88
 91)  dibromochloromethane
            0.298 0.300 0.274 0.298 0.302 0.374 0.293 0.285 0.277   0.300    9.80
 92)  1,2-dibromoethane
            0.262 0.250 0.226 0.250 0.245 0.305 0.235 0.269 0.235   0.253    9.35
 93)  n-butyl ether
                                                                    0.000#  -1.00
 94)  chlorobenzene
            1.204 1.199 1.042 1.055 1.075 1.369 1.003       1.064   1.126   10.82
 95)  1,1,1,2-tetrachloroethane
            0.369 0.357 0.331 0.344 0.352 0.414 0.337 0.329 0.330   0.351    7.73
 96)  ethylbenzene
            2.228 2.244 1.947 1.941 1.957 2.420 1.822 2.779 1.965   2.145   14.26
 97)  m,p-xylene
            0.862 0.884 0.752 0.748 0.748 0.927 0.677 1.195 0.755   0.839   18.59
             ----- Linear regression -----  Coefficient =  0.9976
               Response Ratio = 0.05143 + 0.68543 *A

 98)  o-xylene
            0.806 0.828 0.710 0.717 0.723 0.890 0.679 0.912 0.718   0.776   11.04
 99)  styrene
            1.334 1.309 1.179 1.203 1.211 1.469 1.131 1.538 1.184   1.284   10.93
100)  bromoform
            0.164 0.178 0.153 0.173 0.176 0.212 0.173       0.154   0.173   10.79

101) I   1,4-dichlorobenzene-d ----------------ISTD---------------------
102)  isopropylbenzene
            4.472 4.547 3.858 3.832 3.884 4.772 3.621 5.158 3.894   4.227   12.45
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** VC6448-ICC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C179998.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
103)  4-bromofluorobenzene (s)
            1.328       1.058 1.110 1.079       1.018       1.258   1.142   10.78
104)  bromobenzene
            0.955 0.958 0.826 0.849 0.859 1.128 0.816       0.859   0.906   11.53
105)  1,1,2,2-tetrachloroethane
            0.717 0.768 0.591 0.633 0.618 1.024 0.592 0.678 0.613   0.693   19.91
             ----- Linear regression -----  Coefficient =  0.9994
               Response Ratio = 0.01176 + 0.59455 *A

106)  trans-1,4-dichloro-2-butene
            0.184 0.180 0.152 0.170 0.169 0.222 0.165       0.153   0.174   12.82
107)  1,2,3-trichloropropane
            0.180 0.193 0.147 0.162 0.159       0.153       0.160   0.165    9.83
108)  n-propylbenzene
            5.298 5.544 4.560 4.597 4.683 5.554 4.301 6.602 4.616   5.084   14.40
109)  4-ethyltoluene
            4.198 3.740 3.606 3.632 3.706 3.810 3.369 4.725 3.694   3.831   10.44
110)  2-chlorotoluene
            1.010 1.042 0.874 0.884 0.905 1.155 0.844 1.246 0.888   0.983   14.35
111)  4-chlorotoluene
            3.229 3.276 2.739 2.793 2.834 3.645 2.641       2.807   2.995   11.62
112)  1,3,5-trimethylbenzene
            3.705 3.895 3.223 3.243 3.293 4.002 3.059 4.554 3.282   3.584   13.68
113)  tert-butylbenzene
            3.122 3.268 2.783 2.738 2.775 3.367 2.609 3.757 2.801   3.025   12.53
114)  pentachloroethane
            0.532 0.547 0.483 0.505 0.529 0.619 0.506       0.478   0.525    8.55
115)  1,2,4-trimethylbenzene
            3.640 3.727 3.148 3.200 3.245 4.008 2.995       3.211   3.397   10.32
116)  sec-butylbenzene
            4.825 5.187 4.259 4.220 4.305 4.901 3.988 6.161 4.304   4.683   14.46
117)  1,3-dichlorobenzene
            1.921 1.991 1.676 1.708 1.739 2.374 1.611       1.729   1.844   13.50
118)  p-isopropyltoluene
            3.838 4.113 3.427 3.456 3.529 3.943 3.260 5.004 3.482   3.784   14.14
119)  1,4-dichlorobenzene
            1.922 2.017 1.658 1.723 1.731 2.377 1.603       1.706   1.842   13.90
120)  benzyl chloride
            1.236 1.276 0.985 1.175 1.229 1.334 1.220       1.052   1.188    9.76
121)  p-diethylbenzene
            2.375 2.131 2.054 2.090 2.170 2.020 1.962 2.599 2.073   2.164    9.27
122)  1,2-dichlorobenzene
            1.684 1.725 1.459 1.500 1.524 1.989 1.422       1.509   1.602   11.79
123)  n-butylbenzene
            2.116 2.251 1.902 1.952 2.000 2.073 1.817       1.904   2.002    6.97
124)  1,2,4,5-tetramethylbenzene
            3.344 2.945 2.962 3.000 3.102 2.943 2.842 4.239 3.035   3.157   13.61
125)  1,2-dibromo-3-chloropropane
            0.100 0.100 0.087 0.097 0.096       0.096       0.091   0.095    4.80
126)  1,3,5-trichlorobenzene
            1.463 1.578 1.301 1.366 1.393 1.565 1.259       1.323   1.406    8.48
127)  1,2,4-trichlorobenzene
            1.151 1.197 1.055 1.111 1.122 1.385 1.034       1.069   1.140    9.83
128)  hexachlorobutadiene
            0.729 0.835 0.687 0.658 0.679 0.731 0.668       0.680   0.708    8.17
129)  naphthalene
            2.000 2.049 1.721 1.838 1.818       1.734       1.801   1.851    6.83
130)  1,2,3-trichlorobenzene
            0.951 1.069 0.874 0.897 0.897 1.164 0.844       0.912   0.951   11.52
131)  hexachloroethane
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** VC6448-ICC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C179998.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
            0.580 0.643 0.551 0.584 0.615 0.620 0.608 0.809 0.543   0.617   12.79
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          MCS6448.M         Thu Mar 21 16:07:21 2013   C
```

Initial Calibration Verification

Job Number: JB30425 **Sample:** VC6450-ICV6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180019.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\C180019.D Vial: 2
Acq On : 13 Mar 2013 11:05 am Operator: tamikag
Sample : icv6448-50 Inst : MSC
Misc : MS44188,VC6450,5.0,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\msdchem\1\METHODS\MCS6448.M (RTE Integrator)
Title : SW846 8260B,ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Mar 21 15:53:29 2013
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		Tert Butyl Alcohol-d9	1.000	1.000	0.0	113	0.00	5.48
2	M	1,4-dioxane	0.113	0.106	6.2	97	0.00	9.82
3	M	tertiary butyl alcohol	1.314	1.322	-0.6	107	0.00	5.61
4		ethanol		----------NA----------				
5	I	pentafluorobenzene	1.000	1.000	0.0	95	0.00	8.07
6	M	chlorotrifluoroethene		----------NA----------				
7	M	chlorodifluoromethane	0.418	0.437	-4.5	103	0.00	2.55
8	M	dichlorodifluoromethane	0.539	0.560	-3.9	94	0.00	2.54
9	M	chloromethane	0.570	0.537	5.8	95	0.00	2.73
10	M	vinyl chloride	0.582	0.578	0.7	95	0.00	2.88
11	M	acetaldehyde		----------NA----------				
12	M	bromomethane	0.320	0.322	-0.6	92	0.00	3.35
13	M	chloroethane	0.327	0.327	0.0	96	0.00	3.48
14		VINYL BROMIDE		----------NA----------				
15	M	trichlorofluoromethane	0.699	0.694	0.7	95	0.00	3.79
16		pentane	0.763	0.698	8.5	97	0.00	3.86
17	M	ethyl ether	0.235	0.248	-5.5	102	-0.02	4.21
18	m	2-chloropropane	0.859	0.822	4.3	101	0.00	4.42
19	M	acrolein	0.045	0.054	-20.0	106	0.00	4.54
20	M	1,1-dichloroethene	0.412	0.418	-1.5	100	0.00	4.62
21	M	isopropyl alcohol		----------NA----------				
22	M	acetone	0.064	0.067	-4.7	106	-0.02	4.77
23	M	allyl chloride	0.741	0.709	4.3	100	0.00	5.22
24	M	acetonitrile	0.011	0.012	-9.1	102	-0.02	5.34
25	M	iodomethane	0.706	0.701	0.7	96	0.00	4.89
26	M	iso-butyl alcohol	0.004	0.005	-25.0#	101	0.00	5.77
27	M	carbon disulfide	1.567	1.493	4.7	99	-0.02	4.95
28	M	methylene chloride	0.469	0.437	6.8	100	0.00	5.47
29	m	1-chloropropane	0.036	0.038	-5.6	101	-0.02	5.44
		----------	True	Calc.	% Drift	----------		
30	M	methyl acetate	50.000	53.655	-7.3	99	0.00	5.24
		----------	AvgRF	CCRF	% Dev	----------		
31	M	methyl tert butyl ether	1.019	1.074	-5.3	99	0.00	5.77
32	M	trans-1,2-dichloroethene	0.475	0.468	1.5	97	0.00	5.81
33	M	di-isopropyl ether	1.431	1.503	-5.0	99	0.00	6.46
34	M	ethyl tert-butyl ether	1.291	1.328	-2.9	95	0.00	6.98
		----------	True	Calc.	% Drift	----------		
35	M	2-butanone	50.000	56.038	-12.1	107	0.00	7.36

Initial Calibration Verification

Job Number: JB30425 **Sample:** VC6450-ICV6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180019.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

			AvgRF	CCRF	% Dev			
36	M	1,1-dichloroethane	0.829	0.839	-1.2	100	0.00	6.49
37	M	chloroprene	0.699	0.695	0.6	92	0.00	6.57
38	M	acrylonitrile	0.078	0.090	-15.4	104	0.00	5.93
			True	Calc.	% Drift			
39	M	vinyl acetate	50.000	56.011	-12.0	102	0.00	6.53
40	M	ethyl acetate	50.000	55.105	-10.2	92	0.00	7.39
			AvgRF	CCRF	% Dev			
41	M	2,2-dichloropropane	0.661	0.658	0.5	103	0.00	7.30
42	M	cis-1,2-dichloroethene	0.462	0.482	-4.3	98	0.00	7.35
43	m	methyl acrylate	0.203	0.243	-19.7	103	0.00	7.46
44	M	propionitrile	0.030	0.036	-20.0	104	0.00	7.55
45	M	bromochloromethane	0.176	0.187	-6.3	98	0.00	7.69
46	M	tetrahydrofuran	0.077	0.089	-15.6	105	0.00	7.67
47	M	chloroform	0.753	0.746	0.9	100	0.00	7.78
48	m	t-butyl formate	0.233	0.255	-9.4	94	0.00	7.79
49	S	dibromofluoromethane (s)	0.396	0.378	4.5	94	0.00	8.01
50	S	1,2-dichloroethane-d4 (s)	0.369	0.368	0.3	97	0.00	8.50
51	M	freon 113	0.284	0.264	7.0	81	0.00	4.60
52	M	methacrylonitrile	0.174	0.203	-16.7	107	0.00	7.71
53		cyclohexane	0.716	0.724	-1.1	103	0.00	7.96
54	M	1,1,1-trichloroethane	0.661	0.653	1.2	99	0.00	7.97
55		tert-amyl alcohol	0.020	0.028	-40.0#	116	0.00	8.52
56	M	tert-amyl methyl ether	1.133	1.134	-0.1	92	0.00	8.58
57	I	1,4-difluorobenzene	1.000	1.000	0.0	98	0.00	9.06
58	M	epichlorohydrin	0.016	0.019	-18.7	107	0.00	10.45
			True	Calc.	% Drift			
59	M	n-butyl alcohol	2500.000	2846.154	-13.8	107	0.00	9.33
			AvgRF	CCRF	% Dev			
60	M	carbon tetrachloride	0.423	0.375	11.3	98	0.00	8.15
61	M	1,1-dichloropropene	0.485	0.455	6.2	100	0.00	8.19
62	M	hexane	0.449	0.381	15.1	83	0.00	6.08
63	M	benzene	1.411	1.302	7.7	99	0.00	8.46
64	M	heptane	0.263	0.235	10.6	81	0.00	8.71
65	M	isopropyl acetate	0.110	0.121	-10.0	101	0.00	8.57
66	M	1,2-dichloroethane	0.299	0.308	-3.0	100	0.00	8.61
67		ethyl acrylate		----------NA----------				
68	M	trichloroethene	0.328	0.313	4.6	98	0.00	9.36
69	M	2-chloroethyl vinyl ether	0.085	0.091	-7.1	99	0.00	10.35
70	M	methylcyclohexane	0.522	0.509	2.5	93	0.00	9.50
71		tert-amyl ethyl ether	0.718	0.754	-5.0	104	0.00	9.59
72	M	methyl methacrylate	0.133	0.149	-12.0	100	0.00	9.79
73	M	1,2-dichloropropane	0.309	0.309	0.0	100	0.00	9.69
74	M	dibromomethane	0.131	0.133	-1.5	99	0.00	9.85
75	M	bromodichloromethane	0.356	0.358	-0.6	99	0.00	10.02
76	M	cis-1,3-dichloropropene	0.472	0.464	1.7	98	0.00	10.50
77	S	toluene-d8 (s)	1.158	1.071	7.5	94	0.00	10.72
78	M	4-methyl-2-pentanone	0.066	0.079	-19.7	104	0.00	10.65
79	M	toluene	0.824	0.775	5.9	98	0.00	10.79
80	M	3-methyl-1-butanol	0.007	0.009#	-28.6#	106	0.00	10.73
81	M	trans-1,3-dichloropropene	0.377	0.369	2.1	99	0.00	11.10
82	M	ethyl methacrylate	0.290	0.310	-6.9	99	0.00	11.11
83	M	1,1,2-trichloroethane	0.177	0.173	2.3	100	0.00	11.27
84	M	2-hexanone	0.063	0.074	-17.5	103	0.00	11.47

Initial Calibration Verification

Job Number: JB30425 **Sample:** VC6450-ICV6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180019.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

85	I	chlorobenzene-d5	1.000	1.000	0.0	100	0.00	12.13
		----------	True	Calc.	% Drift	----------		
86	M	cyclohexanone	500.000	873.417	-74.7#	200	0.00	13.15
		----------	AvgRF	CCRF	% Dev	----------		
87	M	tetrachloroethene	0.461	0.400	13.2	93	0.00	11.31
88	M	1,3-dichloropropane	0.485	0.464	4.3	100	0.00	11.44
89	M	butyl acetate	0.168	0.186	-10.7	102	0.00	11.56
90	m	3,3-dimethyl-1-butanol	0.020	0.024	-20.0	108	0.00	11.65
91	M	dibromochloromethane	0.300	0.288	4.0	96	0.00	11.62
92	M	1,2-dibromoethane	0.253	0.243	4.0	97	0.00	11.74
93	M	n-butyl ether		----------NA----------				
94	M	chlorobenzene	1.126	1.020	9.4	96	0.00	12.16
95	M	1,1,1,2-tetrachloroethane	0.351	0.330	6.0	96	0.00	12.24
96	M	ethylbenzene	2.145	1.889	11.9	97	0.00	12.22
		----------	True	Calc.	% Drift	----------		
97	M	m,p-xylene	100.000	101.105	-1.1	96	0.00	12.33
		----------	AvgRF	CCRF	% Dev	----------		
98	M	o-xylene	0.776	0.690	11.1	96	0.00	12.69
99	M	styrene	1.284	1.149	10.5	95	0.00	12.71
100	M	bromoform	0.173	0.166	4.0	96	0.00	12.92
101	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	98	0.00	14.15
102	M	isopropylbenzene	4.227	3.774	10.7	97	0.00	12.99
103	S	4-bromofluorobenzene (s)	1.142	1.049	8.1	93	0.00	13.18
104	M	bromobenzene	0.906	0.824	9.1	95	0.00	13.31
		----------	True	Calc.	% Drift	----------		
105	M	1,1,2,2-tetrachloroethane	50.000	52.776	-5.6	99	0.00	13.33
		----------	AvgRF	CCRF	% Dev	----------		
106	M	trans-1,4-dichloro-2-bute	0.174	0.174	0.0	101	0.00	13.38
107	M	1,2,3-trichloropropane	0.165	0.165	0.0	100	0.00	13.38
108	M	n-propylbenzene	5.084	4.507	11.3	96	0.00	13.35
109	M	4-ethyltoluene	3.831	3.511	8.4	95	0.00	13.44
110	M	2-chlorotoluene	0.983	0.859	12.6	95	0.00	13.46
111	M	4-chlorotoluene	2.995	2.708	9.6	95	0.00	13.55
112	M	1,3,5-trimethylbenzene	3.584	3.156	11.9	96	0.00	13.50
113	M	tert-butylbenzene	3.025	2.688	11.1	96	0.00	13.76
114	M	pentachloroethane	0.525	0.489	6.9	95	0.00	13.84
115	M	1,2,4-trimethylbenzene	3.397	3.091	9.0	95	0.00	13.82
116	M	sec-butylbenzene	4.683	4.146	11.5	96	0.00	13.95
117	M	1,3-dichlorobenzene	1.844	1.617	12.3	93	0.00	14.10
118	M	p-isopropyltoluene	3.784	3.329	12.0	95	0.00	14.07
119	M	1,4-dichlorobenzene	1.842	1.615	12.3	92	0.00	14.18
120		benzyl chloride	1.188	1.174	1.2	98	0.00	14.29
121		p-diethylbenzene	2.164	1.992	7.9	94	0.00	14.38
122	M	1,2-dichlorobenzene	1.602	1.438	10.2	94	0.00	14.49
123	M	n-butylbenzene	2.002	1.854	7.4	93	0.00	14.40
124		1,2,4,5-tetramethylbenzen	3.157	2.898	8.2	95	0.00	15.02
125	M	1,2-dibromo-3-chloropropa	0.095	0.099	-4.2	100	0.00	15.14
126	m	1,3,5-trichlorobenzene	1.406	1.249	11.2	90	0.00	15.26
127	M	1,2,4-trichlorobenzene	1.140	1.017	10.8	90	0.00	15.77
128	M	hexachlorobutadiene	0.708	0.632	10.7	94	0.00	15.84
129	M	naphthalene	1.851	1.758	5.0	94	0.00	15.97
130	M	1,2,3-trichlorobenzene	0.951	0.832	12.5	91	0.00	16.17

Initial Calibration Verification

Job Number: JB30425 **Sample:** VC6450-ICV6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180019.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
131 M   hexachloroethane            0.617   0.564      8.6   95   0.00   14.66
 ---------------------------------------------------------------------------
 ---------------------------------------------------------------------------

    (#) = Out of Range               SPCC's out = 0  CCC's out = 0
     C179998.D  MCS6448.M        Thu Mar 21 17:25:26 2013   C
```

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VC6455-CC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180057.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\c-core\vc6455\c180057.d    Vial: 2
Acq On    : 14 Mar 2013  12:27 pm                    Operator: tamikag
Sample    : cc6448-20                                Inst    : MSC
Misc      : MS44209,VC6455,5,,100,5,1                Multiplr: 1.00
MS Integration Params: RTEINT.P

Method       : C:\MSDCHEM\1\METHODS\MCS6448.M (RTE Integrator)
Title        : SW846  8260B,ZB624 60m x 0.25mm x 1.4um
Last Update  : Wed Mar 13 09:37:57 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.010  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		Tert Butyl Alcohol-d9	1.000	1.000	0.0	120	0.00	5.48
2	M	1,4-dioxane	0.113	0.102	9.7	110	0.00	9.83
3	M	tertiary butyl alcohol	1.314	1.292	1.7	120	0.00	5.61
4		ethanol		----------NA----------				
5	I	pentafluorobenzene	1.000	1.000	0.0	85	0.00	8.07
6	M	chlorotrifluoroethene		----------NA----------				
7	M	chlorodifluoromethane	0.418	0.401	4.1	88	0.00	2.55
8	M	dichlorodifluoromethane	0.539	0.532	1.3	88	0.00	2.54
9	M	chloromethane	0.570	0.557	2.3	93	0.00	2.73
10	M	vinyl chloride	0.582	0.577	0.9	92	0.00	2.88
11	M	acetaldehyde		----------NA----------				
12	M	bromomethane	0.320	0.329	-2.8	89	0.00	3.36
13	M	chloroethane	0.327	0.337	-3.1	96	0.00	3.48
14		VINYL BROMIDE		----------NA----------				
15	M	trichlorofluoromethane	0.699	0.681	2.6	90	0.00	3.79
16		pentane		----------NA----------				
17	M	ethyl ether	0.235	0.256	-8.9	101	0.00	4.22
18	m	2-chloropropane	0.859	0.885	-3.0	94	0.00	4.42
19	M	acrolein	0.045	0.062	-37.8#	120	0.00	4.55
20	M	1,1-dichloroethene	0.412	0.420	-1.9	89	0.00	4.62
21	M	isopropyl alcohol		----------NA----------				
22	M	acetone	0.064	0.079	-23.4#	113	-0.01	4.78
23	M	allyl chloride	0.741	0.752	-1.5	96	0.00	5.22
24	M	acetonitrile	0.011	0.013	-18.2	114	0.00	5.35
25	M	iodomethane	0.706	0.686	2.8	85	0.00	4.89
26	M	iso-butyl alcohol	0.004	0.005#	-25.0#	100	0.00	5.77
27	M	carbon disulfide	1.567	1.530	2.4	90	0.00	4.96
28	M	methylene chloride	0.469	0.458	2.3	94	0.00	5.47
29	m	1-chloropropane	0.036	0.039	-8.3	92	0.00	5.45
		----------	True	Calc.	% Drift	----------		
30	M	methyl acetate	20.000	23.585	-17.9	112	0.00	5.25
		----------	AvgRF	CCRF	% Dev	----------		
31	M	methyl tert butyl ether	1.019	1.094	-7.4	99	0.00	5.77
32	M	trans-1,2-dichloroethene	0.475	0.473	0.4	89	0.00	5.81
33	M	di-isopropyl ether	1.431	1.561	-9.1	100	0.00	6.46
34	M	ethyl tert-butyl ether	1.291	1.372	-6.3	99	0.00	6.99
		----------	True	Calc.	% Drift	----------		
35	M	2-butanone	20.000	22.567	-12.8	113	0.00	7.37

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VC6455-CC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180057.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

			AvgRF	CCRF	% Dev			
36	M	1,1-dichloroethane	0.829	0.867	-4.6	94	0.00	6.49
37	M	chloroprene	0.699	0.718	-2.7	91	0.00	6.57
38	M	acrylonitrile	0.078	0.093	-19.2	109	0.00	5.93
			True	Calc.	% Drift			
39	M	vinyl acetate	20.000	20.396	-2.0	100	0.00	6.54
40	M	ethyl acetate	20.000	23.966	-19.8	115	0.00	7.40
			AvgRF	CCRF	% Dev			
41	M	2,2-dichloropropane	0.661	0.678	-2.6	95	0.00	7.30
42	M	cis-1,2-dichloroethene	0.462	0.483	-4.5	91	0.00	7.35
43	m	methyl acrylate	0.203	0.235	-15.8	107	0.00	7.47
44	M	propionitrile	0.030	0.037	-23.3#	111	0.00	7.56
45	M	bromochloromethane	0.176	0.179	-1.7	90	0.00	7.69
46	M	tetrahydrofuran	0.077	0.097	-26.0#	118	0.00	7.69
47	M	chloroform	0.753	0.758	-0.7	92	0.00	7.79
48	m	t-butyl formate	0.233	0.207	11.2	83	0.00	7.80
49	S	dibromofluoromethane (s)	0.396	0.377	4.8	87	0.00	8.02
50	S	1,2-dichloroethane-d4 (s)	0.369	0.365	1.1	91	0.00	8.50
51	M	freon 113	0.284	0.275	3.2	82	0.00	4.61
52	M	methacrylonitrile	0.174	0.209	-20.1#	113	0.00	7.72
53		cyclohexane	0.716	0.739	-3.2	91	0.00	7.96
54	M	1,1,1-trichloroethane	0.661	0.646	2.3	88	0.00	7.98
55		tert-amyl alcohol		----------NA----------				
56	M	tert-amyl methyl ether	1.133	1.123	0.9	94	0.00	8.58
57	I	1,4-difluorobenzene	1.000	1.000	0.0	89	0.00	9.06
58	M	epichlorohydrin	0.016	0.018	-12.5	114	0.00	10.45
			True	Calc.	% Drift			
59	M	n-butyl alcohol	1000.000	1140.048	-14.0	123	0.00	9.33
			AvgRF	CCRF	% Dev			
60	M	carbon tetrachloride	0.423	0.368	13.0	87	0.00	8.16
61	M	1,1-dichloropropene	0.485	0.460	5.2	93	0.00	8.20
62	M	hexane	0.449	0.431	4.0	97	0.00	6.09
63	M	benzene	1.411	1.320	6.4	92	0.00	8.47
64	M	heptane	0.263	0.274	-4.2	102	0.00	8.72
65	M	isopropyl acetate	0.110	0.115	-4.5	103	0.00	8.58
66	M	1,2-dichloroethane	0.299	0.312	-4.3	98	0.00	8.61
67		ethyl acrylate		----------NA----------				
68	M	trichloroethene	0.328	0.310	5.5	91	0.00	9.36
69	M	2-chloroethyl vinyl ether	0.085	0.086	-1.2	101	0.00	10.35
70	M	methylcyclohexane	0.522	0.509	2.5	89	0.00	9.50
71		tert-amyl ethyl ether		----------NA----------				
72	M	methyl methacrylate	0.133	0.144	-8.3	103	0.00	9.79
73	M	1,2-dichloropropane	0.309	0.313	-1.3	96	0.00	9.69
74	M	dibromomethane	0.131	0.133	-1.5	98	0.00	9.85
75	M	bromodichloromethane	0.356	0.341	4.2	91	0.00	10.02
76	M	cis-1,3-dichloropropene	0.472	0.460	2.5	95	0.00	10.51
77	S	toluene-d8 (s)	1.158	1.124	2.9	92	0.00	10.72
78	M	4-methyl-2-pentanone	0.066	0.076	-15.2	109	0.00	10.65
79	M	toluene	0.824	0.776	5.8	90	0.00	10.79
80	M	3-methyl-1-butanol	0.007	0.008#	-14.3	118	0.00	10.73
81	M	trans-1,3-dichloropropene	0.377	0.360	4.5	96	0.00	11.10
82	M	ethyl methacrylate	0.290	0.303	-4.5	101	0.00	11.11
83	M	1,1,2-trichloroethane	0.177	0.172	2.8	95	0.00	11.27
84	M	2-hexanone	0.063	0.073	-15.9	110	0.00	11.47

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VC6455-CC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180057.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

85	I	chlorobenzene-d5	1.000	1.000	0.0	90	0.00	12.14
		----------	True	Calc.	% Drift	----------		
86	M	cyclohexanone	200.000	820.290	-310.1#	472	0.00	13.15
		----------	AvgRF	CCRF	% Dev	----------		
87	M	tetrachloroethene	0.461	0.388	15.8	83	0.00	11.31
88	M	1,3-dichloropropane	0.485	0.475	2.1	99	0.00	11.44
89	M	butyl acetate	0.168	0.185	-10.1	111	0.00	11.56
90	m	3,3-dimethyl-1-butanol	0.020	0.022	-10.0	118	0.00	11.65
91	M	dibromochloromethane	0.300	0.267	11.0	88	0.00	11.62
92	M	1,2-dibromoethane	0.253	0.239	5.5	95	0.00	11.74
93	M	n-butyl ether		----------NA----------				
94	M	chlorobenzene	1.126	1.023	9.1	89	0.00	12.16
95	M	1,1,1,2-tetrachloroethane	0.351	0.313	10.8	86	0.00	12.24
96	M	ethylbenzene	2.145	1.943	9.4	90	0.00	12.22
		----------	True	Calc.	% Drift	----------		
97	M	m,p-xylene	40.000	38.906	2.7	88	0.00	12.33
		----------	AvgRF	CCRF	% Dev	----------		
98	M	o-xylene	0.776	0.689	11.2	88	0.00	12.69
99	M	styrene	1.284	1.161	9.6	89	0.00	12.71
100	M	bromoform	0.173	0.146	15.6	87	0.00	12.92
101	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	87	0.00	14.16
102	M	isopropylbenzene	4.227	3.916	7.4	89	0.00	12.99
103	S	4-bromofluorobenzene (s)	1.142	1.063	6.9	88	0.00	13.18
104	M	bromobenzene	0.906	0.819	9.6	86	0.00	13.31
105	M	1,1,2,2-tetrachloroethane	0.693	0.675	2.6	100	0.00	13.33
106	M	trans-1,4-dichloro-2-bute	0.174	0.183	-5.2	105	0.00	13.38
107	M	1,2,3-trichloropropane	0.165	0.166	-0.6	98	0.00	13.38
108	M	n-propylbenzene	5.084	4.739	6.8	91	0.00	13.35
109	M	4-ethyltoluene		----------NA----------				
110	M	2-chlorotoluene	0.983	0.869	11.6	87	0.00	13.46
111	M	4-chlorotoluene	2.995	2.873	4.1	91	0.00	13.55
112	M	1,3,5-trimethylbenzene	3.584	3.240	9.6	88	0.00	13.50
113	M	tert-butylbenzene	3.025	2.747	9.2	86	0.00	13.76
114	M	pentachloroethane	0.525	0.453	13.7	82	0.00	13.84
115	M	1,2,4-trimethylbenzene	3.397	3.207	5.6	89	0.00	13.82
116	M	sec-butylbenzene	4.683	4.318	7.8	88	0.00	13.95
117	M	1,3-dichlorobenzene	1.844	1.664	9.8	87	0.00	14.10
118	M	p-isopropyltoluene	3.784	3.454	8.7	88	0.00	14.07
119	M	1,4-dichlorobenzene	1.842	1.680	8.8	88	0.00	14.18
120		benzyl chloride	1.188	1.170	1.5	104	0.00	14.29
121		p-diethylbenzene		----------NA----------				
122	M	1,2-dichlorobenzene	1.602	1.461	8.8	87	0.00	14.49
123	M	n-butylbenzene	2.002	1.950	2.6	89	0.00	14.41
124		1,2,4,5-tetramethylbenzen		----------NA----------				
125	M	1,2-dibromo-3-chloropropa	0.095	0.096	-1.1	96	0.00	15.14
126	m	1,3,5-trichlorobenzene	1.406	1.286	8.5	86	0.00	15.26
127	M	1,2,4-trichlorobenzene	1.140	1.040	8.8	86	0.00	15.77
128	M	hexachlorobutadiene	0.708	0.665	6.1	84	0.00	15.84
129	M	naphthalene	1.851	1.820	1.7	92	0.00	15.97
130	M	1,2,3-trichlorobenzene	0.951	0.880	7.5	88	0.00	16.17
131	M	hexachloroethane	0.617	0.515	16.5	81	0.00	14.66

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VC6455-CC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180057.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
(#) = Out of Range              SPCC's out = 0  CCC's out = 0
 C179997.D  MCS6448.M        Wed Mar 20 14:49:47 2013   VOA-CLN-04
```

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VC6455-CC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180083.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\c-core\vc6455\C180083.D    Vial: 2
Acq On    : 15 Mar 2013   1:35 pm                    Operator: tamikag
Sample    : cc6448-20                                Inst    : MSC
Misc      : MS44695,VC6455,5.0,,100,5,1              Multiplr: 1.00
MS Integration Params: RTEINT.P

Method       : C:\MSDCHEM\1\METHODS\MCS6448.M (RTE Integrator)
Title        : SW846  8260B,ZB624 60m x 0.25mm x 1.4um
Last Update  : Wed Mar 13 09:37:57 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.010  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		Tert Butyl Alcohol-d9	1.000	1.000	0.0	97	-0.01	5.48
2	M	1,4-dioxane	0.113	0.114	-0.9	99	0.00	9.82
3	M	tertiary butyl alcohol	1.314	1.447	-10.1	109	0.01	5.62
4		ethanol		----------NA----------				
5	I	pentafluorobenzene	1.000	1.000	0.0	86	0.00	8.07
6	M	chlorotrifluoroethene		----------NA----------				
7	M	chlorodifluoromethane	0.418	0.296	29.2#	65	0.00	2.55
8	M	dichlorodifluoromethane	0.539	0.419	22.3#	69	0.00	2.55
9	M	chloromethane	0.570	0.498	12.6	83	0.00	2.73
10	M	vinyl chloride	0.582	0.506	13.1	81	0.00	2.88
11	M	acetaldehyde		----------NA----------				
12	M	bromomethane	0.320	0.288	10.0	78	0.00	3.35
13	M	chloroethane	0.327	0.292	10.7	83	0.00	3.49
14		VINYL BROMIDE		----------NA----------				
15	M	trichlorofluoromethane	0.699	0.561	19.7	74	0.00	3.80
16		pentane		----------NA----------				
17	M	ethyl ether	0.235	0.274	-16.6	108	0.00	4.22
18	m	2-chloropropane	0.859	0.942	-9.7	100	0.00	4.42
19	M	acrolein	0.045	0.050	-11.1	97	0.00	4.56
20	M	1,1-dichloroethene	0.412	0.440	-6.8	94	0.00	4.63
21	M	isopropyl alcohol		----------NA----------				
22	M	acetone	0.064	0.077	-20.3#	110	0.00	4.79
23	M	allyl chloride	0.741	0.836	-12.8	106	0.00	5.22
24	M	acetonitrile	0.011	0.013	-18.2	113	0.00	5.35
25	M	iodomethane	0.706	0.765	-8.4	95	0.00	4.90
26	M	iso-butyl alcohol	0.004	0.005#	-25.0#	106	-0.01	5.76
27	M	carbon disulfide	1.567	1.592	-1.6	94	0.00	4.96
28	M	methylene chloride	0.469	0.498	-6.2	103	0.00	5.47
29	m	1-chloropropane	0.036	0.042	-16.7	100	0.00	5.45
		----------	True	Calc.	% Drift	----------		
30	M	methyl acetate	20.000	23.224	-16.1	111	0.00	5.25
		----------	AvgRF	CCRF	% Dev	----------		
31	M	methyl tert butyl ether	1.019	1.186	-16.4	108	0.00	5.78
32	M	trans-1,2-dichloroethene	0.475	0.523	-10.1	99	0.00	5.82
33	M	di-isopropyl ether	1.431	1.605	-12.2	103	0.00	6.46
34	M	ethyl tert-butyl ether	1.291	1.409	-9.1	101	0.00	6.99
		----------	True	Calc.	% Drift	----------		
35	M	2-butanone	20.000	22.164	-10.8	111	0.01	7.38

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VC6455-CC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180083.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

			AvgRF	CCRF	% Dev			
36	M	1,1-dichloroethane	0.829	0.970	-17.0	105	0.00	6.50
37	M	chloroprene	0.699	0.704	-0.7	90	0.00	6.57
38	M	acrylonitrile	0.078	0.098	-25.6#	114	0.00	5.93
			True	Calc.	% Drift			
39	M	vinyl acetate	20.000	20.293	-1.5	100	0.00	6.53
40	M	ethyl acetate	20.000	20.934	-4.7	100	0.00	7.39
			AvgRF	CCRF	% Dev			
41	M	2,2-dichloropropane	0.661	0.709	-7.3	100	-0.01	7.30
42	M	cis-1,2-dichloroethene	0.462	0.545	-18.0	103	0.00	7.35
43	m	methyl acrylate	0.203	0.245	-20.7#	112	0.00	7.47
44	M	propionitrile	0.030	0.037	-23.3#	112	0.00	7.55
45	M	bromochloromethane	0.176	0.199	-13.1	100	0.00	7.69
46	M	tetrahydrofuran	0.077	0.098	-27.3#	120	0.00	7.68
47	M	chloroform	0.753	0.838	-11.3	102	0.00	7.78
48	m	t-butyl formate	0.233	0.223	4.3	90	0.00	7.80
49	S	dibromofluoromethane (s)	0.396	0.363	8.3	85	0.00	8.01
50	S	1,2-dichloroethane-d4 (s)	0.369	0.338	8.4	85	0.00	8.51
51	M	freon 113	0.284	0.262	7.7	78	0.00	4.60
52	M	methacrylonitrile	0.174	0.212	-21.8#	115	0.00	7.72
53		cyclohexane	0.716	0.758	-5.9	93	0.00	7.96
54	M	1,1,1-trichloroethane	0.661	0.676	-2.3	93	0.00	7.98
55		tert-amyl alcohol		----------NA----------				
56	M	tert-amyl methyl ether	1.133	1.135	-0.2	95	0.00	8.58
57	I	1,4-difluorobenzene	1.000	1.000	0.0	89	0.00	9.06
58	M	epichlorohydrin	0.016	0.017	-6.3	103	0.00	10.45
			True	Calc.	% Drift			
59	M	n-butyl alcohol	1000.000	995.533	0.4	105	0.00	9.34
			AvgRF	CCRF	% Dev			
60	M	carbon tetrachloride	0.423	0.376	11.1	89	0.00	8.16
61	M	1,1-dichloropropene	0.485	0.482	0.6	97	0.00	8.20
62	M	hexane	0.449	0.398	11.4	90	0.00	6.08
63	M	benzene	1.411	1.478	-4.7	103	0.00	8.47
64	M	heptane	0.263	0.260	1.1	96	0.00	8.72
65	M	isopropyl acetate	0.110	0.120	-9.1	107	0.00	8.58
66	M	1,2-dichloroethane	0.299	0.333	-11.4	105	0.00	8.61
67		ethyl acrylate		----------NA----------				
68	M	trichloroethene	0.328	0.337	-2.7	99	0.00	9.36
69	M	2-chloroethyl vinyl ether	0.085	0.068	20.0	79	0.00	10.35
70	M	methylcyclohexane	0.522	0.494	5.4	87	0.00	9.51
71		tert-amyl ethyl ether		----------NA----------				
72	M	methyl methacrylate	0.133	0.150	-12.8	107	0.00	9.79
73	M	1,2-dichloropropane	0.309	0.353	-14.2	109	0.00	9.69
74	M	dibromomethane	0.131	0.142	-8.4	104	0.00	9.85
75	M	bromodichloromethane	0.356	0.381	-7.0	101	0.00	10.02
76	M	cis-1,3-dichloropropene	0.472	0.510	-8.1	105	0.00	10.51
77	S	toluene-d8 (s)	1.158	1.117	3.5	92	0.00	10.72
78	M	4-methyl-2-pentanone	0.066	0.075	-13.6	107	0.00	10.65
79	M	toluene	0.824	0.856	-3.9	99	0.00	10.79
80	M	3-methyl-1-butanol	0.007	0.007#	0.0	101	0.00	10.73
81	M	trans-1,3-dichloropropene	0.377	0.388	-2.9	104	0.00	11.10
82	M	ethyl methacrylate	0.290	0.310	-6.9	104	0.00	11.11
83	M	1,1,2-trichloroethane	0.177	0.188	-6.2	103	0.00	11.27
84	M	2-hexanone	0.063	0.068	-7.9	104	0.00	11.48

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VC6455-CC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180083.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

85	I	chlorobenzene-d5	1.000	1.000	0.0	89	0.00	12.14
		----------	True	Calc.	% Drift	----------		
86	M	cyclohexanone	200.000	711.253	-255.6#	413	0.00	13.15
		----------	AvgRF	CCRF	% Dev	----------		
87	M	tetrachloroethene	0.461	0.431	6.5	91	0.00	11.31
88	M	1,3-dichloropropane	0.485	0.518	-6.8	106	0.00	11.44
89	M	butyl acetate	0.168	0.172	-2.4	101	0.00	11.56
90	m	3,3-dimethyl-1-butanol	0.020	0.019	5.0	100	0.00	11.65
91	M	dibromochloromethane	0.300	0.295	1.7	96	0.00	11.62
92	M	1,2-dibromoethane	0.253	0.259	-2.4	102	0.00	11.74
93	M	n-butyl ether		----------NA----------				
94	M	chlorobenzene	1.126	1.159	-2.9	99	0.00	12.16
95	M	1,1,1,2-tetrachloroethane	0.351	0.362	-3.1	97	0.00	12.25
96	M	ethylbenzene	2.145	2.147	-0.1	98	0.00	12.22
		----------	True	Calc.	% Drift	----------		
97	M	m,p-xylene	40.000	44.019	-10.0	97	0.00	12.33
		----------	AvgRF	CCRF	% Dev	----------		
98	M	o-xylene	0.776	0.790	-1.8	99	0.00	12.69
99	M	styrene	1.284	1.319	-2.7	100	0.00	12.71
100	M	bromoform	0.173	0.159	8.1	93	0.00	12.92
101	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	86	0.00	14.15
102	M	isopropylbenzene	4.227	4.664	-10.3	104	0.00	12.99
103	S	4-bromofluorobenzene (s)	1.142	1.053	7.8	86	0.00	13.18
104	M	bromobenzene	0.906	0.933	-3.0	97	0.00	13.31
105	M	1,1,2,2-tetrachloroethane	0.693	0.700	-1.0	102	0.00	13.33
106	M	trans-1,4-dichloro-2-bute	0.174	0.186	-6.9	105	0.00	13.38
107	M	1,2,3-trichloropropane	0.165	0.178	-7.9	104	0.00	13.38
108	M	n-propylbenzene	5.084	5.189	-2.1	98	0.00	13.35
109	M	4-ethyltoluene		----------NA----------				
110	M	2-chlorotoluene	0.983	0.996	-1.3	98	0.00	13.46
111	M	4-chlorotoluene	2.995	3.188	-6.4	100	0.00	13.55
112	M	1,3,5-trimethylbenzene	3.584	3.634	-1.4	97	0.00	13.50
113	M	tert-butylbenzene	3.025	3.041	-0.5	94	0.00	13.77
114	M	pentachloroethane	0.525	0.516	1.7	92	0.00	13.84
115	M	1,2,4-trimethylbenzene	3.397	3.596	-5.9	98	0.00	13.82
116	M	sec-butylbenzene	4.683	4.676	0.1	94	0.00	13.95
117	M	1,3-dichlorobenzene	1.844	1.864	-1.1	96	0.00	14.10
118	M	p-isopropyltoluene	3.784	3.779	0.1	95	0.00	14.07
119	M	1,4-dichlorobenzene	1.842	1.846	-0.2	96	0.00	14.18
120		benzyl chloride	1.188	1.073	9.7	94	0.00	14.29
121		p-diethylbenzene		----------NA----------				
122	M	1,2-dichlorobenzene	1.602	1.659	-3.6	98	0.00	14.49
123	M	n-butylbenzene	2.002	2.044	-2.1	92	0.00	14.41
124		1,2,4,5-tetramethylbenzen		----------NA----------				
125	M	1,2-dibromo-3-chloropropa	0.095	0.098	-3.2	97	0.00	15.14
126	m	1,3,5-trichlorobenzene	1.406	1.388	1.3	92	0.00	15.26
127	M	1,2,4-trichlorobenzene	1.140	1.117	2.0	91	0.00	15.77
128	M	hexachlorobutadiene	0.708	0.711	-0.4	89	0.00	15.84
129	M	naphthalene	1.851	1.937	-4.6	97	0.00	15.97
130	M	1,2,3-trichlorobenzene	0.951	0.947	0.4	93	0.00	16.17
131	M	hexachloroethane	0.617	0.578	6.3	90	0.00	14.66

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VC6455-CC6448
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** C180083.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
(#) = Out of Range              SPCC's out = 0  CCC's out = 0
 C179997.D  MCS6448.M        Wed Mar 20 13:00:03 2013   VOA-CLN-04
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Initial Calibration Summary

Job Number: JB30425 **Sample:** VD8379-ICC8379
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** D205391.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MSD

```
Method       : C:\MSDCHEM\1\METHODS\MD8379.M (RTE Integrator)
Title        : SW-846 Method 8260B
Last Update  : Tue Feb 12 09:12:31 2013
Response via : Initial Calibration

Calibration Files
5   =d205388.D   2   =d205387.D   0.5 =d205385.D   50  =d205391.D
100 =d205392.D   1   =d205386.D   200 =d205393.D   20  =d205390.D
10  =d205389.D       =

 Compound
           5     2     0.5   50    100   1     200   20    10      Avg    %RSD
-------------------------------------------------------------------------------

1) I   Tert Butyl Alcohol-d9 ----------------ISTD---------------------
2)  1,4-dioxane
          0.090 0.088       0.080 0.105       0.084 0.100 0.118   0.095   13.98
3)  tertiary butyl alcohol
          1.069 1.026       1.114 1.111 0.830 1.009 1.154 1.210   1.065   10.84

4) I   pentafluorobenzene    ----------------ISTD---------------------
5)  1,2-dichloro-1,2,2-trifluoroet
                                                                    0.000#  -1.00
6)  chlorodifluoromethane
          0.568 0.561       0.531 0.550 0.437 0.557 0.551 0.617   0.547    9.26
7)  dichlorodifluoromethane
          0.680 0.713       0.697 0.658 0.519 0.696 0.716 0.680   0.670    9.55
8)  chloromethane
          0.768 0.771 0.786 0.734 0.760 0.622 0.805 0.759 0.706   0.746    7.30
9)  vinyl chloride
          0.784 0.762 0.720 0.787 0.786 0.624 0.813 0.794 0.739   0.757    7.58
10)  bromomethane
          0.457 0.470 0.398 0.451 0.425 0.380 0.320 0.476 0.435   0.424   11.84
11)  chloroethane
          0.452 0.454 0.410 0.418 0.451 0.369 0.436 0.436 0.402   0.425    6.66
12)  vinyl bromide
                                                                    0.000#  -1.00
13)  trichlorofluoromethane
          0.808 0.812       0.836 0.811 0.615 0.869 0.854 0.819   0.803    9.86
14)  pentane
          0.894 0.909 0.829 0.828 0.920 0.768 0.967 0.906 0.841   0.874    6.99
15)  ethyl ether
          0.329 0.382 0.471 0.328 0.346 0.361 0.349 0.345 0.295   0.356   13.85
16)  acrolein
          0.144 0.145       0.130 0.170 0.145 0.145 0.141 0.121   0.143    9.88
17)  chlorotrifluoroethene
                                                                    0.000#  -1.00
18)  2-chloropropane
          0.995 1.198 1.253 0.978 1.005 1.195 0.977 1.001 0.831   1.048   13.07
19)  1,1-dichloroethene
          0.539 0.568 0.441 0.509 0.522 0.490 0.517 0.516 0.450   0.506    7.94
20)  acetone
          0.058             0.052 0.059       0.056 0.061 0.050   0.056    7.69
21)  allyl chloride
          1.299 1.442 0.989 1.206 1.299 1.050 1.187 1.316 1.091   1.209   12.05
22)  acetonitrile
          0.029 0.032       0.024 0.026       0.025 0.027 0.031   0.028   11.03
23)  acetaldehyde
```

										0.000#	-1.00
24)	iodomethane										
	0.955	0.929	0.739	0.940	0.982	0.787	0.945	0.959	0.827	0.896	9.79
25)	iso-butyl alcohol										
										0.000#	-1.00
26)	carbon disulfide										
	1.885	1.862	1.458	1.802	1.857	1.602	1.812	1.832	1.557	1.741	9.06
27)	methylene chloride										
	0.640	0.682		0.584	0.609	0.736	0.593	0.613	0.518	0.622	10.57
28)	1-chloropropane										
	1.017	1.185	1.300	0.974	1.003	1.044	0.997	1.025	0.896	1.049	11.51
29)	methyl acetate										
	0.540	0.593	0.484	0.494	0.504	0.560	0.506	0.528	0.527	0.526	6.54
30)	methyl tert butyl ether										
	1.800	1.765	1.547	1.726	1.807	1.510	1.730	1.831	1.534	1.694	7.57
31)	trans-1,2-dichloroethene										
	0.558	0.565	0.452	0.533	0.551	0.530	0.542	0.539	0.470	0.526	7.44
32)	di-isopropyl ether										
	1.871	1.945	1.552	1.821	1.869	1.414	1.844	1.889	1.865	1.786	9.98
33)	ethyl tert-butyl ether										
	1.873	1.875	1.428	1.869	1.918	1.377	1.875	1.919	1.908	1.783	12.16
34)	2-butanone										
	0.067	0.065		0.073	0.076		0.074	0.078	0.066	0.071	7.58
35)	1,1-dichloroethane										
	0.996	1.011	0.802	0.984	1.013	0.823	0.987	1.009	0.842	0.941	9.56
36)	chloroprene										
	0.788	0.817	0.568	0.775	0.810	0.581	0.805	0.793	0.791	0.748	13.25
37)	acrylonitrile										
	0.242	0.245	0.201	0.235	0.250	0.204	0.240	0.256	0.217	0.232	8.52
38)	vinyl acetate										
	0.110	0.105		0.113	0.118		0.116	0.116	0.112	0.113	4.03
39)	ethyl acetate										
	0.092	0.086		0.079	0.082		0.084	0.091	0.087	0.086	5.41
40)	2,2-dichloropropane										
	0.746	0.755	0.678	0.685	0.697	0.662	0.681	0.718	0.617	0.693	6.11
41)	cis-1,2-dichloroethene										
	0.586	0.612	0.479	0.572	0.595	0.531	0.582	0.592	0.505	0.562	8.11
42)	propionitrile										
	0.093	0.094	0.088	0.091	0.099	0.079	0.094	0.101	0.084	0.091	7.81
43)	bromochloromethane										
	0.275	0.269		0.285	0.295	0.220	0.282	0.289	0.247	0.270	9.27
44)	tetrahydrofuran										
	0.083	0.099		0.084	0.086	0.084	0.083	0.088	0.080	0.086	6.61
45)	chloroform										
	0.902	0.923	0.734	0.898	0.929	0.791	0.889	0.930	0.795	0.866	8.38
46)	dibromofluoromethane (s)										
	0.502	0.532		0.481	0.497	0.444	0.482	0.501	0.468	0.488	5.34
47)	1,2-dichloroethane-d4 (s)										
	0.610	0.625		0.583	0.600	0.517	0.584	0.627	0.570	0.590	6.08
48)	freon 113										
	0.347	0.350		0.364	0.384	0.257	0.389	0.360	0.385	0.354	12.01
49)	methacrylonitrile										
	0.398	0.427	0.461	0.366	0.381	0.381	0.360	0.409	0.346	0.392	9.22
50)	t-butyl formate										
	0.566	0.566		0.584	0.593	0.436	0.555	0.593	0.604	0.562	9.51
51)	1,1,1-trichloroethane										
	0.807	0.794	0.673	0.789	0.823	0.639	0.794	0.809	0.698	0.758	9.06
52)	tert-amyl methyl ether										
	1.791	1.841	1.690	1.769	1.875	1.416	1.832	1.845	1.816	1.764	8.00

Initial Calibration Summary

Job Number: JB30425 **Sample:** VD8379-ICC8379
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** D205391.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
53) I   1,4-difluorobenzene   ----------------ISTD--------------------
54)  cyclohexane
            0.540 0.547 0.415 0.544 0.552 0.482 0.556 0.528 0.497   0.518    8.90
55)  tert amyl alcohol
            0.018 0.019       0.015 0.016 0.014 0.015 0.018 0.017   0.016   10.97
56)  2,2,4-trimethylpentane
            1.209 1.332 1.050 1.237 1.304 1.074 1.403 1.279 1.313   1.245    9.44
57)  epichlorohydrin
            0.042 0.047 0.037 0.041 0.045 0.032 0.044 0.046 0.046   0.042   11.42
58)  n-butyl alcohol
            0.012 0.013 0.013 0.012 0.014 0.012 0.013 0.013 0.013   0.013    4.62
59)  carbon tetrachloride
            0.447 0.461 0.385 0.450 0.467 0.361 0.462 0.447 0.394   0.430    9.17
60)  1,1-dichloropropene
            0.471 0.477 0.393 0.454 0.470 0.389 0.469 0.471 0.409   0.445    8.23
61)  hexane
            0.408 0.456 0.374 0.397 0.399 0.406 0.428 0.397 0.419   0.409    5.66
62)  benzene
            1.378 1.409 1.177 1.359 1.401 1.205 1.379 1.396 1.219   1.325    7.17
63)  heptane
            0.222 0.248 0.198 0.231 0.238 0.189 0.259 0.233 0.248   0.230   10.11
64)  isopropyl acetate
            0.748 0.779 0.686 0.718 0.727 0.624 0.729 0.742 0.765   0.724    6.36
65)  1,2-dichloroethane
            0.469 0.465 0.353 0.468 0.484 0.377 0.480 0.492 0.419   0.445   11.29
66)  Ethyl Acrylate
            0.475 0.488 0.433 0.496 0.523 0.518 0.525 0.536 0.516   0.501    6.41
67)  trichloroethene
            0.334 0.333 0.297 0.342 0.350 0.284 0.348 0.347 0.301   0.326    7.73
68)  2-nitropropane
            0.944 1.004 0.994 0.968 1.026 0.816 1.037 1.012 0.989   0.977    6.82
69)  2-chloroethyl vinyl ether
            0.242 0.244       0.257 0.270 0.173 0.273 0.263 0.267   0.249   13.19
70)  methyl methacrylate
            0.092 0.085       0.104 0.111 0.082 0.111 0.105 0.095   0.098   11.45
71)  tert-amyl ethyl ether
            0.502 0.502       0.526 0.552 0.347 0.542 0.527 0.511   0.501   12.97
72)  1,2-dichloropropane
            0.375 0.363 0.291 0.375 0.397 0.304 0.395 0.381 0.326   0.356   11.07
73)  methylcyclohexane
            0.547 0.585 0.413 0.573 0.607 0.454 0.632 0.557 0.598   0.552   13.13
74)  dibromomethane
            0.217 0.226 0.151 0.224 0.234 0.173 0.228 0.232 0.201   0.210   13.97
75)  bromodichloromethane
            0.435 0.440 0.341 0.469 0.486 0.364 0.478 0.478 0.405   0.433   12.17
76)  cis-1,3-dichloropropene
            0.571 0.567 0.463 0.598 0.622 0.474 0.618 0.620 0.518   0.561   11.08
77)  toluene-d8 (s)
            1.230 1.299       1.200 1.263 1.004 1.275 1.234 1.189   1.212    7.56
78)  4-methyl-2-pentanone
            0.151 0.162       0.156 0.169 0.124 0.172 0.166 0.145   0.156   10.06
79)  toluene
            0.839 0.864 0.738 0.859 0.901 0.706 0.889 0.877 0.758   0.826    8.74
80)  3-methyl-1-butanol
            0.012 0.012 0.010 0.012 0.013 0.010 0.013 0.013 0.013   0.012   11.41
81)  trans-1,3-dichloropropene
            0.533 0.537 0.445 0.559 0.592 0.445 0.591 0.579 0.487   0.530   10.98
82)  ethyl methacrylate
            0.470 0.490 0.483 0.512 0.556 0.400 0.559 0.537 0.452   0.496   10.46
83)  1,1,2-trichloroethane
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** VD8379-ICC8379
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** D205391.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
            0.257 0.256 0.246 0.268 0.285 0.236 0.283 0.279 0.242   0.261    7.04
 84)  2-hexanone
            0.139 0.145 0.116 0.144 0.159 0.116 0.165 0.157 0.137   0.142   12.32

 85) I   chlorobenzene-d5      ----------------ISTD--------------------
 86)  tetrachloroethene
            0.435 0.441 0.339 0.423 0.442 0.370 0.423 0.426 0.385   0.409    8.82
 87)  1,3-dichloropropane
            0.611 0.619 0.532 0.616 0.643 0.529 0.624 0.656 0.568   0.600    7.69
 88)  butyl acetate
            0.268 0.285 0.184 0.273 0.280 0.224 0.283 0.287 0.294   0.264   13.75
 89)  3,3-dimethyl-1-butanol
            0.049 0.048 0.042 0.044 0.049 0.044 0.049 0.050 0.052   0.047    6.83
 90)  dibromochloromethane
            0.373 0.380 0.364 0.408 0.422 0.316 0.406 0.407 0.352   0.381    8.89
 91)  1,2-dibromoethane
            0.369 0.352 0.302 0.374 0.387 0.297 0.369 0.389 0.338   0.353    9.66
 92)  chlorobenzene
            1.050 1.037 0.955 1.058 1.078 0.895 1.047 1.074 0.946   1.016    6.50
 93)  1,1,1,2-tetrachloroethane
            0.384 0.369 0.339 0.403 0.414 0.310 0.404 0.406 0.355   0.376    9.46
 94)  ethylbenzene
            1.806 1.876 1.758 1.802 1.841 1.587 1.795 1.824 1.602   1.766    5.80
 95)  m,p-xylene
            0.697 0.705 0.835 0.706 0.717 0.636 0.701 0.707 0.629   0.704    8.37
 96)  o-xylene
            0.703 0.695 0.769 0.710 0.733 0.609 0.721 0.715 0.631   0.698    7.09
 97)  styrene
            1.205 1.155 1.105 1.237 1.285 1.011 1.252 1.244 1.087   1.176    7.82
 98)  bromoform
            0.282 0.268 0.305 0.315 0.335 0.236 0.331 0.309 0.273   0.295   11.01

 99) I   1,4-dichlorobenzene-d ----------------ISTD--------------------
100)  isopropylbenzene
            3.102 3.181 2.953 2.992 3.051 2.705 3.072 3.077 2.754   2.987    5.36
101)  4-bromofluorobenzene (s)
            0.926 1.004       0.881 0.907 0.804 0.959 0.921 0.866   0.908    6.66
102)  bromobenzene
            0.836 0.847 0.807 0.815 0.834 0.722 0.852 0.841 0.752   0.812    5.61
103)  cyclohexanone
            0.026 0.026       0.021 0.021       0.019 0.027 0.021   0.023   13.40
104)  1,1,2,2-tetrachloroethane
            0.908 0.934 1.143 0.869 0.888 0.909 0.892 0.924 0.824   0.921    9.69
105)  trans-1,4-dichloro-2-butene
            0.249 0.256 0.236 0.258 0.271 0.211 0.274 0.270 0.236   0.251    8.19
106)  1,2,3-trichloropropane
            0.260 0.270 0.311 0.250 0.257 0.240 0.258 0.263 0.244   0.262    7.93
107)  n-propylbenzene
            3.651 3.727 3.954 3.485 3.534 3.366 3.590 3.546 3.183   3.560    6.11
108)  p-ethyltoluene
            2.817 3.025 3.117 2.776 2.883 2.412 2.942 2.860 2.833   2.852    6.91
109)  2-chlorotoluene
            0.751 0.756 0.707 0.745 0.772 0.695 0.791 0.769 0.691   0.742    4.84
110)  4-chlorotoluene
            2.343 2.380 2.504 2.284 2.339 2.235 2.387 2.334 2.109   2.324    4.71
111)  1,3,5-trimethylbenzene
            2.685 2.869 3.546 2.649 2.731 2.675 2.743 2.700 2.396   2.777   11.31
112)  tert-butylbenzene
            2.343 2.436 2.470 2.287 2.345 2.216 2.373 2.384 2.123   2.331    4.64
113)  pentachloroethane
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** VD8379-ICC8379
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** D205391.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
            0.518 0.506 0.591 0.520 0.512 0.487 0.519 0.547 0.478   0.520    6.39
114)  1,2,4-trimethylbenzene
            2.793 3.047       2.728 2.813 3.086 2.799 2.819 2.496   2.823    6.52
115)  sec-butylbenzene
            3.530 3.622 3.632 3.401 3.454 3.285 3.405 3.476 3.095   3.433    4.88
116)  1,3-dichlorobenzene
            1.612 1.643 1.808 1.585 1.617 1.465 1.595 1.632 1.456   1.601    6.47
117)  p-isopropyltoluene
            2.908 2.974 2.979 2.831 2.896 2.650 2.859 2.926 2.569   2.843    5.00
118)  1,4-dichlorobenzene
            1.647 1.664 1.936 1.651 1.685 1.618 1.636 1.699 1.505   1.671    6.83
119)  Benzyl Chloride
            1.497 1.628 1.405 1.557 1.551 1.370 1.523 1.591 1.632   1.528    6.00
120)  p-diethylbenzene
            1.744 1.825       1.704 1.762 1.445 1.745 1.722 1.684   1.704    6.63
121)  1,2-dichlorobenzene
            1.593 1.629 2.018 1.576 1.582 1.568 1.523 1.675 1.481   1.627    9.65
122)  n-butylbenzene
            1.594 1.583 1.733 1.559 1.604 1.419 1.598 1.585 1.381   1.562    6.70
123)  1,2,4,5-tetramethylbenzene
            2.719 2.802 2.910 2.556 2.511 2.098 2.541 2.816 2.737   2.632    9.23
124)  1,2-dibromo-3-chloropropane
            0.187 0.197       0.158 0.153 0.218 0.156 0.190 0.172   0.179   12.94
125)  1,3,5-trichlorobenzene
            1.272 1.289 1.439 1.169 1.113 1.291 1.138 1.303 1.154   1.241    8.49
126)  1,2,4-trichlorobenzene
            0.990 0.993 1.231 0.960 0.917 0.983 0.910 1.120 0.951   1.006   10.36
127)  hexachlorobutadiene
            0.652 0.699       0.517 0.479 0.643 0.508 0.607 0.581   0.586   13.42
128)  naphthalene
            2.291 2.313       2.050 1.910 2.426 1.837 2.624 2.249   2.212   11.98
129)  1,2,3-trichlorobenzene
            0.895 0.881       0.744 0.676 0.821 0.639 0.965 0.856   0.810   14.01
130)  hexachloroethane
            0.527 0.531 0.619 0.516 0.533 0.527 0.541 0.557 0.494   0.538    6.47
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           MD8379.M          Tue Feb 12 09:17:14 2013
```

Initial Calibration Verification

Job Number: JB30425 **Sample:** VD8380-ICV8379
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** D205400.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\d205400.D Vial: 3
Acq On : 12 Feb 2013 4:21 pm Operator: EmilyT
Sample : ICV8379-50 Inst : MSD
Misc : ms42807,vd8380,5,,100,5,1 Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : C:\MSDCHEM\1\METHODS\MD8379.M (RTE Integrator)
Title : SW-846 Method 8260B
Last Update : Tue Feb 12 09:47:05 2013
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	115	0.01	8.03
2	M	1,4-dioxane	0.095	0.093	2.1	134	0.00	11.89
3	M	tertiary butyl alcohol	1.065	1.077	-1.1	111	0.00	8.13
4	I	pentafluorobenzene	1.000	1.000	0.0	101	0.00	10.25
5	M	1,2-dichloro-1,2,2-triflu		----------NA----------				
6	M	chlorodifluoromethane	0.547	0.589	-7.7	112	0.00	4.57
7	M	dichlorodifluoromethane	0.670	0.616	8.1	89	0.00	4.55
8	M	chloromethane	0.746	0.638	14.5	88	0.00	4.92
9	M	vinyl chloride	0.757	0.674	11.0	87	0.00	5.19
10	M	bromomethane	0.424	0.412	2.8	93	0.00	5.87
11	M	chloroethane	0.425	0.385	9.4	93	0.00	6.05
12	M	vinyl bromide		----------NA----------				
13	M	trichlorofluoromethane	0.803	0.758	5.6	92	0.00	6.57
14		pentane	0.874	0.862	1.4	105	0.00	6.65
15	M	ethyl ether	0.356	0.325	8.7	100	0.00	6.96
16	M	acrolein	0.143	0.125	12.6	98	0.00	7.19
17	M	chlorotrifluoroethene		----------NA----------				
18	M	2-chloropropane	1.048	0.958	8.6	99	0.00	7.16
19	M	1,1-dichloroethene	0.506	0.498	1.6	99	0.00	7.39
20	M	acetone	0.056	0.053	5.4	103	0.00	7.40
21	M	allyl chloride	1.209	1.336	-10.5	112	0.00	7.90
22	M	acetonitrile	0.028	0.024	14.3	100	0.02	7.83
23	M	acetaldehyde		----------NA----------				
24	M	iodomethane	0.896	0.939	-4.8	101	0.00	7.66
25	M	iso-butyl alcohol		----------NA----------				
26	M	carbon disulfide	1.741	1.765	-1.4	99	0.00	7.80
27	M	methylene chloride	0.622	0.590	5.1	102	0.00	8.07
28	M	1-chloropropane	1.049	0.981	6.5	102	0.00	8.14
29	M	methyl acetate	0.526	0.471	10.5	96	0.00	7.87
30	M	methyl tert butyl ether	1.694	1.712	-1.1	100	0.00	8.44
31	M	trans-1,2-dichloroethene	0.526	0.524	0.4	99	0.00	8.46
32	M	di-isopropyl ether	1.786	1.790	-0.2	99	0.00	9.03
33	M	ethyl tert-butyl ether	1.783	1.771	0.7	96	0.00	9.49
34	M	2-butanone	0.071	0.060	15.5	83	0.00	9.69
35	M	1,1-dichloroethane	0.941	0.967	-2.8	99	0.00	9.01
36	M	chloroprene	0.748	0.732	2.1	96	0.00	9.13
37	M	acrylonitrile	0.232	0.246	-6.0	106	0.00	8.37
38	M	vinyl acetate	0.113	0.121	-7.1	108	0.00	8.99
39	M	ethyl acetate	0.086	0.075	12.8	96	0.00	9.72
40	M	2,2-dichloropropane	0.693	0.813	-17.3	120	0.00	9.77
41	M	cis-1,2-dichloroethene	0.562	0.578	-2.8	102	0.00	9.74

Initial Calibration Verification

Job Number: JB30425 **Sample:** VD8380-ICV8379
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** D205400.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	M	propionitrile	0.091	0.094	-3.3	105	0.00	9.77
43	M	bromochloromethane	0.270	0.287	-6.3	102	0.00	10.03
44	M	tetrahydrofuran	0.086	0.083	3.5	100	0.00	10.10
45	M	chloroform	0.866	0.896	-3.5	101	0.00	10.09
46	S	dibromofluoromethane (s)	0.488	0.479	1.8	101	0.00	10.28
47	S	1,2-dichloroethane-d4 (s)	0.590	0.557	5.6	97	0.00	10.71
48	M	freon 113	0.354	0.336	5.1	93	0.00	7.37
49	M	methacrylonitrile	0.392	0.364	7.1	101	0.00	9.97
50	m	t-butyl formate	0.562	0.589	-4.8	102	0.00	10.16
51	M	1,1,1-trichloroethane	0.758	0.784	-3.4	101	0.00	10.39
52	M	tert-amyl methyl ether	1.764	1.725	2.2	99	0.00	10.86
53	I	1,4-difluorobenzene	1.000	1.000	0.0	101	0.00	11.17
54	M	cyclohexane	0.518	0.546	-5.4	102	0.00	10.48
55		tert amyl alcohol	0.016	0.015	9.4	99	0.00	10.65
56	M	2,2,4-trimethylpentane	1.245	1.280	-2.8	105	0.00	10.86
57	M	epichlorohydrin	0.042	0.043	-2.4	106	0.00	12.43
58	M	n-butyl alcohol	0.013	0.012	7.7	103	0.00	11.25
59	M	carbon tetrachloride	0.430	0.450	-4.7	101	0.00	10.59
60	M	1,1-dichloropropene	0.445	0.448	-0.7	100	0.00	10.55
61	M	hexane	0.409	0.407	0.5	104	0.00	8.79
62	M	benzene	1.325	1.326	-0.1	99	0.00	10.81
63	M	heptane	0.230	0.254	-10.4	111	0.00	11.02
64	M	isopropyl acetate	0.724	0.704	2.8	99	0.00	10.72
65	M	1,2-dichloroethane	0.445	0.459	-3.1	99	0.00	10.80
66		Ethyl Acrylate	0.501	0.451	10.0	92	0.00	11.51
67	M	trichloroethene	0.326	0.328	-0.6	97	0.00	11.52
68	M	2-nitropropane	0.977	0.967	1.0	101	0.00	12.31
69	M	2-chloroethyl vinyl ether	0.249	0.254	-2.0	100	0.00	12.31
70	M	methyl methacrylate	0.098	0.102	-4.1	99	0.00	11.78
71	M	tert-amyl ethyl ether	0.501	0.533	-6.3	103	0.00	11.72
72	M	1,2-dichloropropane	0.356	0.368	-3.4	99	0.00	11.78
73	M	methylcyclohexane	0.552	0.564	-2.2	100	0.00	11.78
74	M	dibromomethane	0.210	0.221	-5.2	100	0.00	11.93
75	M	bromodichloromethane	0.433	0.457	-5.5	99	0.00	12.06
76	M	cis-1,3-dichloropropene	0.561	0.599	-6.8	101	0.00	12.54
77	S	toluene-d8 (s)	1.212	1.222	-0.8	103	0.00	12.88
78	M	4-methyl-2-pentanone	0.156	0.160	-2.6	104	0.00	12.65
79	M	toluene	0.826	0.834	-1.0	98	0.00	12.96
80	M	3-methyl-1-butanol	0.012	0.012	0.0	104	0.00	12.64
81	M	trans-1,3-dichloropropene	0.530	0.566	-6.8	102	0.00	13.13
82	M	ethyl methacrylate	0.496	0.511	-3.0	101	0.00	13.14
83	M	1,1,2-trichloroethane	0.261	0.267	-2.3	101	0.00	13.36
84	M	2-hexanone	0.142	0.130	8.5	91	0.00	13.56
85	I	chlorobenzene-d5	1.000	1.000	0.0	104	0.00	14.51
86	M	tetrachloroethene	0.409	0.391	4.4	96	0.00	13.59
87	M	1,3-dichloropropane	0.600	0.606	-1.0	102	0.00	13.56
88	M	butyl acetate	0.264	0.265	-0.4	101	0.00	13.65
89	m	3,3-dimethyl-1-butanol	0.047	0.056	-19.1	130	0.00	13.73
90	M	dibromochloromethane	0.381	0.393	-3.1	100	0.00	13.84
91	M	1,2-dibromoethane	0.353	0.365	-3.4	101	0.00	14.02
92	M	chlorobenzene	1.016	1.011	0.5	99	0.00	14.55
93	M	1,1,1,2-tetrachloroethane	0.376	0.392	-4.3	101	0.00	14.60
94	M	ethylbenzene	1.766	1.724	2.4	99	0.00	14.61
95	M	m,p-xylene	0.704	0.671	4.7	99	0.00	14.73
96	M	o-xylene	0.698	0.687	1.6	100	0.00	15.20
97	M	styrene	1.176	1.191	-1.3	100	0.00	15.20
98	M	bromoform	0.295	0.305	-3.4	100	0.00	15.47

Initial Calibration Verification

Job Number: JB30425 **Sample:** VD8380-ICV8379
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** D205400.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	102	0.00	17.10
100	M	isopropylbenzene	2.987	2.915	2.4	100	0.00	15.58
101	S	4-bromofluorobenzene (s)	0.908	0.863	5.0	100	0.00	15.79
102	M	bromobenzene	0.812	0.783	3.6	98	0.00	16.01
103	M	cyclohexanone	0.023	0.016	30.4#	78	0.00	15.75
104	M	1,1,2,2-tetrachloroethane	0.921	0.847	8.0	100	0.00	15.88
105	M	trans-1,4-dichloro-2-bute	0.251	0.268	-6.8	106	0.00	15.93
106	M	1,2,3-trichloropropane	0.262	0.244	6.9	100	0.00	15.97
107	M	n-propylbenzene	3.560	3.372	5.3	99	0.00	16.04
108	M	p-ethyltoluene	2.852	2.649	7.1	98	0.00	16.16
109	M	2-chlorotoluene	0.742	0.727	2.0	100	0.00	16.20
110	M	4-chlorotoluene	2.324	2.211	4.9	99	0.00	16.30
111	M	1,3,5-trimethylbenzene	2.777	2.558	7.9	99	0.00	16.21
112	M	tert-butylbenzene	2.331	2.182	6.4	98	0.00	16.60
113	M	pentachloroethane	0.520	0.524	-0.8	103	0.00	16.67
114	M	1,2,4-trimethylbenzene	2.823	2.664	5.6	100	0.00	16.65
115	M	sec-butylbenzene	3.433	3.335	2.9	100	0.00	16.85
116	M	1,3-dichlorobenzene	1.601	1.540	3.8	99	0.00	17.03
117	M	p-isopropyltoluene	2.843	2.766	2.7	100	0.00	16.97
118	M	1,4-dichlorobenzene	1.671	1.604	4.0	99	0.00	17.12
119		Benzyl Chloride	1.528	2.052	-34.3#	135	0.00	17.24
120	M	p-diethylbenzene	1.704	1.640	3.8	98	0.00	17.39
121	M	1,2-dichlorobenzene	1.627	1.540	5.3	100	0.00	17.56
122	M	n-butylbenzene	1.562	1.565	-0.2	103	0.00	17.43
123	M	1,2,4,5-tetramethylbenzen	2.632	2.525	4.1	101	0.00	18.26
124	M	1,2-dibromo-3-chloropropa	0.179	0.161	10.1	105	0.00	18.40
125	M	1,3,5-trichlorobenzene	1.241	1.188	4.3	104	0.00	18.64
126	M	1,2,4-trichlorobenzene	1.006	0.981	2.5	105	0.00	19.37
127	M	hexachlorobutadiene	0.586	0.548	6.5	108	0.00	19.52
128	M	naphthalene	2.212	2.054	7.1	102	0.00	19.69
129	M	1,2,3-trichlorobenzene	0.810	0.760	6.2	104	0.00	19.97
130	M	hexachloroethane	0.538	0.525	2.4	104	0.00	17.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
d205391.D MD8379.M Tue Feb 12 16:48:55 2013

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VD8426-CC8379
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** D206529.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\d206529.D Vial: 2
Acq On : 15 Mar 2013 10:01 am Operator: EmilyT
Sample : cc8379-20 Inst : MSD
Misc : ms44714,vd8426,5,,100,5,1 Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : C:\MSDCHEM\1\METHODS\MD8379.M (RTE Integrator)
Title : SW-846 Method 8260B
Last Update : Tue Feb 19 09:53:02 2013
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	94	0.00	8.02
2	M	1,4-dioxane	0.095	0.115	-21.1#	109	0.00	11.88
3	M	tertiary butyl alcohol	1.065	1.355	-27.2#	110	0.00	8.13
4	I	pentafluorobenzene	1.000	1.000	0.0	102	0.00	10.25
5	M	1,2-dichloro-1,2,2-triflu		----------NA----------				
6	M	chlorodifluoromethane	0.547	0.730	-33.5#	134	0.00	4.56
7	M	dichlorodifluoromethane	0.670	0.759	-13.3	108	-0.01	4.53
8	M	chloromethane	0.746	0.761	-2.0	102	0.01	4.93
9	M	vinyl chloride	0.757	0.815	-7.7	104	0.02	5.21
10	M	bromomethane	0.424	0.529	-24.8#	113	0.01	5.88
11	M	chloroethane	0.425	0.452	-6.4	105	0.01	6.06
12	M	vinyl bromide		----------NA----------				
13	M	trichlorofluoromethane	0.803	0.562	30.0#	67	0.00	6.57
14		pentane	0.874	0.151	82.7#	17#	0.08	6.74
15	M	ethyl ether	0.356	0.315	11.5	93	0.00	6.95
16	M	acrolein	0.143	0.106	25.9#	76	0.00	7.17
17	M	chlorotrifluoroethene		----------NA----------				
18	M	2-chloropropane	1.048	1.039	0.9	105	-0.02	7.14
19	M	1,1-dichloroethene	0.506	0.493	2.6	97	-0.02	7.38
20	M	acetone	0.056	0.057	-1.8	94	0.00	7.39
21	M	allyl chloride	1.209	1.123	7.1	87	-0.01	7.89
22	M	acetonitrile	0.028	0.035	-25.0#	131	0.00	7.81
23	M	acetaldehyde		----------NA----------				
24	M	iodomethane	0.896	0.900	-0.4	95	0.00	7.66
25	M	iso-butyl alcohol		----------NA----------				
26	M	carbon disulfide	1.741	1.694	2.7	94	-0.01	7.79
27	M	methylene chloride	0.622	0.558	10.3	92	-0.02	8.06
28	M	1-chloropropane	1.049	1.014	3.3	100	-0.01	8.12
29	M	methyl acetate	0.526	0.511	2.9	98	0.00	7.87
30	M	methyl tert butyl ether	1.694	1.781	-5.1	99	0.00	8.43
31	M	trans-1,2-dichloroethene	0.526	0.509	3.2	96	-0.01	8.45
32	M	di-isopropyl ether	1.786	1.848	-3.5	99	-0.01	9.02
33	M	ethyl tert-butyl ether	1.783	1.843	-3.4	98	0.00	9.48
34	M	2-butanone	0.071	0.076	-7.0	99	0.00	9.69
35	M	1,1-dichloroethane	0.941	0.926	1.6	93	0.00	9.00
36	M	chloroprene	0.748	0.799	-6.8	102	0.00	9.12
37	M	acrylonitrile	0.232	0.233	-0.4	92	0.00	8.37
38	M	vinyl acetate	0.113	0.105	7.1	92	0.00	8.99
39	M	ethyl acetate	0.086	0.092	-7.0	102	0.00	9.72
40	M	2,2-dichloropropane	0.693	0.866	-25.0#	123	-0.02	9.75
41	M	cis-1,2-dichloroethene	0.562	0.559	0.5	96	0.00	9.73

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VD8426-CC8379
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** D206529.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	M	propionitrile	0.091	0.091	0.0	91	0.00	9.77
43	M	bromochloromethane	0.270	0.278	-3.0	98	0.00	10.03
44	M	tetrahydrofuran	0.086	0.086	0.0	99	0.00	10.09
45	M	chloroform	0.866	0.915	-5.7	100	0.00	10.08
46	S	dibromofluoromethane (s)	0.488	0.447	8.4	90	0.00	10.27
47	S	1,2-dichloroethane-d4 (s)	0.590	0.583	1.2	95	0.00	10.70
48	M	freon 113	0.354	0.384	-8.5	108	0.01	7.38
49	M	methacrylonitrile	0.392	0.383	2.3	95	0.00	9.97
50	m	t-butyl formate	0.562	0.539	4.1	92	0.00	10.15
51	M	1,1,1-trichloroethane	0.758	0.857	-13.1	108	0.00	10.37
52	M	tert-amyl methyl ether	1.764	1.746	1.0	96	0.00	10.85
53	I	1,4-difluorobenzene	1.000	1.000	0.0	95	0.00	11.16
54	M	cyclohexane	0.518	0.566	-9.3	102	0.00	10.47
55		tert amyl alcohol		----------NA----------				
56	M	2,2,4-trimethylpentane	1.245	1.386	-11.3	103	0.00	10.85
57	M	epichlorohydrin	0.042	0.047	-11.9	98	0.00	12.42
58	M	n-butyl alcohol	0.013	0.014	-7.7	98	0.00	11.25
59	M	carbon tetrachloride	0.430	0.512	-19.1	109	0.00	10.58
60	M	1,1-dichloropropene	0.445	0.490	-10.1	99	0.00	10.55
61	M	hexane	0.409	0.418	-2.2	100	0.00	8.79
62	M	benzene	1.325	1.410	-6.4	96	0.00	10.81
63	M	heptane	0.230	0.290	-26.1#	118	0.00	11.01
64	M	isopropyl acetate	0.724	0.827	-14.2	106	0.00	10.72
65	M	1,2-dichloroethane	0.445	0.529	-18.9	102	0.00	10.79
66		Ethyl Acrylate		----------NA----------				
67	M	trichloroethene	0.326	0.355	-8.9	97	0.00	11.51
68	M	2-nitropropane	0.977	0.929	4.9	87	0.00	12.31
69	M	2-chloroethyl vinyl ether	0.249	0.220	11.6	79	0.00	12.31
70	M	methyl methacrylate	0.098	0.103	-5.1	93	0.00	11.78
71	M	tert-amyl ethyl ether		----------NA----------				
72	M	1,2-dichloropropane	0.356	0.380	-6.7	94	0.00	11.77
73	M	methylcyclohexane	0.552	0.606	-9.8	103	0.00	11.78
74	M	dibromomethane	0.210	0.241	-14.8	98	0.00	11.92
75	M	bromodichloromethane	0.433	0.503	-16.2	100	0.00	12.05
76	M	cis-1,3-dichloropropene	0.561	0.623	-11.1	95	0.00	12.54
77	S	toluene-d8 (s)	1.212	1.238	-2.1	95	0.00	12.87
78	M	4-methyl-2-pentanone	0.156	0.182	-16.7	104	0.00	12.65
79	M	toluene	0.826	0.920	-11.4	99	0.00	12.95
80	M	3-methyl-1-butanol	0.012	0.012	0.0	89	0.00	12.65
81	M	trans-1,3-dichloropropene	0.530	0.599	-13.0	98	0.00	13.12
82	M	ethyl methacrylate	0.496	0.543	-9.5	96	0.00	13.14
83	M	1,1,2-trichloroethane	0.261	0.291	-11.5	99	0.00	13.35
84	M	2-hexanone	0.142	0.156	-9.9	94	0.00	13.56
85	I	chlorobenzene-d5	1.000	1.000	0.0	99	0.00	14.50
86	M	tetrachloroethene	0.409	0.465	-13.7	108	0.00	13.58
87	M	1,3-dichloropropane	0.600	0.634	-5.7	96	0.00	13.56
88	M	butyl acetate	0.264	0.309	-17.0	107	0.00	13.65
89	m	3,3-dimethyl-1-butanol	0.047	0.042	10.6	83	0.00	13.74
90	M	dibromochloromethane	0.381	0.431	-13.1	105	0.00	13.84
91	M	1,2-dibromoethane	0.353	0.388	-9.9	99	0.00	14.02
92	M	chlorobenzene	1.016	1.082	-6.5	100	0.00	14.54
93	M	1,1,1,2-tetrachloroethane	0.376	0.403	-7.2	98	0.00	14.60
94	M	ethylbenzene	1.766	1.891	-7.1	103	0.00	14.61
95	M	m,p-xylene	0.704	0.733	-4.1	103	0.00	14.73
96	M	o-xylene	0.698	0.730	-4.6	101	0.00	15.19
97	M	styrene	1.176	1.189	-1.1	94	0.00	15.19
98	M	bromoform	0.295	0.320	-8.5	102	0.00	15.47

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VD8426-CC8379
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** D206529.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	99	0.00	17.09
100	M	isopropylbenzene	2.987	3.202	-7.2	103	0.00	15.58
101	S	4-bromofluorobenzene (s)	0.908	0.830	8.6	89	0.00	15.78
102	M	bromobenzene	0.812	0.865	-6.5	102	0.00	16.01
103	M	cyclohexanone	0.023	0.084	-265.2#	310#	0.00	15.74
104	M	1,1,2,2-tetrachloroethane	0.921	0.926	-0.5	99	0.00	15.87
105	M	trans-1,4-dichloro-2-bute	0.251	0.275	-9.6	101	0.00	15.93
106	M	1,2,3-trichloropropane	0.262	0.265	-1.1	99	0.00	15.97
107	M	n-propylbenzene	3.560	3.721	-4.5	104	0.00	16.04
108	M	p-ethyltoluene		----------NA----------				
109	M	2-chlorotoluene	0.742	0.759	-2.3	98	0.00	16.19
110	M	4-chlorotoluene	2.324	2.294	1.3	97	0.00	16.30
111	M	1,3,5-trimethylbenzene	2.777	2.746	1.1	101	0.00	16.20
112	M	tert-butylbenzene	2.331	2.424	-4.0	101	0.00	16.60
113	M	pentachloroethane	0.520	0.546	-5.0	99	0.00	16.67
114	M	1,2,4-trimethylbenzene	2.823	2.796	1.0	98	0.00	16.64
115	M	sec-butylbenzene	3.433	3.573	-4.1	102	0.00	16.84
116	M	1,3-dichlorobenzene	1.601	1.595	0.4	97	0.00	17.03
117	M	p-isopropyltoluene	2.843	2.920	-2.7	99	0.00	16.97
118	M	1,4-dichlorobenzene	1.671	1.642	1.7	96	0.00	17.12
119		Benzyl Chloride	1.528	1.844	-20.7#	115	0.00	17.24
120	M	p-diethylbenzene		----------NA----------				
121	M	1,2-dichlorobenzene	1.627	1.576	3.1	93	0.00	17.55
122	M	n-butylbenzene	1.562	1.483	5.1	93	0.00	17.43
123	M	1,2,4,5-tetramethylbenzen		----------NA----------				
124	M	1,2-dibromo-3-chloropropa	0.179	0.174	2.8	91	0.00	18.40
125	M	1,3,5-trichlorobenzene	1.241	1.257	-1.3	95	0.00	18.63
126	M	1,2,4-trichlorobenzene	1.006	1.054	-4.8	93	0.00	19.36
127	M	hexachlorobutadiene	0.586	0.601	-2.6	98	0.00	19.51
128	M	naphthalene	2.212	2.140	3.3	81	0.00	19.68
129	M	1,2,3-trichlorobenzene	0.810	0.877	-8.3	90	0.00	19.96
130	M	hexachloroethane	0.538	0.535	0.6	95	0.00	17.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
d205390.D MD8379.M Fri Mar 15 15:14:55 2013

Initial Calibration Summary

Job Number: JB30425 **Sample:** VX5795-ICC5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133702.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report ACC-VOA-M

```
Method       : C:\MSDCHEM\1\METHODS\MX5795.M (RTE Integrator)
Title        : SW-846 Method 8260B, ZB624 60m x 0.25mm x 1.4um
Last Update  : Thu Mar 07 18:00:57 2013
Response via : Initial Calibration

Calibration Files
1   =X133697.D   2   =X133698.D   100 =X133703.D   50  =X133702.D
20  =X133701.D   200 =X133704.D   5   =X133699.D   10  =X133700.D
0.5 =X133696.D       =
```

Compound	1	2	100	50	20	200	5	10	0.5	Avg	%RSD
1) I tert butyl alcohol-d9 ----------ISTD----------											
2) tertiary butyl alcohol	1.186	1.324	1.365	1.357	1.233	1.300	1.356			1.303	5.29
3) ethyl alcohol	0.103	0.108	0.089	0.094	0.097		0.129	0.104		0.103	12.59
4) 1,4-dioxane	0.085	0.116	0.119	0.116	0.119	0.124	0.110			0.113	11.33
5) I pentafluorobenzene ----------ISTD----------											
6) freon 23										0.000	-1.00
7) freon 115										0.000	-1.00
8) freon 143a										0.000	-1.00
9) freon 152a										0.000	-1.00
10) chlorotrifluoroethene										0.000	-1.00
11) chlorodifluoromethane			0.274	0.289	0.267	0.284	0.250	0.276		0.273	4.99
12) dichlorodifluoromethane			0.476	0.506	0.487	0.467	0.509	0.537		0.497	5.12
13) freon 114										0.000	-1.00
14) freon 142b										0.000	-1.00
15) chloromethane			0.425	0.438	0.431	0.400	0.457	0.446		0.433	4.56
16) vinyl chloride			0.423	0.435	0.423	0.411	0.454	0.455		0.434	4.20
17) acetaldehyde			0.005	0.005	0.005	0.004		0.006		0.005	10.50
18) bromomethane			0.320	0.334	0.325		0.358	0.340		0.335	4.44
19) chloroethane	0.257	0.275	0.212	0.222	0.212	0.200	0.227	0.240		0.231	11.02
20) vinyl bromide										0.000	-1.00
21) trichlorofluoromethane			0.644	0.678	0.652	0.622	0.711	0.718		0.671	5.69
22) pentane										0.000	-1.00
23) ethyl ether											

Initial Calibration Summary

Job Number: JB30425 **Sample:** VX5795-ICC5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133702.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	0.174	0.218	0.208	0.197	0.201	0.195	0.190	0.207		0.199	6.64
24) freon 141b											
										0.000	-1.00
25) freon 123a											
										0.000	-1.00
26) freon 123											
										0.000	-1.00
27) acrolein											
	0.048	0.051	0.060	0.057	0.057	0.053	0.048	0.057		0.054	8.68
28) 1,1-dichloroethene											
			0.329	0.341	0.317	0.327	0.320	0.335		0.328	2.66
29) acetone											
			0.026	0.024	0.021	0.023		0.022		0.023	9.12
30) allyl chloride											
	0.218	0.265	0.226	0.218	0.214	0.218	0.216	0.227		0.225	7.42
31) acetonitrile											
		0.026	0.025	0.024	0.025	0.023	0.021	0.025		0.024	7.48
32) iodomethane											
	0.876	0.936	0.789	0.817	0.761	0.771	0.763	0.805	0.855	0.819	7.21
33) iso-butyl alcohol											
			0.017	0.015	0.015	0.014	0.011	0.016		0.014	14.45
34) carbon disulfide											
			1.173	1.225	1.129	1.162	1.222	1.218		1.188	3.34
35) methylene chloride											
	0.508	0.466	0.416	0.428	0.407	0.409	0.400	0.427	0.475	0.437	8.47
36) methyl acetate											
			0.240	0.224	0.222	0.211	0.167	0.233		0.216	12.18
37) methyl tert butyl ether											
	1.085	1.191	1.201	1.189	1.148	1.106	1.041	1.216	0.958	1.126	7.70
38) trans-1,2-dichloroethene											
	0.469	0.496	0.392	0.400	0.384	0.388	0.384	0.401	0.417	0.415	9.78
39) di-isopropyl ether											
	1.207	1.292	1.225	1.267	1.229	1.214	1.150	1.234	1.170	1.221	3.60
40) 2-butanone											
			0.041	0.039	0.036	0.036		0.036		0.038	5.83
41) 1,1-dichloroethane											
	0.795	0.848	0.706	0.738	0.710	0.691	0.725	0.733	0.739	0.743	6.64
42) chloroprene											
			0.540	0.570	0.549	0.550	0.543	0.556		0.551	1.92
43) acrylonitrile											
		0.090	0.109	0.103	0.101	0.097	0.082	0.106		0.098	9.56
44) vinyl acetate											
			0.057	0.055	0.053	0.055		0.052		0.054	3.55
45) ethyl tert-butyl ether											
	1.185	1.316	1.300	1.330	1.288	1.261	1.189	1.328	1.133	1.259	5.73
46) ethyl acetate											
			0.039	0.036	0.034	0.035	0.027	0.037		0.035	12.47
47) 2,2-dichloropropane											
			0.593	0.629	0.593	0.566	0.641	0.636		0.610	4.92
48) cis-1,2-dichloroethene											
	0.515	0.521	0.455	0.468	0.442	0.445	0.460	0.453	0.405	0.463	7.79
49) propionitrile											
		0.034	0.043	0.040	0.040	0.038	0.031	0.043		0.039	11.86
50) tert-Butyl Formate											
	0.289	0.317	0.367	0.365	0.352	0.338	0.303	0.353		0.336	8.68
51) bromochloromethane											
	0.225	0.248	0.243	0.249	0.238	0.235	0.223	0.232	0.178	0.230	9.38
52) tetrahydrofuran											
	0.126	0.094	0.115	0.108	0.110	0.098	0.096	0.118		0.108	10.56
53) chloroform											

Initial Calibration Summary

Job Number: JB30425 **Sample:** VX5795-ICC5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133702.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
           0.874 0.912 0.777 0.803 0.781 0.754 0.787 0.791 0.915   0.822    7.47
54)  dibromofluoromethane (s)
                       0.450 0.456 0.441 0.446 0.504 0.509         0.468    6.59
55)  1,2-dichloroethane-d4 (s)
           0.553 0.588 0.471 0.472 0.469 0.440 0.495 0.532         0.502   10.01
56)  freon 113
                       0.277 0.293 0.271 0.282 0.261 0.294         0.280    4.64
57)  methacrylonitrile
                 0.149 0.195 0.187 0.185 0.174 0.146 0.192         0.175   11.50
58)  1,1,1-trichloroethane
                       0.664 0.696 0.650 0.641 0.692 0.694         0.673    3.60
59)  cyclohexane
                       0.513 0.538 0.484 0.505 0.517 0.528         0.514    3.65
60)  tert amyl alcohol
                                                                   0.000   -1.00
61)  iso-octane
           1.493 1.645 1.242 1.328 1.256 1.288 1.239 1.314         1.351   10.69

62) I   1,4-difluorobenzene   ----------------ISTD--------------------
63)  di-isobutylene
                                                                   0.000   -1.00
64)  epichlorohydrin
                       0.026 0.023 0.023 0.022 0.017 0.025         0.023   12.87
65)  n-butyl alcohol
                 0.006 0.008 0.007 0.007 0.007 0.005 0.008         0.007   16.69
     ----- Quadratic regression -----                 Coefficient =  0.9953
          Response Ratio = -0.00901 + 0.00836 *A + -0.00001 *A^2

66)  carbon tetrachloride
                       0.469 0.490 0.460 0.451 0.484 0.480         0.472    3.20
67)  1,1-dichloropropene
                       0.398 0.416 0.396 0.391 0.430 0.417         0.408    3.77
68)  hexane
                       0.307 0.323 0.304 0.317 0.307 0.314         0.312    2.30
69)  benzene
           1.392 1.426 1.171 1.202 1.163 1.147 1.195 1.171         1.233    8.93
70)  tert-amyl methyl ether
           0.851 0.916 0.939 0.946 0.928 0.885 0.817 0.950 0.849   0.898    5.47
71)  heptane
                       0.193 0.205 0.193 0.198 0.189 0.198         0.196    2.88
72)  isopropyl acetate
                       0.510 0.491 0.490 0.439 0.400 0.504         0.472    9.18
73)  1,2-dichloroethane
           0.433 0.456 0.439 0.449 0.443 0.409 0.414 0.450 0.393   0.432    5.01
74)  trichloroethene
                       0.336 0.347 0.328 0.329 0.339 0.344         0.337    2.30
75)  ethyl acrylate
                                                                   0.000   -1.00
76)  tert amyl ethyl ether
                                                                   0.000   -1.00
77)  2-nitropropane
                       0.005 0.005       0.005                     0.005    6.76
78)  2-chloroethyl vinyl ether
                       0.166 0.161 0.159 0.151 0.137 0.163         0.156    6.82
79)  methyl methacrylate
                 0.160 0.187 0.179 0.171 0.165 0.142 0.182         0.169    9.02
80)  1,2-dichloropropane
           0.303 0.338 0.315 0.319 0.307 0.306 0.301 0.315         0.313    3.74
81)  dibromomethane
           0.180 0.189 0.205 0.204 0.199 0.190 0.191 0.204         0.195    4.65
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** VX5795-ICC5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133702.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
 82)  methylcyclohexane
                        0.432 0.456 0.422 0.446 0.412 0.444         0.435    3.79
 83)  bromodichloromethane
              0.473 0.503 0.475 0.487 0.471 0.453 0.461 0.475 0.438   0.471    3.98
 84)  cis-1,3-dichloropropene
              0.532 0.579 0.559 0.565 0.548 0.534 0.543 0.560 0.494   0.546    4.53
 85)  toluene-d8 (s)
                        1.161 1.169 1.132 1.148 1.370 1.337         1.220    8.63
 86)  4-methyl-2-pentanone
                        0.109 0.102 0.100 0.092 0.075 0.104         0.097   12.70
 87)  toluene
              0.923 0.956 0.785 0.813 0.775 0.767 0.796 0.783         0.825    8.82
 88)  3-methyl-1-butanol
                        0.013 0.012 0.012 0.011 0.008 0.012         0.011   14.95
 89)  trans-1,3-dichloropropene
              0.468 0.518 0.525 0.530 0.519 0.492 0.487 0.530 0.472   0.505    4.95
 90)  ethyl methacrylate
                    0.329 0.398 0.382 0.369 0.357 0.322 0.387         0.364    8.04
 91)  1,1,2-trichloroethane
              0.205 0.231 0.237 0.234 0.232 0.220 0.213 0.235 0.188   0.222    7.55
 92)  2-hexanone
                        0.106 0.096 0.093 0.088 0.071 0.102         0.093   13.27

 93) I   chlorobenzene-d5      ----------------ISTD--------------------
 94)  3,3-Dimethyl-1-butanol
              0.018 0.021 0.031 0.027 0.027       0.021 0.029         0.025   19.83
               ----- Linear regression -----  Coefficient =  0.9966
                 Response Ratio = -0.01016 + 0.03115 *A

 95)  tetrachloroethene
                        0.330 0.335 0.325 0.322 0.349 0.331         0.332    2.84
 96)  1,3-dichloropropane
              0.457 0.534 0.504 0.497 0.496 0.469 0.484 0.506 0.439   0.487    5.92
 97)  butyl acetate
                        0.202 0.188 0.189 0.176 0.150 0.190         0.182    9.84
 98)  dibromochloromethane
              0.441 0.453 0.461 0.456 0.443 0.432 0.442 0.449 0.399   0.442    4.12
 99)  1,2-dibromoethane
              0.316 0.329 0.342 0.332 0.335 0.315 0.308 0.338 0.255   0.319    8.37
100)  n-butyl ether
                                                                      0.000   -1.00
101)  chlorobenzene
              1.203 1.235 1.057 1.086 1.047 1.034 1.104 1.070 1.137   1.108    6.36
102)  1,1,1,2-tetrachloroethane
              0.429 0.473 0.428 0.436 0.421 0.412 0.436 0.438 0.420   0.433    4.05
103)  ethylbenzene
              2.171 2.120 1.715 1.741 1.675 1.678 1.790 1.723         1.827   10.98
104)  m,p-xylene
              0.827 0.832 0.671 0.683 0.662 0.657 0.697 0.670 1.044   0.749   17.38
               ----- Linear regression -----  Coefficient =  0.9997
                 Response Ratio = 0.00809 + 0.66196 *A

105)  o-xylene
              0.760 0.789 0.672 0.684 0.660 0.655 0.679 0.668 0.802   0.708    8.27
106)  styrene
              1.164 1.260 1.190 1.199 1.145 1.160 1.146 1.142 1.164   1.175    3.20
107)  bromoform
              0.270 0.308 0.335 0.320 0.313 0.303 0.281 0.317 0.277   0.303    7.28

108) I   1,4-dichlorobenzene-d ----------------ISTD--------------------
```

6.9.12

6

Initial Calibration Summary

Job Number: JB30425 **Sample:** VX5795-ICC5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133702.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
109)  isopropylbenzene
                        2.875 3.048 2.891 2.941 3.227 3.029         3.002    4.36
110)  Cyclohexanone
            0.068 0.065 0.040 0.042 0.061 0.043 0.060 0.067 0.062   0.056   20.28
             ----- Linear regression -----  Coefficient =  0.9959
               Response Ratio = 0.01713 + 0.04216 *A

111)  4-bromofluorobenzene (s)
                        0.887 0.911 0.897 0.898 1.257 1.084         0.989   15.25
             ----- Linear regression -----  Coefficient =  0.9998
               Response Ratio = 0.02444 + 0.88819 *A

112)  bromobenzene
            0.941 1.029 0.874 0.908 0.879 0.874 0.960 0.894 0.885   0.916    5.70
113)  1,1,2,2-tetrachloroethane
            0.671 0.733 0.704 0.688 0.702 0.650 0.678 0.730 0.662   0.691    4.20
114)  trans-1,4-dichloro-2-butene
                        0.193 0.186 0.187 0.174 0.165 0.185         0.182    5.60
115)  1,2,3-trichloropropane
                    0.201 0.192 0.189 0.187 0.174 0.180 0.196       0.188    4.93
116)  n-propylbenzene
                        3.318 3.495 3.339 3.375 3.720 3.456         3.451    4.30
117)  4-ethyltoluene
                                                                    0.000   -1.00
118)  2-chlorotoluene
                        0.754 0.791 0.760 0.764 0.828 0.769         0.778    3.57
119)  4-chlorotoluene
            2.767 2.767 2.217 2.330 2.239 2.229 2.401 2.271 2.682   2.434    9.73
120)  1,3,5-trimethylbenzene
                        2.525 2.655 2.553 2.578 2.786 2.618         2.619    3.59
121)  tert-butylbenzene
                        2.159 2.250 2.191 2.196 2.457 2.268         2.254    4.77
122)  pentachloroethane
            0.643 0.679 0.587 0.612 0.606 0.600 0.623 0.629 0.649   0.625    4.53
123)  1,2,4-trimethylbenzene
                        2.611 2.719 2.601 2.647 2.794 2.685         2.676    2.73
124)  1,2,3-trimethylbenzene
                                                                    0.000   -1.00
125)  sec-butylbenzene
                        3.155 3.299 3.148 3.210 3.479 3.289         3.263    3.78
126)  1,3-dichlorobenzene
            1.904 1.880 1.626 1.690 1.644 1.622 1.710 1.627 1.855   1.729    6.81
127)  p-isopropyltoluene
                        2.740 2.887 2.766 2.784 3.003 2.838         2.836    3.43
128)  1,4-dichlorobenzene
            2.012 1.956 1.653 1.736 1.670 1.652 1.752 1.682 1.974   1.787    8.36
129)  1,2-dichlorobenzene
            1.628 1.755 1.537 1.584 1.556 1.540 1.591 1.575 1.666   1.604    4.38
130)  benzyl chloride
            1.333 1.372 1.486 1.489 1.457 1.369 1.274 1.497 1.241   1.391    6.94
131)  1,4-diethylbenzene
                                                                    0.000   -1.00
132)  n-butylbenzene
            1.705 1.690 1.355 1.428 1.349 1.368 1.441 1.401 1.531   1.474    9.38
133)  1,2,4,5-tetramethylbenzene
                                                                    0.000   -1.00
134)  1,2-dibromo-3-chloropropane
                    0.123 0.110 0.115 0.122 0.111 0.108 0.134       0.118    7.90
135)  1,3,5-trichlorobenzene
            1.284 1.462 1.147 1.272 1.278 1.237 1.293 1.296 1.233   1.278    6.52
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** VX5795-ICC5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133702.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
136)  hexachlorobutadiene
                        0.545 0.636 0.651 0.591 0.711 0.670         0.634    9.28
137)  naphthalene
                        1.490 1.717 1.831 1.475 1.420 1.735         1.611   10.56
138)  1,2,4-trichlorobenzene
                  0.830 0.885 1.012 1.037 0.943 0.860 0.965         0.933    8.34
139)  1,2,3-trichlorobenzene
                        0.638 0.792 0.849 0.618 0.683 0.799         0.730   13.13
140)  hexachloroethane
                        0.535 0.568 0.557 0.565 0.614 0.557         0.566    4.62
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          MX5795.M          Thu Mar 07 18:13:12 2013   ACCNJ
```

Initial Calibration Verification

Job Number: JB30425 **Sample:** VX5796-ICV5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133710.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\X\vx5795FINAL\X133710.D Vial: 3
Acq On : 7 Mar 2013 12:00 pm Operator: margares
Sample : icv5795-50 Inst : ACC-VOA-MSX
Misc : MS43960,VX5796,5.0,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MX5795.M (RTE Integrator)
Title : SW-846 Method 8260B, ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Mar 07 18:00:57 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	tert butyl alcohol-d9	1.000	1.000	0.0	104	-0.01	7.05
2		tertiary butyl alcohol	1.303	1.225	6.0	93	0.00	7.19
3		ethyl alcohol	0.103	0.093	9.7	102	0.00	5.73
4		1,4-dioxane	0.113	0.111	1.8	97	0.00	11.83
5	I	pentafluorobenzene	1.000	1.000	0.0	107	0.00	9.73
6	m	freon 23		----------NA----------				
7	m	freon 115		----------NA----------				
8	m	freon 143a		----------NA----------				
9	m	freon 152a		----------NA----------				
10	m	chlorotrifluoroethene		----------NA----------				
11		chlorodifluoromethane	0.273	0.316	-15.8	117	0.00	3.64
12		dichlorodifluoromethane	0.497	0.546	-9.9	116	-0.01	3.62
13	m	freon 114		----------NA----------				
14	m	freon 142b		----------NA----------				
15		chloromethane	0.433	0.480	-10.9	118	0.00	3.94
16		vinyl chloride	0.434	0.494	-13.8	122	-0.01	4.18
17	m	acetaldehyde	0.005	0.006	-20.0	118	0.00	4.40
18		bromomethane	0.335	0.355	-6.0	114	0.00	4.80
19		chloroethane	0.231	0.243	-5.2	117	0.00	4.98
20		vinyl bromide		----------NA----------				
21		trichlorofluoromethane	0.671	0.754	-12.4	119	0.01	5.43
22		pentane		----------NA----------				
23		ethyl ether	0.199	0.188	5.5	102	-0.01	5.86
24	m	freon 141b		----------NA----------				
25	m	freon 123a		----------NA----------				
26	m	freon 123		----------NA----------				
27		acrolein	0.054	0.053	1.9	99	0.00	6.12
28		1,1-dichloroethene	0.328	0.370	-12.8	116	0.00	6.30
29		acetone	0.023	0.021	8.7	94	-0.03	6.35
30		allyl chloride	0.225	0.227	-0.9	111	-0.01	6.86
31		acetonitrile	0.024	0.022	8.3	98	-0.02	6.83
32		iodomethane	0.819	0.817	0.2	107	0.00	6.59
33		iso-butyl alcohol	0.014	0.013	7.1	88	-0.01	10.11
34		carbon disulfide	1.188	1.316	-10.8	115	0.00	6.72
35		methylene chloride	0.437	0.412	5.7	103	-0.01	7.08
36		methyl acetate	0.216	0.180	16.7	86	-0.01	6.86
37		methyl tert butyl ether	1.126	1.041	7.5	94	0.00	7.45
38		trans-1,2-dichloroethene	0.415	0.418	-0.7	112	0.00	7.50
39		di-isopropyl ether	1.221	1.163	4.8	98	-0.01	8.15
40		2-butanone	0.038	0.033	13.2	90	-0.01	9.02
41		1,1-dichloroethane	0.743	0.733	1.3	107	0.00	8.15

Initial Calibration Verification

Job Number: JB30425 **Sample:** VX5796-ICV5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133710.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42		chloroprene	0.551	0.522	5.3	98	0.00	8.28
43		acrylonitrile	0.098	0.091	7.1	95	-0.01	7.44
44		vinyl acetate	0.054	0.052	3.7	101	-0.01	8.15
45		ethyl tert-butyl ether	1.259	1.162	7.7	94	0.00	8.71
46		ethyl acetate	0.035	0.032	8.6	93	0.00	9.06
47		2,2-dichloropropane	0.610	0.659	-8.0	112	0.00	9.05
48		cis-1,2-dichloroethene	0.463	0.459	0.9	105	-0.01	9.05
49		propionitrile	0.039	0.036	7.7	95	0.00	9.14
50		tert-Butyl Formate	0.336	0.325	3.3	95	0.00	9.55
51		bromochloromethane	0.230	0.228	0.9	98	-0.02	9.43
52		tetrahydrofuran	0.108	0.095	12.0	94	-0.01	9.48
53		chloroform	0.822	0.779	5.2	104	-0.01	9.51
54	S	dibromofluoromethane (s)	0.468	0.457	2.4	108	0.00	9.76
55	S	1,2-dichloroethane-d4 (s)	0.502	0.441	12.2	100	-0.01	10.29
56		freon 113	0.280	0.258	7.9	94	0.00	6.29
57		methacrylonitrile	0.175	0.162	7.4	93	-0.01	9.36
58		1,1,1-trichloroethane	0.673	0.719	-6.8	111	0.00	9.82
59		cyclohexane	0.514	0.579	-12.6	115	-0.01	9.90
60	m	tert amyl alcohol		----------NA----------				
61	m	iso-octane	1.351	1.153	14.7	93	0.00	10.40
62	I	1,4-difluorobenzene	1.000	1.000	0.0	109	-0.01	10.88
63		di-isobutylene		----------NA----------				
64		epichlorohydrin	0.023	0.021	8.7	95	-0.01	12.57
		----------	True	Calc.	% Drift	----------		
65		n-butyl alcohol	2500.000	2027.103	18.9	95	0.00	11.09
		----------	AvgRF	CCRF	% Dev	----------		
66		carbon tetrachloride	0.472	0.503	-6.6	111	0.00	10.07
67		1,1-dichloropropene	0.408	0.431	-5.6	113	-0.01	10.05
68		hexane	0.312	0.246	21.2#	83	-0.01	7.85
69		benzene	1.233	1.189	3.6	107	0.00	10.38
70		tert-amyl methyl ether	0.898	0.820	8.7	94	-0.01	10.44
71		heptane	0.196	0.184	6.1	98	-0.01	10.64
72		isopropyl acetate	0.472	0.362	23.3#	80	0.00	10.33
73		1,2-dichloroethane	0.432	0.393	9.0	95	-0.01	10.40
74		trichloroethene	0.337	0.354	-5.0	111	-0.01	11.32
75	m	ethyl acrylate		----------NA----------				
76	m	tert amyl ethyl ether		----------NA----------				
77		2-nitropropane	0.005	0.004	20.0	88	0.00	12.42
78		2-chloroethyl vinyl ether	0.156	0.138	11.5	93	0.00	12.43
79		methyl methacrylate	0.169	0.153	9.5	93	0.00	11.72
80		1,2-dichloropropane	0.313	0.303	3.2	103	-0.01	11.66
81		dibromomethane	0.195	0.182	6.7	97	0.00	11.88
82		methylcyclohexane	0.435	0.429	1.4	102	0.00	11.59
83		bromodichloromethane	0.471	0.444	5.7	99	0.00	12.07
84		cis-1,3-dichloropropene	0.546	0.525	3.8	101	0.00	12.70
85	S	toluene-d8 (s)	1.220	1.222	-0.2	114	0.00	13.08
86		4-methyl-2-pentanone	0.097	0.087	10.3	92	-0.01	12.84
87		toluene	0.825	0.800	3.0	107	0.00	13.18
88		3-methyl-1-butanol	0.011	0.010	9.1	91	0.00	12.91
89		trans-1,3-dichloropropene	0.505	0.474	6.1	97	-0.01	13.47
90		ethyl methacrylate	0.364	0.336	7.7	96	0.00	13.50
91		1,1,2-trichloroethane	0.222	0.211	5.0	98	0.00	13.76
92		2-hexanone	0.093	0.082	11.8	93	-0.01	14.02
93	I	chlorobenzene-d5	1.000	1.000	0.0	106	-0.01	15.12
		----------	True	Calc.	% Drift	----------		

Initial Calibration Verification

Job Number: JB30425 **Sample:** VX5796-ICV5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133710.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

94		3,3-Dimethyl-1-butanol	500.000	394.699	21.1#	91	0.00	14.27
		----------	AvgRF	CCRF	% Dev	----------		
95		tetrachloroethene	0.332	0.354	-6.6	112	0.00	13.97
96		1,3-dichloropropane	0.487	0.450	7.6	96	0.00	14.00
97		butyl acetate	0.182	0.163	10.4	92	0.00	14.15
98		dibromochloromethane	0.442	0.413	6.6	96	-0.01	14.35
99		1,2-dibromoethane	0.319	0.300	6.0	96	0.00	14.53
100	m	n-butyl ether		----------NA----------				
101		chlorobenzene	1.108	1.056	4.7	103	0.00	15.16
102		1,1,1,2-tetrachloroethane	0.433	0.408	5.8	99	0.00	15.26
103		ethylbenzene	1.827	1.755	3.9	107	-0.01	15.25
		----------	True	Calc.	% Drift	----------		
104		m,p-xylene	100.000	103.443	-3.4	107	0.00	15.40
		----------	AvgRF	CCRF	% Dev	----------		
105		o-xylene	0.708	0.675	4.7	105	0.00	15.95
106		styrene	1.175	1.149	2.2	102	-0.01	15.96
107		bromoform	0.303	0.283	6.6	94	-0.01	16.29
108	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	106	0.00	17.95
109		isopropylbenzene	3.002	3.099	-3.2	108	-0.01	16.40
		----------	True	Calc.	% Drift	----------		
110		Cyclohexanone	500.000	491.739	1.7	110	0.00	16.59
111	S	4-bromofluorobenzene (s)	50.000	50.540	-1.1	108	0.00	16.64
		----------	AvgRF	CCRF	% Dev	----------		
112		bromobenzene	0.916	0.850	7.2	99	-0.01	16.86
113		1,1,2,2-tetrachloroethane	0.691	0.610	11.7	94	0.00	16.79
114		trans-1,4-dichloro-2-bute	0.182	0.161	11.5	92	0.00	16.85
115		1,2,3-trichloropropane	0.188	0.162	13.8	91	0.00	16.87
116		n-propylbenzene	3.451	3.543	-2.7	108	0.00	16.90
117	m	4-ethyltoluene		----------NA----------				
118		2-chlorotoluene	0.778	0.783	-0.6	105	0.00	17.06
119		4-chlorotoluene	2.434	2.272	6.7	104	0.00	17.18
120		1,3,5-trimethylbenzene	2.619	2.638	-0.7	106	0.00	17.09
121		tert-butylbenzene	2.254	2.283	-1.3	108	0.00	17.47
122		pentachloroethane	0.625	0.567	9.3	98	0.00	17.56
123		1,2,4-trimethylbenzene	2.676	2.680	-0.1	105	0.00	17.53
124	m	1,2,3-trimethylbenzene		----------NA----------				
125		sec-butylbenzene	3.263	3.387	-3.8	109	0.00	17.71
126		1,3-dichlorobenzene	1.729	1.610	6.9	101	0.00	17.89
127		p-isopropyltoluene	2.836	2.904	-2.4	107	0.00	17.84
128		1,4-dichlorobenzene	1.787	1.635	8.5	100	0.00	17.98
129		1,2-dichlorobenzene	1.604	1.470	8.4	99	0.00	18.37
130		benzyl chloride	1.391	1.359	2.3	97	0.00	18.11
131	m	1,4-diethylbenzene		----------NA----------				
132		n-butylbenzene	1.474	1.451	1.6	108	0.00	18.26
133	m	1,2,4,5-tetramethylbenzen		----------NA----------				
134		1,2-dibromo-3-chloropropa	0.118	0.096	18.6	89	-0.01	19.12
135		1,3,5-trichlorobenzene	1.278	1.217	4.8	102	0.00	19.29
136		hexachlorobutadiene	0.634	0.630	0.6	105	0.00	19.99
137		naphthalene	1.611	1.474	8.5	91	0.00	20.15
138		1,2,4-trichlorobenzene	0.933	0.947	-1.5	99	0.00	19.89
139	m	1,2,3-trichlorobenzene	0.730	0.713	2.3	96	0.00	20.38
140		hexachloroethane	0.566	0.569	-0.5	107	0.00	18.62

Initial Calibration Verification

Job Number: JB30425 **Sample:** VX5796-ICV5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133710.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 X133702.D  MX5795.M          Thu Mar 07 18:14:33 2013   ACCNJ
```

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VX5805-CC5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133973.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\X\VX5805\X133973.D         Vial: 2
Acq On    : 18 Mar 2013   9:03 am                    Operator: margares
Sample    : cc5795-20                                Inst    : ACC-VOA-MSX
Misc      : MS44831,VX5805,5.0,,,,1                  Multiplr: 1.00
MS Integration Params: rteint.p

Method       : C:\MSDCHEM\1\METHODS\MX5795.M (RTE Integrator)
Title        : SW-846 Method 8260B, ZB624 60m x 0.25mm x 1.4um
Last Update  : Thu Mar 07 18:00:57 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	tert butyl alcohol-d9	1.000	1.000	0.0	137	-0.03	7.03
2		tertiary butyl alcohol	1.303	1.106	15.1	111	-0.03	7.16
3		ethyl alcohol		----------NA----------				
4		1,4-dioxane	0.113	0.095	15.9	111	-0.03	11.81
5	I	pentafluorobenzene	1.000	1.000	0.0	84	-0.03	9.70
6	m	freon 23		----------NA----------				
7	m	freon 115		----------NA----------				
8	m	freon 143a		----------NA----------				
9	m	freon 152a		----------NA----------				
10	m	chlorotrifluoroethene		----------NA----------				
11		chlorodifluoromethane	0.273	0.325	-19.0	102	-0.02	3.63
12		dichlorodifluoromethane	0.497	0.524	-5.4	91	-0.01	3.62
13	m	freon 114		----------NA----------				
14	m	freon 142b		----------NA----------				
15		chloromethane	0.433	0.427	1.4	83	-0.03	3.91
16		vinyl chloride	0.434	0.454	-4.6	91	-0.02	4.17
17	m	acetaldehyde	0.005	0.004	20.0	61	-0.03	4.37
18		bromomethane	0.335	0.347	-3.6	90	-0.01	4.79
19		chloroethane	0.231	0.215	6.9	86	-0.03	4.96
20		vinyl bromide		----------NA----------				
21		trichlorofluoromethane	0.671	0.794	-18.3	103	0.00	5.41
22		pentane		----------NA----------				
23		ethyl ether	0.199	0.211	-6.0	88	-0.03	5.84
24	m	freon 141b		----------NA----------				
25	m	freon 123a		----------NA----------				
26	m	freon 123		----------NA----------				
27		acrolein	0.054	0.064	-18.5	96	-0.03	6.10
28		1,1-dichloroethene	0.328	0.378	-15.2	100	-0.03	6.28
29		acetone	0.023	0.027	-17.4	110	-0.04	6.34
30		allyl chloride	0.225	0.244	-8.4	96	-0.03	6.85
31		acetonitrile	0.024	0.028	-16.7	94	-0.04	6.81
32		iodomethane	0.819	0.867	-5.9	96	-0.03	6.57
33		iso-butyl alcohol	0.014	0.019	-35.7#	108	-0.04	10.08
34		carbon disulfide	1.188	1.358	-14.3	101	-0.03	6.70
35		methylene chloride	0.437	0.447	-2.3	93	-0.03	7.06
36		methyl acetate	0.216	0.253	-17.1	96	-0.03	6.83
37		methyl tert butyl ether	1.126	1.296	-15.1	95	-0.03	7.43
38		trans-1,2-dichloroethene	0.415	0.438	-5.5	96	-0.03	7.48
39		di-isopropyl ether	1.221	1.273	-4.3	87	-0.03	8.13
40		2-butanone	0.038	0.043	-13.2	101	-0.04	8.99
41		1,1-dichloroethane	0.743	0.790	-6.3	94	-0.03	8.13

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VX5805-CC5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133973.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42		chloroprene	0.551	0.644	-16.9	99	-0.03	8.26
43		acrylonitrile	0.098	0.118	-20.4#	99	-0.03	7.42
44		vinyl acetate	0.054	0.056	-3.7	90	-0.03	8.13
45		ethyl tert-butyl ether	1.259	1.363	-8.3	89	-0.03	8.69
46		ethyl acetate	0.035	0.040	-14.3	99	-0.04	9.03
47		2,2-dichloropropane	0.610	0.747	-22.5#	106	-0.03	9.03
48		cis-1,2-dichloroethene	0.463	0.486	-5.0	93	-0.04	9.02
49		propionitrile	0.039	0.048	-23.1#	102	-0.03	9.11
50		tert-Butyl Formate	0.336	0.390	-16.1	94	-0.03	9.53
51		bromochloromethane	0.230	0.260	-13.0	92	-0.04	9.41
52		tetrahydrofuran	0.108	0.131	-21.3#	100	-0.03	9.46
53		chloroform	0.822	0.880	-7.1	95	-0.03	9.49
54	S	dibromofluoromethane (s)	0.468	0.532	-13.7	102	-0.03	9.74
55	S	1,2-dichloroethane-d4 (s)	0.502	0.541	-7.8	97	-0.03	10.27
56		freon 113	0.280	0.341	-21.8#	106	-0.02	6.27
57		methacrylonitrile	0.175	0.216	-23.4#	98	-0.03	9.34
58		1,1,1-trichloroethane	0.673	0.817	-21.4#	106	-0.04	9.79
59		cyclohexane	0.514	0.586	-14.0	102	-0.03	9.88
60	m	tert amyl alcohol		----------NA----------				
61	m	iso-octane	1.351	1.476	-9.3	99	-0.03	10.37
62	I	1,4-difluorobenzene	1.000	1.000	0.0	90	-0.03	10.86
63		di-isobutylene		----------NA----------				
64		epichlorohydrin	0.023	0.026	-13.0	100	-0.03	12.56
		----------	True	Calc.	% Drift	----------		
65		n-butyl alcohol	1000.000	1096.137	-9.6	105	-0.04	11.06
		----------	AvgRF	CCRF	% Dev	----------		
66		carbon tetrachloride	0.472	0.557	-18.0	109	-0.04	10.05
67		1,1-dichloropropene	0.408	0.439	-7.6	100	-0.03	10.03
68		hexane	0.312	0.334	-7.1	99	-0.04	7.82
69		benzene	1.233	1.191	3.4	92	-0.03	10.35
70		tert-amyl methyl ether	0.898	0.921	-2.6	89	-0.04	10.42
71		heptane	0.196	0.208	-6.1	97	-0.04	10.61
72		isopropyl acetate	0.472	0.539	-14.2	99	-0.03	10.30
73		1,2-dichloroethane	0.432	0.470	-8.8	96	-0.04	10.38
74		trichloroethene	0.337	0.369	-9.5	101	-0.03	11.30
75	m	ethyl acrylate		----------NA----------				
76	m	tert amyl ethyl ether		----------NA----------				
77		2-nitropropane		----------NA----------				
78		2-chloroethyl vinyl ether	0.156	0.180	-15.4	102	-0.03	12.40
79		methyl methacrylate	0.169	0.189	-11.8	99	-0.03	11.69
80		1,2-dichloropropane	0.313	0.308	1.6	90	-0.04	11.64
81		dibromomethane	0.195	0.212	-8.7	96	-0.03	11.85
82		methylcyclohexane	0.435	0.483	-11.0	103	-0.03	11.57
83		bromodichloromethane	0.471	0.497	-5.5	95	-0.03	12.04
84		cis-1,3-dichloropropene	0.546	0.565	-3.5	93	-0.03	12.67
85	S	toluene-d8 (s)	1.220	1.314	-7.7	105	-0.03	13.06
86		4-methyl-2-pentanone	0.097	0.113	-16.5	102	-0.03	12.83
87		toluene	0.825	0.826	-0.1	96	-0.03	13.16
88		3-methyl-1-butanol	0.011	0.014	-27.3#	109	-0.03	12.89
89		trans-1,3-dichloropropene	0.505	0.547	-8.3	95	-0.03	13.46
90		ethyl methacrylate	0.364	0.403	-10.7	98	-0.03	13.48
91		1,1,2-trichloroethane	0.222	0.243	-9.5	94	-0.03	13.74
92		2-hexanone	0.093	0.104	-11.8	101	-0.03	14.00
93	I	chlorobenzene-d5	1.000	1.000	0.0	96	-0.03	15.10
		----------	True	Calc.	% Drift	----------		

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VX5805-CC5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133973.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

94		3,3-Dimethyl-1-butanol	200.000	216.781	-8.4	110	-0.03	14.25
		----------	AvgRF	CCRF	% Dev	----------		
95		tetrachloroethene	0.332	0.400	-20.5#	118	-0.03	13.95
96		1,3-dichloropropane	0.487	0.481	1.2	93	-0.03	13.98
97		butyl acetate	0.182	0.187	-2.7	95	-0.02	14.13
98		dibromochloromethane	0.442	0.459	-3.8	100	-0.03	14.33
99		1,2-dibromoethane	0.319	0.329	-3.1	95	-0.03	14.51
100	m	n-butyl ether		----------NA----------				
101		chlorobenzene	1.108	1.050	5.2	97	-0.03	15.14
102		1,1,1,2-tetrachloroethane	0.433	0.431	0.5	99	-0.03	15.23
103		ethylbenzene	1.827	1.716	6.1	99	-0.03	15.23
		----------	True	Calc.	% Drift	----------		
104		m,p-xylene	40.000	40.033	-0.1	98	-0.03	15.38
		----------	AvgRF	CCRF	% Dev	----------		
105		o-xylene	0.708	0.669	5.5	98	-0.03	15.92
106		styrene	1.175	1.127	4.1	95	-0.03	15.95
107		bromoform	0.303	0.333	-9.9	102	-0.03	16.26
108	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	102	-0.02	17.94
109		isopropylbenzene	3.002	2.906	3.2	102	-0.03	16.38
		----------	True	Calc.	% Drift	----------		
110		Cyclohexanone	200.000	160.423	19.8	63	-0.02	16.57
111	S	4-bromofluorobenzene (s)	50.000	49.694	0.6	103	-0.03	16.63
		----------	AvgRF	CCRF	% Dev	----------		
112		bromobenzene	0.916	0.839	8.4	97	-0.03	16.85
113		1,1,2,2-tetrachloroethane	0.691	0.657	4.9	95	-0.02	16.78
114		trans-1,4-dichloro-2-bute	0.182	0.195	-7.1	106	-0.03	16.82
115		1,2,3-trichloropropane	0.188	0.192	-2.1	104	-0.02	16.85
116		n-propylbenzene	3.451	3.291	4.6	100	-0.02	16.89
117	m	4-ethyltoluene		----------NA----------				
118		2-chlorotoluene	0.778	0.730	6.2	98	-0.02	17.04
119		4-chlorotoluene	2.434	2.154	11.5	98	-0.02	17.16
120		1,3,5-trimethylbenzene	2.619	2.512	4.1	100	-0.02	17.07
121		tert-butylbenzene	2.254	2.180	3.3	101	-0.02	17.46
122		pentachloroethane	0.625	0.473	24.3#	79	-0.02	17.54
123		1,2,4-trimethylbenzene	2.676	2.549	4.7	100	-0.02	17.51
124	m	1,2,3-trimethylbenzene		----------NA----------				
125		sec-butylbenzene	3.263	3.170	2.9	102	-0.02	17.69
126		1,3-dichlorobenzene	1.729	1.570	9.2	97	-0.02	17.88
127		p-isopropyltoluene	2.836	2.757	2.8	101	-0.02	17.82
128		1,4-dichlorobenzene	1.787	1.600	10.5	97	-0.02	17.97
129		1,2-dichlorobenzene	1.604	1.489	7.2	97	-0.02	18.36
130		benzyl chloride	1.391	1.518	-9.1	106	-0.02	18.09
131	m	1,4-diethylbenzene		----------NA----------				
132		n-butylbenzene	1.474	1.352	8.3	102	-0.02	18.25
133	m	1,2,4,5-tetramethylbenzen		----------NA----------				
134		1,2-dibromo-3-chloropropa	0.118	0.129	-9.3	107	-0.02	19.10
135		1,3,5-trichlorobenzene	1.278	1.257	1.6	100	-0.02	19.27
136		hexachlorobutadiene	0.634	0.686	-8.2	107	-0.02	19.98
137		naphthalene	1.611	1.872	-16.2	104	-0.02	20.14
138		1,2,4-trichlorobenzene	0.933	1.036	-11.0	101	-0.02	19.87
139	m	1,2,3-trichlorobenzene	0.730	0.855	-17.1	102	-0.02	20.37
140		hexachloroethane	0.566	0.570	-0.7	104	-0.02	18.61

Continuing Calibration Summary

Job Number: JB30425 **Sample:** VX5805-CC5795
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** X133973.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 X133701.D  MX5795.M         Wed Mar 20 11:33:37 2013   ACCNJ
```

New Jersey

ACCUTEST LABORATORIES

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192405.D Vial: 100
Acq On : 8 Mar 2013 6:15 pm Operator: Oksanat
Sample : jb30425-1 Inst : MSA
Misc : MS44366,VA7246,10.3,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 8:50 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.01	65	71311	500.00	ug/L	-0.02
5) pentafluorobenzene	9.34	168	203858	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.28	114	287630	50.00	ug/L	-0.02
85) chlorobenzene-d5	13.73	117	249083	50.00	ug/L	-0.01
99) 1,4-dichlorobenzene-d4	16.37	152	102863	50.00	ug/L	-0.01

System Monitoring Compounds						
47) dibromofluoromethane (s)	9.37	113	81054	53.43	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 106.86%			
48) 1,2-dichloroethane-d4 (s)	9.81	65	117761	69.48	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 138.96%#			
77) toluene-d8 (s)	12.04	98	335380	61.40	ug/L	-0.02
Spiked Amount 50.000	Range 80 - 122		Recovery = 122.80%#			
102) 4-bromofluorobenzene (s)	15.05	95	87699	60.06	ug/L	0.00
Spiked Amount 50.000	Range 78 - 116		Recovery = 120.12%#			

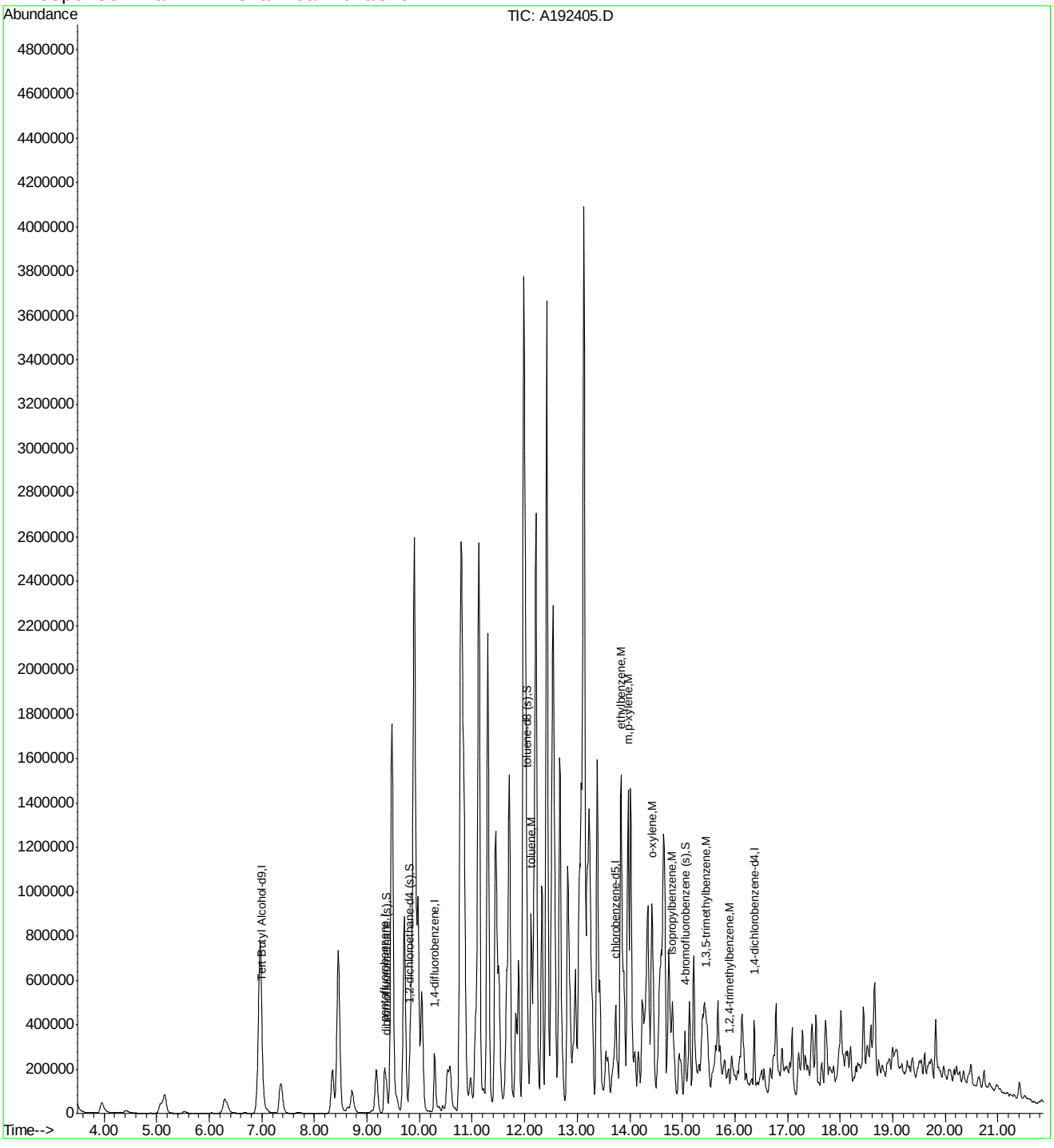
Target Compounds						Qvalue
79) toluene	12.13	92	4329	1.21	ug/L #	57
94) ethylbenzene	13.83	91	9546	1.46	ug/L #	1
95) m,p-xylene	13.96	106	6430	2.48	ug/L	90
96) o-xylene	14.42	106	17319	6.52	ug/L	96
100) isopropylbenzene	14.81	105	112185	24.51	ug/L	96
111) 1,3,5-trimethylbenzene	15.45	105	1984	0.49	ug/L	91
114) 1,2,4-trimethylbenzene	15.89	105	4483	1.07	ug/L	95

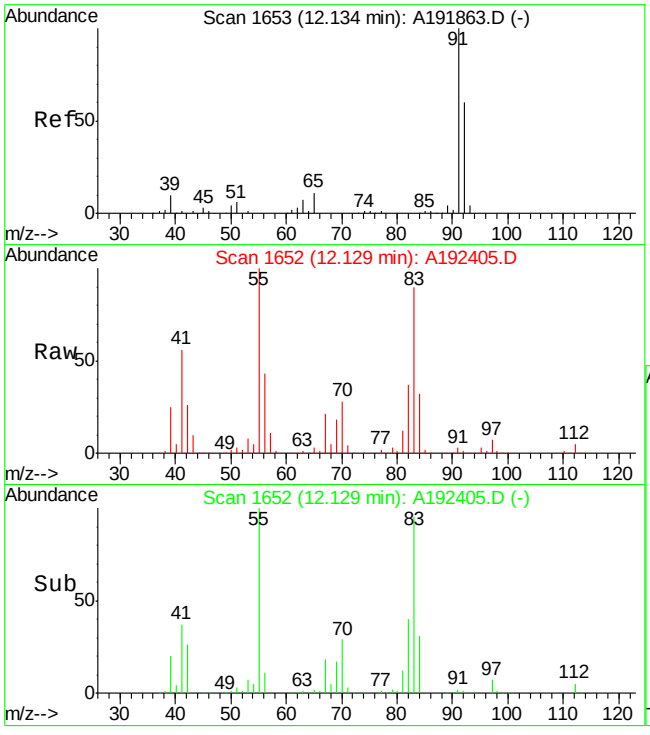
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192405.D Vial: 100
Acq On : 8 Mar 2013 6:15 pm Operator: Oksanat
Sample : jb30425-1 Inst : MSA
Misc : MS44366,VA7246,10.3,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 8:50 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration

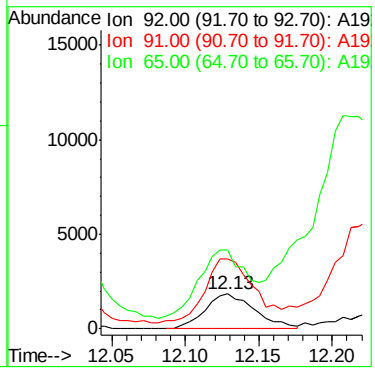


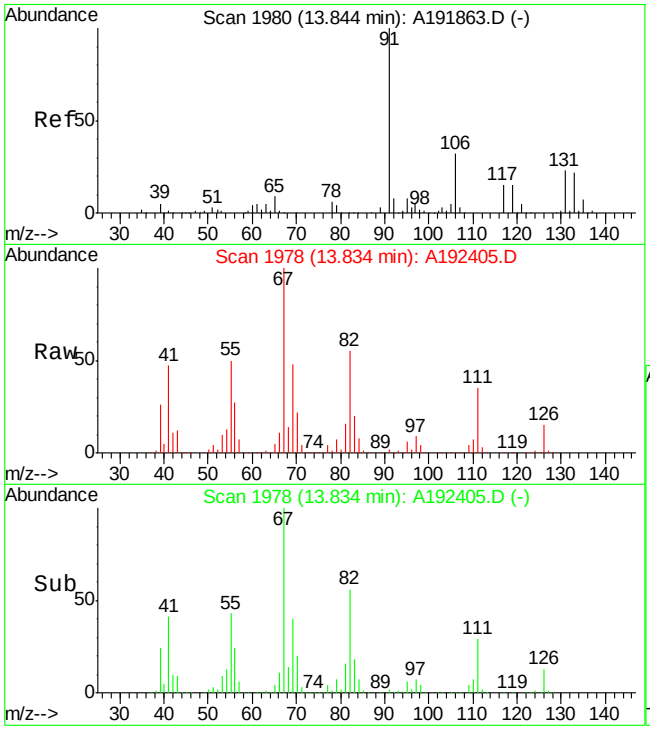


#79
toluene
Concen: 1.21 ug/L
RT: 12.13 min Scan# 1652
Delta R.T. -0.01 min
Lab File: A192405.D
Acq: 8 Mar 2013 6:15 pm

Tgt Ion: 92 Resp: 4329

Ion	Ratio	Lower	Upper
92	100		
91	176.4	137.9	197.9
65	189.2	0.0	48.0#

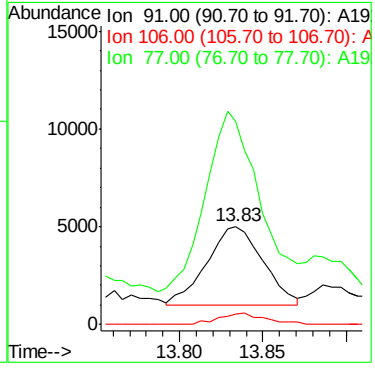


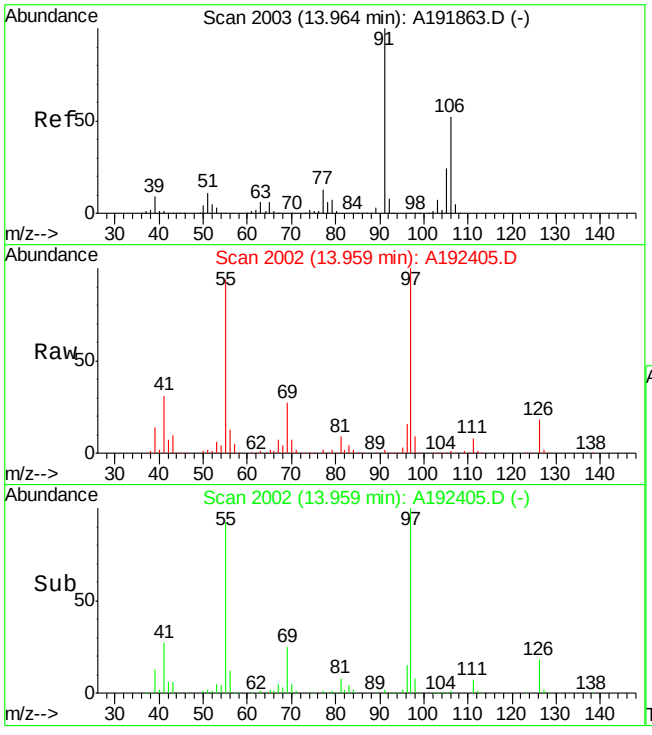


#94
ethylbenzene
Concen: 1.46 ug/L
RT: 13.83 min Scan# 1978
Delta R.T. -0.01 min
Lab File: A192405.D
Acq: 8 Mar 2013 6:15 pm

Tgt Ion: 91 Resp: 9546

Ion	Ratio	Lower	Upper
91	100		
106	13.7	1.9	61.9
77	218.9	0.0	38.4#

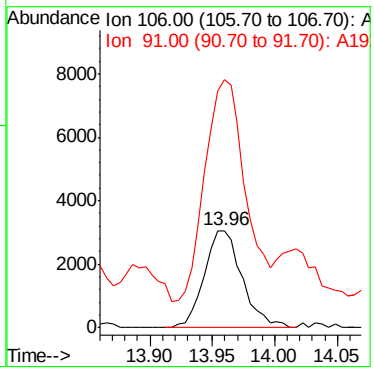


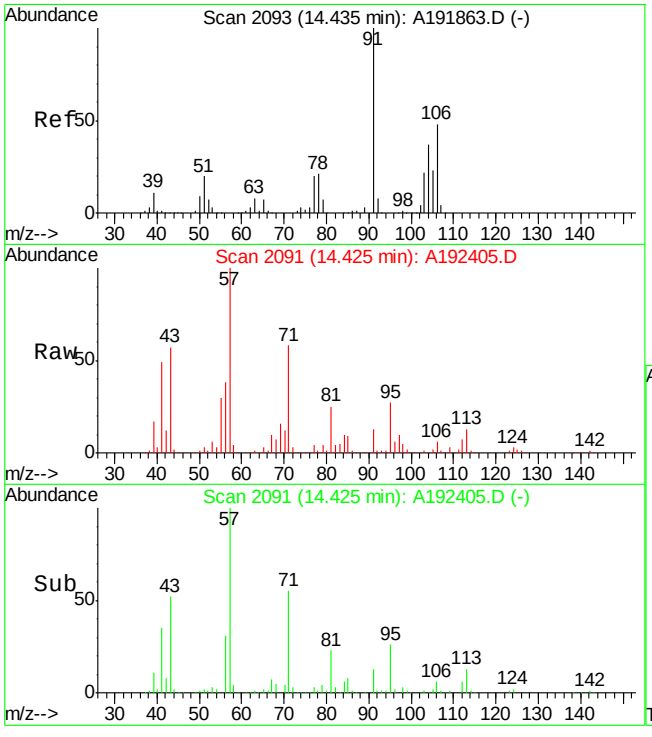


#95
m,p-xylene
Concen: 2.48 ug/L
RT: 13.96 min Scan# 2002
Delta R.T. -0.01 min
Lab File: A192405.D
Acq: 8 Mar 2013 6:15 pm

Tgt Ion:106 Resp: 6430

Ion	Ratio	Lower	Upper
106	100		
91	209.0	164.0	224.0

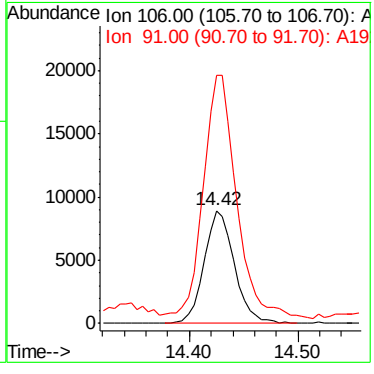


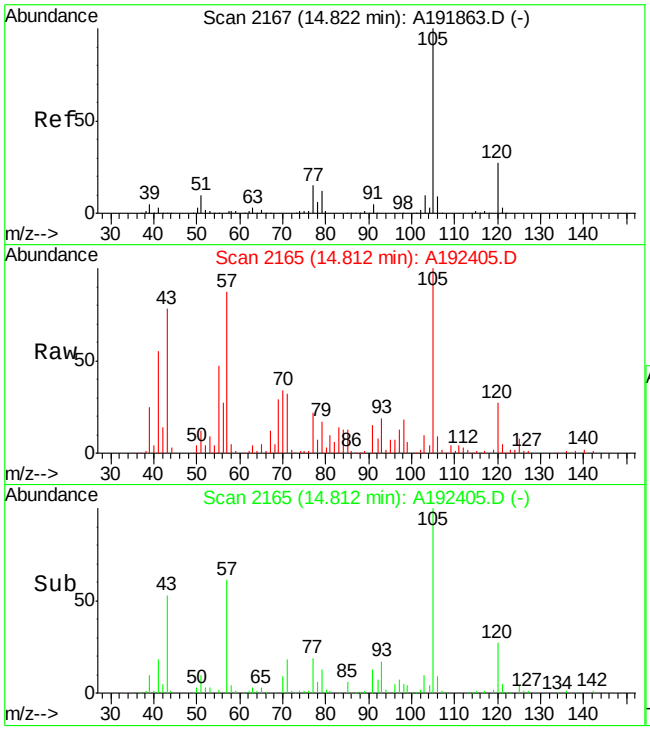


#96
o-xylene
Concen: 6.52 ug/L
RT: 14.42 min Scan# 2091
Delta R.T. -0.01 min
Lab File: A192405.D
Acq: 8 Mar 2013 6:15 pm

Tgt Ion:106 Resp: 17319

Ion	Ratio	Lower	Upper
106	100		
91	212.5	176.4	236.4

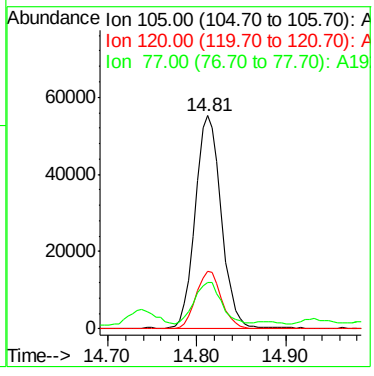


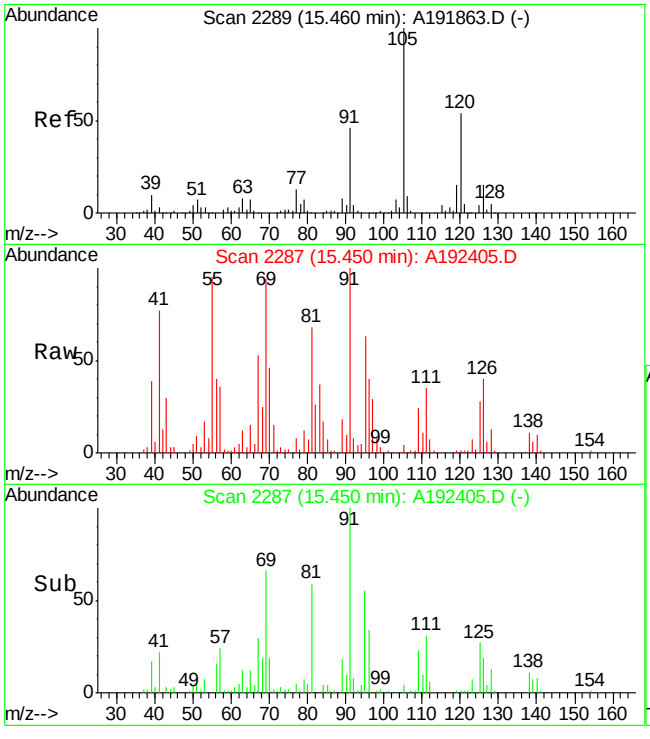


#100
isopropylbenzene
Concen: 24.51 ug/L
RT: 14.81 min Scan# 2165
Delta R.T. -0.01 min
Lab File: A192405.D
Acq: 8 Mar 2013 6:15 pm

Tgt Ion:105 Resp: 112185

Ion	Ratio	Lower	Upper
105	100		
120	27.2	0.0	56.9
77	19.0	0.0	44.9

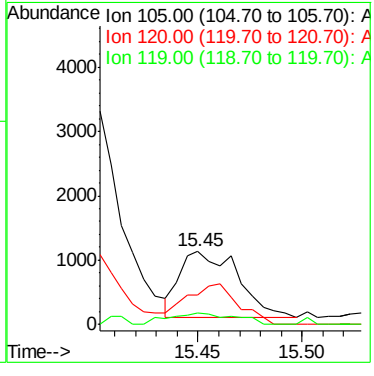


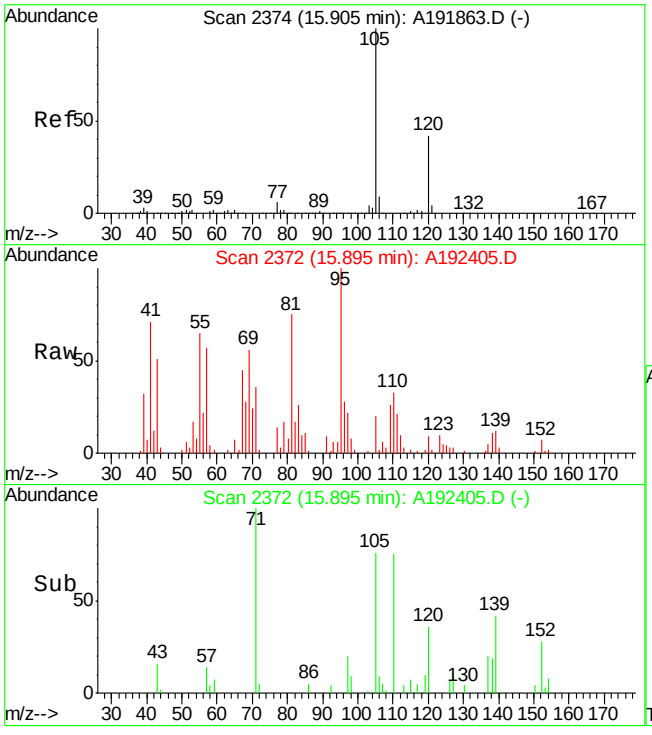


#111
1,3,5-trimethylbenzene
Concen: 0.49 ug/L
RT: 15.45 min Scan# 2287
Delta R.T. -0.01 min
Lab File: A192405.D
Acq: 8 Mar 2013 6:15 pm

Tgt Ion:105 Resp: 1984

Ion	Ratio	Lower	Upper
105	100		
120	45.0	21.5	81.5
119	17.2	0.0	43.3

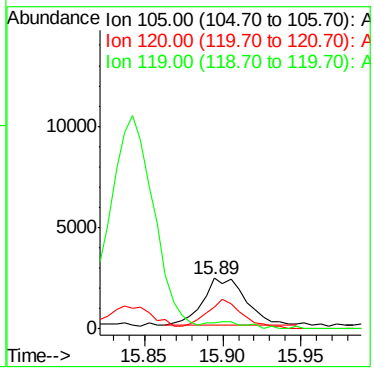




#114
1,2,4-trimethylbenzene
Concen: 1.07 ug/L
RT: 15.89 min Scan# 2372
Delta R.T. -0.01 min
Lab File: A192405.D
Acq: 8 Mar 2013 6:15 pm

Tgt Ion:105 Resp: 4483

Ion	Ratio	Lower	Upper
105	100		
120	45.1	17.0	77.0
119	8.3	0.0	43.0



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192481.D Vial: 100
Acq On : 11 Mar 2013 3:39 pm Operator: Oksanat
Sample : jb30425-1cfs Inst : MSA
Misc : MS44366,VA7248,9.0,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 18:00 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.01	65	61570	500.00	ug/L	-0.02
5) pentafluorobenzene	9.33	168	180056	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.28	114	260085	50.00	ug/L	-0.02
85) chlorobenzene-d5	13.73	117	237920	50.00	ug/L	-0.01
99) 1,4-dichlorobenzene-d4	16.36	152	101712	50.00	ug/L	-0.01

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	73637	54.96	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 109.92%			
48) 1,2-dichloroethane-d4 (s)	9.81	65	97737	65.29	ug/L	-0.01
Spiked Amount 50.000	Range 74 - 127		Recovery = 130.58%#			
77) toluene-d8 (s)	12.04	98	297279	60.19	ug/L	-0.02
Spiked Amount 50.000	Range 80 - 122		Recovery = 120.38%			
102) 4-bromofluorobenzene (s)	15.04	95	84813	58.74	ug/L	-0.02
Spiked Amount 50.000	Range 78 - 116		Recovery = 117.48%#			

Target Compounds

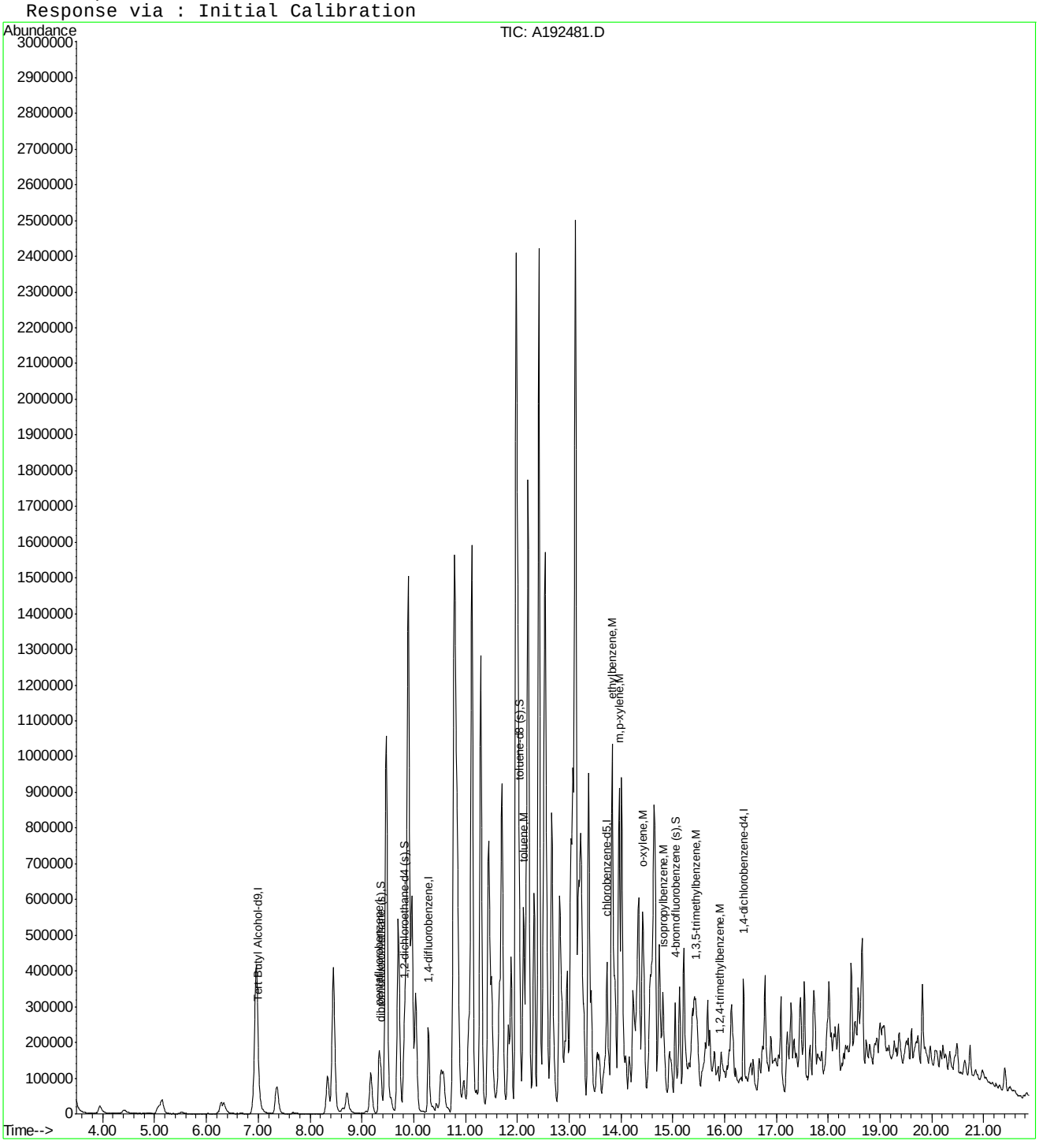
						Qvalue
79) toluene	12.13	92	3036	0.94	ug/L #	66
94) ethylbenzene	13.83	91	6994	1.12	ug/L #	1
95) m,p-xylene	13.96	106	5599	2.26	ug/L	87
96) o-xylene	14.42	106	15328	6.04	ug/L	99
100) isopropylbenzene	14.81	105	93375	20.63	ug/L	97
111) 1,3,5-trimethylbenzene	15.45	105	1953	0.49	ug/L	94
114) 1,2,4-trimethylbenzene	15.90	105	3866	0.94	ug/L	94

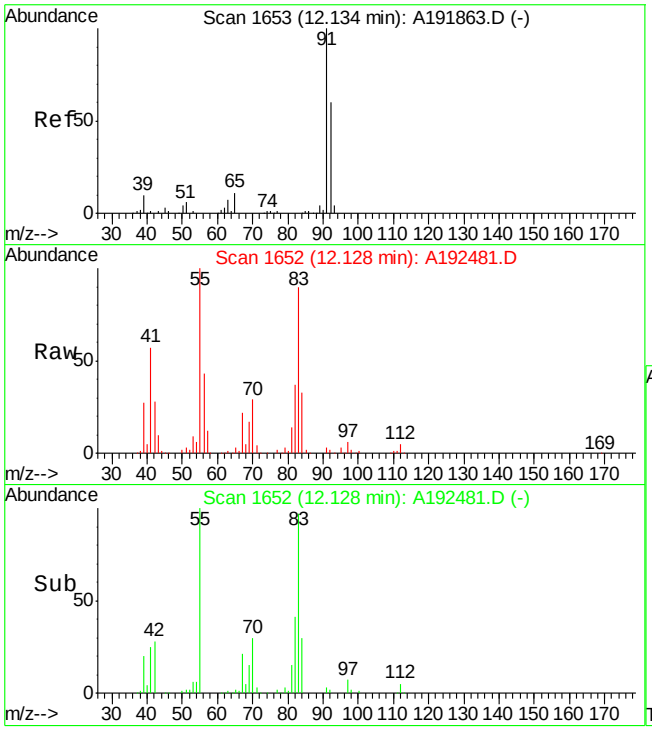
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192481.D Vial: 100
Acq On : 11 Mar 2013 3:39 pm Operator: Oksanat
Sample : jb30425-1cfs Inst : MSA
Misc : MS44366,VA7248,9.0,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 18:00 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration

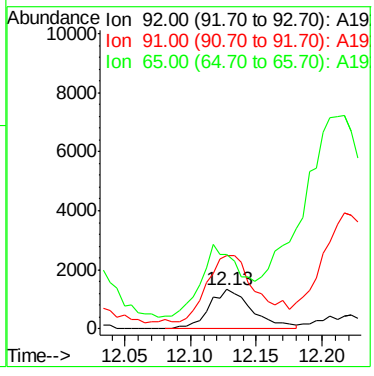


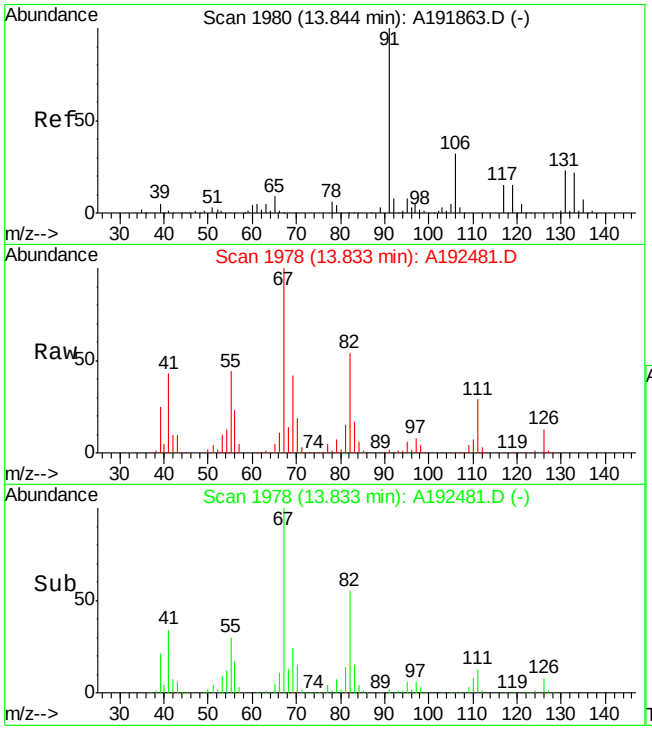


#79
toluene
Concen: 0.94 ug/L
RT: 12.13 min Scan# 1652
Delta R.T. -0.01 min
Lab File: A192481.D
Acq: 11 Mar 2013 3:39 pm

Tgt Ion: 92 Resp: 3036

Ion	Ratio	Lower	Upper
92	100		
91	162.1	137.9	197.9
65	156.0	0.0	48.0#

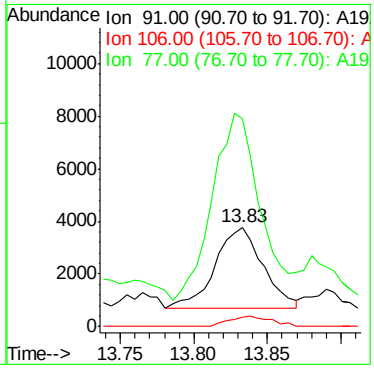


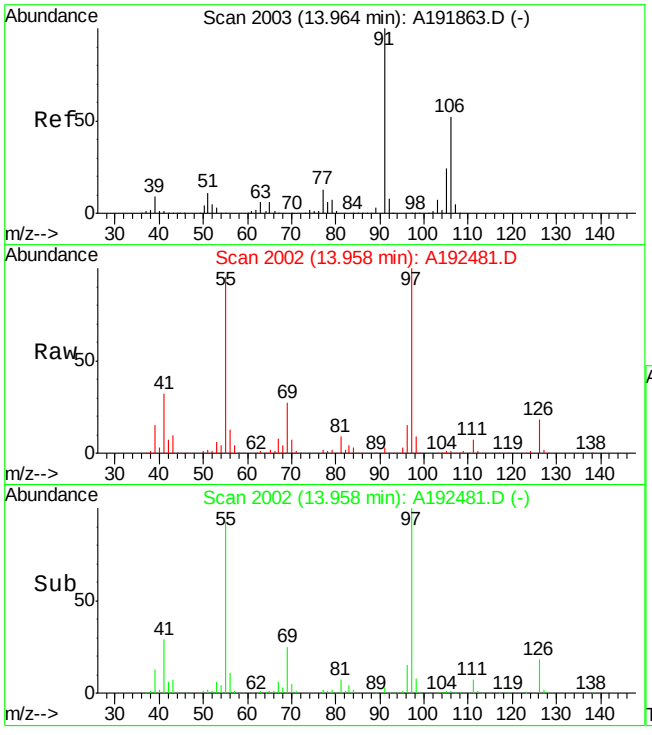


#94
ethylbenzene
Concen: 1.12 ug/L
RT: 13.83 min Scan# 1978
Delta R.T. -0.01 min
Lab File: A192481.D
Acq: 11 Mar 2013 3:39 pm

Tgt Ion: 91 Resp: 6994

Ion	Ratio	Lower	Upper
91	100		
106	11.8	1.9	61.9
77	212.1	0.0	38.4#

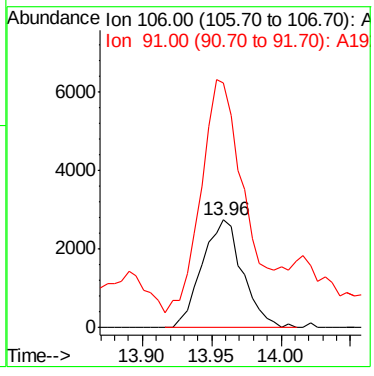


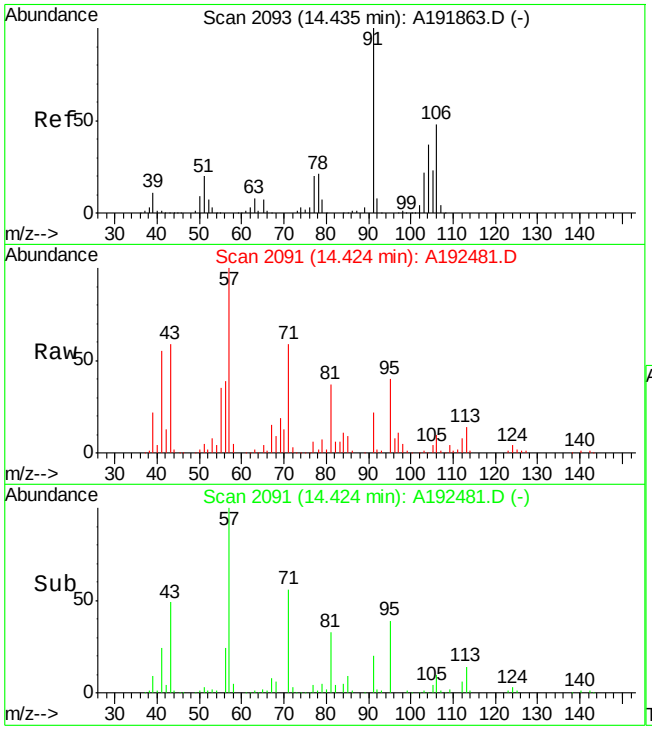


#95
m,p-xylene
Concen: 2.26 ug/L
RT: 13.96 min Scan# 2002
Delta R.T. -0.01 min
Lab File: A192481.D
Acq: 11 Mar 2013 3:39 pm

Tgt Ion:106 Resp: 5599

Ion	Ratio	Lower	Upper
106	100		
91	213.4	164.0	224.0

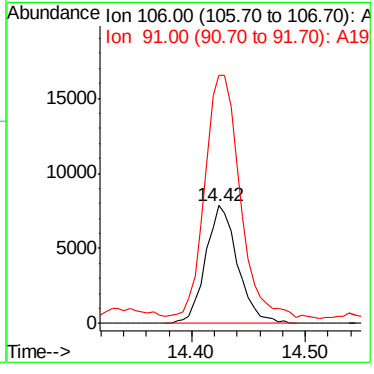




#96
o-xylene
Concen: 6.04 ug/L
RT: 14.42 min Scan# 2091
Delta R.T. -0.01 min
Lab File: A192481.D
Acq: 11 Mar 2013 3:39 pm

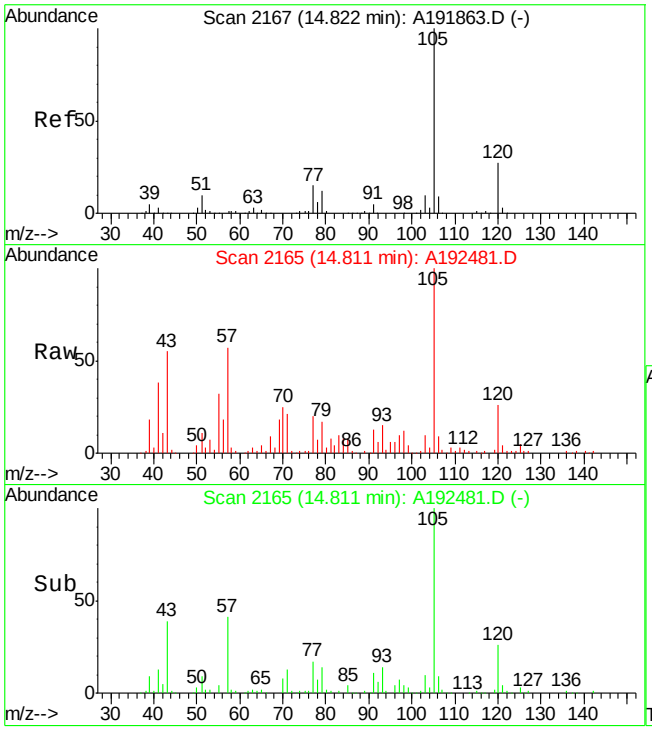
Tgt Ion:106 Resp: 15328

Ion	Ratio	Lower	Upper
106	100		
91	205.2	176.4	236.4



7.1.2

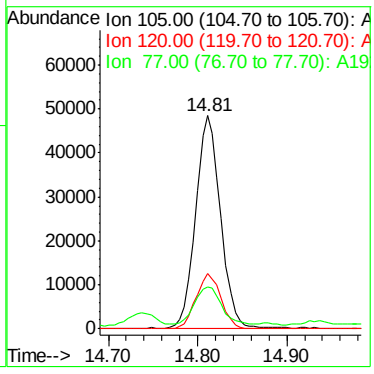
7

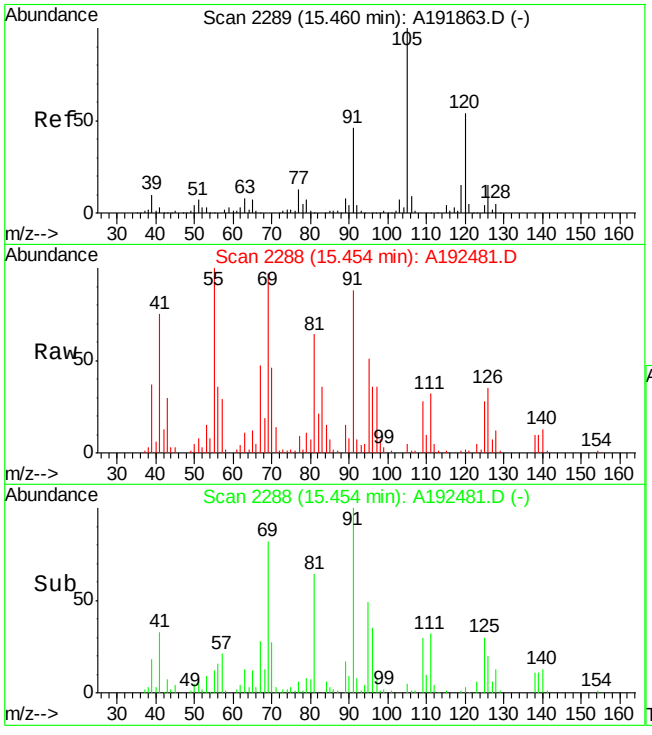


#100
isopropylbenzene
Concen: 20.63 ug/L
RT: 14.81 min Scan# 2165
Delta R.T. -0.01 min
Lab File: A192481.D
Acq: 11 Mar 2013 3:39 pm

Tgt Ion:105 Resp: 93375

Ion	Ratio	Lower	Upper
105	100		
120	26.1	0.0	56.9
77	17.5	0.0	44.9

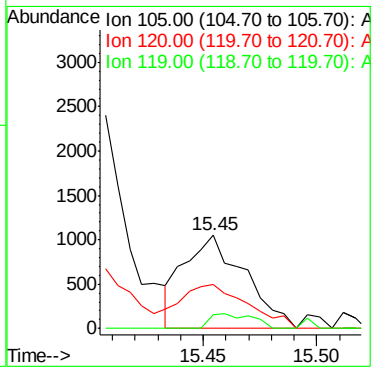


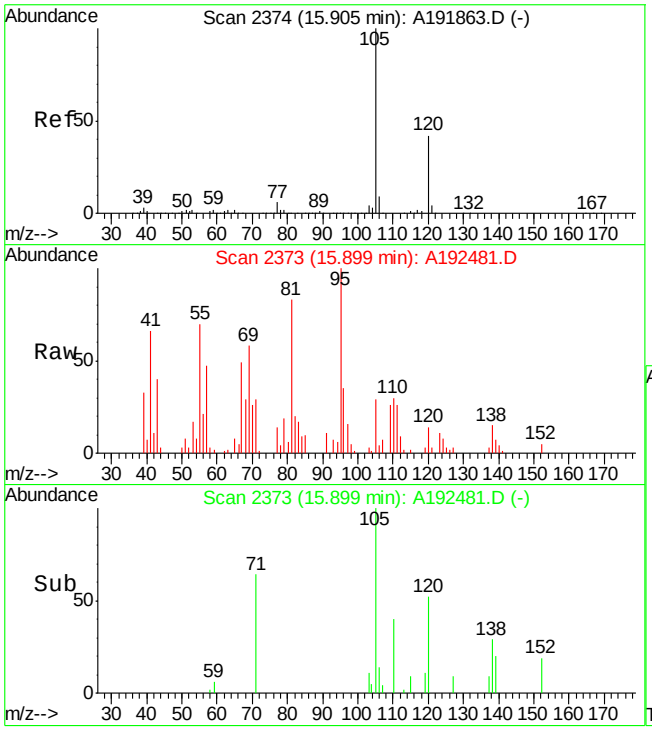


#111
1,3,5-trimethylbenzene
Concen: 0.49 ug/L
RT: 15.45 min Scan# 2288
Delta R.T. -0.01 min
Lab File: A192481.D
Acq: 11 Mar 2013 3:39 pm

Tgt Ion:105 Resp: 1953

Ion	Ratio	Lower	Upper
105	100		
120	46.9	21.5	81.5
119	14.6	0.0	43.3

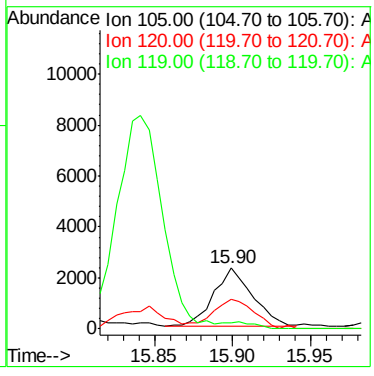




#114
1,2,4-trimethylbenzene
Concen: 0.94 ug/L
RT: 15.90 min Scan# 2373
Delta R.T. -0.01 min
Lab File: A192481.D
Acq: 11 Mar 2013 3:39 pm

Tgt Ion:105 Resp: 3866

Ion	Ratio	Lower	Upper
105	100		
120	50.7	17.0	77.0
119	10.8	0.0	43.0



7.1.2

7

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192406.D Vial: 100
Acq On : 8 Mar 2013 6:45 pm Operator: Oksanat
Sample : jb30425-3 Inst : MSA
Misc : MS44366,VA7246,5.2,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 8:52 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.00	65	81404	500.00	ug/L	-0.02
5) pentafluorobenzene	9.34	168	225253	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.29	114	304799	50.00	ug/L	-0.01
85) chlorobenzene-d5	13.73	117	282058	50.00	ug/L	-0.01
99) 1,4-dichlorobenzene-d4	16.37	152	152383	50.00	ug/L	-0.01

System Monitoring Compounds						
47) dibromofluoromethane (s)	9.37	113	83759	49.97	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 99.94%			
48) 1,2-dichloroethane-d4 (s)	9.81	65	79481	42.44	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 84.88%			
77) toluene-d8 (s)	12.05	98	308070	53.23	ug/L	0.00
Spiked Amount 50.000	Range 80 - 122		Recovery = 106.46%			
102) 4-bromofluorobenzene (s)	15.04	95	115702	53.49	ug/L	-0.01
Spiked Amount 50.000	Range 78 - 116		Recovery = 106.98%			

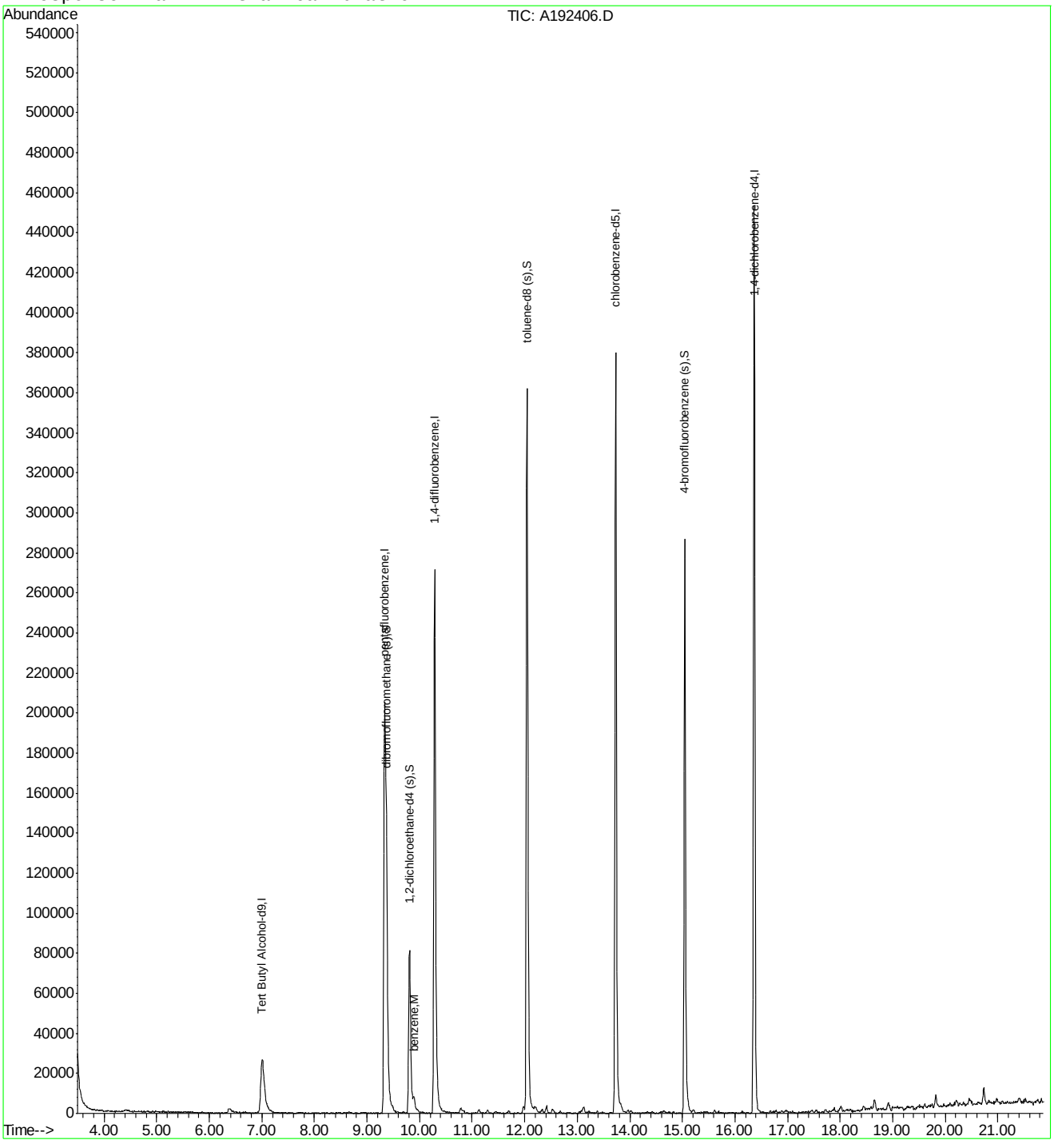
Target Compounds						Qvalue
61) benzene	9.90	78	5117	0.84	ug/L	90

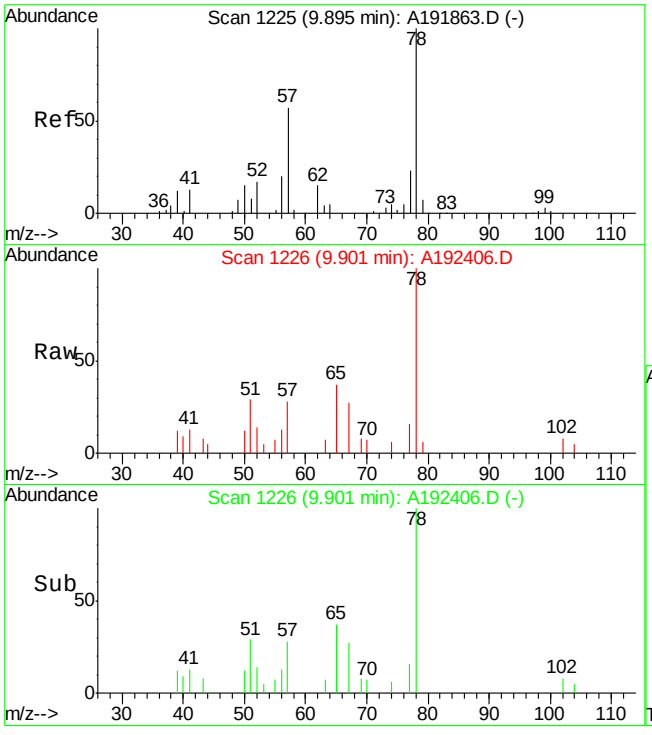
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192406.D Vial: 100
Acq On : 8 Mar 2013 6:45 pm Operator: Oksanat
Sample : jb30425-3 Inst : MSA
Misc : MS44366,VA7246,5.2,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 8:52 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration

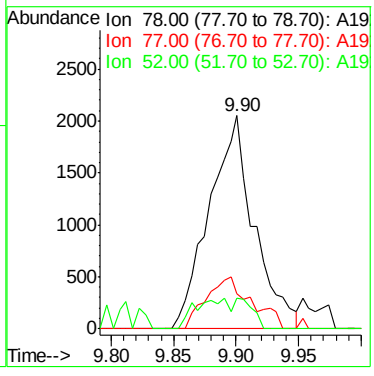




#61
benzene
Concen: 0.84 ug/L
RT: 9.90 min Scan# 1226
Delta R.T. 0.01 min
Lab File: A192406.D
Acq: 8 Mar 2013 6:45 pm

Tgt Ion: 78 Resp: 5117

Ion	Ratio	Lower	Upper
78	100		
77	16.5	0.0	52.8
52	14.1	0.0	47.0



7.1.3

7

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192407.D Vial: 100
Acq On : 8 Mar 2013 7:14 pm Operator: Oksanat
Sample : jb30425-4 Inst : MSA
Misc : MS44366,VA7246,6.0,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 8:57 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.01	65	79858	500.00	ug/L	-0.02
5) pentafluorobenzene	9.34	168	223663	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.29	114	307390	50.00	ug/L	-0.01
85) chlorobenzene-d5	13.73	117	295419	50.00	ug/L	-0.01
99) 1,4-dichlorobenzene-d4	16.36	152	156259	50.00	ug/L	-0.01

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	81530	48.99	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 97.98%			
48) 1,2-dichloroethane-d4 (s)	9.81	65	77404	41.63	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 83.26%			
77) toluene-d8 (s)	12.04	98	315162	53.99	ug/L	-0.01
Spiked Amount 50.000	Range 80 - 122		Recovery = 107.98%			
102) 4-bromofluorobenzene (s)	15.05	95	120053	54.12	ug/L	-0.01
Spiked Amount 50.000	Range 78 - 116		Recovery = 108.24%			

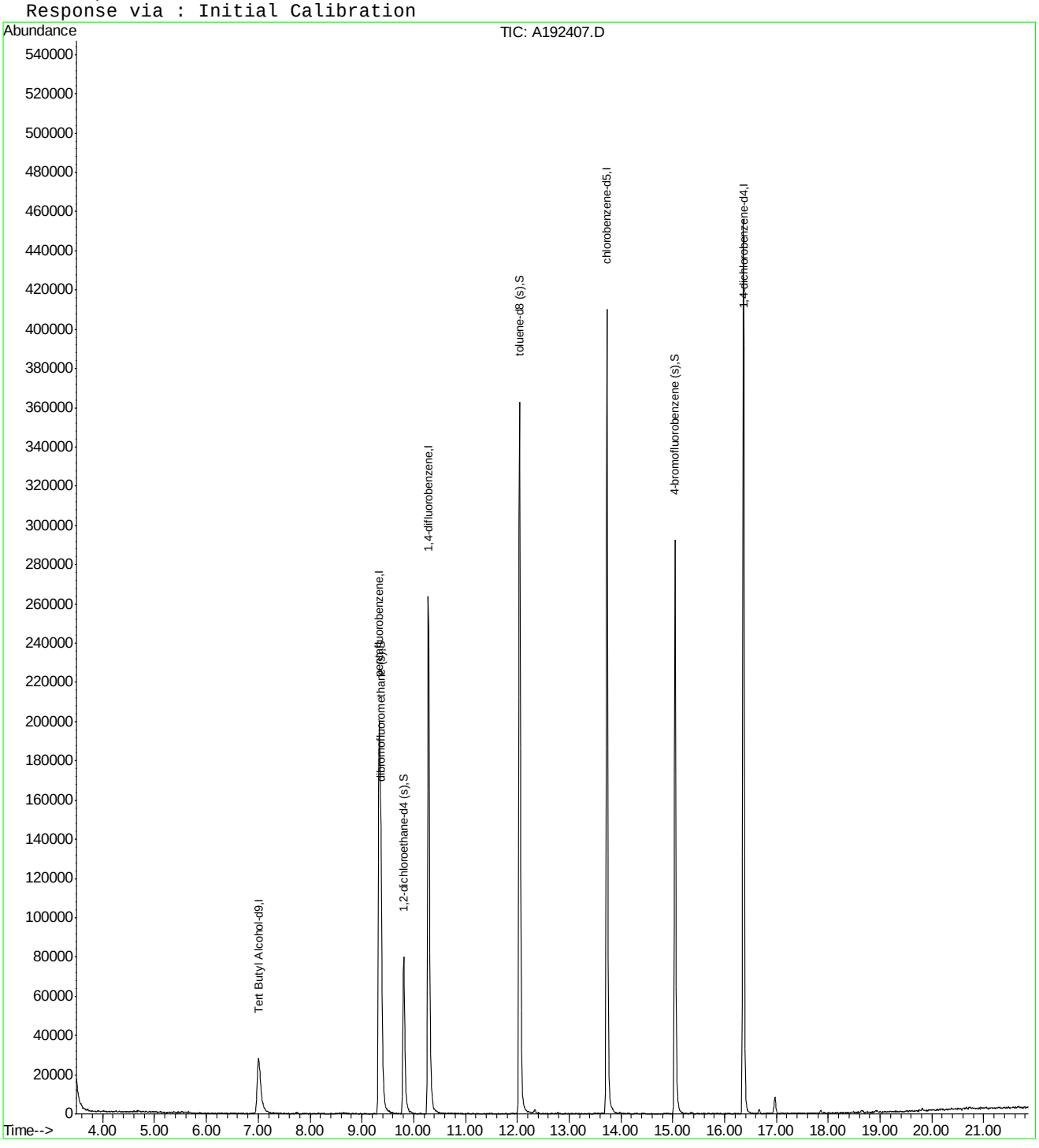
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192407.D Vial: 100
Acq On : 8 Mar 2013 7:14 pm Operator: Oksanat
Sample : jb30425-4 Inst : MSA
Misc : MS44366,VA7246,6.0,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 8:57 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192408.D Vial: 100
Acq On : 8 Mar 2013 7:59 pm Operator: Oksanat
Sample : jb30425-5 Inst : MSA
Misc : MS44366,VA7246,6.0,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 8:58 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.01	65	84365	500.00	ug/L	-0.02
5) pentafluorobenzene	9.34	168	220681	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.29	114	299192	50.00	ug/L	-0.01
85) chlorobenzene-d5	13.72	117	276403	50.00	ug/L	-0.02
99) 1,4-dichlorobenzene-d4	16.36	152	155309	50.00	ug/L	-0.02

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	82308	50.13	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 100.26%			
48) 1,2-dichloroethane-d4 (s)	9.80	65	82019	44.70	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 89.40%			
77) toluene-d8 (s)	12.04	98	301279	53.03	ug/L	-0.02
Spiked Amount 50.000	Range 80 - 122		Recovery = 106.06%			
102) 4-bromofluorobenzene (s)	15.04	95	114013	51.71	ug/L	-0.01
Spiked Amount 50.000	Range 78 - 116		Recovery = 103.42%			

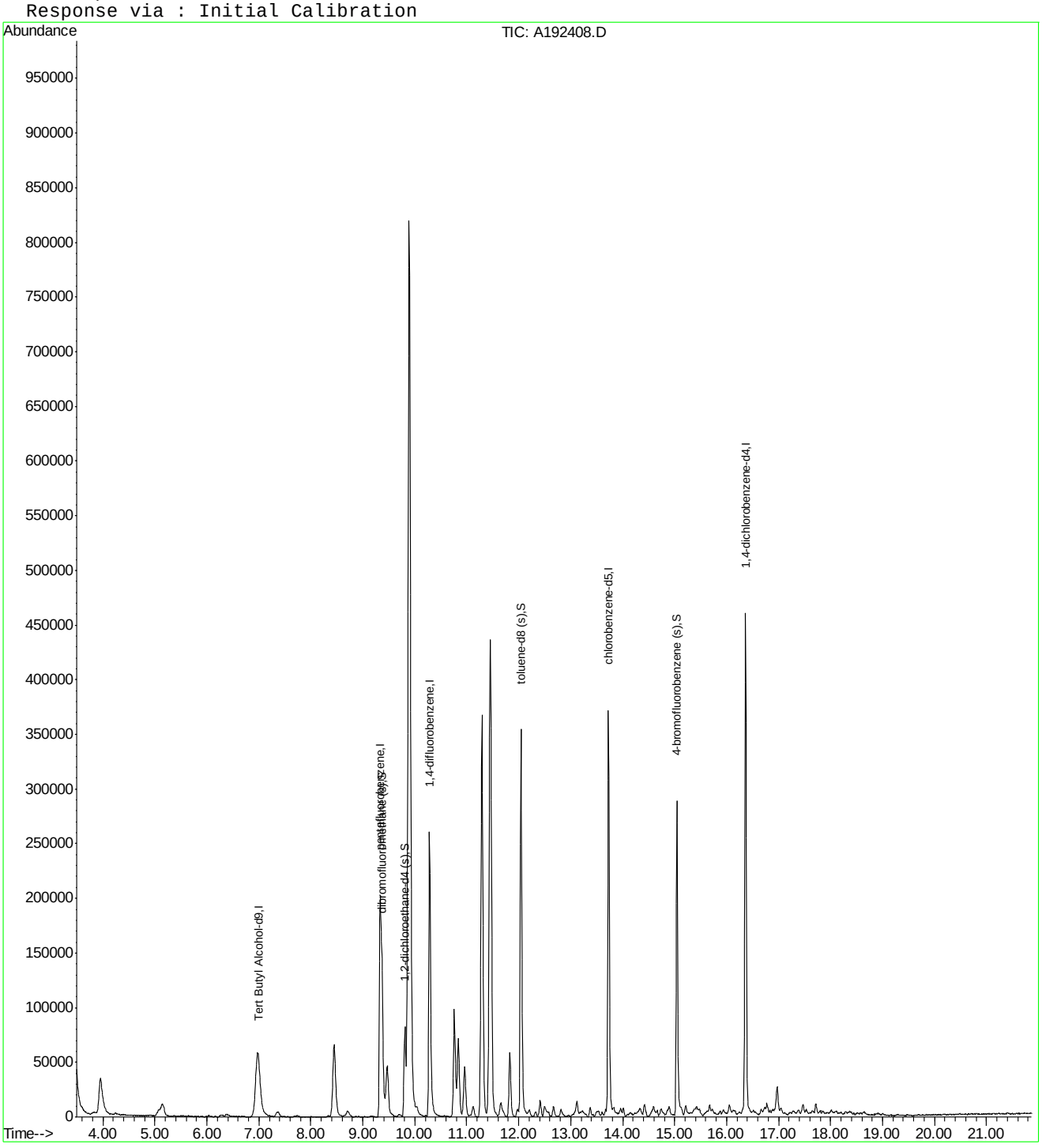
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192408.D Vial: 100
Acq On : 8 Mar 2013 7:59 pm Operator: Oksanat
Sample : jb30425-5 Inst : MSA
Misc : MS44366,VA7246,6.0,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 8:58 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192409.D Vial: 100
Acq On : 8 Mar 2013 8:28 pm Operator: Oksanat
Sample : jb30425-6 Inst : MSA
Misc : MS44366,VA7246,5.5,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 8:59 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.00	65	76771	500.00	ug/L	-0.02
5) pentafluorobenzene	9.33	168	216157	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.28	114	300389	50.00	ug/L	-0.02
85) chlorobenzene-d5	13.72	117	280345	50.00	ug/L	-0.02
99) 1,4-dichlorobenzene-d4	16.36	152	150966	50.00	ug/L	-0.02

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	81472	50.65	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 101.30%			
48) 1,2-dichloroethane-d4 (s)	9.80	65	78043	43.43	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 86.86%			
77) toluene-d8 (s)	12.04	98	301390	52.84	ug/L	-0.01
Spiked Amount 50.000	Range 80 - 122		Recovery = 105.68%			
102) 4-bromofluorobenzene (s)	15.04	95	115023	53.67	ug/L	-0.01
Spiked Amount 50.000	Range 78 - 116		Recovery = 107.34%			

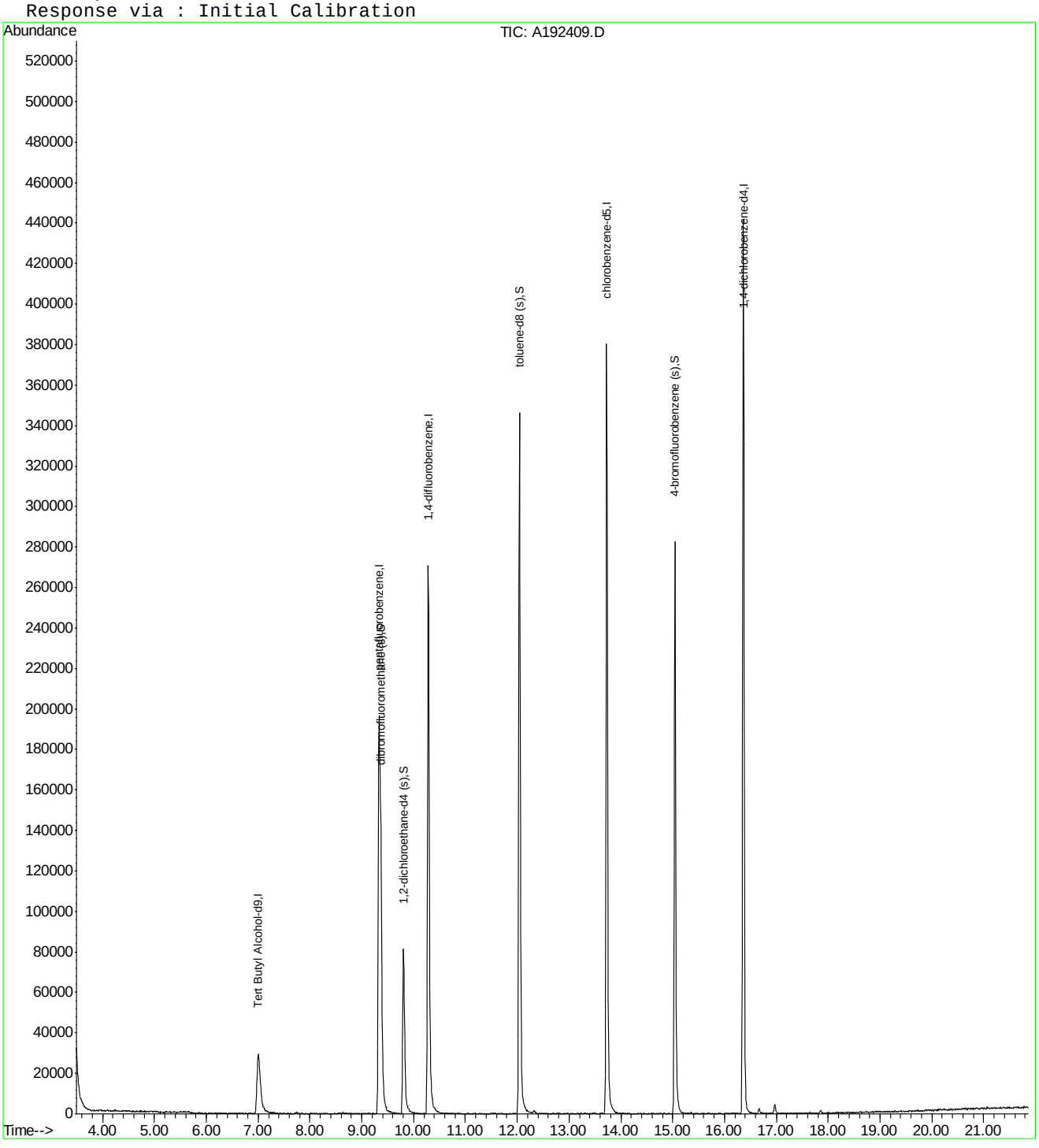
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192409.D Vial: 100
Acq On : 8 Mar 2013 8:28 pm Operator: Oksanat
Sample : jb30425-6 Inst : MSA
Misc : MS44366,VA7246,5.5,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 8:59 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\c-core\vc6455\
Data File : C180072.D
Acq On : 14 Mar 2013 7:41 pm
Operator : tamikag
Sample : jb30425-7
Misc : MS44366,VC6455,6.4,,100,10,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 20 12:11:41 2013
Quant Method : C:\MSDCHEM\1\METHODS\MCS6448.M
Quant Title : SW846 8260B,ZB624 60m x 0.25mm x 1.4um
QLast Update : Wed Mar 13 09:37:57 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	5.506	65	32935	500.00	ug/L	0.01
5) pentafluorobenzene	8.069	168	167231	50.00	ug/L	0.00
57) 1,4-difluorobenzene	9.063	114	239254	50.00	ug/L	0.00
85) chlorobenzene-d5	12.133	117	175423	50.00	ug/L	0.00
101) 1,4-dichlorobenzene-d4	14.157	152	82868	50.00	ug/L	0.00
System Monitoring Compounds						
49) dibromofluoromethane (s)	8.017	113	57496	43.42	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 86.84%			
50) 1,2-dichloroethane-d4 (s)	8.503	65	53657	43.52	ug/L	0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 87.04%			
77) toluene-d8 (s)	10.726	98	265284	47.88	ug/L	0.00
Spiked Amount 50.000	Range 81 - 127		Recovery = 95.76%			
103) 4-bromofluorobenzene (s)	13.184	95	91001	48.09	ug/L	0.00
Spiked Amount 50.000	Range 66 - 132		Recovery = 96.18%			

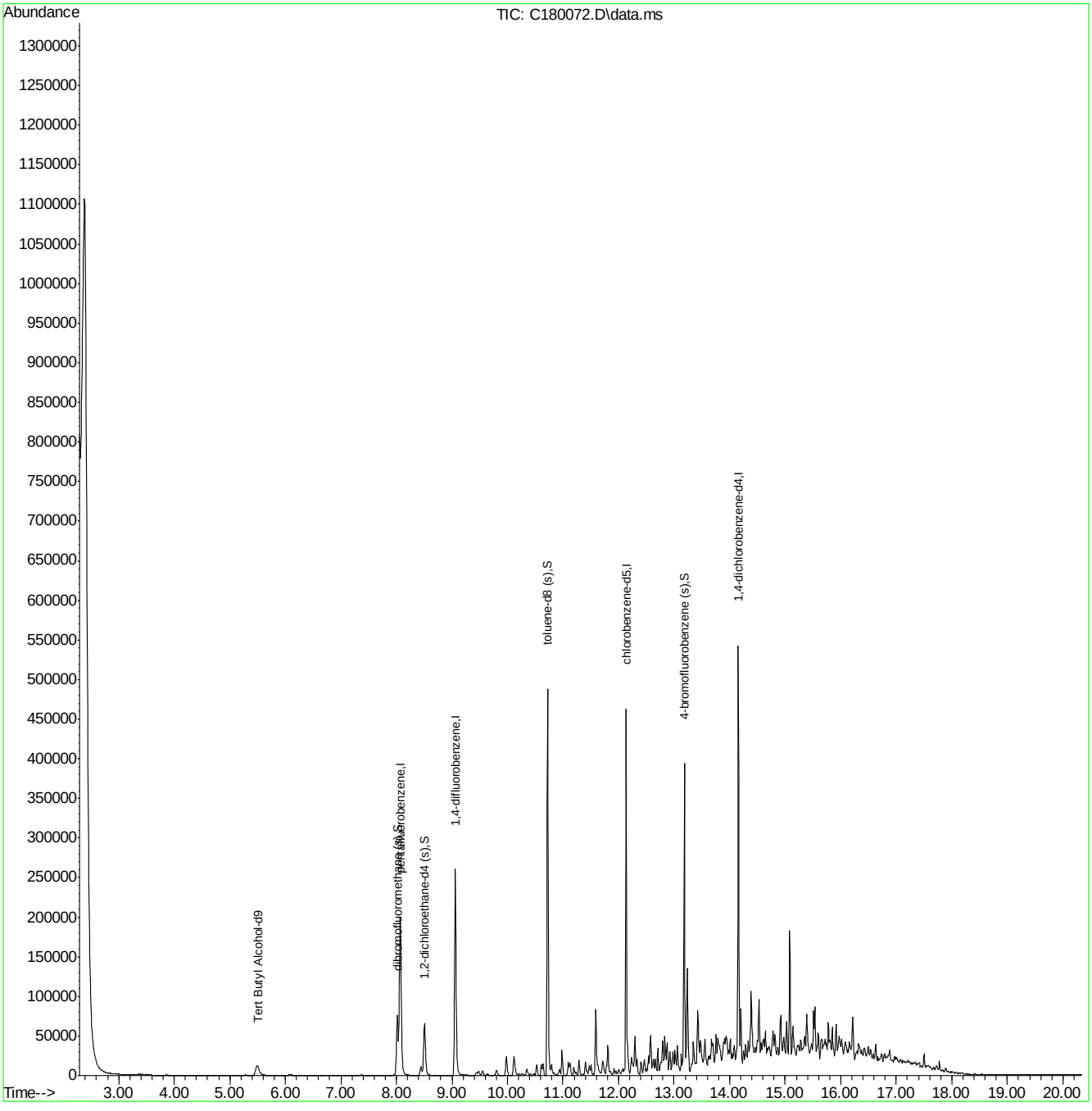
Target Compounds Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\c-core\vc6455\
Data File : C180072.D
Acq On : 14 Mar 2013 7:41 pm
Operator : tamikag
Sample : jb30425-7
Misc : MS44366,VC6455,6.4,,100,10,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 20 12:11:41 2013
Quant Method : C:\MSDCHEM\1\METHODS\MCS6448.M
Quant Title : SW846 8260B,ZB624 60m x 0.25mm x 1.4um
QLast Update : Wed Mar 13 09:37:57 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192410.D Vial: 100
Acq On : 8 Mar 2013 8:58 pm Operator: Oksanat
Sample : jb30425-8 Inst : MSA
Misc : MS44366,VA7246,6.7,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 9:00 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.00	65	66932	500.00	ug/L	-0.02
5) pentafluorobenzene	9.33	168	214303	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.28	114	296262	50.00	ug/L	-0.02
85) chlorobenzene-d5	13.73	117	280579	50.00	ug/L	-0.01
99) 1,4-dichlorobenzene-d4	16.36	152	135596	50.00	ug/L	-0.01

System Monitoring Compounds						
47) dibromofluoromethane (s)	9.37	113	79602	49.92	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 99.84%			
48) 1,2-dichloroethane-d4 (s)	9.81	65	76674	43.04	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 86.08%			
77) toluene-d8 (s)	12.04	98	306586	54.50	ug/L	-0.02
Spiked Amount 50.000	Range 80 - 122		Recovery = 109.00%			
102) 4-bromofluorobenzene (s)	15.04	95	108439	56.33	ug/L	-0.02
Spiked Amount 50.000	Range 78 - 116		Recovery = 112.66%			

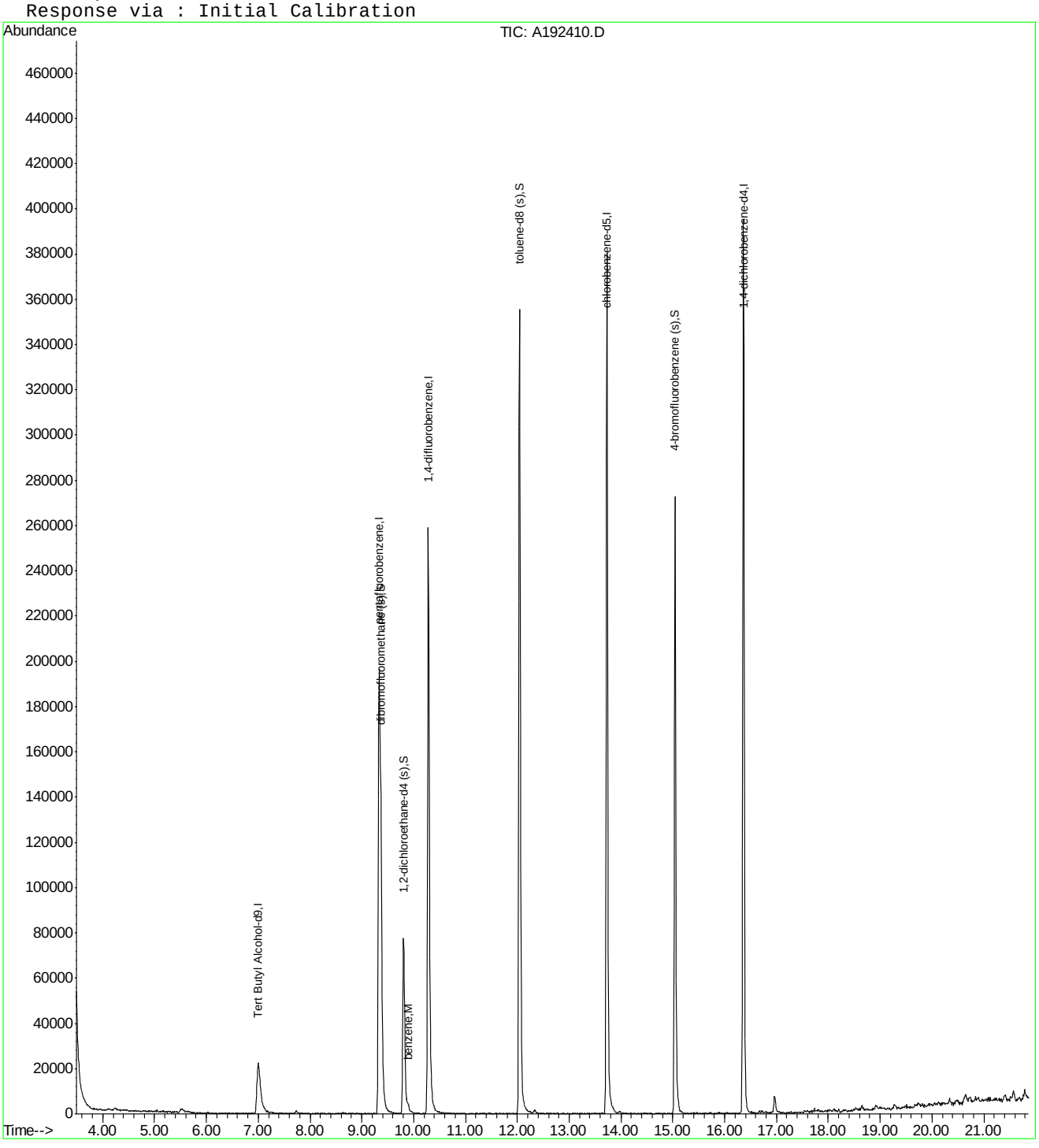
Target Compounds						Qvalue
61) benzene	9.90	78	2438	0.41	ug/L	95

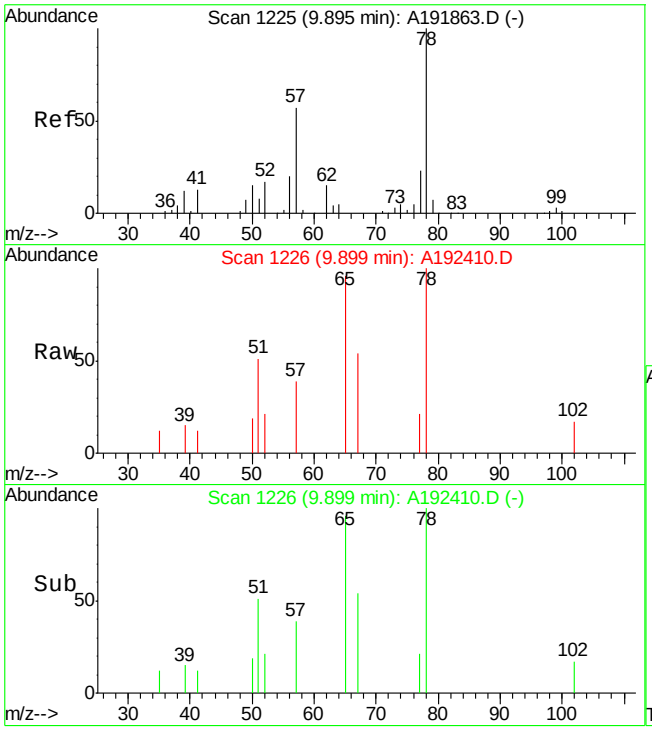
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192410.D Vial: 100
Acq On : 8 Mar 2013 8:58 pm Operator: Oksanat
Sample : jb30425-8 Inst : MSA
Misc : MS44366,VA7246,6.7,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 9:00 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration

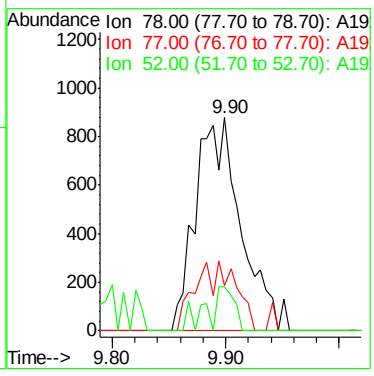




#61
benzene
Concen: 0.41 ug/L
RT: 9.90 min Scan# 1226
Delta R.T. 0.00 min
Lab File: A192410.D
Acq: 8 Mar 2013 8:58 pm

Tgt Ion: 78 Resp: 2438

Ion	Ratio	Lower	Upper
78	100		
77	21.4	0.0	52.8
52	20.7	0.0	47.0



7.1.8

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\X\VX5805\
Data File : X133980.D
Acq On : 18 Mar 2013 12:51 pm
Operator : margares
Sample : jb30425-9
Misc : MS44366,VX5805,6.3,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 20 09:15:37 2013
Quant Method : C:\MSDCHEM\1\METHODS\MX5795.M
Quant Title : SW-846 Method 8260B, ZB624 60m x 0.25mm x 1.4um
QLast Update : Thu Mar 07 18:00:57 2013
Response via : Initial Calibration

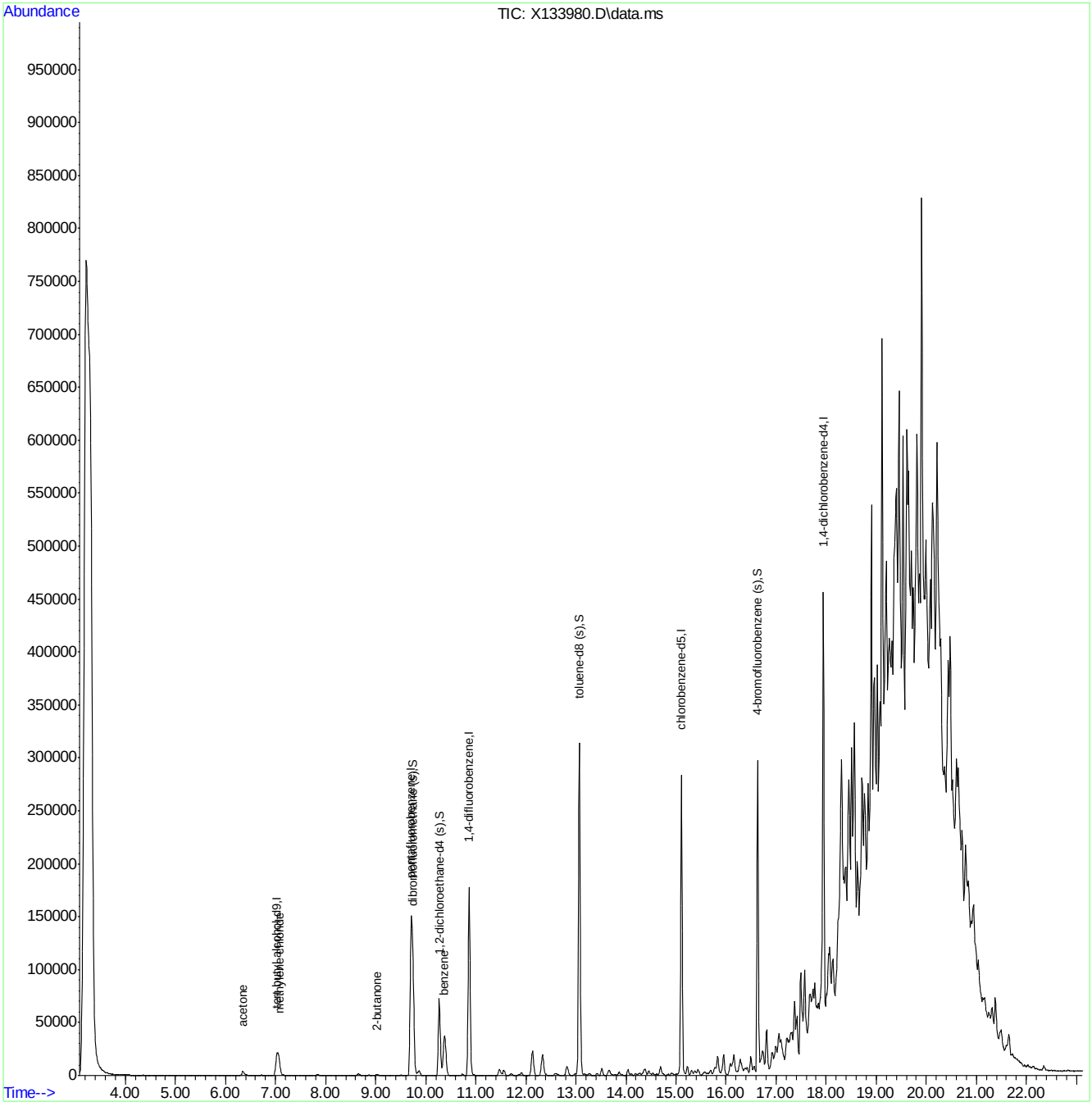
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	7.028	65	53757	500.00	ug/L	-0.03
5) pentafluorobenzene	9.706	168	155486	50.00	ug/L	-0.03
62) 1,4-difluorobenzene	10.867	114	218169	50.00	ug/L	-0.03
93) chlorobenzene-d5	15.109	117	205750	50.00	ug/L	-0.02
108) 1,4-dichlorobenzene-d4	17.944	152	105090	50.00	ug/L	-0.02
System Monitoring Compounds						
54) dibromofluoromethane (s)	9.743	113	79355	54.57	ug/L	-0.03
Spiked Amount 50.000	Range 70 - 130		Recovery = 109.14%			
55) 1,2-dichloroethane-d4 (s)	10.271	65	78411	50.19	ug/L	-0.03
Spiked Amount 50.000	Range 70 - 122		Recovery = 100.38%			
85) toluene-d8 (s)	13.069	98	286559	53.85	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 127		Recovery = 107.70%			
111) 4-bromofluorobenzene (s)	16.631	95	107115	56.00	ug/L	-0.02
Spiked Amount 50.000	Range 66 - 132		Recovery = 112.00%			
Target Compounds						Qvalue
29) acetone	6.343	58	2623	36.55	ug/L	89
35) methylene chloride	7.070	84	5623	4.13	ug/L	94
40) 2-butanone	9.026	72	643	5.47	ug/L #	45
69) benzene	10.365	78	1100	0.20	ug/L	84

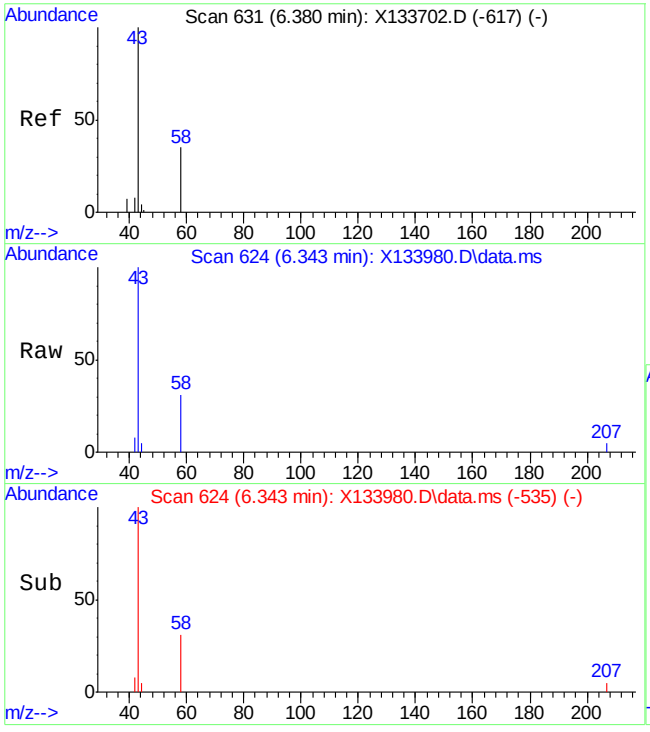
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\X\VX5805\
Data File : X133980.D
Acq On : 18 Mar 2013 12:51 pm
Operator : margares
Sample : jb30425-9
Misc : MS44366,VX5805,6.3,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 20 09:15:37 2013
Quant Method : C:\MSDCHEM\1\METHODS\MX5795.M
Quant Title : SW-846 Method 8260B, ZB624 60m x 0.25mm x 1.4um
QLast Update : Thu Mar 07 18:00:57 2013
Response via : Initial Calibration

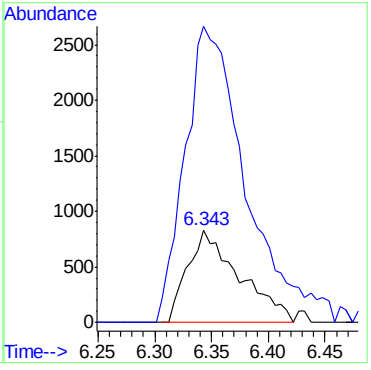


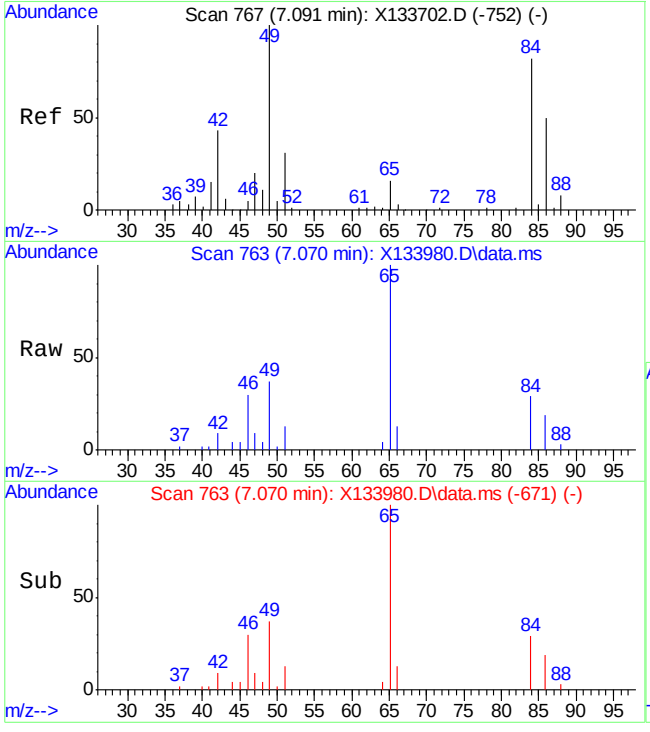


#29
acetone
Concen: 36.55 ug/L
RT: 6.343 min Scan# 624
Delta R.T. -0.036 min
Lab File: X133980.D
Acq: 18 Mar 2013 12:51 pm

Tgt Ion: 58 Resp: 2623

Ion	Ratio	Lower	Upper
58	100		
43	320.9	269.2	329.2

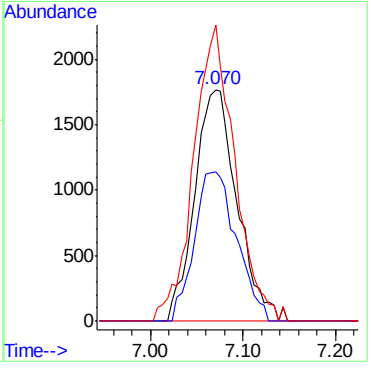


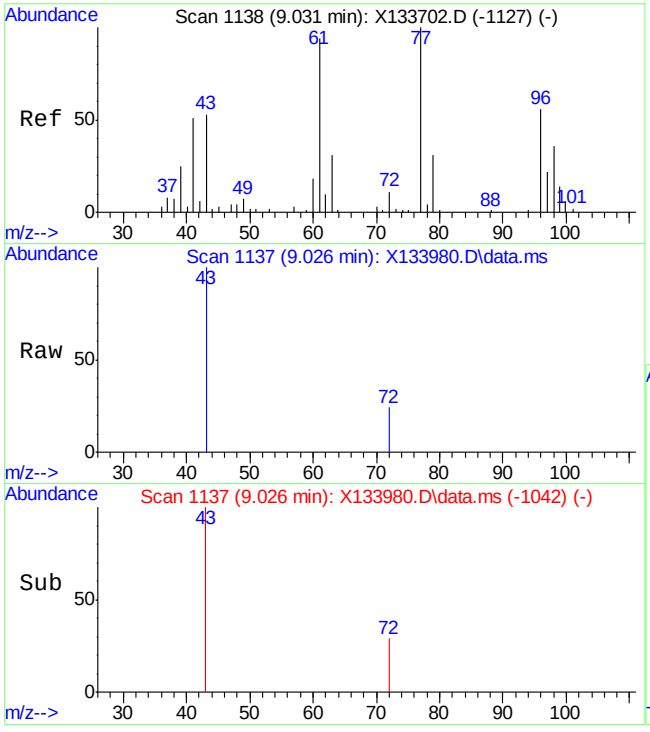


#35
methylene chloride
Concen: 4.13 ug/L
RT: 7.070 min Scan# 763
Delta R.T. -0.021 min
Lab File: X133980.D
Acq: 18 Mar 2013 12:51 pm

Tgt Ion: 84 Resp: 5623

Ion	Ratio	Lower	Upper
84	100		
86	64.7	30.4	90.4
49	128.0	91.3	151.3

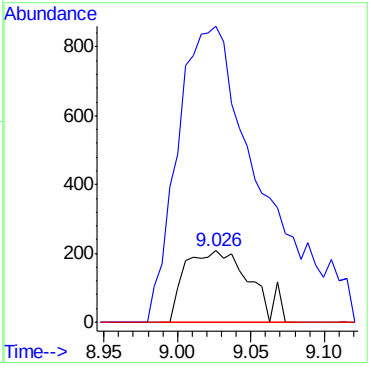


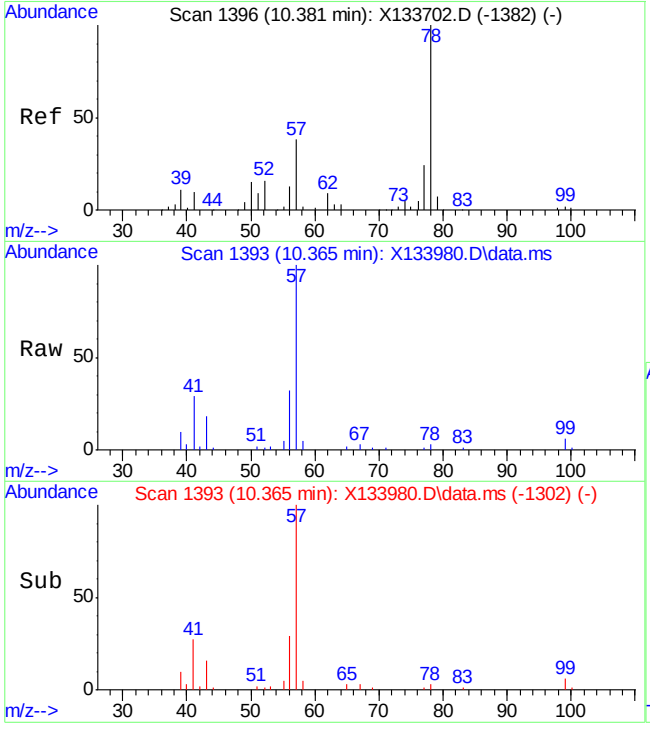


#40
2-butanone
Concen: 5.47 ug/L
RT: 9.026 min Scan# 1137
Delta R.T. -0.005 min
Lab File: X133980.D
Acq: 18 Mar 2013 12:51 pm

Tgt Ion: 72 Resp: 643

Ion	Ratio	Lower	Upper
72	100		
43	331.7	335.9	623.9#
57	0.0	16.7	31.1#

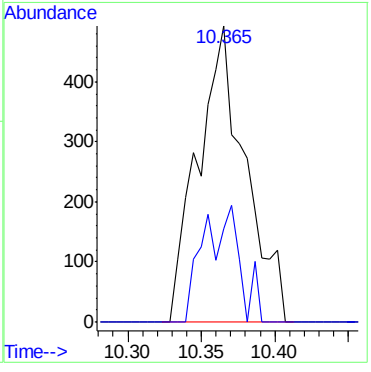




#69
benzene
Concen: 0.20 ug/L
RT: 10.365 min Scan# 1393
Delta R.T. -0.016 min
Lab File: X133980.D
Acq: 18 Mar 2013 12:51 pm

Tgt Ion: 78 Resp: 1100

Ion	Ratio	Lower	Upper
78	100		
77	31.4	0.0	53.7



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192411.D Vial: 100
Acq On : 8 Mar 2013 9:27 pm Operator: Oksanat
Sample : jb30425-10 Inst : MSA
Misc : MS44366,VA7246,4.9,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 9:00 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.00	65	84099	500.00	ug/L	-0.03
5) pentafluorobenzene	9.33	168	212977	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.28	114	292515	50.00	ug/L	-0.02
85) chlorobenzene-d5	13.72	117	265839	50.00	ug/L	-0.02
99) 1,4-dichlorobenzene-d4	16.36	152	140072	50.00	ug/L	-0.02

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	80877	51.04	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 102.08%			
48) 1,2-dichloroethane-d4 (s)	9.81	65	75989	42.92	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 85.84%			
77) toluene-d8 (s)	12.04	98	292169	52.60	ug/L	-0.02
Spiked Amount 50.000	Range 80 - 122		Recovery = 105.20%			
102) 4-bromofluorobenzene (s)	15.04	95	106085	53.35	ug/L	-0.02
Spiked Amount 50.000	Range 78 - 116		Recovery = 106.70%			

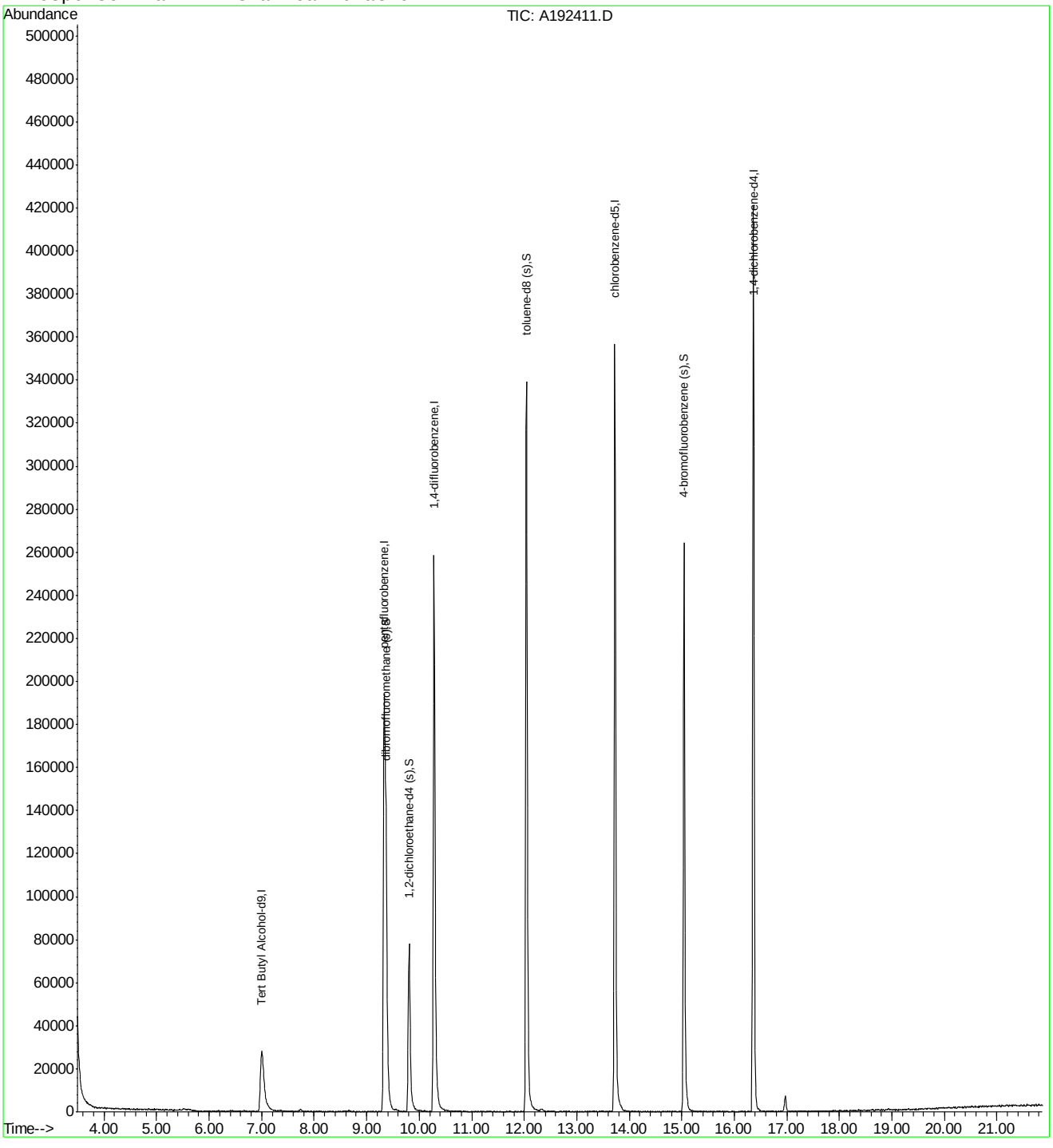
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192411.D Vial: 100
Acq On : 8 Mar 2013 9:27 pm Operator: Oksanat
Sample : jb30425-10 Inst : MSA
Misc : MS44366,VA7246,4.9,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 9:00 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192412.D Vial: 100
Acq On : 8 Mar 2013 9:57 pm Operator: Oksanat
Sample : jb30425-11 Inst : MSA
Misc : MS44366,VA7246,5.8,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 9:02 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.00	65	78435	500.00	ug/L	-0.02
5) pentafluorobenzene	9.33	168	207060	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.28	114	280577	50.00	ug/L	-0.02
85) chlorobenzene-d5	13.72	117	260382	50.00	ug/L	-0.02
99) 1,4-dichlorobenzene-d4	16.36	152	135418	50.00	ug/L	-0.02

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	78806	51.15	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 102.30%			
48) 1,2-dichloroethane-d4 (s)	9.80	65	75265	43.72	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 87.44%			
77) toluene-d8 (s)	12.04	98	279360	52.43	ug/L	-0.02
Spiked Amount 50.000	Range 80 - 122		Recovery = 104.86%			
102) 4-bromofluorobenzene (s)	15.04	95	103900	54.05	ug/L	-0.02
Spiked Amount 50.000	Range 78 - 116		Recovery = 108.10%			

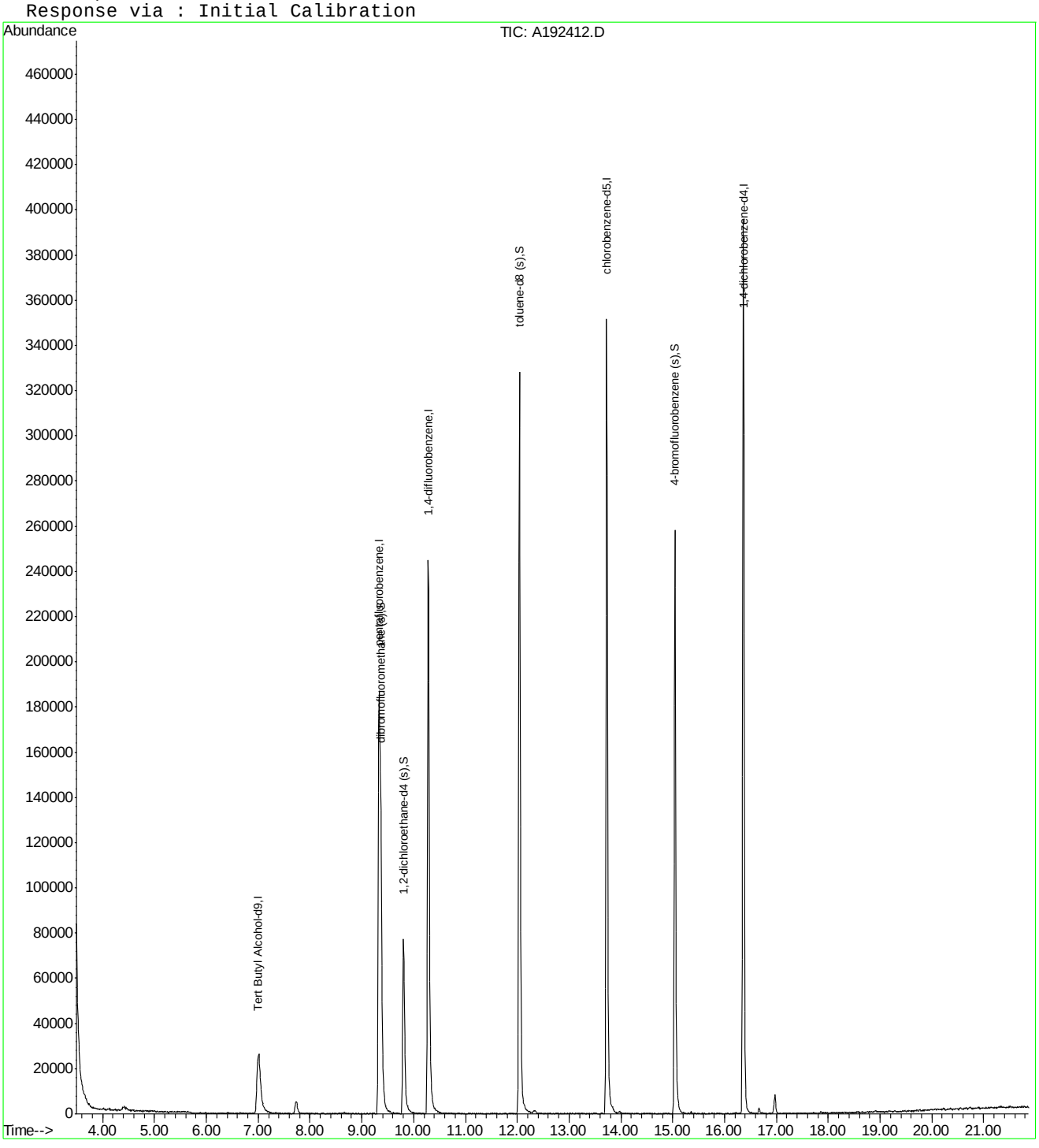
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192412.D Vial: 100
Acq On : 8 Mar 2013 9:57 pm Operator: Oksanat
Sample : jb30425-11 Inst : MSA
Misc : MS44366,VA7246,5.8,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 9:02 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192413.D Vial: 100
Acq On : 8 Mar 2013 10:26 pm Operator: Oksanat
Sample : jb30425-12 Inst : MSA
Misc : MS44366,VA7246,6.5,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 9:02 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.01	65	77697	500.00	ug/L	-0.02
5) pentafluorobenzene	9.33	168	208136	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.28	114	287068	50.00	ug/L	-0.02
85) chlorobenzene-d5	13.72	117	272314	50.00	ug/L	-0.02
99) 1,4-dichlorobenzene-d4	16.36	152	135705	50.00	ug/L	-0.02

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	79246	51.17	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 102.34%			
48) 1,2-dichloroethane-d4 (s)	9.81	65	75683	43.74	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 87.48%			
77) toluene-d8 (s)	12.04	98	299409	54.92	ug/L	-0.02
Spiked Amount 50.000	Range 80 - 122		Recovery = 109.84%			
102) 4-bromofluorobenzene (s)	15.04	95	105911	54.98	ug/L	-0.02
Spiked Amount 50.000	Range 78 - 116		Recovery = 109.96%			

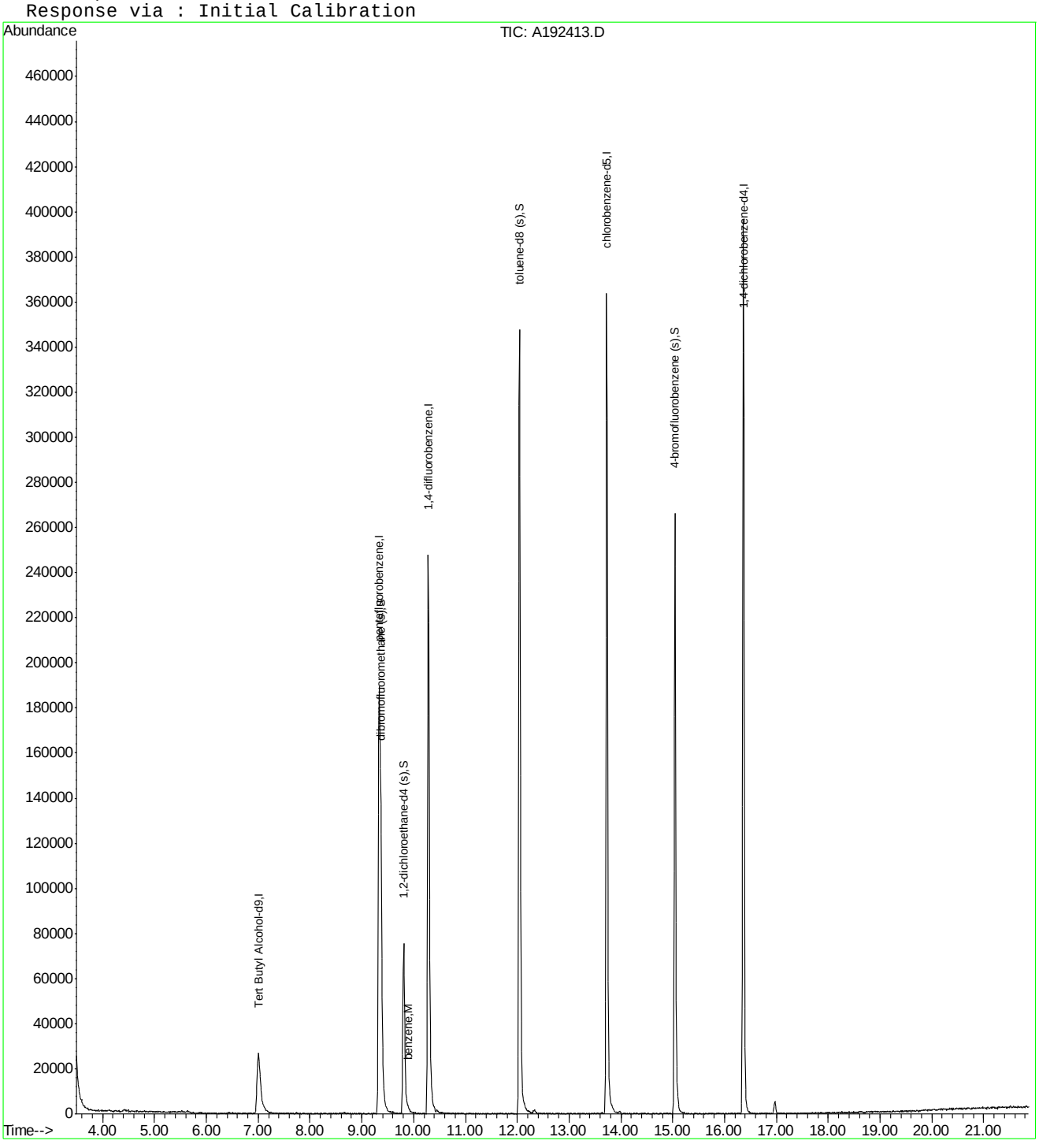
Target Compounds						Qvalue
61) benzene	9.89	78	1338	0.23	ug/L	77

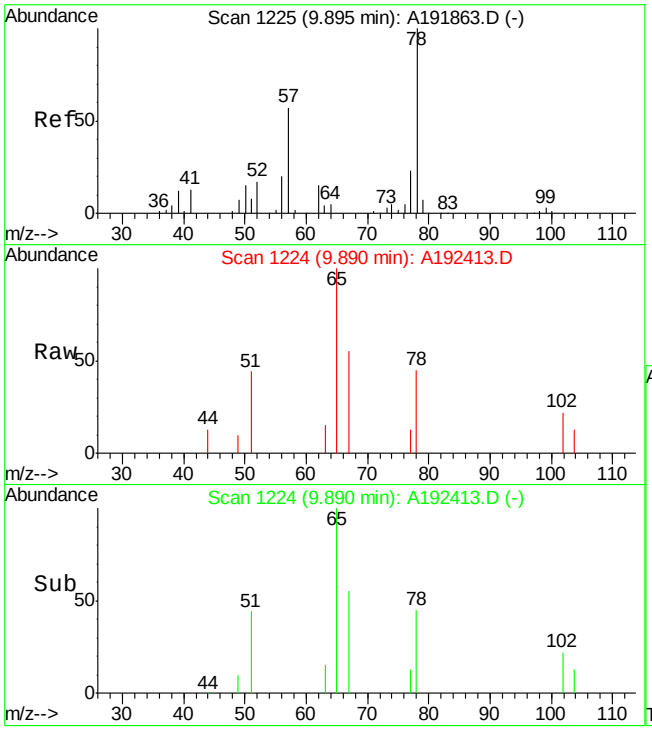
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192413.D Vial: 100
Acq On : 8 Mar 2013 10:26 pm Operator: Oksanat
Sample : jb30425-12 Inst : MSA
Misc : MS44366,VA7246,6.5,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 9:02 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration

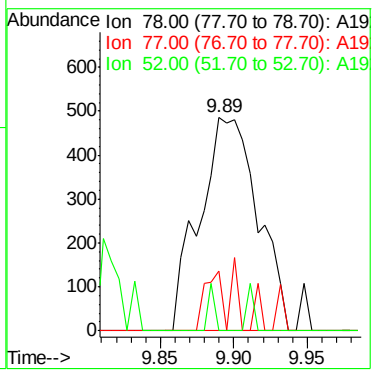




#61
benzene
Concen: 0.23 ug/L
RT: 9.89 min Scan# 1224
Delta R.T. -0.01 min
Lab File: A192413.D
Acq: 8 Mar 2013 10:26 pm

Tgt Ion: 78 Resp: 1338

Ion	Ratio	Lower	Upper
78	100		
77	28.0	0.0	52.8
52	0.0	0.0	47.0



7.1.12

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : d206543.D
Acq On : 15 Mar 2013 5:50 pm
Operator : EmilyT
Sample : jb30425-13
Misc : ms44366,vd8426,8.9,,100,10,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 18 08:06:39 2013
Quant Method : C:\MSDCHEM\1\METHODS\MD8379.M
Quant Title : SW-846 Method 8260B
QLast Update : Tue Feb 19 09:53:02 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Tert Butyl Alcohol-d9	8.031	65	127810	500.00 ug/L	0.02
4) pentafluorobenzene	10.247	168	203220	50.00 ug/L	0.00
53) 1,4-difluorobenzene	11.162	114	296627	50.00 ug/L	0.00
85) chlorobenzene-d5	14.503	117	285517	50.00 ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.091	152	175560	50.00 ug/L	0.00

System Monitoring Compounds

46) dibromofluoromethane (s)	10.279	113	89236	44.97 ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 89.94%		
47) 1,2-dichloroethane-d4 (s)	10.702	65	119913	50.04 ug/L	0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 100.08%		
77) toluene-d8 (s)	12.872	98	366283	50.95 ug/L	0.00
Spiked Amount 50.000	Range 81 - 127		Recovery = 101.90%		
101) 4-bromofluorobenzene (s)	15.784	95	144874	45.43 ug/L	0.00
Spiked Amount 50.000	Range 66 - 132		Recovery = 90.86%		

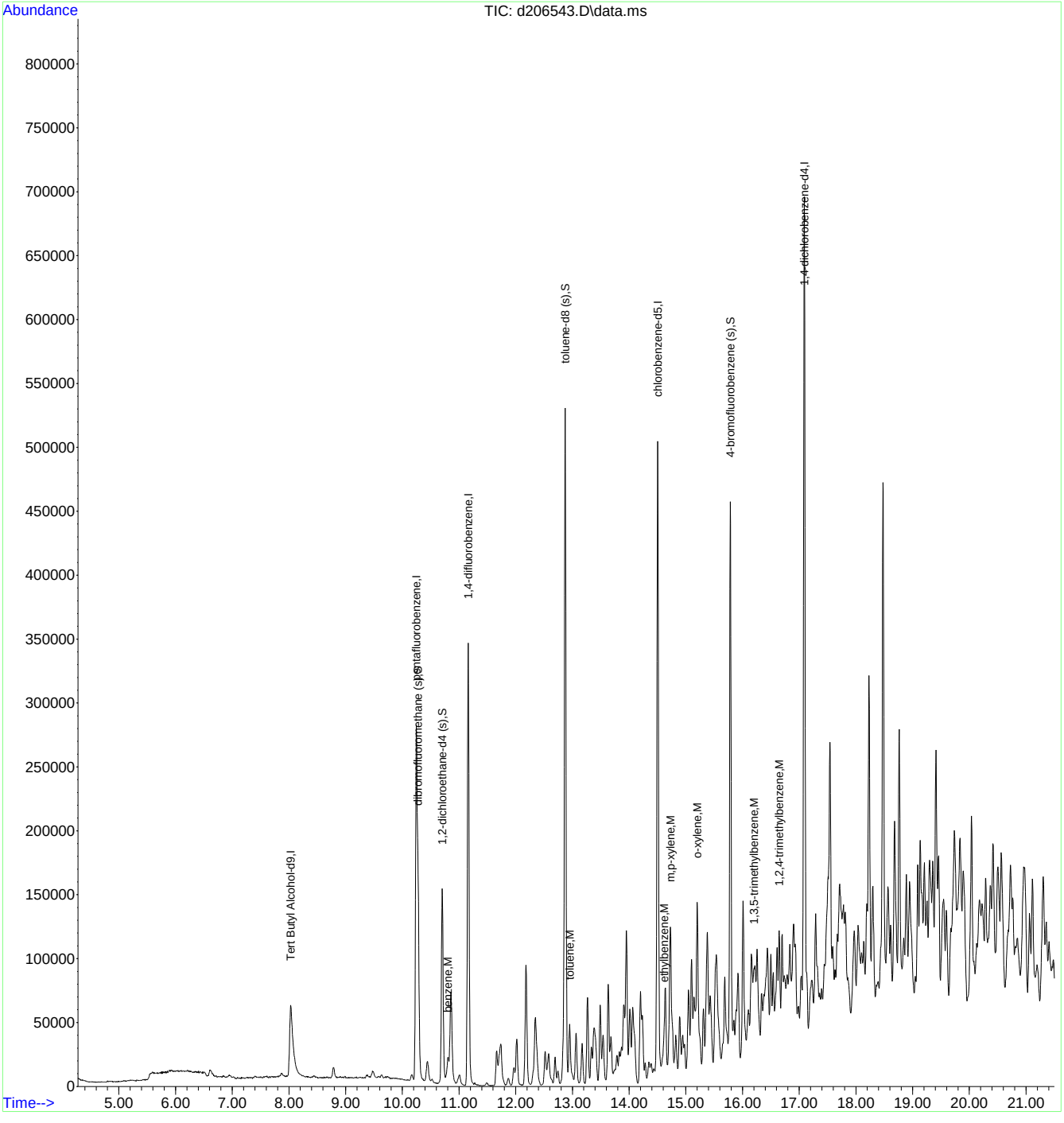
Target Compounds					Qvalue
62) benzene	10.807	78	16849	2.14 ug/L	99
79) toluene	12.950	92	18556	3.79 ug/L	90
94) ethylbenzene	14.613	91	17309	1.72 ug/L	98
95) m,p-xylene	14.728	106	30869	7.68 ug/L	99
96) o-xylene	15.198	106	3327	0.83 ug/L	94
111) 1,3,5-trimethylbenzene	16.197	105	4631	0.47 ug/L	97
114) 1,2,4-trimethylbenzene	16.641	105	17518	1.77 ug/L	99

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

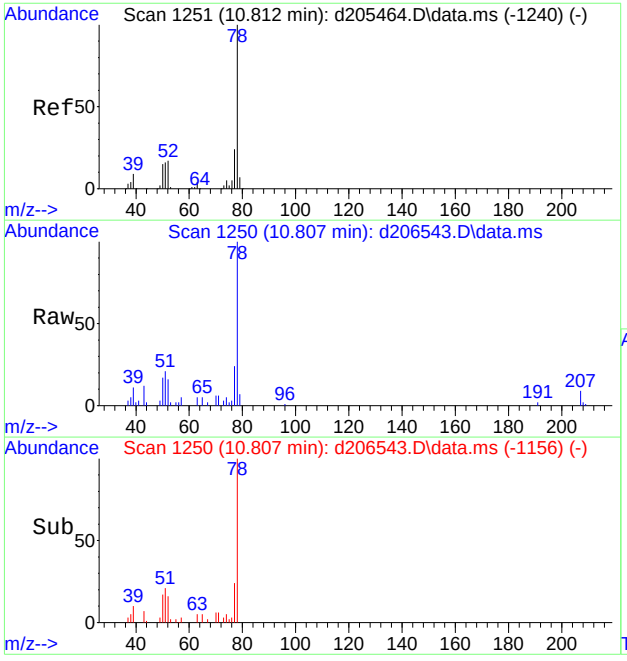
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : d206543.D
Acq On : 15 Mar 2013 5:50 pm
Operator : EmilyT
Sample : jb30425-13
Misc : ms44366,vd8426,8.9,,100,10,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 18 08:06:39 2013
Quant Method : C:\MSDCHEM\1\METHODS\MD8379.M
Quant Title : SW-846 Method 8260B
QLast Update : Tue Feb 19 09:53:02 2013
Response via : Initial Calibration



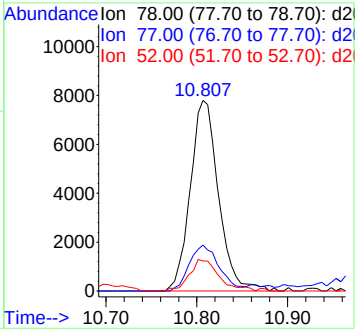
MD8379.M Mon Mar 18 08:06:43 2013 Page: 2

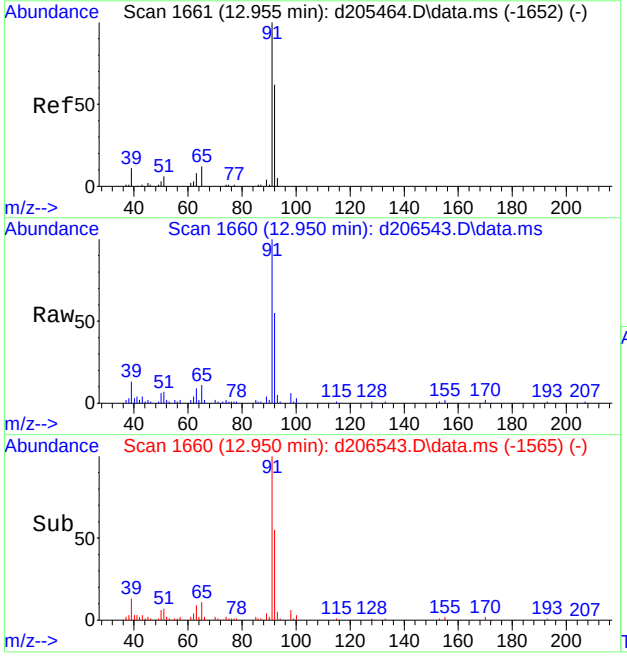


#62
benzene
Concen: 2.14 ug/L
RT: 10.807 min Scan# 1250
Delta R.T. -0.010 min
Lab File: d206543.D
Acq: 15 Mar 2013 5:50 pm

Tgt Ion: 78 Resp: 16849

Ion	Ratio	Lower	Upper
78	100		
77	24.1	0.0	54.1
52	15.8	0.0	46.6

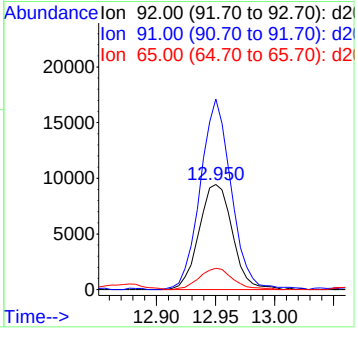


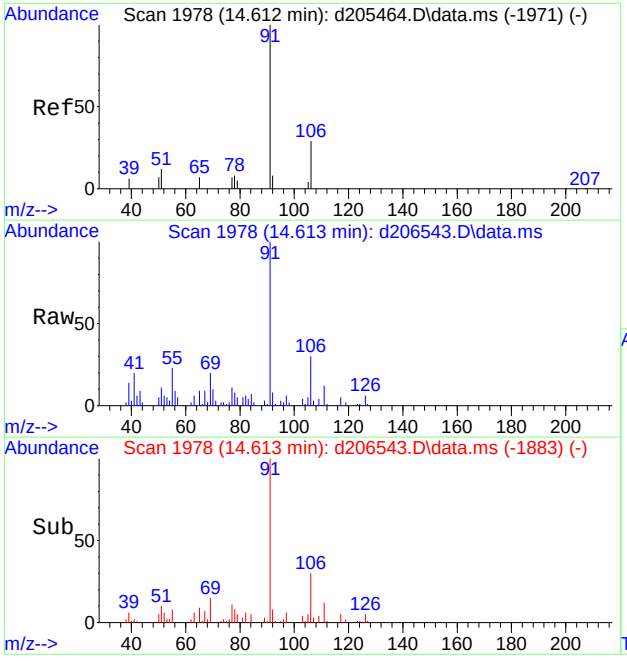


#79
toluene
Concen: 3.79 ug/L
RT: 12.950 min Scan# 1660
Delta R.T. -0.004 min
Lab File: d206543.D
Acq: 15 Mar 2013 5:50 pm

Tgt Ion: 92 Resp: 18556

Ion	Ratio	Lower	Upper
92	100		
91	181.0	136.0	196.0
65	20.2	0.0	49.8

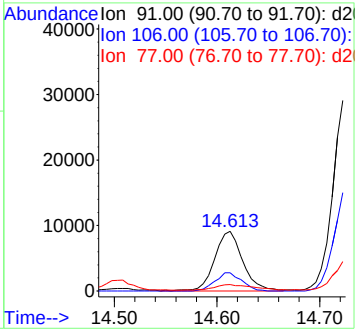


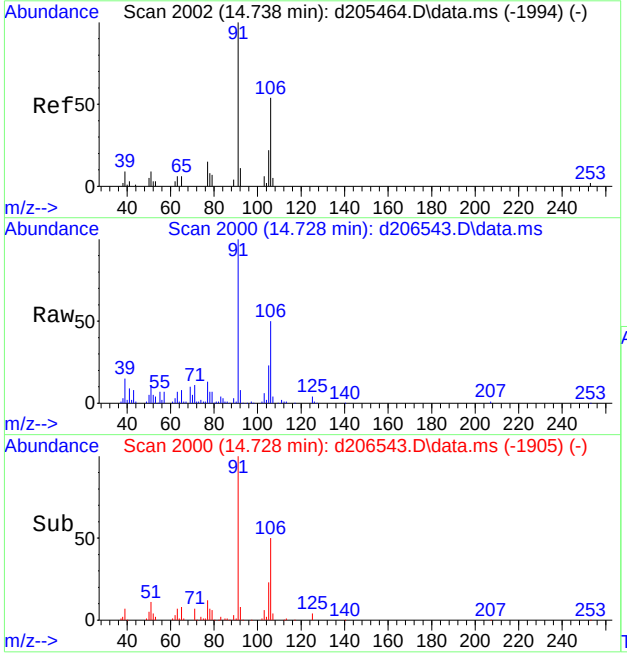


#94
ethylbenzene
Concen: 1.72 ug/L
RT: 14.613 min Scan# 1978
Delta R.T. -0.004 min
Lab File: d206543.D
Acq: 15 Mar 2013 5:50 pm

Tgt Ion: 91 Resp: 17309

Ion	Ratio	Lower	Upper
91	100		
106	30.5	1.6	61.6
77	8.7	0.0	38.8

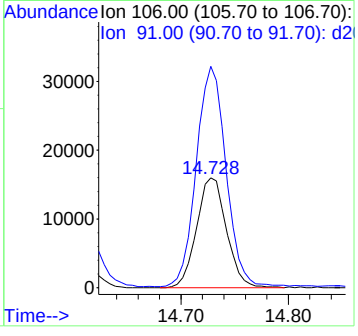




#95
m,p-xylene
Concen: 7.68 ug/L
RT: 14.728 min Scan# 2000
Delta R.T. -0.004 min
Lab File: d206543.D
Acq: 15 Mar 2013 5:50 pm

Tgt Ion:106 Resp: 30869

Ion	Ratio	Lower	Upper
106	100		
91	201.0	139.9	259.9



7.1.13

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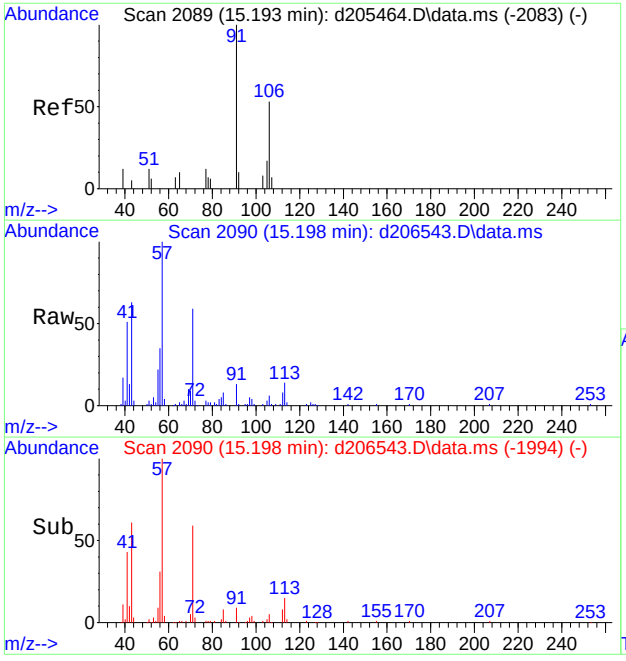
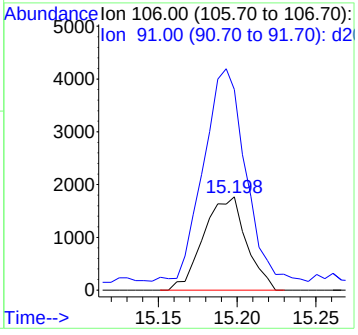
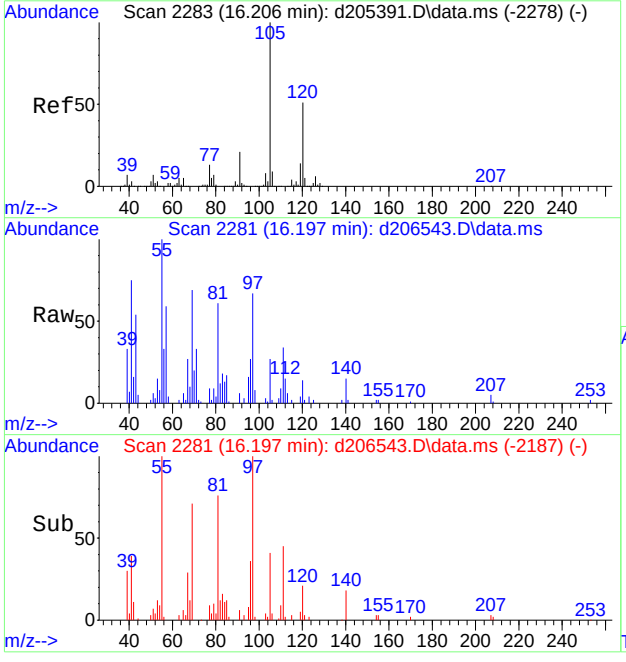


#96
o-xylene
Concen: 0.83 ug/L
RT: 15.198 min Scan# 2090
Delta R.T. 0.001 min
Lab File: d206543.D
Acq: 15 Mar 2013 5:50 pm

Tgt Ion:106 Resp: 3327

Ion	Ratio	Lower	Upper
106	100		
91	201.5	147.9	274.7

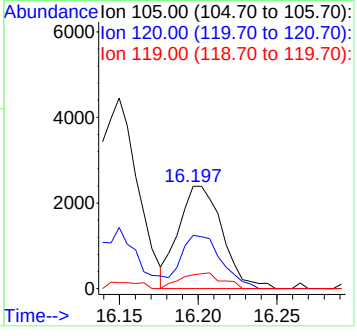


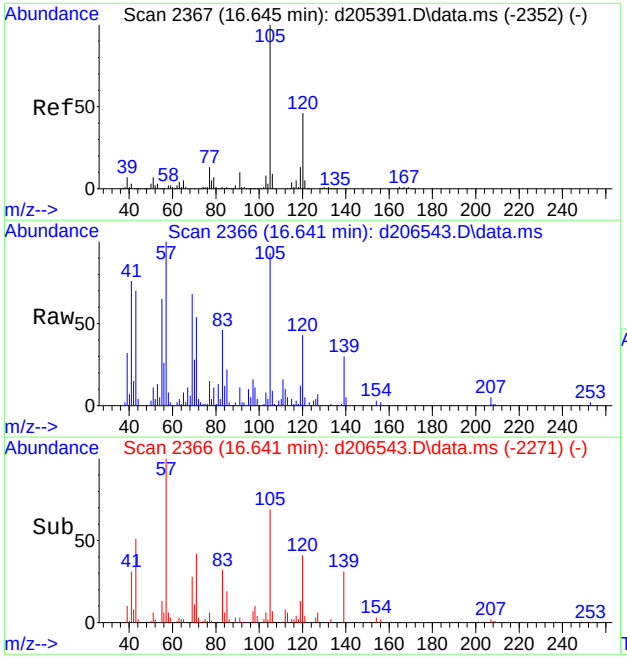


#111
1,3,5-trimethylbenzene
Concen: 0.47 ug/L
RT: 16.197 min Scan# 2281
Delta R.T. -0.010 min
Lab File: d206543.D
Acq: 15 Mar 2013 5:50 pm

Tgt Ion:105 Resp: 4631

Ion	Ratio	Lower	Upper
105	100		
120	52.0	19.5	79.5
119	13.4	0.0	42.6

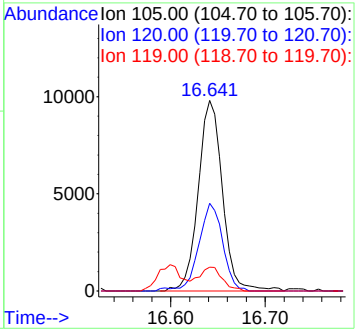




#114
1,2,4-trimethylbenzene
Concen: 1.77 ug/L
RT: 16.641 min Scan# 2366
Delta R.T. -0.004 min
Lab File: d206543.D
Acq: 15 Mar 2013 5:50 pm

Tgt Ion:105 Resp: 17518

Ion	Ratio	Lower	Upper
105	100		
120	46.1	16.5	76.5
119	12.6	0.0	43.9



7.1.13

7

Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 03/19/13 15:33

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192414.D Vial: 100
Acq On : 8 Mar 2013 11:11 pm Operator: Oksanat
Sample : jb30425-14 Inst : MSA
Misc : MS44366,VA7246,7.1,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 9:06 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.01	65	73200	500.00	ug/L	-0.02
5) pentafluorobenzene	9.33	168	207413	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.29	114	284836	50.00	ug/L	-0.01
85) chlorobenzene-d5	13.73	117	268672	50.00	ug/L	-0.01
99) 1,4-dichlorobenzene-d4	16.36	152	140142	50.00	ug/L	-0.02

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	79096	51.25	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 102.50%			
48) 1,2-dichloroethane-d4 (s)	9.80	65	74320	43.10	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 86.20%			
77) toluene-d8 (s)	12.04	98	289861	53.59	ug/L	-0.01
Spiked Amount 50.000	Range 80 - 122		Recovery = 107.18%			
102) 4-bromofluorobenzene (s)	15.04	95	108182	54.38	ug/L	-0.02
Spiked Amount 50.000	Range 78 - 116		Recovery = 108.76%			

Target Compounds

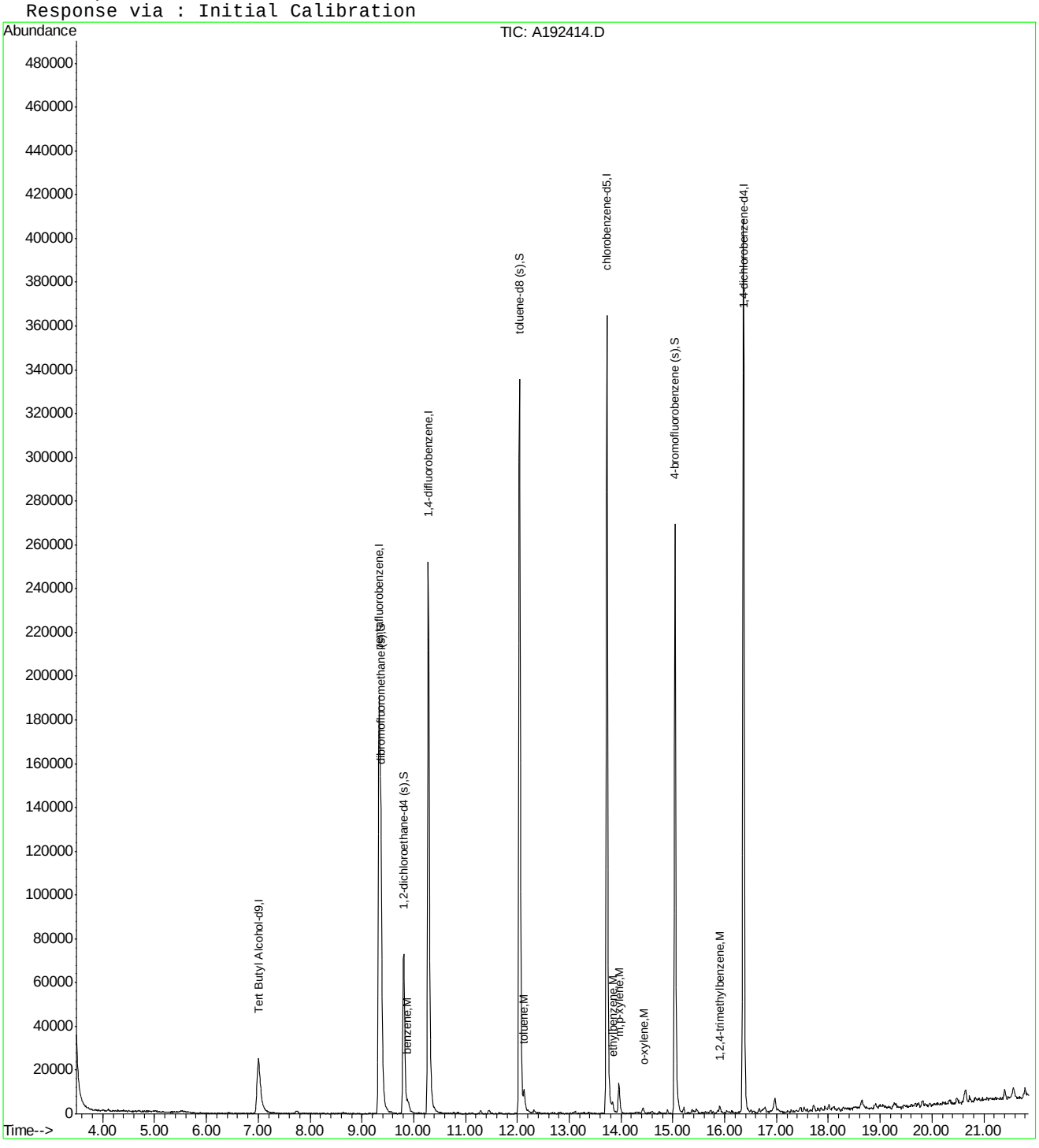
						Qvalue
61) benzene	9.88	78	3313m	0.58	ug/L	
79) toluene	12.13	92	4934	1.39	ug/L	84
94) ethylbenzene	13.84	91	2950	0.42	ug/L	97
95) m,p-xylene	13.96	106	5349	1.91	ug/L	95
96) o-xylene	14.44	106	750m	0.26	ug/L	
114) 1,2,4-trimethylbenzene	15.90	105	2813	0.49	ug/L	95

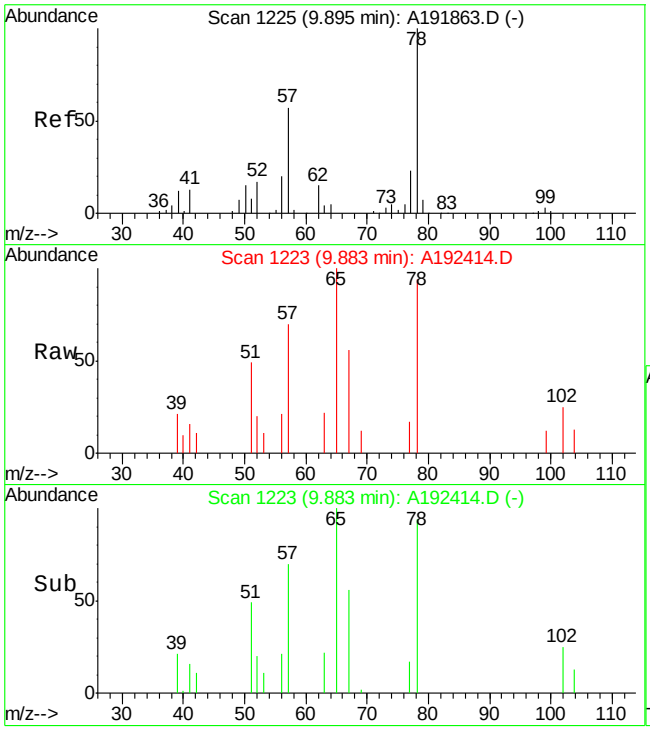
(#) = qualifier out of range (m) = manual integration
A192414.D MA7222.M Mon Mar 11 10:00:45 2013 MSA

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192414.D Vial: 100
Acq On : 8 Mar 2013 11:11 pm Operator: Oksanat
Sample : jb30425-14 Inst : MSA
Misc : MS44366,VA7246,7.1,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 9:06 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration

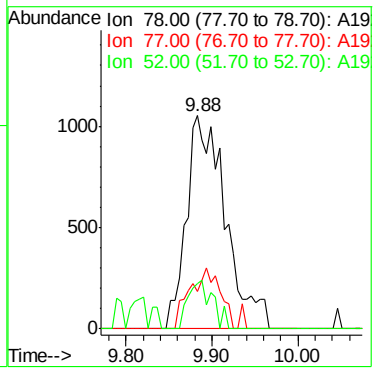


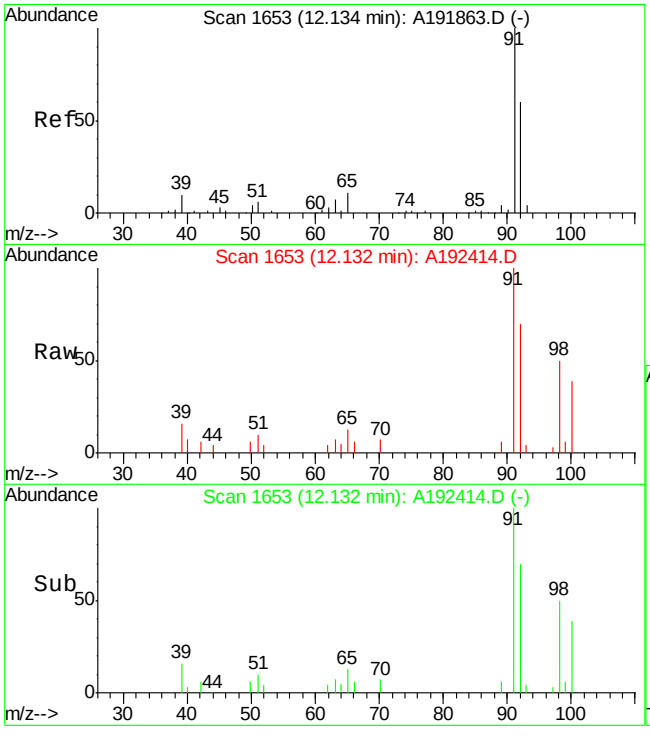


#61
benzene
Concen: 0.58 ug/L m
RT: 9.88 min Scan# 1223
Delta R.T. -0.01 min
Lab File: A192414.D
Acq: 8 Mar 2013 11:11 pm

Tgt Ion: 78 Resp: 3313

Ion	Ratio	Lower	Upper
78	100		
77	17.6	0.0	52.8
52	21.2	0.0	47.0

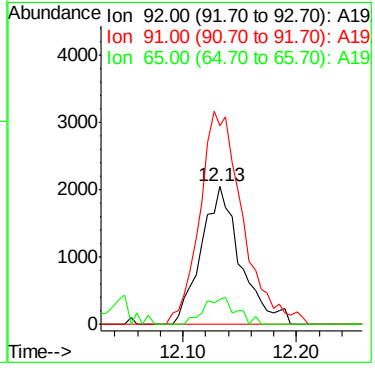




#79
toluene
Concen: 1.39 ug/L
RT: 12.13 min Scan# 1653
Delta R.T. -0.00 min
Lab File: A192414.D
Acq: 8 Mar 2013 11:11 pm

Tgt Ion: 92 Resp: 4934

Ion	Ratio	Lower	Upper
92	100		
91	143.5	137.9	197.9
65	18.2	0.0	48.0



7.1.14

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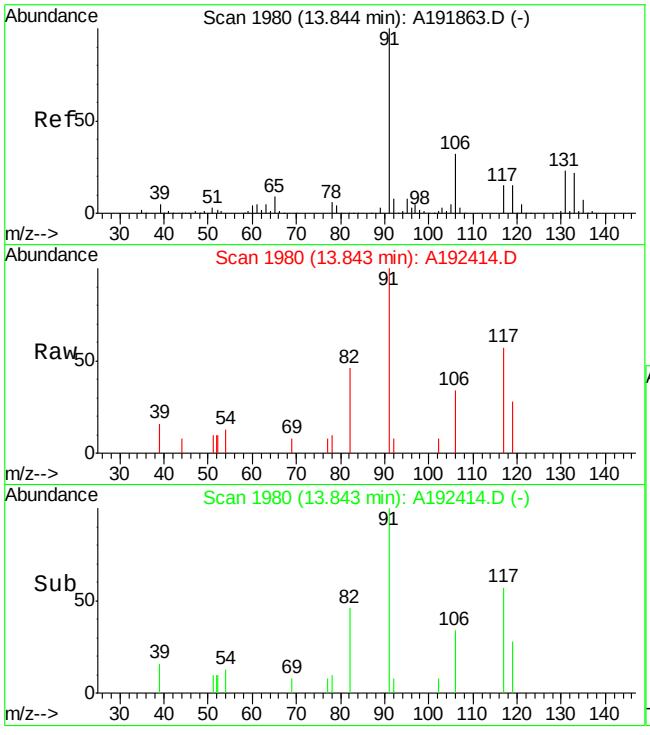
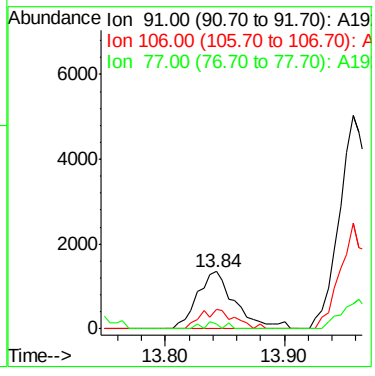
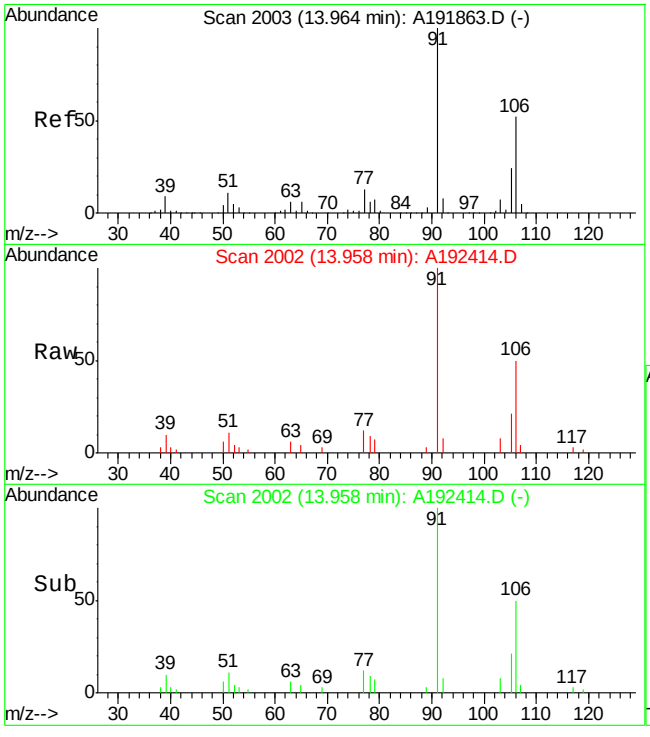


#94
ethylbenzene
Concen: 0.42 ug/L
RT: 13.84 min Scan# 1980
Delta R.T. -0.00 min
Lab File: A192414.D
Acq: 8 Mar 2013 11:11 pm

Tgt Ion: 91 Resp: 2950

Ion	Ratio	Lower	Upper
91	100		
106	33.7	1.9	61.9
77	8.5	0.0	38.4

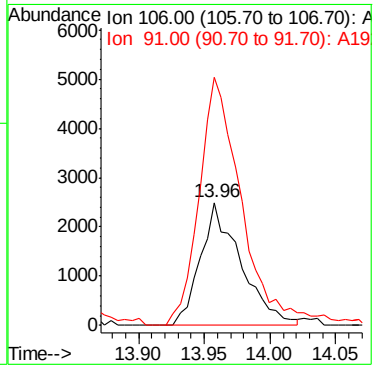


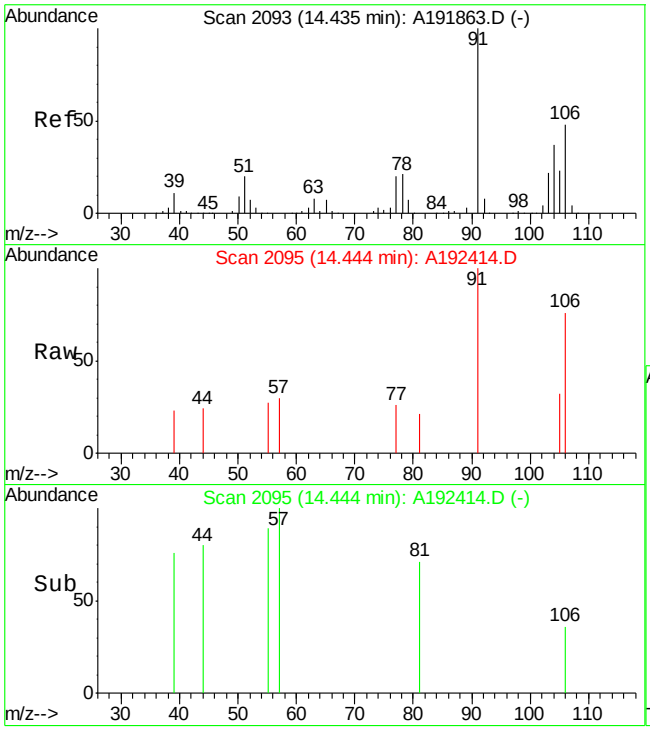


#95
m,p-xylene
Concen: 1.91 ug/L
RT: 13.96 min Scan# 2002
Delta R.T. -0.01 min
Lab File: A192414.D
Acq: 8 Mar 2013 11:11 pm

Tgt Ion:106 Resp: 5349

Ion	Ratio	Lower	Upper
106	100		
91	201.5	164.0	224.0

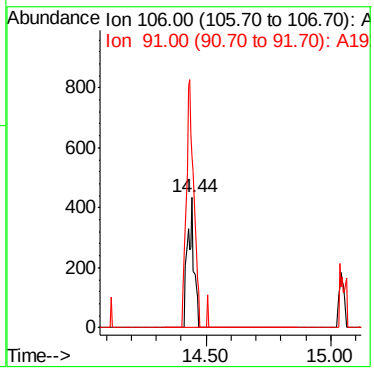


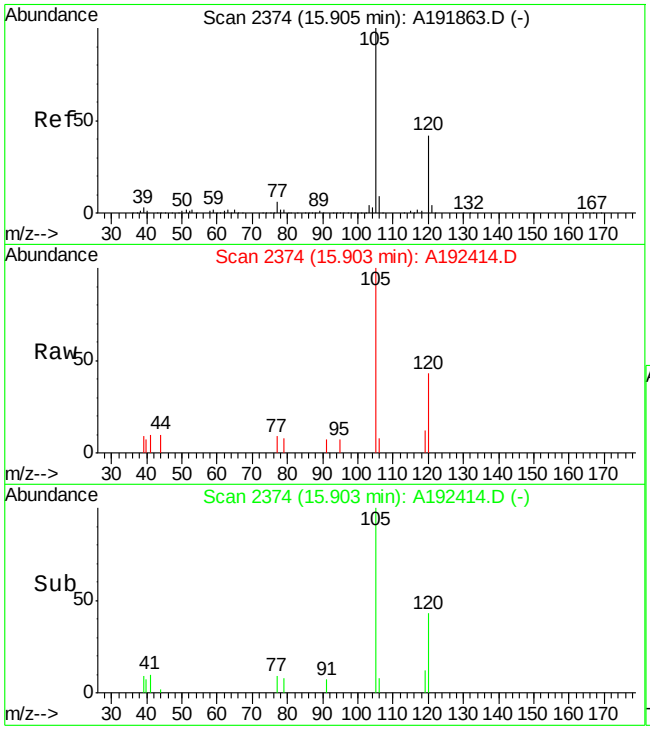


#96
o-xylene
Concen: 0.26 ug/L m
RT: 14.44 min Scan# 2095
Delta R.T. 0.01 min
Lab File: A192414.D
Acq: 8 Mar 2013 11:11 pm

Tgt Ion:106 Resp: 750

Ion	Ratio	Lower	Upper
106	100		
91	131.7	176.4	236.4#

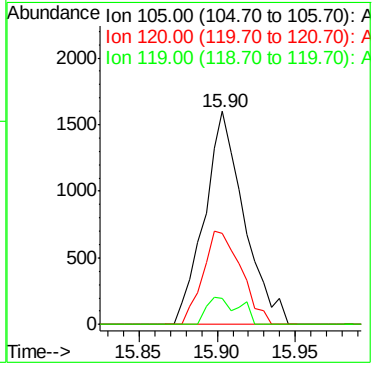




#114
1,2,4-trimethylbenzene
Concen: 0.49 ug/L
RT: 15.90 min Scan# 2374
Delta R.T. -0.00 min
Lab File: A192414.D
Acq: 8 Mar 2013 11:11 pm

Tgt Ion:105 Resp: 2813

Ion	Ratio	Lower	Upper
105	100		
120	42.9	17.0	77.0
119	12.4	0.0	43.0



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192480.D Vial: 100
Acq On : 11 Mar 2013 3:10 pm Operator: Oksanat
Sample : jb30425-15 Inst : MSA
Misc : MS44366,VA7248,7.2,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 17:56 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	6.99	65	76665	500.00	ug/L	-0.03
5) pentafluorobenzene	9.34	168	179696	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.28	114	248820	50.00	ug/L	-0.02
85) chlorobenzene-d5	13.73	117	245290	50.00	ug/L	-0.01
99) 1,4-dichlorobenzene-d4	16.37	152	129727	50.00	ug/L	-0.01

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	70817	52.96	ug/L	-0.02
Spiked Amount 50.000	Range 81 - 121		Recovery = 105.92%			
48) 1,2-dichloroethane-d4 (s)	9.81	65	72805	48.73	ug/L	-0.02
Spiked Amount 50.000	Range 74 - 127		Recovery = 97.46%			
77) toluene-d8 (s)	12.04	98	257906	54.58	ug/L	-0.02
Spiked Amount 50.000	Range 80 - 122		Recovery = 109.16%			
102) 4-bromofluorobenzene (s)	15.04	95	99971	54.29	ug/L	-0.01
Spiked Amount 50.000	Range 78 - 116		Recovery = 108.58%			

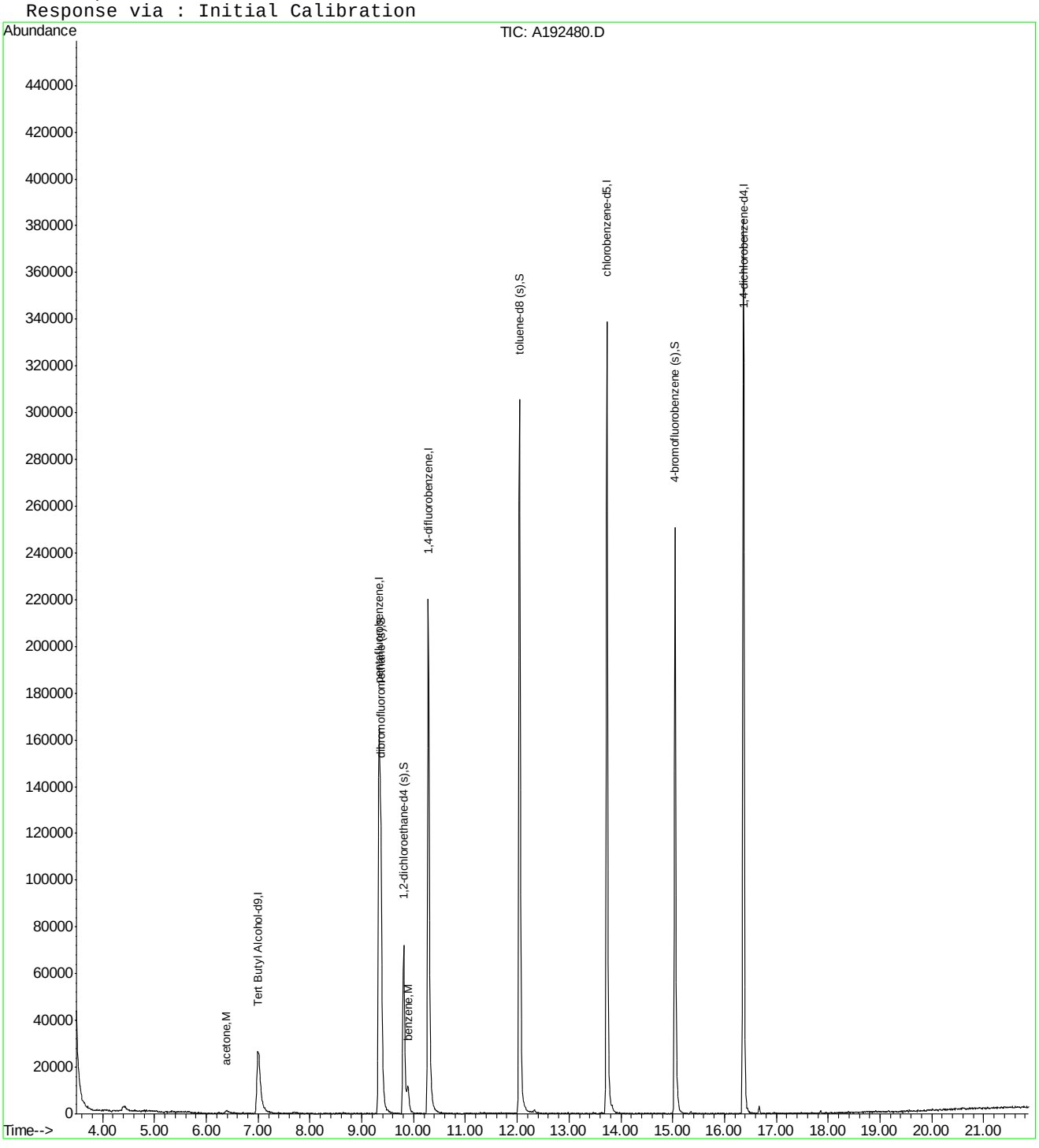
Target Compounds						Qvalue
20) acetone	6.39	43	4703	15.95	ug/L	97
61) benzene	9.90	78	12791	2.58	ug/L	97

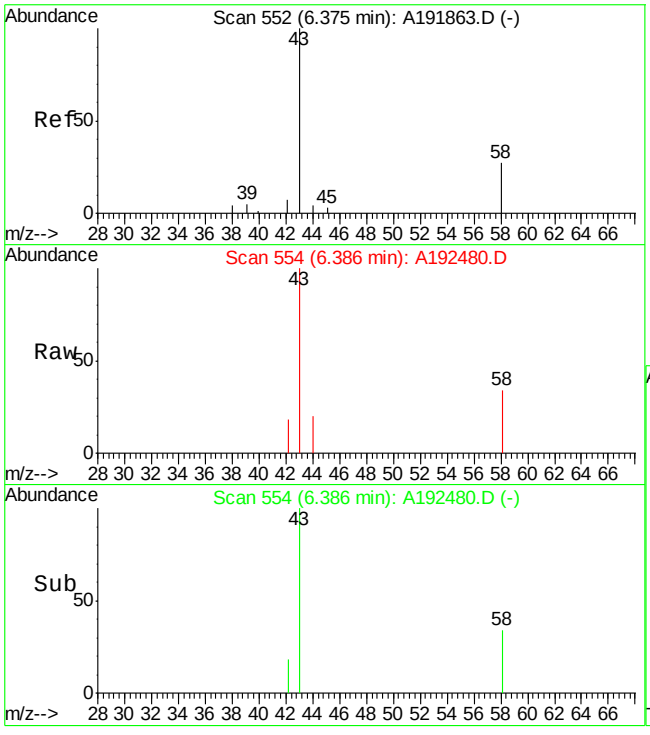
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192480.D Vial: 100
Acq On : 11 Mar 2013 3:10 pm Operator: Oksanat
Sample : jb30425-15 Inst : MSA
Misc : MS44366,VA7248,7.2,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 17:56 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration

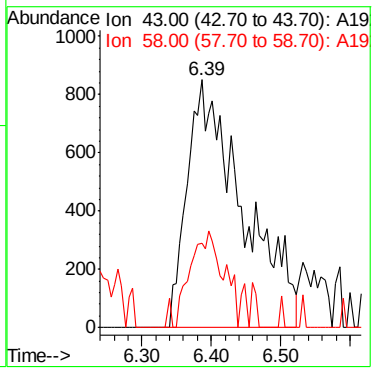


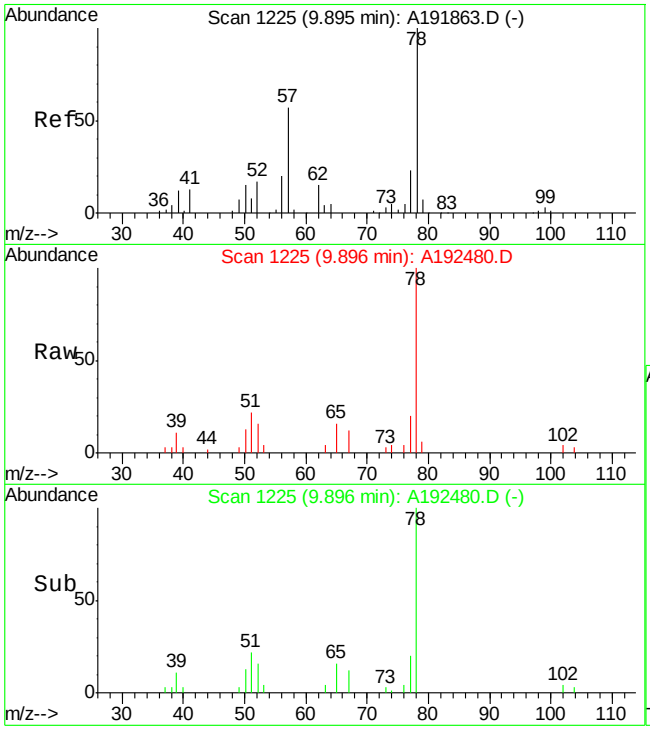


#20
acetone
Concen: 15.95 ug/L
RT: 6.39 min Scan# 554
Delta R.T. 0.01 min
Lab File: A192480.D
Acq: 11 Mar 2013 3:10 pm

Tgt Ion: 43 Resp: 4703

Ion	Ratio	Lower	Upper
43	100		
58	19.5	0.0	50.9

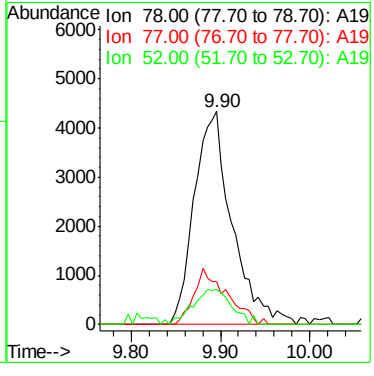




#61
benzene
Concen: 2.58 ug/L
RT: 9.90 min Scan# 1225
Delta R.T. 0.00 min
Lab File: A192480.D
Acq: 11 Mar 2013 3:10 pm

Tgt Ion: 78 Resp: 12791

Ion	Ratio	Lower	Upper
78	100		
77	20.4	0.0	52.8
52	16.5	0.0	47.0



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192398.D Vial: 100
Acq On : 8 Mar 2013 2:22 pm Operator: Oksanat
Sample : mb Inst : MSA
Misc : MS44144,VA7246,5,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 8 16:22 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.00	65	82451	500.00	ug/L	-0.02
5) pentafluorobenzene	9.34	168	192336	50.00	ug/L	-0.01
54) 1,4-difluorobenzene	10.29	114	261962	50.00	ug/L	0.00
85) chlorobenzene-d5	13.74	117	250093	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	16.37	152	128472	50.00	ug/L	0.00

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	71021	49.63	ug/L	-0.01
Spiked Amount 50.000	Range 81 - 121		Recovery = 99.26%			
48) 1,2-dichloroethane-d4 (s)	9.81	65	72123	45.10	ug/L	0.00
Spiked Amount 50.000	Range 74 - 127		Recovery = 90.20%			
77) toluene-d8 (s)	12.05	98	260175	52.30	ug/L	0.00
Spiked Amount 50.000	Range 80 - 122		Recovery = 104.60%			
102) 4-bromofluorobenzene (s)	15.05	95	99905	54.78	ug/L	0.00
Spiked Amount 50.000	Range 78 - 116		Recovery = 109.56%			

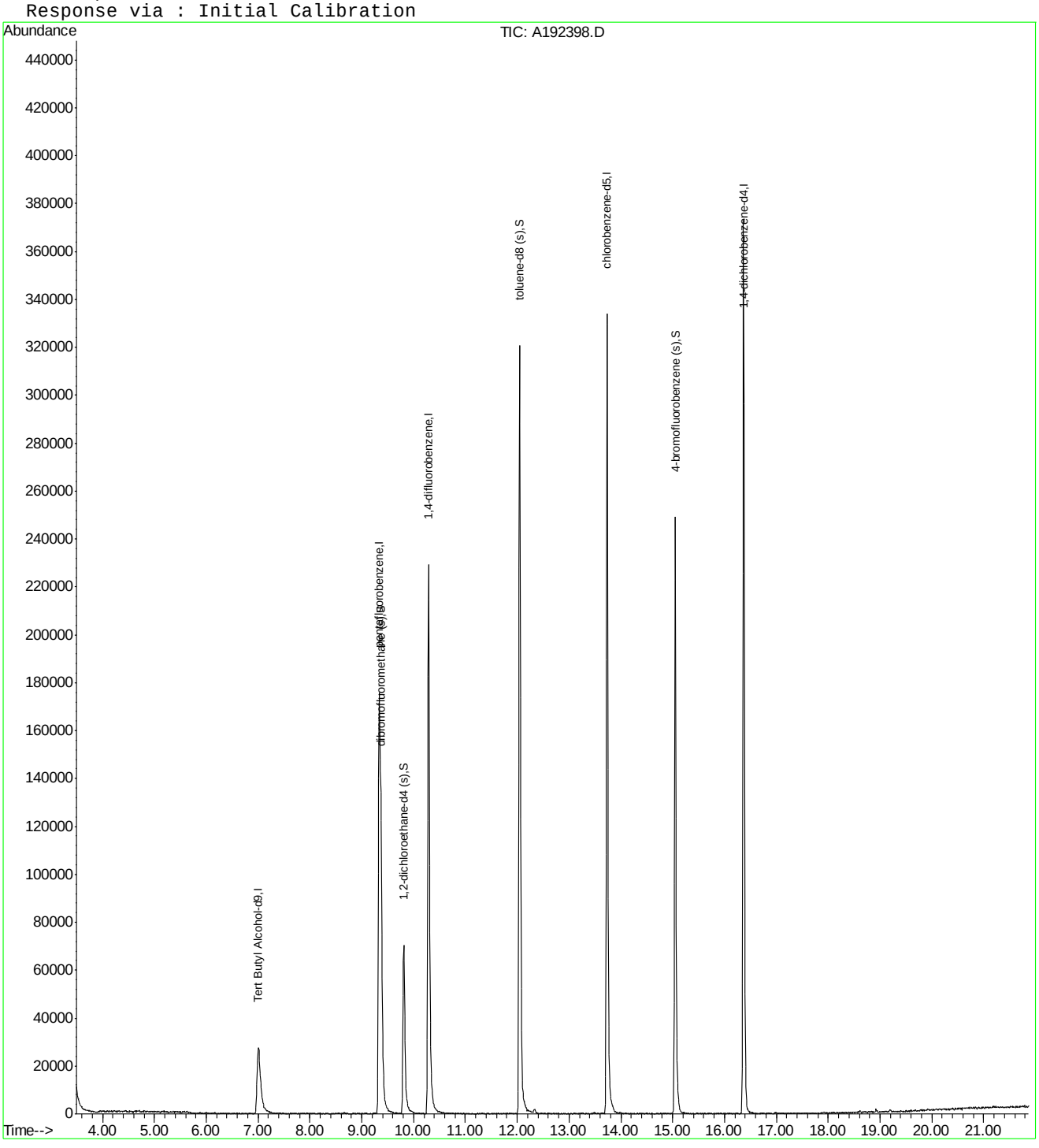
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
A192398.D MA7222.M Fri Mar 08 16:22:34 2013 MSA

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192398.D Vial: 100
Acq On : 8 Mar 2013 2:22 pm Operator: Oksanat
Sample : mb Inst : MSA
Misc : MS44144,VA7246,5,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 8 16:22 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\A192472.D Vial: 100
Acq On : 11 Mar 2013 10:56 am Operator: Oksanat
Sample : mb Inst : MSA
Misc : MS44307,VA7248,5,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 11:20 2013 Quant Results File: MA7222.RES

Quant Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration
DataAcq Meth : MA7222

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.00	65	71630	500.00	ug/L	-0.03
5) pentafluorobenzene	9.33	168	157288	50.00	ug/L	-0.02
54) 1,4-difluorobenzene	10.28	114	219705	50.00	ug/L	-0.02
85) chlorobenzene-d5	13.72	117	210444	50.00	ug/L	-0.02
99) 1,4-dichlorobenzene-d4	16.36	152	105849	50.00	ug/L	-0.02

System Monitoring Compounds

47) dibromofluoromethane (s)	9.37	113	62113	53.07	ug/L	-0.02
Spiked Amount 50.000 Range 81 - 121 Recovery = 106.14%						
48) 1,2-dichloroethane-d4 (s)	9.80	65	63313	48.42	ug/L	-0.03
Spiked Amount 50.000 Range 74 - 127 Recovery = 96.84%						
77) toluene-d8 (s)	12.03	98	223222	53.50	ug/L	-0.02
Spiked Amount 50.000 Range 80 - 122 Recovery = 107.00%						
102) 4-bromofluorobenzene (s)	15.04	95	84611	56.31	ug/L	-0.02
Spiked Amount 50.000 Range 78 - 116 Recovery = 112.62%						

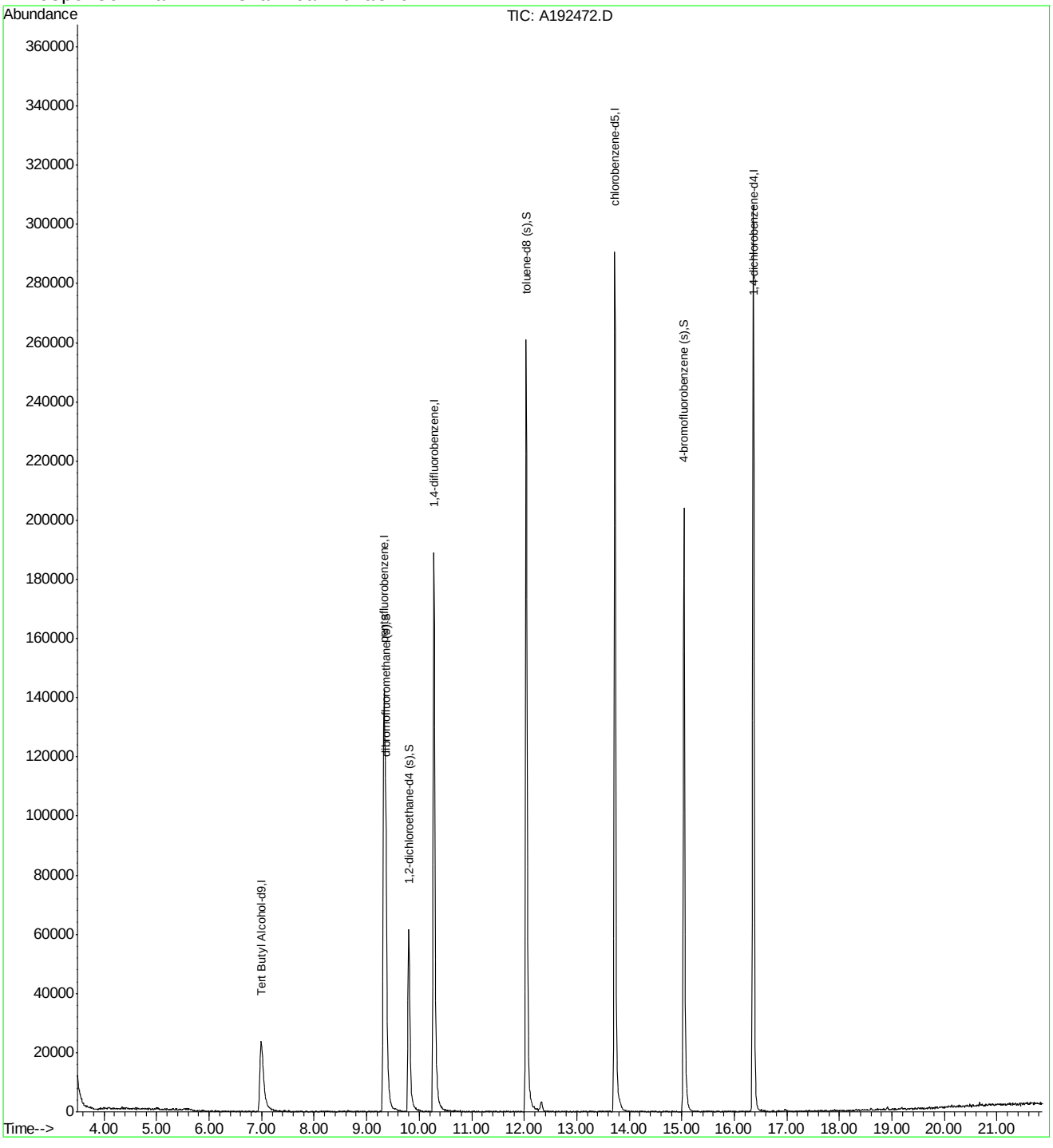
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
A192472.D MA7222.M Mon Mar 11 11:21:08 2013 MSA Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\A192472.D Vial: 100
Acq On : 11 Mar 2013 10:56 am Operator: Oksanat
Sample : mb Inst : MSA
Misc : MS44307,VA7248,5,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P
Quant Time: Mar 11 11:20 2013 Quant Results File: MA7222.RES

Method : C:\HPCHEM\1\METHODS\MA7222.M (RTE Integrator)
Title : SW 846 8260bB ZB624 60m x 0.25mm x 1.4um
Last Update : Thu Feb 21 15:26:34 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\c-core\vc6455\
Data File : c180059.d
Acq On : 14 Mar 2013 1:29 pm
Operator : tamikag
Sample : mb
Misc : MS44209,VC6455,5,,100,5,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 14 17:44:06 2013
Quant Method : C:\MSDCHEM\1\METHODS\MCS6448.M
Quant Title : SW846 8260B,ZB624 60m x 0.25mm x 1.4um
QLast Update : Wed Mar 13 09:37:57 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	5.479	65	33930	500.00	ug/L	-0.01
5) pentafluorobenzene	8.068	168	160873	50.00	ug/L	0.00
57) 1,4-difluorobenzene	9.062	114	232362	50.00	ug/L	0.00
85) chlorobenzene-d5	12.137	117	171616	50.00	ug/L	0.00
101) 1,4-dichlorobenzene-d4	14.156	152	80333	50.00	ug/L	0.00
System Monitoring Compounds						
49) dibromofluoromethane (s)	8.016	113	58098	45.61	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 91.22%			
50) 1,2-dichloroethane-d4 (s)	8.507	65	55543	46.83	ug/L	0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 93.66%			
77) toluene-d8 (s)	10.725	98	254254	47.25	ug/L	0.00
Spiked Amount 50.000	Range 81 - 127		Recovery = 94.50%			
103) 4-bromofluorobenzene (s)	13.183	95	85480	46.59	ug/L	0.00
Spiked Amount 50.000	Range 66 - 132		Recovery = 93.18%			

Target Compounds Qvalue

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

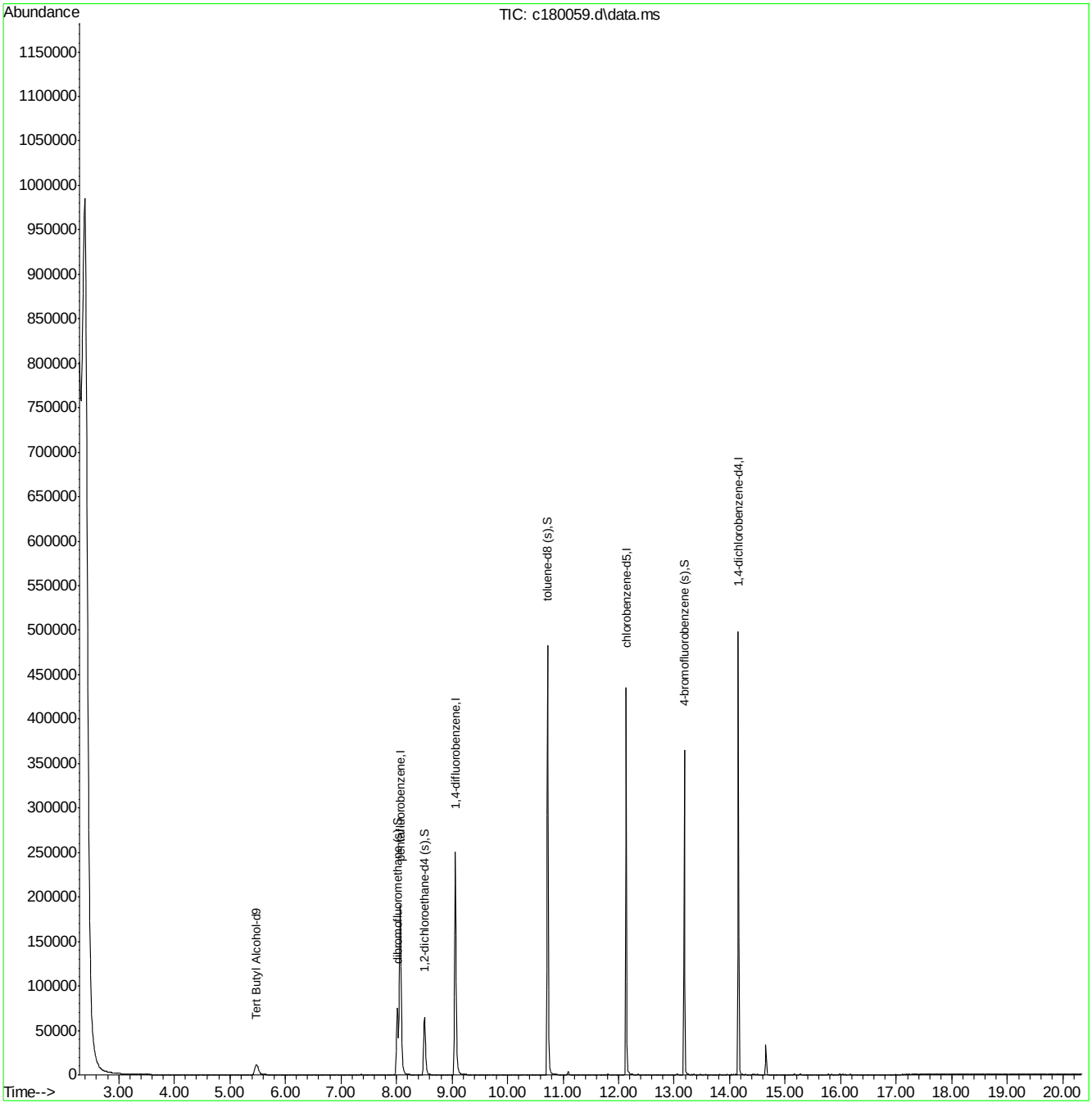
7.2.3

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\c-core\vc6455\
Data File : c180059.d
Acq On : 14 Mar 2013 1:29 pm
Operator : tamikag
Sample : mb
Misc : MS44209,VC6455,5,,100,5,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 14 17:44:06 2013
Quant Method : C:\MSDCHEM\1\METHODS\MCS6448.M
Quant Title : SW846 8260B,ZB624 60m x 0.25mm x 1.4um
QLast Update : Wed Mar 13 09:37:57 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : d206531.D
Acq On : 15 Mar 2013 11:19 am
Operator : EmilyT
Sample : mb
Misc : ms44714,vd8426,5,,100,5,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 15 15:15:25 2013
Quant Method : C:\MSDCHEM\1\METHODS\MD8379.M
Quant Title : SW-846 Method 8260B
QLast Update : Tue Feb 19 09:53:02 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	8.023	65	123146	500.00	ug/L	0.00
4) pentafluorobenzene	10.245	168	199159	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.160	114	291936	50.00	ug/L	-0.01
85) chlorobenzene-d5	14.505	117	277873	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.088	152	160526	50.00	ug/L	0.00

System Monitoring Compounds

46) dibromofluoromethane (s)	10.276	113	89744	46.14	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 92.28%			
47) 1,2-dichloroethane-d4 (s)	10.705	65	120736	51.41	ug/L	0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 102.82%			
77) toluene-d8 (s)	12.869	98	364446	51.51	ug/L	0.00
Spiked Amount 50.000	Range 81 - 127		Recovery = 103.02%			
101) 4-bromofluorobenzene (s)	15.786	95	136533	46.82	ug/L	0.00
Spiked Amount 50.000	Range 66 - 132		Recovery = 93.64%			

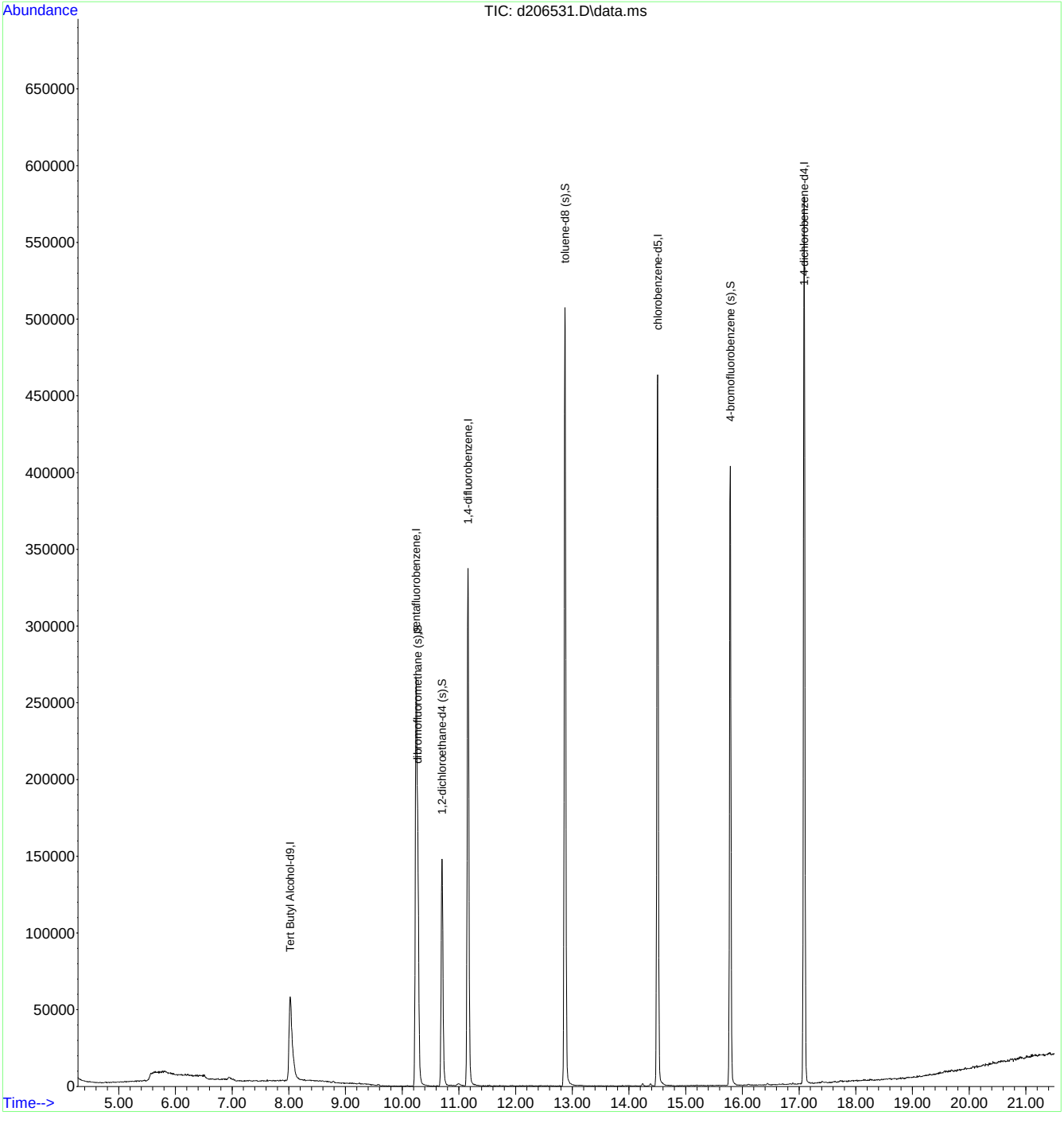
Target Compounds Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : d206531.D
Acq On : 15 Mar 2013 11:19 am
Operator : EmilyT
Sample : mb
Misc : ms44714,vd8426,5,,100,5,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 15 15:15:25 2013
Quant Method : C:\MSDCHEM\1\METHODS\MD8379.M
Quant Title : SW-846 Method 8260B
QLast Update : Tue Feb 19 09:53:02 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\X\VX5805\
Data File : X133974.D
Acq On : 18 Mar 2013 9:45 am
Operator : margares
Sample : mb
Misc : MS44831,VX5805,5.0,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 19 17:44:28 2013
Quant Method : C:\MSDCHEM\1\METHODS\MX5795.M
Quant Title : SW-846 Method 8260B, ZB624 60m x 0.25mm x 1.4um
QLast Update : Thu Mar 07 18:00:57 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	7.028	65	42717	500.00	ug/L	-0.03
5) pentafluorobenzene	9.701	168	160274	50.00	ug/L	-0.03
62) 1,4-difluorobenzene	10.862	114	226824	50.00	ug/L	-0.03
93) chlorobenzene-d5	15.104	117	206230	50.00	ug/L	-0.03
108) 1,4-dichlorobenzene-d4	17.944	152	113686	50.00	ug/L	-0.02
System Monitoring Compounds						
54) dibromofluoromethane (s)	9.738	113	77150	51.47	ug/L	-0.03
Spiked Amount 50.000	Range 70 - 130		Recovery = 102.94%			
55) 1,2-dichloroethane-d4 (s)	10.266	65	72611	45.09	ug/L	-0.03
Spiked Amount 50.000	Range 70 - 122		Recovery = 90.18%			
85) toluene-d8 (s)	13.064	98	291006	52.60	ug/L	-0.03
Spiked Amount 50.000	Range 81 - 127		Recovery = 105.20%			
111) 4-bromofluorobenzene (s)	16.626	95	107548	51.88	ug/L	-0.03
Spiked Amount 50.000	Range 66 - 132		Recovery = 103.76%			

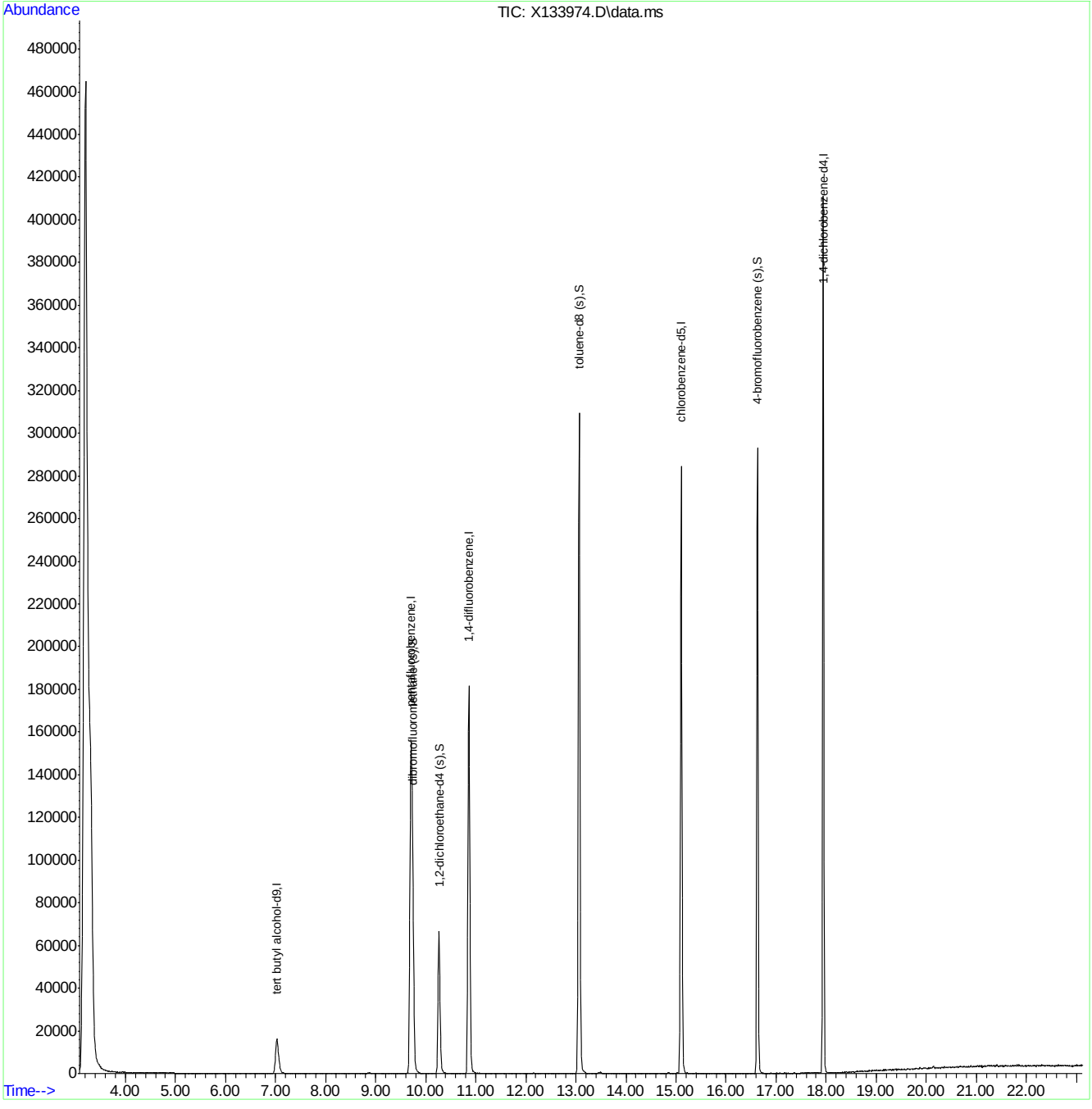
Target Compounds Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\X\VX5805\
Data File : X133974.D
Acq On : 18 Mar 2013 9:45 am
Operator : margares
Sample : mb
Misc : MS44831,VX5805,5.0,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 19 17:44:28 2013
Quant Method : C:\MSDCHEM\1\METHODS\MX5795.M
Quant Title : SW-846 Method 8260B, ZB624 60m x 0.25mm x 1.4um
QLast Update : Thu Mar 07 18:00:57 2013
Response via : Initial Calibration



MX5795.M Tue Mar 19 18:05:45 2013 ACCNJ

New Jersey

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
- Instrument Performance Checks (DFTPP)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64440-MB1	2P21229.D	1	03/19/13	ALS	03/18/13	OP64440	E2P936

The QC reported here applies to the following samples: **Method:** SW846 8270D

JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-8, JB30425-9, JB30425-10, JB30425-11, JB30425-12, JB30425-13, JB30425-14, JB30425-15

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	ND	29	ug/kg	
56-55-3	Benzo(a)anthracene	ND	29	ug/kg	
50-32-8	Benzo(a)pyrene	ND	29	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	29	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	29	ug/kg	
218-01-9	Chrysene	ND	29	ug/kg	
86-73-7	Fluorene	ND	29	ug/kg	
91-20-3	Naphthalene	ND	29	ug/kg	
85-01-8	Phenanthrene	ND	29	ug/kg	
129-00-0	Pyrene	ND	29	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	12%* [a]	21-116%
4165-62-2	Phenol-d5	13%* [a]	19-117%
118-79-6	2,4,6-Tribromophenol	19%* [a]	24-136%
4165-60-0	Nitrobenzene-d5	12%* [a]	21-122%
321-60-8	2-Fluorobiphenyl	12%* [a]	30-117%
1718-51-0	Terphenyl-d14	32%	31-129%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Semi-Volatile		0	ug/kg	

(a) Outside control limits biased low. Sample results confirmed by reanalysis outside the holding time.

Method Blank Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64440-MB2	2P21375.D	1	03/22/13	ALS	03/20/13	OP64440	E2P941

The QC reported here applies to the following samples: **Method:** SW846 8270D

JB30425-7

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	ND	29	ug/kg	
56-55-3	Benzo(a)anthracene	ND	29	ug/kg	
50-32-8	Benzo(a)pyrene	ND	29	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	29	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	29	ug/kg	
218-01-9	Chrysene	ND	29	ug/kg	
86-73-7	Fluorene	ND	29	ug/kg	
91-20-3	Naphthalene	ND	29	ug/kg	
85-01-8	Phenanthrene	ND	29	ug/kg	
129-00-0	Pyrene	ND	29	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	83%	21-116%
4165-62-2	Phenol-d5	86%	19-117%
118-79-6	2,4,6-Tribromophenol	94%	24-136%
4165-60-0	Nitrobenzene-d5	85%	21-122%
321-60-8	2-Fluorobiphenyl	90%	30-117%
1718-51-0	Terphenyl-d14	91%	31-129%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	unknown	12.93	1100	ug/kg	J
	Total TIC, Semi-Volatile		1100	ug/kg	J

Method Blank Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64440-MB2	3P17976.D	1	03/22/13	KH	03/20/13	OP64440	E3P816

The QC reported here applies to the following samples: **Method:** SW846 8270D

JB30425-7

CAS No.	Compound	Result	RL	Units	Q
120-12-7	Anthracene	ND	29	ug/kg	
56-55-3	Benzo(a)anthracene	ND	29	ug/kg	
50-32-8	Benzo(a)pyrene	ND	29	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	29	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	29	ug/kg	
218-01-9	Chrysene	ND	29	ug/kg	
86-73-7	Fluorene	ND	29	ug/kg	
91-20-3	Naphthalene	ND	29	ug/kg	
85-01-8	Phenanthrene	ND	29	ug/kg	
129-00-0	Pyrene	ND	29	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	80%	21-116%
4165-62-2	Phenol-d5	81%	19-117%
118-79-6	2,4,6-Tribromophenol	101%	24-136%
4165-60-0	Nitrobenzene-d5	103%	21-122%
321-60-8	2-Fluorobiphenyl	91%	30-117%
1718-51-0	Terphenyl-d14	96%	31-129%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	2.25	720	ug/kg	J
	unknown	13.88	1200	ug/kg	J
	Total TIC, Semi-Volatile		1200	ug/kg	J

Blank Spike Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64440-BS1	2M50790.D	1	03/19/13	OYA	03/18/13	OP64440	E2M2166

The QC reported here applies to the following samples: **Method:** SW846 8270D

JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-8, JB30425-9, JB30425-10, JB30425-11, JB30425-12, JB30425-13, JB30425-14, JB30425-15

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
120-12-7	Anthracene	1430	1190	83	59-121
56-55-3	Benzo(a)anthracene	1430	1170	82	54-119
50-32-8	Benzo(a)pyrene	1430	1170	82	59-122
205-99-2	Benzo(b)fluoranthene	1430	1250	88	45-133
191-24-2	Benzo(g,h,i)perylene	1430	1030	72	57-122
218-01-9	Chrysene	1430	1210	85	55-120
86-73-7	Fluorene	1430	1210	85	57-117
91-20-3	Naphthalene	1430	1150	81	49-111
85-01-8	Phenanthrene	1430	1160	81	58-118
129-00-0	Pyrene	1430	1070	75	54-122

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	92%	21-116%
4165-62-2	Phenol-d5	108%	19-117%
118-79-6	2,4,6-Tribromophenol	101%	24-136%
4165-60-0	Nitrobenzene-d5	76%	21-122%
321-60-8	2-Fluorobiphenyl	74%	30-117%
1718-51-0	Terphenyl-d14	88%	31-129%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64440-BS2	3P17977.D	1	03/22/13	KH	03/20/13	OP64440	E3P816

The QC reported here applies to the following samples: **Method:** SW846 8270D

JB30425-7

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
120-12-7	Anthracene	1430	1380	97	59-121
56-55-3	Benzo(a)anthracene	1430	1380	97	54-119
50-32-8	Benzo(a)pyrene	1430	1410	99	59-122
205-99-2	Benzo(b)fluoranthene	1430	1440	101	45-133
191-24-2	Benzo(g,h,i)perylene	1430	1430	100	57-122
218-01-9	Chrysene	1430	1370	96	55-120
86-73-7	Fluorene	1430	1390	97	57-117
91-20-3	Naphthalene	1430	1150	81	49-111
85-01-8	Phenanthrene	1430	1340	94	58-118
129-00-0	Pyrene	1430	1370	96	54-122

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	81%	21-116%
4165-62-2	Phenol-d5	82%	19-117%
118-79-6	2,4,6-Tribromophenol	105%	24-136%
4165-60-0	Nitrobenzene-d5	104%	21-122%
321-60-8	2-Fluorobiphenyl	92%	30-117%
1718-51-0	Terphenyl-d14	102%	31-129%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64440-MS	3P18002.D	1	03/22/13	KH	03/21/13	OP64440	E3P816
OP64440-MSD	3P18003.D	1	03/22/13	KH	03/21/13	OP64440	E3P816
JB30423-1	2M50798.D	1	03/19/13	OYA	03/18/13	OP64440	E2M2166
JB30423-1 [a]	3P17999.D	1	03/22/13	KH	03/21/13	OP64440	E3P816

The QC reported here applies to the following samples: **Method:** SW846 8270D

JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-7, JB30425-8, JB30425-9, JB30425-10, JB30425-11, JB30425-12, JB30425-13, JB30425-14, JB30425-15

CAS No.	Compound	JB30423-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
120-12-7	Anthracene	31.5	J	3780	2860	76	2610	68	9	33-130/30
56-55-3	Benzo(a)anthracene	56.8	J	3780	2880	76	2470	63	15	29-127/33
50-32-8	Benzo(a)pyrene	45.5	J	3780	2830	75	2490	64	13	28-134/34
205-99-2	Benzo(b)fluoranthene	ND		3780	2710	72	2470	65	9	19-143/38
191-24-2	Benzo(g,h,i)perylene	ND		3780	2870	76	2510	66	13	27-135/34
218-01-9	Chrysene	57.7	J	3780	2810	74	2480	64	12	29-129/32
86-73-7	Fluorene	ND		3780	2850	75	2570	68	10	32-125/32
91-20-3	Naphthalene	79.2		3780	2340	62	2280	58	3	25-117/32
85-01-8	Phenanthrene	98.3		3780	2840	75	2590	65	9	28-132/34
129-00-0	Pyrene	109		3780	2800	74	2490	63	12	27-132/33

CAS No.	Surrogate Recoveries	MS	MSD	JB30423-1	JB30423-1	Limits
367-12-4	2-Fluorophenol	61%	56%	51%	44%	21-116%
4165-62-2	Phenol-d5	65%	61%	61%	47%	19-117%
118-79-6	2,4,6-Tribromophenol	85%	76%	98%	65%	24-136%
4165-60-0	Nitrobenzene-d5	79%	75%	57%	56%	21-122%
321-60-8	2-Fluorobiphenyl	70%	64%	53%	54%	30-117%
1718-51-0	Terphenyl-d14	75%	68%	87%	65%	31-129%

(a) Confirmation run.

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M2147-DFTPP
Lab File ID: 2M50362.D
Instrument ID: GCMS2M
Injection Date: 03/06/13
Injection Time: 17:29

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	35429	37.8		Pass
68	Less than 2.0% of mass 69	660	0.70	(1.69) [a]	Pass
69	Mass 69 relative abundance	39022	41.7		Pass
70	Less than 2.0% of mass 69	193	0.21	(0.49) [a]	Pass
127	40.0 - 60.0% of mass 198	52362	55.9		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	93650	100.0		Pass
199	5.0 - 9.0% of mass 198	6110	6.52		Pass
275	10.0 - 30.0% of mass 198	20579	22.0		Pass
365	1.0 - 100.0% of mass 198	2131	2.28		Pass
441	Present, but less than mass 443	8341	8.91	(72.0) [b]	Pass
442	40.0 - 100.0% of mass 198	58296	62.2		Pass
443	17.0 - 23.0% of mass 442	11584	12.4	(19.9) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M2147-IC2147	2M50363.D	03/06/13	17:46	00:17	Initial cal 100
E2M2147-IC2147	2M50364.D	03/06/13	18:14	00:45	Initial cal 80
E2M2147-ICC2147	2M50365.D	03/06/13	18:37	01:08	Initial cal 50
E2M2147-IC2147	2M50366.D	03/06/13	19:00	01:31	Initial cal 25
E2M2147-IC2147	2M50367.D	03/06/13	19:23	01:54	Initial cal 10
E2M2147-IC2147	2M50368.D	03/06/13	19:46	02:17	Initial cal 5
E2M2147-IC2147	2M50369.D	03/06/13	20:09	02:40	Initial cal 2
E2M2147-IC2147	2M50370.D	03/06/13	20:32	03:03	Initial cal 1

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M2148-DFTPP
Lab File ID: 2M50371.D
Instrument ID: GCMS2M
Injection Date: 03/06/13
Injection Time: 20:51

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	33390	38.8		Pass
68	Less than 2.0% of mass 69	604	0.70	(1.65) [a]	Pass
69	Mass 69 relative abundance	36704	42.7		Pass
70	Less than 2.0% of mass 69	200	0.23	(0.54) [a]	Pass
127	40.0 - 60.0% of mass 198	48688	56.6		Pass
197	Less than 1.0% of mass 198	129	0.15		Pass
198	Base peak, 100% relative abundance	86024	100.0		Pass
199	5.0 - 9.0% of mass 198	5930	6.89		Pass
275	10.0 - 30.0% of mass 198	18201	21.2		Pass
365	1.0 - 100.0% of mass 198	1941	2.26		Pass
441	Present, but less than mass 443	7595	8.83	(73.8) [b]	Pass
442	40.0 - 100.0% of mass 198	52226	60.7		Pass
443	17.0 - 23.0% of mass 442	10286	12.0	(19.7) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M2148-IC2148	2M50372.D	03/06/13	21:03	00:12	Initial cal 100
E2M2148-IC2148	2M50373.D	03/06/13	21:26	00:35	Initial cal 80
E2M2148-ICC2148	2M50374.D	03/06/13	21:49	00:58	Initial cal 50
E2M2148-IC2148	2M50375.D	03/06/13	22:12	01:21	Initial cal 25
E2M2148-IC2148	2M50376.D	03/06/13	22:35	01:44	Initial cal 10
E2M2148-IC2148	2M50377.D	03/06/13	22:58	02:07	Initial cal 5
E2M2148-IC2148	2M50378.D	03/06/13	23:21	02:30	Initial cal 2
E2M2148-IC2148	2M50379.D	03/06/13	23:44	02:53	Initial cal 1
E2M2148-ICV2147	2M50380.D	03/07/13	00:07	03:16	Initial cal verification 50
E2M2148-ICV2147	2M50381.D	03/07/13	00:30	03:39	Initial cal verification 50
E2M2148-ICV2148	2M50381A.D	03/07/13	00:30	03:39	Initial cal verification 50
E2M2148-ICV2147	2M50382.D	03/07/13	00:53	04:02	Initial cal verification 50
E2M2148-ICV2148	2M50382A.D	03/07/13	00:53	04:02	Initial cal verification 50
E2M2148-ICV2147	2M50383.D	03/07/13	01:16	04:25	Initial cal verification 50
E2M2148-ICV2147	2M50384.D	03/07/13	01:39	04:48	Initial cal verification 50
E2M2148-ICV2148	2M50385.D	03/07/13	02:02	05:11	Initial cal verification 50
E2M2148-ICV2148	2M50386.D	03/07/13	02:25	05:34	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M2166-DFTPP
Lab File ID: 2M50786.D
Instrument ID: GCMS2M
Injection Date: 03/19/13
Injection Time: 15:44

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	32501	42.4		Pass
68	Less than 2.0% of mass 69	658	0.86	(1.85) [a]	Pass
69	Mass 69 relative abundance	35506	46.4		Pass
70	Less than 2.0% of mass 69	143	0.19	(0.40) [a]	Pass
127	40.0 - 60.0% of mass 198	44186	57.7		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	76578	100.0		Pass
199	5.0 - 9.0% of mass 198	5188	6.77		Pass
275	10.0 - 30.0% of mass 198	19560	25.5		Pass
365	1.0 - 100.0% of mass 198	2278	2.97		Pass
441	Present, but less than mass 443	8224	10.7	(79.9) [b]	Pass
442	40.0 - 100.0% of mass 198	54324	70.9		Pass
443	17.0 - 23.0% of mass 442	10298	13.4	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M2166-CC2147	2M50787.D	03/19/13	15:56	00:12	Continuing cal 25
E2M2166-CC2148	2M50788.D	03/19/13	16:25	00:41	Continuing cal 25
OP64440-BS1	2M50790.D	03/19/13	17:11	01:27	Blank Spike
OP64433-MB1	2M50791.D	03/19/13	17:34	01:50	Method Blank
OP64433-BS1	2M50792.D	03/19/13	17:57	02:13	Blank Spike
OP64437-MB1	2M50793.D	03/19/13	18:20	02:36	Method Blank
OP64437-BS1	2M50794.D	03/19/13	18:43	02:59	Blank Spike
ZZZZZZ	2M50795.D	03/19/13	19:06	03:22	(unrelated sample)
ZZZZZZ	2M50796.D	03/19/13	19:29	03:45	(unrelated sample)
ZZZZZZ	2M50797.D	03/19/13	19:52	04:08	(unrelated sample)
JB30423-1	2M50798.D	03/19/13	20:15	04:31	(used for QC only; not part of job JB30425)
ZZZZZZ	2M50799.D	03/19/13	20:39	04:55	(unrelated sample)
ZZZZZZ	2M50800.D	03/19/13	21:02	05:18	(unrelated sample)
ZZZZZZ	2M50803.D	03/19/13	22:11	06:27	(unrelated sample)
ZZZZZZ	2M50804.D	03/19/13	22:34	06:50	(unrelated sample)
ZZZZZZ	2M50805.D	03/19/13	22:56	07:12	(unrelated sample)
ZZZZZZ	2M50806.D	03/19/13	23:19	07:35	(unrelated sample)
ZZZZZZ	2M50807.D	03/19/13	23:43	07:59	(unrelated sample)
ZZZZZZ	2M50808.D	03/20/13	00:06	08:22	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M2166-DFTPP
Lab File ID: 2M50786.D
Instrument ID: GCMS2M
Injection Date: 03/19/13
Injection Time: 15:44

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	2M50809.D	03/20/13	00:28	08:44	(unrelated sample)
JB31283-1	2M50810.D	03/20/13	00:51	09:07	(used for QC only; not part of job JB30425)
OP64437-MS	2M50811.D	03/20/13	01:15	09:31	Matrix Spike
OP64437-MSD	2M50812.D	03/20/13	01:38	09:54	Matrix Spike Duplicate
ZZZZZZ	2M50813.D	03/20/13	02:00	10:16	(unrelated sample)
ZZZZZZ	2M50814.D	03/20/13	02:23	10:39	(unrelated sample)
ZZZZZZ	2M50815.D	03/20/13	02:47	11:03	(unrelated sample)
OP64433-MS	2M50816.D	03/20/13	04:19	12:35	Matrix Spike
OP64433-MSD	2M50817.D	03/20/13	04:42	12:58	Matrix Spike Duplicate
JB31066-2	2M50818.D	03/20/13	05:05	13:21	(used for QC only; not part of job JB30425)
ZZZZZZ	2M50819.D	03/20/13	05:28	13:44	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2P889-DFTPP
Lab File ID: 2P20060.D
Instrument ID: GCMS2P
Injection Date: 02/14/13
Injection Time: 16:49

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	247028	35.5		Pass
68	Less than 2.0% of mass 69	4681	0.67	(1.56) [a]	Pass
69	Mass 69 relative abundance	299285	43.1		Pass
70	Less than 2.0% of mass 69	1593	0.23	(0.53) [a]	Pass
127	40.0 - 60.0% of mass 198	384853	55.4		Pass
197	Less than 1.0% of mass 198	4870	0.70		Pass
198	Base peak, 100% relative abundance	694891	100.0		Pass
199	5.0 - 9.0% of mass 198	46558	6.70		Pass
275	10.0 - 30.0% of mass 198	167576	24.1		Pass
365	1.0 - 100.0% of mass 198	20924	3.01		Pass
441	Present, but less than mass 443	91109	13.1	(78.9) [b]	Pass
442	40.0 - 100.0% of mass 198	615680	88.6		Pass
443	17.0 - 23.0% of mass 442	115464	16.6	(18.8) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2P889-IC889	2P20061.D	02/14/13	16:58	00:09	Initial cal 100
E2P889-IC889	2P20062.D	02/14/13	17:21	00:32	Initial cal 80
E2P889-ICC889	2P20063.D	02/14/13	17:44	00:55	Initial cal 50
E2P889-IC889	2P20064.D	02/14/13	18:07	01:18	Initial cal 25
E2P889-IC889	2P20065.D	02/14/13	18:29	01:40	Initial cal 10
E2P889-IC889	2P20066.D	02/14/13	18:52	02:03	Initial cal 5
E2P889-IC889	2P20067.D	02/14/13	19:15	02:26	Initial cal 2
E2P889-IC889	2P20068.D	02/14/13	19:37	02:48	Initial cal 1
E2P889-ICV889	2P20069A.D	02/14/13	20:00	03:11	Initial cal verification 50
E2P889-ICV888	2P20069.D	02/14/13	20:00	03:11	Initial cal verification 50
E2P889-ICV889	2P20070A.D	02/14/13	20:23	03:34	Initial cal verification 50
E2P889-ICV888	2P20070.D	02/14/13	20:23	03:34	Initial cal verification 50
E2P889-ICV888	2P20071.D	02/14/13	20:45	03:56	Initial cal verification 50
E2P889-ICV888	2P20072.D	02/14/13	21:08	04:19	Initial cal verification 50
E2P889-ICV889	2P20073A.D	02/14/13	21:31	04:42	Initial cal verification 50
E2P889-ICV888	2P20073.D	02/14/13	21:31	04:42	Initial cal verification 50
E2P889-ICV888	2P20074.D	02/14/13	21:53	05:04	Initial cal verification 50
E2P889-ICV889	2P20075A.D	02/14/13	22:16	05:27	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2P896-DFTPP
Lab File ID: 2P20223.D
Instrument ID: GCMS2P
Injection Date: 02/20/13
Injection Time: 09:14

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	412889	34.8		Pass
68	Less than 2.0% of mass 69	7218	0.61	(1.49) [a]	Pass
69	Mass 69 relative abundance	483367	40.8		Pass
70	Less than 2.0% of mass 69	1932	0.16	(0.40) [a]	Pass
127	40.0 - 60.0% of mass 198	617112	52.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	1186113	100.0		Pass
199	5.0 - 9.0% of mass 198	79203	6.68		Pass
275	10.0 - 30.0% of mass 198	257408	21.7		Pass
365	1.0 - 100.0% of mass 198	31587	2.66		Pass
441	Present, but less than mass 443	128379	10.8	(77.1) [b]	Pass
442	40.0 - 100.0% of mass 198	868651	73.2		Pass
443	17.0 - 23.0% of mass 442	166589	14.0	(19.2) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2P896-IC896	2P20224.D	02/20/13	09:22	00:08	Initial cal 100
E2P896-IC896	2P20225.D	02/20/13	09:45	00:31	Initial cal 1
E2P896-IC896	2P20226.D	02/20/13	10:08	00:54	Initial cal 80
E2P896-IC896	2P20227.D	02/20/13	10:30	01:16	Initial cal 2
E2P896-ICC896	2P20228.D	02/20/13	10:54	01:40	Initial cal 50
E2P896-IC896	2P20229.D	02/20/13	11:17	02:03	Initial cal 5
E2P896-IC896	2P20230.D	02/20/13	11:39	02:25	Initial cal 25
E2P896-IC896	2P20231.D	02/20/13	12:02	02:48	Initial cal 10
E2P896-ICV896	2P20232.D	02/20/13	12:26	03:12	Initial cal verification 50
E2P896-ICV896	2P20233.D	02/20/13	12:49	03:35	Initial cal verification 50
E2P896-ICV896	2P20234.D	02/20/13	13:12	03:58	Initial cal verification 50
E2P896-ICV896	2P20235.D	02/20/13	13:35	04:21	Initial cal verification 50
E2P896-ICV896	2P20237.D	02/20/13	14:21	05:07	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2P936-DFTPP
Lab File ID: 2P21226.D
Instrument ID: GCMS2P
Injection Date: 03/19/13
Injection Time: 14:55

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	749137	44.8		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	834816	49.9		Pass
70	Less than 2.0% of mass 69	3103	0.19	(0.37) [a]	Pass
127	40.0 - 60.0% of mass 198	846644	50.6		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	1673600	100.0		Pass
199	5.0 - 9.0% of mass 198	112640	6.73		Pass
275	10.0 - 30.0% of mass 198	384532	23.0		Pass
365	1.0 - 100.0% of mass 198	38659	2.31		Pass
441	Present, but less than mass 443	177413	10.6	(87.9) [b]	Pass
442	40.0 - 100.0% of mass 198	1040981	62.2		Pass
443	17.0 - 23.0% of mass 442	201947	12.1	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2P936-CC896	2P21227.D	03/19/13	15:04	00:09	Continuing cal 25
E2P936-CC889	2P21228.D	03/19/13	15:26	00:31	Continuing cal 50
OP64440-MB1	2P21229.D	03/19/13	15:48	00:53	Method Blank
ZZZZZZ	2P21230.D	03/19/13	16:11	01:16	(unrelated sample)
ZZZZZZ	2P21231.D	03/19/13	16:34	01:39	(unrelated sample)
ZZZZZZ	2P21232.D	03/19/13	16:56	02:01	(unrelated sample)
JB30425-4	2P21233.D	03/19/13	17:19	02:24	AOI4_S-366_0-1_30513
JB30425-5	2P21234.D	03/19/13	17:42	02:47	AOI4_S-366_4.5-5.5_30513
JB30425-6	2P21235.D	03/19/13	18:04	03:09	AOI4_S-368_0-1_30513
JB30425-15	2P21237.D	03/19/13	18:50	03:55	AOI5_BH-13-37_1.5-2_030513
JB30425-1	2P21238.D	03/19/13	19:12	04:17	S-367_0-2'
JB30425-3	2P21239.D	03/19/13	19:35	04:40	AOI5_BH-13-37-2.5-3_030513
JB30425-11	2P21240.D	03/19/13	19:58	05:03	AOI5_BH-13-38_3.5-4_030513
JB30425-12	2P21241.D	03/19/13	20:20	05:25	AOI5_BH-13-39_1.5-2_030513
JB30425-8	2P21242.D	03/19/13	20:43	05:48	BH-13-43-1.5-2_030513
JB30425-10	2P21243.D	03/19/13	21:06	06:11	AOI5_BH-13-38_1.5-2_030513
JB30425-13	2P21244.D	03/19/13	21:29	06:34	AOI5_BH-13-39_2-2.5_030513
JB30425-14	2P21245.D	03/19/13	21:51	06:56	AOI5_BH-13-39_2.5-3_030513
JB30425-9	2P21246.D	03/19/13	22:14	07:19	BH-13-43-2-2.5_030513

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2P936-DFTPP
Lab File ID: 2P21226.D
Instrument ID: GCMS2P
Injection Date: 03/19/13
Injection Time: 14:55

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	2P21248.D	03/19/13	22:59	08:04	(unrelated sample)
ZZZZZZ	2P21249.D	03/19/13	23:21	08:26	(unrelated sample)
ZZZZZZ	2P21250.D	03/19/13	23:44	08:49	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2P940-DFTPP
Lab File ID: 2P21340.D
Instrument ID: GCMS2P
Injection Date: 03/21/13
Injection Time: 19:38

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	692186	38.7		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	825320	46.2		Pass
70	Less than 2.0% of mass 69	4748	0.27	(0.58) [a]	Pass
127	40.0 - 60.0% of mass 198	850187	47.5		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	1788194	100.0		Pass
199	5.0 - 9.0% of mass 198	117131	6.55		Pass
275	10.0 - 30.0% of mass 198	418523	23.4		Pass
365	1.0 - 100.0% of mass 198	40000	2.24		Pass
441	Present, but less than mass 443	212928	11.9	(88.5) [b]	Pass
442	40.0 - 100.0% of mass 198	1258219	70.4		Pass
443	17.0 - 23.0% of mass 442	240619	13.5	(19.1) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2P940-CC896	2P21341.D	03/21/13	19:46	00:08	Continuing cal 25
E2P940-CC889	2P21342.D	03/21/13	20:11	00:33	Continuing cal 50
OP63768A-MB1	2P21343.D	03/21/13	20:34	00:56	Method Blank
OP63768A-BS1	2P21344.D	03/21/13	20:56	01:18	Blank Spike
OP63953A-MB1	2P21345.D	03/21/13	21:19	01:41	Method Blank
OP63953A-BS1	2P21346.D	03/21/13	21:42	02:04	Blank Spike
OP64332A-MB1	2P21347.D	03/21/13	22:04	02:26	Method Blank
OP64332A-BS1	2P21348.D	03/21/13	22:27	02:49	Blank Spike
OP64392A-MB1	2P21349.D	03/21/13	22:50	03:12	Method Blank
OP64392A-BS1	2P21350.D	03/21/13	23:12	03:34	Blank Spike
ZZZZZZ	2P21368.D	03/21/13	23:35	03:57	(unrelated sample)
ZZZZZZ	2P21369.D	03/21/13	23:57	04:19	(unrelated sample)
JB30425-7	2P21371.D	03/22/13	00:43	05:05	AOI4_S-368_6-7_30513
ZZZZZZ	2P21351.D	03/22/13	01:05	05:27	(unrelated sample)
FA2467-15Q	2P21352.D	03/22/13	01:28	05:50	(used for QC only; not part of job JB30425)
ZZZZZZ	2P21353.D	03/22/13	01:51	06:13	(unrelated sample)
OP64392A-MS	2P21354.D	03/22/13	02:14	06:36	Matrix Spike
OP64392A-MSD	2P21355.D	03/22/13	02:36	06:58	Matrix Spike Duplicate
ZZZZZZ	2P21356.D	03/22/13	02:59	07:21	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2P940-DFTPP
Lab File ID: 2P21340.D
Instrument ID: GCMS2P
Injection Date: 03/21/13
Injection Time: 19:38

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP64332A-MS	2P21358.D	03/22/13	03:44	08:06	Matrix Spike
OP64332A-MSD	2P21359.D	03/22/13	04:07	08:29	Matrix Spike Duplicate
JB28831-1Q	2P21360.D	03/22/13	04:29	08:51	(used for QC only; not part of job JB30425)
ZZZZZZ	2P21361.D	03/22/13	04:52	09:14	(unrelated sample)
OP63768A-MS	2P21362.D	03/22/13	05:15	09:37	Matrix Spike
OP63768A-MSD	2P21363.D	03/22/13	05:37	09:59	Matrix Spike Duplicate
ZZZZZZ	2P21364.D	03/22/13	06:00	10:22	(unrelated sample)
JB29788-7Q	2P21365.D	03/22/13	06:23	10:45	(used for QC only; not part of job JB30425)
OP63953A-MS	2P21366.D	03/22/13	06:45	11:07	Matrix Spike
OP63953A-MSD	2P21367.D	03/22/13	07:08	11:30	Matrix Spike Duplicate

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2P941-DFTPP
Lab File ID: 2P21372.D
Instrument ID: GCMS2P
Injection Date: 03/22/13
Injection Time: 08:37

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	701592	35.3		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	853019	42.9		Pass
70	Less than 2.0% of mass 69	4029	0.20	(0.47) [a]	Pass
127	40.0 - 60.0% of mass 198	918707	46.2		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	1990297	100.0		Pass
199	5.0 - 9.0% of mass 198	126468	6.35		Pass
275	10.0 - 30.0% of mass 198	485348	24.4		Pass
365	1.0 - 100.0% of mass 198	50093	2.52		Pass
441	Present, but less than mass 443	264597	13.3	(90.6) [b]	Pass
442	40.0 - 100.0% of mass 198	1545621	77.7		Pass
443	17.0 - 23.0% of mass 442	292181	14.7	(18.9) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2P941-CC896	2P21373.D	03/22/13	08:46	00:09	Continuing cal 50
E2P941-CC889	2P21374.D	03/22/13	09:09	00:32	Continuing cal 50
OP64440-MB2	2P21375.D	03/22/13	09:32	00:55	Method Blank
JB30425-4	2P21376.D	03/22/13	09:54	01:17	AOI4_S-366_0-1_30513
JB30425-5	2P21377.D	03/22/13	10:17	01:40	AOI4_S-366_4.5-5.5_30513
JB30425-6	2P21378.D	03/22/13	10:39	02:02	AOI4_S-368_0-1_30513
JB30425-7	2P21379.D	03/22/13	11:02	02:25	AOI4_S-368_6-7_30513
JB30425-14	2P21380.D	03/22/13	11:24	02:47	AOI5_BH-13-39_2.5-3_030513
JB30425-15	2P21381.D	03/22/13	11:47	03:10	AOI5_BH-13-37_1.5-2_030513
JB30425-1	2P21382.D	03/22/13	12:10	03:33	S-367_0-2'
JB30425-3	2P21383.D	03/22/13	12:32	03:55	AOI5_BH-13-37-2.5-3_030513
JB30425-8	2P21384.D	03/22/13	12:55	04:18	BH-13-43-1.5-2_030513
JB30425-9	2P21385.D	03/22/13	13:17	04:40	BH-13-43-2-2.5_030513
JB30425-10	2P21386.D	03/22/13	13:40	05:03	AOI5_BH-13-38_1.5-2_030513
JB30425-11	2P21387.D	03/22/13	14:02	05:25	AOI5_BH-13-38_3.5-4_030513
JB30425-12	2P21388.D	03/22/13	14:25	05:48	AOI5_BH-13-39_1.5-2_030513
JB30425-13	2P21389.D	03/22/13	14:48	06:11	AOI5_BH-13-39_2-2.5_030513
ZZZZZZ	2P21390.D	03/22/13	15:10	06:33	(unrelated sample)
ZZZZZZ	2P21392.D	03/22/13	15:55	07:18	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2P941-DFTPP
Lab File ID: 2P21372.D
Instrument ID: GCMS2P
Injection Date: 03/22/13
Injection Time: 08:37

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	2P21394.D	03/22/13	16:41	08:04	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E3P782-DFTPP
Lab File ID: 3P17131.D
Instrument ID: GCMS3P
Injection Date: 02/26/13
Injection Time: 09:17

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	44244	45.7		Pass
68	Less than 2.0% of mass 69	547	0.57	(1.07) [a]	Pass
69	Mass 69 relative abundance	51091	52.8		Pass
70	Less than 2.0% of mass 69	226	0.23	(0.44) [a]	Pass
127	40.0 - 60.0% of mass 198	53456	55.3		Pass
197	Less than 1.04% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	96747	100.0		Pass
199	5.0 - 9.0% of mass 198	6418	6.63		Pass
275	10.0 - 30.0% of mass 198	23148	23.9		Pass
365	1.0 - 100.0% of mass 198	3410	3.52		Pass
441	Present, but less than mass 443	14935	15.4	(96.1) [b]	Pass
442	40.0 - 100.0% of mass 198	80411	83.1		Pass
443	17.0 - 23.0% of mass 442	15545	16.1	(19.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P782-IC782	3P17132.D	02/26/13	09:26	00:09	Initial cal 100
E3P782-IC782	3P17133.D	02/26/13	09:50	00:33	Initial cal 1
E3P782-IC782	3P17134.D	02/26/13	10:14	00:57	Initial cal 80
E3P782-IC782	3P17135.D	02/26/13	10:38	01:21	Initial cal 2
E3P782-ICC782	3P17136.D	02/26/13	11:01	01:44	Initial cal 50
E3P782-IC782	3P17137.D	02/26/13	11:25	02:08	Initial cal 5
E3P782-IC782	3P17138.D	02/26/13	11:49	02:32	Initial cal 25
E3P782-IC782	3P17139.D	02/26/13	12:13	02:56	Initial cal 10

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E3P783-DFTPP
Lab File ID: 3P17140.D
Instrument ID: GCMS3P
Injection Date: 02/26/13
Injection Time: 12:38

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	38368	42.0		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	44592	48.8		Pass
70	Less than 2.0% of mass 69	233	0.26	(0.52) [a]	Pass
127	40.0 - 60.0% of mass 198	48656	53.3		Pass
197	Less than 1.04% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	91291	100.0		Pass
199	5.0 - 9.0% of mass 198	6418	7.03		Pass
275	10.0 - 30.0% of mass 198	22715	24.9		Pass
365	1.0 - 100.0% of mass 198	3379	3.70		Pass
441	Present, but less than mass 443	15903	17.4	(94.6) [b]	Pass
442	40.0 - 100.0% of mass 198	86712	95.0		Pass
443	17.0 - 23.0% of mass 442	16807	18.4	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P783-IC783	3P17141.D	02/26/13	12:47	00:09	Initial cal 100
E3P783-IC783	3P17142.D	02/26/13	13:11	00:33	Initial cal 80
E3P783-ICC783	3P17143.D	02/26/13	13:34	00:56	Initial cal 50
E3P783-IC783	3P17144.D	02/26/13	13:58	01:20	Initial cal 25
E3P783-IC783	3P17145.D	02/26/13	14:22	01:44	Initial cal 10
E3P783-IC783	3P17146.D	02/26/13	14:46	02:08	Initial cal 5
E3P783-IC783	3P17147.D	02/26/13	15:10	02:32	Initial cal 2
E3P783-IC783	3P17148.D	02/26/13	15:33	02:55	Initial cal 1
E3P783-ICV782	3P17149.D	02/26/13	15:57	03:19	Initial cal verification 50
E3P783-ICV783	3P17150A.D	02/26/13	16:21	03:43	Initial cal verification 50
E3P783-ICV782	3P17150.D	02/26/13	16:21	03:43	Initial cal verification 50
E3P783-ICV783	3P17151A.D	02/26/13	16:44	04:06	Initial cal verification 50
E3P783-ICV782	3P17151.D	02/26/13	16:44	04:06	Initial cal verification 50
E3P783-ICV782	3P17152.D	02/26/13	17:08	04:30	Initial cal verification 50
E3P783-ICV783	3P17153.D	02/26/13	17:32	04:54	Initial cal verification 50
E3P783-ICV782	3P17154.D	02/26/13	17:56	05:18	Initial cal verification 50
E3P783-ICV783	3P17155.D	02/26/13	18:20	05:42	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E3P816-DFTPP
Lab File ID: 3P17973.D
Instrument ID: GCMS3P
Injection Date: 03/22/13
Injection Time: 09:40

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	675522	57.3		Pass
68	Less than 2.0% of mass 69	2017	0.17	(0.28) [a]	Pass
69	Mass 69 relative abundance	727862	61.8		Pass
70	Less than 2.0% of mass 69	1651	0.14	(0.23) [a]	Pass
127	40.0 - 60.0% of mass 198	680811	57.8		Pass
197	Less than 1.04% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	1178261	100.0		Pass
199	5.0 - 9.0% of mass 198	76320	6.48		Pass
275	10.0 - 30.0% of mass 198	301227	25.6		Pass
365	1.0 - 100.0% of mass 198	49613	4.21		Pass
441	Present, but less than mass 443	180373	15.3	(93.5) [b]	Pass
442	40.0 - 100.0% of mass 198	1007296	85.5		Pass
443	17.0 - 23.0% of mass 442	192939	16.4	(19.2) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P816-CC782	3P17974.D	03/22/13	09:49	00:09	Continuing cal 50
E3P816-CC783	3P17975.D	03/22/13	10:12	00:32	Continuing cal 50
OP64440-MB2	3P17976.D	03/22/13	10:36	00:56	Method Blank
OP64440-BS2	3P17977.D	03/22/13	10:59	01:19	Blank Spike
OP64602-MB1	3P17978.D	03/22/13	11:23	01:43	Method Blank
OP64602-BS1	3P17979.D	03/22/13	11:46	02:06	Blank Spike
OP64617-MB1	3P17980.D	03/22/13	12:10	02:30	Method Blank
OP64617-BS1	3P17981.D	03/22/13	12:33	02:53	Blank Spike
ZZZZZZ	3P17982.D	03/22/13	12:56	03:16	(unrelated sample)
ZZZZZZ	3P17983.D	03/22/13	13:20	03:40	(unrelated sample)
ZZZZZZ	3P17984.D	03/22/13	13:43	04:03	(unrelated sample)
ZZZZZZ	3P17985.D	03/22/13	14:06	04:26	(unrelated sample)
ZZZZZZ	3P17986.D	03/22/13	14:30	04:50	(unrelated sample)
ZZZZZZ	3P17987.D	03/22/13	14:53	05:13	(unrelated sample)
JB31494-2	3P17988.D	03/22/13	15:17	05:37	(used for QC only; not part of job JB30425)
OP64602-MS	3P17989.D	03/22/13	15:40	06:00	Matrix Spike
OP64602-MSD	3P17990.D	03/22/13	16:03	06:23	Matrix Spike Duplicate
ZZZZZZ	3P18001.D	03/22/13	16:27	06:47	(unrelated sample)
ZZZZZZ	3P17991.D	03/22/13	16:50	07:10	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E3P816-DFTPP
Lab File ID: 3P17973.D
Instrument ID: GCMS3P
Injection Date: 03/22/13
Injection Time: 09:40

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	3P17992.D	03/22/13	17:13	07:33	(unrelated sample)
ZZZZZZ	3P17993.D	03/22/13	17:37	07:57	(unrelated sample)
ZZZZZZ	3P17994.D	03/22/13	18:00	08:20	(unrelated sample)
JB29946-29	3P17995.D	03/22/13	18:24	08:44	(used for QC only; not part of job JB30425)
ZZZZZZ	3P17996.D	03/22/13	18:47	09:07	(unrelated sample)
OP64617-MS	3P17997.D	03/22/13	19:10	09:30	Matrix Spike
OP64617-MSD	3P17998.D	03/22/13	19:34	09:54	Matrix Spike Duplicate
JB30423-1	3P17999.D	03/22/13	19:57	10:17	(used for QC only; not part of job JB30425)
ZZZZZZ	3P18000.D	03/22/13	20:21	10:41	(unrelated sample)
OP64440-MS	3P18002.D	03/22/13	20:44	11:04	Matrix Spike
OP64440-MSD	3P18003.D	03/22/13	21:07	11:27	Matrix Spike Duplicate

Semivolatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E2M2166-CC2147	**Injection Date:**	03/19/13
Lab File ID:	2M50787.D	**Injection Time:**	15:56
Instrument ID:	GCMS2M	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	254115	2.92	1085933	4.53	625847	7.15	1072429	9.39	1047319	13.06	858929	14.43
Upper Limit [a]	508230	3.42	2171866	5.03	1251694	7.65	2144858	9.89	2094638	13.56	1717858	14.93
Lower Limit [b]	127058	2.42	542967	4.03	312924	6.65	536215	8.89	523660	12.56	429465	13.93

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP64440-BS1	230321	2.91	1178054	4.53	737835	7.15	1283217	9.39	1198078	13.06	993994	14.43
OP64433-MB1	274266	2.92	1197505	4.52	693266	7.14	1171155	9.39	1096377	13.05	929619	14.43
OP64433-BS1	312841	2.92	1331007	4.53	762082	7.14	1280275	9.39	1220456	13.06	1045520	14.43
OP64437-MB1	285968	2.91	1196231	4.52	664088	7.14	1073814	9.39	1000577	13.05	873208	14.43
OP64437-BS1	285402	2.92	1206769	4.53	672874	7.14	1101537	9.39	1026902	13.06	879153	14.43
ZZZZZZ	304489	2.92	1301550	4.52	743612	7.14	1237145	9.39	1161614	13.05	996235	14.43
ZZZZZZ	244048	2.92	1044294	4.52	591032	7.14	989553	9.39	982492	13.05	852218	14.43
ZZZZZZ	292412	2.92	1288584	4.53	696519	7.14	1163983	9.39	1059981	13.05	838207	14.43
JB30423-1	269125	2.92	1138610	4.52	637492	7.14	1021183	9.39	885163	13.05	765260	14.43
ZZZZZZ	267350	2.92	1166693	4.52	642546	7.14	1038513	9.39	881926	13.05	771935	14.43
ZZZZZZ	268544	2.92	1147883	4.52	620372	7.14	976220	9.39	838180	13.05	754508	14.43
ZZZZZZ	282573	2.92	1168458	4.53	649243	7.14	1030119	9.39	878869	13.05	763613	14.43
ZZZZZZ	285073	2.92	1220088	4.52	664325	7.14	1093897	9.39	953719	13.06	833562	14.43
ZZZZZZ	277668	2.92	1168287	4.52	639441	7.14	1038047	9.39	912068	13.06	756294	14.43
ZZZZZZ	282436	2.92	1214661	4.53	678581	7.14	1081293	9.39	978776	13.06	820917	14.43
ZZZZZZ	282571	2.92	1200033	4.53	679252	7.14	1065271	9.39	971725	13.06	807704	14.43
ZZZZZZ	300368	2.92	1258144	4.53	696388	7.14	1100279	9.39	983180	13.06	852815	14.43
ZZZZZZ	309064	2.92	1297334	4.53	722113	7.15	1125420	9.39	968400	13.06	870775	14.44
JB31283-1	285328	2.92	1214991	4.53	664840	7.15	1070697	9.40	1035555	13.07	889482	14.44
OP64437-MS	333065	2.92	1402413	4.53	799334	7.15	1283481	9.40	1201940	13.08	1042369	14.45
OP64437-MSD	282393	2.92	1206326	4.53	678110	7.15	1095949	9.40	1009236	13.07	861135	14.44
ZZZZZZ	293449	2.92	1253242	4.53	661379	7.15	1155122	9.45	992274	13.06	876789	14.44
ZZZZZZ	283337	2.92	1189371	4.53	644369	7.15	1050615	9.40	895180	13.06	812383	14.44
ZZZZZZ	283944	2.92	1208392	4.53	669662	7.15	1069234	9.40	898480	13.06	847949	14.44
OP64433-MS	299304	2.92	1279975	4.53	708272	7.15	1147933	9.40	1063118	13.07	865419	14.44
OP64433-MSD	298883	2.92	1259492	4.53	714043	7.15	1148109	9.40	1079036	13.07	890939	14.44
JB31066-2	317561	2.92	1314140	4.53	730381	7.15	1175688	9.40	1081724	13.06	888797	14.44
ZZZZZZ	314941	2.92	1355171	4.53	757630	7.15	1230133	9.40	1162252	13.06	969933	14.44

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

Semivolatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E2M2166-CC2147	**Injection Date:**	03/19/13
Lab File ID:	2M50787.D	**Injection Time:**	15:56
Instrument ID:	GCMS2M	**Method:**	SW846 8270D

Lab	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
Sample ID	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E2P936-CC896	**Injection Date:**	03/19/13
Lab File ID:	2P21227.D	**Injection Time:**	15:04
Instrument ID:	GCMS2P	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	78645	2.94	306167	4.56	171585	7.19	279223	9.46	291926	13.34	257648	15.00
Upper Limit [a]	157290	3.44	612334	5.06	343170	7.69	558446	9.96	583852	13.84	515296	15.50
Lower Limit [b]	39323	2.44	153084	4.06	85793	6.69	139612	8.96	145963	12.84	128824	14.50

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP64440-MB1	62904	2.94	244974	4.55	137397	7.18	220771	9.45	227909	13.33	204820	14.99
ZZZZZZ	88511	2.97	352050	4.57	184058	7.19	317836	9.46	376954	13.37	335112	15.04
ZZZZZZ	66053	2.94	259697	4.56	140868	7.19	234019	9.46	278354	13.36	270627	15.04
ZZZZZZ	71241	2.95	275493	4.56	148680	7.18	241858	9.45	237495	13.33	220697	15.00
JB30425-4	69721	2.94	270748	4.55	149605	7.18	243220	9.45	240027	13.33	204694	15.00
JB30425-5	60488	2.94	232525	4.55	130530	7.18	214235	9.45	221613	13.33	195511	14.99
JB30425-6	59205	2.94	236272	4.55	133025	7.18	220222	9.45	221233	13.33	188361	14.99
JB30425-15	69806	2.94	265413	4.55	149006	7.18	242586	9.44	245110	13.33	217030	14.99
JB30425-1	68826	2.94	263800	4.56	152299	7.20	258443	9.49	288699	13.39	279325	15.07
JB30425-3	75262	2.94	297312	4.56	163983	7.20	268341	9.47	273826	13.35	260596	15.02
JB30425-11	55054	2.94	257473	4.56	160773	7.19	256926	9.47	238695	13.35	197885	15.02
JB30425-12	65904	2.94	253415	4.56	139463	7.19	229106	9.47	248195	13.36	235218	15.03
JB30425-8	75883	2.95	293531	4.56	164051	7.20	273874	9.47	294896	13.37	287358	15.04
JB30425-10	147707	2.95	572605	4.57	322761	7.20	533396	9.48	528574	13.37	498220	15.03
JB30425-13	71237	2.95	276620	4.57	157116	7.21	258806	9.49	274975	13.38	267633	15.06
JB30425-14	70555	2.95	271850	4.57	154169	7.21	259258	9.49	266386	13.37	250585	15.04
JB30425-9	74256	2.95	286411	4.57	159547	7.21	272704	9.49	281587	13.37	272007	15.05
ZZZZZZ	97065	2.96	378023	4.57	209793	7.21	340437	9.49	345535	13.37	323172	15.04
ZZZZZZ	72772	2.95	280951	4.57	157192	7.21	255886	9.48	259461	13.37	236682	15.03
ZZZZZZ	66145	2.95	262093	4.57	146210	7.20	238210	9.48	249159	13.37	230422	15.03

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E2P940-CC896	**Injection Date:**	03/21/13
Lab File ID:	2P21341.D	**Injection Time:**	19:46
Instrument ID:	GCMS2P	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	69400	2.91	266048	4.52	146165	7.14	240613	9.41	248769	13.30	219672	14.96
Upper Limit [a]	138800	3.41	532096	5.02	292330	7.64	481226	9.91	497538	13.80	439344	15.46
Lower Limit [b]	34700	2.41	133024	4.02	73083	6.64	120307	8.91	124385	12.80	109836	14.46

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP63768A-MB1	57326	2.91	234010	4.52	132430	7.14	214620	9.41	227953	13.30	207400	14.96
OP63768A-BS1	57379	2.91	232425	4.51	130488	7.14	213056	9.41	220682	13.30	200578	14.96
OP63953A-MB1	80358	2.91	322402	4.52	184228	7.14	298721	9.41	305317	13.30	267016	14.96
OP63953A-BS1	56970	2.91	233524	4.52	131496	7.14	218176	9.41	224672	13.30	202404	14.96
OP64332A-MB1	73008	2.91	296018	4.52	171455	7.14	278528	9.41	288940	13.30	267884	14.96
OP64332A-BS1	50479	2.91	201805	4.51	114237	7.14	189807	9.40	195691	13.29	174124	14.96
OP64392A-MB1	56239	2.91	230528	4.51	134093	7.14	218897	9.40	233650	13.29	204279	14.95
OP64392A-BS1	57728	2.91	233816	4.51	132791	7.14	222559	9.40	228746	13.29	200106	14.96
ZZZZZZ	60723	2.91	243833	4.51	139317	7.14	230025	9.40	233844	13.29	204890	14.95
ZZZZZZ	50443	2.91	207522	4.51	117027	7.14	192306	9.41	197751	13.29	170574	14.96
JB30425-7 [c]	61993	2.91	246304	4.52	134937	7.14	220135	9.41	217409	13.30	190184	14.96
ZZZZZZ	51201	2.91	203781	4.52	116052	7.14	190225	9.41	199290	13.30	175048	14.96
FA2467-15Q	57567	2.91	229444	4.51	130874	7.14	215499	9.40	221187	13.29	194277	14.95
ZZZZZZ	72349	2.91	295637	4.52	168813	7.14	276611	9.40	278305	13.29	246659	14.95
OP64392A-MS	52463	2.91	212062	4.51	121925	7.14	200958	9.40	205510	13.29	179200	14.95
OP64392A-MSD	53958	2.91	223316	4.51	126938	7.14	206815	9.40	213306	13.29	188090	14.95
ZZZZZZ	60080	2.91	250697	4.52	147570	7.16	258340	9.44	251262	13.30	207986	14.95
OP64332A-MS	52337	2.91	215345	4.51	123421	7.14	204317	9.41	213868	13.30	185826	14.95
OP64332A-MSD	52399	2.91	217131	4.51	125473	7.14	207798	9.40	210993	13.29	186297	14.95
JB28831-1Q	57790	2.91	234238	4.51	130642	7.14	216552	9.40	223168	13.29	200682	14.95
ZZZZZZ	62289	2.91	252256	4.51	146207	7.14	245604	9.41	252640	13.29	224227	14.95
OP63768A-MS	65298	2.91	263483	4.51	149221	7.14	253563	9.41	265779	13.29	231943	14.95
OP63768A-MSD	68918	2.91	271723	4.51	156102	7.14	262438	9.41	275104	13.29	243462	14.95
ZZZZZZ	78673	2.91	314837	4.51	197390	7.16	328532	9.44	341937	13.32	293903	14.98
JB29788-7Q	71555	2.91	283427	4.51	159469	7.14	265041	9.41	260115	13.30	233440	14.96
OP63953A-MS	67709	2.91	265506	4.51	149780	7.14	248917	9.41	246109	13.30	222891	14.96
OP63953A-MSD	78822	2.91	313342	4.51	177334	7.14	292316	9.41	300416	13.30	270556	14.96

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

Semivolatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E2P940-CC896	**Injection Date:**	03/21/13
Lab File ID:	2P21341.D	**Injection Time:**	19:46
Instrument ID:	GCMS2P	**Method:**	SW846 8270D

Lab	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
Sample ID	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Diluted due to matrix.

Semivolatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E2P941-CC896	**Injection Date:**	03/22/13
Lab File ID:	2P21373.D	**Injection Time:**	08:46
Instrument ID:	GCMS2P	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	74305	2.90	292477	4.51	165926	7.13	277378	9.40	286060	13.29	239320	14.95
Upper Limit [a]	148610	3.40	584954	5.01	331852	7.63	554756	9.90	572120	13.79	478640	15.45
Lower Limit [b]	37153	2.40	146239	4.01	82963	6.63	138689	8.90	143030	12.79	119660	14.45

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP64440-MB2	59995	2.90	237427	4.51	134305	7.13	220853	9.40	230325	13.28	203839	14.95
JB30425-4 [c]	64524	2.90	251494	4.51	143365	7.13	232719	9.40	224903	13.28	175358	14.95
JB30425-5 [c]	69088	2.90	271318	4.51	155609	7.13	258456	9.40	265486	13.29	231227	14.95
JB30425-6 [c]	68602	2.90	267593	4.51	150921	7.13	246138	9.40	238936	13.28	208429	14.95
JB30425-7 [c]	67626	2.90	263288	4.51	148332	7.13	241826	9.40	240871	13.28	203122	14.95
JB30425-14 [c]	68160	2.90	268054	4.51	154663	7.14	266734	9.41	283409	13.30	256663	14.97
JB30425-15 [c]	59328	2.90	232582	4.51	130972	7.13	216697	9.40	211251	13.29	191484	14.95
JB30425-1 [c]	55132	2.90	219031	4.51	127768	7.16	221040	9.44	254446	13.35	243873	15.03
JB30425-3 [c]	61150	2.91	240978	4.52	135457	7.15	226775	9.42	229180	13.31	213112	14.98
JB30425-8 [c]	68769	2.91	270791	4.52	150796	7.15	250330	9.42	275248	13.32	268557	15.01
JB30425-9 [c]	74579	2.91	295992	4.52	164749	7.16	282927	9.43	296073	13.33	290623	15.01
JB30425-10 [c]	60358	2.91	238775	4.52	135639	7.15	223305	9.42	216666	13.32	203317	14.99
JB30425-11 [c]	61035	2.91	241389	4.52	136527	7.15	226376	9.42	227088	13.32	210461	14.99
JB30425-12 [c]	64110	2.91	249287	4.52	139687	7.15	229077	9.42	253502	13.33	248902	15.01
JB30425-13 [c]	65613	2.91	262363	4.53	153151	7.18	257335	9.46	290408	13.37	285748	15.06
ZZZZZZ	60028	2.92	233925	4.53	132087	7.16	219645	9.43	211617	13.33	198937	15.00
ZZZZZZ	65368	2.92	267845	4.55	192677	7.24	281012	9.56	268250	13.37	252450	15.04
ZZZZZZ	46855	2.94	184420	4.56	115981	7.24	187525	9.57	178624	13.49	174960	15.16

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Confirmation run.

Semivolatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E3P816-CC782	**Injection Date:**	03/22/13
Lab File ID:	3P17974.D	**Injection Time:**	09:49
Instrument ID:	GCMS3P	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	157479	3.85	585028	5.56	311156	8.27	511404	10.62	541499	14.39	474549	16.05
Upper Limit [a]	314958	4.35	1170056	6.06	622312	8.77	1022808	11.12	1082998	14.89	949098	16.55
Lower Limit [b]	78740	3.35	292514	5.06	155578	7.77	255702	10.12	270750	13.89	237275	15.55

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP64440-MB2	151235	3.84	564734	5.55	304703	8.26	490906	10.61	514536	14.38	467499	16.05
OP64440-BS2	143404	3.84	534445	5.56	272580	8.26	440575	10.62	433829	14.39	395644	16.05
OP64602-MB1	147837	3.84	549459	5.55	283599	8.26	447818	10.61	452267	14.38	412436	16.05
OP64602-BS1	141171	3.84	513254	5.56	263680	8.26	422333	10.62	428554	14.38	383032	16.05
OP64617-MB1	142169	3.84	528462	5.55	276193	8.25	444985	10.61	472811	14.38	422575	16.05
OP64617-BS1	137074	3.84	501032	5.56	265630	8.26	433442	10.61	445166	14.38	396327	16.05
ZZZZZZ	124070	3.84	471896	5.55	259823	8.25	399441	10.61	404316	14.38	377459	16.05
ZZZZZZ	119942	3.84	455627	5.55	231932	8.26	356359	10.62	385896	14.42	383123	16.08
ZZZZZZ	110292	3.85	444553	5.56	236699	8.26	357584	10.62	380207	14.42	382517	16.11
ZZZZZZ	111011	3.85	427973	5.56	226665	8.27	348662	10.62	373013	14.43	382600	16.10
ZZZZZZ	136718	3.85	522711	5.56	274002	8.27	416097	10.62	409181	14.41	437397	16.10
ZZZZZZ	128648	3.85	472384	5.56	251868	8.27	403453	10.62	369256	14.39	359044	16.06
JB31494-2	140583	3.85	529120	5.56	279181	8.27	451604	10.62	419291	14.39	398403	16.06
OP64602-MS	141282	3.85	512978	5.56	268846	8.27	429118	10.62	419042	14.39	394265	16.06
OP64602-MSD	143804	3.85	529664	5.56	286851	8.27	463079	10.62	455080	14.39	417336	16.06
ZZZZZZ	149610	3.85	542357	5.56	291440	8.27	449868	10.62	449677	14.39	428405	16.06
ZZZZZZ	148528	3.85	556778	5.56	292550	8.26	469360	10.62	463764	14.39	434872	16.06
ZZZZZZ	129031	3.85	488000	5.56	265941	8.26	416970	10.62	413280	14.38	383029	16.05
ZZZZZZ	159391	3.85	591818	5.56	299175	8.28	482617	10.68	528322	14.50	459369	16.22
ZZZZZZ	126752	3.85	475061	5.56	232975	8.28	385842	10.66	362303	14.52	304166	16.22
JB29946-29	120440	3.86	328961	5.57	203337	8.66	410679	10.63	384089	14.41	386944	16.07
ZZZZZZ	79858	3.86	484900	5.55	252138	8.26	406561	10.63	368262	14.39	354543	16.06
OP64617-MS	124124	3.85	286972*	5.56	206423	8.55	392121	10.63	376903	14.39	350083	16.07
OP64617-MSD	125279	3.85	218067*	5.56	194855	8.67	415714	10.62	395722	14.39	364380	16.06
JB30423-1	152119	3.85	558268	5.56	295392	8.27	466291	10.62	453893	14.39	443236	16.06
ZZZZZZ	138840	3.85	518469	5.56	263003	8.27	414679	10.62	415478	14.39	393815	16.06
OP64440-MS	139320	3.85	508101	5.56	261997	8.27	418000	10.62	430153	14.39	406014	16.06
OP64440-MSD	146953	3.85	537273	5.56	279694	8.27	438224	10.62	459978	14.39	438066	16.06

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

Semivolatile Internal Standard Area Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E3P816-CC782	**Injection Date:**	03/22/13
Lab File ID:	3P17974.D	**Injection Time:**	09:49
Instrument ID:	GCMS3P	**Method:**	SW846 8270D

Lab	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
Sample ID	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Surrogate Recovery Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8270D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JB30425-1	2P21382.D	73.0	72.0	67.0
JB30425-1	2P21238.D	74.0	75.0	71.0
JB30425-3	2P21383.D	52.0	61.0	59.0
JB30425-3	2P21239.D	52.0	65.0	79.0
JB30425-4	2P21376.D	73.0	76.0	79.0
JB30425-4	2P21233.D	70.0	72.0	87.0
JB30425-5	2P21234.D	41.0	42.0	85.0
JB30425-5	2P21377.D	65.0	70.0	78.0
JB30425-6	2P21378.D	74.0	78.0	80.0
JB30425-6	2P21235.D	57.0	60.0	75.0
JB30425-7	2P21379.D	63.0	72.0	80.0
JB30425-7	2P21371.D	35.0	19.0* [a]	25.0* [a]
JB30425-8	2P21384.D	61.0	67.0	67.0
JB30425-8	2P21242.D	59.0	68.0	67.0
JB30425-9	2P21385.D	48.0	56.0	56.0
JB30425-9	2P21246.D	52.0	65.0	65.0
JB30425-10	2P21243.D	47.0	49.0	46.0
JB30425-10	2P21386.D	53.0	67.0	67.0
JB30425-11	2P21387.D	55.0	70.0	69.0
JB30425-11	2P21240.D	44.0	49.0	46.0
JB30425-12	2P21388.D	59.0	72.0	66.0
JB30425-12	2P21241.D	61.0	70.0	63.0
JB30425-13	2P21244.D	58.0	63.0	63.0
JB30425-13	2P21389.D	65.0	70.0	66.0
JB30425-14	2P21380.D	59.0	61.0	59.0
JB30425-14	2P21245.D	40.0	55.0	60.0
JB30425-15	2P21381.D	65.0	70.0	71.0
JB30425-15	2P21237.D	63.0	67.0	80.0
OP64440-BS1	2M50790.D	76.0	74.0	88.0
OP64440-BS2	3P17977.D	104.0	92.0	102.0
OP64440-MB1	2P21229.D	12.0* [b]	12.0* [b]	32.0
OP64440-MB2	3P17976.D	103.0	91.0	96.0
OP64440-MB2	2P21375.D	85.0	90.0	91.0
OP64440-MS	3P18002.D	79.0	70.0	75.0
OP64440-MSD	3P18003.D	75.0	64.0	68.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	21-122%

Semivolatile Surrogate Recovery Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8270D **Matrix:** SO

Samples and QC shown here apply to the above method

Surrogate Compounds	Recovery Limits
S2 = 2-Fluorobiphenyl	30-117%
S3 = Terphenyl-d14	31-129%

(a) Outside control limits biased low. Results confirmed by re-extraction outside the holding time.
(b) Outside control limits biased low. Sample results confirmed by reanalysis outside the holding time.

Initial Calibration Summary

Job Number: JB30425 **Sample:** E2M2147-ICC2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50365.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MS2M

Method : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update : Thu Mar 07 09:32:27 2013
Response via : Initial Calibration

Calibration Files
2 =2m50369.D 5 =2m50368.D 25 =2m50366.D 80 =2m50364.D
100 =2m50363.D 50 =2m50365.D 1 =2m50370.D 10 =2m50367.D

Compound	2	5	25	80	100	50	1	10	Avg	%RSD
1) I 1,4-Dichlorobenzene-d	----------ISTD----------									
2) 1,4-Dioxane	0.615	0.607	0.595	0.578	0.561	0.591	0.667	0.620	0.604	5.26
3) Pyridine	1.384	1.636	1.616	1.595	1.552	1.661	1.639	1.546	1.579	5.62
4) N-Nitrosodim	0.966	1.021	0.987	0.947	0.928	0.972	1.027	0.996	0.980	3.49
5) 2-Fluorophen	1.266	1.423	1.447	1.449	1.413	1.459	1.424	1.450	1.416	4.43
6) Indene	2.383	2.555	2.532	2.421	2.370	2.486	2.486	2.562	2.474	3.06
7) Cumene	3.262	3.562	3.485	3.379	3.312	3.454	3.576	3.602	3.454	3.66
8) Phenol-d5	1.685	1.843	1.831	1.788	1.747	1.812	1.780	1.847	1.792	3.08
9) Phenol	1.966	2.080	2.088	2.014	1.964	2.073	2.058	2.059	2.038	2.45
10) Aniline	2.416	2.495	2.515	2.045	1.964	2.439	2.454	2.369	2.337	9.04
11) bis(2-Chloro	1.473	1.560	1.523	1.441	1.403	1.482	1.527	1.542	1.494	3.61
12) 2-Chlorophen	1.392	1.542	1.509	1.477	1.442	1.511	1.531	1.511	1.489	3.38
13) Decane	1.369	1.434	1.400	1.345	1.297	1.386	1.432	1.465	1.391	3.90
14) 1,3-Dichloro	1.595	1.687	1.648	1.603	1.554	1.631	1.685	1.687	1.636	3.03
15) 1,4-Dichloro	1.628	1.694	1.655	1.602	1.562	1.649	1.770	1.703	1.658	3.90
16) Benzyl alcoh	0.936	1.013	1.023	0.970	0.950	1.013	0.925	1.032	0.983	4.32
17) 1,2-Dichloro	1.517	1.636	1.558	1.448	1.398	1.517	1.668	1.575	1.540	5.84
18) Acetophenone	1.969	2.121	2.109	2.038	2.000	2.124	2.185	2.118	2.083	3.50
19) 2-Methylphen	1.308	1.417	1.435	1.338	1.316	1.432	1.294	1.425	1.371	4.53
20) 2,2'-oxybis(	1.883	1.975	1.954	1.849	1.768	1.931	1.975	1.953	1.911	3.82
21) 3&4-Methylph	1.383	1.488	1.493	1.399	1.371	1.454	1.343	1.483	1.427	4.19
22) n-Nitroso-di	1.037	1.121	1.122	1.062	1.042	1.093	1.095	1.136	1.089	3.47
23) Hexachloroet	0.443	0.480	0.468	0.440	0.434	0.454	0.465	0.486	0.459	4.17
24) I Naphthalene-d8	----------ISTD----------									
25) Nitrobenzene	0.334	0.376	0.383	0.372	0.369	0.379	0.365	0.381	0.370	4.30
26) Nitrobenzene	0.380	0.419	0.411	0.396	0.393	0.406	0.376	0.417	0.400	4.04
27) Quinoline	0.642	0.725	0.730	0.701	0.706	0.724	0.703	0.725	0.707	4.07
28) Isophorone	0.613	0.702	0.708	0.667	0.666	0.693	0.681	0.707	0.680	4.63
29) 2-Nitropheno	0.175	0.199	0.210	0.194	0.195	0.204	0.165	0.202	0.193	8.08
30) 2,4-Dimethyl	0.276	0.334	0.368	0.344	0.347	0.370	0.287	0.326	0.332	10.33
31) Benzoic acid			0.282	0.342	0.346	0.329		0.230	0.306	16.10
32) bis(2-Chloro	0.388	0.437	0.434	0.412	0.410	0.429	0.441	0.428	0.422	4.22
33) 2,4-Dichloro	0.261	0.285	0.302	0.288	0.289	0.299	0.275	0.299	0.287	4.85
34) 2,6-Dichloro	0.259	0.287	0.293	0.275	0.272	0.285	0.265	0.292	0.279	4.52
35) 1,3,5-Trichl	0.316	0.322	0.314	0.286	0.283	0.301	0.327	0.321	0.309	5.43
36) 1,2,4-Trichl	0.296	0.311	0.309	0.291	0.288	0.302	0.318	0.314	0.304	3.66
37) 1,2,3-Trichl	0.290	0.313	0.298	0.282	0.283	0.293	0.300	0.308	0.296	3.77
38) Naphthalene	1.063	1.102	1.084	1.010	1.001	1.055	1.116	1.110	1.068	4.13
39) 4-Chloroanil	0.459	0.492	0.488	0.426	0.418	0.471	0.451	0.481	0.461	5.99
40) 2,3-Dichloro	0.341	0.360	0.363	0.341	0.341	0.361	0.339	0.363	0.351	3.27
41) Caprolactam	0.143	0.157	0.169	0.169	0.172	0.170	0.135	0.169	0.161	8.75
42) Hexachlorobu	0.145	0.152	0.150	0.143	0.144	0.149	0.160	0.154	0.150	3.72
43) 4-Chloro-3-m	0.273	0.301	0.326	0.317	0.324	0.327	0.259	0.318	0.306	8.54
44) 2-Methylnaph	0.594	0.646	0.647	0.605	0.602	0.634	0.625	0.662	0.627	3.94
45) 1-Methylnaph	0.655	0.722	0.718	0.668	0.664	0.690	0.697	0.711	0.691	3.72

Initial Calibration Summary

Job Number: JB30425 **Sample:** E2M2147-ICC2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50365.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

46)	Dimethylnaph	0.584	0.647	0.657	0.610	0.609	0.643	0.607	0.658	0.627	4.42
47)	I Acenaphthene-d10	----------ISTD----------									
48)	Hexachlorocy	0.197	0.237	0.281	0.277	0.276	0.284	0.186	0.254	0.249	15.62
49)	2,4,6-Trichl	0.295	0.326	0.354	0.338	0.339	0.353	0.291	0.344	0.330	7.40
50)	2,4,5-Trichl	0.324	0.352	0.393	0.384	0.380	0.395	0.286	0.375	0.361	10.66
51)	2-Fluorobiph	1.252	1.349	1.314	1.232	1.213	1.302	1.369	1.351	1.298	4.55
52)	2-Chloronaph	1.135	1.205	1.199	1.118	1.102	1.163	1.162	1.199	1.160	3.39
53)	Biphenyl	1.524	1.592	1.545	1.465	1.425	1.523	1.598	1.591	1.533	4.10
54)	2-Nitroanili	0.329	0.381	0.396	0.382	0.385	0.395	0.307	0.385	0.370	8.96
55)	Dimethylphth	1.269	1.384	1.338	1.279	1.266	1.317	1.312	1.338	1.313	3.11
56)	Acenaphthyle	1.700	1.897	1.957	1.834	1.817	1.923	1.764	1.908	1.850	4.73
57)	2,6-Dinitrot	0.216	0.284	0.307	0.304	0.304	0.309	0.197	0.289	0.276	16.00
58)	3-Nitroanili	0.317	0.362	0.375	0.350	0.344	0.370	0.319	0.369	0.351	6.54
59)	Acenaphthene	1.170	1.238	1.198	1.095	1.075	1.167	1.252	1.219	1.177	5.47
60)	2,4-Dinitrop			0.170	0.197	0.202	0.190		0.126	0.177	17.56
61)	4-Nitropheno	0.112	0.161	0.183	0.194	0.198	0.194		0.167	0.173	17.57
62)	Dibenzofuran	1.587	1.733	1.702	1.582	1.550	1.646	1.699	1.703	1.650	4.18
63)	2,4-Dinitrot	0.324	0.394	0.428	0.430	0.424	0.439	0.272	0.423	0.392	15.54
64)	2,3,4,6-Tetr	0.207	0.263	0.284	0.287	0.286	0.291	0.206	0.274	0.262	13.47
65)	Diethylphtha	1.394	1.431	1.374	1.329	1.333	1.363	1.493	1.401	1.390	3.89
66)	Fluorene	1.272	1.420	1.407	1.306	1.312	1.387	1.303	1.377	1.348	4.14
67)	4-Chlorophen	0.570	0.602	0.604	0.563	0.555	0.594	0.618	0.604	0.589	3.89
68)	4-Nitroanili	0.309	0.363	0.385	0.381	0.375	0.388	0.285	0.368	0.357	10.74
69)	I Phenanthrene-d10	----------ISTD----------									
70)	4,6-Dinitro-		0.110	0.153	0.169	0.167	0.162		0.130	0.148	15.99
71)	n-Nitrosodip	0.630	0.663	0.663	0.624	0.599	0.643	0.629	0.663	0.639	3.60
72)	1,2-Diphenyl	0.896	0.979	0.981	0.933	0.912	0.955	0.909	0.976	0.943	3.67
73)	2,4,6-Tribro	0.065	0.083	0.092	0.091	0.090	0.091	0.063	0.087	0.083	14.51
74)	4-Bromopheny	0.175	0.194	0.200	0.192	0.186	0.194	0.182	0.198	0.190	4.45
75)	Hexachlorobe	0.184	0.199	0.196	0.189	0.182	0.197	0.192	0.200	0.192	3.62
76)	Pentachlorop	0.081	0.107	0.132	0.134	0.131	0.133		0.121	0.120	16.47
77)	Phenanthrene	1.209	1.268	1.233	1.154	1.127	1.207	1.262	1.262	1.215	4.29
78)	Anthracene	1.164	1.254	1.259	1.162	1.126	1.223	1.147	1.242	1.197	4.41
79)	Carbazole	1.078	1.175	1.175	1.109	1.075	1.142	1.115	1.192	1.133	4.01
80)	Di-n-butylph	1.147	1.339	1.441	1.396	1.362	1.435	1.079	1.410	1.326	10.34
81)	Fluoranthene	1.067	1.211	1.210	1.149	1.140	1.192	1.087	1.219	1.159	5.04
82)	Octadecane	0.498	0.534	0.567	0.532	0.516	0.553	0.457	0.559	0.527	6.92
83)	I Chrysene-d12	----------ISTD----------									
84)	Pyrene	1.318	1.458	1.484	1.386	1.347	1.418	1.323	1.453	1.398	4.62
85)	Terphenyl-d1	0.799	0.886	0.894	0.849	0.829	0.877	0.850	0.882	0.858	3.81
86)	Butylbenzylp	0.540	0.659	0.739	0.718	0.707	0.748	0.529	0.695	0.667	12.93
87)	Butyl steara	0.295	0.389	0.427	0.405	0.391	0.426	0.234	0.398	0.371	18.61
88)	Benzo[a]anth	1.089	1.200	1.222	1.164	1.144	1.212	1.139	1.187	1.169	3.80
89)	3,3'-Dichlor	0.349	0.415	0.431	0.396	0.384	0.422	0.325	0.429	0.394	9.92
90)	Chrysene	1.146	1.204	1.154	1.015	0.988	1.083	1.226	1.183	1.125	7.78
91)	bis(2-Ethylh	0.698	0.890	0.991	0.965	0.957	1.005	0.629	0.924	0.882	15.99
92)	I Perylene-d12	----------ISTD----------									
93)	Di-n-octylph	1.164	1.665	1.961	1.908	1.863	1.933		1.817	1.759	15.92
94)	Benzo[b]fluo	1.018	1.227	1.315	1.457	1.469	1.287	0.996	1.446	1.277	14.72
95)	Benzo[k]fluo	1.393	1.547	1.348	0.991	0.934	1.206	1.464	1.276	1.270	17.12
96)	Benzo[a]pyre	0.998	1.190	1.256	1.192	1.156	1.233	0.978	1.223	1.153	9.24
97)	Indeno[1,2,3	1.158	1.400	1.429	1.397	1.366	1.395	1.152	1.413	1.339	8.58
98)	Dibenz(a,h)a	0.761	0.942	1.030	1.018	0.998	1.012	0.598	0.981	0.918	16.95
99)	Dibenz[a,h]a	0.987	1.139	1.193	1.156	1.136	1.173	0.913	1.161	1.107	9.09
100)	7,12-Dimethy	0.523	0.595	0.643	0.550	0.545	0.593	0.494	0.598	0.568	8.48
101)	Benzo[g,h,i]	1.027	1.222	1.196	1.180	1.156	1.187	1.015	1.197	1.147	6.99

Initial Calibration Summary

Job Number: JB30425 **Sample:** E2M2147-ICC2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50365.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
-------------------------------------------------------------------------------
(#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          M2M2147.M         Thu Mar 07 09:48:39 2013   MS2M
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** E2M2148-ICC2148
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50374.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
                         Response Factor Report  MS2M

  Method       : C:\MSDCHEM\1\METHODS\M2M2148.M (RTE Integrator)
  Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
  Last Update  : Thu Mar 07 10:53:54 2013
  Response via : Initial Calibration

  Calibration Files
  2   =2m50378.D   5   =2m50377.D   25  =2m50375.D   80  =2m50373.D
  100 =2m50372.D   50  =2m50374.D   1   =2m50379.D   10  =2m50376.D

   Compound         2     5     25    80    100   50    1     10    Avg %RSD
  -------------------------------------------------------------------------------

102)     1,4-Dichlorobenzene-d ----------------ISTD---------------------
103) Benzaldehyde 1.328 1.297 1.265 1.242 1.145 1.238       1.273 1.256   4.61

104)     Acenaphthene-d10a     ----------------ISTD---------------------
105) 1,2,4,5-Tetr 0.539 0.494 0.494 0.458 0.443 0.476       0.487 0.484   6.34
106) 2-bromonapht 0.654 0.619 0.641 0.614 0.607 0.634       0.632 0.629   2.62

107)     Chrysene-d12a         ----------------ISTD---------------------
108) Benzidine    0.702 0.832 0.826 0.662 0.503 0.726       0.913 0.738  18.33
109) 1-chloroocta 0.357 0.383 0.448 0.419 0.404 0.435       0.421 0.409   7.63

110)     Phenanthrene-d10a     ----------------ISTD---------------------
111) Atrazine     0.099 0.102 0.120 0.121 0.115 0.119       0.112 0.113   7.86
112) o-terphenyl  0.616 0.593 0.578 0.537 0.512 0.562       0.584 0.569   6.15

113) I   Naphthalene-d8a       ----------------ISTD---------------------
114) hydroquinone 0.252 0.282 0.359 0.407 0.384 0.383       0.325 0.342  16.87
 -------------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M2M2147.M         Thu Mar 07 10:56:34 2013   MS2M
```

8.7.2

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2M2148-ICV2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50380.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E2M2147\2m50380.D          Vial: 18
Acq On    :  7 Mar 2013  12:07 am                     Operator: olgaa
Sample    : ICv2147-50                                Inst    : MS2M
Misc      : op64036,e2m2148,                          Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update  : Thu Mar 07 09:32:27 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	122	0.00	3.01
9	t	Phenol	2.038	1.835	10.0	108	0.00	2.72
12	t	2-Chlorophenol	1.489	1.486	0.2	120	0.00	2.81
19	t	2-Methylphenol	1.371	1.308	4.6	111	0.00	3.40
21	t	3&4-Methylphenol	1.427	1.383	3.1	116	0.00	3.59
24	I	Naphthalene-d8	1.000	1.000	0.0	115	0.00	4.63
29	t	2-Nitrophenol	0.193	0.203	-5.2	114	0.00	4.16
30	t	2,4-Dimethylphenol	0.332	0.358	-7.8	111	0.00	4.30
31	t	Benzoic acid	0.306	0.265	13.4	92	0.00	4.55
33	t	2,4-Dichlorophenol	0.287	0.292	-1.7	112	0.00	4.48
34	t	2,6-Dichlorophenol	0.279	0.291	-4.3	117	0.00	4.81
43	t	4-Chloro-3-methylphenol	0.306	0.310	-1.3	108	-0.01	5.61
47	I	Acenaphthene-d10	1.000	1.000	0.0	107	0.00	7.25
49	t	2,4,6-Trichlorophenol	0.330	0.352	-6.7	107	0.00	6.18
50	t	2,4,5-Trichlorophenol	0.361	0.371	-2.8	101	-0.01	6.22
60	t	2,4-Dinitrophenol	0.177	0.124	29.9	70	0.00	7.45
61	t	4-Nitrophenol	0.173	0.173	0.0	96	0.00	7.67
64		2,3,4,6-Tetrachlorophenol	0.262	0.265	-1.1	97	0.00	7.86
69	I	Phenanthrene-d10	1.000	1.000	0.0	100	0.00	9.50
70	t	4,6-Dinitro-2-methylpheno	0.148	0.138	6.8	85	-0.02	8.31
76	t	Pentachlorophenol	0.120	0.124	-3.3	92	0.00	9.37

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m50365.D M2M2147.M Thu Mar 07 10:09:39 2013 MS2M

8.7.3

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2M2148-ICV2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50381.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M2147\2m50381.D Vial: 19
Acq On : 7 Mar 2013 12:30 am Operator: olgaa
Sample : ICv2147-50 Inst : MS2M
Misc : op64036,e2m2148, Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update : Thu Mar 07 09:32:27 2013
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	115	0.00	3.01
3	t	Pyridine	1.579	1.519	3.8	105	0.00	1.09
4	t	N-Nitrosodimethylamine	0.980	0.961	1.9	113	0.00	1.09
11	t	bis(2-Chloroethyl)ether	1.494	1.600	-7.1	124	0.00	2.79
14	t	1,3-Dichlorobenzene	1.636	1.692	-3.4	119	0.00	2.96
15	t	1,4-Dichlorobenzene	1.658	1.704	-2.8	118	0.00	3.02
16	t	Benzyl alcohol	0.983	0.974	0.9	110	0.00	3.22
17	t	1,2-Dichlorobenzene	1.540	1.601	-4.0	121	0.00	3.23
20	t	2,2'-oxybis(1-Chloropropa	1.911	1.919	-0.4	114	0.00	3.42
22	t	n-Nitroso-di-n-propylamin	1.089	1.061	2.6	111	0.00	3.59
23	t	Hexachloroethane	0.459	0.491	-7.0	124	0.00	3.60
24	I	Naphthalene-d8	1.000	1.000	0.0	108	0.00	4.63
26	t	Nitrobenzene	0.400	0.412	-3.0	110	0.00	3.73
28	t	Isophorone	0.680	0.715	-5.1	112	0.00	4.05
36	t	1,2,4-Trichlorobenzene	0.304	0.319	-4.9	114	0.00	4.59
38	t	Naphthalene	1.068	1.108	-3.7	114	0.00	4.65
42	t	Hexachlorobutadiene	0.150	0.160	-6.7	117	0.00	4.97
44	t	2-Methylnaphthalene	0.627	0.605	3.5	103	0.00	5.67
47	I	Acenaphthene-d10	1.000	1.000	0.0	101	0.00	7.26
48	t	Hexachlorocyclopentadiene	0.249	0.244	2.0	86	0.00	6.04
52	t	2-Chloronaphthalene	1.160	1.216	-4.8	106	0.00	6.38
54	t	2-Nitroaniline	0.370	0.359	3.0	92	0.00	6.65
55	t	Dimethylphthalate	1.313	1.317	-0.3	101	0.00	7.06
56	t	Acenaphthylene	1.850	1.754	5.2	92	0.00	7.01
57	t	2,6-Dinitrotoluene	0.276	0.296	-7.2	97	0.00	7.12
58	t	3-Nitroaniline	0.351	0.296	15.7	81	0.00	7.30
59	t	Acenaphthene	1.177	1.182	-0.4	102	0.00	7.31
62	t	Dibenzofuran	1.650	1.627	1.4	100	0.00	7.56
63	t	2,4-Dinitrotoluene	0.392	0.371	5.4	86	0.00	7.70
65	t	Diethylphthalate	1.390	1.292	7.1	96	0.00	8.18
66	t	Fluorene	1.348	1.376	-2.1	100	0.00	8.09
67	t	4-Chlorophenyl-phenylethe	0.589	0.586	0.5	100	0.00	8.17
68	t	4-Nitroaniline	0.357	0.337	5.6	88	0.00	8.25
69	I	Phenanthrene-d10	1.000	1.000	0.0	93	0.00	9.50
71	t	n-Nitrosodiphenylamine	0.639	0.648	-1.4	94	0.00	8.38
72	t	1,2-Diphenylhydrazine	0.943	1.051	-11.5	103	0.00	8.40
74	t	4-Bromophenyl-phenylether	0.190	0.210	-10.5	101	0.00	8.91
75	t	Hexachlorobenzene	0.192	0.202	-5.2	96	0.00	9.06
77	t	Phenanthrene	1.215	1.249	-2.8	97	0.00	9.54

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2M2148-ICV2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50381.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

78	t	Anthracene	1.197	1.268	-5.9	97	0.00	9.61
79	t	Carbazole	1.133	1.158	-2.2	95	0.00	9.93
80	t	Di-n-butylphthalate	1.326	1.410	-6.3	92	0.00	10.75
81	t	Fluoranthene	1.159	1.194	-3.0	94	0.00	11.37
83	I	Chrysene-d12	1.000	1.000	0.0	93	0.00	13.15
84	t	Pyrene	1.398	1.459	-4.4	95	0.00	11.66
86	t	Butylbenzylphthalate	0.667	0.700	-4.9	87	0.00	12.71
88	t	Benzo[a]anthracene	1.169	1.188	-1.6	91	0.00	13.13
89	t	3,3'-Dichlorobenzidine	0.394	0.288	26.9	63	0.00	13.18
90	t	Chrysene	1.125	1.137	-1.1	97	0.00	13.17
91	t	bis(2-Ethylhexyl)phthalat	0.882	0.932	-5.7	86	0.00	13.41
92	I	Perylene-d12	1.000	1.000	0.0	91	0.00	14.52
93	t	Di-n-octylphthalate	1.759	1.861	-5.8	87	0.00	14.01
94	t	Benzo[b]fluoranthene	1.277	1.343	-5.2	94	0.00	14.20
95	t	Benzo[k]fluoranthene	1.270	1.220	3.9	92	0.00	14.22
96	t	Benzo[a]pyrene	1.153	1.221	-5.9	90	0.00	14.46
97	t	Indeno[1,2,3-cd]pyrene	1.339	1.462	-9.2	95	0.00	15.34
99	t	Dibenz[a,h]anthracene	1.107	1.201	-8.5	93	0.00	15.36
101	t	Benzo[g,h,i]perylene	1.147	1.268	-10.5	97	0.00	15.52

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m50365.D M2M2147.M Thu Mar 07 09:36:58 2013 MS2M

8.7.4

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2M2148-ICV2148
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50381A.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E2M2147\2m50381a.D        Vial: 19
Acq On    :  7 Mar 2013  12:30 am                   Operator: olgaa
Sample    : ICv2148-50                              Inst    : MS2M
Misc      : op64036,e2m2148,                        Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update  : Thu Mar 07 10:53:54 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
104	Acenaphthene-d10a	1.000	1.000	0.0	94	0.00	7.26
105	1,2,4,5-Tetrachlorobenzen	0.484	0.488	-0.8	96	0.00	5.99

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m50374.D M2M2147.M Thu Mar 07 11:08:54 2013 MS2M

8.7.5

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2M2148-ICV2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50382.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E2M2147\2m50382.D          Vial: 20
Acq On    :  7 Mar 2013  12:53 am                     Operator: olgaa
Sample    : ICv2147-50                                Inst    : MS2M
Misc      : op64036,e2m2148,                          Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update  : Thu Mar 07 09:32:27 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	130	0.00	3.01
2	t	1,4-Dioxane	0.604	0.538	10.9	118	0.00	0.95
6	t	Indene	2.474	2.524	-2.0	132	0.00	3.33
7	t	Cumene	3.454	3.454	0.0	130	0.00	2.25
13	t	Decane	1.391	1.294	7.0	121	0.00	2.90
18	t	Acetophenone	2.083	2.051	1.5	125	0.00	3.53
24	I	Naphthalene-d8	1.000	1.000	0.0	123	0.00	4.62
27	t	Quinoline	0.707	0.688	2.7	116	-0.01	5.14
40	t	2,3-Dichloroaniline	0.351	0.304	13.4	103	0.00	6.17
41	t	Caprolactam	0.161	0.147	8.7	106	-0.05	5.26
45	t	1-Methylnaphthalene	0.691	0.679	1.7	121	0.00	5.83
46	t	Dimethylnaphthalene	0.627	0.616	1.8	118	0.00	6.63
47	I	Acenaphthene-d10	1.000	1.000	0.0	115	0.00	7.25
53	t	Biphenyl	1.533	1.553	-1.3	118	0.00	6.42
69	I	Phenanthrene-d10	1.000	1.000	0.0	109	0.00	9.51
82	t	Octadecane	0.527	0.560	-6.3	110	0.00	9.65
92	I	Perylene-d12	1.000	1.000	0.0	94	0.00	14.51
100	t	7,12-Dimethylbenz(a)anthr	0.568	0.525	7.6	83	0.00	14.22

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m50365.D M2M2147.M Thu Mar 07 09:39:18 2013 MS2M

8.7.6

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2M2148-ICV2148
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50382A.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E2M2147\2m50382a.D        Vial: 20
Acq On    :  7 Mar 2013  12:53 am                   Operator: olgaa
Sample    : ICv2148-50                              Inst    : MS2M
Misc      : op64036,e2m2148,                        Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update  : Thu Mar 07 10:53:54 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
102	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	119	0.00	3.01
103	Benzaldehyde	1.256	1.228	2.2	118	0.00	2.55
110	Phenanthrene-d10a	1.000	1.000	0.0	101	0.00	9.51
111	Atrazine	0.113	0.112	0.9	95	0.00	9.34

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m50374.D M2M2147.M Thu Mar 07 11:10:30 2013 MS2M

8.7.7

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2M2148-ICV2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50383.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E2M2147\2m50383.D          Vial: 21
Acq On    :  7 Mar 2013   1:16 am                    Operator: olgaa
Sample    : ICv2147-50                               Inst    : MS2M
Misc      : op64036,e2m2148,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update  : Thu Mar 07 09:32:27 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	133	0.00	3.00
5	S	2-Fluorophenol	1.416	1.312	7.3	120	0.00	1.85
8	S	Phenol-d5	1.792	1.607	10.3	118	0.00	2.71
24	I	Naphthalene-d8	1.000	1.000	0.0	125	0.00	4.63
25	S	Nitrobenzene-d5	0.370	0.367	0.8	121	0.00	3.71
47	I	Acenaphthene-d10	1.000	1.000	0.0	118	0.00	7.25
51	S	2-Fluorobiphenyl	1.298	1.237	4.7	112	0.00	6.31
69	I	Phenanthrene-d10	1.000	1.000	0.0	109	0.00	9.51
73	S	2,4,6-Tribromophenol	0.083	0.075	9.6	89	0.00	8.49
83	I	Chrysene-d12	1.000	1.000	0.0	100	0.00	13.14
85	S	Terphenyl-d14	0.858	0.830	3.3	95	0.00	12.00

```
(#) = Out of Range              SPCC's out = 0  CCC's out = 0
 2m50365.D  M2M2147.M        Thu Mar 07 09:45:35 2013   MS2M
```

8.7.8

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2M2148-ICV2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50384.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E2M2147\2m50384.D          Vial: 22
Acq On    :  7 Mar 2013   1:39 am                    Operator: olgaa
Sample    : ICv2147-50                               Inst    : MS2M
Misc      : op64036,e2m2148,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update  : Thu Mar 07 09:32:27 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	188	0.00	3.01
10		Aniline	2.337	2.317	0.9	178	0.00	2.71
24	I	Naphthalene-d8	1.000	1.000	0.0	185	0.00	4.63
39	t	4-Chloroaniline	0.461	0.450	2.4	177	0.00	4.82

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m50365.D M2M2147.M Thu Mar 07 09:46:55 2013 MS2M

8.7.9

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2M2148-ICV2148
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50385.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E2M2147\2m50385.D          Vial: 23
Acq On    :  7 Mar 2013   2:02 am                    Operator: olgaa
Sample    : ICv2148-50                               Inst    : MS2M
Misc      : op64036,e2m2148,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update  : Thu Mar 07 10:53:54 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
107	Chrysene-d12a	1.000	1.000	0.0	169	0.00	13.15
108	Benzidine	0.738	0.867	-17.5	202	0.00	11.67

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m50374.D M2M2147.M Thu Mar 07 10:54:11 2013 MS2M

8.7.10

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2M2148-ICV2148
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50386.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E2M2147\2m50386.D          Vial: 24
Acq On    :  7 Mar 2013   2:25 am                    Operator: olgaa
Sample    : ICv2148-50                               Inst    : MS2M
Misc      : op64036,e2m2148,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update  : Thu Mar 07 10:53:54 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
113 I	Naphthalene-d8a	1.000	1.000	0.0	104	0.00	4.63
114	hydroquinone	0.342	0.365	-6.7	99	0.00	5.43

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m50374.D M2M2147.M Thu Mar 07 10:55:32 2013 MS2M

8.7.11

8

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2M2166-CC2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50787.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E2M2166\2m50787.D          Vial: 2
Acq On    : 19 Mar 2013   3:56 pm                    Operator: olgaa
Sample    : cc2147-25                                Inst    : MS2M
Misc      : op64435,e2m2166,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2M2147.M (RTE Integrator)
Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update  : Fri Mar 15 09:53:29 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	92	-0.02	2.92
2	t	1,4-Dioxane	0.604	0.540	10.6	83	-0.01	0.90
3	t	Pyridine	1.579	1.466	7.2	83	-0.01	1.04
4	t	N-Nitrosodimethylamine	0.980	0.926	5.5	86	-0.01	1.03
5	S	2-Fluorophenol	1.416	1.406	0.7	89	0.00	1.80
6	t	Indene	2.474	2.635	-6.5	96	-0.02	3.24
7	t	Cumene	3.454	3.651	-5.7	96	-0.02	2.17
8	S	Phenol-d5	1.792	1.967	-9.8	99	0.00	2.66
9	t	Phenol	2.038	2.139	-5.0	94	0.00	2.67
10		Aniline	2.337	2.376	-1.7	87	-0.02	2.62
11	t	bis(2-Chloroethyl)ether	1.494	1.581	-5.8	96	-0.02	2.70
12	t	2-Chlorophenol	1.489	1.566	-5.2	95	-0.01	2.74
13	t	Decane	1.391	1.534	-10.3	101	-0.02	2.81
14	t	1,3-Dichlorobenzene	1.636	1.648	-0.7	92	-0.02	2.87
15	t	1,4-Dichlorobenzene	1.658	1.658	0.0	92	-0.02	2.93
16	t	Benzyl alcohol	0.983	1.071	-9.0	96	-0.01	3.14
17	t	1,2-Dichlorobenzene	1.540	1.580	-2.6	93	-0.02	3.14
18	t	Acetophenone	2.083	2.250	-8.0	98	-0.02	3.44
19	t	2-Methylphenol	1.371	1.473	-7.4	94	0.00	3.35
20	t	2,2'-oxybis(1-Chloropropa	1.911	2.101	-9.9	99	-0.02	3.33
21	t	3&4-Methylphenol	1.427	1.612	-13.0	99	0.00	3.54
22	t	n-Nitroso-di-n-propylamin	1.089	1.255	-15.2	103	-0.02	3.50
23	t	Hexachloroethane	0.459	0.553	-20.5#	109	-0.02	3.50
24	I	Naphthalene-d8	1.000	1.000	0.0	97	-0.02	4.53
25	S	Nitrobenzene-d5	0.370	0.423	-14.3	108	-0.02	3.62
26	t	Nitrobenzene	0.400	0.442	-10.5	105	-0.02	3.64
27	t	Quinoline	0.707	0.740	-4.7	99	-0.02	5.04
28	t	Isophorone	0.680	0.762	-12.1	105	-0.02	3.95
29	t	2-Nitrophenol	0.193	0.203	-5.2	94	-0.02	4.06
30	t	2,4-Dimethylphenol	0.332	0.371	-11.7	98	-0.01	4.22
31	t	Benzoic acid	0.306	0.215	29.7#	74	0.00	4.48
32	t	bis(2-Chloroethoxy)methan	0.422	0.434	-2.8	97	-0.02	4.32
33	t	2,4-Dichlorophenol	0.287	0.282	1.7	91	-0.01	4.41
34	t	2,6-Dichlorophenol	0.279	0.276	1.1	92	-0.01	4.73
35		1,3,5-Trichlorobenzene	0.309	0.321	-3.9	100	-0.02	4.07
36	t	1,2,4-Trichlorobenzene	0.304	0.312	-2.6	98	-0.02	4.49
37		1,2,3-Trichlorobenzene	0.296	0.307	-3.7	101	-0.02	4.82
38	t	Naphthalene	1.068	1.104	-3.4	99	-0.02	4.55
39	t	4-Chloroaniline	0.461	0.481	-4.3	96	-0.02	4.72
40	t	2,3-Dichloroaniline	0.351	0.353	-0.6	95	-0.02	6.07
41	t	Caprolactam	0.161	0.190	-18.0	109	-0.01	5.19

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2M2166-CC2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50787.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	t	Hexachlorobutadiene	0.150	0.184	-22.7#	120	-0.02	4.86
43	t	4-Chloro-3-methylphenol	0.306	0.366	-19.6	110	0.00	5.56
44	t	2-Methylnaphthalene	0.627	0.659	-5.1	99	-0.02	5.56
45	t	1-Methylnaphthalene	0.691	0.699	-1.2	95	-0.02	5.71
46	t	Dimethylnaphthalene	0.627	0.658	-4.9	98	-0.02	6.52
47	I	Acenaphthene-d10	1.000	1.000	0.0	98	-0.02	7.15
48	t	Hexachlorocyclopentadiene	0.249	0.284	-14.1	99	-0.02	5.93
49	t	2,4,6-Trichlorophenol	0.330	0.367	-11.2	102	-0.02	6.09
50	t	2,4,5-Trichlorophenol	0.361	0.394	-9.1	98	0.00	6.17
51	S	2-Fluorobiphenyl	1.298	1.260	2.9	94	-0.02	6.19
52	t	2-Chloronaphthalene	1.160	1.166	-0.5	96	-0.02	6.27
53	t	Biphenyl	1.533	1.519	0.9	97	-0.02	6.31
54	t	2-Nitroaniline	0.370	0.479	-29.5#	119	-0.02	6.55
55	t	Dimethylphthalate	1.313	1.391	-5.9	102	-0.02	6.94
56	t	Acenaphthylene	1.850	1.955	-5.7	98	-0.02	6.90
57	t	2,6-Dinitrotoluene	0.276	0.316	-14.5	101	-0.02	7.01
58	t	3-Nitroaniline	0.351	0.386	-10.0	101	-0.02	7.20
59	t	Acenaphthene	1.177	1.196	-1.6	98	-0.02	7.19
60	t	2,4-Dinitrophenol	0.177	0.115	35.0#	67	-0.01	7.38
61	t	4-Nitrophenol	0.173	0.184	-6.4	99	0.02	7.65
62	t	Dibenzofuran	1.650	1.655	-0.3	96	-0.02	7.45
63	t	2,4-Dinitrotoluene	0.392	0.438	-11.7	100	-0.02	7.61
64		2,3,4,6-Tetrachlorophenol	0.262	0.263	-0.4	91	-0.02	7.77
65	t	Diethylphthalate	1.390	1.513	-8.8	108	-0.02	8.06
66	t	Fluorene	1.348	1.359	-0.8	95	-0.02	7.97
67	t	4-Chlorophenyl-phenylethe	0.589	0.648	-10.0	105	-0.02	8.05
68	t	4-Nitroaniline	0.357	0.398	-11.5	102	-0.02	8.15
69	I	Phenanthrene-d10	1.000	1.000	0.0	107	-0.02	9.39
70	t	4,6-Dinitro-2-methylpheno	0.148	0.142	4.1	100	-0.01	8.23
71	t	n-Nitrosodiphenylamine	0.639	0.611	4.4	99	-0.02	8.26
72	t	1,2-Diphenylhydrazine	0.943	1.014	-7.5	111	-0.02	8.28
73	S	2,4,6-Tribromophenol	0.083	0.100	-20.5#	117	-0.02	8.39
74	t	4-Bromophenyl-phenylether	0.190	0.216	-13.7	116	-0.03	8.78
75	t	Hexachlorobenzene	0.192	0.215	-12.0	118	-0.02	8.95
76	t	Pentachlorophenol	0.120	0.100	16.7	81	-0.02	9.28
77	t	Phenanthrene	1.215	1.196	1.6	104	-0.02	9.42
78	t	Anthracene	1.197	1.219	-1.8	104	-0.02	9.49
79	t	Carbazole	1.133	1.046	7.7	96	-0.02	9.82
80	t	Di-n-butylphthalate	1.326	1.465	-10.5	109	-0.03	10.62
81	t	Fluoranthene	1.159	1.191	-2.8	106	-0.02	11.26
82	t	Octadecane	0.527	0.613	-16.3	116	-0.02	9.53
83	I	Chrysene-d12	1.000	1.000	0.0	123	-0.02	13.06
84	t	Pyrene	1.398	1.281	8.4	106	-0.02	11.55
85	S	Terphenyl-d14	0.858	0.875	-2.0	120	-0.02	11.90
86	t	Butylbenzylphthalate	0.667	0.668	-0.1	111	-0.02	12.61
87		Butyl stearate	0.371	0.406	-9.4	117	-0.02	12.73
88	t	Benzo[a]anthracene	1.169	1.178	-0.8	119	-0.02	13.04
89	t	3,3'-Dichlorobenzidine	0.394	0.434	-10.2	124	-0.02	13.09
90	t	Chrysene	1.125	1.102	2.0	117	-0.02	13.08
91	t	bis(2-Ethylhexyl)phthalat	0.882	0.916	-3.9	113	-0.02	13.32
92	I	Perylene-d12	1.000	1.000	0.0	115	-0.01	14.43
93	t	Di-n-octylphthalate	1.759	1.913	-8.8	112	-0.02	13.91
94	t	Benzo[b]fluoranthene	1.277	1.321	-3.4	116	-0.02	14.10
95	t	Benzo[k]fluoranthene	1.270	1.348	-6.1	115	-0.01	14.13
96	t	Benzo[a]pyrene	1.153	1.231	-6.8	113	-0.02	14.38
97	t	Indeno[1,2,3-cd]pyrene	1.339	1.292	3.5	104	-0.01	15.25

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2M2166-CC2147
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50787.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

98	t	Dibenz(a,h)acridine	0.918	0.953	-3.8	107	-0.01	15.11
99	t	Dibenz[a,h]anthracene	1.107	1.066	3.7	103	-0.02	15.27
100	t	7,12-Dimethylbenz(a)anthr	0.568	0.622	-9.5	111	-0.02	14.13
101	t	Benzo[g,h,i]perylene	1.147	1.049	8.5	101	-0.02	15.43

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m50375.D M2M2147.M Wed Mar 20 15:18:27 2013 MS2M

8.7.12

8

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2M2166-CC2148
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2M50788.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E2M2166\2m50788.D          Vial: 3
Acq On    : 19 Mar 2013   4:25 pm                     Operator: olgaa
Sample    : cc2148-25                                 Inst    : MS2M
Misc      : op64435,e2m2166,                          Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M2M2147a.M (RTE Integrator)
Title        : Semi Volatile GC/MS, ZB-5 15mx .25mmx .25um
Last Update  : Thu Mar 07 10:53:54 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
102	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	106	-0.09	2.91
103	Benzaldehyde	1.256	1.179	6.1	98	-0.08	2.47
104	Acenaphthene-d10a	1.000	1.000	0.0	116	-0.11	7.14
105	1,2,4,5-Tetrachlorobenzen	0.484	0.507	-4.8	119	-0.11	5.88
107	Chrysene-d12a	1.000	1.000	0.0	142	-0.09	13.05
108	Benzidine	0.738	0.598	19.0	103	-0.11	11.56
110	Phenanthrene-d10a	1.000	1.000	0.0	128	-0.12	9.39
111	Atrazine	0.113	0.123	-8.8	131	-0.11	9.23
113 I	Naphthalene-d8a	1.000	1.000	0.0	114	-0.11	4.52
114	hydroquinone	0.342	0.391	-14.3	124	-0.04	5.39

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m50375.D M2M2147a.M Wed Mar 20 15:19:34 2013 MS2M

8.7.13

8

Initial Calibration Summary

Job Number: JB30425 **Sample:** E2P889-ICC889
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20063.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
                         Response Factor Report  MS2P

  Method       : C:\MSDCHEM\1\METHODS\M2P887.M (RTE Integrator)
  Title        : Semi Volatile Extractables by GC/MS
  Last Update  : Fri Feb 15 09:21:19 2013
  Response via : Initial Calibration

  Calibration Files
  2   =2p20067.D   5   =2p20066.D   25  =2p20064.D   80  =2p20062.D
  100 =2p20061.D   50  =2p20063.D   1   =2p20068.D   10  =2p20065.D

   Compound         2     5     25    80    100   50    1     10    Avg %RSD
  ---------------------------------------------------------------------------
102) I   1,4-Dichlorobenzene-d ----------------ISTD---------------------
103) Benzaldehyde 1.172 1.195 1.150 1.096 0.932 0.930 1.090 1.216 1.098  10.18

104)     Acenaphthene-d10a     ----------------ISTD---------------------
105) Atrazine     0.128 0.131 0.162 0.173 0.175 0.155 0.103 0.148 0.147  16.88
106) 1,2,4,5-Tetr 0.492 0.499 0.511 0.516 0.515 0.464 0.490 0.509 0.499   3.51

107)     Phenanthrene-d10a     ----------------ISTD---------------------
108) o-terphenyl  0.546 0.559 0.610 0.633 0.642 0.562 0.494 0.593 0.580   8.51

109) O   Chrysene-d12a         ----------------ISTD---------------------
110) 1-chloroocta 0.286 0.296 0.401 0.417 0.414 0.365       0.354 0.362  14.88
111) Benzidine          0.546 0.617 0.425 0.380 0.496       0.680 0.524  21.73
          ----- Quadratic regression -----                 Coefficient =  0.9980
               Response Ratio = 0.01121 + 0.62300 *A + -0.10017 *A^2


112)     Naphthalene-d8a       ----------------ISTD---------------------
113) Hydroquinone       0.211 0.308 0.373 0.377 0.328       0.280 0.313  19.94
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M2P887.M          Fri Feb 15 12:23:19 2013   RPT1
```

8.7.14

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2P889-ICV889
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20069A.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p888\2p20069a.D          Vial: 18
Acq On    : 14 Feb 2013   8:00 pm                   Operator: andrews1
Sample    : icv889-50                               Inst    : MS2P
Misc      : op63249,e2p889,35.0,,,1,1               Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2P887.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Fri Feb 15 09:21:19 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
104	Acenaphthene-d10a	1.000	1.000	0.0	86	0.00	7.58
106	1,2,4,5-Tetrachlorobenzen	0.499	0.475	4.8	88	0.00	6.31

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20063.D M2P887.M Fri Feb 15 12:52:03 2013 RPT1

8.7.15

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2P889-ICV889
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20070A.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p888\2p20070a.D          Vial: 19
Acq On    : 14 Feb 2013   8:23 pm                   Operator: andrews1
Sample    : icv889-50                               Inst    : MS2P
Misc      : op63249,e2p889,35.0,,,1,1               Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2P887.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Fri Feb 15 09:21:19 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
102 I	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	81	0.00	3.27
103	Benzaldehyde	1.098	1.424	-29.7	124	0.00	2.81
104	Acenaphthene-d10a	1.000	1.000	0.0	75	0.00	7.58
105	Atrazine	0.147	0.189	-28.6	92	0.00	9.66

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20063.D M2P887.M Fri Feb 15 12:52:07 2013 RPT1

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2P889-ICV889
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20073A.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
  Data File : C:\msdchem\1\DATA\2p888\2p20073a.D          Vial: 22
  Acq On    : 14 Feb 2013   9:31 pm                   Operator: andrews1
  Sample    : icv889-50                               Inst    : MS2P
  Misc      : op63249,e2p889,35.0,,,1,1               Multiplr: 1.00
  MS Integration Params: lscint.p

  Method       : C:\MSDCHEM\1\METHODS\M2P887.M (RTE Integrator)
  Title        : Semi Volatile Extractables by GC/MS
  Last Update  : Fri Feb 15 09:21:19 2013
  Response via : Multiple Level Calibration

  Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
  Max. RRF Dev :  30%     Max. Rel. Area : 200%

        Compound                   AvgRF   CCRF      %Dev Area%  Dev(min)R.T.
  ---------------------------------------------------------------------------
109 O   Chrysene-d12a               1.000   1.000      0.0   85   0.00   13.66

            ----------------------- True    Calc.   % Drift  ------------
111     Benzidine                  50.000  80.497    -61.0# 118   0.00   12.01
 ---------------------------------------------------------------------------
 ---------------------------------------------------------------------------

    (#) = Out of Range              SPCC's out = 0  CCC's out = 0
     2p20063.D  M2P887.M         Fri Feb 15 12:52:15 2013   RPT1
```

8.7.17

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2P889-ICV889
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20075A.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p888\2p20075a.D          Vial: 24
Acq On    : 14 Feb 2013  10:16 pm                   Operator: andrews1
Sample    : icv889-50                               Inst    : MS2P
Misc      : op63249,e2p889,35.0,,,1,1               Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2P887.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Fri Feb 15 09:21:19 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
	----------	AvgRF	CCRF	% Dev	----------		
112	Naphthalene-d8a	1.000	1.000	0.0	65	0.00	4.93
113	Hydroquinone	0.313	0.348	-11.2	69	-0.01	5.71

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20063.D M2P887.M Fri Feb 15 12:52:19 2013 RPT1

8.7.18

8

Initial Calibration Summary

Job Number: JB30425 **Sample:** E2P896-ICC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20228.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MS2P

Method : C:\msdchem\1\METHODS\M2P896.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Wed Feb 20 13:17:25 2013
Response via : Initial Calibration

Calibration Files
2 =2p20227.D 5 =2p20229.D 25 =2p20230.D 80 =2p20226.D
100 =2p20224.D 50 =2p20228.D 1 =2p20225.D 10 =2p20231.D

Compound	2	5	25	80	100	50	1	10	Avg	%RSD
1) I 1,4-Dichlorobenzene-d	----------ISTD----------									
2) 1,4-Dioxane	0.684	0.641	0.584	0.540	0.600	0.603	0.688	0.605	0.618	8.15
3) Pyridine	1.725	1.646	1.487	1.490	1.555	1.555	2.151	1.618	1.653	13.10
4) N-Nitrosodim	0.941	0.935	0.893	0.886	0.937	0.923	0.890	0.946	0.919	2.74
5) 2-Fluorophen	1.350	1.456	1.393	1.426	1.467	1.471	1.431	1.461	1.432	2.94
6) Indene	2.388	2.550	2.407	2.428	2.415	2.495	2.581	2.531	2.474	3.00
7) Cumene	3.338	3.440	3.293	3.259	3.308	3.366	3.511	3.448	3.370	2.61
8) Phenol-d5	1.667	1.820	1.758	1.732	1.761	1.788	1.834	1.848	1.776	3.36
9) Phenol	1.975	2.077	1.987	1.976	1.973	2.034	2.130	2.112	2.033	3.22
10) Aniline	2.365	2.426	2.172	2.160	2.148	2.137	2.588	2.413	2.301	7.37
11) bis(2-Chloro	1.453	1.503	1.385	1.389	1.393	1.410	1.649	1.516	1.462	6.24
12) 2-Chlorophen	1.419	1.555	1.461	1.492	1.499	1.536	1.557	1.536	1.507	3.24
13) Decane	1.749	1.788	1.638	1.587	1.611	1.674	1.927	1.746	1.715	6.49
14) 1,3-Dichloro	1.572	1.639	1.576	1.594	1.583	1.632	1.631	1.693	1.615	2.57
15) 1,4-Dichloro	1.619	1.706	1.611	1.617	1.634	1.677	1.732	1.703	1.662	2.87
16) Benzyl alcoh	0.962	0.998	0.985	0.996	0.981	1.035	0.996	1.043	1.000	2.72
17) 1,2-Dichloro	1.523	1.587	1.525	1.518	1.504	1.549	1.680	1.598	1.560	3.76
18) Acetophenone	1.996	2.070	1.978	1.991	1.966	2.031	2.130	2.087	2.031	2.91
19) 2-Methylphen	1.326	1.439	1.363	1.369	1.338	1.388	1.379	1.466	1.383	3.46
20) 2,2'-oxybis(	0.500	0.512	0.486	0.481	0.479	0.500	0.536	0.519	0.502	3.94
21) 3&4-Methylph	1.403	1.533	1.450	1.429	1.401	1.481	1.497	1.557	1.469	3.96
22) n-Nitroso-di	1.025	1.049	1.009	0.995	0.976	1.022	1.148	1.068	1.037	5.16
23) Hexachloroet	0.482	0.536	0.503	0.502	0.490	0.523	0.541	0.524	0.513	4.20
24) I Naphthalene-d8	----------ISTD----------									
25) Nitrobenzene	0.343	0.371	0.356	0.362	0.364	0.371	0.400	0.376	0.368	4.47
26) Nitrobenzene	0.371	0.403	0.367	0.376	0.375	0.381	0.421	0.392	0.386	4.77
27) Quinoline	0.703	0.721	0.682	0.714	0.707	0.717	0.741	0.728	0.714	2.47
28) Isophorone	0.654	0.685	0.640	0.654	0.651	0.664	0.705	0.693	0.668	3.47
29) 2-Nitropheno	0.177	0.195	0.191	0.196	0.195	0.200	0.189	0.198	0.193	3.78
30) 2,4-Dimethyl	0.311	0.360	0.321	0.351	0.351	0.343	0.351	0.358	0.343	5.14
31) Benzoic acid			0.175	0.254	0.276	0.233		0.114	0.210	31.26
----- Linear regression ----- Coefficient = 0.9961										
Response Ratio = -0.06372 + 0.29363 *A										
32) bis(2-Chloro	0.387	0.420	0.391	0.401	0.400	0.408	0.433	0.417	0.407	3.84
33) 2,4-Dichloro	0.263	0.283	0.277	0.293	0.292	0.294	0.278	0.290	0.284	3.80
34) 2,6-Dichloro	0.268	0.284	0.277	0.285	0.282	0.285	0.270	0.290	0.280	2.85
35) 1,3,5-Trichl	0.295	0.323	0.303	0.303	0.298	0.310	0.322	0.323	0.310	3.77
36) 1,2,4-Trichl	0.291	0.313	0.296	0.305	0.300	0.308	0.313	0.315	0.305	2.88
37) 1,2,3-Trichl	0.286	0.302	0.288	0.298	0.294	0.301	0.306	0.300	0.297	2.34
38) Naphthalene	1.032	1.107	1.039	1.055	1.043	1.073	1.111	1.109	1.071	3.16
39) 4-Chloroanil	0.451	0.490	0.460	0.459	0.439	0.469	0.465	0.493	0.466	3.95
40) 2,3-Dichloro	0.336	0.360	0.341	0.360	0.355	0.360	0.355	0.360	0.353	2.68
41) Caprolactam	0.107	0.112	0.115	0.124	0.122	0.123	0.104	0.121	0.116	6.65
42) Hexachlorobu	0.151	0.164	0.155	0.159	0.159	0.160	0.168	0.161	0.160	3.17

Initial Calibration Summary

Job Number: JB30425 **Sample:** E2P896-ICC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20228.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
43) 4-Chloro-3-m 0.293 0.316 0.304 0.322 0.315 0.324 0.317 0.320 0.314   3.34
44) 2-Methylnaph 0.577 0.624 0.600 0.606 0.596 0.616 0.634 0.633 0.611   3.24
45) 1-Methylnaph 0.543 0.591 0.559 0.574 0.568 0.587 0.599 0.583 0.575   3.19
46) Dimethylnaph 0.558 0.595 0.577 0.587 0.576 0.593 0.631 0.599 0.589   3.61

47) I   Acenaphthene-d10      ----------------ISTD---------------------
48) Hexachlorocy 0.198 0.258 0.293 0.324 0.327 0.316 0.188 0.282 0.273  19.93
49) 2,4,6-Trichl 0.293 0.357 0.349 0.370 0.371 0.363 0.332 0.350 0.348   7.39
50) 2,4,5-Trichl 0.330 0.383 0.381 0.414 0.412 0.406 0.349 0.391 0.383   7.86
51) 2-Fluorobiph 1.235 1.332 1.243 1.289 1.265 1.275 1.309 1.286 1.279   2.52
52) 2-Chloronaph 1.121 1.241 1.151 1.185 1.162 1.184 1.220 1.206 1.184   3.28
53) Biphenyl     1.374 1.510 1.415 1.457 1.434 1.453 1.454 1.502 1.450   3.04
54) 2-Nitroanili 0.338 0.386 0.379 0.384 0.373 0.387 0.369 0.395 0.376   4.65
55) Dimethylphth 1.239 1.368 1.273 1.288 1.270 1.284 1.374 1.343 1.305   3.84
56) Acenaphthyle 1.759 1.917 1.804 1.842 1.826 1.848 1.932 1.888 1.852   3.14
57) 2,6-Dinitrot 0.232 0.279 0.283 0.304 0.298 0.300 0.249 0.293 0.280   9.34
58) 3-Nitroanili 0.294 0.357 0.358 0.365 0.352 0.368 0.301 0.359 0.344   8.48
59) Acenaphthene 1.116 1.173 1.122 1.132 1.098 1.131 1.141 1.180 1.137   2.43
60) 2,4-Dinitrop       0.059 0.131 0.169 0.175 0.159       0.086 0.130  36.75
            ----- Linear regression -----  Coefficient =  0.9987
              Response Ratio = -0.04860 + 0.18228 *A

61) 4-Nitropheno       0.135 0.161 0.185 0.186 0.178       0.148 0.166  12.80
62) Dibenzofuran 1.565 1.710 1.573 1.598 1.567 1.611 1.674 1.682 1.623   3.58
63) 2,4-Dinitrot 0.324 0.366 0.402 0.420 0.412 0.419 0.303 0.397 0.380  11.83
64) 2,3,4,6-Tetr 0.171 0.213 0.257 0.285 0.289 0.283 0.190 0.242 0.241  18.93
65) Diethylphtha 1.272 1.366 1.254 1.277 1.261 1.283 1.368 1.350 1.304   3.73
66) Fluorene     1.256 1.354 1.276 1.316 1.290 1.317 1.358 1.343 1.314   2.84
67) 4-Chlorophen 0.565 0.630 0.569 0.581 0.565 0.580 0.594 0.609 0.587   3.93
68) 4-Nitroanili 0.299 0.351 0.357 0.369 0.365 0.376 0.290 0.362 0.346   9.51

69) I   Phenanthrene-d10      ----------------ISTD---------------------
70) 4,6-Dinitro-       0.103 0.142 0.165 0.161 0.159       0.121 0.142  17.76
71) n-Nitrosodip 0.582 0.658 0.635 0.633 0.620 0.635 0.675 0.645 0.635   4.28
72) 1,2-Diphenyl 0.931 0.995 0.935 0.933 0.897 0.944 1.016 1.001 0.957   4.40
73) 2,4,6-Tribro 0.078 0.083 0.091 0.100 0.098 0.099 0.074 0.093 0.089  11.38
74) 4-Bromopheny 0.191 0.209 0.199 0.205 0.206 0.207 0.207 0.205 0.204   2.90
75) Hexachlorobe 0.206 0.219 0.211 0.217 0.214 0.217 0.224 0.218 0.216   2.44
76) Pentachlorop       0.059 0.115 0.137 0.143 0.132       0.086 0.112  29.39
            ----- Linear regression -----  Coefficient =  0.9990
              Response Ratio = -0.03198 + 0.14713 *A

77) Phenanthrene 1.162 1.246 1.163 1.190 1.161 1.187 1.308 1.223 1.205   4.29
78) Anthracene   1.161 1.260 1.164 1.153 1.115 1.173 1.266 1.244 1.192   4.74
79) Carbazole    1.075 1.186 1.135 1.150 1.117 1.151 1.224 1.191 1.154   4.05
80) Di-n-butylph 1.323 1.432 1.424 1.434 1.393 1.439 1.405 1.460 1.414   2.97
81) Fluoranthene 1.161 1.253 1.224 1.235 1.203 1.234 1.317 1.269 1.237   3.73
82) Octadecane   0.318 0.359 0.344 0.334 0.315 0.340 0.342 0.362 0.339   5.01

83) I   Chrysene-d12          ----------------ISTD---------------------
84) Pyrene       1.282 1.416 1.312 1.351 1.334 1.376 1.446 1.387 1.363   3.96
85) Terphenyl-d1 0.801 0.852 0.814 0.859 0.851 0.874 0.844 0.845 0.843   2.81
86) Butylbenzylp 0.593 0.666 0.647 0.680 0.669 0.686 0.691 0.659 0.661   4.74
87) Butyl steara 0.063 0.076 0.077 0.085 0.082 0.084 0.067 0.077 0.076  10.60
88) Benzo[a]anth 1.139 1.192 1.131 1.170 1.150 1.186 1.402 1.171 1.192   7.33
89) 3,3'-Dichlor 0.442 0.459 0.432 0.445 0.424 0.453 0.472 0.455 0.448   3.44
90) Chrysene     1.117 1.174 1.059 1.100 1.055 1.111 1.343 1.124 1.135   8.09
91) bis(2-Ethylh 0.896 0.944 0.900 0.934 0.908 0.937 1.098 0.919 0.942   6.96

92) I   Perylene-d12          ----------------ISTD---------------------
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** E2P896-ICC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20228.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

93)	Di-n-octylph	1.604	1.707	1.717	1.774	1.716	1.815	1.915	1.720	1.746	5.22
94)	Benzo[b]fluo	1.267	1.316	1.367	1.432	1.373	1.390	1.463	1.305	1.364	4.84
95)	Benzo[k]fluo	1.187	1.238	1.140	1.104	1.115	1.191	1.294	1.266	1.192	5.89
96)	Benzo[a]pyre	1.113	1.161	1.157	1.203	1.188	1.214	1.263	1.177	1.185	3.76
97)	Indeno[1,2,3	1.275	1.358	1.352	1.396	1.402	1.438	1.413	1.357	1.374	3.66
98)	Dibenz(a,h)a	0.906	0.969	0.976	1.007	1.014	1.032	1.003	0.960	0.983	4.04
99)	Dibenz[a,h]a	1.046	1.149	1.128	1.171	1.171	1.191	1.169	1.137	1.145	3.95
100)	7,12-Dimethy	0.568	0.607	0.582	0.609	0.586	0.604	0.639	0.614	0.601	3.63
101)	Benzo[g,h,i]	1.107	1.160	1.152	1.185	1.178	1.197	1.199	1.160	1.167	2.57

(#) = Out of Range ### Number of calibration levels exceeded format ###

M2P896.M Wed Feb 20 15:12:20 2013 RPT1

8.7.19

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2P896-ICV896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20232.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p896\2p20232.D            Vial: 10
Acq On    : 20 Feb 2013  12:26 pm                     Operator: andrews1
Sample    : icv896-50                                 Inst    : MS2P
Misc      : op63249,e2p896,35.0,,,1,1                 Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M2P896.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Wed Feb 20 13:17:25 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	95	-0.03	3.25
9	t	Phenol	2.033	2.003	1.5	94	-0.02	2.96
12	t	2-Chlorophenol	1.507	1.622	-7.6	100	-0.03	3.05
19	t	2-Methylphenol	1.383	1.448	-4.7	99	-0.02	3.65
21	t	3&4-Methylphenol	1.469	1.520	-3.5	97	-0.03	3.84
24	I	Naphthalene-d8	1.000	1.000	0.0	95	-0.03	4.90
29	t	2-Nitrophenol	0.193	0.208	-7.8	98	-0.03	4.42
30	t	2,4-Dimethylphenol	0.343	0.384	-12.0	106	-0.02	4.56
		----------	True	Calc.	% Drift		----------	
31	t	Benzoic acid	50.000	41.625	16.8	79	-0.03	4.80
		----------	AvgRF	CCRF	% Dev		----------	
33	t	2,4-Dichlorophenol	0.284	0.310	-9.2	100	-0.02	4.76
34	t	2,6-Dichlorophenol	0.280	0.303	-8.2	101	-0.03	5.09
43	t	4-Chloro-3-methylphenol	0.314	0.333	-6.1	97	-0.02	5.89
47	I	Acenaphthene-d10	1.000	1.000	0.0	94	-0.03	7.56
49	t	2,4,6-Trichlorophenol	0.348	0.370	-6.3	96	-0.03	6.47
50	t	2,4,5-Trichlorophenol	0.383	0.406	-6.0	94	-0.02	6.52
		----------	True	Calc.	% Drift		----------	
60	t	2,4-Dinitrophenol	100.000	102.898	-2.9	84	-0.02	7.75
		----------	AvgRF	CCRF	% Dev		----------	
61	t	4-Nitrophenol	0.166	0.174	-4.8	92	0.00	7.97
64		2,3,4,6-Tetrachlorophenol	0.241	0.282	-17.0	94	-0.02	8.17
69	I	Phenanthrene-d10	1.000	1.000	0.0	95	-0.03	9.82
70	t	4,6-Dinitro-2-methylpheno	0.142	0.153	-7.7	91	-0.03	8.62
		----------	True	Calc.	% Drift		----------	
76	t	Pentachlorophenol	100.000	97.912	2.1	86	-0.02	9.69

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20228.D M2P896.M Wed Feb 20 14:59:03 2013 RPT1

8.7.20

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2P896-ICV896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20233.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p896\2p20233.D            Vial: 11
Acq On    : 20 Feb 2013  12:49 pm                     Operator: andrews1
Sample    : icv896-50                                 Inst    : MS2P
Misc      : op63249,e2p896,35.0,,,1,1                 Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M2P896.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Wed Feb 20 13:17:25 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	122	-0.03	3.25
3	t	Pyridine	1.653	1.277	22.7	100	-0.03	1.23
4	t	N-Nitrosodimethylamine	0.919	0.808	12.1	107	-0.02	1.22
11	t	bis(2-Chloroethyl)ether	1.462	1.428	2.3	124	-0.03	3.02
14	t	1,3-Dichlorobenzene	1.615	1.551	4.0	116	-0.03	3.20
15	t	1,4-Dichlorobenzene	1.662	1.580	4.9	115	-0.03	3.27
16	t	Benzyl alcohol	1.000	1.001	-0.1	118	-0.03	3.46
17	t	1,2-Dichlorobenzene	1.560	1.517	2.8	120	-0.03	3.48
20	t	2,2'-oxybis(1-Chloropropa	0.502	0.495	1.4	121	-0.03	3.67
22	t	n-Nitroso-di-n-propylamin	1.037	0.995	4.1	119	-0.04	3.84
23	t	Hexachloroethane	0.513	0.513	0.0	120	-0.03	3.86
24	I	Naphthalene-d8	1.000	1.000	0.0	125	-0.03	4.90
26	t	Nitrobenzene	0.386	0.367	4.9	120	-0.03	3.99
28	t	Isophorone	0.668	0.643	3.7	121	-0.04	4.31
		----------	AvgRF	CCRF	% Dev	----------		
32	t	bis(2-Chloroethoxy)methan	0.407	0.415	-2.0	127	-0.03	4.68
36	t	1,2,4-Trichlorobenzene	0.305	0.298	2.3	121	-0.03	4.87
38	t	Naphthalene	1.071	1.015	5.2	118	-0.03	4.93
42	t	Hexachlorobutadiene	0.160	0.155	3.1	121	-0.03	5.24
44	t	2-Methylnaphthalene	0.611	0.565	7.5	115	-0.03	5.96
47	I	Acenaphthene-d10	1.000	1.000	0.0	122	-0.03	7.56
48	t	Hexachlorocyclopentadiene	0.273	0.250	8.4	96	-0.03	6.33
52	t	2-Chloronaphthalene	1.184	1.131	4.5	117	-0.03	6.68
54	t	2-Nitroaniline	0.376	0.361	4.0	114	-0.03	6.94
55	t	Dimethylphthalate	1.305	1.229	5.8	117	-0.03	7.34
56	t	Acenaphthylene	1.852	1.588	14.3	105	-0.03	7.31
57	t	2,6-Dinitrotoluene	0.280	0.290	-3.6	118	-0.03	7.41
58	t	3-Nitroaniline	0.344	0.313	9.0	104	-0.03	7.59
59	t	Acenaphthene	1.137	1.071	5.8	116	-0.03	7.61
		----------	AvgRF	CCRF	% Dev	----------		
62	t	Dibenzofuran	1.623	1.506	7.2	114	-0.03	7.86
63	t	2,4-Dinitrotoluene	0.380	0.377	0.8	110	-0.02	8.00
65	t	Diethylphthalate	1.304	1.197	8.2	114	-0.04	8.46
66	t	Fluorene	1.314	1.261	4.0	117	-0.03	8.40
67	t	4-Chlorophenyl-phenylethe	0.587	0.541	7.8	114	-0.03	8.47
68	t	4-Nitroaniline	0.346	0.341	1.4	111	-0.03	8.55
69	I	Phenanthrene-d10	1.000	1.000	0.0	120	-0.03	9.83

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2P896-ICV896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20233.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

71	t	n-Nitrosodiphenylamine	0.635	0.581	8.5	110	-0.03	8.67
72	t	1,2-Diphenylhydrazine	0.957	0.920	3.9	117	-0.03	8.70
74	t	4-Bromophenyl-phenylether	0.204	0.199	2.5	116	-0.03	9.21
75	t	Hexachlorobenzene	0.216	0.211	2.3	117	-0.03	9.38
		----------	AvgRF	CCRF	% Dev	----------		
77	t	Phenanthrene	1.205	1.140	5.4	116	-0.03	9.86
78	t	Anthracene	1.192	1.150	3.5	118	-0.03	9.93
79	t	Carbazole	1.154	1.099	4.8	115	-0.02	10.25
80	t	Di-n-butylphthalate	1.414	1.355	4.2	113	-0.03	11.05
81	t	Fluoranthene	1.237	1.169	5.5	114	-0.02	11.70
83	I	Chrysene-d12	1.000	1.000	0.0	122	-0.02	13.66
84	t	Pyrene	1.363	1.303	4.4	116	-0.02	12.01
86	t	Butylbenzylphthalate	0.661	0.631	4.5	113	-0.02	13.13
88	t	Benzo[a]anthracene	1.192	1.108	7.0	114	-0.01	13.64
89	t	3,3'-Dichlorobenzidine	0.448	0.335	25.2	90	-0.02	13.69
90	t	Chrysene	1.135	1.075	5.3	118	-0.02	13.69
91	t	bis(2-Ethylhexyl)phthalat	0.942	0.865	8.2	113	-0.02	13.95
92	I	Perylene-d12	1.000	1.000	0.0	121	0.00	15.31
93	t	Di-n-octylphthalate	1.746	1.713	1.9	114	-0.02	14.68
94	t	Benzo[b]fluoranthene	1.364	1.324	2.9	115	-0.01	14.92
95	t	Benzo[k]fluoranthene	1.192	1.092	8.4	111	-0.02	14.94
96	t	Benzo[a]pyrene	1.185	1.139	3.9	113	-0.01	15.25
97	t	Indeno[1,2,3-cd]pyrene	1.374	1.345	2.1	113	0.00	16.33
99	t	Dibenz[a,h]anthracene	1.145	1.115	2.6	113	-0.01	16.36
101	t	Benzo[g,h,i]perylene	1.167	1.133	2.9	114	0.00	16.55

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20228.D M2P896.M Wed Feb 20 14:59:05 2013 RPT1

8.7.21

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2P896-ICV896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20234.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p896\2p20234.D            Vial: 12
Acq On    : 20 Feb 2013   1:12 pm                    Operator: andrews1
Sample    : icv896-50                                Inst    : MS2P
Misc      : op63249,e2p896,35.0,,,1,1                Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M2P896.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Wed Feb 20 13:17:25 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	100	-0.03	3.25
2	t	1,4-Dioxane	0.618	0.597	3.4	99	-0.03	1.07
6	t	Indene	2.474	2.897	-17.1	116	-0.03	3.58
7	t	Cumene	3.370	3.755	-11.4	112	-0.03	2.46
13	t	Decane	1.715	1.735	-1.2	104	-0.03	3.13
18	t	Acetophenone	2.031	2.362	-16.3	116	-0.03	3.78
24	I	Naphthalene-d8	1.000	1.000	0.0	100	-0.03	4.90
27	t	Quinoline	0.714	0.811	-13.6	113	-0.04	5.42
		----------	AvgRF	CCRF	% Dev	----------		
40	t	2,3-Dichloroaniline	0.353	0.391	-10.8	109	-0.03	6.45
41	t	Caprolactam	0.116	0.136	-17.2	111	-0.08	5.53
45	t	1-Methylnaphthalene	0.575	0.671	-16.7	115	-0.03	6.11
46	t	Dimethylnaphthalene	0.589	0.687	-16.6	116	-0.03	6.93
47	I	Acenaphthene-d10	1.000	1.000	0.0	101	-0.03	7.56
53	t	Biphenyl	1.450	1.664	-14.8	115	-0.03	6.71
69	I	Phenanthrene-d10	1.000	1.000	0.0	100	-0.03	9.82
82	t	Octadecane	0.339	0.398	-17.4	117	-0.03	9.94
92	I	Perylene-d12	1.000	1.000	0.0	97	-0.01	15.31
100	t	7,12-Dimethylbenz(a)anthr	0.601	0.608	-1.2	97	-0.02	14.95

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20228.D M2P896.M Wed Feb 20 14:59:07 2013 RPT1

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2P896-ICV896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20235.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p896\2p20235.D            Vial: 13
Acq On    : 20 Feb 2013   1:35 pm                    Operator: andrews1
Sample    : icv896-50                                Inst    : MS2P
Misc      : op63249,e2p896,35.0,,,1,1                Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M2P896.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Wed Feb 20 13:17:25 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	94	-0.03	3.25
5	S	2-Fluorophenol	1.432	1.489	-4.0	95	-0.01	2.06
8	S	Phenol-d5	1.776	1.848	-4.1	97	-0.02	2.95
24	I	Naphthalene-d8	1.000	1.000	0.0	92	-0.03	4.90
25	S	Nitrobenzene-d5	0.368	0.393	-6.8	98	-0.04	3.96
47	I	Acenaphthene-d10	1.000	1.000	0.0	90	-0.03	7.56
51	S	2-Fluorobiphenyl	1.279	1.343	-5.0	95	-0.03	6.59
69	I	Phenanthrene-d10	1.000	1.000	0.0	89	-0.03	9.82
73	S	2,4,6-Tribromophenol	0.089	0.090	-1.1	81	-0.03	8.80
83	I	Chrysene-d12	1.000	1.000	0.0	90	-0.02	13.65
85	S	Terphenyl-d14	0.843	0.914	-8.4	94	-0.02	12.35

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20228.D M2P896.M Wed Feb 20 14:59:09 2013 RPT1

Initial Calibration Verification

Job Number: JB30425 **Sample:** E2P896-ICV896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P20237.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p896\2p20237.D            Vial: 15
Acq On    : 20 Feb 2013   2:21 pm                    Operator: andrews1
Sample    : icv896-50                                Inst    : MS2P
Misc      : op63249,e2p896,35.0,,,1,1                Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M2P896.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Wed Feb 20 13:17:25 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	163	-0.03	3.25
10		Aniline	2.301	2.060	10.5	157	-0.03	2.94
24	I	Naphthalene-d8	1.000	1.000	0.0	167	-0.03	4.90
39	t	4-Chloroaniline	0.466	0.430	7.7	153	-0.03	5.09

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20228.D M2P896.M Wed Feb 20 14:59:11 2013 RPT1

8.7.24

8

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P936-CC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21227.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\2p936\2p21227.D Vial: 2
Acq On : 19 Mar 2013 3:04 pm Operator: andrews1
Sample : cc896-25 Inst : MS2P
Misc : op64284,e2p936, Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M2P896.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Mon Mar 11 09:37:29 2013
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	160	-0.09	2.94
2	t	1,4-Dioxane	0.618	0.555	10.2	152	-0.05	0.91
3	t	Pyridine	1.653	1.422	14.0	153	-0.05	1.05
4	t	N-Nitrosodimethylamine	0.919	0.901	2.0	161	-0.05	1.05
5	S	2-Fluorophenol	1.432	1.300	9.2	149	-0.06	1.83
6	t	Indene	2.474	2.326	6.0	154	-0.09	3.26
7	t	Cumene	3.370	3.269	3.0	158	-0.09	2.18
8	S	Phenol-d5	1.776	1.700	4.3	154	-0.06	2.71
9	t	Phenol	2.033	1.838	9.6	148	-0.06	2.72
10		Aniline	2.301	1.734	24.6#	127	-0.09	2.65
11	t	bis(2-Chloroethyl)ether	1.462	1.304	10.8	150	-0.09	2.72
12	t	2-Chlorophenol	1.507	1.425	5.4	156	-0.08	2.77
13	t	Decane	1.715	1.477	13.9	144	-0.09	2.82
14	t	1,3-Dichlorobenzene	1.615	1.544	4.4	156	-0.09	2.89
15	t	1,4-Dichlorobenzene	1.662	1.562	6.0	155	-0.09	2.96
16	t	Benzyl alcohol	1.000	0.930	7.0	151	-0.09	3.17
17	t	1,2-Dichlorobenzene	1.560	1.493	4.3	156	-0.09	3.17
18	t	Acetophenone	2.031	1.843	9.3	149	-0.09	3.47
19	t	2-Methylphenol	1.383	1.271	8.1	149	-0.08	3.39
20	t	2,2'-oxybis(1-Chloropropa	0.502	0.441	12.2	145	-0.10	3.35
21	t	3&4-Methylphenol	1.469	1.349	8.2	148	-0.07	3.59
22	t	n-Nitroso-di-n-propylamin	1.037	1.019	1.7	161	-0.09	3.52
23	t	Hexachloroethane	0.513	0.508	1.0	161	-0.10	3.52
24	I	Naphthalene-d8	1.000	1.000	0.0	153	-0.10	4.56
25	S	Nitrobenzene-d5	0.368	0.368	0.0	158	-0.09	3.65
26	t	Nitrobenzene	0.386	0.380	1.6	158	-0.09	3.67
27	t	Quinoline	0.714	0.668	6.4	150	-0.10	5.09
28	t	Isophorone	0.668	0.629	5.8	150	-0.09	3.98
29	t	2-Nitrophenol	0.193	0.195	-1.0	155	-0.09	4.10
30	t	2,4-Dimethylphenol	0.343	0.308	10.2	146	-0.08	4.27
		----------	True	Calc.	% Drift	----------		
31	t	Benzoic acid	25.000	19.038	23.8#	107	-0.03	4.55
		----------	AvgRF	CCRF	% Dev	----------		
32	t	bis(2-Chloroethoxy)methan	0.407	0.379	6.9	148	-0.10	4.35
33	t	2,4-Dichlorophenol	0.284	0.279	1.8	154	-0.08	4.47
34	t	2,6-Dichlorophenol	0.280	0.279	0.4	154	-0.09	4.76
35		1,3,5-Trichlorobenzene	0.310	0.316	-1.9	159	-0.10	4.09
36	t	1,2,4-Trichlorobenzene	0.305	0.308	-1.0	159	-0.10	4.52
37		1,2,3-Trichlorobenzene	0.297	0.302	-1.7	160	-0.10	4.86

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P936-CC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21227.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

38	t	Naphthalene	1.071	1.054	1.6	155	-0.10	4.58
39	t	4-Chloroaniline	0.466	0.428	8.2	142	-0.09	4.76
40	t	2,3-Dichloroaniline	0.353	0.333	5.7	149	-0.10	6.11
41	t	Caprolactam	0.116	0.116	0.0	153	-0.06	5.24
42	t	Hexachlorobutadiene	0.160	0.165	-3.1	162	-0.11	4.87
43	t	4-Chloro-3-methylphenol	0.314	0.318	-1.3	160	-0.06	5.63
44	t	2-Methylnaphthalene	0.611	0.648	-6.1	165	-0.10	5.60
45	t	1-Methylnaphthalene	0.575	0.586	-1.9	160	-0.10	5.75
46	t	Dimethylnaphthalene	0.589	0.582	1.2	154	-0.10	6.56
47	I	Acenaphthene-d10	1.000	1.000	0.0	156	-0.10	7.19
48	t	Hexachlorocyclopentadiene	0.273	0.196	28.2#	104	-0.11	5.95
49	t	2,4,6-Trichlorophenol	0.348	0.330	5.2	147	-0.08	6.15
50	t	2,4,5-Trichlorophenol	0.383	0.354	7.6	145	-0.06	6.25
51	S	2-Fluorobiphenyl	1.279	1.236	3.4	155	-0.11	6.22
52	t	2-Chloronaphthalene	1.184	1.090	7.9	148	-0.10	6.32
53	t	Biphenyl	1.450	1.442	0.6	159	-0.10	6.34
54	t	2-Nitroaniline	0.376	0.380	-1.1	156	-0.09	6.60
55	t	Dimethylphthalate	1.305	1.254	3.9	154	-0.10	6.98
56	t	Acenaphthylene	1.852	1.844	0.4	159	-0.10	6.94
57	t	2,6-Dinitrotoluene	0.280	0.289	-3.2	159	-0.09	7.06
58	t	3-Nitroaniline	0.344	0.346	-0.6	150	-0.09	7.26
59	t	Acenaphthene	1.137	1.169	-2.8	162	-0.10	7.23
		----------	True	Calc.	% Drift	----------		
60	t	2,4-Dinitrophenol	50.000	25.693	48.6#	65	-0.05	7.49
		----------	AvgRF	CCRF	% Dev	----------		
61	t	4-Nitrophenol	0.166	0.036#	78.3#	35#	-0.02	7.79
62	t	Dibenzofuran	1.623	1.592	1.9	158	-0.10	7.49
63	t	2,4-Dinitrotoluene	0.380	0.400	-5.3	155	-0.08	7.69
64		2,3,4,6-Tetrachlorophenol	0.241	0.095	60.6#	58	-0.08	7.84
65	t	Diethylphthalate	1.304	1.280	1.8	159	-0.10	8.09
66	t	Fluorene	1.314	1.268	3.5	155	-0.10	8.02
67	t	4-Chlorophenyl-phenylethe	0.587	0.603	-2.7	165	-0.11	8.09
68	t	4-Nitroaniline	0.346	0.337	2.6	147	-0.08	8.23
69	I	Phenanthrene-d10	1.000	1.000	0.0	167	-0.10	9.46
70	t	4,6-Dinitro-2-methylpheno	0.142	0.111	21.8#	130	-0.06	8.34
71	t	n-Nitrosodiphenylamine	0.635	0.589	7.2	155	-0.10	8.31
72	t	1,2-Diphenylhydrazine	0.957	0.878	8.3	157	-0.10	8.33
73	S	2,4,6-Tribromophenol	0.089	0.082	7.9	150	-0.09	8.46
74	t	4-Bromophenyl-phenylether	0.204	0.198	2.9	166	-0.10	8.83
75	t	Hexachlorobenzene	0.216	0.210	2.8	166	-0.10	9.01
		----------	True	Calc.	% Drift	----------		
76	t	Pentachlorophenol	50.000	12.128	75.7#	15	-0.07	9.38
		----------	AvgRF	CCRF	% Dev	----------		
77	t	Phenanthrene	1.205	1.133	6.0	163	-0.10	9.49
78	t	Anthracene	1.192	1.164	2.3	167	-0.10	9.56
79	t	Carbazole	1.154	1.029	10.8	151	-0.09	9.89
80	t	Di-n-butylphthalate	1.414	1.324	6.4	155	-0.10	10.67
81	t	Fluoranthene	1.237	1.205	2.6	164	-0.09	11.34
82	t	Octadecane	0.339	0.333	1.8	161	-0.11	9.56
83	I	Chrysene-d12	1.000	1.000	0.0	180	-0.08	13.34
84	t	Pyrene	1.363	1.198	12.1	164	-0.09	11.65
85	S	Terphenyl-d14	0.843	0.774	8.2	171	-0.09	12.00
86	t	Butylbenzylphthalate	0.661	0.578	12.6	161	-0.09	12.79

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P936-CC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21227.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

87		Butyl stearate	0.076	0.080	-5.3	186	-0.09	12.93
88	t	Benzo[a]anthracene	1.192	1.101	7.6	175	-0.08	13.32
89	t	3,3'-Dichlorobenzidine	0.448	0.409	8.7	170	-0.08	13.37
90	t	Chrysene	1.135	1.034	8.9	176	-0.08	13.37
91	t	bis(2-Ethylhexyl)phthalat	0.942	0.822	12.7	165	-0.09	13.63
92	I	Perylene-d12	1.000	1.000	0.0	178	-0.06	15.00
93	t	Di-n-octylphthalate	1.746	1.624	7.0	168	-0.09	14.35
94	t	Benzo[b]fluoranthene	1.364	1.286	5.7	167	-0.06	14.61
95	t	Benzo[k]fluoranthene	1.192	1.126	5.5	176	-0.07	14.63
96	t	Benzo[a]pyrene	1.185	1.122	5.3	173	-0.06	14.94
97	t	Indeno[1,2,3-cd]pyrene	1.374	1.248	9.2	164	-0.06	16.02
98	t	Dibenz(a,h)acridine	0.983	0.933	5.1	170	-0.06	15.84
99	t	Dibenz[a,h]anthracene	1.145	1.054	7.9	166	-0.06	16.04
100	t	7,12-Dimethylbenz(a)anthr	0.601	0.542	9.8	166	-0.08	14.62
101	t	Benzo[g,h,i]perylene	1.167	1.038	11.1	160	-0.06	16.24

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20230.D M2P896.M Wed Mar 20 14:25:10 2013 RPT1

8.7.25

8

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P936-CC889
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21228.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p936\2p21228.D          Vial: 3
Acq On    : 19 Mar 2013   3:26 pm                   Operator: andrews1
Sample    : cc889-50                                Inst    : MS2P
Misc      : op64284,e2p936,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2P896.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Mon Mar 11 09:37:29 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
102 I	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	90	-0.09	2.94
103	Benzaldehyde	1.098	1.086	1.1	105	-0.09	2.50
104	Acenaphthene-d10a	1.000	1.000	0.0	92	-0.11	7.18
105	Atrazine	0.147	0.198	-34.7#	118	-0.09	9.28
106	1,2,4,5-Tetrachlorobenzen	0.499	0.553	-10.8	110	-0.10	5.92
107 I	Chrysene-d12a	1.000	1.000	0.0	99	-0.09	13.33
	----------	True	Calc.	% Drift	----------		
108	Benzidine	50.000	53.502	-7.0	106	-0.31	11.64
	----------	AvgRF	CCRF	% Dev	----------		
109	Naphthalene-d8a	1.000	1.000	0.0	88	-0.10	4.55
110	Hydroquinone	0.313	0.346	-10.5	92	-0.05	5.48

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20856.D M2P896.M Wed Mar 20 14:28:31 2013 RPT1

8.7.26

8

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P940-CC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21341.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p940\2p21341.D          Vial: 2
Acq On    : 21 Mar 2013   7:46 pm                  Operator: ashleyd
Sample    : cc896-25                               Inst    : MS2P
Misc      : op64284,e2p940,                        Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2P896.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Sat Mar 23 12:41:15 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	141	0.00	2.91
2	t	1,4-Dioxane		----------NA----------				
3	t	Pyridine	1.653	1.364	17.5	129	0.00	1.06
4	t	N-Nitrosodimethylamine	0.919	0.831	9.6	131	0.00	1.05
5	S	2-Fluorophenol	1.432	1.240	13.4	125	0.00	1.82
6	t	Indene	2.474	2.317	6.3	136	0.00	3.22
7	t	Cumene	3.370	3.156	6.4	135	0.00	2.16
8	S	Phenol-d5	1.776	1.695	4.6	136	0.00	2.69
9	t	Phenol	2.033	1.730	14.9	123	0.00	2.71
10		Aniline	2.301	1.651	28.2#	107	0.00	2.63
11	t	bis(2-Chloroethyl)ether	1.462	1.253	14.3	127	0.00	2.69
12	t	2-Chlorophenol	1.507	1.423	5.6	137	0.00	2.75
13	t	Decane	1.715	1.382	19.4	119	0.00	2.80
14	t	1,3-Dichlorobenzene	1.615	1.551	4.0	139	0.00	2.87
15	t	1,4-Dichlorobenzene	1.662	1.587	4.5	139	0.00	2.92
16	t	Benzyl alcohol	1.000	0.906	9.4	130	0.00	3.15
17	t	1,2-Dichlorobenzene	1.560	1.481	5.1	137	0.00	3.13
18	t	Acetophenone	2.031	1.790	11.9	128	0.00	3.44
19	t	2-Methylphenol	1.383	1.219	11.9	126	0.00	3.36
20	t	2,2'-oxybis(1-Chloropropa	0.502	0.429	14.5	124	0.00	3.32
21	t	3&4-Methylphenol	1.469	1.299	11.6	126	0.00	3.57
22	t	n-Nitroso-di-n-propylamin	1.037	0.953	8.1	133	0.00	3.49
23	t	Hexachloroethane	0.513	0.510	0.6	143	0.00	3.48
24	I	Naphthalene-d8	1.000	1.000	0.0	133	0.00	4.52
25	S	Nitrobenzene-d5	0.368	0.346	6.0	129	0.00	3.62
26	t	Nitrobenzene	0.386	0.363	6.0	131	0.00	3.64
27	t	Quinoline	0.714	0.667	6.6	130	0.00	5.05
28	t	Isophorone	0.668	0.605	9.4	126	0.00	3.95
29	t	2-Nitrophenol	0.193	0.194	-0.5	135	0.00	4.07
30	t	2,4-Dimethylphenol	0.343	0.294	14.3	122	0.00	4.24
		----------	True	Calc.	% Drift	----------		
31	t	Benzoic acid	25.000	22.845	8.6	127	0.00	4.52
		----------	AvgRF	CCRF	% Dev	----------		
32	t	bis(2-Chloroethoxy)methan	0.407	0.362	11.1	123	0.00	4.32
33	t	2,4-Dichlorophenol	0.284	0.272	4.2	131	0.00	4.44
34	t	2,6-Dichlorophenol	0.280	0.274	2.1	132	0.00	4.74
35		1,3,5-Trichlorobenzene	0.310	0.320	-3.2	140	0.00	4.06
36	t	1,2,4-Trichlorobenzene	0.305	0.311	-2.0	140	0.00	4.49
37		1,2,3-Trichlorobenzene	0.297	0.298	-0.3	137	0.00	4.82

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P940-CC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21341.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

38	t	Naphthalene	1.071	1.054	1.6	135	0.00	4.55
39	t	4-Chloroaniline	0.466	0.417	10.5	121	0.00	4.73
40	t	2,3-Dichloroaniline	0.353	0.336	4.8	131	0.00	6.08
41	t	Caprolactam	0.116	0.105	9.5	121	0.00	5.22
42	t	Hexachlorobutadiene	0.160	0.163	-1.9	139	0.00	4.84
43	t	4-Chloro-3-methylphenol	0.314	0.308	1.9	135	0.00	5.60
44	t	2-Methylnaphthalene	0.611	0.648	-6.1	143	0.00	5.56
45	t	1-Methylnaphthalene	0.575	0.585	-1.7	139	0.00	5.71
46	t	Dimethylnaphthalene	0.589	0.583	1.0	134	0.00	6.52
47	I	Acenaphthene-d10	1.000	1.000	0.0	133	0.00	7.14
48	t	Hexachlorocyclopentadiene	0.273	0.173	36.6#	78	0.00	5.91
49	t	2,4,6-Trichlorophenol	0.348	0.335	3.7	127	0.00	6.12
50	t	2,4,5-Trichlorophenol	0.383	0.354	7.6	123	0.00	6.22
51	S	2-Fluorobiphenyl	1.279	1.246	2.6	133	0.00	6.19
52	t	2-Chloronaphthalene	1.184	1.116	5.7	129	0.00	6.28
53	t	Biphenyl	1.450	1.461	-0.8	137	0.00	6.30
54	t	2-Nitroaniline	0.376	0.365	2.9	128	0.00	6.57
55	t	Dimethylphthalate	1.305	1.266	3.0	132	0.00	6.94
56	t	Acenaphthylene	1.852	1.888	-1.9	139	0.00	6.90
57	t	2,6-Dinitrotoluene	0.280	0.292	-4.3	137	0.00	7.03
58	t	3-Nitroaniline	0.344	0.346	-0.6	128	0.00	7.24
59	t	Acenaphthene	1.137	1.171	-3.0	139	0.00	7.19
		----------	True	Calc.	% Drift	----------		
60	t	2,4-Dinitrophenol	50.000	26.616	46.8#	59	0.00	7.48
		----------	AvgRF	CCRF	% Dev	----------		
61	t	4-Nitrophenol	0.166	0.044#	73.5#	36#	0.00	7.80
62	t	Dibenzofuran	1.623	1.624	-0.1	137	0.00	7.45
63	t	2,4-Dinitrotoluene	0.380	0.412	-8.4	136	0.00	7.66
64		2,3,4,6-Tetrachlorophenol	0.241	0.119	50.6#	61	0.00	7.81
65	t	Diethylphthalate	1.304	1.280	1.8	136	0.00	8.05
66	t	Fluorene	1.314	1.288	2.0	134	0.00	7.98
67	t	4-Chlorophenyl-phenylethe	0.587	0.601	-2.4	140	0.00	8.05
68	t	4-Nitroaniline	0.346	0.324	6.4	121	0.00	8.19
69	I	Phenanthrene-d10	1.000	1.000	0.0	144	0.00	9.41
70	t	4,6-Dinitro-2-methylpheno	0.142	0.099	30.3#	100	0.00	8.31
71	t	n-Nitrosodiphenylamine	0.635	0.591	6.9	134	0.00	8.27
72	t	1,2-Diphenylhydrazine	0.957	0.844	11.8	130	0.00	8.28
73	S	2,4,6-Tribromophenol	0.089	0.079	11.2	125	0.00	8.42
74	t	4-Bromophenyl-phenylether	0.204	0.202	1.0	146	0.00	8.79
75	t	Hexachlorobenzene	0.216	0.212	1.9	144	0.00	8.97
		----------	True	Calc.	% Drift	----------		
76	t	Pentachlorophenol	50.000	12.415	75.2#	14	0.00	9.34
		----------	AvgRF	CCRF	% Dev	----------		
77	t	Phenanthrene	1.205	1.132	6.1	140	0.00	9.44
78	t	Anthracene	1.192	1.149	3.6	142	0.00	9.52
79	t	Carbazole	1.154	1.049	9.1	133	0.00	9.86
80	t	Di-n-butylphthalate	1.414	1.319	6.7	133	0.00	10.62
81	t	Fluoranthene	1.237	1.203	2.7	141	0.00	11.30
82	t	Octadecane	0.339	0.319	5.9	134	0.00	9.52
83	I	Chrysene-d12	1.000	1.000	0.0	153	0.00	13.30
84	t	Pyrene	1.363	1.207	11.4	141	0.00	11.61
85	S	Terphenyl-d14	0.843	0.778	7.7	147	0.00	11.96
86	t	Butylbenzylphthalate	0.661	0.571	13.6	135	0.00	12.76

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P940-CC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21341.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

87		Butyl stearate		----------NA----------				
88	t	Benzo[a]anthracene	1.192	1.100	7.7	149	0.00	13.28
89	t	3,3'-Dichlorobenzidine	0.448	0.404	9.8	143	0.00	13.34
90	t	Chrysene	1.135	1.029	9.3	149	0.00	13.33
91	t	bis(2-Ethylhexyl)phthalat	0.942	0.808	14.2	138	0.00	13.59
92	I	Perylene-d12	1.000	1.000	0.0	152	0.00	14.96
93	t	Di-n-octylphthalate	1.746	1.640	6.1	145	0.00	14.32
94	t	Benzo[b]fluoranthene	1.364	1.273	6.7	141	0.00	14.57
95	t	Benzo[k]fluoranthene	1.192	1.168	2.0	156	0.00	14.60
96	t	Benzo[a]pyrene	1.185	1.087	8.3	142	0.00	14.91
97	t	Indeno[1,2,3-cd]pyrene	1.374	1.267	7.8	142	0.00	16.00
98	t	Dibenz(a,h)acridine	0.983	0.936	4.8	146	0.00	15.80
99	t	Dibenz[a,h]anthracene	1.145	1.091	4.7	147	0.00	16.01
100	t	7,12-Dimethylbenz(a)anthr	0.601	0.541	10.0	141	0.00	14.58
101	t	Benzo[g,h,i]perylene	1.167	1.065	8.7	140	0.00	16.22
102	I	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	105	0.00	2.91
103		Benzaldehyde		----------NA----------				
104		Acenaphthene-d10a	1.000	1.000	0.0	111	0.00	7.14
105		Atrazine		----------NA----------				
106		1,2,4,5-Tetrachlorobenzen		----------NA----------				
107	I	Chrysene-d12a	1.000	1.000	0.0	125	0.00	13.30
		----------	True	Calc.	% Drift	----------		
108		Benzidine		----------NA----------				
		----------	AvgRF	CCRF	% Dev	----------		
109		Naphthalene-d8a	1.000	1.000	0.0	103	0.00	4.52
110		Hydroquinone		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p20230.D M2P896.M Sat Mar 23 12:45:39 2013 RPT1

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P940-CC889
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21342.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p940\2p21342.D          Vial: 3
Acq On    : 21 Mar 2013   8:11 pm                   Operator: ashleyd
Sample    : cc889-50                                Inst    : MS2P
Misc      : op64284,e2p940,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M2P896eph.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Sat Mar 23 10:29:41 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
102	I	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	90	0.00	2.91
103		Benzaldehyde	1.098	0.968	11.8	94	0.00	2.47
104		Acenaphthene-d10a	1.000	1.000	0.0	92	0.00	7.14
105		Atrazine	0.147	0.201	-36.7#	119	0.00	9.25
106		1,2,4,5-Tetrachlorobenzen	0.499	0.555	-11.2	111	0.00	5.89
107	I	Phenanthrene-d10a	1.000	1.000	0.0	96	0.00	9.41
108	S	o-terphenyl	0.580	0.620	-6.9	105	0.00	10.18
109	I	Chrysene-d12a	1.000	1.000	0.0	104	0.00	13.30
110	S	1-chlorooctadecane	0.362	0.337	6.9	96	0.00	11.38
			True	Calc.	% Drift			
111		Benzidine	50.000	35.880	28.2#	82	0.00	11.62
			AvgRF	CCRF	% Dev			
112		Naphthalene-d8a	1.000	1.000	0.0	86	0.00	4.52
113		Hydroquinone	0.313	0.312	0.3	82	0.00	5.45

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p21342.D M2P896eph.M Sat Mar 23 11:40:09 2013 RPT1

8.7.28

8

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P941-CC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21373.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\2p941\2p21373.D Vial: 2
Acq On : 22 Mar 2013 8:46 am Operator: andrews1
Sample : cc896-50 Inst : MS2P
Misc : op64284,e2p941, Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M2P896.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Sat Mar 23 13:07:29 2013
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	155	0.00	2.90
2	t	1,4-Dioxane		----------NA----------				
3	t	Pyridine	1.653	1.456	11.9	145	0.15	1.04
4	t	N-Nitrosodimethylamine	0.919	0.864	6.0	145	0.15	1.04
5	S	2-Fluorophenol	1.432	1.337	6.6	141	0.12	1.81
6	t	Indene	2.474	2.411	2.5	150	0.08	3.21
7	t	Cumene	3.370	3.315	1.6	152	0.09	2.15
8	S	Phenol-d5	1.776	1.760	0.9	152	0.11	2.68
9	t	Phenol	2.033	1.902	6.4	145	0.11	2.69
10		Aniline	2.301	1.903	17.3	138	0.09	2.61
11	t	bis(2-Chloroethyl)ether	1.462	1.349	7.7	148	0.09	2.69
12	t	2-Chlorophenol	1.507	1.502	0.3	151	0.10	2.74
13	t	Decane	1.715	1.478	13.8	137	0.08	2.79
14	t	1,3-Dichlorobenzene	1.615	1.606	0.6	152	0.08	2.86
15	t	1,4-Dichlorobenzene	1.662	1.650	0.7	152	0.08	2.92
16	t	Benzyl alcohol	1.000	0.956	4.4	143	0.09	3.14
17	t	1,2-Dichlorobenzene	1.560	1.544	1.0	154	0.08	3.12
18	t	Acetophenone	2.031	1.904	6.3	145	0.09	3.43
19	t	2-Methylphenol	1.383	1.324	4.3	148	0.10	3.35
20	t	2,2'-oxybis(1-Chloropropa	0.502	0.453	9.8	140	0.08	3.31
21	t	3&4-Methylphenol	1.469	1.445	1.6	151	0.10	3.55
22	t	n-Nitroso-di-n-propylamin	1.037	1.025	1.2	155	0.08	3.49
23	t	Hexachloroethane	0.513	0.520	-1.4	154	0.07	3.48
24	I	Naphthalene-d8	1.000	1.000	0.0	149	0.00	4.51
25	S	Nitrobenzene-d5	0.368	0.372	-1.1	149	0.08	3.61
26	t	Nitrobenzene	0.386	0.389	-0.8	152	0.08	3.63
27	t	Quinoline	0.714	0.711	0.4	148	0.08	5.05
28	t	Isophorone	0.668	0.648	3.0	146	0.08	3.95
29	t	2-Nitrophenol	0.193	0.210	-8.8	156	0.08	4.05
30	t	2,4-Dimethylphenol	0.343	0.350	-2.0	152	0.09	4.22
		----------	True	Calc.	% Drift	----------		
31	t	Benzoic acid	50.000	52.114	-4.2	163	0.19	4.57
		----------	AvgRF	CCRF	% Dev	----------		
32	t	bis(2-Chloroethoxy)methan	0.407	0.388	4.7	142	0.07	4.30
33	t	2,4-Dichlorophenol	0.284	0.294	-3.5	149	0.09	4.43
34	t	2,6-Dichlorophenol	0.280	0.291	-3.9	152	0.08	4.73
35		1,3,5-Trichlorobenzene	0.310	0.327	-5.5	157	0.07	4.05
36	t	1,2,4-Trichlorobenzene	0.305	0.317	-3.9	154	0.07	4.48
37		1,2,3-Trichlorobenzene	0.297	0.308	-3.7	153	0.07	4.81

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P941-CC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21373.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

38	t	Naphthalene	1.071	1.095	-2.2	152	0.07	4.53
39	t	4-Chloroaniline	0.466	0.455	2.4	144	0.08	4.72
40	t	2,3-Dichloroaniline	0.353	0.352	0.3	146	0.07	6.06
41	t	Caprolactam	0.116	0.121	-4.3	147	0.15	5.24
42	t	Hexachlorobutadiene	0.160	0.168	-5.0	157	0.06	4.83
43	t	4-Chloro-3-methylphenol	0.314	0.335	-6.7	154	0.11	5.59
44	t	2-Methylnaphthalene	0.611	0.648	-6.1	157	0.06	5.55
45	t	1-Methylnaphthalene	0.575	0.614	-6.8	156	0.06	5.70
46	t	Dimethylnaphthalene	0.589	0.612	-3.9	154	0.06	6.51
47	I	Acenaphthene-d10	1.000	1.000	0.0	151	0.00	7.13
48	t	Hexachlorocyclopentadiene	0.273	0.242	11.4	116	0.05	5.90
49	t	2,4,6-Trichlorophenol	0.348	0.357	-2.6	149	0.09	6.11
50	t	2,4,5-Trichlorophenol	0.383	0.396	-3.4	147	0.10	6.20
51	S	2-Fluorobiphenyl	1.279	1.276	0.2	151	0.06	6.18
52	t	2-Chloronaphthalene	1.184	1.129	4.6	144	0.07	6.27
53	t	Biphenyl	1.450	1.493	-3.0	155	0.06	6.29
54	t	2-Nitroaniline	0.376	0.392	-4.3	153	0.08	6.57
55	t	Dimethylphthalate	1.305	1.303	0.2	153	0.07	6.94
56	t	Acenaphthylene	1.852	1.947	-5.1	159	0.06	6.89
57	t	2,6-Dinitrotoluene	0.280	0.308	-10.0	155	0.08	7.03
58	t	3-Nitroaniline	0.344	0.352	-2.3	144	0.09	7.22
59	t	Acenaphthene	1.137	1.211	-6.5	162	0.06	7.18
		----------	True	Calc.	% Drift	----------		
60	t	2,4-Dinitrophenol	100.000	81.943	18.1	123	0.11	7.44
		----------	AvgRF	CCRF	% Dev	----------		
61	t	4-Nitrophenol	0.166	0.100	39.8#	85	0.14	7.74
62	t	Dibenzofuran	1.623	1.664	-2.5	156	0.06	7.44
63	t	2,4-Dinitrotoluene	0.380	0.423	-11.3	152	0.09	7.65
64		2,3,4,6-Tetrachlorophenol	0.241	0.199	17.4	106	0.08	7.79
65	t	Diethylphthalate	1.304	1.340	-2.8	158	0.07	8.05
66	t	Fluorene	1.314	1.344	-2.3	154	0.07	7.97
67	t	4-Chlorophenyl-phenylethe	0.587	0.637	-8.5	166	0.05	8.04
68	t	4-Nitroaniline	0.346	0.349	-0.9	140	0.10	8.19
69	I	Phenanthrene-d10	1.000	1.000	0.0	164	0.00	9.40
70	t	4,6-Dinitro-2-methylpheno	0.142	0.131	7.7	135	0.10	8.29
71	t	n-Nitrosodiphenylamine	0.635	0.604	4.9	156	0.07	8.26
72	t	1,2-Diphenylhydrazine	0.957	0.893	6.7	155	0.05	8.27
73	S	2,4,6-Tribromophenol	0.089	0.088	1.1	147	0.07	8.40
74	t	4-Bromophenyl-phenylether	0.204	0.208	-2.0	165	0.05	8.78
75	t	Hexachlorobenzene	0.216	0.216	0.0	164	0.06	8.96
		----------	True	Calc.	% Drift	----------		
76	t	Pentachlorophenol	100.000	52.033	48.0#	79	0.08	9.31
		----------	AvgRF	CCRF	% Dev	----------		
77	t	Phenanthrene	1.205	1.153	4.3	159	0.06	9.43
78	t	Anthracene	1.192	1.182	0.8	165	0.07	9.51
79	t	Carbazole	1.154	1.069	7.4	152	0.08	9.85
80	t	Di-n-butylphthalate	1.414	1.368	3.3	156	0.05	10.62
81	t	Fluoranthene	1.237	1.231	0.5	164	0.07	11.29
82	t	Octadecane	0.339	0.334	1.5	161	0.05	9.51
83	I	Chrysene-d12	1.000	1.000	0.0	181	0.00	13.29
84	t	Pyrene	1.363	1.245	8.7	164	0.07	11.60
85	S	Terphenyl-d14	0.843	0.800	5.1	166	0.07	11.95
86	t	Butylbenzylphthalate	0.661	0.597	9.7	157	0.07	12.74

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P941-CC896
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21373.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

87		Butyl stearate	0.076	0.084	-10.5	181	0.08	12.88
88	t	Benzo[a]anthracene	1.192	1.101	7.6	168	0.09	13.27
89	t	3,3'-Dichlorobenzidine	0.448	0.386	13.8	154	0.09	13.32
90	t	Chrysene	1.135	1.063	6.3	173	0.09	13.32
91	t	bis(2-Ethylhexyl)phthalat	0.942	0.809	14.1	156	0.08	13.58
92	I	Perylene-d12	1.000	1.000	0.0	167	0.00	14.95
93	t	Di-n-octylphthalate	1.746	1.748	-0.1	161	0.08	14.31
94	t	Benzo[b]fluoranthene	1.364	1.270	6.9	153	0.11	14.57
95	t	Benzo[k]fluoranthene	1.192	1.365	-14.5	192	0.10	14.59
96	t	Benzo[a]pyrene	1.185	1.200	-1.3	165	0.10	14.89
97	t	Indeno[1,2,3-cd]pyrene	1.374	1.353	1.5	158	0.11	15.99
98	t	Dibenz(a,h)acridine	0.983	0.961	2.2	156	0.10	15.79
99	t	Dibenz[a,h]anthracene	1.145	1.138	0.6	160	0.11	16.00
100	t	7,12-Dimethylbenz(a)anthr	0.601	0.631	-5.0	175	0.09	14.57
101	t	Benzo[g,h,i]perylene	1.167	1.124	3.7	157	0.11	16.20

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p21374.D M2P896.M Sat Mar 23 14:04:17 2013 RPT1

8.7.29

8

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E2P941-CC889
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 2P21374.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\2p941\2p21374.D          Vial: 3
Acq On    : 22 Mar 2013   9:09 am                   Operator: andrews1
Sample    : cc889-50                                Inst    : MS2P
Misc      : op64284,e2p941,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M2P896.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Sat Mar 23 13:07:29 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
102 I	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	139	0.00	2.90
103	Benzaldehyde	1.098	1.019	7.2	153	0.00	2.46
104	Acenaphthene-d10a	1.000	1.000	0.0	147	0.00	7.13
105	Atrazine	0.147	0.198	-34.7#	187	0.00	9.25
106	1,2,4,5-Tetrachlorobenzen	0.499	0.553	-10.8	175	0.00	5.88
107 I	Chrysene-d12a	1.000	1.000	0.0	159	0.00	13.28
	----------	True	Calc.	% Drift	----------		
108	Benzidine	50.000	24.527	50.9#	91	0.00	11.60
	----------	AvgRF	CCRF	% Dev	----------		
109	Naphthalene-d8a	1.000	1.000	0.0	139	0.00	4.51
110	Hydroquinone	0.313	0.350	-11.8	148	0.00	5.44

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2p21374.D M2P896.M Sat Mar 23 14:04:19 2013 RPT1

8.7.30

8

Initial Calibration Summary

Job Number: JB30425 **Sample:** E3P782-ICC782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17136.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report GC3P

Method : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Feb 26 09:55:13 2013
Response via : Initial Calibration

Calibration Files
2 =3p17135.D 5 =3p17137.D 25 =3p17138.D 80 =3p17134.D
100 =3p17132.D 50 =3p17136.D 1 =3p17133.D 10 =3p17139.D

Compound	2	5	25	80	100	50	1	10	Avg	%RSD
1) I 1,4-Dichlorobenzene-d	----------ISTD----------									
2) 1,4-Dioxane	0.409	0.513	0.464	0.498	0.513	0.478	0.743	0.486	0.513	19.24
3) Pyridine	1.389	1.391	1.337	1.403	1.449	1.371	1.623	1.334	1.412	6.58
4) N-Nitrosodim	0.675	0.690	0.659	0.707	0.734	0.684	0.777	0.687	0.702	5.38
5) 2-Fluorophen	1.260	1.340	1.330	1.364	1.386	1.338	1.399	1.317	1.342	3.25
6) Indene	2.154	2.203	2.118	2.082	2.045	2.107	2.212	2.187	2.138	2.82
7) Cumene	2.875	2.998	2.880	2.999	3.001	2.898	3.029	2.924	2.950	2.12
8) Phenol-d5	1.477	1.623	1.582	1.659	1.661	1.586	1.636	1.612	1.604	3.70
9) Phenol	1.693	1.815	1.762	1.767	1.806	1.770	1.893	1.784	1.786	3.19
10) Aniline	1.953	2.011	1.991	1.761	1.734	2.011	2.185	1.894	1.942	7.52
11) bis(2-Chloro	1.091	1.162	1.098	1.139	1.146	1.106	1.196	1.110	1.131	3.20
12) 2-Chlorophen	1.417	1.486	1.444	1.455	1.471	1.434	1.447	1.464	1.452	1.50
13) Decane	1.441	1.443	1.406	1.404	1.408	1.368	1.539	1.428	1.429	3.52
14) 1,3-Dichloro	1.530	1.664	1.567	1.585	1.570	1.565	1.714	1.633	1.604	3.83
15) 1,4-Dichloro	1.589	1.659	1.585	1.589	1.598	1.578	1.713	1.645	1.619	2.98
16) Benzyl alcoh	0.830	0.875	0.824	0.846	0.840	0.851	0.871	0.854	0.849	2.11
17) 1,2-Dichloro	1.463	1.563	1.478	1.470	1.457	1.484	1.562	1.545	1.503	3.06
18) Acetophenone	1.712	1.801	1.715	1.706	1.702	1.704	1.861	1.757	1.745	3.33
19) 2-Methylphen	1.147	1.249	1.191	1.154	1.142	1.181	1.247	1.207	1.190	3.56
20) 2,2'-oxybis(	1.996	2.064	1.911	1.921	1.926	1.885	2.154	1.937	1.974	4.65
21) 3&4-Methylph	1.219	1.292	1.278	1.259	1.250	1.243	1.310	1.300	1.269	2.47
22) n-Nitroso-di	0.845	0.881	0.858	0.854	0.856	0.843	0.941	0.863	0.868	3.69
23) Hexachloroet	0.516	0.563	0.524	0.528	0.535	0.527	0.552	0.543	0.536	2.95
24) I Naphthalene-d8	----------ISTD----------									
25) Nitrobenzene	0.337	0.346	0.327	0.343	0.343	0.330	0.357	0.345	0.341	2.81
26) Nitrobenzene	0.360	0.358	0.338	0.346	0.349	0.341	0.380	0.351	0.353	3.73
27) Quinoline	0.659	0.683	0.657	0.692	0.688	0.676	0.720	0.677	0.682	2.93
28) Isophorone	0.561	0.567	0.547	0.576	0.577	0.561	0.577	0.578	0.568	1.97
29) 2-Nitropheno	0.186	0.201	0.198	0.210	0.208	0.202	0.191	0.199	0.199	4.02
30) 2,4-Dimethyl	0.265	0.315	0.313	0.318	0.318	0.322	0.293	0.292	0.304	6.45
31) Benzoic acid	0.204	0.240	0.263	0.299	0.312	0.285	0.227	0.258	0.261	14.05
32) bis(2-Chloro	0.359	0.371	0.355	0.368	0.364	0.358	0.369	0.370	0.364	1.68
33) 2,4-Dichloro	0.278	0.291	0.279	0.298	0.294	0.291	0.288	0.291	0.289	2.40
34) 2,6-Dichloro	0.272	0.291	0.280	0.284	0.287	0.283	0.295	0.286	0.285	2.40
35) 1,3,5-Trichl	0.319	0.333	0.325	0.333	0.328	0.323	0.347	0.341	0.331	2.83
36) 1,2,4-Trichl	0.315	0.326	0.316	0.321	0.318	0.317	0.327	0.330	0.321	1.78
37) 1,2,3-Trichl	0.305	0.312	0.306	0.312	0.308	0.305	0.317	0.314	0.310	1.52
38) Naphthalene	1.045	1.083	1.022	1.019	1.016	1.022	1.084	1.061	1.044	2.75
39) 4-Chloroanil	0.451	0.469	0.456	0.450	0.444	0.463	0.455	0.458	0.456	1.69
40) 2,3-Dichloro	0.323	0.345	0.321	0.338	0.339	0.327	0.332	0.338	0.333	2.61
41) Caprolactam	0.139	0.144	0.147	0.157	0.160	0.148	0.158	0.146	0.150	5.04
42) Hexachlorobu	0.170	0.177	0.172	0.173	0.171	0.171	0.175	0.178	0.173	1.75
43) 4-Chloro-3-m	0.246	0.268	0.259	0.279	0.282	0.271	0.257	0.271	0.267	4.47
44) 2-Methylnaph	0.577	0.618	0.599	0.613	0.607	0.597	0.613	0.619	0.605	2.30
45) 1-Methylnaph	0.572	0.593	0.570	0.578	0.573	0.574	0.600	0.589	0.581	1.92

Initial Calibration Summary

Job Number: JB30425 **Sample:** E3P782-ICC782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17136.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

46)	Dimethylnaph	0.494	0.537	0.510	0.529	0.528	0.527	0.535	0.541	0.525	3.01
47)	I Acenaphthene-d10	----------ISTD----------									
48)	Hexachlorocy	0.316	0.358	0.382	0.409	0.405	0.389	0.304	0.384	0.368	10.67
49)	2,4,6-Trichl	0.355	0.366	0.370	0.396	0.387	0.380	0.362	0.394	0.376	4.07
50)	2,4,5-Trichl	0.394	0.422	0.411	0.439	0.440	0.415	0.396	0.436	0.419	4.40
51)	2-Fluorobiph	1.224	1.303	1.216	1.260	1.249	1.240	1.311	1.333	1.267	3.43
52)	2-Chloronaph	1.176	1.231	1.180	1.190	1.157	1.163	1.220	1.259	1.197	3.00
53)	Biphenyl	1.408	1.498	1.407	1.468	1.395	1.403	1.488	1.542	1.451	3.81
54)	2-Nitroanili	0.340	0.339	0.340	0.363	0.366	0.346	0.362	0.357	0.352	3.30
55)	Dimethylphth	1.258	1.321	1.249	1.302	1.311	1.258	1.354	1.362	1.302	3.37
56)	Acenaphthyle	1.907	1.956	1.862	1.909	1.903	1.897	1.927	2.039	1.925	2.76
57)	2,6-Dinitrot	0.264	0.284	0.275	0.301	0.293	0.284	0.259	0.296	0.282	5.34
58)	3-Nitroanili	0.337	0.363	0.359	0.381	0.384	0.373	0.339	0.377	0.364	4.97
59)	Acenaphthene	1.190	1.244	1.165	1.221	1.210	1.183	1.247	1.259	1.215	2.77
60)	2,4-Dinitrop		0.120	0.153	0.189	0.197	0.172		0.140	0.162	18.31
61)	4-Nitropheno	0.146	0.165	0.175	0.192	0.191	0.180	0.161	0.181	0.174	9.06
62)	Dibenzofuran	1.620	1.679	1.594	1.611	1.599	1.580	1.732	1.689	1.638	3.34
63)	2,4-Dinitrot	0.369	0.386	0.383	0.399	0.403	0.380	0.387	0.399	0.388	2.98
64)	2,3,4,6-Tetr	0.282	0.315	0.316	0.344	0.344	0.330	0.288	0.331	0.319	7.35
65)	Diethylphtha	1.296	1.368	1.301	1.374	1.387	1.327	1.440	1.408	1.363	3.75
66)	Fluorene	1.178	1.290	1.218	1.258	1.256	1.207	1.269	1.304	1.248	3.45
67)	4-Chlorophen	0.556	0.590	0.565	0.577	0.581	0.571	0.590	0.595	0.578	2.34
68)	4-Nitroanili	0.327	0.345	0.356	0.370	0.368	0.356	0.352	0.371	0.356	4.16
69)	I Phenanthrene-d10	----------ISTD----------									
70)	4,6-Dinitro-	0.086	0.114	0.132	0.154	0.154	0.147		0.127	0.131	18.94
71)	n-Nitrosodip	0.518	0.559	0.548	0.564	0.561	0.552	0.560	0.574	0.554	3.03
72)	1,2-Diphenyl	0.752	0.808	0.766	0.791	0.801	0.790	0.827	0.819	0.794	3.21
73)	2,4,6-Tribro	0.120	0.133	0.134	0.145	0.148	0.142	0.121	0.139	0.135	7.54
74)	4-Bromopheny	0.198	0.216	0.206	0.219	0.218	0.213	0.214	0.220	0.213	3.46
75)	Hexachlorobe	0.255	0.267	0.253	0.264	0.264	0.258	0.274	0.265	0.263	2.65
76)	Pentachlorop	0.135	0.162	0.166	0.186	0.193	0.181	0.145	0.171	0.167	11.90
77)	Phenanthrene	1.134	1.147	1.086	1.103	1.071	1.100	1.210	1.133	1.123	3.88
78)	Anthracene	1.089	1.137	1.091	1.117	1.083	1.122	1.209	1.154	1.125	3.71
79)	Carbazole	1.076	1.103	1.044	1.062	1.047	1.057	1.249	1.102	1.093	6.16
80)	Di-n-butylph	1.372	1.458	1.428	1.506	1.497	1.457	1.537	1.468	1.465	3.47
81)	Fluoranthene	1.195	1.215	1.156	1.216	1.194	1.186	1.416	1.211	1.224	6.54
82)	Octadecane	0.484	0.514	0.496	0.518	0.513	0.514	0.496	0.510	0.506	2.40
83)	I Chrysene-d12	----------ISTD----------									
84)	Pyrene	1.305	1.359	1.202	1.246	1.245	1.221	1.538	1.263	1.298	8.40
85)	Terphenyl-d1	0.836	0.838	0.781	0.822	0.823	0.783	0.978	0.817	0.835	7.39
86)	Butylbenzylp	0.623	0.654	0.638	0.688	0.677	0.659	0.698	0.635	0.659	4.09
87)	Benzo[a]anth	1.175	1.181	1.089	1.122	1.123	1.102	1.435	1.115	1.168	9.68
88)	3,3'-Dichlor	0.401	0.440	0.434	0.458	0.452	0.444	0.439	0.435	0.438	3.87
89)	Chrysene	1.053	1.111	0.997	1.027	1.011	1.020	1.300	1.053	1.071	9.22
90)	bis(2-Ethylh	0.855	0.922	0.884	0.960	0.921	0.912	0.949	0.905	0.914	3.70
91)	I Perylene-d12	----------ISTD----------									
92)	Di-n-octylph	1.414	1.631	1.618	1.816	1.774	1.726	1.594	1.631	1.650	7.57
93)	Benzo[b]fluo	1.263	1.345	1.257	1.379	1.491	1.253	1.339	1.274	1.325	6.21
94)	Benzo[k]fluo	1.077	1.121	1.100	1.141	0.975	1.156	1.234	1.159	1.120	6.72
95)	Benzo[a]pyre	1.073	1.127	1.096	1.159	1.173	1.131	1.128	1.122	1.126	2.82
96)	Indeno[1,2,3	1.202	1.286	1.303	1.414	1.413	1.337	1.326	1.315	1.325	5.19
97)	Dibenz(a,h)a	0.844	0.926	0.938	1.027	1.038	0.969	0.955	0.949	0.956	6.34
98)	Dibenz[a,h]a	0.988	1.069	1.068	1.161	1.157	1.110	1.100	1.093	1.093	5.04
99)	7,12-Dimethy	0.489	0.511	0.543	0.578	0.570	0.567	0.532	0.529	0.540	5.75
100)	Benzo[g,h,i]	1.014	1.084	1.098	1.189	1.174	1.105	1.097	1.099	1.107	4.90

Initial Calibration Summary

Job Number: JB30425 **Sample:** E3P782-ICC782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17136.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
(#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          M3P782.M          Tue Feb 26 12:34:54 2013   RPT1
```

Initial Calibration Summary

Job Number: JB30425 **Sample:** E3P783-ICC783
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17143.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
                         Response Factor Report  GC3P

  Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
  Title        : Semi Volatile Extractables by GC/MS
  Last Update  : Tue Feb 26 16:13:24 2013
  Response via : Initial Calibration

  Calibration Files
  2   =3p17147.D   5   =3p17146.D   25  =3p17144.D   80  =3p17142.D
  100 =3p17141.D   50  =3p17143.D   1   =3p17148.D   10  =3p17145.D

   Compound         2     5     25    80    100   50    1     10    Avg %RSD
  ---------------------------------------------------------------------------
101) I   1,4-Dichlorobenzene-d ----------------ISTD---------------------
102) Benzaldehyde 1.178 1.154 1.079 1.136 1.083 1.114       1.152 1.128   3.33

103) I   Acenaphthene-d10a     ----------------ISTD---------------------
104) Atrazine     0.134 0.140 0.143 0.147 0.145 0.151       0.145 0.143   3.70
105) 1,2,4,5-Tetr 0.603 0.581 0.577 0.608 0.607 0.608       0.602 0.598   2.24
106) 2-bromonapht 0.636 0.618 0.630 0.635 0.629 0.640       0.630 0.631   1.13

107)     Chrysene-d12a         ----------------ISTD---------------------
108) Benzidine    0.735 0.763 0.614 0.719 0.610 0.671       0.774 0.698   9.68

109) I   Phenanthrene-d10a     ----------------ISTD---------------------
110) o-terphenyl  0.622 0.562 0.546 0.558 0.546 0.577       0.553 0.566   4.69
111) 1-chloroocta 0.369 0.340 0.347 0.357 0.347 0.365       0.345 0.353   3.07

112) I   Naphthalene-d8a       ----------------ISTD---------------------
113) Hydroquinone 0.223 0.256 0.320 0.333 0.320 0.339 0.434 0.291 0.315  19.99
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M3P782.M          Tue Feb 26 16:13:56 2013   RPT1
```

Initial Calibration Verification

Job Number: JB30425 **Sample:** E3P783-ICV782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17149.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\783\3p17149.D              Vial: 10
Acq On    : 26 Feb 2013   3:57 pm                     Operator: katelynh
Sample    : icv782-50                                 Inst    : GC3P
Misc      : op63753,e3p783,                           Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00	4.00
9	t	Phenol	1.786	1.653	7.4	119	-0.02	3.59
12	t	2-Chlorophenol	1.452	1.508	-3.9	134	-0.01	3.75
19	t	2-Methylphenol	1.190	1.186	0.3	128	-0.01	4.33
21	t	3&4-Methylphenol	1.269	1.228	3.2	126	-0.02	4.54
24	I	Naphthalene-d8	1.000	1.000	0.0	125	0.00	5.72
29	t	2-Nitrophenol	0.199	0.210	-5.5	130	-0.02	5.18
30	t	2,4-Dimethylphenol	0.304	0.346	-13.8	134	-0.01	5.29
31	t	Benzoic acid	0.261	0.273	-4.6	120	-0.05	5.52
33	t	2,4-Dichlorophenol	0.289	0.321	-11.1	138	-0.01	5.53
34	t	2,6-Dichlorophenol	0.285	0.301	-5.6	133	-0.02	5.86
43	t	4-Chloro-3-methylphenol	0.267	0.285	-6.7	131	-0.04	6.64
47	I	Acenaphthene-d10	1.000	1.000	0.0	127	-0.01	8.42
49	t	2,4,6-Trichlorophenol	0.376	0.400	-6.4	134	-0.01	7.27
50	t	2,4,5-Trichlorophenol	0.419	0.440	-5.0	135	-0.03	7.31
60	t	2,4-Dinitrophenol	0.162	0.162	0.0	118	-0.03	8.56
61	t	4-Nitrophenol	0.174	0.169	2.9	120	-0.03	8.73
64		2,3,4,6-Tetrachlorophenol	0.319	0.335	-5.0	129	-0.02	8.97
69	I	Phenanthrene-d10	1.000	1.000	0.0	127	0.00	10.77
70	t	4,6-Dinitro-2-methylpheno	0.131	0.142	-8.4	123	-0.03	9.42
76	t	Pentachlorophenol	0.167	0.186	11.3	130	-0.02	10.50

```
(#) = Out of Range              SPCC's out = 0  CCC's out = 0
 3p17143.D  M3P782.M         Tue Feb 26 16:44:25 2013   RPT1
```

Initial Calibration Verification

Job Number: JB30425 **Sample:** E3P783-ICV783
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17150A.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\783\3p17150a.D            Vial: 11
Acq On    : 26 Feb 2013   4:21 pm                   Operator: katelynh
Sample    : icv783-50                               Inst    : GC3P
Misc      : op63753,e3p783,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
103 I	Acenaphthene-d10a	1.000	1.000	0.0	111	0.00	8.43
105	1,2,4,5-Tetrachlorobenzen	0.598	0.605	-1.2	110	0.00	7.07

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p17143.D M3P782.M Tue Feb 26 17:14:17 2013 RPT1

8.7.34

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E3P783-ICV782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17150.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\783\3p17150.D              Vial: 11
Acq On    : 26 Feb 2013   4:21 pm                     Operator: katelynh
Sample    : icv782-50                                 Inst    : GC3P
Misc      : op63753,e3p783,                           Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	114	0.00	4.00
3	t	Pyridine	1.412	1.263	10.6	105	0.00	1.76
4	t	N-Nitrosodimethylamine	0.702	0.622	11.4	104	0.00	1.73
11	t	bis(2-Chloroethyl)ether	1.131	1.184	-4.7	122	-0.01	3.69
14	t	1,3-Dichlorobenzene	1.604	1.691	-5.4	123	0.00	3.93
15	t	1,4-Dichlorobenzene	1.619	1.672	-3.3	121	0.00	4.02
16	t	Benzyl alcohol	0.849	0.857	-0.9	115	-0.02	4.18
17	t	1,2-Dichlorobenzene	1.503	1.617	-7.6	125	0.00	4.21
20	t	2,2'-oxybis(1-Chloropropa	1.974	1.909	3.3	116	-0.01	4.36
22	t	n-Nitroso-di-n-propylamin	0.868	0.872	-0.5	118	-0.02	4.53
23	t	Hexachloroethane	0.536	0.590	-10.1	128	0.00	4.64
24	I	Naphthalene-d8	1.000	1.000	0.0	117	0.00	5.72
26	t	Nitrobenzene	0.353	0.351	0.6	121	-0.02	4.74
28	t	Isophorone	0.568	0.591	-4.0	124	-0.03	5.07
32	t	bis(2-Chloroethoxy)methan	0.364	0.394	-8.2	129	-0.01	5.42
36	t	1,2,4-Trichlorobenzene	0.321	0.354	-10.3	131	-0.01	5.65
38	t	Naphthalene	1.044	1.080	-3.4	124	0.00	5.75
42	t	Hexachlorobutadiene	0.173	0.196	-13.3	135	0.00	5.98
44	t	2-Methylnaphthalene	0.605	0.607	-0.3	119	-0.01	6.81
47	I	Acenaphthene-d10	1.000	1.000	0.0	116	0.00	8.43
48	t	Hexachlorocyclopentadiene	0.368	0.380	3.2	112	0.00	7.08
52	t	2-Chloronaphthalene	1.197	1.269	-6.0	126	-0.01	7.55
54	t	2-Nitroaniline	0.352	0.340	3.4	114	-0.02	7.75
55	t	Dimethylphthalate	1.302	1.340	-2.9	123	-0.01	8.09
56	t	Acenaphthylene	1.925	1.789	7.1	109	-0.01	8.19
57	t	2,6-Dinitrotoluene	0.282	0.301	-6.7	123	-0.01	8.16
58	t	3-Nitroaniline	0.364	0.317	12.9	98	-0.02	8.40
59	t	Acenaphthene	1.215	1.261	-3.8	123	0.00	8.48
62	t	Dibenzofuran	1.638	1.625	0.8	119	-0.01	8.75
63	t	2,4-Dinitrotoluene	0.388	0.384	1.0	117	-0.02	8.78
65	t	Diethylphthalate	1.363	1.379	-1.2	120	-0.02	9.23
66	t	Fluorene	1.248	1.324	-6.1	127	0.00	9.30
67	t	4-Chlorophenyl-phenylethe	0.578	0.601	-4.0	122	0.00	9.34
68	t	4-Nitroaniline	0.356	0.352	1.1	114	-0.04	9.37
69	I	Phenanthrene-d10	1.000	1.000	0.0	114	0.00	10.77
71	t	n-Nitrosodiphenylamine	0.554	0.572	-3.2	118	-0.02	9.54
72	t	1,2-Diphenylhydrazine	0.794	0.831	-4.7	120	-0.01	9.59
74	t	4-Bromophenyl-phenylether	0.213	0.227	-6.6	122	0.00	10.11
75	t	Hexachlorobenzene	0.263	0.282	-7.2	125	-0.01	10.17

Initial Calibration Verification

Job Number: JB30425 **Sample:** E3P783-ICV782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17150.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

77	t	Phenanthrene	1.123	1.197	-6.6	124	-0.01	10.81
78	t	Anthracene	1.125	1.205	-7.1	123	-0.01	10.89
79	t	Carbazole	1.093	1.104	-1.0	119	-0.01	11.17
80	t	Di-n-butylphthalate	1.465	1.510	-3.1	118	0.00	11.83
81	t	Fluoranthene	1.224	1.243	-1.6	120	0.00	12.59
83	I	Chrysene-d12	1.000	1.000	0.0	114	0.00	14.50
84	t	Pyrene	1.298	1.280	1.4	119	-0.01	12.89
86	t	Butylbenzylphthalate	0.659	0.639	3.0	110	0.00	13.87
87	t	Benzo[a]anthracene	1.168	1.155	1.1	119	-0.01	14.49
88	t	3,3'-Dichlorobenzidine	0.438	0.318	27.4	82	-0.01	14.49
89	t	Chrysene	1.071	1.083	-1.1	121	-0.01	14.53
90	t	bis(2-Ethylhexyl)phthalat	0.914	0.917	-0.3	114	0.00	14.64
91	I	Perylene-d12	1.000	1.000	0.0	111	0.00	16.15
92	t	Di-n-octylphthalate	1.650	1.754	-6.3	112	0.00	15.41
93	t	Benzo[b]fluoranthene	1.325	1.285	3.0	113	-0.03	15.75
94	t	Benzo[k]fluoranthene	1.120	1.195	-6.7	114	-0.02	15.78
95	t	Benzo[a]pyrene	1.126	1.150	-2.1	112	-0.01	16.09
96	t	Indeno[1,2,3-cd]pyrene	1.325	1.462	-10.3	121	-0.02	17.23
98	t	Dibenz[a,h]anthracene	1.093	1.199	-9.7	119	-0.02	17.26
100	t	Benzo[g,h,i]perylene	1.107	1.241	-12.1	124	-0.02	17.53

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p17143.D M3P782.M Tue Feb 26 17:22:10 2013 RPT1

8.7.35

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E3P783-ICV782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17151.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\783\3p17151.D              Vial: 12
Acq On    : 26 Feb 2013   4:44 pm                     Operator: katelynh
Sample    : icv782-50                                 Inst    : GC3P
Misc      : op63753,e3p783,                           Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	131	0.00	4.00
2	t	1,4-Dioxane	0.513	0.433	15.6	119	0.00	1.58
6	t	Indene	2.138	2.284	-6.8	142	0.00	4.32
7	t	Cumene	2.950	2.968	-0.6	134	0.00	3.12
13	t	Decane	1.429	1.278	10.6	122	0.00	3.83
18	t	Acetophenone	1.745	1.754	-0.5	135	-0.02	4.51
24	I	Naphthalene-d8	1.000	1.000	0.0	131	0.00	5.72
27	t	Quinoline	0.682	0.691	-1.3	134	-0.04	6.24
40	t	2,3-Dichloroaniline	0.333	0.307	7.8	124	0.00	7.25
41	t	Caprolactam	0.150	0.143	4.7	127	-0.10	6.36
45	t	1-Methylnaphthalene	0.581	0.601	-3.4	137	0.00	6.95
46	t	Dimethylnaphthalene	0.525	0.556	-5.9	139	-0.01	7.79
47	I	Acenaphthene-d10	1.000	1.000	0.0	131	-0.01	8.42
53	t	Biphenyl	1.451	1.501	-3.4	140	0.00	7.55
69	I	Phenanthrene-d10	1.000	1.000	0.0	131	0.00	10.77
82	t	Octadecane	0.506	0.497	1.8	127	0.00	10.79
91	I	Perylene-d12	1.000	1.000	0.0	119	0.00	16.15
99	t	7,12-Dimethylbenz(a)anthr	0.540	0.518	4.1	108	-0.02	15.75

```
(#) = Out of Range              SPCC's out = 0  CCC's out = 0
 3p17143.D  M3P782.M         Tue Feb 26 17:16:38 2013   RPT1
```

8.7.36

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E3P783-ICV783
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17151A.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\783\3p17151a.D            Vial: 12
Acq On    : 26 Feb 2013   4:44 pm                   Operator: katelynh
Sample    : icv783-50                               Inst    : GC3P
Misc      : op63753,e3p783,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
101 I	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	126	0.00	4.00
102	Benzaldehyde	1.128	1.141	-1.2	129	0.00	3.49
103 I	Acenaphthene-d10a	1.000	1.000	0.0	126	0.00	8.42
104	Atrazine	0.143	0.146	-2.1	122	-0.01	10.45

```
(#) = Out of Range              SPCC's out = 0  CCC's out = 0
 3p17143.D  M3P782.M         Tue Feb 26 17:17:32 2013   RPT1
```

8.7.37

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E3P783-ICV782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17152.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\783\3p17152.D              Vial: 13
Acq On    : 26 Feb 2013   5:08 pm                     Operator: katelynh
Sample    : icv782-50                                 Inst    : GC3P
Misc      : op63753,e3p783,                           Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	135	0.00	4.00
5	S	2-Fluorophenol	1.342	1.233	8.1	125	0.00	2.64
8	S	Phenol-d5	1.604	1.443	10.0	123	-0.02	3.57
24	I	Naphthalene-d8	1.000	1.000	0.0	136	0.00	5.72
25	S	Nitrobenzene-d5	0.341	0.329	3.5	136	-0.02	4.71
47	I	Acenaphthene-d10	1.000	1.000	0.0	136	-0.01	8.42
51	S	2-Fluorobiphenyl	1.267	1.234	2.6	136	0.00	7.41
69	I	Phenanthrene-d10	1.000	1.000	0.0	135	0.00	10.77
73	S	2,4,6-Tribromophenol	0.135	0.133	1.5	126	-0.02	9.67
83	I	Chrysene-d12	1.000	1.000	0.0	124	-0.01	14.50
85	S	Terphenyl-d14	0.835	0.831	0.5	131	0.00	13.18

```
(#) = Out of Range              SPCC's out = 0  CCC's out = 0
 3p17143.D  M3P782.M         Wed Feb 27 07:54:54 2013   RPT1
```

8.7.38

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E3P783-ICV783
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17153.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\783\3p17153.D              Vial: 14
Acq On    : 26 Feb 2013   5:32 pm                    Operator: katelynh
Sample    : icv783-50                                Inst    : GC3P
Misc      : op63753,e3p783,                          Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
107	Chrysene-d12a	1.000	1.000	0.0	180	0.00	14.50
108	Benzidine	0.698	0.745	-6.7	200	0.00	12.83

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p17143.D M3P782.M Wed Feb 27 07:55:47 2013 RPT1

Initial Calibration Verification

Job Number: JB30425 **Sample:** E3P783-ICV782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17154.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\783\3p17154.D              Vial: 15
Acq On    : 26 Feb 2013   5:56 pm                    Operator: katelynh
Sample    : icv782-50                                Inst    : GC3P
Misc      : op63753,e3p783,                          Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	165	0.00	4.00
10		Aniline	1.942	1.835	5.5	151	0.00	3.61
24	I	Naphthalene-d8	1.000	1.000	0.0	166	0.00	5.72
39	t	4-Chloroaniline	0.456	0.439	3.7	157	-0.02	5.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p17143.D M3P782.M Wed Feb 27 07:56:36 2013 RPT1

8.7.40

8

Initial Calibration Verification

Job Number: JB30425 **Sample:** E3P783-ICV783
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17155.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\783\3p17155.D              Vial: 16
Acq On    : 26 Feb 2013   6:20 pm                    Operator: katelynh
Sample    : icv783-50                                Inst    : GC3P
Misc      : op63753,e3p783,                          Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
112 I	Naphthalene-d8a	1.000	1.000	0.0	111	0.00	5.72
113 t	Hydroquinone	0.315	0.329	-4.4	108	-0.02	6.44

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p17143.D M3P782.M Wed Feb 27 07:57:11 2013 RPT1

8.7.41

8

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E3P816-CC782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17974.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\816\3p17974.D              Vial: 2
Acq On    : 22 Mar 2013   9:49 am                    Operator: katelynh
Sample    : cc782-50                                 Inst    : GC3P
Misc      : op64602,e3p816,                          Multiplr: 1.00
MS Integration Params: rteint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	116	-0.03	3.85
2	t	1,4-Dioxane	0.513	0.512	0.2	124	-0.02	1.48
3	t	Pyridine	1.412	1.354	4.1	114	-0.02	1.65
4	t	N-Nitrosodimethylamine	0.702	1.151	-64.0#	195	-0.02	1.63
5	S	2-Fluorophenol	1.342	1.201	10.5	104	-0.03	2.54
6	t	Indene	2.138	2.022	5.4	111	-0.03	4.16
7	t	Cumene	2.950	3.192	-8.2	127	-0.02	2.97
8	S	Phenol-d5	1.604	1.586	1.1	116	-0.04	3.48
9	t	Phenol	1.786	1.688	5.5	110	-0.04	3.50
10		Aniline	1.942	1.634	15.9	94	-0.03	3.47
11	t	bis(2-Chloroethyl)ether	1.131	1.037	8.3	108	-0.02	3.55
12	t	2-Chlorophenol	1.452	1.393	4.1	112	-0.03	3.62
13	t	Decane	1.429	1.546	-8.2	131	-0.03	3.67
14	t	1,3-Dichlorobenzene	1.604	1.551	3.3	115	-0.03	3.78
15	t	1,4-Dichlorobenzene	1.619	1.560	3.6	114	-0.03	3.87
16	t	Benzyl alcohol	0.849	0.804	5.3	109	-0.03	4.05
17	t	1,2-Dichlorobenzene	1.503	1.468	2.3	114	-0.03	4.06
18	t	Acetophenone	1.745	1.797	-3.0	122	-0.03	4.38
19	t	2-Methylphenol	1.190	1.102	7.4	108	-0.04	4.23
20	t	2,2'-oxybis(1-Chloropropa	1.974	1.861	5.7	114	-0.03	4.21
21	t	3&4-Methylphenol	1.269	1.160	8.6	108	-0.04	4.44
22	t	n-Nitroso-di-n-propylamin	0.868	0.972	-12.0	133	-0.03	4.39
23	t	Hexachloroethane	0.536	0.581	-8.4	128	-0.03	4.47
24	I	Naphthalene-d8	1.000	1.000	0.0	116	-0.02	5.56
25	S	Nitrobenzene-d5	0.341	0.405	-18.8	142	-0.02	4.57
26	t	Nitrobenzene	0.353	0.399	-13.0	136	-0.03	4.60
27	t	Quinoline	0.682	0.635	6.9	109	-0.03	6.11
28	t	Isophorone	0.568	0.627	-10.4	130	-0.03	4.93
29	t	2-Nitrophenol	0.199	0.204	-2.5	118	-0.03	5.04
30	t	2,4-Dimethylphenol	0.304	0.346	-13.8	125	-0.04	5.17
31	t	Benzoic acid	0.261	0.275	-5.4	112	-0.04	5.46
32	t	bis(2-Chloroethoxy)methan	0.364	0.350	3.8	113	-0.03	5.27
33	t	2,4-Dichlorophenol	0.289	0.301	-4.2	120	-0.04	5.41
34	t	2,6-Dichlorophenol	0.285	0.288	-1.1	118	-0.04	5.73
35		1,3,5-Trichlorobenzene	0.331	0.338	-2.1	122	-0.03	5.05
36	t	1,2,4-Trichlorobenzene	0.321	0.328	-2.2	120	-0.03	5.49
37		1,2,3-Trichlorobenzene	0.310	0.308	0.6	118	-0.03	5.82
38	t	Naphthalene	1.044	0.992	5.0	113	-0.03	5.59
39	t	4-Chloroaniline	0.456	0.412	9.6	103	-0.03	5.72
40	t	2,3-Dichloroaniline	0.333	0.342	-2.7	122	-0.03	7.11
41	t	Caprolactam	0.150	0.165	-10.0	129	-0.03	6.29

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E3P816-CC782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17974.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	t	Hexachlorobutadiene	0.173	0.204	-17.9	139	-0.03	5.80
43	t	4-Chloro-3-methylphenol	0.267	0.309	-15.7	133	-0.04	6.57
44	t	2-Methylnaphthalene	0.605	0.624	-3.1	121	-0.03	6.64
45	t	1-Methylnaphthalene	0.581	0.586	-0.9	119	-0.03	6.79
46	t	Dimethylnaphthalene	0.525	0.517	1.5	114	-0.03	7.63
47	I	Acenaphthene-d10	1.000	1.000	0.0	120	-0.02	8.27
48	t	Hexachlorocyclopentadiene	0.368	0.344	6.5	106	-0.03	6.90
49	t	2,4,6-Trichlorophenol	0.376	0.388	-3.2	123	-0.04	7.15
50	t	2,4,5-Trichlorophenol	0.419	0.421	-0.5	122	-0.03	7.23
51	S	2-Fluorobiphenyl	1.267	1.225	3.3	119	-0.03	7.24
52	t	2-Chloronaphthalene	1.197	1.163	2.8	120	-0.03	7.40
53	t	Biphenyl	1.451	1.410	2.8	121	-0.03	7.39
54	t	2-Nitroaniline	0.352	0.471	-33.8#	164	-0.03	7.62
55	t	Dimethylphthalate	1.302	1.367	-5.0	131	-0.03	7.93
56	t	Acenaphthylene	1.925	1.879	2.4	119	-0.03	8.04
57	t	2,6-Dinitrotoluene	0.282	0.304	-7.8	129	-0.03	8.02
58	t	3-Nitroaniline	0.364	0.345	5.2	111	-0.03	8.29
59	t	Acenaphthene	1.215	1.167	4.0	119	-0.03	8.31
60	t	2,4-Dinitrophenol	0.162	0.149	8.0	104	-0.02	8.49
61	t	4-Nitrophenol	0.174	0.186	-6.9	125	-0.04	8.72
62	t	Dibenzofuran	1.638	1.582	3.4	120	-0.03	8.60
63	t	2,4-Dinitrotoluene	0.388	0.420	-8.2	133	-0.02	8.68
64		2,3,4,6-Tetrachlorophenol	0.319	0.311	2.5	113	-0.03	8.85
65	t	Diethylphthalate	1.363	1.482	-8.7	134	-0.03	9.07
66	t	Fluorene	1.248	1.261	-1.0	126	-0.03	9.14
67	t	4-Chlorophenyl-phenylethe	0.578	0.592	-2.4	125	-0.03	9.18
68	t	4-Nitroaniline	0.356	0.325	8.7	110	-0.03	9.27
69	I	Phenanthrene-d10	1.000	1.000	0.0	124	-0.02	10.62
70	t	4,6-Dinitro-2-methylpheno	0.131	0.136	-3.8	115	-0.02	9.35
71	t	n-Nitrosodiphenylamine	0.554	0.541	2.3	122	-0.04	9.39
72	t	1,2-Diphenylhydrazine	0.794	0.884	-11.3	139	-0.03	9.43
73	S	2,4,6-Tribromophenol	0.135	0.146	-8.1	128	-0.03	9.54
74	t	4-Bromophenyl-phenylether	0.213	0.215	-0.9	125	-0.03	9.95
75	t	Hexachlorobenzene	0.263	0.272	-3.4	131	-0.02	10.04
76	t	Pentachlorophenol	0.167	0.137	18.0	94	-0.03	10.39
77	t	Phenanthrene	1.123	1.066	5.1	120	-0.03	10.66
78	t	Anthracene	1.125	1.077	4.3	119	-0.03	10.74
79	t	Carbazole	1.093	1.014	7.2	119	-0.03	11.05
80	t	Di-n-butylphthalate	1.465	1.572	-7.3	134	-0.03	11.67
81	t	Fluoranthene	1.224	1.201	1.9	126	-0.02	12.46
82	t	Octadecane	0.506	0.584	-15.4	141	-0.03	10.62
83	I	Chrysene-d12	1.000	1.000	0.0	129	-0.01	14.39
84	t	Pyrene	1.298	1.210	6.8	128	-0.02	12.77
85	S	Terphenyl-d14	0.835	0.809	3.1	133	-0.02	13.04
86	t	Butylbenzylphthalate	0.659	0.684	-3.8	134	-0.03	13.73
87	t	Benzo[a]anthracene	1.168	1.089	6.8	127	-0.03	14.37
88	t	3,3'-Dichlorobenzidine	0.438	0.448	-2.3	130	-0.03	14.38
89	t	Chrysene	1.071	0.971	9.3	123	-0.03	14.42
90	t	bis(2-Ethylhexyl)phthalat	0.914	0.973	-6.5	137	-0.03	14.50
91	I	Perylene-d12	1.000	1.000	0.0	121	-0.01	16.05
92	t	Di-n-octylphthalate	1.650	1.979	-19.9	139	-0.03	15.27
93	t	Benzo[b]fluoranthene	1.325	1.281	3.3	124	-0.02	15.66
94	t	Benzo[k]fluoranthene	1.120	1.129	-0.8	119	-0.02	15.68
95	t	Benzo[a]pyrene	1.126	1.105	1.9	119	-0.02	15.99
96	t	Indeno[1,2,3-cd]pyrene	1.325	1.301	1.8	118	-0.02	17.14
97	t	Dibenz(a,h)acridine	0.956	0.954	0.2	120	-0.02	16.89

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E3P816-CC782
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17974.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

98	t	Dibenz[a,h]anthracene	1.093	1.081	1.1	118	-0.03	17.15
99	t	7,12-Dimethylbenz(a)anthr	0.540	0.537	0.6	115	-0.03	15.64
100	t	Benzo[g,h,i]perylene	1.107	1.060	4.2	117	-0.02	17.43

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p17909.D M3P782.M Fri Mar 22 12:16:12 2013 RPT1

Continuing Calibration Summary

Job Number: JB30425 **Sample:** E3P816-CC783
Account: AQTPAW Aquaterra Technologies, Inc. **Lab FileID:** 3P17975.D
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\816\3p17975.D              Vial: 3
Acq On    : 22 Mar 2013  10:12 am                     Operator: katelynh
Sample    : cc783-50                                  Inst    : GC3P
Misc      : op64602,e3p816,                           Multiplr: 1.00
MS Integration Params: rteint.p

Method       : C:\msdchem\1\METHODS\M3P782.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Tue Feb 26 16:13:24 2013
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
101 I	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	100	-0.02	3.84
102	Benzaldehyde	1.128	1.072	5.0	97	-0.02	3.34
103 I	Acenaphthene-d10a	1.000	1.000	0.0	110	-0.01	8.27
104	Atrazine	0.143	0.157	-9.8	115	-0.02	10.31
105	1,2,4,5-Tetrachlorobenzen	0.598	0.603	-0.8	110	-0.01	6.92
106	Chrysene-d12a	1.000	1.000	0.0	113	0.00	14.38
107	Benzidine	0.698	0.474	32.1#	80	-0.01	12.71
108 I	Naphthalene-d8a	1.000	1.000	0.0	101	-0.01	5.56
109 t	Hydroquinone	0.315	0.318	-1.0	95	-0.02	6.38

```
(#) = Out of Range              SPCC's out = 0  CCC's out = 0
 3p17909.D  M3P782.M         Fri Mar 22 12:16:43 2013   RPT1
```

8.7.43

8

New Jersey

ACCUTEST LABORATORIES

GC/MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21238.D
Acq On : 19 Mar 2013 7:12 pm
Operator : andrews1
Sample : jb30425-1
Misc : op64440,e2p936,31.6
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 20 14:45:22 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.941	152	68826	40.00	ppb	-0.09
24) Naphthalene-d8	4.556	136	263800	40.00	ppb	-0.10
47) Acenaphthene-d10	7.204	164	152299	40.00	ppb	-0.09
69) Phenanthrene-d10	9.487	188	258443	40.00	ppb	-0.06
83) Chrysene-d12	13.387	240	288699	40.00	ppb	-0.03
92) Perylene-d12	15.066	264	279325	40.00	ppb	0.00
102) 1,4-Dichlorobenzene-d4a	2.941	152	68826	40.00	ppb	-0.09
104) Acenaphthene-d10a	7.204	164	152299	40.00	ppb	-0.09
107) Chrysene-d12a	13.387	240	288699	40.00	ppb	-0.03
109) Naphthalene-d8a	4.556	136	263800	40.00	ppb	#-0.10
System Monitoring Compounds						
5) 2-Fluorophenol	1.839	112	71199	28.90	ppb	-0.06
Spiked Amount 50.000	Range 11 - 58		Recovery = 57.80%			
8) Phenol-d5	2.716	99	94213	30.83	ppb	-0.06
Spiked Amount 50.000	Range 10 - 59		Recovery = 61.66%#			
25) Nitrobenzene-d5	3.647	82	89831	37.02	ppb	-0.09
Spiked Amount 50.000	Range 19 - 61		Recovery = 74.04%#			
51) 2-Fluorobiphenyl	6.235	172	181607	37.29	ppb	-0.10
Spiked Amount 50.000	Range 21 - 58		Recovery = 74.58%#			
73) 2,4,6-Tribromophenol	8.482	330	22791	39.46	ppb	-0.06
Spiked Amount 50.000	Range 12 - 68		Recovery = 78.92%#			
85) Terphenyl-d14	12.049	244	216922	35.67	ppb	-0.04
Spiked Amount 50.000	Range 16 - 65		Recovery = 71.34%#			
Target Compounds						Qvalue
59) Acenaphthene	7.246	153	37927	8.76	ppb	88
66) Fluorene	8.043	166	54851	10.97	ppb	94
77) Phenanthrene	9.525	178	181787	23.35	ppb	95
78) Anthracene	9.594	178	44869	5.83	ppb	96
81) Fluoranthene	11.402	202	203856	25.51	ppb	87
84) Pyrene	11.707	202	285315	29.00	ppb	100
88) Benzo[a]anthracene	13.371	228	112082	13.02	ppb	94
90) Chrysene	13.413	228	166347	20.30	ppb	93
94) Benzo[b]fluoranthene	14.676	252	108484m	11.39	ppb	
95) Benzo[k]fluoranthene	14.681	252	65085m	7.82	ppb	
96) Benzo[a]pyrene	15.007	252	92596	11.19	ppb	91
97) Indeno[1,2,3-cd]pyrene	16.104	276	65729	6.85	ppb	85
99) Dibenz[a,h]anthracene	16.109	278	32572	4.07	ppb	85
101) Benzo[g,h,i]perylene	16.318	276	78594	9.64	ppb	95

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

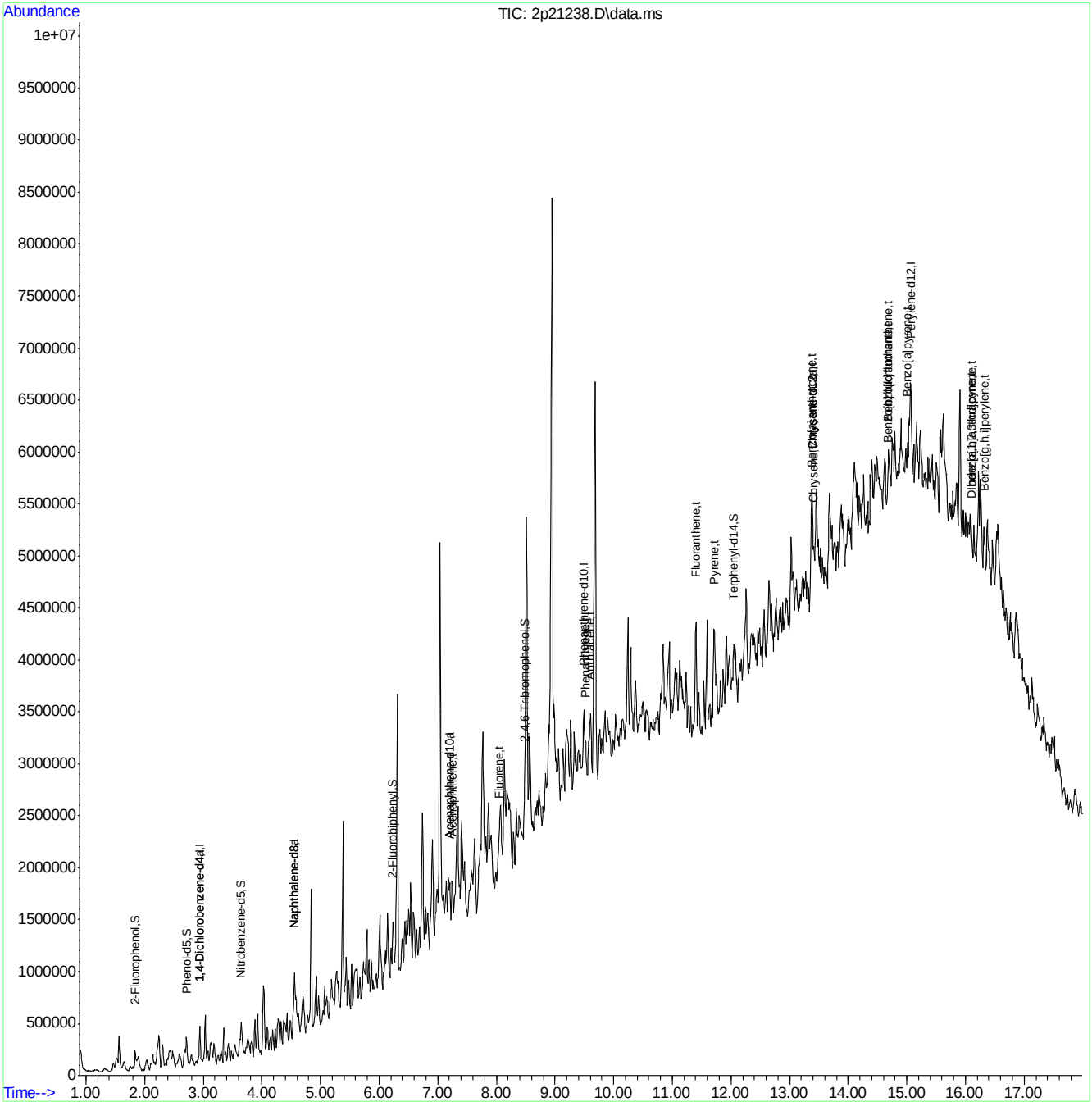
9.1.1

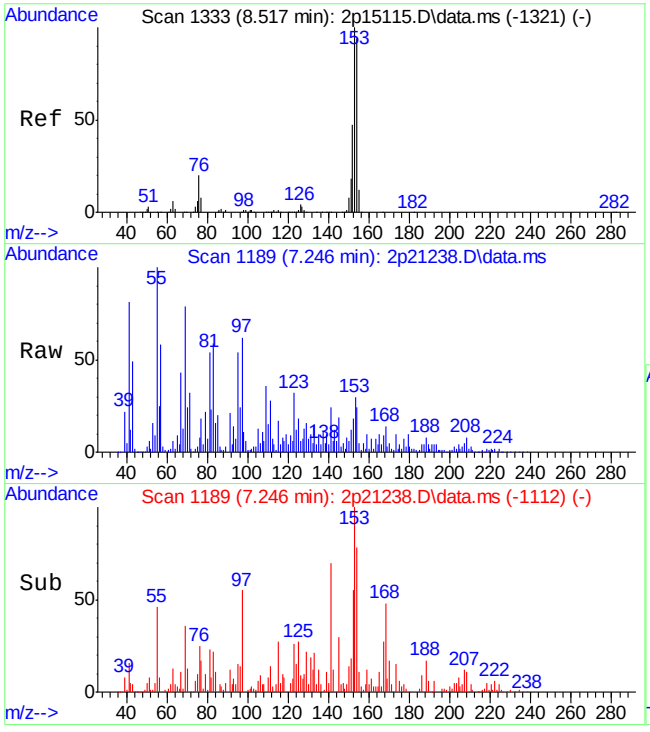
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21238.D
Acq On : 19 Mar 2013 7:12 pm
Operator : andrews1
Sample : jb30425-1
Misc : op64440,e2p936,31.6
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 20 14:45:22 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

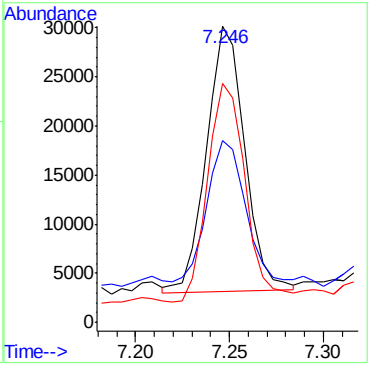


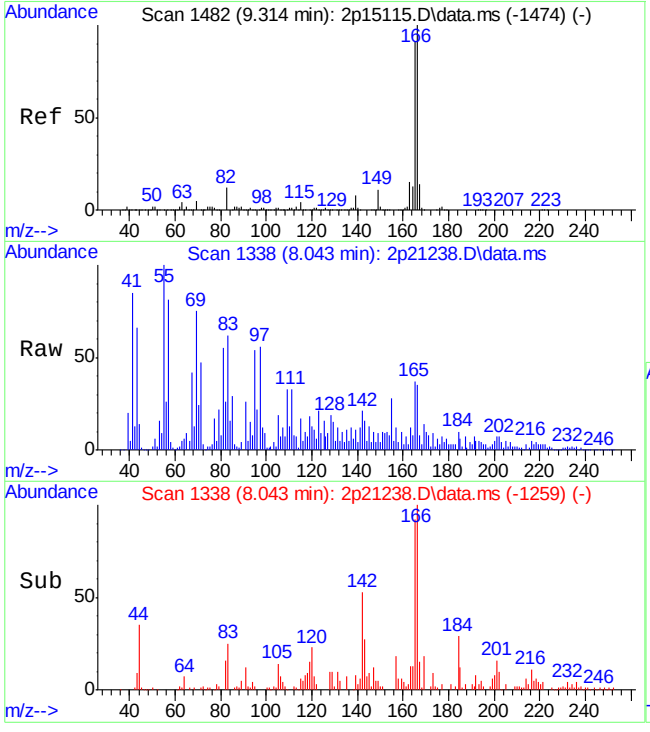


#59
Acenaphthene
Concen: 8.76 ppb
RT: 7.246 min Scan# 1189
Delta R.T. -0.086 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:153 Resp: 37927

Ion	Ratio	Lower	Upper
153	100		
152	53.8	17.8	77.8
154	82.0	65.2	125.2

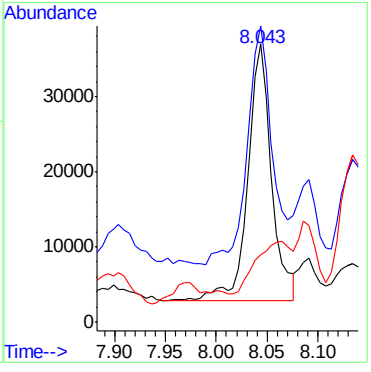


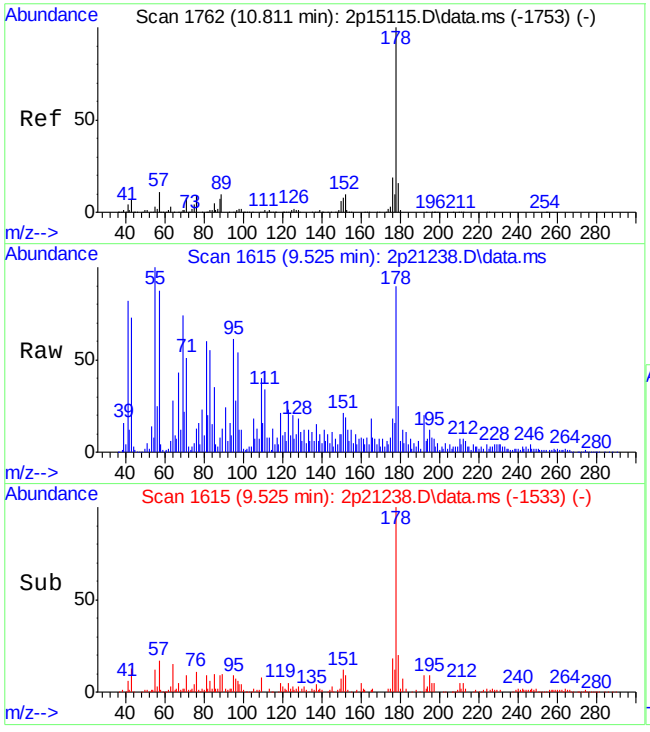


#66
Fluorene
Concen: 10.97 ppb
RT: 8.043 min Scan# 1338
Delta R.T. -0.075 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:166 Resp: 54851

Ion	Ratio	Lower	Upper
166	100		
165	87.5	62.5	122.5
167	8.2	0.0	42.9

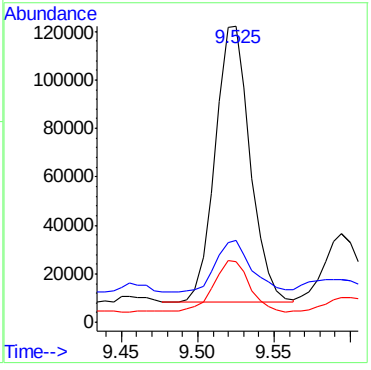


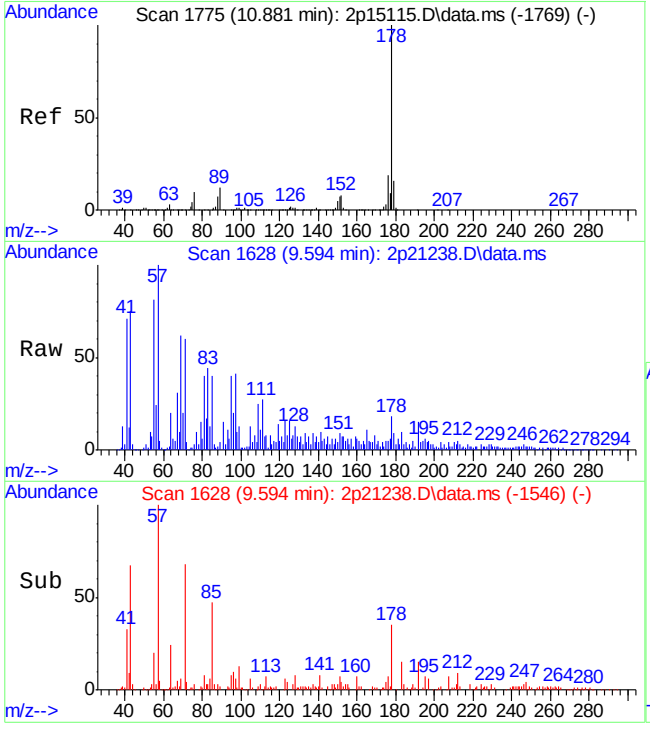


#77
Phenanthrene
Concen: 23.35 ppb
RT: 9.525 min Scan# 1615
Delta R.T. -0.059 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:178 Resp: 181787

Ion	Ratio	Lower	Upper
178	100		
179	18.2	0.0	44.4
176	17.9	0.0	48.6

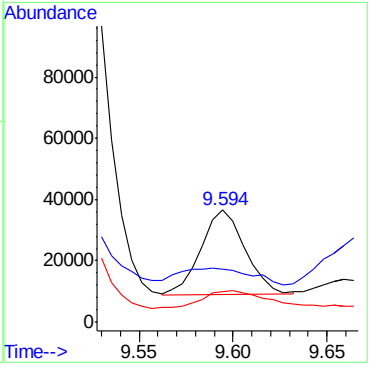




#78
Anthracene
Concen: 5.83 ppb
RT: 9.594 min Scan# 1628
Delta R.T. -0.059 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:178 Resp: 44869

Ion	Ratio	Lower	Upper
178	100		
179	16.3	0.0	44.5
176	17.9	0.0	46.5



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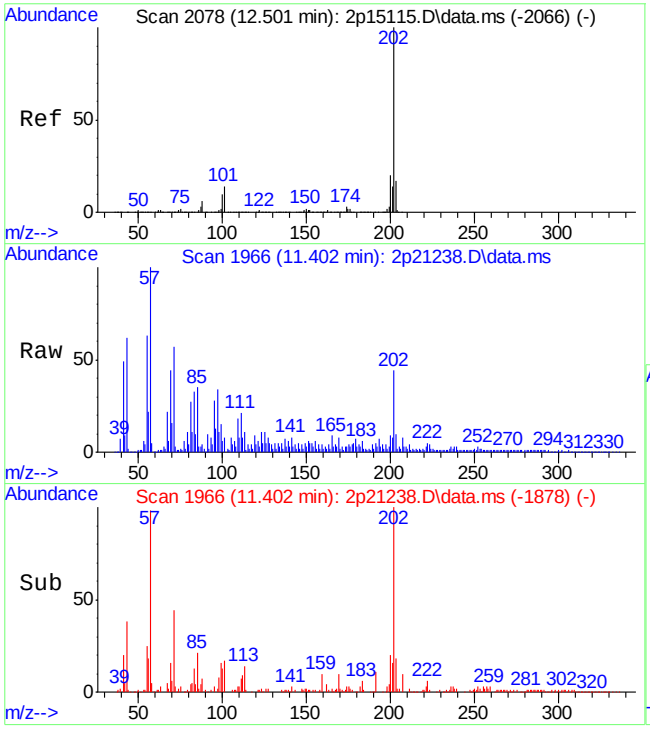
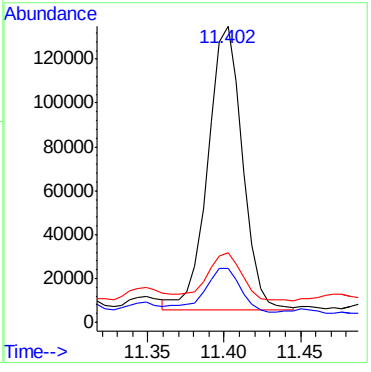
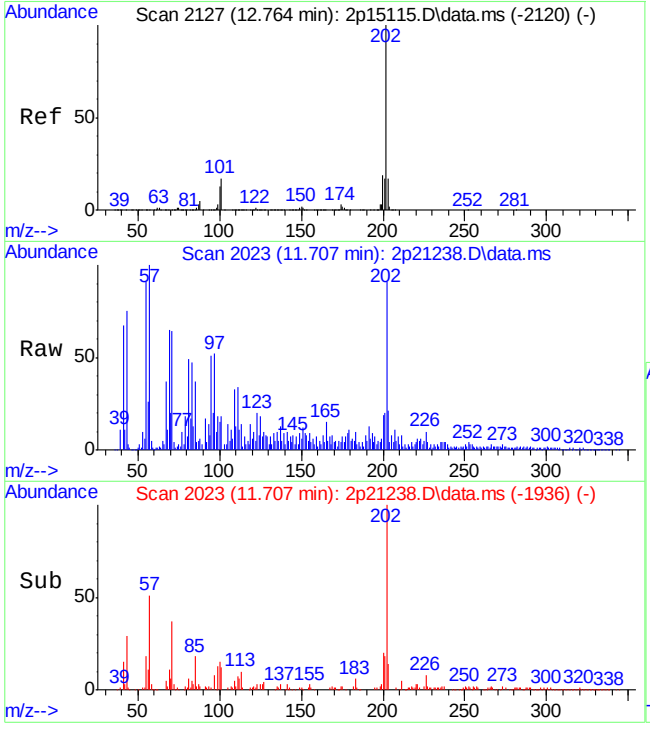


#81
Fluoranthene
Concen: 25.51 ppb
RT: 11.402 min Scan# 1966
Delta R.T. -0.027 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:202 Resp: 203856

Ion	Ratio	Lower	Upper
202	100		
101	18.3	0.0	41.3
203	23.6	0.0	49.1

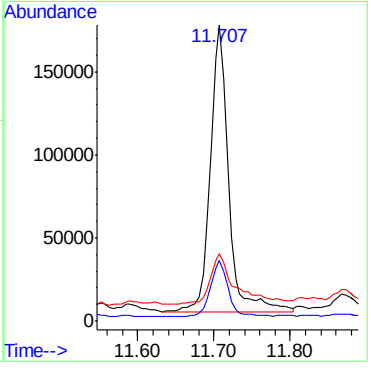


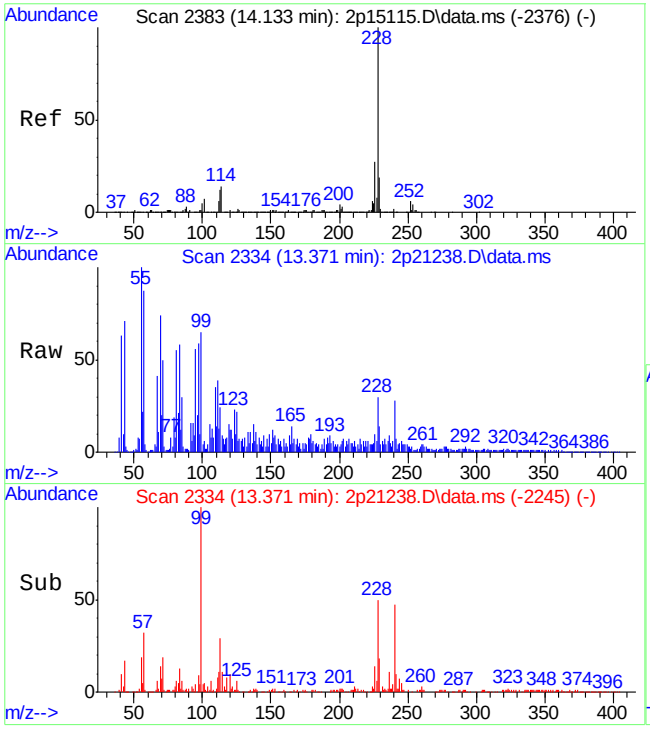


#84
Pyrene
Concen: 29.00 ppb
RT: 11.707 min Scan# 2023
Delta R.T. -0.032 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:202 Resp: 285315

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	49.6
203	17.1	0.0	46.9

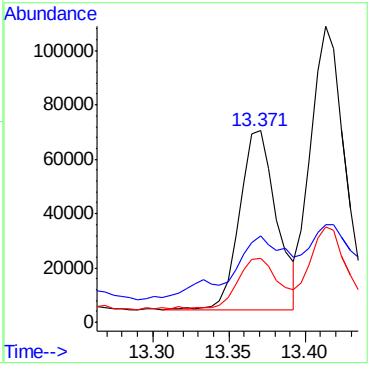


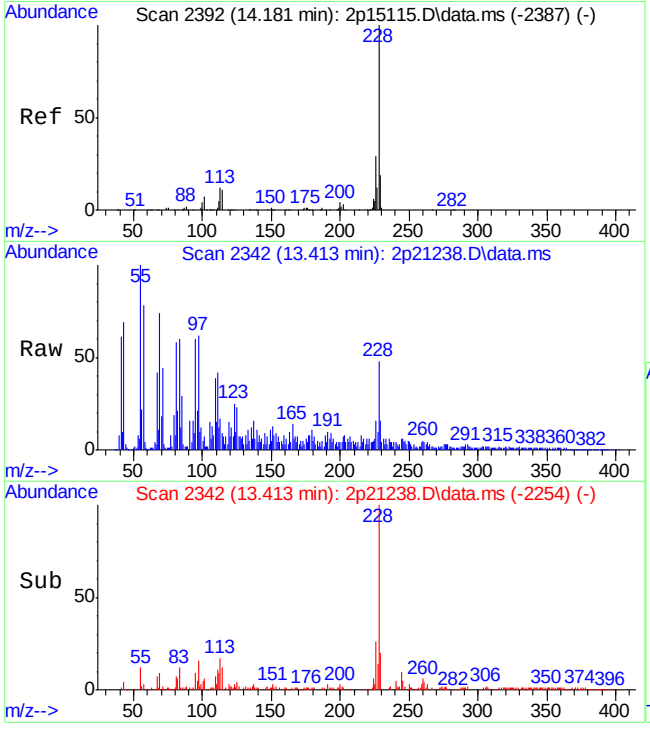


#88
Benzo[a]anthracene
Concen: 13.02 ppb
RT: 13.371 min Scan# 2334
Delta R.T. -0.022 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:228 Resp: 112082

Ion	Ratio	Lower	Upper
228	100		
229	26.7	0.0	50.7
226	26.2	0.0	56.7

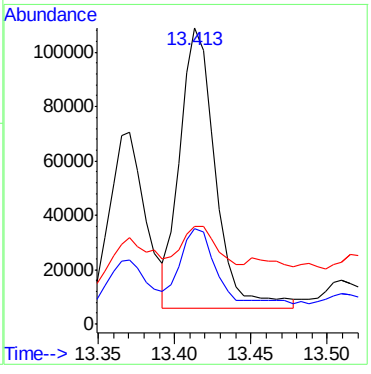


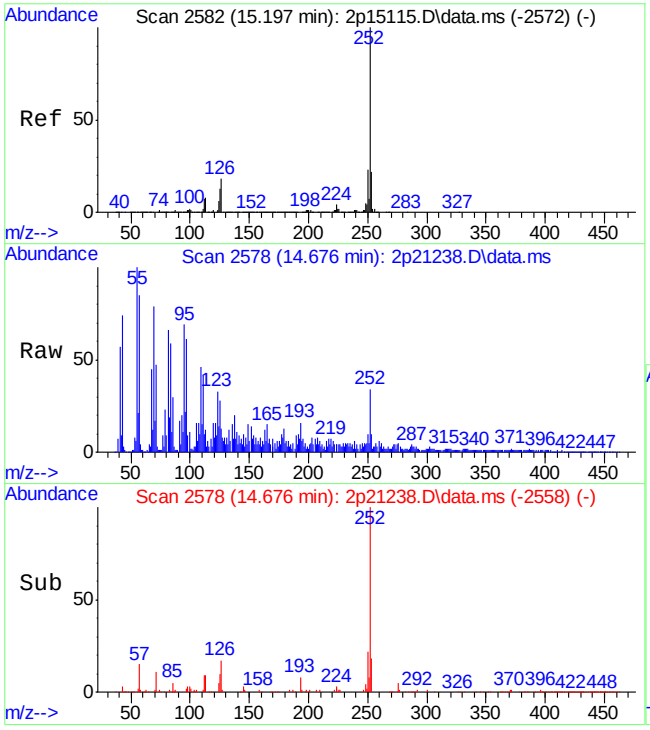


#90
Chrysene
Concen: 20.30 ppb
RT: 13.413 min Scan# 2342
Delta R.T. -0.027 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:228 Resp: 166347

Ion	Ratio	Lower	Upper
228	100		
226	27.1	0.0	58.4
229	14.5	0.0	50.1

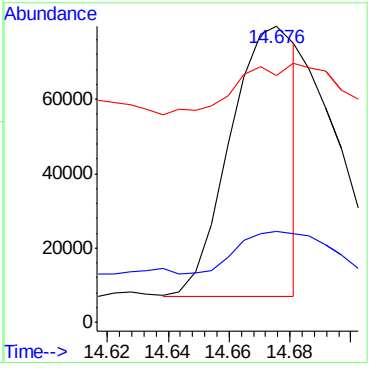


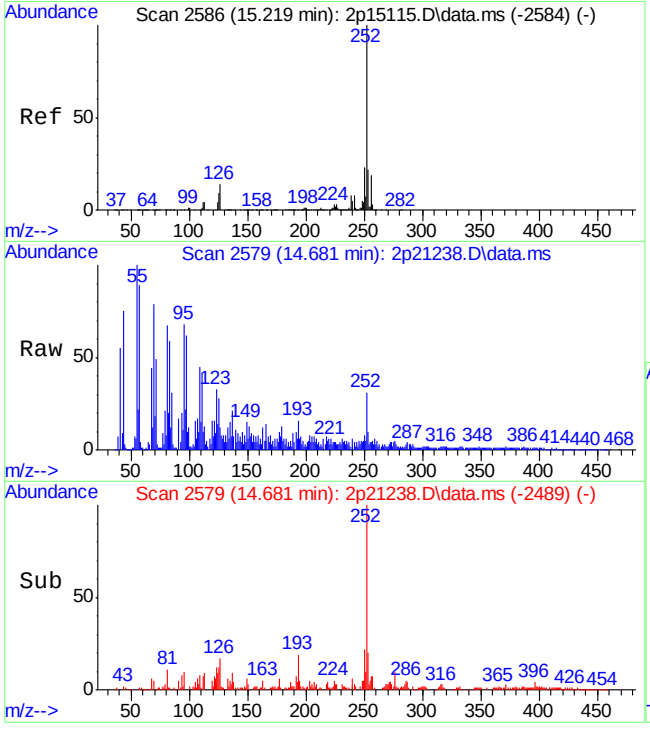


#94
Benzo[b]fluoranthene
Concen: 11.39 ppb m
RT: 14.676 min Scan# 2578
Delta R.T. 0.005 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:252 Resp: 108484

Ion	Ratio	Lower	Upper
252	100		
253	30.7	0.0	51.1
125	83.2	0.0	40.8#

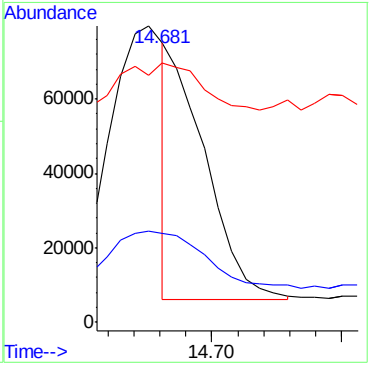


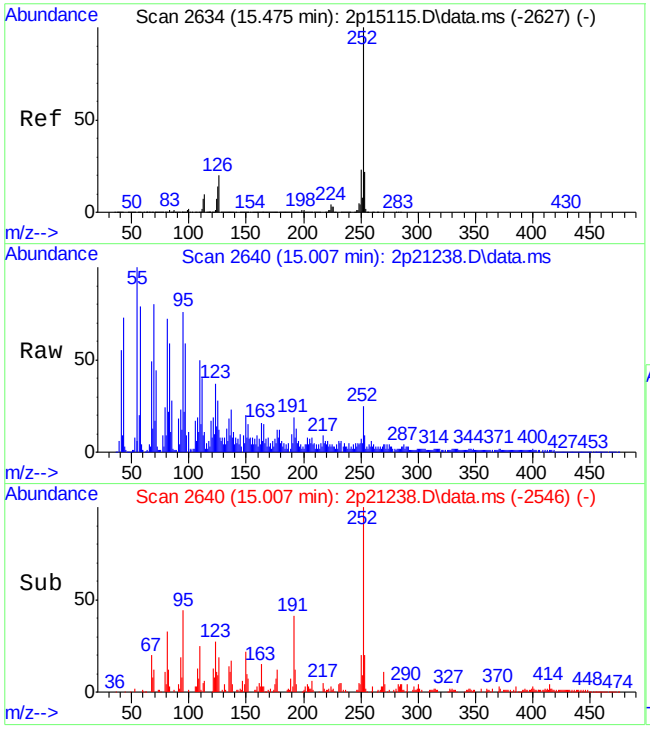


#95
Benzo[k]fluoranthene
Concen: 7.82 ppb m
RT: 14.681 min Scan# 2579
Delta R.T. -0.016 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:252 Resp: 65085

Ion	Ratio	Lower	Upper
252	100		
253	31.7	0.0	56.1
125	92.7	0.0	45.7#

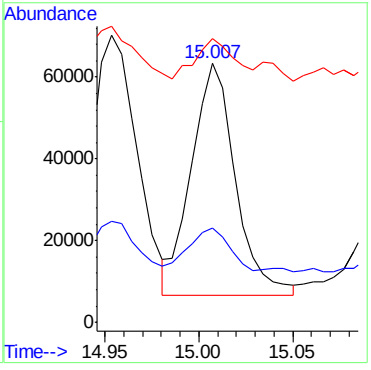


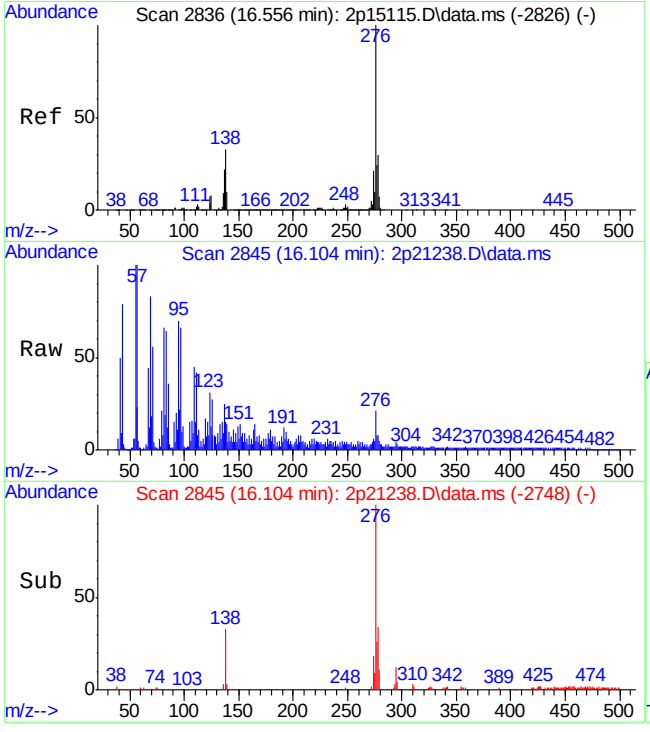


#96
Benzo[a]pyrene
Concen: 11.19 ppb
RT: 15.007 min Scan# 2640
Delta R.T. 0.005 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:252 Resp: 92596

Ion	Ratio	Lower	Upper
252	100		
253	19.5	0.0	51.5
125	18.5	0.0	41.1

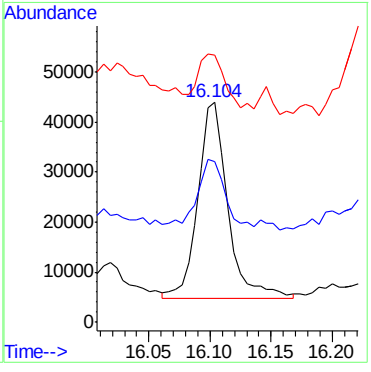




#97
Indeno[1,2,3-cd]pyrene
Concen: 6.85 ppb
RT: 16.104 min Scan# 2845
Delta R.T. 0.021 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:276 Resp: 65729

Ion	Ratio	Lower	Upper
276	100		
138	34.0	0.0	54.7
137	24.4	0.0	49.5



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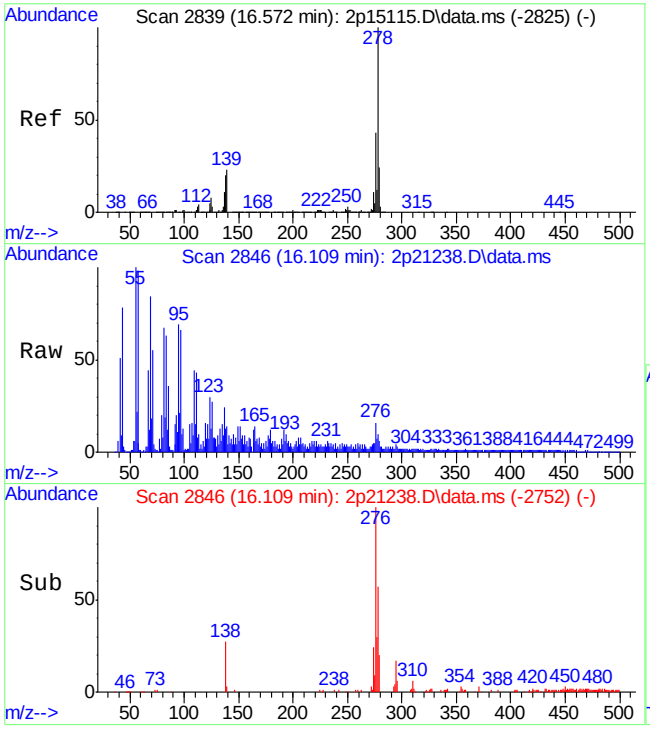
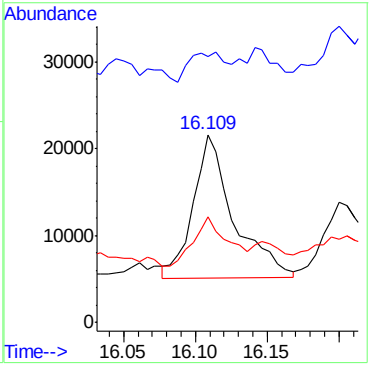
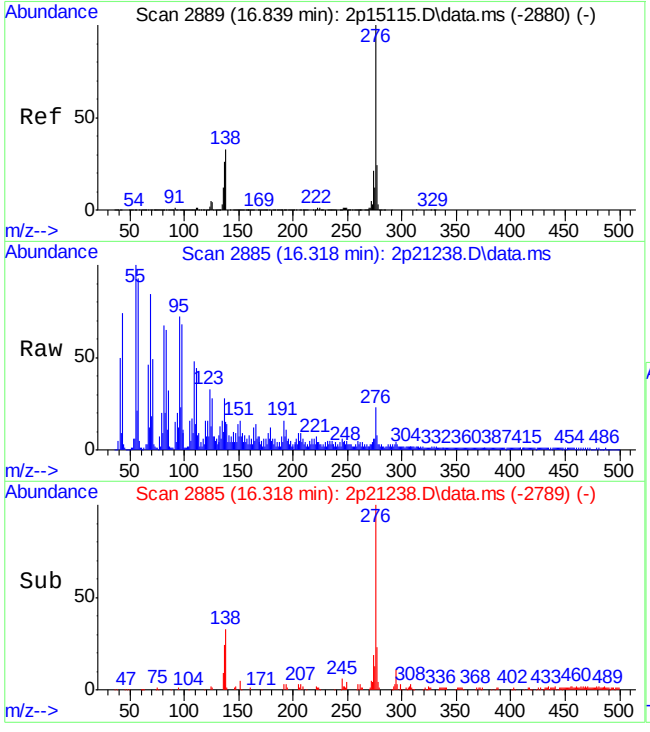


#99
Dibenz[a,h]anthracene
Concen: 4.07 ppb
RT: 16.109 min Scan# 2846
Delta R.T. 0.005 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:278 Resp: 32572

Ion	Ratio	Lower	Upper
278	100		
139	10.9	0.0	49.9
279	32.4	0.0	56.4

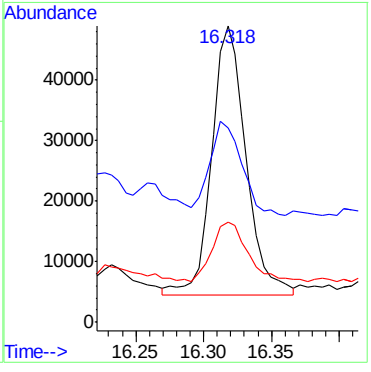




#101
Benzo[g,h,i]perylene
Concen: 9.64 ppb
RT: 16.318 min Scan# 2885
Delta R.T. 0.016 min
Lab File: 2p21238.D
Acq: 19 Mar 2013 7:12 pm

Tgt Ion:276 Resp: 78594

Ion	Ratio	Lower	Upper
276	100		
138	28.6	0.0	55.6
277	21.6	0.0	53.3



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Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21382.D
Acq On : 22 Mar 2013 12:10 pm
Operator : andrews1
Sample : jb30425-1cf
Misc : op64440,e2p941,35.7
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 23 13:26:29 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.903	152	55132	40.00	ppb	-0.02
24) Naphthalene-d8	4.513	136	219031	40.00	ppb	-0.02
47) Acenaphthene-d10	7.155	164	127768	40.00	ppb	-0.01
69) Phenanthrene-d10	9.439	188	221040	40.00	ppb	0.00
83) Chrysene-d12	13.349	240	254446	40.00	ppb	0.03
92) Perylene-d12	15.034	264	243873	40.00	ppb	0.05
102) 1,4-Dichlorobenzene-d4a	2.903	152	55132	40.00	ppb	-0.02
104) Acenaphthene-d10a	7.155	164	127768	40.00	ppb	-0.01
107) Chrysene-d12a	13.349	240	254446	40.00	ppb	0.03
109) Naphthalene-d8a	4.513	136	219031	40.00	ppb	#-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	1.812	112	59846	30.32	ppb	-0.02
Spiked Amount 50.000	Range 11 - 58		Recovery = 60.64%#			
8) Phenol-d5	2.684	99	78537	32.08	ppb	-0.02
Spiked Amount 50.000	Range 10 - 59		Recovery = 64.16%#			
25) Nitrobenzene-d5	3.609	82	73401	36.43	ppb	-0.02
Spiked Amount 50.000	Range 19 - 61		Recovery = 72.86%#			
51) 2-Fluorobiphenyl	6.187	172	146950	35.96	ppb	-0.02
Spiked Amount 50.000	Range 21 - 58		Recovery = 71.92%#			
73) 2,4,6-Tribromophenol	8.434	330	16243	32.88	ppb	0.00
Spiked Amount 50.000	Range 12 - 68		Recovery = 65.76%			
85) Terphenyl-d14	12.007	244	179059	33.41	ppb	0.02
Spiked Amount 50.000	Range 16 - 65		Recovery = 66.82%#			
Target Compounds						Qvalue
56) Acenaphthylene	6.915	152	16479	2.79	ppb	76
59) Acenaphthene	7.198	153	41334	11.39	ppb	87
66) Fluorene	7.995	166	52394	12.48	ppb	99
77) Phenanthrene	9.477	178	202134	30.36	ppb	97
78) Anthracene	9.546	178	51846	7.87	ppb	92
81) Fluoranthene	11.354	202	246554	36.07	ppb	90
84) Pyrene	11.664	202	309326	35.68	ppb	100
88) Benzo[a]anthracene	13.328	228	126997	16.74	ppb	99
90) Chrysene	13.376	228	180426	24.98	ppb	94
94) Benzo[b]fluoranthene	14.638	252	123308m	14.83	ppb	
95) Benzo[k]fluoranthene	14.643	252	80765m	11.11	ppb	
96) Benzo[a]pyrene	14.975	252	109053	15.10	ppb	90
97) Indeno[1,2,3-cd]pyrene	16.066	276	77382	9.24	ppb	80
99) Dibenz[a,h]anthracene	16.077	278	40272	5.77	ppb	83
101) Benzo[g,h,i]perylene	16.285	276	85288	11.99	ppb	92

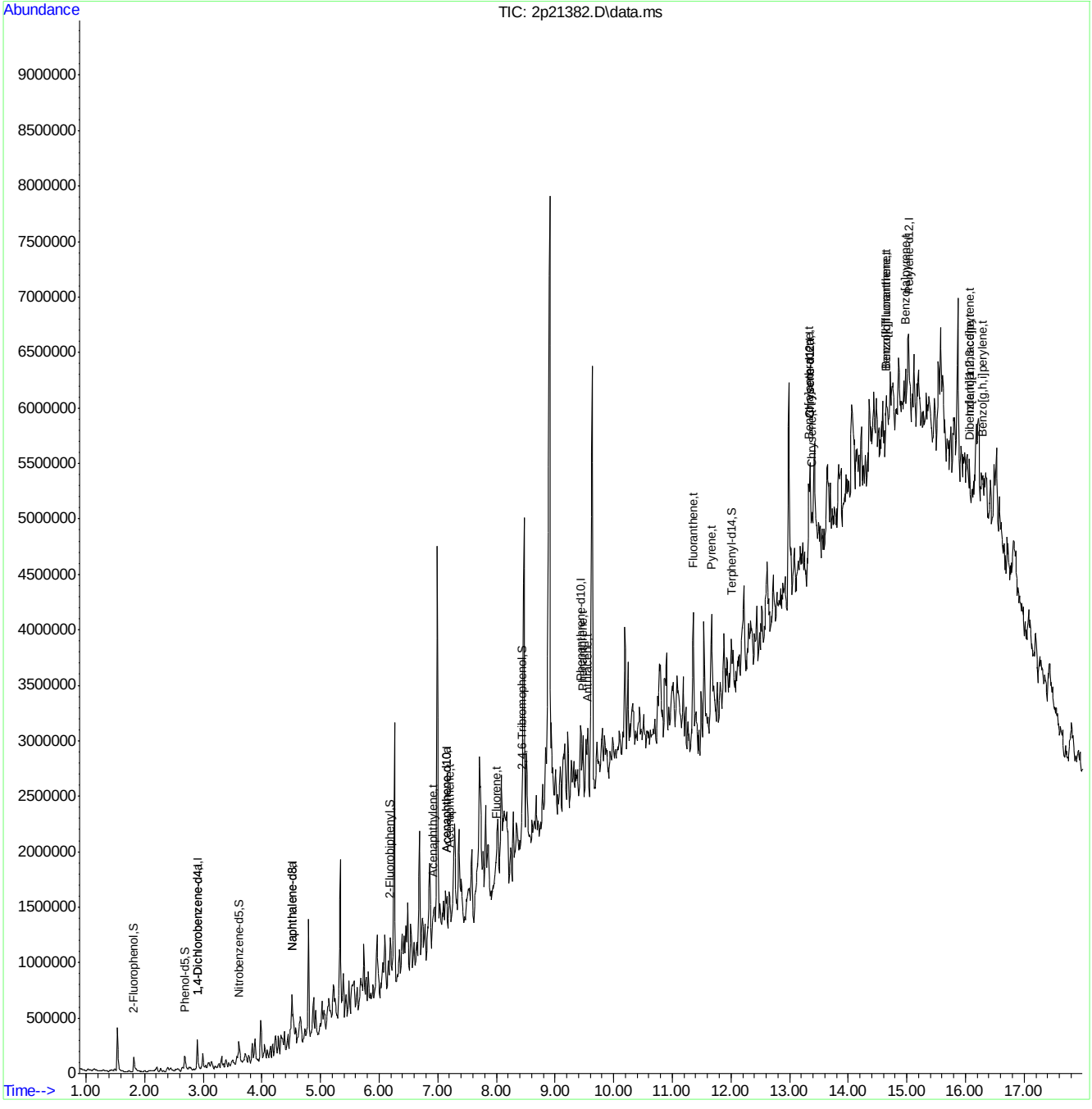
(#) = qualifier out of range (m) = manual integration (+) = signals summed

9.1.2
9

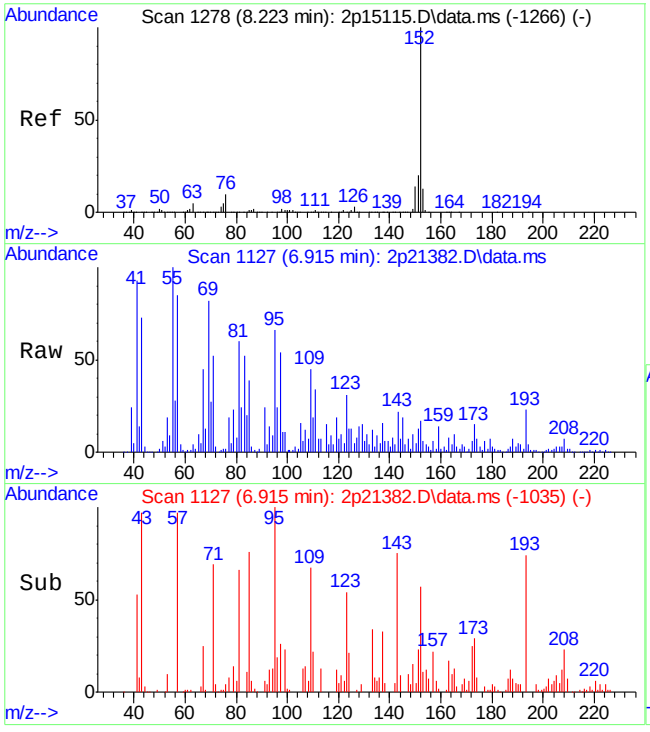
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21382.D
Acq On : 22 Mar 2013 12:10 pm
Operator : andrews1
Sample : jb30425-1cf
Misc : op64440,e2p941,35.7
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 23 13:26:29 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration



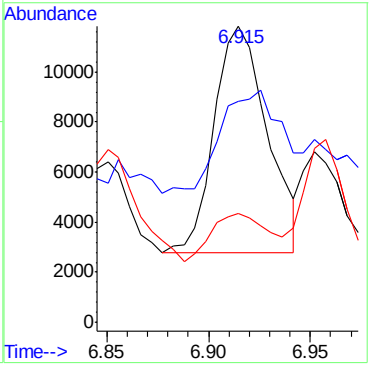
M2P896.M Sat Mar 23 13:26:39 2013 RPT1 Page: 2

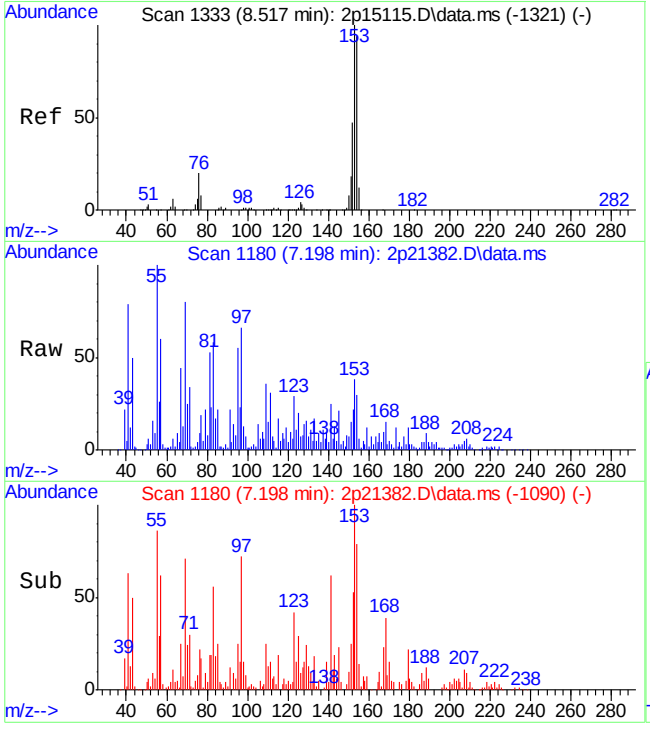


#56
Acenaphthylene
Concen: 2.79 ppb
RT: 6.915 min Scan# 1127
Delta R.T. -0.005 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:152 Resp: 16479

Ion	Ratio	Lower	Upper
152	100		
151	36.2	0.0	49.9
153	10.5	0.0	43.1

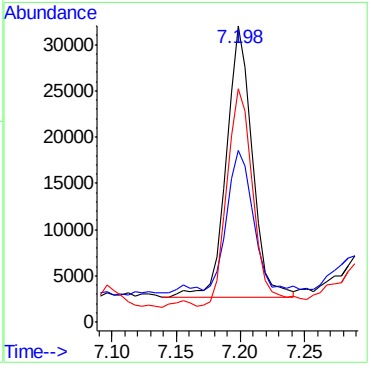




#59
Acenaphthene
Concen: 11.39 ppb
RT: 7.198 min Scan# 1180
Delta R.T. -0.016 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

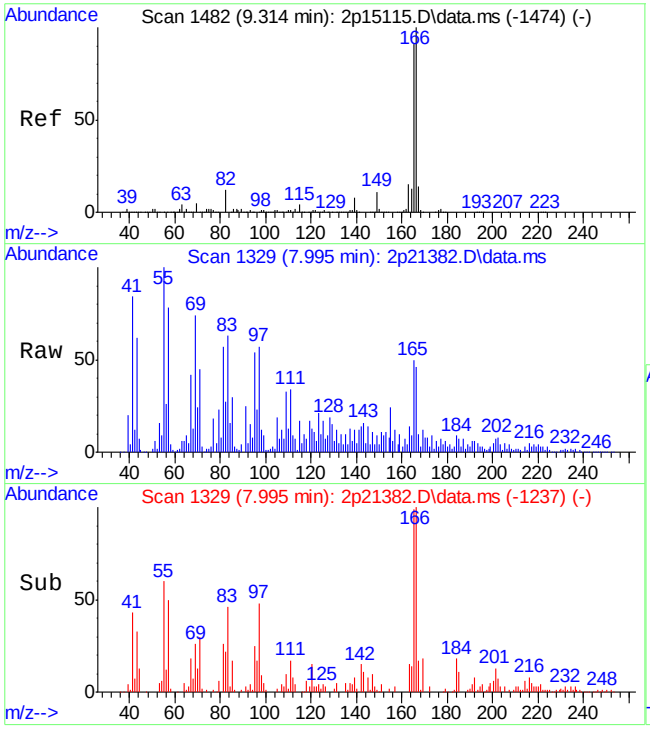
Tgt Ion:153 Resp: 41334

Ion	Ratio	Lower	Upper
153	100		
152	51.6	17.8	77.8
154	79.5	65.2	125.2



9.1.2

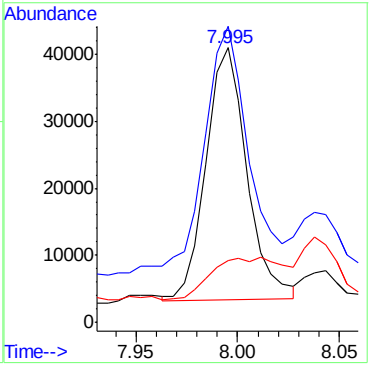
9

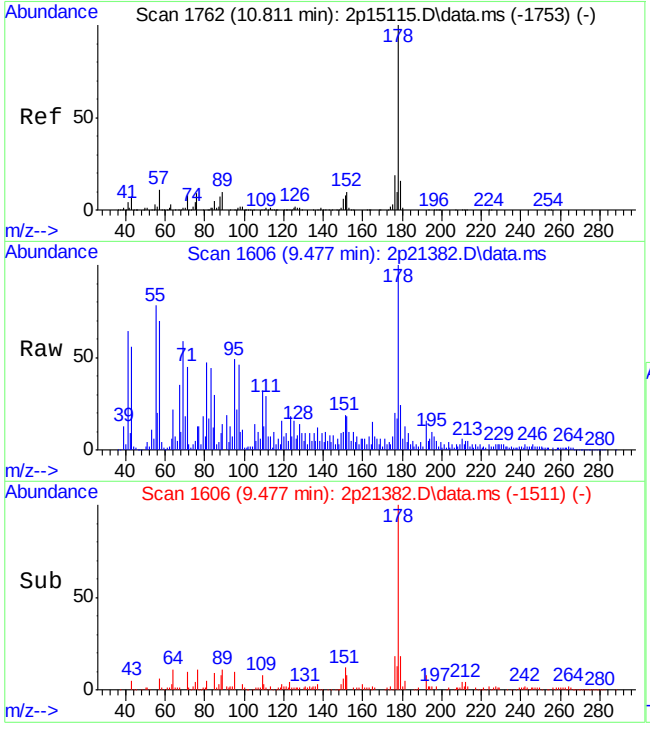


#66
Fluorene
Concen: 12.48 ppb
RT: 7.995 min Scan# 1329
Delta R.T. -0.005 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:166 Resp: 52394

Ion	Ratio	Lower	Upper
166	100		
165	92.3	62.5	122.5
167	9.4	0.0	42.9

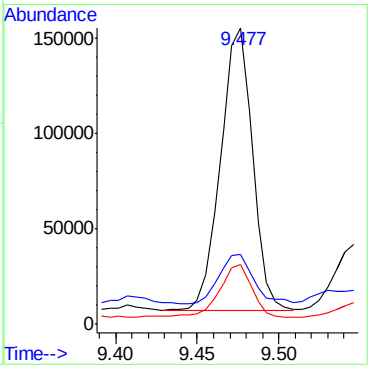




#77
Phenanthrene
Concen: 30.36 ppb
RT: 9.477 min Scan# 1606
Delta R.T. 0.011 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

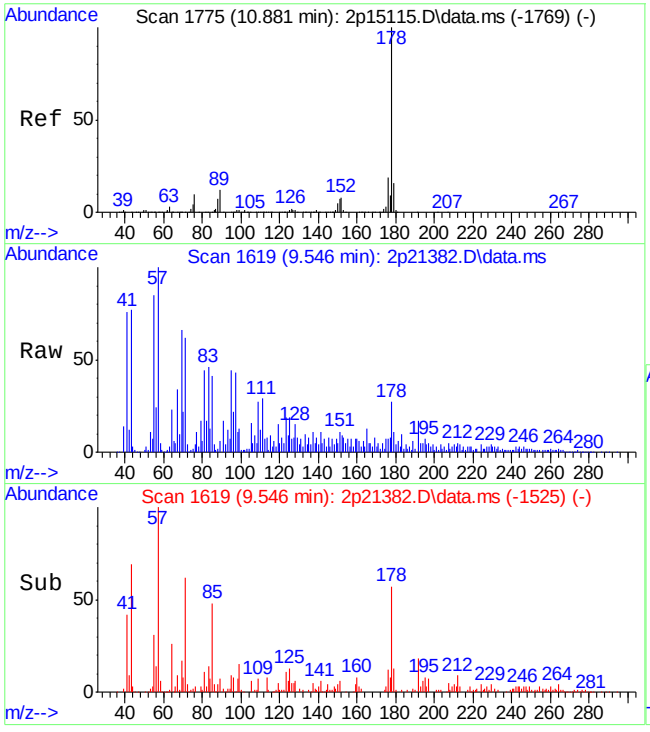
Tgt Ion:178 Resp: 202134

Ion	Ratio	Lower	Upper
178	100		
179	17.0	0.0	44.4
176	18.6	0.0	48.6



9.1.2

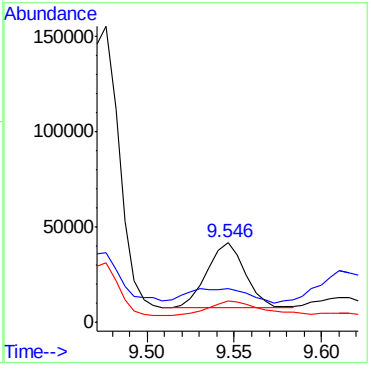
9

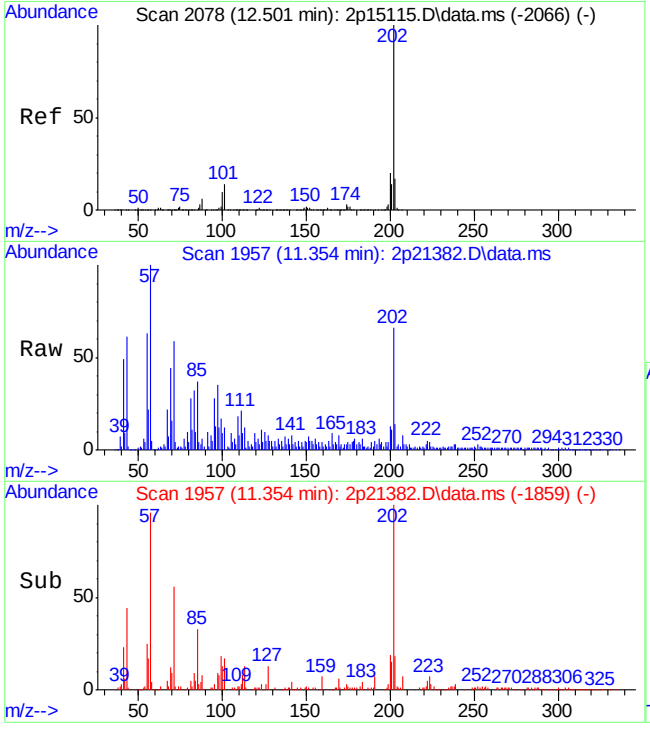


#78
Anthracene
Concen: 7.87 ppb
RT: 9.546 min Scan# 1619
Delta R.T. 0.005 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:178 Resp: 51846

Ion	Ratio	Lower	Upper
178	100		
179	18.1	0.0	44.5
176	19.6	0.0	46.5

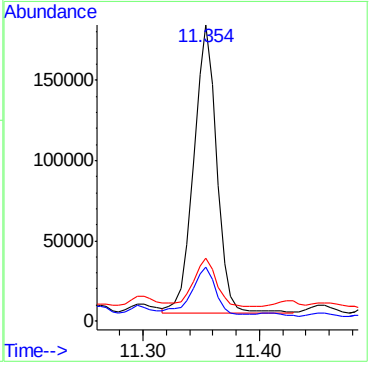


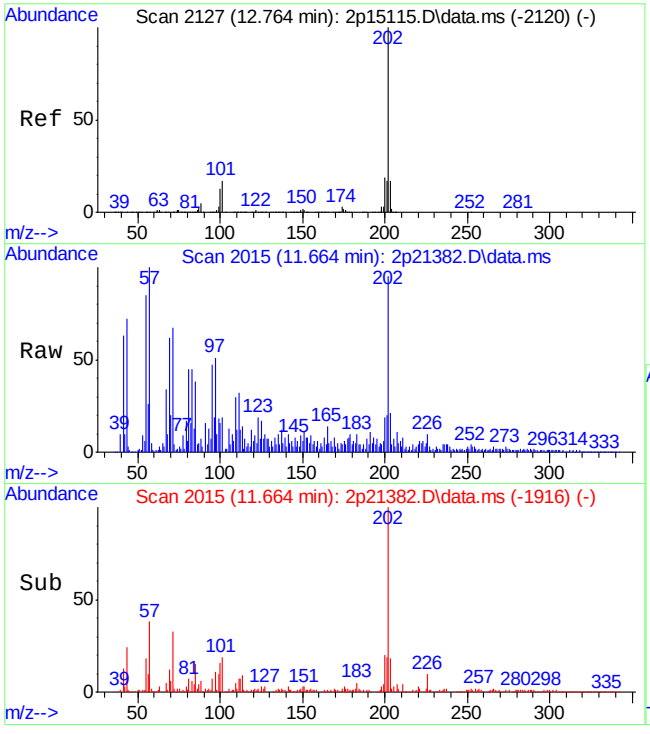


#81
Fluoranthene
Concen: 36.07 ppb
RT: 11.354 min Scan# 1957
Delta R.T. 0.027 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:202 Resp: 246554

Ion	Ratio	Lower	Upper
202	100		
101	18.3	0.0	41.3
203	21.1	0.0	49.1

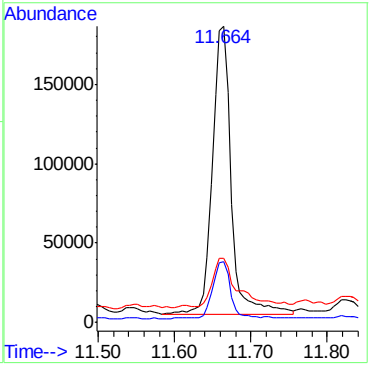


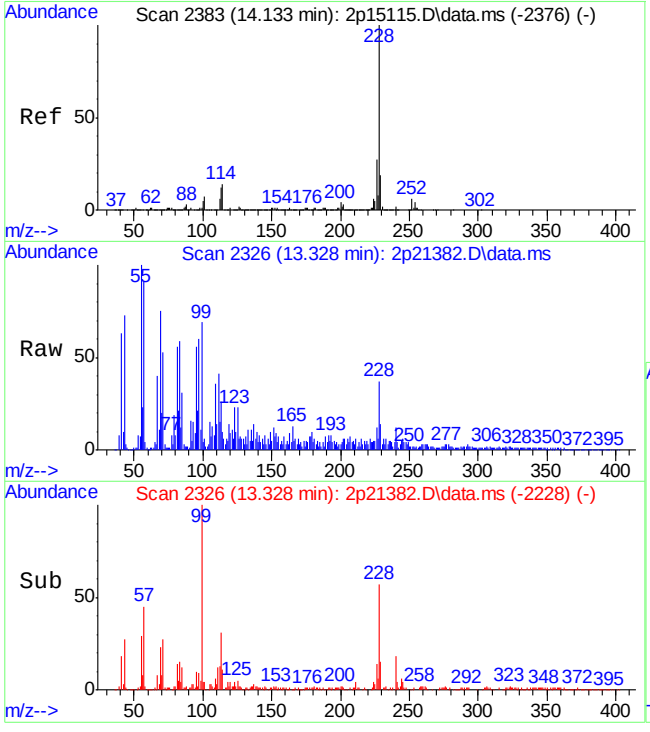


#84
Pyrene
Concen: 35.68 ppb
RT: 11.664 min Scan# 2015
Delta R.T. 0.032 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:202 Resp: 309326

Ion	Ratio	Lower	Upper
202	100		
200	19.6	0.0	49.6
203	16.5	0.0	46.9

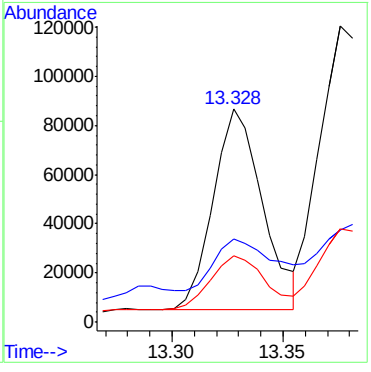




#88
Benzo[a]anthracene
Concen: 16.74 ppb
RT: 13.328 min Scan# 2326
Delta R.T. 0.027 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

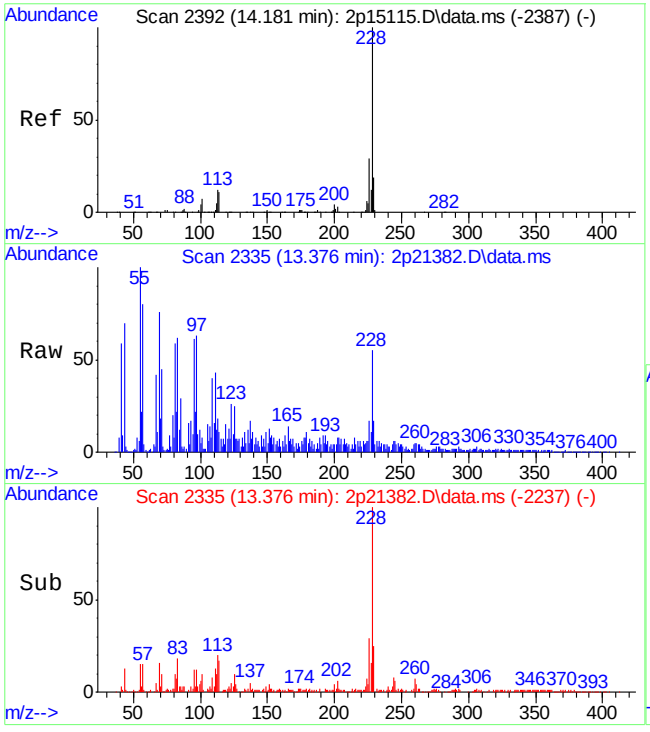
Tgt Ion:228 Resp: 126997

Ion	Ratio	Lower	Upper
228	100		
229	20.8	0.0	50.7
226	26.0	0.0	56.7



9.1.2

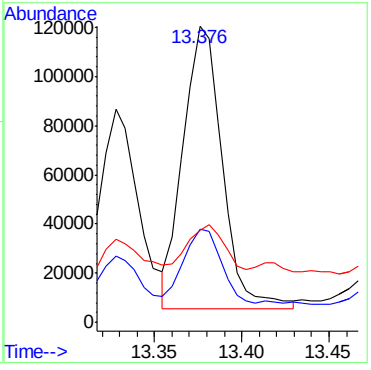
9

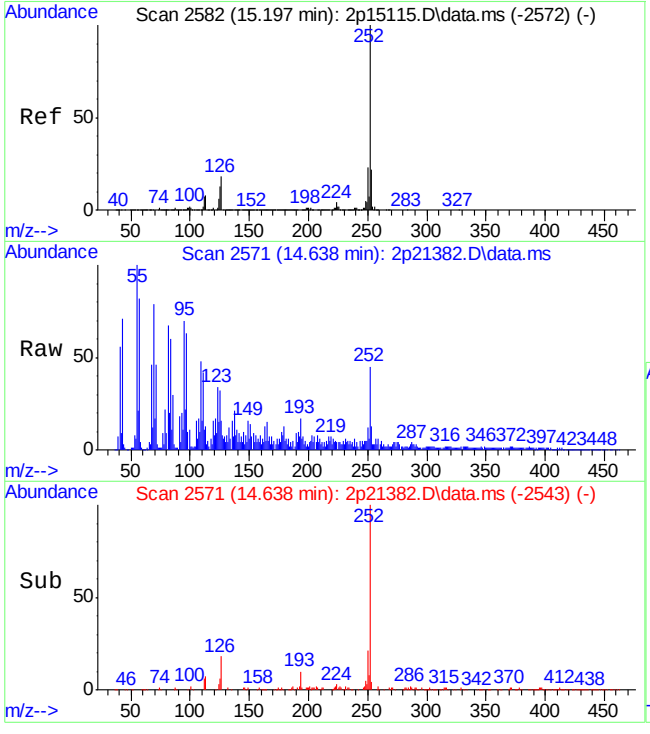


#90
Chrysene
Concen: 24.98 ppb
RT: 13.376 min Scan# 2335
Delta R.T. 0.027 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:228 Resp: 180426

Ion	Ratio	Lower	Upper
228	100		
226	27.0	0.0	58.4
229	15.0	0.0	50.1

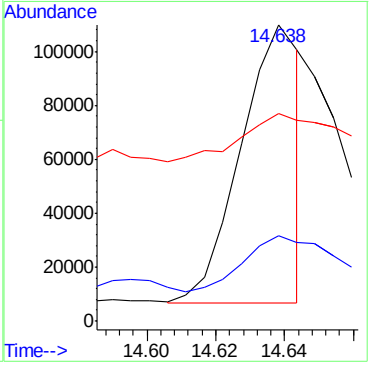


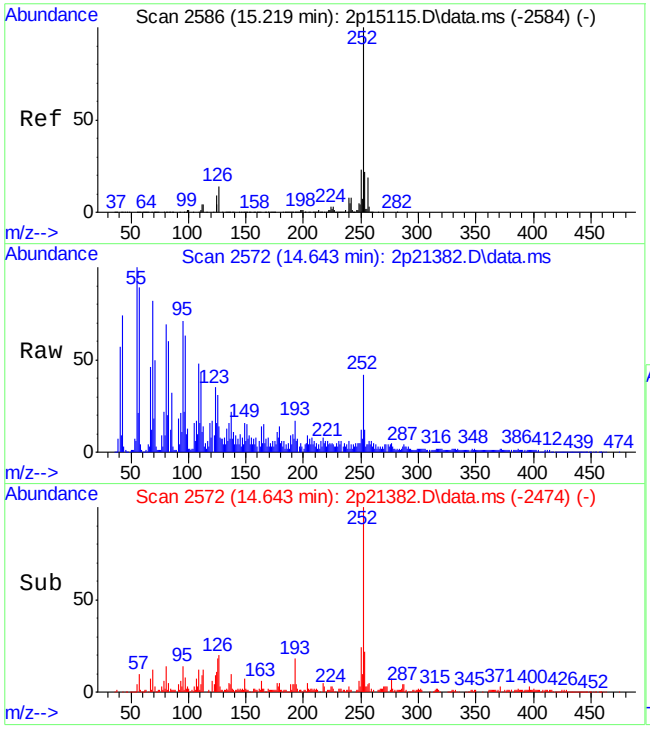


#94
Benzo[b]fluoranthene
Concen: 14.83 ppb m
RT: 14.638 min Scan# 2571
Delta R.T. 0.048 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:252 Resp: 123308

Ion	Ratio	Lower	Upper
252	100		
253	28.6	0.0	51.1
125	70.1	0.0	40.8#

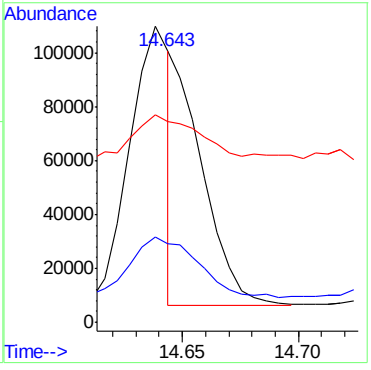


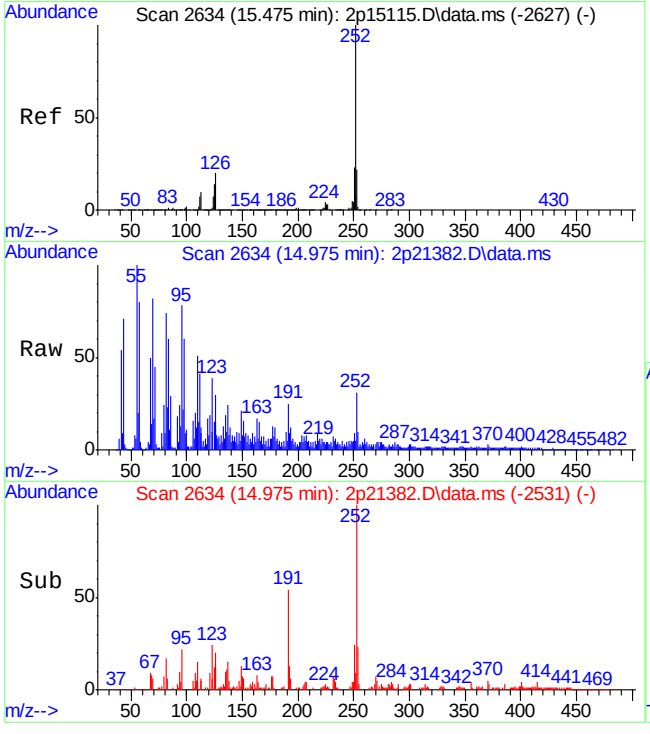


#95
Benzo[k]fluoranthene
Concen: 11.11 ppb m
RT: 14.643 min Scan# 2572
Delta R.T. 0.027 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:252 Resp: 80765

Ion	Ratio	Lower	Upper
252	100		
253	29.2	0.0	56.1
125	74.3	0.0	45.7#

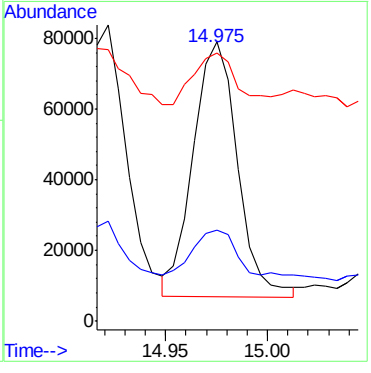




#96
Benzo[a]pyrene
Concen: 15.10 ppb
RT: 14.975 min Scan# 2634
Delta R.T. 0.053 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

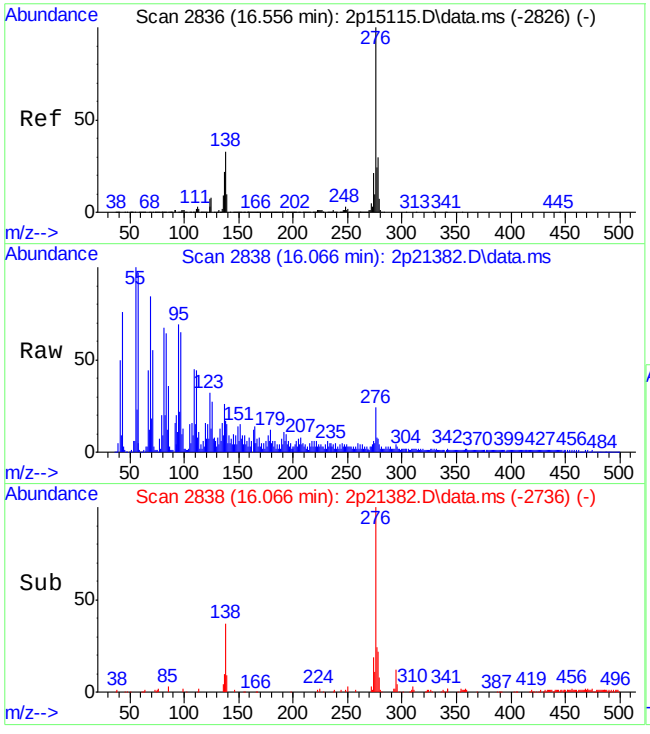
Tgt Ion:252 Resp: 109053

Ion	Ratio	Lower	Upper
252	100		
253	19.0	0.0	51.5
125	18.4	0.0	41.1



9.1.2

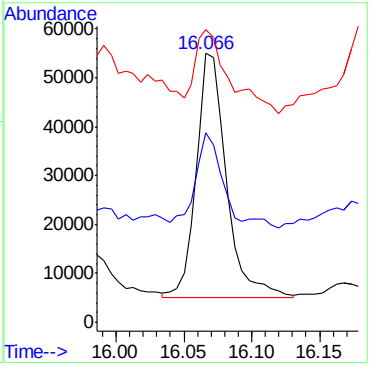
9

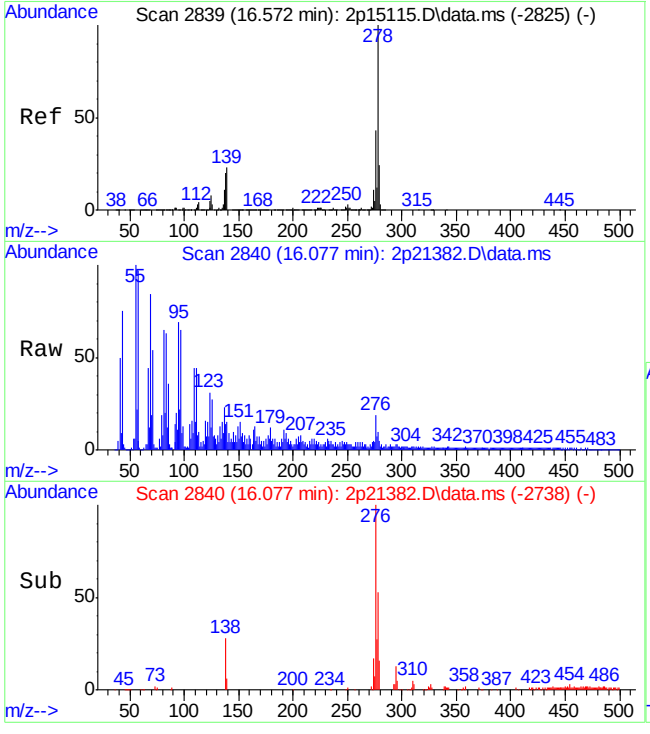


#97
Indeno[1,2,3-cd]pyrene
Concen: 9.24 ppb
RT: 16.066 min Scan# 2838
Delta R.T. 0.048 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:276 Resp: 77382

Ion	Ratio	Lower	Upper
276	100		
138	36.4	0.0	54.7
137	26.2	0.0	49.5

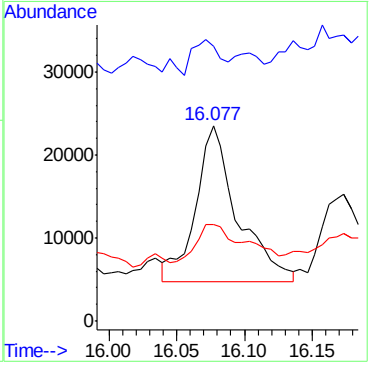


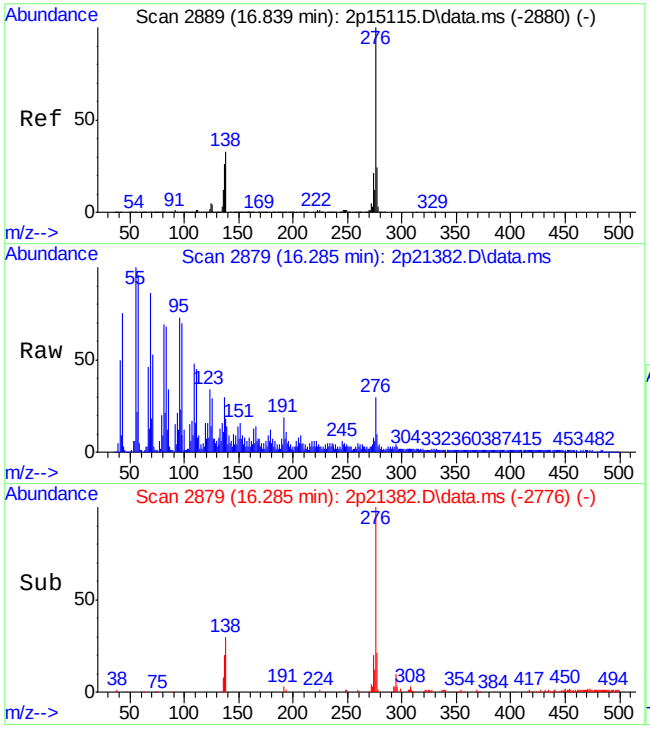


#99
Dibenz[a,h]anthracene
Concen: 5.77 ppb
RT: 16.077 min Scan# 2840
Delta R.T. 0.048 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:278 Resp: 40272

Ion	Ratio	Lower	Upper
278	100		
139	7.3	0.0	49.9
279	21.4	0.0	56.4

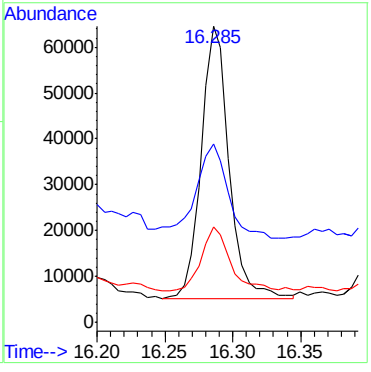




#101
Benzo[g,h,i]perylene
Concen: 11.99 ppb
RT: 16.285 min Scan# 2879
Delta R.T. 0.053 min
Lab File: 2p21382.D
Acq: 22 Mar 2013 12:10 pm

Tgt Ion:276 Resp: 85288

Ion	Ratio	Lower	Upper
276	100		
138	32.7	0.0	55.6
277	23.5	0.0	53.3



9.1.2

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21239.D
Acq On : 19 Mar 2013 7:35 pm
Operator : andrews1
Sample : jb30425-3
Misc : op64440,e2p936,31.9
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 20 14:47:55 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.941	152	75262	40.00	ppb	-0.09
24) Naphthalene-d8	4.561	136	297312	40.00	ppb	-0.09
47) Acenaphthene-d10	7.198	164	163983	40.00	ppb	-0.09
69) Phenanthrene-d10	9.466	188	268341	40.00	ppb	-0.09
83) Chrysene-d12	13.355	240	273826	40.00	ppb	-0.06
92) Perylene-d12	15.018	264	260596	40.00	ppb	-0.04
102) 1,4-Dichlorobenzene-d4a	2.941	152	75262	40.00	ppb	-0.09
104) Acenaphthene-d10a	7.198	164	163983	40.00	ppb	-0.09
107) Chrysene-d12a	13.355	240	273826	40.00	ppb	-0.06
109) Naphthalene-d8a	4.561	136	297312	40.00	ppb	#-0.09
System Monitoring Compounds						
5) 2-Fluorophenol	1.844	112	68845	25.55	ppb	-0.05
Spiked Amount 50.000	Range 11 - 58		Recovery = 51.10%			
8) Phenol-d5	2.721	99	94451	28.26	ppb	-0.05
Spiked Amount 50.000	Range 10 - 59		Recovery = 56.52%			
25) Nitrobenzene-d5	3.652	82	70872	25.91	ppb	-0.09
Spiked Amount 50.000	Range 19 - 61		Recovery = 51.82%			
51) 2-Fluorobiphenyl	6.236	172	170482	32.51	ppb	-0.10
Spiked Amount 50.000	Range 21 - 58		Recovery = 65.02%#			
73) 2,4,6-Tribromophenol	8.466	330	23527	39.23	ppb	-0.08
Spiked Amount 50.000	Range 12 - 68		Recovery = 78.46%#			
85) Terphenyl-d14	12.017	244	226717	39.30	ppb	-0.07
Spiked Amount 50.000	Range 16 - 65		Recovery = 78.60%#			
Target Compounds						Qvalue
38) Naphthalene	4.588	128	10919	1.37	ppb	96
56) Acenaphthylene	6.958	152	9056m	1.19	ppb	
59) Acenaphthene	7.241	153	5458	1.17	ppb	93
62) Dibenzofuran	7.508	168	4207	0.63	ppb	94
66) Fluorene	8.033	166	9511	1.77	ppb	96
77) Phenanthrene	9.498	178	201758	24.96	ppb	98
78) Anthracene	9.568	178	62127	7.77	ppb	97
81) Fluoranthene	11.360	202	381963	46.03	ppb	93
84) Pyrene	11.670	202	314878	33.75	ppb	99
88) Benzo[a]anthracene	13.333	228	177861m	21.79	ppb	
90) Chrysene	13.381	228	165457m	21.29	ppb	
94) Benzo[b]fluoranthene	14.628	252	150751m	16.96	ppb	
95) Benzo[k]fluoranthene	14.633	252	108585m	13.98	ppb	
96) Benzo[a]pyrene	14.959	252	136461	17.68	ppb	95
97) Indeno[1,2,3-cd]pyrene	16.050	276	90182	10.07	ppb	90
99) Dibenz[a,h]anthracene	16.061	278	38372	5.14	ppb	90
101) Benzo[g,h,i]perylene	16.264	276	81149	10.67	ppb	90

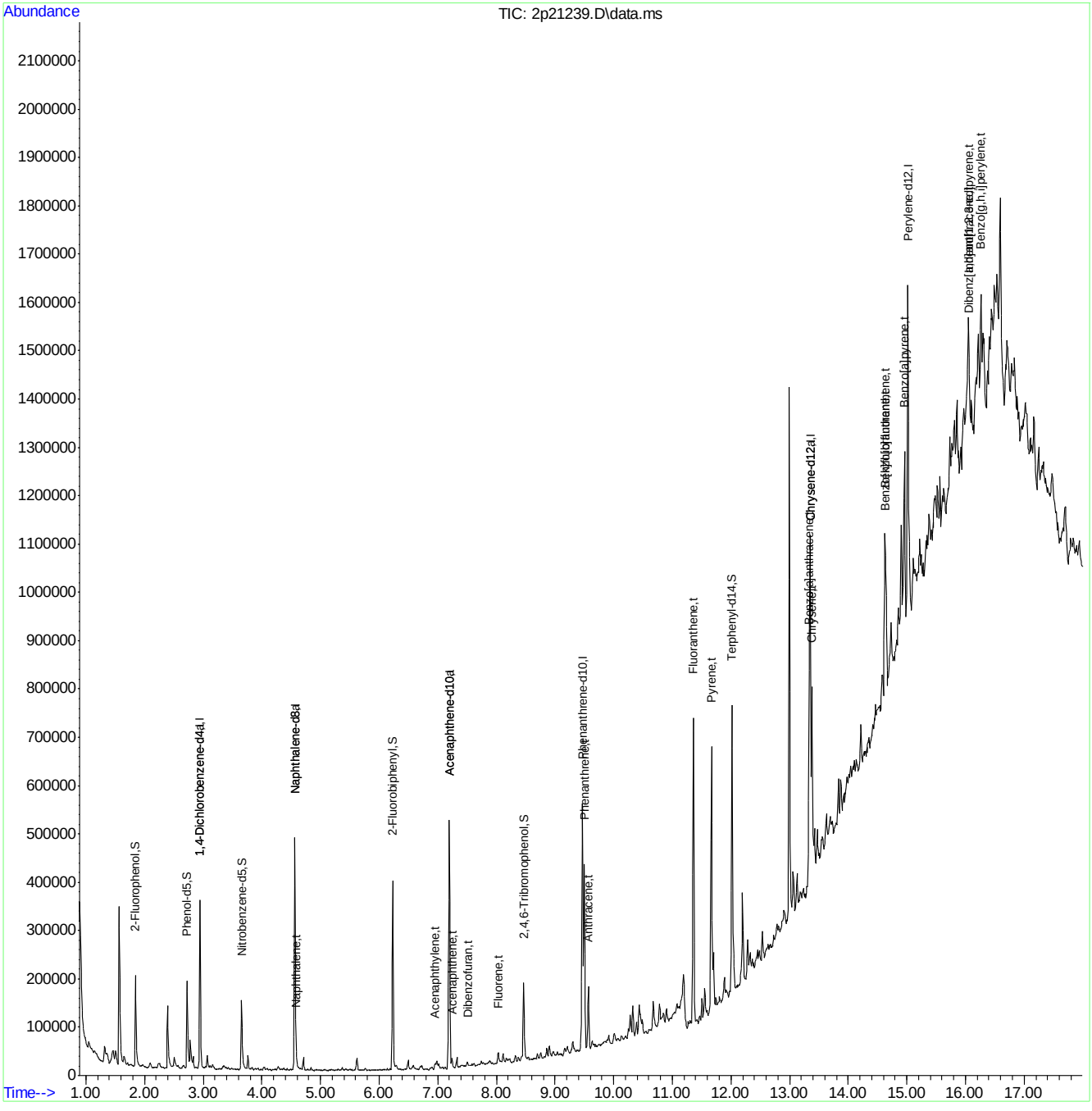
(#) = qualifier out of range (m) = manual integration (+) = signals summed

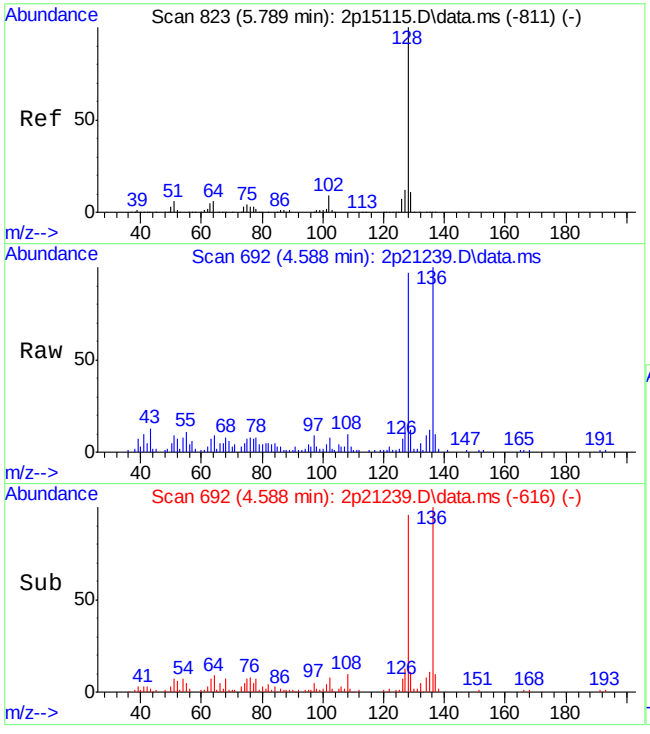
9.1.3
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21239.D
Acq On : 19 Mar 2013 7:35 pm
Operator : andrews1
Sample : jb30425-3
Misc : op64440,e2p936,31.9
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 20 14:47:55 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

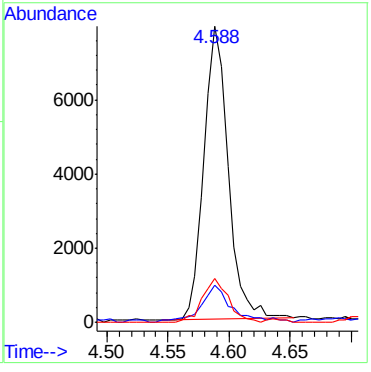


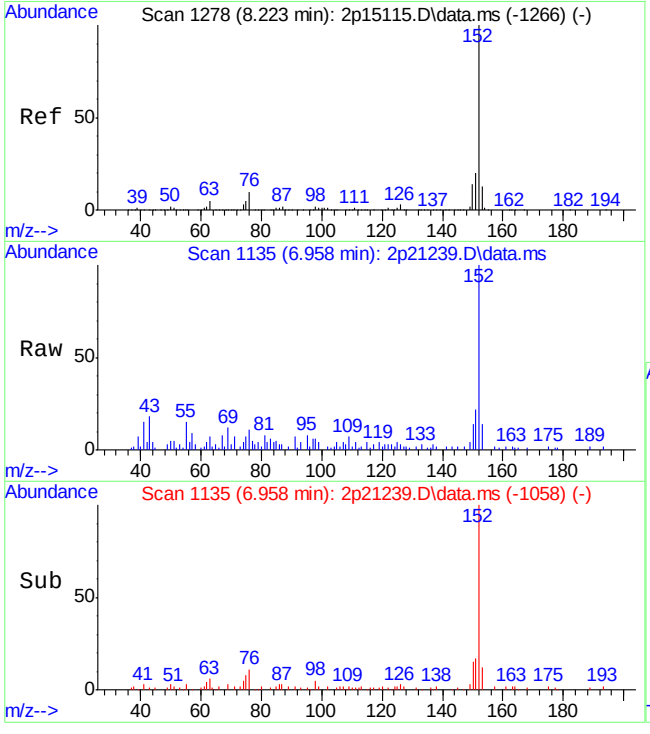


#38
Naphthalene
Concen: 1.37 ppb
RT: 4.588 min Scan# 692
Delta R.T. -0.091 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:128 Resp: 10919

Ion	Ratio	Lower	Upper
128	100		
129	12.4	0.0	41.0
127	14.8	0.0	43.0

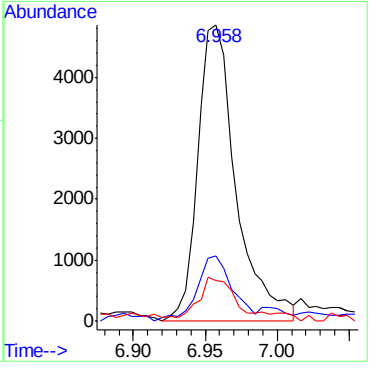


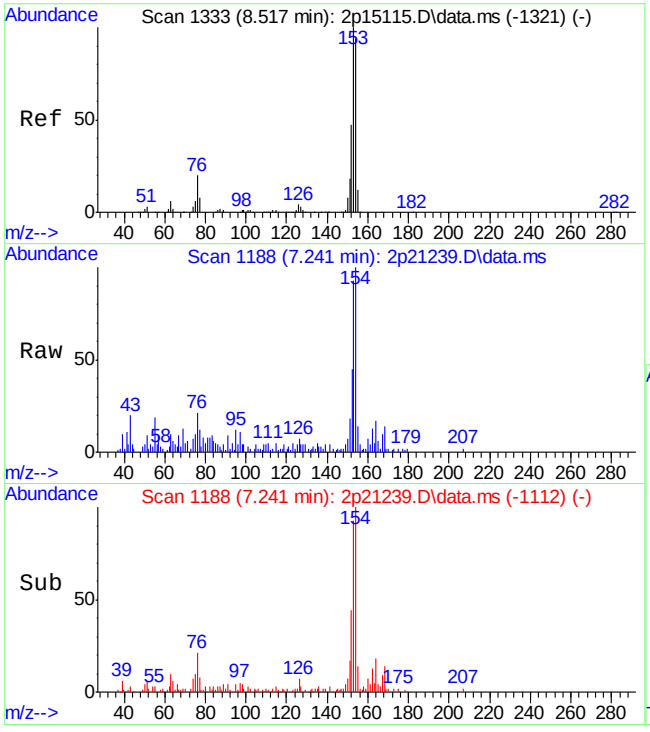


#56
Acenaphthylene
Concen: 1.19 ppb m
RT: 6.958 min Scan# 1135
Delta R.T. -0.086 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:152 Resp: 9056

Ion	Ratio	Lower	Upper
152	100		
151	22.0	0.0	49.9
153	13.8	0.0	43.1

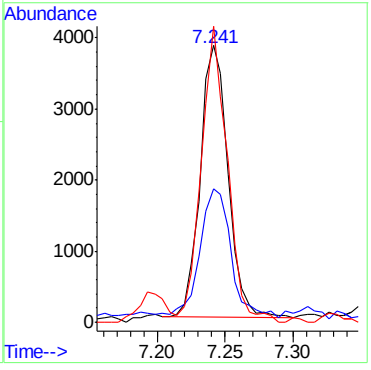


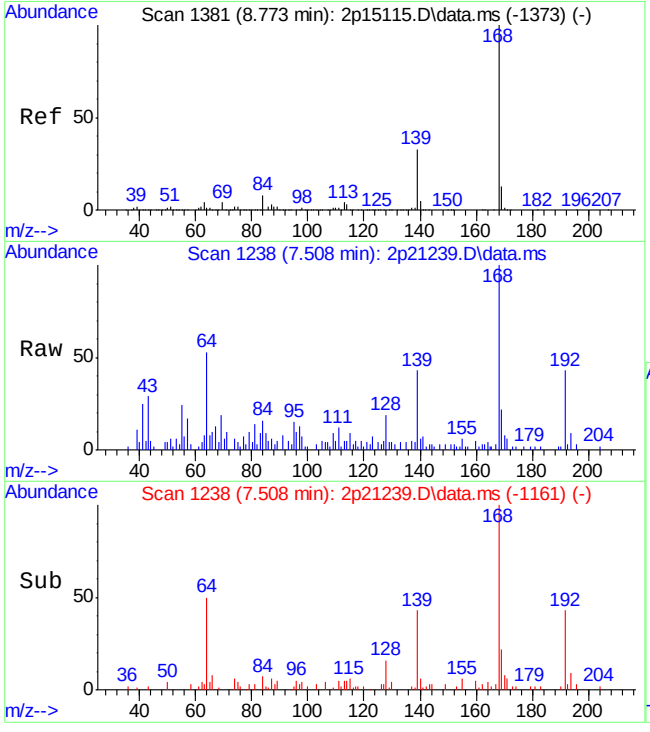


#59
Acenaphthene
Concen: 1.17 ppb
RT: 7.241 min Scan# 1188
Delta R.T. -0.091 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:153 Resp: 5458

Ion	Ratio	Lower	Upper
153	100		
152	45.8	17.8	77.8
154	103.6	65.2	125.2

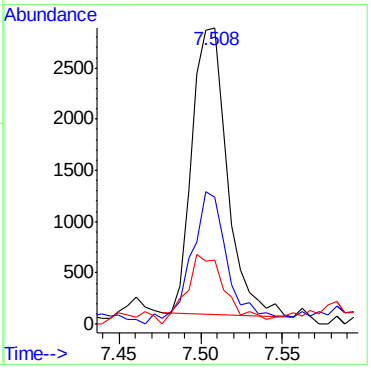




#62
Dibenzofuran
Concen: 0.63 ppb
RT: 7.508 min Scan# 1238
Delta R.T. -0.086 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

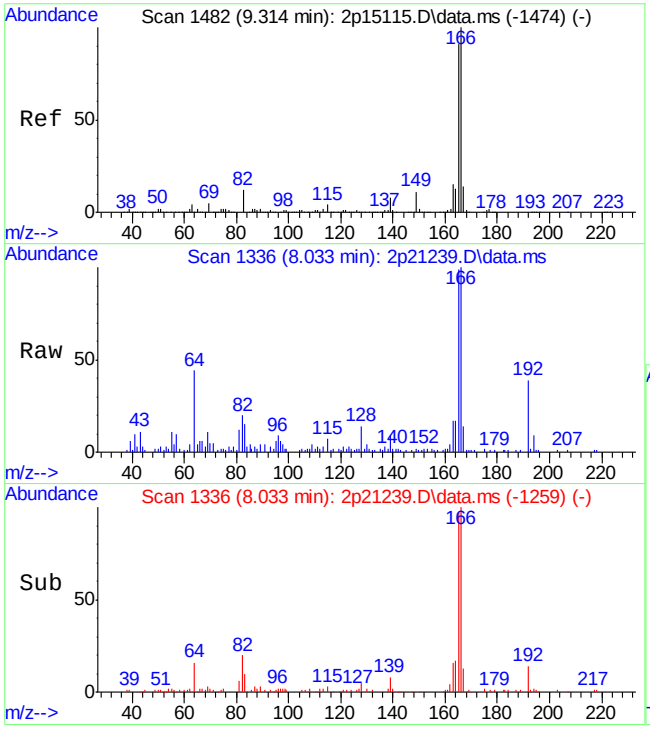
Tgt Ion:168 Resp: 4207

Ion	Ratio	Lower	Upper
168	100		
139	41.9	10.3	70.3
169	20.4	0.0	43.7



9.1.3

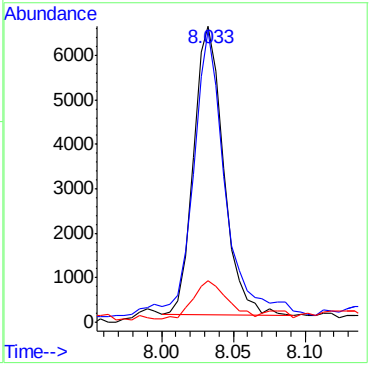
9

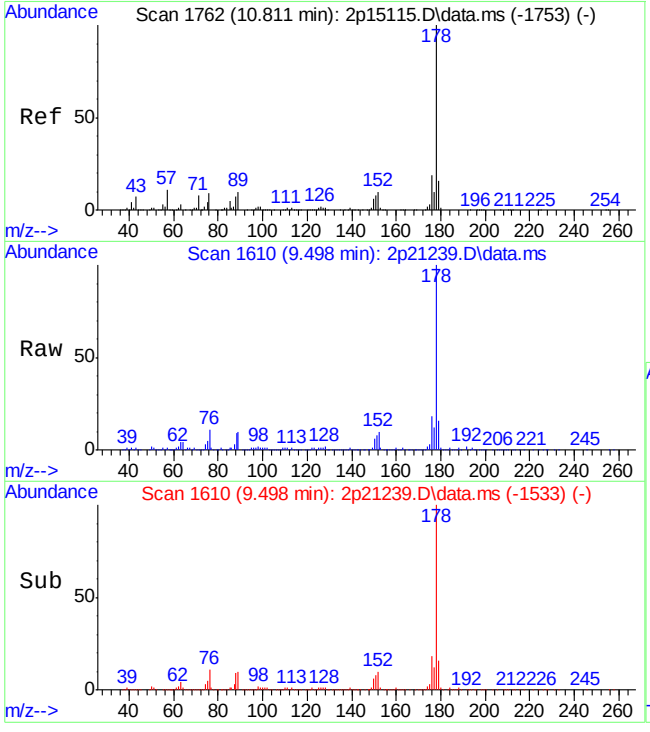


#66
Fluorene
Concen: 1.77 ppb
RT: 8.033 min Scan# 1336
Delta R.T. -0.086 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:166 Resp: 9511

Ion	Ratio	Lower	Upper
166	100		
165	96.3	62.5	122.5
167	13.0	0.0	42.9

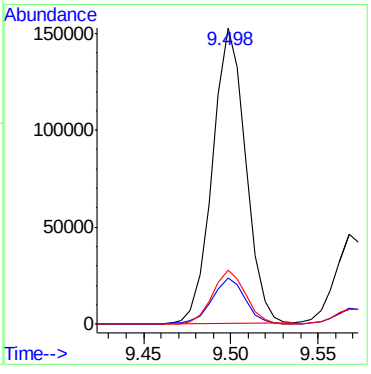


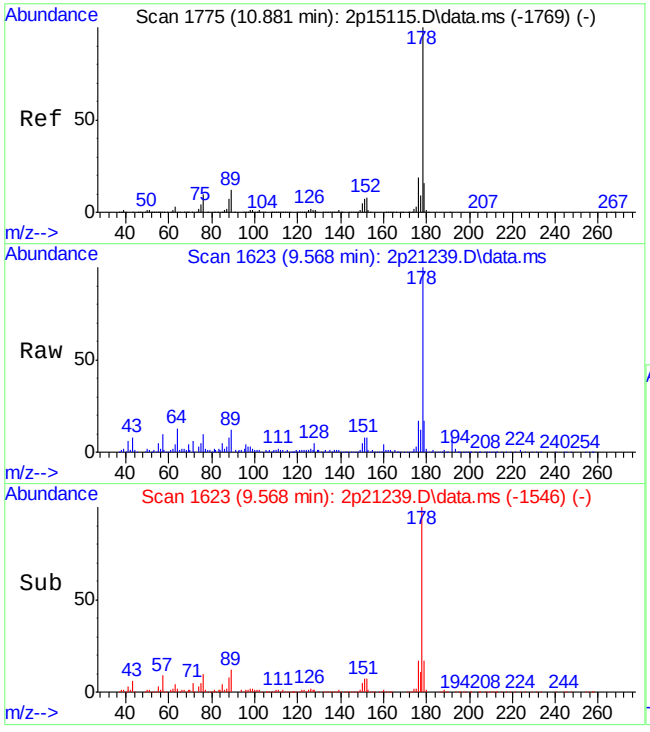


#77
Phenanthrene
Concen: 24.96 ppb
RT: 9.498 min Scan# 1610
Delta R.T. -0.086 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:178 Resp: 201758

Ion	Ratio	Lower	Upper
178	100		
179	15.5	0.0	44.4
176	18.1	0.0	48.6

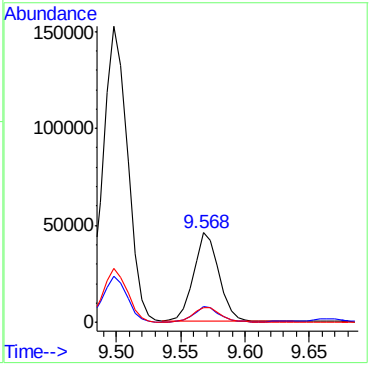


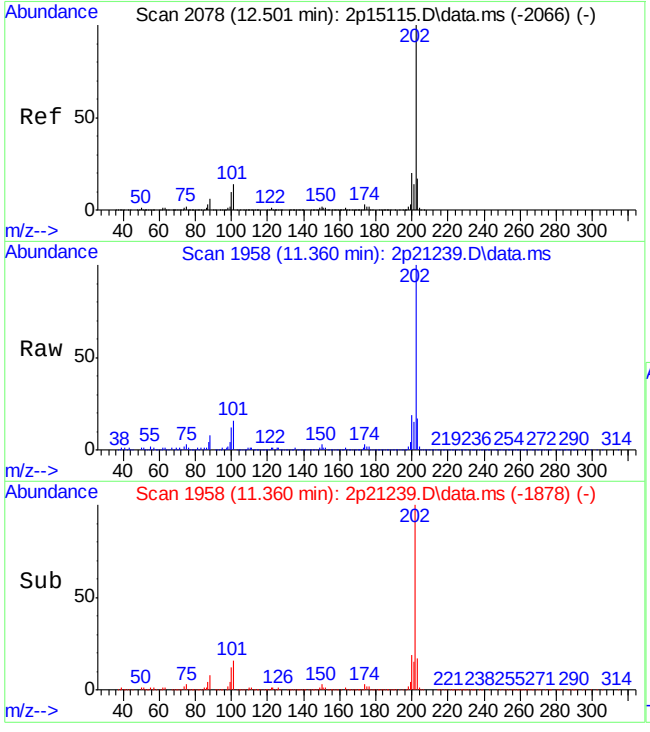


#78
Anthracene
Concen: 7.77 ppb
RT: 9.568 min Scan# 1623
Delta R.T. -0.086 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:178 Resp: 62127

Ion	Ratio	Lower	Upper
178	100		
179	16.8	0.0	44.5
176	16.6	0.0	46.5

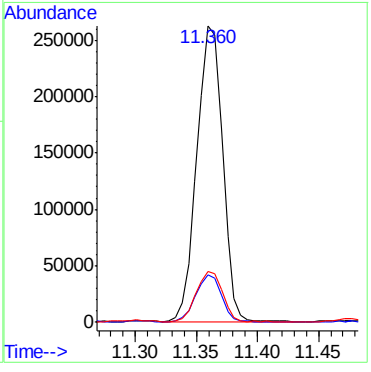


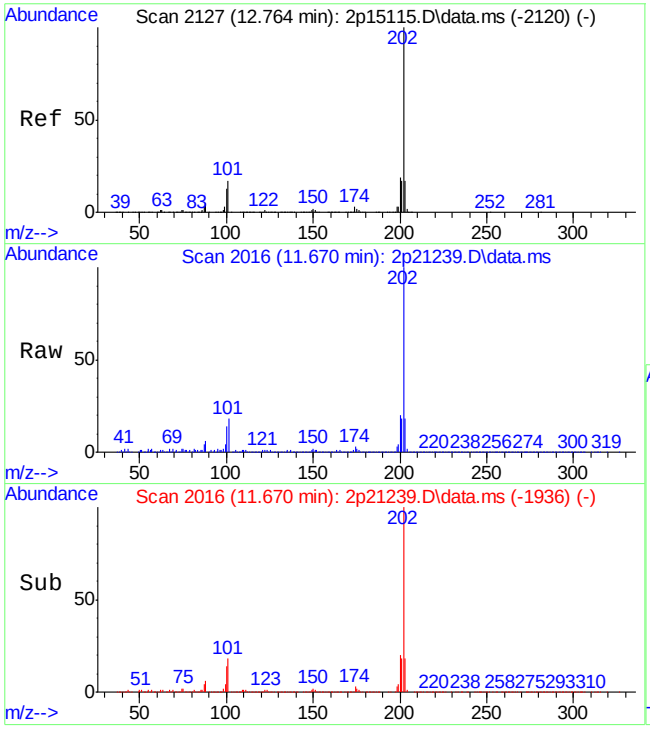


#81
Fluoranthene
Concen: 46.03 ppb
RT: 11.360 min Scan# 1958
Delta R.T. -0.070 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:202 Resp: 381963

Ion	Ratio	Lower	Upper
202	100		
101	16.1	0.0	41.3
203	17.2	0.0	49.1

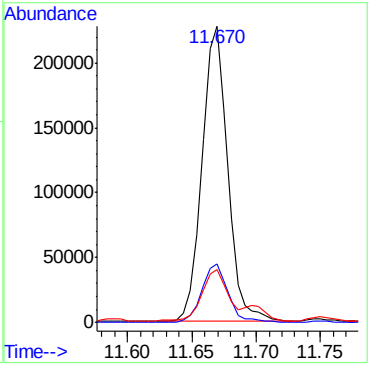


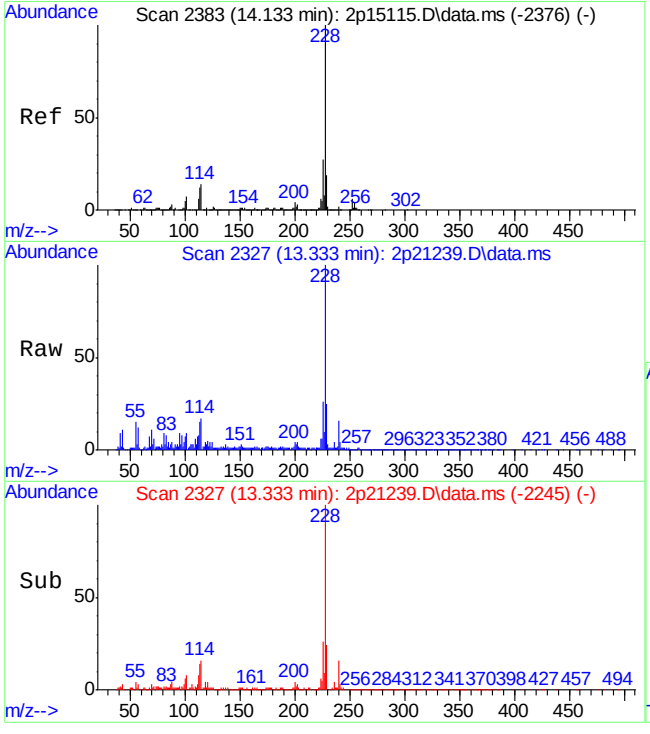


#84
Pyrene
Concen: 33.75 ppb
RT: 11.670 min Scan# 2016
Delta R.T. -0.070 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:202 Resp: 314878

Ion	Ratio	Lower	Upper
202	100		
200	19.8	0.0	49.6
203	17.5	0.0	46.9

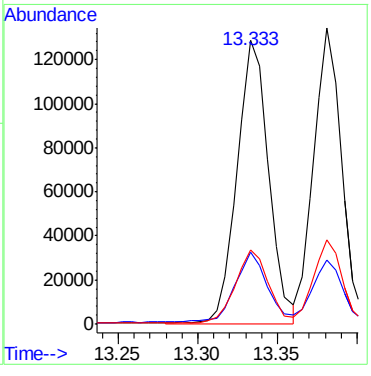


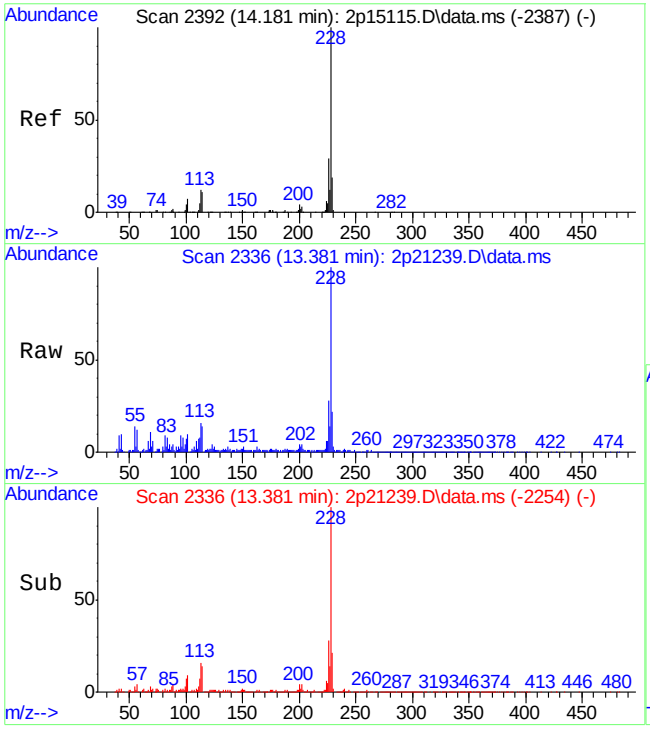


#88
Benzo[a]anthracene
Concen: 21.79 ppb m
RT: 13.333 min Scan# 2327
Delta R.T. -0.059 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:228 Resp: 177861

Ion	Ratio	Lower	Upper
228	100		
229	25.3	0.0	50.7
226	26.2	0.0	56.7

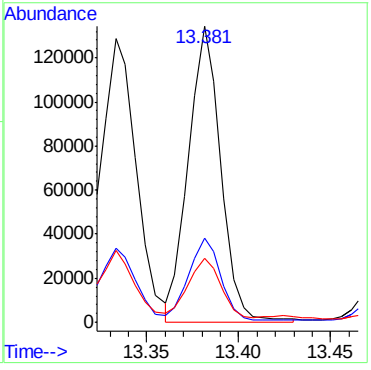


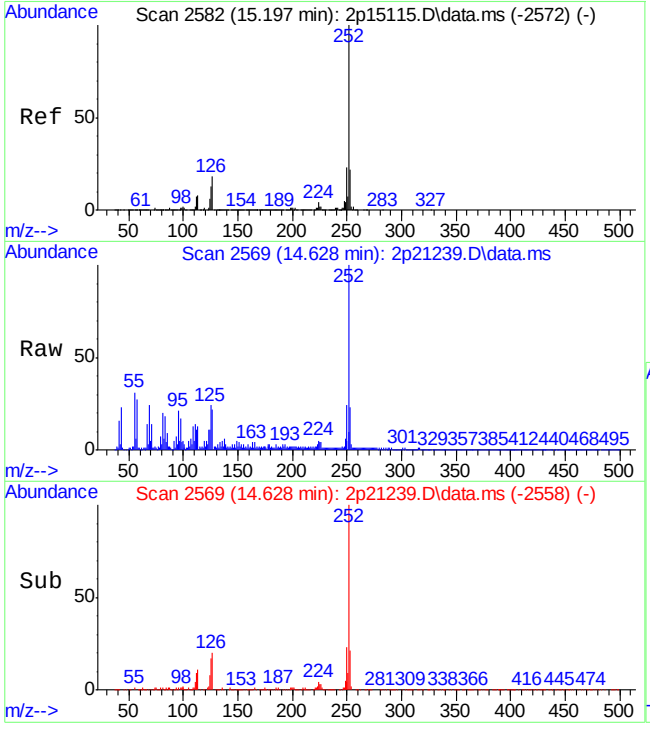


#90
Chrysene
Concen: 21.29 ppb m
RT: 13.381 min Scan# 2336
Delta R.T. -0.059 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:228 Resp: 165457

Ion	Ratio	Lower	Upper
228	100		
226	28.3	0.0	58.4
229	21.8	0.0	50.1

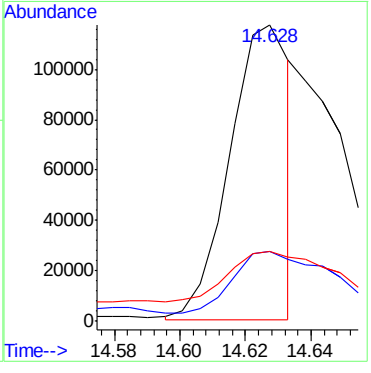


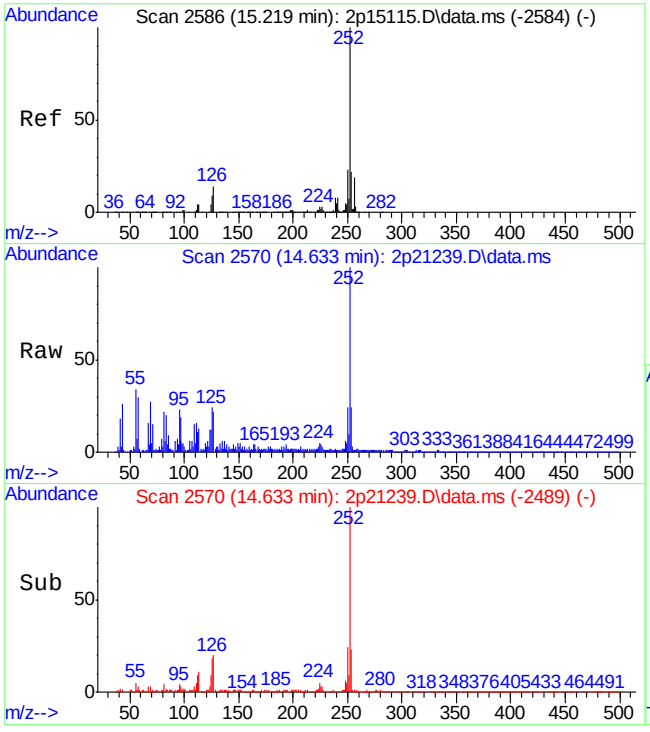


#94
Benzo[b]fluoranthene
Concen: 16.96 ppb m
RT: 14.628 min Scan# 2569
Delta R.T. -0.043 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:252 Resp: 150751

Ion	Ratio	Lower	Upper
252	100		
253	23.4	0.0	51.1
125	23.7	0.0	40.8

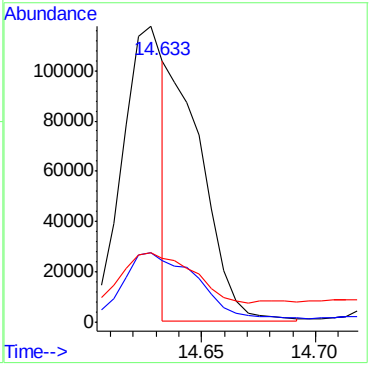


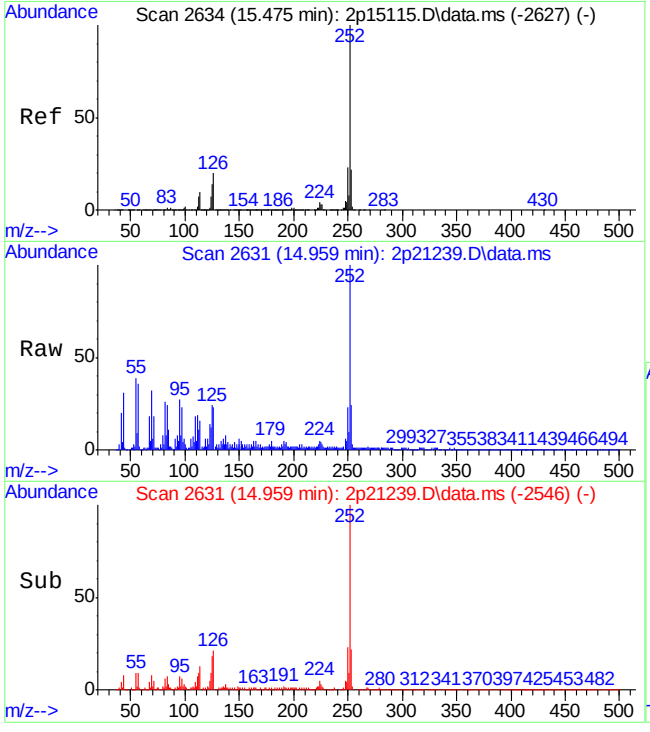


#95
Benzo[k]fluoranthene
Concen: 13.98 ppb m
RT: 14.633 min Scan# 2570
Delta R.T. -0.064 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:252 Resp: 108585

Ion	Ratio	Lower	Upper
252	100		
253	23.7	0.0	56.1
125	24.4	0.0	45.7

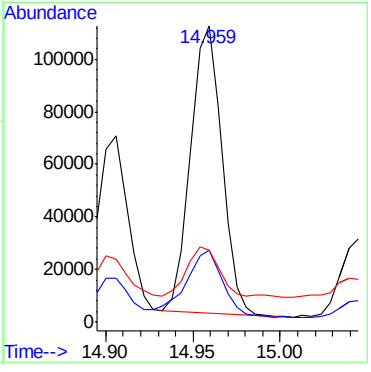


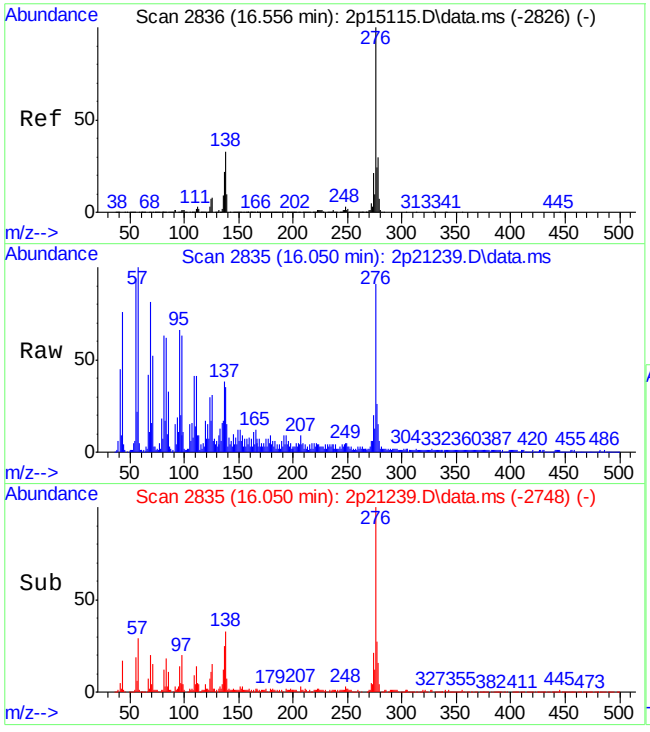


#96
Benzo[a]pyrene
Concen: 17.68 ppb
RT: 14.959 min Scan# 2631
Delta R.T. -0.043 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:252 Resp: 136461

Ion	Ratio	Lower	Upper
252	100		
253	21.5	0.0	51.5
125	16.2	0.0	41.1

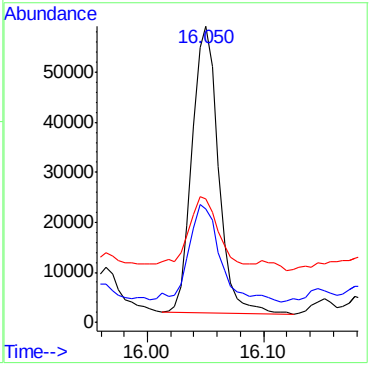


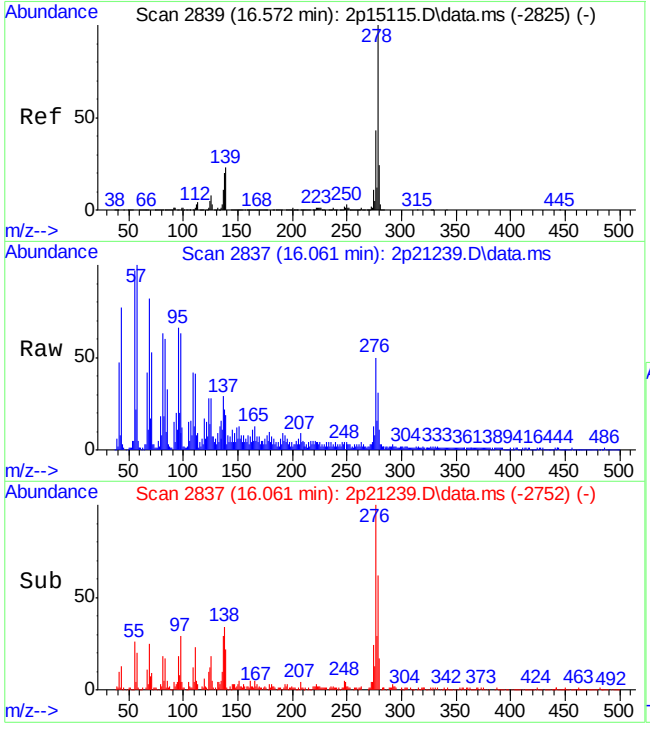


#97
Indeno[1,2,3-cd]pyrene
Concen: 10.07 ppb
RT: 16.050 min Scan# 2835
Delta R.T. -0.032 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:276 Resp: 90182

Ion	Ratio	Lower	Upper
276	100		
138	30.4	0.0	54.7
137	23.3	0.0	49.5

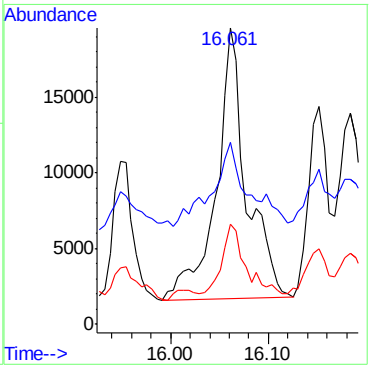


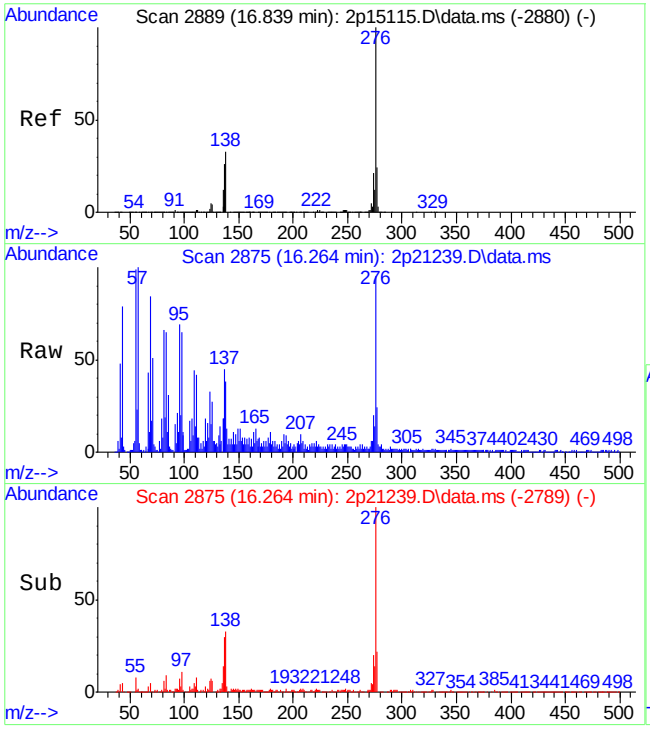


#99
Dibenz[a,h]anthracene
Concen: 5.14 ppb
RT: 16.061 min Scan# 2837
Delta R.T. -0.043 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:278 Resp: 38372

Ion	Ratio	Lower	Upper
278	100		
139	29.3	0.0	49.9
279	25.7	0.0	56.4

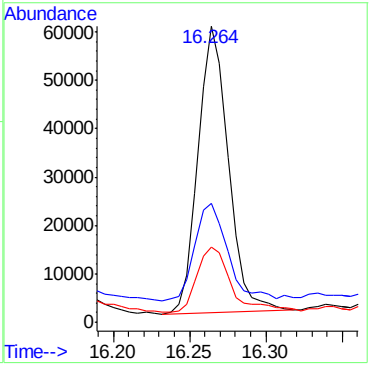




#101
Benzo[g,h,i]perylene
Concen: 10.67 ppb
RT: 16.264 min Scan# 2875
Delta R.T. -0.038 min
Lab File: 2p21239.D
Acq: 19 Mar 2013 7:35 pm

Tgt Ion:276 Resp: 81149

Ion	Ratio	Lower	Upper
276	100		
138	33.8	0.0	55.6
277	22.1	0.0	53.3



9.1.3

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21383.D
Acq On : 22 Mar 2013 12:32 pm
Operator : andrews1
Sample : jb30425-3cf
Misc : op64440,e2p941,31.6
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 23 16:13:48 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.909	152	61150	40.00	ppb	-0.02
24) Naphthalene-d8	4.519	136	240978	40.00	ppb	-0.02
47) Acenaphthene-d10	7.150	164	135457	40.00	ppb	-0.02
69) Phenanthrene-d10	9.418	188	226775	40.00	ppb	-0.02
83) Chrysene-d12	13.312	240	229180	40.00	ppb	0.00
92) Perylene-d12	14.980	264	213112	40.00	ppb	0.00
102) 1,4-Dichlorobenzene-d4a	2.909	152	61150	40.00	ppb	-0.02
104) Acenaphthene-d10a	7.150	164	135457	40.00	ppb	-0.02
107) Chrysene-d12a	13.312	240	229180	40.00	ppb	0.00
109) Naphthalene-d8a	4.519	136	240978	40.00	ppb	#-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	1.817	112	55104	25.17	ppb	-0.02
Spiked Amount 50.000	Range 11 - 58		Recovery = 50.34%			
8) Phenol-d5	2.695	99	73313	27.00	ppb	-0.01
Spiked Amount 50.000	Range 10 - 59		Recovery = 54.00%			
25) Nitrobenzene-d5	3.620	82	57895	26.12	ppb	-0.01
Spiked Amount 50.000	Range 19 - 61		Recovery = 52.24%			
51) 2-Fluorobiphenyl	6.187	172	131410	30.34	ppb	-0.02
Spiked Amount 50.000	Range 21 - 58		Recovery = 60.68%#			
73) 2,4,6-Tribromophenol	8.423	330	16070	31.71	ppb	-0.02
Spiked Amount 50.000	Range 12 - 68		Recovery = 63.42%			
85) Terphenyl-d14	11.975	244	142140	29.44	ppb	-0.01
Spiked Amount 50.000	Range 16 - 65		Recovery = 58.88%			
Target Compounds						Qvalue
38) Naphthalene	4.545	128	11419	1.77	ppb	99
56) Acenaphthylene	6.909	152	14888	2.37	ppb	97
59) Acenaphthene	7.193	153	3485m	0.91	ppb	
62) Dibenzofuran	7.460	168	3416	0.62	ppb	93
63) 2,4-Dinitrotoluene	7.845	165	1334	1.04	ppb #	34
66) Fluorene	7.984	166	6076	1.37	ppb	98
77) Phenanthrene	9.450	178	130788	19.14	ppb	98
78) Anthracene	9.520	178	30682	4.54	ppb	95
81) Fluoranthene	11.311	202	263398	37.56	ppb	93
84) Pyrene	11.622	202	244903	31.36	ppb	99
88) Benzo[a]anthracene	13.296	228	129373	18.94	ppb	96
90) Chrysene	13.344	228	134576	20.69	ppb	99
94) Benzo[b]fluoranthene	14.585	252	124009m	17.07	ppb	
95) Benzo[k]fluoranthene	14.595	252	79462m	12.51	ppb	
96) Benzo[a]pyrene	14.916	252	113422	17.97	ppb	93
97) Indeno[1,2,3-cd]pyrene	16.013	276	72635	9.92	ppb	85
99) Dibenz[a,h]anthracene	16.023	278	29020	4.76	ppb	93
101) Benzo[g,h,i]perylene	16.232	276	68268	10.98	ppb	91

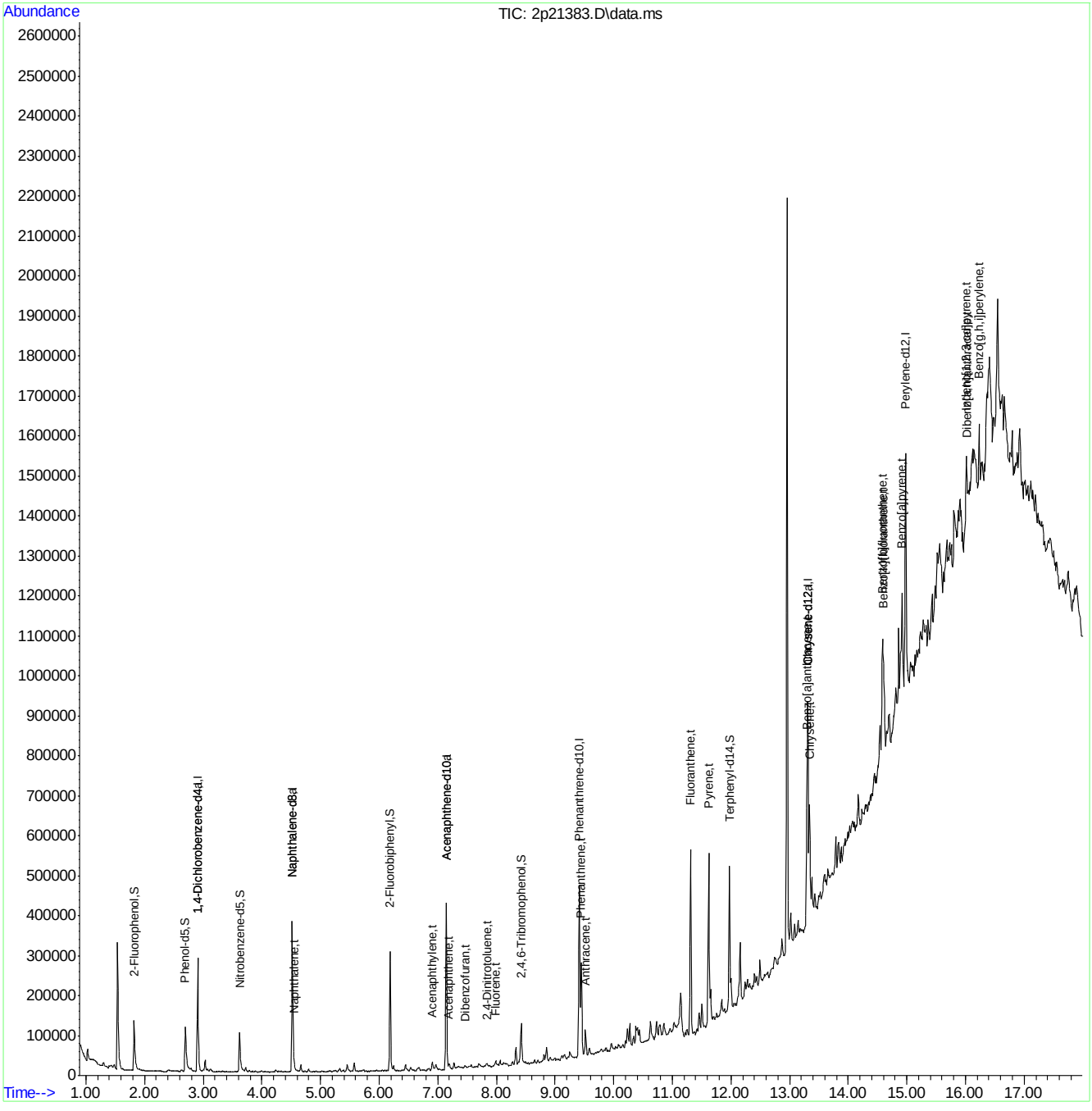
(#) = qualifier out of range (m) = manual integration (+) = signals summed

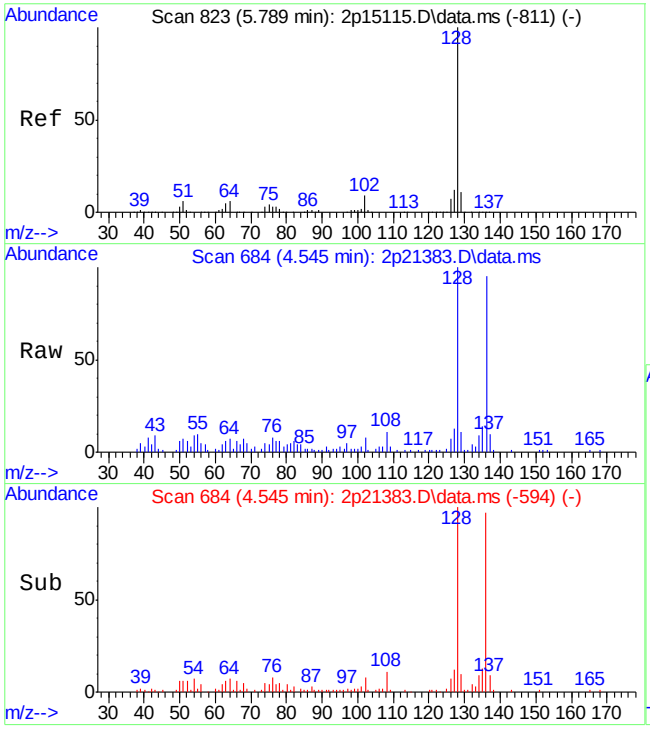
9.1.4
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21383.D
Acq On : 22 Mar 2013 12:32 pm
Operator : andrews1
Sample : jb30425-3cf
Misc : op64440,e2p941,31.6
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 23 16:13:48 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

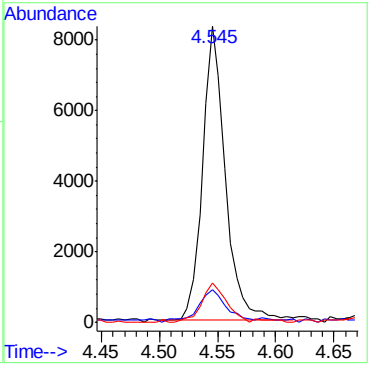


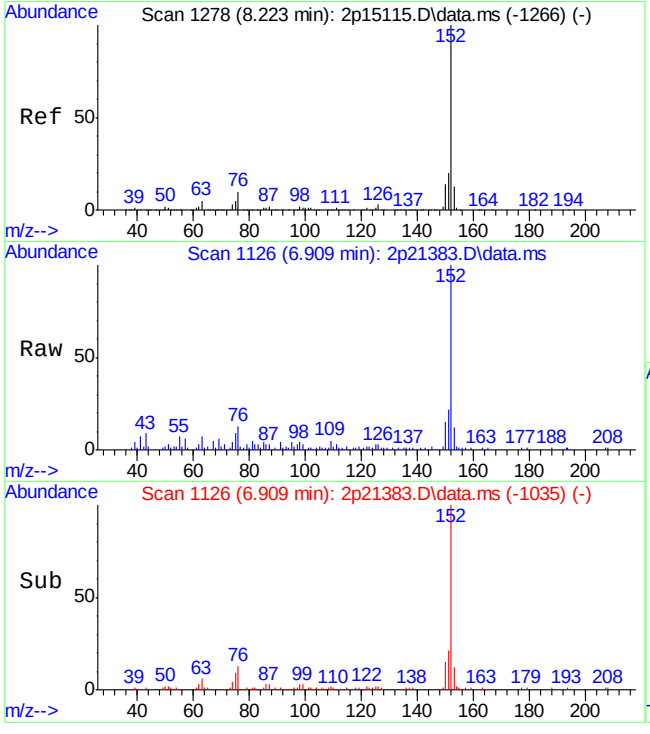


#38
Naphthalene
Concen: 1.77 ppb
RT: 4.545 min Scan# 684
Delta R.T. -0.016 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:128 Resp: 11419

Ion	Ratio	Lower	Upper
128	100		
129	10.7	0.0	41.0
127	13.1	0.0	43.0

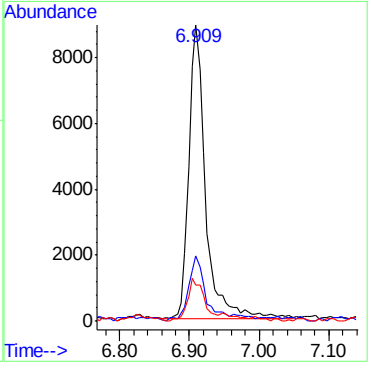


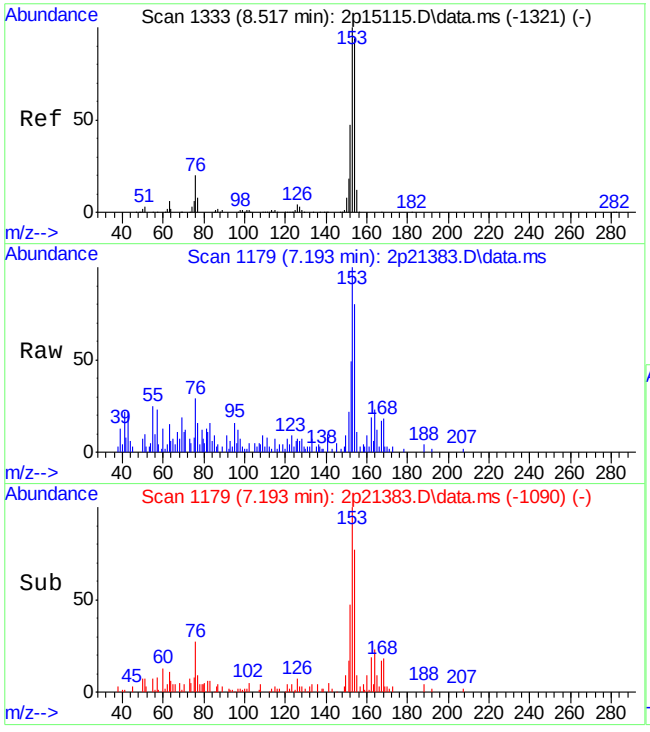


#56
Acenaphthylene
Concen: 2.37 ppb
RT: 6.909 min Scan# 1126
Delta R.T. -0.011 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:152 Resp: 14888

Ion	Ratio	Lower	Upper
152	100		
151	21.4	0.0	49.9
153	12.1	0.0	43.1

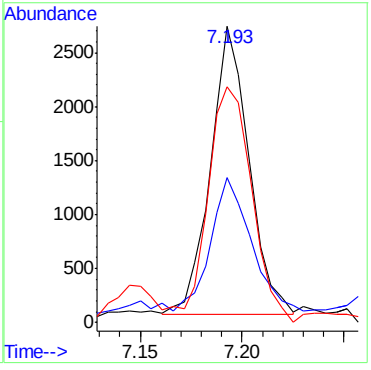


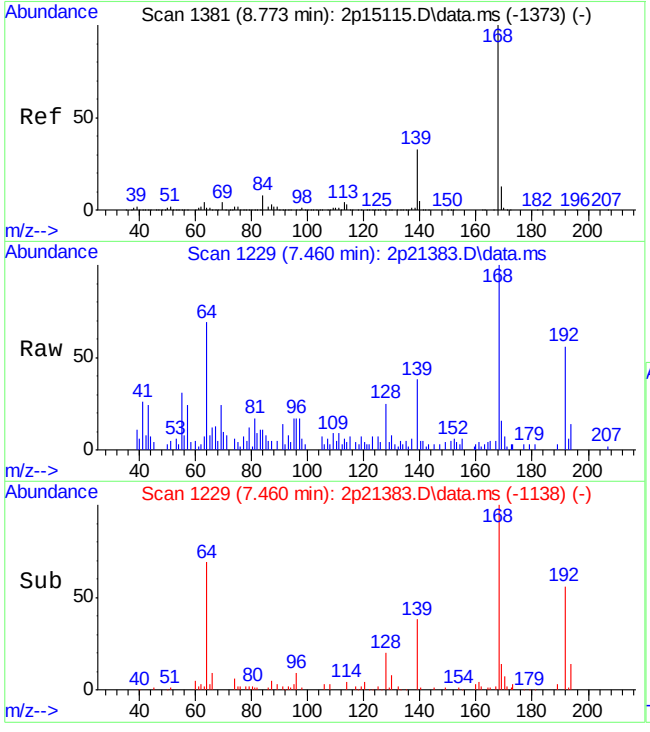


#59
Acenaphthene
Concen: 0.91 ppb m
RT: 7.193 min Scan# 1179
Delta R.T. -0.021 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:153 Resp: 3485

Ion	Ratio	Lower	Upper
153	100		
152	48.9	17.8	77.8
154	79.7	65.2	125.2

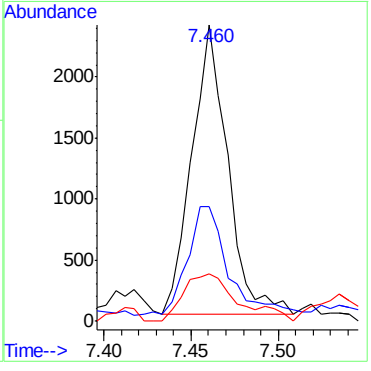




#62
Dibenzofuran
Concen: 0.62 ppb
RT: 7.460 min Scan# 1229
Delta R.T. -0.011 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

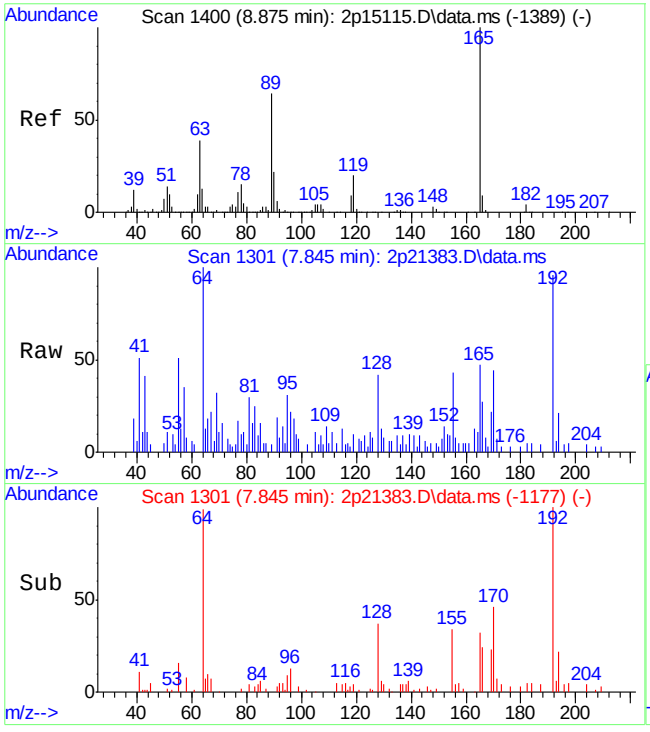
Tgt Ion:168 Resp: 3416

Ion	Ratio	Lower	Upper
168	100		
139	36.2	10.3	70.3
169	16.3	0.0	43.7



9.1.4

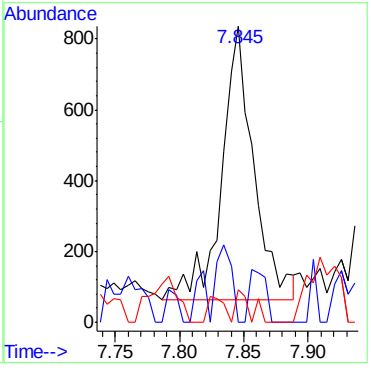
9

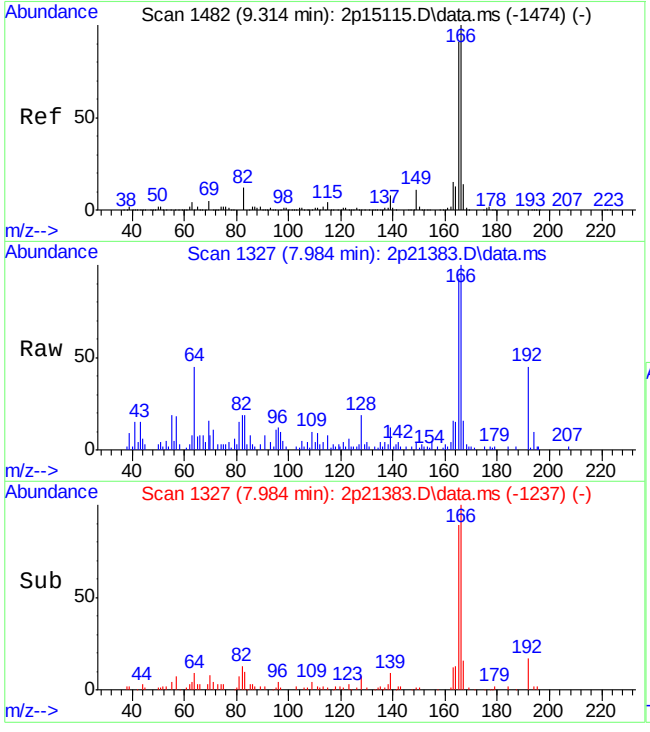


#63
2,4-Dinitrotoluene
Concen: 1.04 ppb
RT: 7.845 min Scan# 1301
Delta R.T. 0.166 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:165 Resp: 1334

Ion	Ratio	Lower	Upper
165	100		
63	0.0	17.6	77.6#
182	5.1	0.0	33.5

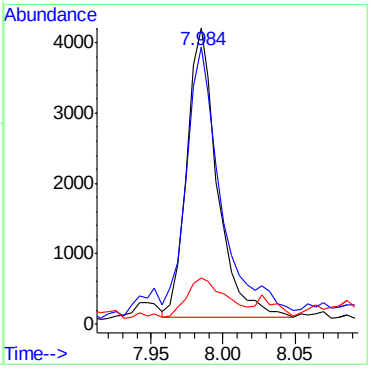




#66
Fluorene
Concen: 1.37 ppb
RT: 7.984 min Scan# 1327
Delta R.T. -0.016 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

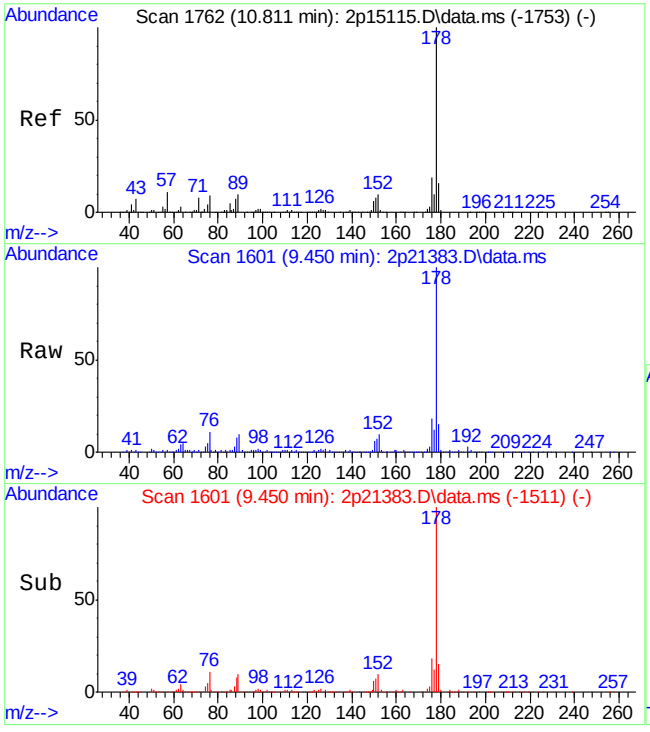
Tgt Ion:166 Resp: 6076

Ion	Ratio	Lower	Upper
166	100		
165	90.9	62.5	122.5
167	13.6	0.0	42.9



9.1.4

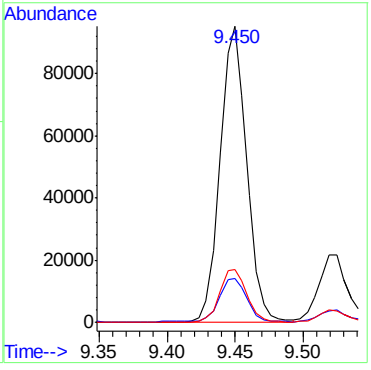
9

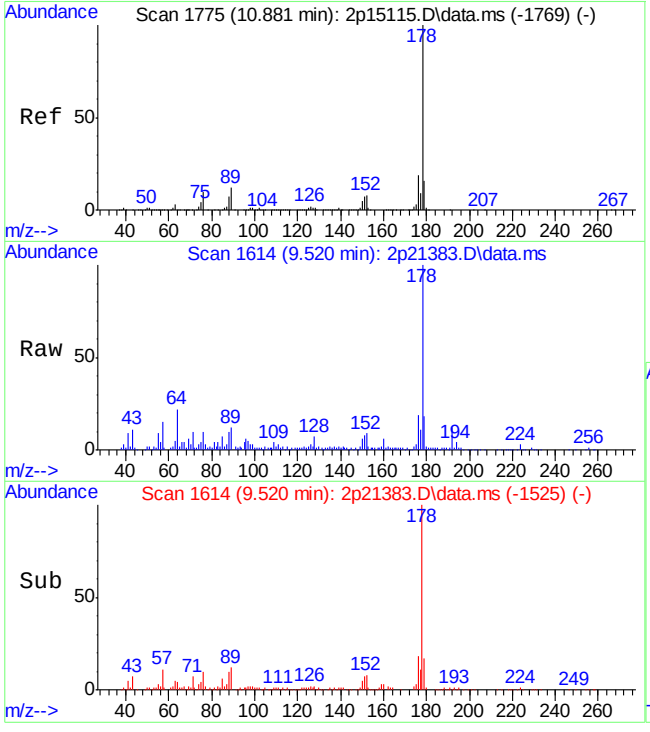


#77
Phenanthrene
Concen: 19.14 ppb
RT: 9.450 min Scan# 1601
Delta R.T. -0.016 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:178 Resp: 130788

Ion	Ratio	Lower	Upper
178	100		
179	14.7	0.0	44.4
176	17.6	0.0	48.6

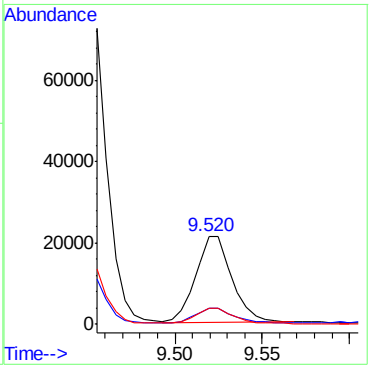


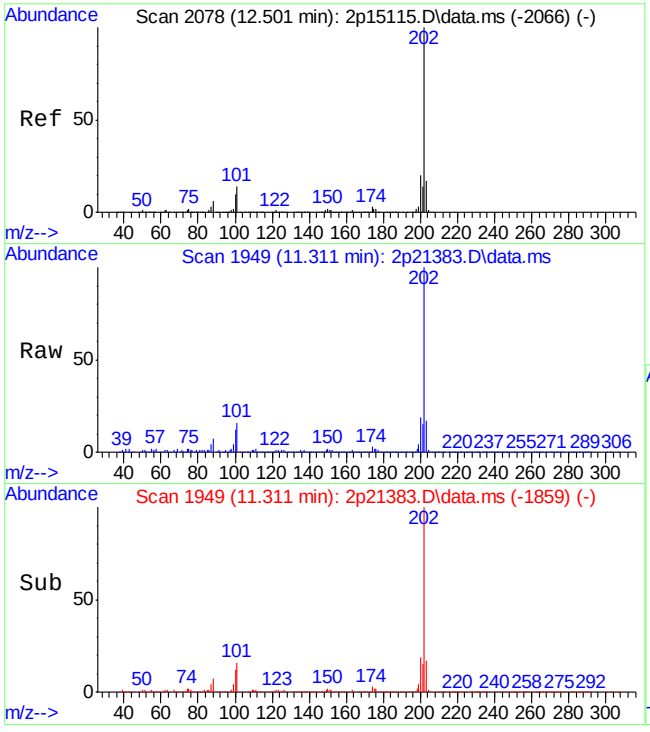


#78
Anthracene
Concen: 4.54 ppb
RT: 9.520 min Scan# 1614
Delta R.T. -0.021 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:178 Resp: 30682

Ion	Ratio	Lower	Upper
178	100		
179	16.9	0.0	44.5
176	18.3	0.0	46.5

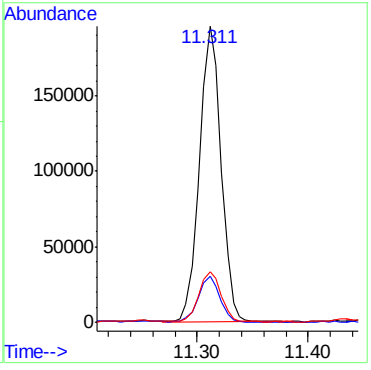


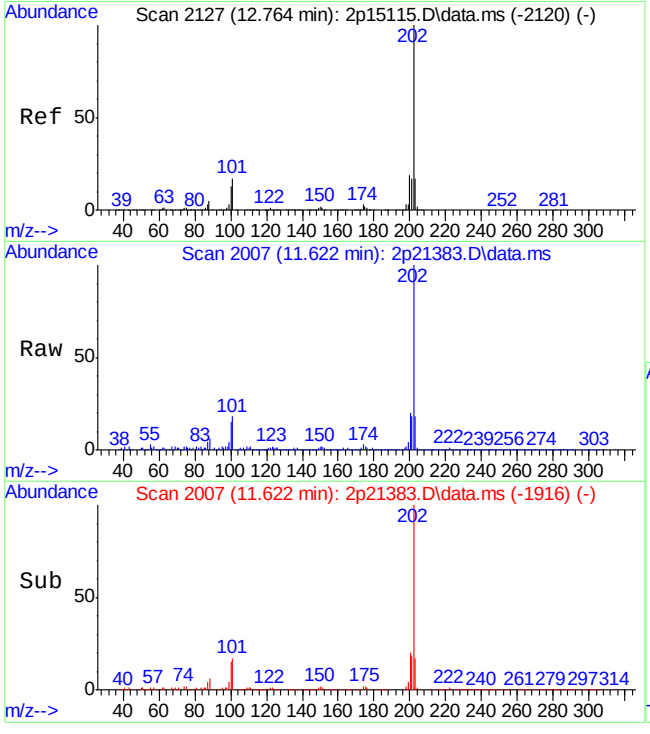


#81
Fluoranthene
Concen: 37.56 ppb
RT: 11.311 min Scan# 1949
Delta R.T. -0.016 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:202 Resp: 263398

Ion	Ratio	Lower	Upper
202	100		
101	15.7	0.0	41.3
203	17.3	0.0	49.1

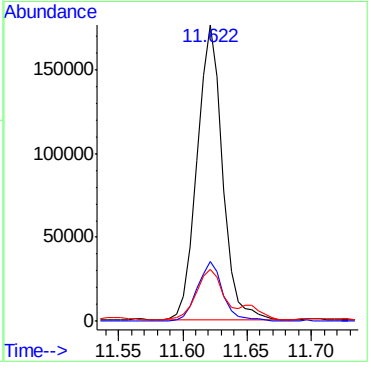




#84
Pyrene
Concen: 31.36 ppb
RT: 11.622 min Scan# 2007
Delta R.T. -0.011 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

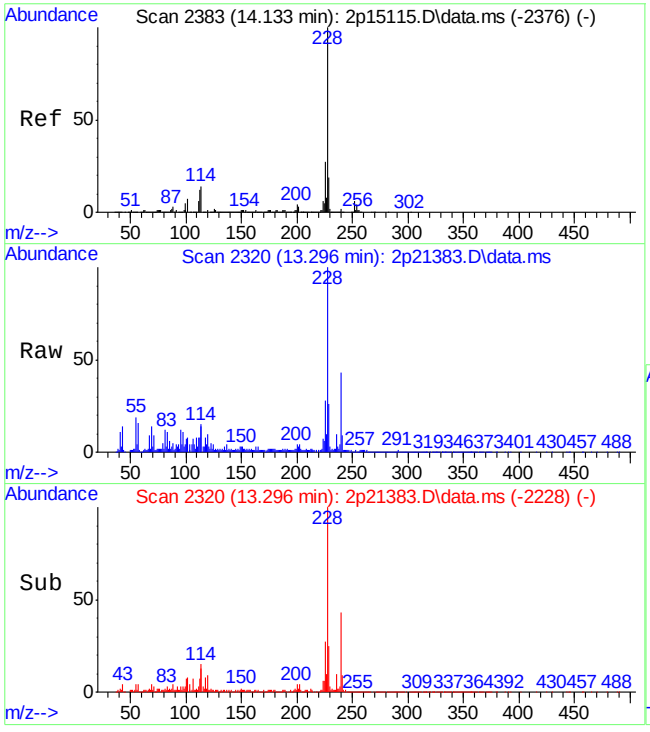
Tgt Ion:202 Resp: 244903

Ion	Ratio	Lower	Upper
202	100		
200	20.0	0.0	49.6
203	17.1	0.0	46.9



9.1.4

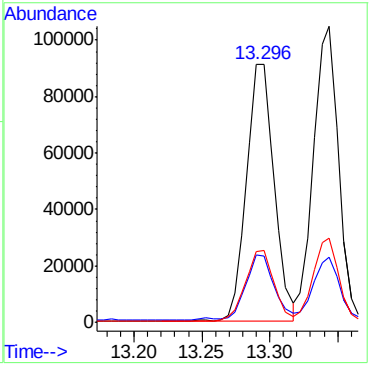
9

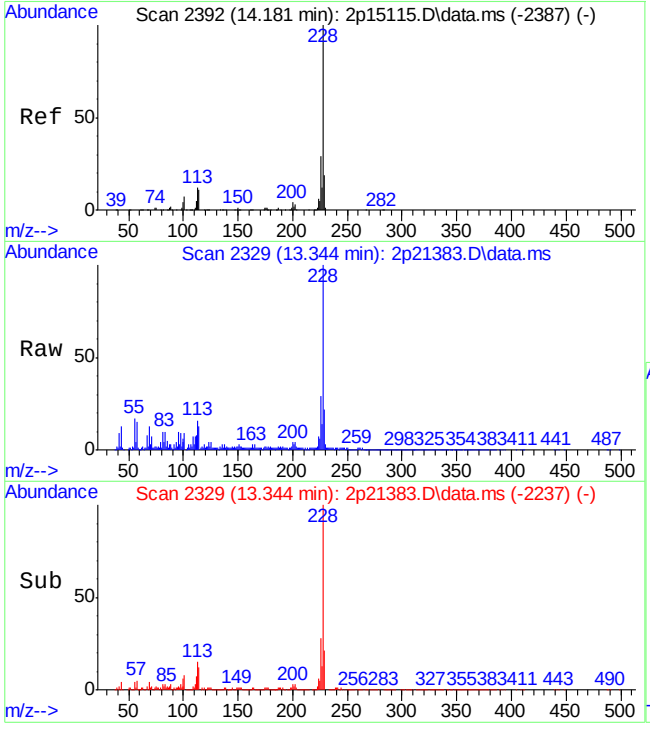


#88
Benzo[a]anthracene
Concen: 18.94 ppb
RT: 13.296 min Scan# 2320
Delta R.T. -0.005 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:228 Resp: 129373

Ion	Ratio	Lower	Upper
228	100		
229	24.2	0.0	50.7
226	27.4	0.0	56.7

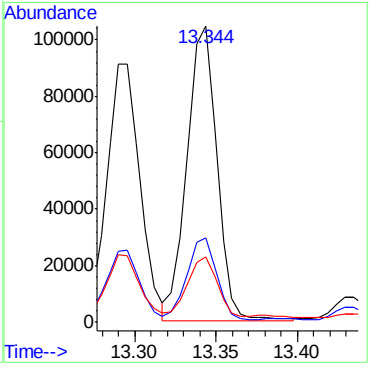


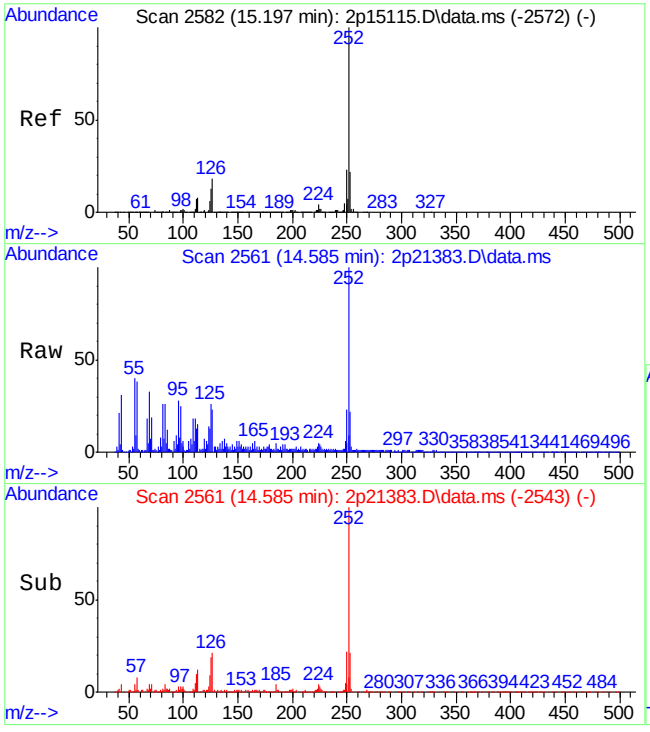


#90
Chrysene
Concen: 20.69 ppb
RT: 13.344 min Scan# 2329
Delta R.T. -0.005 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:228 Resp: 134576

Ion	Ratio	Lower	Upper
228	100		
226	28.1	0.0	58.4
229	20.5	0.0	50.1

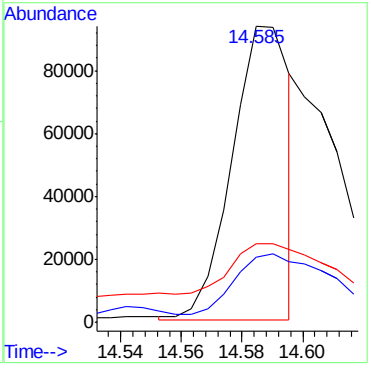


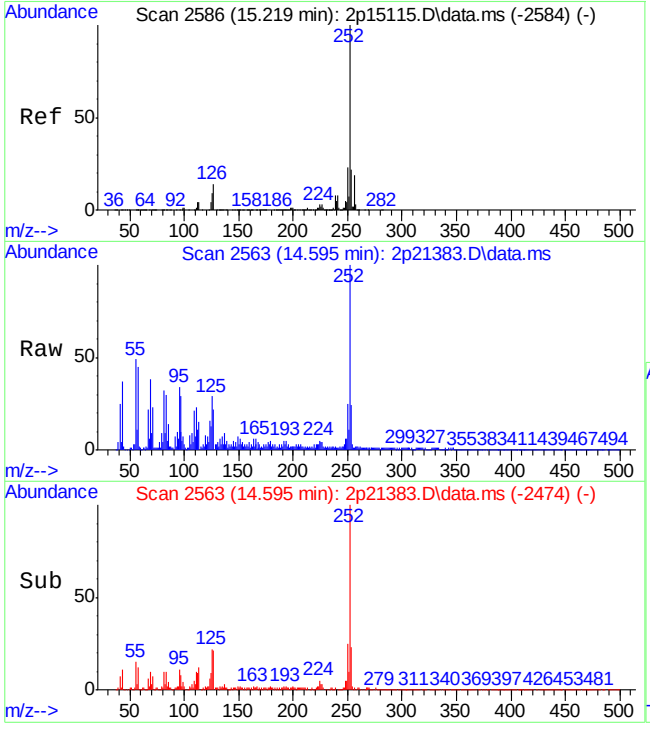


#94
Benzo[b]fluoranthene
Concen: 17.07 ppb m
RT: 14.585 min Scan# 2561
Delta R.T. -0.005 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:252 Resp: 124009

Ion	Ratio	Lower	Upper
252	100		
253	21.9	0.0	51.1
125	26.5	0.0	40.8

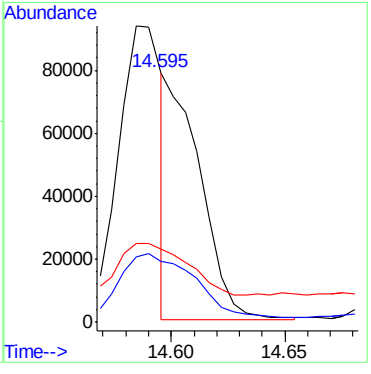




#95
Benzo[k]fluoranthene
Concen: 12.51 ppb m
RT: 14.595 min Scan# 2563
Delta R.T. -0.021 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

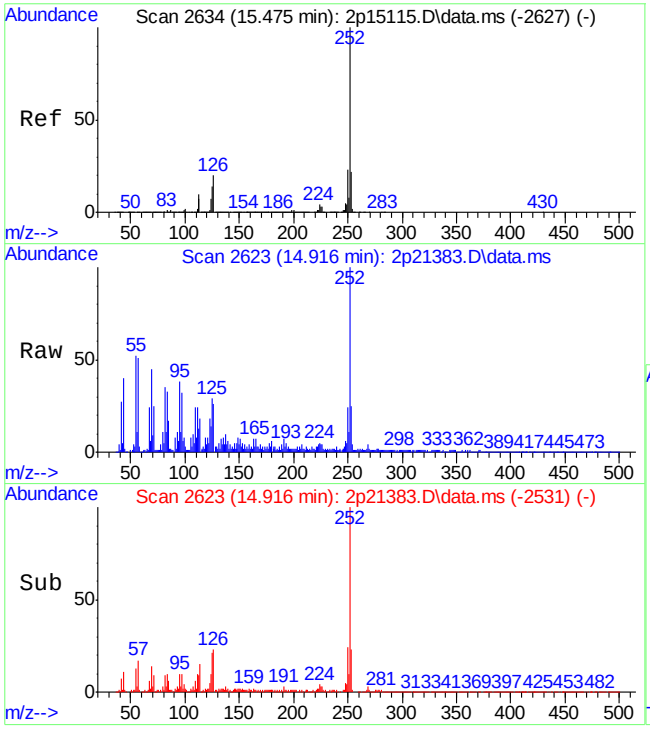
Tgt Ion:252 Resp: 79462

Ion	Ratio	Lower	Upper
252	100		
253	24.2	0.0	56.1
125	29.4	0.0	45.7



9.1.4

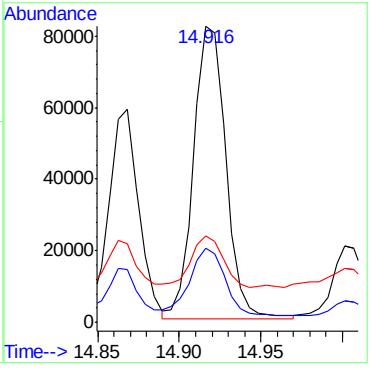
9

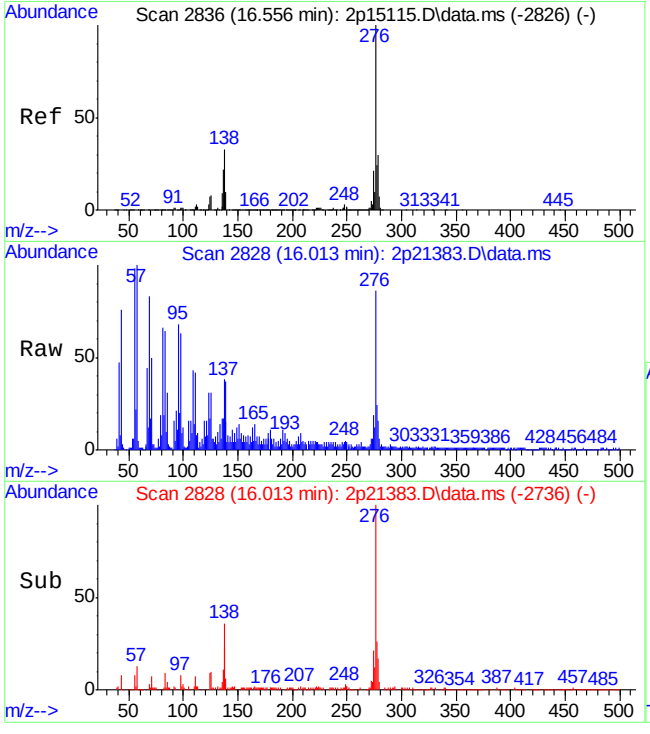


#96
Benzo[a]pyrene
Concen: 17.97 ppb
RT: 14.916 min Scan# 2623
Delta R.T. -0.005 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:252 Resp: 113422

Ion	Ratio	Lower	Upper
252	100		
253	22.6	0.0	51.5
125	16.9	0.0	41.1

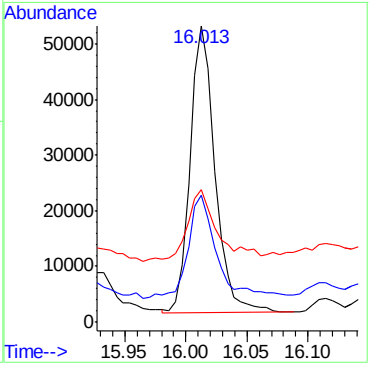


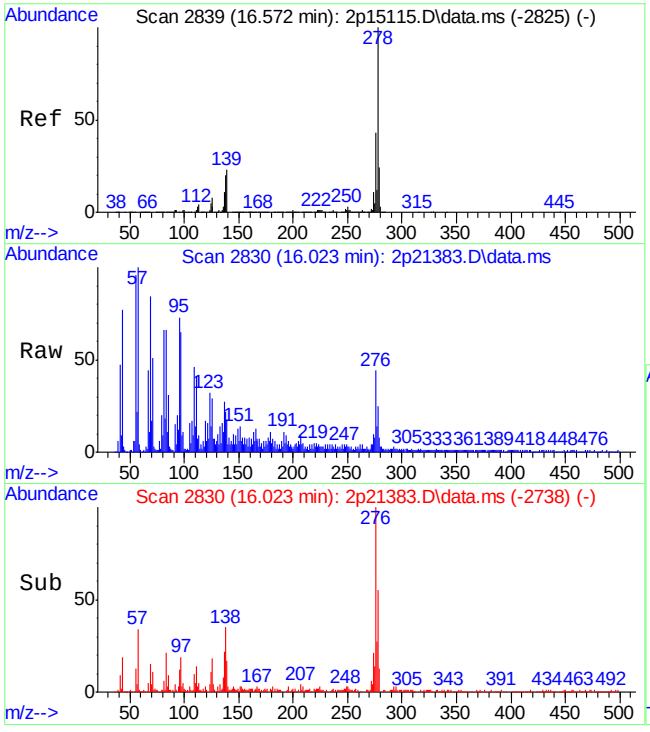


#97
Indeno[1,2,3-cd]pyrene
Concen: 9.92 ppb
RT: 16.013 min Scan# 2828
Delta R.T. -0.005 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:276 Resp: 72635

Ion	Ratio	Lower	Upper
276	100		
138	34.8	0.0	54.7
137	23.3	0.0	49.5

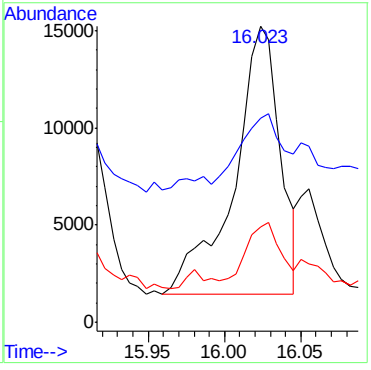


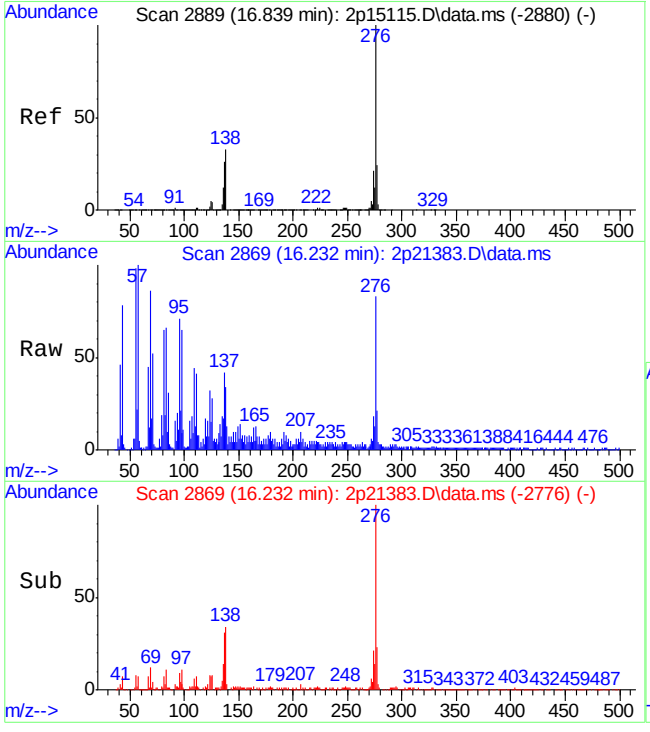


#99
Dibenz[a,h]anthracene
Concen: 4.76 ppb
RT: 16.023 min Scan# 2830
Delta R.T. -0.005 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:278 Resp: 29020

Ion	Ratio	Lower	Upper
278	100		
139	24.2	0.0	49.9
279	23.3	0.0	56.4

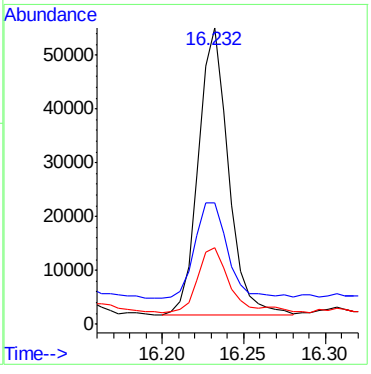




#101
Benzo[g,h,i]perylene
Concen: 10.98 ppb
RT: 16.232 min Scan# 2869
Delta R.T. -0.000 min
Lab File: 2p21383.D
Acq: 22 Mar 2013 12:32 pm

Tgt Ion:276 Resp: 68268

Ion	Ratio	Lower	Upper
276	100		
138	33.3	0.0	55.6
277	22.3	0.0	53.3



Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21233.D
Acq On : 19 Mar 2013 5:19 pm
Operator : andrews1
Sample : jb30425-4
Misc : op64440,e2p936,30.9
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 20 14:38:35 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.935	152	69721	40.00	ppb	-0.09
24) Naphthalene-d8	4.551	136	270748	40.00	ppb	-0.10
47) Acenaphthene-d10	7.182	164	149605	40.00	ppb	-0.11
69) Phenanthrene-d10	9.450	188	243220	40.00	ppb	-0.10
83) Chrysene-d12	13.333	240	240027	40.00	ppb	-0.08
92) Perylene-d12	14.997	264	204694	40.00	ppb	-0.06
102) 1,4-Dichlorobenzene-d4a	2.935	152	69721	40.00	ppb	-0.09
104) Acenaphthene-d10a	7.182	164	149605	40.00	ppb	-0.11
107) Chrysene-d12a	13.333	240	240027	40.00	ppb	-0.08
109) Naphthalene-d8a	4.551	136	270748	40.00	ppb	#-0.10
System Monitoring Compounds						
5) 2-Fluorophenol	1.839	112	80339	32.19	ppb	-0.06
Spiked Amount 50.000	Range 11 - 58		Recovery = 64.38%#			
8) Phenol-d5	2.716	99	106536	34.41	ppb	-0.06
Spiked Amount 50.000	Range 10 - 59		Recovery = 68.82%#			
25) Nitrobenzene-d5	3.647	82	86640	34.79	ppb	-0.09
Spiked Amount 50.000	Range 19 - 61		Recovery = 69.58%#			
51) 2-Fluorobiphenyl	6.225	172	173189	36.20	ppb	-0.11
Spiked Amount 50.000	Range 21 - 58		Recovery = 72.40%#			
73) 2,4,6-Tribromophenol	8.450	330	19486	35.85	ppb	-0.10
Spiked Amount 50.000	Range 12 - 68		Recovery = 71.70%#			
85) Terphenyl-d14	12.001	244	218796	43.27	ppb	-0.09
Spiked Amount 50.000	Range 16 - 65		Recovery = 86.54%#			
Target Compounds						Qvalue
81) Fluoranthene	11.343	202	3189	0.42	ppb	89
88) Benzo[a]anthracene	13.312	228	3166	0.44	ppb	93
90) Chrysene	13.360	228	2705	0.40	ppb	80
94) Benzo[b]fluoranthene	14.606	252	3544m	0.51	ppb	
96) Benzo[a]pyrene	14.932	252	2937	0.48	ppb	96
99) Dibenz[a,h]anthracene	16.045	278	2373	0.40	ppb	76
101) Benzo[g,h,i]perylene	16.243	276	3626	0.61	ppb	100

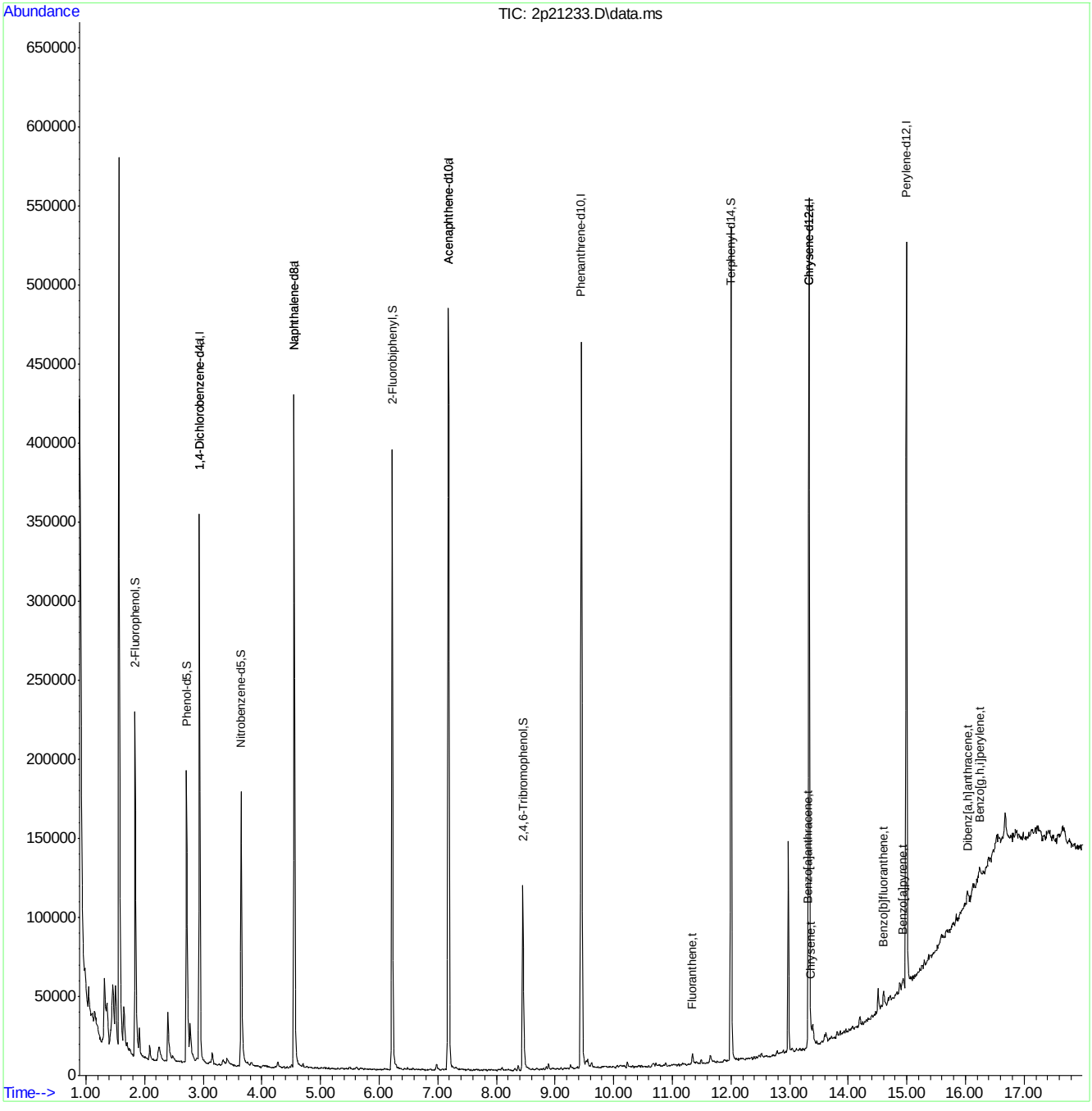
(#) = qualifier out of range (m) = manual integration (+) = signals summed

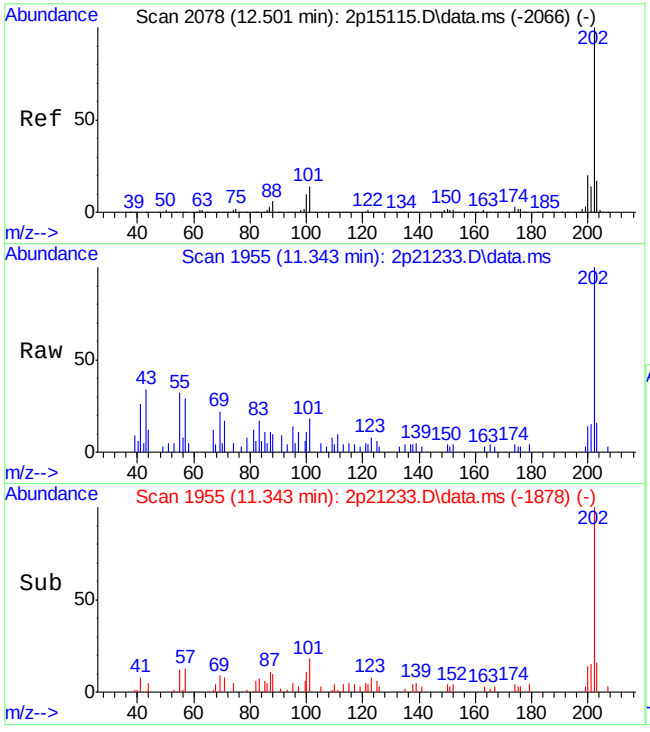
9.1.5
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21233.D
Acq On : 19 Mar 2013 5:19 pm
Operator : andrews1
Sample : jb30425-4
Misc : op64440,e2p936,30.9
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 20 14:38:35 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

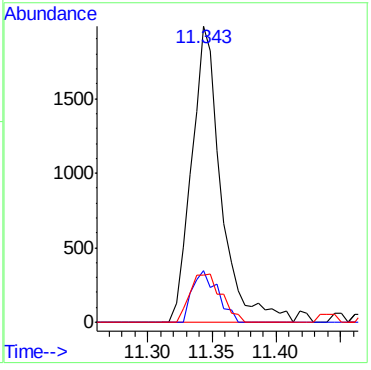


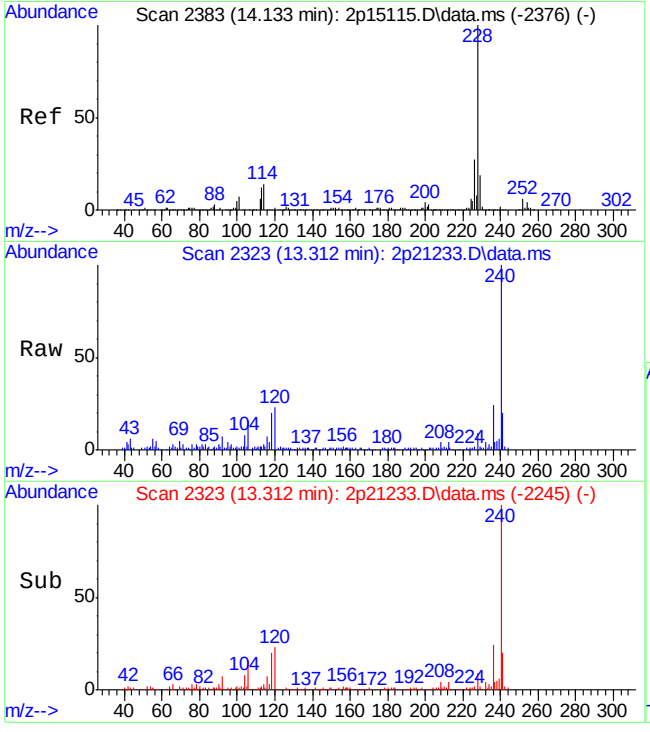


#81
Fluoranthene
Concen: 0.42 ppb
RT: 11.343 min Scan# 1955
Delta R.T. -0.086 min
Lab File: 2p21233.D
Acq: 19 Mar 2013 5:19 pm

Tgt Ion:202 Resp: 3189

Ion	Ratio	Lower	Upper
202	100		
101	17.6	0.0	41.3
203	15.8	0.0	49.1

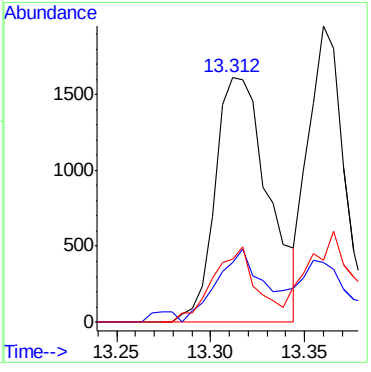


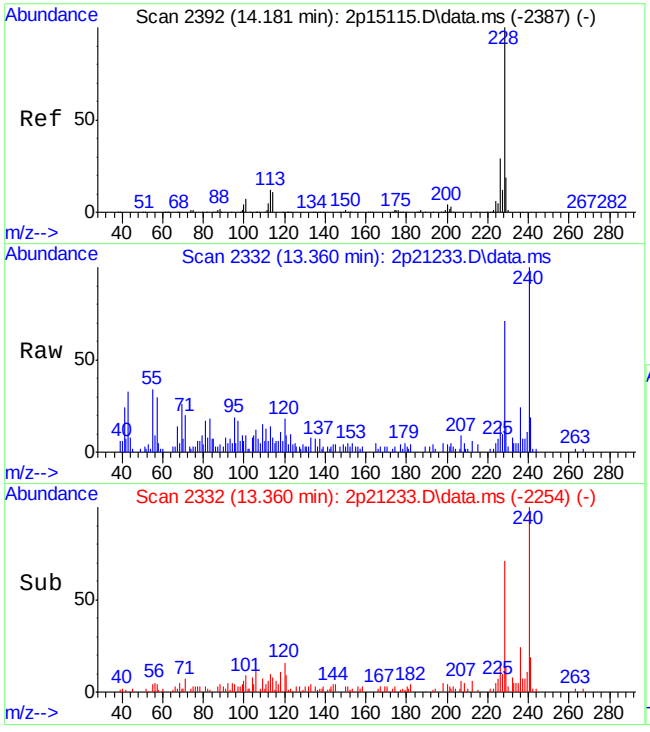


#88
Benzo[a]anthracene
Concen: 0.44 ppb
RT: 13.312 min Scan# 2323
Delta R.T. -0.080 min
Lab File: 2p21233.D
Acq: 19 Mar 2013 5:19 pm

Tgt Ion:228 Resp: 3166

Ion	Ratio	Lower	Upper
228	100		
229	18.3	0.0	50.7
226	22.0	0.0	56.7

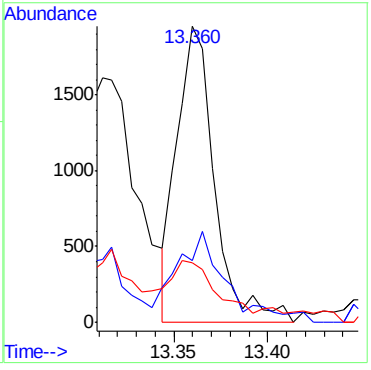


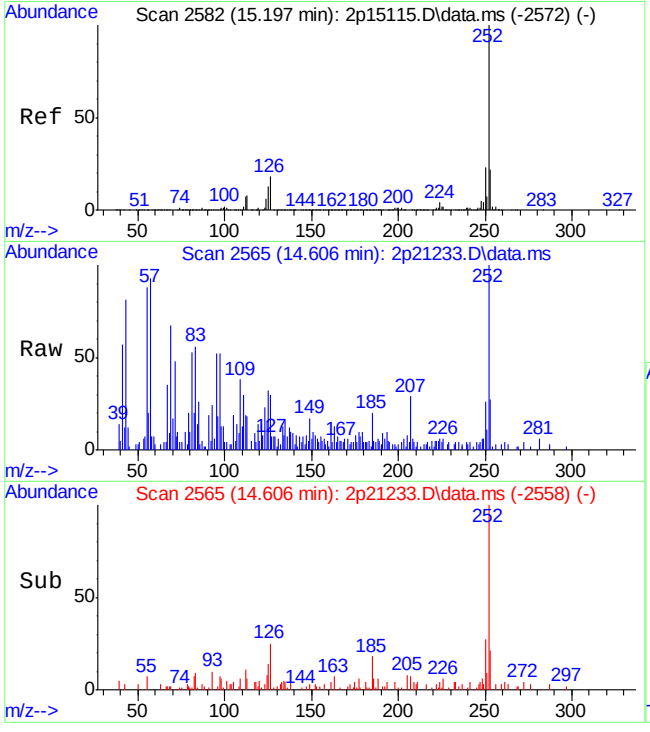


#90
Chrysene
Concen: 0.40 ppb
RT: 13.360 min Scan# 2332
Delta R.T. -0.080 min
Lab File: 2p21233.D
Acq: 19 Mar 2013 5:19 pm

Tgt Ion:228 Resp: 2705

Ion	Ratio	Lower	Upper
228	100		
226	15.3	0.0	58.4
229	14.2	0.0	50.1

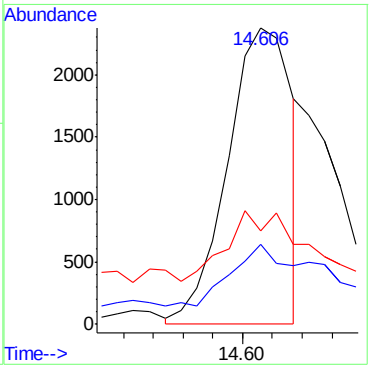


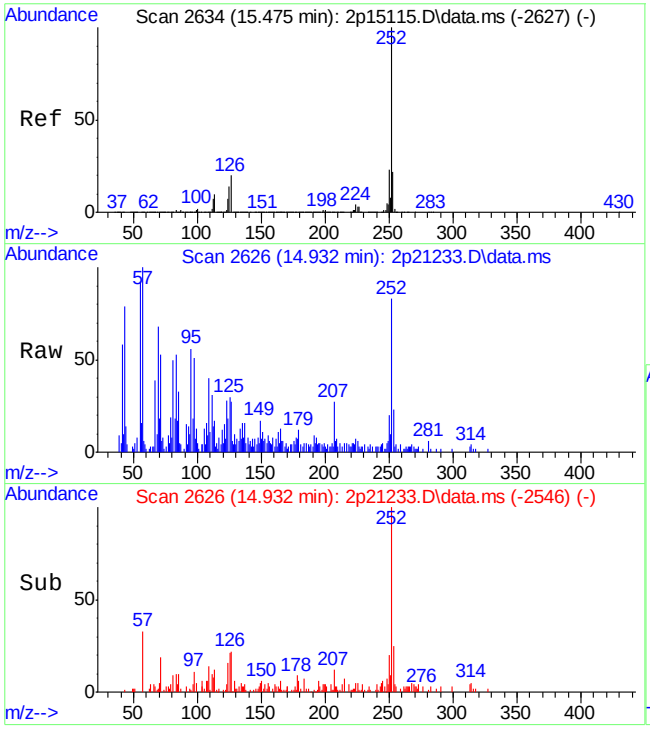


#94
Benzo[b]fluoranthene
Concen: 0.51 ppb m
RT: 14.606 min Scan# 2565
Delta R.T. -0.064 min
Lab File: 2p21233.D
Acq: 19 Mar 2013 5:19 pm

Tgt Ion:252 Resp: 3544

Ion	Ratio	Lower	Upper
252	100		
253	26.9	0.0	51.1
125	31.6	0.0	40.8

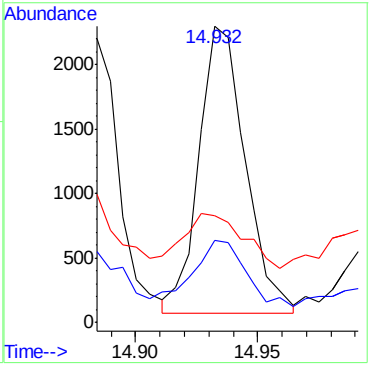


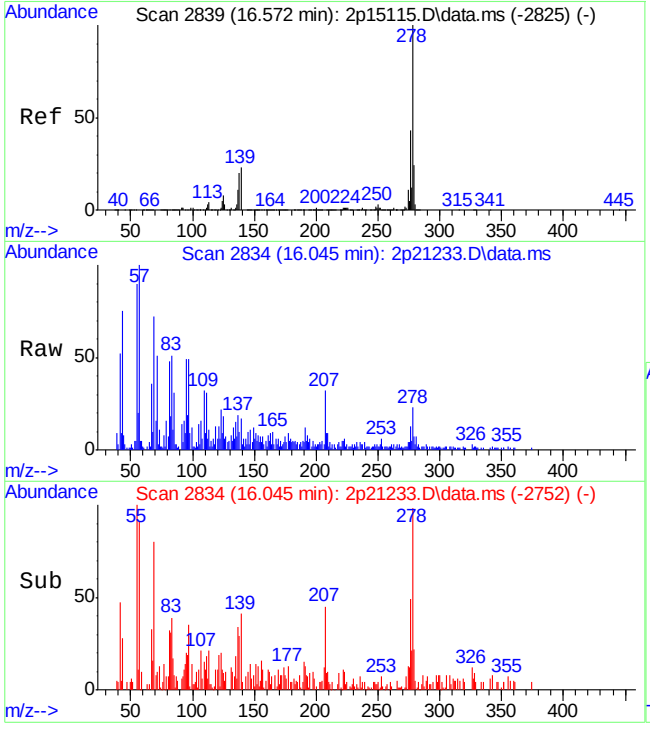


#96
Benzo[a]pyrene
Concen: 0.48 ppb
RT: 14.932 min Scan# 2626
Delta R.T. -0.070 min
Lab File: 2p21233.D
Acq: 19 Mar 2013 5:19 pm

Tgt Ion:252 Resp: 2937

Ion	Ratio	Lower	Upper
252	100		
253	21.0	0.0	51.5
125	15.3	0.0	41.1

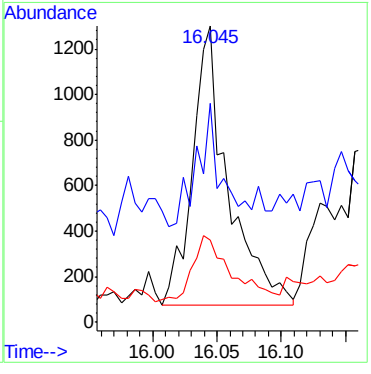


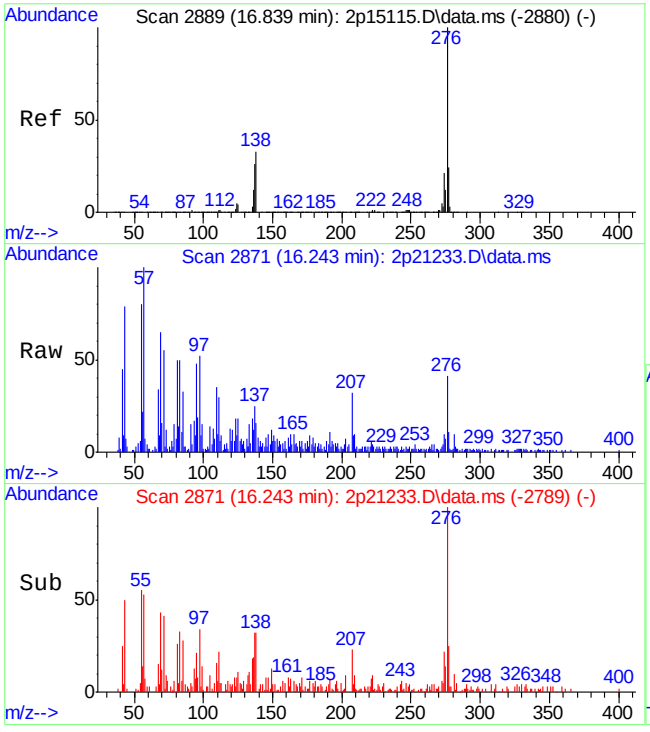


#99
Dibenz[a,h]anthracene
Concen: 0.40 ppb
RT: 16.045 min Scan# 2834
Delta R.T. -0.059 min
Lab File: 2p21233.D
Acq: 19 Mar 2013 5:19 pm

Tgt Ion:278 Resp: 2373

Ion	Ratio	Lower	Upper
278	100		
139	35.9	0.0	49.9
279	18.4	0.0	56.4

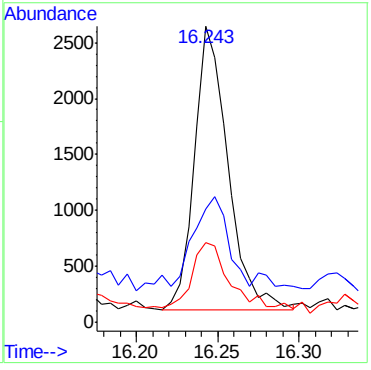




#101
Benzo[g,h,i]perylene
Concen: 0.61 ppb
RT: 16.243 min Scan# 2871
Delta R.T. -0.059 min
Lab File: 2p21233.D
Acq: 19 Mar 2013 5:19 pm

Tgt Ion:276 Resp: 3626

Ion	Ratio	Lower	Upper
276	100		
138	25.5	0.0	55.6
277	23.6	0.0	53.3



9.1.5

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21376.D
Acq On : 22 Mar 2013 9:54 am
Operator : andrews1
Sample : jb30425-4cf
Misc : op64440,e2p941,34.2
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 23 13:09:59 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.898	152	64524	40.00	ppb	-0.03
24) Naphthalene-d8	4.508	136	251494	40.00	ppb	-0.03
47) Acenaphthene-d10	7.134	164	143365	40.00	ppb	-0.03
69) Phenanthrene-d10	9.397	188	232719	40.00	ppb	-0.04
83) Chrysene-d12	13.280	240	224903	40.00	ppb	-0.04
92) Perylene-d12	14.949	264	175358	40.00	ppb	-0.04
102) 1,4-Dichlorobenzene-d4a	2.898	152	64524	40.00	ppb	-0.03
104) Acenaphthene-d10a	7.134	164	143365	40.00	ppb	-0.03
107) Chrysene-d12a	13.280	240	224903	40.00	ppb	-0.04
109) Naphthalene-d8a	4.508	136	251494	40.00	ppb	#-0.03
System Monitoring Compounds						
5) 2-Fluorophenol	1.812	112	73548	31.84	ppb	-0.02
Spiked Amount 50.000	Range 11 - 58		Recovery = 63.68%#			
8) Phenol-d5	2.684	99	97772	34.13	ppb	-0.02
Spiked Amount 50.000	Range 10 - 59		Recovery = 68.26%#			
25) Nitrobenzene-d5	3.609	82	84548	36.55	ppb	-0.02
Spiked Amount 50.000	Range 19 - 61		Recovery = 73.10%#			
51) 2-Fluorobiphenyl	6.177	172	175093	38.19	ppb	-0.03
Spiked Amount 50.000	Range 21 - 58		Recovery = 76.38%#			
73) 2,4,6-Tribromophenol	8.407	330	9662	18.58	ppb	-0.03
Spiked Amount 50.000	Range 12 - 68		Recovery = 37.16%			
85) Terphenyl-d14	11.948	244	187498	39.58	ppb	-0.04
Spiked Amount 50.000	Range 16 - 65		Recovery = 79.16%#			
Target Compounds						Qvalue
77) Phenanthrene	9.429	178	7181	1.02	ppb	97
81) Fluoranthene	11.290	202	11561	1.61	ppb	94
84) Pyrene	11.600	202	11003	1.44	ppb	94
88) Benzo[a]anthracene	13.264	228	7268	1.08	ppb	98
90) Chrysene	13.317	228	6870	1.08	ppb	97
94) Benzo[b]fluoranthene	14.563	252	7907m	1.32	ppb	
95) Benzo[k]fluoranthene	14.585	252	2017m	0.39	ppb	
96) Benzo[a]pyrene	14.895	252	4884	0.94	ppb	88
97) Indeno[1,2,3-cd]pyrene	15.997	276	3378	0.56	ppb	92
99) Dibenz[a,h]anthracene	16.008	278	2355	0.47	ppb	94
101) Benzo[g,h,i]perylene	16.211	276	3755	0.73	ppb	87

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

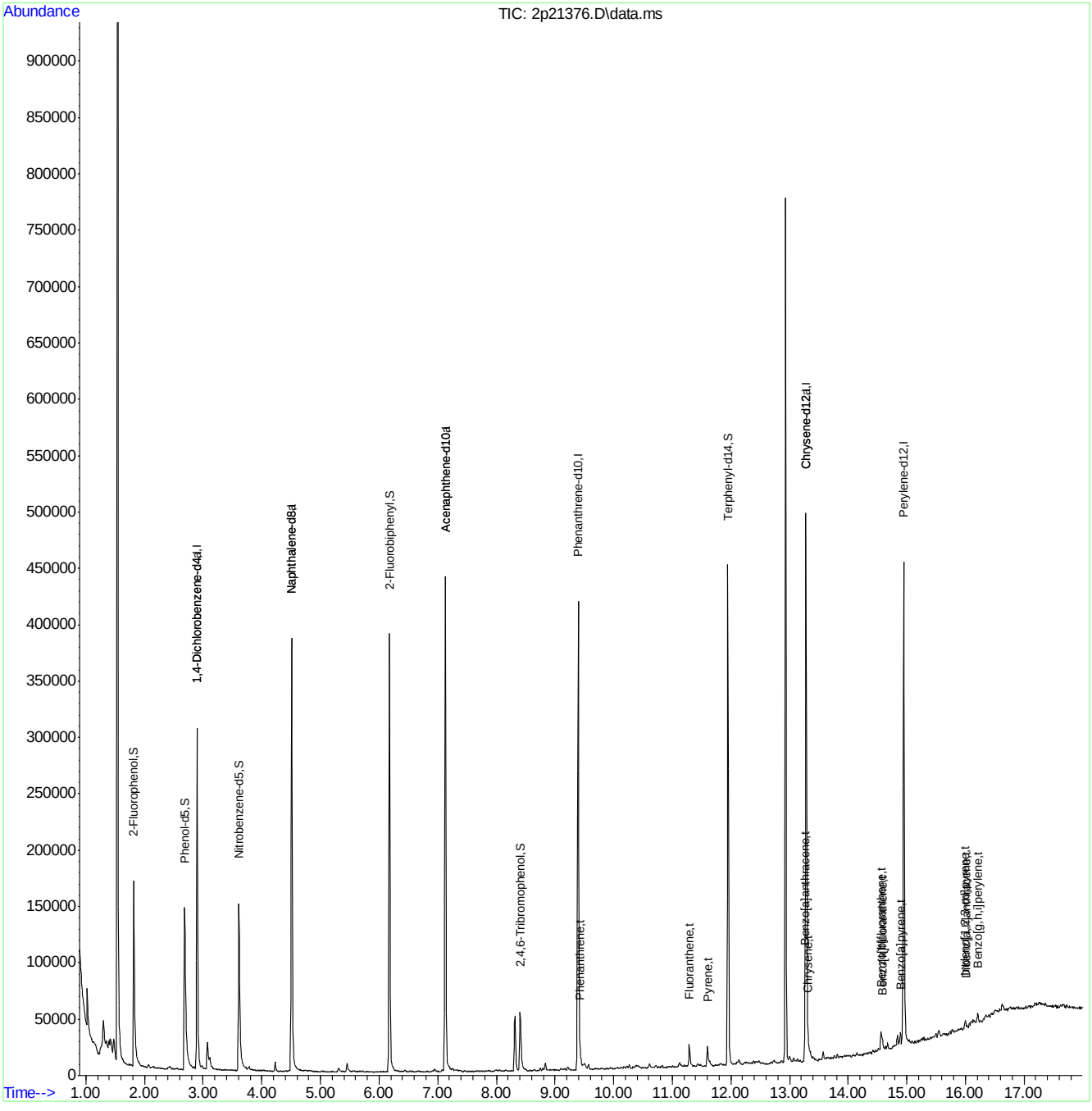
9.1.6

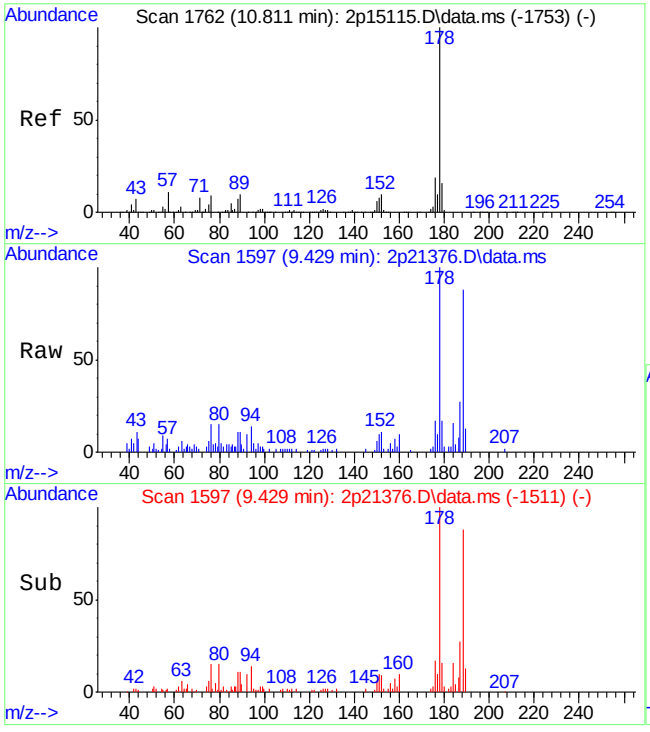
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21376.D
Acq On : 22 Mar 2013 9:54 am
Operator : andrews1
Sample : jb30425-4cf
Misc : op64440,e2p941,34.2
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 23 13:09:59 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

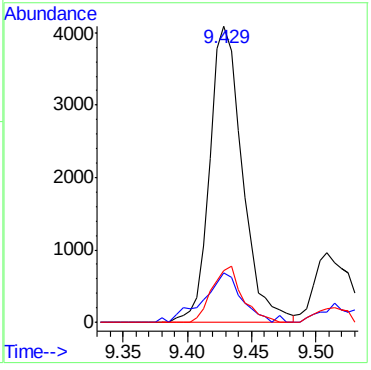


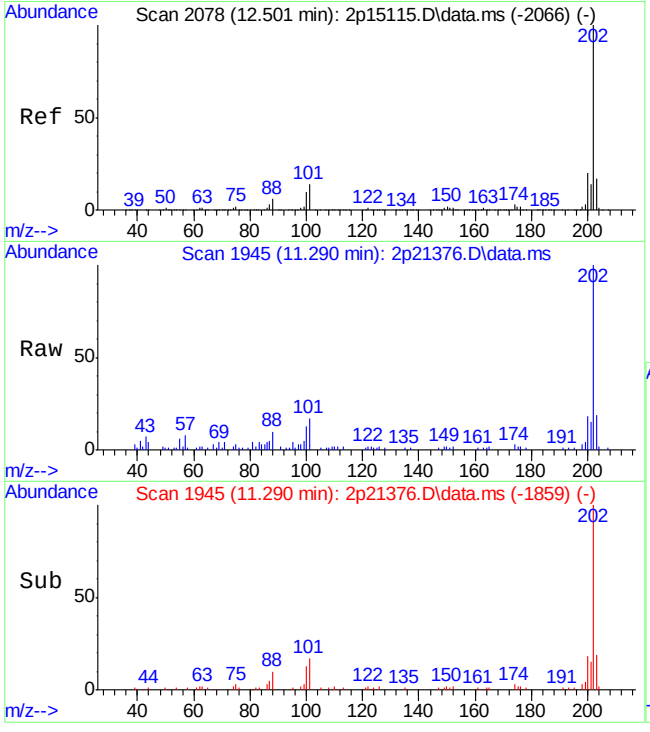


#77
Phenanthrene
Concen: 1.02 ppb
RT: 9.429 min Scan# 1597
Delta R.T. -0.037 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

Tgt Ion:178 Resp: 7181

Ion	Ratio	Lower	Upper
178	100		
179	16.1	0.0	44.4
176	17.5	0.0	48.6

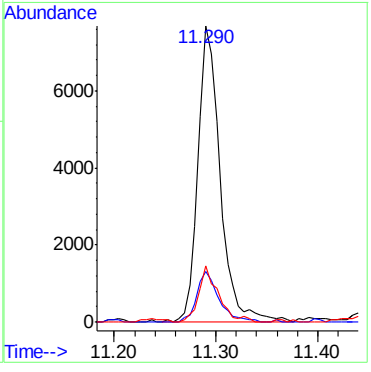


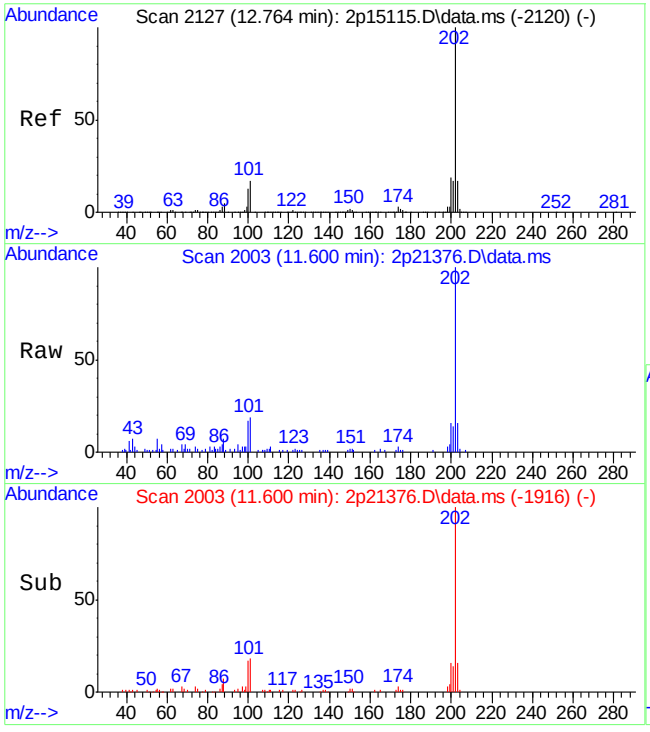


#81
Fluoranthene
Concen: 1.61 ppb
RT: 11.290 min Scan# 1945
Delta R.T. -0.037 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

Tgt Ion:202 Resp: 11561

Ion	Ratio	Lower	Upper
202	100		
101	17.1	0.0	41.3
203	19.0	0.0	49.1

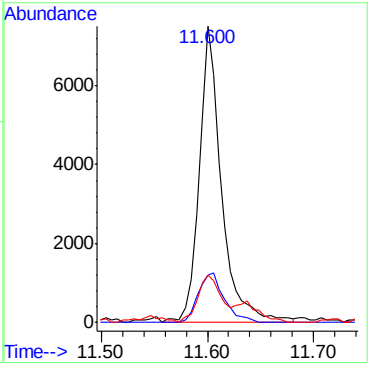


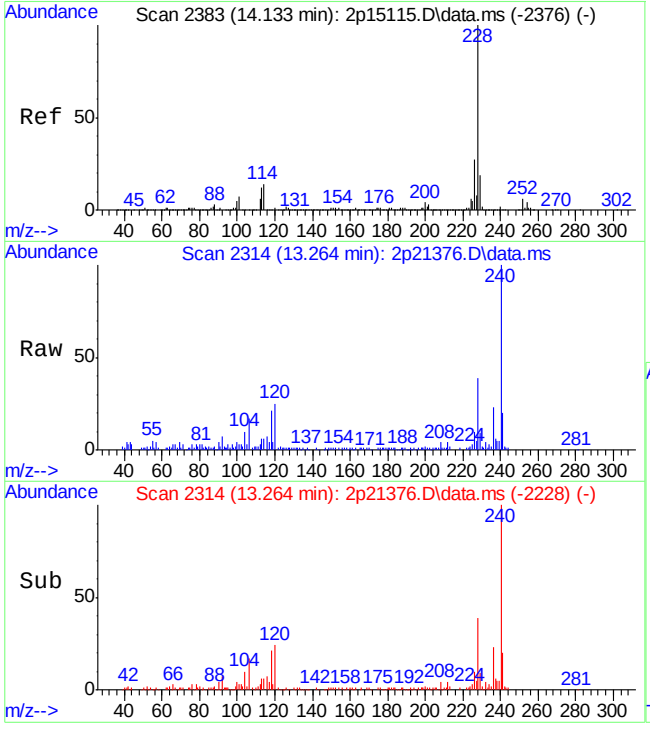


#84
Pyrene
Concen: 1.44 ppb
RT: 11.600 min Scan# 2003
Delta R.T. -0.032 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

Tgt Ion:202 Resp: 11003

Ion	Ratio	Lower	Upper
202	100		
200	15.9	0.0	49.6
203	15.3	0.0	46.9

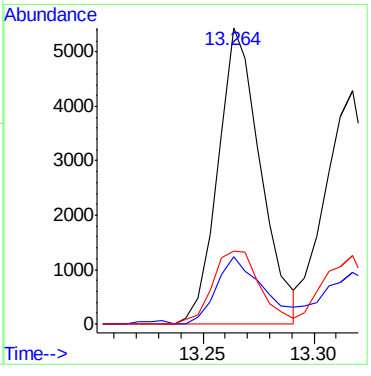


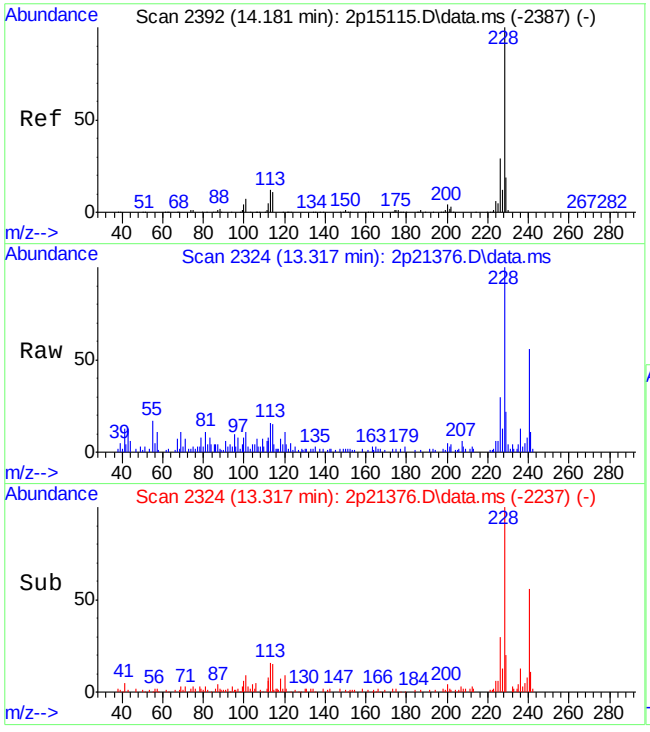


#88
Benzo[a]anthracene
Concen: 1.08 ppb
RT: 13.264 min Scan# 2314
Delta R.T. -0.037 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

Tgt Ion:228 Resp: 7268

Ion	Ratio	Lower	Upper
228	100		
229	20.3	0.0	50.7
226	25.2	0.0	56.7

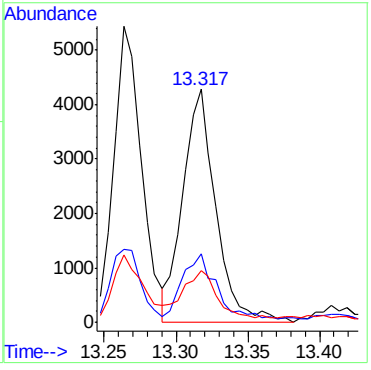


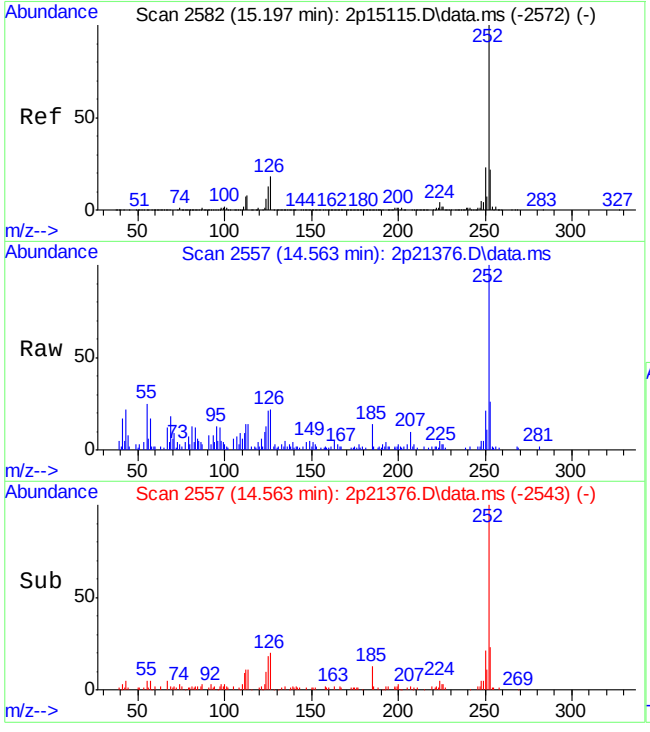


#90
Chrysene
Concen: 1.08 ppb
RT: 13.317 min Scan# 2324
Delta R.T. -0.032 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

Tgt Ion:228 Resp: 6870

Ion	Ratio	Lower	Upper
228	100		
226	29.6	0.0	58.4
229	18.5	0.0	50.1

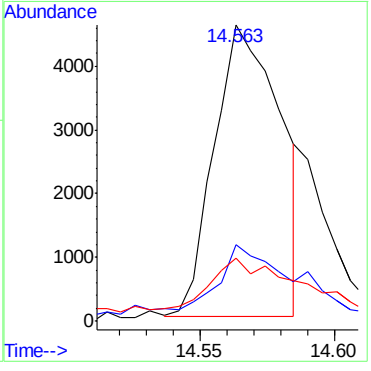


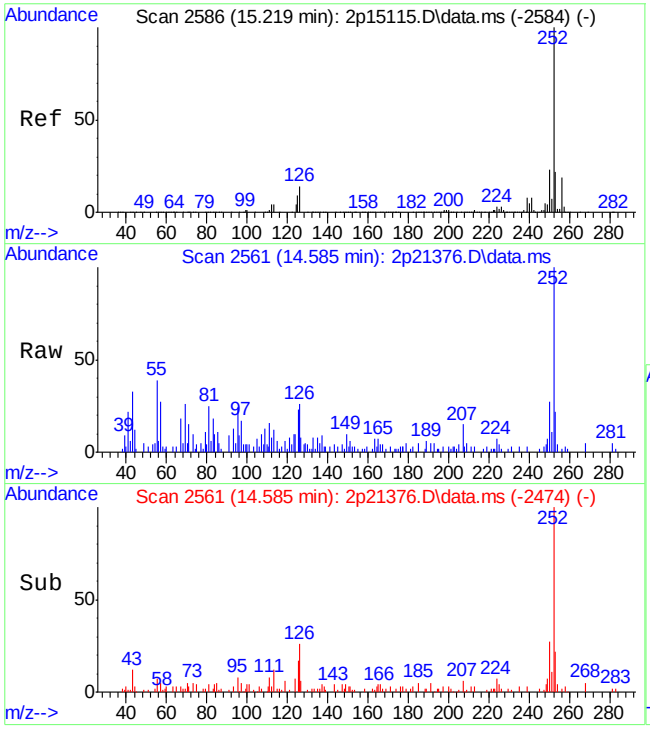


#94
Benzo[b]fluoranthene
Concen: 1.32 ppb m
RT: 14.563 min Scan# 2557
Delta R.T. -0.027 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

Tgt Ion:252 Resp: 7907

Ion	Ratio	Lower	Upper
252	100		
253	25.7	0.0	51.1
125	21.3	0.0	40.8

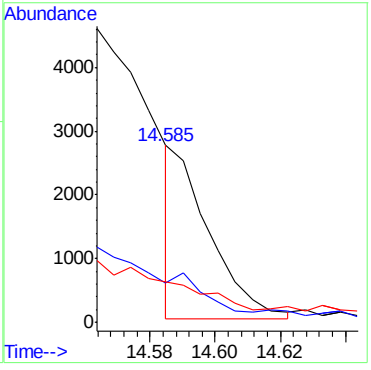


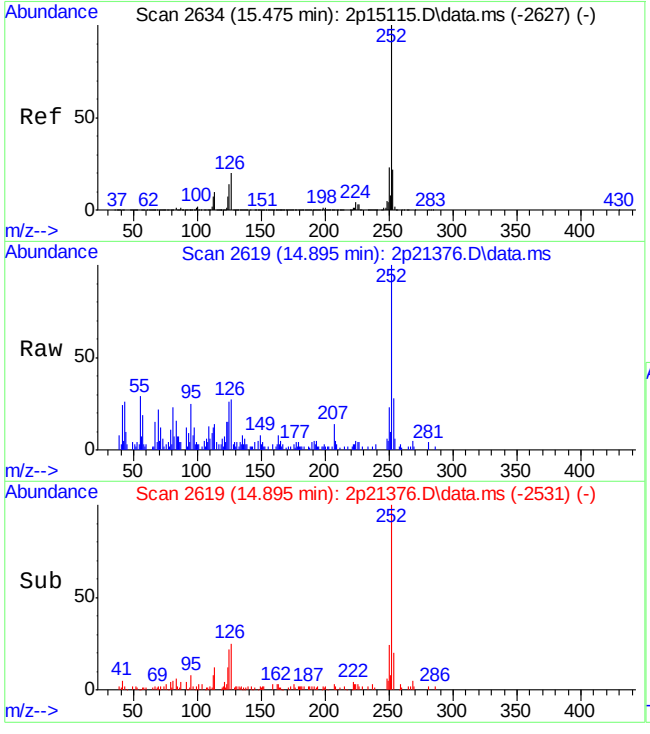


#95
Benzo[k]fluoranthene
Concen: 0.39 ppb m
RT: 14.585 min Scan# 2561
Delta R.T. -0.032 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

Tgt Ion:252 Resp: 2017

Ion	Ratio	Lower	Upper
252	100		
253	22.4	0.0	56.1
125	22.9	0.0	45.7

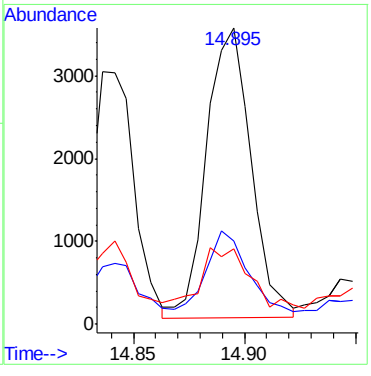




#96
Benzo[a]pyrene
Concen: 0.94 ppb
RT: 14.895 min Scan# 2619
Delta R.T. -0.027 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

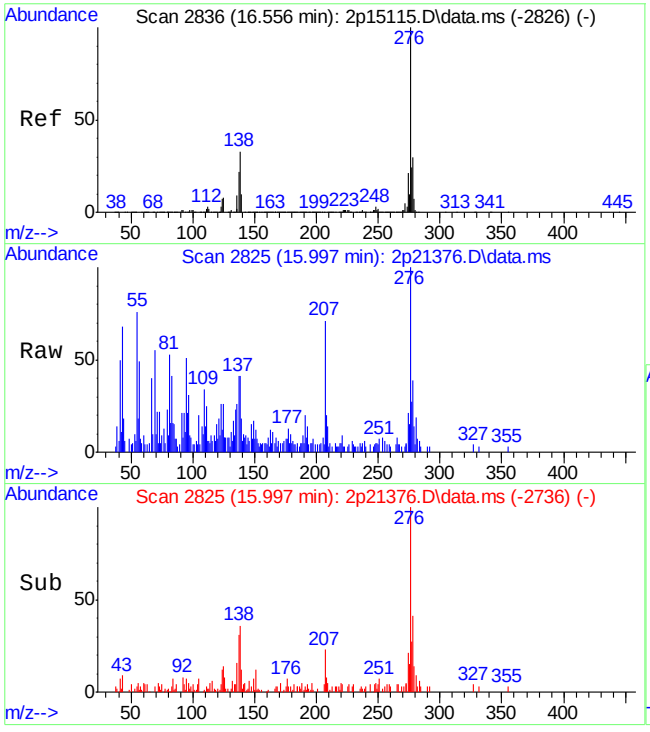
Tgt Ion:252 Resp: 4884

Ion	Ratio	Lower	Upper
252	100		
253	24.5	0.0	51.5
125	19.9	0.0	41.1



9.1.6

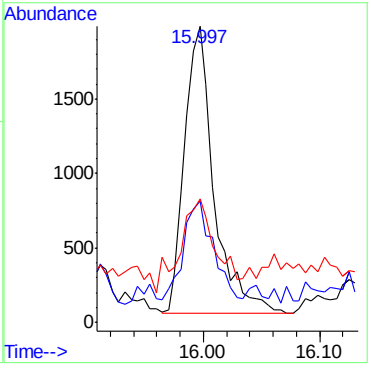
9

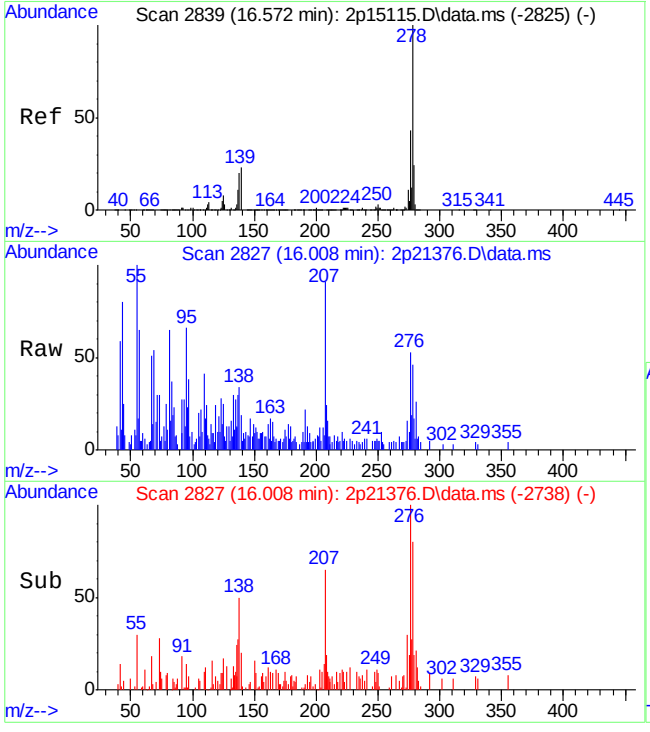


#97
Indeno[1,2,3-cd]pyrene
Concen: 0.56 ppb
RT: 15.997 min Scan# 2825
Delta R.T. -0.021 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

Tgt Ion:276 Resp: 3378

Ion	Ratio	Lower	Upper
276	100		
138	29.8	0.0	54.7
137	22.2	0.0	49.5

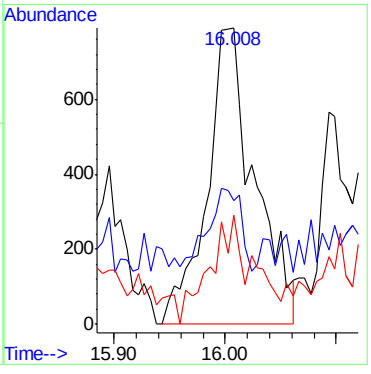


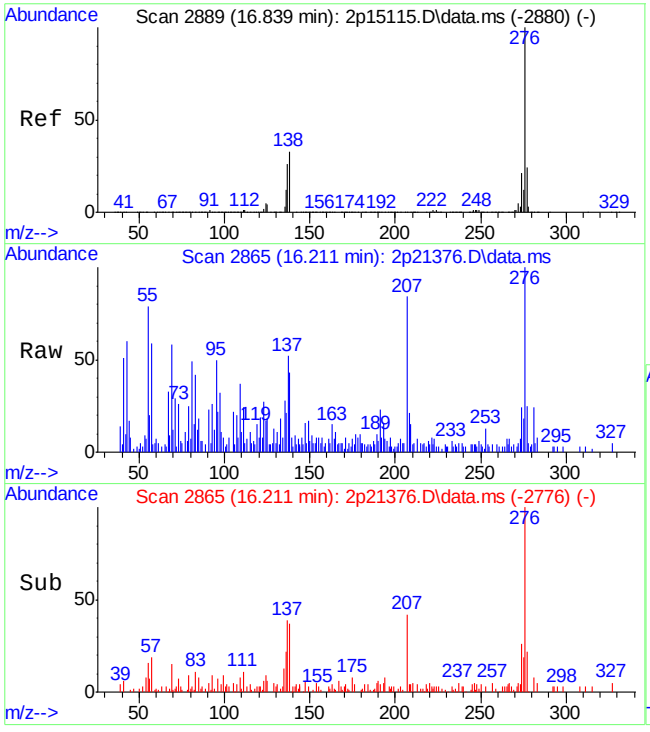


#99
Dibenz[a,h]anthracene
Concen: 0.47 ppb
RT: 16.008 min Scan# 2827
Delta R.T. -0.021 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

Tgt Ion:278 Resp: 2355

Ion	Ratio	Lower	Upper
278	100		
139	22.1	0.0	49.9
279	30.0	0.0	56.4

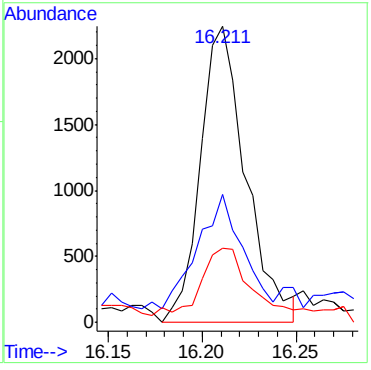




#101
Benzo[g,h,i]perylene
Concen: 0.73 ppb
RT: 16.211 min Scan# 2865
Delta R.T. -0.021 min
Lab File: 2p21376.D
Acq: 22 Mar 2013 9:54 am

Tgt Ion:276 Resp: 3755

Ion	Ratio	Lower	Upper
276	100		
138	36.6	0.0	55.6
277	21.6	0.0	53.3



9.1.6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21234.D
Acq On : 19 Mar 2013 5:42 pm
Operator : andrews1
Sample : jb30425-5
Misc : op64440,e2p936,31.9
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 20 14:39:16 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.935	152	60488	40.00	ppb	-0.09
24) Naphthalene-d8	4.551	136	232525	40.00	ppb	-0.10
47) Acenaphthene-d10	7.182	164	130530	40.00	ppb	-0.11
69) Phenanthrene-d10	9.450	188	214235	40.00	ppb	-0.10
83) Chrysene-d12	13.328	240	221613	40.00	ppb	-0.09
92) Perylene-d12	14.991	264	195511	40.00	ppb	-0.07
102) 1,4-Dichlorobenzene-d4a	2.935	152	60488	40.00	ppb	-0.09
104) Acenaphthene-d10a	7.182	164	130530	40.00	ppb	-0.11
107) Chrysene-d12a	13.328	240	221613	40.00	ppb	-0.09
109) Naphthalene-d8a	4.657	136	1140	40.00	ppb	# 0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.844	112	43232	19.97	ppb	-0.05
Spiked Amount 50.000	Range 11 - 58		Recovery = 39.94%			
8) Phenol-d5	2.716	99	57133	21.27	ppb	-0.06
Spiked Amount 50.000	Range 10 - 59		Recovery = 42.54%			
25) Nitrobenzene-d5	3.647	82	43595	20.38	ppb	-0.09
Spiked Amount 50.000	Range 19 - 61		Recovery = 40.76%			
51) 2-Fluorobiphenyl	6.225	172	86990	20.84	ppb	-0.11
Spiked Amount 50.000	Range 21 - 58		Recovery = 41.68%			
73) 2,4,6-Tribromophenol	8.450	330	16735	34.95	ppb	-0.10
Spiked Amount 50.000	Range 12 - 68		Recovery = 69.90%#			
85) Terphenyl-d14	12.001	244	198360	42.49	ppb	-0.09
Spiked Amount 50.000	Range 16 - 65		Recovery = 84.98%#			

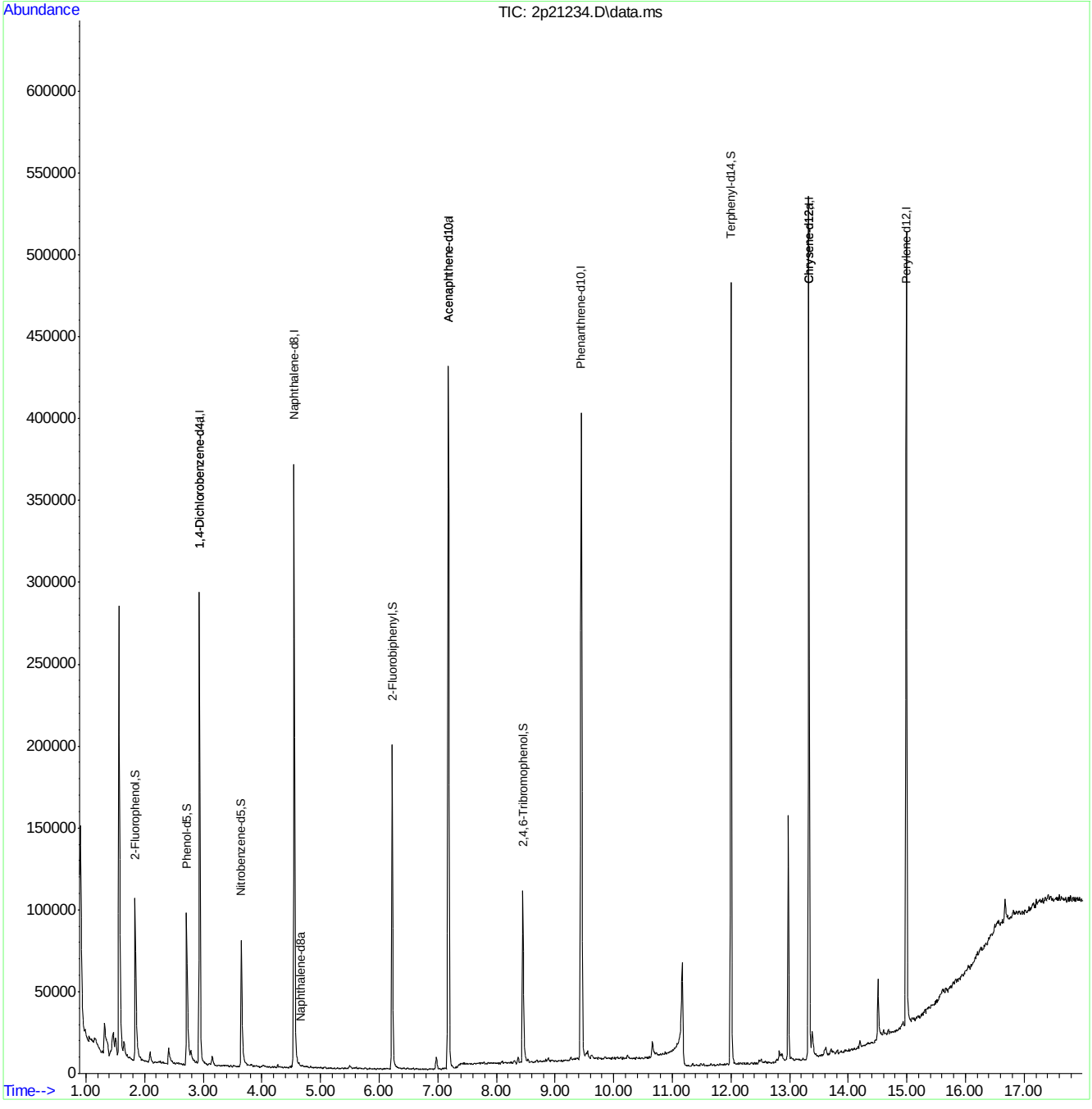
Target Compounds Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21234.D
Acq On : 19 Mar 2013 5:42 pm
Operator : andrews1
Sample : jb30425-5
Misc : op64440,e2p936,31.9
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 20 14:39:16 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21377.D
Acq On : 22 Mar 2013 10:17 am
Operator : andrews1
Sample : jb30425-5cf
Misc : op64440,e2p941,33.2
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 23 16:13:17 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

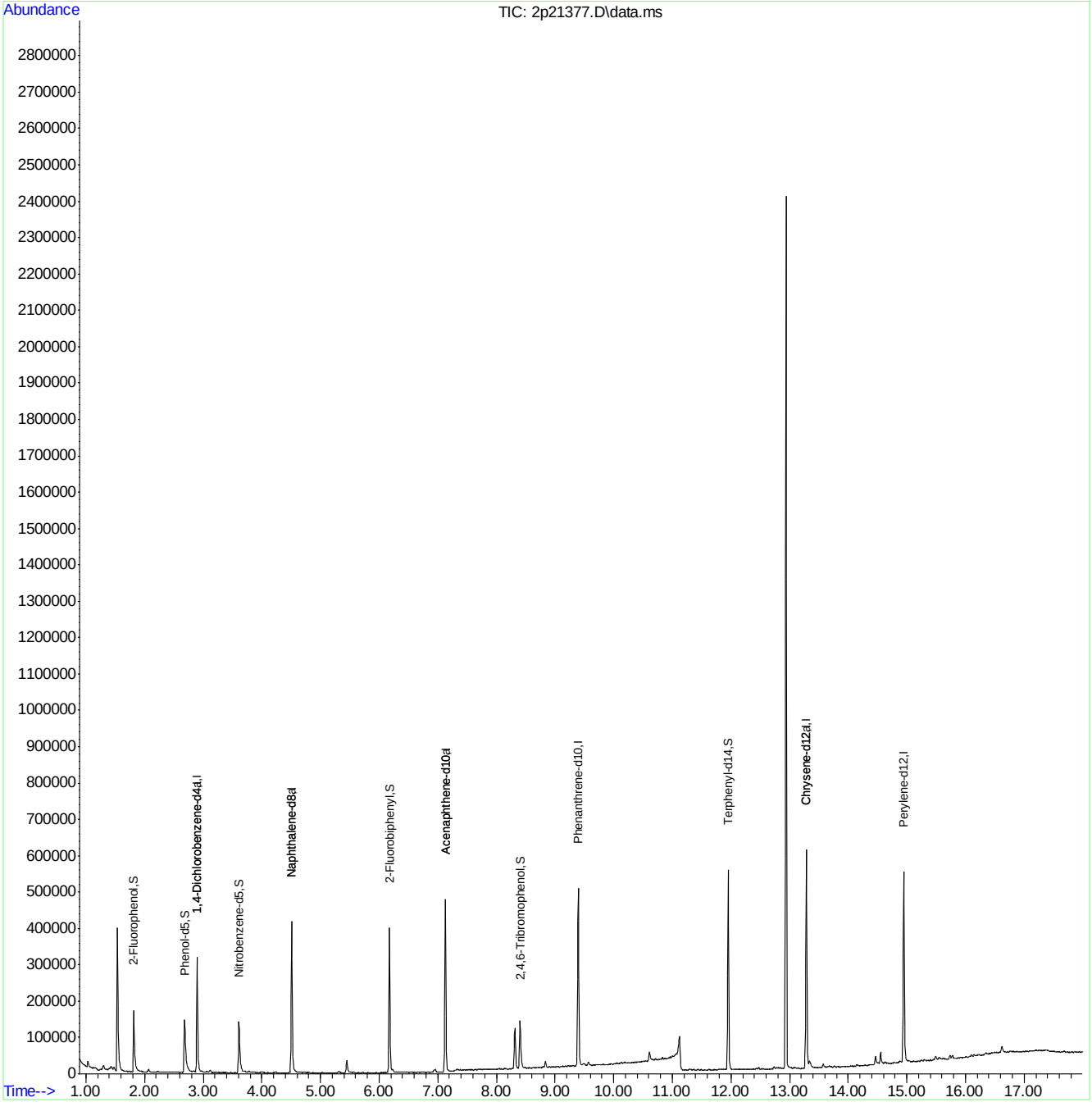
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.898	152	69088	40.00	ppb	-0.03
24) Naphthalene-d8	4.508	136	271318	40.00	ppb	-0.03
47) Acenaphthene-d10	7.134	164	155609	40.00	ppb	-0.03
69) Phenanthrene-d10	9.397	188	258456	40.00	ppb	-0.04
83) Chrysene-d12	13.285	240	265486	40.00	ppb	-0.03
92) Perylene-d12	14.948	264	231227	40.00	ppb	-0.04
102) 1,4-Dichlorobenzene-d4a	2.898	152	69088	40.00	ppb	-0.03
104) Acenaphthene-d10a	7.134	164	155609	40.00	ppb	-0.03
107) Chrysene-d12a	13.285	240	265486	40.00	ppb	-0.03
109) Naphthalene-d8a	4.508	136	271318	40.00	ppb	#-0.03
System Monitoring Compounds						
5) 2-Fluorophenol	1.812	112	75886	30.69	ppb	-0.02
Spiked Amount 50.000	Range 11 - 58		Recovery = 61.38%#			
8) Phenol-d5	2.684	99	100400	32.73	ppb	-0.02
Spiked Amount 50.000	Range 10 - 59		Recovery = 65.46%#			
25) Nitrobenzene-d5	3.609	82	81015	32.46	ppb	-0.02
Spiked Amount 50.000	Range 19 - 61		Recovery = 64.92%#			
51) 2-Fluorobiphenyl	6.177	172	174397	35.05	ppb	-0.03
Spiked Amount 50.000	Range 21 - 58		Recovery = 70.10%#			
73) 2,4,6-Tribromophenol	8.407	330	22973	39.77	ppb	-0.03
Spiked Amount 50.000	Range 12 - 68		Recovery = 79.54%#			
85) Terphenyl-d14	11.953	244	218059	38.99	ppb	-0.03
Spiked Amount 50.000	Range 16 - 65		Recovery = 77.98%#			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21377.D
Acq On : 22 Mar 2013 10:17 am
Operator : andrews1
Sample : jb30425-5cf
Misc : op64440,e2p941,33.2
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 23 16:13:17 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21235.D
Acq On : 19 Mar 2013 6:04 pm
Operator : andrews1
Sample : jb30425-6
Misc : op64440,e2p936,31.9
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 20 14:40:16 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.935	152	59205	40.00	ppb	-0.09
24) Naphthalene-d8	4.551	136	236272	40.00	ppb	-0.10
47) Acenaphthene-d10	7.182	164	133025	40.00	ppb	-0.11
69) Phenanthrene-d10	9.450	188	220222	40.00	ppb	-0.10
83) Chrysene-d12	13.328	240	221233	40.00	ppb	-0.09
92) Perylene-d12	14.991	264	188361	40.00	ppb	-0.07
102) 1,4-Dichlorobenzene-d4a	2.935	152	59205	40.00	ppb	-0.09
104) Acenaphthene-d10a	7.182	164	133025	40.00	ppb	-0.11
107) Chrysene-d12a	13.328	240	221233	40.00	ppb	-0.09
109) Naphthalene-d8a	4.551	136	236272	40.00	ppb	#-0.10
System Monitoring Compounds						
5) 2-Fluorophenol	1.839	112	59955	28.29	ppb	-0.06
Spiked Amount 50.000	Range 11 - 58		Recovery = 56.58%			
8) Phenol-d5	2.721	99	80909	30.78	ppb	-0.05
Spiked Amount 50.000	Range 10 - 59		Recovery = 61.56%#			
25) Nitrobenzene-d5	3.647	82	61762	28.42	ppb	-0.09
Spiked Amount 50.000	Range 19 - 61		Recovery = 56.84%			
51) 2-Fluorobiphenyl	6.225	172	127956	30.08	ppb	-0.11
Spiked Amount 50.000	Range 21 - 58		Recovery = 60.16%#			
73) 2,4,6-Tribromophenol	8.455	330	16258	33.03	ppb	-0.09
Spiked Amount 50.000	Range 12 - 68		Recovery = 66.06%			
85) Terphenyl-d14	12.001	244	174659	37.48	ppb	-0.09
Spiked Amount 50.000	Range 16 - 65		Recovery = 74.96%#			
Target Compounds						Qvalue
44) 2-Methylnaphthalene	5.604	141	1692	0.47	ppb	74
77) Phenanthrene	9.482	178	3809	0.57	ppb	95
81) Fluoranthene	11.338	202	8315	1.22	ppb	96
84) Pyrene	11.648	202	8457	1.12	ppb	98
88) Benzo[a]anthracene	13.312	228	5975	0.91	ppb	96
90) Chrysene	13.355	228	6290	1.00	ppb	92
94) Benzo[b]fluoranthene	14.601	252	6797m	1.06	ppb	
95) Benzo[k]fluoranthene	14.611	252	4749m	0.85	ppb	
96) Benzo[a]pyrene	14.932	252	5743	1.03	ppb	88
97) Indeno[1,2,3-cd]pyrene	16.023	276	4478	0.69	ppb	81
101) Benzo[g,h,i]perylene	16.243	276	4424	0.80	ppb	85

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

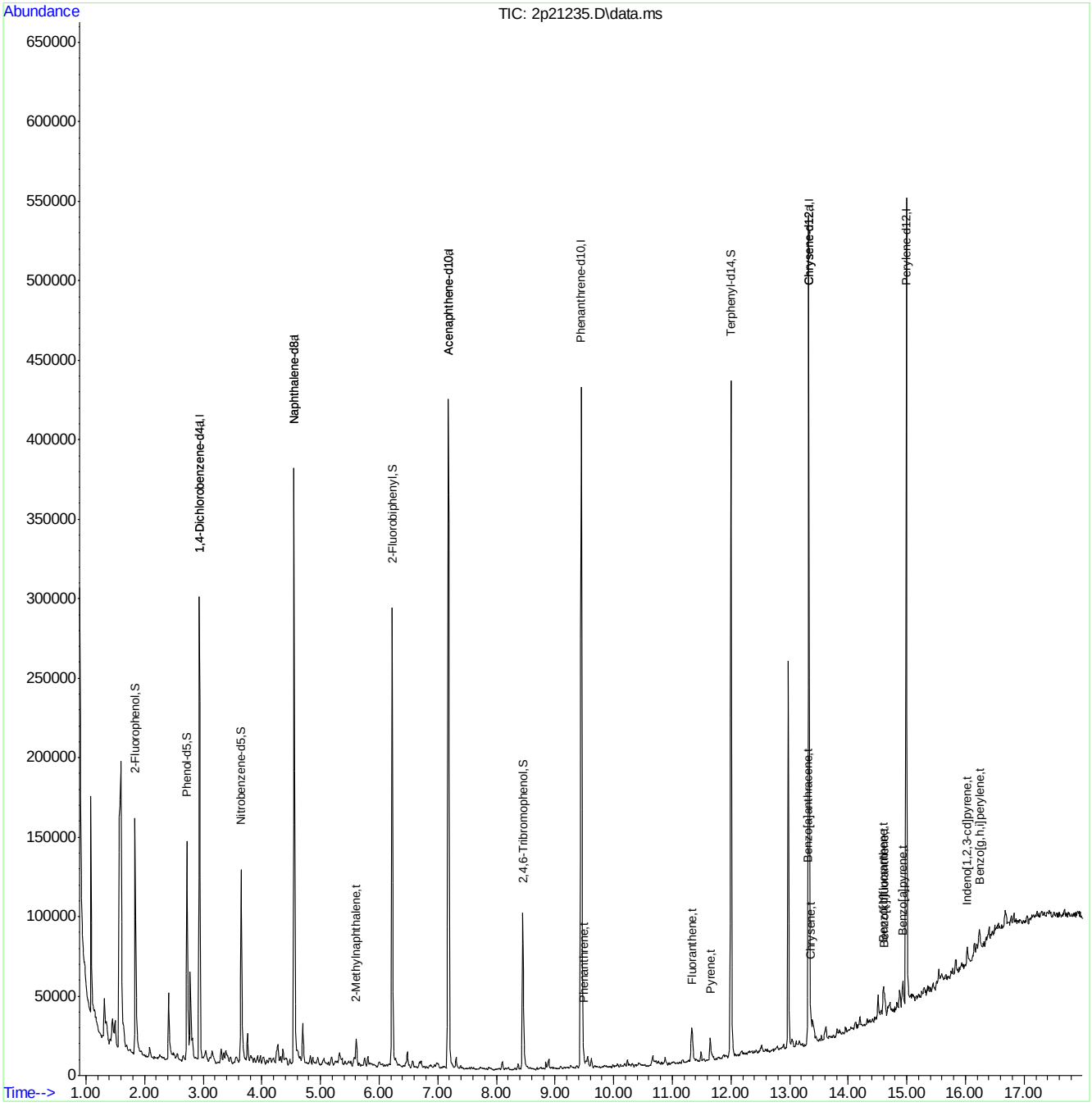
9.1.9

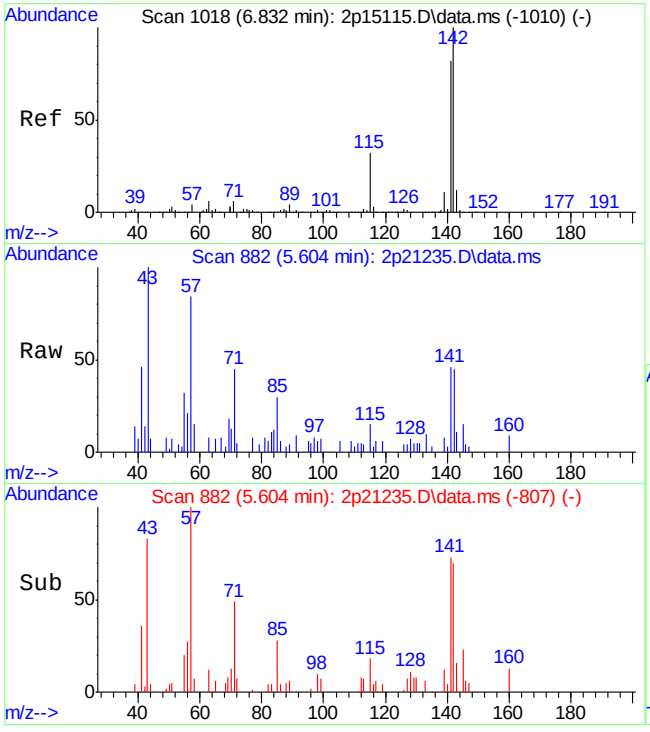
6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21235.D
Acq On : 19 Mar 2013 6:04 pm
Operator : andrews1
Sample : jb30425-6
Misc : op64440,e2p936,31.9
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 20 14:40:16 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

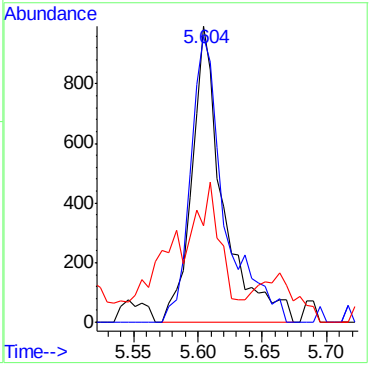


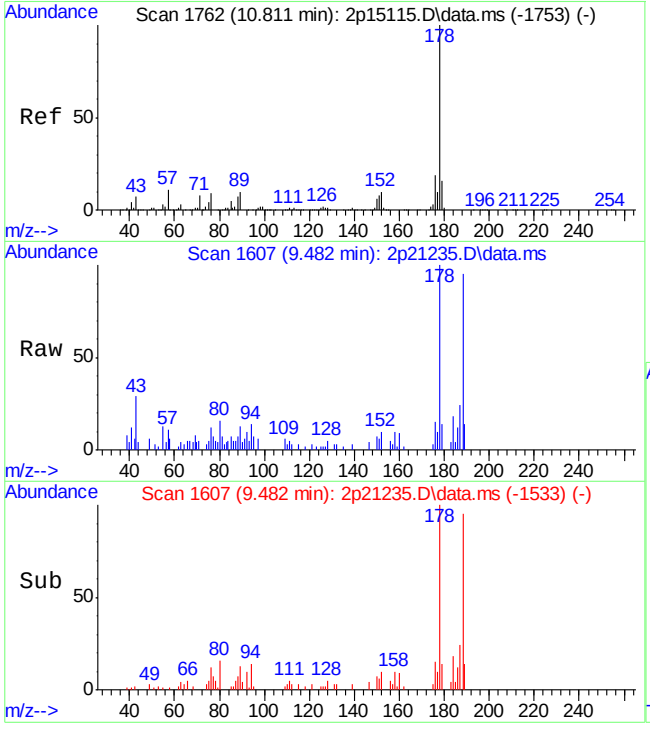


#44
2-Methylnaphthalene
Concen: 0.47 ppb
RT: 5.604 min Scan# 882
Delta R.T. -0.096 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:141 Resp: 1692

Ion	Ratio	Lower	Upper
141	100		
142	96.5	88.4	148.4
115	16.9	14.8	74.8

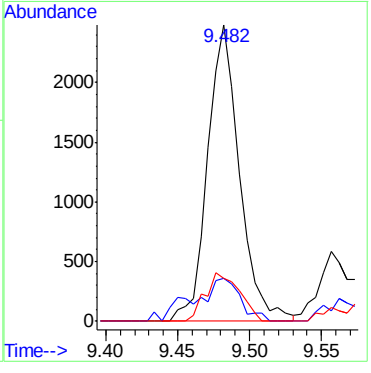


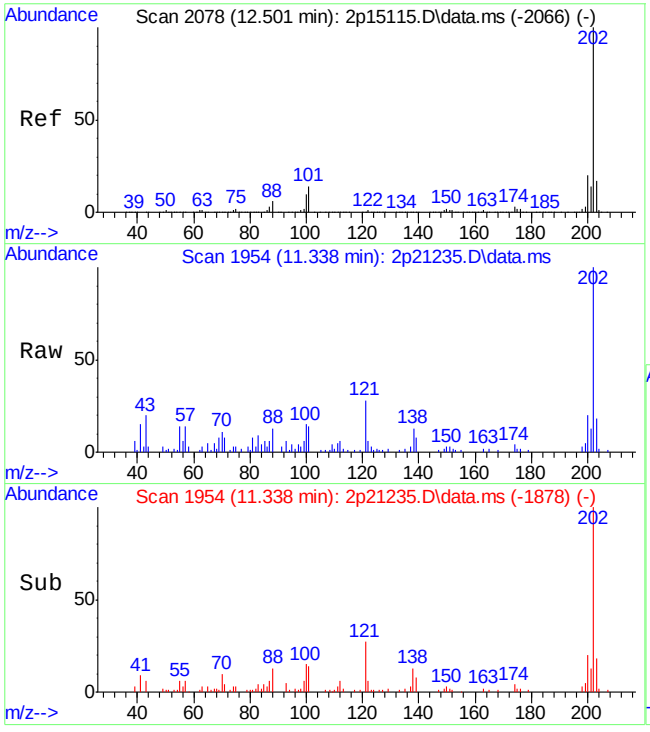


#77
Phenanthrene
Concen: 0.57 ppb
RT: 9.482 min Scan# 1607
Delta R.T. -0.102 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:178 Resp: 3809

Ion	Ratio	Lower	Upper
178	100		
179	14.5	0.0	44.4
176	14.7	0.0	48.6

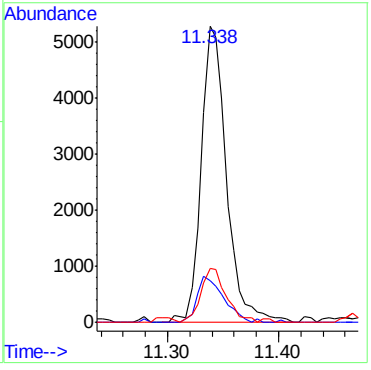


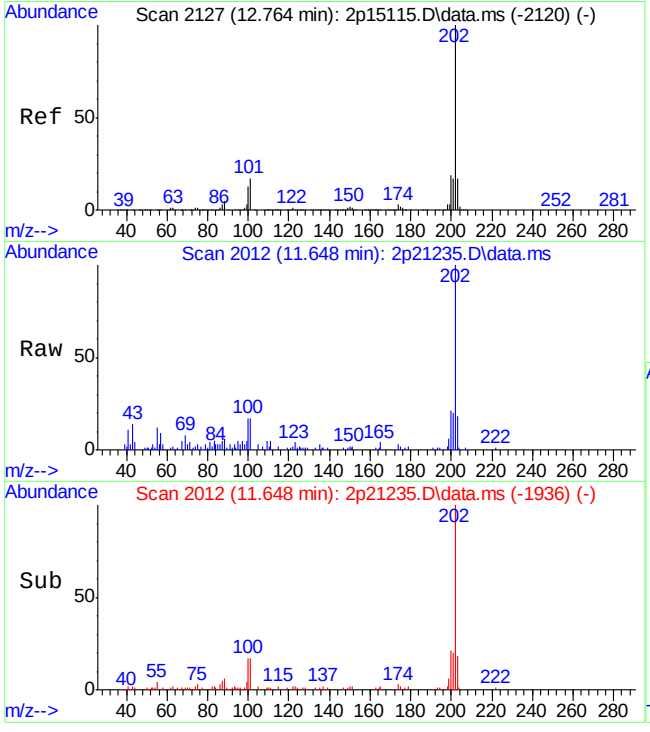


#81
Fluoranthene
Concen: 1.22 ppb
RT: 11.338 min Scan# 1954
Delta R.T. -0.091 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:202 Resp: 8315

Ion	Ratio	Lower	Upper
202	100		
101	13.9	0.0	41.3
203	18.3	0.0	49.1

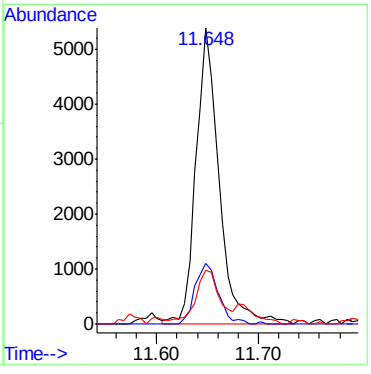


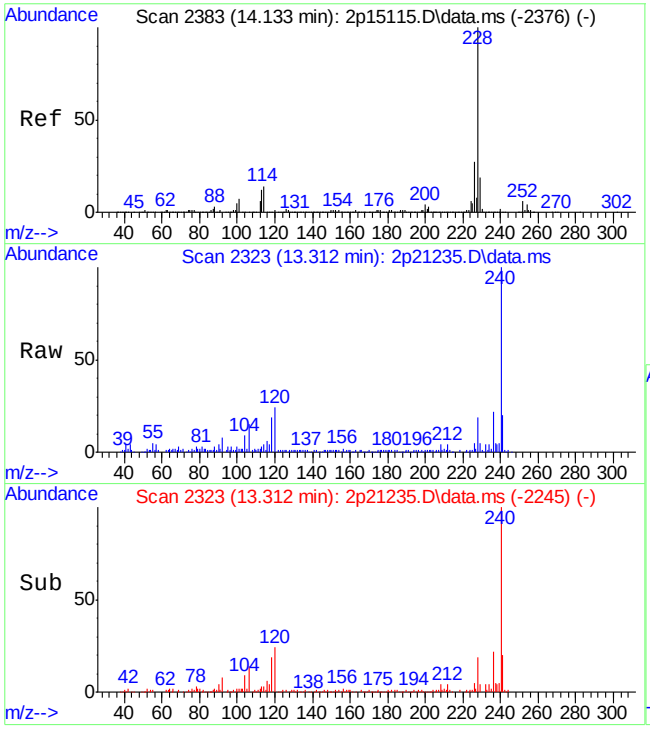


#84
Pyrene
Concen: 1.12 ppb
RT: 11.648 min Scan# 2012
Delta R.T. -0.091 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:202 Resp: 8457

Ion	Ratio	Lower	Upper
202	100		
200	20.7	0.0	49.6
203	16.6	0.0	46.9

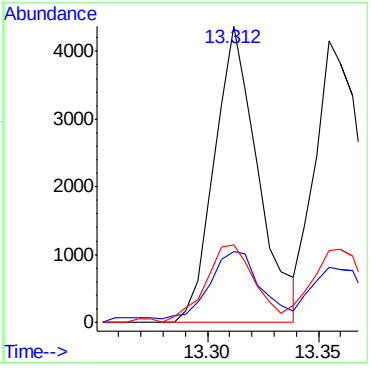


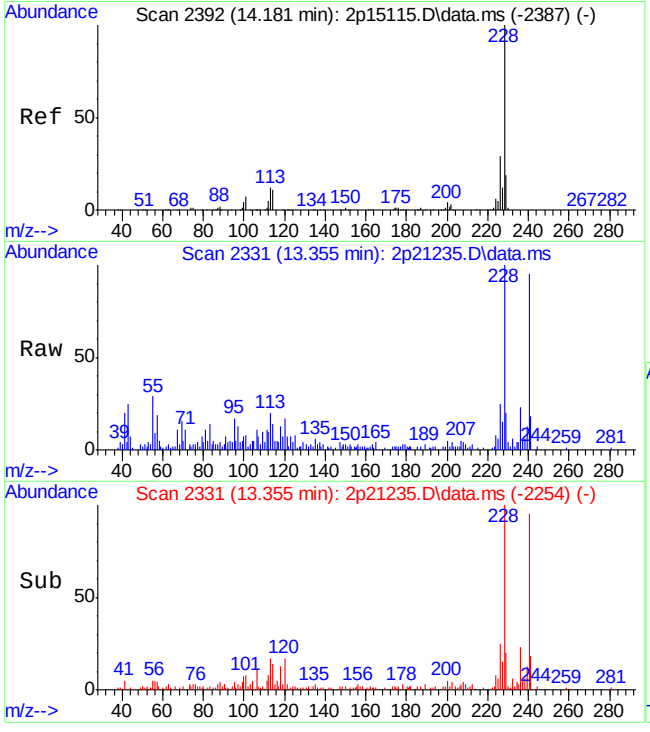


#88
Benzo[a]anthracene
Concen: 0.91 ppb
RT: 13.312 min Scan# 2323
Delta R.T. -0.080 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:228 Resp: 5975

Ion	Ratio	Lower	Upper
228	100		
229	23.0	0.0	50.7
226	25.2	0.0	56.7

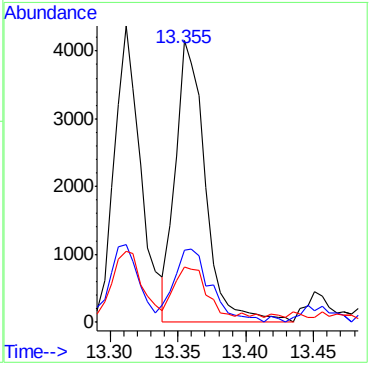


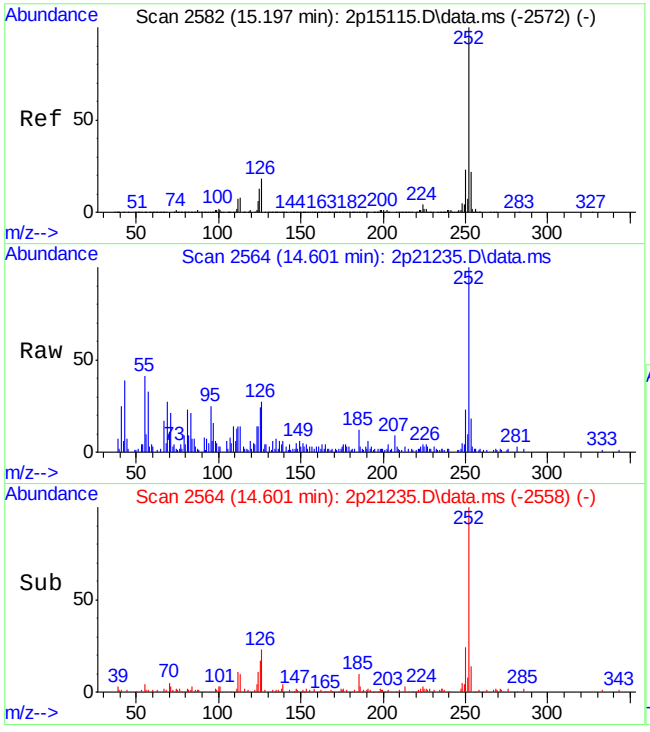


#90
Chrysene
Concen: 1.00 ppb
RT: 13.355 min Scan# 2331
Delta R.T. -0.086 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:228 Resp: 6290

Ion	Ratio	Lower	Upper
228	100		
226	23.5	0.0	58.4
229	16.9	0.0	50.1

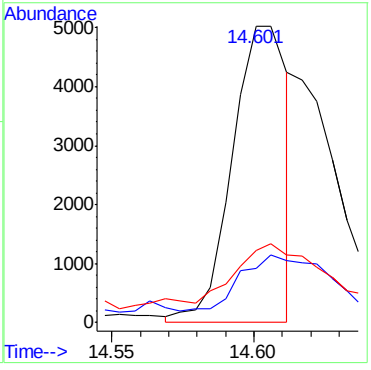


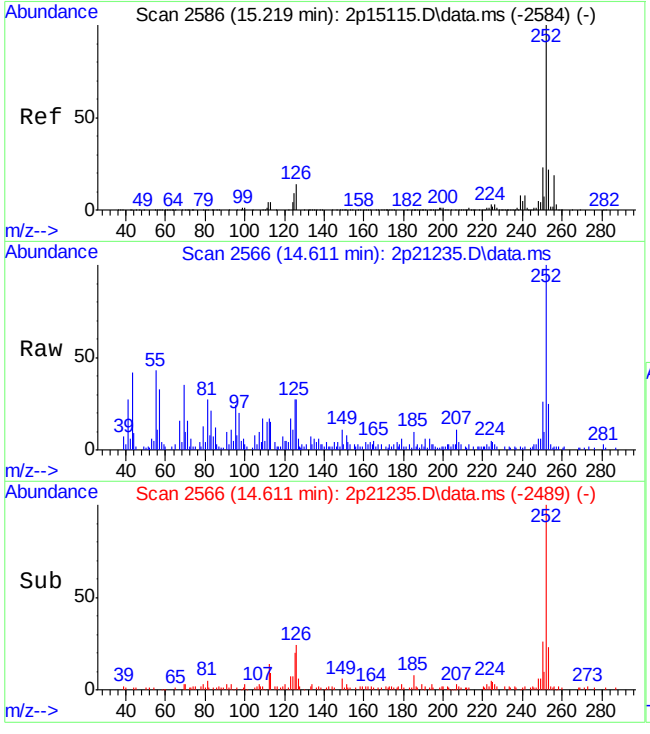


#94
Benzo[b]fluoranthene
Concen: 1.06 ppb m
RT: 14.601 min Scan# 2564
Delta R.T. -0.070 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:252 Resp: 6797

Ion	Ratio	Lower	Upper
252	100		
253	18.3	0.0	51.1
125	24.1	0.0	40.8

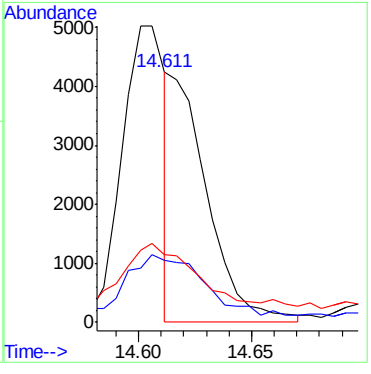


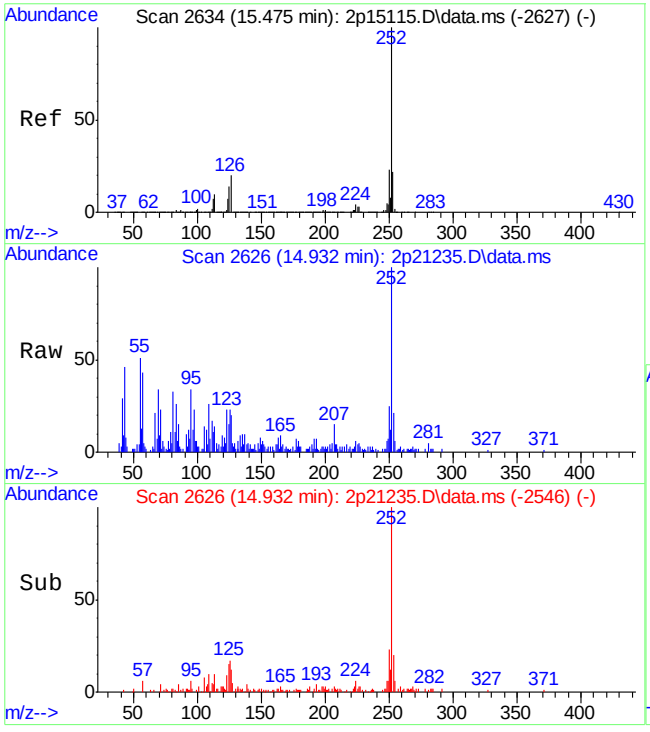


#95
Benzo[k]fluoranthene
Concen: 0.85 ppb m
RT: 14.611 min Scan# 2566
Delta R.T. -0.086 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:252 Resp: 4749

Ion	Ratio	Lower	Upper
252	100		
253	24.7	0.0	56.1
125	27.0	0.0	45.7

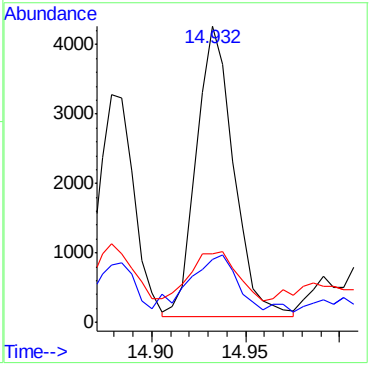


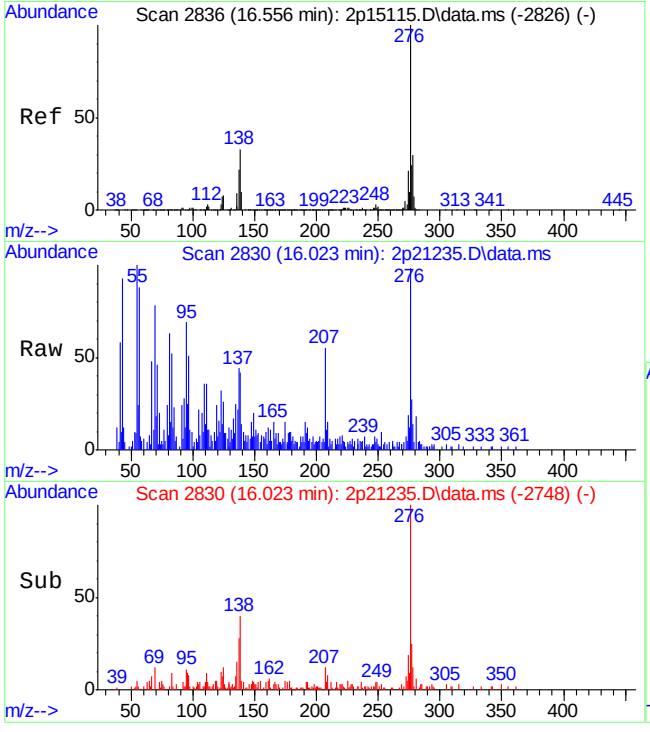


#96
Benzo[a]pyrene
Concen: 1.03 ppb
RT: 14.932 min Scan# 2626
Delta R.T. -0.070 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:252 Resp: 5743

Ion	Ratio	Lower	Upper
252	100		
253	15.6	0.0	51.5
125	15.1	0.0	41.1

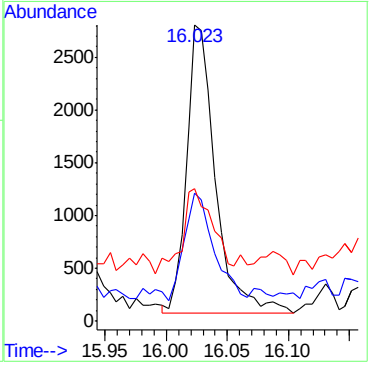


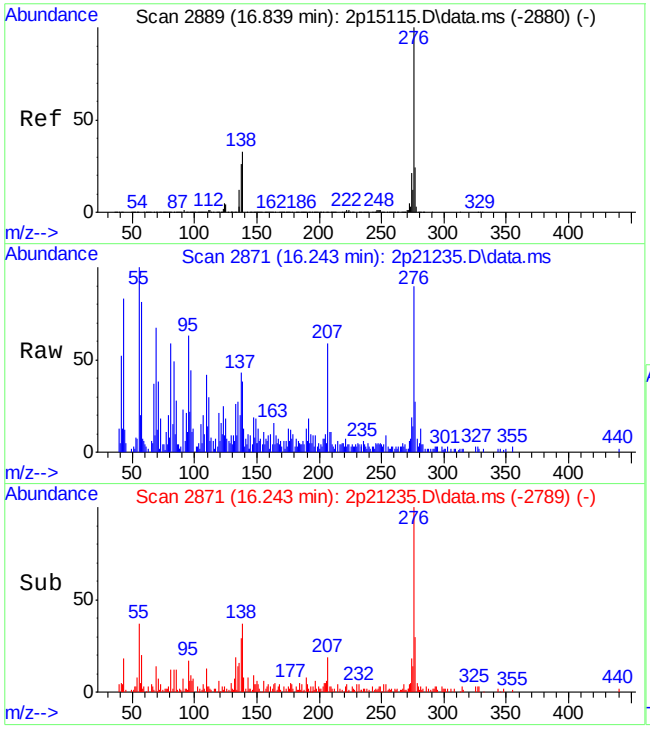


#97
Indeno[1,2,3-cd]pyrene
Concen: 0.69 ppb
RT: 16.023 min Scan# 2830
Delta R.T. -0.059 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:276 Resp: 4478

Ion	Ratio	Lower	Upper
276	100		
138	34.9	0.0	54.7
137	27.3	0.0	49.5

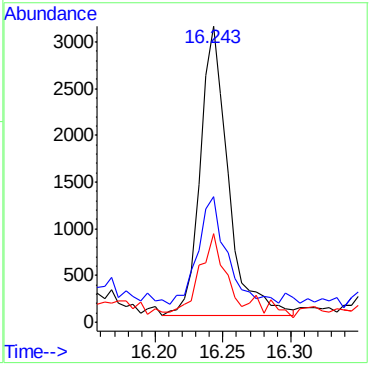




#101
Benzo[g,h,i]perylene
Concen: 0.80 ppb
RT: 16.243 min Scan# 2871
Delta R.T. -0.059 min
Lab File: 2p21235.D
Acq: 19 Mar 2013 6:04 pm

Tgt Ion:276 Resp: 4424

Ion	Ratio	Lower	Upper
276	100		
138	35.6	0.0	55.6
277	28.1	0.0	53.3



9.1.9

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21378.D
Acq On : 22 Mar 2013 10:39 am
Operator : andrews1
Sample : jb30425-6cf
Misc : op64440,e2p941,34.9
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 23 13:19:01 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.898	152	68602	40.00	ppb	-0.03
24) Naphthalene-d8	4.508	136	267593	40.00	ppb	-0.03
47) Acenaphthene-d10	7.129	164	150921	40.00	ppb	-0.04
69) Phenanthrene-d10	9.396	188	246138	40.00	ppb	-0.04
83) Chrysene-d12	13.285	240	238936	40.00	ppb	-0.03
92) Perylene-d12	14.948	264	208429	40.00	ppb	-0.04
102) 1,4-Dichlorobenzene-d4a	2.898	152	68602	40.00	ppb	-0.03
104) Acenaphthene-d10a	7.129	164	150921	40.00	ppb	-0.04
107) Chrysene-d12a	13.285	240	238936	40.00	ppb	-0.03
109) Naphthalene-d8a	4.508	136	267593	40.00	ppb	#-0.03
System Monitoring Compounds						
5) 2-Fluorophenol	1.812	112	81749	33.29	ppb	-0.02
Spiked Amount 50.000	Range 11 - 58		Recovery = 66.58%#			
8) Phenol-d5	2.684	99	106546	34.98	ppb	-0.02
Spiked Amount 50.000	Range 10 - 59		Recovery = 69.96%#			
25) Nitrobenzene-d5	3.609	82	91309	37.09	ppb	-0.02
Spiked Amount 50.000	Range 19 - 61		Recovery = 74.18%#			
51) 2-Fluorobiphenyl	6.177	172	187537	38.86	ppb	-0.03
Spiked Amount 50.000	Range 21 - 58		Recovery = 77.72%#			
73) 2,4,6-Tribromophenol	8.407	330	20256	36.82	ppb	-0.03
Spiked Amount 50.000	Range 12 - 68		Recovery = 73.64%#			
85) Terphenyl-d14	11.948	244	202523	40.24	ppb	-0.04
Spiked Amount 50.000	Range 16 - 65		Recovery = 80.48%#			
Target Compounds						Qvalue
77) Phenanthrene	9.429	178	17655	2.38	ppb	98
78) Anthracene	9.514	178	4300	0.59	ppb	96
81) Fluoranthene	11.290	202	36096	4.74	ppb	96
84) Pyrene	11.600	202	32943	4.05	ppb	99
88) Benzo[a]anthracene	13.264	228	19160	2.69	ppb	95
90) Chrysene	13.312	228	18840	2.78	ppb	98
94) Benzo[b]fluoranthene	14.558	252	21752m	3.06	ppb	
95) Benzo[k]fluoranthene	14.574	252	10532m	1.70	ppb	
96) Benzo[a]pyrene	14.895	252	15876	2.57	ppb	94
97) Indeno[1,2,3-cd]pyrene	15.991	276	10701	1.49	ppb	83
99) Dibenz[a,h]anthracene	15.997	278	5896	0.99	ppb	87
101) Benzo[g,h,i]perylene	16.205	276	10297	1.69	ppb	89

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

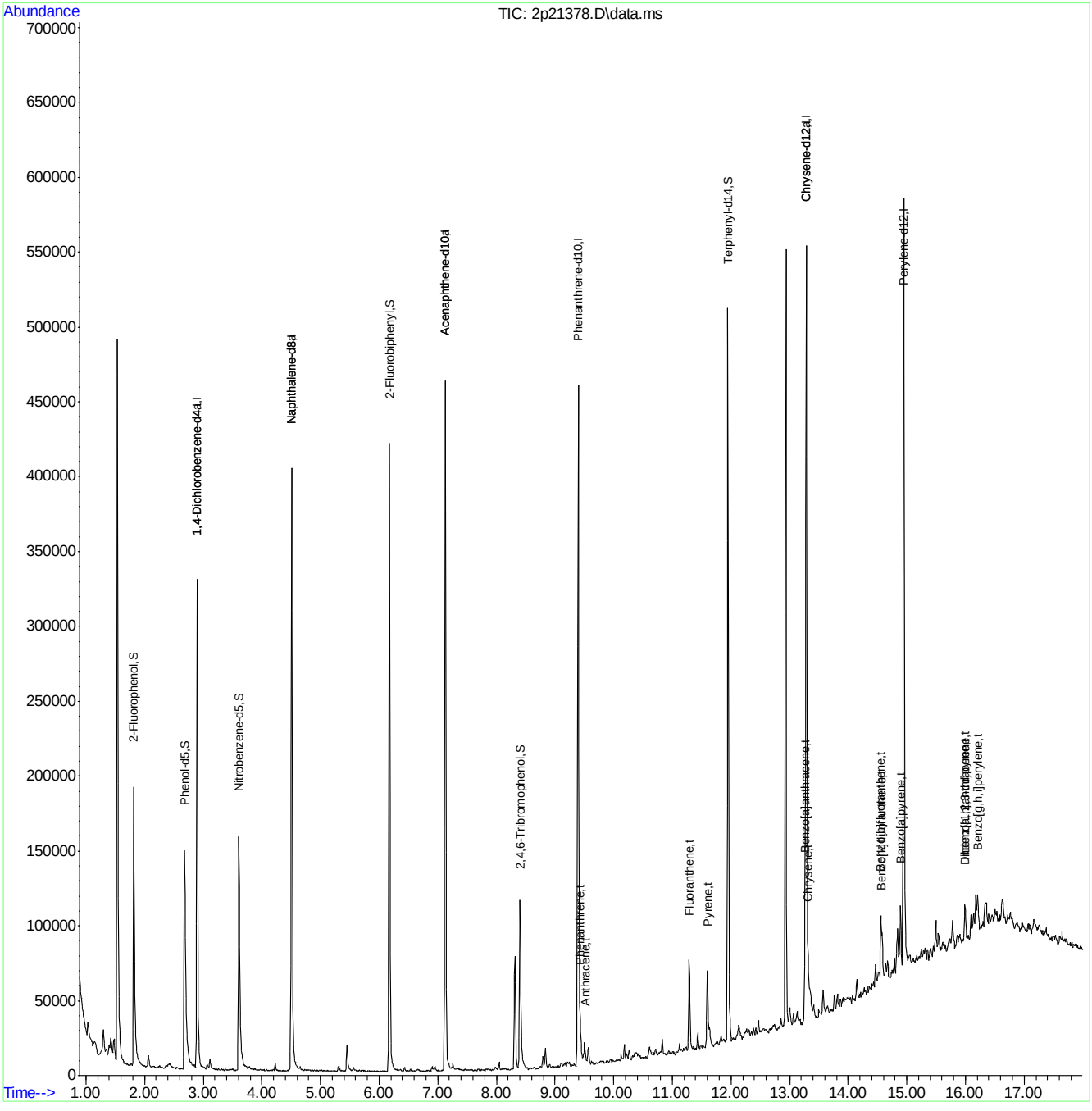
9.1.10

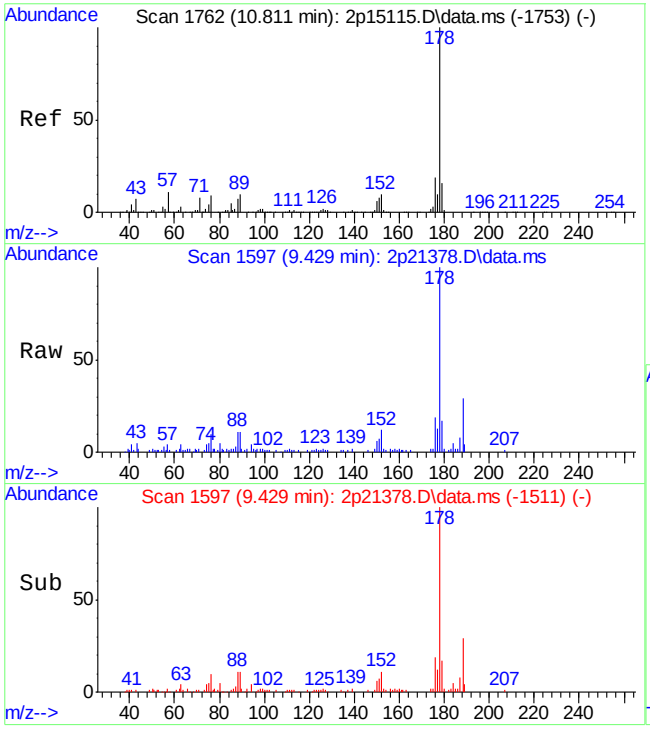
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21378.D
Acq On : 22 Mar 2013 10:39 am
Operator : andrews1
Sample : jb30425-6cf
Misc : op64440,e2p941,34.9
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 23 13:19:01 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

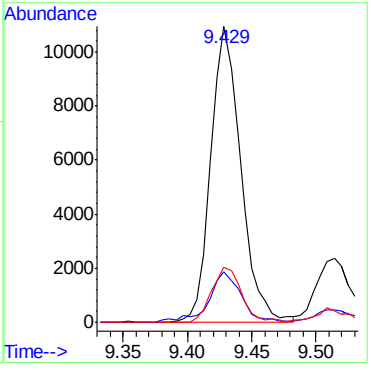


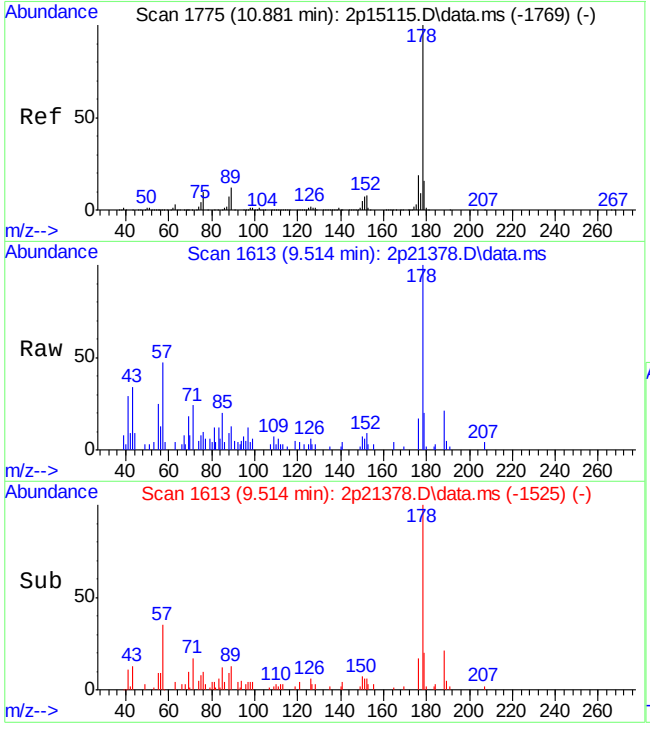


#77
Phenanthrene
Concen: 2.38 ppb
RT: 9.429 min Scan# 1597
Delta R.T. -0.038 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

Tgt Ion:178 Resp: 17655

Ion	Ratio	Lower	Upper
178	100		
179	16.6	0.0	44.4
176	18.6	0.0	48.6

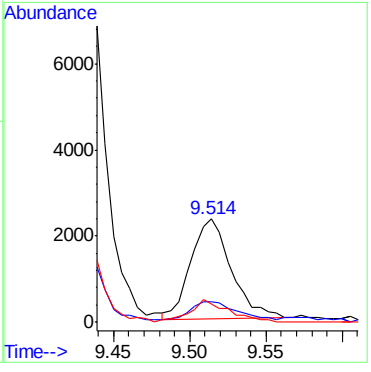


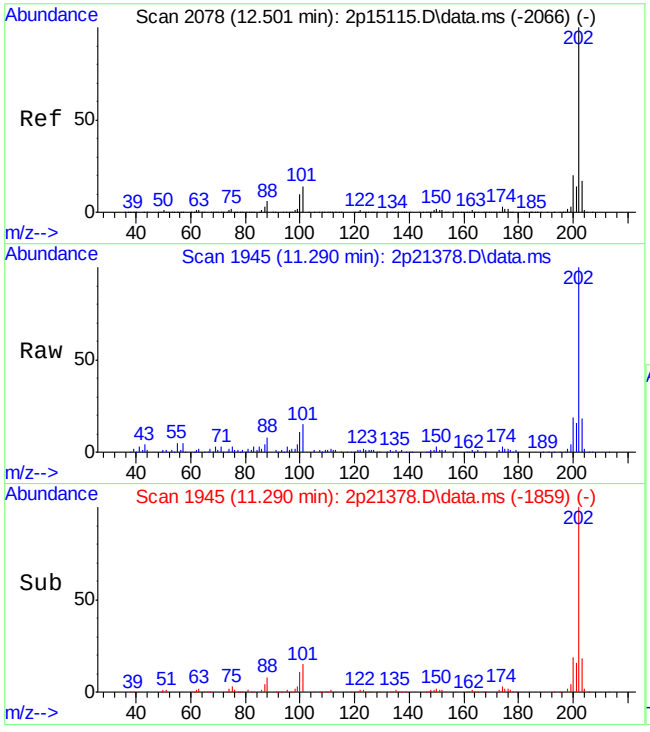


#78
Anthracene
Concen: 0.59 ppb
RT: 9.514 min Scan# 1613
Delta R.T. -0.027 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

Tgt Ion:178 Resp: 4300

Ion	Ratio	Lower	Upper
178	100		
179	17.6	0.0	44.5
176	16.8	0.0	46.5

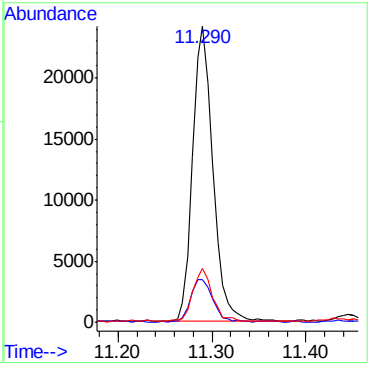


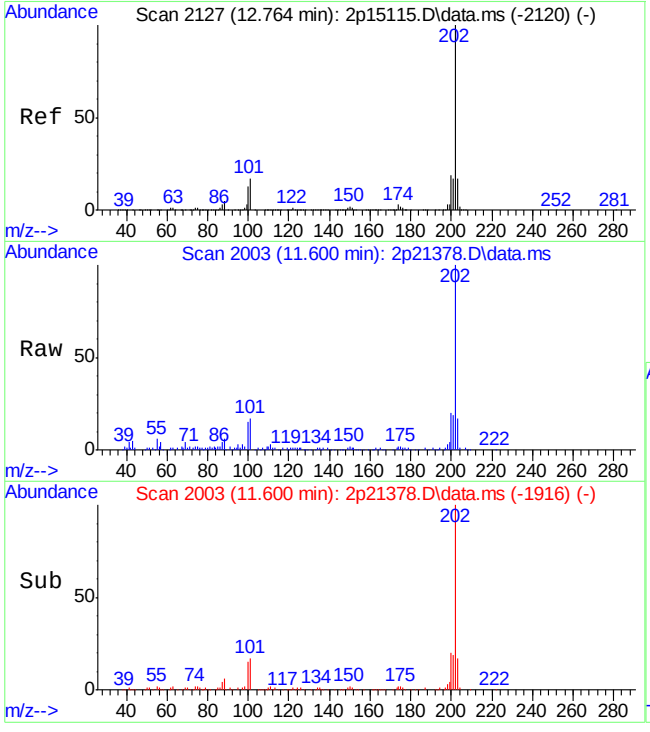


#81
Fluoranthene
Concen: 4.74 ppb
RT: 11.290 min Scan# 1945
Delta R.T. -0.038 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

Tgt Ion:202 Resp: 36096

Ion	Ratio	Lower	Upper
202	100		
101	14.6	0.0	41.3
203	18.3	0.0	49.1

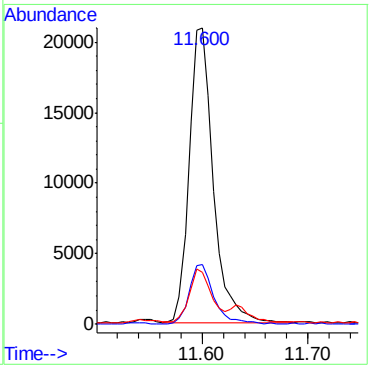




#84
Pyrene
Concen: 4.05 ppb
RT: 11.600 min Scan# 2003
Delta R.T. -0.032 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

Tgt Ion:202 Resp: 32943

Ion	Ratio	Lower	Upper
202	100		
200	20.1	0.0	49.6
203	16.8	0.0	46.9



9.1.10

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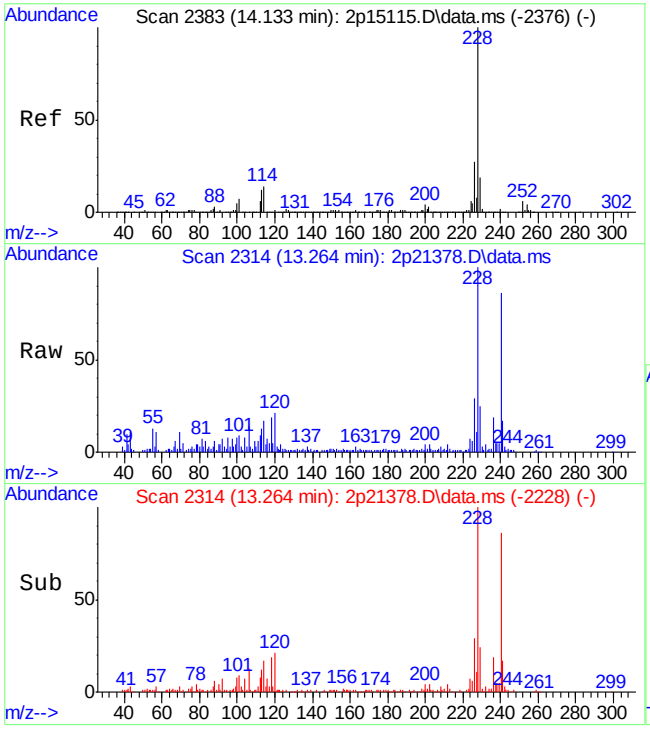
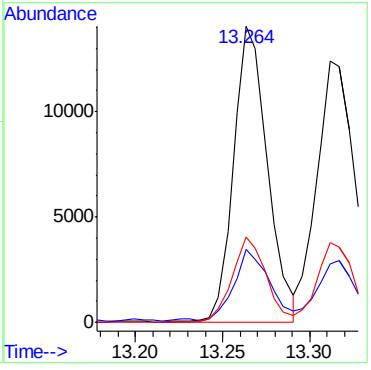
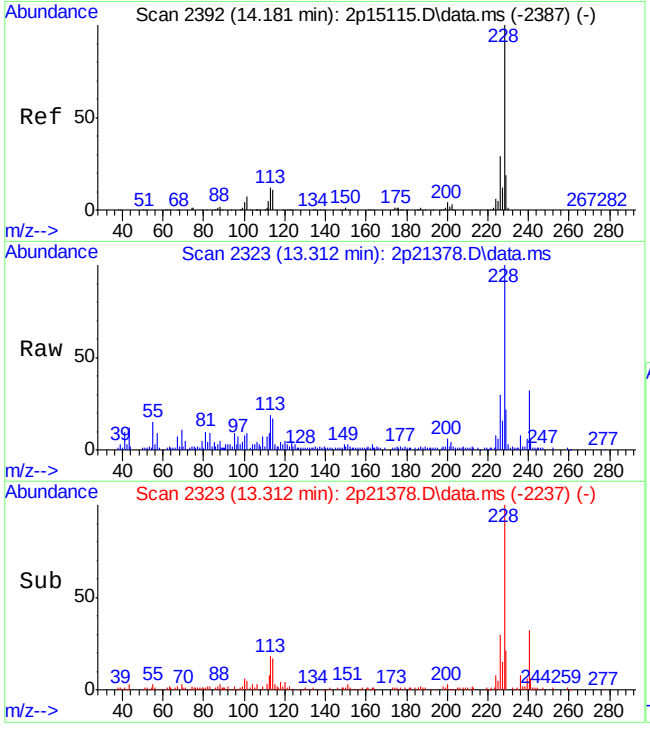


#88
Benzo[a]anthracene
Concen: 2.69 ppb
RT: 13.264 min Scan# 2314
Delta R.T. -0.038 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

Tgt Ion:228 Resp: 19160

Ion	Ratio	Lower	Upper
228	100		
229	23.4	0.0	50.7
226	28.9	0.0	56.7

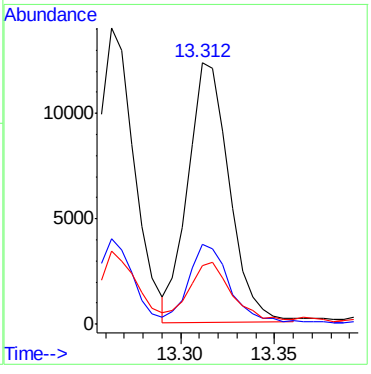




#90
Chrysene
Concen: 2.78 ppb
RT: 13.312 min Scan# 2323
Delta R.T. -0.038 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

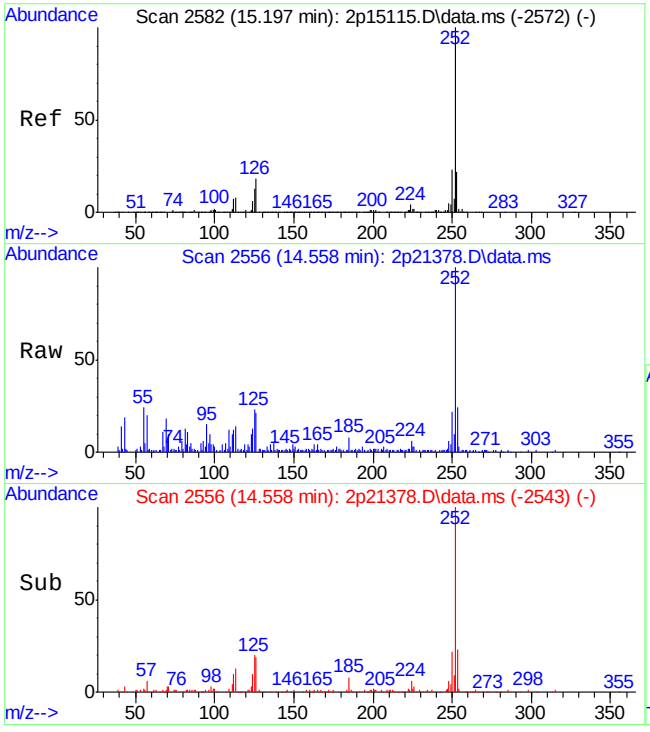
Tgt Ion:228 Resp: 18840

Ion	Ratio	Lower	Upper
228	100		
226	30.4	0.0	58.4
229	20.3	0.0	50.1



9.1.10

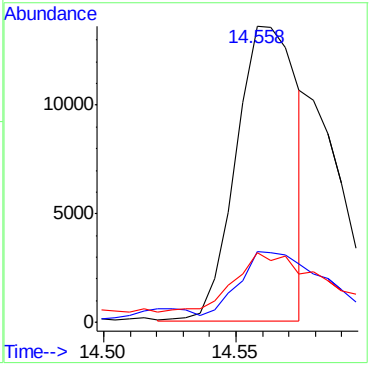
9

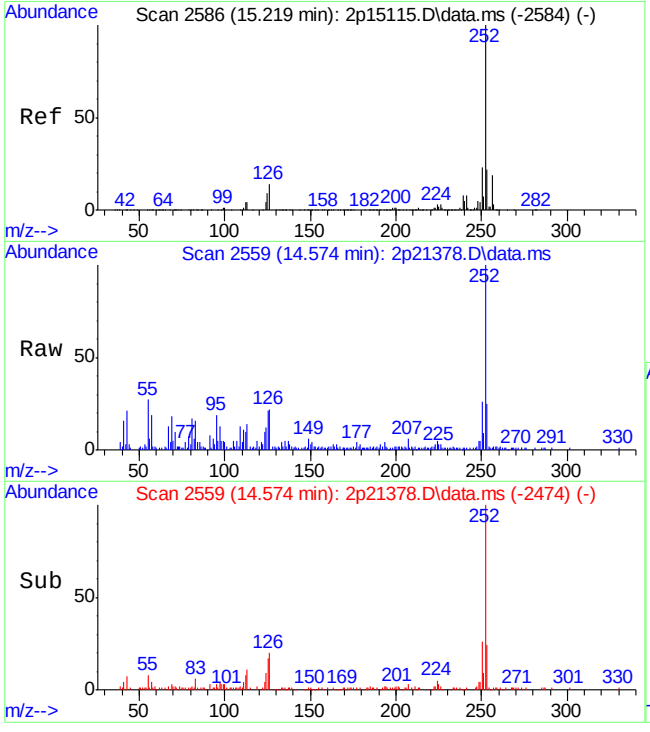


#94
Benzo[b]fluoranthene
Concen: 3.06 ppb m
RT: 14.558 min Scan# 2556
Delta R.T. -0.032 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

Tgt Ion:252 Resp: 21752

Ion	Ratio	Lower	Upper
252	100		
253	23.8	0.0	51.1
125	23.5	0.0	40.8

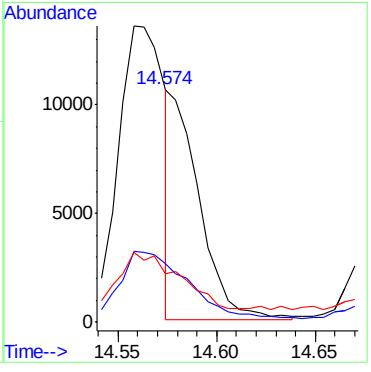


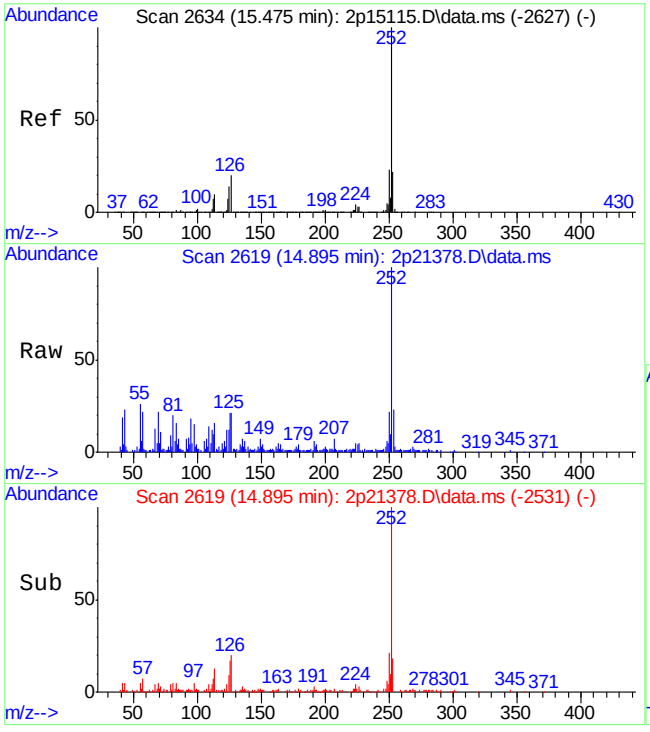


#95
Benzo[k]fluoranthene
Concen: 1.70 ppb m
RT: 14.574 min Scan# 2559
Delta R.T. -0.043 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

Tgt Ion:252 Resp: 10532

Ion	Ratio	Lower	Upper
252	100		
253	25.0	0.0	56.1
125	21.0	0.0	45.7

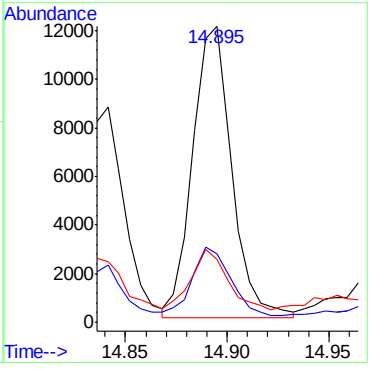


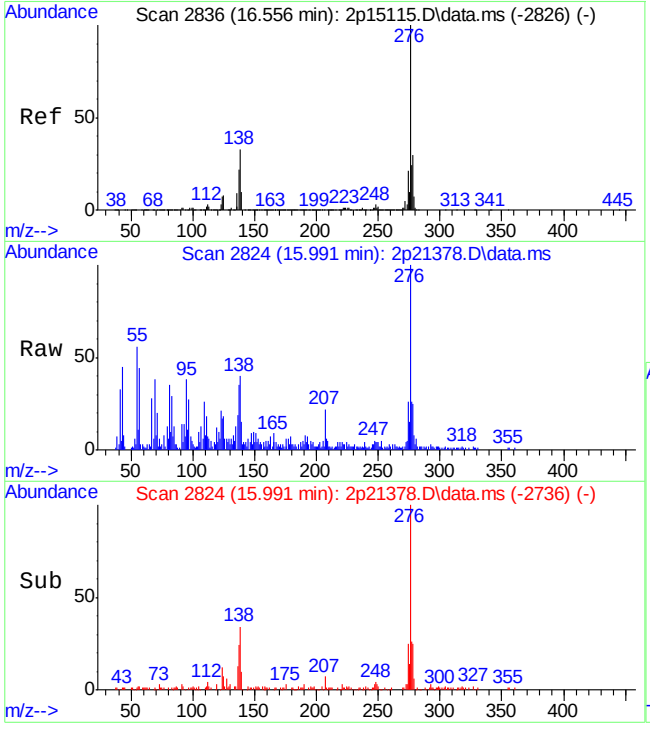


#96
Benzo[a]pyrene
Concen: 2.57 ppb
RT: 14.895 min Scan# 2619
Delta R.T. -0.027 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

Tgt Ion:252 Resp: 15876

Ion	Ratio	Lower	Upper
252	100		
253	21.0	0.0	51.5
125	16.7	0.0	41.1

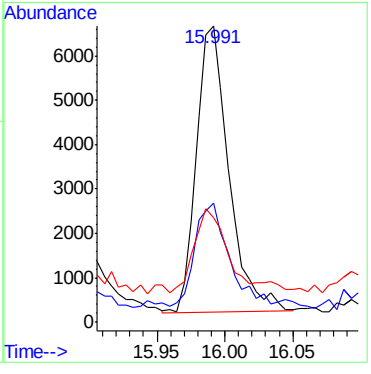




#97
Indeno[1,2,3-cd]pyrene
Concen: 1.49 ppb
RT: 15.991 min Scan# 2824
Delta R.T. -0.027 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

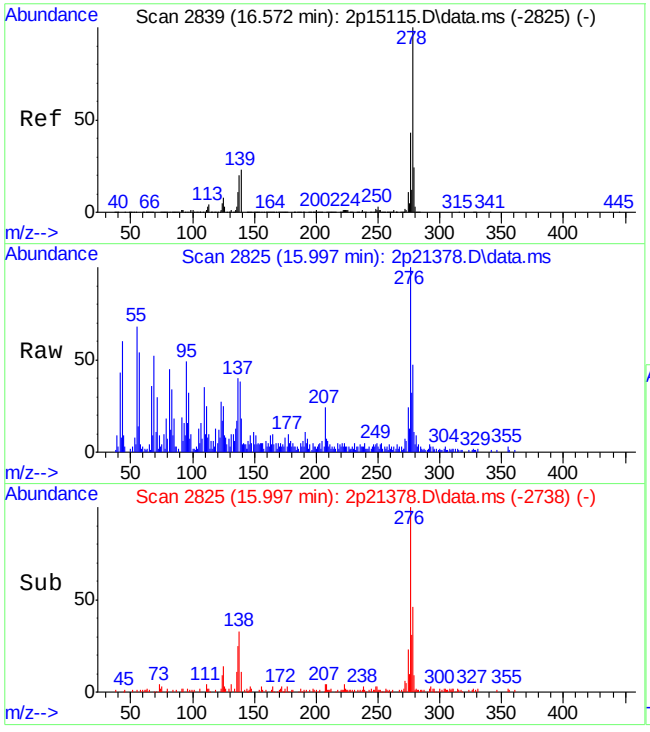
Tgt Ion:276 Resp: 10701

Ion	Ratio	Lower	Upper
276	100		
138	35.2	0.0	54.7
137	24.6	0.0	49.5



9.1.10

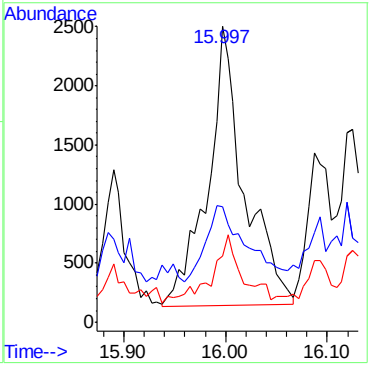
9

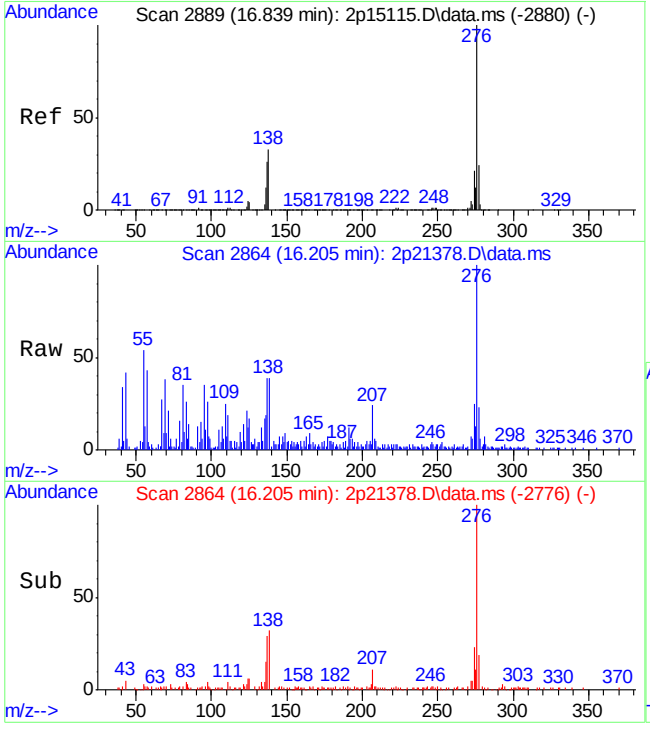


#99
Dibenz[a,h]anthracene
Concen: 0.99 ppb
RT: 15.997 min Scan# 2825
Delta R.T. -0.032 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

Tgt Ion:278 Resp: 5896

Ion	Ratio	Lower	Upper
278	100		
139	21.0	0.0	49.9
279	15.5	0.0	56.4

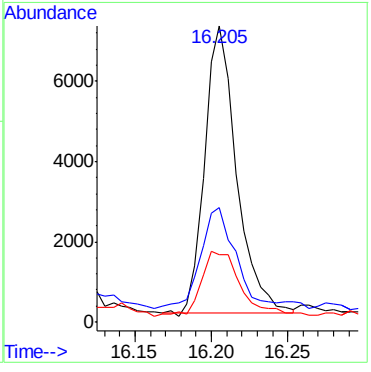




#101
Benzo[g,h,i]perylene
Concen: 1.69 ppb
RT: 16.205 min Scan# 2864
Delta R.T. -0.027 min
Lab File: 2p21378.D
Acq: 22 Mar 2013 10:39 am

Tgt Ion:276 Resp: 10297

Ion	Ratio	Lower	Upper
276	100		
138	33.6	0.0	55.6
277	20.6	0.0	53.3



9.1.10

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p940\
Data File : 2p21371.D
Acq On : 22 Mar 2013 12:43 am
Operator : ashleyd
Sample : jb30425-7
Misc : op64440,e2p940,33.4,,,1,2
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Mar 23 11:29:04 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.909	152	61993	40.00	ppb	-0.12
24) Naphthalene-d8	4.519	136	246304	40.00	ppb	-0.13
47) Acenaphthene-d10	7.140	164	134937	40.00	ppb	-0.15
69) Phenanthrene-d10	9.407	188	220135	40.00	ppb	-0.14
83) Chrysene-d12	13.296	240	217409	40.00	ppb	-0.12
92) Perylene-d12	14.959	264	190184	40.00	ppb	-0.10
102) 1,4-Dichlorobenzene-d4a	2.909	152	61993	40.00	ppb	-0.12
104) Acenaphthene-d10a	7.140	164	134937	40.00	ppb	-0.15
107) Chrysene-d12a	13.296	240	217409	40.00	ppb	-0.12
109) Naphthalene-d8a	4.519	136	246304	40.00	ppb	-0.13
System Monitoring Compounds						
5) 2-Fluorophenol	1.828	112	33095	14.91	ppb	-0.07
Spiked Amount 50.000	Range 11 - 58		Recovery = 29.82%			
8) Phenol-d5	2.700	99	54779	19.90	ppb	-0.07
Spiked Amount 50.000	Range 10 - 59		Recovery = 39.80%			
25) Nitrobenzene-d5	3.631	82	19803	8.74	ppb	-0.11
Spiked Amount 50.000	Range 19 - 61		Recovery = 17.48%#			
51) 2-Fluorobiphenyl	6.187	172	20143	4.67	ppb	-0.14
Spiked Amount 50.000	Range 21 - 58		Recovery = 9.34%#			
73) 2,4,6-Tribromophenol	8.423	330	5075	10.32	ppb	-0.12
Spiked Amount 50.000	Range 12 - 68		Recovery = 20.64%			
85) Terphenyl-d14	11.959	244	28499	6.22	ppb	-0.13
Spiked Amount 50.000	Range 16 - 65		Recovery = 12.44%#			

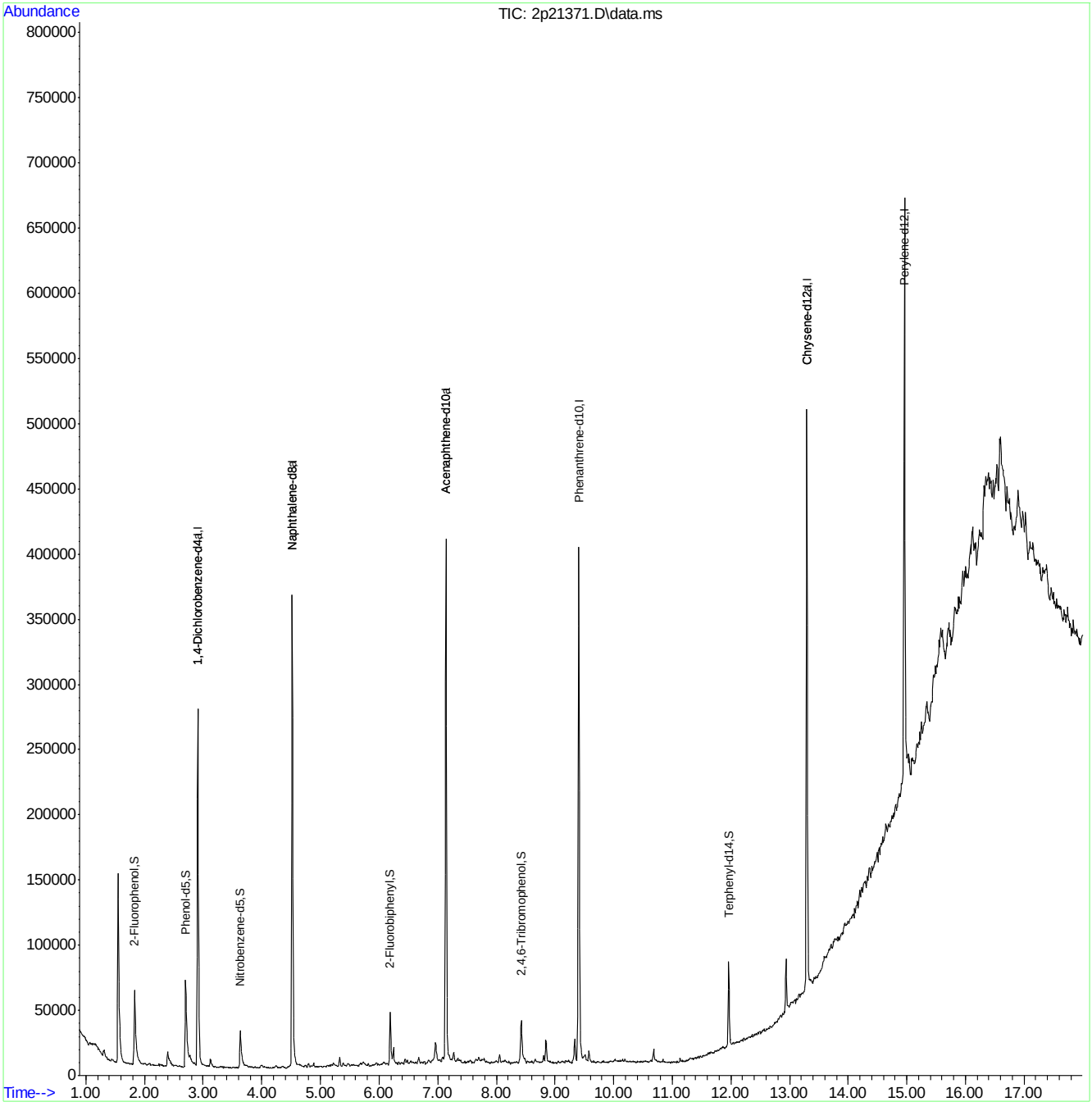
Target Compounds Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p940\
Data File : 2p21371.D
Acq On : 22 Mar 2013 12:43 am
Operator : ashleyd
Sample : jb30425-7
Misc : op64440,e2p940,33.4,,,1,2
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Mar 23 11:29:04 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21379.D
Acq On : 22 Mar 2013 11:02 am
Operator : andrews1
Sample : jb30425-7cf
Misc : op64440,e2p941,30.8
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 23 13:20:28 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	2.898	152	67626	40.00 ppb	-0.03
24) Naphthalene-d8	4.508	136	263288	40.00 ppb	-0.03
47) Acenaphthene-d10	7.134	164	148332	40.00 ppb	-0.03
69) Phenanthrene-d10	9.396	188	241826	40.00 ppb	-0.04
83) Chrysene-d12	13.285	240	240871	40.00 ppb	-0.03
92) Perylene-d12	14.948	264	203122	40.00 ppb	-0.04
102) 1,4-Dichlorobenzene-d4a	2.898	152	67626	40.00 ppb	-0.03
104) Acenaphthene-d10a	7.134	164	148332	40.00 ppb	-0.03
107) Chrysene-d12a	13.285	240	240871	40.00 ppb	-0.03
109) Naphthalene-d8a	4.508	136	263288	40.00 ppb	#-0.03
System Monitoring Compounds					
5) 2-Fluorophenol	1.812	112	72234	29.84 ppb	-0.02
Spiked Amount 50.000	Range 11 - 58		Recovery = 59.68%#		
8) Phenol-d5	2.684	99	94984	31.63 ppb	-0.02
Spiked Amount 50.000	Range 10 - 59		Recovery = 63.26%#		
25) Nitrobenzene-d5	3.609	82	76229	31.47 ppb	-0.02
Spiked Amount 50.000	Range 19 - 61		Recovery = 62.94%#		
51) 2-Fluorobiphenyl	6.177	172	171116	36.07 ppb	-0.03
Spiked Amount 50.000	Range 21 - 58		Recovery = 72.14%#		
73) 2,4,6-Tribromophenol	8.407	330	21370	39.54 ppb	-0.03
Spiked Amount 50.000	Range 12 - 68		Recovery = 79.08%#		
85) Terphenyl-d14	11.953	244	202947	40.00 ppb	-0.03
Spiked Amount 50.000	Range 16 - 65		Recovery = 80.00%#		
Target Compounds					Qvalue

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

9.1.12

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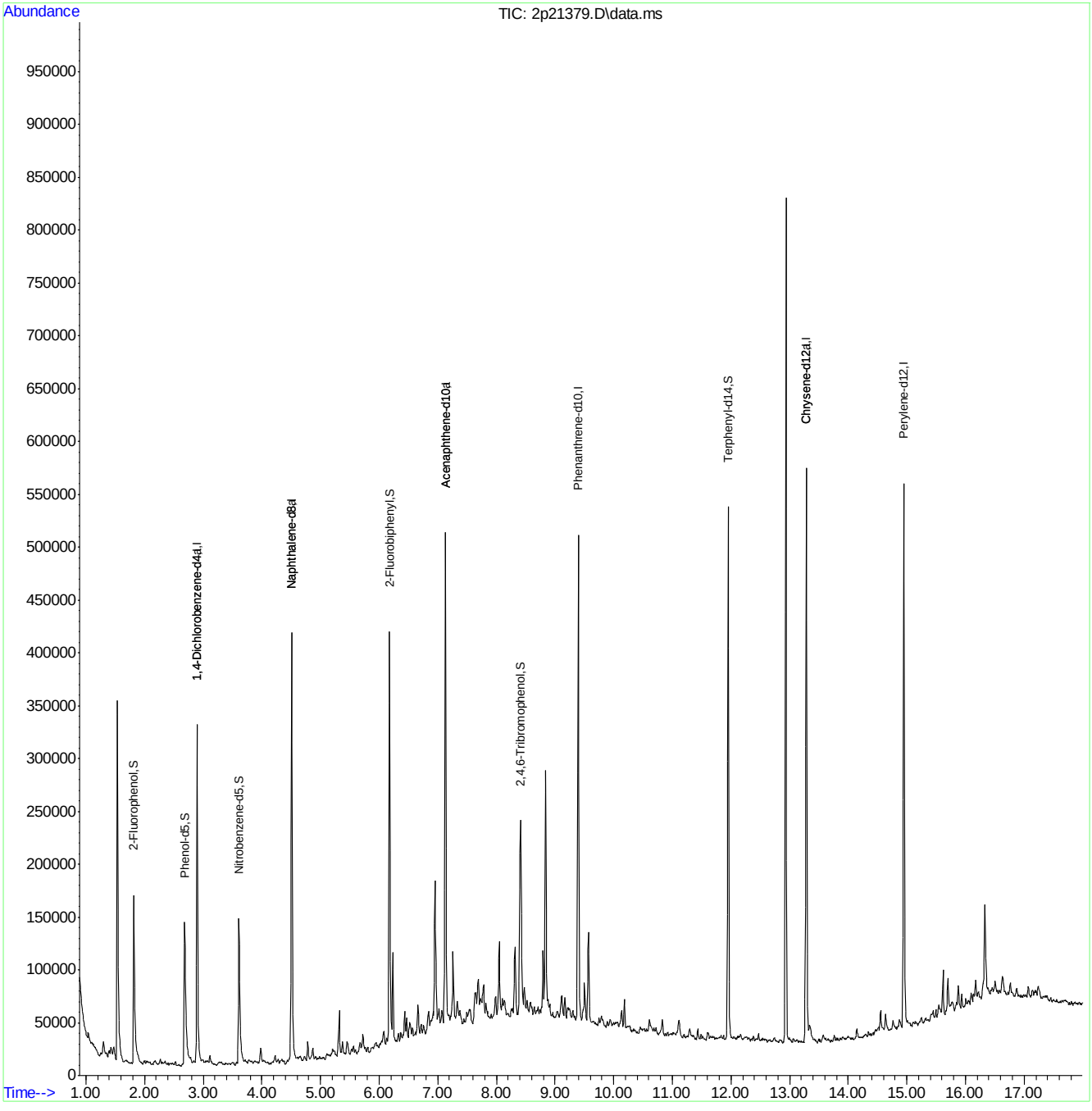
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21379.D
Acq On : 22 Mar 2013 11:02 am
Operator : andrews1
Sample : jb30425-7cf
Misc : op64440,e2p941,30.8
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 23 13:20:28 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21242.D
Acq On : 19 Mar 2013 8:43 pm
Operator : andrews1
Sample : jb30425-8
Misc : op64440,e2p936,30.8
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 20 14:52:00 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.946	152	75883	40.00	ppb	-0.08
24) Naphthalene-d8	4.561	136	293531	40.00	ppb	-0.09
47) Acenaphthene-d10	7.198	164	164051	40.00	ppb	-0.09
69) Phenanthrene-d10	9.471	188	273874	40.00	ppb	-0.08
83) Chrysene-d12	13.365	240	294896	40.00	ppb	-0.05
92) Perylene-d12	15.045	264	287358	40.00	ppb	-0.02
102) 1,4-Dichlorobenzene-d4a	2.946	152	75883	40.00	ppb	-0.08
104) Acenaphthene-d10a	7.198	164	164051	40.00	ppb	-0.09
107) Chrysene-d12a	13.365	240	294896	40.00	ppb	-0.05
109) Naphthalene-d8a	4.561	136	293531	40.00	ppb	#-0.09
System Monitoring Compounds						
5) 2-Fluorophenol	1.849	112	81689	30.07	ppb	-0.05
Spiked Amount 50.000	Range 11 - 58		Recovery = 60.14%#			
8) Phenol-d5	2.732	99	106920	31.73	ppb	-0.04
Spiked Amount 50.000	Range 10 - 59		Recovery = 63.46%#			
25) Nitrobenzene-d5	3.657	82	79923	29.60	ppb	-0.08
Spiked Amount 50.000	Range 19 - 61		Recovery = 59.20%			
51) 2-Fluorobiphenyl	6.235	172	178142	33.96	ppb	-0.10
Spiked Amount 50.000	Range 21 - 58		Recovery = 67.92%#			
73) 2,4,6-Tribromophenol	8.471	330	20602	33.66	ppb	-0.08
Spiked Amount 50.000	Range 12 - 68		Recovery = 67.32%			
85) Terphenyl-d14	12.028	244	208722	33.60	ppb	-0.06
Spiked Amount 50.000	Range 16 - 65		Recovery = 67.20%#			
Target Compounds						Qvalue
38) Naphthalene	4.588	128	20439	2.60	ppb	98
56) Acenaphthylene	6.957	152	20502	2.70	ppb	95
59) Acenaphthene	7.246	153	5094	1.09	ppb	90
66) Fluorene	8.032	166	6629	1.23	ppb	99
77) Phenanthrene	9.509	178	69845	8.47	ppb	99
78) Anthracene	9.578	178	26515	3.25	ppb	98
81) Fluoranthene	11.370	202	164456	19.42	ppb	95
84) Pyrene	11.675	202	166734	16.59	ppb	99
88) Benzo[a]anthracene	13.344	228	128949	14.67	ppb	98
90) Chrysene	13.392	228	138261	16.52	ppb	99
94) Benzo[b]fluoranthene	14.643	252	212108m	21.65	ppb	
95) Benzo[k]fluoranthene	14.659	252	74973m	8.76	ppb	
96) Benzo[a]pyrene	14.980	252	161730	19.00	ppb	94
97) Indeno[1,2,3-cd]pyrene	16.077	276	132953	13.47	ppb	83
99) Dibenz[a,h]anthracene	16.088	278	53907	6.55	ppb	96
101) Benzo[g,h,i]perylene	16.296	276	143344	17.10	ppb	90

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

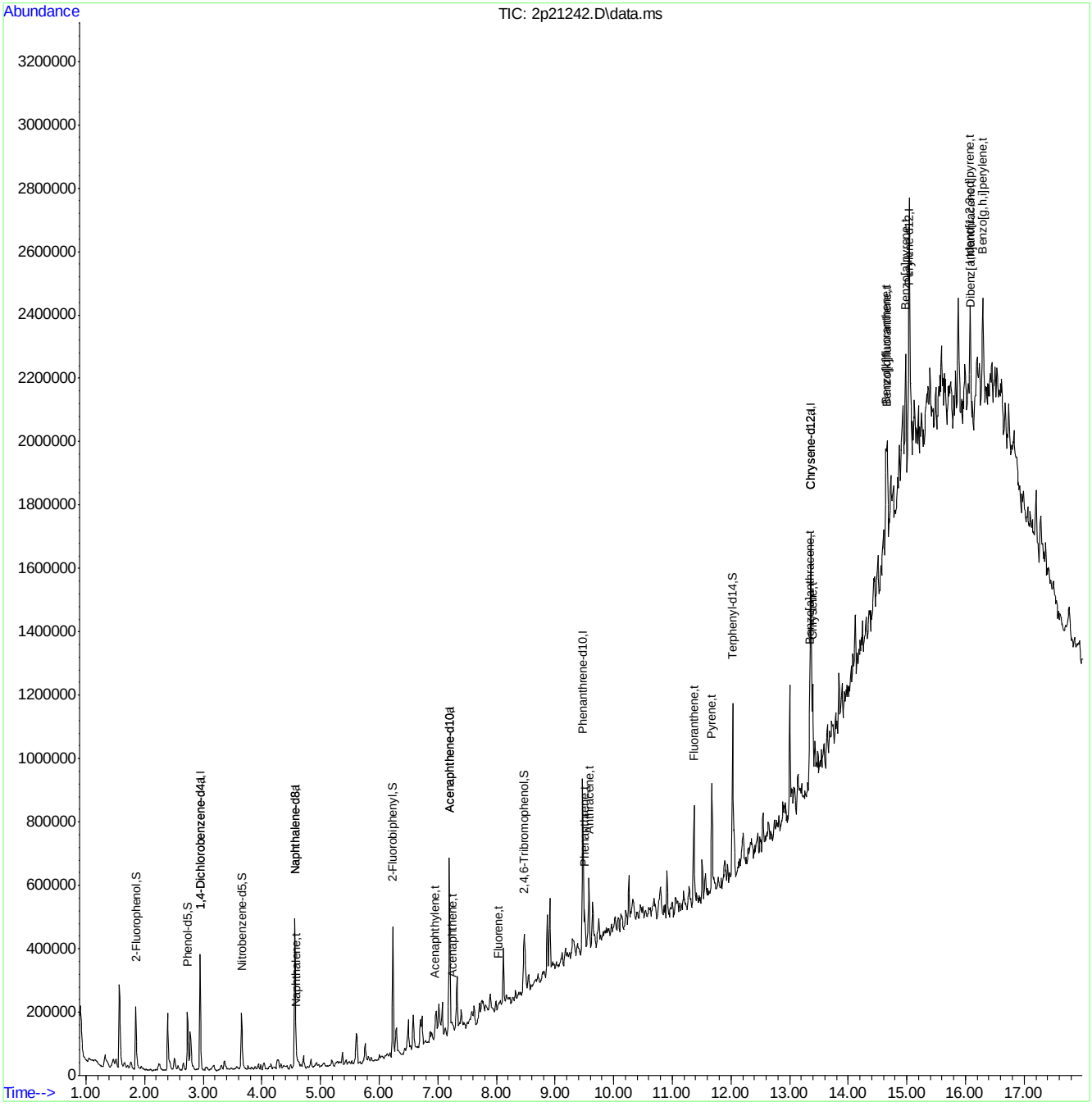
9.1.13

9

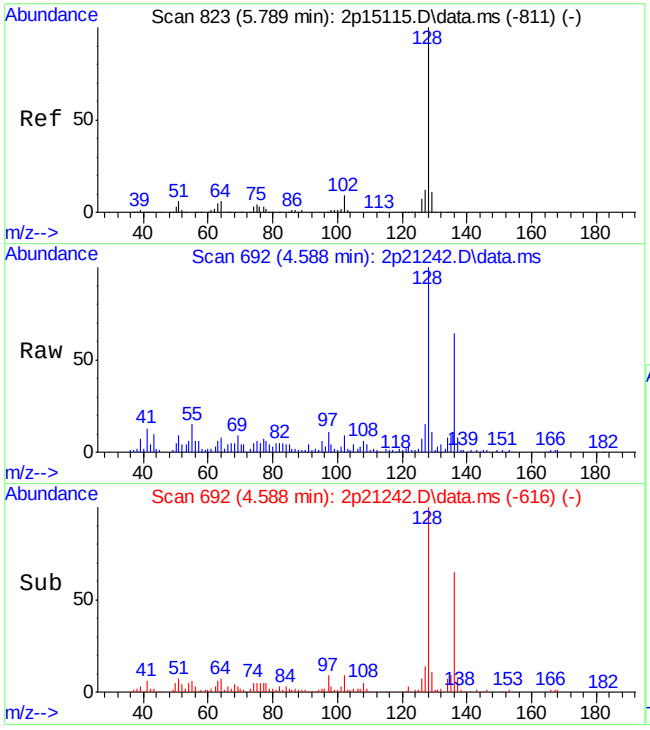
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21242.D
Acq On : 19 Mar 2013 8:43 pm
Operator : andrews1
Sample : jb30425-8
Misc : op64440,e2p936,30.8
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 20 14:52:00 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration



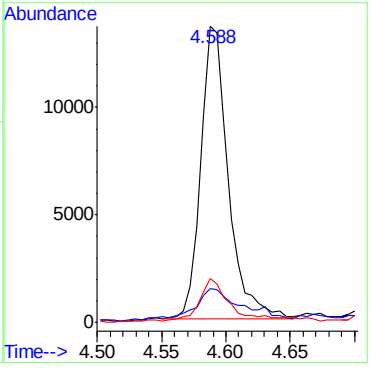
M2P896.M Wed Mar 20 14:52:10 2013 RPT1 Page: 2

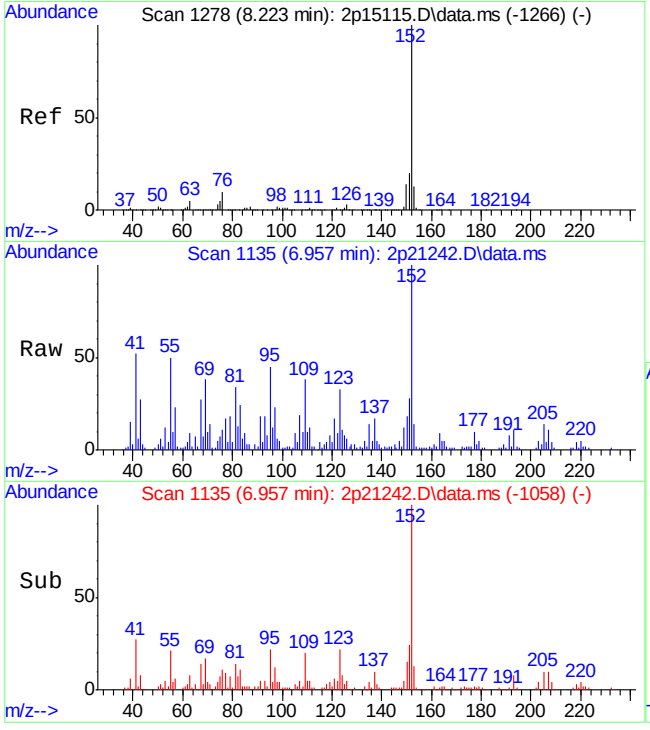


#38
Naphthalene
Concen: 2.60 ppb
RT: 4.588 min Scan# 692
Delta R.T. -0.091 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:128 Resp: 20439

Ion	Ratio	Lower	Upper
128	100		
129	10.0	0.0	41.0
127	13.9	0.0	43.0

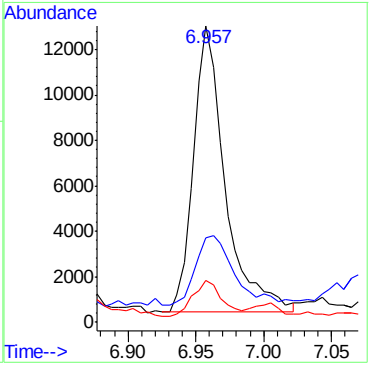




#56
Acenaphthylene
Concen: 2.70 ppb
RT: 6.957 min Scan# 1135
Delta R.T. -0.086 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:152 Resp: 20502

Ion	Ratio	Lower	Upper
152	100		
151	23.1	0.0	49.9
153	12.4	0.0	43.1



9.1.13

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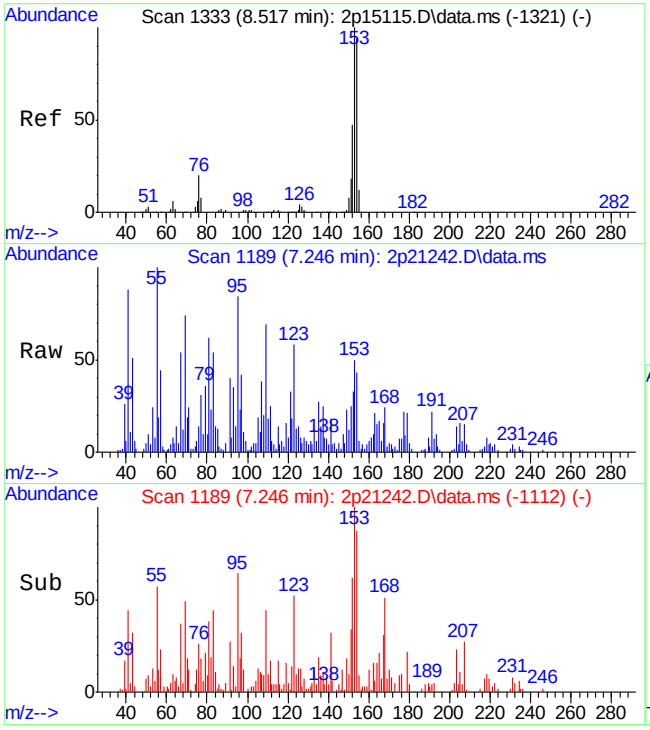
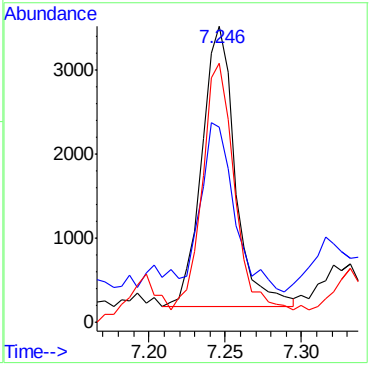
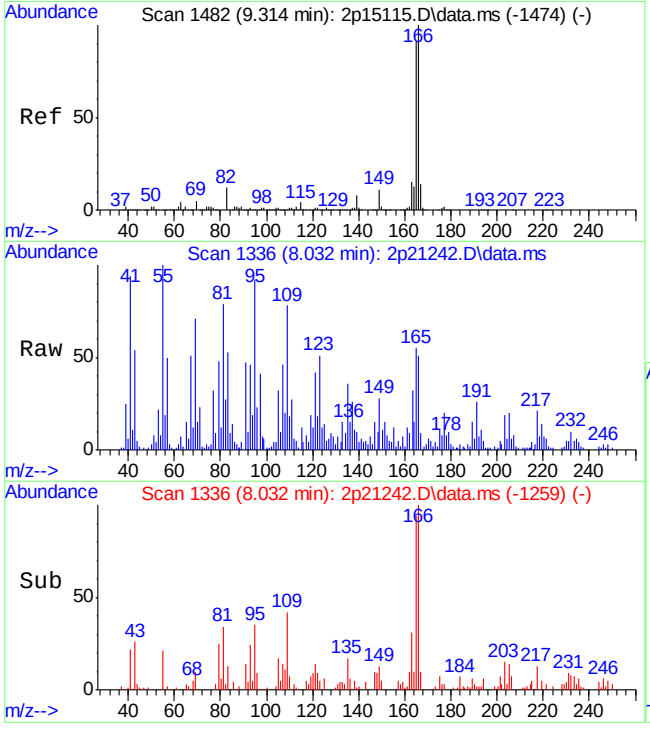


#59
Acenaphthene
Concen: 1.09 ppb
RT: 7.246 min Scan# 1189
Delta R.T. -0.086 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:153 Resp: 5094

Ion	Ratio	Lower	Upper
153	100		
152	55.6	17.8	77.8
154	86.4	65.2	125.2

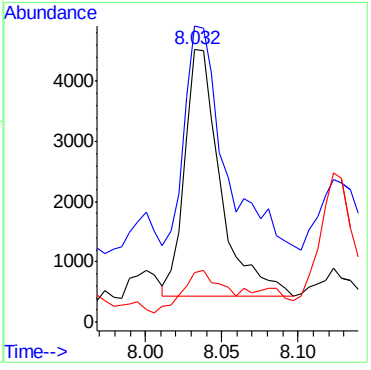


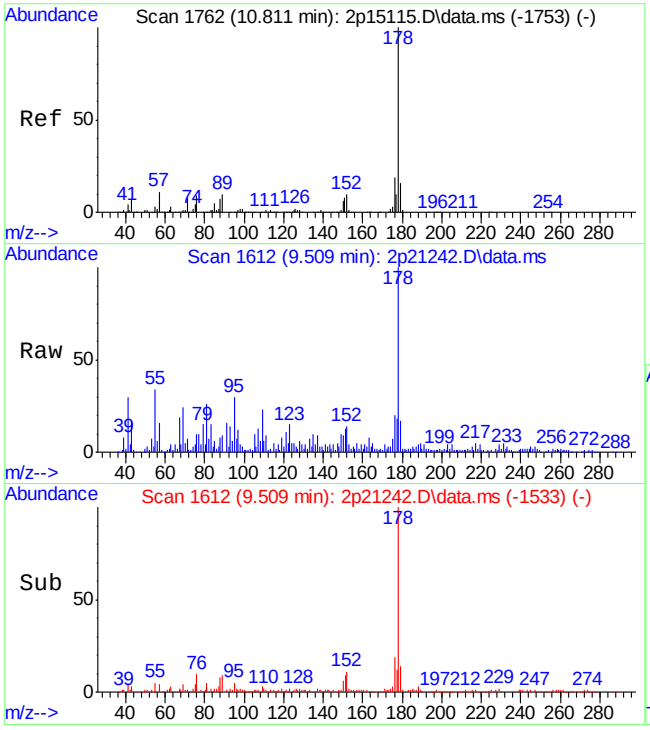


#66
Fluorene
Concen: 1.23 ppb
RT: 8.032 min Scan# 1336
Delta R.T. -0.086 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:166 Resp: 6629

Ion	Ratio	Lower	Upper
166	100		
165	91.1	62.5	122.5
167	13.0	0.0	42.9

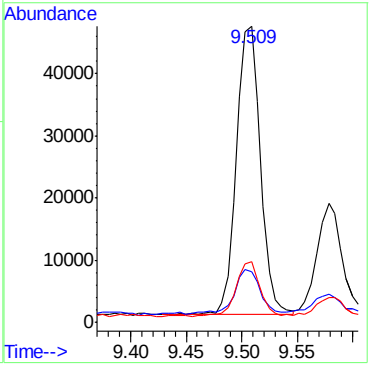


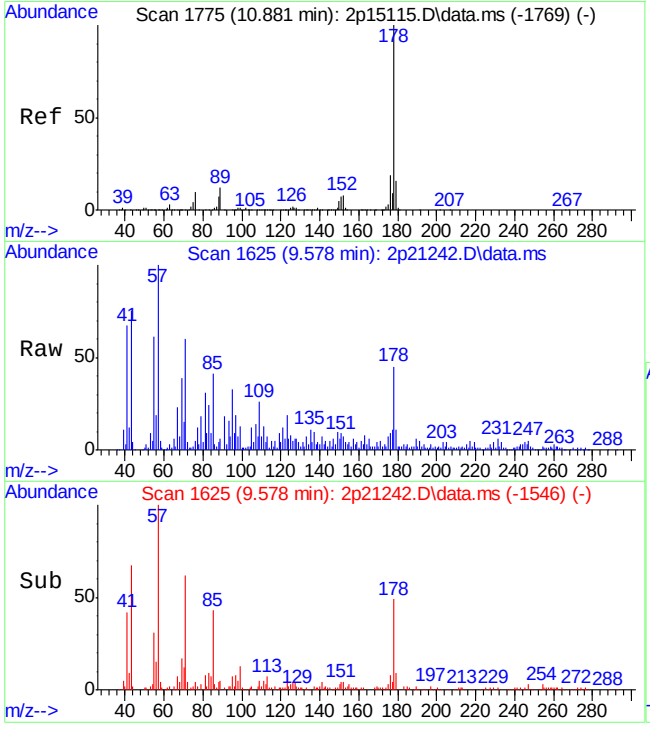


#77
Phenanthrene
Concen: 8.47 ppb
RT: 9.509 min Scan# 1612
Delta R.T. -0.075 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:178 Resp: 69845

Ion	Ratio	Lower	Upper
178	100		
179	14.2	0.0	44.4
176	18.9	0.0	48.6

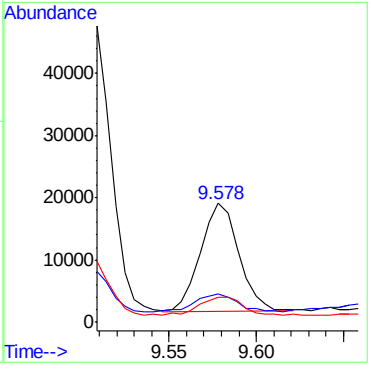




#78
Anthracene
Concen: 3.25 ppb
RT: 9.578 min Scan# 1625
Delta R.T. -0.075 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:178 Resp: 26515

Ion	Ratio	Lower	Upper
178	100		
179	15.4	0.0	44.5
176	15.8	0.0	46.5



9.1.13

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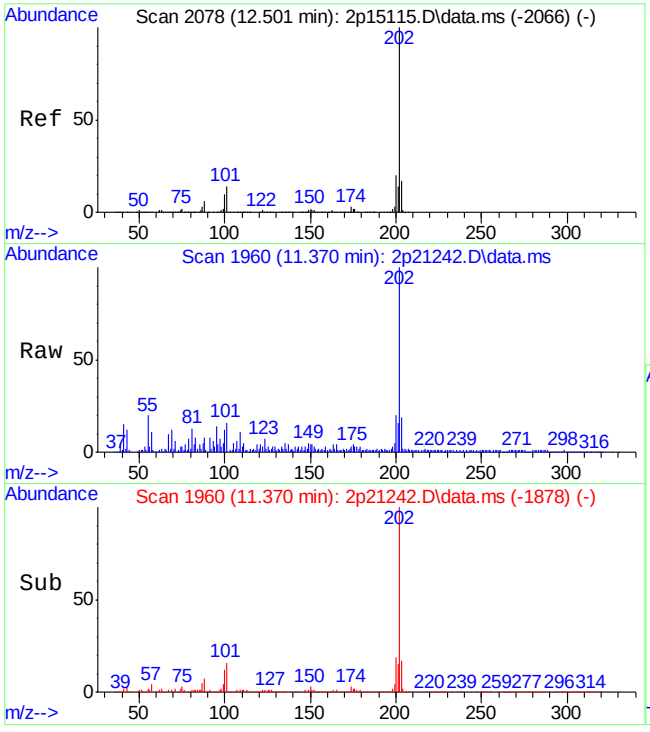
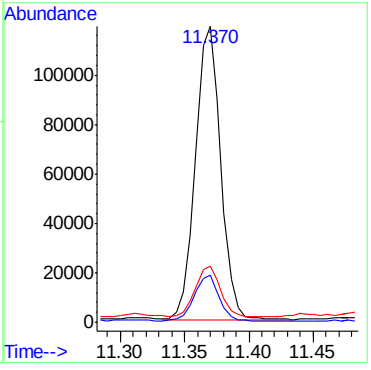
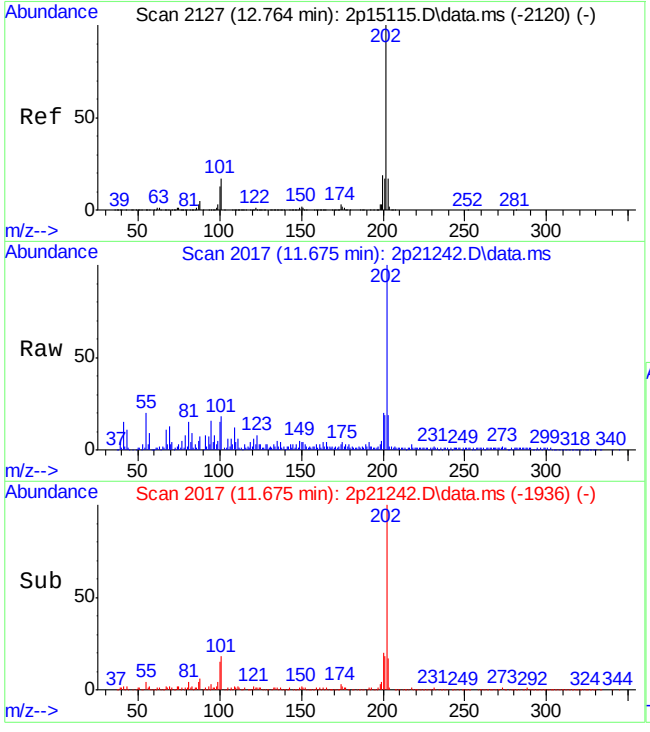


#81
Fluoranthene
Concen: 19.42 ppb
RT: 11.370 min Scan# 1960
Delta R.T. -0.059 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:202 Resp: 164456

Ion	Ratio	Lower	Upper
202	100		
101	16.0	0.0	41.3
203	19.0	0.0	49.1

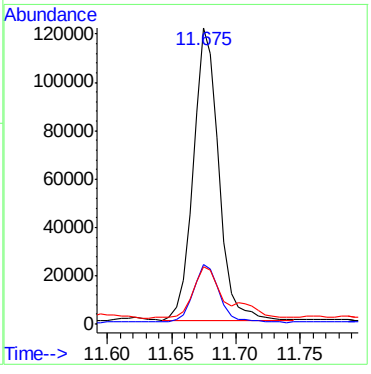


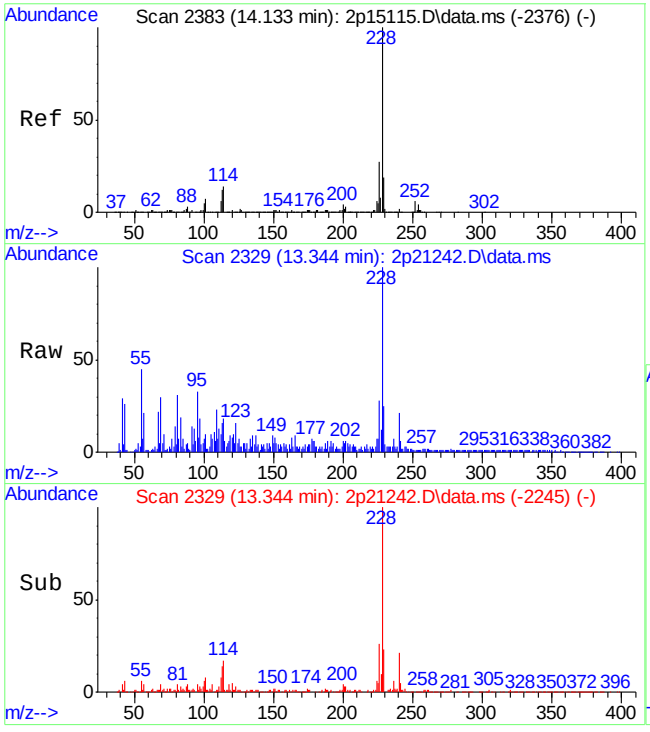


#84
Pyrene
Concen: 16.59 ppb
RT: 11.675 min Scan# 2017
Delta R.T. -0.064 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:202 Resp: 166734

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	49.6
203	17.4	0.0	46.9

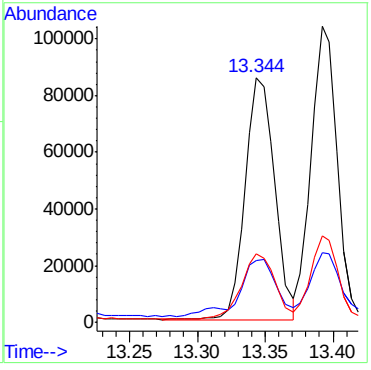


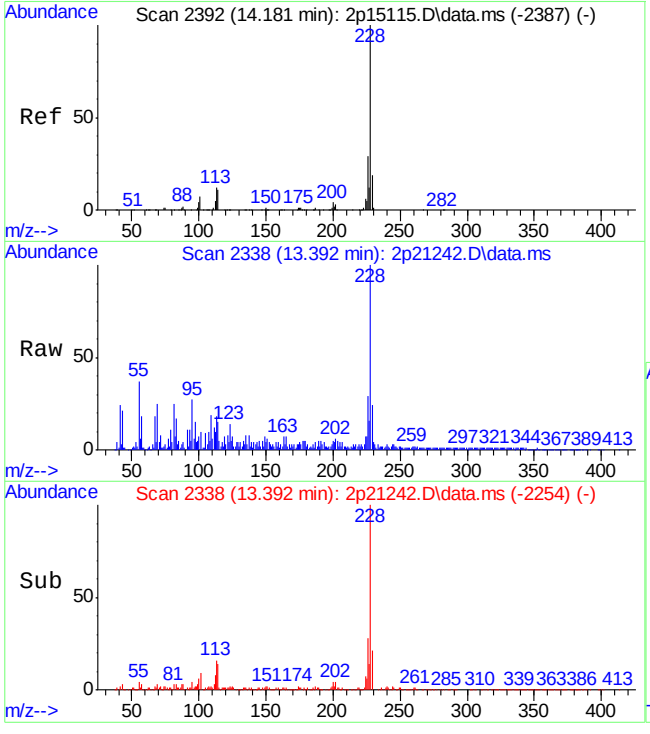


#88
Benzo[a]anthracene
Concen: 14.67 ppb
RT: 13.344 min Scan# 2329
Delta R.T. -0.048 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:228 Resp: 128949

Ion	Ratio	Lower	Upper
228	100		
229	22.4	0.0	50.7
226	26.7	0.0	56.7

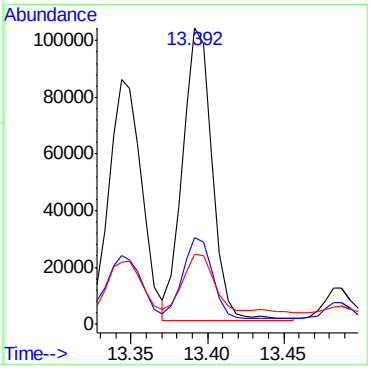




#90
Chrysene
Concen: 16.52 ppb
RT: 13.392 min Scan# 2338
Delta R.T. -0.048 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

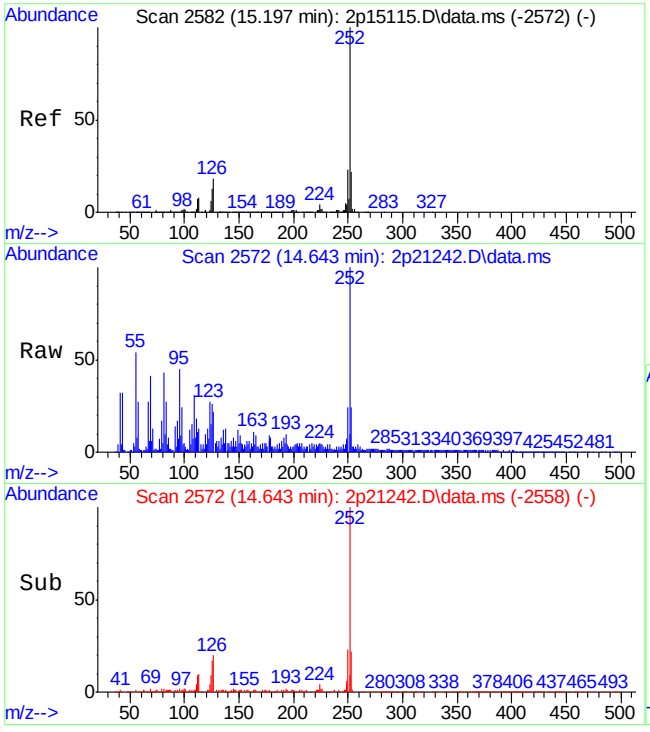
Tgt Ion:228 Resp: 138261

Ion	Ratio	Lower	Upper
228	100		
226	27.9	0.0	58.4
229	20.2	0.0	50.1



9.1.13

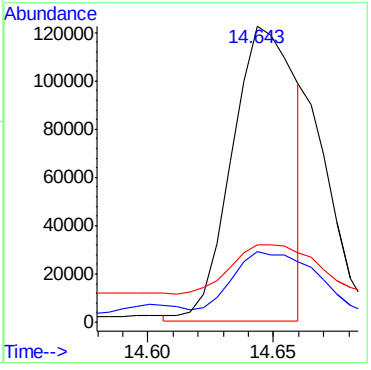
9

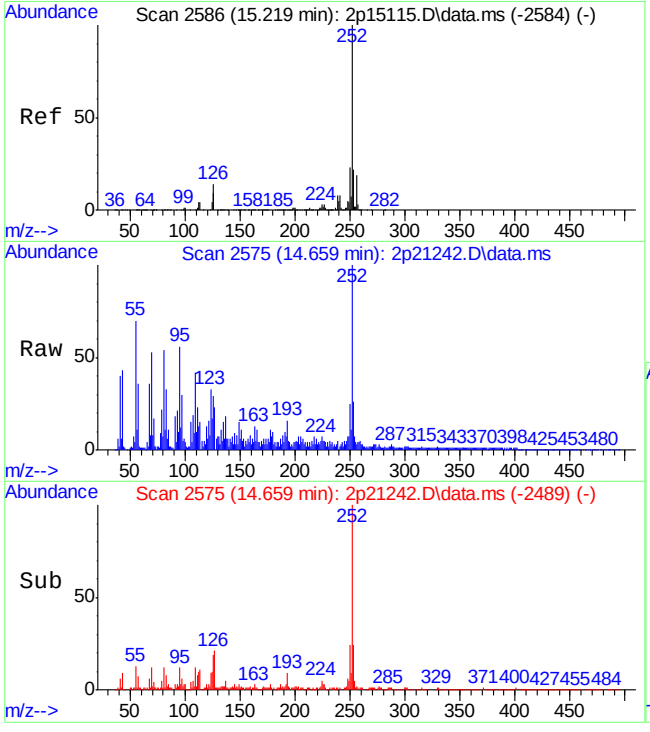


#94
Benzo[b]fluoranthene
Concen: 21.65 ppb m
RT: 14.643 min Scan# 2572
Delta R.T. -0.027 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:252 Resp: 212108

Ion	Ratio	Lower	Upper
252	100		
253	23.9	0.0	51.1
125	26.2	0.0	40.8

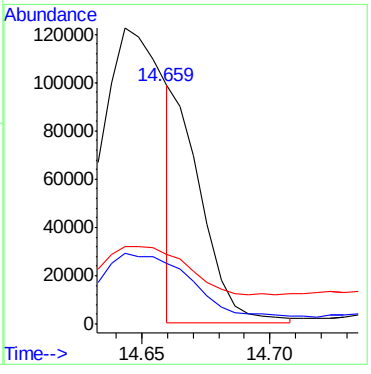


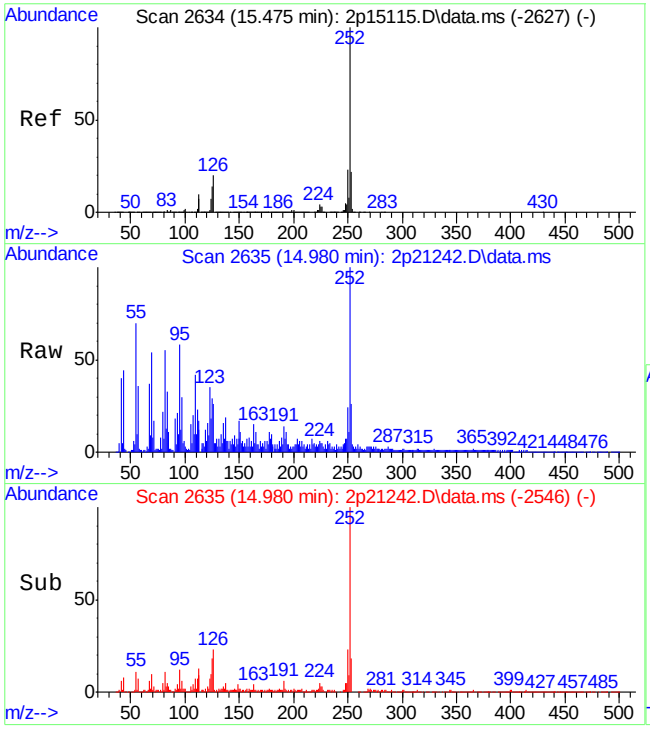


#95
Benzo[k]fluoranthene
Concen: 8.76 ppb m
RT: 14.659 min Scan# 2575
Delta R.T. -0.038 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:252 Resp: 74973

Ion	Ratio	Lower	Upper
252	100		
253	25.5	0.0	56.1
125	29.2	0.0	45.7

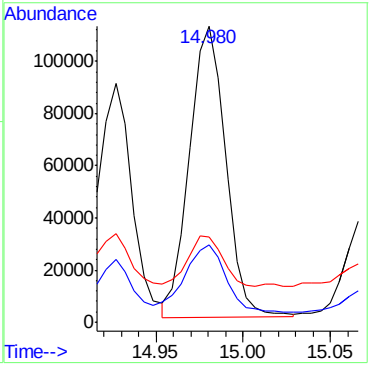


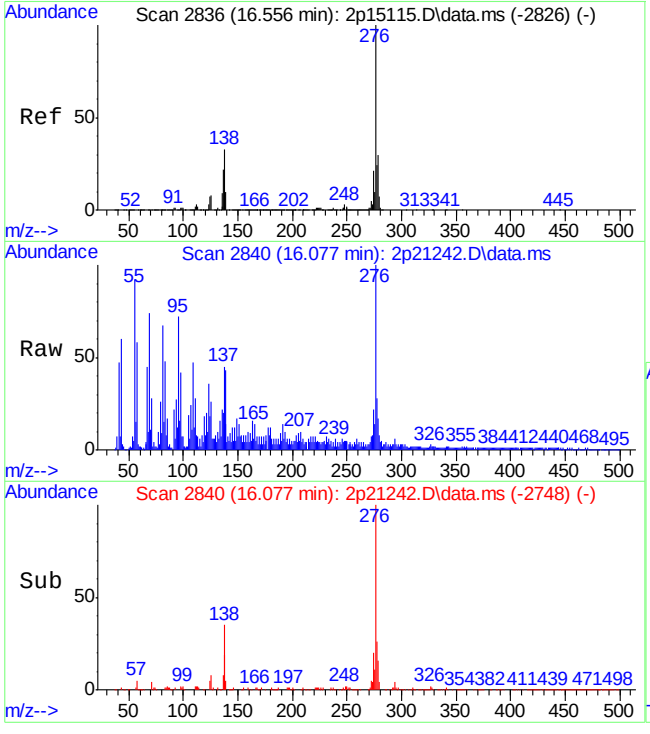


#96
Benzo[a]pyrene
Concen: 19.00 ppb
RT: 14.980 min Scan# 2635
Delta R.T. -0.022 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:252 Resp: 161730

Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	51.5
125	17.1	0.0	41.1

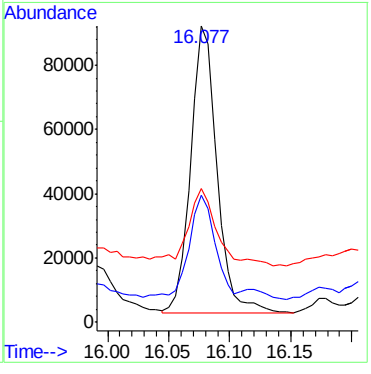




#97
Indeno[1,2,3-cd]pyrene
Concen: 13.47 ppb
RT: 16.077 min Scan# 2840
Delta R.T. -0.006 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

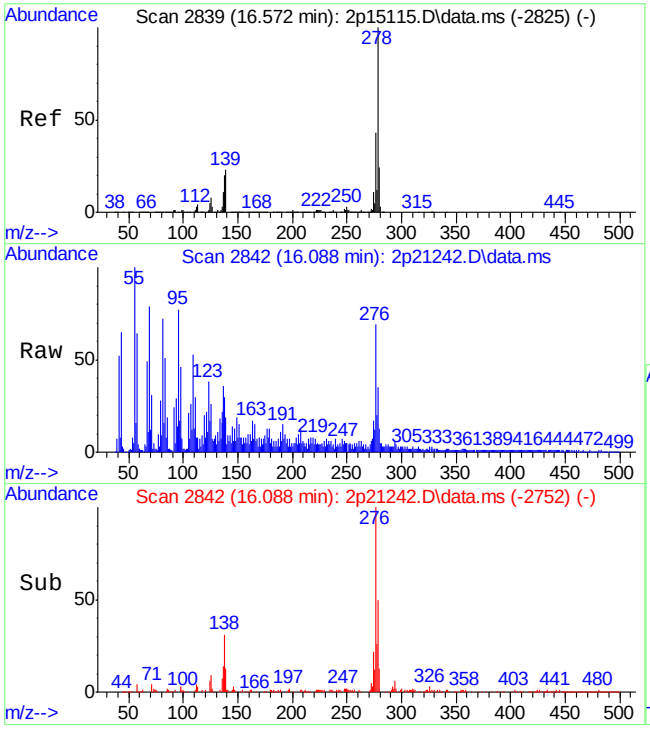
Tgt Ion:276 Resp: 132953

Ion	Ratio	Lower	Upper
276	100		
138	35.2	0.0	54.7
137	25.2	0.0	49.5



9.1.13

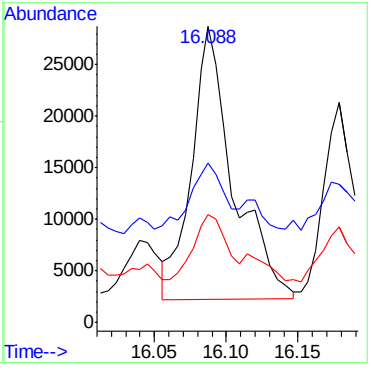
9

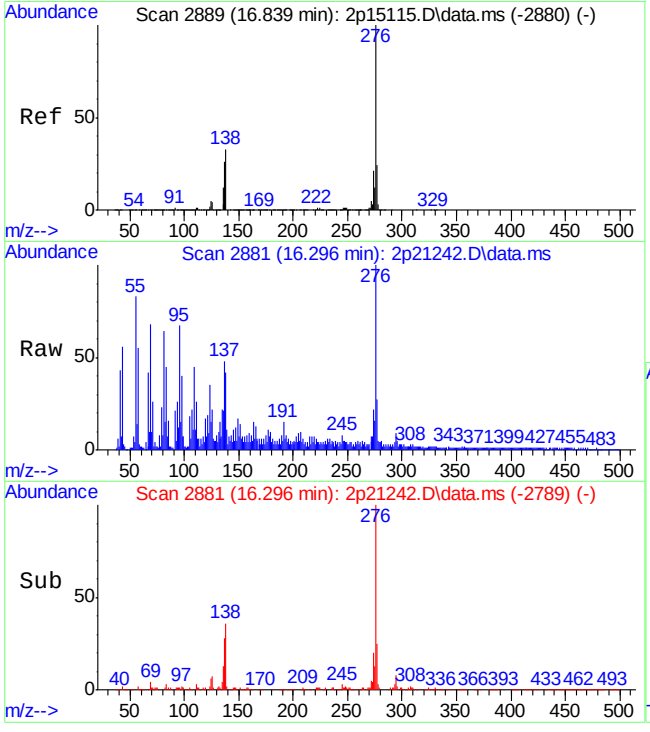


#99
Dibenz[a,h]anthracene
Concen: 6.55 ppb
RT: 16.088 min Scan# 2842
Delta R.T. -0.016 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:278 Resp: 53907

Ion	Ratio	Lower	Upper
278	100		
139	23.9	0.0	49.9
279	25.8	0.0	56.4

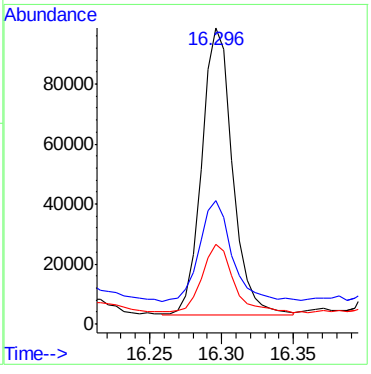




#101
Benzo[g,h,i]perylene
Concen: 17.10 ppb
RT: 16.296 min Scan# 2881
Delta R.T. -0.006 min
Lab File: 2p21242.D
Acq: 19 Mar 2013 8:43 pm

Tgt Ion:276 Resp: 143344

Ion	Ratio	Lower	Upper
276	100		
138	35.3	0.0	55.6
277	23.8	0.0	53.3



9.1.13

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21384.D
Acq On : 22 Mar 2013 12:55 pm
Operator : andrews1
Sample : jb30425-8cf
Misc : op64440,e2p941,30.5
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 23 16:14:07 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.909	152	68769	40.00	ppb	-0.02
24) Naphthalene-d8	4.519	136	270791	40.00	ppb	-0.02
47) Acenaphthene-d10	7.150	164	150796	40.00	ppb	-0.02
69) Phenanthrene-d10	9.423	188	250330	40.00	ppb	-0.01
83) Chrysene-d12	13.322	240	275248	40.00	ppb	0.00
92) Perylene-d12	15.007	264	268557	40.00	ppb	0.02
102) 1,4-Dichlorobenzene-d4a	2.909	152	68769	40.00	ppb	-0.02
104) Acenaphthene-d10a	7.150	164	150796	40.00	ppb	-0.02
107) Chrysene-d12a	13.322	240	275248	40.00	ppb	0.00
109) Naphthalene-d8a	4.519	136	270791	40.00	ppb	#-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	1.817	112	72474	29.44	ppb	-0.02
Spiked Amount 50.000	Range 11 - 58		Recovery = 58.88%#			
8) Phenol-d5	2.695	99	96145	31.49	ppb	-0.01
Spiked Amount 50.000	Range 10 - 59		Recovery = 62.98%#			
25) Nitrobenzene-d5	3.615	82	76369	30.66	ppb	-0.02
Spiked Amount 50.000	Range 19 - 61		Recovery = 61.32%#			
51) 2-Fluorobiphenyl	6.187	172	162388	33.67	ppb	-0.02
Spiked Amount 50.000	Range 21 - 58		Recovery = 67.34%#			
73) 2,4,6-Tribromophenol	8.423	330	19035	34.02	ppb	-0.02
Spiked Amount 50.000	Range 12 - 68		Recovery = 68.04%#			
85) Terphenyl-d14	11.980	244	194173	33.49	ppb	0.00
Spiked Amount 50.000	Range 16 - 65		Recovery = 66.98%#			
Target Compounds						Qvalue
38) Naphthalene	4.545	128	21007	2.90	ppb	98
56) Acenaphthylene	6.909	152	18788	2.69	ppb	89
59) Acenaphthene	7.193	153	6499	1.52	ppb	94
66) Fluorene	7.984	166	8597	1.74	ppb	95
77) Phenanthrene	9.455	178	92320	12.24	ppb	99
78) Anthracene	9.530	178	31493	4.22	ppb	96
81) Fluoranthene	11.322	202	202025	26.10	ppb	96
84) Pyrene	11.627	202	205164	21.88	ppb	98
88) Benzo[a]anthracene	13.301	228	137498	16.76	ppb	96
90) Chrysene	13.354	228	155683	19.93	ppb	99
94) Benzo[b]fluoranthene	14.617	252	175313m	19.14	ppb	
95) Benzo[k]fluoranthene	14.617	252	109445m	13.68	ppb	
96) Benzo[a]pyrene	14.948	252	160183	20.14	ppb	97
97) Indeno[1,2,3-cd]pyrene	16.045	276	135135	14.65	ppb	87
99) Dibenz[a,h]anthracene	16.055	278	54318	7.06	ppb	96
101) Benzo[g,h,i]perylene	16.264	276	144835	18.48	ppb	89

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

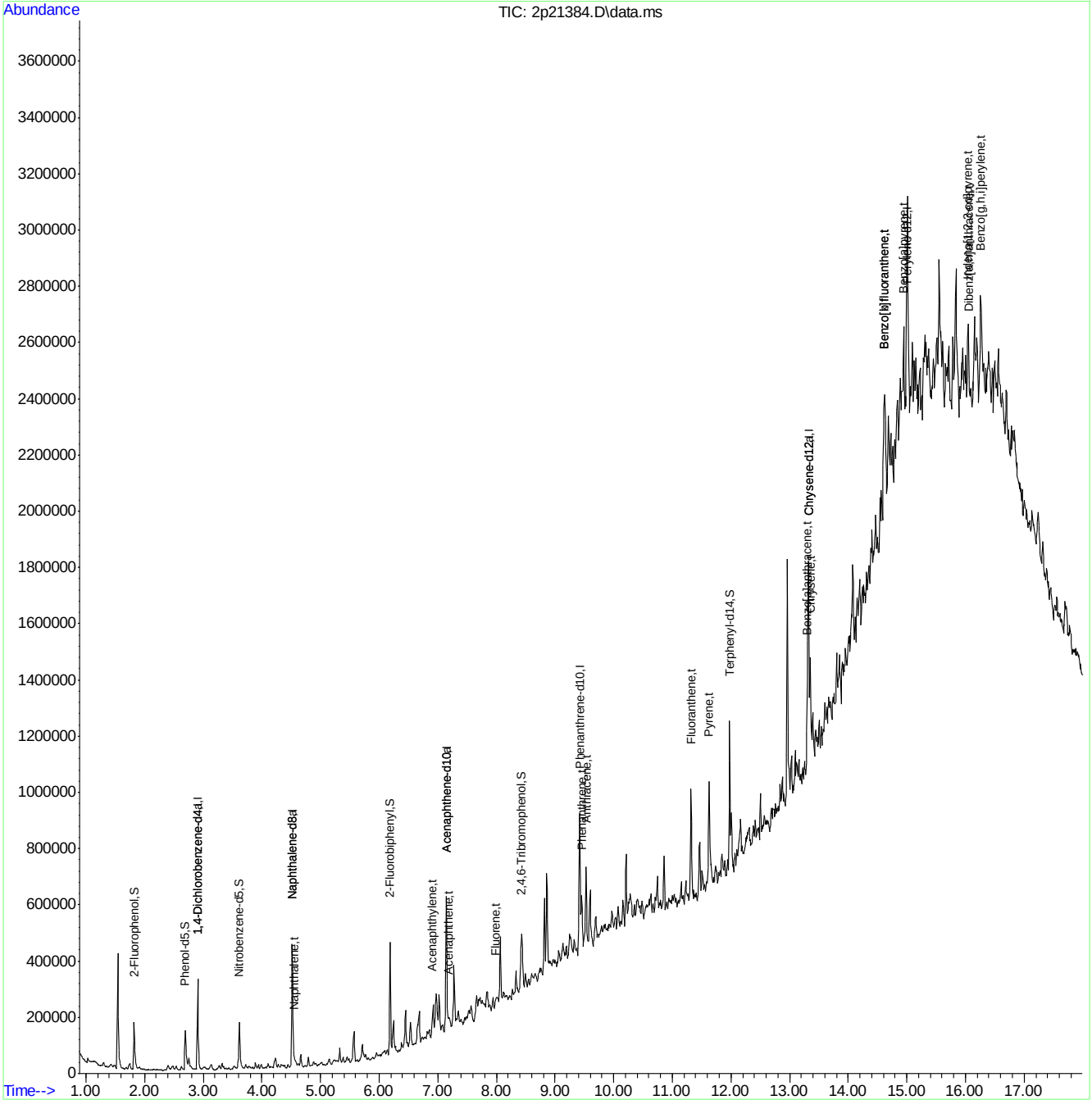
9.1.14

9

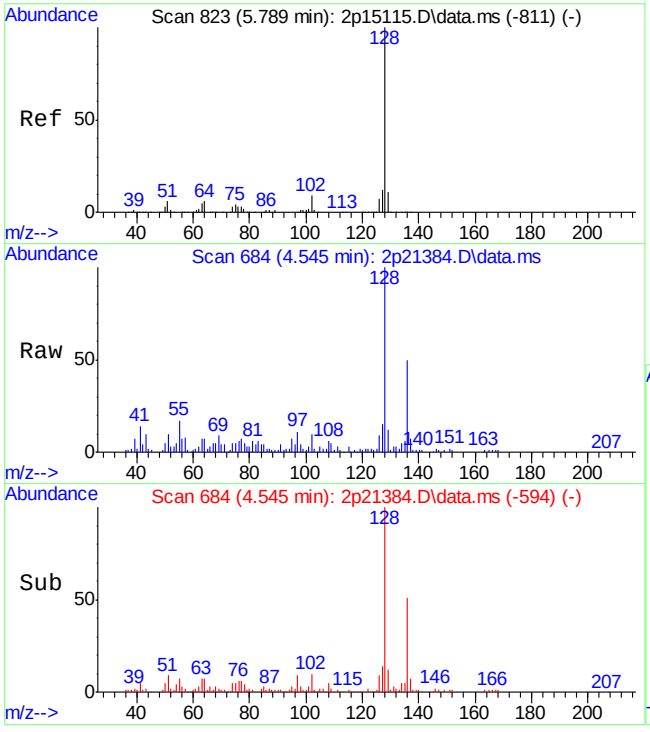
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21384.D
Acq On : 22 Mar 2013 12:55 pm
Operator : andrews1
Sample : jb30425-8cf
Misc : op64440,e2p941,30.5
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 23 16:14:07 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration



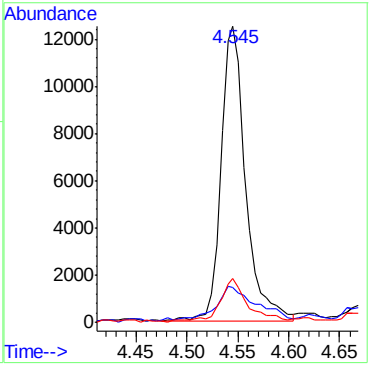
M2P896.M Sat Mar 23 16:14:12 2013 RPT1 Page: 2

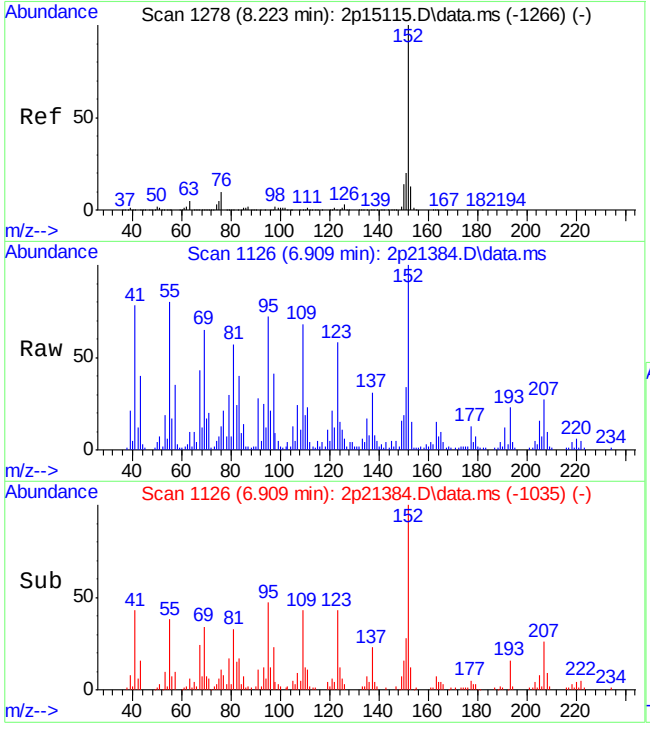


#38
Naphthalene
Concen: 2.90 ppb
RT: 4.545 min Scan# 684
Delta R.T. -0.016 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:128 Resp: 21007

Ion	Ratio	Lower	Upper
128	100		
129	11.0	0.0	41.0
127	14.1	0.0	43.0

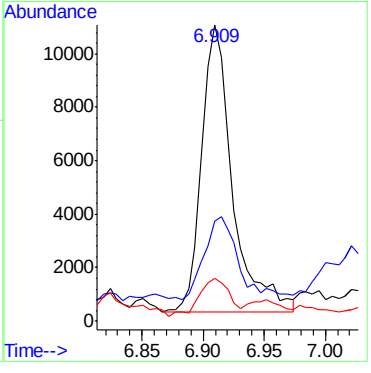




#56
Acenaphthylene
Concen: 2.69 ppb
RT: 6.909 min Scan# 1126
Delta R.T. -0.011 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:152 Resp: 18788

Ion	Ratio	Lower	Upper
152	100		
151	26.8	0.0	49.9
153	11.3	0.0	43.1



9.1.14

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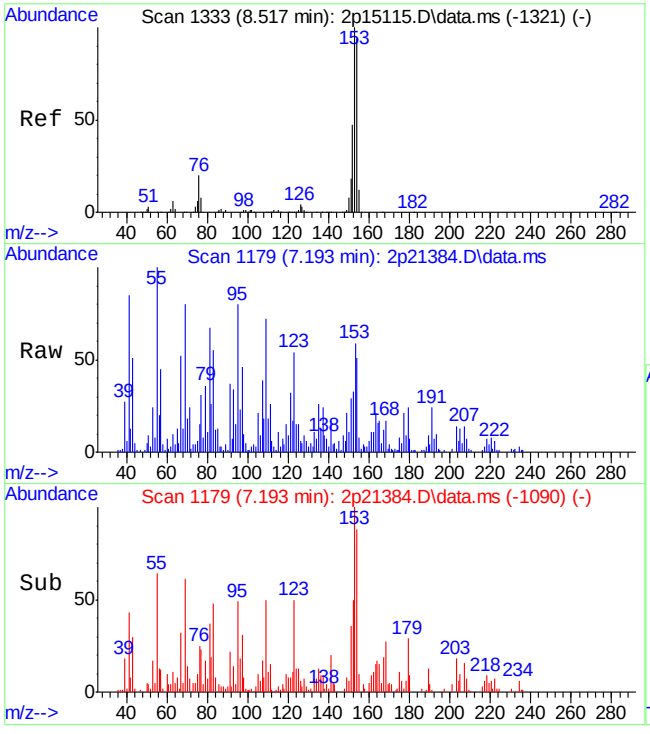
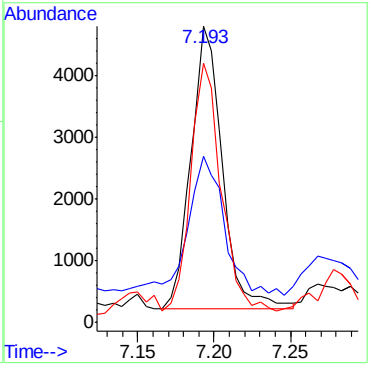
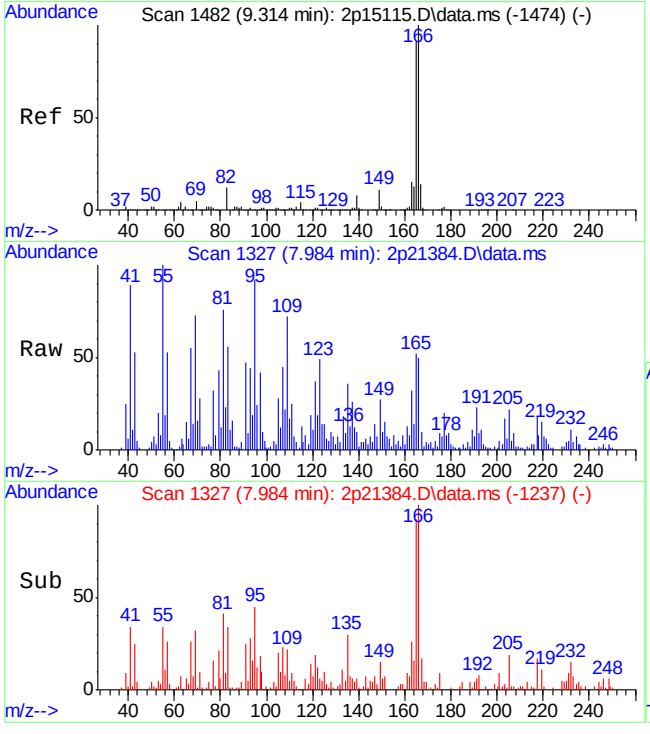


#59
Acenaphthene
Concen: 1.52 ppb
RT: 7.193 min Scan# 1179
Delta R.T. -0.022 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:153 Resp: 6499

Ion	Ratio	Lower	Upper
153	100		
152	46.1	17.8	77.8
154	87.5	65.2	125.2

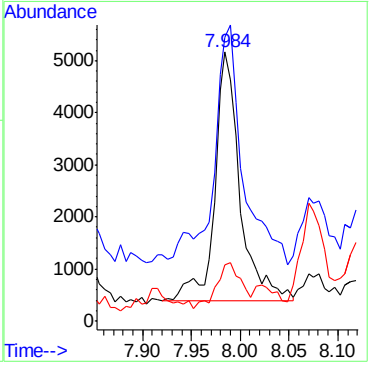


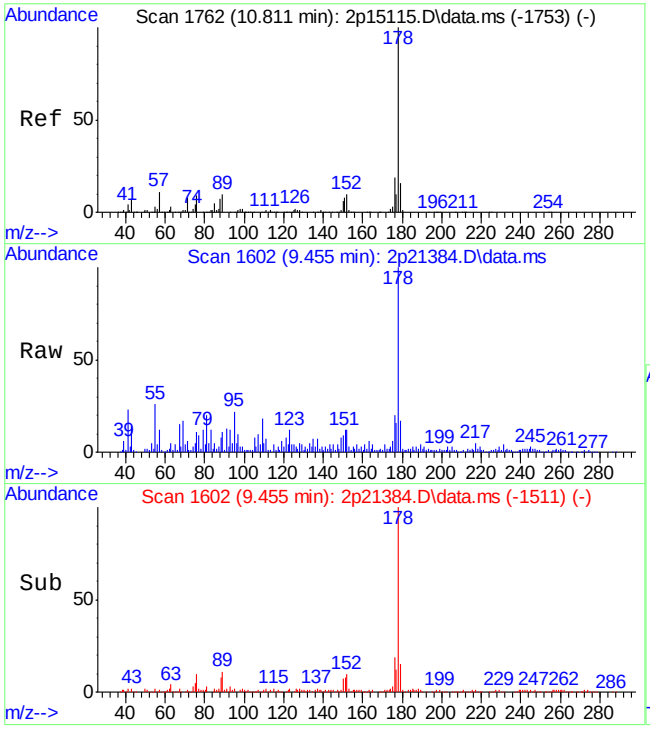


#66
Fluorene
Concen: 1.74 ppb
RT: 7.984 min Scan# 1327
Delta R.T. -0.016 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:166 Resp: 8597

Ion	Ratio	Lower	Upper
166	100		
165	88.2	62.5	122.5
167	10.4	0.0	42.9

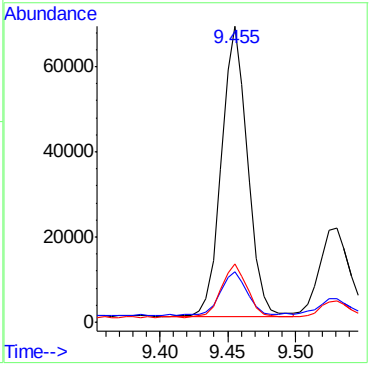


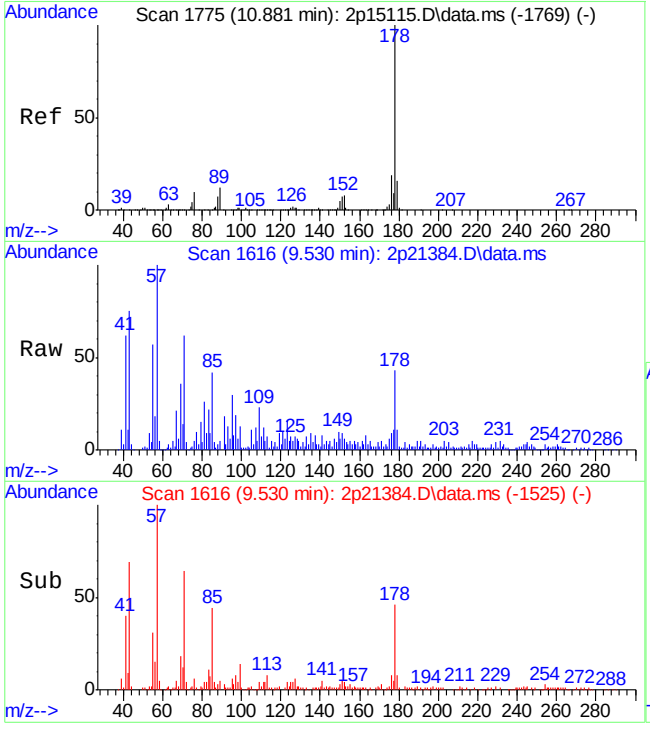


#77
Phenanthrene
Concen: 12.24 ppb
RT: 9.455 min Scan# 1602
Delta R.T. -0.011 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:178 Resp: 92320

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	44.4
176	18.2	0.0	48.6

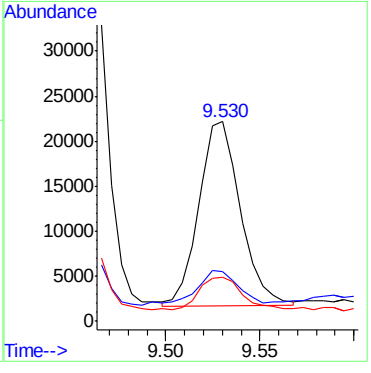




#78
Anthracene
Concen: 4.22 ppb
RT: 9.530 min Scan# 1616
Delta R.T. -0.011 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:178 Resp: 31493

Ion	Ratio	Lower	Upper
178	100		
179	16.9	0.0	44.5
176	17.6	0.0	46.5



9.1.14

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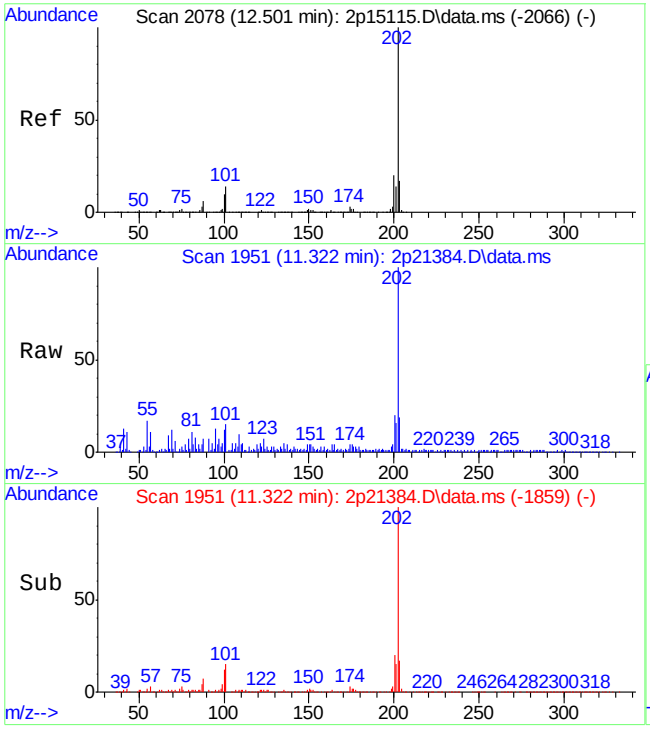
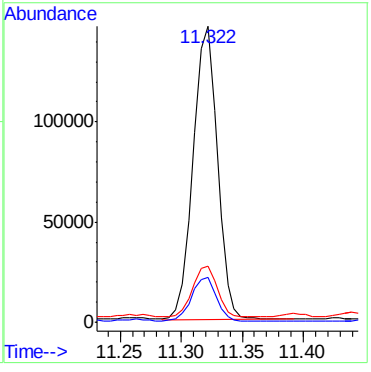
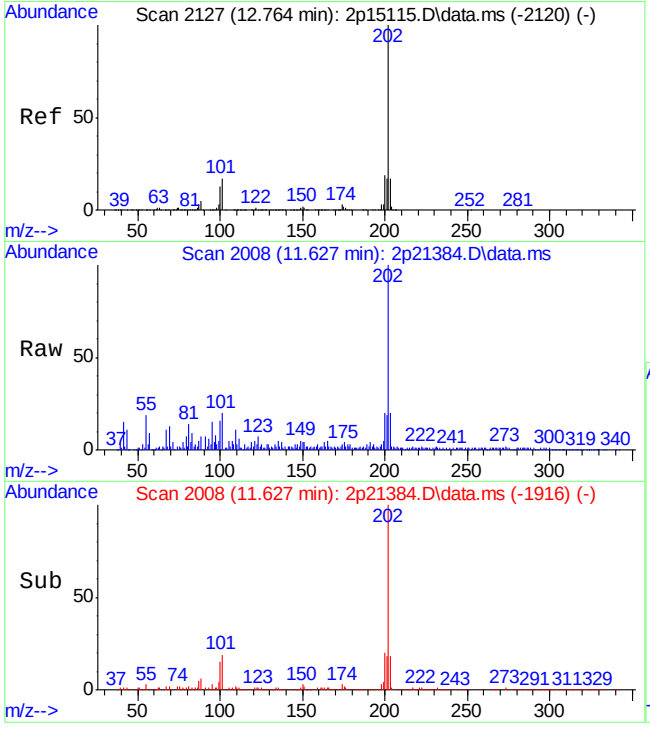


#81
Fluoranthene
Concen: 26.10 ppb
RT: 11.322 min Scan# 1951
Delta R.T. -0.005 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:202 Resp: 202025

Ion	Ratio	Lower	Upper
202	100		
101	15.2	0.0	41.3
203	18.9	0.0	49.1

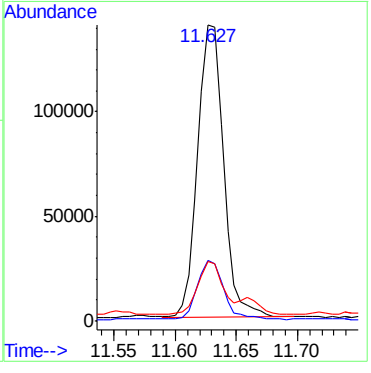


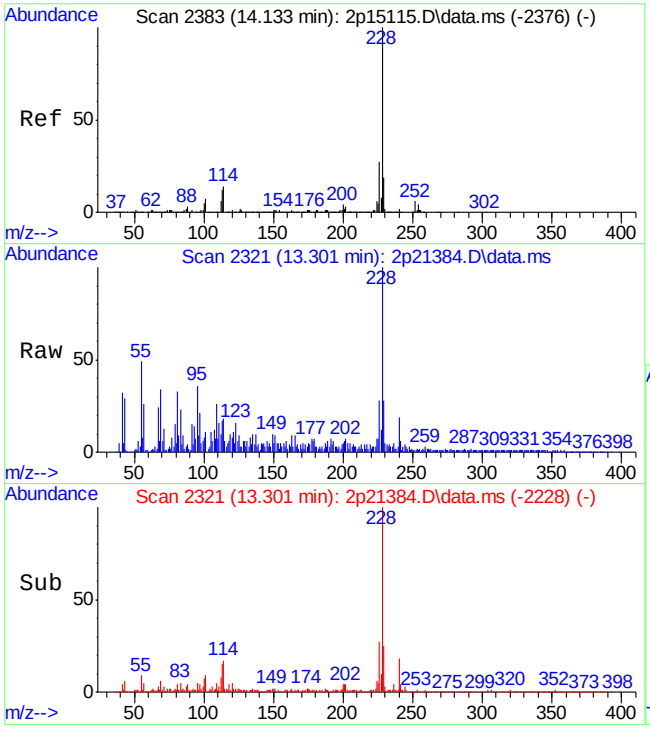


#84
Pyrene
Concen: 21.88 ppb
RT: 11.627 min Scan# 2008
Delta R.T. -0.005 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:202 Resp: 205164

Ion	Ratio	Lower	Upper
202	100		
200	19.9	0.0	49.6
203	18.0	0.0	46.9

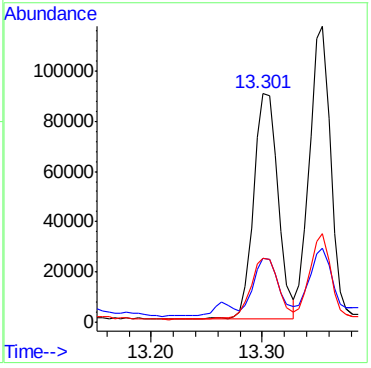


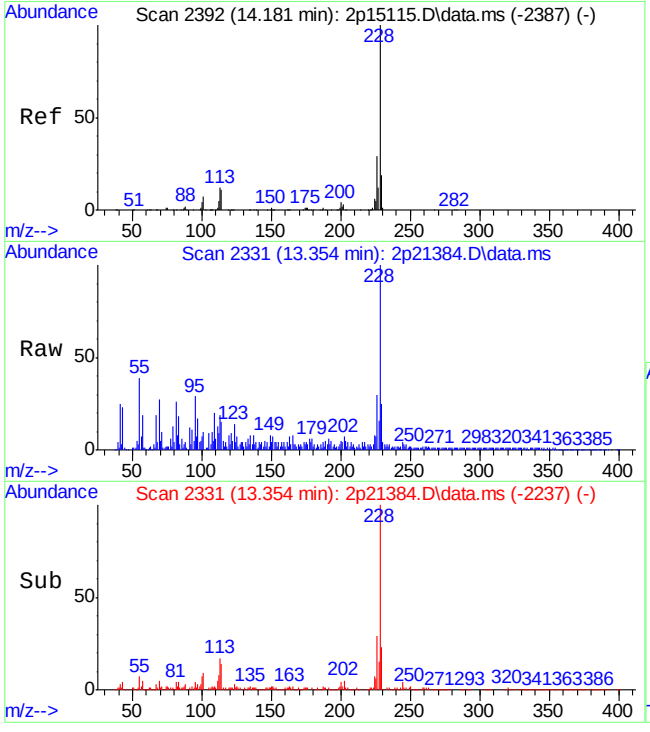


#88
Benzo[a]anthracene
Concen: 16.76 ppb
RT: 13.301 min Scan# 2321
Delta R.T. -0.000 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:228 Resp: 137498

Ion	Ratio	Lower	Upper
228	100		
229	24.5	0.0	50.7
226	26.5	0.0	56.7

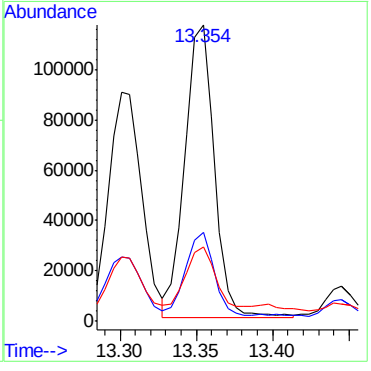




#90
Chrysene
Concen: 19.93 ppb
RT: 13.354 min Scan# 2331
Delta R.T. 0.005 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:228 Resp: 155683

Ion	Ratio	Lower	Upper
228	100		
226	28.7	0.0	58.4
229	21.0	0.0	50.1



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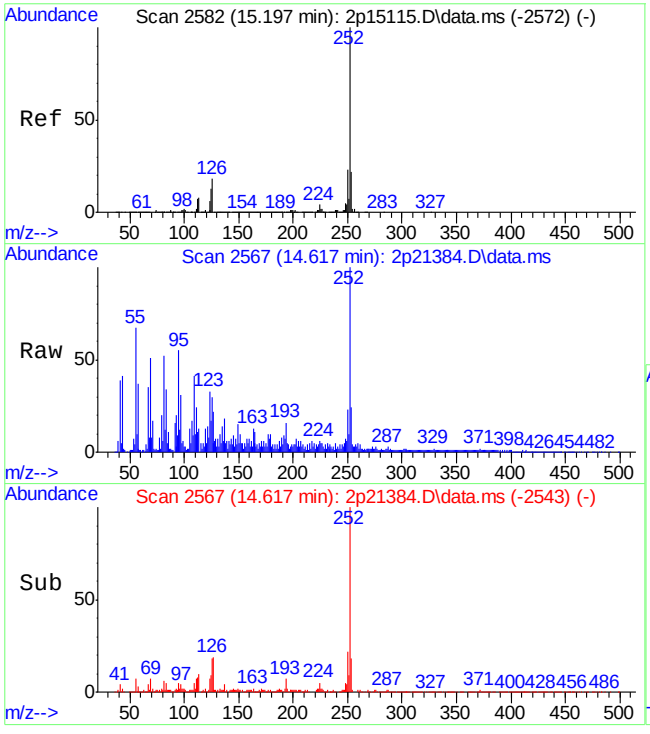
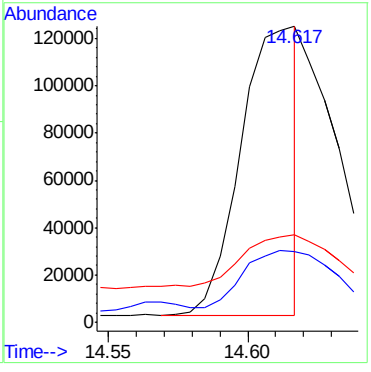
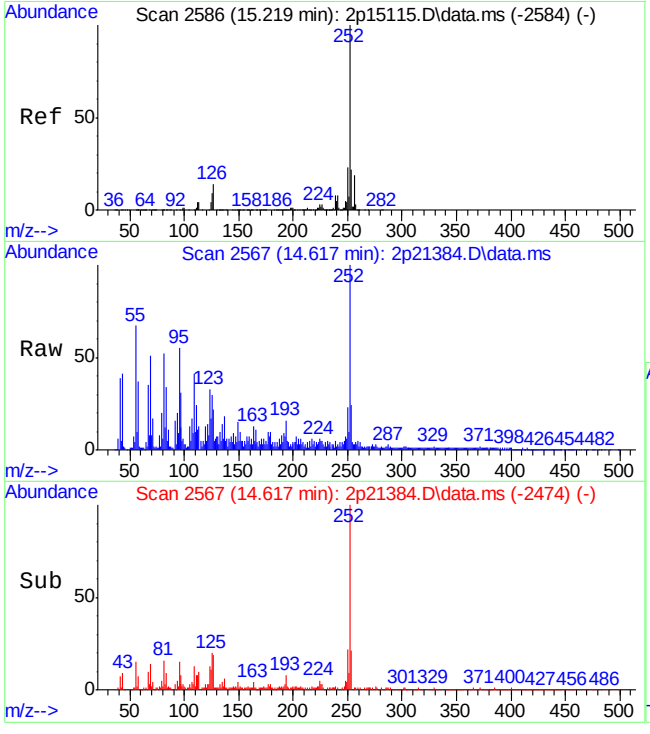


#94
Benzo[b]fluoranthene
Concen: 19.14 ppb m
RT: 14.617 min Scan# 2567
Delta R.T. 0.027 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:252 Resp: 175313

Ion	Ratio	Lower	Upper
252	100		
253	23.9	0.0	51.1
125	29.7	0.0	40.8

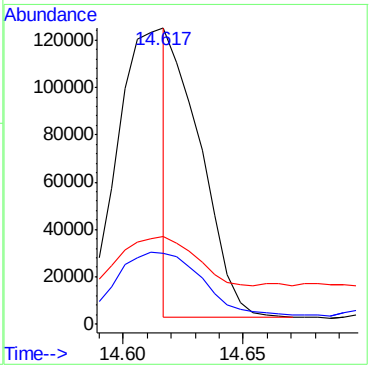


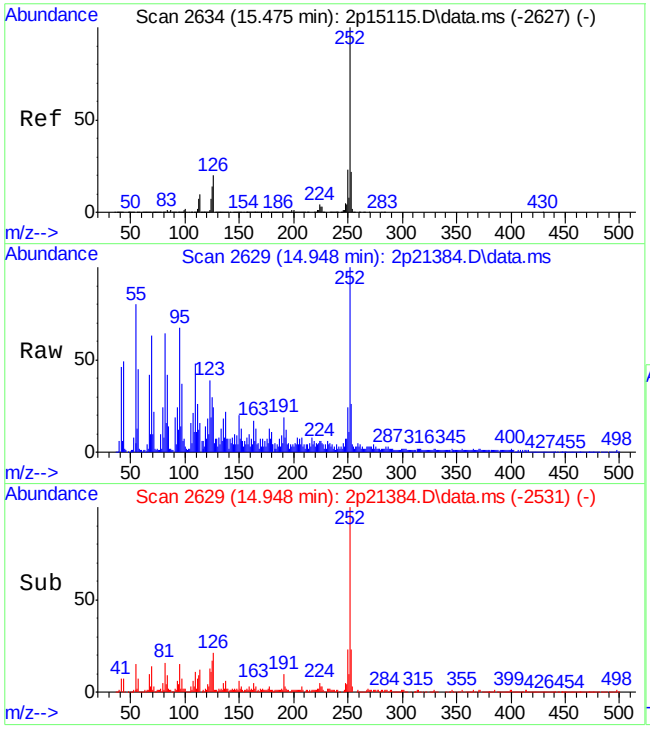


#95
Benzo[k]fluoranthene
Concen: 13.68 ppb m
RT: 14.617 min Scan# 2567
Delta R.T. -0.000 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:252 Resp: 109445

Ion	Ratio	Lower	Upper
252	100		
253	23.9	0.0	56.1
125	29.7	0.0	45.7

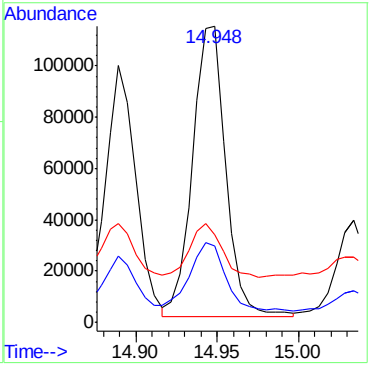


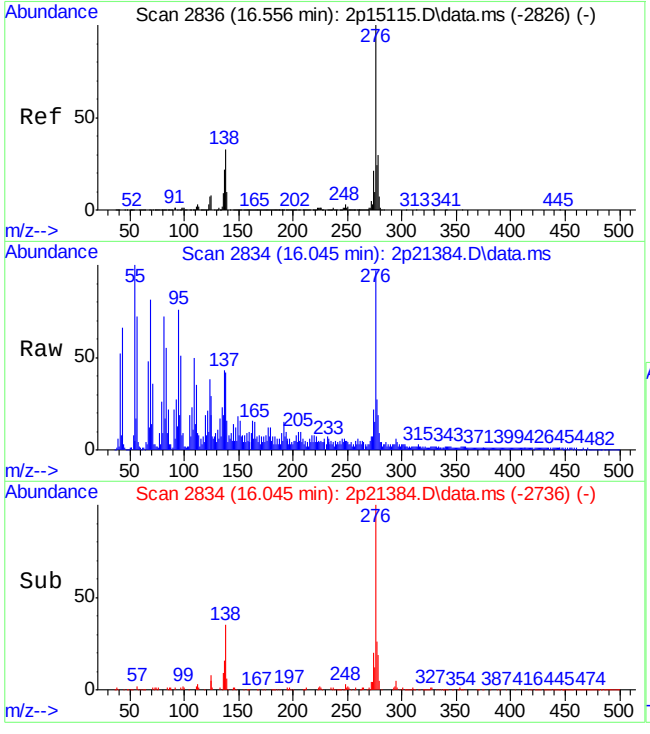


#96
Benzo[a]pyrene
Concen: 20.14 ppb
RT: 14.948 min Scan# 2629
Delta R.T. 0.027 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:252 Resp: 160183

Ion	Ratio	Lower	Upper
252	100		
253	21.8	0.0	51.5
125	14.4	0.0	41.1

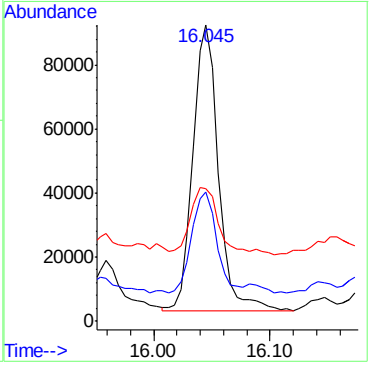


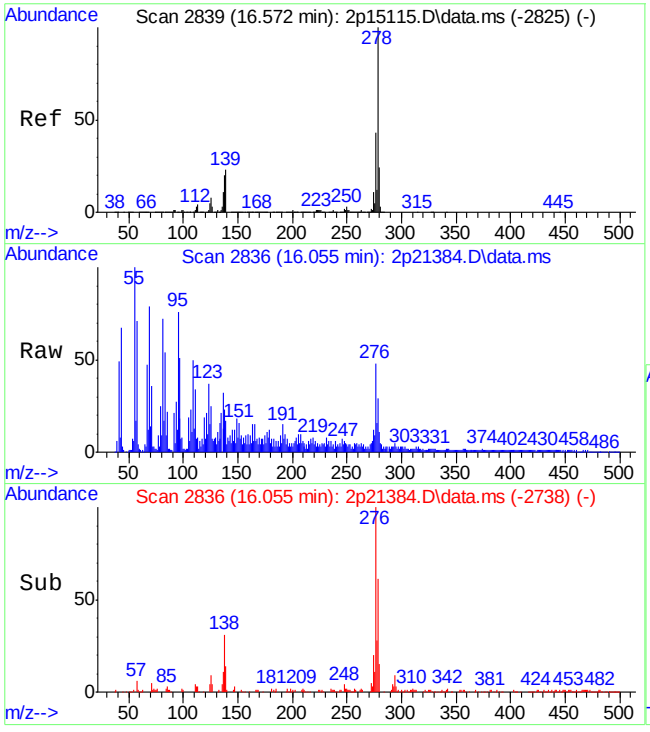


#97
Indeno[1,2,3-cd]pyrene
Concen: 14.65 ppb
RT: 16.045 min Scan# 2834
Delta R.T. 0.027 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:276 Resp: 135135

Ion	Ratio	Lower	Upper
276	100		
138	34.7	0.0	54.7
137	21.0	0.0	49.5

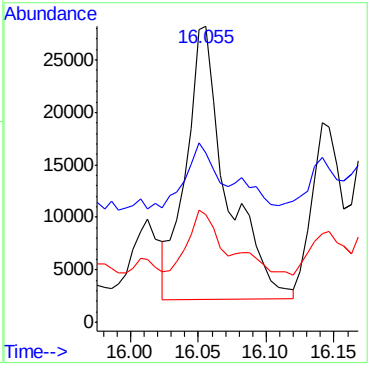


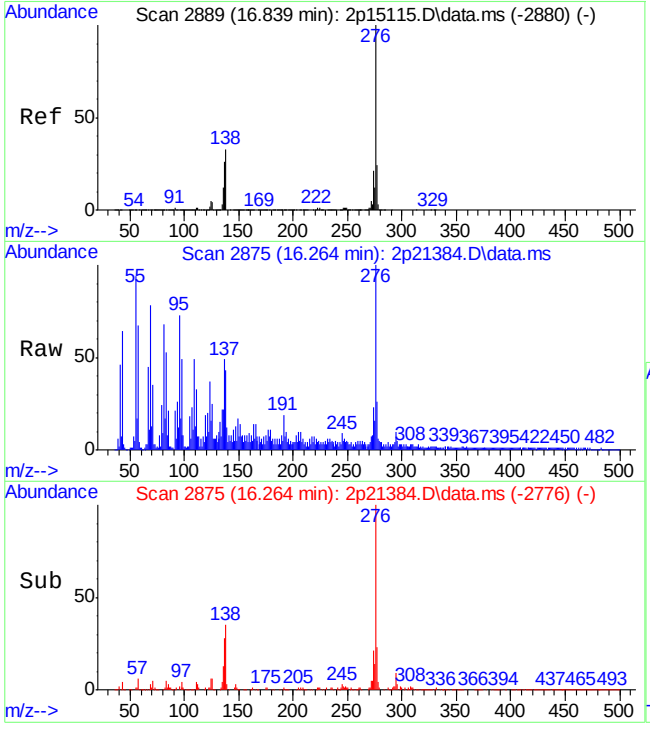


#99
Dibenz[a,h]anthracene
Concen: 7.06 ppb
RT: 16.055 min Scan# 2836
Delta R.T. 0.027 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:278 Resp: 54318

Ion	Ratio	Lower	Upper
278	100		
139	21.5	0.0	49.9
279	24.5	0.0	56.4

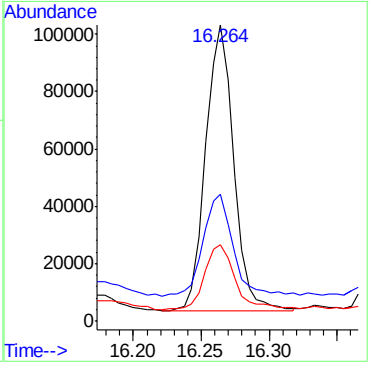




#101
Benzo[g,h,i]perylene
Concen: 18.48 ppb
RT: 16.264 min Scan# 2875
Delta R.T. 0.032 min
Lab File: 2p21384.D
Acq: 22 Mar 2013 12:55 pm

Tgt Ion:276 Resp: 144835

Ion	Ratio	Lower	Upper
276	100		
138	35.0	0.0	55.6
277	22.5	0.0	53.3



9.1.14

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21246.D
Acq On : 19 Mar 2013 10:14 pm
Operator : andrews1
Sample : jb30425-9
Misc : op64440,e2p936,32.6
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Mar 20 15:02:01 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

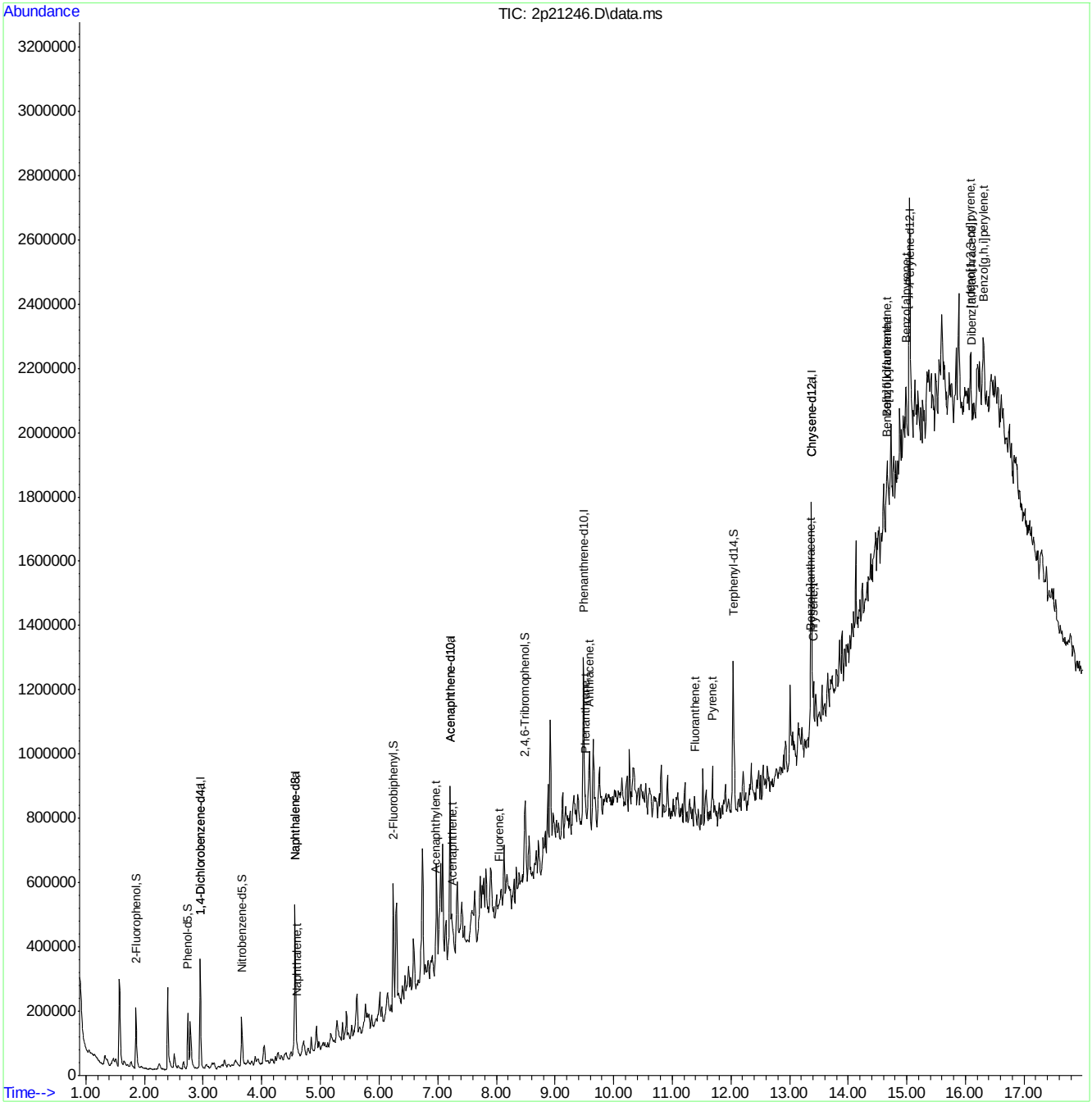
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.946	152	74256	40.00	ppb	-0.08
24) Naphthalene-d8	4.567	136	286411	40.00	ppb	-0.09
47) Acenaphthene-d10	7.209	164	159547	40.00	ppb	-0.08
69) Phenanthrene-d10	9.488	188	272704	40.00	ppb	-0.06
83) Chrysene-d12	13.371	240	281587	40.00	ppb	-0.04
92) Perylene-d12	15.050	264	272007	40.00	ppb	-0.01
102) 1,4-Dichlorobenzene-d4a	2.946	152	74256	40.00	ppb	-0.08
104) Acenaphthene-d10a	7.209	164	159547	40.00	ppb	-0.08
107) Chrysene-d12a	13.371	240	281587	40.00	ppb	-0.04
109) Naphthalene-d8a	4.567	136	286411	40.00	ppb	#-0.09
System Monitoring Compounds						
5) 2-Fluorophenol	1.850	112	75098	28.25	ppb	-0.05
Spiked Amount 50.000	Range 11 - 58		Recovery = 56.50%			
8) Phenol-d5	2.738	99	99688	30.23	ppb	-0.04
Spiked Amount 50.000	Range 10 - 59		Recovery = 60.46%#			
25) Nitrobenzene-d5	3.658	82	68927	26.16	ppb	-0.08
Spiked Amount 50.000	Range 19 - 61		Recovery = 52.32%			
51) 2-Fluorobiphenyl	6.241	172	166429	32.62	ppb	-0.09
Spiked Amount 50.000	Range 21 - 58		Recovery = 65.24%#			
73) 2,4,6-Tribromophenol	8.487	330	19987	32.79	ppb	-0.06
Spiked Amount 50.000	Range 12 - 68		Recovery = 65.58%			
85) Terphenyl-d14	12.039	244	192773	32.50	ppb	-0.05
Spiked Amount 50.000	Range 16 - 65		Recovery = 65.00%#			
Target Compounds						Qvalue
38) Naphthalene	4.594	128	15206	1.98	ppb	98
56) Acenaphthylene	6.968	152	16473	2.23	ppb	81
59) Acenaphthene	7.252	153	3303	0.73	ppb	79
66) Fluorene	8.043	166	7722	1.47	ppb	98
77) Phenanthrene	9.520	178	31205	3.80	ppb	97
78) Anthracene	9.589	178	18619	2.29	ppb	94
81) Fluoranthene	11.381	202	38191	4.53	ppb	83
84) Pyrene	11.686	202	61718	6.43	ppb	100
88) Benzo[a]anthracene	13.355	228	44832	5.34	ppb	95
90) Chrysene	13.403	228	59560	7.45	ppb	99
94) Benzo[b]fluoranthene	14.654	252	75103m	8.10	ppb	
95) Benzo[k]fluoranthene	14.665	252	31263m	3.86	ppb	
96) Benzo[a]pyrene	14.986	252	73336	9.10	ppb	95
97) Indeno[1,2,3-cd]pyrene	16.088	276	78383	8.39	ppb	85
99) Dibenz[a,h]anthracene	16.098	278	23496	3.02	ppb	99
101) Benzo[g,h,i]perylene	16.307	276	99371	12.52	ppb	90

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

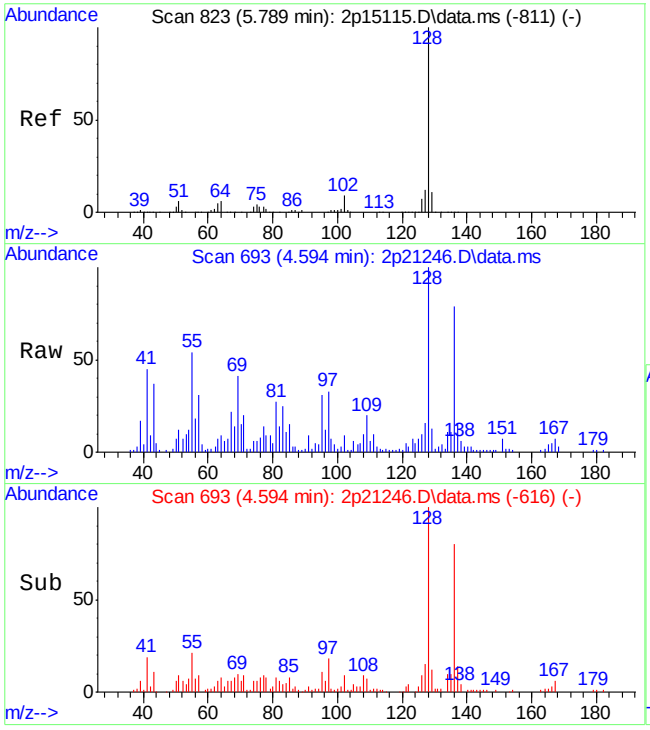
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21246.D
Acq On : 19 Mar 2013 10:14 pm
Operator : andrews1
Sample : jb30425-9
Misc : op64440,e2p936,32.6
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Mar 20 15:02:01 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration



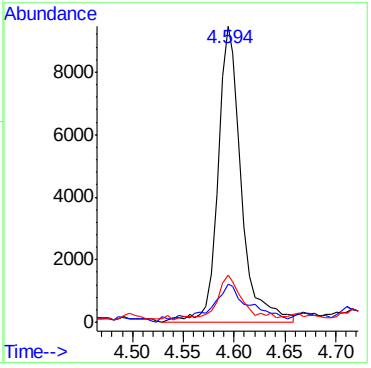
M2P896.M Wed Mar 20 15:02:38 2013 RPT1 Page: 2

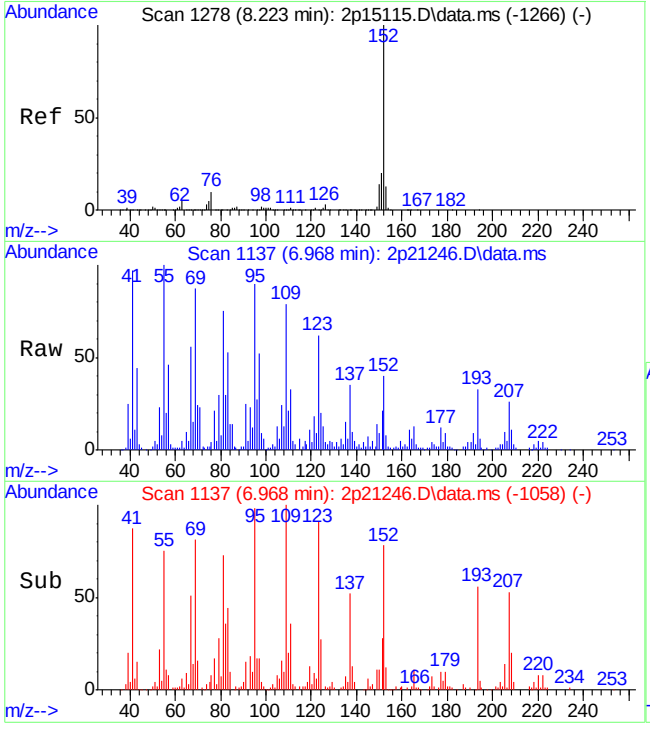


#38
Naphthalene
Concen: 1.98 ppb
RT: 4.594 min Scan# 693
Delta R.T. -0.086 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:128 Resp: 15206

Ion	Ratio	Lower	Upper
128	100		
129	11.2	0.0	41.0
127	14.3	0.0	43.0

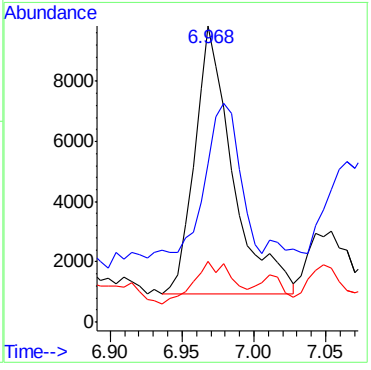


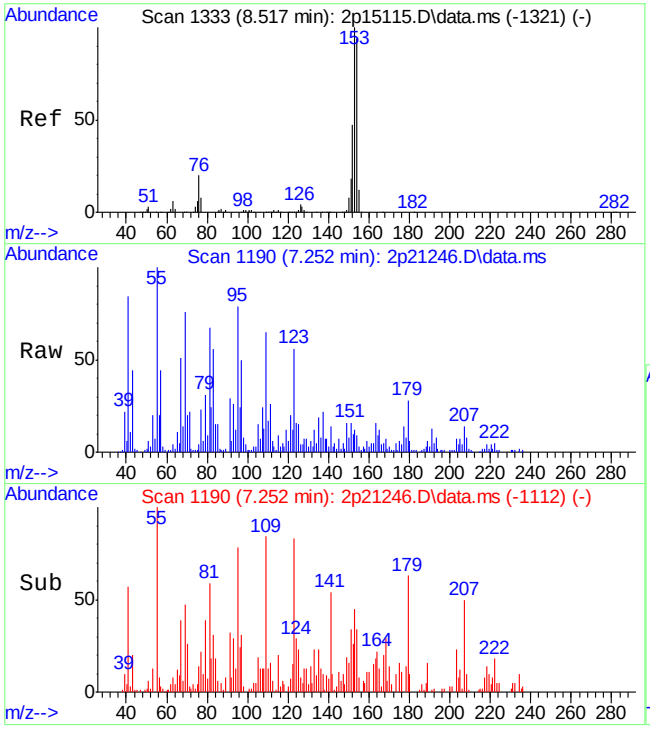


#56
Acenaphthylene
Concen: 2.23 ppb
RT: 6.968 min Scan# 1137
Delta R.T. -0.075 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:152 Resp: 16473

Ion	Ratio	Lower	Upper
152	100		
151	32.8	0.0	49.9
153	14.9	0.0	43.1

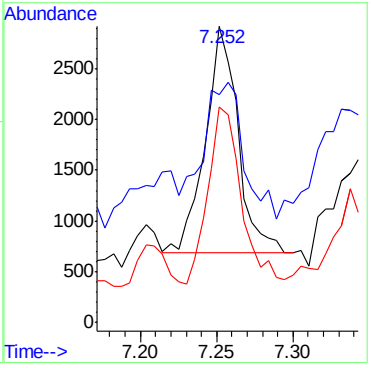


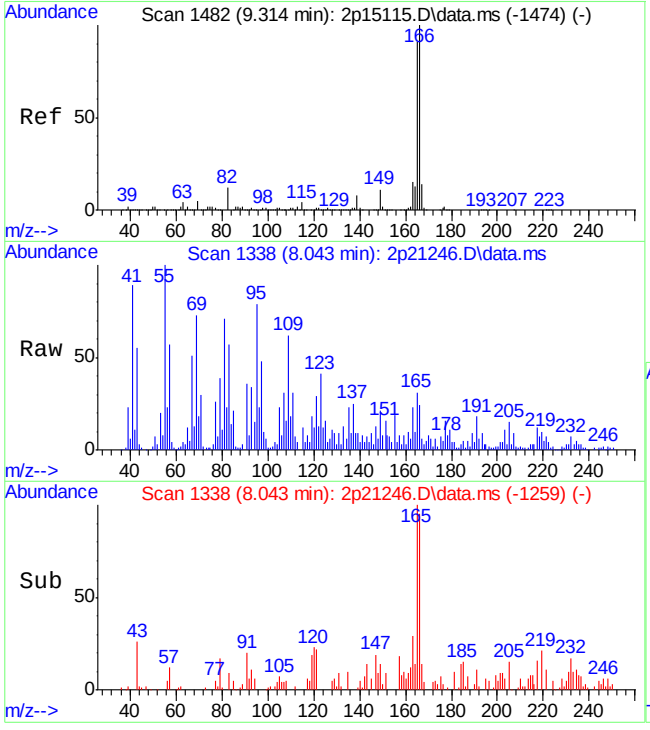


#59
Acenaphthene
Concen: 0.73 ppb
RT: 7.252 min Scan# 1190
Delta R.T. -0.080 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:153 Resp: 3303

Ion	Ratio	Lower	Upper
153	100		
152	41.1	17.8	77.8
154	69.7	65.2	125.2

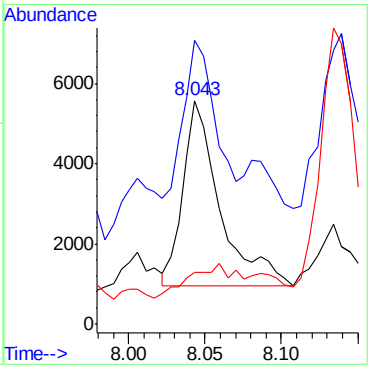




#66
Fluorene
Concen: 1.47 ppb
RT: 8.043 min Scan# 1338
Delta R.T. -0.075 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

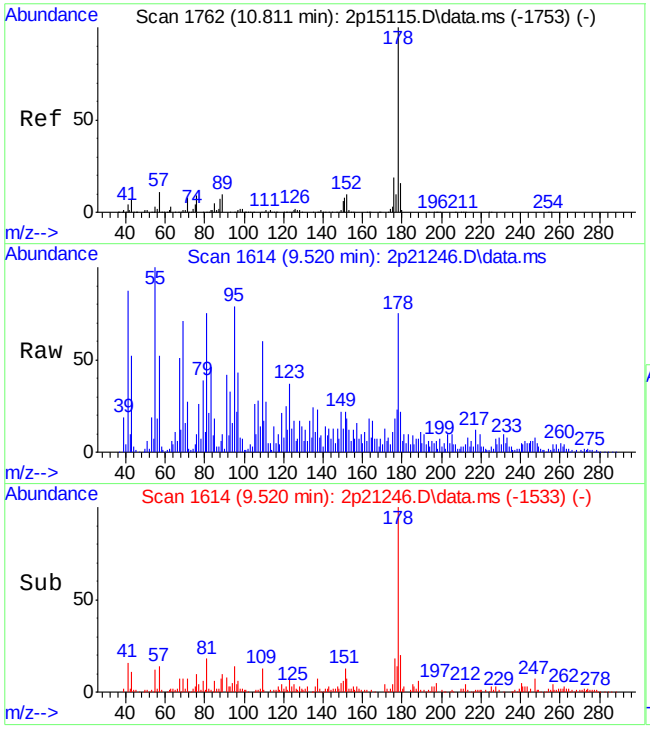
Tgt Ion:166 Resp: 7722

Ion	Ratio	Lower	Upper
166	100		
165	91.1	62.5	122.5
167	9.9	0.0	42.9



9.1.15

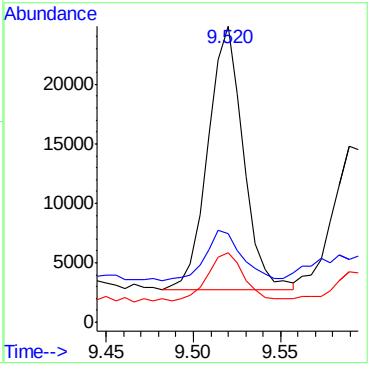
9

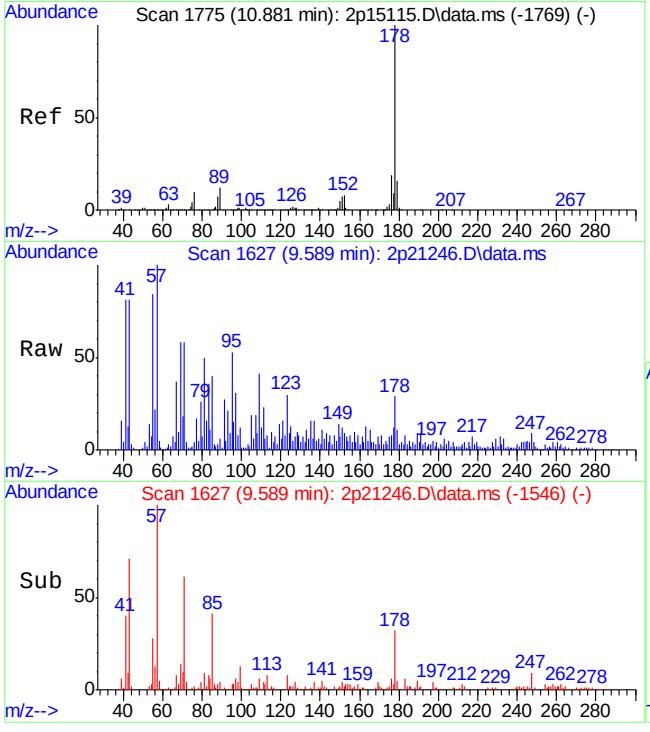


#77
Phenanthrene
Concen: 3.80 ppb
RT: 9.520 min Scan# 1614
Delta R.T. -0.064 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:178 Resp: 31205

Ion	Ratio	Lower	Upper
178	100		
179	16.4	0.0	44.4
176	17.8	0.0	48.6

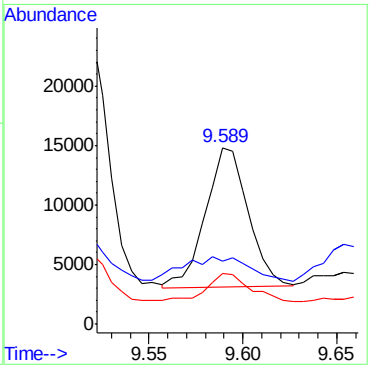




#78
Anthracene
Concen: 2.29 ppb
RT: 9.589 min Scan# 1627
Delta R.T. -0.064 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

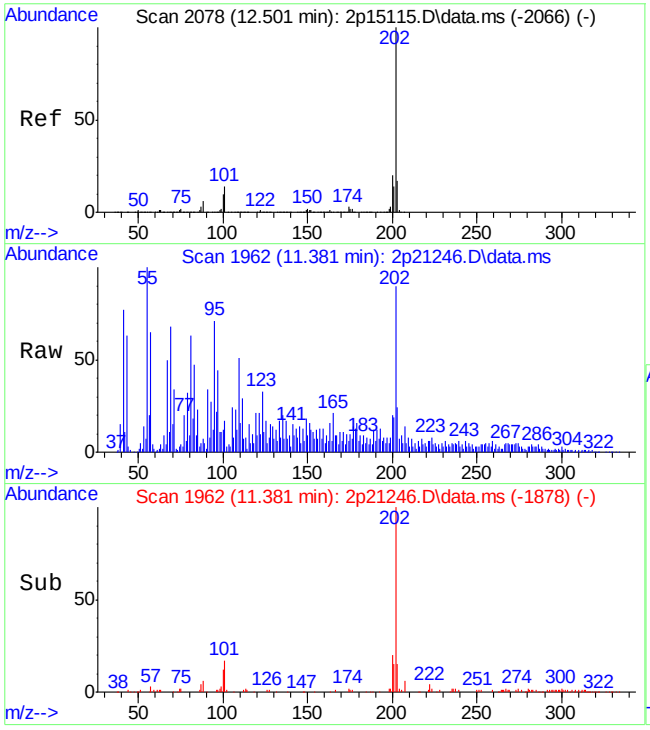
Tgt Ion:178 Resp: 18619

Ion	Ratio	Lower	Upper
178	100		
179	12.7	0.0	44.5
176	19.7	0.0	46.5



9.1.15

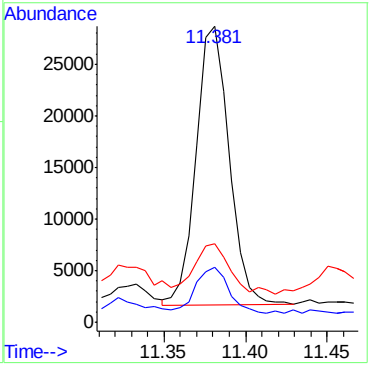
9

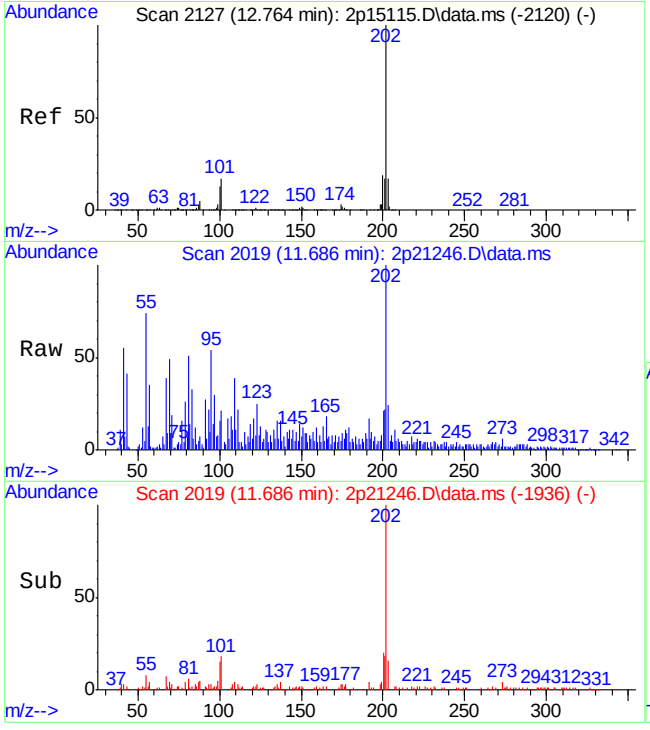


#81
Fluoranthene
Concen: 4.53 ppb
RT: 11.381 min Scan# 1962
Delta R.T. -0.048 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:202 Resp: 38191

Ion	Ratio	Lower	Upper
202	100		
101	18.6	0.0	41.3
203	26.5	0.0	49.1

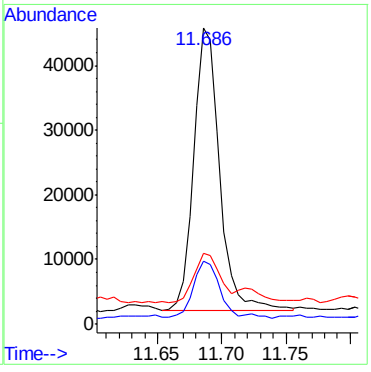


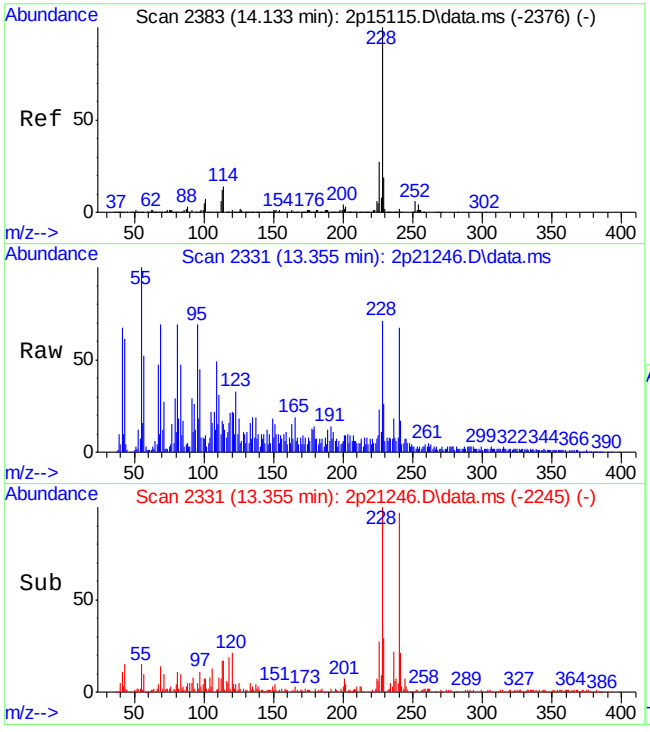


#84
Pyrene
Concen: 6.43 ppb
RT: 11.686 min Scan# 2019
Delta R.T. -0.053 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:202 Resp: 61718

Ion	Ratio	Lower	Upper
202	100		
200	19.8	0.0	49.6
203	17.0	0.0	46.9

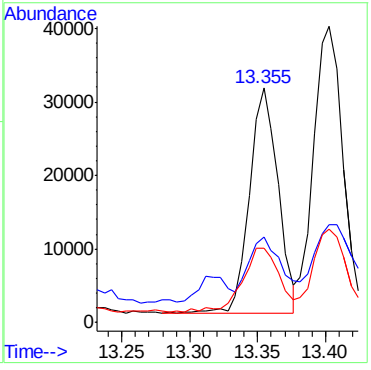


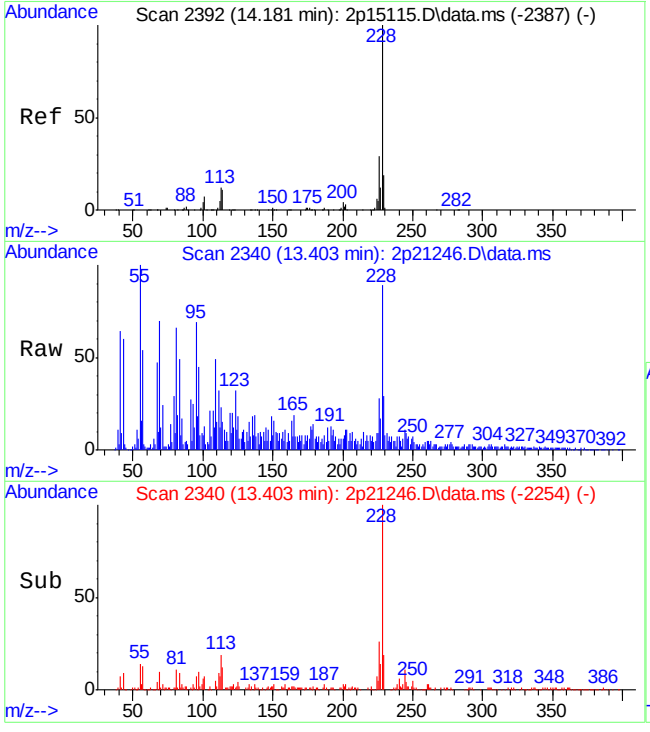


#88
Benzo[a]anthracene
Concen: 5.34 ppb
RT: 13.355 min Scan# 2331
Delta R.T. -0.037 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:228 Resp: 44832

Ion	Ratio	Lower	Upper
228	100		
229	25.4	0.0	50.7
226	27.2	0.0	56.7

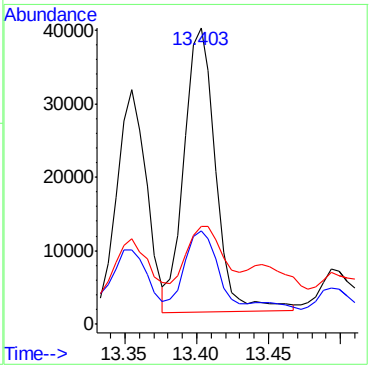




#90
Chrysene
Concen: 7.45 ppb
RT: 13.403 min Scan# 2340
Delta R.T. -0.037 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

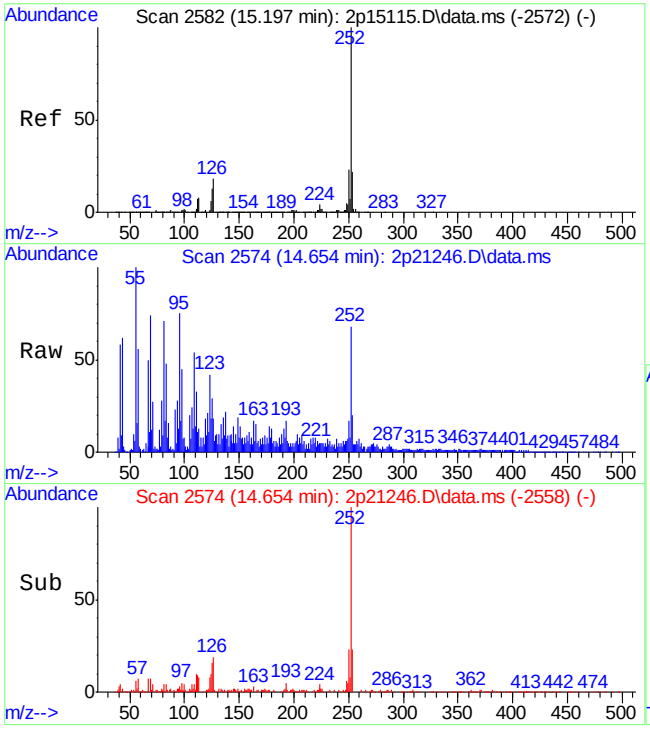
Tgt Ion:228 Resp: 59560

Ion	Ratio	Lower	Upper
228	100		
226	27.4	0.0	58.4
229	19.8	0.0	50.1



9.1.15

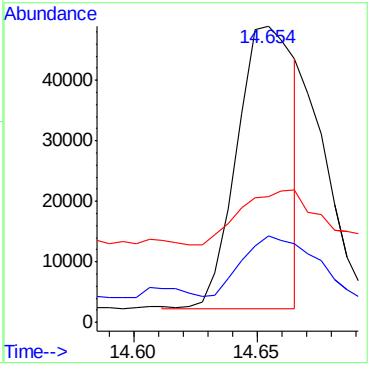
9

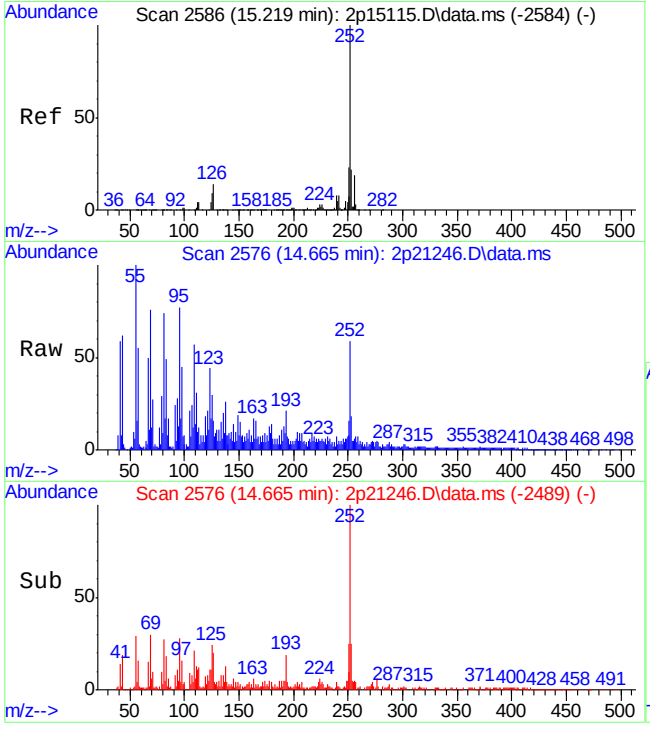


#94
Benzo[b]fluoranthene
Concen: 8.10 ppb m
RT: 14.654 min Scan# 2574
Delta R.T. -0.016 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:252 Resp: 75103

Ion	Ratio	Lower	Upper
252	100		
253	29.1	0.0	51.1
125	42.6	0.0	40.8#

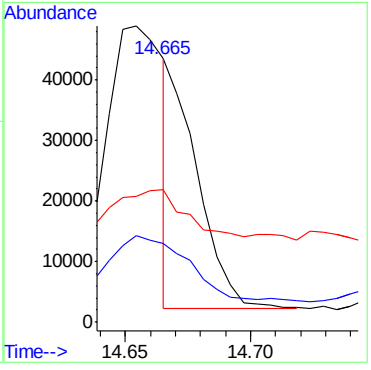


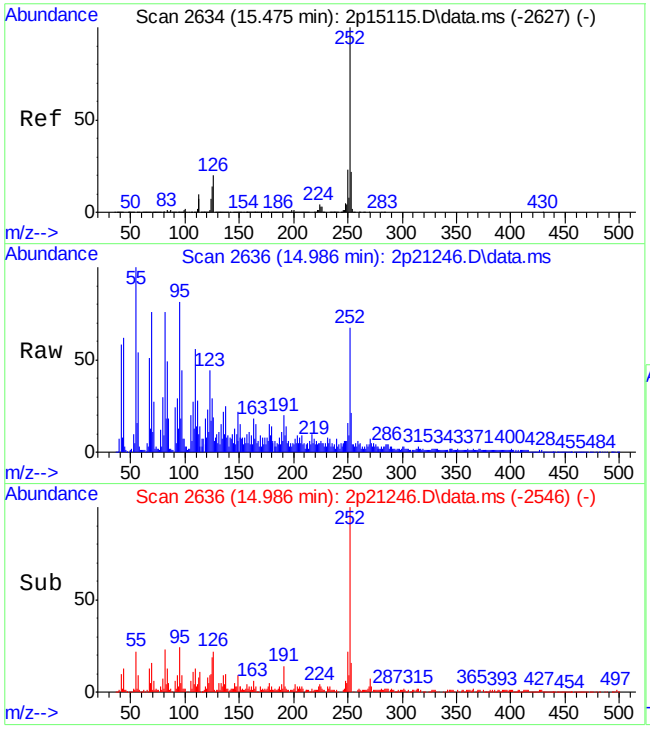


#95
Benzo[k]fluoranthene
Concen: 3.86 ppb m
RT: 14.665 min Scan# 2576
Delta R.T. -0.032 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:252 Resp: 31263

Ion	Ratio	Lower	Upper
252	100		
253	30.1	0.0	56.1
125	50.1	0.0	45.7#

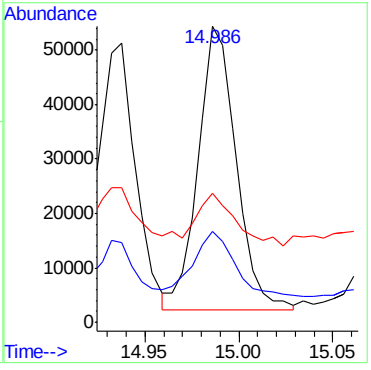


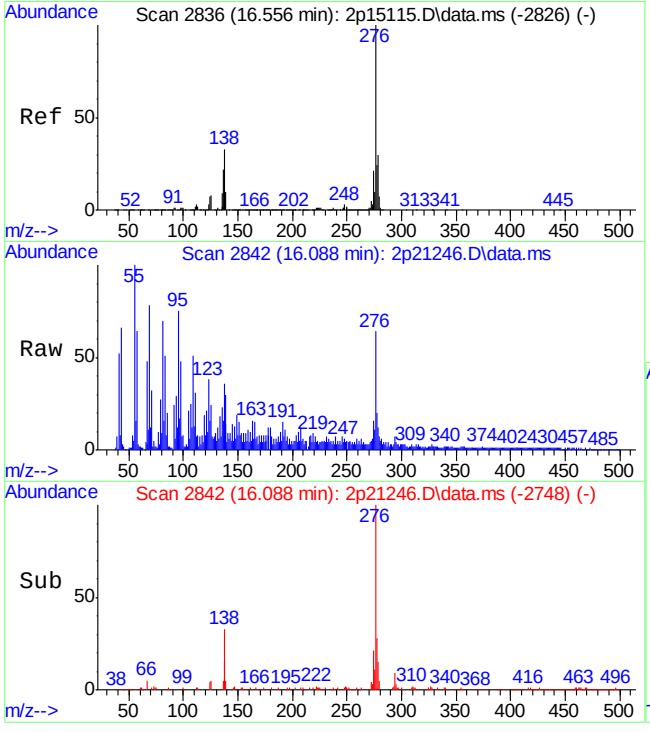


#96
Benzo[a]pyrene
Concen: 9.10 ppb
RT: 14.986 min Scan# 2636
Delta R.T. -0.016 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:252 Resp: 73336

Ion	Ratio	Lower	Upper
252	100		
253	22.4	0.0	51.5
125	15.4	0.0	41.1

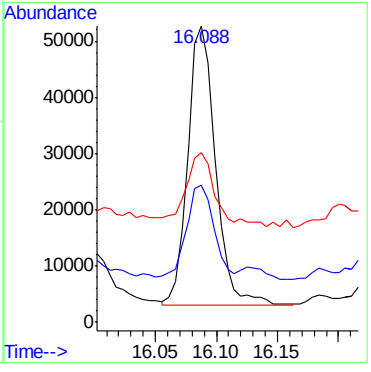


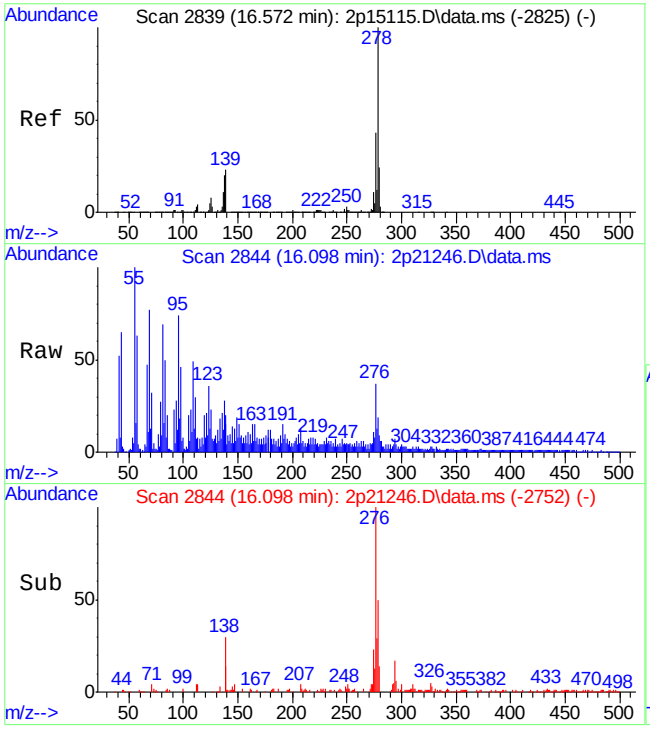


#97
Indeno[1,2,3-cd]pyrene
Concen: 8.39 ppb
RT: 16.088 min Scan# 2842
Delta R.T. 0.005 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:276 Resp: 78383

Ion	Ratio	Lower	Upper
276	100		
138	33.5	0.0	54.7
137	25.0	0.0	49.5

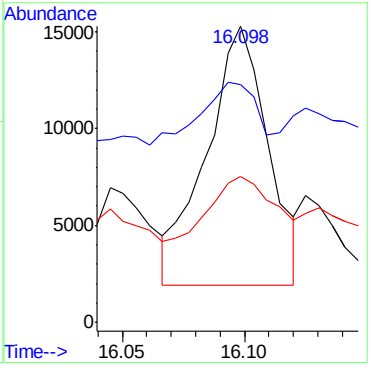


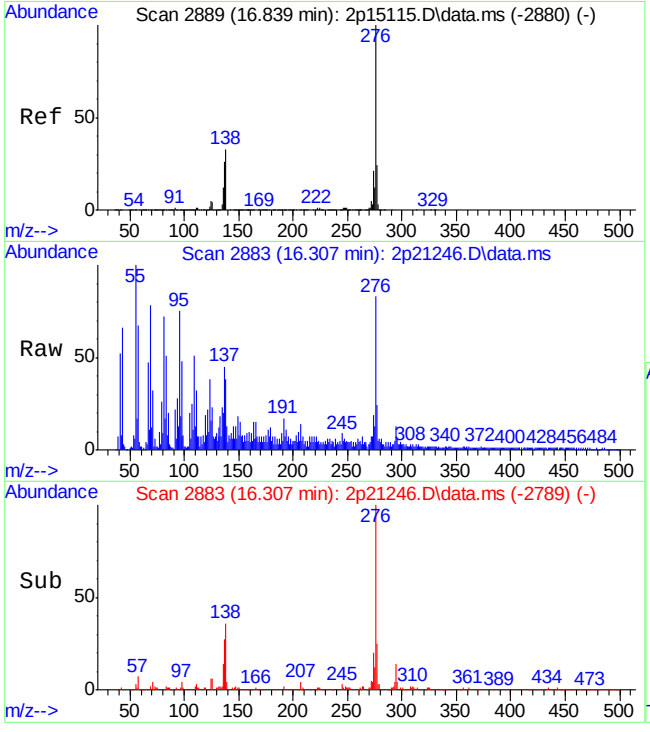


#99
Dibenz[a,h]anthracene
Concen: 3.02 ppb
RT: 16.098 min Scan# 2844
Delta R.T. -0.005 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:278 Resp: 23496

Ion	Ratio	Lower	Upper
278	100		
139	20.0	0.0	49.9
279	26.8	0.0	56.4

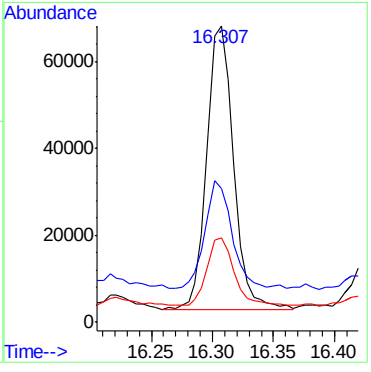




#101
Benzo[g,h,i]perylene
Concen: 12.52 ppb
RT: 16.307 min Scan# 2883
Delta R.T. 0.005 min
Lab File: 2p21246.D
Acq: 19 Mar 2013 10:14 pm

Tgt Ion:276 Resp: 99371

Ion	Ratio	Lower	Upper
276	100		
138	34.4	0.0	55.6
277	23.7	0.0	53.3



9.1.15

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21385.D
Acq On : 22 Mar 2013 1:17 pm
Operator : andrews1
Sample : jb30425-9cf
Misc : op64440,e2p941,32.0
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 23 13:31:56 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.909	152	74579	40.00	ppb	-0.02
24) Naphthalene-d8	4.524	136	295992	40.00	ppb	-0.01
47) Acenaphthene-d10	7.155	164	164749	40.00	ppb	-0.01
69) Phenanthrene-d10	9.434	188	282927	40.00	ppb	0.00
83) Chrysene-d12	13.328	240	296073	40.00	ppb	0.01
92) Perylene-d12	15.012	264	290623	40.00	ppb	0.03
102) 1,4-Dichlorobenzene-d4a	2.909	152	74579	40.00	ppb	-0.02
104) Acenaphthene-d10a	7.155	164	164749	40.00	ppb	-0.01
107) Chrysene-d12a	13.328	240	296073	40.00	ppb	0.01
109) Naphthalene-d8a	4.524	136	295992	40.00	ppb	#-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.823	112	65834	24.66	ppb	-0.01
Spiked Amount 50.000	Range 11 - 58		Recovery = 49.32%			
8) Phenol-d5	2.700	99	84164	25.42	ppb	0.00
Spiked Amount 50.000	Range 10 - 59		Recovery = 50.84%			
25) Nitrobenzene-d5	3.620	82	64955	23.86	ppb	-0.01
Spiked Amount 50.000	Range 19 - 61		Recovery = 47.72%			
51) 2-Fluorobiphenyl	6.193	172	148385	28.16	ppb	-0.02
Spiked Amount 50.000	Range 21 - 58		Recovery = 56.32%			
73) 2,4,6-Tribromophenol	8.434	330	18238	28.84	ppb	0.00
Spiked Amount 50.000	Range 12 - 68		Recovery = 57.68%			
85) Terphenyl-d14	11.990	244	173204	27.77	ppb	0.00
Spiked Amount 50.000	Range 16 - 65		Recovery = 55.54%			
Target Compounds						Qvalue
38) Naphthalene	4.551	128	13574	1.71	ppb	98
56) Acenaphthylene	6.915	152	15764	2.07	ppb	85
59) Acenaphthene	7.203	153	3358	0.72	ppb	87
66) Fluorene	7.995	166	6429	1.19	ppb	98
77) Phenanthrene	9.466	178	29739	3.49	ppb	95
78) Anthracene	9.541	178	16104	1.91	ppb	91
81) Fluoranthene	11.327	202	30283	3.46	ppb	77
84) Pyrene	11.637	202	46682	4.63	ppb	99
88) Benzo[a]anthracene	13.312	228	30493	3.45	ppb	96
90) Chrysene	13.354	228	41953	4.99	ppb	92
94) Benzo[b]fluoranthene	14.611	252	71420m	7.21	ppb	
95) Benzo[k]fluoranthene	14.627	252	17894m	2.07	ppb	
96) Benzo[a]pyrene	14.948	252	60033	6.97	ppb	94
97) Indeno[1,2,3-cd]pyrene	16.045	276	79255	7.94	ppb	86
99) Dibenz[a,h]anthracene	16.055	278	25124	3.02	ppb	92
101) Benzo[g,h,i]perylene	16.269	276	104540	12.33	ppb	90

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

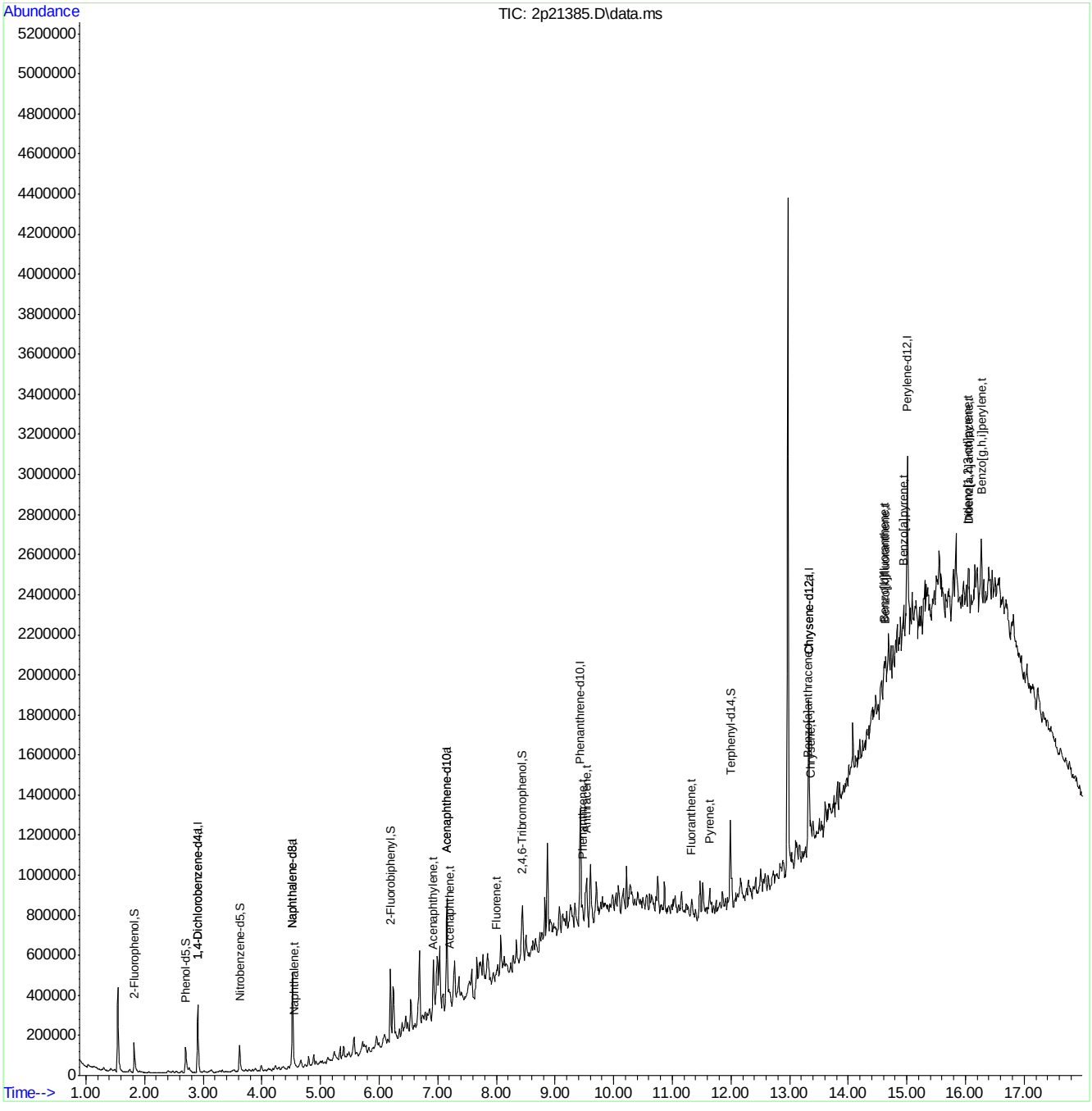
9.1.16

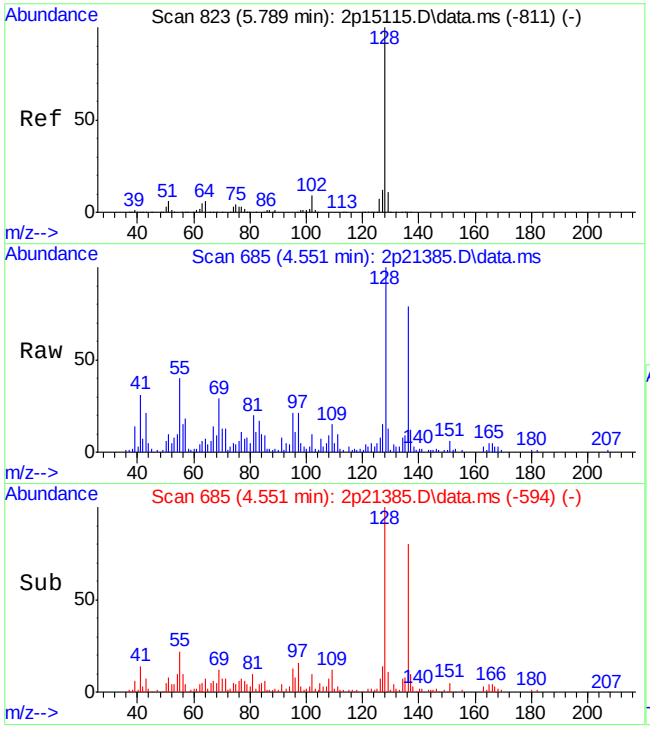
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21385.D
Acq On : 22 Mar 2013 1:17 pm
Operator : andrews1
Sample : jb30425-9cf
Misc : op64440,e2p941,32.0
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 23 13:31:56 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

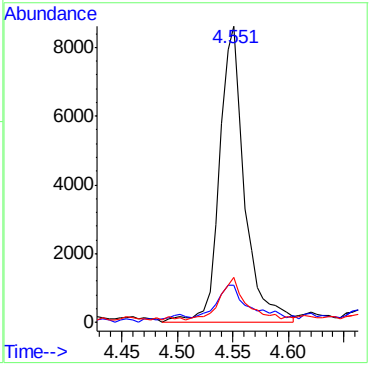


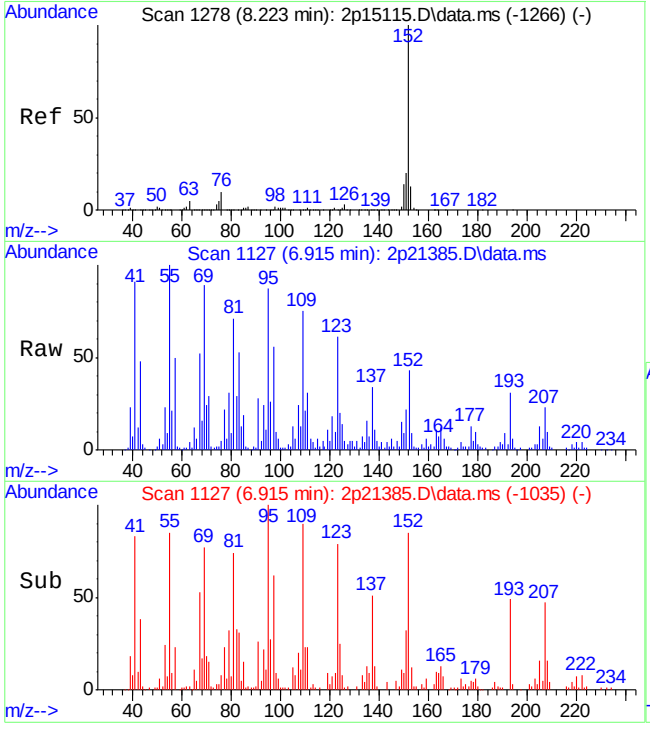


#38
Naphthalene
Concen: 1.71 ppb
RT: 4.551 min Scan# 685
Delta R.T. -0.011 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:128 Resp: 13574

Ion	Ratio	Lower	Upper
128	100		
129	10.9	0.0	41.0
127	14.0	0.0	43.0

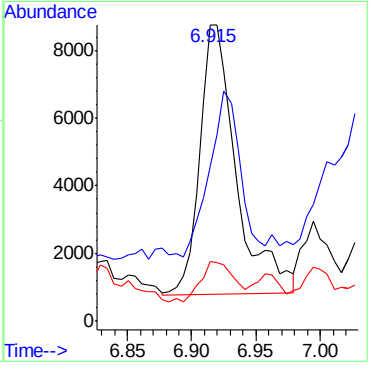




#56
Acenaphthylene
Concen: 2.07 ppb
RT: 6.915 min Scan# 1127
Delta R.T. -0.005 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:152 Resp: 15764

Ion	Ratio	Lower	Upper
152	100		
151	31.2	0.0	49.9
153	13.2	0.0	43.1



9.1.16

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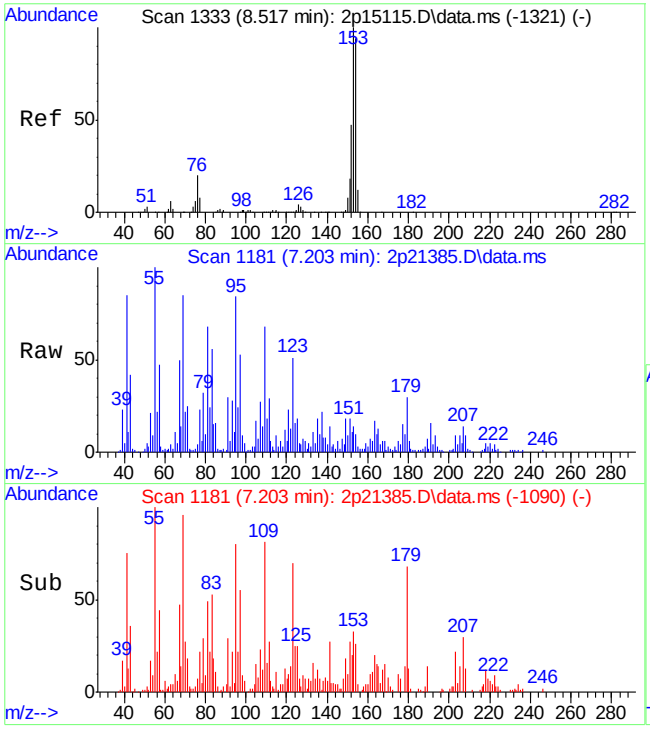
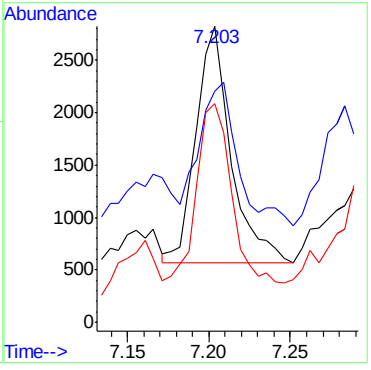
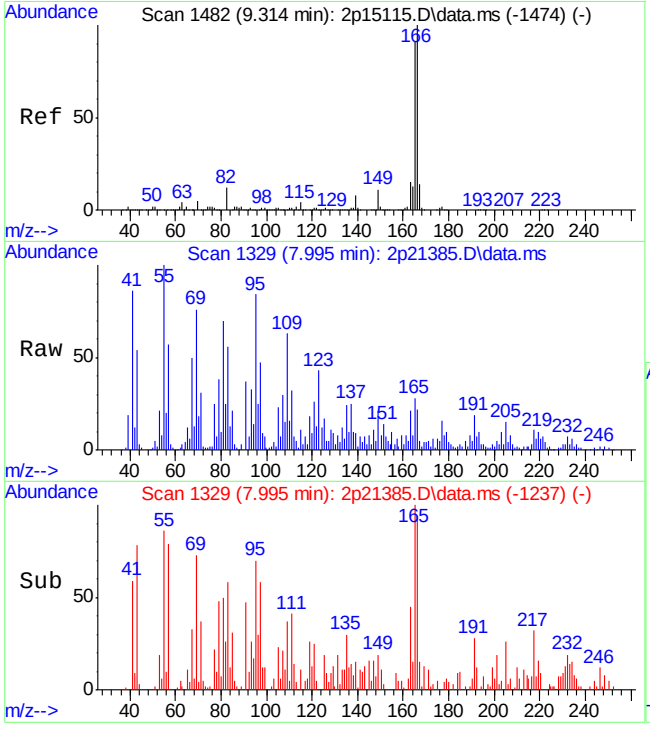


#59
Acenaphthene
Concen: 0.72 ppb
RT: 7.203 min Scan# 1181
Delta R.T. -0.011 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:153 Resp: 3358

Ion	Ratio	Lower	Upper
153	100		
152	47.5	17.8	77.8
154	76.0	65.2	125.2

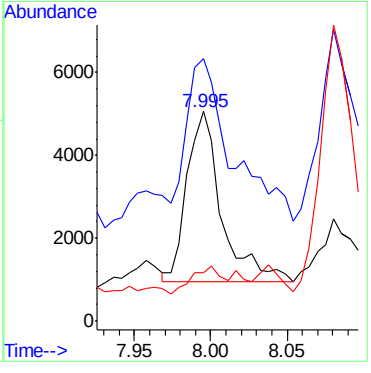


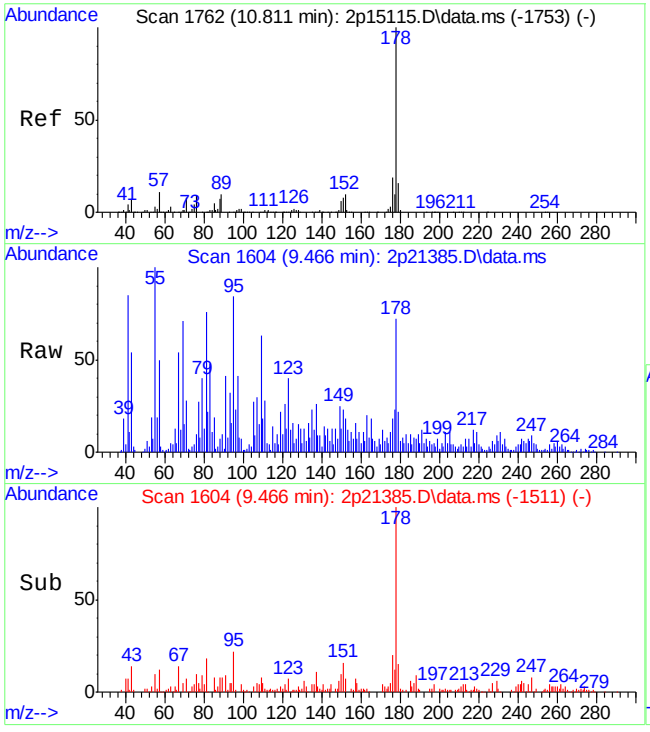


#66
Fluorene
Concen: 1.19 ppb
RT: 7.995 min Scan# 1329
Delta R.T. -0.006 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:166 Resp: 6429

Ion	Ratio	Lower	Upper
166	100		
165	90.9	62.5	122.5
167	10.8	0.0	42.9

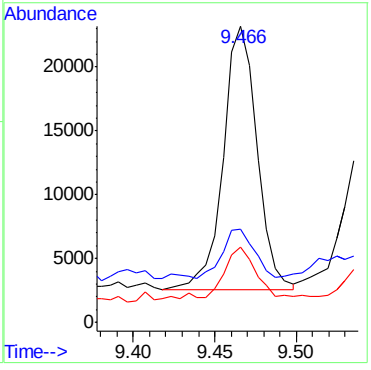


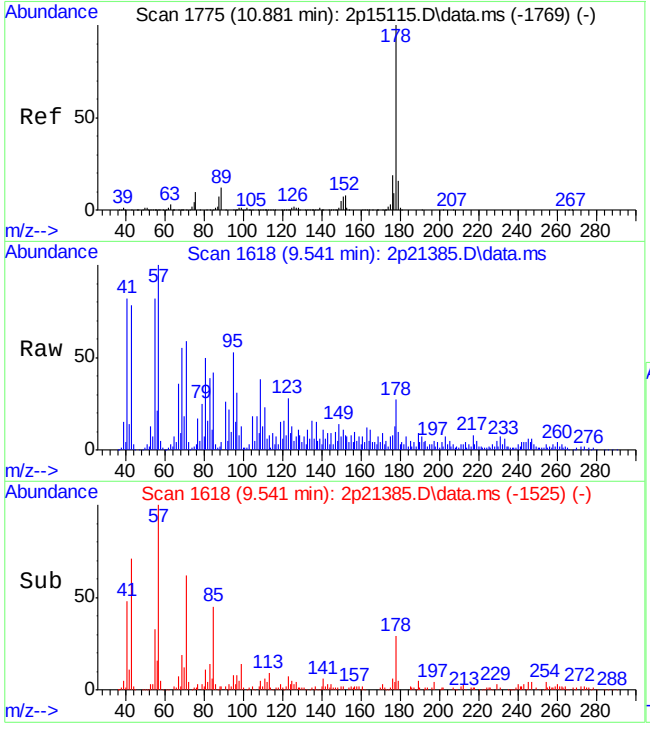


#77
Phenanthrene
Concen: 3.49 ppb
RT: 9.466 min Scan# 1604
Delta R.T. -0.000 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:178 Resp: 29739

Ion	Ratio	Lower	Upper
178	100		
179	18.0	0.0	44.4
176	19.4	0.0	48.6

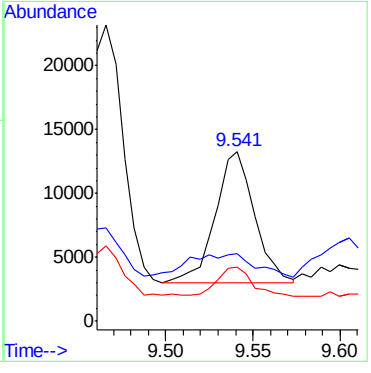




#78
Anthracene
Concen: 1.91 ppb
RT: 9.541 min Scan# 1618
Delta R.T. -0.000 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

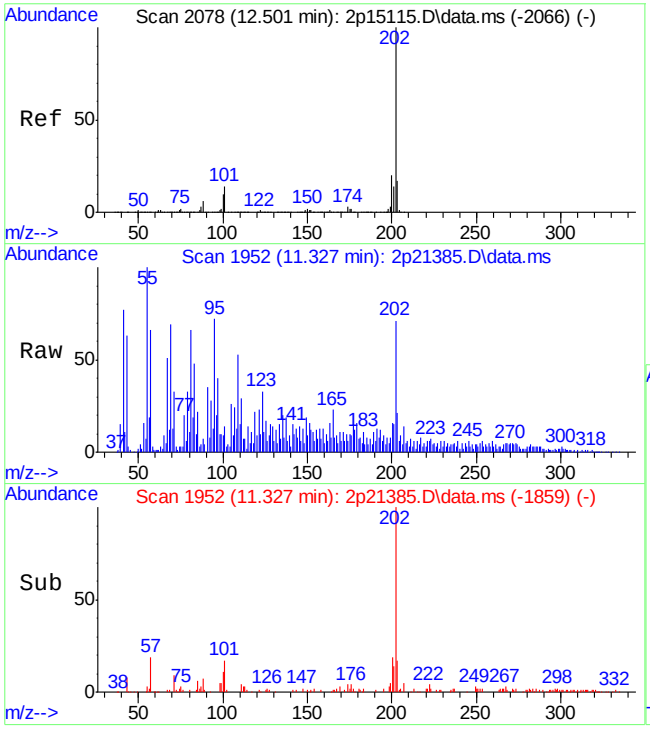
Tgt Ion:178 Resp: 16104

Ion	Ratio	Lower	Upper
178	100		
179	16.3	0.0	44.5
176	22.2	0.0	46.5



9.1.16

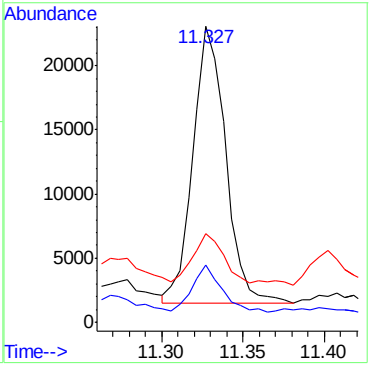
9

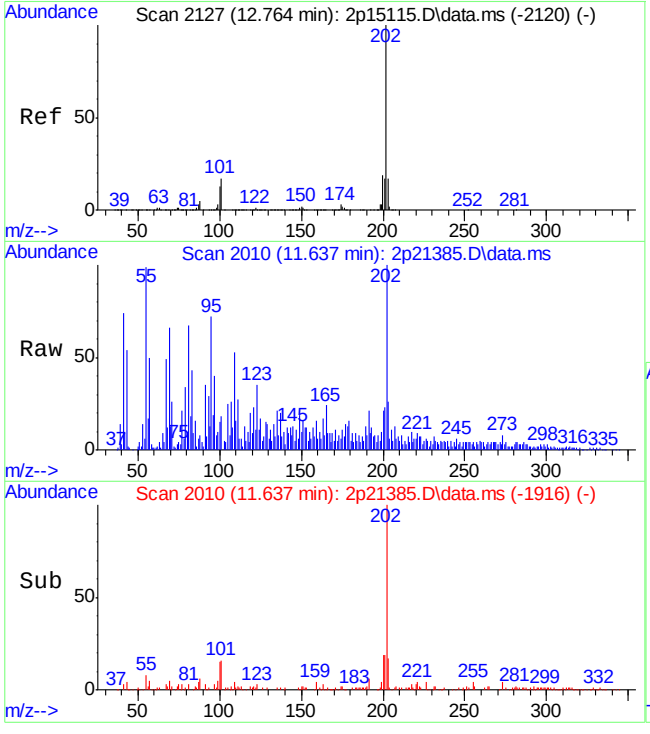


#81
Fluoranthene
Concen: 3.46 ppb
RT: 11.327 min Scan# 1952
Delta R.T. -0.000 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:202 Resp: 30283

Ion	Ratio	Lower	Upper
202	100		
101	19.4	0.0	41.3
203	30.1	0.0	49.1

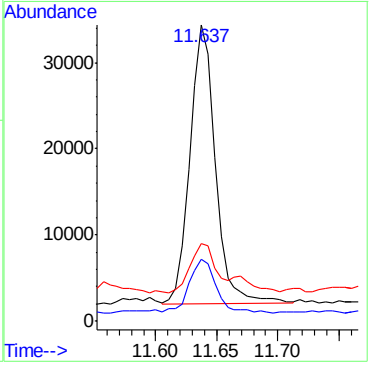


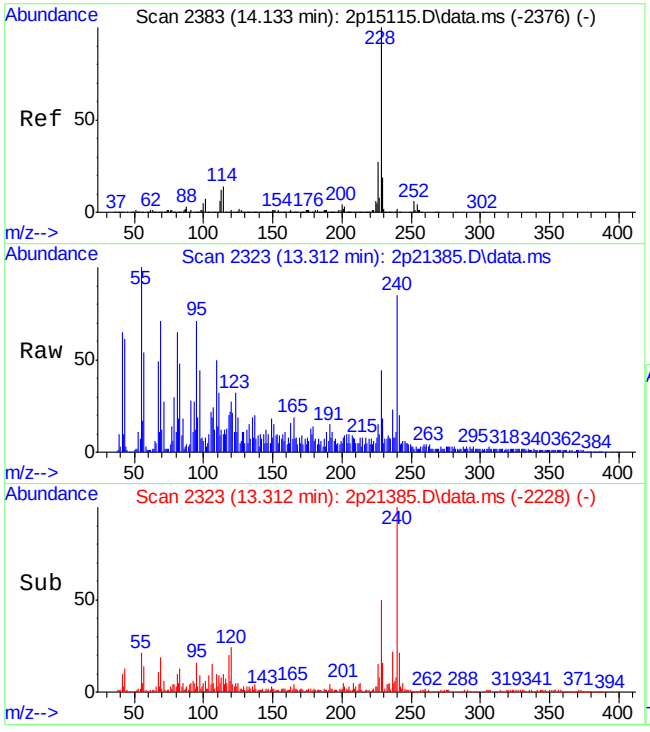


#84
Pyrene
Concen: 4.63 ppb
RT: 11.637 min Scan# 2010
Delta R.T. 0.005 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:202 Resp: 46682

Ion	Ratio	Lower	Upper
202	100		
200	18.8	0.0	49.6
203	16.8	0.0	46.9

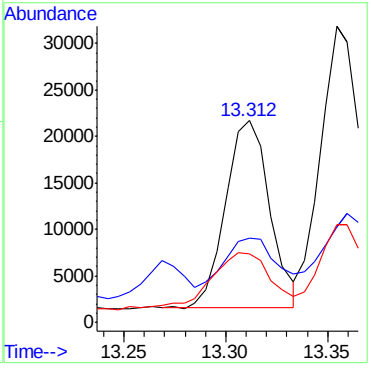


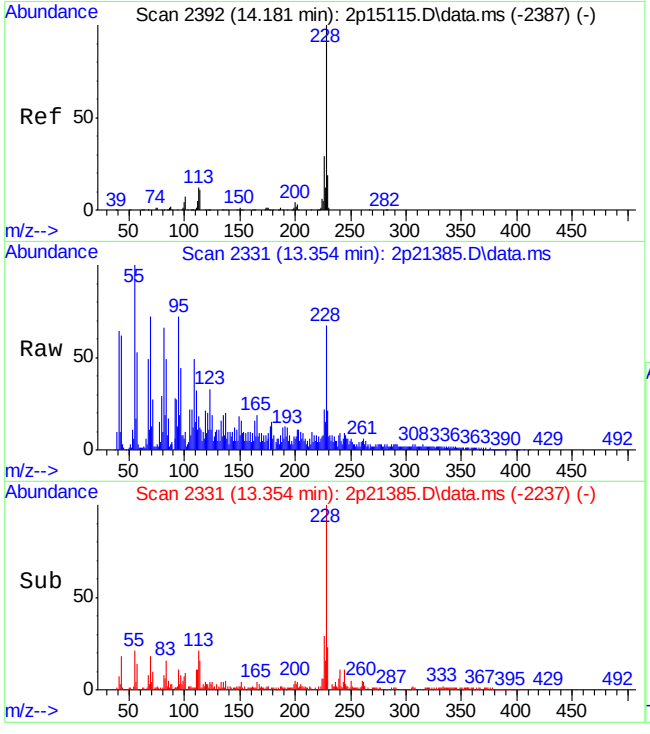


#88
Benzo[a]anthracene
Concen: 3.45 ppb
RT: 13.312 min Scan# 2323
Delta R.T. 0.011 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:228 Resp: 30493

Ion	Ratio	Lower	Upper
228	100		
229	16.7	0.0	50.7
226	26.8	0.0	56.7

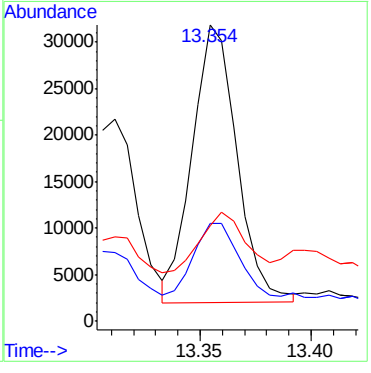


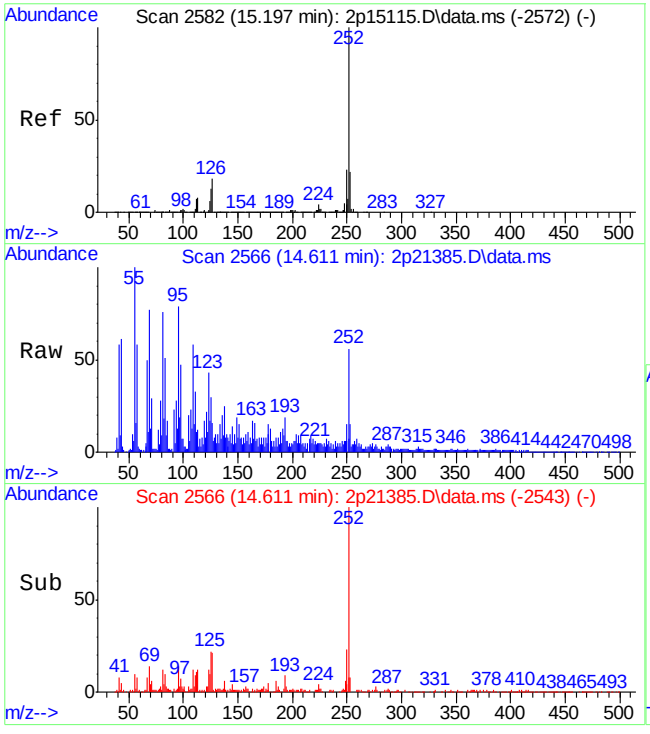


#90
Chrysene
Concen: 4.99 ppb
RT: 13.354 min Scan# 2331
Delta R.T. 0.005 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:228 Resp: 41953

Ion	Ratio	Lower	Upper
228	100		
226	26.7	0.0	58.4
229	13.6	0.0	50.1

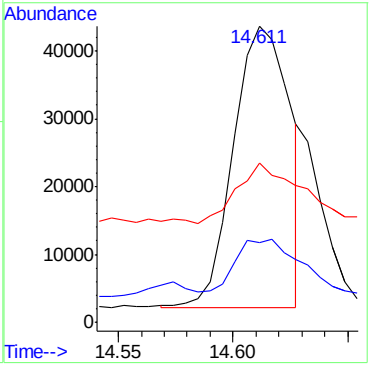


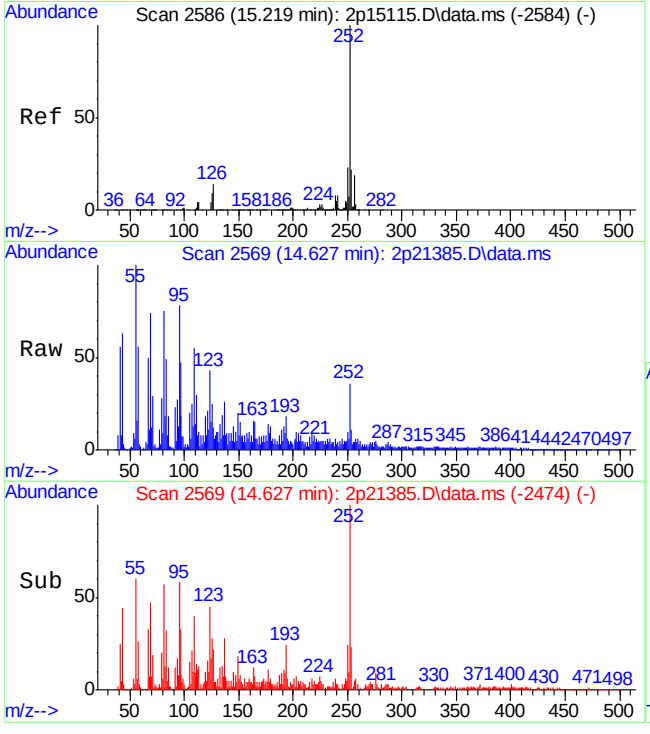


#94
Benzo[b]fluoranthene
Concen: 7.21 ppb m
RT: 14.611 min Scan# 2566
Delta R.T. 0.021 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:252 Resp: 71420

Ion	Ratio	Lower	Upper
252	100		
253	26.8	0.0	51.1
125	53.7	0.0	40.8#

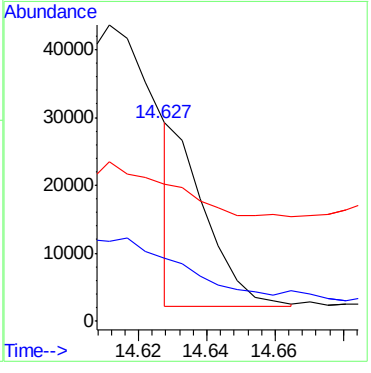




#95
Benzo[k]fluoranthene
Concen: 2.07 ppb m
RT: 14.627 min Scan# 2569
Delta R.T. 0.011 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

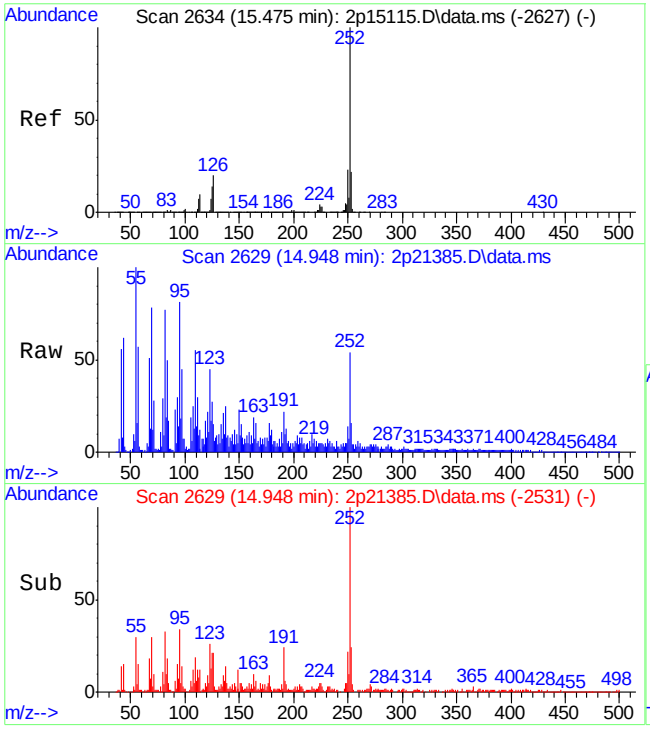
Tgt Ion:252 Resp: 17894

Ion	Ratio	Lower	Upper
252	100		
253	31.5	0.0	56.1
125	68.8	0.0	45.7#



9.1.16

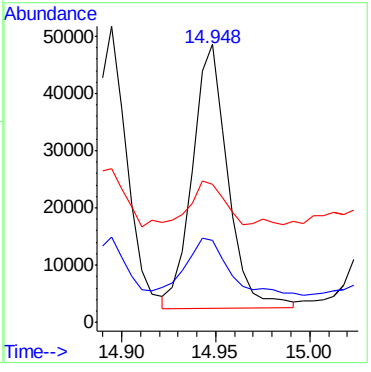
9

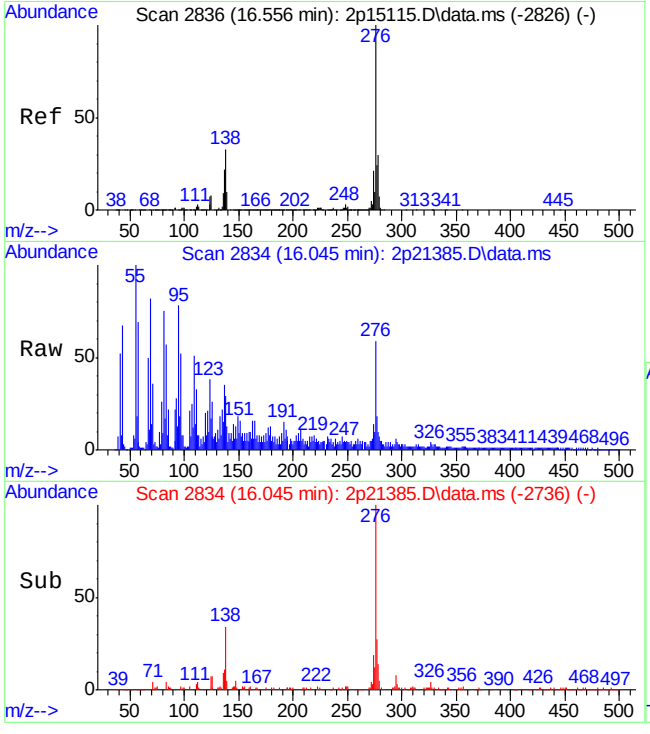


#96
Benzo[a]pyrene
Concen: 6.97 ppb
RT: 14.948 min Scan# 2629
Delta R.T. 0.027 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:252 Resp: 60033

Ion	Ratio	Lower	Upper
252	100		
253	19.5	0.0	51.5
125	14.6	0.0	41.1

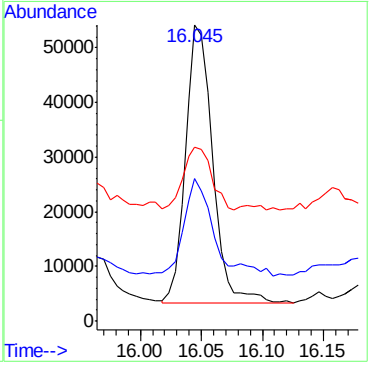


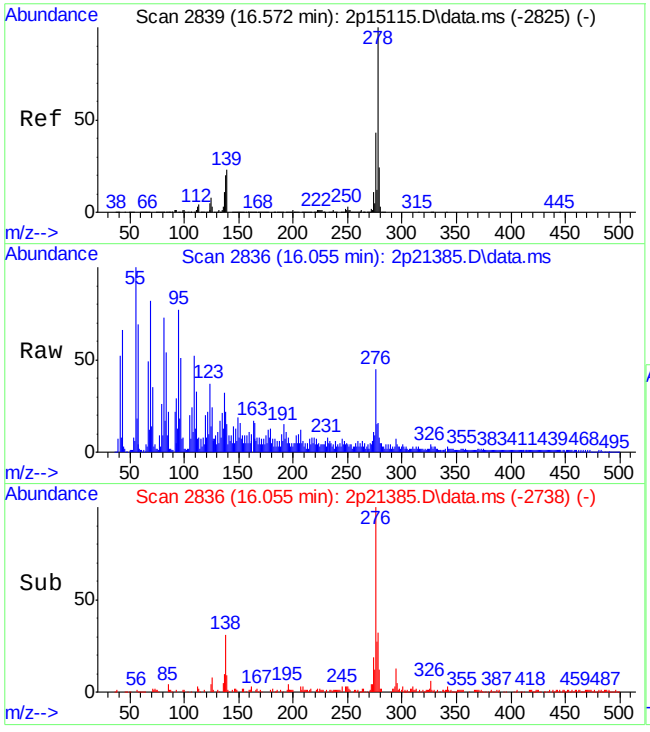


#97
Indeno[1,2,3-cd]pyrene
Concen: 7.94 ppb
RT: 16.045 min Scan# 2834
Delta R.T. 0.027 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:276 Resp: 79255

Ion	Ratio	Lower	Upper
276	100		
138	34.6	0.0	54.7
137	22.1	0.0	49.5

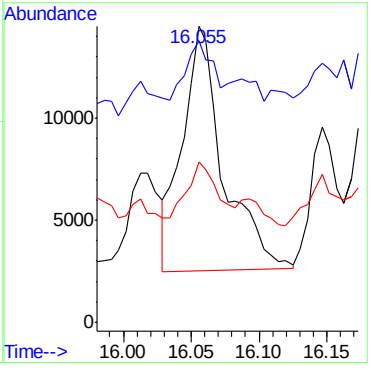


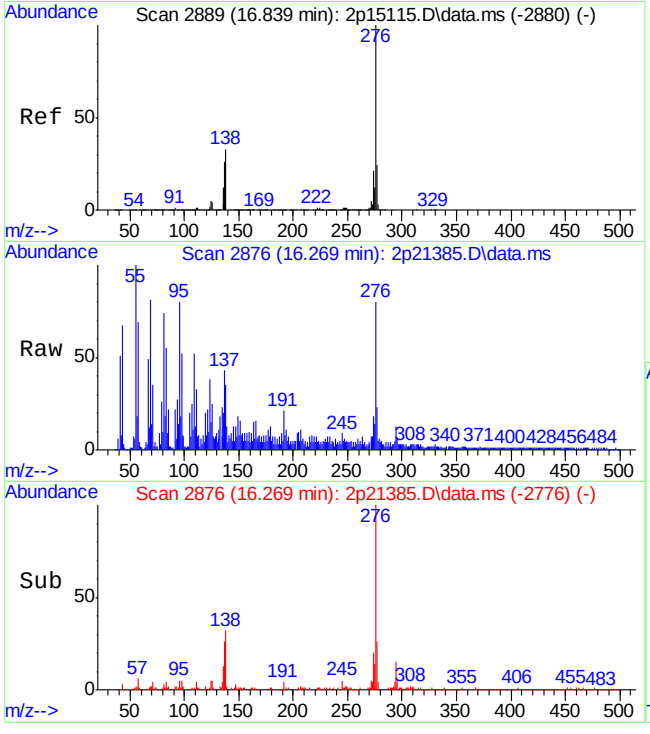


#99
Dibenz[a,h]anthracene
Concen: 3.02 ppb
RT: 16.055 min Scan# 2836
Delta R.T. 0.027 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:278 Resp: 25124

Ion	Ratio	Lower	Upper
278	100		
139	27.8	0.0	49.9
279	27.2	0.0	56.4

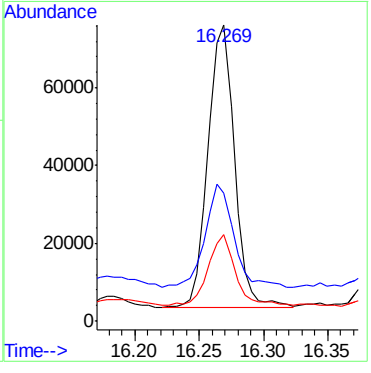




#101
Benzo[g,h,i]perylene
Concen: 12.33 ppb
RT: 16.269 min Scan# 2876
Delta R.T. 0.037 min
Lab File: 2p21385.D
Acq: 22 Mar 2013 1:17 pm

Tgt Ion:276 Resp: 104540

Ion	Ratio	Lower	Upper
276	100		
138	33.5	0.0	55.6
277	25.1	0.0	53.3



Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21243.D
Acq On : 19 Mar 2013 9:06 pm
Operator : andrews1
Sample : jb30425-10
Misc : op64440,e2p936,30.2
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Mar 20 14:53:25 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.946	152	147707	40.00	ppb	-0.08
24) Naphthalene-d8	4.567	136	572605	40.00	ppb	-0.09
47) Acenaphthene-d10	7.204	164	322761	40.00	ppb	-0.09
69) Phenanthrene-d10	9.477	188	533396	40.00	ppb	-0.07
83) Chrysene-d12	13.365	240	528574	40.00	ppb	-0.05
92) Perylene-d12	15.029	264	498220	40.00	ppb	-0.03
102) 1,4-Dichlorobenzene-d4a	2.946	152	147707	40.00	ppb	-0.08
104) Acenaphthene-d10a	7.204	164	322761	40.00	ppb	-0.09
107) Chrysene-d12a	13.365	240	528574	40.00	ppb	-0.05
109) Naphthalene-d8a	4.567	136	572605	40.00	ppb	#-0.09
System Monitoring Compounds						
5) 2-Fluorophenol	1.850	112	136704	25.86	ppb	-0.05
Spiked Amount 50.000	Range 11 - 58		Recovery = 51.72%			
8) Phenol-d5	2.732	99	176806	26.96	ppb	-0.04
Spiked Amount 50.000	Range 10 - 59		Recovery = 53.92%			
25) Nitrobenzene-d5	3.658	82	122564	23.27	ppb	-0.08
Spiked Amount 50.000	Range 19 - 61		Recovery = 46.54%			
51) 2-Fluorobiphenyl	6.241	172	254293	24.64	ppb	-0.09
Spiked Amount 50.000	Range 21 - 58		Recovery = 49.28%			
73) 2,4,6-Tribromophenol	8.471	330	29519	24.76	ppb	-0.07
Spiked Amount 50.000	Range 12 - 68		Recovery = 49.52%			
85) Terphenyl-d14	12.023	244	254960	22.90	ppb	-0.07
Spiked Amount 50.000	Range 16 - 65		Recovery = 45.80%			
Target Compounds						Qvalue
38) Naphthalene	4.594	128	4819	0.31	ppb	96
56) Acenaphthylene	6.963	152	5958	0.40	ppb	97
77) Phenanthrene	9.504	178	50762	3.16	ppb	98
78) Anthracene	9.578	178	12871	0.81	ppb	93
81) Fluoranthene	11.365	202	127208	7.71	ppb	93
84) Pyrene	11.670	202	117059	6.50	ppb	98
88) Benzo[a]anthracene	13.339	228	82543	5.24	ppb	96
90) Chrysene	13.387	228	82478	5.50	ppb	98
94) Benzo[b]fluoranthene	14.633	252	100416m	5.91	ppb	
95) Benzo[k]fluoranthene	14.644	252	40703m	2.74	ppb	
96) Benzo[a]pyrene	14.965	252	74270	5.03	ppb	96
97) Indeno[1,2,3-cd]pyrene	16.056	276	48493	2.83	ppb	90
99) Dibenz[a,h]anthracene	16.066	278	20562	1.44	ppb	90
101) Benzo[g,h,i]perylene	16.270	276	44808	3.08	ppb	91

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

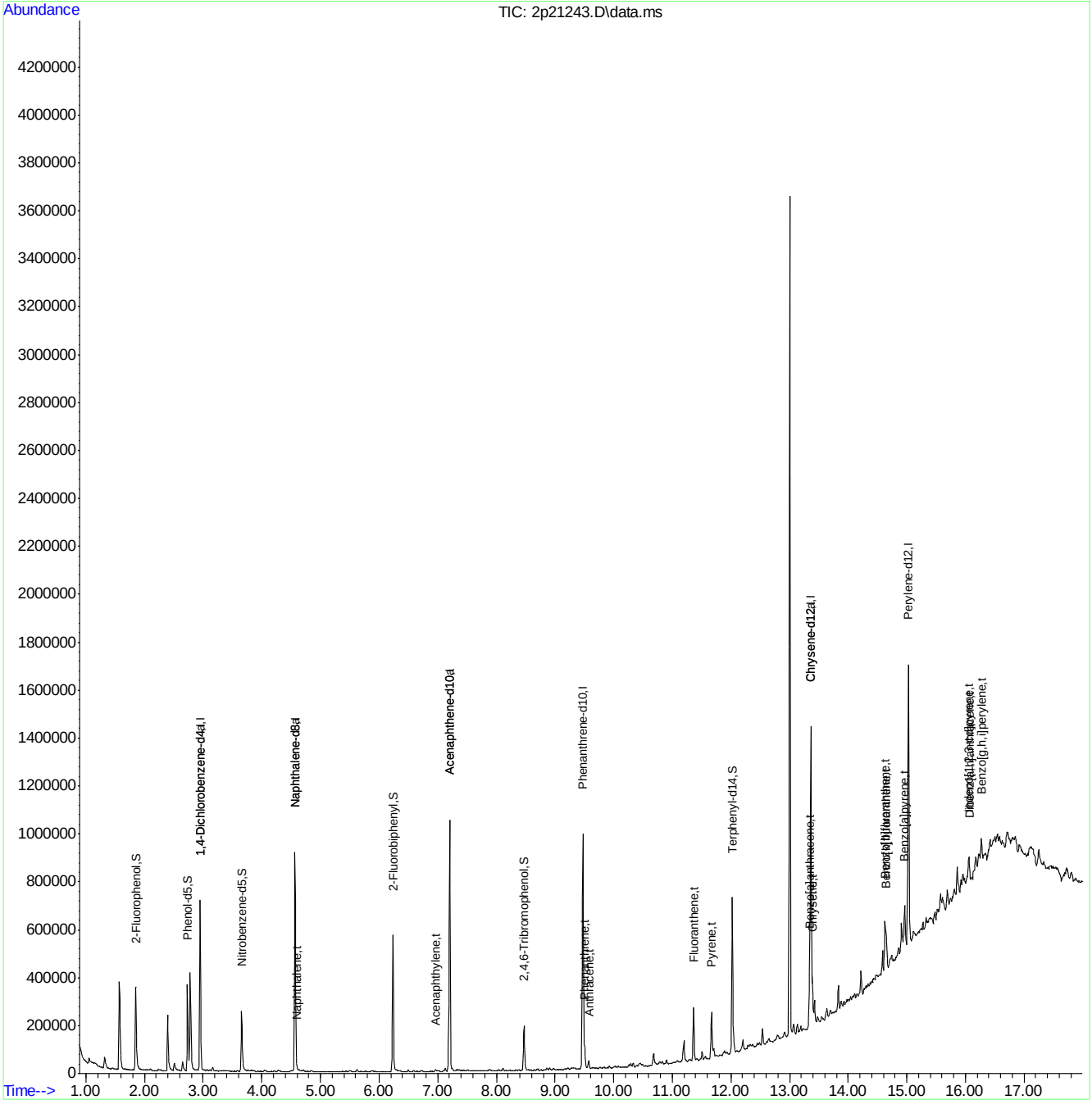
9.1.17

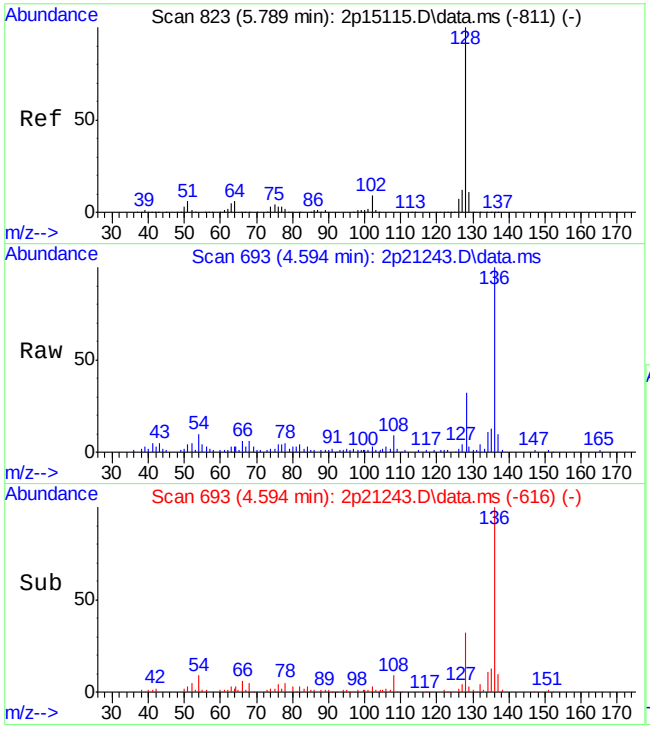
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21243.D
Acq On : 19 Mar 2013 9:06 pm
Operator : andrews1
Sample : jb30425-10
Misc : op64440,e2p936,30.2
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Mar 20 14:53:25 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

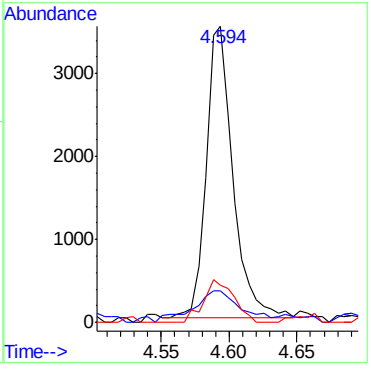


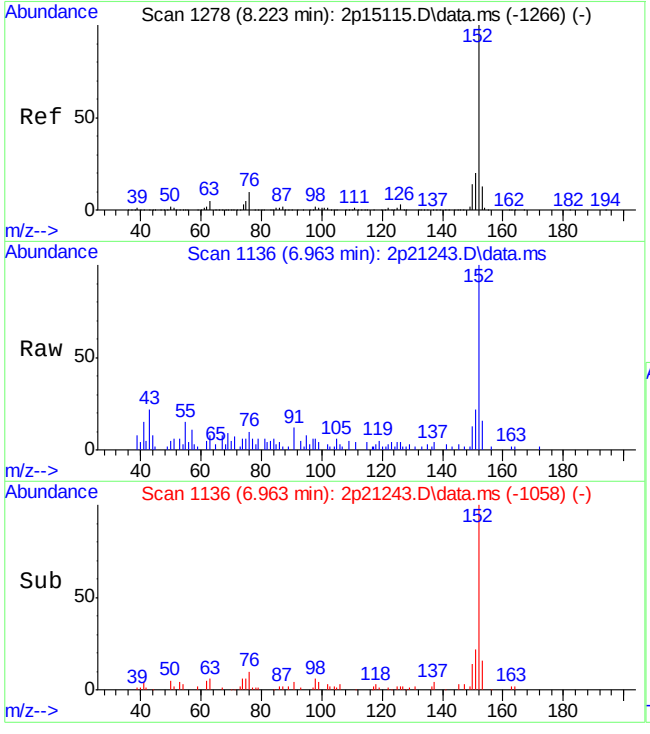


#38
Naphthalene
Concen: 0.31 ppb
RT: 4.594 min Scan# 693
Delta R.T. -0.086 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:128 Resp: 4819

Ion	Ratio	Lower	Upper
128	100		
129	8.9	0.0	41.0
127	12.2	0.0	43.0

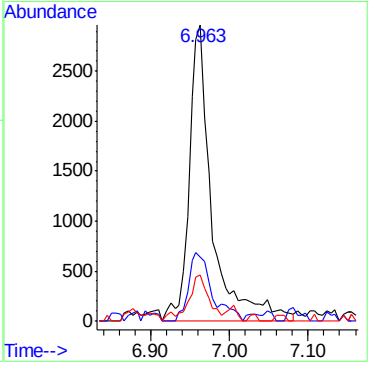


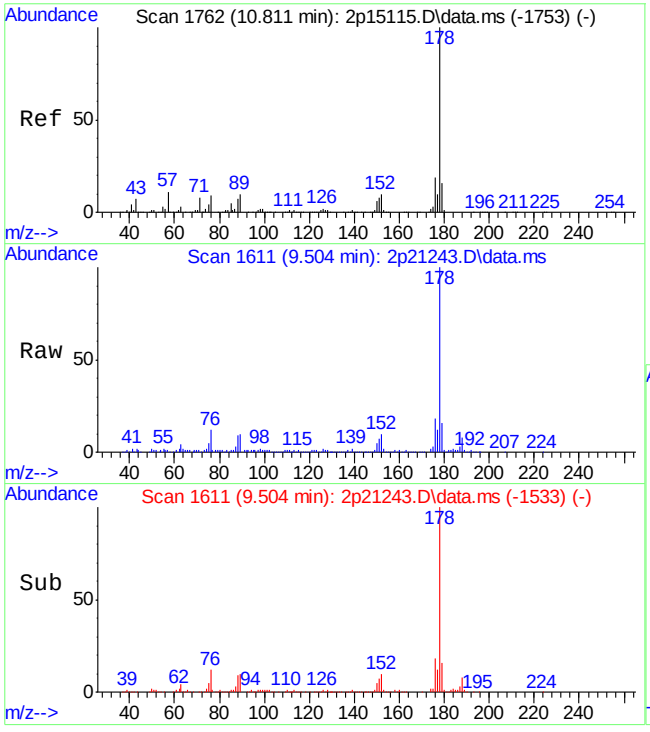


#56
Acenaphthylene
Concen: 0.40 ppb
RT: 6.963 min Scan# 1136
Delta R.T. -0.080 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:152 Resp: 5958

Ion	Ratio	Lower	Upper
152	100		
151	19.5	0.0	49.9
153	15.8	0.0	43.1

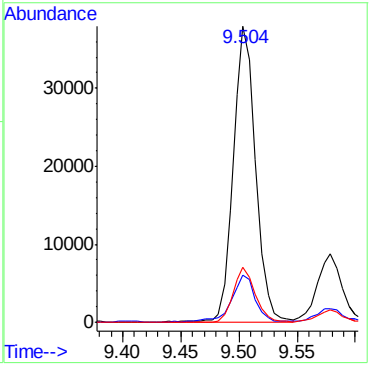


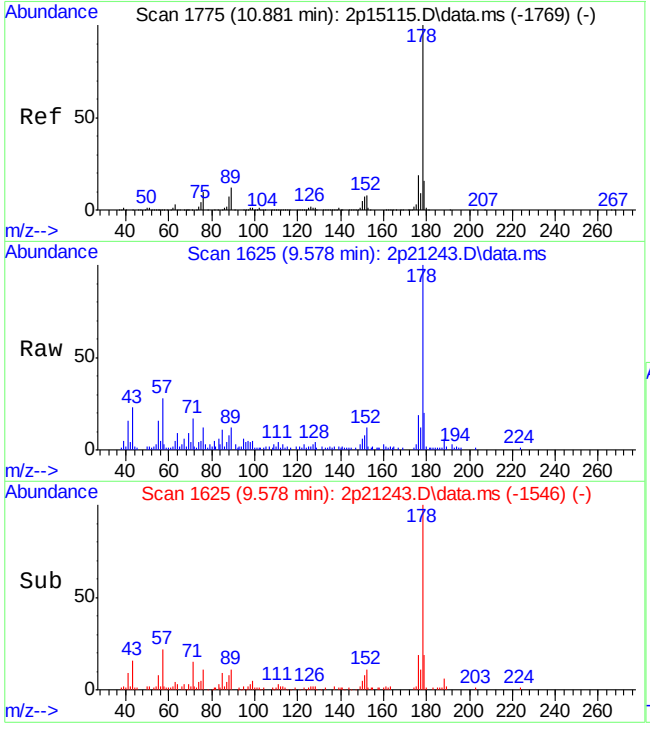


#77
Phenanthrene
Concen: 3.16 ppb
RT: 9.504 min Scan# 1611
Delta R.T. -0.080 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:178 Resp: 50762

Ion	Ratio	Lower	Upper
178	100		
179	15.7	0.0	44.4
176	18.4	0.0	48.6

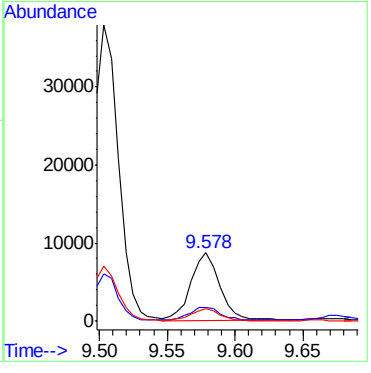




#78
Anthracene
Concen: 0.81 ppb
RT: 9.578 min Scan# 1625
Delta R.T. -0.075 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

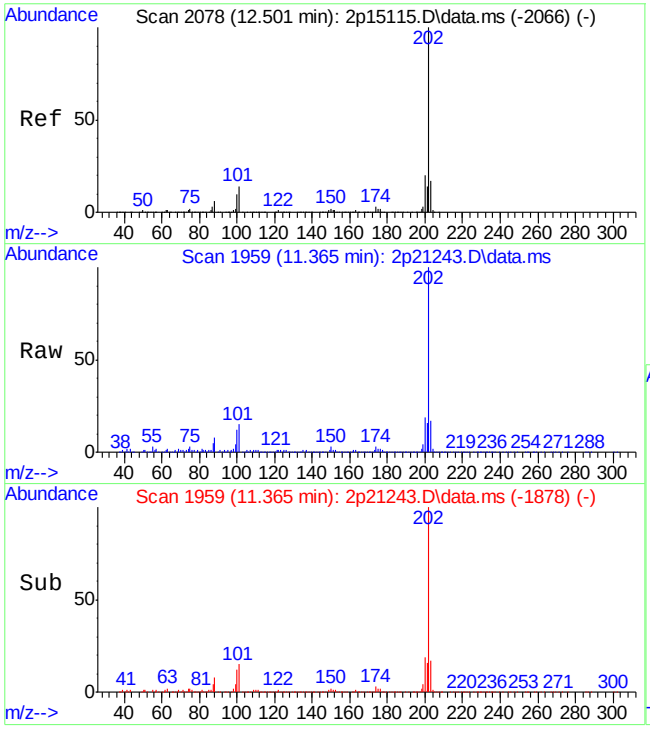
Tgt Ion:178 Resp: 12871

Ion	Ratio	Lower	Upper
178	100		
179	18.7	0.0	44.5
176	18.6	0.0	46.5



9.1.17

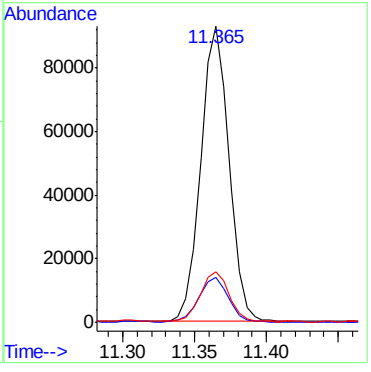
9

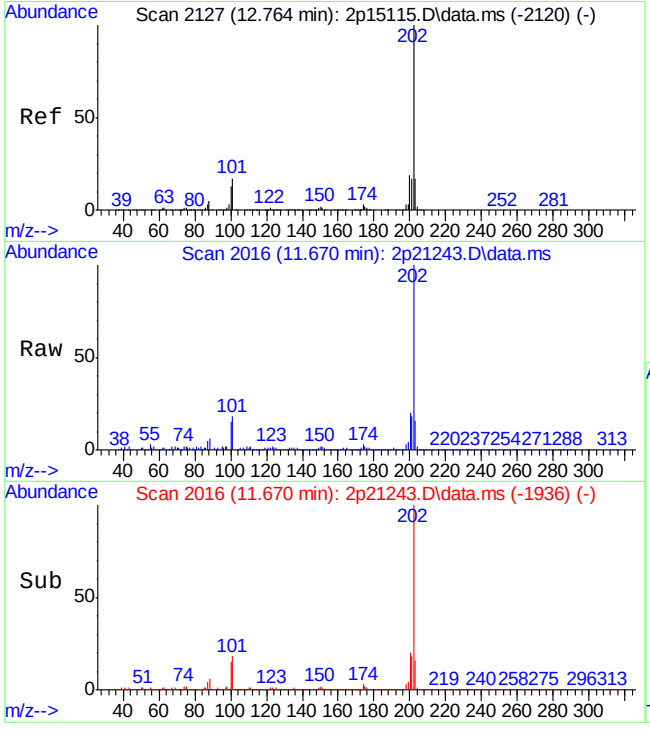


#81
Fluoranthene
Concen: 7.71 ppb
RT: 11.365 min Scan# 1959
Delta R.T. -0.064 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:202 Resp: 127208

Ion	Ratio	Lower	Upper
202	100		
101	15.4	0.0	41.3
203	17.0	0.0	49.1

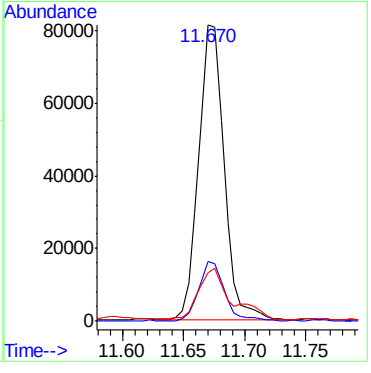




#84
Pyrene
Concen: 6.50 ppb
RT: 11.670 min Scan# 2016
Delta R.T. -0.070 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

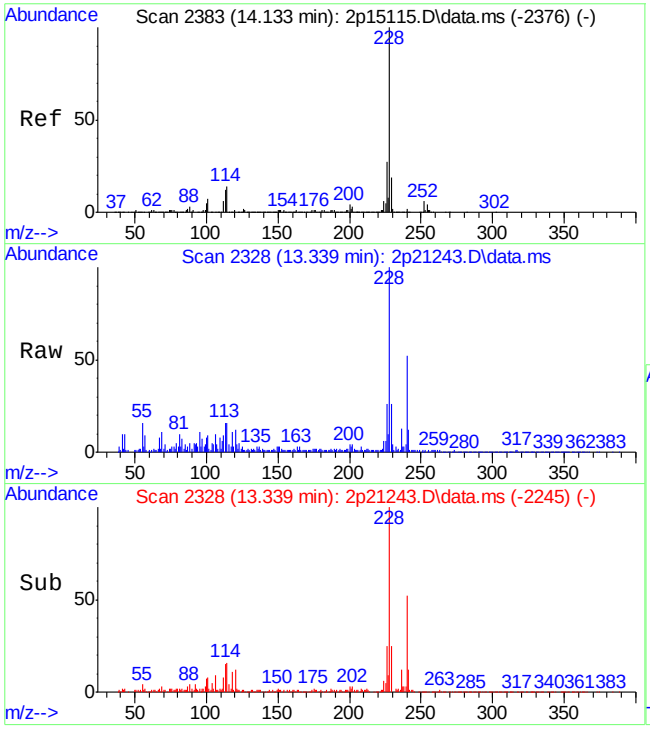
Tgt Ion:202 Resp: 117059

Ion	Ratio	Lower	Upper
202	100		
200	20.1	0.0	49.6
203	15.8	0.0	46.9



9.1.17

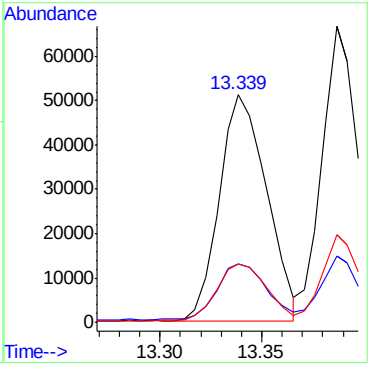
9

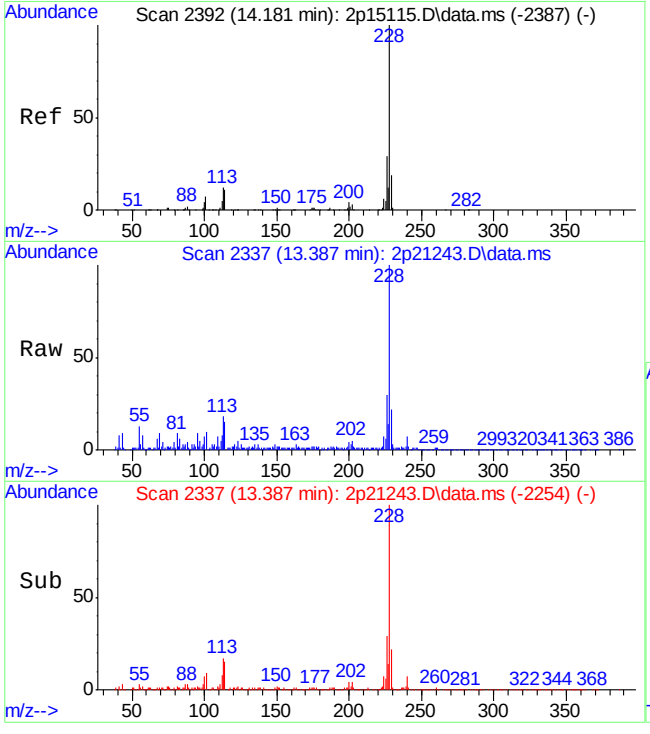


#88
Benzo[a]anthracene
Concen: 5.24 ppb
RT: 13.339 min Scan# 2328
Delta R.T. -0.053 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:228 Resp: 82543

Ion	Ratio	Lower	Upper
228	100		
229	23.8	0.0	50.7
226	25.3	0.0	56.7

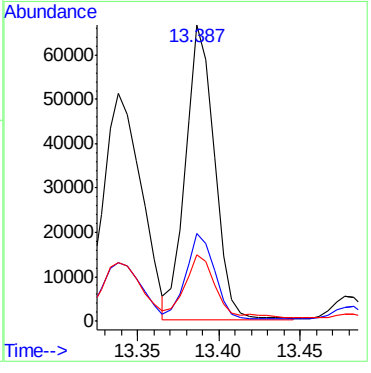


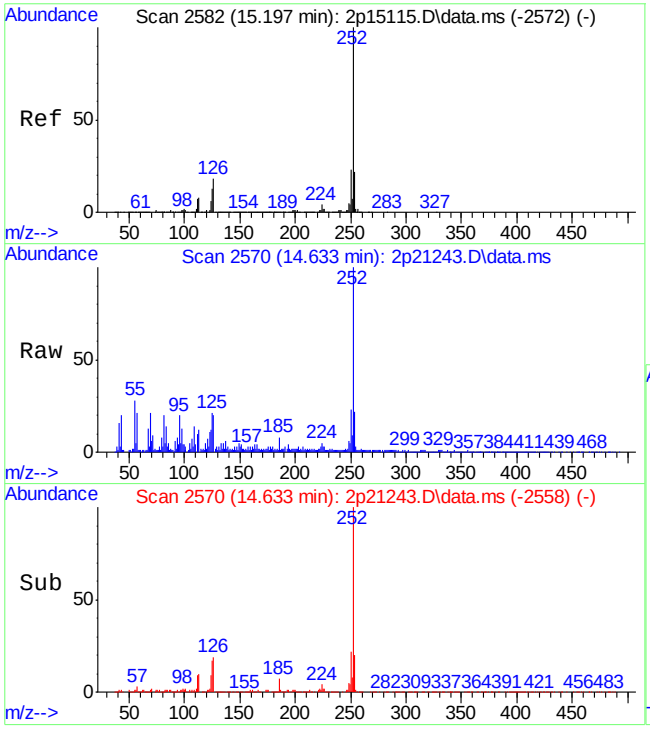


#90
Chrysene
Concen: 5.50 ppb
RT: 13.387 min Scan# 2337
Delta R.T. -0.053 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:228 Resp: 82478

Ion	Ratio	Lower	Upper
228	100		
226	29.3	0.0	58.4
229	21.0	0.0	50.1

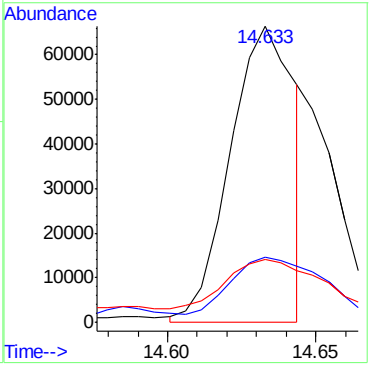


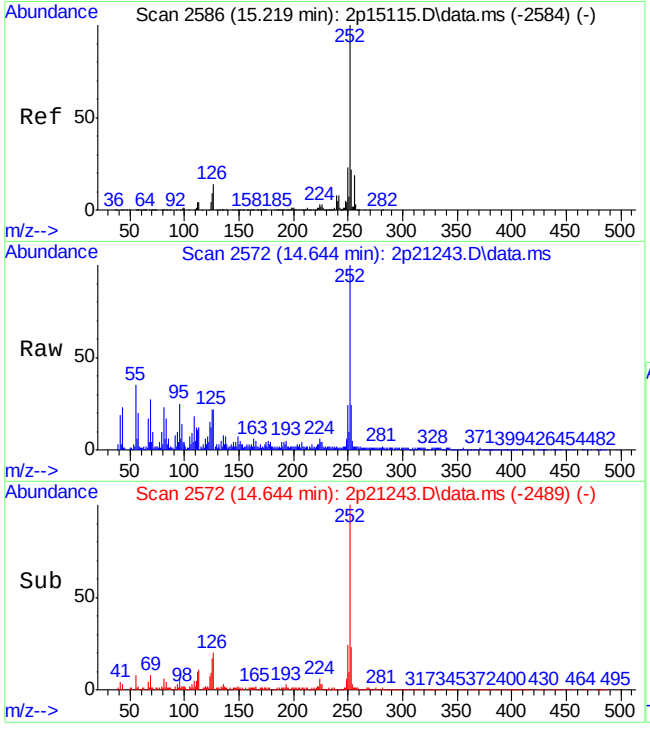


#94
Benzo[b]fluoranthene
Concen: 5.91 ppb m
RT: 14.633 min Scan# 2570
Delta R.T. -0.037 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:252 Resp: 100416

Ion	Ratio	Lower	Upper
252	100		
253	22.1	0.0	51.1
125	21.3	0.0	40.8

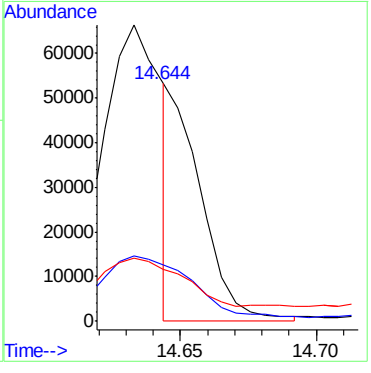


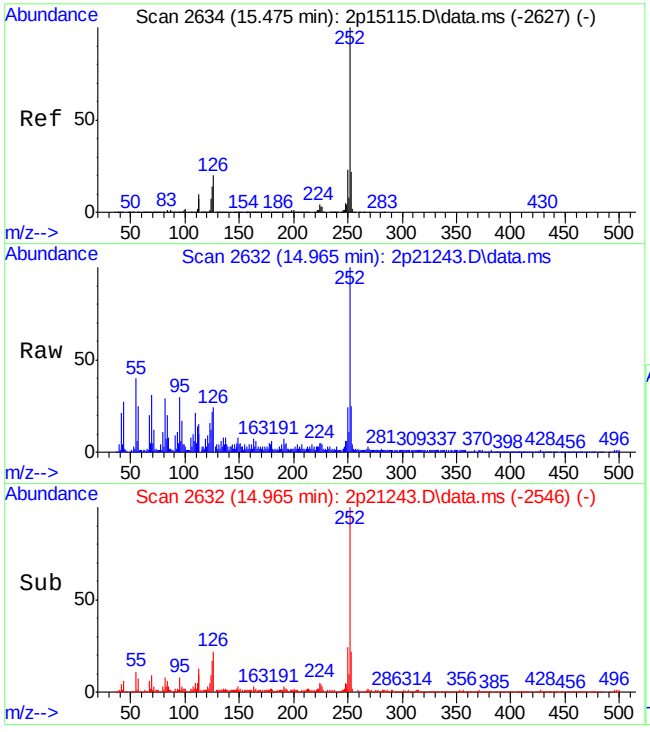


#95
Benzo[k]fluoranthene
Concen: 2.74 ppb m
RT: 14.644 min Scan# 2572
Delta R.T. -0.054 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:252 Resp: 40703

Ion	Ratio	Lower	Upper
252	100		
253	23.6	0.0	56.1
125	21.7	0.0	45.7

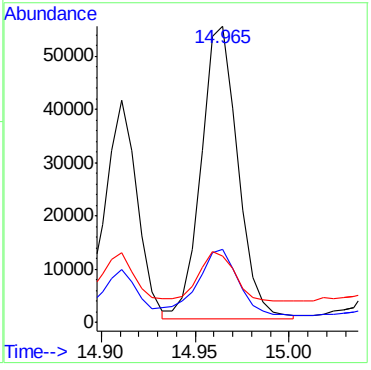


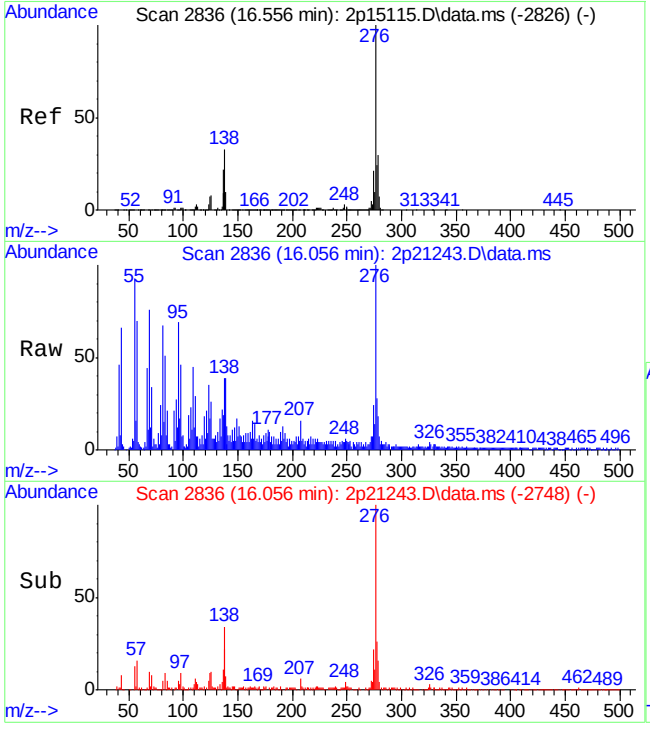


#96
Benzo[a]pyrene
Concen: 5.03 ppb
RT: 14.965 min Scan# 2632
Delta R.T. -0.037 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:252 Resp: 74270

Ion	Ratio	Lower	Upper
252	100		
253	21.8	0.0	51.5
125	15.2	0.0	41.1

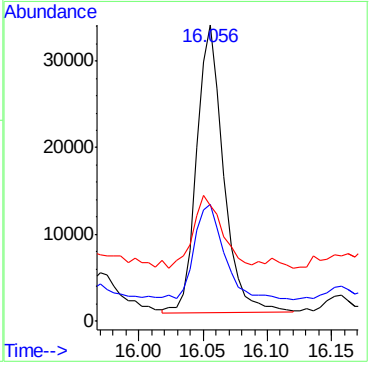


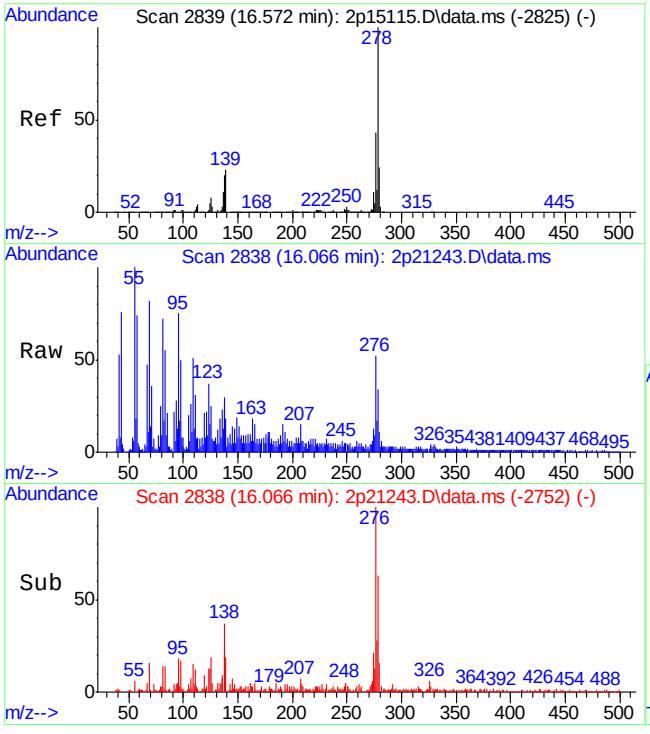


#97
Indeno[1,2,3-cd]pyrene
Concen: 2.83 ppb
RT: 16.056 min Scan# 2836
Delta R.T. -0.027 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:276 Resp: 48493

Ion	Ratio	Lower	Upper
276	100		
138	33.1	0.0	54.7
137	20.5	0.0	49.5

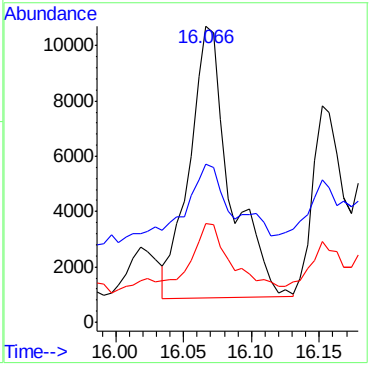


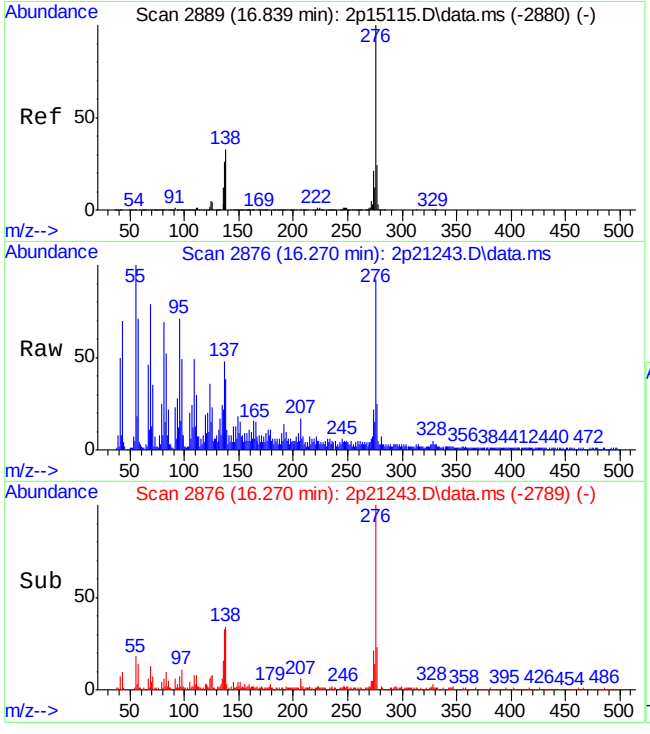


#99
Dibenz[a,h]anthracene
Concen: 1.44 ppb
RT: 16.066 min Scan# 2838
Delta R.T. -0.037 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:278 Resp: 20562

Ion	Ratio	Lower	Upper
278	100		
139	25.8	0.0	49.9
279	22.8	0.0	56.4

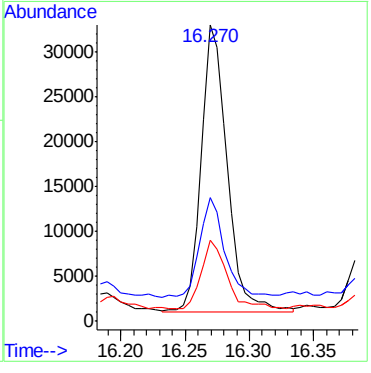




#101
Benzo[g,h,i]perylene
Concen: 3.08 ppb
RT: 16.270 min Scan# 2876
Delta R.T. -0.032 min
Lab File: 2p21243.D
Acq: 19 Mar 2013 9:06 pm

Tgt Ion:276 Resp: 44808

Ion	Ratio	Lower	Upper
276	100		
138	34.1	0.0	55.6
277	23.6	0.0	53.3



9.1.17

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21386.D
Acq On : 22 Mar 2013 1:40 pm
Operator : andrews1
Sample : jb30425-10cf
Misc : op64440,e2p941,32.0
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Mar 23 16:14:28 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.909	152	60358	40.00	ppb	-0.02
24) Naphthalene-d8	4.524	136	238775	40.00	ppb	-0.01
47) Acenaphthene-d10	7.150	164	135639	40.00	ppb	-0.02
69) Phenanthrene-d10	9.423	188	223305	40.00	ppb	-0.01
83) Chrysene-d12	13.317	240	216666	40.00	ppb	0.00
92) Perylene-d12	14.986	264	203317	40.00	ppb	0.00
102) 1,4-Dichlorobenzene-d4a	2.909	152	60358	40.00	ppb	-0.02
104) Acenaphthene-d10a	7.150	164	135639	40.00	ppb	-0.02
107) Chrysene-d12a	13.317	240	216666	40.00	ppb	0.00
109) Naphthalene-d8a	4.524	136	238775	40.00	ppb	#-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.823	112	60440	27.97	ppb	-0.01
Spiked Amount 50.000	Range 11 - 58		Recovery = 55.94%			
8) Phenol-d5	2.700	99	80644	30.09	ppb	0.00
Spiked Amount 50.000	Range 10 - 59		Recovery = 60.18%#			
25) Nitrobenzene-d5	3.620	82	58656	26.71	ppb	-0.01
Spiked Amount 50.000	Range 19 - 61		Recovery = 53.42%			
51) 2-Fluorobiphenyl	6.193	172	145487	33.54	ppb	-0.02
Spiked Amount 50.000	Range 21 - 58		Recovery = 67.08%#			
73) 2,4,6-Tribromophenol	8.428	330	16158	32.38	ppb	-0.01
Spiked Amount 50.000	Range 12 - 68		Recovery = 64.76%			
85) Terphenyl-d14	11.980	244	153882	33.71	ppb	0.00
Spiked Amount 50.000	Range 16 - 65		Recovery = 67.42%#			
Target Compounds						Qvalue
38) Naphthalene	4.545	128	5937	0.93	ppb	97
56) Acenaphthylene	6.915	152	6183	0.98	ppb	98
59) Acenaphthene	7.198	153	3722	0.97	ppb	91
66) Fluorene	7.995	166	4472	1.00	ppb	98
77) Phenanthrene	9.455	178	87477	13.00	ppb	98
78) Anthracene	9.530	178	21304	3.20	ppb	93
81) Fluoranthene	11.317	202	160330	23.22	ppb	93
84) Pyrene	11.627	202	138253	18.73	ppb	100
88) Benzo[a]anthracene	13.296	228	76246	11.80	ppb	98
90) Chrysene	13.344	228	76616	12.46	ppb	100
94) Benzo[b]fluoranthene	14.595	252	84701m	12.22	ppb	
95) Benzo[k]fluoranthene	14.601	252	49244m	8.13	ppb	
96) Benzo[a]pyrene	14.927	252	69739	11.58	ppb	96
97) Indeno[1,2,3-cd]pyrene	16.018	276	48992	7.01	ppb	85
99) Dibenz[a,h]anthracene	16.029	278	21209	3.64	ppb	90
101) Benzo[g,h,i]perylene	16.238	276	45326	7.64	ppb	94

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

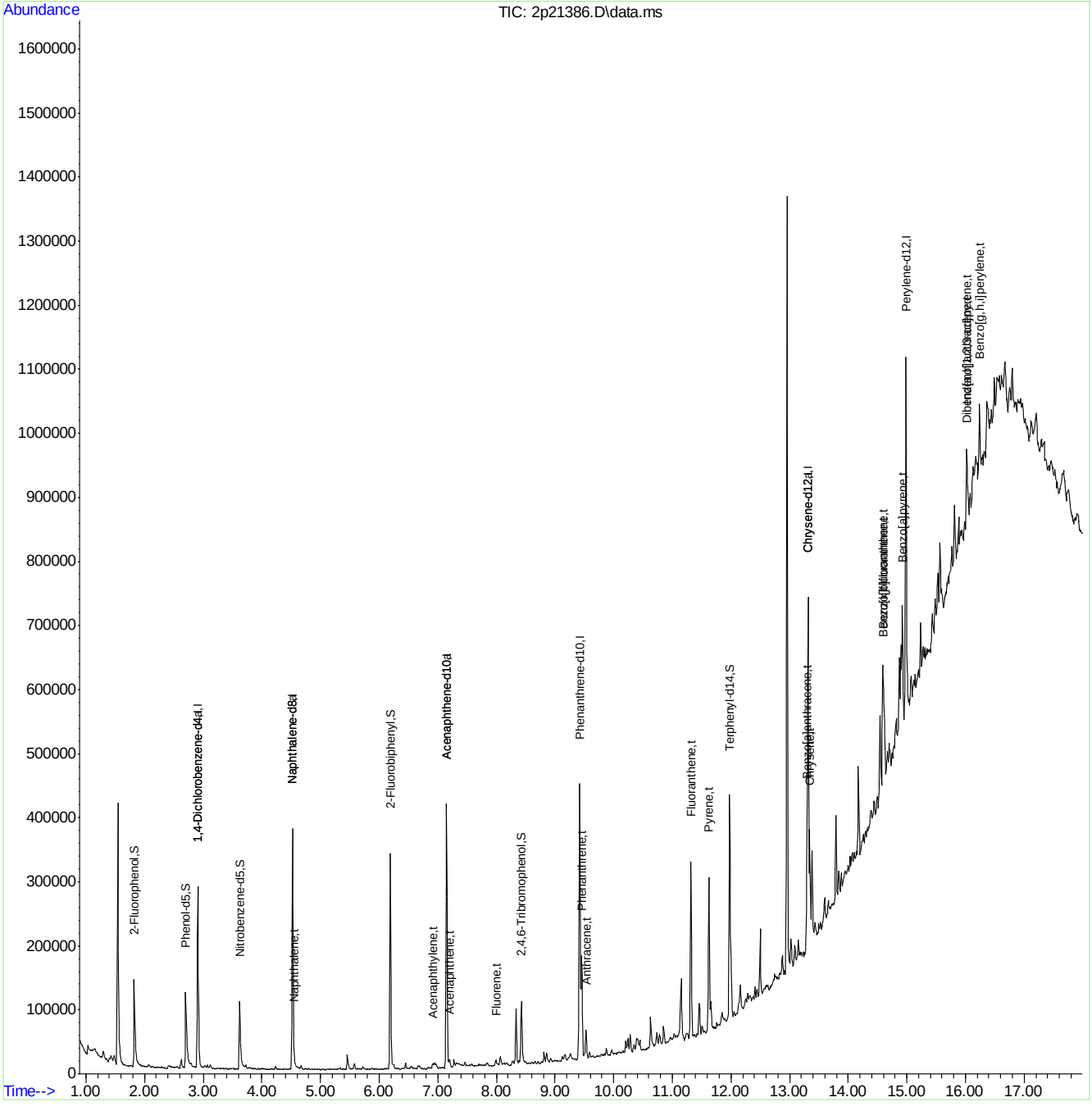
9.1.18

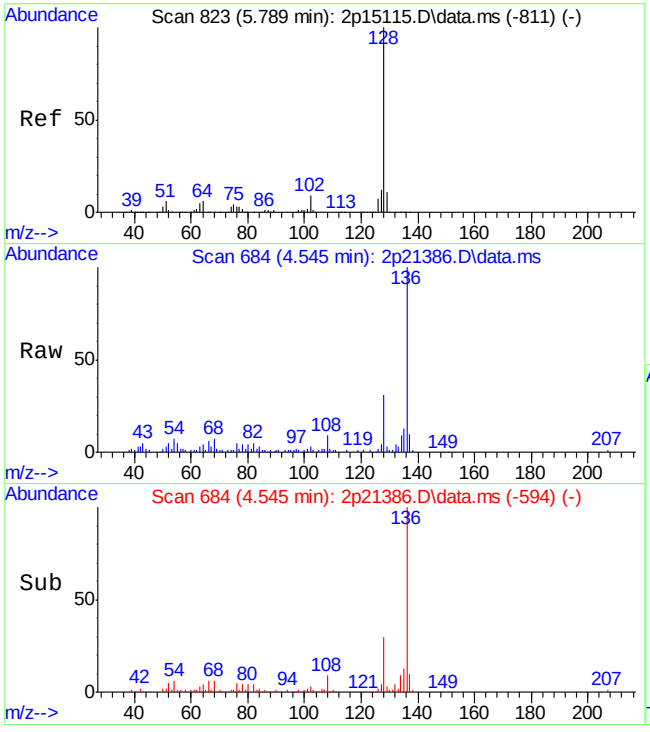
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21386.D
Acq On : 22 Mar 2013 1:40 pm
Operator : andrews1
Sample : jb30425-10cf
Misc : op64440,e2p941,32.0
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Mar 23 16:14:28 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

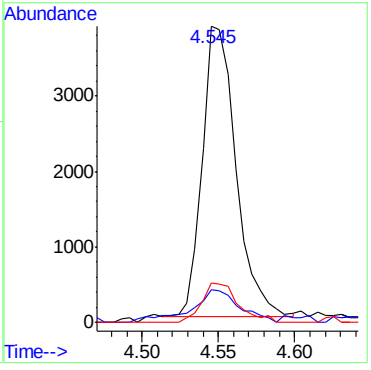


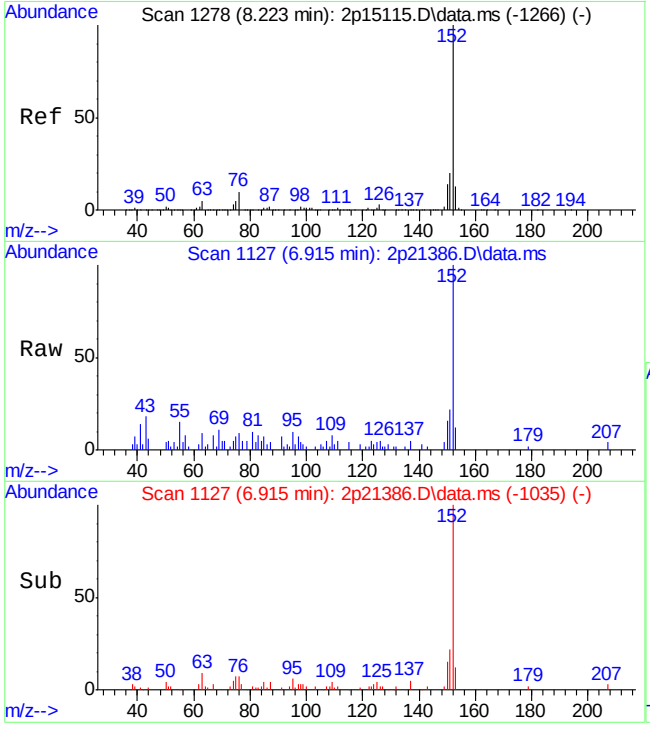


#38
Naphthalene
Concen: 0.93 ppb
RT: 4.545 min Scan# 684
Delta R.T. -0.016 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:128 Resp: 5937

Ion	Ratio	Lower	Upper
128	100		
129	9.3	0.0	41.0
127	13.5	0.0	43.0

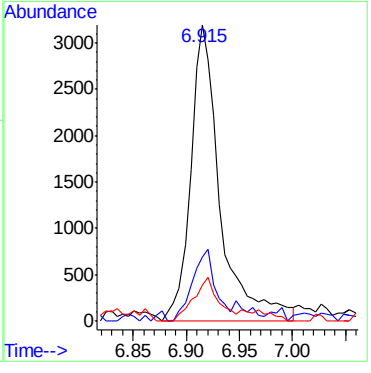




#56
Acenaphthylene
Concen: 0.98 ppb
RT: 6.915 min Scan# 1127
Delta R.T. -0.005 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:152 Resp: 6183

Ion	Ratio	Lower	Upper
152	100		
151	19.2	0.0	49.9
153	12.3	0.0	43.1



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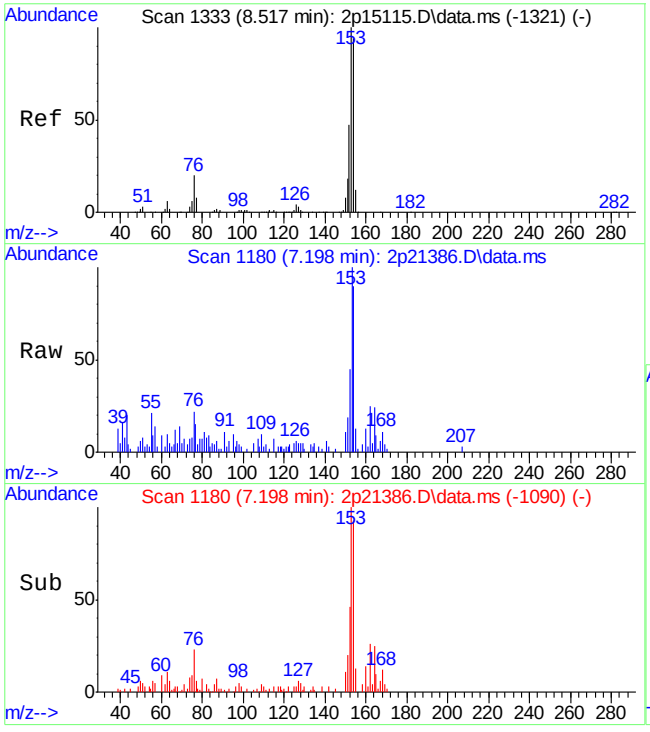
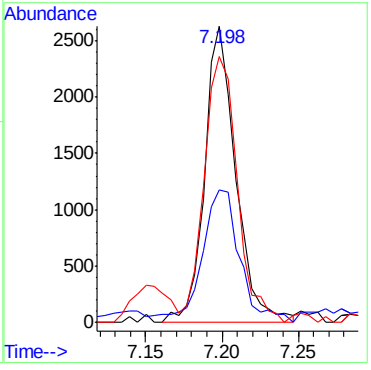
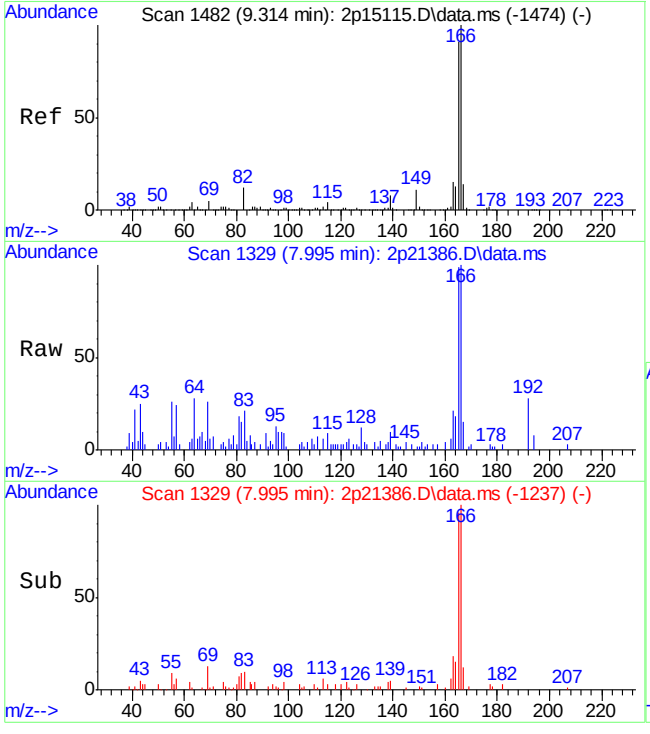


#59
Acenaphthene
Concen: 0.97 ppb
RT: 7.198 min Scan# 1180
Delta R.T. -0.016 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:153 Resp: 3722

Ion	Ratio	Lower	Upper
153	100		
152	43.9	17.8	77.8
154	84.6	65.2	125.2

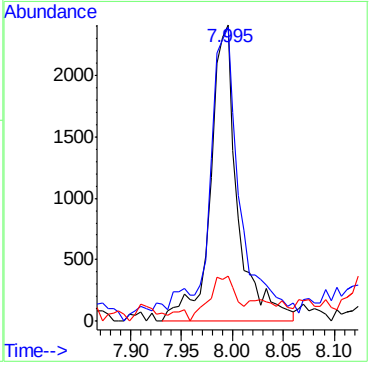




#66
Fluorene
Concen: 1.00 ppb
RT: 7.995 min Scan# 1329
Delta R.T. -0.005 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:166 Resp: 4472

Ion	Ratio	Lower	Upper
166	100		
165	94.8	62.5	122.5
167	11.8	0.0	42.9



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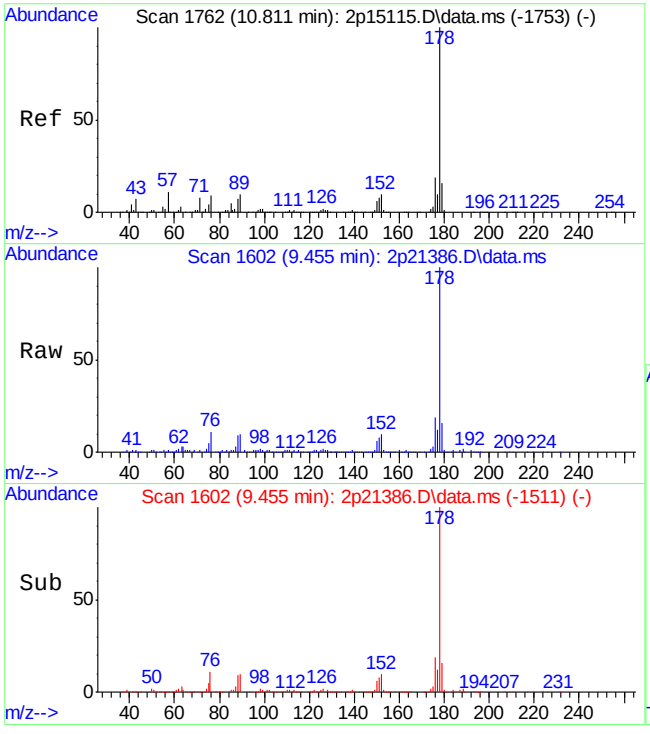
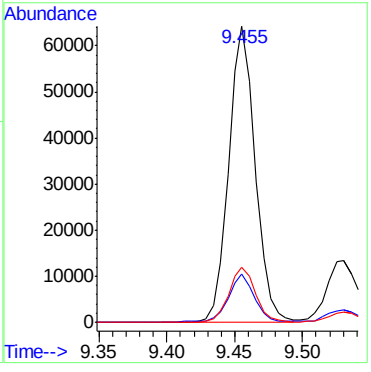
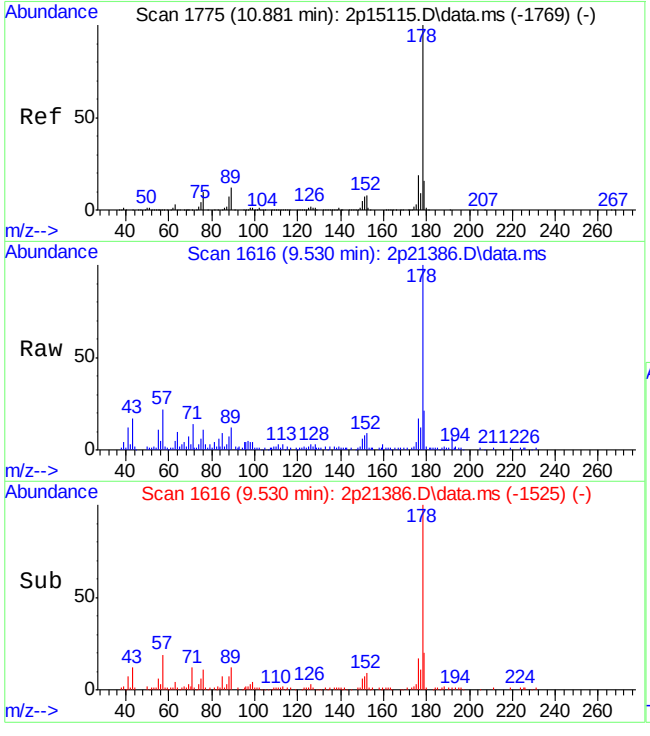


#77
Phenanthrene
Concen: 13.00 ppb
RT: 9.455 min Scan# 1602
Delta R.T. -0.011 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:178 Resp: 87477

Ion	Ratio	Lower	Upper
178	100		
179	16.3	0.0	44.4
176	18.6	0.0	48.6

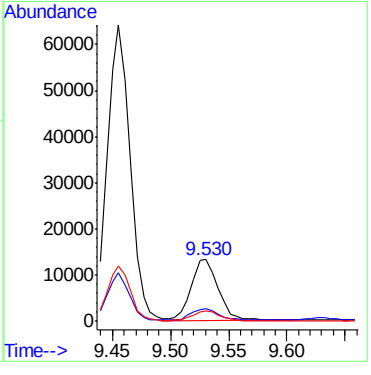




#78
Anthracene
Concen: 3.20 ppb
RT: 9.530 min Scan# 1616
Delta R.T. -0.011 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:178 Resp: 21304

Ion	Ratio	Lower	Upper
178	100		
179	20.0	0.0	44.5
176	17.1	0.0	46.5



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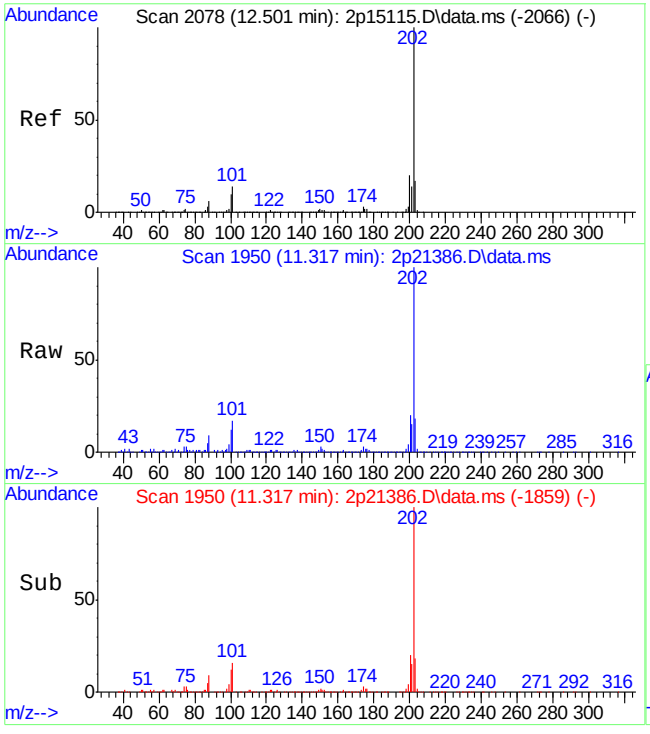
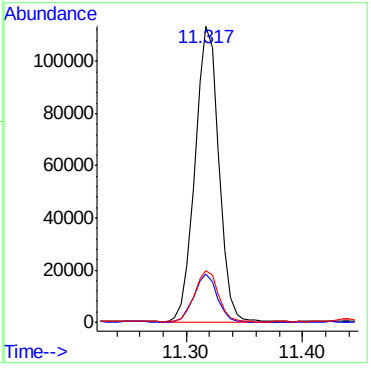
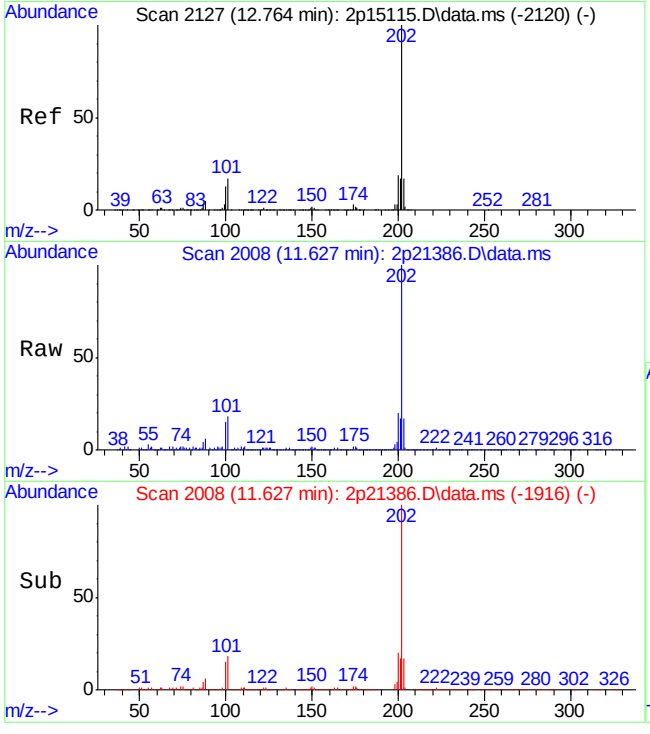


#81
Fluoranthene
Concen: 23.22 ppb
RT: 11.317 min Scan# 1950
Delta R.T. -0.011 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:202 Resp: 160330

Ion	Ratio	Lower	Upper
202	100		
101	16.5	0.0	41.3
203	17.6	0.0	49.1

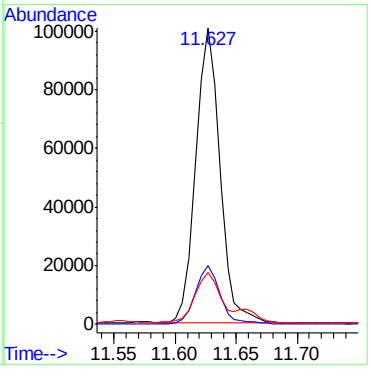




#84
Pyrene
Concen: 18.73 ppb
RT: 11.627 min Scan# 2008
Delta R.T. -0.005 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:202 Resp: 138253

Ion	Ratio	Lower	Upper
202	100		
200	19.5	0.0	49.6
203	16.7	0.0	46.9



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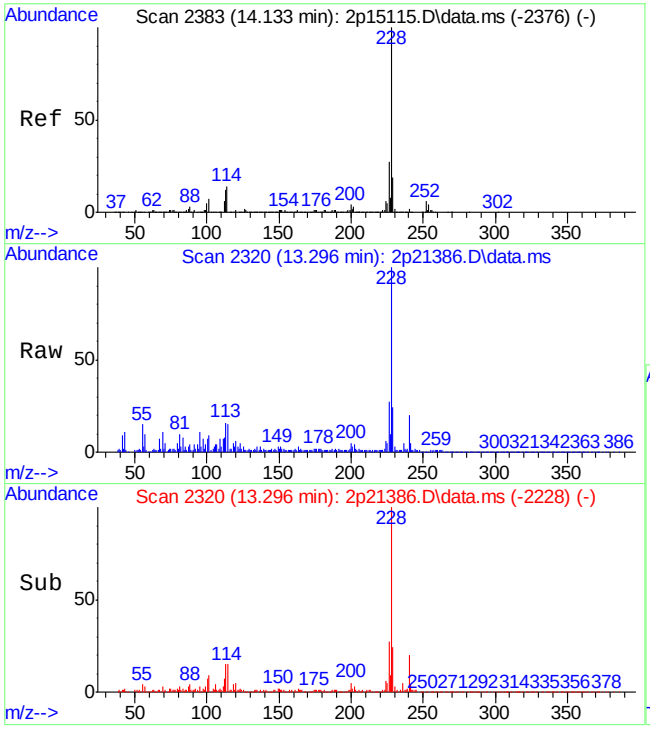
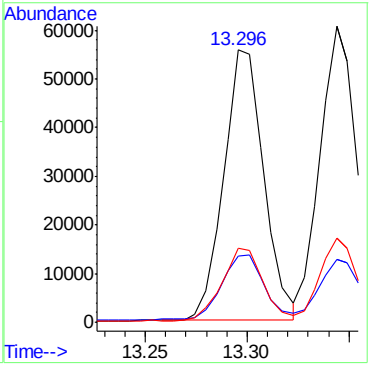
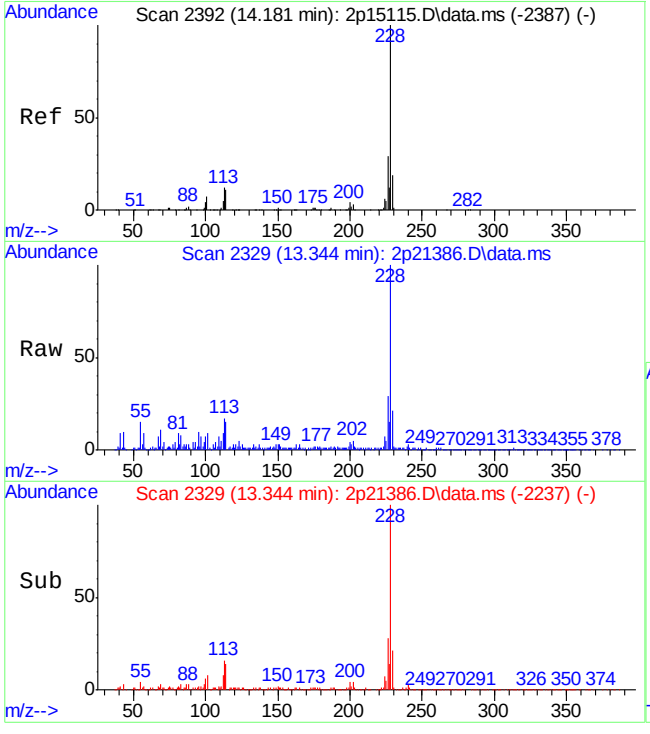


#88
Benzo[a]anthracene
Concen: 11.80 ppb
RT: 13.296 min Scan# 2320
Delta R.T. -0.005 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:228 Resp: 76246

Ion	Ratio	Lower	Upper
228	100		
229	22.8	0.0	50.7
226	26.7	0.0	56.7

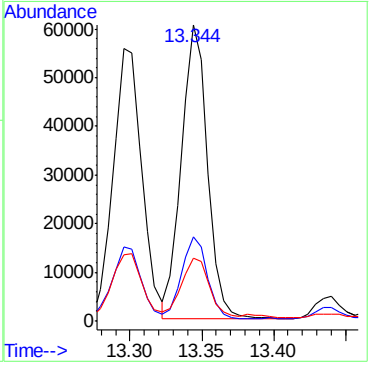




#90
Chrysene
Concen: 12.46 ppb
RT: 13.344 min Scan# 2329
Delta R.T. -0.005 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:228 Resp: 76616

Ion	Ratio	Lower	Upper
228	100		
226	28.2	0.0	58.4
229	20.0	0.0	50.1



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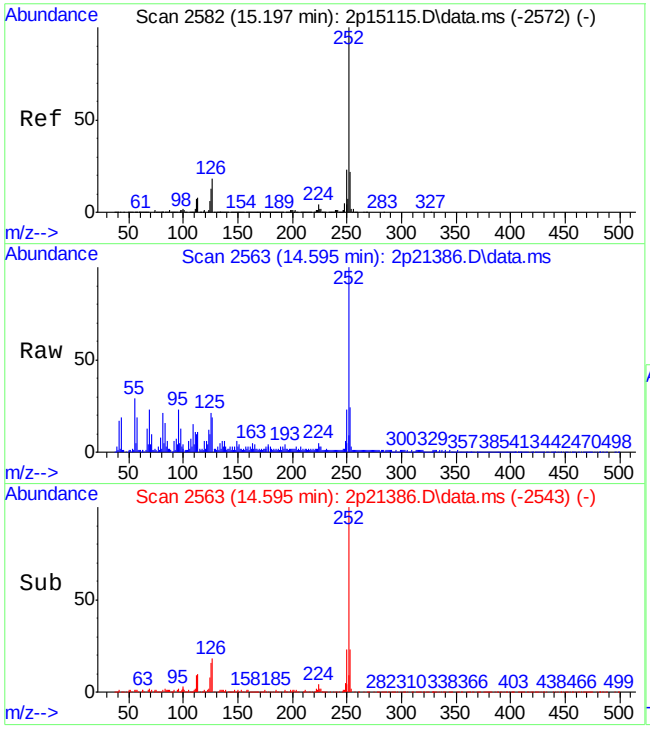
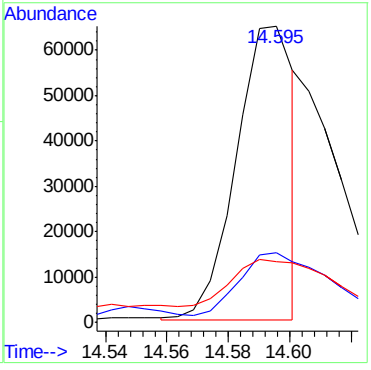
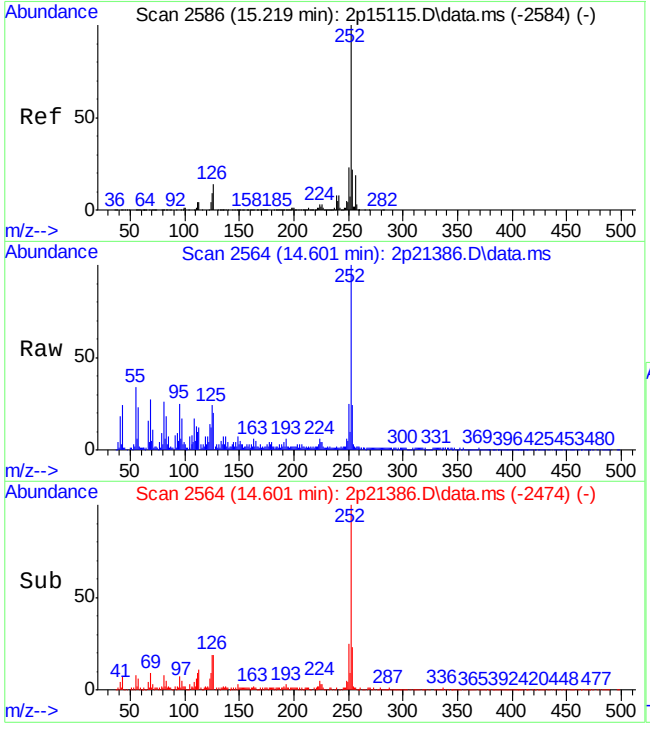


#94
Benzo[b]fluoranthene
Concen: 12.22 ppb m
RT: 14.595 min Scan# 2563
Delta R.T. 0.005 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:252 Resp: 84701

Ion	Ratio	Lower	Upper
252	100		
253	23.6	0.0	51.1
125	20.5	0.0	40.8

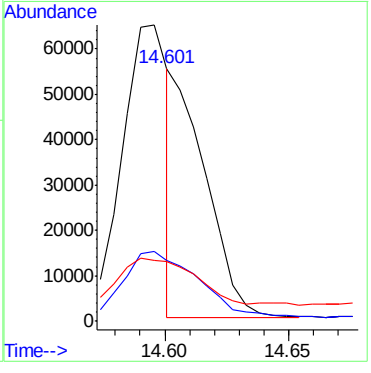




#95
Benzo[k]fluoranthene
Concen: 8.13 ppb m
RT: 14.601 min Scan# 2564
Delta R.T. -0.016 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:252 Resp: 49244

Ion	Ratio	Lower	Upper
252	100		
253	24.0	0.0	56.1
125	23.7	0.0	45.7



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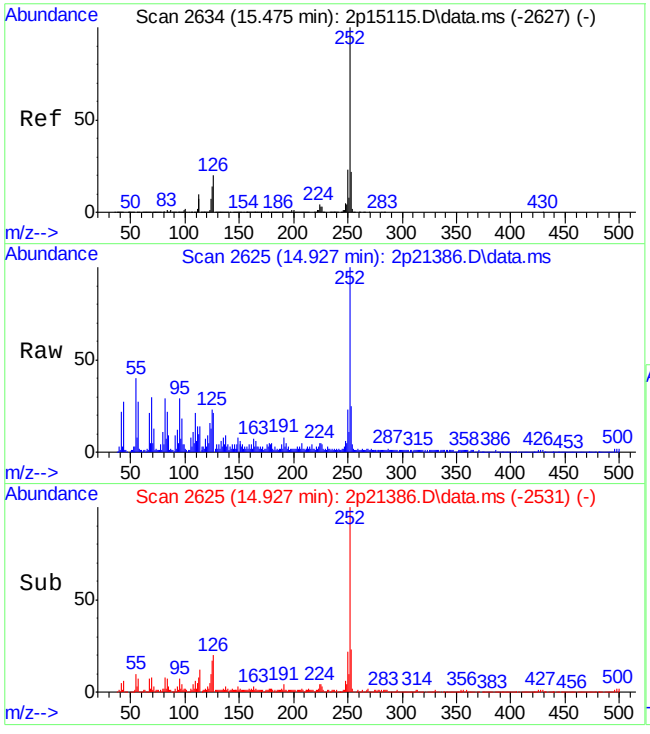
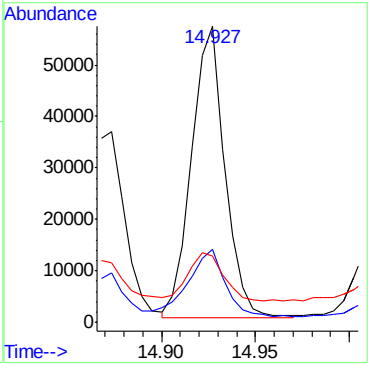
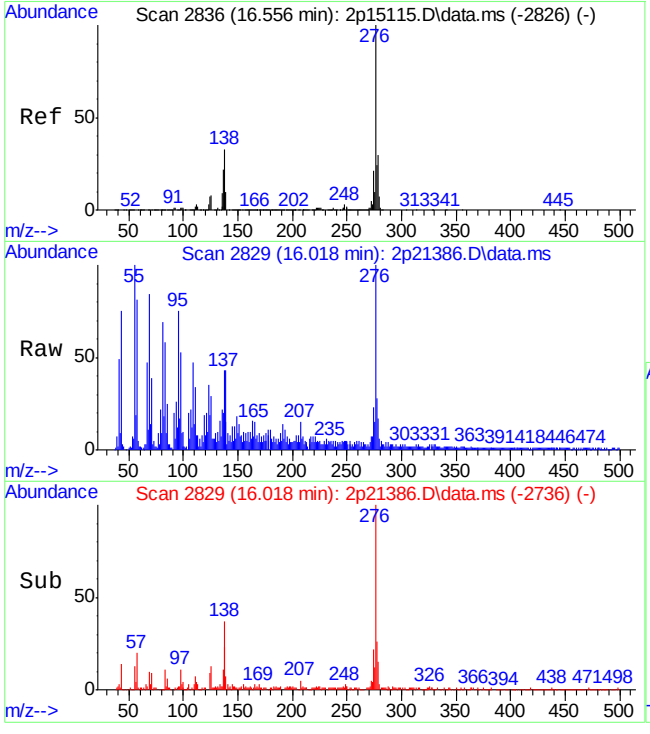


#96
Benzo[a]pyrene
Concen: 11.58 ppb
RT: 14.927 min Scan# 2625
Delta R.T. 0.005 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:252 Resp: 69739

Ion	Ratio	Lower	Upper
252	100		
253	21.9	0.0	51.5
125	15.0	0.0	41.1

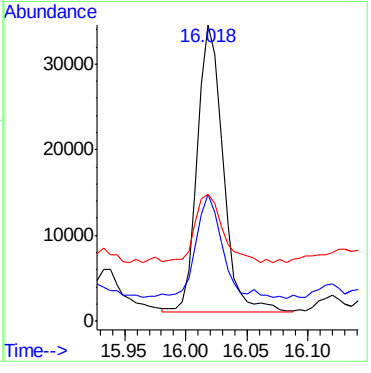




#97
Indeno[1,2,3-cd]pyrene
Concen: 7.01 ppb
RT: 16.018 min Scan# 2829
Delta R.T. 0.000 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:276 Resp: 48992

Ion	Ratio	Lower	Upper
276	100		
138	35.2	0.0	54.7
137	23.3	0.0	49.5



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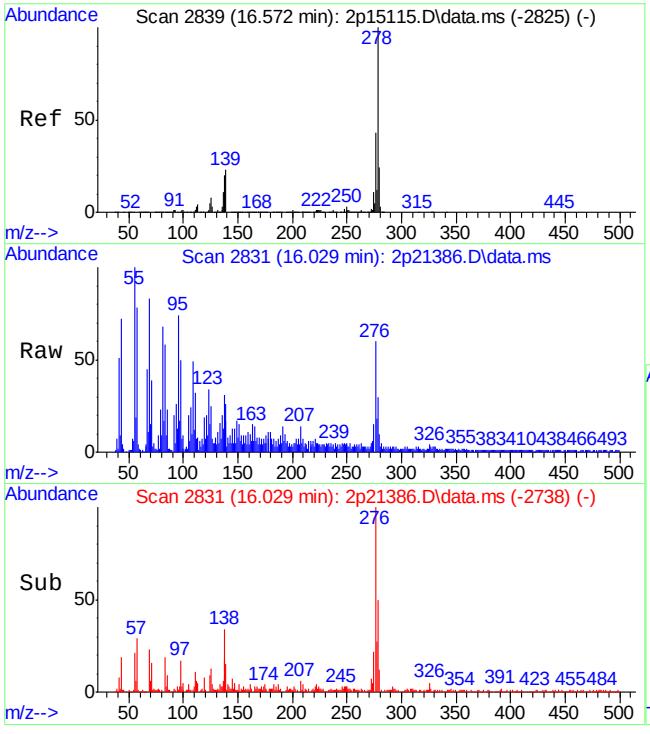
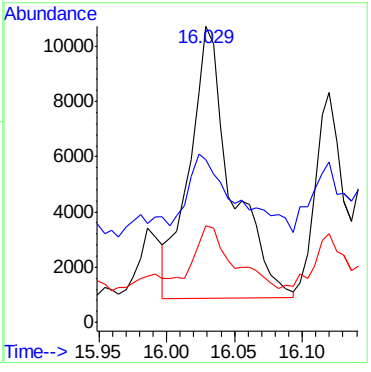
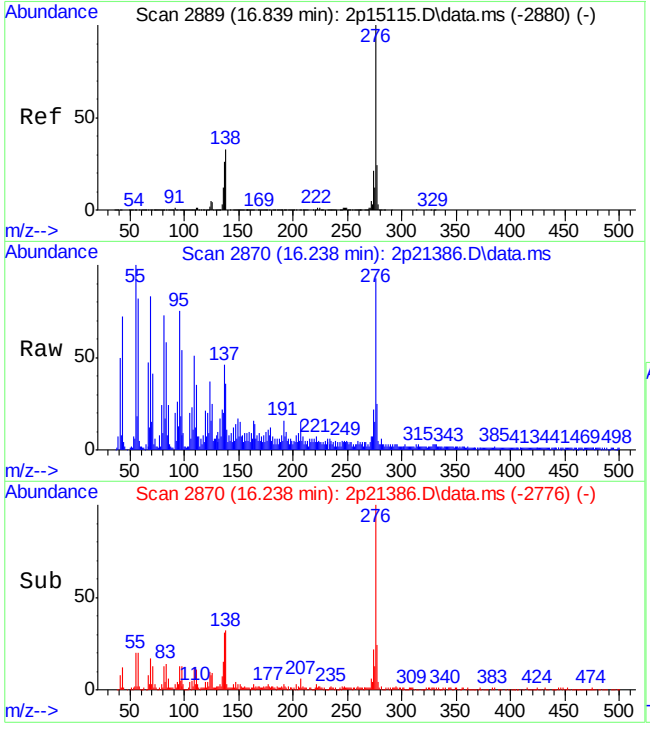


#99
Dibenz[a,h]anthracene
Concen: 3.64 ppb
RT: 16.029 min Scan# 2831
Delta R.T. 0.000 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:278 Resp: 21209

Ion	Ratio	Lower	Upper
278	100		
139	27.0	0.0	49.9
279	23.2	0.0	56.4

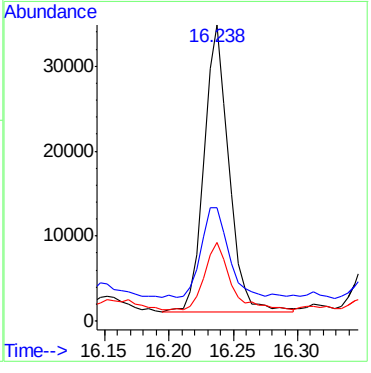




#101
Benzo[g,h,i]perylene
Concen: 7.64 ppb
RT: 16.238 min Scan# 2870
Delta R.T. 0.005 min
Lab File: 2p21386.D
Acq: 22 Mar 2013 1:40 pm

Tgt Ion:276 Resp: 45326

Ion	Ratio	Lower	Upper
276	100		
138	31.2	0.0	55.6
277	23.5	0.0	53.3



9.1.18

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21240.D
Acq On : 19 Mar 2013 7:58 pm
Operator : andrews1
Sample : jb30425-11
Misc : op64440,e2p936,30.7
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Mar 20 14:49:32 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.941	152	55054	40.00	ppb	-0.09
24) Naphthalene-d8	4.561	136	257473	40.00	ppb	-0.09
47) Acenaphthene-d10	7.193	164	160773	40.00	ppb	-0.10
69) Phenanthrene-d10	9.466	188	256926	40.00	ppb	-0.09
83) Chrysene-d12	13.355	240	238695	40.00	ppb	-0.06
92) Perylene-d12	15.023	264	197885	40.00	ppb	-0.04
102) 1,4-Dichlorobenzene-d4a	2.941	152	55054	40.00	ppb	-0.09
104) Acenaphthene-d10a	7.193	164	160773	40.00	ppb	-0.10
107) Chrysene-d12a	13.355	240	238695	40.00	ppb	-0.06
109) Naphthalene-d8a	4.561	136	257473	40.00	ppb	#-0.09
System Monitoring Compounds						
5) 2-Fluorophenol	1.844	112	55230	28.03	ppb	-0.05
Spiked Amount 50.000	Range 11 - 58		Recovery = 56.06%			
8) Phenol-d5	2.743	99	85188	34.85	ppb	-0.03
Spiked Amount 50.000	Range 10 - 59		Recovery = 69.70%#			
25) Nitrobenzene-d5	3.652	82	51643	21.80	ppb	-0.09
Spiked Amount 50.000	Range 19 - 61		Recovery = 43.60%			
51) 2-Fluorobiphenyl	6.236	172	126781	24.66	ppb	-0.10
Spiked Amount 50.000	Range 21 - 58		Recovery = 49.32%			
73) 2,4,6-Tribromophenol	8.466	330	12639	22.01	ppb	-0.08
Spiked Amount 50.000	Range 12 - 68		Recovery = 44.02%			
85) Terphenyl-d14	12.017	244	115028	22.88	ppb	-0.07
Spiked Amount 50.000	Range 16 - 65		Recovery = 45.76%			
Target Compounds						Qvalue
38) Naphthalene	4.588	128	26952	3.91	ppb	97
56) Acenaphthylene	6.952	152	8062	1.08	ppb	97
59) Acenaphthene	7.241	153	30790	6.74	ppb	96
66) Fluorene	8.027	166	39258	7.43	ppb	97
77) Phenanthrene	9.498	178	488320	63.09	ppb	99
78) Anthracene	9.568	178	129235	16.88	ppb	93
81) Fluoranthene	11.365	202	691373	87.03	ppb	92
84) Pyrene	11.670	202	561518	69.04	ppb	100
88) Benzo[a]anthracene	13.339	228	318162m	44.71	ppb	
90) Chrysene	13.387	228	305973m	45.17	ppb	
94) Benzo[b]fluoranthene	14.633	252	294808m	43.69	ppb	
95) Benzo[k]fluoranthene	14.638	252	168643m	28.60	ppb	
96) Benzo[a]pyrene	14.959	252	231518	39.50	ppb	93
97) Indeno[1,2,3-cd]pyrene	16.050	276	144387	21.24	ppb	86
99) Dibenz[a,h]anthracene	16.061	278	51906m	9.16	ppb	
101) Benzo[g,h,i]perylene	16.270	276	129081	22.36	ppb	93

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

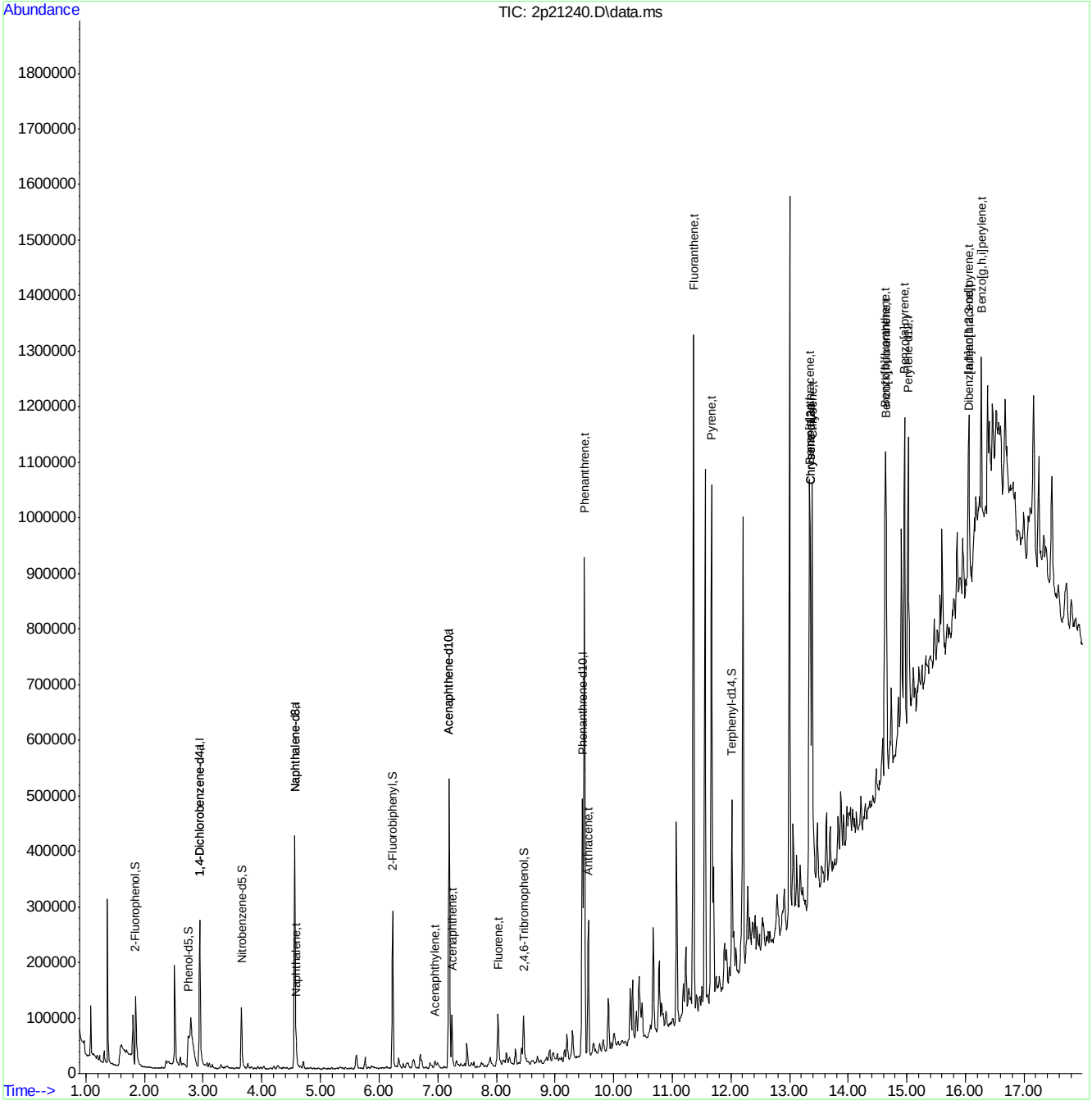
9.1.19

9

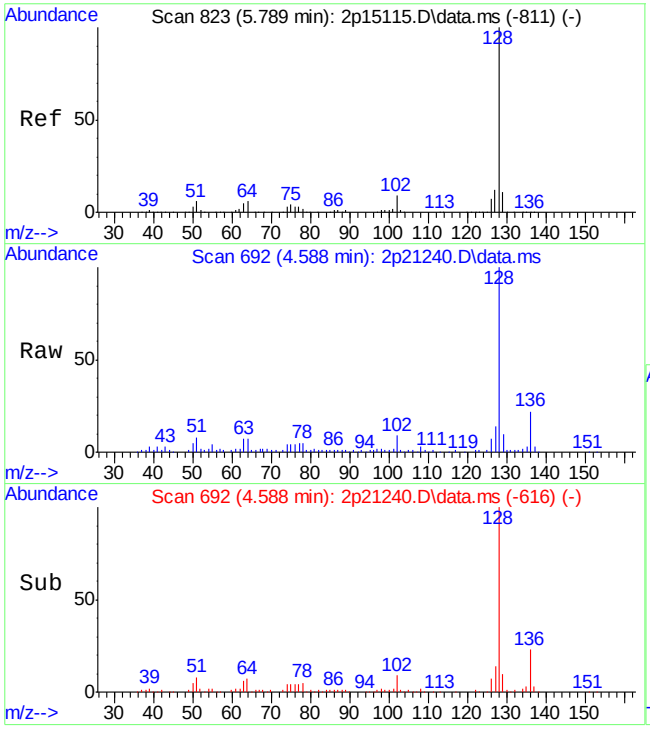
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21240.D
Acq On : 19 Mar 2013 7:58 pm
Operator : andrews1
Sample : jb30425-11
Misc : op64440,e2p936,30.7
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Mar 20 14:49:32 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration



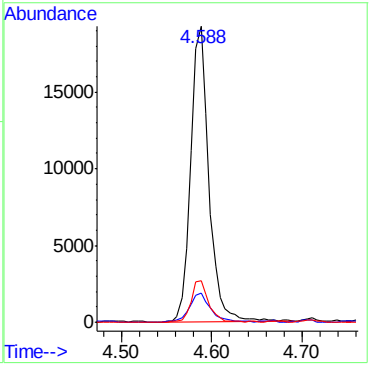
M2P896.M Wed Mar 20 14:49:35 2013 RPT1 Page: 2

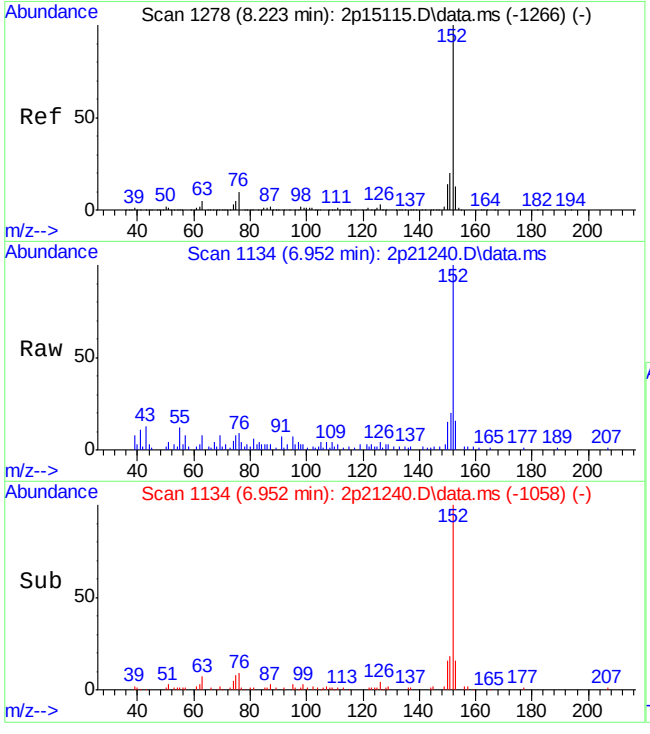


#38
Naphthalene
Concen: 3.91 ppb
RT: 4.588 min Scan# 692
Delta R.T. -0.091 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:128 Resp: 26952

Ion	Ratio	Lower	Upper
128	100		
129	9.6	0.0	41.0
127	14.2	0.0	43.0

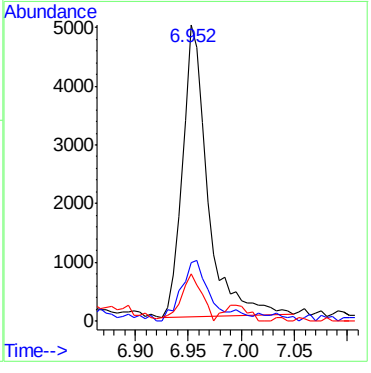




#56
Acenaphthylene
Concen: 1.08 ppb
RT: 6.952 min Scan# 1134
Delta R.T. -0.091 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:152 Resp: 8062

Ion	Ratio	Lower	Upper
152	100		
151	19.1	0.0	49.9
153	15.5	0.0	43.1



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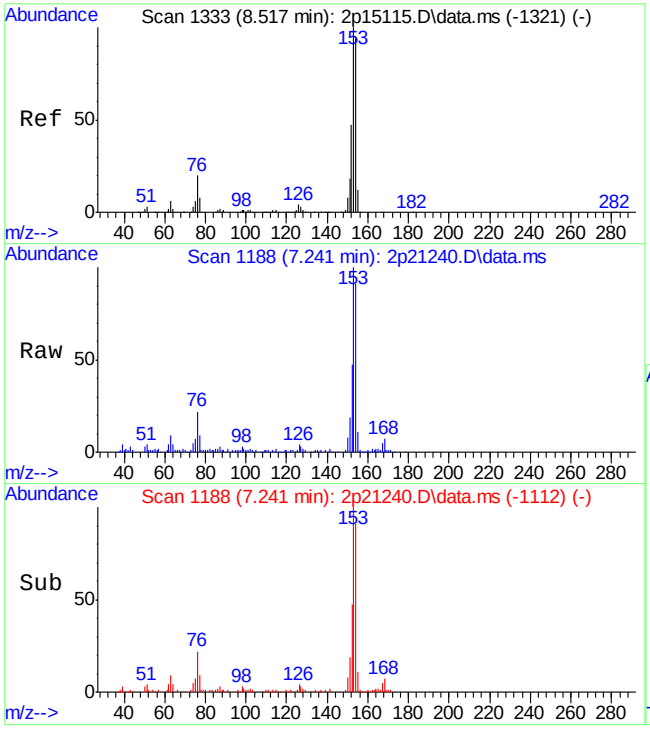
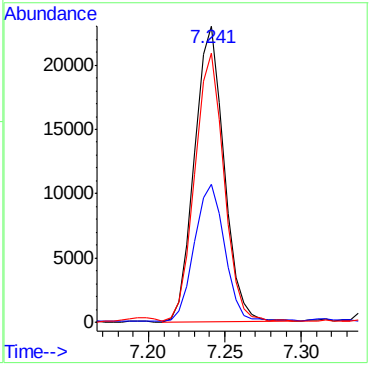
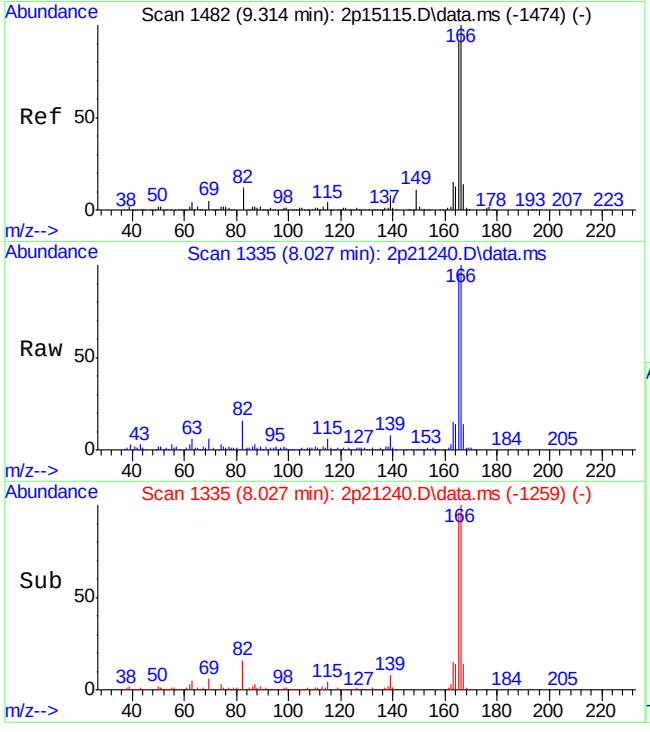


#59
Acenaphthene
Concen: 6.74 ppb
RT: 7.241 min Scan# 1188
Delta R.T. -0.091 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:153 Resp: 30790

Ion	Ratio	Lower	Upper
153	100		
152	46.3	17.8	77.8
154	90.5	65.2	125.2

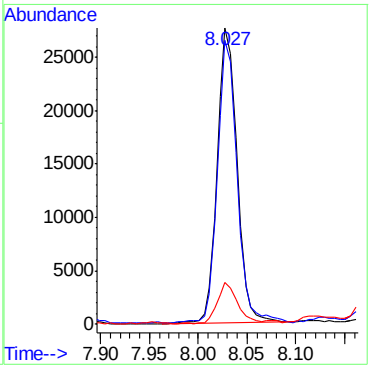




#66
Fluorene
Concen: 7.43 ppb
RT: 8.027 min Scan# 1335
Delta R.T. -0.091 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:166 Resp: 39258

Ion	Ratio	Lower	Upper
166	100		
165	95.8	62.5	122.5
167	13.3	0.0	42.9



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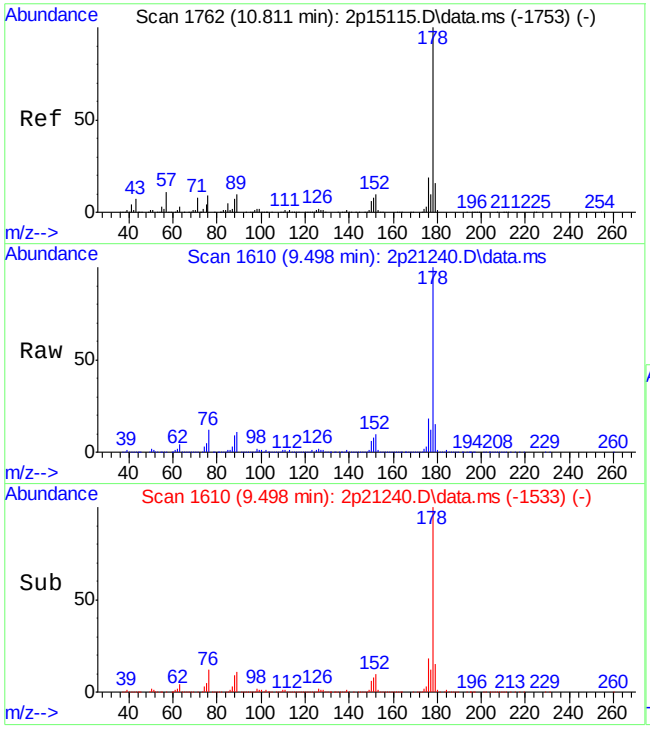
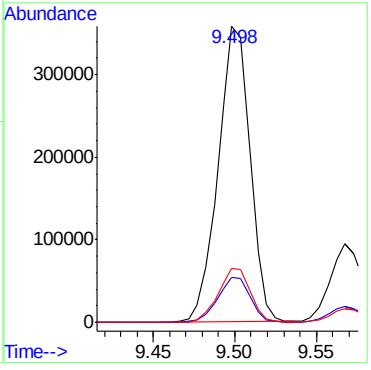
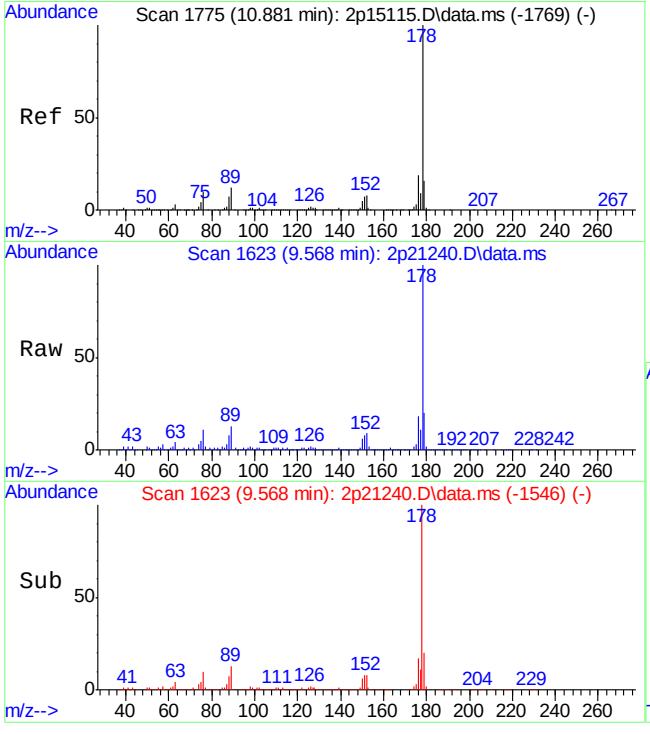


#77
Phenanthrene
Concen: 63.09 ppb
RT: 9.498 min Scan# 1610
Delta R.T. -0.086 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:178 Resp: 488320

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	44.4
176	18.3	0.0	48.6

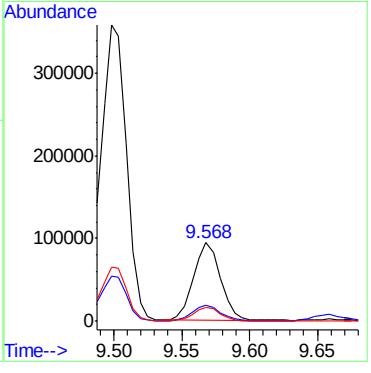


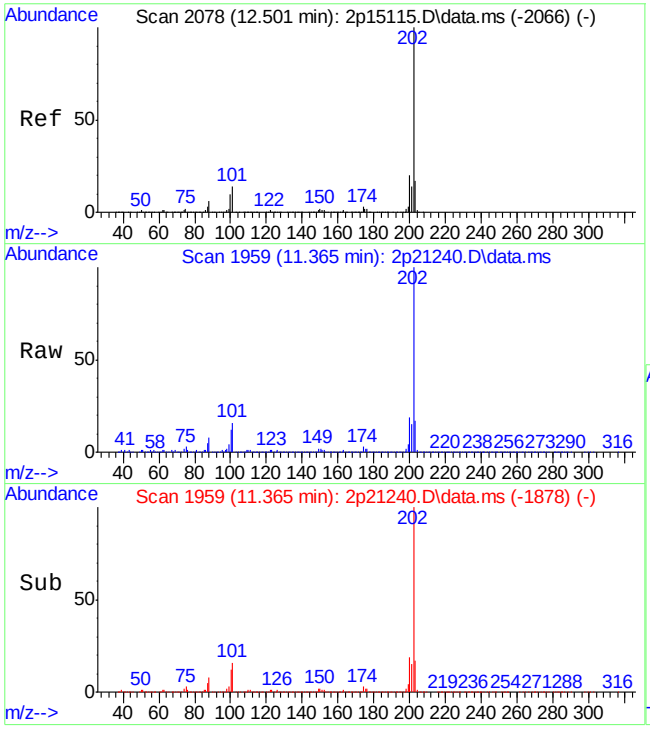


#78
Anthracene
Concen: 16.88 ppb
RT: 9.568 min Scan# 1623
Delta R.T. -0.086 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:178 Resp: 129235

Ion	Ratio	Lower	Upper
178	100		
179	20.0	0.0	44.5
176	17.4	0.0	46.5

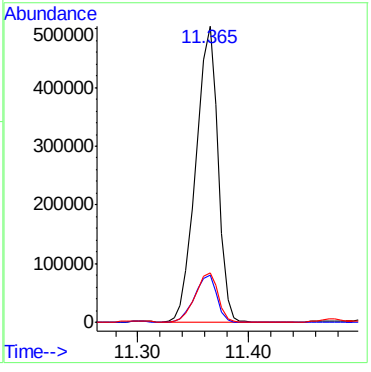


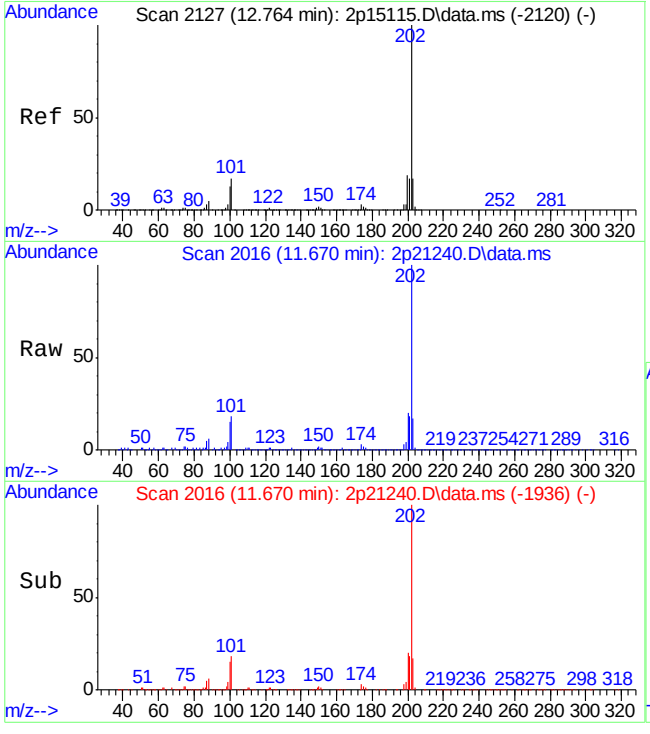


#81
Fluoranthene
Concen: 87.03 ppb
RT: 11.365 min Scan# 1959
Delta R.T. -0.064 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:202 Resp: 691373

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	41.3
203	16.6	0.0	49.1

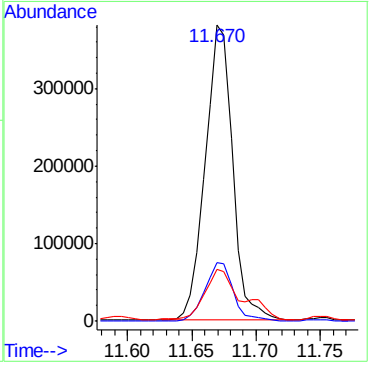


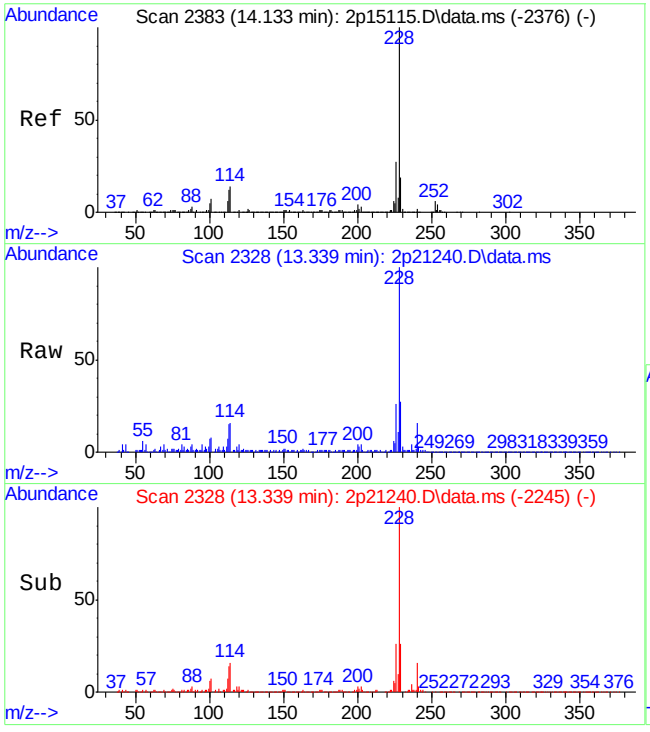


#84
Pyrene
Concen: 69.04 ppb
RT: 11.670 min Scan# 2016
Delta R.T. -0.070 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:202 Resp: 561518

Ion	Ratio	Lower	Upper
202	100		
200	19.9	0.0	49.6
203	17.0	0.0	46.9

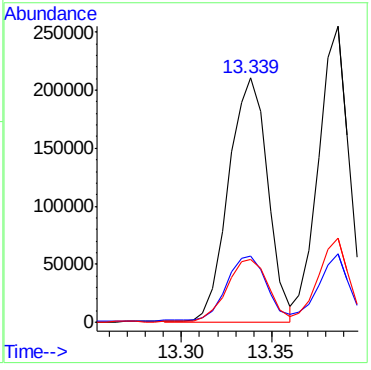


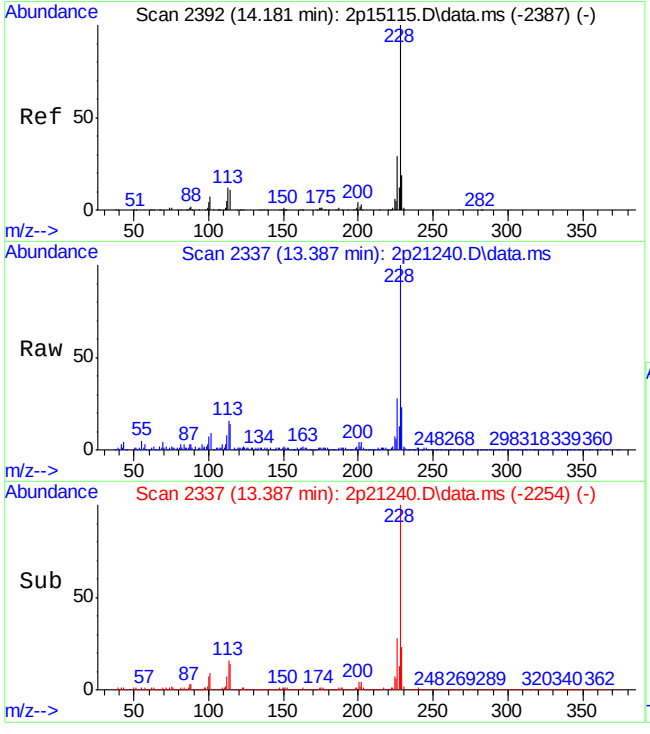


#88
Benzo[a]anthracene
Concen: 44.71 ppb m
RT: 13.339 min Scan# 2328
Delta R.T. -0.054 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:228 Resp: 318162

Ion	Ratio	Lower	Upper
228	100		
229	27.2	0.0	50.7
226	26.0	0.0	56.7

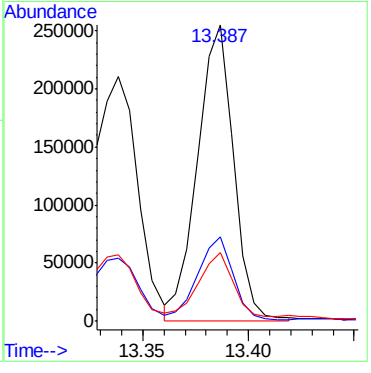


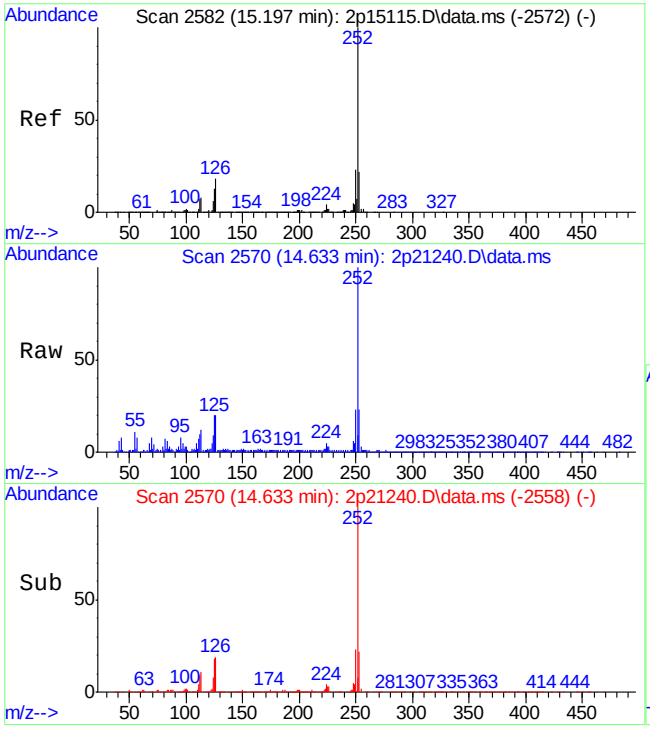


#90
Chrysene
Concen: 45.17 ppb m
RT: 13.387 min Scan# 2337
Delta R.T. -0.054 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:228 Resp: 305973

Ion	Ratio	Lower	Upper
228	100		
226	28.3	0.0	58.4
229	23.1	0.0	50.1

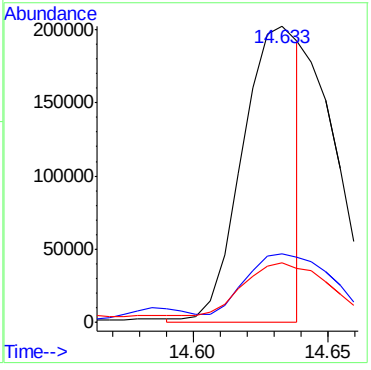


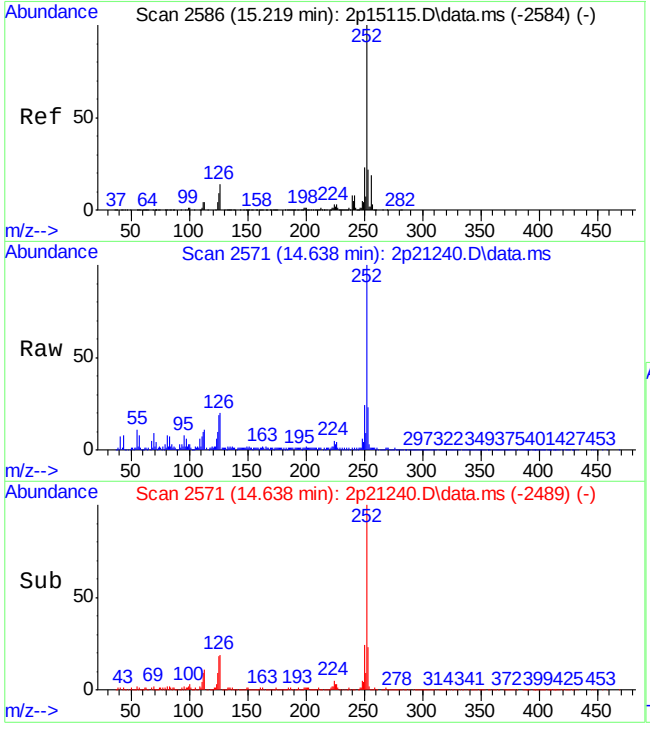


#94
Benzo[b]fluoranthene
Concen: 43.69 ppb m
RT: 14.633 min Scan# 2570
Delta R.T. -0.037 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:252 Resp: 294808

Ion	Ratio	Lower	Upper
252	100		
253	23.2	0.0	51.1
125	20.2	0.0	40.8

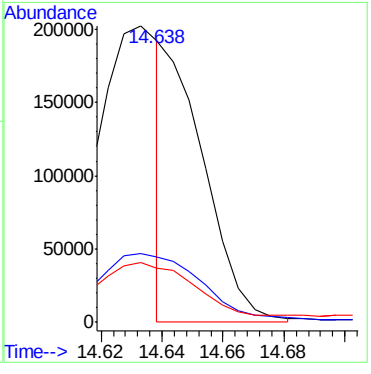


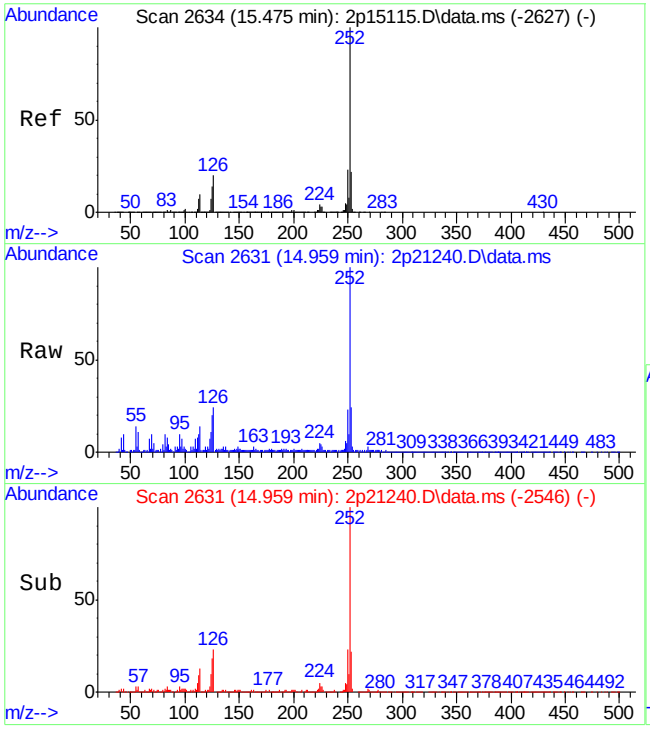


#95
Benzo[k]fluoranthene
Concen: 28.60 ppb m
RT: 14.638 min Scan# 2571
Delta R.T. -0.059 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:252 Resp: 168643

Ion	Ratio	Lower	Upper
252	100		
253	23.2	0.0	56.1
125	19.3	0.0	45.7

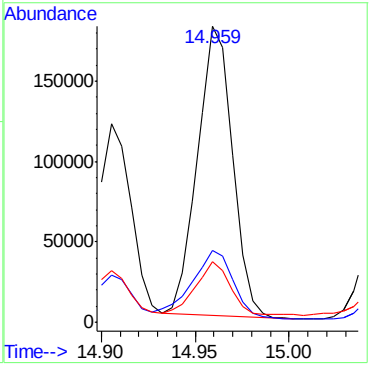


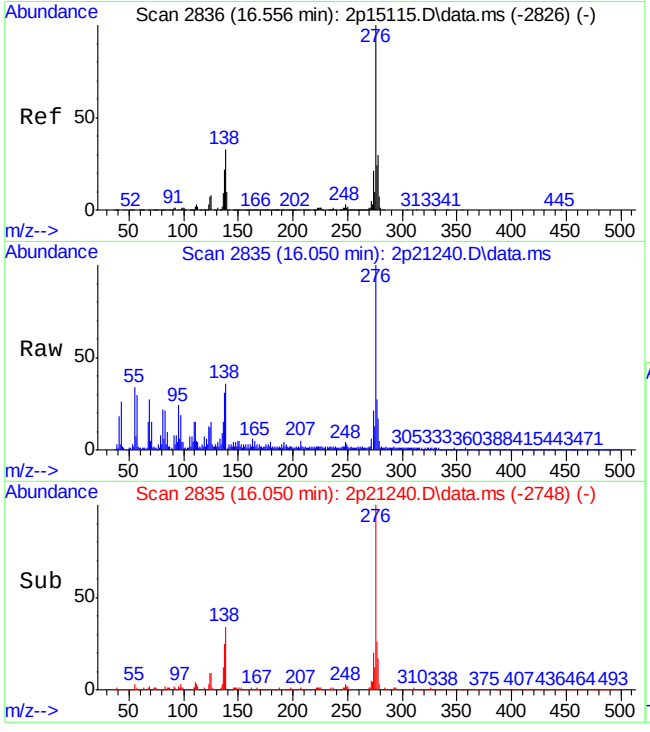


#96
Benzo[a]pyrene
Concen: 39.50 ppb
RT: 14.959 min Scan# 2631
Delta R.T. -0.043 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:252 Resp: 231518

Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	51.5
125	17.8	0.0	41.1

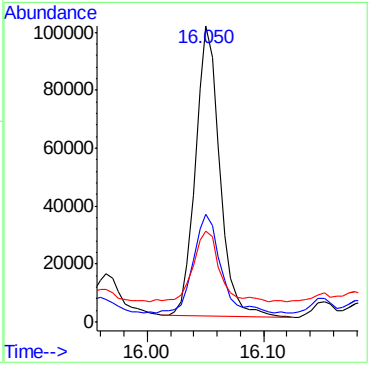




#97
Indeno[1,2,3-cd]pyrene
Concen: 21.24 ppb
RT: 16.050 min Scan# 2835
Delta R.T. -0.032 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:276 Resp: 144387

Ion	Ratio	Lower	Upper
276	100		
138	33.6	0.0	54.7
137	24.0	0.0	49.5



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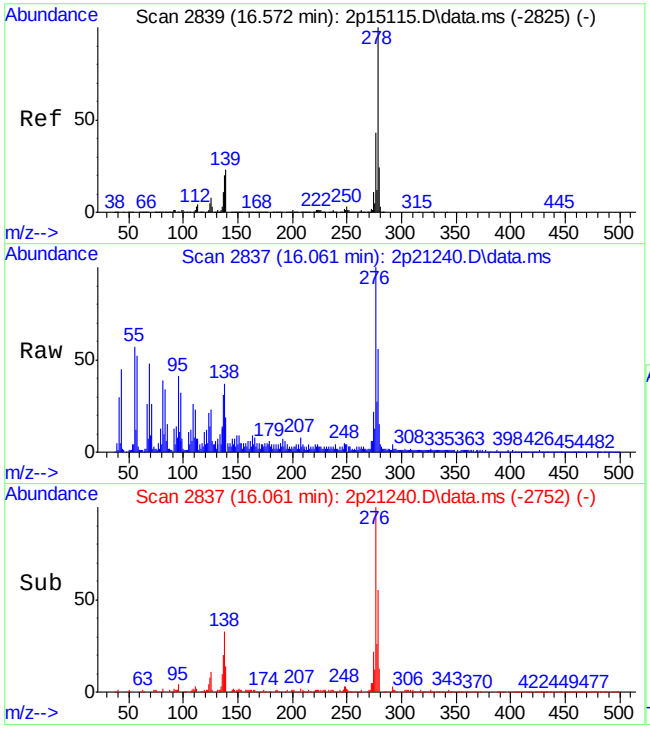
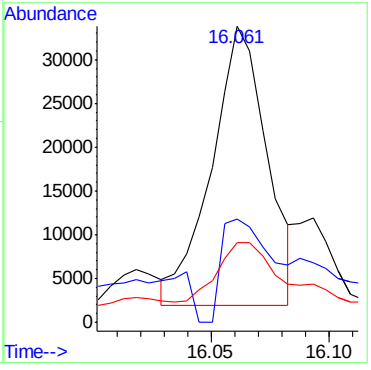
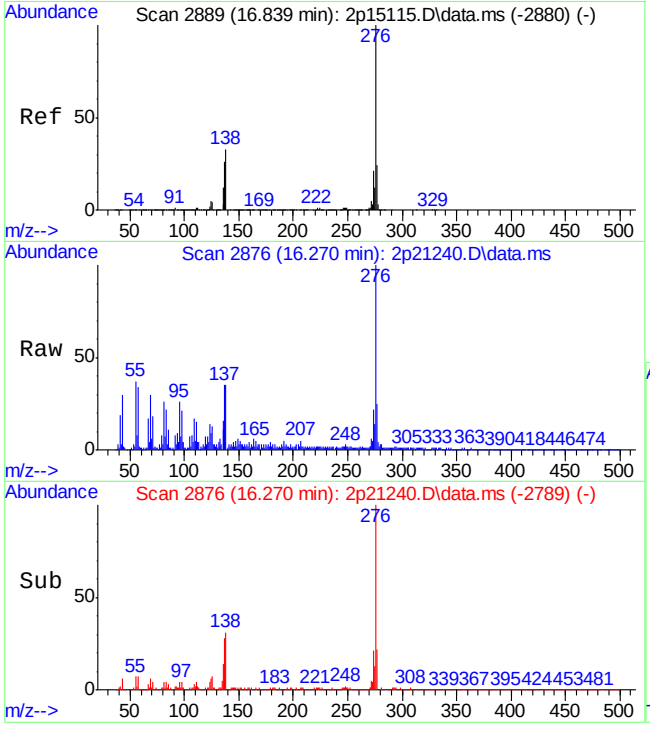


#99
Dibenz[a,h]anthracene
Concen: 9.16 ppb m
RT: 16.061 min Scan# 2837
Delta R.T. -0.043 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:278 Resp: 51906

Ion	Ratio	Lower	Upper
278	100		
139	34.9	0.0	49.9
279	27.1	0.0	56.4

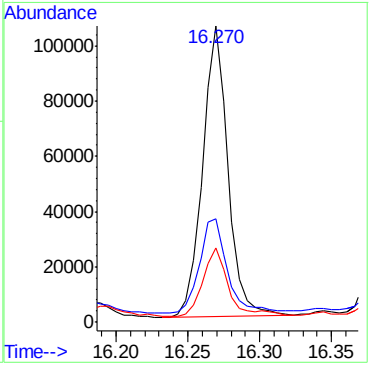




#101
Benzo[g,h,i]perylene
Concen: 22.36 ppb
RT: 16.270 min Scan# 2876
Delta R.T. -0.032 min
Lab File: 2p21240.D
Acq: 19 Mar 2013 7:58 pm

Tgt Ion:276 Resp: 129081

Ion	Ratio	Lower	Upper
276	100		
138	31.9	0.0	55.6
277	23.3	0.0	53.3



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Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21387.D
Acq On : 22 Mar 2013 2:02 pm
Operator : andrews1
Sample : jb30425-11cf
Misc : op64440,e2p941,30.4
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 23 13:41:02 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.909	152	61035	40.00	ppb	-0.02
24) Naphthalene-d8	4.524	136	241389	40.00	ppb	-0.01
47) Acenaphthene-d10	7.150	164	136527	40.00	ppb	-0.02
69) Phenanthrene-d10	9.423	188	226376	40.00	ppb	-0.01
83) Chrysene-d12	13.322	240	227088	40.00	ppb	0.00
92) Perylene-d12	14.991	264	210461	40.00	ppb	0.00
102) 1,4-Dichlorobenzene-d4a	2.909	152	61035	40.00	ppb	-0.02
104) Acenaphthene-d10a	7.150	164	136527	40.00	ppb	-0.02
107) Chrysene-d12a	13.322	240	227088	40.00	ppb	0.00
109) Naphthalene-d8a	4.524	136	241389	40.00	ppb	#-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.823	112	64709	29.62	ppb	-0.01
Spiked Amount 50.000	Range 11 - 58		Recovery = 59.24%#			
8) Phenol-d5	2.700	99	86082	31.76	ppb	0.00
Spiked Amount 50.000	Range 10 - 59		Recovery = 63.52%#			
25) Nitrobenzene-d5	3.620	82	61384	27.64	ppb	-0.01
Spiked Amount 50.000	Range 19 - 61		Recovery = 55.28%			
51) 2-Fluorobiphenyl	6.193	172	153812	35.23	ppb	-0.02
Spiked Amount 50.000	Range 21 - 58		Recovery = 70.46%#			
73) 2,4,6-Tribromophenol	8.428	330	17265	34.12	ppb	-0.01
Spiked Amount 50.000	Range 12 - 68		Recovery = 68.24%#			
85) Terphenyl-d14	11.980	244	166227	34.75	ppb	0.00
Spiked Amount 50.000	Range 16 - 65		Recovery = 69.50%#			
Target Compounds						Qvalue
38) Naphthalene	4.551	128	14580	2.26	ppb	99
56) Acenaphthylene	6.915	152	12838	2.03	ppb	97
59) Acenaphthene	7.198	153	13758	3.55	ppb	92
66) Fluorene	7.984	166	14679	3.27	ppb	97
77) Phenanthrene	9.455	178	242690	35.59	ppb	98
78) Anthracene	9.525	178	60194	8.92	ppb	90
81) Fluoranthene	11.322	202	396782	56.68	ppb	94
84) Pyrene	11.627	202	360383	46.58	ppb	99
88) Benzo[a]anthracene	13.301	228	203279	30.03	ppb	95
90) Chrysene	13.349	228	208220	32.31	ppb	98
94) Benzo[b]fluoranthene	14.601	252	264955m	36.92	ppb	
95) Benzo[k]fluoranthene	14.606	252	139425m	22.23	ppb	
96) Benzo[a]pyrene	14.932	252	198878	31.91	ppb	95
97) Indeno[1,2,3-cd]pyrene	16.023	276	134902	18.66	ppb	83
99) Dibenz[a,h]anthracene	16.034	278	52685m	8.74	ppb	
101) Benzo[g,h,i]perylene	16.248	276	126226	20.55	ppb	93

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

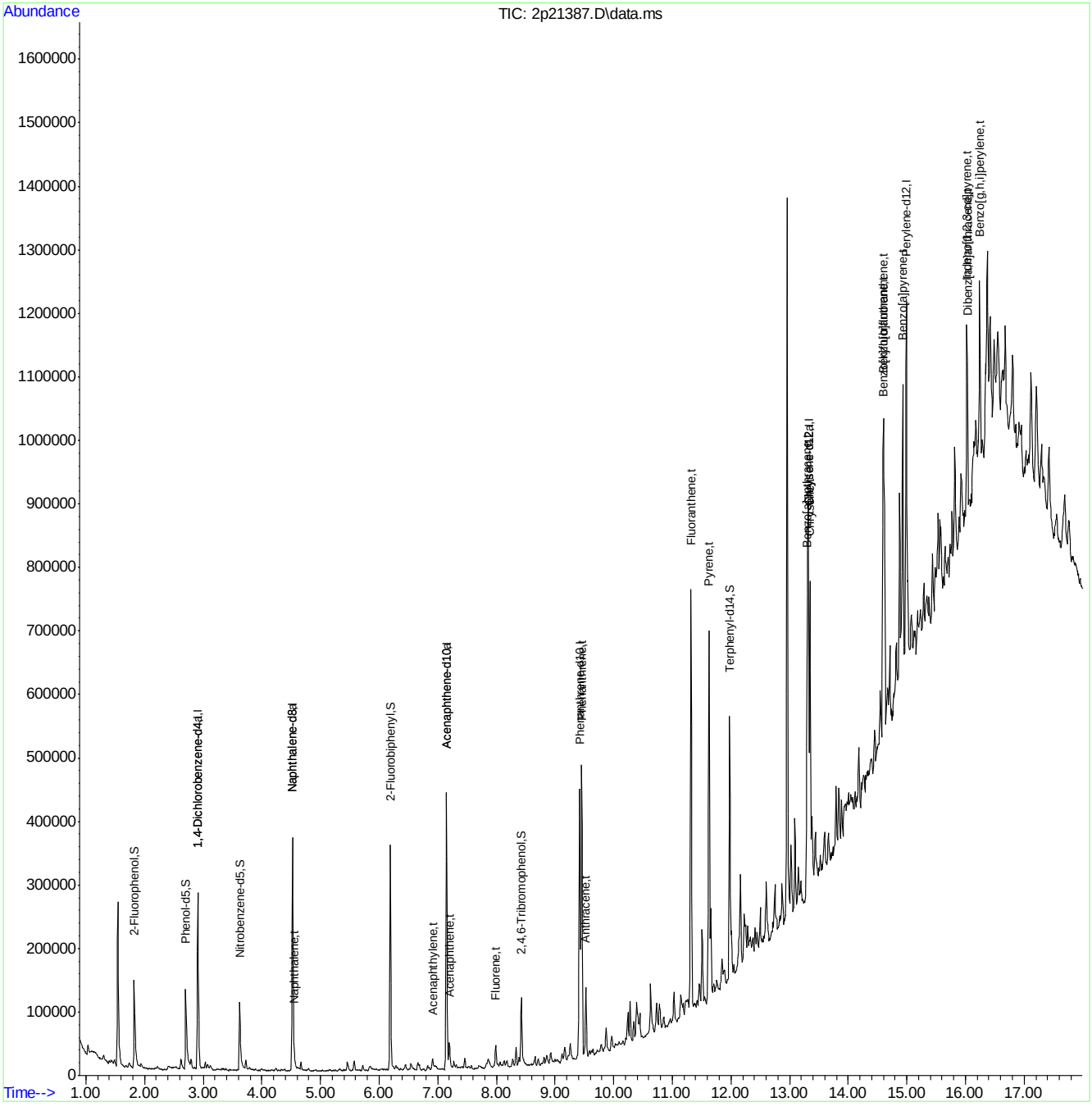
9.1.20

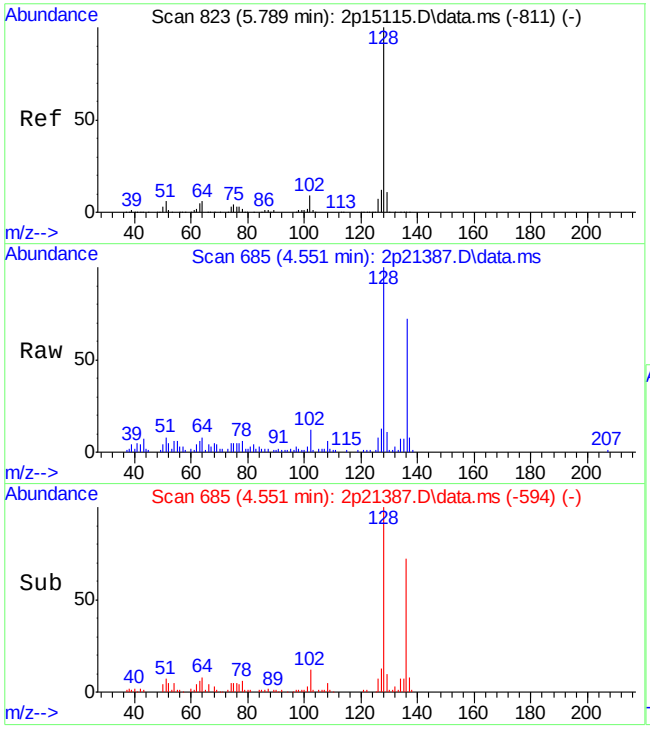
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21387.D
Acq On : 22 Mar 2013 2:02 pm
Operator : andrews1
Sample : jb30425-11cf
Misc : op64440,e2p941,30.4
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 23 13:41:02 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

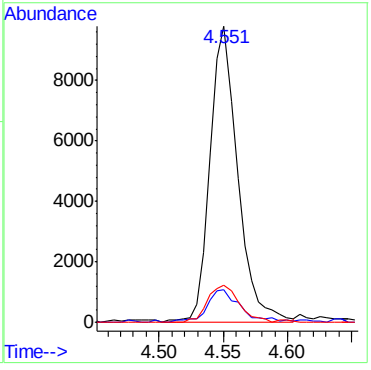


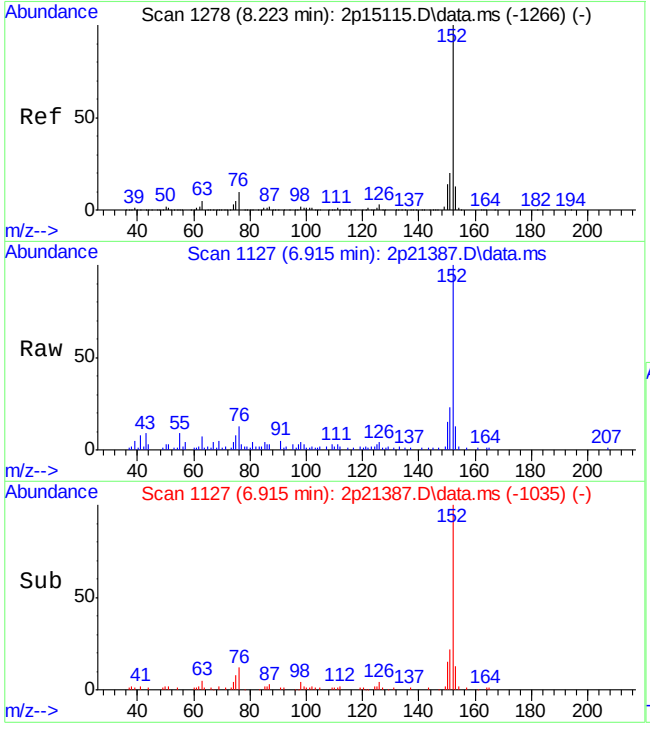


#38
Naphthalene
Concen: 2.26 ppb
RT: 4.551 min Scan# 685
Delta R.T. -0.011 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:128 Resp: 14580

Ion	Ratio	Lower	Upper
128	100		
129	10.8	0.0	41.0
127	12.4	0.0	43.0

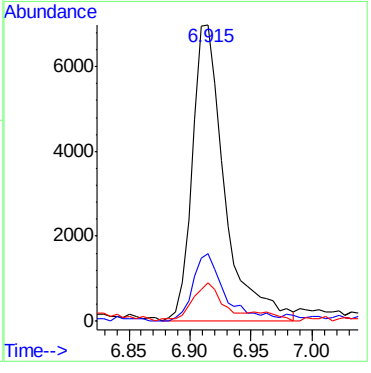




#56
Acenaphthylene
Concen: 2.03 ppb
RT: 6.915 min Scan# 1127
Delta R.T. -0.005 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:152 Resp: 12838

Ion	Ratio	Lower	Upper
152	100		
151	21.9	0.0	49.9
153	12.9	0.0	43.1



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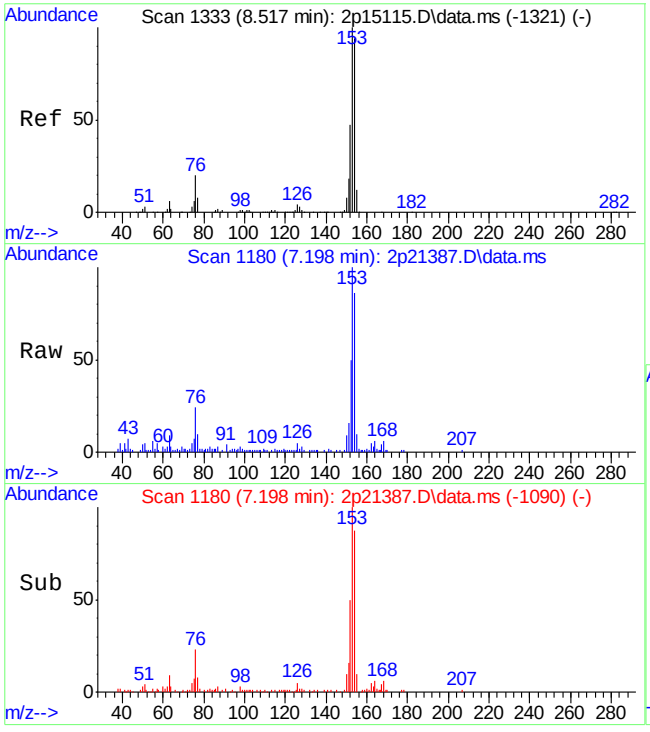
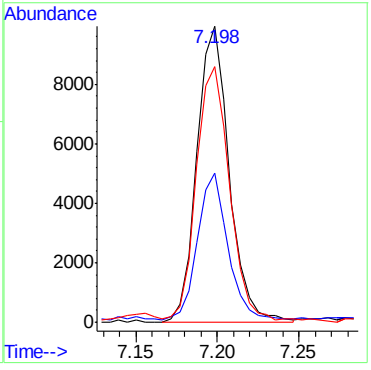
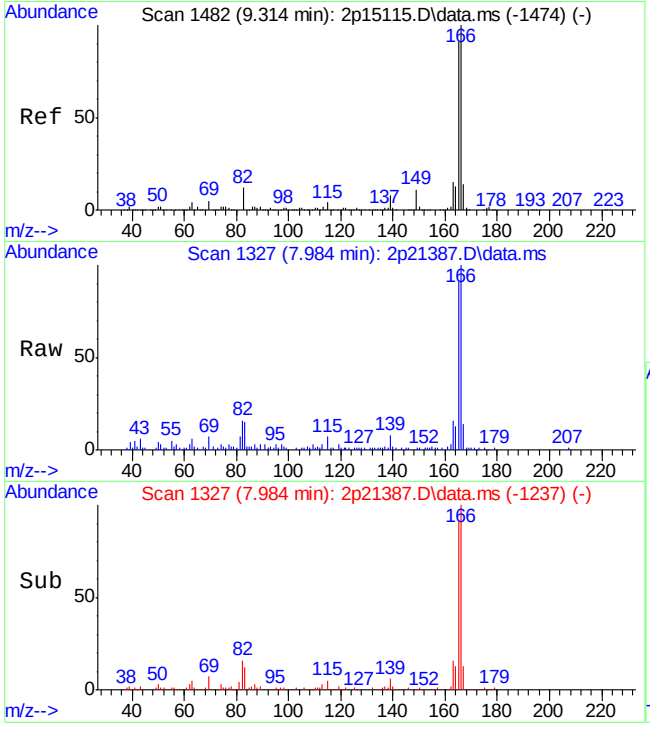


#59
Acenaphthene
Concen: 3.55 ppb
RT: 7.198 min Scan# 1180
Delta R.T. -0.016 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:153 Resp: 13758

Ion	Ratio	Lower	Upper
153	100		
152	49.5	17.8	77.8
154	85.4	65.2	125.2

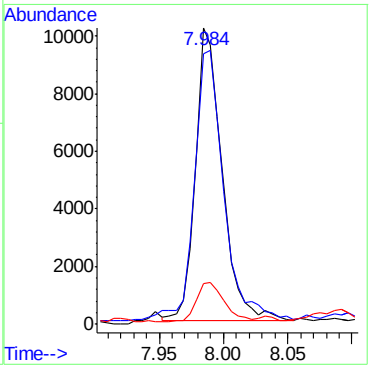


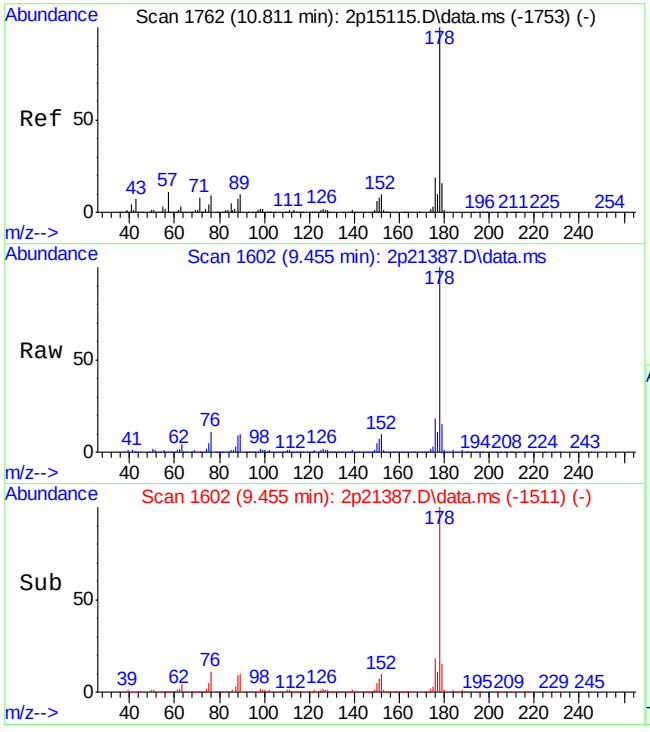


#66
Fluorene
Concen: 3.27 ppb
RT: 7.984 min Scan# 1327
Delta R.T. -0.016 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:166 Resp: 14679

Ion	Ratio	Lower	Upper
166	100		
165	89.3	62.5	122.5
167	12.8	0.0	42.9

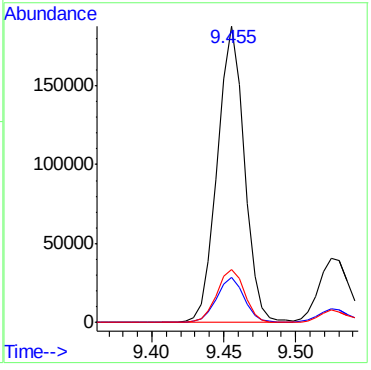


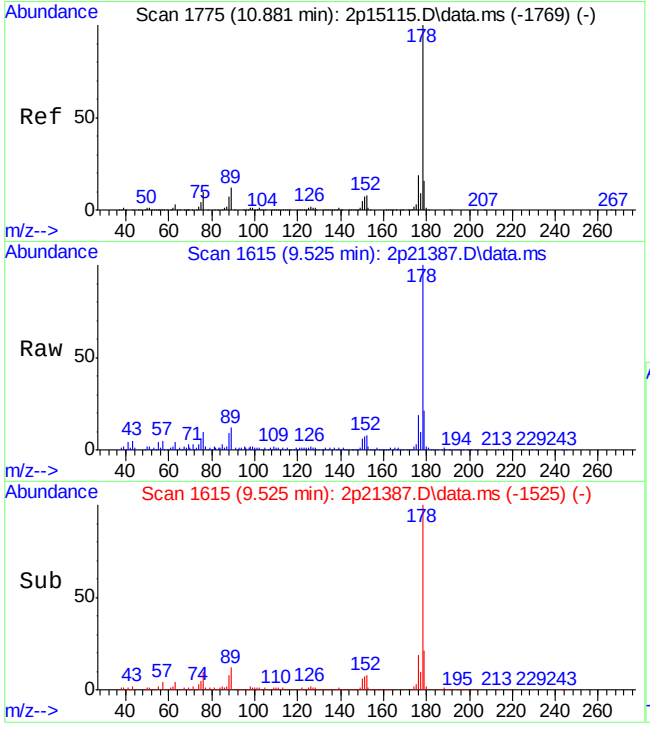


#77
Phenanthrene
Concen: 35.59 ppb
RT: 9.455 min Scan# 1602
Delta R.T. -0.011 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:178 Resp: 242690

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	44.4
176	17.8	0.0	48.6

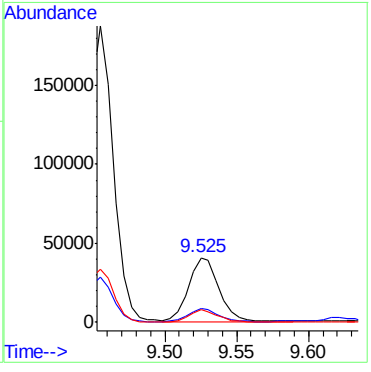


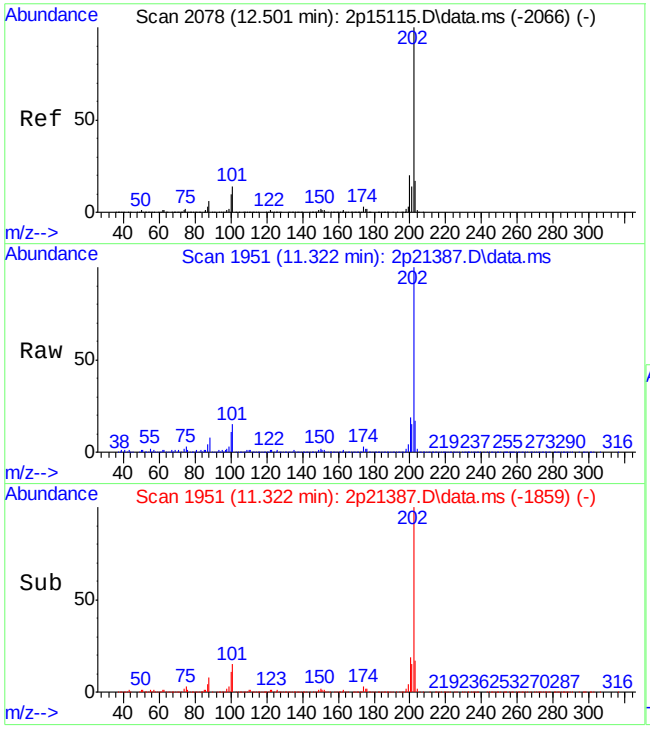


#78
Anthracene
Concen: 8.92 ppb
RT: 9.525 min Scan# 1615
Delta R.T. -0.016 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:178 Resp: 60194

Ion	Ratio	Lower	Upper
178	100		
179	20.7	0.0	44.5
176	18.5	0.0	46.5

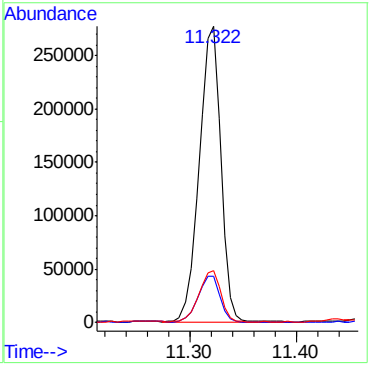


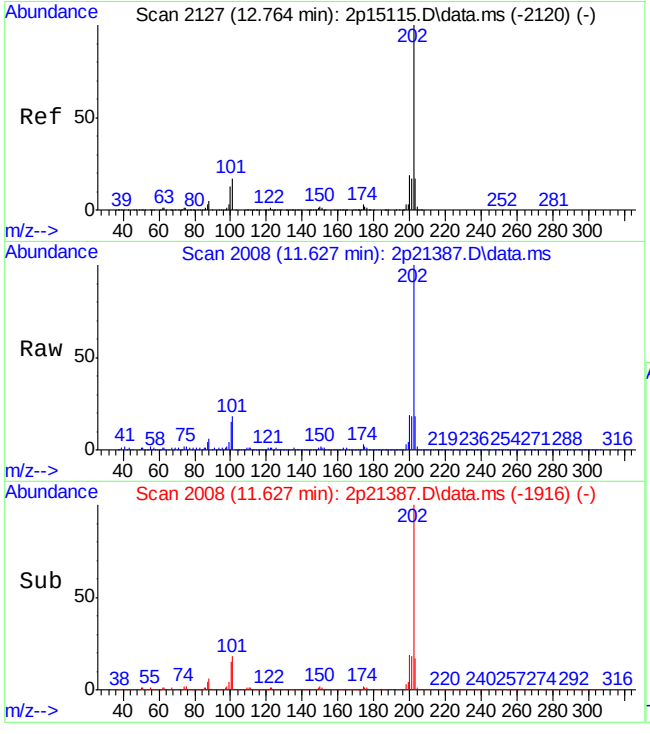


#81
Fluoranthene
Concen: 56.68 ppb
RT: 11.322 min Scan# 1951
Delta R.T. -0.005 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:202 Resp: 396782

Ion	Ratio	Lower	Upper
202	100		
101	15.4	0.0	41.3
203	17.3	0.0	49.1

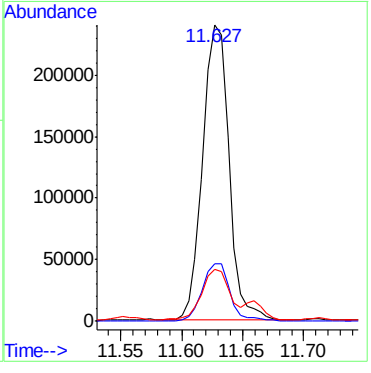




#84
Pyrene
Concen: 46.58 ppb
RT: 11.627 min Scan# 2008
Delta R.T. -0.005 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:202 Resp: 360383

Ion	Ratio	Lower	Upper
202	100		
200	19.3	0.0	49.6
203	17.2	0.0	46.9



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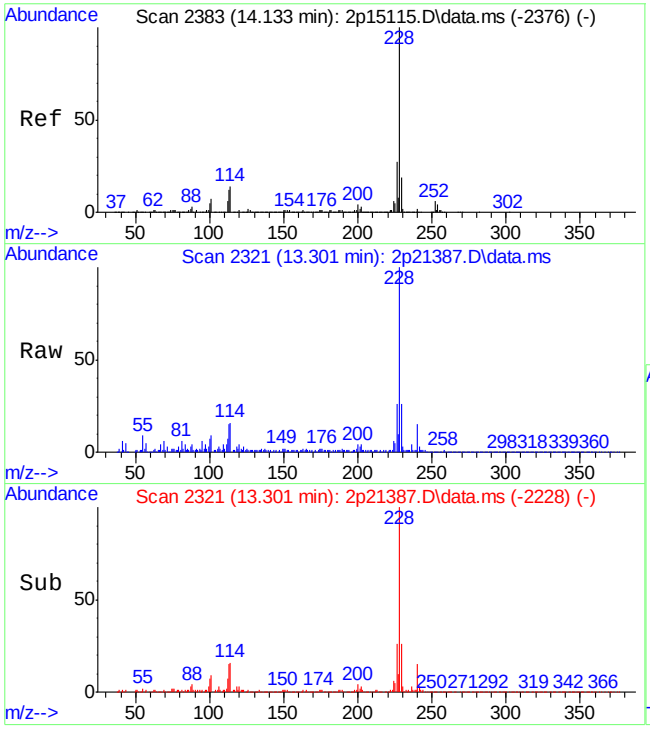
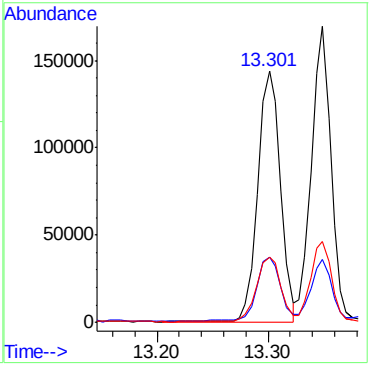
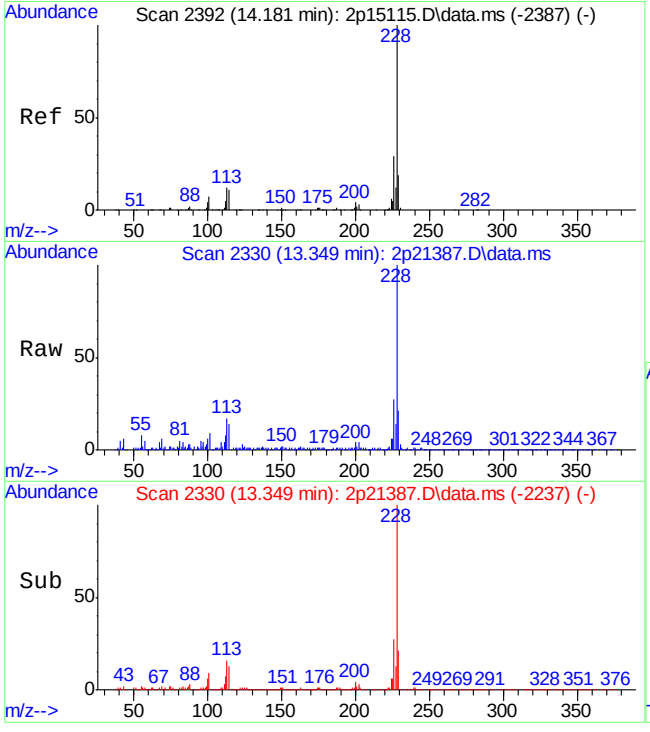


#88
Benzo[a]anthracene
Concen: 30.03 ppb
RT: 13.301 min Scan# 2321
Delta R.T. -0.000 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:228 Resp: 203279

Ion	Ratio	Lower	Upper
228	100		
229	25.1	0.0	50.7
226	25.5	0.0	56.7

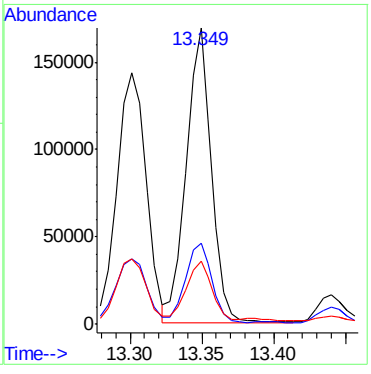




#90
Chrysene
Concen: 32.31 ppb
RT: 13.349 min Scan# 2330
Delta R.T. -0.000 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:228 Resp: 208220

Ion	Ratio	Lower	Upper
228	100		
226	26.9	0.0	58.4
229	19.9	0.0	50.1



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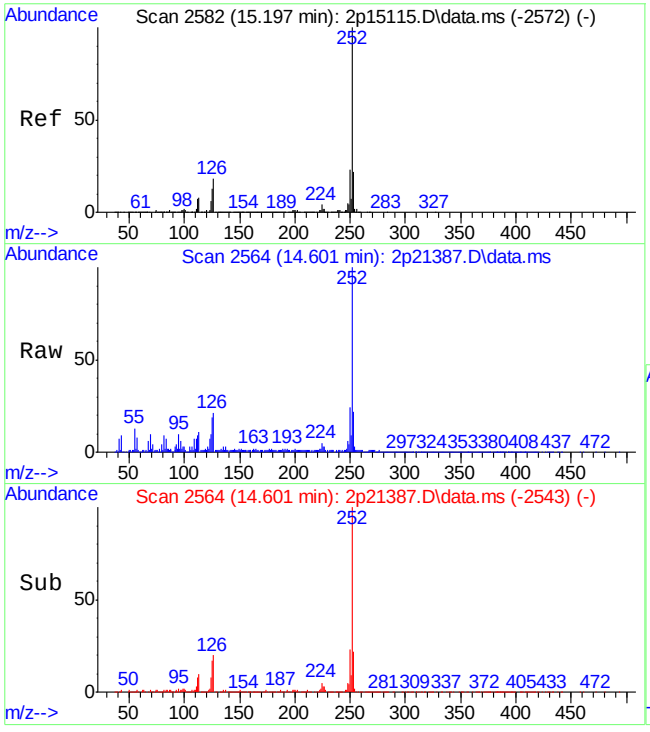
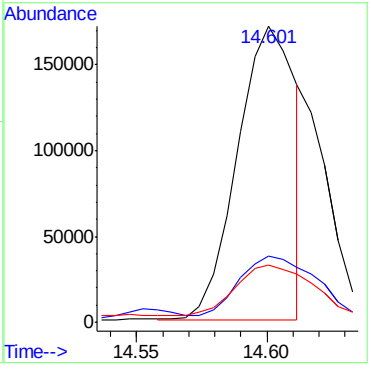
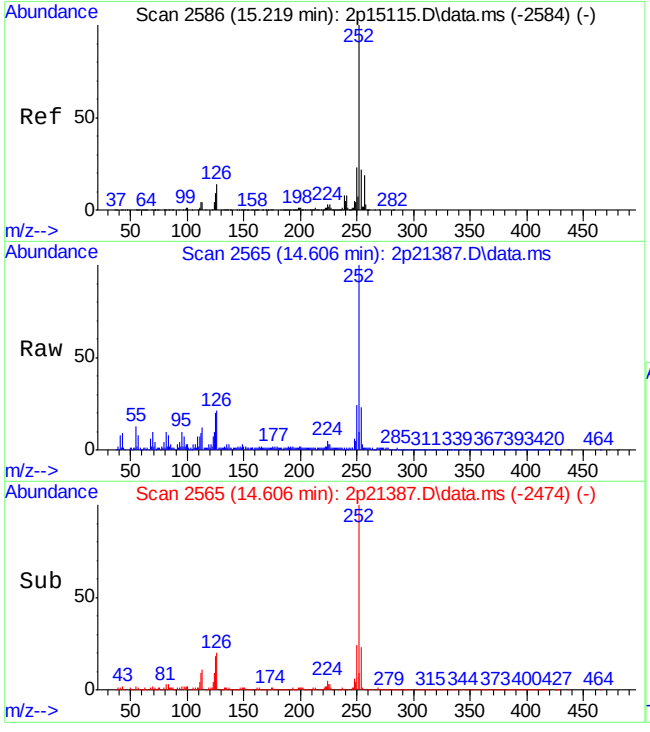


#94
Benzo[b]fluoranthene
Concen: 36.92 ppb m
RT: 14.601 min Scan# 2564
Delta R.T. 0.011 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:252 Resp: 264955

Ion	Ratio	Lower	Upper
252	100		
253	22.4	0.0	51.1
125	19.3	0.0	40.8

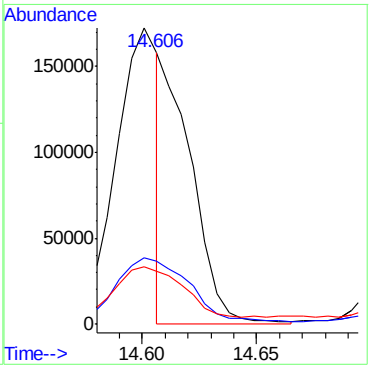


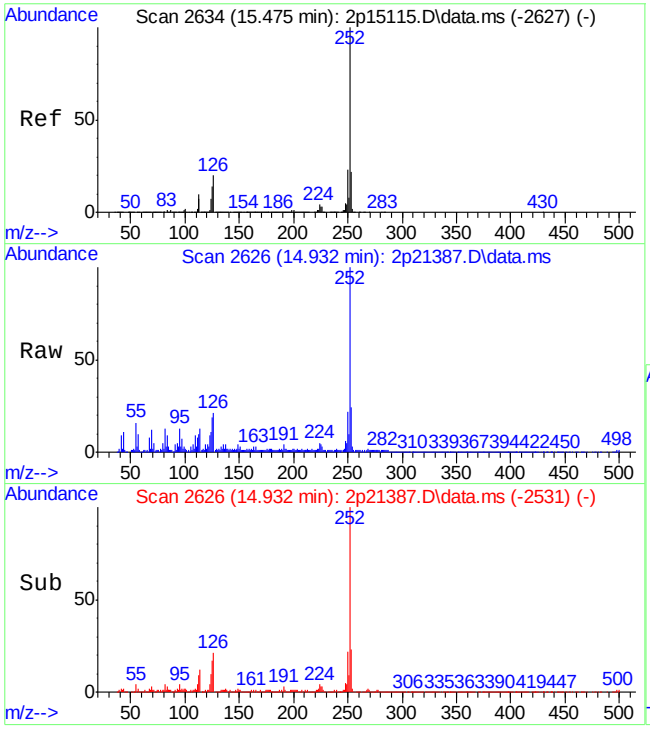


#95
Benzo[k]fluoranthene
Concen: 22.23 ppb m
RT: 14.606 min Scan# 2565
Delta R.T. -0.011 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:252 Resp: 139425

Ion	Ratio	Lower	Upper
252	100		
253	23.3	0.0	56.1
125	19.5	0.0	45.7

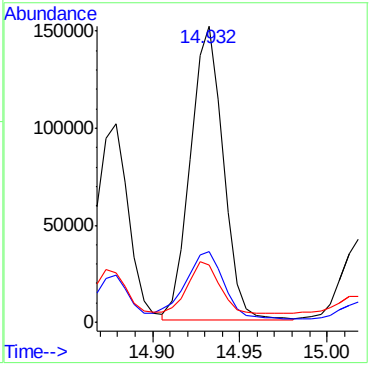


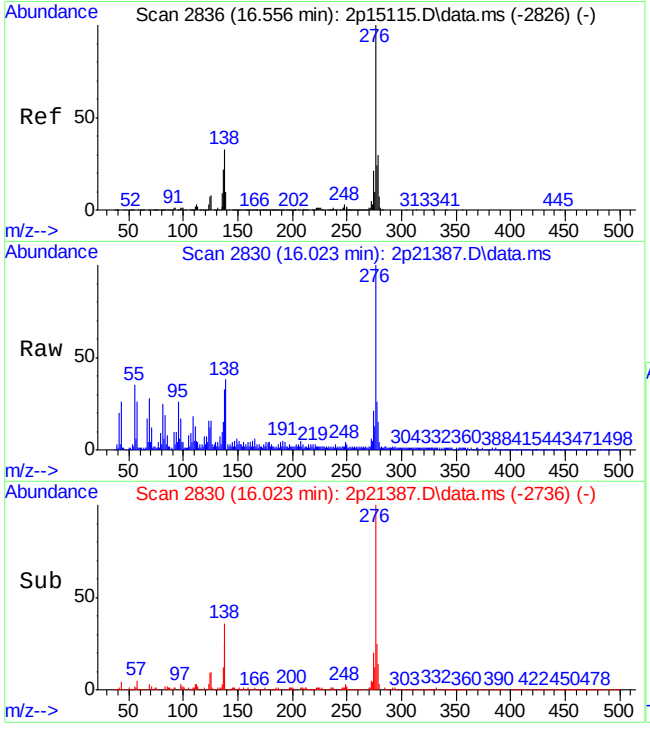


#96
Benzo[a]pyrene
Concen: 31.91 ppb
RT: 14.932 min Scan# 2626
Delta R.T. 0.011 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:252 Resp: 198878

Ion	Ratio	Lower	Upper
252	100		
253	21.5	0.0	51.5
125	16.4	0.0	41.1

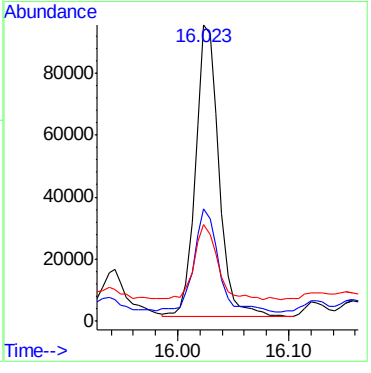




#97
Indeno[1,2,3-cd]pyrene
Concen: 18.66 ppb
RT: 16.023 min Scan# 2830
Delta R.T. 0.005 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:276 Resp: 134902

Ion	Ratio	Lower	Upper
276	100		
138	35.0	0.0	54.7
137	25.5	0.0	49.5



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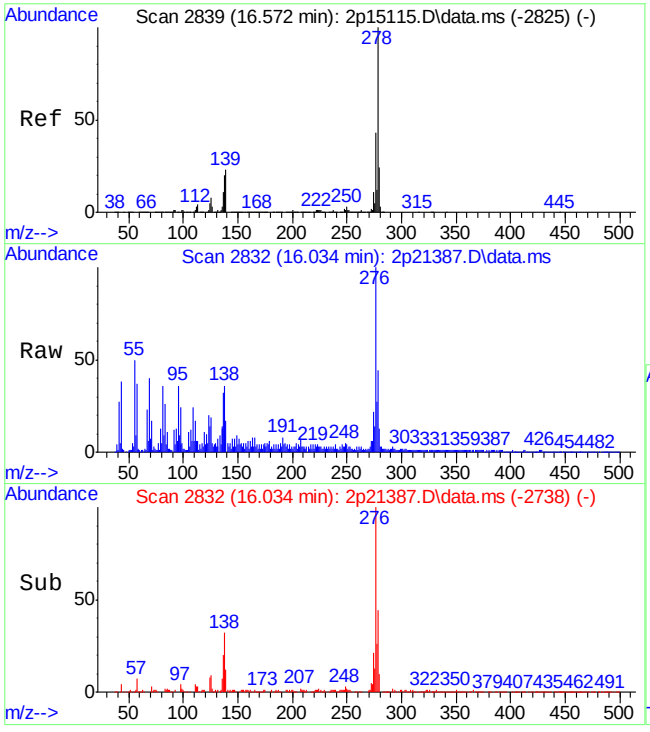
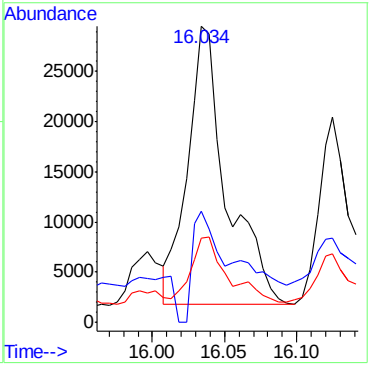
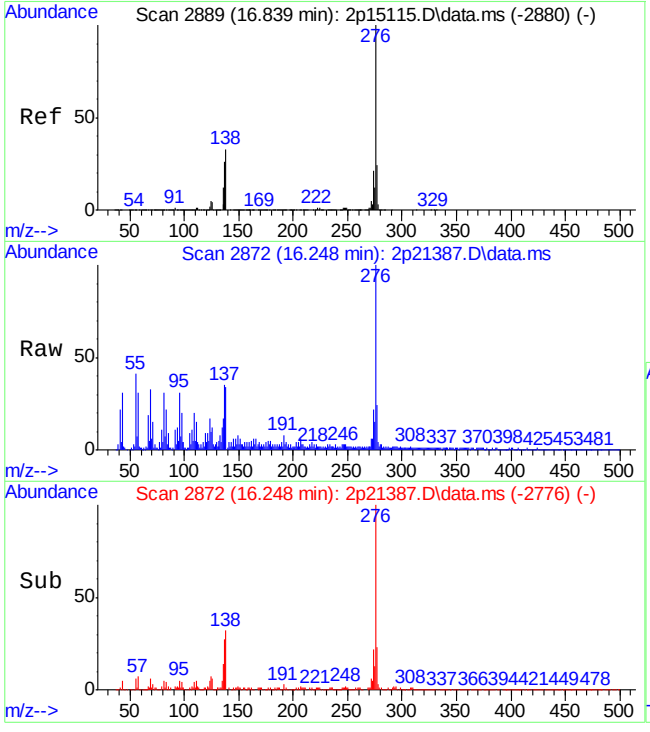


#99
Dibenz[a,h]anthracene
Concen: 8.74 ppb m
RT: 16.034 min Scan# 2832
Delta R.T. 0.005 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:278 Resp: 52685

Ion	Ratio	Lower	Upper
278	100		
139	37.7	0.0	49.9
279	28.6	0.0	56.4

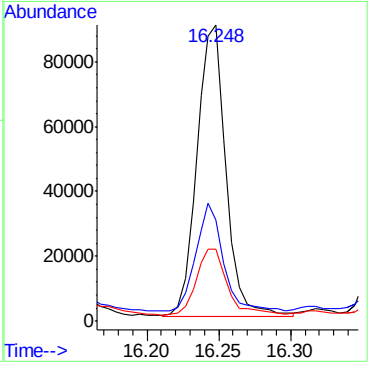




#101
Benzo[g,h,i]perylene
Concen: 20.55 ppb
RT: 16.248 min Scan# 2872
Delta R.T. 0.016 min
Lab File: 2p21387.D
Acq: 22 Mar 2013 2:02 pm

Tgt Ion:276 Resp: 126226

Ion	Ratio	Lower	Upper
276	100		
138	31.4	0.0	55.6
277	22.5	0.0	53.3



9.1.20

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Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21241.D
Acq On : 19 Mar 2013 8:20 pm
Operator : andrews1
Sample : jb30425-12
Misc : op64440,e2p936,31.0
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 20 14:50:44 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.941	152	65904	40.00	ppb	-0.09
24) Naphthalene-d8	4.561	136	253415	40.00	ppb	-0.09
47) Acenaphthene-d10	7.193	164	139463	40.00	ppb	-0.10
69) Phenanthrene-d10	9.466	188	229106	40.00	ppb	-0.09
83) Chrysene-d12	13.360	240	248195	40.00	ppb	-0.05
92) Perylene-d12	15.034	264	235218	40.00	ppb	-0.03
102) 1,4-Dichlorobenzene-d4a	2.941	152	65904	40.00	ppb	-0.09
104) Acenaphthene-d10a	7.193	164	139463	40.00	ppb	-0.10
107) Chrysene-d12a	13.360	240	248195	40.00	ppb	-0.05
109) Naphthalene-d8a	4.561	136	253415	40.00	ppb	#-0.09
System Monitoring Compounds						
5) 2-Fluorophenol	1.844	112	74217	31.46	ppb	-0.05
Spiked Amount 50.000	Range 11 - 58		Recovery = 62.92%#			
8) Phenol-d5	2.727	99	95337	32.58	ppb	-0.05
Spiked Amount 50.000	Range 10 - 59		Recovery = 65.16%#			
25) Nitrobenzene-d5	3.652	82	70694	30.33	ppb	-0.09
Spiked Amount 50.000	Range 19 - 61		Recovery = 60.66%			
51) 2-Fluorobiphenyl	6.230	172	155054	34.77	ppb	-0.10
Spiked Amount 50.000	Range 21 - 58		Recovery = 69.54%#			
73) 2,4,6-Tribromophenol	8.466	330	17258	33.70	ppb	-0.08
Spiked Amount 50.000	Range 12 - 68		Recovery = 67.40%			
85) Terphenyl-d14	12.017	244	165867	31.72	ppb	-0.07
Spiked Amount 50.000	Range 16 - 65		Recovery = 63.44%			
Target Compounds						Qvalue
38) Naphthalene	4.588	128	7883	1.16	ppb	99
56) Acenaphthylene	6.952	152	16208	2.51	ppb	98
59) Acenaphthene	7.241	153	4136	1.04	ppb	86
66) Fluorene	8.027	166	4569	1.00	ppb	98
77) Phenanthrene	9.498	178	95842	13.89	ppb	100
78) Anthracene	9.568	178	32431	4.75	ppb	96
81) Fluoranthene	11.360	202	195360	27.58	ppb	94
84) Pyrene	11.664	202	177791	21.02	ppb	100
88) Benzo[a]anthracene	13.339	228	115194	15.57	ppb	94
90) Chrysene	13.387	228	114197	16.21	ppb	100
94) Benzo[b]fluoranthene	14.638	252	129318m	16.12	ppb	
95) Benzo[k]fluoranthene	14.644	252	91114m	13.00	ppb	
96) Benzo[a]pyrene	14.970	252	119734	17.19	ppb	92
97) Indeno[1,2,3-cd]pyrene	16.066	276	91451	11.32	ppb	88
99) Dibenz[a,h]anthracene	16.082	278	35693	5.30	ppb	93
101) Benzo[g,h,i]perylene	16.286	276	86784	12.64	ppb	90

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

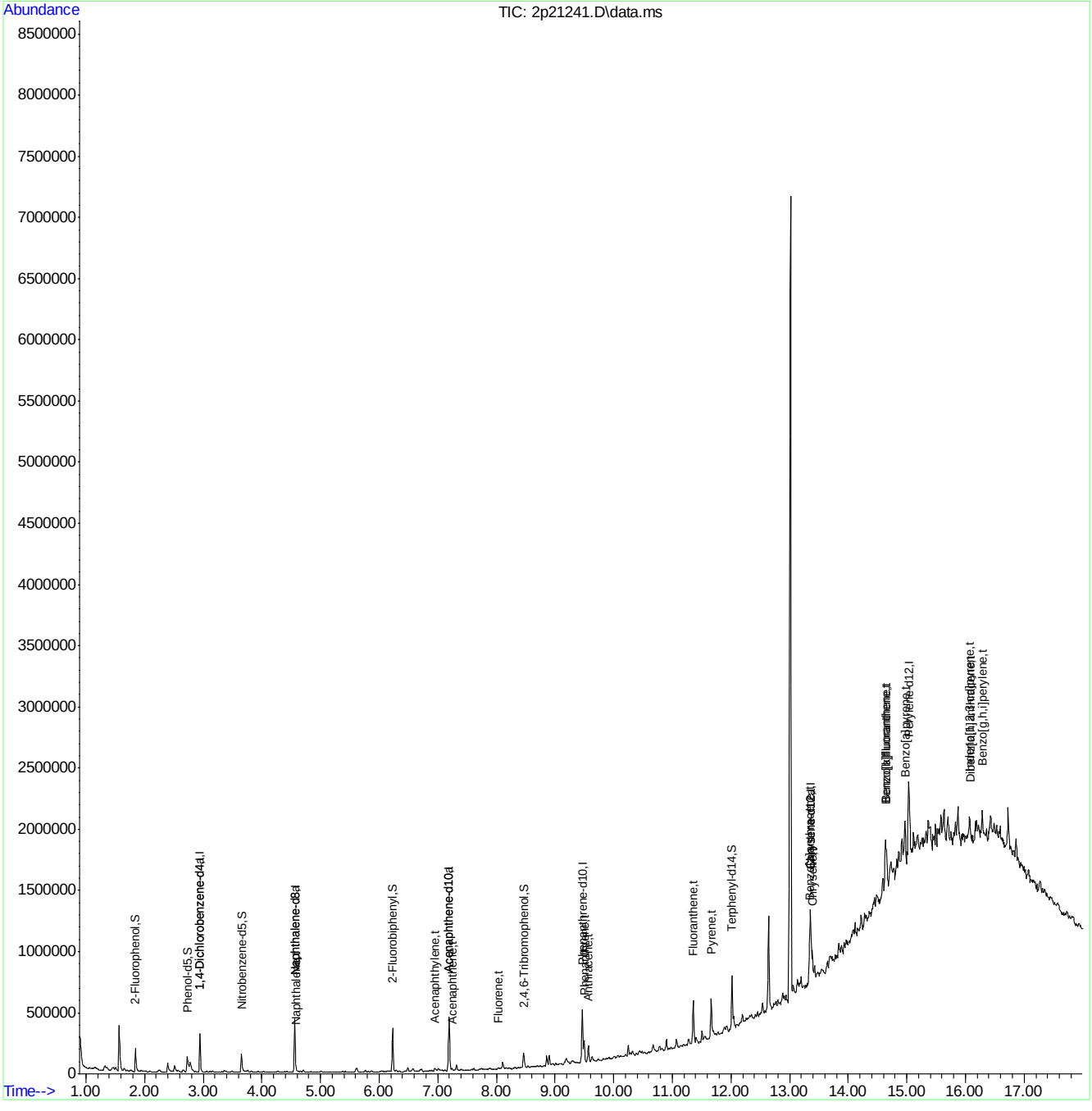
9.1.21

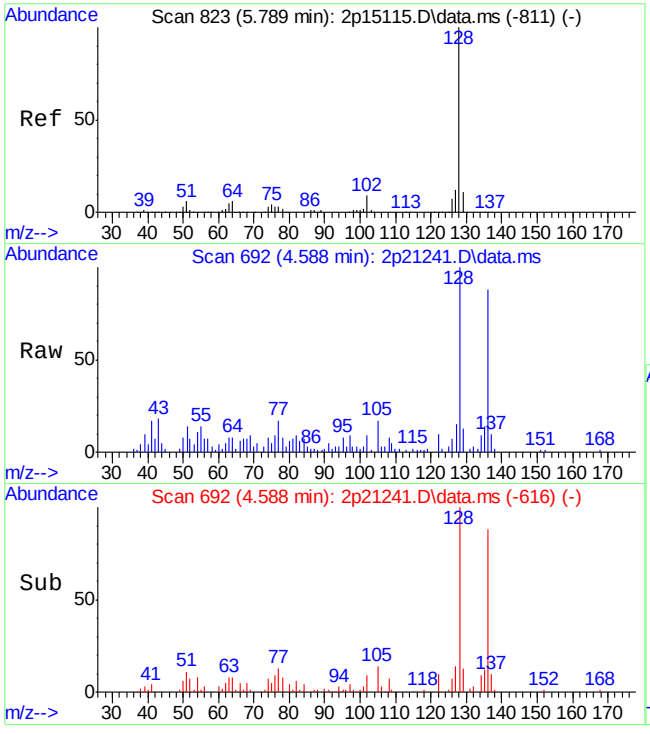
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21241.D
Acq On : 19 Mar 2013 8:20 pm
Operator : andrews1
Sample : jb30425-12
Misc : op64440,e2p936,31.0
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 20 14:50:44 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

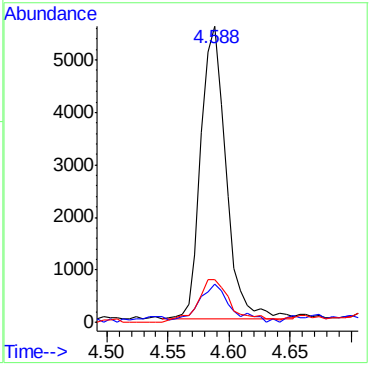


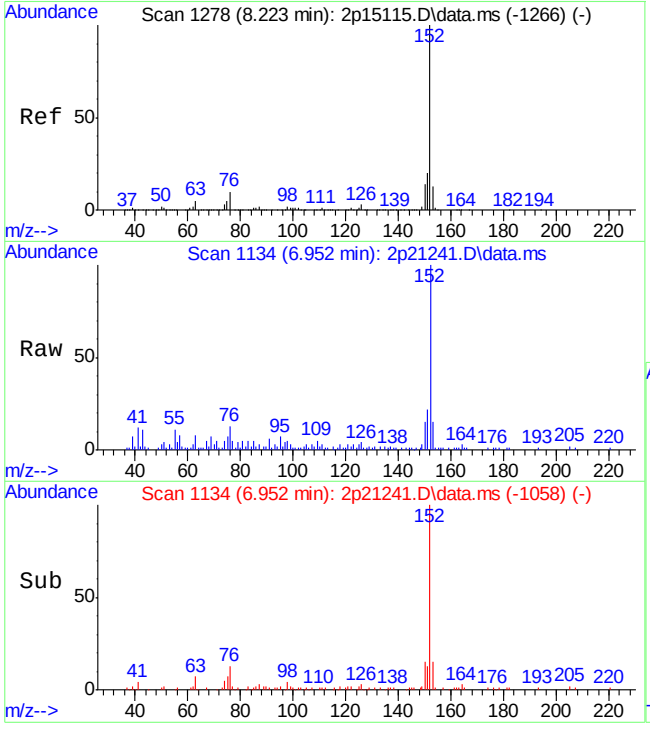


#38
Naphthalene
Concen: 1.16 ppb
RT: 4.588 min Scan# 692
Delta R.T. -0.091 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:128 Resp: 7883

Ion	Ratio	Lower	Upper
128	100		
129	11.1	0.0	41.0
127	14.0	0.0	43.0

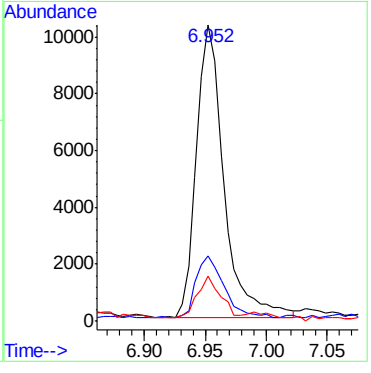




#56
Acenaphthylene
Concen: 2.51 ppb
RT: 6.952 min Scan# 1134
Delta R.T. -0.091 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:152 Resp: 16208

Ion	Ratio	Lower	Upper
152	100		
151	20.5	0.0	49.9
153	14.2	0.0	43.1



9.1.21

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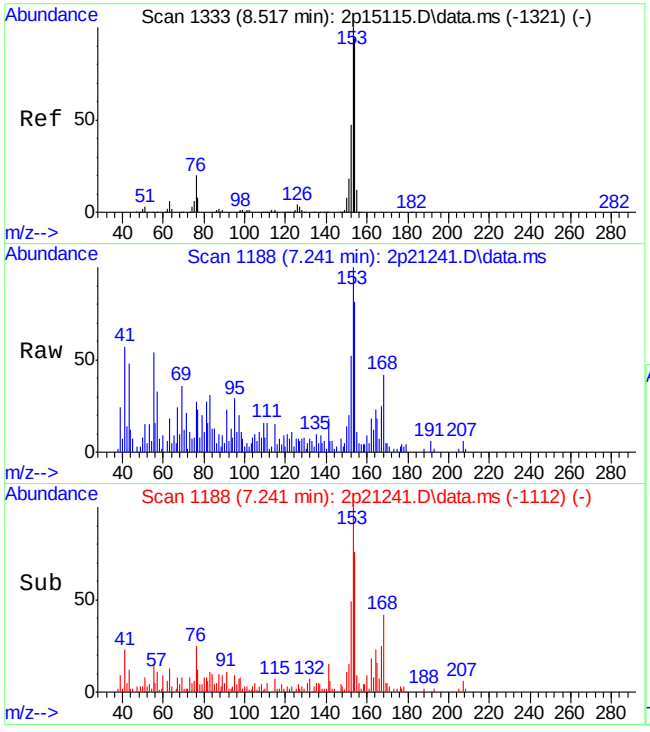
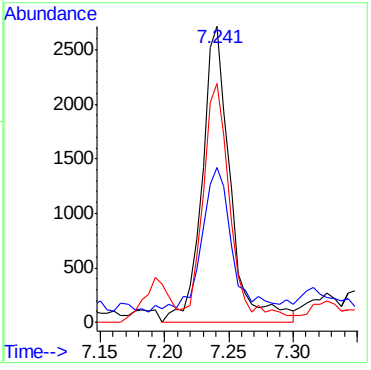
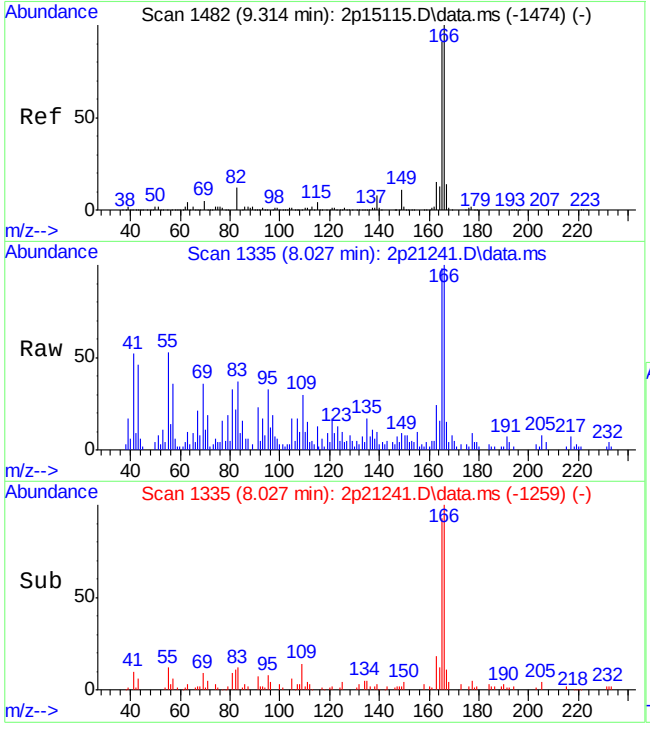


#59
Acenaphthene
Concen: 1.04 ppb
RT: 7.241 min Scan# 1188
Delta R.T. -0.091 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:153 Resp: 4136

Ion	Ratio	Lower	Upper
153	100		
152	47.7	17.8	77.8
154	74.3	65.2	125.2

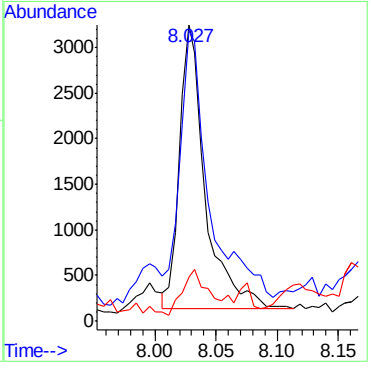




#66
Fluorene
Concen: 1.00 ppb
RT: 8.027 min Scan# 1335
Delta R.T. -0.091 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:166 Resp: 4569

Ion	Ratio	Lower	Upper
166	100		
165	91.8	62.5	122.5
167	7.8	0.0	42.9



9.1.21

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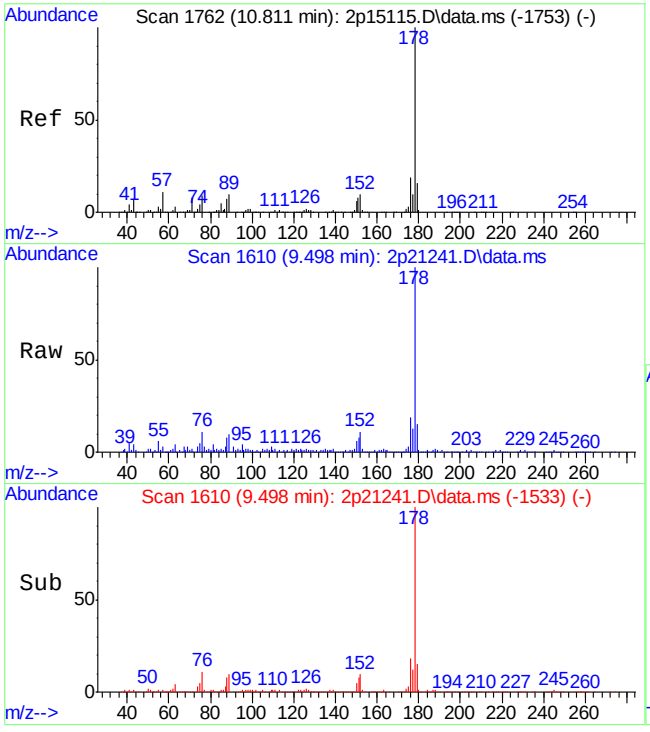
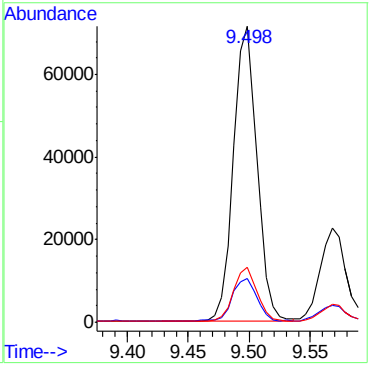
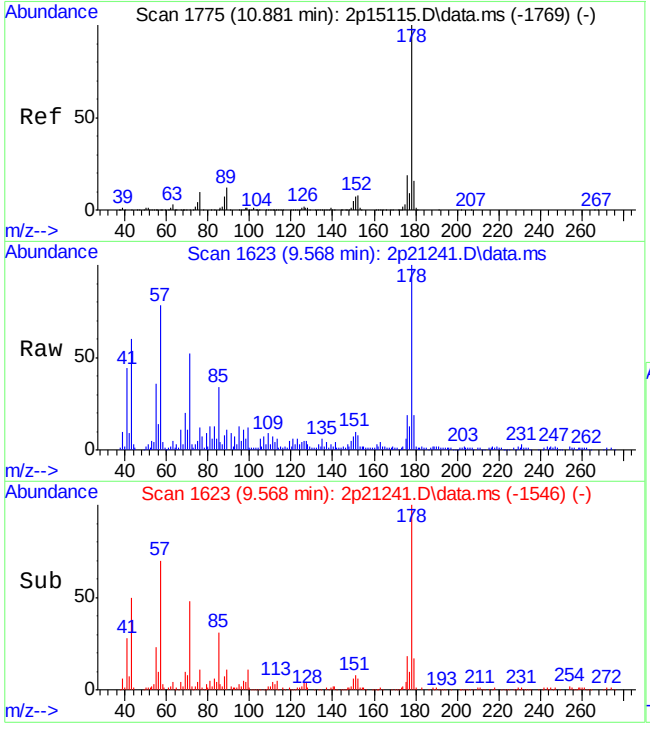


#77
Phenanthrene
Concen: 13.89 ppb
RT: 9.498 min Scan# 1610
Delta R.T. -0.086 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:178 Resp: 95842

Ion	Ratio	Lower	Upper
178	100		
179	14.4	0.0	44.4
176	18.4	0.0	48.6

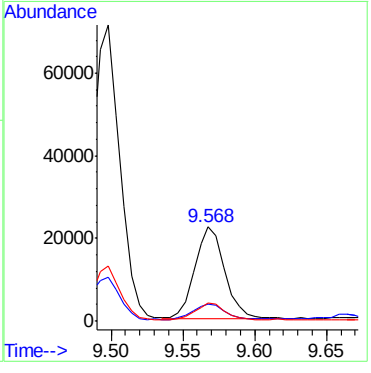




#78
Anthracene
Concen: 4.75 ppb
RT: 9.568 min Scan# 1623
Delta R.T. -0.086 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:178 Resp: 32431

Ion	Ratio	Lower	Upper
178	100		
179	17.0	0.0	44.5
176	17.7	0.0	46.5



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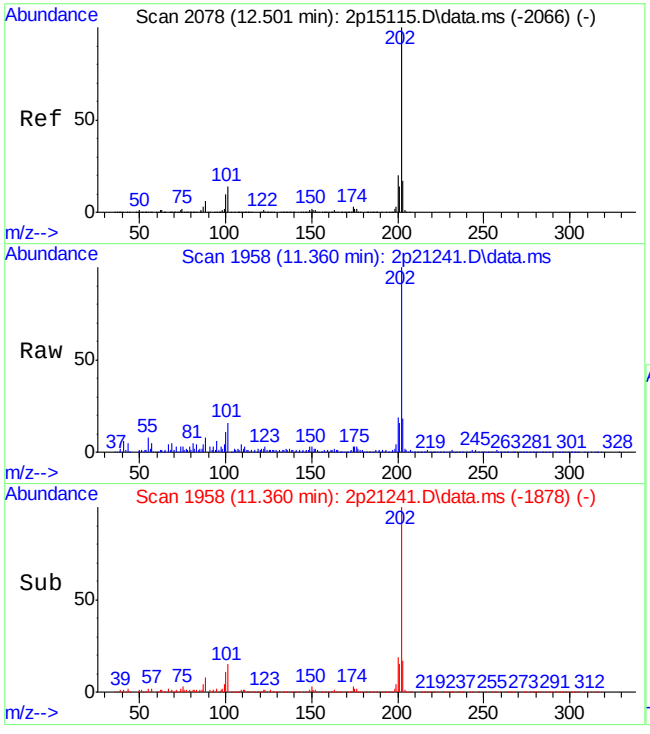
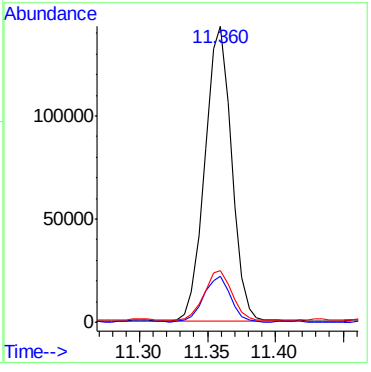
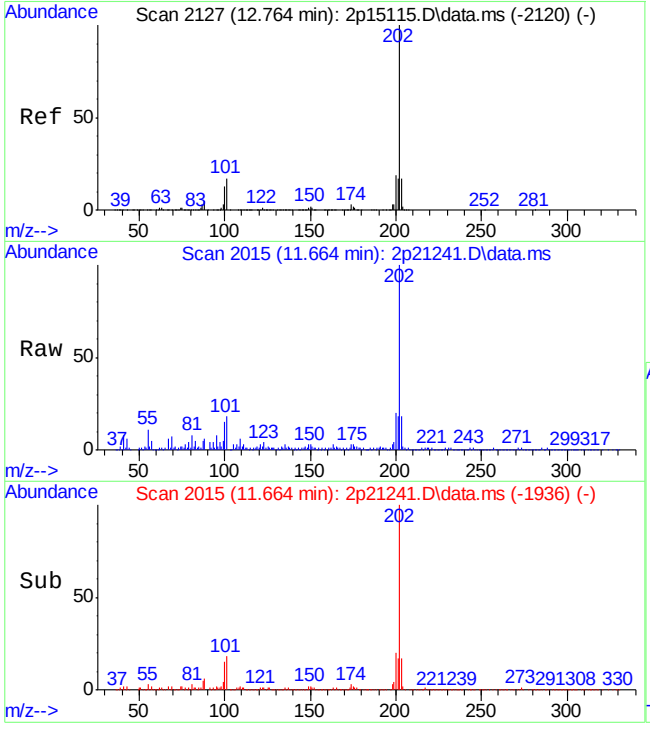


#81
Fluoranthene
Concen: 27.58 ppb
RT: 11.360 min Scan# 1958
Delta R.T. -0.070 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:202 Resp: 195360

Ion	Ratio	Lower	Upper
202	100		
101	15.6	0.0	41.3
203	17.5	0.0	49.1

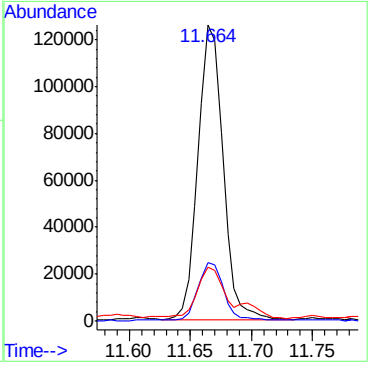


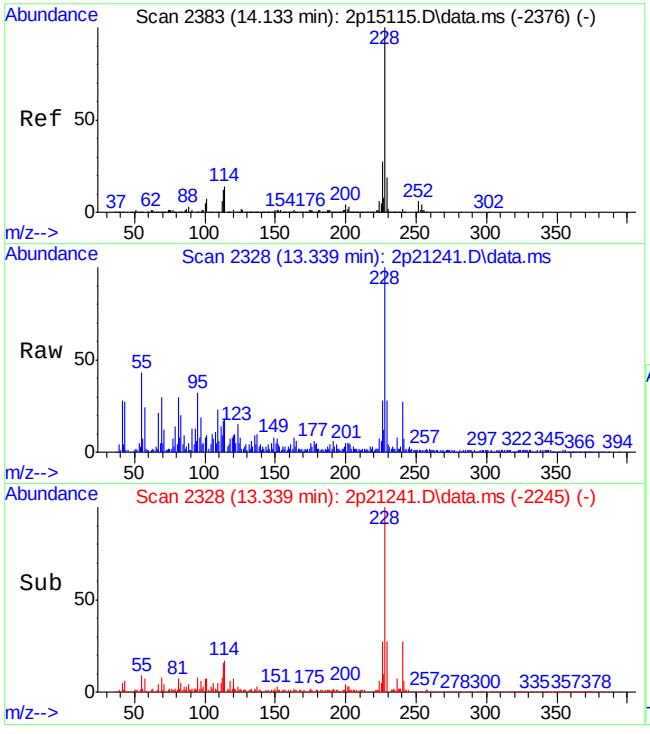


#84
Pyrene
Concen: 21.02 ppb
RT: 11.664 min Scan# 2015
Delta R.T. -0.075 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:202 Resp: 177791

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	49.6
203	17.0	0.0	46.9

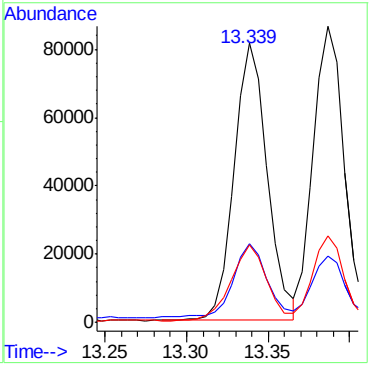


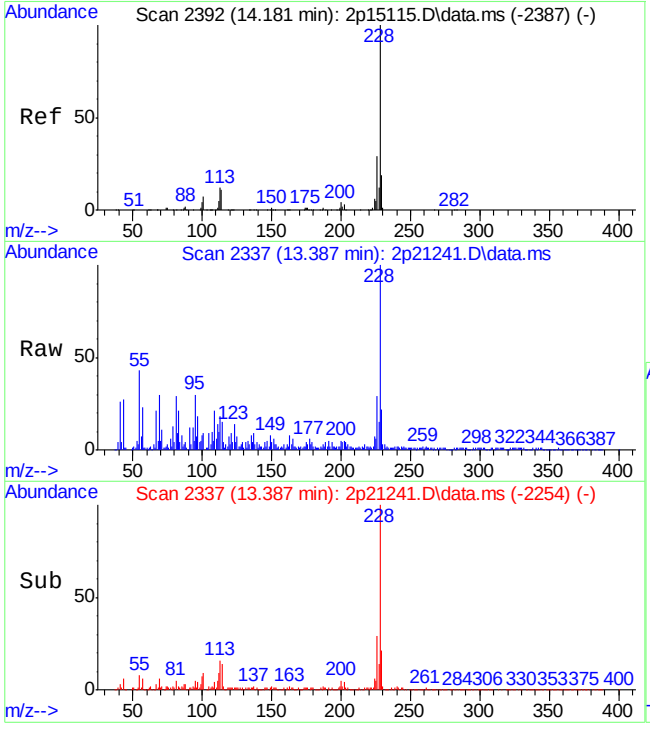


#88
Benzo[a]anthracene
Concen: 15.57 ppb
RT: 13.339 min Scan# 2328
Delta R.T. -0.054 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:228 Resp: 115194

Ion	Ratio	Lower	Upper
228	100		
229	26.3	0.0	50.7
226	27.2	0.0	56.7

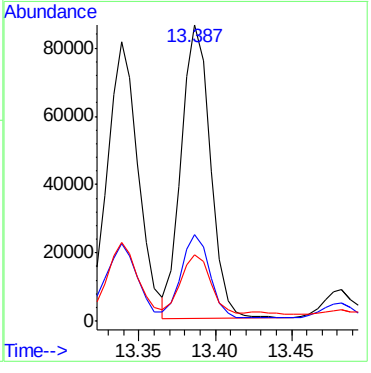


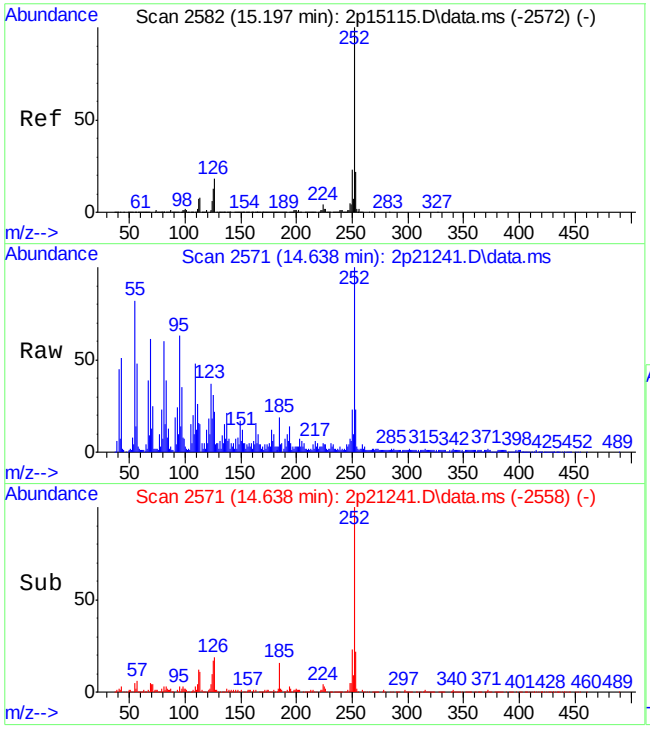


#90
Chrysene
Concen: 16.21 ppb
RT: 13.387 min Scan# 2337
Delta R.T. -0.054 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:228 Resp: 114197

Ion	Ratio	Lower	Upper
228	100		
226	28.4	0.0	58.4
229	20.4	0.0	50.1

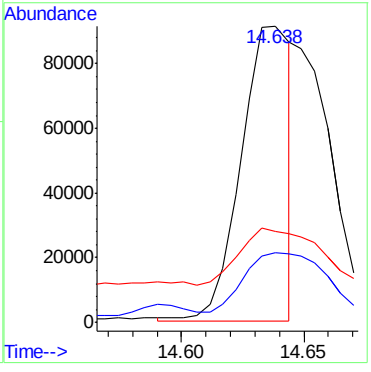


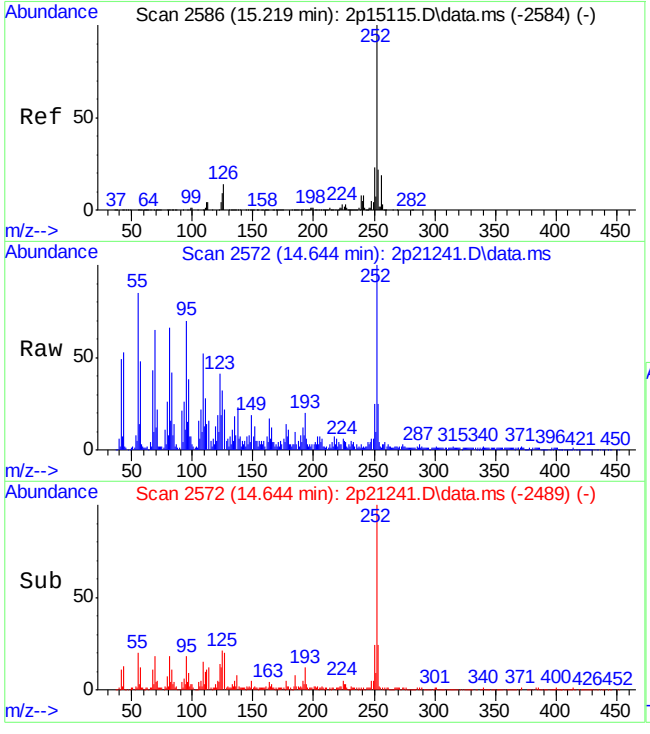


#94
Benzo[b]fluoranthene
Concen: 16.12 ppb m
RT: 14.638 min Scan# 2571
Delta R.T. -0.032 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:252 Resp: 129318

Ion	Ratio	Lower	Upper
252	100		
253	23.4	0.0	51.1
125	30.6	0.0	40.8

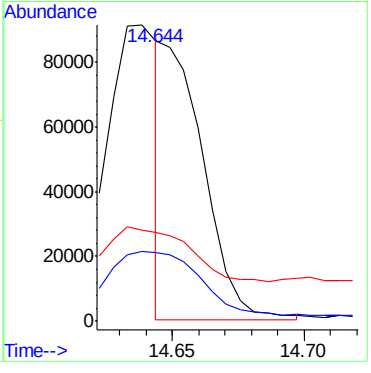




#95
Benzo[k]fluoranthene
Concen: 13.00 ppb m
RT: 14.644 min Scan# 2572
Delta R.T. -0.054 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:252 Resp: 91114

Ion	Ratio	Lower	Upper
252	100		
253	24.6	0.0	56.1
125	31.7	0.0	45.7



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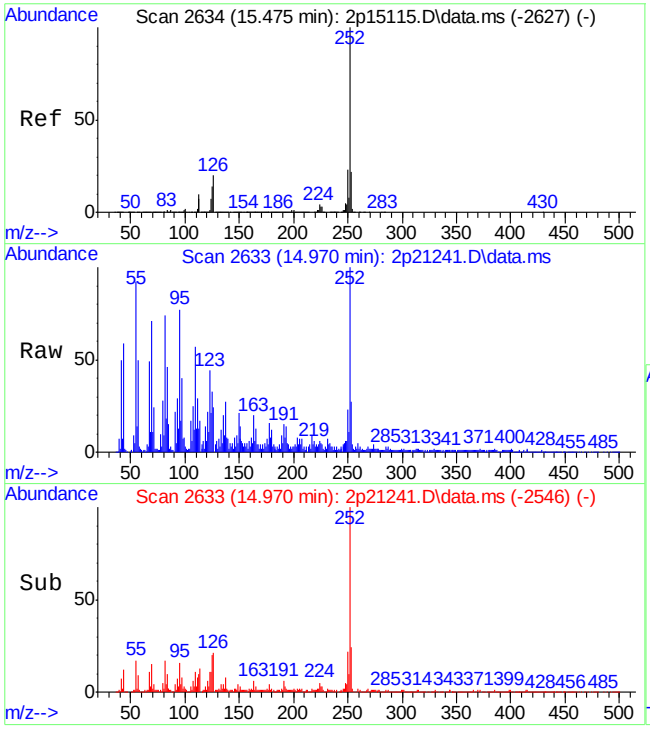
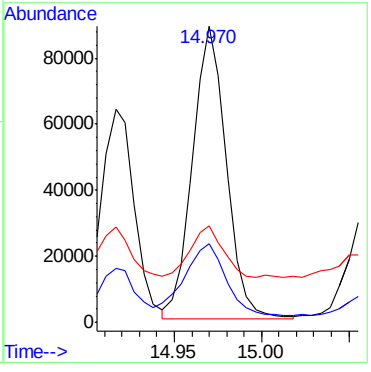
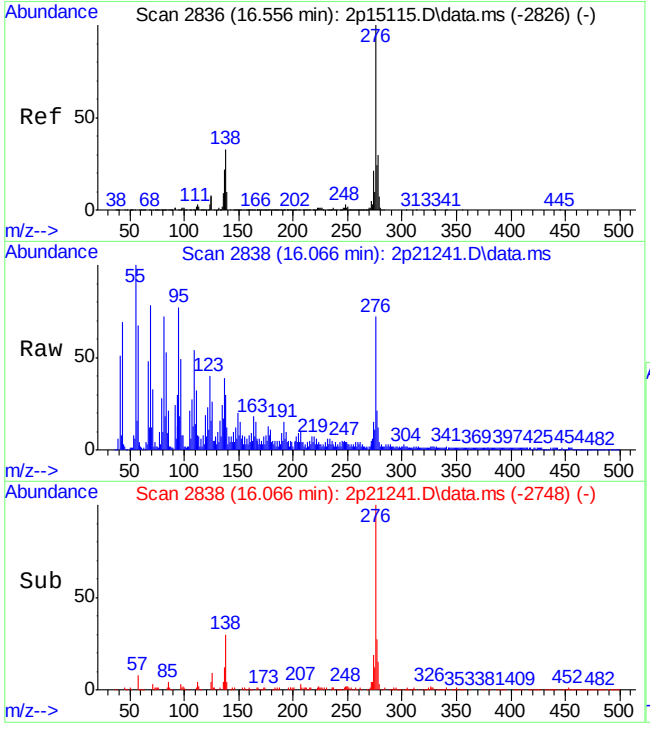


#96
Benzo[a]pyrene
Concen: 17.19 ppb
RT: 14.970 min Scan# 2633
Delta R.T. -0.032 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:252 Resp: 119734

Ion	Ratio	Lower	Upper
252	100		
253	23.0	0.0	51.5
125	17.7	0.0	41.1

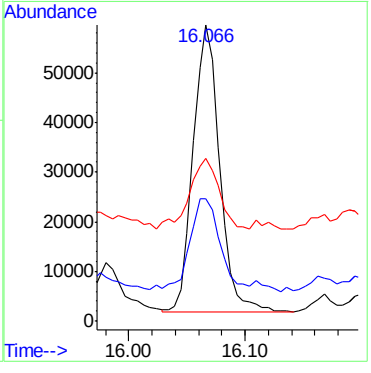


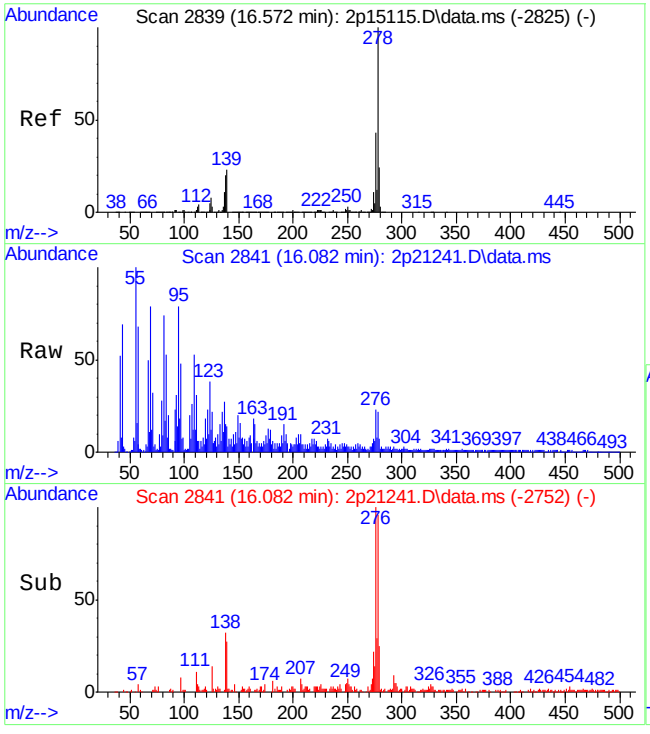


#97
Indeno[1,2,3-cd]pyrene
Concen: 11.32 ppb
RT: 16.066 min Scan# 2838
Delta R.T. -0.016 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:276 Resp: 91451

Ion	Ratio	Lower	Upper
276	100		
138	31.7	0.0	54.7
137	23.6	0.0	49.5

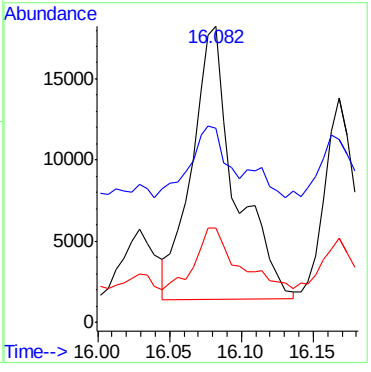


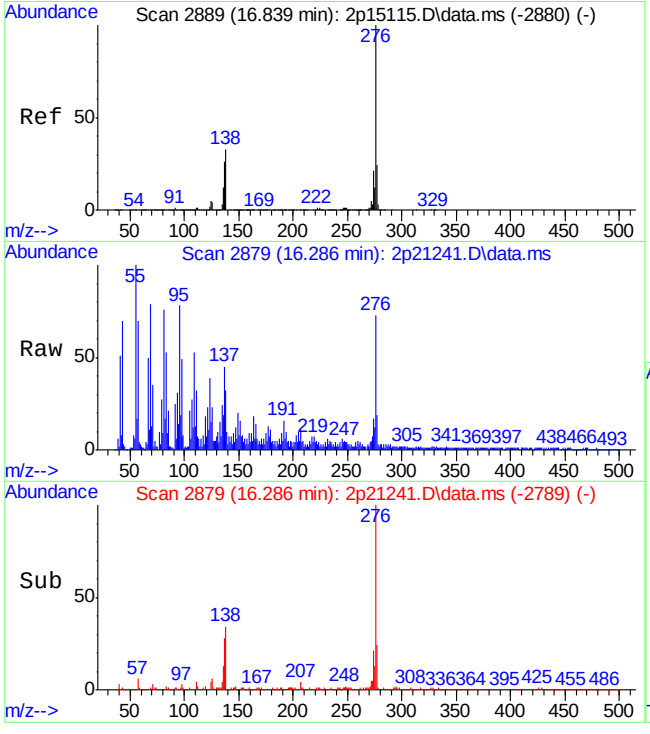


#99
Dibenz[a,h]anthracene
Concen: 5.30 ppb
RT: 16.082 min Scan# 2841
Delta R.T. -0.021 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:278 Resp: 35693

Ion	Ratio	Lower	Upper
278	100		
139	24.8	0.0	49.9
279	24.5	0.0	56.4

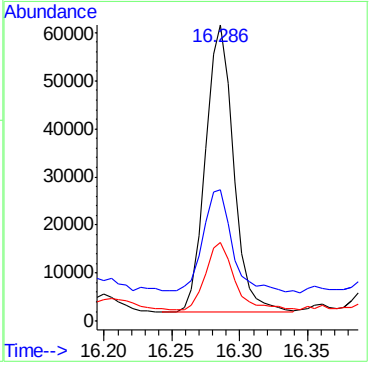




#101
Benzo[g,h,i]perylene
Concen: 12.64 ppb
RT: 16.286 min Scan# 2879
Delta R.T. -0.016 min
Lab File: 2p21241.D
Acq: 19 Mar 2013 8:20 pm

Tgt Ion:276 Resp: 86784

Ion	Ratio	Lower	Upper
276	100		
138	35.3	0.0	55.6
277	23.0	0.0	53.3



9.1.21

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21388.D
Acq On : 22 Mar 2013 2:25 pm
Operator : andrews1
Sample : jb30425-12cf
Misc : op64440,e2p941,30.0
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 23 13:42:57 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.909	152	64110	40.00	ppb	-0.02
24) Naphthalene-d8	4.524	136	249287	40.00	ppb	-0.01
47) Acenaphthene-d10	7.150	164	139687	40.00	ppb	-0.02
69) Phenanthrene-d10	9.423	188	229077	40.00	ppb	-0.01
83) Chrysene-d12	13.328	240	253502	40.00	ppb	0.01
92) Perylene-d12	15.013	264	248902	40.00	ppb	0.03
102) 1,4-Dichlorobenzene-d4a	2.909	152	64110	40.00	ppb	-0.02
104) Acenaphthene-d10a	7.150	164	139687	40.00	ppb	-0.02
107) Chrysene-d12a	13.328	240	253502	40.00	ppb	0.01
109) Naphthalene-d8a	4.524	136	249287	40.00	ppb	#-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.823	112	75889	33.07	ppb	-0.01
Spiked Amount 50.000	Range 11 - 58		Recovery = 66.14%#			
8) Phenol-d5	2.716	99	93690	32.91	ppb	0.01
Spiked Amount 50.000	Range 10 - 59		Recovery = 65.82%#			
25) Nitrobenzene-d5	3.620	82	68098	29.70	ppb	-0.01
Spiked Amount 50.000	Range 19 - 61		Recovery = 59.40%			
51) 2-Fluorobiphenyl	6.193	172	161016	36.04	ppb	-0.02
Spiked Amount 50.000	Range 21 - 58		Recovery = 72.08%#			
73) 2,4,6-Tribromophenol	8.428	330	18707	36.54	ppb	-0.01
Spiked Amount 50.000	Range 12 - 68		Recovery = 73.08%#			
85) Terphenyl-d14	11.985	244	175869	32.93	ppb	0.00
Spiked Amount 50.000	Range 16 - 65		Recovery = 65.86%#			
Target Compounds						Qvalue
38) Naphthalene	4.551	128	14076	2.11	ppb	99
56) Acenaphthylene	6.909	152	22150	3.42	ppb	98
59) Acenaphthene	7.198	153	3731	0.94	ppb	83
66) Fluorene	7.990	166	4214	0.92	ppb	91
77) Phenanthrene	9.455	178	65974	9.56	ppb	99
78) Anthracene	9.530	178	50463	7.39	ppb	98
81) Fluoranthene	11.322	202	149275	21.07	ppb	96
84) Pyrene	11.632	202	143154	16.57	ppb	99
88) Benzo[a]anthracene	13.306	228	102023	13.50	ppb	95
90) Chrysene	13.360	228	126800	17.62	ppb	99
94) Benzo[b]fluoranthene	14.617	252	130707m	15.40	ppb	
95) Benzo[k]fluoranthene	14.622	252	94004m	12.68	ppb	
96) Benzo[a]pyrene	14.954	252	121609	16.50	ppb	93
97) Indeno[1,2,3-cd]pyrene	16.056	276	102010	11.93	ppb	91
99) Dibenz[a,h]anthracene	16.061	278	37271m	5.23	ppb	
101) Benzo[g,h,i]perylene	16.275	276	103848	14.30	ppb	90

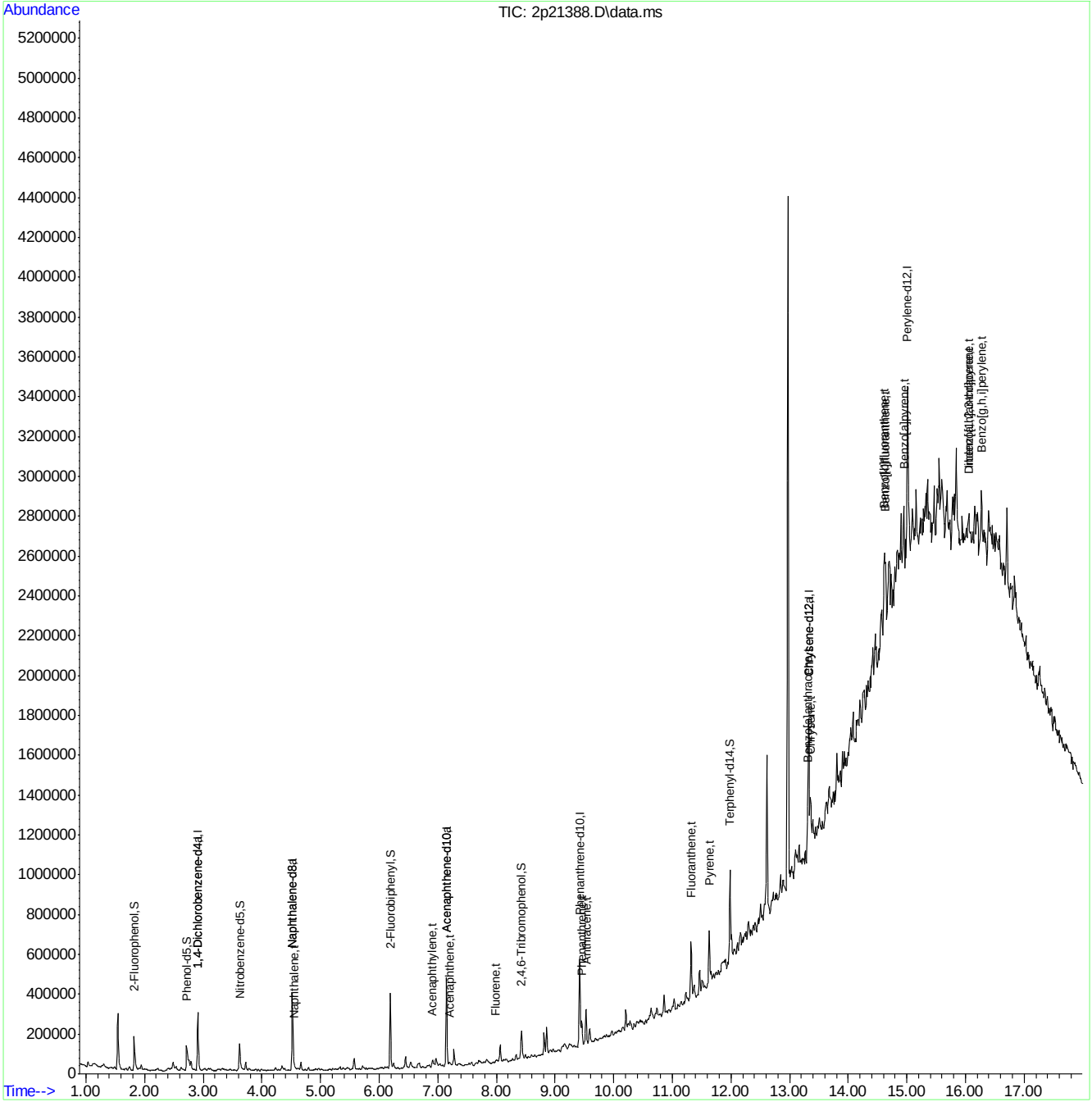
(#) = qualifier out of range (m) = manual integration (+) = signals summed

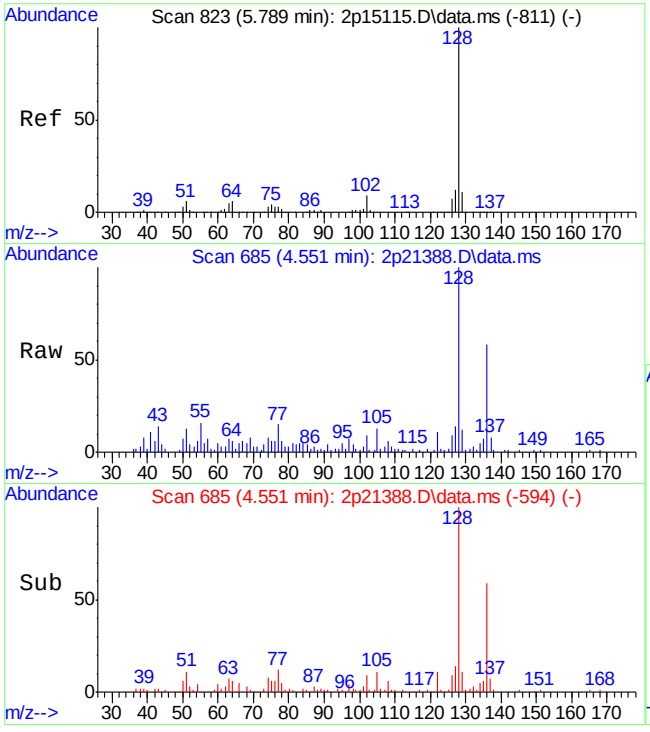
9.1.22
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21388.D
Acq On : 22 Mar 2013 2:25 pm
Operator : andrews1
Sample : jb30425-12cf
Misc : op64440,e2p941,30.0
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 23 13:42:57 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

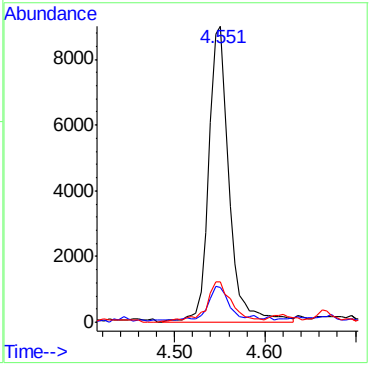


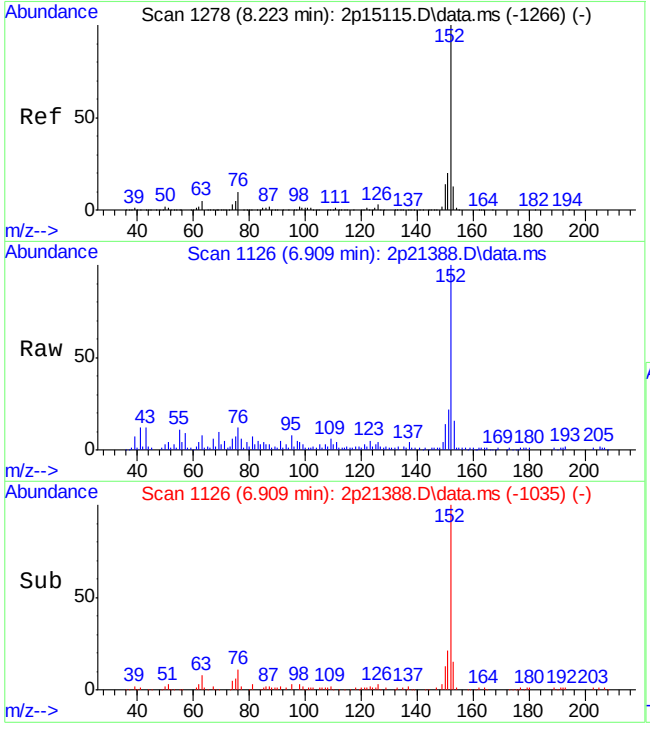


#38
Naphthalene
Concen: 2.11 ppb
RT: 4.551 min Scan# 685
Delta R.T. -0.011 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:128 Resp: 14076

Ion	Ratio	Lower	Upper
128	100		
129	10.5	0.0	41.0
127	12.9	0.0	43.0

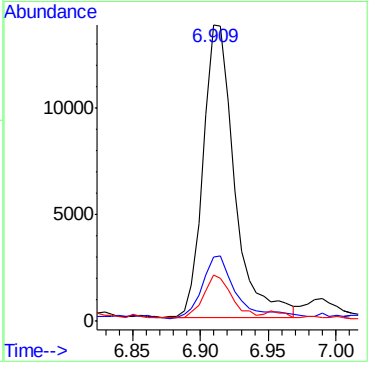




#56
Acenaphthylene
Concen: 3.42 ppb
RT: 6.909 min Scan# 1126
Delta R.T. -0.011 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:152 Resp: 22150

Ion	Ratio	Lower	Upper
152	100		
151	20.6	0.0	49.9
153	14.6	0.0	43.1



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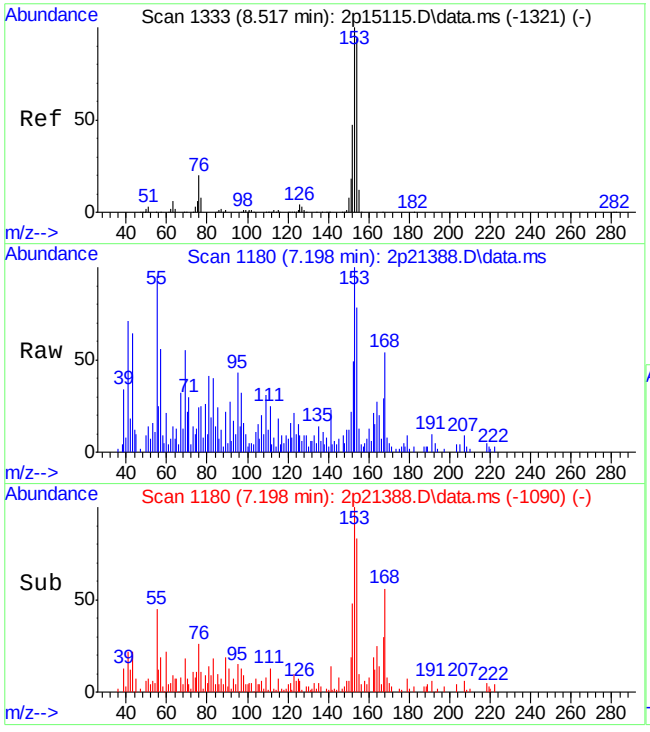
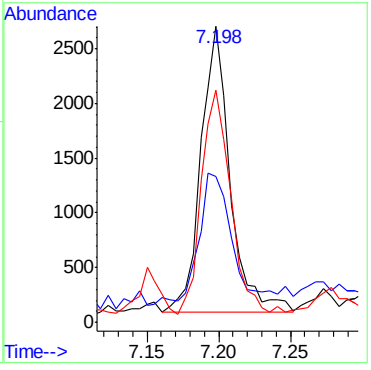
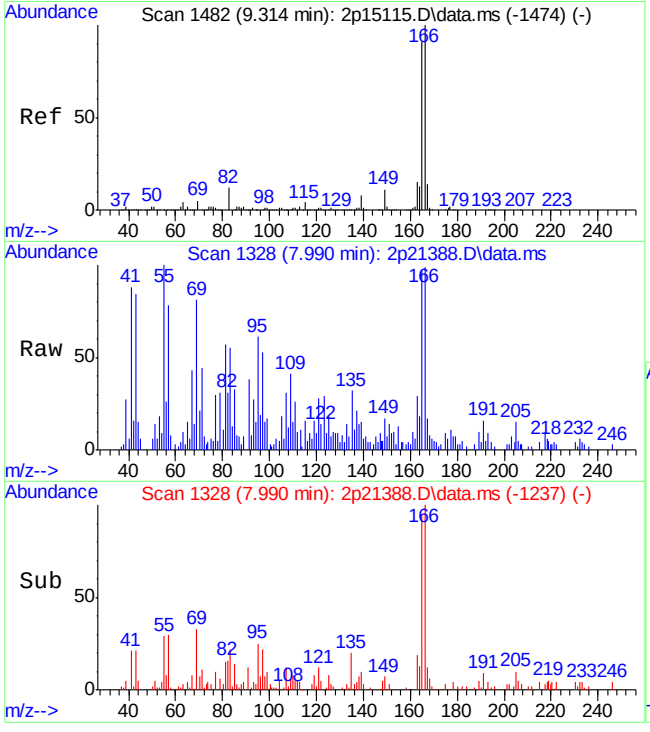


#59
Acenaphthene
Concen: 0.94 ppb
RT: 7.198 min Scan# 1180
Delta R.T. -0.016 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:153 Resp: 3731

Ion	Ratio	Lower	Upper
153	100		
152	42.0	17.8	77.8
154	74.3	65.2	125.2

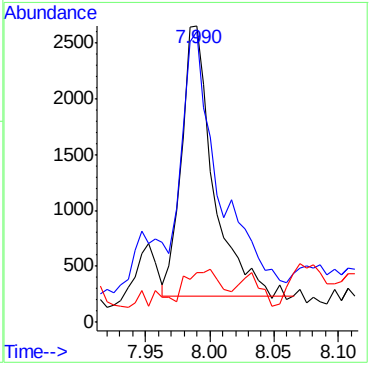


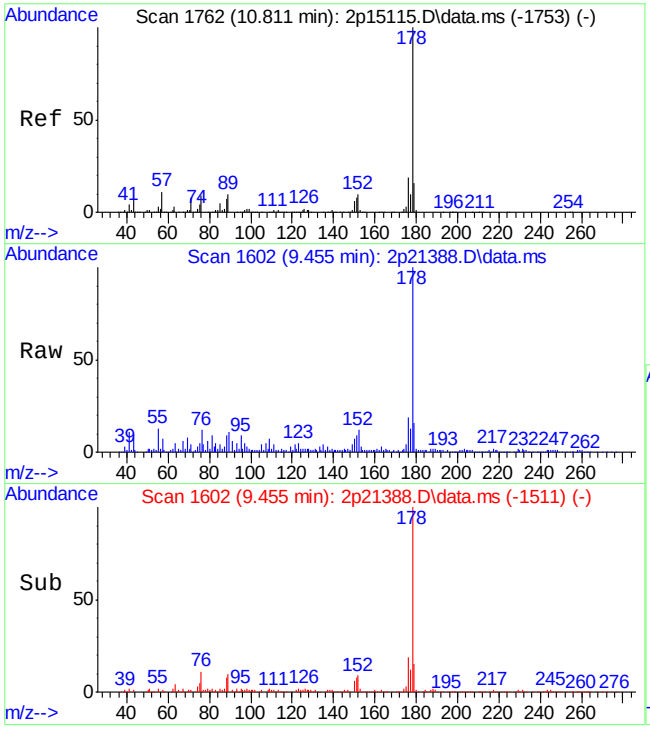


#66
Fluorene
Concen: 0.92 ppb
RT: 7.990 min Scan# 1328
Delta R.T. -0.011 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:166 Resp: 4214

Ion	Ratio	Lower	Upper
166	100		
165	85.4	62.5	122.5
167	5.1	0.0	42.9

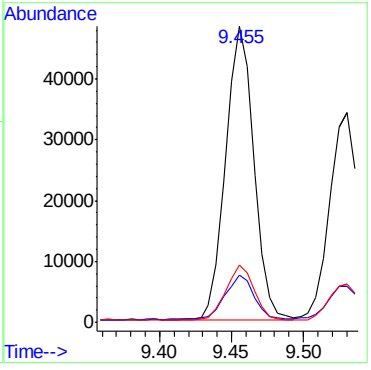


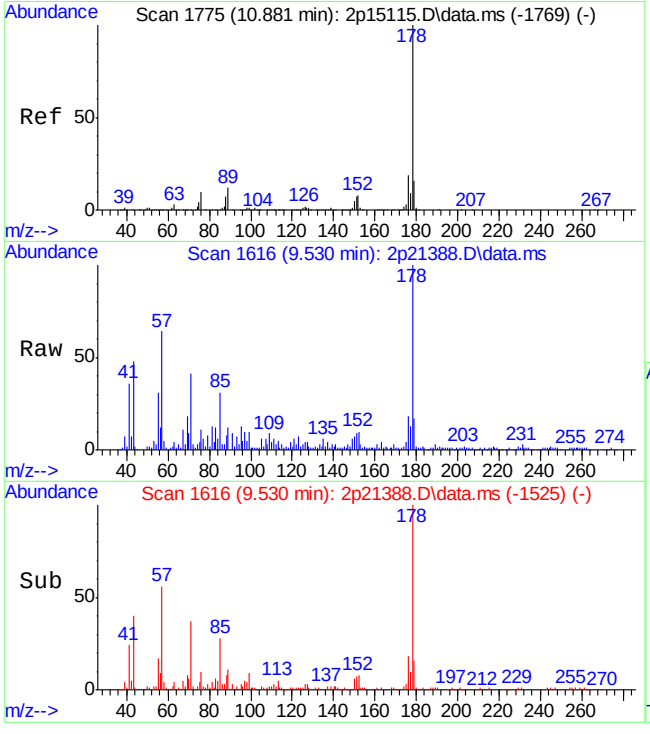


#77
Phenanthrene
Concen: 9.56 ppb
RT: 9.455 min Scan# 1602
Delta R.T. -0.011 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:178 Resp: 65974

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	44.4
176	18.6	0.0	48.6

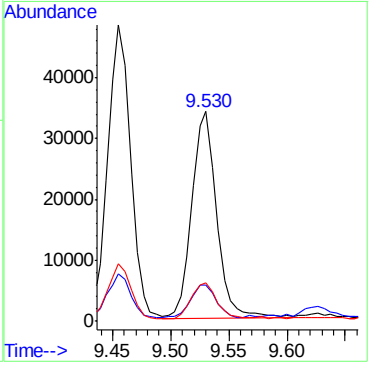




#78
Anthracene
Concen: 7.39 ppb
RT: 9.530 min Scan# 1616
Delta R.T. -0.011 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:178 Resp: 50463

Ion	Ratio	Lower	Upper
178	100		
179	15.4	0.0	44.5
176	17.2	0.0	46.5



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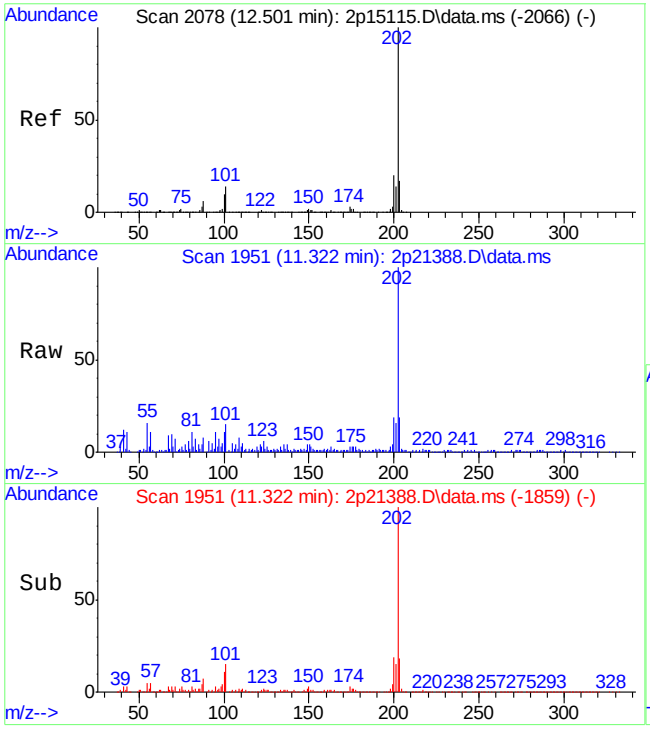
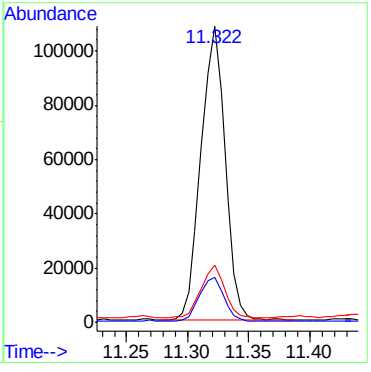
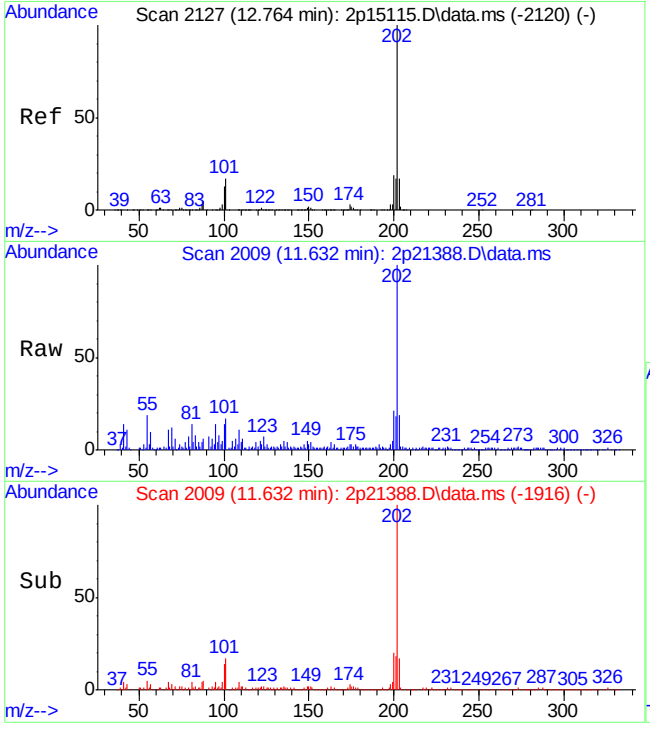


#81
Fluoranthene
Concen: 21.07 ppb
RT: 11.322 min Scan# 1951
Delta R.T. -0.005 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:202 Resp: 149275

Ion	Ratio	Lower	Upper
202	100		
101	15.2	0.0	41.3
203	19.4	0.0	49.1

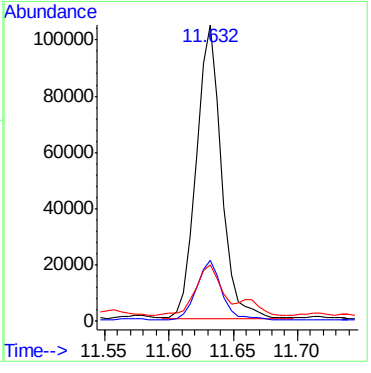




#84
Pyrene
Concen: 16.57 ppb
RT: 11.632 min Scan# 2009
Delta R.T. -0.000 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:202 Resp: 143154

Ion	Ratio	Lower	Upper
202	100		
200	20.4	0.0	49.6
203	17.0	0.0	46.9



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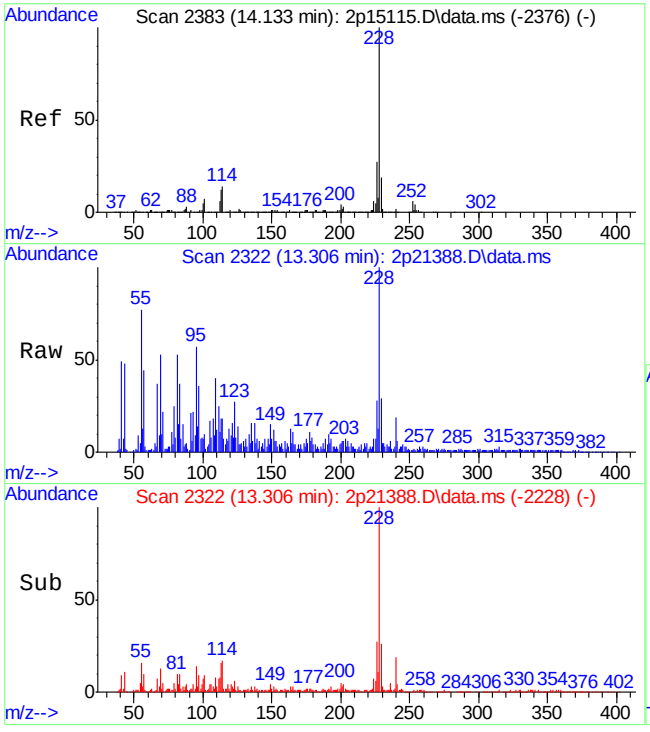
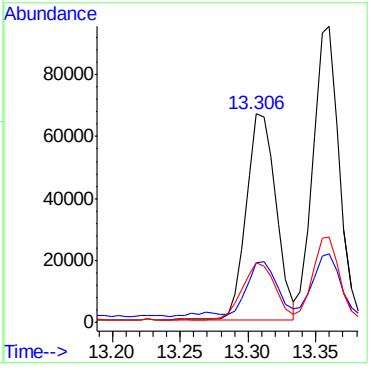
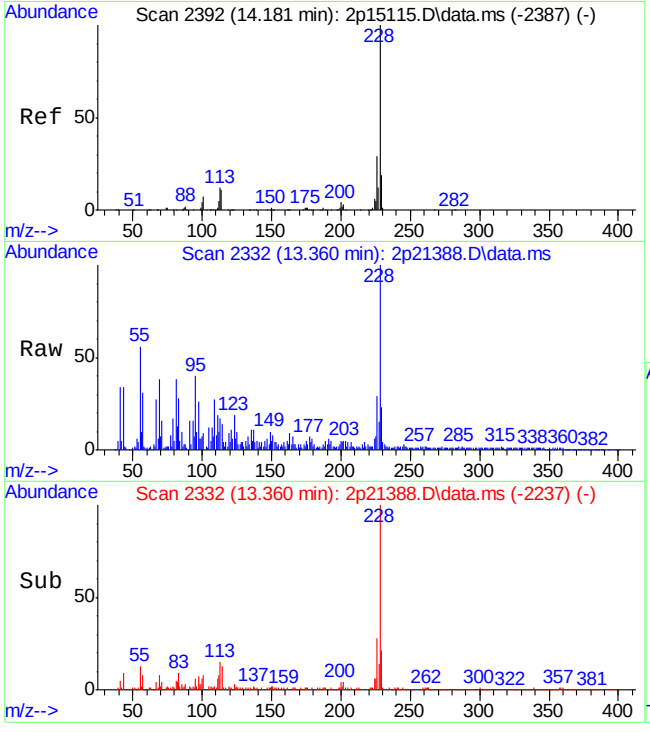


#88
Benzo[a]anthracene
Concen: 13.50 ppb
RT: 13.306 min Scan# 2322
Delta R.T. 0.005 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:228 Resp: 102023

Ion	Ratio	Lower	Upper
228	100		
229	25.1	0.0	50.7
226	27.3	0.0	56.7

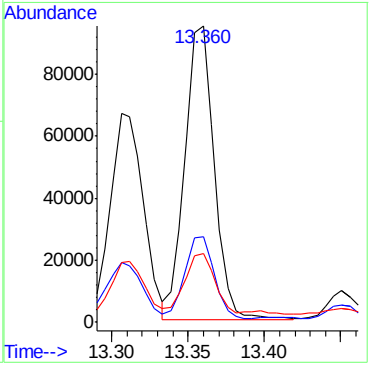




#90
Chrysene
Concen: 17.62 ppb
RT: 13.360 min Scan# 2332
Delta R.T. 0.011 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:228 Resp: 126800

Ion	Ratio	Lower	Upper
228	100		
226	27.9	0.0	58.4
229	20.2	0.0	50.1



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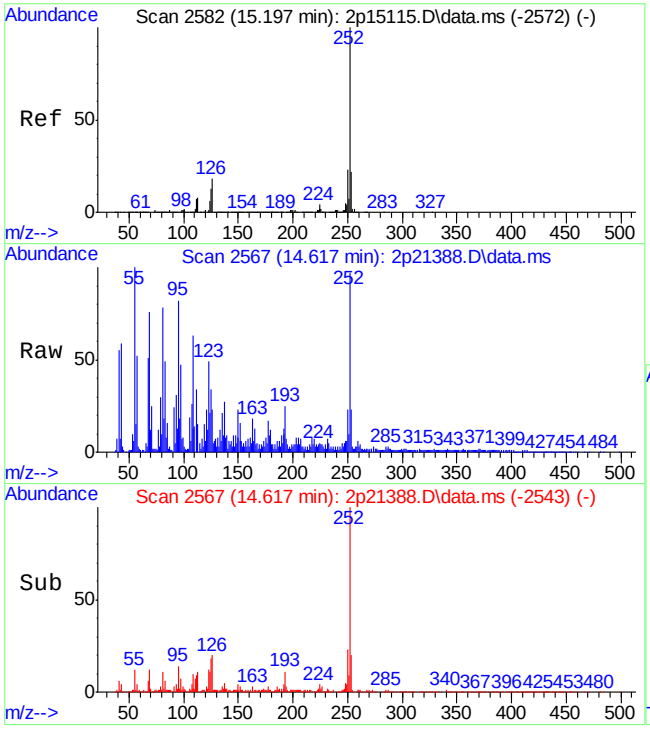
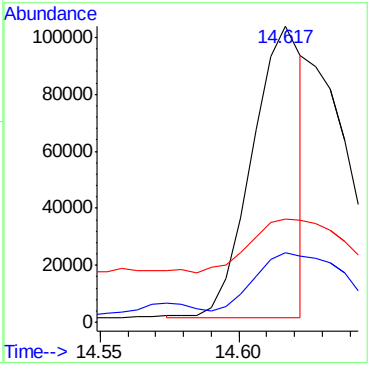
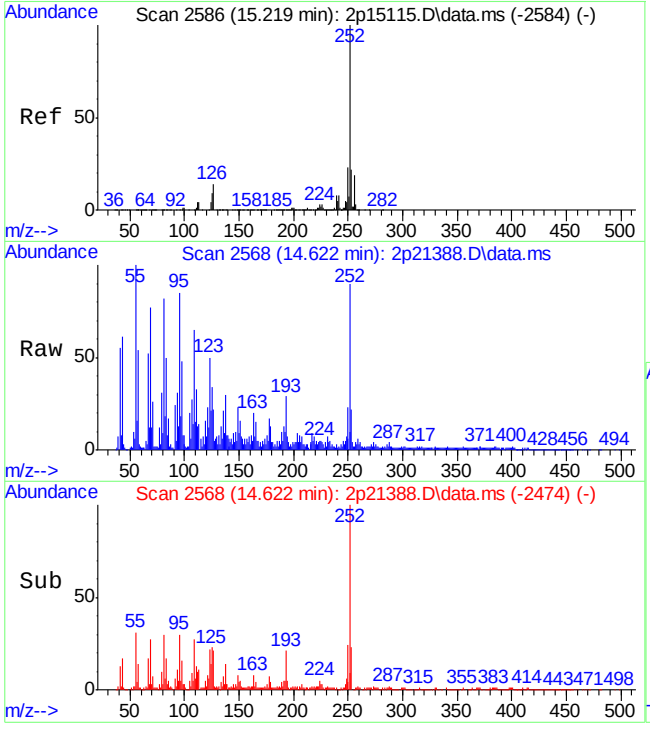


#94
Benzo[b]fluoranthene
Concen: 15.40 ppb m
RT: 14.617 min Scan# 2567
Delta R.T. 0.027 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:252 Resp: 130707

Ion	Ratio	Lower	Upper
252	100		
253	23.6	0.0	51.1
125	34.8	0.0	40.8

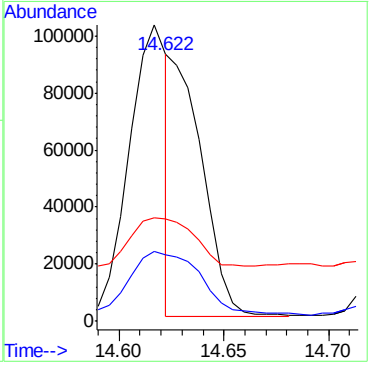




#95
Benzo[k]fluoranthene
Concen: 12.68 ppb m
RT: 14.622 min Scan# 2568
Delta R.T. 0.005 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:252 Resp: 94004

Ion	Ratio	Lower	Upper
252	100		
253	24.7	0.0	56.1
125	38.2	0.0	45.7



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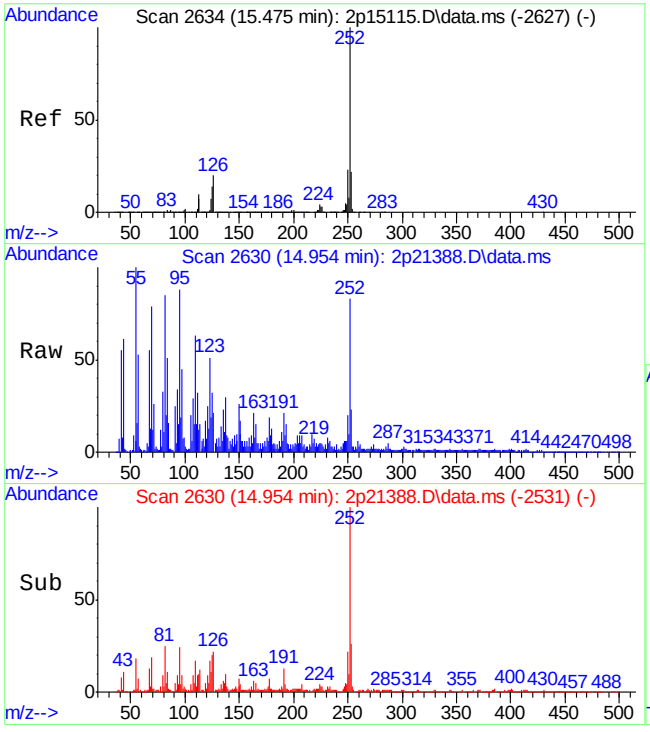
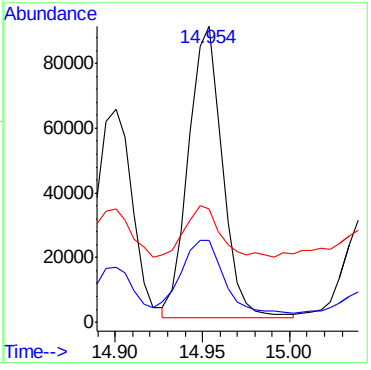
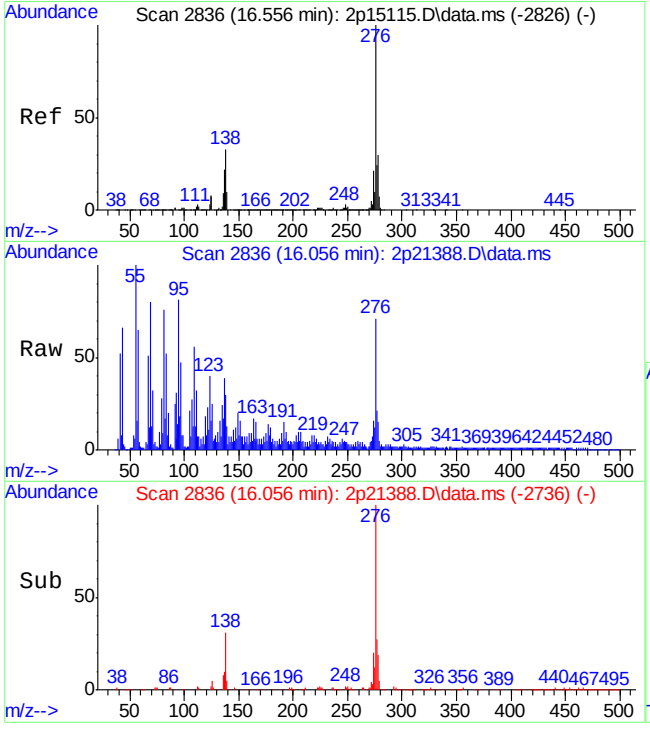


#96
Benzo[a]pyrene
Concen: 16.50 ppb
RT: 14.954 min Scan# 2630
Delta R.T. 0.032 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:252 Resp: 121609

Ion	Ratio	Lower	Upper
252	100		
253	23.8	0.0	51.5
125	15.9	0.0	41.1

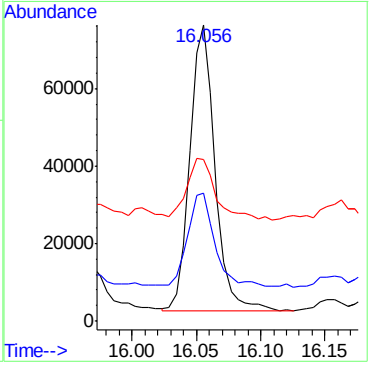




#97
Indeno[1,2,3-cd]pyrene
Concen: 11.93 ppb
RT: 16.056 min Scan# 2836
Delta R.T. 0.037 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:276 Resp: 102010

Ion	Ratio	Lower	Upper
276	100		
138	32.5	0.0	54.7
137	19.4	0.0	49.5



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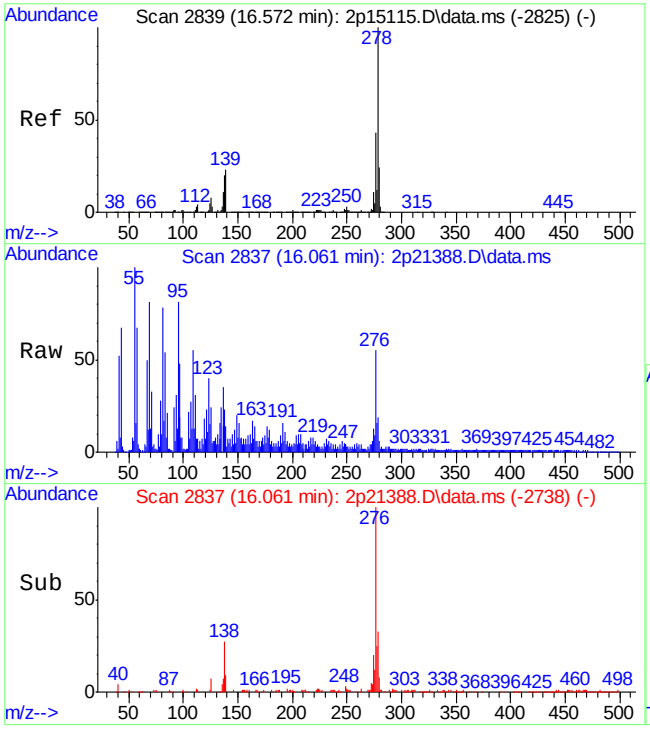
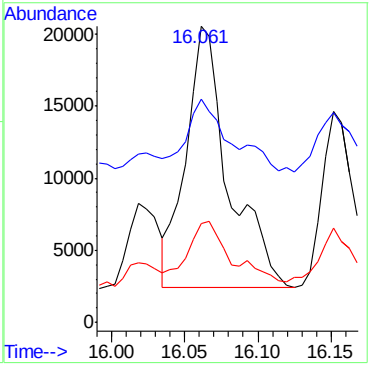
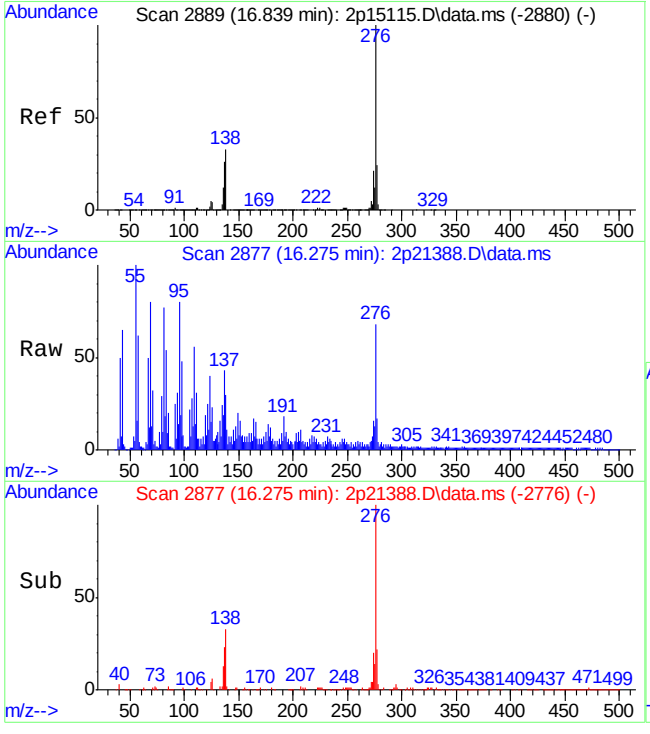


#99
Dibenz[a,h]anthracene
Concen: 5.23 ppb m
RT: 16.061 min Scan# 2837
Delta R.T. 0.032 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:278 Resp: 37271

Ion	Ratio	Lower	Upper
278	100		
139	75.3	0.0	49.9#
279	33.4	0.0	56.4

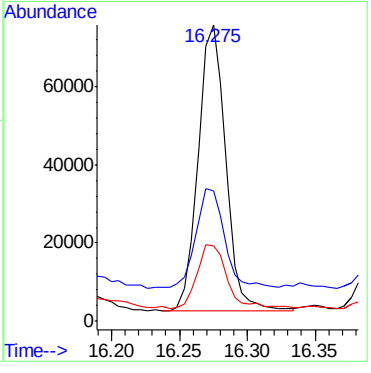




#101
Benzo[g,h,i]perylene
Concen: 14.30 ppb
RT: 16.275 min Scan# 2877
Delta R.T. 0.043 min
Lab File: 2p21388.D
Acq: 22 Mar 2013 2:25 pm

Tgt Ion:276 Resp: 103848

Ion	Ratio	Lower	Upper
276	100		
138	33.5	0.0	55.6
277	21.4	0.0	53.3



9.1.22

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Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21244.D
Acq On : 19 Mar 2013 9:29 pm
Operator : andrews1
Sample : jb30425-13
Misc : op64440,e2p936,31.3
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Mar 20 14:55:46 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.946	152	71237	40.00	ppb	-0.08
24) Naphthalene-d8	4.567	136	276620	40.00	ppb	-0.09
47) Acenaphthene-d10	7.214	164	157116	40.00	ppb	-0.08
69) Phenanthrene-d10	9.487	188	258806	40.00	ppb	-0.06
83) Chrysene-d12	13.381	240	274975	40.00	ppb	-0.03
92) Perylene-d12	15.055	264	267633	40.00	ppb	0.00
102) 1,4-Dichlorobenzene-d4a	2.946	152	71237	40.00	ppb	-0.08
104) Acenaphthene-d10a	7.214	164	157116	40.00	ppb	-0.08
107) Chrysene-d12a	13.381	240	274975	40.00	ppb	-0.03
109) Naphthalene-d8a	4.567	136	276620	40.00	ppb	#-0.09
System Monitoring Compounds						
5) 2-Fluorophenol	1.849	112	71776	28.15	ppb	-0.05
Spiked Amount 50.000	Range 11 - 58		Recovery = 56.30%			
8) Phenol-d5	2.732	99	92761	29.33	ppb	-0.04
Spiked Amount 50.000	Range 10 - 59		Recovery = 58.66%#			
25) Nitrobenzene-d5	3.657	82	73892	29.04	ppb	-0.08
Spiked Amount 50.000	Range 19 - 61		Recovery = 58.08%			
51) 2-Fluorobiphenyl	6.246	172	158715	31.59	ppb	-0.09
Spiked Amount 50.000	Range 21 - 58		Recovery = 63.18%#			
73) 2,4,6-Tribromophenol	8.487	330	19351	33.46	ppb	-0.06
Spiked Amount 50.000	Range 12 - 68		Recovery = 66.92%			
85) Terphenyl-d14	12.044	244	182273	31.47	ppb	-0.05
Spiked Amount 50.000	Range 16 - 65		Recovery = 62.94%			
Target Compounds						Qvalue
38) Naphthalene	4.593	128	22006	2.97	ppb	96
56) Acenaphthylene	6.973	152	22596	3.11	ppb	64
59) Acenaphthene	7.257	153	20280	4.54	ppb	92
66) Fluorene	8.049	166	54760	10.61	ppb	99
77) Phenanthrene	9.525	178	195253	25.04	ppb	97
78) Anthracene	9.594	178	57976	7.52	ppb	98
81) Fluoranthene	11.391	202	336574	42.06	ppb	95
84) Pyrene	11.696	202	321452	34.31	ppb	99
88) Benzo[a]anthracene	13.360	228	162576	19.83	ppb	96
90) Chrysene	13.408	228	173576	22.24	ppb	99
94) Benzo[b]fluoranthene	14.659	252	208917m	22.89	ppb	
95) Benzo[k]fluoranthene	14.670	252	86066m	10.79	ppb	
96) Benzo[a]pyrene	14.996	252	152156	19.20	ppb	94
97) Indeno[1,2,3-cd]pyrene	16.088	276	114261	12.43	ppb	85
99) Dibenz[a,h]anthracene	16.104	278	49623	6.48	ppb	97
101) Benzo[g,h,i]perylene	16.307	276	106073	13.58	ppb	93

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

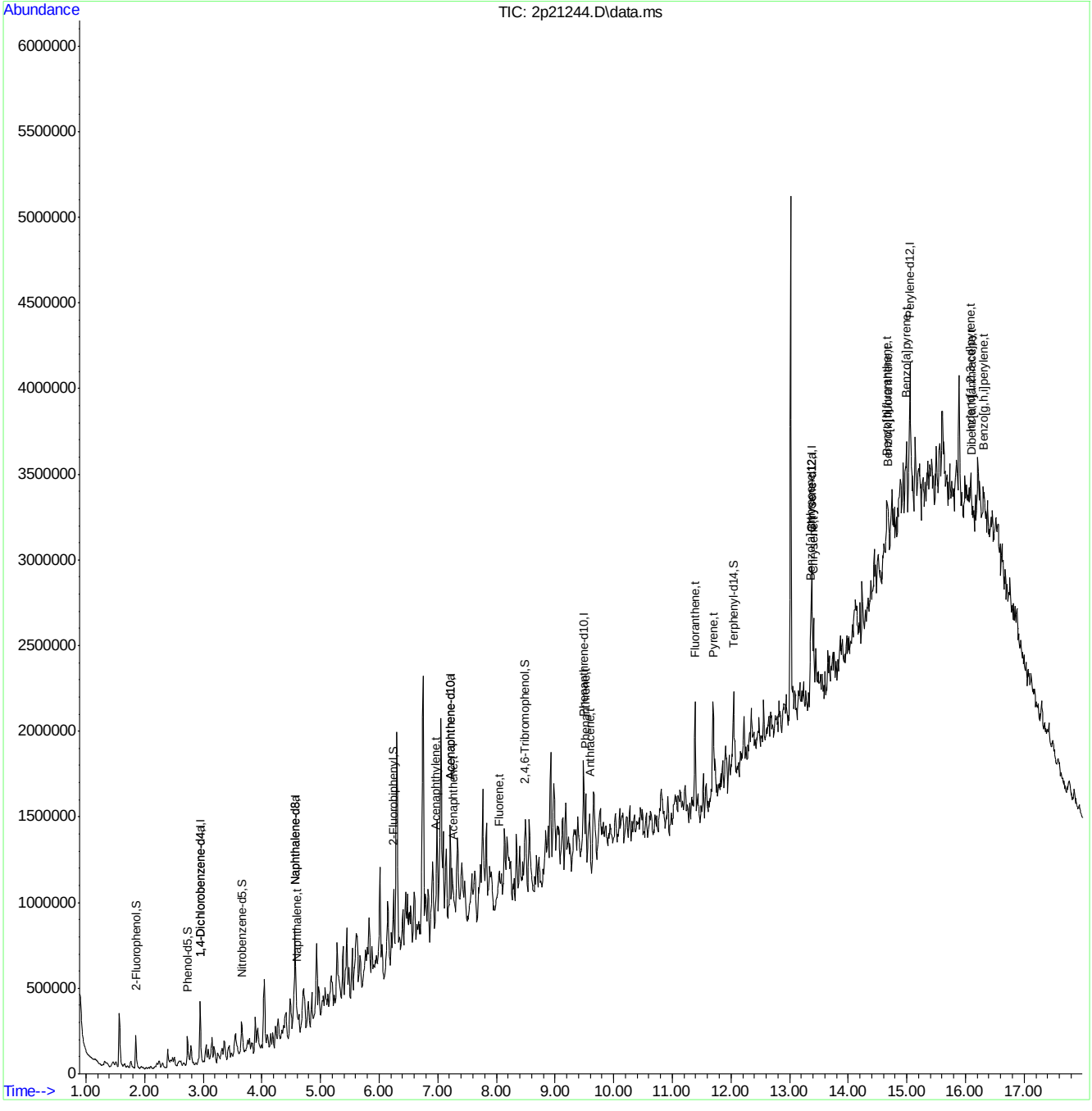
9.1.23

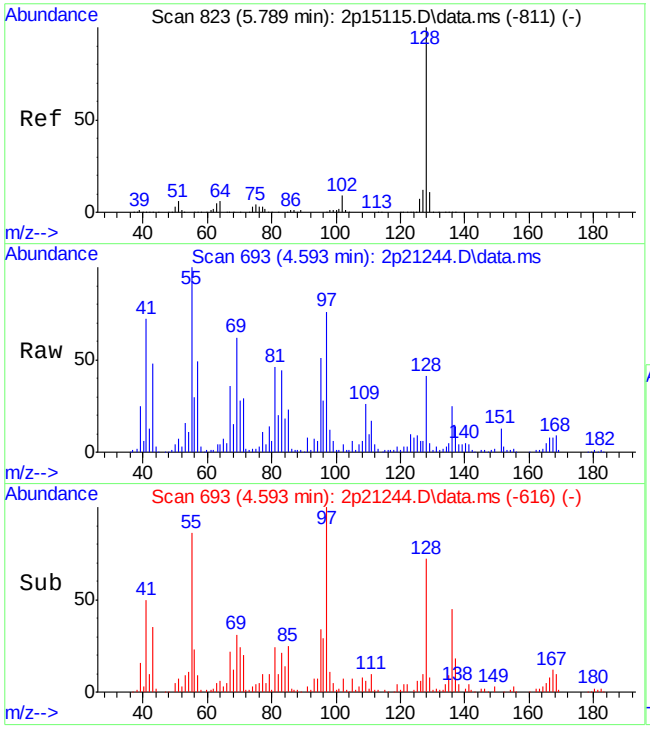
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21244.D
Acq On : 19 Mar 2013 9:29 pm
Operator : andrews1
Sample : jb30425-13
Misc : op64440,e2p936,31.3
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Mar 20 14:55:46 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

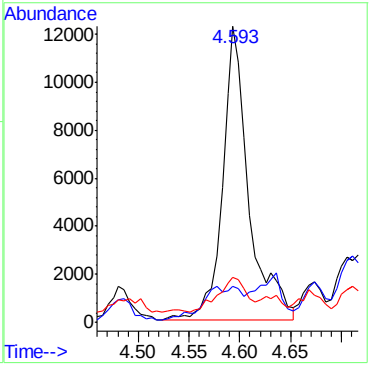


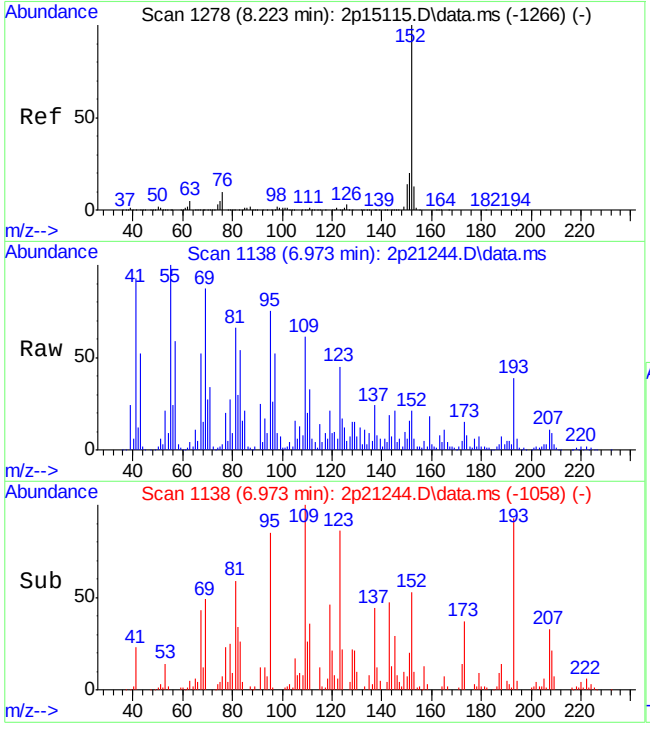


#38
Naphthalene
Concen: 2.97 ppb
RT: 4.593 min Scan# 693
Delta R.T. -0.086 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:128 Resp: 22006

Ion	Ratio	Lower	Upper
128	100		
129	10.2	0.0	41.0
127	10.8	0.0	43.0

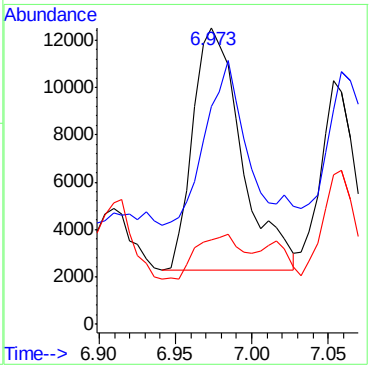


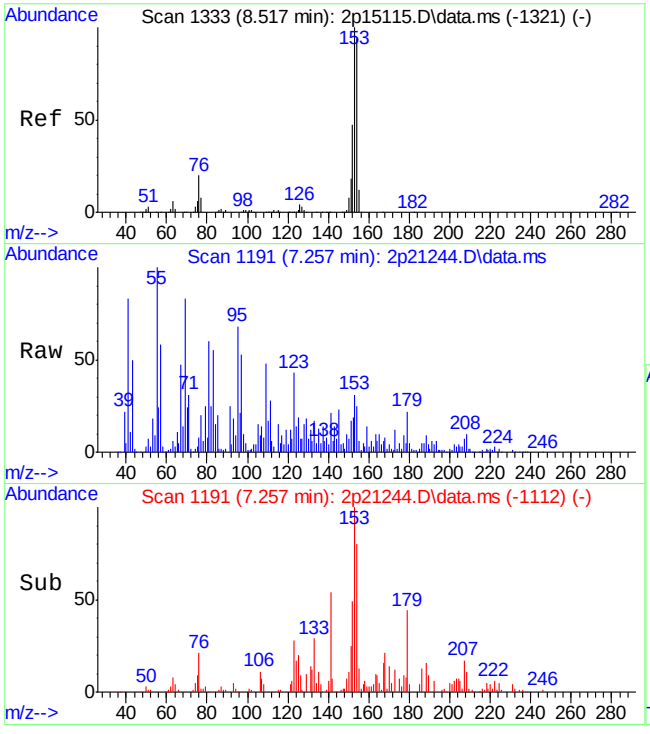


#56
Acenaphthylene
Concen: 3.11 ppb
RT: 6.973 min Scan# 1138
Delta R.T. -0.070 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:152 Resp: 22596

Ion	Ratio	Lower	Upper
152	100		
151	46.7	0.0	49.9
153	13.9	0.0	43.1

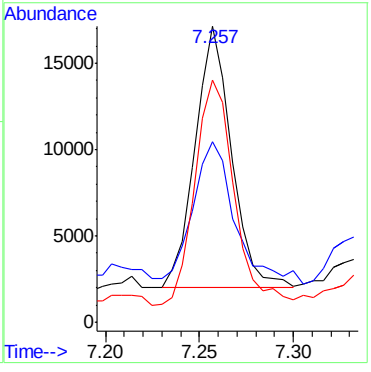


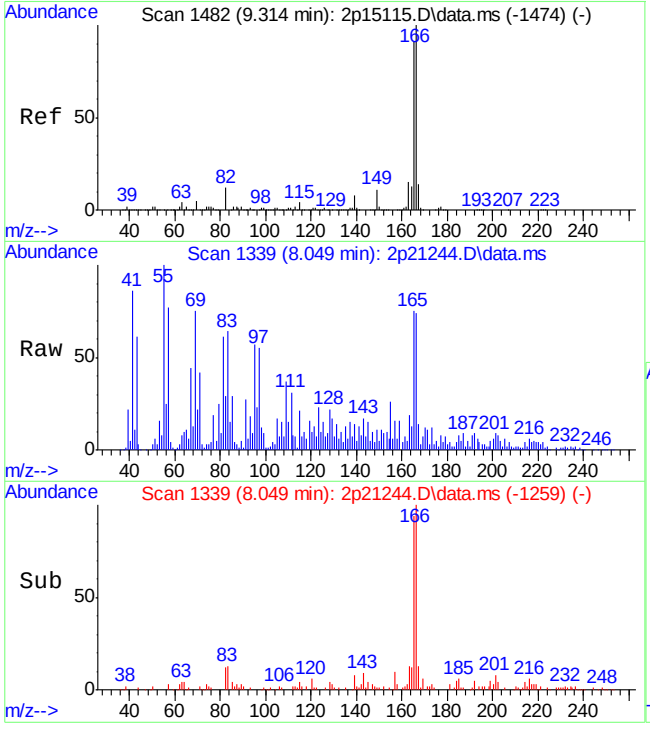


#59
Acenaphthene
Concen: 4.54 ppb
RT: 7.257 min Scan# 1191
Delta R.T. -0.075 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:153 Resp: 20280

Ion	Ratio	Lower	Upper
153	100		
152	50.9	17.8	77.8
154	85.1	65.2	125.2

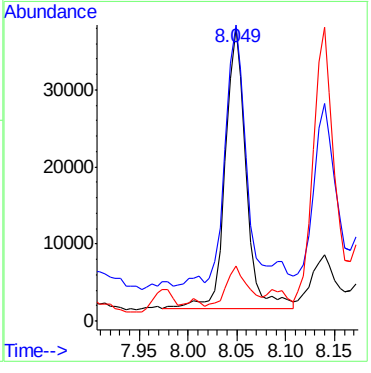




#66
Fluorene
Concen: 10.61 ppb
RT: 8.049 min Scan# 1339
Delta R.T. -0.070 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:166 Resp: 54760

Ion	Ratio	Lower	Upper
166	100		
165	91.9	62.5	122.5
167	10.6	0.0	42.9



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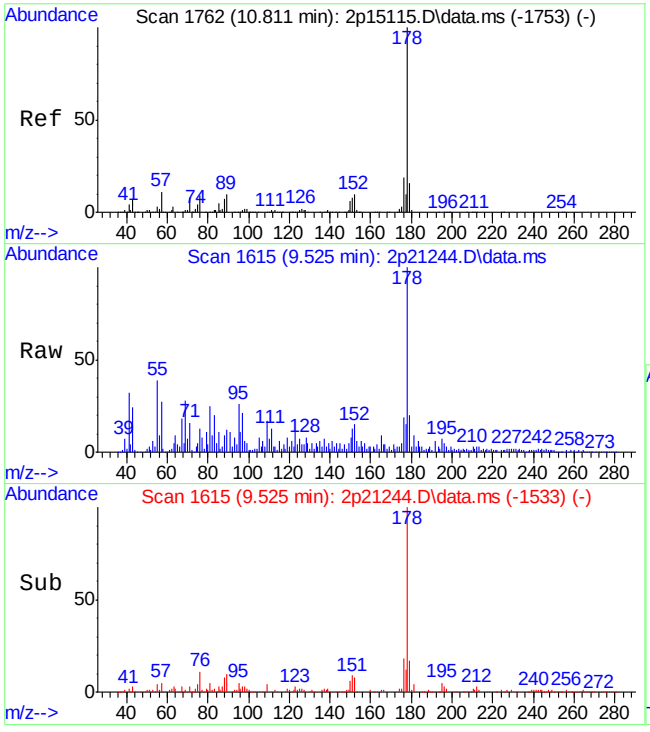
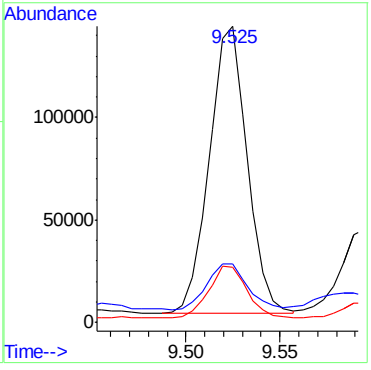
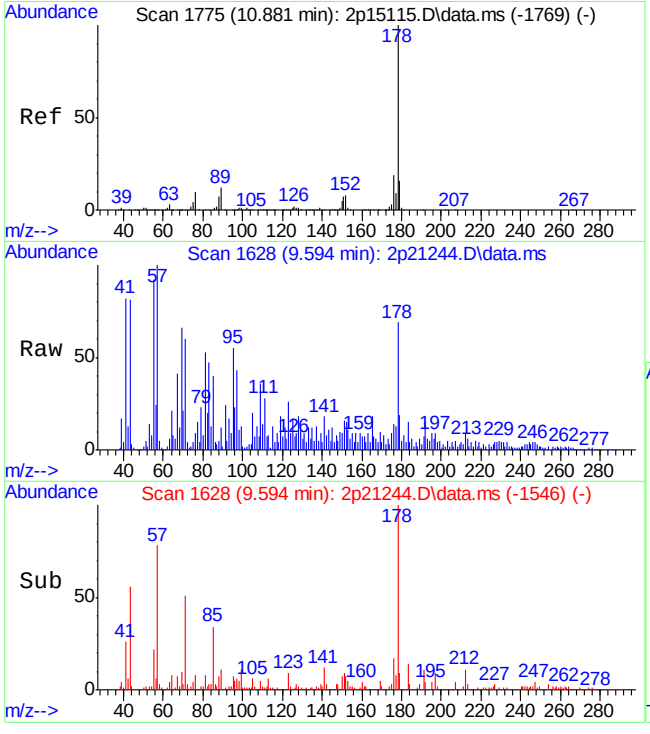


#77
Phenanthrene
Concen: 25.04 ppb
RT: 9.525 min Scan# 1615
Delta R.T. -0.059 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:178 Resp: 195253

Ion	Ratio	Lower	Upper
178	100		
179	15.6	0.0	44.4
176	17.6	0.0	48.6

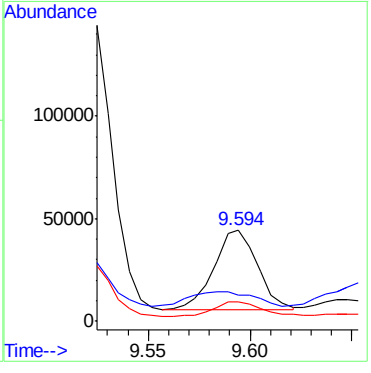


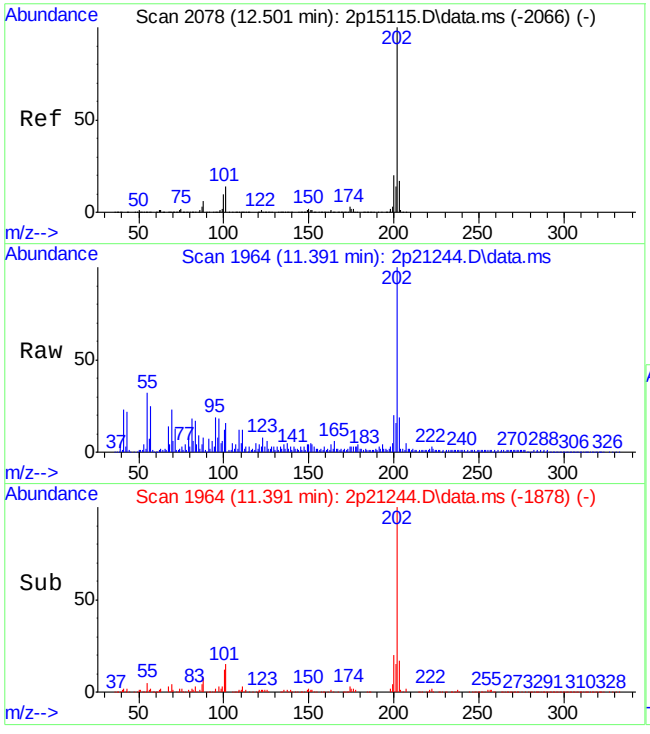


#78
Anthracene
Concen: 7.52 ppb
RT: 9.594 min Scan# 1628
Delta R.T. -0.059 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:178 Resp: 57976

Ion	Ratio	Lower	Upper
178	100		
179	13.3	0.0	44.5
176	16.7	0.0	46.5

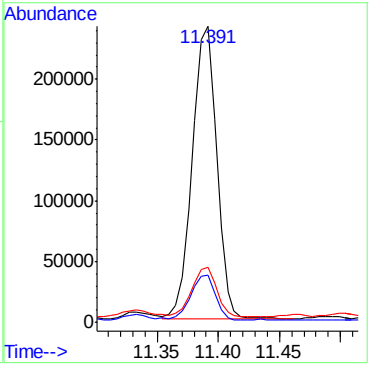


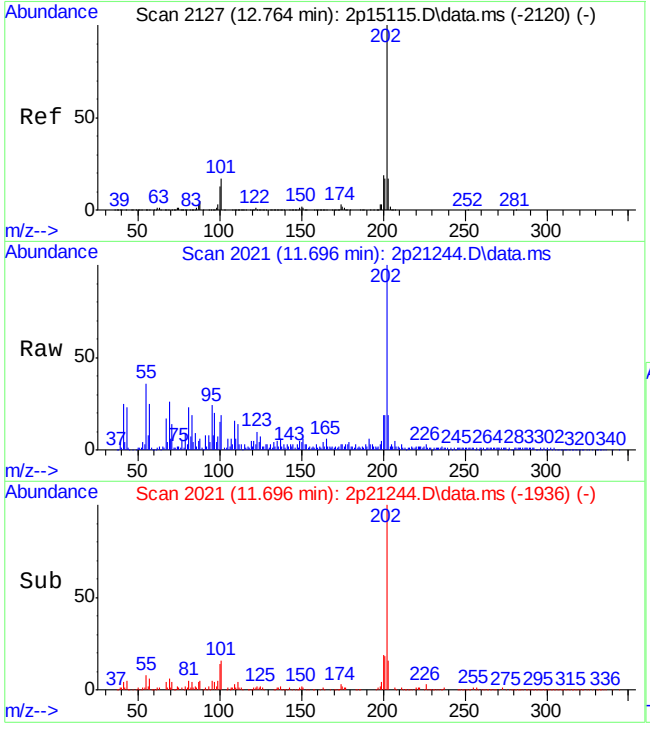


#81
Fluoranthene
Concen: 42.06 ppb
RT: 11.391 min Scan# 1964
Delta R.T. -0.038 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:202 Resp: 336574

Ion	Ratio	Lower	Upper
202	100		
101	16.0	0.0	41.3
203	18.7	0.0	49.1

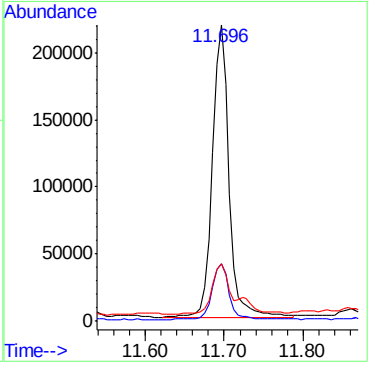




#84
Pyrene
Concen: 34.31 ppb
RT: 11.696 min Scan# 2021
Delta R.T. -0.043 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:202 Resp: 321452

Ion	Ratio	Lower	Upper
202	100		
200	19.0	0.0	49.6
203	16.7	0.0	46.9



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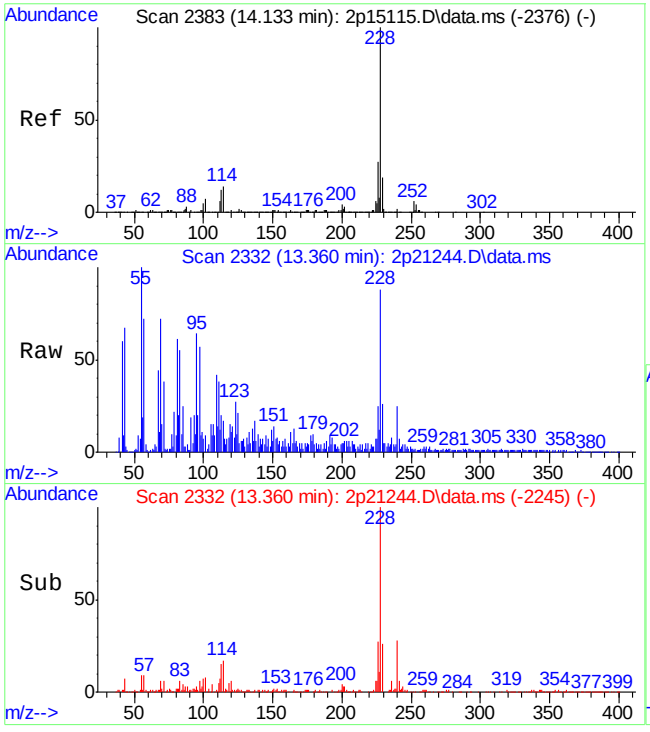
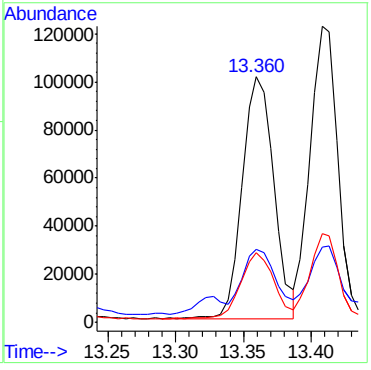
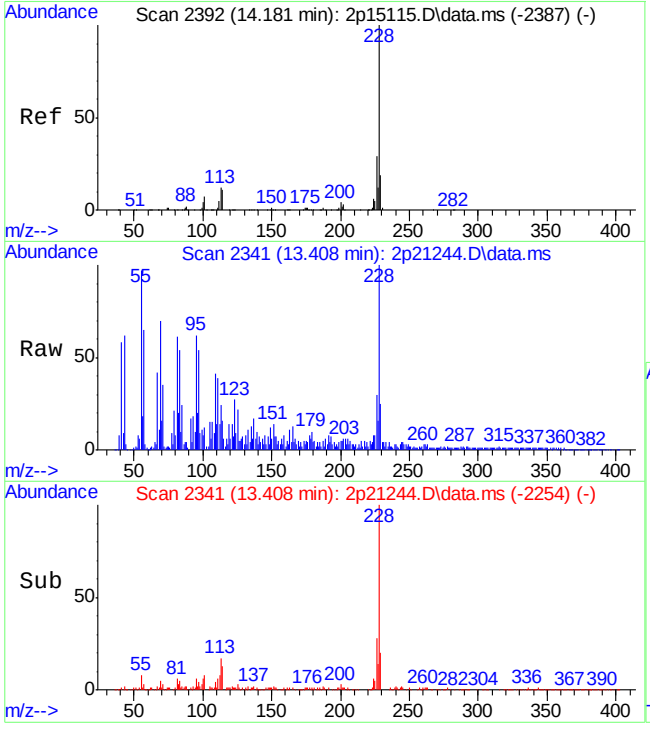


#88
Benzo[a]anthracene
Concen: 19.83 ppb
RT: 13.360 min Scan# 2332
Delta R.T. -0.032 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:228 Resp: 162576

Ion	Ratio	Lower	Upper
228	100		
229	25.2	0.0	50.7
226	26.8	0.0	56.7

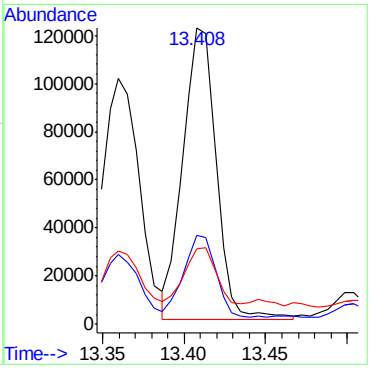


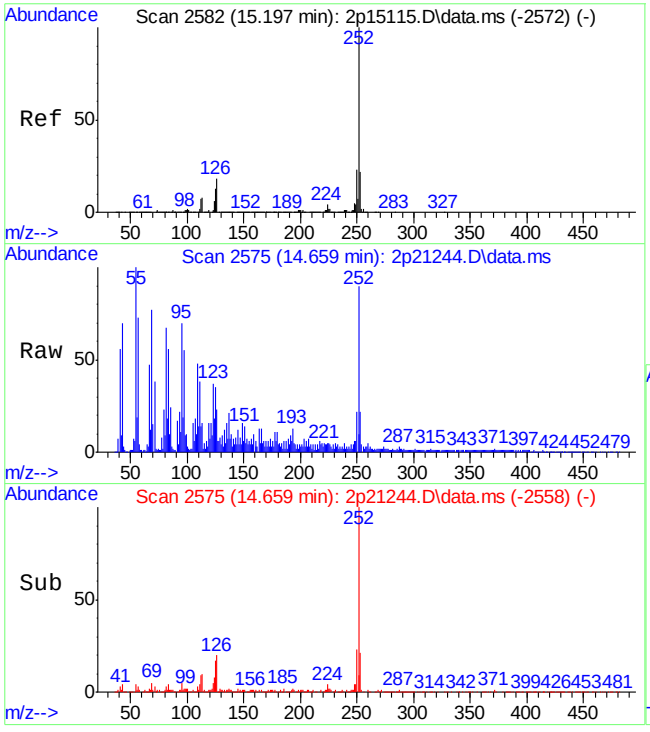


#90
Chrysene
Concen: 22.24 ppb
RT: 13.408 min Scan# 2341
Delta R.T. -0.032 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:228 Resp: 173576

Ion	Ratio	Lower	Upper
228	100		
226	28.5	0.0	58.4
229	19.3	0.0	50.1

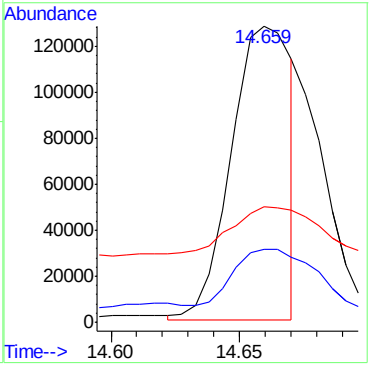


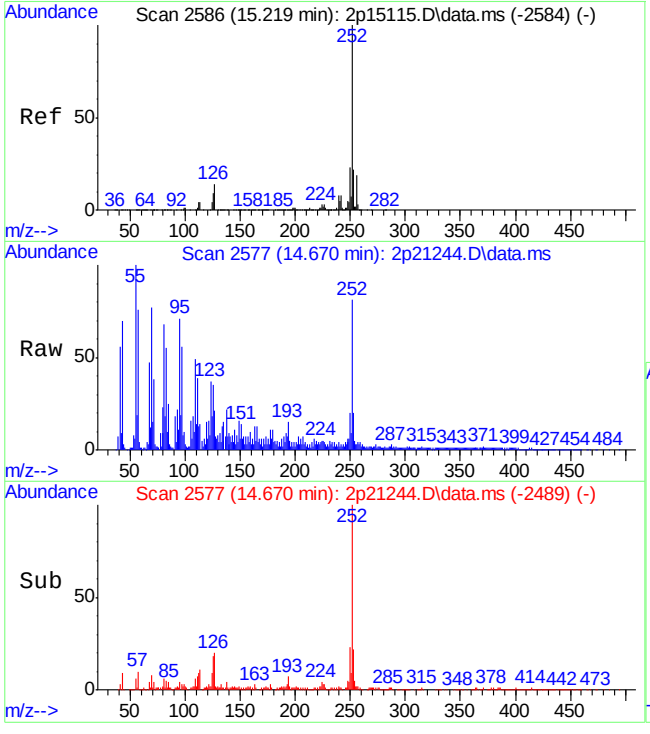


#94
Benzo[b]fluoranthene
Concen: 22.89 ppb m
RT: 14.659 min Scan# 2575
Delta R.T. -0.011 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:252 Resp: 208917

Ion	Ratio	Lower	Upper
252	100		
253	24.7	0.0	51.1
125	39.0	0.0	40.8

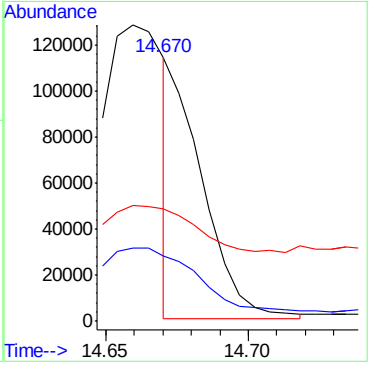




#95
Benzo[k]fluoranthene
Concen: 10.79 ppb m
RT: 14.670 min Scan# 2577
Delta R.T. -0.027 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:252 Resp: 86066

Ion	Ratio	Lower	Upper
252	100		
253	24.6	0.0	56.1
125	42.6	0.0	45.7



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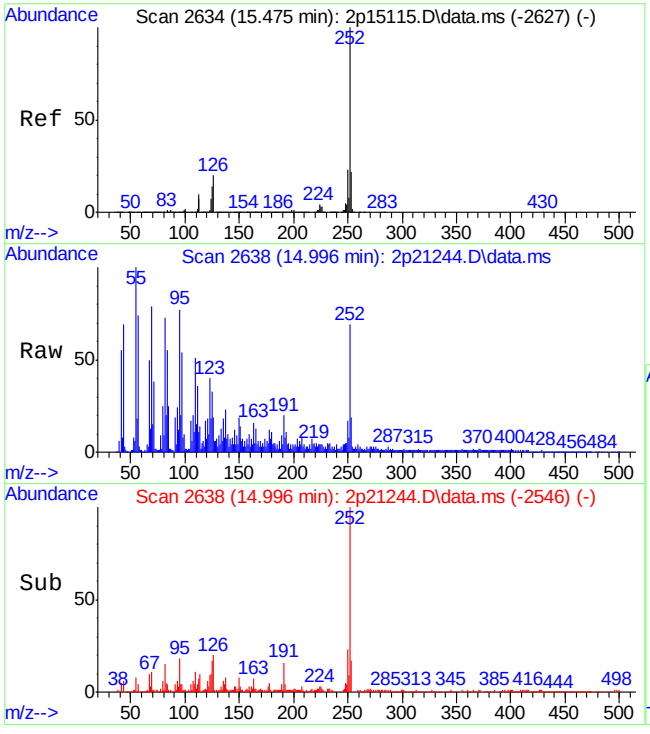
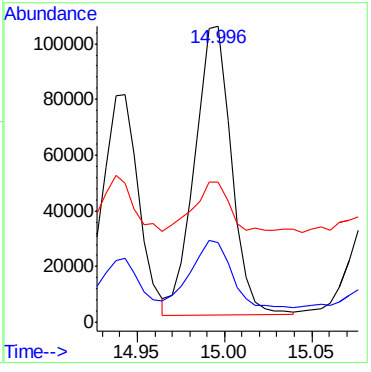
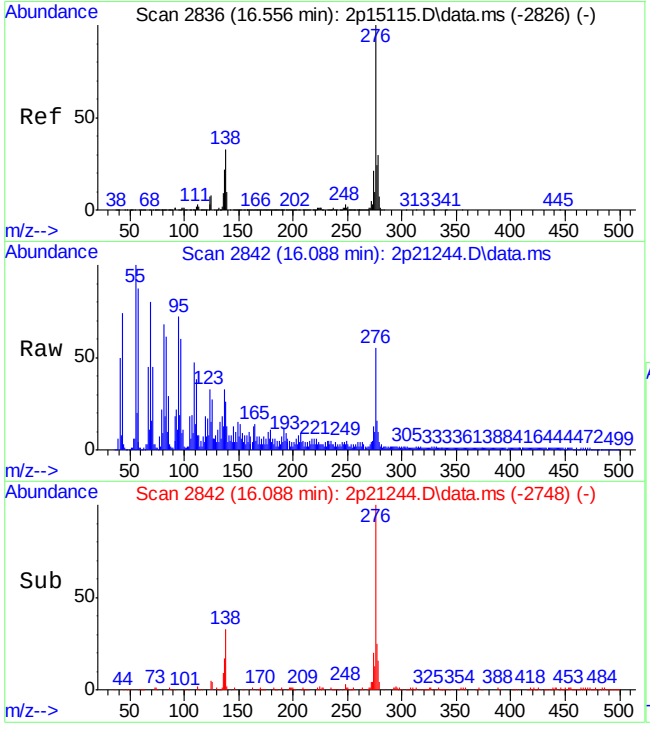


#96
Benzo[a]pyrene
Concen: 19.20 ppb
RT: 14.996 min Scan# 2638
Delta R.T. -0.006 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:252 Resp: 152156

Ion	Ratio	Lower	Upper
252	100		
253	22.1	0.0	51.5
125	17.3	0.0	41.1

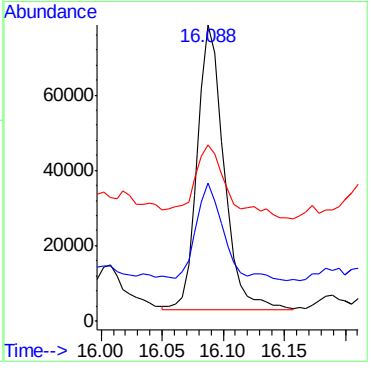




#97
Indeno[1,2,3-cd]pyrene
Concen: 12.43 ppb
RT: 16.088 min Scan# 2842
Delta R.T. 0.005 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:276 Resp: 114261

Ion	Ratio	Lower	Upper
276	100		
138	33.3	0.0	54.7
137	24.5	0.0	49.5



9.1.23

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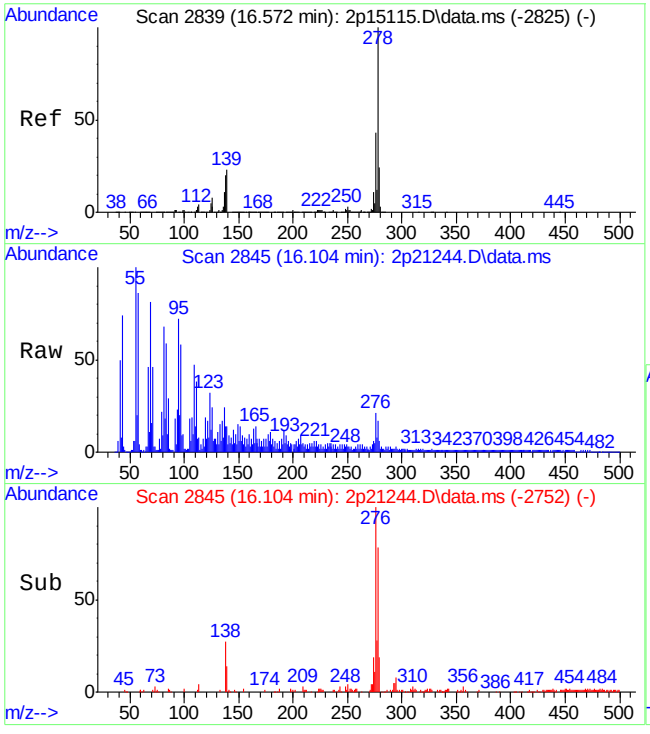
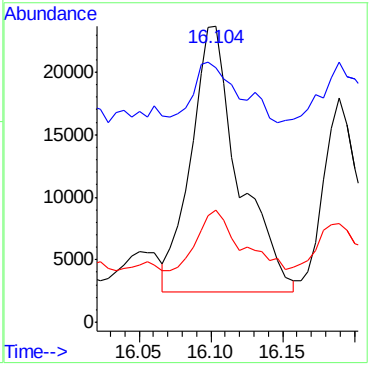
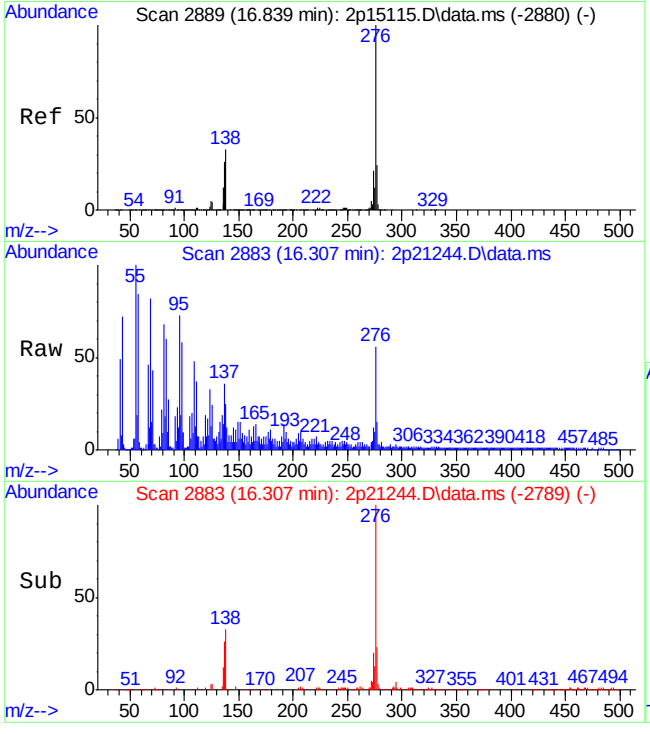


#99
Dibenz[a,h]anthracene
Concen: 6.48 ppb
RT: 16.104 min Scan# 2845
Delta R.T. -0.000 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:278 Resp: 49623

Ion	Ratio	Lower	Upper
278	100		
139	20.1	0.0	49.9
279	24.1	0.0	56.4

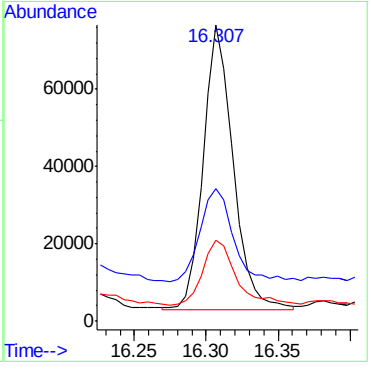




#101
Benzo[g,h,i]perylene
Concen: 13.58 ppb
RT: 16.307 min Scan# 2883
Delta R.T. 0.005 min
Lab File: 2p21244.D
Acq: 19 Mar 2013 9:29 pm

Tgt Ion:276 Resp: 106073

Ion	Ratio	Lower	Upper
276	100		
138	32.1	0.0	55.6
277	22.6	0.0	53.3



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Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21389.D
Acq On : 22 Mar 2013 2:48 pm
Operator : andrews1
Sample : jb30425-13cf
Misc : op64440,e2p941,34.8
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Mar 23 16:14:52 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.914	152	65613	40.00	ppb	-0.01
24) Naphthalene-d8	4.529	136	262363	40.00	ppb	0.00
47) Acenaphthene-d10	7.177	164	153151	40.00	ppb	0.01
69) Phenanthrene-d10	9.461	188	257335	40.00	ppb	0.03
83) Chrysene-d12	13.365	240	290408	40.00	ppb	0.05
92) Perylene-d12	15.055	264	285748	40.00	ppb	0.07
102) 1,4-Dichlorobenzene-d4a	2.914	152	65613	40.00	ppb	-0.01
104) Acenaphthene-d10a	7.177	164	153151	40.00	ppb	0.01
107) Chrysene-d12a	13.365	240	290408	40.00	ppb	0.05
109) Naphthalene-d8a	4.529	136	262363	40.00	ppb	# 0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.828	112	74373	31.67	ppb	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 63.34%#			
8) Phenol-d5	2.705	99	90670	31.12	ppb	0.00
Spiked Amount 50.000	Range 10 - 59		Recovery = 62.24%#			
25) Nitrobenzene-d5	3.620	82	78331	32.46	ppb	-0.01
Spiked Amount 50.000	Range 19 - 61		Recovery = 64.92%#			
51) 2-Fluorobiphenyl	6.209	172	170385	34.79	ppb	0.00
Spiked Amount 50.000	Range 21 - 58		Recovery = 69.58%#			
73) 2,4,6-Tribromophenol	8.455	330	21726	37.78	ppb	0.02
Spiked Amount 50.000	Range 12 - 68		Recovery = 75.56%#			
85) Terphenyl-d14	12.017	244	202881	33.16	ppb	0.03
Spiked Amount 50.000	Range 16 - 65		Recovery = 66.32%#			
Target Compounds						Qvalue
38) Naphthalene	4.556	128	27350	3.89	ppb	95
56) Acenaphthylene	6.936	152	31644	4.46	ppb	70
59) Acenaphthene	7.220	153	26715	6.14	ppb	94
66) Fluorene	8.017	166	70462	14.01	ppb	98
77) Phenanthrene	9.493	178	246706	31.82	ppb	98
78) Anthracene	9.562	178	76447	9.97	ppb	97
81) Fluoranthene	11.365	202	432354	54.34	ppb	94
84) Pyrene	11.675	202	407530	41.18	ppb	99
88) Benzo[a]anthracene	13.344	228	211337	24.41	ppb	96
90) Chrysene	13.392	228	226666	27.50	ppb	98
94) Benzo[b]fluoranthene	14.654	252	267711m	27.48	ppb	
95) Benzo[k]fluoranthene	14.665	252	118583m	13.93	ppb	
96) Benzo[a]pyrene	14.991	252	207569	24.53	ppb	96
97) Indeno[1,2,3-cd]pyrene	16.098	276	155471	15.84	ppb	93
99) Dibenz[a,h]anthracene	16.104	278	61098m	7.47	ppb	
101) Benzo[g,h,i]perylene	16.318	276	146610	17.58	ppb	95

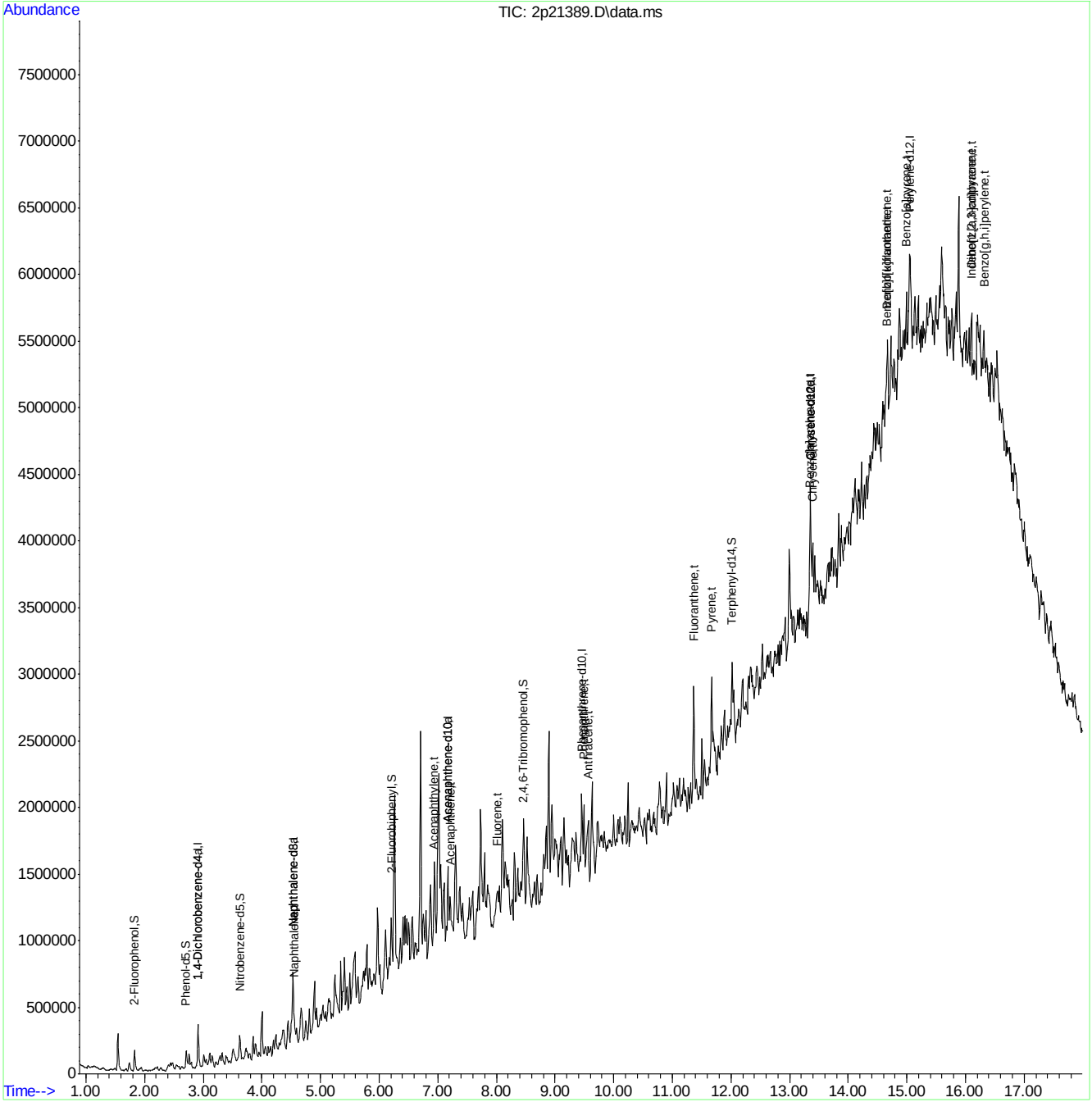
(#) = qualifier out of range (m) = manual integration (+) = signals summed

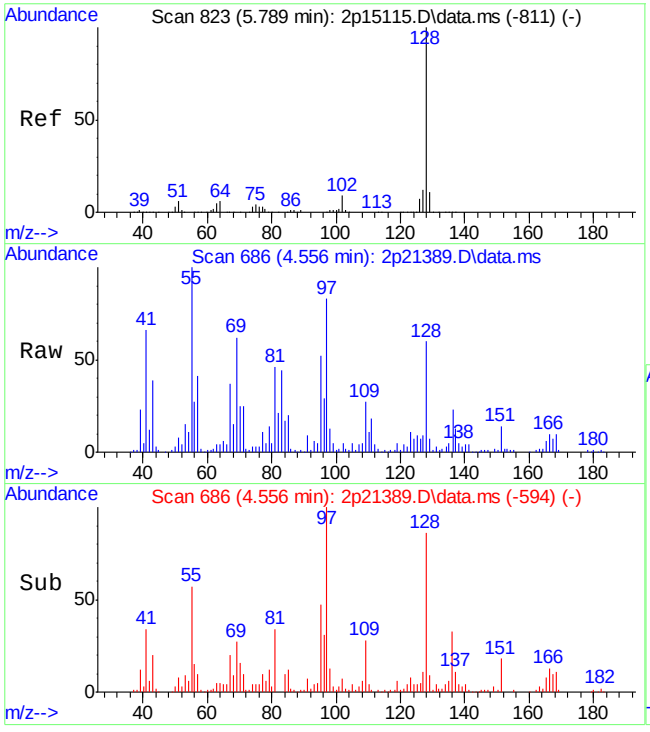
9.1.24
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21389.D
Acq On : 22 Mar 2013 2:48 pm
Operator : andrews1
Sample : jb30425-13cf
Misc : op64440,e2p941,34.8
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Mar 23 16:14:52 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

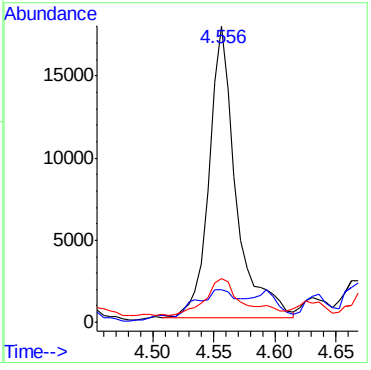


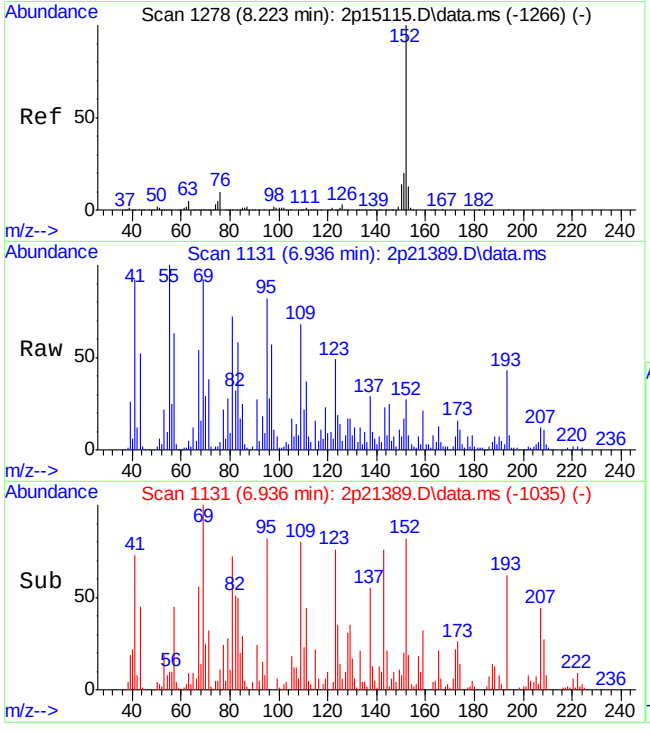


#38
Naphthalene
Concen: 3.89 ppb
RT: 4.556 min Scan# 686
Delta R.T. -0.005 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:128 Resp: 27350

Ion	Ratio	Lower	Upper
128	100		
129	8.6	0.0	41.0
127	11.5	0.0	43.0

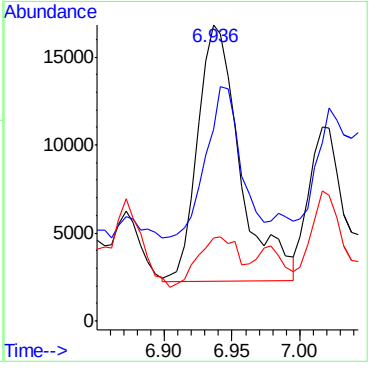




#56
Acenaphthylene
Concen: 4.46 ppb
RT: 6.936 min Scan# 1131
Delta R.T. 0.016 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:152 Resp: 31644

Ion	Ratio	Lower	Upper
152	100		
151	41.3	0.0	49.9
153	15.2	0.0	43.1



9.1.24

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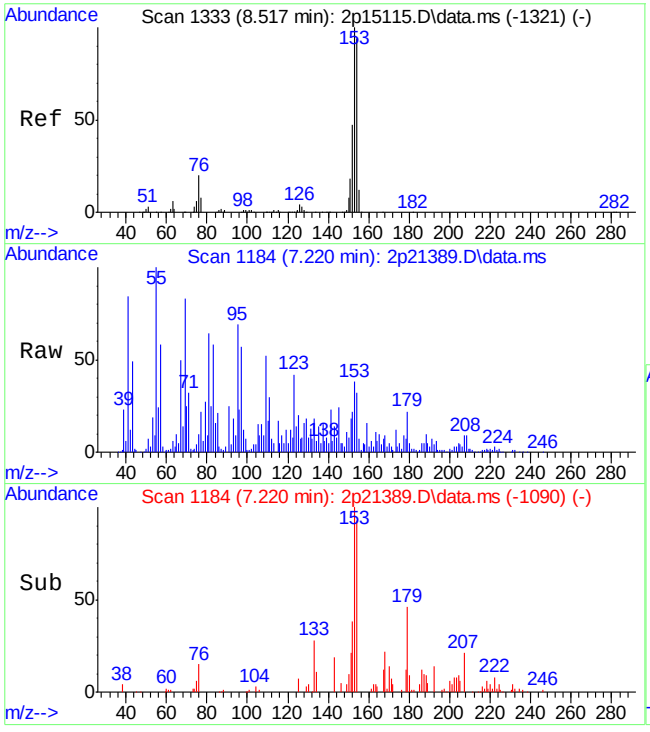
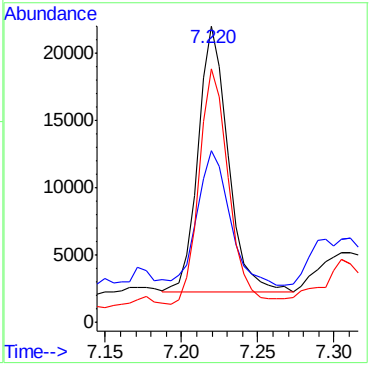
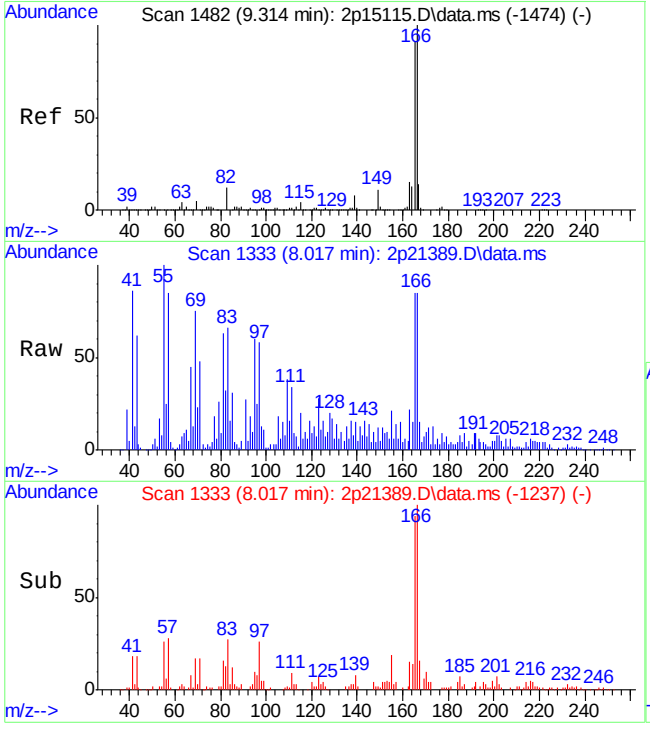


#59
Acenaphthene
Concen: 6.14 ppb
RT: 7.220 min Scan# 1184
Delta R.T. 0.005 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:153 Resp: 26715

Ion	Ratio	Lower	Upper
153	100		
152	49.5	17.8	77.8
154	87.6	65.2	125.2

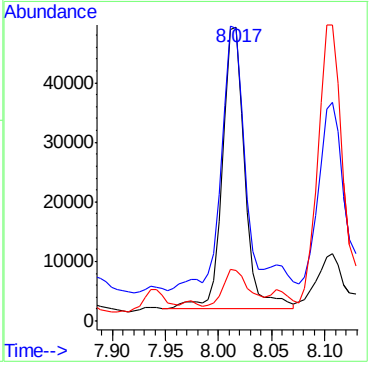




#66
Fluorene
Concen: 14.01 ppb
RT: 8.017 min Scan# 1333
Delta R.T. 0.016 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:166 Resp: 70462

Ion	Ratio	Lower	Upper
166	100		
165	91.7	62.5	122.5
167	10.0	0.0	42.9



9.1.24

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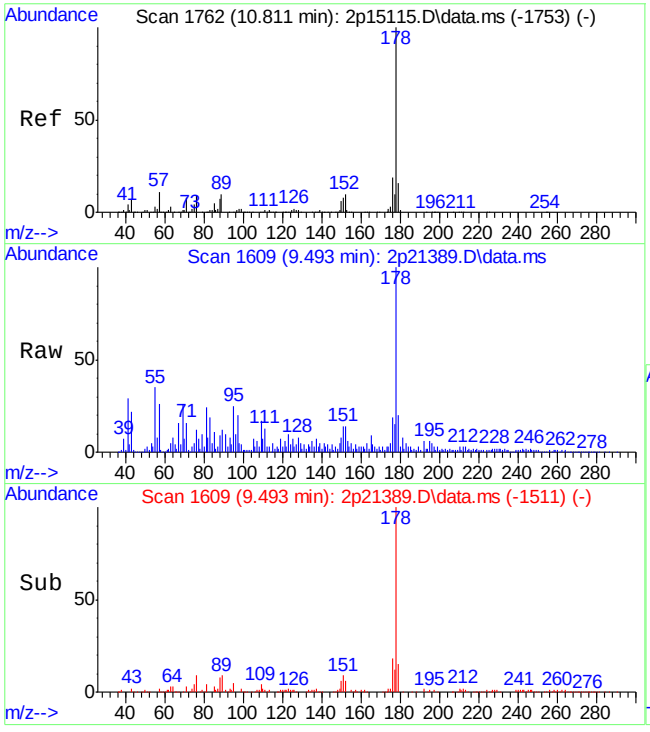
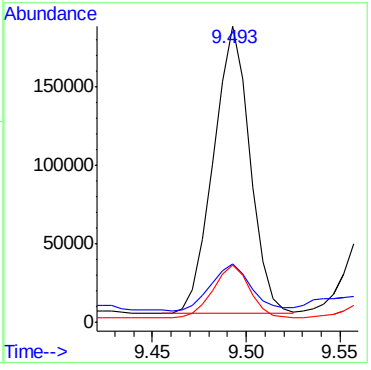
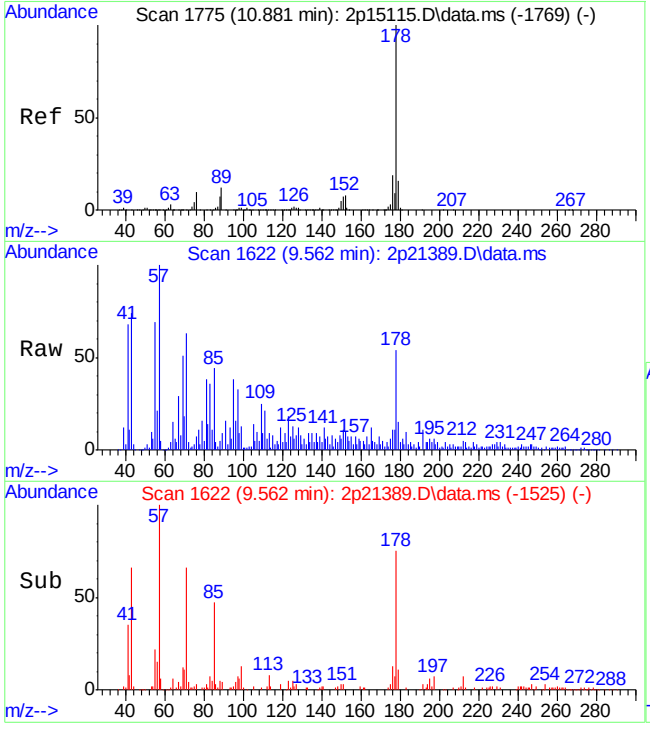


#77
Phenanthrene
Concen: 31.82 ppb
RT: 9.493 min Scan# 1609
Delta R.T. 0.027 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:178 Resp: 246706

Ion	Ratio	Lower	Upper
178	100		
179	15.9	0.0	44.4
176	18.3	0.0	48.6

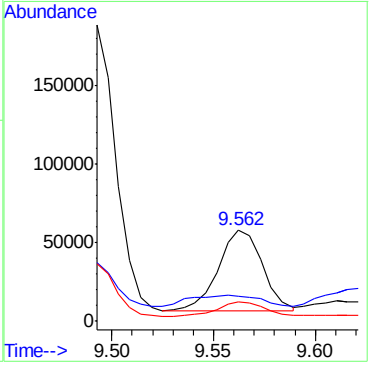




#78
Anthracene
Concen: 9.97 ppb
RT: 9.562 min Scan# 1622
Delta R.T. 0.021 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:178 Resp: 76447

Ion	Ratio	Lower	Upper
178	100		
179	13.4	0.0	44.5
176	17.7	0.0	46.5



9.1.24

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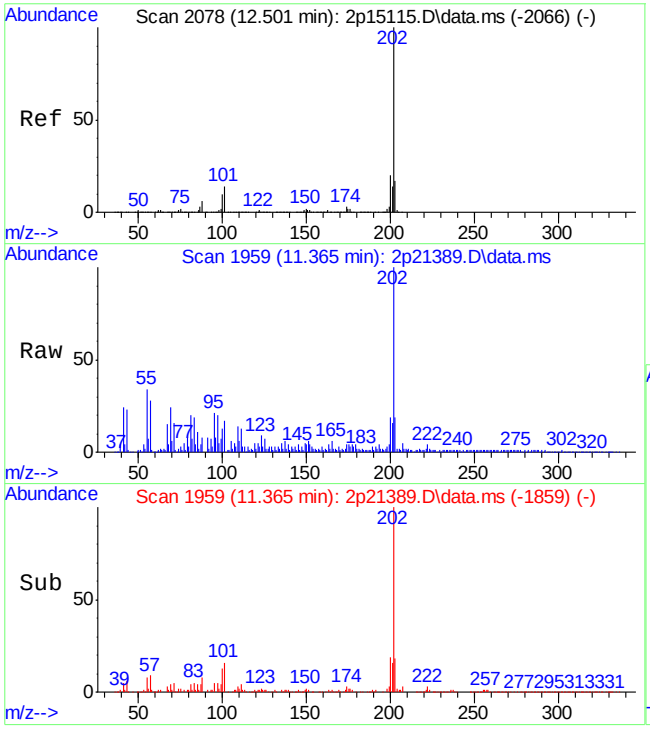
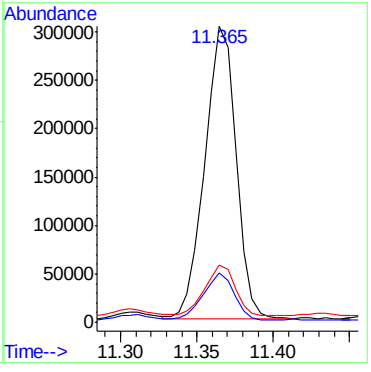
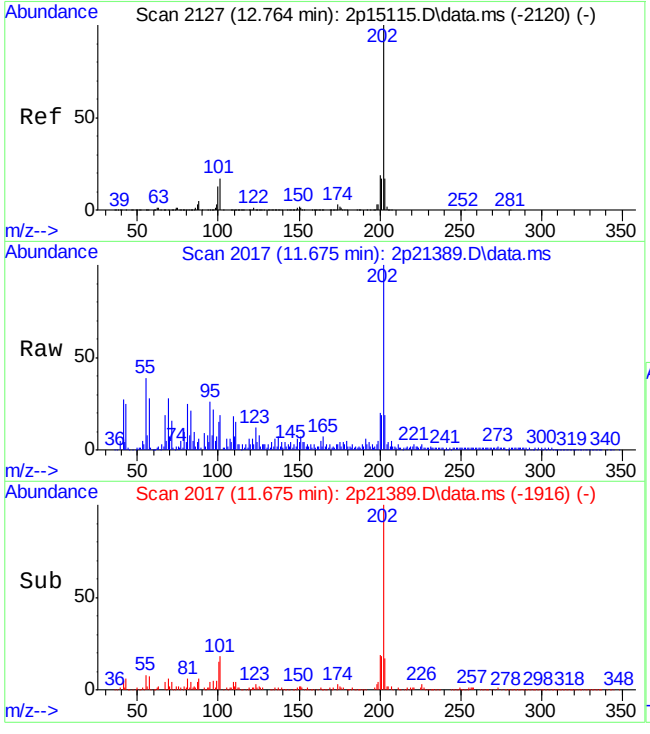


#81
Fluoranthene
Concen: 54.34 ppb
RT: 11.365 min Scan# 1959
Delta R.T. 0.037 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:202 Resp: 432354

Ion	Ratio	Lower	Upper
202	100		
101	16.8	0.0	41.3
203	19.4	0.0	49.1

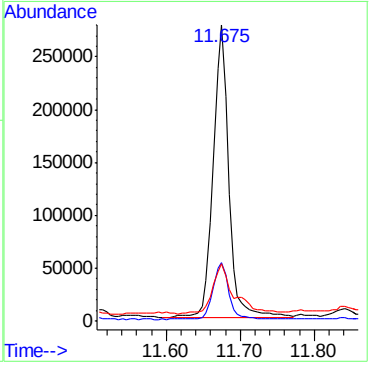


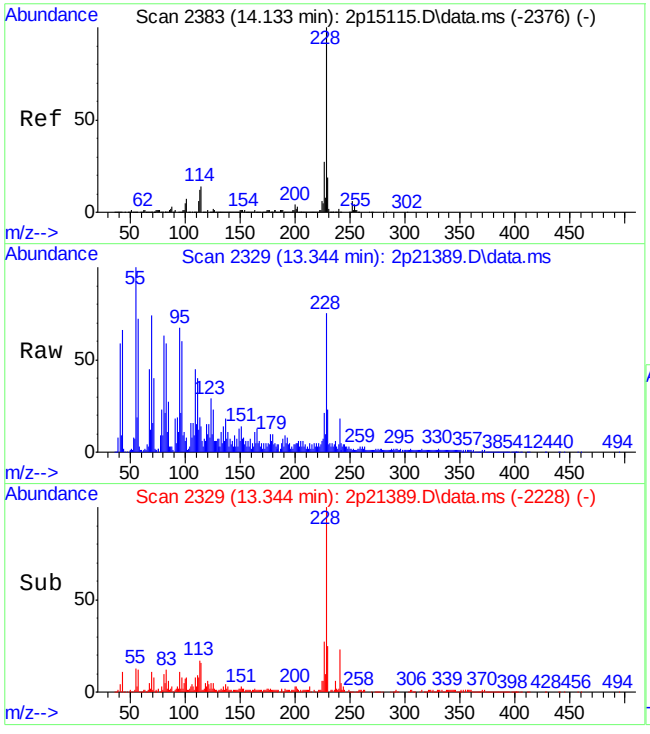


#84
Pyrene
Concen: 41.18 ppb
RT: 11.675 min Scan# 2017
Delta R.T. 0.043 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:202 Resp: 407530

Ion	Ratio	Lower	Upper
202	100		
200	19.2	0.0	49.6
203	16.6	0.0	46.9

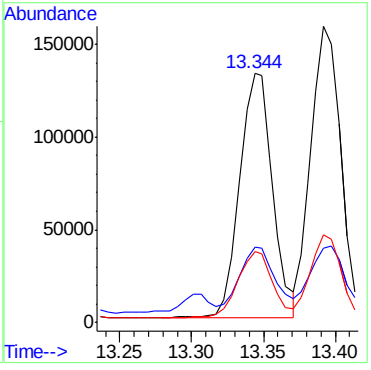


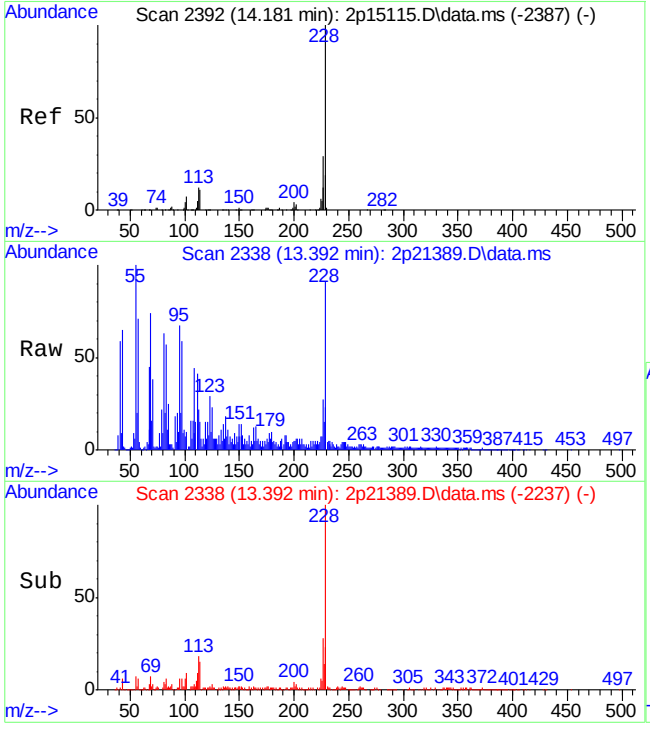


#88
Benzo[a]anthracene
Concen: 24.41 ppb
RT: 13.344 min Scan# 2329
Delta R.T. 0.043 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:228 Resp: 211337

Ion	Ratio	Lower	Upper
228	100		
229	24.9	0.0	50.7
226	26.9	0.0	56.7

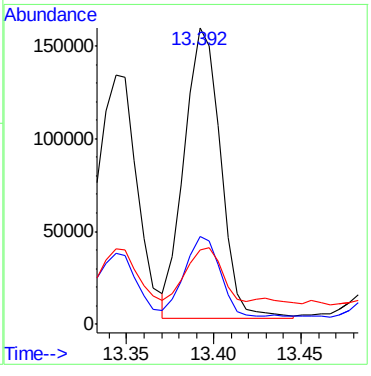




#90
Chrysene
Concen: 27.50 ppb
RT: 13.392 min Scan# 2338
Delta R.T. 0.043 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:228 Resp: 226666

Ion	Ratio	Lower	Upper
228	100		
226	27.7	0.0	58.4
229	18.7	0.0	50.1



9.1.24

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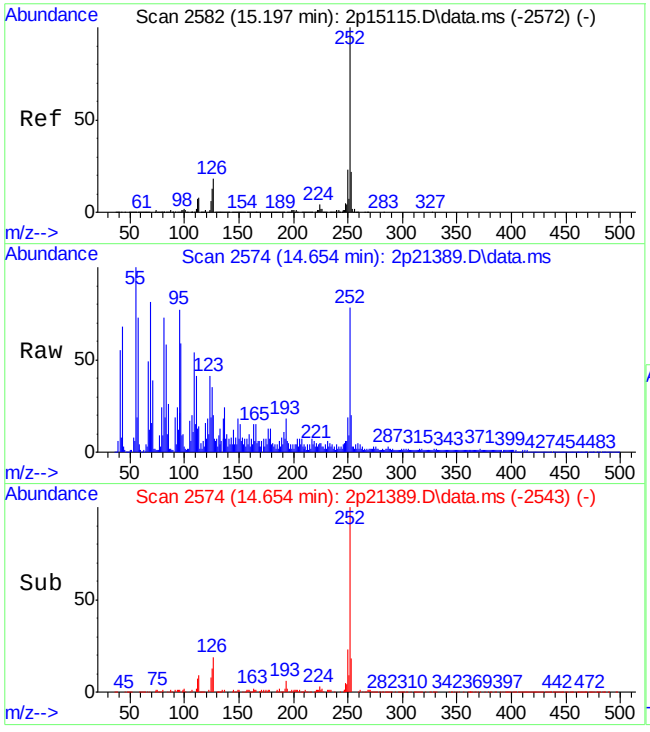
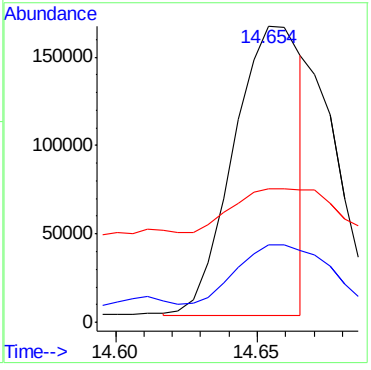
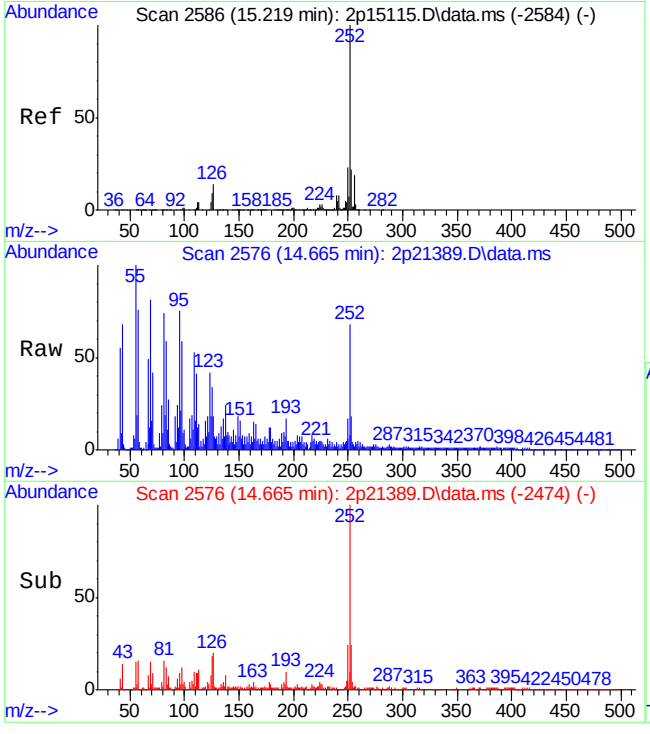


#94
Benzo[b]fluoranthene
Concen: 27.48 ppb m
RT: 14.654 min Scan# 2574
Delta R.T. 0.064 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:252 Resp: 267711

Ion	Ratio	Lower	Upper
252	100		
253	26.0	0.0	51.1
125	44.9	0.0	40.8#

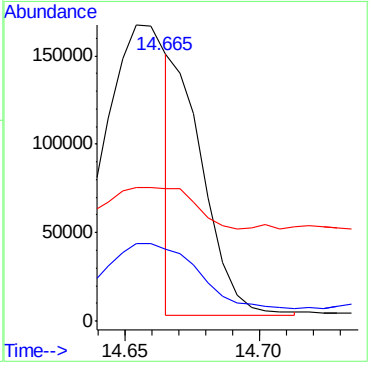


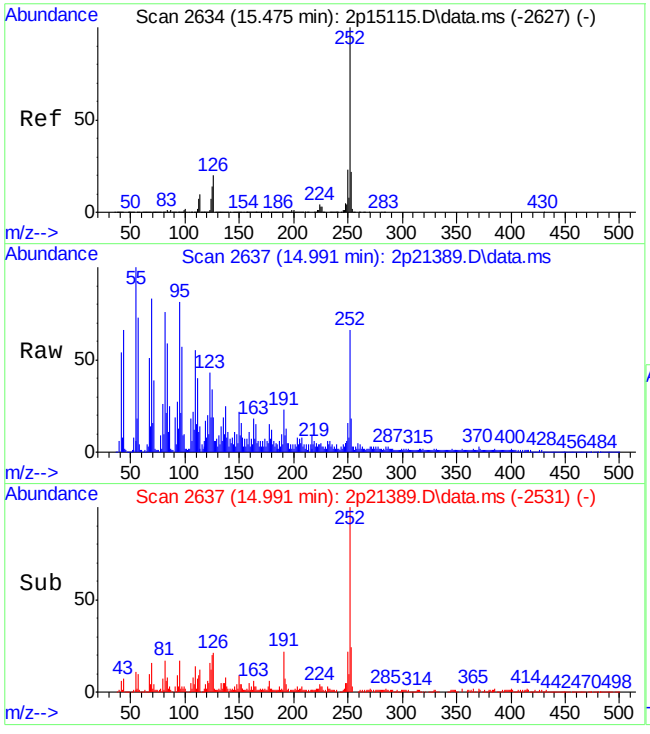


#95
Benzo[k]fluoranthene
Concen: 13.93 ppb m
RT: 14.665 min Scan# 2576
Delta R.T. 0.048 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:252 Resp: 118583

Ion	Ratio	Lower	Upper
252	100		
253	26.7	0.0	56.1
125	49.8	0.0	45.7#

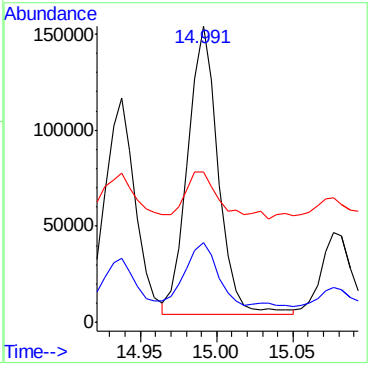


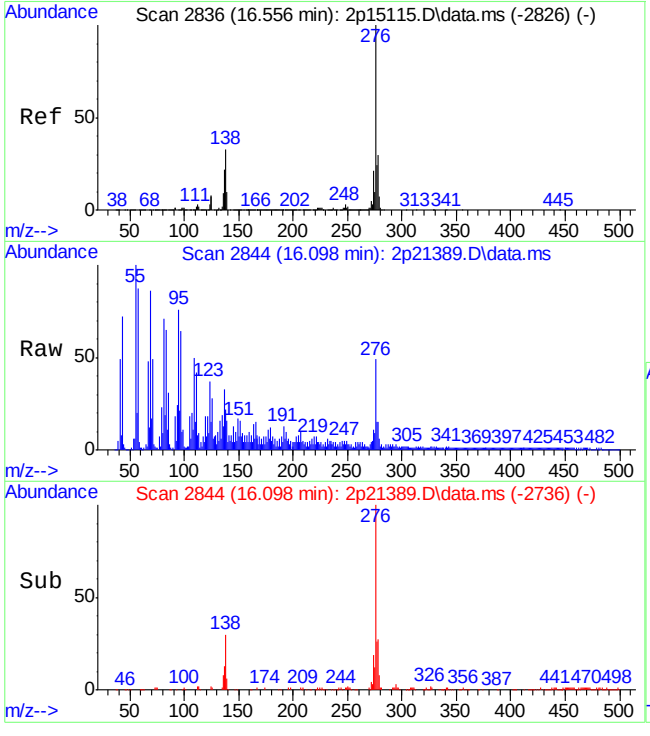


#96
Benzo[a]pyrene
Concen: 24.53 ppb
RT: 14.991 min Scan# 2637
Delta R.T. 0.069 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:252 Resp: 207569

Ion	Ratio	Lower	Upper
252	100		
253	21.8	0.0	51.5
125	15.2	0.0	41.1

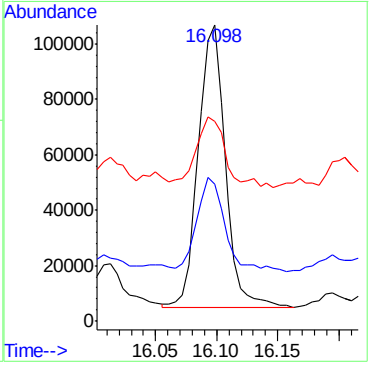


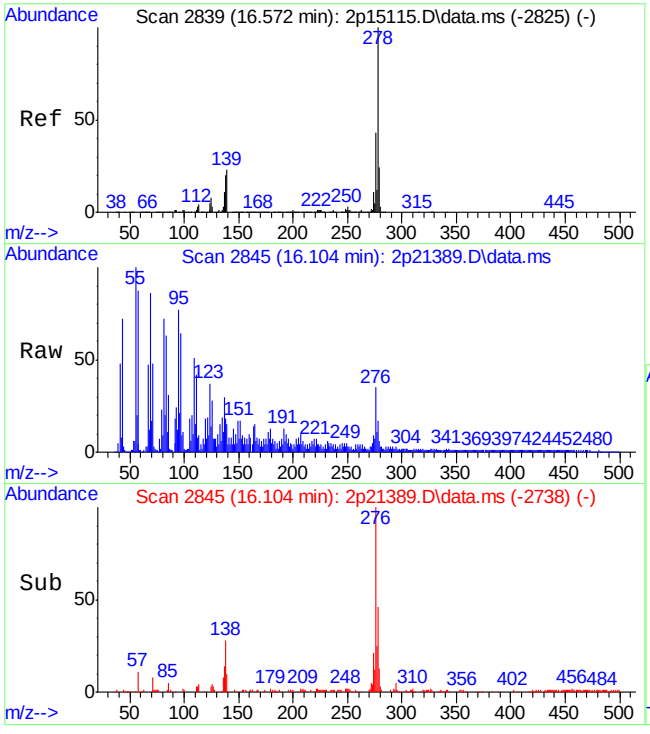


#97
Indeno[1,2,3-cd]pyrene
Concen: 15.84 ppb
RT: 16.098 min Scan# 2844
Delta R.T. 0.080 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:276 Resp: 155471

Ion	Ratio	Lower	Upper
276	100		
138	29.7	0.0	54.7
137	21.0	0.0	49.5

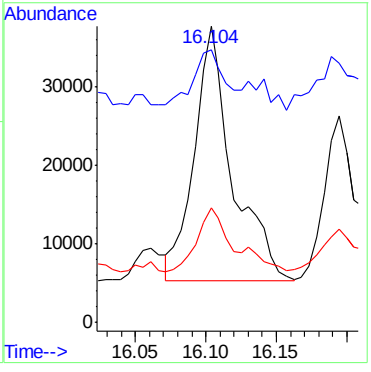


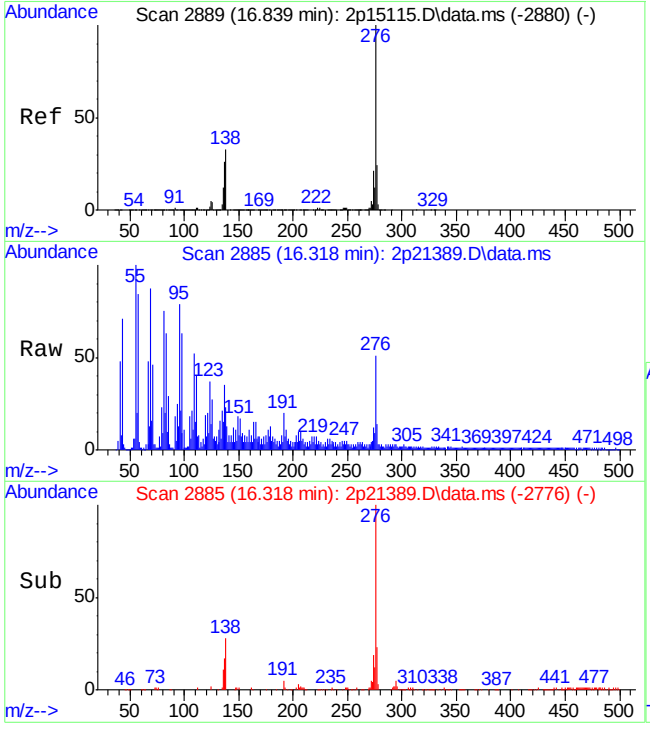


#99
Dibenz[a,h]anthracene
Concen: 7.47 ppb m
RT: 16.104 min Scan# 2845
Delta R.T. 0.075 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:278 Resp: 61098

Ion	Ratio	Lower	Upper
278	100		
139	92.1	0.0	49.9#
279	38.7	0.0	56.4

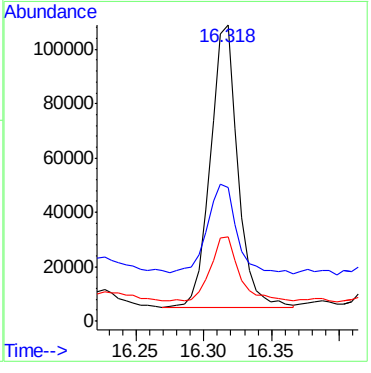




#101
Benzo[g,h,i]perylene
Concen: 17.58 ppb
RT: 16.318 min Scan# 2885
Delta R.T. 0.085 min
Lab File: 2p21389.D
Acq: 22 Mar 2013 2:48 pm

Tgt Ion:276 Resp: 146610

Ion	Ratio	Lower	Upper
276	100		
138	30.1	0.0	55.6
277	22.6	0.0	53.3



9.1.24

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21245.D
Acq On : 19 Mar 2013 9:51 pm
Operator : andrews1
Sample : jb30425-14
Misc : op64440,e2p936,31.5
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Mar 20 14:57:56 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.946	152	70555	40.00	ppb	-0.08
24) Naphthalene-d8	4.567	136	271850	40.00	ppb	-0.09
47) Acenaphthene-d10	7.214	164	154169	40.00	ppb	-0.07
69) Phenanthrene-d10	9.488	188	259258	40.00	ppb	-0.06
83) Chrysene-d12	13.371	240	266386	40.00	ppb	-0.04
92) Perylene-d12	15.045	264	250585	40.00	ppb	-0.02
102) 1,4-Dichlorobenzene-d4a	2.946	152	70555	40.00	ppb	-0.08
104) Acenaphthene-d10a	7.214	164	154169	40.00	ppb	-0.07
107) Chrysene-d12a	13.371	240	266386	40.00	ppb	-0.04
109) Naphthalene-d8a	4.567	136	271850	40.00	ppb	#-0.09
System Monitoring Compounds						
5) 2-Fluorophenol	1.855	112	52693	20.86	ppb	-0.04
Spiked Amount 50.000	Range 11 - 58		Recovery = 41.72%			
8) Phenol-d5	2.738	99	69342	22.13	ppb	-0.04
Spiked Amount 50.000	Range 10 - 59		Recovery = 44.26%			
25) Nitrobenzene-d5	3.658	82	50363	20.14	ppb	-0.08
Spiked Amount 50.000	Range 19 - 61		Recovery = 40.28%			
51) 2-Fluorobiphenyl	6.246	172	134896	27.36	ppb	-0.09
Spiked Amount 50.000	Range 21 - 58		Recovery = 54.72%			
73) 2,4,6-Tribromophenol	8.487	330	16871	29.12	ppb	-0.06
Spiked Amount 50.000	Range 12 - 68		Recovery = 58.24%			
85) Terphenyl-d14	12.039	244	168957	30.11	ppb	-0.05
Spiked Amount 50.000	Range 16 - 65		Recovery = 60.22%			
Target Compounds						Qvalue
38) Naphthalene	4.594	128	18167	2.50	ppb	99
56) Acenaphthylene	6.979	152	21267	2.98	ppb #	12
59) Acenaphthene	7.262	153	2783	0.64	ppb	79
66) Fluorene	8.049	166	4689	0.93	ppb	92
77) Phenanthrene	9.520	178	26624	3.41	ppb	96
78) Anthracene	9.594	178	14378	1.86	ppb	97
81) Fluoranthene	11.386	202	21230	2.65	ppb	75
84) Pyrene	11.691	202	36292	4.00	ppb	97
88) Benzo[a]anthracene	13.355	228	25939	3.27	ppb	99
90) Chrysene	13.397	228	32261	4.27	ppb	97
94) Benzo[b]fluoranthene	14.649	252	58821m	6.88	ppb	
95) Benzo[k]fluoranthene	14.660	252	26123m	3.50	ppb	
96) Benzo[a]pyrene	14.981	252	45776	6.17	ppb	92
97) Indeno[1,2,3-cd]pyrene	16.072	276	48209	5.60	ppb	88
99) Dibenz[a,h]anthracene	16.082	278	19070	2.66	ppb	93
101) Benzo[g,h,i]perylene	16.291	276	47155	6.45	ppb	92

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

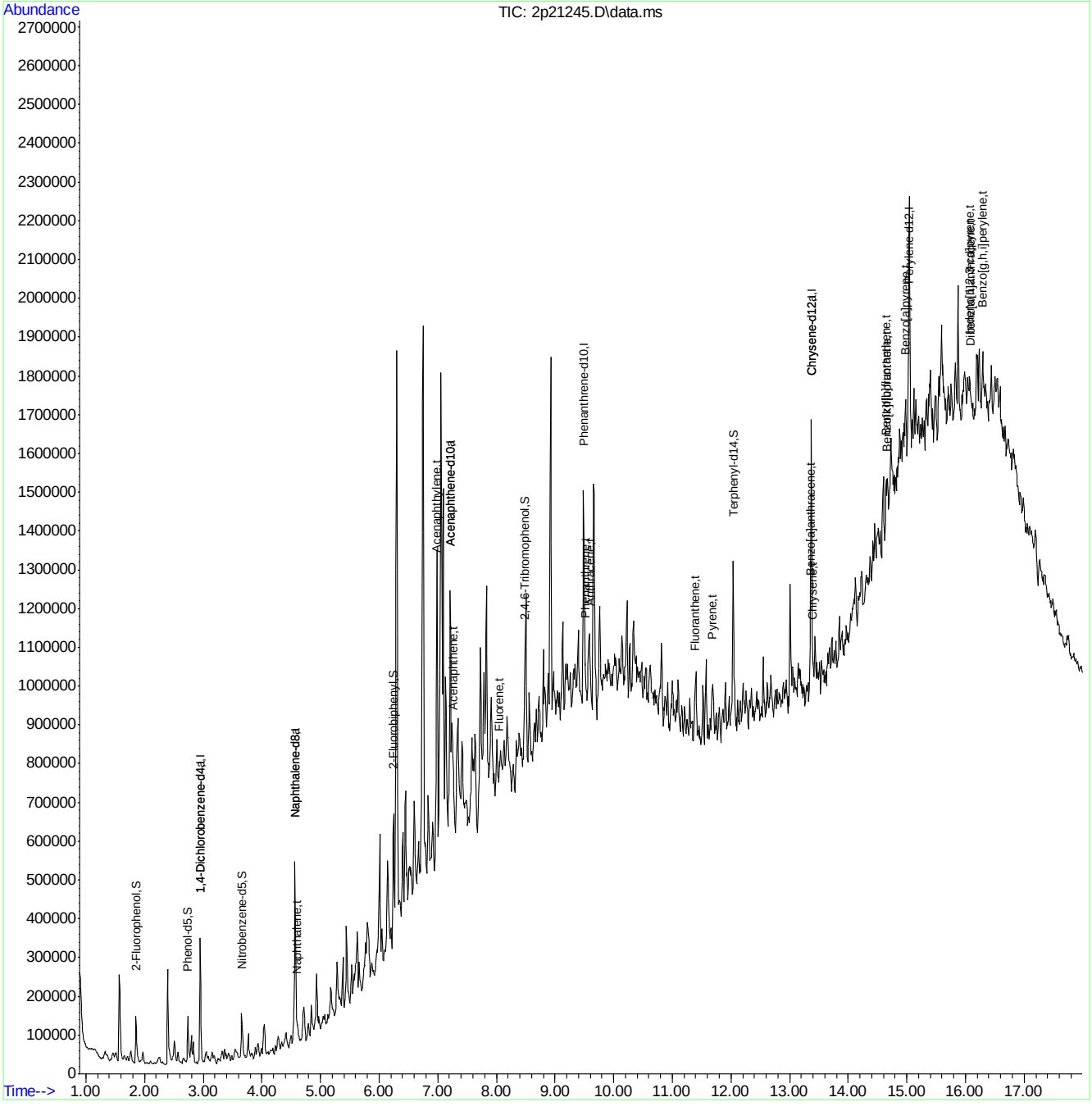
9.1.25

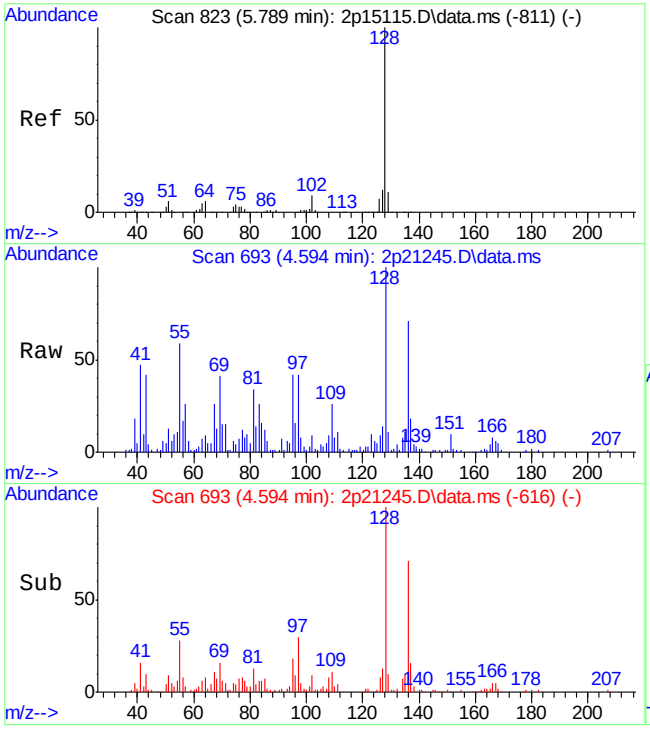
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21245.D
Acq On : 19 Mar 2013 9:51 pm
Operator : andrews1
Sample : jb30425-14
Misc : op64440,e2p936,31.5
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Mar 20 14:57:56 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

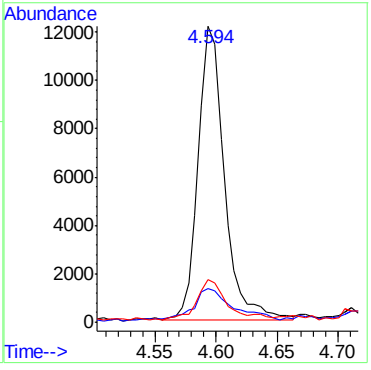


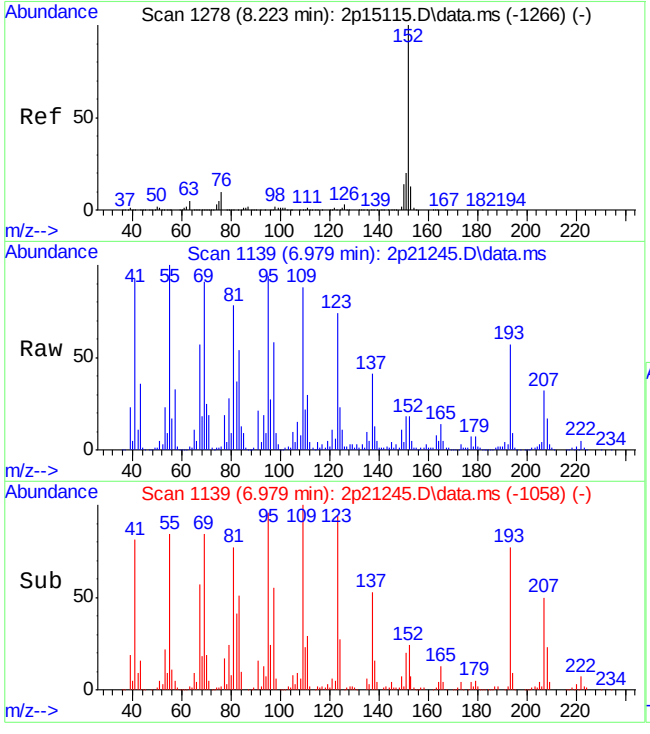


#38
Naphthalene
Concen: 2.50 ppb
RT: 4.594 min Scan# 693
Delta R.T. -0.086 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:128 Resp: 18167

Ion	Ratio	Lower	Upper
128	100		
129	10.5	0.0	41.0
127	12.8	0.0	43.0

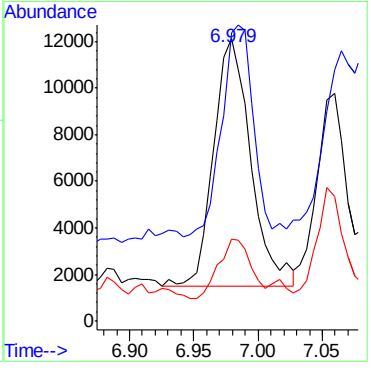


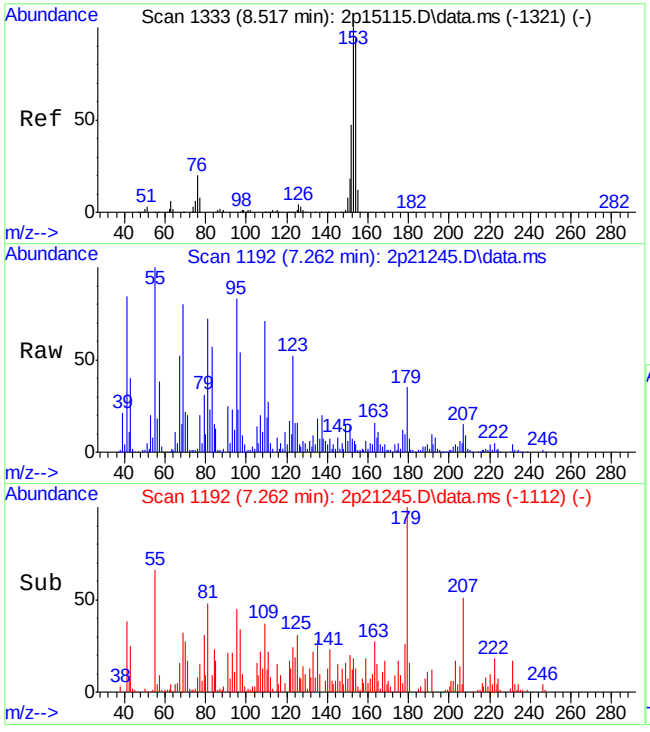


#56
Acenaphthylene
Concen: 2.98 ppb
RT: 6.979 min Scan# 1139
Delta R.T. -0.064 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:152 Resp: 21267

Ion	Ratio	Lower	Upper
152	100		
151	80.7	0.0	49.9#
153	21.4	0.0	43.1

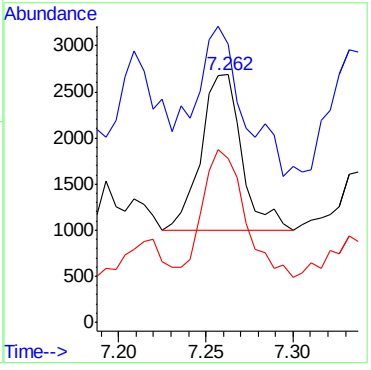


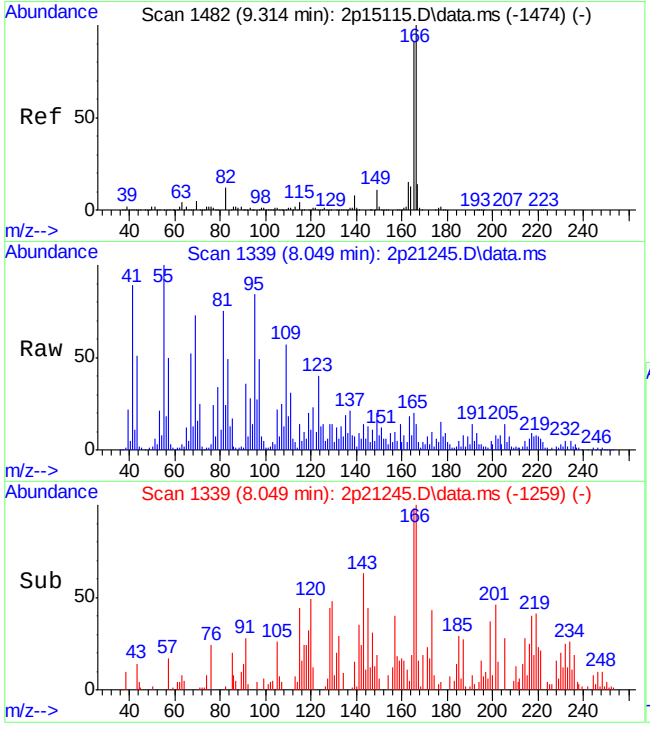


#59
Acenaphthene
Concen: 0.64 ppb
RT: 7.262 min Scan# 1192
Delta R.T. -0.070 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:153 Resp: 2783

Ion	Ratio	Lower	Upper
153	100		
152	57.3	17.8	77.8
154	71.1	65.2	125.2

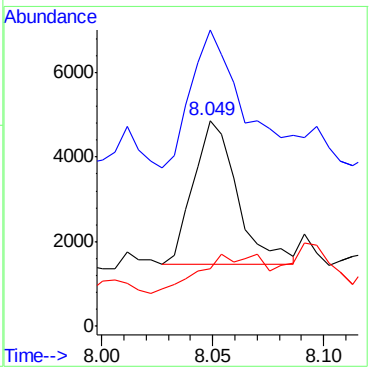


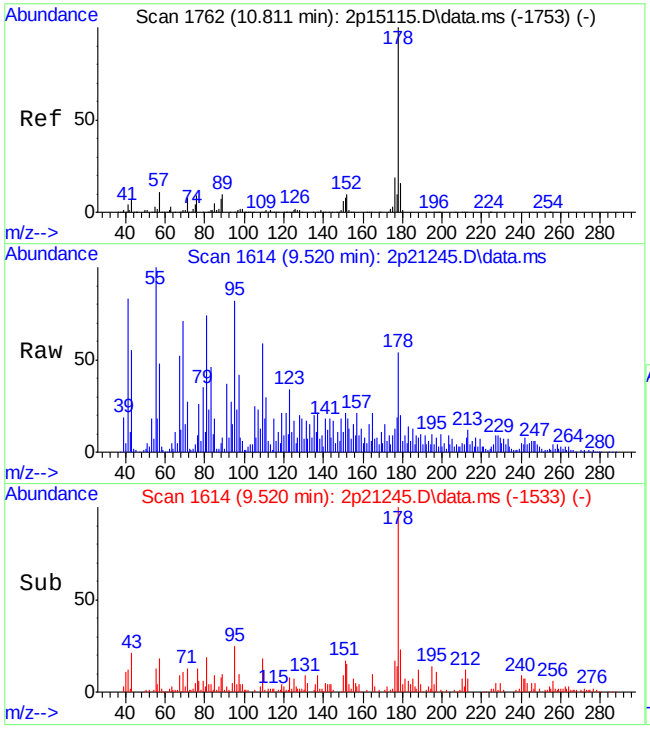


#66
Fluorene
Concen: 0.93 ppb
RT: 8.049 min Scan# 1339
Delta R.T. -0.070 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:166 Resp: 4689

Ion	Ratio	Lower	Upper
166	100		
165	86.8	62.5	122.5
167	4.8	0.0	42.9

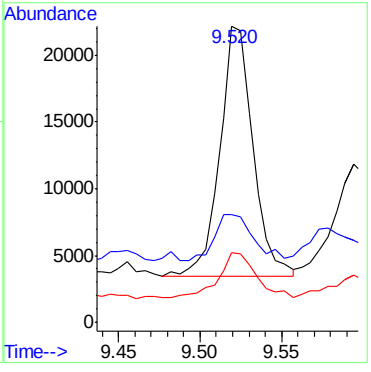


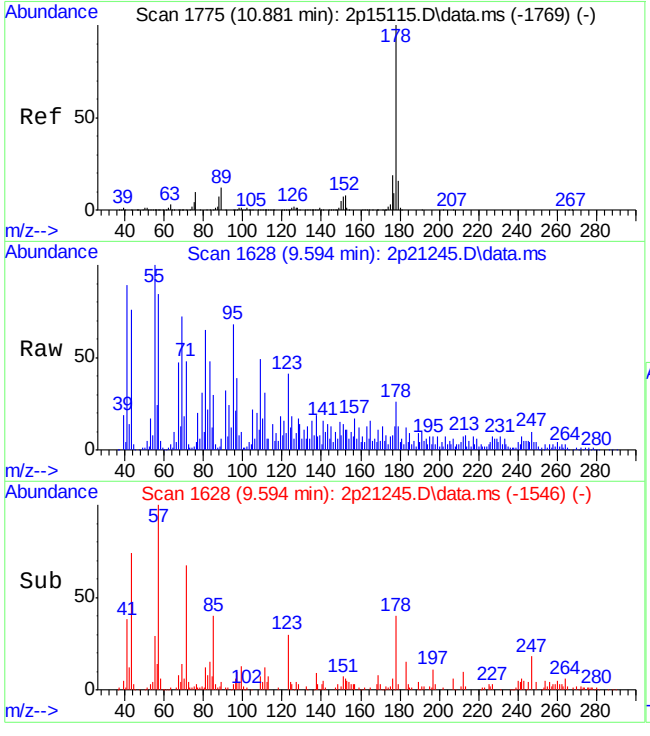


#77
Phenanthrene
Concen: 3.41 ppb
RT: 9.520 min Scan# 1614
Delta R.T. -0.064 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:178 Resp: 26624

Ion	Ratio	Lower	Upper
178	100		
179	17.3	0.0	44.4
176	18.1	0.0	48.6

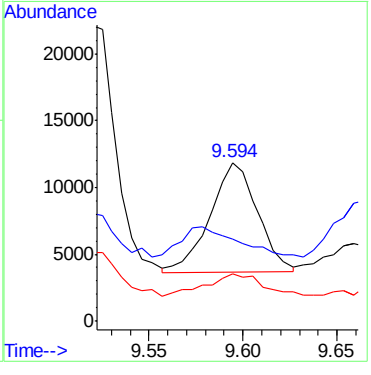


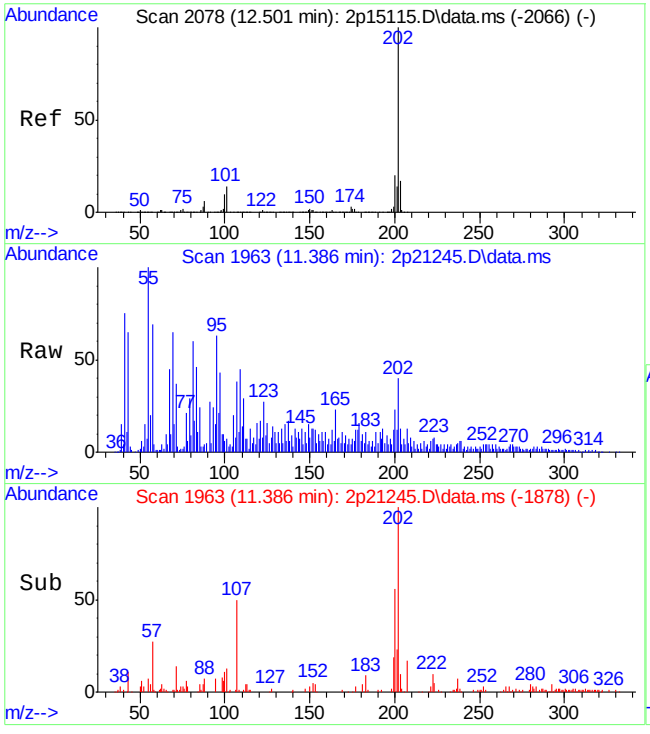


#78
Anthracene
Concen: 1.86 ppb
RT: 9.594 min Scan# 1628
Delta R.T. -0.059 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:178 Resp: 14378

Ion	Ratio	Lower	Upper
178	100		
179	14.4	0.0	44.5
176	18.7	0.0	46.5

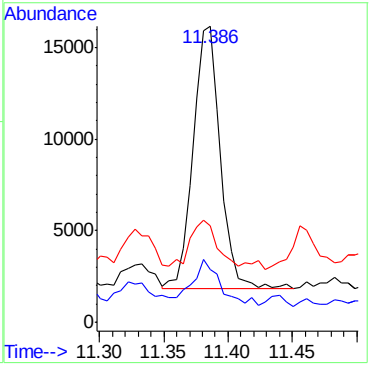


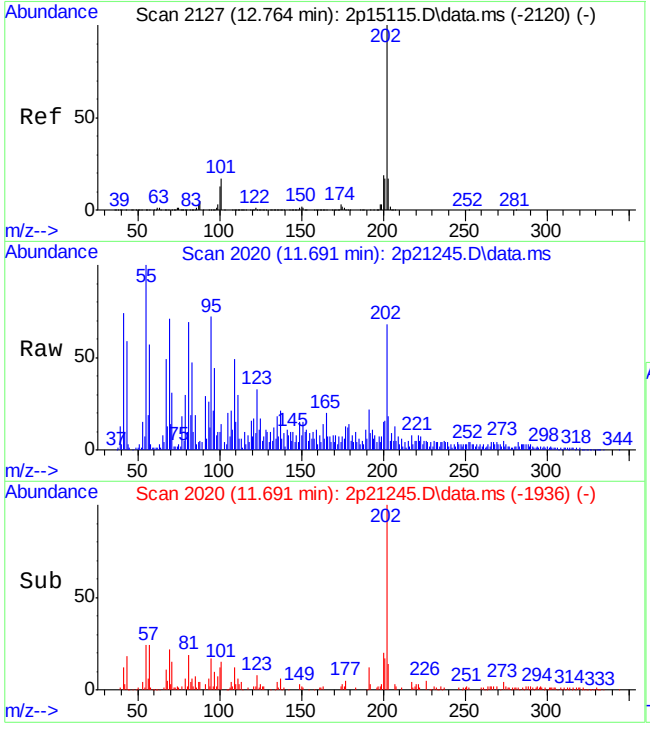


#81
Fluoranthene
Concen: 2.65 ppb
RT: 11.386 min Scan# 1963
Delta R.T. -0.043 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:202 Resp: 21230

Ion	Ratio	Lower	Upper
202	100		
101	17.9	0.0	41.3
203	32.5	0.0	49.1

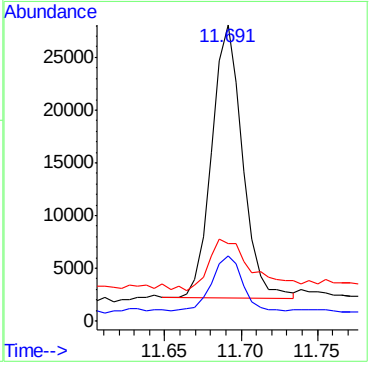


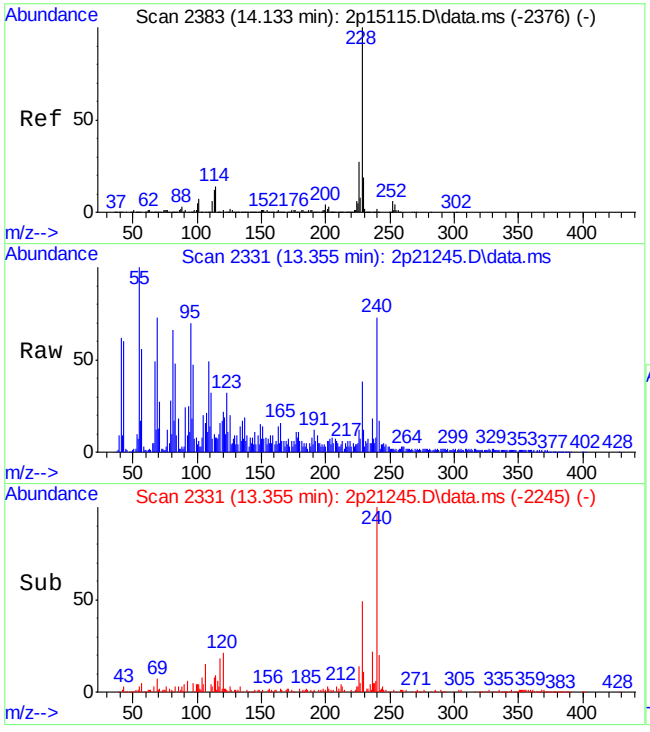


#84
Pyrene
Concen: 4.00 ppb
RT: 11.691 min Scan# 2020
Delta R.T. -0.048 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:202 Resp: 36292

Ion	Ratio	Lower	Upper
202	100		
200	20.2	0.0	49.6
203	14.5	0.0	46.9

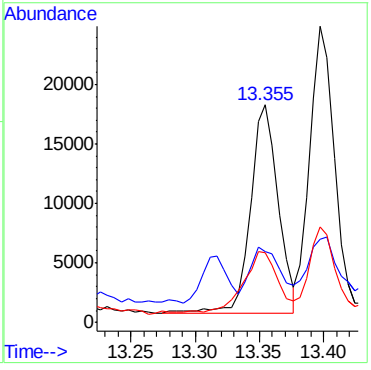


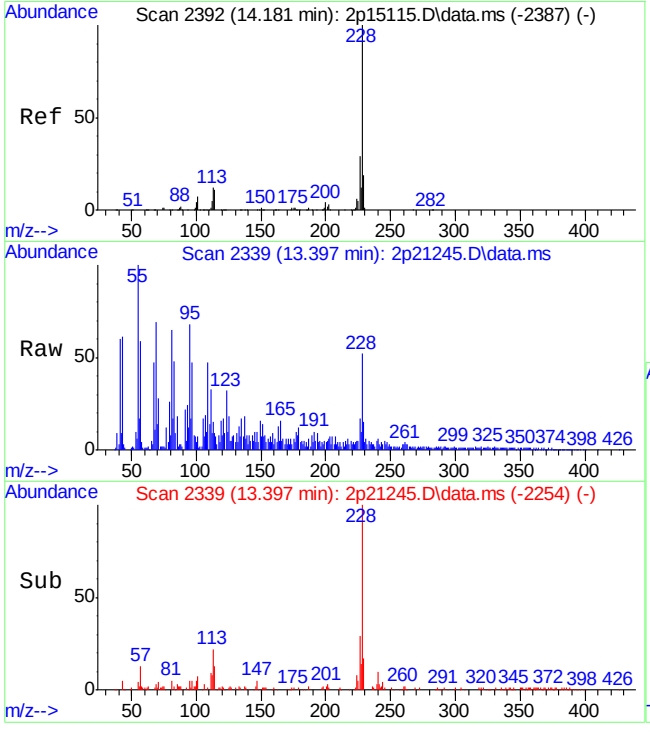


#88
Benzo[a]anthracene
Concen: 3.27 ppb
RT: 13.355 min Scan# 2331
Delta R.T. -0.037 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:228 Resp: 25939

Ion	Ratio	Lower	Upper
228	100		
229	21.8	0.0	50.7
226	27.1	0.0	56.7

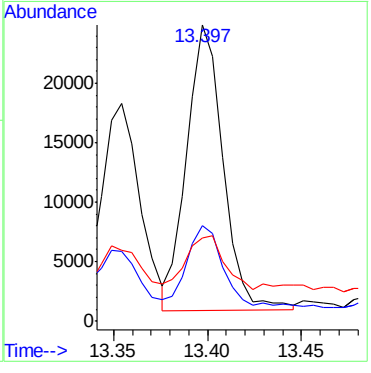




#90
Chrysene
Concen: 4.27 ppb
RT: 13.397 min Scan# 2339
Delta R.T. -0.043 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:228 Resp: 32261

Ion	Ratio	Lower	Upper
228	100		
226	28.2	0.0	58.4
229	17.4	0.0	50.1



9.1.25

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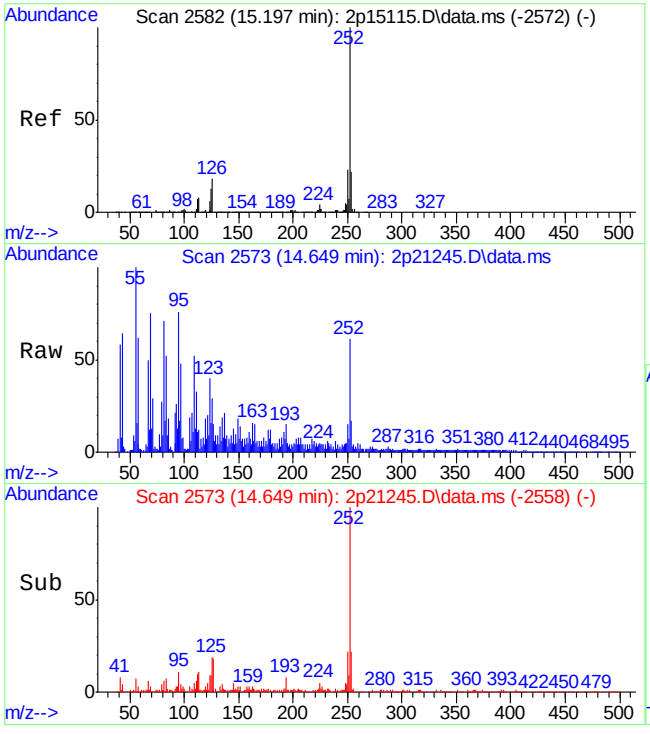
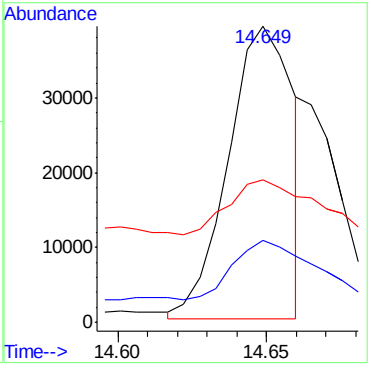
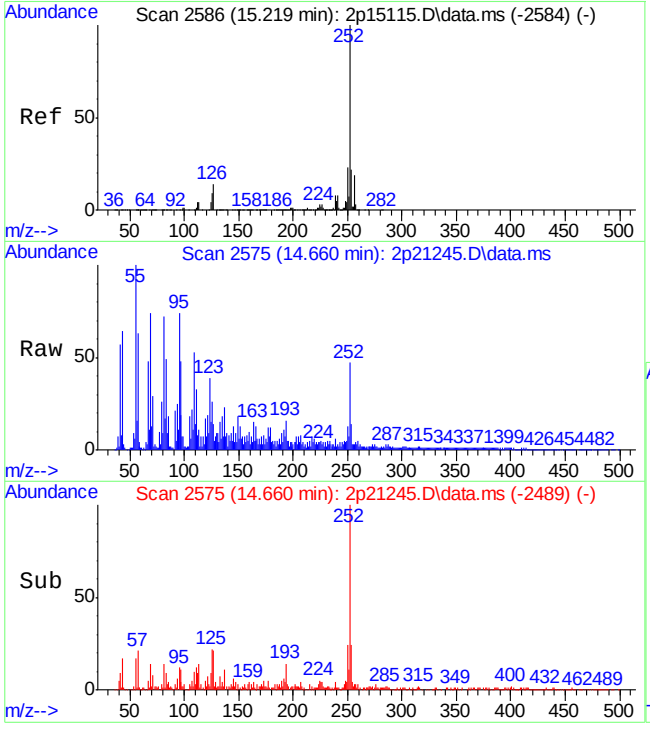


#94
Benzo[b]fluoranthene
Concen: 6.88 ppb m
RT: 14.649 min Scan# 2573
Delta R.T. -0.021 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:252 Resp: 58821

Ion	Ratio	Lower	Upper
252	100		
253	27.6	0.0	51.1
125	48.1	0.0	40.8#

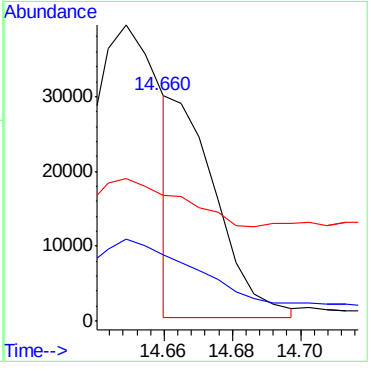




#95
Benzo[k]fluoranthene
Concen: 3.50 ppb m
RT: 14.660 min Scan# 2575
Delta R.T. -0.038 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:252 Resp: 26123

Ion	Ratio	Lower	Upper
252	100		
253	29.3	0.0	56.1
125	55.5	0.0	45.7#



9.1.25

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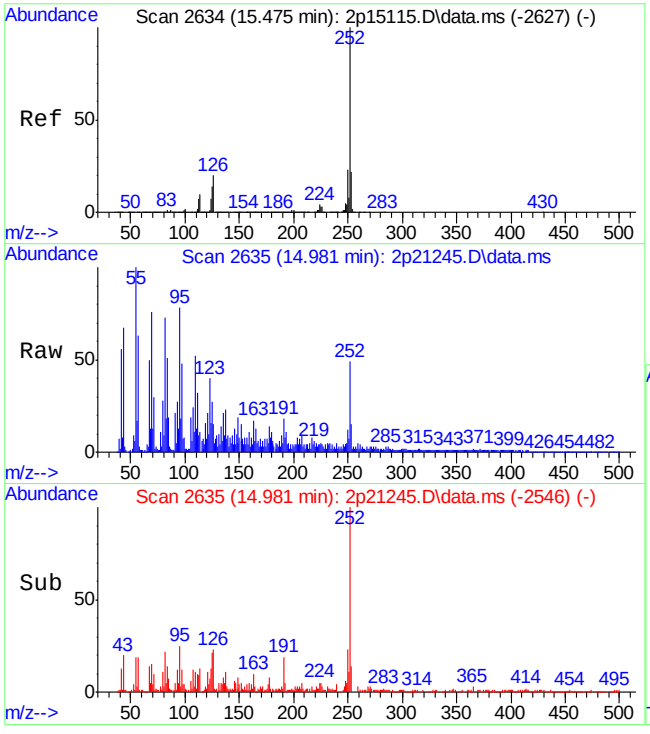
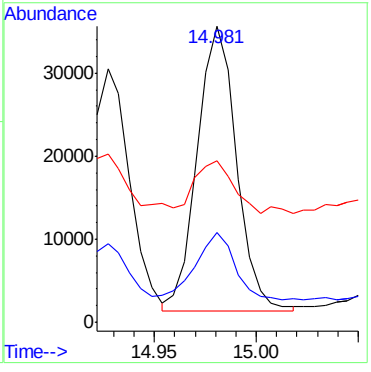
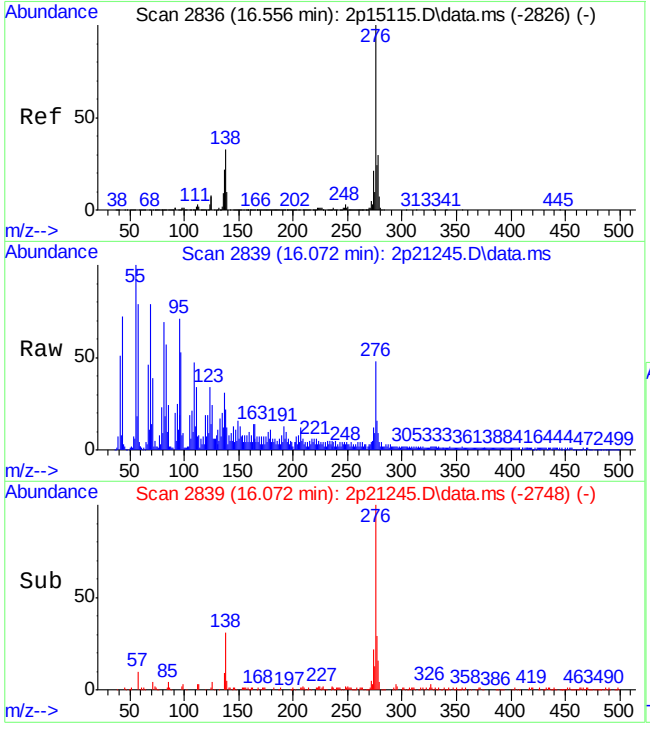


#96
Benzo[a]pyrene
Concen: 6.17 ppb
RT: 14.981 min Scan# 2635
Delta R.T. -0.021 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:252 Resp: 45776

Ion	Ratio	Lower	Upper
252	100		
253	23.4	0.0	51.5
125	17.2	0.0	41.1

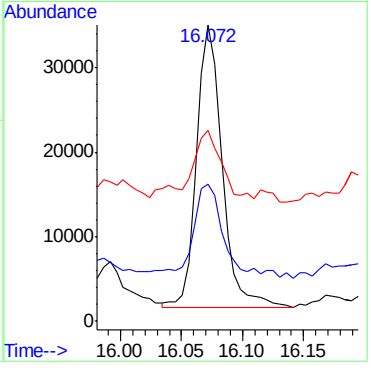




#97
Indeno[1,2,3-cd]pyrene
Concen: 5.60 ppb
RT: 16.072 min Scan# 2839
Delta R.T. -0.011 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

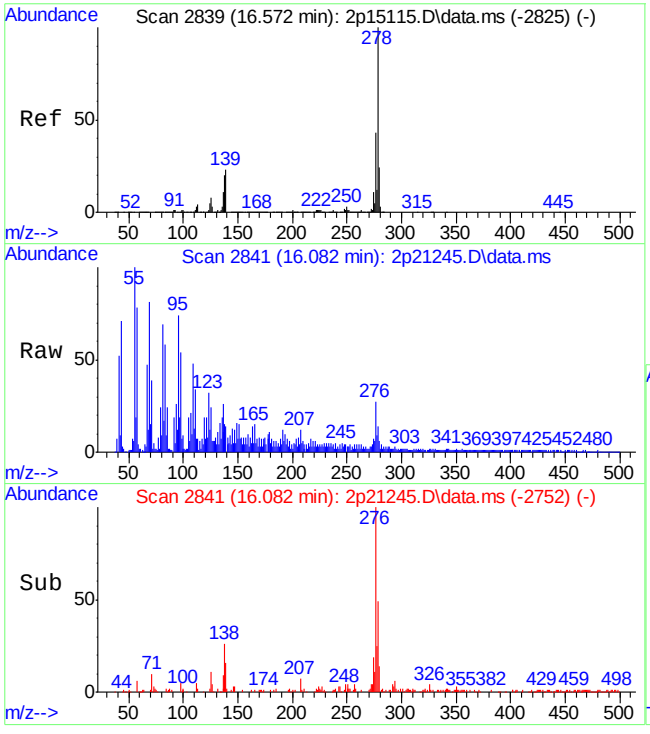
Tgt Ion:276 Resp: 48209

Ion	Ratio	Lower	Upper
276	100		
138	32.0	0.0	54.7
137	22.9	0.0	49.5



9.1.25

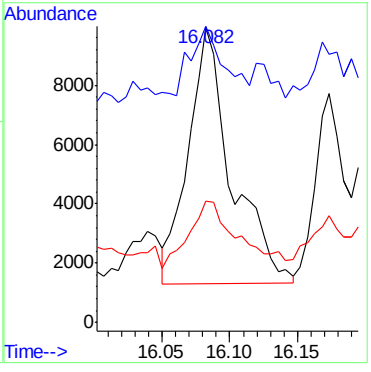
9

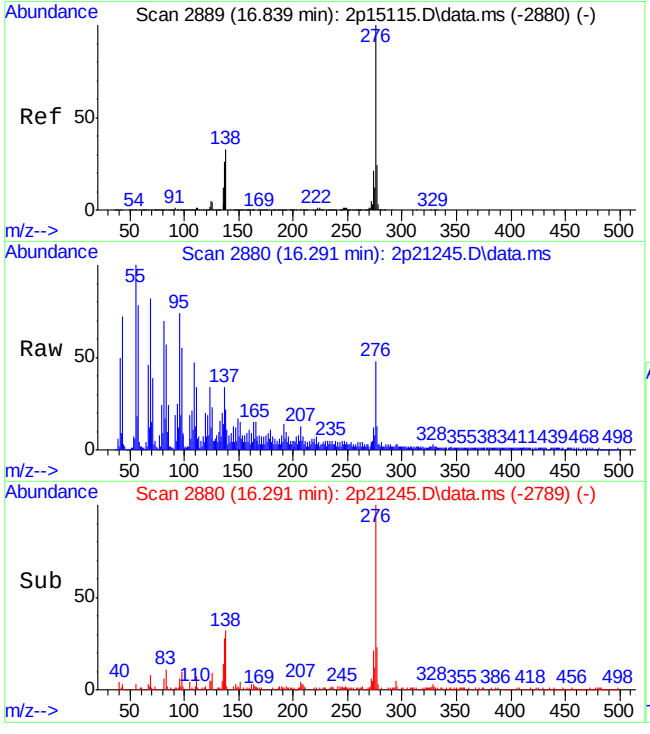


#99
Dibenz[a,h]anthracene
Concen: 2.66 ppb
RT: 16.082 min Scan# 2841
Delta R.T. -0.021 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:278 Resp: 19070

Ion	Ratio	Lower	Upper
278	100		
139	26.6	0.0	49.9
279	26.8	0.0	56.4

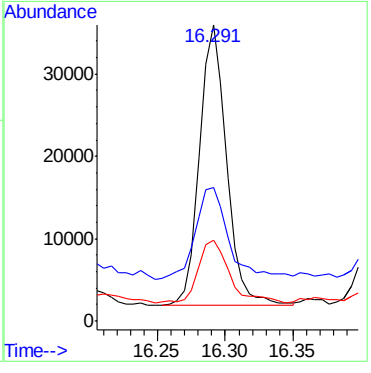




#101
Benzo[g,h,i]perylene
Concen: 6.45 ppb
RT: 16.291 min Scan# 2880
Delta R.T. -0.011 min
Lab File: 2p21245.D
Acq: 19 Mar 2013 9:51 pm

Tgt Ion:276 Resp: 47155

Ion	Ratio	Lower	Upper
276	100		
138	32.3	0.0	55.6
277	22.0	0.0	53.3



9.1.25

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21380.D
Acq On : 22 Mar 2013 11:24 am
Operator : andrews1
Sample : jb30425-14cf
Misc : op64440,e2p941,30.3
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 23 13:22:59 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.898	152	68160	40.00	ppb	-0.03
24) Naphthalene-d8	4.508	136	268054	40.00	ppb	-0.03
47) Acenaphthene-d10	7.139	164	154663	40.00	ppb	-0.03
69) Phenanthrene-d10	9.407	188	266734	40.00	ppb	-0.03
83) Chrysene-d12	13.296	240	283409	40.00	ppb	-0.02
92) Perylene-d12	14.970	264	256663	40.00	ppb	-0.02
102) 1,4-Dichlorobenzene-d4a	2.898	152	68160	40.00	ppb	-0.03
104) Acenaphthene-d10a	7.139	164	154663	40.00	ppb	-0.03
107) Chrysene-d12a	13.296	240	283409	40.00	ppb	-0.02
109) Naphthalene-d8a	4.508	136	268054	40.00	ppb	#-0.03
System Monitoring Compounds						
5) 2-Fluorophenol	1.812	112	64484	26.43	ppb	-0.02
Spiked Amount 50.000	Range 11 - 58		Recovery = 52.86%			
8) Phenol-d5	2.684	99	83734	27.67	ppb	-0.02
Spiked Amount 50.000	Range 10 - 59		Recovery = 55.34%			
25) Nitrobenzene-d5	3.609	82	73051	29.63	ppb	-0.02
Spiked Amount 50.000	Range 19 - 61		Recovery = 59.26%			
51) 2-Fluorobiphenyl	6.182	172	150522	30.43	ppb	-0.03
Spiked Amount 50.000	Range 21 - 58		Recovery = 60.86%#			
73) 2,4,6-Tribromophenol	8.412	330	19312	32.40	ppb	-0.03
Spiked Amount 50.000	Range 12 - 68		Recovery = 64.80%			
85) Terphenyl-d14	11.964	244	177430	29.72	ppb	-0.02
Spiked Amount 50.000	Range 16 - 65		Recovery = 59.44%			
Target Compounds						Qvalue
38) Naphthalene	4.535	128	27077	3.77	ppb	98
44) 2-Methylnaphthalene	5.556	141	32234	7.87	ppb	97
66) Fluorene	7.974	166	5373	1.06	ppb	74
77) Phenanthrene	9.445	178	31104	3.87	ppb	97
78) Anthracene	9.520	178	11577m	1.46	ppb	
81) Fluoranthene	11.301	202	34966	4.24	ppb	78
84) Pyrene	11.611	202	50369	5.22	ppb	99
88) Benzo[a]anthracene	13.280	228	39808	4.71	ppb	95
90) Chrysene	13.328	228	53698	6.68	ppb	98
94) Benzo[b]fluoranthene	14.574	252	84564m	9.66	ppb	
95) Benzo[k]fluoranthene	14.585	252	42705m	5.58	ppb	
96) Benzo[a]pyrene	14.906	252	69073	9.09	ppb	93
97) Indeno[1,2,3-cd]pyrene	16.002	276	64240	7.29	ppb	87
99) Dibenz[a,h]anthracene	16.013	278	26644m	3.63	ppb	
101) Benzo[g,h,i]perylene	16.216	276	64610	8.63	ppb	91

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

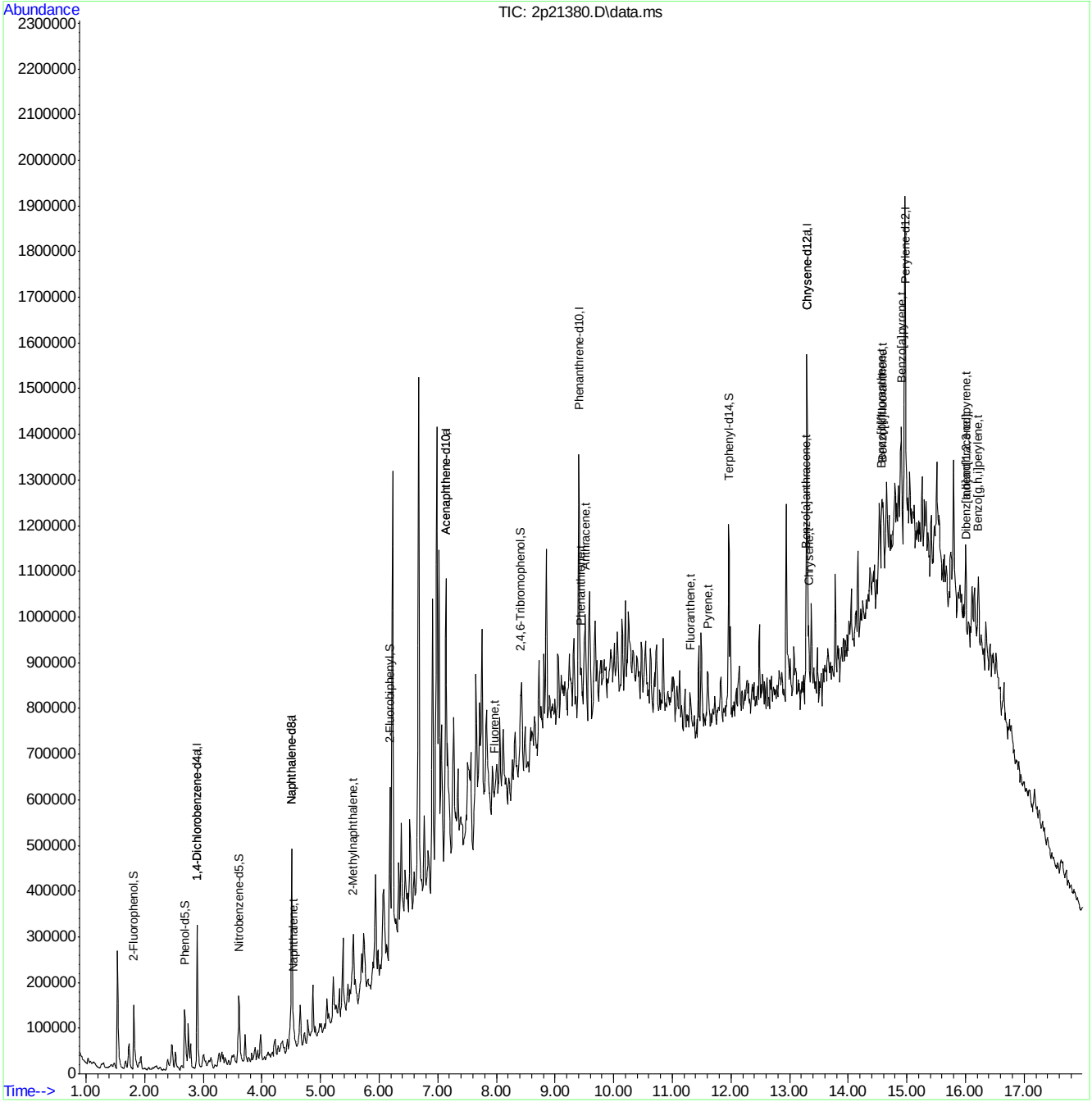
9.1.26

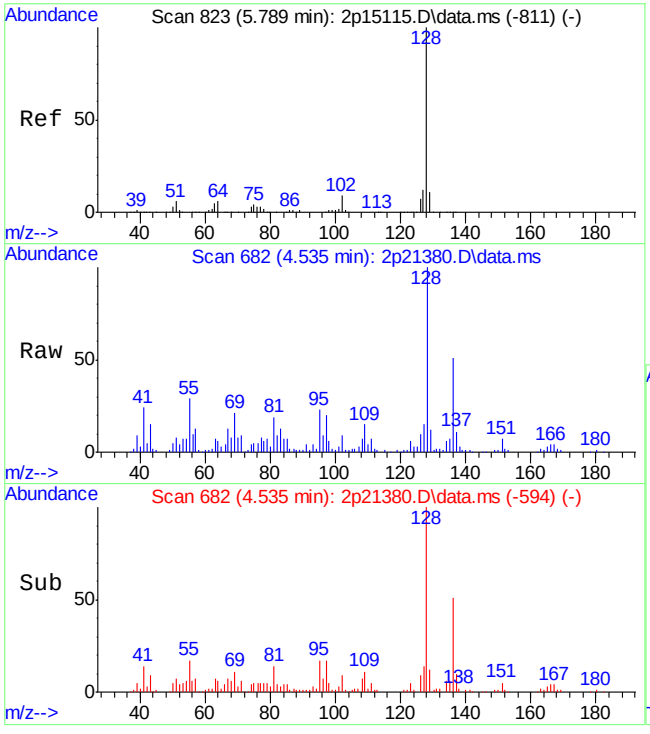
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21380.D
Acq On : 22 Mar 2013 11:24 am
Operator : andrews1
Sample : jb30425-14cf
Misc : op64440,e2p941,30.3
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 23 13:22:59 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

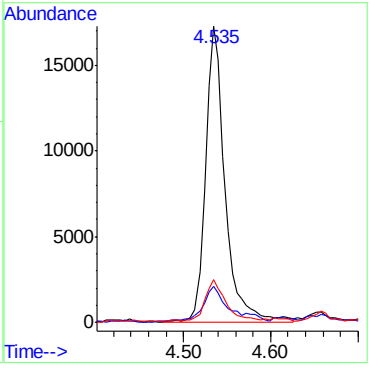


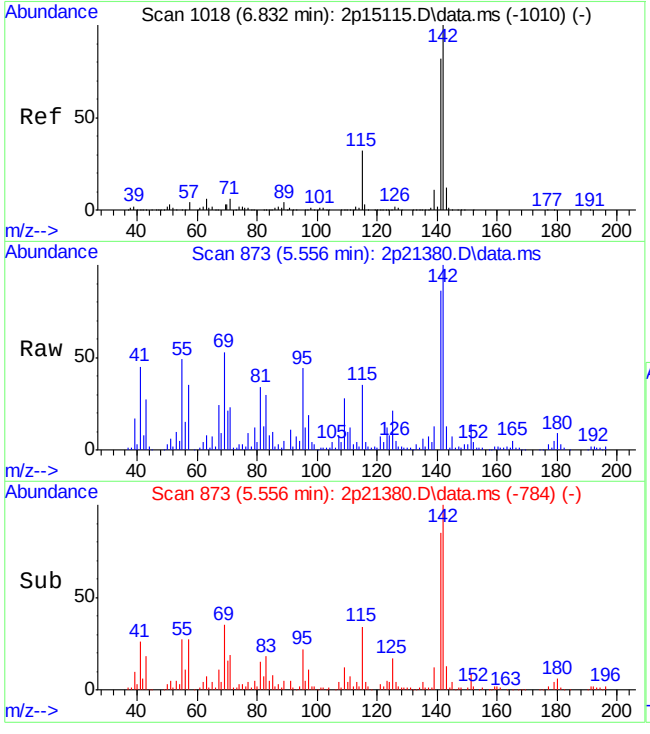


#38
Naphthalene
Concen: 3.77 ppb
RT: 4.535 min Scan# 682
Delta R.T. -0.027 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:128 Resp: 27077

Ion	Ratio	Lower	Upper
128	100		
129	11.3	0.0	41.0
127	14.2	0.0	43.0

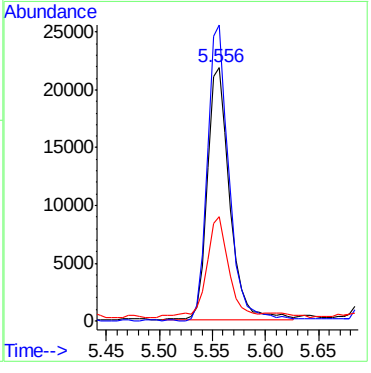


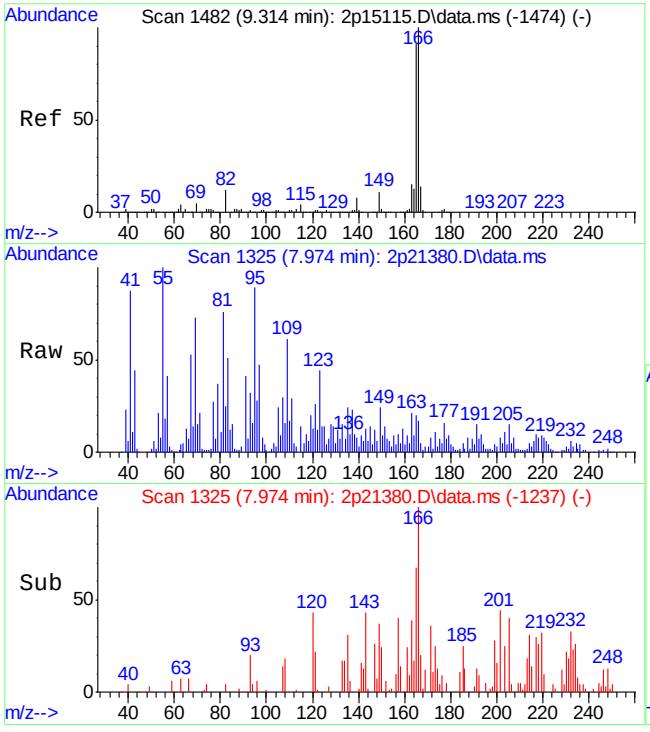


#44
2-Methylnaphthalene
Concen: 7.87 ppb
RT: 5.556 min Scan# 873
Delta R.T. -0.021 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:141 Resp: 32234

Ion	Ratio	Lower	Upper
141	100		
142	117.3	88.4	148.4
115	39.4	14.8	74.8

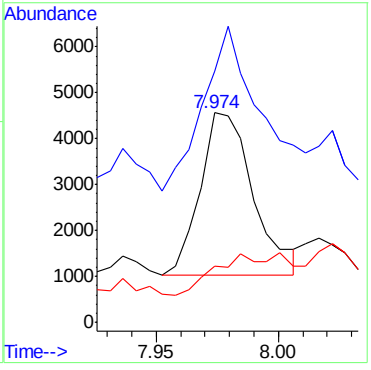


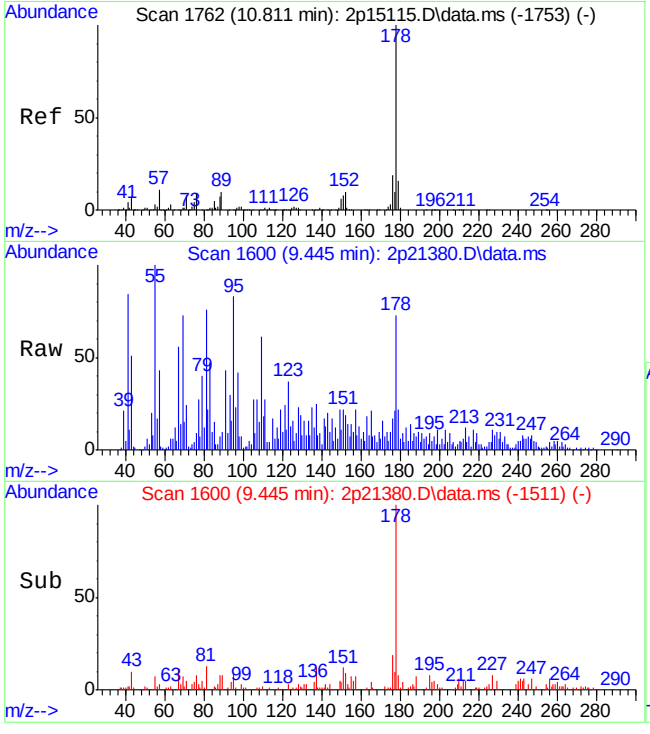


#66
Fluorene
Concen: 1.06 ppb
RT: 7.974 min Scan# 1325
Delta R.T. -0.027 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:166 Resp: 5373

Ion	Ratio	Lower	Upper
166	100		
165	65.1	62.5	122.5
167	9.9	0.0	42.9

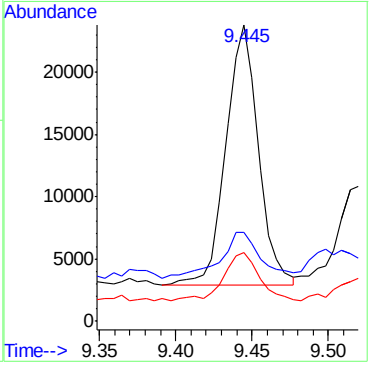




#77
Phenanthrene
Concen: 3.87 ppb
RT: 9.445 min Scan# 1600
Delta R.T. -0.021 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:178 Resp: 31104

Ion	Ratio	Lower	Upper
178	100		
179	16.8	0.0	44.4
176	18.1	0.0	48.6



9.1.26

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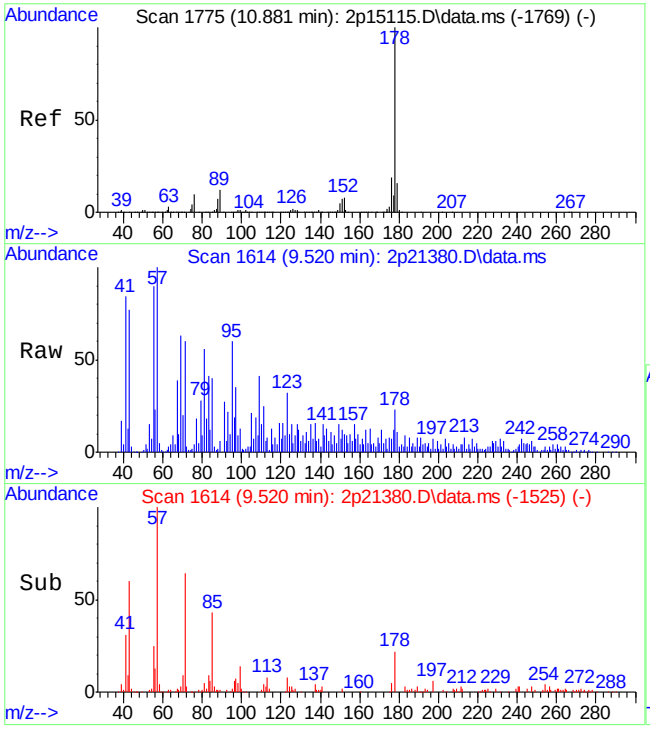
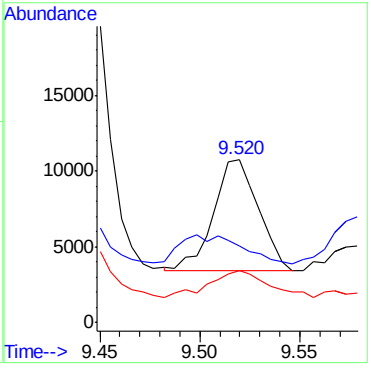
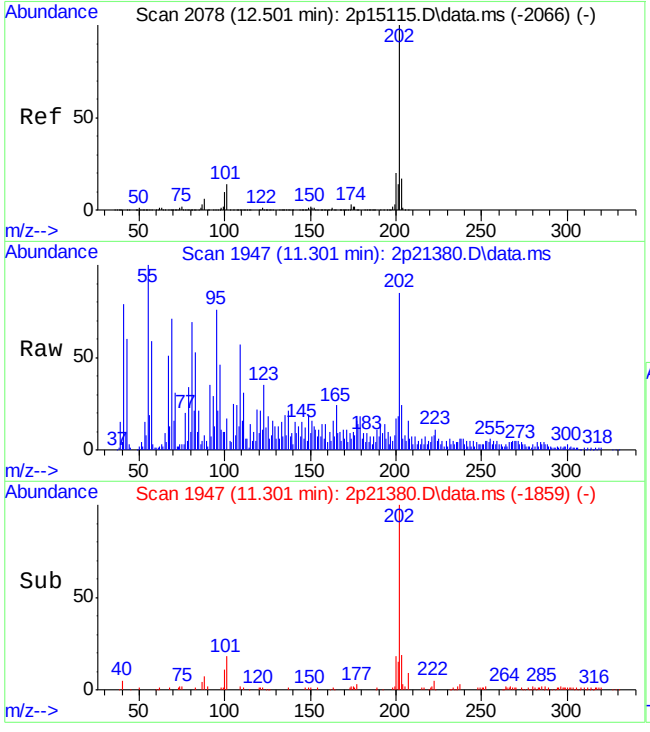


#78
Anthracene
Concen: 1.46 ppb m
RT: 9.520 min Scan# 1614
Delta R.T. -0.021 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:178 Resp: 11577

Ion	Ratio	Lower	Upper
178	100		
179	46.9	0.0	44.5#
176	31.6	0.0	46.5

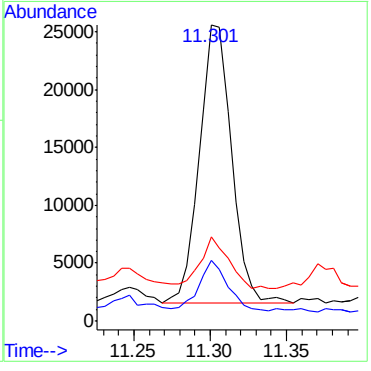




#81
Fluoranthene
Concen: 4.24 ppb
RT: 11.301 min Scan# 1947
Delta R.T. -0.027 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:202 Resp: 34966

Ion	Ratio	Lower	Upper
202	100		
101	20.4	0.0	41.3
203	28.6	0.0	49.1



9.1.26

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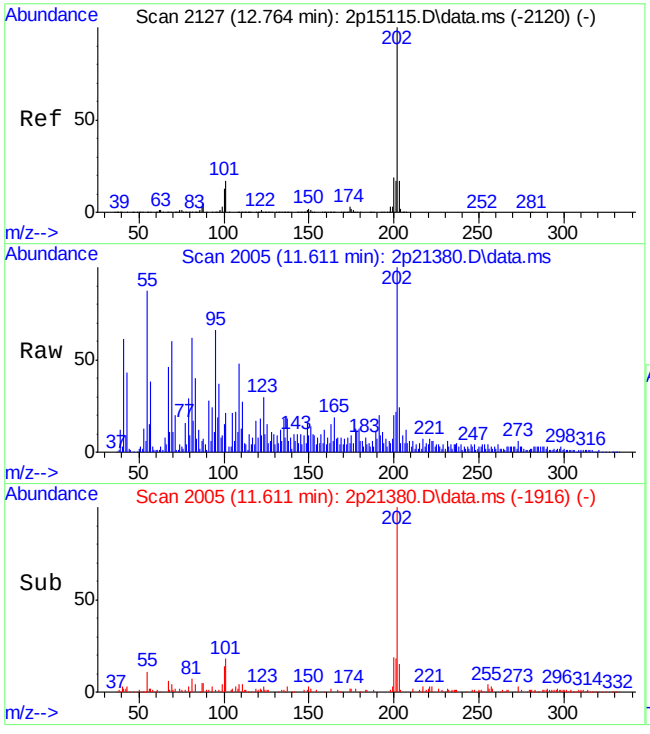
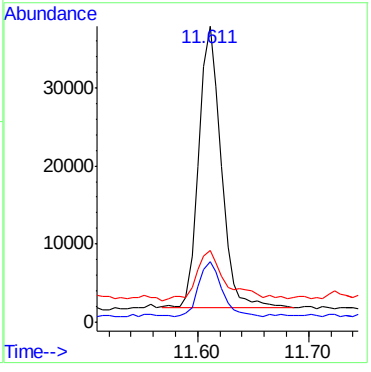
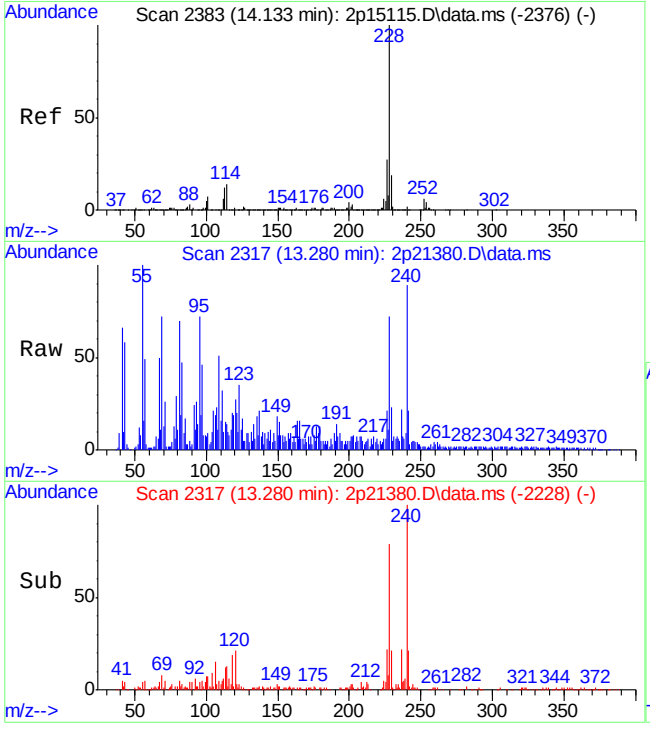


#84
Pyrene
Concen: 5.22 ppb
RT: 11.611 min Scan# 2005
Delta R.T. -0.021 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:202 Resp: 50369

Ion	Ratio	Lower	Upper
202	100		
200	19.1	0.0	49.6
203	17.2	0.0	46.9

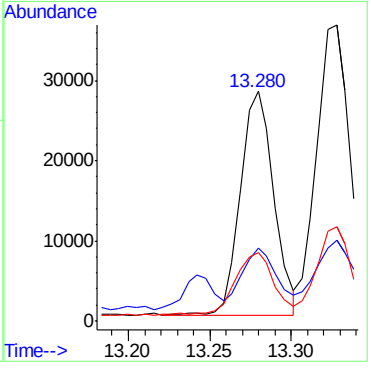




#88
Benzo[a]anthracene
Concen: 4.71 ppb
RT: 13.280 min Scan# 2317
Delta R.T. -0.021 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:228 Resp: 39808

Ion	Ratio	Lower	Upper
228	100		
229	25.2	0.0	50.7
226	27.2	0.0	56.7



9.1.26

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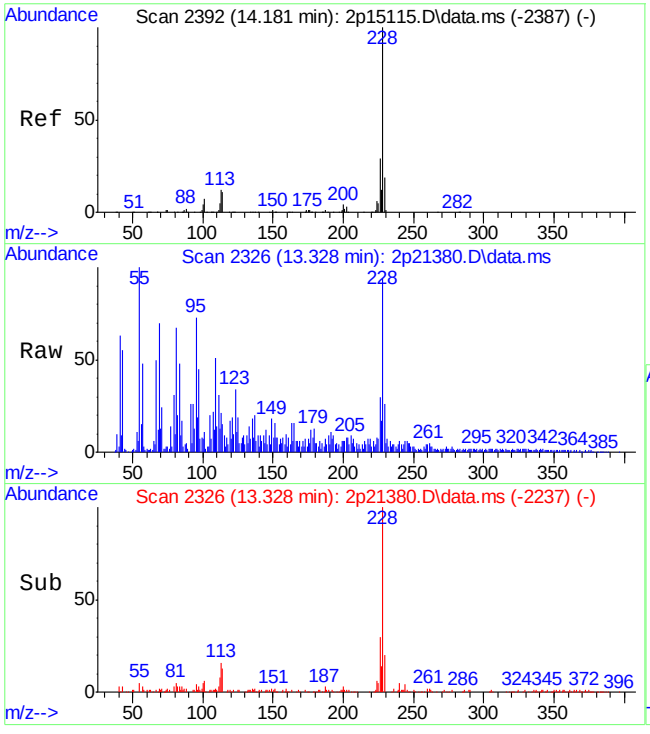
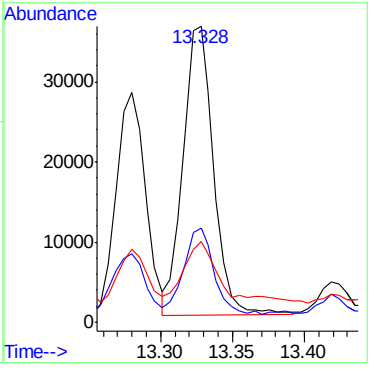
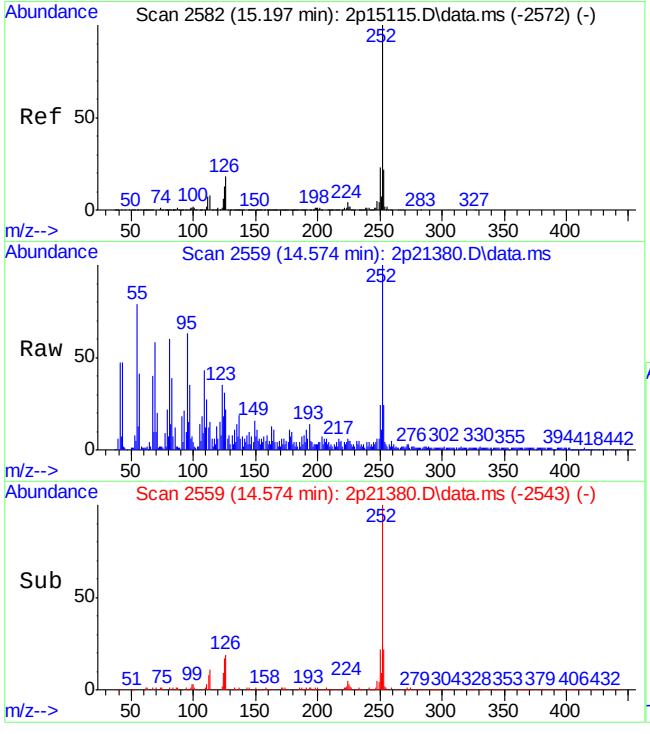


#90
Chrysene
Concen: 6.68 ppb
RT: 13.328 min Scan# 2326
Delta R.T. -0.021 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:228 Resp: 53698

Ion	Ratio	Lower	Upper
228	100		
226	29.8	0.0	58.4
229	20.9	0.0	50.1

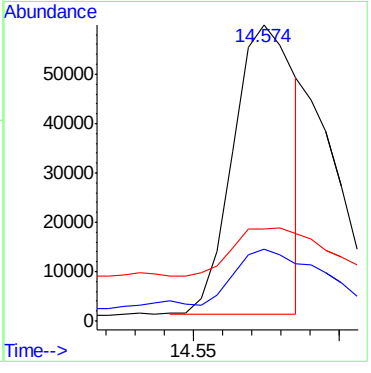




#94
Benzo[b]fluoranthene
Concen: 9.66 ppb m
RT: 14.574 min Scan# 2559
Delta R.T. -0.016 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:252 Resp: 84564

Ion	Ratio	Lower	Upper
252	100		
253	24.3	0.0	51.1
125	31.2	0.0	40.8



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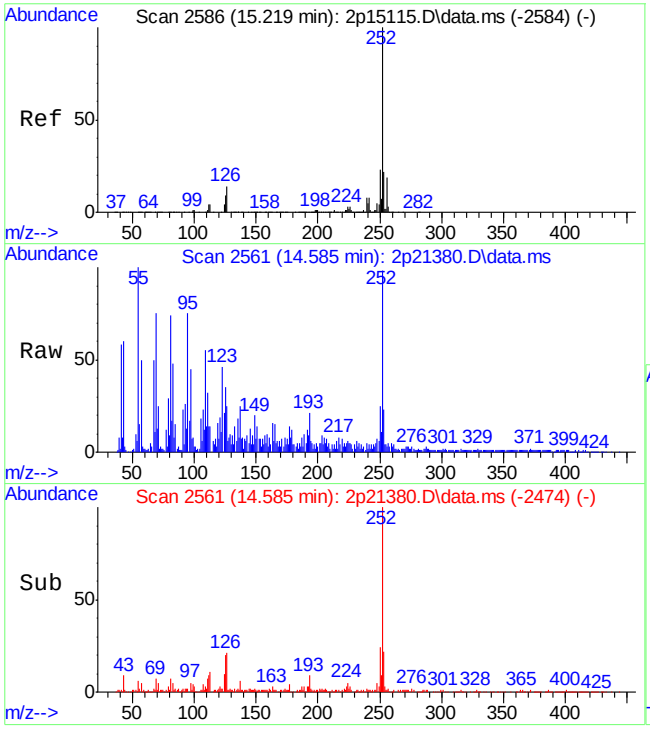
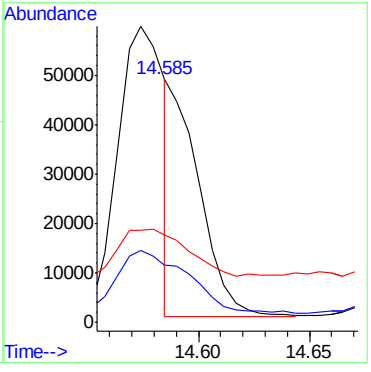
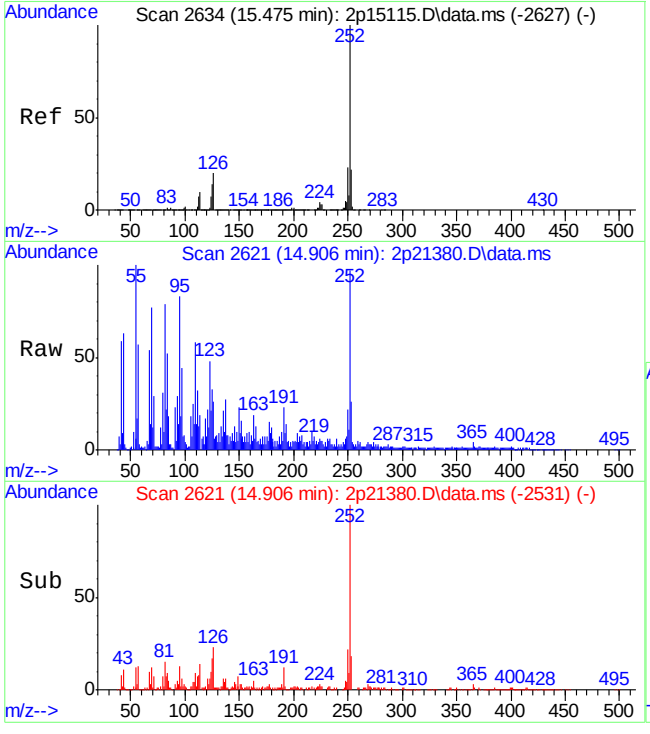


#95
Benzo[k]fluoranthene
Concen: 5.58 ppb m
RT: 14.585 min Scan# 2561
Delta R.T. -0.032 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:252 Resp: 42705

Ion	Ratio	Lower	Upper
252	100		
253	23.8	0.0	56.1
125	36.1	0.0	45.7

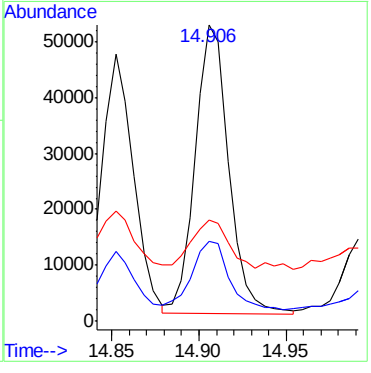




#96
Benzo[a]pyrene
Concen: 9.09 ppb
RT: 14.906 min Scan# 2621
Delta R.T. -0.016 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:252 Resp: 69073

Ion	Ratio	Lower	Upper
252	100		
253	23.0	0.0	51.5
125	16.7	0.0	41.1



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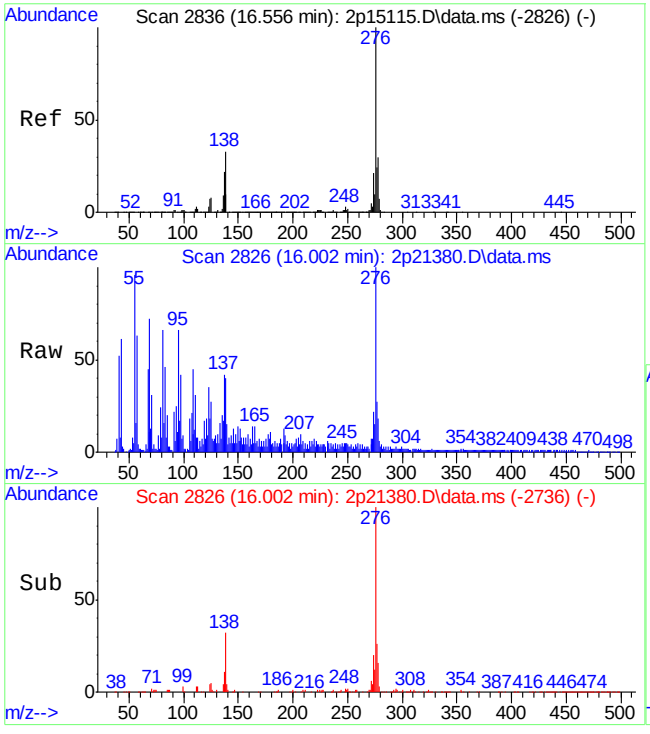
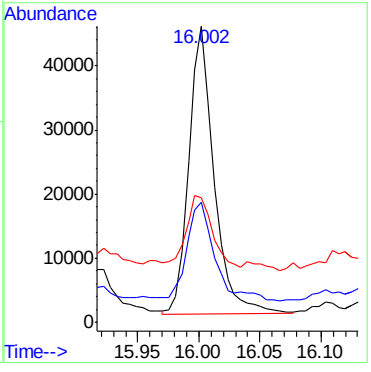
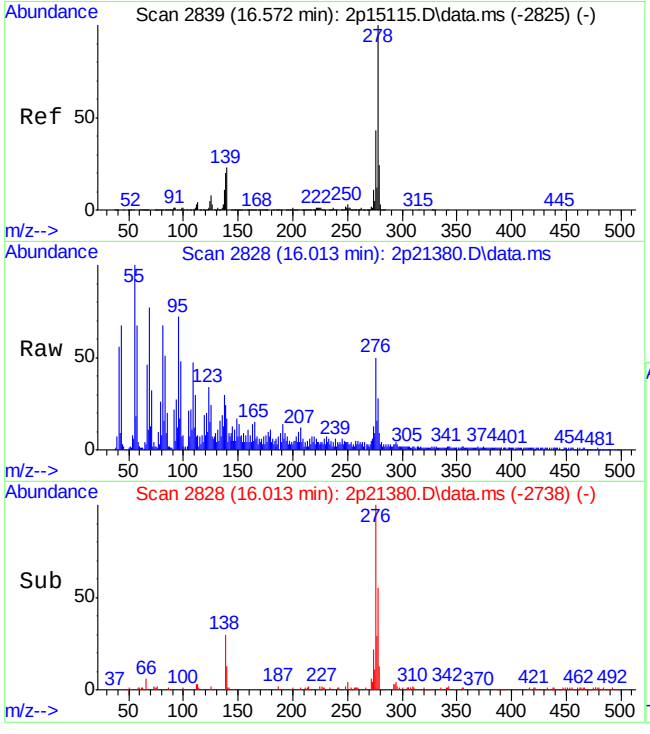


#97
Indeno[1,2,3-cd]pyrene
Concen: 7.29 ppb
RT: 16.002 min Scan# 2826
Delta R.T. -0.016 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:276 Resp: 64240

Ion	Ratio	Lower	Upper
276	100		
138	33.5	0.0	54.7
137	22.8	0.0	49.5

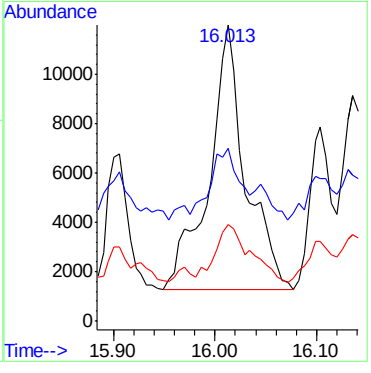




#99
Dibenz[a,h]anthracene
Concen: 3.63 ppb m
RT: 16.013 min Scan# 2828
Delta R.T. -0.016 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:278 Resp: 26644

Ion	Ratio	Lower	Upper
278	100		
139	58.3	0.0	49.9#
279	32.5	0.0	56.4



9.1.26

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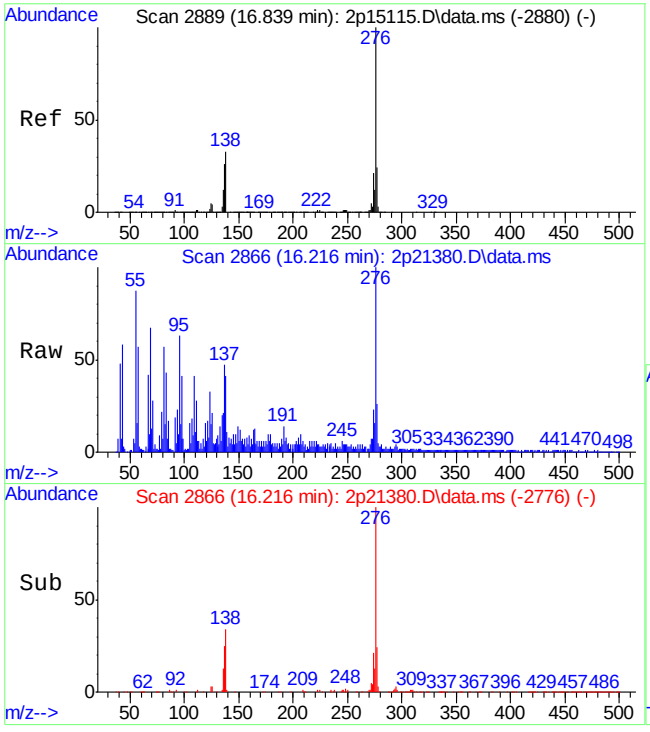
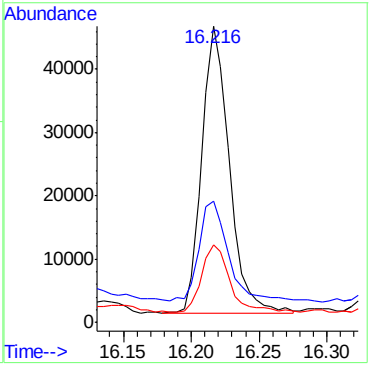


#101
Benzo[g,h,i]perylene
Concen: 8.63 ppb
RT: 16.216 min Scan# 2866
Delta R.T. -0.016 min
Lab File: 2p21380.D
Acq: 22 Mar 2013 11:24 am

Tgt Ion:276 Resp: 64610

Ion	Ratio	Lower	Upper
276	100		
138	34.4	0.0	55.6
277	23.3	0.0	53.3



9.1.26

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21237.D
Acq On : 19 Mar 2013 6:50 pm
Operator : andrews1
Sample : jb30425-15
Misc : op64440,e2p936,33.6
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 20 14:42:42 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.935	152	69806	40.00	ppb	-0.09
24) Naphthalene-d8	4.551	136	265413	40.00	ppb	-0.10
47) Acenaphthene-d10	7.182	164	149006	40.00	ppb	-0.11
69) Phenanthrene-d10	9.445	188	242586	40.00	ppb	-0.11
83) Chrysene-d12	13.328	240	245110	40.00	ppb	-0.09
92) Perylene-d12	14.991	264	217030	40.00	ppb	-0.07
102) 1,4-Dichlorobenzene-d4a	2.935	152	69806	40.00	ppb	-0.09
104) Acenaphthene-d10a	7.182	164	149006	40.00	ppb	-0.11
107) Chrysene-d12a	13.328	240	245110	40.00	ppb	-0.09
109) Naphthalene-d8a	4.551	136	265413	40.00	ppb	#-0.10
System Monitoring Compounds						
5) 2-Fluorophenol	1.839	112	73417	29.38	ppb	-0.06
Spiked Amount 50.000	Range 11 - 58		Recovery = 58.76%#			
8) Phenol-d5	2.711	99	99169	31.99	ppb	-0.06
Spiked Amount 50.000	Range 10 - 59		Recovery = 63.98%#			
25) Nitrobenzene-d5	3.647	82	77504	31.74	ppb	-0.09
Spiked Amount 50.000	Range 19 - 61		Recovery = 63.48%#			
51) 2-Fluorobiphenyl	6.225	172	159092	33.39	ppb	-0.11
Spiked Amount 50.000	Range 21 - 58		Recovery = 66.78%#			
73) 2,4,6-Tribromophenol	8.450	330	21063	38.85	ppb	-0.10
Spiked Amount 50.000	Range 12 - 68		Recovery = 77.70%#			
85) Terphenyl-d14	12.001	244	205373	39.77	ppb	-0.09
Spiked Amount 50.000	Range 16 - 65		Recovery = 79.54%#			
Target Compounds						Qvalue
38) Naphthalene	4.577	128	3886	0.55	ppb	92
56) Acenaphthylene	6.941	152	3514	0.51	ppb	94
66) Fluorene	8.017	166	2221	0.45	ppb	89
77) Phenanthrene	9.477	178	33132	4.53	ppb	99
78) Anthracene	9.557	178	8197	1.13	ppb	94
81) Fluoranthene	11.338	202	69572	9.28	ppb	94
84) Pyrene	11.643	202	64661	7.74	ppb	99
88) Benzo[a]anthracene	13.306	228	38177	5.22	ppb	94
90) Chrysene	13.360	228	38623	5.55	ppb	99
94) Benzo[b]fluoranthene	14.601	252	43527m	5.88	ppb	
95) Benzo[k]fluoranthene	14.611	252	23344m	3.61	ppb	
96) Benzo[a]pyrene	14.932	252	35351	5.50	ppb	94
97) Indeno[1,2,3-cd]pyrene	16.023	276	23130	3.10	ppb	84
99) Dibenz[a,h]anthracene	16.040	278	9726	1.57	ppb	91
101) Benzo[g,h,i]perylene	16.237	276	21761	3.44	ppb	92

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

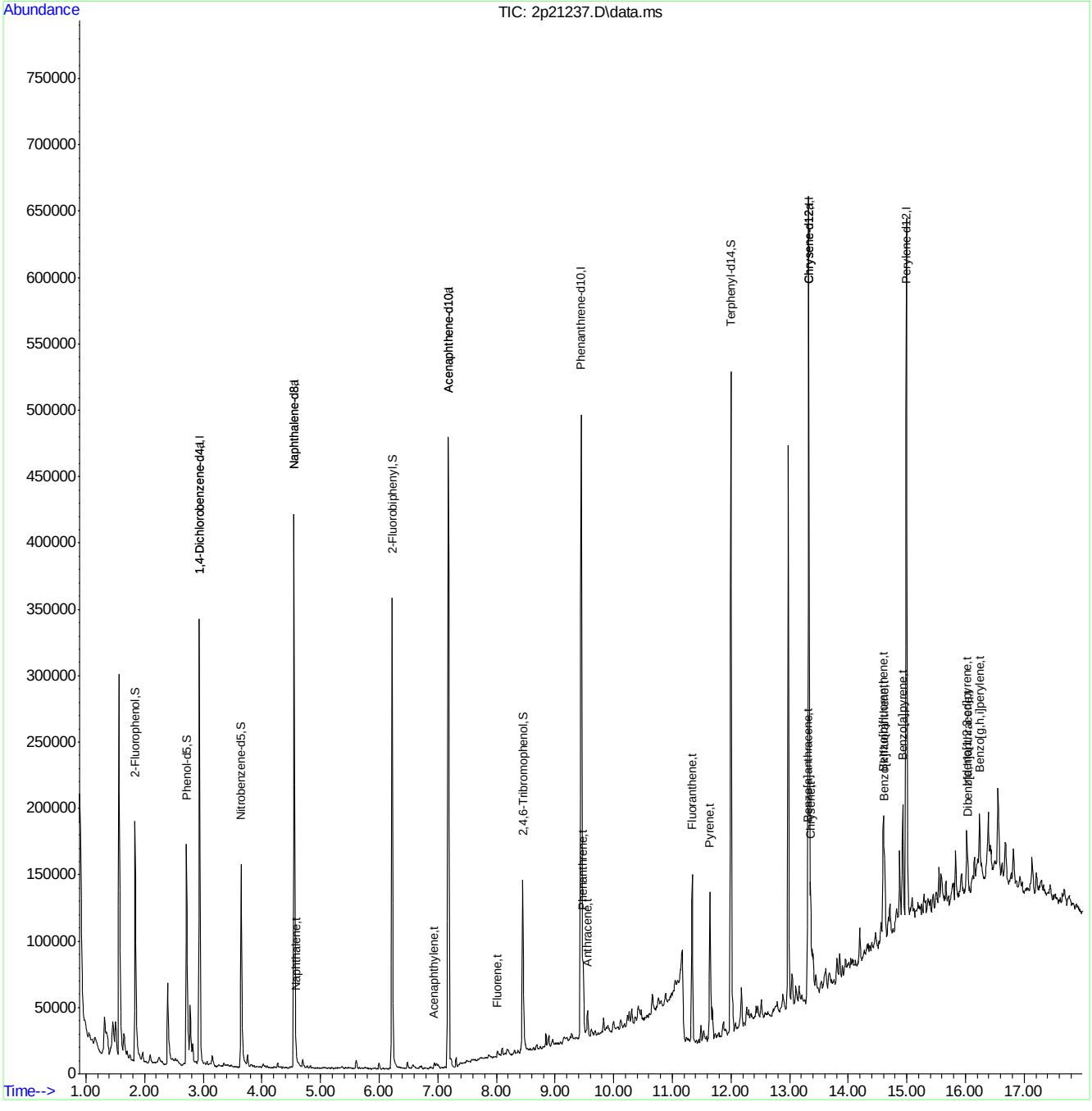
9.1.27

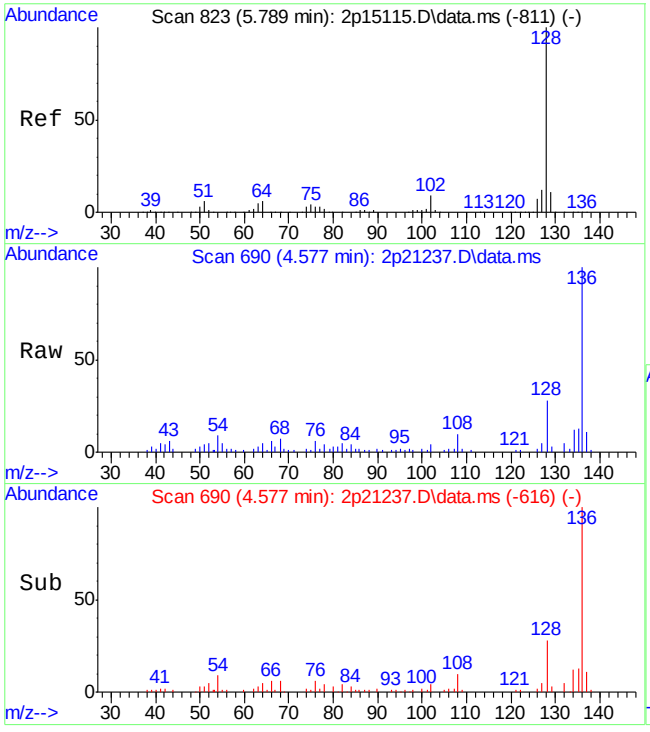
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21237.D
Acq On : 19 Mar 2013 6:50 pm
Operator : andrews1
Sample : jb30425-15
Misc : op64440,e2p936,33.6
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 20 14:42:42 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

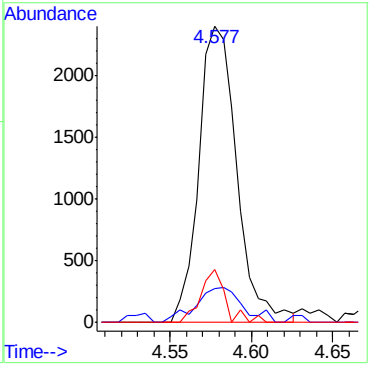


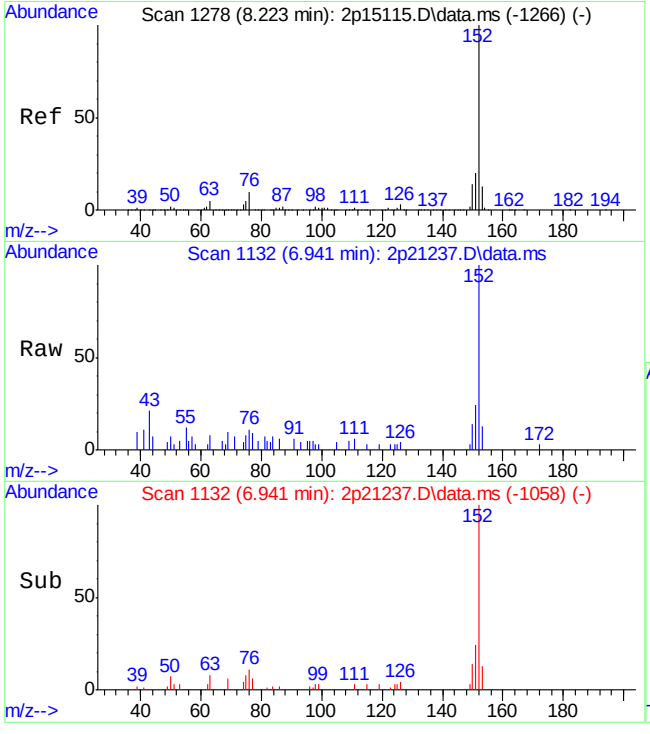


#38
Naphthalene
Concen: 0.55 ppb
RT: 4.577 min Scan# 690
Delta R.T. -0.102 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:128 Resp: 3886

Ion	Ratio	Lower	Upper
128	100		
129	10.6	0.0	41.0
127	18.3	0.0	43.0

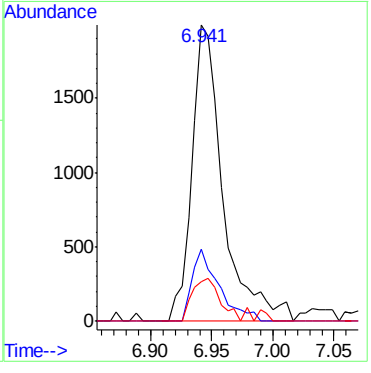


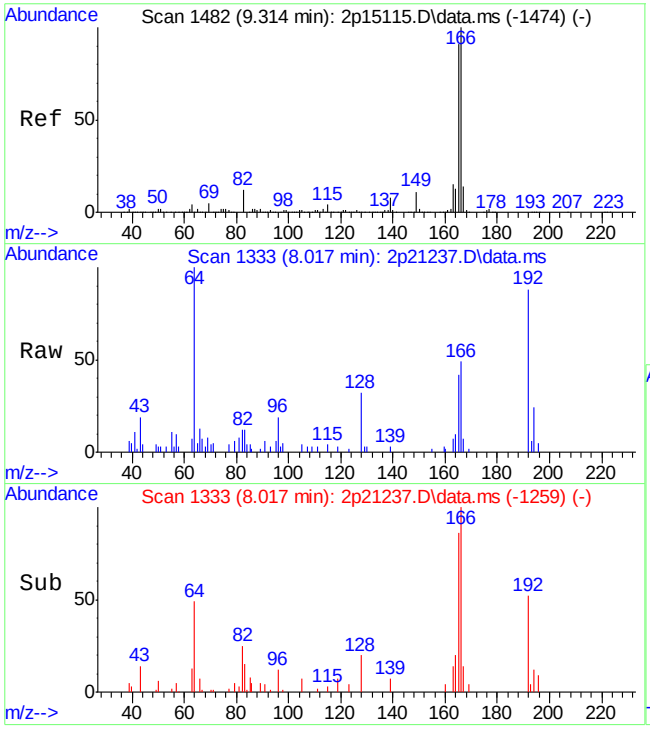


#56
Acenaphthylene
Concen: 0.51 ppb
RT: 6.941 min Scan# 1132
Delta R.T. -0.102 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:152 Resp: 3514

Ion	Ratio	Lower	Upper
152	100		
151	24.1	0.0	49.9
153	13.2	0.0	43.1

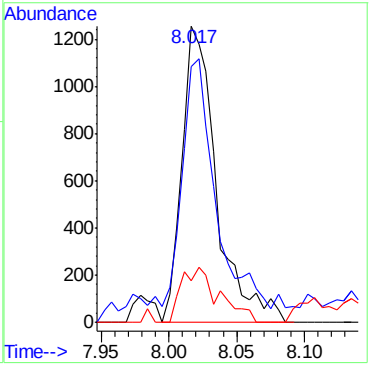


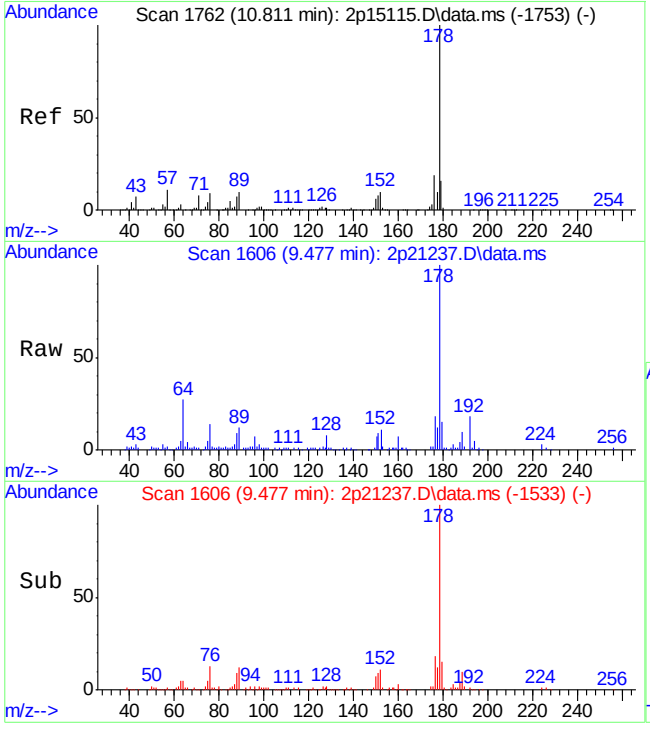


#66
Fluorene
Concen: 0.45 ppb
RT: 8.017 min Scan# 1333
Delta R.T. -0.102 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:166 Resp: 2221

Ion	Ratio	Lower	Upper
166	100		
165	81.0	62.5	122.5
167	11.8	0.0	42.9

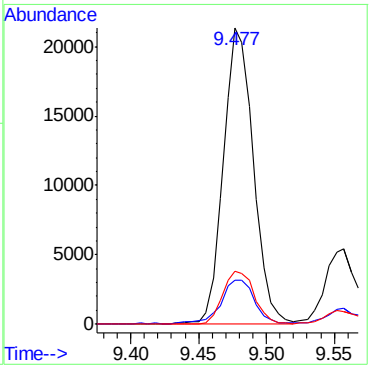


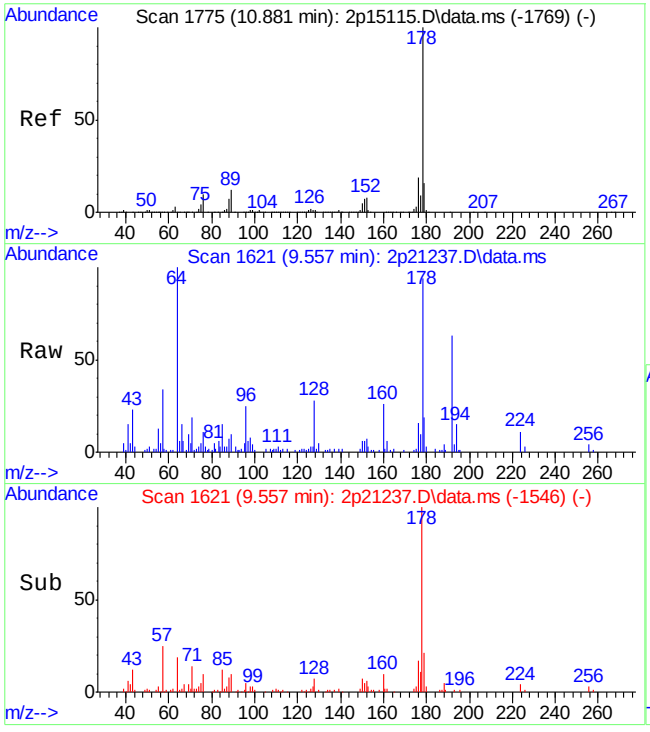


#77
Phenanthrene
Concen: 4.53 ppb
RT: 9.477 min Scan# 1606
Delta R.T. -0.107 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:178 Resp: 33132

Ion	Ratio	Lower	Upper
178	100		
179	14.7	0.0	44.4
176	18.1	0.0	48.6

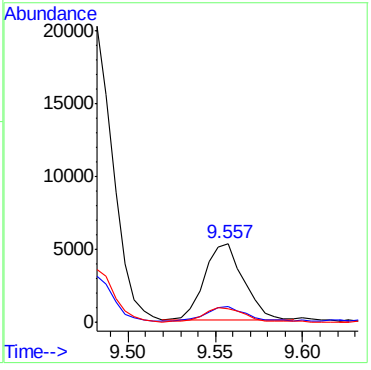


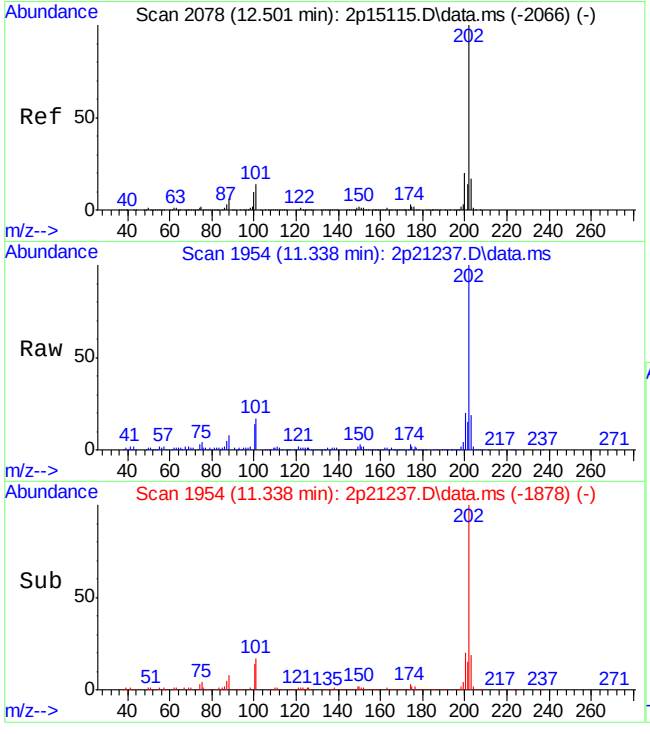


#78
Anthracene
Concen: 1.13 ppb
RT: 9.557 min Scan# 1621
Delta R.T. -0.096 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:178 Resp: 8197

Ion	Ratio	Lower	Upper
178	100		
179	19.5	0.0	44.5
176	17.1	0.0	46.5

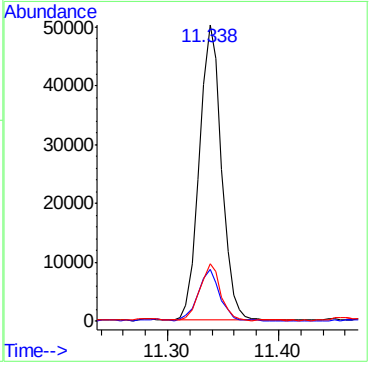


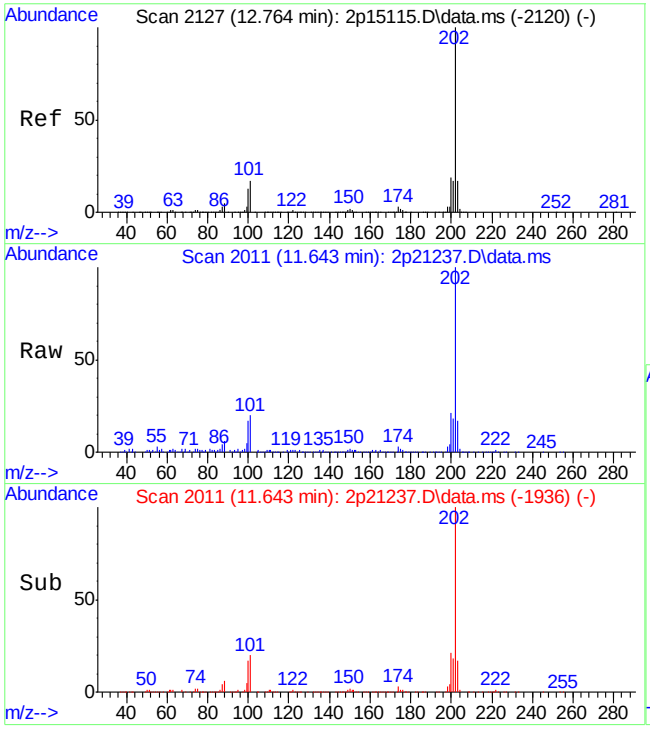


#81
Fluoranthene
Concen: 9.28 ppb
RT: 11.338 min Scan# 1954
Delta R.T. -0.091 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:202 Resp: 69572

Ion	Ratio	Lower	Upper
202	100		
101	17.4	0.0	41.3
203	19.2	0.0	49.1

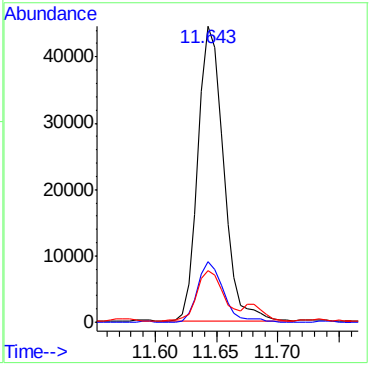


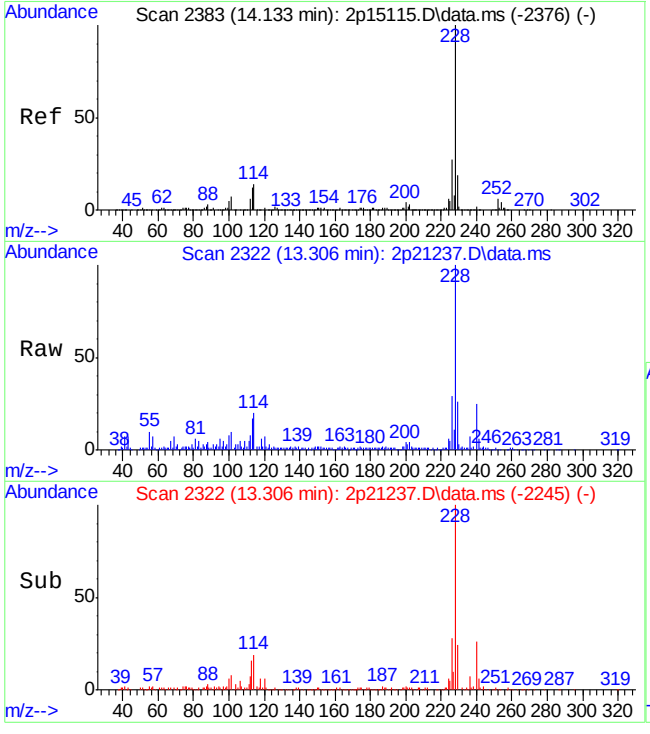


#84
Pyrene
Concen: 7.74 ppb
RT: 11.643 min Scan# 2011
Delta R.T. -0.096 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:202 Resp: 64661

Ion	Ratio	Lower	Upper
202	100		
200	20.5	0.0	49.6
203	16.9	0.0	46.9

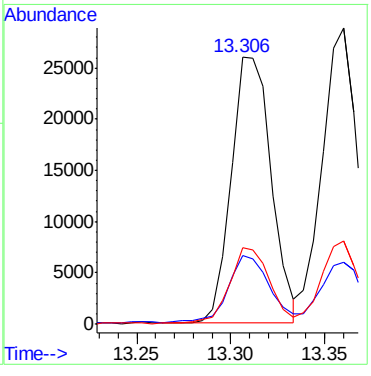




#88
Benzo[a]anthracene
Concen: 5.22 ppb
RT: 13.306 min Scan# 2322
Delta R.T. -0.086 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:228 Resp: 38177

Ion	Ratio	Lower	Upper
228	100		
229	24.7	0.0	50.7
226	28.5	0.0	56.7



9.1.27

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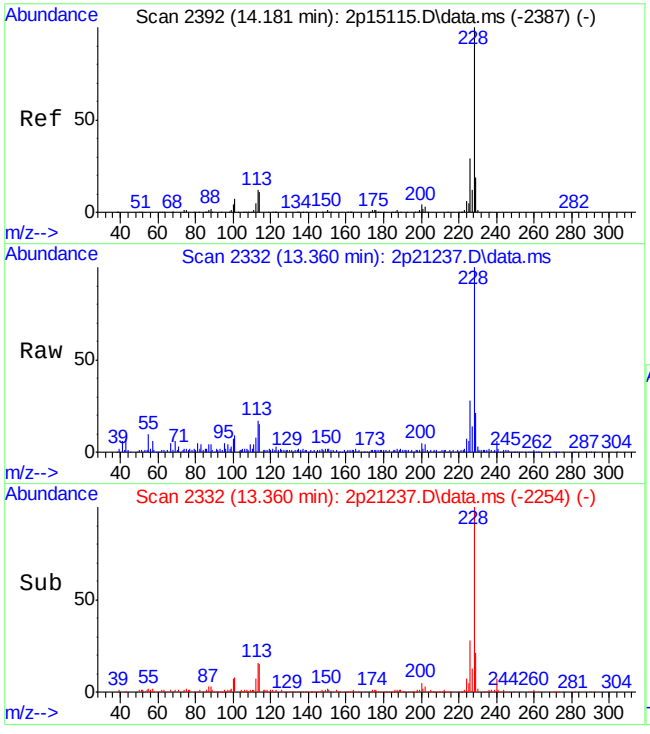
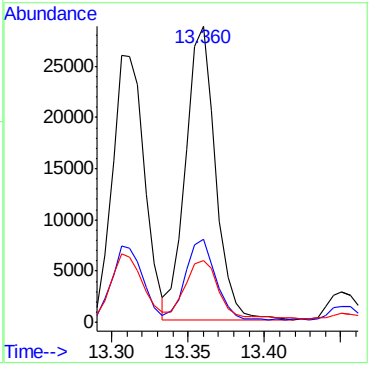
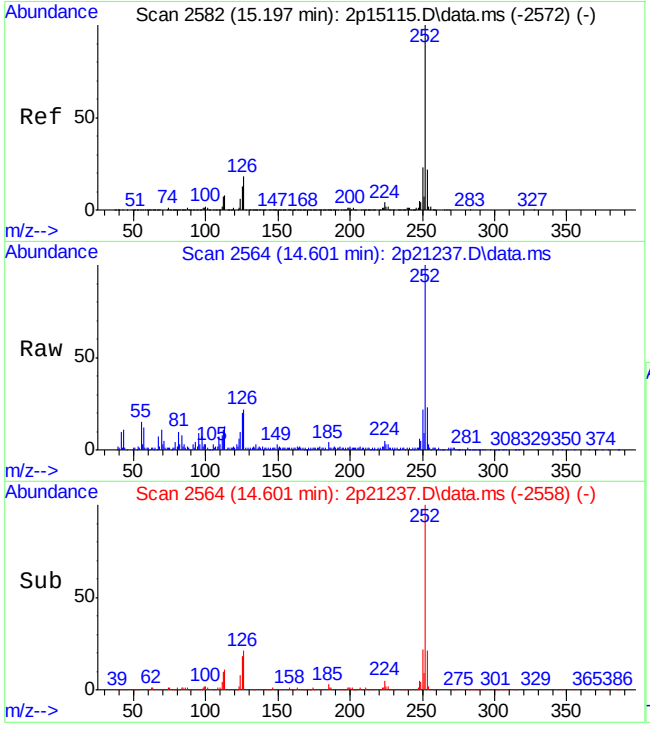


#90
Chrysene
Concen: 5.55 ppb
RT: 13.360 min Scan# 2332
Delta R.T. -0.080 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:228 Resp: 38623

Ion	Ratio	Lower	Upper
228	100		
226	27.6	0.0	58.4
229	19.5	0.0	50.1

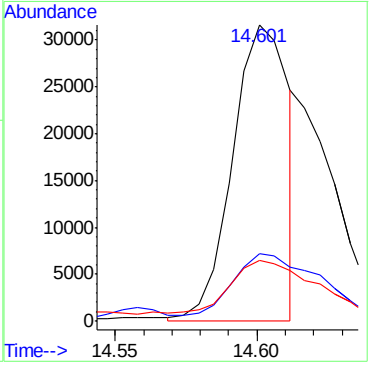




#94
Benzo[b]fluoranthene
Concen: 5.88 ppb m
RT: 14.601 min Scan# 2564
Delta R.T. -0.070 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:252 Resp: 43527

Ion	Ratio	Lower	Upper
252	100		
253	22.6	0.0	51.1
125	20.4	0.0	40.8



9.1.27

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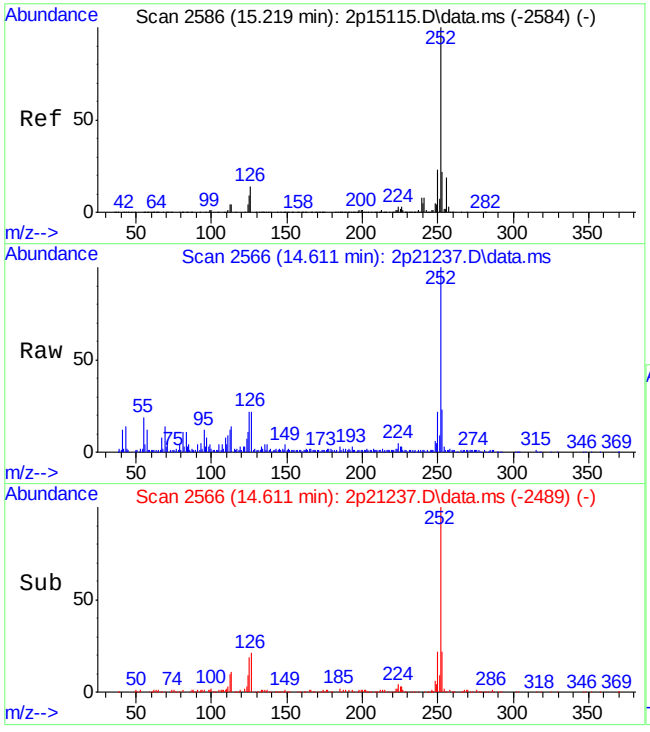
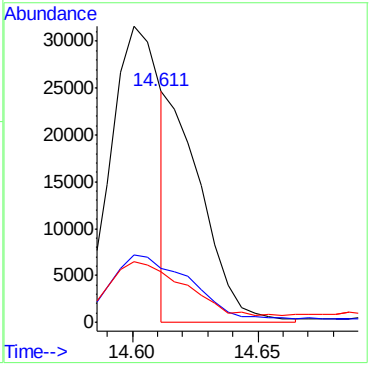
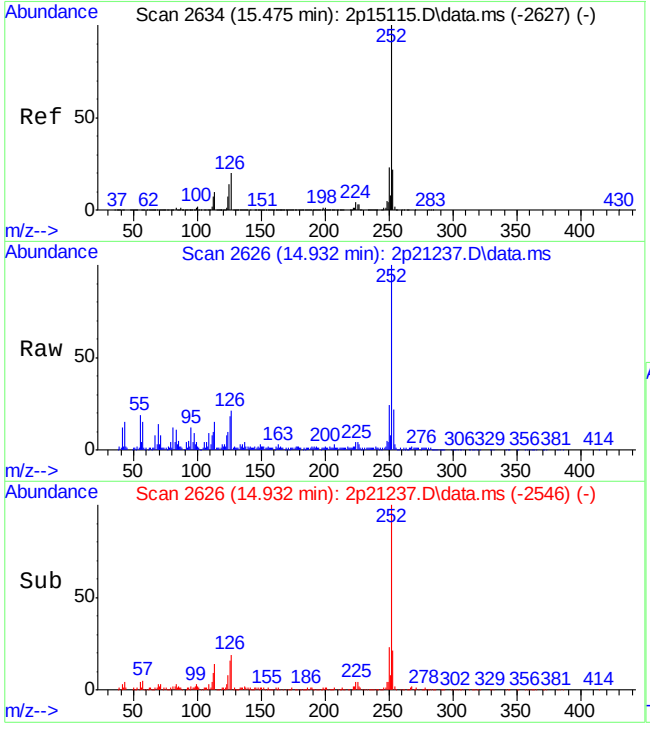


#95
Benzo[k]fluoranthene
Concen: 3.61 ppb m
RT: 14.611 min Scan# 2566
Delta R.T. -0.086 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:252 Resp: 23344

Ion	Ratio	Lower	Upper
252	100		
253	23.2	0.0	56.1
125	21.9	0.0	45.7

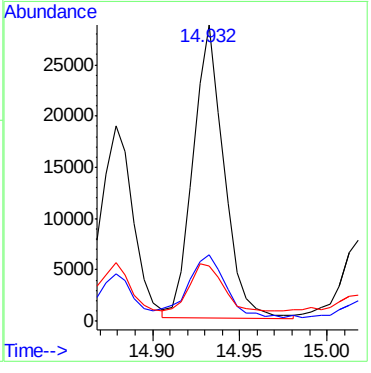




#96
Benzo[a]pyrene
Concen: 5.50 ppb
RT: 14.932 min Scan# 2626
Delta R.T. -0.070 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:252 Resp: 35351

Ion	Ratio	Lower	Upper
252	100		
253	19.7	0.0	51.5
125	15.3	0.0	41.1



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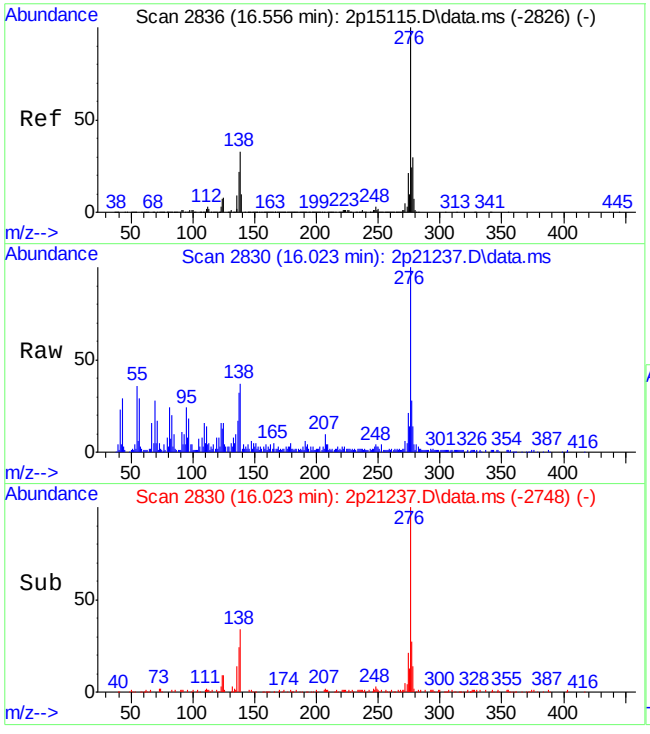
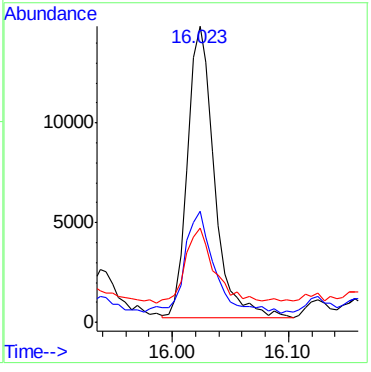
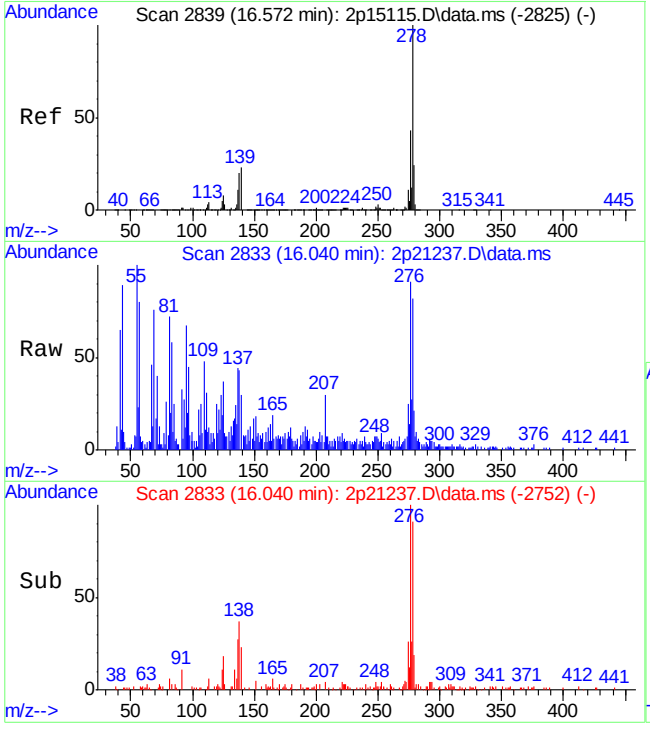


#97
Indeno[1,2,3-cd]pyrene
Concen: 3.10 ppb
RT: 16.023 min Scan# 2830
Delta R.T. -0.059 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:276 Resp: 23130

Ion	Ratio	Lower	Upper
276	100		
138	34.0	0.0	54.7
137	25.0	0.0	49.5

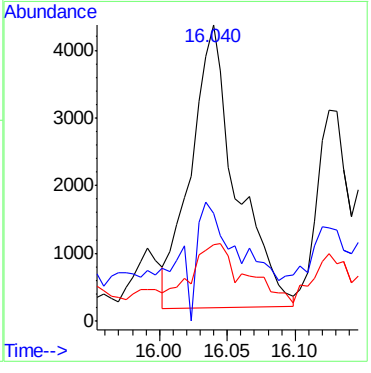




#99
Dibenz[a,h]anthracene
Concen: 1.57 ppb
RT: 16.040 min Scan# 2833
Delta R.T. -0.064 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:278 Resp: 9726

Ion	Ratio	Lower	Upper
278	100		
139	22.7	0.0	49.9
279	20.8	0.0	56.4



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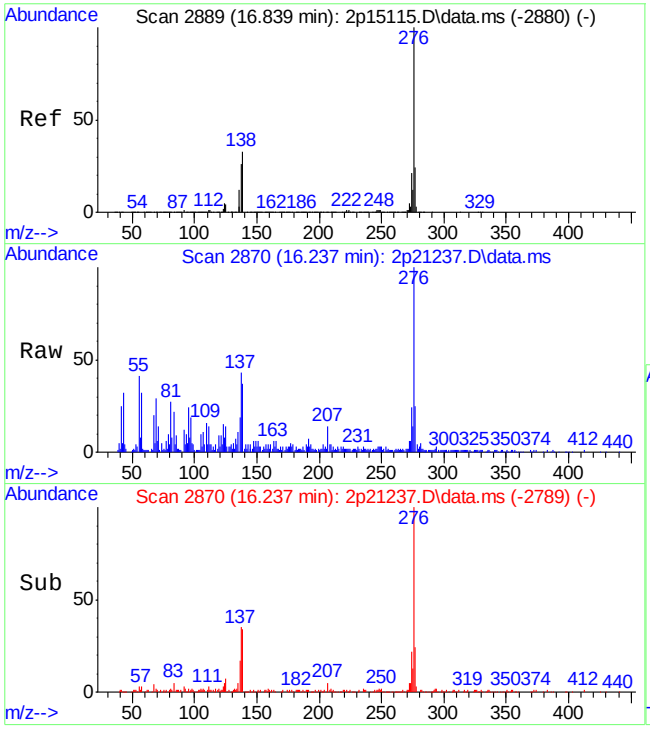
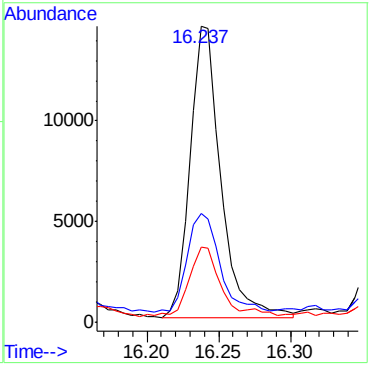


#101
Benzo[g,h,i]perylene
Concen: 3.44 ppb
RT: 16.237 min Scan# 2870
Delta R.T. -0.064 min
Lab File: 2p21237.D
Acq: 19 Mar 2013 6:50 pm

Tgt Ion:276 Resp: 21761

Ion	Ratio	Lower	Upper
276	100		
138	33.2	0.0	55.6
277	23.0	0.0	53.3



9.1.27

9

Manual Integrations APPROVED (compounds with "m" flag)
Jennifer Laidlaw
03/24/13 00:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21381.D
Acq On : 22 Mar 2013 11:47 am
Operator : andrews1
Sample : jb30425-15cf
Misc : op64440,e2p941,32.8
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 23 13:24:24 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.898	152	59328	40.00	ppb	-0.03
24) Naphthalene-d8	4.508	136	232582	40.00	ppb	-0.03
47) Acenaphthene-d10	7.134	164	130972	40.00	ppb	-0.03
69) Phenanthrene-d10	9.402	188	216697	40.00	ppb	-0.03
83) Chrysene-d12	13.285	240	211251	40.00	ppb	-0.03
92) Perylene-d12	14.954	264	191484	40.00	ppb	-0.03
102) 1,4-Dichlorobenzene-d4a	2.898	152	59328	40.00	ppb	-0.03
104) Acenaphthene-d10a	7.134	164	130972	40.00	ppb	-0.03
107) Chrysene-d12a	13.285	240	211251	40.00	ppb	-0.03
109) Naphthalene-d8a	4.508	136	232582	40.00	ppb	#-0.03
System Monitoring Compounds						
5) 2-Fluorophenol	1.812	112	64587	30.41	ppb	-0.02
Spiked Amount 50.000	Range 11 - 58		Recovery = 60.82%#			
8) Phenol-d5	2.684	99	83696	31.77	ppb	-0.02
Spiked Amount 50.000	Range 10 - 59		Recovery = 63.54%#			
25) Nitrobenzene-d5	3.609	82	69775	32.61	ppb	-0.02
Spiked Amount 50.000	Range 19 - 61		Recovery = 65.22%#			
51) 2-Fluorobiphenyl	6.182	172	147050	35.11	ppb	-0.03
Spiked Amount 50.000	Range 21 - 58		Recovery = 70.22%#			
73) 2,4,6-Tribromophenol	8.407	330	17070	35.25	ppb	-0.03
Spiked Amount 50.000	Range 12 - 68		Recovery = 70.50%#			
85) Terphenyl-d14	11.953	244	158762	35.68	ppb	-0.03
Spiked Amount 50.000	Range 16 - 65		Recovery = 71.36%#			
Target Compounds						Qvalue
38) Naphthalene	4.535	128	8048	1.29	ppb	98
44) 2-Methylnaphthalene	5.562	141	2513	0.71	ppb	95
56) Acenaphthylene	6.899	152	6110	1.01	ppb	94
59) Acenaphthene	7.182	153	7587	2.04	ppb	93
66) Fluorene	7.974	166	9582	2.23	ppb	99
77) Phenanthrene	9.434	178	142681	21.86	ppb	98
78) Anthracene	9.509	178	35741	5.53	ppb	90
81) Fluoranthene	11.290	202	196170	29.28	ppb	93
84) Pyrene	11.600	202	174040	24.18	ppb	99
88) Benzo[a]anthracene	13.269	228	90887	14.43	ppb	96
90) Chrysene	13.317	228	87771	14.64	ppb	99
94) Benzo[b]fluoranthene	14.563	252	72287m	11.07	ppb	
95) Benzo[k]fluoranthene	14.569	252	59771m	10.48	ppb	
96) Benzo[a]pyrene	14.895	252	73800	13.01	ppb	95
97) Indeno[1,2,3-cd]pyrene	15.986	276	44890	6.82	ppb	84
99) Dibenz[a,h]anthracene	16.002	278	18186	3.32	ppb	93
101) Benzo[g,h,i]perylene	16.205	276	40925	7.32	ppb	89

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

9.1.28
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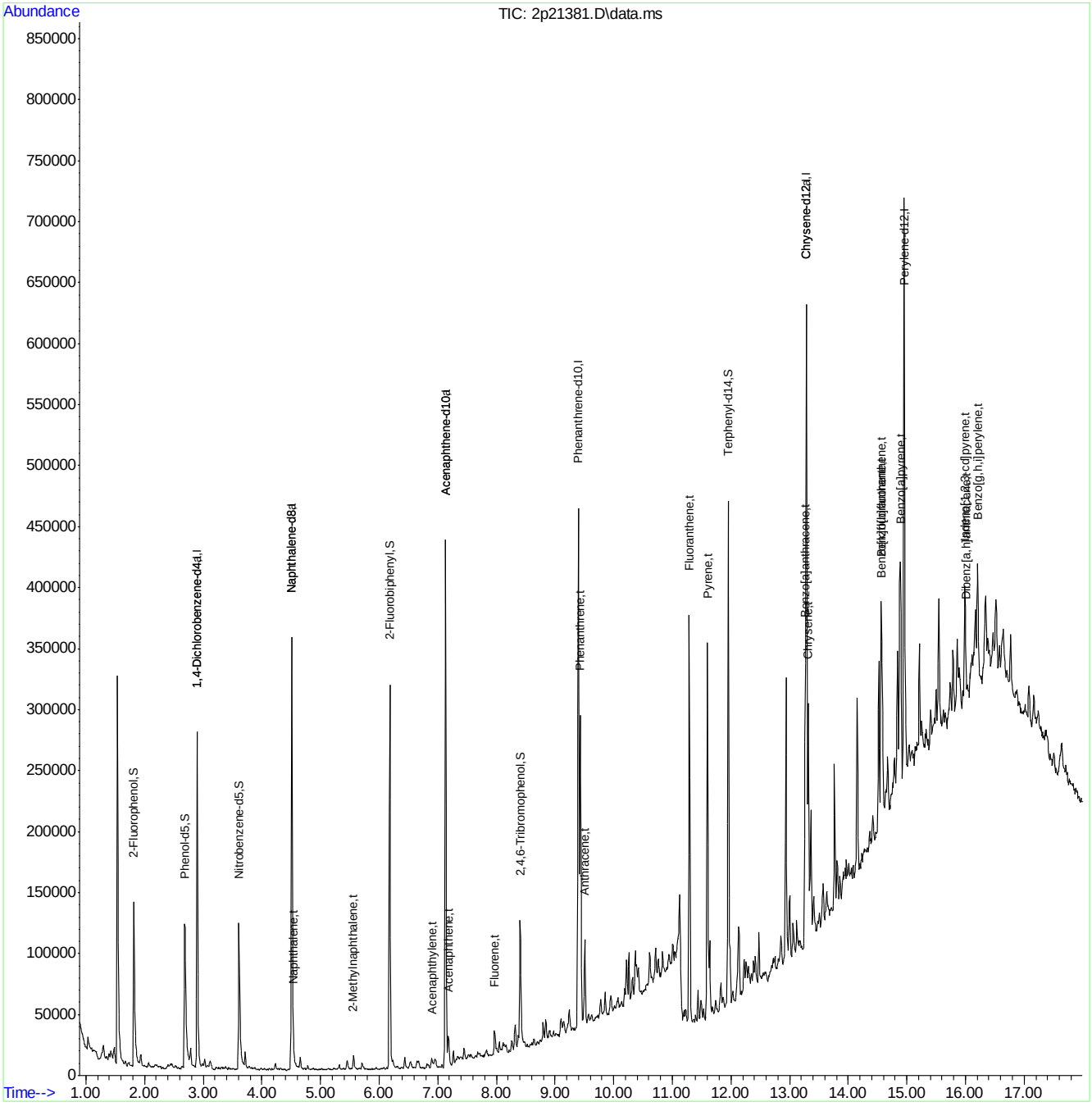
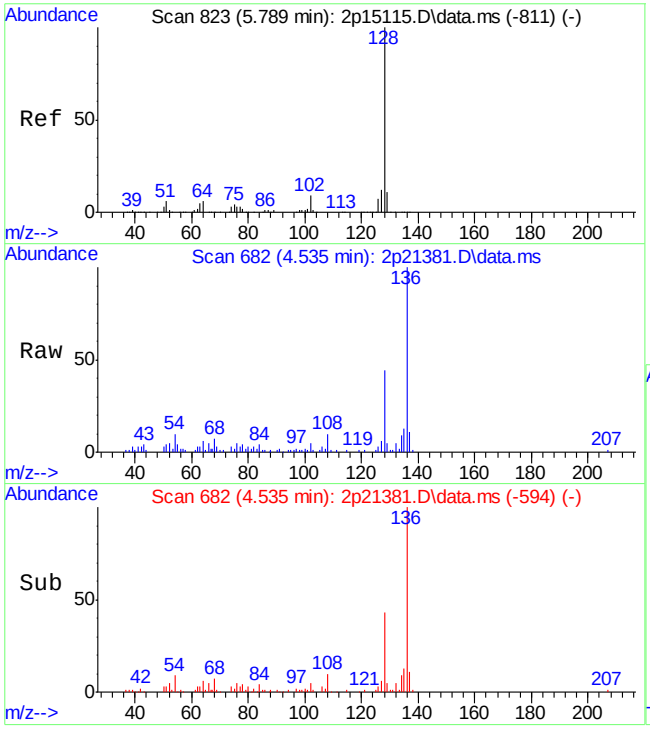
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21381.D
Acq On : 22 Mar 2013 11:47 am
Operator : andrews1
Sample : jb30425-15cf
Misc : op64440,e2p941,32.8
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 23 13:24:24 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

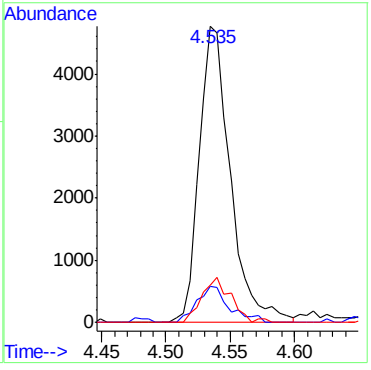


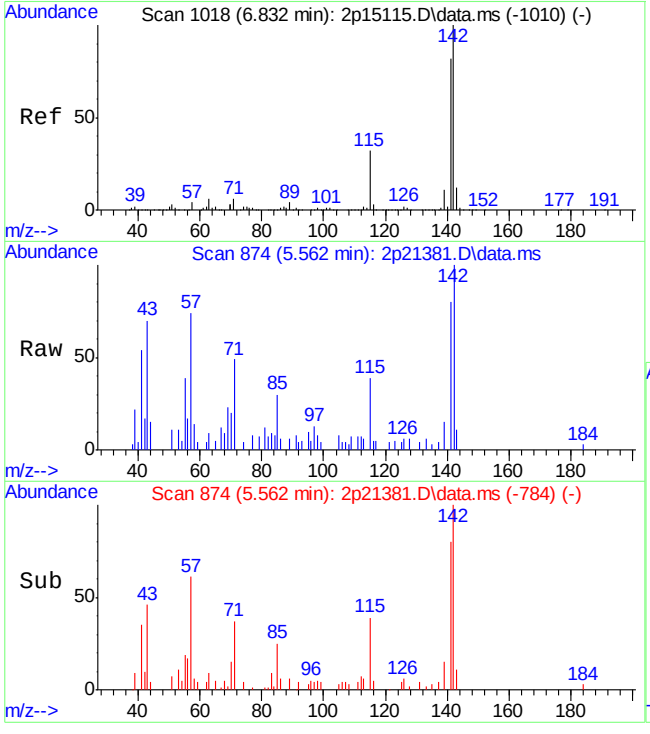


#38
Naphthalene
Concen: 1.29 ppb
RT: 4.535 min Scan# 682
Delta R.T. -0.027 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:128 Resp: 8048

Ion	Ratio	Lower	Upper
128	100		
129	12.4	0.0	41.0
127	12.6	0.0	43.0

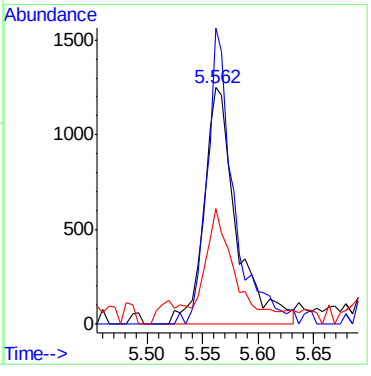




#44
2-Methylnaphthalene
Concen: 0.71 ppb
RT: 5.562 min Scan# 874
Delta R.T. -0.016 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:141 Resp: 2513

Ion	Ratio	Lower	Upper
141	100		
142	125.7	88.4	148.4
115	43.3	14.8	74.8



9.1.28

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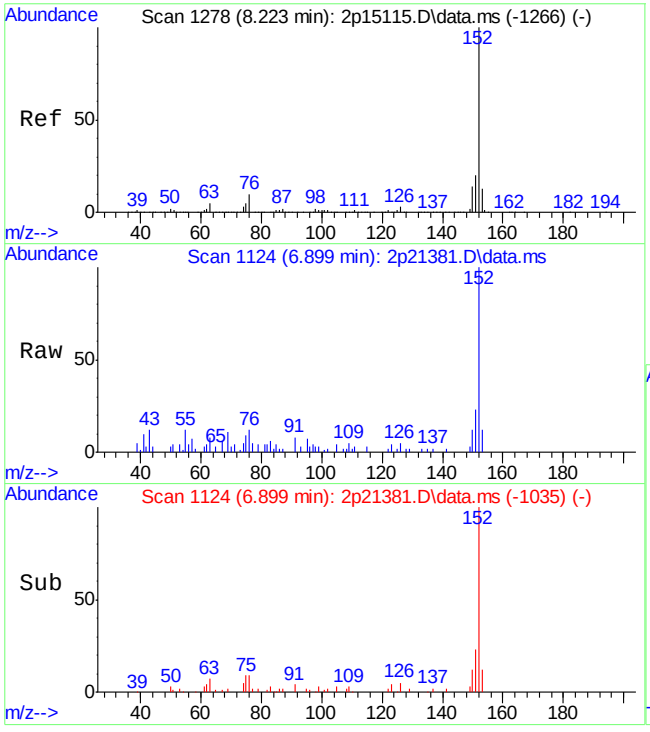
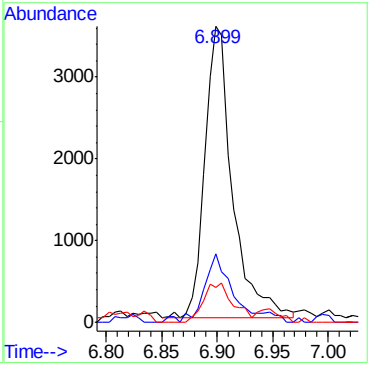
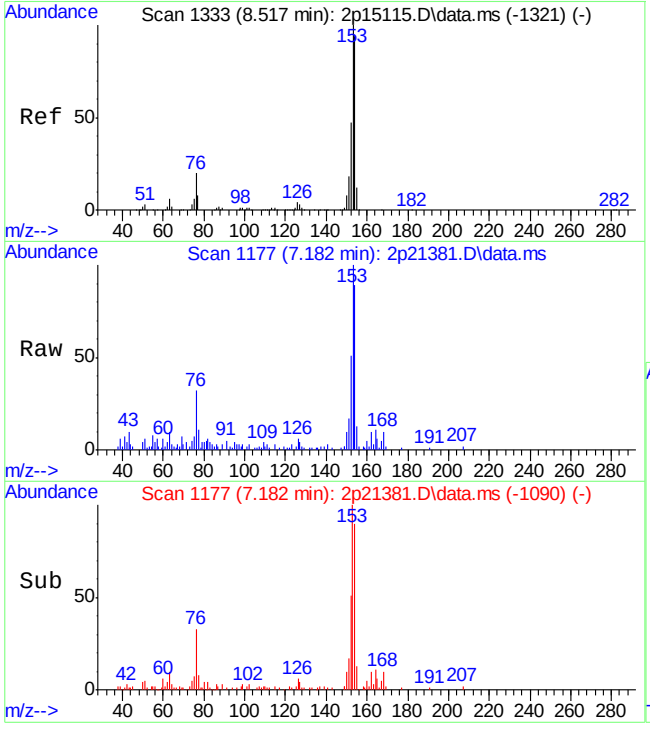


#56
Acenaphthylene
Concen: 1.01 ppb
RT: 6.899 min Scan# 1124
Delta R.T. -0.021 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:152 Resp: 6110

Ion	Ratio	Lower	Upper
152	100		
151	23.6	0.0	49.9
153	11.9	0.0	43.1

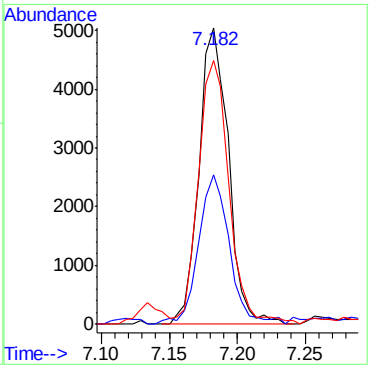




#59
Acenaphthene
Concen: 2.04 ppb
RT: 7.182 min Scan# 1177
Delta R.T. -0.032 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:153 Resp: 7587

Ion	Ratio	Lower	Upper
153	100		
152	48.8	17.8	77.8
154	86.3	65.2	125.2



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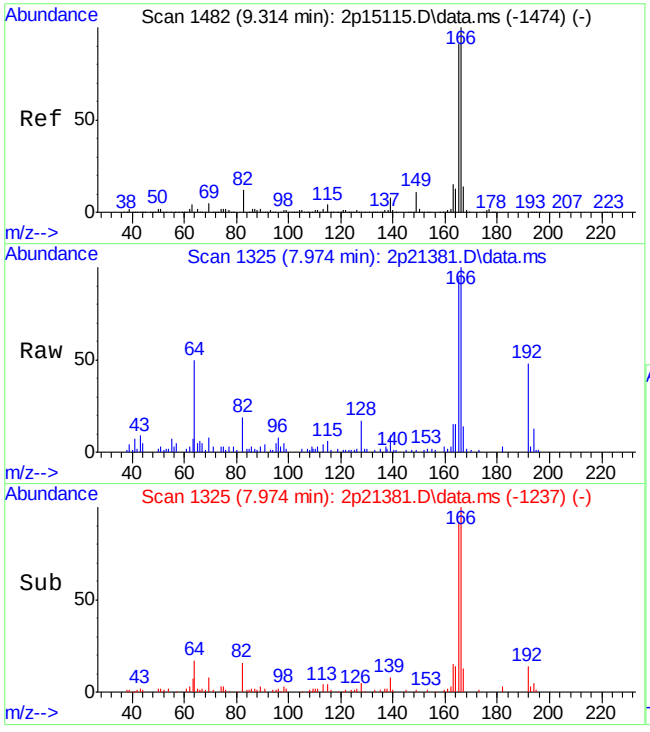
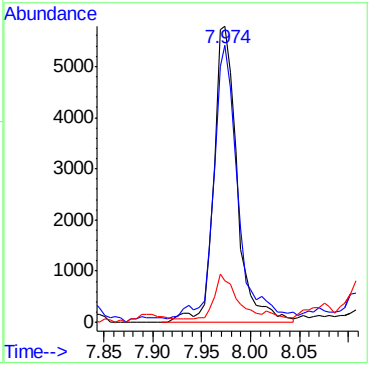
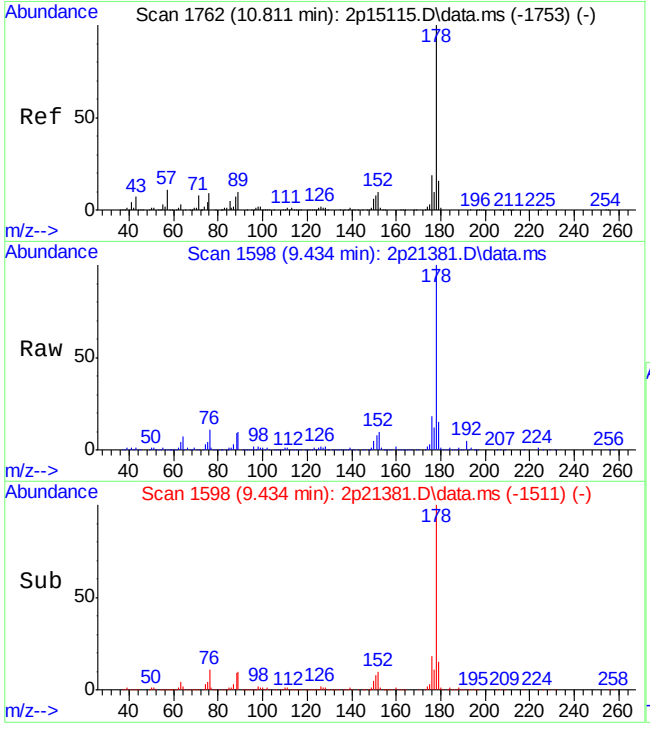


#66
Fluorene
Concen: 2.23 ppb
RT: 7.974 min Scan# 1325
Delta R.T. -0.027 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:166 Resp: 9582

Ion	Ratio	Lower	Upper
166	100		
165	91.8	62.5	122.5
167	12.6	0.0	42.9

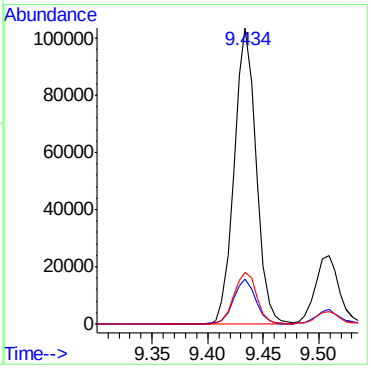




#77
Phenanthrene
Concen: 21.86 ppb
RT: 9.434 min Scan# 1598
Delta R.T. -0.032 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:178 Resp: 142681

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	44.4
176	17.6	0.0	48.6



9.1.28

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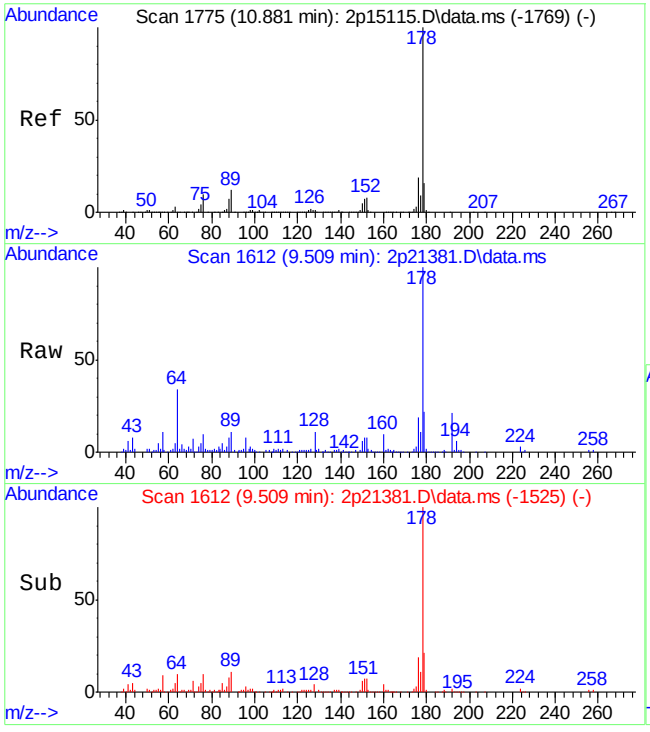
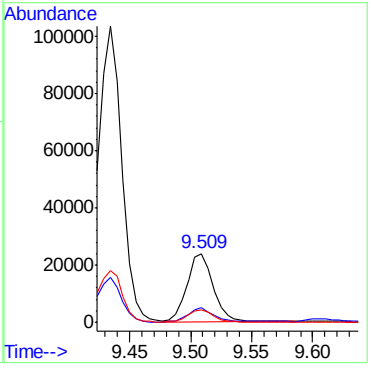
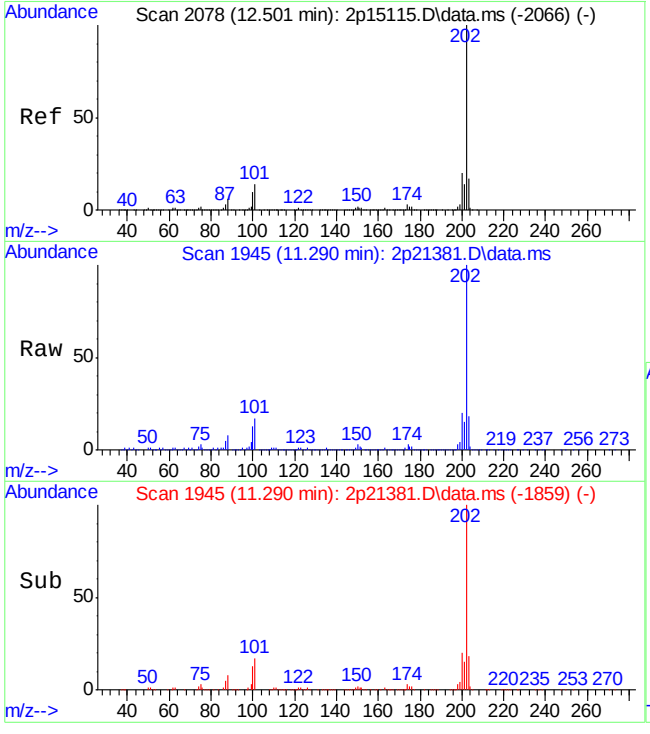


#78
Anthracene
Concen: 5.53 ppb
RT: 9.509 min Scan# 1612
Delta R.T. -0.032 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:178 Resp: 35741

Ion	Ratio	Lower	Upper
178	100		
179	21.2	0.0	44.5
176	18.4	0.0	46.5

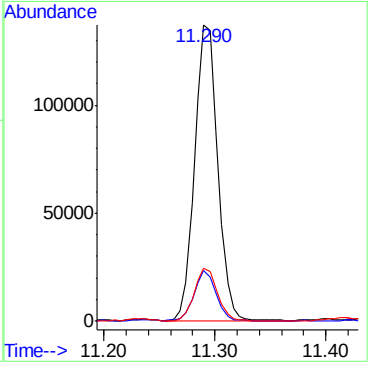




#81
Fluoranthene
Concen: 29.28 ppb
RT: 11.290 min Scan# 1945
Delta R.T. -0.037 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:202 Resp: 196170

Ion	Ratio	Lower	Upper
202	100		
101	17.0	0.0	41.3
203	17.9	0.0	49.1



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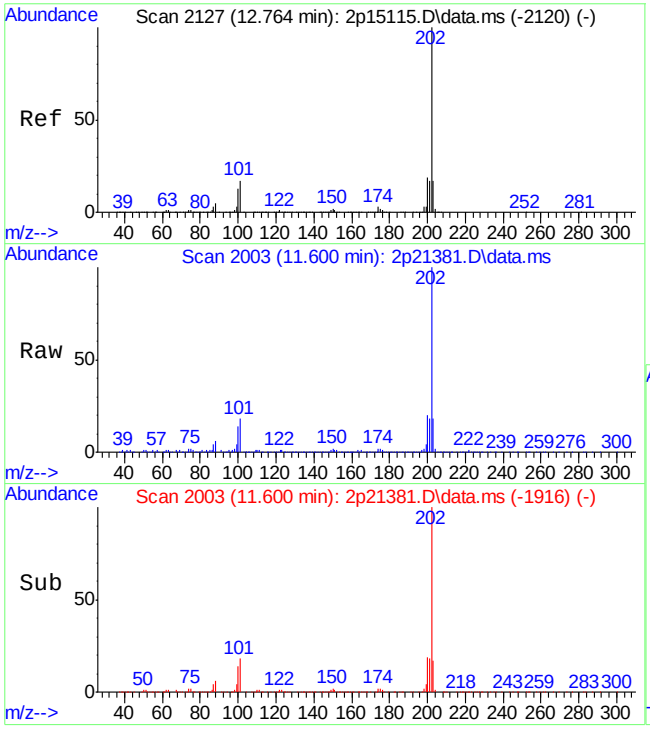
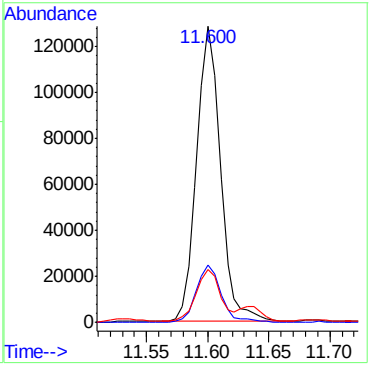
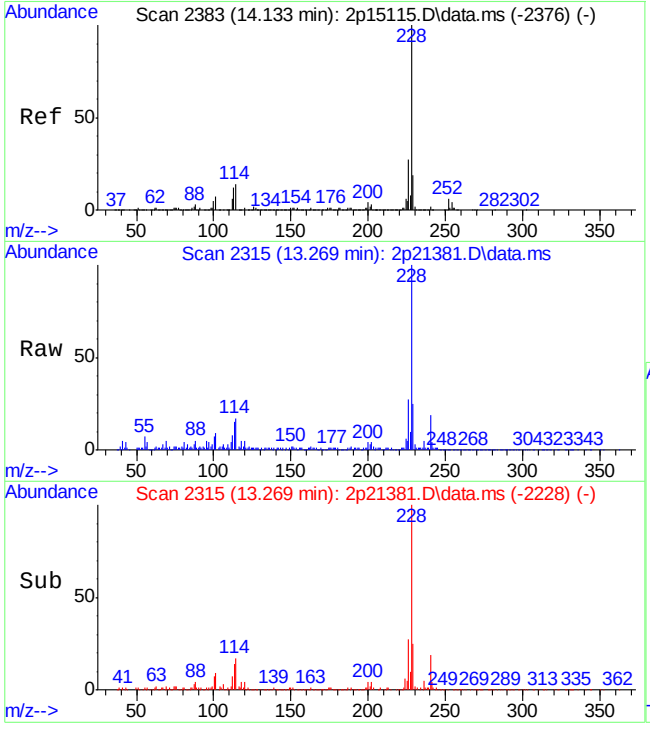


#84
Pyrene
Concen: 24.18 ppb
RT: 11.600 min Scan# 2003
Delta R.T. -0.032 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:202 Resp: 174040

Ion	Ratio	Lower	Upper
202	100		
200	19.5	0.0	49.6
203	17.3	0.0	46.9

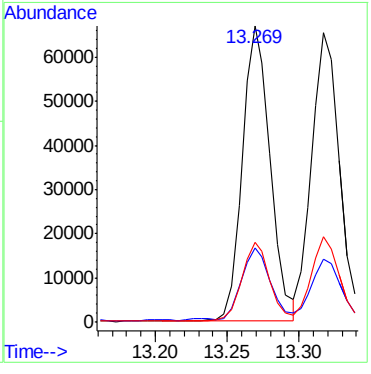




#88
Benzo[a]anthracene
Concen: 14.43 ppb
RT: 13.269 min Scan# 2315
Delta R.T. -0.032 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:228 Resp: 90887

Ion	Ratio	Lower	Upper
228	100		
229	24.3	0.0	50.7
226	26.5	0.0	56.7



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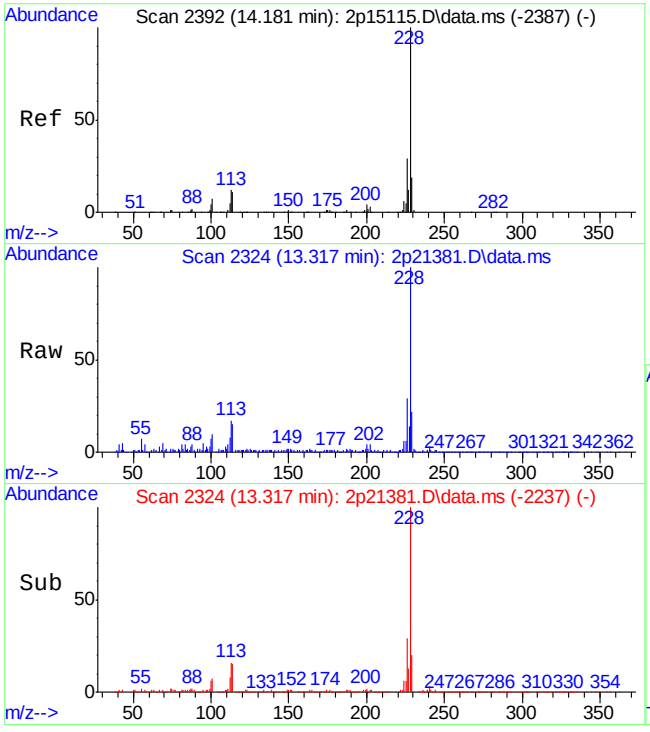
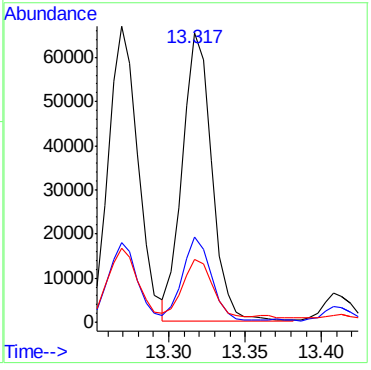
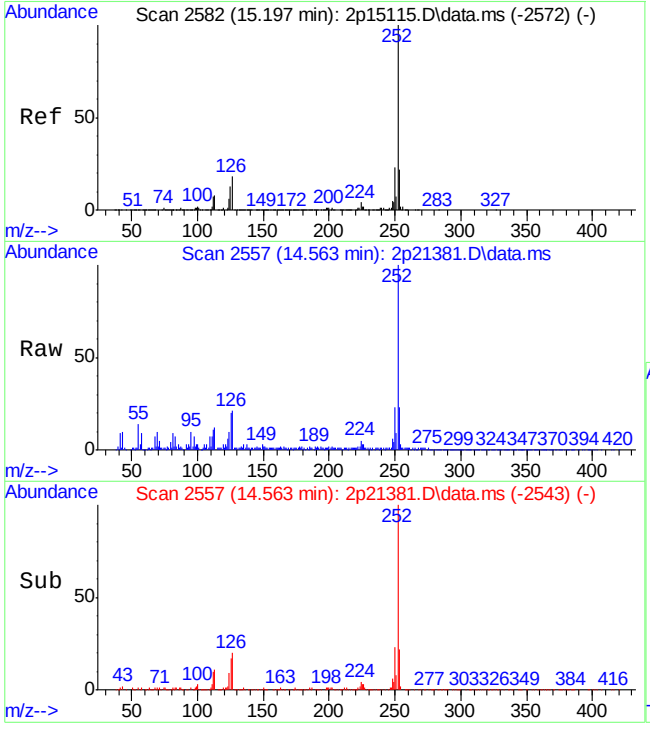


#90
Chrysene
Concen: 14.64 ppb
RT: 13.317 min Scan# 2324
Delta R.T. -0.032 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:228 Resp: 87771

Ion	Ratio	Lower	Upper
228	100		
226	29.0	0.0	58.4
229	20.3	0.0	50.1

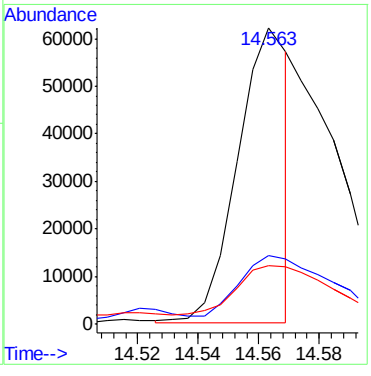




#94
Benzo[b]fluoranthene
Concen: 11.07 ppb m
RT: 14.563 min Scan# 2557
Delta R.T. -0.027 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:252 Resp: 72287

Ion	Ratio	Lower	Upper
252	100		
253	23.0	0.0	51.1
125	19.8	0.0	40.8



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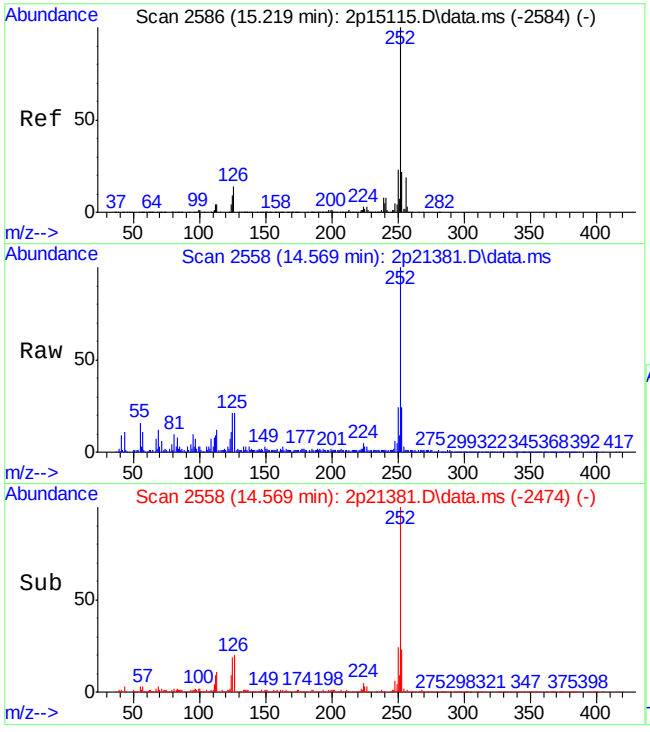
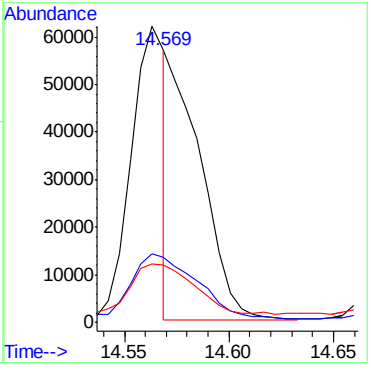
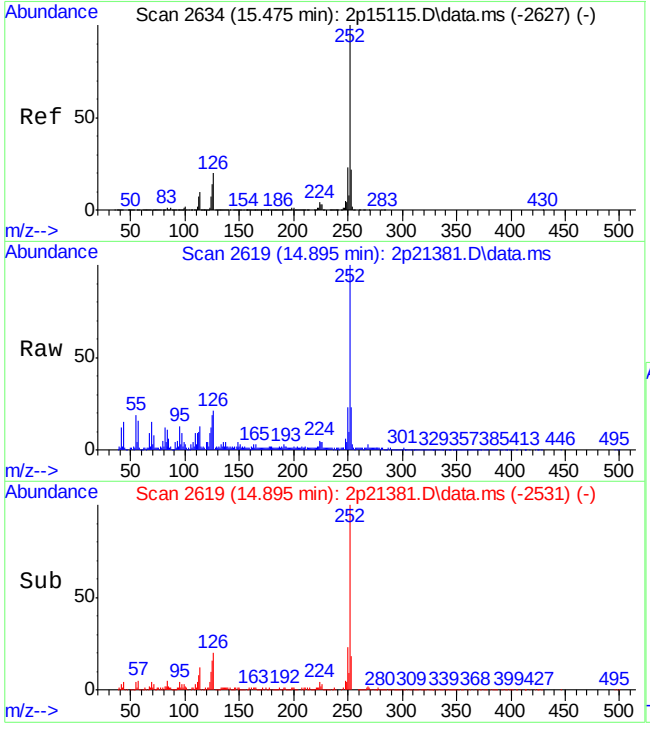


#95
Benzo[k]fluoranthene
Concen: 10.48 ppb m
RT: 14.569 min Scan# 2558
Delta R.T. -0.048 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:252 Resp: 59771

Ion	Ratio	Lower	Upper
252	100		
253	23.8	0.0	56.1
125	21.1	0.0	45.7

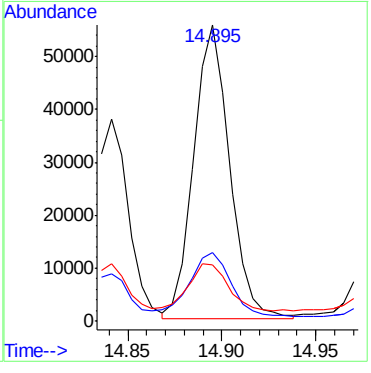




#96
Benzo[a]pyrene
Concen: 13.01 ppb
RT: 14.895 min Scan# 2619
Delta R.T. -0.027 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:252 Resp: 73800

Ion	Ratio	Lower	Upper
252	100		
253	20.8	0.0	51.5
125	15.3	0.0	41.1



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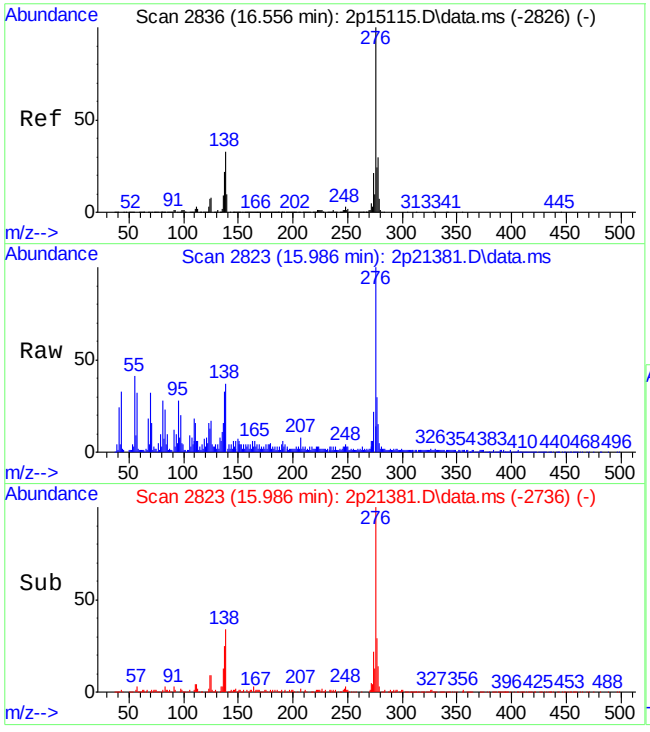
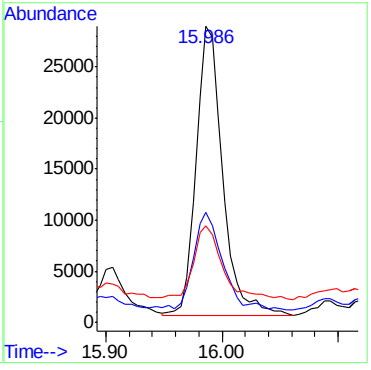
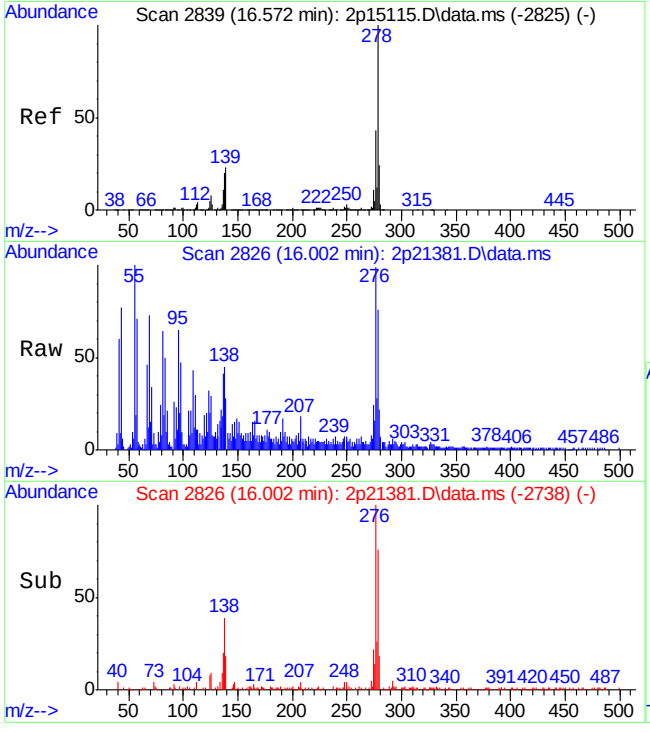


#97
Indeno[1,2,3-cd]pyrene
Concen: 6.82 ppb
RT: 15.986 min Scan# 2823
Delta R.T. -0.032 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:276 Resp: 44890

Ion	Ratio	Lower	Upper
276	100		
138	33.5	0.0	54.7
137	25.3	0.0	49.5

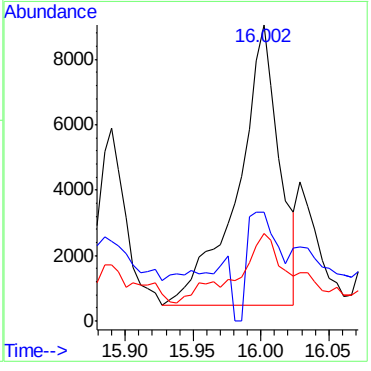




#99
Dibenz[a,h]anthracene
Concen: 3.32 ppb
RT: 16.002 min Scan# 2826
Delta R.T. -0.027 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:278 Resp: 18186

Ion	Ratio	Lower	Upper
278	100		
139	22.1	0.0	49.9
279	22.1	0.0	56.4



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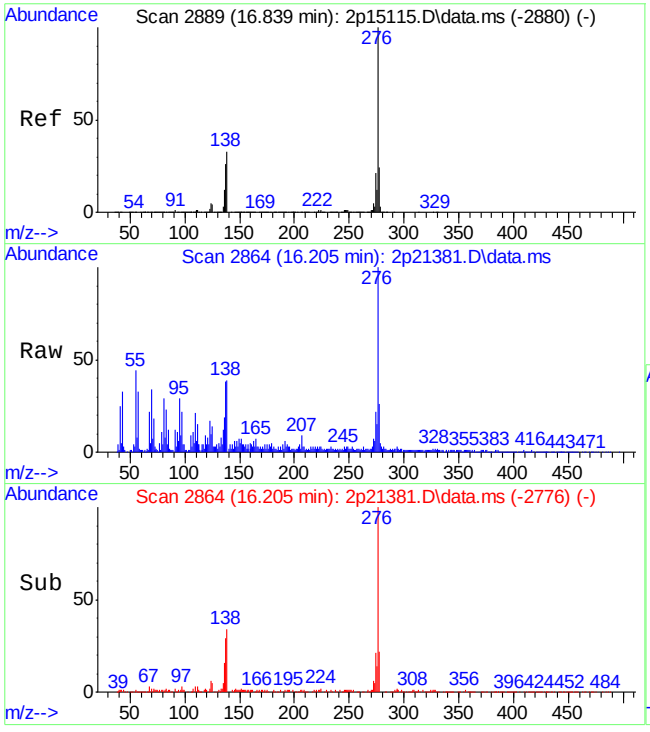
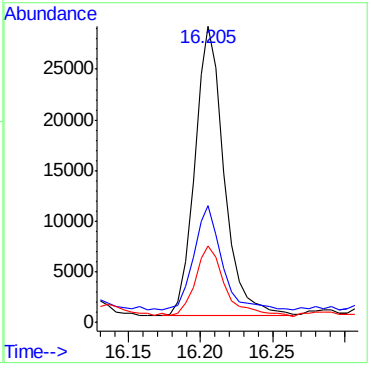


#101
Benzo[g,h,i]perylene
Concen: 7.32 ppb
RT: 16.205 min Scan# 2864
Delta R.T. -0.027 min
Lab File: 2p21381.D
Acq: 22 Mar 2013 11:47 am

Tgt Ion:276 Resp: 40925

Ion	Ratio	Lower	Upper
276	100		
138	36.0	0.0	55.6
277	24.0	0.0	53.3



9.1.28

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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21229.D
Acq On : 19 Mar 2013 3:48 pm
Operator : andrews1
Sample : op64440-mb1
Misc : op64440,e2p936,35.0
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 19 16:06:09 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration

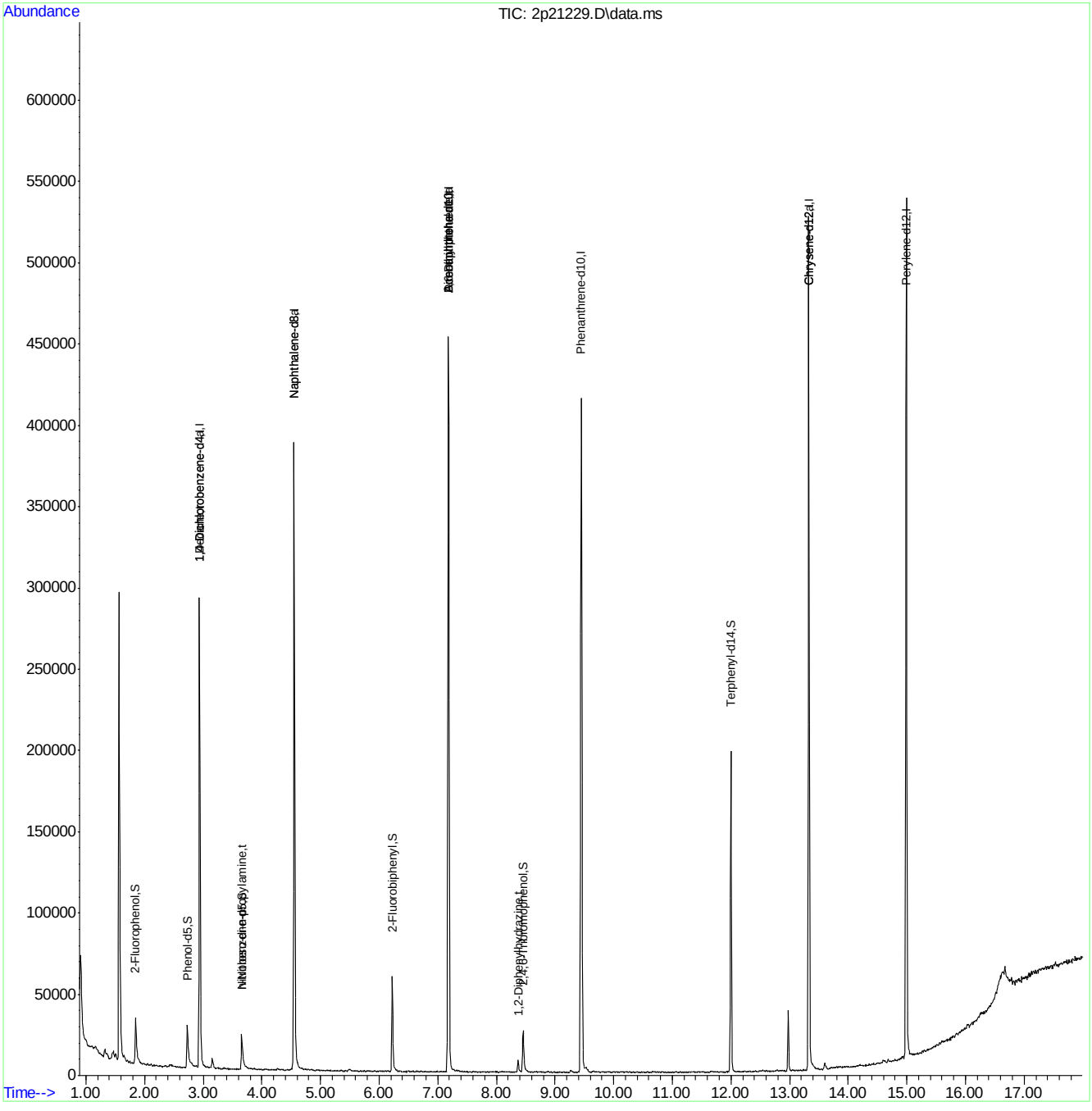
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.941	152	62904	40.00	ppb	-0.09
24) Naphthalene-d8	4.551	136	244974	40.00	ppb	-0.10
47) Acenaphthene-d10	7.182	164	137397	40.00	ppb	-0.11
69) Phenanthrene-d10	9.450	188	220771	40.00	ppb	-0.10
83) Chrysene-d12	13.328	240	227909	40.00	ppb	-0.09
92) Perylene-d12	14.991	264	204820	40.00	ppb	-0.07
102) 1,4-Dichlorobenzene-d4a	2.941	152	62904	40.00	ppb	-0.09
104) Acenaphthene-d10a	7.182	164	137397	40.00	ppb	-0.11
107) Chrysene-d12a	13.328	240	227909	40.00	ppb	-0.09
109) Naphthalene-d8a	4.551	136	244974	40.00	ppb	#-0.10
System Monitoring Compounds						
5) 2-Fluorophenol	1.844	112	13581	6.03	ppb	-0.05
Spiked Amount 50.000	Range 11 - 58		Recovery	=	12.06%	
8) Phenol-d5	2.727	99	17869	6.40	ppb	-0.05
Spiked Amount 50.000	Range 10 - 59		Recovery	=	12.80%	
25) Nitrobenzene-d5	3.658	82	13388	5.94	ppb	-0.08
Spiked Amount 50.000	Range 19 - 61		Recovery	=	11.88%#	
51) 2-Fluorobiphenyl	6.225	172	27028	6.15	ppb	-0.11
Spiked Amount 50.000	Range 21 - 58		Recovery	=	12.30%#	
73) 2,4,6-Tribromophenol	8.455	330	4675	9.47	ppb	-0.09
Spiked Amount 50.000	Range 12 - 68		Recovery	=	18.94%	
85) Terphenyl-d14	12.001	244	76623	15.96	ppb	-0.09
Spiked Amount 50.000	Range 16 - 65		Recovery	=	31.92%	
Target Compounds						Qvalue
13) Decane	2.935	57	1061	0.39	ppb #	1
22) n-Nitroso-di-n-propyla...	3.658	70	1916	1.18	ppb #	52
55) Dimethylphthalate	7.182	163	23962	5.35	ppb #	1
57) 2,6-Dinitrotoluene	7.182	165	17981	18.72	ppb #	27
72) 1,2-Diphenylhydrazine	8.370	77	2245	0.43	ppb #	1
108) Benzidine	12.001	184	1140	Below Cal		95

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2p936\
Data File : 2p21229.D
Acq On : 19 Mar 2013 3:48 pm
Operator : andrews1
Sample : op64440-mb1
Misc : op64440,e2p936,35.0
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 19 16:06:09 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 09 10:05:35 2013
Response via : Initial Calibration



ACCUTEST LABORATORIES JB30425

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21375.D
Acq On : 22 Mar 2013 9:32 am
Operator : andrews1
Sample : op64440-mb2
Misc : op64440,e2p941,35.0
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 23 13:08:31 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	2.898	152	59995	40.00 ppb	-0.03
24) Naphthalene-d8	4.508	136	237427	40.00 ppb	-0.03
47) Acenaphthene-d10	7.134	164	134305	40.00 ppb	-0.03
69) Phenanthrene-d10	9.397	188	220853	40.00 ppb	-0.04
83) Chrysene-d12	13.280	240	230325	40.00 ppb	-0.04
92) Perylene-d12	14.948	264	203839	40.00 ppb	-0.04
102) 1,4-Dichlorobenzene-d4a	2.898	152	59995	40.00 ppb	-0.03
104) Acenaphthene-d10a	7.134	164	134305	40.00 ppb	-0.03
107) Chrysene-d12a	13.280	240	230325	40.00 ppb	-0.04
109) Naphthalene-d8a	4.508	136	237427	40.00 ppb	#-0.03
System Monitoring Compounds					
5) 2-Fluorophenol	1.812	112	88662	41.28 ppb	-0.02
Spiked Amount 50.000	Range 11 - 58		Recovery = 82.56%#		
8) Phenol-d5	2.679	99	113965	42.78 ppb	-0.03
Spiked Amount 50.000	Range 10 - 59		Recovery = 85.56%#		
25) Nitrobenzene-d5	3.609	82	93265	42.70 ppb	-0.02
Spiked Amount 50.000	Range 19 - 61		Recovery = 85.40%#		
51) 2-Fluorobiphenyl	6.177	172	192494	44.82 ppb	-0.03
Spiked Amount 50.000	Range 21 - 58		Recovery = 89.64%#		
73) 2,4,6-Tribromophenol	8.402	330	23239	47.08 ppb	-0.04
Spiked Amount 50.000	Range 12 - 68		Recovery = 94.16%#		
85) Terphenyl-d14	11.953	244	219632	45.27 ppb	-0.03
Spiked Amount 50.000	Range 16 - 65		Recovery = 90.54%#		
Target Compounds					Qvalue

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

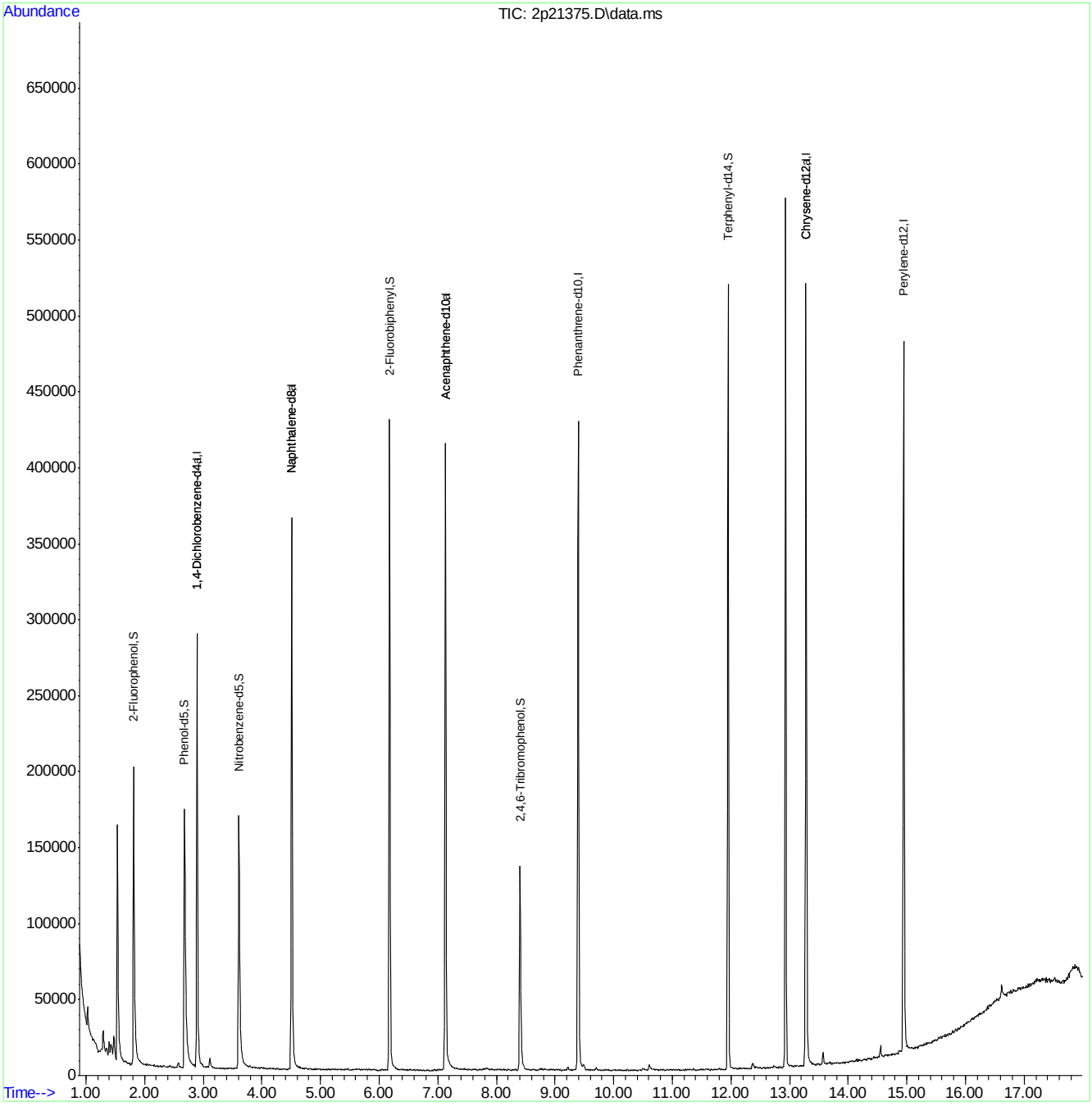
9.2.2

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2p941\
Data File : 2p21375.D
Acq On : 22 Mar 2013 9:32 am
Operator : andrews1
Sample : op64440-mb2
Misc : op64440,e2p941,35.0
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 23 13:08:31 2013
Quant Method : C:\MSDCHEM\1\METHODS\M2P896.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sat Mar 23 09:30:19 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\816\
Data File : 3p17976.D
Acq On : 22 Mar 2013 10:36 am
Operator : katelynh
Sample : op64440-mb2
Misc : op64440,e3p816,35.0
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 22 12:17:07 2013
Quant Method : C:\msdchem\1\METHODS\M3P782.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Mar 20 09:29:45 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.842	152	151235	40.00	ppb	-0.03
24) Naphthalene-d8	5.553	136	564734	40.00	ppb	-0.03
47) Acenaphthene-d10	8.260	164	304703	40.00	ppb	-0.03
69) Phenanthrene-d10	10.613	188	490906	40.00	ppb	-0.03
83) Chrysene-d12	14.384	240	514536	40.00	ppb	-0.02
91) Perylene-d12	16.048	264	467499	40.00	ppb	-0.02
101) 1,4-Dichlorobenzene-d4a	3.842	152	151235	40.00	ppb	-0.02
103) Acenaphthene-d10a	8.260	164	304703	40.00	ppb	-0.02
106) Chrysene-d12a	14.384	240	514536	40.00	ppb	0.00
108) Naphthalene-d8a	5.553	136	564734	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	2.537	112	202893	39.99	ppb	-0.03
Spiked Amount 50.000			Recovery = 79.98%			
8) Phenol-d5	3.484	99	245916	40.54	ppb	-0.04
Spiked Amount 50.000			Recovery = 81.08%			
25) Nitrobenzene-d5	4.564	82	246889	51.26	ppb	-0.03
Spiked Amount 50.000			Recovery = 102.52%			
51) 2-Fluorobiphenyl	7.238	172	438081	45.39	ppb	-0.03
Spiked Amount 50.000			Recovery = 90.78%			
73) 2,4,6-Tribromophenol	9.538	330	83630	50.39	ppb	-0.04
Spiked Amount 50.000			Recovery = 100.78%			
85) Terphenyl-d14	13.042	244	517369	48.18	ppb	-0.02
Spiked Amount 50.000			Recovery = 96.36%			

Target Compounds Qvalue

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

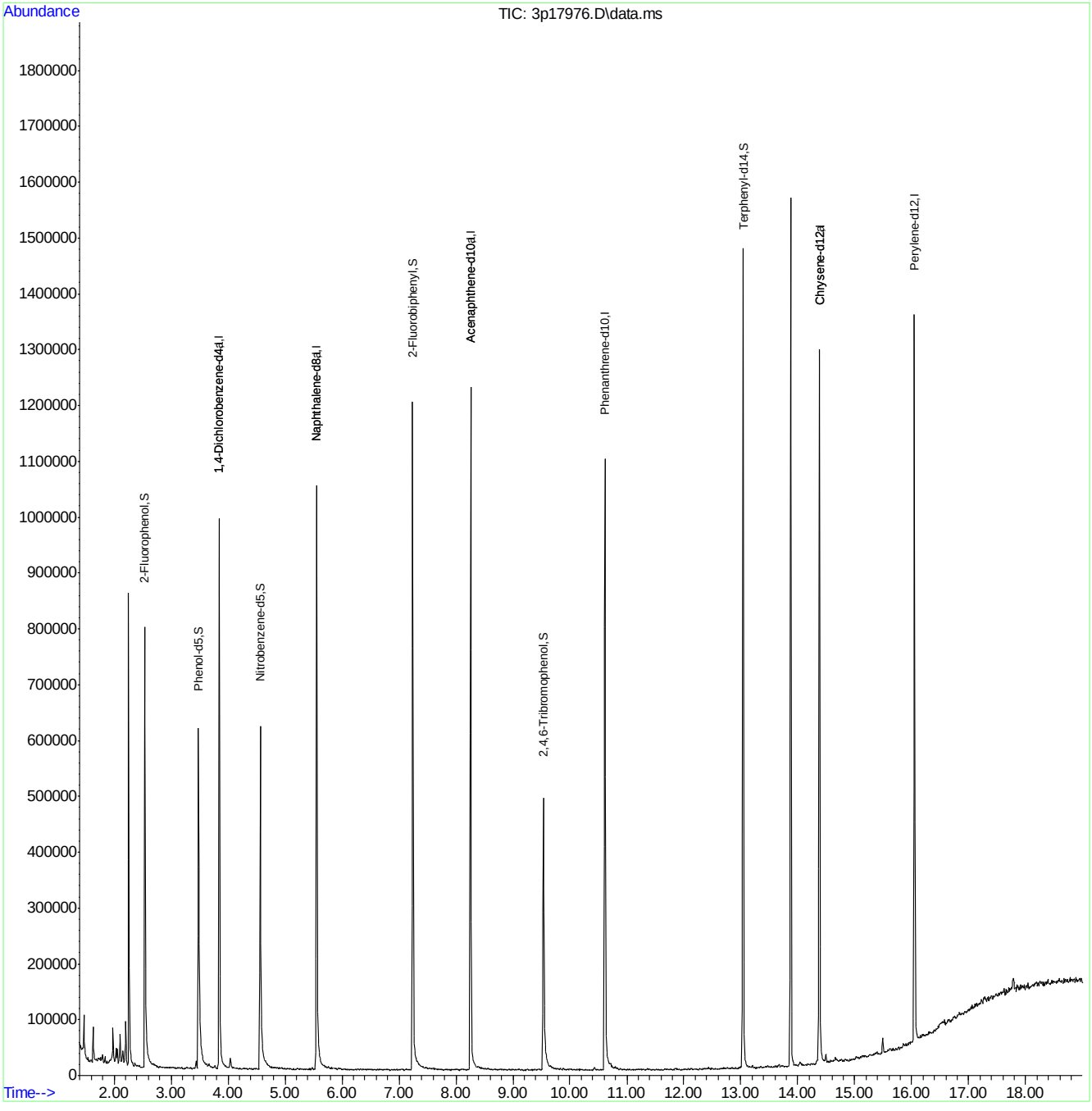
9.2.3

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\816\
Data File : 3p17976.D
Acq On : 22 Mar 2013 10:36 am
Operator : katelynh
Sample : op64440-mb2
Misc : op64440,e3p816,35.0
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 22 12:17:07 2013
Quant Method : C:\msdchem\1\METHODS\M3P782.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Mar 20 09:29:45 2013
Response via : Initial Calibration



ACCUTEST LABORATORIES JB30425

New Jersey
ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:01	MA30721-STD1	1		STDA
12:07	MA30721-STD2	1		STDB
12:13	MA30721-STD3	1		STDC
12:18	MA30721-STD4	1		STDD
12:24	MA30721-CCV1	1		
12:30	MA30721-CCB1	1		
12:36	MA30721-CRI1	1		
12:42	MA30721-CRID1	1		
12:48	MA30721-CRIA1	1		
12:54	MA30721-ICV1	1		
12:59	MA30721-ICB1	1		
13:05	MA30721-CCV2	1		
13:11	MA30721-CCB2	1		
13:17	MA30721-ICSA1	1		
13:23	MA30721-ICSAB1	1		
13:29	ZZZZZZ	1		
13:35	ZZZZZZ	1		
13:41	MA30721-CCV3	1		
13:46	MA30721-CCB3	1		
13:52	MP70481-MB1	1		
13:58	MP70481-B1	1		
14:04	ZZZZZZ	1		
14:10	ZZZZZZ	1		
14:16	ZZZZZZ	1		
14:22	ZZZZZZ	1		
14:27	ZZZZZZ	1		
14:33	ZZZZZZ	1		
14:39	ZZZZZZ	1		
14:45	MA30721-CCV4	1		
14:51	MA30721-CCB4	1		
14:57	MP70500-MB1	1		
15:03	MP70500-LC1	1		
15:09	ZZZZZZ	1		

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:14	MP70499-MB1	1		
15:20	MP70499-B1	1		
15:26	ZZZZZZ	1		
15:32	ZZZZZZ	1		
15:38	ZZZZZZ	1		
15:44	ZZZZZZ	1		
15:50	ZZZZZZ	1		
15:55	MA30721-CCV5	1		
16:01	MA30721-CCB5	1		
16:07	MP70499-S1	1		
16:13	MP70499-S2	1		
16:19	JB31488-1	1		(sample used for QC only; not part of login JB30425)
16:25	MP70499-SD1	5		
16:31	MA30721-CCV6	1		
16:37	MA30721-CCB6	1		
16:43	MA30721-CRI2	1		
16:48	MA30721-CRID2	1		
16:54	MA30721-CRIA2	1		
17:00	MA30721-ICSA2	1		
17:06	MA30721-ICSAB2	1		
17:12	MA30721-CCV7	1		
17:18	MA30721-CCB7	1		
17:24	ZZZZZZ	2		
17:30	MP70504-MB1	1		
17:36	MP70504-B1	1		
17:42	MP70504-S1	1		
17:48	MP70504-S2	1		
17:54	JB31297-2	1		(sample used for QC only; not part of login JB30425)
18:00	MP70504-SD1	5		
18:06	ZZZZZZ	1		
18:12	ZZZZZZ	1		
18:18	ZZZZZZ	1		
18:24	MA30721-CCV8	1		

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:29	MA30721-CCB8	1		
18:35	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:47	MP70369-MB2	1		
18:53	MP70369-LC1	1		
18:59	ZZZZZZ	1		
19:05	ZZZZZZ	1		
19:11	ZZZZZZ	1		
19:17	ZZZZZZ	1		
19:23	ZZZZZZ	1		
19:28	MA30721-CCV9	1		
19:34	MA30721-CCB9	1		
19:40	ZZZZZZ	1		
19:46	ZZZZZZ	1		
19:52	ZZZZZZ	1		
19:58	ZZZZZZ	1		
20:04	ZZZZZZ	1		
20:10	ZZZZZZ	1		
20:15	ZZZZZZ	1		
20:21	ZZZZZZ	1		
20:27	ZZZZZZ	1		
20:33	ZZZZZZ	1		
20:39	MA30721-CCV10	1		
20:45	MA30721-CCB10	1		
20:50	ZZZZZZ	1		
20:56	ZZZZZZ	1		
21:02	ZZZZZZ	1		
21:08	ZZZZZZ	1		
21:14	ZZZZZZ	1		
21:19	ZZZZZZ	1		
21:25	MP70372-MB1	1		
21:31	MP70372-B1	1		
21:37	MP70372-S1	1		

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
21:43	MP70372-S2	1		
21:49	MA30721-CCV11	1		
21:54	MA30721-CCB11	1		
22:00	JB27782-6R	1		(sample used for QC only; not part of login JB30425)
22:06	MP70372-SD1	5		
22:12	ZZZZZZ	1		
22:18	ZZZZZZ	1		
22:24	MP70373-MB1	1		
22:30	MP70373-B1	1		
22:35	MP70373-S1	1		
22:41	MP70373-S2	1		
22:47	JB27782-12R	1		(sample used for QC only; not part of login JB30425)
22:53	MP70373-SD1	5		
22:59	MA30721-CCV12	1		
23:04	MA30721-CCB12	1		
23:10	ZZZZZZ	1		
23:16	MP70370-S1	1		
23:22	MP70370-S2	1		
23:28	JB30251-1A	1		(sample used for QC only; not part of login JB30425)
23:34	MP70370-SD1	5		
23:40	ZZZZZZ	1		
23:46	ZZZZZZ	1		
23:52	MP70431-MB1	1		
23:58	MP70431-B1	1		
00:04	MA30721-CCV13	1		
00:10	MA30721-CCB13	1		
00:16	MA30721-CRI3	1		
00:22	MA30721-CRID3	1		
00:28	MA30721-CRIA3	1		
00:33	MA30721-ICSA3	1		
00:39	MA30721-ICSAB3	1		
00:45	MA30721-CCV14	1		
00:51	MA30721-CCB14	1		

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:57	MP70431-S1	1		
01:03	MP70431-S2	1		
01:09	JB30425-6	1		
01:14	MP70431-SD1	5		
01:20	JB30425-1	1		
01:26	JB30425-3	1		
01:32	JB30425-4	1		IN out
01:38	JB30425-5	1		
01:44	JB30425-7	1		
01:49	JB30425-8	1		
01:55	MA30721-CCV15	1		
02:01	MA30721-CCB15	1		
02:07	JB30425-9	1		
02:13	JB30425-10	1		FE=700ppm
02:19	JB30425-11	1		
02:25	JB30425-12	1		
02:31	JB30425-13	1		
02:36	JB30425-14	1		Cu=160ppm
02:42	JB30425-15	1		
---------->	Last reportable sample/prep for job JB30425			
02:48	ZZZZZZ	1		
02:54	ZZZZZZ	1		
03:00	ZZZZZZ	1		
03:06	MA30721-CCV16	1		
03:12	MA30721-CCB16	1		
03:18	ZZZZZZ	1		
03:24	ZZZZZZ	1		
03:30	ZZZZZZ	1		
03:35	ZZZZZZ	1		
03:42	ZZZZZZ	1		
03:47	ZZZZZZ	1		
03:54	ZZZZZZ	1		Bad reading for Y 3710 on CRI
04:00	MP70374-MB2	1		Bad reading for Y 3710 on CRI
04:05	MP70374-LC1	1		

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
04:11	MA30721-CCV17	1		
04:17	MA30721-CCB17	1		
04:23	ZZZZZZ	1		
04:29	ZZZZZZ	1		
04:35	ZZZZZZ	1		
04:41	ZZZZZZ	1		
04:47	ZZZZZZ	1		Bad reading for Y 3710 on CRI
04:53	MP70455-S1	1		Bad reading for Y 3710 on CRI
04:58	MP70455-S2	1		Bad reading for Y 3710 on CRI
05:04	JB31280-2	1		(sample used for QC only; not part of login JB30425)
05:10	MP70455-SD1	5		Bad reading for Y 3710 on CRI
05:16	ZZZZZZ	1		
05:22	MA30721-CCV18	1		
05:28	MA30721-CCB18	1		
05:33	MA30721-CRI4	1		
05:39	MA30721-CRID4	1		
05:45	MA30721-CRIA4	1		
05:51	MA30721-ICSA4	1		
05:57	MA30721-ICSAB4	1		
06:03	MA30721-CCV19	1		
06:09	MA30721-CCB19	1		
---------->	Last reportable CCB for job JB30425			
06:15	ZZZZZZ	1		
06:21	ZZZZZZ	1		
06:27	ZZZZZZ	1		
06:33	ZZZZZZ	1		
06:39	ZZZZZZ	1		
06:45	MA30721-CCV20	1		
06:51	MA30721-CCB20	1		
06:57	MP70481-S1	1		
07:02	MP70481-S2	1		
07:08	JB31319-11	1		(sample used for QC only; not part of login JB30425)
07:14	MP70481-SD1	5		
07:20	ZZZZZZ	1		

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:26	ZZZZZZ	1		
07:31	ZZZZZZ	1		
07:37	ZZZZZZ	1		
07:43	ZZZZZZ	1		
07:49	MA30721-CCV21	1		
07:55	MA30721-CCB21	1		
08:01	ZZZZZZ	1		
08:07	ZZZZZZ	1		
08:12	ZZZZZZ	1		
08:18	ZZZZZZ	1		
08:24	ZZZZZZ	1		
08:30	ZZZZZZ	1		
08:36	ZZZZZZ	1		
08:41	ZZZZZZ	1		
08:47	MP70410-B1	1		
08:53	MA30721-CCV22	1		
08:59	MA30721-CCB22	1		
09:05	MA30721-CRI5	1		
09:11	MA30721-CRIA5	1		
09:17	MP70410-S1	1		
09:23	MP70410-S2	1		
09:29	ZZZZZZ	1		
09:35	ZZZZZZ	1		
09:41	MA30721-CCV23	1		
09:47	MA30721-CCB23	1		
09:53	MP70504-S1	5		
09:59	MP70504-S2	5		
10:05	JB31297-2	5		(sample used for QC only; not part of login JB30425)
10:11	MP70504-SD1	25		Rerun for Pb
10:17	MA30721-CCV24	1		
10:22	MA30721-CCB24	1		
10:28	MA30721-CRI6	1		
10:34	MA30721-CRID5	1		

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:40	MA30721-CRIA6	1		
10:46	MA30721-ICSA5	1		
10:52	MA30721-ICSAB5	1		Bad reading on Y3600, refer to ICSA for IEC information.
10:58	ZZZZZZ	1		
11:04	ZZZZZZ	1		
11:10	ZZZZZZ	1		
11:16	ZZZZZZ	1		
11:22	ZZZZZZ	1		
11:28	ZZZZZZ	1		
11:33	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:01	MA30721-STD1	3326 R	63777 R	12065 R	4364 R
12:07	MA30721-STD2	3119	58494	11666	3916
12:13	MA30721-STD3	3072	56873	11501	3827
12:18	MA30721-STD4	2933	54116	11354	3663
12:24	MA30721-CCV1	No results reported for the elements associated with this internal standard.			
12:30	MA30721-CCB1	No results reported for the elements associated with this internal standard.			
12:36	MA30721-CRI1	3259	62170	11893	4192
12:42	MA30721-CRID1	3297	63326	11943	4307
12:48	MA30721-CRIA1	3358	64890	12111	4402
12:54	MA30721-ICV1	3091	57464	11567	3836
12:59	MA30721-ICB1	3336	64328	11944	4375
13:05	MA30721-CCV2	3088	54016	12010	3835
13:11	MA30721-CCB2	3365	65288	12230	4414
13:17	MA30721-ICSA1	2744	50244	10729	3423
13:23	MA30721-ICSAB1	2773	50773	10813	3449
13:29	ZZZZZZ	2868	53883	11067	3606
13:35	ZZZZZZ	3200	57529	11623	3894
13:41	MA30721-CCV3	3033	56292	11280	3774
13:46	MA30721-CCB3	3266	64162	11812	4302
13:52	MP70481-MB1	3335	65230	12260	4388
13:58	MP70481-B1	3147	59321	11315	3963
14:04	ZZZZZZ	3125	57995	11718	4055
14:10	ZZZZZZ	3146	59008	11667	3953
14:16	ZZZZZZ	3267	61459	12026	4036
14:22	ZZZZZZ	3252	60254	11920	3969
14:27	ZZZZZZ	3294	62284	11919	4163
14:33	ZZZZZZ	3197	59920	11848	3943
14:39	ZZZZZZ	3222	60248	11752	4071
14:45	MA30721-CCV4	3033	56299	11175	3779
14:51	MA30721-CCB4	3342	64083	11765	4382
14:57	MP70500-MB1	3347	64731	11867	4370
15:03	MP70500-LC1	3200	61502	11592	4038
15:09	ZZZZZZ	3374	65073	11876	4384

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:14	MP70499-MB1	3433	66225	12249	4501
15:20	MP70499-B1	3153	60040	11632	3977
15:26	ZZZZZZ	3364	63497	12446	4067
15:32	ZZZZZZ	3336	61953	12092	4046
15:38	ZZZZZZ	3353	61740	11731	4079
15:44	ZZZZZZ	3367	62547	12335	4034
15:50	ZZZZZZ	3389	63540	11695	4126
15:55	MA30721-CCV5	3051	55290	10999	3796
16:01	MA30721-CCB5	3338	63784	11805	4378
16:07	MP70499-S1	3257	60505	11894	3917
16:13	MP70499-S2	3220	59700	11790	3855
16:19	JB31488-1	3345	62482	12276	4036
16:25	MP70499-SD1	3309	62140	11433	4197
16:31	MA30721-CCV6	3070	56802	11085	3814
16:37	MA30721-CCB6	3349	64487	11665	4388
16:43	MA30721-CRI2	3243	62019	11619	4170
16:48	MA30721-CRID2	3309	63425	11545	4319
16:54	MA30721-CRIA2	3367	64674	11742	4407
17:00	MA30721-ICSA2	2716	49899	10359	3388
17:06	MA30721-ICSAB2	2724	50056	10453	3394
17:12	MA30721-CCV7	3061	56706	11074	3801
17:18	MA30721-CCB7	3311	63657	11310	4348
17:24	ZZZZZZ	3205	60069	11690	4104
17:30	MP70504-MB1	2947	52492	11252	3537
17:36	MP70504-B1	2820	50246	10782	3393
17:42	MP70504-S1	2829	50627	10772	3337
17:48	MP70504-S2	2823	50322	10690	3333
17:54	JB31297-2	2792	50029	10733	3303
18:00	MP70504-SD1	3001	55008	10988	3650
18:06	ZZZZZZ	3285	63680	11590	4288
18:12	ZZZZZZ	3102	57397	11455	3688
18:18	ZZZZZZ	3219	59752	11774	3982
18:24	MA30721-CCV8	2979	54812	10792	3725

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
18:29	MA30721-CCB8	3268	62941	11324	4298
18:35	ZZZZZZ	3271	60581	11844	4016
18:41	ZZZZZZ	3124	58361	11265	3834
18:47	MP70369-MB2	2747	48438	10335	3334
18:53	MP70369-LC1	3166	58269	10903	4010
18:59	ZZZZZZ	2775	49314	10479	3341
19:05	ZZZZZZ	3328	64270	11497	4336
19:11	ZZZZZZ	3204	60814	11478	4060
19:17	ZZZZZZ	3048	57044	11225	3773
19:23	ZZZZZZ	3321	64350	11681	4332
19:28	MA30721-CCV9	2987	55471	10744	3744
19:34	MA30721-CCB9	3268	62474	11321	4319
19:40	ZZZZZZ	3202	59364	11693	3918
19:46	ZZZZZZ	3161	59320	11423	3902
19:52	ZZZZZZ	3108	58284	11301	3975
19:58	ZZZZZZ	2935	55051	10942	4337
20:04	ZZZZZZ	2488	45964	9899	3057
20:10	ZZZZZZ	3167	59476	11344	3922
20:15	ZZZZZZ	3250	60732	11514	3973
20:21	ZZZZZZ	3310	61870	11757	3966
20:27	ZZZZZZ	3027	56457	11071	3790
20:33	ZZZZZZ	3167	59233	11445	3939
20:39	MA30721-CCV10	2996	54785	10610	3765
20:45	MA30721-CCB10	3234	62043	11137	4296
20:50	ZZZZZZ	3139	58456	11223	3890
20:56	ZZZZZZ	3210	59720	11479	3954
21:02	ZZZZZZ	3235	58818	11653	3941
21:08	ZZZZZZ	3053	57533	11351	3711
21:14	ZZZZZZ	3243	60117	11473	3937
21:19	ZZZZZZ	3263	60243	11664	3850
21:25	MP70372-MB1	3283	63148	11382	4353
21:31	MP70372-B1	3277	63128	11413	4276
21:37	MP70372-S1	3197	60381	11172	4049

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
21:43	MP70372-S2	3207	60282	11187	4060
21:49	MA30721-CCV11	2938	54344	10458	3719
21:54	MA30721-CCB11	3254	62533	11150	4332
22:00	JB27782-6R	3216	60726	11121	4090
22:06	MP70372-SD1	3192	61677	11067	4183
22:12	ZZZZZZ	3176	60635	11241	4115
22:18	ZZZZZZ	3182	60485	11041	4049
22:24	MP70373-MB1	3329	64008	11456	4413
22:30	MP70373-B1	3297	63168	11415	4310
22:35	MP70373-S1	3228	61091	11242	4173
22:41	MP70373-S2	3264	62467	11240	4220
22:47	JB27782-12R	3250	62213	11627	4288
22:53	MP70373-SD1	3258	62866	11251	4355
22:59	MA30721-CCV12	2937	54147	10492	3728
23:04	MA30721-CCB12	3250	62367	11151	4343
23:10	ZZZZZZ	2734	48211	10172	3359
23:16	MP70370-S1	2549	46635	9919	3159
23:22	MP70370-S2	2545	46677	9913	3156
23:28	JB30251-1A	2569	47041	10190	3177
23:34	MP70370-SD1	2934	54128	10651	3675
23:40	ZZZZZZ	2586	47187	9974	3184
23:46	ZZZZZZ	2607	47812	9934	3171
23:52	MP70431-MB1	3249	62622	11140	4358
23:58	MP70431-B1	3060	56828	10569	3922
00:04	MA30721-CCV13	2882	53964	10417	3679
00:10	MA30721-CCB13	3211	61572	10803	4310
00:16	MA30721-CRI3	3136	59256	10787	4119
00:22	MA30721-CRID3	3208	60224	10652	4278
00:28	MA30721-CRIA3	3211	61562	10923	4315
00:33	MA30721-ICSA3	2649	48096	9789	3380
00:39	MA30721-ICSAB3	2611	48459	9920	3339
00:45	MA30721-CCV14	2932	54125	10350	3732
00:51	MA30721-CCB14	3247	61754	10872	4347

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
00:57	MP70431-S1	2946	54518	10553	3626
01:03	MP70431-S2	2928	54370	10799	3598
01:09	JB30425-6	3105	57703	11014	3800
01:14	MP70431-SD1	3144	59096	10765	4067
01:20	JB30425-1	3162	59281	11132	3958
01:26	JB30425-3	3139	57097	11040	4028
01:32	JB30425-4	2502	45915	9746	3046 !
01:38	JB30425-5	3207	59438	11125	3933
01:44	JB30425-7	3219	59851	11181	3929
01:49	JB30425-8	2822	52769	10555	3510
01:55	MA30721-CCV15	2912	53101	10308	3717
02:01	MA30721-CCB15	3194	61100	10737	4298
02:07	JB30425-9	2912	54167	10641	3654
02:13	JB30425-10	3046	56733	10801	4145
02:19	JB30425-11	3068	56712	10995	4058
02:25	JB30425-12	3112	57602	10939	3984
02:31	JB30425-13	3137	57963	999999 !	4000
02:36	JB30425-14	3081	58674	11263	4042
02:42	JB30425-15	3188	58267	11152	3889
02:48	ZZZZZZ	3175	58753	11102	3852
02:54	ZZZZZZ	3117	57424	10939	3801
03:00	ZZZZZZ	3141	57755	10956	3822
03:06	MA30721-CCV16	2977	54866	10350	3783
03:12	MA30721-CCB16	3232	61787	10911	4341
03:18	ZZZZZZ	3209	59082	11190	3967
03:24	ZZZZZZ	2722	47356	9834	3374
03:30	ZZZZZZ	2533	46440	9619	3153
03:35	ZZZZZZ	2550	45366	9524	3155
03:42	ZZZZZZ	2650	47467	9856	3312
03:47	ZZZZZZ	2673	47226	9736	3298
03:54	ZZZZZZ	2708	47437	9652	3370
04:00	MP70374-MB2	3250	62205	10876	4336
04:05	MP70374-LC1	3097	58601	10525	4027

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
04:11	MA30721-CCV17	2903	53738	10068	3722
04:17	MA30721-CCB17	3189	61449	10658	4303
04:23	ZZZZZZ	3208	61541	10739	4301
04:29	ZZZZZZ	3222	62169	10635	4316
04:35	ZZZZZZ	3245	62420	10801	4342
04:41	ZZZZZZ	3243	62834	10792	4342
04:47	ZZZZZZ	3260	62358	10815	4390
04:53	MP70455-S1	2980	54849	10409	3826
04:58	MP70455-S2	2968	54327	10380	3816
05:04	JB31280-2	2971	54891	10449	3793
05:10	MP70455-SD1	3107	58328	10480	4054
05:16	ZZZZZZ	2839	52502	10108	3462
05:22	MA30721-CCV18	2908	53257	10006	3725
05:28	MA30721-CCB18	3188	60486	10383	4308
05:33	MA30721-CRI4	3151	58893	999999 !a	4155
05:39	MA30721-CRID4	3186	59724	10556	4271
05:45	MA30721-CRIA4	3181	60843	10409	4306
05:51	MA30721-ICSA4	2615	47466	9608	3363
05:57	MA30721-ICSAB4	2617	47749	9330	3368
06:03	MA30721-CCV19	2913	51983	10130	3742
06:09	MA30721-CCB19	3211	61277	10619	4347
06:15	ZZZZZZ	2913	52901	10260	3548
06:21	ZZZZZZ	3110	56917	10889	3746
06:27	ZZZZZZ	3020	54856	10605	3788
06:33	ZZZZZZ	2964	53993	10450	3774
06:39	ZZZZZZ	2917	52953	10291	3586
06:45	MA30721-CCV20	2922	53470	10010	3774
06:51	MA30721-CCB20	3174	62184	10300	4328
06:57	MP70481-S1	3017	55119	10236	3827
07:02	MP70481-S2	3014	55209	10222	3821
07:08	JB31319-11	3114	57318	10446	3973
07:14	MP70481-SD1	3144	58597	10234	4172
07:20	ZZZZZZ	2996	54747	10405	3763

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:26	ZZZZZZ	3141	57740	10462	3963
07:31	ZZZZZZ	3166	57904	10729	3934
07:37	ZZZZZZ	3107	57274	10562	3998
07:43	ZZZZZZ	3088	57473	10537	3947
07:49	MA30721-CCV21	2917	53575	10056	3783
07:55	MA30721-CCB21	3173	61166	10389	4346
08:01	ZZZZZZ	3113	57827	10615	4006
08:07	ZZZZZZ	3071	56587	10476	3948
08:12	ZZZZZZ	3182	58830	10645	4024
08:18	ZZZZZZ	3114	57330	10443	4033
08:24	ZZZZZZ	3189	59084	10692	4065
08:30	ZZZZZZ	3117	57337	10371	4070
08:36	ZZZZZZ	3137	56380	10280	4083
08:41	ZZZZZZ	2673	46461	9460	3390
08:47	MP70410-B1	2674	46754	9468	3378
08:53	MA30721-CCV22	2867	52698	9617	3751
08:59	MA30721-CCB22	3156	60574	10193	4345
09:05	MA30721-CRI5	3082	58029	10089	4150
09:11	MA30721-CRIA5	No results reported for the elements associated with this internal standard.			
09:17	MP70410-S1	2663	46670	9451	3359
09:23	MP70410-S2	2669	46845	9297	3366
09:29	ZZZZZZ	2607	45613	9193	3271
09:35	ZZZZZZ	2487	43701 !	9084	3143
09:41	MA30721-CCV23	2870	52640	9626	3759
09:47	MA30721-CCB23	3170	60220	10175	4353
09:53	MP70504-S1	2901	52191	9663	3686
09:59	MP70504-S2	2892	51604	9721	3679
10:05	JB31297-2	2877	51690	9567	3659
10:11	MP70504-SD1	No results reported for the elements associated with this internal standard.			
10:17	MA30721-CCV24	2859	52434	9534	3745
10:22	MA30721-CCB24	3159	60093	10080	4355
10:28	MA30721-CRI6	3094	58184	9907	4169
10:34	MA30721-CRID5	3133	59727	9927	4294

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA30721
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:40	MA30721-CRIA6	3181	58815	9947	4378
10:46	MA30721-ICSA5	2599	46753	8955	3406
10:52	MA30721-ICSAB5	No results reported for the elements associated with this internal standard.			
10:58	ZZZZZZ	3187	60558	10080	4368
11:04	ZZZZZZ	3123	59918	10044	4291
11:10	ZZZZZZ	3171	60109	9992	4341
11:16	ZZZZZZ	3200	60771	10518	4373
11:22	ZZZZZZ	3164	60317	9861	4319
11:28	ZZZZZZ	3177	60419	9920	4414
11:33	ZZZZZZ	2975	59996	9868	4329

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30721 Units: ug/l

Time:			12:59		13:11		13:46		14:51	
Sample ID:			ICB1		CCB2		CCB3		CCB4	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	11	anr							
Antimony	6.0	2.1	anr							
Arsenic	3.0	1.2	anr							
Barium	200	.3	anr							
Beryllium	1.0	.04								
Bismuth	20	1.9								
Boron	100	.9								
Cadmium	3.0	.3	anr							
Calcium	5000	51								
Chromium	10	.3	anr							
Cobalt	50	.3								
Copper	10	.6	anr							
Iron	100	3.5								
Lead	3.0	1.7	-0.20	<3.0	-0.50	<3.0	0.10	<3.0	-1.1	<3.0
Lithium	20	1.1								
Magnesium	5000	24								
Manganese	15	.2	anr							
Molybdenum	20	2.9								
Nickel	10	1	anr							
Palladium	50	1.7								
Potassium	10000	32								
Selenium	10	2.6	anr							
Silicon	200	9.5								
Silver	10	.8	anr							
Sodium	10000	7.5								
Sulfur	50	3								
Strontium	10	.2	anr							
Thallium	2.0	1.4								
Tin	10	.6								
Titanium	10	.5								
Tungsten	50	6.1								
Vanadium	50	.5	anr							
Zinc	20	4.5	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30721 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	.3

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30721 Units: ug/l

Time:			16:01		16:37		17:18		18:29	
Sample ID:			CCB5		CCB6		CCB7		CCB8	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	11	anr							
Antimony	6.0	2.1	anr							
Arsenic	3.0	1.2	anr							
Barium	200	.3	anr							
Beryllium	1.0	.04								
Bismuth	20	1.9								
Boron	100	.9								
Cadmium	3.0	.3	anr							
Calcium	5000	51								
Chromium	10	.3	anr							
Cobalt	50	.3								
Copper	10	.6	anr							
Iron	100	3.5								
Lead	3.0	1.7	-0.70	<3.0	-0.60	<3.0	0.20	<3.0	1.7	<3.0
Lithium	20	1.1								
Magnesium	5000	24								
Manganese	15	.2	anr							
Molybdenum	20	2.9								
Nickel	10	1	anr							
Palladium	50	1.7								
Potassium	10000	32								
Selenium	10	2.6	anr							
Silicon	200	9.5								
Silver	10	.8	anr							
Sodium	10000	7.5								
Sulfur	50	3								
Strontium	10	.2	anr							
Thallium	2.0	1.4								
Tin	10	.6								
Titanium	10	.5								
Tungsten	50	6.1								
Vanadium	50	.5	anr							
Zinc	20	4.5	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30721 Units: ug/l

Time:
Sample ID:

Metal		
Zirconium	10	.3

(*) Outside of QC limits
(anr) Analyte not requested

10.1.2
10

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30721 Units: ug/l

Time:			19:34		20:45		21:54		23:04	
Sample ID:			CCB9		CCB10		CCB11		CCB12	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	11	anr							
Antimony	6.0	2.1	anr							
Arsenic	3.0	1.2	anr							
Barium	200	.3	anr							
Beryllium	1.0	.04								
Bismuth	20	1.9								
Boron	100	.9								
Cadmium	3.0	.3	anr							
Calcium	5000	51								
Chromium	10	.3	anr							
Cobalt	50	.3								
Copper	10	.6	anr							
Iron	100	3.5								
Lead	3.0	1.7	0.0	<3.0	1.7	<3.0	1.0	<500	0.50	<500
Lithium	20	1.1								
Magnesium	5000	24								
Manganese	15	.2	anr							
Molybdenum	20	2.9								
Nickel	10	1	anr							
Palladium	50	1.7								
Potassium	10000	32								
Selenium	10	2.6	anr							
Silicon	200	9.5								
Silver	10	.8	anr							
Sodium	10000	7.5								
Sulfur	50	3								
Strontium	10	.2	anr							
Thallium	2.0	1.4								
Tin	10	.6								
Titanium	10	.5								
Tungsten	50	6.1								
Vanadium	50	.5	anr							
Zinc	20	4.5	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30721 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	.3

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30721 Units: ug/l

Time:			00:10		00:51		02:01		03:12	
Sample ID:			CCB13		CCB14		CCB15		CCB16	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	11	anr							
Antimony	6.0	2.1	anr							
Arsenic	3.0	1.2	anr							
Barium	200	.3	anr							
Beryllium	1.0	.04								
Bismuth	20	1.9								
Boron	100	.9								
Cadmium	3.0	.3	anr							
Calcium	5000	51								
Chromium	10	.3	anr							
Cobalt	50	.3								
Copper	10	.6	anr							
Iron	100	3.5								
Lead	3.0	1.7	-0.10	<3.0	0.90	<3.0	1.4	<3.0	0.80	<3.0
Lithium	20	1.1								
Magnesium	5000	24								
Manganese	15	.2	anr							
Molybdenum	20	2.9								
Nickel	10	1	anr							
Palladium	50	1.7								
Potassium	10000	32								
Selenium	10	2.6	anr							
Silicon	200	9.5								
Silver	10	.8	anr							
Sodium	10000	7.5								
Sulfur	50	3								
Strontium	10	.2	anr							
Thallium	2.0	1.4								
Tin	10	.6								
Titanium	10	.5								
Tungsten	50	6.1								
Vanadium	50	.5	anr							
Zinc	20	4.5	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30721 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	.3

(*) Outside of QC limits
(anr) Analyte not requested

10.1.2
10

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30721 Units: ug/l

Time:			04:17		05:28		06:09	
Sample ID:			CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	11	anr					
Antimony	6.0	2.1	anr					
Arsenic	3.0	1.2	anr					
Barium	200	.3	anr					
Beryllium	1.0	.04						
Bismuth	20	1.9						
Boron	100	.9						
Cadmium	3.0	.3	anr					
Calcium	5000	51						
Chromium	10	.3	anr					
Cobalt	50	.3						
Copper	10	.6	anr					
Iron	100	3.5						
Lead	3.0	1.7	0.60	<3.0	0.20	<3.0	1.3	<3.0
Lithium	20	1.1						
Magnesium	5000	24						
Manganese	15	.2	anr					
Molybdenum	20	2.9						
Nickel	10	1	anr					
Palladium	50	1.7						
Potassium	10000	32						
Selenium	10	2.6	anr					
Silicon	200	9.5						
Silver	10	.8	anr					
Sodium	10000	7.5						
Sulfur	50	3						
Strontium	10	.2	anr					
Thallium	2.0	1.4						
Tin	10	.6						
Titanium	10	.5						
Tungsten	50	6.1						
Vanadium	50	.5	anr					
Zinc	20	4.5	anr					

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30721 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	.3

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:		12:54			13:05			13:41	
Sample ID:	ICV	ICV1		CCV	CCV2		CCV	CCV3	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium									
Bismuth									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron									
Lead	2000	2000	100.0	2000	2000	100.0	2000	2040	102.0
Lithium									
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	anr								
Palladium									
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium									
Sulfur									
Strontium	anr								
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:	
Sample ID:	
Metal	
Zirconium	

(*) Outside of QC limits
(anr) Analyte not requested

10.1.3
10

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:		14:45			15:55			16:31	
Sample ID:	CCV	CCV4		CCV	CCV5		CCV	CCV6	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium									
Bismuth									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron									
Lead	2000	2030	101.5	2000	2020	101.0	2000	2010	100.5
Lithium									
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	anr								
Palladium									
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium									
Sulfur									
Strontium	anr								
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:	
Sample ID:	
Metal	
Zirconium	

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:		17:12			18:24			19:28	
Sample ID:	CCV	CCV7		CCV	CCV8		CCV	CCV9	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium									
Bismuth									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron									
Lead	2000	2020	101.0	2000	2060	103.0	2000	2060	103.0
Lithium									
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	anr								
Palladium									
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium									
Sulfur									
Strontium	anr								
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:	
Sample ID:	
Metal	
Zirconium	

(*) Outside of QC limits
(anr) Analyte not requested

10.1.3
10

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:		20:39			21:49			22:59	
Sample ID:	CCV	CCV10		CCV	CCV11		CCV	CCV12	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium									
Bismuth									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron									
Lead	2000	2050	102.5	2000	2080	104.0	2000	2070	103.5
Lithium									
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	anr								
Palladium									
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium									
Sulfur									
Strontium	anr								
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:	
Sample ID:	
Metal	
Zirconium	

(*) Outside of QC limits
(anr) Analyte not requested

10.1.3
10

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:		00:04			00:45			01:55	
Sample ID:	CCV	CCV13		CCV	CCV14		CCV	CCV15	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium									
Bismuth									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron									
Lead	2000	2120	106.0	2000	2080	104.0	2000	2100	105.0
Lithium									
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	anr								
Palladium									
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium									
Sulfur									
Strontium	anr								
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:	
Sample ID:	
Metal	
Zirconium	

(*) Outside of QC limits
(anr) Analyte not requested

10.1.3
10

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:		03:06			04:11			05:22	
Sample ID:	CCV	CCV16		CCV	CCV17		CCV	CCV18	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium									
Bismuth									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron									
Lead	2000	2060	103.0	2000	2100	105.0	2000	2100	105.0
Lithium									
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	anr								
Palladium									
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium									
Sulfur									
Strontium	anr								
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:	
Sample ID:	
Metal	

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:		06:03	
Sample ID:	CCV	CCV19	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium			
Bismuth			
Boron			
Cadmium	anr		
Calcium			
Chromium	anr		
Cobalt			
Copper	anr		
Iron			
Lead	2000	2100	105.0
Lithium			
Magnesium			
Manganese	anr		
Molybdenum			
Nickel	anr		
Palladium			
Potassium			
Selenium	anr		
Silicon			
Silver	anr		
Sodium			
Sulfur			
Strontium	anr		
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium	anr		
Zinc	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30721 Units: ug/l

Time:	
Sample ID:	
Metal	
Zirconium	

(*) Outside of QC limits
(anr) Analyte not requested

10.1.3
10

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30721 Units: ug/l

Time:				12:36		12:42		12:48	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000		1000						
Chromium	10		2.0	anr					
Cobalt	50		3.0						
Copper	10		2.0	anr					
Iron	100	500							
Lead	3.0	20	2.5	2.2	73.3			19.7	98.5
Lithium	20								
Magnesium	5000		100						
Manganese	15		3.0	anr					
Molybdenum	20		4.0						
Nickel	10		4.0	anr					
Palladium	50								
Potassium	5000		2000						
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		1.0	anr					
Sodium	5000		1000						
Sulfur	50	50	50						
Strontium	10			anr					
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30721 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	5.0

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30721 Units: ug/l

Time:				16:43		16:48		16:54	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000		1000						
Chromium	10		2.0	anr					
Cobalt	50		3.0						
Copper	10		2.0	anr					
Iron	100	500							
Lead	3.0	20	2.5	2.6	86.7			20.8	104.0
Lithium	20								
Magnesium	5000		100						
Manganese	15		3.0	anr					
Molybdenum	20		4.0						
Nickel	10		4.0	anr					
Palladium	50								
Potassium	5000		2000						
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		1.0	anr					
Sodium	5000		1000						
Sulfur	50	50	50						
Strontium	10			anr					
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30721 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	5.0

(*) Outside of QC limits
(anr) Analyte not requested

10.1.4
10

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30721 Units: ug/l

Time:				00:16		00:22		00:28	
Sample ID:	CRI	CRIA	CRID	CRI3		CRID3		CRIA3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000		1000						
Chromium	10		2.0	anr					
Cobalt	50		3.0						
Copper	10		2.0	anr					
Iron	100	500							
Lead	3.0	20	2.5	3.3	110.0			21.8	109.0
Lithium	20								
Magnesium	5000		100						
Manganese	15		3.0	anr					
Molybdenum	20		4.0						
Nickel	10		4.0	anr					
Palladium	50								
Potassium	5000		2000						
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		1.0	anr					
Sodium	5000		1000						
Sulfur	50	50	50						
Strontium	10			anr					
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30721 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	5.0

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30721 Units: ug/l

Time:				05:33		05:39		05:45	
Sample ID:	CRI	CRIA	CRID	CRI4		CRID4		CRIA4	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000		1000						
Chromium	10		2.0	anr					
Cobalt	50		3.0						
Copper	10		2.0	anr					
Iron	100	500							
Lead	3.0	20	2.5	3.0	100.0			23.0	115.0
Lithium	20								
Magnesium	5000		100						
Manganese	15		3.0	anr					
Molybdenum	20		4.0						
Nickel	10		4.0	anr					
Palladium	50								
Potassium	5000		2000						
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		1.0	anr					
Sodium	5000		1000						
Sulfur	50	50	50						
Strontium	10			anr					
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30721 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	5.0

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA30721 Units: ug/l

Time:			13:17		13:23		17:00		17:06	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	539000	107.8	518000	103.6	544000	108.8	525000	105.0
Antimony		1000	5.7		1060	106.0	5.5		1080	108.0
Arsenic		1000	4.8		1080	108.0	2.3		1090	109.0
Barium		500	-0.50		544	108.8	-0.50		555	111.0
Beryllium		500	1.2		493	98.6	0.80		493	98.6
Bismuth		500	66.8*		568	113.6	66.5*		578	115.6
Boron			-1.2		13.2		-1.3		13.3	
Cadmium		1000	-1.7		1000	100.0	-1.7		1020	102.0
Calcium	400000	400000	404000	101.0	407000	101.8	402000	100.5	398000	99.5
Chromium		500	-3.1		484	96.8	-3.1		492	98.4
Cobalt		500	-1.2		482	96.4	-1.0		494	98.8
Copper		500	5.1		499	99.8	3.4		505	101.0
Iron	200000	200000	212000	106.0	197000	98.5	208000	104.0	194000	97.0
Lead		1000	-1.5		944	94.4	-0.90		959	95.9
Lithium		500	26.3		646	129.2	24.7		634	126.8*
Magnesium	500000	500000	520000	104.0	511000	102.2	516000	103.2	510000	102.0
Manganese		500	2.7		489	97.8	1.7		494	98.8
Molybdenum		500	3.1		513	102.6	2.2		523	104.6
Nickel		1000	-0.40		919	91.9	-0.30		931	93.1
Palladium		500	30.6		539	107.8	29.4		547	109.4
Potassium			180		195		149		163	
Selenium		1000	6.7		1060	106.0	4.8		1090	109.0
Silicon			8.0		10.0		6.9		10.4	
Silver		1000	1.0		1010	101.0	-2.3		1020	102.0
Sodium			759		904		371		493	
Sulfur		500	7.4		477	95.4	-53		442	88.4
Strontium			2.6		2.5		3.1		3.1	
Thallium		1000	-0.40		1010	101.0	1.1		1020	102.0
Tin			-4.8		-4.5		-5.1		-5.2	
Titanium			5.4		5.1		5.5		5.2	
Tungsten		500	-24		538	107.6	-47		534	106.8
Vanadium		500	-5.5		499	99.8	-4.9		509	101.8
Zinc		1000	8.3		1010	101.0	7.8		1040	104.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA30721 Units: ug/l

Time:							
Sample ID:							
Metal							
Zirconium	500	0.0	397	79.4*	-1.3	397	79.4*

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA30721 Units: ug/l

Time:			00:33		00:39		05:51		05:57	
Sample ID:	ICSA	ICSAB	ICSA3		ICSAB3		ICSA4		ICSAB4	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	554000	110.8	530000	106.0	547000	109.4	540000	108.0
Antimony		1000	5.9		1130	113.0	4.5		1140	114.0
Arsenic		1000	1.8		1150	115.0	0.70		1140	114.0
Barium		500	-0.30		562	112.4	-1.0		573	114.6
Beryllium		500	0.90		485	97.0	0.90		477	95.4
Bismuth		500	67.1*		605	121.0*	67.7*		603	120.6*
Boron			-1.7		13.4		-0.30		12.7	
Cadmium		1000	-1.5		1070	107.0	-1.5		1080	108.0
Calcium	400000	400000	401000	100.3	403000	100.8	383000	95.8	408000	102.0
Chromium		500	-3.5		507	101.4	-3.5		514	102.8
Cobalt		500	-1.3		508	101.6	-0.90		505	101.0
Copper		500	-2.2		514	102.8	-5.2		518	103.6
Iron	200000	200000	205000	102.5	191000	95.5	193000	96.5	185000	92.5
Lead		1000	-1.2		987	98.7	-0.80		989	98.9
Lithium		500	22.5		616	123.2*	25.3		597	119.4
Magnesium	500000	500000	506000	101.2	497000	99.4	477000	95.4	482000	96.4
Manganese		500	1.9		511	102.2	0.0		516	103.2
Molybdenum		500	1.2		541	108.2	1.5		538	107.6
Nickel		1000	-0.80		950	95.0	-1.1		945	94.5
Palladium		500	26.1		565	113.0	19.0		570	114.0
Potassium			83.7		14.5		-43		-35	
Selenium		1000	1.4		1130	113.0	-1.8		1130	113.0
Silicon			6.7		9.7		6.0		8.0	
Silver		1000	-1.2		1060	106.0	-4.3		1080	108.0
Sodium			504		468		314		336	
Sulfur		500	-74		458	91.6	-75		458	91.6
Strontium			3.6		3.3		4.1		3.7	
Thallium		1000	-2.7		1050	105.0	-2.9		1050	105.0
Tin			-4.5		-4.0		-5.1		-4.1	
Titanium			4.6		5.4		5.0		5.2	
Tungsten		500	-50		553	110.6	-51		551	110.2
Vanadium		500	-4.6		521	104.2	-5.1		525	105.0
Zinc		1000	8.8		1070	107.0	8.7		1050	105.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031613M1.ICP Date Analyzed: 03/16/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA30721 Units: ug/l

Time:							
Sample ID:							
Metal							
Zirconium	500	-1.4	407	81.4	-2.5	415	83.0

(*) Outside of QC limits
(anr) Analyte not requested

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
Analyst: MET Run ID: MA30730
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:44	MA30730-STD1	1		STDA
09:49	MA30730-STD2	1		STDB
09:55	MA30730-STD3	1		STDC
10:01	MA30730-STD4	1		STDD
10:07	MA30730-CCV1	1		
10:13	MA30730-CCB1	1		
10:19	ZZZZZZ	1		
10:24	MA30730-CRI1	1		
10:30	MA30730-CRID1	1		
10:36	MA30730-CRIA1	1		
10:43	MA30730-ICV1	1		
10:56	MA30730-ICB1	1		
11:01	MA30730-ICCV1	1		
11:24	MA30730-CCB2	1		
11:29	MA30730-CRID2	1		
11:35	MA30730-ICSA1	1		
11:41	MA30730-ICSAB1	1		
11:47	ZZZZZZ	1		
11:53	ZZZZZZ	1		
11:58	ZZZZZZ	1		
12:04	ZZZZZZ	1		
12:10	MA30730-CCV2	1		
12:16	MA30730-CCB3	1		
12:22	ZZZZZZ	1		
12:28	ZZZZZZ	5		
12:34	ZZZZZZ	1		
12:40	ZZZZZZ	5		
12:46	ZZZZZZ	5		
12:52	ZZZZZZ	1		
12:58	ZZZZZZ	1		
13:03	JB30425-4	5		
13:09	JB30425-10	3		
13:15	MA30730-CCV3	1		

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
Analyst: MET Run ID: MA30730
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:21	MA30730-CCB4	1		
13:27	JB30425-14	5		
13:33	ZZZZZZ	1		
13:39	ZZZZZZ	1		
13:45	ZZZZZZ	1		
13:51	ZZZZZZ	1		
13:57	ZZZZZZ	5		
14:03	MP70455-S1	1		
14:09	MP70455-S2	1		
14:14	JB31280-2	1		(sample used for QC only; not part of login JB30425)
14:20	MA30730-CCV4	1		
14:26	MA30730-CCB5	1		
14:32	MA30730-CCV5	1		
14:38	MA30730-CCB6	1		
14:44	MP70455-SD1	5		
14:50	ZZZZZZ	2		
14:55	MP70504-SD1	25		
15:01	ZZZZZZ	1		
15:07	ZZZZZZ	1		
15:13	ZZZZZZ	1		
15:19	ZZZZZZ	1		
15:25	ZZZZZZ	1		
15:31	MA30730-CCV6	1		
15:37	MA30730-CCB7	1		
15:43	ZZZZZZ	1		
15:49	ZZZZZZ	1		
15:55	MP70374-MB3	1		
16:00	MP70374-LC2	1		
16:06	ZZZZZZ	1		
16:12	MA30730-CCV7	1		
16:18	MA30730-CCB8	1		
16:24	MA30730-CRI2	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
Analyst: MET Run ID: MA30730
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:44	MA30730-STD1	3113 R	53352 R	10444 R	3650 R
09:49	MA30730-STD2	2989	50021	10287	3296
09:55	MA30730-STD3	2883	48555	9983	3165
10:01	MA30730-STD4	2817	47086	9959	3089
10:07	MA30730-CCV1	No results reported for the elements associated with this internal standard.			
10:13	MA30730-CCB1	No results reported for the elements associated with this internal standard.			
10:19	ZZZZZZ	No results reported for the elements associated with this internal standard.			
10:24	MA30730-CRI1	3076	52342	10072	3495
10:30	MA30730-CRID1	3116	52786	10195	3603
10:36	MA30730-CRIA1	3152	53493	10325	3650
10:43	MA30730-ICV1	2878	48016	9784	3144
10:56	MA30730-ICB1	3154	52998	10077	3668
11:01	MA30730-ICCV1	2913	48681	9851	3178
11:24	MA30730-CCB2	3164	51898	9943	3672
11:29	MA30730-CRID2	3121	50210	9951	3601
11:35	MA30730-ICSA1	2652	43865	9333	2851
11:41	MA30730-ICSAB1	2610	43702	9190	2810
11:47	ZZZZZZ	3102	52257	9930	3587
11:53	ZZZZZZ	3065	48566	9876	3173
11:58	ZZZZZZ	3149	53172	9904	3605
12:04	ZZZZZZ	2935	52930	9870	3584
12:10	MA30730-CCV2	2892	47863	9591	3137
12:16	MA30730-CCB3	3134	52828	9923	3615
12:22	ZZZZZZ	3190	53485	9876	3636
12:28	ZZZZZZ	3073	51287	10008	3525
12:34	ZZZZZZ	2691	43596	9276	2827
12:40	ZZZZZZ	2807	46593	9526	2967
12:46	ZZZZZZ	2866	47813	9373	3076
12:52	ZZZZZZ	2570	42917	9221	2674
12:58	ZZZZZZ	2803	45238	9305	2891
13:03	JB30425-4	2811	43295	7894	2965
13:09	JB30425-10	3125	52316	9791	3523
13:15	MA30730-CCV3	2952	48756	9592	3197

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
Analyst: MET Run ID: MA30730
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:21	MA30730-CCB4	3183	53577	9696	3666
13:27	JB30425-14	3176	53462	10074	3517
13:33	ZZZZZZ	2542	43685	9038	2676
13:39	ZZZZZZ	2548	42774	9063	2676
13:45	ZZZZZZ	2704	44221	9209	2859
13:51	ZZZZZZ	2700	44458	9269	2808
13:57	ZZZZZZ	2863	47620	9289	3023
14:03	MP70455-S1	3025	50776	9869	3265
14:09	MP70455-S2	3004	49946	9652	3244
14:14	JB31280-2	3006	50639	9677	3219
14:20	MA30730-CCV4	2948	49151	9247	3167
14:26	MA30730-CCB5	3200	53944	9692	3639
14:32	MA30730-CCV5	2919	48648	9318	3124
14:38	MA30730-CCB6	3224	54442	9755	3657
14:44	MP70455-SD1	3099	51687	9582	3380
14:50	ZZZZZZ	3033	50379	9613	3223
14:55	MP70504-SD1	3029	50725	9432	3274
15:01	ZZZZZZ	2690	43694	9030	2813
15:07	ZZZZZZ	3249	54664	9897	3653
15:13	ZZZZZZ	2711	44116	9101	2816
15:19	ZZZZZZ	3218	54233	9896	3623
15:25	ZZZZZZ	3242	54665	9765	3641
15:31	MA30730-CCV6	2894	48282	9200	3102
15:37	MA30730-CCB7	3192	53823	9562	3635
15:43	ZZZZZZ	2675	43822	8870	2774
15:49	ZZZZZZ	2808	46037	9042	2930
15:55	MP70374-MB3	3182	53596	9613	3586
16:00	MP70374-LC2	3125	52030	9488	3395
16:06	ZZZZZZ	2913	48700	9421	3078
16:12	MA30730-CCV7	2951	49191	9248	3151
16:18	MA30730-CCB8	3171	53649	9437	3606
16:24	MA30730-CRI2	3114	52301	9335	3457

R = Reference for ISTD limits. ! = Outside limits.

INTERNAL STANDARD SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
Analyst: MET Run ID: MA30730
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

10.2.1
10

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30730 Units: ug/l

Time:			10:56		11:24		12:16		13:21	
Sample ID:			ICB1		CCB2		CCB3		CCB4	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	11								
Antimony	6.0	2.1								
Arsenic	3.0	1.2	anr							
Barium	200	.3	anr							
Beryllium	1.0	.04								
Bismuth	20	1.9								
Boron	100	.9								
Cadmium	3.0	.3	anr							
Calcium	5000	51								
Chromium	10	.3	anr							
Cobalt	50	.3								
Copper	10	.6								
Iron	100	3.5								
Lead	3.0	1.7	0.30	<3.0	0.10	<3.0	0.50	<3.0	0.70	<3.0
Lithium	20	1.1								
Magnesium	5000	24								
Manganese	15	.2								
Molybdenum	20	2.9								
Nickel	10	1								
Palladium	50	1.7								
Potassium	10000	32								
Selenium	10	2.6	anr							
Silicon	200	9.5								
Silver	10	.8	anr							
Sodium	10000	7.5	anr							
Sulfur	50	3								
Strontium	10	.2								
Thallium	2.0	1.4								
Tin	10	.6								
Titanium	10	.5								
Tungsten	50	6.1								
Vanadium	50	.5								
Zinc	20	4.5								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30730 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	.3

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30730 Units: ug/l

Time:			14:26		14:38		15:37		16:18	
Sample ID:			CCB5		CCB6		CCB7		CCB8	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	11								
Antimony	6.0	2.1								
Arsenic	3.0	1.2	anr							
Barium	200	.3	anr							
Beryllium	1.0	.04								
Bismuth	20	1.9								
Boron	100	.9								
Cadmium	3.0	.3	anr							
Calcium	5000	51								
Chromium	10	.3	anr							
Cobalt	50	.3								
Copper	10	.6								
Iron	100	3.5								
Lead	3.0	1.7	1.0	<3.0	-0.20	<3.0	0.10	<3.0	0.60	<3.0
Lithium	20	1.1								
Magnesium	5000	24								
Manganese	15	.2								
Molybdenum	20	2.9								
Nickel	10	1								
Palladium	50	1.7								
Potassium	10000	32								
Selenium	10	2.6	anr							
Silicon	200	9.5								
Silver	10	.8	anr							
Sodium	10000	7.5	anr							
Sulfur	50	3								
Strontium	10	.2								
Thallium	2.0	1.4								
Tin	10	.6								
Titanium	10	.5								
Tungsten	50	6.1								
Vanadium	50	.5								
Zinc	20	4.5								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA30730 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	.3

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30730 Units: ug/l

Time:		11:01	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum			
Antimony			
Arsenic	anr		
Barium	anr		
Beryllium			
Bismuth			
Boron			
Cadmium	anr		
Calcium			
Chromium	anr		
Cobalt			
Copper			
Iron			
Lead	2000	2050	102.5
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Palladium			
Potassium			
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Sulfur			
Strontium			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			
Zinc			

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30730 Units: ug/l

Time:	
Sample ID:	
Metal	
Zirconium	

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30730 Units: ug/l

Time:		10:43			12:10			13:15	
Sample ID:	ICV	ICV1		CCV	CCV2		CCV	CCV3	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Bismuth									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper									
Iron									
Lead	2000	2070	103.5	2000	2090	104.5	2000	2060	103.0
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Palladium									
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									
Zinc									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30730 Units: ug/l

Time:	
Sample ID:	
Metal	
Zirconium	

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30730 Units: ug/l

Time:		14:20			14:32			15:31	
Sample ID:	CCV	CCV4		CCV	CCV5		CCV	CCV6	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Bismuth									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper									
Iron									
Lead	2000	2060	103.0	2000	2090	104.5	2000	2100	105.0
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Palladium									
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									
Zinc									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30730 Units: ug/l

Time:	
Sample ID:	
Metal	
Zirconium	

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30730 Units: ug/l

Time:		16:12	
Sample ID:	CCV	CCV7	
Metal	True	Results	% Rec
Aluminum			
Antimony			
Arsenic	anr		
Barium	anr		
Beryllium			
Bismuth			
Boron			
Cadmium	anr		
Calcium			
Chromium	anr		
Cobalt			
Copper			
Iron			
Lead	2000	2100	105.0
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Palladium			
Potassium			
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Sulfur			
Strontium			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			
Zinc			

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA30730 Units: ug/l

Time:	
Sample ID:	
Metal	
Zirconium	

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30730 Units: ug/l

Time:				10:24		10:30		10:36	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000		1000						
Chromium	10		2.0	anr					
Cobalt	50		3.0						
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5	3.1	103.3	3.2	128.0	21.0	105.0
Lithium	20								
Magnesium	5000		100						
Manganese	15		3.0						
Molybdenum	20		4.0						
Nickel	10		4.0						
Palladium	50								
Potassium	5000		2000						
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		1.0	anr					
Sodium	5000		1000	anr					
Sulfur	50	50	50						
Strontium	10								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0						
Zinc	20		10						

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30730 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	5.0

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30730 Units: ug/l

Time:				11:29		16:24	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec
Aluminum	200	500	100				
Antimony	6.0	20	3.0				
Arsenic	8.0	20	3.0	anr			
Barium	200		4.0	anr			
Beryllium	2.0		1.0				
Bismuth	20						
Boron	100		10				
Cadmium	3.0		1.0	anr			
Calcium	5000		1000				
Chromium	10		2.0	anr			
Cobalt	50		3.0				
Copper	10		2.0				
Iron	100	500					
Lead	3.0	20	2.5	3.6	144.0*(a	2.7	90.0
Lithium	20						
Magnesium	5000		100				
Manganese	15		3.0				
Molybdenum	20		4.0				
Nickel	10		4.0				
Palladium	50						
Potassium	5000		2000				
Selenium	10	20	5.0	anr			
Silicon	200						
Silver	5.0		1.0	anr			
Sodium	5000		1000	anr			
Sulfur	50	50	50				
Strontium	10						
Thallium	10		2.0				
Tin	10						
Titanium	10						
Tungsten	50						
Vanadium	50		2.0				
Zinc	20		10				

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA30730 Units: ug/l

Time:		
Sample ID:		
Metal		
Zirconium	10	5.0

(*) Outside of QC limits
(anr) Analyte not requested
(a) No samples reported for this element at this RL in the area bracketed by this QC.

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA30730 Units: ug/l

Time:			11:35		11:41	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	519000	103.8	504000	100.8
Antimony		1000	3.4		1010	101.0
Arsenic		1000	0.90		1020	102.0
Barium		500	-0.70		512	102.4
Beryllium		500	0.80		468	93.6
Bismuth		500	33.8		505	101.0
Boron			0.0		21.7	
Cadmium		1000	-1.4		962	96.2
Calcium	400000	400000	381000	95.3	397000	99.3
Chromium		500	-5.0		466	93.2
Cobalt		500	-1.8		463	92.6
Copper		500	-0.10		478	95.6
Iron	200000	200000	201000	100.5	189000	94.5
Lead		1000	-5.5		918	91.8
Lithium		500	20.4		592	118.4
Magnesium	500000	500000	492000	98.4	489000	97.8
Manganese		500	7.3		478	95.6
Molybdenum		500	1.6		483	96.6
Nickel		1000	-2.8		887	88.7
Palladium		500	23.9		522	104.4
Potassium			-31		-35	
Selenium		1000	-4.3		988	98.8
Silicon			-10		-8.6	
Silver		1000	3.8		992	99.2
Sodium			95.4		121	
Sulfur		500	-17		445	89.0
Strontium			2.2		1.7	
Thallium		1000	-0.70		970	97.0
Tin			-4.2		-4.2	
Titanium			4.5		5.3	
Tungsten		500	-33		499	99.8
Vanadium		500	-5.5		493	98.6
Zinc		1000	9.6		980	98.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SC031813M1.ICP Date Analyzed: 03/18/13 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA30730 Units: ug/l

Time:				
Sample ID:				
Metal				
Zirconium	500	0.50	441	88.2

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP70431
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 03/14/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	51	1.2	.76		
Antimony	2.0	.21	.15		
Arsenic	2.0	.12	.13		
Barium	20	.031	.055		
Beryllium	0.20	.0041	.02		
Bismuth	2.0	.19	.14		
Boron	10	.092	.15		
Cadmium	0.51	.031	.026		
Calcium	510	5.2	2.4		
Chromium	1.0	.031	.12		
Cobalt	5.1	.031	.032		
Copper	2.6	.061	.13		
Iron	51	.36	.8		
Lead	2.0	.17	.12	-0.031	<2.0
Lithium	2.0	.11	.26		
Magnesium	510	2.4	3.1		
Manganese	1.5	.02	.049		
Molybdenum	2.0	.3	.076		
Nickel	4.1	.1	.11		
Palladium	5.1	.17	.18		
Potassium	1000	3.2	14		
Selenium	2.0	.27	.24		
Silicon	20	.97	1.9		
Silver	0.51	.082	.064		
Sodium	1000	.77	13		
Strontium	1.0	.02	.17		
Sulfur	5.1	.31	.66		
Thallium	1.0	.14	.22		
Tin	5.1	.061	1.5		
Titanium	1.0	.051	.63		
Tungsten	5.1	.62	1.1		
Vanadium	5.1	.051	.1		
Zinc	2.0	.46	.2		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP70431 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date:

Metal			
Zirconium	2.0	.031	.1

Associated samples MP70431: JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-7, JB30425-8, JB30425-9, JB30425-10, JB30425-11, JB30425-12, JB30425-13, JB30425-14, JB30425-15

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: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP70431
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 03/14/13

Metal	JB30425-6 Original	MS	Spikelot MPIRS1	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	44.3	161	118	99.2	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Palladium					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP70431 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date:

Metal

Zirconium

Associated samples MP70431: JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-7, JB30425-8, JB30425-9, JB30425-10, JB30425-11, JB30425-12, JB30425-13, JB30425-14, JB30425-15

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: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP70431
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 03/14/13

Metal	JB30425-6 Original	MSD	Spikelot MPIRS1	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead	44.3	158	114	99.6	1.9	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Palladium						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP70431 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date:

Metal

Zirconium

Associated samples MP70431: JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-7, JB30425-8, JB30425-9, JB30425-10, JB30425-11, JB30425-12, JB30425-13, JB30425-14, JB30425-15

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: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP70431
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 03/14/13

Metal	BSP Result	Spikelot MPIRS1	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	99.0	98	101.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Palladium				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP70431 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date:

Metal

Zirconium

Associated samples MP70431: JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-7, JB30425-8, JB30425-9, JB30425-10, JB30425-11, JB30425-12, JB30425-13, JB30425-14, JB30425-15

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP70431
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 03/14/13

Metal	JB30425-6 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	396	419	6.0	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Palladium				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JB30425
Account: AQTPAW - Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP70431 Methods: SW846 6010C
Matrix Type: SOLID Units: ug/l

Prep Date:

Metal

Zirconium

Associated samples MP70431: JB30425-1, JB30425-3, JB30425-4, JB30425-5, JB30425-6, JB30425-7, JB30425-8, JB30425-9, JB30425-10, JB30425-11, JB30425-12, JB30425-13, JB30425-14, JB30425-15

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

New Jersey
ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: JB30425-1 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: S-367_0-2'

Wet Weight (Total)	26.43	g
Tare Weight	20.63	g
Dry Weight (Total)	25.74	g
Solids, Percent	88.1	%

Sample: JB30425-3 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI5_BH-13-37-2.5-3_030513

Wet Weight (Total)	25.67	g
Tare Weight	20.04	g
Dry Weight (Total)	24.22	g
Solids, Percent	74.2	%

Sample: JB30425-4 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI4_S-366_0-1_30513

Wet Weight (Total)	29.94	g
Tare Weight	21	g
Dry Weight (Total)	29.29	g
Solids, Percent	92.7	%

Sample: JB30425-5 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI4_S-366_4.5-5.5_30513

Wet Weight (Total)	32.32	g
Tare Weight	25.17	g
Dry Weight (Total)	30.77	g
Solids, Percent	78.3	%

Sample: JB30425-6 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI4_S-368_0-1_30513

Wet Weight (Total)	28.17	g
Tare Weight	19.73	g
Dry Weight (Total)	27.12	g
Solids, Percent	87.6	%

Sample: JB30425-7 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI4_S-368_6-7_30513

Wet Weight (Total)	27.13	g
Tare Weight	19.76	g
Dry Weight (Total)	25.8	g
Solids, Percent	82	%

Percent Solids Raw Data Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: JB30425-8 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: BH-13-43-1.5-2_030513

Wet Weight (Total)	30.92	g
Tare Weight	24.03	g
Dry Weight (Total)	29.35	g
Solids, Percent	77.2	%

Sample: JB30425-9 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: BH-13-43-2-2.5_030513

Wet Weight (Total)	26.3	g
Tare Weight	20.2	g
Dry Weight (Total)	24.67	g
Solids, Percent	73.3	%

Sample: JB30425-10 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI5_BH-13-38_1.5-2_030513

Wet Weight (Total)	24.64	g
Tare Weight	19.41	g
Dry Weight (Total)	23.3	g
Solids, Percent	74.4	%

Sample: JB30425-11 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI5_BH-13-38_3.5-4_030513

Wet Weight (Total)	26.33	g
Tare Weight	20.11	g
Dry Weight (Total)	23.92	g
Solids, Percent	61.3	%

Sample: JB30425-12 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI5_BH-13-39_1.5-2_030513

Wet Weight (Total)	28.77	g
Tare Weight	20.35	g
Dry Weight (Total)	26.52	g
Solids, Percent	73.3	%

Sample: JB30425-13 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI5_BH-13-39_2-2.5_030513

Wet Weight (Total)	25.11	g
Tare Weight	19.03	g
Dry Weight (Total)	23.39	g
Solids, Percent	71.7	%

Percent Solids Raw Data Summary

Job Number: JB30425
Account: AQTPAW Aquaterra Technologies, Inc.
Project: Sun-Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: JB30425-14 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI5_BH-13-39_2.5-3_030513

Wet Weight (Total)	29.02	g
Tare Weight	19.58	g
Dry Weight (Total)	26.3	g
Solids, Percent	71.2	%

Sample: JB30425-15 **Analyzed:** 14-MAR-13 by WR **Method:** SM2540 G-97
ClientID: AOI5_BH-13-37_1.5-2_030513

Wet Weight (Total)	26.34	g
Tare Weight	19.69	g
Dry Weight (Total)	25.36	g
Solids, Percent	85.3	%