Total Pages 838

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Sunoco Aquaterra Technologies
Client Ref.:MH Refinery AOI-5

Pace-Pittsburgh Project No. : 30133009

Pace Analytical Services, Inc.-Pittsburgh
1638 Roseytown Road
Suites 2, 3, & 4
Greensburg, PA 15601

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Project # 3013309

LABORATORY DELIVERABLES

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR
ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following laboratory deliverables shall be included in the data submission. All deviations from the accepted methodology and procedures, or performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The "Technical Requirements for Site Remediation", N.J.A.C. 7:26E, which became effective on July 1, 1993, provide further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages may be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits be included in one section of the data package and in the main body of the report.

		Check if Complete
1.	Cover Page, Title Page listing Lab Certification number, Facility name and address, and date of report.	X
2.	Table of Contents	X
3.	Summary Sheets listing analytical results for all targeted And non-targeted compounds.	X
4.	Summary Table cross-referencing field ID numbers vs. Lab ID numbers	X
5.	Document bound, paginated and legible	X
6.	Chain of Custody	X
7.	Methodology Summary	X
8.	Laboratory Chronicle and Holding time Check	X
9.	Results submitted on a dry weight basis (if applicable)	X
10.	Method Detection Limits (see sample results tables)	X
11.	Lab Certified by NJDEP for parameters or appropriate category Of parameters or lab is a member of the USEPA CLP	X
12.	Non-Conformance Summary	X

Samantha O'Bayne — 12/12/14
Laboratory Manager or Environmental Consultants Signature — Date

Karen Sweetee — 12/12/14
Data Package Prepared By — Date

Q:\Deliverables\Data Pkg Forms\Deliverables Forms\NJ Deliverables Form (Q020 Rev0 22Jan2007).doc

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

November 10, 2014

Ms. Tiffani Doerr
Aquaterra Technologies
122 South Church Street
West Chester, PA 19381

RE: Project: MH Refinery AOI-5
Pace Project No.: 30133009

Dear Ms. Doerr:
Enclosed are the analytical results for sample(s) received by the laboratory on October 28, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rachel D Christner

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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SAMPLE SUMMARY

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30133009001	**AOI-5_PECO-B2_12-13_10222014**	Solid	10/22/14 15:00	10/28/14 10:15
30133009002	**AOI-5_PECO-B5_14-16_10232014**	Solid	10/23/14 14:30	10/28/14 10:15
30133009003	**AOI-5_PECO-B6_12-14_10242014**	Solid	10/24/14 11:30	10/28/14 10:15

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SAMPLE ANALYTE COUNT

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30133009001	**AOI-5_PECO-B2_12-13_10222014**	EPA 6010B	RTL	5	PASI-PA
		EPA 8270C by SIM	DJL, JSH	18	PASI-PA
		EPA 8270C	DJL	18	PASI-PA
		EPA 8260B	JEW	17	PASI-PA
		ASTM D2974-87	SMW	1	PASI-PA
30133009002	**AOI-5_PECO-B5_14-16_10232014**	EPA 6010B	RTL	5	PASI-PA
		EPA 8270C by SIM	DJL, JSH	18	PASI-PA
		EPA 8270C	DJL	18	PASI-PA
		EPA 8260B	JEW	17	PASI-PA
		ASTM D2974-87	SMW	1	PASI-PA
30133009003	**AOI-5_PECO-B6_12-14_10242014**	EPA 6010B	RTL	5	PASI-PA
		EPA 8270C by SIM	DJL, JSH	18	PASI-PA
		EPA 8270C	DJL	18	PASI-PA
		EPA 8260B	JEW, MAK	17	PASI-PA
		ASTM D2974-87	SMW	1	PASI-PA

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PROJECT NARRATIVE

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Method: **EPA 6010B**
Description: 6010 MET ICP
Client: Sunoco_Langan
Date: November 10, 2014

General Information:
3 samples were analyzed for EPA 6010B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Method: **EPA 8270C by SIM**
Description: 8270 MSSV PAH by SIM
Client: Sunoco_Langan
Date: November 10, 2014

General Information:
3 samples were analyzed for EPA 8270C by SIM. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Method: **EPA 8270C**
Description: 8270 MSSV FULL LIST MICROWAVE
Client: Sunoco_Langan
Date: November 10, 2014

General Information:
3 samples were analyzed for EPA 8270C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/21399

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- AOI-5_PECO-B6_12-14_10242014 (Lab ID: 30133009003)
  - 2-Fluorophenol (S)
  - Phenol-d6 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: OEXT/21399

1c: Surrogate recovery exceeded laboratory control limits. Results unaffected by high bias.

- LCS (Lab ID: 809327)
  - 2-Fluorophenol (S)

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PROJECT NARRATIVE

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Method: **EPA 8270C**
Description: 8270 MSSV FULL LIST MICROWAVE
Client: Sunoco_Langan
Date: November 10, 2014

Analyte Comments:

QC Batch: OEXT/21399

- LCS (Lab ID: 809327)
  - 2-Fluorophenol (S)

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PROJECT NARRATIVE

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Sunoco_Langan
Date: November 10, 2014

General Information:
3 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: MSV/21491

S0: Surrogate recovery outside laboratory control limits.

- AOI-5_PECO-B6_12-14_10242014 (Lab ID: 30133009003)
  - Toluene-d8 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/21491

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Sample: AOI-5_PECO-B2_12-13_10222014 **Lab ID: 30133009001** Collected: 10/22/14 15:00 Received: 10/28/14 10:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010B Preparation Method: EPA 3050B								
Cobalt	**5.7**	mg/kg	0.93	0.043	1	11/03/14 10:52	11/04/14 14:03	7440-48-4	
Lead	**7.5**	mg/kg	0.46	0.25	1	11/03/14 10:52	11/04/14 14:03	7439-92-1	
Nickel	**8.8**	mg/kg	1.9	0.13	1	11/03/14 10:52	11/04/14 14:03	7440-02-0	
Vanadium	**14.1**	mg/kg	0.93	0.053	1	11/03/14 10:52	11/04/14 14:03	7440-62-2	
Zinc	**27.0**	mg/kg	0.93	0.42	1	11/03/14 10:52	11/04/14 14:03	7440-66-6	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546								
Acenaphthene	**0.0082 U**	mg/kg	0.0082	0.0015	1	11/05/14 15:15	11/07/14 15:26	83-32-9	
Anthracene	**0.0082 U**	mg/kg	0.0082	0.0011	1	11/05/14 15:15	11/07/14 15:26	120-12-7	
Benzo(a)anthracene	**0.0082 U**	mg/kg	0.0082	0.00055	1	11/05/14 15:15	11/07/14 15:26	56-55-3	
Benzo(a)pyrene	**0.0082 U**	mg/kg	0.0082	0.00048	1	11/05/14 15:15	11/07/14 15:26	50-32-8	
Benzo(b)fluoranthene	**0.0082 U**	mg/kg	0.0082	0.00077	1	11/05/14 15:15	11/07/14 15:26	205-99-2	
Benzo(g,h,i)perylene	**0.0082 U**	mg/kg	0.0082	0.00067	1	11/05/14 15:15	11/07/14 15:26	191-24-2	
Benzo(k)fluoranthene	**0.0082 U**	mg/kg	0.0082	0.00041	1	11/05/14 15:15	11/07/14 15:26	207-08-9	
Chrysene	**0.0082 U**	mg/kg	0.0082	0.0010	1	11/05/14 15:15	11/07/14 15:26	218-01-9	
Dibenz(a,h)anthracene	**0.0082 U**	mg/kg	0.0082	0.00063	1	11/05/14 15:15	11/07/14 15:26	53-70-3	
Fluoranthene	**0.0082 U**	mg/kg	0.0082	0.00076	1	11/05/14 15:15	11/07/14 15:26	206-44-0	
Fluorene	**0.0082 U**	mg/kg	0.0082	0.0014	1	11/05/14 15:15	11/07/14 15:26	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.0082 U**	mg/kg	0.0082	0.00045	1	11/05/14 15:15	11/07/14 15:26	193-39-5	
Naphthalene	**0.0082 U**	mg/kg	0.0082	0.0022	1	11/05/14 15:15	11/07/14 15:26	91-20-3	
Phenanthrene	**0.0082 U**	mg/kg	0.0082	0.0011	1	11/05/14 15:15	11/07/14 15:26	85-01-8	
Pyrene	**0.0082 U**	mg/kg	0.0082	0.00086	1	11/05/14 15:15	11/07/14 15:26	129-00-0	
Quinoline	**0.0082 U**	mg/kg	0.0082	0.0020	1	11/05/14 15:15	11/10/14 14:22	91-22-5	
Surrogates									
2-Fluorobiphenyl (S)	63	%	35-141		1	11/05/14 15:15	11/07/14 15:26	321-60-8	
Terphenyl-d14 (S)	78	%	64-141		1	11/05/14 15:15	11/07/14 15:26	1718-51-0	
8270 MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270C Preparation Method: EPA 3546								
Biphenyl (Diphenyl)	**0.41 U**	mg/kg	0.41	0.076	1	10/29/14 15:30	10/30/14 12:51	92-52-4	
Diethylphthalate	**0.41 U**	mg/kg	0.41	0.046	1	10/29/14 15:30	10/30/14 12:51	84-66-2	
2,4-Dimethylphenol	**0.41 U**	mg/kg	0.41	0.073	1	10/29/14 15:30	10/30/14 12:51	105-67-9	
Di-n-butylphthalate	**0.41 U**	mg/kg	0.41	0.069	1	10/29/14 15:30	10/30/14 12:51	84-74-2	
2,4-Dinitrophenol	**1.0 U**	mg/kg	1.0	0.38	1	10/29/14 15:30	10/30/14 12:51	51-28-5	
bis(2-Ethylhexyl)phthalate	**0.41 U**	mg/kg	0.41	0.14	1	10/29/14 15:30	10/30/14 12:51	117-81-7	
2-Methylnaphthalene	**0.41 U**	mg/kg	0.41	0.050	1	10/29/14 15:30	10/30/14 12:51	91-57-6	
2-Methylphenol(o-Cresol)	**0.41 U**	mg/kg	0.41	0.073	1	10/29/14 15:30	10/30/14 12:51	95-48-7	
3&4-Methylphenol(m&p Cresol)	**0.83 U**	mg/kg	0.83	0.084	1	10/29/14 15:30	10/30/14 12:51		
4-Nitrophenol	**0.41 U**	mg/kg	0.41	0.17	1	10/29/14 15:30	10/30/14 12:51	100-02-7	
Phenol	**0.41 U**	mg/kg	0.41	0.10	1	10/29/14 15:30	10/30/14 12:51	108-95-2	
Pyridine	**1.0 U**	mg/kg	1.0	0.34	1	10/29/14 15:30	10/30/14 12:51	110-86-1	
Surrogates									
Nitrobenzene-d5 (S)	80	%	34-107		1	10/29/14 15:30	10/30/14 12:51	4165-60-0	
2-Fluorobiphenyl (S)	84	%	38-107		1	10/29/14 15:30	10/30/14 12:51	321-60-8	
Terphenyl-d14 (S)	73	%	34-129		1	10/29/14 15:30	10/30/14 12:51	1718-51-0	

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ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Sample: AOI-5_PECO-B2_12-13_10222014 **Lab ID: 30133009001** Collected: 10/22/14 15:00 Received: 10/28/14 10:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270C Preparation Method: EPA 3546								
Surrogates									
Phenol-d6 (S)	86	%	20-102		1	10/29/14 15:30	10/30/14 12:51	13127-88-3	
2-Fluorophenol (S)	79	%	29-88		1	10/29/14 15:30	10/30/14 12:51	367-12-4	
2,4,6-Tribromophenol (S)	62	%	13-114		1	10/29/14 15:30	10/30/14 12:51	118-79-6	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Benzene	**0.0048 U**	mg/kg	0.0048	0.00075	1		11/04/14 17:58	71-43-2	M5
sec-Butylbenzene	**0.0048 U**	mg/kg	0.0048	0.0014	1		11/04/14 17:58	135-98-8	M5
tert-Butylbenzene	**0.0048 U**	mg/kg	0.0048	0.0019	1		11/04/14 17:58	98-06-6	M5
Cyclohexane	**0.013**	mg/kg	0.0096	0.0012	1		11/04/14 17:58	110-82-7	M5
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0029	0.0025	1		11/04/14 17:58	106-93-4	M5
1,2-Dichloroethane	**0.0048 U**	mg/kg	0.0048	0.00088	1		11/04/14 17:58	107-06-2	M5
Ethylbenzene	**0.0048 U**	mg/kg	0.0048	0.0025	1		11/04/14 17:58	100-41-4	M5
Hexane	**0.020**	mg/kg	0.0096	0.0096	1		11/04/14 17:58		M5
Isopropylbenzene (Cumene)	**0.0048 U**	mg/kg	0.0048	0.0010	1		11/04/14 17:58	98-82-8	M5
Methyl-tert-butyl ether	**0.0048 U**	mg/kg	0.0048	0.00069	1		11/04/14 17:58	1634-04-4	M5
Toluene	**0.0032J**	mg/kg	0.0048	0.00062	1		11/04/14 17:58	108-88-3	M5
1,2,4-Trimethylbenzene	**0.0048 U**	mg/kg	0.0048	0.0011	1		11/04/14 17:58	95-63-6	M5
1,3,5-Trimethylbenzene	**0.0048 U**	mg/kg	0.0048	0.0013	1		11/04/14 17:58	108-67-8	M5
Xylene (Total)	**0.011J**	mg/kg	0.014	0.0029	1		11/04/14 17:58	1330-20-7	M5
Surrogates									
Toluene-d8 (S)	97	%	73-124		1		11/04/14 17:58	2037-26-5	M5
4-Bromofluorobenzene (S)	95	%	71-124		1		11/04/14 17:58	460-00-4	M5
1,2-Dichloroethane-d4 (S)	105	%	83-138		1		11/04/14 17:58	17060-07-0	M5
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**20.5**	%	0.10	0.10	1		11/07/14 12:14		

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ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Sample: AOI-5_PECO-B5_14-16_10232014 **Lab ID: 30133009002** Collected: 10/23/14 14:30 Received: 10/28/14 10:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010B Preparation Method: EPA 3050B								
Cobalt	**5.7**	mg/kg	0.79	0.037	1	11/03/14 10:52	11/04/14 14:14	7440-48-4	
Lead	**9.2**	mg/kg	0.40	0.21	1	11/03/14 10:52	11/04/14 14:14	7439-92-1	
Nickel	**12.0**	mg/kg	1.6	0.11	1	11/03/14 10:52	11/04/14 14:14	7440-02-0	
Vanadium	**18.9**	mg/kg	0.79	0.045	1	11/03/14 10:52	11/04/14 14:14	7440-62-2	
Zinc	**32.3**	mg/kg	0.79	0.36	1	11/03/14 10:52	11/04/14 14:14	7440-66-6	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546								
Acenaphthene	**0.060**	mg/kg	0.0079	0.0014	1	11/05/14 15:15	11/07/14 15:43	83-32-9	
Anthracene	**0.066**	mg/kg	0.0079	0.0010	1	11/05/14 15:15	11/07/14 15:43	120-12-7	
Benzo(a)anthracene	**0.030**	mg/kg	0.0079	0.00053	1	11/05/14 15:15	11/07/14 15:43	56-55-3	
Benzo(a)pyrene	**0.0029J**	mg/kg	0.0079	0.00046	1	11/05/14 15:15	11/07/14 15:43	50-32-8	
Benzo(b)fluoranthene	**0.0060J**	mg/kg	0.0079	0.00074	1	11/05/14 15:15	11/07/14 15:43	205-99-2	
Benzo(g,h,i)perylene	**0.0079 U**	mg/kg	0.0079	0.00064	1	11/05/14 15:15	11/07/14 15:43	191-24-2	
Benzo(k)fluoranthene	**0.0058J**	mg/kg	0.0079	0.00039	1	11/05/14 15:15	11/07/14 15:43	207-08-9	
Chrysene	**0.080**	mg/kg	0.0079	0.00099	1	11/05/14 15:15	11/07/14 15:43	218-01-9	
Dibenz(a,h)anthracene	**0.0079 U**	mg/kg	0.0079	0.00060	1	11/05/14 15:15	11/07/14 15:43	53-70-3	
Fluoranthene	**0.044**	mg/kg	0.0079	0.00073	1	11/05/14 15:15	11/07/14 15:43	206-44-0	
Fluorene	**0.11**	mg/kg	0.0079	0.0013	1	11/05/14 15:15	11/07/14 15:43	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.0079 U**	mg/kg	0.0079	0.00043	1	11/05/14 15:15	11/07/14 15:43	193-39-5	
Naphthalene	**0.016**	mg/kg	0.0079	0.0021	1	11/05/14 15:15	11/07/14 15:43	91-20-3	
Phenanthrene	**0.11**	mg/kg	0.0079	0.0010	1	11/05/14 15:15	11/07/14 15:43	85-01-8	
Pyrene	**0.13**	mg/kg	0.0079	0.00083	1	11/05/14 15:15	11/07/14 15:43	129-00-0	
Quinoline	**0.0079 U**	mg/kg	0.0079	0.0019	1	11/05/14 15:15	11/10/14 13:51	91-22-5	
Surrogates									
2-Fluorobiphenyl (S)	76	%	35-141		1	11/05/14 15:15	11/07/14 15:43	321-60-8	
Terphenyl-d14 (S)	90	%	64-141		1	11/05/14 15:15	11/07/14 15:43	1718-51-0	
8270 MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270C Preparation Method: EPA 3546								
Biphenyl (Diphenyl)	**0.39 U**	mg/kg	0.39	0.072	1	10/29/14 15:30	10/30/14 13:10	92-52-4	
Diethylphthalate	**0.39 U**	mg/kg	0.39	0.043	1	10/29/14 15:30	10/30/14 13:10	84-66-2	
2,4-Dimethylphenol	**0.39 U**	mg/kg	0.39	0.070	1	10/29/14 15:30	10/30/14 13:10	105-67-9	
Di-n-butylphthalate	**0.39 U**	mg/kg	0.39	0.065	1	10/29/14 15:30	10/30/14 13:10	84-74-2	
2,4-Dinitrophenol	**0.99 U**	mg/kg	0.99	0.36	1	10/29/14 15:30	10/30/14 13:10	51-28-5	
bis(2-Ethylhexyl)phthalate	**0.39 U**	mg/kg	0.39	0.14	1	10/29/14 15:30	10/30/14 13:10	117-81-7	
2-Methylnaphthalene	**0.39 U**	mg/kg	0.39	0.048	1	10/29/14 15:30	10/30/14 13:10	91-57-6	
2-Methylphenol(o-Cresol)	**0.39 U**	mg/kg	0.39	0.070	1	10/29/14 15:30	10/30/14 13:10	95-48-7	
3&4-Methylphenol(m&p Cresol)	**0.79 U**	mg/kg	0.79	0.079	1	10/29/14 15:30	10/30/14 13:10		
4-Nitrophenol	**0.39 U**	mg/kg	0.39	0.16	1	10/29/14 15:30	10/30/14 13:10	100-02-7	
Phenol	**0.39 U**	mg/kg	0.39	0.096	1	10/29/14 15:30	10/30/14 13:10	108-95-2	
Pyridine	**0.99 U**	mg/kg	0.99	0.33	1	10/29/14 15:30	10/30/14 13:10	110-86-1	
Surrogates									
Nitrobenzene-d5 (S)	79	%	34-107		1	10/29/14 15:30	10/30/14 13:10	4165-60-0	
2-Fluorobiphenyl (S)	74	%	38-107		1	10/29/14 15:30	10/30/14 13:10	321-60-8	
Terphenyl-d14 (S)	73	%	34-129		1	10/29/14 15:30	10/30/14 13:10	1718-51-0	

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ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Sample: AOI-5_PECO-B5_14-16_10232014 **Lab ID: 30133009002** Collected: 10/23/14 14:30 Received: 10/28/14 10:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270C Preparation Method: EPA 3546								
Surrogates									
Phenol-d6 (S)	93	%	20-102		1	10/29/14 15:30	10/30/14 13:10	13127-88-3	
2-Fluorophenol (S)	84	%	29-88		1	10/29/14 15:30	10/30/14 13:10	367-12-4	
2,4,6-Tribromophenol (S)	65	%	13-114		1	10/29/14 15:30	10/30/14 13:10	118-79-6	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Benzene	**0.0050 U**	mg/kg	0.0050	0.00078	1		11/04/14 18:20	71-43-2	M5
sec-Butylbenzene	**0.0050 U**	mg/kg	0.0050	0.0015	1		11/04/14 18:20	135-98-8	M5
tert-Butylbenzene	**0.0050 U**	mg/kg	0.0050	0.0020	1		11/04/14 18:20	98-06-6	M5
Cyclohexane	**0.0049J**	mg/kg	0.010	0.0013	1		11/04/14 18:20	110-82-7	M5
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0030	0.0026	1		11/04/14 18:20	106-93-4	M5
1,2-Dichloroethane	**0.0050 U**	mg/kg	0.0050	0.00091	1		11/04/14 18:20	107-06-2	M5
Ethylbenzene	**0.0050 U**	mg/kg	0.0050	0.0026	1		11/04/14 18:20	100-41-4	M5
Hexane	**0.010 U**	mg/kg	0.010	0.010	1		11/04/14 18:20		M5
Isopropylbenzene (Cumene)	**0.0050 U**	mg/kg	0.0050	0.0011	1		11/04/14 18:20	98-82-8	M5
Methyl-tert-butyl ether	**0.0050 U**	mg/kg	0.0050	0.00071	1		11/04/14 18:20	1634-04-4	M5
Toluene	**0.0016J**	mg/kg	0.0050	0.00064	1		11/04/14 18:20	108-88-3	M5
1,2,4-Trimethylbenzene	**0.0050 U**	mg/kg	0.0050	0.0012	1		11/04/14 18:20	95-63-6	M5
1,3,5-Trimethylbenzene	**0.0050 U**	mg/kg	0.0050	0.0014	1		11/04/14 18:20	108-67-8	M5
Xylene (Total)	**0.015 U**	mg/kg	0.015	0.0031	1		11/04/14 18:20	1330-20-7	M5
Surrogates									
Toluene-d8 (S)	96	%	73-124		1		11/04/14 18:20	2037-26-5	M5
4-Bromofluorobenzene (S)	124	%	71-124		1		11/04/14 18:20	460-00-4	M5
1,2-Dichloroethane-d4 (S)	104	%	83-138		1		11/04/14 18:20	17060-07-0	M5
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.1**	%	0.10	0.10	1		11/07/14 12:15		

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ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Sample: AOI-5_PECO-B6_12-14_10242014 **Lab ID: 30133009003** Collected: 10/24/14 11:30 Received: 10/28/14 10:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010B Preparation Method: EPA 3050B								
Cobalt	**10.7**	mg/kg	0.89	0.042	1	11/03/14 10:52	11/04/14 14:16	7440-48-4	
Lead	**10.5**	mg/kg	0.44	0.24	1	11/03/14 10:52	11/04/14 14:16	7439-92-1	
Nickel	**15.5**	mg/kg	1.8	0.12	1	11/03/14 10:52	11/04/14 14:16	7440-02-0	
Vanadium	**20.8**	mg/kg	0.89	0.051	1	11/03/14 10:52	11/04/14 14:16	7440-62-2	
Zinc	**38.8**	mg/kg	0.89	0.40	1	11/03/14 10:52	11/04/14 14:16	7440-66-6	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546								
Acenaphthene	**0.064**	mg/kg	0.0084	0.0015	1	11/05/14 15:15	11/07/14 16:01	83-32-9	
Anthracene	**0.035**	mg/kg	0.0084	0.0011	1	11/05/14 15:15	11/07/14 16:01	120-12-7	
Benzo(a)anthracene	**0.018**	mg/kg	0.0084	0.00056	1	11/05/14 15:15	11/07/14 16:01	56-55-3	
Benzo(a)pyrene	**0.0075J**	mg/kg	0.0084	0.00049	1	11/05/14 15:15	11/07/14 16:01	50-32-8	
Benzo(b)fluoranthene	**0.0049J**	mg/kg	0.0084	0.00078	1	11/05/14 15:15	11/07/14 16:01	205-99-2	
Benzo(g,h,i)perylene	**0.0085**	mg/kg	0.0084	0.00068	1	11/05/14 15:15	11/07/14 16:01	191-24-2	
Benzo(k)fluoranthene	**0.0049J**	mg/kg	0.0084	0.00042	1	11/05/14 15:15	11/07/14 16:01	207-08-9	
Chrysene	**0.043**	mg/kg	0.0084	0.0011	1	11/05/14 15:15	11/07/14 16:01	218-01-9	
Dibenz(a,h)anthracene	**0.0084 U**	mg/kg	0.0084	0.00064	1	11/05/14 15:15	11/07/14 16:01	53-70-3	
Fluoranthene	**0.018**	mg/kg	0.0084	0.00078	1	11/05/14 15:15	11/07/14 16:01	206-44-0	
Fluorene	**0.081**	mg/kg	0.0084	0.0014	1	11/05/14 15:15	11/07/14 16:01	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.0014J**	mg/kg	0.0084	0.00046	1	11/05/14 15:15	11/07/14 16:01	193-39-5	
Naphthalene	**0.066**	mg/kg	0.0084	0.0022	1	11/05/14 15:15	11/07/14 16:01	91-20-3	
Phenanthrene	**0.24**	mg/kg	0.0084	0.0011	1	11/05/14 15:15	11/07/14 16:01	85-01-8	
Pyrene	**0.078**	mg/kg	0.0084	0.00088	1	11/05/14 15:15	11/07/14 16:01	129-00-0	
Quinoline	**0.017 U**	mg/kg	0.017	0.0041	2	11/05/14 15:15	11/10/14 14:37	91-22-5	
Surrogates									
2-Fluorobiphenyl (S)	78	%	35-141		1	11/05/14 15:15	11/07/14 16:01	321-60-8	
Terphenyl-d14 (S)	81	%	64-141		1	11/05/14 15:15	11/07/14 16:01	1718-51-0	
8270 MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270C Preparation Method: EPA 3546								
Biphenyl (Diphenyl)	**0.41 U**	mg/kg	0.41	0.076	1	10/29/14 15:30	10/30/14 13:30	92-52-4	
Diethylphthalate	**0.41 U**	mg/kg	0.41	0.046	1	10/29/14 15:30	10/30/14 13:30	84-66-2	
2,4-Dimethylphenol	**0.41 U**	mg/kg	0.41	0.073	1	10/29/14 15:30	10/30/14 13:30	105-67-9	
Di-n-butylphthalate	**0.41 U**	mg/kg	0.41	0.069	1	10/29/14 15:30	10/30/14 13:30	84-74-2	
2,4-Dinitrophenol	**1.0 U**	mg/kg	1.0	0.38	1	10/29/14 15:30	10/30/14 13:30	51-28-5	
bis(2-Ethylhexyl)phthalate	**0.41 U**	mg/kg	0.41	0.14	1	10/29/14 15:30	10/30/14 13:30	117-81-7	
2-Methylnaphthalene	**0.41 U**	mg/kg	0.41	0.050	1	10/29/14 15:30	10/30/14 13:30	91-57-6	
2-Methylphenol(o-Cresol)	**0.41 U**	mg/kg	0.41	0.073	1	10/29/14 15:30	10/30/14 13:30	95-48-7	
3&4-Methylphenol(m&p Cresol)	**0.83 U**	mg/kg	0.83	0.083	1	10/29/14 15:30	10/30/14 13:30		
4-Nitrophenol	**0.41 U**	mg/kg	0.41	0.17	1	10/29/14 15:30	10/30/14 13:30	100-02-7	
Phenol	**0.41 U**	mg/kg	0.41	0.10	1	10/29/14 15:30	10/30/14 13:30	108-95-2	
Pyridine	**1.0 U**	mg/kg	1.0	0.34	1	10/29/14 15:30	10/30/14 13:30	110-86-1	
Surrogates									
Nitrobenzene-d5 (S)	88	%	34-107		1	10/29/14 15:30	10/30/14 13:30	4165-60-0	
2-Fluorobiphenyl (S)	62	%	38-107		1	10/29/14 15:30	10/30/14 13:30	321-60-8	
Terphenyl-d14 (S)	83	%	34-129		1	10/29/14 15:30	10/30/14 13:30	1718-51-0	

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ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Sample: AOI-5_PECO-B6_12-14_10242014 **Lab ID: 30133009003** Collected: 10/24/14 11:30 Received: 10/28/14 10:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270C Preparation Method: EPA 3546								
Surrogates									
Phenol-d6 (S)	106	%	20-102		1	10/29/14 15:30	10/30/14 13:30	13127-88-3	S3
2-Fluorophenol (S)	92	%	29-88		1	10/29/14 15:30	10/30/14 13:30	367-12-4	S3
2,4,6-Tribromophenol (S)	69	%	13-114		1	10/29/14 15:30	10/30/14 13:30	118-79-6	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Benzene	**0.034**	mg/kg	0.0054	0.00084	1		11/04/14 18:43	71-43-2	M5
sec-Butylbenzene	**0.10**	mg/kg	0.0054	0.0016	1		11/04/14 18:43	135-98-8	M5
tert-Butylbenzene	**0.0054 U**	mg/kg	0.0054	0.0021	1		11/04/14 18:43	98-06-6	M5
Cyclohexane	**4.4**	mg/kg	0.62	0.077	50		11/06/14 11:56	110-82-7	M5
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0032	0.0028	1		11/04/14 18:43	106-93-4	M5
1,2-Dichloroethane	**0.0054 U**	mg/kg	0.0054	0.00098	1		11/04/14 18:43	107-06-2	M5
Ethylbenzene	**0.0054 U**	mg/kg	0.0054	0.0028	1		11/04/14 18:43	100-41-4	M5
Hexane	**0.38**	mg/kg	0.011	0.011	1		11/04/14 18:43		M5
Isopropylbenzene (Cumene)	**0.035**	mg/kg	0.0054	0.0011	1		11/04/14 18:43	98-82-8	M5
Methyl-tert-butyl ether	**0.0054 U**	mg/kg	0.0054	0.00077	1		11/04/14 18:43	1634-04-4	M5
Toluene	**0.0078**	mg/kg	0.0054	0.00069	1		11/04/14 18:43	108-88-3	M5
1,2,4-Trimethylbenzene	**0.0054 U**	mg/kg	0.0054	0.0013	1		11/04/14 18:43	95-63-6	M5
1,3,5-Trimethylbenzene	**0.0054 U**	mg/kg	0.0054	0.0015	1		11/04/14 18:43	108-67-8	M5
Xylene (Total)	**0.016 U**	mg/kg	0.016	0.0033	1		11/04/14 18:43	1330-20-7	M5
Surrogates									
Toluene-d8 (S)	220	%	73-124		1		11/04/14 18:43	2037-26-5	M5,S0
4-Bromofluorobenzene (S)	98	%	71-124		1		11/04/14 18:43	460-00-4	M5
1,2-Dichloroethane-d4 (S)	100	%	83-138		1		11/04/14 18:43	17060-07-0	M5
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**21.5**	%	0.10	0.10	1		11/07/14 12:16		

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QUALITY CONTROL DATA

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QC Batch: MPRP/14243 Analysis Method: EPA 6010B
QC Batch Method: EPA 3050B Analysis Description: 6010 MET
Associated Lab Samples: 30133009001, 30133009002, 30133009003

METHOD BLANK: 811287 Matrix: Solid
Associated Lab Samples: 30133009001, 30133009002, 30133009003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cobalt	mg/kg	1.0 U	1.0	11/04/14 13:41	
Lead	mg/kg	0.50 U	0.50	11/04/14 13:41	
Nickel	mg/kg	2.0 U	2.0	11/04/14 13:41	
Vanadium	mg/kg	1.0 U	1.0	11/04/14 13:41	
Zinc	mg/kg	1.0 U	1.0	11/04/14 13:41	

LABORATORY CONTROL SAMPLE: 811288

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	mg/kg	50	49.5	99	80-120	
Lead	mg/kg	50	48.3	97	80-120	
Nickel	mg/kg	50	50.1	100	80-120	
Vanadium	mg/kg	50	49.6	99	80-120	
Zinc	mg/kg	50	49.6	99	80-120	

MATRIX SPIKE SAMPLE: 811290

Parameter	Units	30133262001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cobalt	mg/kg	13.6	38.5	53.1	103	75-125	
Lead	mg/kg	27.1	38.5	58.0	80	75-125	
Nickel	mg/kg	18.1	38.5	50.3	84	75-125	
Vanadium	mg/kg	26.1	38.5	63.7	98	75-125	
Zinc	mg/kg	60.9	38.5	89.8	75	75-125	

SAMPLE DUPLICATE: 811289

Parameter	Units	30133262001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cobalt	mg/kg	13.6	12.8	6	20	
Lead	mg/kg	27.1	24.7	9	20	
Nickel	mg/kg	18.1	19.0	5	20	
Vanadium	mg/kg	26.1	28.0	7	20	
Zinc	mg/kg	60.9	66.4	9	20	

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REPORT OF LABORATORY ANALYSIS

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(724)850-5600

QUALITY CONTROL DATA

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QC Batch: MSV/21491 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30133009001, 30133009002, 30133009003

METHOD BLANK: 812345 | Matrix: Solid
Associated Lab Samples: 30133009001, 30133009002, 30133009003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
1,2-Dibromoethane (EDB)	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
1,2-Dichloroethane	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
1,3,5-Trimethylbenzene	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
Benzene	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
Cyclohexane	mg/kg	0.010 U	0.010	11/04/14 11:40	M5
Ethylbenzene	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
Hexane	mg/kg	0.010 U	0.010	11/04/14 11:40	M5
Isopropylbenzene (Cumene)	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
Methyl-tert-butyl ether	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
sec-Butylbenzene	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
tert-Butylbenzene	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
Toluene	mg/kg	0.0050 U	0.0050	11/04/14 11:40	M5
Xylene (Total)	mg/kg	0.015 U	0.015	11/04/14 11:40	M5
1,2-Dichloroethane-d4 (S)	%	97	83-138	11/04/14 11:40	M5
4-Bromofluorobenzene (S)	%	95	71-124	11/04/14 11:40	M5
Toluene-d8 (S)	%	96	73-124	11/04/14 11:40	M5

LABORATORY CONTROL SAMPLE: 812346

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	.02	0.017	86	54-131	M5
1,2-Dibromoethane (EDB)	mg/kg	.02	0.018	92	57-110	M5
1,2-Dichloroethane	mg/kg	.02	0.017	85	52-121	M5
1,3,5-Trimethylbenzene	mg/kg	.02	0.017	83	54-131	M5
Benzene	mg/kg	.02	0.017	83	52-126	M5
Cyclohexane	mg/kg	.02	0.020	98	50-132	M5
Ethylbenzene	mg/kg	.02	0.018	91	54-128	M5
Hexane	mg/kg		0.016			M5
Isopropylbenzene (Cumene)	mg/kg	.02	0.017	84	58-144	M5
Methyl-tert-butyl ether	mg/kg	.02	0.020	98	57-129	M5
sec-Butylbenzene	mg/kg	.02	0.017	85	51-145	M5
tert-Butylbenzene	mg/kg	.02	0.017	85	54-139	M5
Toluene	mg/kg	.02	0.018	92	53-127	M5
Xylene (Total)	mg/kg	.06	0.057	95	53-127	M5
1,2-Dichloroethane-d4 (S)	%			99	83-138	M5
4-Bromofluorobenzene (S)	%			93	71-124	M5
Toluene-d8 (S)	%			98	73-124	M5

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QUALITY CONTROL DATA

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QC Batch: OEXT/21490 | Analysis Method: EPA 8270C by SIM
QC Batch Method: EPA 3546 | Analysis Description: 8270/3546 MSSV PAH by SIM
Associated Lab Samples: 30133009001, 30133009002, 30133009003

METHOD BLANK: 812361 | Matrix: Solid
Associated Lab Samples: 30133009001, 30133009002, 30133009003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Anthracene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Benzo(a)anthracene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Benzo(a)pyrene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Benzo(b)fluoranthene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Benzo(g,h,i)perylene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Benzo(k)fluoranthene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Chrysene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Dibenz(a,h)anthracene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Fluoranthene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Fluorene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Indeno(1,2,3-cd)pyrene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Naphthalene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Phenanthrene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Pyrene	mg/kg	0.0067 U	0.0067	11/07/14 14:51	
Quinoline	mg/kg	0.0067 U	0.0067	11/10/14 11:49	
2-Fluorobiphenyl (S)	%	63	35-141	11/07/14 14:51	
Terphenyl-d14 (S)	%	89	64-141	11/07/14 14:51	

LABORATORY CONTROL SAMPLE: 812362

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	mg/kg	.13	0.11	85	43-113	
Anthracene	mg/kg	.13	0.13	101	59-115	
Benzo(a)anthracene	mg/kg	.13	0.13	99	62-122	
Benzo(a)pyrene	mg/kg	.13	0.11	86	56-113	
Benzo(b)fluoranthene	mg/kg	.13	0.13	95	43-138	
Benzo(g,h,i)perylene	mg/kg	.13	0.13	96	47-143	
Benzo(k)fluoranthene	mg/kg	.13	0.15	110	52-138	
Chrysene	mg/kg	.13	0.15	109	64-119	
Dibenz(a,h)anthracene	mg/kg	.13	0.13	98	59-133	
Fluoranthene	mg/kg	.13	0.13	97	64-122	
Fluorene	mg/kg	.13	0.11	83	46-114	
Indeno(1,2,3-cd)pyrene	mg/kg	.13	0.13	97	59-132	
Naphthalene	mg/kg	.13	0.12	89	47-108	
Phenanthrene	mg/kg	.13	0.13	94	42-122	
Pyrene	mg/kg	.13	0.13	100	64-117	
Quinoline	mg/kg	.13	0.12	93	45-124	
2-Fluorobiphenyl (S)	%			82	35-141	
Terphenyl-d14 (S)	%			104	64-141	

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QUALITY CONTROL DATA

Project: MH Refinery AOI-5
Pace Project No.: 30133009

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 812363 812364

Parameter	Units	30133378004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acenaphthene	mg/kg	0.0065 U	.13	.13	0.097	0.10	73	79	43-113	6	20	
Anthracene	mg/kg	0.0065 U	.13	.13	0.11	0.11	84	88	59-115	3	20	
Benzo(a)anthracene	mg/kg	0.0065 U	.13	.13	0.11	0.11	84	88	62-122	3	20	
Benzo(a)pyrene	mg/kg	0.0065 U	.13	.13	0.10	0.11	79	82	56-113	2	20	
Benzo(b)fluoranthene	mg/kg	0.0065 U	.13	.13	0.12	0.12	89	92	43-138	1	20	
Benzo(g,h,i)perylene	mg/kg	0.0065 U	.13	.13	0.11	0.11	84	85	47-143	1	20	
Benzo(k)fluoranthene	mg/kg	0.0065 U	.13	.13	0.12	0.12	91	94	52-138	1	20	
Chrysene	mg/kg	0.0065 U	.13	.13	0.12	0.12	88	91	64-119	1	20	
Dibenz(a,h)anthracene	mg/kg	0.0065 U	.13	.13	0.11	0.11	84	87	59-133	1	20	
Fluoranthene	mg/kg	0.0065 U	.13	.13	0.11	0.11	84	86	64-122	0	20	
Fluorene	mg/kg	0.0065 U	.13	.13	0.10	0.10	76	78	46-114	0	20	
Indeno(1,2,3-cd)pyrene	mg/kg	0.0065 U	.13	.13	0.11	0.11	83	86	59-132	1	20	
Naphthalene	mg/kg	0.0065 U	.13	.13	0.10	0.11	79	83	47-108	2	20	
Phenanthrene	mg/kg	0.0065 U	.13	.13	0.11	0.11	83	85	42-122	1	20	
Pyrene	mg/kg	0.0065 U	.13	.13	0.11	0.11	85	87	64-117	1	20	
Quinoline	mg/kg	0.0065 U	.13	.13	0.15	0.13	111	100	45-124	12	20	
2-Fluorobiphenyl (S)	%						71	74	35-141			
Terphenyl-d14 (S)	%						85	88	64-141			

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QUALITY CONTROL DATA

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QC Batch: OEXT/21399 | Analysis Method: EPA 8270C
QC Batch Method: EPA 3546 | Analysis Description: 8270 Solid MSSV Microwave
Associated Lab Samples: 30133009001, 30133009002, 30133009003

METHOD BLANK: 809326 | Matrix: Solid
Associated Lab Samples: 30133009001, 30133009002, 30133009003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2,4-Dimethylphenol	mg/kg	0.33 U	0.33	10/30/14 14:49	
2,4-Dinitrophenol	mg/kg	0.83 U	0.83	10/30/14 14:49	
2-Methylnaphthalene	mg/kg	0.33 U	0.33	10/30/14 14:49	
2-Methylphenol(o-Cresol)	mg/kg	0.33 U	0.33	10/30/14 14:49	
3&4-Methylphenol(m&p Cresol)	mg/kg	0.67 U	0.67	10/30/14 14:49	
4-Nitrophenol	mg/kg	0.33 U	0.33	10/30/14 14:49	
Biphenyl (Diphenyl)	mg/kg	0.33 U	0.33	10/30/14 14:49	
bis(2-Ethylhexyl)phthalate	mg/kg	0.33 U	0.33	10/30/14 14:49	
Di-n-butylphthalate	mg/kg	0.33 U	0.33	10/30/14 14:49	
Diethylphthalate	mg/kg	0.33 U	0.33	10/30/14 14:49	
Phenol	mg/kg	0.33 U	0.33	10/30/14 14:49	
Pyridine	mg/kg	0.83 U	0.83	10/30/14 14:49	
2,4,6-Tribromophenol (S)	%	69	13-114	10/30/14 14:49	
2-Fluorobiphenyl (S)	%	83	38-107	10/30/14 14:49	
2-Fluorophenol (S)	%	83	29-88	10/30/14 14:49	
Nitrobenzene-d5 (S)	%	84	34-107	10/30/14 14:49	
Phenol-d6 (S)	%	93	20-102	10/30/14 14:49	
Terphenyl-d14 (S)	%	91	34-129	10/30/14 14:49	

LABORATORY CONTROL SAMPLE: 809327

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dimethylphenol	mg/kg	3.3	2.9	86	66-135	
2,4-Dinitrophenol	mg/kg	3.3	2.8	83	10-185	
2-Methylnaphthalene	mg/kg	3.3	2.8	83	56-121	
2-Methylphenol(o-Cresol)	mg/kg	3.3	3.3	99	63-130	
3&4-Methylphenol(m&p Cresol)	mg/kg	3.3	3.2	97	60-130	
4-Nitrophenol	mg/kg	3.3	3.2	95	19-139	
Biphenyl (Diphenyl)	mg/kg		0.33 U			
bis(2-Ethylhexyl)phthalate	mg/kg	3.3	3.3	98	66-150	
Di-n-butylphthalate	mg/kg	3.3	3.3	98	74-127	
Diethylphthalate	mg/kg	3.3	3.1	94	70-132	
Phenol	mg/kg	3.3	3.5	105	49-126	
Pyridine	mg/kg	3.3	3.6	109	10-175	
2,4,6-Tribromophenol (S)	%			76	13-114	
2-Fluorobiphenyl (S)	%			83	38-107	
2-Fluorophenol (S)	%			93	29-88	1c
Nitrobenzene-d5 (S)	%			81	34-107	
Phenol-d6 (S)	%			95	20-102	
Terphenyl-d14 (S)	%			89	34-129	

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QUALITY CONTROL DATA

Project: MH Refinery AOI-5
Pace Project No.: 30133009

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 809328 809329

Parameter	Units	30132646008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4-Dimethylphenol	mg/kg	ND	4.1	4.1	2.9	2.8	71	69	66-135	4	25	
2,4-Dinitrophenol	mg/kg	ND	4.1	4.1	2.0J	2.2	49	54	10-160		25	
2-Methylnaphthalene	mg/kg	ND	4.1	4.1	2.8	2.7	68	66	56-121	4	25	
2-Methylphenol(o-Cresol)	mg/kg	ND	4.1	4.1	4.0	3.8	97	94	63-130	3	25	
3&4-Methylphenol(m&p Cresol)	mg/kg	ND	4.1	4.1	3.9	3.8	94	93	60-130	1	25	
4-Nitrophenol	mg/kg	ND	4.1	4.1	3.7	3.3	91	80	19-139	13	25	
Biphenyl (Diphenyl)	mg/kg	ND			0.41 U	0.41 U					25	
bis(2-Ethylhexyl)phthalate	mg/kg	ND	4.1	4.1	3.6	3.8	89	93	66-150	5	25	
Di-n-butylphthalate	mg/kg	ND	4.1	4.1	3.9	3.8	95	94	74-127	1	25	
Diethylphthalate	mg/kg	ND	4.1	4.1	3.8	3.7	93	92	70-132	2	25	
Phenol	mg/kg	ND	4.1	4.1	4.1	4.0	100	98	49-126	2	25	
Pyridine	mg/kg	ND	4.1	4.1	0.97J	0.91J	24	22	10-175		25	
2,4,6-Tribromophenol (S)	%						73	76	13-114			
2-Fluorobiphenyl (S)	%						84	83	38-107			
2-Fluorophenol (S)	%						83	83	29-88			
Nitrobenzene-d5 (S)	%						67	67	34-107			
Phenol-d6 (S)	%						92	92	20-102			
Terphenyl-d14 (S)	%						86	82	34-129			

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QUALITY CONTROL DATA

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QC Batch: PMST/4954 | Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30133009001, 30133009002, 30133009003

SAMPLE DUPLICATE: 813663

Parameter	Units	30133009001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.5	19.2	7	20	

SAMPLE DUPLICATE: 813664

Parameter	Units	30133009002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.1	16.2	0	20	

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QUALIFIERS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/21491

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c	Surrogate recovery exceeded laboratory control limits. Results unaffected by high bias.
M5	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
S0	Surrogate recovery outside laboratory control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

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Manual Integration Letter Code System

NI: indicates that the peak was not integrated at all by the computer software.

LT: indicates that the peak in question was inappropriately integrated to an area less than what it should be (i.e. Peak area was cut)

GT: indicates that the peak in question was inappropriately integrated to an area greater than it should be (i.e. Peak tailing)

BA: indicates that the baseline had to be adjusted correctly by the analyst.

WP: indicates that the wrong peak was chosen (i.e. The surrogate peak was misidentified by the computer system.).

CO: indicates that the analyst had to split two co-eluting peaks apart that were not (or could not be) separated by the computer system.

RT: indicates that the retention time for the peak in question has shifted from the expected retention time.

INT: indicates that there was electronic interference (i.e. Noise).

Letter Codes from Manual Integration SOP S-ALL-Q-016-3

Data Qualifier Flags

Organic Data Flags

A: Target compound was detected but, the quantitated amount exceeded the maximum amount of the calibration range.

a. Target compound was detected but, the amount quantitated was below the limit of quantitation.

B: This flag is used when the analyte is found in the associated method blank as well as in the sample.

DF: This indicates the amount of the diluted analyte.

J: This flag designates a result that is between the method detection limit (MDL) and the reporting limit (RL). The reported number should be considered an estimated value.

M: Compound response was manually integrated.

N: This flag indicates presumptive evidence of a compound for a tentatively identified compound.

ND: This flag indicates the compound was analyzed for but not detected.

Q: One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV)

R: Spike/Surrogate failed the recovery limits

U: This flag indicates the compound was analyzed for but not detected.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30133009001	**AOI-5_PECO-B2_12-13_10222014**	EPA 3050B	MPRP/14243	EPA 6010B	ICP/13487
30133009002	**AOI-5_PECO-B5_14-16_10232014**	EPA 3050B	MPRP/14243	EPA 6010B	ICP/13487
30133009003	**AOI-5_PECO-B6_12-14_10242014**	EPA 3050B	MPRP/14243	EPA 6010B	ICP/13487
30133009001	**AOI-5_PECO-B2_12-13_10222014**	EPA 3546	OEXT/21490	EPA 8270C by SIM	MSSV/6965
30133009002	**AOI-5_PECO-B5_14-16_10232014**	EPA 3546	OEXT/21490	EPA 8270C by SIM	MSSV/6965
30133009003	**AOI-5_PECO-B6_12-14_10242014**	EPA 3546	OEXT/21490	EPA 8270C by SIM	MSSV/6965
30133009001	**AOI-5_PECO-B2_12-13_10222014**	EPA 3546	OEXT/21399	EPA 8270C	MSSV/6936
30133009002	**AOI-5_PECO-B5_14-16_10232014**	EPA 3546	OEXT/21399	EPA 8270C	MSSV/6936
30133009003	**AOI-5_PECO-B6_12-14_10242014**	EPA 3546	OEXT/21399	EPA 8270C	MSSV/6936
30133009001	**AOI-5_PECO-B2_12-13_10222014**	EPA 8260B	MSV/21491		
30133009002	**AOI-5_PECO-B5_14-16_10232014**	EPA 8260B	MSV/21491		
30133009003	**AOI-5_PECO-B6_12-14_10242014**	EPA 8260B	MSV/21491		
30133009001	**AOI-5_PECO-B2_12-13_10222014**	ASTM D2974-87	PMST/4954		
30133009002	**AOI-5_PECO-B5_14-16_10232014**	ASTM D2974-87	PMST/4954		
30133009003	**AOI-5_PECO-B6_12-14_10242014**	ASTM D2974-87	PMST/4954		

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Project Number: 30133009

Chain of Custody
And
Sample Conditions
Upon Receipt Form

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

1703092

Section A Required Client Information:

Company: Aquaterra
Address: 122 S. Church Street West Chester, PA
Email To: TD@aquaterra-tech.com
Phone: 610-431-5733 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To:
Copy To:
Purchase Order No.:
Project Name: MH Refinery AOI-5
Project Number:

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: PA

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other Na Bisulfate	Analysis Test (Y/N)	8260 Ref Ext List + EDB	8270 Ref Ext List	Co, Ni, PB, V, ZN	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 30133009
1	AOI5_PECO-B2_12-13_10222014	SL	G			10/22/14	1500		6	3						1	2		X	X	X		001
2	AOI5_PECO-B5_14-16_10232014	SL	G			10/23/14	1430		6	3						1	2		X	X	X		002
3	AOI5_PECO-B6_12-14'_10242014	SL	G			10/24/14	1130		6	3						1	2		X	X	X		003
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*8260 include EDB.	Noelle Stroik			Aquaterra Refrigerator						
	[illegible]	10/25/14	1125	[illegible]	10/25/14	11:25				
	[illegible]	10/25/14	1200	[illegible]	10/28/14	1015	5.1	Y	N	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelle Stroik

SIGNATURE of SAMPLER: Noelle Stroik

DATE Signed (MM/DD/YY):

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: Aquaterra

Project # 30133009

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 8860 4757 9820

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap ___ Bubble Bags X None ___ Other Foam

Thermometer Used #6 Type of Ice: (Wet) Blue None ☒ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 5.1 °C Correction Factor: 0 °C Final Temp: 5.1 °C

Date and Initials of person examining contents: SRA 10/28/14

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☐Yes ☒No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: S1	☒Yes ☐No ☐N/A	12.
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☒No	Initial when completed SRA / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☒No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Rachel Chambers **Date:** 10/29/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 30133009

Client Name: Aquaterra

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SI	2	4																					
003	"	"	"																					

Project Number: 30133009

Volatiles Data

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORM

	Yes	No
1. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	✓	
2. GC/MS Tune Specifications	✓	
a. BFB Meets Criteria		
b. DFTPP Meets Criteria		
3. GC/MS Tuning Frequency performed every 24 hours for 600 Series and 12 hours for 8000 Series	✓	
4. GC/MS Calibration – Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	✓	
5. GC/MS Calibration Requirements		
a. Calibration Check Compounds	✓	
b. System Performance Check Compounds	✓	
6. Blank Contamination If yes, list compounds And concentrations in each blank		✓
a. VOA Fraction		
b. B/N Fraction		
c. Acid Fraction		
7. Surrogate Recoveries Meet Criteria	✓	
If not met, list those compounds and their recoveries which fall outside the acceptable range		
a. VOA Fraction		
b. B/N Fraction		
c. Acid Fraction		
If not met, were the calculations checked and the results qualified as "estimates"?		
8. Matrix Spike/Matrix Spike Duplication Recoveries Meet Criteria (If not met, list those compounds and their recoveries which fall outside the acceptable range)	N/A	
a. VOA Fraction		
b. B/N Fraction		
c. Acid Fraction		
9. Internal Standard Area/Retention Time Shift Meet Criteria	✓	
10. Extraction Holding Times Met		
If not met, list number of days exceeded for each sample:		
11 Analysis Holding Time Met	✓	
If not met, list number of days exceeded for each sample:		

Additional Comments

Analyst: Jodi E Wegand Date: 12/11/14 Project # 30133009

Dept. Group Leader: Mike Arly Date: 12-12-2014

Q:\Deliverables\Data Pkg Forms\Deliverables Forms\NJ Conformance Form (Q017 Rev0 22Jan2007).doc

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SURROGATE RECOVERY SUMMARY

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: MSV / 21491
Method(s): EPA 8260B / EPA 8260B

Lab ID	Type	Client Sample ID	Dilution	Sur1 % Rec	Sur1 Qual	Sur2 % Rec	Sur2 Qual	Sur3 % Rec	Sur3 Qual	Sur4 % Rec	Sur4 Qual	Sur5 % Rec	Sur5 Qual	Sur6 % Rec	Sur6 Qual
30133009001		AOI-5_PECO-B2_12-13_10222014	1	105	M5	95	M5	97	M5						
812345	BLANK		1	97	M5	95	M5	96	M5						
30133009002		AOI-5_PECO-B5_14-16_10232014	1	104	M5	124	M5	96	M5						
812346	LCS		1	99	M5	93	M5	98	M5						
30133009003		AOI-5_PECO-B6_12-14_10242014	1	100	M5	98	M5	220	M5,S0						
			QC Limits:	83-138		71-124		73-124							
			Sample Limits:	83-138		71-124		73-124							

Sur 1: 1,2-Dichloroethane-d4 (S)
Sur 2: 4-Bromofluorobenzene (S)
Sur 3: Toluene-d8 (S)

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Greensburg, PA 15601
(724)850-5600

LAB CONTROL SAMPLE RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: MSV/21491
Method(s): EPA 8260B

LCS Prepared:
LCSD Prepared:

Analyte	LCS % Rec	LCSD % Rec	RPD	QC Limits % Rec	QC Limits RPD	Spike Conc	LCS Conc	LCSD Conc	Units	LCS Analyzed	LCSD Analyzed	LCS Qual	LCSD Qual
1,2,4-Trimethylbenzene	86			54-131		0.02	0.017		mg/kg	11/04/14		M5	
1,2-Dibromoethane (EDB)	92			57-110		0.02	0.018		mg/kg	11/04/14		M5	
1,2-Dichloroethane	85			52-121		0.02	0.017		mg/kg	11/04/14		M5	
1,3,5-Trimethylbenzene	83			54-131		0.02	0.017		mg/kg	11/04/14		M5	
Benzene	83			52-126		0.02	0.017		mg/kg	11/04/14		M5	
Cyclohexane	98			50-132		0.02	0.020		mg/kg	11/04/14		M5	
Ethylbenzene	91			54-128		0.02	0.018		mg/kg	11/04/14		M5	
Hexane							0.016		mg/kg	11/04/14		M5	
Isopropylbenzene (Cumene)	84			58-144		0.02	0.017		mg/kg	11/04/14		M5	
Methyl-tert-butyl ether	98			57-129		0.02	0.020		mg/kg	11/04/14		M5	
sec-Butylbenzene	85			51-145		0.02	0.017		mg/kg	11/04/14		M5	
tert-Butylbenzene	85			54-139		0.02	0.017		mg/kg	11/04/14		M5	
Toluene	92			53-127		0.02	0.018		mg/kg	11/04/14		M5	
Xylene (Total)	95			53-127		0.06	0.057		mg/kg	11/04/14		M5	

Type	Sample
LCS	812346

REPORT OF LABORATORY ANALYSIS

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FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

5MB

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: 51104007 Lab Sample ID: 812345

Date Analyzed: 11/04/14 Time Analyzed: 1140

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: 30MSV5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	5MBLCS	812346	51104005	1055
02	AOI-5_PECO-B	30133009001	51104024	1758
03	AOI-5_PECO-B	30133009002	51104025	1820
04	AOI-5_PECO-B	30133009003	51104026	1843
05	AOI-5_PECO-B	30133009003	51106009	1156
06	AOI-5_PECO-B	30133009003	51106010	1218
07				
08				
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30				

COMMENTS:

FORM IV VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

5MB

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: 51106006 Lab Sample ID: 812959

Date Analyzed: 11/06/14 Time Analyzed: 1050

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: 30MSV5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	5MBLCS	812960	51106004	1005
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
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28				
29				
30				

COMMENTS:

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID (Standard): 51106003 Date Analyzed: 11/06/14

Instrument ID: 30MSV5 Time Analyzed: 0943

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

		IS1(CBZ) AREA #	RT #	IS2(DCB) AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	40493	5.88	36287	6.87	91773	4.16
	UPPER LIMIT	80986	6.38	72574	7.37	183546	4.66
	LOWER LIMIT	20247	5.38	18144	6.37	45887	3.66
	CLIENT SAMPLE NO.						
01	5MBLCS	39673	5.88	38870	6.87	90801	4.16
02	5MB	36435	5.88	36110	6.87	81303	4.16
03	AOI-5_PECO-B	40734	5.88	29339	6.87	86545	4.16
04	AOI-5_PECO-B	38300	5.88	34974	6.87	83606	4.16
05							
06							
07							
08							
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11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (CBZ) = Chlorobenzene-d5
IS2 (DCB) = 1,4-Dichlorobenzene-d4
IS3 = Fluorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID (Standard): 51104004 Date Analyzed: 11/04/14

Instrument ID: 30MSV5 Time Analyzed: 1033

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

		IS1(CBZ) AREA #	RT #	IS2(DCB) AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	41101	5.88	37743	6.87	96404	4.16
	UPPER LIMIT	82202	6.38	75486	7.37	192808	4.66
	LOWER LIMIT	20551	5.38	18872	6.37	48202	3.66
	CLIENT SAMPLE NO.						
01	5MBLCS	36519	5.88	35700	6.87	84039	4.16
02	5MB	43653	5.88	41945	6.87	98505	4.16
03	AOI-5_PECO-B	41312	5.88	40992	6.87	92578	4.16
04	AOI-5_PECO-B	40472	5.88	26034	6.87	94942	4.16
05	AOI-5_PECO-B	26237	5.88	19875	6.88	90416	4.16
06							
07							
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18							
19							
20							
21							
22							

IS1 (CBZ) = Chlorobenzene-d5
IS2 (DCB) = 1,4-Dichlorobenzene-d4
IS3 = Fluorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Matrix: Solid
% Moisture: 20.5395
Acode: 8260 MSV 5030 Low Level
Prep/Method: EPA 8260B

Sample: AOI-5_PECO-B2_12-13_10222014
Lab ID: 30133009001
Collected: 10/22/14 15:00
Received: 10/28/14 10:15

Results reported on a "dry-weight" basis

CAS No.	Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	Qual
71-43-2	Benzene	**0.0048 U**	mg/kg	0.0048	0.00075	1		11/04/14 17:58	M5
135-98-8	sec-Butylbenzene	**0.0048 U**	mg/kg	0.0048	0.0014	1		11/04/14 17:58	M5
98-06-6	tert-Butylbenzene	**0.0048 U**	mg/kg	0.0048	0.0019	1		11/04/14 17:58	M5
110-82-7	Cyclohexane	**0.013**	mg/kg	0.0096	0.0012	1		11/04/14 17:58	M5
106-93-4	1,2-Dibromoethane (EDB)	ND	mg/kg	0.0029	0.0025	1		11/04/14 17:58	M5
107-06-2	1,2-Dichloroethane	**0.0048 U**	mg/kg	0.0048	0.00088	1		11/04/14 17:58	M5
100-41-4	Ethylbenzene	**0.0048 U**	mg/kg	0.0048	0.0025	1		11/04/14 17:58	M5
	Hexane	**0.020**	mg/kg	0.0096	0.0096	1		11/04/14 17:58	M5
98-82-8	Isopropylbenzene (Cumene)	**0.0048 U**	mg/kg	0.0048	0.0010	1		11/04/14 17:58	M5
1634-04-4	Methyl-tert-butyl ether	**0.0048 U**	mg/kg	0.0048	0.00069	1		11/04/14 17:58	M5
108-88-3	Toluene	**0.0032J**	mg/kg	0.0048	0.00062	1		11/04/14 17:58	M5
95-63-6	1,2,4-Trimethylbenzene	**0.0048 U**	mg/kg	0.0048	0.0011	1		11/04/14 17:58	M5
108-67-8	1,3,5-Trimethylbenzene	**0.0048 U**	mg/kg	0.0048	0.0013	1		11/04/14 17:58	M5
1330-20-7	Xylene (Total)	**0.011J**	mg/kg	0.014	0.0029	1		11/04/14 17:58	M5
Surrogates									
2037-26-5	Toluene-d8 (S)	**97**	%	73-124		1		11/04/14 17:58	M5
460-00-4	4-Bromofluorobenzene (S)	**95**	%	71-124		1		11/04/14 17:58	M5
17060-07-0	1,2-Dichloroethane-d4 (S)	**105**	%	83-138		1		11/04/14 17:58	M5

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Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104024.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104024.d
Lab Smp Id: 30133009001 Client Smp ID: AOI-5_PECO-B2_12-13
Inj Date : 04-NOV-2014 17:58
Operator : JEW Inst ID: 30msv5.i
Smp Info : 30133009001,,6.53
Misc Info : 21491
Comment :
Method : \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 13:07 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	20.540	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	6.530	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
1 Dichlorodifluoromethane	85	Compound Not Detected.						
2 Chloromethane	50	Compound Not Detected.						
3 Vinyl Chloride	62	Compound Not Detected.						
4 Bromomethane	94	Compound Not Detected.						
5 Chloroethane	64	Compound Not Detected.						
6 Trichlorofluoromethane	101	Compound Not Detected.						
7 Ethyl Ether	59	Compound Not Detected.						
8 1,1-Dichloroethene	61	Compound Not Detected.						
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	Compound Not Detected.						
10 1,1,2-Trichlorotrifluoroethan	151	Compound Not Detected.						
11 Iodomethane	142	Compound Not Detected.						
12 Acrolein	56	Compound Not Detected.						
13 Allyl chloride	41	Compound Not Detected.						
14 Methylene Chloride	49	Compound Not Detected.						
15 Acetone	58	Compound Not Detected.						
16 trans-1,2-Dichloroethene	61	Compound Not Detected.						
17 Methyl Acetate	74	Compound Not Detected.						
18 Hexane	86	2.084	2.084	(0.501)	3514	21.1912	20.4(QM)	LT
19 tert-butyl Methylether,MtB	73	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104024.d
Report Date: 11-Dec-2014 13:07

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
	21 tert-Butyl Alcohol	59	Compound Not Detected.						
	20 Acetonitrile	41	Compound Not Detected.						
	22 DiisopropylEther	45	Compound Not Detected.						
	23 Chloroprene	53	Compound Not Detected.						
	25 Acrylonitrile	53	Compound Not Detected.						
	24 1,1-Dichloroethane	63	Compound Not Detected.						
	27 t-Butyl ethyl ether	59	Compound Not Detected.						
	26 Vinyl Acetate	43	Compound Not Detected.						
	28 cis-1,2-Dichloroethene	61	Compound Not Detected.						
	29 2,2-Dichloropropane	77	Compound Not Detected.						
	30 Cyclohexane	56	3.139	3.142	(0.754)	16460	13.2171	12.7(QM)	LT
	31 Bromochloromethane	130	Compound Not Detected.						
	32 Chloroform	83	Compound Not Detected.						
	33 Carbon Tetrachloride	117	Compound Not Detected.						
	36 Ethyl Acetate	43	Compound Not Detected.						
	35 Tetrahydrofuran	42	Compound Not Detected.						
	34 1,1,1-Trichloroethane	97	Compound Not Detected.						
	37 1,1-Dichloropropene	75	Compound Not Detected.						
	38 2-Butanone	43	Compound Not Detected.						
	39 Benzene	78	Compound Not Detected.						
	40 Propionitrile	54	Compound Not Detected.						
	41 Methacrylonitrile	41	Compound Not Detected.						
$	42 1,2-Dichloroethane-d4	65	3.939	3.939	(0.947)	34146	31.5970	30.4	
	43 t-Amyl methyl ether	73	Compound Not Detected.						
	46 Isobutanol	43	Compound Not Detected.						
	44 1,2-Dichloroethane	62	Compound Not Detected.						
*	45 Fluorobenzene	96	4.161	4.161	(1.000)	92578	30.0000		
	47 Methylcyclohexane	83	4.267	4.267	(0.726)	52223	44.6205	43.0	
	48 Trichloroethene	132	Compound Not Detected.						
	49 Dibromomethane	174	Compound Not Detected.						
	50 1,2-Dichloropropane	63	Compound Not Detected.						
	51 Bromodichloromethane	83	Compound Not Detected.						
	52 Methyl methacrylate	69	Compound Not Detected.						
	53 1,4-Dioxane	88	Compound Not Detected.						
	55 2-ChloroethylVinylEther	63	Compound Not Detected.						
	54 cis-1,3-Dichloropropene	75	Compound Not Detected.						
$	56 Toluene-d8	98	5.129	5.129	(0.873)	92290	29.2494	28.2	
	57 Toluene	91	5.158	5.154	(0.877)	11519	3.35706	3.23	
	58 2-Nitropropane	43	Compound Not Detected.						
	59 Tetrachloroethene	166	Compound Not Detected.						
	60 4-Methyl-2-Pentanone	43	Compound Not Detected.						
	61 trans-1,3-Dichloropropene	75	Compound Not Detected.						
	63 Ethyl methacrylate	41	Compound Not Detected.						
	62 1,1,2-Trichloroethane	97	Compound Not Detected.						
	64 Dibromochloromethane	129	Compound Not Detected.						
	65 1,3-Dichloropropane	76	Compound Not Detected.						
	66 1,2-Dibromoethane,EDB	107	Compound Not Detected.						
	70 2-Hexanone	43	Compound Not Detected.						
*	67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	41312	30.0000		
	68 Chlorobenzene	112	Compound Not Detected.						
	69 Ethylbenzene	106	Compound Not Detected.						
	71 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.						
	72 m,p-Xylene	106	5.965	5.961	(1.015)	12471	8.97194	8.64(M)	LT
	73 o-Xylene	106	6.151	6.151	(1.046)	3129	2.33329	2.25(aQM)	LT
	74 Styrene	104	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104024.d
Report Date: 11-Dec-2014 13:07

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
75 Bromoform	173	Compound Not Detected.						
76 Isopropylbenzene,Cumene	105	Compound Not Detected.						
$ 77 Bromofluorobenzene	174	6.409	6.405	(0.933)	32147	28.5779	27.5	
79 n-Propylbenzene	91	Compound Not Detected.						
78 Bromobenzene	77	Compound Not Detected.						
80 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.						
81 2-Chlorotoluene	126	Compound Not Detected.						
82 1,3,5-Trimethylbenzene	120	Compound Not Detected.						
83 1,2,3-Trichloropropane	110	Compound Not Detected.						
84 trans 1,4-Dichloro-2-butene	53	Compound Not Detected.						
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	Compound Not Detected.						
87 tert-Butyl benzene	119	Compound Not Detected.						
88 1,2,4-Trimethylbenzene	120	Compound Not Detected.						
89 sec-Butyl benzene	105	Compound Not Detected.						
90 4-Isopropyl toluene	119	Compound Not Detected.						
91 1,3-Dichlorobenzene	146	Compound Not Detected.						
* 92 1,4-Dichlorobenzene-d4	152	6.872	6.871	(1.000)	40992	30.0000		
93 1,4-Dichlorobenzene	146	Compound Not Detected.						
94 n-Butyl benzene	91	Compound Not Detected.						
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	Compound Not Detected.						
96 bis(2Chloro1methyl ethyl)eth	45	Compound Not Detected.						
97 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.						
98 Hexachlorobutadiene	225	Compound Not Detected.						
99 1,2,4-Trichlorobenzene	180	Compound Not Detected.						
100 Naphthalene	128	Compound Not Detected.						
101 1,2,3-Trichlorobenzene	180	Compound Not Detected.						
157 2-methylnaphthalene	142	Compound Not Detected.						

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104024.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51104024.d
Lab Smp Id: 30133009001
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Calibration Date: 04-NOV-2014
Calibration Time: 10:33
Client Smp ID: AOI-5_PECO-B2_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	96404	48202	192808	92578	-3.97
67 Chlorobenzene-d5	41101	20551	82202	41312	0.51
92 1,4-Dichlorobenze	37743	18872	75486	40992	8.61

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104024.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

RECOVERY REPORT

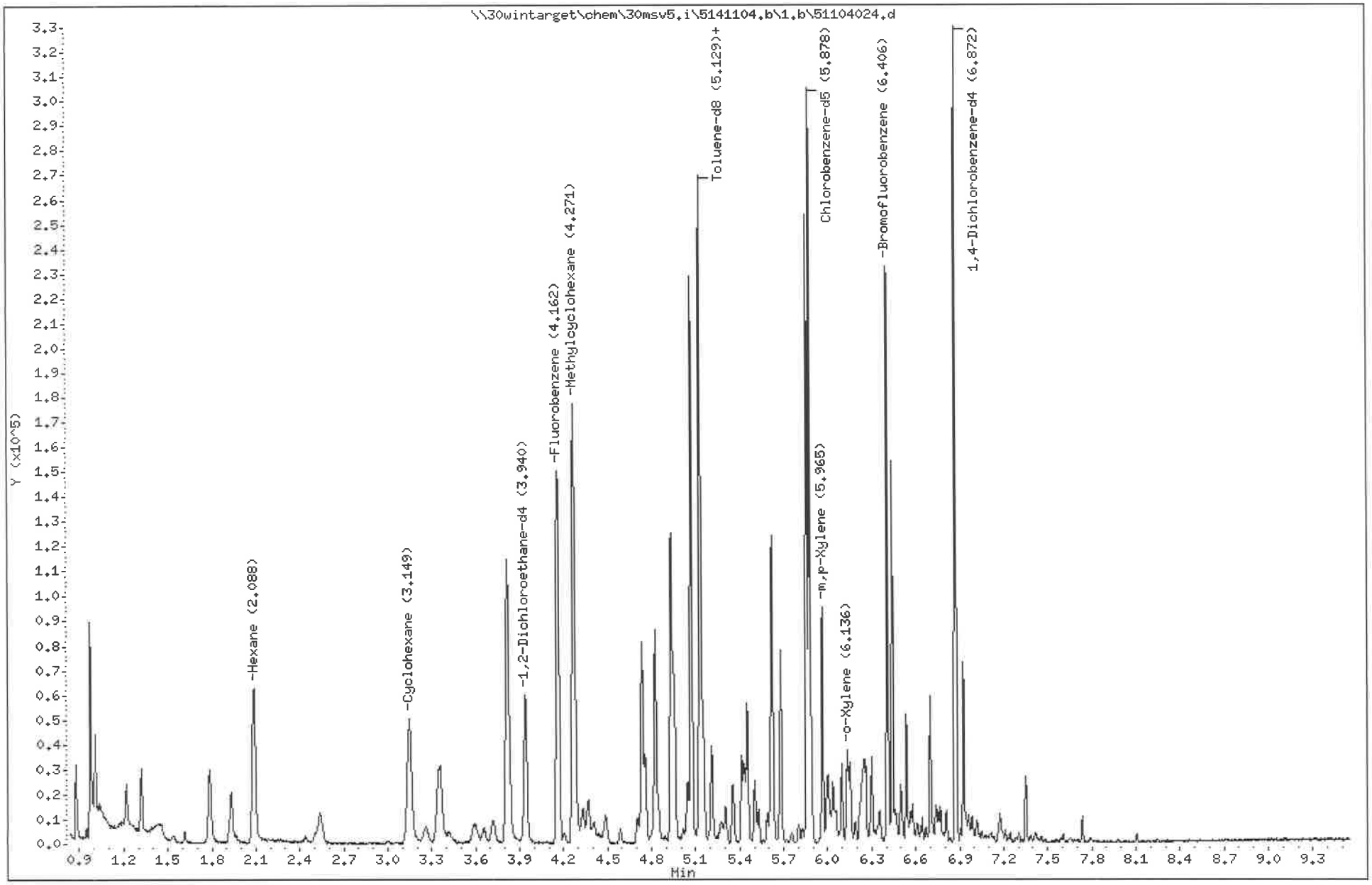
Client Name: Sunoco_Langan
Sample Matrix: SOLID
Lab Smp Id: 30133009001
Level: LOW
Data Type: MS DATA
SpikeList File: lcs.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Client SDG: 30133009
Fraction: VOA
Client Smp ID: AOI-5_PECO-B2_12-13
Operator: JEW
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 42 1,2-Dichloroethane	28.9	30.4	105.32	83-138
$ 56 Toluene-d8	28.9	28.2	97.50	73-124
$ 77 Bromofluorobenzene	28.9	27.5	95.26	71-124
$ 158 1,2-Dichlorobenze	28.9	0.000	*	0-200

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104024.d
Date : 04-NOV-2014 17:58
Client ID: AOI-5_PECO-B2_12-13
Sample Info: 30133009001,,6.53
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



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Date : 04-NOV-2014 17:58

Client ID: AOI-5_PECO-B2_12-13

Instrument: 30msv5.i

Sample Info: 30133009001,,6.53

Purge Volume: 5.0

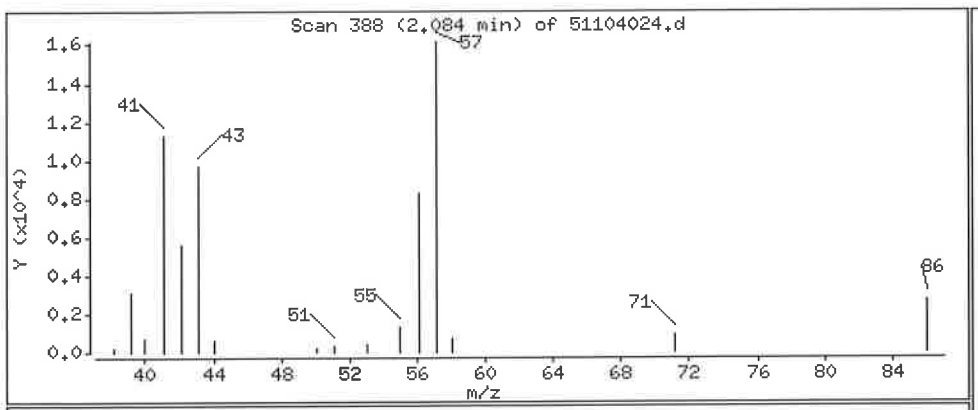
Operator: JEW

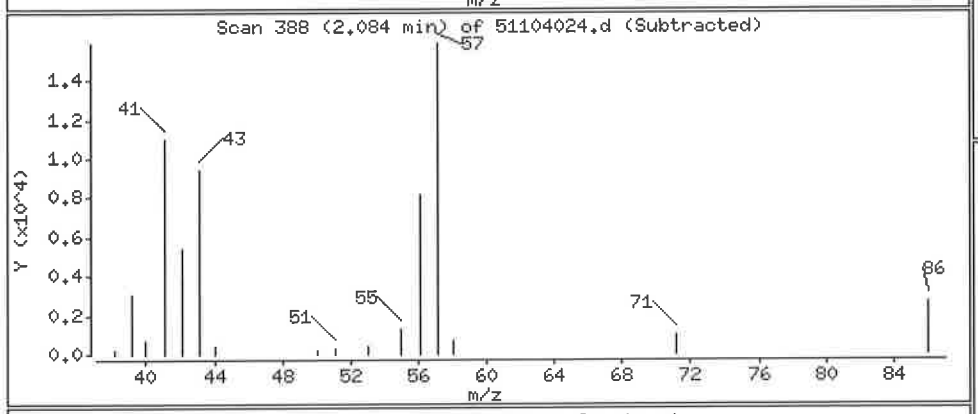
Column phase: Rtx-VMS

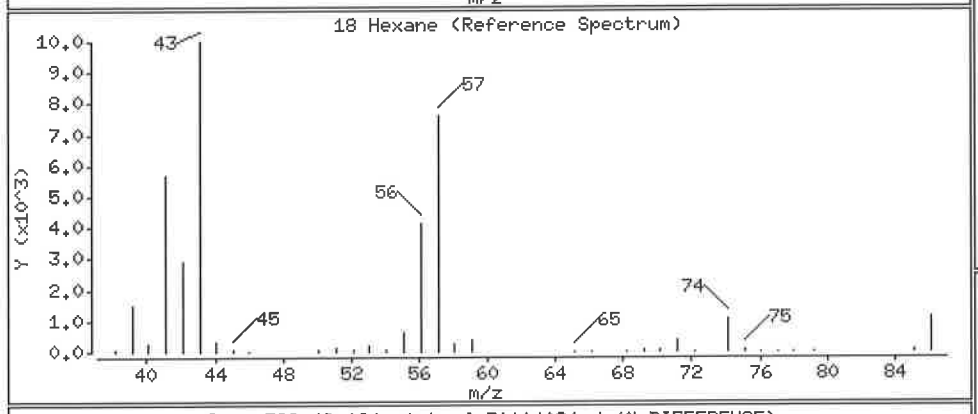
Column diameter: 0.18

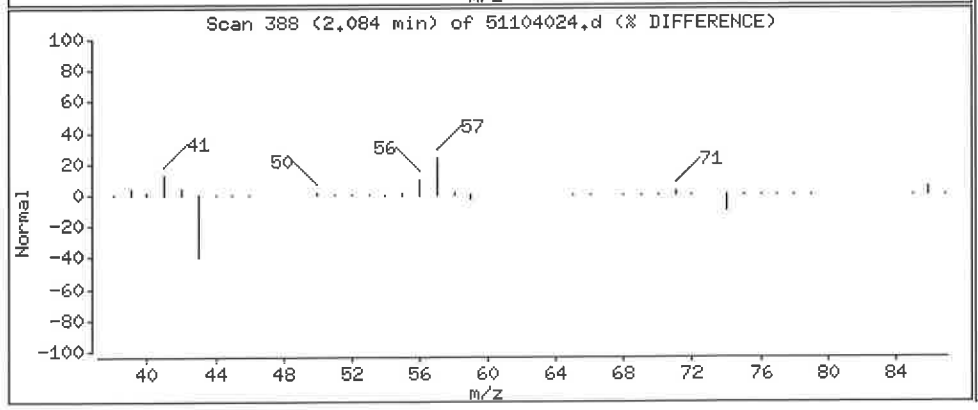
18 Hexane

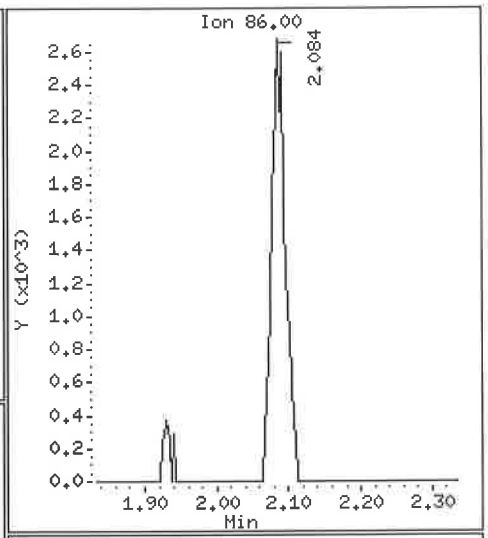
Concentration: 20.4 ug/kg

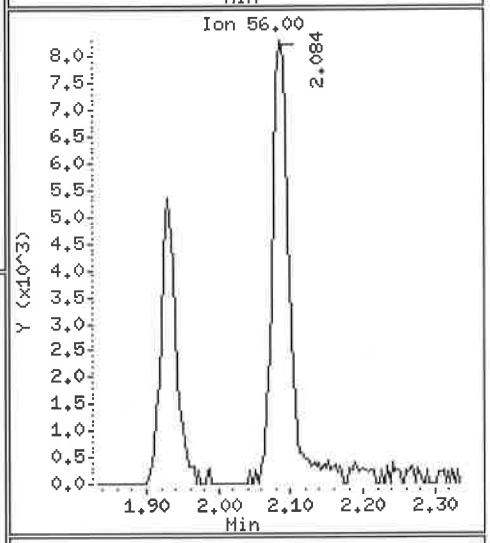


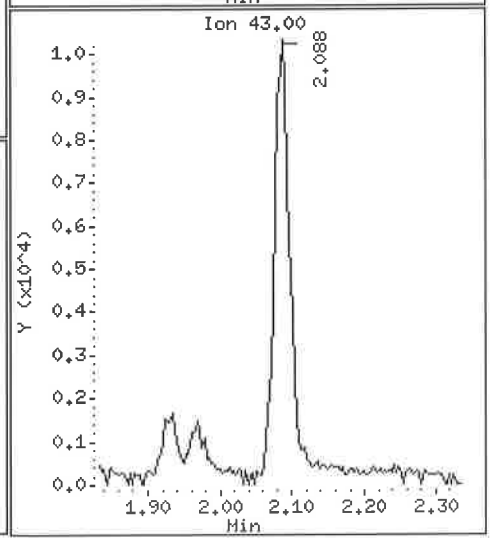












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Date : 04-NOV-2014 17:58

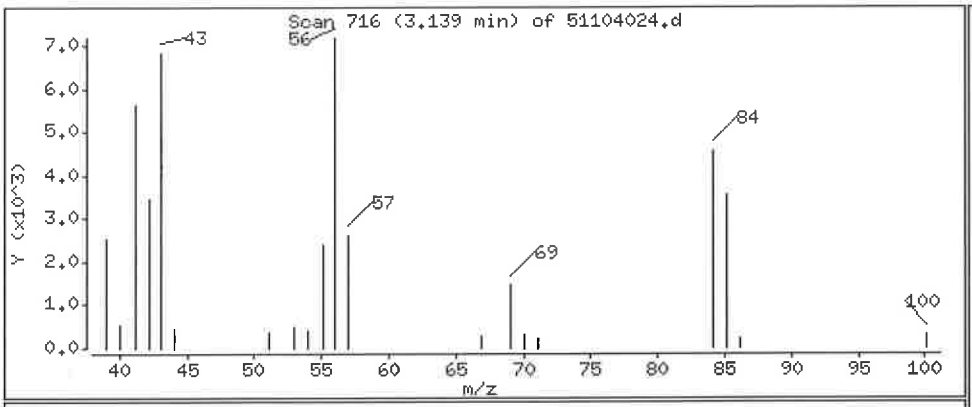
Client ID: AOI-5_PECO-B2_12-13 Instrument: 30msv5.i

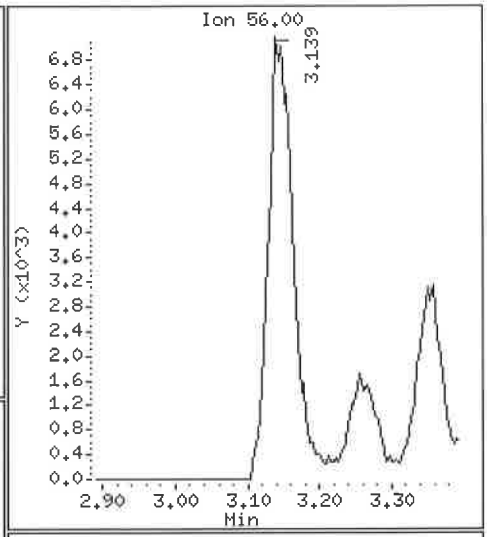
Sample Info: 30133009001,,6.53

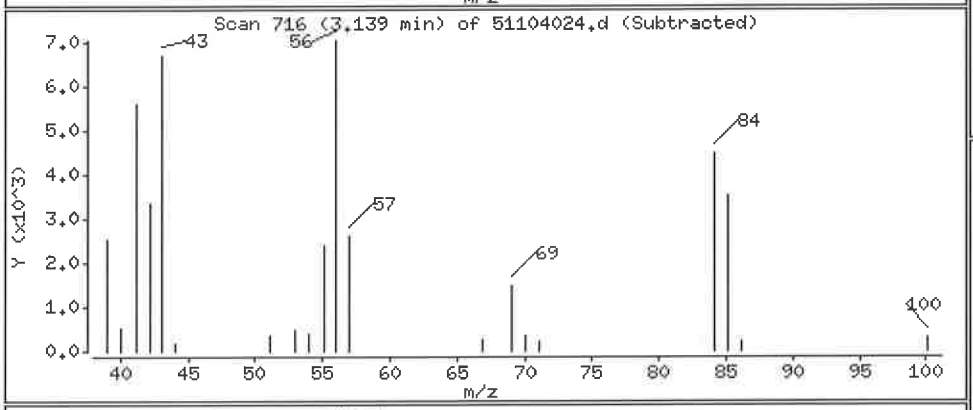
Purge Volume: 5.0 Operator: JEW

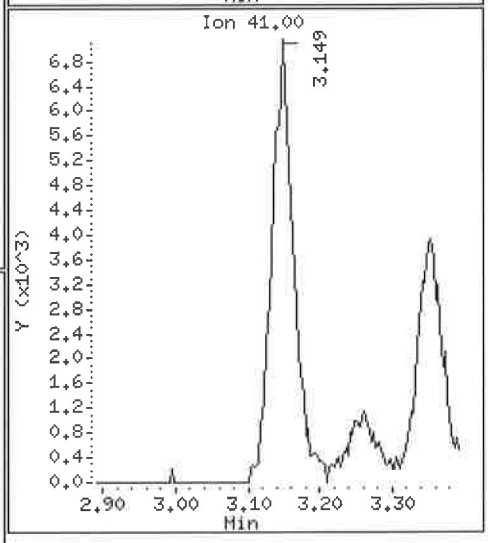
Column phase: Rtx-VMS Column diameter: 0.18

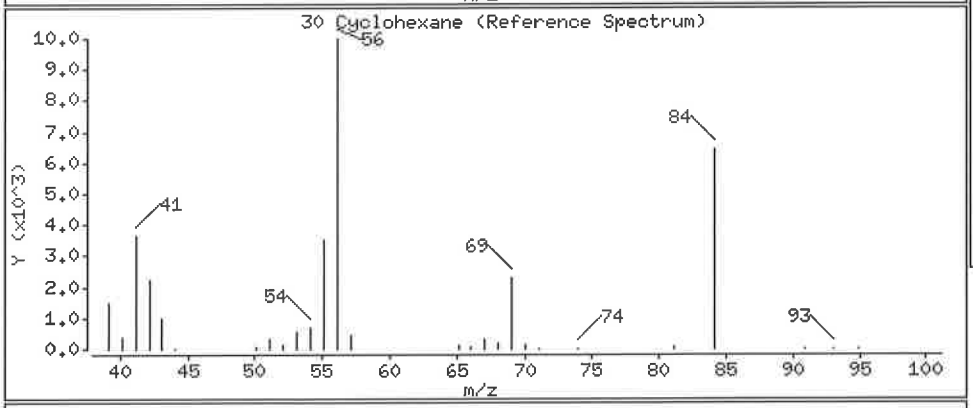
30 Cyclohexane Concentration: 12.7 ug/kg

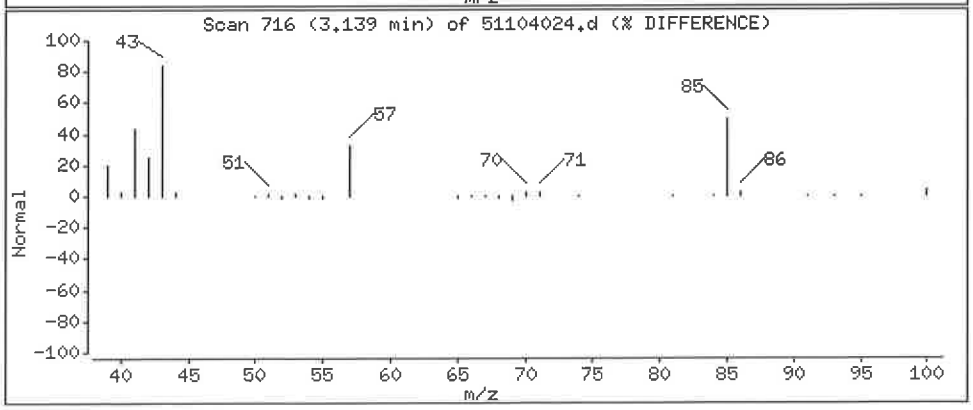












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Date : 04-NOV-2014 17:58

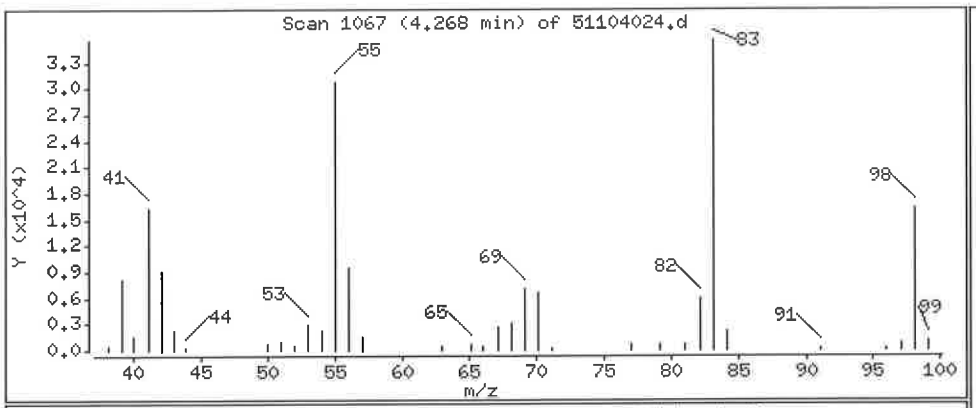
Client ID: AOI-5_PECO-B2_12-13 Instrument: 30msv5.i

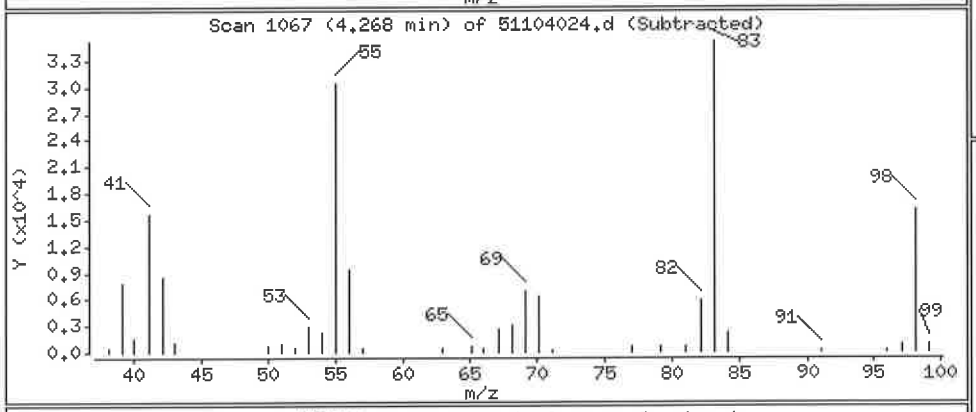
Sample Info: 30133009001,,6.53

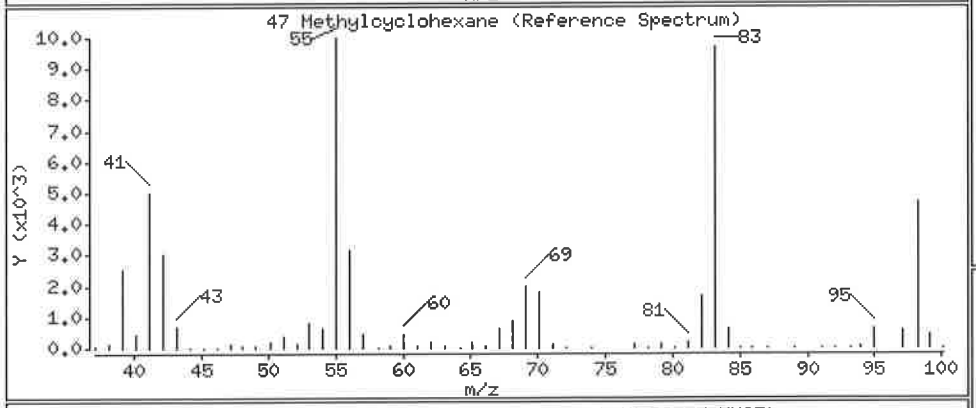
Purge Volume: 5.0 Operator: JEW

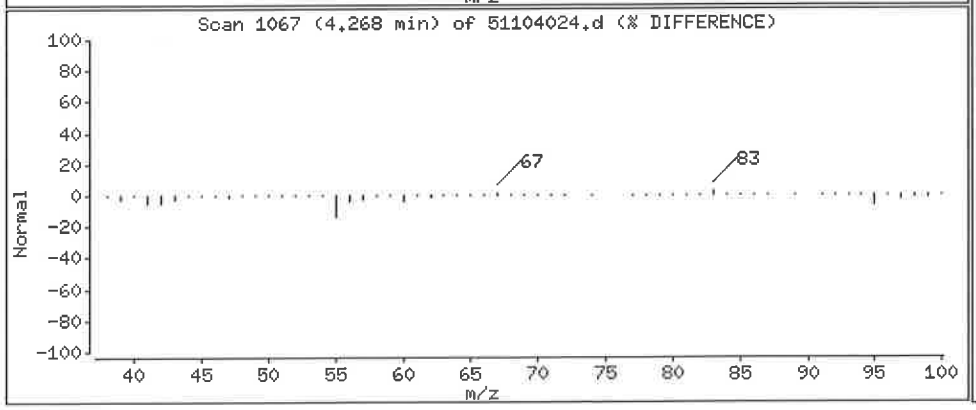
Column phase: Rtx-VMS Column diameter: 0.18

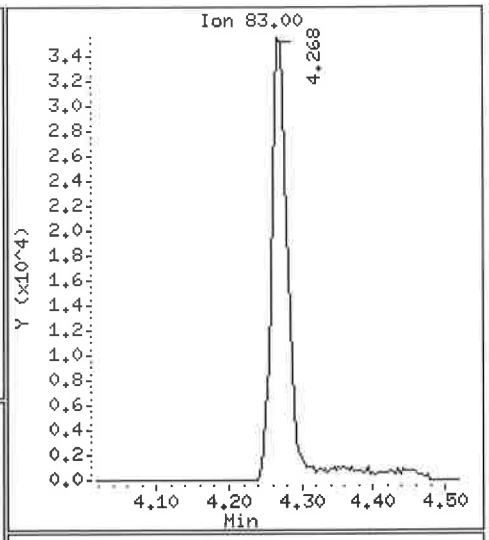
47 Methylcyclohexane Concentration: 43.0 ug/kg

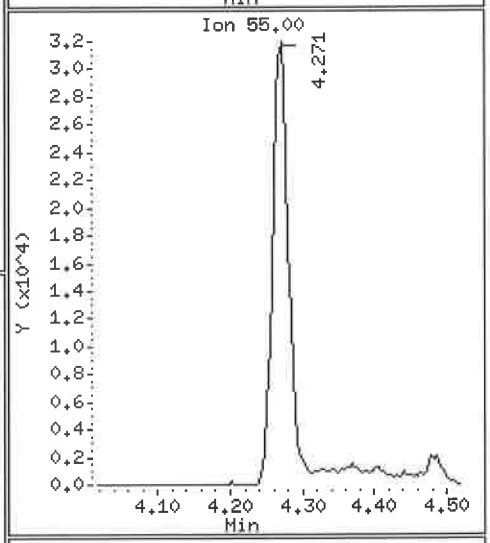


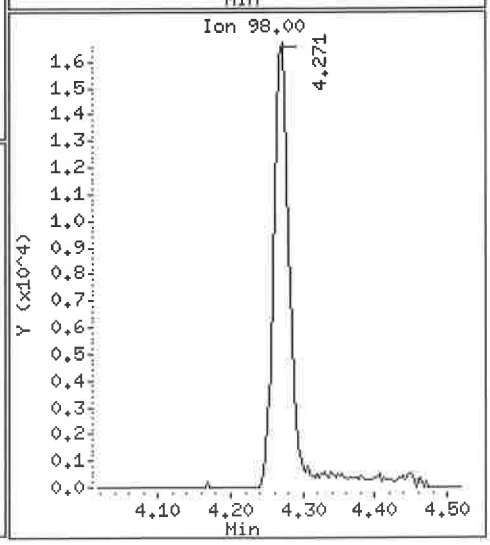












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Date : 04-NOV-2014 17:58

Client ID: AOI-5_PECO-B2_12-13

Instrument: 30msv5.i

Sample Info: 30133009001,,6.53

Purge Volume: 5.0

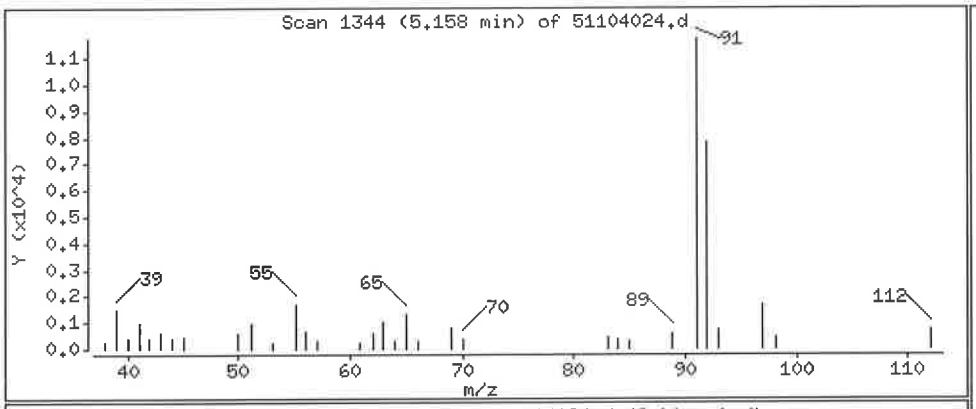
Operator: JEW

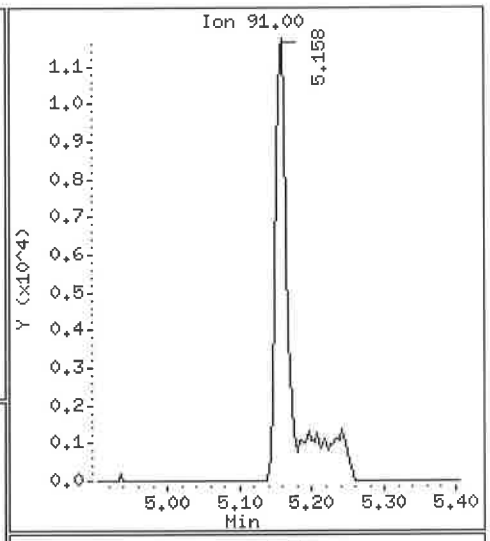
Column phase: Rtx-VMS

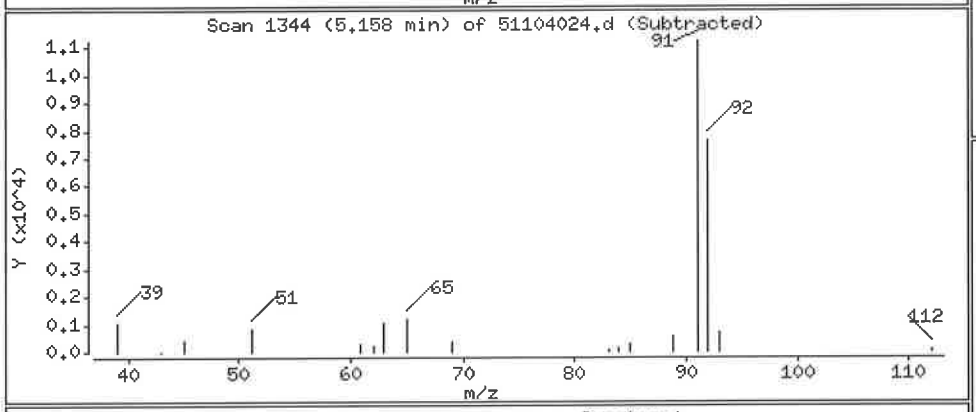
Column diameter: 0.18

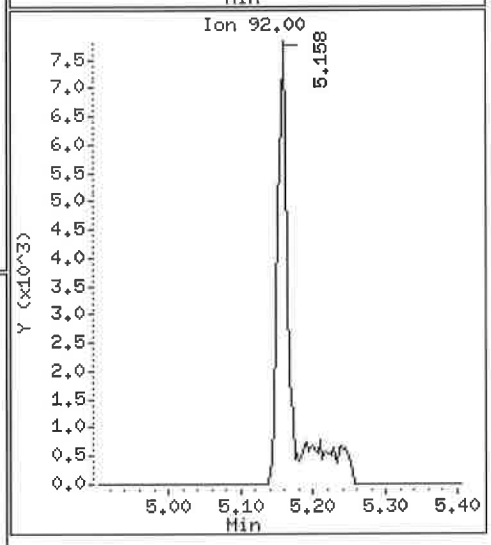
57 Toluene

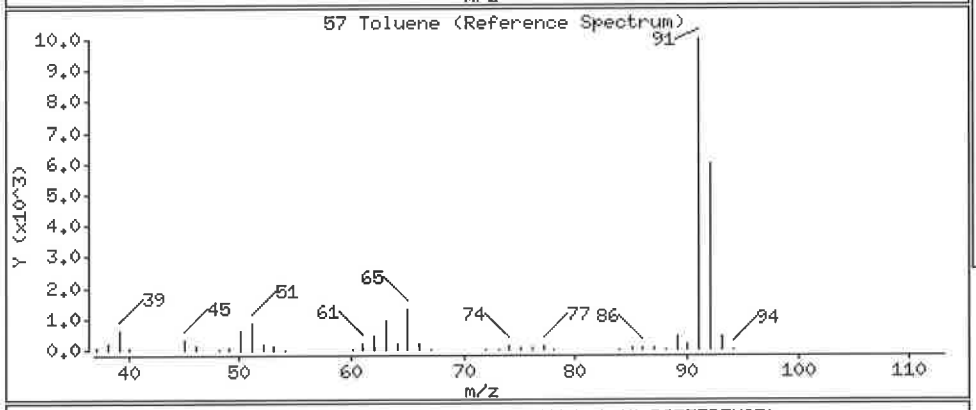
Concentration: 3.23 ug/kg

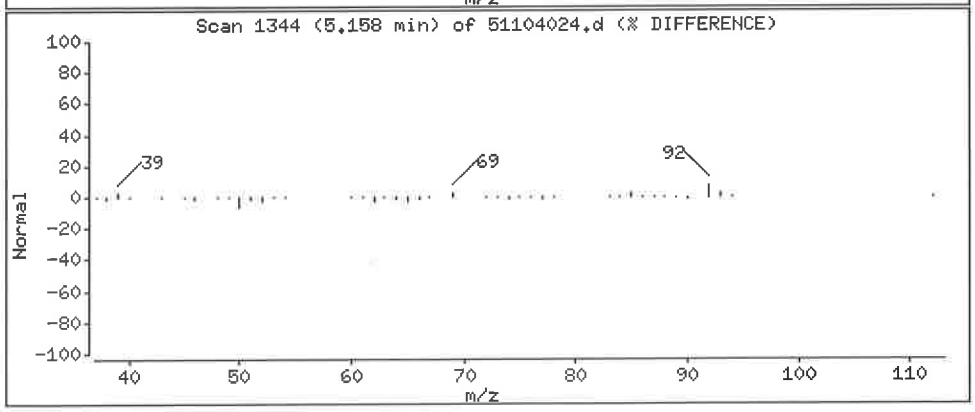












Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104024.d

Date : 04-NOV-2014 17:58

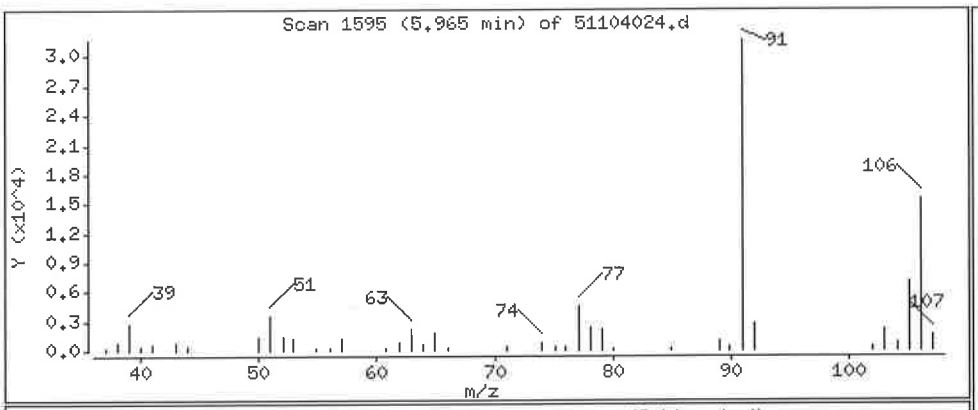
Client ID: AOI-5_PECO-B2_12-13 | Instrument: 30msv5.i

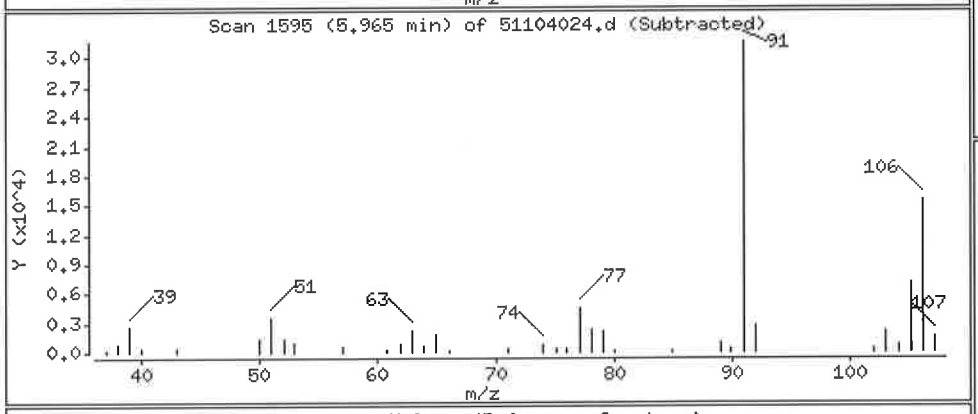
Sample Info: 30133009001,,6.53

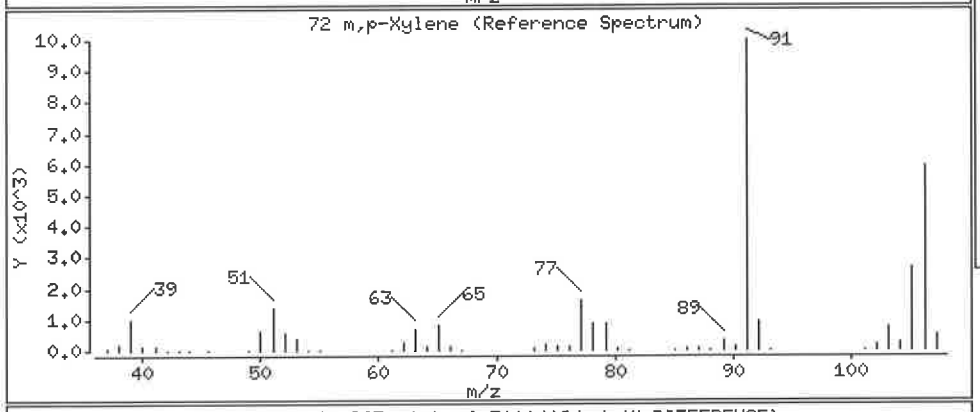
Purge Volume: 5.0 | Operator: JEW

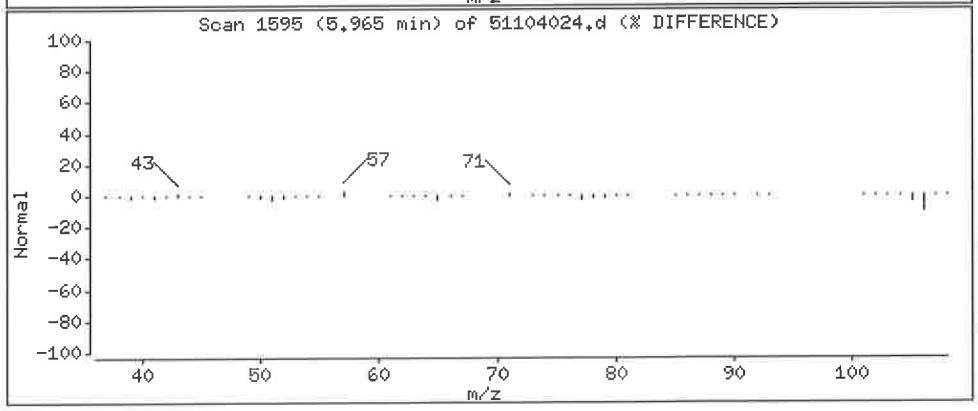
Column phase: Rtx-VMS | Column diameter: 0.18

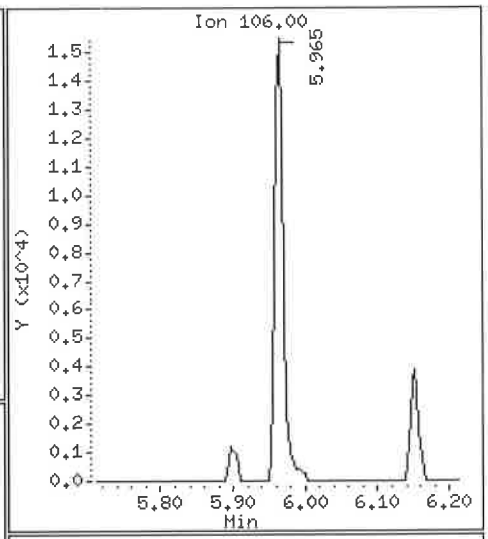
72 m,p-Xylene | Concentration: 8.64 ug/kg

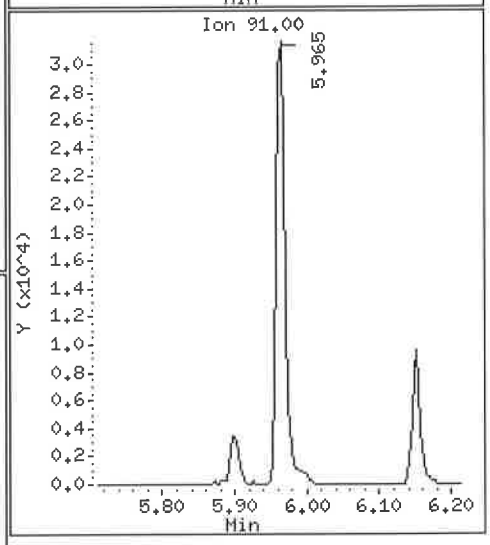












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Date : 04-NOV-2014 17:58

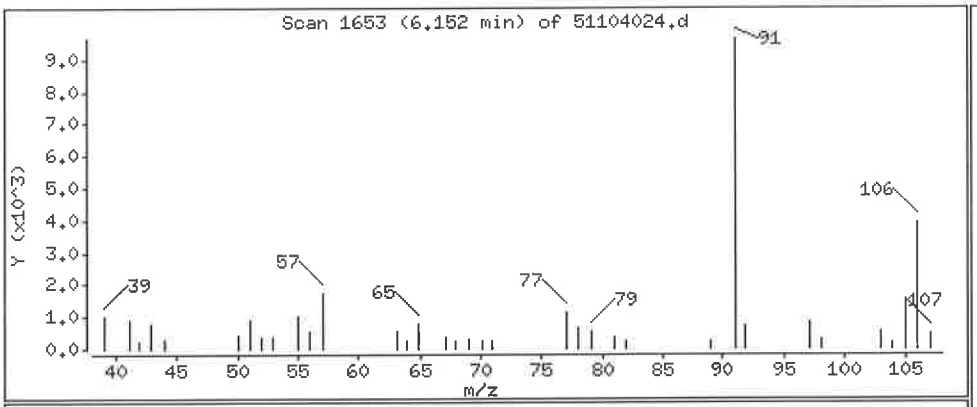
Client ID: AOI-5_PECO-B2_12-13 Instrument: 30msv5.i

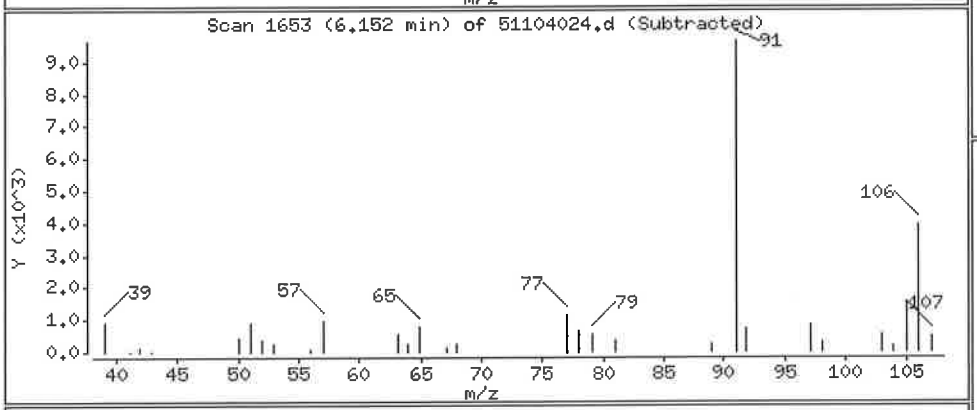
Sample Info: 30133009001,,6.53

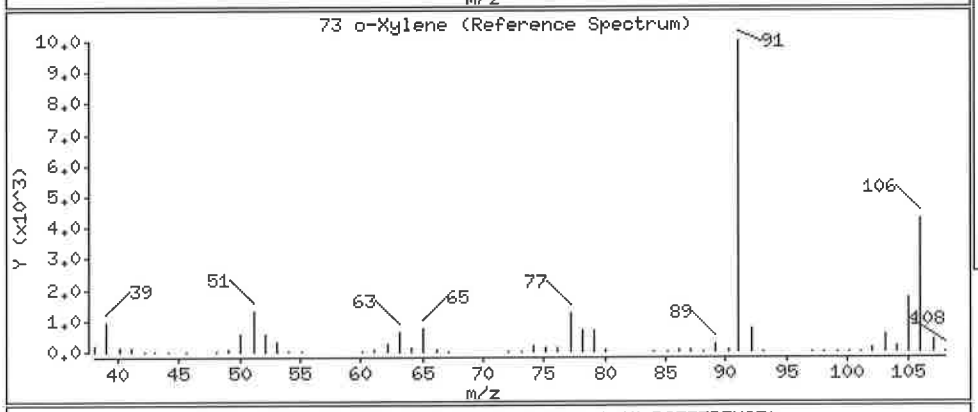
Purge Volume: 5.0 Operator: JEW

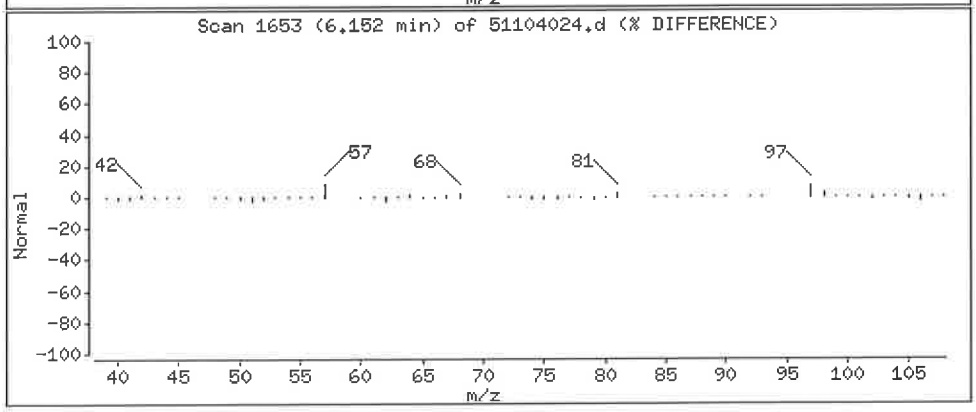
Column phase: Rtx-VMS Column diameter: 0.18

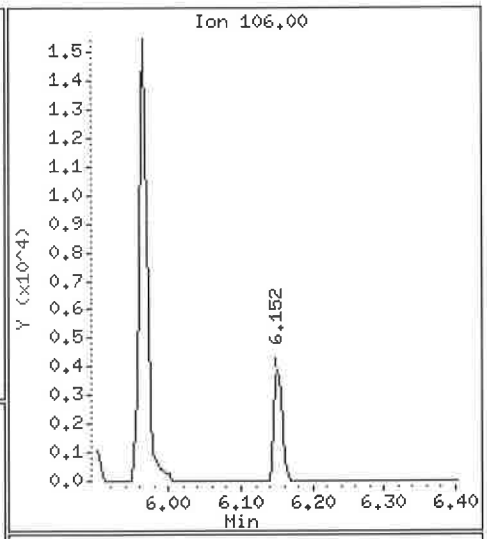
73 o-Xylene Concentration: 2.25 ug/kg

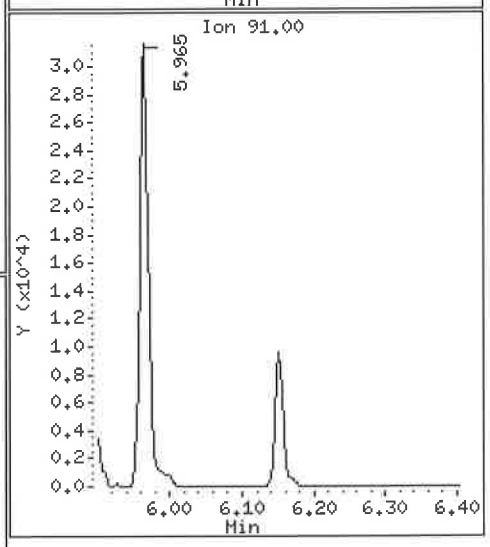






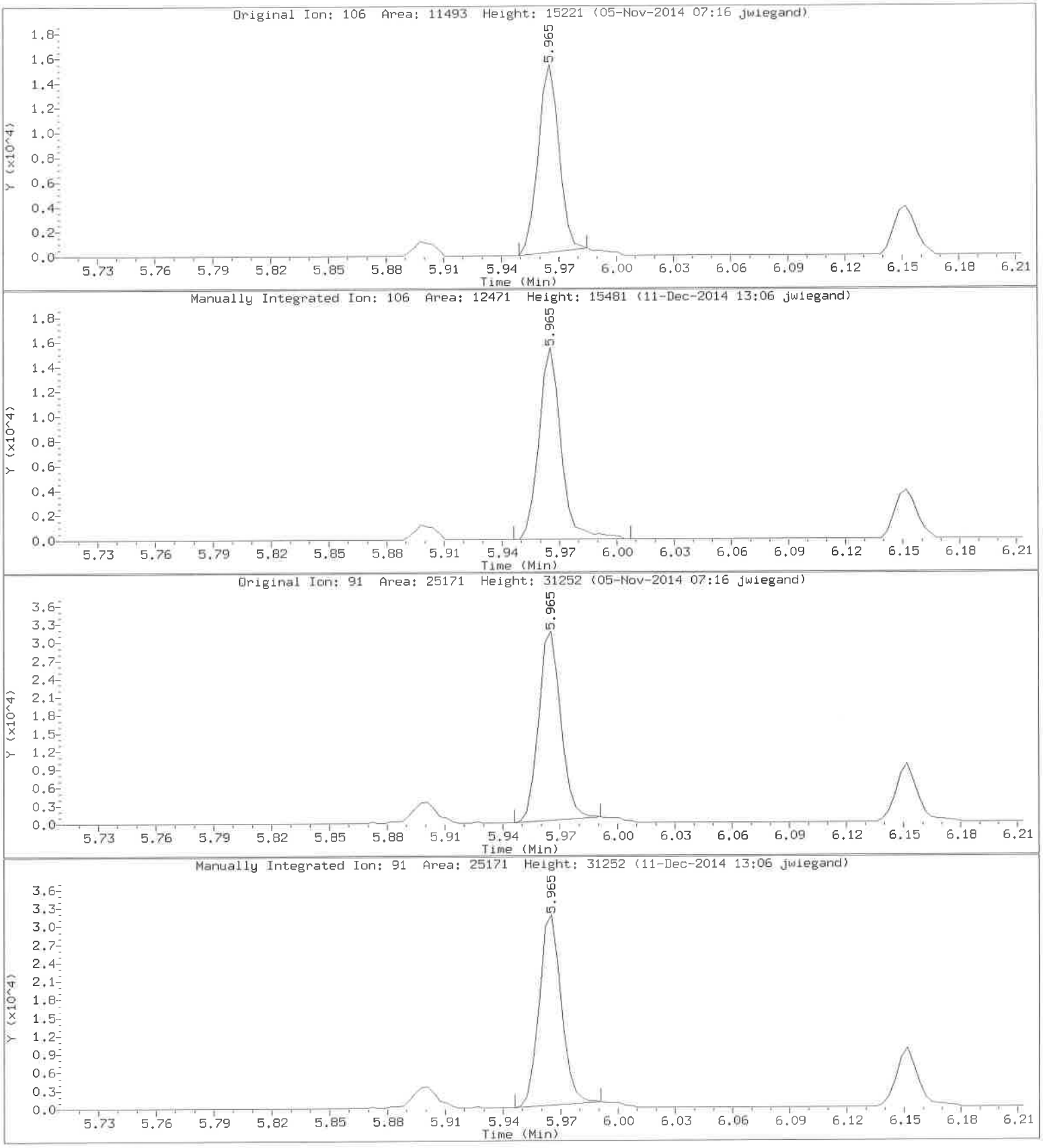






Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b/51104024.d (ManInt: al
Injection Date: 04-NOV-2014 17:58
Instrument: 30msv5.i
Lab Sample ID: 30133009001

Compound: m,p-Xylene
CAS Number: 7816-60-0



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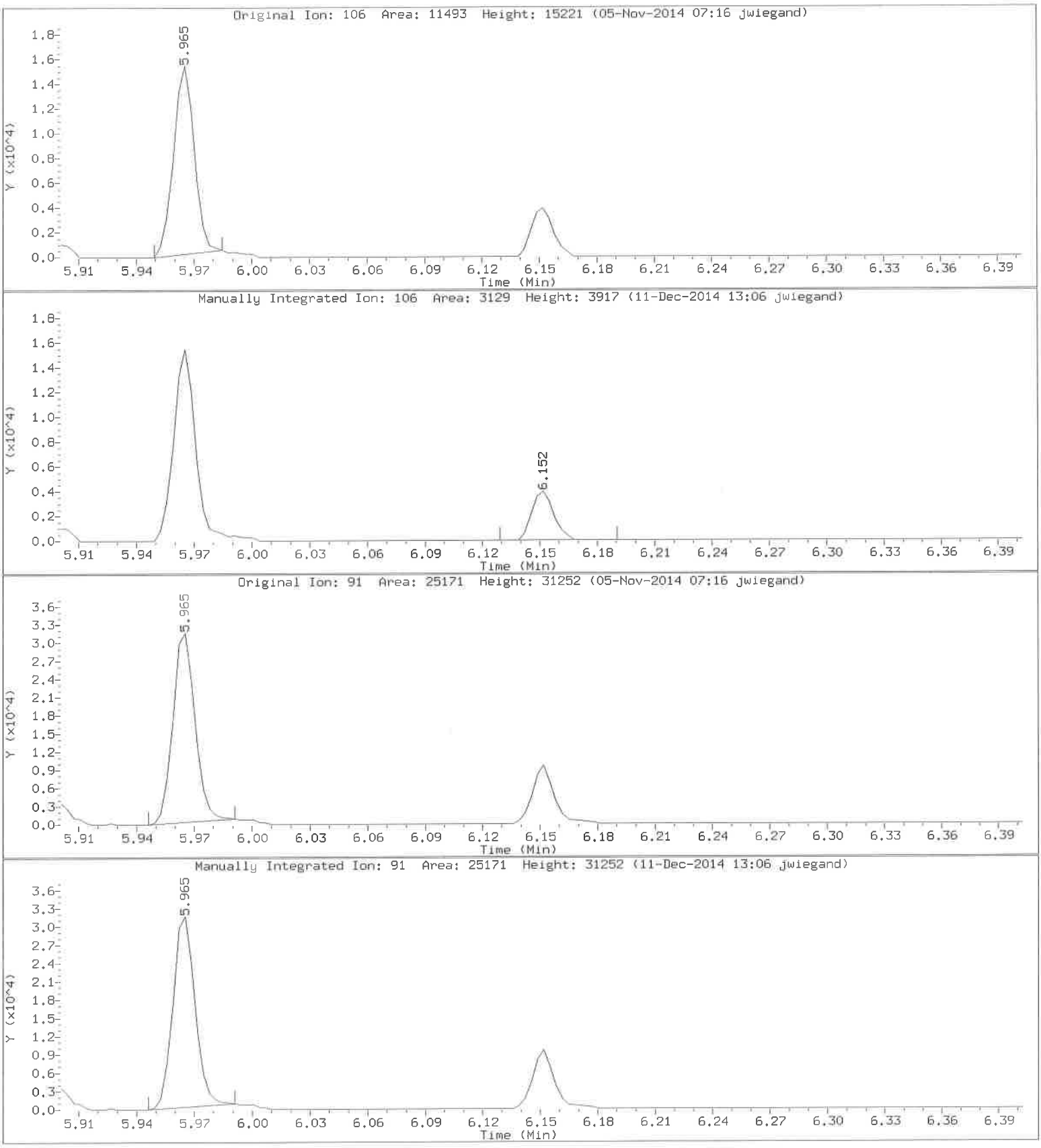
Injection Date: 04-NOV-2014 17:58
Instrument: 30msv5.i
Lab Sample ID: 30133009001

Compound: o-Xylene
CAS Number: 95-47-6



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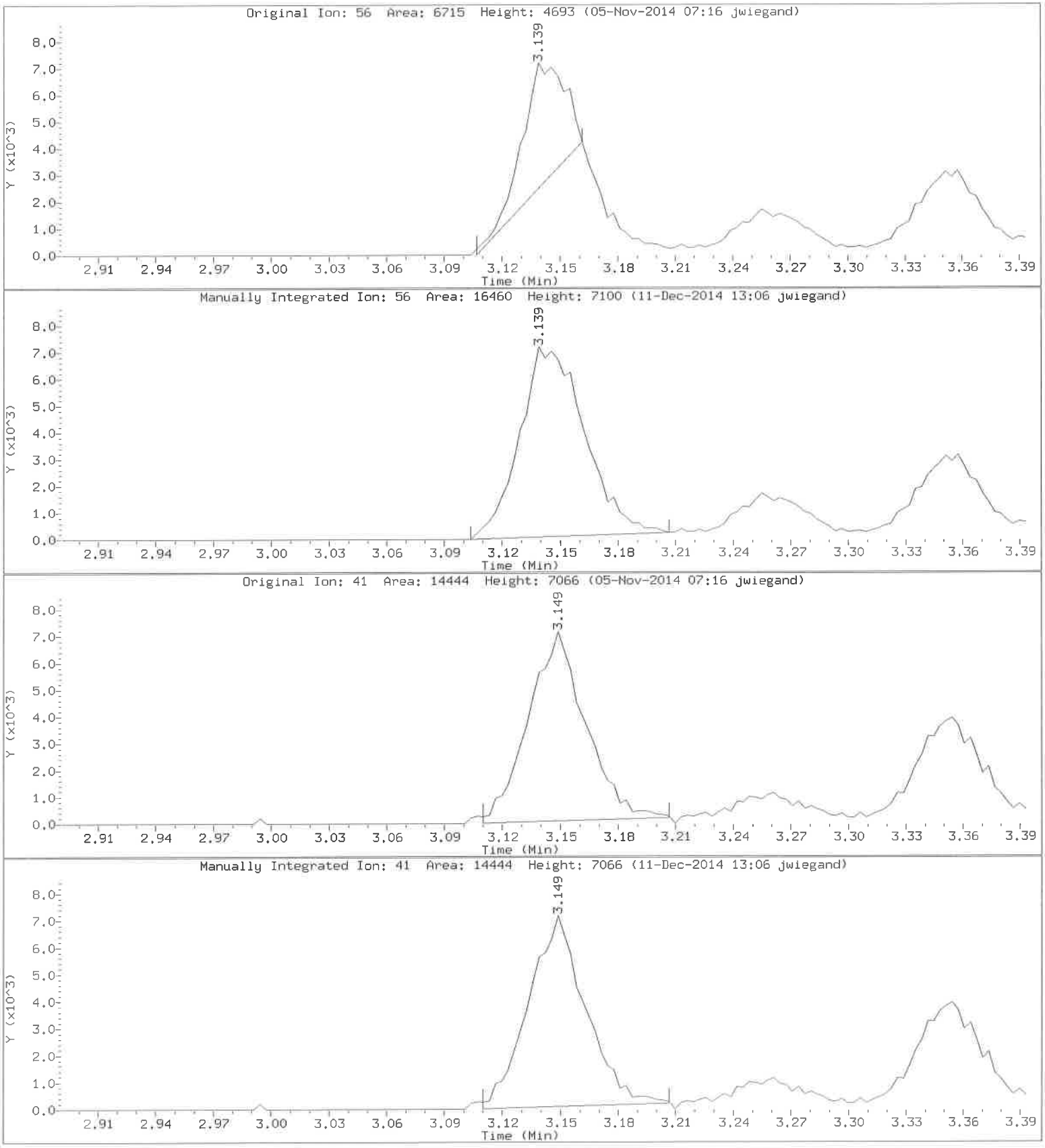
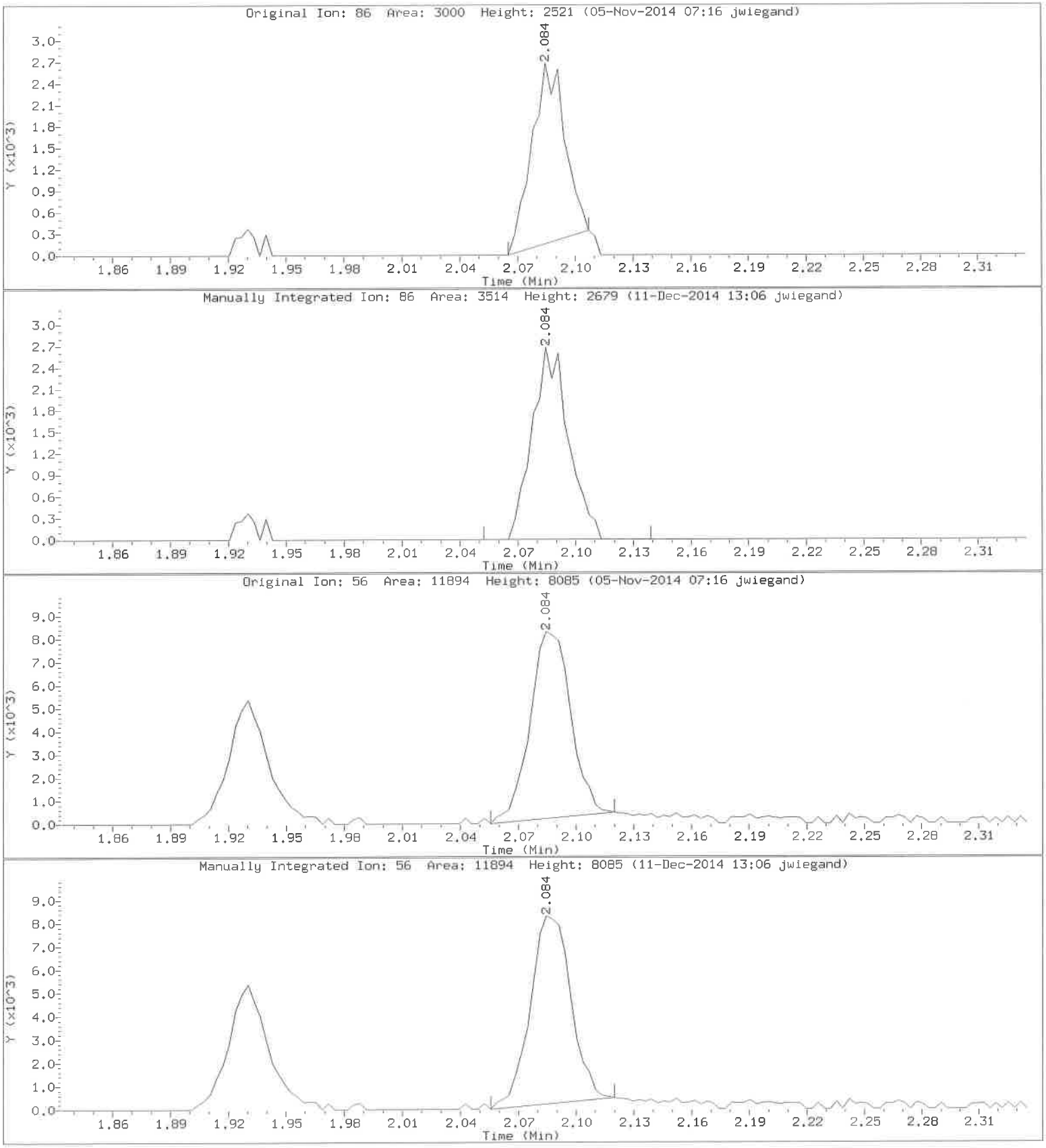
Injection Date: 04-NOV-2014 17:58
Instrument: 30msv5.i
Lab Sample ID: 30133009001

Compound: Cyclohexane
CAS Number: 110-82-7

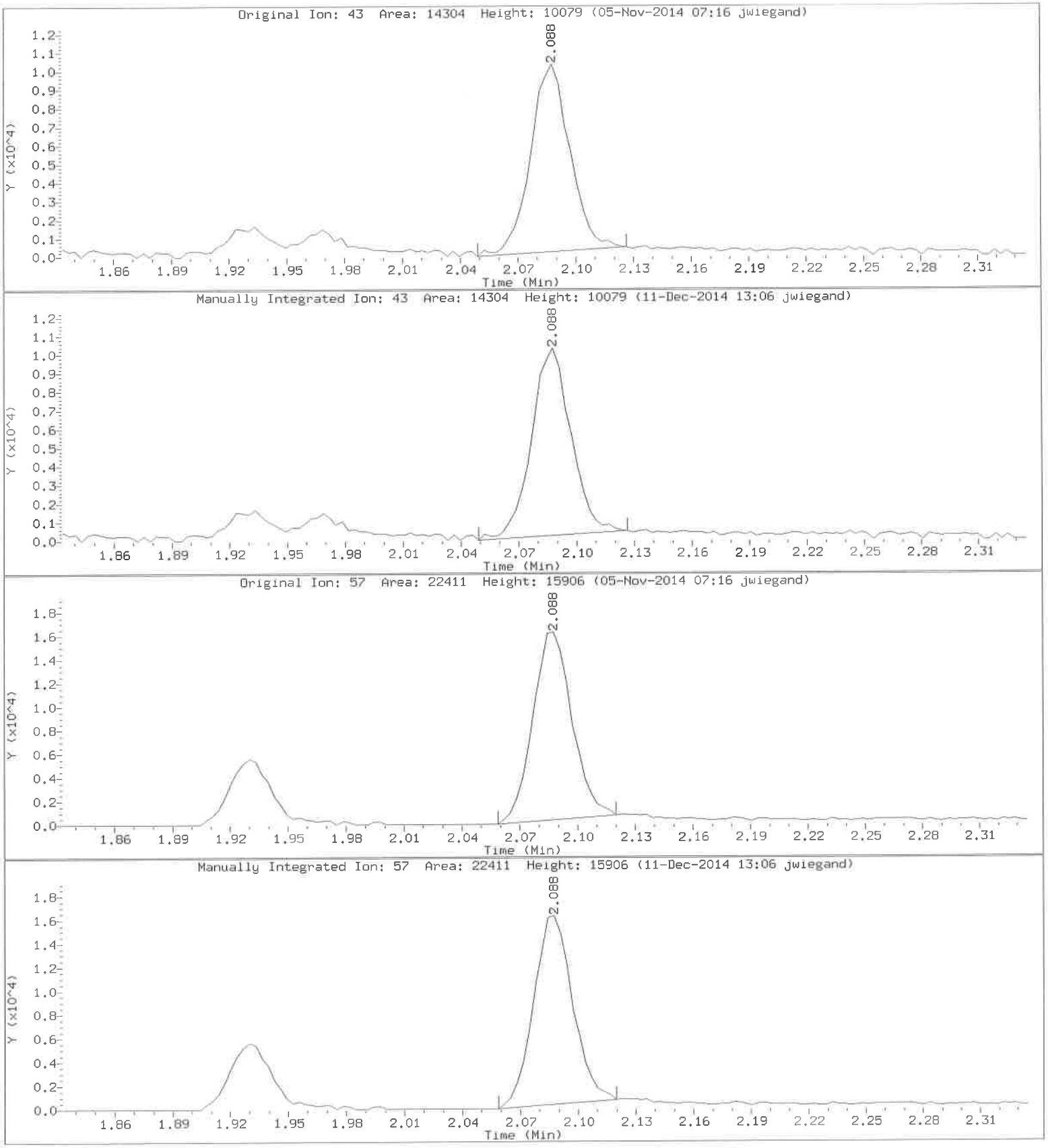


Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b/51104024.d (ManInt: al
Injection Date: 04-NOV-2014 17:58
Instrument: 30msv5.i
Lab Sample ID: 30133009001

Compound: Hexane
CAS Number: 110-54-03



Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b/51104024.d (ManInt: al
Injection Date: 04-NOV-2014 17:58
Instrument: 30msv5.i
Lab Sample ID: 30133009001



Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Matrix: Solid
% Moisture: 16.1389
Acode: 8260 MSV 5030 Low Level
Prep/Method: EPA 8260B

Sample: AOI-5_PECO-B5_14-16_10232014
Lab ID: 30133009002
Collected: 10/23/14 14:30
Received: 10/28/14 10:15

Results reported on a "dry-weight" basis

CAS No.	Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	Qual
71-43-2	Benzene	**0.0050 U**	mg/kg	0.0050	0.00078	1		11/04/14 18:20	M5
135-98-8	sec-Butylbenzene	**0.0050 U**	mg/kg	0.0050	0.0015	1		11/04/14 18:20	M5
98-06-6	tert-Butylbenzene	**0.0050 U**	mg/kg	0.0050	0.0020	1		11/04/14 18:20	M5
110-82-7	Cyclohexane	**0.0049J**	mg/kg	0.010	0.0013	1		11/04/14 18:20	M5
106-93-4	1,2-Dibromoethane (EDB)	ND	mg/kg	0.0030	0.0026	1		11/04/14 18:20	M5
107-06-2	1,2-Dichloroethane	**0.0050 U**	mg/kg	0.0050	0.00091	1		11/04/14 18:20	M5
100-41-4	Ethylbenzene	**0.0050 U**	mg/kg	0.0050	0.0026	1		11/04/14 18:20	M5
	Hexane	**0.010 U**	mg/kg	0.010	0.010	1		11/04/14 18:20	M5
98-82-8	Isopropylbenzene (Cumene)	**0.0050 U**	mg/kg	0.0050	0.0011	1		11/04/14 18:20	M5
1634-04-4	Methyl-tert-butyl ether	**0.0050 U**	mg/kg	0.0050	0.00071	1		11/04/14 18:20	M5
108-88-3	Toluene	**0.0016J**	mg/kg	0.0050	0.00064	1		11/04/14 18:20	M5
95-63-6	1,2,4-Trimethylbenzene	**0.0050 U**	mg/kg	0.0050	0.0012	1		11/04/14 18:20	M5
108-67-8	1,3,5-Trimethylbenzene	**0.0050 U**	mg/kg	0.0050	0.0014	1		11/04/14 18:20	M5
1330-20-7	Xylene (Total)	**0.015 U**	mg/kg	0.015	0.0031	1		11/04/14 18:20	M5
Surrogates									
2037-26-5	Toluene-d8 (S)	**96**	%	73-124		1		11/04/14 18:20	M5
460-00-4	4-Bromofluorobenzene (S)	**124**	%	71-124		1		11/04/14 18:20	M5
17060-07-0	1,2-Dichloroethane-d4 (S)	**104**	%	83-138		1		11/04/14 18:20	M5

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104025.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104025.d
Lab Smp Id: 30133009002 Client Smp ID: AOI-5_PECO-B5_14-16
Inj Date : 04-NOV-2014 18:20
Operator : JEW Inst ID: 30msv5.i
Smp Info : 30133009002,,5.95
Misc Info : 21491
Comment :
Method : \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 13:07 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	16.139	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.950	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
1 Dichlorodifluoromethane	85	Compound Not Detected.						
2 Chloromethane	50	Compound Not Detected.						
3 Vinyl Chloride	62	Compound Not Detected.						
4 Bromomethane	94	Compound Not Detected.						
5 Chloroethane	64	Compound Not Detected.						
6 Trichlorofluoromethane	101	Compound Not Detected.						
7 Ethyl Ether	59	Compound Not Detected.						
8 1,1-Dichloroethene	61	Compound Not Detected.						
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	Compound Not Detected.						
10 1,1,2-Trichlorotrifluoroethan	151	Compound Not Detected.						
11 Iodomethane	142	Compound Not Detected.						
12 Acrolein	56	Compound Not Detected.						
13 Allyl chloride	41	Compound Not Detected.						
14 Methylene Chloride	49	Compound Not Detected.						
15 Acetone	58	1.962	1.968	(0.472)	1404	18.9383	19.0	
16 trans-1,2-Dichloroethene	61	Compound Not Detected.						
17 Methyl Acetate	74	Compound Not Detected.						
18 Hexane	86	Compound Not Detected.						
19 tert-butyl Methylether,MtB	73	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104025.d
Report Date: 11-Dec-2014 13:07

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
	21 tert-Butyl Alcohol	59	Compound Not Detected.						
	20 Acetonitrile	41	Compound Not Detected.						
	22 DiisopropylEther	45	Compound Not Detected.						
	23 Chloroprene	53	Compound Not Detected.						
	25 Acrylonitrile	53	Compound Not Detected.						
	24 1,1-Dichloroethane	63	Compound Not Detected.						
	27 t-Butyl ethyl ether	59	Compound Not Detected.						
	26 Vinyl Acetate	43	Compound Not Detected.						
	28 cis-1,2-Dichloroethene	61	Compound Not Detected.						
	29 2,2-Dichloropropane	77	Compound Not Detected.						
	30 Cyclohexane	56	3.151	3.142	(0.757)	6242	4.88740	4.90(Q)	
	31 Bromochloromethane	130	Compound Not Detected.						
	32 Chloroform	83	Compound Not Detected.						
	33 Carbon Tetrachloride	117	Compound Not Detected.						
	36 Ethyl Acetate	43	Compound Not Detected.						
	35 Tetrahydrofuran	42	Compound Not Detected.						
	34 1,1,1-Trichloroethane	97	Compound Not Detected.						
	37 1,1-Dichloropropene	75	Compound Not Detected.						
	38 2-Butanone	43	Compound Not Detected.						
	39 Benzene	78	Compound Not Detected.						
	40 Propionitrile	54	Compound Not Detected.						
	41 Methacrylonitrile	41	Compound Not Detected.						
$	42 1,2-Dichloroethane-d4	65	3.939	3.939	(0.947)	34677	31.2893	31.4	
	43 t-Amyl methyl ether	73	Compound Not Detected.						
	46 Isobutanol	43	Compound Not Detected.						
	44 1,2-Dichloroethane	62	Compound Not Detected.						
*	45 Fluorobenzene	96	4.161	4.161	(1.000)	94942	30.0000		
	47 Methylcyclohexane	83	4.267	4.267	(0.726)	22777	19.8651	19.9	
	48 Trichloroethene	132	Compound Not Detected.						
	49 Dibromomethane	174	Compound Not Detected.						
	50 1,2-Dichloropropane	63	Compound Not Detected.						
	51 Bromodichloromethane	83	Compound Not Detected.						
	52 Methyl methacrylate	69	Compound Not Detected.						
	53 1,4-Dioxane	88	Compound Not Detected.						
	55 2-ChloroethylVinylEther	63	Compound Not Detected.						
	54 cis-1,3-Dichloropropene	75	Compound Not Detected.						
$	56 Toluene-d8	98	5.129	5.129	(0.873)	89399	28.9213	29.0	
	57 Toluene	91	5.158	5.154	(0.877)	5516	1.64093	1.64(a)	
	58 2-Nitropropane	43	Compound Not Detected.						
	59 Tetrachloroethene	166	Compound Not Detected.						
	60 4-Methyl-2-Pentanone	43	Compound Not Detected.						
	61 trans-1,3-Dichloropropene	75	Compound Not Detected.						
	63 Ethyl methacrylate	41	Compound Not Detected.						
	62 1,1,2-Trichloroethane	97	Compound Not Detected.						
	64 Dibromochloromethane	129	Compound Not Detected.						
	65 1,3-Dichloropropane	76	Compound Not Detected.						
	66 1,2-Dibromoethane,EDB	107	Compound Not Detected.						
	70 2-Hexanone	43	Compound Not Detected.						
*	67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	40472	30.0000		
	68 Chlorobenzene	112	Compound Not Detected.						
	69 Ethylbenzene	106	Compound Not Detected.						
	71 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.						
	72 m,p-Xylene	106	Compound Not Detected.						
	73 o-Xylene	106	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104025.d
Report Date: 11-Dec-2014 13:07

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
74 Styrene	104	Compound Not Detected.						
75 Bromoform	173	Compound Not Detected.						
76 Isopropylbenzene,Cumene	105	Compound Not Detected.						
$ 77 Bromofluorobenzene	174	6.408	6.405	(0.933)	26682	37.3479	37.4(QR)	
79 n-Propylbenzene	91	Compound Not Detected.						
78 Bromobenzene	77	Compound Not Detected.						
80 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.						
81 2-Chlorotoluene	126	Compound Not Detected.						
82 1,3,5-Trimethylbenzene	120	Compound Not Detected.						
83 1,2,3-Trichloropropane	110	Compound Not Detected.						
84 trans 1,4-Dichloro-2-butene	53	Compound Not Detected.						
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	Compound Not Detected.						
87 tert-Butyl benzene	119	Compound Not Detected.						
88 1,2,4-Trimethylbenzene	120	Compound Not Detected.						
89 sec-Butyl benzene	105	Compound Not Detected.						
90 4-Isopropyl toluene	119	Compound Not Detected.						
91 1,3-Dichlorobenzene	146	Compound Not Detected.						
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.871	(1.000)	26034	30.0000		
93 1,4-Dichlorobenzene	146	Compound Not Detected.						
94 n-Butyl benzene	91	Compound Not Detected.						
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	Compound Not Detected.						
96 bis(2Chloro1methyl ethyl)eth	45	Compound Not Detected.						
97 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.						
98 Hexachlorobutadiene	225	Compound Not Detected.						
99 1,2,4-Trichlorobenzene	180	Compound Not Detected.						
100 Naphthalene	128	Compound Not Detected.						
101 1,2,3-Trichlorobenzene	180	Compound Not Detected.						
157 2-methylnaphthalene	142	Compound Not Detected.						

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104025.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51104025.d
Lab Smp Id: 30133009002
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Calibration Date: 04-NOV-2014
Calibration Time: 10:33
Client Smp ID: AOI-5_PECO-B5_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	96404	48202	192808	94942	-1.52
67 Chlorobenzene-d5	41101	20551	82202	40472	-1.53
92 1,4-Dichlorobenze	37743	18872	75486	26034	-31.02

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104025.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

RECOVERY REPORT

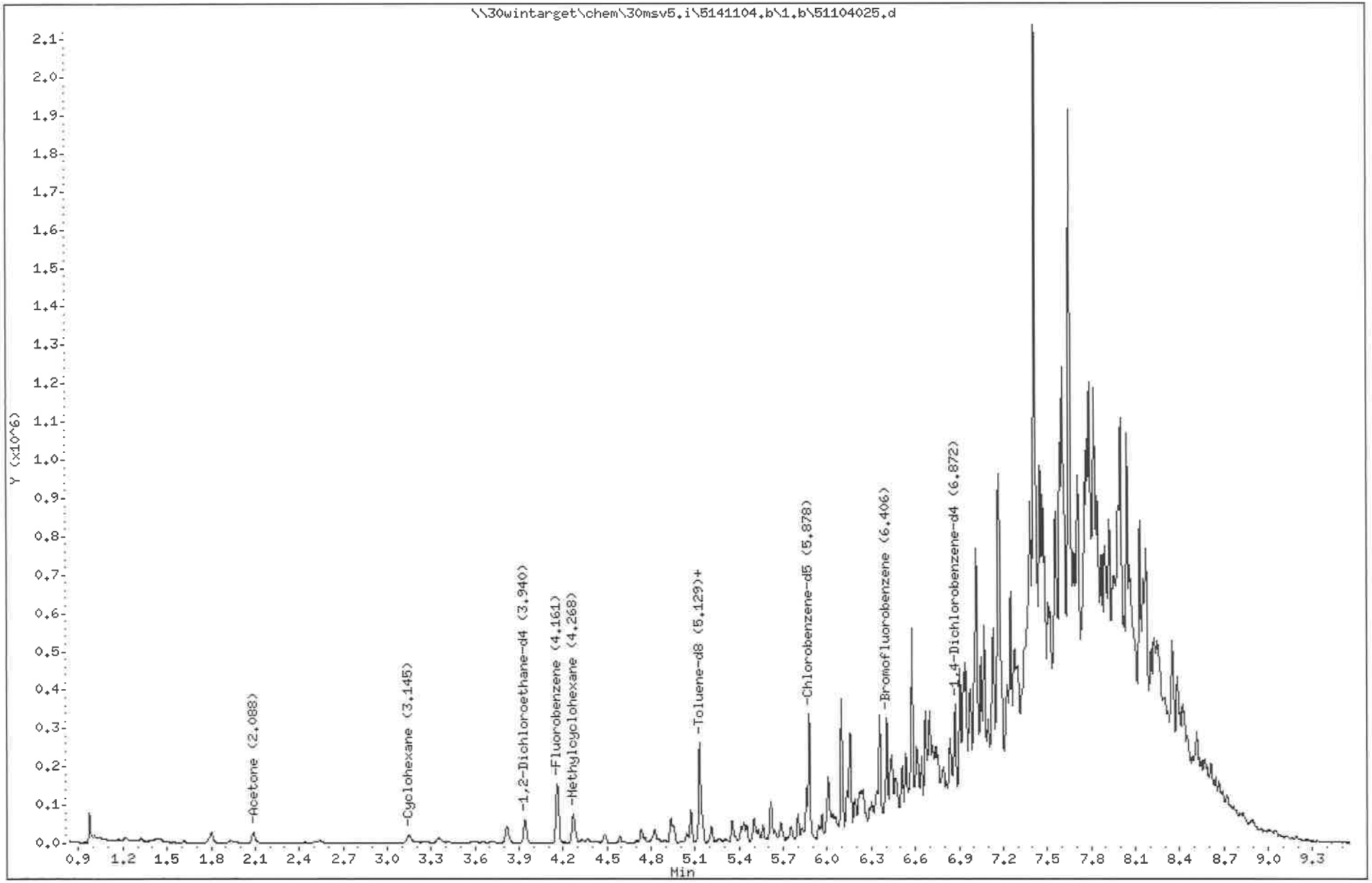
Client Name: Sunoco_Langan
Sample Matrix: SOLID
Lab Smp Id: 30133009002
Level: LOW
Data Type: MS DATA
SpikeList File: lcs.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Client SDG: 30133009
Fraction: VOA
Client Smp ID: AOI-5_PECO-B5_14-16
Operator: JEW
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 42 1,2-Dichloroethane	30.1	31.4	104.30	83-138
$ 56 Toluene-d8	30.1	29.0	96.40	73-124
$ 77 Bromofluorobenzene	30.1	37.4	124.49*	71-124
$ 158 1,2-Dichlorobenze	30.1	0.000	*	0-200

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104025.d
Date : 04-NOV-2014 18:20
Client ID: AOI-5_PECO-B5_14-16
Sample Info: 30133009002,,5.95
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104025.d

Date : 04-NOV-2014 18:20

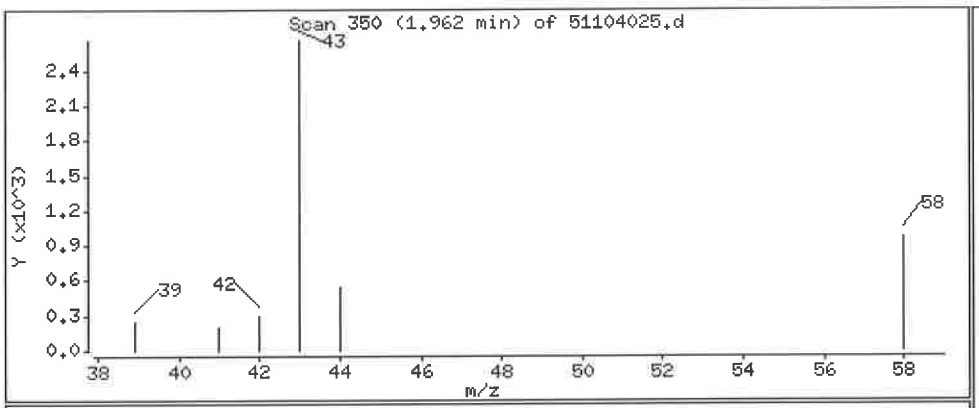
Client ID: AOI-5_PECO-B5_14-16 Instrument: 30msv5.i

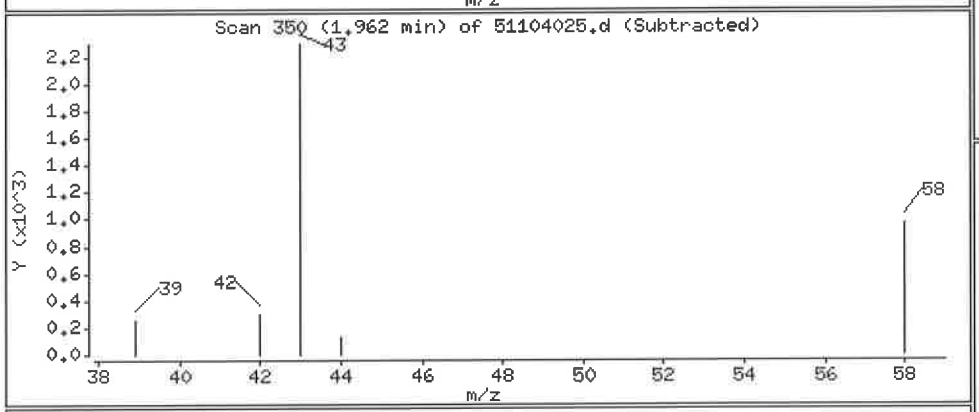
Sample Info: 30133009002,,5.95

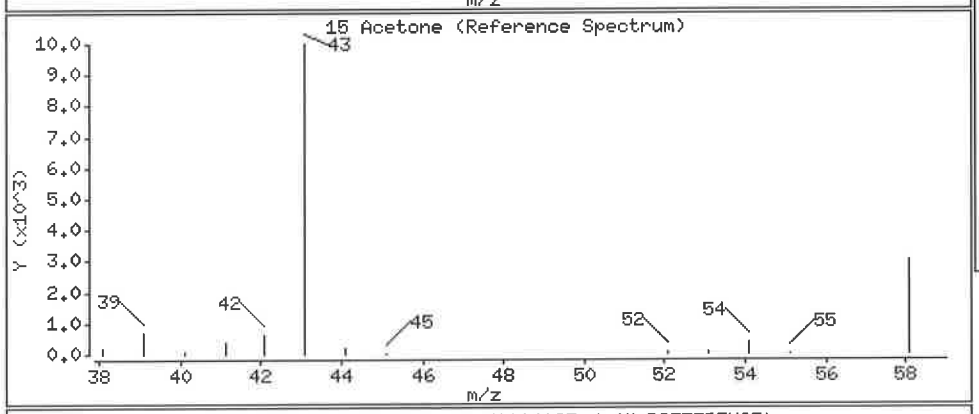
Purge Volume: 5.0 Operator: JEW

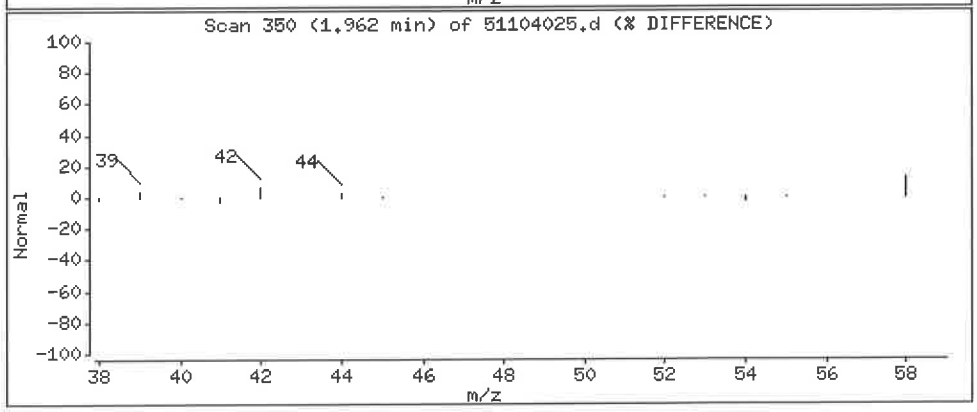
Column phase: Rtx-VMS Column diameter: 0.18

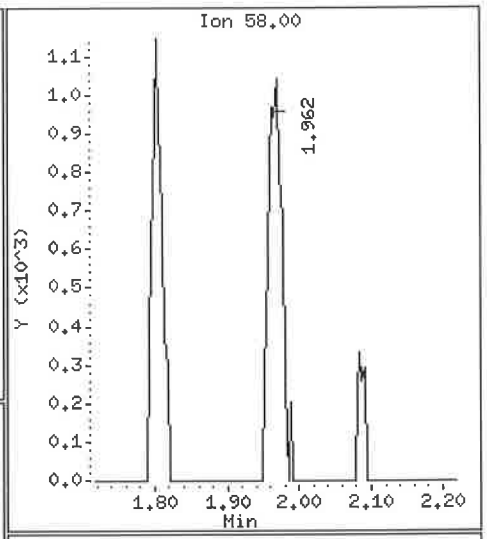
15 Acetone Concentration: 19.0 ug/kg

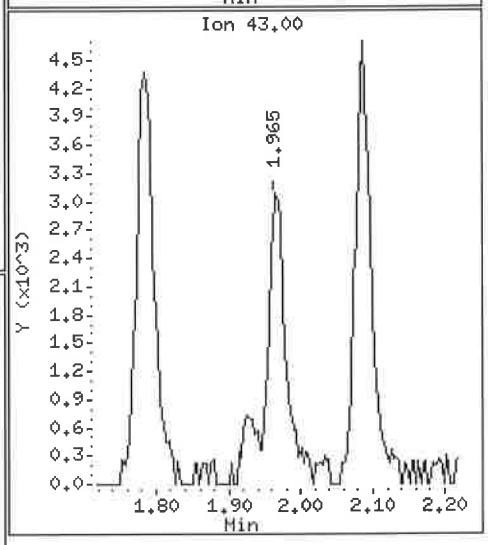












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Date : 04-NOV-2014 18:20

Client ID: AOI-5_PECO-B5_14-16

Instrument: 30msv5.i

Sample Info: 30133009002,,5.95

Purge Volume: 5.0

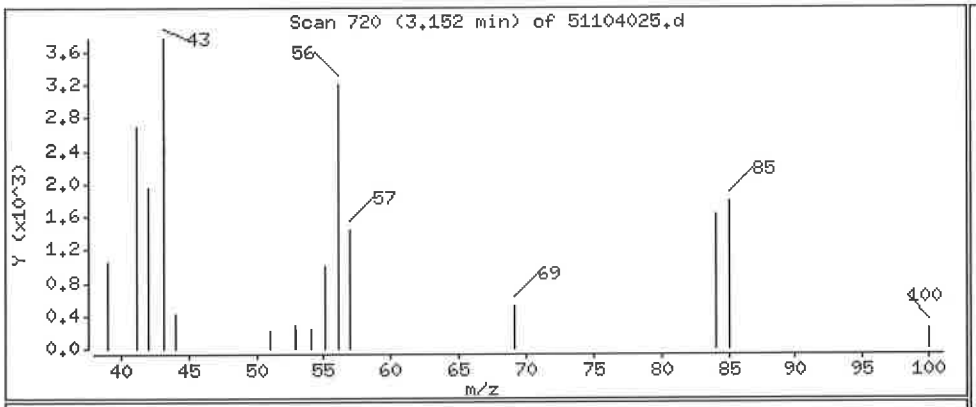
Operator: JEW

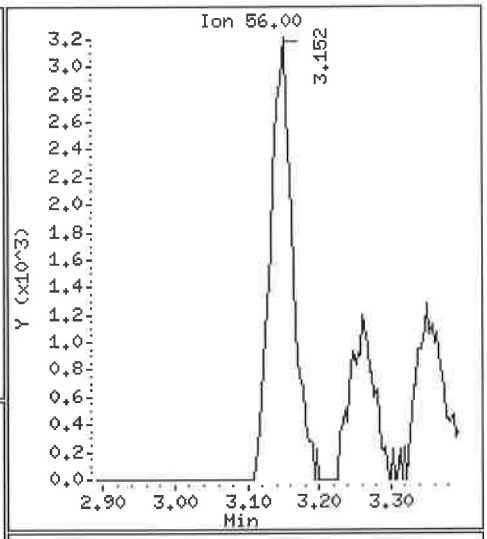
Column phase: Rtx-VMS

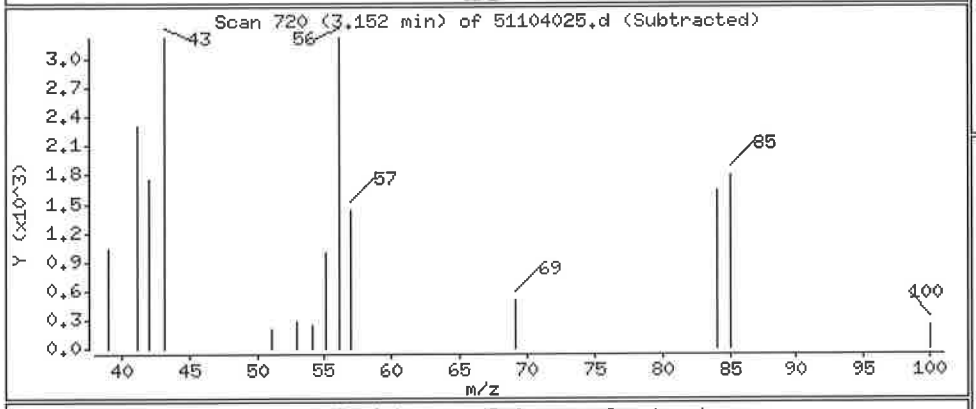
Column diameter: 0.18

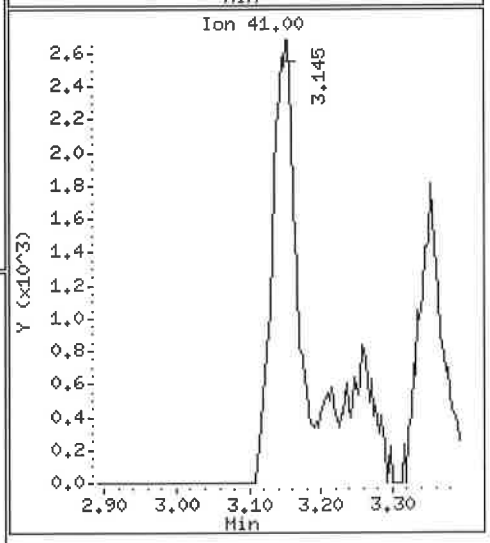
30 Cyclohexane

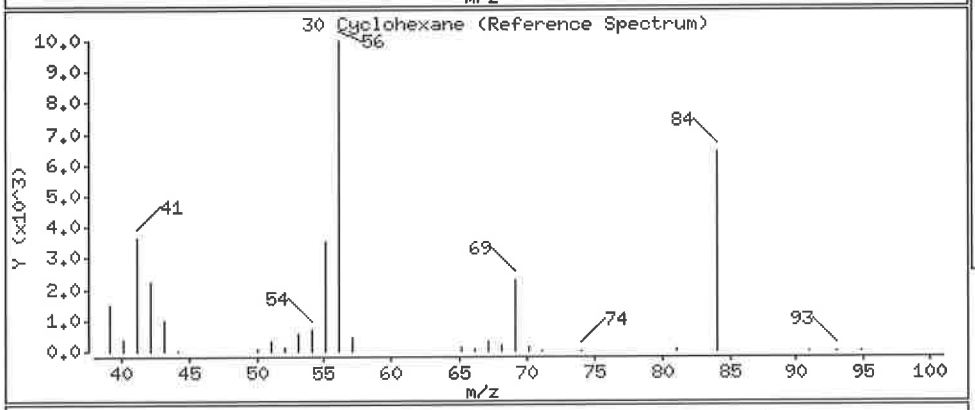
Concentration: 4.90 ug/kg

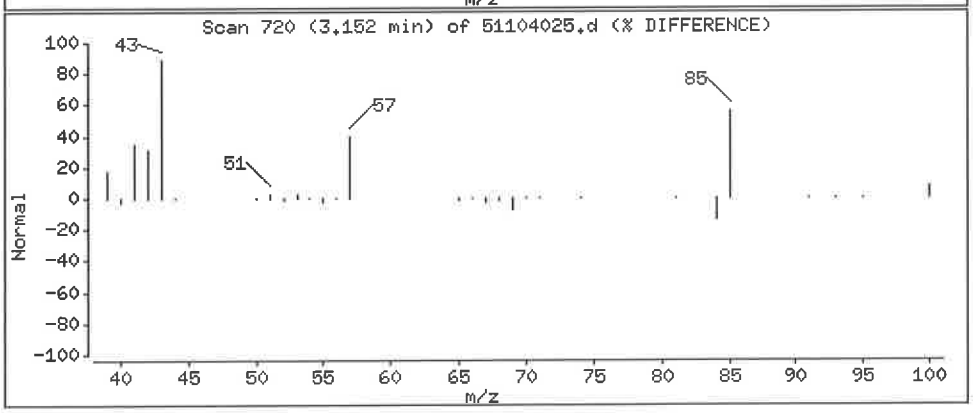












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Date : 04-NOV-2014 18:20

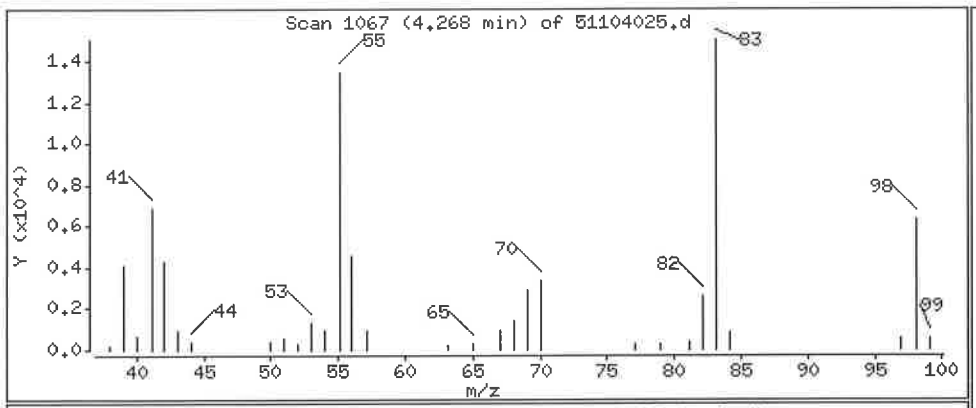
Client ID: AOI-5_PECO-B5_14-16 Instrument: 30msv5.i

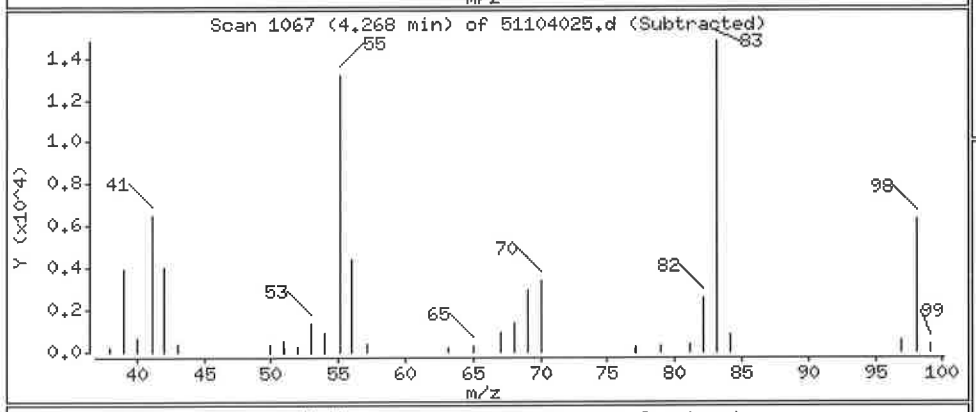
Sample Info: 30133009002,,5.95

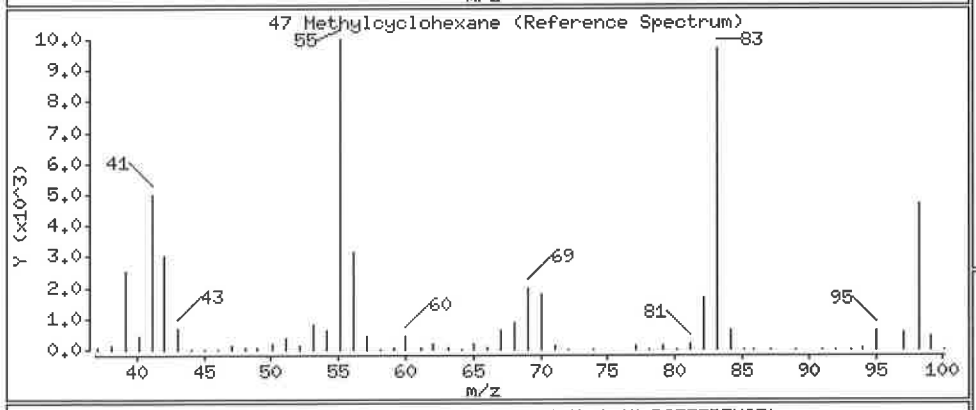
Purge Volume: 5.0 Operator: JEW

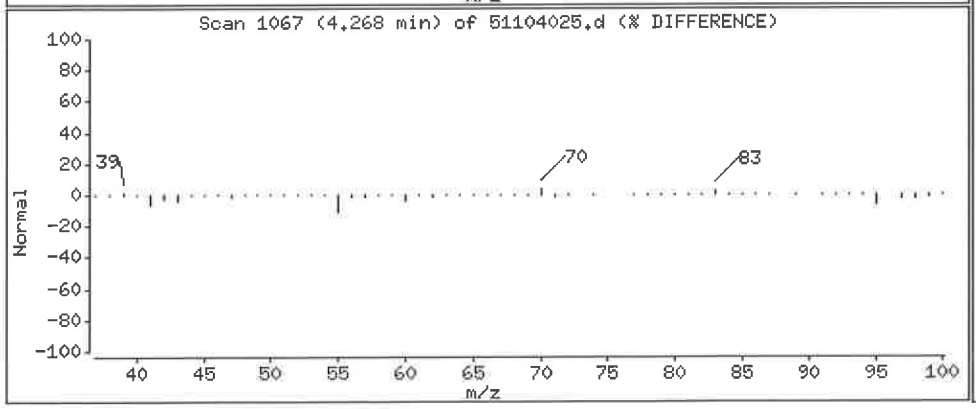
Column phase: Rtx-VMS Column diameter: 0.18

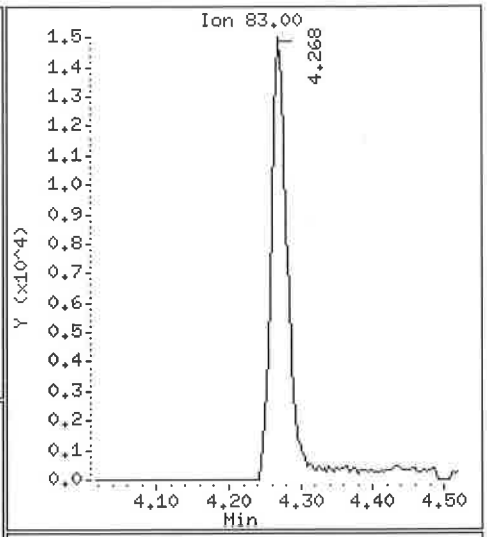
47 Methylcyclohexane Concentration: 19.9 ug/kg

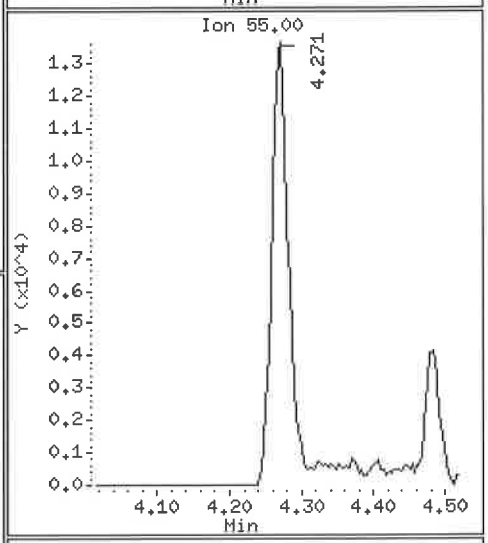


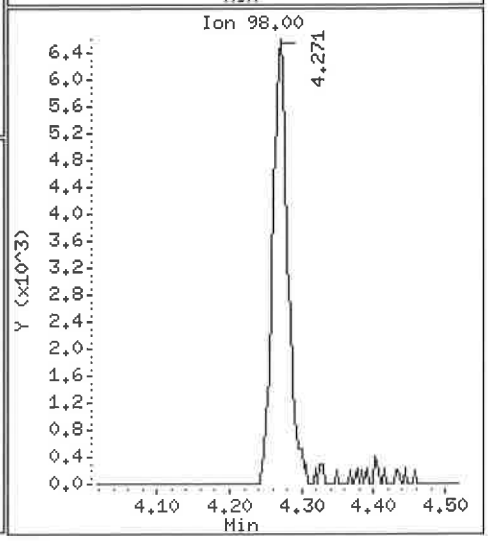












Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104025.d

Date : 04-NOV-2014 18:20

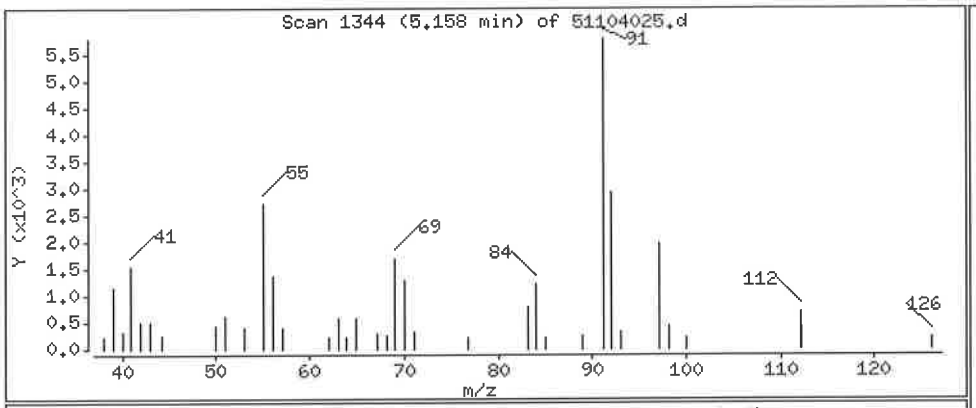
Client ID: AOI-5_PECO-B5_14-16 Instrument: 30msv5.i

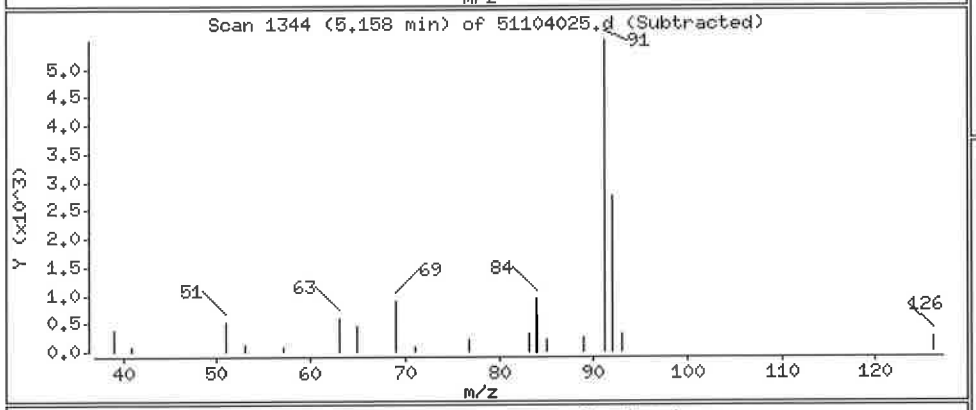
Sample Info: 30133009002,,5.95

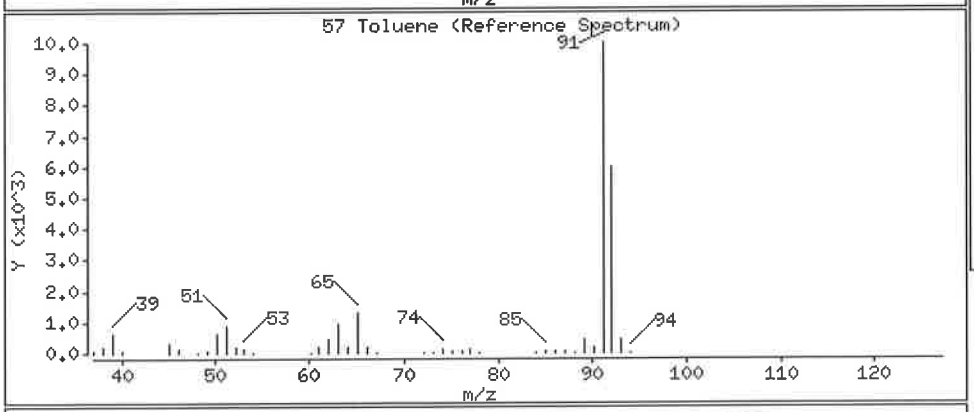
Purge Volume: 5.0 Operator: JEW

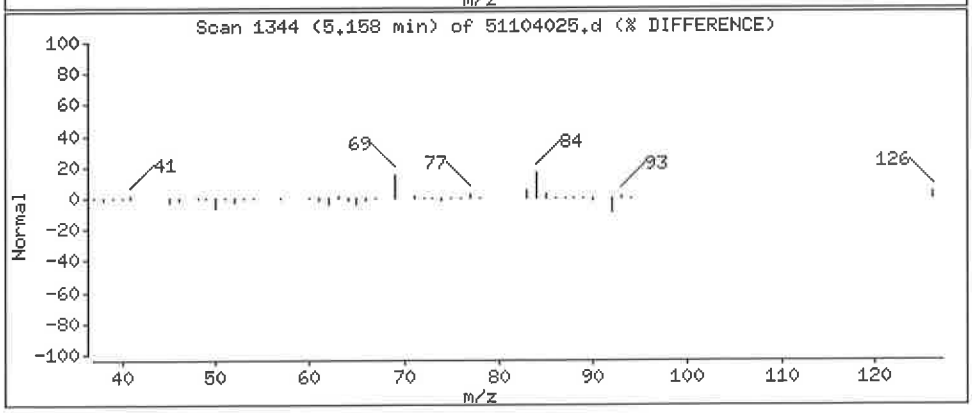
Column phase: Rtx-VMS Column diameter: 0.18

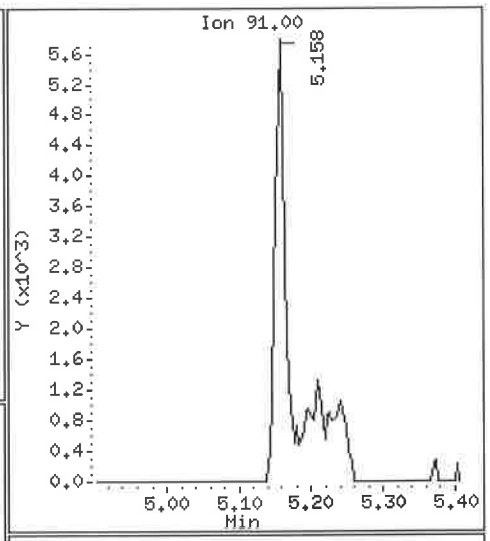
57 Toluene Concentration: 1.64 ug/kg

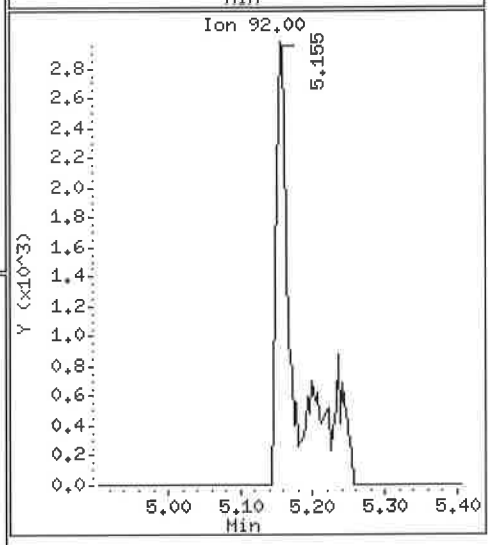












Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b/51104025.d (ManInt: al
Injection Date: 04-NOV-2014 18:20
Instrument: 30msv5.i
Lab Sample ID: 30133009002
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Matrix: Solid
% Moisture: 21.5405
Acode: 8260 MSV 5030 Low Level
Prep/Method: EPA 8260B

Sample: AOI-5_PECO-B6_12-14_10242014
Lab ID: 30133009003
Collected: 10/24/14 11:30
Received: 10/28/14 10:15

Results reported on a "dry-weight" basis

CAS No.	Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	Qual
71-43-2	Benzene	**0.034**	mg/kg	0.0054	0.00084	1		11/04/14 18:43	M5
135-98-8	sec-Butylbenzene	**0.10**	mg/kg	0.0054	0.0016	1		11/04/14 18:43	M5
98-06-6	tert-Butylbenzene	**0.0054 U**	mg/kg	0.0054	0.0021	1		11/04/14 18:43	M5
110-82-7	Cyclohexane	**4.4**	mg/kg	0.62	0.077	50		11/06/14 11:56	M5
106-93-4	1,2-Dibromoethane (EDB)	ND	mg/kg	0.0032	0.0028	1		11/04/14 18:43	M5
107-06-2	1,2-Dichloroethane	**0.0054 U**	mg/kg	0.0054	0.00098	1		11/04/14 18:43	M5
100-41-4	Ethylbenzene	**0.0054 U**	mg/kg	0.0054	0.0028	1		11/04/14 18:43	M5
	Hexane	**0.38**	mg/kg	0.011	0.011	1		11/04/14 18:43	M5
98-82-8	Isopropylbenzene (Cumene)	**0.035**	mg/kg	0.0054	0.0011	1		11/04/14 18:43	M5
1634-04-4	Methyl-tert-butyl ether	**0.0054 U**	mg/kg	0.0054	0.00077	1		11/04/14 18:43	M5
108-88-3	Toluene	**0.0078**	mg/kg	0.0054	0.00069	1		11/04/14 18:43	M5
95-63-6	1,2,4-Trimethylbenzene	**0.0054 U**	mg/kg	0.0054	0.0013	1		11/04/14 18:43	M5
108-67-8	1,3,5-Trimethylbenzene	**0.0054 U**	mg/kg	0.0054	0.0015	1		11/04/14 18:43	M5
1330-20-7	Xylene (Total)	**0.016 U**	mg/kg	0.016	0.0033	1		11/04/14 18:43	M5
Surrogates									
2037-26-5	Toluene-d8 (S)	**220**	%	73-124		1		11/04/14 18:43	M5,S0
460-00-4	4-Bromofluorobenzene (S)	**98**	%	71-124		1		11/04/14 18:43	M5
17060-07-0	1,2-Dichloroethane-d4 (S)	**100**	%	83-138		1		11/04/14 18:43	M5

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without the written consent of Pace Analytical Services, Inc..

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d
Lab Smp Id: 30133009003 Client Smp ID: AOI-5_PECO-B6_12-14
Inj Date : 04-NOV-2014 18:43
Operator : JEW Inst ID: 30msv5.i
Smp Info : 30133009003,,5.90
Misc Info : 21491
Comment :
Method : \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 13:07 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	21.541	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.900	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
1 Dichlorodifluoromethane	85	Compound Not Detected.						
2 Chloromethane	50	Compound Not Detected.						
3 Vinyl Chloride	62	Compound Not Detected.						
4 Bromomethane	94	Compound Not Detected.						
5 Chloroethane	64	Compound Not Detected.						
6 Trichlorofluoromethane	101	Compound Not Detected.						
7 Ethyl Ether	59	Compound Not Detected.						
8 1,1-Dichloroethene	61	Compound Not Detected.						
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	Compound Not Detected.						
10 1,1,2-Trichlorotrifluoroethan	151	Compound Not Detected.						
11 Iodomethane	142	Compound Not Detected.						
12 Acrolein	56	Compound Not Detected.						
13 Allyl chloride	41	Compound Not Detected.						
14 Methylene Chloride	49	Compound Not Detected.						
15 Acetone	58	Compound Not Detected.						
16 trans-1,2-Dichloroethene	61	Compound Not Detected.						
17 Methyl Acetate	74	Compound Not Detected.						
18 Hexane	86	2.087	2.084	(0.502)	57031	352.150	380(Q)	
19 tert-butyl Methylether,MtB	73	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d
Report Date: 11-Dec-2014 13:07

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
	21 tert-Butyl Alcohol	59	Compound Not Detected.						
	20 Acetonitrile	41	Compound Not Detected.						
	22 DiisopropylEther	45	Compound Not Detected.						
	23 Chloroprene	53	Compound Not Detected.						
	25 Acrylonitrile	53	Compound Not Detected.						
	24 1,1-Dichloroethane	63	Compound Not Detected.						
	27 t-Butyl ethyl ether	59	Compound Not Detected.						
	26 Vinyl Acetate	43	Compound Not Detected.						
	28 cis-1,2-Dichloroethene	61	Compound Not Detected.						
	29 2,2-Dichloropropane	77	Compound Not Detected.						
	30 Cyclohexane	56	3.145	3.142	(0.756)	1040631	855.587	924(AQ)	
	31 Bromochloromethane	130	Compound Not Detected.						
	32 Chloroform	83	Compound Not Detected.						
	33 Carbon Tetrachloride	117	Compound Not Detected.						
	36 Ethyl Acetate	43	Compound Not Detected.						
	35 Tetrahydrofuran	42	Compound Not Detected.						
	34 1,1,1-Trichloroethane	97	Compound Not Detected.						
	37 1,1-Dichloropropene	75	Compound Not Detected.						
	38 2-Butanone	43	Compound Not Detected.						
	39 Benzene	78	3.823	3.823	(0.650)	66397	31.1353	33.6	
	40 Propionitrile	54	Compound Not Detected.						
	41 Methacrylonitrile	41	Compound Not Detected.						
$	42 1,2-Dichloroethane-d4	65	3.942	3.939	(0.947)	31794	30.1240	32.5	
	43 t-Amyl methyl ether	73	Compound Not Detected.						
	46 Isobutanol	43	Compound Not Detected.						
	44 1,2-Dichloroethane	62	Compound Not Detected.						
*	45 Fluorobenzene	96	4.161	4.161	(1.000)	90416	30.0000		
	47 Methylcyclohexane	83	4.274	4.267	(0.727)	2313257	3112.14	3360(A)	
	48 Trichloroethene	132	Compound Not Detected.						
	49 Dibromomethane	174	Compound Not Detected.						
	50 1,2-Dichloropropane	63	Compound Not Detected.						
	51 Bromodichloromethane	83	Compound Not Detected.						
	52 Methyl methacrylate	69	Compound Not Detected.						
	53 1,4-Dioxane	88	Compound Not Detected.						
	55 2-ChloroethylVinylEther	63	Compound Not Detected.						
	54 cis-1,3-Dichloropropene	75	Compound Not Detected.						
$	56 Toluene-d8	98	5.132	5.129	(0.873)	132043	65.8932	71.2(QR)	
	57 Toluene	91	5.155	5.154	(0.877)	15836	7.26694	7.85(Q)	
	58 2-Nitropropane	43	Compound Not Detected.						
	59 Tetrachloroethene	166	Compound Not Detected.						
	60 4-Methyl-2-Pentanone	43	Compound Not Detected.						
	61 trans-1,3-Dichloropropene	75	Compound Not Detected.						
	63 Ethyl methacrylate	41	Compound Not Detected.						
	62 1,1,2-Trichloroethane	97	Compound Not Detected.						
	64 Dibromochloromethane	129	Compound Not Detected.						
	65 1,3-Dichloropropane	76	Compound Not Detected.						
	66 1,2-Dibromoethane,EDB	107	Compound Not Detected.						
	70 2-Hexanone	43	Compound Not Detected.						
*	67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	26237	30.0000	(Q)	
	68 Chlorobenzene	112	Compound Not Detected.						
	69 Ethylbenzene	106	Compound Not Detected.						
	71 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.						
	72 m,p-Xylene	106	Compound Not Detected.						
	73 o-Xylene	106	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d
Report Date: 11-Dec-2014 13:07

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
74 Styrene	104	Compound Not Detected.						
75 Bromoform	173	Compound Not Detected.						
76 Isopropylbenzene,Cumene	105	6.286	6.283	(0.914)	60780	31.9471	34.5(Q)	
$ 77 Bromofluorobenzene	174	6.409	6.405	(0.932)	16106	29.5304	31.9(Q)	
79 n-Propylbenzene	91	Compound Not Detected.						
78 Bromobenzene	77	Compound Not Detected.						
80 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.						
81 2-Chlorotoluene	126	Compound Not Detected.						
82 1,3,5-Trimethylbenzene	120	Compound Not Detected.						
83 1,2,3-Trichloropropane	110	Compound Not Detected.						
84 trans 1,4-Dichloro-2-butene	53	Compound Not Detected.						
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	Compound Not Detected.						
87 tert-Butyl benzene	119	Compound Not Detected.						
88 1,2,4-Trimethylbenzene	120	Compound Not Detected.						
89 sec-Butyl benzene	105	6.749	6.746	(0.982)	177434	93.1418	101(Q)	
90 4-Isopropyl toluene	119	Compound Not Detected.						
91 1,3-Dichlorobenzene	146	Compound Not Detected.						
* 92 1,4-Dichlorobenzene-d4	152	6.875	6.871	(1.000)	19875	30.0000	(Q)	
93 1,4-Dichlorobenzene	146	Compound Not Detected.						
94 n-Butyl benzene	91	6.978	6.974	(1.015)	44917	29.4060	31.8	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	Compound Not Detected.						
96 bis(2Chloro1methyl ethyl)eth	45	Compound Not Detected.						
97 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.						
98 Hexachlorobutadiene	225	Compound Not Detected.						
99 1,2,4-Trichlorobenzene	180	Compound Not Detected.						
100 Naphthalene	128	Compound Not Detected.						
101 1,2,3-Trichlorobenzene	180	Compound Not Detected.						
157 2-methylnaphthalene	142	8.241	8.241	(1.199)	7368	13.4516	14.5(Q)	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51104026.d
Lab Smp Id: 30133009003
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Calibration Date: 04-NOV-2014
Calibration Time: 10:33
Client Smp ID: AOI-5_PECO-B6_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	96404	48202	192808	90416	-6.21
67 Chlorobenzene-d5	41101	20551	82202	26237	-36.16
92 1,4-Dichlorobenze	37743	18872	75486	19875	-47.34

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.88	0.05

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

RECOVERY REPORT

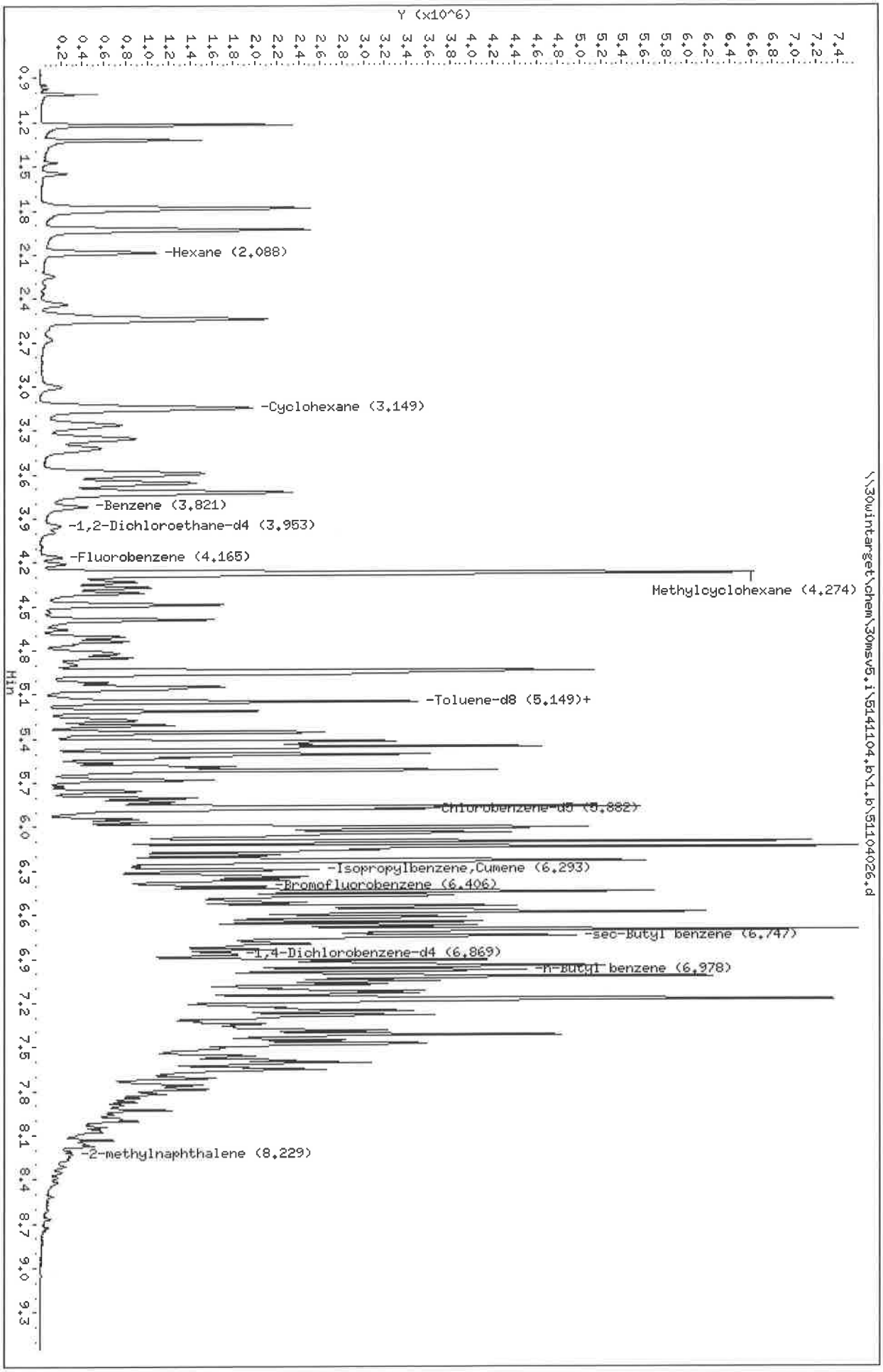
Client Name: Sunoco_Langan
Sample Matrix: SOLID
Lab Smp Id: 30133009003
Level: LOW
Data Type: MS DATA
SpikeList File: lcs.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Client SDG: 30133009
Fraction: VOA
Client Smp ID: AOI-5_PECO-B6_12-14
Operator: JEW
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 42 1,2-Dichloroethane	32.4	32.5	100.41	83-138
$ 56 Toluene-d8	32.4	71.2	219.64*	73-124
$ 77 Bromofluorobenzene	32.4	31.9	98.43	71-124
$ 158 1,2-Dichlorobenze	32.4	0.000	*	0-200

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d
Date : 04-NOV-2014 18:43
Client ID: AOI-5_PECO-B6_12-14
Sample Info: 3013009003,,5.90
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



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Date : 04-NOV-2014 18:43

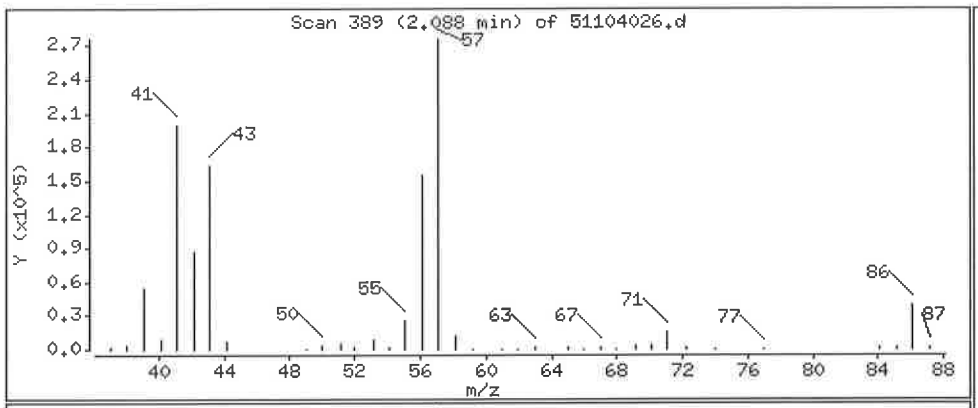
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

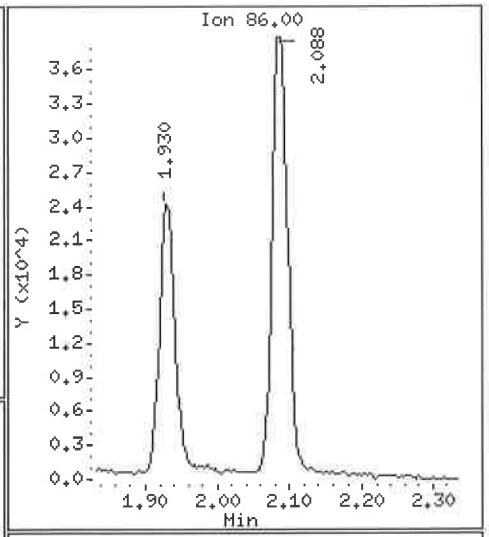
Sample Info: 30133009003,,5.90

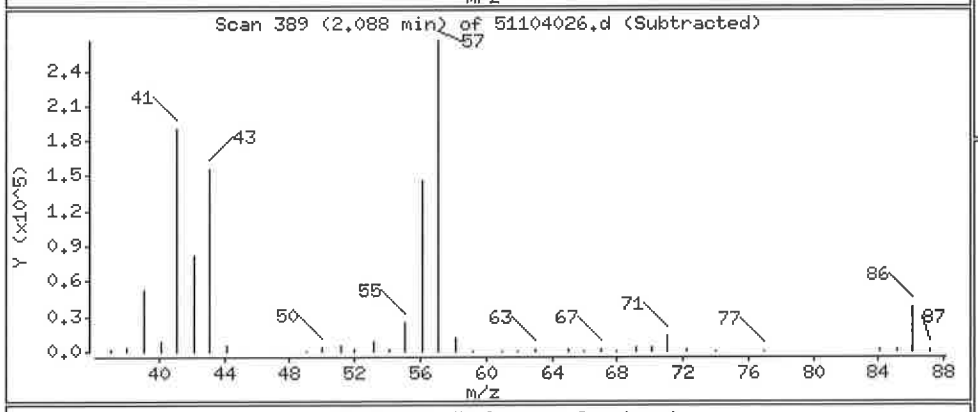
Purge Volume: 5.0 Operator: JEW

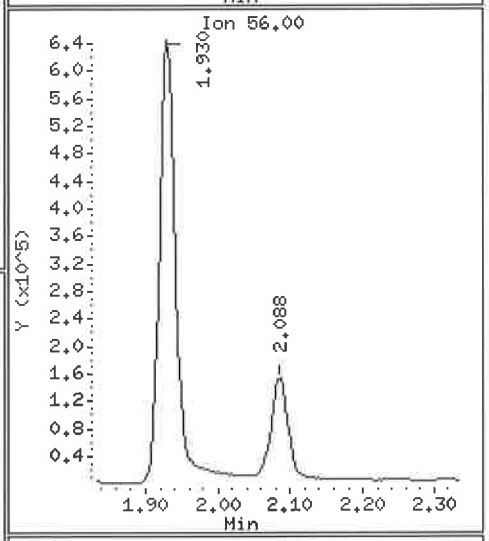
Column phase: Rtx-VMS Column diameter: 0.18

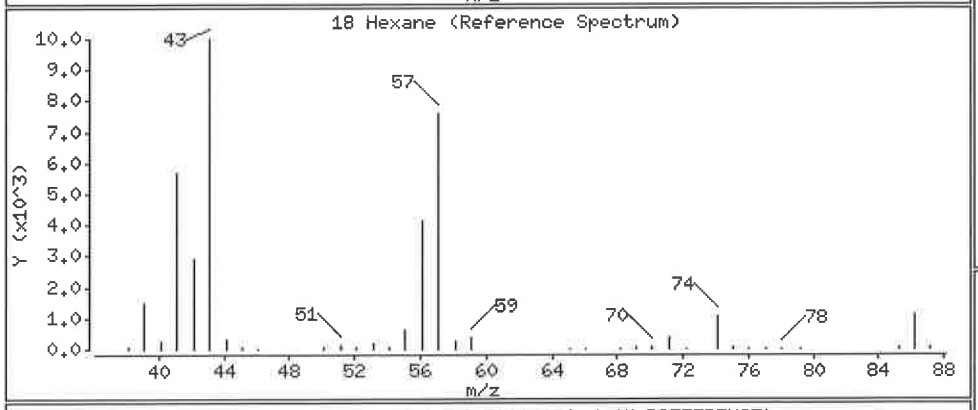
18 Hexane Concentration: 380 ug/kg

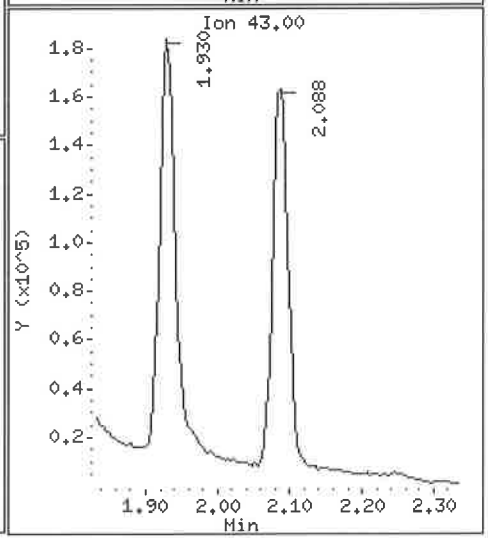


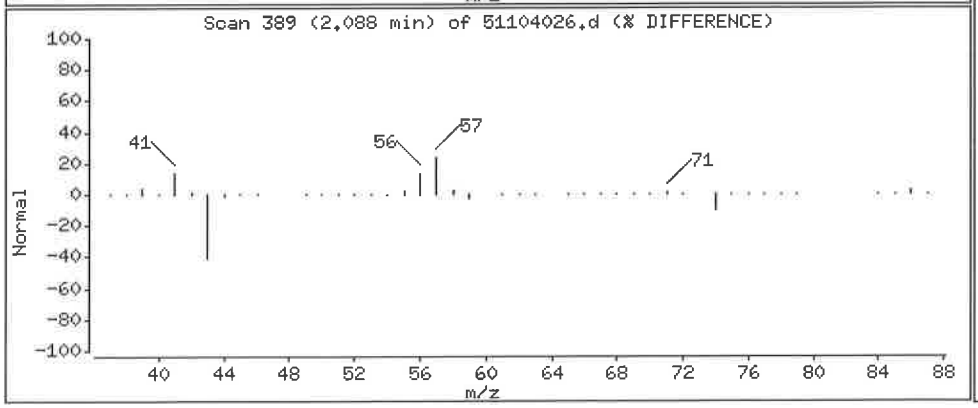












Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d

Date : 04-NOV-2014 18:43

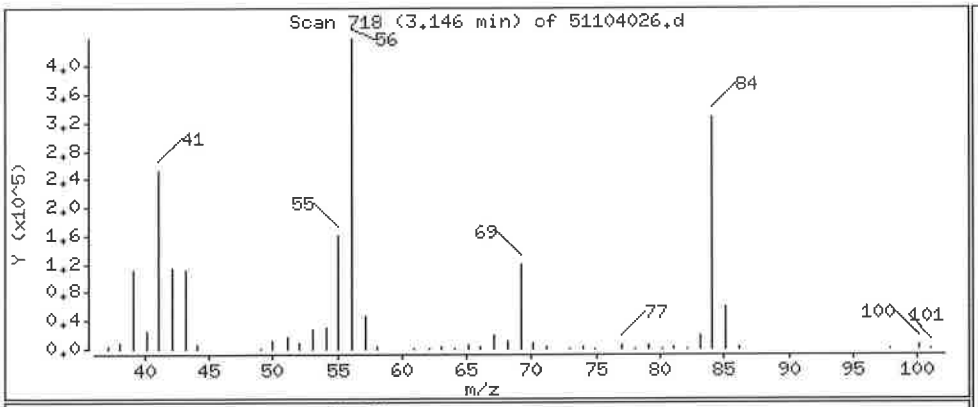
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

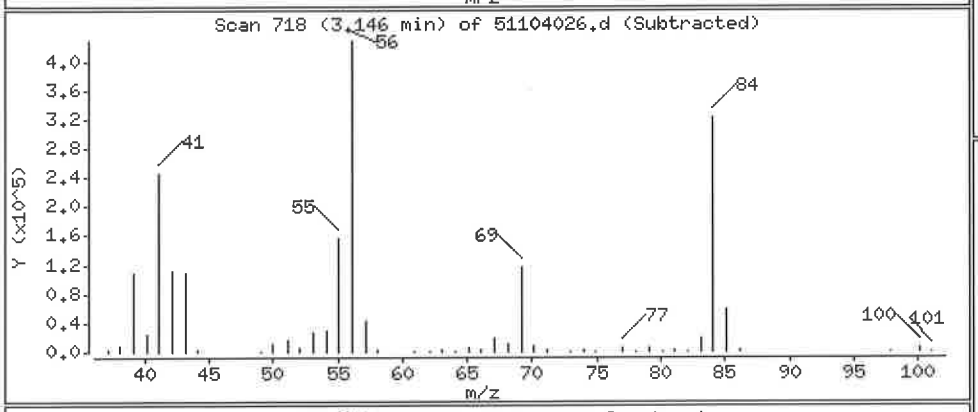
Sample Info: 30133009003,,5.90

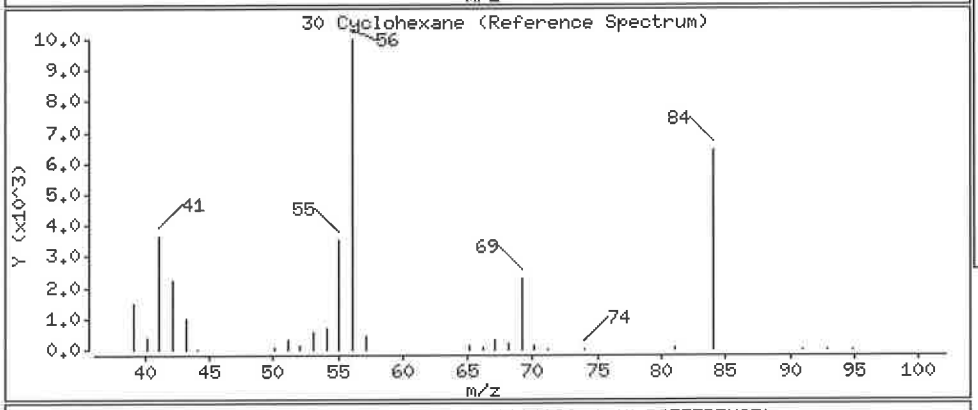
Purge Volume: 5.0 Operator: JEW

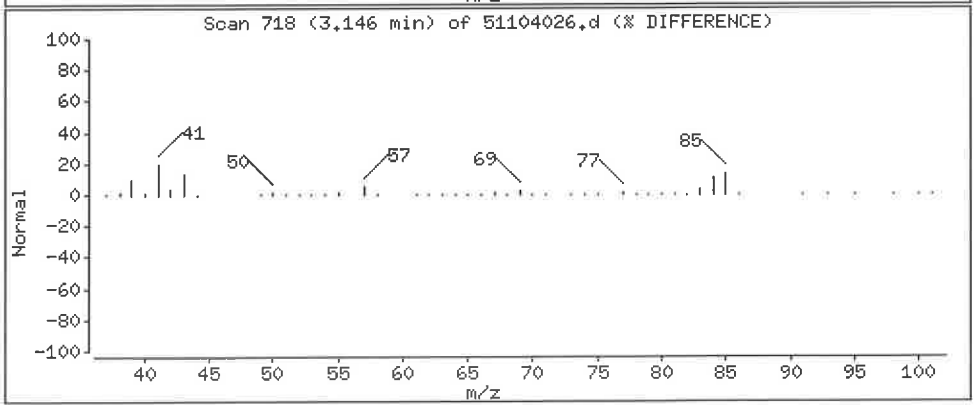
Column phase: Rtx-VMS Column diameter: 0.18

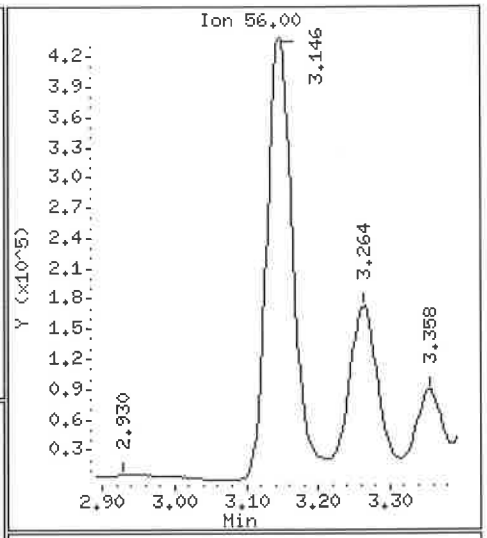
30 Cyclohexane Concentration: 924 ug/kg

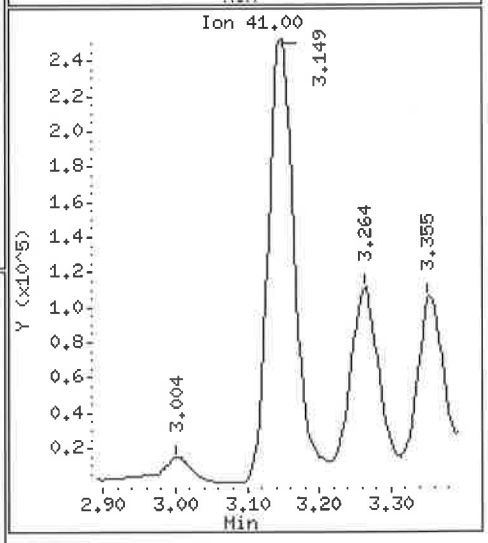












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Date : 04-NOV-2014 18:43

Client ID: AOI-5_PECO-B6_12-14

Instrument: 30msv5.i

Sample Info: 30133009003,,5.90

Purge Volume: 5.0

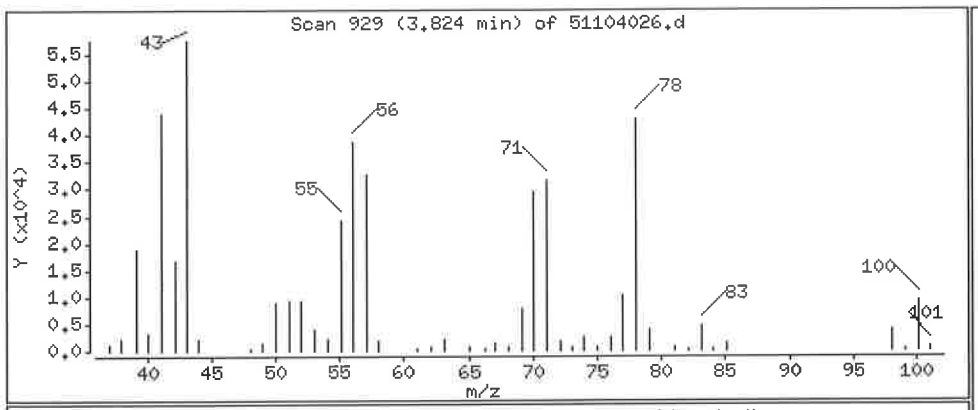
Operator: JEW

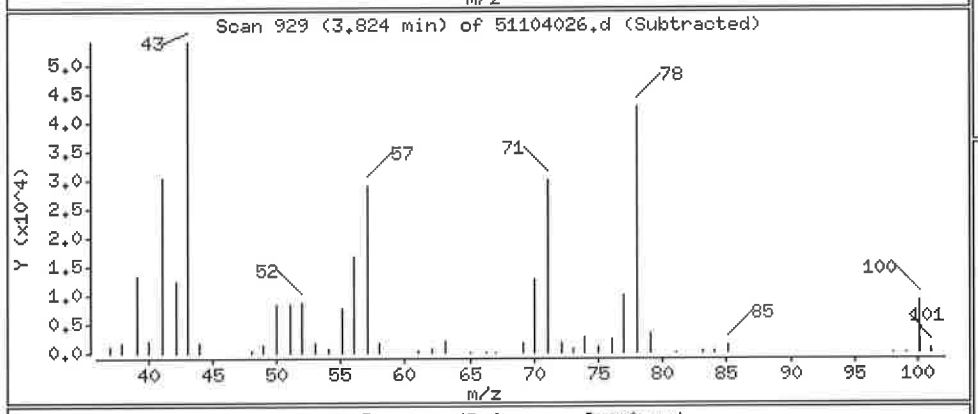
Column phase: Rtx-VMS

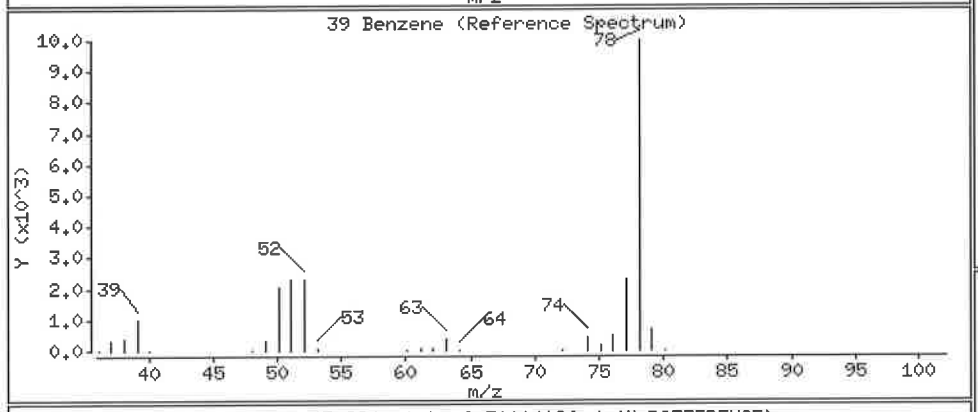
Column diameter: 0.18

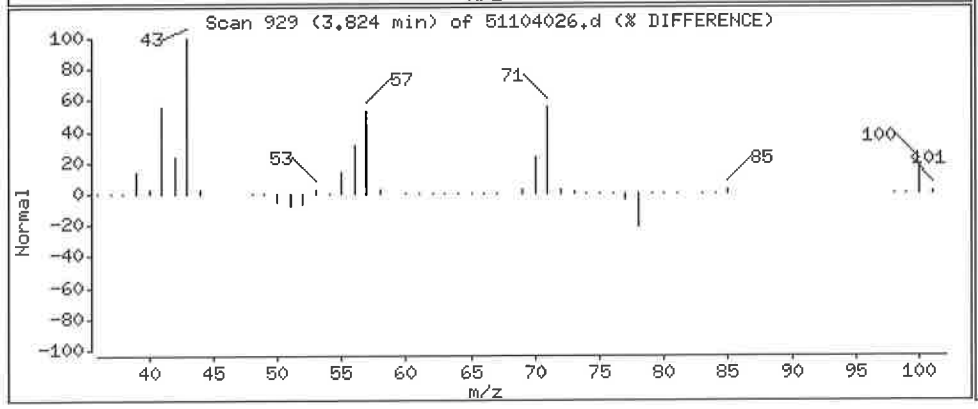
39 Benzene

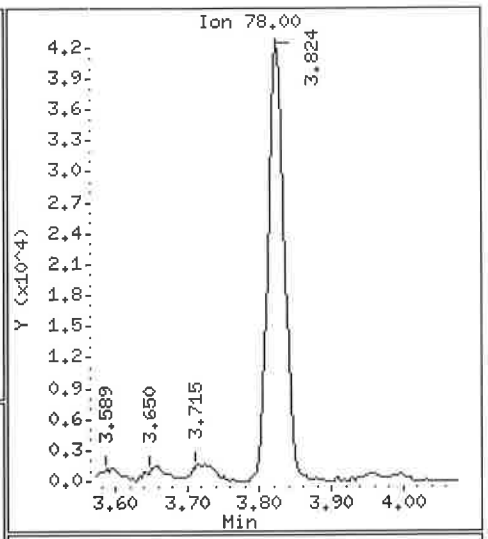
Concentration: 33.6 ug/kg

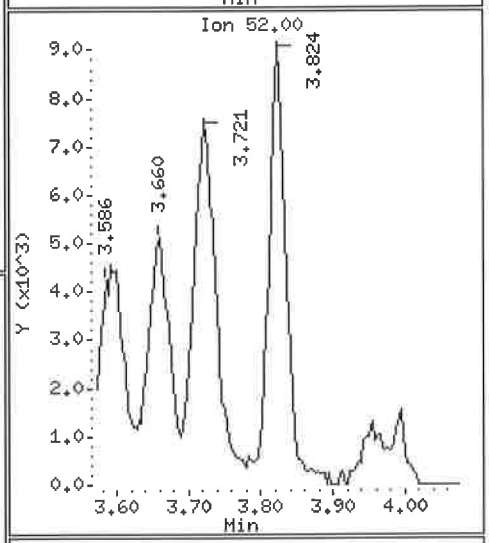


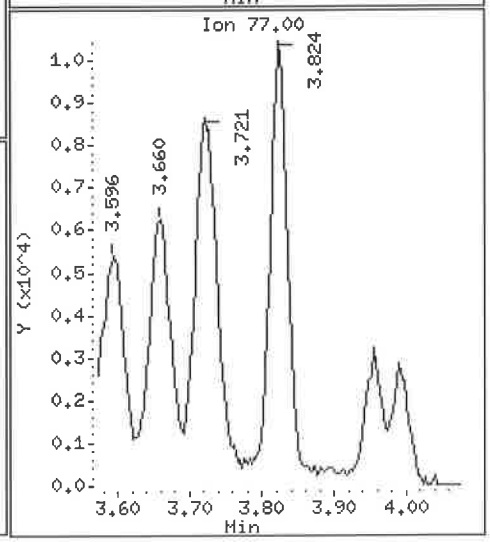












Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d

Date : 04-NOV-2014 18:43

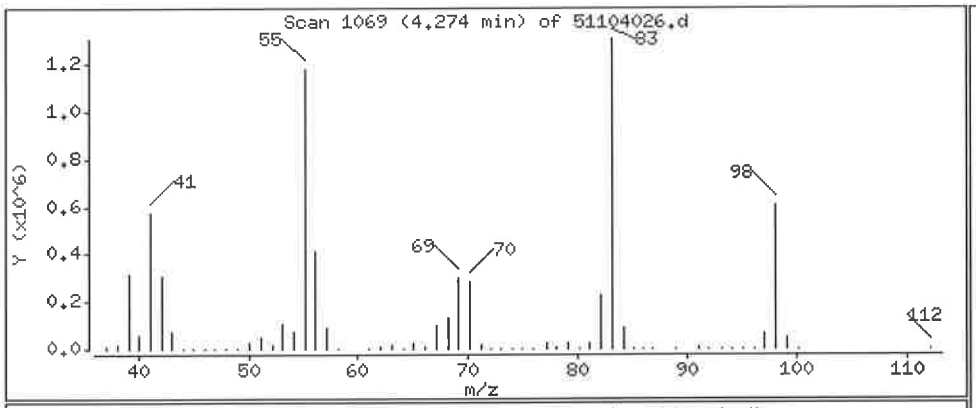
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

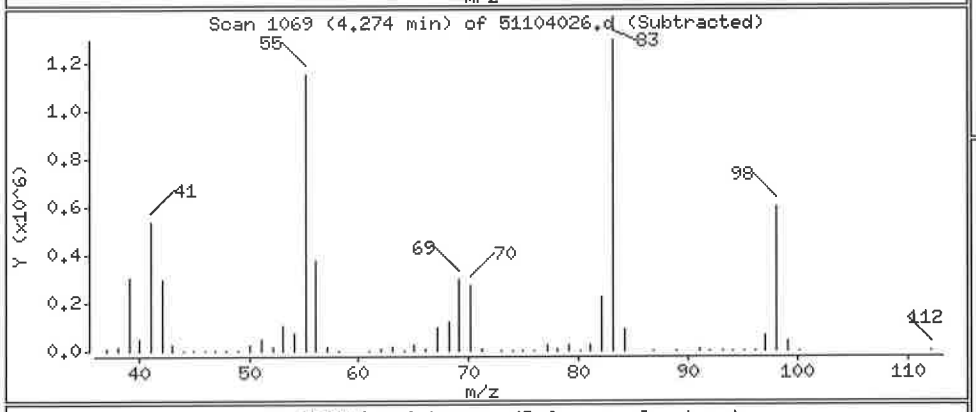
Sample Info: 30133009003,,5.90

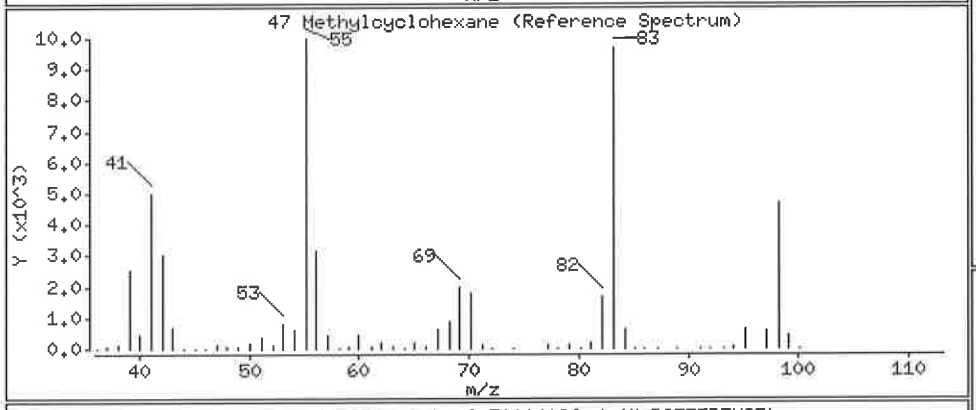
Purge Volume: 5.0 Operator: JEW

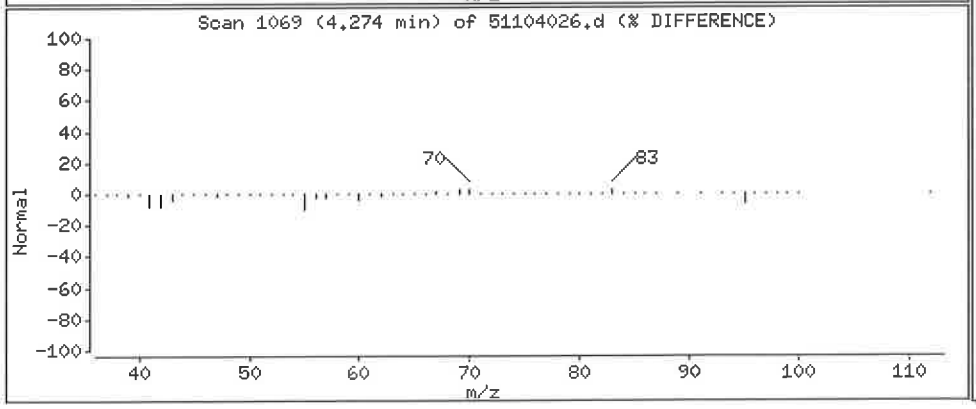
Column phase: Rtx-VMS Column diameter: 0.18

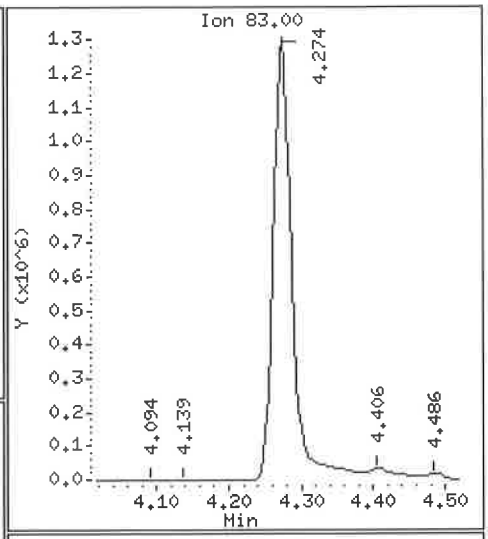
47 Methylcyclohexane Concentration: 3360 ug/kg

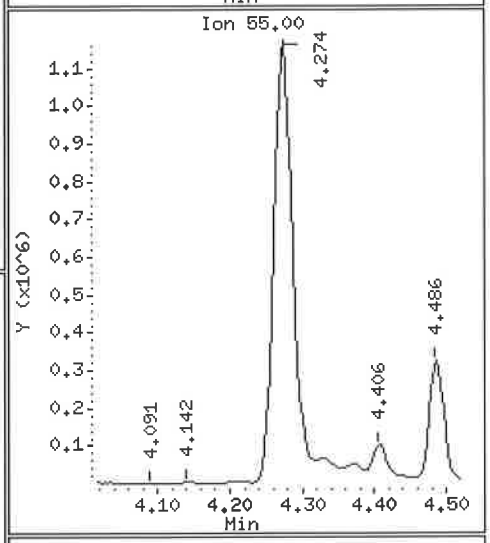


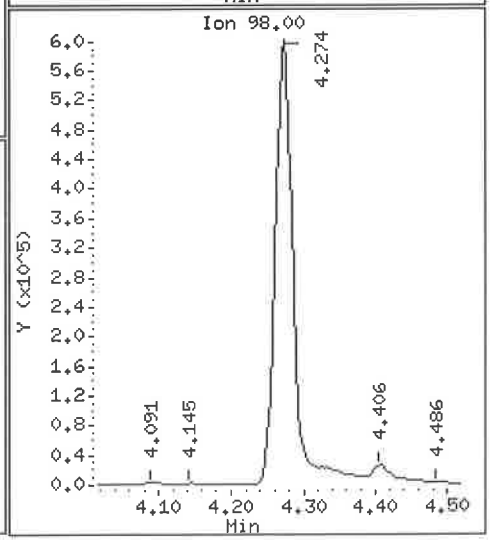












Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d

Date : 04-NOV-2014 18:43

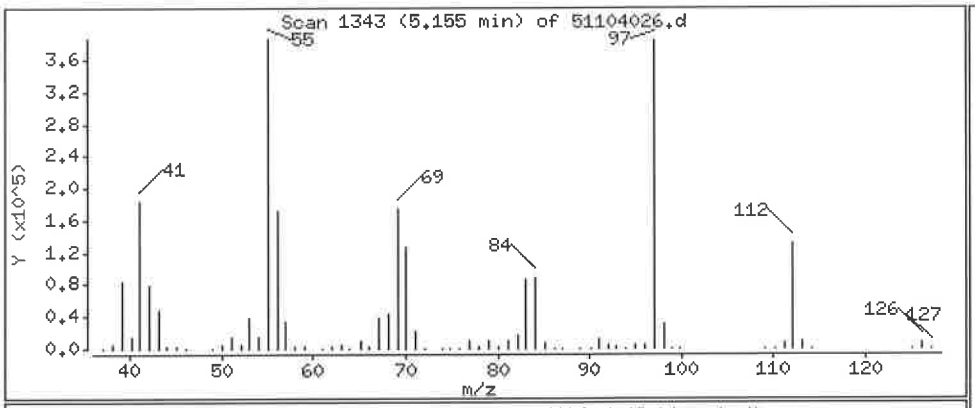
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

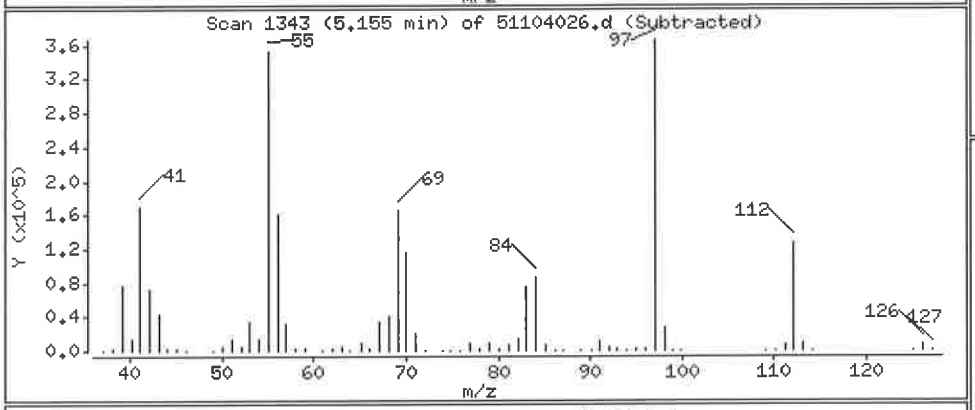
Sample Info: 30133009003,,5.90

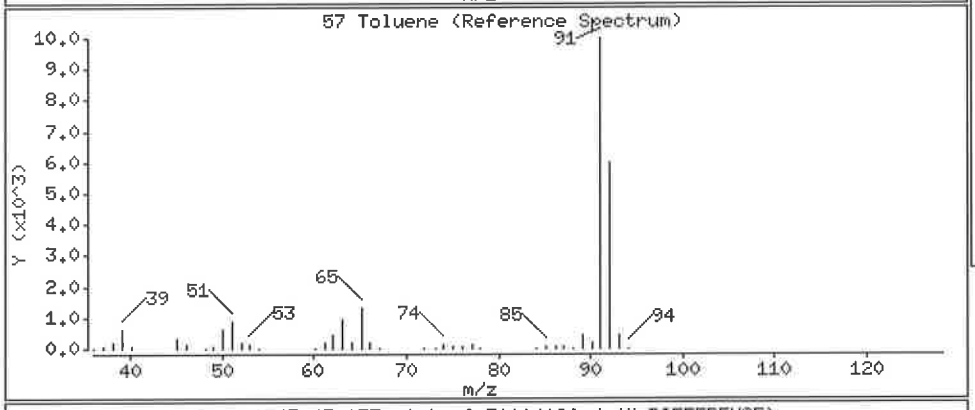
Purge Volume: 5.0 Operator: JEW

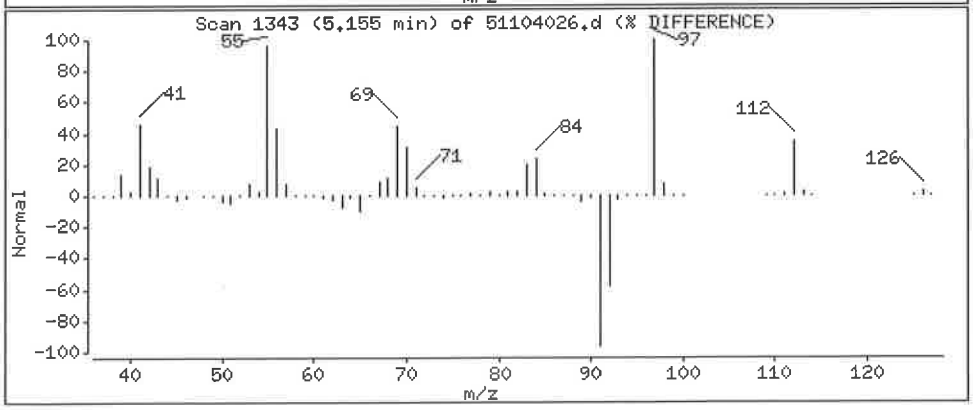
Column phase: Rtx-VMS Column diameter: 0.18

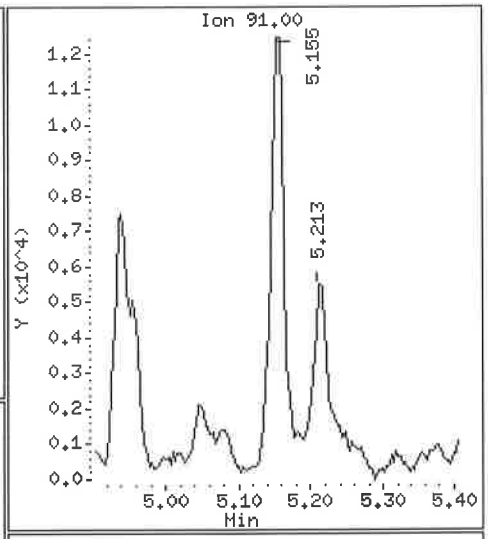
57 Toluene Concentration: 7.85 ug/kg

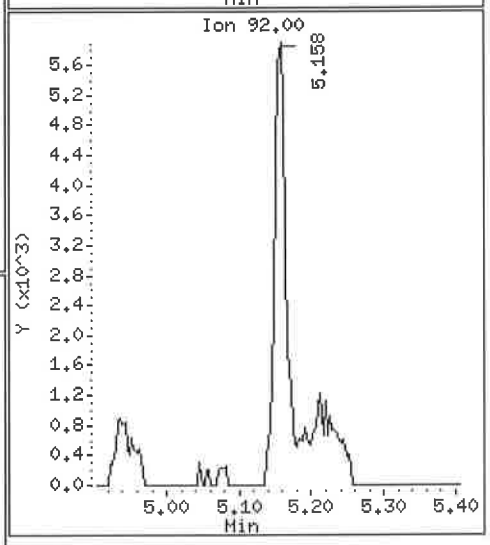












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Date : 04-NOV-2014 18:43

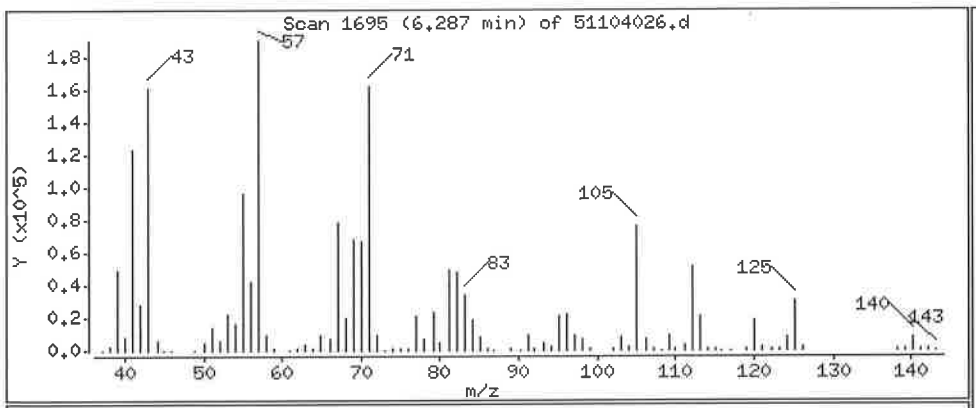
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

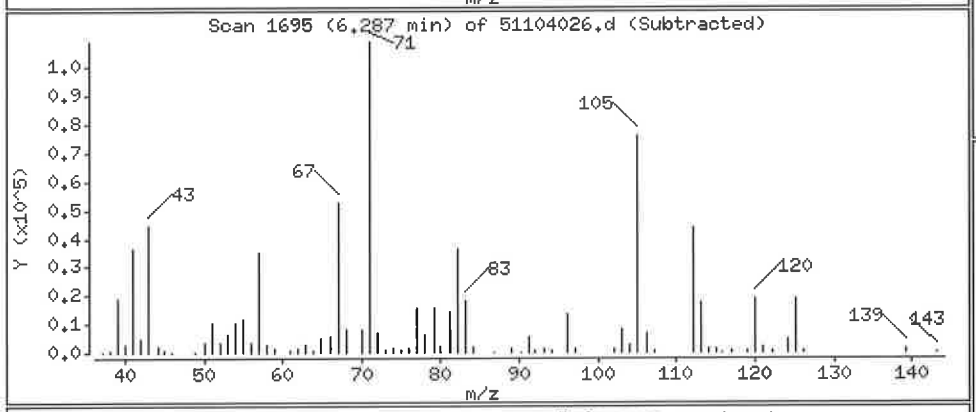
Sample Info: 30133009003,,5.90

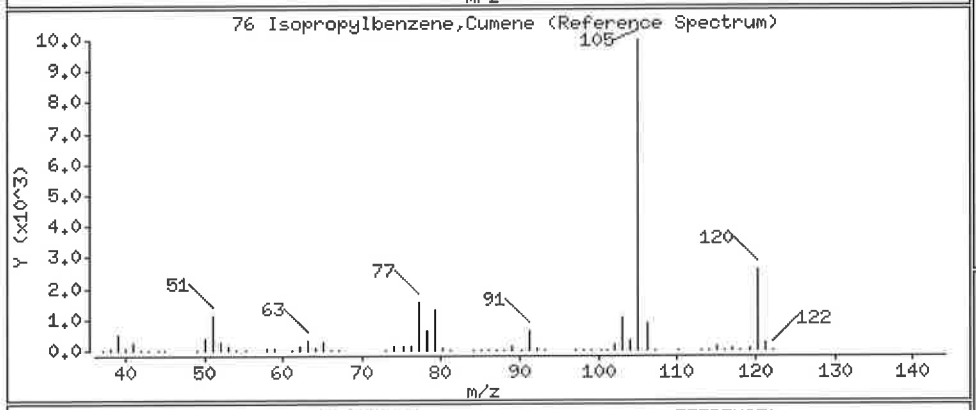
Purge Volume: 5.0 Operator: JEW

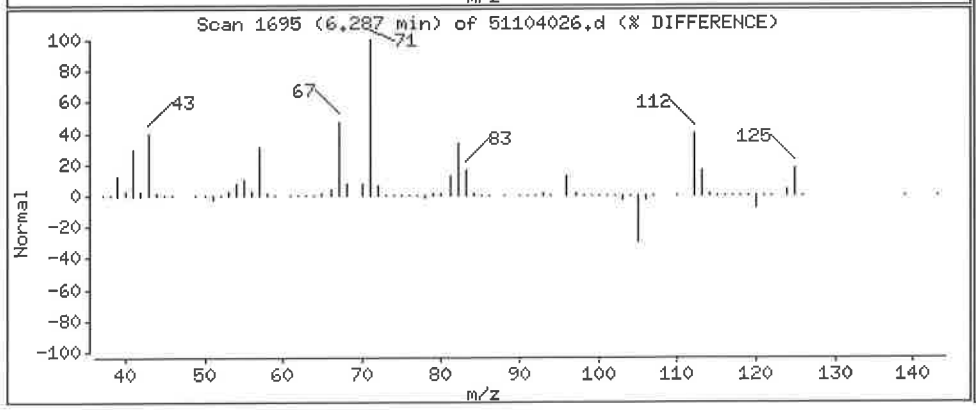
Column phase: Rtx-VMS Column diameter: 0.18

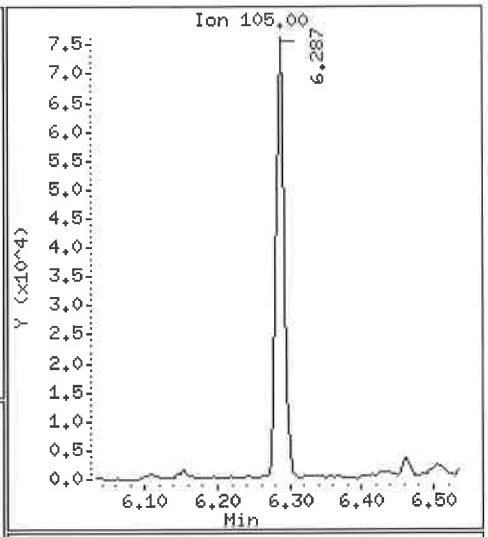
76 Isopropylbenzene,Cumene Concentration: 34.5 ug/kg

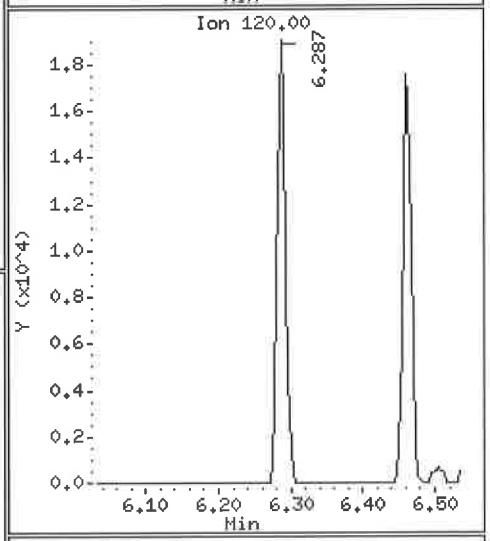


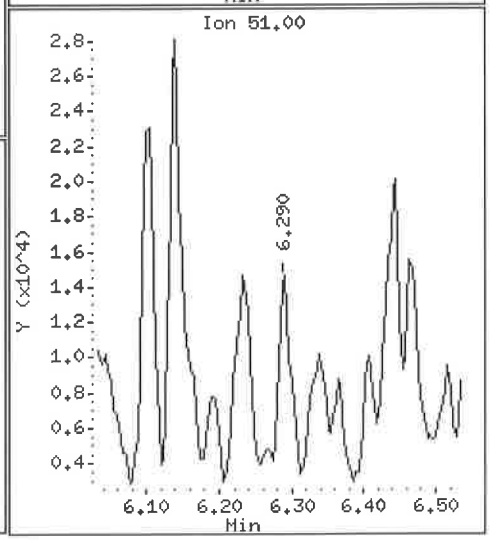












Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d

Date : 04-NOV-2014 18:43

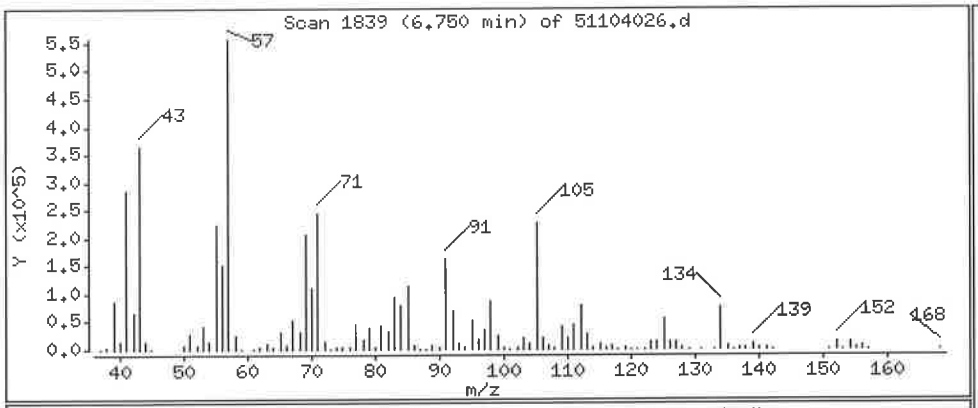
Client ID: AOI-5_PECO-B6_12-14 | Instrument: 30msv5.i

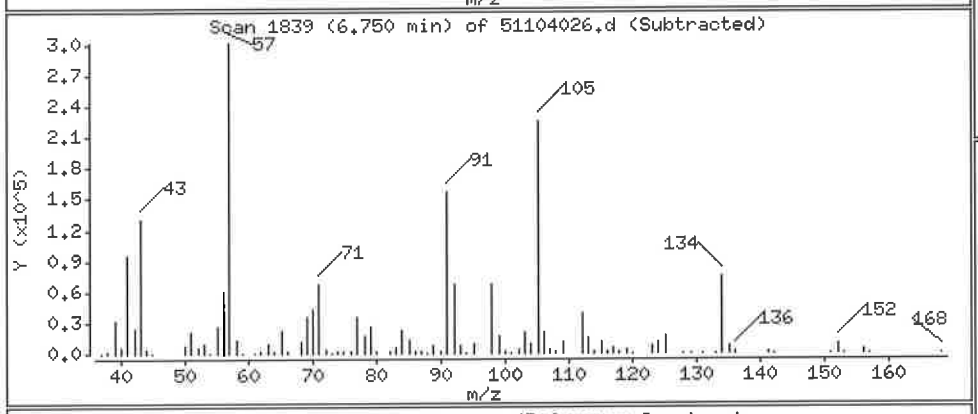
Sample Info: 30133009003,,5.90

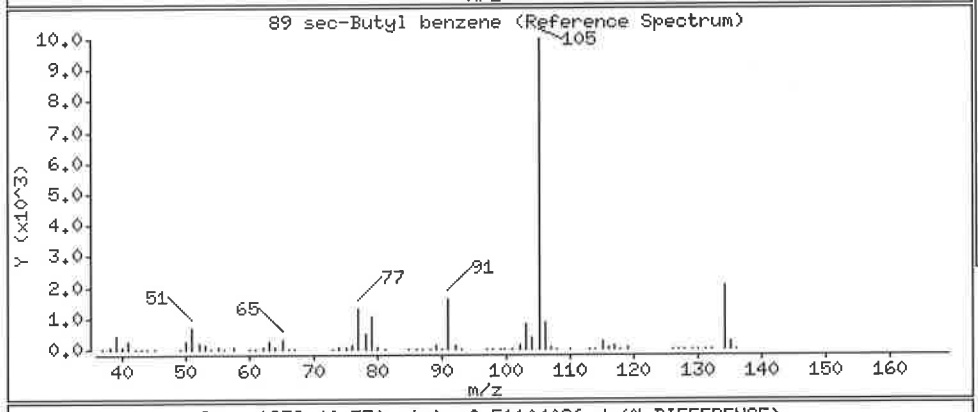
Purge Volume: 5.0 | Operator: JEW

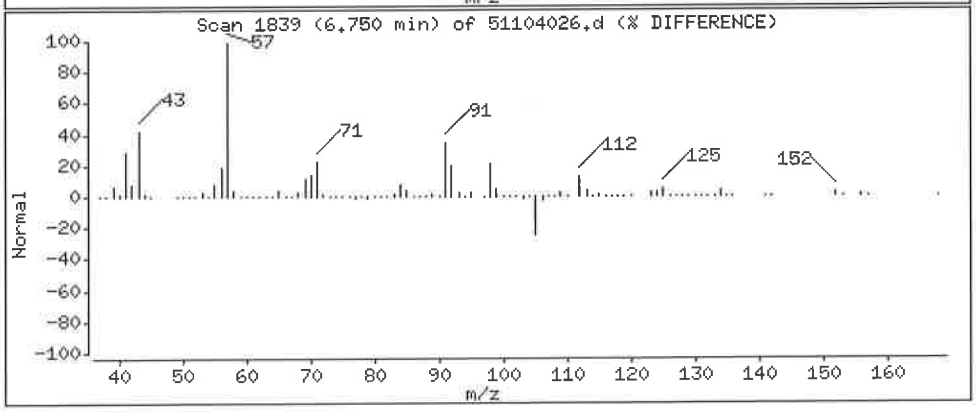
Column phase: Rtx-VMS | Column diameter: 0.18

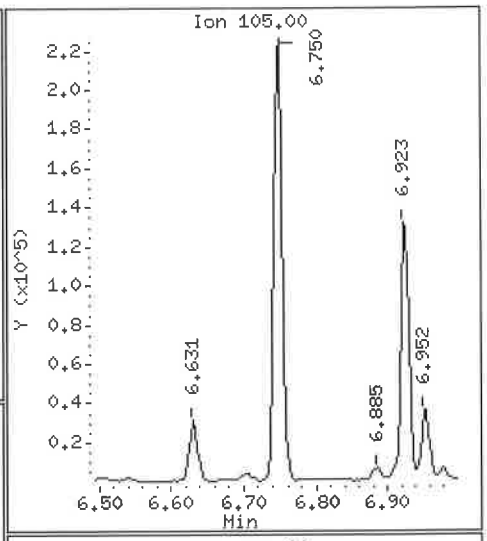
89 sec-Butyl benzene | Concentration: 101 ug/kg

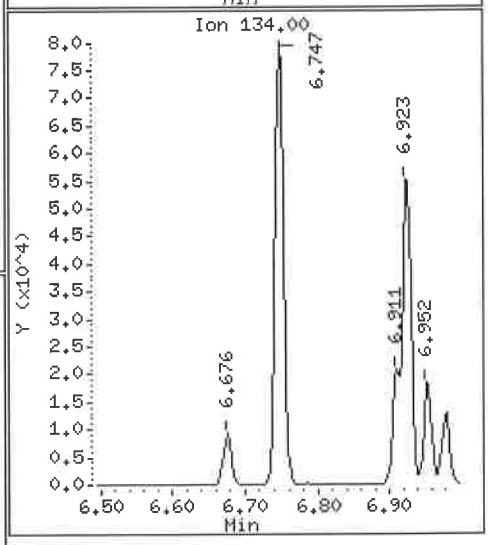












Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d

Date : 04-NOV-2014 18:43

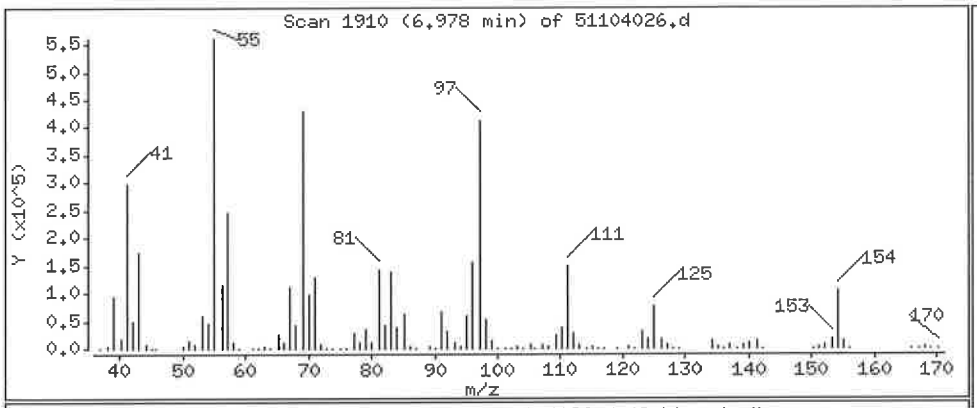
Client ID: AOI-5_PECO-B6_12-14 | Instrument: 30msv5.i

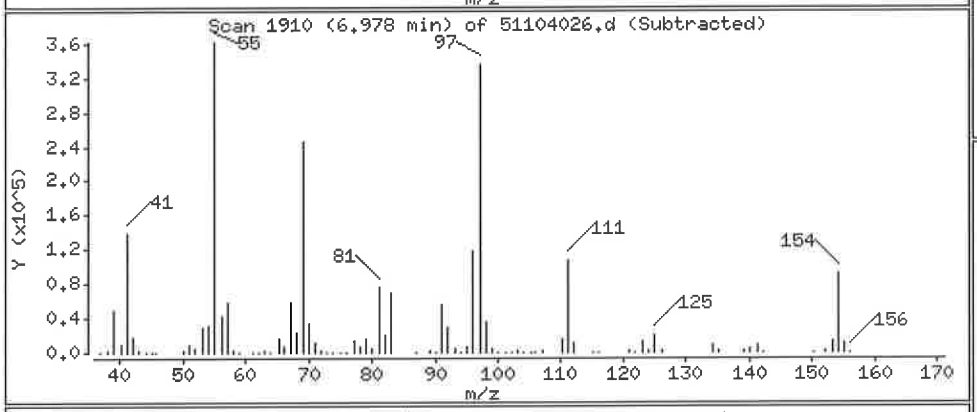
Sample Info: 30133009003,,5.90

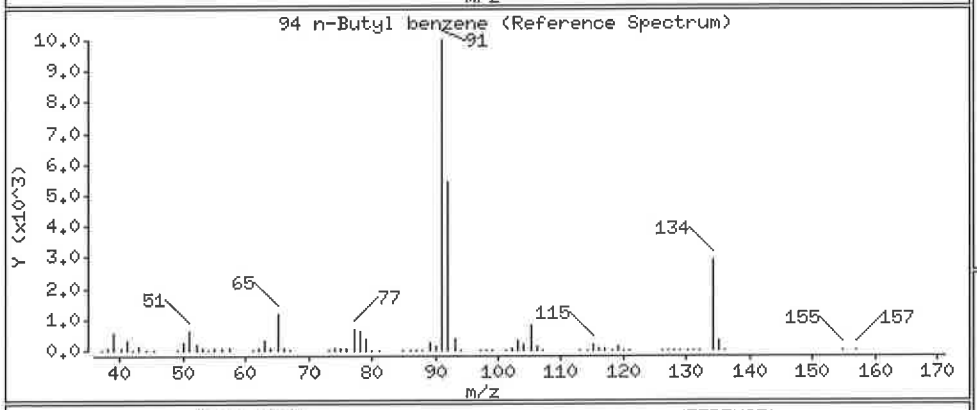
Purge Volume: 5.0 | Operator: JEW

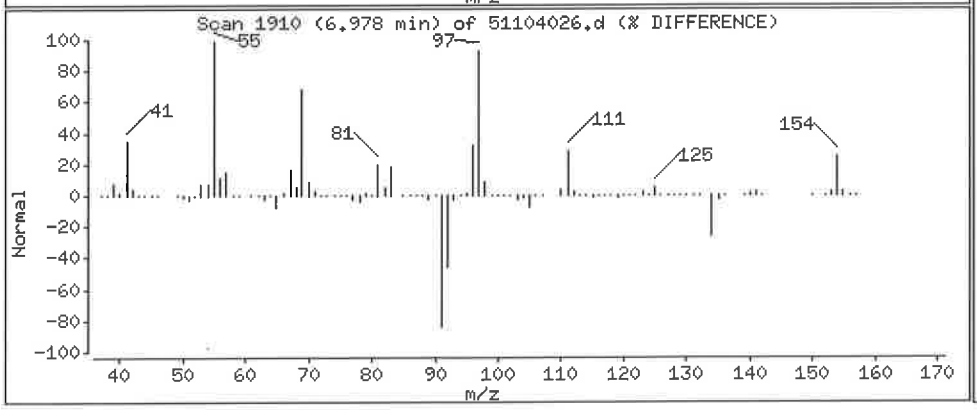
Column phase: Rtx-VMS | Column diameter: 0.18

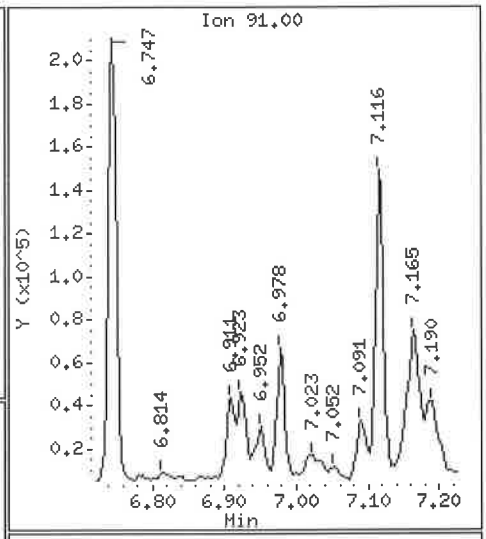
94 n-Butyl benzene | Concentration: 31.8 ug/kg

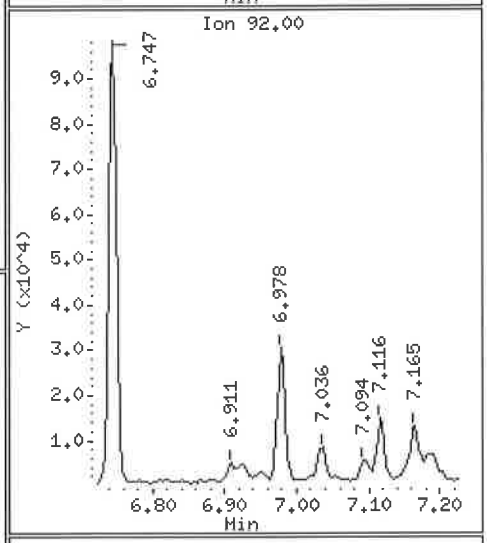


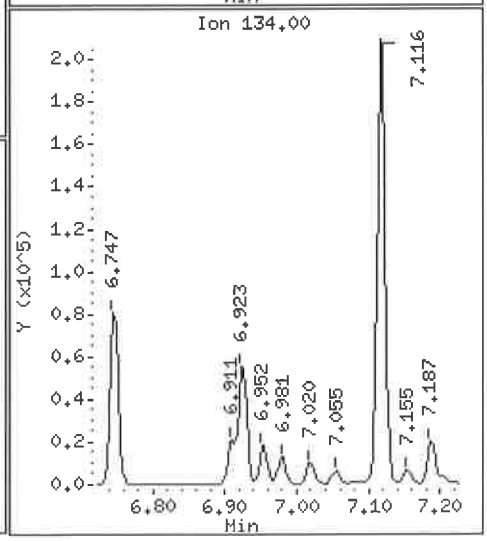












Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104026.d

Date : 04-NOV-2014 18:43

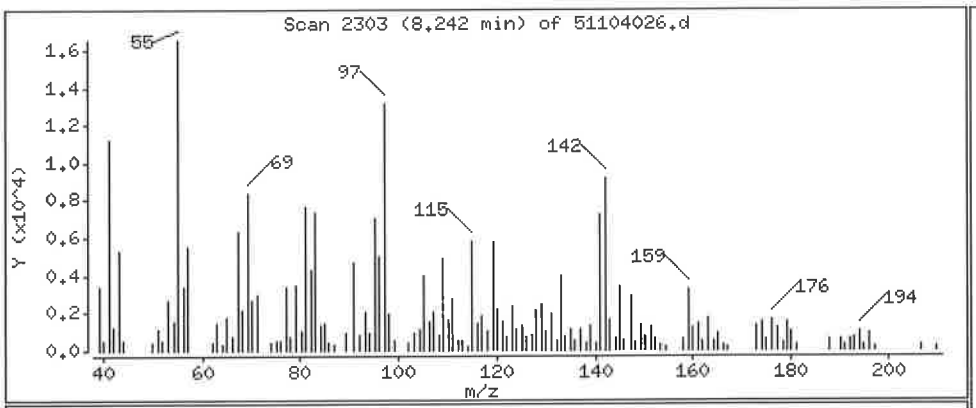
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

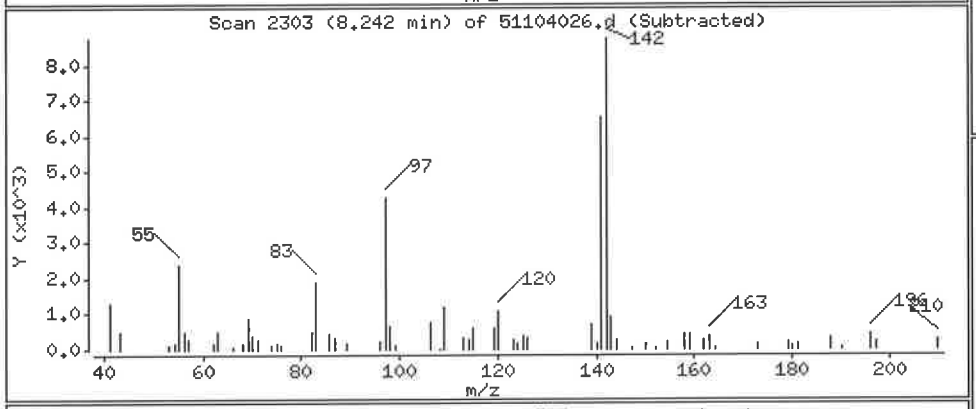
Sample Info: 30133009003,,5.90

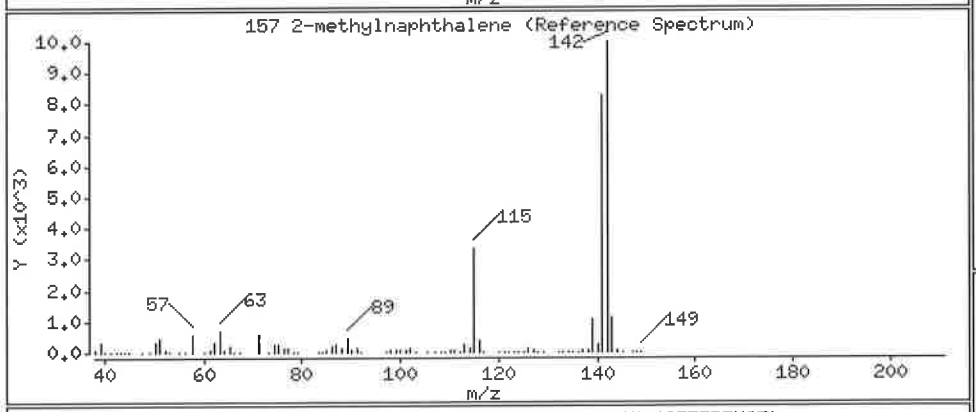
Purge Volume: 5.0 Operator: JEW

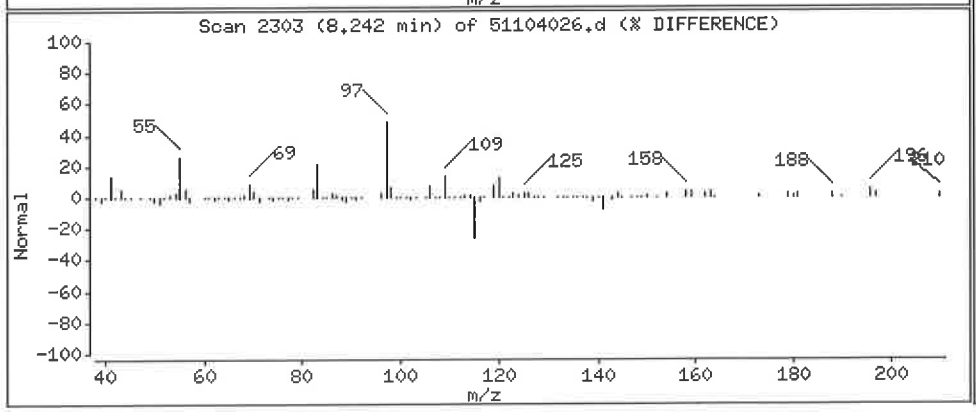
Column phase: Rtx-VMS Column diameter: 0.18

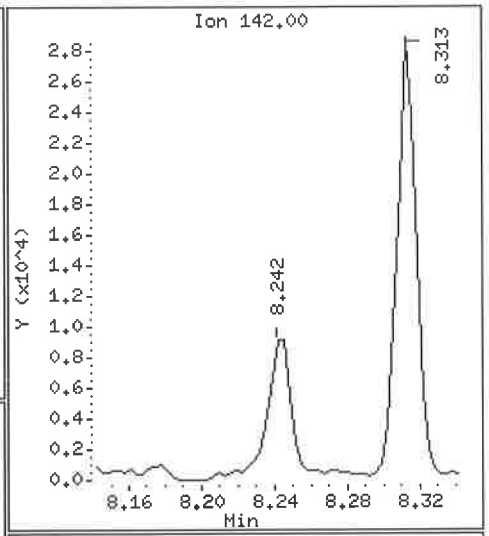
157 2-methylnaphthalene Concentration: 14.5 ug/kg

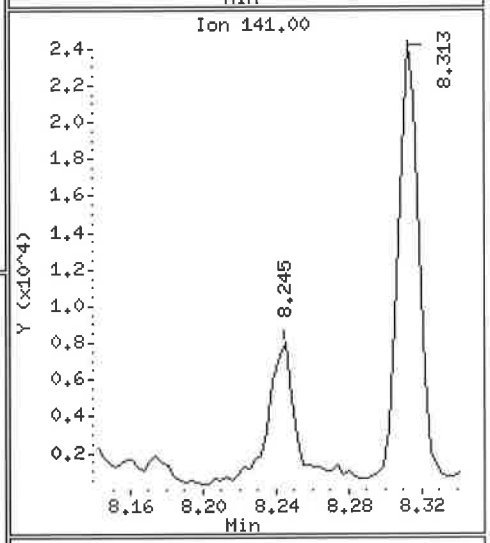


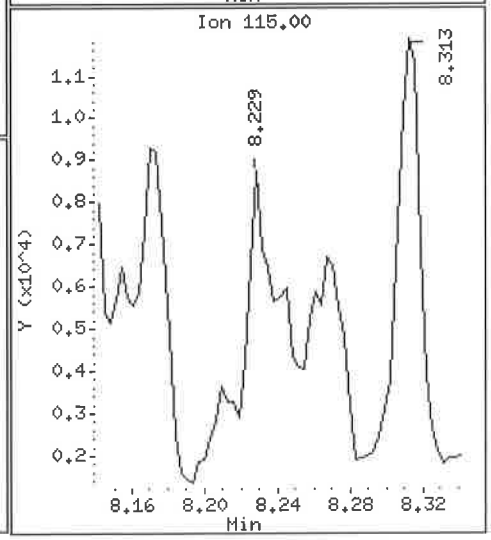












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Injection Date: 04-NOV-2014 18:43
Instrument: 30msv5.i
Lab Sample ID: 30133009003
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106009.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106009.d
Lab Smp Id: 30133009003 Client Smp ID: AOI-5_PECO-B6_12-14
Inj Date : 06-NOV-2014 11:56
Operator : MAK Inst ID: 30msv5.i
Smp Info : 30133009003x50,,5.18
Misc Info : 21491
Comment :
Method : \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 13:21 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1
Dil Factor: 50.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	50.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.180	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
1 Dichlorodifluoromethane	85	Compound Not Detected.						
2 Chloromethane	50	Compound Not Detected.						
3 Vinyl Chloride	62	Compound Not Detected.						
4 Bromomethane	94	Compound Not Detected.						
5 Chloroethane	64	Compound Not Detected.						
6 Trichlorofluoromethane	101	Compound Not Detected.						
7 Ethyl Ether	59	Compound Not Detected.						
8 1,1-Dichloroethene	61	Compound Not Detected.						
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	Compound Not Detected.						
10 1,1,2-Trichlorotrifluoroethan	151	Compound Not Detected.						
11 Iodomethane	142	Compound Not Detected.						
12 Acrolein	56	Compound Not Detected.						
13 Allyl chloride	41	Compound Not Detected.						
14 Methylene Chloride	49	1.930	1.929	(0.464)	2634	3.61542	174(Q)	
15 Acetone	58	Compound Not Detected.						
16 trans-1,2-Dichloroethene	61	Compound Not Detected.						
17 Methyl Acetate	74	Compound Not Detected.						
18 Hexane	86	2.084	2.087	(0.501)	4003	25.8230	1250(Q)	
19 tert-butyl Methylether,MtB	73	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106009.d
Report Date: 11-Dec-2014 13:21

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
	21 tert-Butyl Alcohol	59	Compound Not Detected.						
	20 Acetonitrile	41	Compound Not Detected.						
	22 DiisopropylEther	45	Compound Not Detected.						
	23 Chloroprene	53	Compound Not Detected.						
	25 Acrylonitrile	53	Compound Not Detected.						
	24 1,1-Dichloroethane	63	Compound Not Detected.						
	27 t-Butyl ethyl ether	59	Compound Not Detected.						
	26 Vinyl Acetate	43	Compound Not Detected.						
	28 cis-1,2-Dichloroethene	61	Compound Not Detected.						
	29 2,2-Dichloropropane	77	Compound Not Detected.						
	30 Cyclohexane	56	3.142	3.145	(0.755)	82472	70.8398	3420(Q)	
	31 Bromochloromethane	130	Compound Not Detected.						
	32 Chloroform	83	Compound Not Detected.						
	33 Carbon Tetrachloride	117	Compound Not Detected.						
	36 Ethyl Acetate	43	Compound Not Detected.						
	35 Tetrahydrofuran	42	Compound Not Detected.						
	34 1,1,1-Trichloroethane	97	Compound Not Detected.						
	37 1,1-Dichloropropene	75	Compound Not Detected.						
	38 2-Butanone	43	Compound Not Detected.						
	39 Benzene	78	Compound Not Detected.						
	40 Propionitrile	54	Compound Not Detected.						
	41 Methacrylonitrile	41	Compound Not Detected.						
$	42 1,2-Dichloroethane-d4	65	3.939	3.939	(0.947)	30104	29.7986	28.8	
	43 t-Amyl methyl ether	73	Compound Not Detected.						
	46 Isobutanol	43	Compound Not Detected.						
	44 1,2-Dichloroethane	62	Compound Not Detected.						
*	45 Fluorobenzene	96	4.161	4.161	(1.000)	86545	30.0000		
	47 Methylcyclohexane	83	4.267	4.270	(0.726)	267259	231.593	11200	
	48 Trichloroethene	132	Compound Not Detected.						
	49 Dibromomethane	174	Compound Not Detected.						
	50 1,2-Dichloropropane	63	Compound Not Detected.						
	51 Bromodichloromethane	83	Compound Not Detected.						
	52 Methyl methacrylate	69	Compound Not Detected.						
	53 1,4-Dioxane	88	Compound Not Detected.						
	55 2-ChloroethylVinylEther	63	Compound Not Detected.						
	54 cis-1,3-Dichloropropene	75	Compound Not Detected.						
$	56 Toluene-d8	98	5.129	5.129	(0.873)	91058	29.2685	28.2	
	57 Toluene	91	Compound Not Detected.						
	58 2-Nitropropane	43	Compound Not Detected.						
	59 Tetrachloroethene	166	Compound Not Detected.						
	60 4-Methyl-2-Pentanone	43	Compound Not Detected.						
	61 trans-1,3-Dichloropropene	75	Compound Not Detected.						
	63 Ethyl methacrylate	41	Compound Not Detected.						
	62 1,1,2-Trichloroethane	97	Compound Not Detected.						
	64 Dibromochloromethane	129	Compound Not Detected.						
	65 1,3-Dichloropropane	76	Compound Not Detected.						
	66 1,2-Dibromoethane,EDB	107	Compound Not Detected.						
	70 2-Hexanone	43	Compound Not Detected.						
*	67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	40734	30.0000	(Q)	
	68 Chlorobenzene	112	Compound Not Detected.						
	69 Ethylbenzene	106	Compound Not Detected.						
	71 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.						
	72 m,p-Xylene	106	Compound Not Detected.						
	73 o-Xylene	106	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106009.d
Report Date: 11-Dec-2014 13:21

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
74 Styrene	104	Compound Not Detected.						
75 Bromoform	173	Compound Not Detected.						
76 Isopropylbenzene,Cumene	105	Compound Not Detected.						
$ 77 Bromofluorobenzene	174	6.409	6.408	(0.933)	25001	31.0528	30.0(Q)	
79 n-Propylbenzene	91	Compound Not Detected.						
78 Bromobenzene	77	Compound Not Detected.						
80 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.						
81 2-Chlorotoluene	126	Compound Not Detected.						
82 1,3,5-Trimethylbenzene	120	Compound Not Detected.						
83 1,2,3-Trichloropropane	110	Compound Not Detected.						
84 trans 1,4-Dichloro-2-butene	53	Compound Not Detected.						
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	Compound Not Detected.						
87 tert-Butyl benzene	119	6.672	6.675	(0.971)	6649	3.46974	167(Q)	
88 1,2,4-Trimethylbenzene	120	Compound Not Detected.						
89 sec-Butyl benzene	105	6.746	6.746	(0.982)	39209	13.9430	673(Q)	
90 4-Isopropyl toluene	119	Compound Not Detected.						
91 1,3-Dichlorobenzene	146	Compound Not Detected.						
* 92 1,4-Dichlorobenzene-d4	152	6.872	6.871	(1.000)	29339	30.0000		
93 1,4-Dichlorobenzene	146	Compound Not Detected.						
94 n-Butyl benzene	91	6.978	6.977	(1.015)	10688	4.74005	229(Q)	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	Compound Not Detected.						
96 bis(2Chloro1methyl ethyl)eth	45	Compound Not Detected.						
97 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.						
98 Hexachlorobutadiene	225	Compound Not Detected.						
99 1,2,4-Trichlorobenzene	180	Compound Not Detected.						
100 Naphthalene	128	7.785	7.794	(1.133)	6337	3.87051	187(Q)	
101 1,2,3-Trichlorobenzene	180	Compound Not Detected.						
157 2-methylnaphthalene	142	8.244	8.241	(1.200)	5251	6.49425	313(Q)	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106009.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51106009.d
Lab Smp Id: 30133009003
Analysis Type: VOA
Quant Type: ISTD
Operator: MAK
Calibration Date: 06-NOV-2014
Calibration Time: 09:43
Client Smp ID: AOI-5_PECO-B6_1
Level: LOW
Sample Type: SOIL
Method File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Misc Info: 21491

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	91773	45887	183546	86545	-5.70
67 Chlorobenzene-d5	40493	20247	80986	40734	0.60
92 1,4-Dichlorobenze	36287	18144	72574	29339	-19.15

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106009.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

RECOVERY REPORT

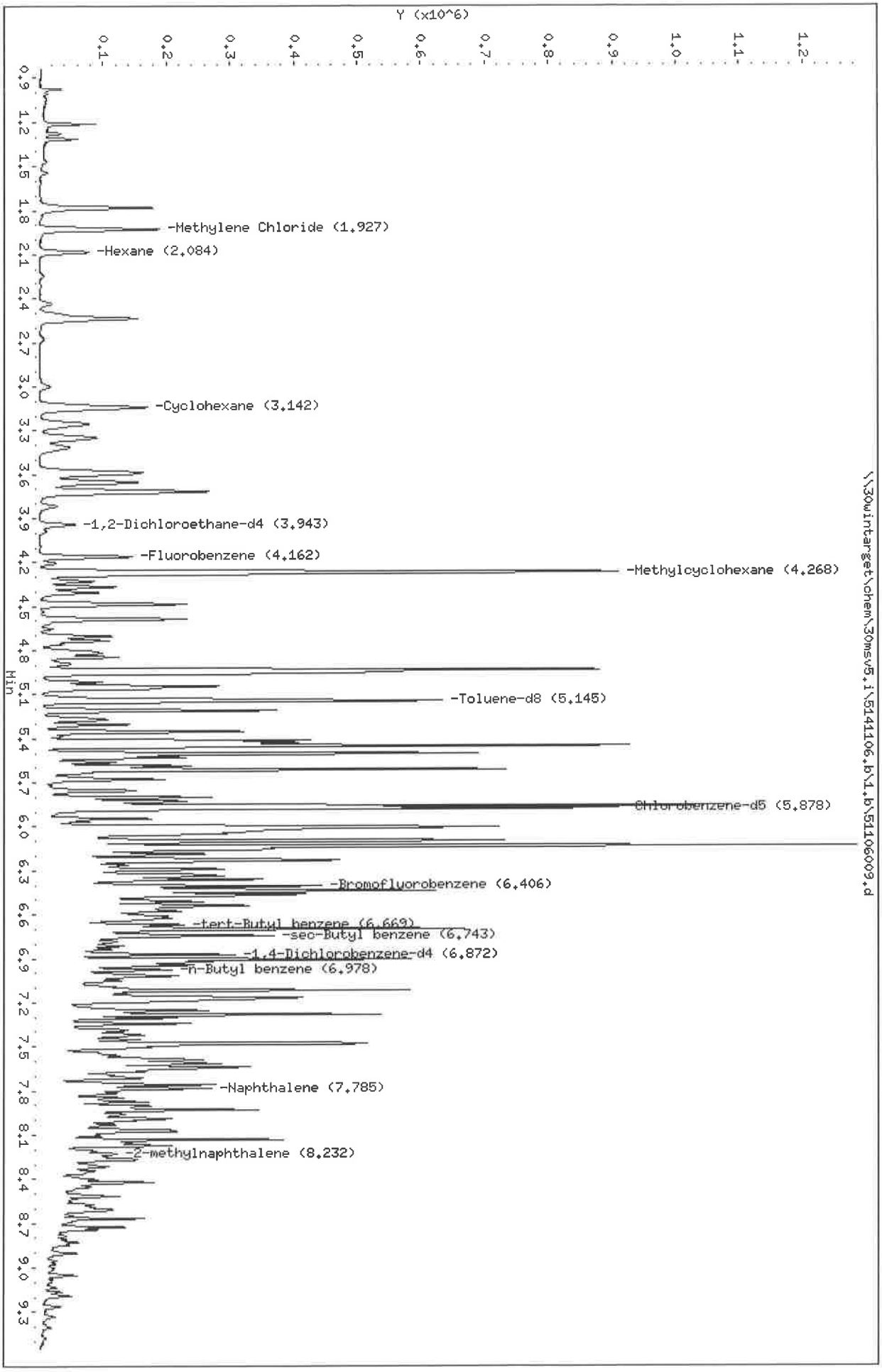
Client Name: Sunoco_Langan
Sample Matrix: SOLID
Lab Smp Id: 30133009003
Level: LOW
Data Type: MS DATA
SpikeList File: lcsaq.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Misc Info: 21491

Client SDG: 30133009
Fraction: VOA
Client Smp ID: AOI-5_PECO-B6_12-14
Operator: MAK
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 42 1,2-Dichloroethane	29.0	28.8	99.33	83-138
$ 56 Toluene-d8	29.0	28.2	97.56	73-124
$ 77 Bromofluorobenzene	29.0	30.0	103.51	71-124
$ 158 1,2-Dichlorobenze	29.0	0.000	*	0-200

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106009.d
Date : 06-NOV-2014 11:56
Client ID: AOI-5_PECO-B6_12-14
Sample Info: 3013300900 3x50,,5.18
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: HAK
Column diameter: 0.18



Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106009.d

Date : 06-NOV-2014 11:56

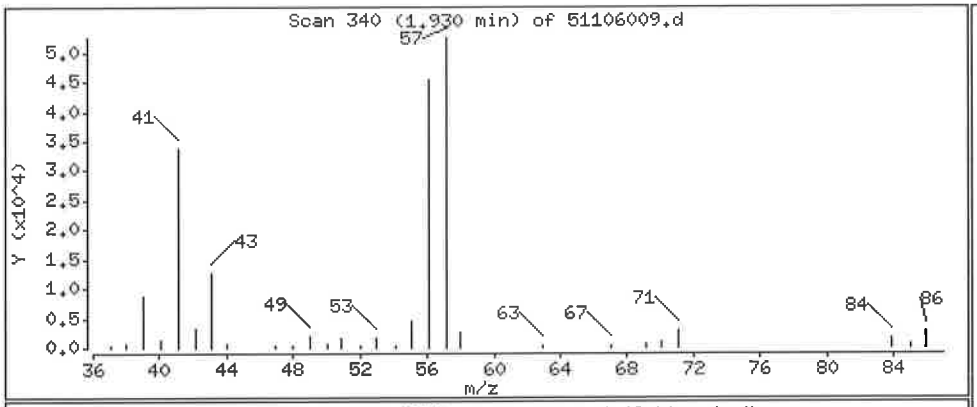
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

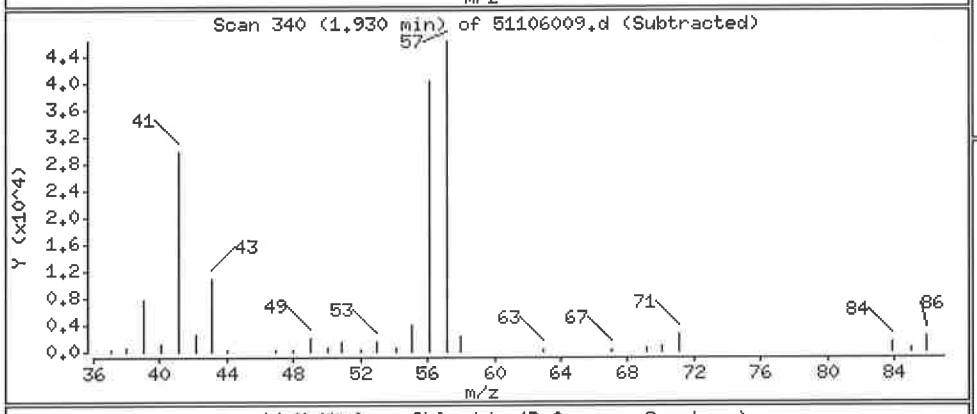
Sample Info: 30133009003x50,,5.18

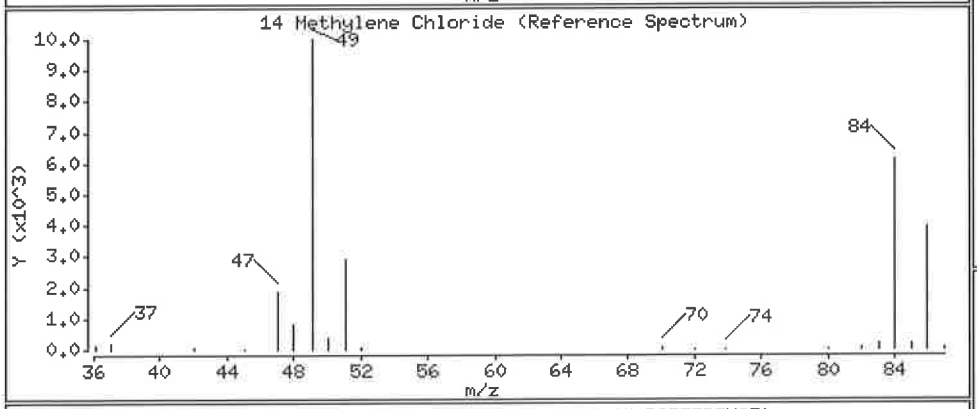
Purge Volume: 5.0 Operator: MAK

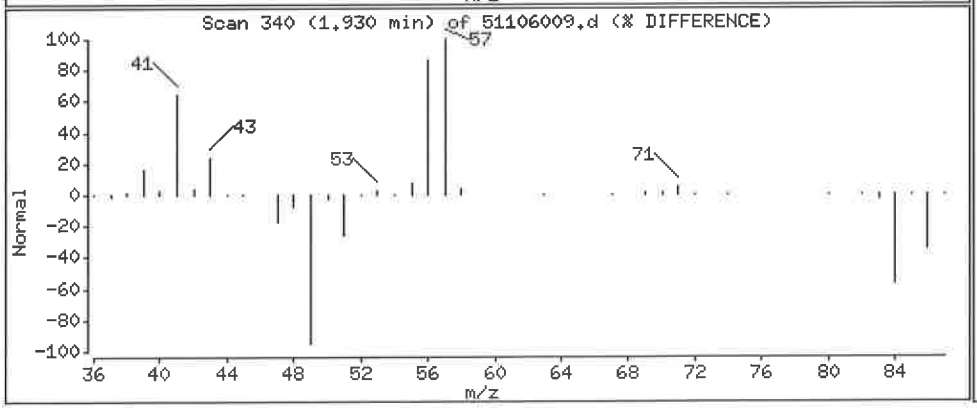
Column phase: Rtx-VMS Column diameter: 0.18

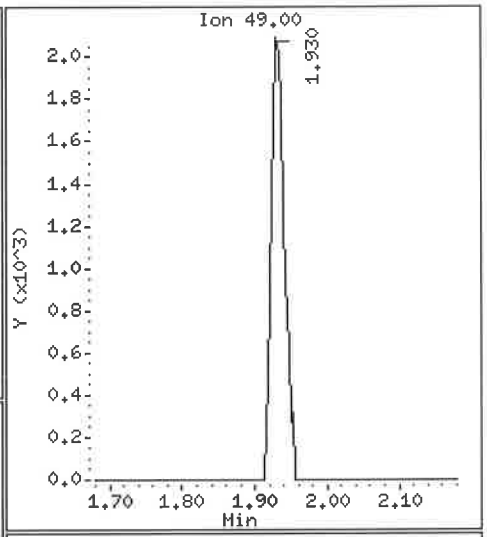
14 Methylene Chloride Concentration: 174 ug/kg

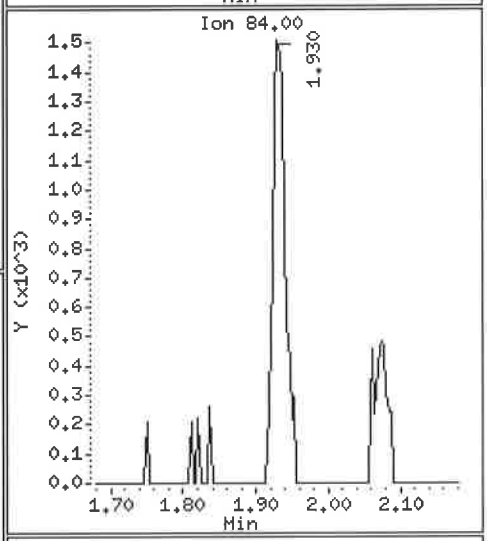


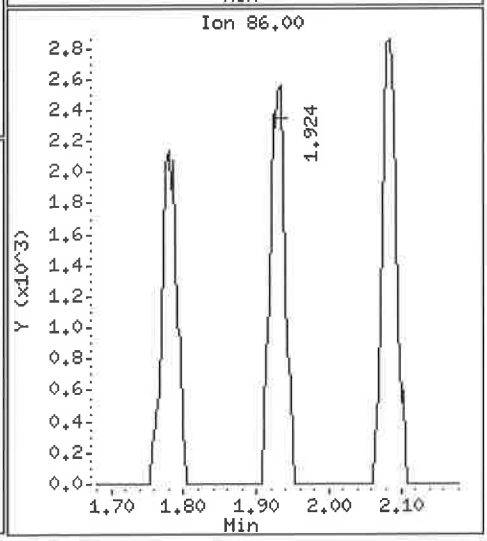












Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106009.d

Date : 06-NOV-2014 11:56

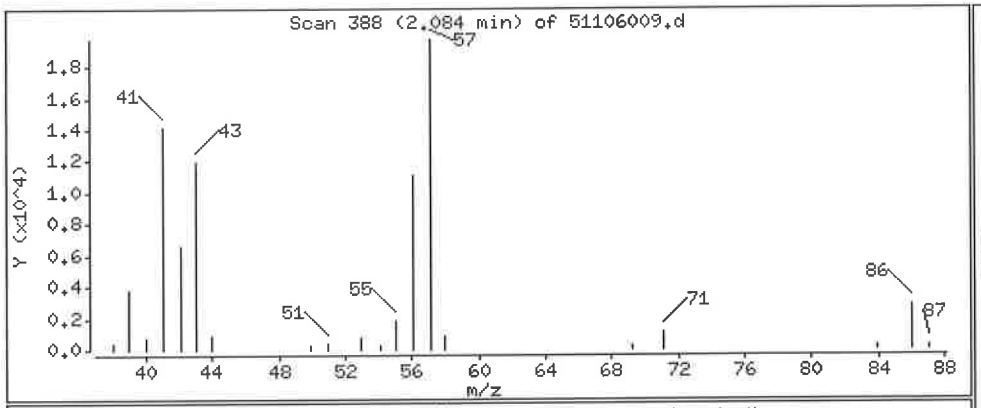
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

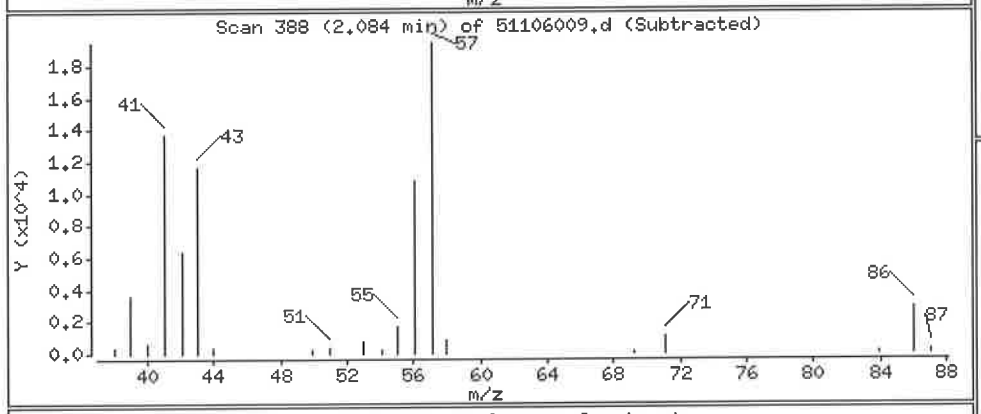
Sample Info: 30133009003x50,,5.18

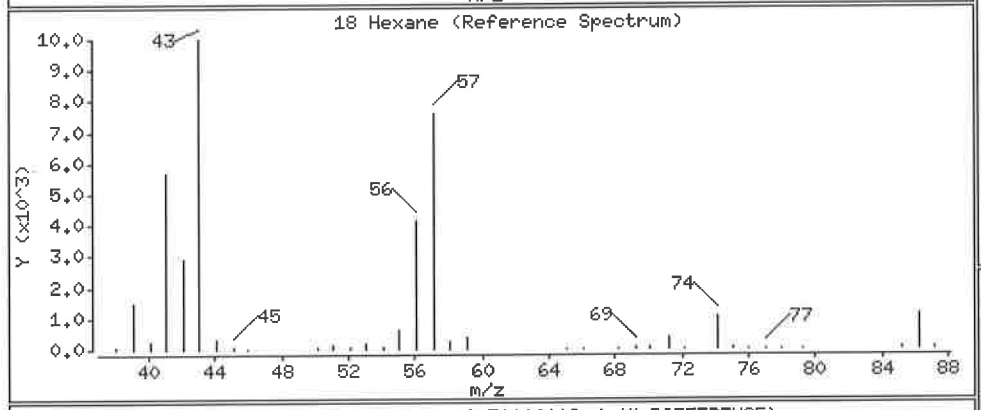
Purge Volume: 5.0 Operator: MAK

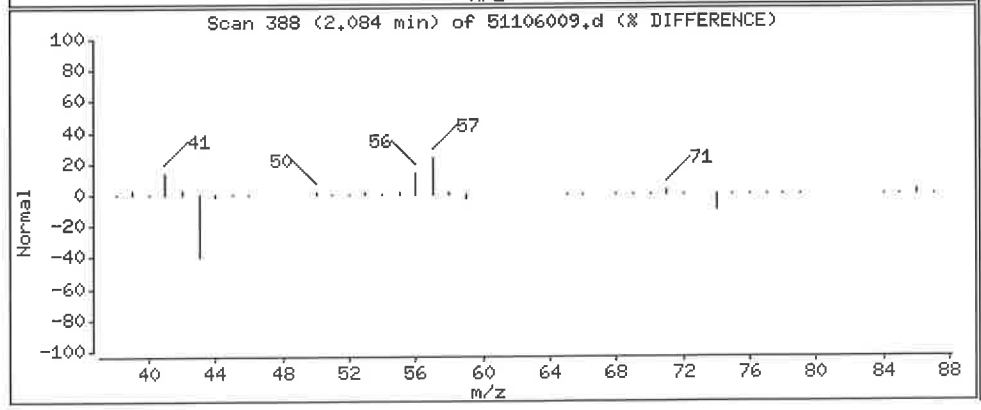
Column phase: Rtx-VMS Column diameter: 0.18

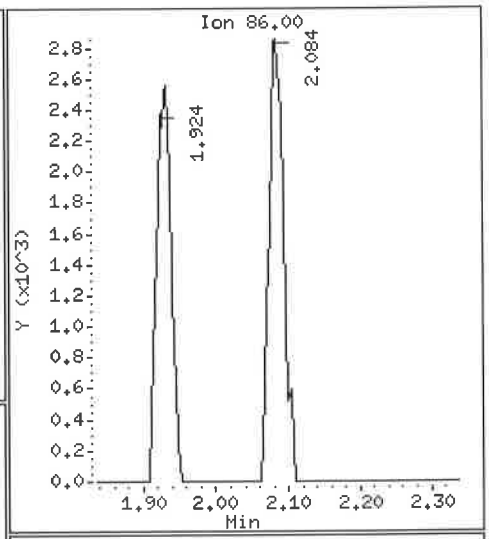
18 Hexane Concentration: 1250 ug/kg

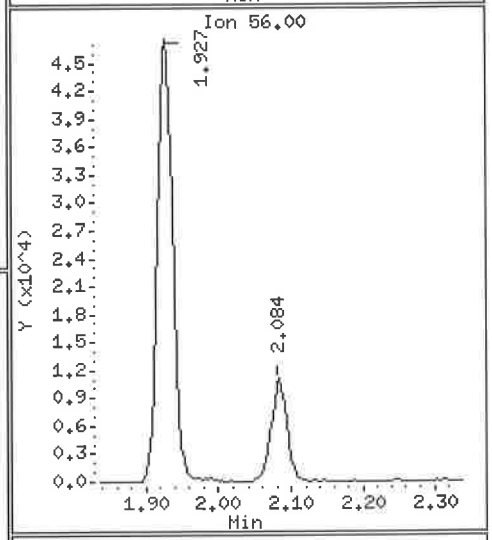


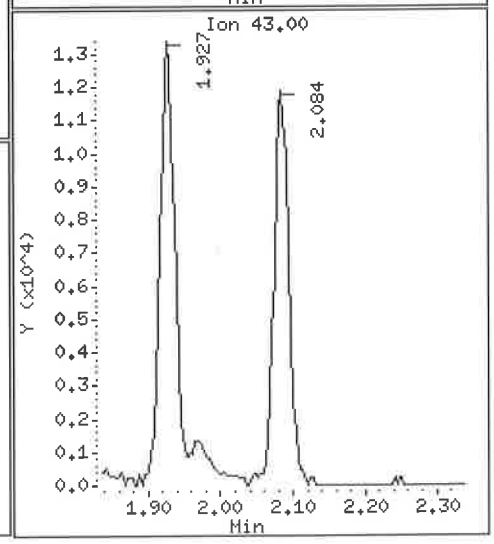












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Date : 06-NOV-2014 11:56

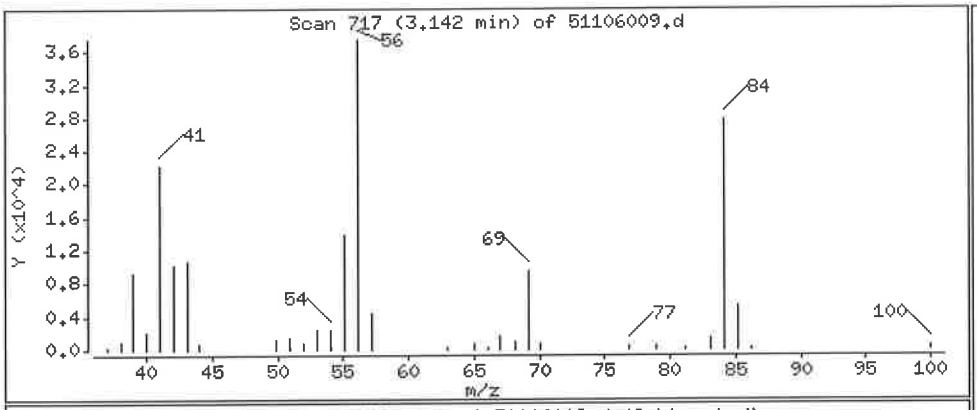
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

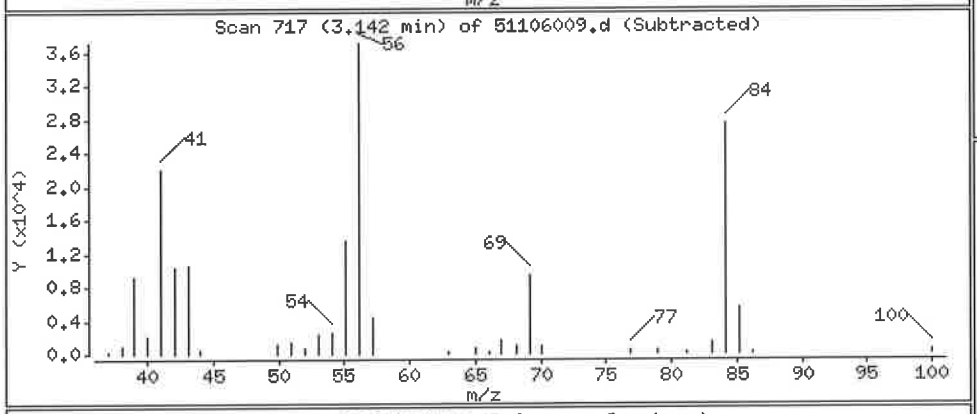
Sample Info: 30133009003x50,,5.18

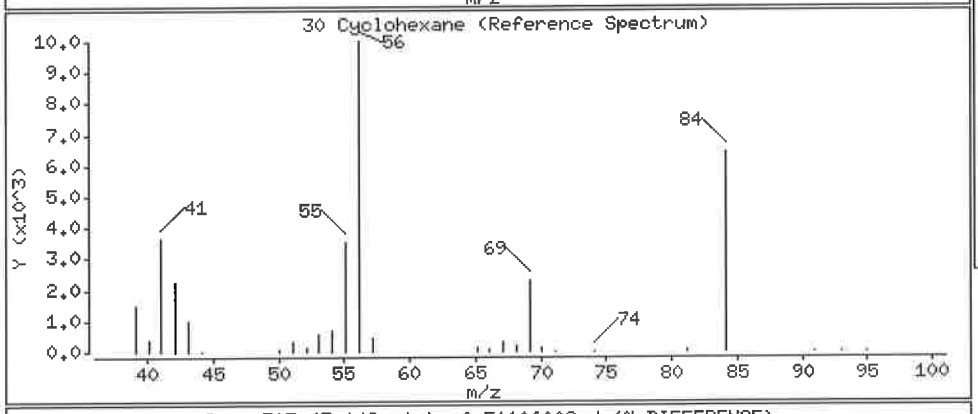
Purge Volume: 5.0 Operator: MAK

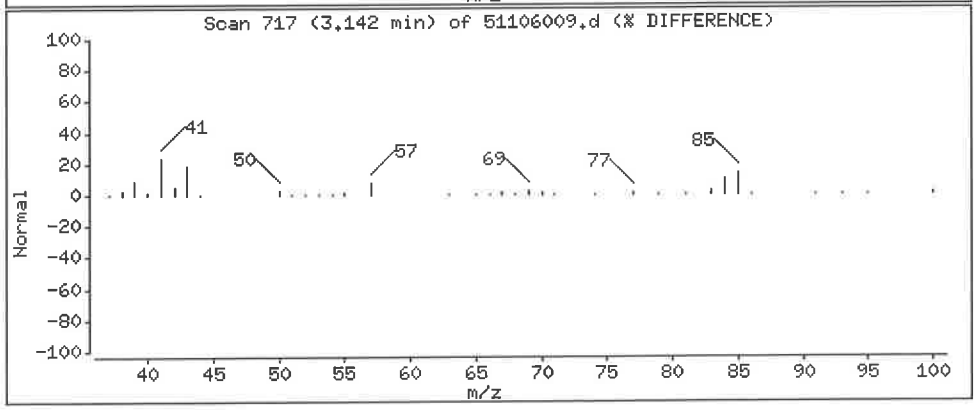
Column phase: Rtx-VMS Column diameter: 0.18

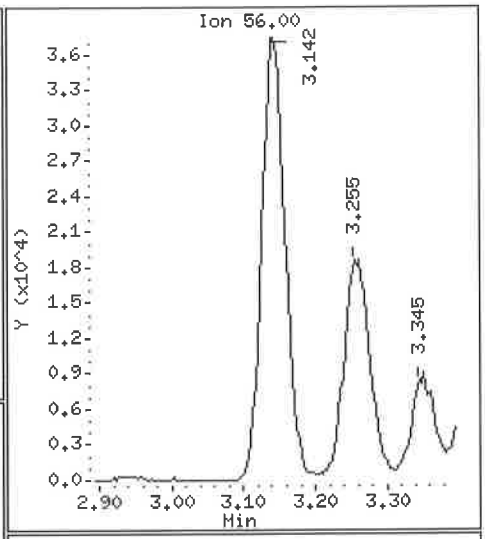
30 Cyclohexane Concentration: 3420 ug/kg

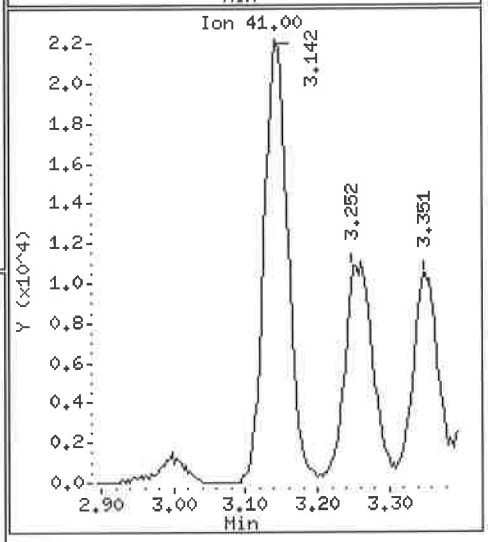












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Date : 06-NOV-2014 11:56

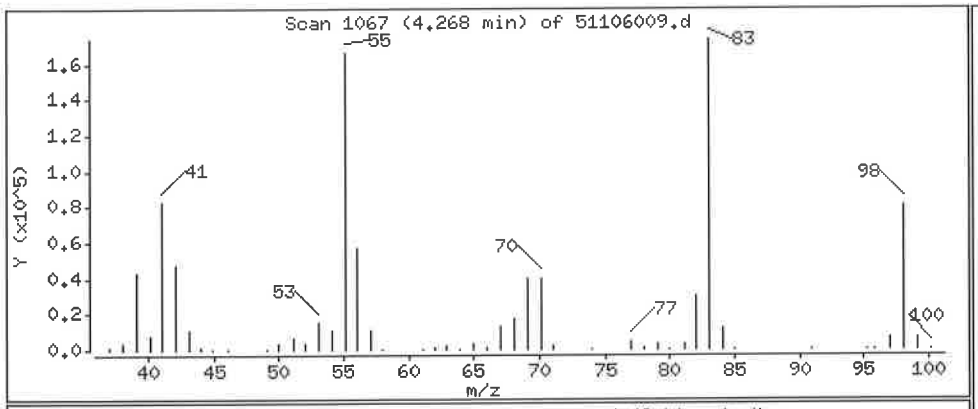
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

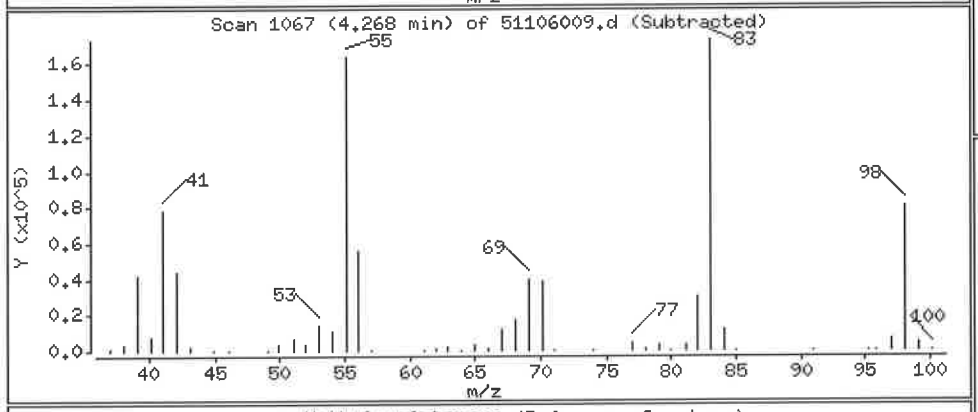
Sample Info: 30133009003x50,,5.18

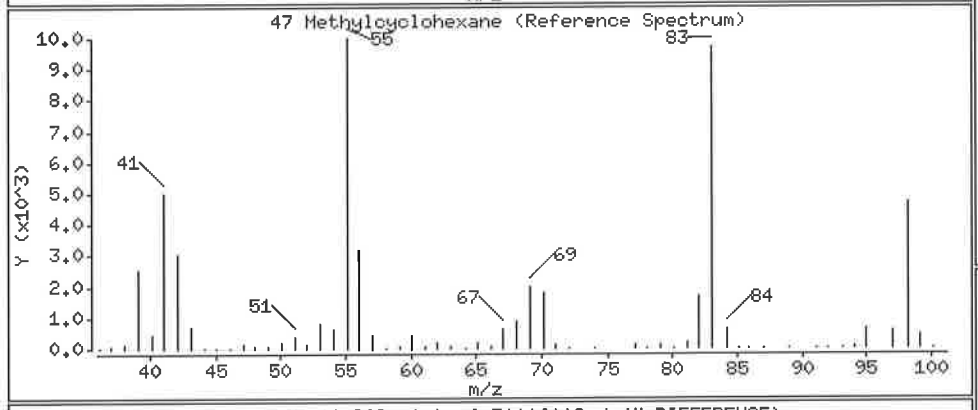
Purge Volume: 5.0 Operator: MAK

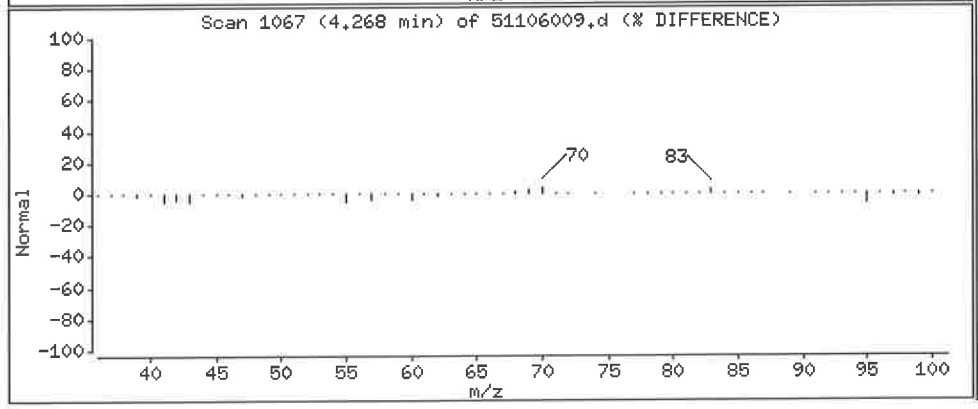
Column phase: Rtx-VMS Column diameter: 0.18

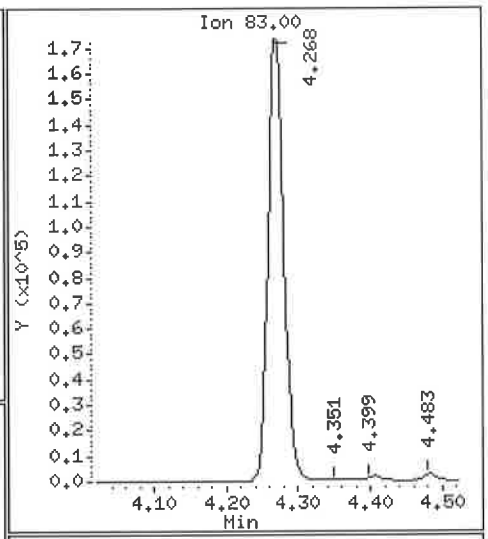
47 Methylcyclohexane Concentration: 11200 ug/kg

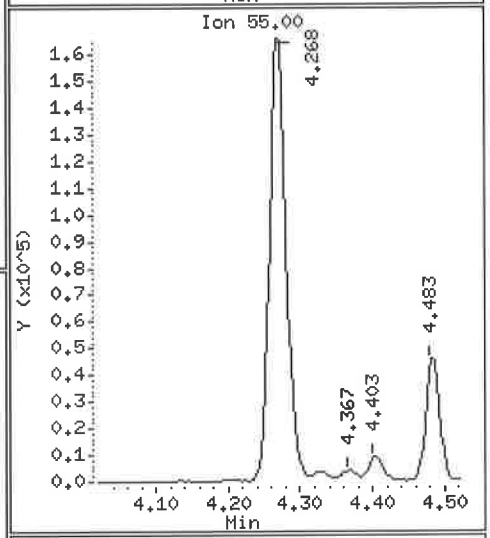


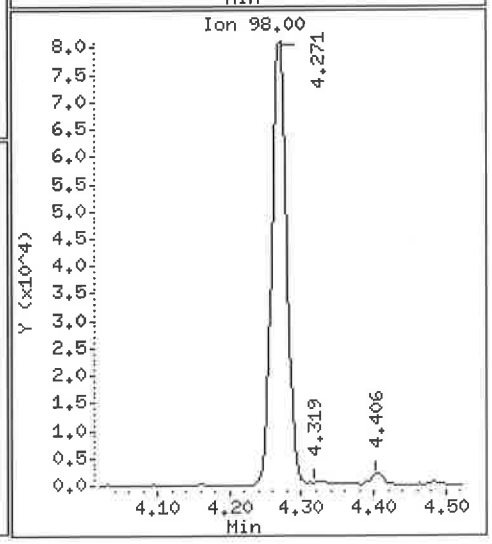












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Date : 06-NOV-2014 11:56

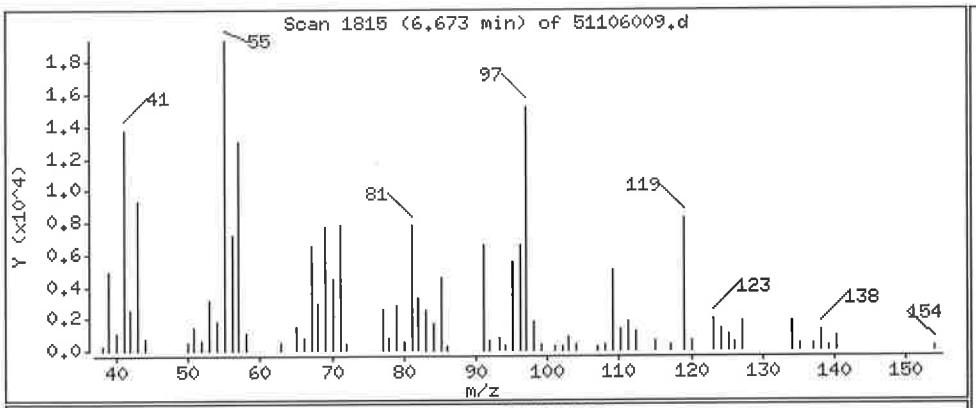
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

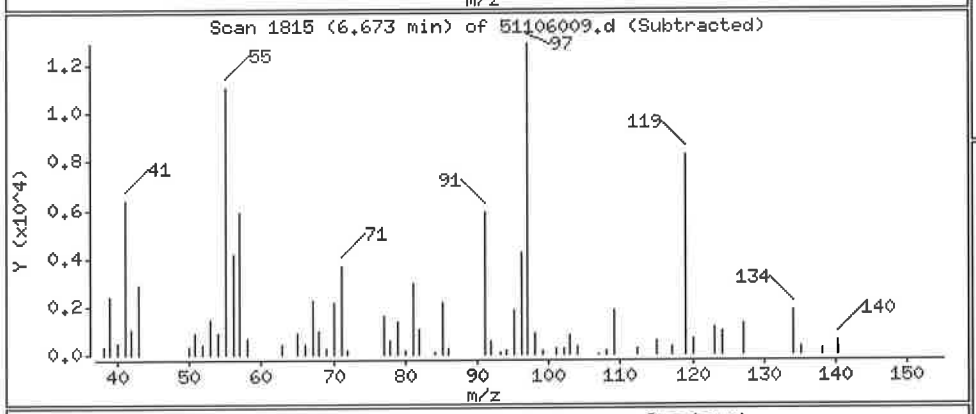
Sample Info: 30133009003x50,,5.18

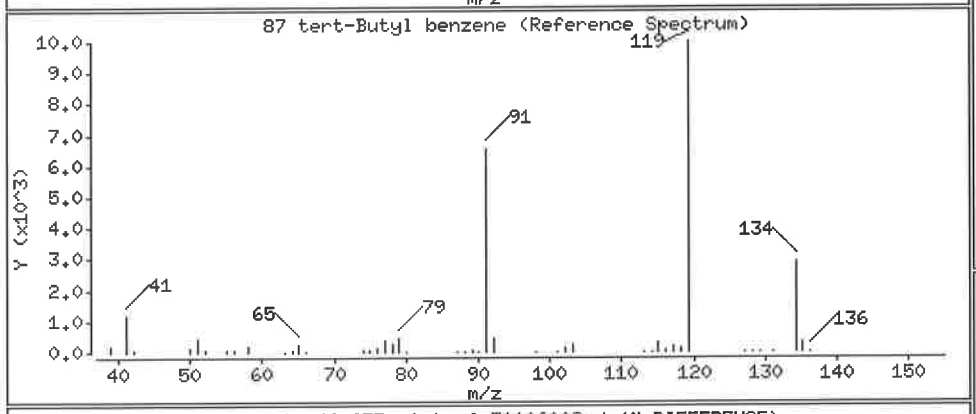
Purge Volume: 5.0 Operator: MAK

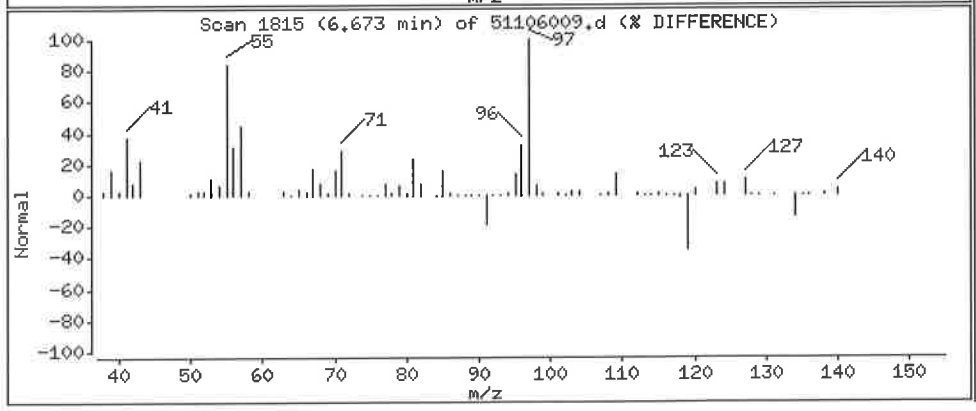
Column phase: Rtx-VMS Column diameter: 0.18

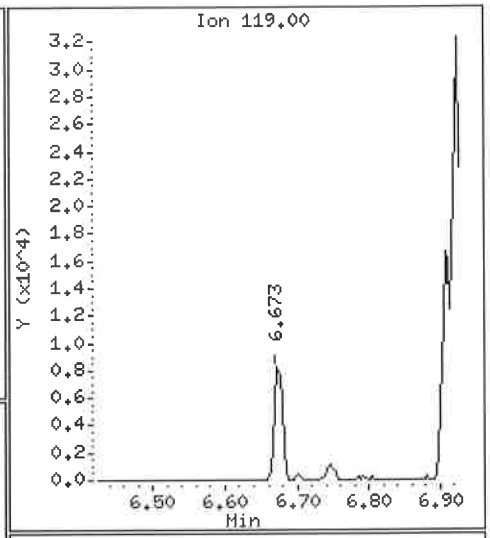
87 tert-Butyl benzene Concentration: 167 ug/kg

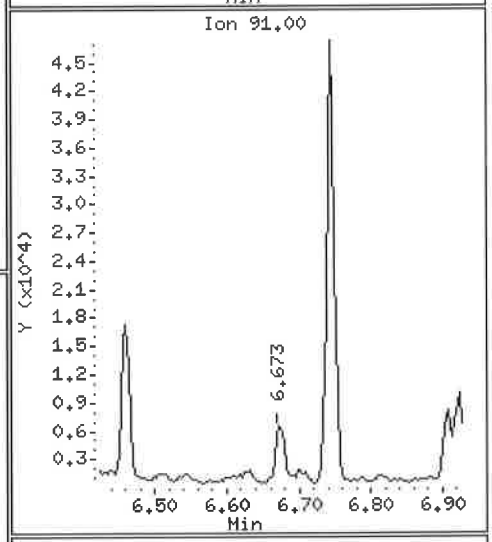


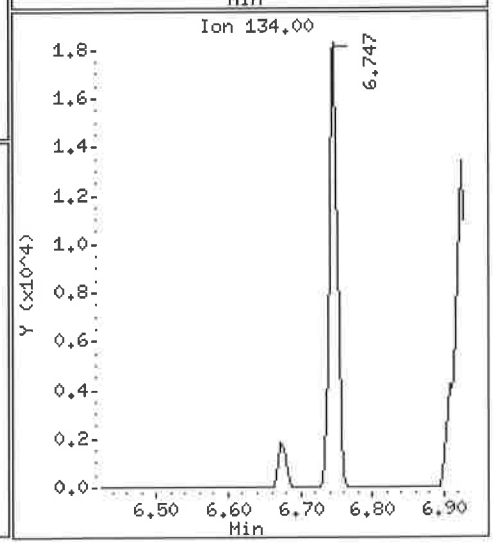












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Date : 06-NOV-2014 11:56

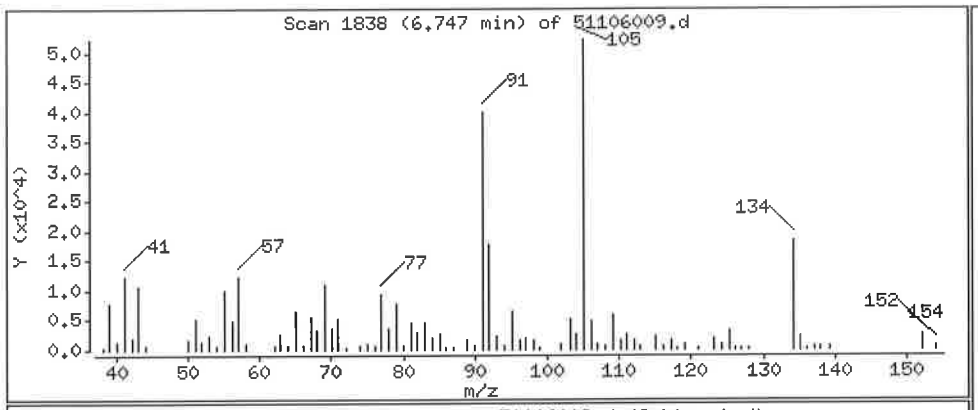
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

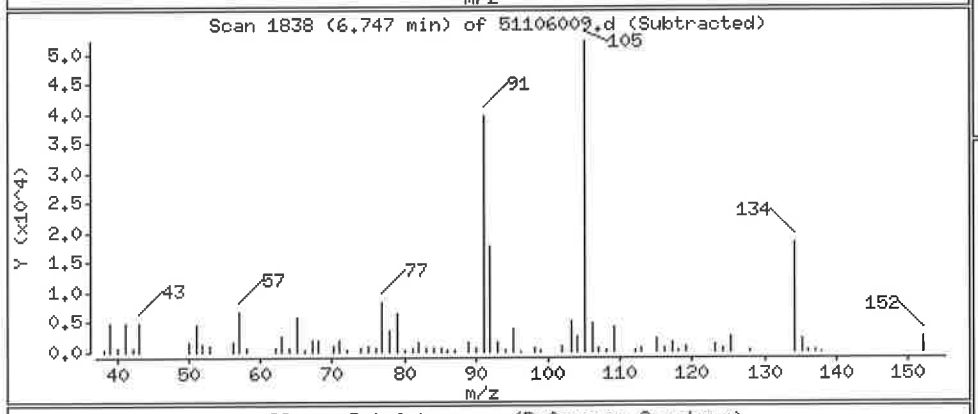
Sample Info: 30133009003x50,,5.18

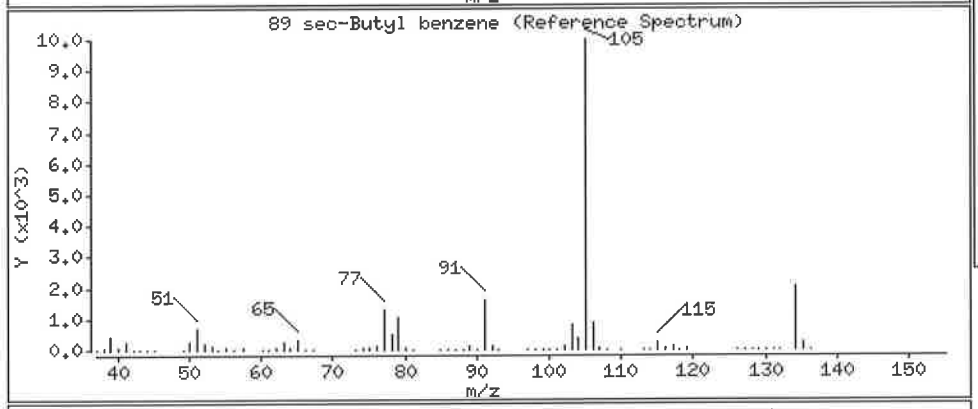
Purge Volume: 5.0 Operator: MAK

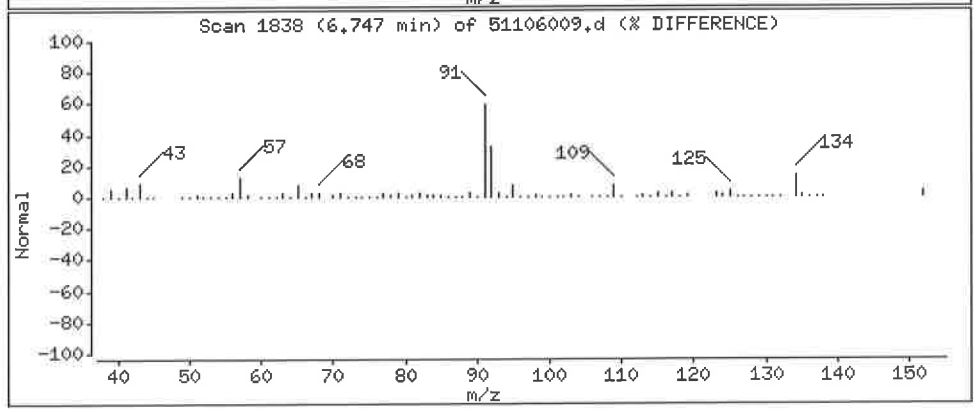
Column phase: Rtx-VMS Column diameter: 0.18

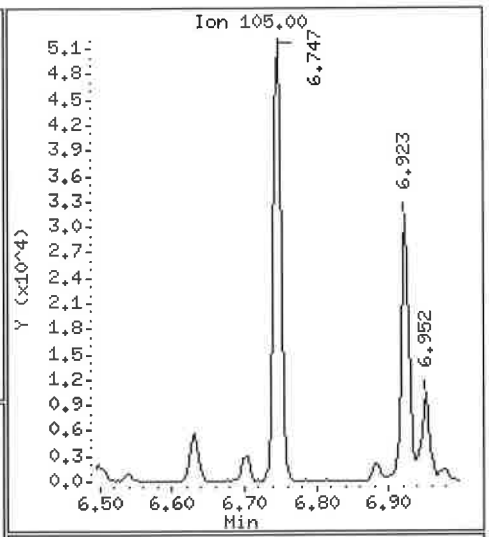
89 sec-Butyl benzene Concentration: 673 ug/kg

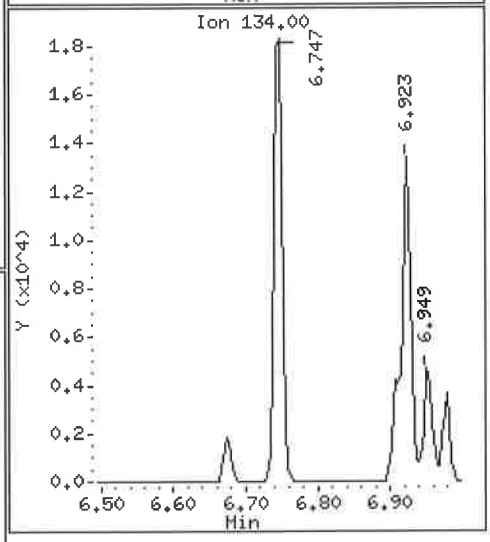












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Date : 06-NOV-2014 11:56

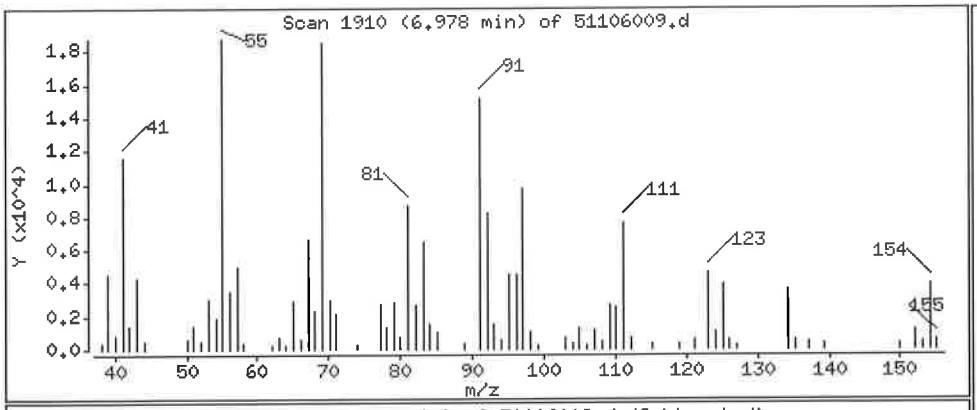
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

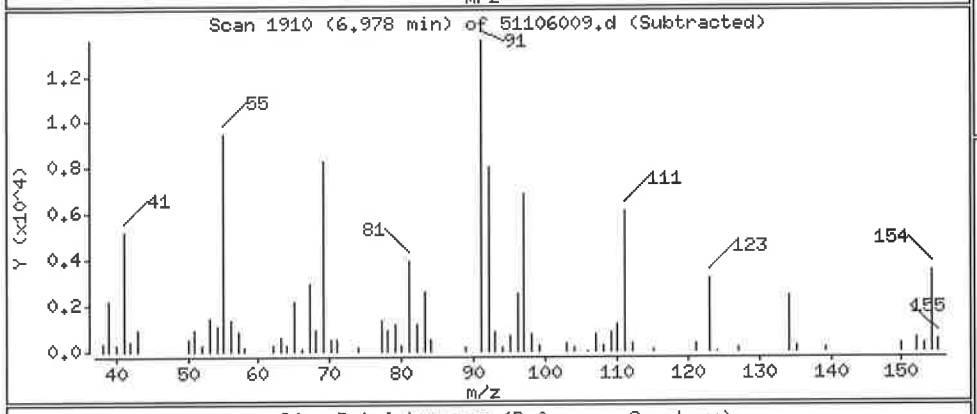
Sample Info: 30133009003x50,,5.18

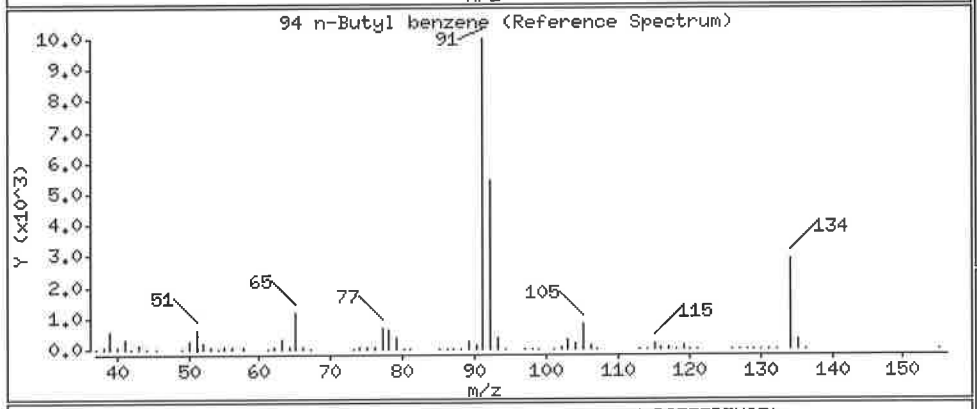
Purge Volume: 5.0 Operator: MAK

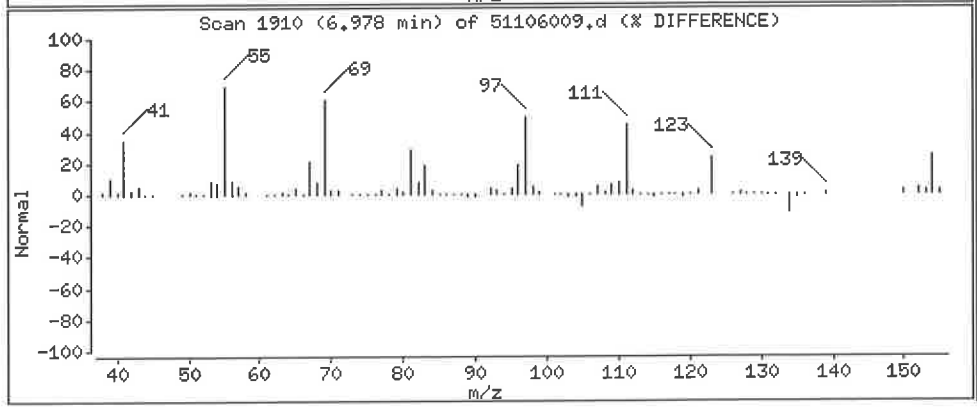
Column phase: Rtx-VMS Column diameter: 0.18

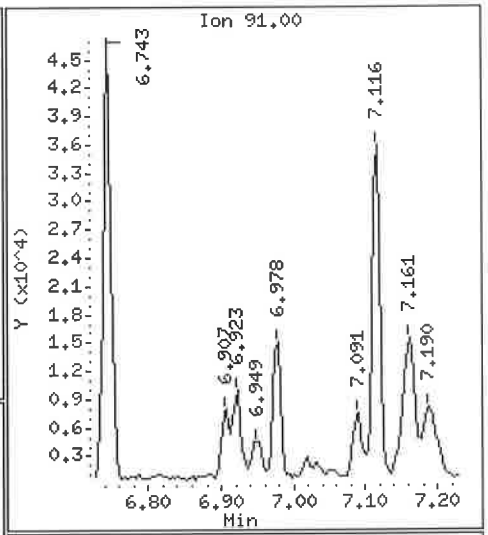
94 n-Butyl benzene Concentration: 229 ug/kg

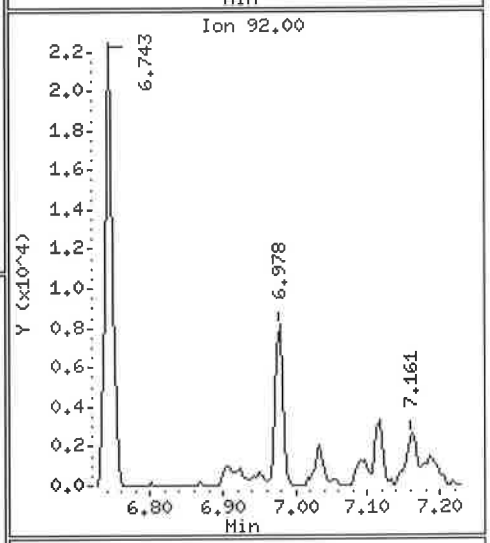


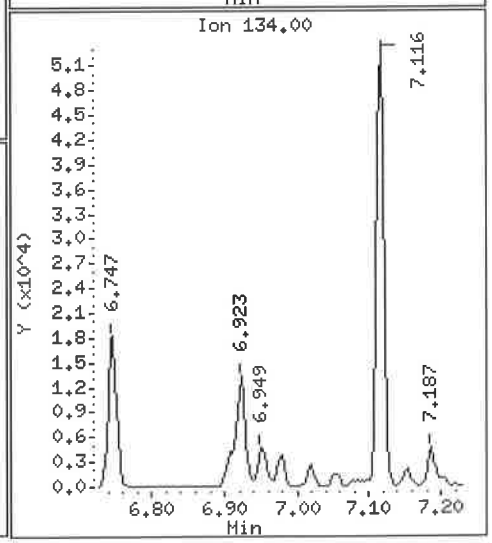












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Date : 06-NOV-2014 11:56

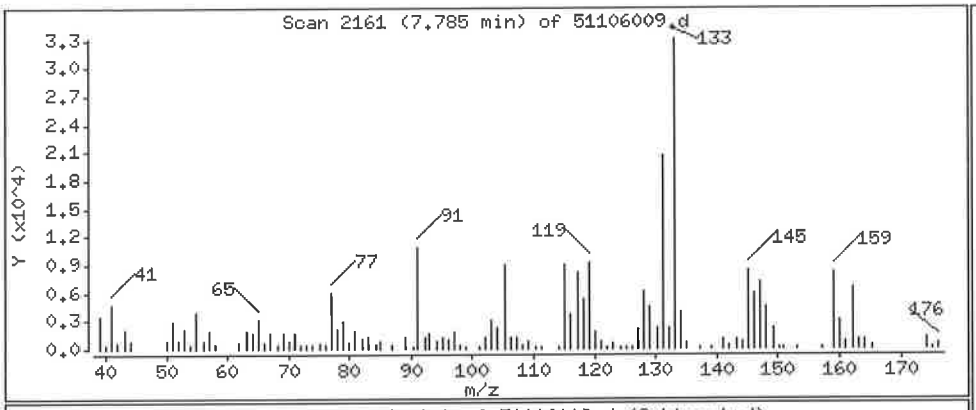
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

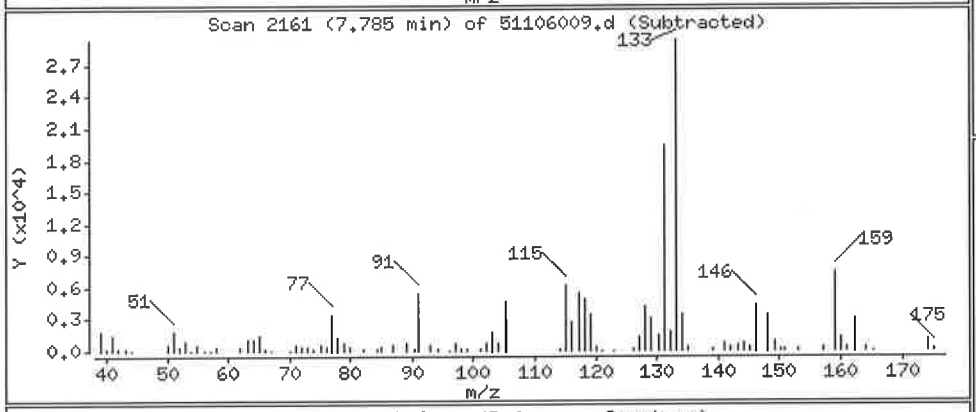
Sample Info: 30133009003x50,,5.18

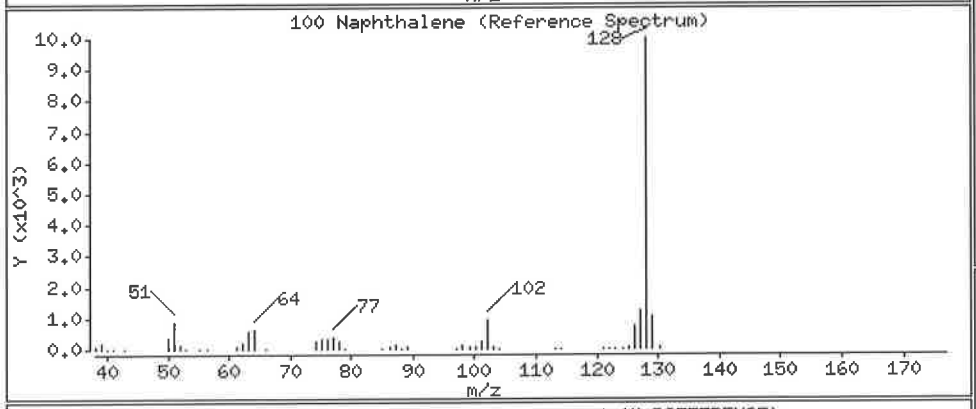
Purge Volume: 5.0 Operator: MAK

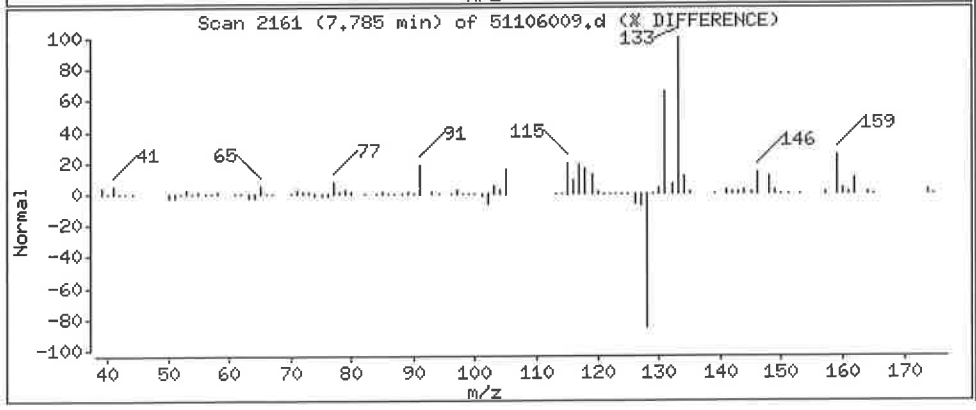
Column phase: Rtx-VMS Column diameter: 0.18

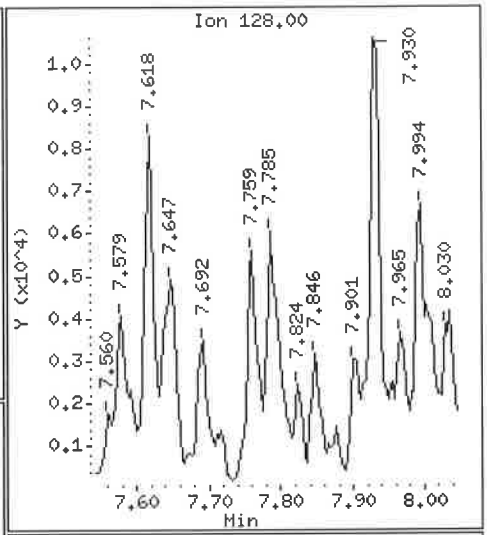
100 Naphthalene Concentration: 187 ug/kg

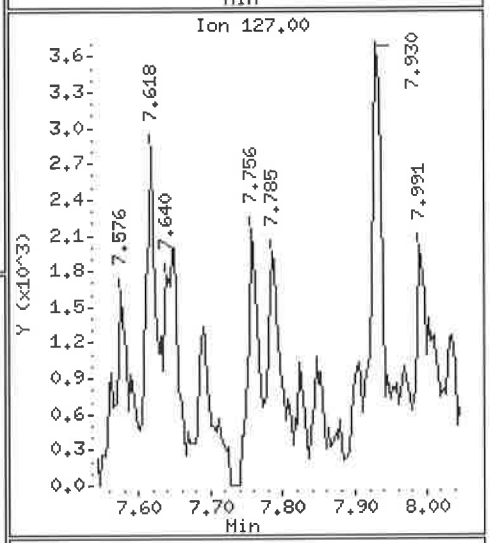


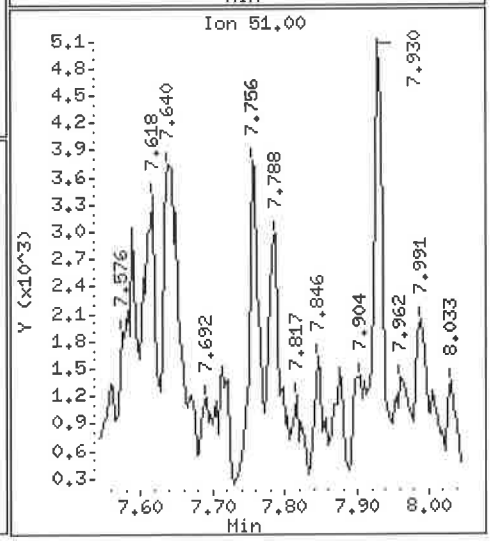












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Date : 06-NOV-2014 11:56

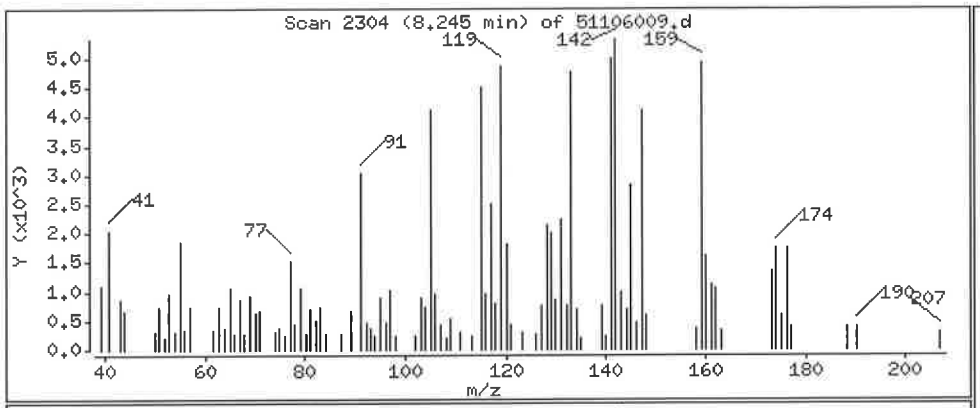
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

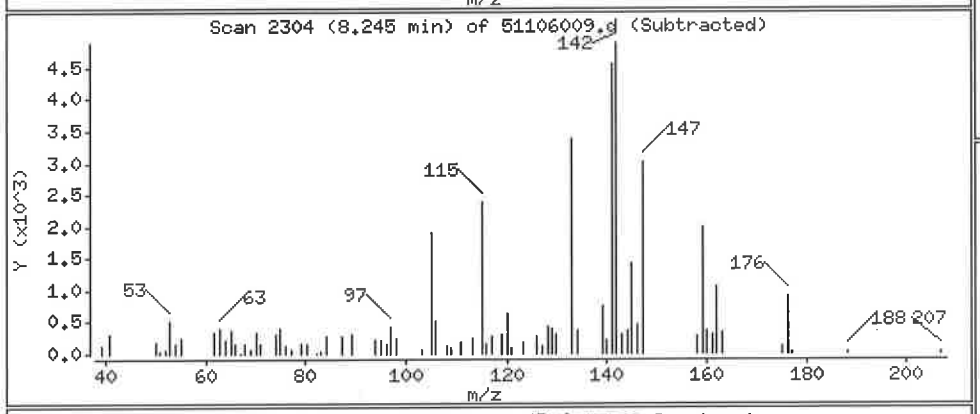
Sample Info: 30133009003x50,,5.18

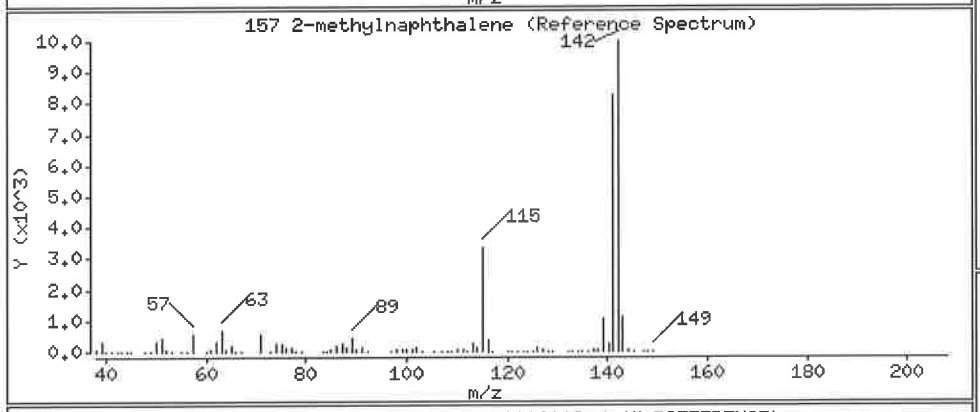
Purge Volume: 5.0 Operator: MAK

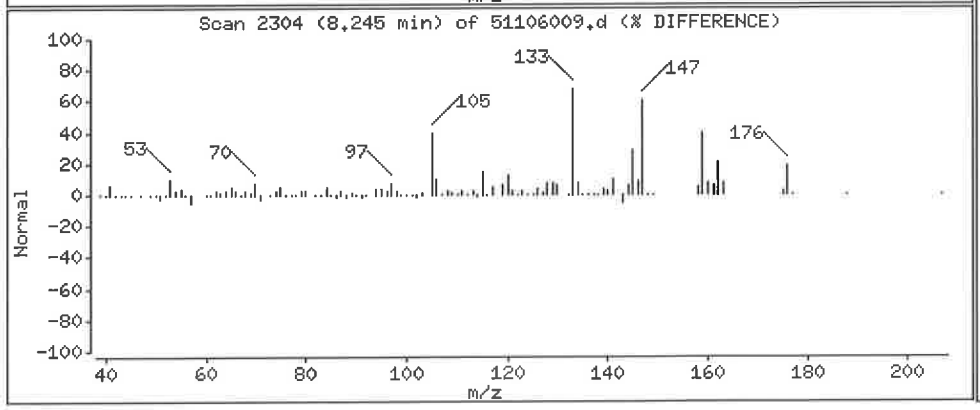
Column phase: Rtx-VMS Column diameter: 0.18

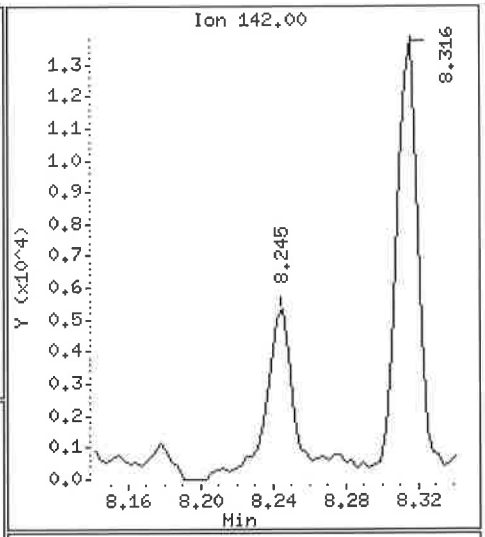
157 2-methylnaphthalene Concentration: 313 ug/kg

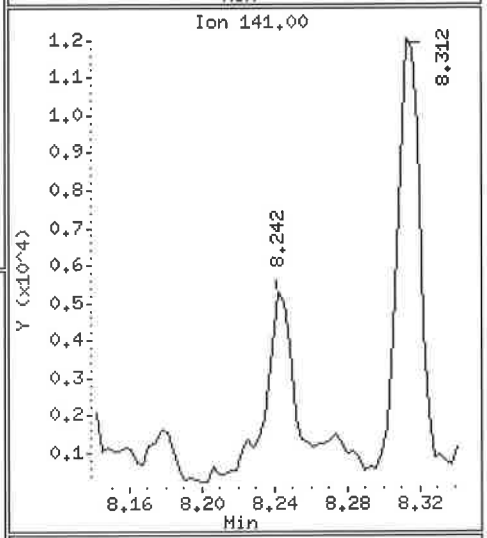


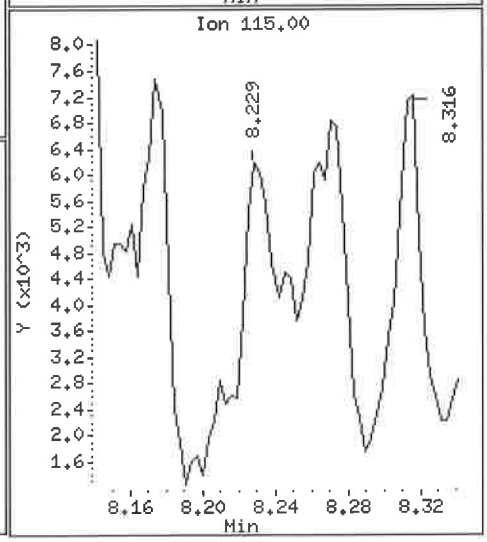












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Injection Date: 06-NOV-2014 11:56
Instrument: 30msv5.i
Lab Sample ID: 30133009003
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106010.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106010.d
Lab Smp Id: 30133009003 Client Smp ID: AOI-5_PECO-B6_12-14
Inj Date : 06-NOV-2014 12:18
Operator : MAK Inst ID: 30msv5.i
Smp Info : 30133009003x500,,5.18
Misc Info : 21491
Comment :
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Meth Date : 11-Dec-2014 13:21 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1
Dil Factor: 500.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	500.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.180	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
1 Dichlorodifluoromethane	85	Compound Not Detected.						
2 Chloromethane	50	Compound Not Detected.						
3 Vinyl Chloride	62	Compound Not Detected.						
4 Bromomethane	94	Compound Not Detected.						
5 Chloroethane	64	Compound Not Detected.						
6 Trichlorofluoromethane	101	Compound Not Detected.						
7 Ethyl Ether	59	Compound Not Detected.						
8 1,1-Dichloroethene	61	Compound Not Detected.						
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	Compound Not Detected.						
10 1,1,2-Trichlorotrifluoroethan	151	Compound Not Detected.						
11 Iodomethane	142	Compound Not Detected.						
12 Acrolein	56	Compound Not Detected.						
13 Allyl chloride	41	Compound Not Detected.						
14 Methylene Chloride	49	Compound Not Detected.						
15 Acetone	58	Compound Not Detected.						
16 trans-1,2-Dichloroethene	61	Compound Not Detected.						
17 Methyl Acetate	74	Compound Not Detected.						
18 Hexane	86	Compound Not Detected.						
19 tert-butyl Methylether,MtB	73	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106010.d
Report Date: 11-Dec-2014 13:21

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
	21 tert-Butyl Alcohol	59	Compound Not Detected.						
	20 Acetonitrile	41	Compound Not Detected.						
	22 DiisopropylEther	45	Compound Not Detected.						
	23 Chloroprene	53	Compound Not Detected.						
	25 Acrylonitrile	53	Compound Not Detected.						
	24 1,1-Dichloroethane	63	Compound Not Detected.						
	27 t-Butyl ethyl ether	59	Compound Not Detected.						
	26 Vinyl Acetate	43	Compound Not Detected.						
	28 cis-1,2-Dichloroethene	61	Compound Not Detected.						
	29 2,2-Dichloropropane	77	Compound Not Detected.						
	30 Cyclohexane	56	3.148	3.145	(0.757)	9264	8.23709	3980(QM)	LT
	31 Bromochloromethane	130	Compound Not Detected.						
	32 Chloroform	83	Compound Not Detected.						
	33 Carbon Tetrachloride	117	Compound Not Detected.						
	36 Ethyl Acetate	43	Compound Not Detected.						
	35 Tetrahydrofuran	42	Compound Not Detected.						
	34 1,1,1-Trichloroethane	97	Compound Not Detected.						
	37 1,1-Dichloropropene	75	Compound Not Detected.						
	38 2-Butanone	43	Compound Not Detected.						
	39 Benzene	78	Compound Not Detected.						
	40 Propionitrile	54	Compound Not Detected.						
	41 Methacrylonitrile	41	Compound Not Detected.						
$	42 1,2-Dichloroethane-d4	65	3.942	3.939	(0.947)	29508	30.2354	29.2	
	43 t-Amyl methyl ether	73	Compound Not Detected.						
	46 Isobutanol	43	Compound Not Detected.						
	44 1,2-Dichloroethane	62	Compound Not Detected.						
*	45 Fluorobenzene	96	4.161	4.161	(1.000)	83606	30.0000		
	47 Methylcyclohexane	83	4.270	4.270	(0.727)	29817	27.4799	13300	
	48 Trichloroethene	132	Compound Not Detected.						
	49 Dibromomethane	174	Compound Not Detected.						
	50 1,2-Dichloropropane	63	Compound Not Detected.						
	51 Bromodichloromethane	83	Compound Not Detected.						
	52 Methyl methacrylate	69	Compound Not Detected.						
	53 1,4-Dioxane	88	Compound Not Detected.						
	55 2-ChloroethylVinylEther	63	Compound Not Detected.						
	54 cis-1,3-Dichloropropene	75	Compound Not Detected.						
$	56 Toluene-d8	98	5.129	5.129	(0.873)	82298	28.1339	27.2	
	57 Toluene	91	Compound Not Detected.						
	58 2-Nitropropane	43	Compound Not Detected.						
	59 Tetrachloroethene	166	Compound Not Detected.						
	60 4-Methyl-2-Pentanone	43	Compound Not Detected.						
	61 trans-1,3-Dichloropropene	75	Compound Not Detected.						
	63 Ethyl methacrylate	41	Compound Not Detected.						
	62 1,1,2-Trichloroethane	97	Compound Not Detected.						
	64 Dibromochloromethane	129	Compound Not Detected.						
	65 1,3-Dichloropropane	76	Compound Not Detected.						
	66 1,2-Dibromoethane,EDB	107	Compound Not Detected.						
	70 2-Hexanone	43	Compound Not Detected.						
*	67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	38300	30.0000		
	68 Chlorobenzene	112	Compound Not Detected.						
	69 Ethylbenzene	106	Compound Not Detected.						
	71 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.						
	72 m,p-Xylene	106	Compound Not Detected.						
	73 o-Xylene	106	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106010.d
Report Date: 11-Dec-2014 13:21

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
74 Styrene	104	Compound Not Detected.						
75 Bromoform	173	Compound Not Detected.						
76 Isopropylbenzene,Cumene	105	Compound Not Detected.						
$ 77 Bromofluorobenzene	174	6.408	6.408	(0.933)	27579	28.7357	27.7	
79 n-Propylbenzene	91	Compound Not Detected.						
78 Bromobenzene	77	Compound Not Detected.						
80 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.						
81 2-Chlorotoluene	126	Compound Not Detected.						
82 1,3,5-Trimethylbenzene	120	Compound Not Detected.						
83 1,2,3-Trichloropropane	110	Compound Not Detected.						
84 trans 1,4-Dichloro-2-butene	53	Compound Not Detected.						
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	Compound Not Detected.						
87 tert-Butyl benzene	119	Compound Not Detected.						
88 1,2,4-Trimethylbenzene	120	Compound Not Detected.						
89 sec-Butyl benzene	105	Compound Not Detected.						
90 4-Isopropyl toluene	119	Compound Not Detected.						
91 1,3-Dichlorobenzene	146	Compound Not Detected.						
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.871	(1.000)	34974	30.0000		
93 1,4-Dichlorobenzene	146	Compound Not Detected.						
94 n-Butyl benzene	91	Compound Not Detected.						
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	Compound Not Detected.						
96 bis(2Chloro1methyl ethyl)eth	45	Compound Not Detected.						
97 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.						
98 Hexachlorobutadiene	225	Compound Not Detected.						
99 1,2,4-Trichlorobenzene	180	Compound Not Detected.						
100 Naphthalene	128	Compound Not Detected.						
101 1,2,3-Trichlorobenzene	180	Compound Not Detected.						
157 2-methylnaphthalene	142	Compound Not Detected.						

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106010.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51106010.d
Lab Smp Id: 30133009003
Analysis Type: VOA
Quant Type: ISTD
Operator: MAK
Method File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Misc Info: 21491

Calibration Date: 06-NOV-2014
Calibration Time: 09:43
Client Smp ID: AOI-5_PECO-B6_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	91773	45887	183546	83606	-8.90
67 Chlorobenzene-d5	40493	20247	80986	38300	-5.42
92 1,4-Dichlorobenze	36287	18144	72574	34974	-3.62

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	-0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	-0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106010.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

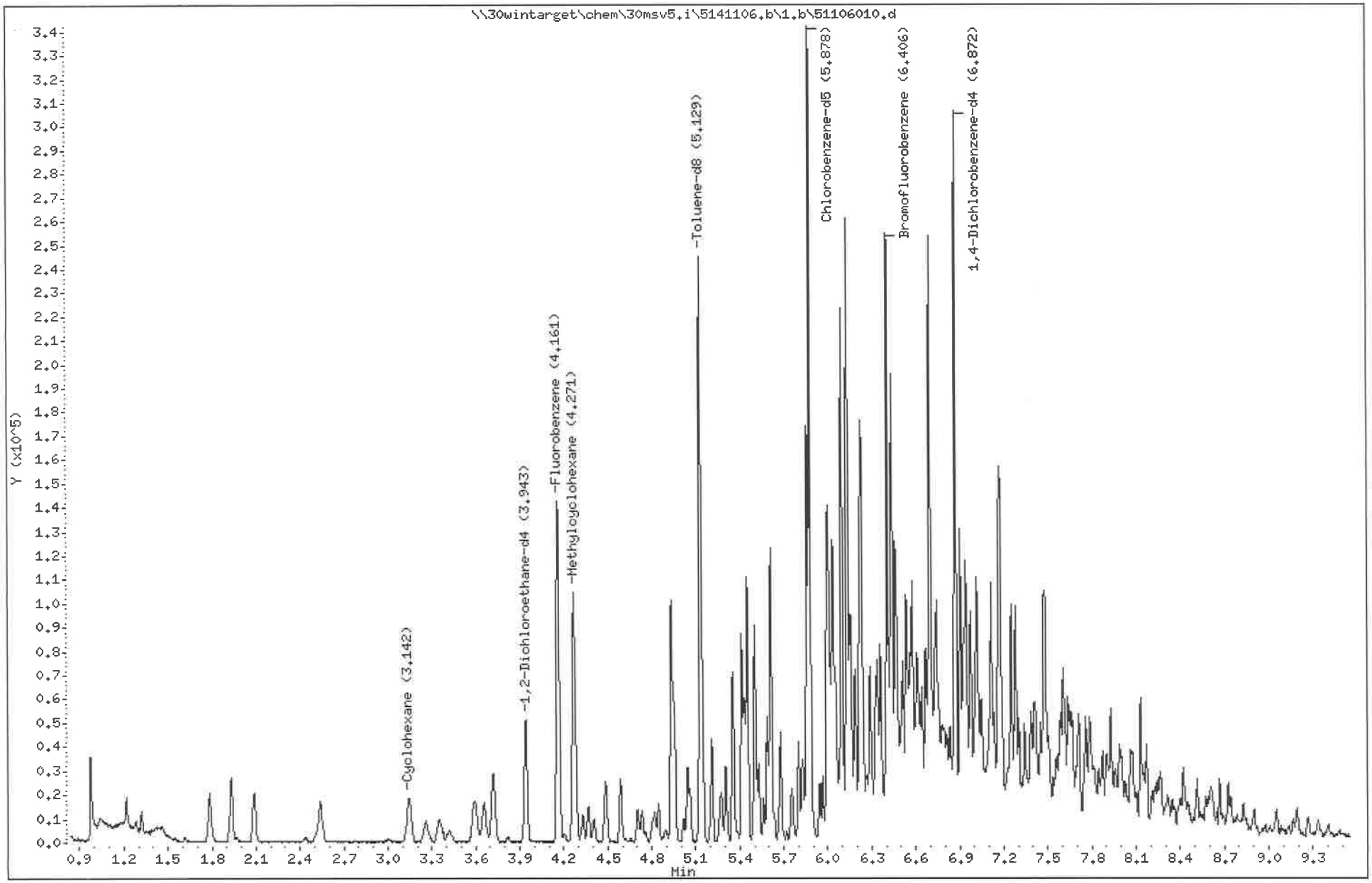
RECOVERY REPORT

Client Name: Sunoco_Langan
Client SDG: 30133009
Sample Matrix: SOLID
Fraction: VOA
Lab Smp Id: 30133009003
Client Smp ID: AOI-5_PECO-B6_12-14
Level: LOW
Operator: MAK
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: lcsaq.spk
Quant Type: ISTD
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Misc Info: 21491

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 42 1,2-Dichloroethane	29.0	29.2	100.78	83-138
$ 56 Toluene-d8	29.0	27.2	93.78	73-124
$ 77 Bromofluorobenzene	29.0	27.7	95.79	71-124
$ 158 1,2-Dichlorobenze	29.0	0.000	*	0-200

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106010.d
Date : 06-NOV-2014 12:18
Client ID: AOI-5_PECO-B6_12-14
Sample Info: 30133009003x500,,5.18
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: MAK
Column diameter: 0.18



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Date : 06-NOV-2014 12:18

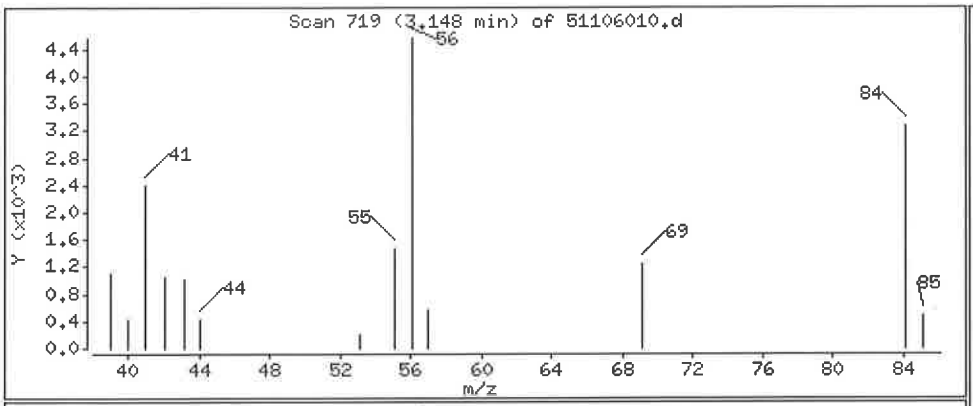
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

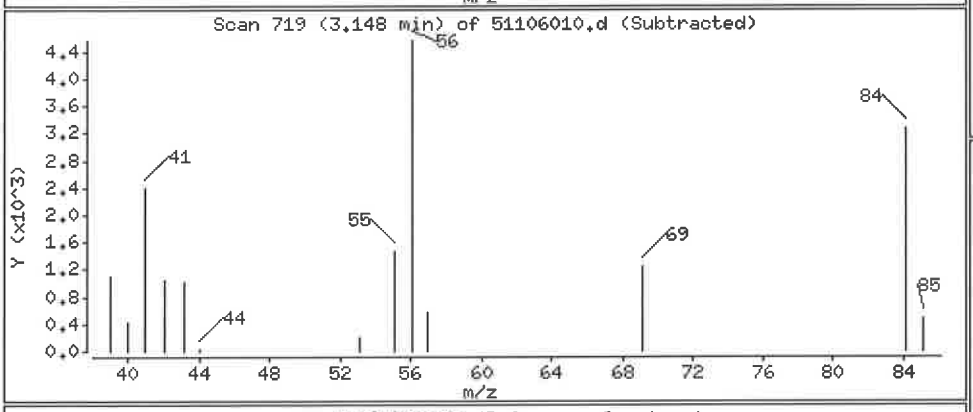
Sample Info: 30133009003x500,,5.18

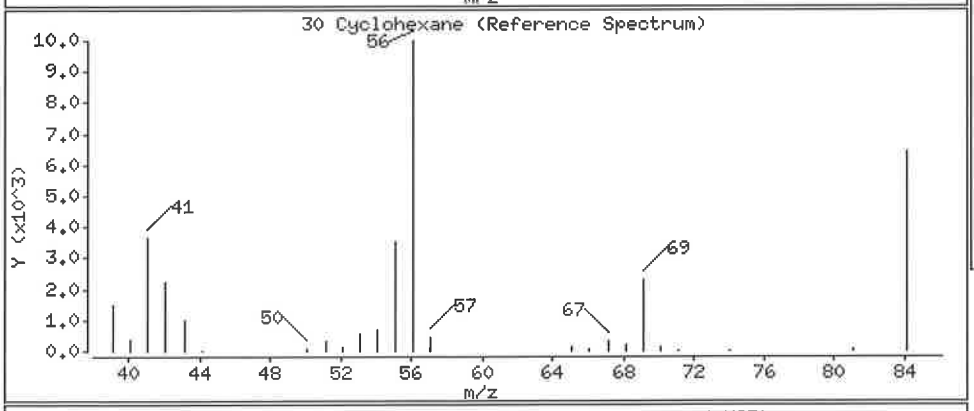
Purge Volume: 5.0 Operator: MAK

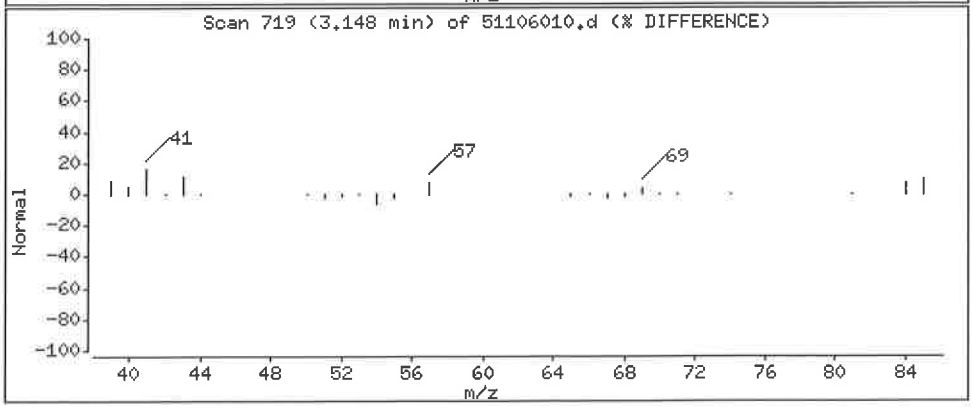
Column phase: Rtx-VMS Column diameter: 0.18

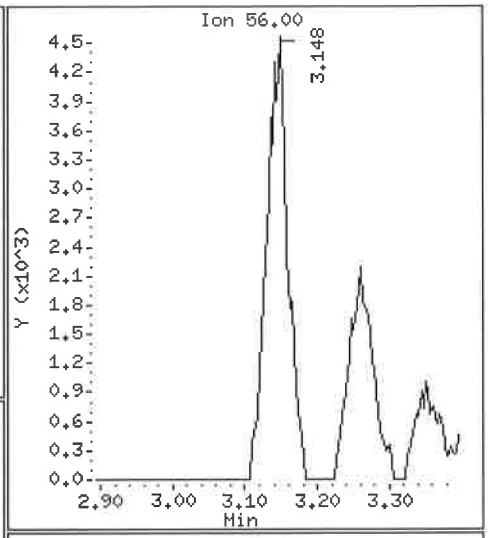
30 Cyclohexane Concentration: 3980 ug/kg

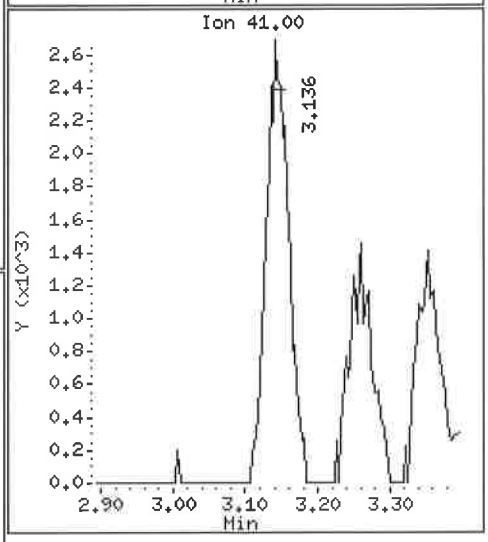












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Date : 06-NOV-2014 12:18

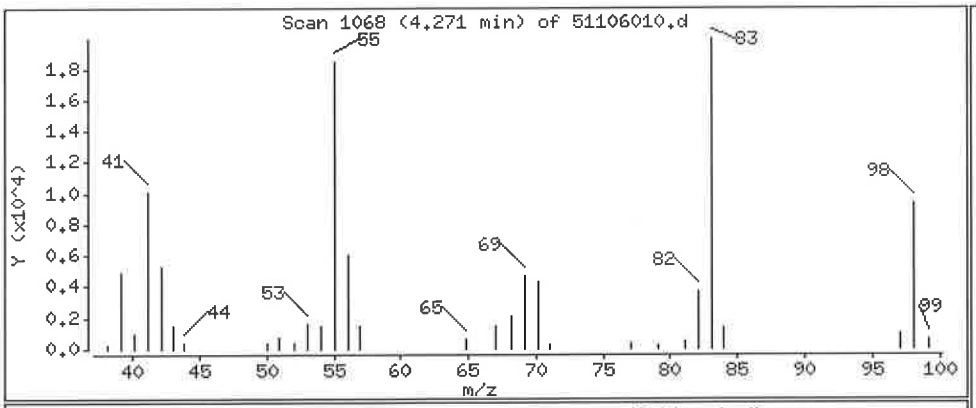
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30msv5.i

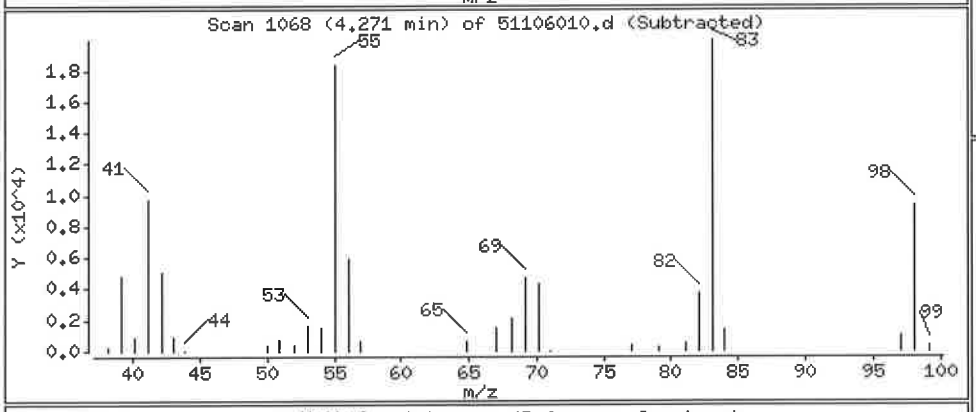
Sample Info: 30133009003x500,,5.18

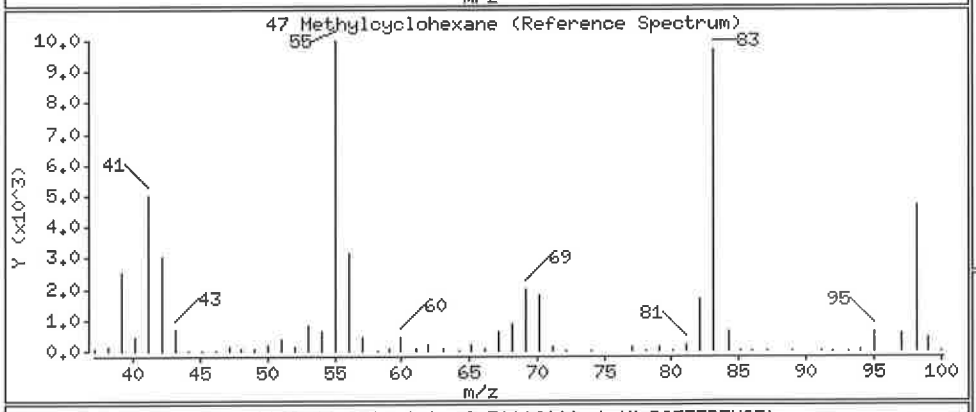
Purge Volume: 5.0 Operator: MAK

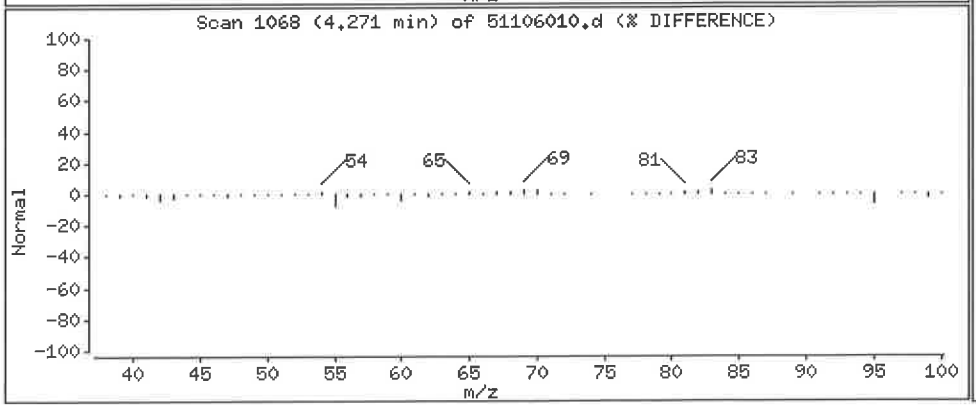
Column phase: Rtx-VMS Column diameter: 0.18

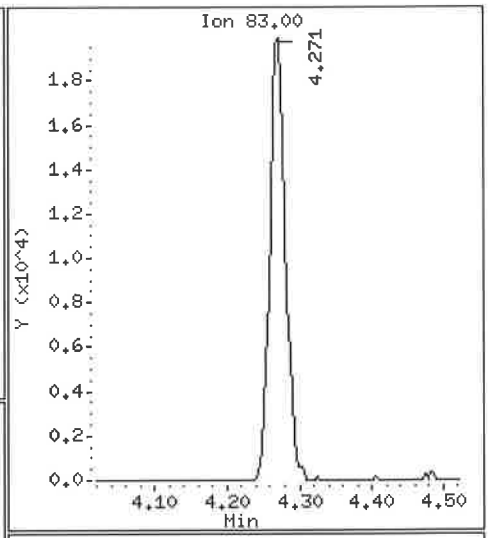
47 Methylcyclohexane Concentration: 13300 ug/kg

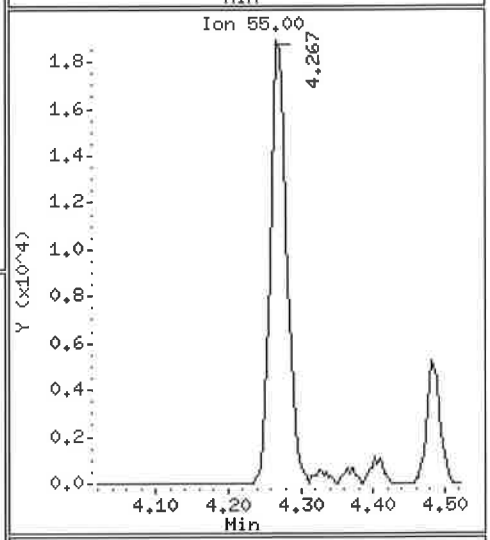


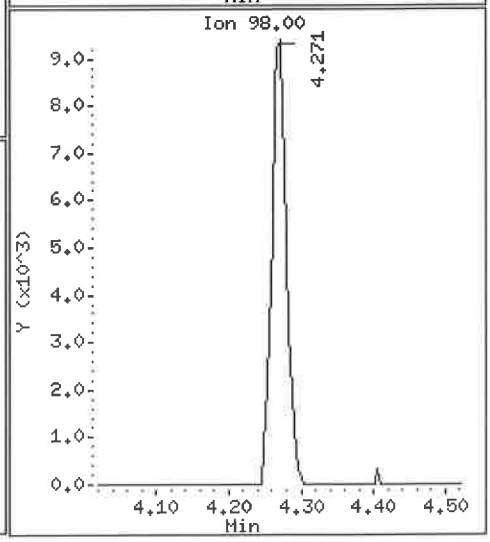












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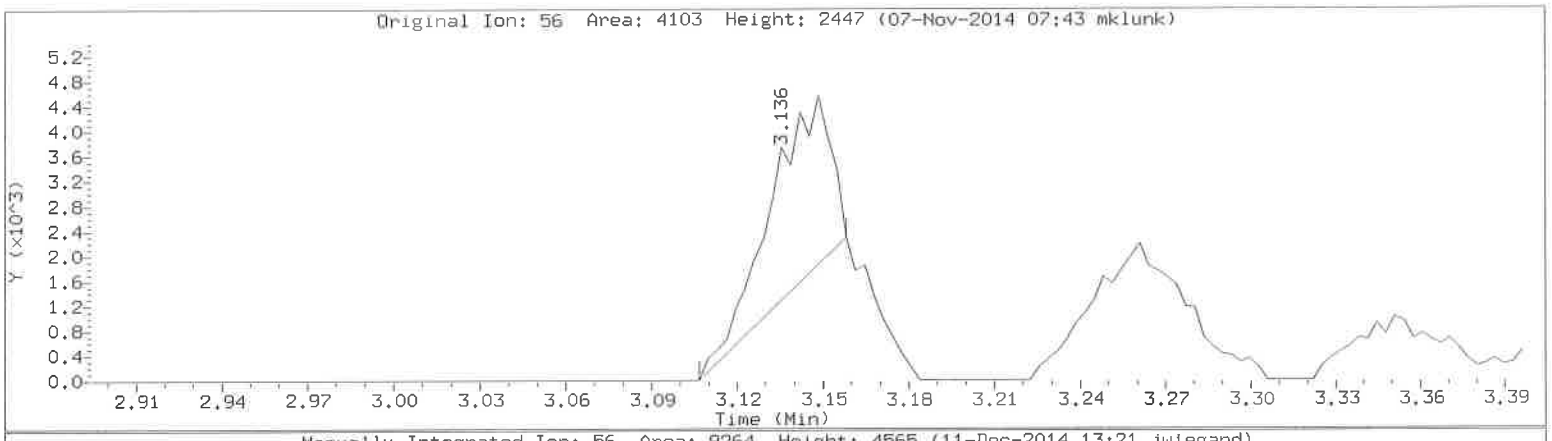
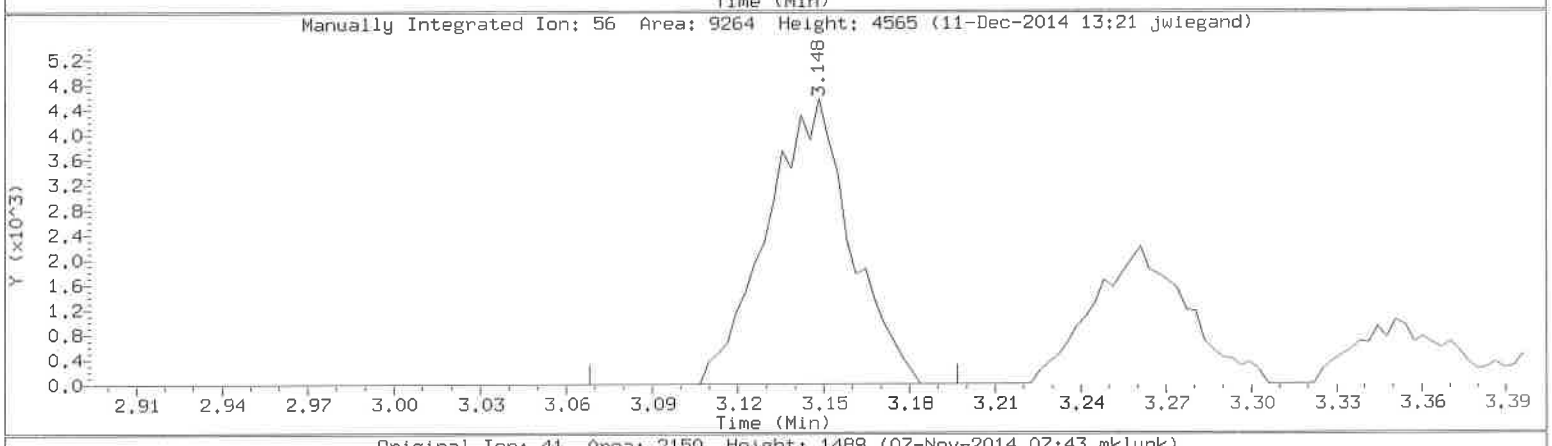
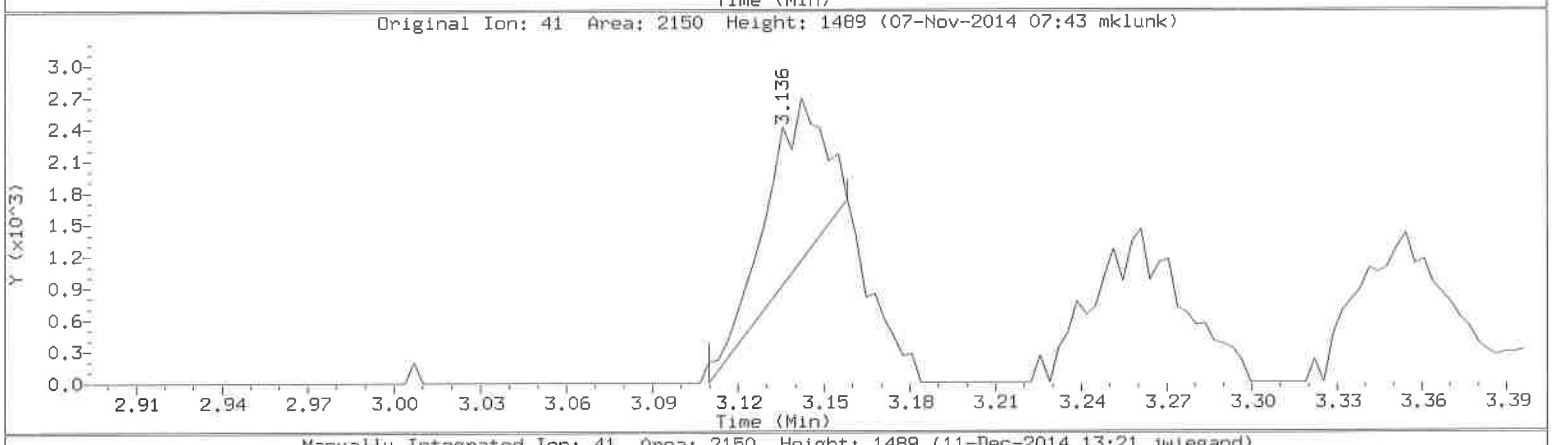
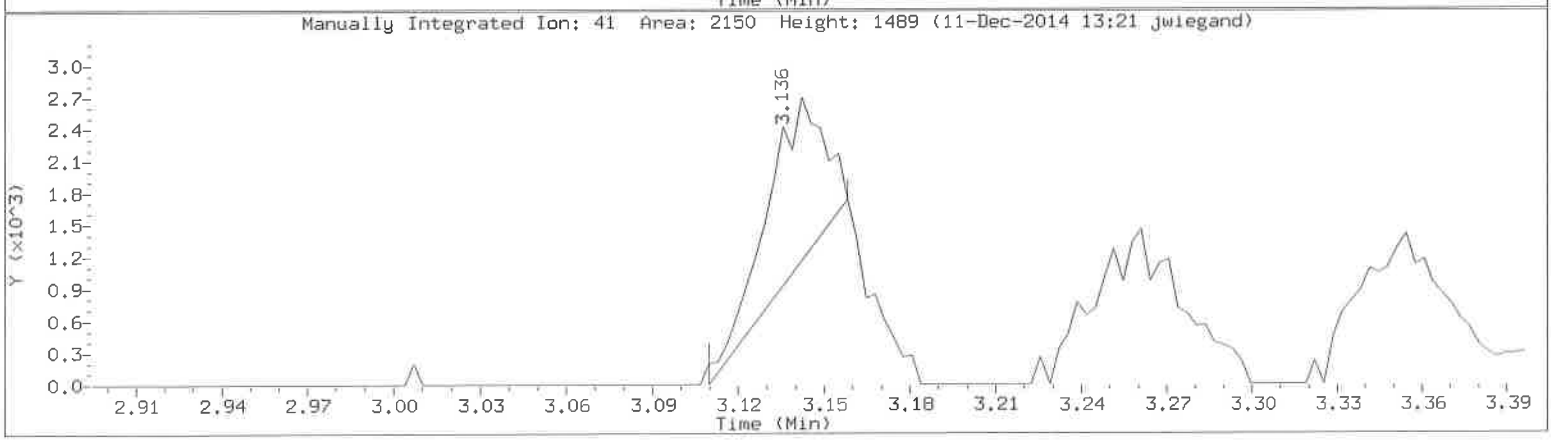
Injection Date: 06-NOV-2014 12:18
Instrument: 30msv5.i
Lab Sample ID: 30133009003

Compound: Cyclohexane
CAS Number: 110-82-7









FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date(s): 10/10/14 10/10/14

Column: RTX-VMS ID: 0.18 (mm) Calibration Time(s): 1045 1259

LAB FILE ID: RF5: 51010012 RF10: 51010013 RF20: 51010014
RF50: 51010015 RF2.5: 51010011

COMPOUND	RF5	RF10	RF20	RF50	RF2.5
Bromochloromethane	0.154	0.183	0.171	0.178	
Chloromethane	0.318	0.251	0.238	0.309	
Bromomethane	0.034	0.024	0.027	0.028	
Vinyl Chloride	0.145	0.133	0.114	0.134	
Chloroethane	0.064	0.071	0.068	0.063	
Methylene Chloride	2.290	2.567	3.091	3.139	
1,1-Dichloroethene	0.337	0.345	0.306	0.347	
1,1-Dichloroethane	0.513	0.574	0.537	0.541	
trans-1,2-Dichloroethene	0.407	0.435	0.393	0.401	
Chloroform	0.529	0.574	0.536	0.538	
1,2-Dichloroethane	0.416	0.482	0.446	0.450	
1,1,1-Trichloroethane	0.443	0.488	0.438	0.442	
Carbon Tetrachloride	0.437	0.449	0.380	0.389	
Bromodichloromethane	0.914	0.976	0.905	0.978	
1,2-Dichloropropane	0.656	0.734	0.678	0.740	
trans-1,3-Dichloropropene	0.943	1.042	0.997	1.057	
Trichloroethene	0.549	0.635	0.582	0.617	
Dibromochloromethane	0.621	0.677	0.639	0.681	
1,1,2-Trichloroethane	0.514	0.559	0.531	0.544	
Benzene	2.270	2.525	2.338	2.479	
cis-1,3-Dichloropropene	0.973	1.041	0.995	1.052	
Bromoform	0.393	0.445	0.421	0.432	
Tetrachloroethene	0.594	0.647	0.611	0.677	
1,1,2,2-Tetrachloroethane	0.706	0.816	0.799	0.830	
Toluene	2.358	2.556	2.415	2.594	
Chlorobenzene	1.511	1.695	1.606	1.681	
Ethylbenzene	0.857	0.931	0.848	0.880	
Styrene	1.531	1.644	1.598	1.666	
Trichlorofluoromethane	0.279	0.326	0.283	0.305	
m,p-Xylene	0.984	1.114	1.018	1.065	
cis-1,2-Dichloroethene	0.412	0.470	0.437	0.446	
o-Xylene	0.958	1.060	0.978	1.009	
1,2,3-Trichloropropane	0.204	0.244	0.251	0.254	
1,3-Dichlorobenzene	1.247	1.419	1.385	1.429	
1,4-Dichlorobenzene	1.252	1.420	1.392	1.407	
Dibromomethane	0.365	0.426	0.410	0.427	
1,2-Dichlorobenzene	1.204	1.315	1.291	1.293	

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date(s): 10/10/14 10/10/14

Column: RTX-VMS ID: 0.18 (mm) Calibration Time(s): 1045 1259

LAB FILE ID: RF5: 51010012 RF10: 51010013 RF20: 51010014
RF50: 51010015 RF2.5: 51010011

COMPOUND	RF5	RF10	RF20	RF50	RF2.5
Dichlorodifluoromethane	0.122	0.120	0.116	0.127	
2,2-Dichloropropane	0.457	0.468	0.421	0.406	
1,1-Dichloropropene	0.342	0.407	0.369	0.382	
1,3-Dichloropropane	0.912	0.964	0.933	0.969	
1,2-Dibromoethane,EDB	0.516	0.584	0.549	0.563	
1,1,1,2-Tetrachloroethane	0.523	0.557	0.550	0.586	
Isopropylbenzene,Cumene	2.760	2.870	2.714	2.914	
Bromobenzene	1.397	1.482	1.469	1.540	
n-Propylbenzene	3.398	3.678	3.559	3.779	
2-Chlorotoluene	0.600	0.704	0.708	0.730	
4-Chlorotoluene	0.662	0.717	0.724	0.773	
1,3,5-Trimethylbenzene	1.069	1.170	1.125	1.176	
tert-Butyl benzene	1.832	2.048	1.920	2.003	
1,2,4-Trimethylbenzene	1.023	1.097	1.091	1.106	
sec-Butyl benzene	2.769	3.054	2.768	2.881	
4-Isopropyl toluene	2.350	2.562	2.441	2.509	
n-Butyl benzene	2.231	2.441	2.255	2.374	
1,2-Dibromo-3-Chloropropane	0.132	0.142	0.141	0.140	
1,2,4-Trichlorobenzene	0.758	0.833	0.777	0.792	
Hexachlorobutadiene	0.465	0.464	0.406	0.428	
Naphthalene	1.641	1.794	1.781	1.714	
1,2,3-Trichlorobenzene	0.673	0.721	0.678	0.664	
Acrolein	0.025	0.034	0.033	0.037	
1,1,2-Trichlorotrifluoroetha	0.143	0.156	0.141	0.148	
Carbon Disulfide	0.476	0.508	0.433	0.448	
Acetone	19.760	30.032	36.925	40.244	
Acrylonitrile	0.099	0.103	0.098	0.083	
tert-butyl Methylether,MtB	0.741	0.796	0.776	0.735	
Vinyl Acetate	0.271	0.361	0.348	0.370	
2-ChloroethylVinylEther	0.182	0.218	0.199	0.214	
4-Methyl-2-Pentanone	0.528	0.654	0.617	0.638	
2-Hexanone	0.441	0.515	0.509	0.509	
2-Butanone	0.114	0.119	0.096	0.115	
Iodomethane	17.334	14.509	13.983	11.516	
DiisopropylEther	0.894	0.931	0.901	0.922	
Tetrahydrofuran	6.395	7.406	8.198	10.272	
trans 1,4-Dichloro-2-butene	0.257	0.278	0.292	0.295	

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date(s): 10/10/14 10/10/14

Column: RTX-VMS ID: 0.18 (mm) Calibration Time(s): 1045 1259

LAB FILE ID: RF5: 51010012 RF10: 51010013 RF20: 51010014
RF50: 51010015 RF2.5: 51010011

COMPOUND	RF5	RF10	RF20	RF50	RF2.5
Acetonitrile	0.018	0.018	0.017	0.018	
Allyl chloride	0.317	0.344	0.308	0.314	
Propionitrile	0.031	0.034	0.032	0.034	
Methacrylonitrile	0.175	0.164	0.164	0.170	
Isobutanol		0.059	0.056	0.056	
Methyl methacrylate	0.433	0.467	0.446	0.450	
1,4-Dioxane		397.885	241.536	202.604	
Ethyl methacrylate	0.532	0.657	0.612	0.635	
Chloroprene	0.426	0.453	0.403	0.419	
Methyl Acetate	0.053	0.066	0.062	0.062	
Cyclohexane	0.406	0.508	0.402	0.404	
Methylcyclohexane	0.807	0.879	0.794	0.865	
tert-Butyl Alcohol	0.029	0.030	0.030	0.030	
t-Butyl ethyl ether	0.877	0.976	0.933	0.931	
t-Amyl methyl ether	1.632	1.811	1.716	1.776	
Ethyl Ether	0.186	0.201	0.176	0.176	
Hexane	0.056	0.064	0.052	0.056	
Ethyl Acetate	0.196	0.214	0.211	0.218	
2-Nitropropane	0.191	0.224	0.213	0.225	
bis(2Chloro1methyl ethyl)eth	0.336	0.373	0.362	0.360	
Cyclohexanone	0.043	0.054	0.046	0.054	
2-methylnaphthalene	0.828	0.885	0.850	0.844	
Ethanol					
Toluene-d8	2.180	2.213	2.164	2.298	
Bromofluorobenzene	0.754	0.776	0.780	0.839	
1,2-Dichloroethane-d4	0.347	0.347	0.350	0.352	
1,2-Dichlorobenzene-d4					

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date(s): 10/10/14 10/10/14

Column: RTX-VMS ID: 0.18 (mm) Calibration Time(s): 1045 1259

LAB FILE ID: RF400: 51010017 RF200: RF100: 51010016

COMPOUND	RF400	RF200	RF100
Bromochloromethane	0.158		0.165
Chloromethane	0.276		0.277
Bromomethane	0.036		0.032
Vinyl Chloride	0.134		0.130
Chloroethane	0.046		0.057
Methylene Chloride	3.999		3.688
1,1-Dichloroethene	0.304		0.326
1,1-Dichloroethane	0.461		0.496
trans-1,2-Dichloroethene	0.332		0.360
Chloroform	0.480		0.503
1,2-Dichloroethane	0.410		0.425
1,1,1-Trichloroethane	0.387		0.416
Carbon Tetrachloride	0.356		0.372
Bromodichloromethane	1.054		0.978
1,2-Dichloropropane	0.754		0.715
trans-1,3-Dichloropropene	1.051		1.032
Trichloroethene	0.648		0.593
Dibromochloromethane	0.672		0.672
1,1,2-Trichloroethane	0.516		0.527
Benzene	2.620		2.398
cis-1,3-Dichloropropene	1.085		1.031
Bromoform	0.386		0.422
Tetrachloroethene	0.654		0.643
1,1,2,2-Tetrachloroethane	0.837		0.805
Toluene	2.554		2.473
Chlorobenzene	1.520		1.576
Ethylbenzene	0.776		0.812
Styrene	1.378		1.534
Trichlorofluoromethane	0.270		0.279
m,p-Xylene	0.897		0.979
cis-1,2-Dichloroethene	0.400		0.408
o-Xylene	0.873		0.963
1,2,3-Trichloropropane	0.251		0.240
1,3-Dichlorobenzene	1.327		1.334
1,4-Dichlorobenzene	1.321		1.333
Dibromomethane	0.448		0.426
1,2-Dichlorobenzene	1.202		1.207

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date(s): 10/10/14 10/10/14

Column: RTX-VMS ID: 0.18 (mm) Calibration Time(s): 1045 1259

LAB FILE ID: RF400: 51010017 RF200: RF100: 51010016

COMPOUND	RF400	RF200	RF100
Dichlorodifluoromethane	0.117		0.121
2,2-Dichloropropane	0.339		0.375
1,1-Dichloropropene	0.363		0.362
1,3-Dichloropropane	0.931		0.927
1,2-Dibromoethane,EDB	0.539		0.554
1,1,1,2-Tetrachloroethane	0.545		0.562
Isopropylbenzene,Cumene	3.148		2.824
Bromobenzene	1.554		1.490
n-Propylbenzene	3.856		3.615
2-Chlorotoluene	0.725		0.702
4-Chlorotoluene	0.750		0.733
1,3,5-Trimethylbenzene	1.173		1.120
tert-Butyl benzene	2.060		1.893
1,2,4-Trimethylbenzene	1.061		1.067
sec-Butyl benzene	3.016		2.765
4-Isopropyl toluene	2.504		2.346
n-Butyl benzene	2.327		2.205
1,2-Dibromo-3-Chloropropane	0.136		0.134
1,2,4-Trichlorobenzene	0.698		0.697
Hexachlorobutadiene	0.448		0.394
Naphthalene	1.528		1.587
1,2,3-Trichlorobenzene	0.588		0.604
Acrolein	0.030		0.033
1,1,2-Trichlorotrifluoroetha	0.122		0.132
Carbon Disulfide	0.428		0.431
Acetone	61.157		47.769
Acrylonitrile	0.079		0.082
tert-butyl Methylether,MtB	0.597		0.680
Vinyl Acetate	0.344		0.351
2-ChloroethylVinylEther	0.226		0.213
4-Methyl-2-Pentanone	0.592		0.629
2-Hexanone	0.458		0.484
2-Butanone	0.105		0.112
Iodomethane	9.419		11.594
DiisopropylEther	0.788		0.853
Tetrahydrofuran	12.408		11.452
trans 1,4-Dichloro-2-butene	0.304		0.287

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date(s): 10/10/14 10/10/14

Column: RTX-VMS ID: 0.18 (mm) Calibration Time(s): 1045 1259

LAB FILE ID: RF400: 51010017 RF200: RF100: 51010016

COMPOUND	RF400	RF200	RF100
Acetonitrile	0.017		0.018
Allyl chloride	0.241		0.282
Propionitrile	0.028		0.031
Methacrylonitrile	0.153		0.159
Isobutanol	0.048		0.052
Methyl methacrylate	0.444		0.435
1,4-Dioxane	130.647		179.566
Ethyl methacrylate	0.579		0.613
Chloroprene	0.385		0.392
Methyl Acetate	0.054		0.058
Cyclohexane	0.330		0.372
Methylcyclohexane	0.915		0.839
tert-Butyl Alcohol	0.025		0.027
t-Butyl ethyl ether	0.792		0.874
t-Amyl methyl ether	1.823		1.777
Ethyl Ether	0.147		0.161
Hexane	0.047		0.047
Ethyl Acetate	0.208		0.214
2-Nitropropane	0.225		0.220
bis(2Chloro1methyl ethyl)eth	0.357		0.352
Cyclohexanone	0.064		0.051
2-methylnaphthalene	0.778		0.775
Ethanol			
Toluene-d8	2.556		2.336
Bromofluorobenzene	0.940		0.850
1,2-Dichloroethane-d4	0.358		0.346
1,2-Dichlorobenzene-d4			

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date(s): 10/10/14 10/10/14

Column: RTX-VMS ID: 0.18 (mm) Calibration Time(s): 1045 1259

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Bromochloromethane	AVRG		0.16823164		6.8
Chloromethane	AVRG		0.27809766		11.2
Bromomethane	AVRG		3.016e-002		14.8
Vinyl Chloride	AVRG		0.13165756		7.7
Chloroethane	AVRG		6.157e-002		14.5
Methylene Chloride	LINR	0.00000000	0.25254343		0.997
1,1-Dichloroethene	AVRG		0.32765560		5.8
1,1-Dichloroethane	AVRG		0.52014305		7.6
trans-1,2-Dichloroethene	AVRG		0.38796458		9.4
Chloroform	AVRG		0.52681942		6.1
1,2-Dichloroethane	AVRG		0.43827884		6.0
1,1,1-Trichloroethane	AVRG		0.43592513		7.7
Carbon Tetrachloride	AVRG		0.39719275		9.4
Bromodichloromethane	AVRG		0.96749212		5.6
1,2-Dichloropropane	AVRG		0.71303951		5.4
trans-1,3-Dichloropropene	AVRG		1.02037403		4.2
Trichloroethene	AVRG		0.60401545		6.0
Dibromochloromethane	AVRG		0.66050609		3.7
1,1,2-Trichloroethane	AVRG		0.53173790		3.3
Benzene	AVRG		2.43838240		5.3
cis-1,3-Dichloropropene	AVRG		1.02962926		3.9
Bromoform	AVRG		0.41661804		5.4
Tetrachloroethene	AVRG		0.63779934		4.7
1,1,2,2-Tetrachloroethane	AVRG		0.79916015		6.0
Toluene	AVRG		2.49173065		3.7
Chlorobenzene	AVRG		1.59823461		4.9
Ethylbenzene	AVRG		0.85046539		6.3
Styrene	AVRG		1.55869269		6.7
Trichlorofluoromethane	AVRG		0.29006840		7.3
m,p-Xylene	AVRG		1.00939254		7.5
cis-1,2-Dichloroethene	AVRG		0.42897310		6.3
o-Xylene	AVRG		0.97382654		6.4
1,2,3-Trichloropropane	AVRG		0.24064162		7.8
1,3-Dichlorobenzene	AVRG		1.35706459		5.0
1,4-Dichlorobenzene	AVRG		1.35428670		4.7
Dibromomethane	AVRG		0.41712553		6.8
1,2-Dichlorobenzene	AVRG		1.25224547		4.2

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date(s): 10/10/14 10/10/14

Column: RTX-VMS ID: 0.18 (mm) Calibration Time(s): 1045 1259

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Dichlorodifluoromethane	AVRG		0.12068128		3.1
2,2-Dichloropropane	AVRG		0.41108807		11.9
1,1-Dichloropropene	AVRG		0.37081230		5.9
1,3-Dichloropropane	AVRG		0.93950648		2.4
1,2-Dibromoethane,EDB	AVRG		0.55111295		4.1
1,1,1,2-Tetrachloroethane	AVRG		0.55405609		3.7
Isopropylbenzene,Cumene	AVRG		2.87173263		5.3
Bromobenzene	AVRG		1.48843054		3.8
n-Propylbenzene	AVRG		3.64766287		4.5
2-Chlorotoluene	AVRG		0.69489415		6.9
4-Chlorotoluene	AVRG		0.72667008		5.2
1,3,5-Trimethylbenzene	AVRG		1.13913135		3.7
tert-Butyl benzene	AVRG		1.95945311		4.7
1,2,4-Trimethylbenzene	AVRG		1.07402859		2.8
sec-Butyl benzene	AVRG		2.87545197		4.6
4-Isopropyl toluene	AVRG		2.45187355		3.6
n-Butyl benzene	AVRG		2.30562682		4.0
1,2-Dibromo-3-Chloropropane	AVRG		0.13768755		3.1
1,2,4-Trichlorobenzene	AVRG		0.75944053		7.1
Hexachlorobutadiene	AVRG		0.43418500		6.9
Naphthalene	AVRG		1.67413896		6.4
1,2,3-Trichlorobenzene	AVRG		0.65498553		7.6
Acrolein	AVRG		3.205e-002		12.8
1,1,2-Trichlorotrifluoroetha	AVRG		0.14019668		8.6
Carbon Disulfide	AVRG		0.45405087		7.0
Acetone	2ORDR	0.00000000	2.378e-002	-5.58e-004	0.999
Acrylonitrile	AVRG		9.076e-002		11.5
tert-butyl Methylether,MtB	AVRG		0.72096229		10.1
Vinyl Acetate	AVRG		0.34094377		10.4
2-ChloroethylVinylEther	AVRG		0.20877422		7.5
4-Methyl-2-Pentanone	AVRG		0.60991507		7.4
2-Hexanone	AVRG		0.48616934		6.4
2-Butanone	AVRG		0.11019135		7.7
Iodomethane	2ORDR	0.00000000	8.002e-002	1.961e-003	1.000
DiisopropylEther	AVRG		0.88154248		6.0
Tetrahydrofuran	LINR	0.00000000	8.136e-002		0.997
trans 1,4-Dichloro-2-butene	AVRG		0.28565078		5.8

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date(s): 10/10/14 10/10/14

Column: RTX-VMS ID: 0.18 (mm) Calibration Time(s): 1045 1259

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acetonitrile	AVRG		1.771e-002		2.6
Allyl chloride	AVRG		0.30090547		11.8
Propionitrile	AVRG		3.164e-002		6.2
Methacrylonitrile	AVRG		0.16417718		4.7
Isobutanol	AVRG		5.456e-002		7.8
Methyl methacrylate	AVRG		0.44582734		2.8
1,4-Dioxane	LINR	5.07707010	7.886e-003		0.997
Ethyl methacrylate	AVRG		0.60465035		7.2
Chloroprene	AVRG		0.41313972		6.0
Methyl Acetate	AVRG		5.936e-002		8.2
Cyclohexane	AVRG		0.40356027		14.6
Methylcyclohexane	AVRG		0.84990805		5.4
tert-Butyl Alcohol	AVRG		2.846e-002		7.6
t-Butyl ethyl ether	AVRG		0.89723977		7.2
t-Amyl methyl ether	AVRG		1.75592933		4.1
Ethyl Ether	AVRG		0.17463618		10.9
Hexane	AVRG		5.374e-002		11.5
Ethyl Acetate	AVRG		0.21029312		3.7
2-Nitropropane	AVRG		0.21640742		6.2
bis(2Chloro1methyl ethyl)eth	AVRG		0.35662613		3.4
Cyclohexanone	AVRG		5.215e-002		14.2
2-methylnaphthalene	AVRG		0.82677831		5.2
Ethanol	AVRG				
Toluene-d8	AVRG		2.29130015		6.4
Bromofluorobenzene	AVRG		0.82325122		8.3
1,2-Dichloroethane-d4	AVRG		0.35019333		1.3
1,2-Dichlorobenzene-d4	AVRG				

FORM VI VOA

Report Date : 11-Dec-2014 12:50

Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-OCT-2014 10:45
End Cal Date : 10-OCT-2014 12:59
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Last Edit : 13-Oct-2014 08:41 mklunk

Calibration File Names:
Level 1: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010012.d
Level 2: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010013.d
Level 3: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010014.d
Level 4: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010015.d
Level 5: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010011.d
Level 6: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010017.d
Level 8: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010016.d

Compound	5.0000 Level 1 / 100.0000 Level 8	10.0000 Level 2	20.0000 Level 3	50.0000 Level 4	2.5000 Level 5	400.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
1 Dichlorodifluoromethane	0.12233	0.12041	0.11610	0.12662	+++++	0.11721					
	0.12141						AVRG		0.12068		3.13552
2 Chloromethane	0.31788	0.25086	0.23823	0.30868	+++++	0.27563					
	0.27731						AVRG		0.27810		11.20629
3 Vinyl Chloride	0.14494	0.13347	0.11362	0.13375	+++++	0.13419					
	0.12998						AVRG		0.13166		7.73570
4 Bromomethane	0.03417	0.02406	0.02725	0.02813	+++++	0.03574					
	0.03162						AVRG		0.03016		14.75896

Report Date : 11-Dec-2014 12:50

Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-OCT-2014 10:45
End Cal Date : 10-OCT-2014 12:59
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Last Edit : 13-Oct-2014 08:41 mklunk

Compound	5.0000 Level 1 / 100.0000 Level 8	10.0000 Level 2	20.0000 Level 3	50.0000 Level 4	2.5000 Level 5	400.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
5 Chloroethane	0.06438	0.07073	0.06778	0.06343	+++++	0.04588					
	0.05720						AVRG		0.06157		14.51144
6 Trichlorofluoromethane	0.27877	0.32586	0.28264	0.30460	+++++	0.26959					
	0.27894						AVRG		0.29007		7.26118
7 Ethyl Ether	0.18632	0.20121	0.17634	0.17620	+++++	0.14665					
	0.16109						AVRG		0.17464		10.90883
8 1,1-Dichloroethene	0.33665	0.34496	0.30646	0.34737	+++++	0.30392					
	0.32658						AVRG		0.32766		5.76322
159 Ethanol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.00143		102 <-
9 Carbon Disulfide	0.47601	0.50797	0.43282	0.44764	+++++	0.42856					
	0.43130						AVRG		0.45405		6.99850
10 1,1,2-Trichlorotrifluoroethan	0.14331	0.15600	0.14077	0.14764	+++++	0.12176					
	0.13169						AVRG		0.14020		8.60394

Report Date : 11-Dec-2014 12:50

Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-OCT-2014 10:45
End Cal Date : 10-OCT-2014 12:59
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Last Edit : 13-Oct-2014 08:41 mklunk

Compound	5.0000 Level 1 / 100.0000 Level 8	10.0000 Level 2	20.0000 Level 3	50.0000 Level 4	2.5000 Level 5	400.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
11 Iodomethane	888	1985	4270	12643	+++++	119043					
	26339						QUAD	0.000e+000	0.08002	0.00196	0.99994
12 Acrolein	0.02495	0.03458	0.03288	0.03674	+++++	0.03007					
	0.03311						AVRG		0.03205		12.83062
13 Allyl chloride	0.31692	0.34371	0.30840	0.31417	+++++	0.24066					
	0.28158						AVRG		0.30091		11.81950
14 Methylene Chloride	6721	11220	19318	46391	+++++	280393					
	82807						LINR	0.000e+000	3.95972		0.99714
15 Acetone	779	959	1617	3618	+++++	18335					
	6393						QUAD	0.000e+000	0.02378	-0.00056	0.99909
16 trans-1,2-Dichloroethene	0.40675	0.43478	0.39274	0.40149	+++++	0.33187					
	0.36015						AVRG		0.38796		9.41458
17 Methyl Acetate	0.05327	0.06552	0.06254	0.06209	+++++	0.05432					
	0.05845						AVRG		0.05936		8.21246

Report Date : 11-Dec-2014 12:50

Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-OCT-2014 10:45
End Cal Date : 10-OCT-2014 12:59
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Last Edit : 13-Oct-2014 08:41 mklunk

Compound	5.0000 Level 1 / 100.0000 Level 8	10.0000 Level 2	20.0000 Level 3	50.0000 Level 4	2.5000 Level 5	400.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
18 Hexane	0.05594	0.06364	0.05215	0.05599	+++++	0.04724					
	0.04745						AVRG		0.05374		11.54132
19 tert-butyl Methylether,MtB	0.74133	0.79581	0.77653	0.73513	+++++	0.59674					
	0.68024						AVRG		0.72096		10.07800
21 tert-Butyl Alcohol	0.02899	0.02974	0.03010	0.03006	+++++	0.02467					
	0.02721						AVRG		0.02846		7.55280
20 Acetonitrile	0.01758	0.01826	0.01702	0.01777	+++++	0.01745					
	0.01818						AVRG		0.01771		2.63967
22 DiisopropylEther	0.89432	0.93105	0.90115	0.92205	+++++	0.78770					
	0.85297						AVRG		0.88154		6.05866
23 Chloroprene	0.42611	0.45294	0.40274	0.41922	+++++	0.38524					
	0.39258						AVRG		0.41314		6.02549
25 Acrylonitrile	0.09875	0.10337	0.09808	0.08338	+++++	0.07888					
	0.08211						AVRG		0.09076		11.52170

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Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-OCT-2014 10:45
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Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Last Edit : 13-Oct-2014 08:41 mklunk

Compound	5.0000 Level 1 / 100.0000 Level 8	10.0000 Level 2	20.0000 Level 3	50.0000 Level 4	2.5000 Level 5	400.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
24 1,1-Dichloroethane	0.51343	0.57353	0.53665	0.54086	+++++	0.46066					
	0.49574						AVRG		0.52014		7.55955
27 t-Butyl ethyl ether	0.87743	0.97602	0.93311	0.93117	+++++	0.79172					
	0.87400						AVRG		0.89724		7.17318
26 Vinyl Acetate	0.27149	0.36082	0.34801	0.37036	+++++	0.34420					
	0.35077						AVRG		0.34094		10.36256
28 cis-1,2-Dichloroethene	0.41169	0.47009	0.43729	0.44648	+++++	0.39969					
	0.40860						AVRG		0.42897		6.28837
29 2,2-Dichloropropane	0.45743	0.46770	0.42107	0.40642	+++++	0.33877					
	0.37515						AVRG		0.41109		11.91440
30 Cyclohexane	0.40630	0.50780	0.40169	0.40380	+++++	0.33019					
	0.37158						AVRG		0.40356		14.56843
31 Bromochloromethane	0.15423	0.18347	0.17132	0.17754	+++++	0.15768					
	0.16515						AVRG		0.16823		6.75258

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32 Chloroform	0.52876	0.57450	0.53631	0.53809	+++++	0.48019					
	0.50307						AVRG		0.52682		6.14060
33 Carbon Tetrachloride	0.43722	0.44933	0.37970	0.38912	+++++	0.35621					
	0.37158						AVRG		0.39719		9.43870
36 Ethyl Acetate	0.19626	0.21416	0.21124	0.21850	+++++	0.20781					
	0.21378						AVRG		0.21029		3.67396
35 Tetrahydrofuran	2407	3889	7283	14175	+++++	90367					
	26667						LINR	0.000e+000	12.29118		0.99699
34 1,1,1-Trichloroethane	0.44307	0.48850	0.43858	0.44250	+++++	0.38684					
	0.41605						AVRG		0.43593		7.72412
37 1,1-Dichloropropene	0.34205	0.40725	0.36918	0.38168	+++++	0.36277					
	0.36195						AVRG		0.37081		5.93175
38 2-Butanone	0.11454	0.11882	0.09570	0.11516	+++++	0.10494					
	0.11199						AVRG		0.11019		7.68788

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Compound	5.0000 Level 1 / 100.0000 Level 8	10.0000 Level 2	20.0000 Level 3	50.0000 Level 4	2.5000 Level 5	400.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
39 Benzene	2.26969	2.52493	2.33771	2.47949	+++++	2.62019					
	2.39827						AVRG		2.43838		5.26583
40 Propionitrile	0.03079	0.03371	0.03159	0.03374	+++++	0.02851					
	0.03149						AVRG		0.03164		6.20410
41 Methacrylonitrile	0.17482	0.16423	0.16412	0.16978	+++++	0.15317					
	0.15894						AVRG		0.16418		4.66590
43 t-Amyl methyl ether	1.63156	1.81127	1.71563	1.77638	+++++	1.82331					
	1.77742						AVRG		1.75593		4.07303
46 Isobutanol	+++++	0.05949	0.05638	0.05621	+++++	0.04846					
	0.05224						AVRG		0.05456		7.82761
44 1,2-Dichloroethane	0.41656	0.48176	0.44587	0.45034	+++++	0.41040					
	0.42474						AVRG		0.43828		6.05890
47 Methylcyclohexane	0.80731	0.87883	0.79359	0.86481	+++++	0.91545					
	0.83946						AVRG		0.84991		5.37890

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48 Trichloroethene	0.54950	0.63512	0.58188	0.61671	+++++	0.64800						
	0.59288						AVRG		0.60402		6.03778	
49 Dibromomethane	0.36515	0.42625	0.41000	0.42710	+++++	0.44789						
	0.42637						AVRG		0.41713		6.75197	
50 1,2-Dichloropropane	0.65639	0.73371	0.67809	0.74029	+++++	0.75453						
	0.71523						AVRG		0.71304		5.36829	
51 Bromodichloromethane	0.91421	0.97608	0.90486	0.97821	+++++	1.05354						
	0.97806						AVRG		0.96749		5.55971	
52 Methyl methacrylate	0.43288	0.46713	0.44658	0.44955	+++++	0.44386						
	0.43496						AVRG		0.44583		2.76117	
53 1,4-Dioxane	+++++	290	942	2528	+++++	20253						
	5375						LINR	5.07707	127		0.99691	<-
55 2-ChloroethylVinylEther	0.18213	0.21792	0.19912	0.21374	+++++	0.22638						
	0.21335						AVRG		0.20877		7.54980	

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54 cis-1,3-Dichloropropene	0.97296	1.04117	0.99547	1.05169	+++++	1.08535					
	1.03114						AVRG		1.02963		3.91046
57 Toluene	2.35789	2.55599	2.41472	2.59443	+++++	2.55440					
	2.47296						AVRG		2.49173		3.71307
58 2-Nitropropane	0.19085	0.22418	0.21277	0.22501	+++++	0.22506					
	0.22057						AVRG		0.21641		6.17552
59 Tetrachloroethene	0.59440	0.64660	0.61106	0.67738	+++++	0.65401					
	0.64334						AVRG		0.63780		4.72241
60 4-Methyl-2-Pentanone	0.52844	0.65454	0.61689	0.63849	+++++	0.59190					
	0.62922						AVRG		0.60992		7.40240
61 trans-1,3-Dichloropropene	0.94277	1.04227	0.99730	1.05675	+++++	1.05073					
	1.03243						AVRG		1.02037		4.25467
63 Ethyl methacrylate	0.53256	0.65682	0.61166	0.63500	+++++	0.57882					
	0.61303						AVRG		0.60465		7.25665

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62 1,1,2-Trichloroethane	0.51401	0.55950	0.53103	0.54352	+++++	0.51563					
	0.52675						AVRG		0.53174		3.26649
64 Dibromochloromethane	0.62106	0.67703	0.63882	0.68146	+++++	0.67212					
	0.67255						AVRG		0.66051		3.72002
65 1,3-Dichloropropane	0.91215	0.96381	0.93340	0.96899	+++++	0.93130					
	0.92738						AVRG		0.93951		2.36093
66 1,2-Dibromoethane,EDB	0.51637	0.58434	0.54933	0.56292	+++++	0.53938					
	0.55433						AVRG		0.55111		4.13917
70 2-Hexanone	0.44083	0.51540	0.50932	0.50911	+++++	0.45785					
	0.48452						AVRG		0.48617		6.35722
68 Chlorobenzene	1.51067	1.69547	1.60649	1.68072	+++++	1.52048					
	1.57557						AVRG		1.59823		4.89113
69 Ethylbenzene	0.85708	0.93071	0.84750	0.88009	+++++	0.77576					
	0.81164						AVRG		0.85047		6.32274

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71 1,1,1,2-Tetrachloroethane	0.52344	0.55745	0.55042	0.58570	+++++	0.54514					
	0.56219						AVRG		0.55406		3.70718
72 m,p-Xylene	0.98371	1.11416	1.01774	1.06510	+++++	0.89693					
	0.97872						AVRG		1.00939		7.46627
73 o-Xylene	0.95809	1.06059	0.97854	1.00930	+++++	0.87339					
	0.96306						AVRG		0.97383		6.37289
74 Styrene	1.53129	1.64438	1.59823	1.66645	+++++	1.37814					
	1.53367						AVRG		1.55869		6.69774
75 Bromoform	0.39328	0.44519	0.42117	0.43177	+++++	0.38653					
	0.42177						AVRG		0.41662		5.41365
76 Isopropylbenzene,Cumene	2.76059	2.86957	2.71397	2.91362	+++++	3.14860					
	2.82405						AVRG		2.87173		5.34792
79 n-Propylbenzene	3.39832	3.67824	3.55941	3.77892	+++++	3.85647					
	3.61462						AVRG		3.64766		4.46815

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78 Bromobenzene	1.39664	1.48163	1.46871	1.53992	+++++	1.55404					
	1.48965						AVRG		1.48843		3.77894
80 1,1,2,2-Tetrachloroethane	0.70653	0.81656	0.79903	0.83029	+++++	0.83709					
	0.80547						AVRG		0.79916		5.95648
81 2-Chlorotoluene	0.59967	0.70441	0.70757	0.73050	+++++	0.72504					
	0.70217						AVRG		0.69489		6.91577
82 1,3,5-Trimethylbenzene	1.06923	1.17050	1.12514	1.17632	+++++	1.17314					
	1.12046						AVRG		1.13913		3.71476
83 1,2,3-Trichloropropane	0.20380	0.24422	0.25078	0.25354	+++++	0.25105					
	0.24046						AVRG		0.24064		7.77024
84 trans 1,4-Dichloro-2-butene	0.25682	0.27828	0.29227	0.29468	+++++	0.30448					
	0.28737						AVRG		0.28565		5.79189
85 Cyclohexanone	0.04346	0.05410	0.04570	0.05413	+++++	0.06432					
	0.05117						AVRG		0.05215		14.19322

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86 4-Chlorotoluene	0.66213	0.71707	0.72392	0.77322	+++++	0.75046					
	0.73323						AVRG		0.72667		5.16404
87 tert-Butyl benzene	1.83253	2.04772	1.91999	2.00274	+++++	2.06060					
	1.89313						AVRG		1.95945		4.67520
88 1,2,4-Trimethylbenzene	1.02288	1.09709	1.09069	1.10585	+++++	1.06071					
	1.06695						AVRG		1.07403		2.84429
89 sec-Butyl benzene	2.76888	3.05425	2.76790	2.88071	+++++	3.01579					
	2.76519						AVRG		2.87545		4.58147
90 4-Isopropyl toluene	2.35007	2.56217	2.44068	2.50910	+++++	2.50371					
	2.34551						AVRG		2.45187		3.64472
91 1,3-Dichlorobenzene	1.24717	1.41897	1.38533	1.42941	+++++	1.32694					
	1.33457						AVRG		1.35706		5.03631
93 1,4-Dichlorobenzene	1.25221	1.41983	1.39223	1.40664	+++++	1.32149					
	1.33331						AVRG		1.35429		4.71804

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94 n-Butyl benzene	2.23069	2.44127	2.25547	2.37353	+++++	2.32748					
	2.20533						AVRG		2.30563		3.95986
95 1,2-Dichlorobenzene	1.20439	1.31540	1.29119	1.29321	+++++	1.20257					
	1.20671						AVRG		1.25225		4.22783
96 bis(2Chloro1methyl ethyl)eth	0.33619	0.37292	0.36229	0.35989	+++++	0.35666					
	0.35181						AVRG		0.35663		3.43204
97 1,2-Dibromo-3-Chloropropane	0.13174	0.14239	0.14139	0.14038	+++++	0.13590					
	0.13432						AVRG		0.13769		3.13136
98 Hexachlorobutadiene	0.46484	0.46418	0.40589	0.42846	+++++	0.44813					
	0.39361						AVRG		0.43418		6.92010
99 1,2,4-Trichlorobenzene	0.75858	0.83346	0.77661	0.79243	+++++	0.69827					
	0.69729						AVRG		0.75944		7.08288
100 Naphthalene	1.64061	1.79414	1.78085	1.71417	+++++	1.52841					
	1.58666						AVRG		1.67414		6.40022

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101 1,2,3-Trichlorobenzene	0.67335	0.72140	0.67843	0.66402	+++++	0.58842						
	0.60429						AVRG		0.65499		7.59700	
157 2-methylnaphthalene	0.82787	0.88520	0.85041	0.84439	+++++	0.77769						
	0.77512						AVRG		0.82678		5.23317	
$ 42 1,2-Dichloroethane-d4	0.34702	0.34725	0.34961	0.35225	+++++	0.35851						
	0.34653						AVRG		0.35019		1.31384	
$ 56 Toluene-d8	2.17963	2.21336	2.16440	2.29854	+++++	2.55558						
	2.33629						AVRG		2.29130		6.37152	
$ 77 Bromofluorobenzene	0.75443	0.77609	0.77966	0.83879	+++++	0.94039						
	0.85015						AVRG		0.82325		8.33583	
$ 158 1,2-Dichlorobenzene-d4	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-

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Average %RSD Results.

Calculated Average %RSD = 8.98342
Maximun Average %RSD = 15.00000
* Passed Average %RSD Test.

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + m1*Rsp	Amount
Quad	Rsp = b + m1*Amt + m2*Amt^2	Amount

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010011.d
Report Date: 11-Dec-2014 12:52

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010011.d
Lab Smp Id: VSTD[2.5] Client Smp ID: VSTD[2.5]
Inj Date : 10-OCT-2014 10:45
Operator : JEW Inst ID: 30msv5.i
Smp Info : VSTD[2.5],,5
Misc Info : V10-49-16
Comment :
Method : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 12:51 jwiegand Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
1 Dichlorodifluoromethane	85	Compound Not Detected.						
2 Chloromethane	50	Compound Not Detected.						
3 Vinyl Chloride	62	Compound Not Detected.						
4 Bromomethane	94	Compound Not Detected.						
5 Chloroethane	64	Compound Not Detected.						
6 Trichlorofluoromethane	101	Compound Not Detected.						
7 Ethyl Ether	59	Compound Not Detected.						
8 1,1-Dichloroethene	61	Compound Not Detected.						
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	Compound Not Detected.						
10 1,1,2-Trichlorotrifluoroethan	151	1.605	1.609	(0.386)	965	2.50000	2.31(a)	
11 Iodomethane	142	Compound Not Detected.						
12 Acrolein	56	Compound Not Detected.						
13 Allyl chloride	41	Compound Not Detected.						
14 Methylene Chloride	49	1.933	1.933	(0.465)	4677	2.50000	6.20	
15 Acetone	58	Compound Not Detected.						
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	2262	2.50000	1.95(a)	
17 Methyl Acetate	74	Compound Not Detected.						
18 Hexane	86	Compound Not Detected.						
19 tert-butyl Methylether,MtB	73	Compound Not Detected.						

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Report Date: 11-Dec-2014 12:52

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
	21 tert-Butyl Alcohol	59	Compound Not Detected.						
	20 Acetonitrile	41	Compound Not Detected.						
	22 DiisopropylEther	45	Compound Not Detected.						
	23 Chloroprene	53	Compound Not Detected.						
	25 Acrylonitrile	53	Compound Not Detected.						
	24 1,1-Dichloroethane	63	2.483	2.483	(0.597)	3472	2.50000	2.24(a)	
	27 t-Butyl ethyl ether	59	2.682	2.682	(0.645)	5941	2.50000	2.22(aQ)	
	26 Vinyl Acetate	43	Compound Not Detected.						
	28 cis-1,2-Dichloroethene	61	2.946	2.953	(0.708)	1362	2.50000	1.06(aQ)	
	29 2,2-Dichloropropane	77	Compound Not Detected.						
	30 Cyclohexane	56	Compound Not Detected.						
	31 Bromochloromethane	130	Compound Not Detected.						
	32 Chloroform	83	Compound Not Detected.						
	33 Carbon Tetrachloride	117	3.364	3.371	(0.808)	2024	2.50000	1.71(aQ)	
	36 Ethyl Acetate	43	Compound Not Detected.						
	35 Tetrahydrofuran	42	Compound Not Detected.						
	34 1,1,1-Trichloroethane	97	Compound Not Detected.						
	37 1,1-Dichloropropene	75	Compound Not Detected.						
	38 2-Butanone	43	Compound Not Detected.						
	39 Benzene	78	3.823	3.824	(0.650)	6695	2.50000	2.12(a)	
	40 Propionitrile	54	Compound Not Detected.						
	41 Methacrylonitrile	41	Compound Not Detected.						
$	42 1,2-Dichloroethane-d4	65	3.939	3.940	(0.947)	31775	30.0000	30.4(Q)	
	43 t-Amyl methyl ether	73	3.942	3.940	(0.671)	4872	2.50000	2.14(a)	
	46 Isobutanol	43	Compound Not Detected.						
	44 1,2-Dichloroethane	62	Compound Not Detected.						
*	45 Fluorobenzene	96	4.161	4.162	(1.000)	89537	30.0000		
	47 Methylcyclohexane	83	4.267	4.271	(0.726)	2384	2.50000	2.16(aQ)	
	48 Trichloroethene	132	4.283	4.287	(0.729)	1647	2.50000	2.10(a)	
	49 Dibromomethane	174	4.556	4.560	(0.775)	977	2.50000	1.81(aQ)	
	50 1,2-Dichloropropane	63	4.624	4.621	(0.787)	1845	2.50000	2.00(a)	
	51 Bromodichloromethane	83	Compound Not Detected.						
	52 Methyl methacrylate	69	Compound Not Detected.						
	53 1,4-Dioxane	88	Compound Not Detected.						
	55 2-ChloroethylVinylEther	63	Compound Not Detected.						
	54 cis-1,3-Dichloropropene	75	5.036	5.033	(0.857)	2730	2.50000	2.04(aQ)	
$	56 Toluene-d8	98	5.129	5.129	(0.873)	87049	30.0000	29.3	
	57 Toluene	91	5.158	5.158	(0.877)	6675	2.50000	2.06(a)	
	58 2-Nitropropane	43	Compound Not Detected.						
	59 Tetrachloroethene	166	5.354	5.354	(0.911)	1714	2.50000	2.07(a)	
	60 4-Methyl-2-Pentanone	43	Compound Not Detected.						
	61 trans-1,3-Dichloropropene	75	5.376	5.377	(0.915)	2629	2.50000	1.99(a)	
	63 Ethyl methacrylate	41	5.460	5.461	(0.929)	1888	2.50000	2.41(a)	
	62 1,1,2-Trichloroethane	97	5.450	5.454	(0.927)	1502	2.50000	2.18(a)	
	64 Dibromochloromethane	129	Compound Not Detected.						
	65 1,3-Dichloropropane	76	5.582	5.583	(0.950)	2680	2.50000	2.20(aQ)	
	66 1,2-Dibromoethane,EDB	107	5.646	5.644	(0.961)	1618	2.50000	2.26(a)	
	70 2-Hexanone	43	Compound Not Detected.						
*	67 Chlorobenzene-d5	82	5.878	5.882	(1.000)	38905	30.0000		
	68 Chlorobenzene	112	Compound Not Detected.						
	69 Ethylbenzene	106	5.965	5.901	(1.015)	5789	2.50000	5.25(Q)	
	71 1,1,1,2-Tetrachloroethane	131	5.920	5.920	(1.007)	1666	2.50000	2.32(aQ)	
	72 m,p-Xylene	106	Compound Not Detected.						
	73 o-Xylene	106	Compound Not Detected.						

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Report Date: 11-Dec-2014 12:52

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
74 Styrene	104	Compound Not Detected.						
75 Bromoform	173	6.190	6.190	(1.053)	1219	2.50000	2.26(a)	
76 Isopropylbenzene,Cumene	105	Compound Not Detected.						
$ 77 Bromofluorobenzene	174	6.408	6.409	(0.933)	28018	30.0000	28.4	
79 n-Propylbenzene	91	Compound Not Detected.						
78 Bromobenzene	77	Compound Not Detected.						
80 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.						
81 2-Chlorotoluene	126	Compound Not Detected.						
82 1,3,5-Trimethylbenzene	120	Compound Not Detected.						
83 1,2,3-Trichloropropane	110	Compound Not Detected.						
84 trans 1,4-Dichloro-2-butene	53	Compound Not Detected.						
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	Compound Not Detected.						
87 tert-Butyl benzene	119	Compound Not Detected.						
88 1,2,4-Trimethylbenzene	120	Compound Not Detected.						
89 sec-Butyl benzene	105	Compound Not Detected.						
90 4-Isopropyl toluene	119	Compound Not Detected.						
91 1,3-Dichlorobenzene	146	Compound Not Detected.						
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.872	(1.000)	35904	30.0000		
93 1,4-Dichlorobenzene	146	Compound Not Detected.						
94 n-Butyl benzene	91	Compound Not Detected.						
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	Compound Not Detected.						
96 bis(2Chloro1methyl ethyl)eth	45	Compound Not Detected.						
97 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.						
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	1304	2.50000	2.51	
99 1,2,4-Trichlorobenzene	180	Compound Not Detected.						
100 Naphthalene	128	Compound Not Detected.						
101 1,2,3-Trichlorobenzene	180	Compound Not Detected.						
157 2-methylnaphthalene	142	Compound Not Detected.						

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

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Report Date: 11-Dec-2014 12:52

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51010011.d
Lab Smp Id: VSTD[2.5]
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Misc Info: V10-49-16

Calibration Date: 10-OCT-2014
Calibration Time: 12:14
Client Smp ID: VSTD[2.5]
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

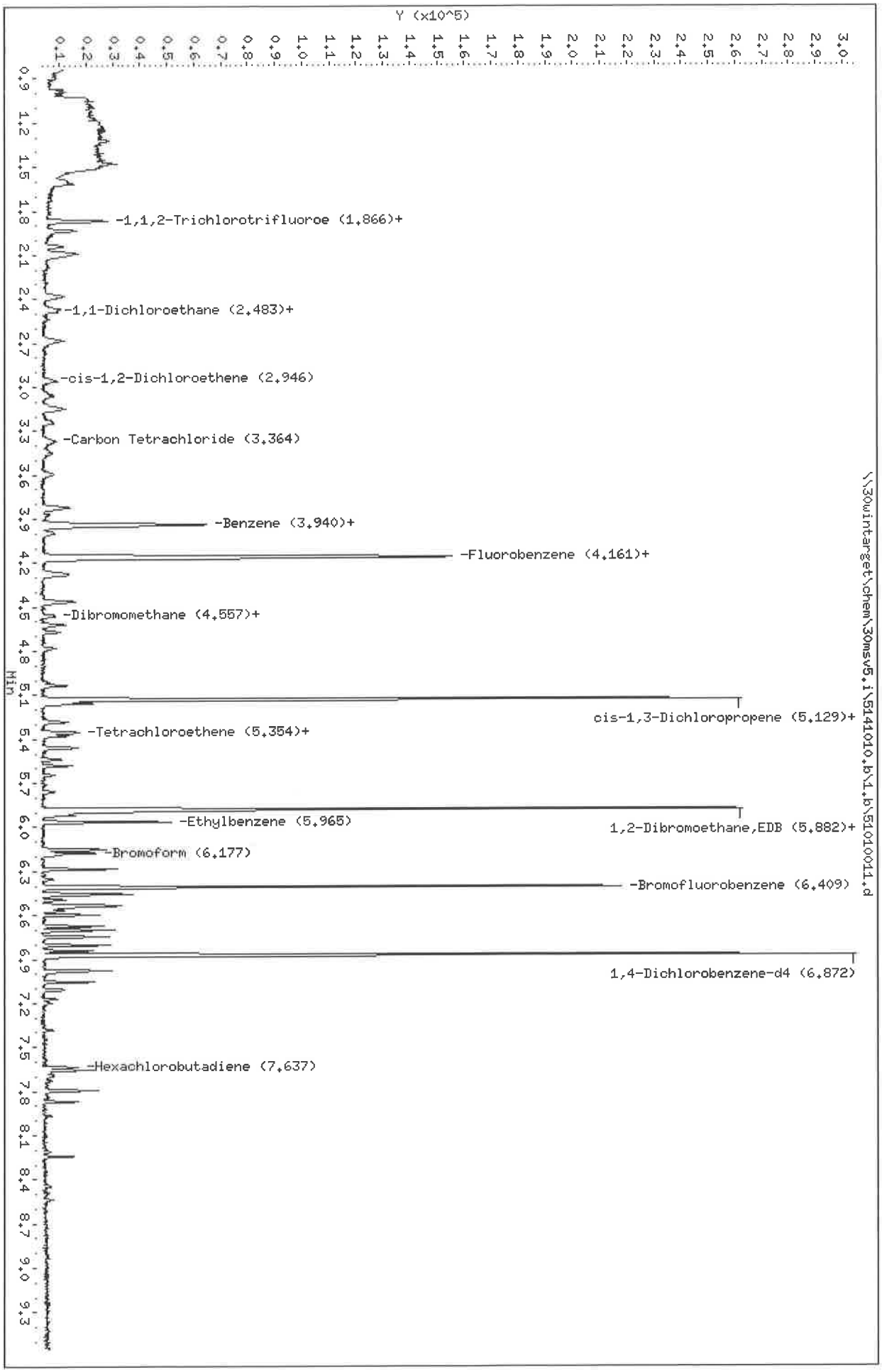
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	87362	43681	174724	89537	2.49
67 Chlorobenzene-d5	37349	18675	74698	38905	4.17
92 1,4-Dichlorobenze	30731	15366	61462	35904	16.83

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010011.d
Date : 10-OCT-2014 10:45
Client ID: VSTD[2.5]
Sample Info: VSTD[2.5],,5
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b/51010011.d (ManInt: al
Injection Date: 10-OCT-2014 10:45
Instrument: 30msv5.i
Lab Sample ID: VSTD[2.5]
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010012.d
Report Date: 11-Dec-2014 12:52

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010012.d
Lab Smp Id: VSTD[5] Client Smp ID: VSTD[5]
Inj Date : 10-OCT-2014 11:07
Operator : JEW Inst ID: 30msv5.i
Smp Info : VSTD[5],,5
Misc Info : V10-49-11
Comment :
Method : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 12:51 jwiegand Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
1 Dichlorodifluoromethane	85	0.897	0.898	(0.216)	1883	5.00000	5.07(T)	
2 Chloromethane	50	0.991	0.991	(0.238)	4893	5.00000	5.72	
3 Vinyl Chloride	62	1.032	1.032	(0.248)	2231	5.00000	5.50(QM)	NI
4 Bromomethane	94	1.193	1.191	(0.287)	526	5.00000	5.66(QM)	NI
5 Chloroethane	64	1.254	1.252	(0.301)	991	5.00000	5.23(QM)	NI
6 Trichlorofluoromethane	101	1.325	1.322	(0.319)	4291	5.00000	4.80	
7 Ethyl Ether	59	1.479	1.477	(0.356)	2868	5.00000	5.33(QM)	NI
8 1,1-Dichloroethene	61	1.592	1.592	(0.383)	5182	5.00000	5.14	
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	1.614	1.612	(0.388)	7327	5.00000	5.24(QM)	NI
10 1,1,2-Trichlorotrifluoroethan	151	1.608	1.609	(0.387)	2206	5.00000	5.11	
11 Iodomethane	142	1.672	1.676	(0.402)	888	5.00000	3.59(QM)	NI
12 Acrolein	56	1.788	1.785	(0.430)	384	5.00000	3.89(QM)	NI
13 Allyl chloride	41	1.865	1.866	(0.448)	24391	25.0000	26.3	
14 Methylene Chloride	49	1.933	1.933	(0.465)	6721	5.00000	8.64	
15 Acetone	58	1.968	1.965	(0.473)	779	5.00000	10.7(QM)	NI
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	6261	5.00000	5.24	
17 Methyl Acetate	74	2.045	2.043	(0.492)	820	5.00000	4.49	
18 Hexane	86	2.090	2.084	(0.502)	861	5.00000	5.20(QM)	NI
19 tert-butyl Methylether,MtB	73	2.103	2.104	(0.505)	11411	5.00000	5.14(Q)	

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Report Date: 11-Dec-2014 12:52

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
	21 tert-Butyl Alcohol	59	2.177	2.174	(0.523)	2231	25.0000	25.5(QM)	LT
	20 Acetonitrile	41	2.293	2.287	(0.551)	1353	25.0000	24.8(M)	NI
	22 DiisopropylEther	45	2.376	2.380	(0.571)	13766	5.00000	5.07	
	23 Chloroprene	53	2.463	2.464	(0.592)	6559	5.00000	5.16(Q)	
	25 Acrylonitrile	53	2.531	2.528	(0.608)	1520	5.00000	5.44(QM)	WP
	24 1,1-Dichloroethane	63	2.486	2.483	(0.597)	7903	5.00000	4.94(Q)	
	27 t-Butyl ethyl ether	59	2.685	2.682	(0.645)	13506	5.00000	4.89(QM)	LT
	26 Vinyl Acetate	43	2.695	2.695	(0.648)	4179	5.00000	3.98(QM)	NI
	28 cis-1,2-Dichloroethene	61	2.955	2.953	(0.710)	6337	5.00000	4.80	
	29 2,2-Dichloropropane	77	3.048	3.055	(0.733)	7041	5.00000	5.56(QM)	NI
	30 Cyclohexane	56	3.142	3.145	(0.755)	6254	5.00000	5.03	
	31 Bromochloromethane	130	3.145	3.149	(0.756)	2374	5.00000	4.58(QM)	LT
	32 Chloroform	83	3.241	3.239	(0.779)	8139	5.00000	5.02(QM)	NI
	33 Carbon Tetrachloride	117	3.367	3.371	(0.809)	6730	5.00000	5.50(Q)	
	36 Ethyl Acetate	43	3.402	3.387	(0.818)	3021	5.00000	4.67(QM)	NI
	35 Tetrahydrofuran	42	3.392	3.399	(0.815)	2407	5.00000	9.61(QM)	NI
	34 1,1,1-Trichloroethane	97	3.444	3.448	(0.828)	6820	5.00000	5.08(QM)	NI
	37 1,1-Dichloropropene	75	3.592	3.592	(0.863)	5265	5.00000	4.61(QM)	NI
	38 2-Butanone	43	3.592	3.586	(0.863)	1763	5.00000	5.20(QM)	NI
	39 Benzene	78	3.823	3.824	(0.650)	15415	5.00000	4.65	
	40 Propionitrile	54	3.865	3.856	(0.929)	474	5.00000	4.87(QM)	NI
	41 Methacrylonitrile	41	3.875	3.875	(0.931)	2691	5.00000	5.32(QM)	NI
$	42 1,2-Dichloroethane-d4	65	3.939	3.940	(0.947)	32049	30.0000	29.7	
	43 t-Amyl methyl ether	73	3.949	3.940	(0.672)	11081	5.00000	4.64(QM)	LT
	46 Isobutanol	43	4.061	3.940	(0.976)	950	25.0000	5.66(QM)	NI
	44 1,2-Dichloroethane	62	3.997	3.998	(0.961)	6412	5.00000	4.75(Q)	
*	45 Fluorobenzene	96	4.161	4.162	(1.000)	92356	30.0000		
	47 Methylcyclohexane	83	4.273	4.271	(0.727)	5483	5.00000	4.75(Q)	
	48 Trichloroethene	132	4.280	4.287	(0.728)	3732	5.00000	4.55	
	49 Dibromomethane	174	4.560	4.560	(0.776)	2480	5.00000	4.38	
	50 1,2-Dichloropropane	63	4.624	4.621	(0.787)	4458	5.00000	4.60	
	51 Bromodichloromethane	83	4.669	4.670	(0.794)	6209	5.00000	4.72	
	52 Methyl methacrylate	69	4.781	4.779	(0.813)	2940	5.00000	4.85	
	53 1,4-Dioxane	88	Compound Not Detected.						
	55 2-ChloroethylVinylEther	63	5.010	5.010	(0.852)	1237	5.00000	4.36	
	54 cis-1,3-Dichloropropene	75	5.032	5.033	(0.856)	6608	5.00000	4.72	
$	56 Toluene-d8	98	5.129	5.129	(0.873)	88820	30.0000	28.5	
	57 Toluene	91	5.158	5.158	(0.877)	16014	5.00000	4.73	
	58 2-Nitropropane	43	5.280	5.280	(0.898)	6481	25.0000	22.0(QM)	NI
	59 Tetrachloroethene	166	5.354	5.354	(0.911)	4037	5.00000	4.66	
	60 4-Methyl-2-Pentanone	43	5.360	5.361	(0.912)	3589	5.00000	4.33(QM)	NI
	61 trans-1,3-Dichloropropene	75	5.376	5.377	(0.915)	6403	5.00000	4.62	
	63 Ethyl methacrylate	41	5.460	5.461	(0.929)	3617	5.00000	4.40	
	62 1,1,2-Trichloroethane	97	5.453	5.454	(0.928)	3491	5.00000	4.83	
	64 Dibromochloromethane	129	5.537	5.538	(0.942)	4218	5.00000	4.70(QM)	NI
	65 1,3-Dichloropropane	76	5.582	5.583	(0.950)	6195	5.00000	4.85	
	66 1,2-Dibromoethane,EDB	107	5.643	5.644	(0.960)	3507	5.00000	4.68	
	70 2-Hexanone	43	5.756	5.756	(0.979)	2994	5.00000	4.53(Q)	
*	67 Chlorobenzene-d5	82	5.878	5.882	(1.000)	40750	30.0000		
	68 Chlorobenzene	112	5.887	5.888	(1.002)	10260	5.00000	4.73	
	69 Ethylbenzene	106	5.900	5.901	(1.004)	5821	5.00000	5.04	
	71 1,1,1,2-Tetrachloroethane	131	5.916	5.920	(1.007)	3555	5.00000	4.72	
	72 m,p-Xylene	106	5.965	5.965	(1.015)	13362	10.0000	9.74	
	73 o-Xylene	106	6.151	6.152	(1.046)	6507	5.00000	4.92	

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Report Date: 11-Dec-2014 12:52

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
74 Styrene	104	6.174	6.174	(1.050)	10400	5.00000	4.91	
75 Bromoform	173	6.190	6.190	(1.053)	2671	5.00000	4.72	
76 Isopropylbenzene,Cumene	105	6.286	6.287	(0.915)	16973	5.00000	4.81(QM)	NI
$ 77 Bromofluorobenzene	174	6.408	6.409	(0.933)	27831	30.0000	27.5	
79 n-Propylbenzene	91	6.460	6.460	(0.940)	20894	5.00000	4.66(Q)	
78 Bromobenzene	77	6.453	6.454	(0.939)	8587	5.00000	4.69	
80 1,1,2,2-Tetrachloroethane	83	6.492	6.493	(0.945)	4344	5.00000	4.42	
81 2-Chlorotoluene	126	6.527	6.531	(0.950)	3687	5.00000	4.31(QM)	NI
82 1,3,5-Trimethylbenzene	120	6.540	6.541	(0.952)	6574	5.00000	4.69	
83 1,2,3-Trichloropropane	110	6.550	6.550	(0.953)	1253	5.00000	4.23	
84 trans 1,4-Dichloro-2-butene	53	6.563	6.567	(0.955)	1579	5.00000	4.50(Q)	
85 Cyclohexanone	55	6.569	6.573	(0.956)	1336	25.0000	20.8(QM)	NI
86 4-Chlorotoluene	126	6.598	6.599	(0.960)	4071	5.00000	4.56	
87 tert-Butyl benzene	119	6.675	6.676	(0.971)	11267	5.00000	4.68(Q)	
88 1,2,4-Trimethylbenzene	120	6.701	6.702	(0.975)	6289	5.00000	4.76	
89 sec-Butyl benzene	105	6.746	6.747	(0.982)	17024	5.00000	4.81(QM)	NI
90 4-Isopropyl toluene	119	6.804	6.805	(0.990)	14449	5.00000	4.79(QM)	NI
91 1,3-Dichlorobenzene	146	6.842	6.843	(0.996)	7668	5.00000	4.60(QM)	NI
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.872	(1.000)	36890	30.0000		
93 1,4-Dichlorobenzene	146	6.878	6.878	(1.001)	7699	5.00000	4.62	
94 n-Butyl benzene	91	6.977	6.978	(1.015)	13715	5.00000	4.84	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	7.055	7.055	(1.027)	7405	5.00000	4.81	
96 bis(2Chloro1methyl ethyl)eth	45	7.196	7.197	(1.047)	2067	5.00000	4.71(QM)	NI
97 1,2-Dibromo-3-Chloropropane	75	7.379	7.383	(1.074)	810	5.00000	4.78	
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	2858	5.00000	5.35	
99 1,2,4-Trichlorobenzene	180	7.656	7.657	(1.114)	4664	5.00000	4.99	
100 Naphthalene	128	7.794	7.795	(1.134)	10087	5.00000	4.90(Q)	
101 1,2,3-Trichlorobenzene	180	7.871	7.872	(1.146)	4140	5.00000	5.14	
157 2-methylnaphthalene	142	8.244	8.241	(1.200)	5090	5.00000	5.01(QM)	

QC Flag Legend

T - Target compound detected outside RT window.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010012.d
Report Date: 11-Dec-2014 12:52

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51010012.d
Lab Smp Id: VSTD[5]
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Misc Info: V10-49-11

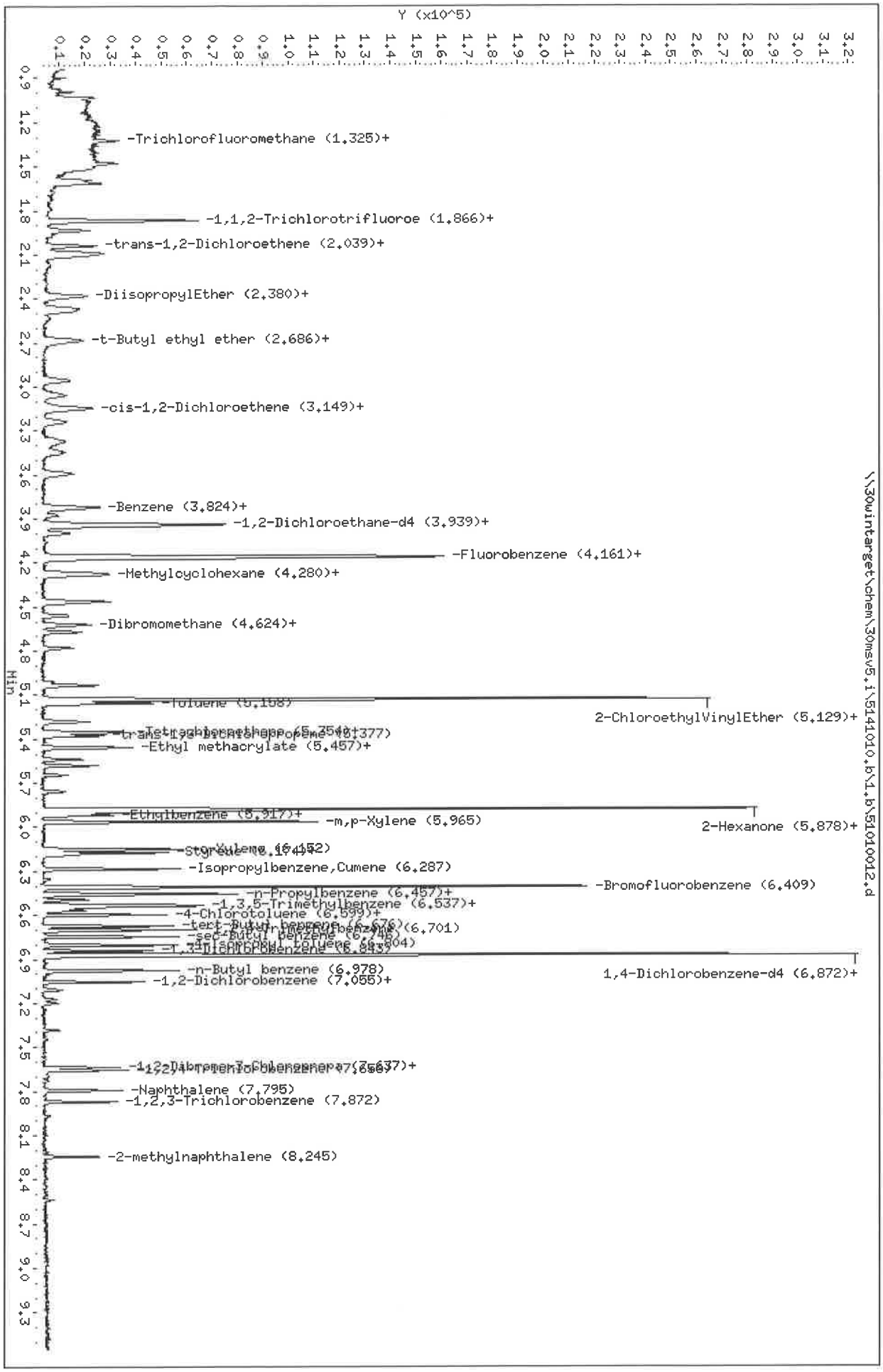
Calibration Date: 10-OCT-2014
Calibration Time: 12:14
Client Smp ID: VSTD[5]
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	87362	43681	174724	92356	5.72
67 Chlorobenzene-d5	37349	18675	74698	40750	9.11
92 1,4-Dichlorobenze	30731	15366	61462	36890	20.04

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	-0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	-0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.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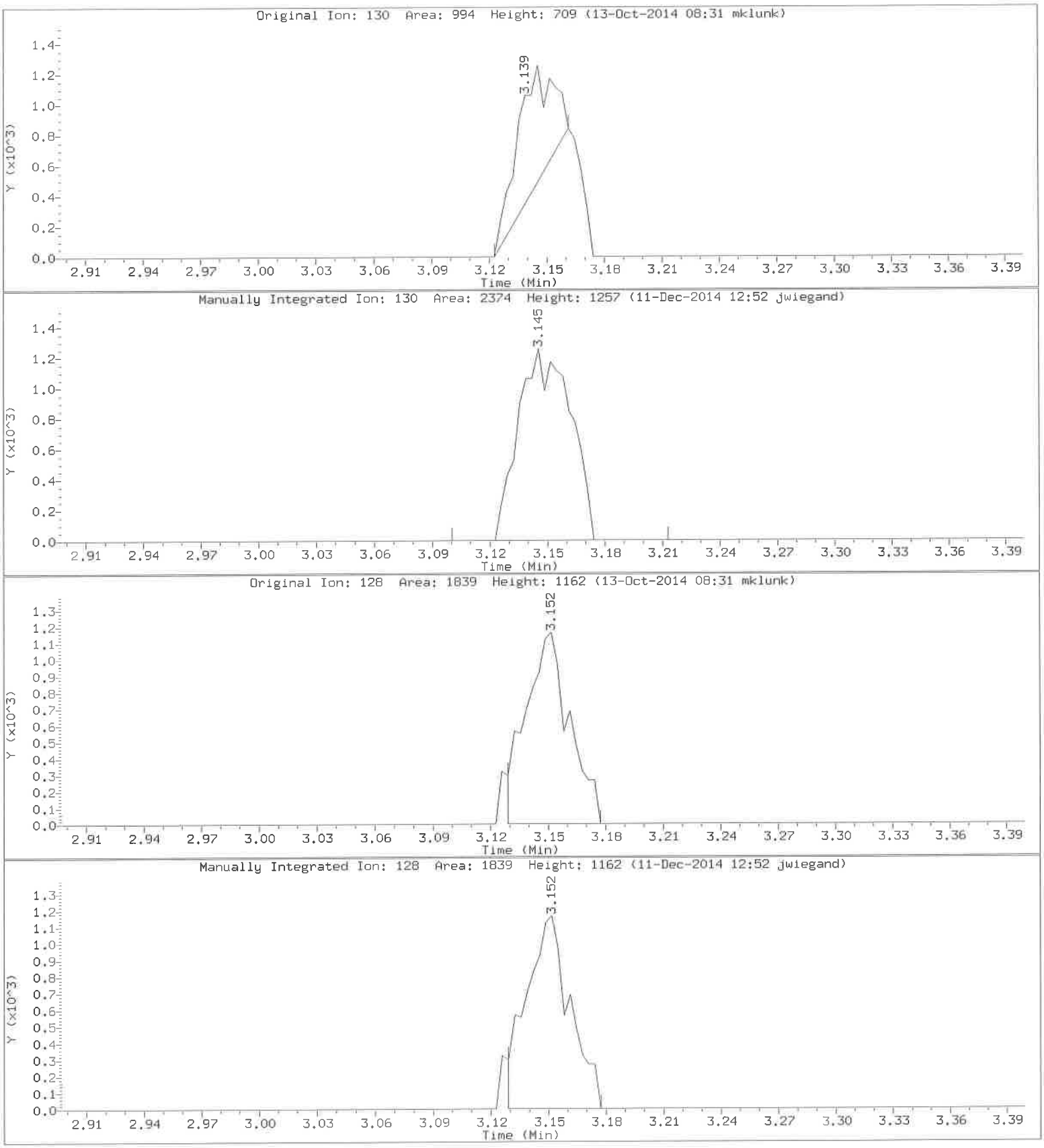
Date : 10-OCT-2014 11:07
Client ID: VSTD[5]
Sample Info: VSTD[5],.5
Purge Volume: 5.0
Column phase: Rtx-VMS
Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18
\\30wintarget\chem\30msv5.i\5141010.b\1.b\51010012.d
Y (x10^5)
Min
-Trichlorofluoromethane (1.325)+
-1,1,2-Trichlorotrifluoroe (1.866)+
-trans-1,2-Dichloroethene (2.039)+
-DiisopropylEther (2.380)+
-t-Butyl ethyl ether (2.686)+
-cis-1,2-Dichloroethene (3.149)+
-Benzene (3.824)+
-1,2-Dichloroethane-d4 (3.939)+
-Fluorobenzene (4.161)+
-Methylcyclohexane (4.280)+
-Dibromomethane (4.624)+
-Toluene (5.158)
2-ChloroethylVinylEther (5.129)+
-Ethyl methacrylate (5.457)+
-Ethylbenzene (5.917)+
-m,p-Xylene (5.965)
2-Hexanone (5.878)+
-Isopropylbenzene,Cumene (6.287)
-Bromofluorobenzene (6.409)
-n-Propylbenzene (6.457)+
-1,3,5-Trimethylbenzene (6.537)+
-4-Chlorotoluene (6.599)+
-sec-Butyl benzene (6.746)
-n-Butyl benzene (6.978)
1,4-Dichlorobenzene-d4 (6.872)+
-1,2-Dichlorobenzene (7.055)+
-Naphthalene (7.795)
-1,2,3-Trichlorobenzene (7.872)
-2-methylnaphthalene (8.245)

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b/51010012.d (ManInt: al
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Bromochloromethane
CAS Number: 74-97-5



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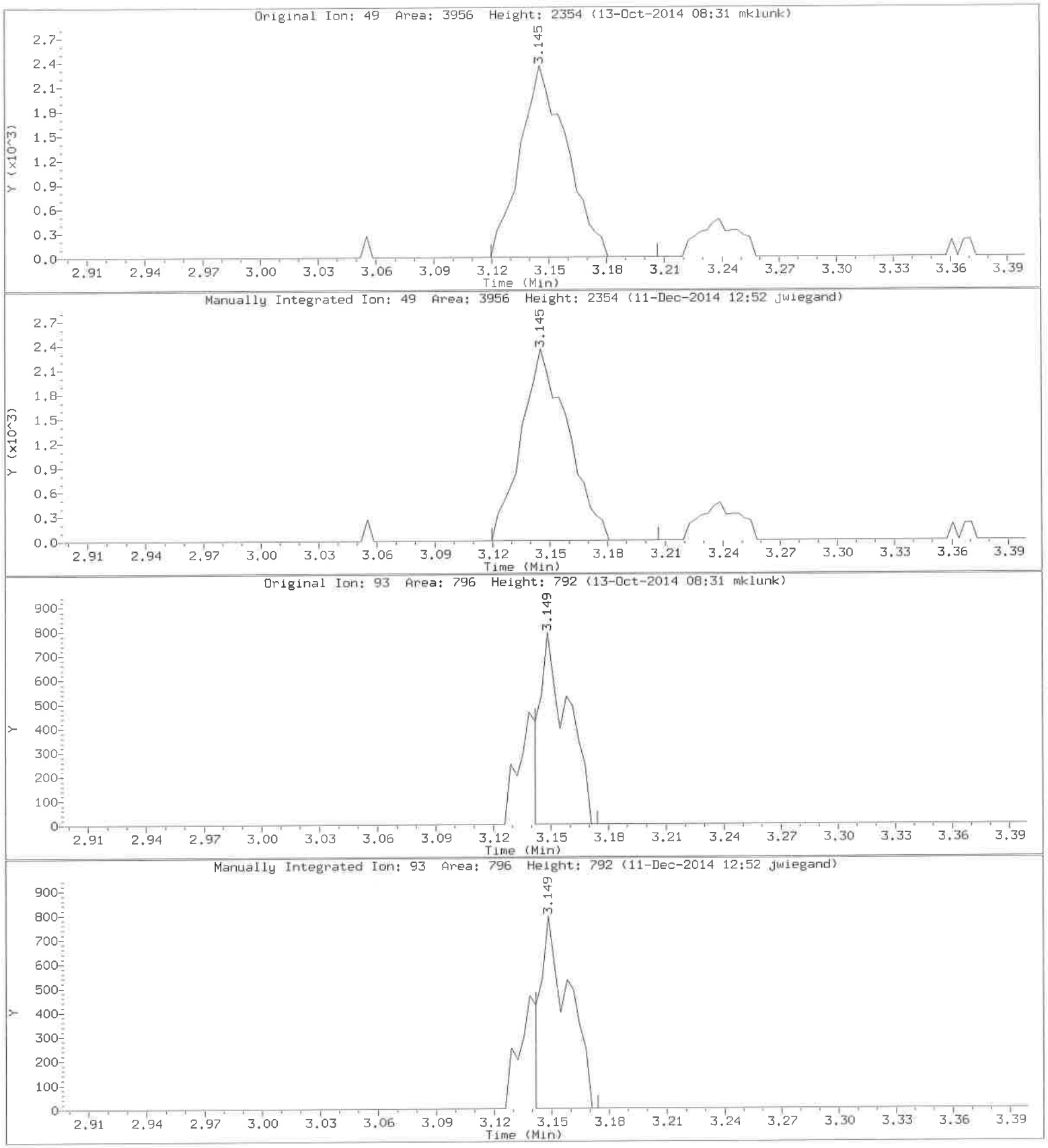
Lab Sample ID: VSTD[5]



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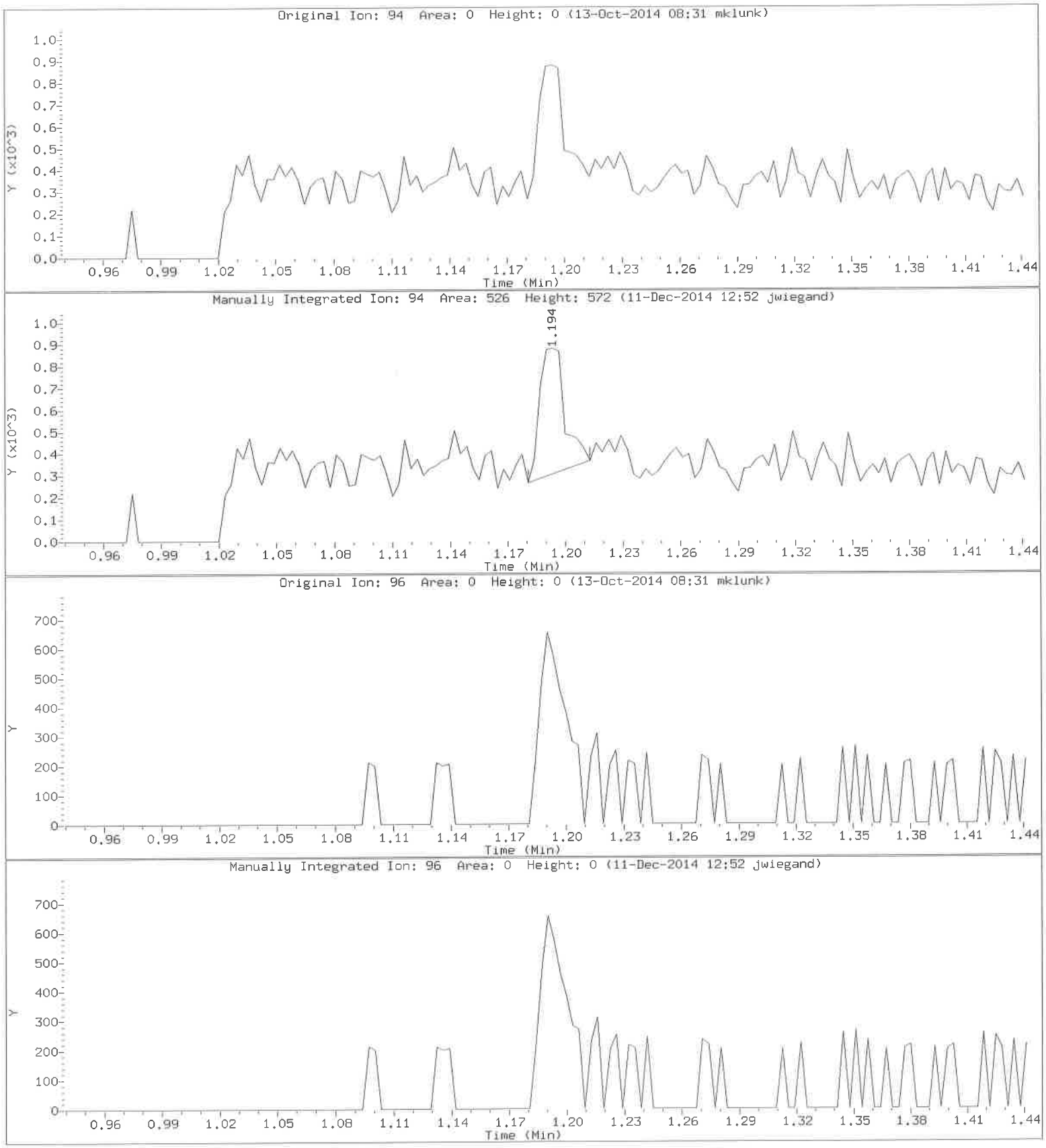
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Bromomethane
CAS Number: 74-83-9



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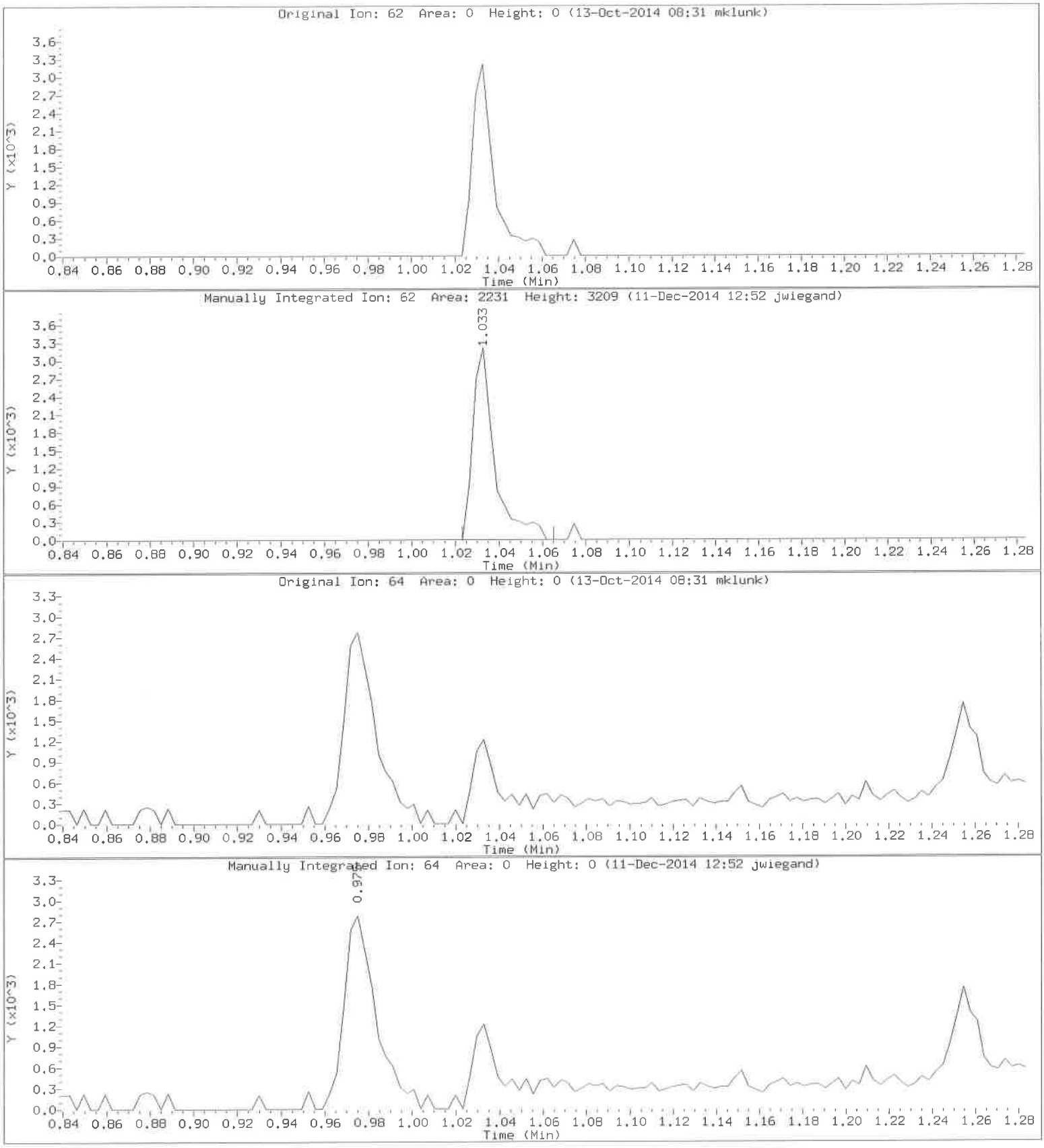
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Vinyl Chloride
CAS Number: 75-01-4



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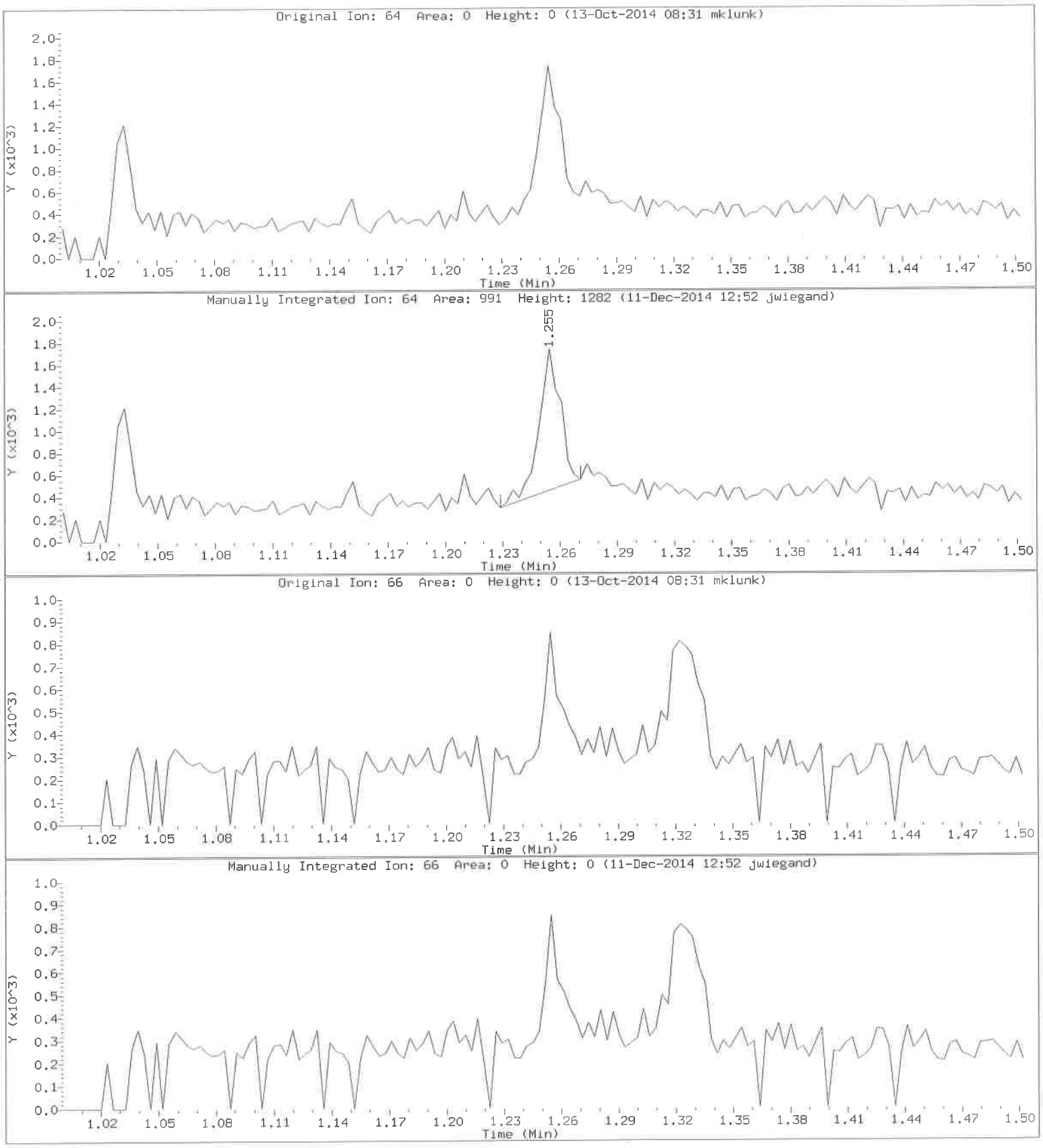
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Chloroethane
CAS Number: 75-00-3



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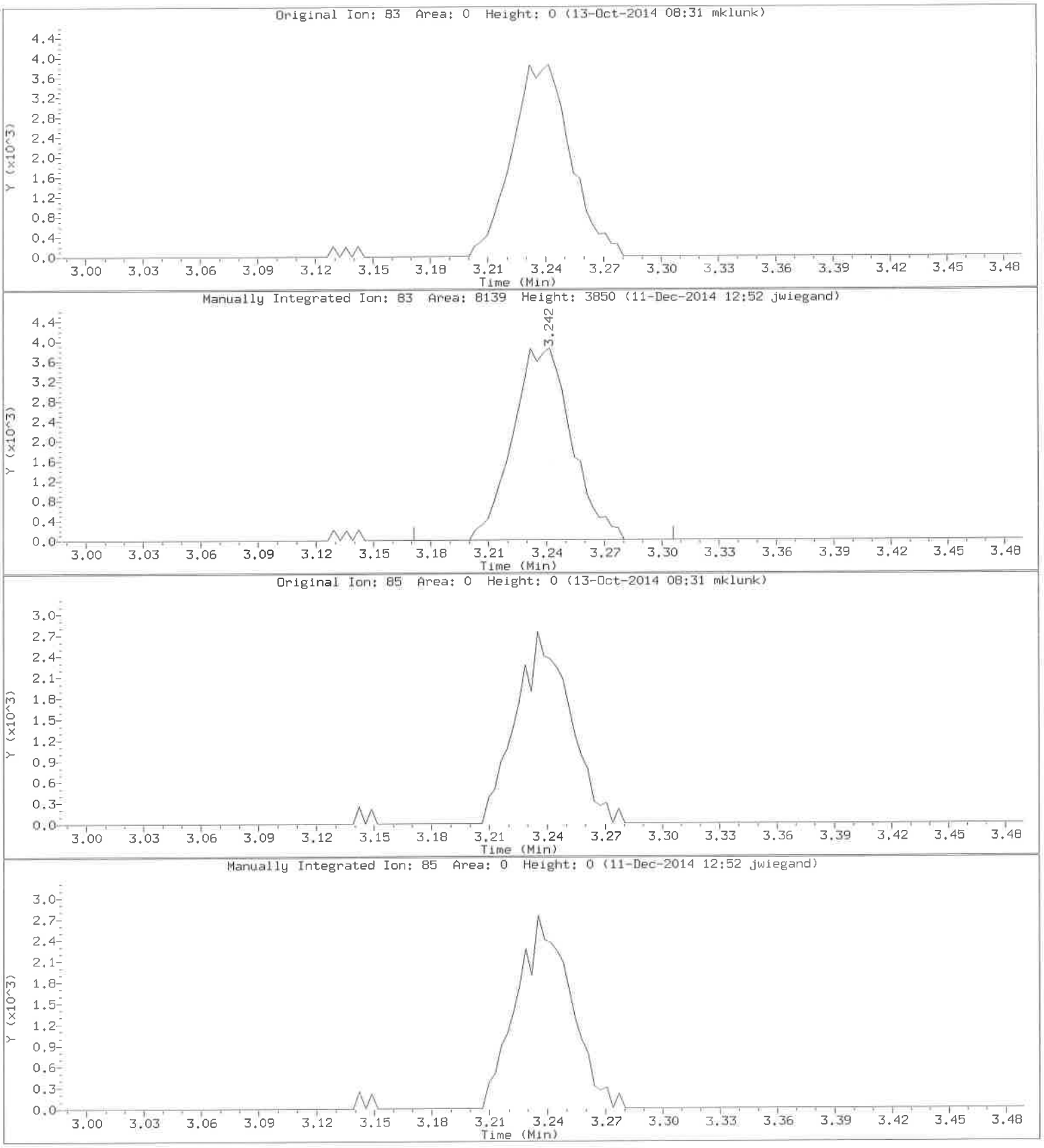
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Chloroform
CAS Number: 67-66-3



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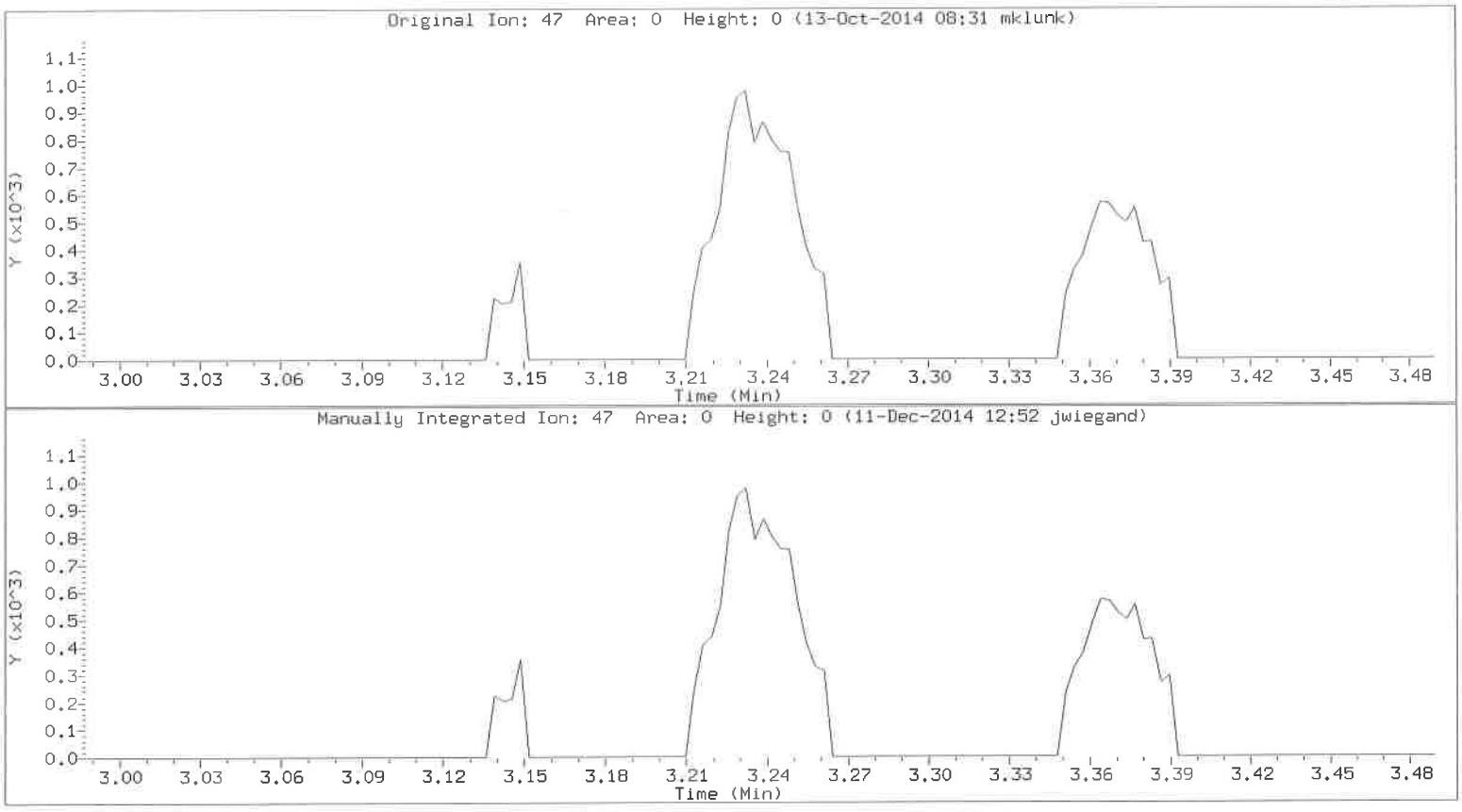

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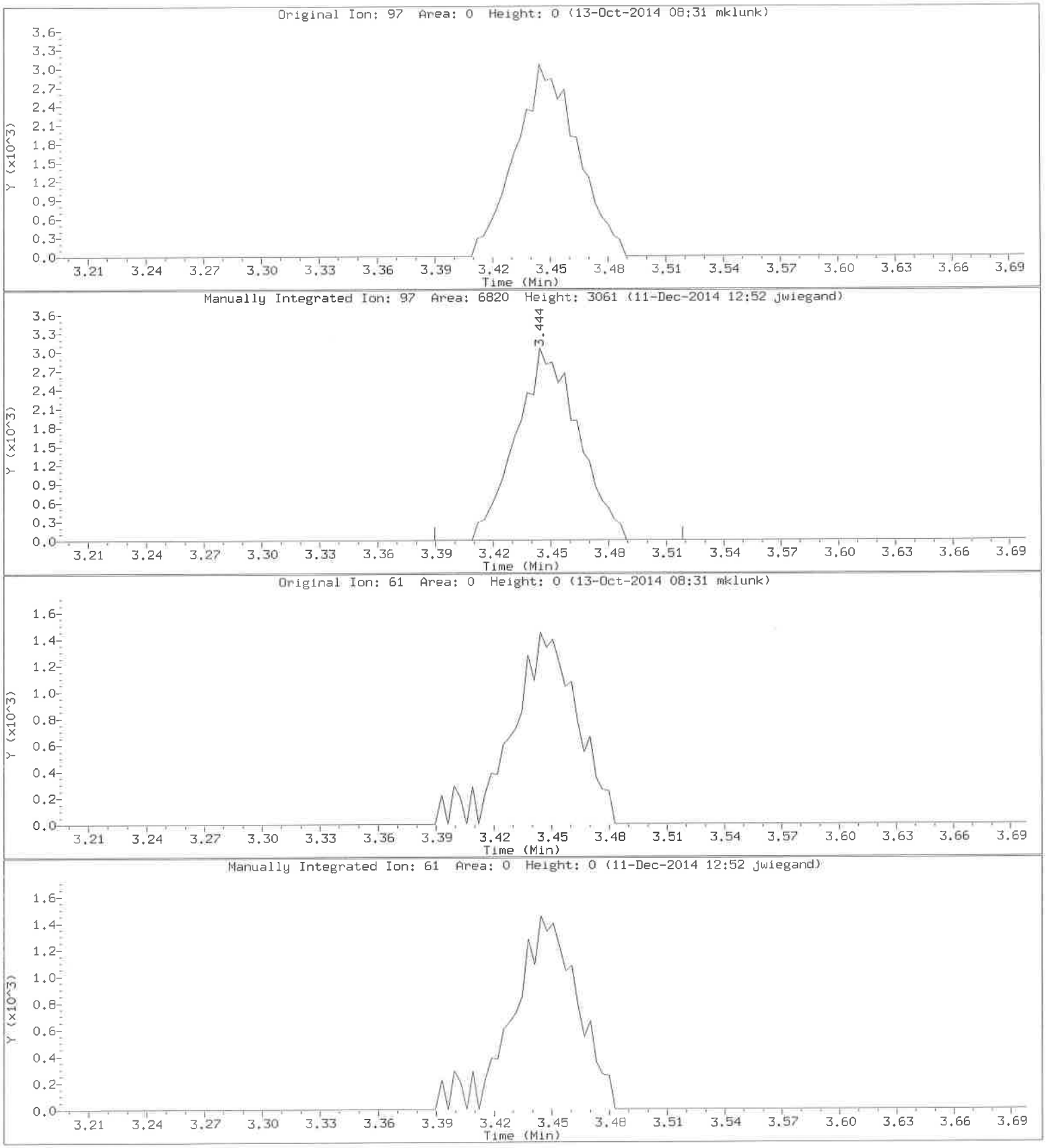
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: 1,1,1-Trichloroethane
CAS Number: 71-55-6



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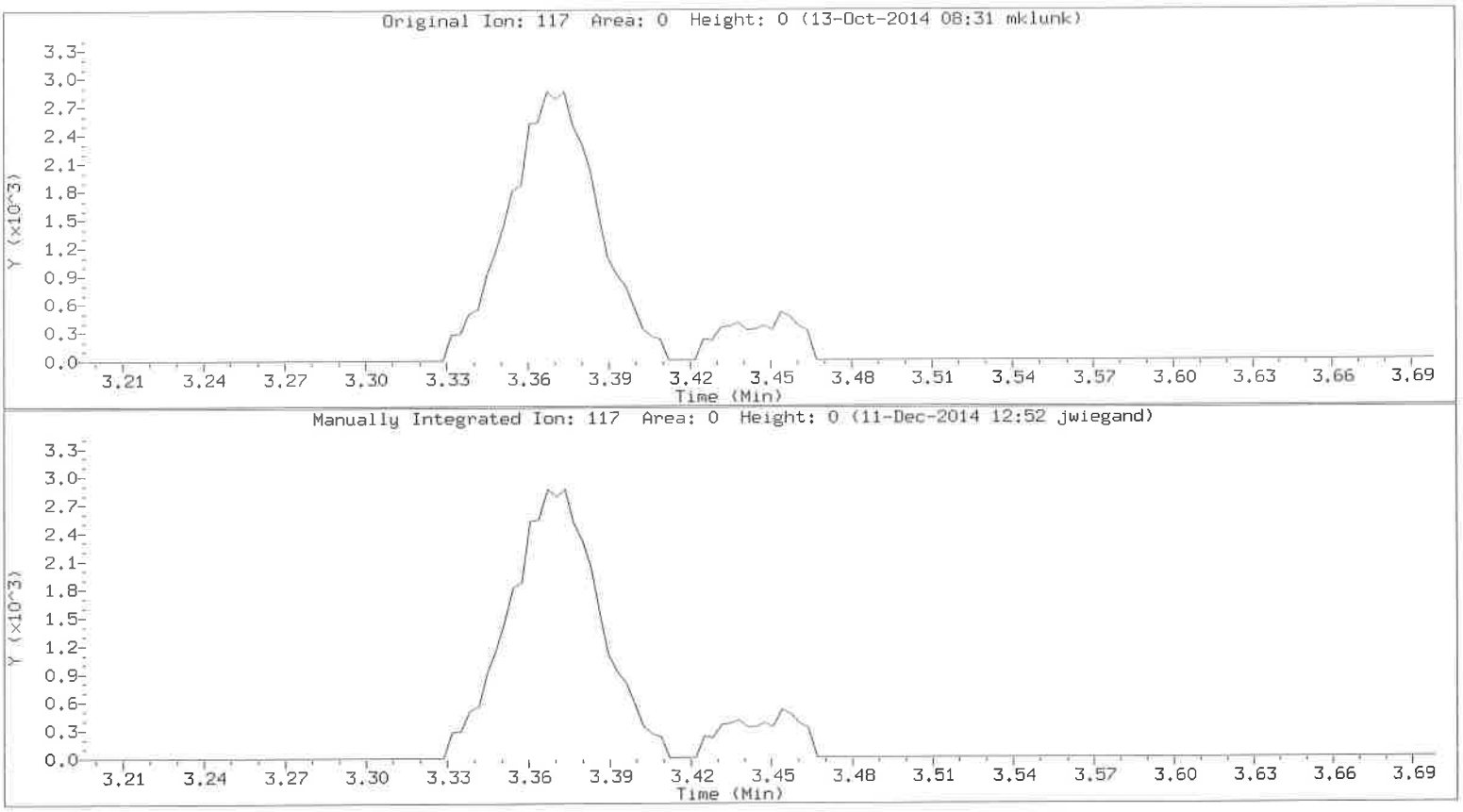

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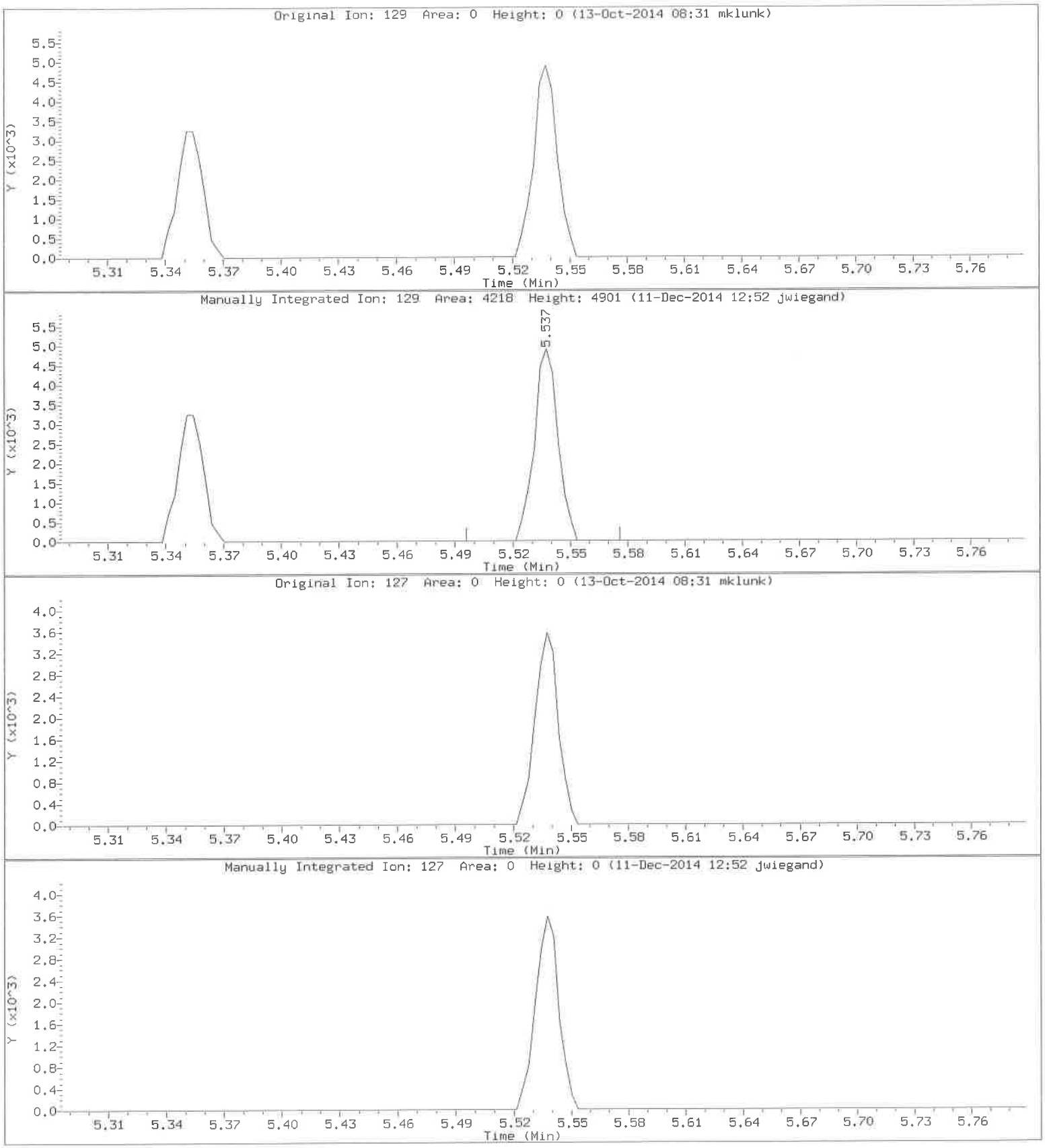
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Dibromochloromethane
CAS Number: 124-48-1



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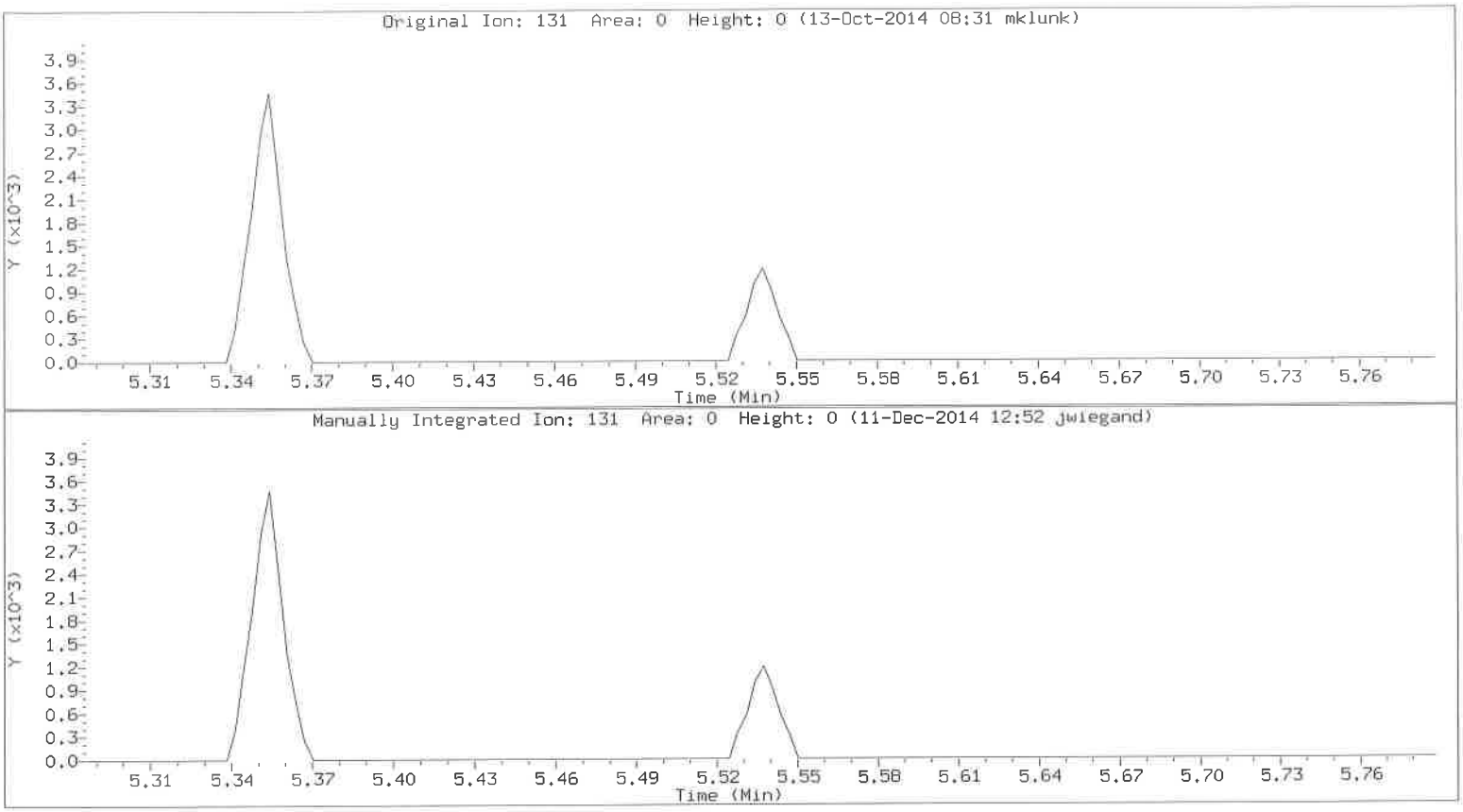

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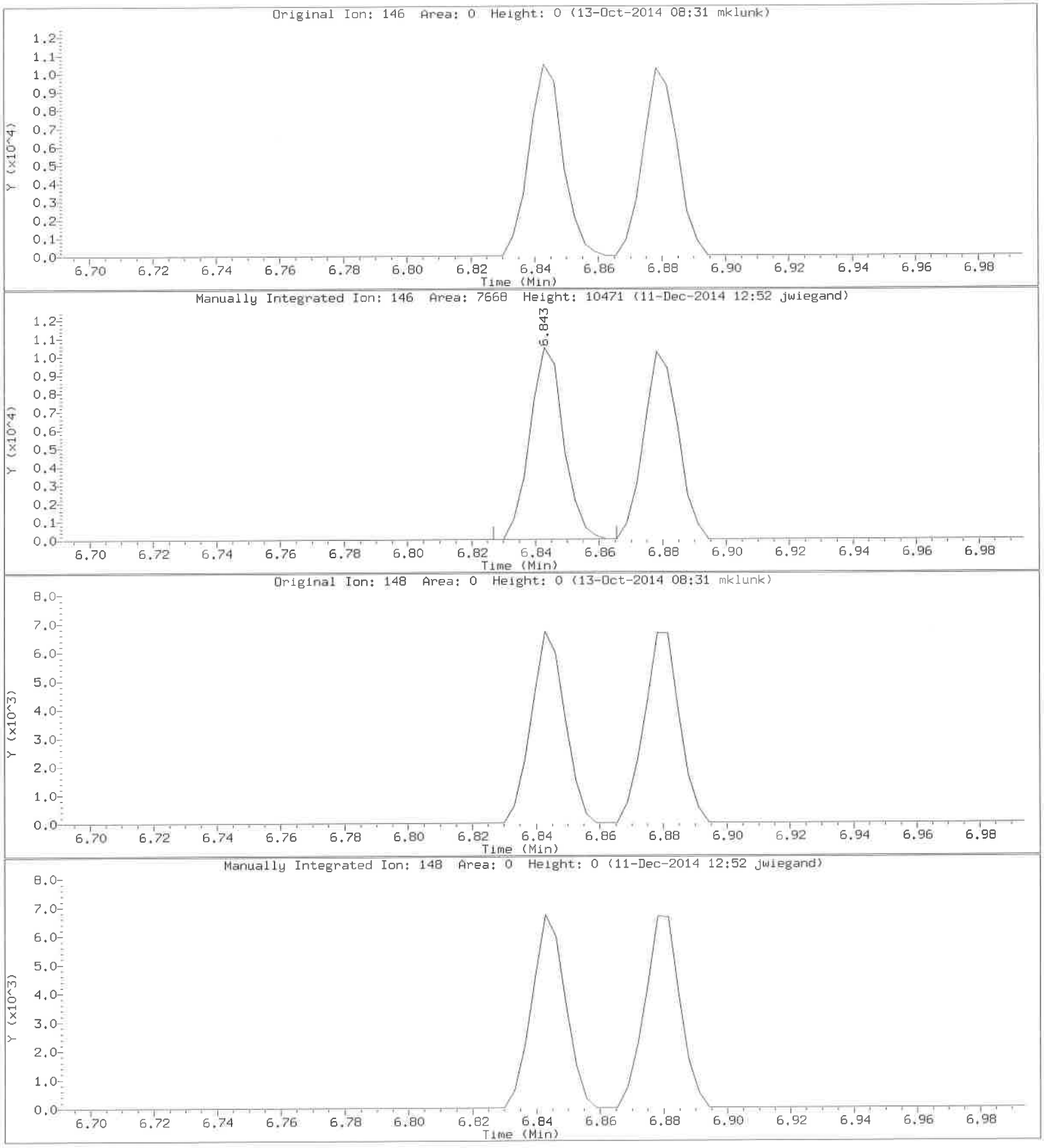
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: 1,3-Dichlorobenzene
CAS Number: 541-73-1



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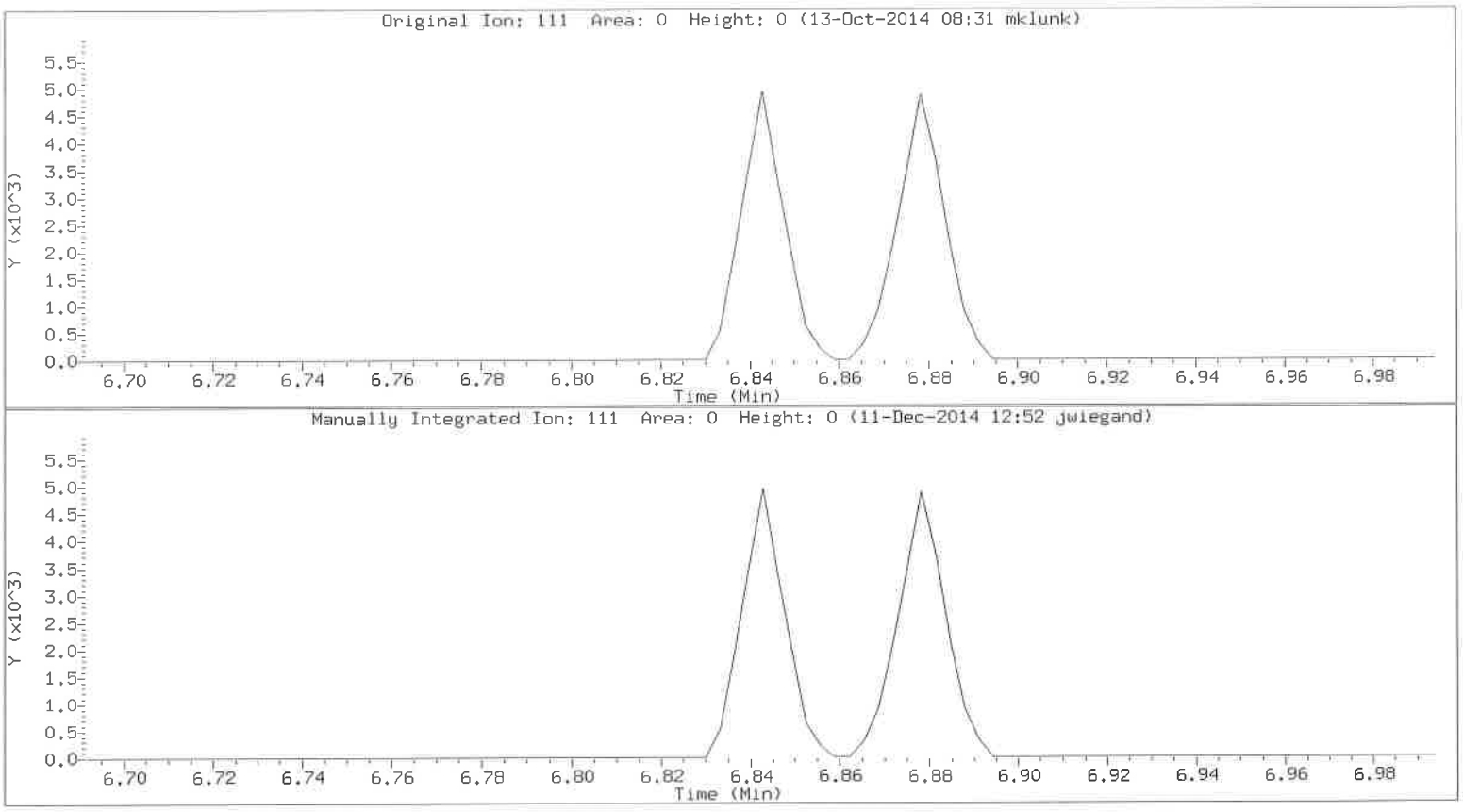
Lab Sample ID: VSTD[5]



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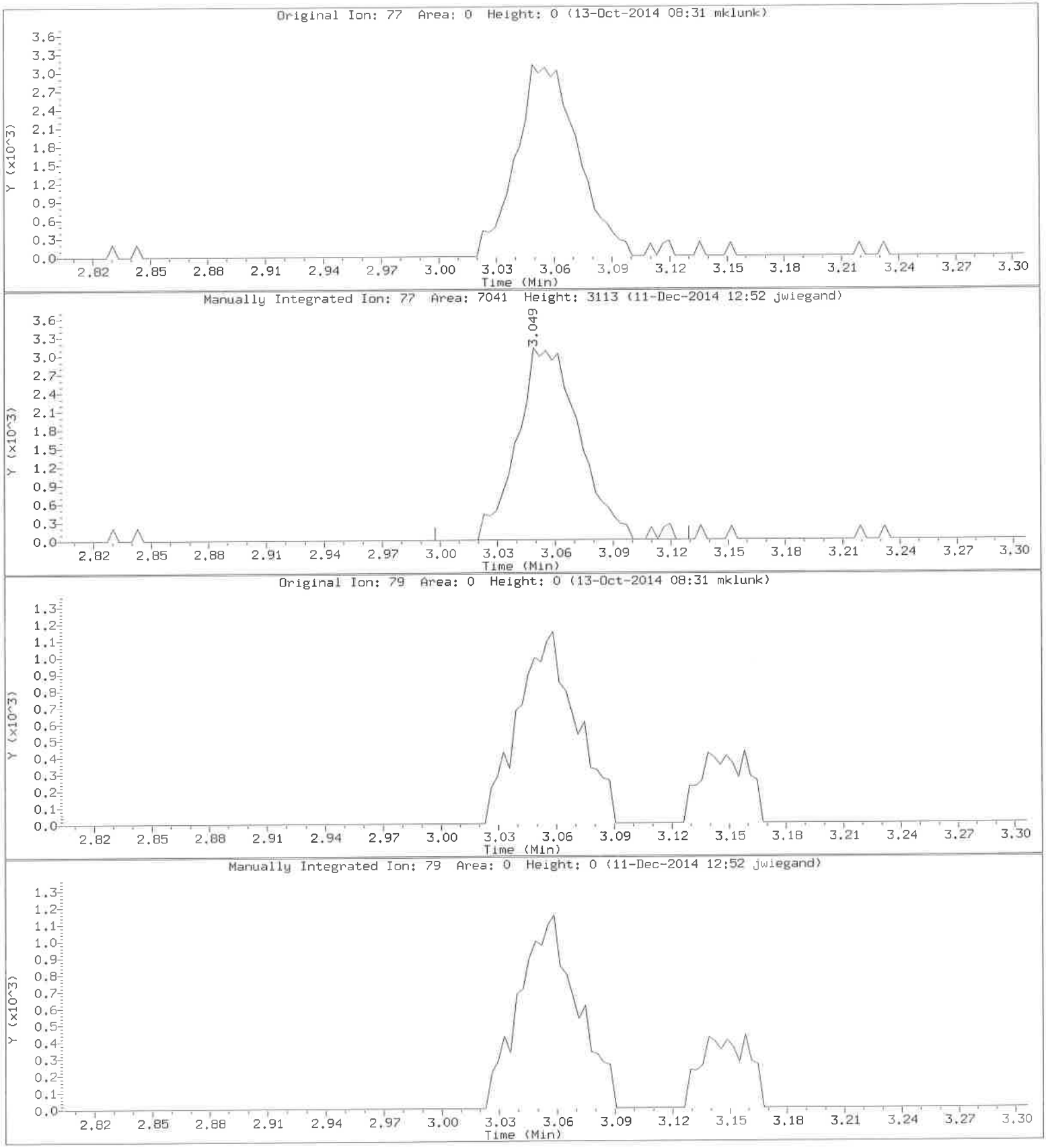
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: 2,2-Dichloropropane
CAS Number: 594-20-7



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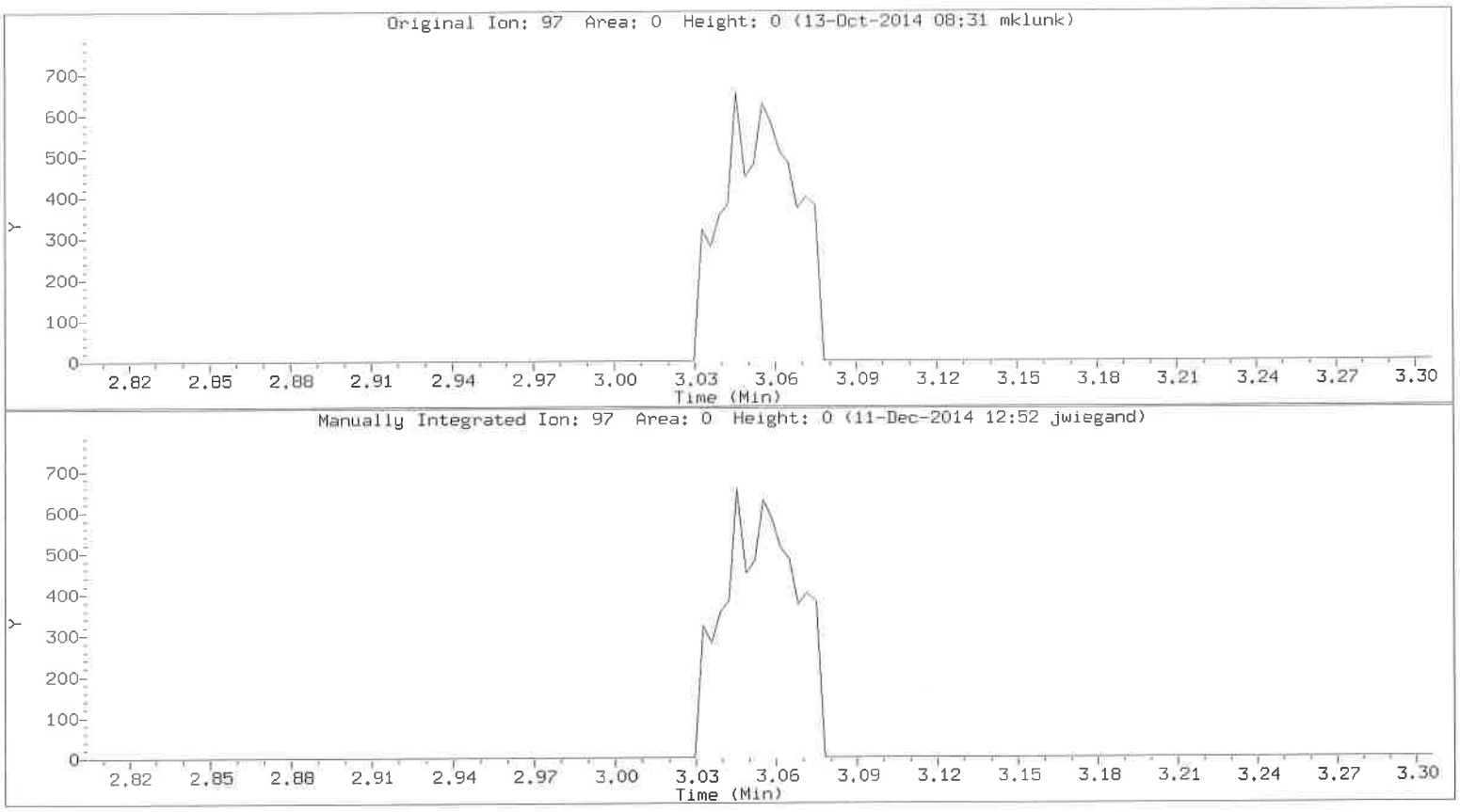

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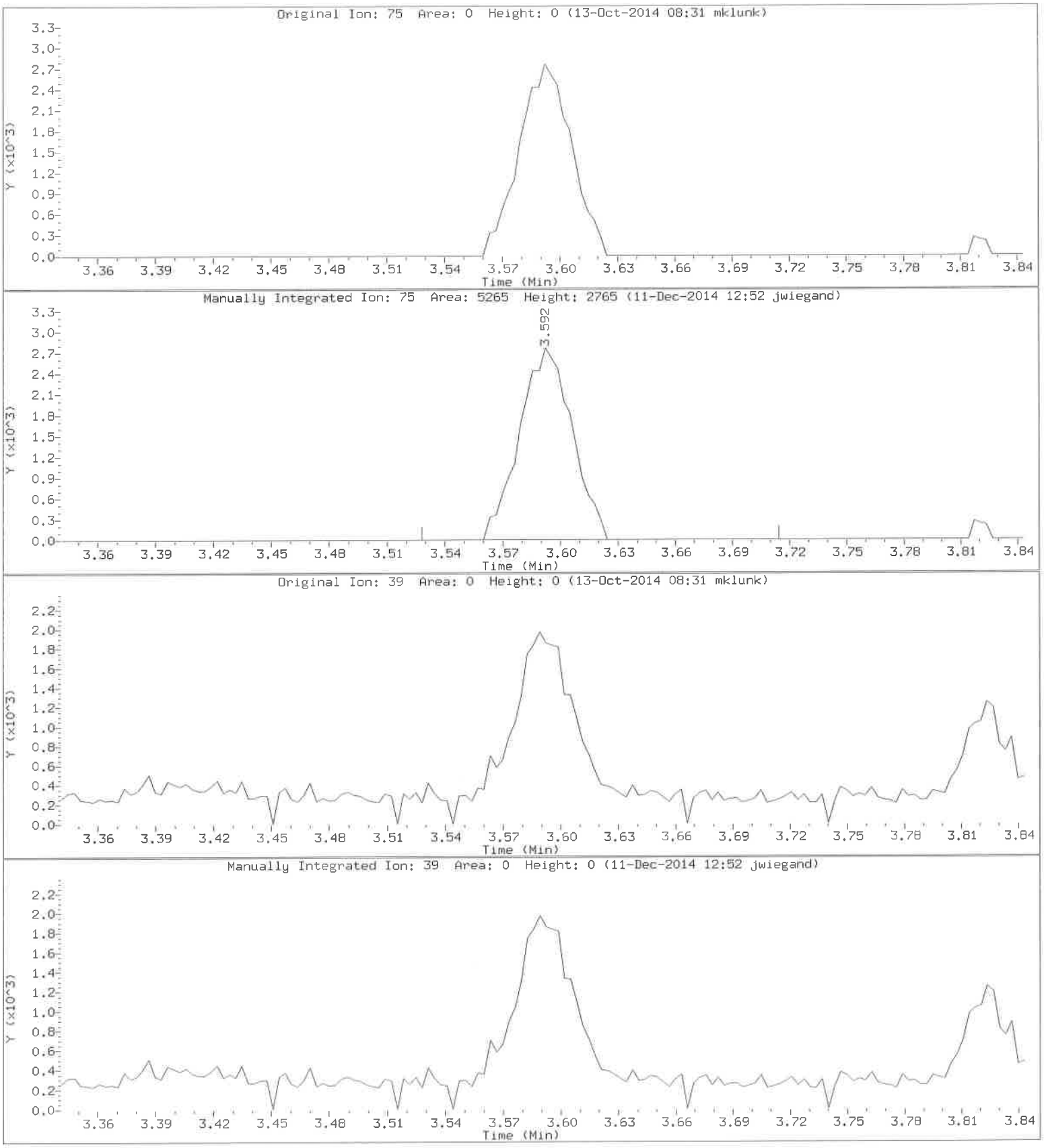
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: 1,1-Dichloropropene
CAS Number: 563-58-6



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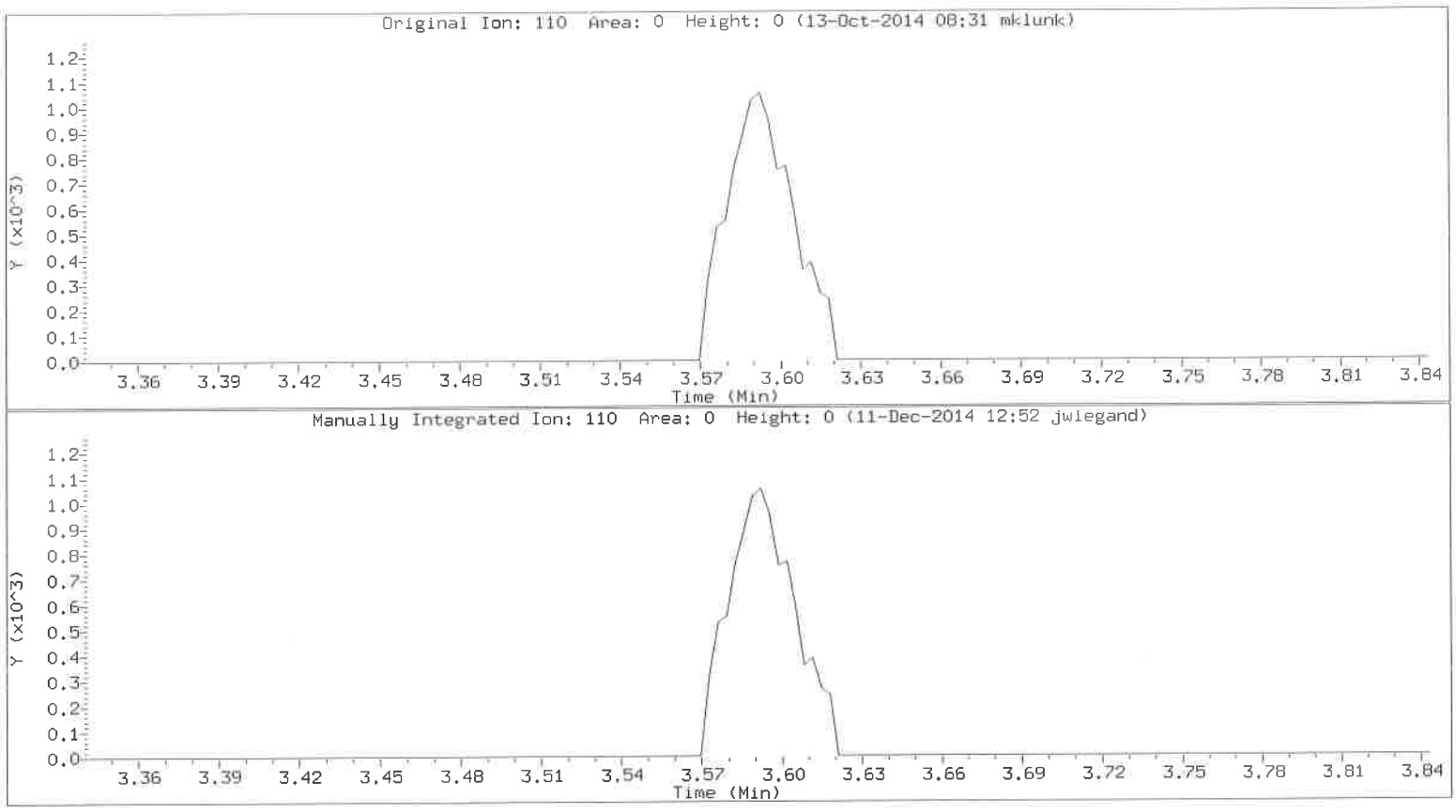

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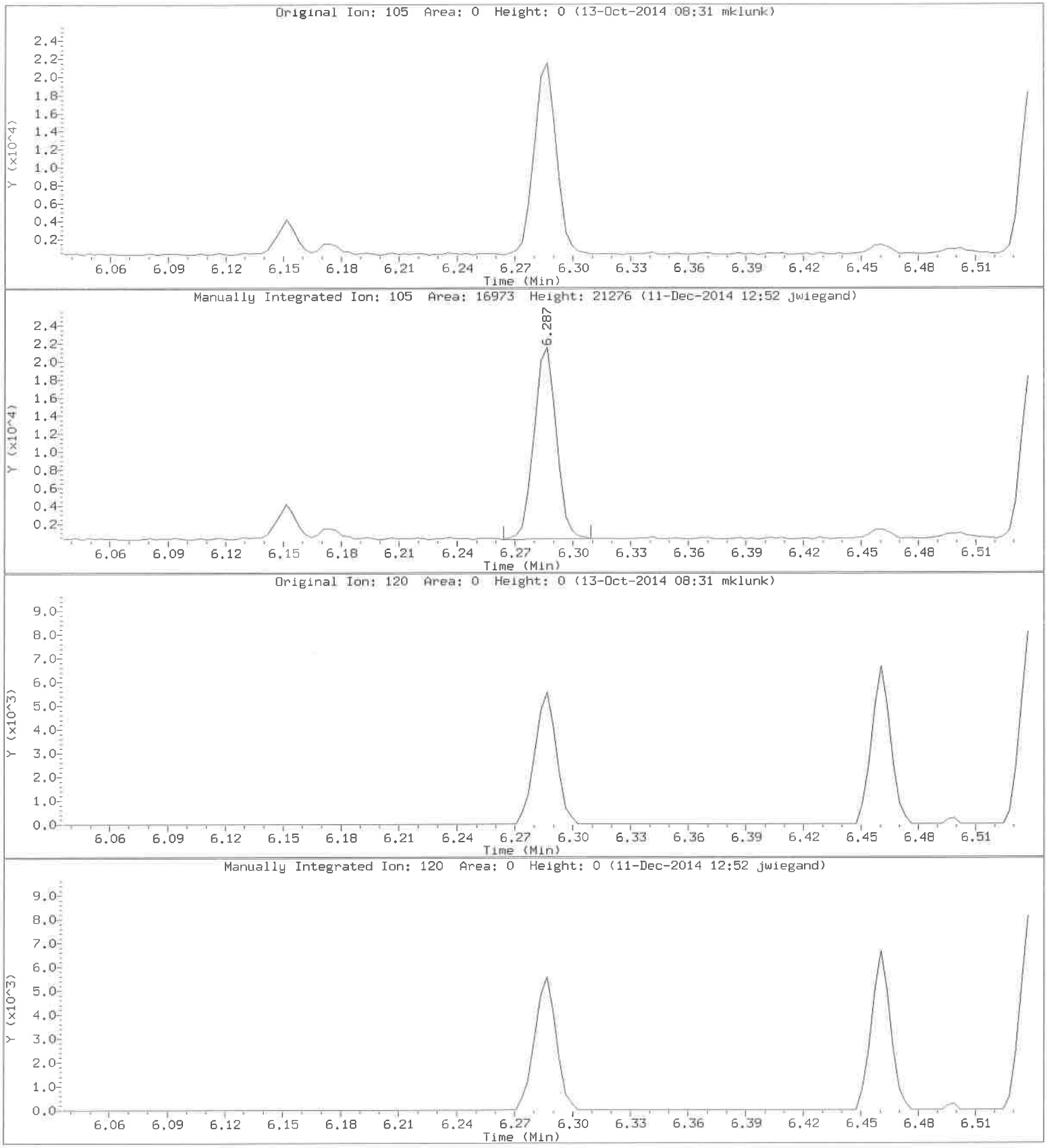
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Isopropylbenzene,Cumene
CAS Number: 98-82-8



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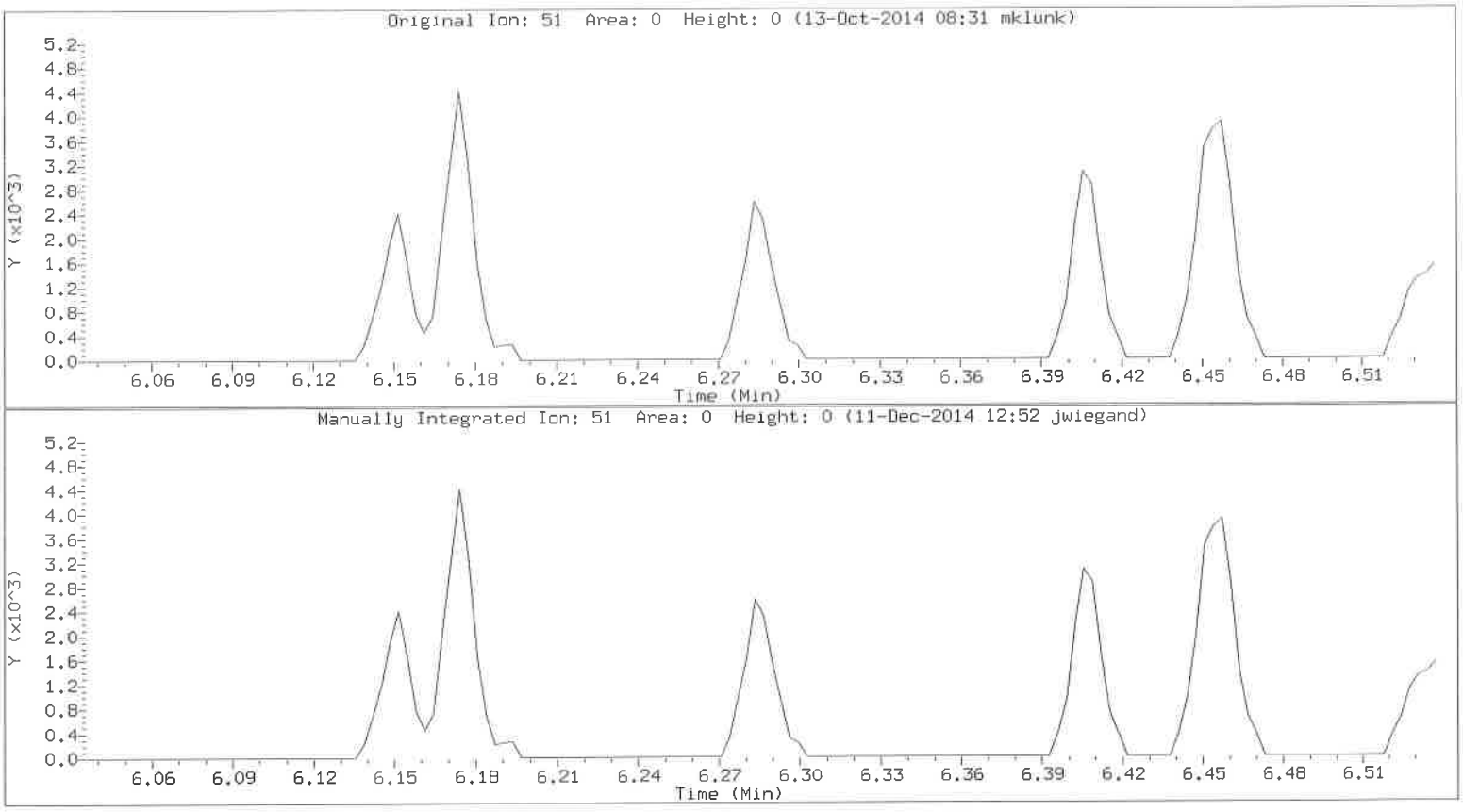

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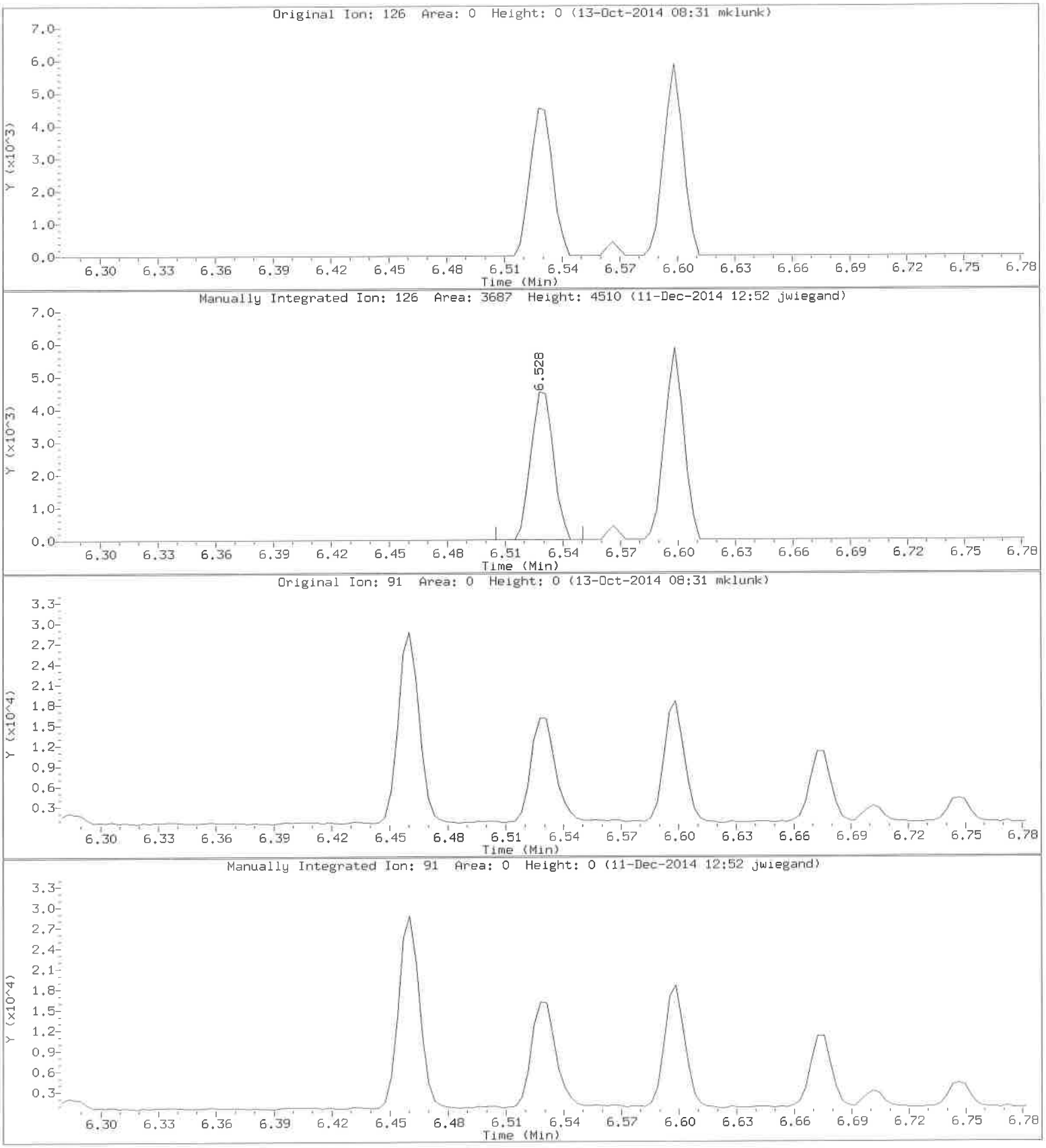
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: 2-Chlorotoluene
CAS Number: 95-49-8



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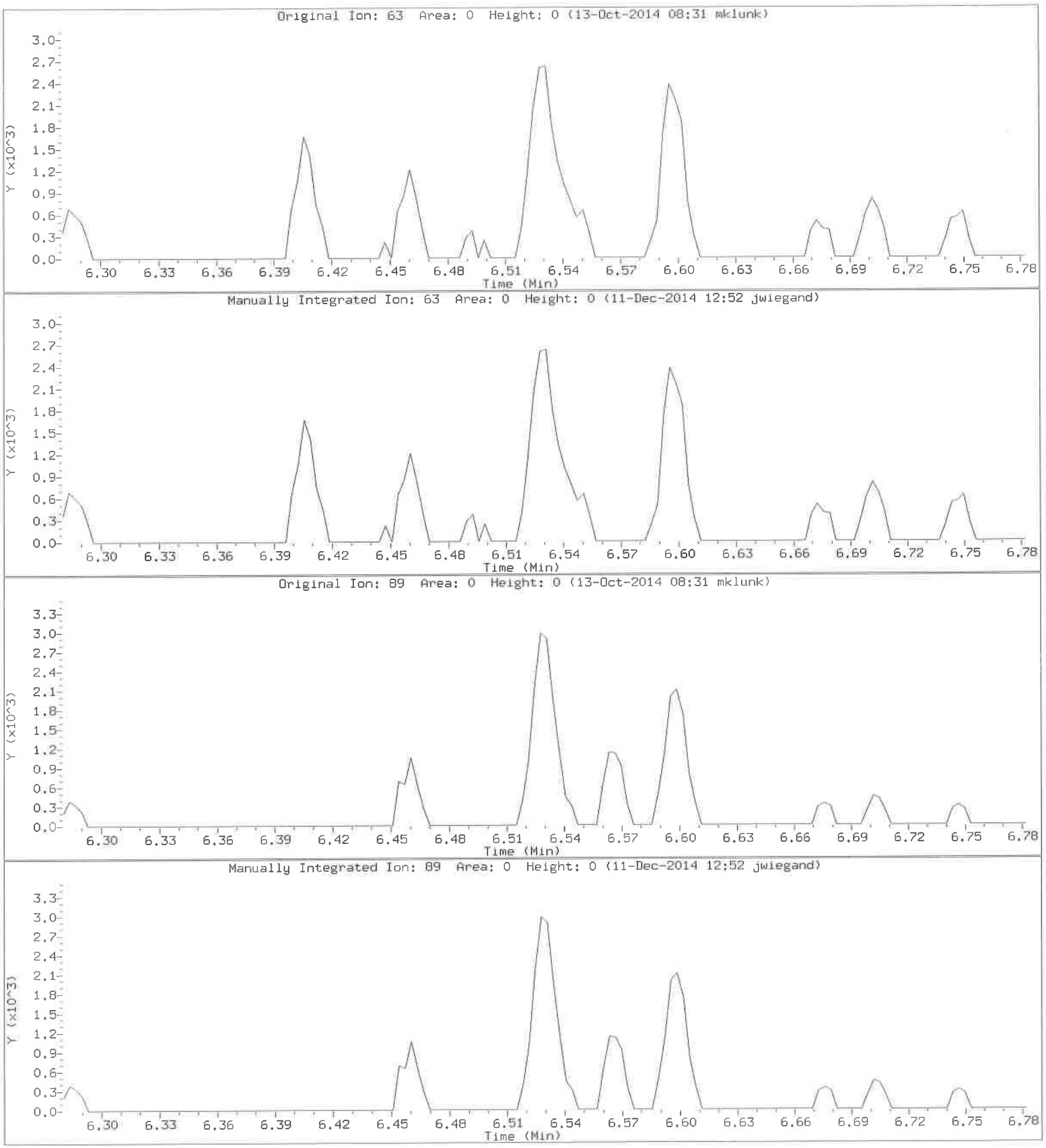

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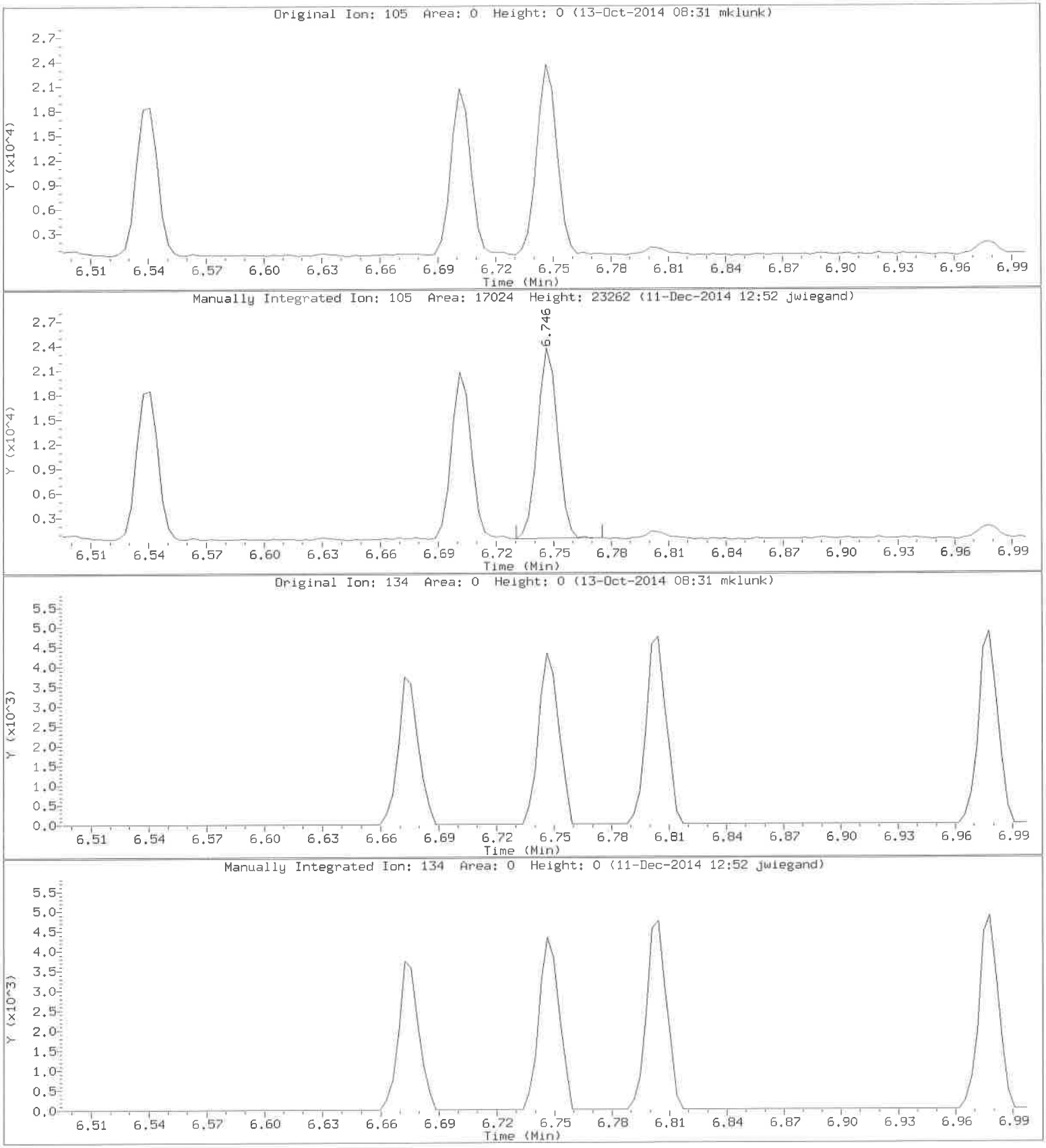
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: sec-Butyl benzene
CAS Number: 135-98-8



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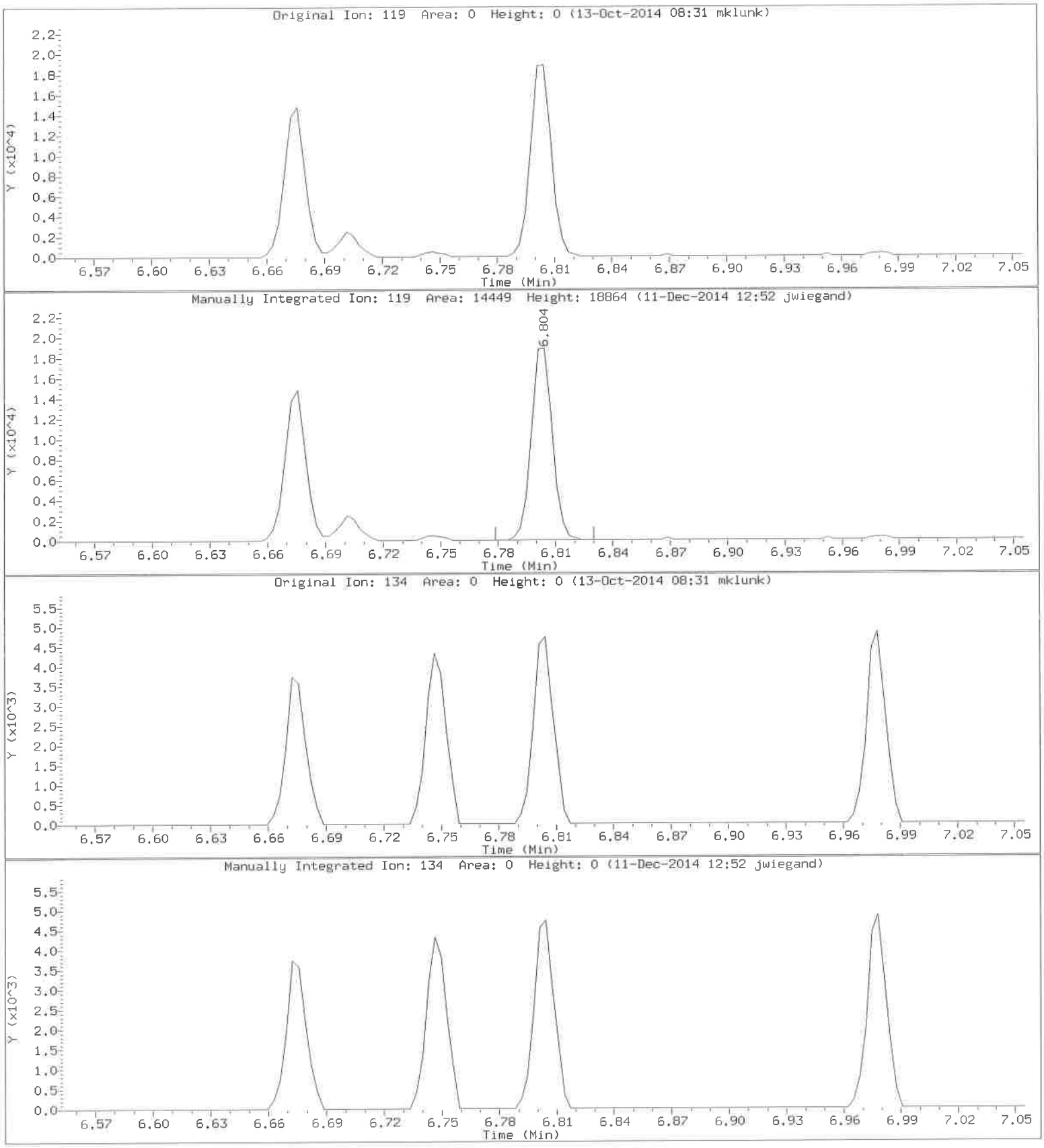
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: 4-Isopropyl toluene
CAS Number: 99-87-6



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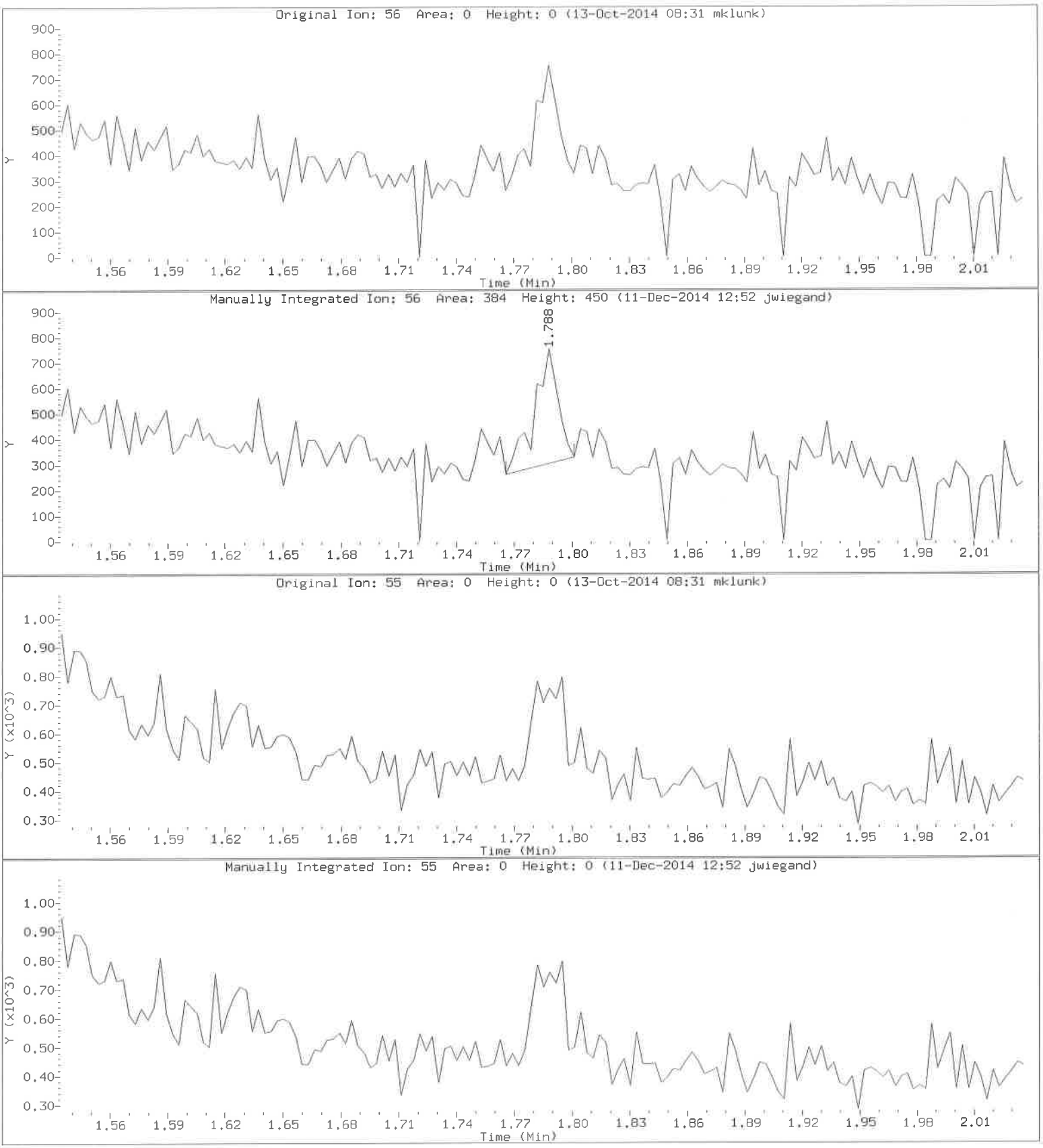
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Acrolein
CAS Number: 107-02-8



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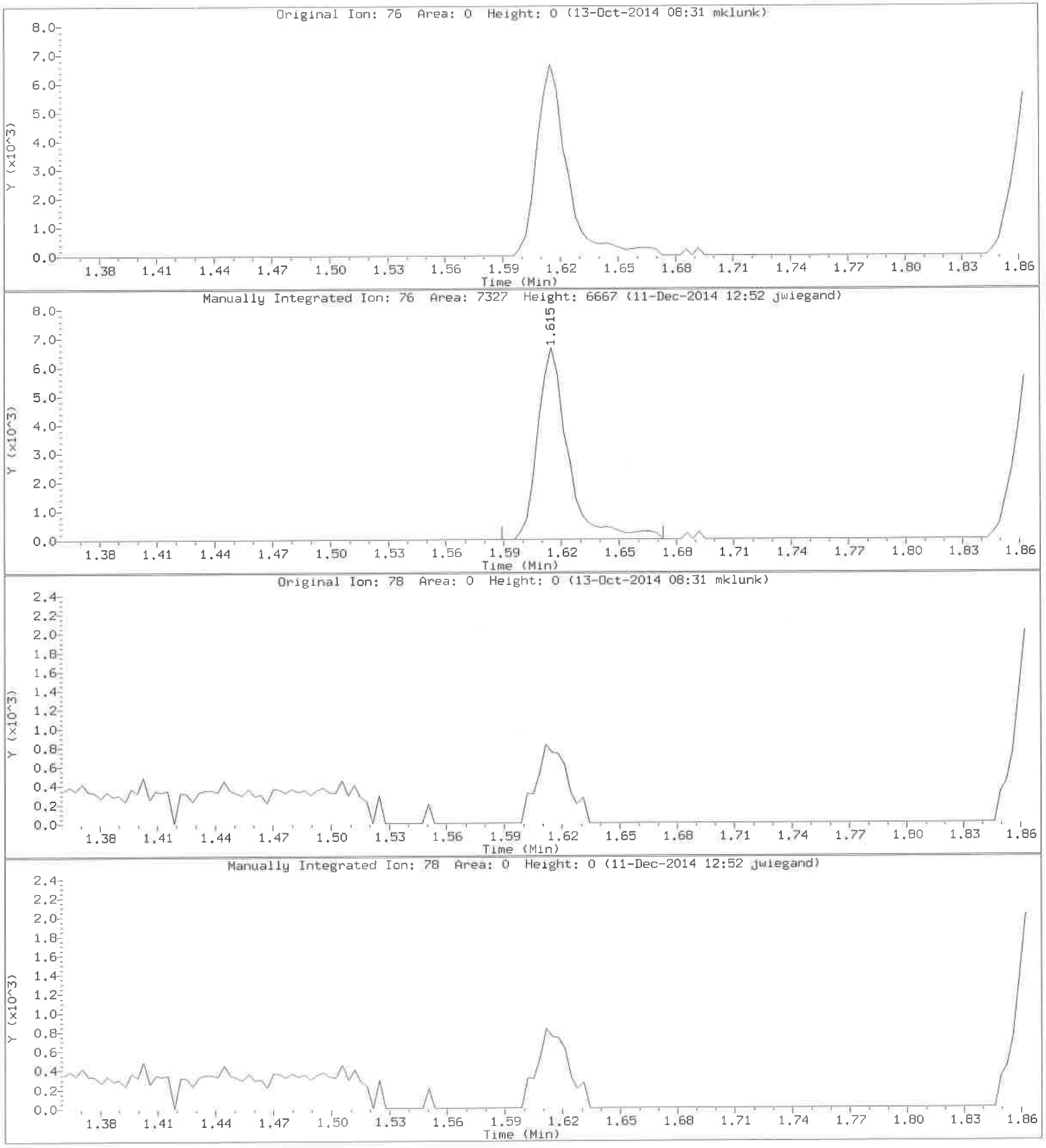
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Carbon Disulfide
CAS Number: 75-15-0



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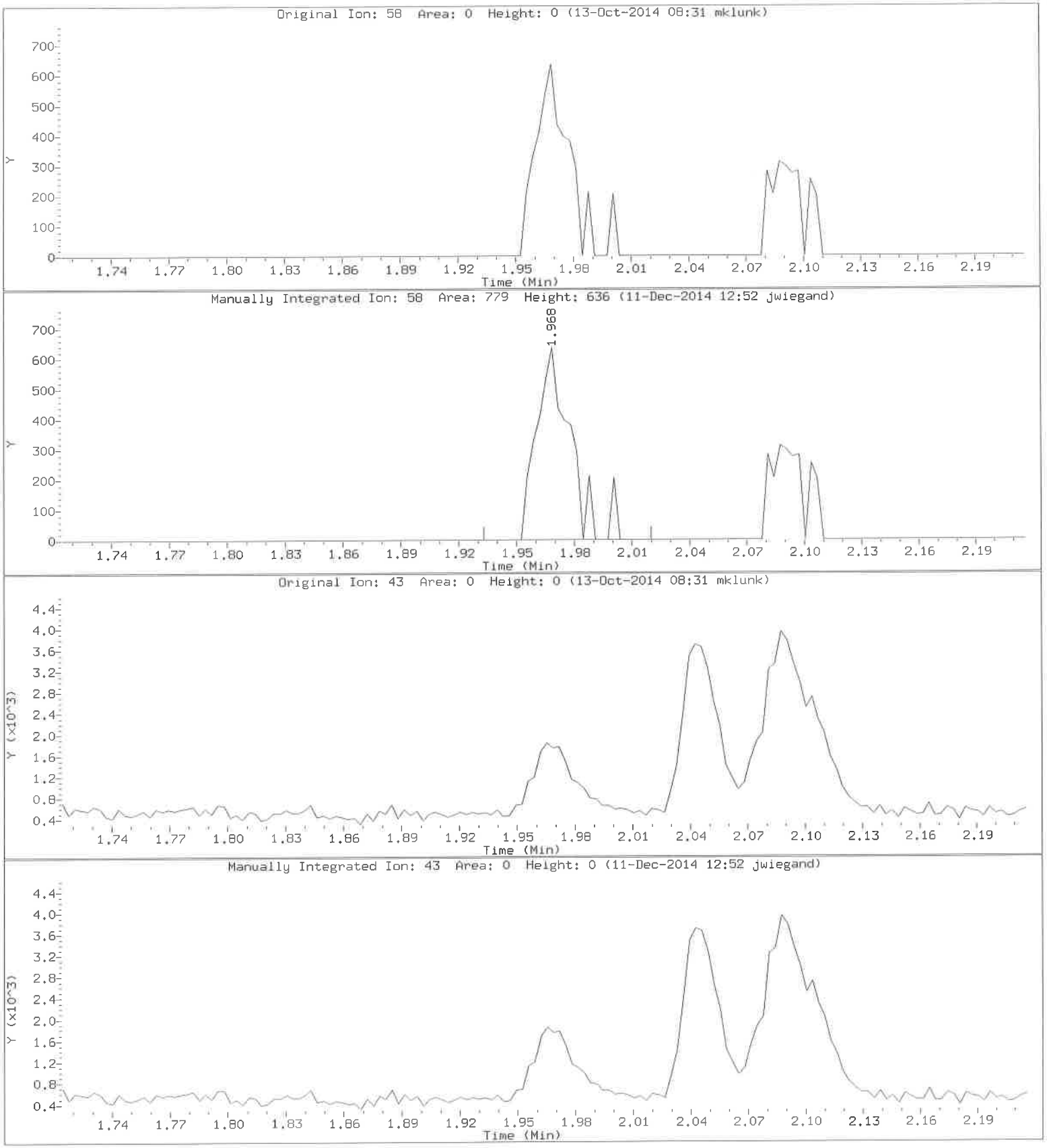
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Acetone
CAS Number: 67-64-1



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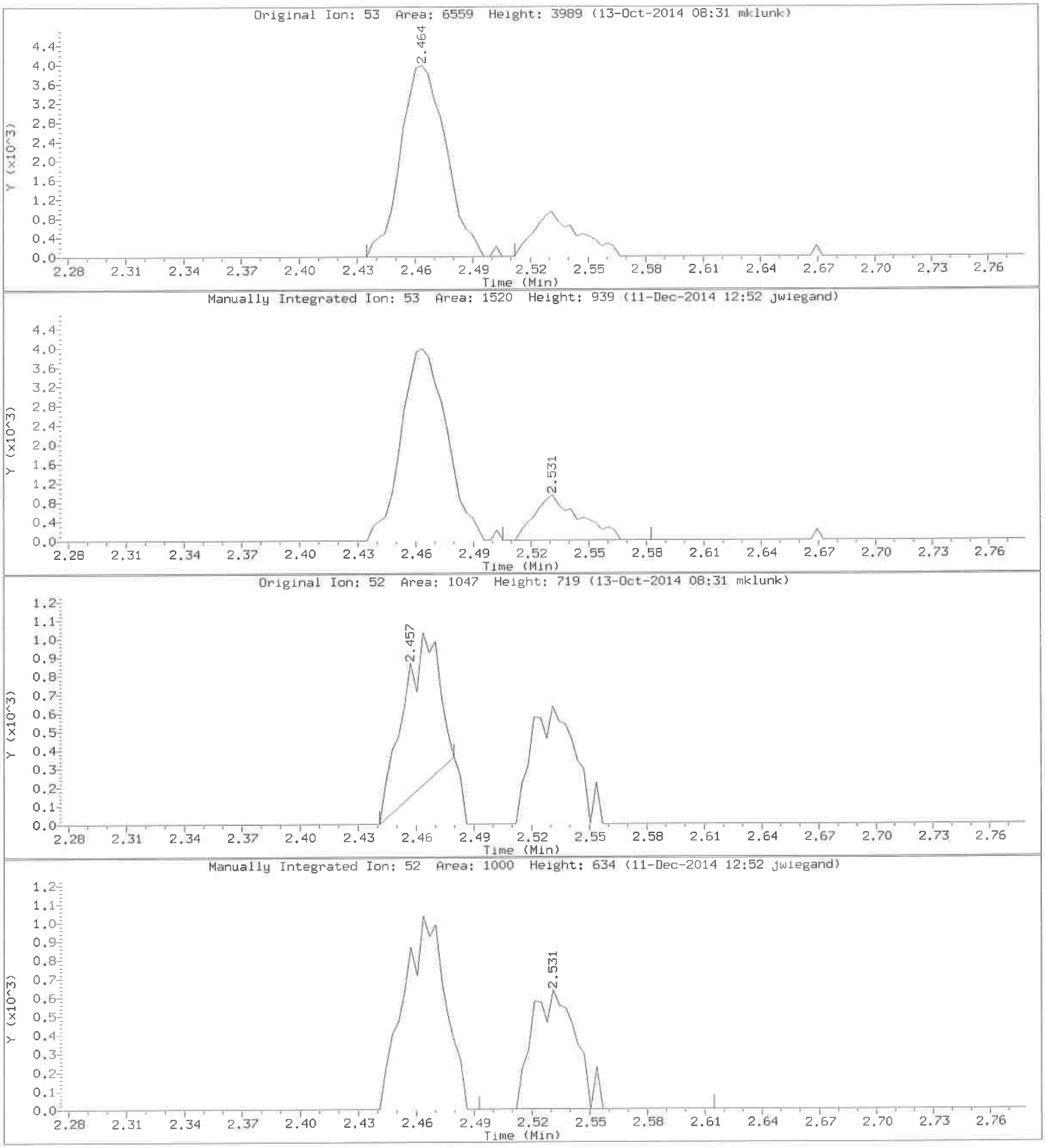
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Acrylonitrile
CAS Number: 107-13-1



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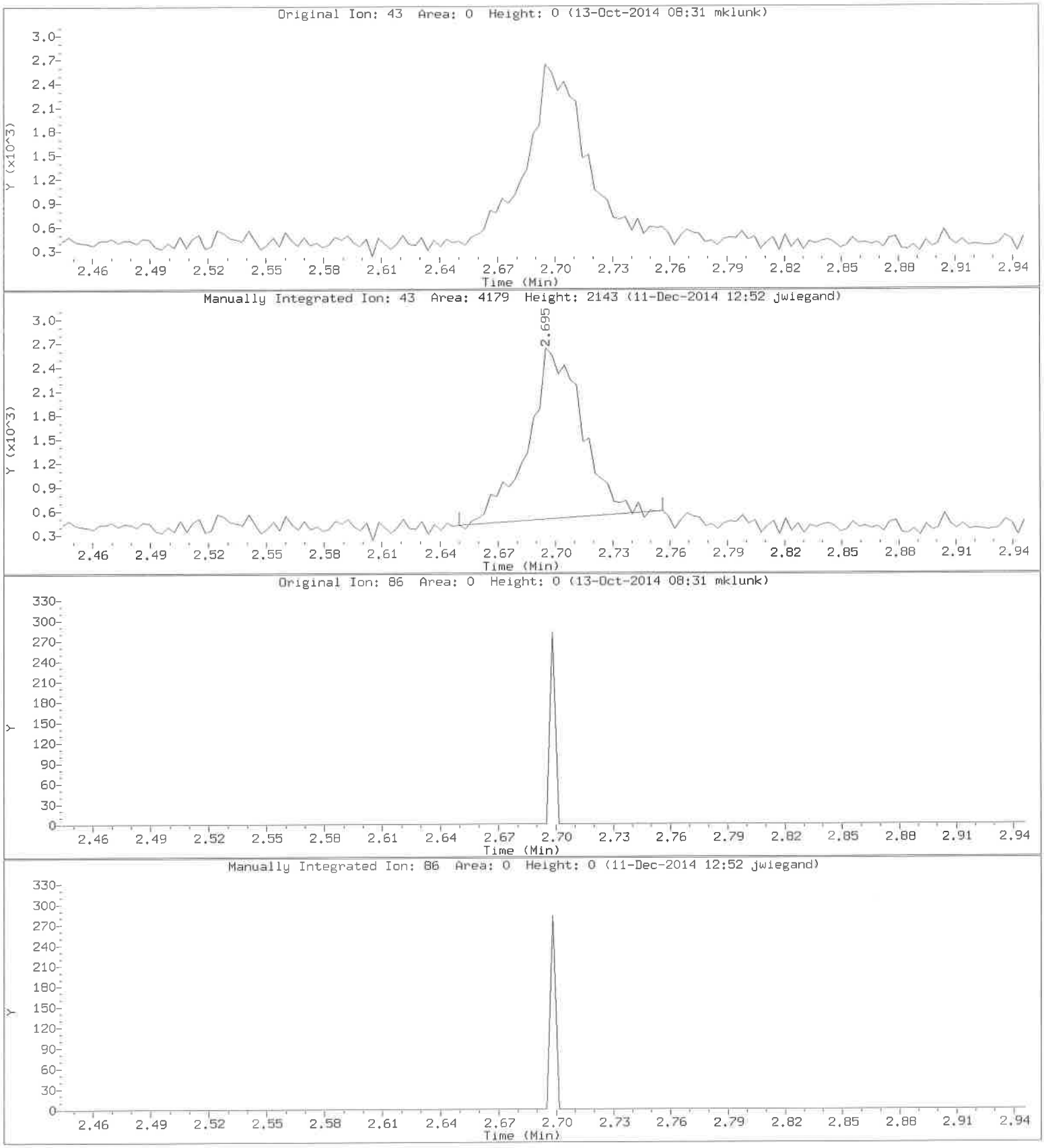
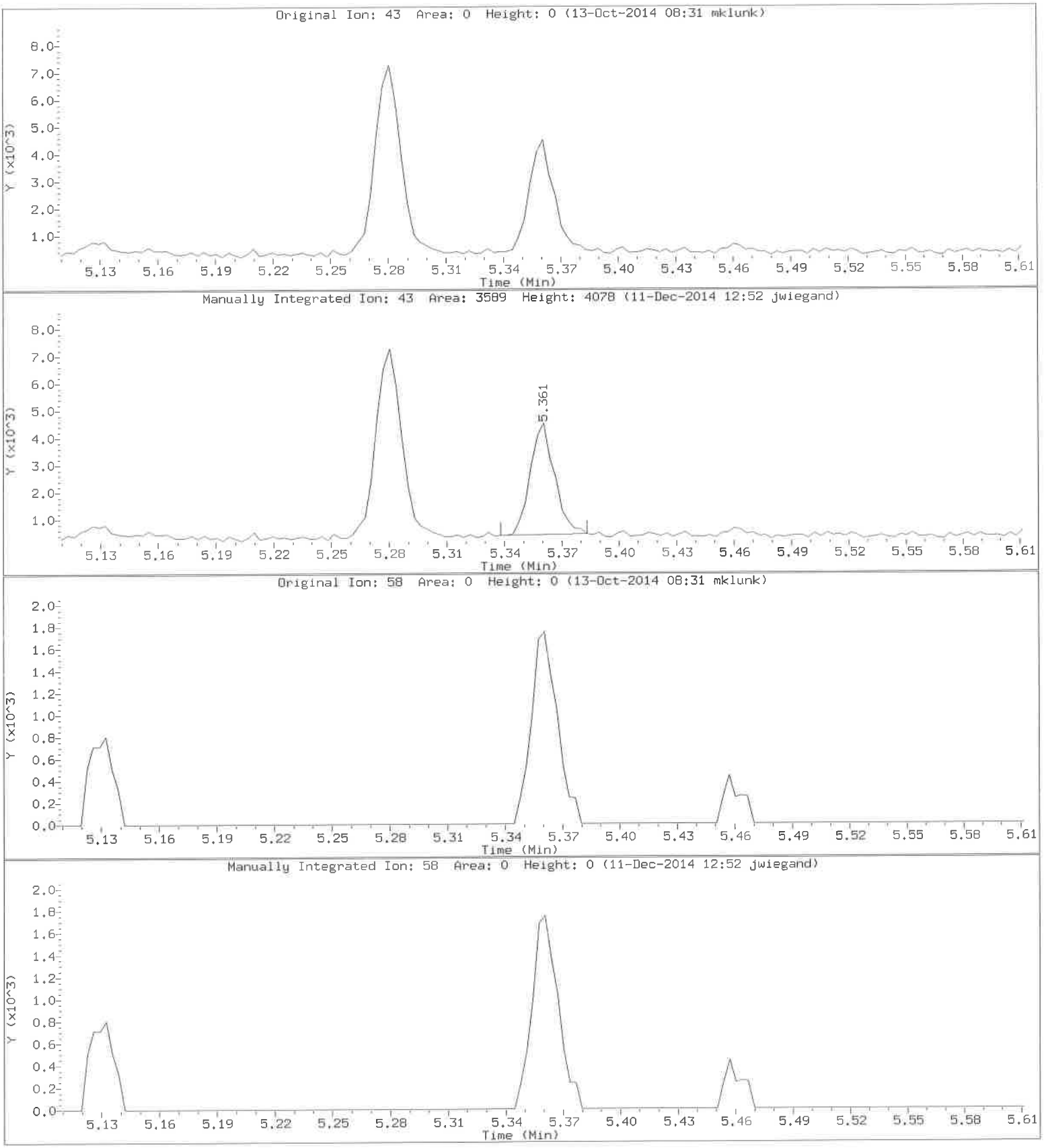
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Vinyl Acetate
CAS Number: 108-05-4



Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b/51010012.d (ManInt: al
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: 4-Methyl-2-Pentanone
CAS Number: 108-10-1



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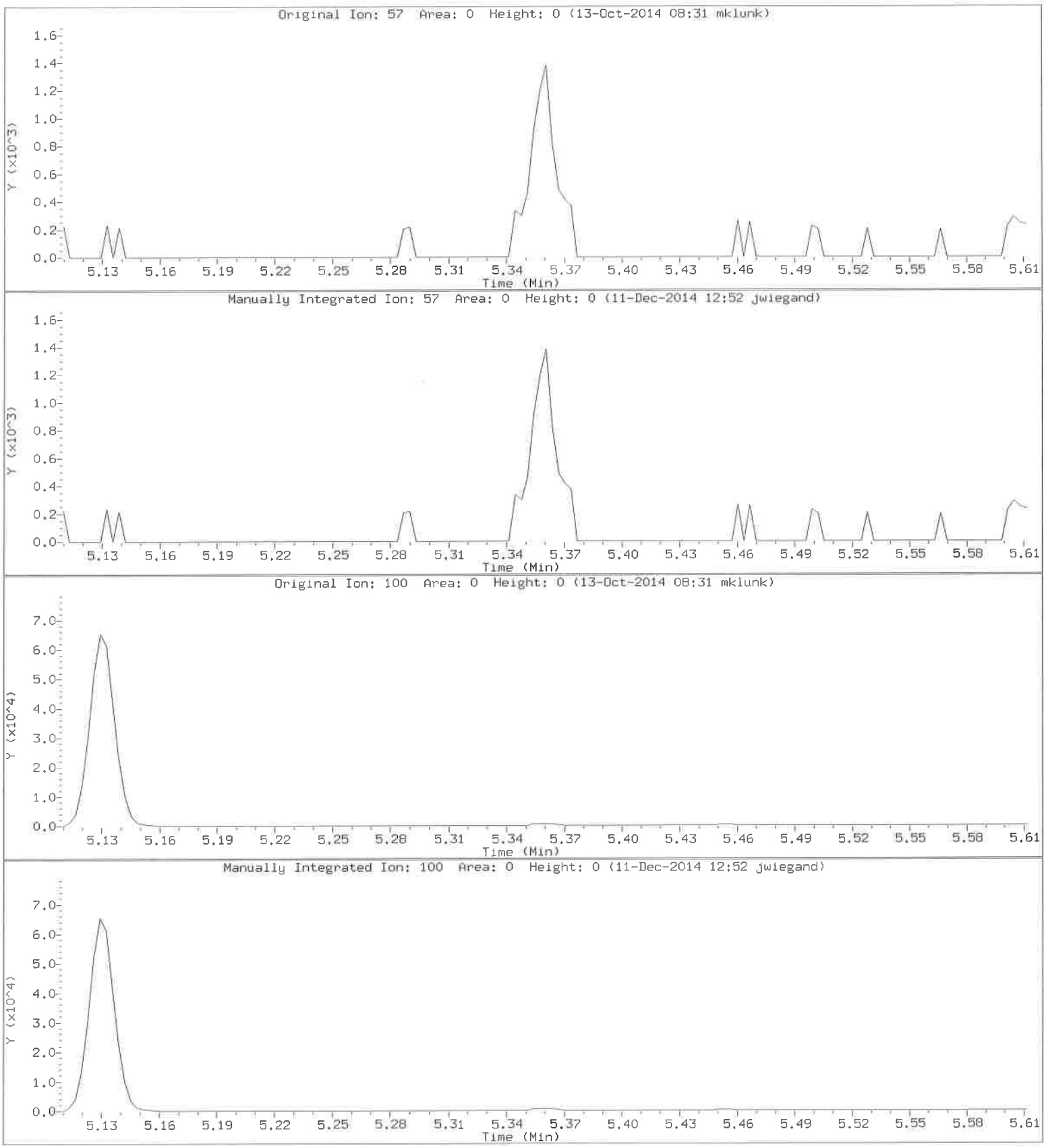
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]



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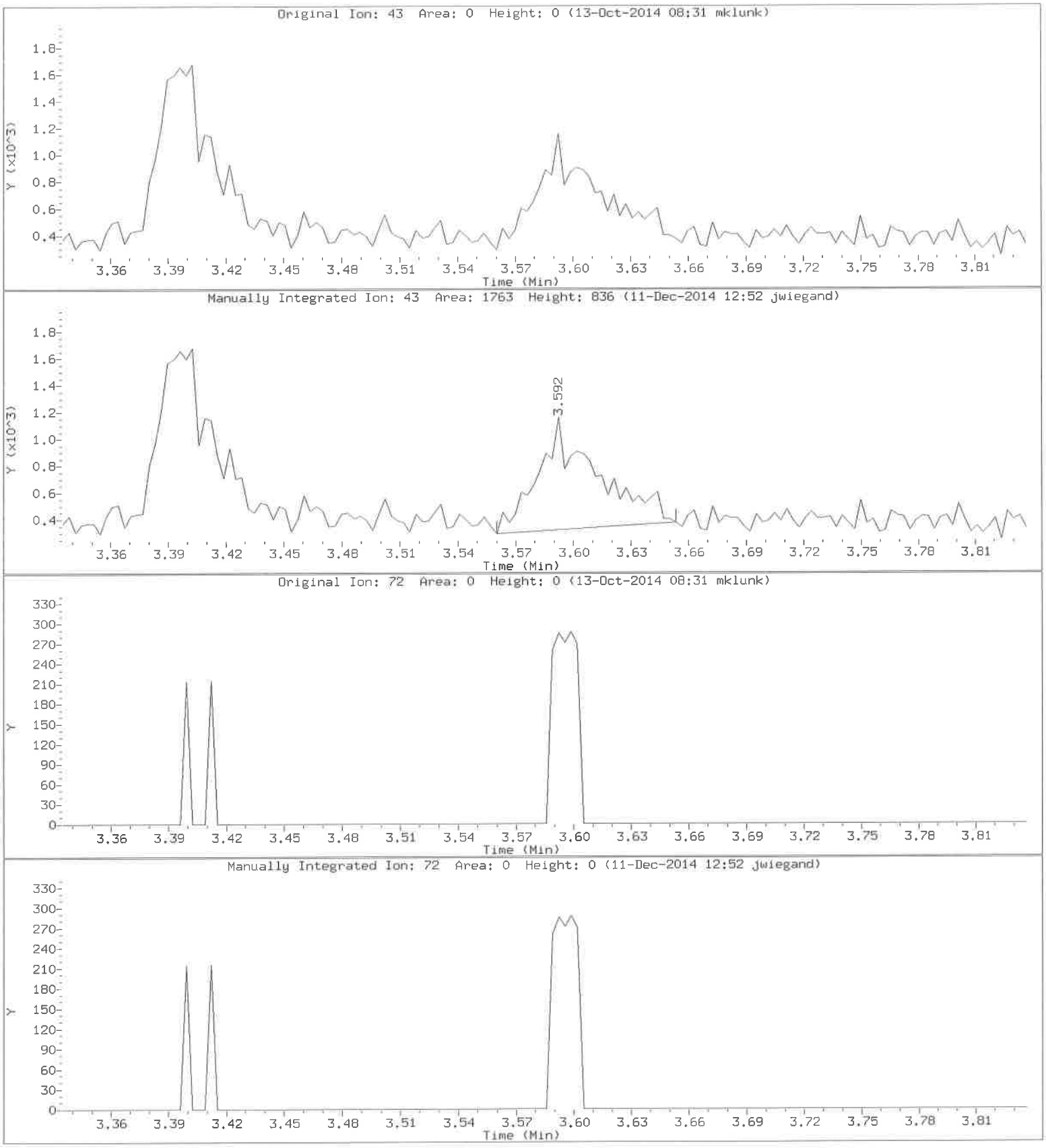
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: 2-Butanone
CAS Number: 78-93-3



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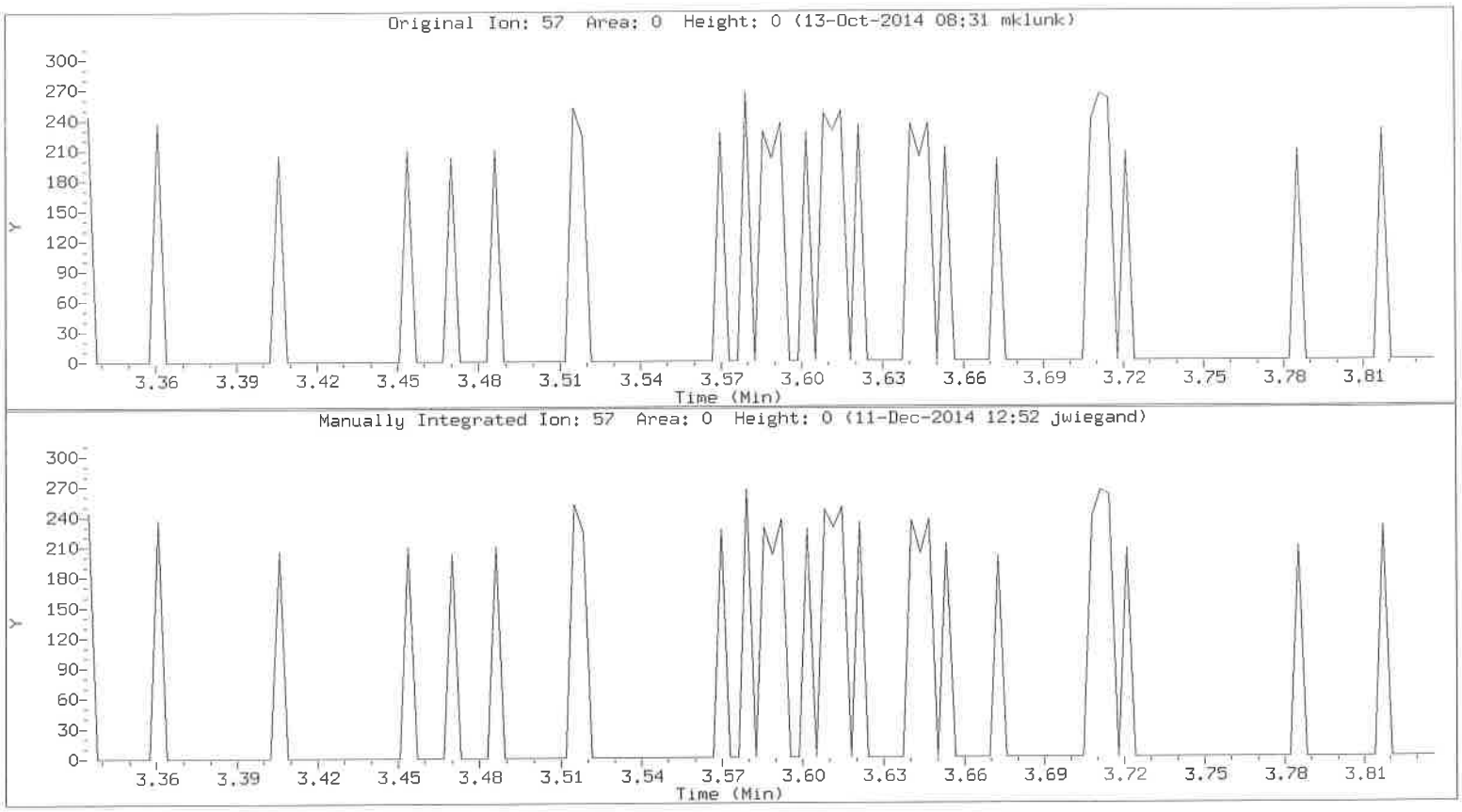
Lab Sample ID: VSTD[5]



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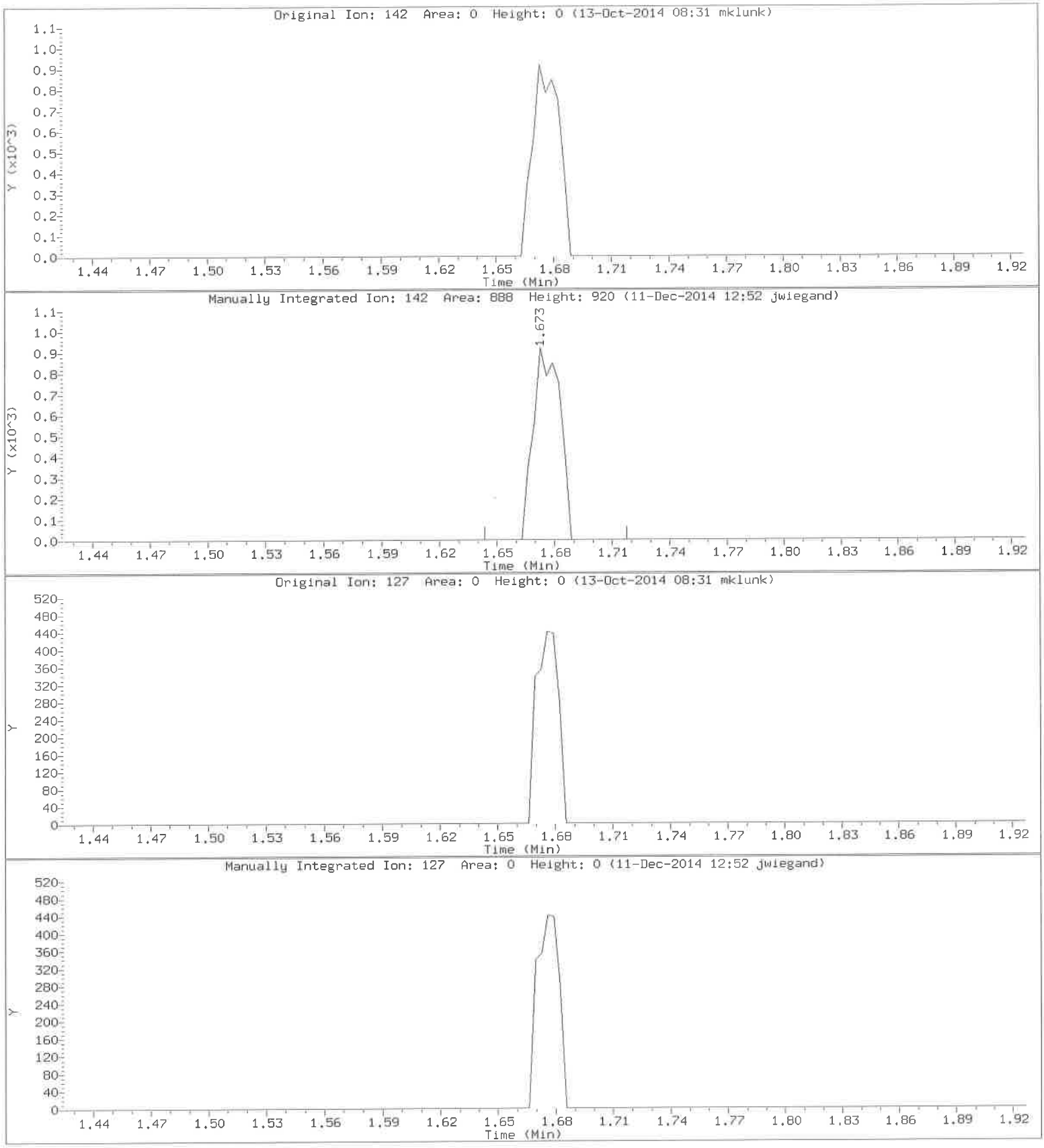
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Iodomethane
CAS Number: 74-88-4



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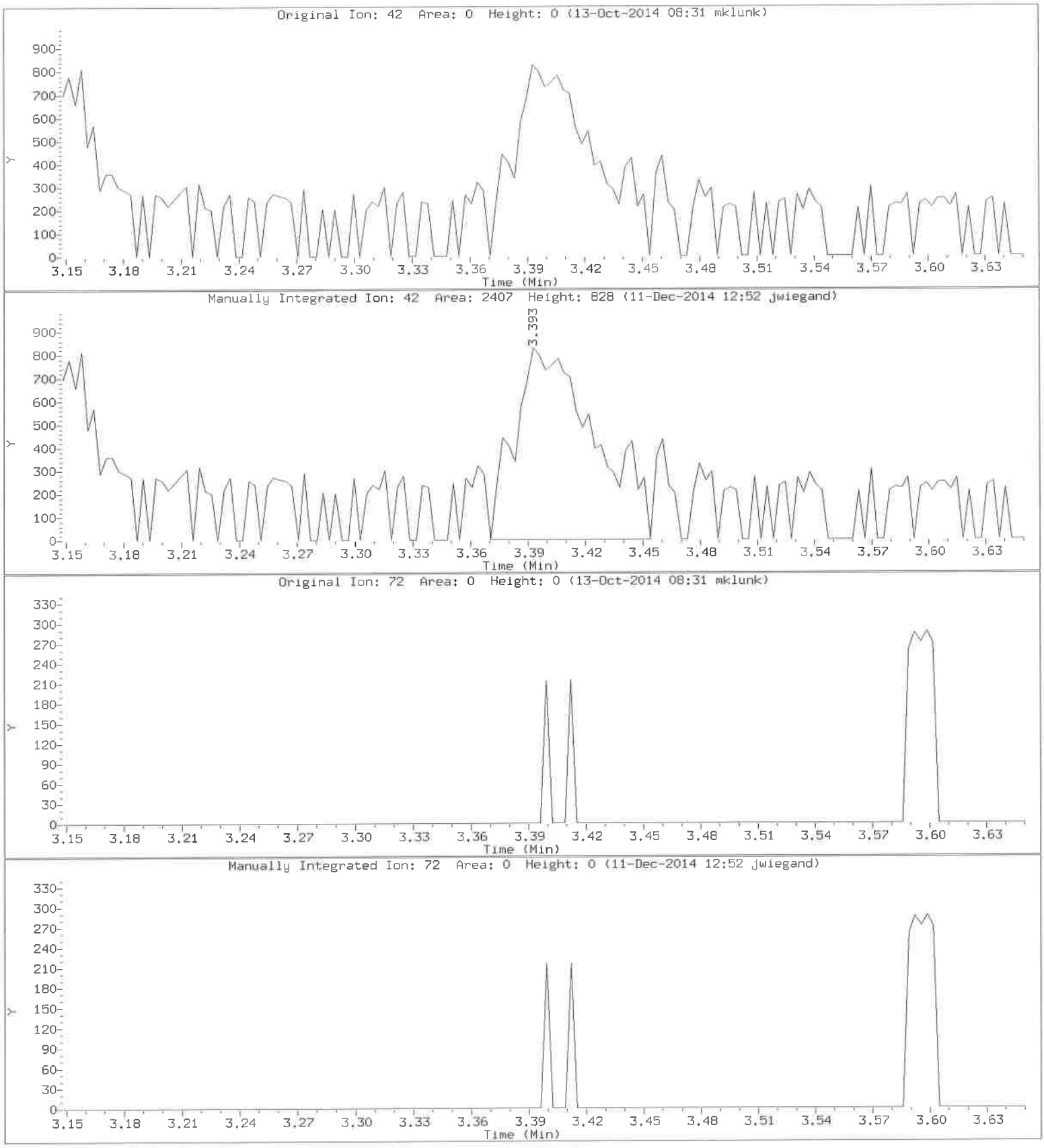
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Tetrahydrofuran
CAS Number: 109-99-9



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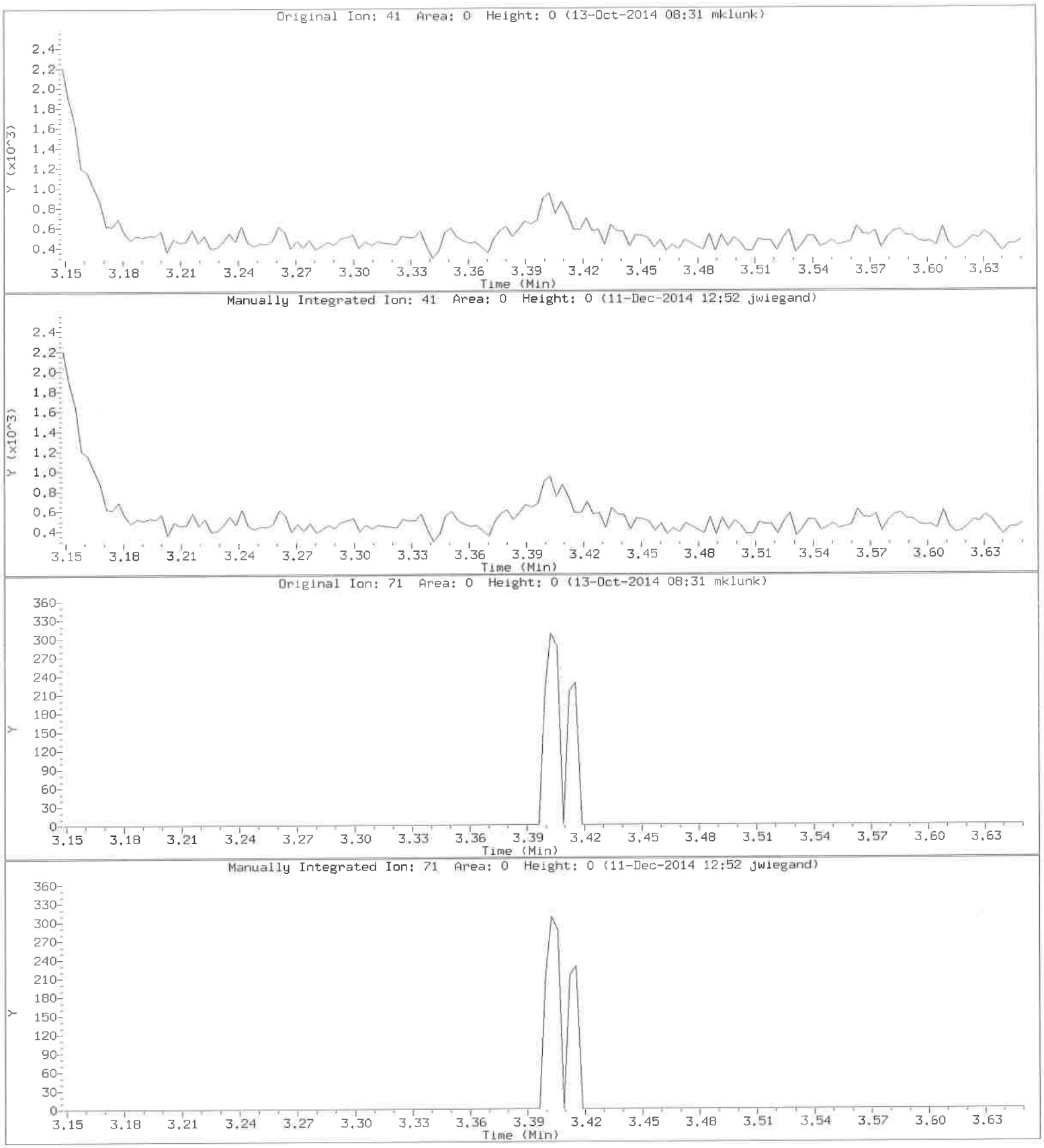
Lab Sample ID: VSTD[5]



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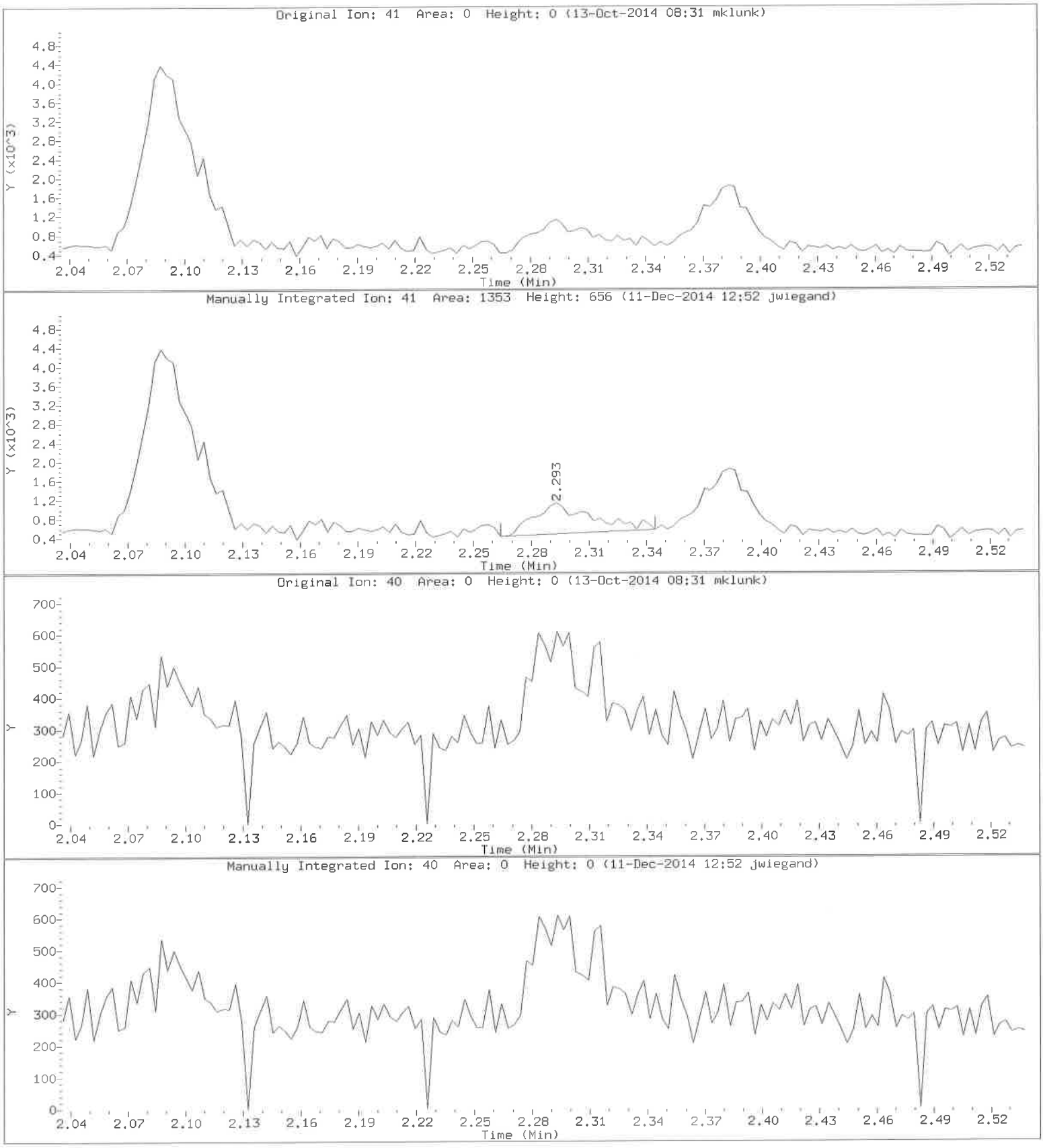
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Acetonitrile
CAS Number: 75-05-8



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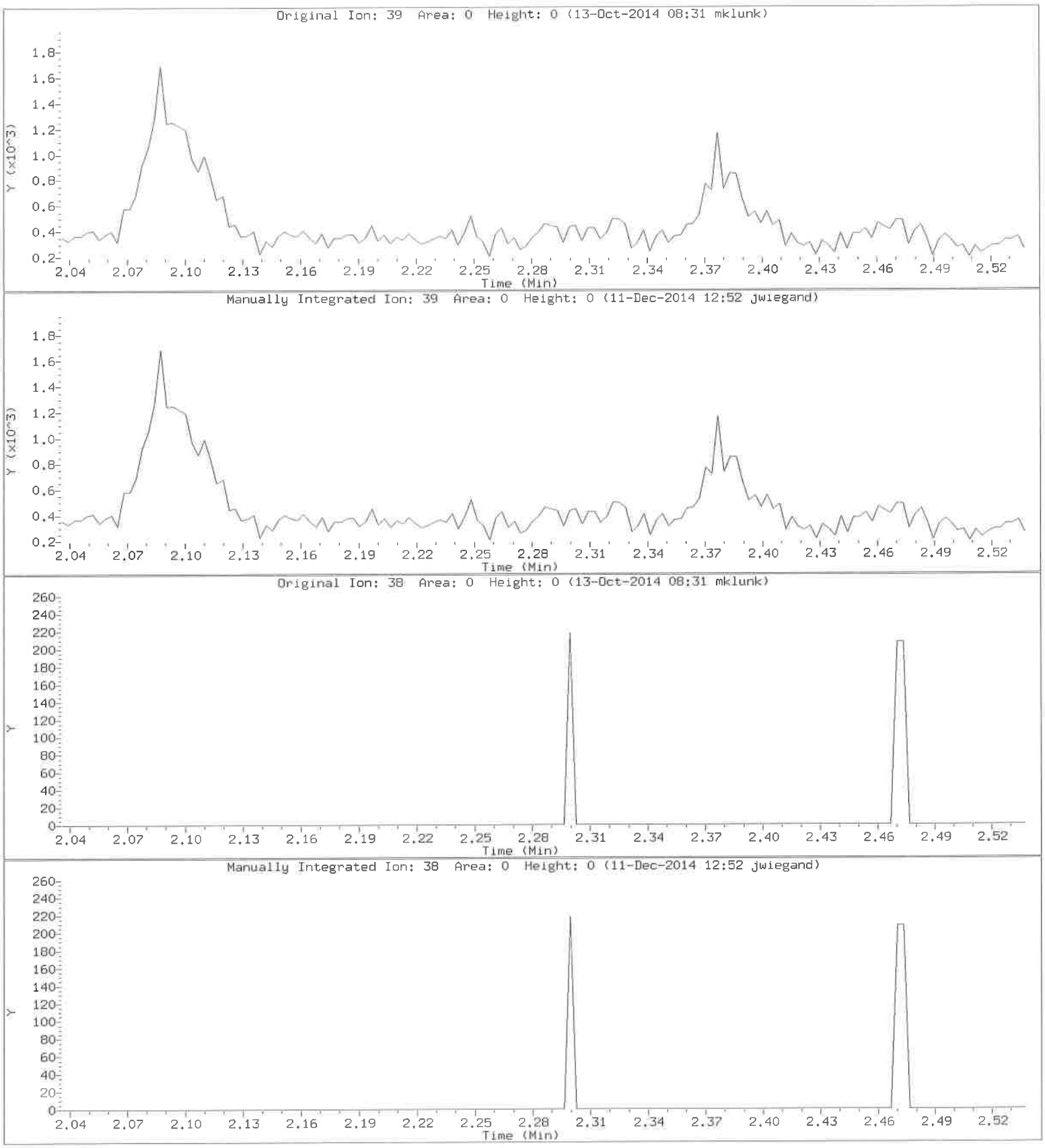
Lab Sample ID: VSTD[5]



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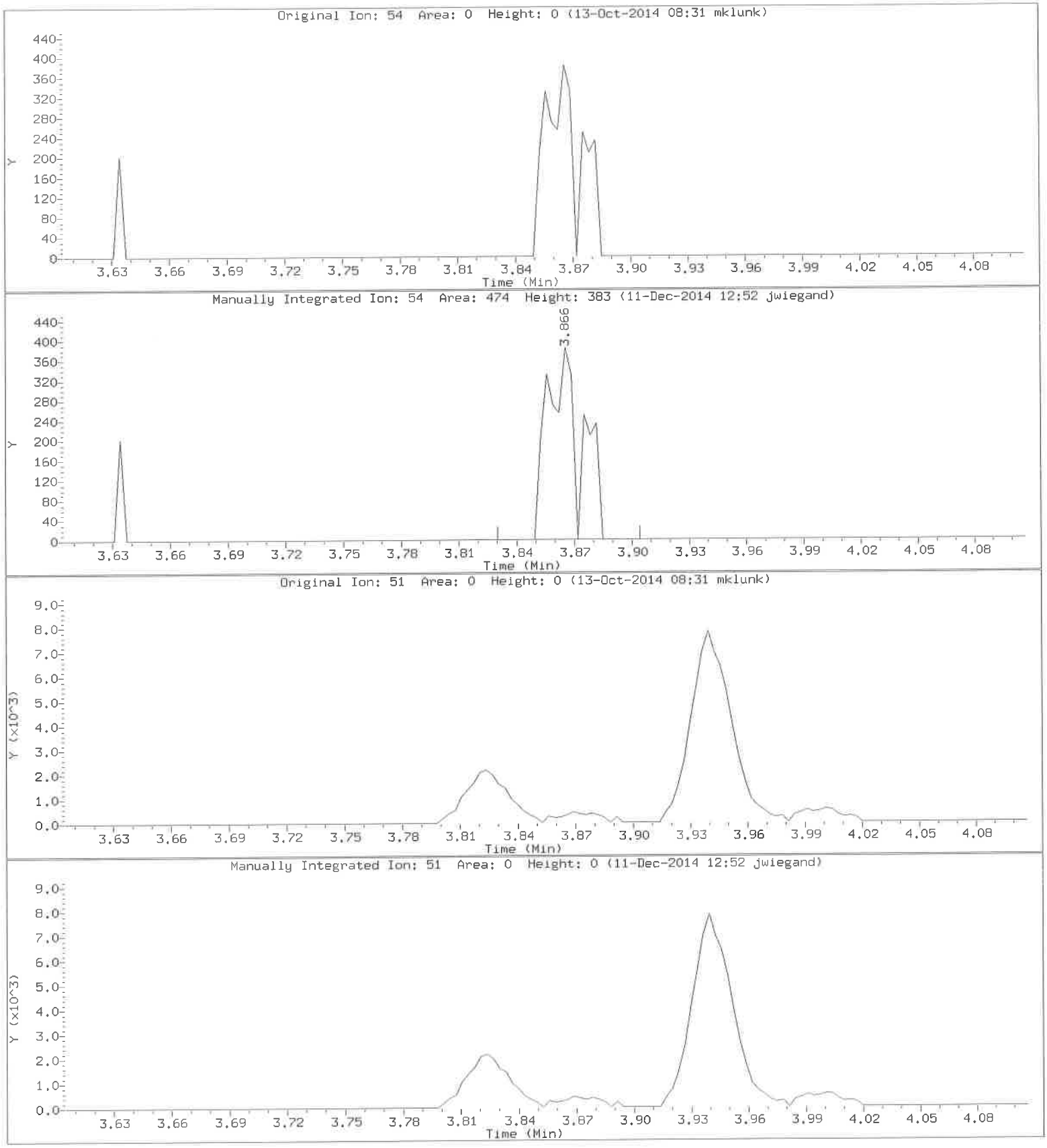
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Propionitrile
CAS Number: 107-12-0



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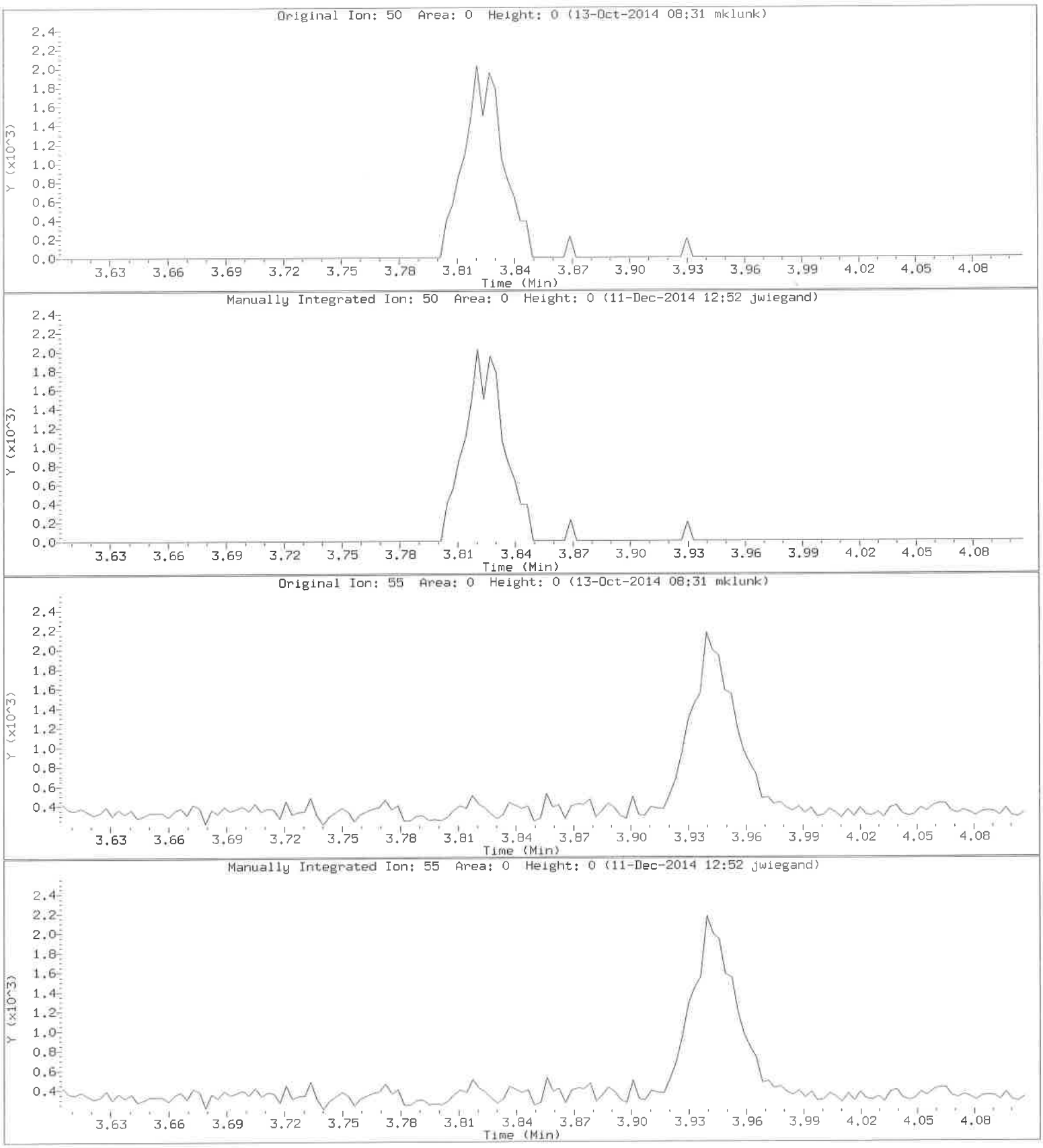
Lab Sample ID: VSTD[5]



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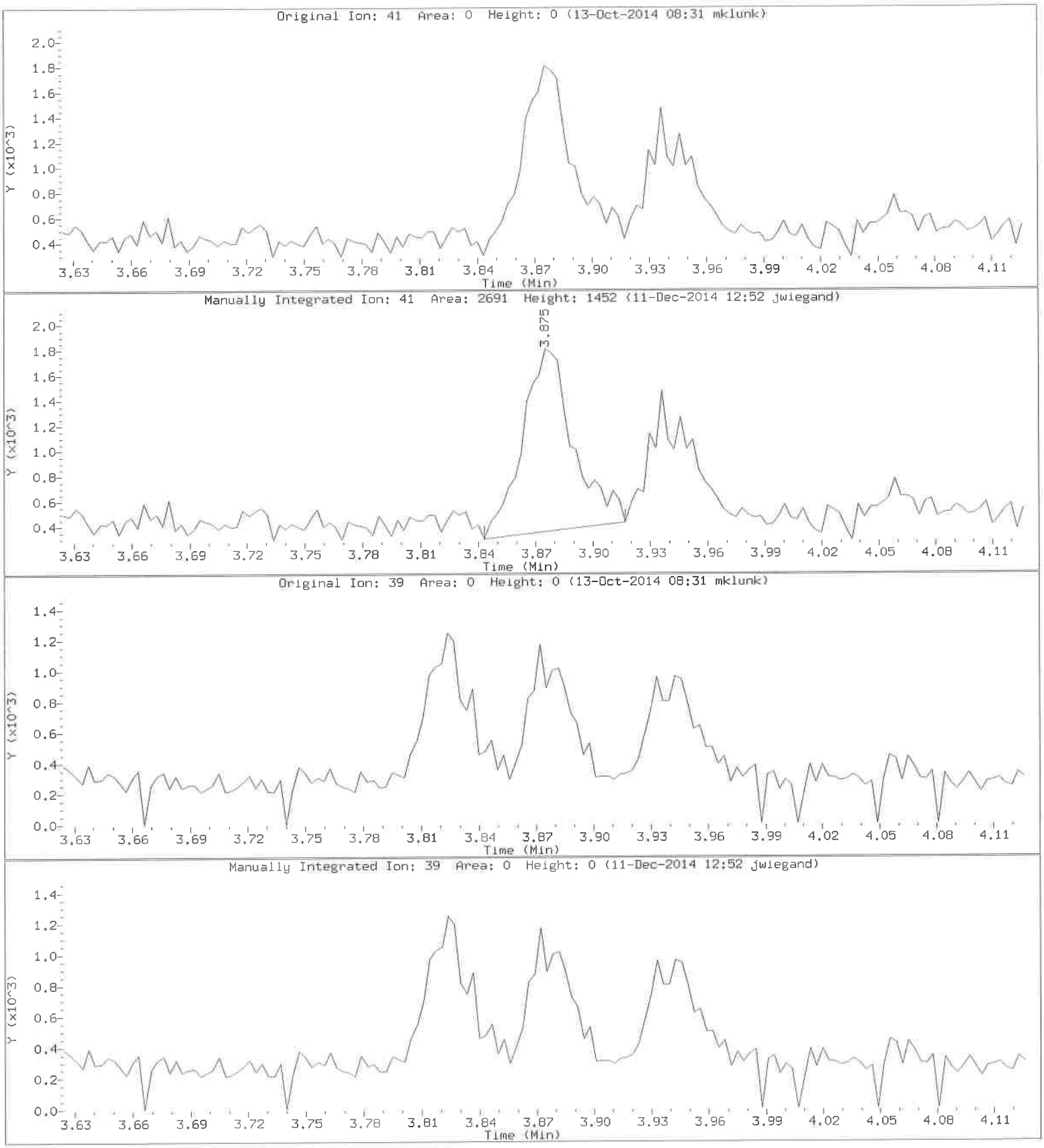
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Methacrylonitrile
CAS Number: 126-98-7



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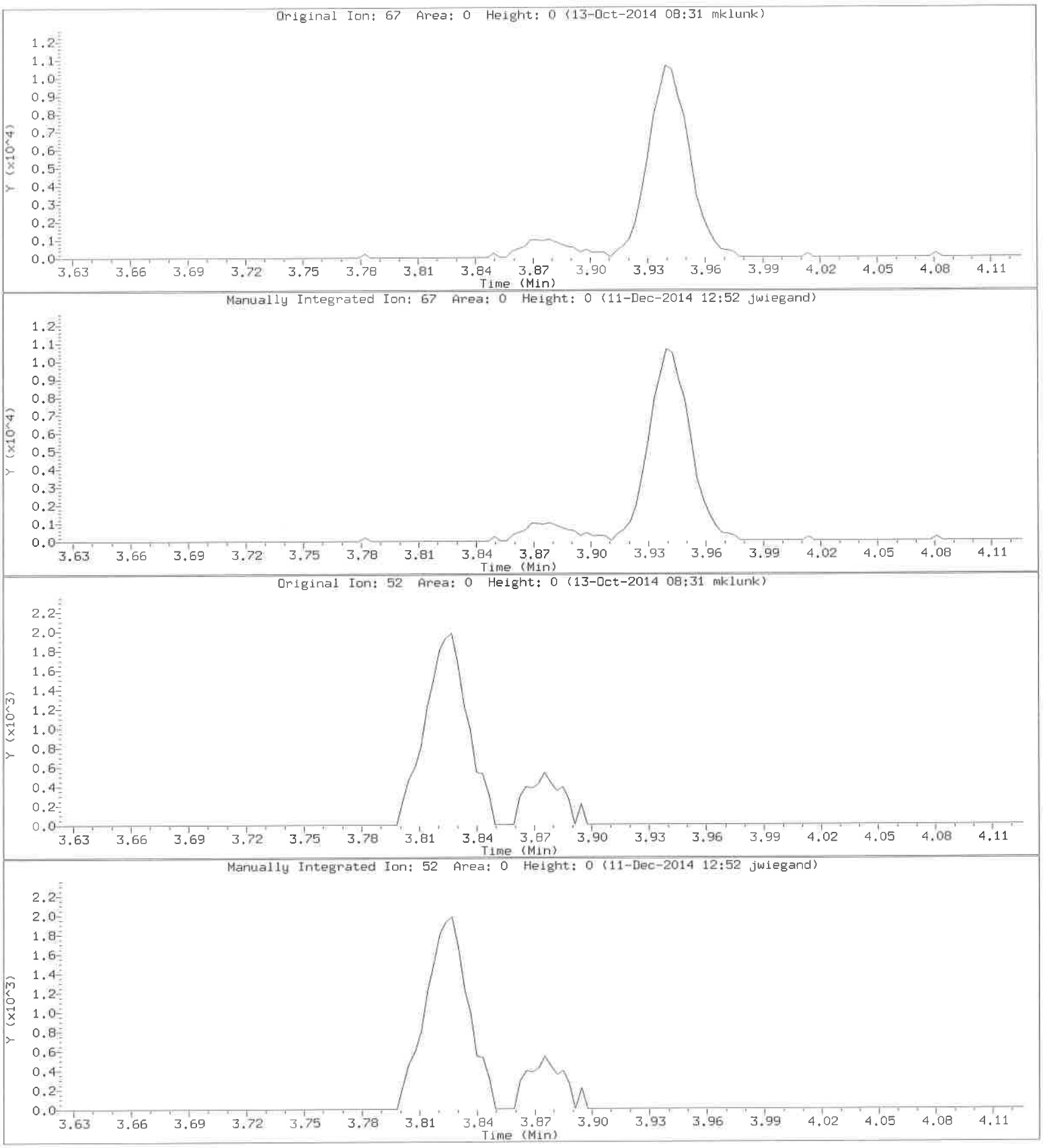
Lab Sample ID: VSTD[5]



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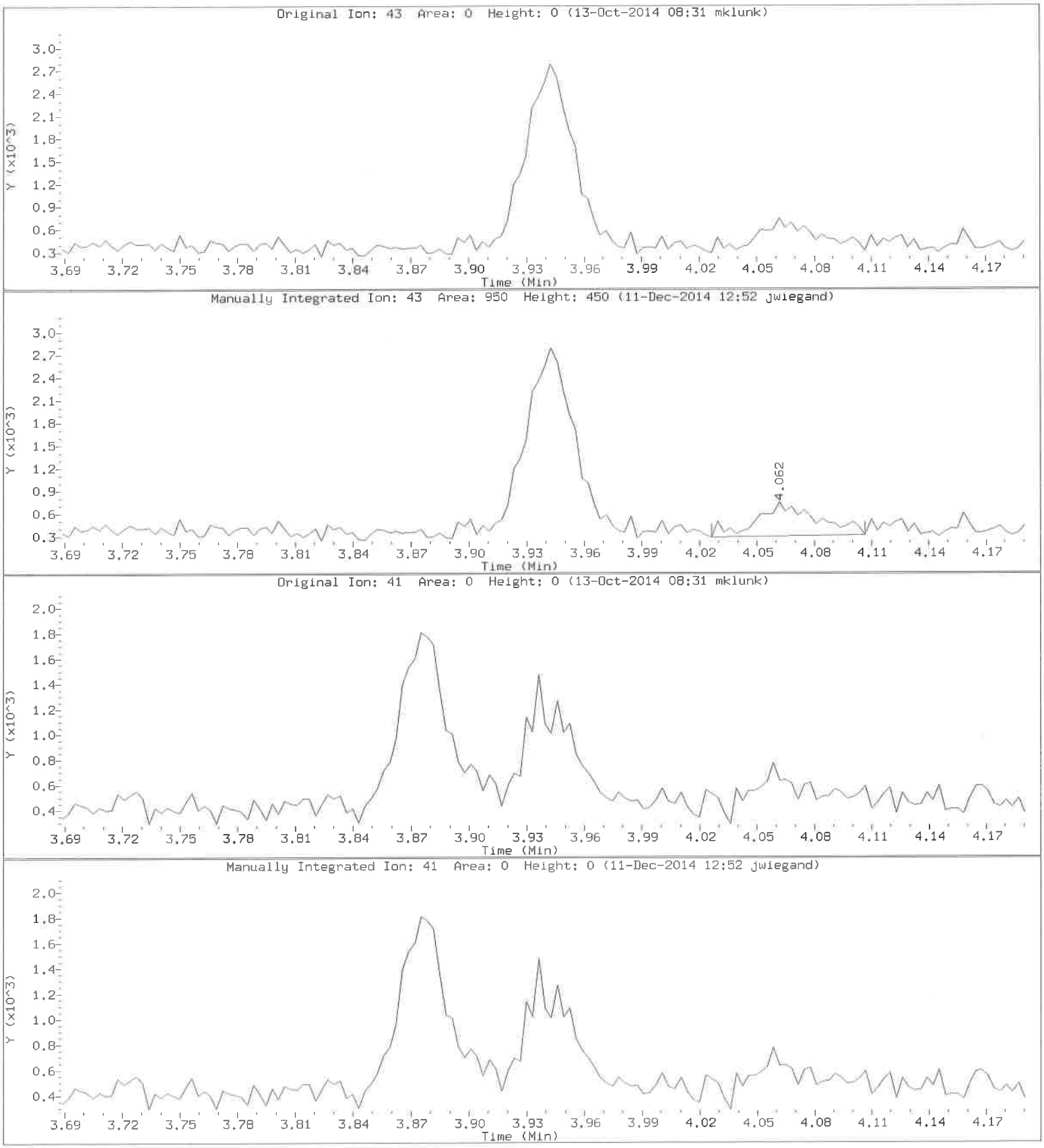
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Isobutanol
CAS Number: 78-83-1



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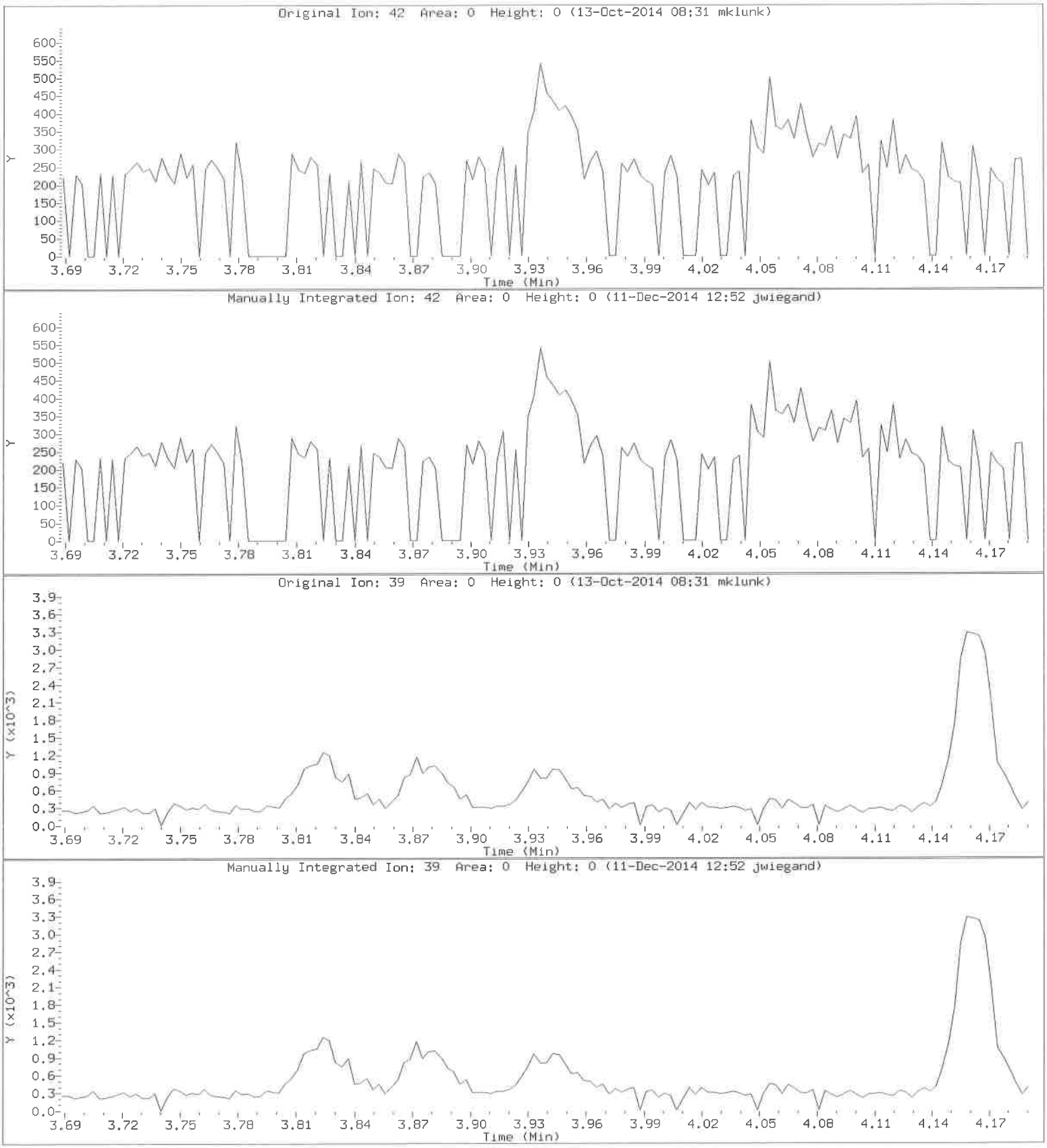
Lab Sample ID: VSTD[5]



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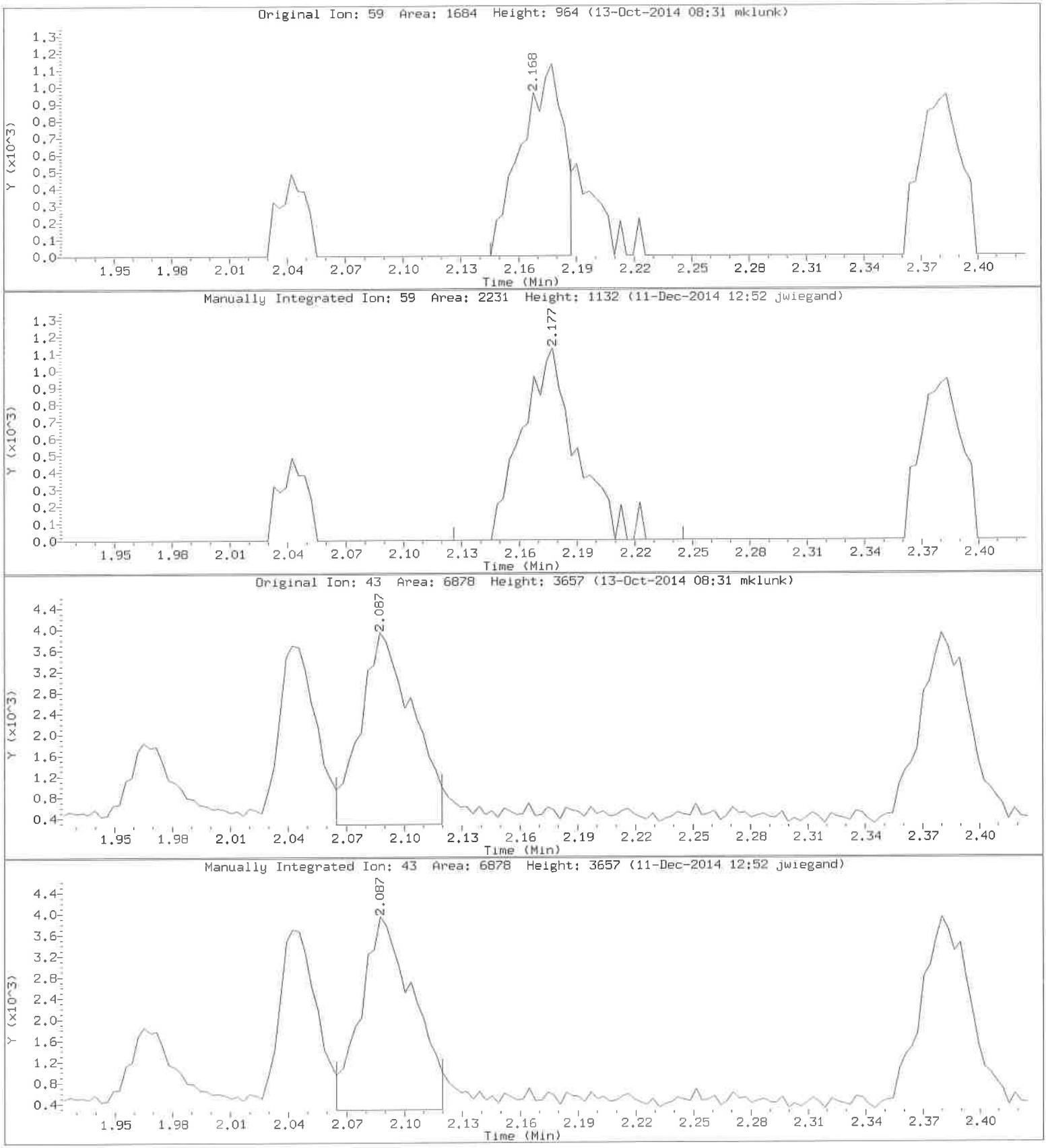
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: tert-Butyl Alcohol
CAS Number: 75-65-0



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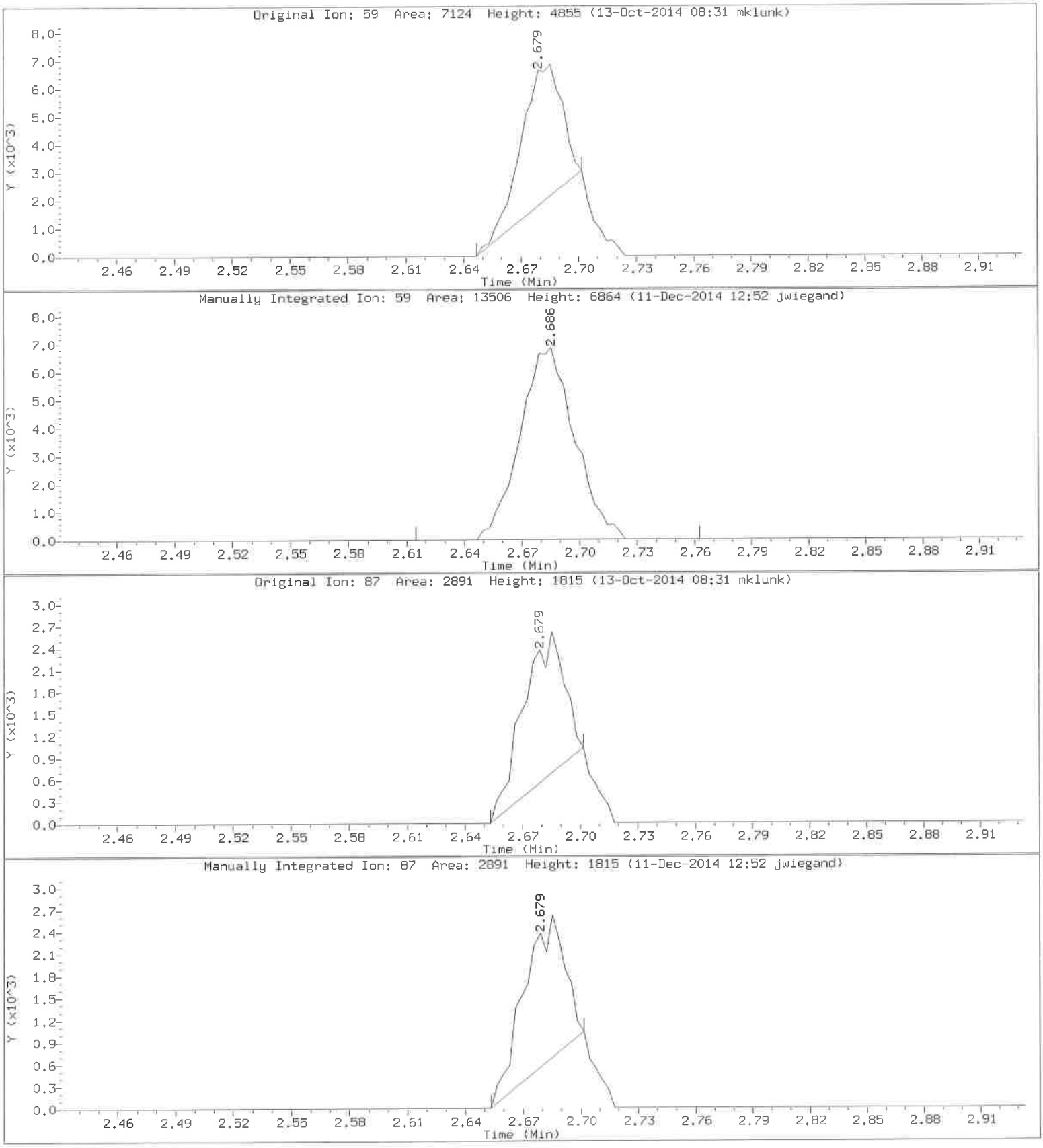
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: t-Butyl ethyl ether
CAS Number: 637-92-3



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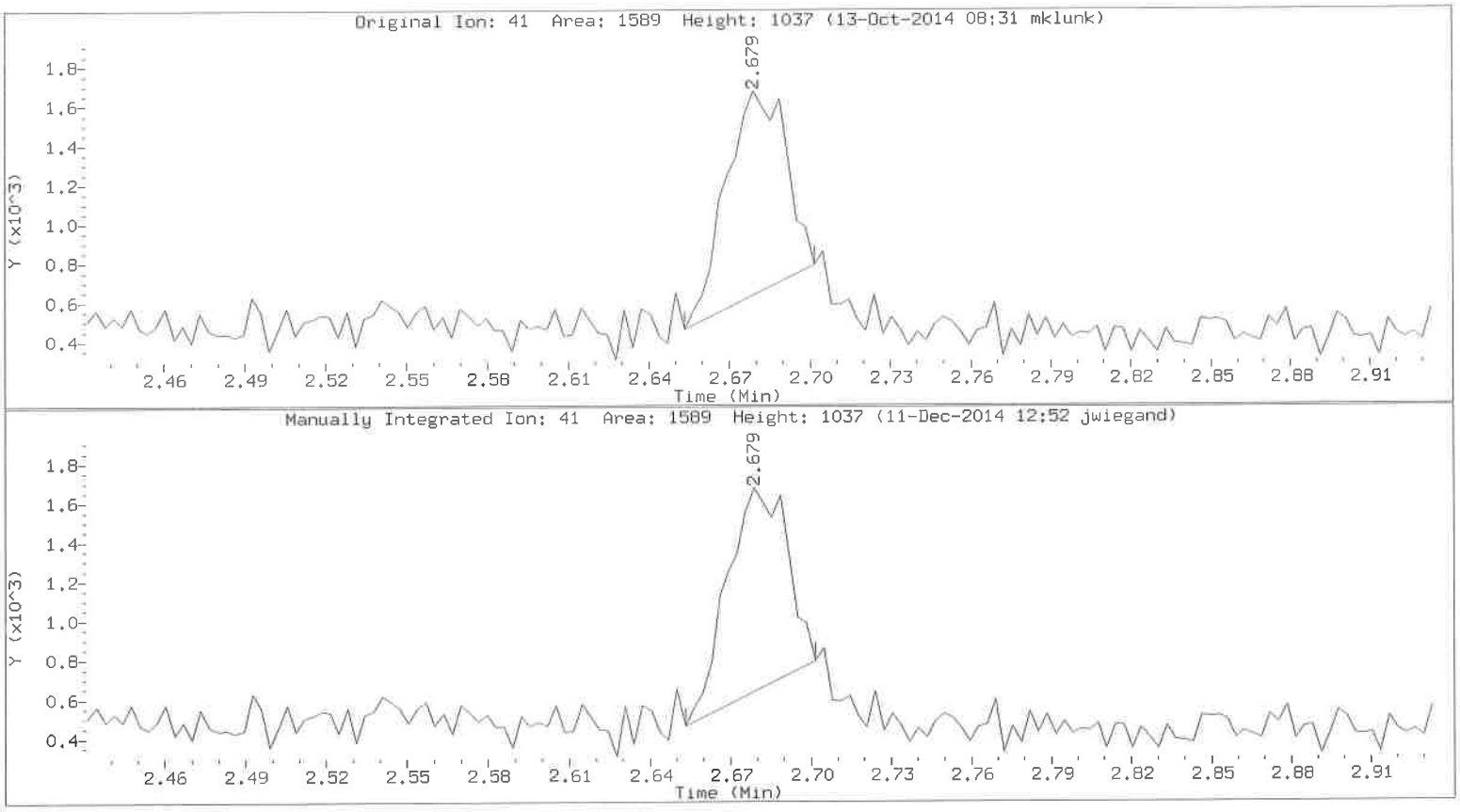
Lab Sample ID: VSTD[5]



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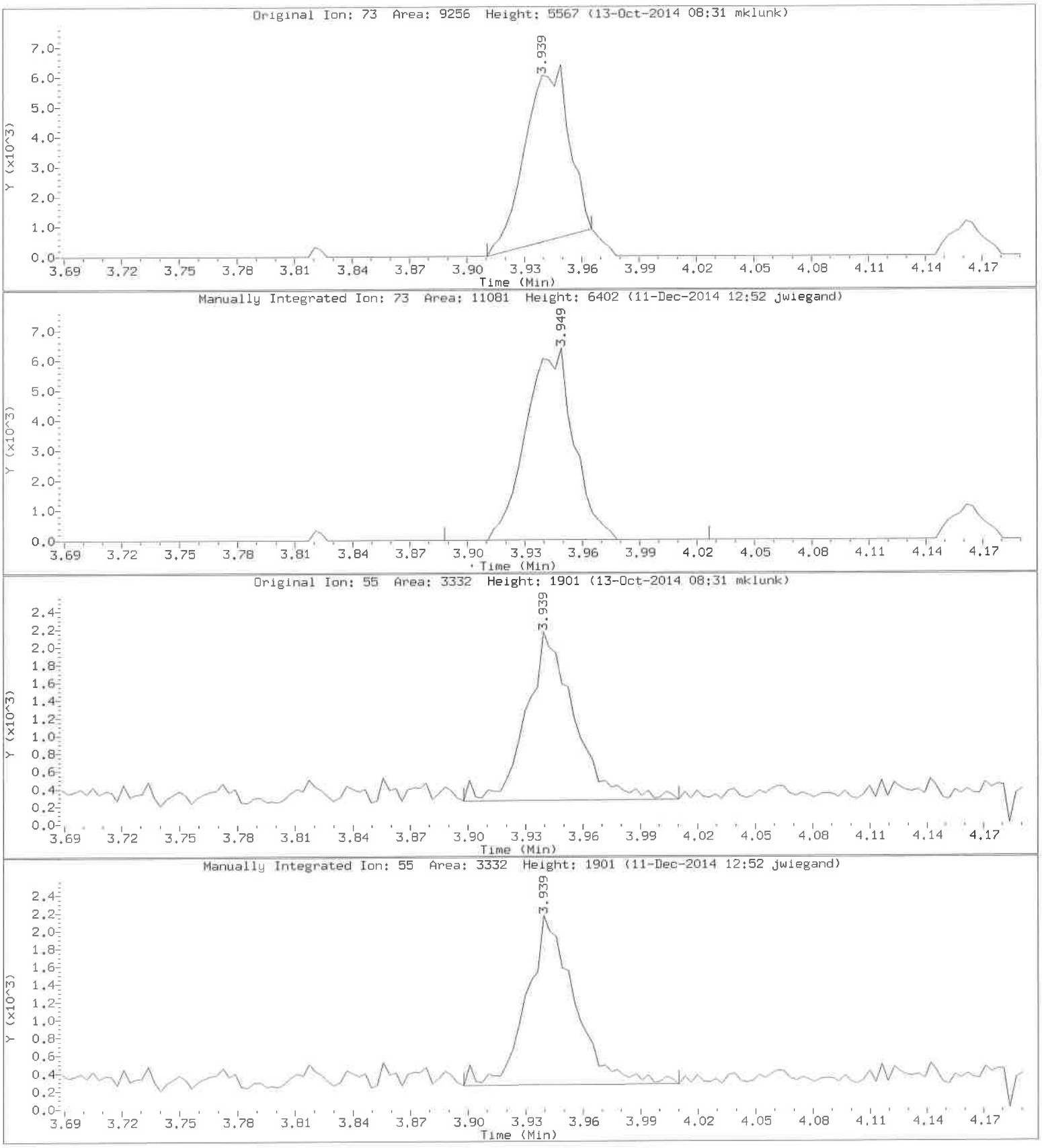
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: t-Amyl methyl ether
CAS Number: 994-05-8



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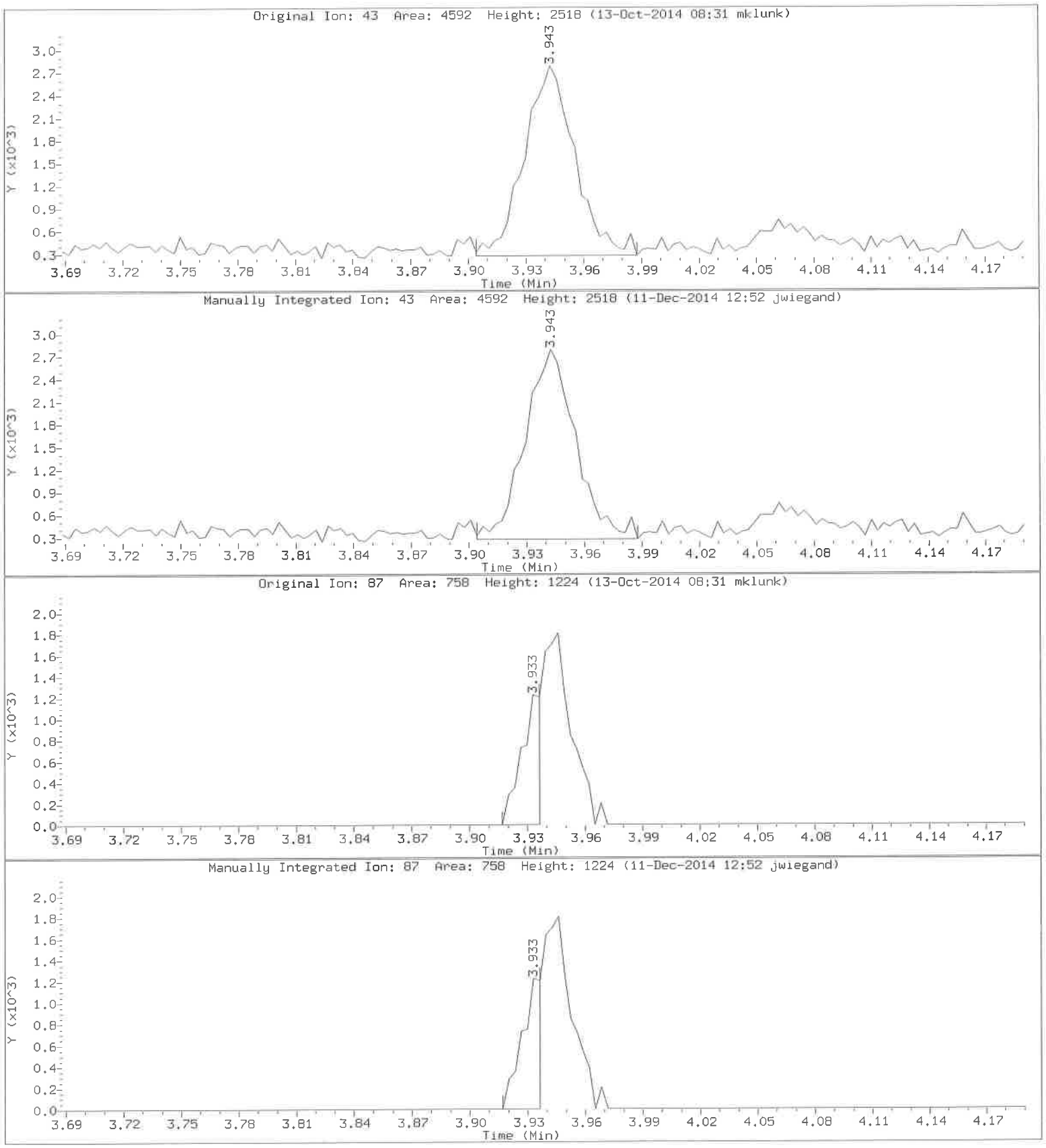
Lab Sample ID: VSTD[5]



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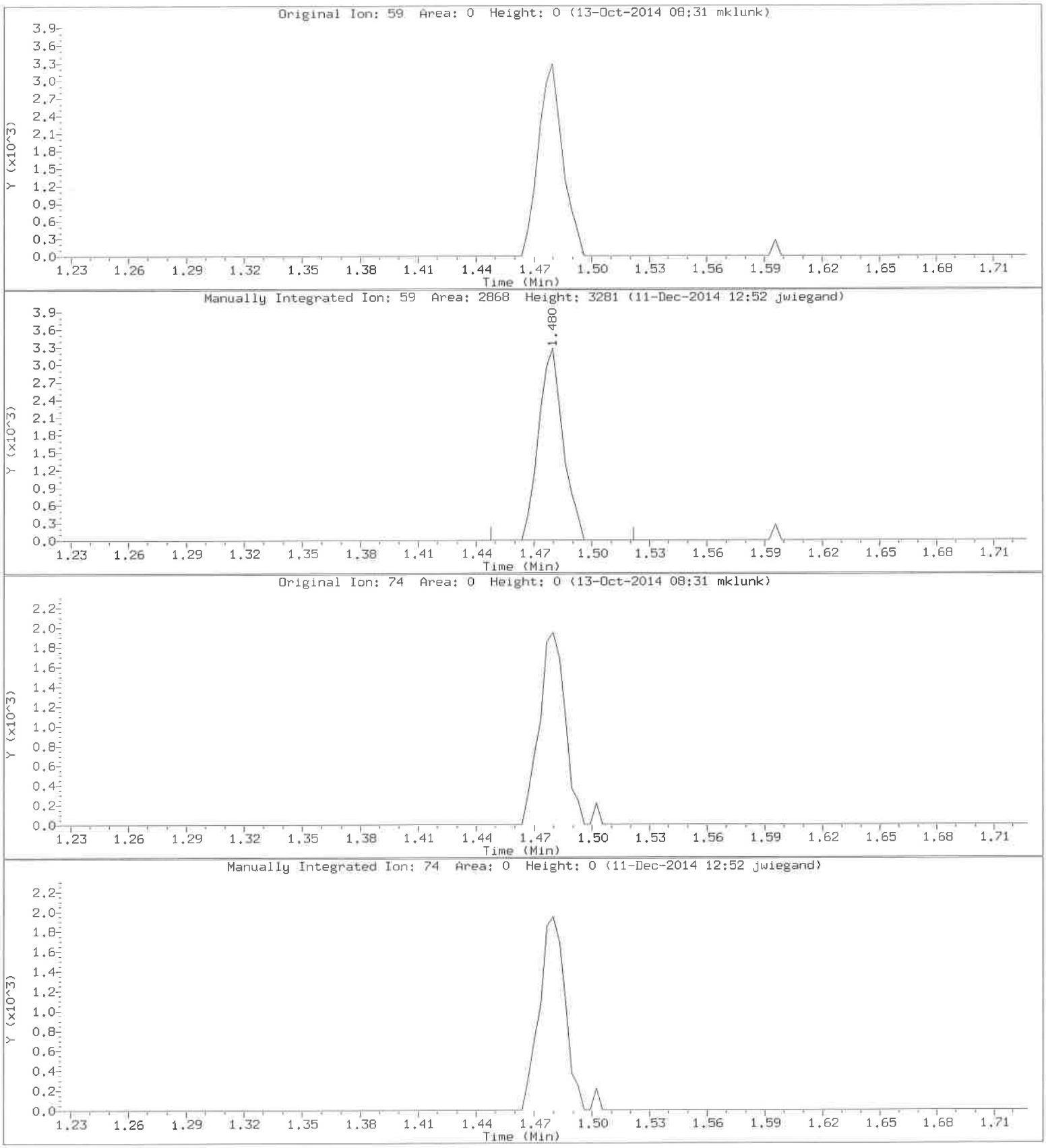
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Ethyl Ether
CAS Number: 60-29-7



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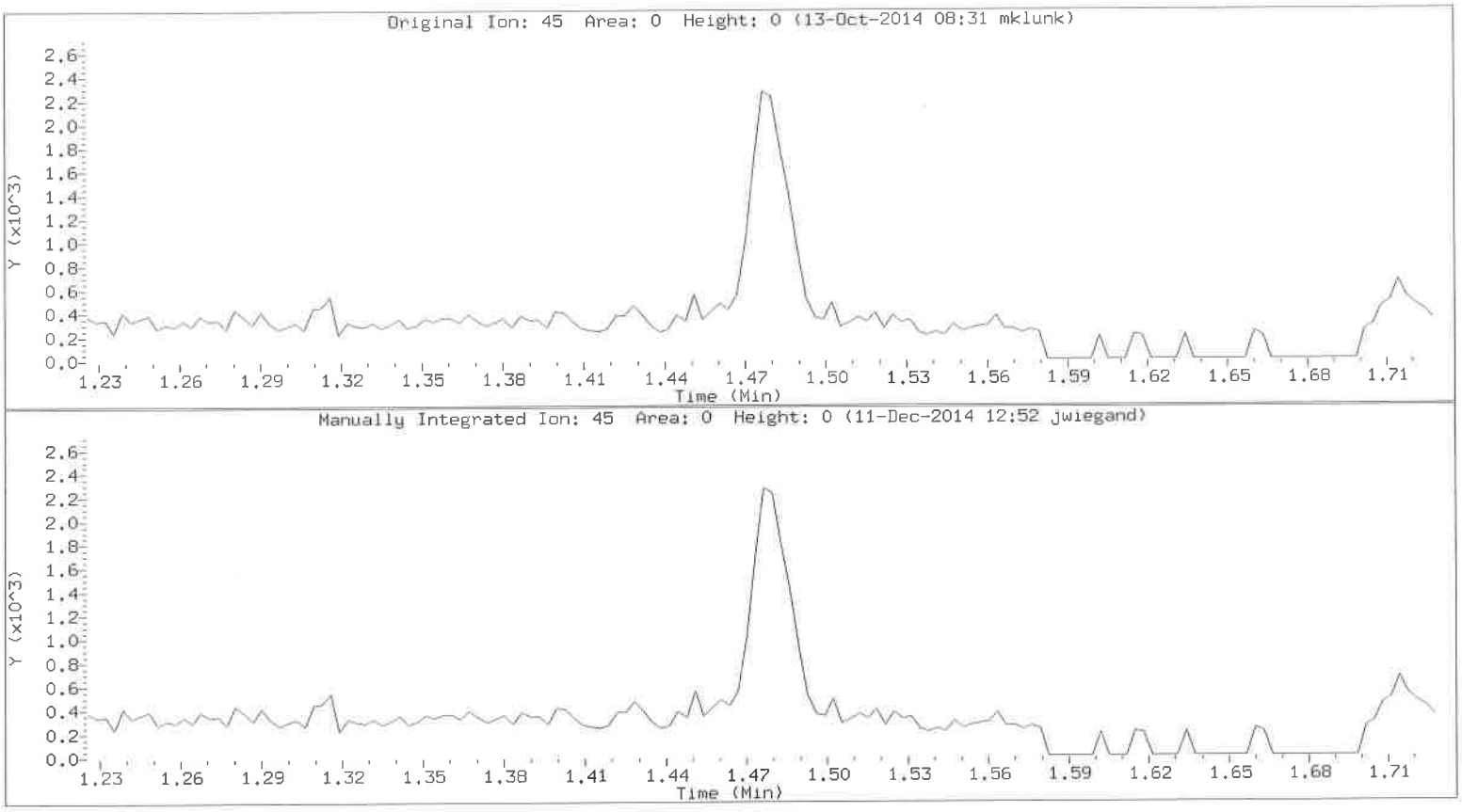
Lab Sample ID: VSTD[5]



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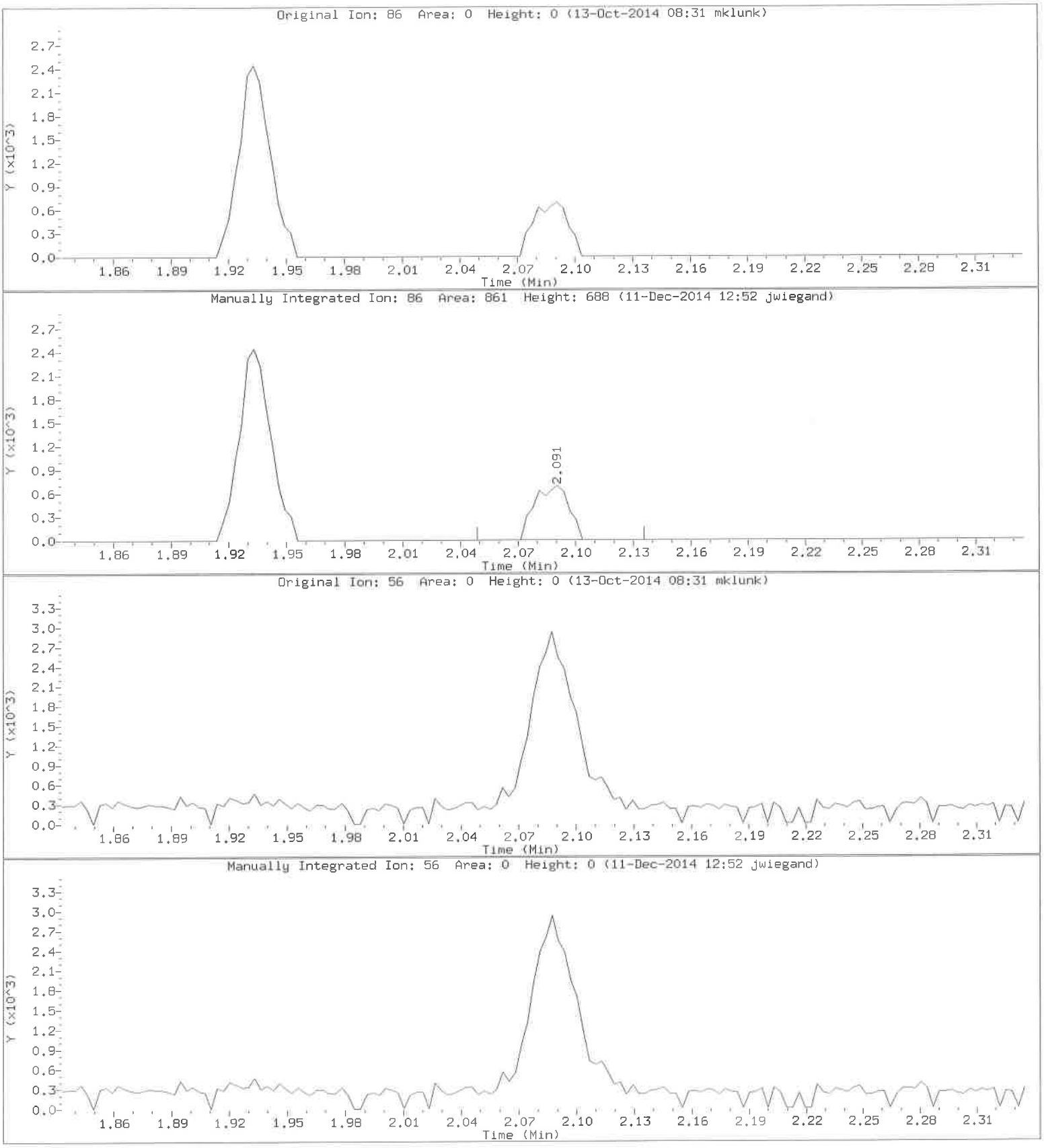
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Hexane
CAS Number: 110-54-03



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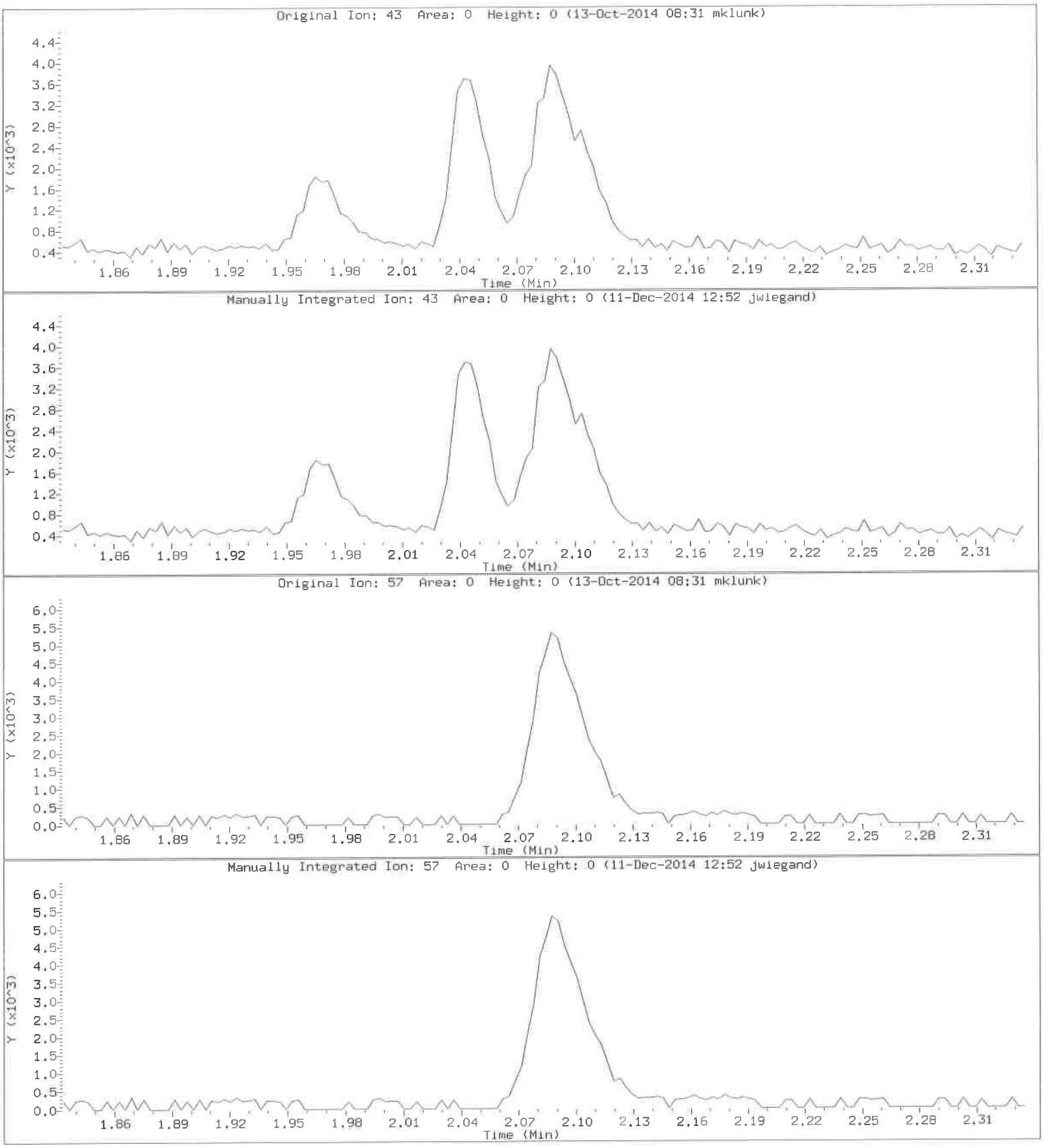
Lab Sample ID: VSTD[5]



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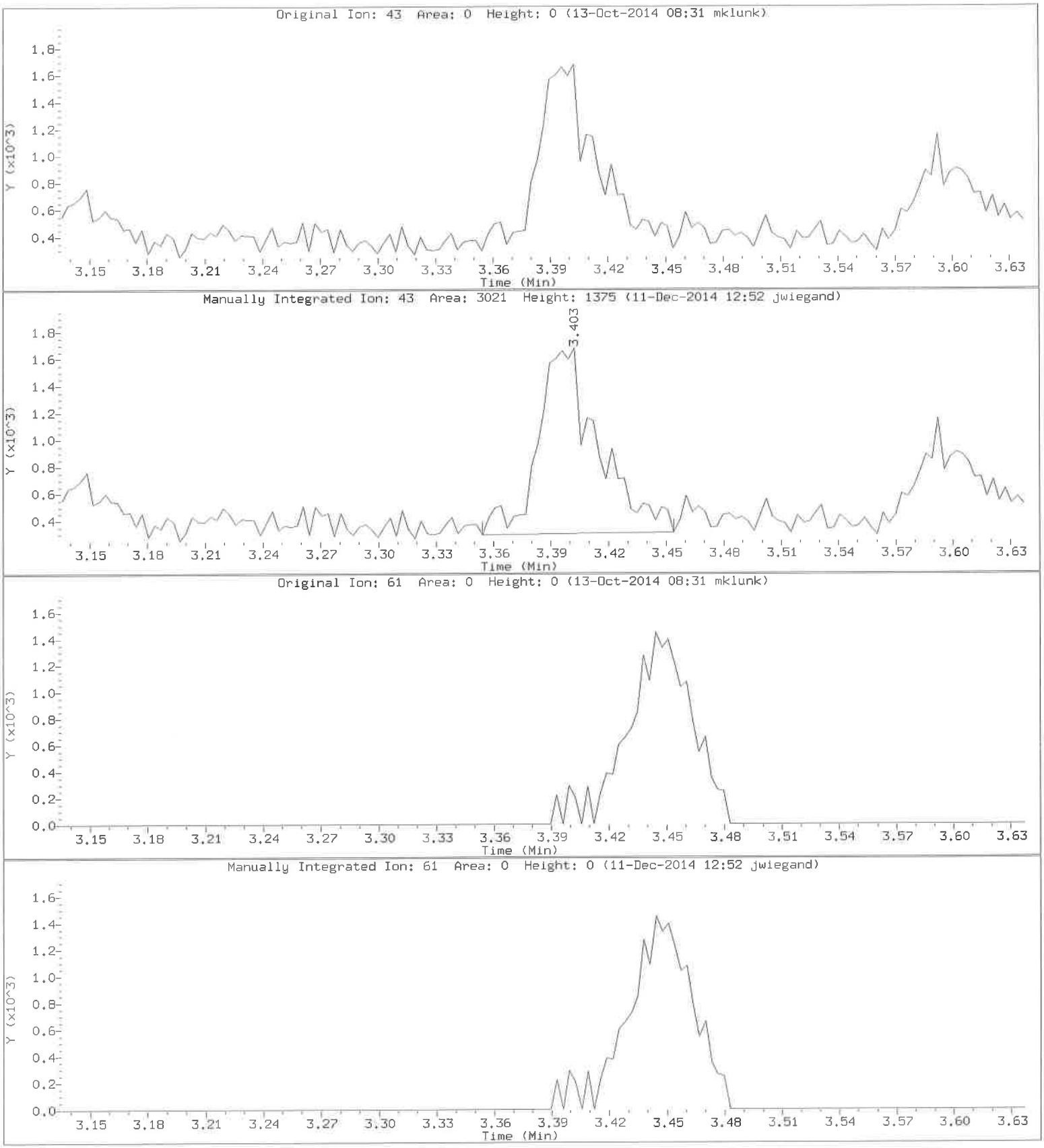
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Ethyl Acetate
CAS Number: 141-78-6



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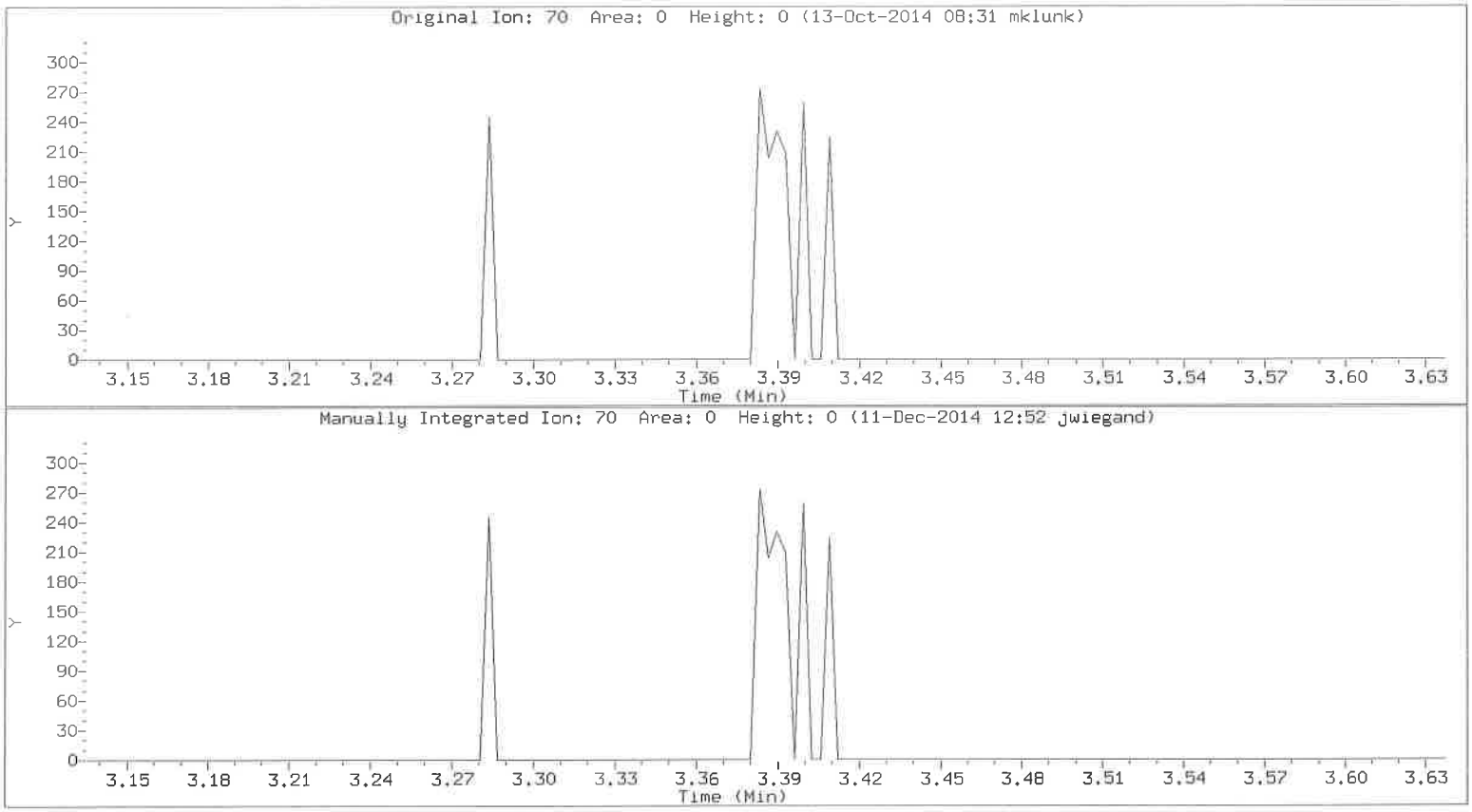
Lab Sample ID: VSTD[5]



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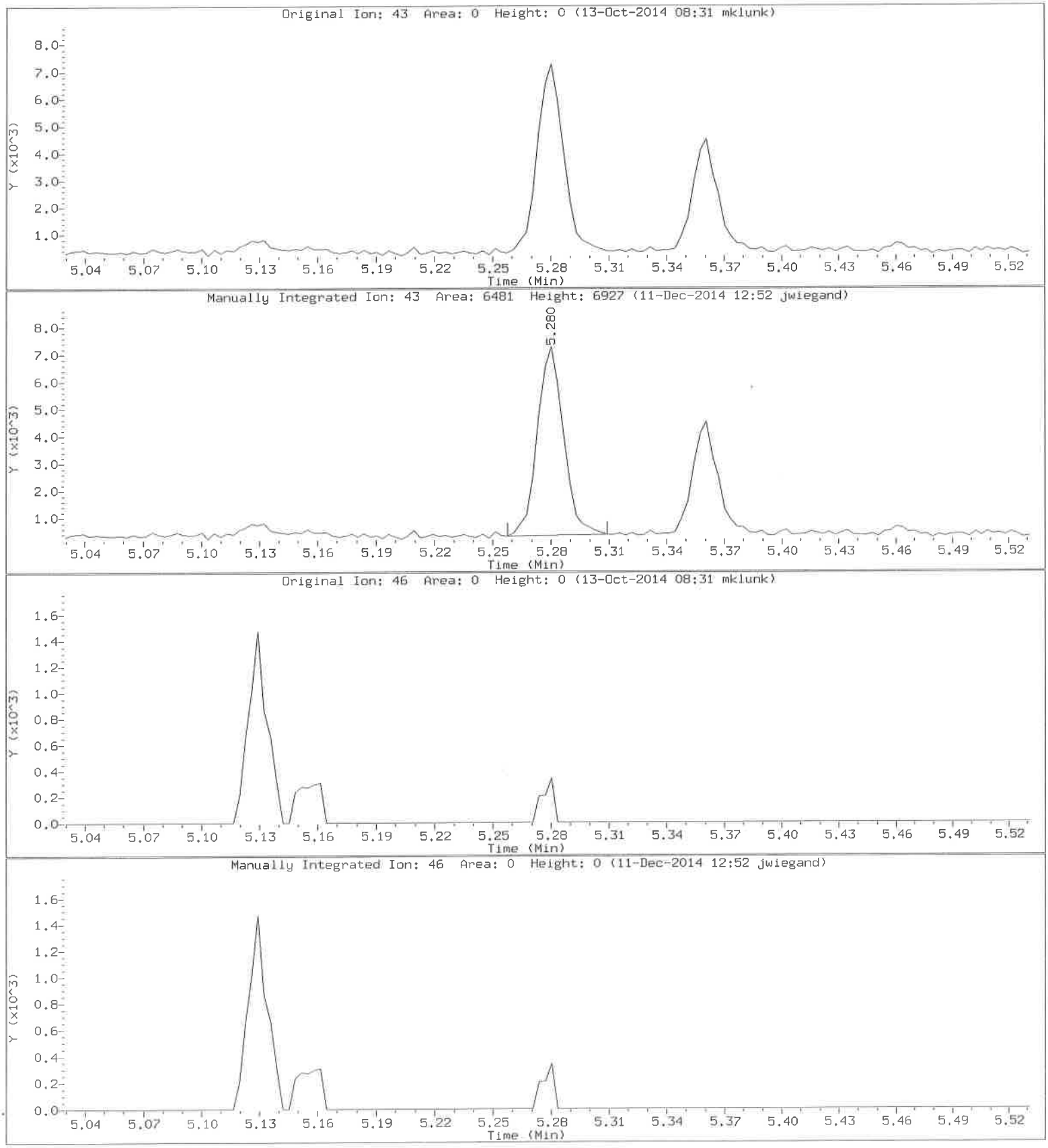
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: 2-Nitropropane
CAS Number: 79-46-9



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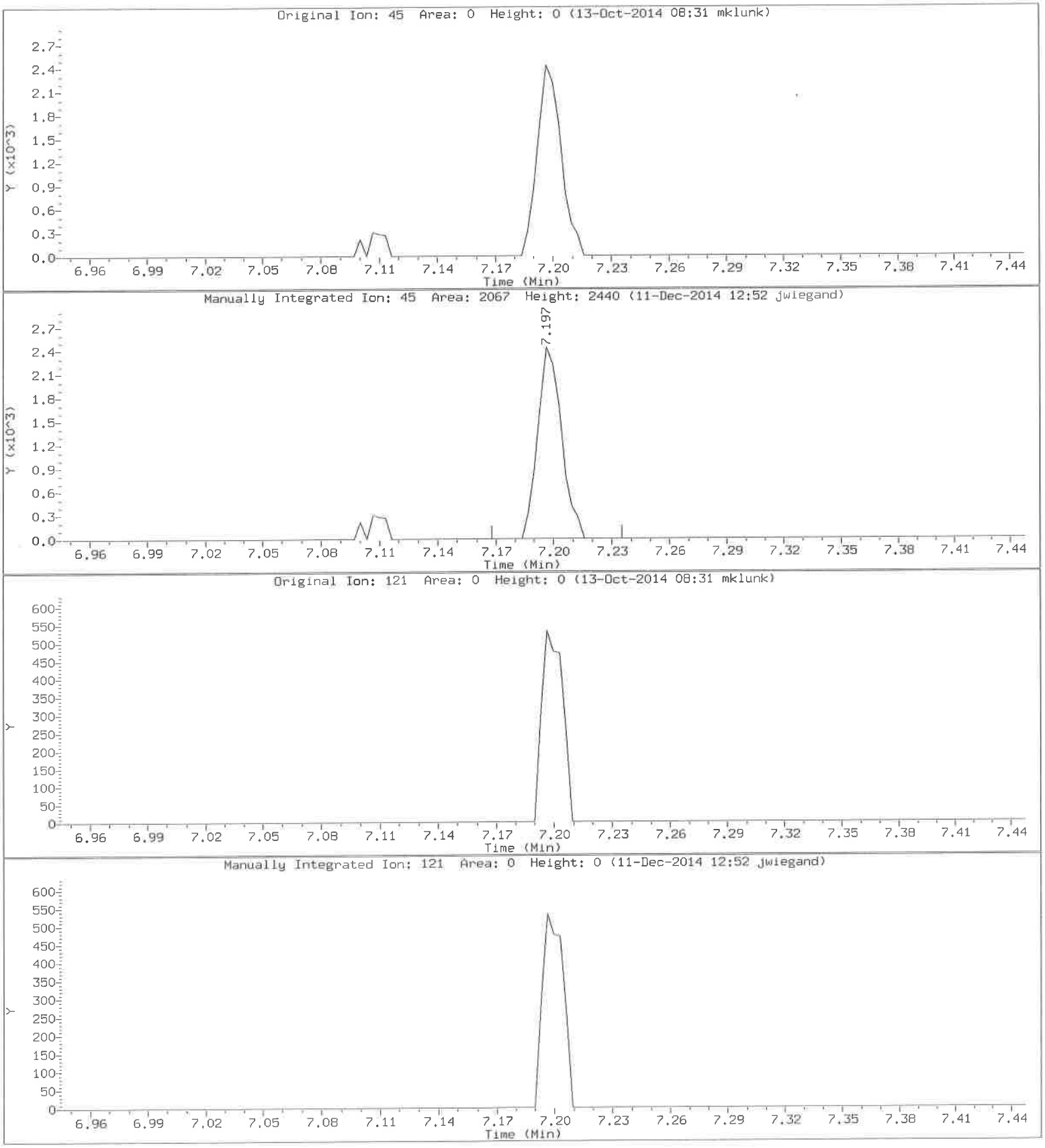
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: bis(2Chloro1methyl ethyl)eth
CAS Number:



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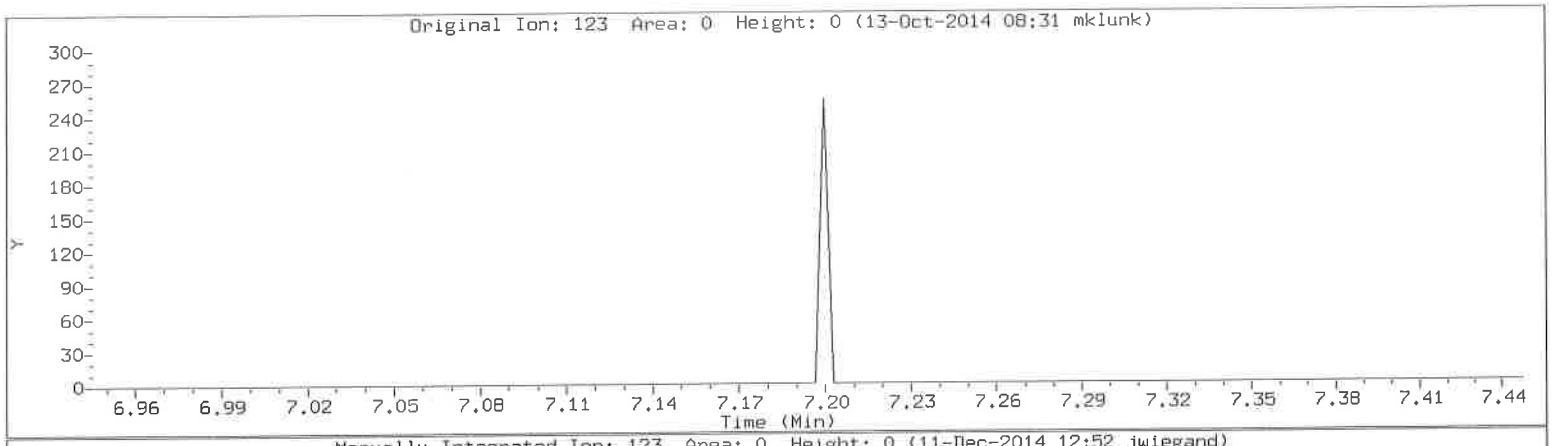
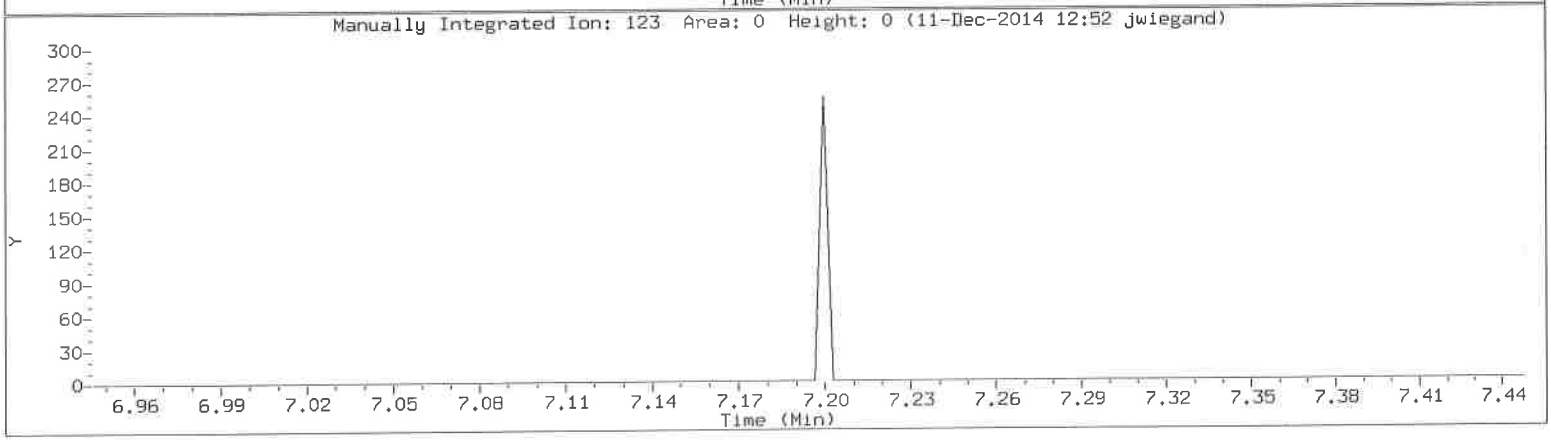
Lab Sample ID: VSTD[5]





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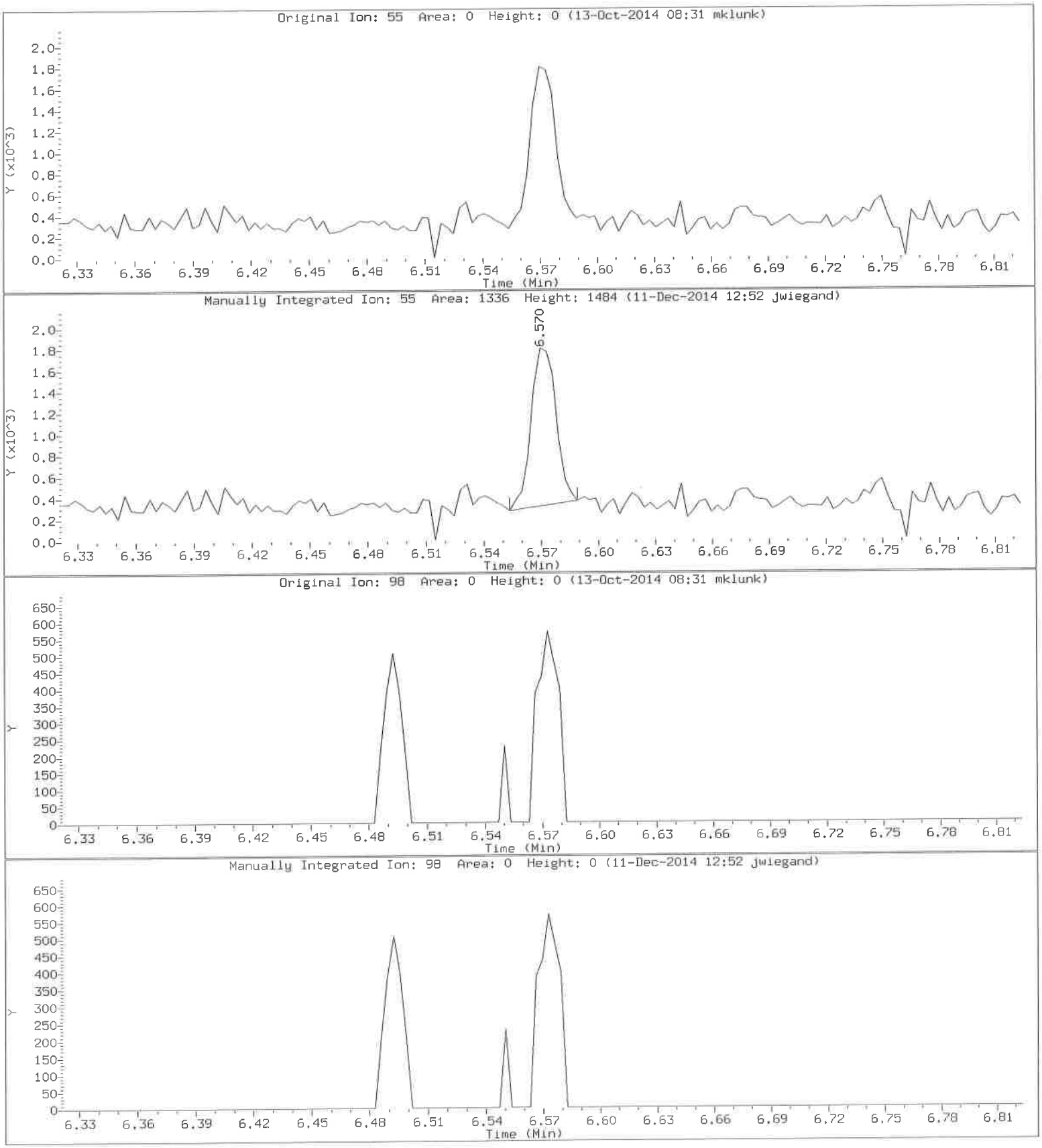
Injection Date: 10-OCT-2014 11:07
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: Cyclohexanone
CAS Number: 108-94-1



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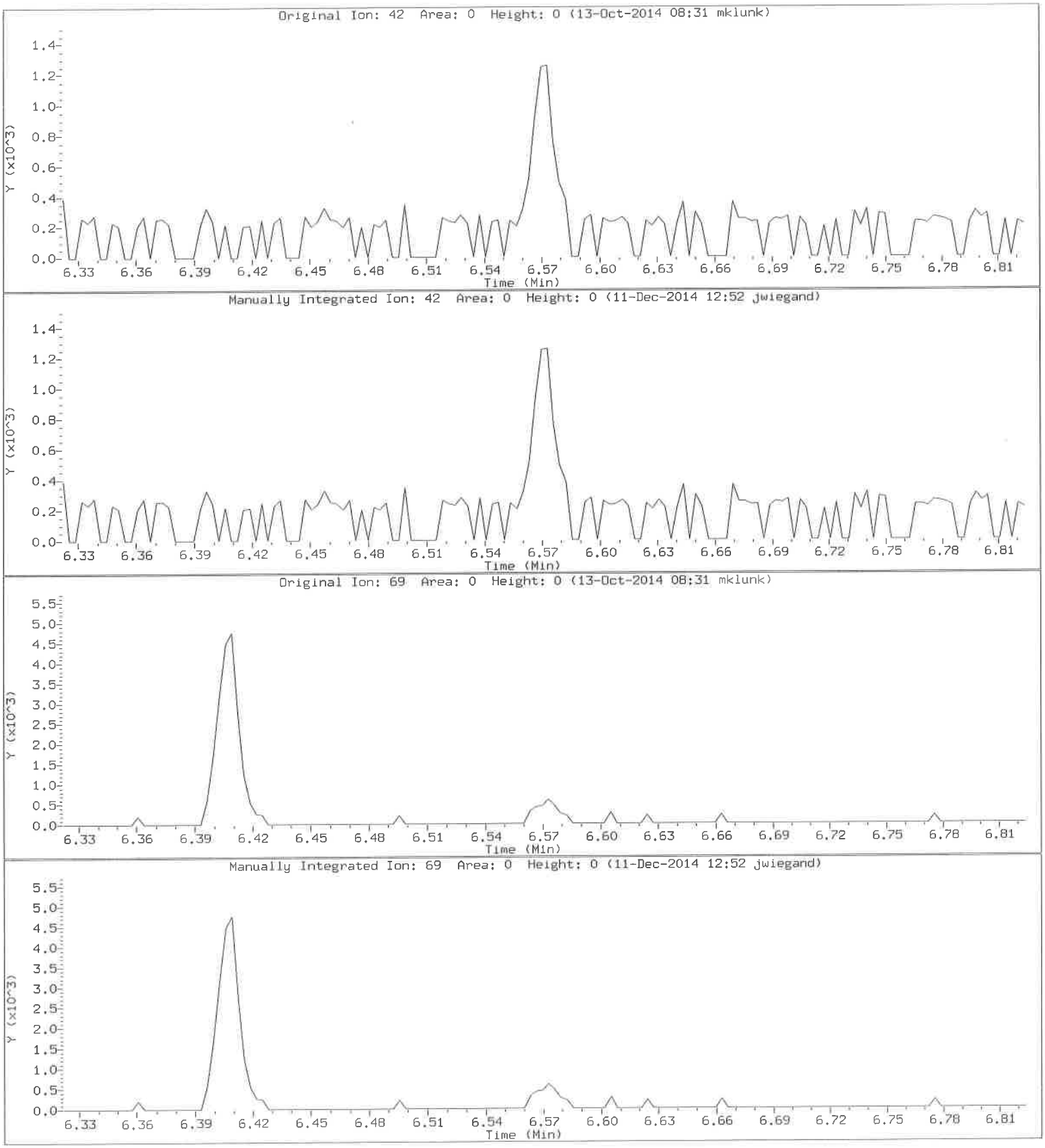
Lab Sample ID: VSTD[5]



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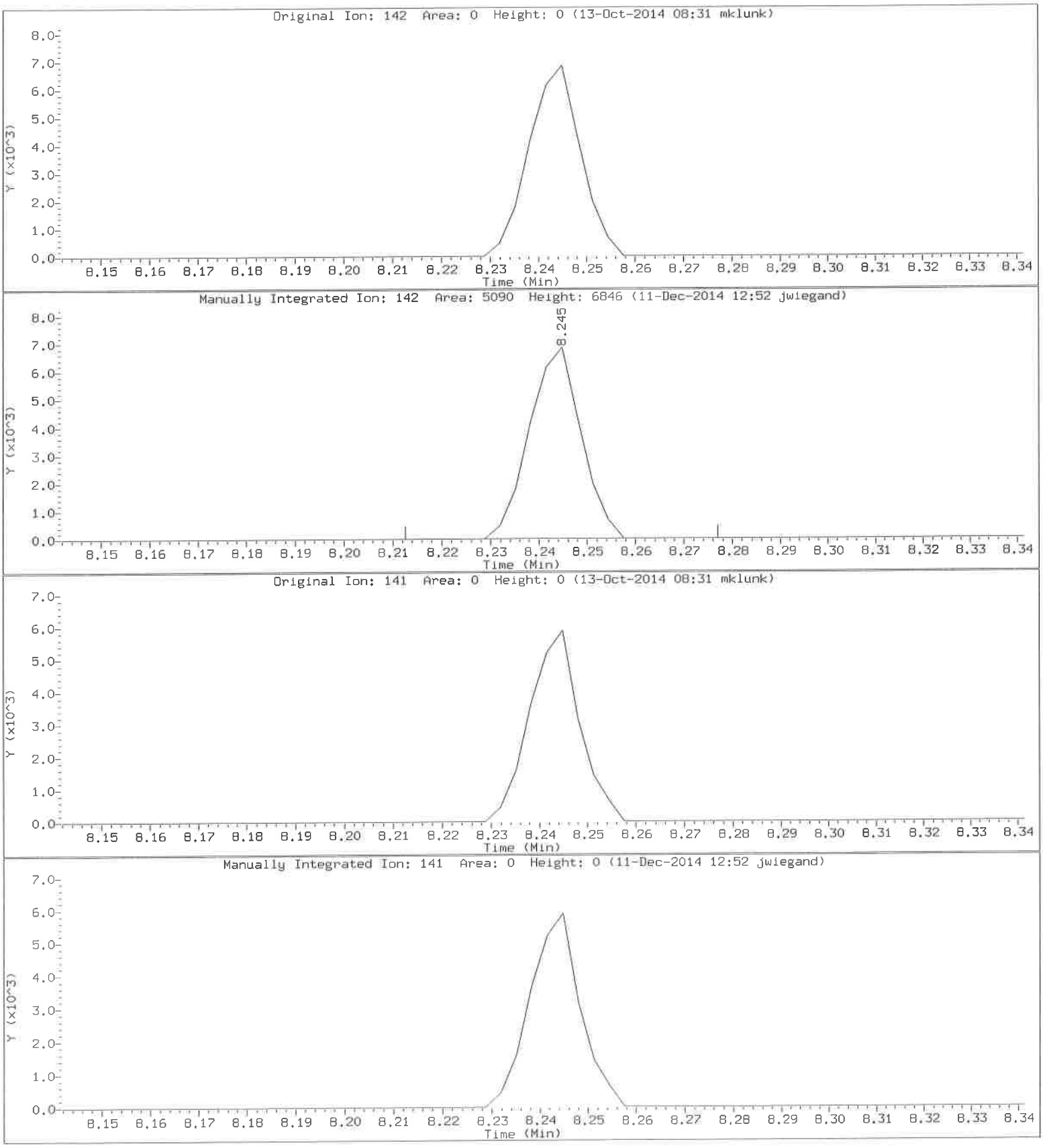
Instrument: 30msv5.i
Lab Sample ID: VSTD[5]

Compound: 2-methylnaphthalene
CAS Number:



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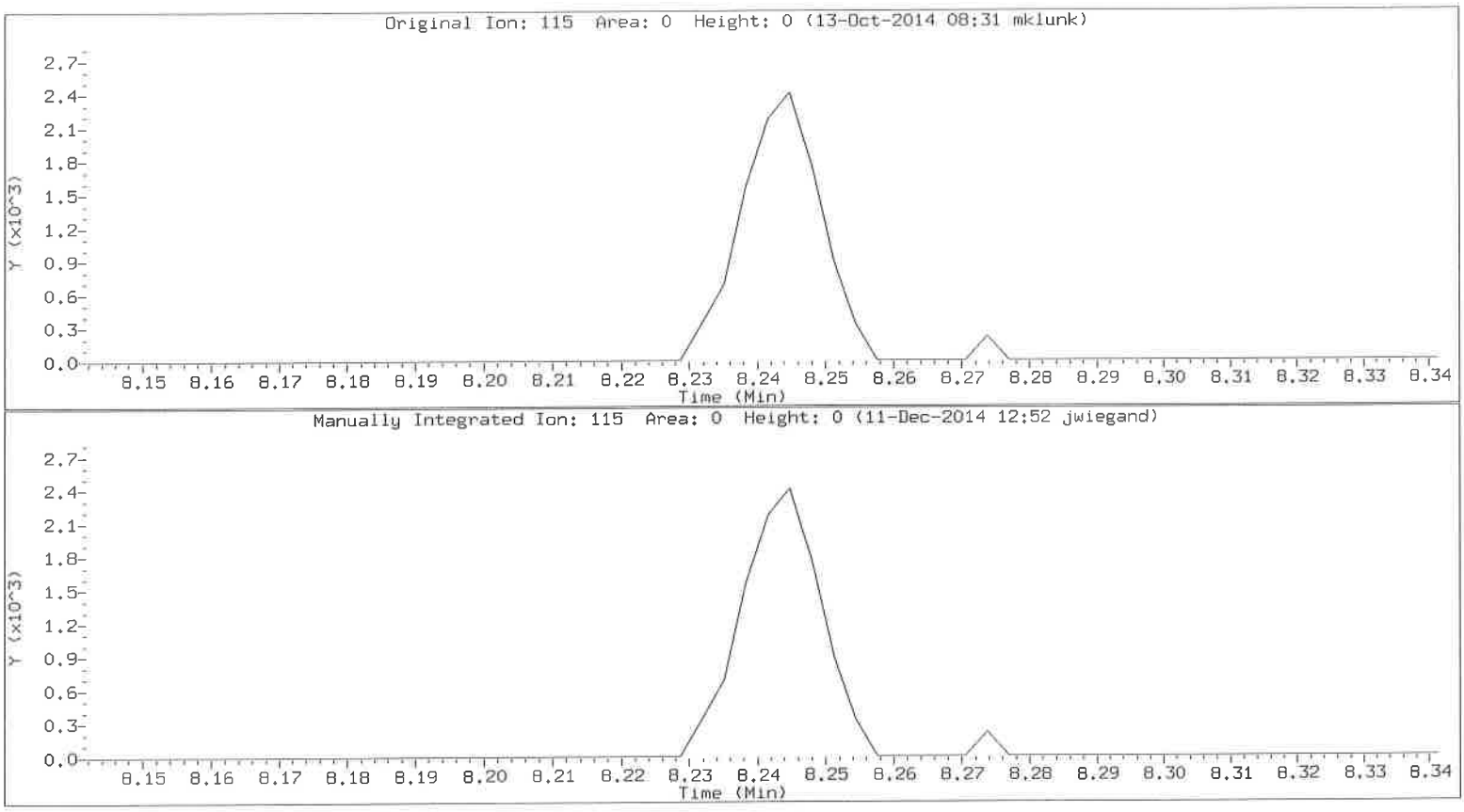
Lab Sample ID: VSTD[5]



Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010013.d
Report Date: 11-Dec-2014 12:52

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010013.d
Lab Smp Id: VSTD[10] Client Smp ID: VSTD[10]
Inj Date : 10-OCT-2014 11:30
Operator : JEW Inst ID: 30msv5.i
Smp Info : VSTD[10],,5
Misc Info : V10-49-12
Comment :
Method : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 12:51 jwiegand Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
1 Dichlorodifluoromethane	85	0.897	0.898	(0.216)	3468	10.0000	9.98(Q)	
2 Chloromethane	50	0.991	0.991	(0.238)	7225	10.0000	9.02	
3 Vinyl Chloride	62	1.032	1.032	(0.248)	3844	10.0000	10.1(Q)	
4 Bromomethane	94	1.193	1.191	(0.287)	693	10.0000	7.98(QM)	NI
5 Chloroethane	64	1.258	1.252	(0.302)	2037	10.0000	11.5(QM)	NI
6 Trichlorofluoromethane	101	1.325	1.322	(0.318)	9385	10.0000	11.2	
7 Ethyl Ether	59	1.479	1.477	(0.355)	5795	10.0000	11.5	
8 1,1-Dichloroethene	61	1.592	1.592	(0.382)	9935	10.0000	10.5	
159 Ethanol	45	1.560	1.557	(0.375)	1158	100.000	281(M)	NI
9 Carbon Disulfide	76	1.614	1.612	(0.388)	14630	10.0000	11.2(QM)	NI
10 1,1,2-Trichlorotrifluoroethan	151	1.608	1.609	(0.386)	4493	10.0000	11.1	
11 Iodomethane	142	1.676	1.676	(0.402)	1985	10.0000	8.55	
12 Acrolein	56	1.785	1.785	(0.429)	996	10.0000	10.8(QM)	NI
13 Allyl chloride	41	1.868	1.866	(0.449)	49496	50.0000	57.1	
14 Methylene Chloride	49	1.930	1.933	(0.463)	11220	10.0000	15.4	
15 Acetone	58	1.968	1.965	(0.473)	959	10.0000	14.2(QM)	NI
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	12522	10.0000	11.2	
17 Methyl Acetate	74	2.042	2.043	(0.490)	1887	10.0000	11.0	
18 Hexane	86	2.084	2.084	(0.500)	1833	10.0000	11.8(QM)	NI
19 tert-butyl Methylether,MtB	73	2.106	2.104	(0.506)	22920	10.0000	11.0	

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010013.d
Report Date: 11-Dec-2014 12:52

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
	21 tert-Butyl Alcohol	59	2.174	2.174	(0.522)	4282	50.0000	52.2(QM)	LT
	20 Acetonitrile	41	2.286	2.287	(0.549)	2630	50.0000	51.6(M)	NI
	22 DiisopropylEther	45	2.383	2.380	(0.572)	26815	10.0000	10.6	
	23 Chloroprene	53	2.466	2.464	(0.592)	13045	10.0000	11.0(Q)	
	25 Acrylonitrile	53	2.531	2.528	(0.608)	2977	10.0000	11.4(Q)	
	24 1,1-Dichloroethane	63	2.483	2.483	(0.596)	16518	10.0000	11.0	
	27 t-Butyl ethyl ether	59	2.685	2.682	(0.645)	28110	10.0000	10.9	
	26 Vinyl Acetate	43	2.698	2.695	(0.648)	10392	10.0000	10.6	
	28 cis-1,2-Dichloroethene	61	2.955	2.953	(0.710)	13539	10.0000	11.0(Q)	
	29 2,2-Dichloropropane	77	3.058	3.055	(0.734)	13470	10.0000	11.4(QM)	LT
	30 Cyclohexane	56	3.145	3.145	(0.755)	14625	10.0000	12.6(Q)	
	31 Bromochloromethane	130	3.148	3.149	(0.756)	5284	10.0000	10.9(Q)	
	32 Chloroform	83	3.238	3.239	(0.778)	16546	10.0000	10.9(QM)	LT
	33 Carbon Tetrachloride	117	3.373	3.371	(0.810)	12941	10.0000	11.3(QM)	LT
	36 Ethyl Acetate	43	3.396	3.387	(0.815)	6168	10.0000	10.2(QM)	LT
	35 Tetrahydrofuran	42	3.396	3.399	(0.815)	3889	10.0000	16.6(QM)	LT
	34 1,1,1-Trichloroethane	97	3.447	3.448	(0.828)	14069	10.0000	11.2(Q)	
	37 1,1-Dichloropropene	75	3.595	3.592	(0.863)	11729	10.0000	11.0(M)	LT
	38 2-Butanone	43	3.585	3.586	(0.861)	3422	10.0000	10.8(QM)	LT
	39 Benzene	78	3.823	3.824	(0.650)	32118	10.0000	10.4	
	40 Propionitrile	54	3.862	3.856	(0.927)	971	10.0000	10.6(Q)	
	41 Methacrylonitrile	41	3.875	3.875	(0.931)	4730	10.0000	10.0(Q)	
$	42 1,2-Dichloroethane-d4	65	3.939	3.940	(0.946)	30003	30.0000	29.7	
	43 t-Amyl methyl ether	73	3.942	3.940	(0.671)	23040	10.0000	10.3	
	46 Isobutanol	43	3.939	3.940	(0.946)	8567	50.0000	54.5(QM)	LT
	44 1,2-Dichloroethane	62	3.997	3.998	(0.960)	13875	10.0000	11.0	
*	45 Fluorobenzene	96	4.164	4.162	(1.000)	86402	30.0000		
	47 Methylcyclohexane	83	4.270	4.271	(0.727)	11179	10.0000	10.3	
	48 Trichloroethene	132	4.286	4.287	(0.729)	8079	10.0000	10.5	
	49 Dibromomethane	174	4.560	4.560	(0.776)	5422	10.0000	10.2	
	50 1,2-Dichloropropane	63	4.621	4.621	(0.786)	9333	10.0000	10.3	
	51 Bromodichloromethane	83	4.669	4.670	(0.794)	12416	10.0000	10.1	
	52 Methyl methacrylate	69	4.778	4.779	(0.813)	5942	10.0000	10.5	
	53 1,4-Dioxane	88	4.791	4.795	(0.697)	290	100.000	184(Q)	
	55 2-ChloroethylVinylEther	63	5.013	5.010	(0.853)	2772	10.0000	10.4	
	54 cis-1,3-Dichloropropene	75	5.032	5.033	(0.856)	13244	10.0000	10.1	
$	56 Toluene-d8	98	5.129	5.129	(0.873)	84464	30.0000	29.0	
	57 Toluene	91	5.158	5.158	(0.877)	32513	10.0000	10.2	
	58 2-Nitropropane	43	5.280	5.280	(0.898)	14258	50.0000	51.8(QM)	NI
	59 Tetrachloroethene	166	5.354	5.354	(0.911)	8225	10.0000	10.1	
	60 4-Methyl-2-Pentanone	43	5.360	5.361	(0.912)	8326	10.0000	10.7	
	61 trans-1,3-Dichloropropene	75	5.376	5.377	(0.915)	13258	10.0000	10.2	
	63 Ethyl methacrylate	41	5.460	5.461	(0.929)	8355	10.0000	10.9	
	62 1,1,2-Trichloroethane	97	5.454	5.454	(0.928)	7117	10.0000	10.5	
	64 Dibromochloromethane	129	5.537	5.538	(0.942)	8612	10.0000	10.2	
	65 1,3-Dichloropropane	76	5.582	5.583	(0.950)	12260	10.0000	10.2	
	66 1,2-Dibromoethane,EDB	107	5.643	5.644	(0.960)	7433	10.0000	10.6	
	70 2-Hexanone	43	5.756	5.756	(0.979)	6556	10.0000	10.6(Q)	
*	67 Chlorobenzene-d5	82	5.878	5.882	(1.000)	38161	30.0000		
	68 Chlorobenzene	112	5.888	5.888	(1.002)	21567	10.0000	10.6	
	69 Ethylbenzene	106	5.897	5.901	(1.003)	11839	10.0000	10.9	
	71 1,1,1,2-Tetrachloroethane	131	5.917	5.920	(1.007)	7091	10.0000	10.1	
	72 m,p-Xylene	106	5.965	5.965	(1.015)	28345	20.0000	22.1	
	73 o-Xylene	106	6.151	6.152	(1.046)	13491	10.0000	10.9	

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010013.d
Report Date: 11-Dec-2014 12:52

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
74 Styrene	104	6.174	6.174	(1.050)	20917	10.0000	10.5	
75 Bromoform	173	6.190	6.190	(1.053)	5663	10.0000	10.7	
76 Isopropylbenzene,Cumene	105	6.286	6.287	(0.915)	33111	10.0000	9.99	
$ 77 Bromofluorobenzene	174	6.408	6.409	(0.933)	26865	30.0000	28.3	
79 n-Propylbenzene	91	6.457	6.460	(0.940)	42442	10.0000	10.1	
78 Bromobenzene	77	6.453	6.454	(0.939)	17096	10.0000	9.95	
80 1,1,2,2-Tetrachloroethane	83	6.492	6.493	(0.945)	9422	10.0000	10.2	
81 2-Chlorotoluene	126	6.527	6.531	(0.950)	8128	10.0000	10.1	
82 1,3,5-Trimethylbenzene	120	6.537	6.541	(0.951)	13506	10.0000	10.3	
83 1,2,3-Trichloropropane	110	6.550	6.550	(0.953)	2818	10.0000	10.1	
84 trans 1,4-Dichloro-2-butene	53	6.566	6.567	(0.956)	3211	10.0000	9.74	
85 Cyclohexanone	55	6.569	6.573	(0.956)	3121	50.0000	51.9(QM)	NI
86 4-Chlorotoluene	126	6.595	6.599	(0.960)	8274	10.0000	9.87	
87 tert-Butyl benzene	119	6.672	6.676	(0.971)	23628	10.0000	10.4	
88 1,2,4-Trimethylbenzene	120	6.701	6.702	(0.975)	12659	10.0000	10.2	
89 sec-Butyl benzene	105	6.746	6.747	(0.982)	35242	10.0000	10.6	
90 4-Isopropyl toluene	119	6.801	6.805	(0.990)	29564	10.0000	10.4	
91 1,3-Dichlorobenzene	146	6.843	6.843	(0.996)	16373	10.0000	10.4	
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.872	(1.000)	34616	30.0000		
93 1,4-Dichlorobenzene	146	6.878	6.878	(1.001)	16383	10.0000	10.5	
94 n-Butyl benzene	91	6.978	6.978	(1.015)	28169	10.0000	10.6	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	7.055	7.055	(1.027)	15178	10.0000	10.5	
96 bis(2Chloro1methyl ethyl)eth	45	7.196	7.197	(1.047)	4303	10.0000	10.4(Q)	
97 1,2-Dibromo-3-Chloropropane	75	7.383	7.383	(1.074)	1643	10.0000	10.3	
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	5356	10.0000	10.7	
99 1,2,4-Trichlorobenzene	180	7.656	7.657	(1.114)	9617	10.0000	11.0	
100 Naphthalene	128	7.794	7.795	(1.134)	20702	10.0000	10.7	
101 1,2,3-Trichlorobenzene	180	7.871	7.872	(1.146)	8324	10.0000	11.0	
157 2-methylnaphthalene	142	8.244	8.241	(1.200)	10214	10.0000	10.7	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010013.d
Report Date: 11-Dec-2014 12:52

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51010013.d
Lab Smp Id: VSTD[10]
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Misc Info: V10-49-12

Calibration Date: 10-OCT-2014
Calibration Time: 12:14
Client Smp ID: VSTD[10]
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

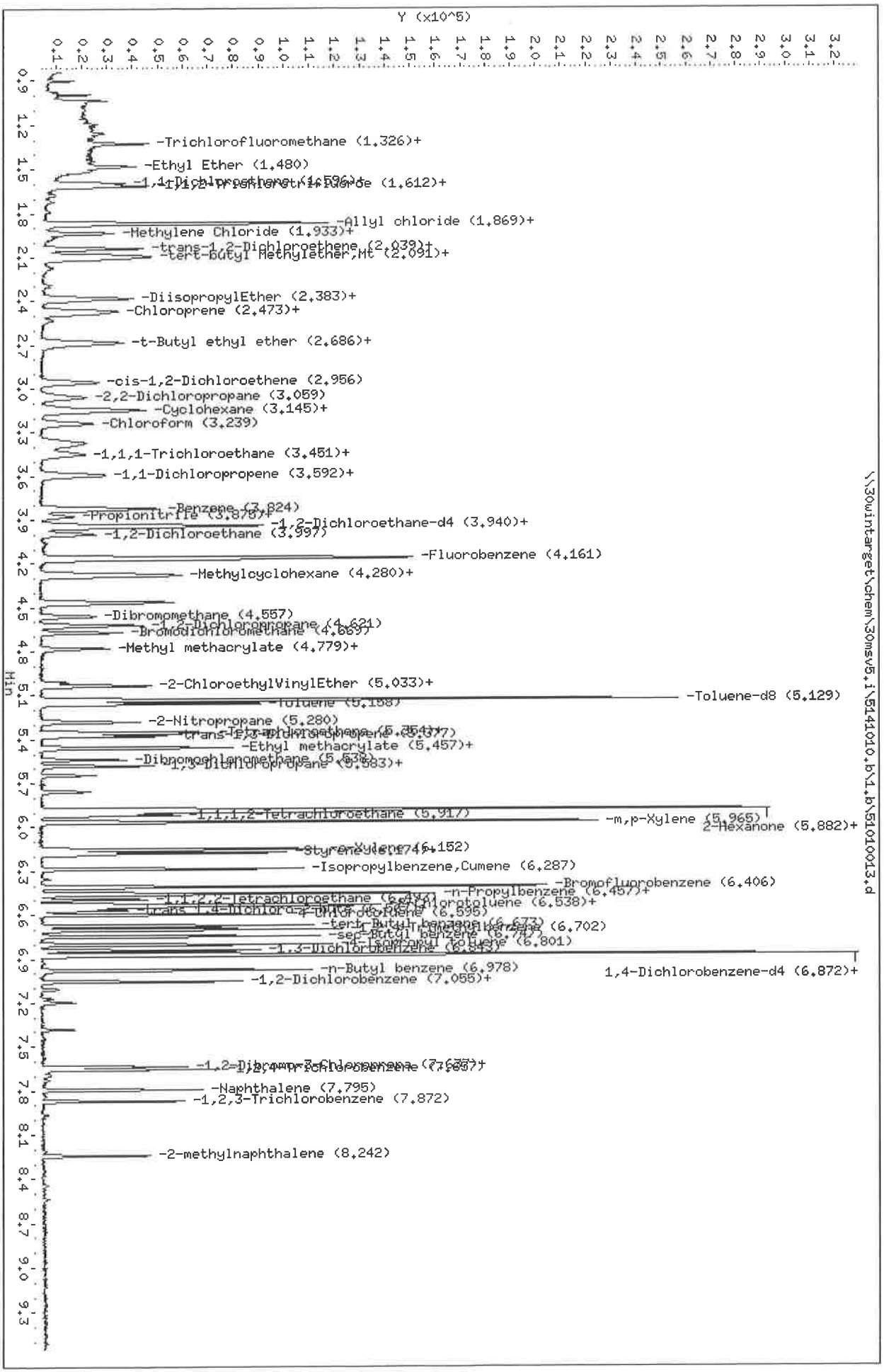
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	87362	43681	174724	86402	-1.10
67 Chlorobenzene-d5	37349	18675	74698	38161	2.17
92 1,4-Dichlorobenze	30731	15366	61462	34616	12.64

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.08
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010013.d
Date : 10-OCT-2014 11:30
Client ID: VSTD[10]
Sample Info: VSTD[10],5
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



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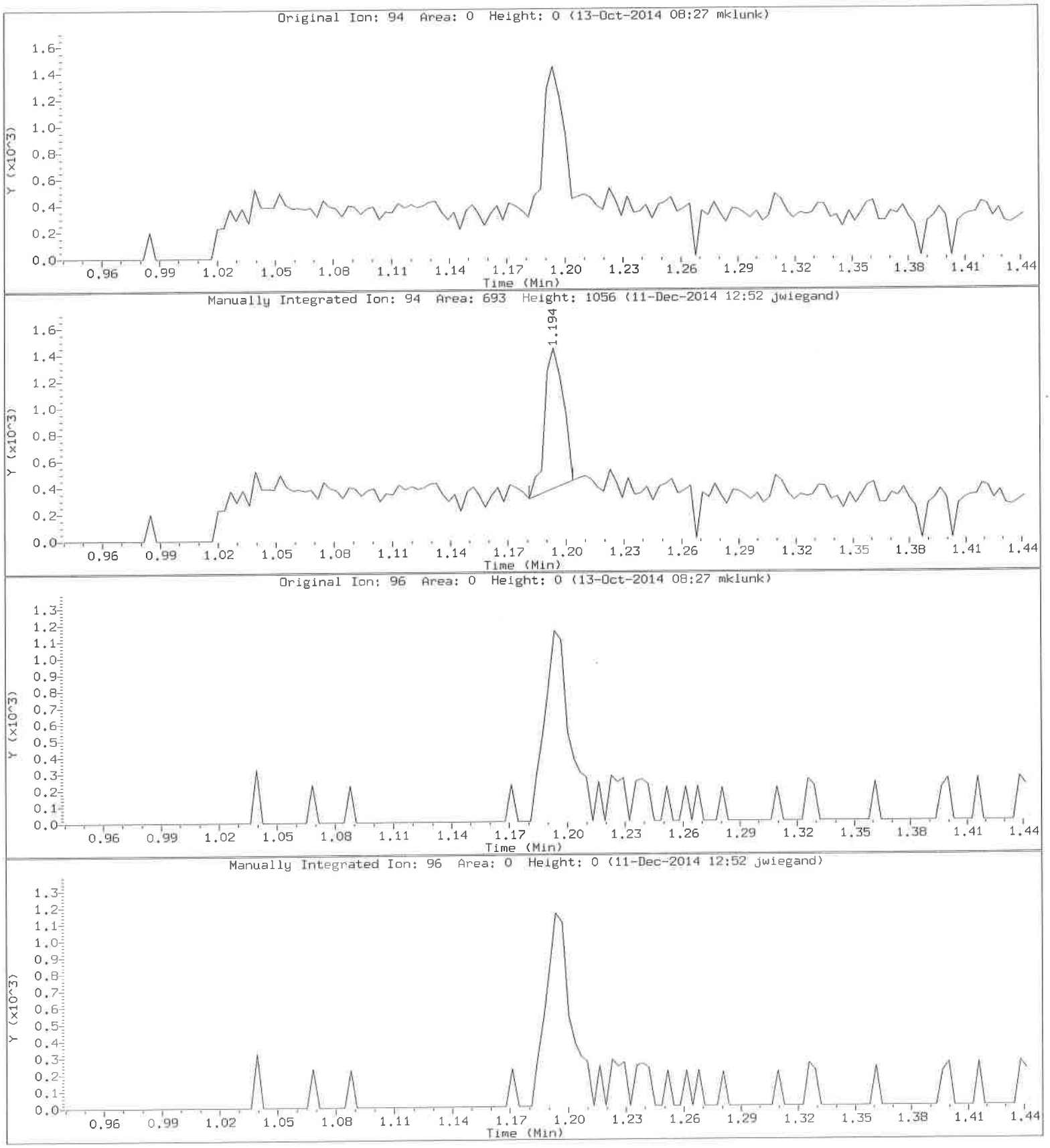
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Bromomethane
CAS Number: 74-83-9



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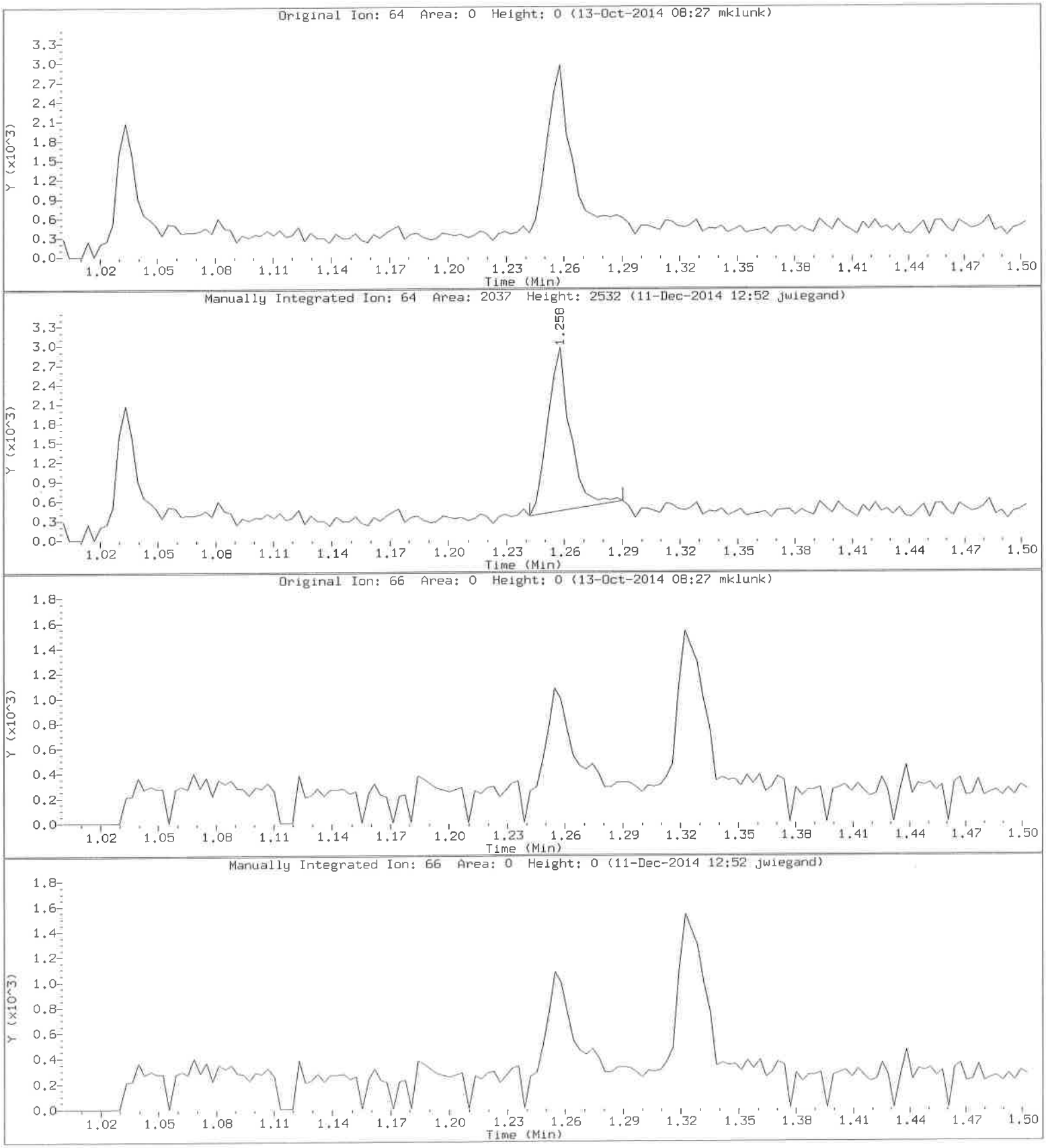
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Chloroethane
CAS Number: 75-00-3



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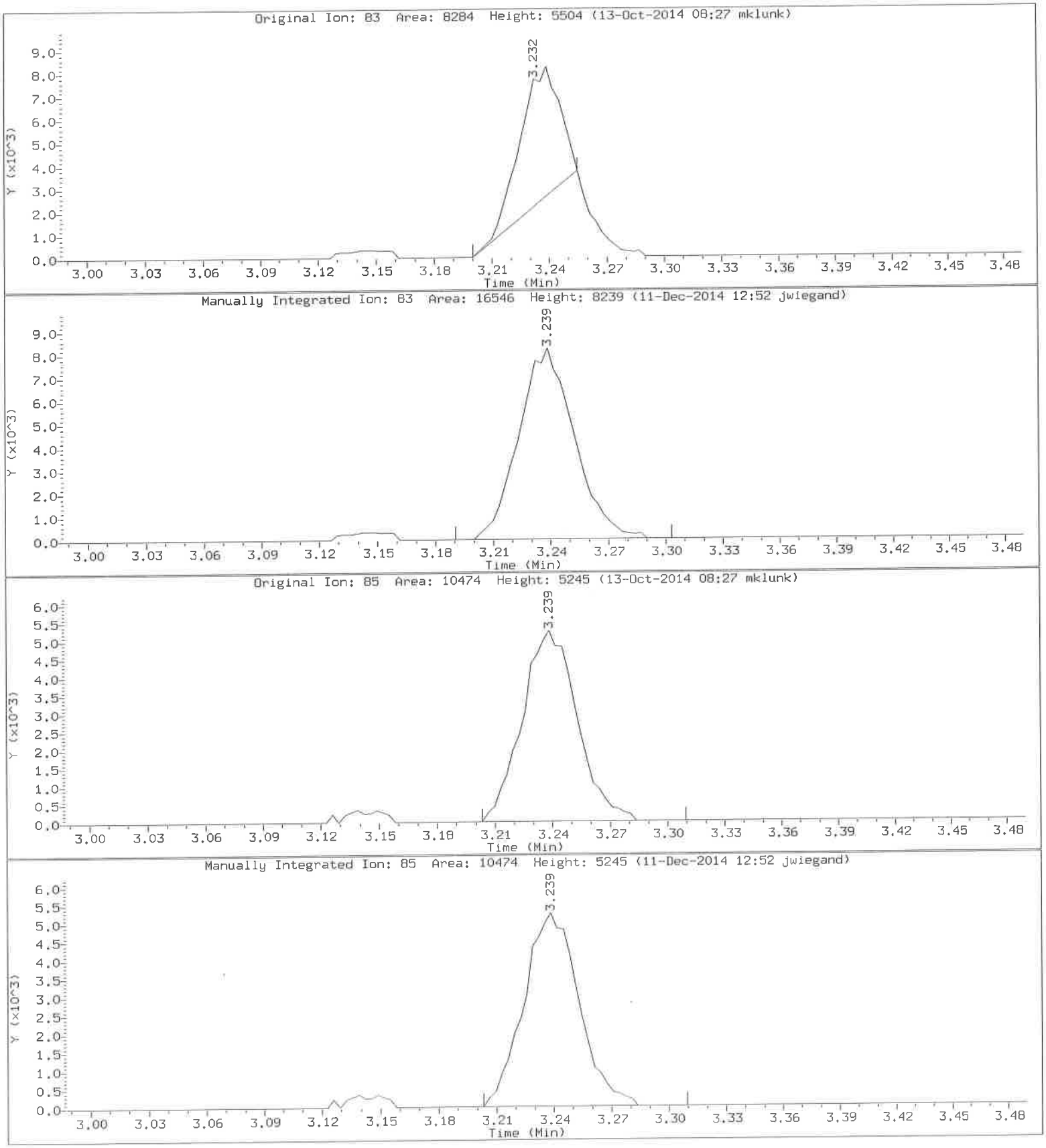
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Chloroform
CAS Number: 67-66-3



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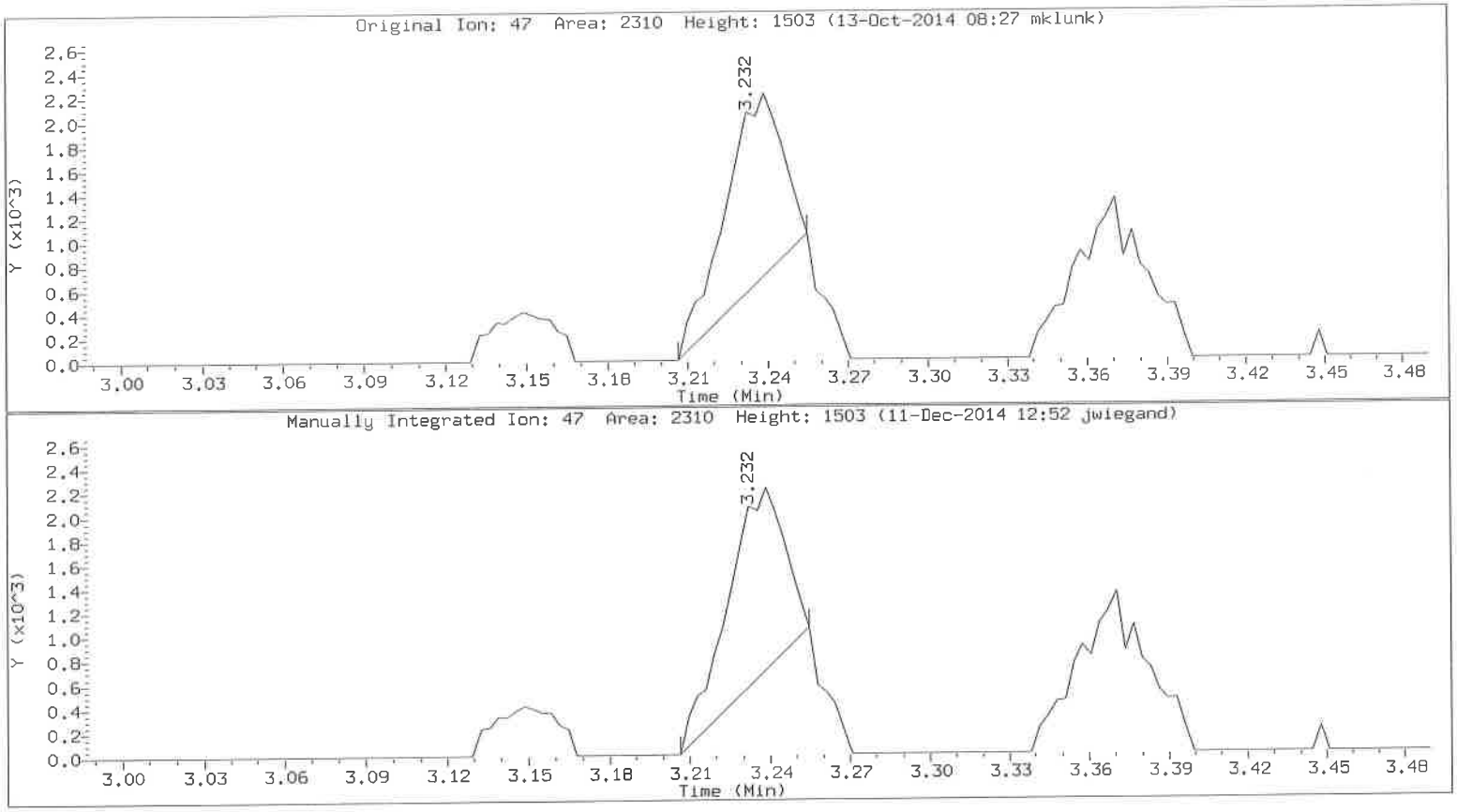
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]



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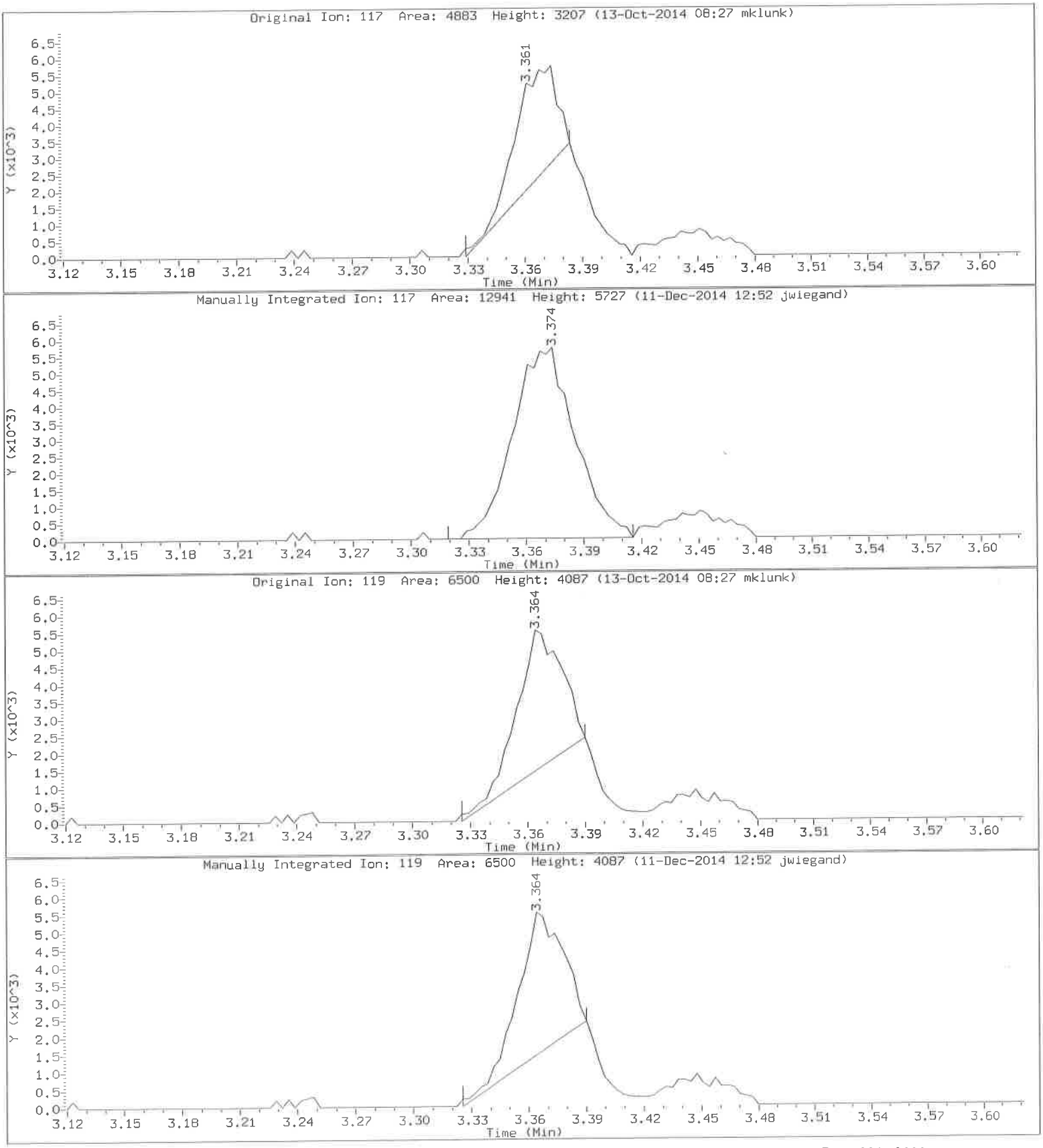
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Carbon Tetrachloride
CAS Number: 56-23-5



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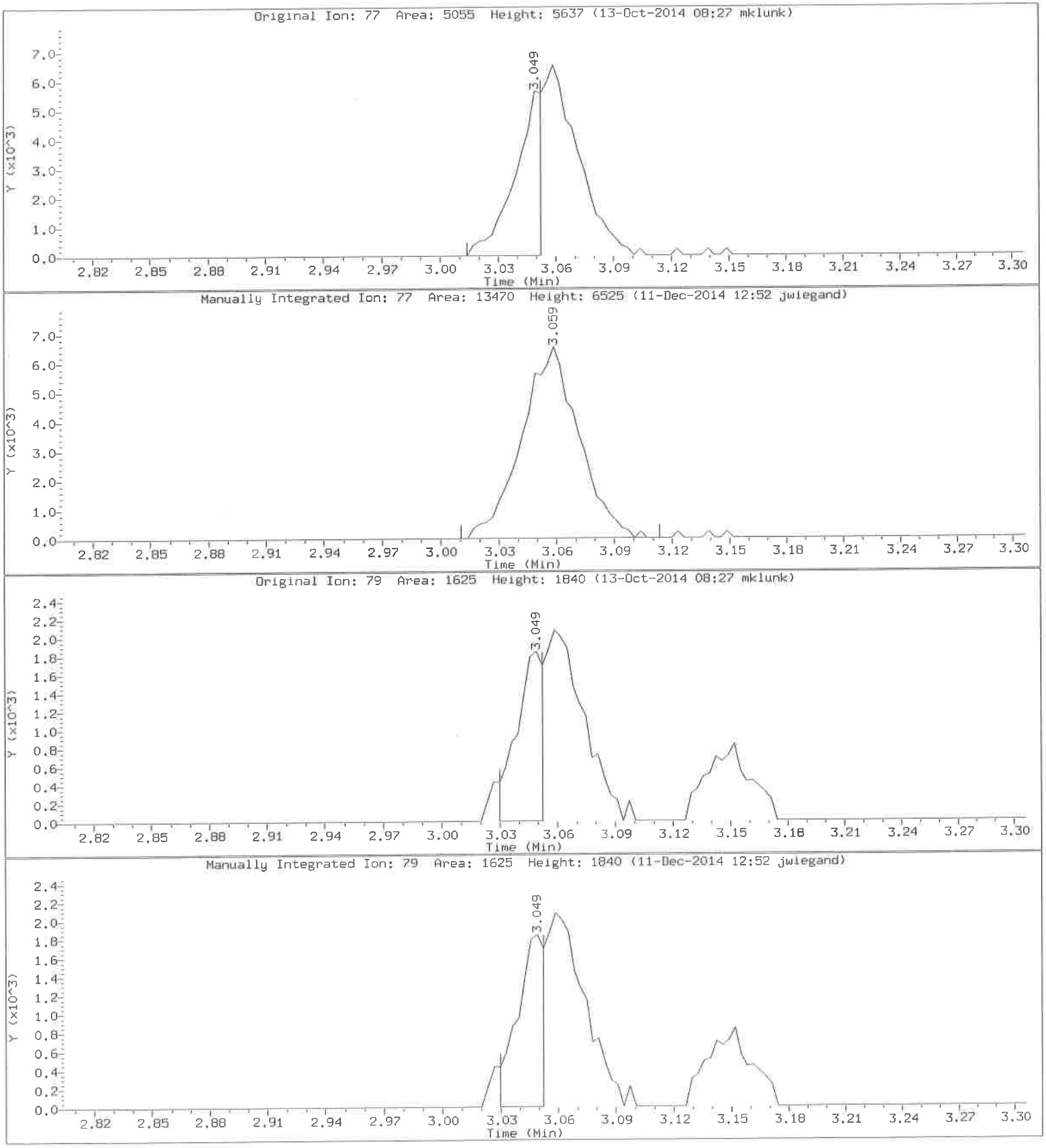
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: 2,2-Dichloropropane
CAS Number: 594-20-7



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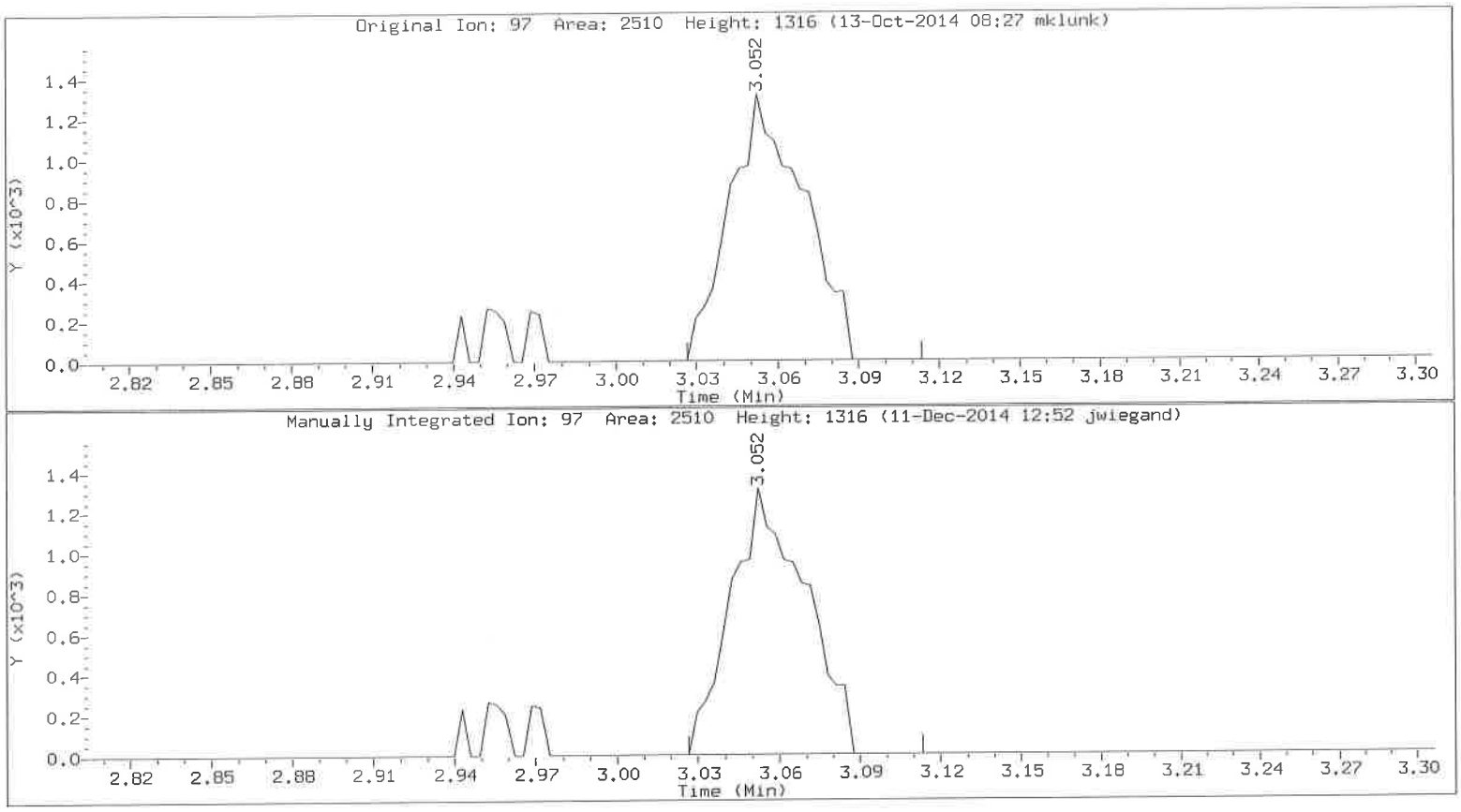

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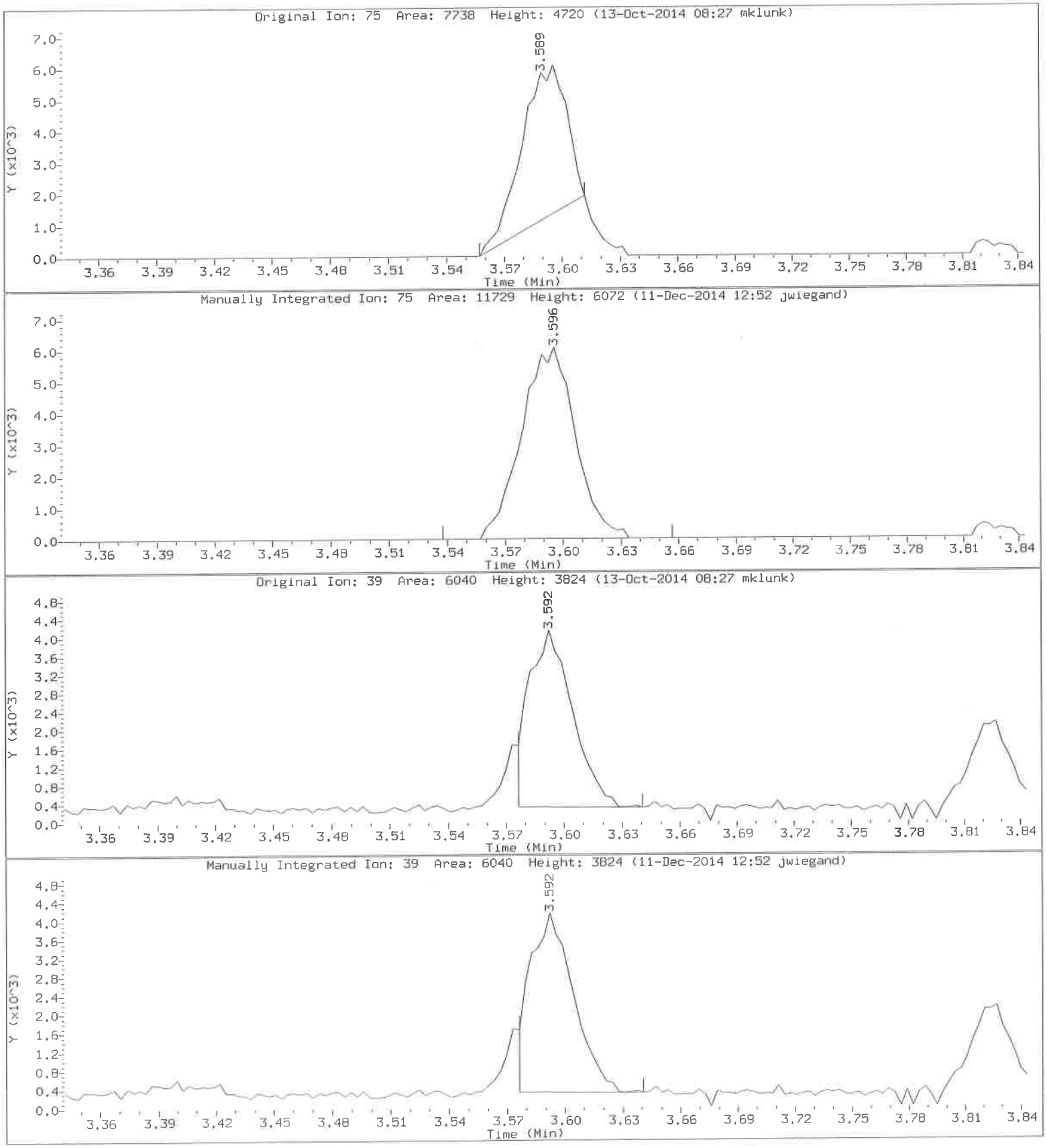
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: 1,1-Dichloropropene
CAS Number: 563-58-6



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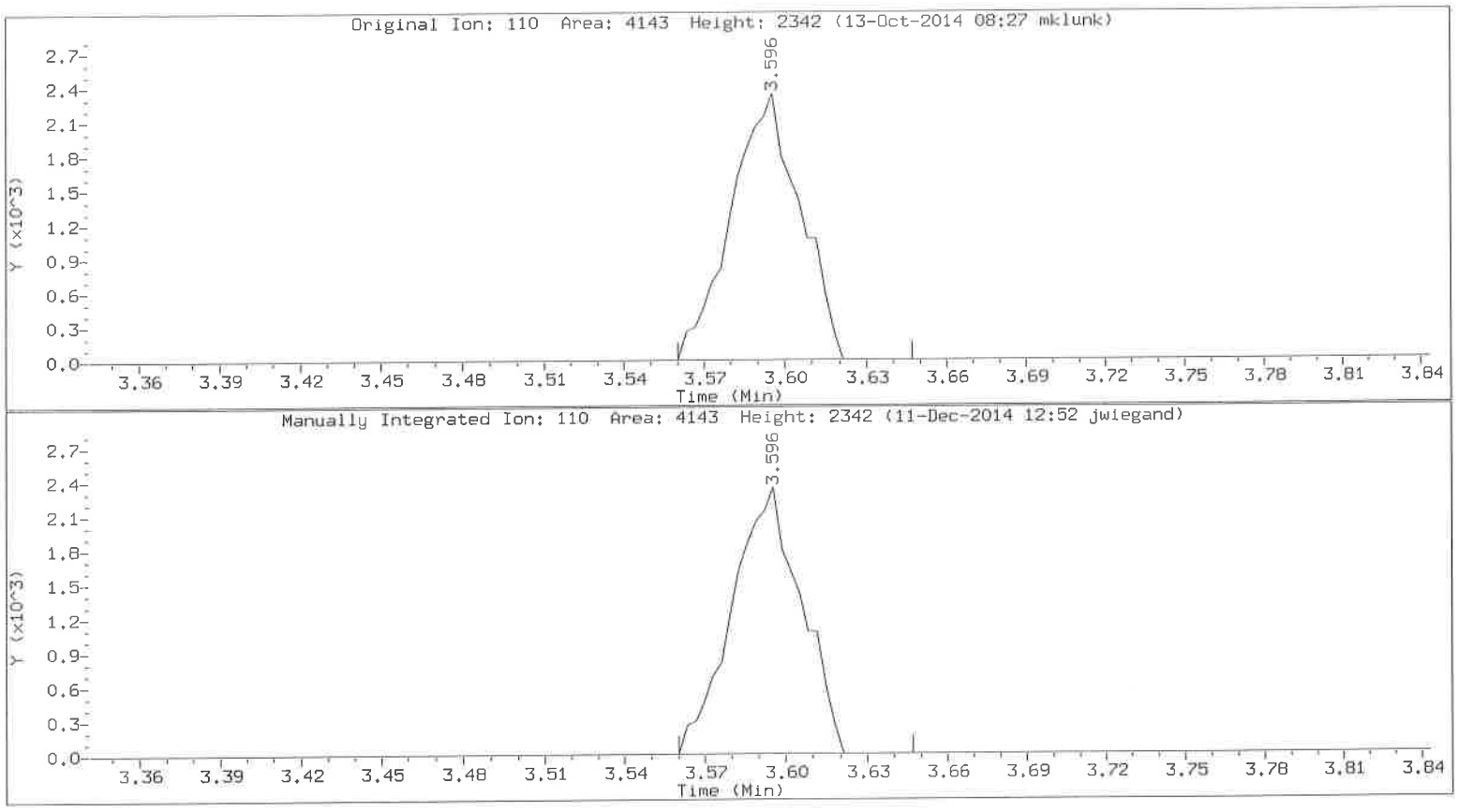
Lab Sample ID: VSTD[10]



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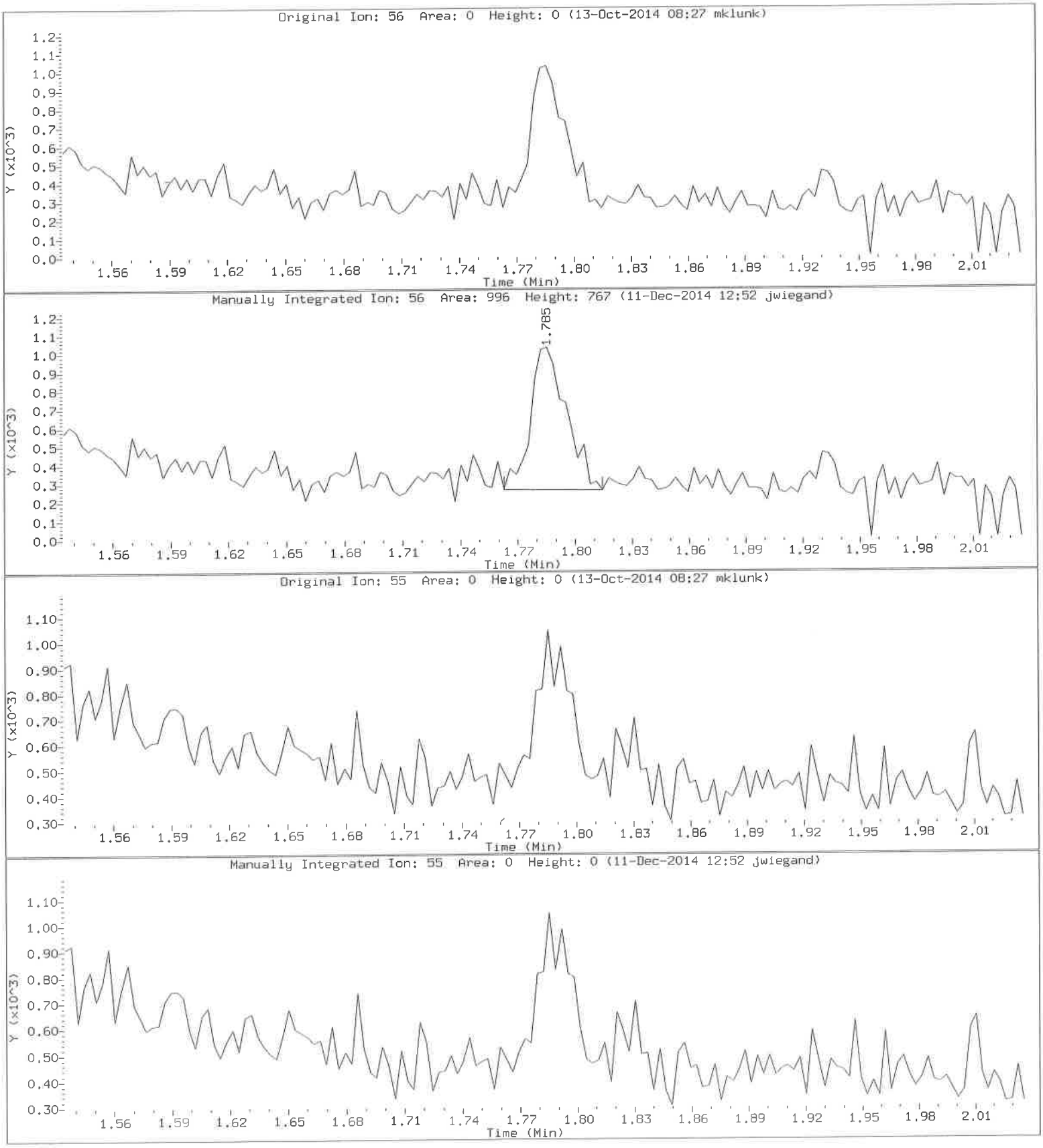
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Acrolein
CAS Number: 107-02-8



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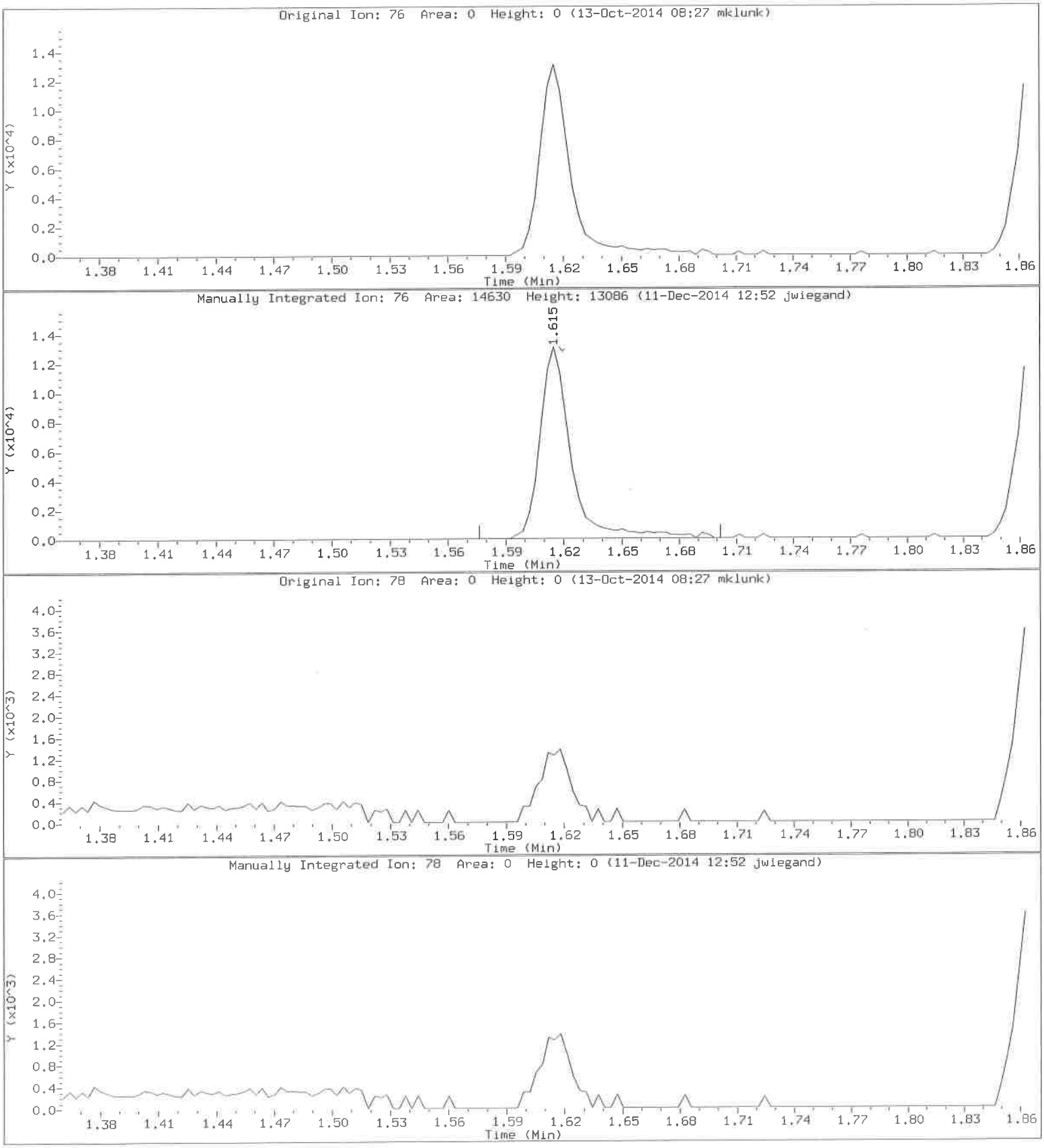
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Carbon Disulfide
CAS Number: 75-15-0



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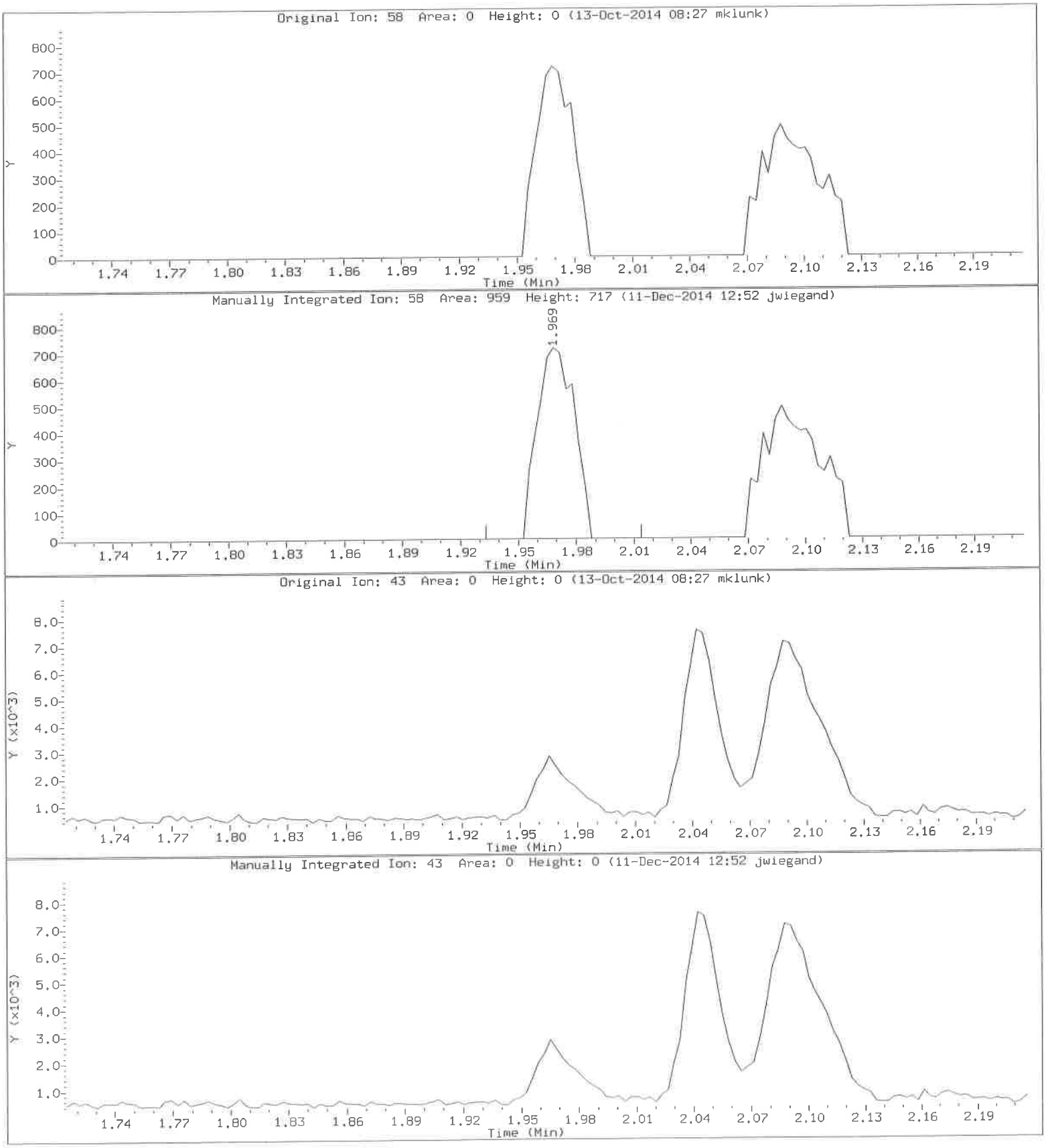
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Acetone
CAS Number: 67-64-1



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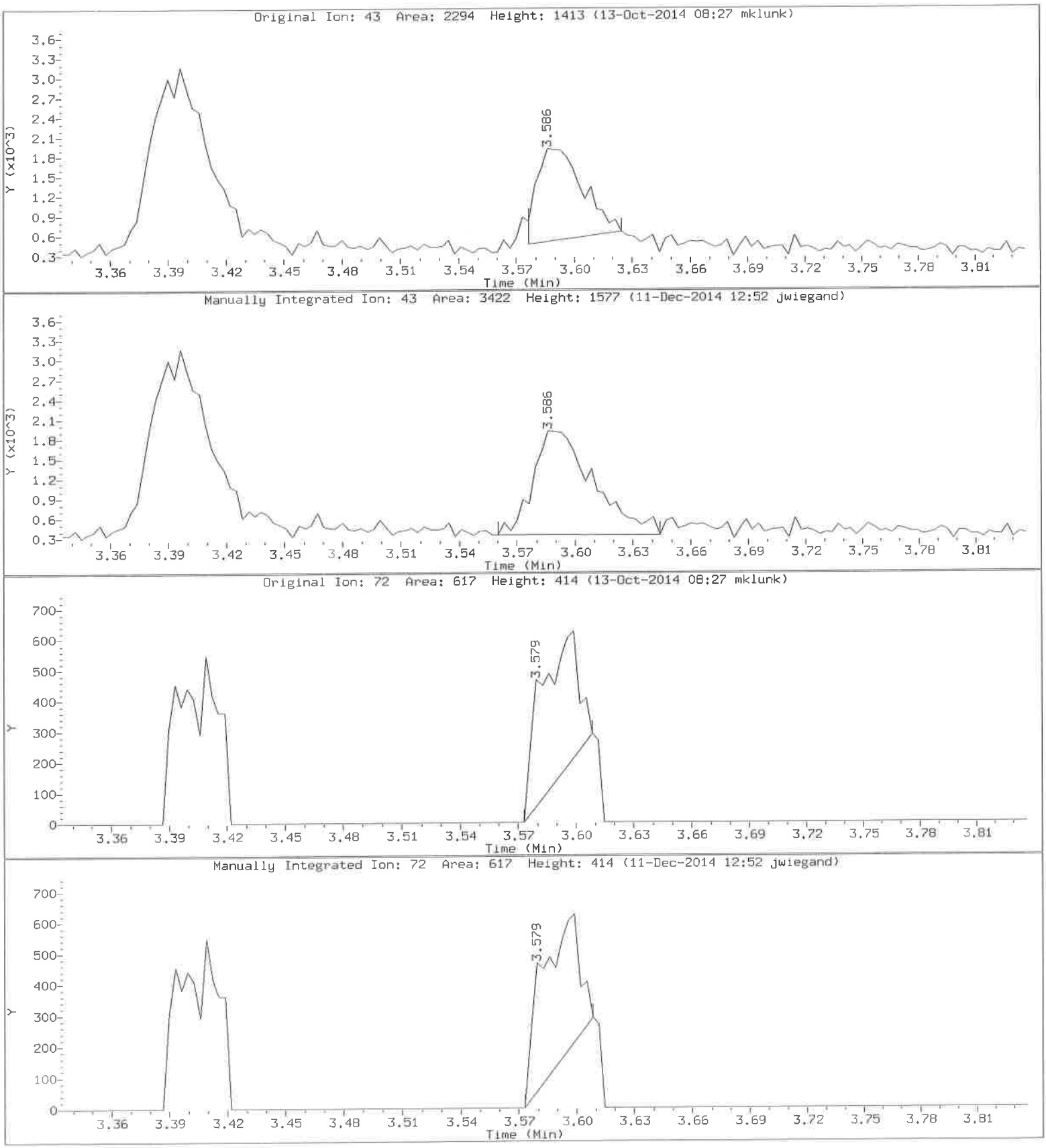
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: 2-Butanone
CAS Number: 78-93-3



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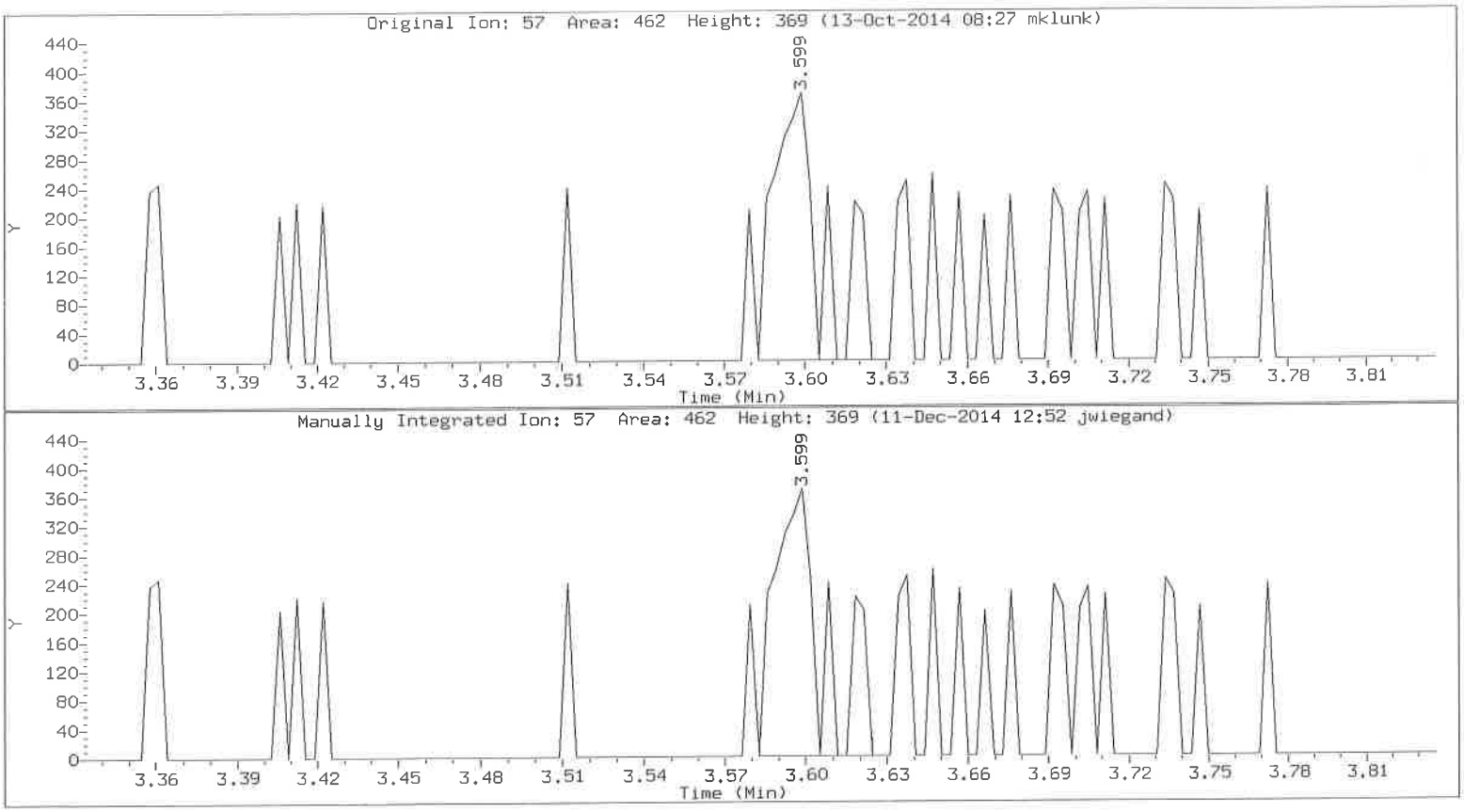

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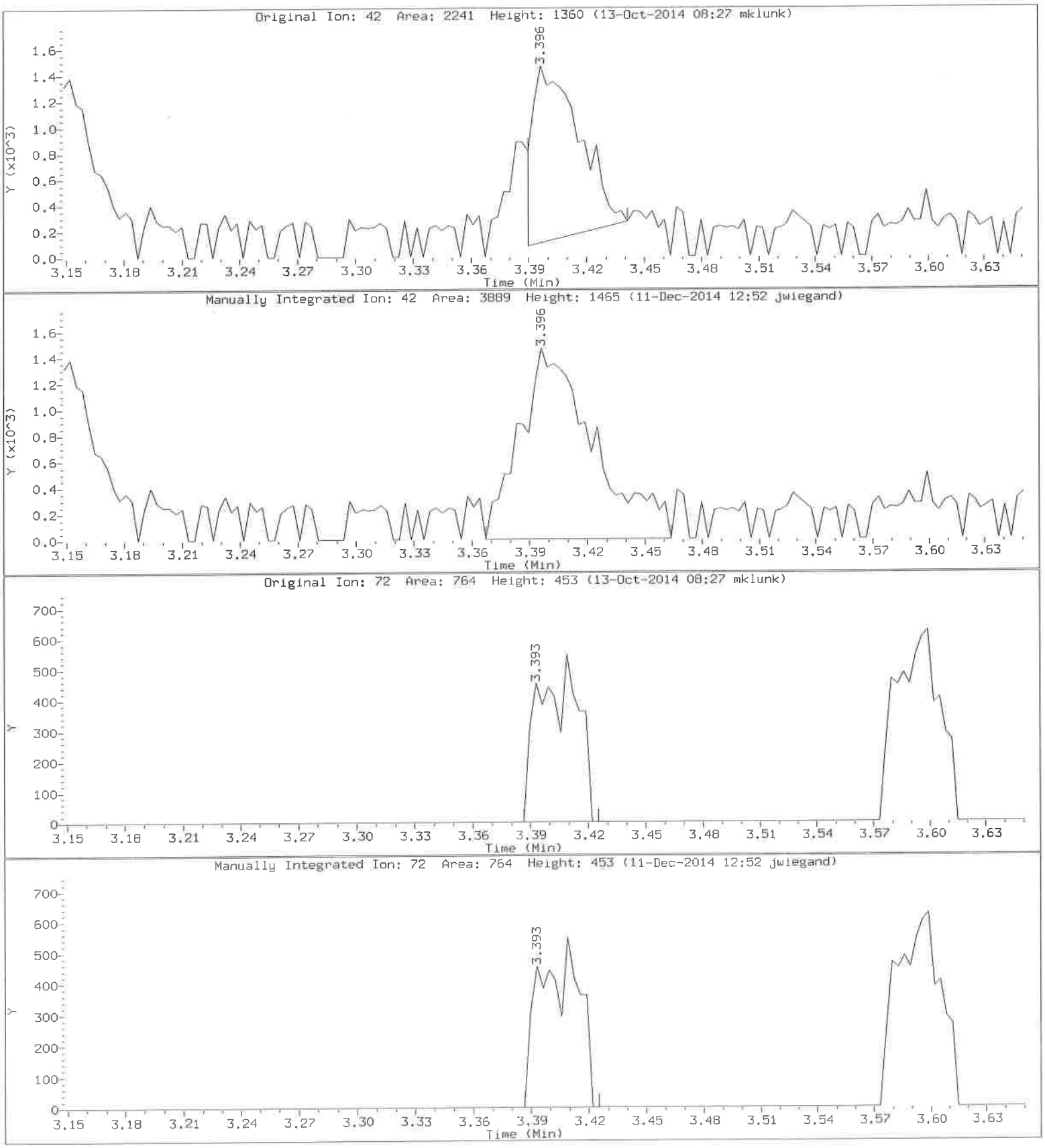
Injection Date: 10-OCT-2014 11:30
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Tetrahydrofuran
CAS Number: 109-99-9



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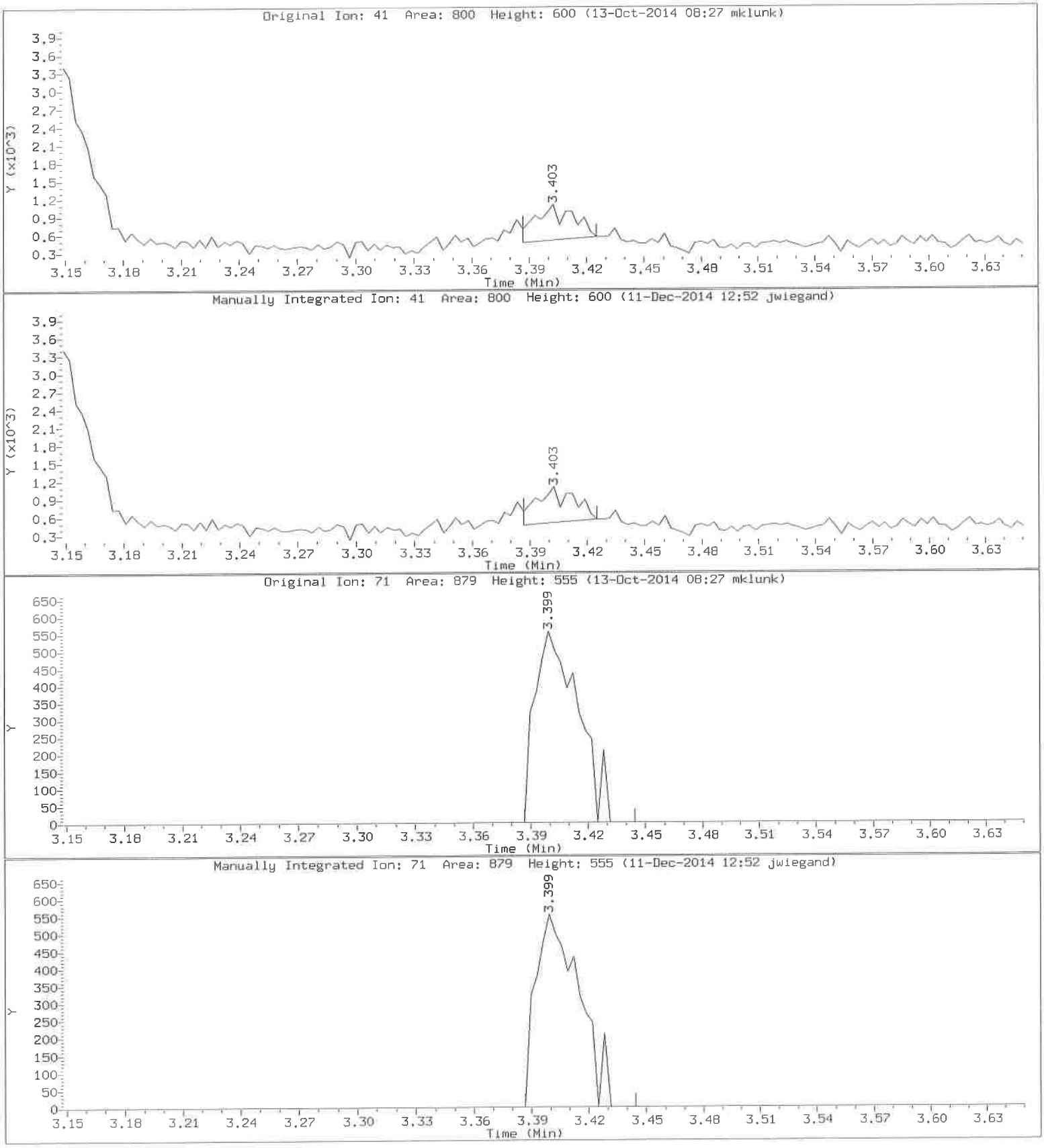
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]



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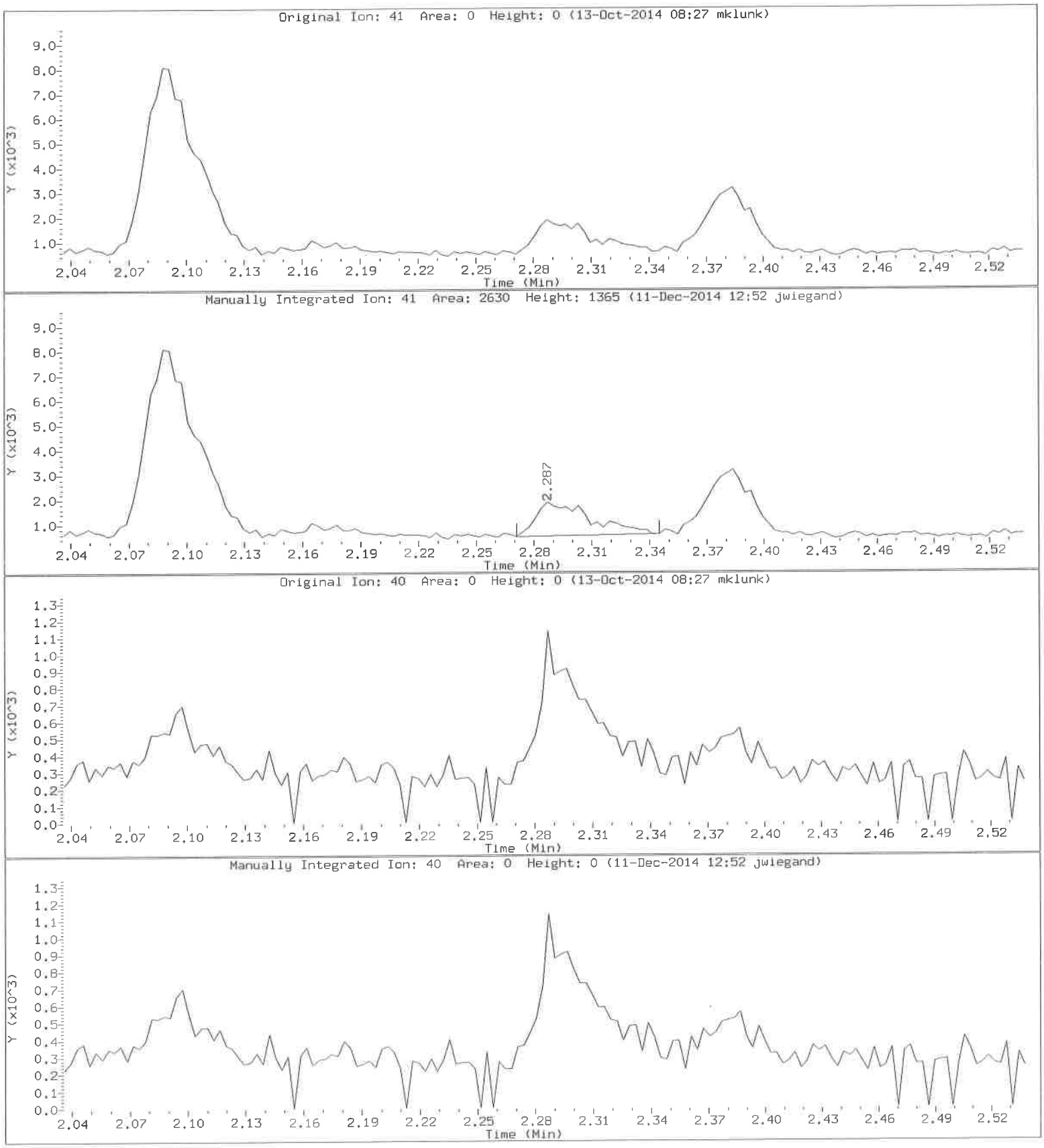
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Acetonitrile
CAS Number: 75-05-8



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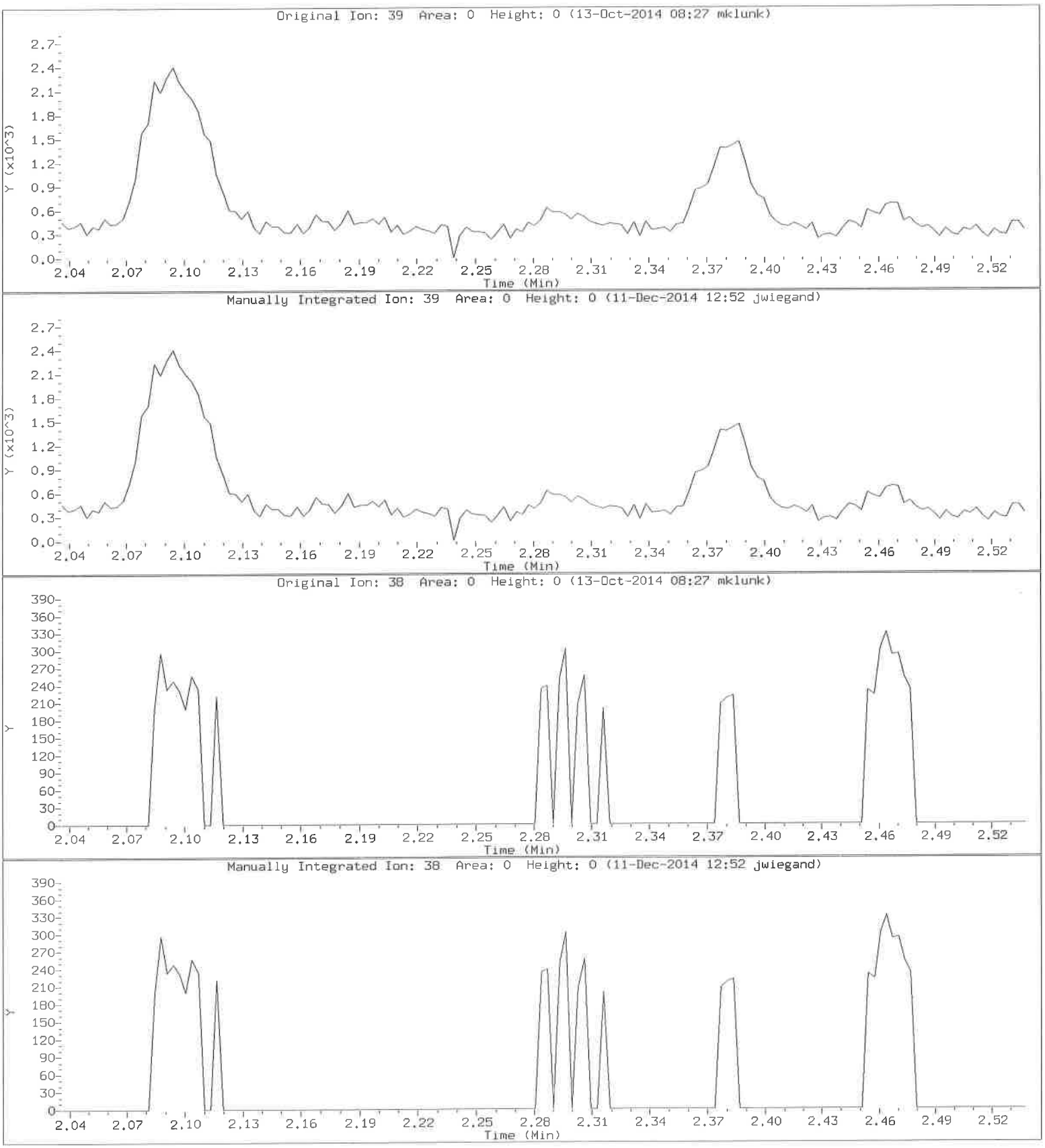

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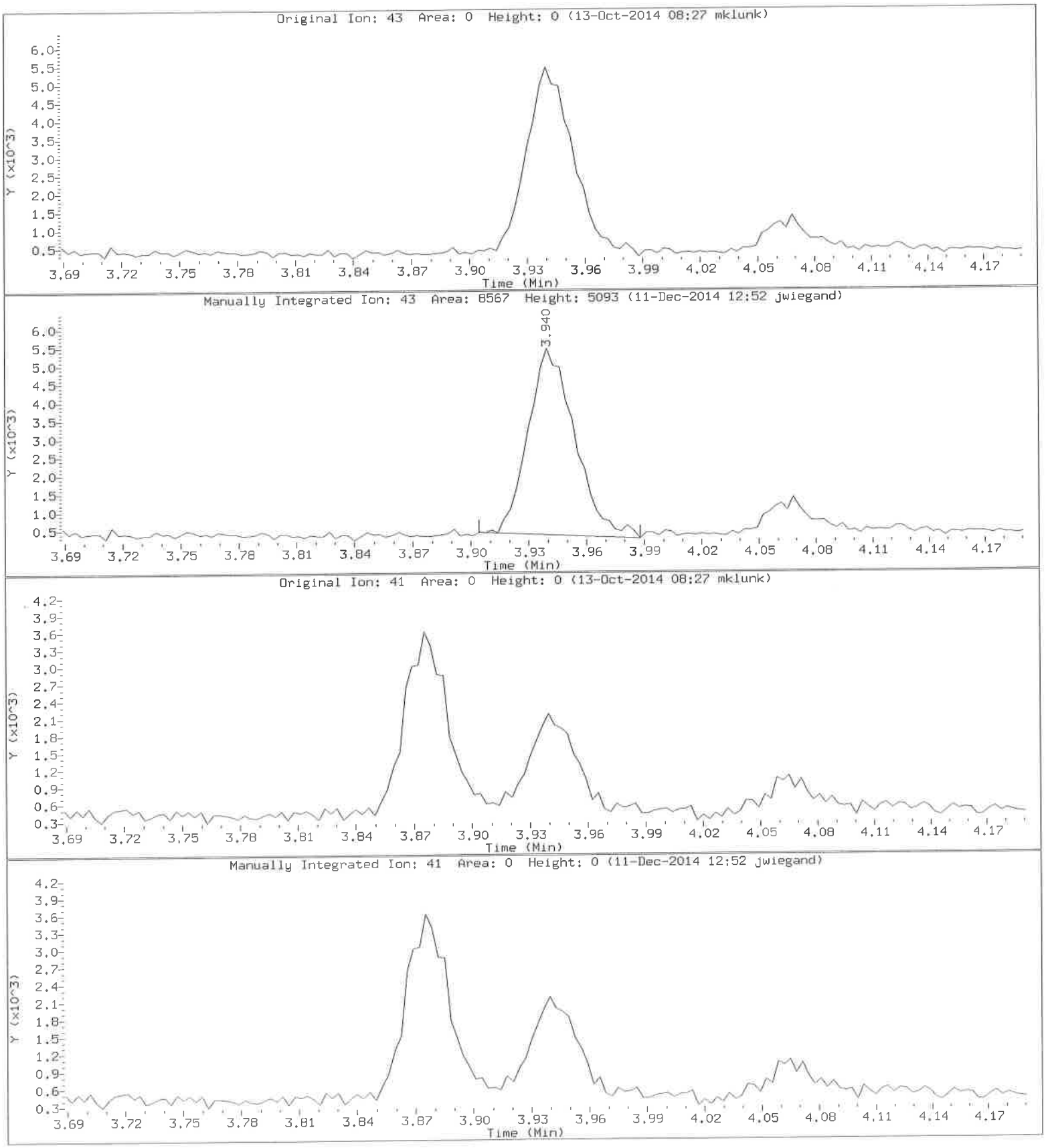
Injection Date: 10-OCT-2014 11:30
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Isobutanol
CAS Number: 78-83-1



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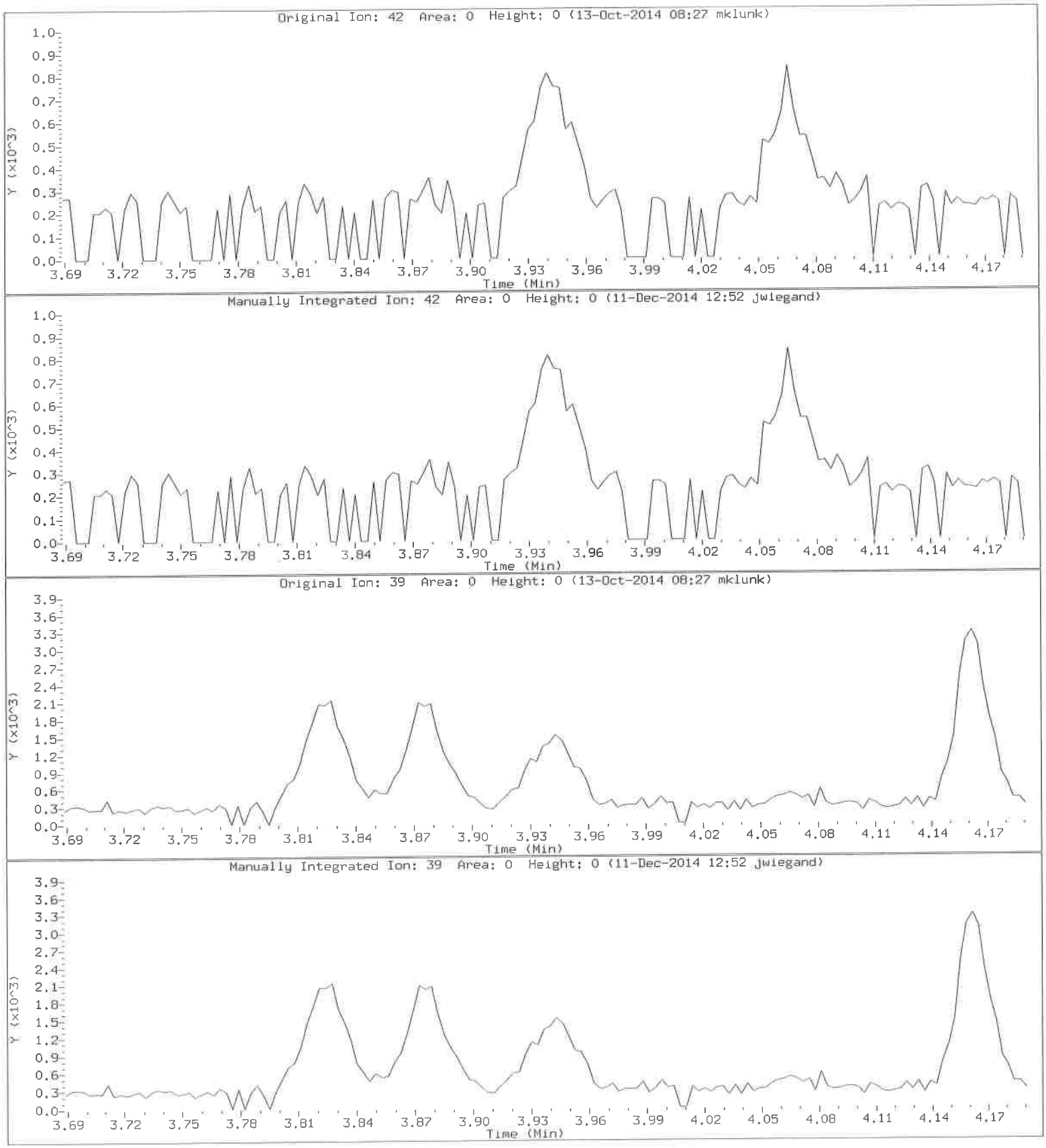

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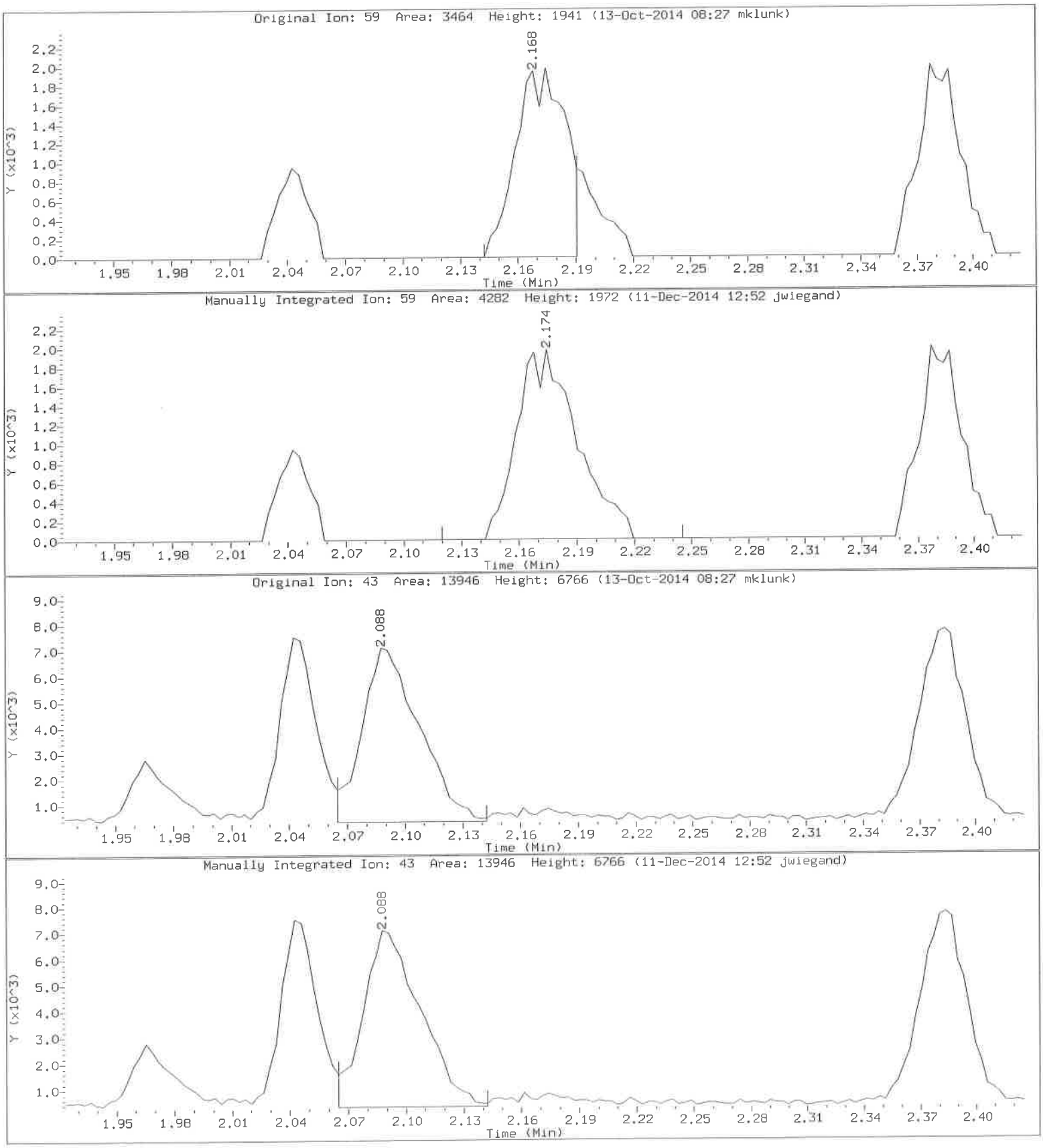
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: tert-Butyl Alcohol
CAS Number: 75-65-0



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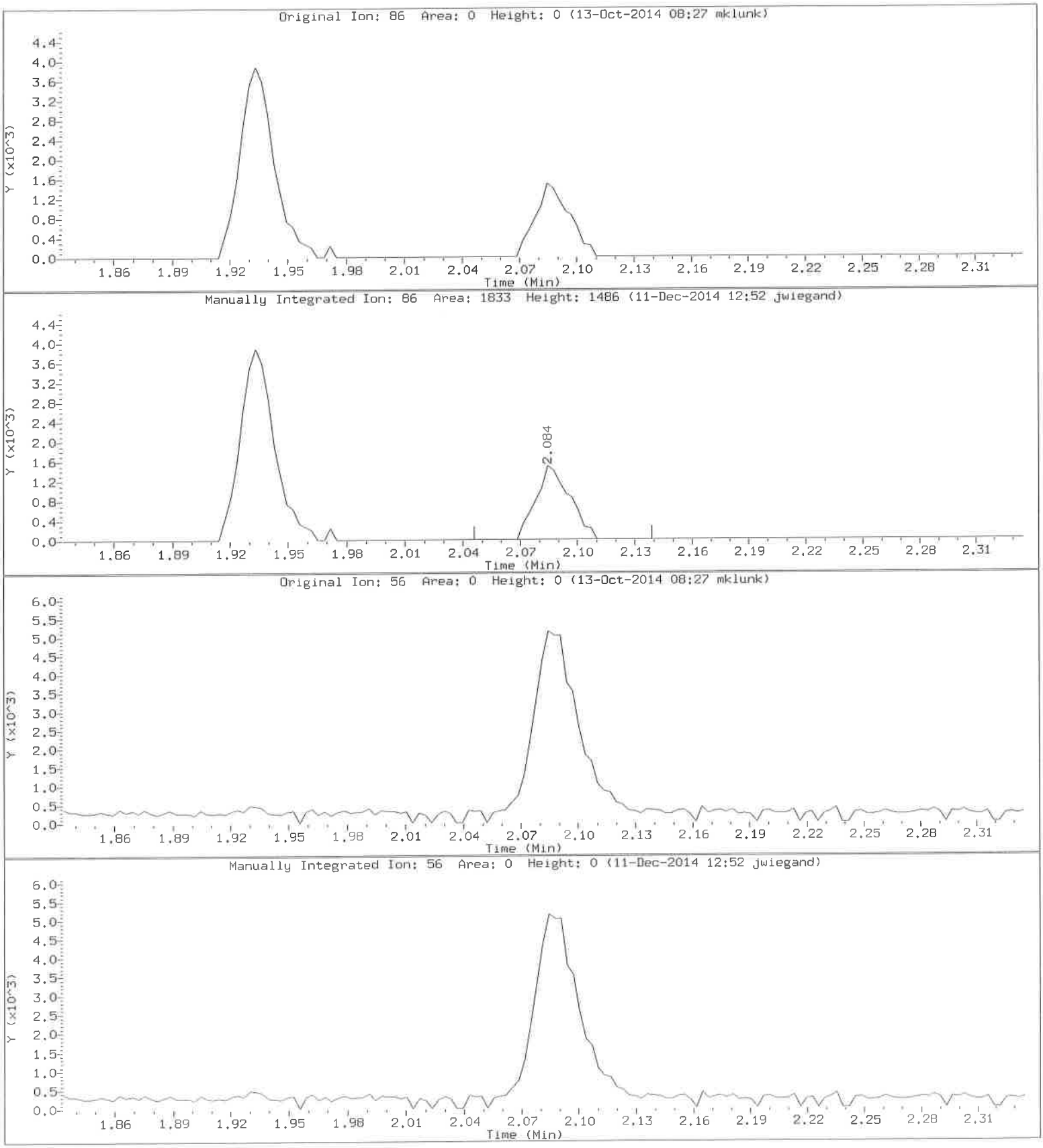
Lab Sample ID: VSTD[10]

Compound: Hexane
CAS Number: 110-54-03



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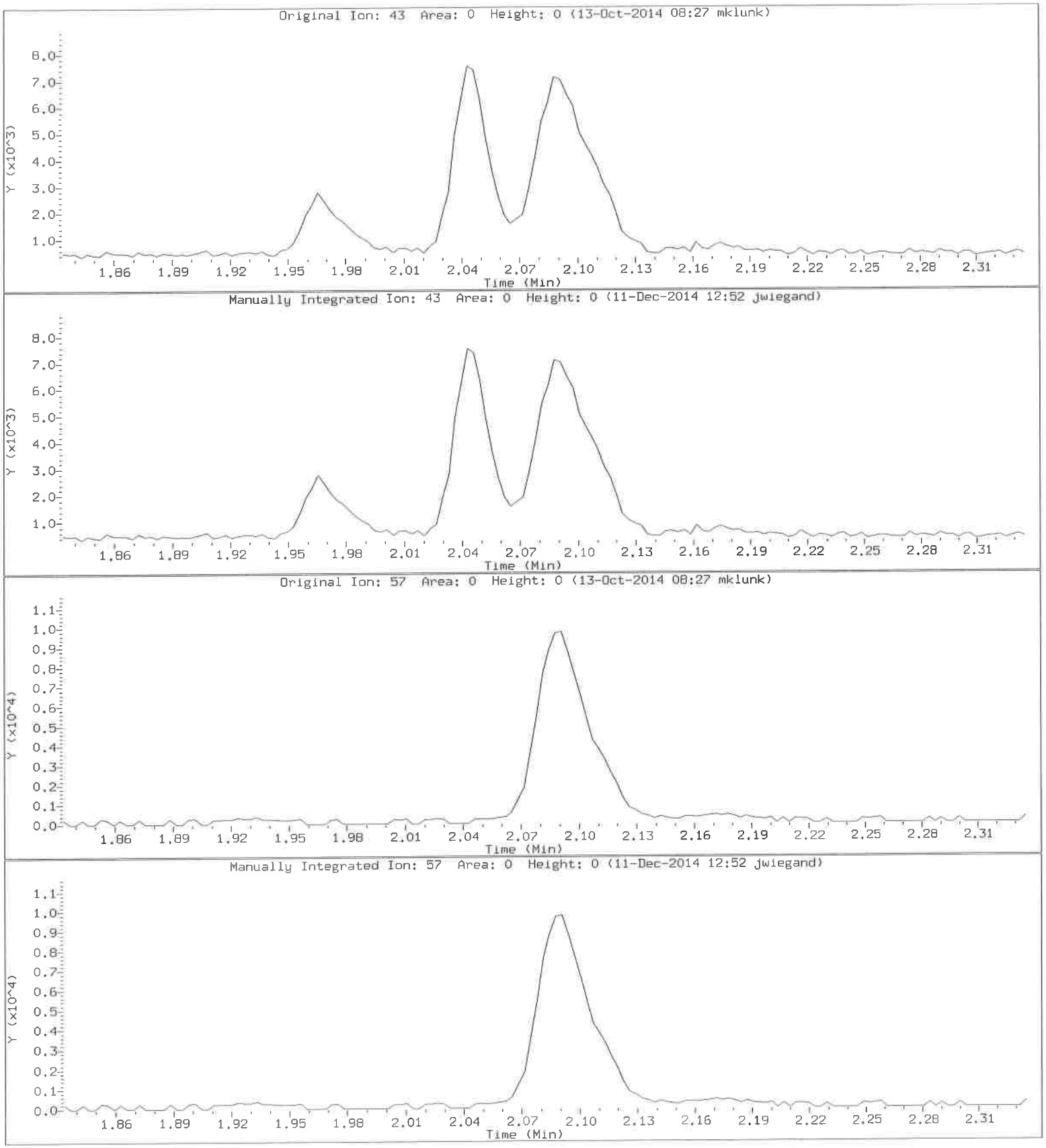

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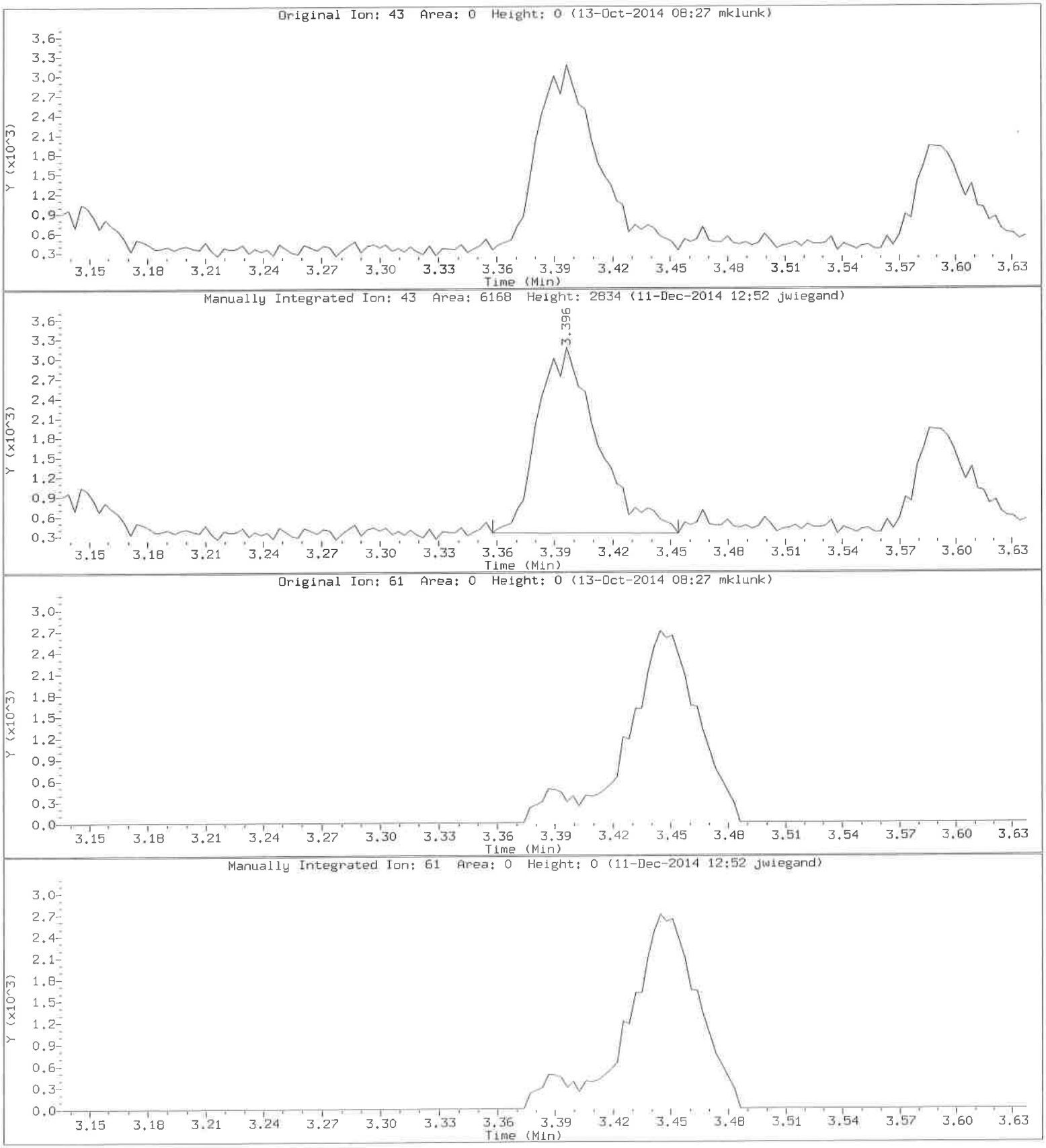
Injection Date: 10-OCT-2014 11:30
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Ethyl Acetate
CAS Number: 141-78-6



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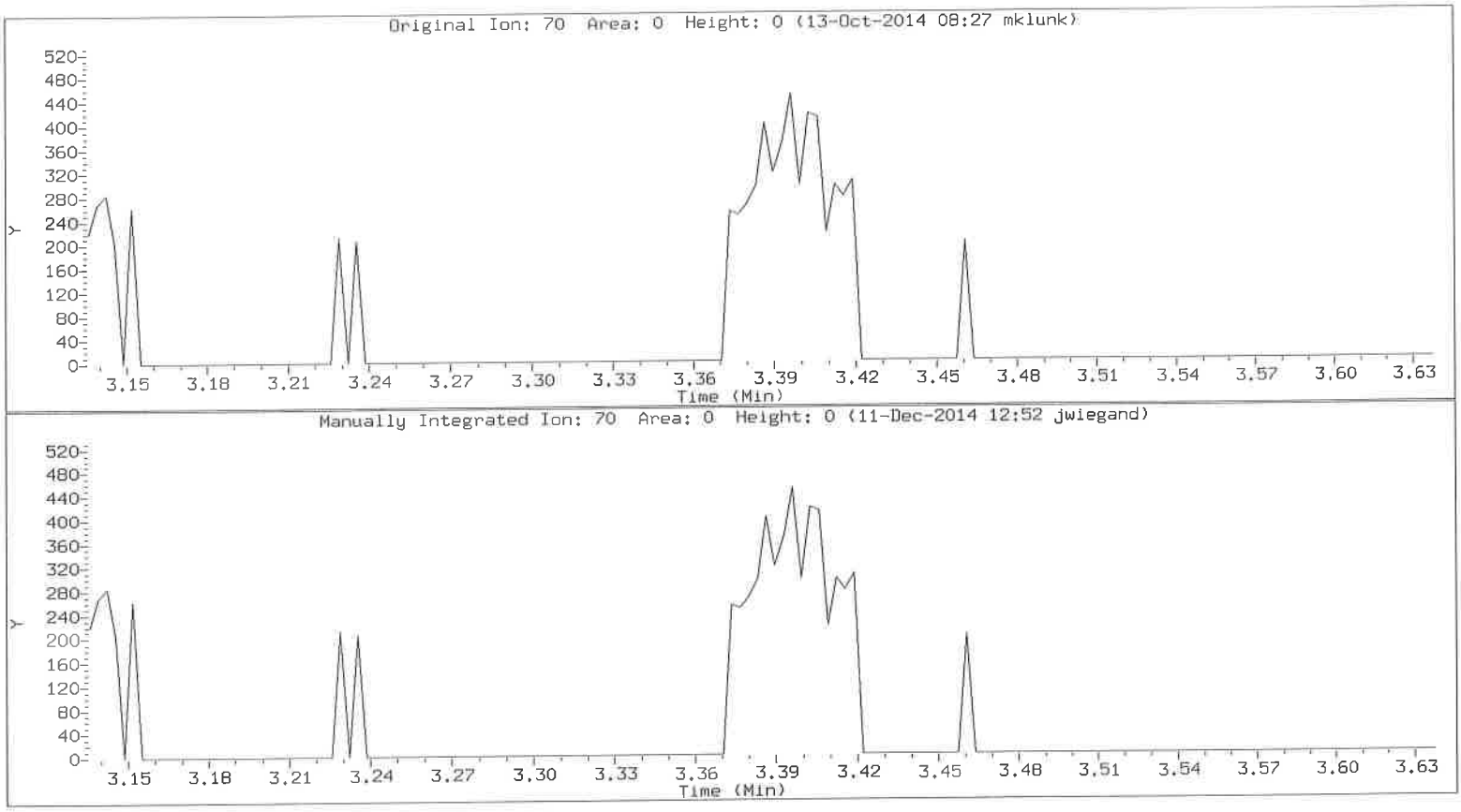

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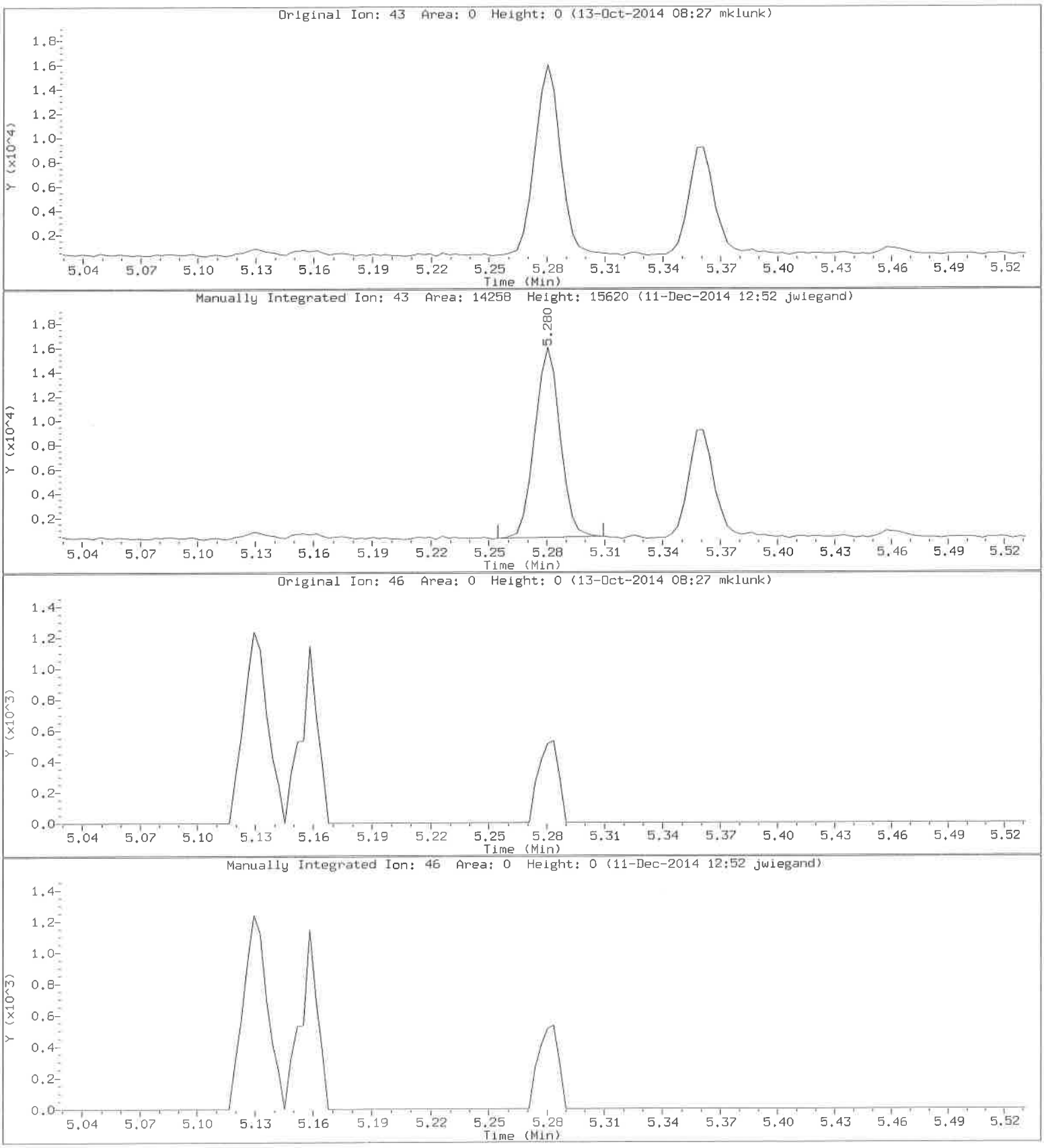
Injection Date: 10-OCT-2014 11:30
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: 2-Nitropropane
CAS Number: 79-46-9



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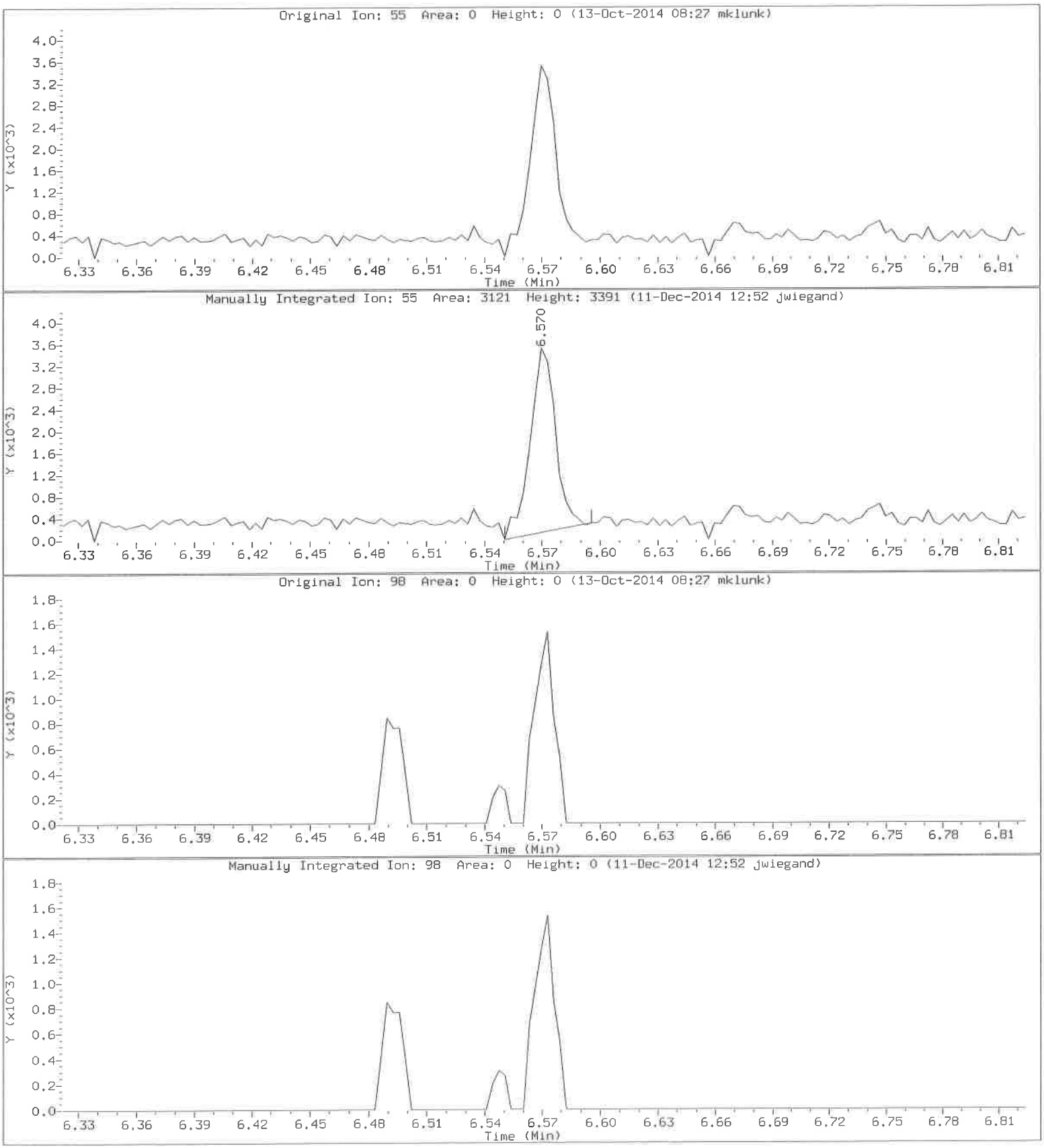
Injection Date: 10-OCT-2014 11:30
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Cyclohexanone
CAS Number: 108-94-1



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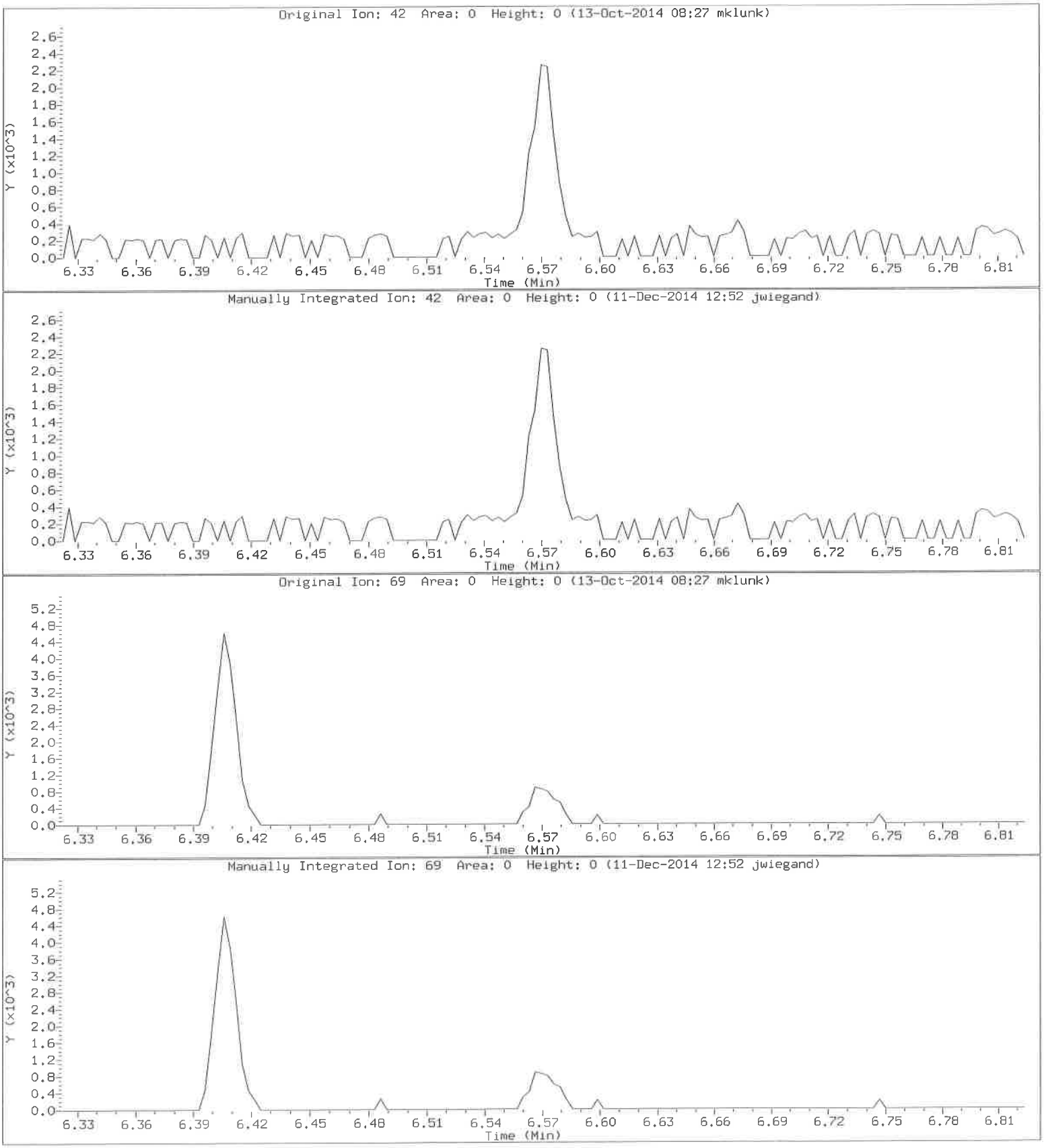

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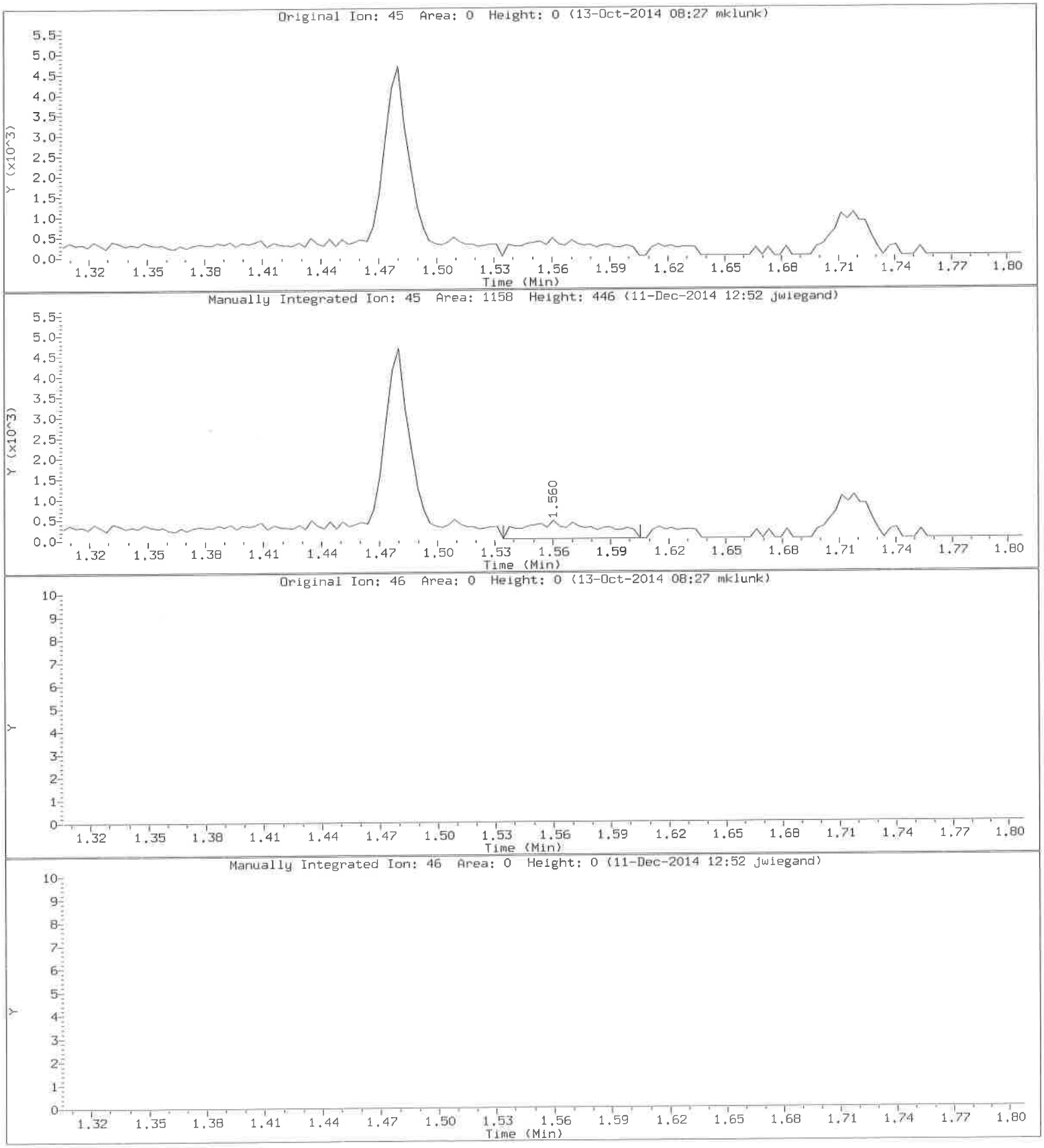
Injection Date: 10-OCT-2014 11:30
Instrument: 30msv5.i
Lab Sample ID: VSTD[10]

Compound: Ethanol
CAS Number: 64-17-5



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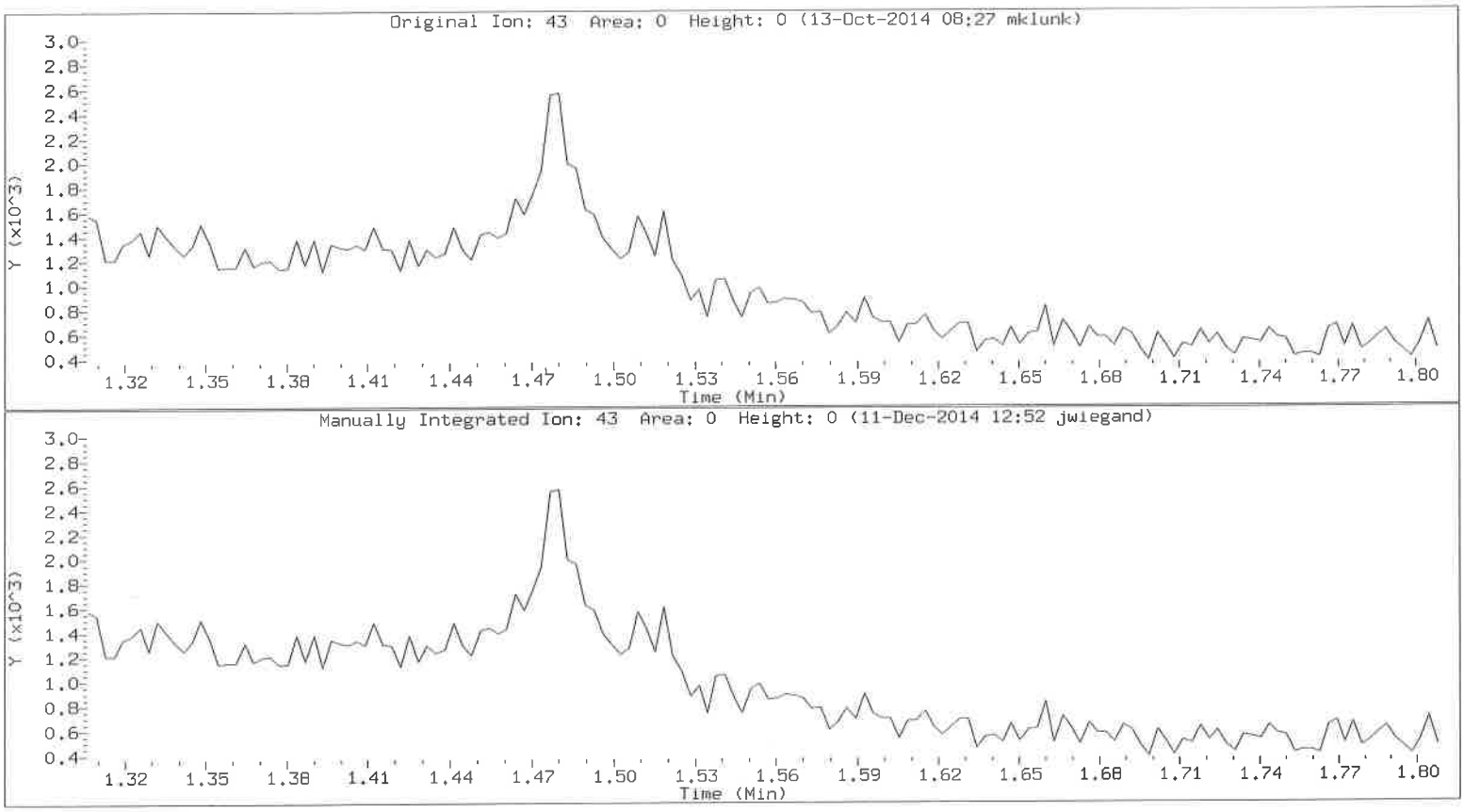
Lab Sample ID: VSTD[10]



Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010014.d
Report Date: 11-Dec-2014 12:52

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010014.d
Lab Smp Id: VSTD[20] Client Smp ID: VSTD[20]
Inj Date : 10-OCT-2014 11:52
Operator : JEW Inst ID: 30msv5.i
Smp Info : VSTD[20],,5
Misc Info : V10-49-13
Comment :
Method : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 12:51 jwiegand Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
1 Dichlorodifluoromethane	85	0.897	0.898	(0.216)	6932	20.0000	19.2(Q)	
2 Chloromethane	50	0.991	0.991	(0.238)	14224	20.0000	17.1	
3 Vinyl Chloride	62	1.033	1.032	(0.248)	6784	20.0000	17.2	
4 Bromomethane	94	1.193	1.191	(0.287)	1627	20.0000	18.1(QM)	NI
5 Chloroethane	64	1.254	1.252	(0.302)	4047	20.0000	22.0(Q)	
6 Trichlorofluoromethane	101	1.325	1.322	(0.319)	16876	20.0000	19.5	
7 Ethyl Ether	59	1.479	1.477	(0.356)	10529	20.0000	20.2	
8 1,1-Dichloroethene	61	1.592	1.592	(0.383)	18298	20.0000	18.7	
159 Ethanol	45	1.553	1.557	(0.373)	564	200.000	132(M)	NI
9 Carbon Disulfide	76	1.615	1.612	(0.388)	25843	20.0000	19.1(Q)	
10 1,1,2-Trichlorotrifluoroethan	151	1.608	1.609	(0.387)	8405	20.0000	20.1	
11 Iodomethane	142	1.676	1.676	(0.403)	4270	20.0000	17.6	
12 Acrolein	56	1.785	1.785	(0.429)	1963	20.0000	20.5(QM)	NI
13 Allyl chloride	41	1.865	1.866	(0.448)	92070	100.000	102	
14 Methylene Chloride	49	1.933	1.933	(0.465)	19318	20.0000	25.6	
15 Acetone	58	1.965	1.965	(0.472)	1617	20.0000	23.2(QM)	NI
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	23450	20.0000	20.2	
17 Methyl Acetate	74	2.045	2.043	(0.492)	3734	20.0000	21.1	
18 Hexane	86	2.087	2.084	(0.502)	3114	20.0000	19.4	
19 tert-butyl Methylether,MtB	73	2.106	2.104	(0.506)	46365	20.0000	21.5	

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010014.d
Report Date: 11-Dec-2014 12:52

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
	21 tert-Butyl Alcohol	59	2.174	2.174	(0.523)	8987	100.000	106(QM)	LT
	20 Acetonitrile	41	2.293	2.287	(0.551)	5082	100.000	96.1(M)	NI
	22 DiisopropylEther	45	2.380	2.380	(0.572)	53806	20.0000	20.4	
	23 Chloroprene	53	2.463	2.464	(0.592)	24047	20.0000	19.5	
	25 Acrylonitrile	53	2.528	2.528	(0.608)	5856	20.0000	21.6(Q)	
	24 1,1-Dichloroethane	63	2.483	2.483	(0.597)	32042	20.0000	20.6	
	27 t-Butyl ethyl ether	59	2.682	2.682	(0.645)	55714	20.0000	20.8	
	26 Vinyl Acetate	43	2.695	2.695	(0.648)	20779	20.0000	20.4	
	28 cis-1,2-Dichloroethene	61	2.955	2.953	(0.710)	26110	20.0000	20.4(Q)	
	29 2,2-Dichloropropane	77	3.052	3.055	(0.733)	25141	20.0000	20.5(Q)	
	30 Cyclohexane	56	3.142	3.145	(0.755)	23984	20.0000	19.9	
	31 Bromochloromethane	130	3.145	3.149	(0.756)	10229	20.0000	20.4(Q)	
	32 Chloroform	83	3.238	3.239	(0.778)	32022	20.0000	20.4(Q)	
	33 Carbon Tetrachloride	117	3.367	3.371	(0.809)	22671	20.0000	19.1(M)	LT
	36 Ethyl Acetate	43	3.393	3.387	(0.815)	12613	20.0000	20.1(Q)	
	35 Tetrahydrofuran	42	3.396	3.399	(0.816)	7283	20.0000	30.0(QM)	LT
	34 1,1,1-Trichloroethane	97	3.444	3.448	(0.828)	26187	20.0000	20.1(Q)	
	37 1,1-Dichloropropene	75	3.592	3.592	(0.863)	22043	20.0000	19.9(M)	LT
	38 2-Butanone	43	3.589	3.586	(0.862)	5714	20.0000	17.4(QM)	NI
	39 Benzene	78	3.823	3.824	(0.650)	62565	20.0000	19.2	
	40 Propionitrile	54	3.859	3.856	(0.927)	1886	20.0000	20.0(Q)	
	41 Methacrylonitrile	41	3.875	3.875	(0.931)	9799	20.0000	20.0(Q)	
$	42 1,2-Dichloroethane-d4	65	3.942	3.940	(0.947)	31312	30.0000	30.0	
	43 t-Amyl methyl ether	73	3.939	3.940	(0.670)	45916	20.0000	19.5	
	46 Isobutanol	43	3.942	3.940	(0.947)	16833	100.000	103(QM)	NI
	44 1,2-Dichloroethane	62	3.997	3.998	(0.961)	26622	20.0000	20.3	
*	45 Fluorobenzene	96	4.161	4.162	(1.000)	89562	30.0000		
	47 Methylcyclohexane	83	4.270	4.271	(0.727)	21239	20.0000	18.7(Q)	
	48 Trichloroethene	132	4.286	4.287	(0.729)	15573	20.0000	19.3	
	49 Dibromomethane	174	4.560	4.560	(0.776)	10973	20.0000	19.6	
	50 1,2-Dichloropropane	63	4.621	4.621	(0.786)	18148	20.0000	19.0	
	51 Bromodichloromethane	83	4.669	4.670	(0.794)	24217	20.0000	18.7	
	52 Methyl methacrylate	69	4.778	4.779	(0.813)	11952	20.0000	20.0	
	53 1,4-Dioxane	88	4.798	4.795	(0.698)	942	200.000	257(QM)	LT
	55 2-ChloroethylVinylEther	63	5.010	5.010	(0.852)	5329	20.0000	19.1	
	54 cis-1,3-Dichloropropene	75	5.032	5.033	(0.856)	26642	20.0000	19.3	
$	56 Toluene-d8	98	5.129	5.129	(0.873)	86890	30.0000	28.3	
	57 Toluene	91	5.158	5.158	(0.877)	64626	20.0000	19.4	
	58 2-Nitropropane	43	5.280	5.280	(0.898)	28472	100.000	98.3	
	59 Tetrachloroethene	166	5.354	5.354	(0.911)	16354	20.0000	19.2	
	60 4-Methyl-2-Pentanone	43	5.360	5.361	(0.912)	16510	20.0000	20.2	
	61 trans-1,3-Dichloropropene	75	5.376	5.377	(0.915)	26691	20.0000	19.5	
	63 Ethyl methacrylate	41	5.457	5.461	(0.928)	16370	20.0000	20.2	
	62 1,1,2-Trichloroethane	97	5.454	5.454	(0.928)	14212	20.0000	20.0	
	64 Dibromochloromethane	129	5.537	5.538	(0.942)	17097	20.0000	19.3	
	65 1,3-Dichloropropane	76	5.582	5.583	(0.950)	24981	20.0000	19.9	
	66 1,2-Dibromoethane,EDB	107	5.643	5.644	(0.960)	14702	20.0000	19.9	
	70 2-Hexanone	43	5.756	5.756	(0.979)	13631	20.0000	21.0	
*	67 Chlorobenzene-d5	82	5.878	5.882	(1.000)	40145	30.0000		
	68 Chlorobenzene	112	5.888	5.888	(1.002)	42995	20.0000	20.1	
	69 Ethylbenzene	106	5.901	5.901	(1.004)	22682	20.0000	19.9	
	71 1,1,1,2-Tetrachloroethane	131	5.917	5.920	(1.007)	14731	20.0000	19.9	
	72 m,p-Xylene	106	5.965	5.965	(1.015)	54476	40.0000	40.3	
	73 o-Xylene	106	6.151	6.152	(1.046)	26189	20.0000	20.1	

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010014.d
Report Date: 11-Dec-2014 12:52

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
74 Styrene	104	6.174	6.174	(1.050)	42774	20.0000	20.5	
75 Bromoform	173	6.190	6.190	(1.053)	11272	20.0000	20.2	
76 Isopropylbenzene,Cumene	105	6.283	6.287	(0.914)	61750	20.0000	18.9	
$ 77 Bromofluorobenzene	174	6.409	6.409	(0.933)	26609	30.0000	28.4	
79 n-Propylbenzene	91	6.460	6.460	(0.940)	80986	20.0000	19.5	
78 Bromobenzene	77	6.450	6.454	(0.939)	33417	20.0000	19.7	
80 1,1,2,2-Tetrachloroethane	83	6.492	6.493	(0.945)	18180	20.0000	20.0	
81 2-Chlorotoluene	126	6.527	6.531	(0.950)	16099	20.0000	20.4	
82 1,3,5-Trimethylbenzene	120	6.537	6.541	(0.951)	25600	20.0000	19.8	
83 1,2,3-Trichloropropane	110	6.550	6.550	(0.953)	5706	20.0000	20.8	
84 trans 1,4-Dichloro-2-butene	53	6.563	6.567	(0.955)	6650	20.0000	20.5	
85 Cyclohexanone	55	6.569	6.573	(0.956)	5199	100.000	87.6(QM)	NI
86 4-Chlorotoluene	126	6.595	6.599	(0.960)	16471	20.0000	19.9	
87 tert-Butyl benzene	119	6.672	6.676	(0.971)	43685	20.0000	19.6	
88 1,2,4-Trimethylbenzene	120	6.701	6.702	(0.975)	24816	20.0000	20.3	
89 sec-Butyl benzene	105	6.746	6.747	(0.982)	62977	20.0000	19.2	
90 4-Isopropyl toluene	119	6.801	6.805	(0.990)	55532	20.0000	19.9	
91 1,3-Dichlorobenzene	146	6.843	6.843	(0.996)	31520	20.0000	20.4	
* 92 1,4-Dichlorobenzene-d4	152	6.872	6.872	(1.000)	34129	30.0000		
93 1,4-Dichlorobenzene	146	6.878	6.878	(1.001)	31677	20.0000	20.6	
94 n-Butyl benzene	91	6.974	6.978	(1.015)	51318	20.0000	19.6	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	7.055	7.055	(1.027)	29378	20.0000	20.6	
96 bis(2Chloro1methyl ethyl)eth	45	7.196	7.197	(1.047)	8243	20.0000	20.3	
97 1,2-Dibromo-3-Chloropropane	75	7.380	7.383	(1.074)	3217	20.0000	20.5	
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	9235	20.0000	18.7	
99 1,2,4-Trichlorobenzene	180	7.656	7.657	(1.114)	17670	20.0000	20.4	
100 Naphthalene	128	7.794	7.795	(1.134)	40519	20.0000	21.3	
101 1,2,3-Trichlorobenzene	180	7.871	7.872	(1.146)	15436	20.0000	20.7	
157 2-methylnaphthalene	142	8.241	8.241	(1.199)	19349	20.0000	20.6	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010014.d
Report Date: 11-Dec-2014 12:52

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51010014.d
Lab Smp Id: VSTD[20]
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Misc Info: V10-49-13

Calibration Date: 10-OCT-2014
Calibration Time: 12:14
Client Smp ID: VSTD[20]
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

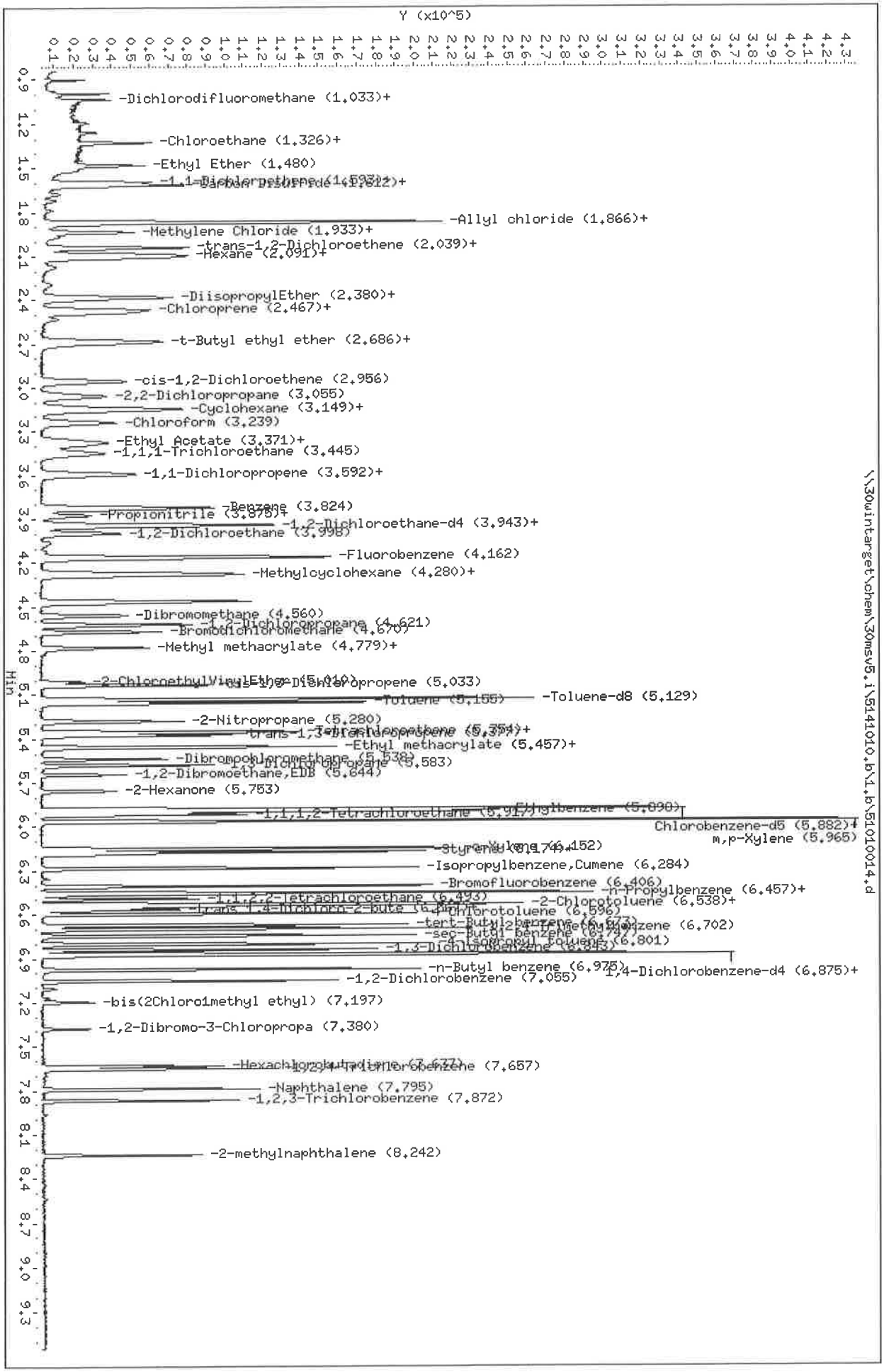
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	87362	43681	174724	89562	2.52
67 Chlorobenzene-d5	37349	18675	74698	40145	7.49
92 1,4-Dichlorobenze	30731	15366	61462	34129	11.06

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30winterget\chem\30msv5.i\5141010.b\1.b\51010014.d
Date : 10-OCT-2014 11:52
Client ID: VSTD[20]
Sample Info: VSTD[20],,5
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEM
Column diameter: 0.18



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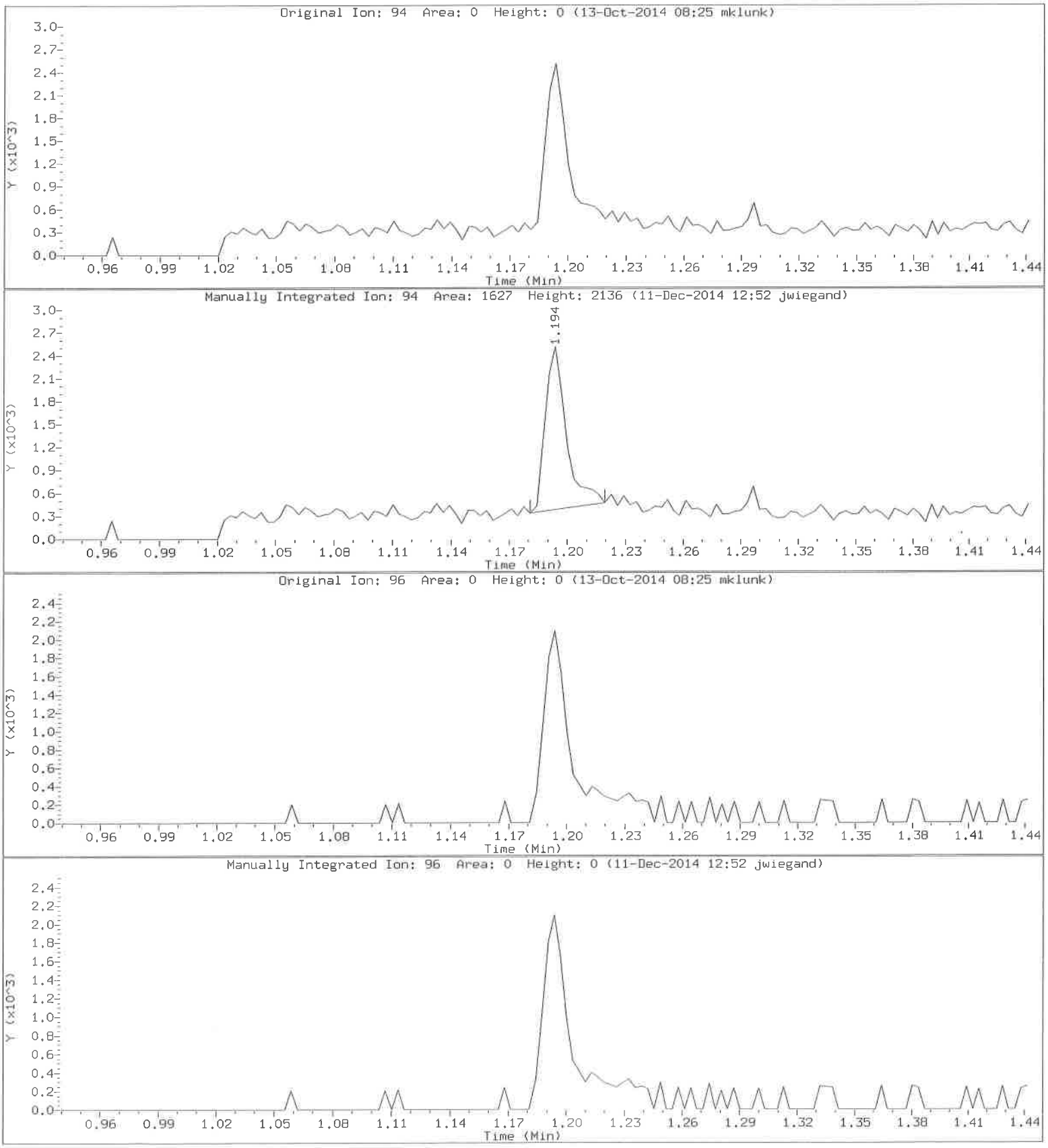
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: Bromomethane
CAS Number: 74-83-9



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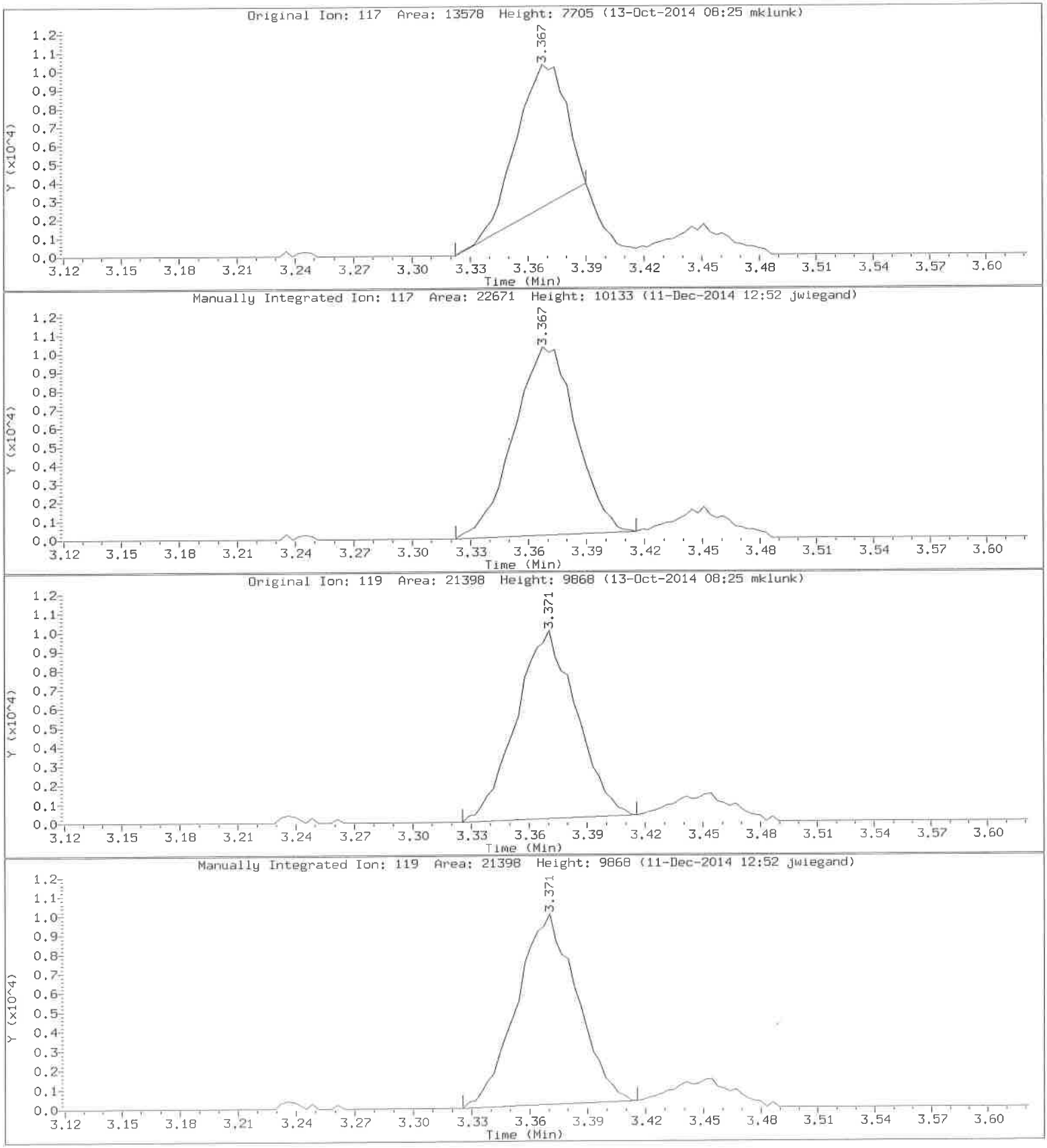
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: Carbon Tetrachloride
CAS Number: 56-23-5



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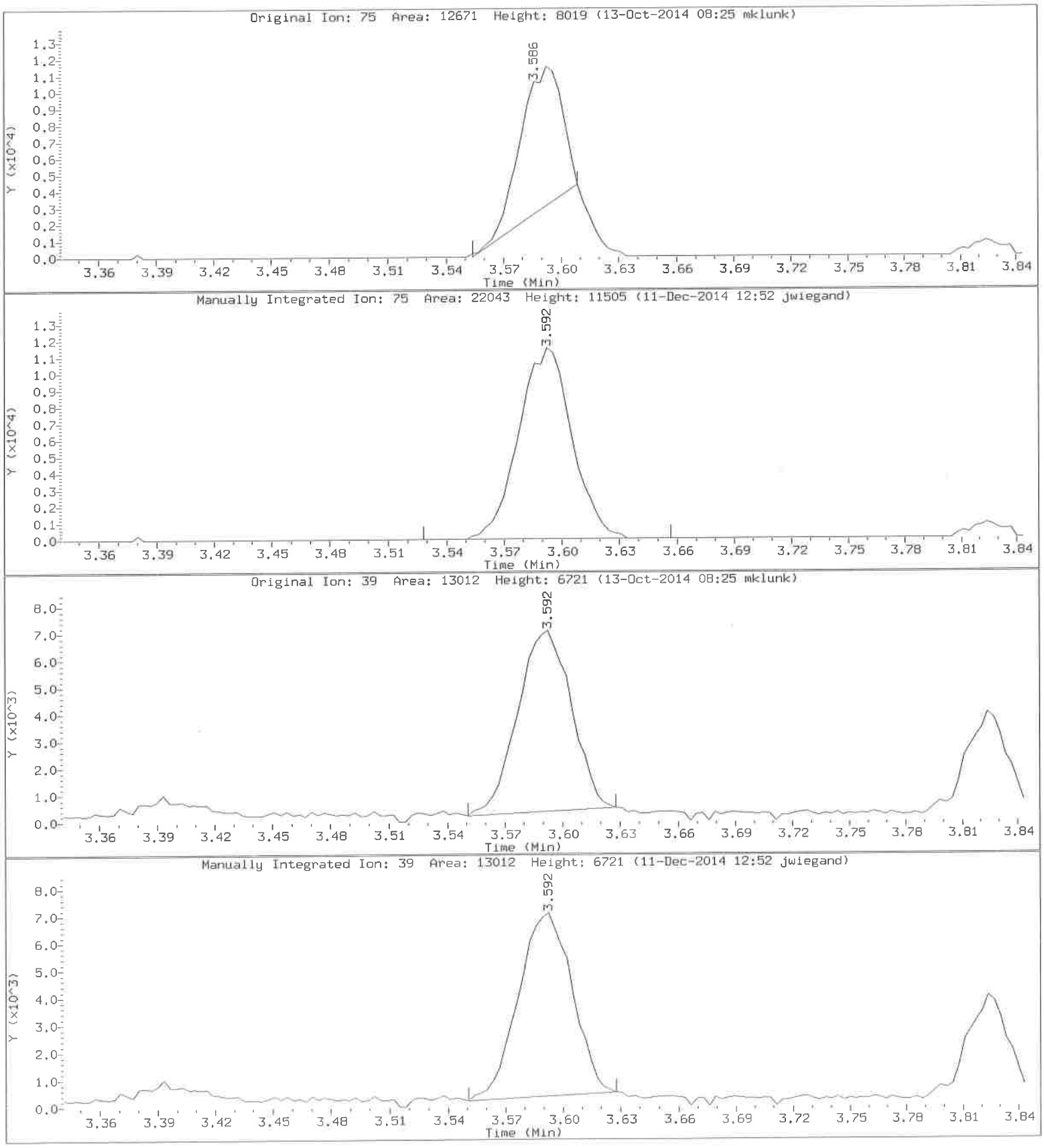
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: 1,1-Dichloropropene
CAS Number: 563-58-6



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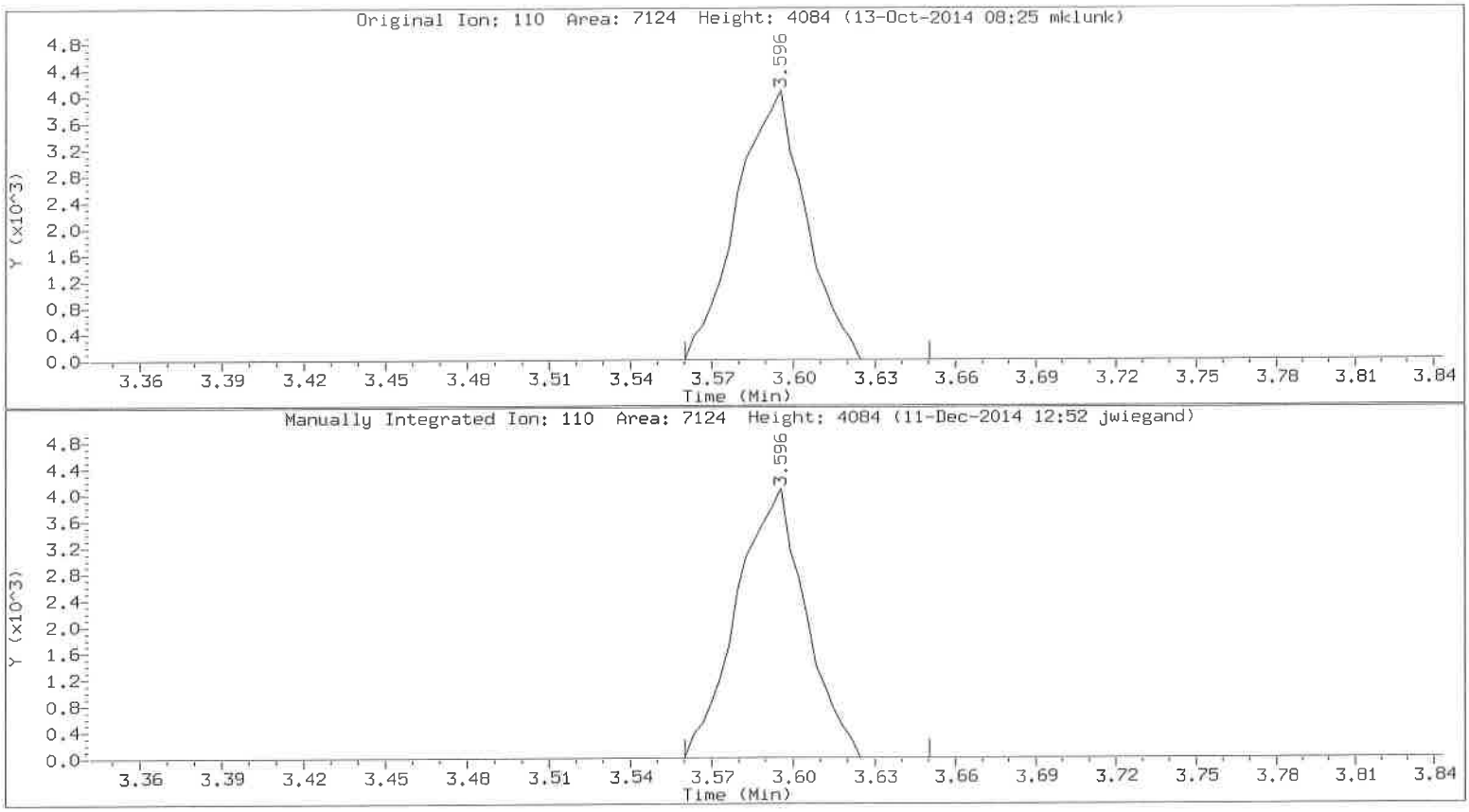
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]



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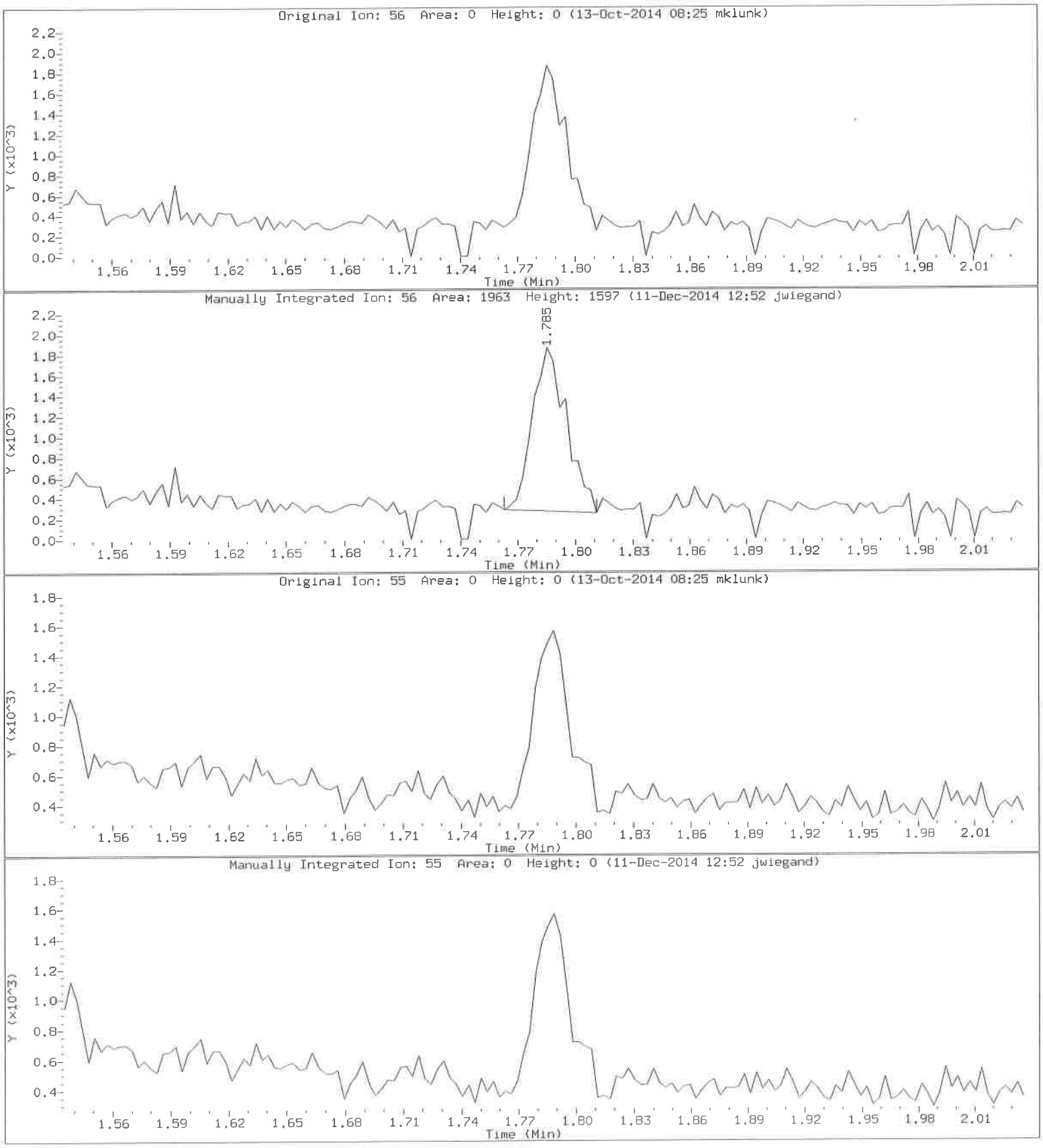
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: Acrolein
CAS Number: 107-02-8



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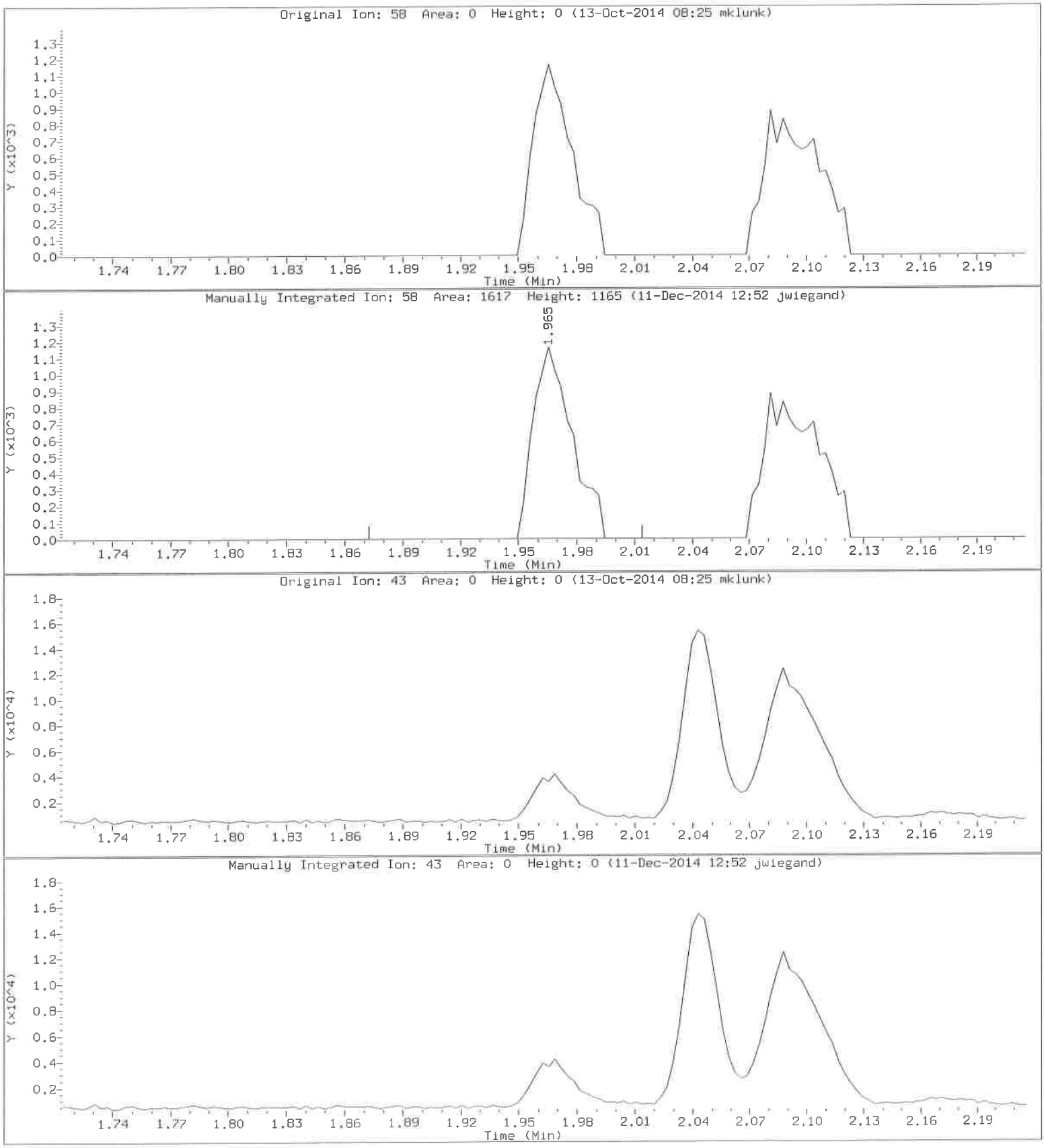
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: Acetone
CAS Number: 67-64-1



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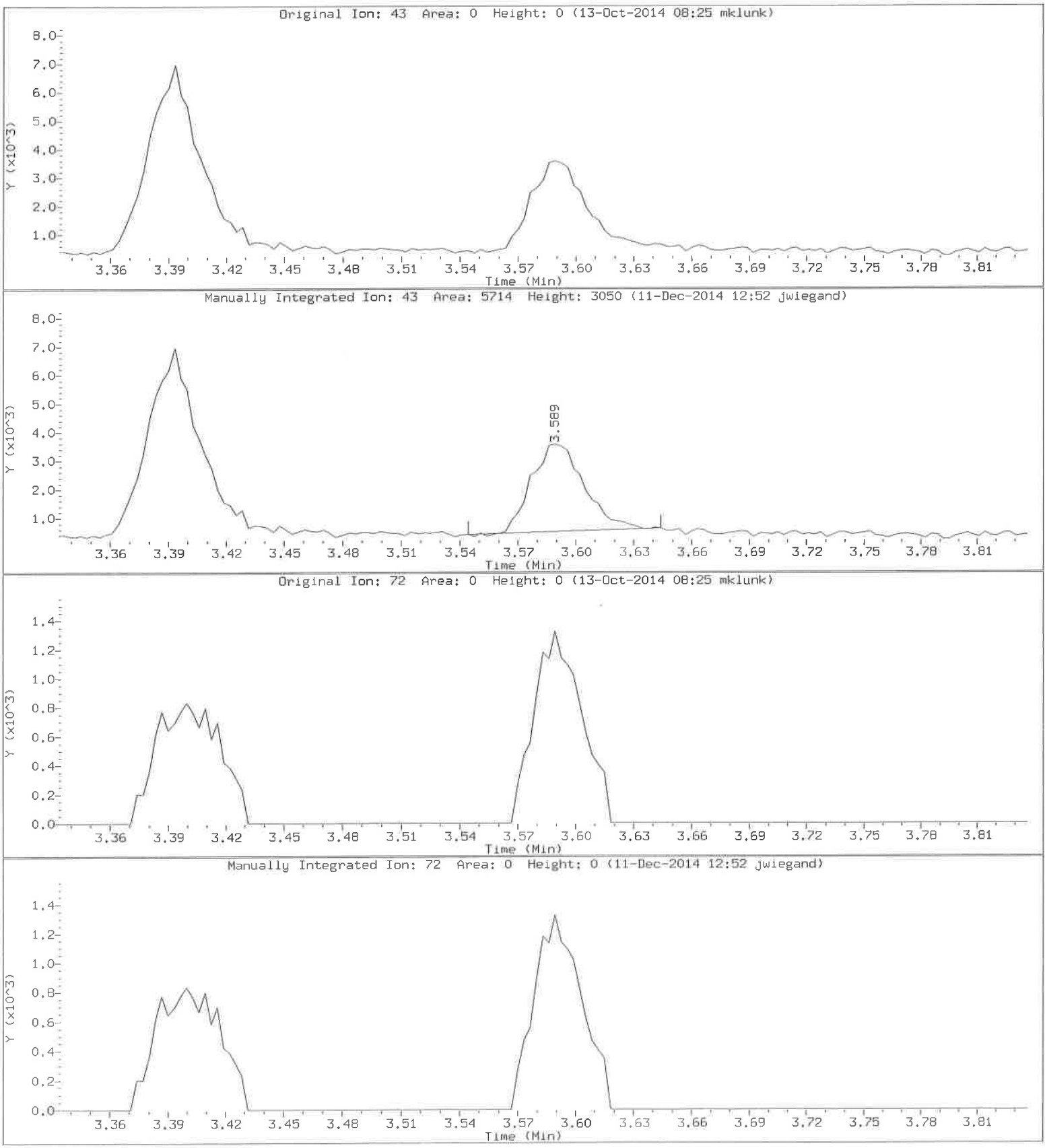
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: 2-Butanone
CAS Number: 78-93-3



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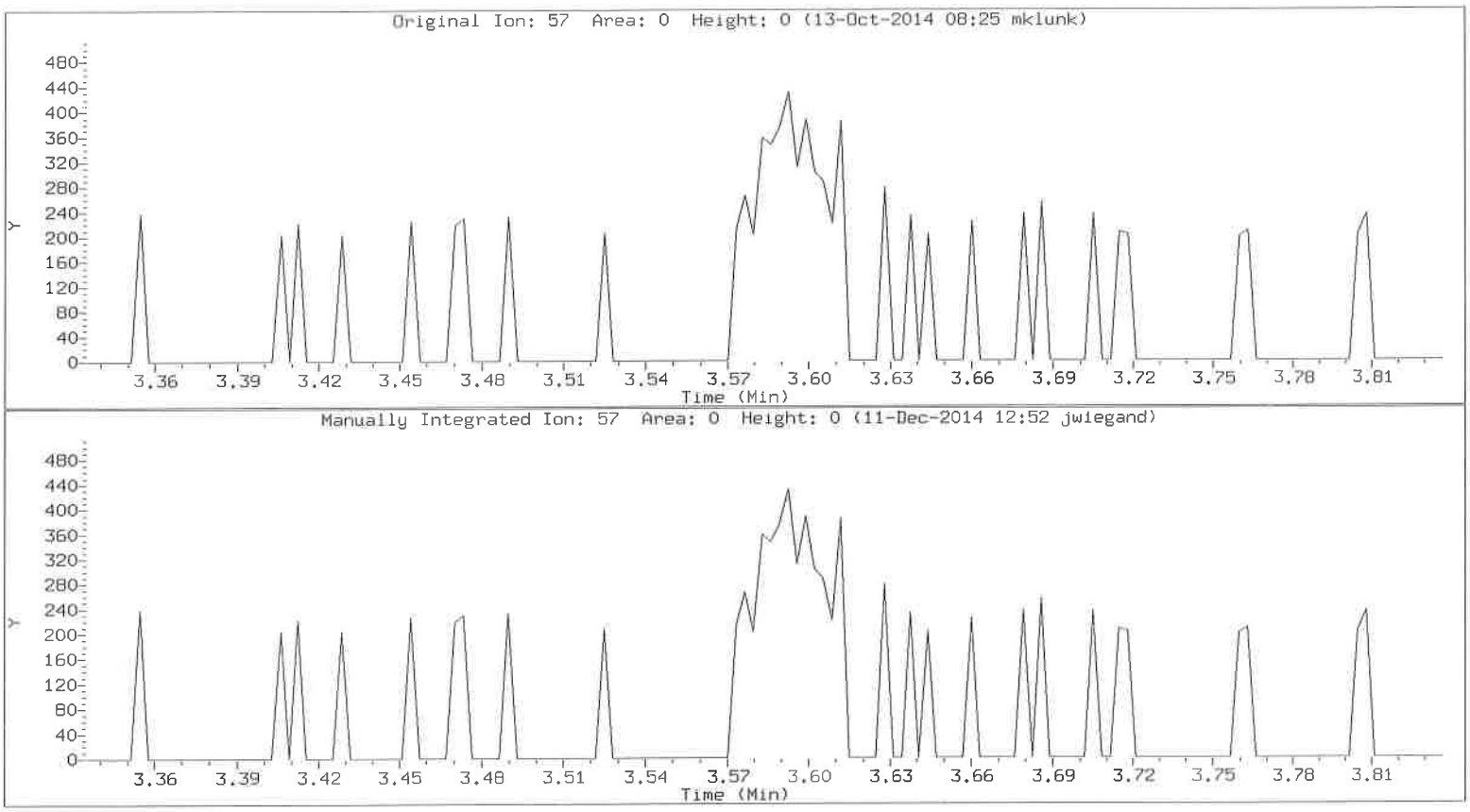
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]



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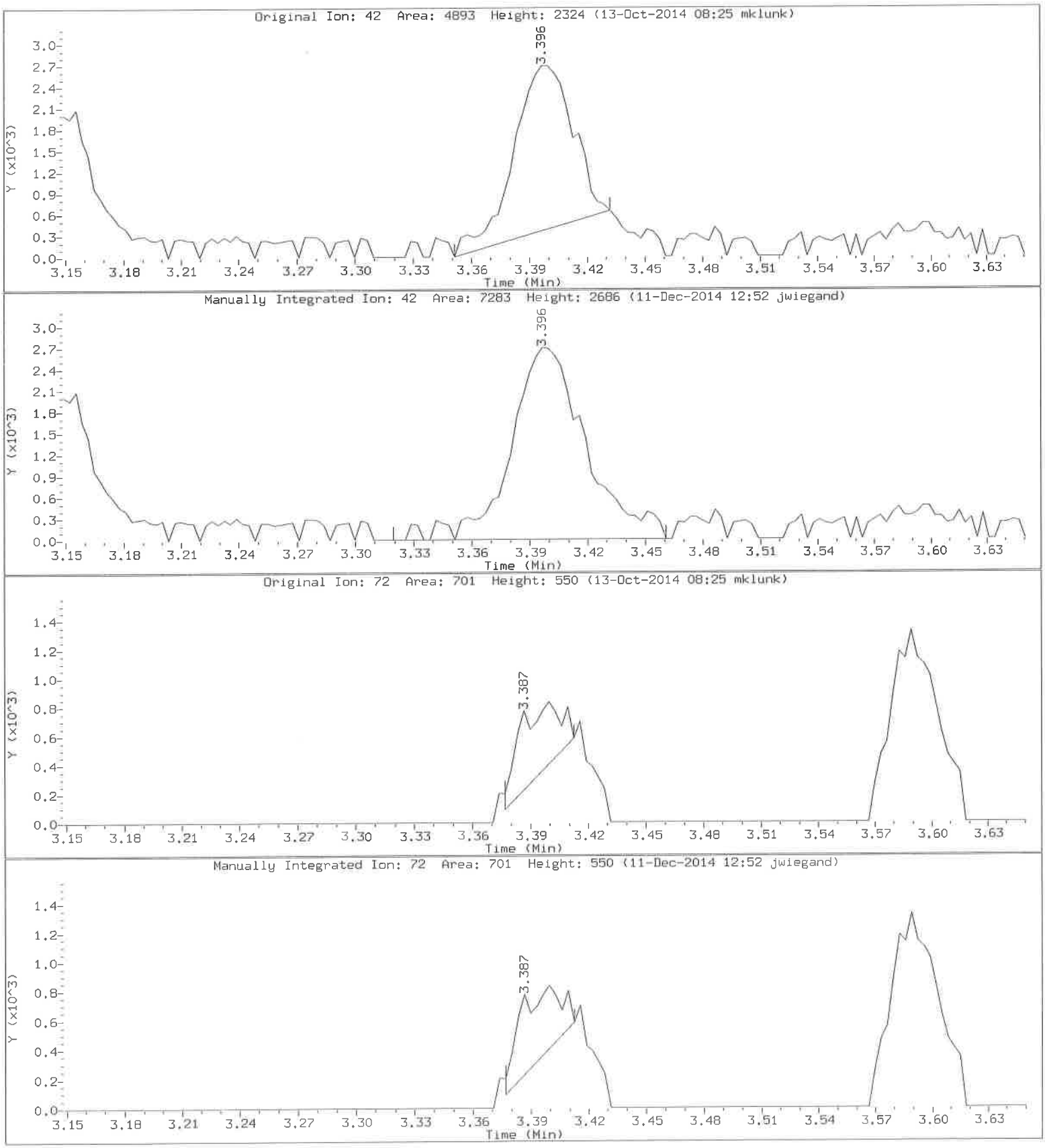
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: Tetrahydrofuran
CAS Number: 109-99-9



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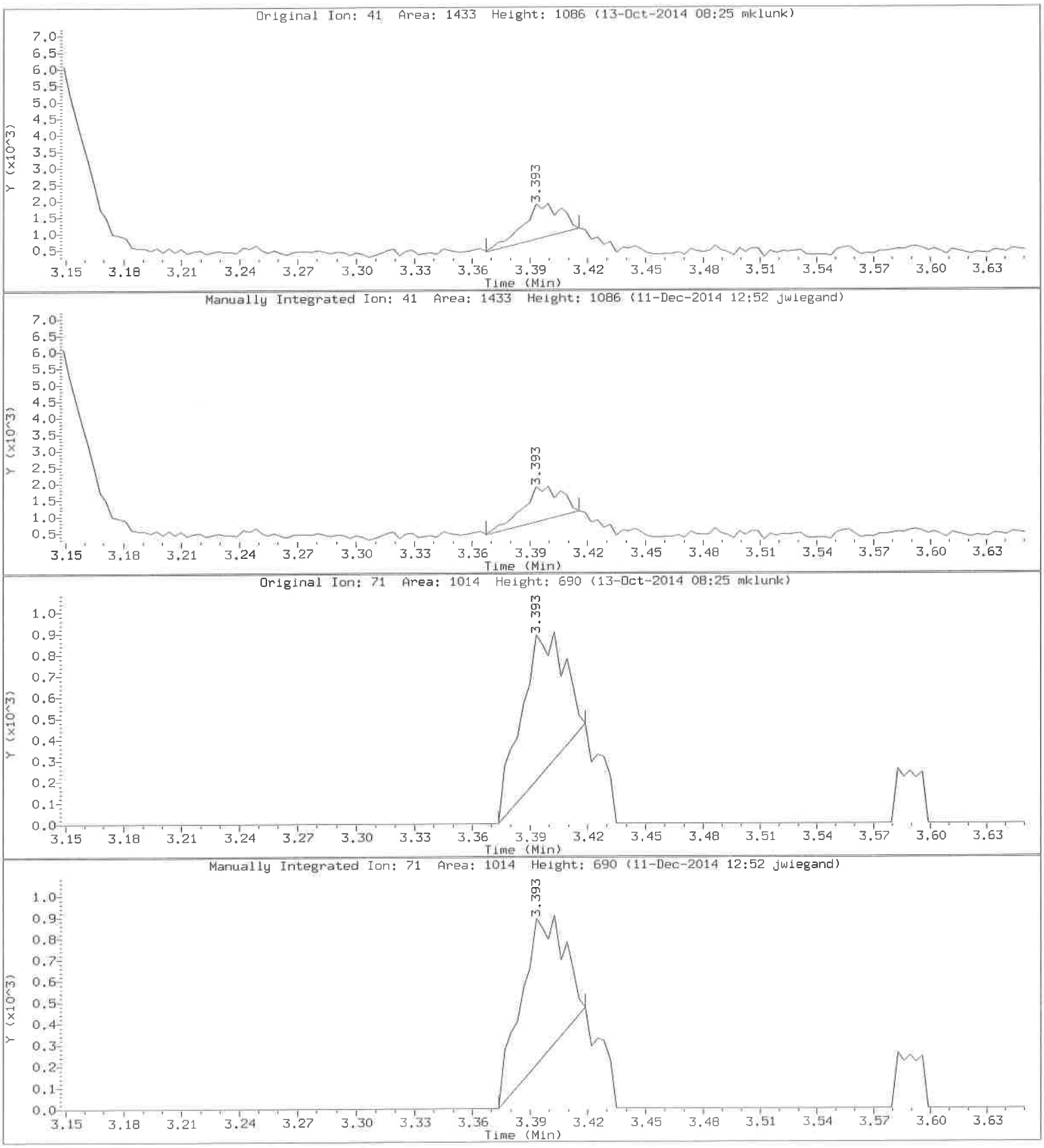
Lab Sample ID: VSTD[20]



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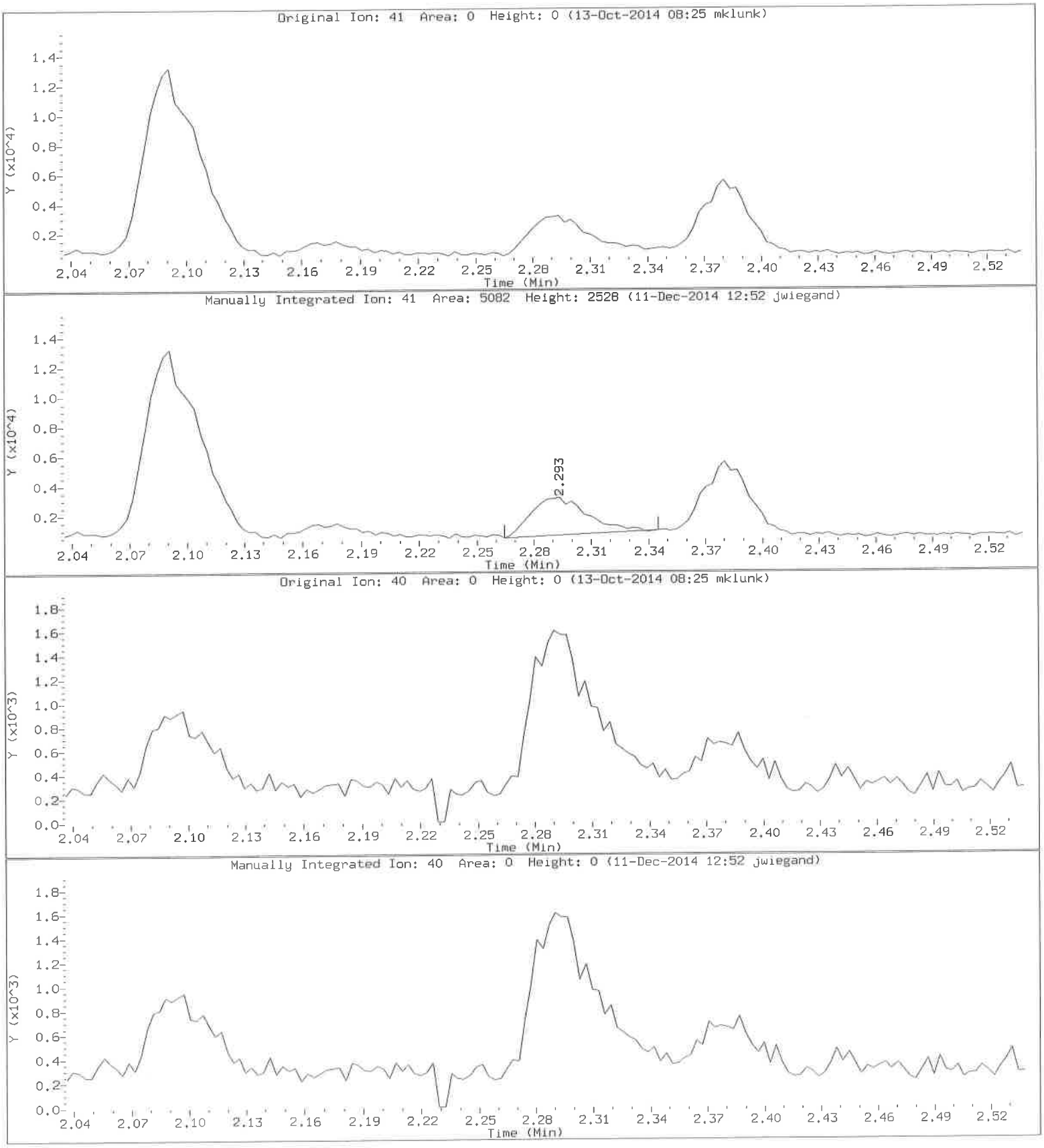
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: Acetonitrile
CAS Number: 75-05-8



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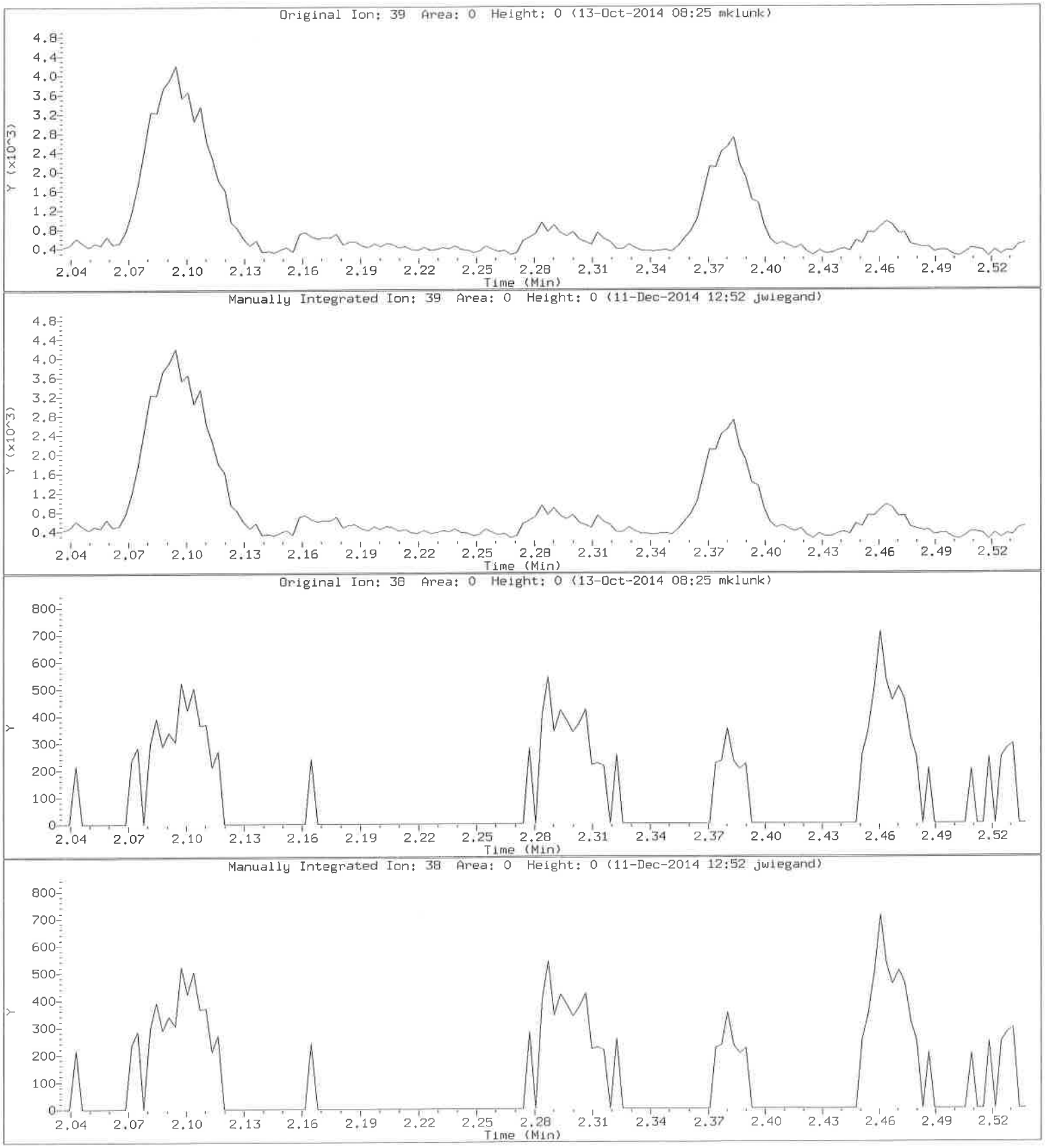
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]



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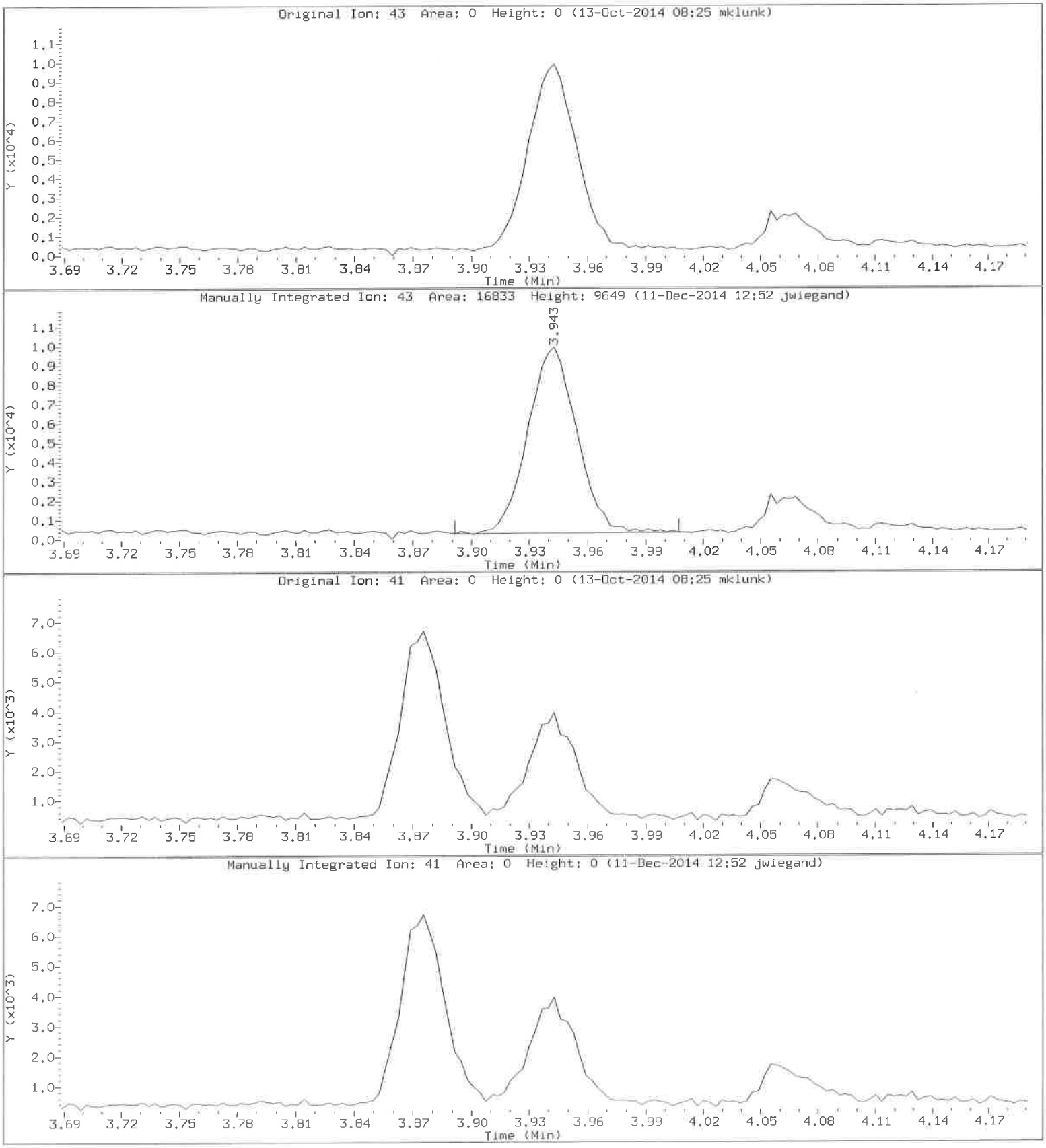
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: Isobutanol
CAS Number: 78-83-1



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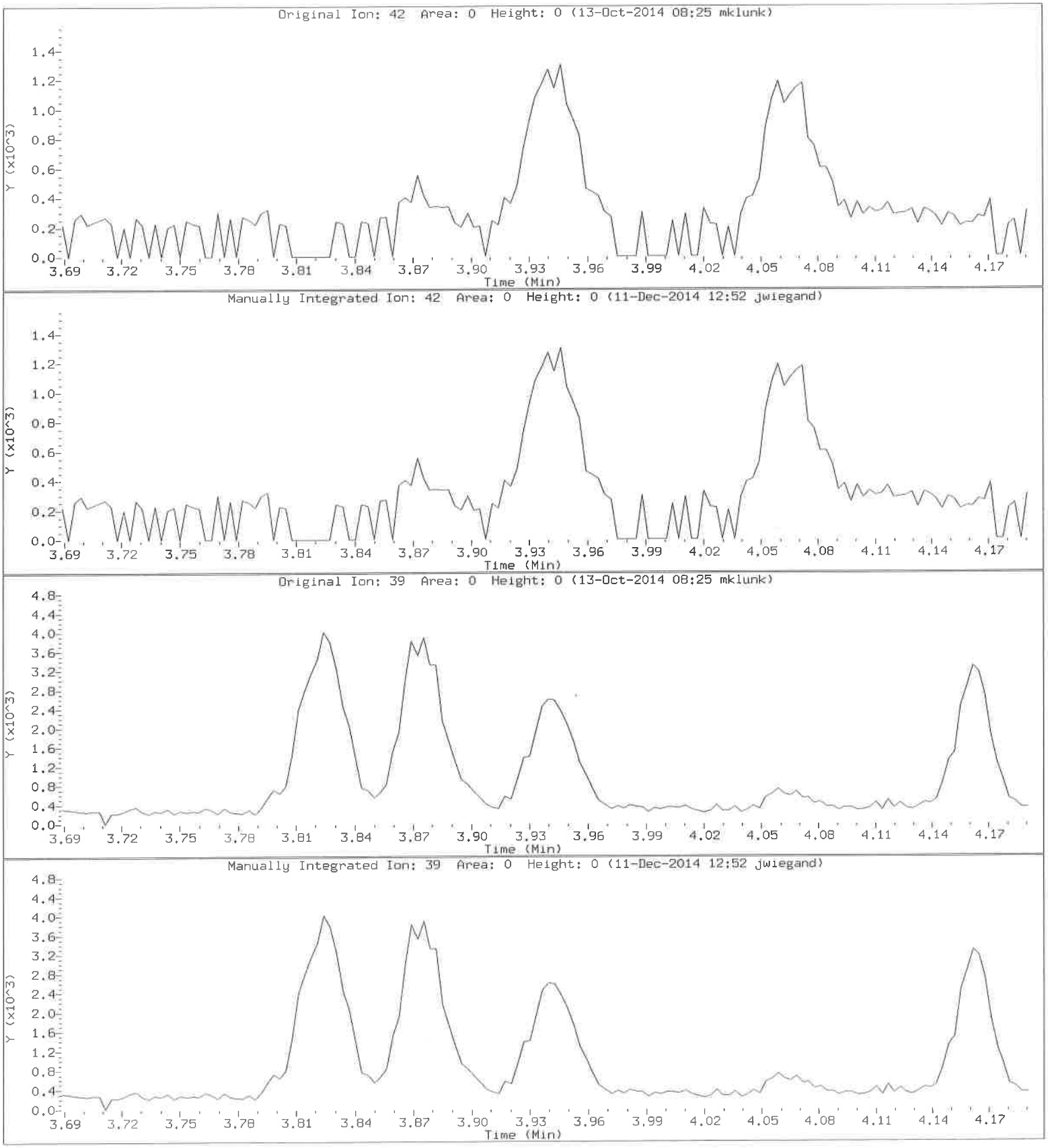
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]



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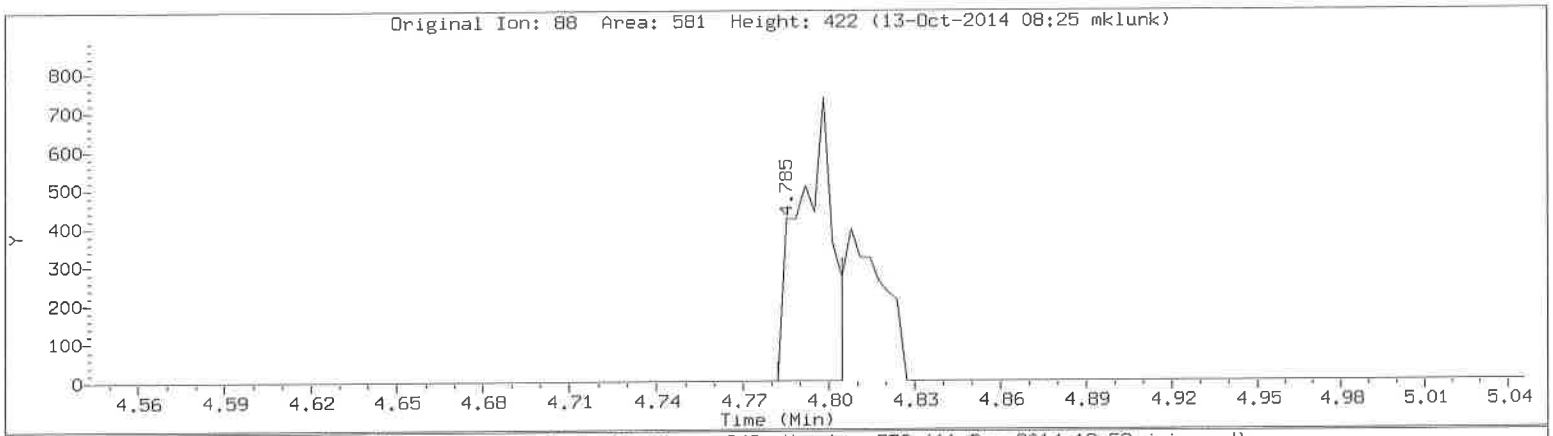
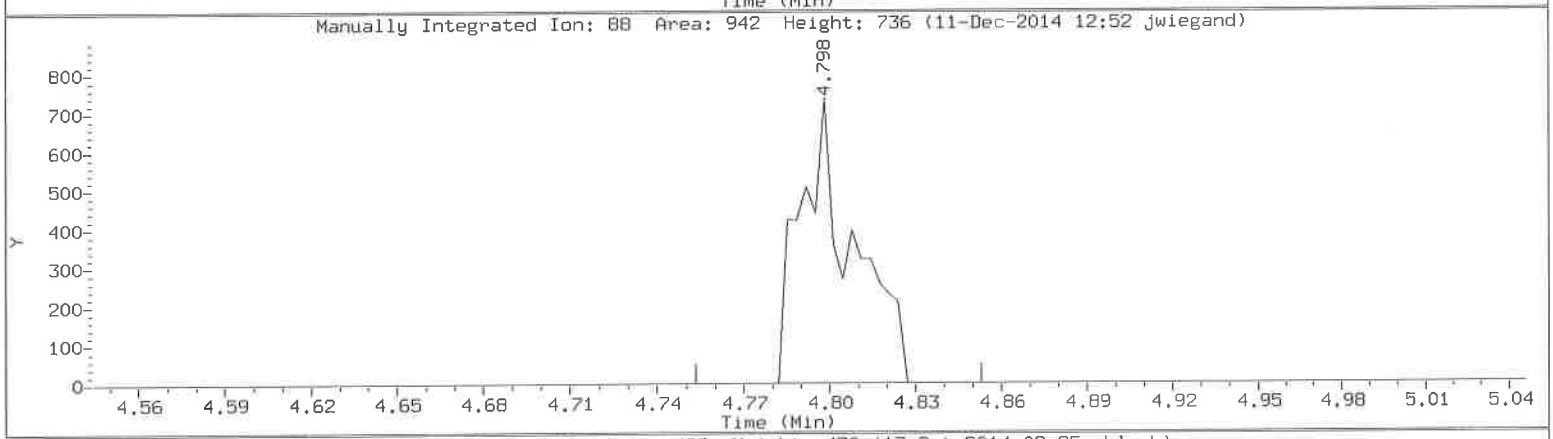
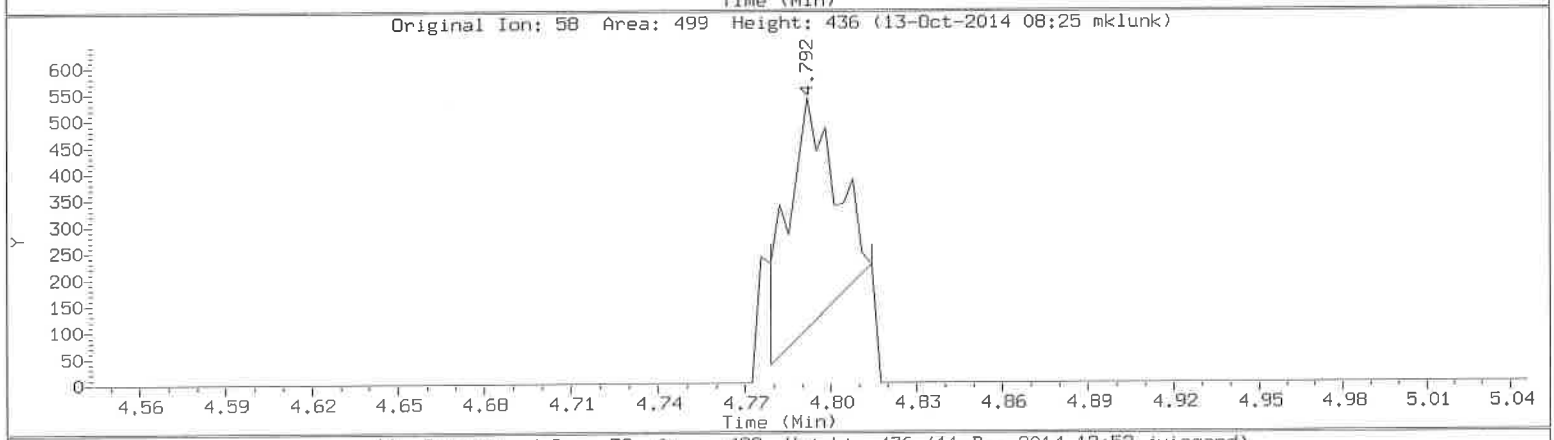
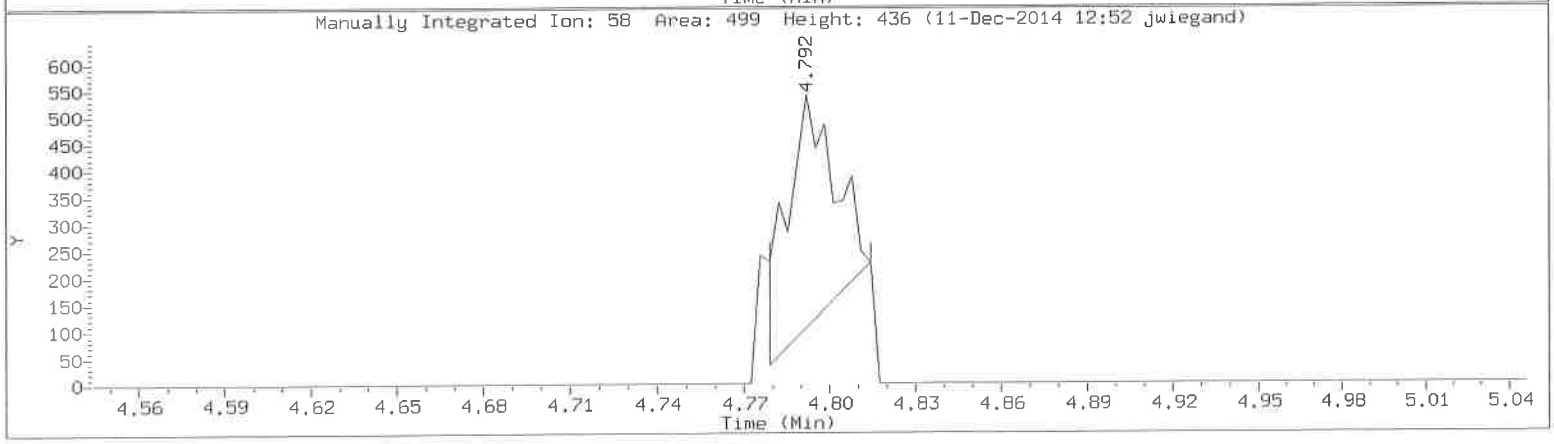
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: 1,4-Dioxane
CAS Number: 123-91-1









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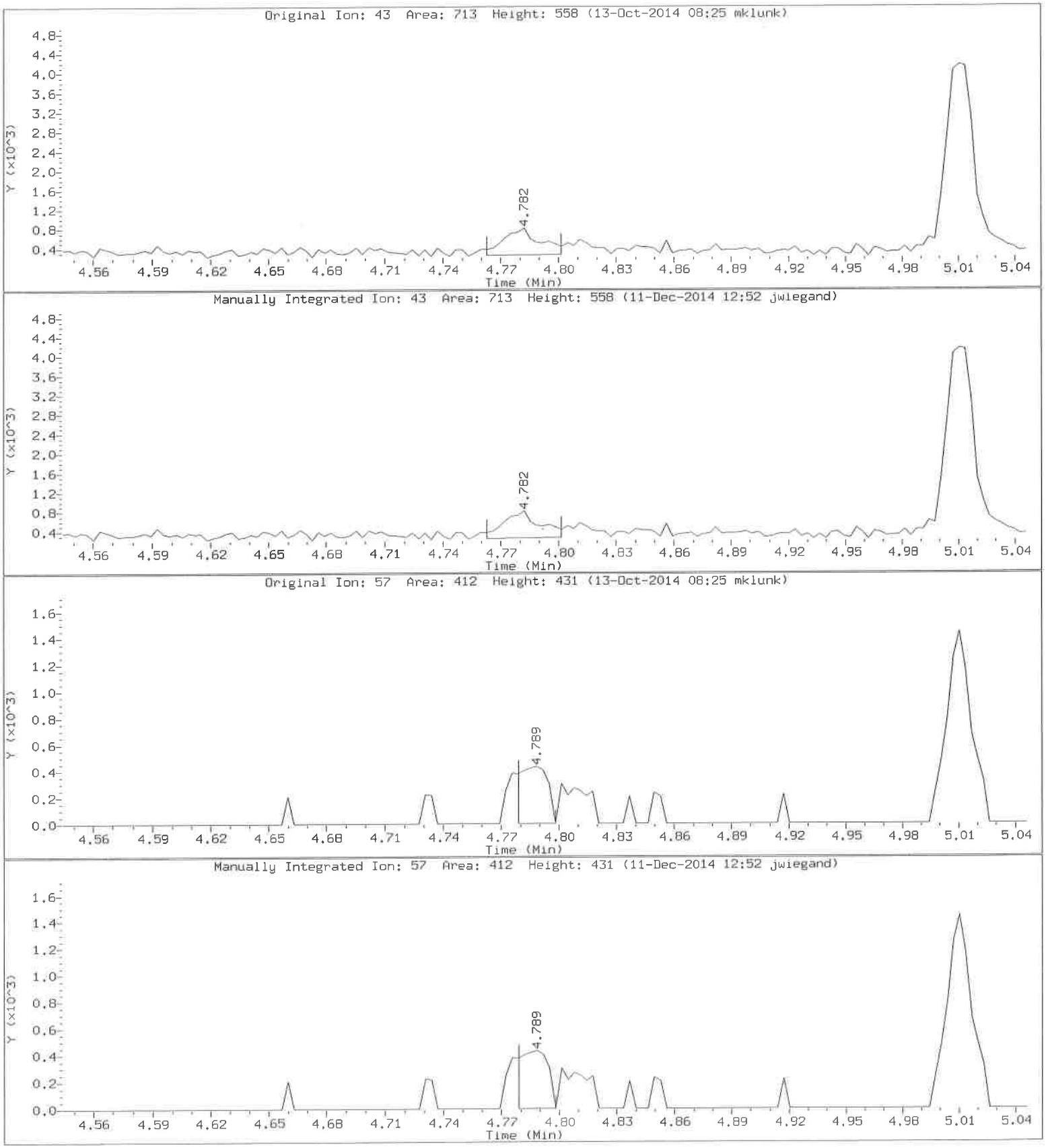
Lab Sample ID: VSTD[20]



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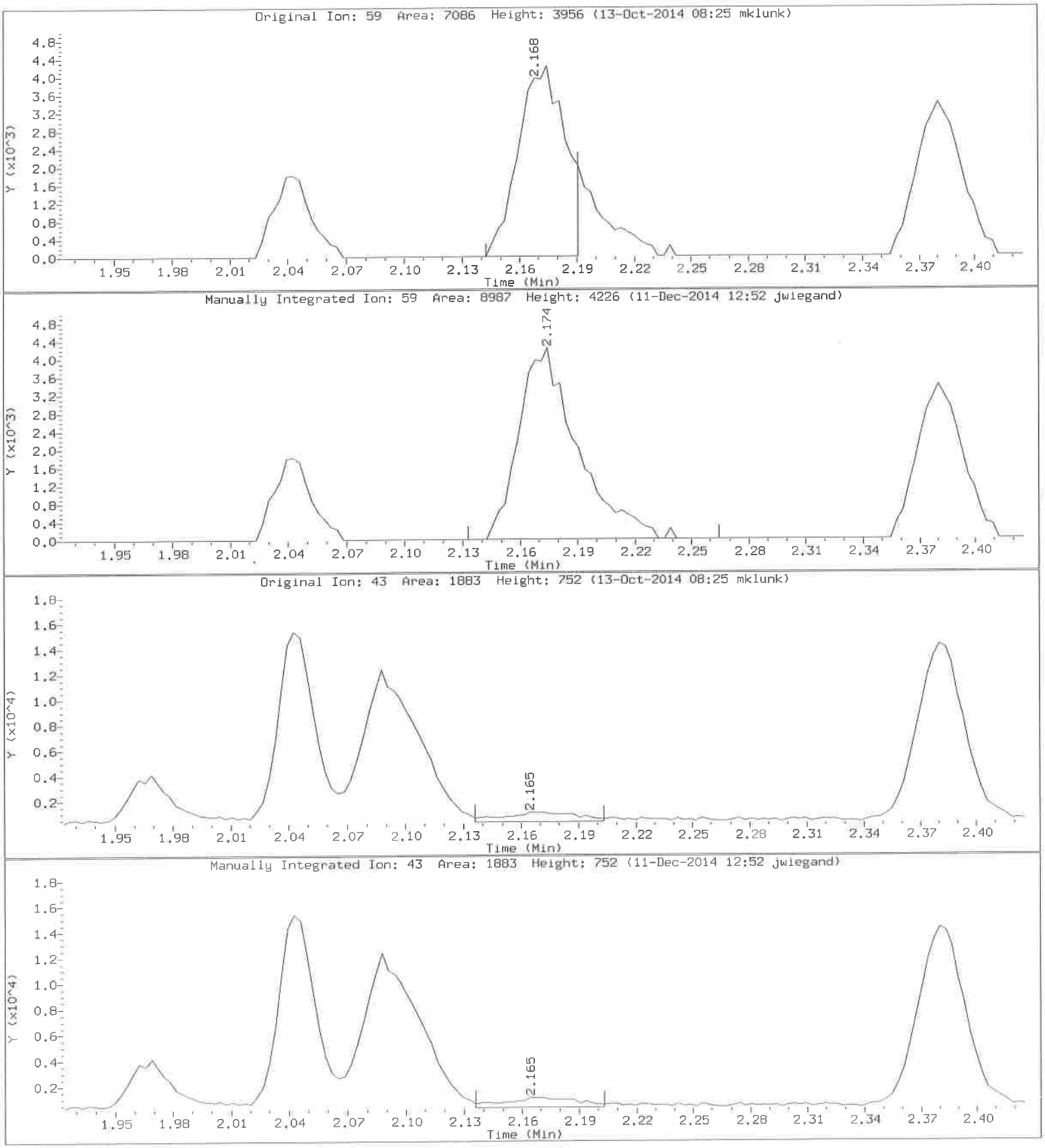
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: tert-Butyl Alcohol
CAS Number: 75-65-0



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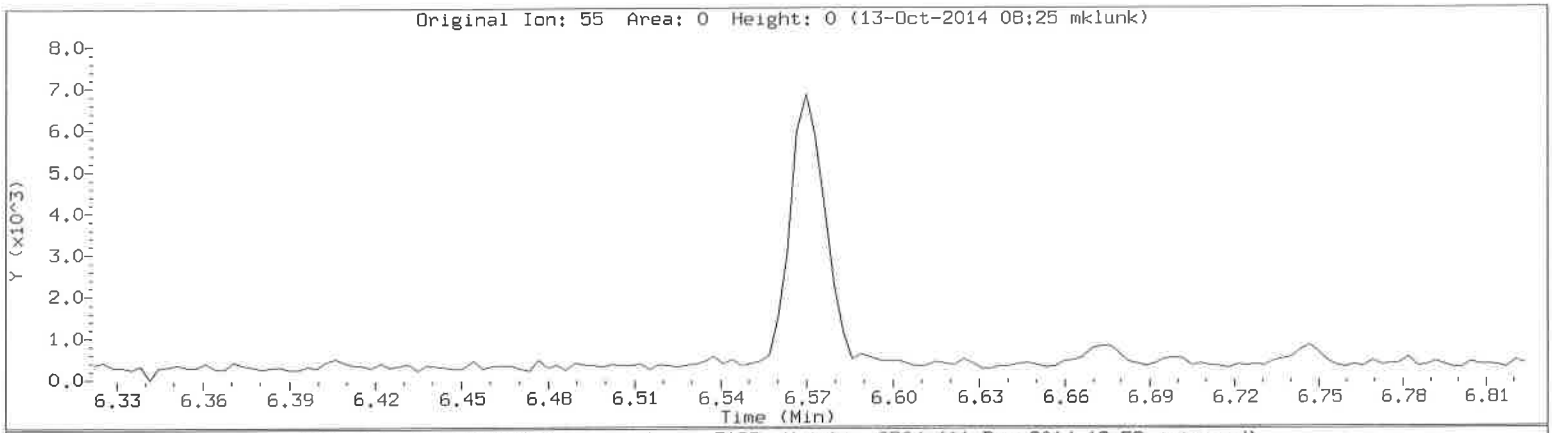
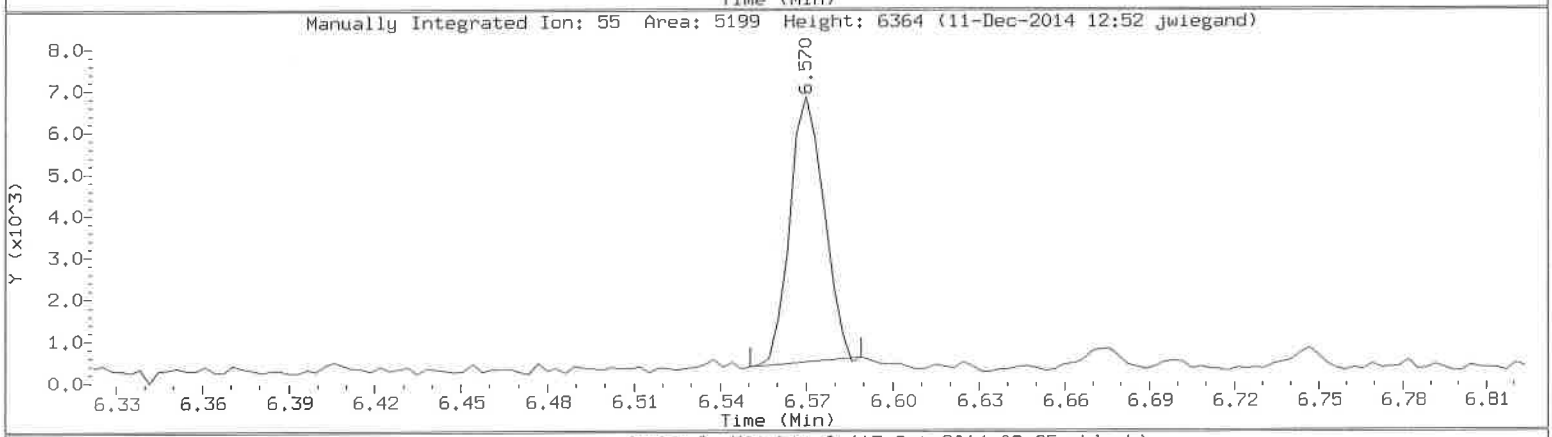
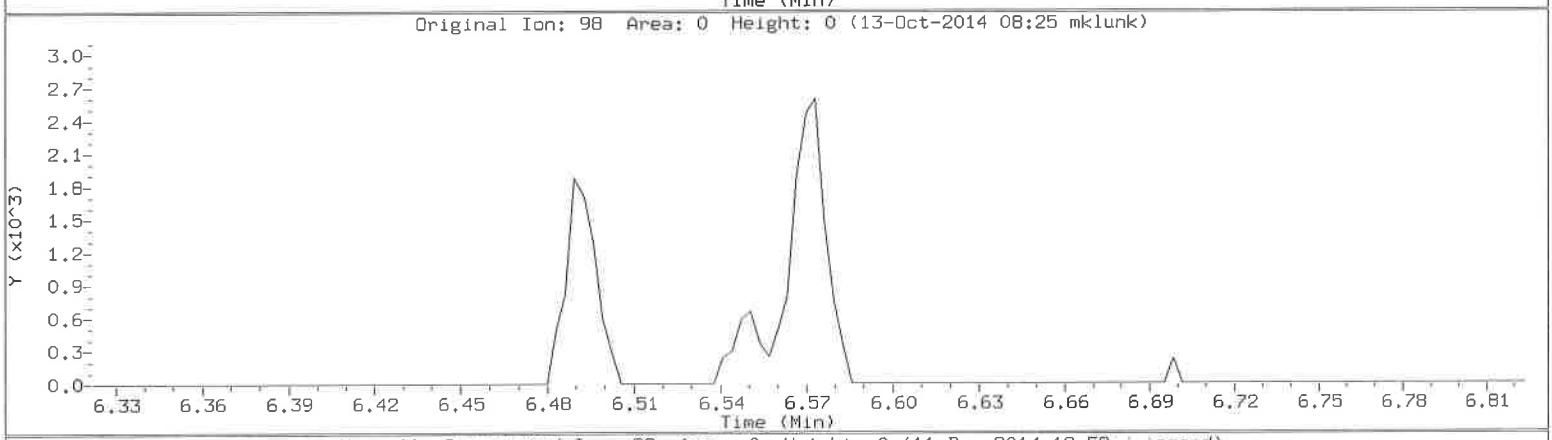
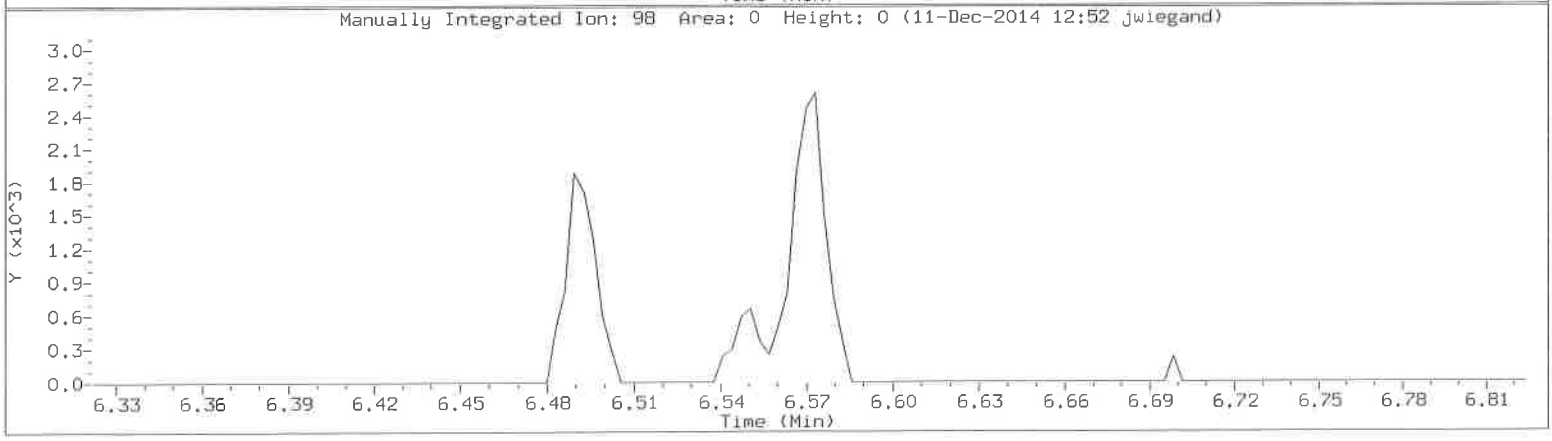
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: Cyclohexanone
CAS Number: 108-94-1









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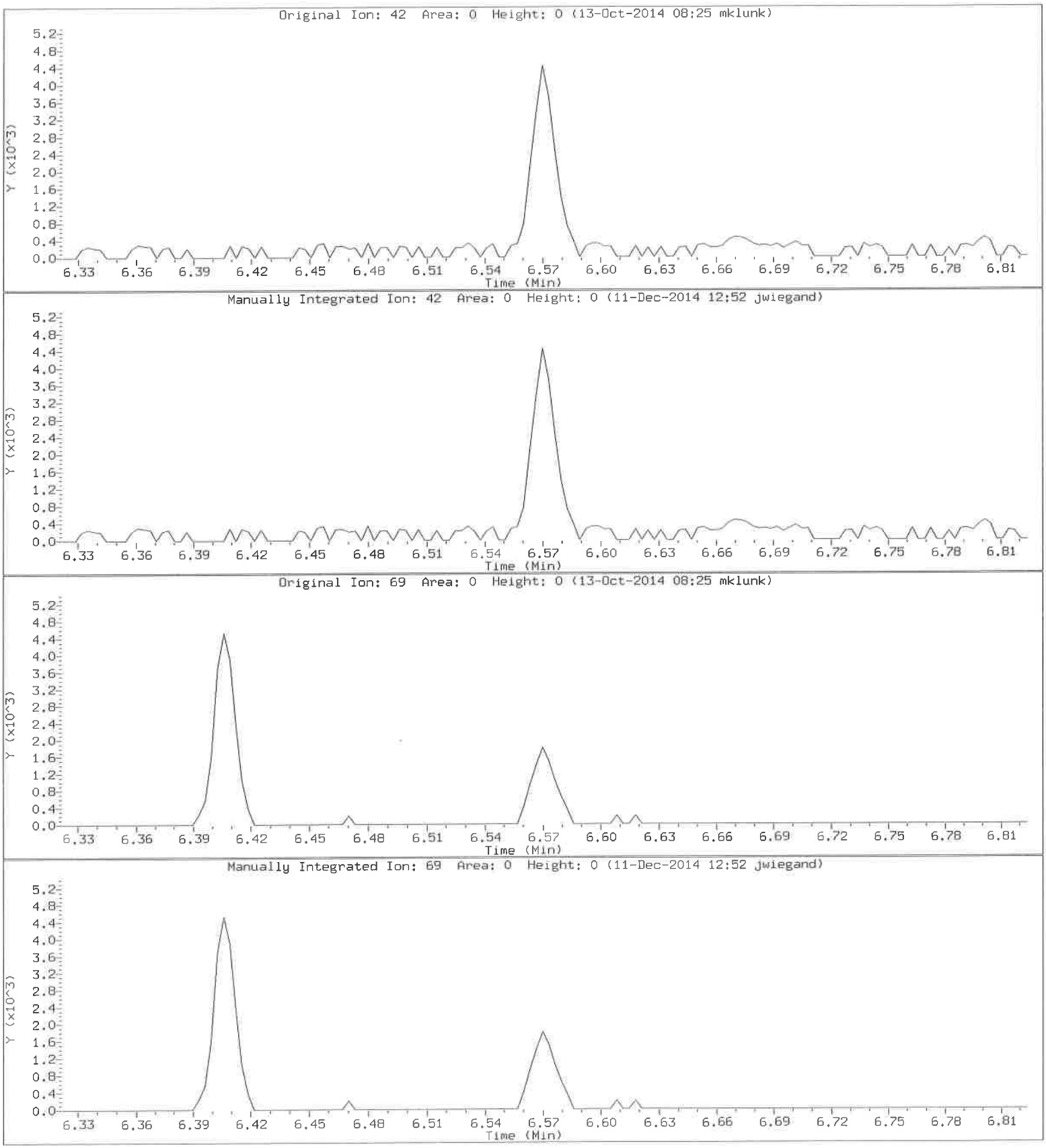
Lab Sample ID: VSTD[20]



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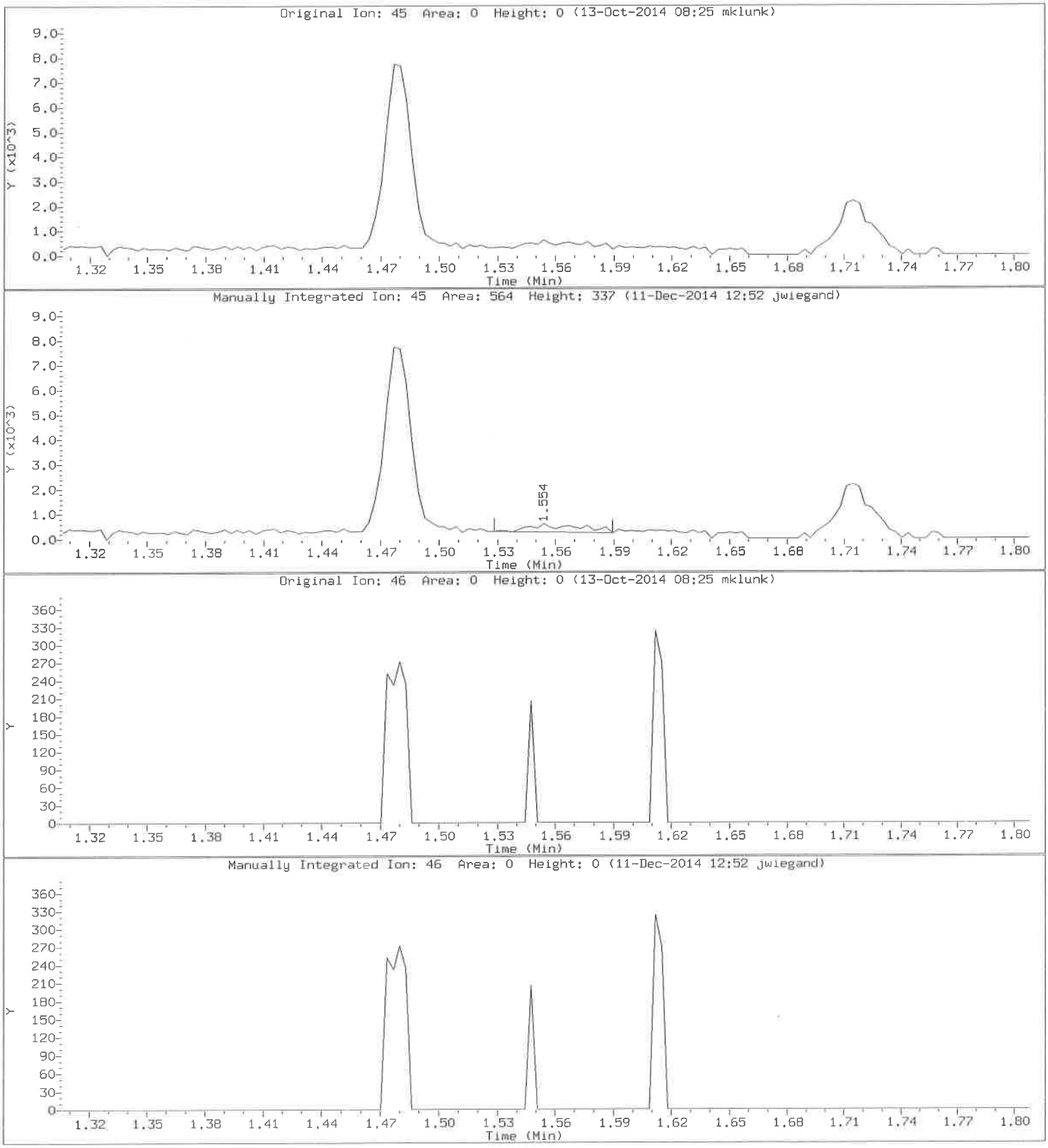
Injection Date: 10-OCT-2014 11:52
Instrument: 30msv5.i
Lab Sample ID: VSTD[20]

Compound: Ethanol
CAS Number: 64-17-5



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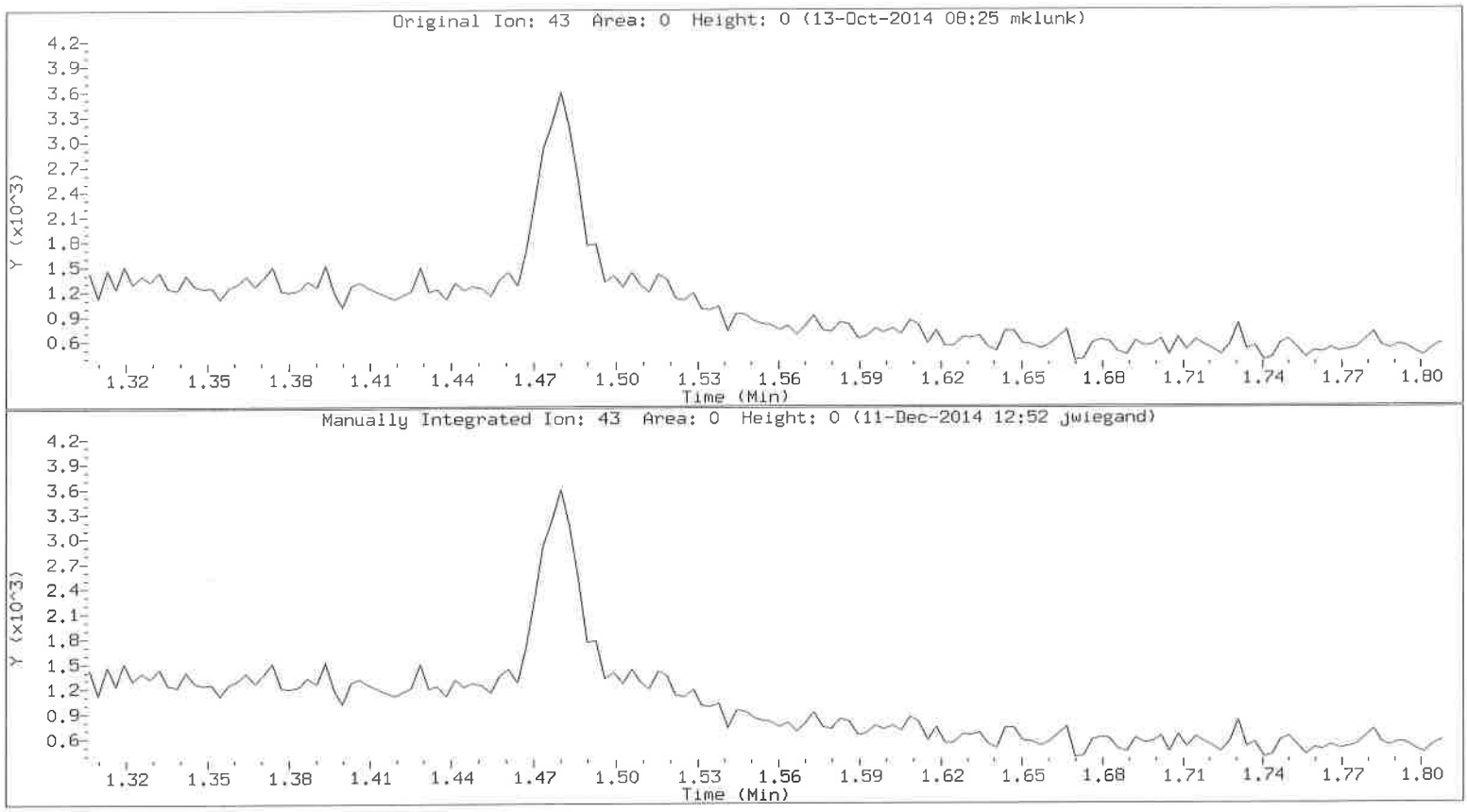
Lab Sample ID: VSTD[20]



Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010015.d
Report Date: 11-Dec-2014 12:52

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010015.d
Lab Smp Id: VSTD[50] Client Smp ID: VSTD[50]
Inj Date : 10-OCT-2014 12:14
Operator : JEW Inst ID: 30msv5.i
Smp Info : VSTD[50],,5
Misc Info : V10-49-14
Comment :
Method : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 12:51 jwiegand Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
1 Dichlorodifluoromethane	85	0.897	0.898	(0.216)	18436	50.0000	52.4(Q)	
2 Chloromethane	50	0.991	0.991	(0.238)	44945	50.0000	55.5	
3 Vinyl Chloride	62	1.032	1.032	(0.248)	19474	50.0000	50.8	
4 Bromomethane	94	1.193	1.191	(0.287)	4096	50.0000	46.6	
5 Chloroethane	64	1.254	1.252	(0.301)	9235	50.0000	51.5	
6 Trichlorofluoromethane	101	1.325	1.322	(0.319)	44351	50.0000	52.5	
7 Ethyl Ether	59	1.479	1.477	(0.356)	25655	50.0000	50.4	
8 1,1-Dichloroethene	61	1.592	1.592	(0.383)	50578	50.0000	53.0	
159 Ethanol	45	1.553	1.557	(0.373)	1297	500.000	312(M)	LT
9 Carbon Disulfide	76	1.614	1.612	(0.388)	65178	50.0000	49.3	
10 1,1,2-Trichlorotrifluoroethan	151	1.608	1.609	(0.387)	21497	50.0000	52.6	
11 Iodomethane	142	1.675	1.676	(0.403)	12643	50.0000	52.0	
12 Acrolein	56	1.788	1.785	(0.430)	5349	50.0000	57.3	
13 Allyl chloride	41	1.865	1.866	(0.448)	228719	250.000	261	
14 Methylene Chloride	49	1.933	1.933	(0.465)	46391	50.0000	63.1	
15 Acetone	58	1.962	1.965	(0.471)	3618	50.0000	54.6(M)	LT
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	58458	50.0000	51.7	
17 Methyl Acetate	74	2.042	2.043	(0.491)	9041	50.0000	52.3	
18 Hexane	86	2.084	2.084	(0.501)	8152	50.0000	52.1	
19 tert-butyl Methylether,MtB	73	2.106	2.104	(0.506)	107037	50.0000	51.0	

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010015.d
Report Date: 11-Dec-2014 12:52

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
	21 tert-Butyl Alcohol	59	2.171	2.174	(0.522)	21886	250.000	264	
	20 Acetonitrile	41	2.283	2.287	(0.549)	12939	250.000	251(M)	LT
	22 DiisopropylEther	45	2.380	2.380	(0.572)	134254	50.0000	52.3	
	23 Chloroprene	53	2.463	2.464	(0.592)	61040	50.0000	50.7	
	25 Acrylonitrile	53	2.527	2.528	(0.607)	12140	50.0000	45.9	
	24 1,1-Dichloroethane	63	2.482	2.483	(0.597)	78751	50.0000	52.0	
	27 t-Butyl ethyl ether	59	2.682	2.682	(0.645)	135581	50.0000	51.9	
	26 Vinyl Acetate	43	2.695	2.695	(0.648)	53926	50.0000	54.3	
	28 cis-1,2-Dichloroethene	61	2.952	2.953	(0.709)	65009	50.0000	52.0	
	29 2,2-Dichloropropane	77	3.055	3.055	(0.734)	59176	50.0000	49.4	
	30 Cyclohexane	56	3.142	3.145	(0.755)	58795	50.0000	50.0	
	31 Bromochloromethane	130	3.145	3.149	(0.756)	25851	50.0000	52.8	
	32 Chloroform	83	3.235	3.239	(0.777)	78347	50.0000	51.1	
	33 Carbon Tetrachloride	117	3.370	3.371	(0.810)	56657	50.0000	49.0	
	36 Ethyl Acetate	43	3.389	3.387	(0.815)	31815	50.0000	52.0	
	35 Tetrahydrofuran	42	3.396	3.399	(0.816)	14175	50.0000	59.8	
	34 1,1,1-Trichloroethane	97	3.450	3.448	(0.829)	64430	50.0000	50.8	
	37 1,1-Dichloropropene	75	3.592	3.592	(0.863)	55574	50.0000	51.5	
	38 2-Butanone	43	3.585	3.586	(0.862)	16768	50.0000	52.2	
	39 Benzene	78	3.823	3.824	(0.650)	154344	50.0000	50.8	
	40 Propionitrile	54	3.859	3.856	(0.927)	4913	50.0000	53.3(M)	LT
	41 Methacrylonitrile	41	3.871	3.875	(0.930)	24721	50.0000	51.7	
$	42 1,2-Dichloroethane-d4	65	3.939	3.940	(0.947)	30773	30.0000	30.2	
	43 t-Amyl methyl ether	73	3.939	3.940	(0.670)	110577	50.0000	50.6	
	46 Isobutanol	43	3.939	3.940	(0.947)	40924	250.000	258	
	44 1,2-Dichloroethane	62	3.994	3.998	(0.960)	65571	50.0000	51.4	
*	45 Fluorobenzene	96	4.161	4.162	(1.000)	87362	30.0000		
	47 Methylcyclohexane	83	4.267	4.271	(0.726)	53833	50.0000	50.9	
	48 Trichloroethene	132	4.283	4.287	(0.729)	38389	50.0000	51.0	
	49 Dibromomethane	174	4.556	4.560	(0.775)	26586	50.0000	51.2	
	50 1,2-Dichloropropane	63	4.621	4.621	(0.786)	46082	50.0000	51.9	
	51 Bromodichloromethane	83	4.669	4.670	(0.794)	60892	50.0000	50.6	
	52 Methyl methacrylate	69	4.778	4.779	(0.813)	27984	50.0000	50.4	
	53 1,4-Dioxane	88	4.794	4.795	(0.698)	2528	500.000	465(M)	LT
	55 2-ChloroethylVinylEther	63	5.006	5.010	(0.852)	13305	50.0000	51.2	
	54 cis-1,3-Dichloropropene	75	5.032	5.033	(0.856)	65466	50.0000	51.1	
$	56 Toluene-d8	98	5.129	5.129	(0.873)	85848	30.0000	30.1	
	57 Toluene	91	5.154	5.158	(0.877)	161499	50.0000	52.1	
	58 2-Nitropropane	43	5.280	5.280	(0.898)	70033	250.000	260	
	59 Tetrachloroethene	166	5.351	5.354	(0.910)	42166	50.0000	53.1	
	60 4-Methyl-2-Pentanone	43	5.357	5.361	(0.911)	39745	50.0000	52.3	
	61 trans-1,3-Dichloropropene	75	5.373	5.377	(0.914)	65781	50.0000	51.8	
	63 Ethyl methacrylate	41	5.457	5.461	(0.928)	39528	50.0000	52.5	
	62 1,1,2-Trichloroethane	97	5.453	5.454	(0.928)	33833	50.0000	51.1	
	64 Dibromochloromethane	129	5.537	5.538	(0.942)	42420	50.0000	51.6	
	65 1,3-Dichloropropane	76	5.579	5.583	(0.949)	60318	50.0000	51.6	
	66 1,2-Dibromoethane,EDB	107	5.643	5.644	(0.960)	35041	50.0000	51.1	
	70 2-Hexanone	43	5.752	5.756	(0.979)	31691	50.0000	52.4	
*	67 Chlorobenzene-d5	82	5.878	5.882	(1.000)	37349	30.0000		
	68 Chlorobenzene	112	5.884	5.888	(1.001)	104622	50.0000	52.6	
	69 Ethylbenzene	106	5.897	5.901	(1.003)	54784	50.0000	51.7	
	71 1,1,1,2-Tetrachloroethane	131	5.916	5.920	(1.007)	36459	50.0000	52.8	
	72 m,p-Xylene	106	5.965	5.965	(1.015)	132602	100.000	106	
	73 o-Xylene	106	6.151	6.152	(1.046)	62827	50.0000	51.8	

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010015.d
Report Date: 11-Dec-2014 12:52

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
74 Styrene	104	6.174	6.174	(1.050)	103734	50.0000	53.4	
75 Bromoform	173	6.190	6.190	(1.053)	26877	50.0000	51.8	
76 Isopropylbenzene,Cumene	105	6.283	6.287	(0.914)	149231	50.0000	50.7	
$ 77 Bromofluorobenzene	174	6.408	6.409	(0.933)	25777	30.0000	30.6	
79 n-Propylbenzene	91	6.460	6.460	(0.940)	193550	50.0000	51.8	
78 Bromobenzene	77	6.450	6.454	(0.939)	78872	50.0000	51.7	
80 1,1,2,2-Tetrachloroethane	83	6.492	6.493	(0.945)	42526	50.0000	51.9	
81 2-Chlorotoluene	126	6.527	6.531	(0.950)	37415	50.0000	52.6	
82 1,3,5-Trimethylbenzene	120	6.537	6.541	(0.951)	60249	50.0000	51.6	
83 1,2,3-Trichloropropane	110	6.550	6.550	(0.953)	12986	50.0000	52.7	
84 trans 1,4-Dichloro-2-butene	53	6.563	6.567	(0.955)	15093	50.0000	51.6	
85 Cyclohexanone	55	6.569	6.573	(0.956)	13863	250.000	260	
86 4-Chlorotoluene	126	6.598	6.599	(0.960)	39603	50.0000	53.2	
87 tert-Butyl benzene	119	6.672	6.676	(0.971)	102577	50.0000	51.1	
88 1,2,4-Trimethylbenzene	120	6.701	6.702	(0.975)	56640	50.0000	51.5	
89 sec-Butyl benzene	105	6.746	6.747	(0.982)	147545	50.0000	50.1	
90 4-Isopropyl toluene	119	6.801	6.805	(0.990)	128512	50.0000	51.2	
91 1,3-Dichlorobenzene	146	6.842	6.843	(0.996)	73212	50.0000	52.7	
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.872	(1.000)	30731	30.0000		
93 1,4-Dichlorobenzene	146	6.878	6.878	(1.001)	72046	50.0000	51.9	
94 n-Butyl benzene	91	6.974	6.978	(1.015)	121568	50.0000	51.5	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	7.055	7.055	(1.027)	66236	50.0000	51.6	
96 bis(2Chlorolmethyl ethyl)eth	45	7.196	7.197	(1.047)	18433	50.0000	50.4	
97 1,2-Dibromo-3-Chloropropane	75	7.379	7.383	(1.074)	7190	50.0000	51.0	
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	21945	50.0000	49.3	
99 1,2,4-Trichlorobenzene	180	7.656	7.657	(1.114)	40587	50.0000	52.2	
100 Naphthalene	128	7.794	7.795	(1.134)	87797	50.0000	51.2	
101 1,2,3-Trichlorobenzene	180	7.871	7.872	(1.146)	34010	50.0000	50.7	
157 2-methylnaphthalene	142	8.241	8.241	(1.199)	43248	50.0000	51.1	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010015.d
Report Date: 11-Dec-2014 12:52

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51010015.d
Lab Smp Id: VSTD[50]
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Misc Info: V10-49-14

Calibration Date: 10-OCT-2014
Calibration Time: 12:14
Client Smp ID: VSTD[50]
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

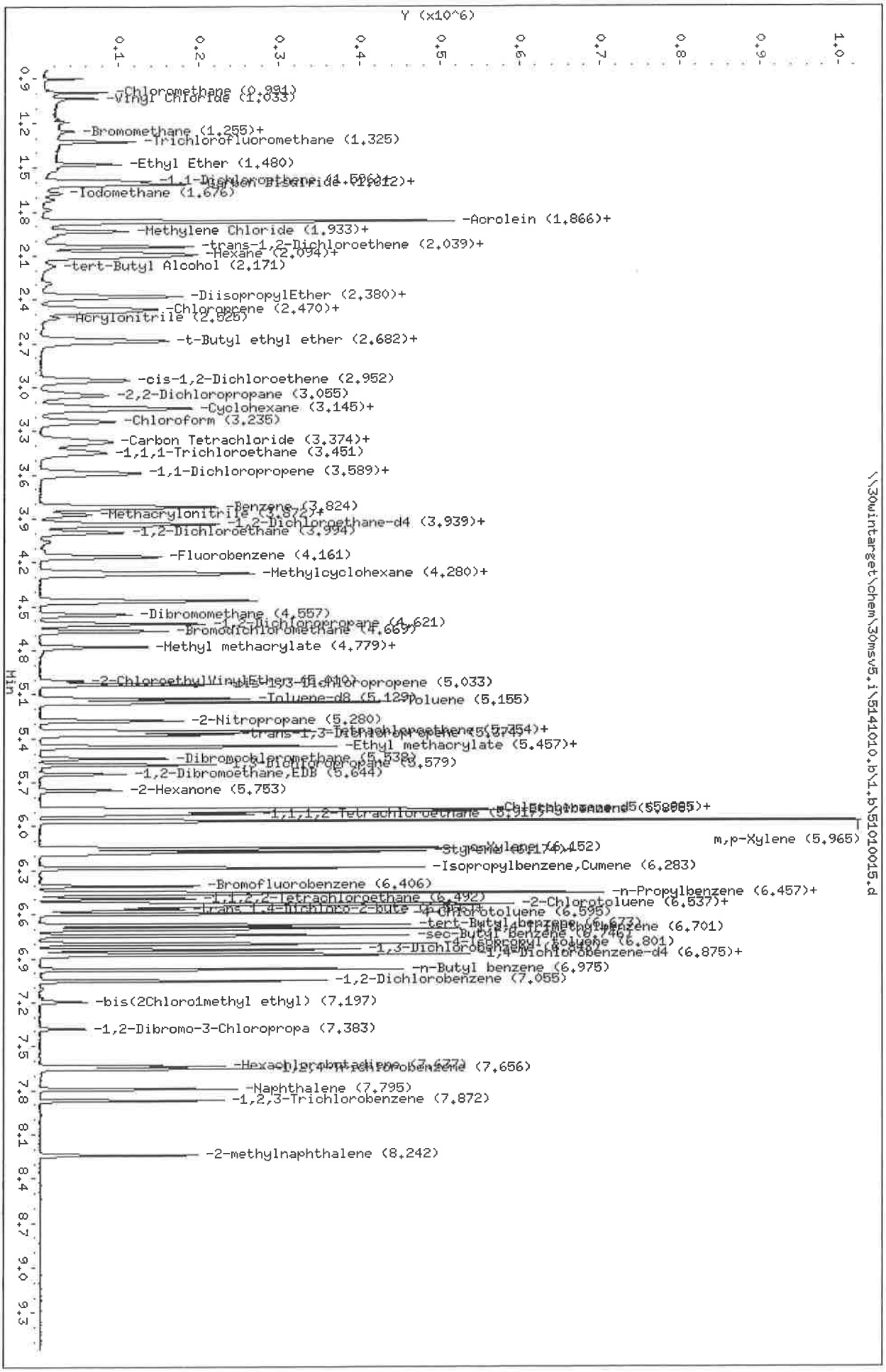
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	87362	43681	174724	87362	0.00
67 Chlorobenzene-d5	37349	18675	74698	37349	0.00
92 1,4-Dichlorobenze	30731	15366	61462	30731	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010015.d
Date : 10-OCT-2014 12:14
Client ID: VSTD[50]
Sample Info: VSTD[50],,5
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



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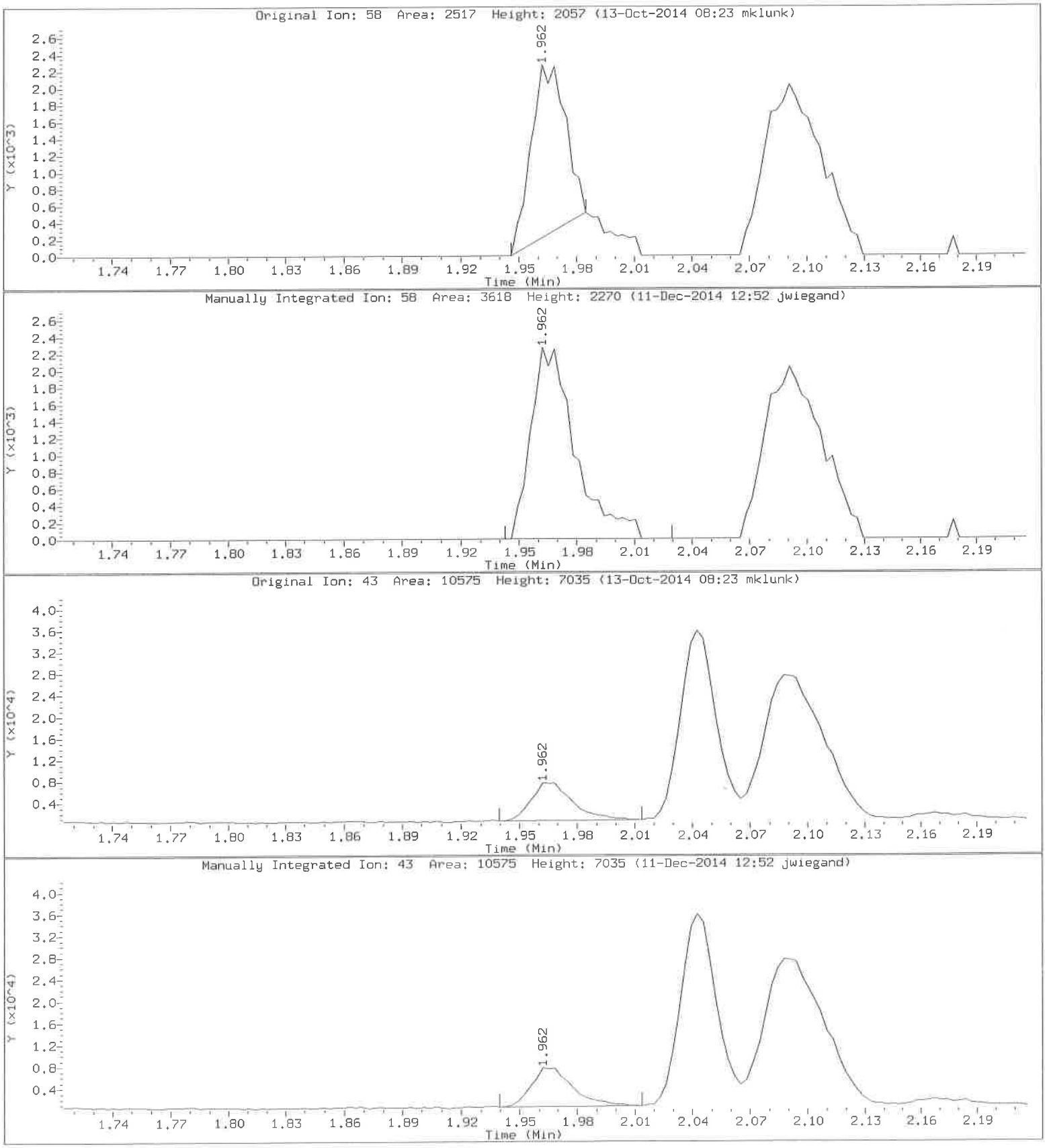
Injection Date: 10-OCT-2014 12:14
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Acetone
CAS Number: 67-64-1



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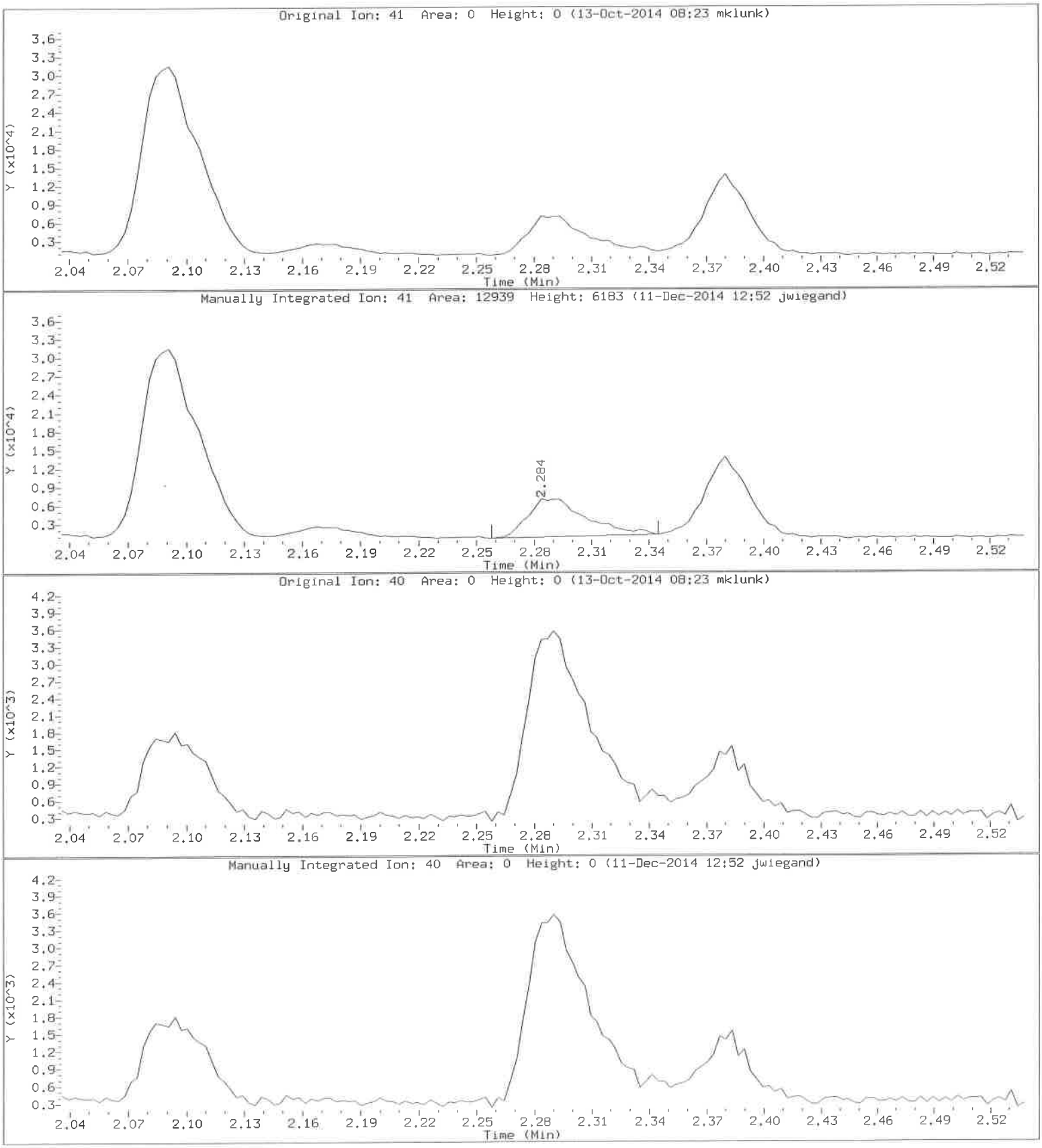
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Acetonitrile
CAS Number: 75-05-8



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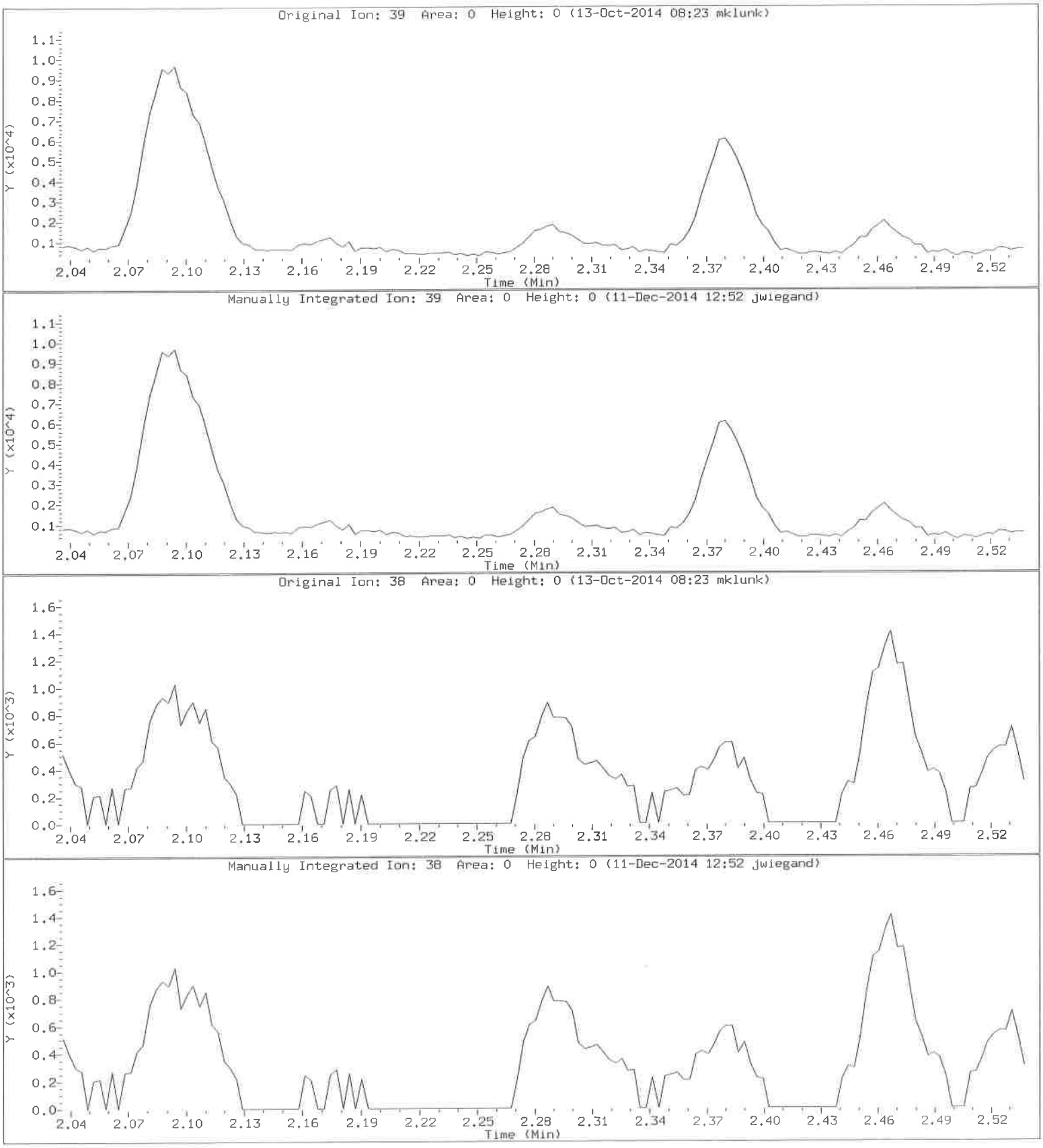
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]



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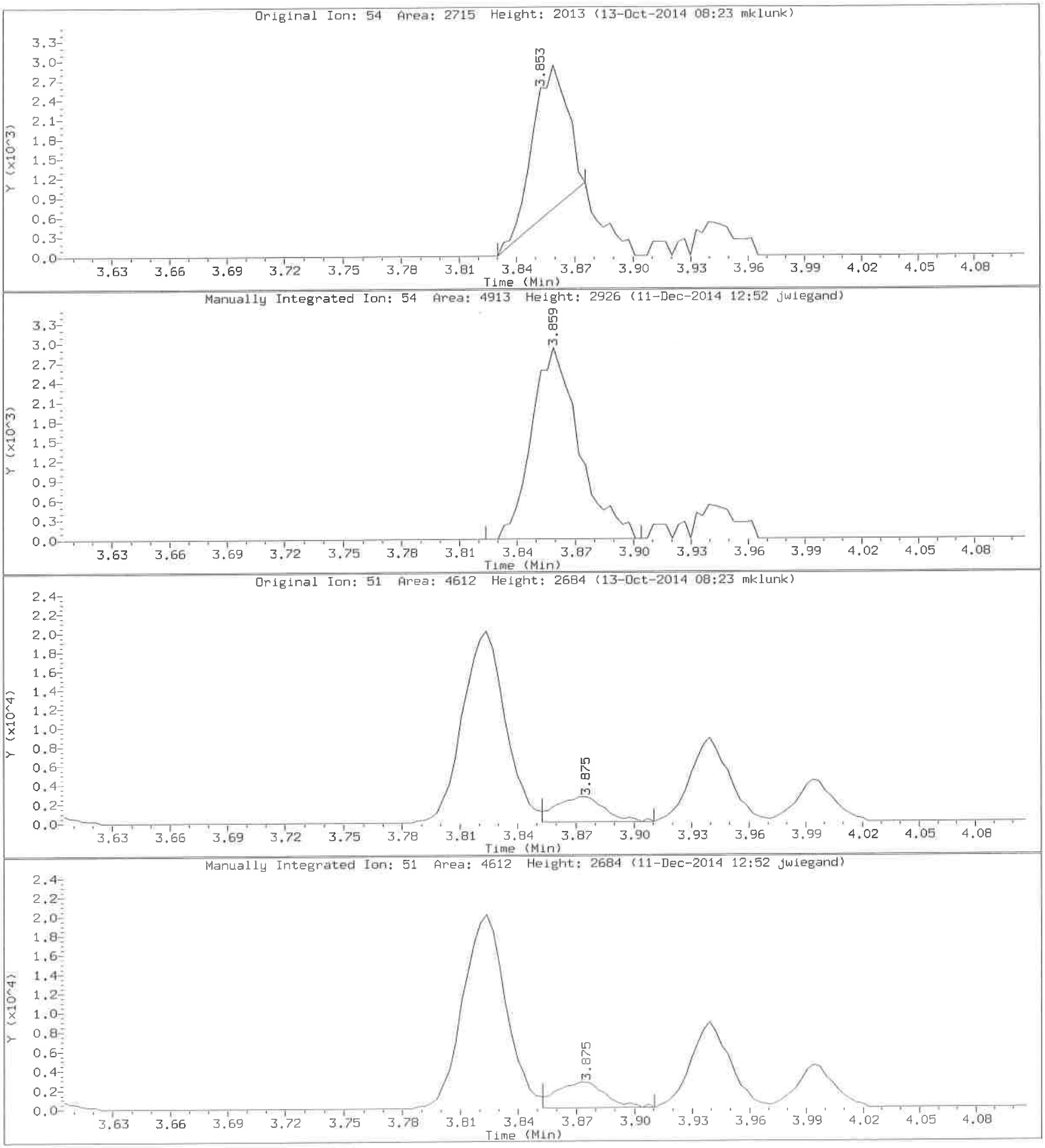
Injection Date: 10-OCT-2014 12:14
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Propionitrile
CAS Number: 107-12-0



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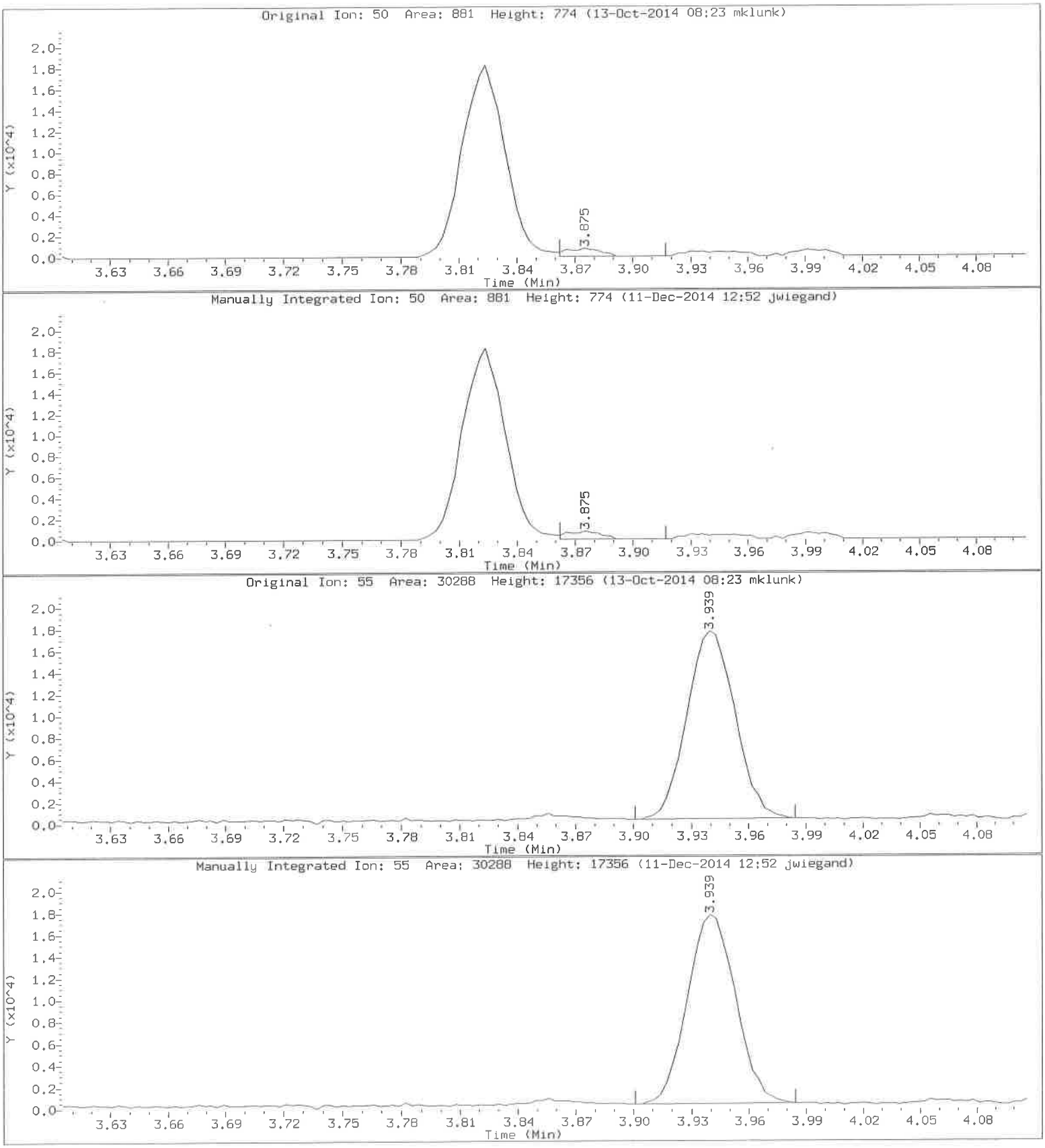
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]



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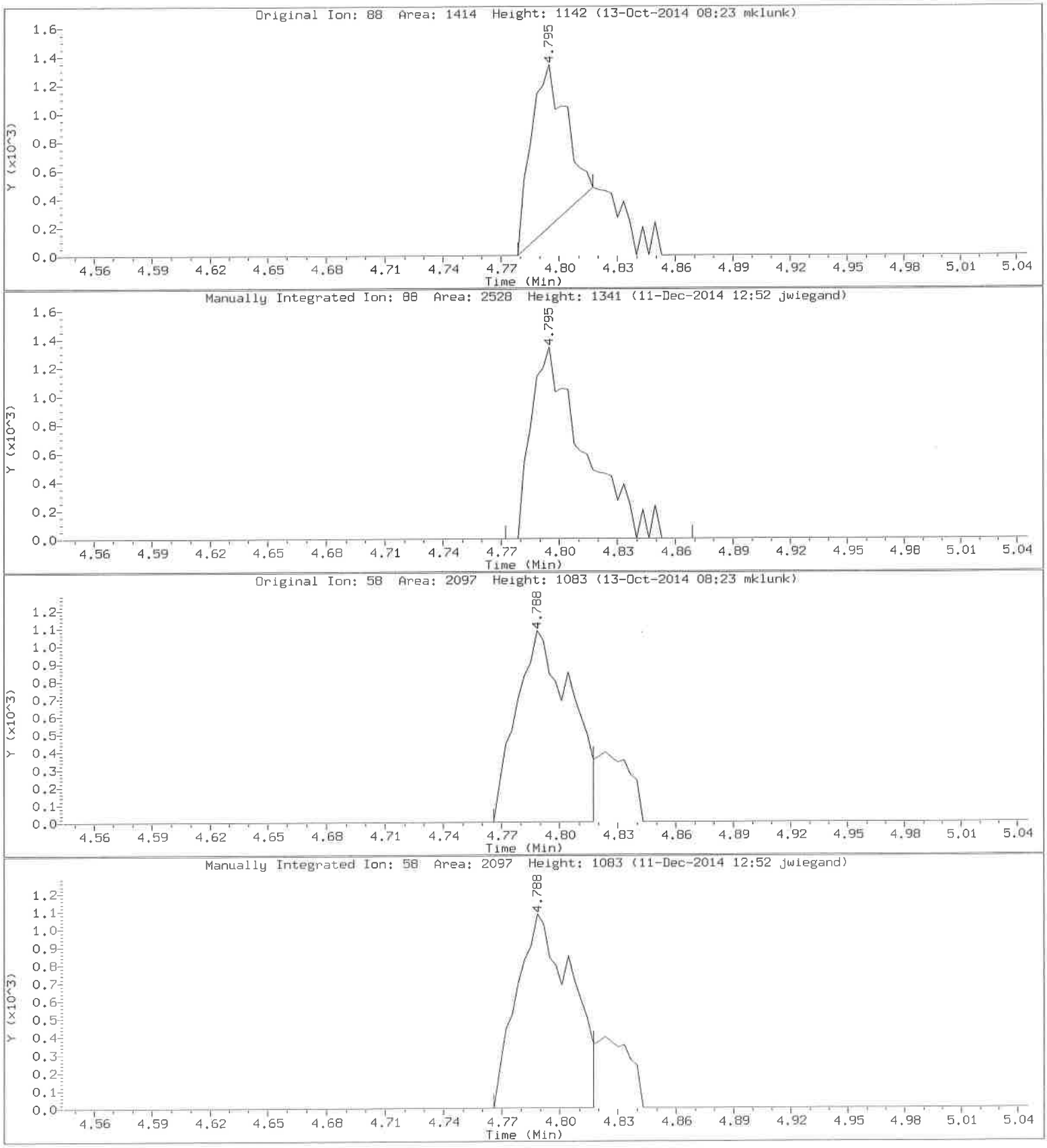
Injection Date: 10-OCT-2014 12:14
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: 1,4-Dioxane
CAS Number: 123-91-1



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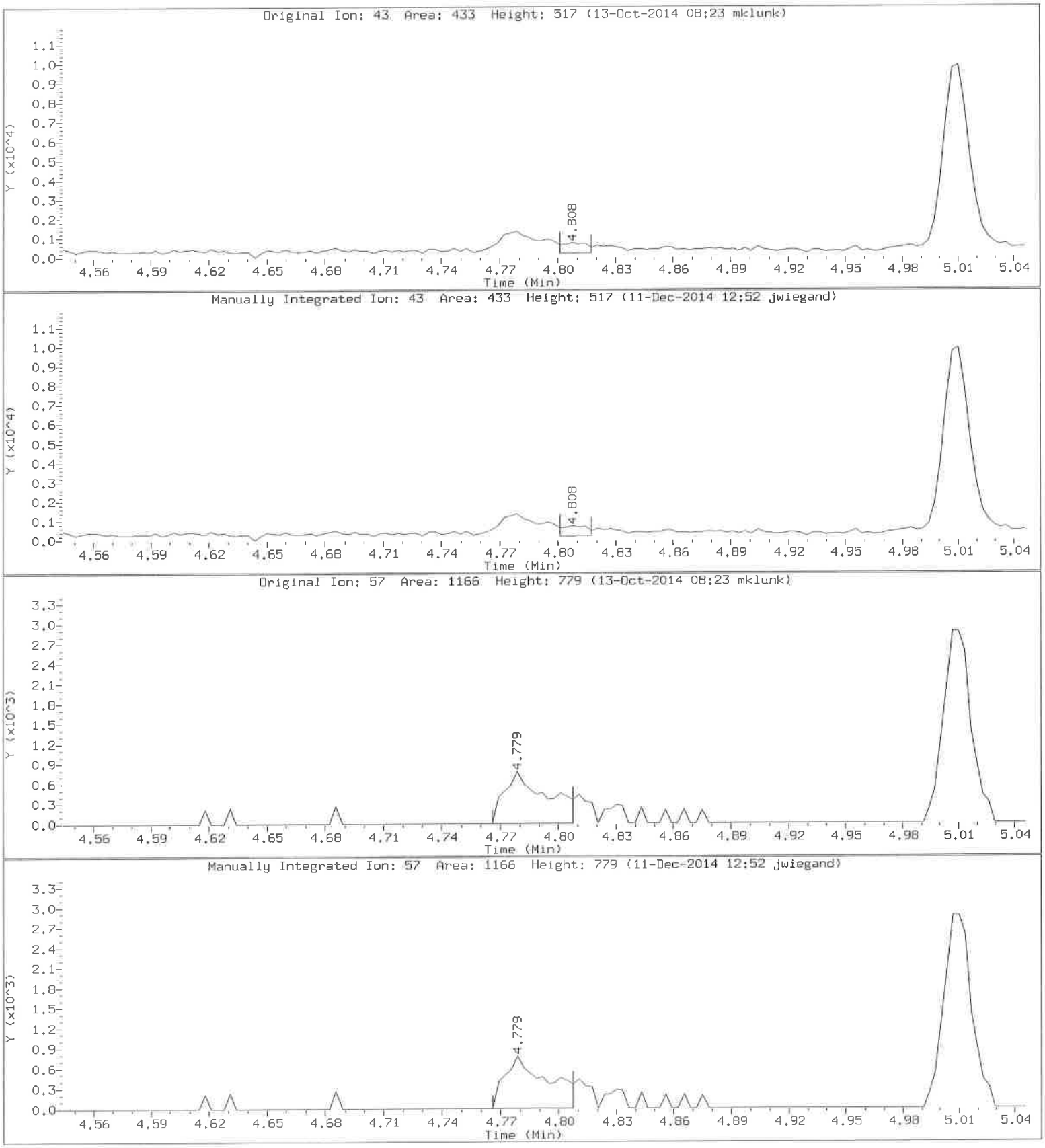
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]



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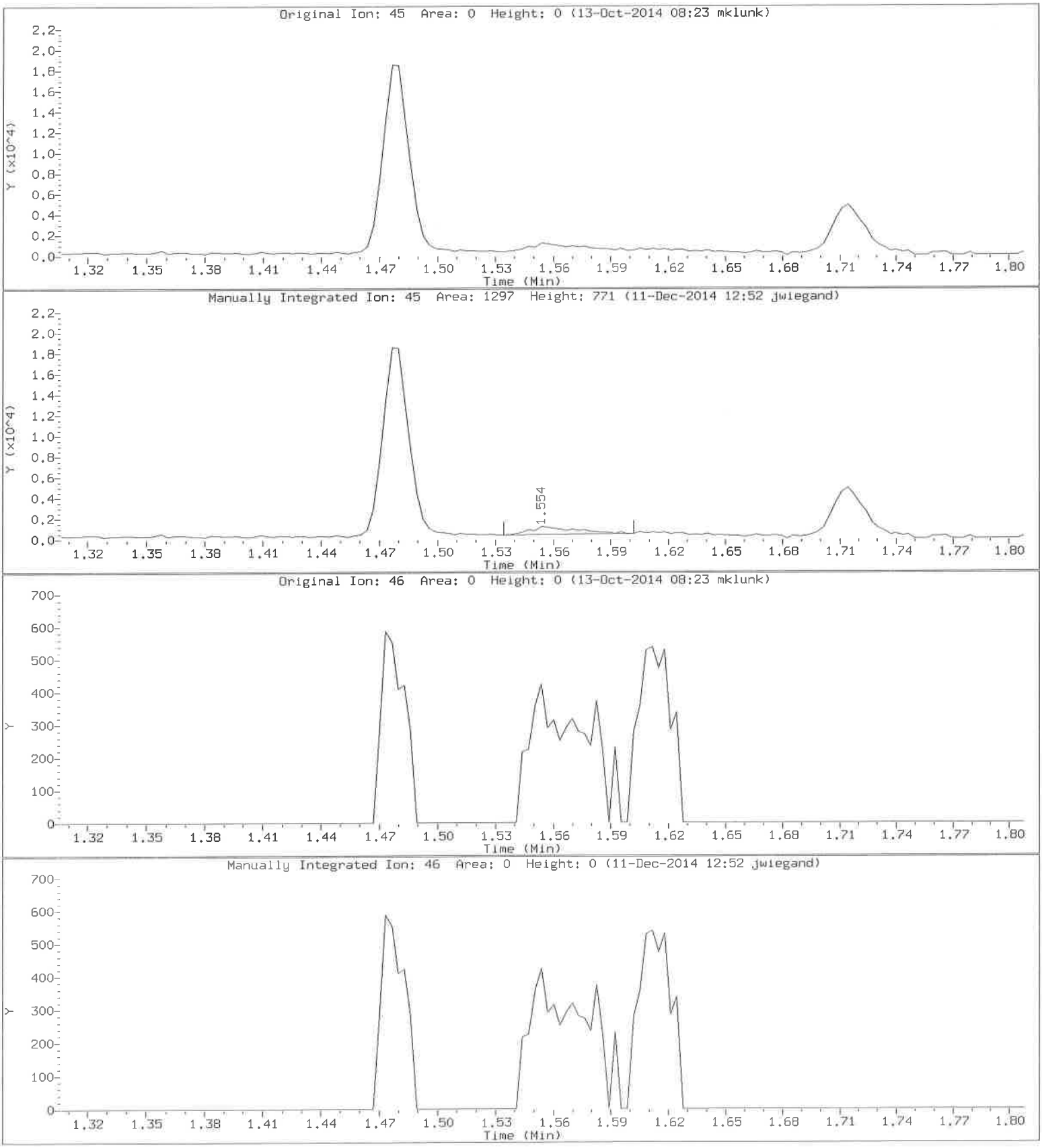
Injection Date: 10-OCT-2014 12:14
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Ethanol
CAS Number: 64-17-5



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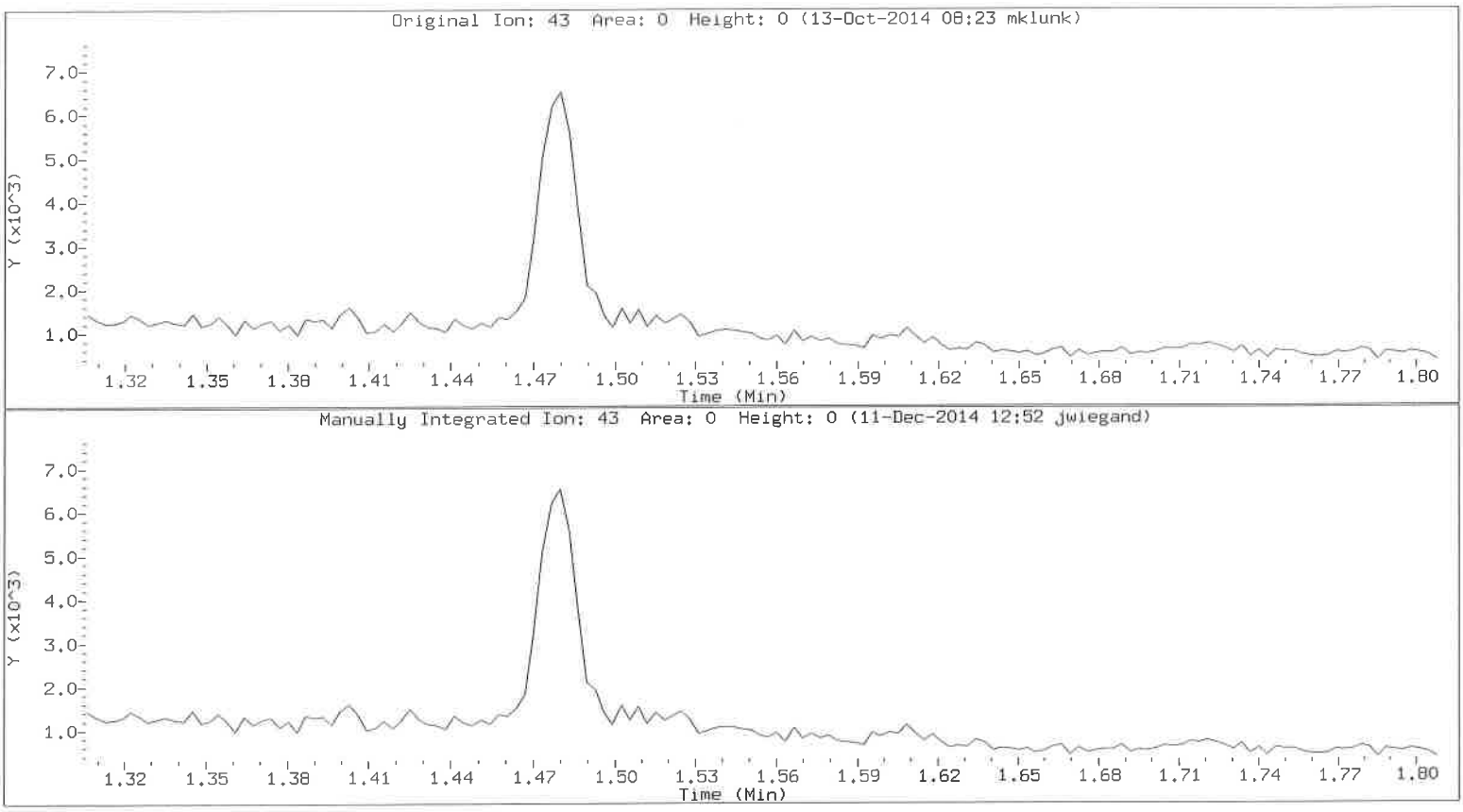
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]



Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010016.d
Report Date: 11-Dec-2014 12:53

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010016.d
Lab Smp Id: VSTD[100] Client Smp ID: VSTD[100]
Inj Date : 10-OCT-2014 12:37
Operator : JEW Inst ID: 30msv5.i
Smp Info : VSTD[100],,5
Misc Info : V10-49-15
Comment :
Method : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 12:51 jwiegand Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
1 Dichlorodifluoromethane	85	0.897	0.898	(0.216)	37078	100.000	101(Q)	
2 Chloromethane	50	0.991	0.991	(0.238)	84688	100.000	99.7	
3 Vinyl Chloride	62	1.032	1.032	(0.248)	39695	100.000	98.7	
4 Bromomethane	94	1.193	1.191	(0.287)	9655	100.000	105	
5 Chloroethane	64	1.254	1.252	(0.302)	17468	100.000	92.9(Q)	
6 Trichlorofluoromethane	101	1.325	1.322	(0.319)	85187	100.000	96.2	
7 Ethyl Ether	59	1.479	1.477	(0.356)	49196	100.000	92.2	
8 1,1-Dichloroethene	61	1.592	1.592	(0.383)	99734	100.000	99.7	
159 Ethanol	45	1.557	1.557	(0.374)	2356	1000.00	540(M)	LT
9 Carbon Disulfide	76	1.614	1.612	(0.388)	131715	100.000	95.0	
10 1,1,2-Trichlorotrifluoroethan	151	1.611	1.609	(0.387)	40217	100.000	93.9	
11 Iodomethane	142	1.676	1.676	(0.403)	26339	100.000	99.7	
12 Acrolein	56	1.785	1.785	(0.429)	10112	100.000	103	
13 Allyl chloride	41	1.865	1.866	(0.448)	429953	500.000	468	
14 Methylene Chloride	49	1.933	1.933	(0.465)	82807	100.000	107	
15 Acetone	58	1.962	1.965	(0.472)	6393	100.000	95.1(M)	LT
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	109985	100.000	92.8	
17 Methyl Acetate	74	2.042	2.043	(0.491)	17849	100.000	98.4	
18 Hexane	86	2.087	2.084	(0.502)	14492	100.000	88.3	
19 tert-butyl Methylether,MtB	73	2.103	2.104	(0.506)	207738	100.000	94.4	

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010016.d
Report Date: 11-Dec-2014 12:53

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
	21 tert-Butyl Alcohol	59	2.171	2.174	(0.522)	41554	500.000	478(Q)	
	20 Acetonitrile	41	2.290	2.287	(0.550)	27764	500.000	513(Q)	
	22 DiisopropylEther	45	2.380	2.380	(0.572)	260489	100.000	96.8	
	23 Chloroprene	53	2.463	2.464	(0.592)	119889	100.000	95.0	
	25 Acrylonitrile	53	2.528	2.528	(0.607)	25075	100.000	90.5	
	24 1,1-Dichloroethane	63	2.483	2.483	(0.597)	151394	100.000	95.3	
	27 t-Butyl ethyl ether	59	2.682	2.682	(0.645)	266910	100.000	97.4	
	26 Vinyl Acetate	43	2.695	2.695	(0.648)	107121	100.000	103(Q)	
	28 cis-1,2-Dichloroethene	61	2.952	2.953	(0.709)	124781	100.000	95.2	
	29 2,2-Dichloropropane	77	3.055	3.055	(0.734)	114567	100.000	91.2(Q)	
	30 Cyclohexane	56	3.142	3.145	(0.755)	113477	100.000	92.1	
	31 Bromochloromethane	130	3.148	3.149	(0.757)	50435	100.000	98.2(Q)	
	32 Chloroform	83	3.238	3.239	(0.778)	153634	100.000	95.5	
	33 Carbon Tetrachloride	117	3.367	3.371	(0.809)	113476	100.000	93.6	
	36 Ethyl Acetate	43	3.389	3.387	(0.815)	65285	100.000	102	
	35 Tetrahydrofuran	42	3.396	3.399	(0.816)	26667	100.000	107(Q)	
	34 1,1,1-Trichloroethane	97	3.450	3.448	(0.829)	127059	100.000	95.4(Q)	
	37 1,1-Dichloropropene	75	3.589	3.592	(0.862)	110535	100.000	97.6	
	38 2-Butanone	43	3.582	3.586	(0.861)	34202	100.000	102(Q)	
	39 Benzene	78	3.823	3.824	(0.650)	298905	100.000	98.4	
	40 Propionitrile	54	3.855	3.856	(0.927)	9617	100.000	99.5(Q)	
	41 Methacrylonitrile	41	3.872	3.875	(0.930)	48539	100.000	96.8	
$	42 1,2-Dichloroethane-d4	65	3.939	3.940	(0.947)	31748	30.0000	29.7(Q)	
	43 t-Amyl methyl ether	73	3.939	3.940	(0.670)	221526	100.000	101	
	46 Isobutanol	43	3.939	3.940	(0.947)	79766	500.000	479	
	44 1,2-Dichloroethane	62	3.994	3.998	(0.960)	129712	100.000	96.9	
*	45 Fluorobenzene	96	4.161	4.162	(1.000)	91617	30.0000		
	47 Methylcyclohexane	83	4.267	4.271	(0.726)	104625	100.000	98.8	
	48 Trichloroethene	132	4.283	4.287	(0.728)	73893	100.000	98.2	
	49 Dibromomethane	174	4.560	4.560	(0.775)	53140	100.000	102	
	50 1,2-Dichloropropane	63	4.621	4.621	(0.786)	89141	100.000	100	
	51 Bromodichloromethane	83	4.669	4.670	(0.794)	121899	100.000	101	
	52 Methyl methacrylate	69	4.778	4.779	(0.812)	54210	100.000	97.6	
	53 1,4-Dioxane	88	4.791	4.795	(0.697)	5375	1000.00	858(QM)	LT
	55 2-ChloroethylVinylEther	63	5.010	5.010	(0.852)	26591	100.000	102	
	54 cis-1,3-Dichloropropene	75	5.032	5.033	(0.856)	128515	100.000	100	
$	56 Toluene-d8	98	5.129	5.129	(0.872)	87354	30.0000	30.6	
	57 Toluene	91	5.154	5.158	(0.876)	308213	100.000	99.2	
	58 2-Nitropropane	43	5.280	5.280	(0.898)	137453	500.000	510	
	59 Tetrachloroethene	166	5.354	5.354	(0.910)	80181	100.000	101	
	60 4-Methyl-2-Pentanone	43	5.357	5.361	(0.911)	78422	100.000	103	
	61 trans-1,3-Dichloropropene	75	5.376	5.377	(0.914)	128675	100.000	101	
	63 Ethyl methacrylate	41	5.460	5.461	(0.928)	76404	100.000	101	
	62 1,1,2-Trichloroethane	97	5.454	5.454	(0.927)	65650	100.000	99.1	
	64 Dibromochloromethane	129	5.537	5.538	(0.942)	83822	100.000	102	
	65 1,3-Dichloropropane	76	5.582	5.583	(0.949)	115583	100.000	98.7	
	66 1,2-Dibromoethane,EDB	107	5.643	5.644	(0.960)	69088	100.000	100	
	70 2-Hexanone	43	5.753	5.756	(0.978)	60387	100.000	99.7	
*	67 Chlorobenzene-d5	82	5.881	5.882	(1.000)	37390	30.0000		
	68 Chlorobenzene	112	5.888	5.888	(1.001)	196369	100.000	98.6	
	69 Ethylbenzene	106	5.900	5.901	(1.003)	101158	100.000	95.4	
	71 1,1,1,2-Tetrachloroethane	131	5.917	5.920	(1.006)	70067	100.000	101	
	72 m,p-Xylene	106	5.965	5.965	(1.014)	243962	200.000	194	
	73 o-Xylene	106	6.151	6.152	(1.046)	120029	100.000	98.9	

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010016.d
Report Date: 11-Dec-2014 12:53

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
74 Styrene	104	6.174	6.174	(1.050)	191146	100.000	98.4	
75 Bromoform	173	6.190	6.190	(1.052)	52566	100.000	101	
76 Isopropylbenzene,Cumene	105	6.286	6.287	(0.915)	272568	100.000	98.3	
$ 77 Bromofluorobenzene	174	6.408	6.409	(0.933)	24616	30.0000	31.0	
79 n-Propylbenzene	91	6.460	6.460	(0.940)	348871	100.000	99.1	
78 Bromobenzene	77	6.453	6.454	(0.939)	143776	100.000	100	
80 1,1,2,2-Tetrachloroethane	83	6.492	6.493	(0.945)	77741	100.000	101	
81 2-Chlorotoluene	126	6.527	6.531	(0.950)	67771	100.000	101	
82 1,3,5-Trimethylbenzene	120	6.540	6.541	(0.952)	108143	100.000	98.4	
83 1,2,3-Trichloropropane	110	6.550	6.550	(0.953)	23208	100.000	99.9	
84 trans 1,4-Dichloro-2-butene	53	6.563	6.567	(0.955)	27736	100.000	101	
85 Cyclohexanone	55	6.569	6.573	(0.956)	24695	500.000	491	
86 4-Chlorotoluene	126	6.598	6.599	(0.960)	70769	100.000	101	
87 tert-Butyl benzene	119	6.672	6.676	(0.971)	182719	100.000	96.6	
88 1,2,4-Trimethylbenzene	120	6.701	6.702	(0.975)	102978	100.000	99.3	
89 sec-Butyl benzene	105	6.746	6.747	(0.982)	266887	100.000	96.2	
90 4-Isopropyl toluene	119	6.801	6.805	(0.990)	226381	100.000	95.7	
91 1,3-Dichlorobenzene	146	6.843	6.843	(0.996)	128808	100.000	98.3	
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.872	(1.000)	28955	30.0000		
93 1,4-Dichlorobenzene	146	6.878	6.878	(1.001)	128687	100.000	98.4	
94 n-Butyl benzene	91	6.978	6.978	(1.015)	212851	100.000	95.6	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	7.055	7.055	(1.027)	116468	100.000	96.4	
96 bis(2Chloro1methyl ethyl)eth	45	7.196	7.197	(1.047)	33956	100.000	98.6	
97 1,2-Dibromo-3-Chloropropane	75	7.383	7.383	(1.074)	12964	100.000	97.6	
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	37990	100.000	90.6	
99 1,2,4-Trichlorobenzene	180	7.656	7.657	(1.114)	67300	100.000	91.8	
100 Naphthalene	128	7.794	7.795	(1.134)	153139	100.000	94.8	
101 1,2,3-Trichlorobenzene	180	7.871	7.872	(1.146)	58324	100.000	92.2	
157 2-methylnaphthalene	142	8.241	8.241	(1.199)	74812	100.000	93.8	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010016.d
Report Date: 11-Dec-2014 12:53

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51010016.d
Lab Smp Id: VSTD[100]
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Misc Info: V10-49-15

Calibration Date: 10-OCT-2014
Calibration Time: 12:14
Client Smp ID: VSTD[100]
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

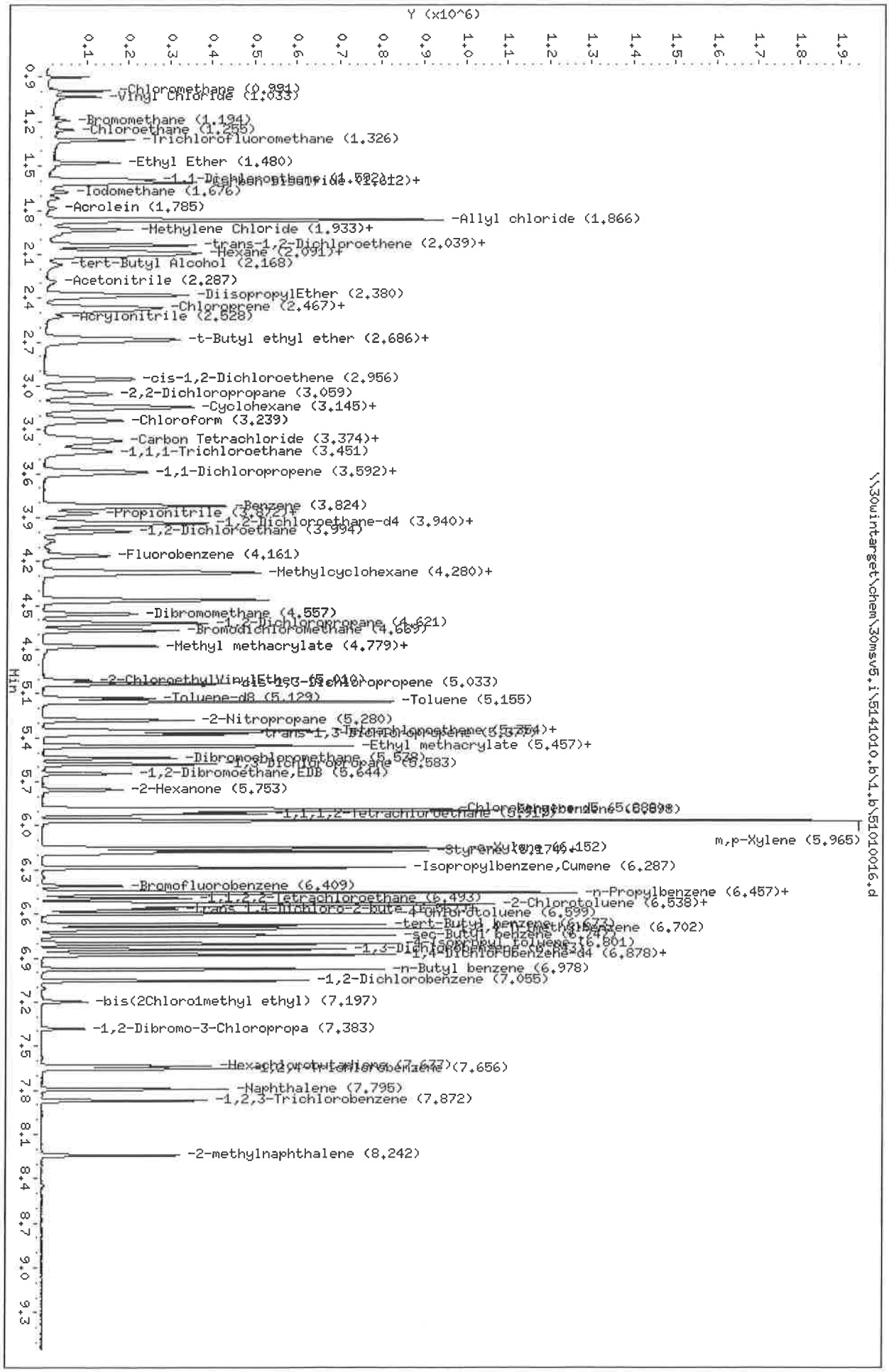
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	87362	43681	174724	91617	4.87
67 Chlorobenzene-d5	37349	18675	74698	37390	0.11
92 1,4-Dichlorobenze	30731	15366	61462	28955	-5.78

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.06
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010016.d
Date : 10-OCT-2014 12:37
Client ID: VSTD[100]
Sample Info: VSTD[100],,5
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



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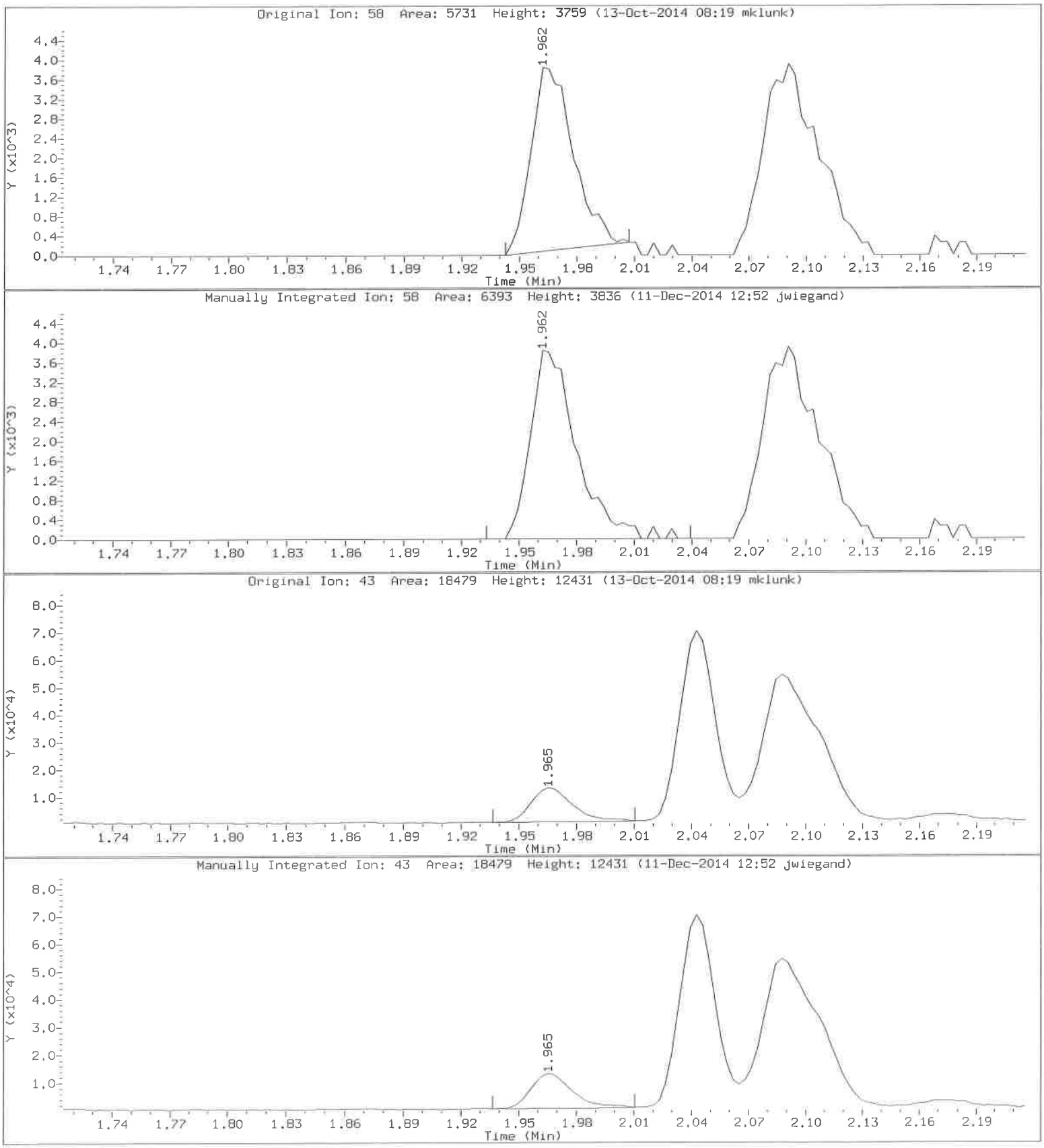
Injection Date: 10-OCT-2014 12:37
Instrument: 30msv5.i
Lab Sample ID: VSTD[100]

Compound: Acetone
CAS Number: 67-64-1



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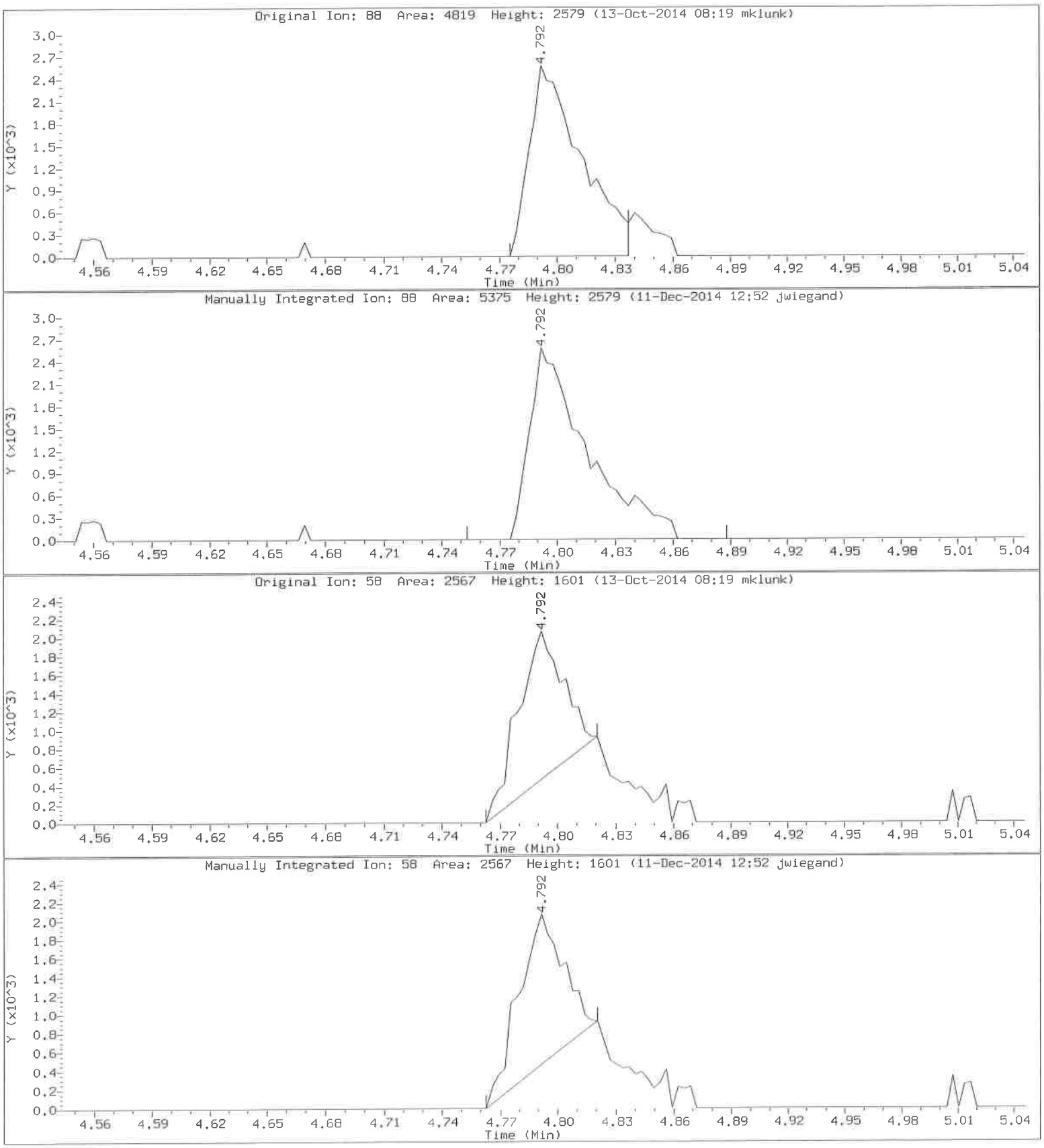
Injection Date: 10-OCT-2014 12:37
Instrument: 30msv5.i
Lab Sample ID: VSTD[100]

Compound: 1,4-Dioxane
CAS Number: 123-91-1



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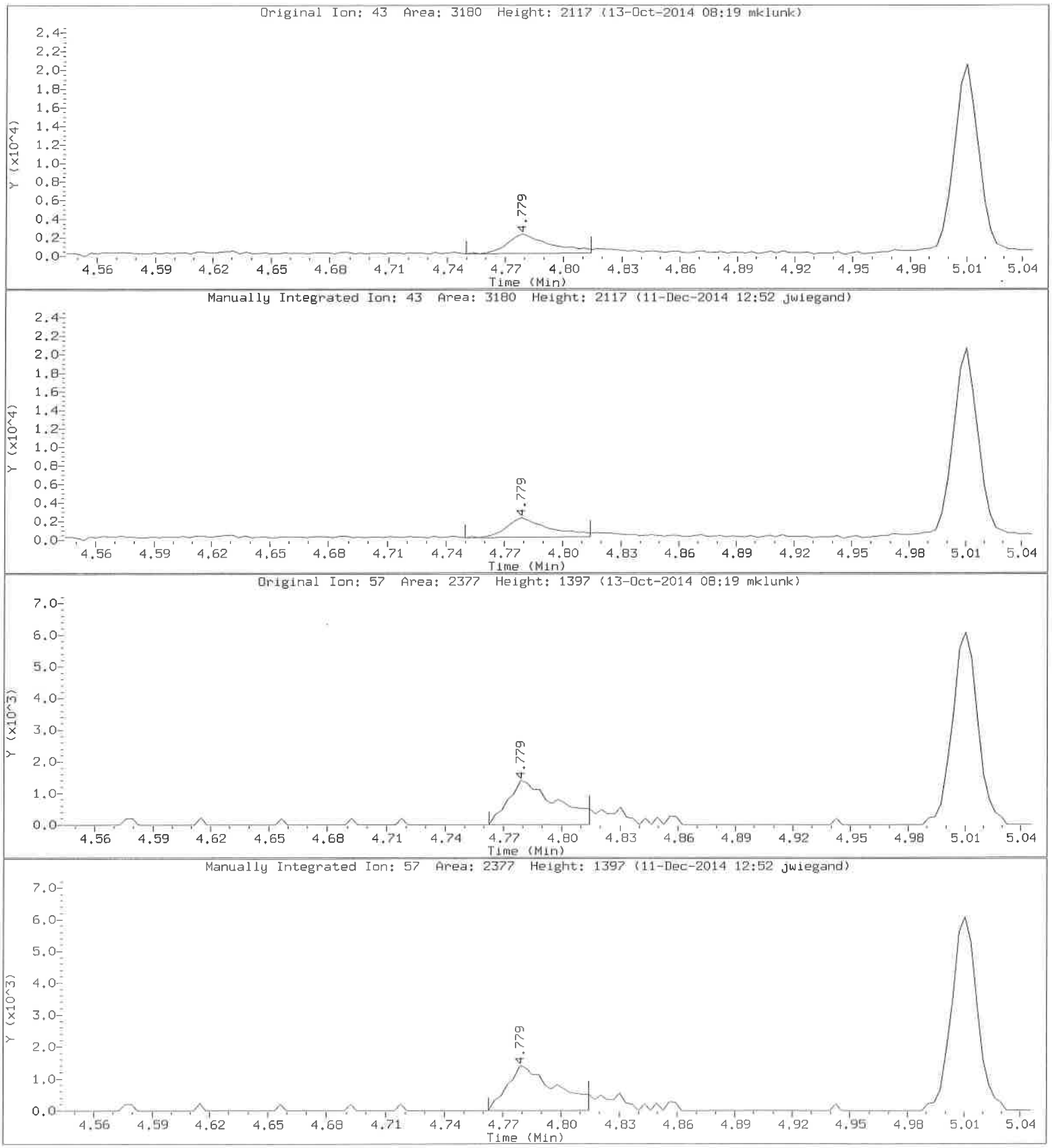
Instrument: 30msv5.i
Lab Sample ID: VSTD[100]



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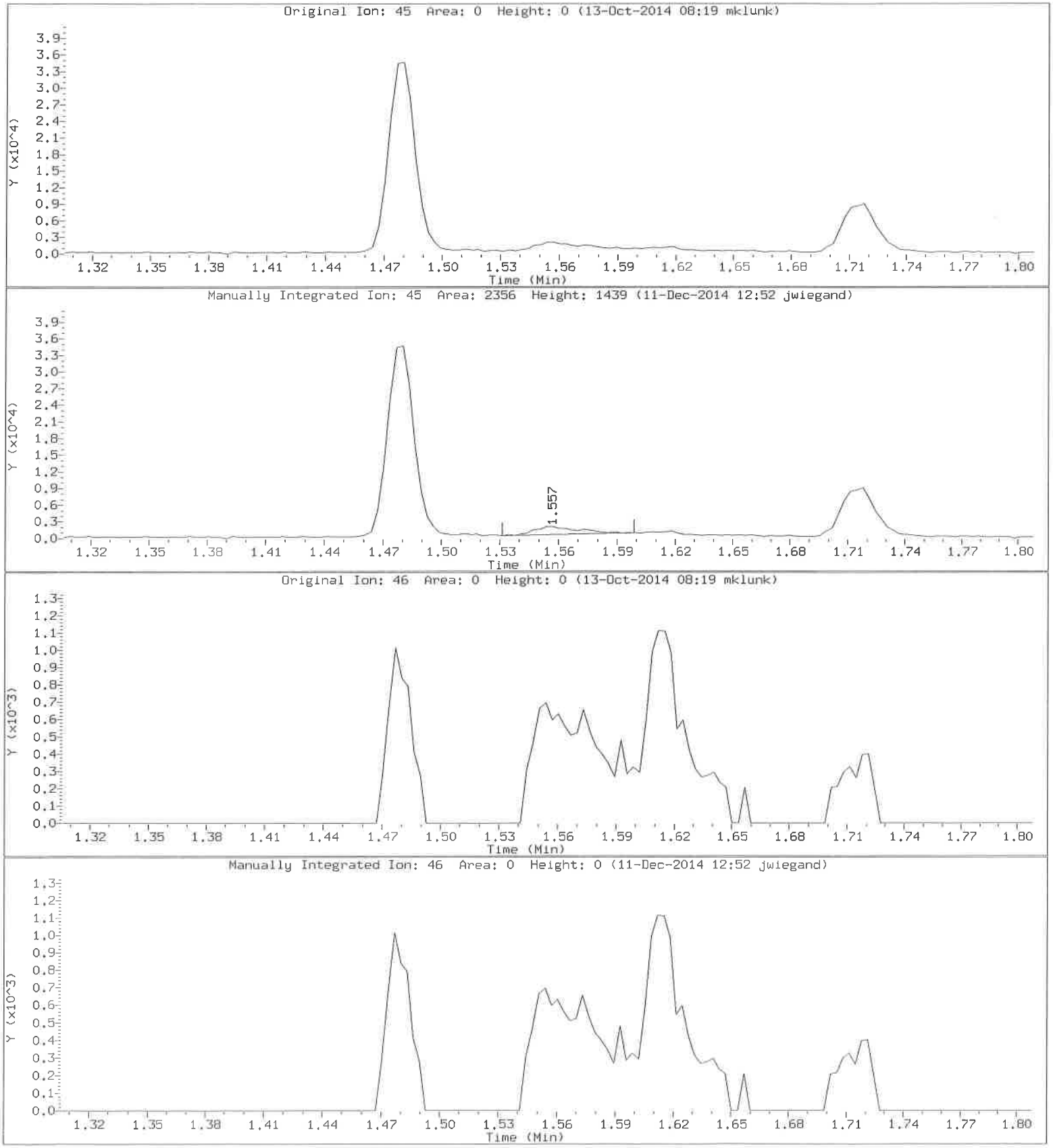
Injection Date: 10-OCT-2014 12:37
Instrument: 30msv5.i
Lab Sample ID: VSTD[100]

Compound: Ethanol
CAS Number: 64-17-5



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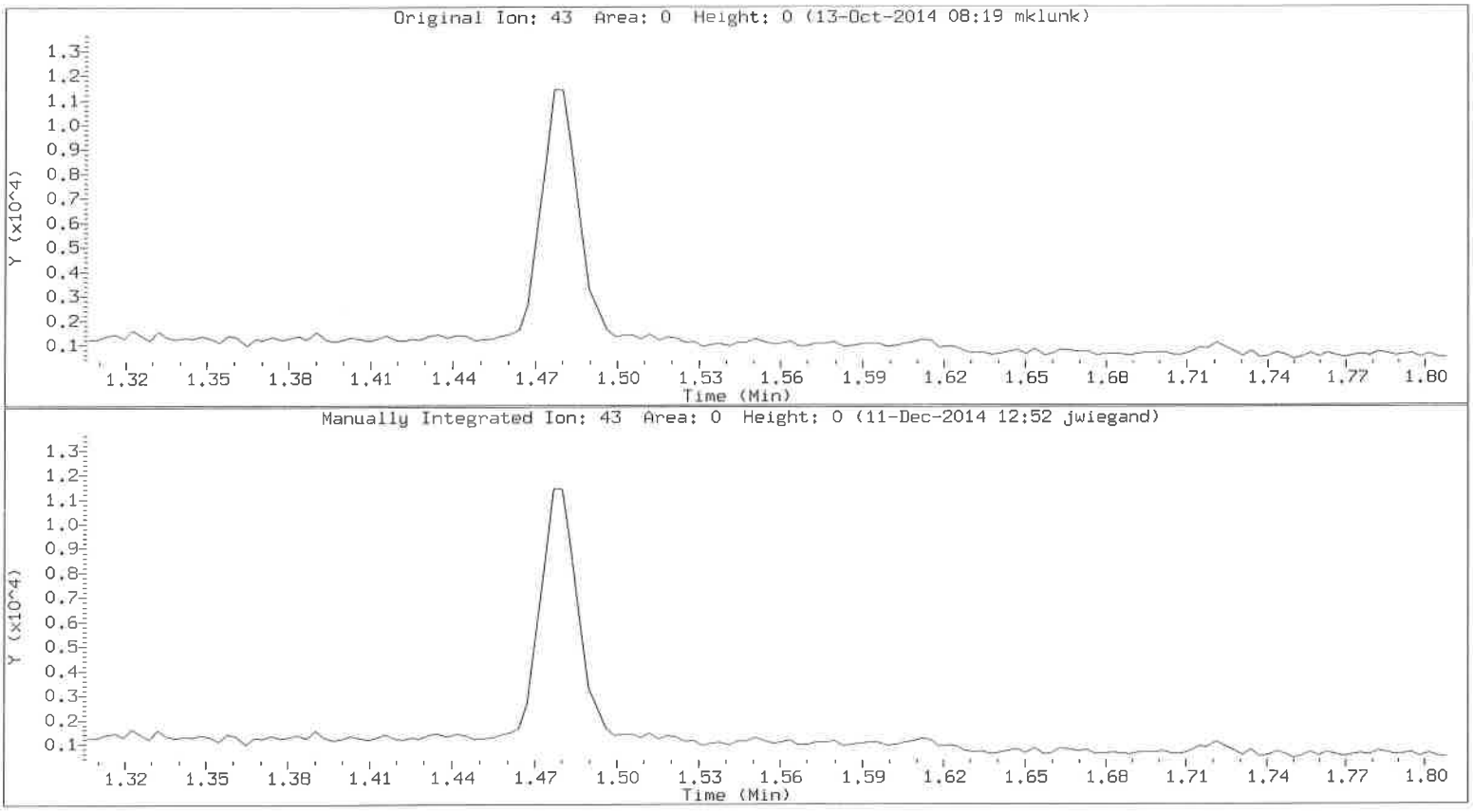
Injection Date: 10-OCT-2014 12:37
Instrument: 30msv5.i
Lab Sample ID: VSTD[100]



Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010017.d
Report Date: 11-Dec-2014 12:53

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010017.d
Lab Smp Id: VSTD[400] Client Smp ID: VSTD[400]
Inj Date : 10-OCT-2014 12:59
Operator : JEW Inst ID: 30msv5.i
Smp Info : VSTD[400],,5
Misc Info : V10-19-10
Comment :
Method : \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 12:51 jwiegand Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
1 Dichlorodifluoromethane	85	0.897	0.898	(0.216)	131435	400.000	388(Q)	
2 Chloromethane	50	0.991	0.991	(0.238)	309066	400.000	396	
3 Vinyl Chloride	62	1.033	1.032	(0.248)	150469	400.000	408(A)	
4 Bromomethane	94	1.190	1.191	(0.286)	40071	400.000	474(A)	
5 Chloroethane	64	1.251	1.252	(0.301)	51445	400.000	298	
6 Trichlorofluoromethane	101	1.322	1.322	(0.318)	302299	400.000	372	
7 Ethyl Ether	59	1.476	1.477	(0.355)	164444	400.000	336	
8 1,1-Dichloroethene	61	1.592	1.592	(0.383)	340788	400.000	371	
159 Ethanol	45	1.557	1.557	(0.374)	5840	4000.00	1460(Q)	
9 Carbon Disulfide	76	1.611	1.612	(0.387)	480553	400.000	378	
10 1,1,2-Trichlorotrifluoroethan	151	1.608	1.609	(0.387)	136534	400.000	347	
11 Iodomethane	142	1.676	1.676	(0.403)	119043	400.000	400	
12 Acrolein	56	1.785	1.785	(0.429)	33716	400.000	375	
13 Allyl chloride	41	1.865	1.866	(0.448)	1349267	2000.00	1600	
14 Methylene Chloride	49	1.933	1.933	(0.465)	280393	400.000	396	
15 Acetone	58	1.965	1.965	(0.472)	18335	400.000	400(AM)	LT
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	372138	400.000	342	
17 Methyl Acetate	74	2.042	2.043	(0.491)	60906	400.000	366	
18 Hexane	86	2.084	2.084	(0.501)	52966	400.000	352	
19 tert-butyl Methylether,MtB	73	2.103	2.104	(0.506)	669133	400.000	331	

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010017.d
Report Date: 11-Dec-2014 12:53

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
21 tert-Butyl Alcohol	59	2.174	2.174	(0.523)	138304	2000.00	1730(Q)	
20 Acetonitrile	41	2.286	2.287	(0.550)	97809	2000.00	1970(Q)	
22 DiisopropylEther	45	2.380	2.380	(0.572)	883265	400.000	357	
23 Chloroprene	53	2.463	2.464	(0.592)	431982	400.000	373	
25 Acrylonitrile	53	2.528	2.528	(0.608)	88450	400.000	348	
24 1,1-Dichloroethane	63	2.483	2.483	(0.597)	516546	400.000	354	
27 t-Butyl ethyl ether	59	2.682	2.682	(0.645)	887768	400.000	353	
26 Vinyl Acetate	43	2.695	2.695	(0.648)	385963	400.000	404(AQ)	
28 cis-1,2-Dichloroethene	61	2.952	2.953	(0.709)	448175	400.000	373	
29 2,2-Dichloropropane	77	3.055	3.055	(0.734)	379870	400.000	330	
30 Cyclohexane	56	3.145	3.145	(0.756)	370251	400.000	327	
31 Bromochloromethane	130	3.148	3.149	(0.757)	176812	400.000	375(Q)	
32 Chloroform	83	3.238	3.239	(0.778)	538444	400.000	364	
33 Carbon Tetrachloride	117	3.370	3.371	(0.810)	399427	400.000	359	
36 Ethyl Acetate	43	3.386	3.387	(0.814)	233021	400.000	395(Q)	
35 Tetrahydrofuran	42	3.399	3.399	(0.817)	90367	400.000	396(Q)	
34 1,1,1-Trichloroethane	97	3.447	3.448	(0.828)	433776	400.000	355(Q)	
37 1,1-Dichloropropene	75	3.592	3.592	(0.863)	406784	400.000	391	
38 2-Butanone	43	3.585	3.586	(0.862)	117672	400.000	381(Q)	
39 Benzene	78	3.823	3.824	(0.650)	1075536	400.000	430(A)	
40 Propionitrile	54	3.856	3.856	(0.927)	31968	400.000	360(Q)	
41 Methacrylonitrile	41	3.875	3.875	(0.931)	171750	400.000	373	
$ 42 1,2-Dichloroethane-d4	65	3.939	3.940	(0.947)	30150	30.0000	30.7	
43 t-Amyl methyl ether	73	3.939	3.940	(0.670)	748431	400.000	415(A)	
46 Isobutanol	43	3.939	3.940	(0.947)	271709	2000.00	1780	
44 1,2-Dichloroethane	62	3.997	3.998	(0.961)	460189	400.000	374	
* 45 Fluorobenzene	96	4.161	4.162	(1.000)	84099	30.0000		
47 Methylcyclohexane	83	4.270	4.271	(0.726)	375773	400.000	431(A)	
48 Trichloroethene	132	4.286	4.287	(0.729)	265992	400.000	429(A)	
49 Dibromomethane	174	4.560	4.560	(0.775)	183848	400.000	429(A)	
50 1,2-Dichloropropane	63	4.621	4.621	(0.786)	309718	400.000	423(A)	
51 Bromodichloromethane	83	4.669	4.670	(0.794)	432457	400.000	436(A)	
52 Methyl methacrylate	69	4.778	4.779	(0.812)	182197	400.000	398	
53 1,4-Dioxane	88	4.794	4.795	(0.698)	20253	4000.00	4030(AM)	LT
55 2-ChloroethylVinylEther	63	5.010	5.010	(0.852)	92925	400.000	434(A)	
54 cis-1,3-Dichloropropene	75	5.032	5.033	(0.856)	445514	400.000	422(A)	
$ 56 Toluene-d8	98	5.129	5.129	(0.872)	78676	30.0000	33.5	
57 Toluene	91	5.158	5.158	(0.877)	1048529	400.000	410(A)	
58 2-Nitropropane	43	5.280	5.280	(0.898)	461922	2000.00	2080(A)	
59 Tetrachloroethene	166	5.354	5.354	(0.910)	268458	400.000	410(A)	
60 4-Methyl-2-Pentanone	43	5.360	5.361	(0.911)	242965	400.000	388	
61 trans-1,3-Dichloropropene	75	5.376	5.377	(0.914)	431302	400.000	412(A)	
63 Ethyl methacrylate	41	5.460	5.461	(0.928)	237595	400.000	383	
62 1,1,2-Trichloroethane	97	5.454	5.454	(0.927)	211656	400.000	388	
64 Dibromochloromethane	129	5.537	5.538	(0.942)	275892	400.000	407(A)	
65 1,3-Dichloropropane	76	5.582	5.583	(0.949)	382281	400.000	396	
66 1,2-Dibromoethane,EDB	107	5.643	5.644	(0.960)	221406	400.000	391	
70 2-Hexanone	43	5.756	5.756	(0.979)	187937	400.000	377	
* 67 Chlorobenzene-d5	82	5.881	5.882	(1.000)	30786	30.0000		
68 Chlorobenzene	112	5.888	5.888	(1.001)	624125	400.000	380	
69 Ethylbenzene	106	5.901	5.901	(1.003)	318435	400.000	365	
71 1,1,1,2-Tetrachloroethane	131	5.920	5.920	(1.007)	223770	400.000	394	
72 m,p-Xylene	106	5.965	5.965	(1.014)	736343	800.000	711	
73 o-Xylene	106	6.151	6.152	(1.046)	358511	400.000	359	

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010017.d
Report Date: 11-Dec-2014 12:53

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
74 Styrene	104	6.174	6.174	(1.050)	565699	400.000	354	
75 Bromoform	173	6.190	6.190	(1.052)	158663	400.000	371	
76 Isopropylbenzene,Cumene	105	6.286	6.287	(0.915)	833119	400.000	438(A)	
$ 77 Bromofluorobenzene	174	6.409	6.409	(0.933)	18662	30.0000	34.3	
79 n-Propylbenzene	91	6.460	6.460	(0.940)	1020422	400.000	423(A)	
78 Bromobenzene	77	6.454	6.454	(0.939)	411200	400.000	418(A)	
80 1,1,2,2-Tetrachloroethane	83	6.492	6.493	(0.945)	221493	400.000	419(A)	
81 2-Chlorotoluene	126	6.531	6.531	(0.950)	191846	400.000	417(A)	
82 1,3,5-Trimethylbenzene	120	6.540	6.541	(0.952)	310412	400.000	412(A)	
83 1,2,3-Trichloropropane	110	6.550	6.550	(0.953)	66428	400.000	417(A)	
84 trans 1,4-Dichloro-2-butene	53	6.566	6.567	(0.956)	80566	400.000	426(A)	
85 Cyclohexanone	55	6.572	6.573	(0.956)	85094	2000.00	2470(A)	
86 4-Chlorotoluene	126	6.598	6.599	(0.960)	198571	400.000	413(A)	
87 tert-Butyl benzene	119	6.675	6.676	(0.971)	545234	400.000	421(A)	
88 1,2,4-Trimethylbenzene	120	6.701	6.702	(0.975)	280665	400.000	395	
89 sec-Butyl benzene	105	6.746	6.747	(0.982)	797977	400.000	420(A)	
90 4-Isopropyl toluene	119	6.804	6.805	(0.990)	662482	400.000	408(A)	
91 1,3-Dichlorobenzene	146	6.843	6.843	(0.996)	351109	400.000	391	
* 92 1,4-Dichlorobenzene-d4	152	6.872	6.872	(1.000)	19845	30.0000	(Q)	
93 1,4-Dichlorobenzene	146	6.878	6.878	(1.001)	349665	400.000	390	
94 n-Butyl benzene	91	6.978	6.978	(1.015)	615851	400.000	404(A)	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	7.055	7.055	(1.027)	318199	400.000	384	
96 bis(2Chloro1methyl ethyl)eth	45	7.196	7.197	(1.047)	94371	400.000	400(A)	
97 1,2-Dibromo-3-Chloropropane	75	7.383	7.383	(1.074)	35960	400.000	395	
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	118576	400.000	413(A)	
99 1,2,4-Trichlorobenzene	180	7.656	7.657	(1.114)	184763	400.000	368	
100 Naphthalene	128	7.794	7.795	(1.134)	404417	400.000	365	
101 1,2,3-Trichlorobenzene	180	7.871	7.872	(1.146)	155697	400.000	359	
157 2-methylnaphthalene	142	8.241	8.241	(1.199)	205778	400.000	376	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010017.d
Report Date: 11-Dec-2014 12:53

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51010017.d
Lab Smp Id: VSTD[400]
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\msv5soil101014.m
Misc Info: V10-19-10

Calibration Date: 10-OCT-2014
Calibration Time: 12:14
Client Smp ID: VSTD[400]
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

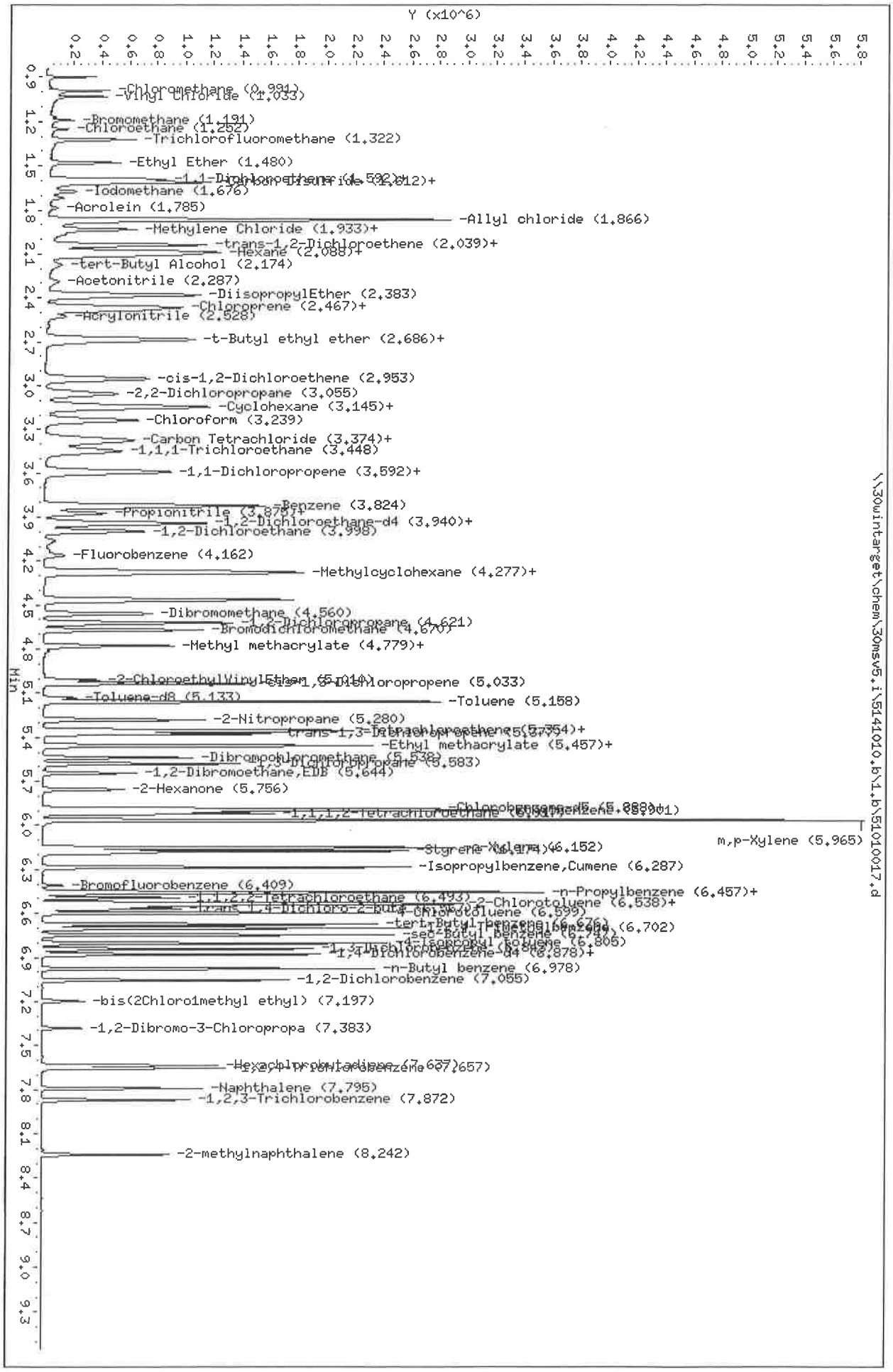
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	87362	43681	174724	84099	-3.74
67 Chlorobenzene-d5	37349	18675	74698	30786	-17.57
92 1,4-Dichlorobenze	30731	15366	61462	19845	-35.42

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.06
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

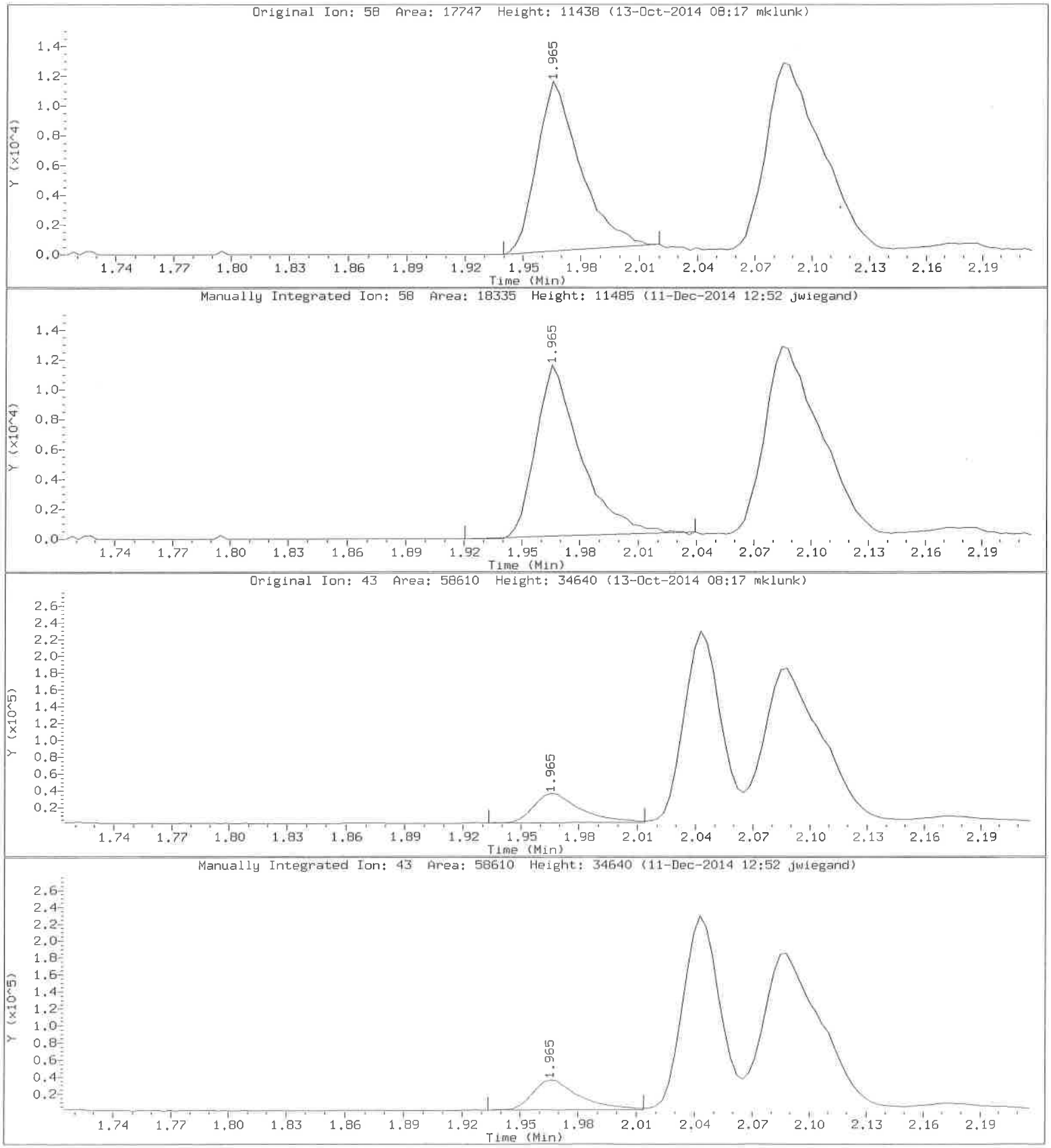
Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010017.d
Date : 10-OCT-2014 12:59
Client ID: VSTD[400]
Sample Info: VSTD[400],,5
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



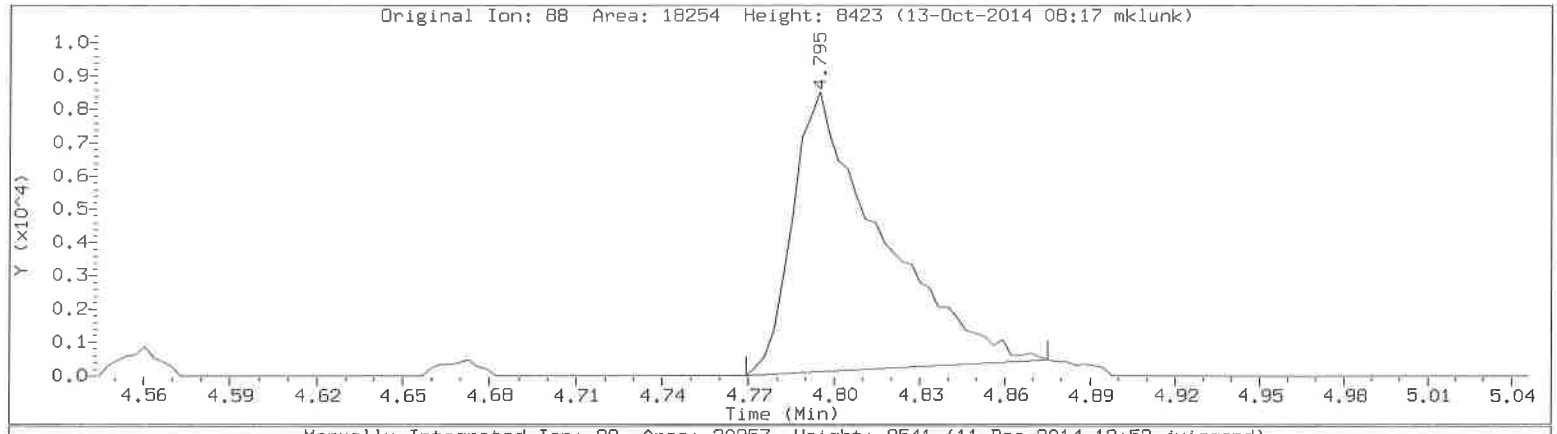
Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b/51010017.d (ManInt: al
Injection Date: 10-OCT-2014 12:59
Instrument: 30msv5.i
Lab Sample ID: VSTD[400]

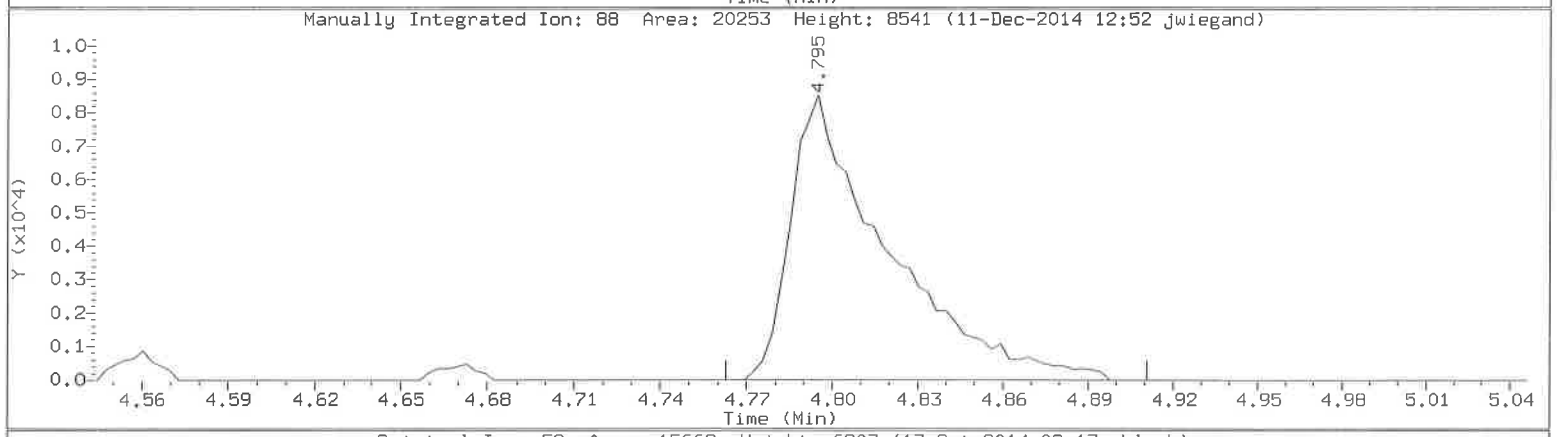
Compound: Acetone
CAS Number: 67-64-1

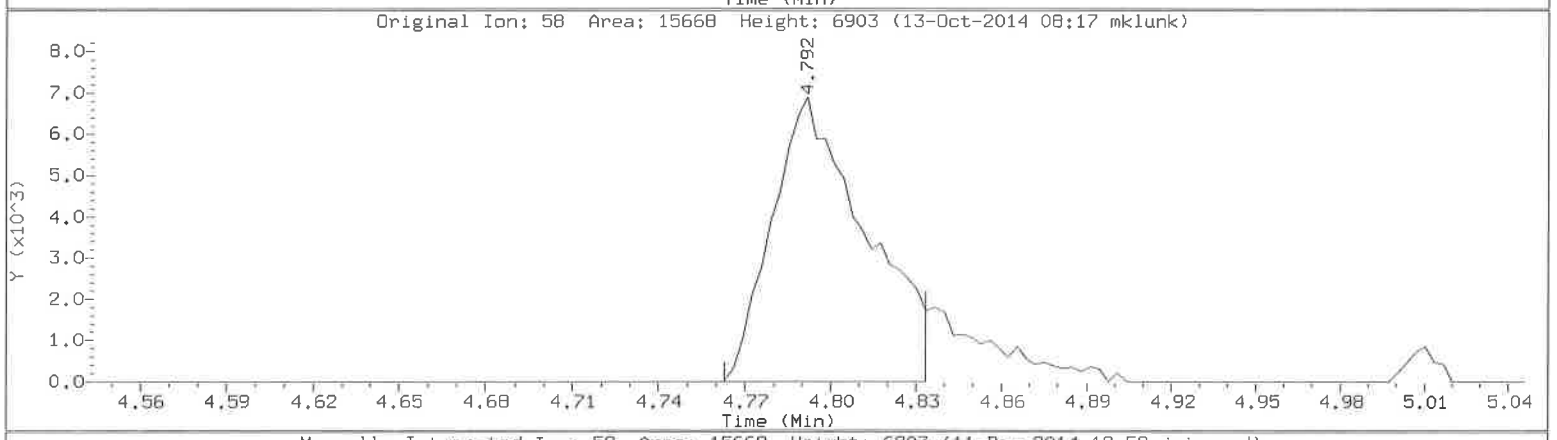


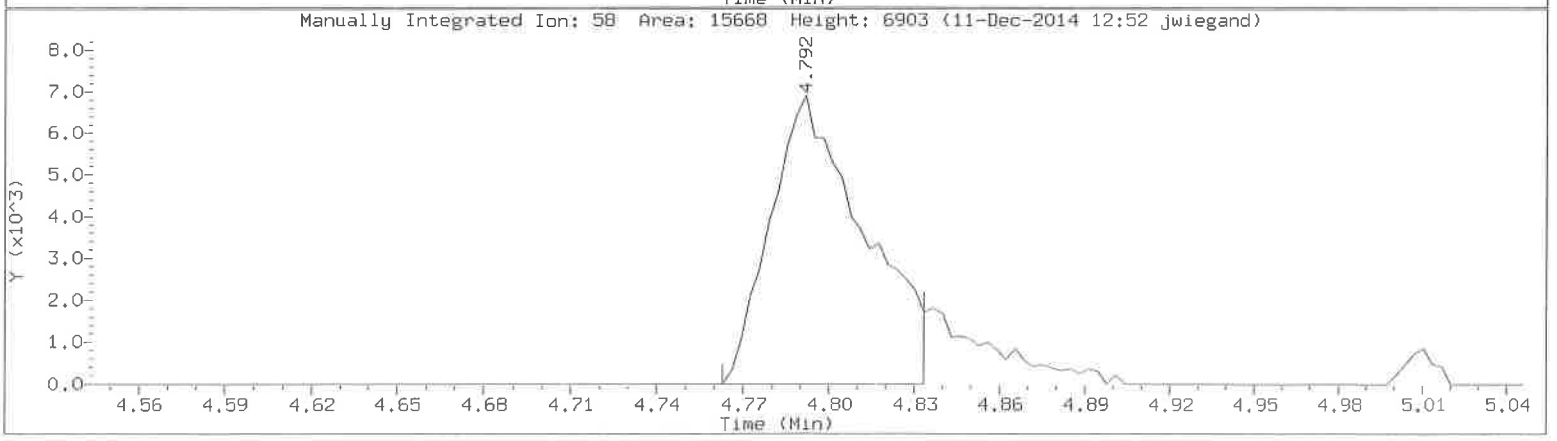
Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b/51010017.d (ManInt: al
Injection Date: 10-OCT-2014 12:59
Instrument: 30msv5.i
Lab Sample ID: VSTD[400]

Compound: 1,4-Dioxane
CAS Number: 123-91-1

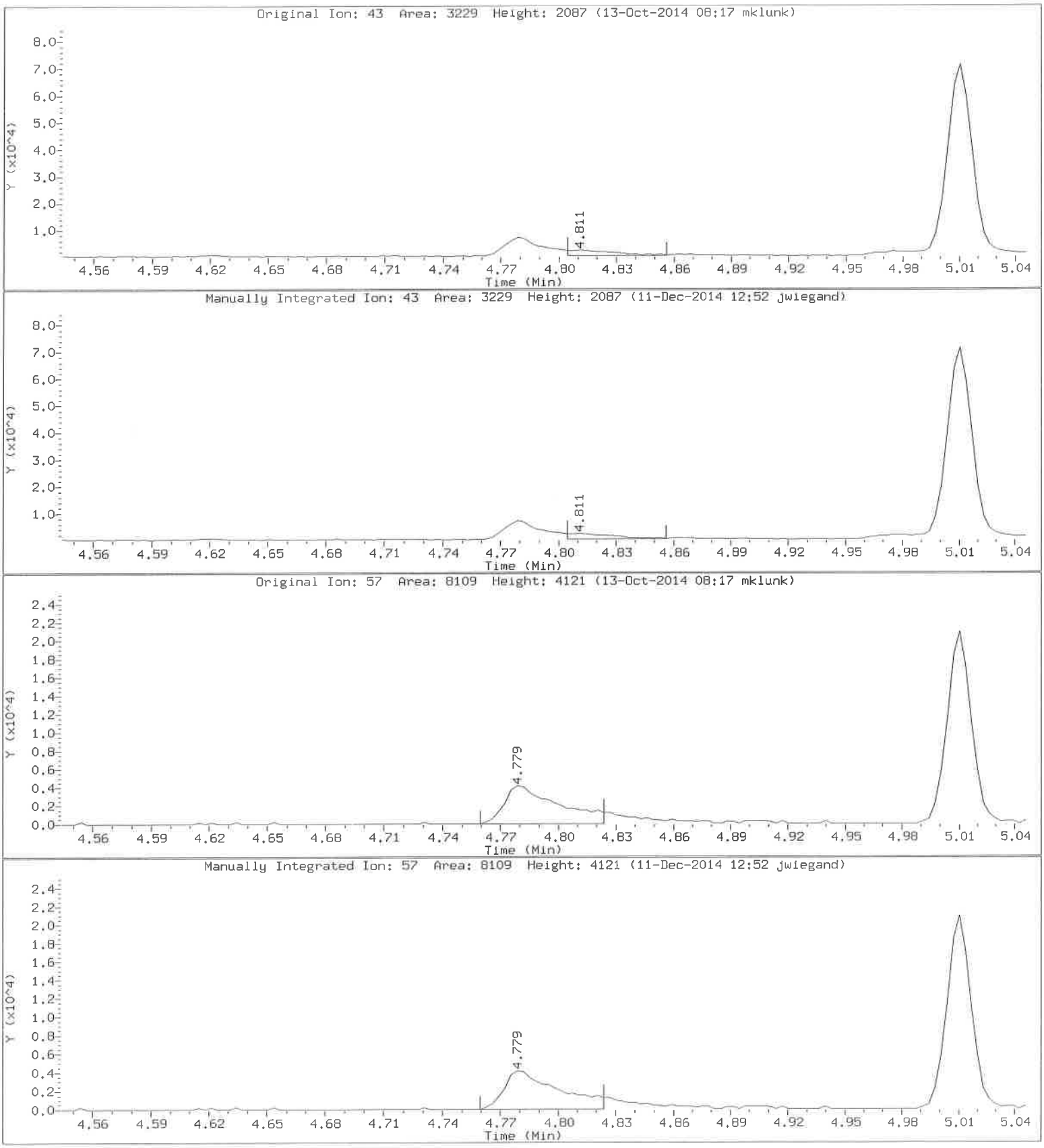








Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b/51010017.d (ManInt: al
Injection Date: 10-OCT-2014 12:59
Instrument: 30msv5.i
Lab Sample ID: VSTD[400]



FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date: 11/04/14 Time: 1033

Lab File ID: 51104004 Init. Calib. Date(s): 10/10/14 10/10/14

Heated Purge: (Y/N) Y Init. Calib. Times: 1045 1259

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	SAMPLE AMOUNT	CAL50 AMOUNT	CURVE	%D	MAX %d	
Bromochloromethane	48.3	50.0	AVRG	3.4	20.0	
Chloromethane	32.3	50.0	AVRG	35.4	20.0	<-
Bromomethane	46.6	50.0	AVRG	6.8	20.0	
Vinyl Chloride	49.0	50.0	AVRG	2.0	20.0	
Chloroethane	68.7	50.0	AVRG	37.4	20.0	<-
Methylene Chloride	53.9	50.0	LINR	7.8	20.0	
1,1-Dichloroethene	46.2	50.0	AVRG	7.6	20.0	
1,1-Dichloroethane	46.7	50.0	AVRG	6.6	20.0	
trans-1,2-Dichloroethene	44.9	50.0	AVRG	10.2	20.0	
Chloroform	47.7	50.0	AVRG	4.6	20.0	
1,2-Dichloroethane	46.9	50.0	AVRG	6.2	20.0	
1,1,1-Trichloroethane	50.8	50.0	AVRG	1.6	20.0	
Carbon Tetrachloride	46.1	50.0	AVRG	7.8	20.0	
Bromodichloromethane	45.5	50.0	AVRG	9.0	20.0	
1,2-Dichloropropane	44.3	50.0	AVRG	11.4	20.0	
trans-1,3-Dichloropropene	43.6	50.0	AVRG	12.8	20.0	
Trichloroethene	50.1	50.0	AVRG	0.2	20.0	
Dibromochloromethane	47.3	50.0	AVRG	5.4	20.0	
1,1,2-Trichloroethane	48.0	50.0	AVRG	4.0	20.0	
Benzene	46.0	50.0	AVRG	8.0	20.0	
cis-1,3-Dichloropropene	43.0	50.0	AVRG	14.0	20.0	
Bromoform	48.6	50.0	AVRG	2.8	20.0	
Tetrachloroethene	52.0	50.0	AVRG	4.0	20.0	
1,1,2,2-Tetrachloroethane	42.0	50.0	AVRG	16.0	20.0	
Toluene	48.1	50.0	AVRG	3.8	20.0	
Chlorobenzene	49.6	50.0	AVRG	0.8	20.0	
Ethylbenzene	48.0	50.0	AVRG	4.0	20.0	
Styrene	48.8	50.0	AVRG	2.4	20.0	
Trichlorofluoromethane	57.4	50.0	AVRG	14.8	20.0	
m,p-Xylene	98.6	100	AVRG	1.4	20.0	
cis-1,2-Dichloroethene	46.8	50.0	AVRG	6.4	20.0	
o-Xylene	47.8	50.0	AVRG	4.4	20.0	
1,2,3-Trichloropropane	45.6	50.0	AVRG	8.8	20.0	
1,3-Dichlorobenzene	44.6	50.0	AVRG	10.8	20.0	
1,4-Dichlorobenzene	45.2	50.0	AVRG	9.6	20.0	
Dibromomethane	51.5	50.0	AVRG	3.0	20.0	
1,2-Dichlorobenzene	44.6	50.0	AVRG	10.8	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date: 11/04/14 Time: 1033

Lab File ID: 51104004 Init. Calib. Date(s): 10/10/14 10/10/14

Heated Purge: (Y/N) Y Init. Calib. Times: 1045 1259

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	SAMPLE AMOUNT	CAL50 AMOUNT	CURVE	%D	MAX %d	
Dichlorodifluoromethane	55.2	50.0	AVRG	10.4	20.0	
2,2-Dichloropropane	32.4	50.0	AVRG	35.2	20.0	<-
1,1-Dichloropropene	48.8	50.0	AVRG	2.4	20.0	
1,3-Dichloropropane	47.3	50.0	AVRG	5.4	20.0	
1,2-Dibromoethane,EDB	49.2	50.0	AVRG	1.6	20.0	
1,1,1,2-Tetrachloroethane	50.4	50.0	AVRG	0.8	20.0	
Isopropylbenzene,Cumene	42.9	50.0	AVRG	14.2	20.0	
Bromobenzene	41.7	50.0	AVRG	16.6	20.0	
n-Propylbenzene	42.9	50.0	AVRG	14.2	20.0	
2-Chlorotoluene	44.9	50.0	AVRG	10.2	20.0	
4-Chlorotoluene	44.5	50.0	AVRG	11.0	20.0	
1,3,5-Trimethylbenzene	44.0	50.0	AVRG	12.0	20.0	
tert-Butyl benzene	44.7	50.0	AVRG	10.6	20.0	
1,2,4-Trimethylbenzene	43.7	50.0	AVRG	12.6	20.0	
sec-Butyl benzene	43.6	50.0	AVRG	12.8	20.0	
4-Isopropyl toluene	44.4	50.0	AVRG	11.2	20.0	
n-Butyl benzene	42.3	50.0	AVRG	15.4	20.0	
1,2-Dibromo-3-Chloropropane	41.3	50.0	AVRG	17.4	20.0	
1,2,4-Trichlorobenzene	45.6	50.0	AVRG	8.8	20.0	
Hexachlorobutadiene	45.7	50.0	AVRG	8.6	20.0	
Naphthalene	44.2	50.0	AVRG	11.6	20.0	
1,2,3-Trichlorobenzene	47.3	50.0	AVRG	5.4	20.0	
Acrolein	45.2	50.0	AVRG	9.6	20.0	
1,1,2-Trichlorotrifluoroetha	51.7	50.0	AVRG	3.4	20.0	
Carbon Disulfide	51.2	50.0	AVRG	2.4	20.0	
Acetone	49.1	50.0	2ORDR	1.8	20.0	
Acrylonitrile	46.5	50.0	AVRG	7.0	20.0	
tert-butyl Methylether,MtB	46.2	50.0	AVRG	7.6	20.0	
Vinyl Acetate	11.1	50.0	AVRG	77.8	20.0	<-
2-ChloroethylVinylEther	44.6	50.0	AVRG	10.8	20.0	
4-Methyl-2-Pentanone	45.9	50.0	AVRG	8.2	20.0	
2-Hexanone	45.0	50.0	AVRG	10.0	20.0	
2-Butanone	46.0	50.0	AVRG	8.0	20.0	
Iodomethane	41.2	50.0	2ORDR	17.6	20.0	
DiisopropylEther	43.5	50.0	AVRG	13.0	20.0	
Tetrahydrofuran	50.8	50.0	LINR	1.6	20.0	
trans 1,4-Dichloro-2-butene	33.2	50.0	AVRG	33.6	20.0	<-

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date: 11/04/14 Time: 1033

Lab File ID: 51104004 Init. Calib. Date(s): 10/10/14 10/10/14

Heated Purge: (Y/N) Y Init. Calib. Times: 1045 1259

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	SAMPLE AMOUNT	CAL50 AMOUNT	CURVE	%D	MAX %d	
Acetonitrile	225	250	AVRG	10.0	20.0	
Allyl chloride	212	250	AVRG	15.2	20.0	
Propionitrile	45.7	50.0	AVRG	8.6	20.0	
Methacrylonitrile	44.5	50.0	AVRG	11.0	20.0	
Isobutanol	209	250	AVRG	16.4	20.0	
Methyl methacrylate	44.0	50.0	AVRG	12.0	20.0	
1,4-Dioxane	437	500	LINR	12.6	20.0	
Ethyl methacrylate	42.5	50.0	AVRG	15.0	20.0	
Chloroprene	44.1	50.0	AVRG	11.8	20.0	
Methyl Acetate	64.1	50.0	AVRG	28.2	20.0	<-
Cyclohexane	45.1	50.0	AVRG	9.8	20.0	
Methylcyclohexane	46.9	50.0	AVRG	6.2	20.0	
tert-Butyl Alcohol	229	250	AVRG	8.4	20.0	
t-Butyl ethyl ether	44.4	50.0	AVRG	11.2	20.0	
t-Amyl methyl ether	44.7	50.0	AVRG	10.6	20.0	
Ethyl Ether	48.3	50.0	AVRG	3.4	20.0	
Hexane	40.3	50.0	AVRG	19.4	20.0	
Ethyl Acetate	45.4	50.0	AVRG	9.2	20.0	
2-Nitropropane	219	250	AVRG	12.4	20.0	
bis(2Chloro1methyl ethyl)eth	39.2	50.0	AVRG	21.6	20.0	<-
Cyclohexanone	0.000	250	AVRG	100.0	20.0	<-
2-methylnaphthalene	43.7	50.0	AVRG	12.6	20.0	
Ethanol	0.000	500	AVRG	100.0	20.0	<-
Toluene-d8	30.1	30.0	AVRG	0.3	20.0	
Bromofluorobenzene	29.6	30.0	AVRG	1.3	20.0	
1,2-Dichloroethane-d4	30.1	30.0	AVRG	0.3	20.0	
1,2-Dichlorobenzene-d4	0.000	30.0	AVRG	100.0	20.0	<-

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104004.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30msv5.i
Lab File ID: 51104004.d
Analysis Type: SOIL
Lab Sample ID: VSTD[50]
Method: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m

Injection Date: 04-NOV-2014 10:33
Init. Cal. Date(s): 10-OCT-2014 10-OCT-2014
Init. Cal. Times: 10:45 12:59
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.12068	0.13320	0.13320	0.010	10.37498	20.00000	Averaged	
2 Chloromethane	0.27810	0.17988	0.17988	0.100	-35.31751	20.00000	Averaged	<-
3 Vinyl Chloride	0.13166	0.12893	0.12893	0.010	-2.07460	20.00000	Averaged	
4 Bromomethane	0.03016	0.02808	0.02808	0.010	-6.89331	20.00000	Averaged	
5 Chloroethane	0.06157	0.08465	0.08465	0.010	37.49608	20.00000	Averaged	<-
6 Trichlorofluoromethane	0.29007	0.33274	0.33274	0.010	14.71207	20.00000	Averaged	
7 Ethyl Ether	0.17464	0.16856	0.16856	0.010	-3.47968	20.00000	Averaged	
8 1,1-Dichloroethene	0.32766	0.30267	0.30267	0.010	-7.62556	20.00000	Averaged	
159 Ethanol	0.00143	++++	++++	0.010	++++	20.00000	Averaged	<-
9 Carbon Disulfide	0.45405	0.46479	0.46479	0.010	2.36606	20.00000	Averaged	
10 1,1,2-Trichlorotrifluoroeth	0.14020	0.14508	0.14508	0.010	3.48547	20.00000	Averaged	
11 Iodomethane	50.00000	41.21176	14.66801	0.010	-17.57649	20.00000	Quadratic	
12 Acrolein	0.03205	0.02899	0.02899	0.010	-9.55677	20.00000	Averaged	
13 Allyl chloride	0.30091	0.25513	0.25513	0.010	-15.21131	20.00000	Averaged	
14 Methylene Chloride	50.00000	53.90986	3.67253	0.010	7.81972	20.00000	Linear	
15 Acetone	50.00000	49.10527	44.53252	0.010	-1.78946	20.00000	Quadratic	
16 trans-1,2-Dichloroethene	0.38796	0.34810	0.34810	0.010	-10.27593	20.00000	Averaged	
17 Methyl Acetate	0.05936	0.07614	0.07614	0.010	28.25205	20.00000	Averaged	<-
18 Hexane	0.05374	0.04332	0.04332	0.010	-19.38670	20.00000	Averaged	
19 tert-butyl Methylether,MtB	0.72096	0.66699	0.66699	0.010	-7.48658	20.00000	Averaged	
21 tert-Butyl Alcohol	0.02846	0.02609	0.02609	0.010	-8.33689	20.00000	Averaged	
20 Acetonitrile	0.01771	0.01592	0.01592	0.010	-10.11744	20.00000	Averaged	
22 DiisopropylEther	0.88154	0.76722	0.76722	0.010	-12.96831	20.00000	Averaged	
23 Chloroprene	0.41314	0.36453	0.36453	0.010	-11.76480	20.00000	Averaged	
25 Acrylonitrile	0.09076	0.08443	0.08443	0.010	-6.97836	20.00000	Averaged	
24 1,1-Dichloroethane	0.52014	0.48556	0.48556	0.100	-6.64821	20.00000	Averaged	
27 t-Butyl ethyl ether	0.89724	0.79745	0.79745	0.010	-11.12183	20.00000	Averaged	
26 Vinyl Acetate	0.34094	0.07568	0.07568	0.010	-77.80235	20.00000	Averaged	<-
28 cis-1,2-Dichloroethene	0.42897	0.40162	0.40162	0.010	-6.37732	20.00000	Averaged	
29 2,2-Dichloropropane	0.41109	0.26664	0.26664	0.010	-35.13789	20.00000	Averaged	<-
30 Cyclohexane	0.40356	0.36417	0.36417	0.010	-9.76132	20.00000	Averaged	
31 Bromochloromethane	0.16823	0.16253	0.16253	0.010	-3.39004	20.00000	Averaged	
32 Chloroform	0.52682	0.50270	0.50270	0.010	-4.57770	20.00000	Averaged	
33 Carbon Tetrachloride	0.39719	0.36590	0.36590	0.010	-7.87906	20.00000	Averaged	
36 Ethyl Acetate	0.21029	0.19081	0.19081	0.010	-9.26498	20.00000	Averaged	
35 Tetrahydrofuran	50.00000	50.81757	12.09343	0.010	1.63513	20.00000	Linear	
34 1,1,1-Trichloroethane	0.43593	0.44341	0.44341	0.010	1.71678	20.00000	Averaged	
37 1,1-Dichloropropene	0.37081	0.36224	0.36224	0.010	-2.31060	20.00000	Averaged	
38 2-Butanone	0.11019	0.10133	0.10133	0.010	-8.04195	20.00000	Averaged	
39 Benzene	2.43838	2.24349	2.24349	0.010	-7.99257	20.00000	Averaged	
40 Propionitrile	0.03164	0.02890	0.02890	0.010	-8.66797	20.00000	Averaged	

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104004.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30msv5.i
Lab File ID: 51104004.d
Analysis Type: SOIL
Lab Sample ID: VSTD[50]
Method: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m

Injection Date: 04-NOV-2014 10:33
Init. Cal. Date(s): 10-OCT-2014 10-OCT-2014
Init. Cal. Times: 10:45 12:59
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
41 Methacrylonitrile	0.16418	0.14622	0.14622	0.010	-10.93638	20.00000	Averaged
$ 42 1,2-Dichloroethane-d4	0.35019	0.35153	0.35153	0.010	0.38200	20.00000	Averaged
43 t-Amyl methyl ether	1.75593	1.56879	1.56879	0.010	-10.65734	20.00000	Averaged
46 Isobutanol	0.05456	0.04565	0.04565	0.010	-16.32237	20.00000	Averaged
44 1,2-Dichloroethane	0.43828	0.41134	0.41134	0.010	-6.14561	20.00000	Averaged
47 Methylcyclohexane	0.84991	0.79703	0.79703	0.010	-6.22142	20.00000	Averaged
48 Trichloroethene	0.60402	0.60534	0.60534	0.010	0.21978	20.00000	Averaged
49 Dibromomethane	0.41713	0.42986	0.42986	0.010	3.05247	20.00000	Averaged
50 1,2-Dichloropropane	0.71304	0.63215	0.63215	0.010	-11.34500	20.00000	Averaged
51 Bromodichloromethane	0.96749	0.88064	0.88064	0.010	-8.97750	20.00000	Averaged
52 Methyl methacrylate	0.44583	0.39266	0.39266	0.010	-11.92510	20.00000	Averaged
53 1,4-Dioxane	500	437	223	0.010	-12.56948	20.00000	Linear
55 2-ChloroethylVinylEther	0.20877	0.18604	0.18604	0.010	-10.88973	20.00000	Averaged
54 cis-1,3-Dichloropropene	1.02963	0.88659	0.88659	0.010	-13.89216	20.00000	Averaged
$ 56 Toluene-d8	2.29130	2.29681	2.29681	0.010	0.24027	20.00000	Averaged
57 Toluene	2.49173	2.39534	2.39534	0.010	-3.86829	20.00000	Averaged
58 2-Nitropropane	0.21641	0.18995	0.18995	0.010	-12.22367	20.00000	Averaged
59 Tetrachloroethene	0.63780	0.66339	0.66339	0.010	4.01160	20.00000	Averaged
60 4-Methyl-2-Pentanone	0.60992	0.56022	0.56022	0.010	-8.14788	20.00000	Averaged
61 trans-1,3-Dichloropropene	1.02037	0.88907	0.88907	0.010	-12.86791	20.00000	Averaged
63 Ethyl methacrylate	0.60465	0.51441	0.51441	0.010	-14.92425	20.00000	Averaged
62 1,1,2-Trichloroethane	0.53174	0.51083	0.51083	0.010	-3.93119	20.00000	Averaged
64 Dibromochloromethane	0.66051	0.62463	0.62463	0.010	-5.43204	20.00000	Averaged
65 1,3-Dichloropropane	0.93951	0.88963	0.88963	0.010	-5.30901	20.00000	Averaged
66 1,2-Dibromoethane,EDB	0.55111	0.54294	0.54294	0.010	-1.48377	20.00000	Averaged
70 2-Hexanone	0.48617	0.43730	0.43730	0.010	-10.05125	20.00000	Averaged
68 Chlorobenzene	1.59823	1.58675	1.58675	0.300	-0.71860	20.00000	Averaged
69 Ethylbenzene	0.85047	0.81578	0.81578	0.010	-4.07890	20.00000	Averaged
71 1,1,1,2-Tetrachloroethane	0.55406	0.55845	0.55845	0.010	0.79369	20.00000	Averaged
72 m,p-Xylene	1.00939	0.99492	0.99492	0.010	-1.43332	20.00000	Averaged
73 o-Xylene	0.97383	0.93135	0.93135	0.010	-4.36186	20.00000	Averaged
74 Styrene	1.55869	1.52188	1.52188	0.010	-2.36206	20.00000	Averaged
75 Bromoform	0.41662	0.40465	0.40465	0.100	-2.87336	20.00000	Averaged
76 Isopropylbenzene,Cumene	2.87173	2.46314	2.46314	0.010	-14.22799	20.00000	Averaged
$ 77 Bromofluorobenzene	0.82325	0.81295	0.81295	0.010	-1.25184	20.00000	Averaged
79 n-Propylbenzene	3.64766	3.13199	3.13199	0.010	-14.13700	20.00000	Averaged
78 Bromobenzene	1.48843	1.24025	1.24025	0.010	-16.67390	20.00000	Averaged
80 1,1,2,2-Tetrachloroethane	0.79916	0.67208	0.67208	0.300	-15.90209	20.00000	Averaged
81 2-Chlorotoluene	0.69489	0.62359	0.62359	0.010	-10.26099	20.00000	Averaged
82 1,3,5-Trimethylbenzene	1.13913	1.00281	1.00281	0.010	-11.96680	20.00000	Averaged
83 1,2,3-Trichloropropane	0.24064	0.21938	0.21938	0.010	-8.83604	20.00000	Averaged
84 trans 1,4-Dichloro-2-butene	0.28565	0.18989	0.18989	0.010	-33.52389	20.00000	Averaged <-

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104004.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30msv5.i
Lab File ID: 51104004.d
Analysis Type: SOIL
Lab Sample ID: VSTD[50]
Method: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m

Injection Date: 04-NOV-2014 10:33
Init. Cal. Date(s): 10-OCT-2014 10-OCT-2014
Init. Cal. Times: 10:45 12:59
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
85 Cyclohexanone	0.05215	++++	++++	0.010	++++	20.00000	Averaged	<-
86 4-Chlorotoluene	0.72667	0.64683	0.64683	0.010	-10.98677	20.00000	Averaged	
87 tert-Butyl benzene	1.95945	1.75170	1.75170	0.010	-10.60235	20.00000	Averaged	
88 1,2,4-Trimethylbenzene	1.07403	0.93932	0.93932	0.010	-12.54225	20.00000	Averaged	
89 sec-Butyl benzene	2.87545	2.51018	2.51018	0.010	-12.70304	20.00000	Averaged	
90 4-Isopropyl toluene	2.45187	2.17670	2.17670	0.010	-11.22319	20.00000	Averaged	
91 1,3-Dichlorobenzene	1.35706	1.21164	1.21164	0.010	-10.71637	20.00000	Averaged	
93 1,4-Dichlorobenzene	1.35429	1.22493	1.22493	0.010	-9.55191	20.00000	Averaged	
94 n-Butyl benzene	2.30563	1.95053	1.95053	0.010	-15.40138	20.00000	Averaged	
$ 158 1,2-Dichlorobenzene-d4	++++	++++	++++	0.010	++++	20.00000	Averaged	<-
95 1,2-Dichlorobenzene	1.25225	1.11600	1.11600	0.010	-10.88007	20.00000	Averaged	
96 bis(2Chloro1methyl ethyl)et	0.35663	0.27998	0.27998	0.010	-21.49264	20.00000	Averaged	<-
97 1,2-Dibromo-3-Chloropropane	0.13769	0.11374	0.11374	0.010	-17.39054	20.00000	Averaged	
98 Hexachlorobutadiene	0.43418	0.39650	0.39650	0.010	-8.67887	20.00000	Averaged	
99 1,2,4-Trichlorobenzene	0.75944	0.69295	0.69295	0.010	-8.75524	20.00000	Averaged	
100 Naphthalene	1.67414	1.48020	1.48020	0.010	-11.58438	20.00000	Averaged	
101 1,2,3-Trichlorobenzene	0.65499	0.61922	0.61922	0.010	-5.46059	20.00000	Averaged	
157 2-methylnaphthalene	0.82678	0.72276	0.72276	0.010	-12.58158	20.00000	Averaged	

Average %D / Drift Results.

Calculated Average %D/Drift = 10.54748
Maximun Average %D/Drift = 20.00000
* Passed Average %D/Drift Test.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104004.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104004.d
Lab Smp Id: VSTD[50] Client Smp ID: VSTD[50]
Inj Date : 04-NOV-2014 10:33
Operator : JEW Inst ID: 30msv5.i
Smp Info : VSTD[50],,5
Misc Info : V10-56-15
Comment :
Method : \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 13:07 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
1 Dichlorodifluoromethane	85	0.897	0.897	(0.216)	21402	50.0000	55.2(Q)	
2 Chloromethane	50	0.991	0.991	(0.238)	28902	50.0000	32.3(M)	LT
3 Vinyl Chloride	62	1.032	1.032	(0.248)	20715	50.0000	49.0	
4 Bromomethane	94	1.193	1.193	(0.287)	4512	50.0000	46.6	
5 Chloroethane	64	1.254	1.254	(0.302)	13601	50.0000	68.7	
6 Trichlorofluoromethane	101	1.325	1.325	(0.319)	53463	50.0000	57.4	
7 Ethyl Ether	59	1.479	1.479	(0.356)	27083	50.0000	48.3	
8 1,1-Dichloroethene	61	1.592	1.592	(0.383)	48631	50.0000	46.2	
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	1.614	1.614	(0.388)	74680	50.0000	51.2	
10 1,1,2-Trichlorotrifluoroethan	151	1.611	1.611	(0.387)	23311	50.0000	51.7	
11 Iodomethane	142	1.675	1.675	(0.403)	10954	50.0000	41.2	
12 Acrolein	56	1.785	1.785	(0.429)	4658	50.0000	45.2(M)	NI
13 Allyl chloride	41	1.865	1.865	(0.448)	204966	250.000	212	
14 Methylene Chloride	49	1.933	1.933	(0.465)	43750	50.0000	53.9	
15 Acetone	58	1.968	1.968	(0.473)	3608	50.0000	49.1(M)	LT
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	55930	50.0000	44.9	
17 Methyl Acetate	74	2.042	2.042	(0.491)	12233	50.0000	64.1	
18 Hexane	86	2.084	2.084	(0.501)	6960	50.0000	40.3	
19 tert-butyl Methylether,MtB	73	2.103	2.103	(0.505)	107167	50.0000	46.2	

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104004.d
Report Date: 11-Dec-2014 13:07

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
21 tert-Butyl Alcohol	59	2.174	2.174	(0.523)	20959	250.000	229(M)	LT
20 Acetonitrile	41	2.286	2.286	(0.550)	12789	250.000	225(M)	LT
22 DiisopropylEther	45	2.380	2.380	(0.572)	123272	50.0000	43.5	
23 Chloroprene	53	2.463	2.463	(0.592)	58571	50.0000	44.1	
25 Acrylonitrile	53	2.524	2.524	(0.607)	13565	50.0000	46.5	
24 1,1-Dichloroethane	63	2.479	2.479	(0.596)	78017	50.0000	46.7	
27 t-Butyl ethyl ether	59	2.682	2.682	(0.645)	128129	50.0000	44.4	
26 Vinyl Acetate	43	2.682	2.682	(0.645)	12160	50.0000	11.1(M)	NI
28 cis-1,2-Dichloroethene	61	2.952	2.952	(0.709)	64529	50.0000	46.8	
29 2,2-Dichloropropane	77	3.055	3.055	(0.734)	42842	50.0000	32.4	
30 Cyclohexane	56	3.142	3.142	(0.755)	58512	50.0000	45.1	
31 Bromochloromethane	130	3.145	3.145	(0.756)	26114	50.0000	48.3	
32 Chloroform	83	3.235	3.235	(0.777)	80771	50.0000	47.7	
33 Carbon Tetrachloride	117	3.367	3.367	(0.809)	58790	50.0000	46.1	
36 Ethyl Acetate	43	3.386	3.386	(0.814)	30658	50.0000	45.4	
35 Tetrahydrofuran	42	3.392	3.392	(0.815)	13286	50.0000	50.8	
34 1,1,1-Trichloroethane	97	3.447	3.447	(0.828)	71244	50.0000	50.8	
37 1,1-Dichloropropene	75	3.589	3.589	(0.862)	58203	50.0000	48.8	
38 2-Butanone	43	3.585	3.585	(0.862)	16281	50.0000	46.0	
39 Benzene	78	3.823	3.823	(0.650)	153683	50.0000	46.0	
40 Propionitrile	54	3.859	3.859	(0.927)	4643	50.0000	45.7	
41 Methacrylonitrile	41	3.875	3.875	(0.931)	23494	50.0000	44.5	
$ 42 1,2-Dichloroethane-d4	65	3.939	3.939	(0.947)	33889	30.0000	30.1	
43 t-Amyl methyl ether	73	3.939	3.939	(0.670)	107465	50.0000	44.7	
46 Isobutanol	43	3.939	3.939	(0.947)	36676	250.000	209	
44 1,2-Dichloroethane	62	3.994	3.994	(0.960)	66092	50.0000	46.9	
* 45 Fluorobenzene	96	4.161	4.161	(1.000)	96404	30.0000		
47 Methylcyclohexane	83	4.267	4.267	(0.726)	54598	50.0000	46.9	
48 Trichloroethene	132	4.283	4.283	(0.729)	41467	50.0000	50.1	
49 Dibromomethane	174	4.556	4.556	(0.775)	29446	50.0000	51.5	
50 1,2-Dichloropropane	63	4.621	4.621	(0.786)	43303	50.0000	44.3	
51 Bromodichloromethane	83	4.669	4.669	(0.794)	60325	50.0000	45.5	
52 Methyl methacrylate	69	4.775	4.775	(0.812)	26898	50.0000	44.0	
53 1,4-Dioxane	88	4.794	4.794	(0.698)	2826	500.000	437(M)	LT
55 2-ChloroethylVinylEther	63	5.010	5.010	(0.852)	12744	50.0000	44.6	
54 cis-1,3-Dichloropropene	75	5.032	5.032	(0.856)	60733	50.0000	43.0	
$ 56 Toluene-d8	98	5.129	5.129	(0.873)	94401	30.0000	30.1	
57 Toluene	91	5.154	5.154	(0.877)	164085	50.0000	48.1	
58 2-Nitropropane	43	5.277	5.277	(0.898)	65061	250.000	219	
59 Tetrachloroethene	166	5.351	5.351	(0.910)	45443	50.0000	52.0	
60 4-Methyl-2-Pentanone	43	5.357	5.357	(0.911)	38376	50.0000	45.9	
61 trans-1,3-Dichloropropene	75	5.373	5.373	(0.914)	60903	50.0000	43.6	
63 Ethyl methacrylate	41	5.457	5.457	(0.928)	35238	50.0000	42.5	
62 1,1,2-Trichloroethane	97	5.453	5.453	(0.928)	34993	50.0000	48.0	
64 Dibromochloromethane	129	5.534	5.534	(0.941)	42788	50.0000	47.3	
65 1,3-Dichloropropane	76	5.579	5.579	(0.949)	60941	50.0000	47.3	
66 1,2-Dibromoethane,EDB	107	5.643	5.643	(0.960)	37192	50.0000	49.2	
70 2-Hexanone	43	5.752	5.752	(0.979)	29956	50.0000	45.0	
* 67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	41101	30.0000		
68 Chlorobenzene	112	5.884	5.884	(1.001)	108695	50.0000	49.6	
69 Ethylbenzene	106	5.897	5.897	(1.003)	55882	50.0000	48.0	
71 1,1,1,2-Tetrachloroethane	131	5.916	5.916	(1.007)	38255	50.0000	50.4	
72 m,p-Xylene	106	5.961	5.961	(1.014)	136308	100.000	98.6	
73 o-Xylene	106	6.151	6.151	(1.046)	63799	50.0000	47.8	

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104004.d
Report Date: 11-Dec-2014 13:07

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
74 Styrene	104	6.174	6.174	(1.050)	104251	50.0000	48.8	
75 Bromoform	173	6.187	6.187	(1.053)	27719	50.0000	48.6	
76 Isopropylbenzene,Cumene	105	6.283	6.283	(0.914)	154944	50.0000	42.9	
$ 77 Bromofluorobenzene	174	6.405	6.405	(0.932)	30683	30.0000	29.6	
79 n-Propylbenzene	91	6.457	6.457	(0.940)	197018	50.0000	42.9	
78 Bromobenzene	77	6.450	6.450	(0.939)	78018	50.0000	41.7	
80 1,1,2,2-Tetrachloroethane	83	6.489	6.489	(0.944)	42277	50.0000	42.0	
81 2-Chlorotoluene	126	6.527	6.527	(0.950)	39227	50.0000	44.9	
82 1,3,5-Trimethylbenzene	120	6.537	6.537	(0.951)	63082	50.0000	44.0	
83 1,2,3-Trichloropropane	110	6.550	6.550	(0.953)	13800	50.0000	45.6	
84 trans 1,4-Dichloro-2-butene	53	6.563	6.563	(0.955)	11945	50.0000	33.2	
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	6.595	6.595	(0.960)	40689	50.0000	44.5	
87 tert-Butyl benzene	119	6.672	6.672	(0.971)	110191	50.0000	44.7	
88 1,2,4-Trimethylbenzene	120	6.701	6.701	(0.975)	59088	50.0000	43.7	
89 sec-Butyl benzene	105	6.746	6.746	(0.982)	157903	50.0000	43.6	
90 4-Isopropyl toluene	119	6.801	6.801	(0.990)	136925	50.0000	44.4	
91 1,3-Dichlorobenzene	146	6.842	6.842	(0.996)	76218	50.0000	44.6	
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.871	(1.000)	37743	30.0000		
93 1,4-Dichlorobenzene	146	6.878	6.878	(1.001)	77054	50.0000	45.2	
94 n-Butyl benzene	91	6.974	6.974	(1.015)	122698	50.0000	42.3	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	7.051	7.051	(1.026)	70202	50.0000	44.6	
96 bis(2Chloro1methyl ethyl)eth	45	7.196	7.196	(1.047)	17612	50.0000	39.2	
97 1,2-Dibromo-3-Chloropropane	75	7.379	7.379	(1.074)	7155	50.0000	41.3	
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	24942	50.0000	45.7	
99 1,2,4-Trichlorobenzene	180	7.656	7.656	(1.114)	43590	50.0000	45.6	
100 Naphthalene	128	7.791	7.791	(1.134)	93112	50.0000	44.2	
101 1,2,3-Trichlorobenzene	180	7.871	7.871	(1.146)	38952	50.0000	47.3	
157 2-methylnaphthalene	142	8.241	8.241	(1.199)	45465	50.0000	43.7	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104004.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51104004.d
Lab Smp Id: VSTD[50]
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: V10-56-15

Calibration Date: 03-NOV-2014
Calibration Time: 08:59
Client Smp ID: VSTD[50]
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

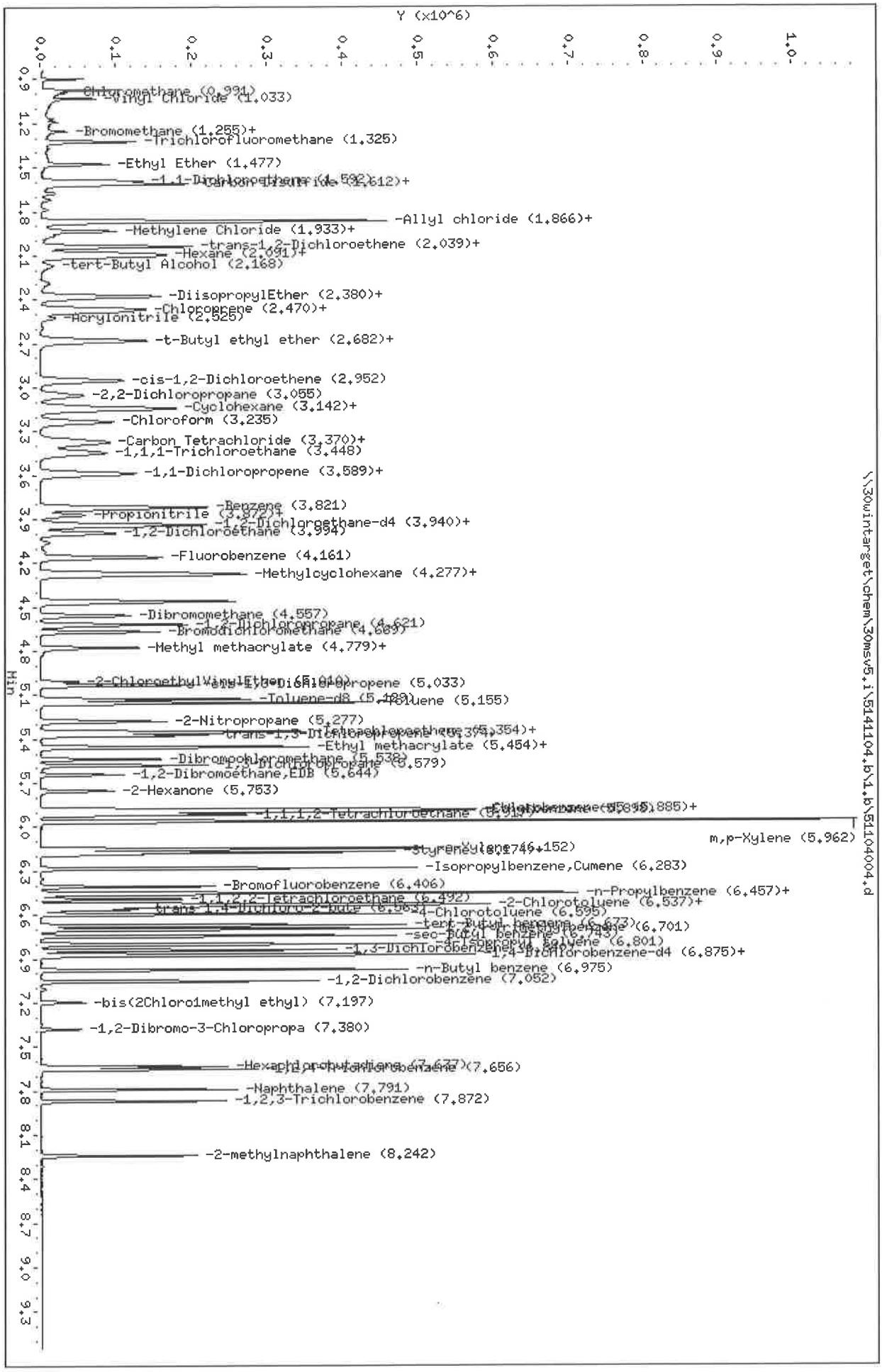
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	89562	44781	179124	96404	7.64
67 Chlorobenzene-d5	40145	20073	80290	41101	2.38
92 1,4-Dichlorobenze	34129	17065	68258	37743	10.59

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	-0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	-0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

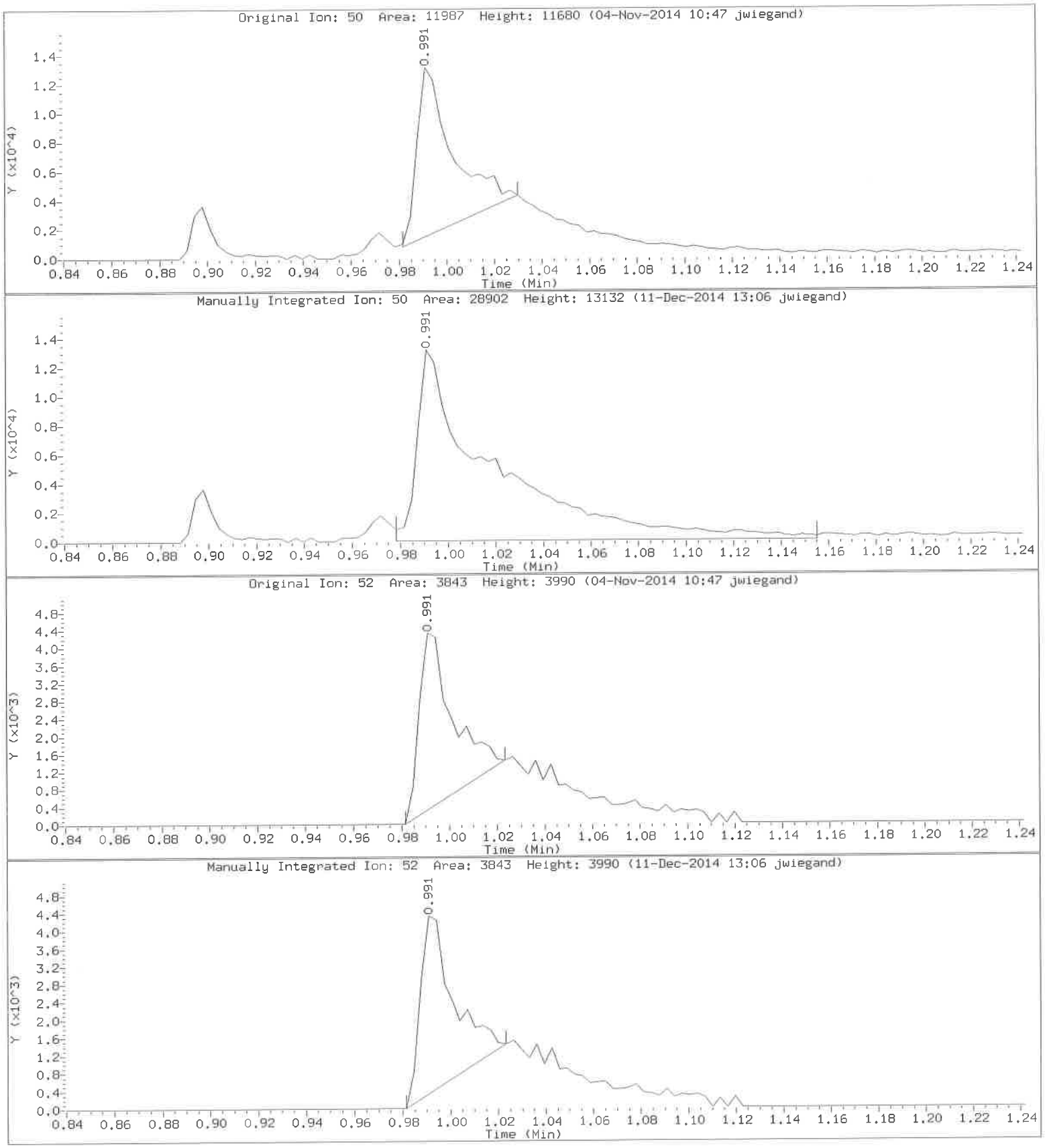
Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104004.d
Date : 04-NOV-2014 10:33
Client ID: VSTD[50]
Sample Info: VSTD[50],5
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b/51104004.d (ManInt: al
Injection Date: 04-NOV-2014 10:33
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Chloromethane
CAS Number: 74-87-3



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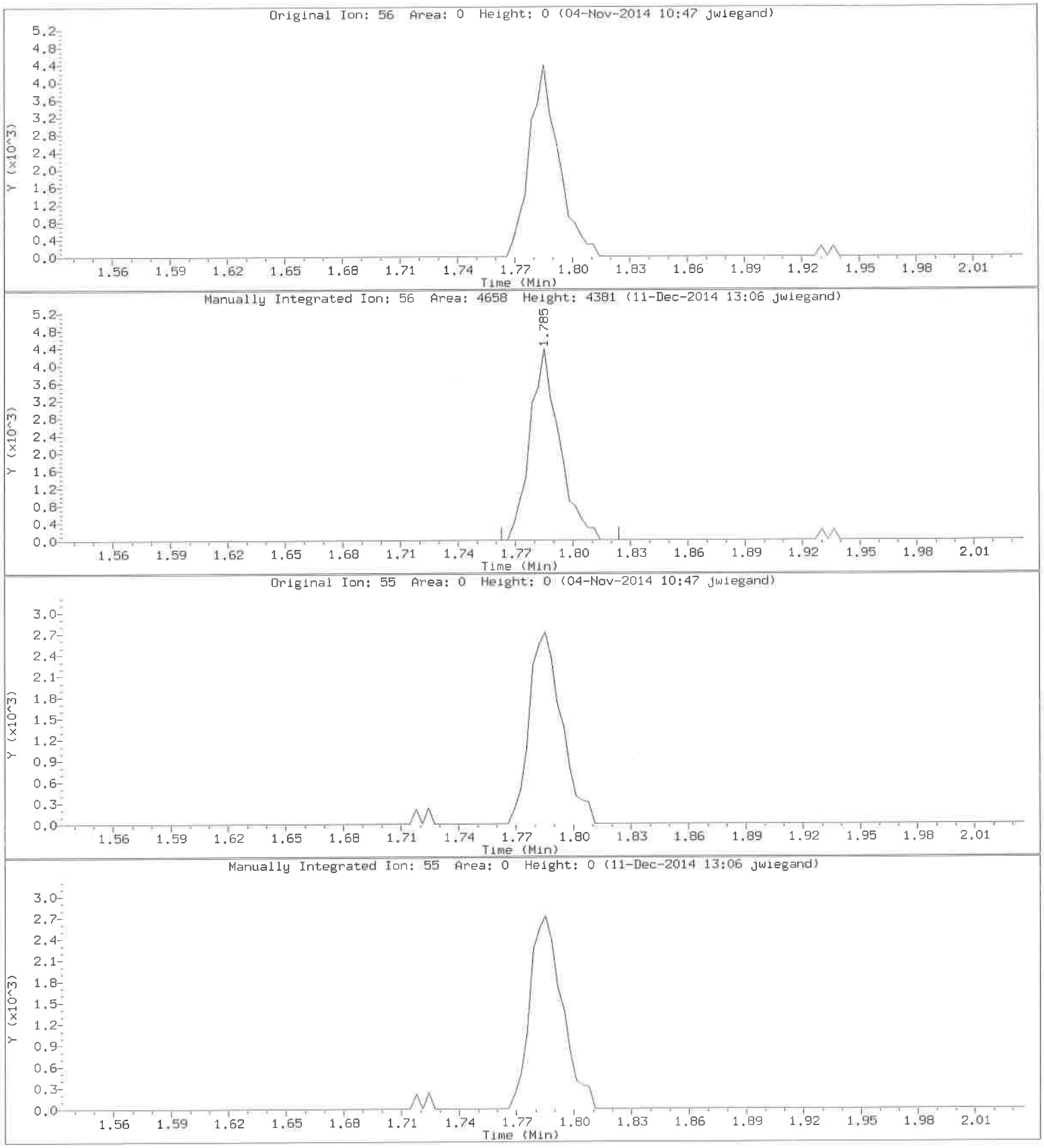
Injection Date: 04-NOV-2014 10:33
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Acrolein
CAS Number: 107-02-8



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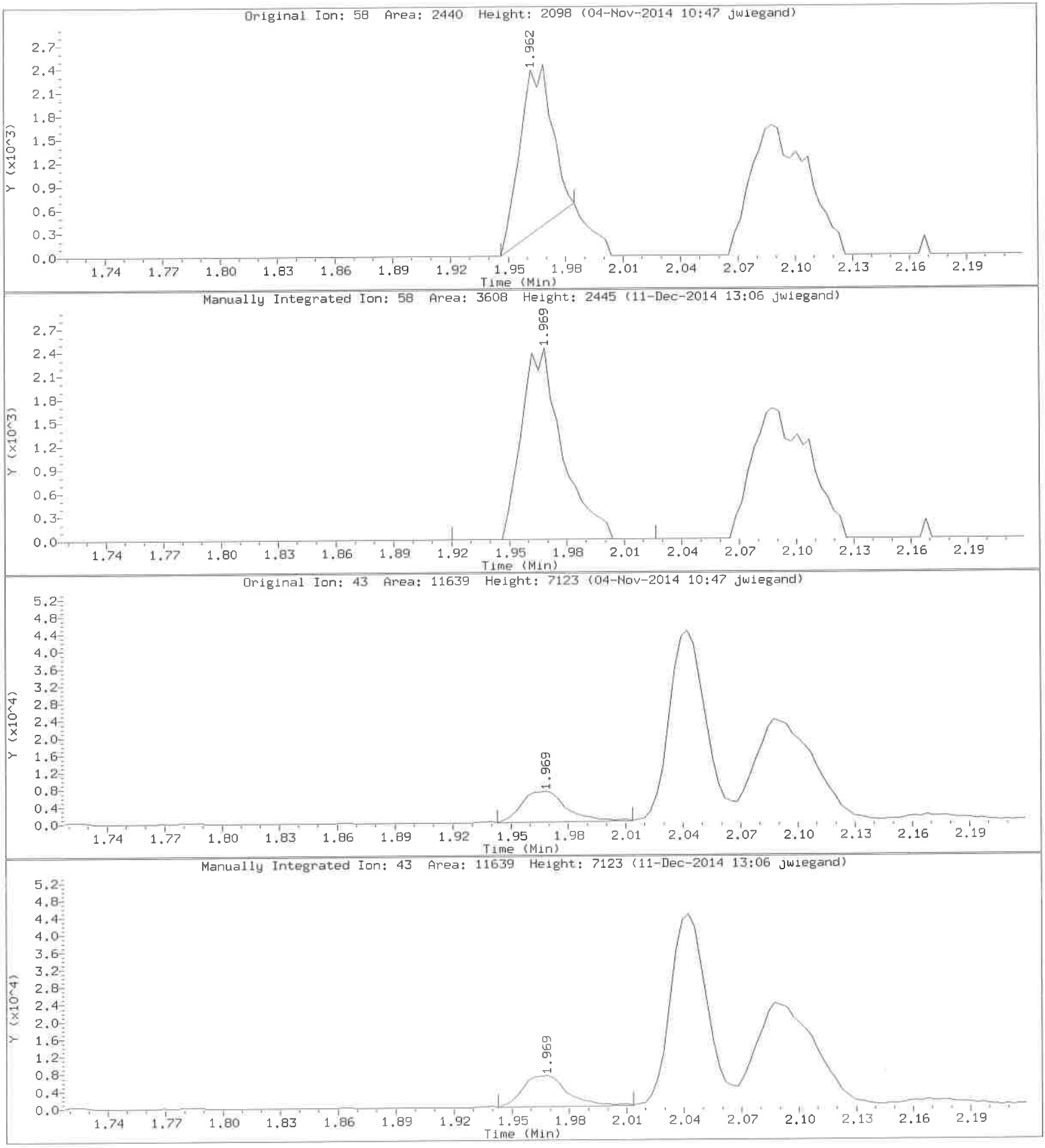
Injection Date: 04-NOV-2014 10:33
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Acetone
CAS Number: 67-64-1



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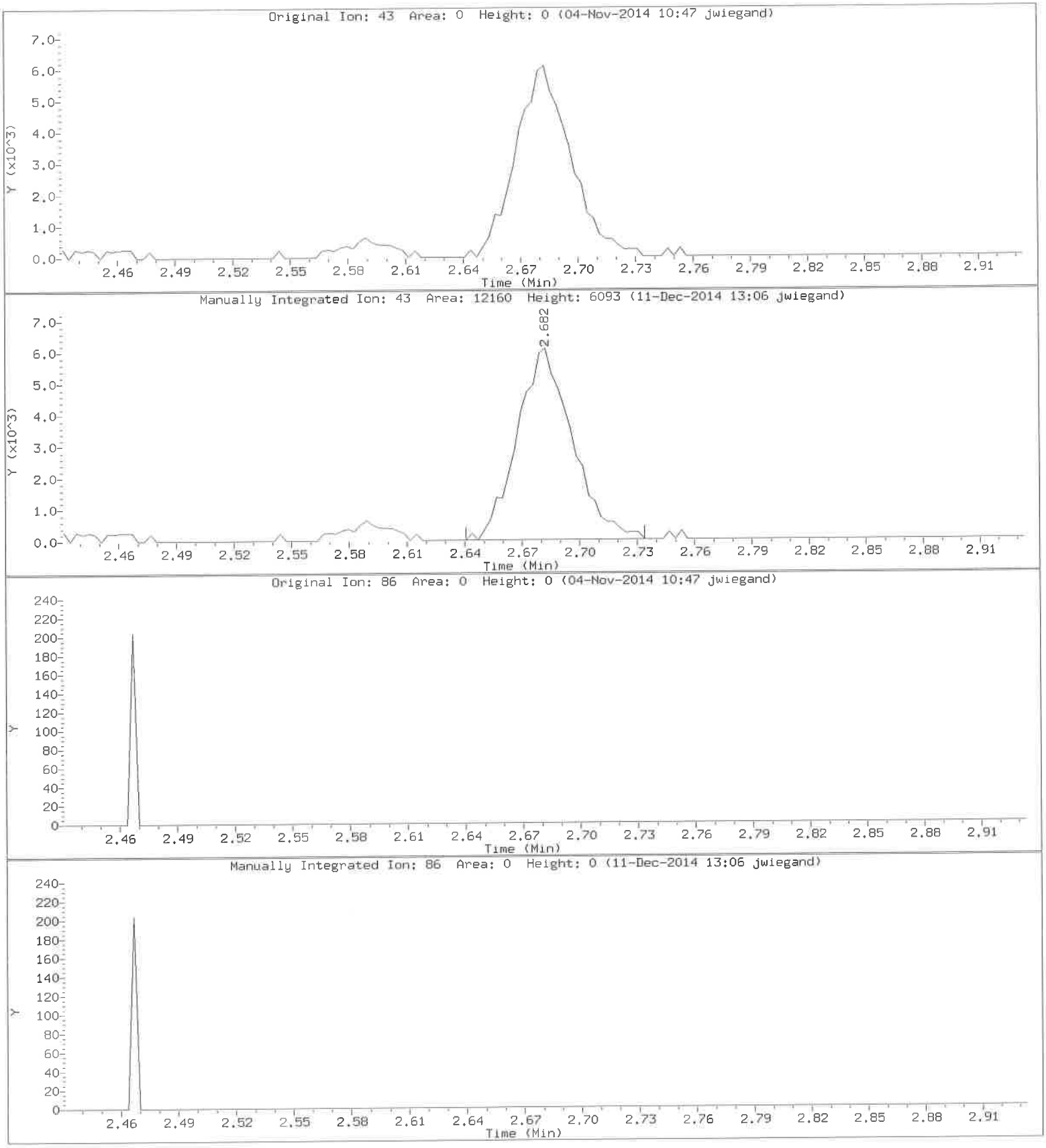
Injection Date: 04-NOV-2014 10:33
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Vinyl Acetate
CAS Number: 108-05-4



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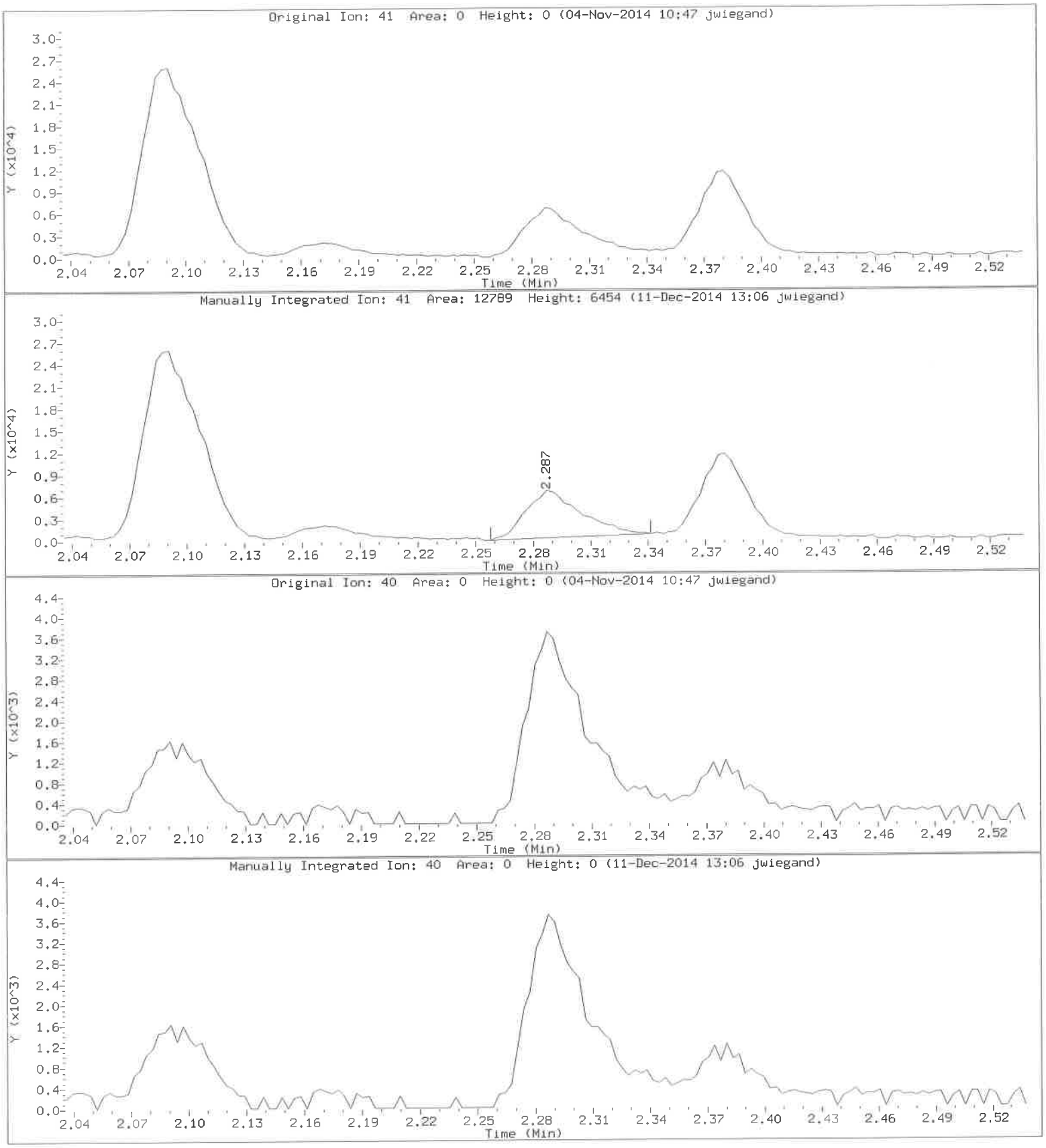
Injection Date: 04-NOV-2014 10:33
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Acetonitrile
CAS Number: 75-05-8



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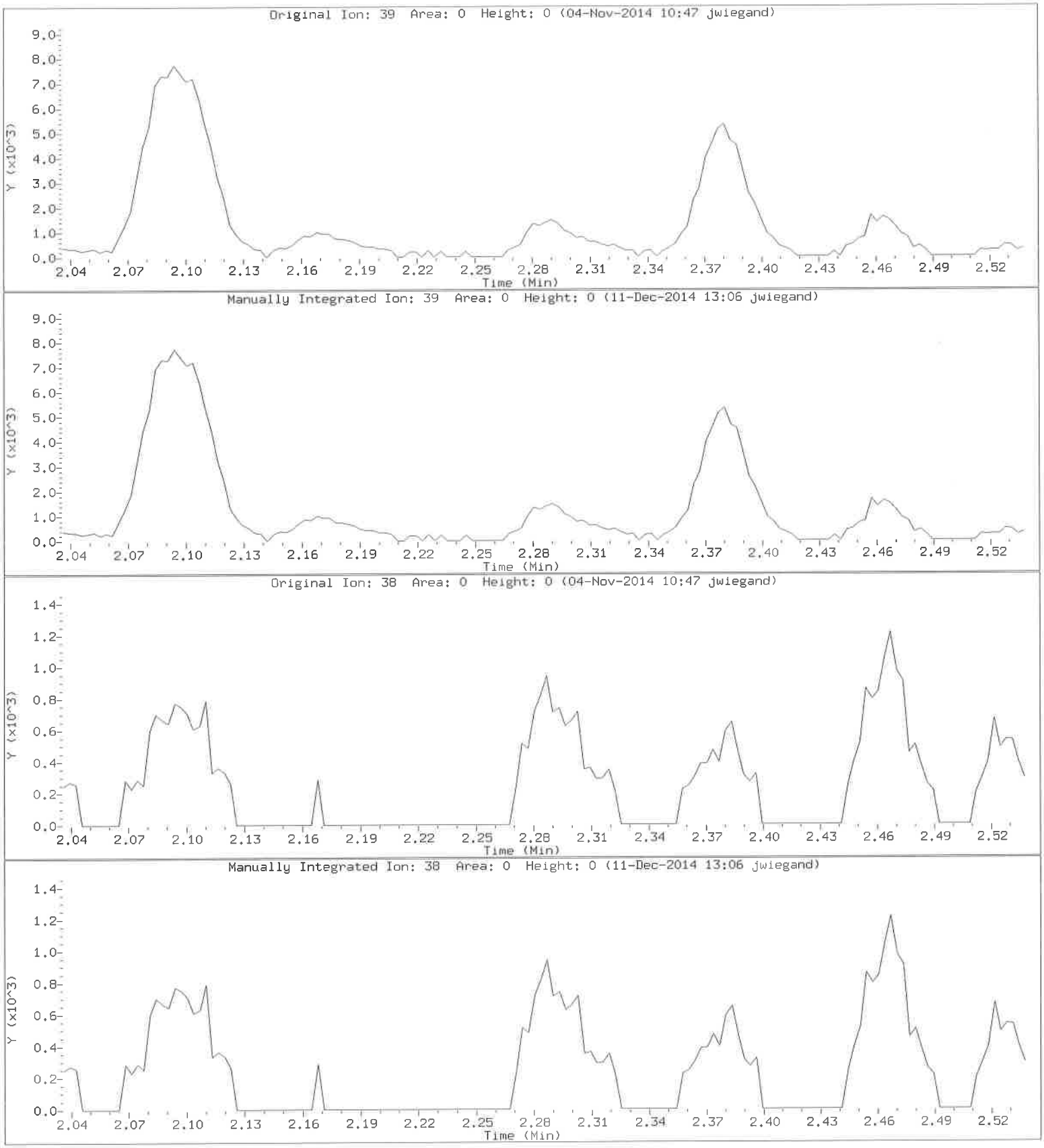
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]



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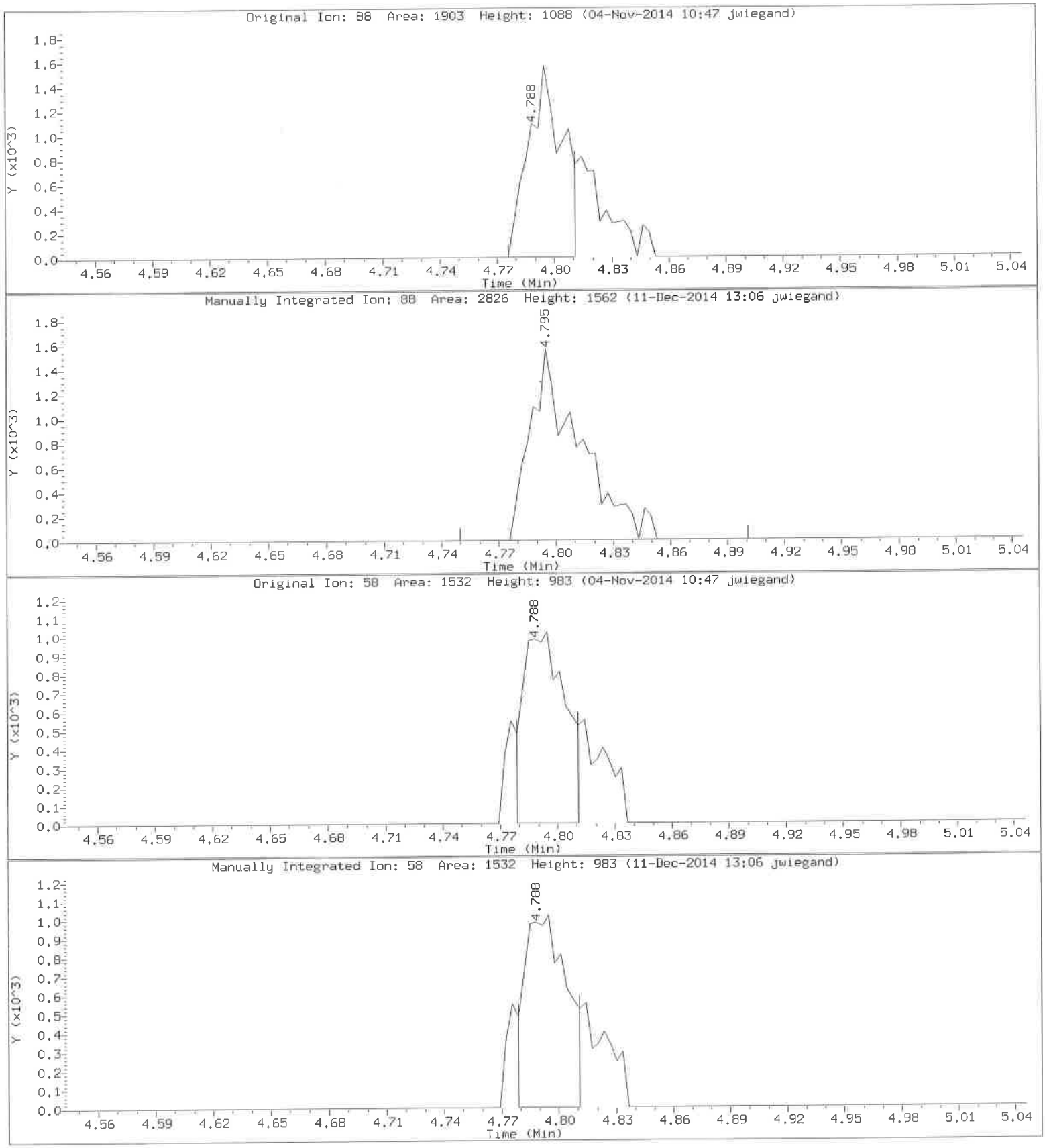
Injection Date: 04-NOV-2014 10:33
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: 1,4-Dioxane
CAS Number: 123-91-1



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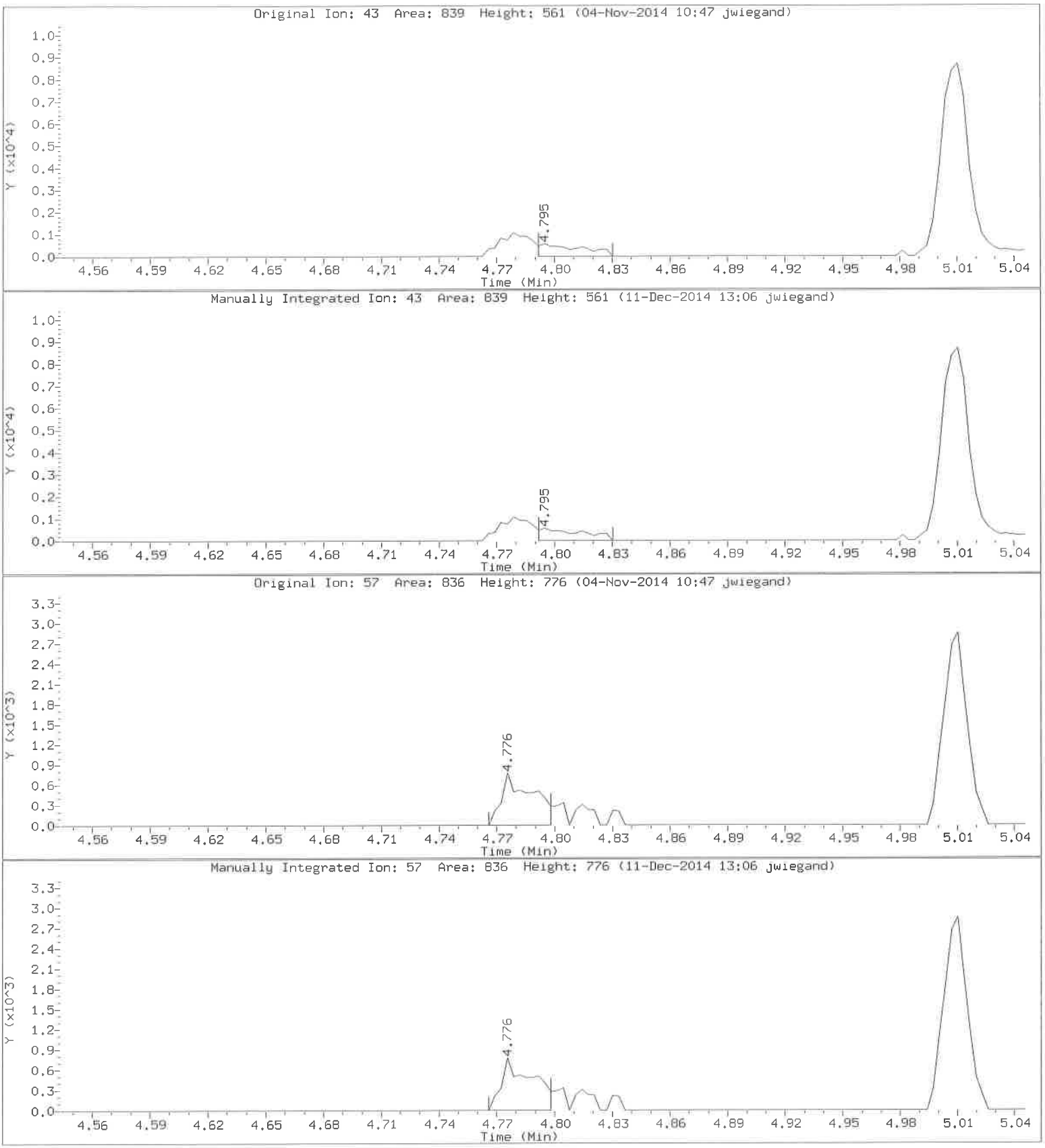
Injection Date: 04-NOV-2014 10:33
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]



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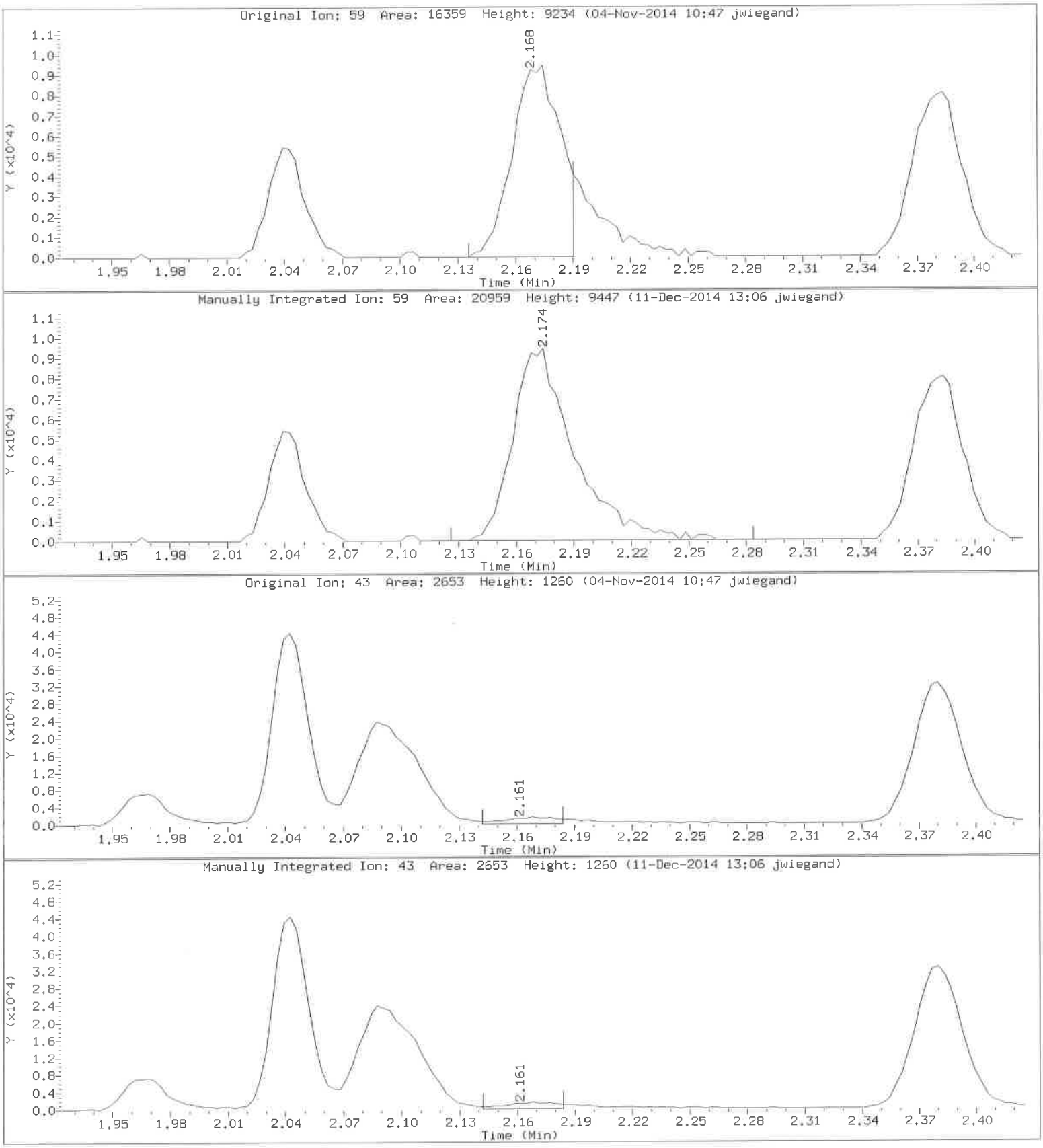
Injection Date: 04-NOV-2014 10:33
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: tert-Butyl Alcohol
CAS Number: 75-65-0



FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date: 11/06/14 Time: 0943

Lab File ID: 51106003 Init. Calib. Date(s): 10/10/14 10/10/14

Heated Purge: (Y/N) Y Init. Calib. Times: 1045 1259

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	SAMPLE AMOUNT	CAL50 AMOUNT	CURVE	%D	MAX %d	
Bromochloromethane	53.7	50.0	AVRG	7.4	20.0	
Chloromethane	32.3	50.0	AVRG	35.4	20.0	<-
Bromomethane	42.2	50.0	AVRG	15.6	20.0	
Vinyl Chloride	51.2	50.0	AVRG	2.4	20.0	
Chloroethane	67.6	50.0	AVRG	35.2	20.0	<-
Methylene Chloride	57.4	50.0	LINR	14.8	20.0	
1,1-Dichloroethene	53.6	50.0	AVRG	7.2	20.0	
1,1-Dichloroethane	49.3	50.0	AVRG	1.4	20.0	
trans-1,2-Dichloroethene	49.1	50.0	AVRG	1.8	20.0	
Chloroform	49.9	50.0	AVRG	0.2	20.0	
1,2-Dichloroethane	50.1	50.0	AVRG	0.2	20.0	
1,1,1-Trichloroethane	54.9	50.0	AVRG	9.8	20.0	
Carbon Tetrachloride	50.8	50.0	AVRG	1.6	20.0	
Bromodichloromethane	45.6	50.0	AVRG	8.8	20.0	
1,2-Dichloropropane	45.1	50.0	AVRG	9.8	20.0	
trans-1,3-Dichloropropene	44.8	50.0	AVRG	10.4	20.0	
Trichloroethene	51.6	50.0	AVRG	3.2	20.0	
Dibromochloromethane	49.3	50.0	AVRG	1.4	20.0	
1,1,2-Trichloroethane	48.8	50.0	AVRG	2.4	20.0	
Benzene	47.4	50.0	AVRG	5.2	20.0	
cis-1,3-Dichloropropene	43.1	50.0	AVRG	13.8	20.0	
Bromoform	50.5	50.0	AVRG	1.0	20.0	
Tetrachloroethene	54.5	50.0	AVRG	9.0	20.0	
1,1,2,2-Tetrachloroethane	46.2	50.0	AVRG	7.6	20.0	
Toluene	49.2	50.0	AVRG	1.6	20.0	
Chlorobenzene	50.3	50.0	AVRG	0.6	20.0	
Ethylbenzene	49.5	50.0	AVRG	1.0	20.0	
Styrene	49.6	50.0	AVRG	0.8	20.0	
Trichlorofluoromethane	61.8	50.0	AVRG	23.6	20.0	<-
m,p-Xylene	101	100	AVRG	1.0	20.0	
cis-1,2-Dichloroethene	50.4	50.0	AVRG	0.8	20.0	
o-Xylene	49.7	50.0	AVRG	0.6	20.0	
1,2,3-Trichloropropane	49.2	50.0	AVRG	1.6	20.0	
1,3-Dichlorobenzene	47.0	50.0	AVRG	6.0	20.0	
1,4-Dichlorobenzene	47.3	50.0	AVRG	5.4	20.0	
Dibromomethane	53.0	50.0	AVRG	6.0	20.0	
1,2-Dichlorobenzene	46.4	50.0	AVRG	7.2	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date: 11/06/14 Time: 0943

Lab File ID: 51106003 Init. Calib. Date(s): 10/10/14 10/10/14

Heated Purge: (Y/N) Y Init. Calib. Times: 1045 1259

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	SAMPLE AMOUNT	CAL50 AMOUNT	CURVE	%D	MAX %d	
Dichlorodifluoromethane	51.6	50.0	AVRG	3.2	20.0	
2,2-Dichloropropane	35.4	50.0	AVRG	29.2	20.0	<-
1,1-Dichloropropene	52.8	50.0	AVRG	5.6	20.0	
1,3-Dichloropropane	49.4	50.0	AVRG	1.2	20.0	
1,2-Dibromoethane,EDB	51.3	50.0	AVRG	2.6	20.0	
1,1,1,2-Tetrachloroethane	51.6	50.0	AVRG	3.2	20.0	
Isopropylbenzene,Cumene	45.4	50.0	AVRG	9.2	20.0	
Bromobenzene	44.1	50.0	AVRG	11.8	20.0	
n-Propylbenzene	45.9	50.0	AVRG	8.2	20.0	
2-Chlorotoluene	46.9	50.0	AVRG	6.2	20.0	
4-Chlorotoluene	46.8	50.0	AVRG	6.4	20.0	
1,3,5-Trimethylbenzene	46.6	50.0	AVRG	6.8	20.0	
tert-Butyl benzene	47.9	50.0	AVRG	4.2	20.0	
1,2,4-Trimethylbenzene	46.1	50.0	AVRG	7.8	20.0	
sec-Butyl benzene	47.9	50.0	AVRG	4.2	20.0	
4-Isopropyl toluene	47.3	50.0	AVRG	5.4	20.0	
n-Butyl benzene	45.2	50.0	AVRG	9.6	20.0	
1,2-Dibromo-3-Chloropropane	46.2	50.0	AVRG	7.6	20.0	
1,2,4-Trichlorobenzene	47.7	50.0	AVRG	4.6	20.0	
Hexachlorobutadiene	51.3	50.0	AVRG	2.6	20.0	
Naphthalene	47.9	50.0	AVRG	4.2	20.0	
1,2,3-Trichlorobenzene	48.8	50.0	AVRG	2.4	20.0	
Acrolein	42.0	50.0	AVRG	16.0	20.0	
1,1,2-Trichlorotrifluoroetha	53.6	50.0	AVRG	7.2	20.0	
Carbon Disulfide	51.1	50.0	AVRG	2.2	20.0	
Acetone	69.8	50.0	2ORDR	39.6	20.0	<-
Acrylonitrile	44.2	50.0	AVRG	11.6	20.0	
tert-butyl Methylether,MtB	49.2	50.0	AVRG	1.6	20.0	
Vinyl Acetate	11.6	50.0	AVRG	76.8	20.0	<-
2-ChloroethylVinylEther	44.3	50.0	AVRG	11.4	20.0	
4-Methyl-2-Pentanone	52.0	50.0	AVRG	4.0	20.0	
2-Hexanone	50.2	50.0	AVRG	0.4	20.0	
2-Butanone	55.9	50.0	AVRG	11.8	20.0	
Iodomethane	42.2	50.0	2ORDR	15.6	20.0	
DiisopropylEther	44.6	50.0	AVRG	10.8	20.0	
Tetrahydrofuran	59.3	50.0	LINR	18.6	20.0	
trans 1,4-Dichloro-2-butene	35.6	50.0	AVRG	28.8	20.0	<-

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSV5 Calibration Date: 11/06/14 Time: 0943

Lab File ID: 51106003 Init. Calib. Date(s): 10/10/14 10/10/14

Heated Purge: (Y/N) Y Init. Calib. Times: 1045 1259

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	SAMPLE AMOUNT	CAL50 AMOUNT	CURVE	%D	MAX %d	
Acetonitrile	254	250	AVRG	1.6	20.0	
Allyl chloride	219	250	AVRG	12.4	20.0	
Propionitrile	52.9	50.0	AVRG	5.8	20.0	
Methacrylonitrile	49.3	50.0	AVRG	1.4	20.0	
Isobutanol	222	250	AVRG	11.2	20.0	
Methyl methacrylate	46.1	50.0	AVRG	7.8	20.0	
1,4-Dioxane	473	500	LINR	5.4	20.0	
Ethyl methacrylate	44.1	50.0	AVRG	11.8	20.0	
Chloroprene	44.7	50.0	AVRG	10.6	20.0	
Methyl Acetate	71.2	50.0	AVRG	42.4	20.0	<-
Cyclohexane	49.2	50.0	AVRG	1.6	20.0	
Methylcyclohexane	47.9	50.0	AVRG	4.2	20.0	
tert-Butyl Alcohol	292	250	AVRG	16.8	20.0	
t-Butyl ethyl ether	46.4	50.0	AVRG	7.2	20.0	
t-Amyl methyl ether	44.6	50.0	AVRG	10.8	20.0	
Ethyl Ether	51.1	50.0	AVRG	2.2	20.0	
Hexane	40.5	50.0	AVRG	19.0	20.0	
Ethyl Acetate	53.3	50.0	AVRG	6.6	20.0	
2-Nitropropane	239	250	AVRG	4.4	20.0	
bis(2Chloro1methyl ethyl)eth	45.8	50.0	AVRG	8.4	20.0	
Cyclohexanone	0.000	250	AVRG	100.0	20.0	<-
2-methylnaphthalene	46.4	50.0	AVRG	7.2	20.0	
Ethanol	0.000	500	AVRG	100.0	20.0	<-
Toluene-d8	29.8	30.0	AVRG	0.7	20.0	
Bromofluorobenzene	30.2	30.0	AVRG	0.7	20.0	
1,2-Dichloroethane-d4	31.1	30.0	AVRG	3.7	20.0	
1,2-Dichlorobenzene-d4	0.000	30.0	AVRG	100.0	20.0	<-

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106003.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30msv5.i Injection Date: 06-NOV-2014 09:43
Lab File ID: 51106003.d Init. Cal. Date(s): 10-OCT-2014 10-OCT-2014
Analysis Type: SOIL Init. Cal. Times: 10:45 12:59
Lab Sample ID: VSTD[50] Quant Type: ISTD
Method: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.12068	0.12443	0.12443	0.010	3.10527	20.00000	Averaged	
2 Chloromethane	0.27810	0.17984	0.17984	0.100	-35.33307	20.00000	Averaged	<-
3 Vinyl Chloride	0.13166	0.13478	0.13478	0.010	2.37027	20.00000	Averaged	
4 Bromomethane	0.03016	0.02544	0.02544	0.010	-15.65620	20.00000	Averaged	
5 Chloroethane	0.06157	0.08329	0.08329	0.010	35.29104	20.00000	Averaged	<-
6 Trichlorofluoromethane	0.29007	0.35856	0.35856	0.010	23.61325	20.00000	Averaged	<-
7 Ethyl Ether	0.17464	0.17848	0.17848	0.010	2.20326	20.00000	Averaged	
8 1,1-Dichloroethene	0.32766	0.35137	0.35137	0.010	7.23800	20.00000	Averaged	
159 Ethanol	0.00143	++++	++++	0.010	++++	20.00000	Averaged	<-
9 Carbon Disulfide	0.45405	0.46412	0.46412	0.010	2.21694	20.00000	Averaged	
10 1,1,2-Trichlorotrifluoroeth	0.14020	0.15017	0.15017	0.010	7.11263	20.00000	Averaged	
11 Iodomethane	50.00000	42.21456	14.30823	0.010	-15.57089	20.00000	Quadratic	
12 Acrolein	0.03205	0.02696	0.02696	0.010	-15.90502	20.00000	Averaged	
13 Allyl chloride	0.30091	0.26317	0.26317	0.010	-12.54187	20.00000	Averaged	
14 Methylene Chloride	50.00000	57.42240	3.44788	0.010	14.84481	20.00000	Linear	
15 Acetone	50.00000	69.75340	31.88555	0.010	39.50680	20.00000	Quadratic	<-
16 trans-1,2-Dichloroethene	0.38796	0.38097	0.38097	0.010	-1.80165	20.00000	Averaged	
17 Methyl Acetate	0.05936	0.08457	0.08457	0.010	42.45506	20.00000	Averaged	<-
18 Hexane	0.05374	0.04357	0.04357	0.010	-18.92022	20.00000	Averaged	
19 tert-butyl Methylether,MtB	0.72096	0.70963	0.70963	0.010	-1.57224	20.00000	Averaged	
21 tert-Butyl Alcohol	0.02846	0.03319	0.03319	0.010	16.61763	20.00000	Averaged	
20 Acetonitrile	0.01771	0.01797	0.01797	0.010	1.45394	20.00000	Averaged	
22 DiisopropylEther	0.88154	0.78689	0.78689	0.010	-10.73771	20.00000	Averaged	
23 Chloroprene	0.41314	0.36907	0.36907	0.010	-10.66719	20.00000	Averaged	
25 Acrylonitrile	0.09076	0.08025	0.08025	0.010	-11.58409	20.00000	Averaged	
24 1,1-Dichloroethane	0.52014	0.51278	0.51278	0.100	-1.41592	20.00000	Averaged	
27 t-Butyl ethyl ether	0.89724	0.83205	0.83205	0.010	-7.26574	20.00000	Averaged	
26 Vinyl Acetate	0.34094	0.07883	0.07883	0.010	-76.87973	20.00000	Averaged	<-
28 cis-1,2-Dichloroethene	0.42897	0.43215	0.43215	0.010	0.74134	20.00000	Averaged	
29 2,2-Dichloropropane	0.41109	0.29129	0.29129	0.010	-29.14053	20.00000	Averaged	<-
30 Cyclohexane	0.40356	0.39679	0.39679	0.010	-1.67766	20.00000	Averaged	
31 Bromochloromethane	0.16823	0.18055	0.18055	0.010	7.32216	20.00000	Averaged	
32 Chloroform	0.52682	0.52596	0.52596	0.010	-0.16340	20.00000	Averaged	
33 Carbon Tetrachloride	0.39719	0.40390	0.40390	0.010	1.68945	20.00000	Averaged	
36 Ethyl Acetate	0.21029	0.22435	0.22435	0.010	6.68612	20.00000	Averaged	
35 Tetrahydrofuran	50.00000	59.30027	10.36351	0.010	18.60054	20.00000	Linear	
34 1,1,1-Trichloroethane	0.43593	0.47830	0.47830	0.010	9.72161	20.00000	Averaged	
37 1,1-Dichloropropene	0.37081	0.39173	0.39173	0.010	5.64094	20.00000	Averaged	
38 2-Butanone	0.11019	0.12313	0.12313	0.010	11.74584	20.00000	Averaged	
39 Benzene	2.43838	2.30935	2.30935	0.010	-5.29183	20.00000	Averaged	
40 Propionitrile	0.03164	0.03345	0.03345	0.010	5.73530	20.00000	Averaged	

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106003.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30msv5.i
Lab File ID: 51106003.d
Analysis Type: SOIL
Lab Sample ID: VSTD[50]
Method: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m

Injection Date: 06-NOV-2014 09:43
Init. Cal. Date(s): 10-OCT-2014 10-OCT-2014
Init. Cal. Times: 10:45 12:59
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
41 Methacrylonitrile	0.16418	0.16180	0.16180	0.010	-1.44841	20.00000	Averaged
$ 42 1,2-Dichloroethane-d4	0.35019	0.36335	0.36335	0.010	3.75785	20.00000	Averaged
43 t-Amyl methyl ether	1.75593	1.56471	1.56471	0.010	-10.88964	20.00000	Averaged
46 Isobutanol	0.05456	0.04834	0.04834	0.010	-11.39046	20.00000	Averaged
44 1,2-Dichloroethane	0.43828	0.43957	0.43957	0.010	0.29545	20.00000	Averaged
47 Methylcyclohexane	0.84991	0.81389	0.81389	0.010	-4.23801	20.00000	Averaged
48 Trichloroethene	0.60402	0.62280	0.62280	0.010	3.11060	20.00000	Averaged
49 Dibromomethane	0.41713	0.44188	0.44188	0.010	5.93544	20.00000	Averaged
50 1,2-Dichloropropane	0.71304	0.64356	0.64356	0.010	-9.74370	20.00000	Averaged
51 Bromodichloromethane	0.96749	0.88350	0.88350	0.010	-8.68134	20.00000	Averaged
52 Methyl methacrylate	0.44583	0.41090	0.41090	0.010	-7.83413	20.00000	Averaged
53 1,4-Dioxane	500	473	198	0.010	-5.37729	20.00000	Linear
55 2-ChloroethylVinylEther	0.20877	0.18499	0.18499	0.010	-11.38995	20.00000	Averaged
54 cis-1,3-Dichloropropene	1.02963	0.88803	0.88803	0.010	-13.75197	20.00000	Averaged
$ 56 Toluene-d8	2.29130	2.27271	2.27271	0.010	-0.81117	20.00000	Averaged
57 Toluene	2.49173	2.45210	2.45210	0.010	-1.59057	20.00000	Averaged
58 2-Nitropropane	0.21641	0.20702	0.20702	0.010	-4.33945	20.00000	Averaged
59 Tetrachloroethene	0.63780	0.69535	0.69535	0.010	9.02329	20.00000	Averaged
60 4-Methyl-2-Pentanone	0.60992	0.63418	0.63418	0.010	3.97902	20.00000	Averaged
61 trans-1,3-Dichloropropene	1.02037	0.91431	0.91431	0.010	-10.39500	20.00000	Averaged
63 Ethyl methacrylate	0.60465	0.53304	0.53304	0.010	-11.84322	20.00000	Averaged
62 1,1,2-Trichloroethane	0.53174	0.51865	0.51865	0.010	-2.46085	20.00000	Averaged
64 Dibromochloromethane	0.66051	0.65085	0.65085	0.010	-1.46143	20.00000	Averaged
65 1,3-Dichloropropane	0.93951	0.92912	0.92912	0.010	-1.10515	20.00000	Averaged
66 1,2-Dibromoethane,EDB	0.55111	0.56595	0.56595	0.010	2.69214	20.00000	Averaged
70 2-Hexanone	0.48617	0.48850	0.48850	0.010	0.47924	20.00000	Averaged
68 Chlorobenzene	1.59823	1.60825	1.60825	0.300	0.62655	20.00000	Averaged
69 Ethylbenzene	0.85047	0.84188	0.84188	0.010	-1.00963	20.00000	Averaged
71 1,1,1,2-Tetrachloroethane	0.55406	0.57152	0.57152	0.010	3.15219	20.00000	Averaged
72 m,p-Xylene	1.00939	1.02267	1.02267	0.010	1.31569	20.00000	Averaged
73 o-Xylene	0.97383	0.96818	0.96818	0.010	-0.57961	20.00000	Averaged
74 Styrene	1.55869	1.54599	1.54599	0.010	-0.81523	20.00000	Averaged
75 Bromoform	0.41662	0.42098	0.42098	0.100	1.04614	20.00000	Averaged
76 Isopropylbenzene,Cumene	2.87173	2.61036	2.61036	0.010	-9.10169	20.00000	Averaged
$ 77 Bromofluorobenzene	0.82325	0.82859	0.82859	0.010	0.64835	20.00000	Averaged
79 n-Propylbenzene	3.64766	3.35120	3.35120	0.010	-8.12747	20.00000	Averaged
78 Bromobenzene	1.48843	1.31384	1.31384	0.010	-11.72968	20.00000	Averaged
80 1,1,2,2-Tetrachloroethane	0.79916	0.73889	0.73889	0.300	-7.54135	20.00000	Averaged
81 2-Chlorotoluene	0.69489	0.65243	0.65243	0.010	-6.11059	20.00000	Averaged
82 1,3,5-Trimethylbenzene	1.13913	1.06111	1.06111	0.010	-6.84944	20.00000	Averaged
83 1,2,3-Trichloropropane	0.24064	0.23663	0.23663	0.010	-1.66697	20.00000	Averaged
84 trans 1,4-Dichloro-2-butene	0.28565	0.20354	0.20354	0.010	-28.74377	20.00000	Averaged <-

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106003.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30msv5.i
Lab File ID: 51106003.d
Analysis Type: SOIL
Lab Sample ID: VSTD[50]
Method: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m

Injection Date: 06-NOV-2014 09:43
Init. Cal. Date(s): 10-OCT-2014 10-OCT-2014
Init. Cal. Times: 10:45 12:59
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
85 Cyclohexanone	0.05215	++++	++++	0.010	++++	20.00000	Averaged	<-
86 4-Chlorotoluene	0.72667	0.68041	0.68041	0.010	-6.36618	20.00000	Averaged	
87 tert-Butyl benzene	1.95945	1.87773	1.87773	0.010	-4.17069	20.00000	Averaged	
88 1,2,4-Trimethylbenzene	1.07403	0.99112	0.99112	0.010	-7.71984	20.00000	Averaged	
89 sec-Butyl benzene	2.87545	2.75275	2.75275	0.010	-4.26707	20.00000	Averaged	
90 4-Isopropyl toluene	2.45187	2.31972	2.31972	0.010	-5.38977	20.00000	Averaged	
91 1,3-Dichlorobenzene	1.35706	1.27652	1.27652	0.010	-5.93497	20.00000	Averaged	
93 1,4-Dichlorobenzene	1.35429	1.28196	1.28196	0.010	-5.34034	20.00000	Averaged	
94 n-Butyl benzene	2.30563	2.08452	2.08452	0.010	-9.59009	20.00000	Averaged	
$ 158 1,2-Dichlorobenzene-d4	++++	++++	++++	0.010	++++	20.00000	Averaged	<-
95 1,2-Dichlorobenzene	1.25225	1.16314	1.16314	0.010	-7.11535	20.00000	Averaged	
96 bis(2Chloro1methyl ethyl)et	0.35663	0.32655	0.32655	0.010	-8.43444	20.00000	Averaged	
97 1,2-Dibromo-3-Chloropropane	0.13769	0.12720	0.12720	0.010	-7.61504	20.00000	Averaged	
98 Hexachlorobutadiene	0.43418	0.44528	0.44528	0.010	2.55615	20.00000	Averaged	
99 1,2,4-Trichlorobenzene	0.75944	0.72489	0.72489	0.010	-4.54977	20.00000	Averaged	
100 Naphthalene	1.67414	1.60395	1.60395	0.010	-4.19276	20.00000	Averaged	
101 1,2,3-Trichlorobenzene	0.65499	0.64003	0.64003	0.010	-2.28321	20.00000	Averaged	
157 2-methylnaphthalene	0.82678	0.76689	0.76689	0.010	-7.24403	20.00000	Averaged	

Average %D / Drift Results.

Calculated Average %D/Drift = 8.85608
Maximun Average %D/Drift = 20.00000
* Passed Average %D/Drift Test.

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106003.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106003.d
Lab Smp Id: VSTD[50] Client Smp ID: VSTD[50]
Inj Date : 06-NOV-2014 09:43
Operator : JEW Inst ID: 30msv5.i
Smp Info : VSTD[50],,5
Misc Info : V10-57-7
Comment :
Method : \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 13:21 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
1 Dichlorodifluoromethane	85	0.897	0.897	(0.216)	19032	50.0000	51.6(Q)	
2 Chloromethane	50	0.991	0.991	(0.238)	27507	50.0000	32.3(M)	
3 Vinyl Chloride	62	1.032	1.032	(0.248)	20615	50.0000	51.2	
4 Bromomethane	94	1.193	1.193	(0.287)	3891	50.0000	42.2	
5 Chloroethane	64	1.254	1.254	(0.301)	12740	50.0000	67.6	
6 Trichlorofluoromethane	101	1.325	1.325	(0.319)	54844	50.0000	61.8	
7 Ethyl Ether	59	1.479	1.479	(0.356)	27300	50.0000	51.1	
8 1,1-Dichloroethene	61	1.592	1.592	(0.383)	53744	50.0000	53.6	
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	1.614	1.614	(0.388)	70989	50.0000	51.1	
10 1,1,2-Trichlorotrifluoroethan	151	1.611	1.611	(0.387)	22969	50.0000	53.6	
11 Iodomethane	142	1.675	1.675	(0.403)	10690	50.0000	42.2	
12 Acrolein	56	1.785	1.785	(0.429)	4123	50.0000	42.0	
13 Allyl chloride	41	1.865	1.865	(0.448)	201263	250.000	219	
14 Methylene Chloride	49	1.929	1.929	(0.464)	44362	50.0000	57.4	
15 Acetone	58	1.962	1.962	(0.471)	4797	50.0000	69.8	
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	58272	50.0000	49.1	
17 Methyl Acetate	74	2.045	2.045	(0.492)	12935	50.0000	71.2	
18 Hexane	86	2.087	2.087	(0.502)	6664	50.0000	40.5	
19 tert-butyl Methylether,MtB	73	2.103	2.103	(0.505)	108541	50.0000	49.2	

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106003.d
Report Date: 11-Dec-2014 13:21

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
21 tert-Butyl Alcohol	59	2.174	2.174	(0.522)	25384	250.000	292	
20 Acetonitrile	41	2.286	2.286	(0.550)	13742	250.000	254(M)	NI
22 DiisopropylEther	45	2.380	2.380	(0.572)	120358	50.0000	44.6	
23 Chloroprene	53	2.463	2.463	(0.592)	56451	50.0000	44.7	
25 Acrylonitrile	53	2.524	2.524	(0.607)	12274	50.0000	44.2	
24 1,1-Dichloroethane	63	2.482	2.482	(0.597)	78432	50.0000	49.3	
27 t-Butyl ethyl ether	59	2.679	2.679	(0.644)	127266	50.0000	46.4	
26 Vinyl Acetate	43	2.685	2.685	(0.645)	12057	50.0000	11.6(M)	NI
28 cis-1,2-Dichloroethene	61	2.952	2.952	(0.709)	66100	50.0000	50.4	
29 2,2-Dichloropropane	77	3.055	3.055	(0.734)	44555	50.0000	35.4	
30 Cyclohexane	56	3.145	3.145	(0.756)	60691	50.0000	49.2	
31 Bromochloromethane	130	3.145	3.145	(0.756)	27616	50.0000	53.7	
32 Chloroform	83	3.235	3.235	(0.777)	80448	50.0000	49.9	
33 Carbon Tetrachloride	117	3.370	3.370	(0.810)	61779	50.0000	50.8	
36 Ethyl Acetate	43	3.389	3.389	(0.815)	34316	50.0000	53.3	
35 Tetrahydrofuran	42	3.399	3.399	(0.817)	14759	50.0000	59.3(M)	LT
34 1,1,1-Trichloroethane	97	3.444	3.444	(0.828)	73159	50.0000	54.9(M)	LT
37 1,1-Dichloropropene	75	3.589	3.589	(0.862)	59917	50.0000	52.8	
38 2-Butanone	43	3.585	3.585	(0.862)	18834	50.0000	55.9	
39 Benzene	78	3.823	3.823	(0.650)	155854	50.0000	47.4	
40 Propionitrile	54	3.859	3.859	(0.927)	5117	50.0000	52.9(M)	LT
41 Methacrylonitrile	41	3.871	3.871	(0.930)	24748	50.0000	49.3	
$ 42 1,2-Dichloroethane-d4	65	3.939	3.939	(0.947)	33346	30.0000	31.1	
43 t-Amyl methyl ether	73	3.939	3.939	(0.670)	105600	50.0000	44.6	
46 Isobutanol	43	3.942	3.942	(0.947)	36972	250.000	222	
44 1,2-Dichloroethane	62	3.997	3.997	(0.961)	67235	50.0000	50.1	
* 45 Fluorobenzene	96	4.161	4.161	(1.000)	91773	30.0000		
47 Methylcyclohexane	83	4.270	4.270	(0.727)	54928	50.0000	47.9	
48 Trichloroethene	132	4.283	4.283	(0.729)	42032	50.0000	51.6	
49 Dibromomethane	174	4.560	4.560	(0.776)	29822	50.0000	53.0	
50 1,2-Dichloropropane	63	4.621	4.621	(0.786)	43433	50.0000	45.1	
51 Bromodichloromethane	83	4.669	4.669	(0.794)	59626	50.0000	45.6	
52 Methyl methacrylate	69	4.778	4.778	(0.813)	27731	50.0000	46.1	
53 1,4-Dioxane	88	4.794	4.794	(0.698)	3060	500.000	473(M)	LT
55 2-ChloroethylVinylEther	63	5.010	5.010	(0.852)	12485	50.0000	44.3	
54 cis-1,3-Dichloropropene	75	5.032	5.032	(0.856)	59932	50.0000	43.1	
$ 56 Toluene-d8	98	5.129	5.129	(0.873)	92029	30.0000	29.8	
57 Toluene	91	5.158	5.158	(0.877)	165488	50.0000	49.2	
58 2-Nitropropane	43	5.280	5.280	(0.898)	69856	250.000	239	
59 Tetrachloroethene	166	5.354	5.354	(0.911)	46928	50.0000	54.5	
60 4-Methyl-2-Pentanone	43	5.357	5.357	(0.911)	42800	50.0000	52.0	
61 trans-1,3-Dichloropropene	75	5.376	5.376	(0.915)	61705	50.0000	44.8	
63 Ethyl methacrylate	41	5.460	5.460	(0.929)	35974	50.0000	44.1	
62 1,1,2-Trichloroethane	97	5.453	5.453	(0.928)	35003	50.0000	48.8	
64 Dibromochloromethane	129	5.537	5.537	(0.942)	43925	50.0000	49.3	
65 1,3-Dichloropropane	76	5.582	5.582	(0.950)	62705	50.0000	49.4	
66 1,2-Dibromoethane,EDB	107	5.643	5.643	(0.960)	38195	50.0000	51.3	
70 2-Hexanone	43	5.756	5.756	(0.979)	32968	50.0000	50.2	
* 67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	40493	30.0000		
68 Chlorobenzene	112	5.887	5.887	(1.002)	108538	50.0000	50.3	
69 Ethylbenzene	106	5.900	5.900	(1.004)	56817	50.0000	49.5	
71 1,1,1,2-Tetrachloroethane	131	5.916	5.916	(1.007)	38571	50.0000	51.6	
72 m,p-Xylene	106	5.965	5.965	(1.015)	138037	100.000	101	
73 o-Xylene	106	6.151	6.151	(1.046)	65341	50.0000	49.7	

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106003.d
Report Date: 11-Dec-2014 13:21

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW CODE
74 Styrene	104	6.174	6.174	(1.050)	104336	50.0000	49.6	
75 Bromoform	173	6.190	6.190	(1.053)	28411	50.0000	50.5	
76 Isopropylbenzene,Cumene	105	6.286	6.286	(0.915)	157870	50.0000	45.4	
$ 77 Bromofluorobenzene	174	6.408	6.408	(0.933)	30067	30.0000	30.2	
79 n-Propylbenzene	91	6.460	6.460	(0.940)	202675	50.0000	45.9	
78 Bromobenzene	77	6.453	6.453	(0.939)	79459	50.0000	44.1	
80 1,1,2,2-Tetrachloroethane	83	6.492	6.492	(0.945)	44687	50.0000	46.2	
81 2-Chlorotoluene	126	6.527	6.527	(0.950)	39458	50.0000	46.9	
82 1,3,5-Trimethylbenzene	120	6.540	6.540	(0.952)	64174	50.0000	46.6	
83 1,2,3-Trichloropropane	110	6.550	6.550	(0.953)	14311	50.0000	49.2	
84 trans 1,4-Dichloro-2-butene	53	6.563	6.563	(0.955)	12310	50.0000	35.6	
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	6.598	6.598	(0.960)	41150	50.0000	46.8	
87 tert-Butyl benzene	119	6.675	6.675	(0.971)	113562	50.0000	47.9	
88 1,2,4-Trimethylbenzene	120	6.701	6.701	(0.975)	59941	50.0000	46.1	
89 sec-Butyl benzene	105	6.746	6.746	(0.982)	166482	50.0000	47.9	
90 4-Isopropyl toluene	119	6.801	6.801	(0.990)	140293	50.0000	47.3	
91 1,3-Dichlorobenzene	146	6.842	6.842	(0.996)	77202	50.0000	47.0	
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.871	(1.000)	36287	30.0000		
93 1,4-Dichlorobenzene	146	6.878	6.878	(1.001)	77531	50.0000	47.3	
94 n-Butyl benzene	91	6.977	6.977	(1.015)	126068	50.0000	45.2	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	7.055	7.055	(1.027)	70345	50.0000	46.4	
96 bis(2Chloro1methyl ethyl)eth	45	7.196	7.196	(1.047)	19749	50.0000	45.8	
97 1,2-Dibromo-3-Chloropropane	75	7.379	7.379	(1.074)	7693	50.0000	46.2	
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	26930	50.0000	51.3	
99 1,2,4-Trichlorobenzene	180	7.656	7.656	(1.114)	43840	50.0000	47.7	
100 Naphthalene	128	7.794	7.794	(1.134)	97004	50.0000	47.9	
101 1,2,3-Trichlorobenzene	180	7.871	7.871	(1.146)	38708	50.0000	48.8	
157 2-methylnaphthalene	142	8.241	8.241	(1.199)	46380	50.0000	46.4	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106003.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51106003.d
Lab Smp Id: VSTD[50]
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Misc Info: V10-57-7

Calibration Date: 05-NOV-2014
Calibration Time: 09:54
Client Smp ID: VSTD[50]
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

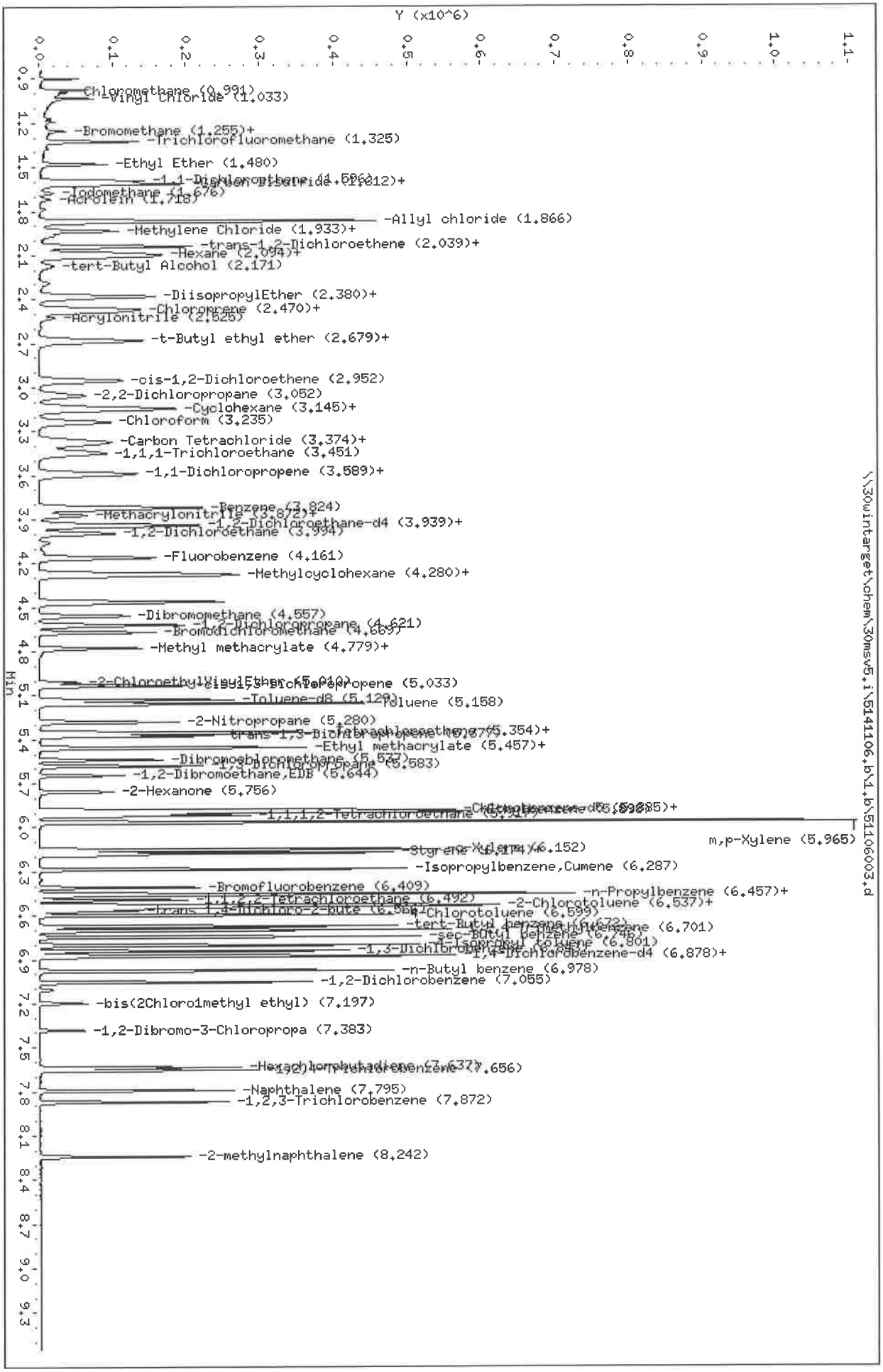
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	89562	44781	179124	91773	2.47
67 Chlorobenzene-d5	40145	20073	80290	40493	0.87
92 1,4-Dichlorobenze	34129	17065	68258	36287	6.32

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	-0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	-0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

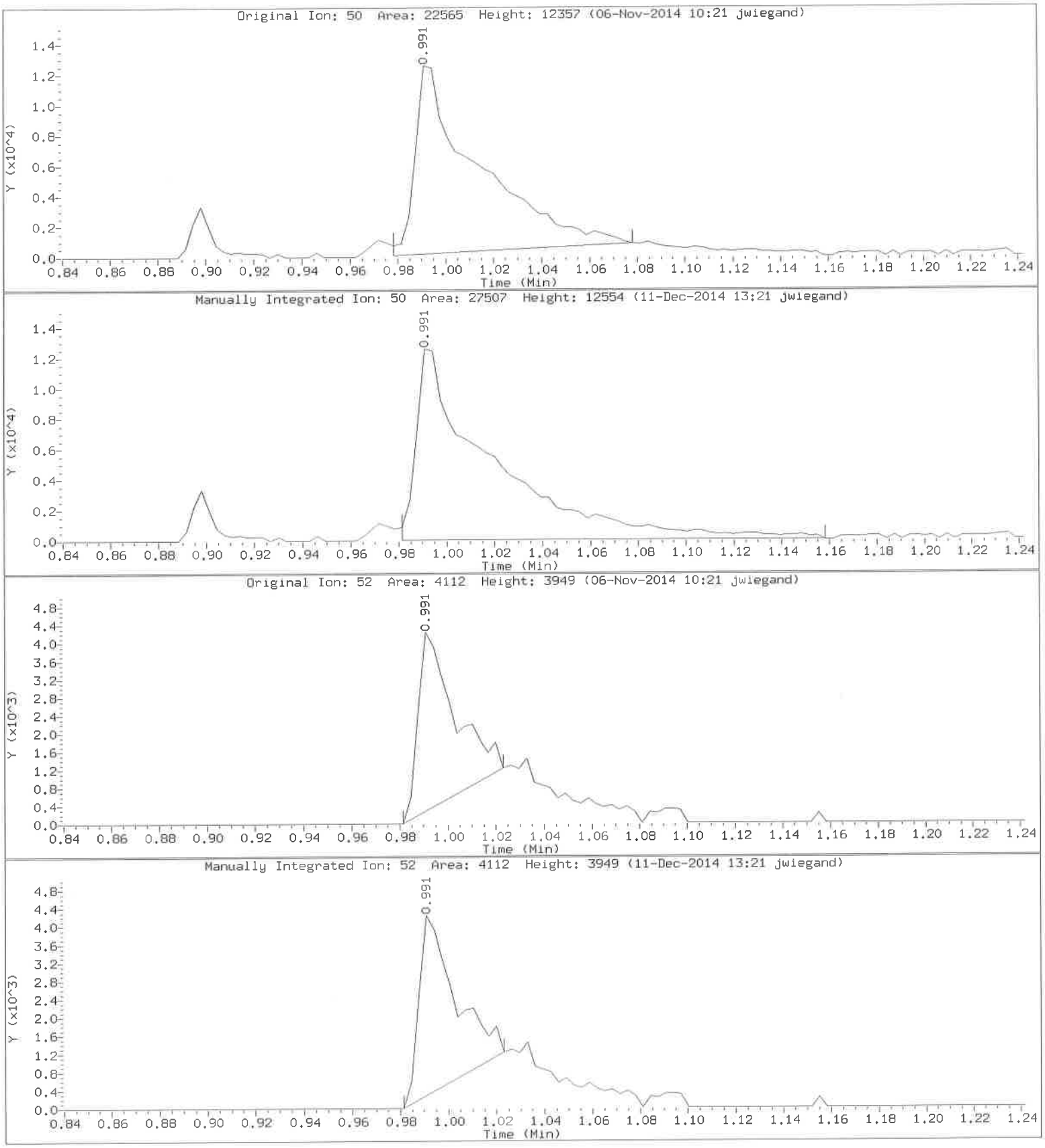
Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106003.d
Date : 06-NOV-2014 09:43
Client ID: VSTD150
Sample Info: VSTD150,,5
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



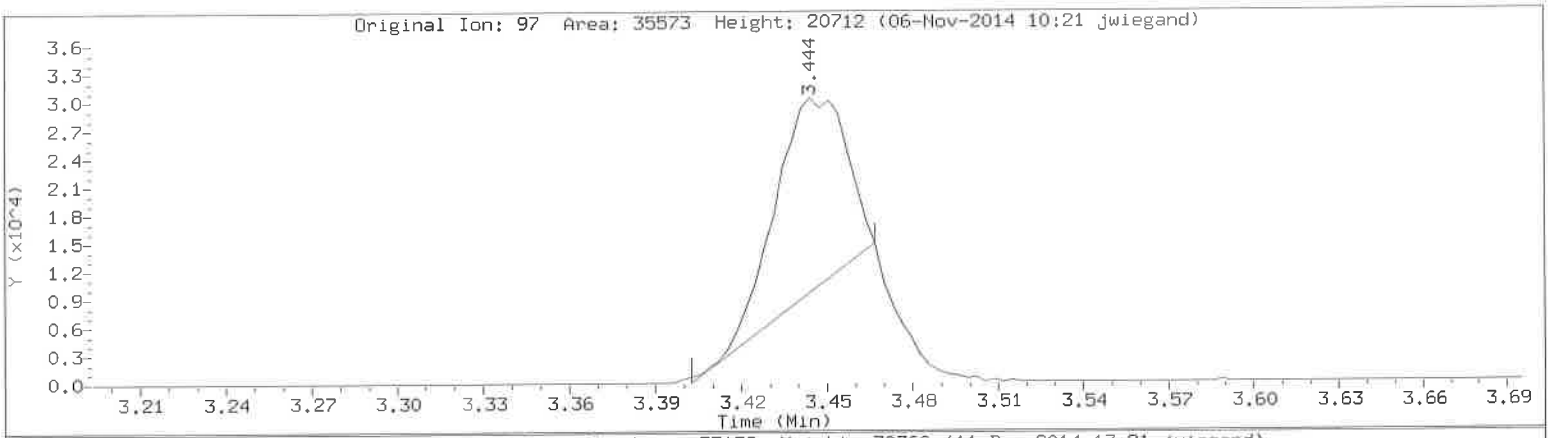
Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

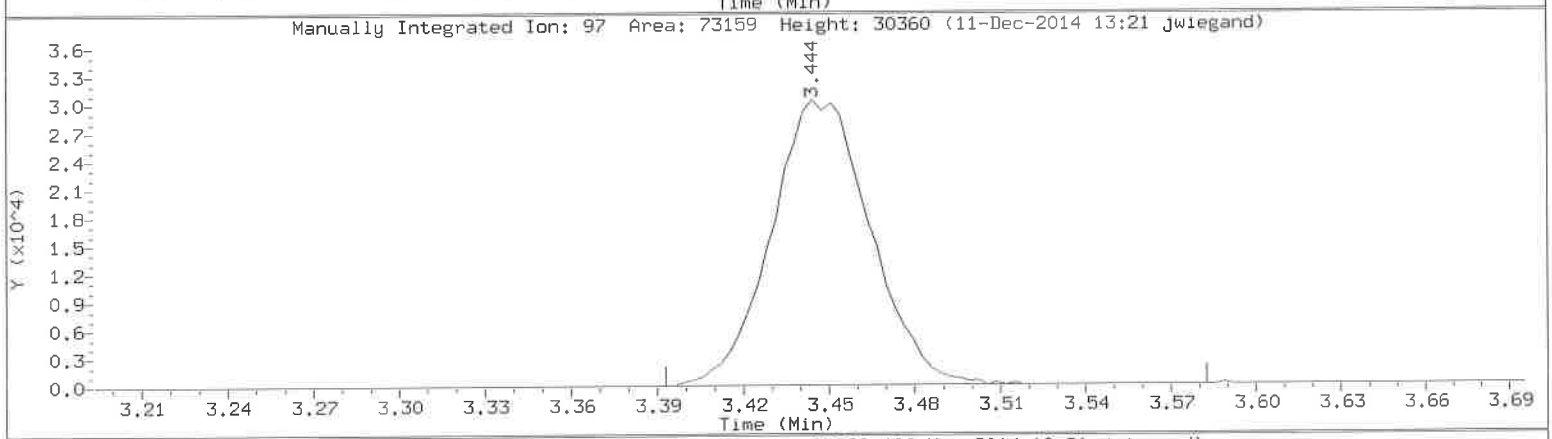
Compound: Chloromethane
CAS Number: 74-87-3

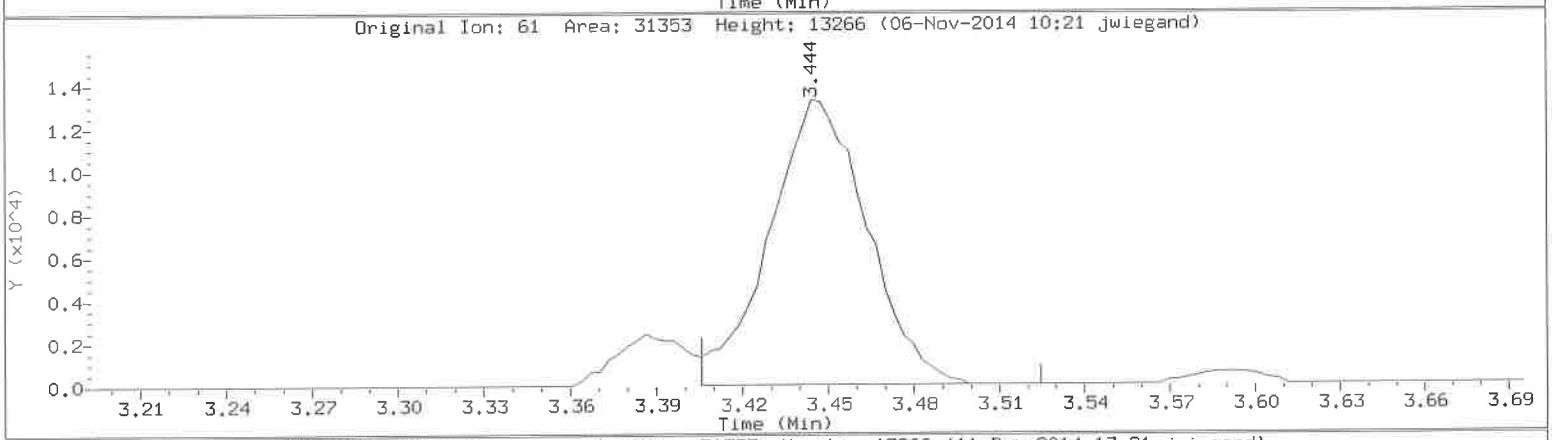


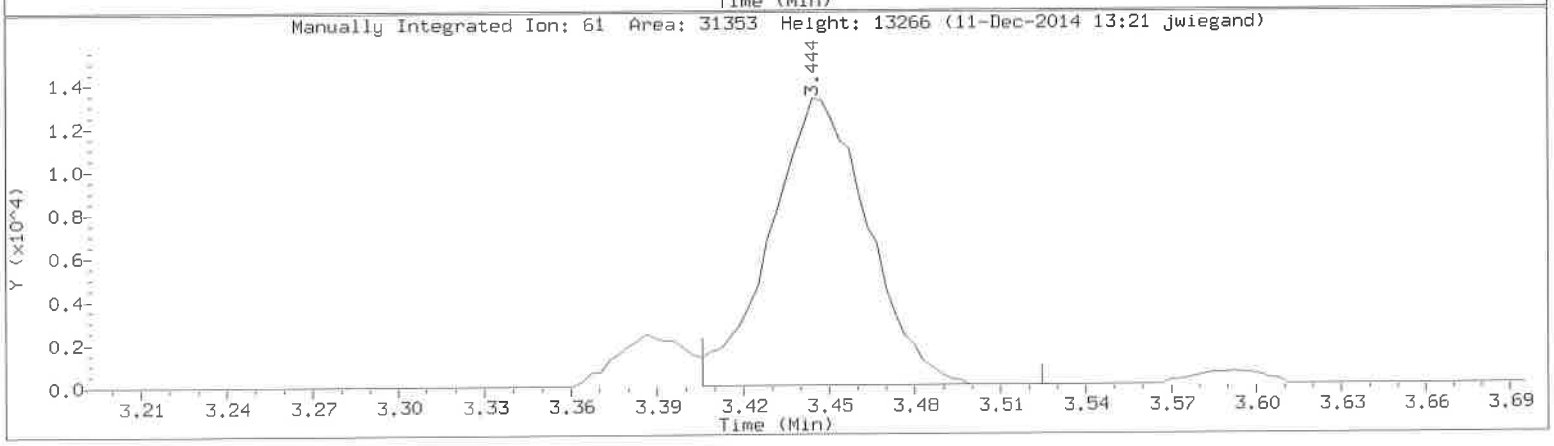
Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: 1,1,1-Trichloroethane
CAS Number: 71-55-6

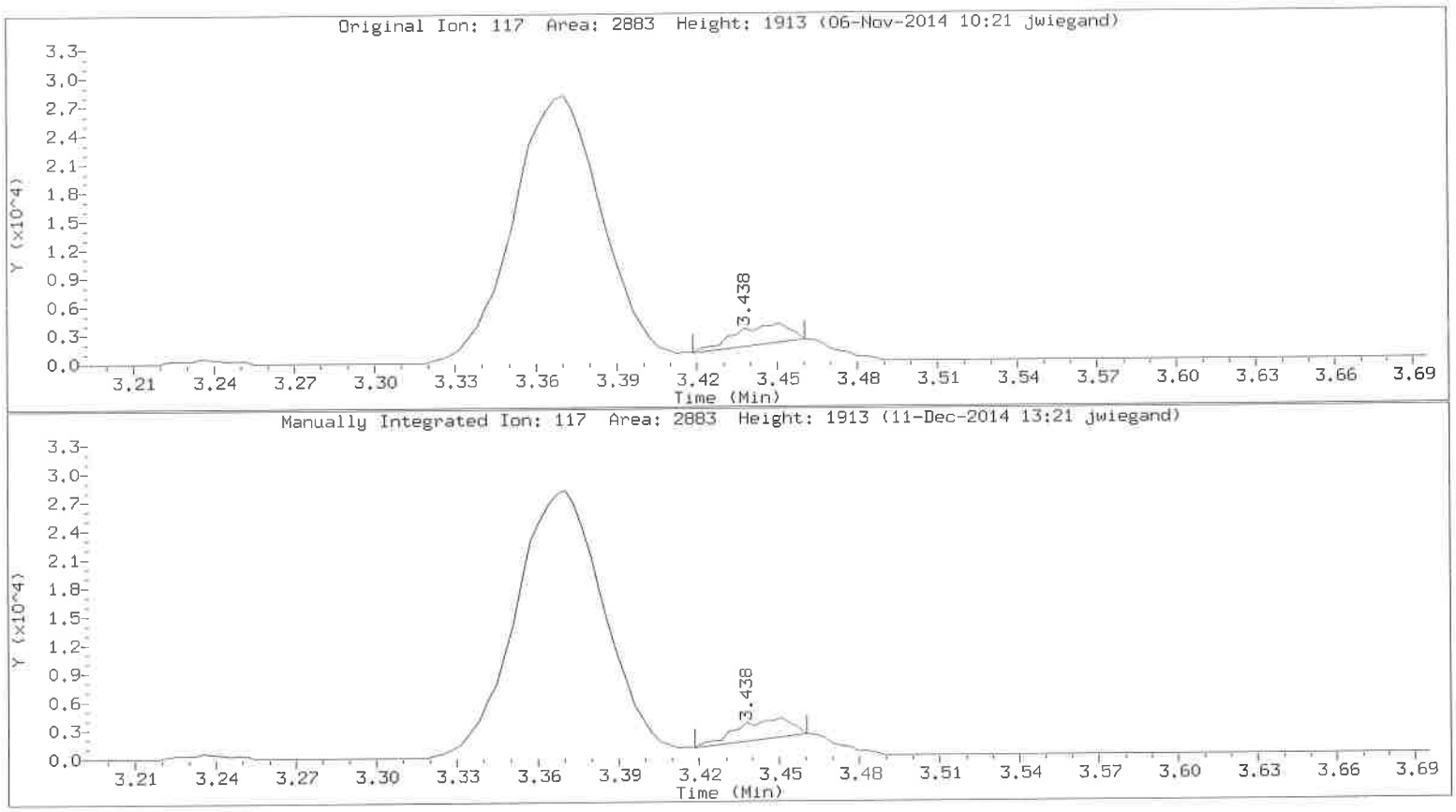






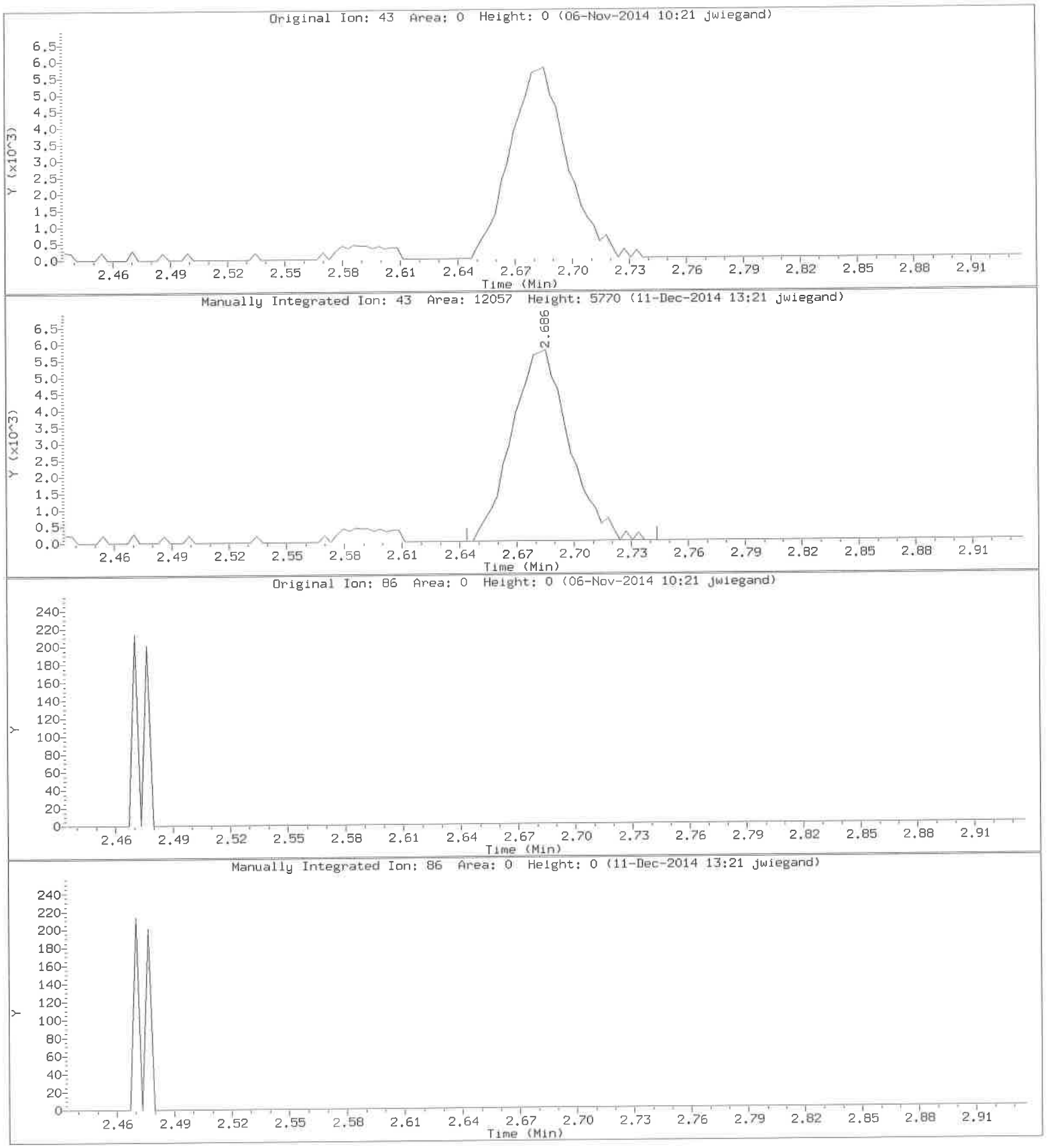


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]



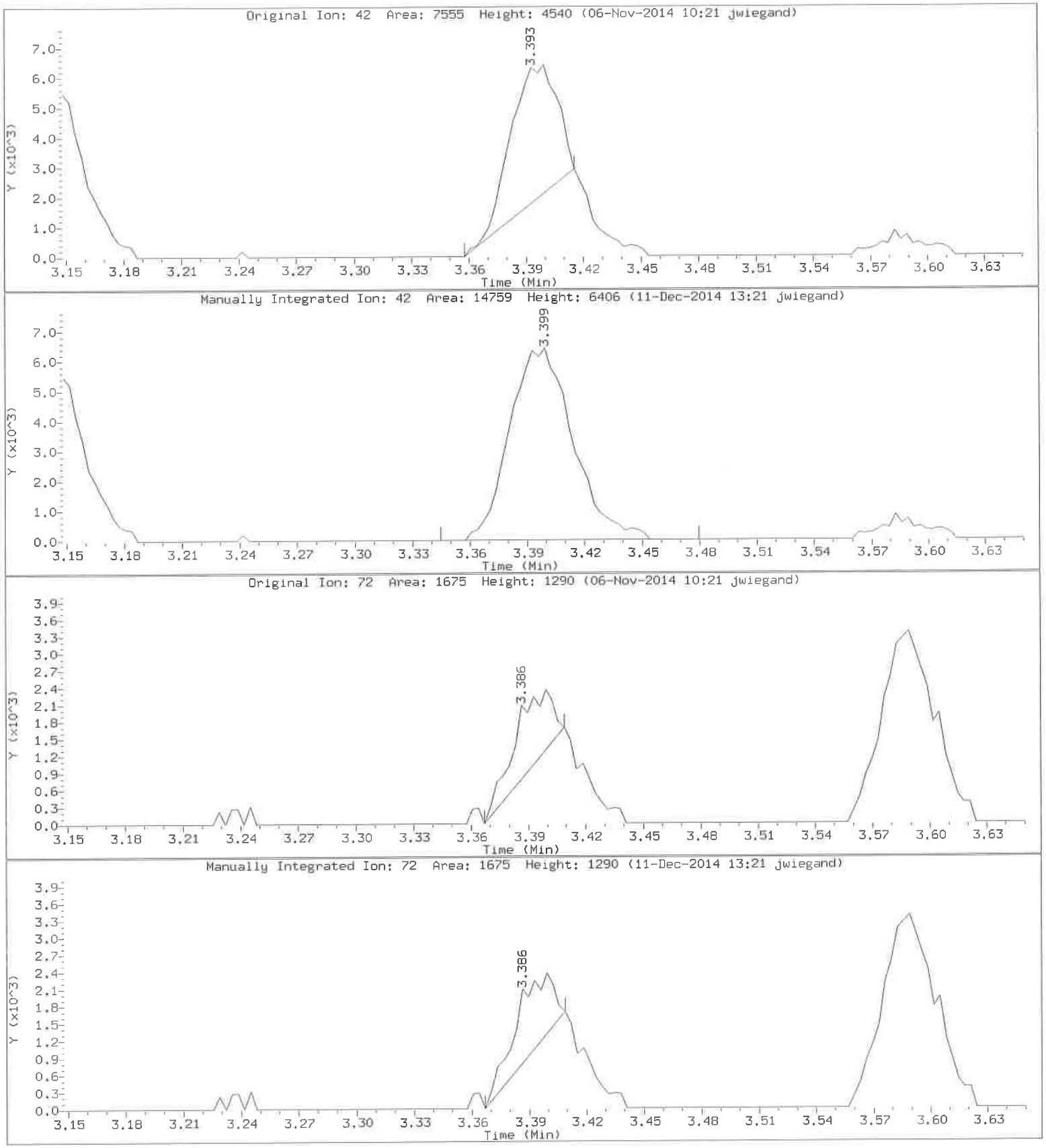
Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Vinyl Acetate
CAS Number: 108-05-4

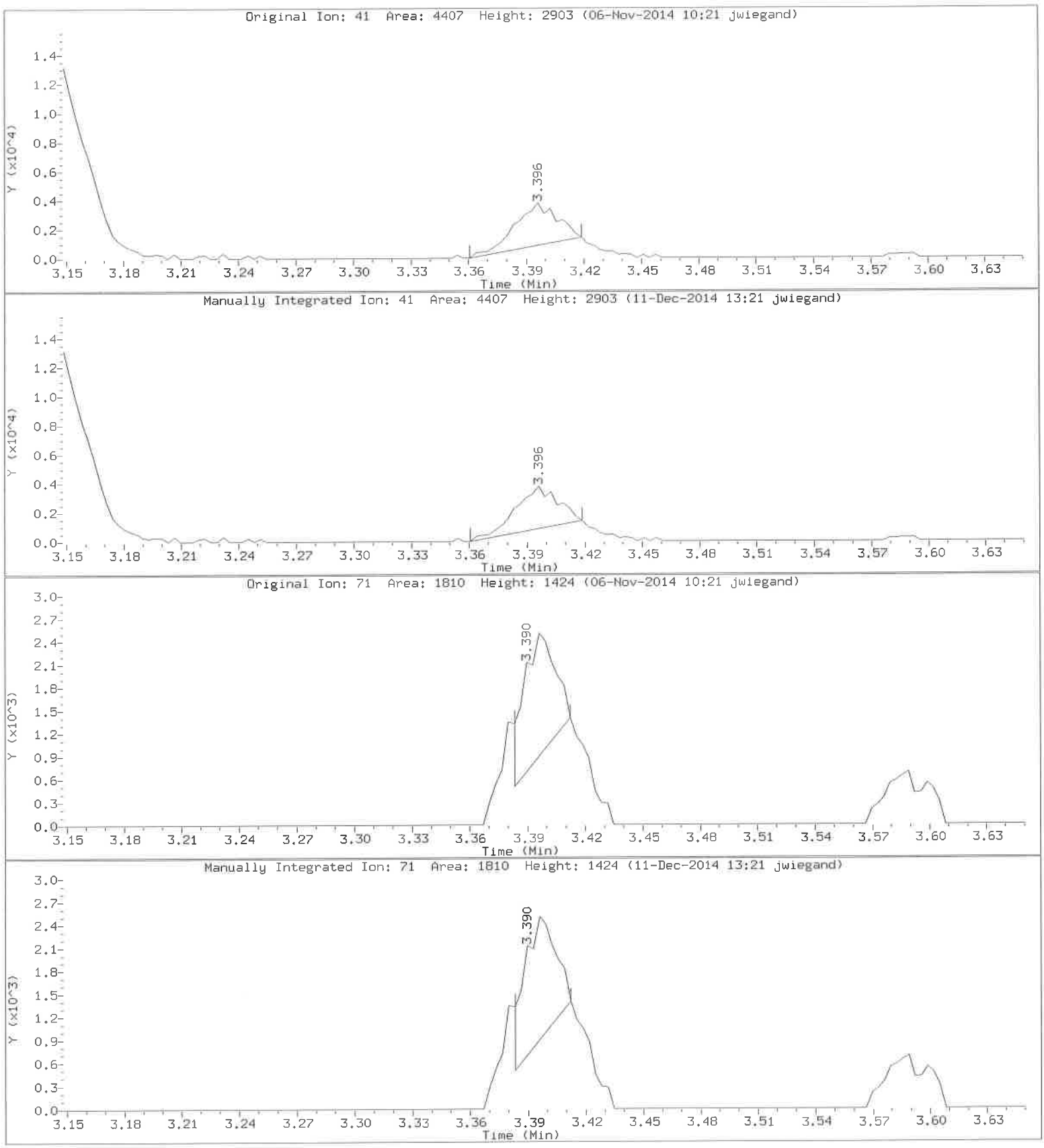


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Tetrahydrofuran
CAS Number: 109-99-9

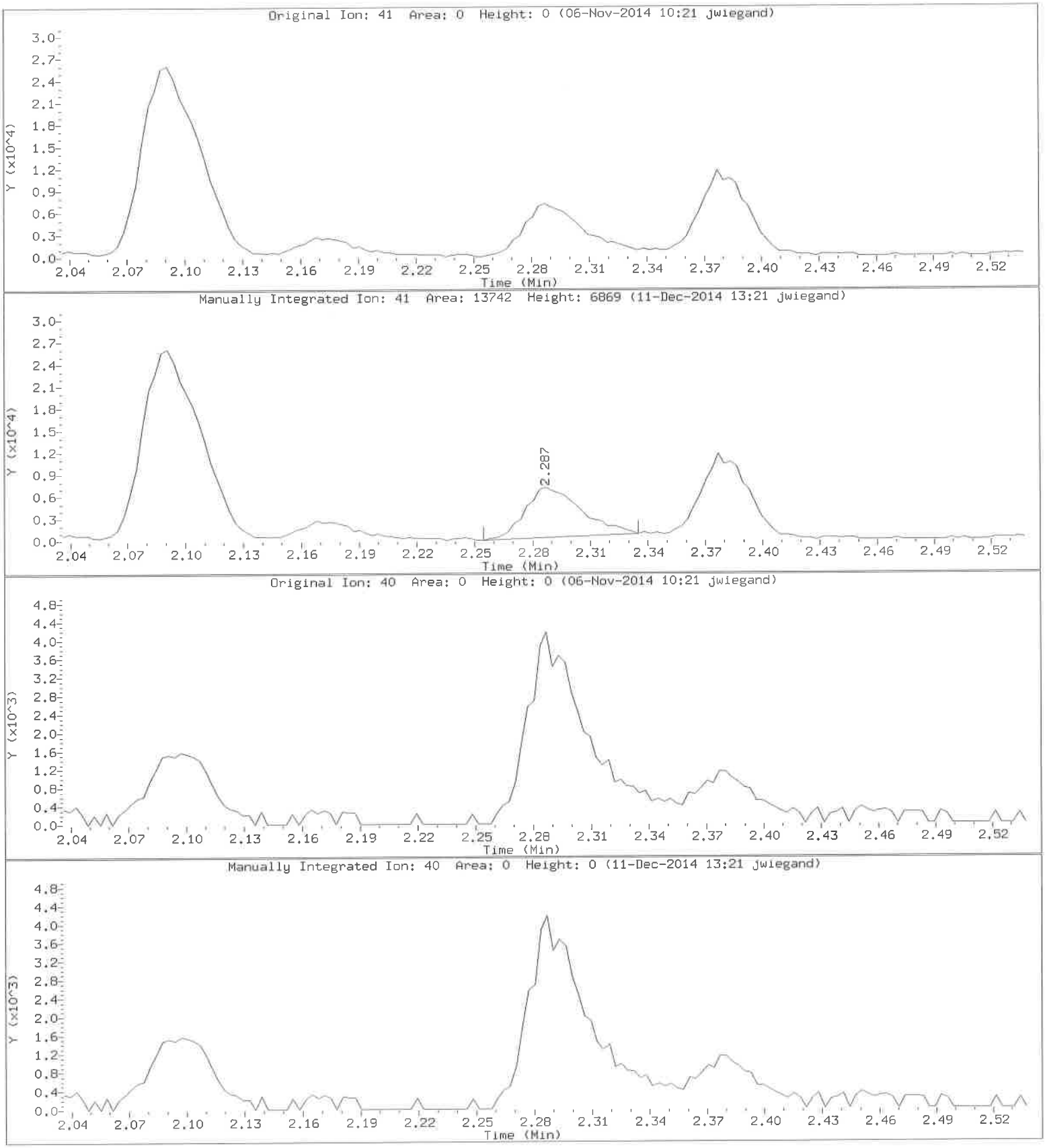


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

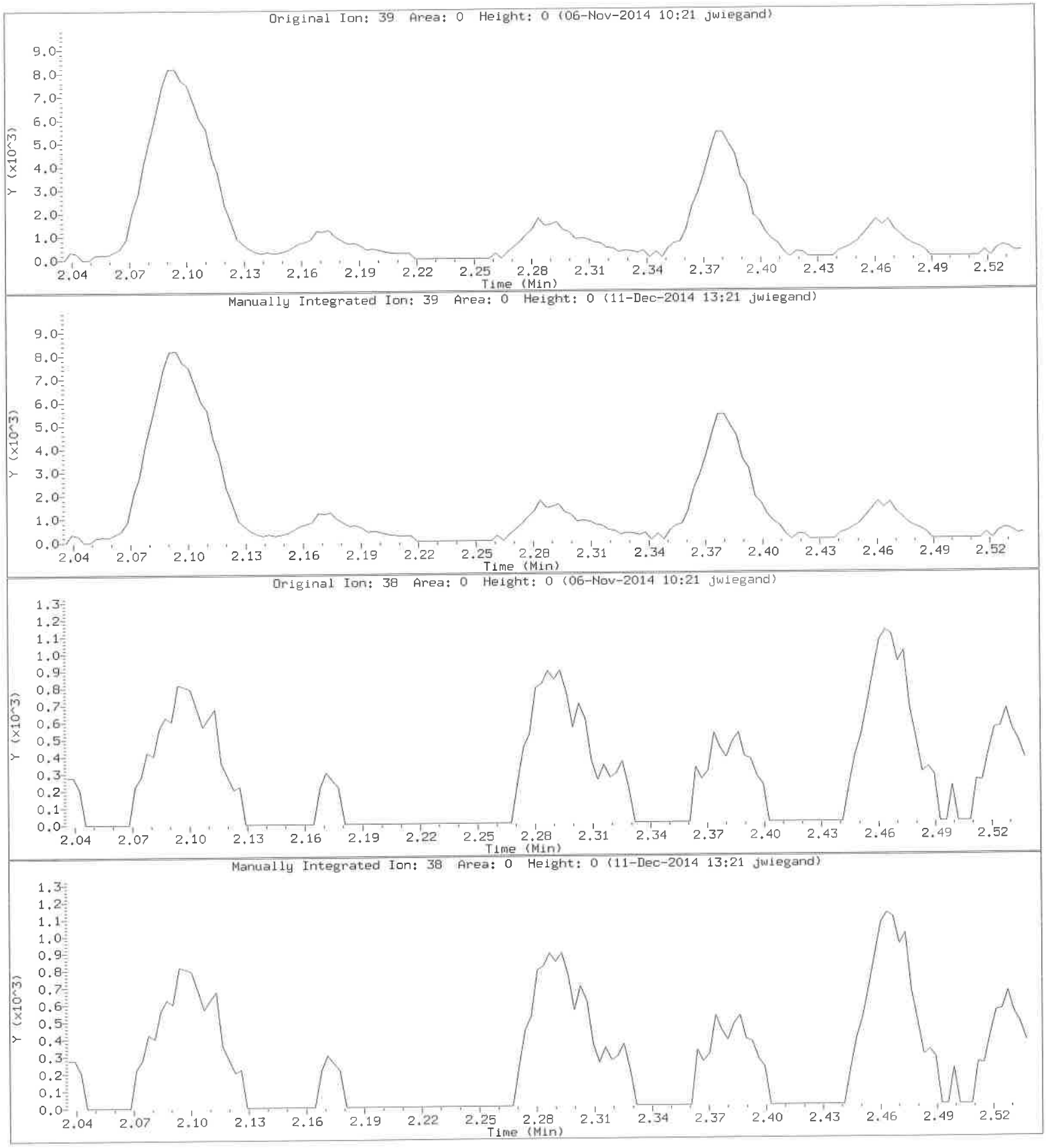


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Acetonitrile
CAS Number: 75-05-8

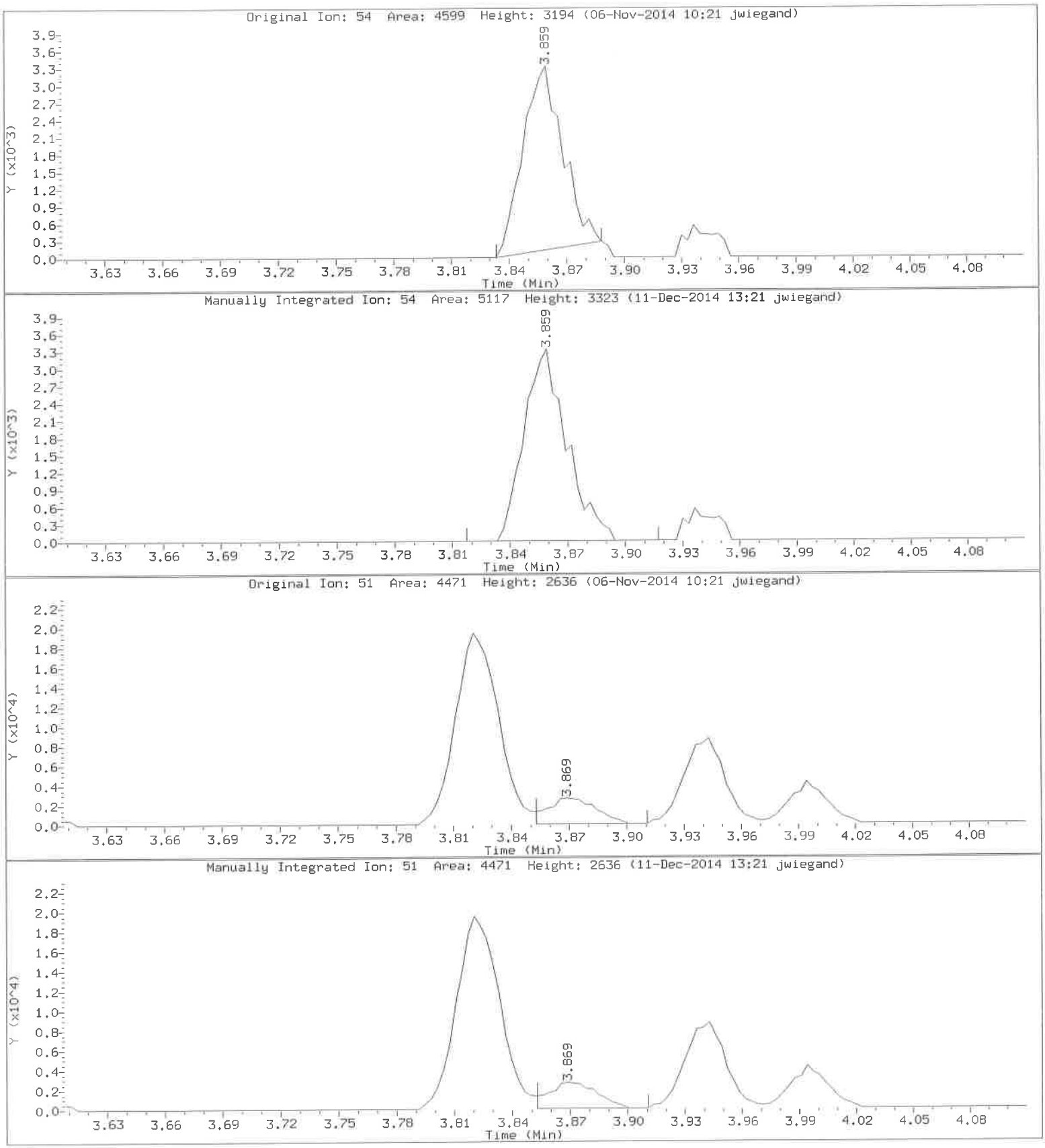


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

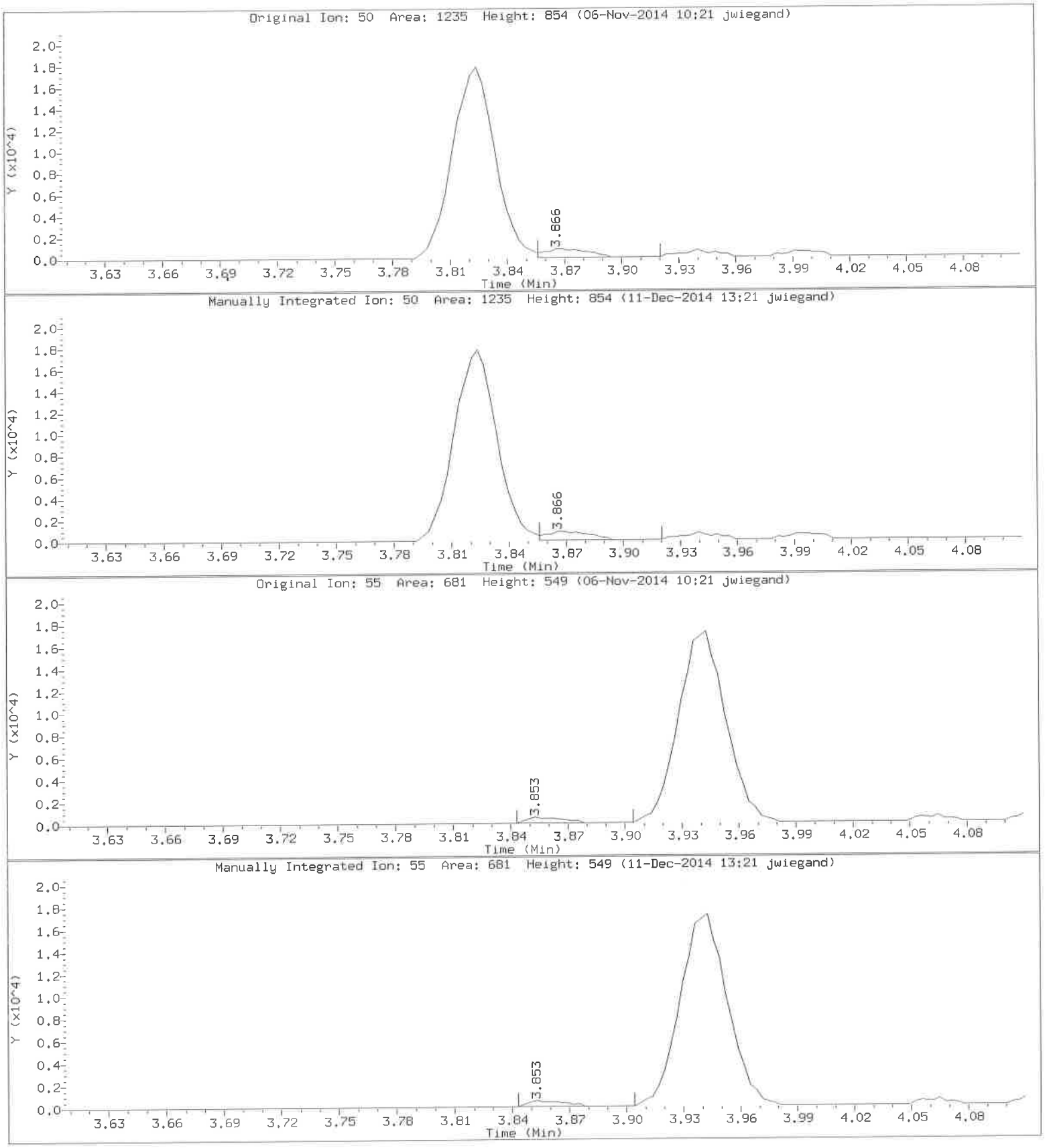


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: Propionitrile
CAS Number: 107-12-0

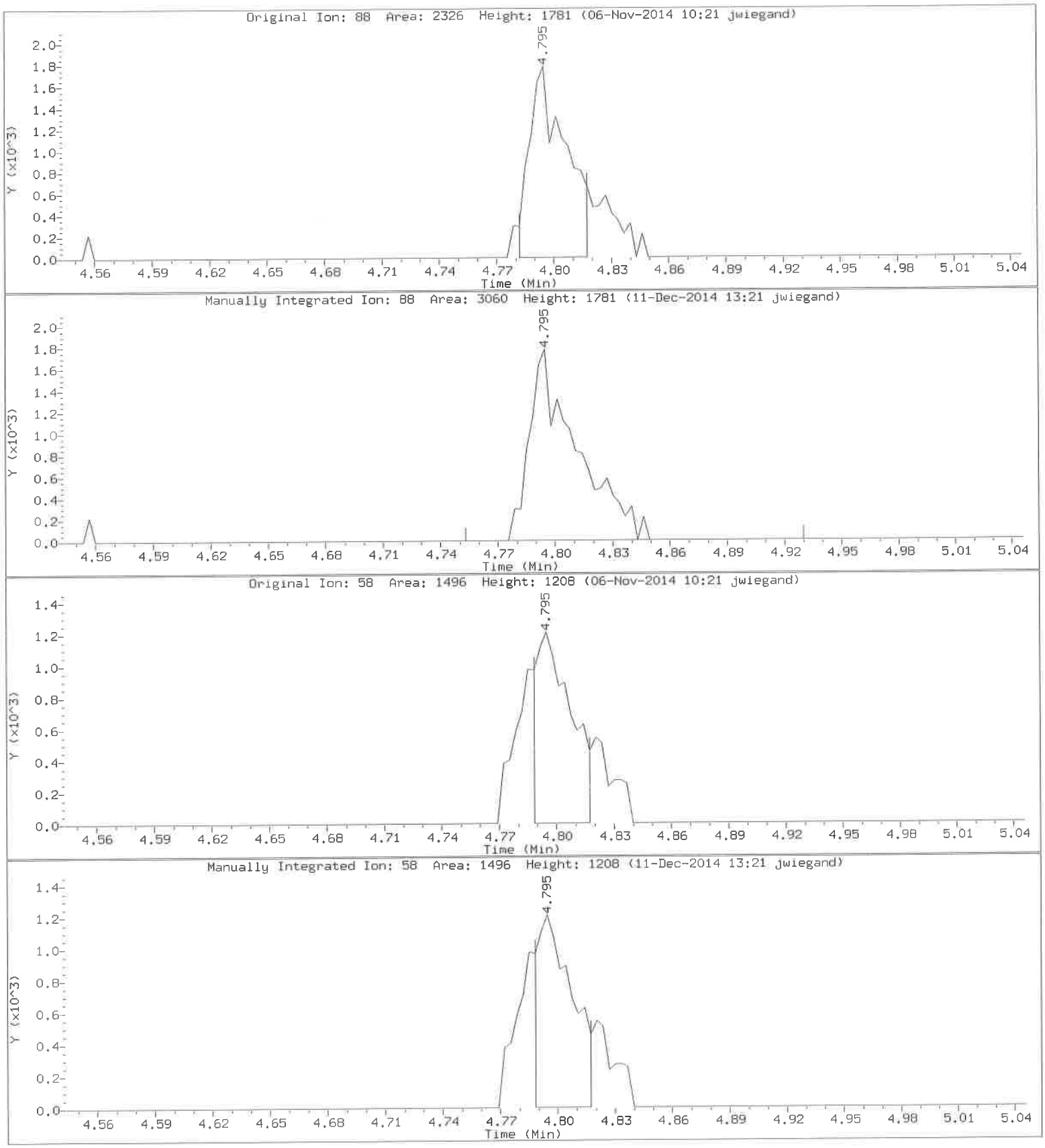


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

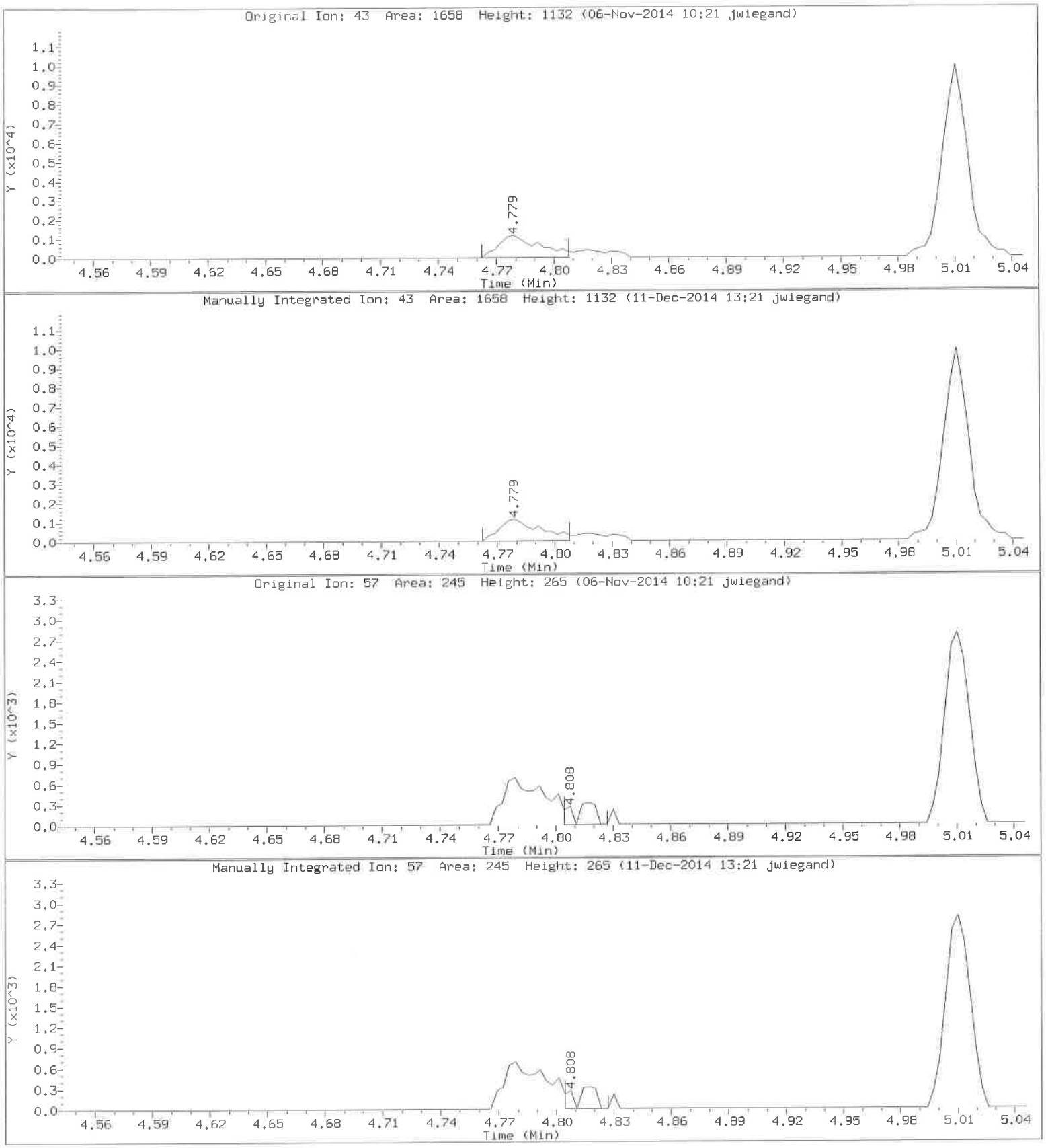


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]

Compound: 1,4-Dioxane
CAS Number: 123-91-1



Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106003.d (ManInt: al
Injection Date: 06-NOV-2014 09:43
Instrument: 30msv5.i
Lab Sample ID: VSTD[50]



FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: 51010010 BFB Injection Date: 10/10/14

Instrument ID: 30MSV5 BFB Injection Time: 1023

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.2
75	30.0 - 60.0% of mass 95	51.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.0
173	Less than 2.0% of mass 174	0.2 (0.2)1
174	50.0 - 120.0% of mass 95	82.4
175	5.0 - 9.0% of mass 174	5.8 (7.0)1
176	95.0 - 101.0% of mass 174	79.3 (96.2)1
177	5.0 - 9.0% of mass 176	5.0 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD[2.5]	VSTD[2.5]	51010011	10/10/14	1045
02	VSTD[5]	VSTD[5]	51010012	10/10/14	1107
03	VSTD[10]	VSTD[10]	51010013	10/10/14	1130
04	VSTD[20]	VSTD[20]	51010014	10/10/14	1152
05	VSTD[50]	VSTD[50]	51010015	10/10/14	1214
06	VSTD[100]	VSTD[100]	51010016	10/10/14	1237
07	VSTD[400]	VSTD[400]	51010017	10/10/14	1259
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010010.d

Date : 10-OCT-2014 10:23

Client ID: BFB

Instrument: 30msv5.i

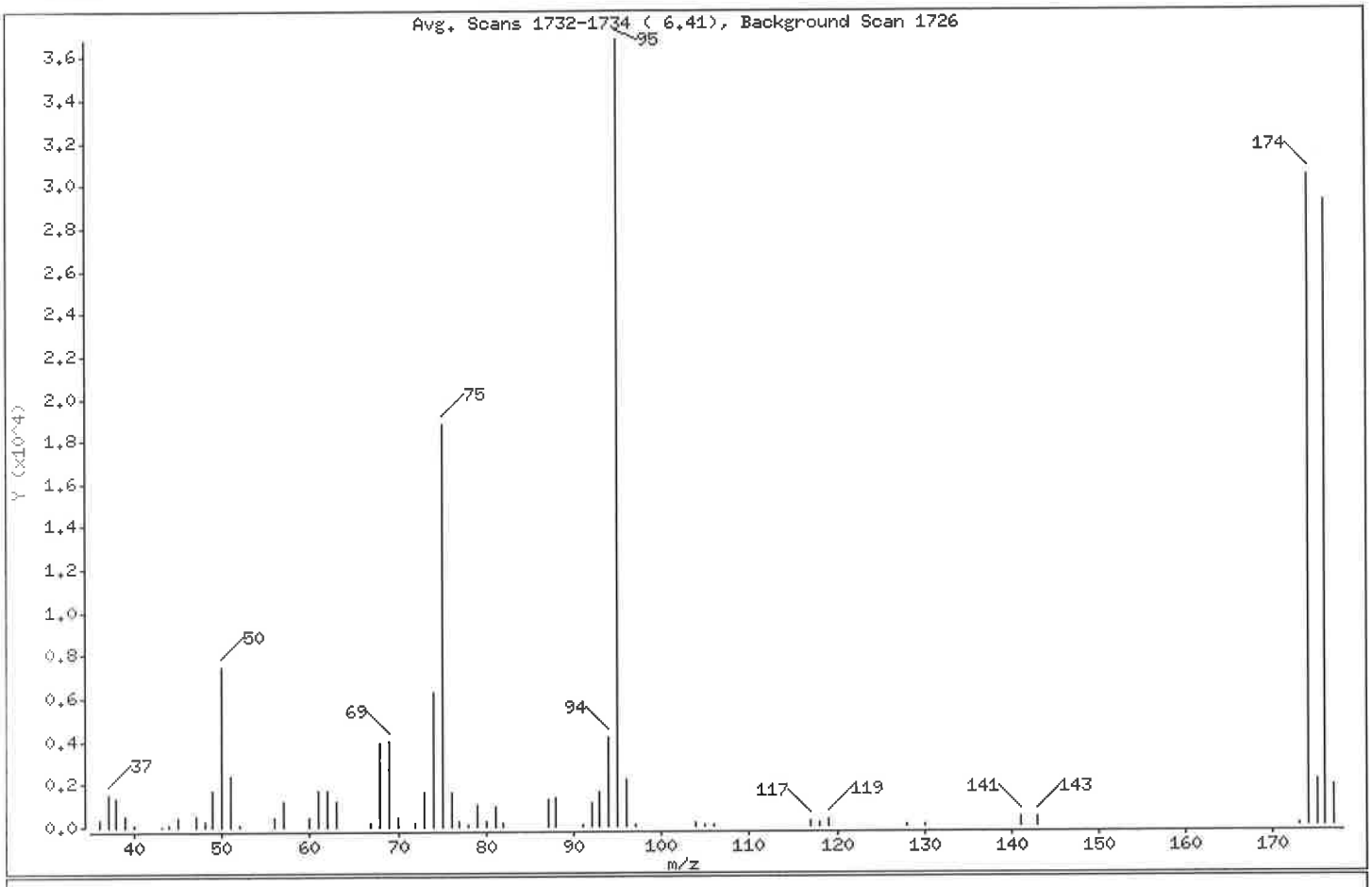
Sample Info: BFB,,5

Operator: JEW

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.17
75	30.00 - 60.00% of mass 95	51.14
96	5.00 - 9.00% of mass 95	6.02
173	Less than 2.00% of mass 174	0.20 (0.24)
174	50.00 - 120.00% of mass 95	82.43
175	5.00 - 9.00% of mass 174	5.79 (7.03)
176	95.00 - 101.00% of mass 174	79.32 (96.23)
177	5.00 - 9.00% of mass 176	5.04 (6.36)

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010010.d

Date : 10-OCT-2014 10:23

Client ID: BFB

Instrument: 30msv5.i

Sample Info: BFB,,5

Operator: JEW

Column phase:

Column diameter: 2.00

Data File: 51010010.d
Spectrum: Avg. Scans 1732-1734 (6.41), Background Scan 1726
Location of Maximum: 95.00
Number of points: 59

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	342	57.00	1162	78.00	79	105.00	87
37.00	1512	60.00	394	79.00	973	106.00	67
38.00	1388	61.00	1678	80.00	267	117.00	295
39.00	519	62.00	1685	81.00	931	118.00	162
40.00	66	63.00	1192	82.00	175	119.00	330
43.00	24	67.00	203	87.00	1254	128.00	74
44.00	64	68.00	3867	88.00	1370	130.00	74
45.00	397	69.00	3952	91.00	69	141.00	393
47.00	502	70.00	431	92.00	1125	143.00	402
48.00	289	72.00	194	93.00	1595	173.00	72
49.00	1679	73.00	1603	94.00	4143	174.00	30328
50.00	7420	74.00	6245	95.00	36792	175.00	2131
51.00	2377	75.00	18816	96.00	2216	176.00	29184
52.00	85	76.00	1591	97.00	67	177.00	1855
56.00	421	77.00	230	104.00	169		

Data File: \\30wintarget\chem\30msv5.i\5141010.b\1.b\51010010.d

Date : 10-OCT-2014 10:23

Client ID: BFB

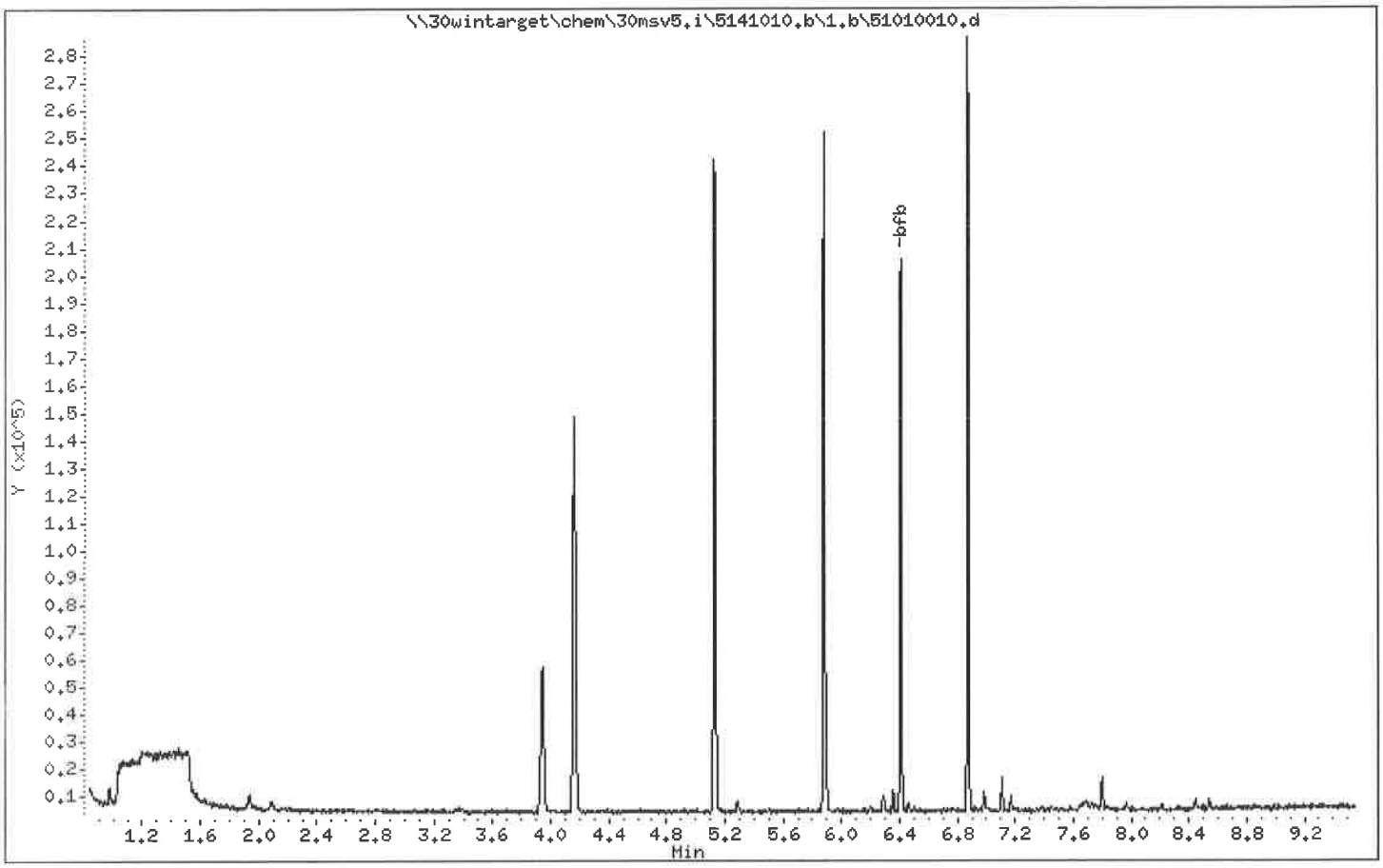
Instrument: 30msv5.i

Sample Info: BFB,,5

Operator: JEW

Column phase:

Column diameter: 2.00



FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: 51104003 BFB Injection Date: 11/04/14

Instrument ID: 30MSV5 BFB Injection Time: 1011

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.5
75	30.0 - 60.0% of mass 95	51.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.5 (0.6)1
174	50.0 - 120.0% of mass 95	82.9
175	5.0 - 9.0% of mass 174	6.2 (7.4)1
176	95.0 - 101.0% of mass 174	81.4 (98.2)1
177	5.0 - 9.0% of mass 176	5.4 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD[50]	VSTD[50]	51104004	11/04/14	1033
02	5MBLCS	812346	51104005	11/04/14	1055
03	5MB	812345	51104007	11/04/14	1140
04	AOI-5_PECO-B	30133009001	51104024	11/04/14	1758
05	AOI-5_PECO-B	30133009002	51104025	11/04/14	1820
06	AOI-5_PECO-B	30133009003	51104026	11/04/14	1843
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104003.d

Date : 04-NOV-2014 10:11

Client ID:

Instrument: 30msv5.i

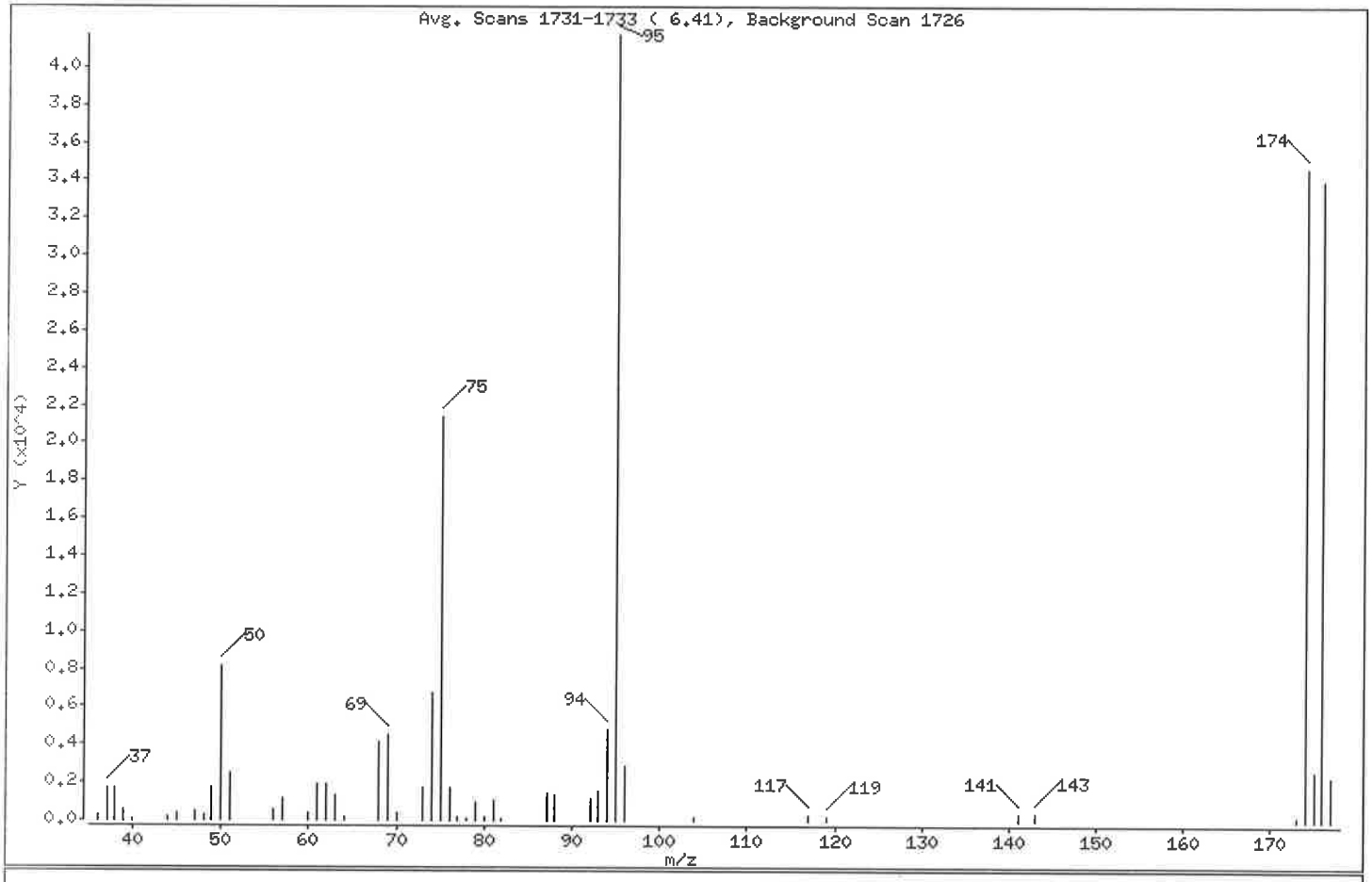
Sample Info: BFB,,5

Operator: JEW

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.55
75	30.00 - 60.00% of mass 95	51.20
96	5.00 - 9.00% of mass 95	6.89
173	Less than 2.00% of mass 174	0.49 (0.59)
174	50.00 - 120.00% of mass 95	82.88
175	5.00 - 9.00% of mass 174	6.17 (7.45)
176	95.00 - 101.00% of mass 174	81.36 (98.17)
177	5.00 - 9.00% of mass 176	5.45 (6.70)

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104003.d

Date : 04-NOV-2014 10:11

Client ID:

Instrument: 30msv5.i

Sample Info: BFB,,5

Operator: JEW

Column phase:

Column diameter: 2.00

Data File: 51104003.d
Spectrum: Avg. Scans 1731-1733 (6.41), Background Scan 1726
Location of Maximum: 95.00
Number of points: 49

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	256	57.00	1194	77.00	202	104.00	173
37.00	1769	60.00	424	78.00	92	117.00	249
38.00	1719	61.00	1925	79.00	997	119.00	182
39.00	583	62.00	1937	80.00	202	141.00	358
40.00	78	63.00	1320	81.00	1036	143.00	346
44.00	151	64.00	236	82.00	83	173.00	204
45.00	343	68.00	4112	87.00	1454	174.00	34576
47.00	517	69.00	4485	88.00	1307	175.00	2575
48.00	242	70.00	366	92.00	1141	176.00	33944
49.00	1685	73.00	1725	93.00	1567	177.00	2273
50.00	8155	74.00	6669	94.00	4749		
51.00	2499	75.00	21360	95.00	41720		
56.00	569	76.00	1744	96.00	2876		

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104003.d

Date : 04-NOV-2014 10:11

Client ID:

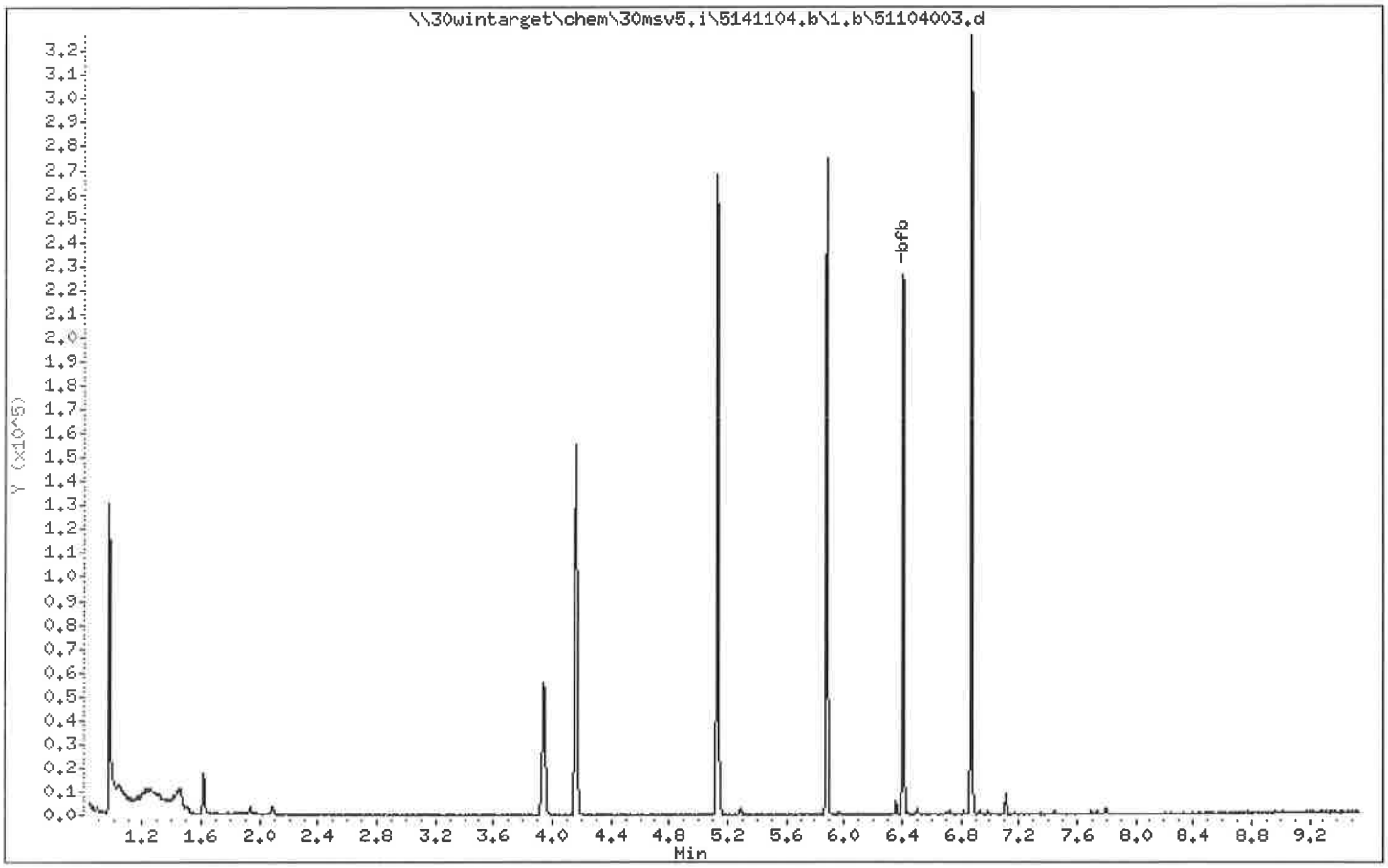
Instrument: 30msv5.i

Sample Info: BFB,,5

Operator: JEW

Column phase:

Column diameter: 2.00



FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: 51106002 BFB Injection Date: 11/06/14

Instrument ID: 30MSV5 BFB Injection Time: 0921

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.7
75	30.0 - 60.0% of mass 95	51.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.2 (0.3)1
174	50.0 - 120.0% of mass 95	82.1
175	5.0 - 9.0% of mass 174	6.4 (7.8)1
176	95.0 - 101.0% of mass 174	81.8 (99.7)1
177	5.0 - 9.0% of mass 176	5.9 (7.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD[50]	VSTD[50]	51106003	11/06/14	0943
02	5MBLCS	812960	51106004	11/06/14	1005
03	5MB	812959	51106006	11/06/14	1050
04	AOI-5_PECO-B	30133009003	51106009	11/06/14	1156
05	AOI-5_PECO-B	30133009003	51106010	11/06/14	1218
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106002.d

Date : 06-NOV-2014 09:21

Client ID:

Instrument: 30msv5.i

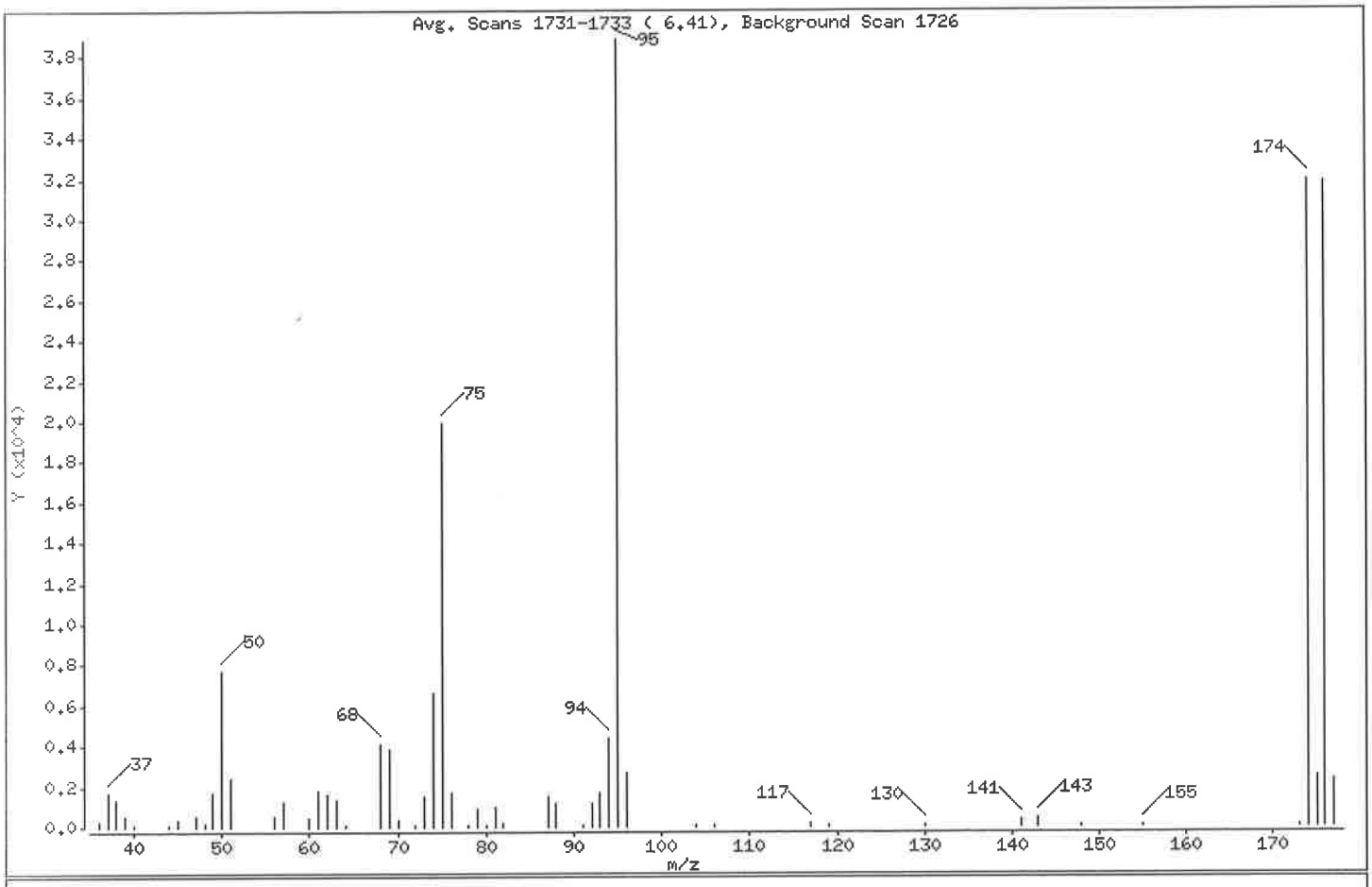
Sample Info: BFB,,5

Operator: JEW

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.66
75	30.00 - 60.00% of mass 95	51.36
96	5.00 - 9.00% of mass 95	6.81
173	Less than 2.00% of mass 174	0.24 (0.29)
174	50.00 - 120.00% of mass 95	82.06
175	5.00 - 9.00% of mass 174	6.39 (7.78)
176	95.00 - 101.00% of mass 174	81.82 (99.70)
177	5.00 - 9.00% of mass 176	5.90 (7.21)

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106002.d

Date : 06-NOV-2014 09:21

Client ID:

Instrument: 30msv5.i

Sample Info: BFB,,5

Operator: JEW

Column phase:

Column diameter: 2.00

Data File: 51106002.d
Spectrum: Avg. Scans 1731-1733 (6.41), Background Scan 1726
Location of Maximum: 95.00
Number of points: 54

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	282	60.00	409	79.00	901	117.00	195
37.00	1658	61.00	1818	80.00	117	119.00	93
38.00	1364	62.00	1615	81.00	961	130.00	104
39.00	562	63.00	1377	82.00	147	141.00	334
40.00	70	64.00	89	87.00	1492	143.00	422
44.00	116	68.00	4071	88.00	1146	148.00	70
45.00	358	69.00	3833	91.00	89	155.00	67
47.00	559	70.00	340	92.00	1128	173.00	92
48.00	217	72.00	83	93.00	1735	174.00	31880
49.00	1730	73.00	1522	94.00	4385	175.00	2481
50.00	7637	74.00	6620	95.00	38848	176.00	31784
51.00	2382	75.00	19952	96.00	2646	177.00	2293
56.00	574	76.00	1694	104.00	102		
57.00	1217	78.00	81	106.00	91		

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106002.d

Date : 06-NOV-2014 09:21

Client ID:

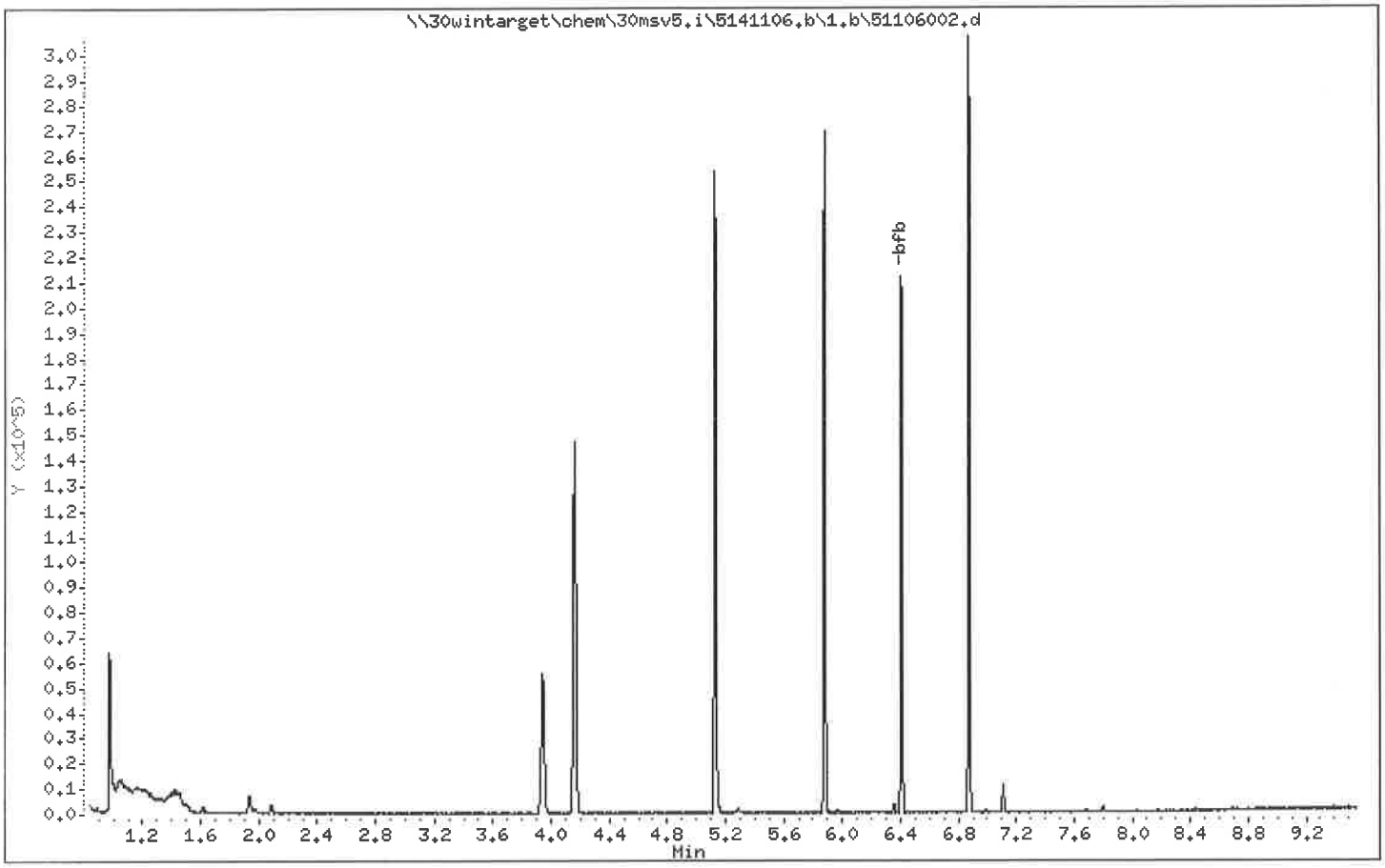
Instrument: 30msv5.i

Sample Info: BFB,,5

Operator: JEW

Column phase:

Column diameter: 2.00



Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

METHOD BLANK RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: MSV/21491 **Prepared:**
Method(s): EPA 8260B
Associated Lab Samples: 30133009001, 30133009002, 30133009003

CAS No.	Parameters	Results	Units	Reporting Limit	MDL	Analyzed	Qual
95-63-6	1,2,4-Trimethylbenzene	0.0050 U	mg/kg	0.0050	0.0012	11/04/14	M5
106-93-4	1,2-Dibromoethane (EDB)	0.0050 U	mg/kg	0.0050	0.0026	11/04/14	M5
107-06-2	1,2-Dichloroethane	0.0050 U	mg/kg	0.0050	0.00091	11/04/14	M5
108-67-8	1,3,5-Trimethylbenzene	0.0050 U	mg/kg	0.0050	0.0014	11/04/14	M5
71-43-2	Benzene	0.0050 U	mg/kg	0.0050	0.00078	11/04/14	M5
110-82-7	Cyclohexane	0.010 U	mg/kg	0.010	0.0012	11/04/14	M5
100-41-4	Ethylbenzene	0.0050 U	mg/kg	0.0050	0.0026	11/04/14	M5
	Hexane	0.010 U	mg/kg	0.010	0.010	11/04/14	M5
98-82-8	Isopropylbenzene (Cumene)	0.0050 U	mg/kg	0.0050	0.0011	11/04/14	M5
1634-04-4	Methyl-tert-butyl ether	0.0050 U	mg/kg	0.0050	0.00071	11/04/14	M5
135-98-8	sec-Butylbenzene	0.0050 U	mg/kg	0.0050	0.0015	11/04/14	M5
98-06-6	tert-Butylbenzene	0.0050 U	mg/kg	0.0050	0.0020	11/04/14	M5
108-88-3	Toluene	0.0050 U	mg/kg	0.0050	0.00064	11/04/14	M5
1330-20-7	Xylene (Total)	0.015 U	mg/kg	0.015	0.0031	11/04/14	M5

Type	Sample	Matrix
BLANK	812345	Solid

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, Inc..

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104007.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104007.d
Lab Smp Id: 812345 Client Smp ID: 5MB
Inj Date : 04-NOV-2014 11:40
Operator : JEW Inst ID: 30msv5.i
Smp Info : 812345,,5
Misc Info : 21491
Comment :
Method : \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 13:07 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
1 Dichlorodifluoromethane	85	Compound Not Detected.						
2 Chloromethane	50	Compound Not Detected.						
3 Vinyl Chloride	62	Compound Not Detected.						
4 Bromomethane	94	Compound Not Detected.						
5 Chloroethane	64	Compound Not Detected.						
6 Trichlorofluoromethane	101	Compound Not Detected.						
7 Ethyl Ether	59	Compound Not Detected.						
8 1,1-Dichloroethene	61	Compound Not Detected.						
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	Compound Not Detected.						
10 1,1,2-Trichlorotrifluoroethan	151	Compound Not Detected.						
11 Iodomethane	142	Compound Not Detected.						
12 Acrolein	56	Compound Not Detected.						
13 Allyl chloride	41	Compound Not Detected.						
14 Methylene Chloride	49	Compound Not Detected.						
15 Acetone	58	Compound Not Detected.						
16 trans-1,2-Dichloroethene	61	Compound Not Detected.						
17 Methyl Acetate	74	Compound Not Detected.						
18 Hexane	86	Compound Not Detected.						
19 tert-butyl Methylether,MtB	73	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104007.d
Report Date: 11-Dec-2014 13:07

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
	21 tert-Butyl Alcohol	59	Compound Not Detected.						
	20 Acetonitrile	41	Compound Not Detected.						
	22 DiisopropylEther	45	Compound Not Detected.						
	23 Chloroprene	53	Compound Not Detected.						
	25 Acrylonitrile	53	Compound Not Detected.						
	24 1,1-Dichloroethane	63	Compound Not Detected.						
	27 t-Butyl ethyl ether	59	Compound Not Detected.						
	26 Vinyl Acetate	43	Compound Not Detected.						
	28 cis-1,2-Dichloroethene	61	Compound Not Detected.						
	29 2,2-Dichloropropane	77	Compound Not Detected.						
	30 Cyclohexane	56	Compound Not Detected.						
	31 Bromochloromethane	130	Compound Not Detected.						
	32 Chloroform	83	Compound Not Detected.						
	33 Carbon Tetrachloride	117	Compound Not Detected.						
	36 Ethyl Acetate	43	Compound Not Detected.						
	35 Tetrahydrofuran	42	Compound Not Detected.						
	34 1,1,1-Trichloroethane	97	Compound Not Detected.						
	37 1,1-Dichloropropene	75	Compound Not Detected.						
	38 2-Butanone	43	Compound Not Detected.						
	39 Benzene	78	Compound Not Detected.						
	40 Propionitrile	54	Compound Not Detected.						
	41 Methacrylonitrile	41	Compound Not Detected.						
$	42 1,2-Dichloroethane-d4	65	3.939	3.939	(0.947)	33435	29.0775	29.1	
	43 t-Amyl methyl ether	73	Compound Not Detected.						
	46 Isobutanol	43	Compound Not Detected.						
	44 1,2-Dichloroethane	62	Compound Not Detected.						
*	45 Fluorobenzene	96	4.161	4.161	(1.000)	98505	30.0000		
	47 Methylcyclohexane	83	Compound Not Detected.						
	48 Trichloroethene	132	Compound Not Detected.						
	49 Dibromomethane	174	Compound Not Detected.						
	50 1,2-Dichloropropane	63	Compound Not Detected.						
	51 Bromodichloromethane	83	Compound Not Detected.						
	52 Methyl methacrylate	69	Compound Not Detected.						
	53 1,4-Dioxane	88	Compound Not Detected.						
	55 2-ChloroethylVinylEther	63	Compound Not Detected.						
	54 cis-1,3-Dichloropropene	75	Compound Not Detected.						
$	56 Toluene-d8	98	5.129	5.129	(0.873)	95549	28.6584	28.6	
	57 Toluene	91	Compound Not Detected.						
	58 2-Nitropropane	43	Compound Not Detected.						
	59 Tetrachloroethene	166	Compound Not Detected.						
	60 4-Methyl-2-Pentanone	43	Compound Not Detected.						
	61 trans-1,3-Dichloropropene	75	Compound Not Detected.						
	63 Ethyl methacrylate	41	Compound Not Detected.						
	62 1,1,2-Trichloroethane	97	Compound Not Detected.						
	64 Dibromochloromethane	129	Compound Not Detected.						
	65 1,3-Dichloropropane	76	Compound Not Detected.						
	66 1,2-Dibromoethane,EDB	107	Compound Not Detected.						
	70 2-Hexanone	43	Compound Not Detected.						
*	67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	43653	30.0000		
	68 Chlorobenzene	112	Compound Not Detected.						
	69 Ethylbenzene	106	Compound Not Detected.						
	71 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.						
	72 m,p-Xylene	106	Compound Not Detected.						
	73 o-Xylene	106	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104007.d
Report Date: 11-Dec-2014 13:07

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
74 Styrene	104	Compound Not Detected.						
75 Bromoform	173	Compound Not Detected.						
76 Isopropylbenzene,Cumene	105	Compound Not Detected.						
$ 77 Bromofluorobenzene	174	6.408	6.405	(0.933)	32707	28.4151	28.4	
79 n-Propylbenzene	91	Compound Not Detected.						
78 Bromobenzene	77	Compound Not Detected.						
80 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.						
81 2-Chlorotoluene	126	Compound Not Detected.						
82 1,3,5-Trimethylbenzene	120	Compound Not Detected.						
83 1,2,3-Trichloropropane	110	Compound Not Detected.						
84 trans 1,4-Dichloro-2-butene	53	Compound Not Detected.						
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	Compound Not Detected.						
87 tert-Butyl benzene	119	Compound Not Detected.						
88 1,2,4-Trimethylbenzene	120	Compound Not Detected.						
89 sec-Butyl benzene	105	Compound Not Detected.						
90 4-Isopropyl toluene	119	Compound Not Detected.						
91 1,3-Dichlorobenzene	146	Compound Not Detected.						
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.871	(1.000)	41945	30.0000		
93 1,4-Dichlorobenzene	146	Compound Not Detected.						
94 n-Butyl benzene	91	Compound Not Detected.						
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	Compound Not Detected.						
96 bis(2Chloro1methyl ethyl)eth	45	Compound Not Detected.						
97 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.						
98 Hexachlorobutadiene	225	Compound Not Detected.						
99 1,2,4-Trichlorobenzene	180	Compound Not Detected.						
100 Naphthalene	128	Compound Not Detected.						
101 1,2,3-Trichlorobenzene	180	Compound Not Detected.						
157 2-methylnaphthalene	142	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104007.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51104007.d
Lab Smp Id: 812345
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Calibration Date: 04-NOV-2014
Calibration Time: 10:33
Client Smp ID: 5MB
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	96404	48202	192808	98505	2.18
67 Chlorobenzene-d5	41101	20551	82202	43653	6.21
92 1,4-Dichlorobenze	37743	18872	75486	41945	11.13

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104007.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

RECOVERY REPORT

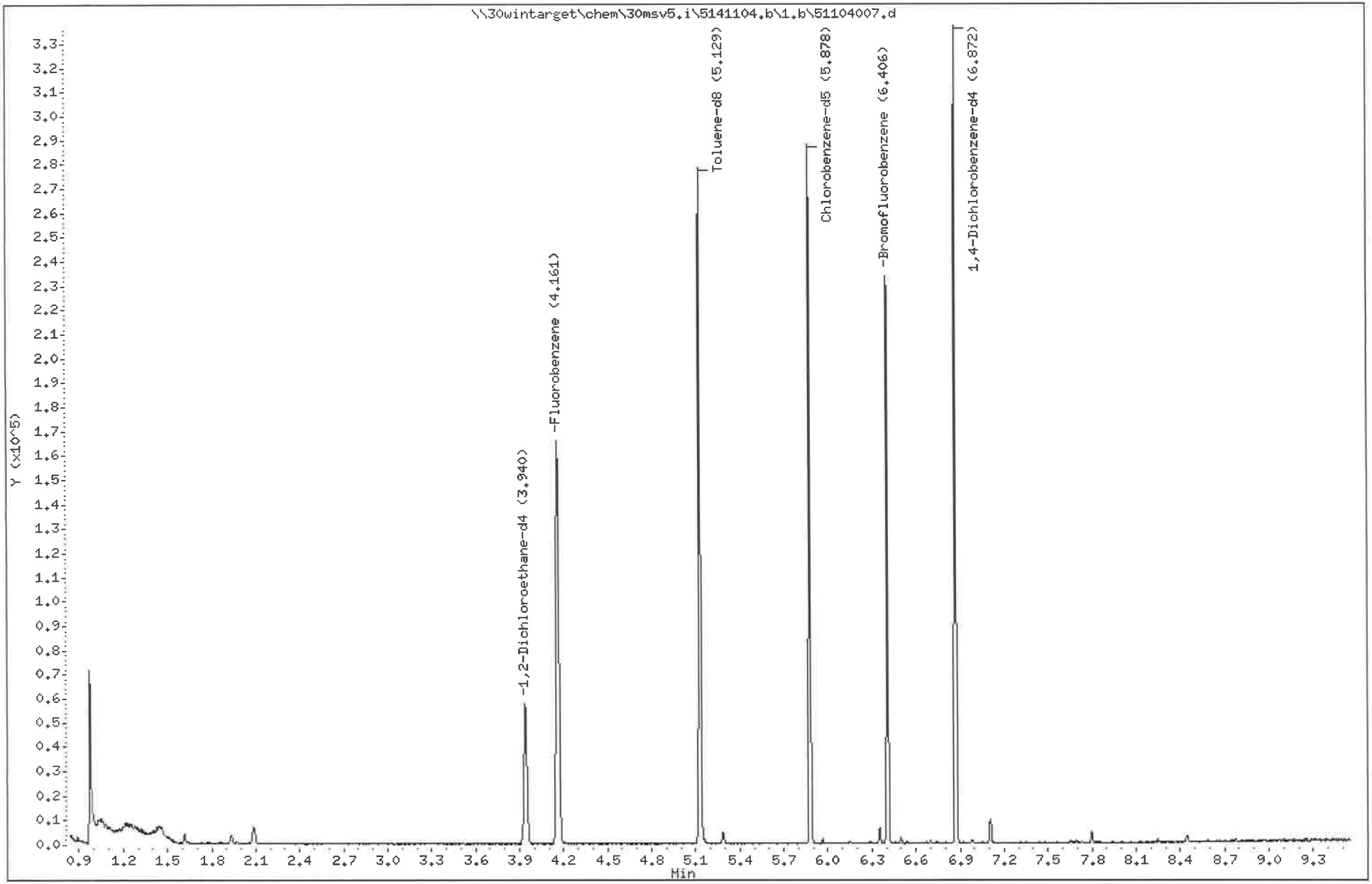
Client Name:
Sample Matrix: SOLID
Lab Smp Id: 812345
Level: LOW
Data Type: MS DATA
SpikeList File: lcs.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Client SDG: 30133009
Fraction: VOA
Client Smp ID: 5MB
Operator: JEW
SampleType: BLANK
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 42 1,2-Dichloroethane	30.0	29.1	96.92	83-138
$ 56 Toluene-d8	30.0	28.6	95.53	73-124
$ 77 Bromofluorobenzene	30.0	28.4	94.72	71-124
$ 158 1,2-Dichlorobenze	30.0	0.000	*	0-200

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104007.d
Date : 04-NOV-2014 11:40
Client ID: 5MB
Sample Info: 812345,,5
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b/51104007.d (ManInt: al
Injection Date: 04-NOV-2014 11:40
Instrument: 30msv5.i
Lab Sample ID: 812345
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106006.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106006.d
Lab Smp Id: 812959 Client Smp ID: 5MB
Inj Date : 06-NOV-2014 10:50
Operator : JEW Inst ID: 30msv5.i
Smp Info : 812959,,5
Misc Info : 21512
Comment :
Method : \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 13:21 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
1 Dichlorodifluoromethane	85	Compound Not Detected.						
2 Chloromethane	50	Compound Not Detected.						
3 Vinyl Chloride	62	Compound Not Detected.						
4 Bromomethane	94	Compound Not Detected.						
5 Chloroethane	64	Compound Not Detected.						
6 Trichlorofluoromethane	101	Compound Not Detected.						
7 Ethyl Ether	59	Compound Not Detected.						
8 1,1-Dichloroethene	61	Compound Not Detected.						
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	Compound Not Detected.						
10 1,1,2-Trichlorotrifluoroethan	151	Compound Not Detected.						
11 Iodomethane	142	Compound Not Detected.						
12 Acrolein	56	Compound Not Detected.						
13 Allyl chloride	41	Compound Not Detected.						
14 Methylene Chloride	49	Compound Not Detected.						
15 Acetone	58	Compound Not Detected.						
16 trans-1,2-Dichloroethene	61	Compound Not Detected.						
17 Methyl Acetate	74	Compound Not Detected.						
18 Hexane	86	Compound Not Detected.						
19 tert-butyl Methylether,MtB	73	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106006.d
Report Date: 11-Dec-2014 13:21

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
	21 tert-Butyl Alcohol	59	Compound Not Detected.						
	20 Acetonitrile	41	Compound Not Detected.						
	22 DiisopropylEther	45	Compound Not Detected.						
	23 Chloroprene	53	Compound Not Detected.						
	25 Acrylonitrile	53	Compound Not Detected.						
	24 1,1-Dichloroethane	63	Compound Not Detected.						
	27 t-Butyl ethyl ether	59	Compound Not Detected.						
	26 Vinyl Acetate	43	Compound Not Detected.						
	28 cis-1,2-Dichloroethene	61	Compound Not Detected.						
	29 2,2-Dichloropropane	77	Compound Not Detected.						
	30 Cyclohexane	56	Compound Not Detected.						
	31 Bromochloromethane	130	Compound Not Detected.						
	32 Chloroform	83	Compound Not Detected.						
	33 Carbon Tetrachloride	117	Compound Not Detected.						
	36 Ethyl Acetate	43	Compound Not Detected.						
	35 Tetrahydrofuran	42	Compound Not Detected.						
	34 1,1,1-Trichloroethane	97	Compound Not Detected.						
	37 1,1-Dichloropropene	75	Compound Not Detected.						
	38 2-Butanone	43	Compound Not Detected.						
	39 Benzene	78	Compound Not Detected.						
	40 Propionitrile	54	Compound Not Detected.						
	41 Methacrylonitrile	41	Compound Not Detected.						
$	42 1,2-Dichloroethane-d4	65	3.942	3.939	(0.947)	29377	30.9538	31.0(M)	LT
	43 t-Amyl methyl ether	73	Compound Not Detected.						
	46 Isobutanol	43	Compound Not Detected.						
	44 1,2-Dichloroethane	62	Compound Not Detected.						
*	45 Fluorobenzene	96	4.161	4.161	(1.000)	81303	30.0000		
	47 Methylcyclohexane	83	Compound Not Detected.						
	48 Trichloroethene	132	Compound Not Detected.						
	49 Dibromomethane	174	Compound Not Detected.						
	50 1,2-Dichloropropane	63	Compound Not Detected.						
	51 Bromodichloromethane	83	Compound Not Detected.						
	52 Methyl methacrylate	69	Compound Not Detected.						
	53 1,4-Dioxane	88	Compound Not Detected.						
	55 2-ChloroethylVinylEther	63	Compound Not Detected.						
	54 cis-1,3-Dichloropropene	75	Compound Not Detected.						
$	56 Toluene-d8	98	5.129	5.129	(0.873)	79397	28.5315	28.5	
	57 Toluene	91	Compound Not Detected.						
	58 2-Nitropropane	43	Compound Not Detected.						
	59 Tetrachloroethene	166	Compound Not Detected.						
	60 4-Methyl-2-Pentanone	43	Compound Not Detected.						
	61 trans-1,3-Dichloropropene	75	Compound Not Detected.						
	63 Ethyl methacrylate	41	Compound Not Detected.						
	62 1,1,2-Trichloroethane	97	Compound Not Detected.						
	64 Dibromochloromethane	129	Compound Not Detected.						
	65 1,3-Dichloropropane	76	Compound Not Detected.						
	66 1,2-Dibromoethane,EDB	107	Compound Not Detected.						
	70 2-Hexanone	43	Compound Not Detected.						
*	67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	36435	30.0000		
	68 Chlorobenzene	112	Compound Not Detected.						
	69 Ethylbenzene	106	Compound Not Detected.						
	71 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.						
	72 m,p-Xylene	106	Compound Not Detected.						
	73 o-Xylene	106	Compound Not Detected.						

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106006.d
Report Date: 11-Dec-2014 13:21

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
74 Styrene	104	Compound Not Detected.						
75 Bromoform	173	Compound Not Detected.						
76 Isopropylbenzene,Cumene	105	Compound Not Detected.						
$ 77 Bromofluorobenzene	174	6.409	6.408	(0.933)	28110	28.3676	28.4	
79 n-Propylbenzene	91	Compound Not Detected.						
78 Bromobenzene	77	Compound Not Detected.						
80 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.						
81 2-Chlorotoluene	126	Compound Not Detected.						
82 1,3,5-Trimethylbenzene	120	Compound Not Detected.						
83 1,2,3-Trichloropropane	110	Compound Not Detected.						
84 trans 1,4-Dichloro-2-butene	53	Compound Not Detected.						
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	Compound Not Detected.						
87 tert-Butyl benzene	119	Compound Not Detected.						
88 1,2,4-Trimethylbenzene	120	Compound Not Detected.						
89 sec-Butyl benzene	105	Compound Not Detected.						
90 4-Isopropyl toluene	119	Compound Not Detected.						
91 1,3-Dichlorobenzene	146	Compound Not Detected.						
* 92 1,4-Dichlorobenzene-d4	152	6.872	6.871	(1.000)	36110	30.0000		
93 1,4-Dichlorobenzene	146	Compound Not Detected.						
94 n-Butyl benzene	91	Compound Not Detected.						
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	Compound Not Detected.						
96 bis(2Chloro1methyl ethyl)eth	45	Compound Not Detected.						
97 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.						
98 Hexachlorobutadiene	225	Compound Not Detected.						
99 1,2,4-Trichlorobenzene	180	Compound Not Detected.						
100 Naphthalene	128	Compound Not Detected.						
101 1,2,3-Trichlorobenzene	180	Compound Not Detected.						
157 2-methylnaphthalene	142	Compound Not Detected.						

QC Flag Legend

M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106006.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51106006.d
Lab Smp Id: 812959
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW

Calibration Date: 06-NOV-2014
Calibration Time: 09:43
Client Smp ID: 5MB
Level: LOW
Sample Type: SOIL

Method File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Misc Info: 21512

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	91773	45887	183546	81303	-11.41
67 Chlorobenzene-d5	40493	20247	80986	36435	-10.02
92 1,4-Dichlorobenze	36287	18144	72574	36110	-0.49

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106006.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 812959
Level: LOW
Data Type: MS DATA
SpikeList File: lcs.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Misc Info: 21512

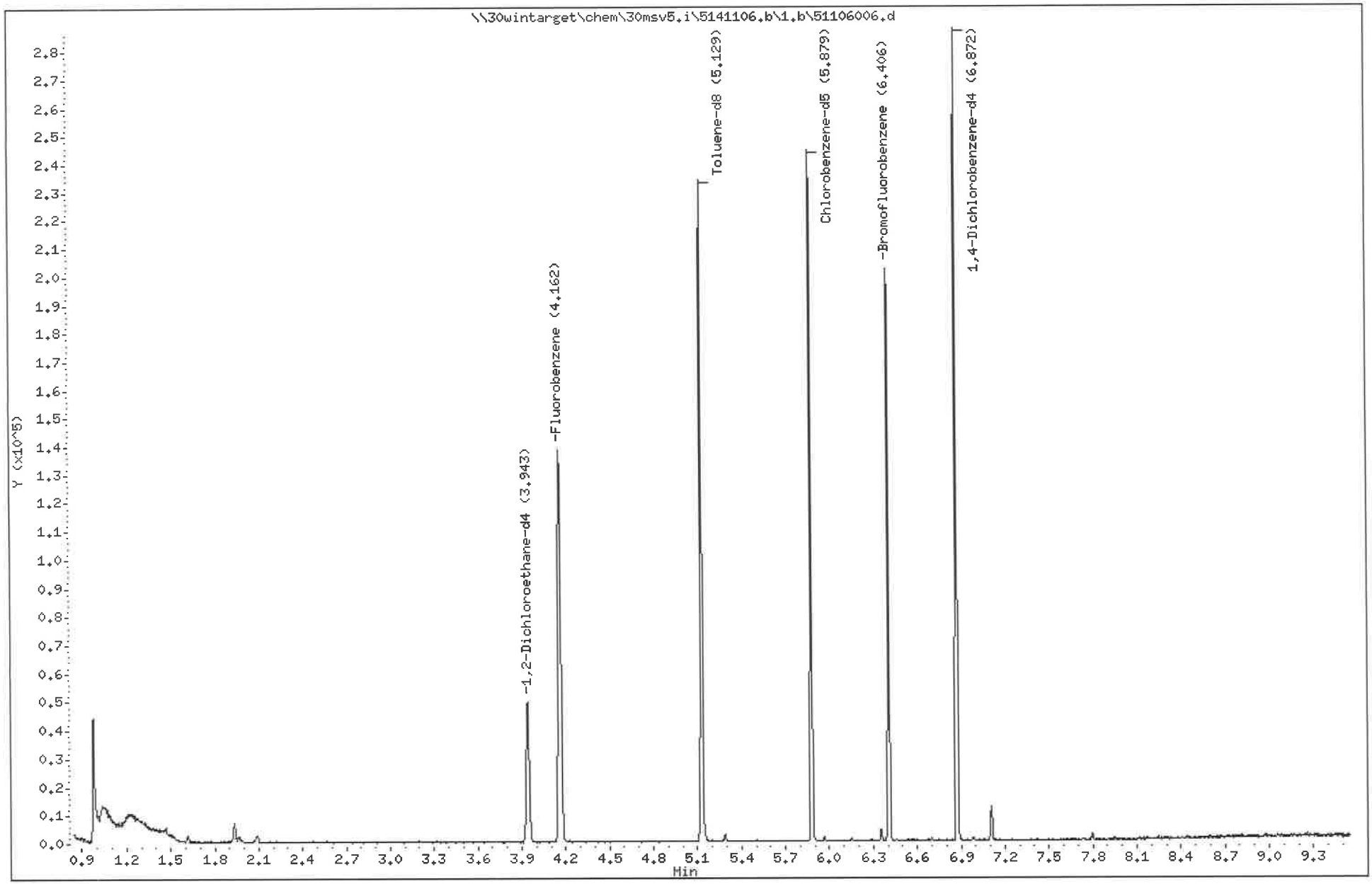
Client SDG: 30133009
Fraction: VOA
Client Smp ID: 5MB
Operator: JEW
SampleType: BLANK
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 42 1,2-Dichloroethane	30.0	31.0	103.18	83-138
$ 56 Toluene-d8	30.0	28.5	95.10	73-124
$ 77 Bromofluorobenzene	30.0	28.4	94.56	71-124
$ 158 1,2-Dichlorobenze	30.0	0.000	*	0-200

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106006.d
Date : 06-NOV-2014 10:50
Client ID: 5MB
Sample Info: 812959,,5
Purge Volume: 5.0
Column phase: Rtx-VMS

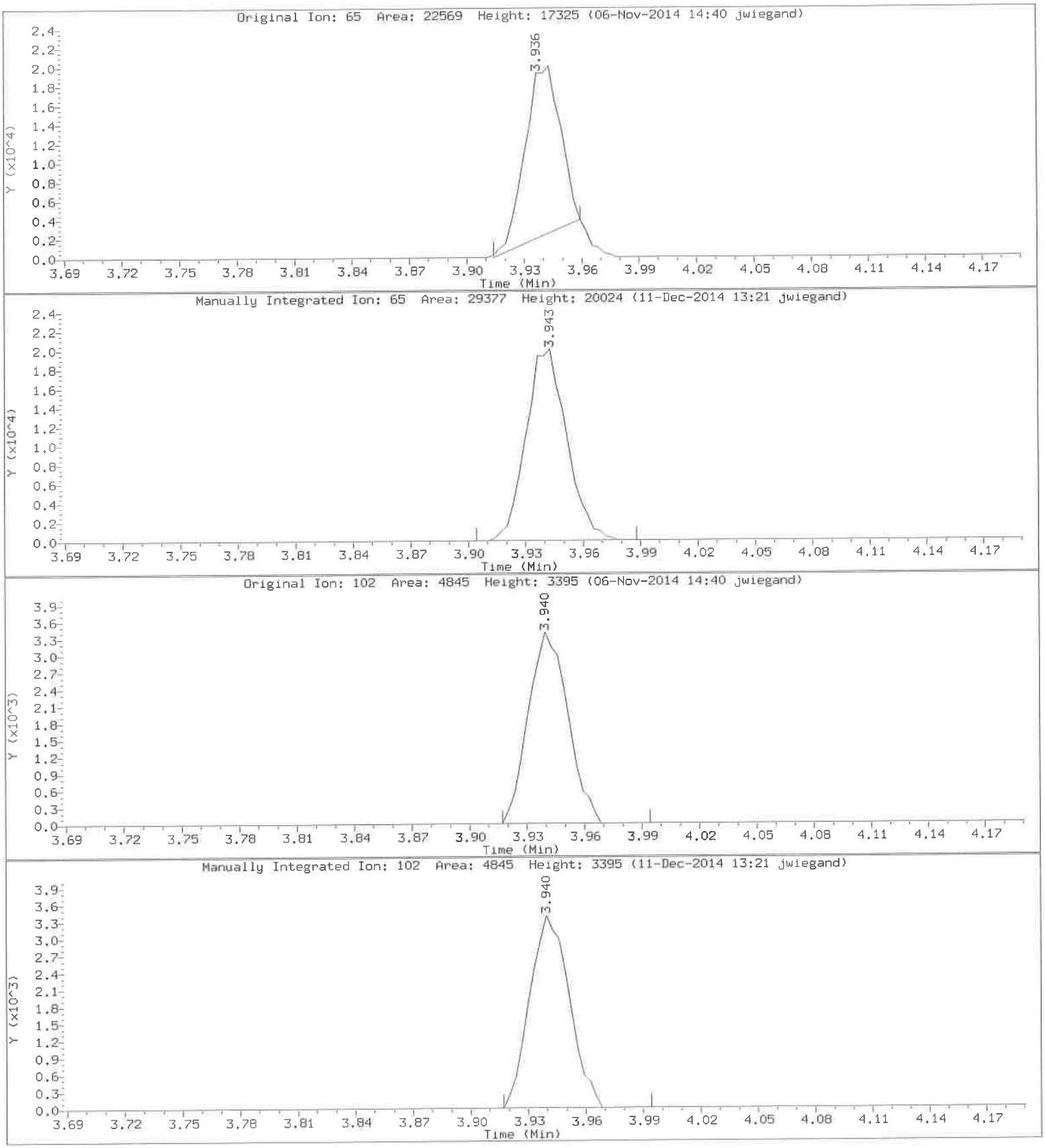
Instrument: 30msv5.i

Operator: JEW
Column diameter: 0.18

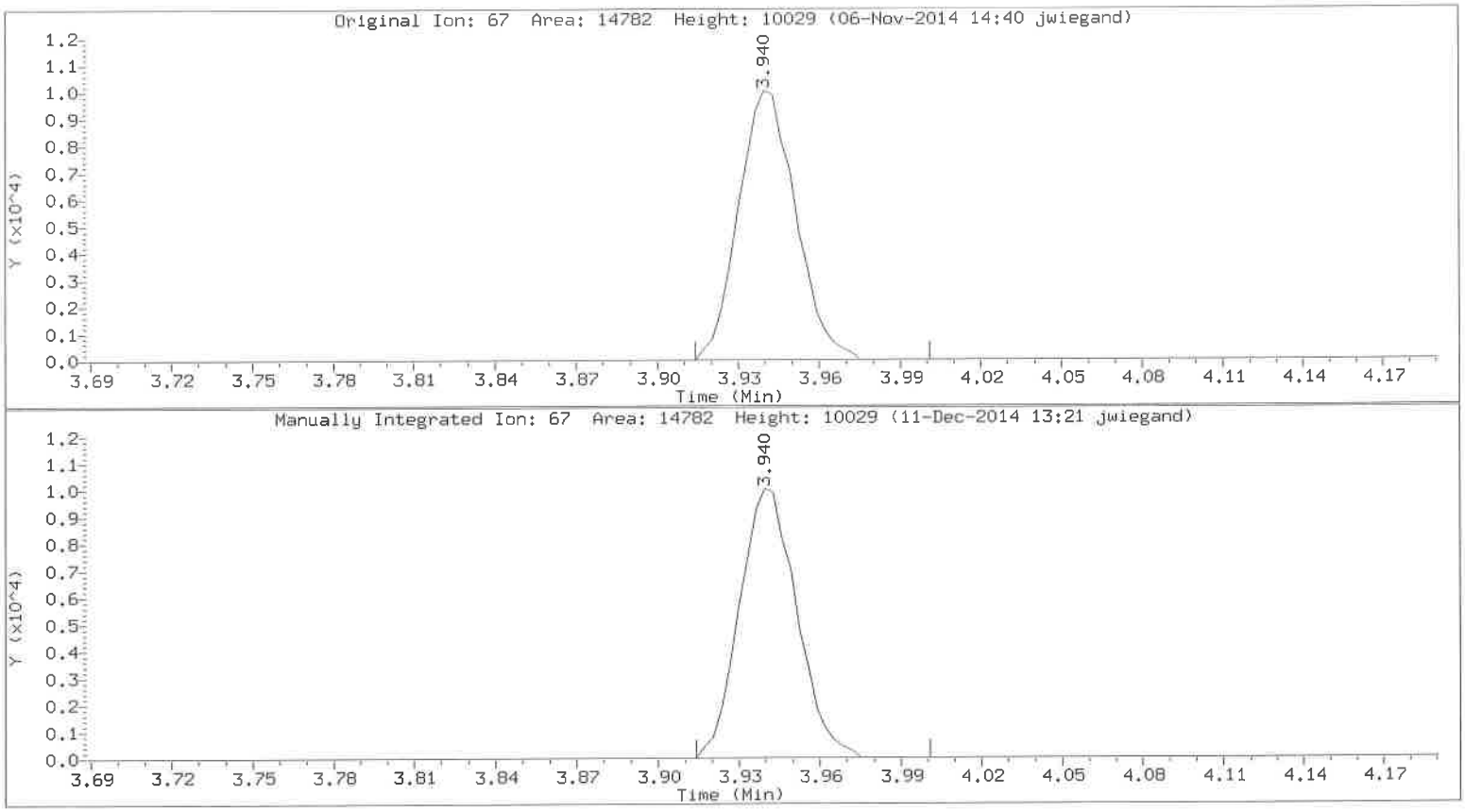


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106006.d (ManInt: al
Injection Date: 06-NOV-2014 10:50
Instrument: 30msv5.i
Lab Sample ID: 812959

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0



Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106006.d (ManInt: al
Injection Date: 06-NOV-2014 10:50
Instrument: 30msv5.i
Lab Sample ID: 812959



Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104005.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 812346
Level: LOW
Data Type: MS DATA
SpikeList File: lcs.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Client SDG: 30133009
Fraction: VOA
Client Smp ID: 5MBLCS
Operator: JEW
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	20.0	23.7	118.44	70-130
2 Chloromethane	20.0	15.9	79.55	70-130
3 Vinyl Chloride	20.0	20.6	102.76	70-130
4 Bromomethane	20.0	27.4	137.24*	70-130
5 Chloroethane	20.0	40.9	204.39*	70-130
6 Trichlorofluoromet	20.0	22.1	110.67	70-130
8 1,1-Dichloroethene	20.0	13.8	68.87*	70-130
9 Carbon Disulfide	20.0	21.7	108.40	70-130
11 Iodomethane	50.0	11.6	23.10*	70-130
12 Acrolein	20.0	0.000	*	70-130
13 Allyl chloride	50.0	94.6	189.14*	70-130
14 Methylene Chloride	20.0	20.6	102.81	70-130
15 Acetone	20.0	15.9	79.74	70-130
16 trans-1,2-Dichloro	20.0	15.4	76.98	70-130
17 Methyl Acetate	20.0	20.8	103.79	70-130
18 Hexane	20.0	15.9	79.65	70-130
19 tert-butyl Methyle	20.0	19.6	97.91	70-130
21 tert-Butyl Alcohol	50.0	92.2	184.37*	70-130
20 Acetonitrile	50.0	82.7	165.36*	70-130
22 DiisopropylEther	20.0	18.1	90.65	70-130
23 Chloroprene	20.0	0.000	*	70-130
24 1,1-Dichloroethane	20.0	16.9	84.44	70-130
25 Acrylonitrile	20.0	16.6	83.17	70-130
27 t-Butyl ethyl ethe	20.0	18.5	92.41	70-130
26 Vinyl Acetate	20.0	0.000	*	70-130
28 cis-1,2-Dichloroet	20.0	16.7	83.54	70-130
29 2,2-Dichloropropan	20.0	11.9	59.57*	70-130
30 Cyclohexane	20.0	19.5	97.54	70-130
31 Bromochloromethane	20.0	17.9	89.75	70-130
32 Chloroform	20.0	18.1	90.65	70-130
33 Carbon Tetrachlori	20.0	15.8	79.09	70-130
36 Ethyl Acetate	20.0	0.000	*	70-130
35 Tetrahydrofuran	20.0	17.6	87.95	70-130
34 1,1,1-Trichloroeth	20.0	18.3	91.47	70-130
37 1,1-Dichloropropen	20.0	17.8	89.03	70-130
38 2-Butanone	20.0	14.4	72.21	70-130
39 Benzene	20.0	16.6	83.26	70-130
40 Propionitrile	20.0	18.3	91.67	70-130
41 Methacrylonitrile	20.0	16.6	83.03	70-130
44 1,2-Dichloroethane	20.0	17.0	84.94	70-130

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104005.d
Report Date: 11-Dec-2014 13:07

SPIKE	COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
46	Isobutanol	50.0	86.0	172.00*	70-130
47	Methylcyclohexane	20.0	18.5	92.58	70-130
48	Trichloroethene	20.0	18.0	90.25	70-130
49	Dibromomethane	20.0	17.9	89.74	70-130
50	1,2-Dichloropropan	20.0	16.2	81.07	70-130
51	Bromodichlorometha	20.0	16.7	83.72	70-130
52	Methyl methacrylat	20.0	21.5	107.33	70-130
53	1,4-Dioxane	200	230	115.21	70-130
55	2-ChloroethylVinyl	20.0	16.7	83.58	70-130
54	cis-1,3-Dichloropr	20.0	15.8	79.07	70-130
57	Toluene	20.0	18.4	91.77	70-130
58	2-Nitropropane	50.0	75.6	151.29*	70-130
59	Tetrachloroethene	20.0	19.5	97.44	70-130
60	4-Methyl-2-Pentano	20.0	14.7	73.64	70-130
61	trans-1,3-Dichloro	20.0	15.6	78.22	70-130
63	Ethyl methacrylate	20.0	10.5	52.57*	70-130
62	1,1,2-Trichloroeth	20.0	18.3	91.71	70-130
64	Dibromochlorometha	20.0	17.0	84.83	70-130
65	1,3-Dichloropropan	20.0	18.2	91.10	70-130
66	1,2-Dibromoethane,	20.0	18.4	92.26	70-130
70	2-Hexanone	20.0	12.3	61.38*	70-130
68	Chlorobenzene	20.0	19.3	96.50	70-130
69	Ethylbenzene	20.0	18.2	90.98	70-130
71	1,1,1,2-Tetrachlor	20.0	18.5	92.47	70-130
72	m,p-Xylene	40.0	38.2	95.61	70-130
73	o-Xylene	20.0	18.8	94.20	70-130
74	Styrene	20.0	19.8	99.20	70-130
75	Bromoform	20.0	18.0	90.05	70-130
76	Isopropylbenzene,C	20.0	16.8	83.87	70-130
79	n-Propylbenzene	20.0	15.9	79.42	70-130
78	Bromobenzene	20.0	15.8	78.89	70-130
80	1,1,2,2-Tetrachlor	20.0	15.0	75.15	70-130
81	2-Chlorotoluene	20.0	17.4	86.84	70-130
82	1,3,5-Trimethylben	20.0	16.6	83.14	70-130
83	1,2,3-Trichloropro	20.0	17.0	85.00	70-130
84	trans 1,4-Dichloro	20.0	10.3	51.31*	70-130
85	Cyclohexanone	50.0	0.000	*	70-130
86	4-Chlorotoluene	20.0	16.6	82.87	70-130
88	1,2,4-Trimethylben	20.0	17.2	85.87	70-130
90	4-Isopropyl toluen	20.0	16.8	84.18	70-130
91	1,3-Dichlorobenzen	20.0	17.5	87.67	70-130
93	1,4-Dichlorobenzen	20.0	17.8	88.81	70-130
95	1,2-Dichlorobenzen	20.0	17.5	87.38	70-130
96	bis(2Chloro1methy	20.0	0.000	*	70-130
98	Hexachlorobutadien	20.0	18.9	94.55	70-130
99	1,2,4-Trichloroben	20.0	19.1	95.71	70-130
100	Naphthalene	20.0	17.9	89.74	70-130
101	1,2,3-Trichloroben	20.0	19.3	96.67	70-130
157	2-methylnaphthalen	20.0	18.9	94.51	70-130

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104005.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 812346
Level: LOW
Data Type: MS DATA
SpikeList File: lcs.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Client SDG: 30133009
Fraction: VOA
Client Smp ID: 5MBLCS
Operator: JEW
SampleType: LCS
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 42 1,2-Dichloroethane	30.0	29.6	98.86	83-138
$ 56 Toluene-d8	30.0	29.3	97.72	73-124
$ 77 Bromofluorobenzene	30.0	27.8	92.79	71-124
$ 158 1,2-Dichlorobenze	30.0	0.000	*	0-200

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104005.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104005.d
Lab Smp Id: 812346 Client Smp ID: 5MBLCS
Inj Date : 04-NOV-2014 10:55
Operator : JEW Inst ID: 30msv5.i
Smp Info : 812346,,5,V10-56-15
Misc Info : 21491
Comment :
Method : \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 13:07 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
1 Dichlorodifluoromethane	85	0.897	0.897	(0.216)	8008	23.6878	23.7(Q)	
2 Chloromethane	50	0.991	0.991	(0.238)	12395	15.9107	15.9(QM)	NI
3 Vinyl Chloride	62	1.032	1.032	(0.248)	7580	20.5525	20.6	
4 Bromomethane	94	1.190	1.193	(0.286)	2319	27.4471	27.4(QRM)	NI
5 Chloroethane	64	1.254	1.254	(0.302)	7050	40.8783	40.9(R)	
6 Trichlorofluoromethane	101	1.325	1.325	(0.319)	17985	22.1335	22.1	
7 Ethyl Ether	59	1.479	1.479	(0.356)	9451	19.3190	19.3	
8 1,1-Dichloroethene	61	1.592	1.592	(0.383)	12643	13.7744	13.8(RM)	LT
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	1.614	1.614	(0.388)	27575	21.6796	21.7	
10 1,1,2-Trichlorotrifluoroethan	151	1.611	1.611	(0.387)	8414	21.4242	21.4	
11 Iodomethane	142	1.675	1.675	(0.403)	2614	11.5523	11.6(R)	
12 Acrolein	56	Compound Not Detected.						
13 Allyl chloride	41	1.865	1.865	(0.448)	79714	94.5682	94.6(R)	
14 Methylene Chloride	49	1.933	1.933	(0.465)	14547	20.5626	20.6	
15 Acetone	58	1.965	1.968	(0.472)	1049	15.9476	15.9(QM)	LT
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	16732	15.3956	15.4	
17 Methyl Acetate	74	2.045	2.042	(0.492)	3452	20.7580	20.8	
18 Hexane	86	2.087	2.084	(0.502)	2398	15.9306	15.9(QM)	NI
19 tert-butyl Methylether,MtB	73	2.103	2.103	(0.506)	39548	19.5818	19.6	

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104005.d
Report Date: 11-Dec-2014 13:07

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
	21 tert-Butyl Alcohol	59	2.171	2.174	(0.522)	7350	92.1861	92.2(R)	
	20 Acetonitrile	41	2.286	2.286	(0.550)	4102	82.6778	82.7(RM)	NI
	22 DiisopropylEther	45	2.383	2.380	(0.573)	44773	18.1306	18.1	
	23 Chloroprene	53	Compound Not Detected.						
	25 Acrylonitrile	53	2.534	2.524	(0.609)	4229	16.6336	16.6(QM)	LT
	24 1,1-Dichloroethane	63	2.479	2.479	(0.596)	24607	16.8879	16.9	
	27 t-Butyl ethyl ether	59	2.682	2.682	(0.645)	46452	18.4815	18.5	
	26 Vinyl Acetate	43	Compound Not Detected.						
	28 cis-1,2-Dichloroethene	61	2.955	2.952	(0.710)	20077	16.7074	16.7	
	29 2,2-Dichloropropane	77	3.055	3.055	(0.734)	13719	11.9132	11.9(QR)	
	30 Cyclohexane	56	3.142	3.142	(0.755)	22053	19.5074	19.5(Q)	
	31 Bromochloromethane	130	3.145	3.145	(0.756)	8459	17.9495	17.9(Q)	
	32 Chloroform	83	3.235	3.235	(0.777)	26757	18.1308	18.1	
	33 Carbon Tetrachloride	117	3.373	3.367	(0.811)	17600	15.8180	15.8(M)	LT
	36 Ethyl Acetate	43	Compound Not Detected.						
	35 Tetrahydrofuran	42	3.405	3.392	(0.818)	4009	17.5902	17.6(QM)	LT
	34 1,1,1-Trichloroethane	97	3.450	3.447	(0.829)	22339	18.2933	18.3(QM)	LT
	37 1,1-Dichloropropene	75	3.585	3.589	(0.862)	18497	17.8069	17.8(QM)	LT
	38 2-Butanone	43	3.589	3.585	(0.862)	4458	14.4422	14.4(QM)	LT
	39 Benzene	78	3.823	3.823	(0.650)	49428	16.6523	16.6(Q)	
	40 Propionitrile	54	3.862	3.859	(0.928)	1625	18.3342	18.3(QM)	LT
	41 Methacrylonitrile	41	3.875	3.875	(0.931)	7637	16.6054	16.6(Q)	
$	42 1,2-Dichloroethane-d4	65	3.939	3.939	(0.947)	29095	29.6586	29.6	
	43 t-Amyl methyl ether	73	3.939	3.939	(0.670)	37516	17.5514	17.6	
	46 Isobutanol	43	3.939	3.939	(0.947)	13144	86.0021	86.0(QRM)	NI
	44 1,2-Dichloroethane	62	3.994	3.994	(0.960)	20858	16.9888	17.0	
*	45 Fluorobenzene	96	4.161	4.161	(1.000)	84039	30.0000		
	47 Methylcyclohexane	83	4.267	4.267	(0.726)	19156	18.5155	18.5	
	48 Trichloroethene	132	4.286	4.283	(0.729)	13271	18.0492	18.0	
	49 Dibromomethane	174	4.560	4.556	(0.776)	9113	17.9472	17.9	
	50 1,2-Dichloropropane	63	4.621	4.621	(0.786)	14073	16.2135	16.2	
	51 Bromodichloromethane	83	4.669	4.669	(0.794)	19720	16.7441	16.7	
	52 Methyl methacrylate	69	4.778	4.775	(0.813)	11650	21.4665	21.5	
	53 1,4-Dioxane	88	4.788	4.794	(0.697)	733	230.421	230(Q)	
	55 2-ChloroethylVinylEther	63	5.010	5.010	(0.852)	4248	16.7151	16.7	
	54 cis-1,3-Dichloropropene	75	5.032	5.032	(0.856)	19821	15.8142	15.8	
$	56 Toluene-d8	98	5.129	5.129	(0.873)	81765	29.3149	29.3	
	57 Toluene	91	5.154	5.154	(0.877)	55669	18.3533	18.4	
	58 2-Nitropropane	43	5.280	5.277	(0.898)	19928	75.6474	75.6(QRM)	NI
	59 Tetrachloroethene	166	5.351	5.351	(0.910)	15131	19.4888	19.5	
	60 4-Methyl-2-Pentanone	43	5.357	5.357	(0.911)	10935	14.7283	14.7	
	61 trans-1,3-Dichloropropene	75	5.373	5.373	(0.914)	19432	15.6445	15.6	
	63 Ethyl methacrylate	41	5.460	5.457	(0.929)	7739	10.5144	10.5(QR)	
	62 1,1,2-Trichloroethane	97	5.453	5.453	(0.928)	11872	18.3412	18.3	
	64 Dibromochloromethane	129	5.537	5.534	(0.942)	13642	16.9669	17.0	
	65 1,3-Dichloropropane	76	5.579	5.579	(0.949)	20838	18.2204	18.2	
	66 1,2-Dibromoethane,EDB	107	5.643	5.643	(0.960)	12379	18.4522	18.4	
	70 2-Hexanone	43	5.752	5.752	(0.979)	7265	12.2758	12.3(R)	
*	67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	36519	30.0000		
	68 Chlorobenzene	112	5.884	5.884	(1.001)	37547	19.2991	19.3	
	69 Ethylbenzene	106	5.897	5.897	(1.003)	18838	18.1962	18.2	
	71 1,1,1,2-Tetrachloroethane	131	5.916	5.916	(1.007)	12473	18.4935	18.5	
	72 m,p-Xylene	106	5.965	5.961	(1.015)	46993	38.2451	38.2	
	73 o-Xylene	106	6.151	6.151	(1.046)	22333	18.8394	18.8	

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104005.d
Report Date: 11-Dec-2014 13:07

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
74 Styrene	104	6.174	6.174	(1.050)	37643	19.8393	19.8	
75 Bromoform	173	6.187	6.187	(1.053)	9134	18.0105	18.0	
76 Isopropylbenzene,Cumene	105	6.283	6.283	(0.914)	57324	16.7743	16.8	
$ 77 Bromofluorobenzene	174	6.408	6.405	(0.933)	27270	27.8359	27.8	
79 n-Propylbenzene	91	6.460	6.457	(0.940)	68948	15.8840	15.9	
78 Bromobenzene	77	6.450	6.450	(0.939)	27946	15.7777	15.8	
80 1,1,2,2-Tetrachloroethane	83	6.492	6.489	(0.945)	14293	15.0294	15.0	
81 2-Chlorotoluene	126	6.527	6.527	(0.950)	14362	17.3680	17.4	
82 1,3,5-Trimethylbenzene	120	6.537	6.537	(0.951)	22540	16.6277	16.6	
83 1,2,3-Trichloropropane	110	6.550	6.550	(0.953)	4868	16.9994	17.0	
84 trans 1,4-Dichloro-2-butene	53	6.563	6.563	(0.955)	3488	10.2611	10.3(R)	
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	6.598	6.595	(0.960)	14333	16.5750	16.6	
87 tert-Butyl benzene	119	6.672	6.672	(0.971)	39868	17.0979	17.1	
88 1,2,4-Trimethylbenzene	120	6.701	6.701	(0.975)	21950	17.1740	17.2	
89 sec-Butyl benzene	105	6.746	6.746	(0.982)	57901	16.9213	16.9	
90 4-Isopropyl toluene	119	6.801	6.801	(0.990)	49122	16.8357	16.8	
91 1,3-Dichlorobenzene	146	6.842	6.842	(0.996)	28317	17.5348	17.5	
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.871	(1.000)	35700	30.0000		
93 1,4-Dichlorobenzene	146	6.878	6.878	(1.001)	28626	17.7625	17.8	
94 n-Butyl benzene	91	6.974	6.974	(1.015)	45290	16.5069	16.5	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	7.055	7.051	(1.027)	26042	17.4758	17.5	
96 bis(2Chloro1methyl ethyl)eth	45	Compound Not Detected.						
97 1,2-Dibromo-3-Chloropropane	75	7.379	7.379	(1.074)	2555	15.5937	15.6	
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	9770	18.9092	18.9	
99 1,2,4-Trichlorobenzene	180	7.656	7.656	(1.114)	17299	19.1417	19.1	
100 Naphthalene	128	7.794	7.791	(1.134)	35756	17.9478	17.9	
101 1,2,3-Trichlorobenzene	180	7.871	7.871	(1.146)	15070	19.3346	19.3	
157 2-methylnaphthalene	142	8.244	8.241	(1.200)	18598	18.9030	18.9	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104005.d
Report Date: 11-Dec-2014 13:07

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51104005.d
Lab Smp Id: 812346
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\msv5soil101014.m
Misc Info: 21491

Calibration Date: 04-NOV-2014
Calibration Time: 10:33
Client Smp ID: 5MBLCS
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

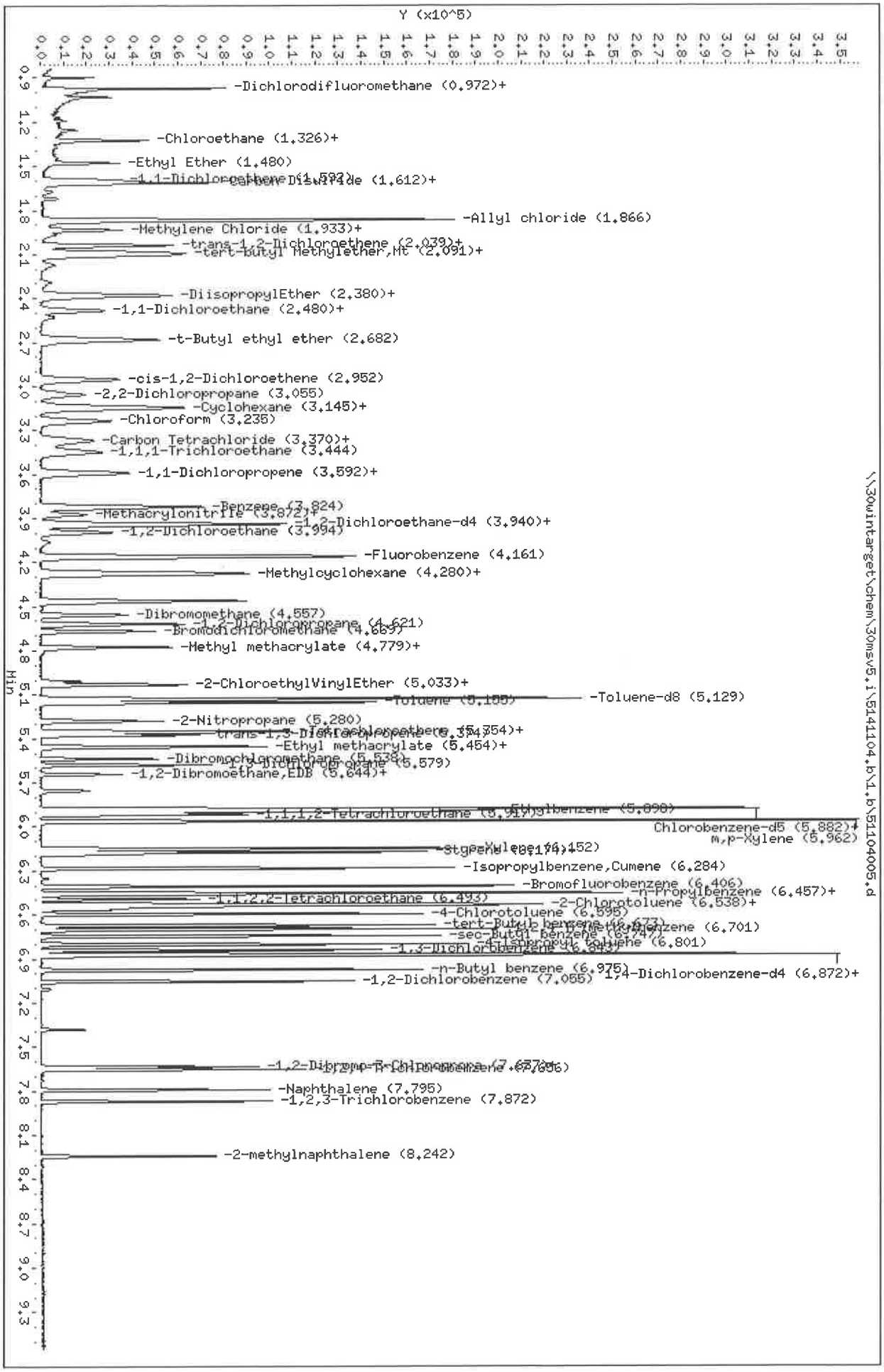
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	96404	48202	192808	84039	-12.83
67 Chlorobenzene-d5	41101	20551	82202	36519	-11.15
92 1,4-Dichlorobenze	37743	18872	75486	35700	-5.41

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30msv5.i\5141104.b\1.b\51104005.d
Date : 04-NOV-2014 10:55
Client ID: 5MBLCS
Sample Info: 812346,,5,V10-56-15
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



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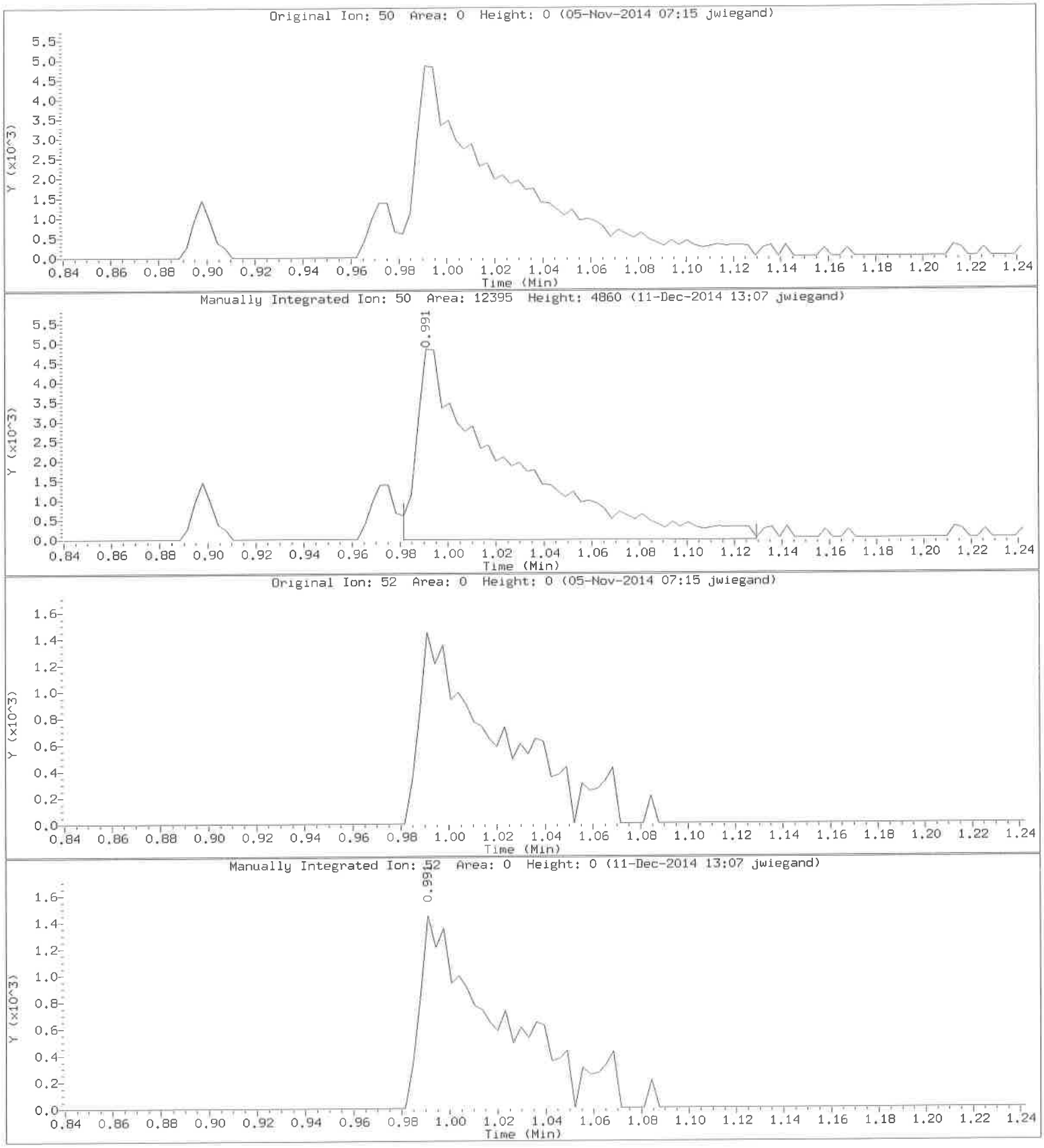
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: Chloromethane
CAS Number: 74-87-3



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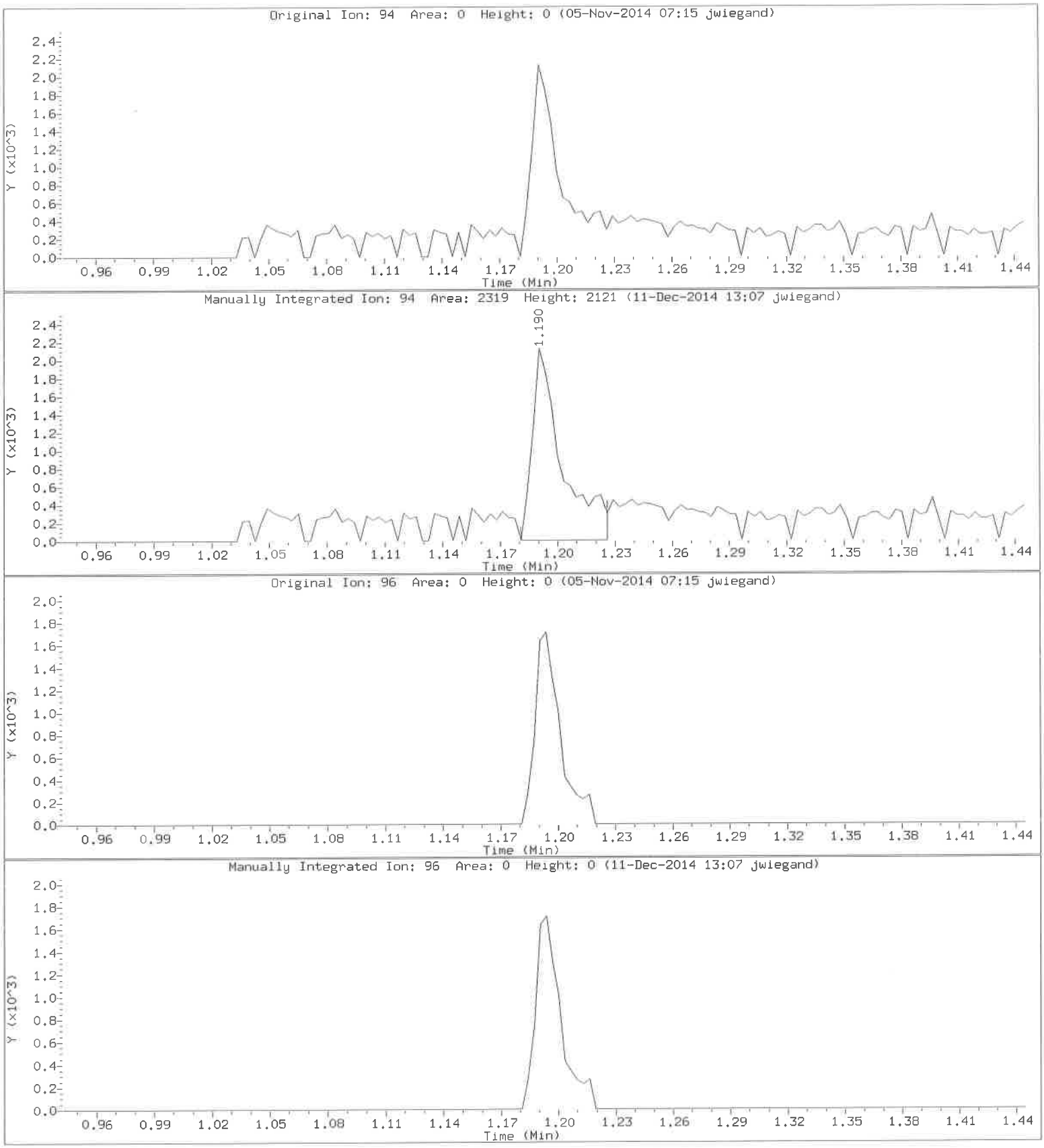
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: Bromomethane
CAS Number: 74-83-9



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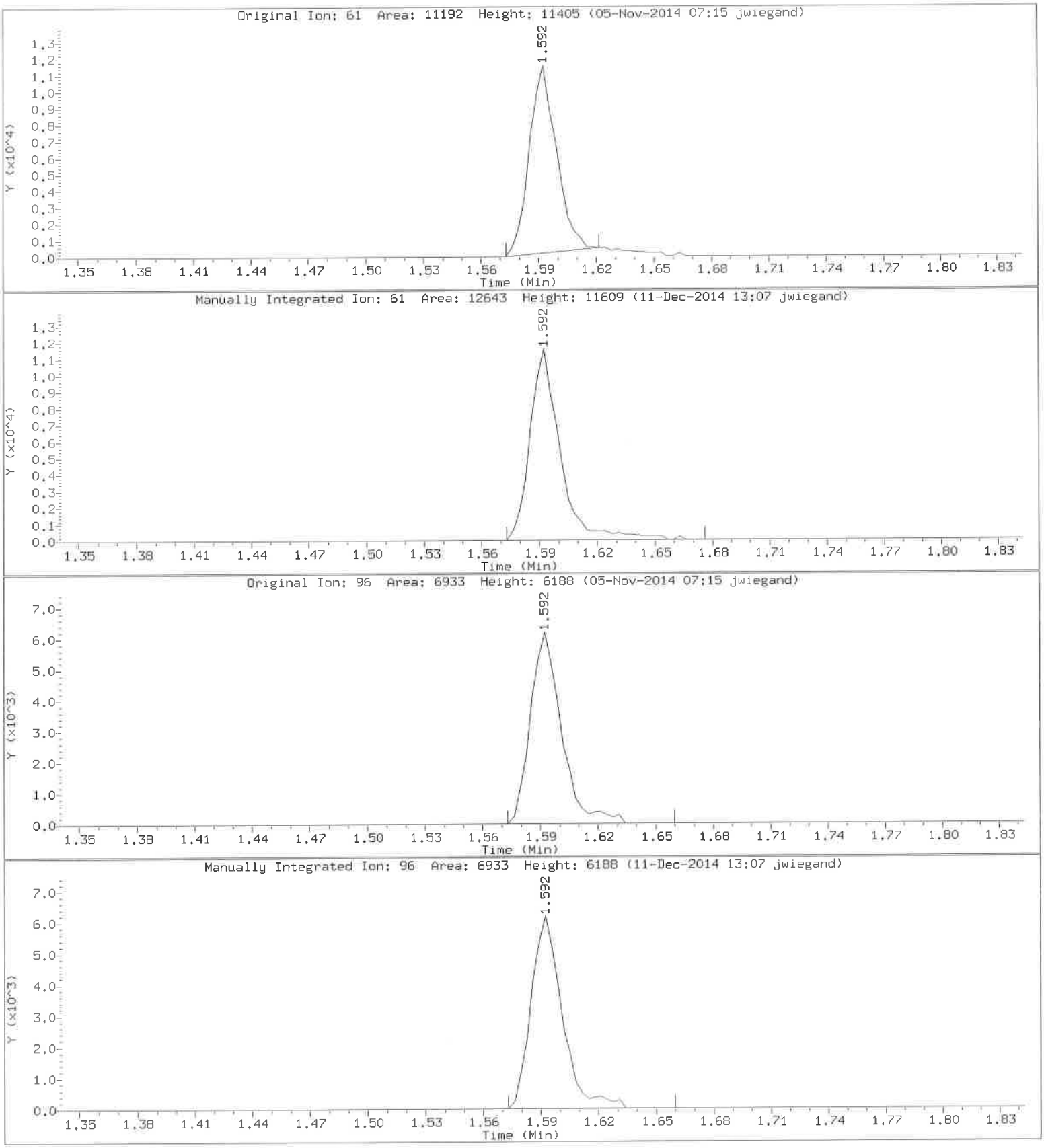
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: 1,1-Dichloroethene
CAS Number: 75-35-4



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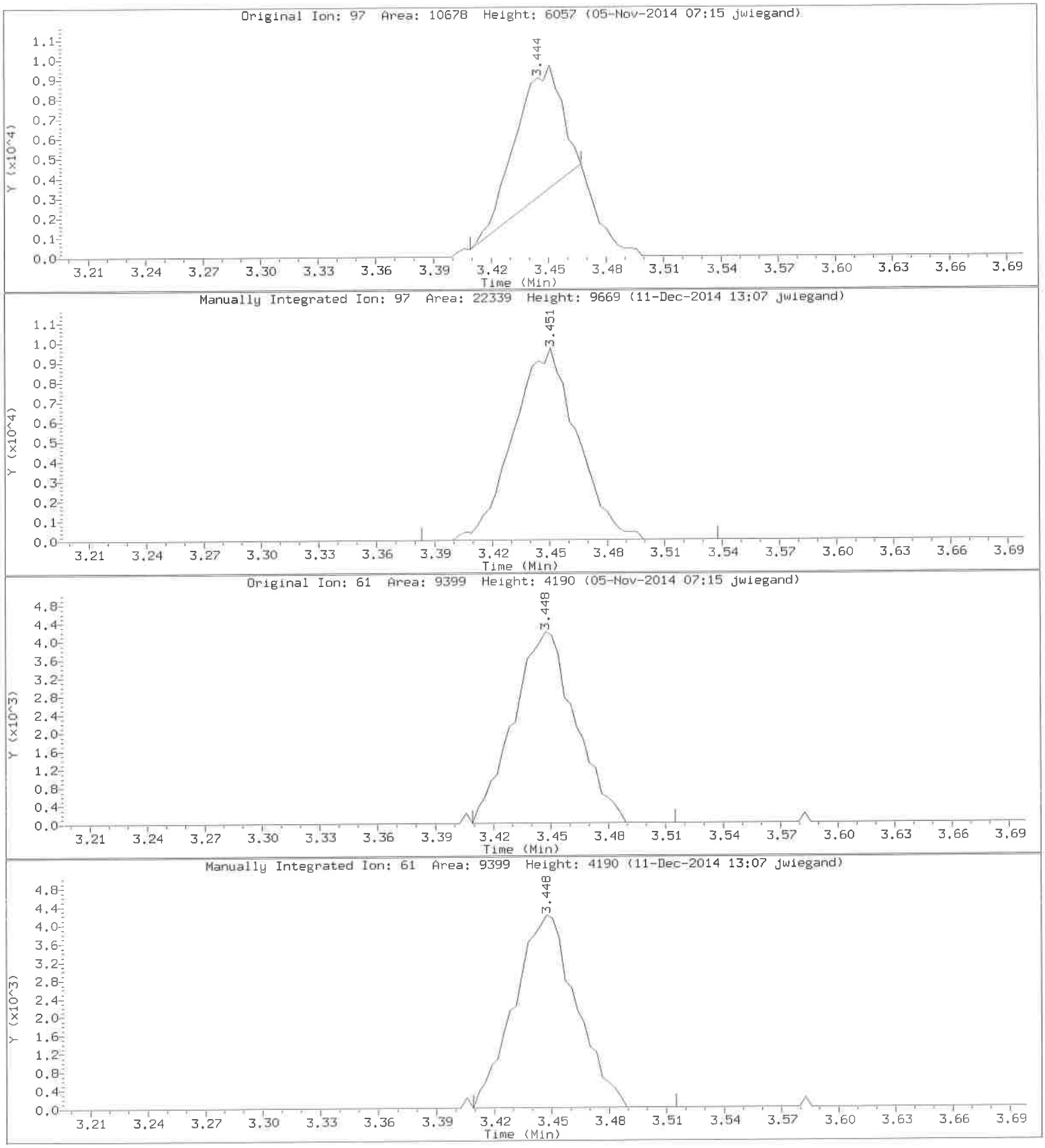
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: 1,1,1-Trichloroethane
CAS Number: 71-55-6



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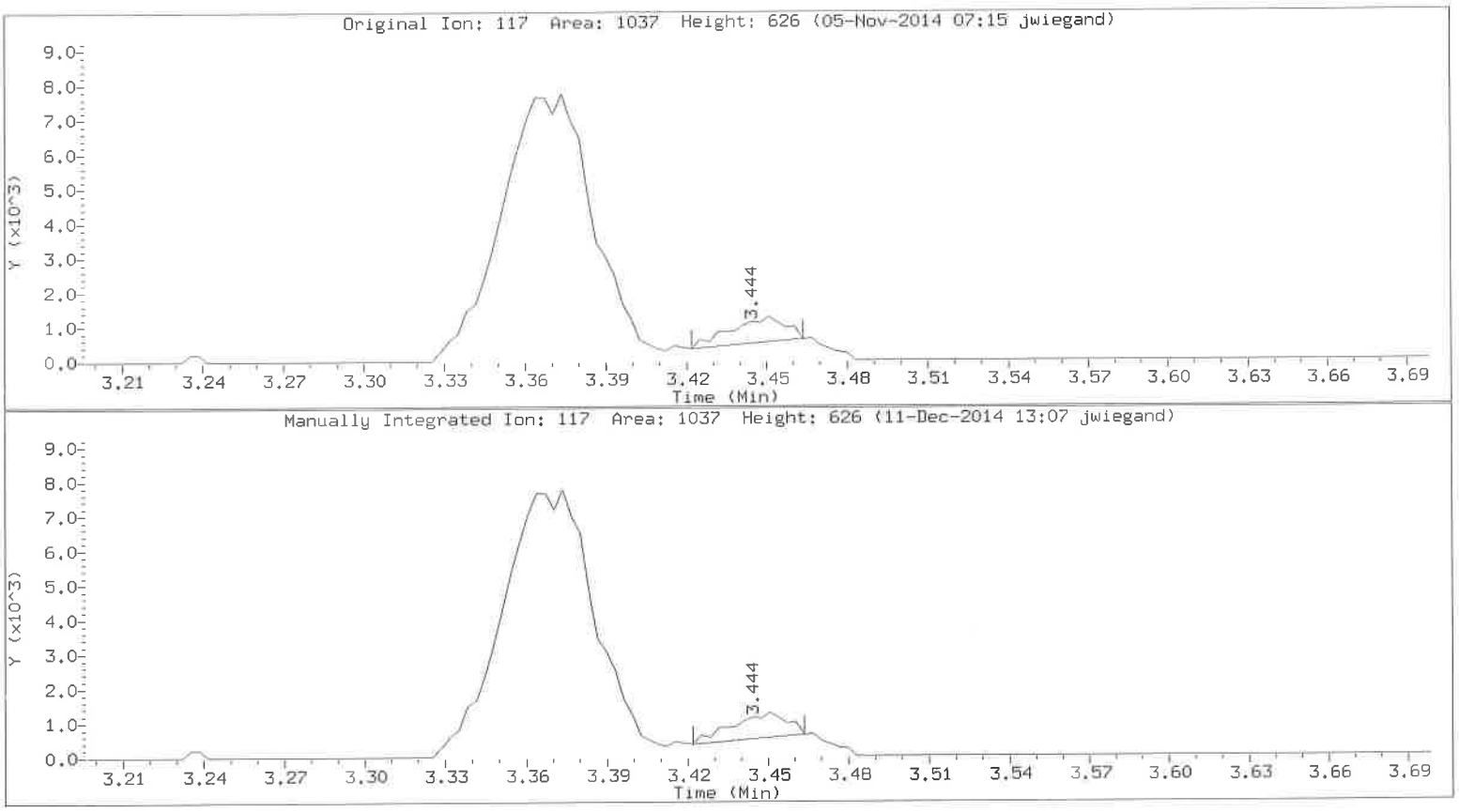
Instrument: 30msv5.i
Lab Sample ID: 812346



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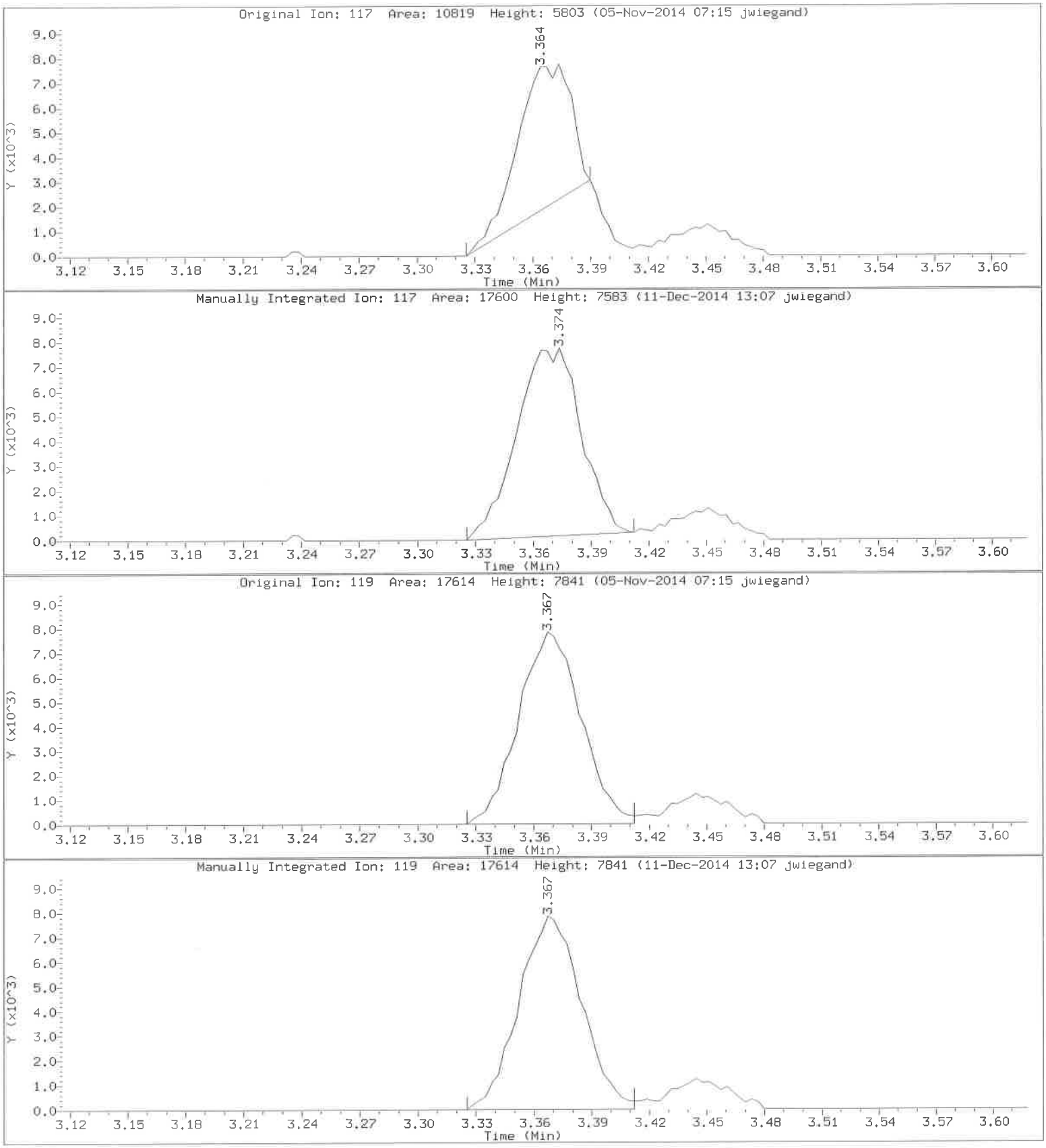
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: Carbon Tetrachloride
CAS Number: 56-23-5



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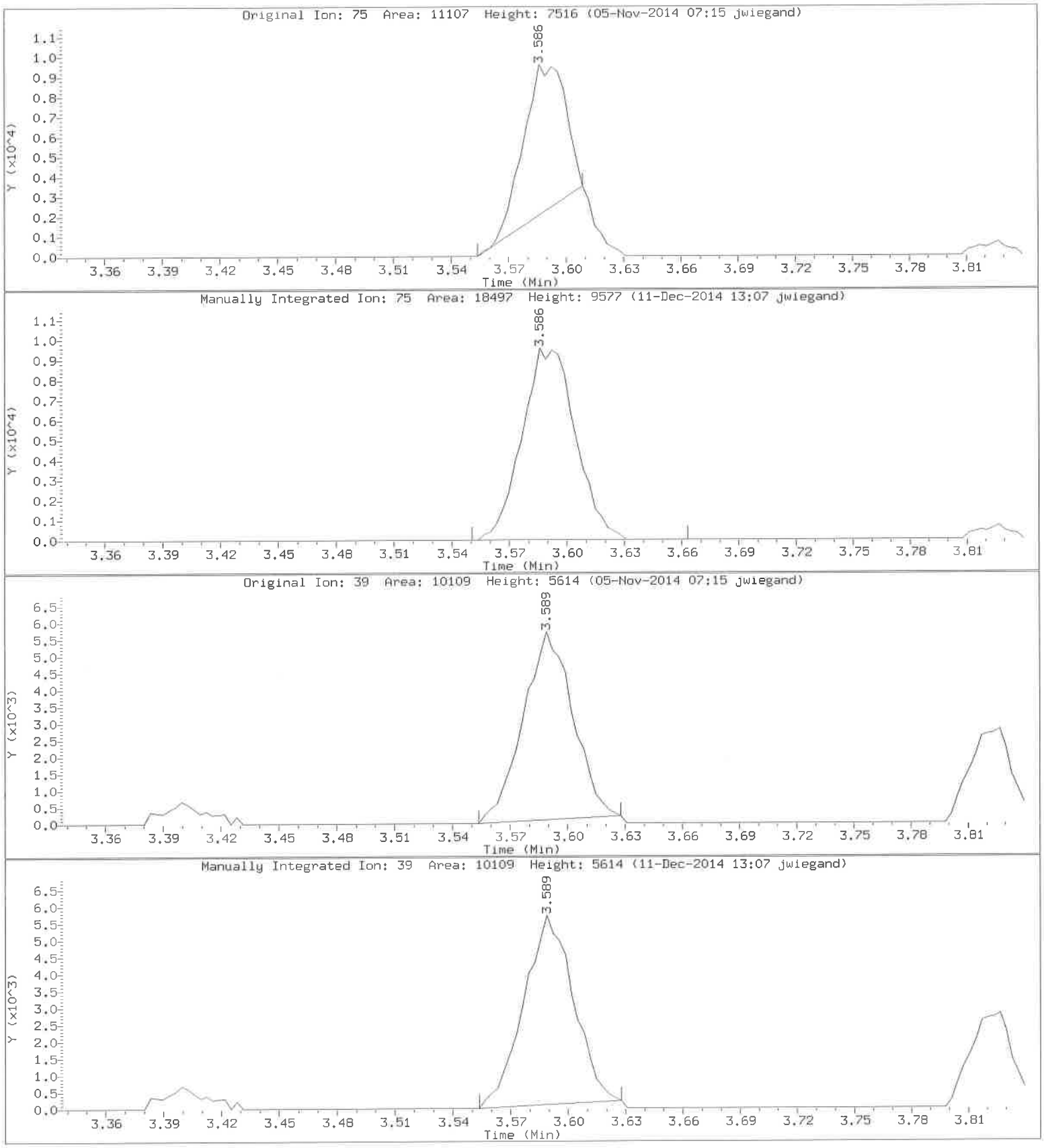
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: 1,1-Dichloropropene
CAS Number: 563-58-6



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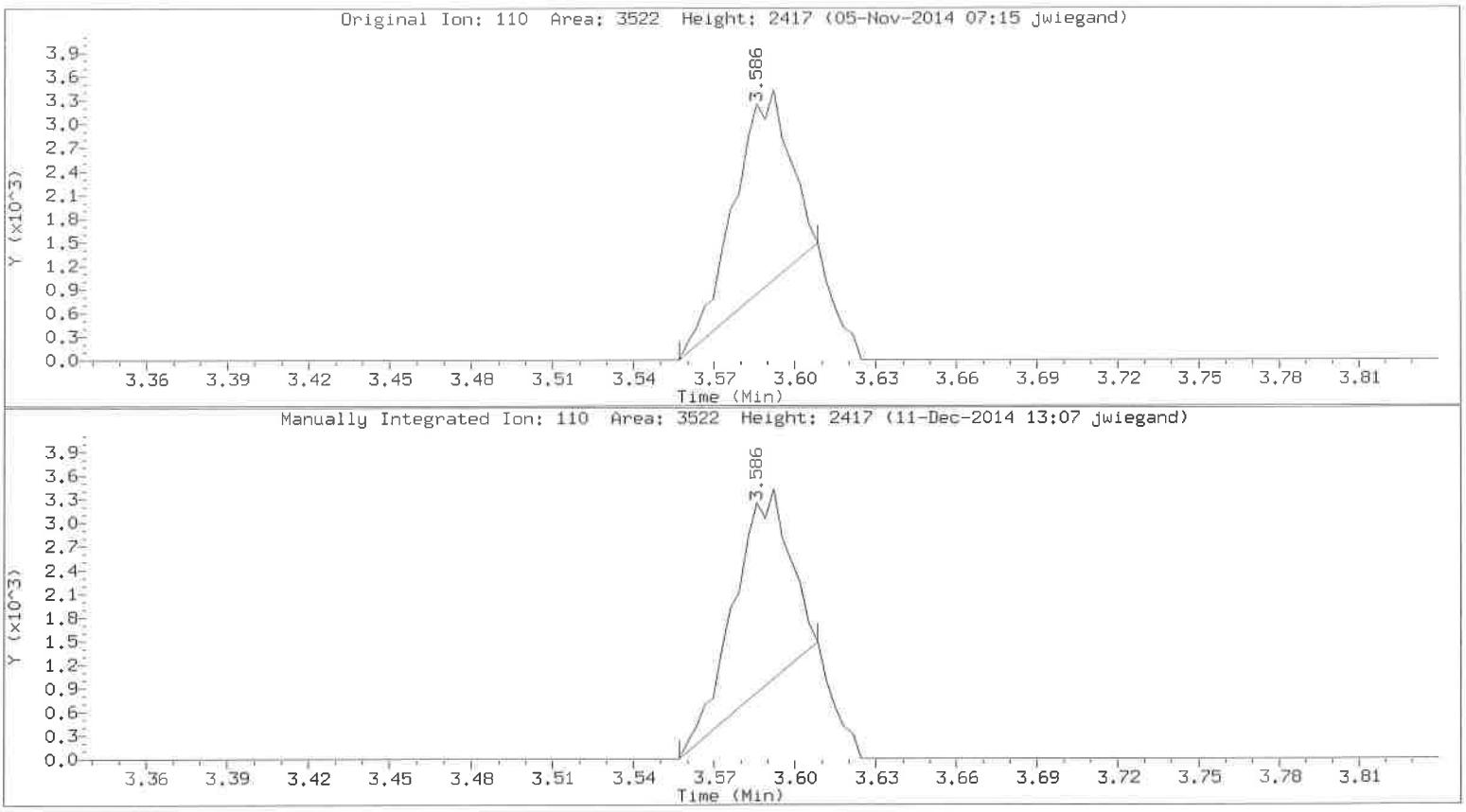
Lab Sample ID: 812346



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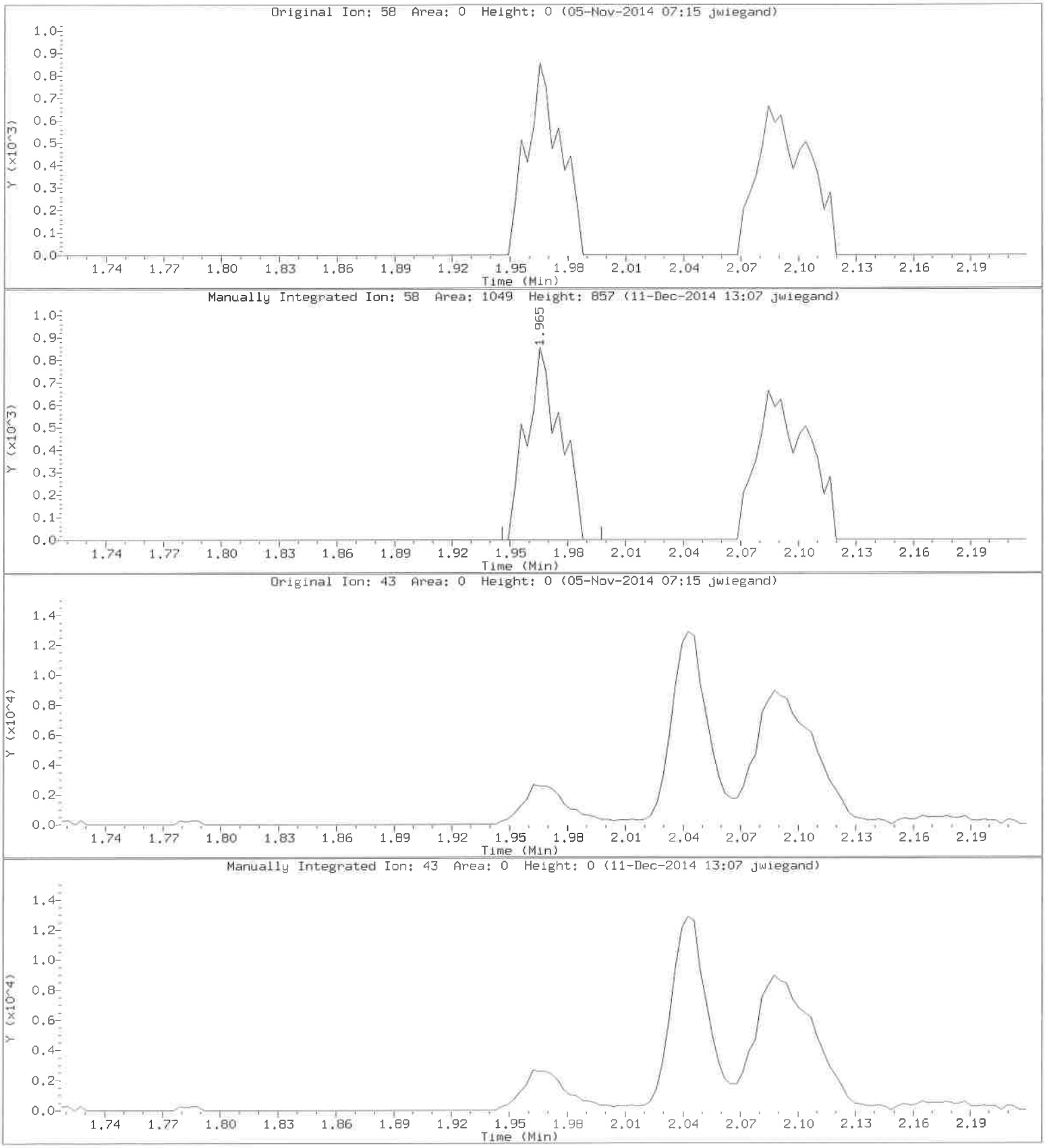
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: Acetone
CAS Number: 67-64-1



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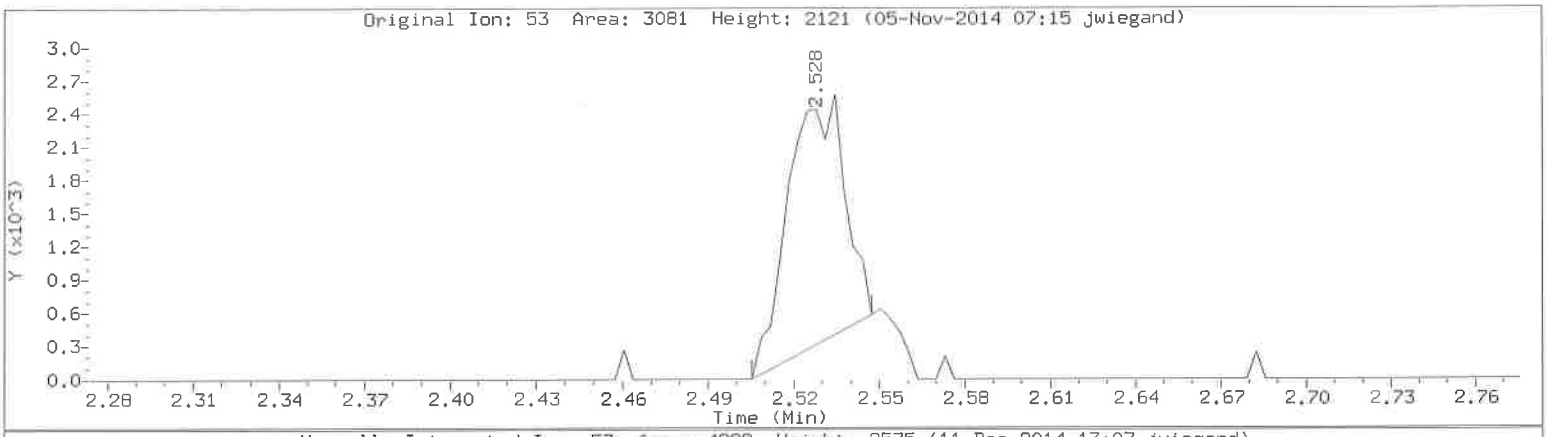
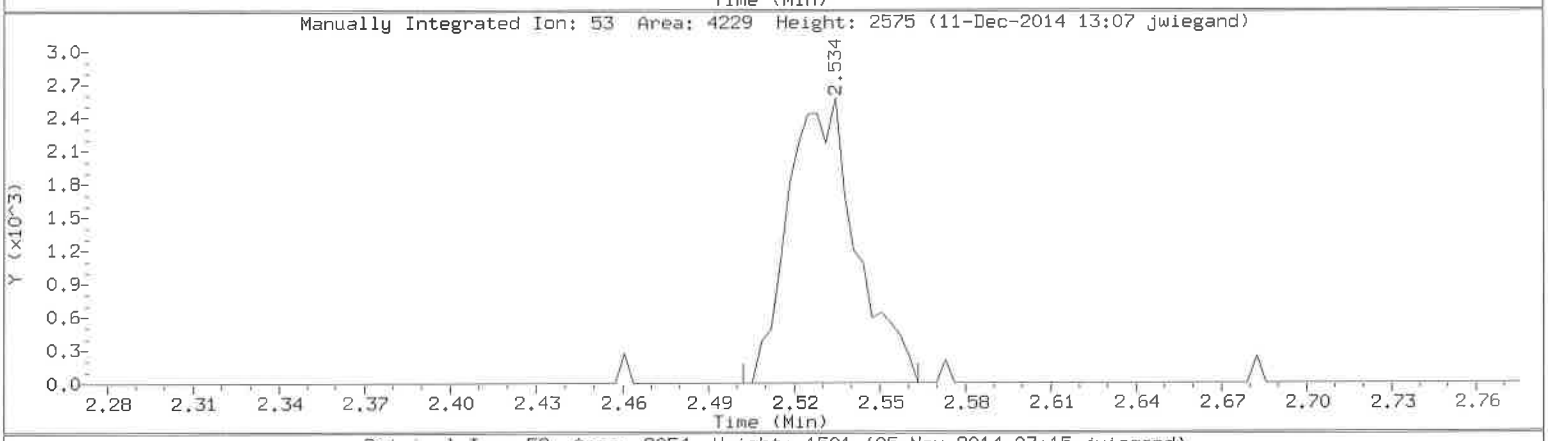
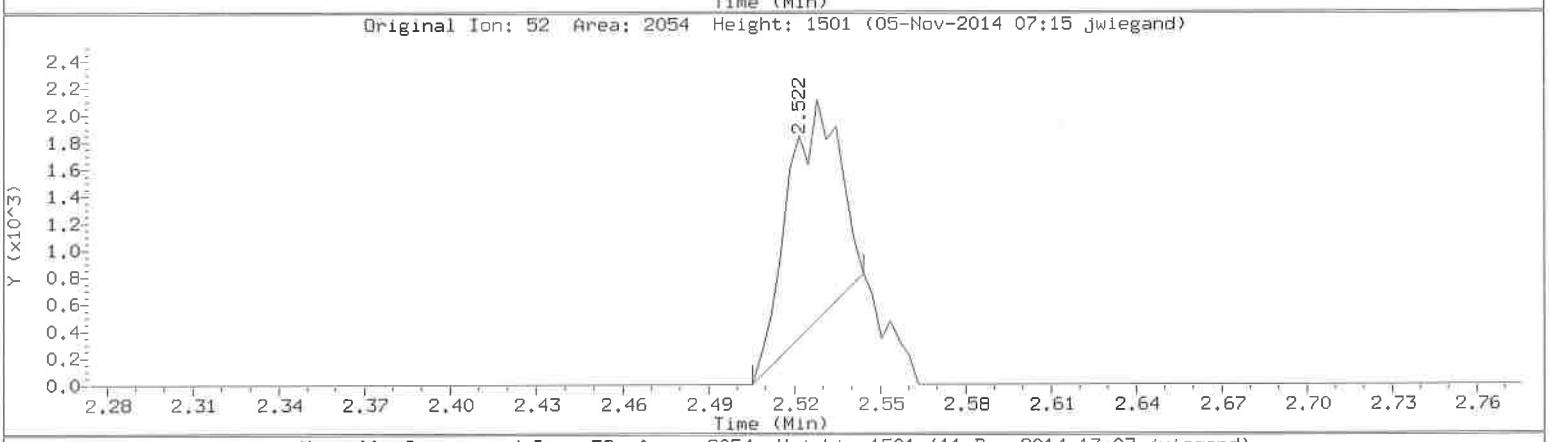
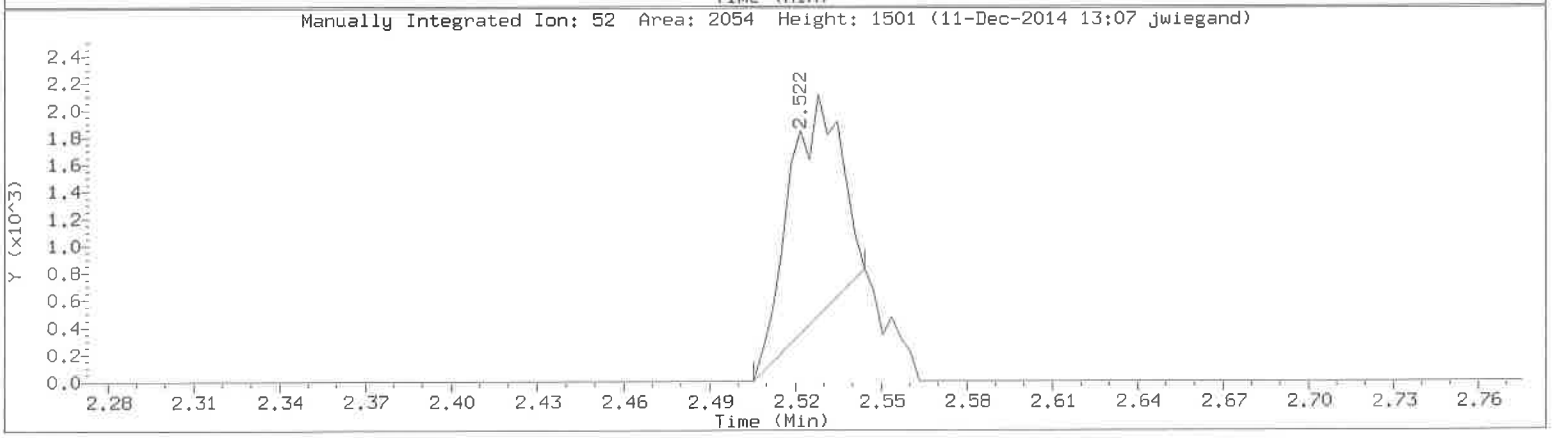
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: Acrylonitrile
CAS Number: 107-13-1









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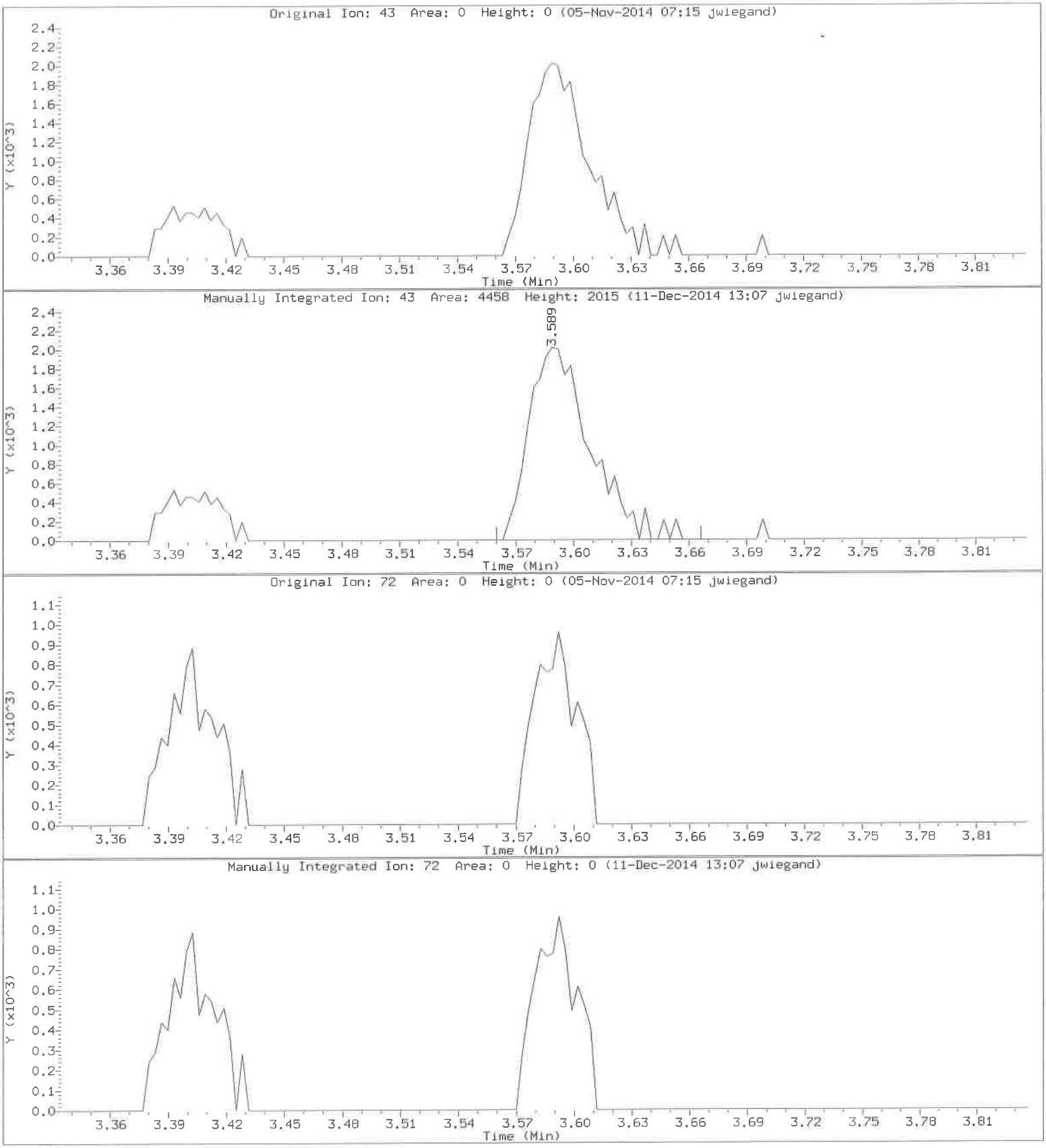
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: 2-Butanone
CAS Number: 78-93-3



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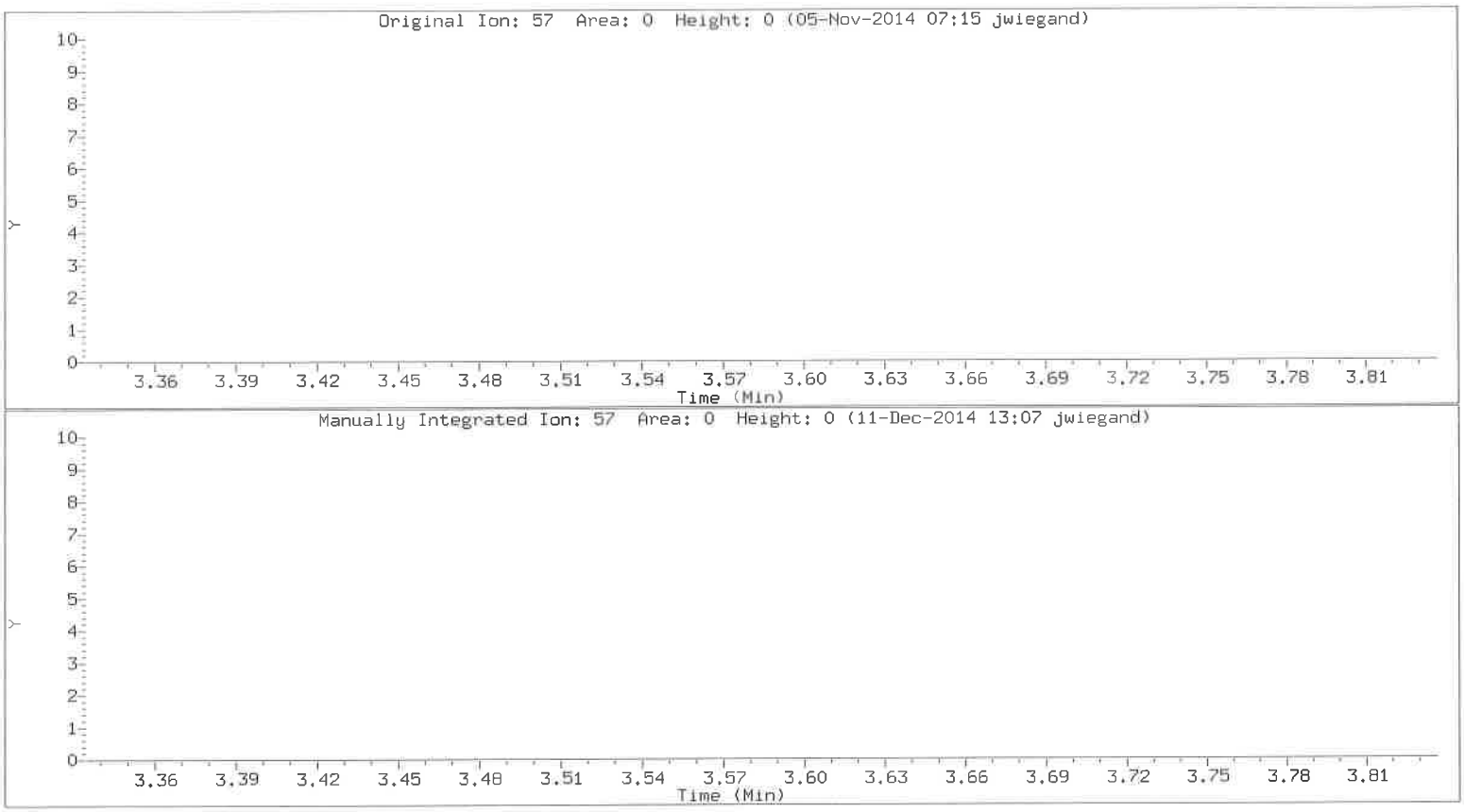
Lab Sample ID: 812346



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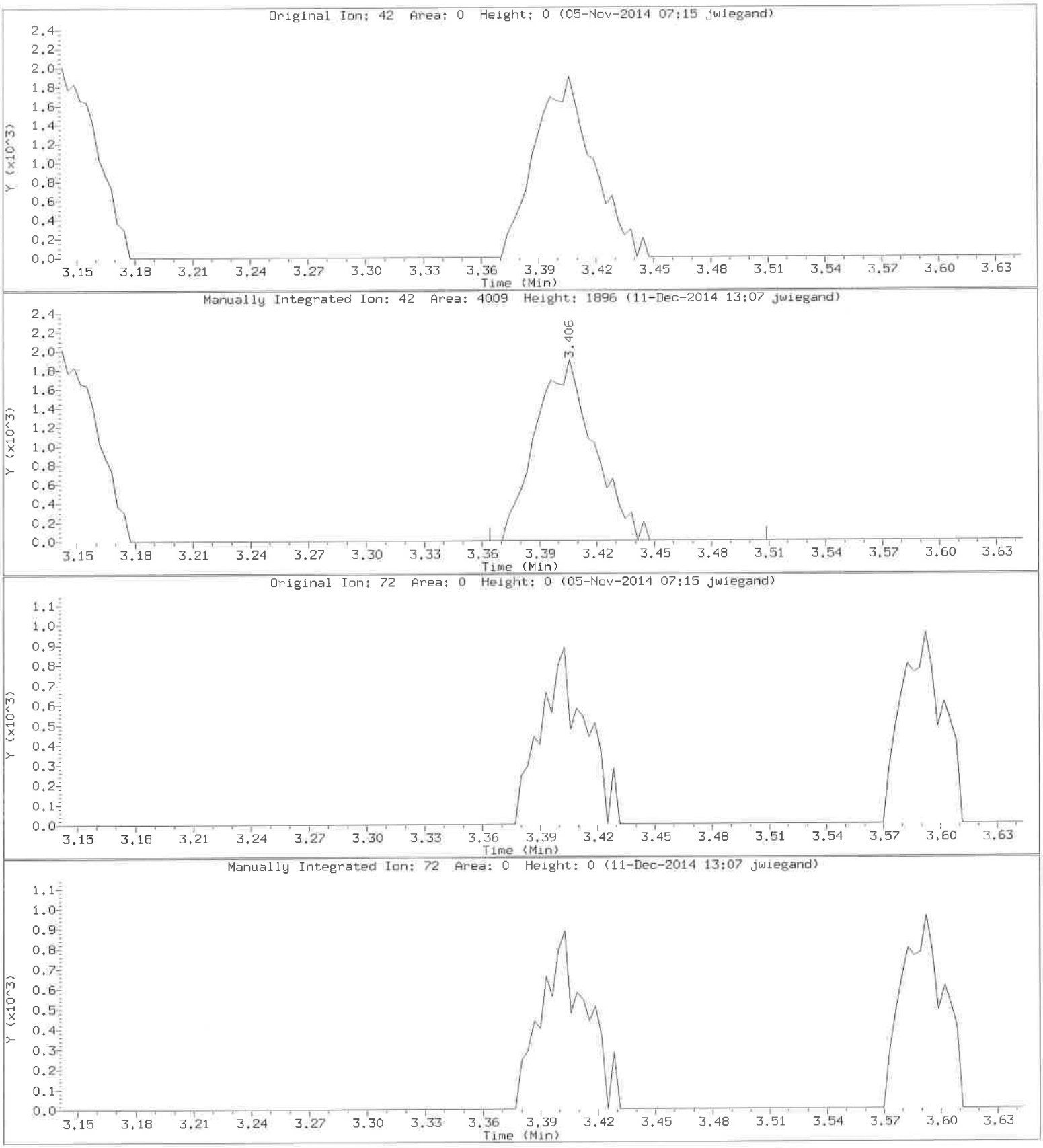
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: Tetrahydrofuran
CAS Number: 109-99-9



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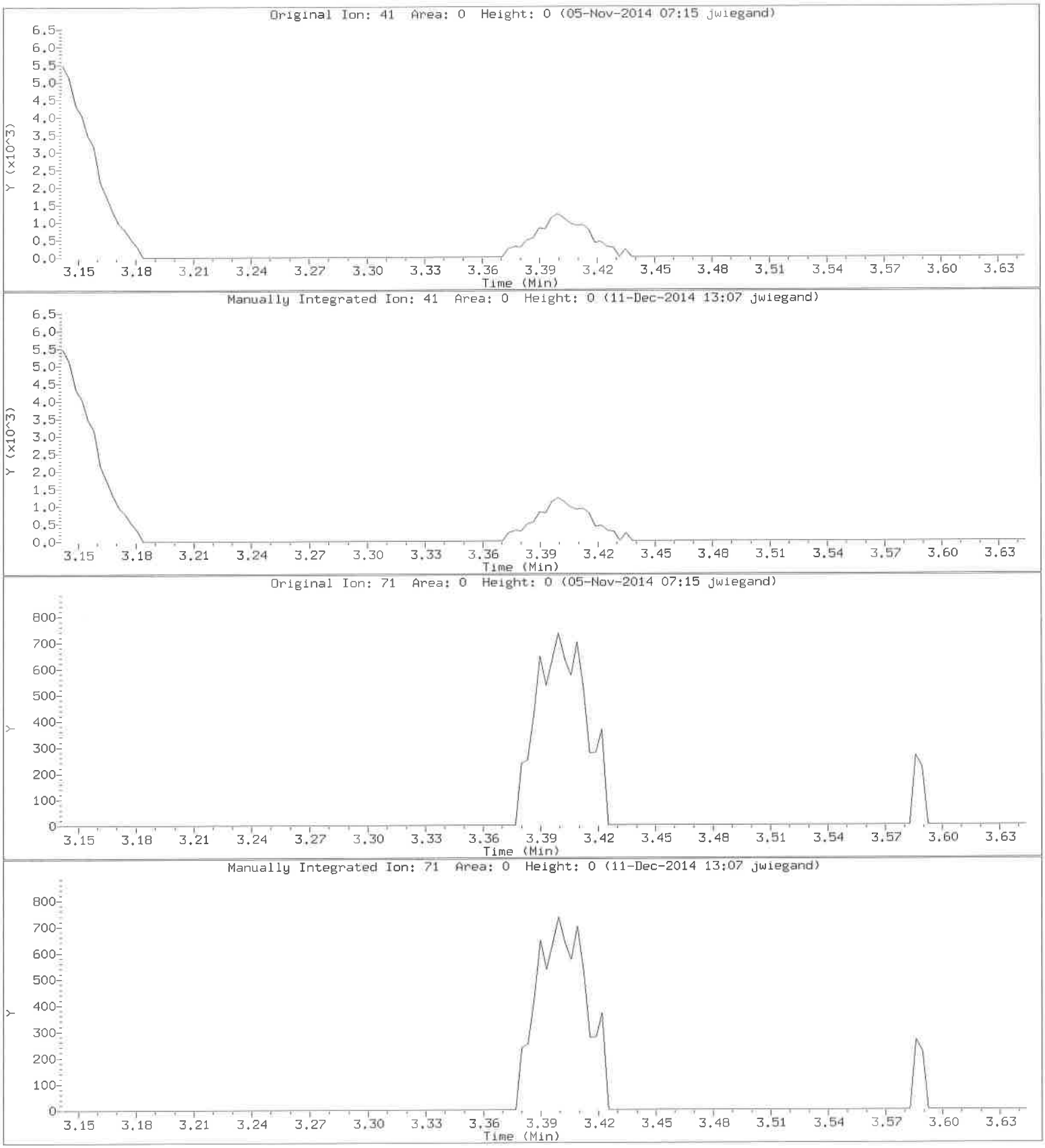
Instrument: 30msv5.i
Lab Sample ID: 812346



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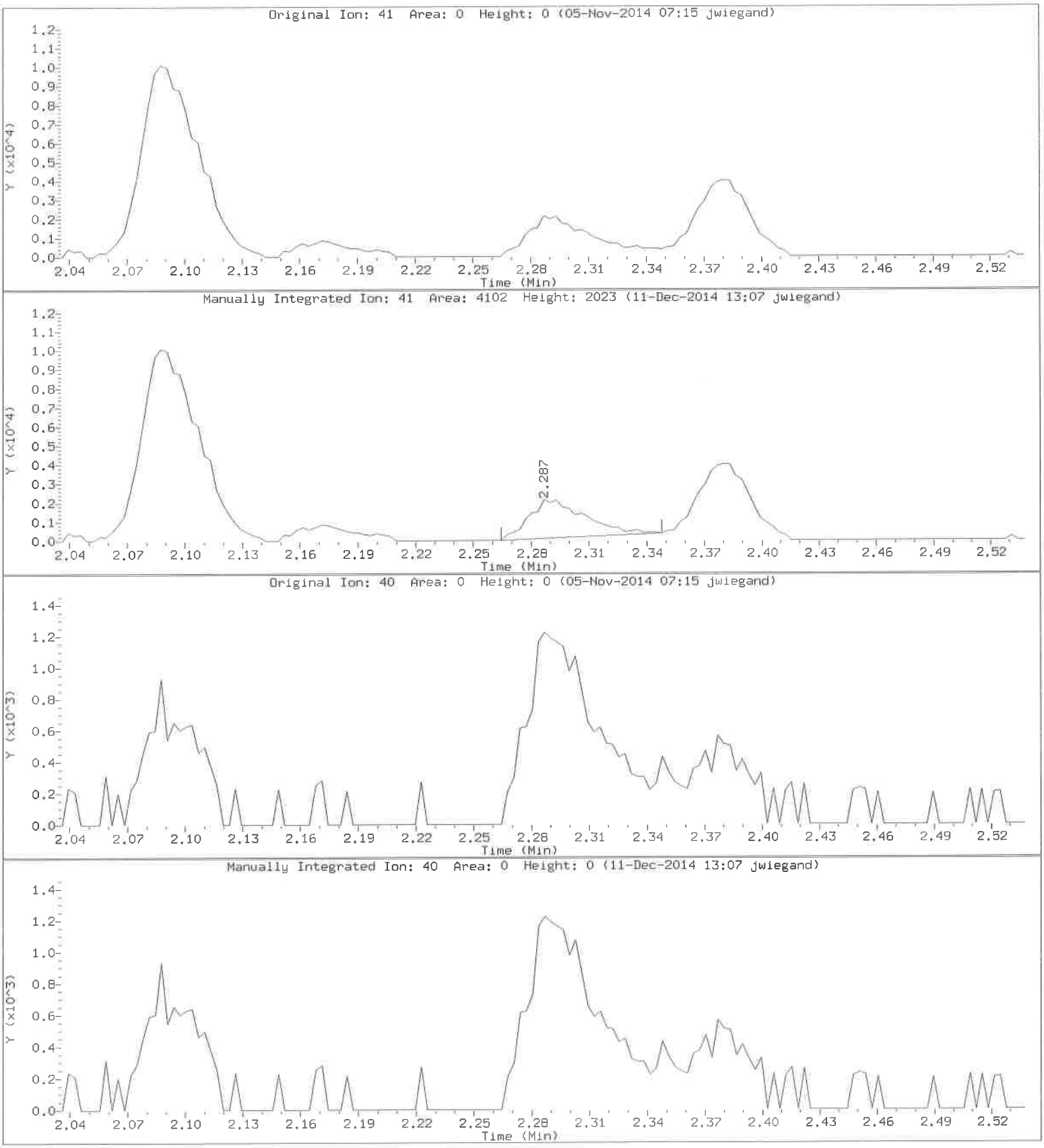
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: Acetonitrile
CAS Number: 75-05-8



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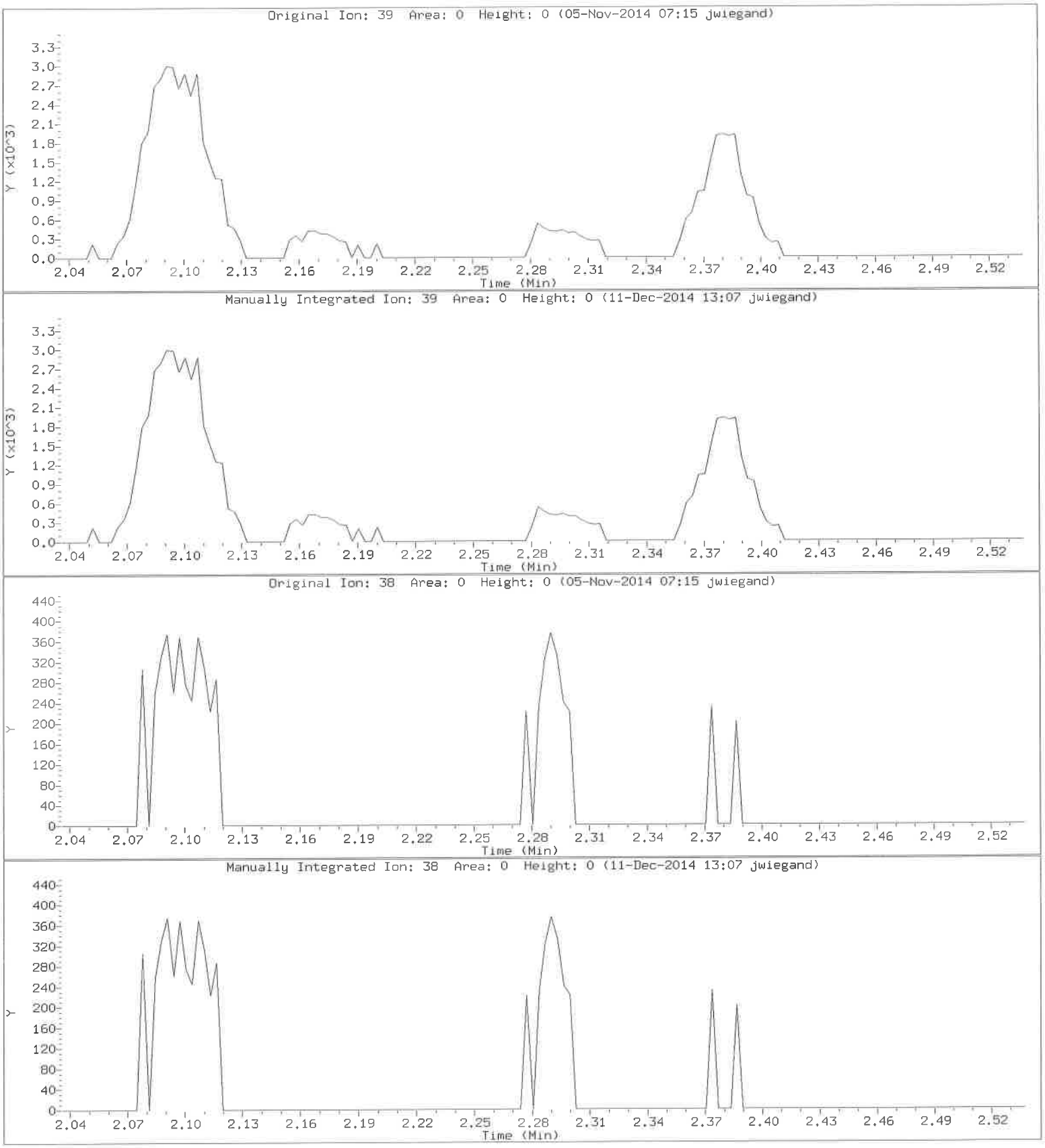
Lab Sample ID: 812346



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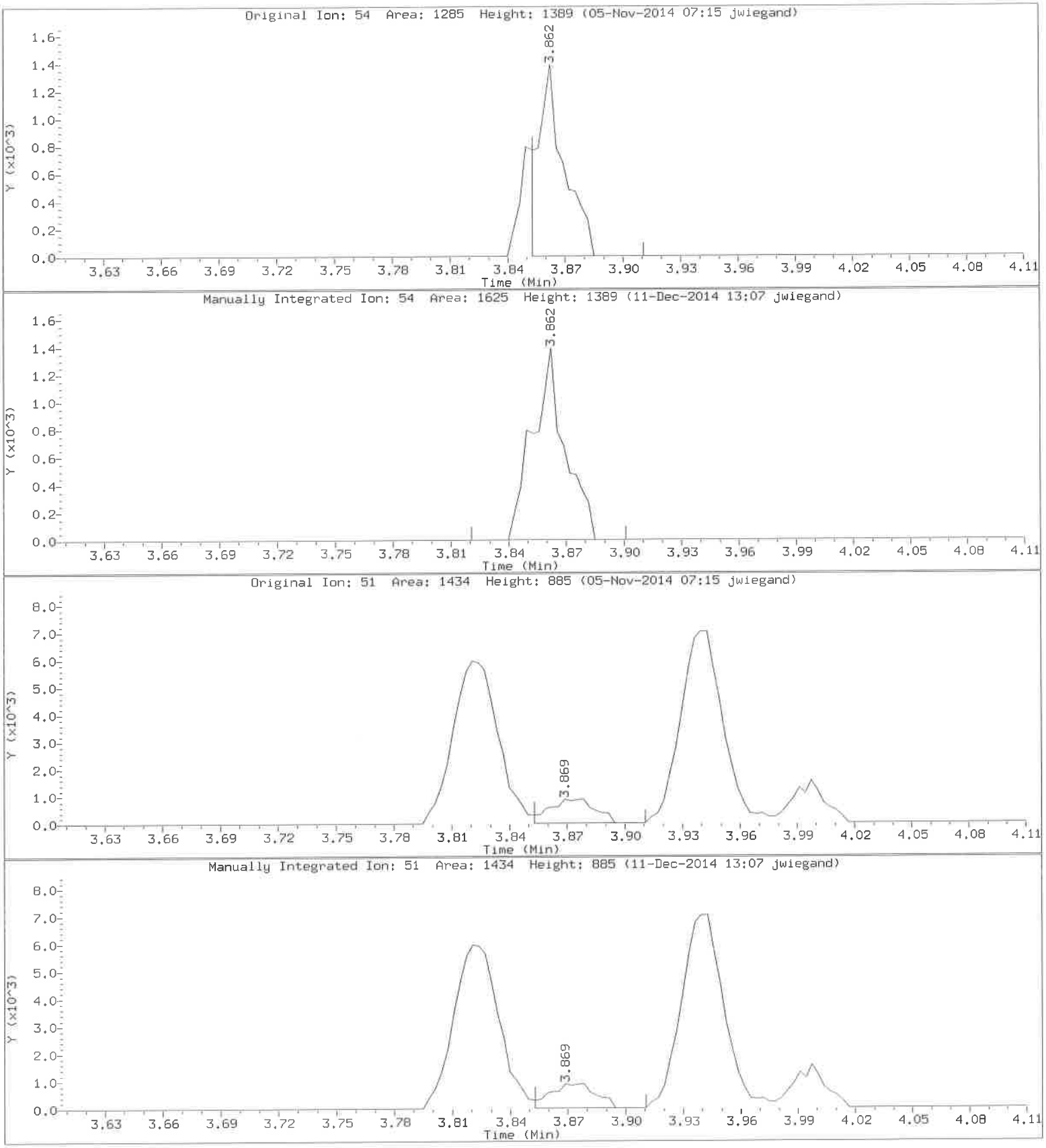
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: Propionitrile
CAS Number: 107-12-0



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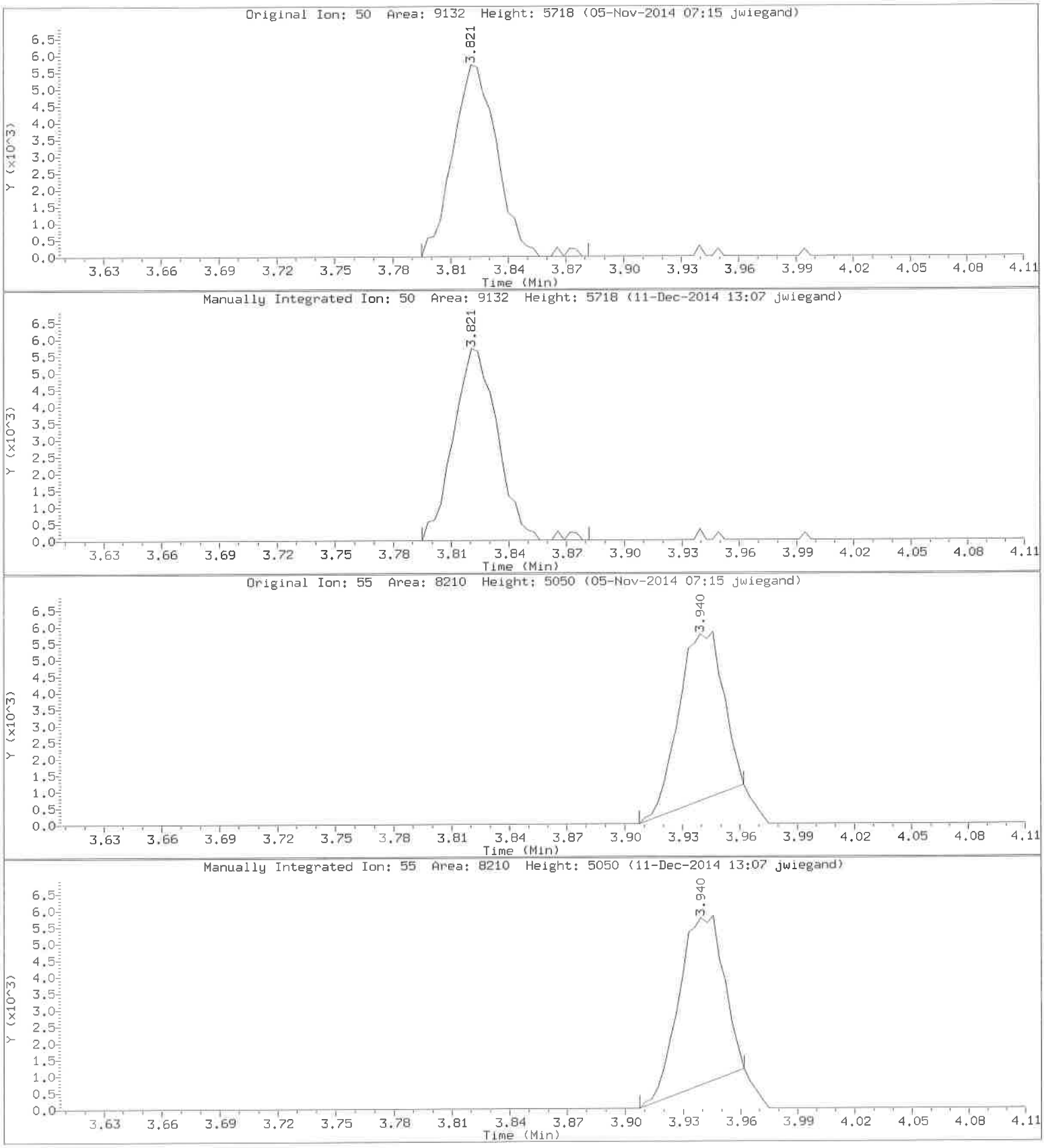

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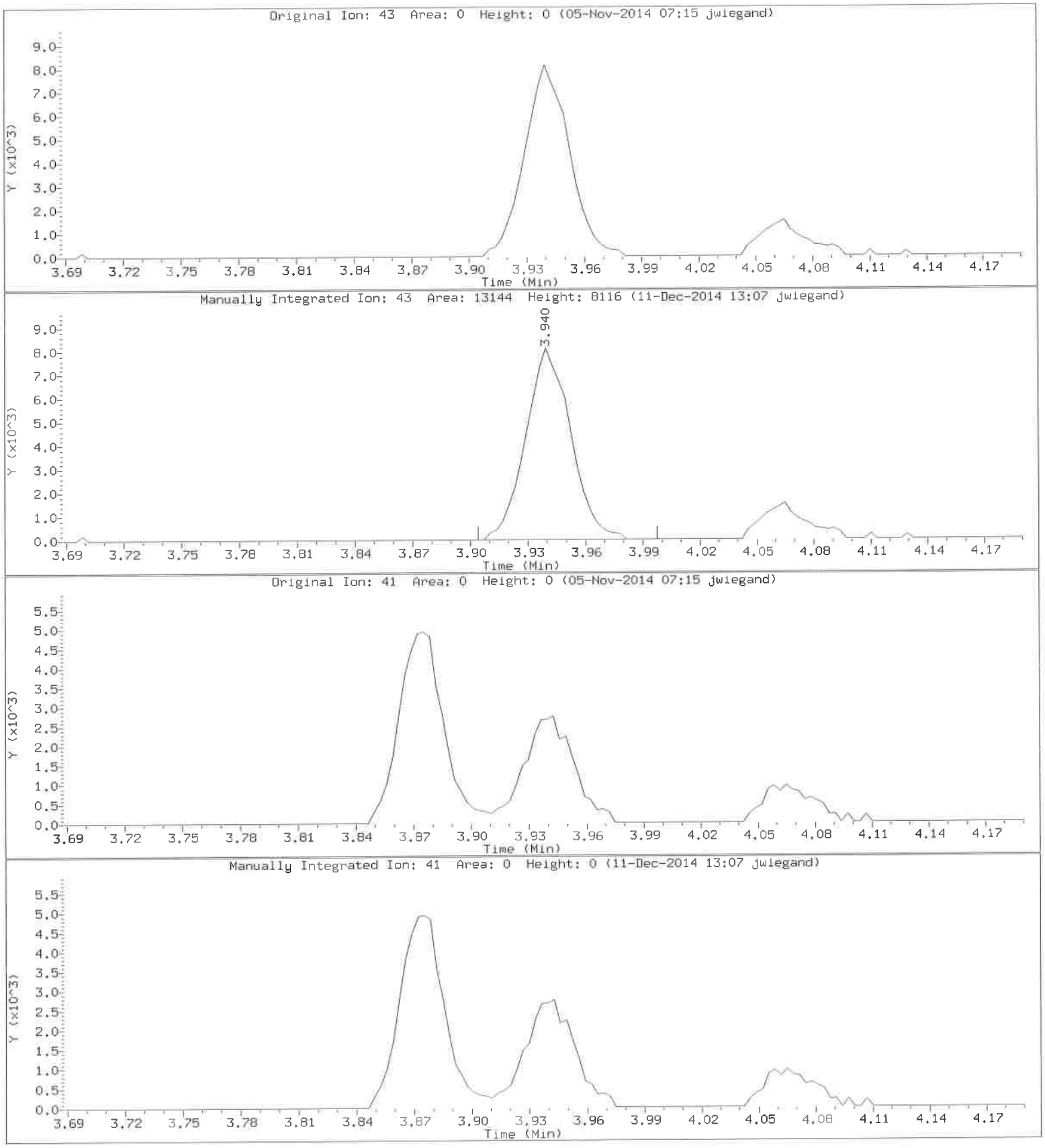
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: Isobutanol
CAS Number: 78-83-1



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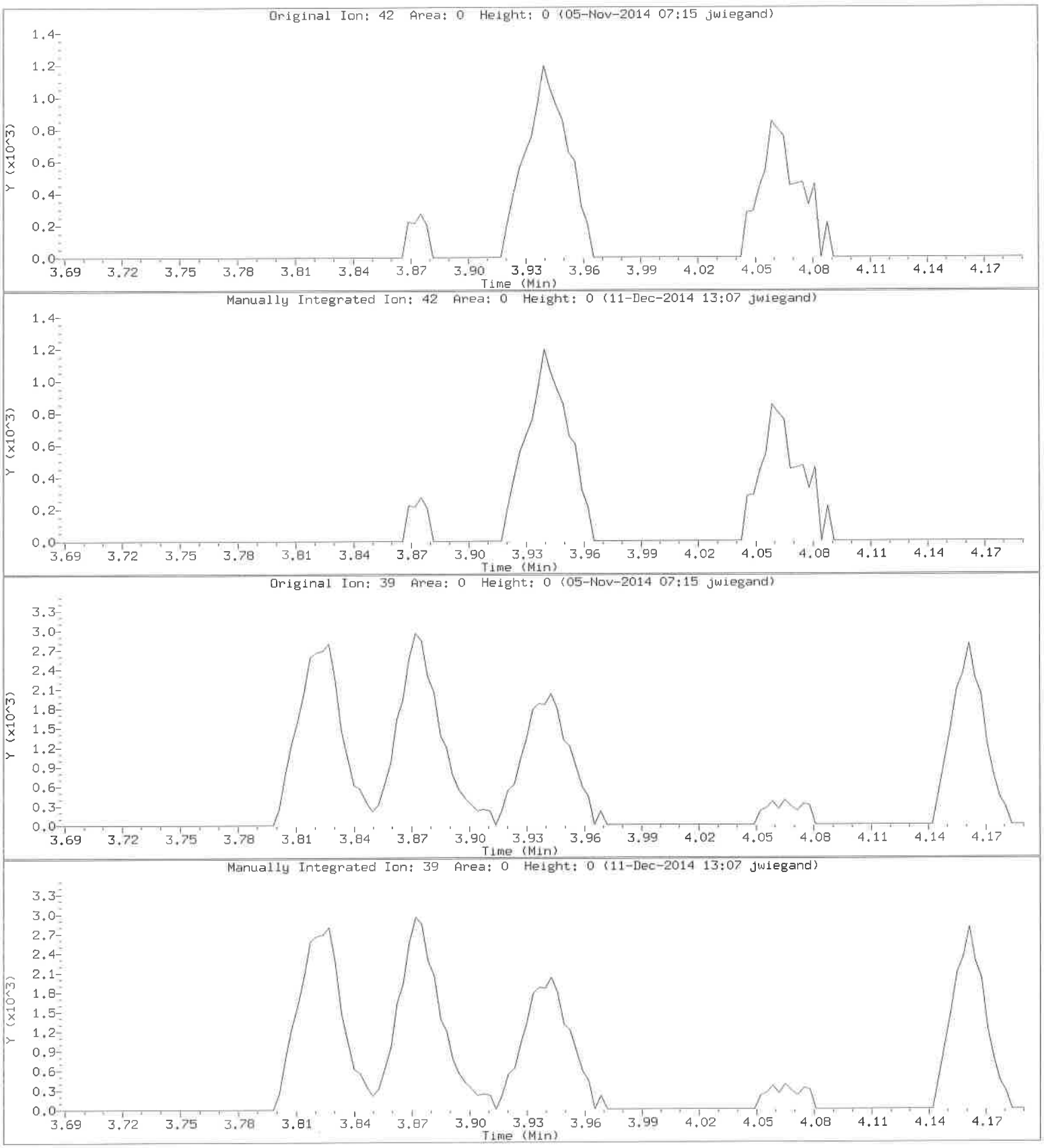
Lab Sample ID: 812346



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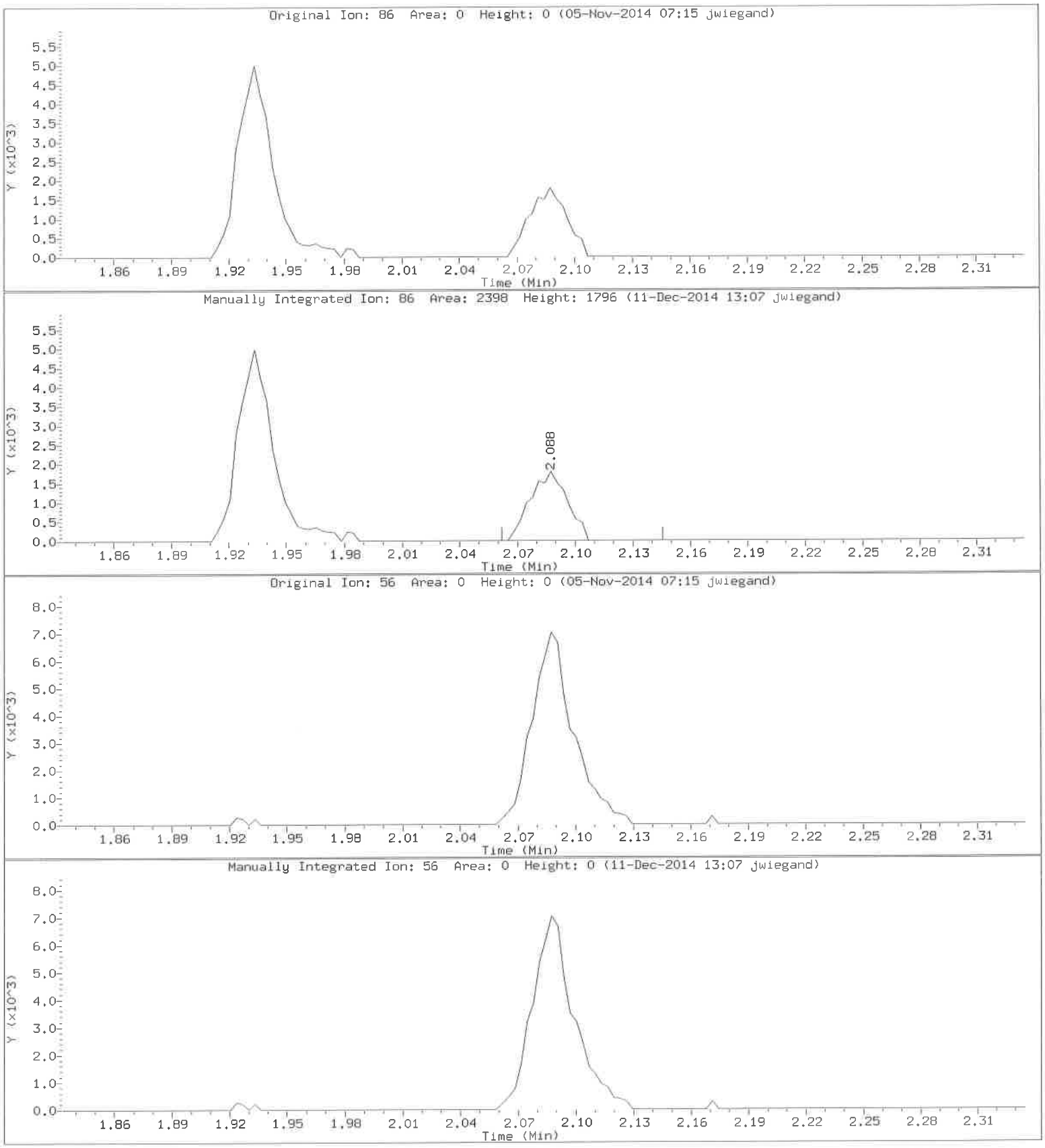
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: Hexane
CAS Number: 110-54-03



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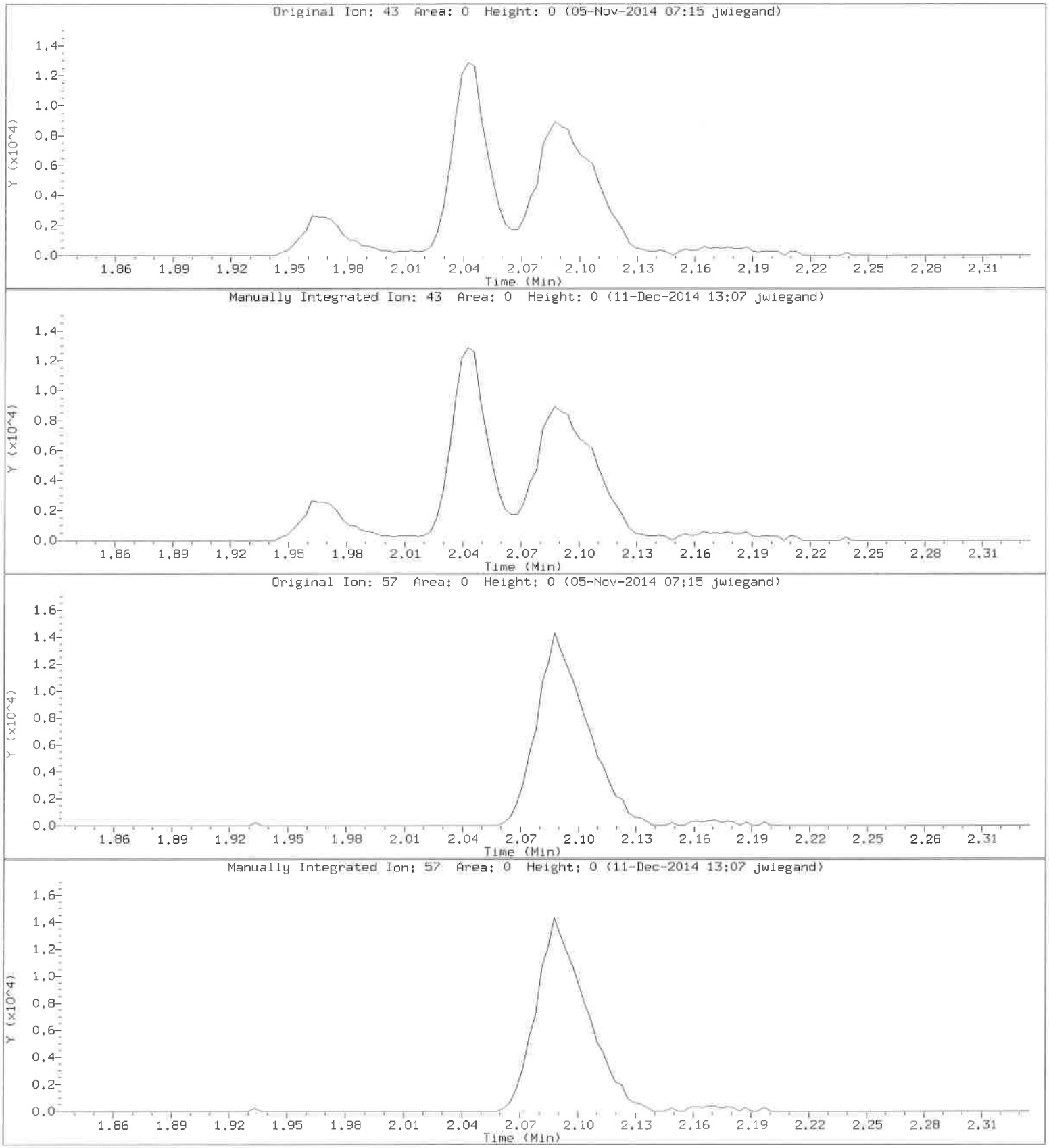
Instrument: 30msv5.i
Lab Sample ID: 812346



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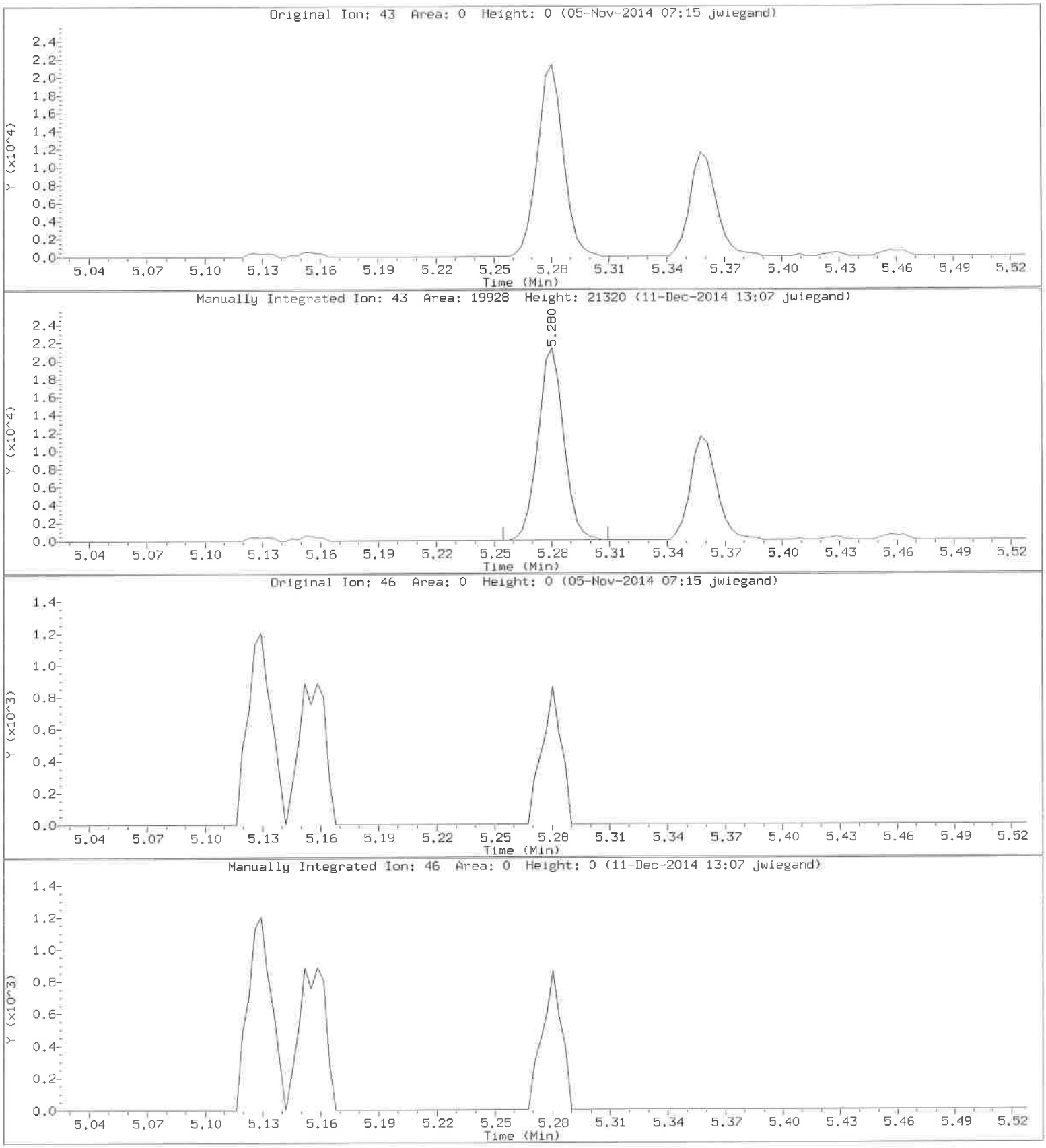
Injection Date: 04-NOV-2014 10:55
Instrument: 30msv5.i
Lab Sample ID: 812346

Compound: 2-Nitropropane
CAS Number: 79-46-9



Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106004.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 812960
Level: LOW
Data Type: MS DATA
SpikeList File: lcs.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Misc Info: 21512

Client SDG: 30133009
Fraction: VOA
Client Smp ID: 5MBLCS
Operator: JEW
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	20.0	20.2	101.21	70-130
2 Chloromethane	20.0	13.2	65.84*	70-130
3 Vinyl Chloride	20.0	15.9	79.51	70-130
4 Bromomethane	20.0	15.6	77.89	70-130
5 Chloroethane	20.0	25.9	129.47	70-130
6 Trichlorofluoromet	20.0	20.7	103.35	70-130
8 1,1-Dichloroethene	20.0	8.11	40.56*	70-130
9 Carbon Disulfide	20.0	20.3	101.42	70-130
11 Iodomethane	50.0	11.1	22.27*	70-130
12 Acrolein	20.0	0.000	*	70-130
13 Allyl chloride	50.0	93.4	186.73*	70-130
14 Methylene Chloride	20.0	15.1	75.40	70-130
15 Acetone	20.0	35.8	178.98*	70-130
16 trans-1,2-Dichloro	20.0	10.5	52.51*	70-130
17 Methyl Acetate	20.0	22.6	113.29	70-130
18 Hexane	20.0	16.0	80.15	70-130
19 tert-butyl Methyle	20.0	19.9	99.59	70-130
21 tert-Butyl Alcohol	50.0	114	227.82*	70-130
20 Acetonitrile	50.0	95.6	191.17*	70-130
22 DiisopropylEther	20.0	18.1	90.39	70-130
23 Chloroprene	20.0	0.000	*	70-130
24 1,1-Dichloroethane	20.0	12.4	61.84*	70-130
25 Acrylonitrile	20.0	17.6	88.11	70-130
27 t-Butyl ethyl ethe	20.0	18.1	90.63	70-130
26 Vinyl Acetate	20.0	0.000	*	70-130
28 cis-1,2-Dichloroet	20.0	13.1	65.32*	70-130
29 2,2-Dichloropropan	20.0	9.68	48.39*	70-130
30 Cyclohexane	20.0	20.5	102.49	70-130
31 Bromochloromethane	20.0	14.2	70.99	70-130
32 Chloroform	20.0	14.6	72.93	70-130
33 Carbon Tetrachlori	20.0	12.8	63.81*	70-130
36 Ethyl Acetate	20.0	0.000	*	70-130
35 Tetrahydrofuran	20.0	19.3	96.55	70-130
34 1,1,1-Trichloroeth	20.0	14.1	70.49	70-130
37 1,1-Dichloropropen	20.0	13.4	67.06*	70-130
38 2-Butanone	20.0	16.5	82.48	70-130
39 Benzene	20.0	12.8	63.86*	70-130
40 Propionitrile	20.0	18.7	93.41	70-130
41 Methacrylonitrile	20.0	17.3	86.42	70-130
44 1,2-Dichloroethane	20.0	14.3	71.63	70-130

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106004.d
Report Date: 11-Dec-2014 13:21

SPIKE	COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
46	Isobutanol	50.0	0.000	*	70-130
47	Methylcyclohexane	20.0	19.8	98.86	70-130
48	Trichloroethene	20.0	14.6	72.84	70-130
49	Dibromomethane	20.0	15.8	78.76	70-130
50	1,2-Dichloropropan	20.0	13.7	68.73*	70-130
51	Bromodichlorometha	20.0	15.1	75.47	70-130
52	Methyl methacrylat	20.0	21.6	107.82	70-130
53	1,4-Dioxane	200	218	109.04	70-130
55	2-ChloroethylViny	20.0	0.000	*	70-130
54	cis-1,3-Dichloropr	20.0	14.1	70.43	70-130
57	Toluene	20.0	15.4	77.26	70-130
58	2-Nitropropane	50.0	83.7	167.42*	70-130
59	Tetrachloroethene	20.0	17.0	84.82	70-130
60	4-Methyl-2-Pentano	20.0	15.9	79.70	70-130
61	trans-1,3-Dichloro	20.0	14.6	73.23	70-130
63	Ethyl methacrylate	20.0	10.6	53.26*	70-130
62	1,1,2-Trichloroeth	20.0	18.4	92.29	70-130
64	Dibromochlorometha	20.0	17.2	85.84	70-130
65	1,3-Dichloropropan	20.0	17.6	88.17	70-130
66	1,2-Dibromoethane,	20.0	17.5	87.44	70-130
70	2-Hexanone	20.0	14.5	72.53	70-130
68	Chlorobenzene	20.0	18.1	90.59	70-130
69	Ethylbenzene	20.0	17.4	86.82	70-130
71	1,1,1,2-Tetrachlor	20.0	19.5	97.39	70-130
72	m,p-Xylene	40.0	36.0	90.10	70-130
73	o-Xylene	20.0	18.2	91.11	70-130
74	Styrene	20.0	20.2	100.81	70-130
75	Bromoform	20.0	19.8	98.77	70-130
76	Isopropylbenzene,C	20.0	17.7	88.52	70-130
79	n-Propylbenzene	20.0	17.0	84.80	70-130
78	Bromobenzene	20.0	16.4	81.96	70-130
80	1,1,2,2-Tetrachlor	20.0	18.8	93.78	70-130
81	2-Chlorotoluene	20.0	17.1	85.59	70-130
82	1,3,5-Trimethylben	20.0	17.3	86.59	70-130
83	1,2,3-Trichloropro	20.0	20.1	100.47	70-130
84	trans 1,4-Dichloro	20.0	10.3	51.59*	70-130
85	Cyclohexanone	50.0	0.000	*	70-130
86	4-Chlorotoluene	20.0	17.1	85.59	70-130
88	1,2,4-Trimethylben	20.0	18.2	91.24	70-130
90	4-Isopropyl toluen	20.0	18.9	94.62	70-130
91	1,3-Dichlorobenzen	20.0	19.1	95.31	70-130
93	1,4-Dichlorobenzen	20.0	19.3	96.45	70-130
95	1,2-Dichlorobenzen	20.0	19.9	99.57	70-130
96	bis(2Chloro1methy	20.0	0.000	*	70-130
98	Hexachlorobutadien	20.0	22.4	111.90	70-130
99	1,2,4-Trichloroben	20.0	23.9	119.37	70-130
100	Naphthalene	20.0	23.3	116.51	70-130
101	1,2,3-Trichloroben	20.0	24.4	121.99	70-130
157	2-methylnaphthalen	20.0	25.3	126.30	70-130

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106004.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 812960
Level: LOW
Data Type: MS DATA
SpikeList File: lcs.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Misc Info: 21512

Client SDG: 30133009
Fraction: VOA
Client Smp ID: 5MBLCS
Operator: JEW
SampleType: LCS
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 42 1,2-Dichloroethane	30.0	30.1	100.29	83-138
$ 56 Toluene-d8	30.0	29.6	98.66	73-124
$ 77 Bromofluorobenzene	30.0	28.5	95.01	71-124
$ 158 1,2-Dichlorobenze	30.0	0.000	*	0-200

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106004.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

SW846-8260

Data file : \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106004.d
Lab Smp Id: 812960 Client Smp ID: 5MBLCS
Inj Date : 06-NOV-2014 10:05
Operator : JEW Inst ID: 30msv5.i
Smp Info : 812960,,5
Misc Info : 21512
Comment :
Method : \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Meth Date : 11-Dec-2014 13:21 30msv5.i Quant Type: ISTD
Cal Date : 10-OCT-2014 12:59 Cal File: 51010017.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30MSV110B6

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.000	Volume of aliquot extract added (uL)
Ws	5.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
1 Dichlorodifluoromethane	85	0.897	0.897	(0.216)	7394	20.2428	20.2(Q)	
2 Chloromethane	50	0.991	0.991	(0.238)	11083	13.1671	13.2(QRM)	NI
3 Vinyl Chloride	62	1.032	1.032	(0.248)	6337	15.9026	15.9(Q)	
4 Bromomethane	94	1.193	1.193	(0.287)	1422	15.5771	15.6(QM)	NI
5 Chloroethane	64	1.254	1.254	(0.302)	4825	25.8935	25.9(Q)	
6 Trichlorofluoromethane	101	1.325	1.325	(0.319)	18147	20.6697	20.7	
7 Ethyl Ether	59	1.479	1.479	(0.356)	10295	19.4770	19.5	
8 1,1-Dichloroethene	61	1.592	1.592	(0.383)	8045	8.11221	8.11(R)	
159 Ethanol	45	Compound Not Detected.						
9 Carbon Disulfide	76	1.614	1.614	(0.388)	27877	20.2849	20.3	
10 1,1,2-Trichlorotrifluoroethan	151	1.611	1.611	(0.387)	9658	22.7604	22.8	
11 Iodomethane	142	1.676	1.675	(0.403)	2721	11.1334	11.1(R)	
12 Acrolein	56	Compound Not Detected.						
13 Allyl chloride	41	1.865	1.865	(0.448)	85033	93.3658	93.4(R)	
14 Methylene Chloride	49	1.933	1.929	(0.465)	11526	15.0790	15.1	
15 Acetone	58	1.962	1.962	(0.472)	2504	35.7952	35.8(R)	
16 trans-1,2-Dichloroethene	61	2.036	2.036	(0.489)	12331	10.5011	10.5(R)	
17 Methyl Acetate	74	2.042	2.045	(0.491)	4071	22.6572	22.6	
18 Hexane	86	2.090	2.087	(0.502)	2607	16.0292	16.0	
19 tert-butyl Methylether,MtB	73	2.106	2.103	(0.506)	43464	19.9181	19.9	

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106004.d
Report Date: 11-Dec-2014 13:21

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/kg)	REVIEW CODE
	21 tert-Butyl Alcohol	59	2.171	2.174	(0.522)	9813	113.912	114(QRM)	LT
	20 Acetonitrile	41	2.290	2.286	(0.550)	5124	95.5856	95.6(RM)	NI
	22 DiisopropylEther	45	2.380	2.380	(0.572)	48233	18.0772	18.1	
	23 Chloroprene	53	Compound Not Detected.						
	25 Acrylonitrile	53	2.528	2.524	(0.608)	4841	17.6228	17.6	
	24 1,1-Dichloroethane	63	2.483	2.482	(0.597)	19471	12.3679	12.4(R)	
	27 t-Butyl ethyl ether	59	2.685	2.679	(0.645)	49223	18.1255	18.1	
	26 Vinyl Acetate	43	Compound Not Detected.						
	28 cis-1,2-Dichloroethene	61	2.952	2.952	(0.709)	16961	13.0633	13.1(R)	
	29 2,2-Dichloropropane	77	3.061	3.055	(0.736)	12041	9.67739	9.68(RM)	LT
	30 Cyclohexane	56	3.145	3.145	(0.756)	25038	20.4985	20.5	
	31 Bromochloromethane	130	3.148	3.145	(0.757)	7229	14.1971	14.2(Q)	
	32 Chloroform	83	3.241	3.235	(0.779)	23259	14.5868	14.6(QM)	LT
	33 Carbon Tetrachloride	117	3.370	3.370	(0.810)	15343	12.7626	12.8(QR)	
	36 Ethyl Acetate	43	Compound Not Detected.						
	35 Tetrahydrofuran	42	3.402	3.399	(0.818)	4755	19.3097	19.3(QM)	LT
	34 1,1,1-Trichloroethane	97	3.450	3.444	(0.829)	18601	14.0979	14.1(Q)	
	37 1,1-Dichloropropene	75	3.595	3.589	(0.864)	15053	13.4122	13.4(QR)	
	38 2-Butanone	43	3.585	3.585	(0.862)	5502	16.4970	16.5(QM)	NI
	39 Benzene	78	3.823	3.823	(0.650)	41182	12.7712	12.8(R)	
	40 Propionitrile	54	3.859	3.859	(0.927)	1789	18.6814	18.7(Q)	
	41 Methacrylonitrile	41	3.878	3.871	(0.932)	8589	17.2846	17.3(Q)	
$	42 1,2-Dichloroethane-d4	65	3.939	3.939	(0.947)	31889	30.0859	30.1	
	43 t-Amyl methyl ether	73	3.942	3.939	(0.671)	40031	17.2391	17.2	
	46 Isobutanol	43	Compound Not Detected.						
	44 1,2-Dichloroethane	62	3.997	3.997	(0.961)	19004	14.3260	14.3	
*	45 Fluorobenzene	96	4.161	4.161	(1.000)	90801	30.0000		
	47 Methylcyclohexane	83	4.270	4.270	(0.727)	22223	19.7723	19.8	
	48 Trichloroethene	132	4.286	4.283	(0.729)	11637	14.5686	14.6	
	49 Dibromomethane	174	4.560	4.560	(0.776)	8689	15.7518	15.8	
	50 1,2-Dichloropropane	63	4.621	4.621	(0.786)	12962	13.7463	13.7(R)	
	51 Bromodichloromethane	83	4.669	4.669	(0.794)	19311	15.0933	15.1	
	52 Methyl methacrylate	69	4.778	4.778	(0.813)	12714	21.5646	21.6	
	53 1,4-Dioxane	88	4.798	4.794	(0.698)	672	218.081	218(Q)	
	55 2-ChloroethylVinylEther	63	Compound Not Detected.						
	54 cis-1,3-Dichloropropene	75	5.036	5.032	(0.857)	19180	14.0862	14.1	
$	56 Toluene-d8	98	5.129	5.129	(0.873)	89687	29.5988	29.6	
	57 Toluene	91	5.158	5.158	(0.877)	50917	15.4521	15.4	
	58 2-Nitropropane	43	5.280	5.280	(0.898)	23957	83.7118	83.7(QRM)	NI
	59 Tetrachloroethene	166	5.354	5.354	(0.911)	14309	16.9649	17.0	
	60 4-Methyl-2-Pentanone	43	5.360	5.357	(0.912)	12857	15.9403	15.9	
	61 trans-1,3-Dichloropropene	75	5.376	5.376	(0.915)	19764	14.6468	14.6	
	63 Ethyl methacrylate	41	5.460	5.460	(0.929)	8518	10.6527	10.6(QR)	
	62 1,1,2-Trichloroethane	97	5.454	5.453	(0.928)	12979	18.4574	18.4	
	64 Dibromochloromethane	129	5.537	5.537	(0.942)	14996	17.1682	17.2	
	65 1,3-Dichloropropane	76	5.582	5.582	(0.950)	21908	17.6331	17.6	
	66 1,2-Dibromoethane,EDB	107	5.643	5.643	(0.960)	12745	17.4874	17.5	
	70 2-Hexanone	43	5.753	5.756	(0.979)	9326	14.5055	14.5	
*	67 Chlorobenzene-d5	82	5.878	5.878	(1.000)	39673	30.0000		
	68 Chlorobenzene	112	5.888	5.887	(1.002)	38295	18.1187	18.1	
	69 Ethylbenzene	106	5.897	5.900	(1.003)	19529	17.3640	17.4	
	71 1,1,1,2-Tetrachloroethane	131	5.917	5.916	(1.007)	14271	19.4772	19.5	
	72 m,p-Xylene	106	5.965	5.965	(1.015)	48106	36.0384	36.0	
	73 o-Xylene	106	6.151	6.151	(1.046)	23466	18.2215	18.2	

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106004.d
Report Date: 11-Dec-2014 13:21

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/kg)	REVIEW CODE
74 Styrene	104	6.174	6.174	(1.050)	41561	20.1628	20.2	
75 Bromoform	173	6.190	6.190	(1.053)	10883	19.7532	19.8	
76 Isopropylbenzene,Cumene	105	6.286	6.286	(0.915)	65875	17.7045	17.7	
$ 77 Bromofluorobenzene	174	6.408	6.408	(0.933)	30402	28.5021	28.5	
79 n-Propylbenzene	91	6.460	6.460	(0.940)	80155	16.9599	17.0	
78 Bromobenzene	77	6.454	6.453	(0.939)	31612	16.3919	16.4	
80 1,1,2,2-Tetrachloroethane	83	6.492	6.492	(0.945)	19421	18.7562	18.8	
81 2-Chlorotoluene	126	6.527	6.527	(0.950)	15413	17.1189	17.1	
82 1,3,5-Trimethylbenzene	120	6.540	6.540	(0.952)	25561	17.3185	17.3	
83 1,2,3-Trichloropropane	110	6.550	6.550	(0.953)	6265	20.0936	20.1	
84 trans 1,4-Dichloro-2-butene	53	6.563	6.563	(0.955)	3819	10.3186	10.3(R)	
85 Cyclohexanone	55	Compound Not Detected.						
86 4-Chlorotoluene	126	6.598	6.598	(0.960)	16117	17.1180	17.1	
87 tert-Butyl benzene	119	6.672	6.675	(0.971)	46886	18.4678	18.5	
88 1,2,4-Trimethylbenzene	120	6.701	6.701	(0.975)	25394	18.2483	18.2	
89 sec-Butyl benzene	105	6.746	6.746	(0.982)	70207	18.8443	18.8	
90 4-Isopropyl toluene	119	6.801	6.801	(0.990)	60117	18.9237	18.9	
91 1,3-Dichlorobenzene	146	6.843	6.842	(0.996)	33518	19.0627	19.1	
* 92 1,4-Dichlorobenzene-d4	152	6.871	6.871	(1.000)	38870	30.0000		
93 1,4-Dichlorobenzene	146	6.878	6.878	(1.001)	33848	19.2899	19.3	
94 n-Butyl benzene	91	6.978	6.977	(1.015)	55474	18.5698	18.6	
$ 158 1,2-Dichlorobenzene-d4	152	Compound Not Detected.						
95 1,2-Dichlorobenzene	146	7.055	7.055	(1.027)	32310	19.9138	19.9	
96 bis(2Chlorolmethyl ethyl)eth	45	Compound Not Detected.						
97 1,2-Dibromo-3-Chloropropane	75	7.380	7.379	(1.074)	3588	20.1124	20.1	
98 Hexachlorobutadiene	225	7.637	7.637	(1.111)	12590	22.3799	22.4	
99 1,2,4-Trichlorobenzene	180	7.656	7.656	(1.114)	23492	23.8744	23.9	
100 Naphthalene	128	7.794	7.794	(1.134)	50544	23.3016	23.3	
101 1,2,3-Trichlorobenzene	180	7.871	7.871	(1.146)	20705	24.3978	24.4	
157 2-methylnaphthalene	142	8.244	8.241	(1.200)	27060	25.2607	25.3	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106004.d
Report Date: 11-Dec-2014 13:21

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30msv5.i
Lab File ID: 51106004.d
Lab Smp Id: 812960
Analysis Type: VOA
Quant Type: ISTD
Operator: JEW
Method File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\msv5soil101014.m
Misc Info: 21512

Calibration Date: 06-NOV-2014
Calibration Time: 09:43
Client Smp ID: 5MBLCS
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 3

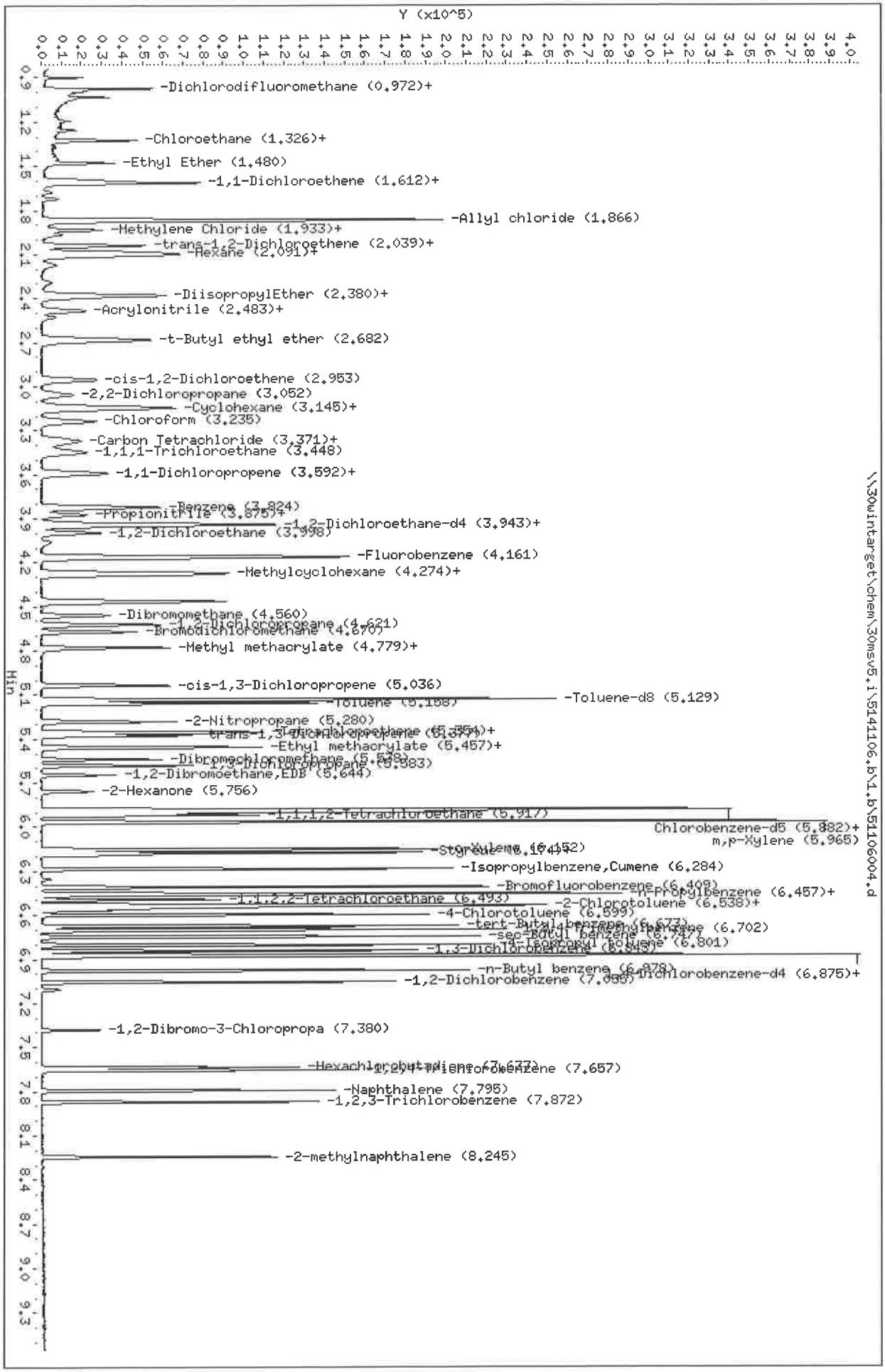
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	91773	45887	183546	90801	-1.06
67 Chlorobenzene-d5	40493	20247	80986	39673	-2.03
92 1,4-Dichlorobenze	36287	18144	72574	38870	7.12

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
45 Fluorobenzene	4.16	3.66	4.66	4.16	0.00
67 Chlorobenzene-d5	5.88	5.38	6.38	5.88	0.00
92 1,4-Dichlorobenze	6.87	6.37	7.37	6.87	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

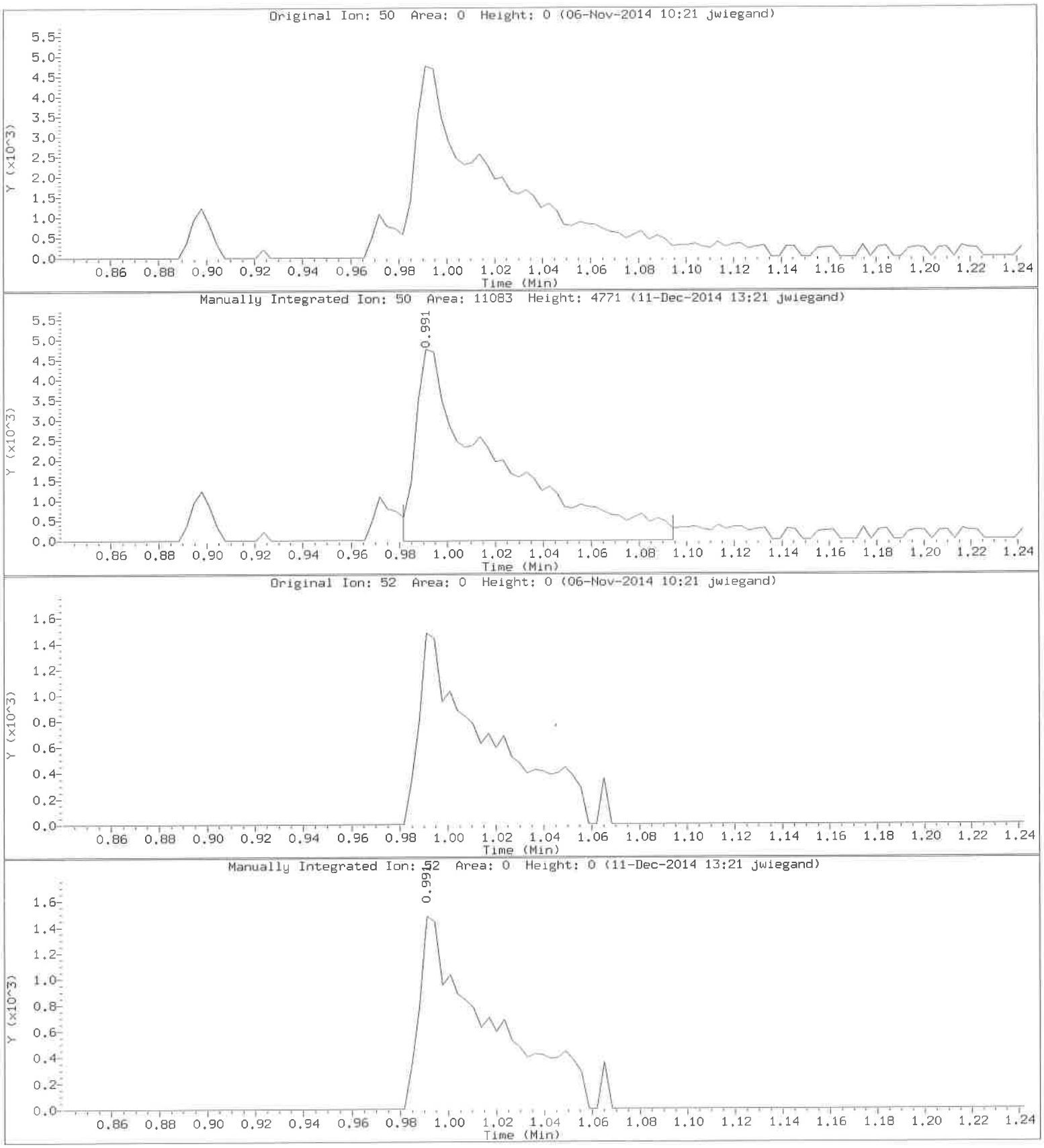
Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b\51106004.d
Date : 06-NOV-2014 10:05
Client ID: 5MBLCS
Sample Info: 812960,,5
Purge Volume: 5.0
Column phase: Rtx-VMS

Instrument: 30msv5.i
Operator: JEW
Column diameter: 0.18



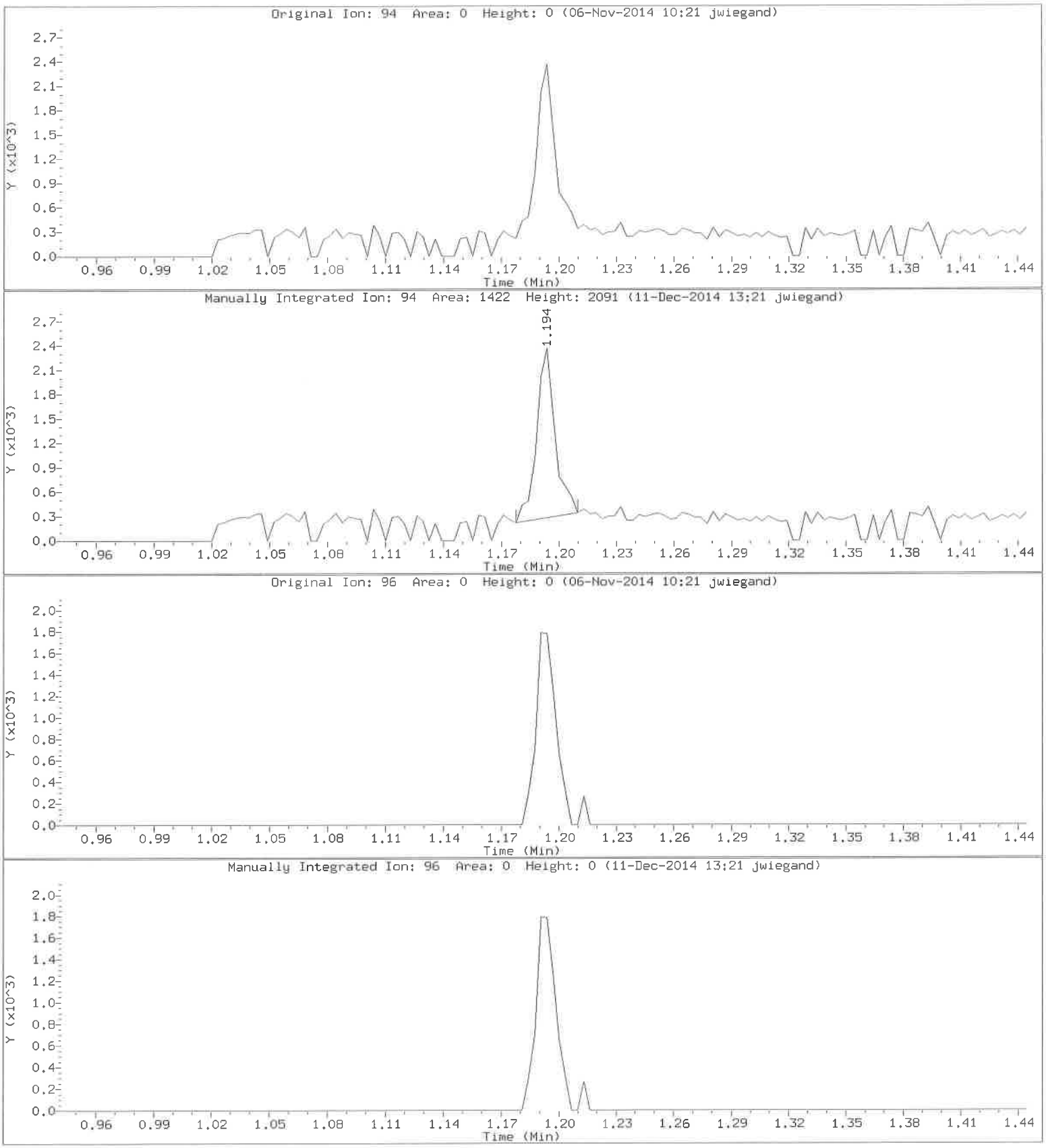
Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

Compound: Chloromethane
CAS Number: 74-87-3



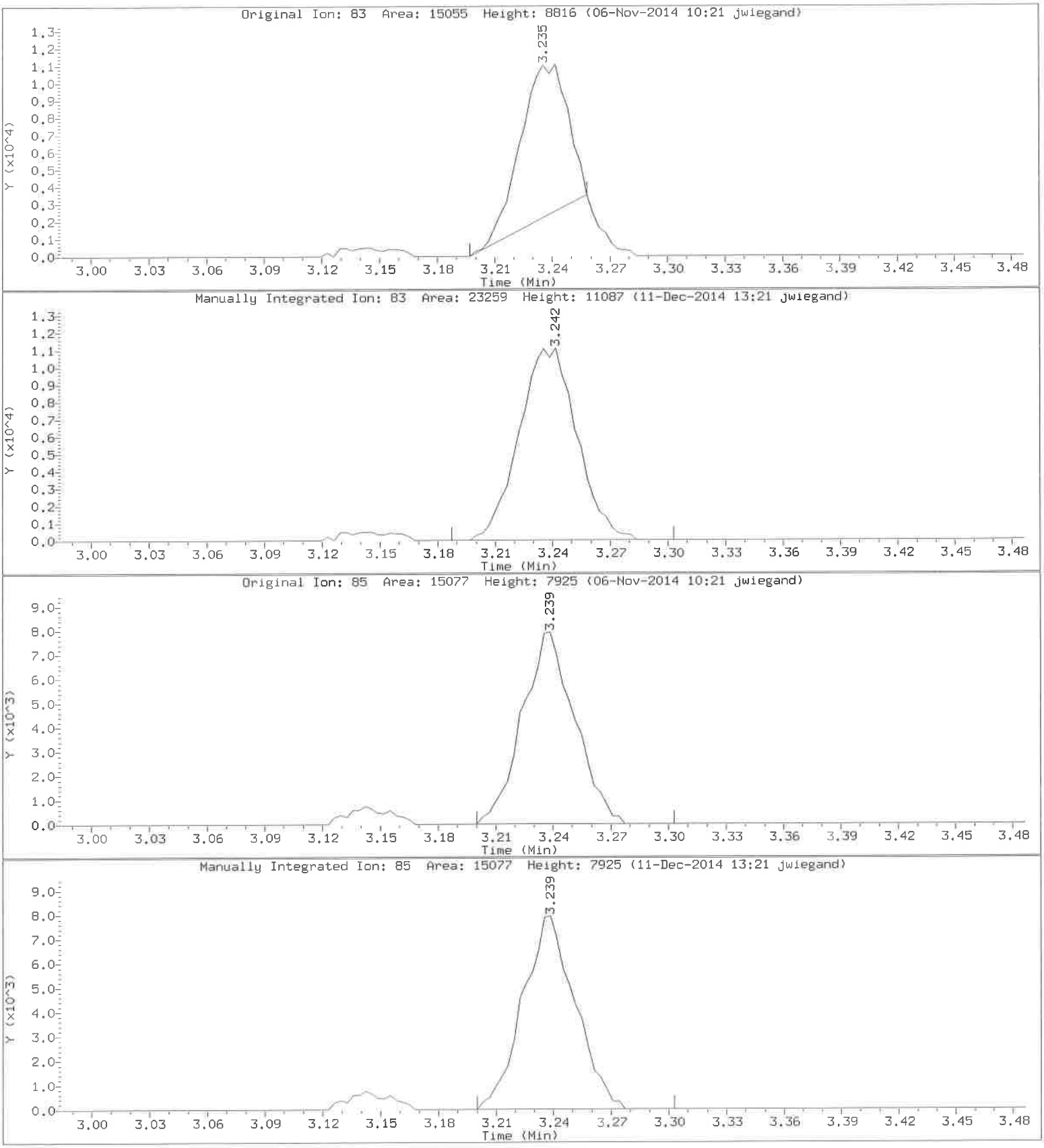
Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

Compound: Bromomethane
CAS Number: 74-83-9



Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

Compound: Chloroform
CAS Number: 67-66-3



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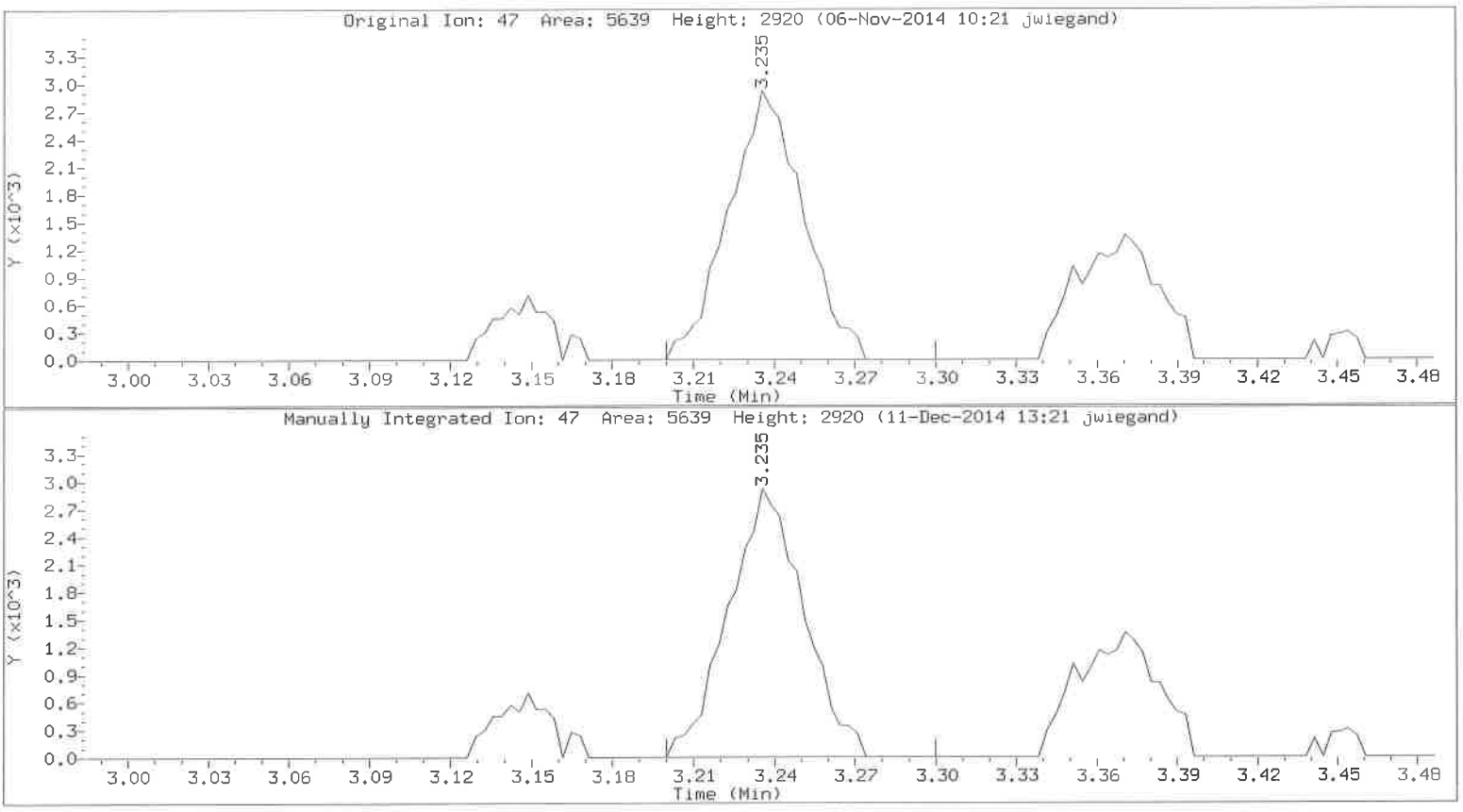
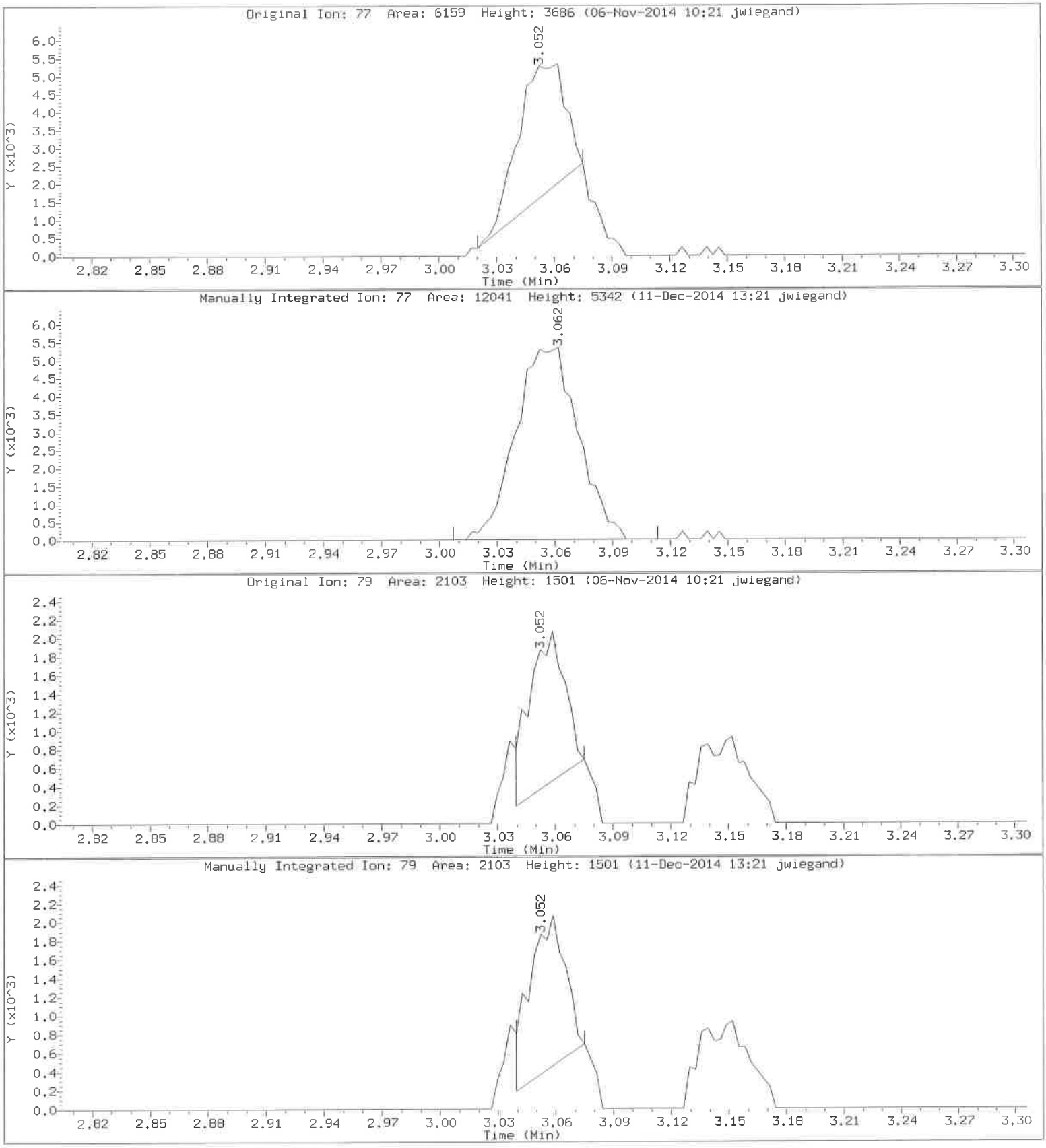
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

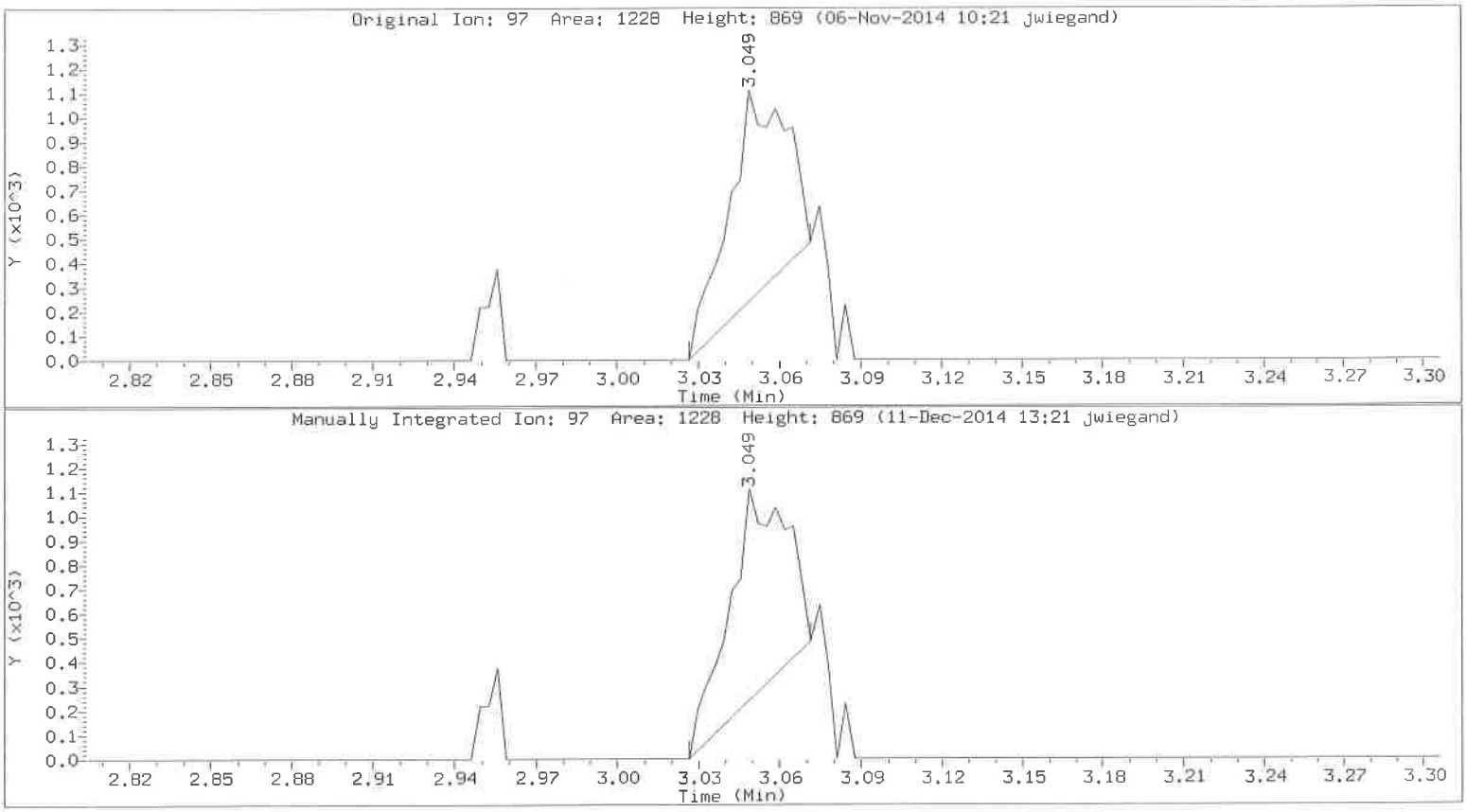


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

Compound: 2,2-Dichloropropane
CAS Number: 594-20-7

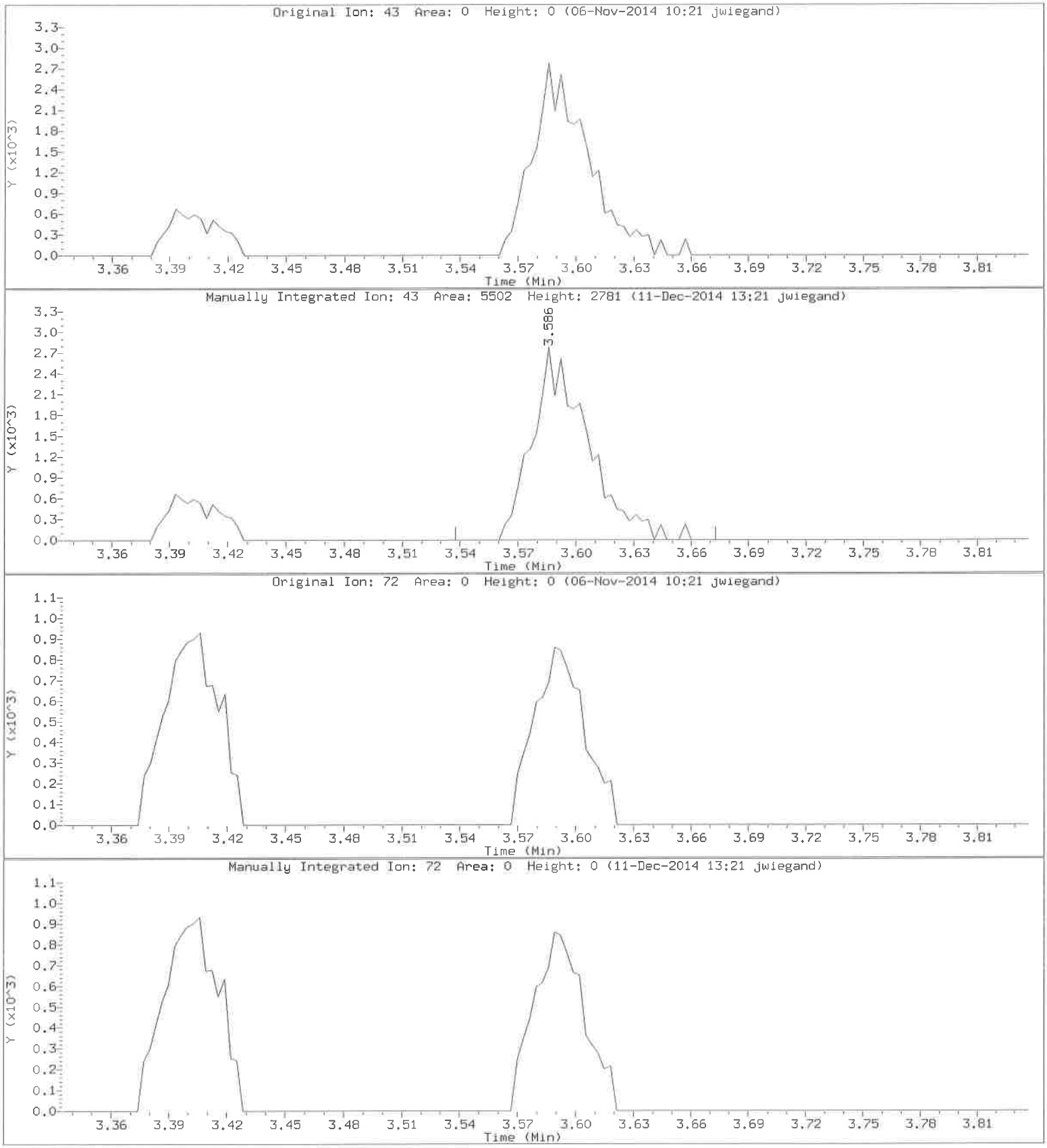


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

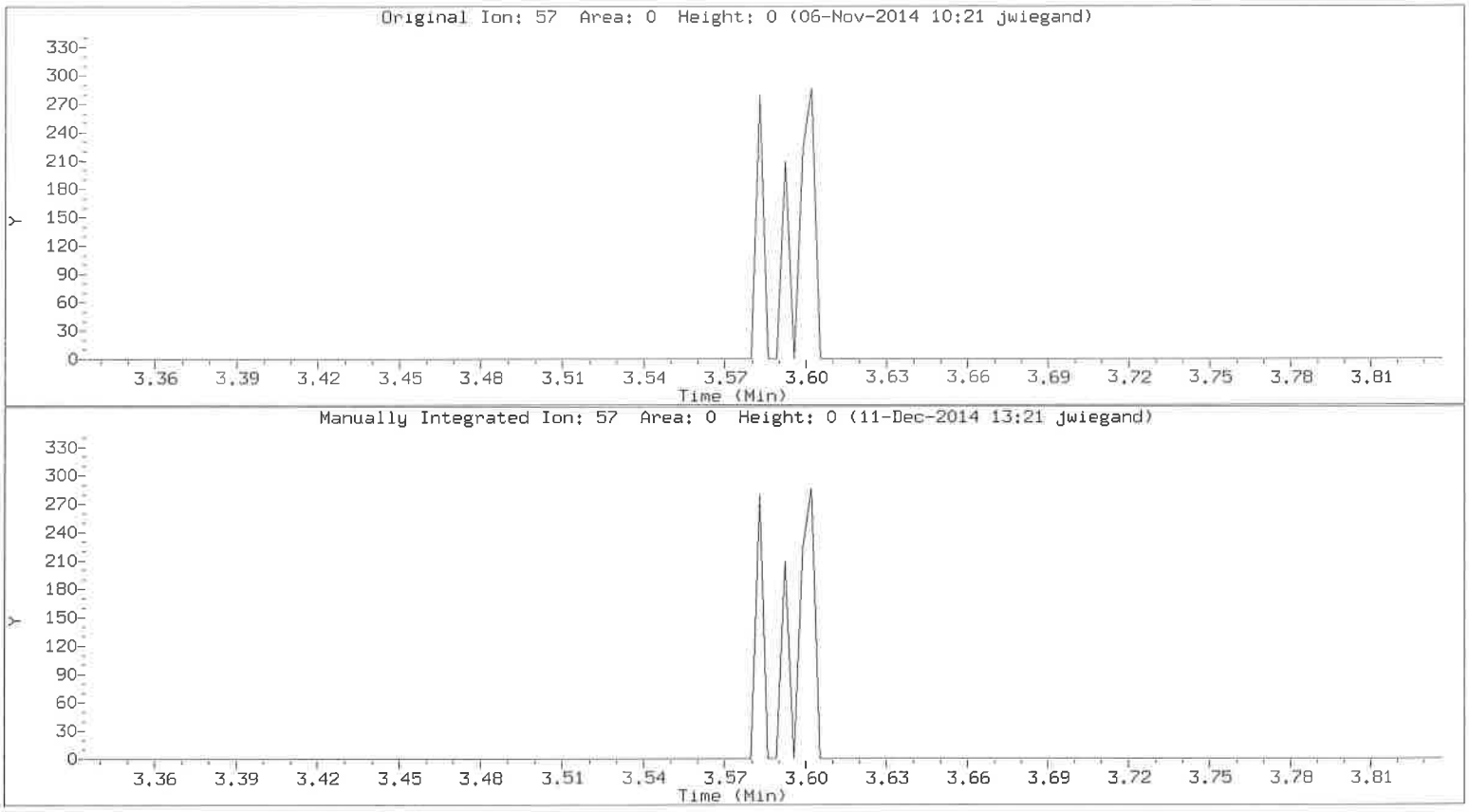


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

Compound: 2-Butanone
CAS Number: 78-93-3

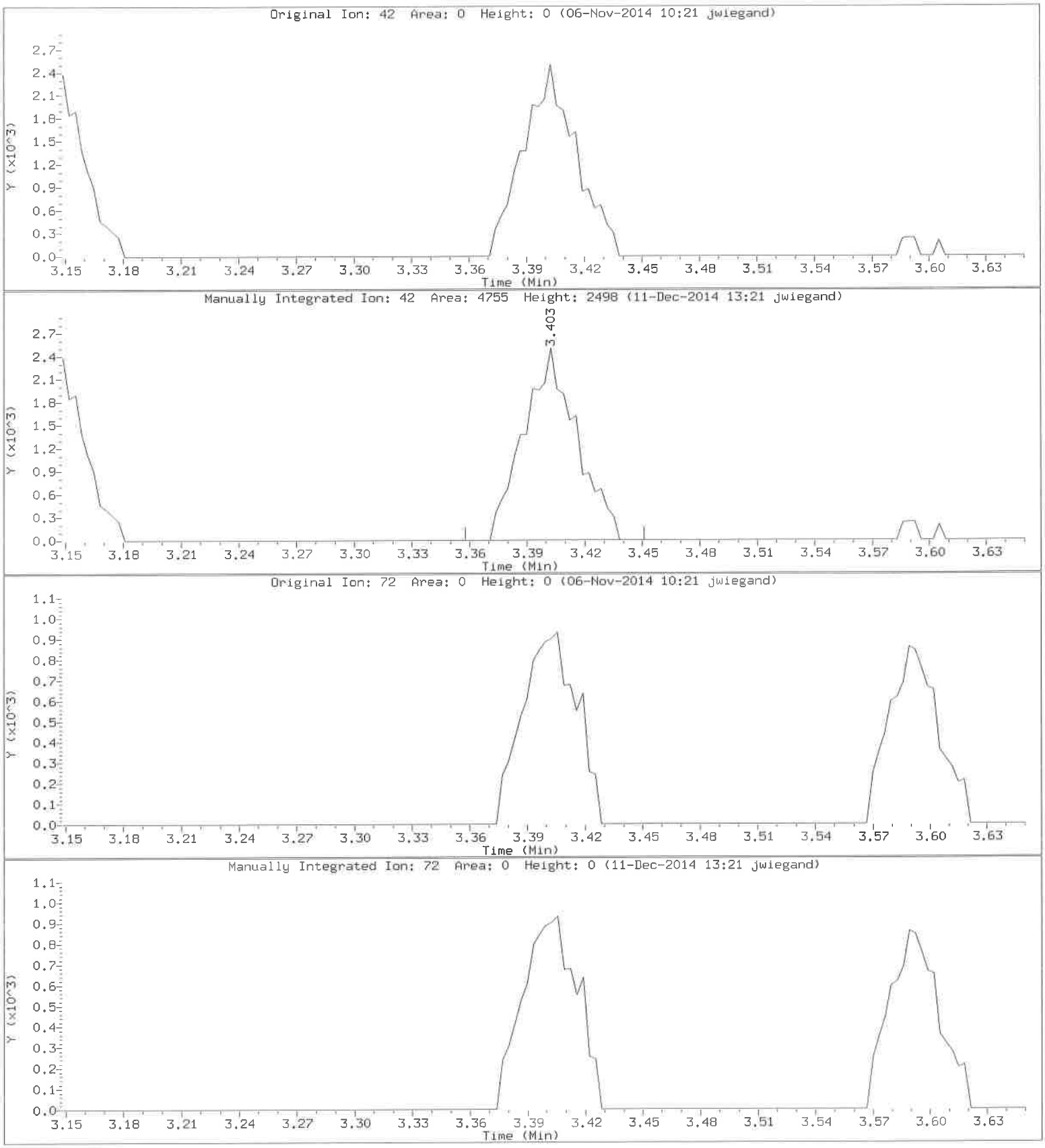


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

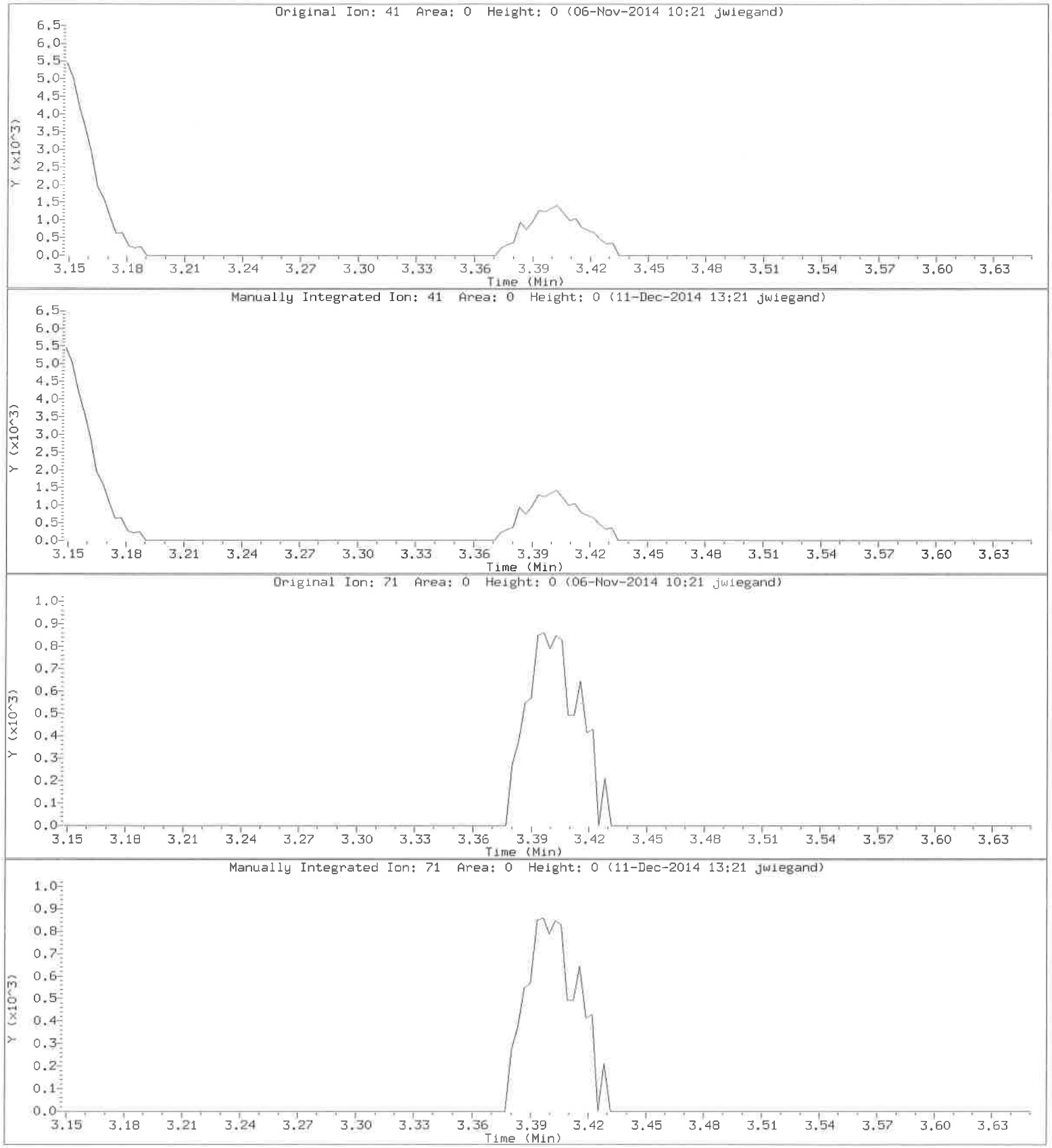


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

Compound: Tetrahydrofuran
CAS Number: 109-99-9



Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960



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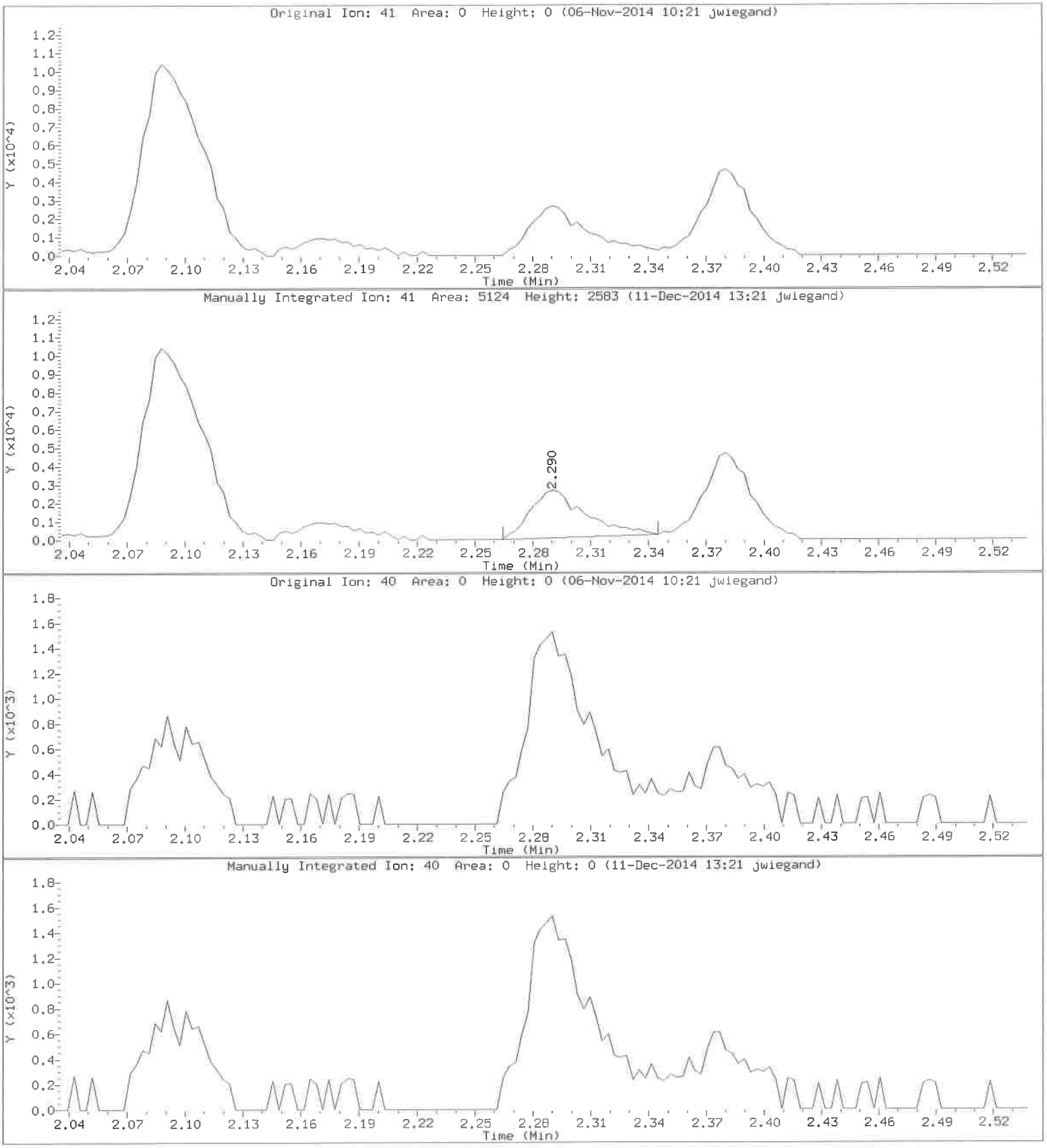
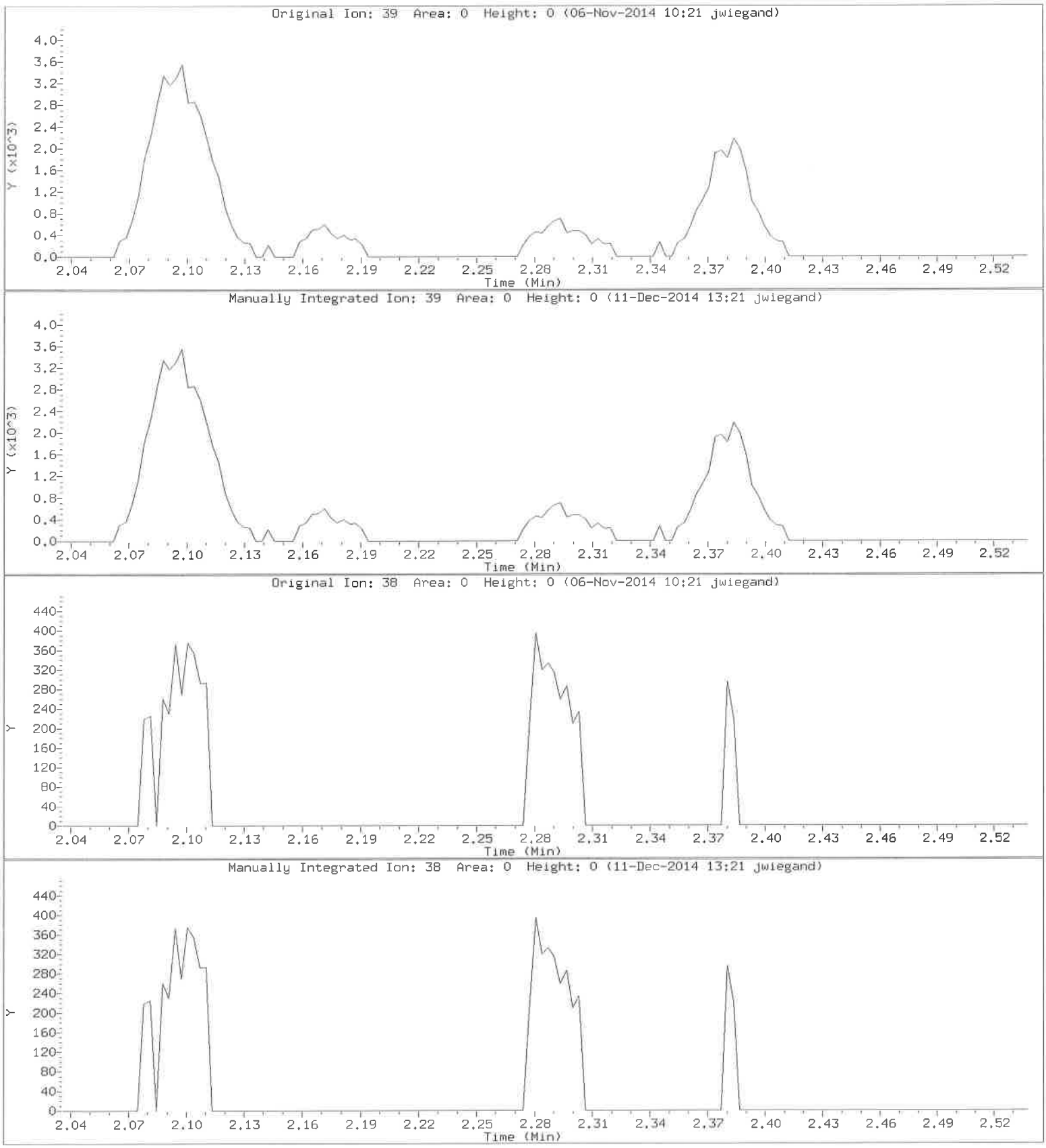
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

Compound: Acetonitrile
CAS Number: 75-05-8

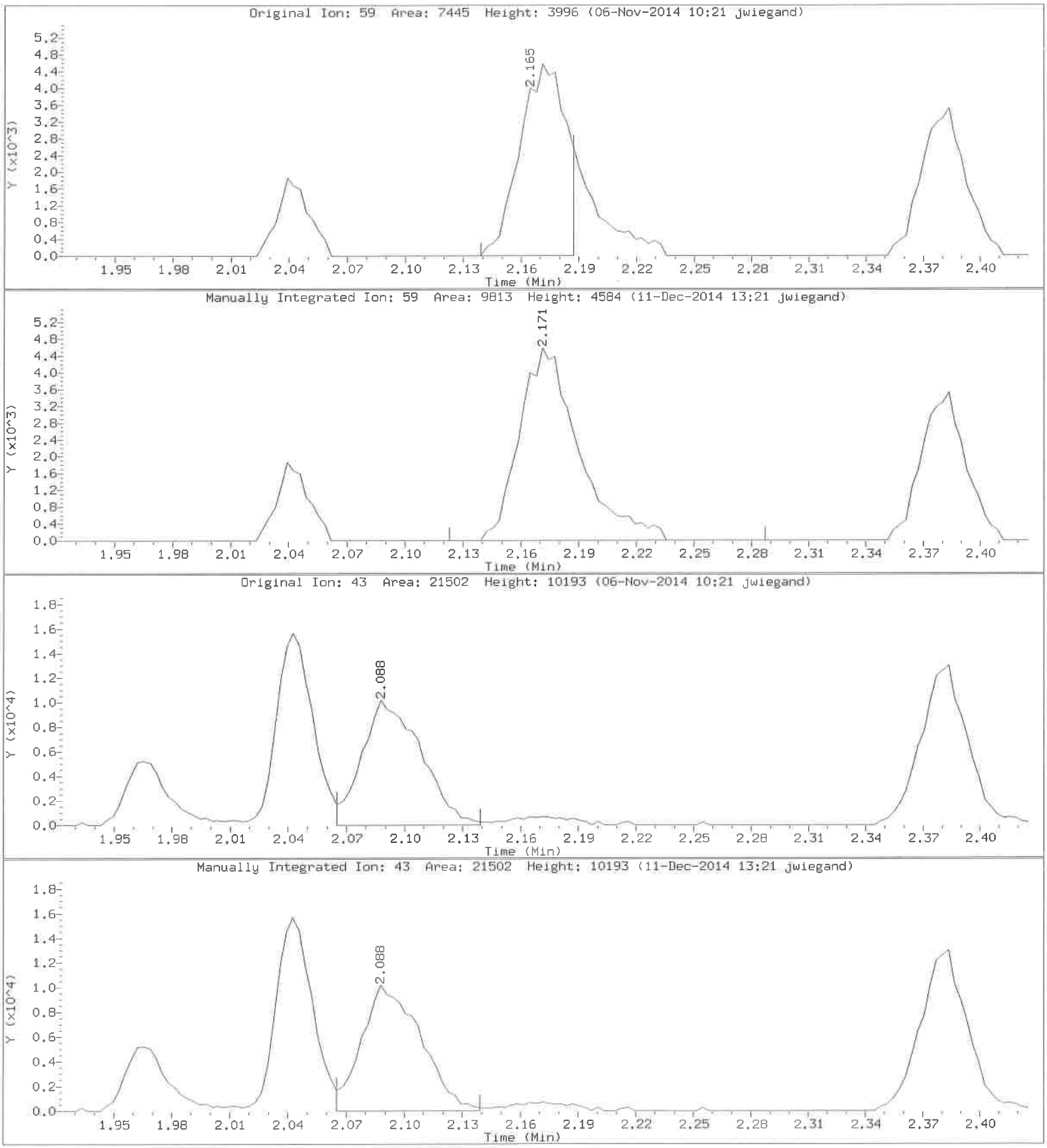


Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960



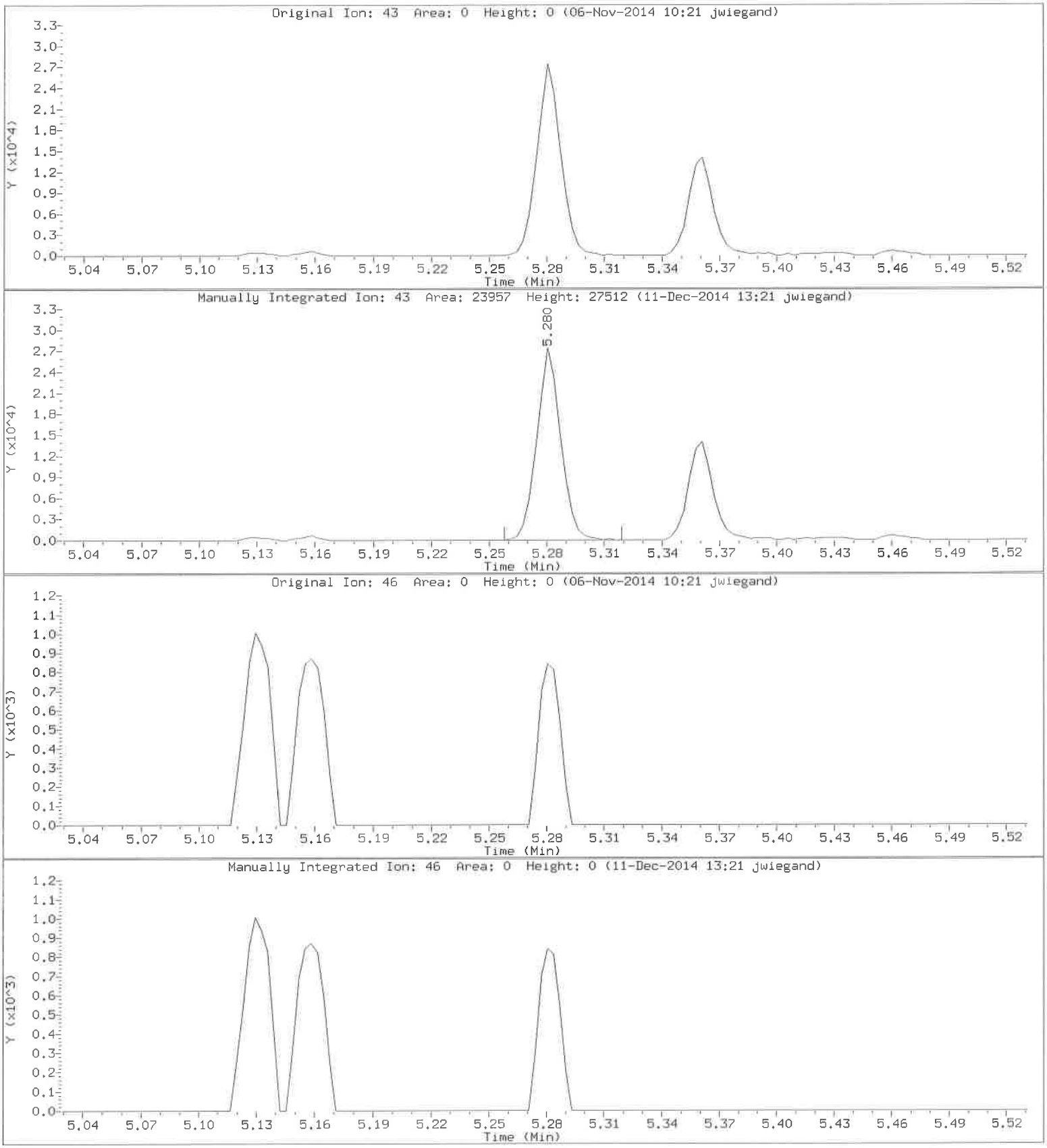
Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

Compound: tert-Butyl Alcohol
CAS Number: 75-65-0



Data File: \\30wintarget\chem\30msv5.i\5141106.b\1.b/51106004.d (ManInt: al
Injection Date: 06-NOV-2014 10:05
Instrument: 30msv5.i
Lab Sample ID: 812960

Compound: 2-Nitropropane
CAS Number: 79-46-9



INSTRUMENT RUN LOG
Pace Analytical Services, Inc

Instrument: 30msv5.i
Column Rtx-VMS 20m X 0.18mm Helium — Method: 8260
Misc. Prep Info [L]:
Misc. Prep Info [S]:
ISTD lot: V3-148-3 — Surr. lot: V3-148-3
Tune std: V3-148-3
Cal. std: see curve

Path/File	Lab ID	Mtrx/Batch	Type	DF	pH	Method	Date	Time	Oper	Comments
1/51010001.d	blk	L/	BFB	1	7	msv5soil101014	10/10/14	06:46	JEW	
1/51010002.d	blk	L/	BFB	1	7	msv5soil101014	10/10/14	07:08	JEW	
1/51010003.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	10/10/14	07:30	JEW	
1/51010004.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	10/10/14	07:52	JEW	
1/51010005.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	10/10/14	08:15	JEW	
1/51010006.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	10/10/14	08:37	JEW	
1/51010007.d	blk	L/	BFB	1	7	msv5soil101014	10/10/14	08:59	JEW	
1/51010008.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	10/10/14	09:21	JEW	
1/51010009.d	blk	L/	BFB	1	7	bfb390	10/10/14	10:01	JEW	
1/51010010.d	BFB	L/	BFB	1	7	bfb390	10/10/14	10:23	JEW	
1/51010011.d	VSTD[2.5]	S/V10-49-16	CALIB_5	1	< 2	msv5soil101014	10/10/14	10:45	JEW	
1/51010012.d	VSTD[5]	S/V10-49-11	CALIB_1	1	< 2	msv5soil101014	10/10/14	11:07	JEW	
1/51010013.d	VSTD[10]	S/V10-49-12	CALIB_2	1	< 2	msv5soil101014	10/10/14	11:30	JEW	
1/51010014.d	VSTD[20]	S/V10-49-13	CALIB_3	1	< 2	msv5soil101014	10/10/14	11:52	JEW	
1/51010015.d	VSTD[50]	S/V10-49-14	CALIB_4	1	< 2	msv5soil101014	10/10/14	12:14	JEW	
1/51010016.d	VSTD[100]	S/V10-49-15	CALIB_8	1	< 2	msv5soil101014	10/10/14	12:37	JEW	
1/51010017.d	VSTD[400]	S/V10-19-10	CALIB_6	1	< 2	msv5soil101014	10/10/14	12:59	JEW	
1/51010018.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	10/10/14	13:21	JEW	
1/51010019.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	10/10/14	13:43	JEW	
1/51010020.d	801078	S/21253	BLANK	1	< 2	msv5soil101014	10/10/14	14:06	JEW	
1/51010021.d	801079	S/21253,,,V10-49-17	LCS	1	< 2	msv5soil101014	10/10/14	14:28	JEW	
1/51010022.d	30130680001	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	14:50	JEW	
1/51010023.d	30130680002	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	15:13	JEW	
1/51010024.d	30130680003	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	15:35	JEW	
1/51010025.d	30130680004	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	15:57	JEW	
1/51010026.d	30130680005	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	16:19	JEW	
1/51010027.d	30130680006	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	16:42	JEW	
1/51010028.d	30130680007	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	17:04	JEW	
1/51010029.d	30130680008	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	17:26	JEW	
1/51010030.d	30130680009	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	17:49	JEW	
1/51010031.d	30130680010	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	18:11	JEW	
1/51010032.d	30130680011	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	18:33	JEW	
1/51010033.d	30130515001	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	18:56	JEW	

Check Maintenance Items Performed:

___ Changed septum
___ Cleaned liner
___ Replaced/Cleaned gold seal
___ Clipped column
___ Changed trap (lot #_____)
___ Cleaned MS source
___ Changed column (lot #_____)
___ Other minor parts replaced _____
✓ No maintenance performed today

Additional Comments: pH acceptance limits pH<2

Run Order Verified: kw

File Path 1: \\30wintarget\chem\30msv5.i\5141010.b\1.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 09:05 10/13/2014

Reviewed By/Date: RES 12/11/14

INSTRUMENT RUN LOG
Pace Analytical Services, Inc

Instrument: 30msv5.i
Column Rtx-VMS 20m X 0.18mm Helium Method: 8260
Misc. Prep Info [L]:
Misc. Prep Info [S]:
ISTD lot: V3-148-3 Surr. lot: V3-148-3
Tune std: V3-148-3
Cal. std: See curve

Path/File	Lab ID	Mtrx/Batch	Type	DF	pH	Method	Date	Time	Oper	Comments
1/51010034.d	30130515002	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	19:18	JEW	
1/51010035.d	30130515003	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	19:40	JEW	
1/51010036.d	30130515004	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	20:02	JEW	
1/51010037.d	30131022001	S/21253	SAMPLE	1	< 2	msv5soil101014	10/10/14	20:25	JEW	

File Path 1: \\30wintarget\chem\30msv5.i\5141010.b\1.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 09:05 10/13/2014 Reviewed By/Date: RES 12/11/14 Page: 2 of 2

INSTRUMENT RUN LOG
Pace Analytical Services Inc.

Instrument: 30msv5.i
Column Rtx-VMS 20m X 0.18mm Helium
Misc. Prep Info [L]:
Misc. Prep Info [S]:
ISTD lot: V3-148-3
Tune std: 1

Method: 8260

Surr. lot: V3-148-3
Cal. std: V10-96-15

Path/File	Lab ID	Mtrx/Batch	Type	DF	pH	Method	Date	Time	Oper	Comments
1/51104001.d	blk	L/	BFB	1	7	bfb390	11/04/14	09:27	JEW	
1/51104002.d	blk	L/	BFB	1	7	bfb390	11/04/14	09:49	JEW	
1/51104003.d	BFB	L/	BFB	1	7	bfb390	11/04/14	10:11	JEW	
1/51104004.d	VSTD[50]	S/V10-56-15	CCALIB_4	1	< 2	msv5soil101014	11/04/14	10:33	JEW	
1/51104005.d	812346	S/21491	LCS	1	< 2	msv5soil101014	11/04/14	10:55	JEW	
1/51104006.d	MBLKX50	S/	BLANK	50	< 2	msv5soil101014	11/04/14	11:18	JEW	
1/51104007.d	812345	S/21491	BLANK	1	< 2	msv5soil101014	11/04/14	11:40	JEW	
1/51104008.d	30133058003	S/	SAMPLE	1	< 2	msv5soil101014	11/04/14	12:02	JEW	
1/51104009.d	30133058007	S/21473	SAMPLE	100	< 2	msv5soil101014	11/04/14	12:24	JEW	
1/51104010.d	30133186003	S/	SAMPLE	1	< 2	msv5soil101014	11/04/14	12:47	JEW	
1/51104011.d	30133186005	S/	SAMPLE	1	< 2	msv5soil101014	11/04/14	13:09	JEW	
1/51104012.d	30133186019	S/	SAMPLE	1	< 2	msv5soil101014	11/04/14	13:31	JEW	
1/51104013.d	30133186010	S/	SAMPLE	1	< 2	msv5soil101014	11/04/14	13:53	JEW	
1/51104014.d	30133186011	S/	SAMPLE	1	< 2	msv5soil101014	11/04/14	14:16	JEW	
1/51104015.d	30133186012	S/	SAMPLE	1	< 2	msv5soil101014	11/04/14	14:38	JEW	
1/51104016.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	11/04/14	15:00	JEW	
1/51104017.d	30133433001	S/21491	SAMPLE	1	< 2	msv5soil101014	11/04/14	15:22	JEW	
1/51104018.d	30133433002	S/21491	SAMPLE	1	< 2	msv5soil101014	11/04/14	15:45	JEW	
1/51104019.d	30133433005	S/21491	SAMPLE	1	< 2	msv5soil101014	11/04/14	16:07	JEW	
1/51104020.d	30133433006	S/21491	SAMPLE	1	< 2	msv5soil101014	11/04/14	16:29	JEW	
1/51104021.d	30133321001	S/21491	SAMPLE	1	< 2	msv5soil101014	11/04/14	16:51	JEW	
1/51104022.d	30133321002	S/	SAMPLE	1	< 2	msv5soil101014	11/04/14	17:14	JEW	
1/51104023.d	30133388001	S/	SAMPLE	1	< 2	msv5soil101014	11/04/14	17:36	JEW	
1/51104024.d	30133009001	S/21491	SAMPLE	1	< 2	msv5soil101014	11/04/14	17:58	JEW	
1/51104025.d	30133009002	S/21491	SAMPLE	1	< 2	msv5soil101014	11/04/14	18:20	JEW	
1/51104026.d	30133009003	S/21491	SAMPLE	1	< 2	msv5soil101014	11/04/14	18:43	JEW	

Check Maintenance Items Performed:

___ Changed septum
___ Cleaned liner
___ Replaced/Cleaned gold seal
___ Clipped column
___ Changed trap (lot #_____)
___ Cleaned MS source
___ Changed column (lot #_____)
___ Other minor parts replaced
✓ No maintenance performed today

Additional Comments:

Run Order Verified: JEW

File Path 1: \\30wintarget\chem\30msv5.i\5141104.b\1.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 10:00 11/05/2014

Reviewed By/Date: RES 12/11/14

Page: 1 of 1

INSTRUMENT RUN LOG
Pace Analytical Services, Inc

Instrument: 30msv5.i
Column Rtx-VMS 20m X 0.18mm Helium — Method: 8260
Misc. Prep Info [L]:
Misc. Prep Info [S]:
ISTD lot: V3-148-3 — Surr. lot: V3-148-3
Tune std: V3-148-3
Cal. std: V10-97-7

Path/File	Lab ID	Mtrx/Batch	Type	DF	pH	Method	Date	Time	Oper	Comments
1/51106001.d	blk	L/	BFB	1	7	bfb390	11/06/14	08:58	JEW	
1/51106002.d	BFB	L/	BFB	1	7	bfb390	11/06/14	09:21	JEW	
1/51106003.d	VSTD[50]	S/V10-57-7	CCALIB_4	1	< 2	msv5soil101014	11/06/14	09:43	JEW	
1/51106004.d	812960	S/21512	LCS	1	< 2	msv5soil101014	11/06/14	10:05	JEW	
1/51106005.d	MBLKX50	S/	BLANK	50	< 2	msv5soil101014	11/06/14	10:27	JEW	
1/51106006.d	812959	S/21512	BLANK	1	< 2	msv5soil101014	11/06/14	10:50	JEW	
1/51106007.d	30133441002	S/21512	SAMPLE	50	< 2	msv5soil101014	11/06/14	11:12	JEW	
1/51106008.d	30133186003	S/21503	SAMPLE	500	< 2	msv5soil101014	11/06/14	11:34	JEW	
1/51106009.d	30133009003	S/21491	SAMPLE	50	5.18	msv5soil101014	11/06/14	11:56	MAK	
1/51106010.d	30133009003	S/21491	SAMPLE	500	5.18	msv5soil101014	11/06/14	12:18	MAK	
1/51106011.d	30132978001	S/21512	SAMPLE	1	5.21	msv5soil101014	11/06/14	12:41	MAK	
1/51106012.d	30132978004	S/21512	SAMPLE	1	6.36	msv5soil101014	11/06/14	13:03	MAK	
1/51106013.d	30132978006	S/21512	SAMPLE	1	6.44	msv5soil101014	11/06/14	13:25	MAK	
1/51106014.d	30132978007	S/21512	SAMPLE	1	6.57	msv5soil101014	11/06/14	13:47	MAK	
1/51106015.d	30132978008	S/21512	SAMPLE	1	6.07	msv5soil101014	11/06/14	14:10	CLG	
1/51106016.d	30133317001	S/21512	SAMPLE	50	< 2	msv5soil101014	11/06/14	14:32	JEW	
1/51106017.d	30133319001	S/21512	SAMPLE	50	< 2	msv5soil101014	11/06/14	14:54	JEW	
1/51106018.d	30133500001	S/21512	SAMPLE	1	< 2	msv5soil101014	11/06/14	15:16	JEW	
1/51106019.d	30133308001	S/21512	SAMPLE	1	< 2	msv5soil101014	11/06/14	15:39	JEW	
1/51106020.d	30133306002	S/21512	SAMPLE	1	< 2	msv5soil101014	11/06/14	16:01	JEW	
1/51106021.d	30133306004	S/21512	SAMPLE	1	< 2	msv5soil101014	11/06/14	16:23	JEW	
1/51106022.d	30133332001	S/21512	SAMPLE	50	< 2	msv5soil101014	11/06/14	16:45	JEW	
1/51106023.d	30133332003	S/21512	SAMPLE	50	< 2	msv5soil101014	11/06/14	17:08	JEW	
1/51106024.d	30133304003	S/21512	SAMPLE	1	< 2	msv5soil101014	11/06/14	17:30	JEW	
1/51106025.d	30133304003	S/21512	SAMPLE	100	< 2	msv5soil101014	11/06/14	17:52	JEW	
1/51106026.d	30133304006	S/21512	SAMPLE	1	< 2	msv5soil101014	11/06/14	18:14	JEW	
1/51106027.d	30133304006	S/21512	SAMPLE	100	< 2	msv5soil101014	11/06/14	18:37	JEW	
1/51106028.d	30133304009	S/21512	SAMPLE	1	< 2	msv5soil101014	11/06/14	18:59	JEW	
1/51106029.d	30133304009	S/21512	SAMPLE	100	< 2	msv5soil101014	11/06/14	19:21	JEW	
1/51106030.d	30133304012	S/21512	SAMPLE	1	< 2	msv5soil101014	11/06/14	19:43	JEW	
1/51106031.d	30133304012	S/21512	SAMPLE	100	< 2	msv5soil101014	11/06/14	20:06	JEW	
1/51106032.d	30133304015	S/21512	SAMPLE	1	< 2	msv5soil101014	11/06/14	20:28	JEW	
1/51106033.d	30133304015	S/21512	SAMPLE	100	< 2	msv5soil101014	11/06/14	20:50	JEW	

Check Maintenance Items Performed:

___ Changed septum
___ Cleaned liner
___ Replaced/Cleaned gold seal
___ Clipped column
___ Changed trap (lot #_____)
___ Cleaned MS source
___ Changed column (lot #_____)
✓ Other minor parts replaced
___ No maintenance performed today

Additional Comments: pH acceptance limits pH<2

Run Order Verified: JEW

File Path 1: \\30wintarget\chem\30msv5.i\5141106.b\1.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 07:47 11/07/2014

Reviewed By/Date: RES 12/11/14

INSTRUMENT RUN LOG
Pace Analytical Services, Inc

Instrument: 30msv5.i
Column Rtx-VMS 20m X 0.18mm Helium Method: 8260
Misc. Prep Info [L]:
Misc. Prep Info [S]:
ISTD lot: V3-148-3 Surr. lot: V3-148-3
Tune std: V3-148-3
Cal. std: V10-977

Path/File	Lab ID	Mtrx/Batch	Type	DF	pH	Method	Date	Time	Oper	Comments
1/51106034.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	11/06/14	21:12	JEW	
1/51106035.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	11/06/14	21:35	JEW	
1/51106036.d	blk	S/	SAMPLE	1	< 2	msv5soil101014	11/06/14	21:57	JEW	

File Path 1: \\30wintarget\chem\30msv5.i\5141106.b\1.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 07:47 11/07/2014

Reviewed By/Date: RES 12/11/14 Page: 2 of 2

Project Number: 30133009

Semi- Volatiles Data

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORM

	Yes	No
1. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	✓	
2. GC/MS Tune Specifications a. BFB Meets Criteria b. DFTPP Meets Criteria	✓	
3. GC/MS Tuning Frequency performed every 24 hours for 600 Series and 12 hours for 8000 Series	✓	
4. GC/MS Calibration – Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	✓	
5. GC/MS Calibration Requirements a. Calibration Check Compounds	✓	
b. System Performance Check Compounds	✓	
6. Blank Contamination If yes, list compounds And concentrations in each blank		✓
a. VOA Fraction		
b. B/N Fraction		
c. Acid Fraction		
7. Surrogate Recoveries Meet Criteria		✓
If not met, list those compounds and their recoveries which fall outside the acceptable range		

	Yes	No
a. VOA Fraction	NA	
b. B/N Fraction	See Form II	
c. Acid Fraction	See Form II	
If not met, were the calculations checked and the results qualified as "estimates"?		✓
8. Matrix Spike/Matrix Spike Duplication Recoveries Meet Criteria (If not met, list those compounds and their recoveries which fall outside the acceptable range)	✓	
a. VOA Fraction		
b. B/N Fraction		
c. Acid Fraction		
9. Internal Standard Area/Retention Time Shift Meet Criteria	✓	
10. Extraction Holding Times Met	✓	
If not met, list number of days exceeded for each sample:		
11. Analysis Holding Time Met	✓	
If not met, list number of days exceeded for each sample:		

Additional Comments

Analyst: Daniel Lee Date: 11/25/14 Project # 30133004

Dept. Group Leader: [signature] Date: 11/25/14

Q:\Deliverables\Data Pkg Forms\Deliverables Forms\NJ Conformance Form (Q017 Rev0 22Jan2007).doc

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

SURROGATE RECOVERY SUMMARY

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: OEXT / 21399
Method(s): EPA 3546 / EPA 8270C

Lab ID	Type	Client Sample ID	Dilution	Sur1 % Rec	Sur1 Qual	Sur2 % Rec	Sur2 Qual	Sur3 % Rec	Sur3 Qual	Sur4 % Rec	Sur4 Qual	Sur5 % Rec	Sur5 Qual	Sur6 % Rec	Sur6 Qual
30133009001		AOI-5_PECO-B2_12-13_10222014	1	62		84		79		80		86		73	
809326	BLANK		1	69		83		83		84		93		91	
30133009002		AOI-5_PECO-B5_14-16_10232014	1	65		74		84		79		93		73	
809327	LCS		1	76		83		93	1c	81		95		89	
30133009003		AOI-5_PECO-B6_12-14_10242014	1	69		62		92	S3	88		106	S3	83	
809328	MS		1	73		84		83		67		92		86	
809329	MSD		1	76		83		83		67		92		82	
			QC Limits:	13-114		38-107		29-88		34-107		20-102		34-129	
			Sample Limits:	13-114		38-107		29-88		34-107		20-102		34-129	

Sur 1: 2,4,6-Tribromophenol (S)
Sur 2: 2-Fluorobiphenyl (S)
Sur 3: 2-Fluorophenol (S)
Sur 4: Nitrobenzene-d5 (S)
Sur 5: Phenol-d6 (S)
Sur 6: Terphenyl-d14 (S)

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Date: 11/25/2014 11:34 AM

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

LAB CONTROL SAMPLE RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: OEXT/21399
Method(s): EPA 3546 / EPA 8270C

LCS Prepared: 10/29/14
LCSD Prepared:

Analyte	LCS % Rec	LCSD % Rec	RPD	QC Limits % Rec	QC Limits RPD	Spike Conc	LCS Conc	LCSD Conc	Units	LCS Analyzed	LCSD Analyzed	LCS Qual	LCSD Qual
2,4-Dimethylphenol	86			66-135		3.3	2.9		mg/kg	10/30/14			
2,4-Dinitrophenol	83			10-185		3.3	2.8		mg/kg	10/30/14			
2-Methylnaphthalene	83			56-121		3.3	2.8		mg/kg	10/30/14			
2-Methylphenol(o-Cresol)	99			63-130		3.3	3.3		mg/kg	10/30/14			
3&4-Methylphenol(m&p Cresol)	97			60-130		3.3	3.2		mg/kg	10/30/14			
4-Nitrophenol	95			19-139		3.3	3.2		mg/kg	10/30/14			
Biphenyl (Diphenyl)							0.33 U		mg/kg	10/30/14			
bis(2-Ethylhexyl)phthalate	98			66-150		3.3	3.3		mg/kg	10/30/14			
Di-n-butylphthalate	98			74-127		3.3	3.3		mg/kg	10/30/14			
Diethylphthalate	94			70-132		3.3	3.1		mg/kg	10/30/14			
Phenol	105			49-126		3.3	3.5		mg/kg	10/30/14			
Pyridine	109			10-175		3.3	3.6		mg/kg	10/30/14			

Type	Sample
LCS	809327

REPORT OF LABORATORY ANALYSIS

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MATRIX SPIKE SAMPLE RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: OEXT/21399
Method(s): EPA 3546 / EPA 8270C

MS Prepared: 10/29/14
MSD Prepared: 10/29/14

Analyte	Units	Sample Conc	Spike Conc		Result		Dilution		% Recovery		QC Limits		Max	Analyzed Date		Qualifier(s)	
			MS	MSD	MS	MSD	MS	MSD	MS	MSD	%Recovery	RPD	RPD	MS	MSD	MS	MSD
2,4-Dimethylphenol	mg/kg	ND	4.1	4.1	2.9	2.8	1	1	71	69	66-135	4	25	10/30/14	10/30/14		
2,4-Dinitrophenol	mg/kg	ND	4.1	4.1	2.0J	2.2	2	2	49	54	10-160		25	10/31/14	10/31/14		
2-Methylnaphthalene	mg/kg	ND	4.1	4.1	2.8	2.7	1	1	68	66	56-121	4	25	10/30/14	10/30/14		
2-Methylphenol(o-Cresol)	mg/kg	ND	4.1	4.1	4.0	3.8	1	1	97	94	63-130	3	25	10/30/14	10/30/14		
3&4-Methylphenol(m&p Cresol)	mg/kg	ND	4.1	4.1	3.9	3.8	1	1	94	93	60-130	1	25	10/30/14	10/30/14		
4-Nitrophenol	mg/kg	ND	4.1	4.1	3.7	3.3	1	1	91	80	19-139	13	25	10/30/14	10/30/14		
Biphenyl (Diphenyl)	mg/kg	ND			0.41 U	0.41 U	1	1					25	10/30/14	10/30/14		
bis(2-Ethylhexyl)phthalate	mg/kg	ND	4.1	4.1	3.6	3.8	1	1	89	93	66-150	5	25	10/30/14	10/30/14		
Di-n-butylphthalate	mg/kg	ND	4.1	4.1	3.9	3.8	1	1	95	94	74-127	1	25	10/30/14	10/30/14		
Diethylphthalate	mg/kg	ND	4.1	4.1	3.8	3.7	1	1	93	92	70-132	2	25	10/30/14	10/30/14		
Phenol	mg/kg	ND	4.1	4.1	4.1	4.0	1	1	100	98	49-126	2	25	10/30/14	10/30/14		
Pyridine	mg/kg	ND	4.1	4.1	0.97J	0.91J	1	1	24	22	10-175		25	10/30/14	10/30/14		

Type	Sample	Client Sample ID
MS	809328	30132646008
MSD	809329	30132646008

REPORT OF LABORATORY ANALYSIS

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FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

MB

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: M1103015 Lab Sample ID: 809326

Instrument ID: 30MSS1 Date Extracted:

Matrix: (soil/water) SOIL Date Analyzed: 10/30/14

Level:(low/med) LOW Time Analyzed: 1449

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	AOI-5_PECO-B	30133009001	M1103009	10/30/14
02	AOI-5_PECO-B	30133009002	M1103010	10/30/14
03	AOI-5_PECO-B	30133009003	M1103011	10/30/14
04	MBLCS	809327	M1103013	10/30/14
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COMMENTS:

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID (Standard): M11030S1 Date Analyzed: 10/30/14

Instrument ID: 30MSS1 Time Analyzed: 0932

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	122838	3.45	464340	4.45	281285	5.89
	UPPER LIMIT	245676	3.95	928680	4.95	562570	6.39
	LOWER LIMIT	61419	2.95	232170	3.95	140643	5.39
	CLIENT SAMPLE NO.						
01	AOI-5_PECO-B	96275	3.45	378820	4.45	229311	5.88
02	AOI-5_PECO-B	99558	3.44	386831	4.45	250388	5.89
03	AOI-5_PECO-B	106607	3.45	466470	4.46	324214	5.90
04	MBLCS	109706	3.44	458042	4.45	265915	5.89
05	MB	105514	3.45	394927	4.45	233180	5.89
06							
07							
08							
09							
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11							
12							
13							
14							
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18							
19							
20							
21							
22							

IS1 = 1,4-dichlorobenzene-d4 IS
IS2 = Naphthalene-d8 IS
IS3 = Acenaphthene-d8 IS

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID (Standard): M11030S1 Date Analyzed: 10/30/14

Instrument ID: 30MSS1 Time Analyzed: 0932

		IS4 AREA #	RT #	IS5 AREA #	RT #	IS6 AREA #	RT #
	12 HOUR STD	519996	7.26	541372	10.06	563702	11.39
	UPPER LIMIT	1039992	7.76	1082744	10.56	1127404	11.89
	LOWER LIMIT	259998	6.76	270686	9.56	281851	10.89
	CLIENT SAMPLE NO.						
01	AOI-5_PECO-B	388197	7.26	459498	10.05	399553	11.39
02	AOI-5_PECO-B	468965	7.27	509715	10.05	528138	11.39
03	AOI-5_PECO-B	528827	7.28	566456	10.06	525770	11.40
04	MBLCS	476167	7.26	525847	10.06	437735	11.39
05	MB	402198	7.26	437295	10.05	274641*	11.39
06							
07							
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20							
21							
22							

IS4 = Phenanthrene-d10 IS
IS5 = Chrysene-d12 IS
IS6 = Perylene-d12 IS

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Matrix: Solid
% Moisture: 20.5395
Acode: 8270 MSSV FULL LIST MICROWAVE
Prep/Method: EPA 3546 / EPA 8270C

Sample: AOI-5_PECO-B2_12-13_10222014
Lab ID: 30133009001
Collected: 10/22/14 15:00
Received: 10/28/14 10:15

Results reported on a "dry-weight" basis

CAS No.	Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	Qual
92-52-4	Biphenyl (Diphenyl)	**0.41 U**	mg/kg	0.41	0.076	1	10/29/14 15:30	10/30/14 12:51	
84-66-2	Diethylphthalate	**0.41 U**	mg/kg	0.41	0.046	1	10/29/14 15:30	10/30/14 12:51	
105-67-9	2,4-Dimethylphenol	**0.41 U**	mg/kg	0.41	0.073	1	10/29/14 15:30	10/30/14 12:51	
84-74-2	Di-n-butylphthalate	**0.41 U**	mg/kg	0.41	0.069	1	10/29/14 15:30	10/30/14 12:51	
51-28-5	2,4-Dinitrophenol	**1.0 U**	mg/kg	1.0	0.38	1	10/29/14 15:30	10/30/14 12:51	
117-81-7	bis(2-Ethylhexyl)phthalate	**0.41 U**	mg/kg	0.41	0.14	1	10/29/14 15:30	10/30/14 12:51	
91-57-6	2-Methylnaphthalene	**0.41 U**	mg/kg	0.41	0.050	1	10/29/14 15:30	10/30/14 12:51	
95-48-7	2-Methylphenol(o-Cresol)	**0.41 U**	mg/kg	0.41	0.073	1	10/29/14 15:30	10/30/14 12:51	
	3&4-Methylphenol(m&p Cresol)	**0.83 U**	mg/kg	0.83	0.084	1	10/29/14 15:30	10/30/14 12:51	
100-02-7	4-Nitrophenol	**0.41 U**	mg/kg	0.41	0.17	1	10/29/14 15:30	10/30/14 12:51	
108-95-2	Phenol	**0.41 U**	mg/kg	0.41	0.10	1	10/29/14 15:30	10/30/14 12:51	
110-86-1	Pyridine	**1.0 U**	mg/kg	1.0	0.34	1	10/29/14 15:30	10/30/14 12:51	
Surrogates									
4165-60-0	Nitrobenzene-d5 (S)	**80**	%	34-107		1	10/29/14 15:30	10/30/14 12:51	
321-60-8	2-Fluorobiphenyl (S)	**84**	%	38-107		1	10/29/14 15:30	10/30/14 12:51	
1718-51-0	Terphenyl-d14 (S)	**73**	%	34-129		1	10/29/14 15:30	10/30/14 12:51	
13127-88-3	Phenol-d6 (S)	**86**	%	20-102		1	10/29/14 15:30	10/30/14 12:51	
367-12-4	2-Fluorophenol (S)	**79**	%	29-88		1	10/29/14 15:30	10/30/14 12:51	
118-79-6	2,4,6-Tribromophenol (S)	**62**	%	13-114		1	10/29/14 15:30	10/30/14 12:51	

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Data file : \\30wintarget\chem\30mss1.i\mss1103014.b\m1103009.d
Lab Smp Id: 30133009001 Client Smp ID: AOI-5_PECO-B2_12-13
Inj Date : 30-OCT-2014 12:51
Operator : DJL Inst ID: 30mss1.i
Smp Info : 30133009001
Misc Info : 6936
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Meth Date : 25-Nov-2014 12:50 dlee Quant Type: ISTD
Cal Date : 08-OCT-2014 13:40 Cal File: m11008y7.d
Als bottle: 12
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	5000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.160	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.447	3.450	(1.000)	96275	4.00000		
* 2 Naphthalene-d8 IS	136	4.451	4.454	(1.000)	378820	4.00000		
* 3 Acenaphthene-d8 IS	164	5.883	5.891	(1.000)	229311	4.00000		
* 4 Phenanthrene-d10 IS	188	7.261	7.264	(1.000)	388197	4.00000		
* 5 Chrysene-d12 IS	240	10.050	10.058	(1.000)	459498	4.00000		
* 6 Perylene-d12 IS	264	11.390	11.394	(1.000)	399553	4.00000		
$ 7 2-Fluorophenol	112	2.480	2.483	(0.719)	175529	5.91744	1950	
$ 8 Phenol-d5	99	3.180	3.183	(0.923)	255612	6.41276	2120	
$ 9 Nitrobenzene-d5	128	3.885	3.888	(0.873)	69273	4.00833	1320	
$ 10 2-Fluorobiphenyl	172	5.332	5.336	(0.906)	373755	4.18090	1380	
$ 11 2,4,6-Tribromophenol (S)	330	6.545	6.548	(0.901)	75732	4.62885	1530	
$ 12 Terphenyl-d14	244	8.976	8.984	(0.893)	417228	3.64940	1200	
13 N-Nitrosodimethylamine	74	Compound Not Detected.						
14 Pyridine	79	Compound Not Detected.						
15 Benzaldehyde	77	Compound Not Detected.						
16 Phenol	94	Compound Not Detected.						
17 Aniline	66	Compound Not Detected.						
18 bis(2-Chloroethyl)ether	63	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
19 2-Chlorophenol	128	Compound Not Detected.						
20 1,3-Dichlorobenzene	146	Compound Not Detected.						
21 1,4-Dichlorobenzene	146	Compound Not Detected.						
22 Benzyl Alcohol	79	Compound Not Detected.						
23 o-Cresol	108	Compound Not Detected.						
24 1,2-Dichlorobenzene	146	Compound Not Detected.						
25 Bis(2-Chloroisopropyl)ethe	45	Compound Not Detected.						
26 m/p-cresol	108	Compound Not Detected.						
28 N-Nitroso-di-n-propylamine	70	Compound Not Detected.						
29 Acetophenone	105	Compound Not Detected.						
30 Hexachloroethane	116	Compound Not Detected.						
31 Nitrobenzene	77	Compound Not Detected.						
32 Isophorone	82	Compound Not Detected.						
33 2,4-Dimethylphenol	107	Compound Not Detected.						
34 2-Nitrophenol	139	Compound Not Detected.						
35 Bis(2-Chloroethoxy)methane	93	Compound Not Detected.						
36 Benzoic Acid	105	Compound Not Detected.						
37 2,4-Dichlorophenol	162	Compound Not Detected.						
38 2,6-Dichlorophenol	162	Compound Not Detected.						
39 1,2,4-Trichlorobenzene	179	Compound Not Detected.						
40 Naphthalene	128	Compound Not Detected.						
41 4-Chloroaniline	65	Compound Not Detected.						
42 Hexachlorobutadiene	224	Compound Not Detected.						
43 Caprolactam	55	Compound Not Detected.						
44 4-Chloro-3-methylphenol	107	Compound Not Detected.						
45 2-Methylnaphthalene	142	Compound Not Detected.						
46 1-Methylnaphthalene	142	Compound Not Detected.						
47 Hexachlorocyclopentadiene	236	Compound Not Detected.						
48 1,2,4,5-Tetrachlorobenzene	216	Compound Not Detected.						
49 2,4,6-Trichlorophenol	195	Compound Not Detected.						
50 2,4,5-Trichlorophenol	195	Compound Not Detected.						
51 Biphenyl	154	Compound Not Detected.						
52 2-Chloronaphthalene	164	Compound Not Detected.						
53 2-Nitroaniline	138	Compound Not Detected.						
54 Dimethylphthalate	163	Compound Not Detected.						
55 2,6-Dinitrotoluene	165	Compound Not Detected.						
56 Acenaphthylene	152	Compound Not Detected.						
57 3-Nitroaniline	65	Compound Not Detected.						
58 Acenaphthene	153	Compound Not Detected.						
59 2,4-Dinitrophenol	184	Compound Not Detected.						
60 Dibenzofuran	168	Compound Not Detected.						
61 4-Nitrophenol	109	Compound Not Detected.						
62 2,4-Dinitrotoluene	165	Compound Not Detected.						
63 2,3,4,6-Tetrachlorophenol	232	Compound Not Detected.						
64 Diethylphthalate	149	Compound Not Detected.						
65 4-Chlorophenyl-phenylether	204	Compound Not Detected.						
66 Fluorene	166	Compound Not Detected.						
67 4-Nitroaniline	108	Compound Not Detected.						
68 4,6-Dinitro-2-methylphenol	198	Compound Not Detected.						
69 N-Nitrosodiphenylamine	169	Compound Not Detected.						
70 Azobenzene	77	Compound Not Detected.						
71 1,2-Diphenylhydrazine	77	Compound Not Detected.						
72 4-Bromophenyl-phenylether	248	Compound Not Detected.						
73 Hexachlorobenzene	283	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
74 Atrazine	200	Compound Not Detected.						
75 Pentachlorophenol	265	Compound Not Detected.						
76 Phenanthrene	178	Compound Not Detected.						
77 Anthracene	178	Compound Not Detected.						
78 Carbazole	167	Compound Not Detected.						
79 Di-n-butylphthalate	149	Compound Not Detected.						
80 Fluoranthene	202	Compound Not Detected.						
81 Pyrene	202	Compound Not Detected.						
82 Butylbenzylphthalate	149	Compound Not Detected.						
83 3,3'-Dichlorobenzidine	251	Compound Not Detected.						
84 bis(2-Ethylhexyl)phthalate	149	Compound Not Detected.						
85 Benzo[a]anthracene	228	Compound Not Detected.						
86 Chrysene	228	Compound Not Detected.						
87 Di-n-octylphthalate	149	Compound Not Detected.						
88 Benzo[b]fluoranthene	252	Compound Not Detected.						
89 Benzo[k]fluoranthene	252	Compound Not Detected.						
90 Benzo[a]pyrene	252	Compound Not Detected.						
91 Dibenz[a,h]anthracene	278	Compound Not Detected.						
92 Indeno[1,2,3-cd]pyrene	276	Compound Not Detected.						
93 Benzo[g,h,i]perylene	276	Compound Not Detected.						

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m1103009.d
Lab Smp Id: 30133009001
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: 6936

Calibration Date: 30-OCT-2014
Calibration Time: 09:32
Client Smp ID: AOI-5_PECO-B2_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	122838	61419	245676	96275	-21.62
2 Naphthalene-d8 I	464340	232170	928680	378820	-18.42
3 Acenaphthene-d8	281285	140643	562570	229311	-18.48
4 Phenanthrene-d10	519996	259998	1039992	388197	-25.35
5 Chrysene-d12 IS	541372	270686	1082744	459498	-15.12
6 Perylene-d12 IS	563702	281851	1127404	399553	-29.12

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.45	2.95	3.95	3.45	-0.10
2 Naphthalene-d8 I	4.45	3.95	4.95	4.45	-0.07
3 Acenaphthene-d8	5.89	5.39	6.39	5.88	-0.15
4 Phenanthrene-d10	7.26	6.76	7.76	7.26	-0.05
5 Chrysene-d12 IS	10.06	9.56	10.56	10.05	-0.09
6 Perylene-d12 IS	11.39	10.89	11.89	11.39	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

RECOVERY REPORT

Client Name: Sunoco_Langan
Sample Matrix: SOLID
Lab Smp Id: 30133009001
Level: LOW
Data Type: MS DATA
SpikeList File: 625.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: 6936

Client SDG: 30133009
Fraction: SV
Client Smp ID: AOI-5_PECO-B2_12-13
Operator: DJL
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 7 2-Fluorophenol	2470	1950	78.90	25-121
$ 8 Phenol-d5	2470	2120	85.50	24-113
$ 9 Nitrobenzene-d5	1650	1320	80.17	23-120
$ 10 2-Fluorobiphenyl	1650	1380	83.62	30-115
$ 11 2,4,6-Tribromophen	2470	1530	61.72	19-122
$ 12 Terphenyl-d14	1650	1200	72.99	18-137

Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m1103009.d

Date : 30-OCT-2014 12:51

Client ID: AOI-5_PECO-B2_12-13

Instrument: 30mss1.i

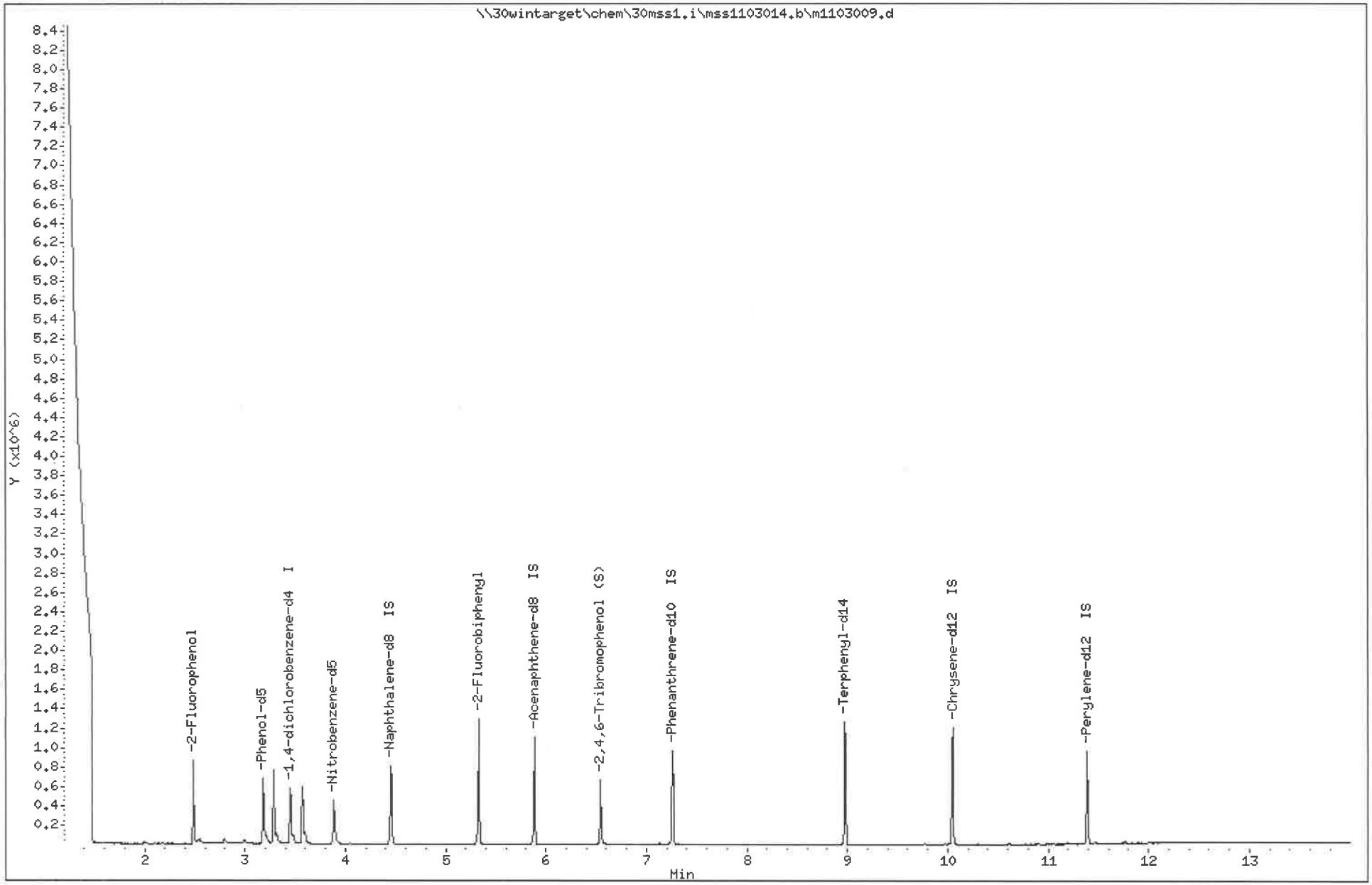
Sample Info: 30133009001

Volume Injected (uL): 1.0

Operator: DJL

Column phase: RTX-5MS

Column diameter: 0.18



Data File: \\30wintarget\chem\30mss1.i\mss1103014.b/m1103009.d (ManInt: all
Injection Date: 30-OCT-2014 12:51
Instrument: 30mss1.i
Lab Sample ID: 30133009001
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Matrix: Solid
% Moisture: 16.1389
Acode: 8270 MSSV FULL LIST MICROWAVE
Prep/Method: EPA 3546 / EPA 8270C

Sample: AOI-5_PECO-B5_14-16_10232014
Lab ID: 30133009002
Collected: 10/23/14 14:30
Received: 10/28/14 10:15

Results reported on a "dry-weight" basis

CAS No.	Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	Qual
92-52-4	Biphenyl (Diphenyl)	**0.39 U**	mg/kg	0.39	0.072	1	10/29/14 15:30	10/30/14 13:10	
84-66-2	Diethylphthalate	**0.39 U**	mg/kg	0.39	0.043	1	10/29/14 15:30	10/30/14 13:10	
105-67-9	2,4-Dimethylphenol	**0.39 U**	mg/kg	0.39	0.070	1	10/29/14 15:30	10/30/14 13:10	
84-74-2	Di-n-butylphthalate	**0.39 U**	mg/kg	0.39	0.065	1	10/29/14 15:30	10/30/14 13:10	
51-28-5	2,4-Dinitrophenol	**0.99 U**	mg/kg	0.99	0.36	1	10/29/14 15:30	10/30/14 13:10	
117-81-7	bis(2-Ethylhexyl)phthalate	**0.39 U**	mg/kg	0.39	0.14	1	10/29/14 15:30	10/30/14 13:10	
91-57-6	2-Methylnaphthalene	**0.39 U**	mg/kg	0.39	0.048	1	10/29/14 15:30	10/30/14 13:10	
95-48-7	2-Methylphenol(o-Cresol)	**0.39 U**	mg/kg	0.39	0.070	1	10/29/14 15:30	10/30/14 13:10	
	3&4-Methylphenol(m&p Cresol)	**0.79 U**	mg/kg	0.79	0.079	1	10/29/14 15:30	10/30/14 13:10	
100-02-7	4-Nitrophenol	**0.39 U**	mg/kg	0.39	0.16	1	10/29/14 15:30	10/30/14 13:10	
108-95-2	Phenol	**0.39 U**	mg/kg	0.39	0.096	1	10/29/14 15:30	10/30/14 13:10	
110-86-1	Pyridine	**0.99 U**	mg/kg	0.99	0.33	1	10/29/14 15:30	10/30/14 13:10	
Surrogates									
4165-60-0	Nitrobenzene-d5 (S)	**79**	%	34-107		1	10/29/14 15:30	10/30/14 13:10	
321-60-8	2-Fluorobiphenyl (S)	**74**	%	38-107		1	10/29/14 15:30	10/30/14 13:10	
1718-51-0	Terphenyl-d14 (S)	**73**	%	34-129		1	10/29/14 15:30	10/30/14 13:10	
13127-88-3	Phenol-d6 (S)	**93**	%	20-102		1	10/29/14 15:30	10/30/14 13:10	
367-12-4	2-Fluorophenol (S)	**84**	%	29-88		1	10/29/14 15:30	10/30/14 13:10	
118-79-6	2,4,6-Tribromophenol (S)	**65**	%	13-114		1	10/29/14 15:30	10/30/14 13:10	

REPORT OF LABORATORY ANALYSIS

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Date: 11/25/2014 11:34 AM

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss1.i\mss1103014.b\m1103010.d
Lab Smp Id: 30133009002 Client Smp ID: AOI-5_PECO-B5_14-16
Inj Date : 30-OCT-2014 13:10
Operator : DJL Inst ID: 30mss1.i
Smp Info : 30133009002
Misc Info : 6936
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Meth Date : 25-Nov-2014 12:50 dlee Quant Type: ISTD
Cal Date : 08-OCT-2014 13:40 Cal File: m11008y7.d
Als bottle: 13
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	5000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.100	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.440	3.450	(1.000)	99558	4.00000		
* 2 Naphthalene-d8 IS	136	4.450	4.454	(1.000)	386831	4.00000		
* 3 Acenaphthene-d8 IS	164	5.887	5.891	(1.000)	250388	4.00000		
* 4 Phenanthrene-d10 IS	188	7.265	7.264	(1.000)	468965	4.00000		
* 5 Chrysene-d12 IS	240	10.054	10.058	(1.000)	509715	4.00000		
* 6 Perylene-d12 IS	264	11.390	11.394	(1.000)	528138	4.00000		
$ 7 2-Fluorophenol	112	2.474	2.483	(0.719)	193188	6.29800	2080	
$ 8 Phenol-d5	99	3.168	3.183	(0.921)	288458	6.99816	2320	
$ 9 Nitrobenzene-d5	128	3.879	3.888	(0.872)	69842	3.95756	1310	
$ 10 2-Fluorobiphenyl	172	5.332	5.336	(0.906)	359413	3.68204	1220	
$ 11 2,4,6-Tribromophenol (S)	330	6.544	6.548	(0.901)	95665	4.84015	1600	
$ 12 Terphenyl-d14	244	8.986	8.984	(0.894)	463982	3.65852	1210	
13 N-Nitrosodimethylamine	74	Compound Not Detected.						
14 Pyridine	79	Compound Not Detected.						
15 Benzaldehyde	77	Compound Not Detected.						
16 Phenol	94	Compound Not Detected.						
17 Aniline	66	Compound Not Detected.						
18 bis(2-Chloroethyl)ether	63	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
19 2-Chlorophenol	128	Compound Not Detected.						
20 1,3-Dichlorobenzene	146	Compound Not Detected.						
21 1,4-Dichlorobenzene	146	Compound Not Detected.						
22 Benzyl Alcohol	79	Compound Not Detected.						
23 o-Cresol	108	Compound Not Detected.						
24 1,2-Dichlorobenzene	146	Compound Not Detected.						
25 Bis(2-Chloroisopropyl)ethe	45	Compound Not Detected.						
26 m/p-cresol	108	Compound Not Detected.						
28 N-Nitroso-di-n-propylamine	70	Compound Not Detected.						
29 Acetophenone	105	Compound Not Detected.						
30 Hexachloroethane	116	Compound Not Detected.						
31 Nitrobenzene	77	Compound Not Detected.						
32 Isophorone	82	Compound Not Detected.						
33 2,4-Dimethylphenol	107	Compound Not Detected.						
34 2-Nitrophenol	139	Compound Not Detected.						
35 Bis(2-Chloroethoxy)methane	93	Compound Not Detected.						
36 Benzoic Acid	105	Compound Not Detected.						
37 2,4-Dichlorophenol	162	Compound Not Detected.						
38 2,6-Dichlorophenol	162	Compound Not Detected.						
39 1,2,4-Trichlorobenzene	179	Compound Not Detected.						
40 Naphthalene	128	Compound Not Detected.						
41 4-Chloroaniline	65	Compound Not Detected.						
42 Hexachlorobutadiene	224	Compound Not Detected.						
43 Caprolactam	55	Compound Not Detected.						
44 4-Chloro-3-methylphenol	107	Compound Not Detected.						
45 2-Methylnaphthalene	142	Compound Not Detected.						
46 1-Methylnaphthalene	142	Compound Not Detected.						
47 Hexachlorocyclopentadiene	236	Compound Not Detected.						
48 1,2,4,5-Tetrachlorobenzene	216	Compound Not Detected.						
49 2,4,6-Trichlorophenol	195	Compound Not Detected.						
50 2,4,5-Trichlorophenol	195	Compound Not Detected.						
51 Biphenyl	154	Compound Not Detected.						
52 2-Chloronaphthalene	164	Compound Not Detected.						
53 2-Nitroaniline	138	Compound Not Detected.						
54 Dimethylphthalate	163	Compound Not Detected.						
55 2,6-Dinitrotoluene	165	Compound Not Detected.						
56 Acenaphthylene	152	Compound Not Detected.						
57 3-Nitroaniline	65	Compound Not Detected.						
58 Acenaphthene	153	Compound Not Detected.						
59 2,4-Dinitrophenol	184	Compound Not Detected.						
60 Dibenzofuran	168	Compound Not Detected.						
61 4-Nitrophenol	109	Compound Not Detected.						
62 2,4-Dinitrotoluene	165	Compound Not Detected.						
63 2,3,4,6-Tetrachlorophenol	232	Compound Not Detected.						
64 Diethylphthalate	149	Compound Not Detected.						
65 4-Chlorophenyl-phenylether	204	Compound Not Detected.						
66 Fluorene	166	Compound Not Detected.						
67 4-Nitroaniline	108	Compound Not Detected.						
68 4,6-Dinitro-2-methylphenol	198	Compound Not Detected.						
69 N-Nitrosodiphenylamine	169	Compound Not Detected.						
70 Azobenzene	77	Compound Not Detected.						
71 1,2-Diphenylhydrazine	77	Compound Not Detected.						
72 4-Bromophenyl-phenylether	248	Compound Not Detected.						
73 Hexachlorobenzene	283	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
74 Atrazine	200	Compound Not Detected.						
75 Pentachlorophenol	265	Compound Not Detected.						
76 Phenanthrene	178	Compound Not Detected.						
77 Anthracene	178	Compound Not Detected.						
78 Carbazole	167	Compound Not Detected.						
79 Di-n-butylphthalate	149	Compound Not Detected.						
80 Fluoranthene	202	Compound Not Detected.						
81 Pyrene	202	Compound Not Detected.						
82 Butylbenzylphthalate	149	Compound Not Detected.						
83 3,3'-Dichlorobenzidine	251	Compound Not Detected.						
84 bis(2-Ethylhexyl)phthalate	149	Compound Not Detected.						
85 Benzo[a]anthracene	228	Compound Not Detected.						
86 Chrysene	228	Compound Not Detected.						
87 Di-n-octylphthalate	149	Compound Not Detected.						
88 Benzo[b]fluoranthene	252	Compound Not Detected.						
89 Benzo[k]fluoranthene	252	Compound Not Detected.						
90 Benzo[a]pyrene	252	Compound Not Detected.						
91 Dibenz[a,h]anthracene	278	Compound Not Detected.						
92 Indeno[1,2,3-cd]pyrene	276	Compound Not Detected.						
93 Benzo[g,h,i]perylene	276	Compound Not Detected.						

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m1103010.d
Lab Smp Id: 30133009002
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: 6936

Calibration Date: 30-OCT-2014
Calibration Time: 09:32
Client Smp ID: AOI-5_PECO-B5_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	122838	61419	245676	99558	-18.95
2 Naphthalene-d8 I	464340	232170	928680	386831	-16.69
3 Acenaphthene-d8	281285	140643	562570	250388	-10.98
4 Phenanthrene-d10	519996	259998	1039992	468965	-9.81
5 Chrysene-d12 IS	541372	270686	1082744	509715	-5.85
6 Perylene-d12 IS	563702	281851	1127404	528138	-6.31

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.45	2.95	3.95	3.44	-0.27
2 Naphthalene-d8 I	4.45	3.95	4.95	4.45	-0.09
3 Acenaphthene-d8	5.89	5.39	6.39	5.89	-0.07
4 Phenanthrene-d10	7.26	6.76	7.76	7.27	0.02
5 Chrysene-d12 IS	10.06	9.56	10.56	10.05	-0.04
6 Perylene-d12 IS	11.39	10.89	11.89	11.39	-0.04

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

RECOVERY REPORT

Client Name: Sunoco_Langan
Sample Matrix: SOLID
Lab Smp Id: 30133009002
Level: LOW
Data Type: MS DATA
SpikeList File: 625.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: 6936

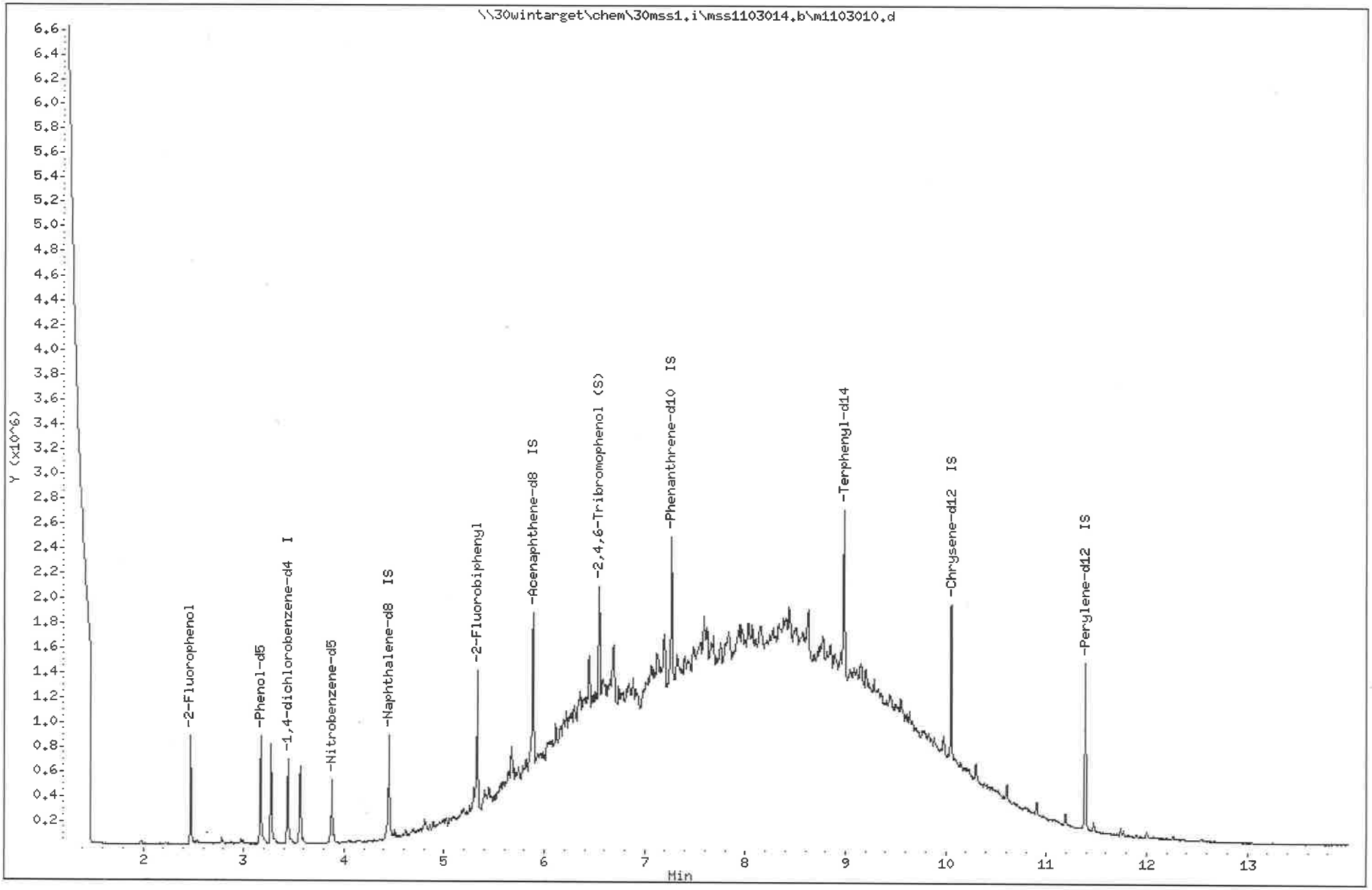
Client SDG: 30133009
Fraction: SV
Client Smp ID: AOI-5_PECO-B5_14-16
Operator: DJL
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 7 2-Fluorophenol	2480	2080	83.97	25-121
$ 8 Phenol-d5	2480	2320	93.31	24-113
$ 9 Nitrobenzene-d5	1660	1310	79.15	23-120
$ 10 2-Fluorobiphenyl	1660	1220	73.64	30-115
$ 11 2,4,6-Tribromophen	2480	1600	64.54	19-122
$ 12 Terphenyl-d14	1660	1210	73.17	18-137

Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m1103010.d
Date : 30-OCT-2014 13:10
Client ID: AOI-5_PECO-B5_14-16
Sample Info: 30133009002
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss1.i

Operator: DJL
Column diameter: 0.18



Data File: \\30wintarget\chem\30mss1.i\mss1103014.b/m1103010.d (ManInt: all
Injection Date: 30-OCT-2014 13:10
Instrument: 30mss1.i
Lab Sample ID: 30133009002
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Matrix: Solid
% Moisture: 21.5405
Acode: 8270 MSSV FULL LIST MICROWAVE
Prep/Method: EPA 3546 / EPA 8270C

Sample: AOI-5_PECO-B6_12-14_10242014
Lab ID: 30133009003
Collected: 10/24/14 11:30
Received: 10/28/14 10:15

Results reported on a "dry-weight" basis

CAS No.	Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	Qual
92-52-4	Biphenyl (Diphenyl)	**0.41 U**	mg/kg	0.41	0.076	1	10/29/14 15:30	10/30/14 13:30	
84-66-2	Diethylphthalate	**0.41 U**	mg/kg	0.41	0.046	1	10/29/14 15:30	10/30/14 13:30	
105-67-9	2,4-Dimethylphenol	**0.41 U**	mg/kg	0.41	0.073	1	10/29/14 15:30	10/30/14 13:30	
84-74-2	Di-n-butylphthalate	**0.41 U**	mg/kg	0.41	0.069	1	10/29/14 15:30	10/30/14 13:30	
51-28-5	2,4-Dinitrophenol	**1.0 U**	mg/kg	1.0	0.38	1	10/29/14 15:30	10/30/14 13:30	
117-81-7	bis(2-Ethylhexyl)phthalate	**0.41 U**	mg/kg	0.41	0.14	1	10/29/14 15:30	10/30/14 13:30	
91-57-6	2-Methylnaphthalene	**0.41 U**	mg/kg	0.41	0.050	1	10/29/14 15:30	10/30/14 13:30	
95-48-7	2-Methylphenol(o-Cresol)	**0.41 U**	mg/kg	0.41	0.073	1	10/29/14 15:30	10/30/14 13:30	
	3&4-Methylphenol(m&p Cresol)	**0.83 U**	mg/kg	0.83	0.083	1	10/29/14 15:30	10/30/14 13:30	
100-02-7	4-Nitrophenol	**0.41 U**	mg/kg	0.41	0.17	1	10/29/14 15:30	10/30/14 13:30	
108-95-2	Phenol	**0.41 U**	mg/kg	0.41	0.10	1	10/29/14 15:30	10/30/14 13:30	
110-86-1	Pyridine	**1.0 U**	mg/kg	1.0	0.34	1	10/29/14 15:30	10/30/14 13:30	
Surrogates									
4165-60-0	Nitrobenzene-d5 (S)	**88**	%	34-107		1	10/29/14 15:30	10/30/14 13:30	
321-60-8	2-Fluorobiphenyl (S)	**62**	%	38-107		1	10/29/14 15:30	10/30/14 13:30	
1718-51-0	Terphenyl-d14 (S)	**83**	%	34-129		1	10/29/14 15:30	10/30/14 13:30	
13127-88-3	Phenol-d6 (S)	**106**	%	20-102		1	10/29/14 15:30	10/30/14 13:30	S3
367-12-4	2-Fluorophenol (S)	**92**	%	29-88		1	10/29/14 15:30	10/30/14 13:30	S3
118-79-6	2,4,6-Tribromophenol (S)	**69**	%	13-114		1	10/29/14 15:30	10/30/14 13:30	

REPORT OF LABORATORY ANALYSIS

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Date: 11/25/2014 11:34 AM

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss1.i\mss1103014.b\m1103011.d
Lab Smp Id: 30133009003 Client Smp ID: AOI-5_PECO-B6_12-14
Inj Date : 30-OCT-2014 13:30
Operator : DJL Inst ID: 30mss1.i
Smp Info : 30133009003
Misc Info : 6936
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Meth Date : 25-Nov-2014 12:50 dlee Quant Type: ISTD
Cal Date : 08-OCT-2014 13:40 Cal File: m11008y7.d
Als bottle: 14
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	5000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.390	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.452	3.450	(1.000)	106607	4.00000		
* 2 Naphthalene-d8 IS	136	4.462	4.454	(1.000)	466470	4.00000		
* 3 Acenaphthene-d8 IS	164	5.899	5.891	(1.000)	324214	4.00000		
* 4 Phenanthrene-d10 IS	188	7.277	7.264	(1.000)	528827	4.00000		
* 5 Chrysene-d12 IS	240	10.060	10.058	(1.000)	566456	4.00000		
* 6 Perylene-d12 IS	264	11.396	11.394	(1.000)	525770	4.00000		
$ 7 2-Fluorophenol	112	2.480	2.483	(0.718)	225770	6.87352	2230	
$ 8 Phenol-d5	99	3.180	3.183	(0.921)	349917	7.92788	2580	
$ 9 Nitrobenzene-d5	128	3.890	3.888	(0.872)	93957	4.41507	1430	
$ 10 2-Fluorobiphenyl	172	5.343	5.336	(0.906)	390842	3.09227	1000	
$ 11 2,4,6-Tribromophenol (S)	330	6.561	6.548	(0.902)	115250	5.17099	1680	
$ 12 Terphenyl-d14	244	8.992	8.984	(0.894)	581444	4.12547	1340	
13 N-Nitrosodimethylamine	74	Compound Not Detected.						
14 Pyridine	79	Compound Not Detected.						
15 Benzaldehyde	77	Compound Not Detected.						
16 Phenol	94	Compound Not Detected.						
17 Aniline	66	Compound Not Detected.						
18 bis(2-Chloroethyl)ether	63	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
19 2-Chlorophenol	128	Compound Not Detected.						
20 1,3-Dichlorobenzene	146	Compound Not Detected.						
21 1,4-Dichlorobenzene	146	Compound Not Detected.						
22 Benzyl Alcohol	79	Compound Not Detected.						
23 o-Cresol	108	Compound Not Detected.						
24 1,2-Dichlorobenzene	146	Compound Not Detected.						
25 Bis(2-Chloroisopropyl)ethe	45	Compound Not Detected.						
26 m/p-cresol	108	Compound Not Detected.						
28 N-Nitroso-di-n-propylamine	70	Compound Not Detected.						
29 Acetophenone	105	Compound Not Detected.						
30 Hexachloroethane	116	Compound Not Detected.						
31 Nitrobenzene	77	Compound Not Detected.						
32 Isophorone	82	Compound Not Detected.						
33 2,4-Dimethylphenol	107	Compound Not Detected.						
34 2-Nitrophenol	139	Compound Not Detected.						
35 Bis(2-Chloroethoxy)methane	93	Compound Not Detected.						
36 Benzoic Acid	105	Compound Not Detected.						
37 2,4-Dichlorophenol	162	Compound Not Detected.						
38 2,6-Dichlorophenol	162	Compound Not Detected.						
39 1,2,4-Trichlorobenzene	179	Compound Not Detected.						
40 Naphthalene	128	Compound Not Detected.						
41 4-Chloroaniline	65	Compound Not Detected.						
42 Hexachlorobutadiene	224	Compound Not Detected.						
43 Caprolactam	55	Compound Not Detected.						
44 4-Chloro-3-methylphenol	107	Compound Not Detected.						
45 2-Methylnaphthalene	142	Compound Not Detected.						
46 1-Methylnaphthalene	142	5.124	5.111	(1.148)	83794	1.03575	336	
47 Hexachlorocyclopentadiene	236	Compound Not Detected.						
48 1,2,4,5-Tetrachlorobenzene	216	Compound Not Detected.						
49 2,4,6-Trichlorophenol	195	Compound Not Detected.						
50 2,4,5-Trichlorophenol	195	Compound Not Detected.						
51 Biphenyl	154	Compound Not Detected.						
52 2-Chloronaphthalene	164	Compound Not Detected.						
53 2-Nitroaniline	138	Compound Not Detected.						
54 Dimethylphthalate	163	Compound Not Detected.						
55 2,6-Dinitrotoluene	165	Compound Not Detected.						
56 Acenaphthylene	152	Compound Not Detected.						
57 3-Nitroaniline	65	Compound Not Detected.						
58 Acenaphthene	153	Compound Not Detected.						
59 2,4-Dinitrophenol	184	Compound Not Detected.						
60 Dibenzofuran	168	Compound Not Detected.						
61 4-Nitrophenol	109	Compound Not Detected.						
62 2,4-Dinitrotoluene	165	Compound Not Detected.						
63 2,3,4,6-Tetrachlorophenol	232	Compound Not Detected.						
64 Diethylphthalate	149	Compound Not Detected.						
65 4-Chlorophenyl-phenylether	204	Compound Not Detected.						
66 Fluorene	166	6.347	6.340	(1.076)	31419	0.26057	84.6(Q)	
67 4-Nitroaniline	108	Compound Not Detected.						
68 4,6-Dinitro-2-methylphenol	198	Compound Not Detected.						
69 N-Nitrosodiphenylamine	169	Compound Not Detected.						
70 Azobenzene	77	Compound Not Detected.						
71 1,2-Diphenylhydrazine	77	Compound Not Detected.						
72 4-Bromophenyl-phenylether	248	Compound Not Detected.						
73 Hexachlorobenzene	283	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
74 Atrazine	200	Compound Not Detected.						
75 Pentachlorophenol	265	Compound Not Detected.						
76 Phenanthrene	178	7.304	7.291	(1.004)	187165	1.28782	418(Q)	
77 Anthracene	178	Compound Not Detected.						
78 Carbazole	167	Compound Not Detected.						
79 Di-n-butylphthalate	149	Compound Not Detected.						
80 Fluoranthene	202	Compound Not Detected.						
81 Pyrene	202	8.816	8.803	(0.876)	61811	0.35874	116(Q)	
82 Butylbenzylphthalate	149	Compound Not Detected.						
83 3,3'-Dichlorobenzidine	251	Compound Not Detected.						
84 bis(2-Ethylhexyl)phthalate	149	Compound Not Detected.						
85 Benzo[a]anthracene	228	Compound Not Detected.						
86 Chrysene	228	10.087	10.085	(1.003)	39958	0.27341	88.8(Q)	
87 Di-n-octylphthalate	149	Compound Not Detected.						
88 Benzo[b]fluoranthene	252	Compound Not Detected.						
89 Benzo[k]fluoranthene	252	Compound Not Detected.						
90 Benzo[a]pyrene	252	Compound Not Detected.						
91 Dibenz[a,h]anthracene	278	Compound Not Detected.						
92 Indeno[1,2,3-cd]pyrene	276	Compound Not Detected.						
93 Benzo[g,h,i]perylene	276	Compound Not Detected.						

QC Flag Legend

Q - Qualifier signal failed the ratio test.

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m1103011.d
Lab Smp Id: 30133009003
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: 6936

Calibration Date: 30-OCT-2014
Calibration Time: 09:32
Client Smp ID: AOI-5_PECO-B6_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	122838	61419	245676	106607	-13.21
2 Naphthalene-d8 I	464340	232170	928680	466470	0.46
3 Acenaphthene-d8	281285	140643	562570	324214	15.26
4 Phenanthrene-d10	519996	259998	1039992	528827	1.70
5 Chrysene-d12 IS	541372	270686	1082744	566456	4.63
6 Perylene-d12 IS	563702	281851	1127404	525770	-6.73

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.45	2.95	3.95	3.45	0.06
2 Naphthalene-d8 I	4.45	3.95	4.95	4.46	0.17
3 Acenaphthene-d8	5.89	5.39	6.39	5.90	0.13
4 Phenanthrene-d10	7.26	6.76	7.76	7.28	0.18
5 Chrysene-d12 IS	10.06	9.56	10.56	10.06	0.02
6 Perylene-d12 IS	11.39	10.89	11.89	11.40	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

RECOVERY REPORT

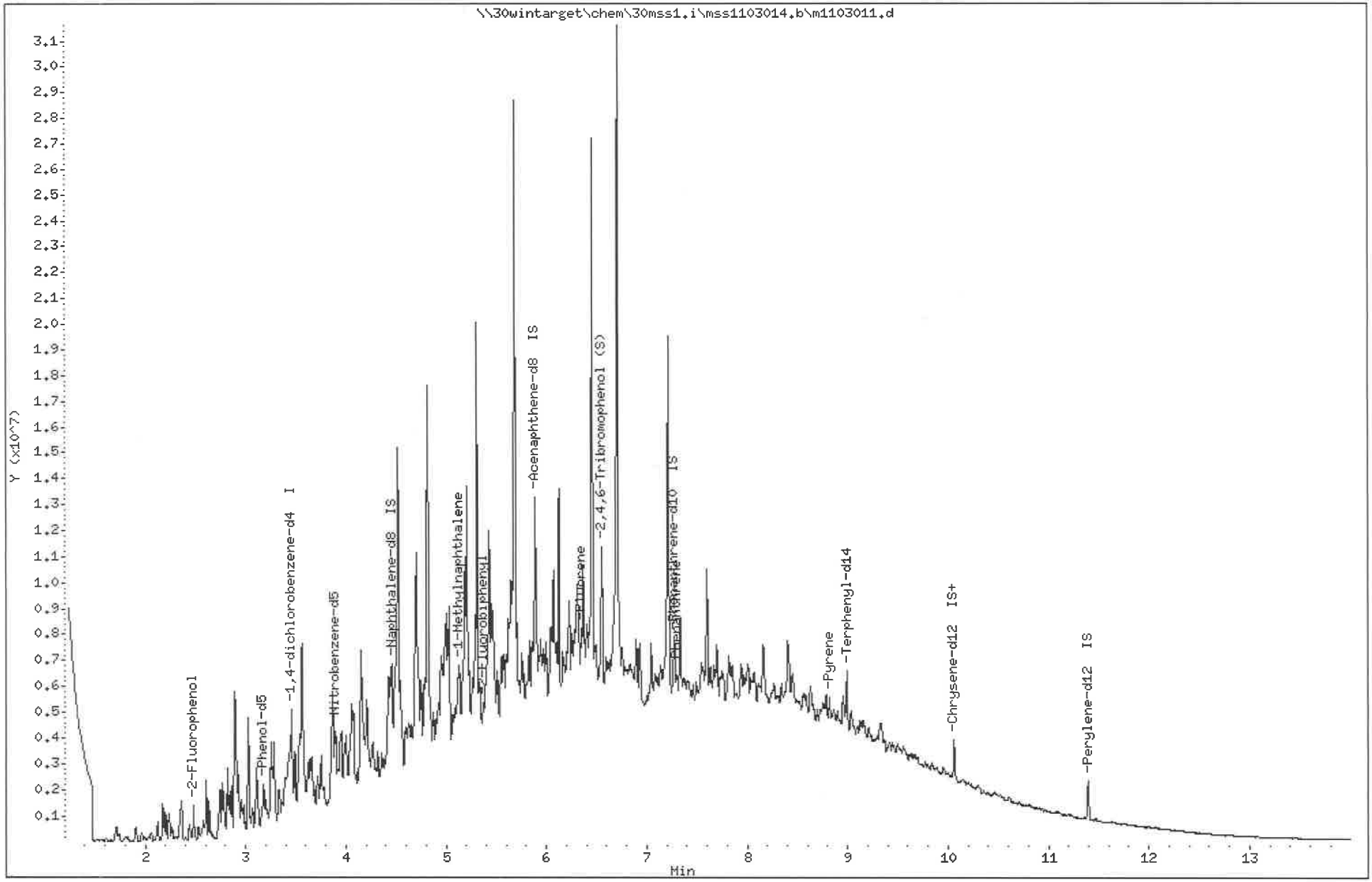
Client Name: Sunoco_Langan
Sample Matrix: SOLID
Lab Smp Id: 30133009003
Level: LOW
Data Type: MS DATA
SpikeList File: 625.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: 6936

Client SDG: 30133009
Fraction: SV
Client Smp ID: AOI-5_PECO-B6_12-14
Operator: DJL
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 7 2-Fluorophenol	2440	2230	91.65	25-121
$ 8 Phenol-d5	2440	2580	105.71	24-113
$ 9 Nitrobenzene-d5	1620	1430	88.30	23-120
$ 10 2-Fluorobiphenyl	1620	1000	61.85	30-115
$ 11 2,4,6-Tribromophen	2440	1680	68.95	19-122
$ 12 Terphenyl-d14	1620	1340	82.51	18-137

Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m1103011.d
Date : 30-OCT-2014 13:30
Client ID: AOI-5_PECO-B6_12-14
Sample Info: 30133009003
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss1.i
Operator: DJL
Column diameter: 0.18



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Date : 30-OCT-2014 13:30

Client ID: AOI-5_PECO-B6_12-14

Instrument: 30mss1.i

Sample Info: 30133009003

Volume Injected (uL): 1.0

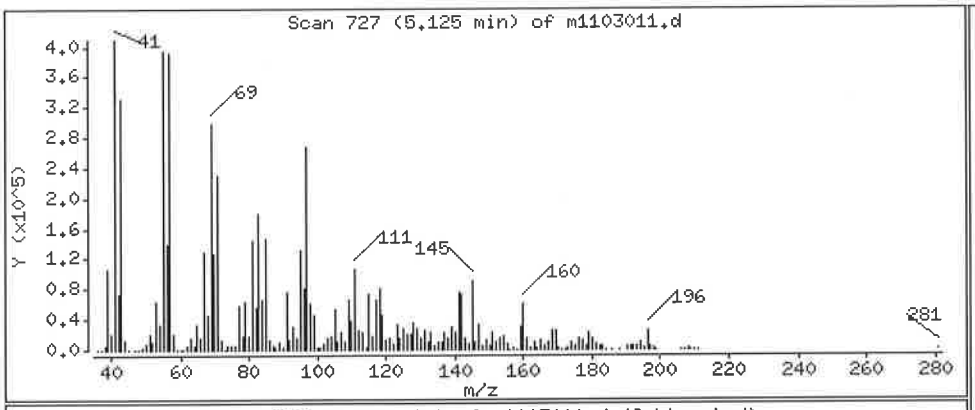
Operator: DJL

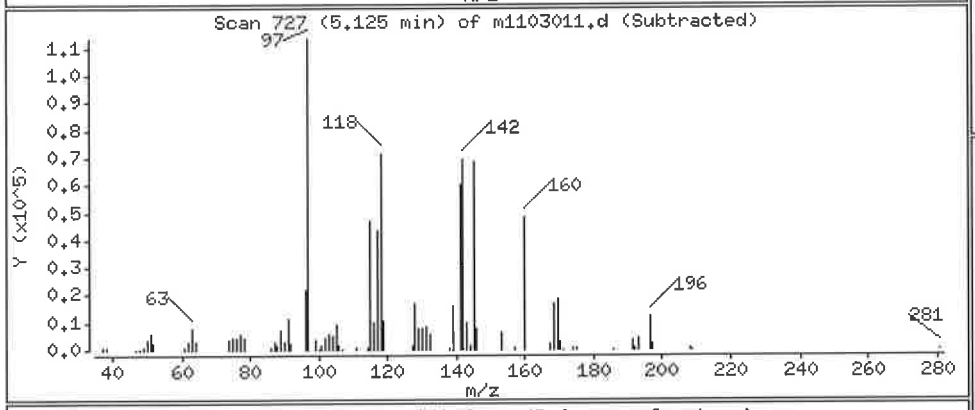
Column phase: RTX-5MS

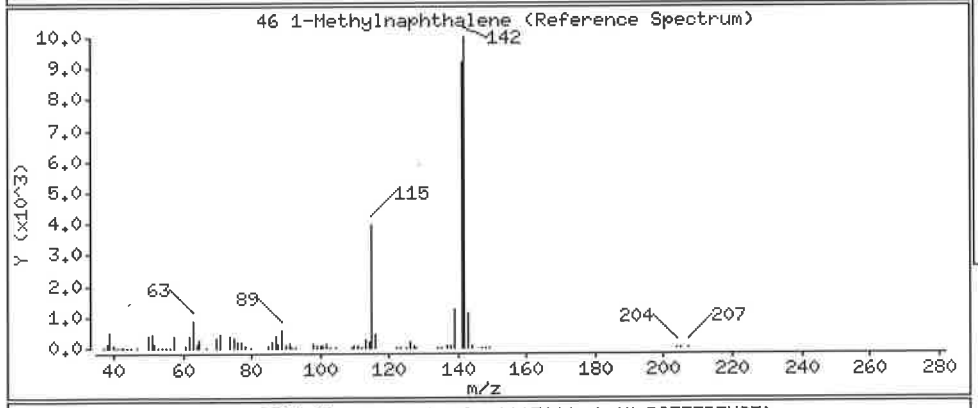
Column diameter: 0.18

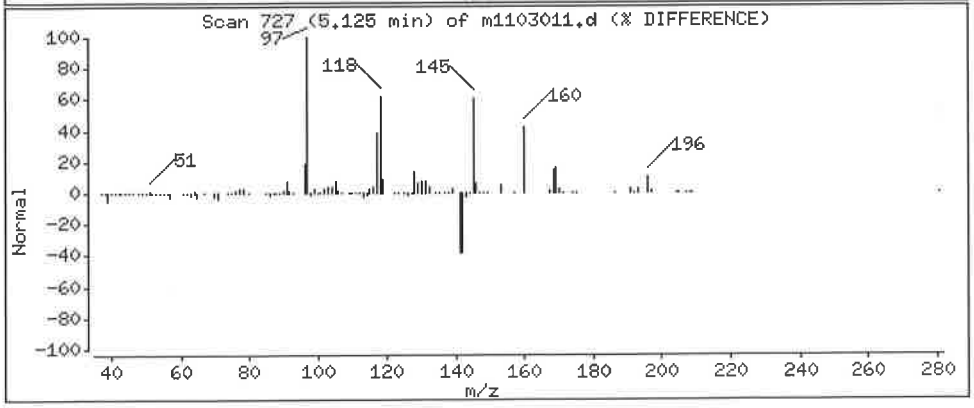
46 1-Methylnaphthalene

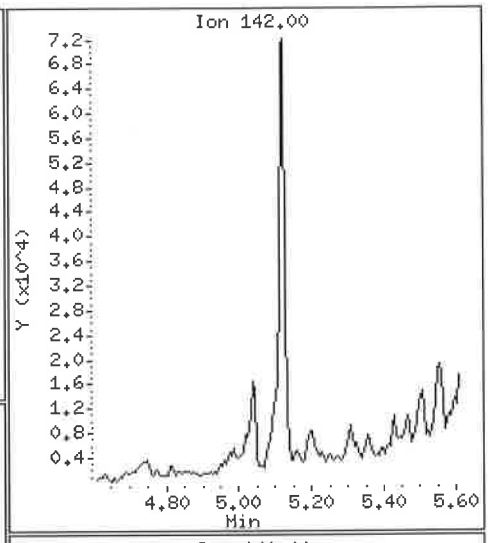
Concentration: 336 ug/Kg

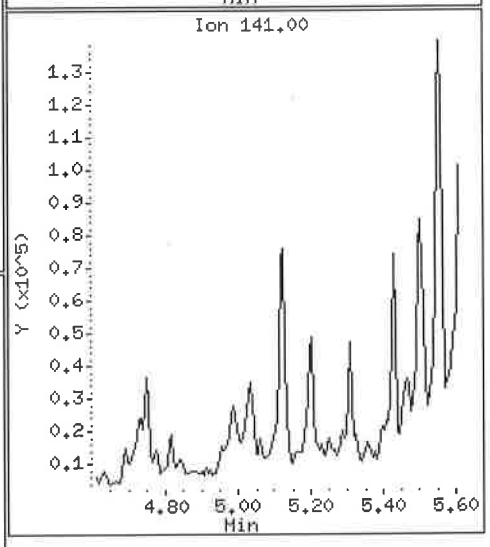












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Date : 30-OCT-2014 13:30

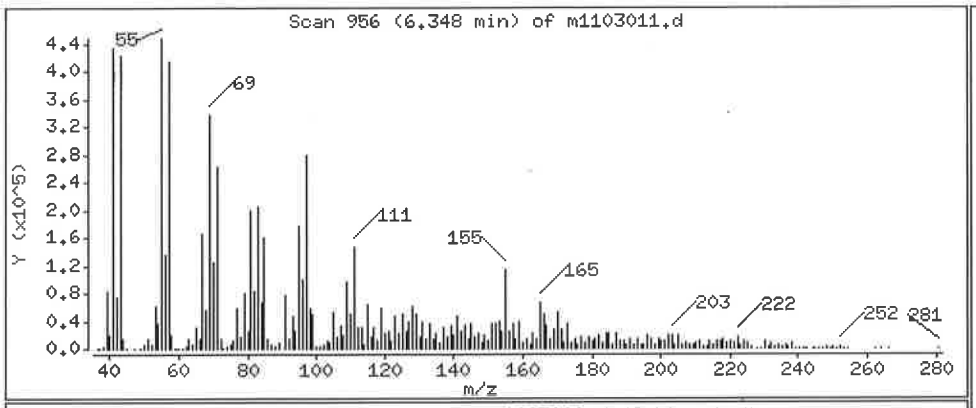
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss1.i

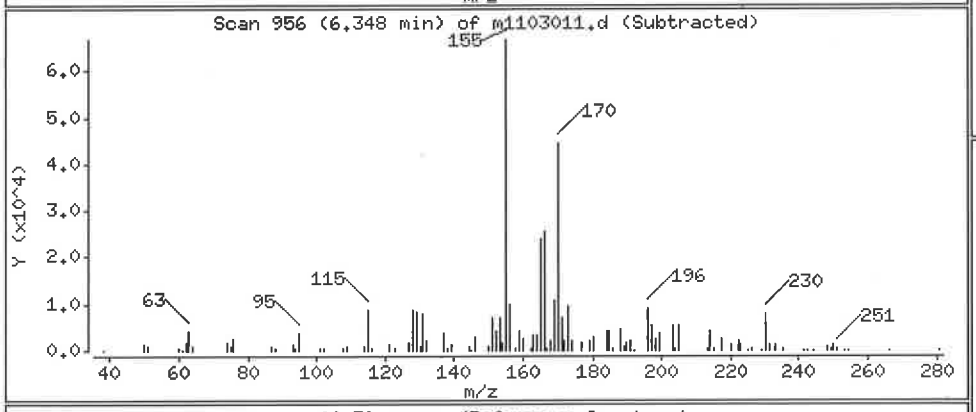
Sample Info: 30133009003

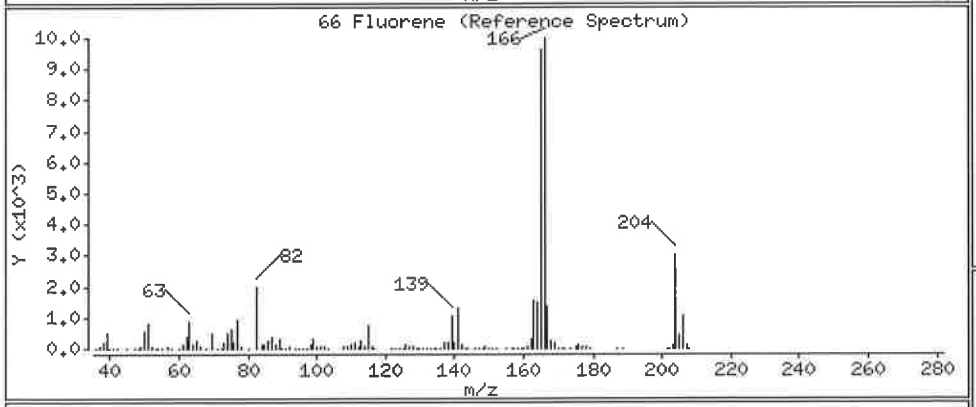
Volume Injected (uL): 1.0 Operator: DJL

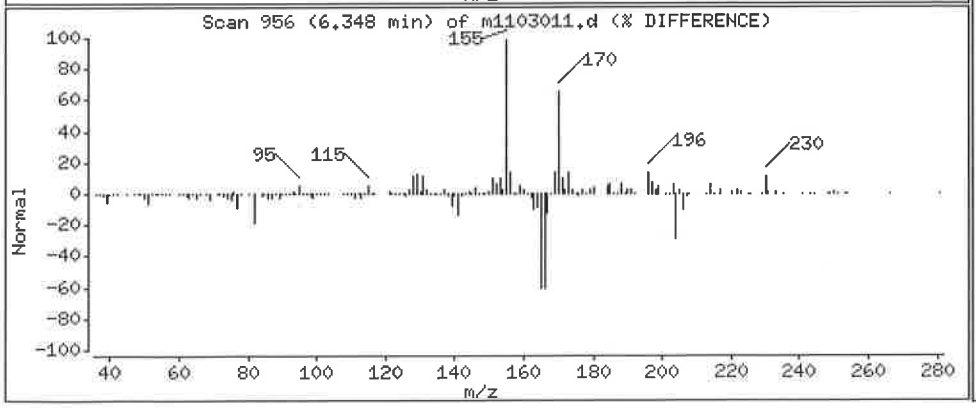
Column phase: RTX-5MS Column diameter: 0.18

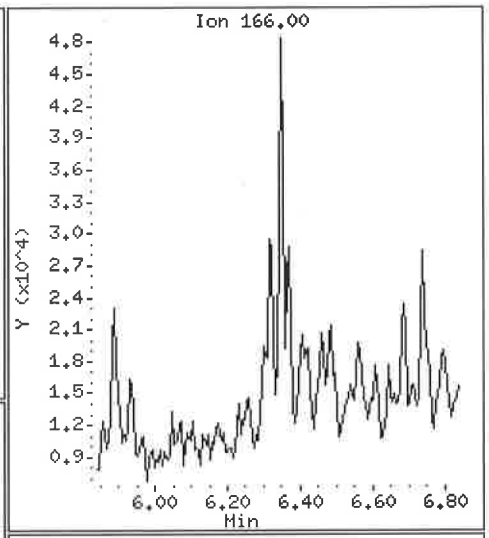
66 Fluorene Concentration: 84.6 ug/Kg

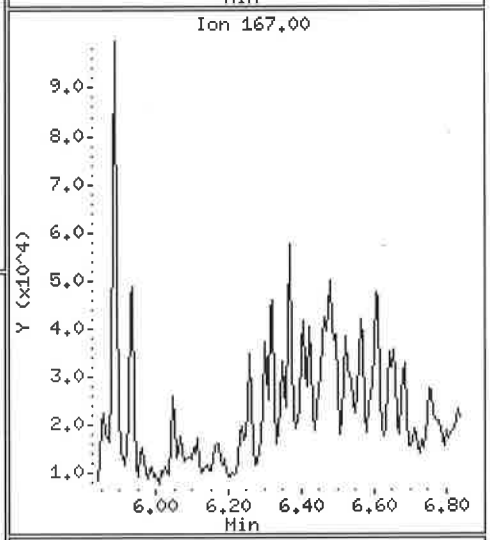


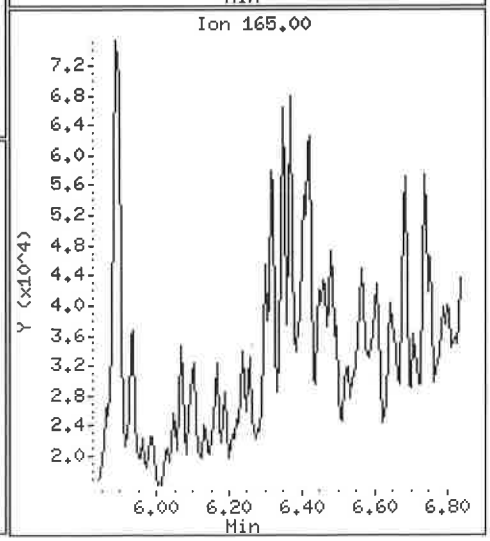












Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m1103011.d

Date : 30-OCT-2014 13:30

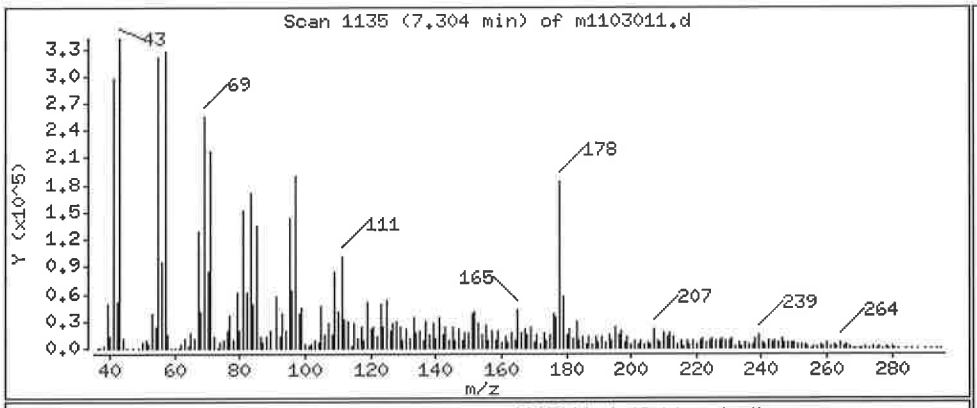
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss1.i

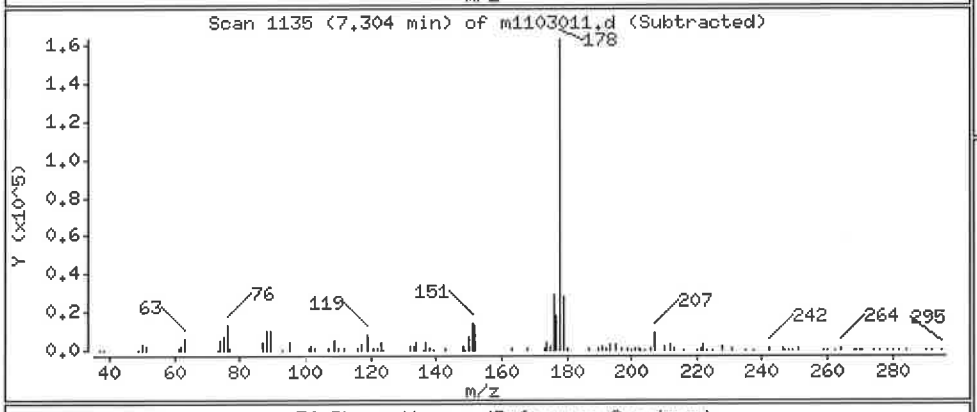
Sample Info: 30133009003

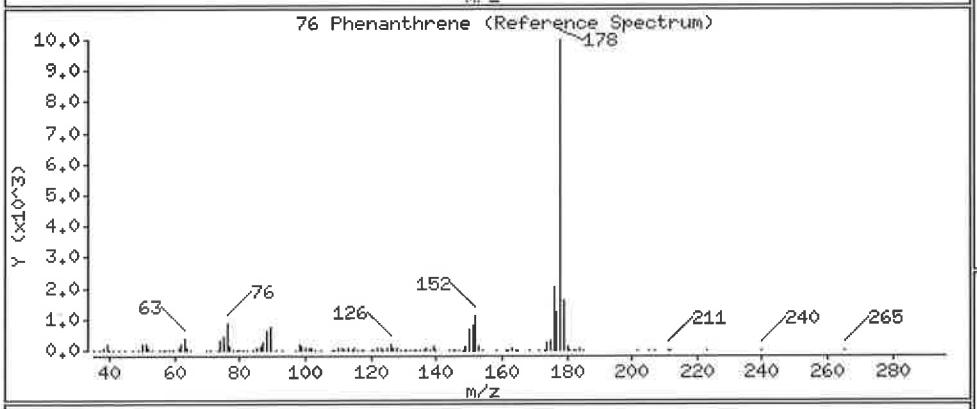
Volume Injected (uL): 1.0 Operator: DJL

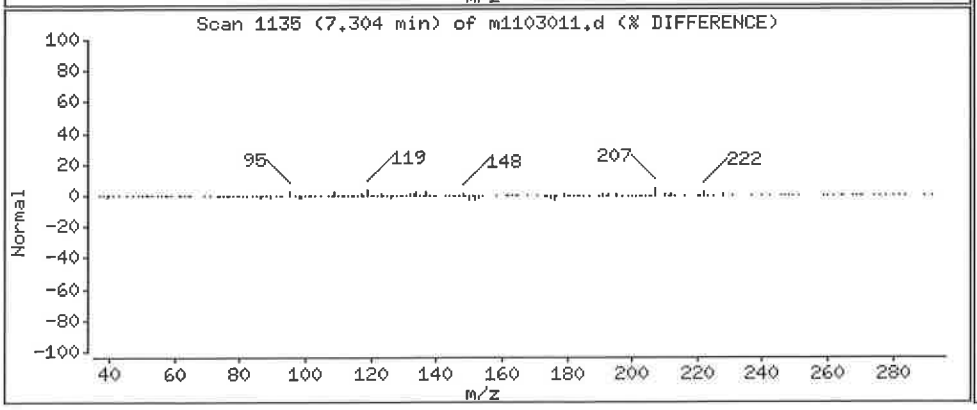
Column phase: RTX-5MS Column diameter: 0.18

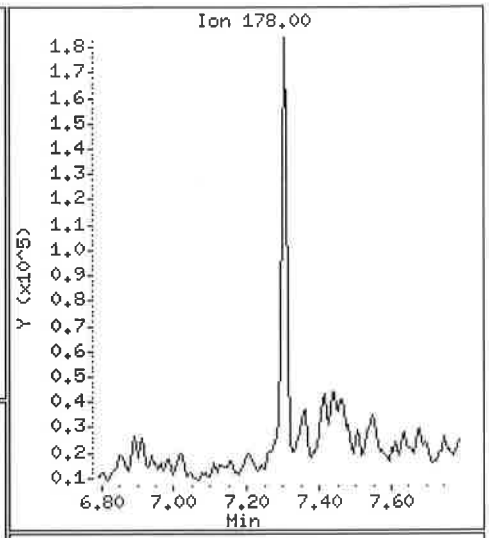
76 Phenanthrene Concentration: 418 ug/Kg

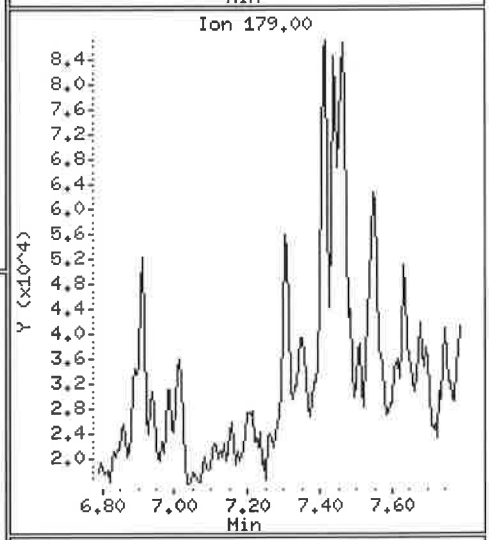


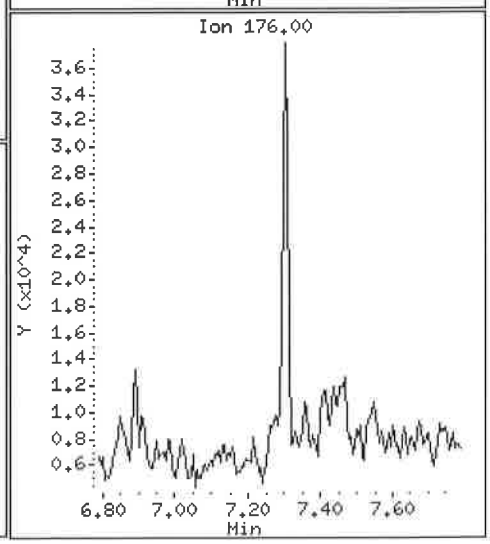












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Date : 30-OCT-2014 13:30

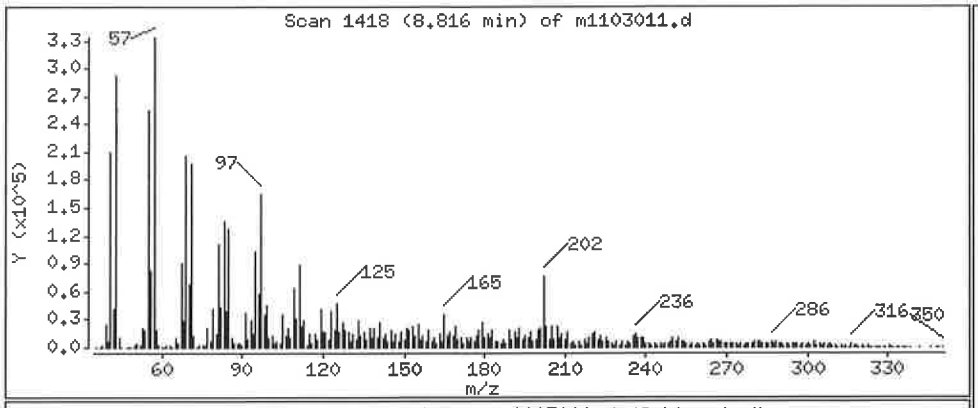
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss1.i

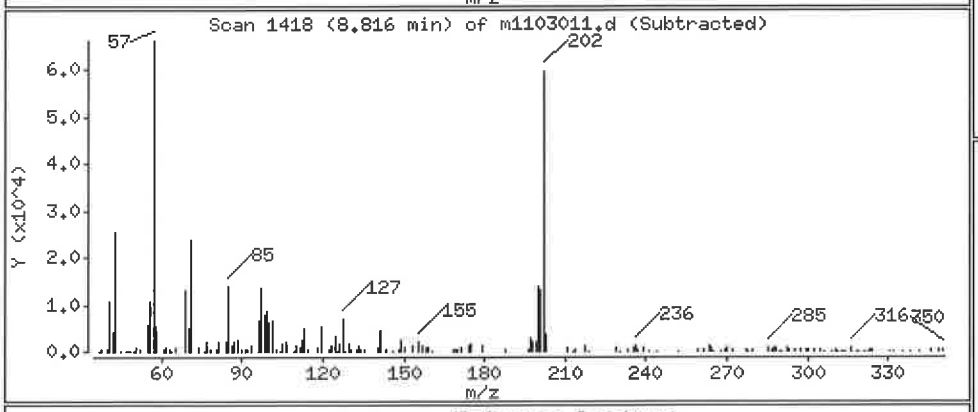
Sample Info: 30133009003

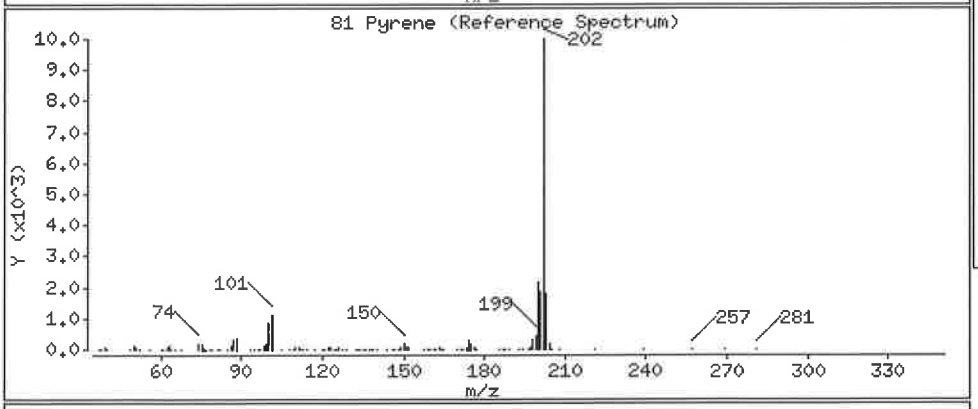
Volume Injected (uL): 1.0 Operator: DJL

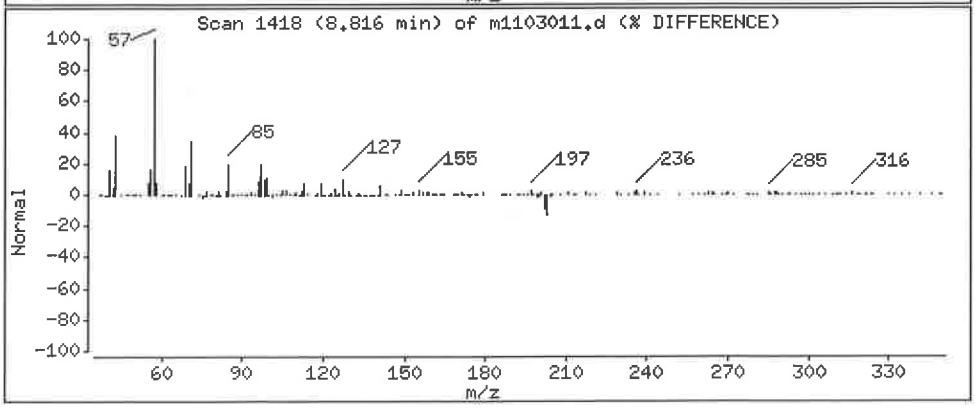
Column phase: RTX-5MS Column diameter: 0.18

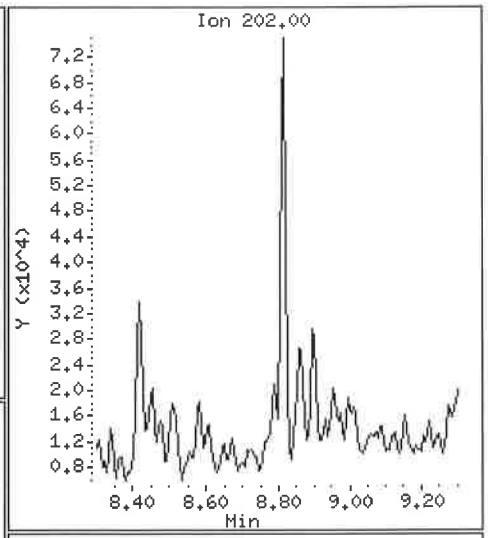
81 Pyrene Concentration: 116 ug/Kg

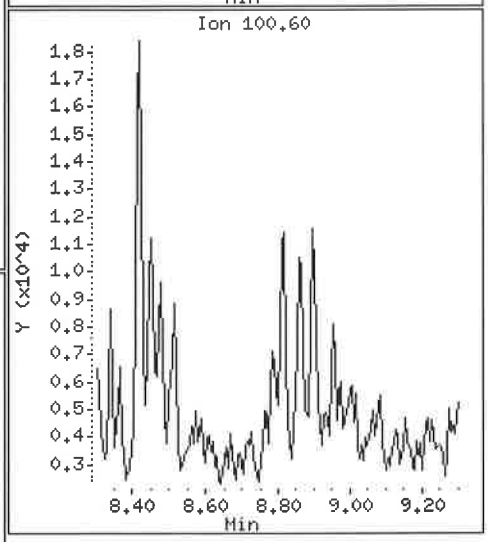












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Date : 30-OCT-2014 13:30

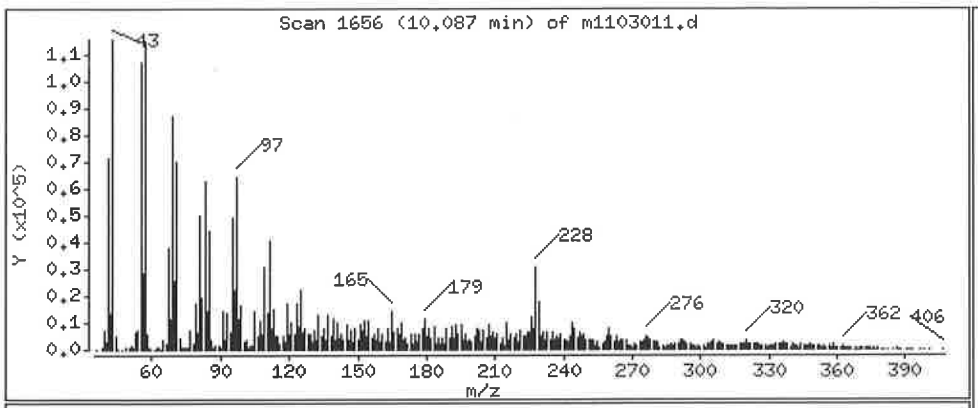
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss1.i

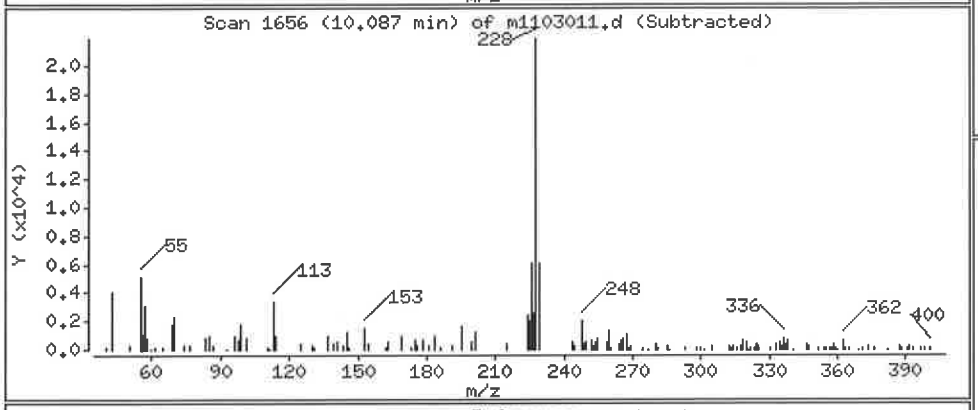
Sample Info: 30133009003

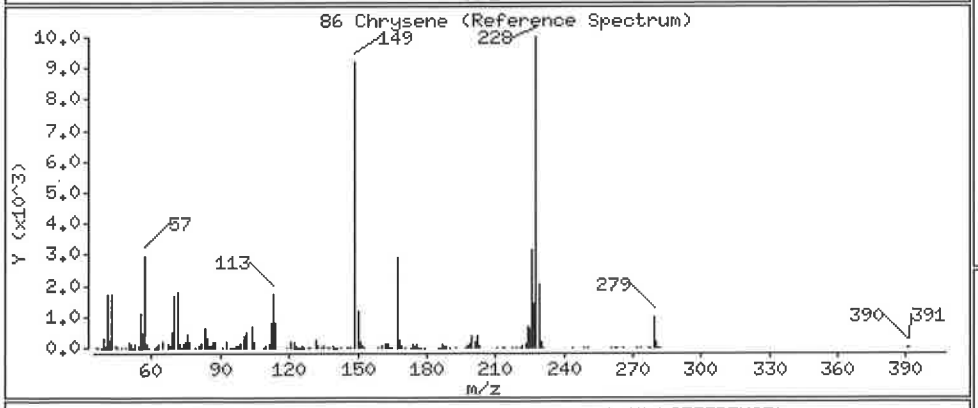
Volume Injected (uL): 1.0 Operator: DJL

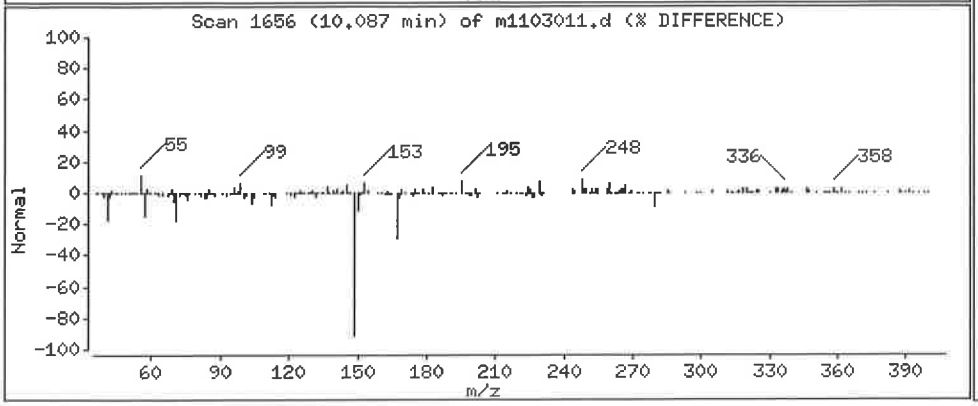
Column phase: RTX-5MS Column diameter: 0.18

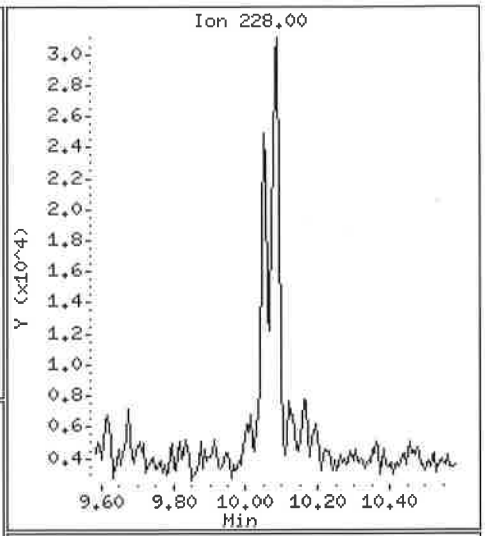
86 Chrysene Concentration: 88.8 ug/Kg

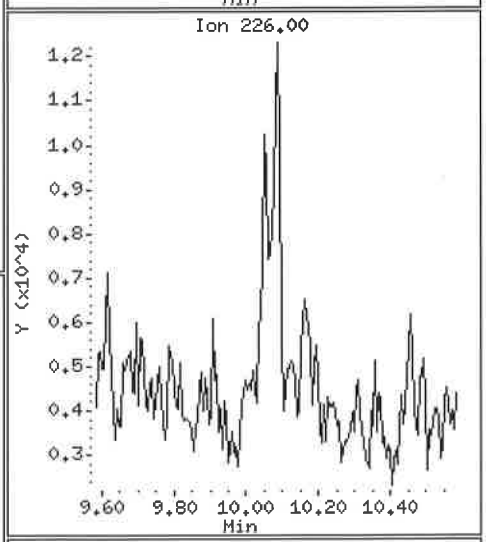


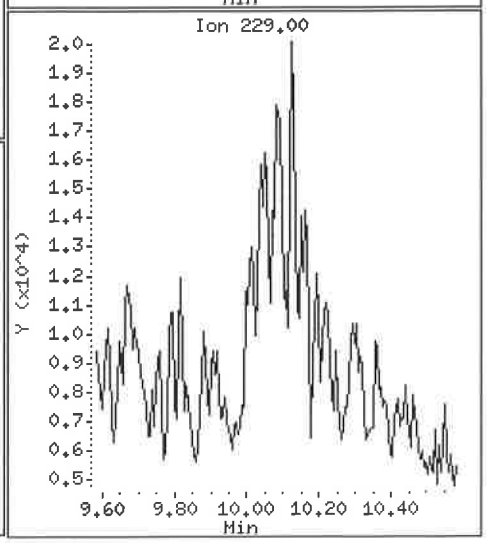












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Injection Date: 30-OCT-2014 13:30
Instrument: 30mss1.i
Lab Sample ID: 30133009003
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.18 (mm) Calibration Time(s): 1141 1340

LAB FILE ID: RF1: M11008Y1ORIGDRF2: M11008Y2ORIGDRF4: M11008Y3ORIGD
RF8: M11008Y4ORIGDRF12: M11008Y5ORIG

COMPOUND	RF1	RF2	RF4	RF8	RF12
Phenol	1.909	1.819	1.836	1.884	1.626
bis(2-Chloroethyl)ether	1.055	1.058	1.082	1.112	1.024
2-Chlorophenol	1.399	1.330	1.363	1.378	1.270
1,3-Dichlorobenzene	1.597	1.592	1.609	1.632	1.516
1,4-Dichlorobenzene	1.840	1.728	1.688	1.721	1.608
1,2-Dichlorobenzene	1.575	1.570	1.535	1.588	1.490
Benzyl Alcohol	1.238	1.221	1.255	1.261	1.184
Bis(2-Chloroisopropyl)ethe	2.152	1.954	1.976	2.005	1.898
o-Cresol	1.338	1.288	1.304	1.318	1.250
Hexachloroethane	0.668	0.630	0.634	0.656	0.624
N-Nitroso-di-n-propylamine	1.239	1.157	1.208	1.265	1.206
m/p-cresol	1.316	1.310	1.346	1.412	1.372
Nitrobenzene	0.502	0.462	0.449	0.453	0.442
Isophorone	0.871	0.799	0.801	0.803	0.788
2-Nitrophenol	0.224	0.231	0.201	0.205	0.198
2,4-Dimethylphenol	0.418	0.408	0.404	0.407	0.402
Bis(2-Chloroethoxy)methane	0.485	0.458	0.459	0.451	0.440
2,4-Dichlorophenol	0.340	0.333	0.334	0.331	0.323
1,2,4-Trichlorobenzene	0.426	0.399	0.397	0.398	0.383
Naphthalene	1.160	1.129	1.097	1.102	1.066
Benzoic Acid	63.117	1.766	69.238		42.330
4-Chloroaniline	8.680	8.546	8.594	9.708	11.118
Hexachlorobutadiene	0.303	0.289	0.293	0.289	0.280
4-Chloro-3-methylphenol	0.323	0.312	0.316	0.314	0.313
2-Methylnaphthalene	0.845	0.771	0.792	0.777	0.756
Hexachlorocyclopentadiene	0.406	0.436	0.498	0.541	0.530
2,4,6-Trichlorophenol	0.447	0.425	0.430	0.452	0.422
2,4,5-Trichlorophenol	0.443	0.433	0.432	0.444	0.418
2-Chloronaphthalene	0.427	0.389	0.398	0.400	0.373
2-Nitroaniline	0.367	0.368	0.386	0.385	0.365
Acenaphthylene	2.206	2.053	1.994	2.058	1.953
Dimethylphthalate	1.563	1.413	1.416	1.441	1.350
2,6-Dinitrotoluene	0.333	0.325	0.330	0.332	0.312
Acenaphthene	1.396	1.299	1.284	1.324	1.260
3-Nitroaniline	2.316	2.346	2.677	3.656	5.221
2,4-Dinitrophenol	11.193	9.486	6.999	6.194	6.150
Dibenzofuran	1.941	1.801	1.810	1.782	1.677

FORM VI SV

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.18 (mm) Calibration Time(s): 1141 1340

LAB FILE ID: RF1: M11008Y1ORIGDRF2: M11008Y2ORIGDRF4: M11008Y3ORIGD
RF8: M11008Y4ORIGDRF12: M11008Y5ORIG

COMPOUND	RF1	RF2	RF4	RF8	RF12
4-Nitrophenol	0.222	0.222	0.241	0.239	0.213
2,4-Dinitrotoluene	0.401	0.417	0.428	0.434	0.401
Fluorene	1.572	1.455	1.526	1.533	1.463
4-Chlorophenyl-phenylether	0.835	0.796	0.816	0.812	0.757
Diethylphthalate	1.520	1.389	1.390	1.415	1.350
4-Nitroaniline	3.970	4.094	7.045	6.933	10.022
4,6-Dinitro-2-methylphenol	0.098	0.102	0.126	0.135	0.132
N-Nitrosodiphenylamine	0.751	0.669	0.656	0.637	0.628
4-Bromophenyl-phenylether	0.328	0.295	0.288	0.293	0.290
Hexachlorobenzene	0.403	0.339	0.334	0.338	0.336
Pentachlorophenol	7.908	7.577	6.409	5.977	6.208
Phenanthrene	1.255	1.108	1.103	1.091	1.053
Anthracene	1.170	1.099	1.094	1.084	1.017
Di-n-butylphthalate	1.288	1.169	1.182	1.233	1.236
Fluoranthene	1.234	1.253	1.259	1.223	1.130
Pyrene	1.348	1.186	1.196	1.253	1.248
Butylbenzylphthalate	0.487	0.424	0.438	0.485	0.502
Benzo[a]anthracene	1.242	1.136	1.140	1.109	1.074
3,3'-Dichlorobenzidine	0.436	0.379	0.387	0.371	0.344
Chrysene	1.170	1.060	1.039	1.032	1.005
bis(2-Ethylhexyl)phthalate	0.726	0.633	0.652	0.745	0.802
Di-n-octylphthalate	1.238	0.990	0.995	1.109	1.155
Benzo[b]fluoranthene	1.148	1.167	1.173	0.964	0.975
Benzo[k]fluoranthene	1.308	1.155	1.097	1.133	1.020
Benzo[a]pyrene	1.216	1.127	1.135	1.085	1.052
Indeno[1,2,3-cd]pyrene	1.432	1.355	1.400	1.445	1.424
Dibenz[a,h]anthracene	1.193	1.146	1.173	1.205	1.237
Benzo[g,h,i]perylene	1.233	1.144	1.179	1.247	1.207
Carbazole	1.020	0.944	0.893	0.796	0.534
N-Nitrosodimethylamine	0.393	0.430	0.433	0.445	0.430
Aniline	0.605	0.670	0.684	0.735	0.555
Azobenzene	0.948	0.846	0.831	0.821	0.822
Pyridine	1.295	1.404	1.420	1.480	1.490
Acetophenone	2.064	2.001	2.019	2.124	2.048
Caprolactam	0.156	0.159	0.166	0.162	0.162
Benzaldehyde	0.623	0.625	0.726	0.636	0.593
Biphenyl	1.772	1.601	1.626	1.641	1.552

FORM VI SV

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.18 (mm) Calibration Time(s): 1141 1340

LAB FILE ID: RF1: M11008Y1ORIGDRF2: M11008Y2ORIGDRF4: M11008Y3ORIGD
RF8: M11008Y4ORIGDRF12: M11008Y5ORIG

COMPOUND	RF1	RF2	RF4	RF8	RF12
Atrazine	0.147	0.120	0.123	0.120	0.118
1-Methylnaphthalene	0.744	0.707	0.688	0.702	0.682
2,6-Dichlorophenol	1.269	1.195	1.191	1.218	1.135
1,2-Diphenylhydrazine	0.942	0.846	0.831	0.821	0.822
2,3,4,6-Tetrachlorophenol	0.829	0.829	0.901	0.930	0.830
1,2,4,5-Tetrachlorobenzene	1.730	1.696	1.716	1.714	1.598
Nitrobenzene-d5	0.197	0.184	0.184	0.182	0.180
Terphenyl-d14	1.055	1.012	1.006	1.046	1.005
Phenol-d5	1.710	1.672	1.676	1.724	1.626
2-Fluorophenol	1.249	1.242	1.291	1.305	1.212
2,4,6-Tribromophenol (S)	0.177	0.162	0.163	0.173	0.170
2-Fluorobiphenyl	1.753	1.581	1.568	1.584	1.494

FORM VI SV

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.18 (mm) Calibration Time(s): 1141 1340

LAB FILE ID: RF16: M11008Y6ORIGRF20: M11008Y7ORIG

COMPOUND	RF16	RF20
Phenol	1.669	1.642
bis(2-Chloroethyl)ether	0.969	1.043
2-Chlorophenol	1.180	1.280
1,3-Dichlorobenzene	1.395	1.510
1,4-Dichlorobenzene	1.537	1.712
1,2-Dichlorobenzene	1.411	1.514
Benzyl Alcohol	1.113	1.186
Bis(2-Chloroisopropyl)ethe	1.778	1.927
o-Cresol	1.206	1.312
Hexachloroethane	0.591	0.633
N-Nitroso-di-n-propylamine	1.167	1.266
m/p-cresol	1.291	1.426
Nitrobenzene	0.404	0.461
Isophorone	0.717	0.805
2-Nitrophenol	0.185	0.205
2,4-Dimethylphenol	0.366	0.417
Bis(2-Chloroethoxy)methane	0.402	0.452
2,4-Dichlorophenol	0.291	0.332
1,2,4-Trichlorobenzene	0.354	0.396
Naphthalene	0.975	1.116
Benzoic Acid	77.580	51.978
4-Chloroaniline	13.157	
Hexachlorobutadiene	0.254	0.288
4-Chloro-3-methylphenol	0.282	0.324
2-Methylnaphthalene	0.688	0.749
Hexachlorocyclopentadiene	0.484	0.542
2,4,6-Trichlorophenol	0.390	0.444
2,4,5-Trichlorophenol	0.374	0.405
2-Chloronaphthalene	0.343	0.388
2-Nitroaniline	0.323	0.352
Acenaphthylene	1.773	1.998
Dimethylphthalate	1.247	1.394
2,6-Dinitrotoluene	0.277	0.308
Acenaphthene	1.148	1.314
3-Nitroaniline	6.174	
2,4-Dinitrophenol		
Dibenzofuran	1.456	1.696

FORM VI SV

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.18 (mm) Calibration Time(s): 1141 1340

LAB FILE ID: RF16: M11008Y6ORIGRF20: M11008Y7ORIG

COMPOUND	RF16	RF20
4-Nitrophenol	0.189	0.215
2,4-Dinitrotoluene	0.364	0.410
Fluorene	1.333	1.532
4-Chlorophenyl-phenylether	0.697	0.756
Diethylphthalate	1.235	1.391
4-Nitroaniline	10.282	
4,6-Dinitro-2-methylphenol	0.124	0.140
N-Nitrosodiphenylamine	0.568	0.627
4-Bromophenyl-phenylether	0.266	0.298
Hexachlorobenzene	0.325	0.355
Pentachlorophenol	6.564	5.808
Phenanthrene	0.981	1.104
Anthracene	0.930	1.024
Di-n-butylphthalate	1.185	1.352
Fluoranthene	1.086	1.207
Pyrene	1.112	1.174
Butylbenzylphthalate	0.462	0.503
Benzo[a]anthracene	1.003	1.105
3,3'-Dichlorobenzidine	0.315	0.339
Chrysene	0.911	1.007
bis(2-Ethylhexyl)phthalate	0.736	0.827
Di-n-octylphthalate	1.070	1.203
Benzo[b]fluoranthene	0.878	1.068
Benzo[k]fluoranthene	0.947	0.996
Benzo[a]pyrene	0.956	1.078
Indeno[1,2,3-cd]pyrene	1.280	1.363
Dibenz[a,h]anthracene	1.069	1.153
Benzo[g,h,i]perylene	1.046	1.072
Carbazole	0.462	0.469
N-Nitrosodimethylamine	0.386	0.433
Aniline	0.537	0.665
Azobenzene	0.746	0.820
Pyridine	1.382	1.476
Acetophenone	1.953	2.135
Caprolactam	0.139	0.155
Benzaldehyde	0.594	0.614
Biphenyl	1.400	1.594

FORM VI SV

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.18 (mm) Calibration Time(s): 1141 1340

LAB FILE ID: RF16: M11008Y6ORIGRF20: M11008Y7ORIG

COMPOUND	RF16	RF20
Atrazine	0.113	0.120
1-Methylnaphthalene	0.622	0.711
2,6-Dichlorophenol	1.085	1.165
1,2-Diphenylhydrazine	0.746	0.820
2,3,4,6-Tetrachlorophenol	0.792	0.870
1,2,4,5-Tetrachlorobenzene	1.521	1.640
Nitrobenzene-d5	0.165	0.185
Terphenyl-d14	0.894	0.949
Phenol-d5	1.533	1.652
2-Fluorophenol	1.138	1.189
2,4,6-Tribromophenol (S)	0.155	0.180
2-Fluorobiphenyl	1.381	1.554

FORM VI SV

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.18 (mm) Calibration Time(s): 1141 1340

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	
Phenol	AVRG		1.76951247		6.8	
bis(2-Chloroethyl)ether	AVRG		1.04890655		4.3	
2-Chlorophenol	AVRG		1.31435027		5.8	
1,3-Dichlorobenzene	AVRG		1.55013163		5.3	
1,4-Dichlorobenzene	AVRG		1.69053552		5.7	
1,2-Dichlorobenzene	AVRG		1.52597493		4.0	
Benzyl Alcohol	AVRG		1.20834257		4.3	
Bis(2-Chloroisopropyl)ethe	AVRG		1.95576890		5.8	
o-Cresol	AVRG		1.28788582		3.5	
Hexachloroethane	AVRG		0.63370254		3.9	
N-Nitroso-di-n-propylamine	AVRG		1.21566666		3.6	
m/p-cresol	AVRG		1.35345155		3.9	
Nitrobenzene	AVRG		0.45341386		6.4	
Isophorone	AVRG		0.79764654		5.6	
2-Nitrophenol	AVRG		0.20691892		7.6	
2,4-Dimethylphenol	AVRG		0.40333723		4.3	
Bis(2-Chloroethoxy)methane	AVRG		0.44974364		5.6	
2,4-Dichlorophenol	AVRG		0.32656985		5.0	
1,2,4-Trichlorobenzene	AVRG		0.39334584		5.5	
Naphthalene	AVRG		1.09245599		5.4	
Benzoic Acid	LINR	0.00000000			0.018	<-
4-Chloroaniline	2ORDR	-3.99e-003	0.13361744	-1.42e-002	1.000	<-
Hexachlorobutadiene	AVRG		0.28538795		5.4	
4-Chloro-3-methylphenol	AVRG		0.31193499		4.5	
2-Methylnaphthalene	AVRG		0.76817958		6.2	
Hexachlorocyclopentadiene	AVRG		0.49095401		10.8	
2,4,6-Trichlorophenol	AVRG		0.42998340		4.9	
2,4,5-Trichlorophenol	AVRG		0.42132665		5.9	
2-Chloronaphthalene	AVRG		0.38840637		6.7	
2-Nitroaniline	AVRG		0.36391734		5.9	
Acenaphthylene	AVRG		2.00509055		6.5	
Dimethylphthalate	AVRG		1.40366112		6.8	
2,6-Dinitrotoluene	AVRG		0.31653368		6.3	
Acenaphthene	AVRG		1.28953162		5.8	
3-Nitroaniline	2ORDR	5.436e-002	0.33278486	-4.75e-002	0.978	<-
2,4-Dinitrophenol	LINR	0.15523435	0.17218274		0.999	<-
Dibenzofuran	AVRG		1.73767811		8.7	

FORM VI SV

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.18 (mm) Calibration Time(s): 1141 1340

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	
4-Nitrophenol	AVRG		0.22029309		8.0	
2,4-Dinitrotoluene	AVRG		0.40787580		5.7	
Fluorene	AVRG		1.48761783		5.4	
4-Chlorophenyl-phenylether	AVRG		0.78127203		6.1	
Diethylphthalate	AVRG		1.38440843		6.1	
4-Nitroaniline	2ORDR	4.131e-002	0.13129595	-1.17e-002	0.965	<-
4,6-Dinitro-2-methylphenol	AVRG		0.12259141		13.2	
N-Nitrosodiphenylamine	AVRG		0.64833177		8.6	
4-Bromophenyl-phenylether	AVRG		0.29404529		6.2	
Hexachlorobenzene	AVRG		0.34710377		7.5	
Pentachlorophenol	POWER	1.15755863	1.09187615		0.998	
Phenanthrene	AVRG		1.09929914		7.5	
Anthracene	AVRG		1.05985839		7.2	
Di-n-butylphthalate	AVRG		1.23506000		5.3	
Fluoranthene	AVRG		1.19880538		5.5	
Pyrene	AVRG		1.21667739		6.1	
Butylbenzylphthalate	AVRG		0.47149842		6.6	
Benzo[a]anthracene	AVRG		1.11543944		6.5	
3,3'-Dichlorobenzidine	AVRG		0.36741594		10.8	
Chrysene	AVRG		1.03201868		7.5	
bis(2-Ethylhexyl)phthalate	AVRG		0.73162973		9.7	
Di-n-octylphthalate	AVRG		1.10865022		8.7	
Benzo[b]fluoranthene	AVRG		1.05337559		11.0	
Benzo[k]fluoranthene	AVRG		1.09366664		11.0	
Benzo[a]pyrene	AVRG		1.09261321		7.3	
Indeno[1,2,3-cd]pyrene	AVRG		1.38569249		4.2	
Dibenz[a,h]anthracene	AVRG		1.16800998		4.6	
Benzo[g,h,i]perylene	AVRG		1.16107015		6.7	
Carbazole	AVRG		0.73126093		32.5	
N-Nitrosodimethylamine	AVRG		0.42135443		5.3	
Aniline	AVRG		0.63607495		11.4	
Azobenzene	AVRG		0.83350614		7.2	
Pyridine	AVRG		1.42094991		4.9	
Acetophenone	AVRG		2.04906669		3.2	
Caprolactam	AVRG		0.15717150		5.6	
Benzaldehyde	AVRG		0.63005337		7.2	
Biphenyl	AVRG		1.59819981		7.0	

FORM VI SV

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.18 (mm) Calibration Time(s): 1141 1340

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Atrazine	AVRG		0.12312689		9.0
1-Methylnaphthalene	AVRG		0.69373638		5.4
2,6-Dichlorophenol	AVRG		1.17972917		5.0
1,2-Diphenylhydrazine	AVRG		0.83265029		6.9
2,3,4,6-Tetrachlorophenol	AVRG		0.85460816		5.6
1,2,4,5-Tetrachlorobenzene	AVRG		1.65936293		4.7
Nitrobenzene-d5	AVRG		0.18248525		5.2
Terphenyl-d14	AVRG		0.99524079		5.7
Phenol-d5	AVRG		1.65608206		3.8
2-Fluorophenol	AVRG		1.23242602		4.7
2,4,6-Tribromophenol (S)	AVRG		0.16858327		5.3
2-Fluorobiphenyl	AVRG		1.55938035		7.2

FORM VI SV

Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2014 11:41
End Cal Date : 08-OCT-2014 13:40
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Last Edit : 14-Oct-2014 16:48 30mss1.i

Calibration File Names:
Level 1: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y1.d
Level 2: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y2.d
Level 3: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y3.d
Level 4: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y4.d
Level 5: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y5.d
Level 6: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y6.d
Level 7: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y7.d

Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
13 N-Nitrosodimethylamine	0.39332 0.43287	0.42967	0.43308	0.44495	0.42982	0.38577	AVRG		0.42135		5.32458
14 Pyridine	1.29538 1.47650	1.40355	1.41963	1.47956	1.48958	1.38245	AVRG		1.42095		4.87444
15 Benzaldehyde	0.62297 0.61357	0.62498	0.72616	0.63609	0.59282	0.59379	AVRG		0.63005		7.19252
16 Phenol	1.90942 1.64162	1.81941	1.83636	1.88456	1.62626	1.66898	AVRG		1.76952		6.79542

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Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
17 Aniline	0.60526	0.66983	0.68430	0.73524	0.55545	0.53733					
	0.66512						AVRG		0.63608		11.36261
18 bis(2-Chloroethyl)ether	1.05541	1.05788	1.08194	1.11163	1.02363	0.96904					
	1.04286						AVRG		1.04891		4.29927
19 2-Chlorophenol	1.39922	1.33037	1.36282	1.37788	1.26950	1.18054					
	1.28016						AVRG		1.31436		5.80530
20 1,3-Dichlorobenzene	1.59719	1.59166	1.60869	1.63157	1.51636	1.39540					
	1.51006						AVRG		1.55013		5.31247
21 1,4-Dichlorobenzene	1.84011	1.72815	1.68792	1.72105	1.60760	1.53736					
	1.71153						AVRG		1.69053		5.68941
22 Benzyl Alcohol	1.23857	1.22086	1.25519	1.26106	1.18401	1.11284					
	1.18588						AVRG		1.20834		4.30841
23 o-Cresol	1.33802	1.28780	1.30364	1.31786	1.25010	1.20601					
	1.31178						AVRG		1.28789		3.52470

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Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
24 1,2-Dichlorobenzene	1.57528	1.56967	1.53472	1.58751	1.48958	1.41091					
	1.51414						AVRG		1.52597		4.04912
25 Bis(2-Chloroisopropyl)ethe	2.15234	1.95377	1.97656	2.00489	1.89766	1.77769					
	1.92749						AVRG		1.95577		5.80649
26 m/p-cresol	1.31603	1.30954	1.34632	1.41247	1.37250	1.29113					
	1.42618						AVRG		1.35345		3.86261
28 N-Nitroso-di-n-propylamine	1.23943	1.15739	1.20789	1.26536	1.20645	1.16694					
	1.26622						AVRG		1.21567		3.60212
29 Acetophenone	2.06371	2.00079	2.01946	2.12372	2.04757	1.95313					
	2.13511						AVRG		2.04907		3.18802
30 Hexachloroethane	0.66773	0.63038	0.63353	0.65658	0.62413	0.59090					
	0.63268						AVRG		0.63370		3.87445
31 Nitrobenzene	0.50220	0.46243	0.44918	0.45342	0.44235	0.40371					
	0.46062						AVRG		0.45341		6.44525

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Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
32 Isophorone	0.87059	0.79883	0.80097	0.80265	0.78849	0.71681					
	0.80516						AVRG		0.79765		5.61438
33 2,4-Dimethylphenol	0.41844	0.40849	0.40360	0.40742	0.40188	0.36646					
	0.41708						AVRG		0.40334		4.32092
34 2-Nitrophenol	0.22357	0.23119	0.20136	0.20463	0.19806	0.18489					
	0.20474						AVRG		0.20692		7.56723
35 Bis(2-Chloroethoxy)methane	0.48549	0.45816	0.45899	0.45141	0.44017	0.40174					
	0.45224						AVRG		0.44974		5.62470
36 Benzoic Acid	12630	22809	76322	177350	282752	361060					
	516866						LINR	0.25239	3.84902		0.99241
37 2,4-Dichlorophenol	0.33987	0.33338	0.33455	0.33127	0.32330	0.29121					
	0.33240						AVRG		0.32657		5.00692
38 2,6-Dichlorophenol	1.26908	1.19531	1.19127	1.21753	1.13505	1.08469					
	1.16516						AVRG		1.17973		5.01832

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Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
39 1,2,4-Trichlorobenzene	0.42651	0.39947	0.39689	0.39760	0.38312	0.35418					
	0.39565						AVRG		0.39335		5.50365
40 Naphthalene	1.16020	1.12901	1.09748	1.10246	1.06638	0.97549					
	1.11617						AVRG		1.09246		5.41207
41 4-Chloroaniline	10994	22765	46357	82989	107909	121317					
	+++++						QUAD	-0.00399	0.13362	-0.01415	0.99997
42 Hexachlorobutadiene	0.30342	0.28935	0.29338	0.28935	0.28025	0.25431					
	0.28767						AVRG		0.28539		5.38622
43 Caprolactam	0.15630	0.15918	0.16651	0.16251	0.16166	0.13941					
	0.15463						AVRG		0.15717		5.58663
44 4-Chloro-3-methylphenol	0.32262	0.31227	0.31618	0.31408	0.31276	0.28198					
	0.32366						AVRG		0.31193		4.48081
45 2-Methylnaphthalene	0.84502	0.77071	0.79226	0.77684	0.75554	0.68818					
	0.74872						AVRG		0.76818		6.17583

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Compound	1.0000 Level 1	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	20.0000 Level 7										
46 1-Methylnaphthalene	0.74351	0.70690	0.68821	0.70206	0.68225	0.62231					
	0.71092						AVRG		0.69374		5.35462
47 Hexachlorocyclopentadiene	0.40587	0.43565	0.49829	0.54119	0.52979	0.48428					
	0.54163						AVRG		0.49096		10.84088
48 1,2,4,5-Tetrachlorobenzene	1.73006	1.69568	1.71651	1.71442	1.59767	1.52077					
	1.64048						AVRG		1.65937		4.66702
49 2,4,6-Trichlorophenol	0.44665	0.42517	0.43019	0.45163	0.42214	0.38994					
	0.44416						AVRG		0.42998		4.87401
50 2,4,5-Trichlorophenol	0.44292	0.43278	0.43231	0.44401	0.41844	0.37389					
	0.40490						AVRG		0.42132		5.94205
51 Biphenyl	1.77208	1.60118	1.62646	1.64133	1.55256	1.40008					
	1.59369						AVRG		1.59820		6.96076
52 2-Chloronaphthalene	0.42705	0.38866	0.39819	0.40050	0.37283	0.34305					
	0.38856						AVRG		0.38841		6.67713

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Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
53 2-Nitroaniline	0.36677	0.36830	0.38635	0.38529	0.36500	0.32314					
	0.35257						AVRG		0.36392		5.91437
54 Dimethylphthalate	1.56329	1.41311	1.41594	1.44148	1.35016	1.24708					
	1.39459						AVRG		1.40366		6.79685
55 2,6-Dinitrotoluene	0.33275	0.32499	0.32962	0.33155	0.31184	0.27691					
	0.30810						AVRG		0.31654		6.31073
56 Acenaphthylene	2.20626	2.05302	1.99365	2.05810	1.95285	1.77349					
	1.99830						AVRG		2.00509		6.50653
57 3-Nitroaniline	24290	50491	89793	131133	152984	163692					
	+++++						QUAD	0.04693	0.34489	-0.04774	0.99123
58 Acenaphthene	1.39571	1.29930	1.28440	1.32411	1.26031	1.14838					
	1.31449						AVRG		1.28953		5.83686
59 2,4-Dinitrophenol	5027	12484	34341	77409	119495	+++++					
	+++++						LINR	0.15523	5.80778		0.99923

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Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
60 Dibenzofuran	1.94074	1.80133	1.81015	1.78247	1.67687	1.45571					
	1.69650						AVRG		1.73768		8.70999
61 4-Nitrophenol	0.17682	0.22206	0.24121	0.23912	0.21274	0.18915					
	0.21532						AVRG		0.21378		11.19954
62 2,4-Dinitrotoluene	0.40112	0.41736	0.42816	0.43406	0.40067	0.36404					
	0.40972						AVRG		0.40788		5.67021
63 2,3,4,6-Tetrachlorophenol	0.82924	0.82888	0.90105	0.93056	0.82982	0.79248					
	0.87024						AVRG		0.85461		5.64228
64 Diethylphthalate	1.52008	1.38916	1.38952	1.41546	1.35053	1.23503					
	1.39105						AVRG		1.38441		6.10986
65 4-Chlorophenyl-phenylether	0.83535	0.79567	0.81576	0.81162	0.75736	0.69748					
	0.75566						AVRG		0.78127		6.06959
66 Fluorene	1.57155	1.45538	1.52588	1.53286	1.46264	1.33292					
	1.53210						AVRG		1.48762		5.35865

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Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
67 4-Nitroaniline	14171	28924	45089	69160	88339	107665					
	+++++						QUAD	0.04220	0.14608	-0.01178	0.99361
68 4,6-Dinitro-2-methylphenol	0.09809	0.10248	0.12588	0.13496	0.13246	0.12460					
	0.13966						AVRG		0.12259		13.16022
69 N-Nitrosodiphenylamine	0.75145	0.66883	0.65632	0.63724	0.62851	0.56847					
	0.62749						AVRG		0.64833		8.55169
70 Azobenzene	0.94773	0.84646	0.83120	0.82078	0.82173	0.74616					
	0.82046						AVRG		0.83350		7.15179
71 1,2-Diphenylhydrazine	0.94172	0.84646	0.83116	0.82078	0.82173	0.74621					
	0.82046						AVRG		0.83265		6.92870
72 4-Bromophenyl-phenylether	0.32792	0.29462	0.28829	0.29333	0.28983	0.26618					
	0.29816						AVRG		0.29405		6.19709
73 Hexachlorobenzene	0.40272	0.33947	0.33371	0.33806	0.33566	0.32500					
	0.35511						AVRG		0.34710		7.52808

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Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
74 Atrazine	0.14723	0.12009	0.12341	0.11985	0.11808	0.11304					
	0.12019						AVRG		0.12313		9.00054
75 Pentachlorophenol	12076	29183	71338	151585	209331	253452					
	365904						POWER	0.14631	1.09188		0.99792
76 Phenanthrene	1.25521	1.10752	1.10298	1.09096	1.05278	0.98145					
	1.10419						AVRG		1.09930		7.47694
77 Anthracene	1.17054	1.09883	1.09447	1.08445	1.01683	0.93035					
	1.02353						AVRG		1.05986		7.25914
78 Carbazole	1.02012	0.94454	0.93349	0.90886	0.80573	0.74796					
	0.70971						AVRG		0.86720		13.17280
79 Di-n-butylphthalate	1.28792	1.16921	1.18232	1.23306	1.23642	1.18464					
	1.35186						AVRG		1.23506		5.34051
80 Fluoranthene	1.23420	1.25307	1.25884	1.22287	1.12972	1.08575					
	1.20719						AVRG		1.19881		5.49175

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Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
81 Pyrene	1.34769	1.18645	1.19583	1.25272	1.24754	1.11254					
	1.17397						AVRG		1.21668		6.13519
82 Butylbenzylphthalate	0.48695	0.42393	0.43772	0.48489	0.50178	0.46187					
	0.50334						AVRG		0.47150		6.61995
83 3,3'-Dichlorobenzidine	0.43635	0.37928	0.38688	0.37128	0.34413	0.31509					
	0.33891						AVRG		0.36742		10.76145
84 bis(2-Ethylhexyl)phthalate	0.72570	0.63314	0.65214	0.74518	0.80194	0.73637					
	0.82694						AVRG		0.73163		9.71090
85 Benzo[a]anthracene	1.24252	1.13569	1.13951	1.10912	1.07357	1.00265					
	1.10504						AVRG		1.11544		6.52275
86 Chrysene	1.16973	1.06037	1.03874	1.03195	1.00538	0.91118					
	1.00678						AVRG		1.03202		7.48075
87 Di-n-octylphthalate	1.23845	0.99020	0.99475	1.10882	1.15544	1.07004					
	1.20282						AVRG		1.10865		8.74520

Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2014 11:41
End Cal Date : 08-OCT-2014 13:40
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Last Edit : 14-Oct-2014 16:48 30mss1.i

Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
88 Benzo[b]fluoranthene	1.14814	1.16730	1.17345	0.96401	0.97488	0.87826					
	1.06755						AVRG		1.05337		11.05678
89 Benzo[k]fluoranthene	1.30768	1.15484	1.09725	1.13314	1.01967	0.94713					
	0.99597						AVRG		1.09367		11.04859
90 Benzo[a]pyrene	1.21564	1.12687	1.13499	1.08547	1.05154	0.95622					
	1.07756						AVRG		1.09261		7.34782
91 Dibenz[a,h]anthracene	1.19296	1.14613	1.17272	1.20505	1.23692	1.06924					
	1.15305						AVRG		1.16801		4.58723
92 Indeno[1,2,3-cd]pyrene	1.43195	1.35530	1.40049	1.44509	1.42383	1.28021					
	1.36297						AVRG		1.38569		4.15679
93 Benzo[g,h,i]perylene	1.23301	1.14406	1.17918	1.24667	1.20688	1.04576					
	1.07196						AVRG		1.16107		6.71324
$ 7 2-Fluorophenol	1.24910	1.24249	1.29098	1.30501	1.21216	1.13851					
	1.18874						AVRG		1.23243		4.70986

Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2014 11:41
End Cal Date : 08-OCT-2014 13:40
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Last Edit : 14-Oct-2014 16:48 30mss1.i

Compound	1.0000 Level 1 / 20.0000 Level 7	2.0000 Level 2	4.0000 Level 3	8.0000 Level 4	12.0000 Level 5	16.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
$ 8 Phenol-d5	1.71000	1.67240	1.67623	1.72359	1.62563	1.53267					
	1.65205						AVRG		1.65608		3.84359
$ 9 Nitrobenzene-d5	0.19666	0.18411	0.18417	0.18256	0.18056	0.16470					
	0.18463						AVRG		0.18249		5.15598
$ 10 2-Fluorobiphenyl	1.75303	1.58110	1.56800	1.58411	1.49402	1.38126					
	1.55415						AVRG		1.55938		7.15461
$ 11 2,4,6-Tribromophenol (S)	0.17698	0.16238	0.16263	0.17334	0.16984	0.15498					
	0.17994						AVRG		0.16858		5.32054
$ 12 Terphenyl-d14	1.05481	1.01250	1.00593	1.04602	1.00467	0.89354					
	0.94921						AVRG		0.99524		5.66741

Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2014 11:41
End Cal Date : 08-OCT-2014 13:40
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Last Edit : 14-Oct-2014 16:48 30mss1.i

Average %RSD Results.

Calculated Average %RSD = 6.45568
Maximun Average %RSD = 15.00000
* Passed Average %RSD Test.

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + m1*Rsp	Amount
Power	Amt = (Rsp/b)^(1/m1)	Amount
Quad	Rsp = b + m1*Amt + m2*Amt^2	Amount

Pace Analytical Services Inc.

Data file : \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y1.d
Lab Smp Id: 1PPM TCL
Inj Date : 08-OCT-2014 11:41
Operator : DJL Inst ID: 30mss1.i
Smp Info : 1PPM TCL
Misc Info : V-55-1
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Meth Date : 14-Oct-2014 16:48 30mss1.i Quant Type: ISTD
Cal Date : 08-OCT-2014 13:40 Cal File: m11008y7.d
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30DCAVALIER2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.614	3.614	(1.000)	107511	4.00000		
* 2 Naphthalene-d8 IS	136	4.624	4.624	(1.000)	381730	4.00000		
* 3 Acenaphthene-d8 IS	164	6.061	6.061	(1.000)	225069	4.00000		
* 4 Phenanthrene-d10 IS	188	7.487	7.487	(1.000)	381989	4.00000		
* 5 Chrysene-d12 IS	240	10.265	10.265	(1.000)	389796	4.00000		
* 6 Perylene-d12 IS	264	11.612	11.612	(1.000)	438307	4.00000		
$ 7 2-Fluorophenol	112	2.647	2.647	(0.733)	33573	1.00000	1.01	
$ 8 Phenol-d5	99	3.331	3.331	(0.922)	45961	1.00000	1.03	
$ 9 Nitrobenzene-d5	128	4.047	4.047	(0.875)	18768	1.00000	1.08	
$ 10 2-Fluorobiphenyl	172	5.500	5.500	(0.907)	98638	1.00000	1.12	
$ 11 2,4,6-Tribromophenol (S)	330	6.745	6.745	(0.901)	16901	1.00000	1.05	
$ 12 Terphenyl-d14	244	9.192	9.192	(0.895)	102790	1.00000	1.06	
13 N-Nitrosodimethylamine	74	1.616	1.616	(0.267)	22131	1.00000	0.933(H)	
14 Pyridine	79	1.638	1.638	(0.453)	34817	1.00000	0.912	
15 Benzaldehyde	77	3.294	3.294	(0.911)	16744	1.00000	0.989	
16 Phenol	94	3.342	3.342	(0.925)	51321	1.00000	1.08	
17 Aniline	66	3.369	3.369	(0.932)	16268	1.00000	0.952	
18 bis(2-Chloroethyl)ether	63	3.406	3.406	(0.942)	28367	1.00000	1.01	
19 2-Chlorophenol	128	3.459	3.459	(0.957)	37608	1.00000	1.06	
20 1,3-Dichlorobenzene	146	3.572	3.572	(0.988)	42929	1.00000	1.03	
21 1,4-Dichlorobenzene	146	3.625	3.625	(1.003)	49458	1.00000	1.09(Q)	
22 Benzyl Alcohol	79	3.721	3.721	(1.030)	33290	1.00000	1.02	
23 o-Cresol	108	3.801	3.801	(1.052)	35963	1.00000	1.04	
24 1,2-Dichlorobenzene	146	3.748	3.748	(1.037)	42340	1.00000	1.03	
25 Bis(2-Chloroisopropyl)ethe	45	3.823	3.823	(1.058)	57850	1.00000	1.10	
26 m/p-cresol	108	3.919	3.919	(1.084)	70744	2.00000	1.94	
28 N-Nitroso-di-n-propylamine	70	3.924	3.924	(1.086)	33313	1.00000	1.02	
29 Acetophenone	105	3.930	3.930	(1.087)	55468	1.00000	1.01	
30 Hexachloroethane	117	4.010	4.010	(1.109)	17947	1.00000	1.05	
31 Nitrobenzene	77	4.063	4.063	(0.879)	47926	1.00000	1.11	
32 Isophorone	82	4.250	4.250	(0.919)	83083	1.00000	1.09	
33 2,4-Dimethylphenol	107	4.341	4.341	(0.939)	39933	1.00000	1.04	
34 2-Nitrophenol	139	4.314	4.314	(0.933)	21336	1.00000	1.08	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
35 Bis(2-Chloroethoxy)methane	93	4.416	4.416	(0.955)	46332	1.00000	1.08	
36 Benzoic Acid	105	4.389	4.389	(0.949)	12630	1.00000	1.52(Q)	
37 2,4-Dichlorophenol	162	4.506	4.506	(0.975)	32435	1.00000	1.04	
38 2,6-Dichlorophenol	162	4.688	4.688	(1.297)	34110	1.00000	1.08	
39 1,2,4-Trichlorobenzene	180	4.576	4.576	(0.990)	40703	1.00000	1.08	
40 Naphthalene	128	4.640	4.640	(1.003)	110721	1.00000	1.06	
41 4-Chloroaniline	65	4.683	4.683	(1.013)	10994	1.00000	1.01	
42 Hexachlorobutadiene	225	4.736	4.736	(1.024)	28956	1.00000	1.06	
43 Caprolactam	55	4.939	4.939	(1.068)	14916	1.00000	0.994(H)	
44 4-Chloro-3-methylphenol	107	5.073	5.073	(1.097)	30788	1.00000	1.03	
45 2-Methylnaphthalene	142	5.201	5.201	(1.125)	80642	1.00000	1.10	
46 1-Methylnaphthalene	142	5.281	5.281	(1.142)	70955	1.00000	1.07	
47 Hexachlorocyclopentadiene	237	5.329	5.329	(0.879)	22837	1.00000	0.827	
48 1,2,4,5-Tetrachlorobenzene	216	5.340	5.340	(1.477)	46500	1.00000	1.04(Q)	
49 2,4,6-Trichlorophenol	196	5.431	5.431	(0.896)	25132	1.00000	1.04	
50 2,4,5-Trichlorophenol	196	5.468	5.468	(0.902)	24922	1.00000	1.05	
51 Biphenyl	154	5.580	5.580	(0.921)	99710	1.00000	1.11	
52 2-Chloronaphthalene	164	5.602	5.602	(0.924)	24029	1.00000	1.10	
53 2-Nitroaniline	138	5.682	5.682	(0.937)	20637	1.00000	1.01	
54 Dimethylphthalate	163	5.826	5.826	(0.961)	87962	1.00000	1.11	
55 2,6-Dinitrotoluene	165	5.879	5.879	(0.970)	18723	1.00000	1.05	
56 Acenaphthylene	152	5.944	5.944	(0.981)	124140	1.00000	1.10	
57 3-Nitroaniline	65	6.024	6.024	(0.994)	24290	1.00000	0.726	
58 Acenaphthene	153	6.088	6.088	(1.004)	78533	1.00000	1.08	
59 2,4-Dinitrophenol	184	6.109	6.109	(1.008)	5027	1.00000	1.14	
60 Dibenzofuran	168	6.232	6.232	(1.028)	109200	1.00000	1.12	
61 4-Nitrophenol	109	6.173	6.173	(1.019)	9949	1.00000	0.827(M)	GT
62 2,4-Dinitrotoluene	165	6.216	6.216	(1.026)	22570	1.00000	0.983	
63 2,3,4,6-Tetrachlorophenol	232	6.334	6.334	(1.752)	22288	1.00000	0.970	
64 Diethylphthalate	149	6.408	6.408	(1.057)	85531	1.00000	1.10	
65 4-Chlorophenyl-phenylether	204	6.515	6.515	(1.075)	47003	1.00000	1.07	
66 Fluorene	166	6.515	6.515	(1.075)	88427	1.00000	1.06	
67 4-Nitroaniline	108	6.531	6.531	(1.078)	14171	1.00000	0.575(Q)	
68 4,6-Dinitro-2-methylphenol	198	6.558	6.558	(0.876)	9367	1.00000	0.800	
69 N-Nitrosodiphenylamine	169	6.617	6.617	(0.884)	71761	1.00000	1.16	
70 Azobenzene	77	6.659	6.659	(0.889)	90506	1.00000	1.14	
71 1,2-Diphenylhydrazine	77	6.659	6.659	(0.889)	89932	1.00000	1.13	
72 4-Bromophenyl-phenylether	248	7.001	7.001	(0.935)	31315	1.00000	1.12	
73 Hexachlorobenzene	284	7.071	7.071	(0.944)	38459	1.00000	1.16	
74 Atrazine	200	7.172	7.172	(0.958)	14060	1.00000	1.20	
75 Pentachlorophenol	266	7.284	7.284	(0.973)	12076	1.00000	0.983	
76 Phenanthrene	178	7.509	7.509	(1.003)	119869	1.00000	1.14	
77 Anthracene	178	7.562	7.562	(1.010)	111783	1.00000	1.10	
78 Carbazole	167	7.738	7.738	(1.034)	97419	1.00000	1.18	
79 Di-n-butylphthalate	149	8.123	8.123	(1.085)	122993	1.00000	1.04	
80 Fluoranthene	202	8.780	8.780	(1.173)	117863	1.00000	1.03	
81 Pyrene	202	9.015	9.015	(0.878)	131331	1.00000	1.11	
82 Butylbenzylphthalate	149	9.704	9.704	(0.945)	47453	1.00000	1.03	
83 3,3'-Dichlorobenzidine	252	10.239	10.239	(0.997)	42522	1.00000	1.19	
84 bis(2-Ethylhexyl)phthalate	149	10.297	10.297	(1.003)	70719	1.00000	0.992	
85 Benzo[a]anthracene	228	10.255	10.255	(0.999)	121082	1.00000	1.11	
86 Chrysene	228	10.292	10.292	(1.003)	113989	1.00000	1.13	
87 Di-n-octylphthalate	149	10.917	10.917	(1.063)	120686	1.00000	1.12(Q)	
88 Benzo[b]fluoranthene	252	11.275	11.275	(0.971)	125809	1.00000	1.09(H)	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
89 Benzo[k]fluoranthene	252	11.302	11.302	(0.973)	143291	1.00000	1.20	
90 Benzo[a]pyrene	252	11.563	11.563	(0.996)	133206	1.00000	1.11	
91 Dibenz[a,h]anthracene	278	12.472	12.472	(1.074)	130721	1.00000	1.02	
92 Indeno[1,2,3-cd]pyrene	276	12.466	12.466	(1.074)	156908	1.00000	1.03	
93 Benzo[g,h,i]perylene	276	12.696	12.696	(1.093)	135109	1.00000	1.06	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m11008y1.d
Lab Smp Id: 1PPM TCL
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Misc Info: V-55-1

Calibration Date: 08-OCT-2014
Calibration Time: 14:00

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	108994	54497	217988	107511	-1.36
2 Naphthalene-d8 I	394602	197301	789204	381730	-3.26
3 Acenaphthene-d8	238890	119445	477780	225069	-5.79
4 Phenanthrene-d10	447551	223776	895102	381989	-14.65
5 Chrysene-d12 IS	437005	218503	874010	389796	-10.80
6 Perylene-d12 IS	536492	268246	1072984	438307	-18.30

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.61	3.11	4.11	3.61	0.00
2 Naphthalene-d8 I	4.62	4.12	5.12	4.62	0.00
3 Acenaphthene-d8	6.06	5.56	6.56	6.06	0.00
4 Phenanthrene-d10	7.49	6.99	7.99	7.49	0.00
5 Chrysene-d12 IS	10.27	9.77	10.77	10.27	-0.05
6 Perylene-d12 IS	11.61	11.11	12.11	11.61	0.00

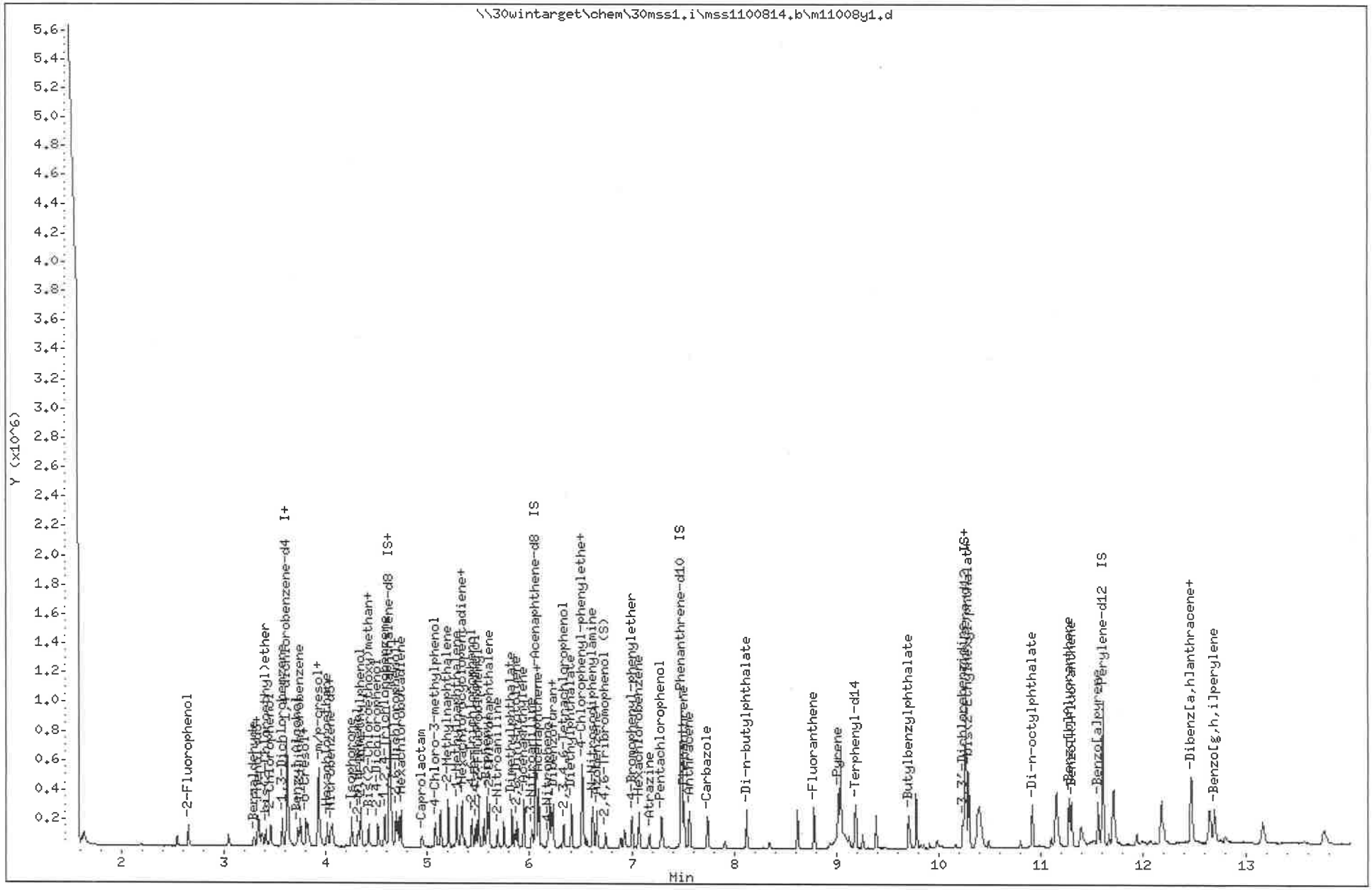
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y1.d
Date : 08-OCT-2014 11:41
Client ID:
Sample Info: 1PPM TCL

Instrument: 30mss1.i

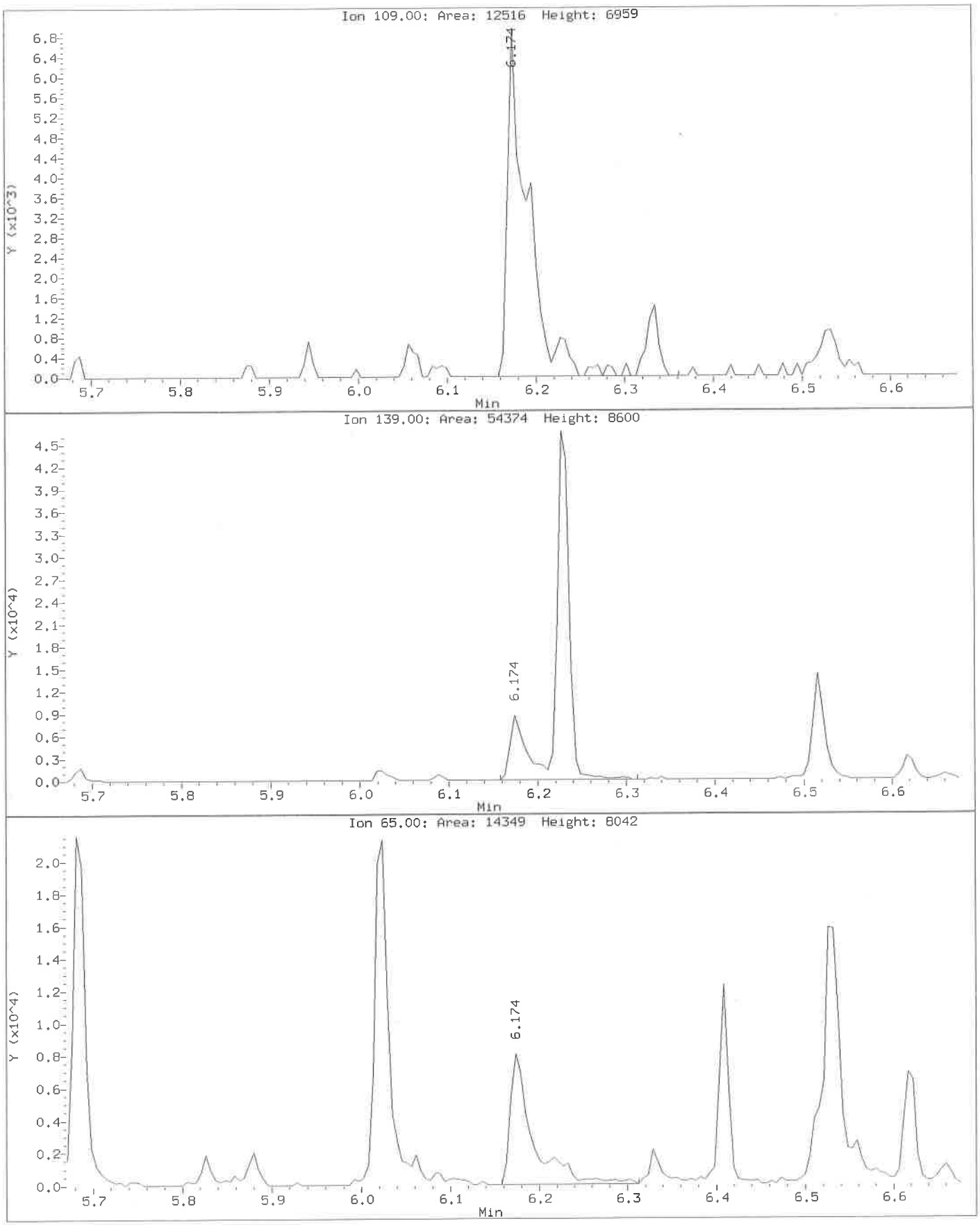
Operator: DJL

Column phase: RTX-5MS
Column diameter: 0.18



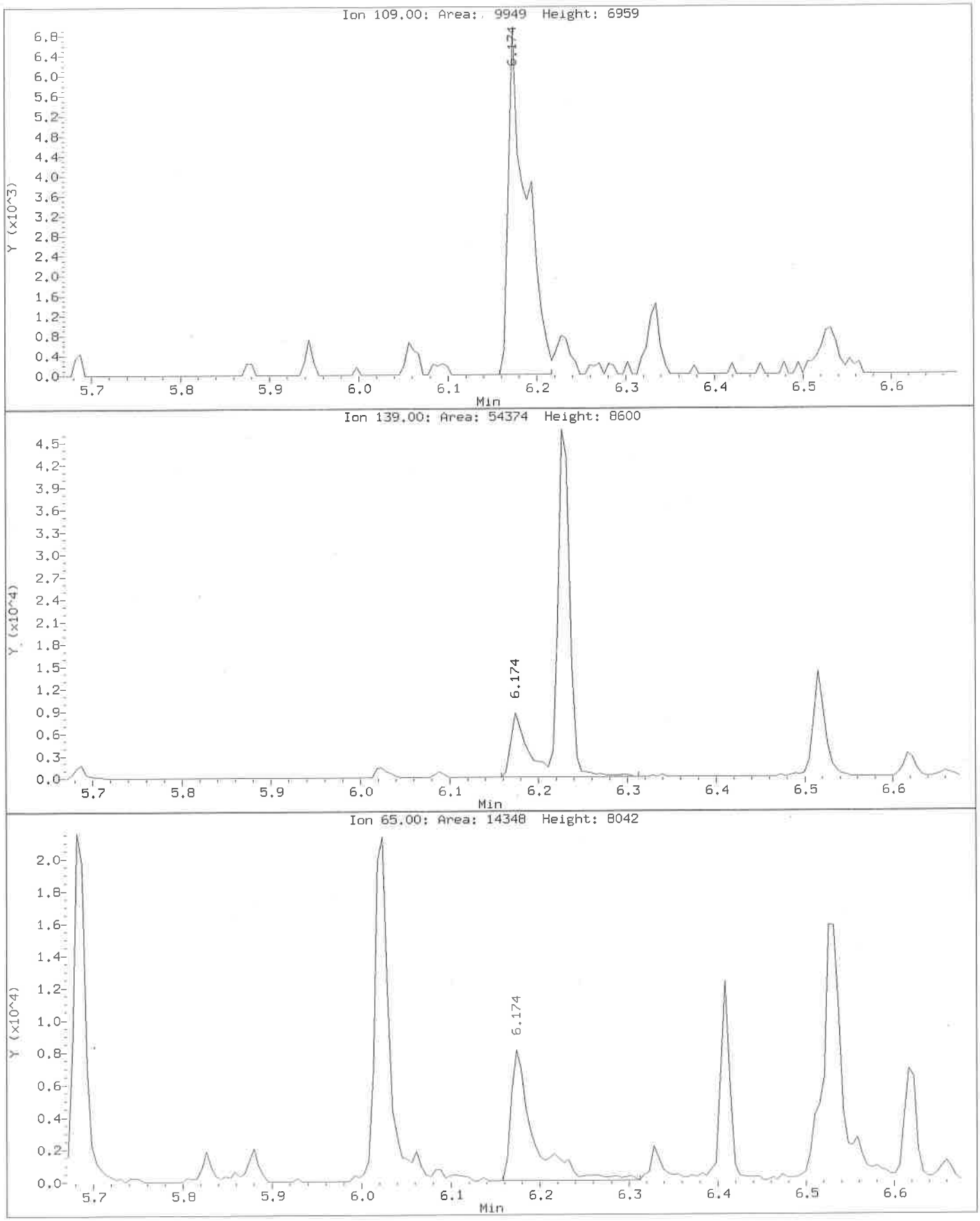
Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y1origdata.d
Injection Date: 08-OCT-2014 11:41
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitrophenol
CAS Number: 100-02-7



Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y1.d
Injection Date: 08-OCT-2014 11:41
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitrophenol
CAS Number: 100-02-7



Pace Analytical Services Inc.

Data file : \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y2.d
Lab Smp Id: 2PPM TCL
Inj Date : 08-OCT-2014 12:00
Operator : DJL Inst ID: 30mss1.i
Smp Info : 2PPM TCL
Misc Info : V-55-2
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Meth Date : 14-Oct-2014 16:48 30mss1.i Quant Type: ISTD
Cal Date : 08-OCT-2014 11:41 Cal File: m11008y1.d
Als bottle: 3 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30DCAVALIER2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.611	3.611	(1.000)	109287	4.00000		
* 2 Naphthalene-d8 IS	136	4.621	4.621	(1.000)	389124	4.00000		
* 3 Acenaphthene-d8 IS	164	6.058	6.058	(1.000)	236859	4.00000		
* 4 Phenanthrene-d10 IS	188	7.484	7.484	(1.000)	442223	4.00000		
* 5 Chrysene-d12 IS	240	10.268	10.268	(1.000)	479202	4.00000		
* 6 Perylene-d12 IS	264	11.608	11.608	(1.000)	458630	4.00000		
$ 7 2-Fluorophenol	112	2.650	2.650	(0.734)	67894	2.00000	2.02	
$ 8 Phenol-d5	99	3.328	3.328	(0.922)	91386	2.00000	2.02	
$ 9 Nitrobenzene-d5	128	4.044	4.044	(0.875)	35820	2.00000	2.02	
$ 10 2-Fluorobiphenyl	172	5.497	5.497	(0.907)	187249	2.00000	2.03	
$ 11 2,4,6-Tribromophenol (S)	330	6.742	6.742	(0.901)	35903	2.00000	1.93	
$ 12 Terphenyl-d14	244	9.188	9.188	(0.895)	242595	2.00000	2.03	
13 N-Nitrosodimethylamine	74	1.613	1.613	(0.266)	50886	2.00000	2.04(H)	
14 Pyridine	79	1.635	1.635	(0.453)	76695	2.00000	1.98	
15 Benzaldehyde	77	3.285	3.285	(0.910)	34151	2.00000	1.98	
16 Phenol	94	3.333	3.333	(0.923)	99419	2.00000	2.06	
17 Aniline	66	3.366	3.366	(0.932)	36602	2.00000	2.11	
18 bis(2-Chloroethyl)ether	63	3.403	3.403	(0.942)	57806	2.00000	2.02	
19 2-Chlorophenol	128	3.451	3.451	(0.956)	72696	2.00000	2.02	
20 1,3-Dichlorobenzene	146	3.569	3.569	(0.988)	86974	2.00000	2.05	
21 1,4-Dichlorobenzene	146	3.622	3.622	(1.003)	94432	2.00000	2.04	
22 Benzyl Alcohol	79	3.718	3.718	(1.030)	66712	2.00000	2.02	
23 o-Cresol	108	3.798	3.798	(1.052)	70370	2.00000	2.00	
24 1,2-Dichlorobenzene	146	3.745	3.745	(1.037)	85772	2.00000	2.06	
25 Bis(2-Chloroisopropyl)ethe	45	3.820	3.820	(1.058)	106761	2.00000	2.00	
26 m/p-cresol	108	3.921	3.921	(1.086)	143116	4.00000	3.87	
28 N-Nitroso-di-n-propylamine	70	3.921	3.921	(1.086)	63244	2.00000	1.90	
29 Acetophenone	105	3.926	3.926	(1.087)	109330	2.00000	1.95	
30 Hexachloroethane	117	4.007	4.007	(1.109)	34446	2.00000	1.99	
31 Nitrobenzene	77	4.060	4.060	(0.879)	89971	2.00000	2.04	
32 Isophorone	82	4.247	4.247	(0.919)	155422	2.00000	2.00	
33 2,4-Dimethylphenol	107	4.338	4.338	(0.939)	79477	2.00000	2.02	
34 2-Nitrophenol	139	4.316	4.316	(0.934)	44980	2.00000	2.23	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
35 Bis(2-Chloroethoxy)methane	93	4.413	4.413	(0.955)	89141	2.00000	2.04	
36 Benzoic Acid	105	4.397	4.397	(0.951)	22809	2.00000	1.91(TQM)	WP
37 2,4-Dichlorophenol	162	4.509	4.509	(0.976)	64864	2.00000	2.04	
38 2,6-Dichlorophenol	162	4.685	4.685	(1.297)	65316	2.00000	2.03	
39 1,2,4-Trichlorobenzene	180	4.573	4.573	(0.990)	77722	2.00000	2.03	
40 Naphthalene	128	4.637	4.637	(1.003)	219663	2.00000	2.07	
41 4-Chloroaniline	65	4.680	4.680	(1.013)	22765	2.00000	1.97	
42 Hexachlorobutadiene	225	4.733	4.733	(1.024)	56296	2.00000	2.03	
43 Caprolactam	55	4.941	4.941	(1.069)	30971	2.00000	2.02(H)	
44 4-Chloro-3-methylphenol	107	5.075	5.075	(1.098)	60756	2.00000	2.00	
45 2-Methylnaphthalene	142	5.198	5.198	(1.125)	149951	2.00000	2.01	
46 1-Methylnaphthalene	142	5.283	5.283	(1.143)	137535	2.00000	2.04	
47 Hexachlorocyclopentadiene	237	5.326	5.326	(0.879)	51594	2.00000	1.77	
48 1,2,4,5-Tetrachlorobenzene	216	5.337	5.337	(1.478)	92658	2.00000	2.04	
49 2,4,6-Trichlorophenol	196	5.433	5.433	(0.897)	50353	2.00000	1.98	
50 2,4,5-Trichlorophenol	196	5.465	5.465	(0.902)	51254	2.00000	2.05	
51 Biphenyl	154	5.583	5.583	(0.922)	189627	2.00000	2.00	
52 2-Chloronaphthalene	164	5.599	5.599	(0.924)	46029	2.00000	2.00	
53 2-Nitroaniline	138	5.684	5.684	(0.938)	43618	2.00000	2.02	
54 Dimethylphthalate	163	5.828	5.828	(0.962)	167354	2.00000	2.01	
55 2,6-Dinitrotoluene	165	5.876	5.876	(0.970)	38488	2.00000	2.05	
56 Acenaphthylene	152	5.946	5.946	(0.981)	243138	2.00000	2.05	
57 3-Nitroaniline	65	6.021	6.021	(0.994)	50491	2.00000	2.08	
58 Acenaphthene	153	6.085	6.085	(1.004)	153875	2.00000	2.02	
59 2,4-Dinitrophenol	184	6.111	6.111	(1.009)	12484	2.00000	1.84	
60 Dibenzofuran	168	6.229	6.229	(1.028)	213331	2.00000	2.07	
61 4-Nitrophenol	109	6.170	6.170	(1.019)	26299	2.00000	2.08	
62 2,4-Dinitrotoluene	165	6.213	6.213	(1.026)	49428	2.00000	2.05	
63 2,3,4,6-Tetrachlorophenol	232	6.330	6.330	(1.753)	45293	2.00000	1.94	
64 Diethylphthalate	149	6.411	6.411	(1.058)	164518	2.00000	2.01	
65 4-Chlorophenyl-phenylether	204	6.512	6.512	(1.075)	94231	2.00000	2.04	
66 Fluorene	166	6.517	6.517	(1.076)	172360	2.00000	1.96	
67 4-Nitroaniline	108	6.528	6.528	(1.078)	28924	2.00000	2.29(Q)	
68 4,6-Dinitro-2-methylphenol	198	6.560	6.560	(0.877)	22659	2.00000	1.67	
69 N-Nitrosodiphenylamine	169	6.619	6.619	(0.884)	147886	2.00000	2.06	
70 Azobenzene	77	6.656	6.656	(0.889)	187161	2.00000	2.03	
71 1,2-Diphenylhydrazine	77	6.656	6.656	(0.889)	187161	2.00000	2.03	
72 4-Bromophenyl-phenylether	248	6.998	6.998	(0.935)	65143	2.00000	2.00	
73 Hexachlorobenzene	284	7.068	7.068	(0.944)	75061	2.00000	1.96	
74 Atrazine	200	7.169	7.169	(0.958)	26554	2.00000	1.95	
75 Pentachlorophenol	266	7.281	7.281	(0.973)	29183	2.00000	1.93	
76 Phenanthrene	178	7.511	7.511	(1.004)	244886	2.00000	2.01	
77 Anthracene	178	7.564	7.564	(1.011)	242963	2.00000	2.07	
78 Carbazole	167	7.741	7.741	(1.034)	208849	2.00000	2.18(Q)	
79 Di-n-butylphthalate	149	8.120	8.120	(1.085)	258525	2.00000	1.89	
80 Fluoranthene	202	8.777	8.777	(1.173)	277069	2.00000	2.09	
81 Pyrene	202	9.018	9.018	(0.878)	284275	2.00000	1.95	
82 Butylbenzylphthalate	149	9.707	9.707	(0.945)	101573	2.00000	1.80	
83 3,3'-Dichlorobenzidine	252	10.236	10.236	(0.997)	90875	2.00000	2.06	
84 bis(2-Ethylhexyl)phthalate	149	10.294	10.294	(1.003)	151702	2.00000	1.73	
85 Benzo[a]anthracene	228	10.257	10.257	(0.999)	272112	2.00000	2.04	
86 Chrysene	228	10.289	10.289	(1.002)	254066	2.00000	2.05	
87 Di-n-octylphthalate	149	10.919	10.919	(1.063)	237254	2.00000	1.79	
88 Benzo[b]fluoranthene	252	11.272	11.272	(0.971)	267679	2.00000	2.22(H)	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
89 Benzo[k]fluoranthene	252	11.299	11.299	(0.973)	264823	2.00000	2.11	
90 Benzo[a]pyrene	252	11.560	11.560	(0.996)	258408	2.00000	2.06	
91 Dibenz[a,h]anthracene	278	12.469	12.469	(1.074)	262825	2.00000	1.96	
92 Indeno[1,2,3-cd]pyrene	276	12.463	12.463	(1.074)	310791	2.00000	1.96	
93 Benzo[g,h,i]perylene	276	12.693	12.693	(1.093)	262349	2.00000	1.97	

QC Flag Legend

T - Target compound detected outside RT window.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m11008y2.d
Lab Smp Id: 2PPM TCL
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Misc Info: V-55-2

Calibration Date: 08-OCT-2014
Calibration Time: 14:00
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	108994	54497	217988	109287	0.27
2 Naphthalene-d8 I	394602	197301	789204	389124	-1.39
3 Acenaphthene-d8	238890	119445	477780	236859	-0.85
4 Phenanthrene-d10	447551	223776	895102	442223	-1.19
5 Chrysene-d12 IS	437005	218503	874010	479202	9.66
6 Perylene-d12 IS	536492	268246	1072984	458630	-14.51

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.61	3.11	4.11	3.61	-0.08
2 Naphthalene-d8 I	4.62	4.12	5.12	4.62	-0.07
3 Acenaphthene-d8	6.06	5.56	6.56	6.06	-0.05
4 Phenanthrene-d10	7.49	6.99	7.99	7.48	-0.04
5 Chrysene-d12 IS	10.27	9.77	10.77	10.27	-0.03
6 Perylene-d12 IS	11.61	11.11	12.11	11.61	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y2.d

Date : 08-OCT-2014 12:00

Client ID:

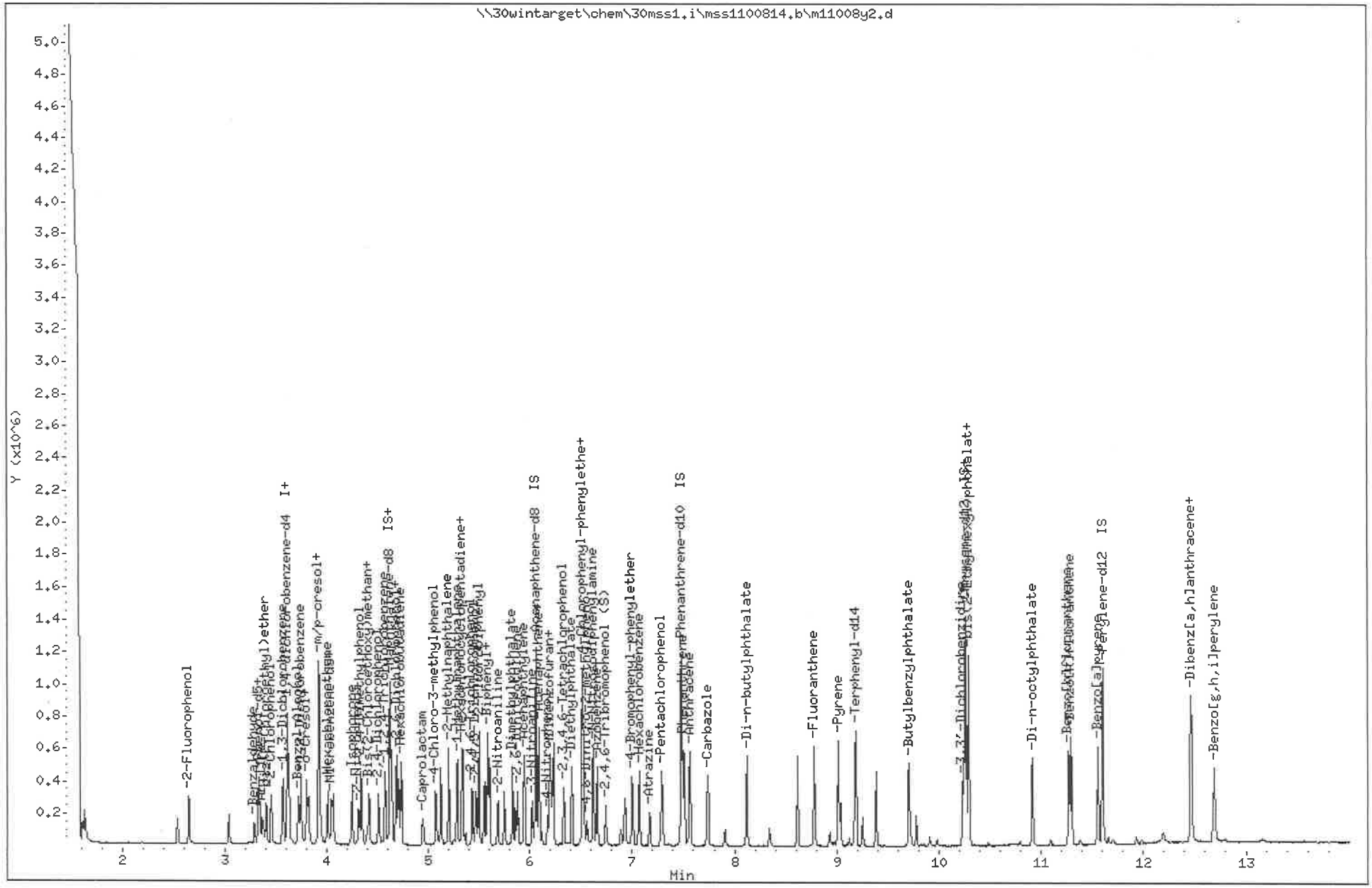
Sample Info: 2PPM TCL

Column phase: RTX-5MS

Instrument: 30mss1.i

Operator: DJL

Column diameter: 0.18



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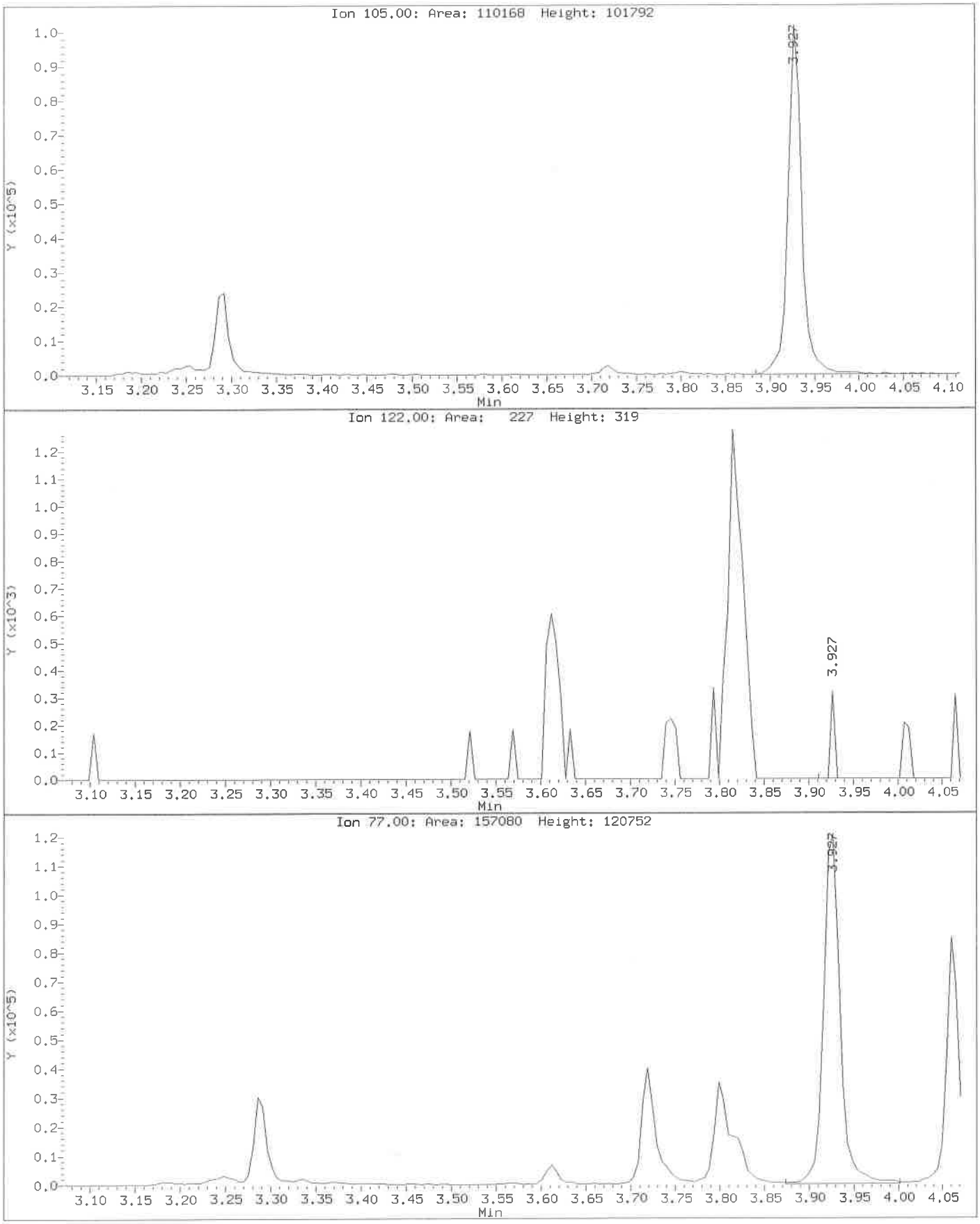
Injection Date: 08-OCT-2014 12:00
Instrument: 30mss1.i
Client Sample ID:

Compound: Benzoic Acid
CAS Number: 65-85-0



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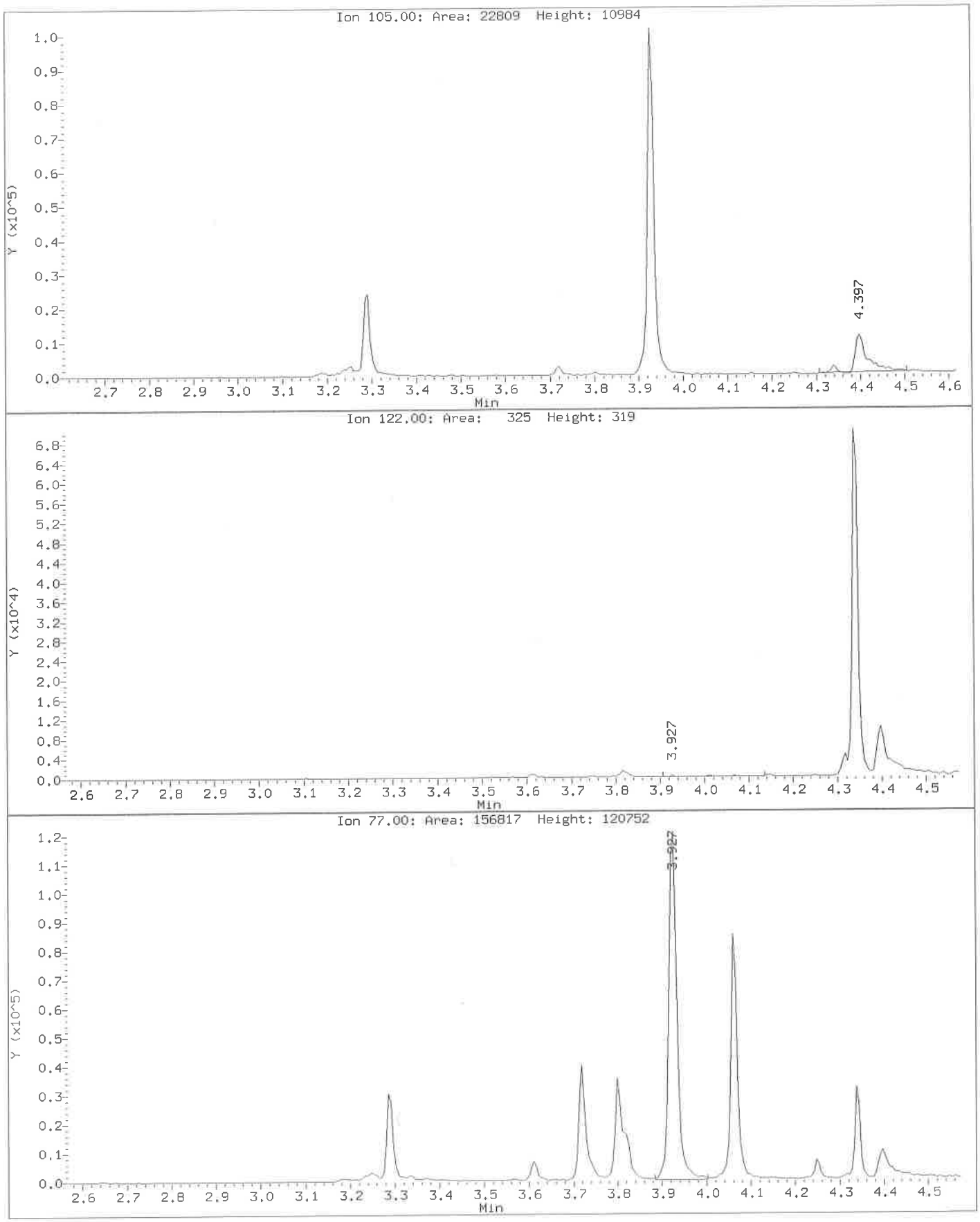
Injection Date: 08-OCT-2014 12:00
Instrument: 30mss1.i
Client Sample ID:

Compound: Benzoic Acid
CAS Number: 65-85-0



Pace Analytical Services Inc.

Data file : \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y3.d
Lab Smp Id: 4PPM TCL
Inj Date : 08-OCT-2014 12:20
Operator : DJL Inst ID: 30mss1.i
Smp Info : 4PPM TCL
Misc Info : V-55-3
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Meth Date : 14-Oct-2014 16:48 30mss1.i Quant Type: ISTD
Cal Date : 08-OCT-2014 12:00 Cal File: m11008y2.d
Als bottle: 4 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30DCAVALIER2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.614	3.614	(1.000)	109794	4.00000		
* 2 Naphthalene-d8 IS	136	4.624	4.624	(1.000)	398395	4.00000		
* 3 Acenaphthene-d8 IS	164	6.061	6.061	(1.000)	240360	4.00000		
* 4 Phenanthrene-d10 IS	188	7.488	7.488	(1.000)	457212	4.00000		
* 5 Chrysene-d12 IS	240	10.271	10.271	(1.000)	497606	4.00000		
* 6 Perylene-d12 IS	264	11.606	11.606	(1.000)	490610	4.00000		
$ 7 2-Fluorophenol	112	2.648	2.648	(0.733)	141742	4.00000	4.19	
$ 8 Phenol-d5	99	3.331	3.331	(0.922)	184040	4.00000	4.05	
$ 9 Nitrobenzene-d5	128	4.053	4.053	(0.876)	73374	4.00000	4.04	
$ 10 2-Fluorobiphenyl	172	5.500	5.500	(0.907)	376884	4.00000	4.02	
$ 11 2,4,6-Tribromophenol (S)	330	6.745	6.745	(0.901)	74357	4.00000	3.86	
$ 12 Terphenyl-d14	244	9.192	9.192	(0.895)	500559	4.00000	4.04	
13 N-Nitrosodimethylamine	74	1.622	1.622	(0.268)	104096	4.00000	4.11	
14 Pyridine	79	1.638	1.638	(0.453)	155867	4.00000	4.00	
15 Benzaldehyde	77	3.294	3.294	(0.911)	79728	4.00000	4.61	
16 Phenol	94	3.337	3.337	(0.923)	201621	4.00000	4.15	
17 Aniline	66	3.369	3.369	(0.932)	75132	4.00000	4.30	
18 bis(2-Chloroethyl)ether	63	3.411	3.411	(0.944)	118791	4.00000	4.12	
19 2-Chlorophenol	128	3.454	3.454	(0.956)	149630	4.00000	4.15	
20 1,3-Dichlorobenzene	146	3.572	3.572	(0.988)	176625	4.00000	4.15	
21 1,4-Dichlorobenzene	146	3.625	3.625	(1.003)	185324	4.00000	3.99	
22 Benzyl Alcohol	79	3.721	3.721	(1.030)	137812	4.00000	4.16	
23 o-Cresol	108	3.801	3.801	(1.052)	143132	4.00000	4.05	
24 1,2-Dichlorobenzene	146	3.748	3.748	(1.037)	168503	4.00000	4.02	
25 Bis(2-Chloroisopropyl)ethe	45	3.823	3.823	(1.058)	217014	4.00000	4.04	
26 m/p-cresol	108	3.924	3.924	(1.086)	295635	8.00000	7.96	
28 N-Nitroso-di-n-propylamine	70	3.930	3.930	(1.087)	132619	4.00000	3.97	
29 Acetophenone	105	3.930	3.930	(1.087)	221725	4.00000	3.94	
30 Hexachloroethane	117	4.010	4.010	(1.109)	69558	4.00000	4.00	
31 Nitrobenzene	77	4.063	4.063	(0.879)	178950	4.00000	3.96	
32 Isophorone	82	4.250	4.250	(0.919)	319104	4.00000	4.02	
33 2,4-Dimethylphenol	107	4.341	4.341	(0.939)	160791	4.00000	4.00	
34 2-Nitrophenol	139	4.314	4.314	(0.933)	80222	4.00000	3.89	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
35 Bis(2-Chloroethoxy)methane	93	4.416	4.416	(0.955)	182858	4.00000	4.08	
36 Benzoic Acid	105	4.416	4.416	(0.955)	76322	4.00000	3.96(QM)	WP
37 2,4-Dichlorophenol	162	4.507	4.507	(0.975)	133284	4.00000	4.10	
38 2,6-Dichlorophenol	162	4.688	4.688	(1.297)	130794	4.00000	4.04	
39 1,2,4-Trichlorobenzene	180	4.576	4.576	(0.990)	158119	4.00000	4.04	
40 Naphthalene	128	4.640	4.640	(1.003)	437230	4.00000	4.02	
41 4-Chloroaniline	65	4.683	4.683	(1.013)	46357	4.00000	4.03	
42 Hexachlorobutadiene	225	4.736	4.736	(1.024)	116881	4.00000	4.11	
43 Caprolactam	55	4.955	4.955	(1.072)	66336	4.00000	4.24	
44 4-Chloro-3-methylphenol	107	5.073	5.073	(1.097)	125966	4.00000	4.05	
45 2-Methylnaphthalene	142	5.201	5.201	(1.125)	315633	4.00000	4.12	
46 1-Methylnaphthalene	142	5.281	5.281	(1.142)	274178	4.00000	3.97	
47 Hexachlorocyclopentadiene	237	5.329	5.329	(0.879)	119769	4.00000	4.06	
48 1,2,4,5-Tetrachlorobenzene	216	5.340	5.340	(1.477)	188463	4.00000	4.14	
49 2,4,6-Trichlorophenol	196	5.431	5.431	(0.896)	103400	4.00000	4.00	
50 2,4,5-Trichlorophenol	196	5.468	5.468	(0.902)	103911	4.00000	4.10	
51 Biphenyl	154	5.580	5.580	(0.921)	390935	4.00000	4.07	
52 2-Chloronaphthalene	164	5.602	5.602	(0.924)	95709	4.00000	4.10	
53 2-Nitroaniline	138	5.682	5.682	(0.937)	92862	4.00000	4.25	
54 Dimethylphthalate	163	5.831	5.831	(0.962)	340335	4.00000	4.03	
55 2,6-Dinitrotoluene	165	5.880	5.880	(0.970)	79227	4.00000	4.16	
56 Acenaphthylene	152	5.944	5.944	(0.981)	479194	4.00000	3.98	
57 3-Nitroaniline	65	6.024	6.024	(0.994)	89793	4.00000	4.48	
58 Acenaphthene	153	6.088	6.088	(1.004)	308719	4.00000	3.98	
59 2,4-Dinitrophenol	184	6.109	6.109	(1.008)	34341	4.00000	3.94	
60 Dibenzofuran	168	6.232	6.232	(1.028)	435087	4.00000	4.17	
61 4-Nitrophenol	109	6.168	6.168	(1.018)	57978	4.00000	4.51	
62 2,4-Dinitrotoluene	165	6.216	6.216	(1.026)	102913	4.00000	4.20	
63 2,3,4,6-Tetrachlorophenol	232	6.334	6.334	(1.752)	98930	4.00000	4.22	
64 Diethylphthalate	149	6.408	6.408	(1.057)	333986	4.00000	4.01	
65 4-Chlorophenyl-phenylether	204	6.515	6.515	(1.075)	196077	4.00000	4.18	
66 Fluorene	166	6.515	6.515	(1.075)	366761	4.00000	4.10	
67 4-Nitroaniline	108	6.531	6.531	(1.078)	45089	4.00000	4.36(QM)	LT
68 4,6-Dinitro-2-methylphenol	198	6.558	6.558	(0.876)	57555	4.00000	4.11	
69 N-Nitrosodiphenylamine	169	6.622	6.622	(0.884)	300077	4.00000	4.05	
70 Azobenzene	77	6.659	6.659	(0.889)	380034	4.00000	3.99	
71 1,2-Diphenylhydrazine	77	6.659	6.659	(0.889)	380016	4.00000	3.99	
72 4-Bromophenyl-phenylether	248	7.001	7.001	(0.935)	131808	4.00000	3.92	
73 Hexachlorobenzene	284	7.071	7.071	(0.944)	152574	4.00000	3.84	
74 Atrazine	200	7.172	7.172	(0.958)	56424	4.00000	4.01	
75 Pentachlorophenol	266	7.285	7.285	(0.973)	71338	4.00000	4.24	
76 Phenanthrene	178	7.509	7.509	(1.003)	504295	4.00000	4.01	
77 Anthracene	178	7.568	7.568	(1.011)	500406	4.00000	4.13	
78 Carbazole	167	7.739	7.739	(1.034)	426802	4.00000	4.30(M)	LT
79 Di-n-butylphthalate	149	8.123	8.123	(1.085)	540569	4.00000	3.83	
80 Fluoranthene	202	8.780	8.780	(1.173)	575555	4.00000	4.20	
81 Pyrene	202	9.021	9.021	(0.878)	595052	4.00000	3.93	
82 Butylbenzylphthalate	149	9.704	9.704	(0.945)	217814	4.00000	3.71	
83 3,3'-Dichlorobenzidine	252	10.239	10.239	(0.997)	192516	4.00000	4.21	
84 bis(2-Ethylhexyl)phthalate	149	10.297	10.297	(1.003)	324507	4.00000	3.56	
85 Benzo[a]anthracene	228	10.260	10.260	(0.999)	567025	4.00000	4.09	
86 Chrysene	228	10.292	10.292	(1.002)	516882	4.00000	4.03	
87 Di-n-octylphthalate	149	10.917	10.917	(1.063)	494995	4.00000	3.59	
88 Benzo[b]fluoranthene	252	11.275	11.275	(0.971)	575704	4.00000	4.46	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
89 Benzo[k]fluoranthene	252	11.302	11.302	(0.974)	538320	4.00000	4.01	
90 Benzo[a]pyrene	252	11.564	11.564	(0.996)	556838	4.00000	4.16	
91 Dibenz[a,h]anthracene	278	12.477	12.477	(1.075)	575347	4.00000	4.02	
92 Indeno[1,2,3-cd]pyrene	276	12.472	12.472	(1.075)	687094	4.00000	4.04	
93 Benzo[g,h,i]perylene	276	12.696	12.696	(1.094)	578516	4.00000	4.06	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m11008y3.d
Lab Smp Id: 4PPM TCL
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Misc Info: V-55-3

Calibration Date: 08-OCT-2014
Calibration Time: 14:00

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	108994	54497	217988	109794	0.73
2 Naphthalene-d8 I	394602	197301	789204	398395	0.96
3 Acenaphthene-d8	238890	119445	477780	240360	0.62
4 Phenanthrene-d10	447551	223776	895102	457212	2.16
5 Chrysene-d12 IS	437005	218503	874010	497606	13.87
6 Perylene-d12 IS	536492	268246	1072984	490610	-8.55

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.61	3.11	4.11	3.61	0.00
2 Naphthalene-d8 I	4.62	4.12	5.12	4.62	0.00
3 Acenaphthene-d8	6.06	5.56	6.56	6.06	0.00
4 Phenanthrene-d10	7.49	6.99	7.99	7.49	0.00
5 Chrysene-d12 IS	10.27	9.77	10.77	10.27	0.00
6 Perylene-d12 IS	11.61	11.11	12.11	11.61	-0.04

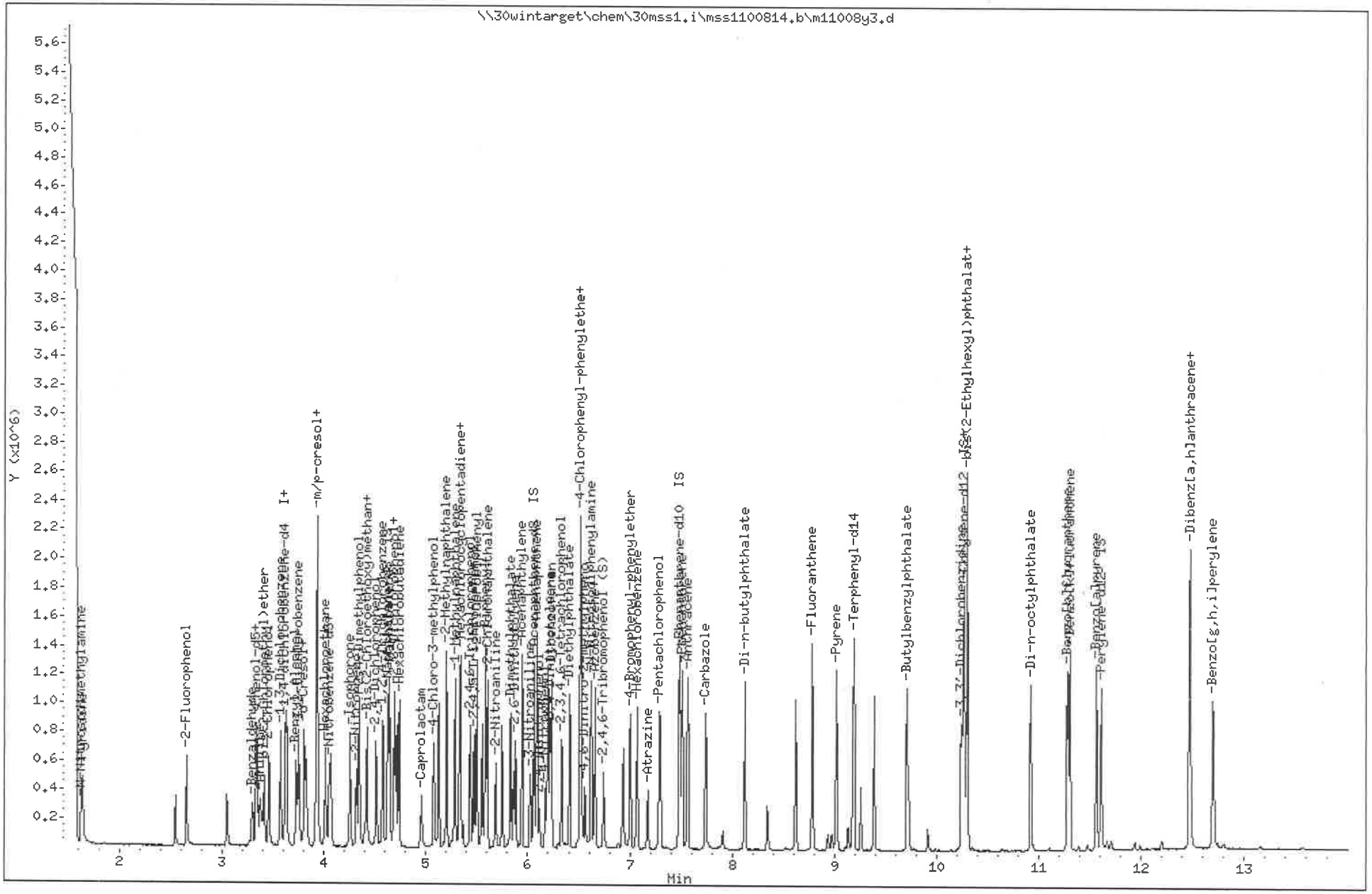
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y3.d
Date : 08-OCT-2014 12:20
Client ID:
Sample Info: 4PPM TCL

Column phase: RTX-5MS

Instrument: 30mss1.i

Operator: DJL
Column diameter: 0.18



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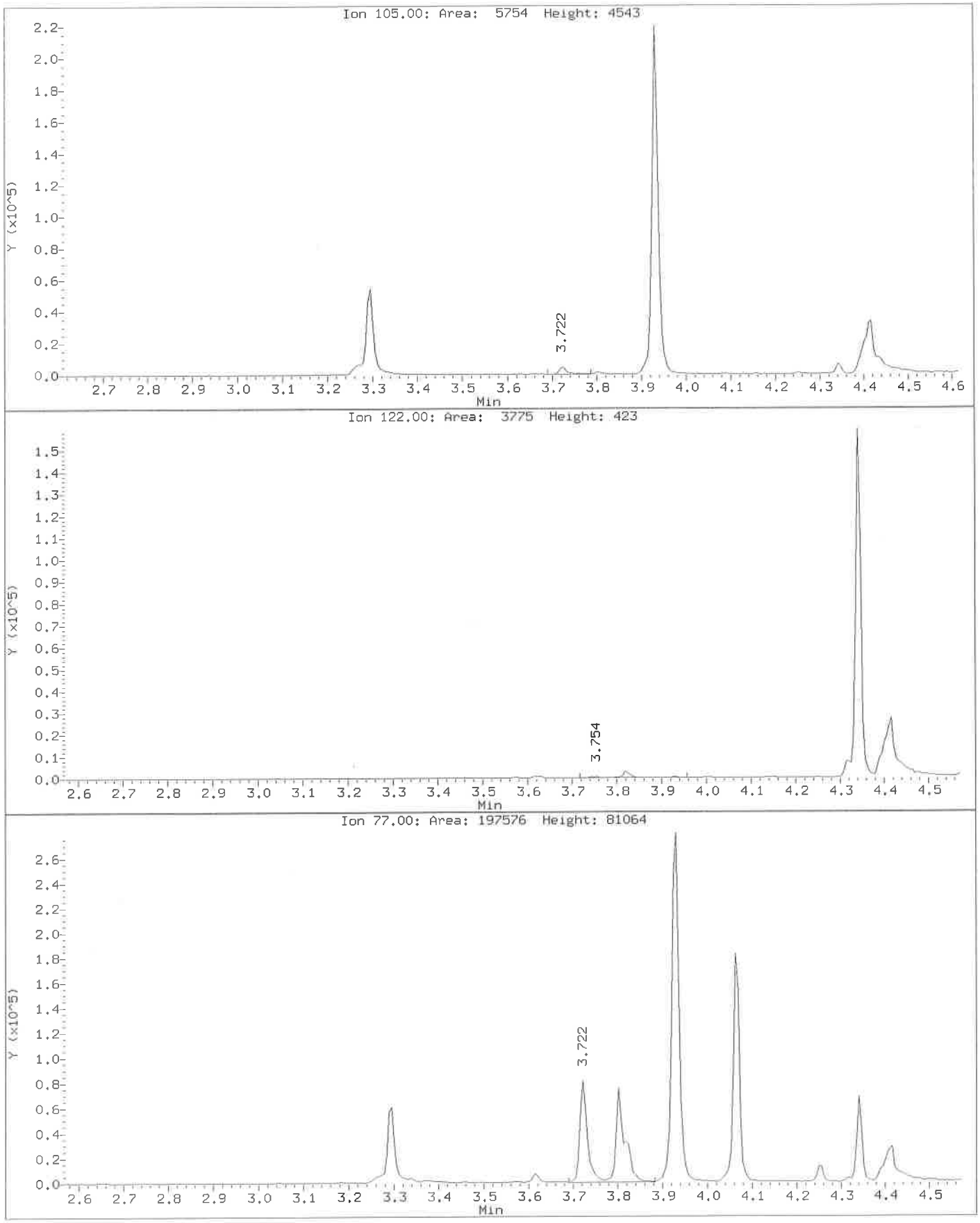
Injection Date: 08-OCT-2014 12:20
Instrument: 30mss1.i
Client Sample ID:

Compound: Benzoic Acid
CAS Number: 65-85-0



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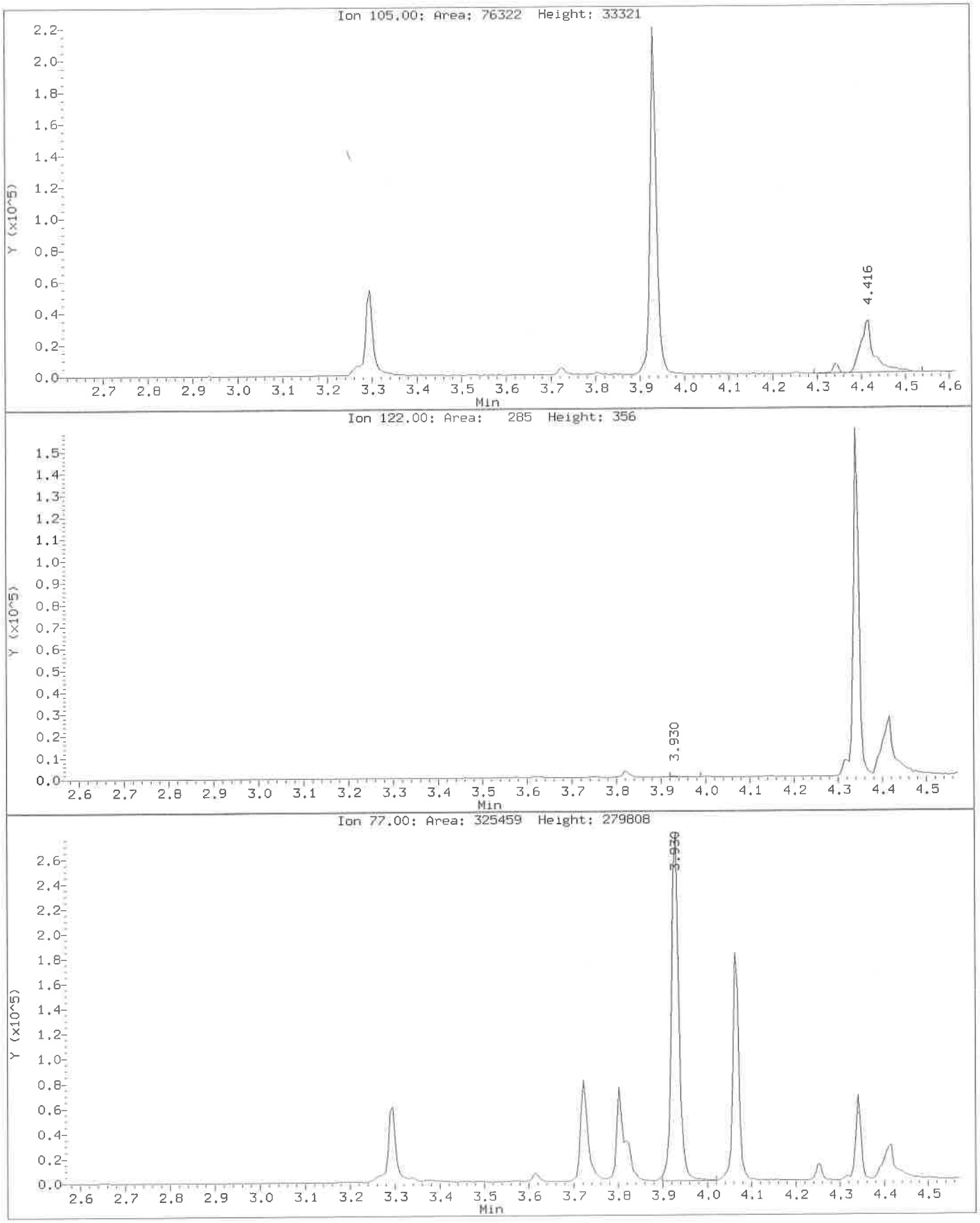
Injection Date: 08-OCT-2014 12:20
Instrument: 30mss1.i
Client Sample ID:

Compound: Benzoic Acid
CAS Number: 65-85-0



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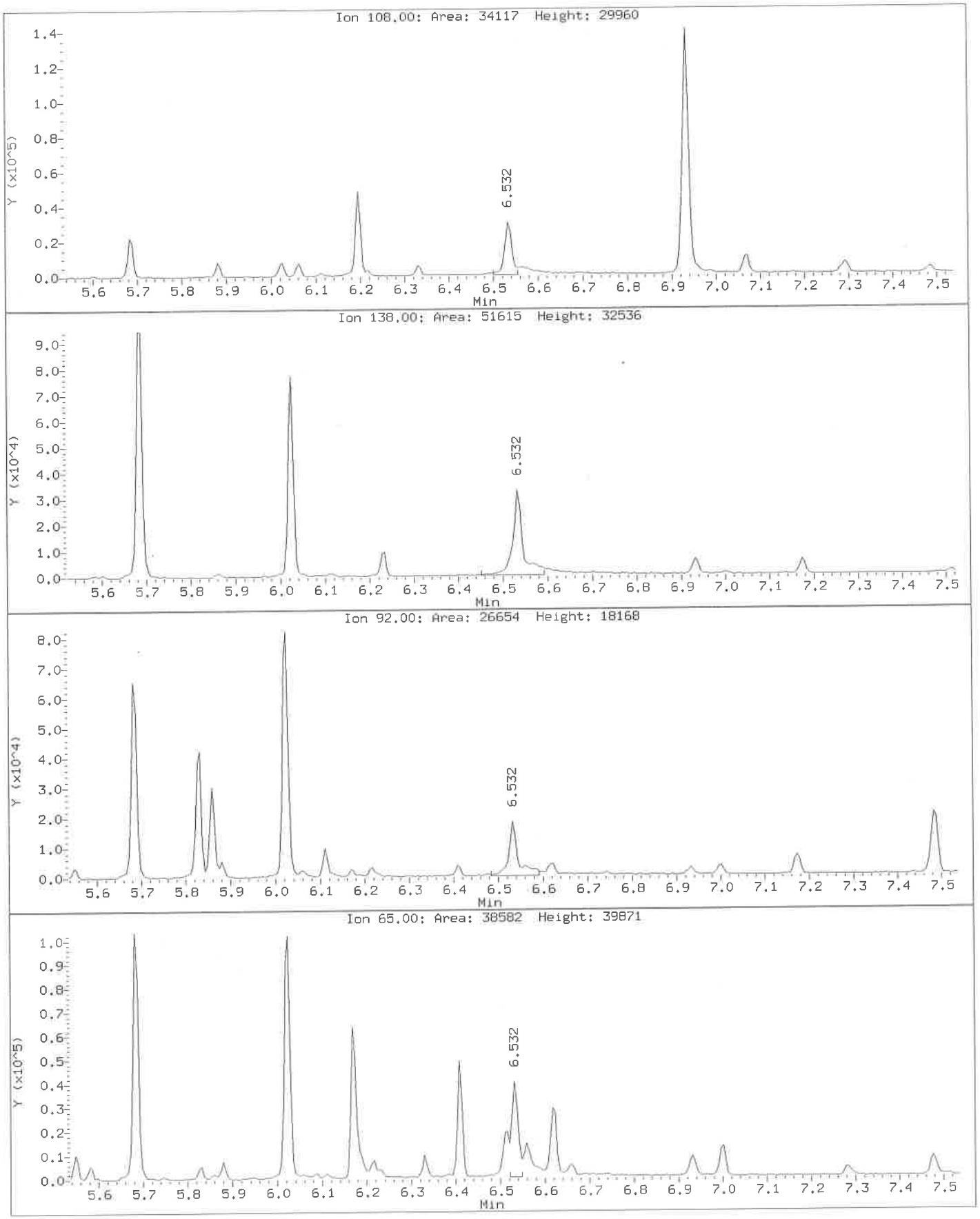
Injection Date: 08-OCT-2014 12:20
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6



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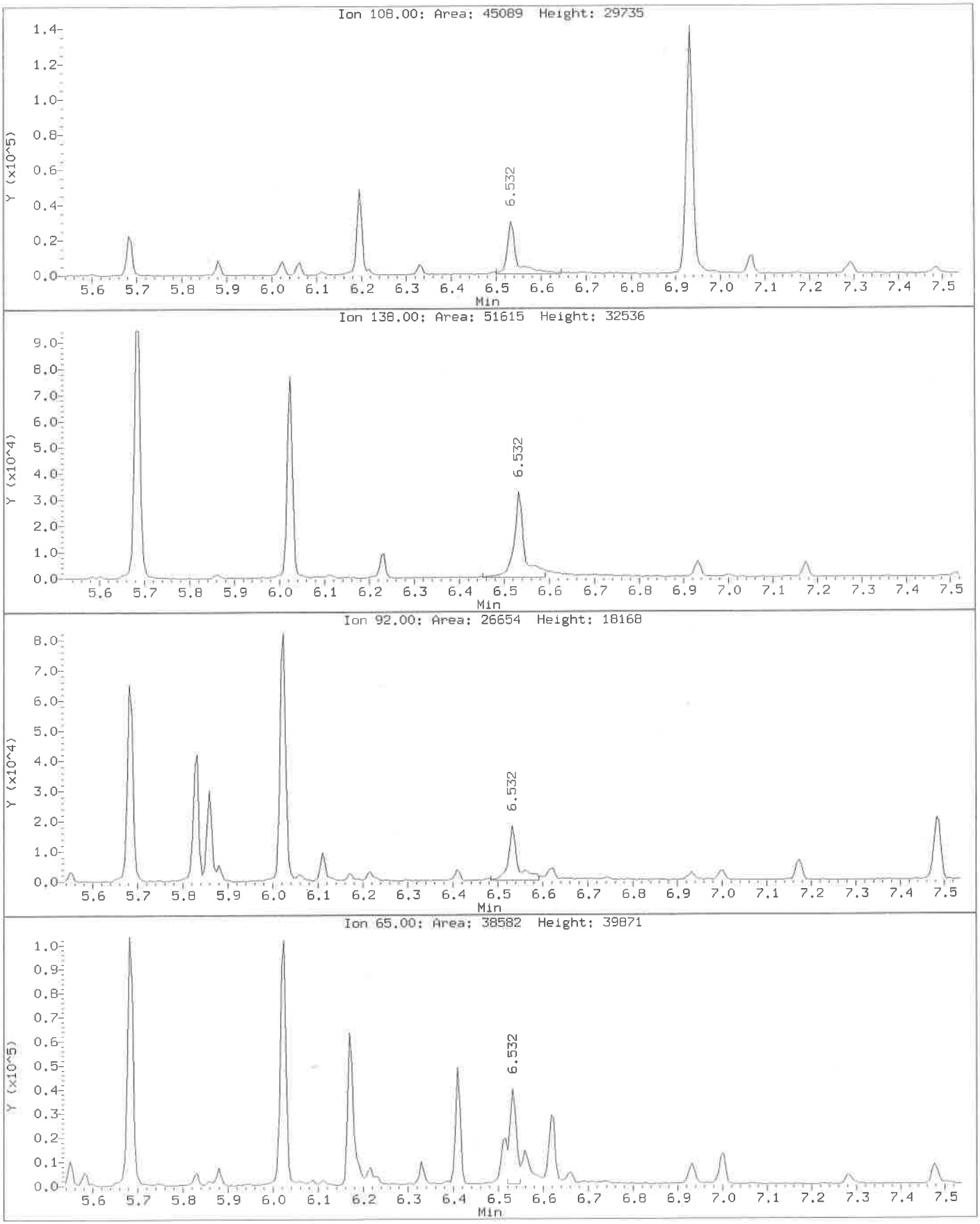
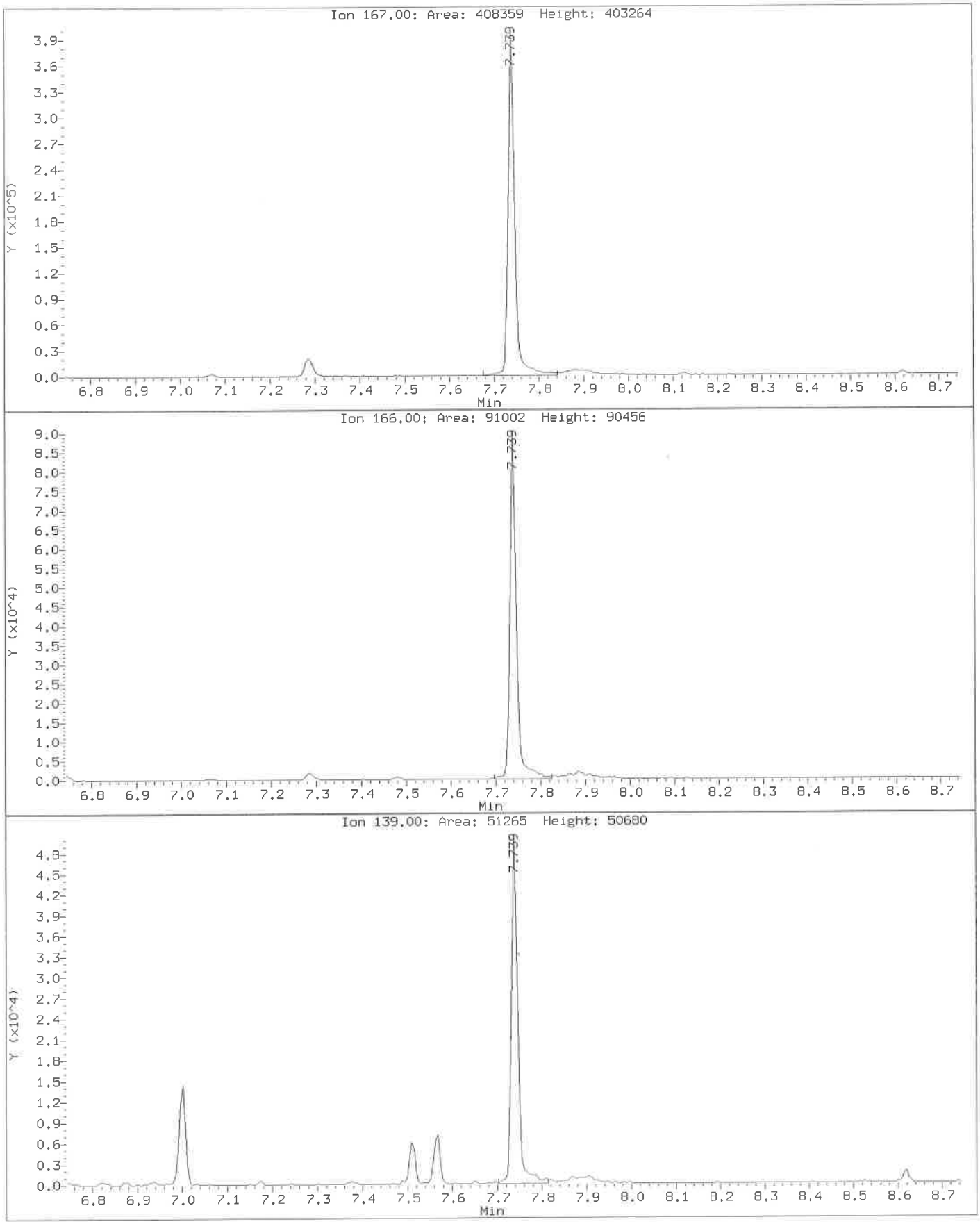
Injection Date: 08-OCT-2014 12:20
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6



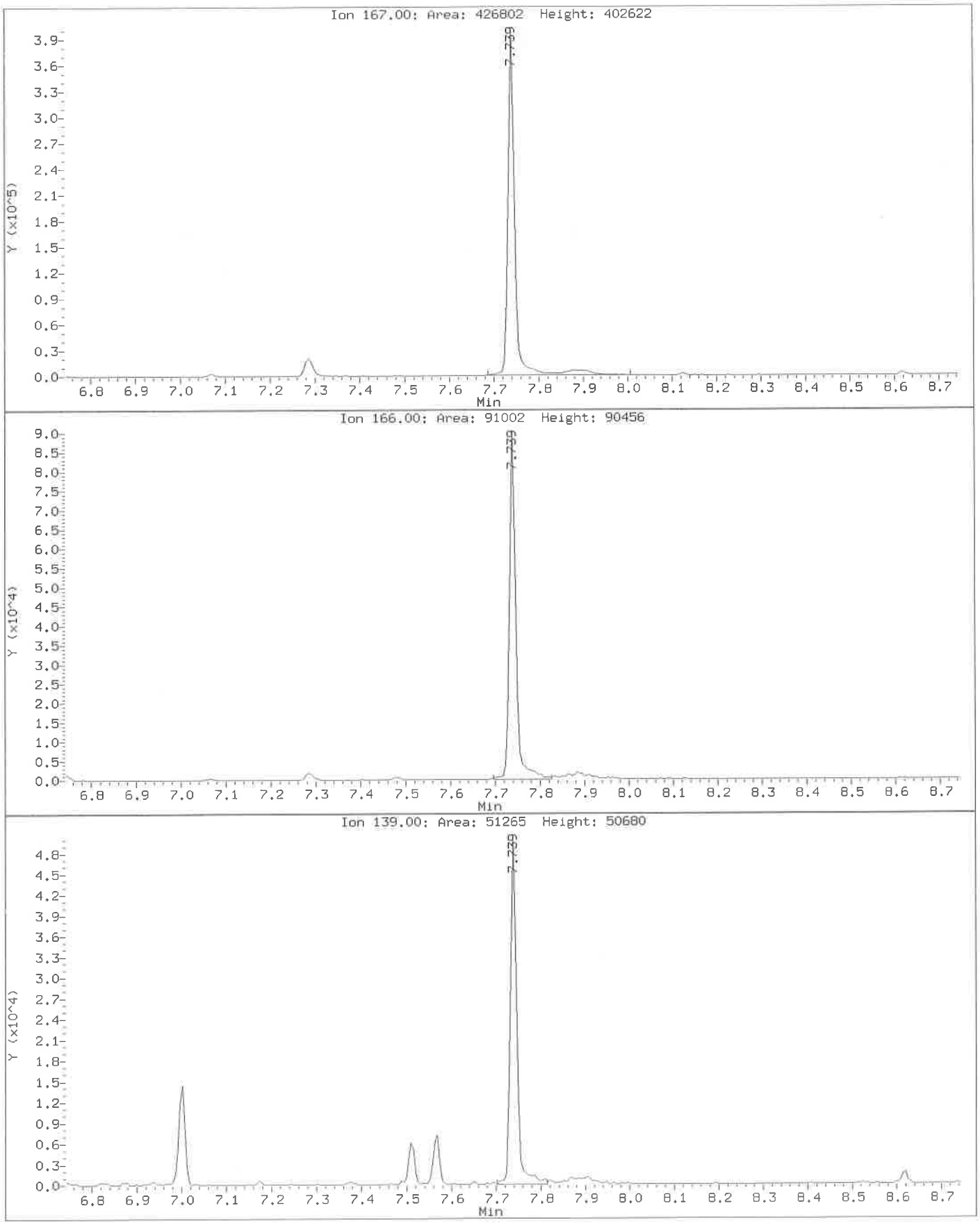
Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y3origdata.d
Injection Date: 08-OCT-2014 12:20
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y3.d
Injection Date: 08-OCT-2014 12:20
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



Pace Analytical Services Inc.

Data file : \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y4.d
Lab Smp Id: 8PPM TCL
Inj Date : 08-OCT-2014 12:40
Operator : DJL Inst ID: 30mss1.i
Smp Info : 8PPM TCL
Misc Info : V-55-4
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Meth Date : 14-Oct-2014 16:48 30mss1.i Quant Type: ISTD
Cal Date : 08-OCT-2014 12:20 Cal File: m11008y3.d
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30DCAVALIER2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.614	3.614	(1.000)	108462	4.00000		
* 2 Naphthalene-d8 IS	136	4.624	4.624	(1.000)	402819	4.00000		
* 3 Acenaphthene-d8 IS	164	6.061	6.061	(1.000)	239739	4.00000		
* 4 Phenanthrene-d10 IS	188	7.487	7.487	(1.000)	453039	4.00000		
* 5 Chrysene-d12 IS	240	10.270	10.270	(1.000)	448291	4.00000		
* 6 Perylene-d12 IS	264	11.611	11.611	(1.000)	536491	4.00000		
$ 7 2-Fluorophenol	112	2.647	2.647	(0.732)	283088	8.00000	8.47	
$ 8 Phenol-d5	99	3.331	3.331	(0.922)	373889	8.00000	8.33	
$ 9 Nitrobenzene-d5	128	4.052	4.052	(0.876)	147080	8.00000	8.00	
$ 10 2-Fluorobiphenyl	172	5.500	5.500	(0.907)	759546	8.00000	8.13	
$ 11 2,4,6-Tribromophenol (S)	330	6.745	6.745	(0.901)	157064	8.00000	8.22	
$ 12 Terphenyl-d14	244	9.191	9.191	(0.895)	937845	8.00000	8.41	
13 N-Nitrosodimethylamine	74	1.621	1.621	(0.268)	213343	8.00000	8.45	
14 Pyridine	79	1.627	1.627	(0.450)	320952	8.00000	8.33	
15 Benzaldehyde	77	3.294	3.294	(0.911)	137983	8.00000	8.08	
16 Phenol	94	3.342	3.342	(0.925)	408806	8.00000	8.52	
17 Aniline	66	3.368	3.368	(0.932)	159491	8.00000	9.25	
18 bis(2-Chloroethyl)ether	63	3.411	3.411	(0.944)	241139	8.00000	8.48	
19 2-Chlorophenol	128	3.459	3.459	(0.957)	298896	8.00000	8.39	
20 1,3-Dichlorobenzene	146	3.571	3.571	(0.988)	353926	8.00000	8.42	
21 1,4-Dichlorobenzene	146	3.625	3.625	(1.003)	373337	8.00000	8.14	
22 Benzyl Alcohol	79	3.721	3.721	(1.030)	273555	8.00000	8.35	
23 o-Cresol	108	3.801	3.801	(1.052)	285876	8.00000	8.19	
24 1,2-Dichlorobenzene	146	3.748	3.748	(1.037)	344369	8.00000	8.32	
25 Bis(2-Chloroisopropyl)ethe	45	3.822	3.822	(1.058)	434909	8.00000	8.20	
26 m/p-cresol	108	3.929	3.929	(1.087)	612796	16.0000	16.7	
28 N-Nitroso-di-n-propylamine	70	3.940	3.940	(1.090)	274487	8.00000	8.33	
29 Acetophenone	105	3.935	3.935	(1.089)	460685	8.00000	8.29	
30 Hexachloroethane	117	4.009	4.009	(1.109)	142428	8.00000	8.29	
31 Nitrobenzene	77	4.068	4.068	(0.880)	365292	8.00000	8.00	
32 Isophorone	82	4.255	4.255	(0.920)	646648	8.00000	8.05	
33 2,4-Dimethylphenol	107	4.346	4.346	(0.940)	328233	8.00000	8.08	
34 2-Nitrophenol	139	4.314	4.314	(0.933)	164857	8.00000	7.91	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
35 Bis(2-Chloroethoxy)methane	93	4.415	4.415	(0.955)	363671	8.00000	8.03	
36 Benzoic Acid	105	4.431	4.431	(0.958)	177350	8.00000	7.79(T)	
37 2,4-Dichlorophenol	162	4.512	4.512	(0.976)	266881	8.00000	8.12	
38 2,6-Dichlorophenol	162	4.688	4.688	(1.297)	264111	8.00000	8.26	
39 1,2,4-Trichlorobenzene	180	4.576	4.576	(0.990)	320319	8.00000	8.09	
40 Naphthalene	128	4.640	4.640	(1.003)	888183	8.00000	8.07	
41 4-Chloroaniline	65	4.683	4.683	(1.013)	82989	8.00000	7.97	
42 Hexachlorobutadiene	225	4.736	4.736	(1.024)	233110	8.00000	8.11	
43 Caprolactam	55	4.971	4.971	(1.075)	130927	8.00000	8.27	
44 4-Chloro-3-methylphenol	107	5.078	5.078	(1.098)	253033	8.00000	8.05	
45 2-Methylnaphthalene	142	5.201	5.201	(1.125)	625853	8.00000	8.09	
46 1-Methylnaphthalene	142	5.286	5.286	(1.143)	565605	8.00000	8.10	
47 Hexachlorocyclopentadiene	237	5.329	5.329	(0.879)	259490	8.00000	8.82	
48 1,2,4,5-Tetrachlorobenzene	216	5.340	5.340	(1.477)	371899	8.00000	8.26	
49 2,4,6-Trichlorophenol	196	5.436	5.436	(0.897)	216545	8.00000	8.40	
50 2,4,5-Trichlorophenol	196	5.468	5.468	(0.902)	212893	8.00000	8.43	
51 Biphenyl	154	5.585	5.585	(0.922)	786983	8.00000	8.22	
52 2-Chloronaphthalene	164	5.607	5.607	(0.925)	192032	8.00000	8.25	
53 2-Nitroaniline	138	5.687	5.687	(0.938)	184737	8.00000	8.47	
54 Dimethylphthalate	163	5.836	5.836	(0.963)	691157	8.00000	8.22	
55 2,6-Dinitrotoluene	165	5.884	5.884	(0.971)	158972	8.00000	8.38	
56 Acenaphthylene	152	5.949	5.949	(0.981)	986812	8.00000	8.21	
57 3-Nitroaniline	65	6.023	6.023	(0.994)	131133	8.00000	8.03	
58 Acenaphthene	153	6.087	6.087	(1.004)	634880	8.00000	8.21	
59 2,4-Dinitrophenol	184	6.114	6.114	(1.009)	77409	8.00000	8.12	
60 Dibenzofuran	168	6.232	6.232	(1.028)	854653	8.00000	8.21	
61 4-Nitrophenol	109	6.173	6.173	(1.019)	114651	8.00000	8.95	
62 2,4-Dinitrotoluene	165	6.221	6.221	(1.026)	208120	8.00000	8.51	
63 2,3,4,6-Tetrachlorophenol	232	6.333	6.333	(1.752)	201861	8.00000	8.71	
64 Diethylphthalate	149	6.413	6.413	(1.058)	678684	8.00000	8.18	
65 4-Chlorophenyl-phenylether	204	6.515	6.515	(1.075)	389154	8.00000	8.31	
66 Fluorene	166	6.520	6.520	(1.076)	734974	8.00000	8.24	
67 4-Nitroaniline	108	6.536	6.536	(1.078)	69160	8.00000	8.05(Q)	
68 4,6-Dinitro-2-methylphenol	198	6.563	6.563	(0.877)	122286	8.00000	8.81	
69 N-Nitrosodiphenylamine	169	6.622	6.622	(0.884)	577393	8.00000	7.86	
70 Azobenzene	77	6.659	6.659	(0.889)	743692	8.00000	7.88	
71 1,2-Diphenylhydrazine	77	6.659	6.659	(0.889)	743692	8.00000	7.89	
72 4-Bromophenyl-phenylether	248	7.001	7.001	(0.935)	265784	8.00000	7.98	
73 Hexachlorobenzene	284	7.070	7.070	(0.944)	306312	8.00000	7.79	
74 Atrazine	200	7.177	7.177	(0.959)	108595	8.00000	7.79	
75 Pentachlorophenol	266	7.284	7.284	(0.973)	151585	8.00000	8.53	
76 Phenanthrene	178	7.514	7.514	(1.004)	988491	8.00000	7.94	
77 Anthracene	178	7.567	7.567	(1.011)	982595	8.00000	8.18	
78 Carbazole	167	7.744	7.744	(1.034)	823498	8.00000	8.38(M)	LT
79 Di-n-butylphthalate	149	8.123	8.123	(1.085)	1117251	8.00000	7.99	
80 Fluoranthene	202	8.785	8.785	(1.173)	1108014	8.00000	8.16	
81 Pyrene	202	9.020	9.020	(0.878)	1123168	8.00000	8.24	
82 Butylbenzylphthalate	149	9.709	9.709	(0.945)	434743	8.00000	8.23	
83 3,3'-Dichlorobenzidine	252	10.238	10.238	(0.997)	332880	8.00000	8.08	
84 bis(2-Ethylhexyl)phthalate	149	10.297	10.297	(1.003)	668113	8.00000	8.15	
85 Benzo[a]anthracene	228	10.260	10.260	(0.999)	994415	8.00000	7.95	
86 Chrysene	228	10.297	10.297	(1.003)	925227	8.00000	8.00	
87 Di-n-octylphthalate	149	10.922	10.922	(1.063)	994150	8.00000	8.00	
88 Benzo[b]fluoranthene	252	11.280	11.280	(0.971)	1034369	8.00000	7.32	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
89 Benzo[k]fluoranthene	252	11.307	11.307	(0.974)	1215843	8.00000	8.29	
90 Benzo[a]pyrene	252	11.569	11.569	(0.996)	1164690	8.00000	7.95	
91 Dibenz[a,h]anthracene	278	12.482	12.482	(1.075)	1292998	8.00000	8.25	
92 Indeno[1,2,3-cd]pyrene	276	12.477	12.477	(1.075)	1550553	8.00000	8.34	
93 Benzo[g,h,i]perylene	276	12.706	12.706	(1.094)	1337650	8.00000	8.59	

QC Flag Legend

T - Target compound detected outside RT window.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m11008y4.d
Lab Smp Id: 8PPM TCL
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Misc Info: V-55-4

Calibration Date: 08-OCT-2014
Calibration Time: 12:40
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	108994	54497	217988	108462	-0.49
2 Naphthalene-d8 I	394602	197301	789204	402819	2.08
3 Acenaphthene-d8	238890	119445	477780	239739	0.36
4 Phenanthrene-d10	447551	223776	895102	453039	1.23
5 Chrysene-d12 IS	437005	218503	874010	448291	2.58
6 Perylene-d12 IS	536492	268246	1072984	536491	-0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.61	3.11	4.11	3.61	-0.01
2 Naphthalene-d8 I	4.62	4.12	5.12	4.62	-0.01
3 Acenaphthene-d8	6.06	5.56	6.56	6.06	-0.00
4 Phenanthrene-d10	7.49	6.99	7.99	7.49	-0.00
5 Chrysene-d12 IS	10.27	9.77	10.77	10.27	-0.00
6 Perylene-d12 IS	11.61	11.11	12.11	11.61	-0.00

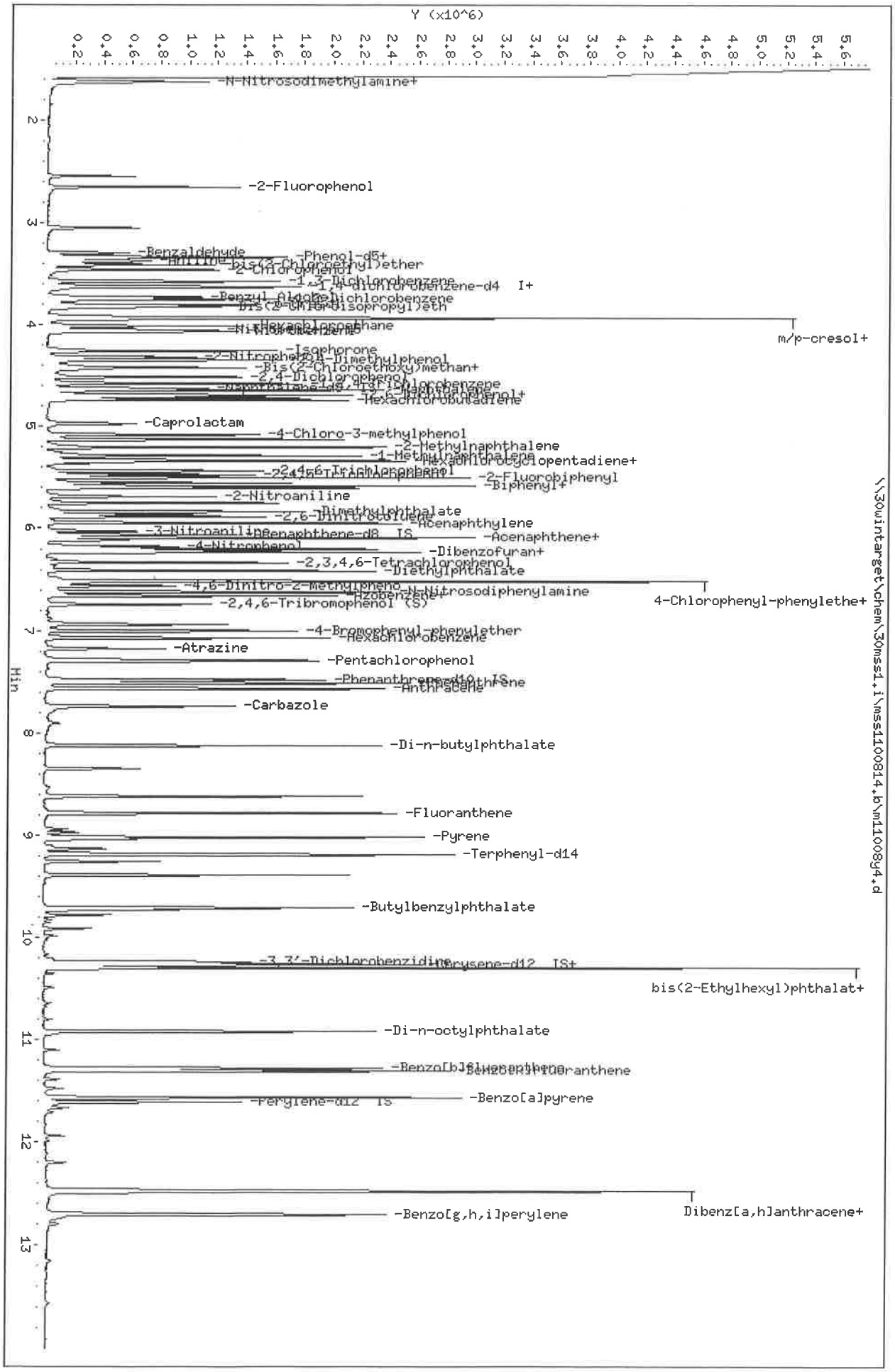
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y4.d
Date : 08-OCT-2014 12:40
Client ID:
Sample Info: 8PPM TCL

Instrument: 30mss1.i

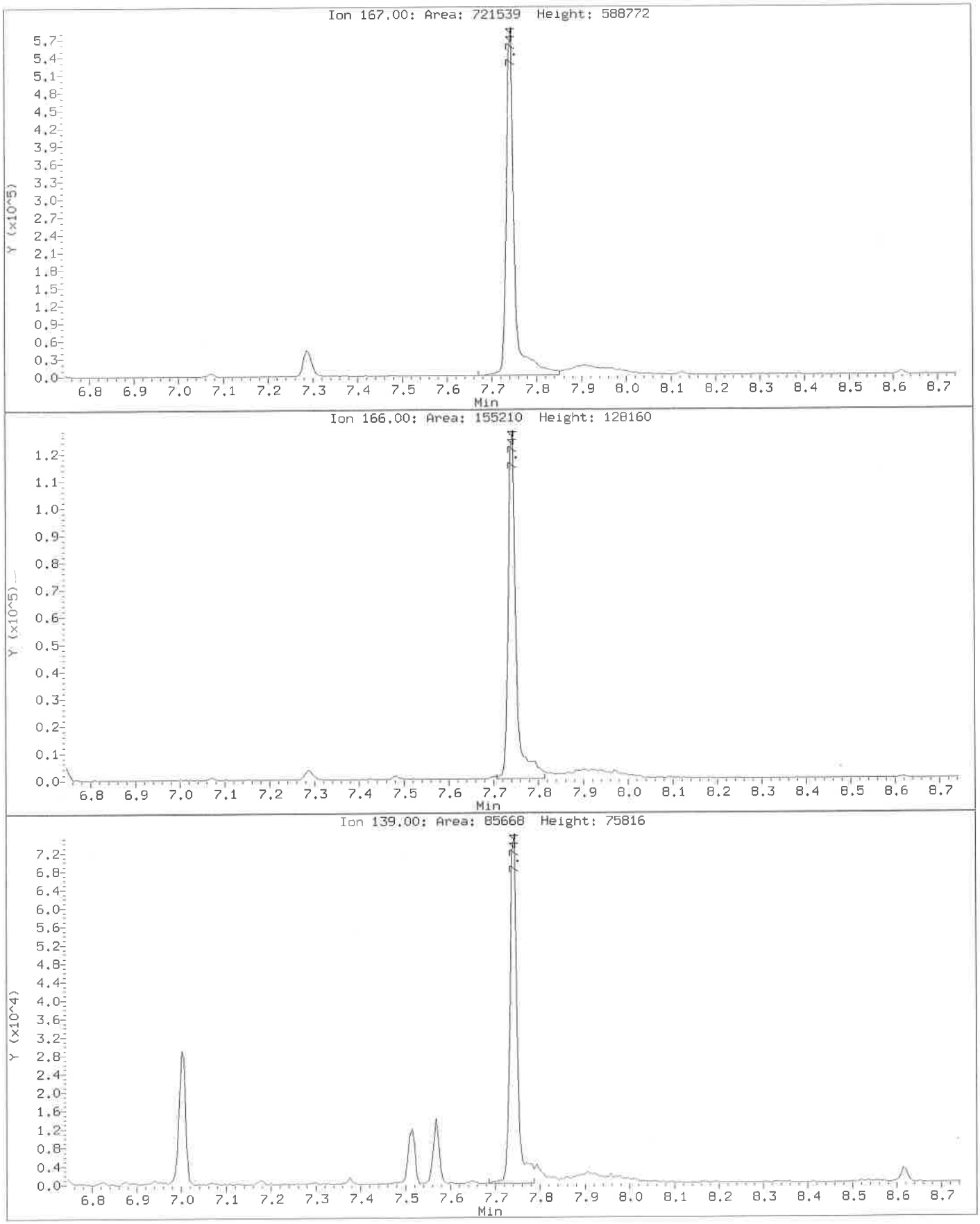
Column phase: RTX-5MS

Operator: DJL
Column diameter: 0.18



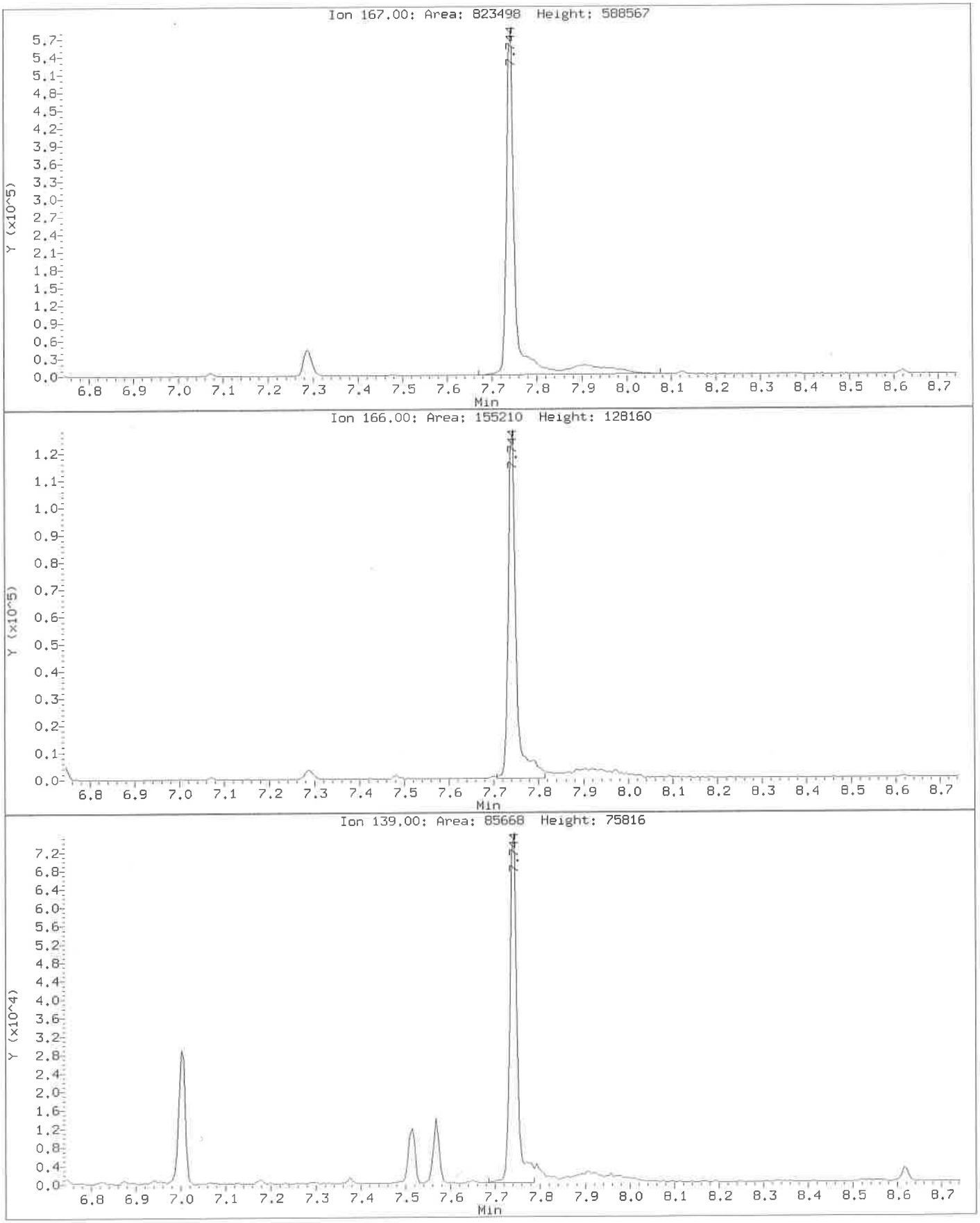
Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y4origdata.d
Injection Date: 08-OCT-2014 12:40
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y4.d
Injection Date: 08-OCT-2014 12:40
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



Pace Analytical Services Inc.

Data file : \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y5.d
Lab Smp Id: 12PPM TCL
Inj Date : 08-OCT-2014 13:00
Operator : DJL Inst ID: 30mss1.i
Smp Info : 12PPM TCL
Misc Info : V-55-5
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Meth Date : 14-Oct-2014 16:48 30mss1.i Quant Type: ISTD
Cal Date : 08-OCT-2014 12:40 Cal File: m11008y4.d
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30DCAVALIER2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.615	3.615	(1.000)	112400	4.00000		
* 2 Naphthalene-d8 IS	136	4.624	4.624	(1.000)	399907	4.00000		
* 3 Acenaphthene-d8 IS	164	6.061	6.061	(1.000)	244974	4.00000		
* 4 Phenanthrene-d10 IS	188	7.488	7.488	(1.000)	433142	4.00000		
* 5 Chrysene-d12 IS	240	10.271	10.271	(1.000)	404757	4.00000		
* 6 Perylene-d12 IS	264	11.612	11.612	(1.000)	541550	4.00000		
$ 7 2-Fluorophenol	112	2.648	2.648	(0.733)	408741	12.0000	11.8	
$ 8 Phenol-d5	99	3.331	3.331	(0.922)	548164	12.0000	11.8	
$ 9 Nitrobenzene-d5	128	4.053	4.053	(0.876)	216622	12.0000	11.9	
$ 10 2-Fluorobiphenyl	172	5.500	5.500	(0.907)	1097989	12.0000	11.5	
$ 11 2,4,6-Tribromophenol (S)	330	6.750	6.750	(0.902)	220692	12.0000	12.1	
$ 12 Terphenyl-d14	244	9.192	9.192	(0.895)	1219939	12.0000	12.1	
13 N-Nitrosodimethylamine	74	1.622	1.622	(0.268)	315881	12.0000	12.2	
14 Pyridine	79	1.627	1.627	(0.450)	502286	12.0000	12.6	
15 Benzaldehyde	77	3.294	3.294	(0.911)	199899	12.0000	11.3	
16 Phenol	94	3.342	3.342	(0.925)	548374	12.0000	11.0	
17 Aniline	66	3.374	3.374	(0.934)	187299	12.0000	10.5(Q)	
18 bis(2-Chloroethyl)ether	63	3.412	3.412	(0.944)	345168	12.0000	11.7	
19 2-Chlorophenol	128	3.460	3.460	(0.957)	428077	12.0000	11.6	
20 1,3-Dichlorobenzene	146	3.572	3.572	(0.988)	511315	12.0000	11.7	
21 1,4-Dichlorobenzene	146	3.625	3.625	(1.003)	542084	12.0000	11.4	
22 Benzyl Alcohol	79	3.727	3.727	(1.031)	399249	12.0000	11.8	
23 o-Cresol	108	3.807	3.807	(1.053)	421533	12.0000	11.6	
24 1,2-Dichlorobenzene	146	3.748	3.748	(1.037)	502285	12.0000	11.7	
25 Bis(2-Chloroisopropyl)ethe	45	3.823	3.823	(1.058)	639892	12.0000	11.6	
26 m/p-cresol	108	3.935	3.935	(1.089)	925617	24.0000	24.3	
28 N-Nitroso-di-n-propylamine	70	3.946	3.946	(1.092)	406816	12.0000	11.9	
29 Acetophenone	105	3.935	3.935	(1.089)	690441	12.0000	12.0	
30 Hexachloroethane	117	4.010	4.010	(1.109)	210455	12.0000	11.8	
31 Nitrobenzene	77	4.069	4.069	(0.880)	530691	12.0000	11.7	
32 Isophorone	82	4.261	4.261	(0.921)	945971	12.0000	11.9	
33 2,4-Dimethylphenol	107	4.346	4.346	(0.940)	482138	12.0000	12.0	
34 2-Nitrophenol	139	4.320	4.320	(0.934)	237615	12.0000	11.5	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
35 Bis(2-Chloroethoxy)methane	93	4.421	4.421	(0.956)	528086	12.0000	11.7	
36 Benzoic Acid	105	4.448	4.448	(0.962)	282752	12.0000	11.9	
37 2,4-Dichlorophenol	162	4.512	4.512	(0.976)	387873	12.0000	11.9	
38 2,6-Dichlorophenol	162	4.688	4.688	(1.297)	382738	12.0000	11.5	
39 1,2,4-Trichlorobenzene	180	4.576	4.576	(0.990)	459633	12.0000	11.7	
40 Naphthalene	128	4.640	4.640	(1.003)	1279360	12.0000	11.7	
41 4-Chloroaniline	65	4.688	4.688	(1.014)	107909	12.0000	12.0	
42 Hexachlorobutadiene	225	4.736	4.736	(1.024)	336216	12.0000	11.8	
43 Caprolactam	55	4.982	4.982	(1.077)	193947	12.0000	12.3	
44 4-Chloro-3-methylphenol	107	5.084	5.084	(1.099)	375222	12.0000	12.0	
45 2-Methylnaphthalene	142	5.207	5.207	(1.126)	906435	12.0000	11.8	
46 1-Methylnaphthalene	142	5.287	5.287	(1.143)	818511	12.0000	11.8	
47 Hexachlorocyclopentadiene	237	5.329	5.329	(0.879)	389355	12.0000	12.9	
48 1,2,4,5-Tetrachlorobenzene	216	5.340	5.340	(1.477)	538733	12.0000	11.6	
49 2,4,6-Trichlorophenol	196	5.436	5.436	(0.897)	310242	12.0000	11.8	
50 2,4,5-Trichlorophenol	196	5.474	5.474	(0.903)	307523	12.0000	11.9	
51 Biphenyl	154	5.586	5.586	(0.922)	1141012	12.0000	11.6	
52 2-Chloronaphthalene	164	5.607	5.607	(0.925)	274004	12.0000	11.5(Q)	
53 2-Nitroaniline	138	5.693	5.693	(0.939)	268248	12.0000	12.0	
54 Dimethylphthalate	163	5.837	5.837	(0.963)	992261	12.0000	11.5	
55 2,6-Dinitrotoluene	165	5.890	5.890	(0.972)	229175	12.0000	11.8	
56 Acenaphthylene	152	5.949	5.949	(0.981)	1435189	12.0000	11.7	
57 3-Nitroaniline	65	6.029	6.029	(0.995)	152984	12.0000	10.5(M)	BA
58 Acenaphthene	153	6.093	6.093	(1.005)	926227	12.0000	11.7	
59 2,4-Dinitrophenol	184	6.115	6.115	(1.009)	119495	12.0000	12.0	
60 Dibenzofuran	168	6.232	6.232	(1.028)	1232371	12.0000	11.6	
61 4-Nitrophenol	109	6.173	6.173	(1.019)	156350	12.0000	11.9	
62 2,4-Dinitrotoluene	165	6.222	6.222	(1.026)	294464	12.0000	11.8	
63 2,3,4,6-Tetrachlorophenol	232	6.334	6.334	(1.752)	279814	12.0000	11.6	
64 Diethylphthalate	149	6.414	6.414	(1.058)	992534	12.0000	11.7	
65 4-Chlorophenyl-phenylether	204	6.515	6.515	(1.075)	556601	12.0000	11.6	
66 Fluorene	166	6.521	6.521	(1.076)	1074927	12.0000	11.8	
67 4-Nitroaniline	108	6.537	6.537	(1.078)	88339	12.0000	11.3(QM)	LT
68 4,6-Dinitro-2-methylphenol	198	6.569	6.569	(0.877)	172125	12.0000	13.0	
69 N-Nitrosodiphenylamine	169	6.628	6.628	(0.885)	816706	12.0000	11.6	
70 Azobenzene	77	6.665	6.665	(0.890)	1067776	12.0000	11.8	
71 1,2-Diphenylhydrazine	77	6.665	6.665	(0.890)	1067776	12.0000	11.8	
72 4-Bromophenyl-phenylether	248	7.007	7.007	(0.936)	376614	12.0000	11.8	
73 Hexachlorobenzene	284	7.076	7.076	(0.945)	436166	12.0000	11.6	
74 Atrazine	200	7.183	7.183	(0.959)	153431	12.0000	11.5	
75 Pentachlorophenol	266	7.290	7.290	(0.974)	209331	12.0000	11.9	
76 Phenanthrene	178	7.520	7.520	(1.004)	1368008	12.0000	11.5	
77 Anthracene	178	7.573	7.573	(1.011)	1321289	12.0000	11.5	
78 Carbazole	167	7.744	7.744	(1.034)	1046985	12.0000	11.1(M)	LT
79 Di-n-butylphthalate	149	8.129	8.129	(1.086)	1606632	12.0000	12.0	
80 Fluoranthene	202	8.786	8.786	(1.173)	1467983	12.0000	11.3	
81 Pyrene	202	9.026	9.026	(0.879)	1514854	12.0000	12.3	
82 Butylbenzylphthalate	149	9.710	9.710	(0.945)	609300	12.0000	12.8	
83 3,3'-Dichlorobenzidine	252	10.244	10.244	(0.997)	417866	12.0000	11.2	
84 bis(2-Ethylhexyl)phthalate	149	10.298	10.298	(1.003)	973775	12.0000	13.2	
85 Benzo[a]anthracene	228	10.260	10.260	(0.999)	1303599	12.0000	11.5	
86 Chrysene	228	10.298	10.298	(1.003)	1220800	12.0000	11.7	
87 Di-n-octylphthalate	149	10.923	10.923	(1.063)	1403023	12.0000	12.5	
88 Benzo[b]fluoranthene	252	11.286	11.286	(0.972)	1583840	12.0000	11.1	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
89 Benzo[k]fluoranthene	252	11.313	11.313	(0.974)	1656611	12.0000	11.2	
90 Benzo[a]pyrene	252	11.569	11.569	(0.996)	1708383	12.0000	11.5	
91 Dibenz[a,h]anthracene	278	12.488	12.488	(1.075)	2009570	12.0000	12.7	
92 Indeno[1,2,3-cd]pyrene	276	12.483	12.483	(1.075)	2313232	12.0000	12.3	
93 Benzo[g,h,i]perylene	276	12.718	12.718	(1.095)	1960764	12.0000	12.5	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m11008y5.d
Lab Smp Id: 12PPM TCL
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Misc Info: V-55-5

Calibration Date: 08-OCT-2014
Calibration Time: 12:40

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

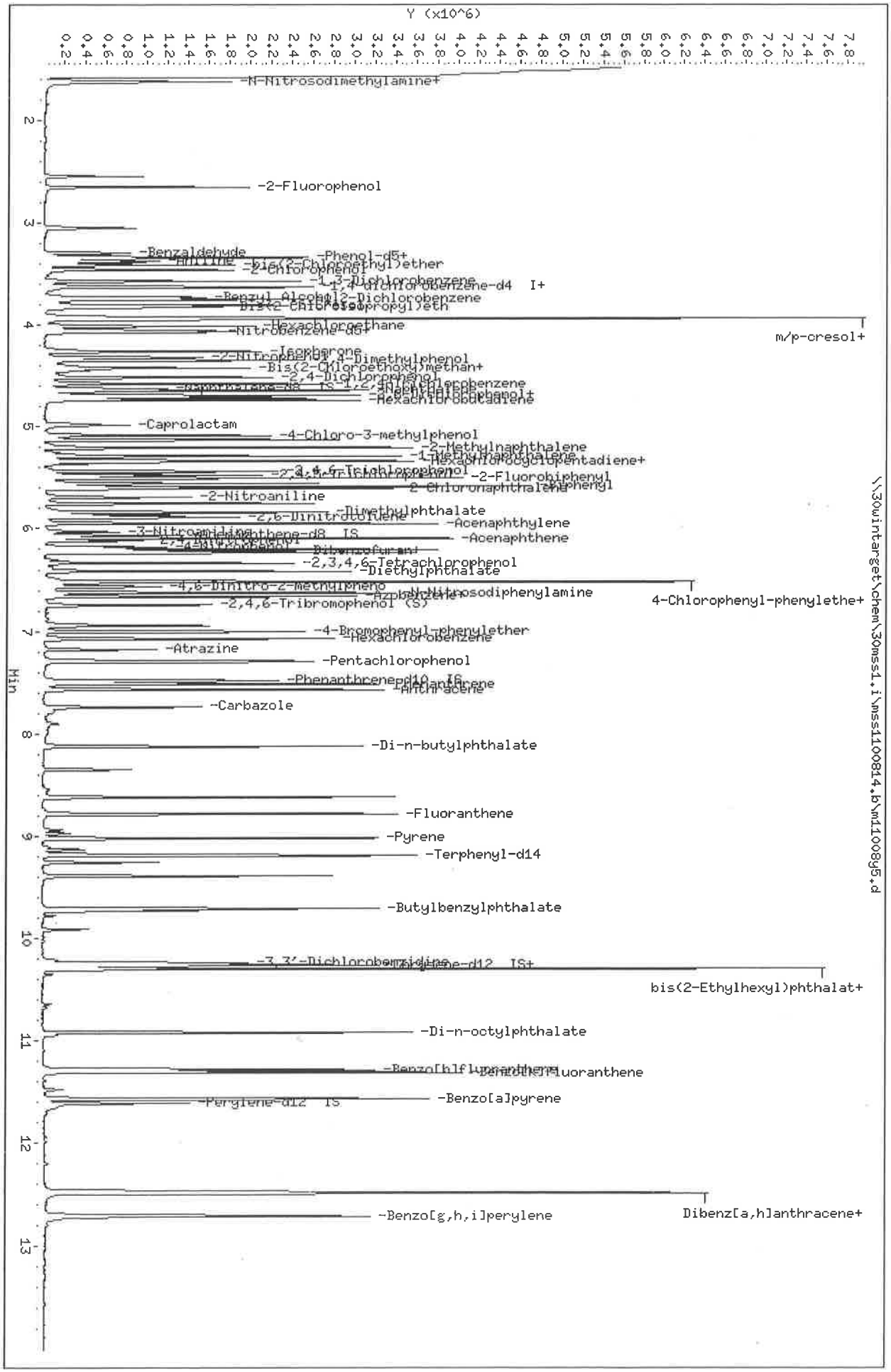
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	108994	54497	217988	112400	3.12
2 Naphthalene-d8 I	394602	197301	789204	399907	1.34
3 Acenaphthene-d8	238890	119445	477780	244974	2.55
4 Phenanthrene-d10	447551	223776	895102	433142	-3.22
5 Chrysene-d12 IS	437005	218503	874010	404757	-7.38
6 Perylene-d12 IS	536492	268246	1072984	541550	0.94

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.61	3.11	4.11	3.62	0.01
2 Naphthalene-d8 I	4.62	4.12	5.12	4.62	0.01
3 Acenaphthene-d8	6.06	5.56	6.56	6.06	0.00
4 Phenanthrene-d10	7.49	6.99	7.99	7.49	0.00
5 Chrysene-d12 IS	10.27	9.77	10.77	10.27	0.00
6 Perylene-d12 IS	11.61	11.11	12.11	11.61	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m1008y5.d
Date : 08-OCT-2014 13:00
Client ID:
Sample Info: 12PPM TCL
Column phase: RTX-5MS

Instrument: 30mss1.i
Operator: DJL
Column diameter: 0.18



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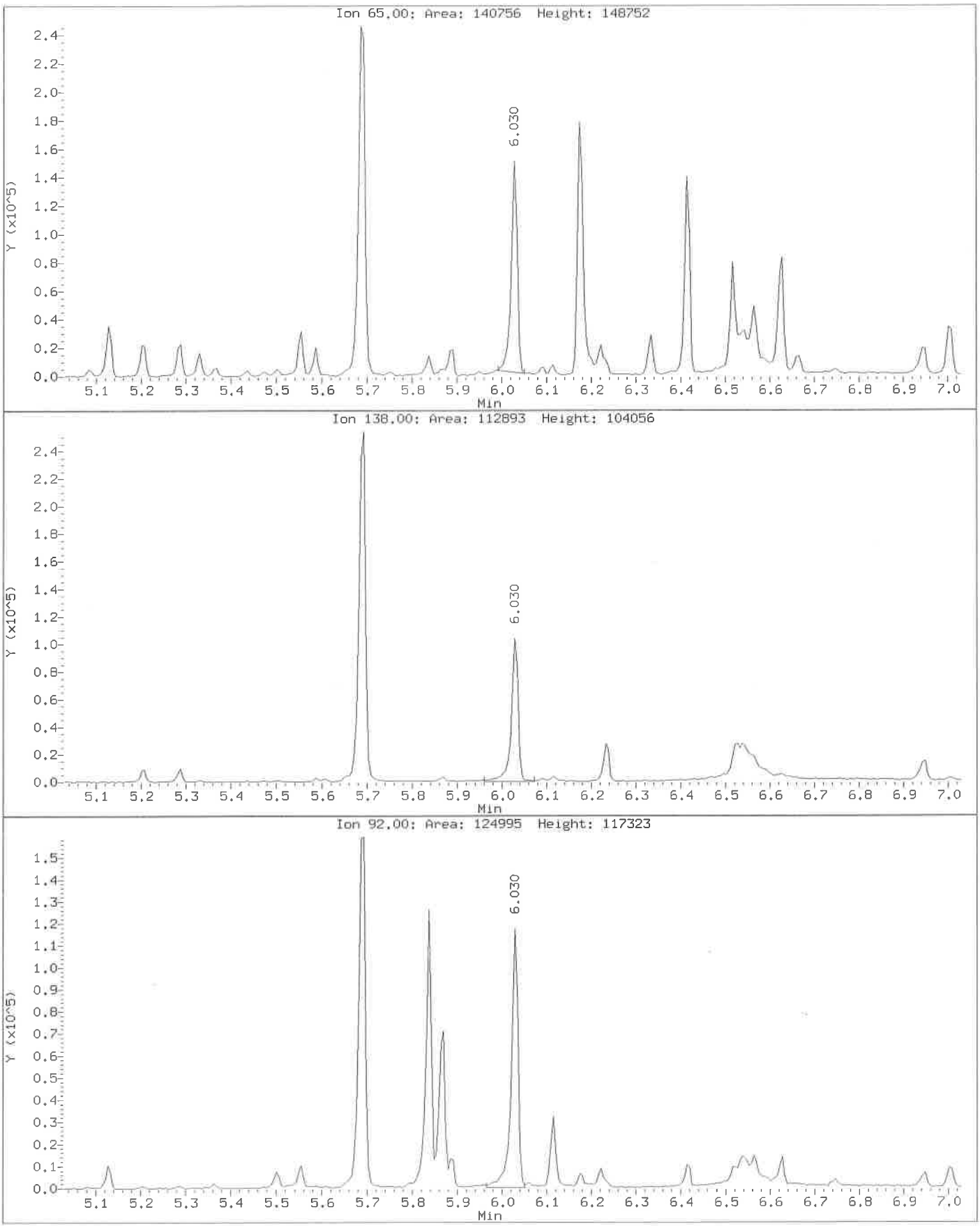
Injection Date: 08-OCT-2014 13:00
Instrument: 30mss1.i
Client Sample ID:

Compound: 3-Nitroaniline
CAS Number: 99-09-2



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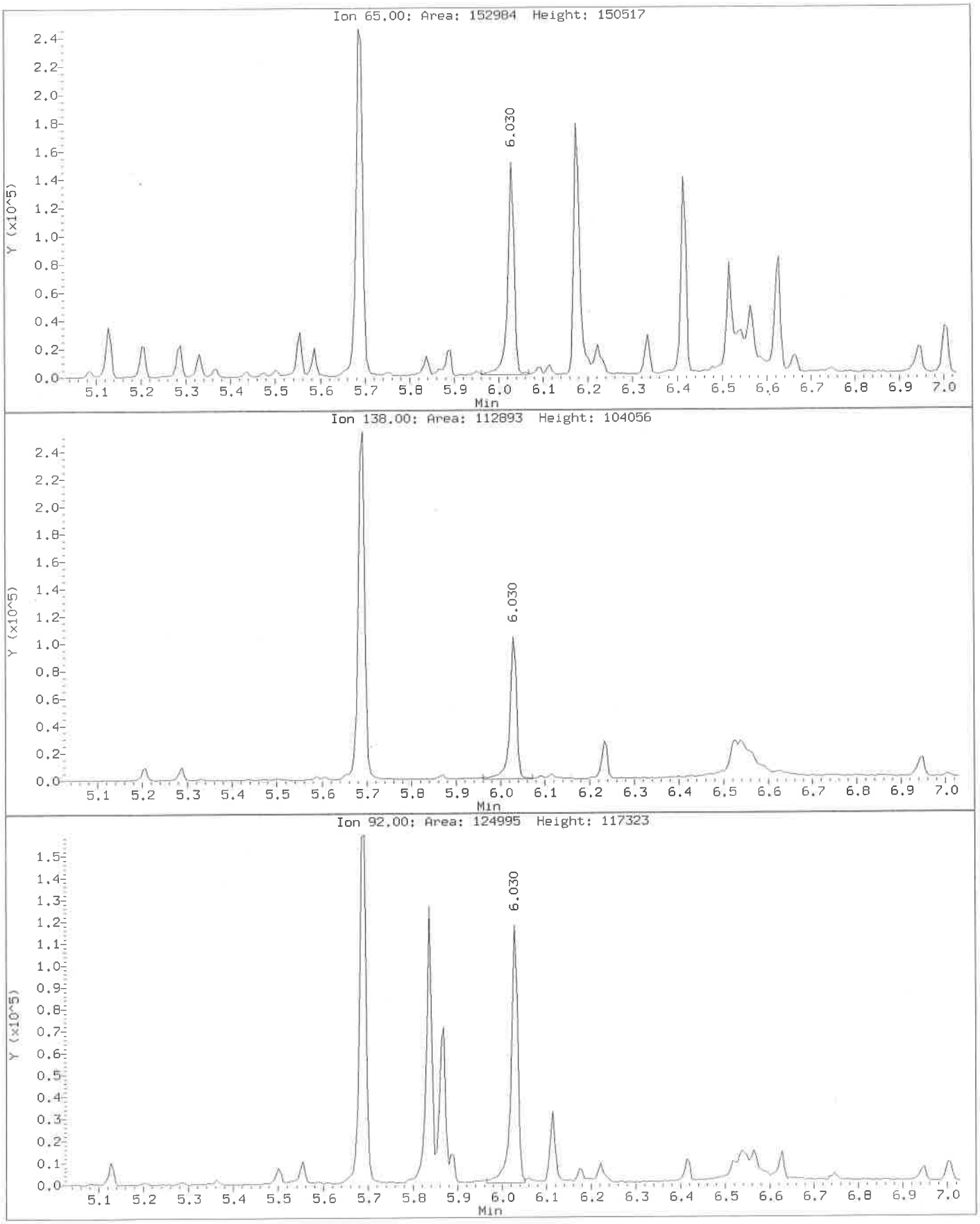
Instrument: 30mss1.i
Client Sample ID:

Compound: 3-Nitroaniline
CAS Number: 99-09-2



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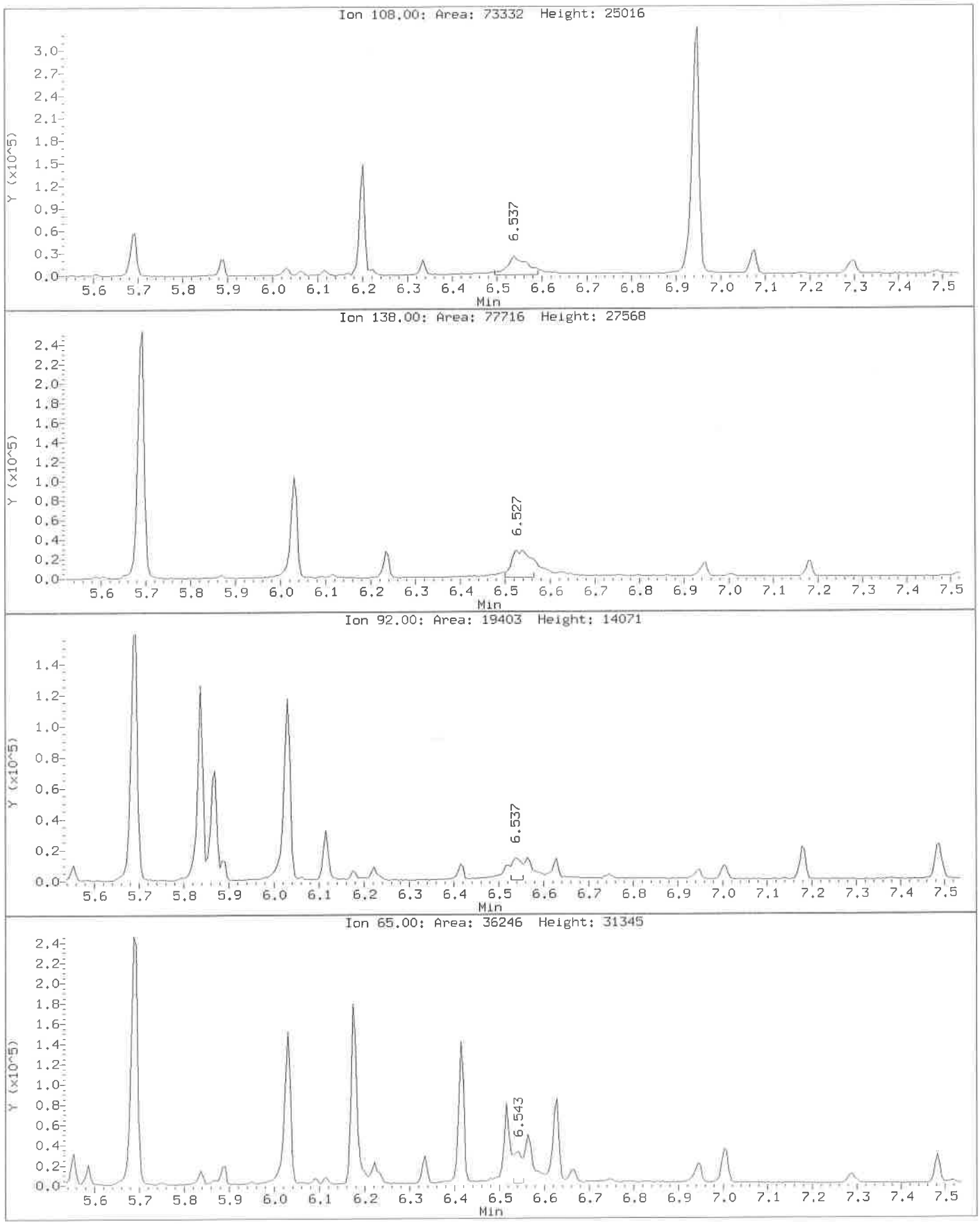
Injection Date: 08-OCT-2014 13:00
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6



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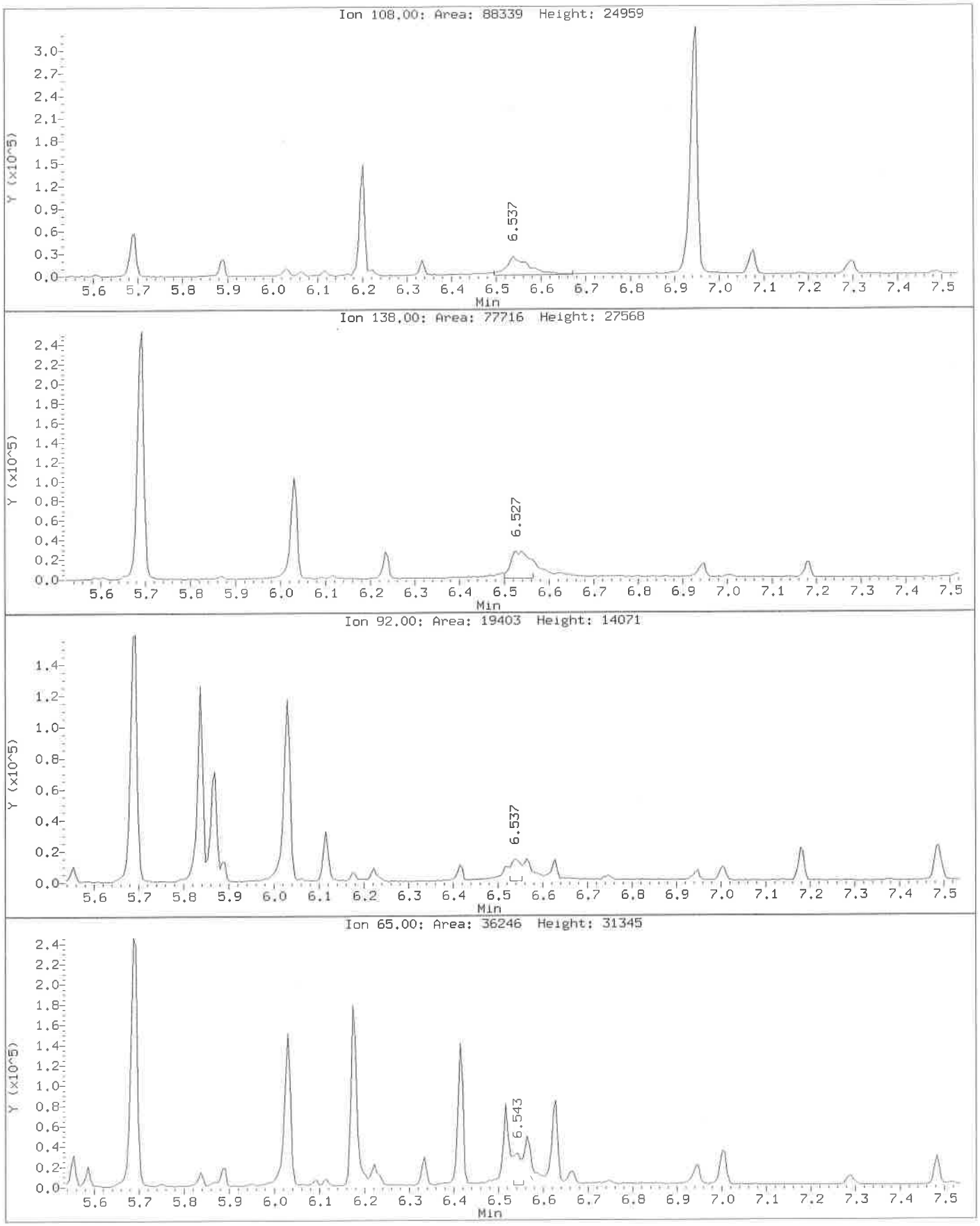
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6



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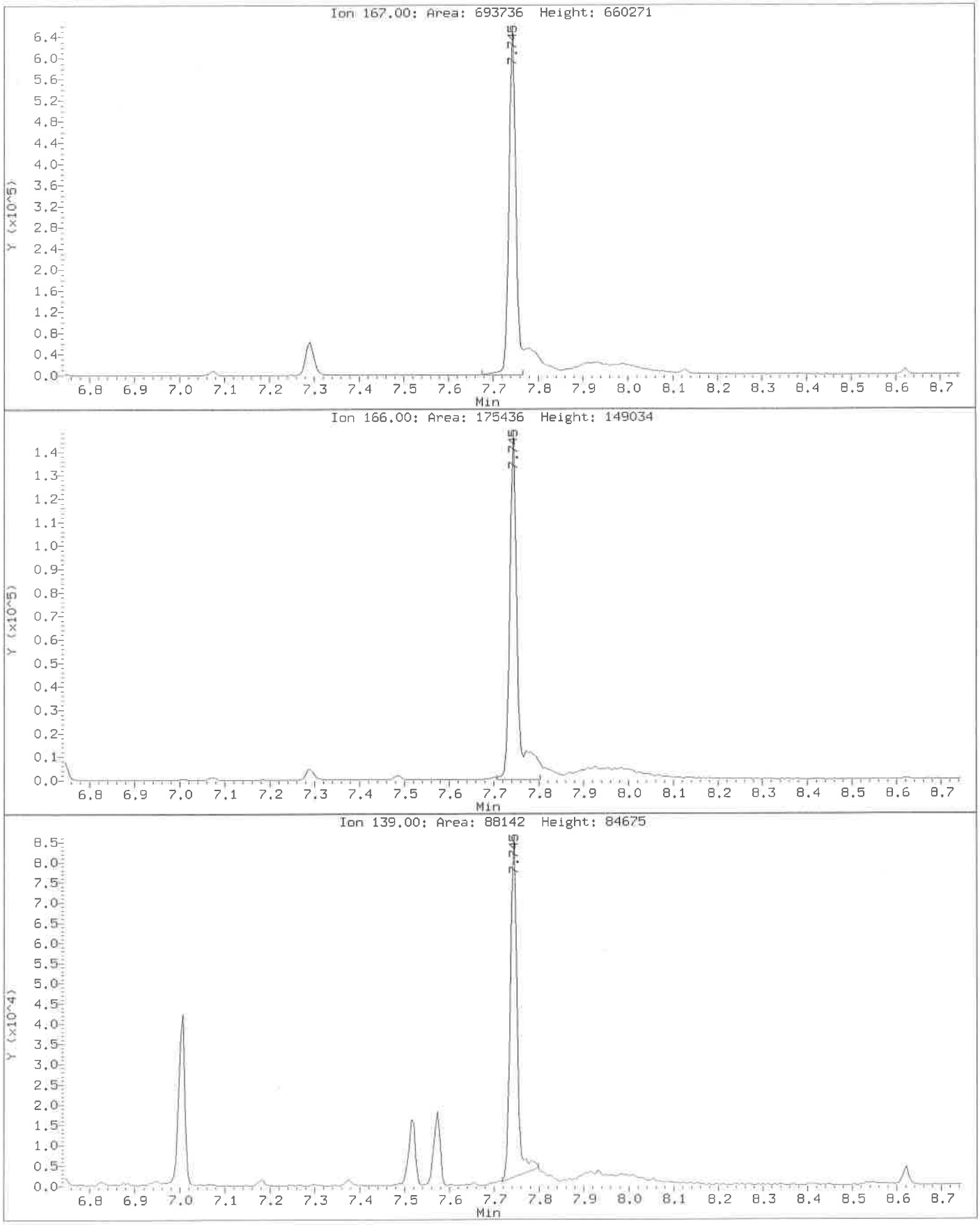
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



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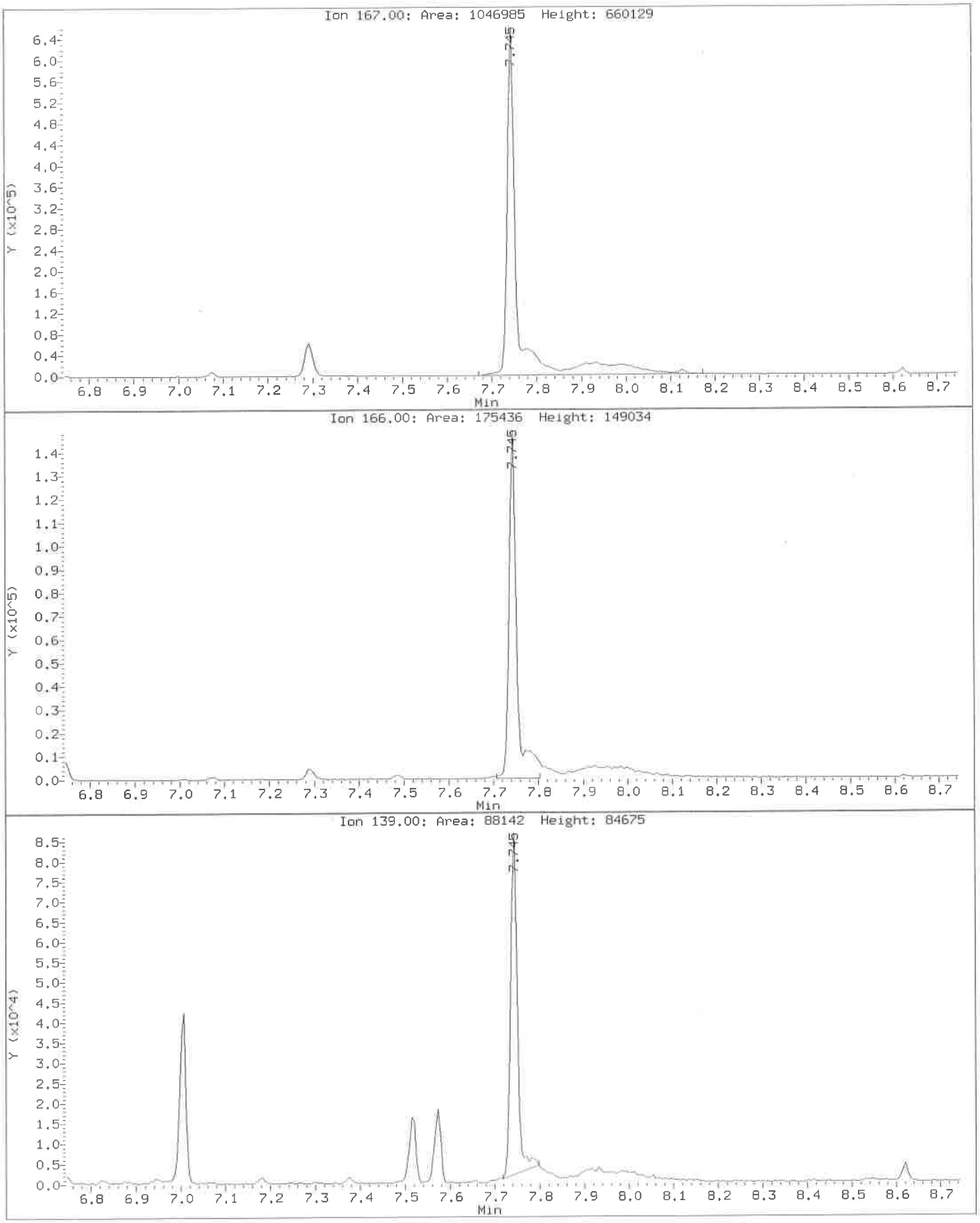
Injection Date: 08-OCT-2014 13:00
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



Pace Analytical Services Inc.

Data file : \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y6.d
Lab Smp Id: 16PPM TCL
Inj Date : 08-OCT-2014 13:20
Operator : DJL Inst ID: 30mss1.i
Smp Info : 16PPM TCL
Misc Info : V-55-6
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Meth Date : 14-Oct-2014 16:48 30mss1.i Quant Type: ISTD
Cal Date : 08-OCT-2014 13:00 Cal File: m11008y5.d
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30DCAVALIER2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.616	3.616	(1.000)	107599	4.00000		
* 2 Naphthalene-d8 IS	136	4.625	4.625	(1.000)	399055	4.00000		
* 3 Acenaphthene-d8 IS	164	6.062	6.062	(1.000)	242137	4.00000		
* 4 Phenanthrene-d10 IS	188	7.489	7.489	(1.000)	415934	4.00000		
* 5 Chrysene-d12 IS	240	10.272	10.272	(1.000)	423070	4.00000		
* 6 Perylene-d12 IS	264	11.618	11.618	(1.000)	567954	4.00000		
$ 7 2-Fluorophenol	112	2.649	2.649	(0.733)	490010	16.0000	14.8	
$ 8 Phenol-d5	99	3.338	3.338	(0.923)	659657	16.0000	14.8	
$ 9 Nitrobenzene-d5	128	4.059	4.059	(0.878)	262895	16.0000	14.4	
$ 10 2-Fluorobiphenyl	172	5.501	5.501	(0.907)	1337813	16.0000	14.2	
$ 11 2,4,6-Tribromophenol (S)	330	6.751	6.751	(0.902)	257841	16.0000	14.7	
$ 12 Terphenyl-d14	244	9.193	9.193	(0.895)	1512128	16.0000	14.4	
13 N-Nitrosodimethylamine	74	1.623	1.623	(0.268)	373633	16.0000	14.6	
14 Pyridine	79	1.623	1.623	(0.449)	595002	16.0000	15.6	
15 Benzaldehyde	77	3.295	3.295	(0.911)	255566	16.0000	15.1	
16 Phenol	94	3.343	3.343	(0.925)	718321	16.0000	15.1	
17 Aniline	66	3.375	3.375	(0.934)	231265	16.0000	13.5(Q)	
18 bis(2-Chloroethyl)ether	63	3.413	3.413	(0.944)	417073	16.0000	14.8	
19 2-Chlorophenol	128	3.461	3.461	(0.957)	508099	16.0000	14.4	
20 1,3-Dichlorobenzene	146	3.573	3.573	(0.988)	600574	16.0000	14.4	
21 1,4-Dichlorobenzene	146	3.632	3.632	(1.004)	661675	16.0000	14.6	
22 Benzyl Alcohol	79	3.728	3.728	(1.031)	478962	16.0000	14.7	
23 o-Cresol	108	3.808	3.808	(1.053)	519060	16.0000	15.0	
24 1,2-Dichlorobenzene	146	3.749	3.749	(1.037)	607252	16.0000	14.8	
25 Bis(2-Chloroisopropyl)ethe	45	3.824	3.824	(1.058)	765109	16.0000	14.5	
26 m/p-cresol	108	3.936	3.936	(1.089)	1111394	32.0000	30.5	
28 N-Nitroso-di-n-propylamine	70	3.947	3.947	(1.092)	502245	16.0000	15.4	
29 Acetophenone	105	3.936	3.936	(1.089)	840618	16.0000	15.2	
30 Hexachloroethane	117	4.011	4.011	(1.109)	254321	16.0000	14.9	
31 Nitrobenzene	77	4.070	4.070	(0.880)	644408	16.0000	14.2	
32 Isophorone	82	4.262	4.262	(0.921)	1144193	16.0000	14.4	
33 2,4-Dimethylphenol	107	4.347	4.347	(0.940)	584953	16.0000	14.5	
34 2-Nitrophenol	139	4.321	4.321	(0.934)	295118	16.0000	14.3	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
35 Bis(2-Chloroethoxy)methane	93	4.422	4.422	(0.956)	641263	16.0000	14.3	
36 Benzoic Acid	105	4.454	4.454	(0.963)	361060	16.0000	14.9	
37 2,4-Dichlorophenol	162	4.513	4.513	(0.976)	464836	16.0000	14.3	
38 2,6-Dichlorophenol	162	4.689	4.689	(1.297)	466846	16.0000	14.7	
39 1,2,4-Trichlorobenzene	180	4.577	4.577	(0.990)	565351	16.0000	14.4	
40 Naphthalene	128	4.647	4.647	(1.005)	1557098	16.0000	14.3	
41 4-Chloroaniline	65	4.689	4.689	(1.014)	121317	16.0000	16.0	
42 Hexachlorobutadiene	225	4.737	4.737	(1.024)	405937	16.0000	14.2	
43 Caprolactam	55	4.988	4.988	(1.079)	222530	16.0000	14.2	
44 4-Chloro-3-methylphenol	107	5.085	5.085	(1.099)	450104	16.0000	14.5	
45 2-Methylnaphthalene	142	5.207	5.207	(1.126)	1098479	16.0000	14.3	
46 1-Methylnaphthalene	142	5.288	5.288	(1.143)	993344	16.0000	14.4	
47 Hexachlorocyclopentadiene	237	5.330	5.330	(0.879)	469044	16.0000	15.8	
48 1,2,4,5-Tetrachlorobenzene	216	5.341	5.341	(1.477)	654534	16.0000	14.7	
49 2,4,6-Trichlorophenol	196	5.437	5.437	(0.897)	377677	16.0000	14.5	
50 2,4,5-Trichlorophenol	196	5.475	5.475	(0.903)	362135	16.0000	14.2	
51 Biphenyl	154	5.587	5.587	(0.922)	1356048	16.0000	14.0	
52 2-Chloronaphthalene	164	5.608	5.608	(0.925)	332257	16.0000	14.1	
53 2-Nitroaniline	138	5.694	5.694	(0.939)	312979	16.0000	14.2	
54 Dimethylphthalate	163	5.838	5.838	(0.963)	1207861	16.0000	14.2	
55 2,6-Dinitrotoluene	165	5.891	5.891	(0.972)	268205	16.0000	14.0	
56 Acenaphthylene	152	5.950	5.950	(0.981)	1717706	16.0000	14.2	
58 Acenaphthene	153	6.094	6.094	(1.005)	1112265	16.0000	14.2	
59 2,4-Dinitrophenol	184	6.116	6.116	(1.009)	140585	16.0000	14.1	
60 Dibenzofuran	168	6.233	6.233	(1.028)	1409921	16.0000	13.4	
61 4-Nitrophenol	109	6.174	6.174	(1.019)	183205	16.0000	14.2	
62 2,4-Dinitrotoluene	165	6.222	6.222	(1.026)	352591	16.0000	14.3	
63 2,3,4,6-Tetrachlorophenol	232	6.335	6.335	(1.752)	341079	16.0000	14.8	
64 Diethylphthalate	149	6.420	6.420	(1.059)	1196183	16.0000	14.3	
65 4-Chlorophenyl-phenylether	204	6.516	6.516	(1.075)	675542	16.0000	14.3	
66 Fluorene	166	6.522	6.522	(1.076)	1291001	16.0000	14.3	
67 4-Nitroaniline	108	6.543	6.543	(1.079)	107665	16.0000	16.5(QM)	LT
68 4,6-Dinitro-2-methylphenol	198	6.570	6.570	(0.877)	207300	16.0000	16.3	
69 N-Nitrosodiphenylamine	169	6.628	6.628	(0.885)	945792	16.0000	14.0	
70 Azobenzene	77	6.666	6.666	(0.890)	1241420	16.0000	14.3	
71 1,2-Diphenylhydrazine	77	6.666	6.666	(0.890)	1241501	16.0000	14.3	
72 4-Bromophenyl-phenylether	248	7.008	7.008	(0.936)	442854	16.0000	14.5	
73 Hexachlorobenzene	284	7.077	7.077	(0.945)	540712	16.0000	15.0	
74 Atrazine	200	7.184	7.184	(0.959)	188064	16.0000	14.7	
75 Pentachlorophenol	266	7.291	7.291	(0.974)	253452	16.0000	14.8	
76 Phenanthrene	178	7.521	7.521	(1.004)	1632875	16.0000	14.3	
77 Anthracene	178	7.574	7.574	(1.011)	1547853	16.0000	14.0	
78 Carbazole	167	7.745	7.745	(1.034)	1244410	16.0000	13.8(QM)	LT
79 Di-n-butylphthalate	149	8.130	8.130	(1.086)	1970925	16.0000	15.3	
80 Fluoranthene	202	8.787	8.787	(1.173)	1806402	16.0000	14.5	
81 Pyrene	202	9.027	9.027	(0.879)	1882734	16.0000	14.6	
82 Butylbenzylphthalate	149	9.711	9.711	(0.945)	781613	16.0000	15.7	
83 3,3'-Dichlorobenzidine	252	10.245	10.245	(0.997)	533213	16.0000	13.7	
84 bis(2-Ethylhexyl)phthalate	149	10.299	10.299	(1.003)	1246143	16.0000	16.1	
85 Benzo[a]anthracene	228	10.266	10.266	(0.999)	1696758	16.0000	14.4	
86 Chrysene	228	10.304	10.304	(1.003)	1541974	16.0000	14.1	
87 Di-n-octylphthalate	149	10.924	10.924	(1.063)	1810807	16.0000	15.4	
88 Benzo[b]fluoranthene	252	11.287	11.287	(0.971)	1995235	16.0000	13.3	
89 Benzo[k]fluoranthene	252	11.314	11.314	(0.974)	2151710	16.0000	13.8	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
90 Benzo[a]pyrene	252	11.575	11.575	(0.996)	2172361	16.0000	14.0	
91 Dibenz[a,h]anthracene	278	12.494	12.494	(1.075)	2429111	16.0000	14.6	
92 Indeno[1,2,3-cd]pyrene	276	12.489	12.489	(1.075)	2908410	16.0000	14.8	
93 Benzo[g,h,i]perylene	276	12.719	12.719	(1.095)	2375784	16.0000	14.4	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m11008y6.d
Lab Smp Id: 16PPM TCL
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Misc Info: V-55-6

Calibration Date: 08-OCT-2014
Calibration Time: 12:40

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

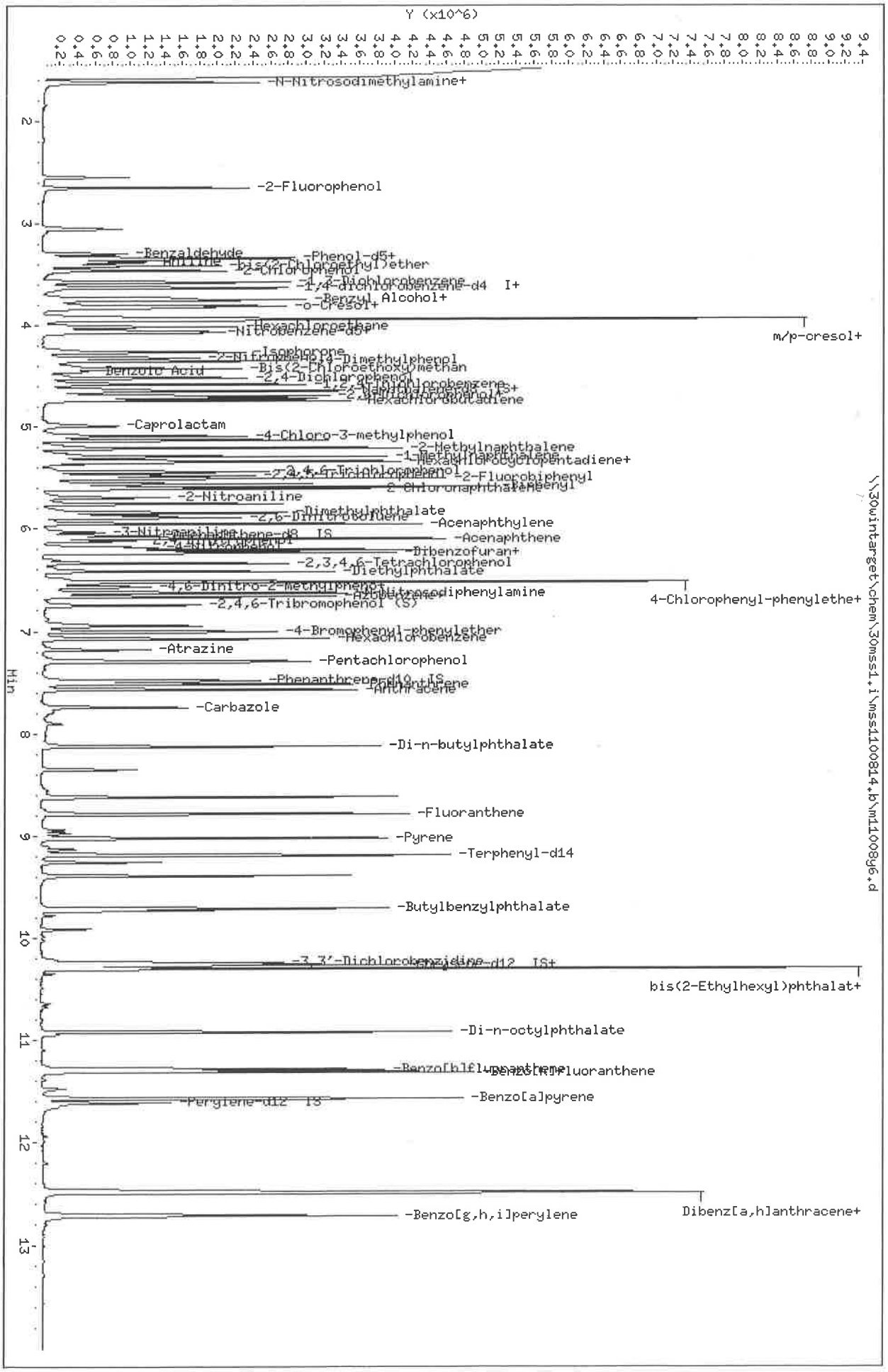
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	108994	54497	217988	107599	-1.28
2 Naphthalene-d8 I	394602	197301	789204	399055	1.13
3 Acenaphthene-d8	238890	119445	477780	242137	1.36
4 Phenanthrene-d10	447551	223776	895102	415934	-7.06
5 Chrysene-d12 IS	437005	218503	874010	423070	-3.19
6 Perylene-d12 IS	536492	268246	1072984	567954	5.86

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.61	3.11	4.11	3.62	0.03
2 Naphthalene-d8 I	4.62	4.12	5.12	4.63	0.03
3 Acenaphthene-d8	6.06	5.56	6.56	6.06	0.02
4 Phenanthrene-d10	7.49	6.99	7.99	7.49	0.02
5 Chrysene-d12 IS	10.27	9.77	10.77	10.27	0.01
6 Perylene-d12 IS	11.61	11.11	12.11	11.62	0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m1100806.d
Date : 08-OCT-2014 13:20
Client ID:
Sample Info: 16PPM TCL
Column phase: RTX-5MS

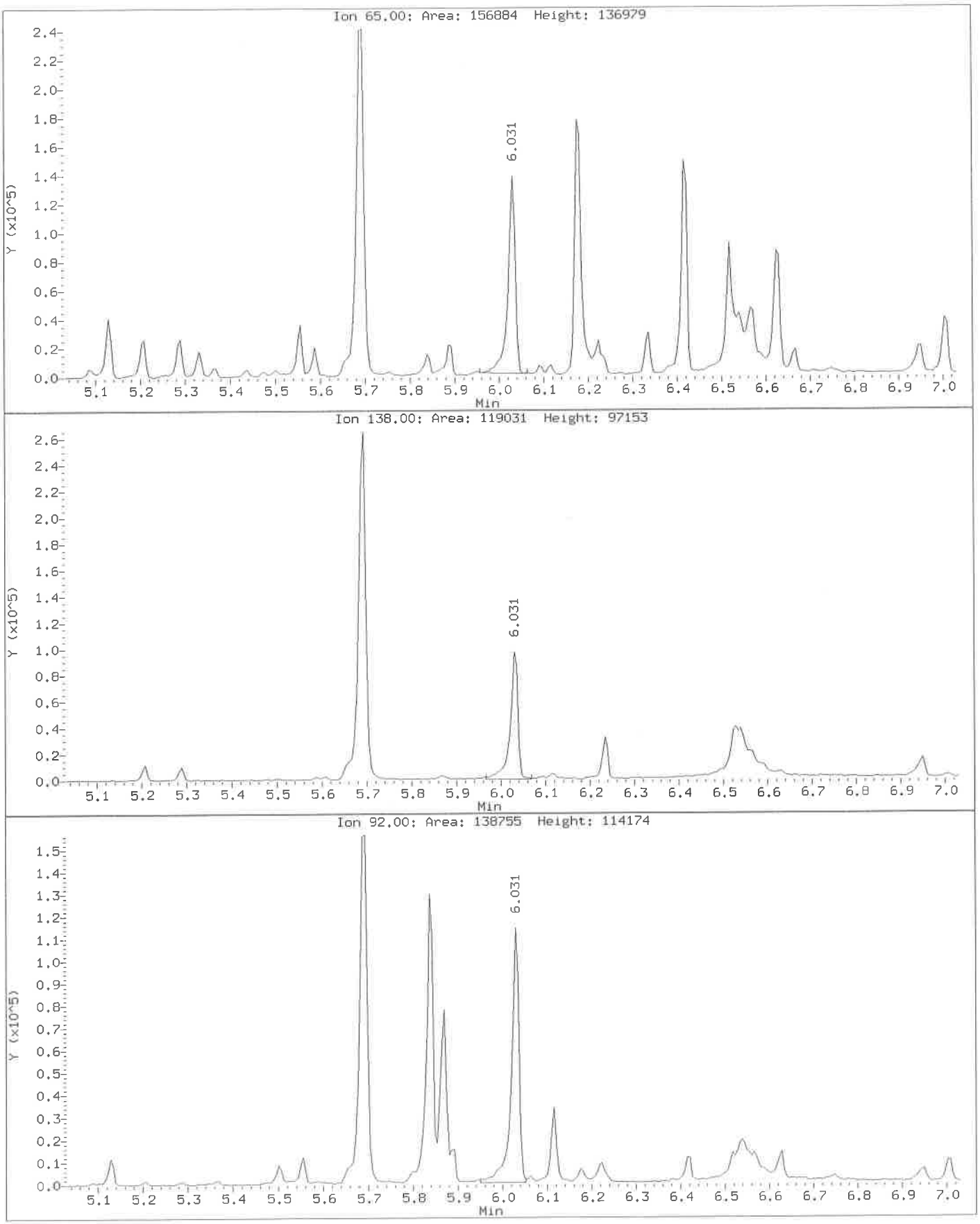
Instrument: 30mss1.i
Operator: DJL
Column diameter: 0.18



Page 5

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y6origdata.d
Injection Date: 08-OCT-2014 13:20
Instrument: 30mss1.i
Client Sample ID:

Compound: 3-Nitroaniline
CAS Number: 99-09-2



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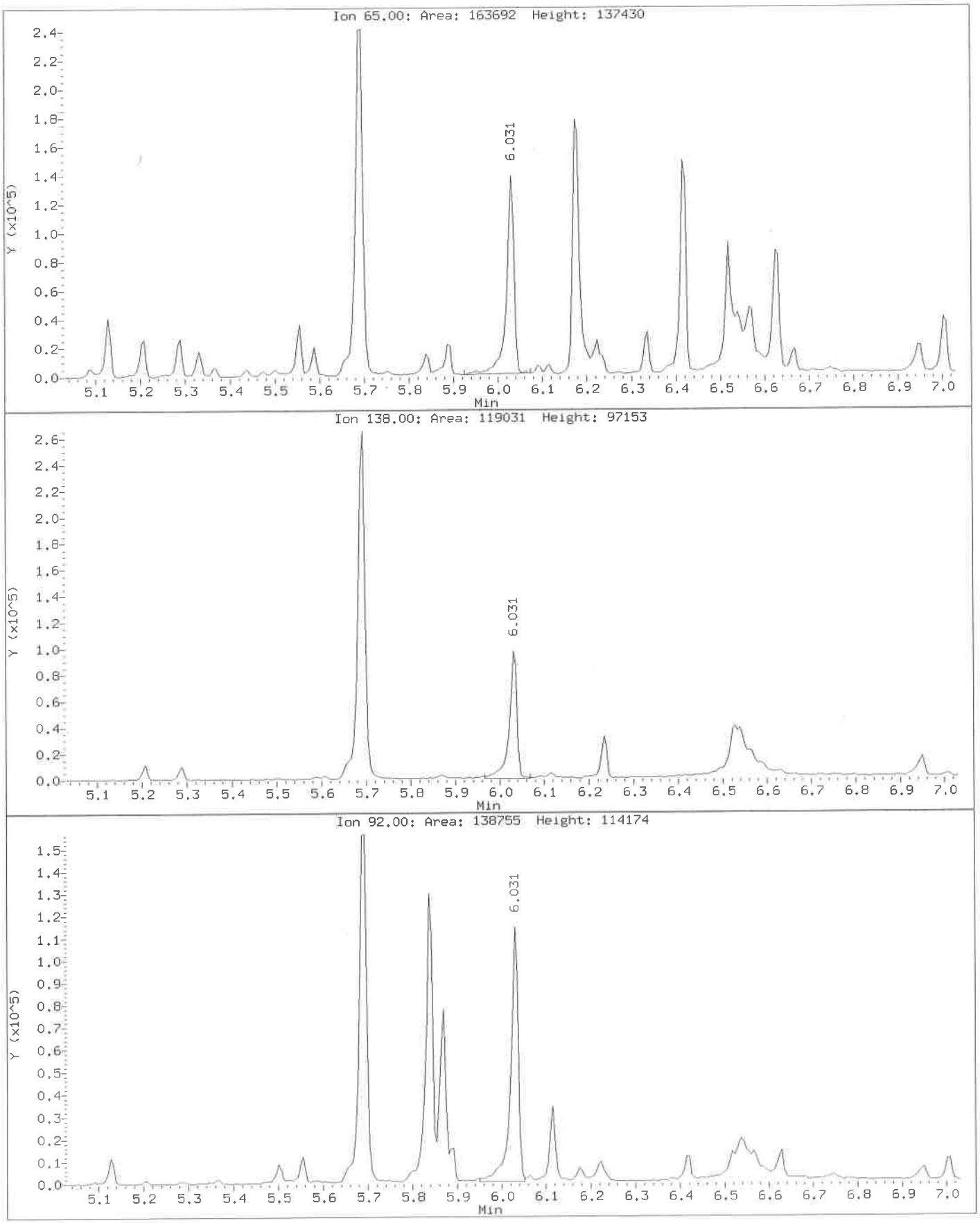
Injection Date: 08-OCT-2014 13:20
Instrument: 30mss1.i
Client Sample ID:

Compound: 3-Nitroaniline
CAS Number: 99-09-2



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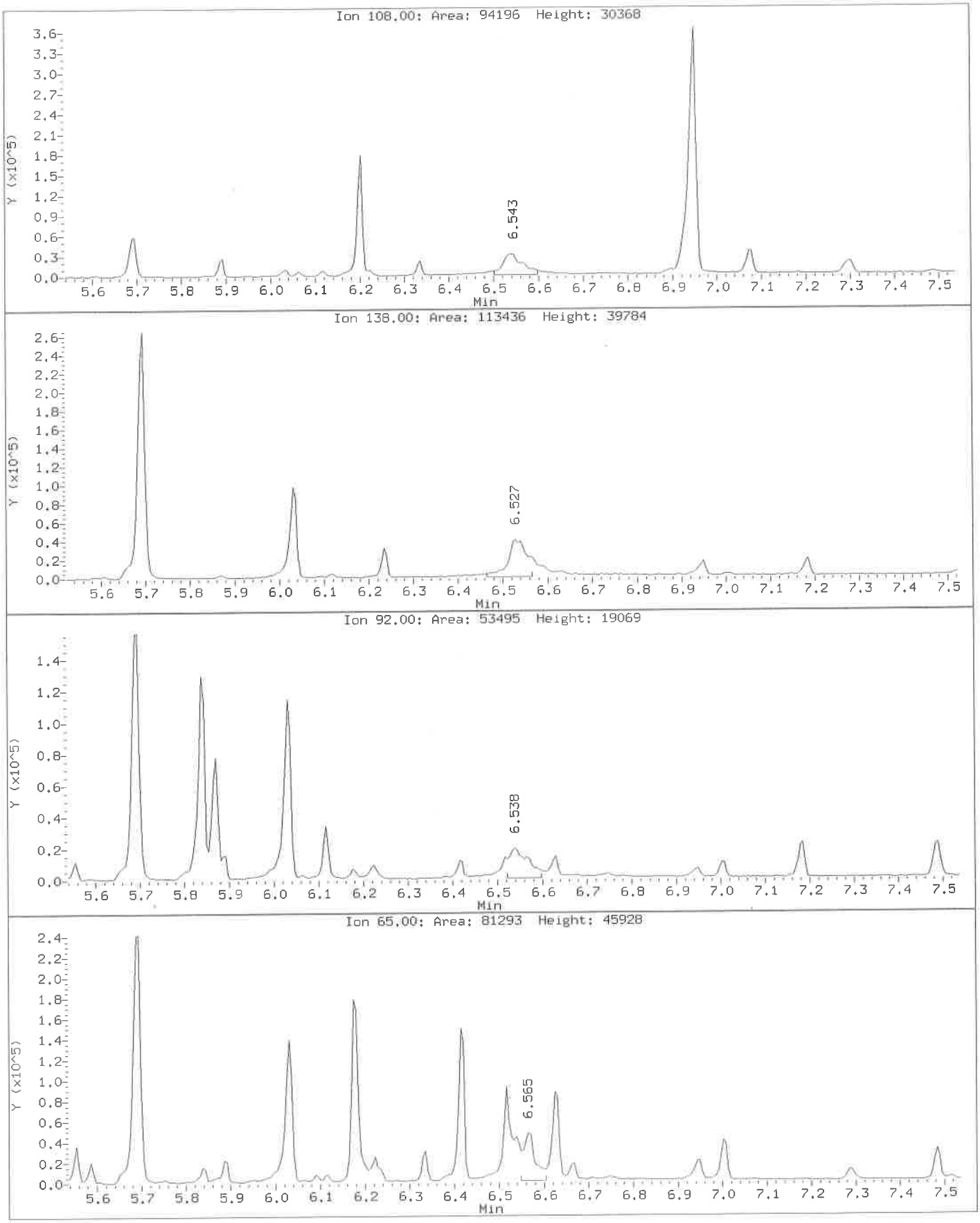
Injection Date: 08-OCT-2014 13:20
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6



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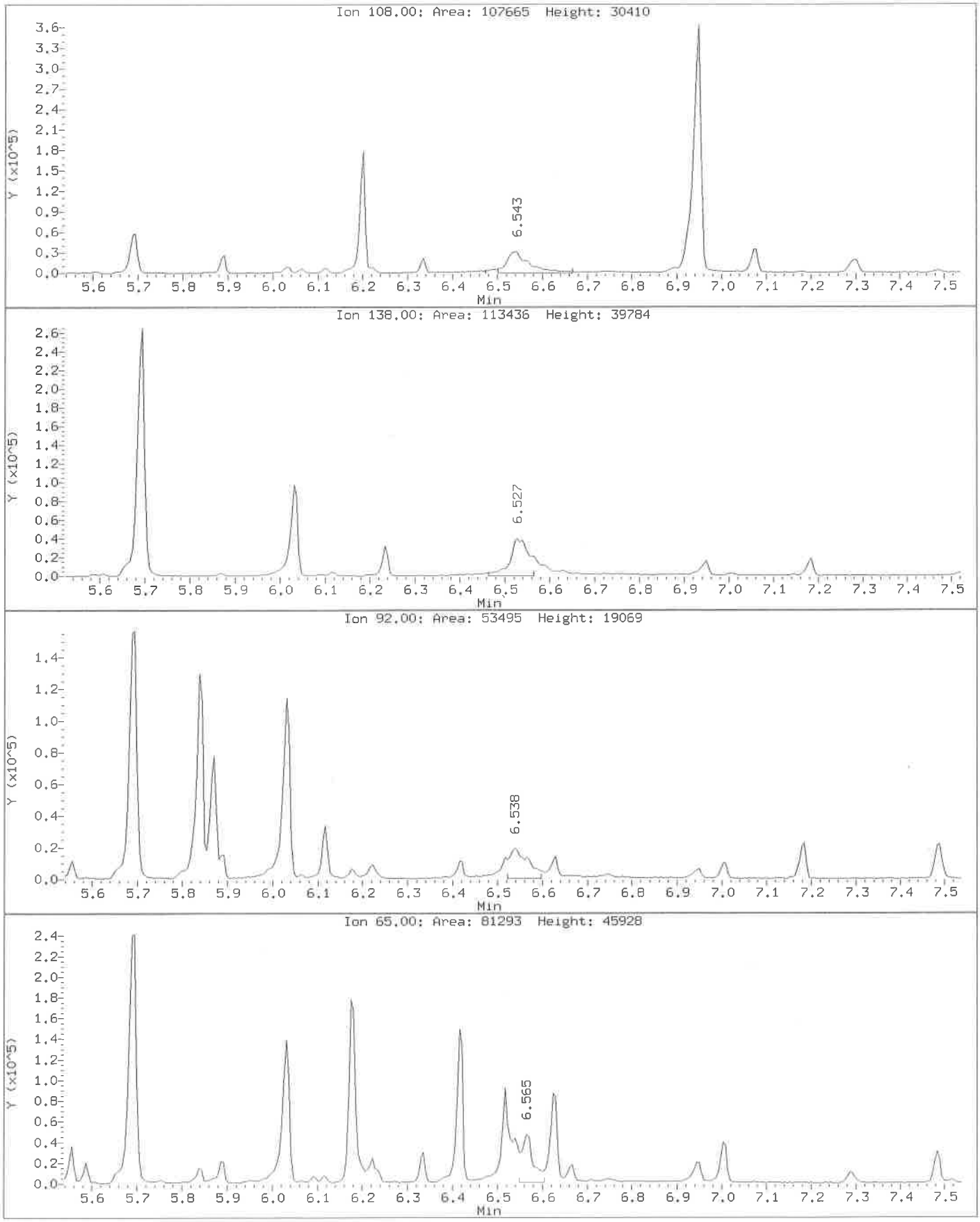
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6



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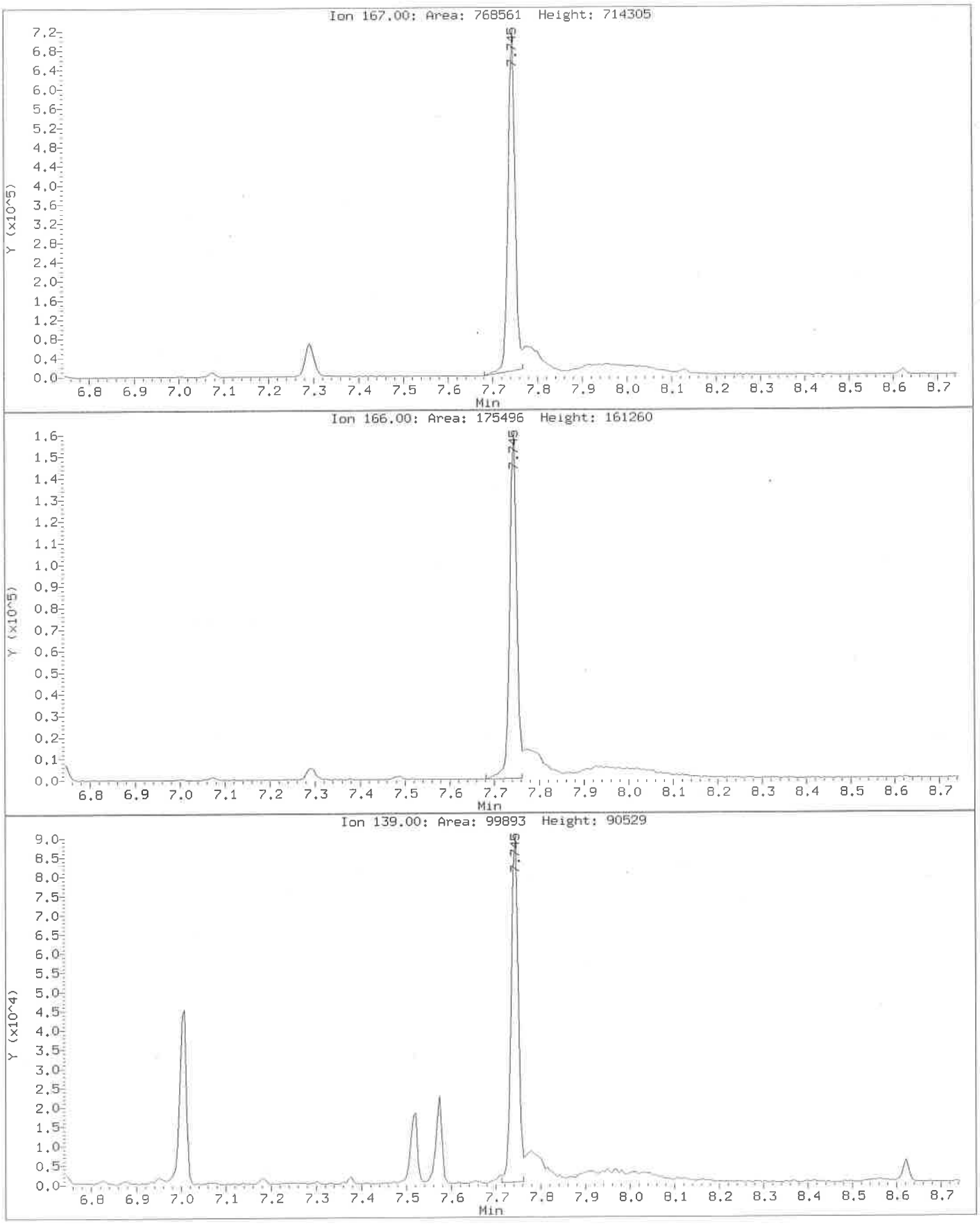
Injection Date: 08-OCT-2014 13:20
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



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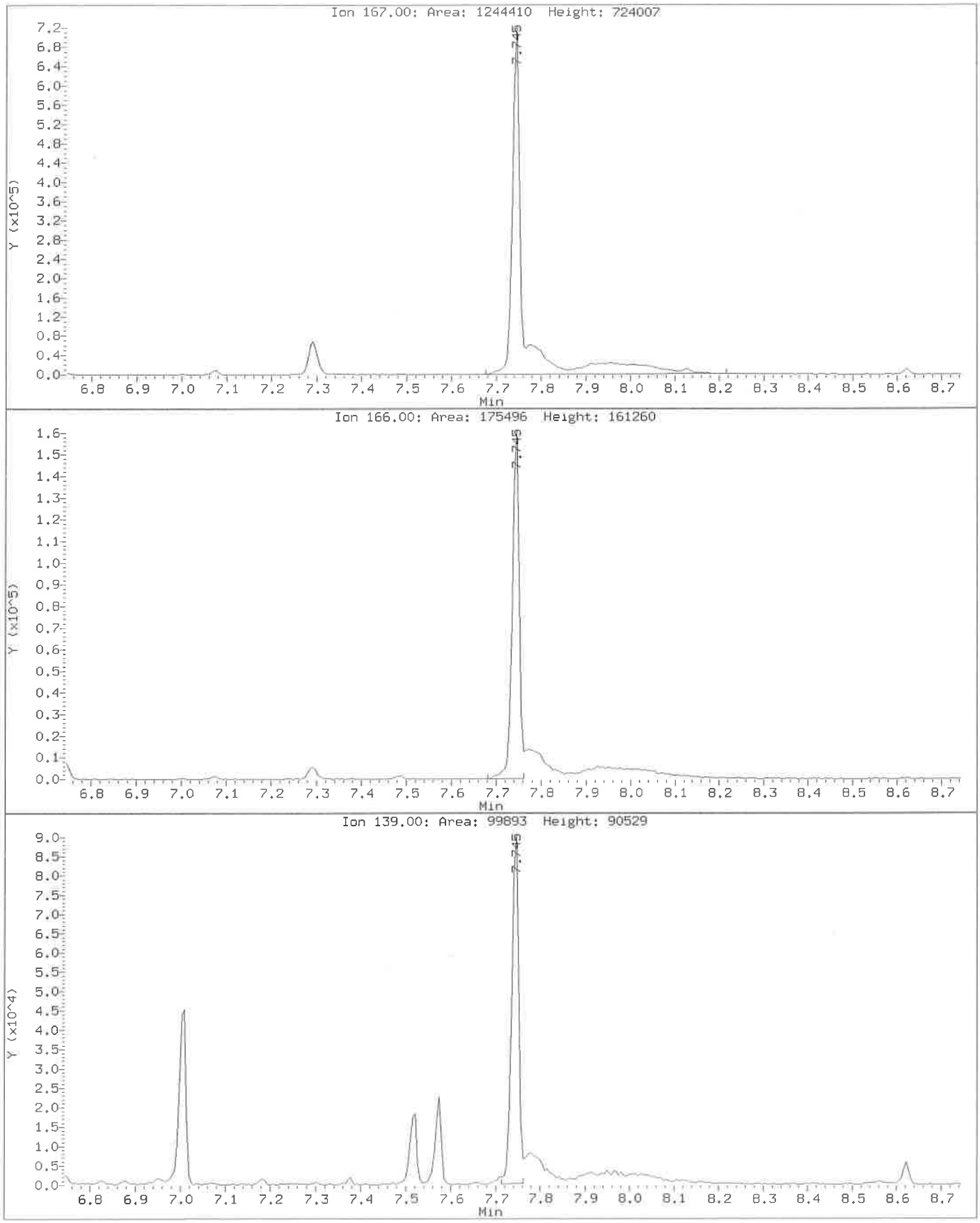
Injection Date: 08-OCT-2014 13:20
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



Pace Analytical Services Inc.

Data file : \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y7.d
Lab Smp Id: 20PPM TCL
Inj Date : 08-OCT-2014 13:40
Operator : DJL Inst ID: 30mss1.i
Smp Info : 20PPM TCL
Misc Info : V-55-7
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Meth Date : 14-Oct-2014 16:48 30mss1.i Quant Type: ISTD
Cal Date : 08-OCT-2014 13:20 Cal File: m11008y6.d
Als bottle: 8 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30DCAVALIER2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.615	3.615	(1.000)	113454	4.00000		
* 2 Naphthalene-d8 IS	136	4.630	4.630	(1.000)	398339	4.00000		
* 3 Acenaphthene-d8 IS	164	6.067	6.067	(1.000)	245373	4.00000		
* 4 Phenanthrene-d10 IS	188	7.493	7.493	(1.000)	425011	4.00000		
* 5 Chrysene-d12 IS	240	10.276	10.276	(1.000)	451032	4.00000		
* 6 Perylene-d12 IS	264	11.617	11.617	(1.000)	599060	4.00000		
$ 7 2-Fluorophenol	112	2.653	2.653	(0.734)	674337	20.0000	19.3	
$ 8 Phenol-d5	99	3.342	3.342	(0.925)	937159	20.0000	20.0	
$ 9 Nitrobenzene-d5	128	4.063	4.063	(0.878)	367731	20.0000	20.2(A)	
$ 10 2-Fluorobiphenyl	172	5.506	5.506	(0.908)	1906731	20.0000	19.9	
$ 11 2,4,6-Tribromophenol (S)	330	6.750	6.750	(0.901)	382374	20.0000	21.3(A)	
$ 12 Terphenyl-d14	244	9.197	9.197	(0.895)	2140625	20.0000	19.1	
13 N-Nitrosodimethylamine	74	1.633	1.633	(0.269)	531068	20.0000	20.5(A)	
14 Pyridine	79	1.627	1.627	(0.450)	837576	20.0000	20.8(A)	
15 Benzaldehyde	77	3.294	3.294	(0.911)	348060	20.0000	19.5	
16 Phenol	94	3.348	3.348	(0.926)	931242	20.0000	18.6	
17 Aniline	66	3.380	3.380	(0.935)	377300	20.0000	20.9(A)	
18 bis(2-Chloroethyl)ether	63	3.417	3.417	(0.945)	591584	20.0000	19.9	
19 2-Chlorophenol	128	3.465	3.465	(0.959)	726195	20.0000	19.5	
20 1,3-Dichlorobenzene	146	3.577	3.577	(0.990)	856614	20.0000	19.5	
21 1,4-Dichlorobenzene	146	3.631	3.631	(1.004)	970900	20.0000	20.2(A)	
22 Benzyl Alcohol	79	3.732	3.732	(1.033)	672712	20.0000	19.6	
23 o-Cresol	108	3.812	3.812	(1.055)	744135	20.0000	20.4(A)	
24 1,2-Dichlorobenzene	146	3.748	3.748	(1.037)	858924	20.0000	19.8	
25 Bis(2-Chloroisopropyl)ethe	45	3.828	3.828	(1.059)	1093410	20.0000	19.7	
26 m/p-cresol	108	3.941	3.941	(1.090)	1618058	40.0000	42.1(A)	
28 N-Nitroso-di-n-propylamine	70	3.957	3.957	(1.095)	718288	20.0000	20.8(A)	
29 Acetophenone	105	3.941	3.941	(1.090)	1211182	20.0000	20.8(A)	
30 Hexachloroethane	117	4.010	4.010	(1.109)	358902	20.0000	20.0	
31 Nitrobenzene	77	4.074	4.074	(0.880)	917414	20.0000	20.3(A)	
32 Isophorone	82	4.266	4.266	(0.922)	1603627	20.0000	20.2(A)	
33 2,4-Dimethylphenol	107	4.352	4.352	(0.940)	830703	20.0000	20.7(A)	
34 2-Nitrophenol	139	4.320	4.320	(0.933)	407777	20.0000	19.8	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
35 Bis(2-Chloroethoxy)methane	93	4.427	4.427	(0.956)	900727	20.0000	20.1(A)	
36 Benzoic Acid	105	4.469	4.469	(0.965)	516866	20.0000	21.0(A)	
37 2,4-Dichlorophenol	162	4.517	4.517	(0.976)	662036	20.0000	20.4(A)	
38 2,6-Dichlorophenol	162	4.694	4.694	(1.299)	660958	20.0000	19.8	
39 1,2,4-Trichlorobenzene	180	4.576	4.576	(0.988)	788022	20.0000	20.1(A)	
40 Naphthalene	128	4.646	4.646	(1.003)	2223064	20.0000	20.4(A)	
42 Hexachlorobutadiene	225	4.736	4.736	(1.023)	572941	20.0000	20.2(A)	
43 Caprolactam	55	5.004	5.004	(1.081)	307968	20.0000	19.7	
44 4-Chloro-3-methylphenol	107	5.089	5.089	(1.099)	644629	20.0000	20.8(A)	
45 2-Methylnaphthalene	142	5.207	5.207	(1.125)	1491231	20.0000	19.5	
46 1-Methylnaphthalene	142	5.292	5.292	(1.143)	1415942	20.0000	20.5(A)	
47 Hexachlorocyclopentadiene	237	5.335	5.335	(0.879)	664505	20.0000	22.1(A)	
48 1,2,4,5-Tetrachlorobenzene	216	5.345	5.345	(1.479)	930597	20.0000	19.8	
49 2,4,6-Trichlorophenol	196	5.442	5.442	(0.897)	544922	20.0000	20.6(A)	
50 2,4,5-Trichlorophenol	196	5.479	5.479	(0.903)	496763	20.0000	19.2	
51 Biphenyl	154	5.591	5.591	(0.922)	1955239	20.0000	19.9	
52 2-Chloronaphthalene	164	5.613	5.613	(0.925)	476709	20.0000	20.0(A)	
53 2-Nitroaniline	138	5.698	5.698	(0.939)	432559	20.0000	19.4	
54 Dimethylphthalate	163	5.848	5.848	(0.964)	1710969	20.0000	19.9	
55 2,6-Dinitrotoluene	165	5.896	5.896	(0.972)	377991	20.0000	19.5	
56 Acenaphthylene	152	5.954	5.954	(0.982)	2451641	20.0000	19.9	
58 Acenaphthene	153	6.093	6.093	(1.004)	1612706	20.0000	20.4(A)	
59 2,4-Dinitrophenol	184	6.120	6.120	(1.009)	208724	20.0000	20.4(A)	
60 Dibenzofuran	168	6.238	6.238	(1.028)	2081378	20.0000	19.5	
61 4-Nitrophenol	109	6.184	6.184	(1.019)	264170	20.0000	20.1(A)	
62 2,4-Dinitrotoluene	165	6.227	6.227	(1.026)	502665	20.0000	20.1(A)	
63 2,3,4,6-Tetrachlorophenol	232	6.339	6.339	(1.754)	493662	20.0000	20.4(A)	
64 Diethylphthalate	149	6.419	6.419	(1.058)	1706627	20.0000	20.1(A)	
65 4-Chlorophenyl-phenylether	204	6.521	6.521	(1.075)	927088	20.0000	19.3	
66 Fluorene	166	6.526	6.526	(1.076)	1879678	20.0000	20.6(A)	
68 4,6-Dinitro-2-methylphenol	198	6.574	6.574	(0.877)	296782	20.0000	22.8(A)	
69 N-Nitrosodiphenylamine	169	6.633	6.633	(0.885)	1333450	20.0000	19.4	
70 Azobenzene	77	6.665	6.665	(0.890)	1743528	20.0000	19.7	
71 1,2-Diphenylhydrazine	77	6.665	6.665	(0.890)	1743528	20.0000	19.7	
72 4-Bromophenyl-phenylether	248	7.012	7.012	(0.936)	633609	20.0000	20.3(A)	
73 Hexachlorobenzene	284	7.082	7.082	(0.945)	754630	20.0000	20.5(A)	
74 Atrazine	200	7.189	7.189	(0.959)	255412	20.0000	19.5	
75 Pentachlorophenol	266	7.295	7.295	(0.974)	365904	20.0000	20.3(A)	
76 Phenanthrene	178	7.520	7.520	(1.004)	2346462	20.0000	20.1(A)	
77 Anthracene	178	7.578	7.578	(1.011)	2175064	20.0000	19.3	
78 Carbazole	167	7.744	7.744	(1.034)	1508168	20.0000	16.4(M)	LT
79 Di-n-butylphthalate	149	8.129	8.129	(1.085)	2872774	20.0000	21.9(A)	
80 Fluoranthene	202	8.791	8.791	(1.173)	2565346	20.0000	20.1(A)	
81 Pyrene	202	9.026	9.026	(0.878)	2647500	20.0000	19.3	
82 Butylbenzylphthalate	149	9.715	9.715	(0.945)	1135102	20.0000	21.4(A)	
83 3,3'-Dichlorobenzidine	252	10.250	10.250	(0.997)	764292	20.0000	18.4	
84 bis(2-Ethylhexyl)phthalate	149	10.303	10.303	(1.003)	1864872	20.0000	22.6(A)	
85 Benzo[a]anthracene	228	10.271	10.271	(0.999)	2492034	20.0000	19.8	
86 Chrysene	228	10.308	10.308	(1.003)	2270461	20.0000	19.5	
87 Di-n-octylphthalate	149	10.928	10.928	(1.063)	2712561	20.0000	21.7(A)	
88 Benzo[b]fluoranthene	252	11.302	11.302	(0.973)	3197635	20.0000	20.3(A)	
89 Benzo[k]fluoranthene	252	11.323	11.323	(0.975)	2983226	20.0000	18.2	
90 Benzo[a]pyrene	252	11.580	11.580	(0.997)	3227614	20.0000	19.7	
91 Dibenz[a,h]anthracene	278	12.504	12.504	(1.076)	3453743	20.0000	19.7	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
92 Indeno[1,2,3-cd]pyrene	276	12.504	12.504	(1.076)	4082492	20.0000	19.7	
93 Benzo[g,h,i]perylene	276	12.728	12.728	(1.096)	3210855	20.0000	18.5	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m11008y7.d
Lab Smp Id: 20PPM TCL
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Misc Info: V-55-7

Calibration Date: 08-OCT-2014
Calibration Time: 12:40
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

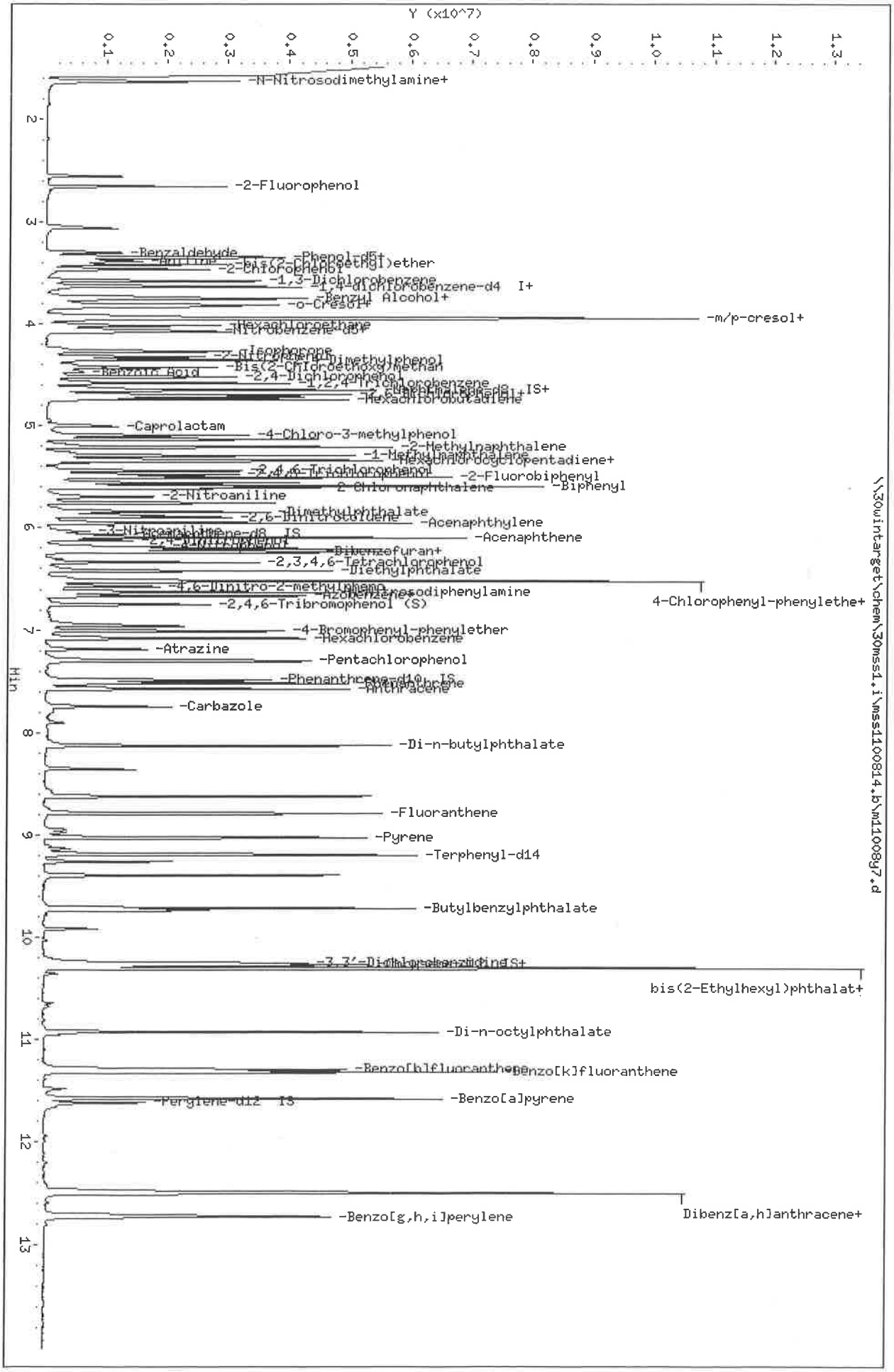
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	108994	54497	217988	113454	4.09
2 Naphthalene-d8 I	394602	197301	789204	398339	0.95
3 Acenaphthene-d8	238890	119445	477780	245373	2.71
4 Phenanthrene-d10	447551	223776	895102	425011	-5.04
5 Chrysene-d12 IS	437005	218503	874010	451032	3.21
6 Perylene-d12 IS	536492	268246	1072984	599060	11.66

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.61	3.11	4.11	3.62	0.01
2 Naphthalene-d8 I	4.62	4.12	5.12	4.63	0.12
3 Acenaphthene-d8	6.06	5.56	6.56	6.07	0.09
4 Phenanthrene-d10	7.49	6.99	7.99	7.49	0.08
5 Chrysene-d12 IS	10.27	9.77	10.77	10.28	0.06
6 Perylene-d12 IS	11.61	11.11	12.11	11.62	0.05

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y7.d
Date : 08-OCT-2014 13:40
Client ID:
Sample Info: 20PPM TCL
Column phase: RTX-5MS

Instrument: 30mss1.i
Operator: DJL
Column diameter: 0.18



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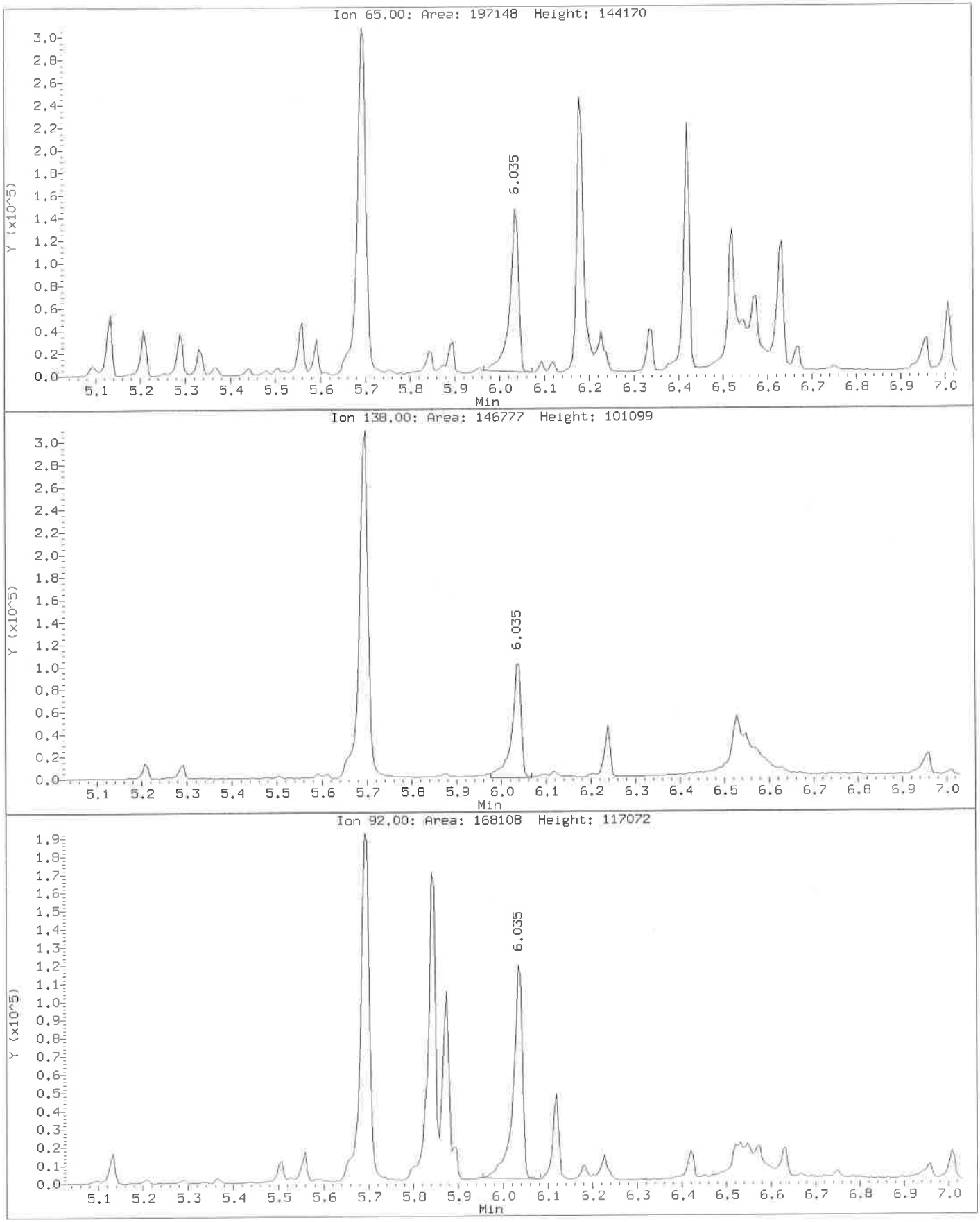
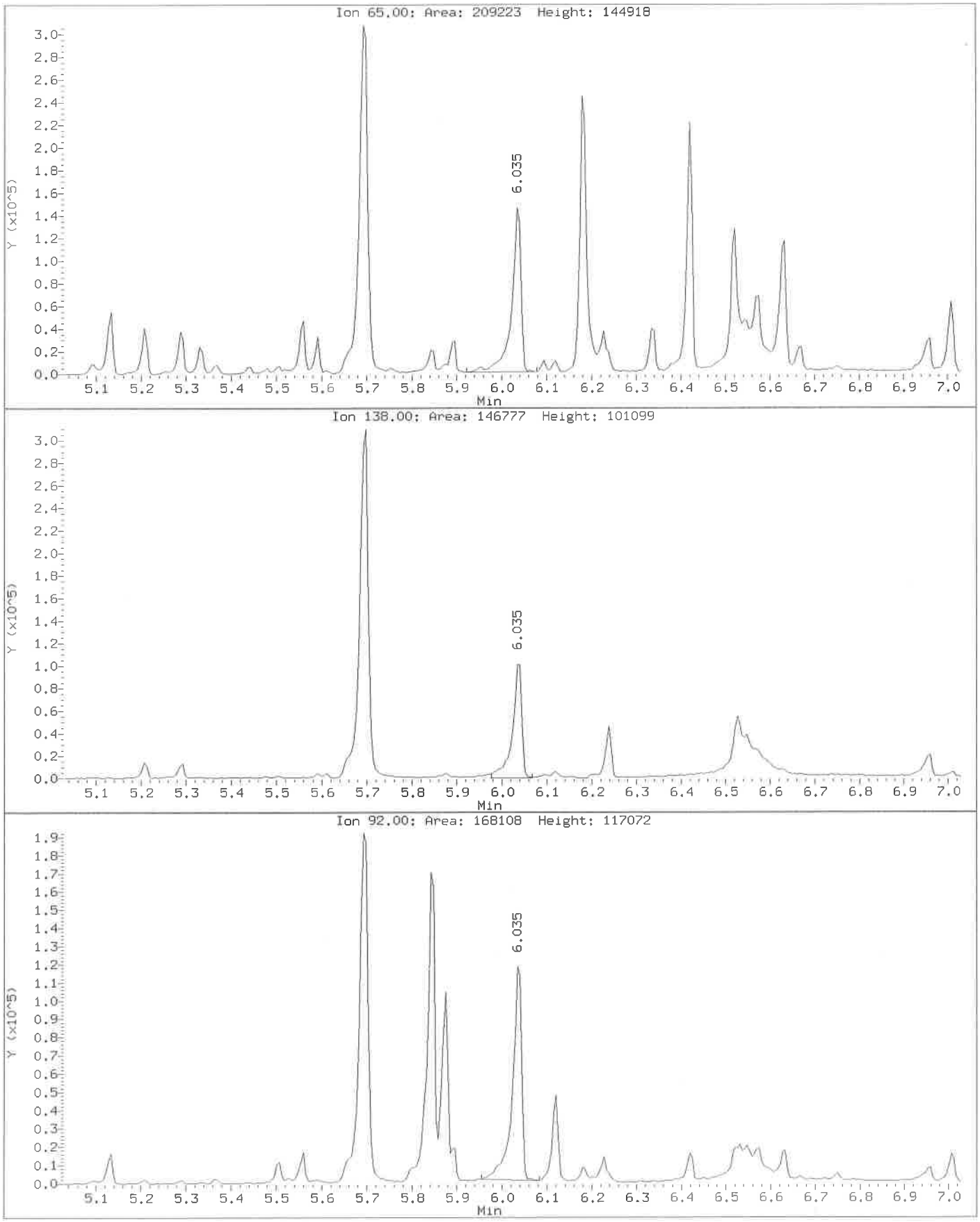
Injection Date: 08-OCT-2014 13:40
Instrument: 30mss1.i
Client Sample ID:

Compound: 3-Nitroaniline
CAS Number: 99-09-2



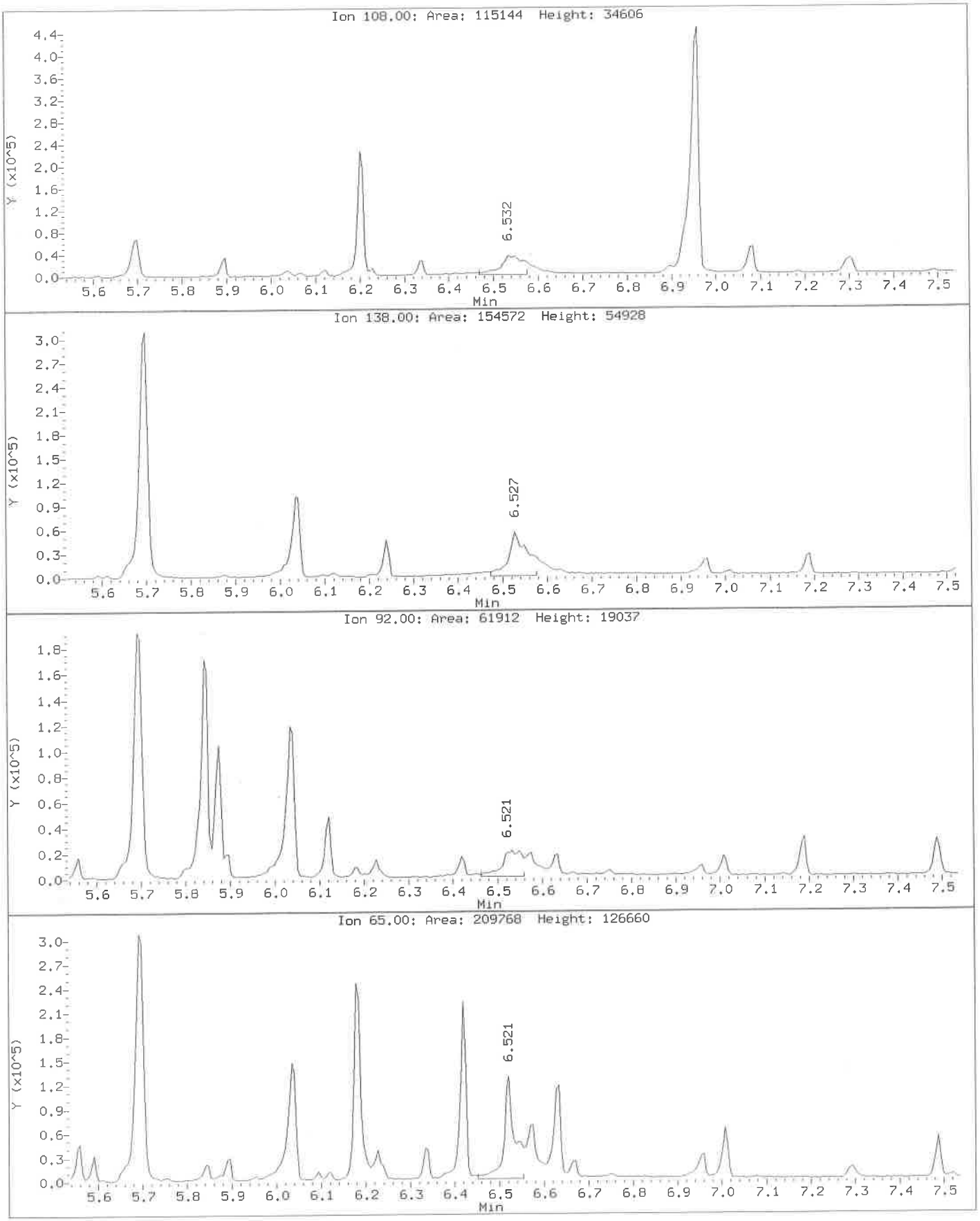
Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y7.d
Injection Date: 08-OCT-2014 13:40
Instrument: 30mss1.i
Client Sample ID:

Compound: 3-Nitroaniline
CAS Number: 99-09-2



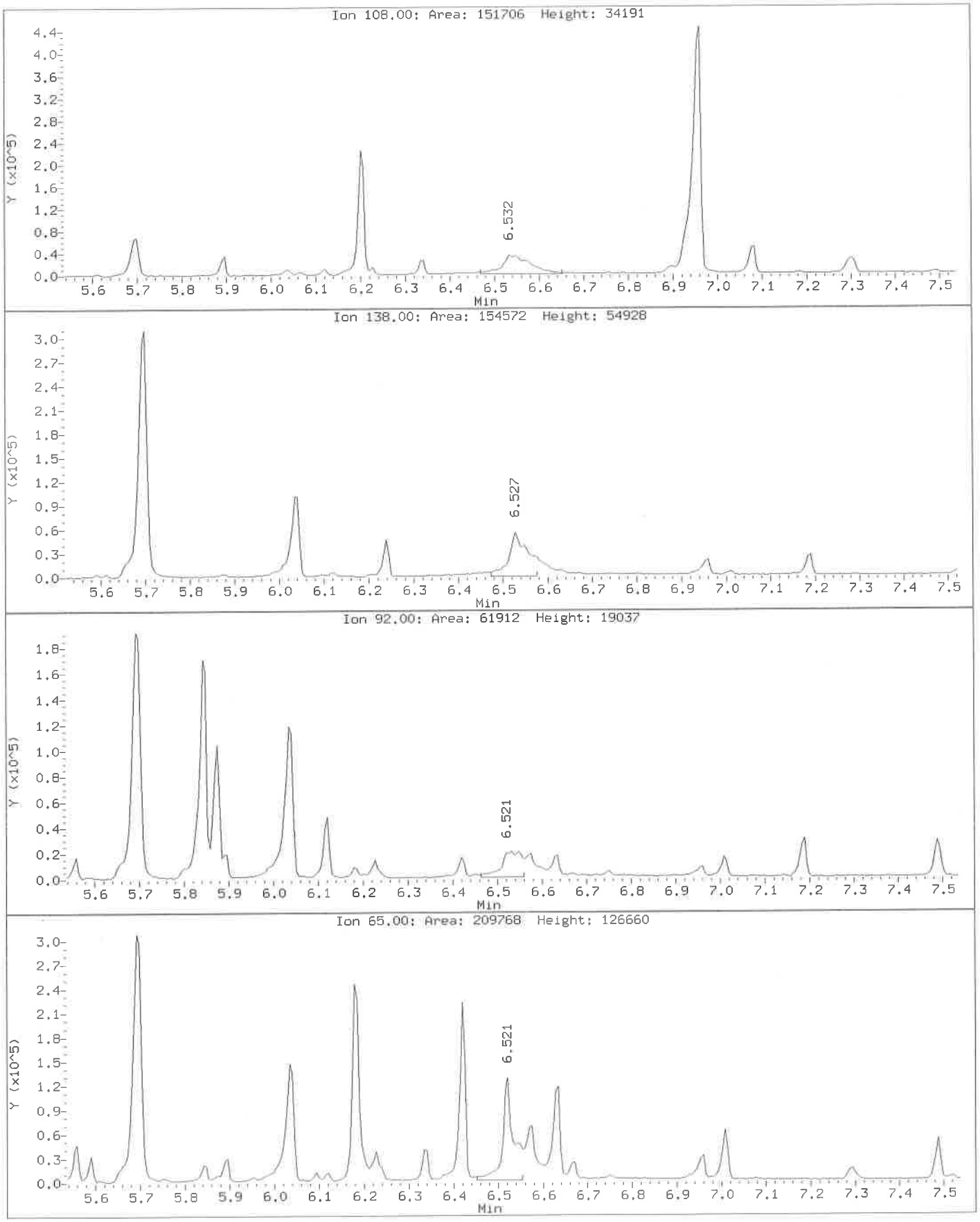
Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y7origdata.d
Injection Date: 08-OCT-2014 13:40
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6



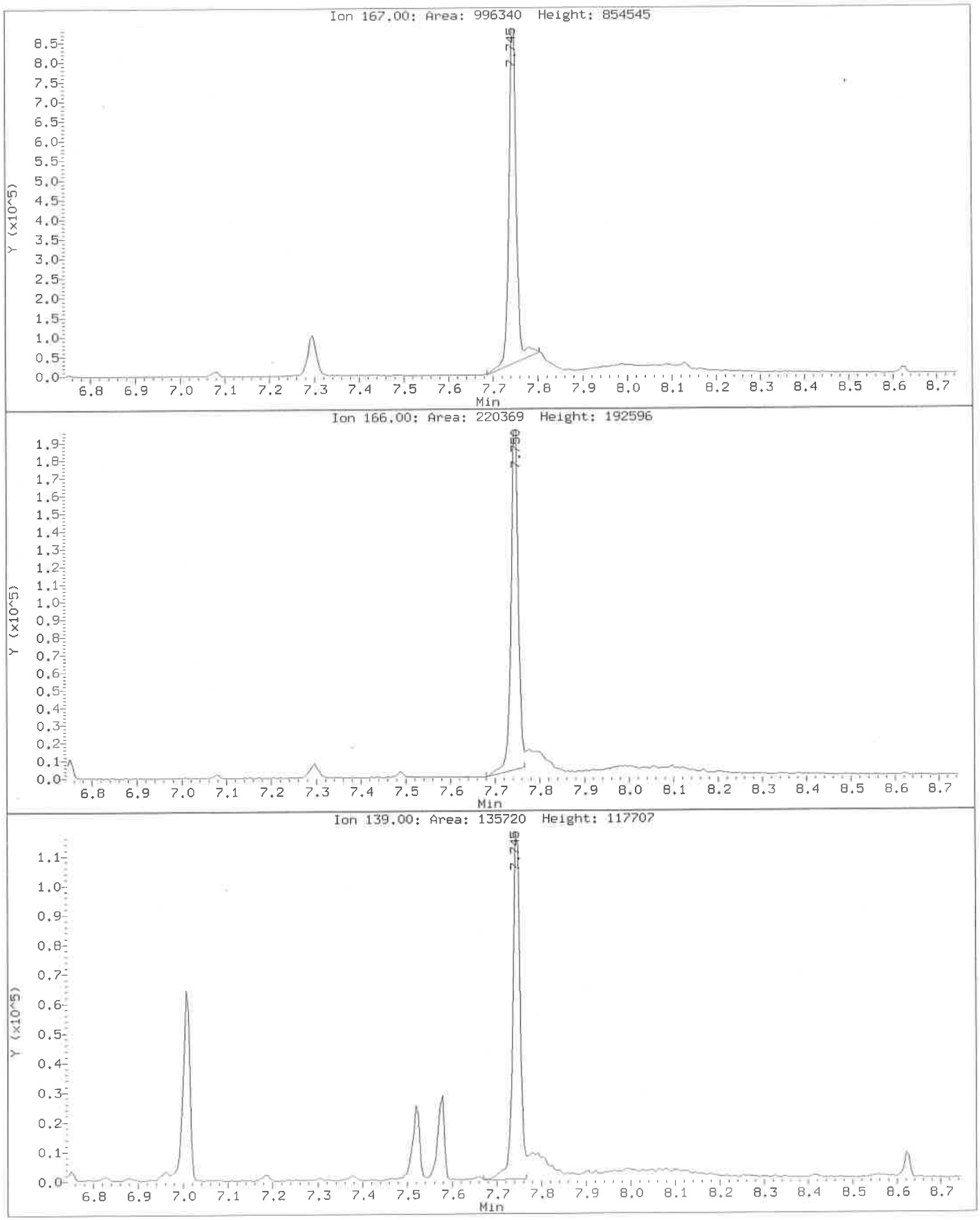
Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y7.d
Injection Date: 08-OCT-2014 13:40
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6



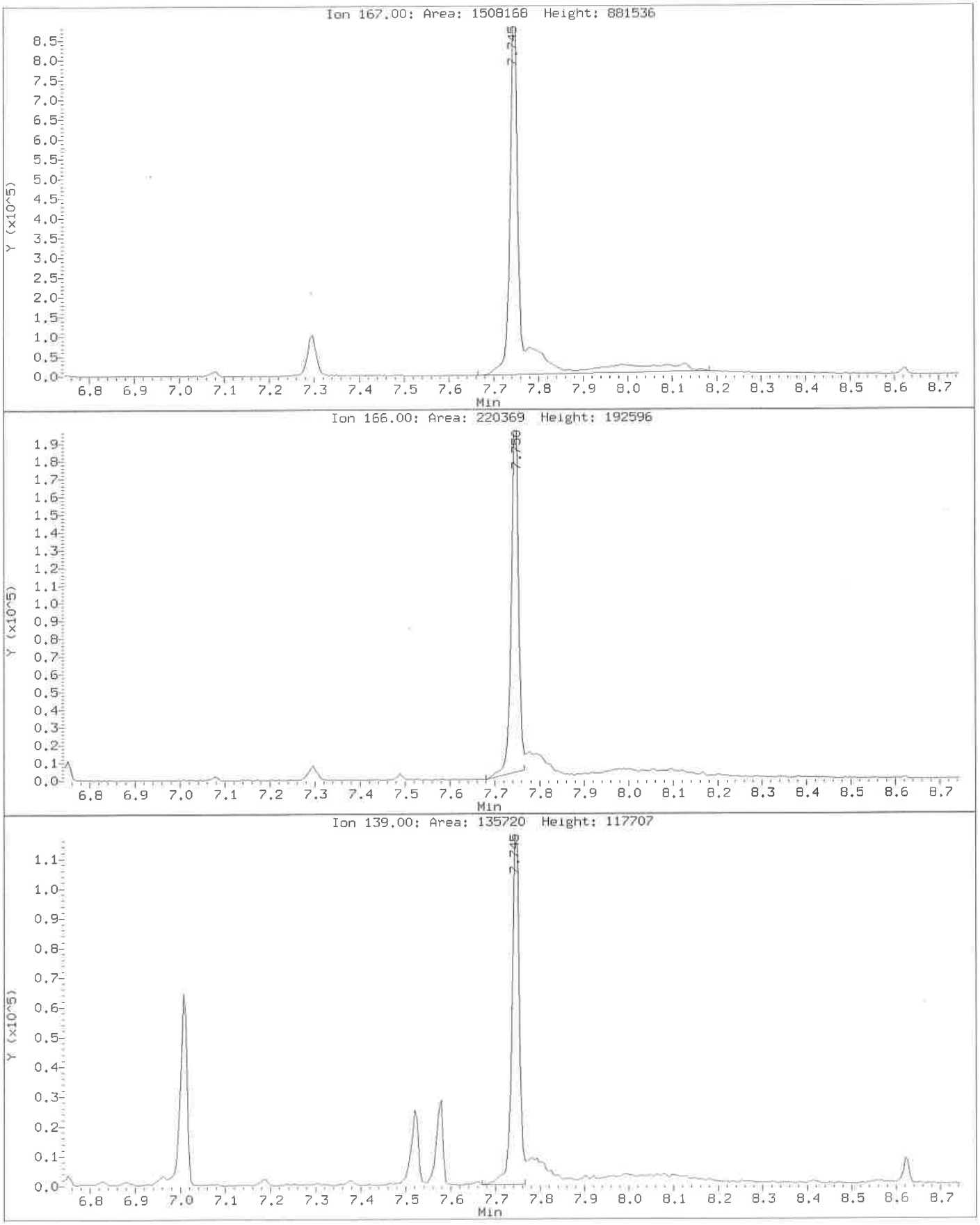
Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y7origdata.d
Injection Date: 08-OCT-2014 13:40
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y7.d
Injection Date: 08-OCT-2014 13:40
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



Pace Analytical Services, Inc

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss1.i Injection Date: 08-OCT-2014 14:00
Lab File ID: m11008y8.d Init. Cal. Date(s): 08-OCT-2014 08-OCT-2014
Analysis Type: Init. Cal. Times: 11:41 13:40
Lab Sample ID: 8PPM TCL ICV Quant Type: ISTD
Method: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m

COMPOUND	RRF / AMOUNT	RF8	CCAL RRF8	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 7 2-Fluorophenol	1.23243	1.28949	1.28949	0.050	4.62995	20.00000	Averaged
$ 8 Phenol-d5	1.65608	1.61269	1.61269	0.050	-2.62059	20.00000	Averaged
$ 9 Nitrobenzene-d5	0.18249	0.18665	0.18665	0.050	2.28090	20.00000	Averaged
$ 10 2-Fluorobiphenyl	1.55938	1.59834	1.59834	0.050	2.49815	20.00000	Averaged
$ 11 2,4,6-Tribromophenol (S)	0.16858	0.16834	0.16834	0.050	-0.14383	20.00000	Averaged
$ 12 Terphenyl-d14	0.99524	0.99770	0.99770	0.050	0.24666	20.00000	Averaged
13 N-Nitrosodimethylamine	0.42135	0.37532	0.37532	0.050	-10.92529	20.00000	Averaged
14 Pyridine	1.42095	1.48025	1.48025	0.050	4.17323	20.00000	Averaged
15 Benzaldehyde	0.63005	0.55748	0.55748	0.050	-11.51869	20.00000	Averaged
16 Phenol	1.76952	1.84182	1.84182	0.050	4.08624	20.00000	Averaged
17 Aniline	0.63608	0.67494	0.67494	0.050	6.11013	20.00000	Averaged
18 bis(2-Chloroethyl)ether	1.04891	1.07399	1.07399	0.050	2.39077	20.00000	Averaged
19 2-Chlorophenol	1.31436	1.36403	1.36403	0.050	3.77917	20.00000	Averaged
20 1,3-Dichlorobenzene	1.55013	1.56803	1.56803	0.050	1.15458	20.00000	Averaged
21 1,4-Dichlorobenzene	1.69053	1.68699	1.68699	0.050	-0.20944	20.00000	Averaged
22 Benzyl Alcohol	1.20834	1.11178	1.11178	0.050	-7.99171	20.00000	Averaged
23 o-Cresol	1.28789	1.36580	1.36580	0.050	6.04927	20.00000	Averaged
24 1,2-Dichlorobenzene	1.52597	1.51586	1.51586	0.050	-0.66273	20.00000	Averaged
25 Bis(2-Chloroisopropyl)ethe	1.95577	1.98606	1.98606	0.050	1.54860	20.00000	Averaged
26 m/p-cresol	1.35345	1.43086	1.43086	0.050	5.71943	20.00000	Averaged
28 N-Nitroso-di-n-propylamine	1.21567	1.19332	1.19332	0.050	-1.83814	20.00000	Averaged
29 Acetophenone	2.04907	1.99997	1.99997	0.050	-2.39606	20.00000	Averaged
30 Hexachloroethane	0.63370	0.63261	0.63261	0.050	-0.17283	20.00000	Averaged
31 Nitrobenzene	0.45341	0.46063	0.46063	0.050	1.59150	20.00000	Averaged
32 Isophorone	0.79765	0.81589	0.81589	0.050	2.28677	20.00000	Averaged
33 2,4-Dimethylphenol	0.40334	0.43342	0.43342	0.050	7.45782	20.00000	Averaged
34 2-Nitrophenol	0.20692	0.20526	0.20526	0.050	-0.80357	20.00000	Averaged
35 Bis(2-Chloroethoxy)methane	0.44974	0.46467	0.46467	0.050	3.31874	20.00000	Averaged
36 Benzoic Acid	8.00000	8.32436	4.20958	0.050	4.05449	20.00000	Linear
37 2,4-Dichlorophenol	0.32657	0.34089	0.34089	0.050	4.38473	20.00000	Averaged
38 2,6-Dichlorophenol	1.17973	1.22392	1.22392	0.050	3.74583	20.00000	Averaged
39 1,2,4-Trichlorobenzene	0.39335	0.38995	0.38995	0.050	-0.86400	20.00000	Averaged
40 Naphthalene	1.09246	1.13658	1.13658	0.050	4.03915	20.00000	Averaged
41 4-Chloroaniline	8.00000	6.36632	11.57208	0.050	-20.42101	20.00000	Quadratic <-
42 Hexachlorobutadiene	0.28539	0.31209	0.31209	0.050	9.35522	20.00000	Averaged
43 Caprolactam	0.15717	0.16655	0.16655	0.050	5.96550	20.00000	Averaged
44 4-Chloro-3-methylphenol	0.31193	0.33404	0.33404	0.050	7.08613	20.00000	Averaged
45 2-Methylnaphthalene	0.76818	0.76031	0.76031	0.050	-1.02525	20.00000	Averaged
46 1-Methylnaphthalene	0.69374	0.71985	0.71985	0.050	3.76429	20.00000	Averaged
47 Hexachlorocyclopentadiene	0.49096	0.53001	0.53001	0.050	7.95364	20.00000	Averaged
48 1,2,4,5-Tetrachlorobenzene	1.65937	1.70791	1.70791	0.050	2.92493	20.00000	Averaged
49 2,4,6-Trichlorophenol	0.42998	0.42527	0.42527	0.050	-1.09594	20.00000	Averaged

Pace Analytical Services, Inc

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss1.i Injection Date: 08-OCT-2014 14:00
Lab File ID: m11008y8.d Init. Cal. Date(s): 08-OCT-2014 08-OCT-2014
Analysis Type: Init. Cal. Times: 11:41 13:40
Lab Sample ID: 8PPM TCL ICV Quant Type: ISTD
Method: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m

COMPOUND	RRF / AMOUNT	RF8	CCAL RRF8	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
50 2,4,5-Trichlorophenol	0.42132	0.47661	0.47661	0.050	13.12108	20.00000	Averaged	
51 Biphenyl	1.59820	1.61112	1.61112	0.050	0.80859	20.00000	Averaged	
52 2-Chloronaphthalene	0.38841	0.39082	0.39082	0.050	0.62251	20.00000	Averaged	
53 2-Nitroaniline	0.36392	0.38633	0.38633	0.050	6.15887	20.00000	Averaged	
54 Dimethylphthalate	1.40366	1.44097	1.44097	0.050	2.65754	20.00000	Averaged	
55 2,6-Dinitrotoluene	0.31654	0.33183	0.33183	0.050	4.83244	20.00000	Averaged	
56 Acenaphthylene	2.00509	2.06081	2.06081	0.050	2.77900	20.00000	Averaged	
57 3-Nitroaniline	8.00000	5.94643	4.40379	0.050	-25.66961	20.00000	Quadratic	<-
58 Acenaphthene	1.28953	1.31419	1.31419	0.050	1.91245	20.00000	Averaged	
59 2,4-Dinitrophenol	8.00000	9.43825	5.26944	0.050	17.97807	20.00000	Linear	
60 Dibenzofuran	1.73768	1.73891	1.73891	0.050	0.07094	20.00000	Averaged	
61 4-Nitrophenol	0.21378	0.23175	0.23175	0.050	8.40652	20.00000	Averaged	
62 2,4-Dinitrotoluene	0.40788	0.42961	0.42961	0.050	5.32911	20.00000	Averaged	
63 2,3,4,6-Tetrachlorophenol	0.85461	0.83724	0.83724	0.050	-2.03203	20.00000	Averaged	
64 Diethylphthalate	1.38441	1.37285	1.37285	0.050	-0.83491	20.00000	Averaged	
65 4-Chlorophenyl-phenylether	0.78127	0.80109	0.80109	0.050	2.53669	20.00000	Averaged	
66 Fluorene	1.48762	1.56579	1.56579	0.050	5.25466	20.00000	Averaged	
67 4-Nitroaniline	8.00000	8.31458	6.78106	0.050	3.93230	20.00000	Quadratic	
68 4,6-Dinitro-2-methylphenol	0.12259	0.14474	0.14474	0.050	18.06849	20.00000	Averaged	
69 N-Nitrosodiphenylamine	0.64833	0.63070	0.63070	0.050	-2.71906	20.00000	Averaged	
70 Azobenzene	0.83350	0.83339	0.83339	0.050	-0.01417	20.00000	Averaged	
71 1,2-Diphenylhydrazine	0.83265	0.83273	0.83273	0.050	0.00975	20.00000	Averaged	
72 4-Bromophenyl-phenylether	0.29405	0.29572	0.29572	0.050	0.57084	20.00000	Averaged	
73 Hexachlorobenzene	0.34710	0.34283	0.34283	0.050	-1.23150	20.00000	Averaged	
74 Atrazine	0.12313	0.15772	0.15772	0.050	28.09885	20.00000	Averaged	<-
75 Pentachlorophenol	8.00000	9.53579	5.29402	0.050	19.19737	20.00000	Power	
76 Phenanthrene	1.09930	1.08482	1.08482	0.050	-1.31705	20.00000	Averaged	
77 Anthracene	1.05986	1.04780	1.04780	0.050	-1.13725	20.00000	Averaged	
78 Carbazole	0.86720	0.84488	0.84488	0.050	-2.57434	20.00000	Averaged	
79 Di-n-butylphthalate	1.23506	1.23353	1.23353	0.050	-0.12408	20.00000	Averaged	
80 Fluoranthene	1.19881	1.22024	1.22024	0.050	1.78768	20.00000	Averaged	
81 Pyrene	1.21668	1.27724	1.27724	0.050	4.97725	20.00000	Averaged	
82 Butylbenzylphthalate	0.47150	0.50029	0.50029	0.050	6.10686	20.00000	Averaged	
83 3,3'-Dichlorobenzidine	0.36742	0.36084	0.36084	0.050	-1.78846	20.00000	Averaged	
84 bis(2-Ethylhexyl)phthalate	0.73163	0.74167	0.74167	0.050	1.37263	20.00000	Averaged	
85 Benzo[a]anthracene	1.11544	1.14715	1.14715	0.050	2.84323	20.00000	Averaged	
86 Chrysene	1.03202	1.07914	1.07914	0.050	4.56625	20.00000	Averaged	
87 Di-n-octylphthalate	1.10865	1.07413	1.07413	0.050	-3.11373	20.00000	Averaged	
88 Benzo[b]fluoranthene	1.05337	1.10879	1.10879	0.050	5.26154	20.00000	Averaged	
89 Benzo[k]fluoranthene	1.09367	1.06394	1.06394	0.050	-2.71810	20.00000	Averaged	
90 Benzo[a]pyrene	1.09261	1.08719	1.08719	0.050	-0.49656	20.00000	Averaged	
91 Dibenz[a,h]anthracene	1.16801	1.22846	1.22846	0.050	5.17568	20.00000	Averaged	
92 Indeno[1,2,3-cd]pyrene	1.38569	1.44572	1.44572	0.050	4.33202	20.00000	Averaged	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss1.i Injection Date: 08-OCT-2014 14:00
Lab File ID: m11008y8.d Init. Cal. Date(s): 08-OCT-2014 08-OCT-2014
Analysis Type: Init. Cal. Times: 11:41 13:40
Lab Sample ID: 8PPM TCL ICV Quant Type: ISTD
Method: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m

COMPOUND	RRF / AMOUNT	RF8	CCAL RRF8	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
93 Benzo[g,h,i]perylene	1.16107	1.22220	1.22220	0.050	5.26484	20.00000	Averaged

Average %D / Drift Results.

Calculated Average %D/Drift = 4.71035
Maximun Average %D/Drift = 15.00000
* Passed Average %D/Drift Test.

Pace Analytical Services Inc.

Data file : \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y8.d
Lab Smp Id: 8PPM TCL ICV
Inj Date : 08-OCT-2014 14:00
Operator : DJL Inst ID: 30mss1.i
Smp Info : 8PPM TCL ICV
Misc Info : V-55-8
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Meth Date : 14-Oct-2014 16:48 30mss1.i Quant Type: ISTD
Cal Date : 08-OCT-2014 13:40 Cal File: m11008y7.d
Als bottle: 9 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VXP30DCAVALIER2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.614	3.614	(1.000)	108994	4.00000		
* 2 Naphthalene-d8 IS	136	4.624	4.624	(1.000)	394602	4.00000		
* 3 Acenaphthene-d8 IS	164	6.061	6.061	(1.000)	238890	4.00000		
* 4 Phenanthrene-d10 IS	188	7.487	7.487	(1.000)	447551	4.00000		
* 5 Chrysene-d12 IS	240	10.271	10.271	(1.000)	437005	4.00000		
* 6 Perylene-d12 IS	264	11.612	11.612	(1.000)	536492	4.00000		
$ 7 2-Fluorophenol	112	2.653	2.653	(0.734)	281093	8.00000	8.37	
$ 8 Phenol-d5	99	3.331	3.331	(0.922)	351546	8.00000	7.79	
$ 9 Nitrobenzene-d5	128	4.052	4.052	(0.876)	147303	8.00000	8.18	
$ 10 2-Fluorobiphenyl	172	5.500	5.500	(0.907)	763653	8.00000	8.20	
$ 11 2,4,6-Tribromophenol (S)	330	6.745	6.745	(0.901)	150682	8.00000	7.99	
$ 12 Terphenyl-d14	244	9.192	9.192	(0.895)	871996	8.00000	8.02	
13 N-Nitrosodimethylamine	74	1.627	1.627	(0.269)	179320	8.00000	7.12	
14 Pyridine	79	1.632	1.632	(0.452)	322677	8.00000	8.33	
15 Benzaldehyde	77	3.299	3.299	(0.913)	121524	8.00000	7.08	
16 Phenol	94	3.342	3.342	(0.925)	401495	8.00000	8.33	
17 Aniline	66	3.374	3.374	(0.934)	147129	8.00000	8.49	
18 bis(2-Chloroethyl)ether	63	3.411	3.411	(0.944)	234117	8.00000	8.19	
19 2-Chlorophenol	128	3.459	3.459	(0.957)	297342	8.00000	8.30	
20 1,3-Dichlorobenzene	146	3.572	3.572	(0.988)	341812	8.00000	8.09	
21 1,4-Dichlorobenzene	146	3.630	3.630	(1.004)	367744	8.00000	7.98	
22 Benzyl Alcohol	79	3.727	3.727	(1.031)	242354	8.00000	7.36	
23 o-Cresol	108	3.807	3.807	(1.053)	297727	8.00000	8.48	
24 1,2-Dichlorobenzene	146	3.748	3.748	(1.037)	330439	8.00000	7.95	
25 Bis(2-Chloroisopropyl)ethe	45	3.823	3.823	(1.058)	432937	8.00000	8.12	
26 m/p-cresol	108	3.930	3.930	(1.087)	623822	16.0000	16.9	
28 N-Nitroso-di-n-propylamine	70	3.940	3.940	(1.090)	260130	8.00000	7.85	
29 Acetophenone	105	3.935	3.935	(1.089)	435970	8.00000	7.81	
30 Hexachloroethane	117	4.010	4.010	(1.109)	137901	8.00000	7.99	
31 Nitrobenzene	77	4.068	4.068	(0.880)	363531	8.00000	8.13	
32 Isophorone	82	4.255	4.255	(0.920)	643900	8.00000	8.18	
33 2,4-Dimethylphenol	107	4.346	4.346	(0.940)	342056	8.00000	8.60	
34 2-Nitrophenol	139	4.319	4.319	(0.934)	161989	8.00000	7.94	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
35 Bis(2-Chloroethoxy)methane	93	4.421	4.421	(0.956)	366719	8.00000	8.26	
36 Benzoic Acid	105	4.437	4.437	(0.960)	187478	8.00000	8.32	
37 2,4-Dichlorophenol	162	4.512	4.512	(0.976)	269031	8.00000	8.35	
38 2,6-Dichlorophenol	162	4.688	4.688	(1.297)	266799	8.00000	8.30	
39 1,2,4-Trichlorobenzene	180	4.576	4.576	(0.990)	307748	8.00000	7.93	
40 Naphthalene	128	4.640	4.640	(1.003)	896995	8.00000	8.32	
41 4-Chloroaniline	65	4.693	4.693	(1.015)	68199	8.00000	6.37(M)	LT
42 Hexachlorobutadiene	225	4.736	4.736	(1.024)	246300	8.00000	8.75	
43 Caprolactam	55	4.971	4.971	(1.075)	131440	8.00000	8.48	
44 4-Chloro-3-methylphenol	107	5.078	5.078	(1.098)	263625	8.00000	8.57	
45 2-Methylnaphthalene	142	5.206	5.206	(1.126)	600036	8.00000	7.92	
46 1-Methylnaphthalene	142	5.286	5.286	(1.143)	568109	8.00000	8.30	
47 Hexachlorocyclopentadiene	237	5.329	5.329	(0.879)	253226	8.00000	8.64	
48 1,2,4,5-Tetrachlorobenzene	216	5.340	5.340	(1.477)	372303	8.00000	8.23	
49 2,4,6-Trichlorophenol	196	5.436	5.436	(0.897)	203186	8.00000	7.91	
50 2,4,5-Trichlorophenol	196	5.473	5.473	(0.903)	227713	8.00000	9.05	
51 Biphenyl	154	5.586	5.586	(0.922)	769761	8.00000	8.06	
52 2-Chloronaphthalene	164	5.607	5.607	(0.925)	186728	8.00000	8.05	
53 2-Nitroaniline	138	5.687	5.687	(0.938)	184581	8.00000	8.49	
54 Dimethylphthalate	163	5.837	5.837	(0.963)	688465	8.00000	8.21	
55 2,6-Dinitrotoluene	165	5.885	5.885	(0.971)	158543	8.00000	8.39	
56 Acenaphthylene	152	5.949	5.949	(0.981)	984616	8.00000	8.22	
57 3-Nitroaniline	65	6.029	6.029	(0.995)	108493	8.00000	5.95	
58 Acenaphthene	153	6.088	6.088	(1.004)	627894	8.00000	8.15	
59 2,4-Dinitrophenol	184	6.114	6.114	(1.009)	90670	8.00000	9.44	
60 Dibenzofuran	168	6.232	6.232	(1.028)	830818	8.00000	8.00	
61 4-Nitrophenol	109	6.173	6.173	(1.019)	110724	8.00000	8.67	
62 2,4-Dinitrotoluene	165	6.221	6.221	(1.026)	205260	8.00000	8.43	
63 2,3,4,6-Tetrachlorophenol	232	6.333	6.333	(1.752)	182509	8.00000	7.84	
64 Diethylphthalate	149	6.414	6.414	(1.058)	655919	8.00000	7.93	
65 4-Chlorophenyl-phenylether	204	6.515	6.515	(1.075)	382745	8.00000	8.20	
66 Fluorene	166	6.520	6.520	(1.076)	748103	8.00000	8.42	
67 4-Nitroaniline	108	6.536	6.536	(1.078)	70458	8.00000	8.31(QM)	LT
68 4,6-Dinitro-2-methylphenol	198	6.563	6.563	(0.877)	129557	8.00000	9.44	
69 N-Nitrosodiphenylamine	169	6.622	6.622	(0.884)	564543	8.00000	7.78	
70 Azobenzene	77	6.659	6.659	(0.889)	745965	8.00000	8.00	
71 1,2-Diphenylhydrazine	77	6.659	6.659	(0.889)	745376	8.00000	8.00	
72 4-Bromophenyl-phenylether	248	7.007	7.007	(0.936)	264704	8.00000	8.04	
73 Hexachlorobenzene	284	7.076	7.076	(0.945)	306868	8.00000	7.90	
74 Atrazine	200	7.183	7.183	(0.959)	141179	8.00000	10.2	
75 Pentachlorophenol	266	7.290	7.290	(0.974)	169078	8.00000	9.54	
76 Phenanthrene	178	7.514	7.514	(1.004)	971024	8.00000	7.89	
77 Anthracene	178	7.573	7.573	(1.011)	937890	8.00000	7.91	
78 Carbazole	167	7.744	7.744	(1.034)	756251	8.00000	7.79(M)	LT
79 Di-n-butylphthalate	149	8.128	8.128	(1.086)	1104133	8.00000	7.99	
80 Fluoranthene	202	8.786	8.786	(1.173)	1092236	8.00000	8.14	
81 Pyrene	202	9.021	9.021	(0.878)	1116317	8.00000	8.40	
82 Butylbenzylphthalate	149	9.710	9.710	(0.945)	437259	8.00000	8.49	
83 3,3'-Dichlorobenzidine	252	10.244	10.244	(0.997)	315382	8.00000	7.86	
84 bis(2-Ethylhexyl)phthalate	149	10.297	10.297	(1.003)	648229	8.00000	8.11	
85 Benzo[a]anthracene	228	10.260	10.260	(0.999)	1002624	8.00000	8.23	
86 Chrysene	228	10.297	10.297	(1.003)	943182	8.00000	8.36	
87 Di-n-octylphthalate	149	10.922	10.922	(1.063)	938799	8.00000	7.75	
88 Benzo[b]fluoranthene	252	11.286	11.286	(0.972)	1189716	8.00000	8.42	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
89 Benzo[k]fluoranthene	252	11.307	11.307	(0.974)	1141593	8.00000	7.78	
90 Benzo[a]pyrene	252	11.569	11.569	(0.996)	1166535	8.00000	7.96	
91 Dibenz[a,h]anthracene	278	12.482	12.482	(1.075)	1318122	8.00000	8.41	
92 Indeno[1,2,3-cd]pyrene	276	12.477	12.477	(1.075)	1551234	8.00000	8.35	
93 Benzo[g,h,i]perylene	276	12.707	12.707	(1.094)	1311404	8.00000	8.42	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Pace Analytical Services Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m11008y8.d
Lab Smp Id: 8PPM TCL ICV
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1100814.b\8270100814b.m
Misc Info: V-55-8

Calibration Date: 08-OCT-2014
Calibration Time: 12:40

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	108462	54231	216924	108994	0.49
2 Naphthalene-d8 I	402819	201410	805638	394602	-2.04
3 Acenaphthene-d8	239739	119870	479478	238890	-0.35
4 Phenanthrene-d10	453039	226520	906078	447551	-1.21
5 Chrysene-d12 IS	448291	224146	896582	437005	-2.52
6 Perylene-d12 IS	536491	268246	1072982	536492	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.61	3.11	4.11	3.61	0.01
2 Naphthalene-d8 I	4.62	4.12	5.12	4.62	0.01
3 Acenaphthene-d8	6.06	5.56	6.56	6.06	0.00
4 Phenanthrene-d10	7.49	6.99	7.99	7.49	0.00
5 Chrysene-d12 IS	10.27	9.77	10.77	10.27	0.00
6 Perylene-d12 IS	11.61	11.11	12.11	11.61	0.00

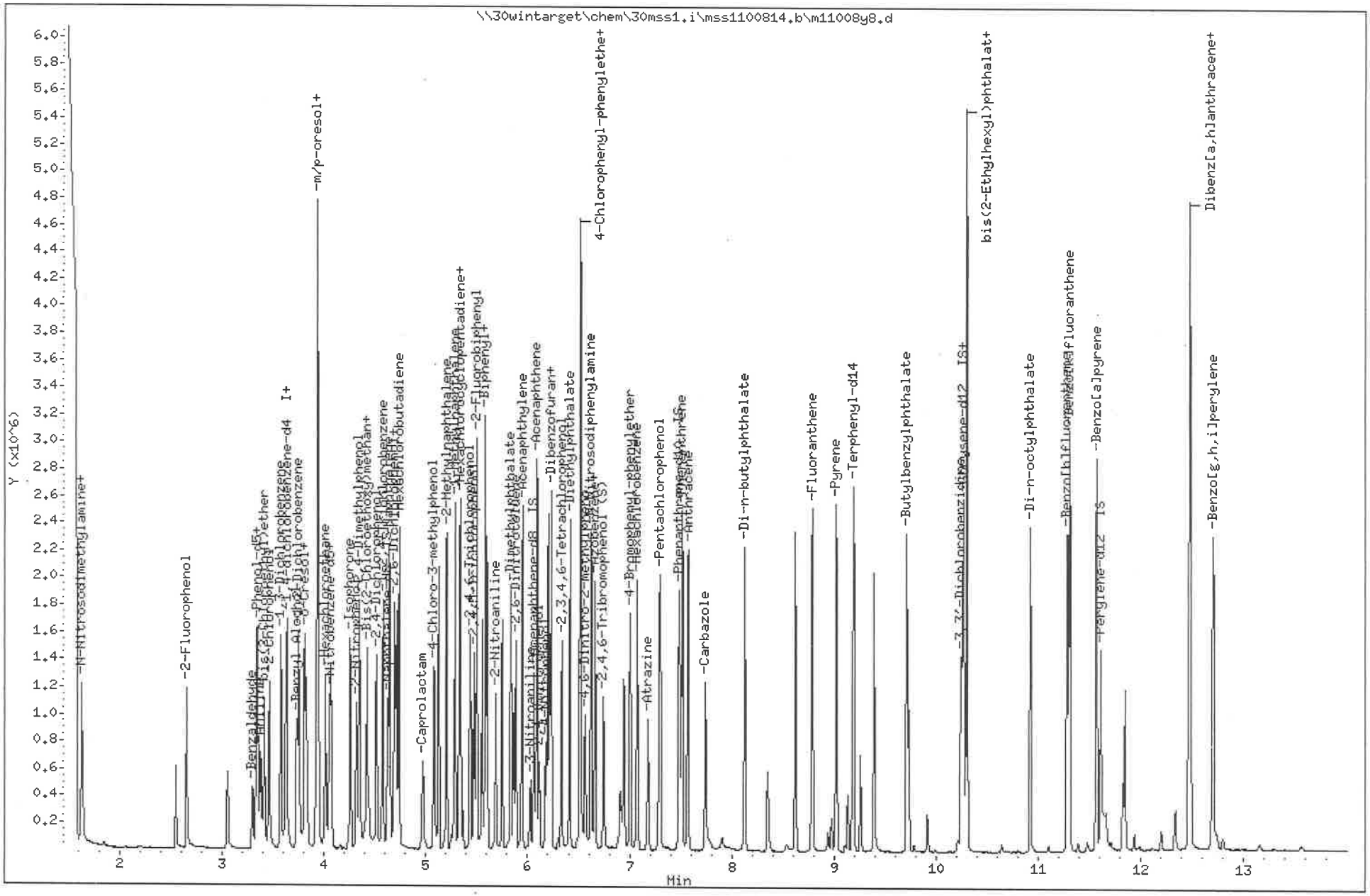
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008y8.d
Date : 08-OCT-2014 14:00
Client ID:
Sample Info: 8PPM TCL ICV

Column phase: RTX-5MS

Instrument: 30mss1.i

Operator: DJL
Column diameter: 0.18



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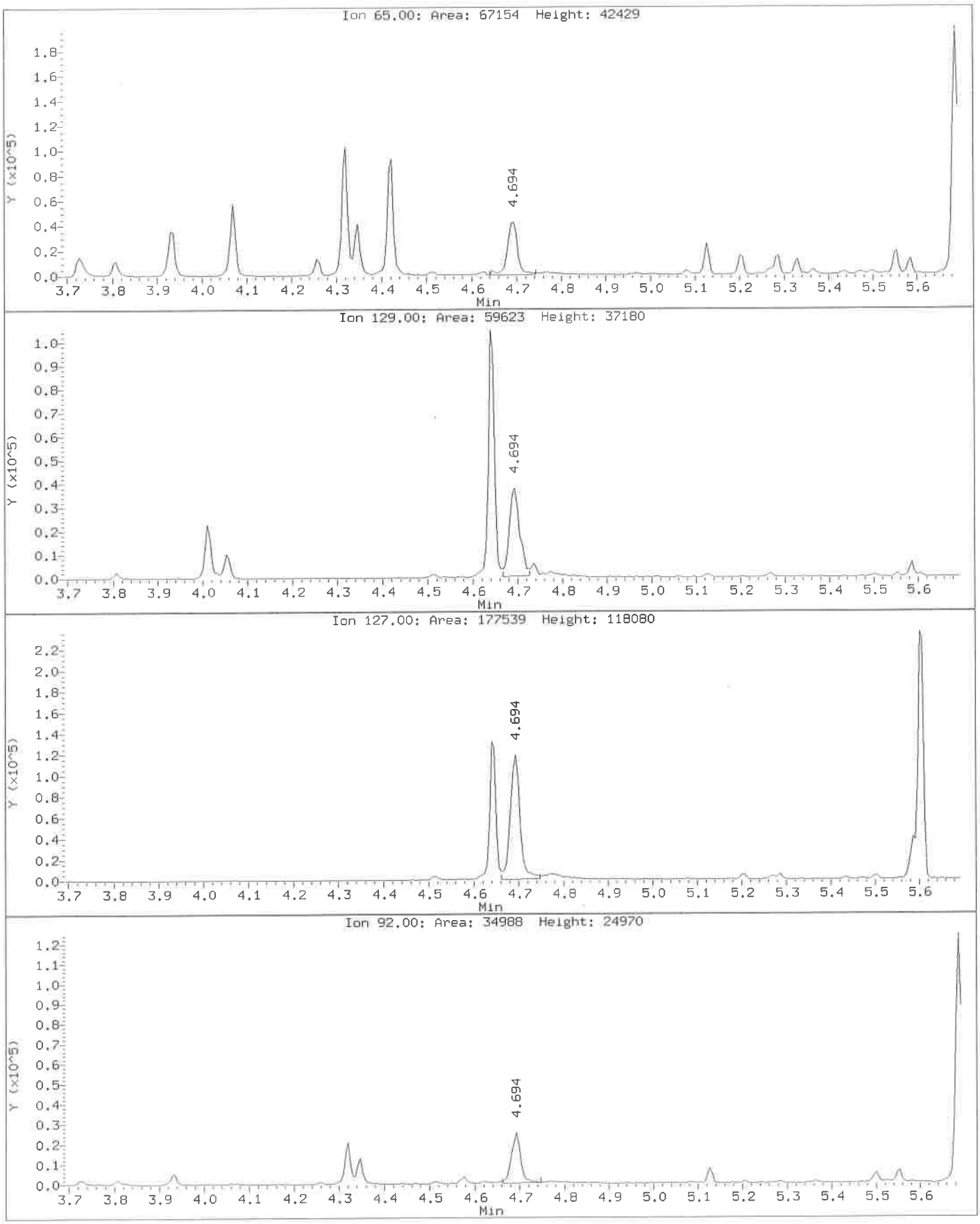
Injection Date: 08-OCT-2014 14:00
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Chloroaniline
CAS Number: 106-47-8



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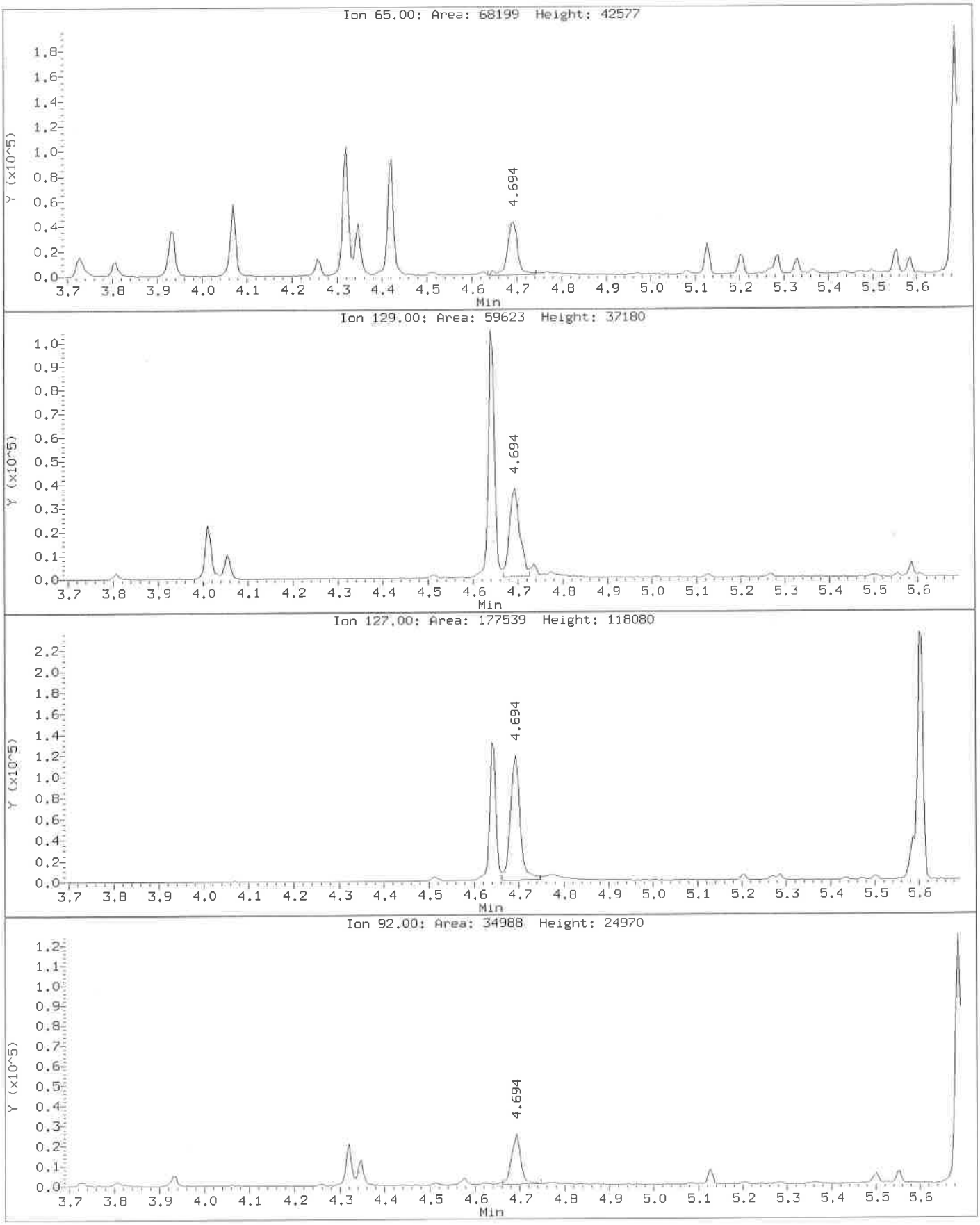
Injection Date: 08-OCT-2014 14:00
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Chloroaniline
CAS Number: 106-47-8



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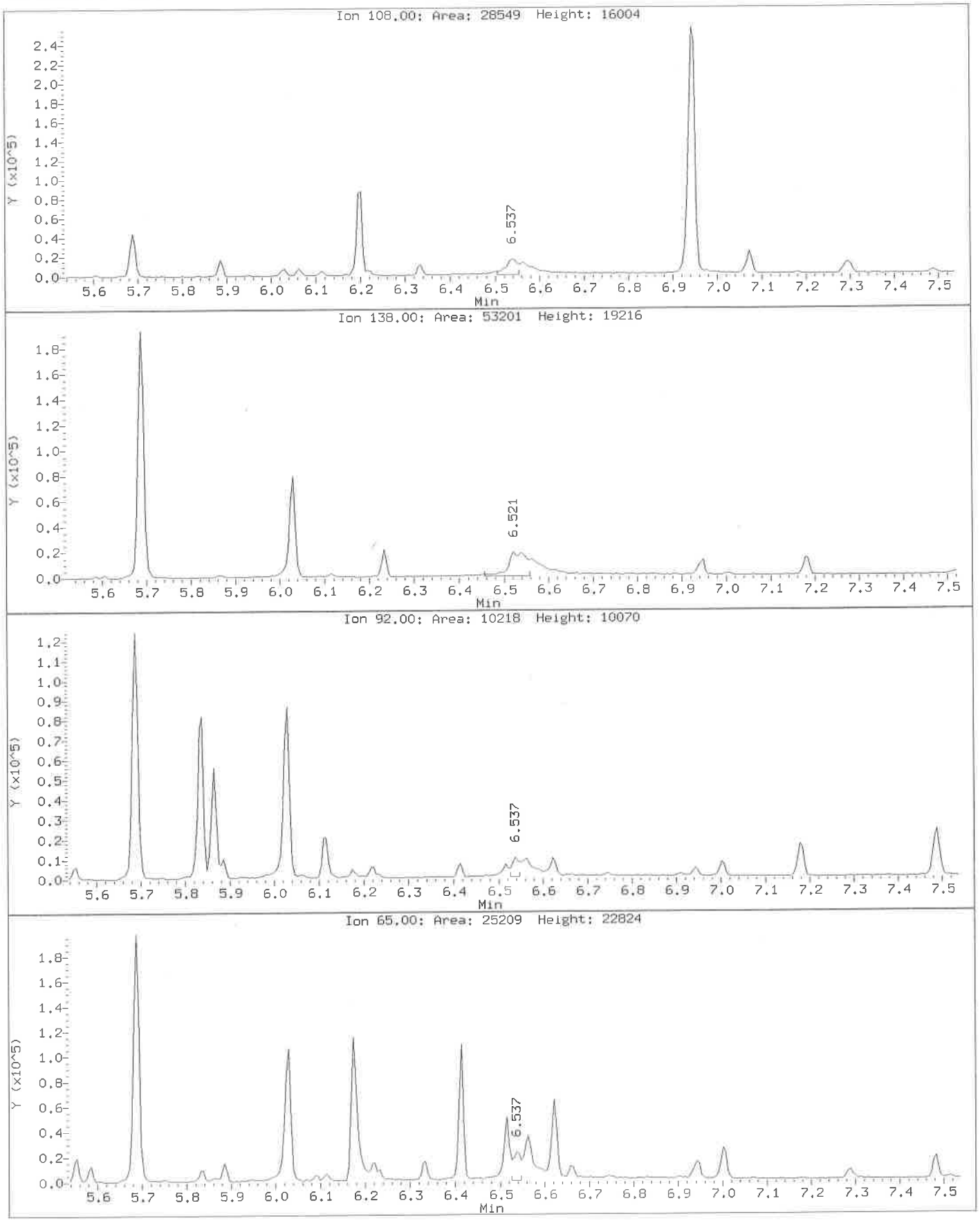
Injection Date: 08-OCT-2014 14:00
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6



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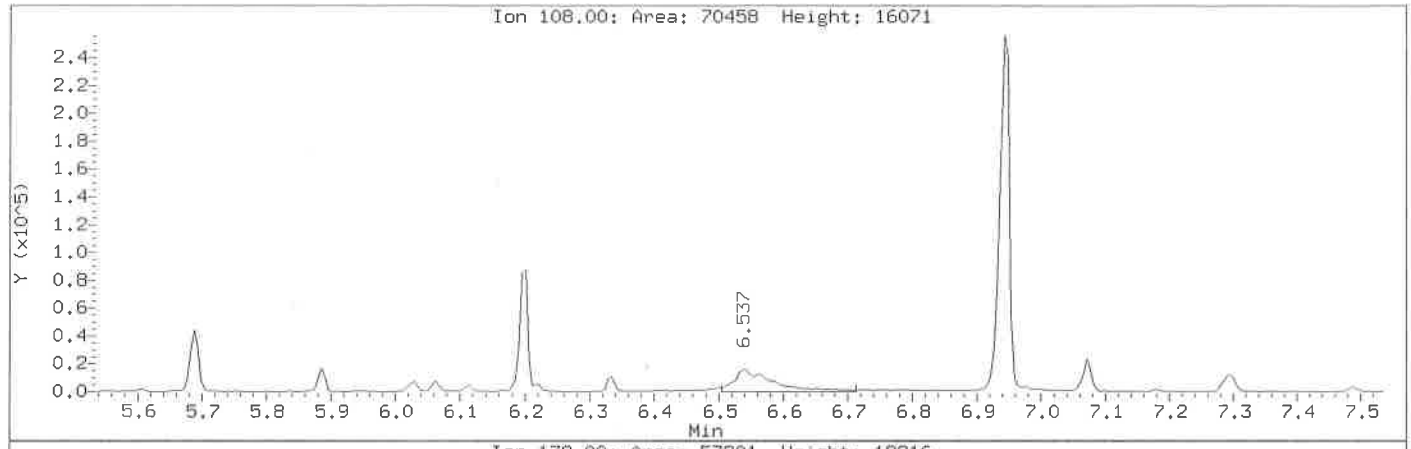
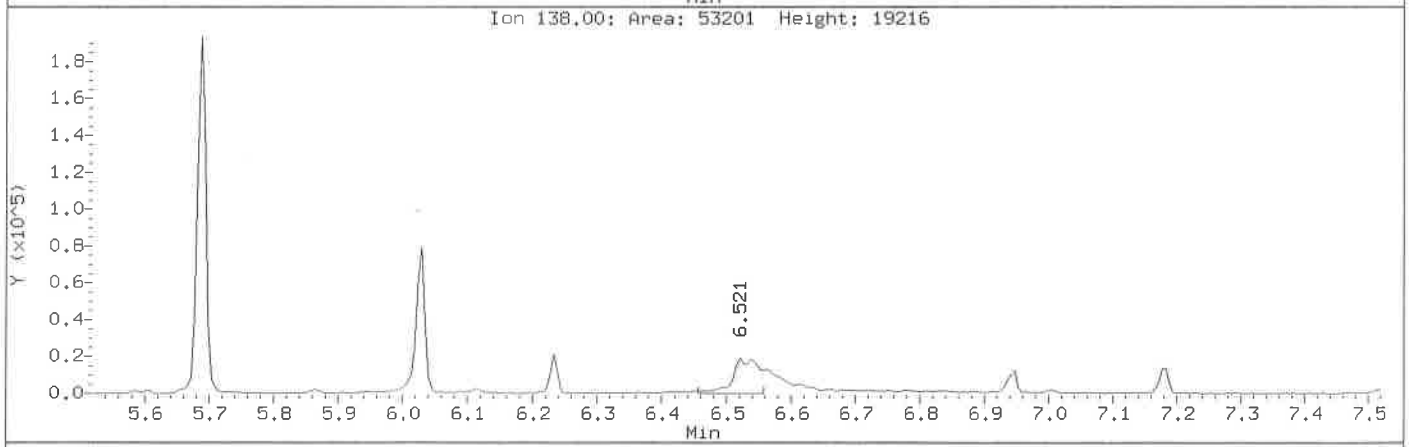
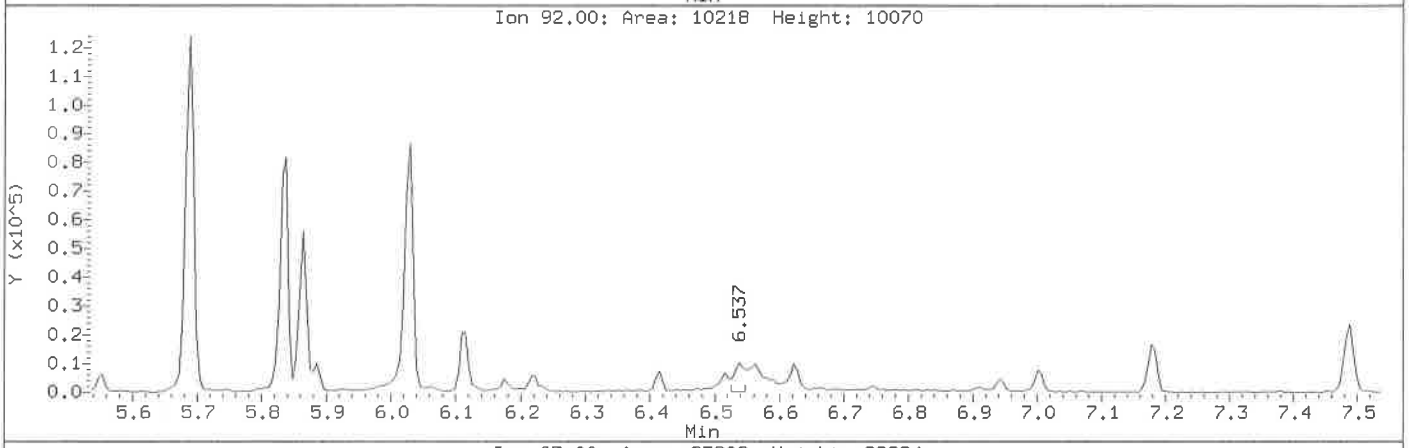
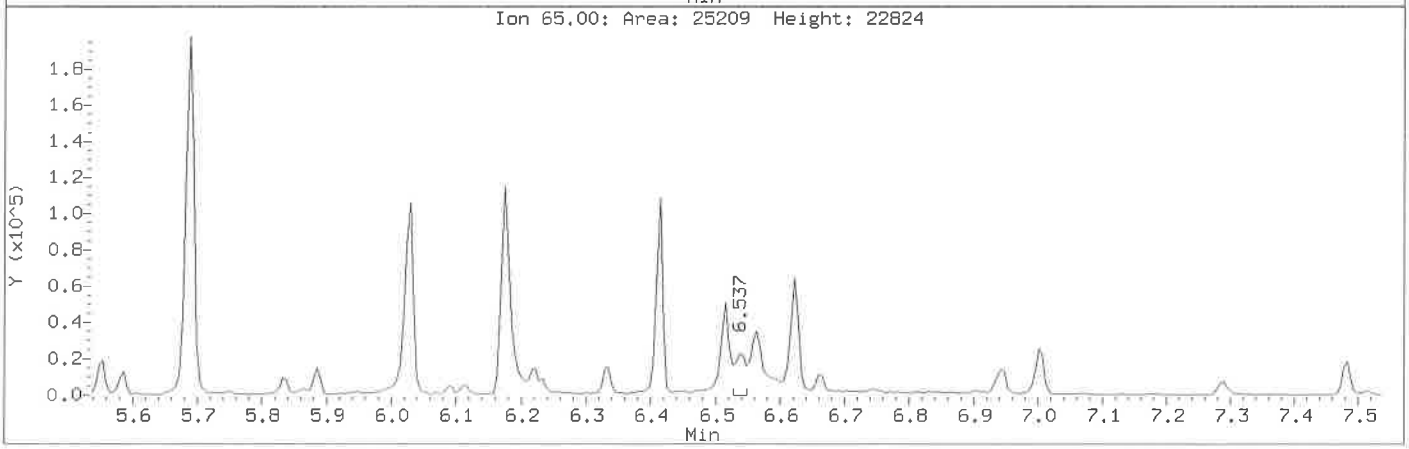
Injection Date: 08-OCT-2014 14:00
Instrument: 30mss1.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6









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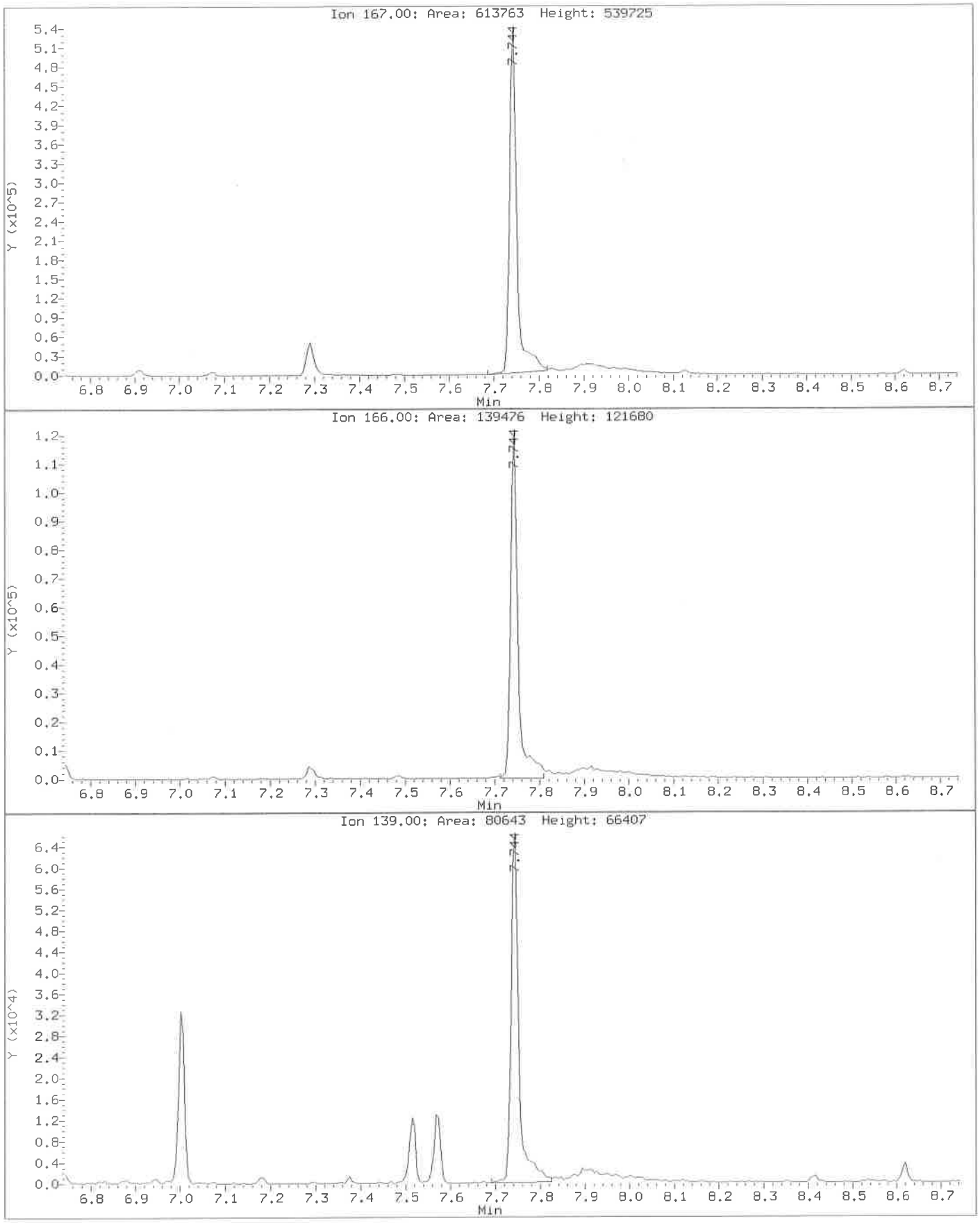
Injection Date: 08-OCT-2014 14:00
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



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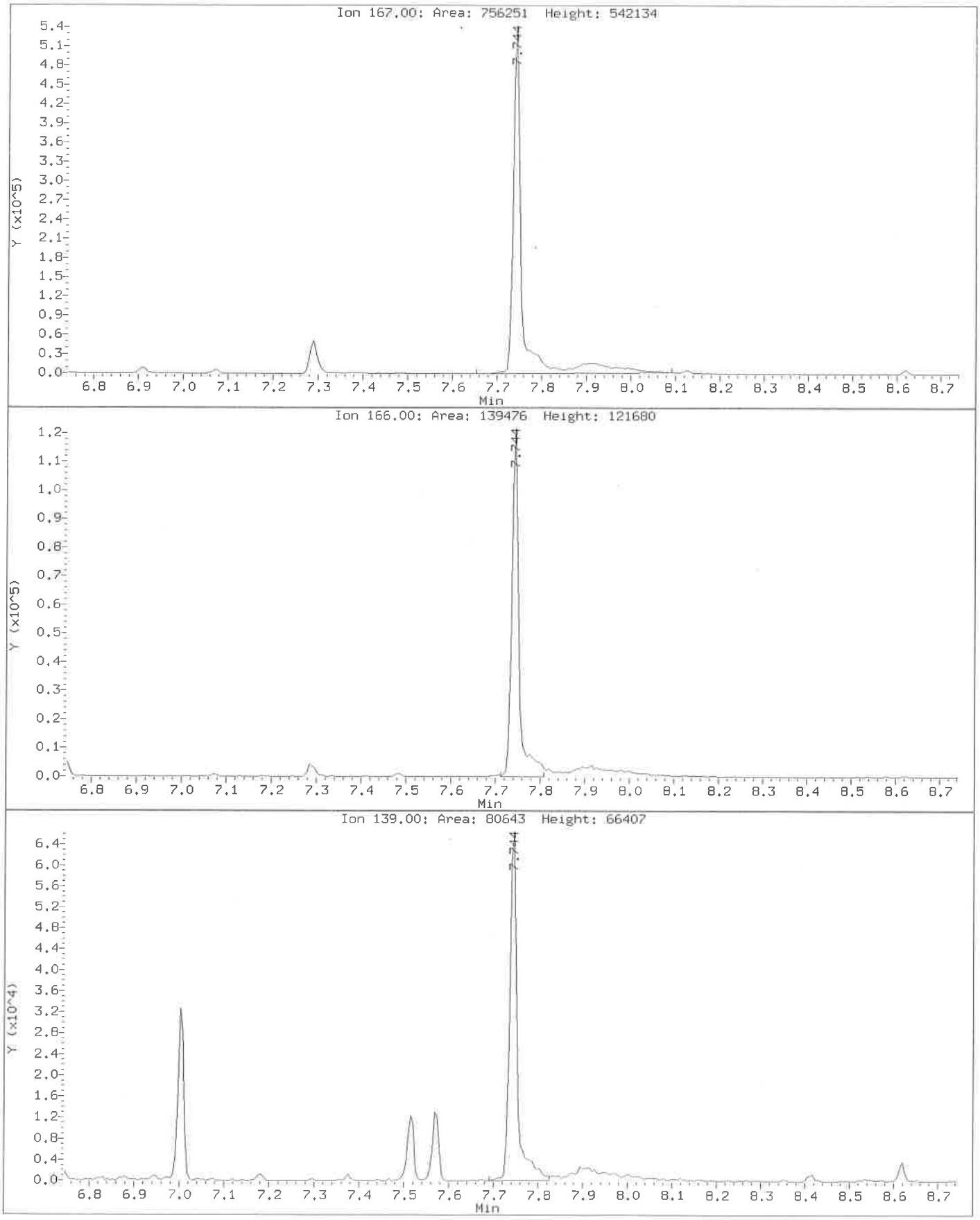
Injection Date: 08-OCT-2014 14:00
Instrument: 30mss1.i
Client Sample ID:

Compound: Carbazole
CAS Number: 86-74-8



FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date: 10/30/14 Time: 0932

Lab File ID: M11030S1 Init. Calib. Date(s): 10/08/14 10/08/14

Init. Calib. Times: 1141 1340

GC Column: RTX-5MS ID: 0.18 (mm)

COMPOUND	SAMPLE AMOUNT	CAL8 AMOUNT	CURVE	%D	MAX %d	
Phenol	9.30	8.00	AVRG	16.2	20.0	
bis(2-Chloroethyl)ether	8.14	8.00	AVRG	1.8	20.0	
2-Chlorophenol	9.17	8.00	AVRG	14.6	20.0	
1,3-Dichlorobenzene	8.21	8.00	AVRG	2.6	20.0	
1,4-Dichlorobenzene	7.84	8.00	AVRG	2.0	20.0	
1,2-Dichlorobenzene	8.01	8.00	AVRG	0.1	20.0	
Benzyl Alcohol	9.18	8.00	AVRG	14.8	20.0	
Bis(2-Chloroisopropyl)ethe	7.82	8.00	AVRG	2.2	20.0	
o-Cresol	8.40	8.00	AVRG	5.0	20.0	
Hexachloroethane	8.74	8.00	AVRG	9.2	20.0	
N-Nitroso-di-n-propylamine	8.79	8.00	AVRG	9.9	20.0	
m/p-cresol	17.6	16.0	AVRG	10.0	20.0	
Nitrobenzene	8.03	8.00	AVRG	0.4	20.0	
Isophorone	8.25	8.00	AVRG	3.1	20.0	
2-Nitrophenol	7.54	8.00	AVRG	5.8	20.0	
2,4-Dimethylphenol	8.39	8.00	AVRG	4.9	20.0	
Bis(2-Chloroethoxy)methane	8.22	8.00	AVRG	2.8	20.0	
2,4-Dichlorophenol	8.28	8.00	AVRG	3.5	20.0	
1,2,4-Trichlorobenzene	7.87	8.00	AVRG	1.6	20.0	
Naphthalene	8.06	8.00	AVRG	0.8	20.0	
Benzoic Acid	6.84	8.00	LINR	14.5	20.0	
4-Chloroaniline	9.09	8.00	2ORDR	13.6	20.0	
Hexachlorobutadiene	7.50	8.00	AVRG	6.2	20.0	
4-Chloro-3-methylphenol	9.16	8.00	AVRG	14.5	20.0	
2-Methylnaphthalene	8.08	8.00	AVRG	1.0	20.0	
Hexachlorocyclopentadiene	6.93	8.00	AVRG	13.4	20.0	
2,4,6-Trichlorophenol	8.34	8.00	AVRG	4.2	20.0	
2,4,5-Trichlorophenol	9.15	8.00	AVRG	14.4	20.0	
2-Chloronaphthalene	8.20	8.00	AVRG	2.5	20.0	
2-Nitroaniline	8.13	8.00	AVRG	1.6	20.0	
Acenaphthylene	7.70	8.00	AVRG	3.8	20.0	
Dimethylphthalate	7.99	8.00	AVRG	0.1	20.0	
2,6-Dinitrotoluene	8.34	8.00	AVRG	4.2	20.0	
Acenaphthene	7.70	8.00	AVRG	3.8	20.0	
3-Nitroaniline	5.89	8.00	2ORDR	26.4	20.0	<-
2,4-Dinitrophenol	8.06	8.00	LINR	0.8	20.0	
Dibenzofuran	7.77	8.00	AVRG	2.9	20.0	

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date: 10/30/14 Time: 0932

Lab File ID: M11030S1 Init. Calib. Date(s): 10/08/14 10/08/14

Init. Calib. Times: 1141 1340

GC Column: RTX-5MS ID: 0.18 (mm)

COMPOUND	SAMPLE AMOUNT	CAL8 AMOUNT	CURVE	%D	MAX %d	
4-Nitrophenol	10.6	8.00	AVRG	32.5	20.0	<-
2,4-Dinitrotoluene	8.51	8.00	AVRG	6.4	20.0	
Fluorene	7.87	8.00	AVRG	1.6	20.0	
4-Chlorophenyl-phenylether	7.89	8.00	AVRG	1.4	20.0	
Diethylphthalate	8.24	8.00	AVRG	3.0	20.0	
4-Nitroaniline	8.36	8.00	2ORDR	4.5	20.0	
4,6-Dinitro-2-methylphenol	8.40	8.00	AVRG	5.0	20.0	
N-Nitrosodiphenylamine	7.70	8.00	AVRG	3.8	20.0	
4-Bromophenyl-phenylether	7.33	8.00	AVRG	8.4	20.0	
Hexachlorobenzene	6.90	8.00	AVRG	13.8	20.0	
Pentachlorophenol	8.12	8.00	POWER	1.5	20.0	
Phenanthrene	7.84	8.00	AVRG	2.0	20.0	
Anthracene	8.01	8.00	AVRG	0.1	20.0	
Di-n-butylphthalate	8.28	8.00	AVRG	3.5	20.0	
Fluoranthene	7.94	8.00	AVRG	0.8	20.0	
Pyrene	7.90	8.00	AVRG	1.2	20.0	
Butylbenzylphthalate	9.28	8.00	AVRG	16.0	20.0	
Benzo[a]anthracene	8.29	8.00	AVRG	3.6	20.0	
3,3'-Dichlorobenzidine	8.17	8.00	AVRG	2.1	20.0	
Chrysene	8.07	8.00	AVRG	0.9	20.0	
bis(2-Ethylhexyl)phthalate	8.62	8.00	AVRG	7.8	20.0	
Di-n-octylphthalate	9.22	8.00	AVRG	15.2	20.0	
Benzo[b]fluoranthene	9.05	8.00	AVRG	13.1	20.0	
Benzo[k]fluoranthene	8.14	8.00	AVRG	1.8	20.0	
Benzo[a]pyrene	8.33	8.00	AVRG	4.1	20.0	
Indeno[1,2,3-cd]pyrene	7.76	8.00	AVRG	3.0	20.0	
Dibenz[a,h]anthracene	7.62	8.00	AVRG	4.8	20.0	
Benzo[g,h,i]perylene	7.64	8.00	AVRG	4.5	20.0	
Carbazole	6.58	8.00	AVRG	17.8	20.0	
N-Nitrosodimethylamine	8.47	8.00	AVRG	5.9	20.0	
Aniline	10.3	8.00	AVRG	28.8	20.0	<-
Azobenzene	8.17	8.00	AVRG	2.1	20.0	
Pyridine	9.26	8.00	AVRG	15.8	20.0	
Acetophenone	8.31	8.00	AVRG	3.9	20.0	
Caprolactam	8.23	8.00	AVRG	2.9	20.0	
Benzaldehyde	8.76	8.00	AVRG	9.5	20.0	
Biphenyl	7.78	8.00	AVRG	2.8	20.0	

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS1 Calibration Date: 10/30/14 Time: 0932

Lab File ID: M11030S1 Init. Calib. Date(s): 10/08/14 10/08/14

Init. Calib. Times: 1141 1340

GC Column: RTX-5MS ID: 0.18 (mm)

COMPOUND	SAMPLE AMOUNT	CAL8 AMOUNT	CURVE	%D	MAX %d
Atrazine	7.42	8.00	AVRG	7.2	20.0
1-Methylnaphthalene	8.09	8.00	AVRG	1.1	20.0
2,6-Dichlorophenol	8.03	8.00	AVRG	0.4	20.0
1,2-Diphenylhydrazine	8.18	8.00	AVRG	2.2	20.0
2,3,4,6-Tetrachlorophenol	8.35	8.00	AVRG	4.4	20.0
1,2,4,5-Tetrachlorobenzene	7.98	8.00	AVRG	0.2	20.0
Nitrobenzene-d5	8.00	8.00	AVRG	0.0	20.0
Terphenyl-d14	7.89	8.00	AVRG	1.4	20.0
Phenol-d5	9.16	8.00	AVRG	14.5	20.0
2-Fluorophenol	8.43	8.00	AVRG	5.4	20.0
2,4,6-Tribromophenol (S)	6.60	8.00	AVRG	17.5	20.0
2-Fluorobiphenyl	7.68	8.00	AVRG	4.0	20.0

Pace Analytical Services, Inc

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss1.i Injection Date: 30-OCT-2014 09:32
Lab File ID: m11030s1.d Init. Cal. Date(s): 08-OCT-2014 08-OCT-2014
Analysis Type: Init. Cal. Times: 11:41 13:40
Lab Sample ID: 8PPM TCL Quant Type: ISTD
Method: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m

COMPOUND	RRF / AMOUNT	RF8	CCAL RRF8	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
$ 7 2-Fluorophenol	1.23243	1.29928	1.29928	0.050	5.42480	20.00000	Averaged	
$ 8 Phenol-d5	1.65608	1.89673	1.89673	0.050	14.53124	20.00000	Averaged	
$ 9 Nitrobenzene-d5	0.18249	0.18240	0.18240	0.050	-0.04626	20.00000	Averaged	
$ 10 2-Fluorobiphenyl	1.55938	1.49716	1.49716	0.050	-3.99033	20.00000	Averaged	
$ 11 2,4,6-Tribromophenol (S)	0.16858	0.13920	0.13920	0.050	-17.43165	20.00000	Averaged	
$ 12 Terphenyl-d14	0.99524	0.98172	0.98172	0.050	-1.35812	20.00000	Averaged	
13 N-Nitrosodimethylamine	0.42135	0.44592	0.44592	0.050	5.83162	20.00000	Averaged	
14 Pyridine	1.42095	1.64524	1.64524	0.050	15.78410	20.00000	Averaged	
15 Benzaldehyde	0.63005	0.69000	0.69000	0.050	9.51475	20.00000	Averaged	
16 Phenol	1.76952	2.05733	2.05733	0.050	16.26528	20.00000	Averaged	
17 Aniline	0.63608	0.81950	0.81950	0.050	28.83719	20.00000	Averaged	<-
18 bis(2-Chloroethyl)ether	1.04891	1.06733	1.06733	0.050	1.75565	20.00000	Averaged	
19 2-Chlorophenol	1.31436	1.50671	1.50671	0.050	14.63457	20.00000	Averaged	
20 1,3-Dichlorobenzene	1.55013	1.59016	1.59016	0.050	2.58208	20.00000	Averaged	
21 1,4-Dichlorobenzene	1.69053	1.65798	1.65798	0.050	-1.92532	20.00000	Averaged	
22 Benzyl Alcohol	1.20834	1.38648	1.38648	0.050	14.74185	20.00000	Averaged	
23 o-Cresol	1.28789	1.35249	1.35249	0.050	5.01605	20.00000	Averaged	
24 1,2-Dichlorobenzene	1.52597	1.52820	1.52820	0.050	0.14601	20.00000	Averaged	
25 Bis(2-Chloroisopropyl)ethe	1.95577	1.91276	1.91276	0.050	-2.19927	20.00000	Averaged	
26 m/p-cresol	1.35345	1.48813	1.48813	0.050	9.95035	20.00000	Averaged	
28 N-Nitroso-di-n-propylamine	1.21567	1.33514	1.33514	0.050	9.82804	20.00000	Averaged	
29 Acetophenone	2.04907	2.12929	2.12929	0.050	3.91489	20.00000	Averaged	
30 Hexachloroethane	0.63370	0.69202	0.69202	0.050	9.20205	20.00000	Averaged	
31 Nitrobenzene	0.45341	0.45508	0.45508	0.050	0.36801	20.00000	Averaged	
32 Isophorone	0.79765	0.82254	0.82254	0.050	3.12127	20.00000	Averaged	
33 2,4-Dimethylphenol	0.40334	0.42287	0.42287	0.050	4.84216	20.00000	Averaged	
34 2-Nitrophenol	0.20692	0.19513	0.19513	0.050	-5.69701	20.00000	Averaged	
35 Bis(2-Chloroethoxy)methane	0.44974	0.46190	0.46190	0.050	2.70193	20.00000	Averaged	
36 Benzoic Acid	8.00000	6.83793	5.28316	0.050	-14.52583	20.00000	Linear	
37 2,4-Dichlorophenol	0.32657	0.33807	0.33807	0.050	3.52023	20.00000	Averaged	
38 2,6-Dichlorophenol	1.17973	1.18430	1.18430	0.050	0.38738	20.00000	Averaged	
39 1,2,4-Trichlorobenzene	0.39335	0.38710	0.38710	0.050	-1.58870	20.00000	Averaged	
40 Naphthalene	1.09246	1.10001	1.10001	0.050	0.69184	20.00000	Averaged	
41 4-Chloroaniline	8.00000	9.09434	8.82390	0.050	13.67925	20.00000	Quadratic	
42 Hexachlorobutadiene	0.28539	0.26754	0.26754	0.050	-6.25281	20.00000	Averaged	
43 Caprolactam	0.15717	0.16174	0.16174	0.050	2.90964	20.00000	Averaged	
44 4-Chloro-3-methylphenol	0.31193	0.35699	0.35699	0.050	14.44459	20.00000	Averaged	
45 2-Methylnaphthalene	0.76818	0.77577	0.77577	0.050	0.98762	20.00000	Averaged	
46 1-Methylnaphthalene	0.69374	0.70124	0.70124	0.050	1.08107	20.00000	Averaged	
47 Hexachlorocyclopentadiene	0.49096	0.42545	0.42545	0.050	-13.34206	20.00000	Averaged	
48 1,2,4,5-Tetrachlorobenzene	1.65937	1.65428	1.65428	0.050	-0.30700	20.00000	Averaged	
49 2,4,6-Trichlorophenol	0.42998	0.44810	0.44810	0.050	4.21224	20.00000	Averaged	

Pace Analytical Services, Inc

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss1.i Injection Date: 30-OCT-2014 09:32
Lab File ID: m11030s1.d Init. Cal. Date(s): 08-OCT-2014 08-OCT-2014
Analysis Type: Init. Cal. Times: 11:41 13:40
Lab Sample ID: 8PPM TCL Quant Type: ISTD
Method: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m

COMPOUND	RRF / AMOUNT	RF8	CCAL RRF8	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
50 2,4,5-Trichlorophenol	0.42132	0.48196	0.48196	0.050	14.39291	20.00000	Averaged	
51 Biphenyl	1.59820	1.55409	1.55409	0.050	-2.75953	20.00000	Averaged	
52 2-Chloronaphthalene	0.38841	0.39830	0.39830	0.050	2.54741	20.00000	Averaged	
53 2-Nitroaniline	0.36392	0.36988	0.36988	0.050	1.63876	20.00000	Averaged	
54 Dimethylphthalate	1.40366	1.40175	1.40175	0.050	-0.13627	20.00000	Averaged	
55 2,6-Dinitrotoluene	0.31654	0.33011	0.33011	0.050	4.28879	20.00000	Averaged	
56 Acenaphthylene	2.00509	1.93125	1.93125	0.050	-3.68254	20.00000	Averaged	
57 3-Nitroaniline	8.00000	5.89238	4.43063	0.050	-26.34524	20.00000	Quadratic	<-
58 Acenaphthene	1.28953	1.24044	1.24044	0.050	-3.80679	20.00000	Averaged	
59 2,4-Dinitrophenol	8.00000	8.06339	6.24287	0.050	0.79237	20.00000	Linear	
60 Dibenzofuran	1.73768	1.68793	1.68793	0.050	-2.86323	20.00000	Averaged	
61 4-Nitrophenol	0.21378	0.28235	0.28235	0.050	32.07631	20.00000	Averaged	<-
62 2,4-Dinitrotoluene	0.40788	0.43394	0.43394	0.050	6.38909	20.00000	Averaged	
63 2,3,4,6-Tetrachlorophenol	0.85461	0.89185	0.89185	0.050	4.35804	20.00000	Averaged	
64 Diethylphthalate	1.38441	1.42656	1.42656	0.050	3.04469	20.00000	Averaged	
65 4-Chlorophenyl-phenylether	0.78127	0.77062	0.77062	0.050	-1.36403	20.00000	Averaged	
66 Fluorene	1.48762	1.46397	1.46397	0.050	-1.58953	20.00000	Averaged	
67 4-Nitroaniline	8.00000	8.35888	6.75646	0.050	4.48604	20.00000	Quadratic	
68 4,6-Dinitro-2-methylphenol	0.12259	0.12865	0.12865	0.050	4.94506	20.00000	Averaged	
69 N-Nitrosodiphenylamine	0.64833	0.62416	0.62416	0.050	-3.72764	20.00000	Averaged	
70 Azobenzene	0.83350	0.85125	0.85125	0.050	2.12958	20.00000	Averaged	
71 1,2-Diphenylhydrazine	0.83265	0.85200	0.85200	0.050	2.32411	20.00000	Averaged	
72 4-Bromophenyl-phenylether	0.29405	0.26944	0.26944	0.050	-8.36836	20.00000	Averaged	
73 Hexachlorobenzene	0.34710	0.29946	0.29946	0.050	-13.72496	20.00000	Averaged	
74 Atrazine	0.12313	0.11428	0.11428	0.050	-7.18372	20.00000	Averaged	
75 Pentachlorophenol	8.00000	8.12470	6.30558	0.050	1.55870	20.00000	Power	
76 Phenanthrene	1.09930	1.07694	1.07694	0.050	-2.03373	20.00000	Averaged	
77 Anthracene	1.05986	1.06183	1.06183	0.050	0.18650	20.00000	Averaged	
78 Carbazole	0.86720	0.71316	0.71316	0.050	-17.76259	20.00000	Averaged	
79 Di-n-butylphthalate	1.23506	1.27784	1.27784	0.050	3.46408	20.00000	Averaged	
80 Fluoranthene	1.19881	1.19037	1.19037	0.050	-0.70376	20.00000	Averaged	
81 Pyrene	1.21668	1.20175	1.20175	0.050	-1.22729	20.00000	Averaged	
82 Butylbenzylphthalate	0.47150	0.54728	0.54728	0.050	16.07244	20.00000	Averaged	
83 3,3'-Dichlorobenzidine	0.36742	0.37535	0.37535	0.050	2.15943	20.00000	Averaged	
84 bis(2-Ethylhexyl)phthalate	0.73163	0.78844	0.78844	0.050	7.76481	20.00000	Averaged	
85 Benzo[a]anthracene	1.11544	1.15578	1.15578	0.050	3.61624	20.00000	Averaged	
86 Chrysene	1.03202	1.04082	1.04082	0.050	0.85313	20.00000	Averaged	
87 Di-n-octylphthalate	1.10865	1.27725	1.27725	0.050	15.20750	20.00000	Averaged	
88 Benzo[b]fluoranthene	1.05337	1.19165	1.19165	0.050	13.12755	20.00000	Averaged	
89 Benzo[k]fluoranthene	1.09367	1.11311	1.11311	0.050	1.77776	20.00000	Averaged	
90 Benzo[a]pyrene	1.09261	1.13721	1.13721	0.050	4.08133	20.00000	Averaged	
91 Dibenz[a,h]anthracene	1.16801	1.11296	1.11296	0.050	-4.71337	20.00000	Averaged	
92 Indeno[1,2,3-cd]pyrene	1.38569	1.34505	1.34505	0.050	-2.93290	20.00000	Averaged	

Pace Analytical Services, Inc

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss1.i Injection Date: 30-OCT-2014 09:32
Lab File ID: m11030s1.d Init. Cal. Date(s): 08-OCT-2014 08-OCT-2014
Analysis Type: Init. Cal. Times: 11:41 13:40
Lab Sample ID: 8PPM TCL Quant Type: ISTD
Method: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m

COMPOUND	RRF / AMOUNT	RF8	CCAL RRF8	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
93 Benzo[g,h,i]perylene	1.16107	1.10947	1.10947	0.050	-4.44489	20.00000	Averaged

Average %D / Drift Results.
Calculated Average %D/Drift = 6.42122
Maximun Average %D/Drift = 15.00000
* Passed Average %D/Drift Test.

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss1.i\mss1103014.b\m11030s1.d
Lab Smp Id: 8PPM TCL
Inj Date : 30-OCT-2014 09:32
Operator : DJL Inst ID: 30mss1.i
Smp Info : 8PPM TCL
Misc Info : V-55-4
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Meth Date : 25-Nov-2014 12:52 30mss1.i Quant Type: ISTD
Cal Date : 08-OCT-2014 13:40 Cal File: m11008y7.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.450	3.450	(1.000)	122838	4.00000		
* 2 Naphthalene-d8 IS	136	4.454	4.454	(1.000)	464340	4.00000		
* 3 Acenaphthene-d8 IS	164	5.891	5.891	(1.000)	281285	4.00000		
* 4 Phenanthrene-d10 IS	188	7.264	7.264	(1.000)	519996	4.00000		
* 5 Chrysene-d12 IS	240	10.058	10.058	(1.000)	541372	4.00000		
* 6 Perylene-d12 IS	264	11.394	11.394	(1.000)	563702	4.00000		
$ 7 2-Fluorophenol	112	2.483	2.483	(0.720)	319203	8.00000	8.43	
$ 8 Phenol-d5	99	3.183	3.183	(0.923)	465982	8.00000	9.16	
$ 9 Nitrobenzene-d5	128	3.888	3.888	(0.873)	169392	8.00000	8.00	
$ 10 2-Fluorobiphenyl	172	5.336	5.336	(0.906)	842255	8.00000	7.68	
$ 11 2,4,6-Tribromophenol (S)	330	6.548	6.548	(0.901)	144763	8.00000	6.60	
$ 12 Terphenyl-d14	244	8.984	8.984	(0.893)	1062956	8.00000	7.89	
13 N-Nitrosodimethylamine	74	1.366	1.366	(0.232)	250864	8.00000	8.47	
14 Pyridine	79	1.361	1.361	(0.395)	404195	8.00000	9.26	
15 Benzaldehyde	77	3.129	3.129	(0.907)	169517	8.00000	8.76	
16 Phenol	94	3.194	3.194	(0.926)	505437	8.00000	9.30	
17 Aniline	66	3.210	3.210	(0.930)	201332	8.00000	10.3(M)	CO
18 bis(2-Chloroethyl)ether	63	3.252	3.252	(0.943)	262217	8.00000	8.14	
19 2-Chlorophenol	128	3.295	3.295	(0.955)	370162	8.00000	9.17	
20 1,3-Dichlorobenzene	146	3.407	3.407	(0.988)	390664	8.00000	8.21	
21 1,4-Dichlorobenzene	146	3.466	3.466	(1.005)	407327	8.00000	7.84	
22 Benzyl Alcohol	79	3.567	3.567	(1.034)	340624	8.00000	9.18	
23 o-Cresol	108	3.653	3.653	(1.059)	332274	8.00000	8.40	
24 1,2-Dichlorobenzene	146	3.583	3.583	(1.039)	375442	8.00000	8.01	
25 Bis(2-Chloroisopropyl)ethe	45	3.664	3.664	(1.062)	469919	8.00000	7.82	
26 m/p-cresol	108	3.776	3.776	(1.094)	731194	16.0000	17.6	
28 N-Nitroso-di-n-propylamine	70	3.776	3.776	(1.094)	328013	8.00000	8.79	
29 Acetophenone	105	3.770	3.770	(1.093)	523115	8.00000	8.31	
30 Hexachloroethane	117	3.840	3.840	(1.113)	170012	8.00000	8.74	
31 Nitrobenzene	77	3.904	3.904	(0.876)	422626	8.00000	8.03	
32 Isophorone	82	4.091	4.091	(0.918)	763878	8.00000	8.25	
33 2,4-Dimethylphenol	107	4.187	4.187	(0.940)	392710	8.00000	8.39	
34 2-Nitrophenol	139	4.155	4.155	(0.933)	181214	8.00000	7.54	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
35 Bis(2-Chloroethoxy)methane	93	4.262	4.262	(0.957)	428953	8.00000	8.22	
36 Benzoic Acid	105	4.289	4.289	(0.963)	175781	8.00000	6.84	
37 2,4-Dichlorophenol	162	4.353	4.353	(0.977)	313955	8.00000	8.28	
38 2,6-Dichlorophenol	162	4.524	4.524	(1.311)	290953	8.00000	8.03	
39 1,2,4-Trichlorobenzene	180	4.406	4.406	(0.989)	359489	8.00000	7.87	
40 Naphthalene	128	4.470	4.470	(1.004)	1021561	8.00000	8.06	
41 4-Chloroaniline	65	4.524	4.524	(1.016)	105246	8.00000	9.09	
42 Hexachlorobutadiene	225	4.572	4.572	(1.026)	248462	8.00000	7.50	
43 Caprolactam	55	4.812	4.812	(1.080)	150209	8.00000	8.23	
44 4-Chloro-3-methylphenol	107	4.924	4.924	(1.106)	331532	8.00000	9.16	
45 2-Methylnaphthalene	142	5.031	5.031	(1.129)	720440	8.00000	8.08	
46 1-Methylnaphthalene	142	5.111	5.111	(1.148)	651224	8.00000	8.09	
47 Hexachlorocyclopentadiene	237	5.159	5.159	(0.876)	239347	8.00000	6.93	
48 1,2,4,5-Tetrachlorobenzene	216	5.170	5.170	(1.499)	406416	8.00000	7.98	
49 2,4,6-Trichlorophenol	196	5.272	5.272	(0.895)	252085	8.00000	8.34	
50 2,4,5-Trichlorophenol	196	5.309	5.309	(0.901)	271139	8.00000	9.15	
51 Biphenyl	154	5.416	5.416	(0.919)	874287	8.00000	7.78	
52 2-Chloronaphthalene	164	5.432	5.432	(0.922)	224072	8.00000	8.20	
53 2-Nitroaniline	138	5.523	5.523	(0.937)	208084	8.00000	8.13	
54 Dimethylphthalate	163	5.672	5.672	(0.963)	788583	8.00000	7.99	
55 2,6-Dinitrotoluene	165	5.720	5.720	(0.971)	185711	8.00000	8.34	
56 Acenaphthylene	152	5.774	5.774	(0.980)	1086466	8.00000	7.70	
57 3-Nitroaniline	65	5.865	5.865	(0.995)	126973	8.00000	5.89	
58 Acenaphthene	153	5.918	5.918	(1.005)	697834	8.00000	7.70	
59 2,4-Dinitrophenol	184	5.950	5.950	(1.010)	90114	8.00000	8.06	
60 Dibenzofuran	168	6.057	6.057	(1.028)	949577	8.00000	7.77	
61 4-Nitrophenol	109	6.025	6.025	(1.023)	158840	8.00000	10.6(Q)	
62 2,4-Dinitrotoluene	165	6.052	6.052	(1.027)	244119	8.00000	8.51	
63 2,3,4,6-Tetrachlorophenol	232	6.164	6.164	(1.787)	219107	8.00000	8.35	
64 Diethylphthalate	149	6.249	6.249	(1.061)	802538	8.00000	8.24	
65 4-Chlorophenyl-phenylether	204	6.340	6.340	(1.076)	433525	8.00000	7.89	
66 Fluorene	166	6.340	6.340	(1.076)	823588	8.00000	7.87	
67 4-Nitroaniline	108	6.372	6.372	(1.082)	83264	8.00000	8.36	
68 4,6-Dinitro-2-methylphenol	198	6.388	6.388	(0.879)	133797	8.00000	8.40	
69 N-Nitrosodiphenylamine	169	6.442	6.442	(0.887)	649125	8.00000	7.70	
70 Azobenzene	77	6.474	6.474	(0.891)	885297	8.00000	8.17	
71 1,2-Diphenylhydrazine	77	6.474	6.474	(0.891)	886071	8.00000	8.18	
72 4-Bromophenyl-phenylether	248	6.783	6.783	(0.934)	280215	8.00000	7.33	
73 Hexachlorobenzene	284	6.848	6.848	(0.943)	311441	8.00000	6.90	
74 Atrazine	200	6.970	6.970	(0.960)	118852	8.00000	7.42	
75 Pentachlorophenol	266	7.072	7.072	(0.974)	164932	8.00000	8.12	
76 Phenanthrene	178	7.291	7.291	(1.004)	1120010	8.00000	7.84	
77 Anthracene	178	7.350	7.350	(1.012)	1104297	8.00000	8.01	
78 Carbazole	167	7.526	7.526	(1.036)	741685	8.00000	6.58(M)	LT
79 Di-n-butylphthalate	149	7.921	7.921	(1.090)	1328947	8.00000	8.28	
80 Fluoranthene	202	8.568	8.568	(1.179)	1237974	8.00000	7.94	
81 Pyrene	202	8.803	8.803	(0.875)	1301184	8.00000	7.90	
82 Butylbenzylphthalate	149	9.508	9.508	(0.945)	592562	8.00000	9.28	
83 3,3'-Dichlorobenzidine	252	10.031	10.031	(0.997)	406408	8.00000	8.17	
84 bis(2-Ethylhexyl)phthalate	149	10.101	10.101	(1.004)	853678	8.00000	8.62	
85 Benzo[a]anthracene	228	10.047	10.047	(0.999)	1251410	8.00000	8.29	
86 Chrysene	228	10.085	10.085	(1.003)	1126945	8.00000	8.07	
87 Di-n-octylphthalate	149	10.726	10.726	(1.066)	1382931	8.00000	9.22	
88 Benzo[b]fluoranthene	252	11.068	11.068	(0.971)	1343471	8.00000	9.05	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
89 Benzo[k]fluoranthene	252	11.089	11.089	(0.973)	1254927	8.00000	8.14	
90 Benzo[a]pyrene	252	11.351	11.351	(0.996)	1282091	8.00000	8.33	
91 Dibenz[a,h]anthracene	278	12.238	12.238	(1.074)	1254754	8.00000	7.62	
92 Indeno[1,2,3-cd]pyrene	276	12.232	12.232	(1.074)	1516415	8.00000	7.76	
93 Benzo[g,h,i]perylene	276	12.441	12.441	(1.092)	1250816	8.00000	7.64	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m11030s1.d
Lab Smp Id: 8PPM TCL
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: V-55-4

Calibration Date: 29-OCT-2014
Calibration Time: 09:00
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	108462	54231	216924	122838	13.25
2 Naphthalene-d8 I	402819	201410	805638	464340	15.27
3 Acenaphthene-d8	239739	119870	479478	281285	17.33
4 Phenanthrene-d10	453039	226520	906078	519996	14.78
5 Chrysene-d12 IS	448291	224146	896582	541372	20.76
6 Perylene-d12 IS	536491	268246	1072982	563702	5.07

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.61	3.11	4.11	3.45	-4.54
2 Naphthalene-d8 I	4.62	4.12	5.12	4.45	-3.67
3 Acenaphthene-d8	6.06	5.56	6.56	5.89	-2.80
4 Phenanthrene-d10	7.49	6.99	7.99	7.26	-2.98
5 Chrysene-d12 IS	10.27	9.77	10.77	10.06	-2.07
6 Perylene-d12 IS	11.61	11.11	12.11	11.39	-1.87

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m11030s1.d

Date : 30-OCT-2014 09:32

Client ID:

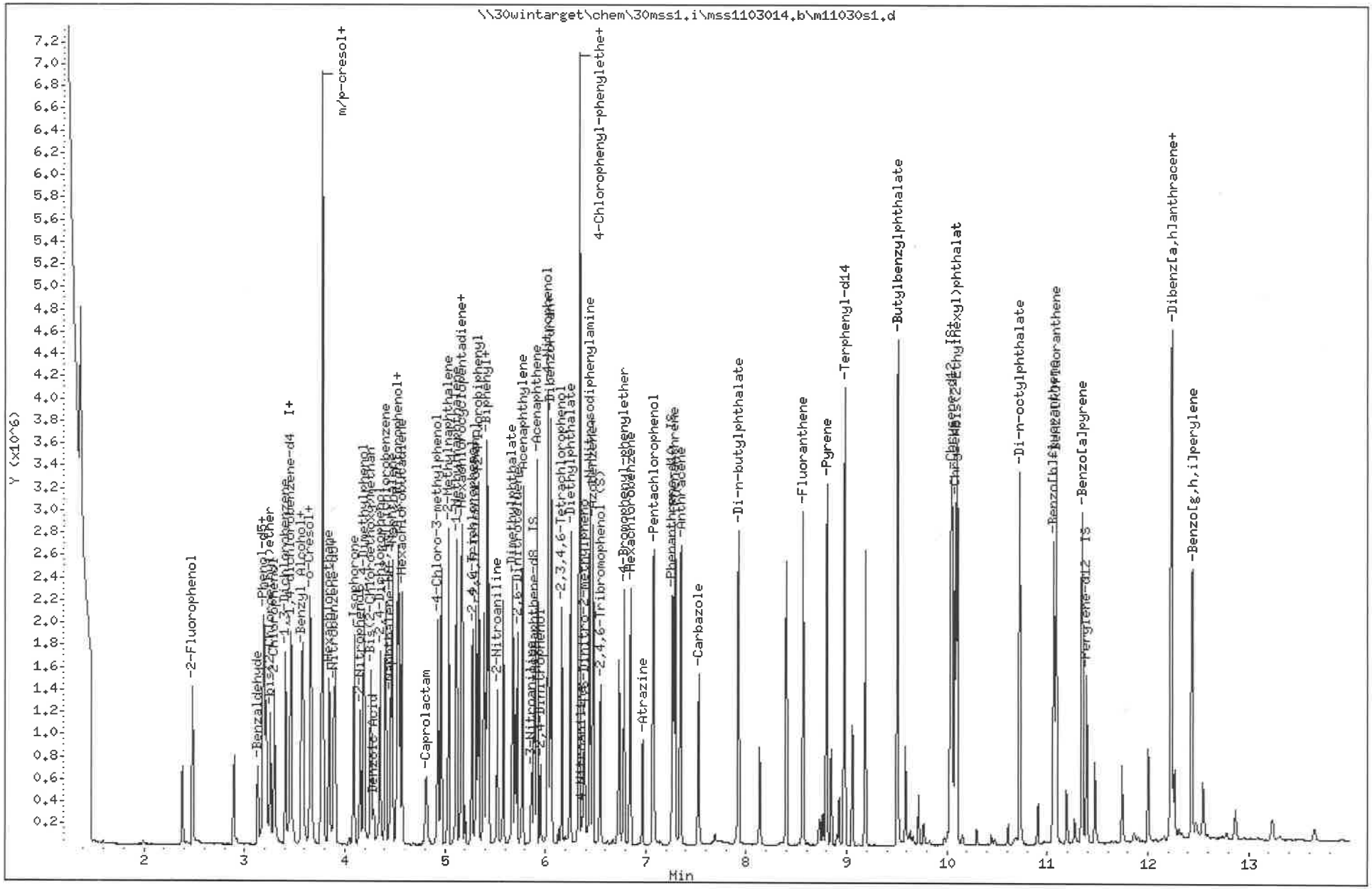
Sample Info: 8PPM TCL

Column phase: RTX-5MS

Instrument: 30mss1.i

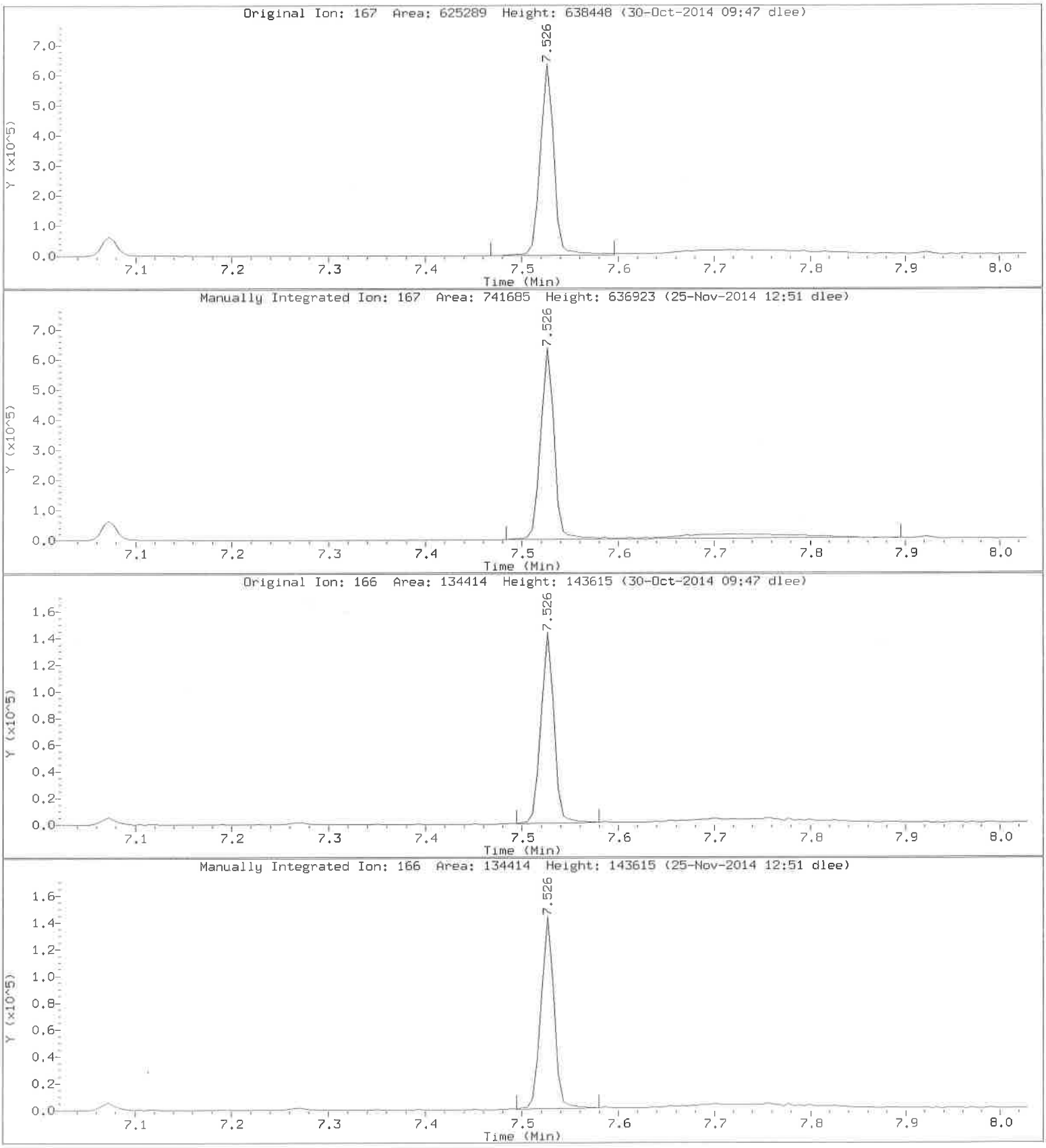
Operator: DJL

Column diameter: 0.18



Data File: \\30wintarget\chem\30mss1.i\mss1103014.b/m11030s1.d (ManInt: all
Injection Date: 30-OCT-2014 09:32
Instrument: 30mss1.i
Lab Sample ID: 8PPM TCL

Compound: Carbazole
CAS Number: 86-74-8



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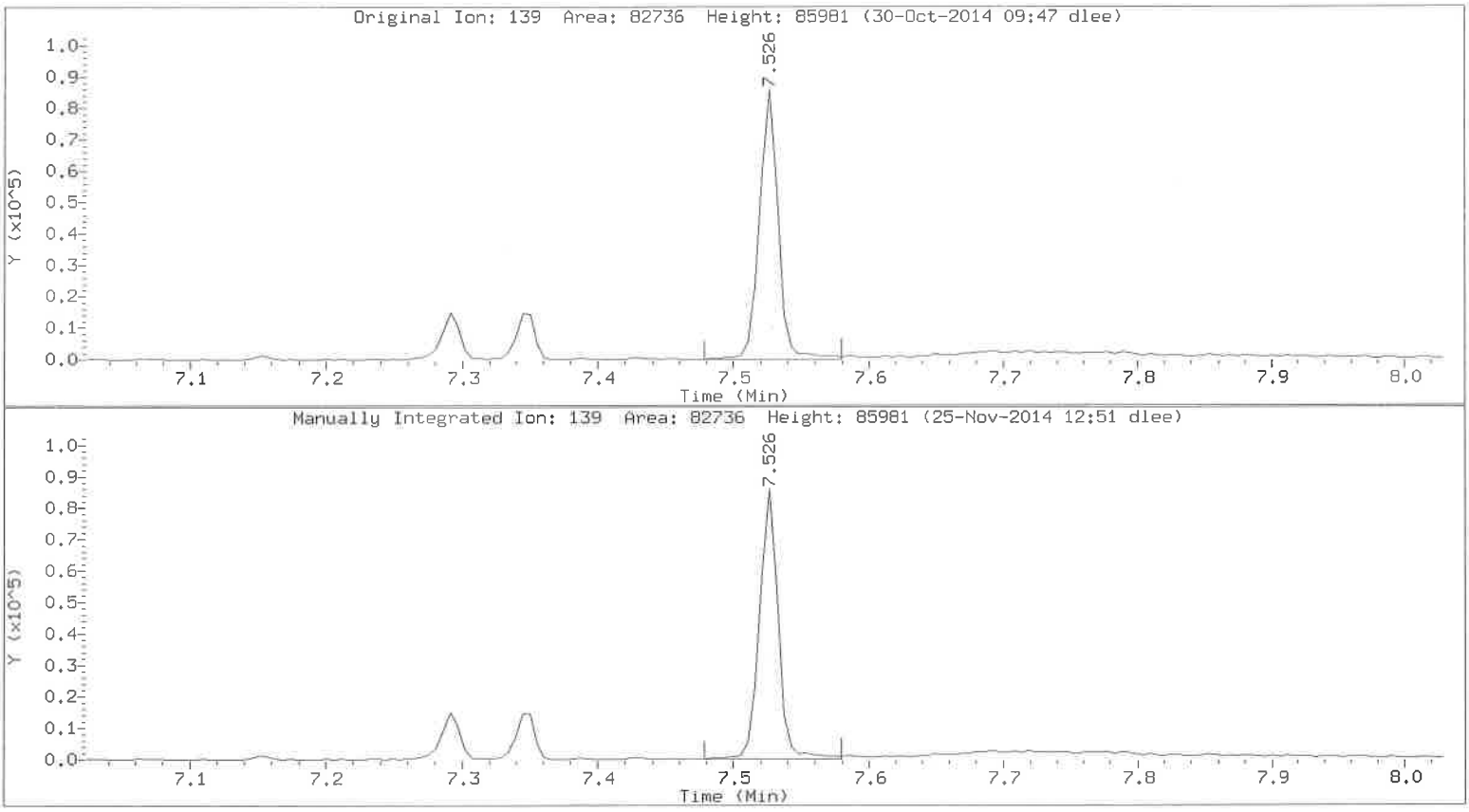
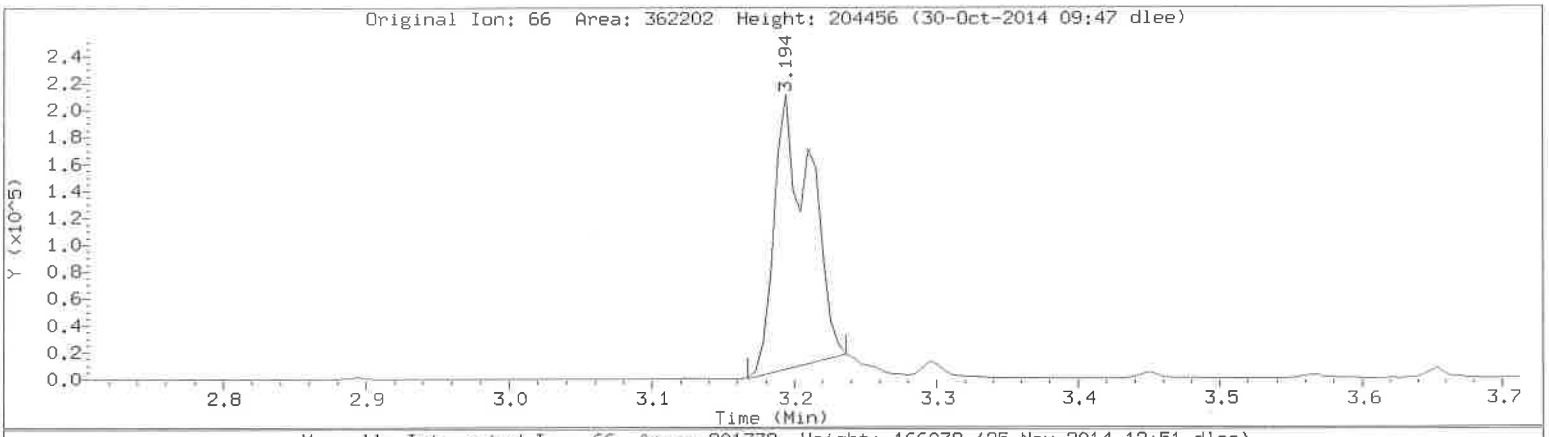
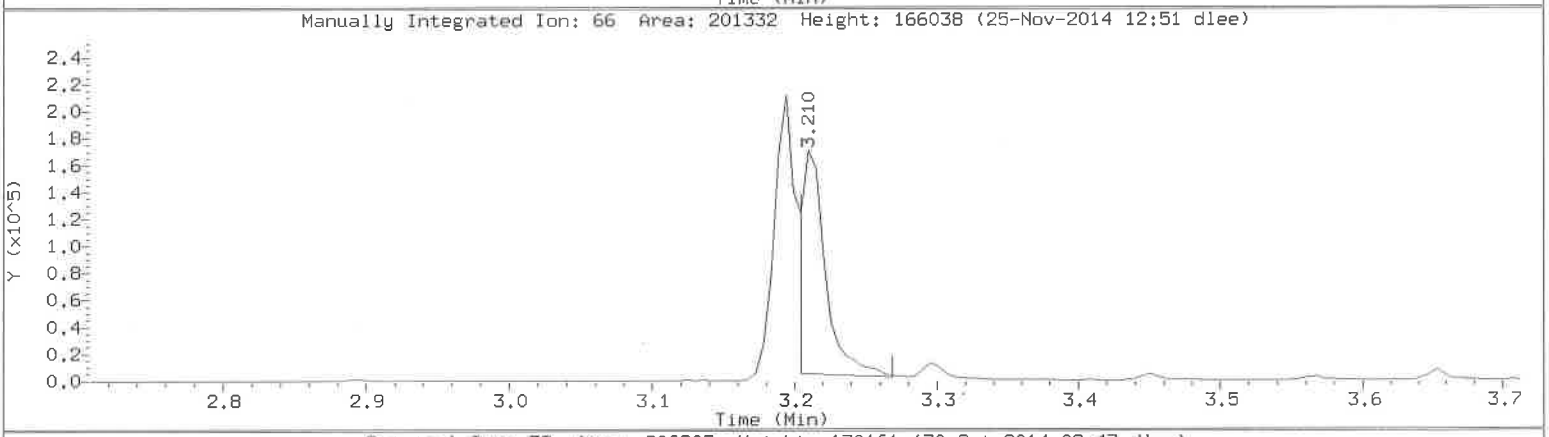
Injection Date: 30-OCT-2014 09:32
Instrument: 30mss1.i
Lab Sample ID: 8PPM TCL

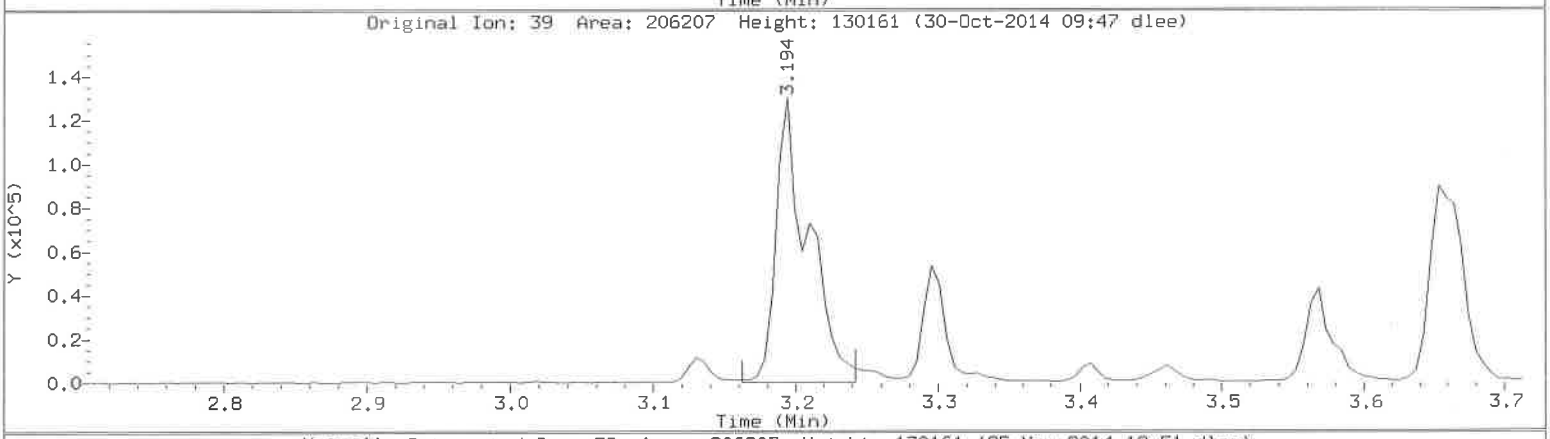


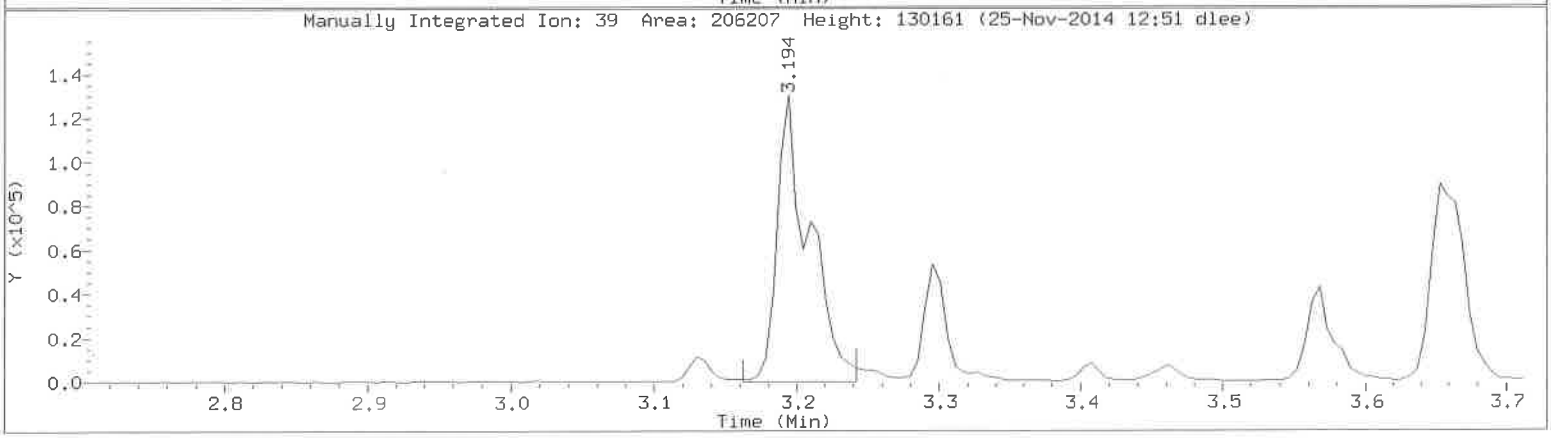
Data File: \\30wintarget\chem\30mss1.i\mss1103014.b/m11030s1.d (ManInt: all
Injection Date: 30-OCT-2014 09:32
Instrument: 30mss1.i
Lab Sample ID: 8PPM TCL

Compound: Aniline
CAS Number: 62-53-3

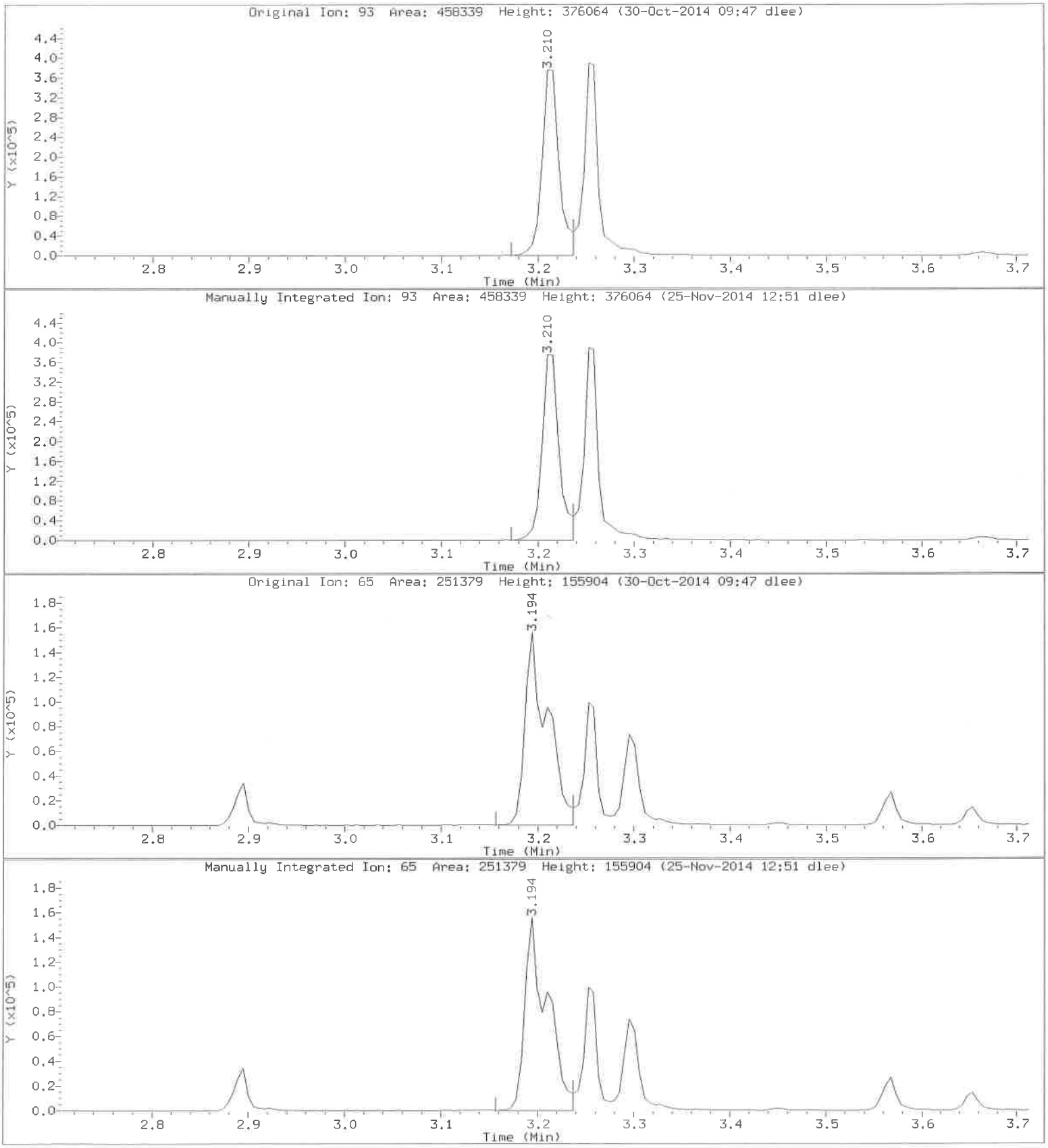








Data File: \\30wintarget\chem\30mss1.i\mss1103014.b/m11030s1.d (ManInt: all
Injection Date: 30-OCT-2014 09:32
Instrument: 30mss1.i
Lab Sample ID: 8PPM TCL



FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: M11008T2 DFTPP Injection Date: 10/08/14

Instrument ID: 30MSS1 DFTPP Injection Time: 1125

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	47.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	41.9
70	Less than 2.0% of mass 69	0.6 (1.5)1
127	25.0 - 75.0% of mass 198	44.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	30.0
365	Greater than 0.75% of mass 198	3.58
441	Present, but less than mass 443	14.2
442	40.0 - 110.0% of mass 198	89.3
443	15.0 - 24.0% of mass 442	17.9 (20.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		1PPM TCL	M11008Y1	10/08/14	1141
02		2PPM TCL	M11008Y2	10/08/14	1200
03		4PPM TCL	M11008Y3	10/08/14	1220
04		8PPM TCL	M11008Y4	10/08/14	1240
05		12PPM TCL	M11008Y5	10/08/14	1300
06		16PPM TCL	M11008Y6	10/08/14	1320
07		20PPM TCL	M11008Y7	10/08/14	1340
08		8PPM TCL ICV	M11008Y8	10/08/14	1400
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

DFTPP TUNE/TAILING FACTOR/DEGRADATION SUMMARY RESULTS

DFTPP Ion Abundance/Ratio Criteria Chart

Ion	Abundance Criteria	Base Peak	Other	Test
198	Base Peak, 100% relative abundance	100.00		PASS
51	30 - 80% of mass 198	47.24		PASS
68	Less than 2% of mass 69	0.00	(0.00)	PASS
69	Mass 69 relative abundance	41.91		PASS
70	Less than 2% of mass 69	0.63	(1.50)	PASS
127	25 - 75% of mass 198	44.59		PASS
197	0 - 1% of mass 198	0.00		PASS
199	5 - 9% of mass 198	6.75		PASS
275	10 - 30% of mass 198	29.97		PASS
365	Greater than 1% of mass 198	3.58		PASS
441	Present, but less than mass 443	14.17	(79.18)	PASS
442	Greater than 40% of mass 198	89.29		PASS
443	15 - 24% of mass 442	17.90	(20.05)	PASS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	2.8236057	5.000	PASS
Benzidine	1.5015576	3.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	247935			N/A
4,4-DDE	0	0.0	15.0	PASS
4,4-DDD	19769	7.4	15.0	PASS
4,4-DDD + DDE	19769	7.4	15.0	PASS

Tuning Sample, //30wintarget/chem/30mss1.i/mss1100814.b/m11008t2.d/m11008t2.d,*** P ******

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008t2.d

Date : 08-OCT-2014 11:25

Client ID:

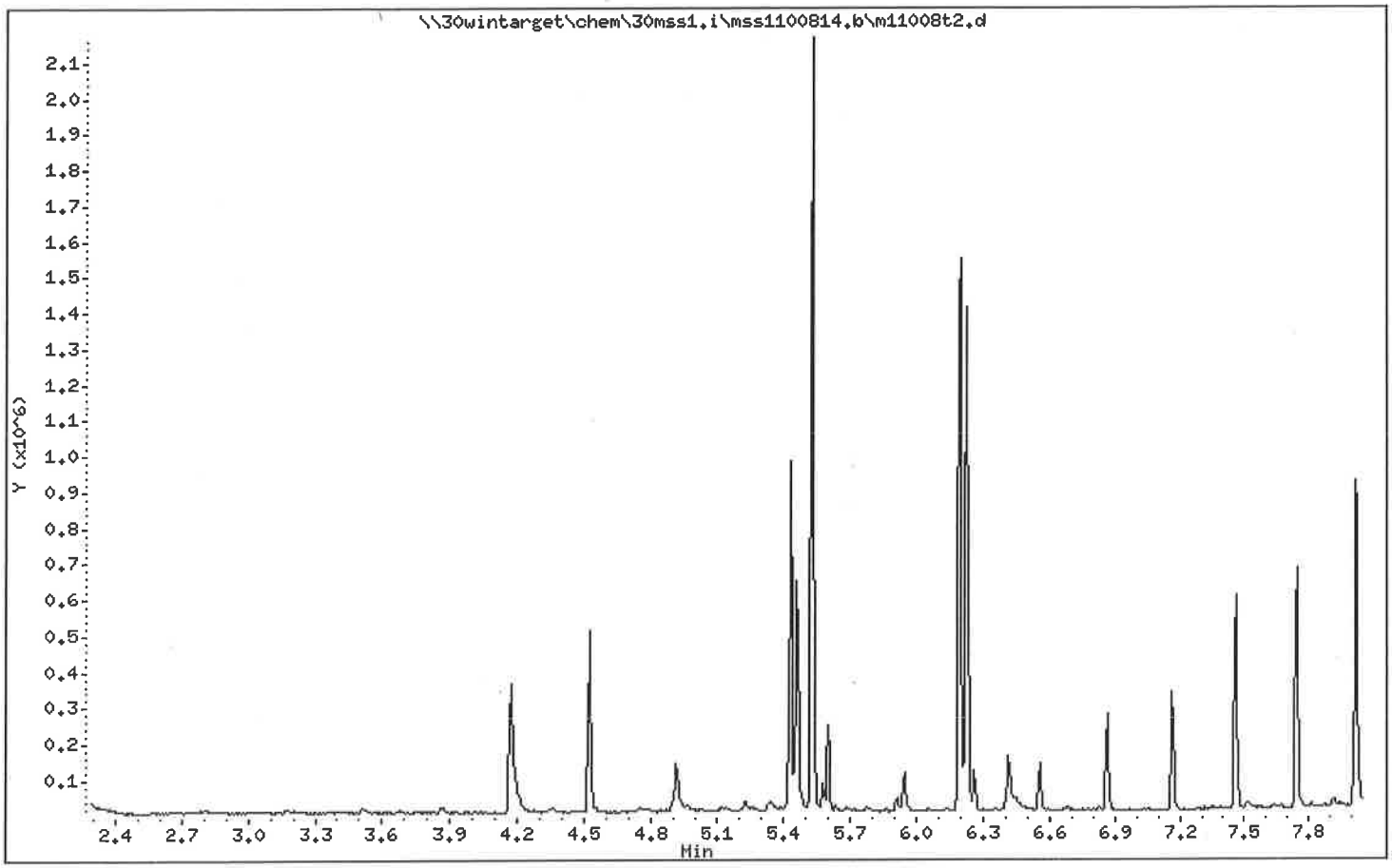
Instrument: 30mss1.i

Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18



Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008t2.d

Date : 08-OCT-2014 11:25

Client ID:

Instrument: 30mss1.i

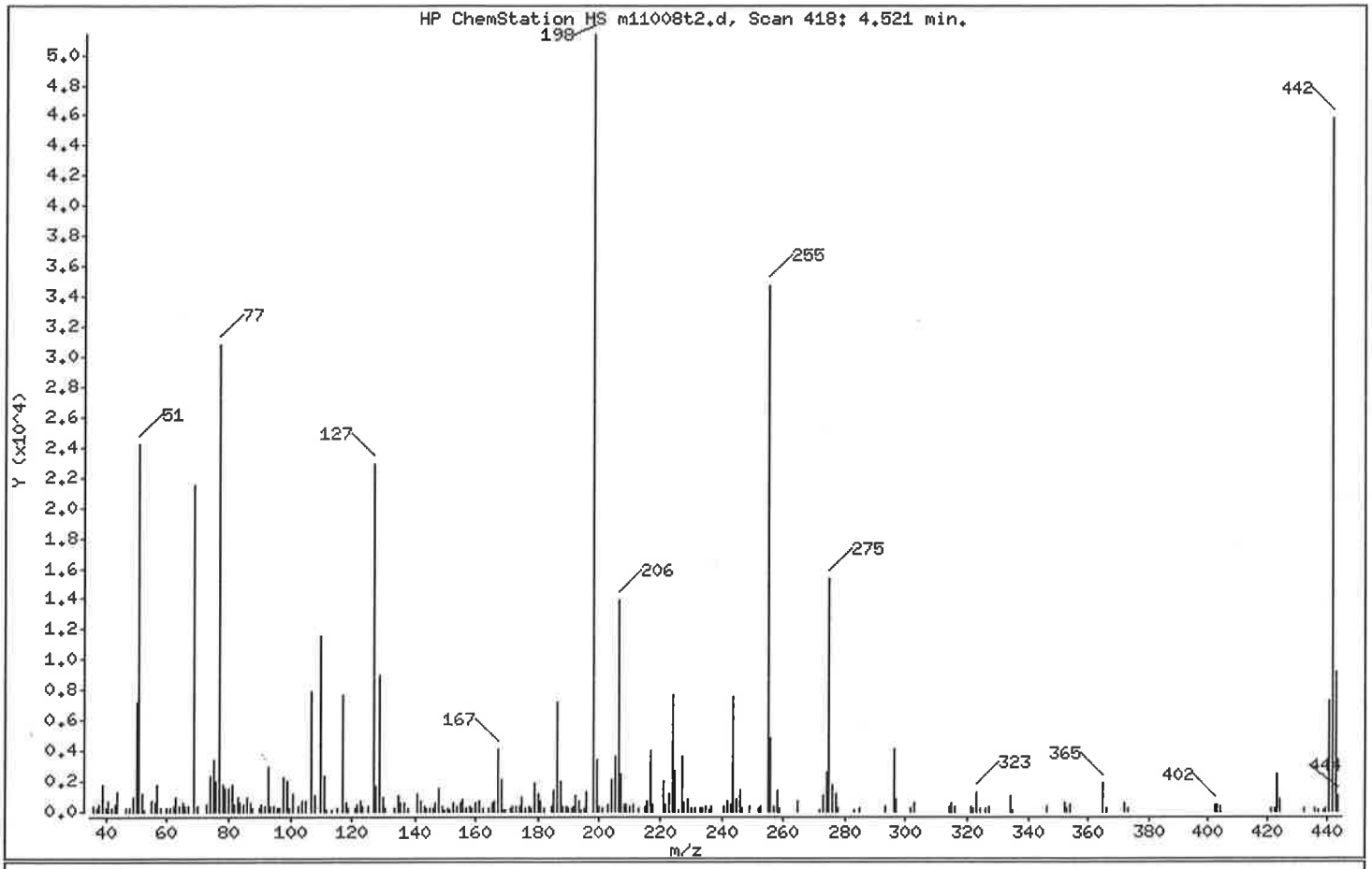
Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 80.00% of mass 198	47.24
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	41.91
70	Less than 2.00% of mass 69	0.63 (1.50)
127	25.00 - 75.00% of mass 198	44.59
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.75
275	10.00 - 30.00% of mass 198	29.97
365	Greater than 0.75% of mass 198	3.58
441	Present, but less than mass 443	14.17
442	40.00 - 110.00% of mass 198	89.29
443	15.00 - 24.00% of mass 442	17.90 (20.05)

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008t2.d

Date : 08-OCT-2014 11:25

Client ID:

Instrument: 30mss1.i

Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18

Data File: m11008t2.d
Spectrum: HP ChemStation MS m11008t2.d, Scan 418: 4.521 min.
Location of Maximum: 197.90
Number of points: 243

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.80	296	104.90	691	176.90	304	245.90	1418
37.00	258	106.90	7908	177.70	227	246.90	184
37.90	471	107.90	1050	178.80	1894	248.90	406
39.00	1829	109.90	11536	179.90	1182	252.00	270
40.00	215	110.90	2369	180.80	706	252.80	299
40.90	705	111.70	161	182.10	267	254.90	34776
42.20	229	113.20	177	184.10	344	255.90	4890
43.10	517	114.90	209	184.90	1404	256.90	360
43.90	1276	116.90	7691	185.90	7234	257.90	1371
47.00	190	117.90	587	187.00	1969	258.80	201
48.00	246	118.90	232	187.90	380	264.90	652
49.00	940	121.10	178	188.90	328	272.00	171
50.00	7234	121.90	491	189.80	250	272.90	1075
51.00	24264	122.90	687	190.60	206	273.90	2596
52.00	1234	123.80	308	191.10	343	274.90	15396
52.90	157	125.00	375	191.90	1021	275.90	1822
55.00	756	126.90	22904	192.90	651	276.90	1123
56.00	643	127.90	1697	193.70	171	277.80	230
56.90	1762	128.90	8970	194.00	177	282.90	172
58.00	206	129.90	938	195.00	228	285.00	268
59.90	182	130.90	246	195.80	1284	292.90	300
61.00	238	133.90	288	197.90	51368	295.90	4187
62.00	368	134.90	1113	198.90	3468	296.90	843
63.00	918	135.70	568	199.90	349	301.80	197
63.90	340	136.90	548	200.80	185	303.00	568
65.00	609	138.00	187	201.10	180	313.90	337
65.80	301	140.90	1204	202.90	502	314.90	579
66.70	302	142.00	666	203.90	2133	315.90	401
66.90	297	142.90	398	204.90	3609	321.00	329
68.90	21528	144.00	202	206.00	13929	321.90	189
70.00	322	144.70	184	206.90	2515	323.00	1330
73.10	475	145.90	198	207.90	450	323.90	202
74.00	2352	146.90	534	208.90	480	325.80	203
75.00	3449	147.90	1579	210.00	379	327.00	408
76.00	2028	148.90	373	210.90	481	334.00	1034

Data File: \\30wintarget\chem\30mss1.i\mss1100814.b\m11008t2.d

Date : 08-OCT-2014 11:25

Client ID:

Instrument: 30mss1.i

Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18

Data File: m11008t2.d
Spectrum: HP ChemStation MS m11008t2.d, Scan 418: 4.521 min.
Location of Maximum: 197.90
Number of points: 243

m/z	Y	m/z	Y	m/z	Y	m/z	Y
77.00	30872	150.00	154	212.90	189	334.80	172
78.00	1731	151.00	271	214.90	347	346.00	405
78.90	1485	151.70	176	216.00	668	351.90	569
80.00	1478	152.90	623	216.90	4060	352.80	288
81.00	1808	154.00	362	217.80	531	353.90	438
81.90	473	154.90	587	220.90	1955	364.90	1838
83.00	888	155.90	834	221.80	441	365.70	195
83.80	571	156.90	198	223.00	1133	372.00	589
84.90	483	157.90	300	223.90	7677	372.90	192
86.00	973	158.80	254	225.00	2754	402.00	484
87.00	580	159.90	591	225.80	154	402.90	457
88.00	224	161.00	717	226.90	3645	403.90	307
90.00	201	162.00	222	227.80	646	420.90	202
90.90	519	163.90	283	229.00	798	422.10	294
92.00	300	164.90	634	229.80	252	423.00	2511
92.90	2970	165.90	683	231.00	270	424.00	847
94.00	320	167.00	4187	233.00	279	432.40	180
95.00	372	168.00	2072	233.90	292	436.20	183
96.00	216	168.80	167	234.90	342	437.10	155
96.90	241	169.10	166	236.10	160	438.90	153
98.00	2192	170.90	179	236.90	388	439.40	211
98.90	2058	171.80	356	241.00	385	441.00	7280
99.90	232	172.80	379	242.00	661	442.00	45864
100.90	1213	173.90	411	242.90	512	443.00	9194
102.80	389	174.90	971	244.00	7554	444.00	1028
103.90	702	175.80	221	244.90	809		

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: M11030T2 DFTPP Injection Date: 10/30/14

Instrument ID: 30MSS1 DFTPP Injection Time: 0920

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	40.6
68	Less than 2.0% of mass 69	0.7 (1.6)1
69	Mass 69 relative abundance	40.6
70	Less than 2.0% of mass 69	0.1 (0.3)1
127	25.0 - 75.0% of mass 198	45.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.2
275	10.0 - 30.0% of mass 198	29.1
365	Greater than 0.75% of mass 198	4.58
441	Present, but less than mass 443	12.8
442	40.0 - 110.0% of mass 198	92.2
443	15.0 - 24.0% of mass 442	18.0 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		8PPM TCL	M11030S1	10/30/14	0932
02	AOI-5_PECO-B	30133009001	M1103009	10/30/14	1251
03	AOI-5_PECO-B	30133009002	M1103010	10/30/14	1310
04	AOI-5_PECO-B	30133009003	M1103011	10/30/14	1330
05	MBLCS	809327	M1103013	10/30/14	1410
06	MB	809326	M1103015	10/30/14	1449
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

DFTPP TUNE/TAILING FACTOR/DEGRADATION SUMMARY RESULTS

DFTPP Ion Abundance/Ratio Criteria Chart

Ion	Abundance Criteria	Base Peak	Other	Test
198	Base Peak, 100% relative abundance	100.00		PASS
51	30 - 80% of mass 198	40.57		PASS
68	Less than 2% of mass 69	0.65	(1.61)	PASS
69	Mass 69 relative abundance	40.59		PASS
70	Less than 2% of mass 69	0.12	(0.30)	PASS
127	25 - 75% of mass 198	45.66		PASS
197	0 - 1% of mass 198	0.00		PASS
199	5 - 9% of mass 198	6.23		PASS
275	10 - 30% of mass 198	29.12		PASS
365	Greater than 1% of mass 198	4.58		PASS
441	Present, but less than mass 443	12.75	(71.02)	PASS
442	Greater than 40% of mass 198	92.22		PASS
443	15 - 24% of mass 442	17.96	(19.47)	PASS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	2.1307779	5.000	PASS
Benzidine	1.5177419	3.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	180310			N/A
4,4-DDE	0	0.0	15.0	PASS
4,4-DDD	16550	8.4	15.0	PASS
4,4-DDD + DDE	16550	8.4	15.0	PASS

******
Tuning Sample, //30wintarget/chem/30mss1.i/mss1103014.b/m11030t2.d/m11030t2.d,*** P
******

Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m11030t2.d

Date : 30-OCT-2014 09:20

Client ID:

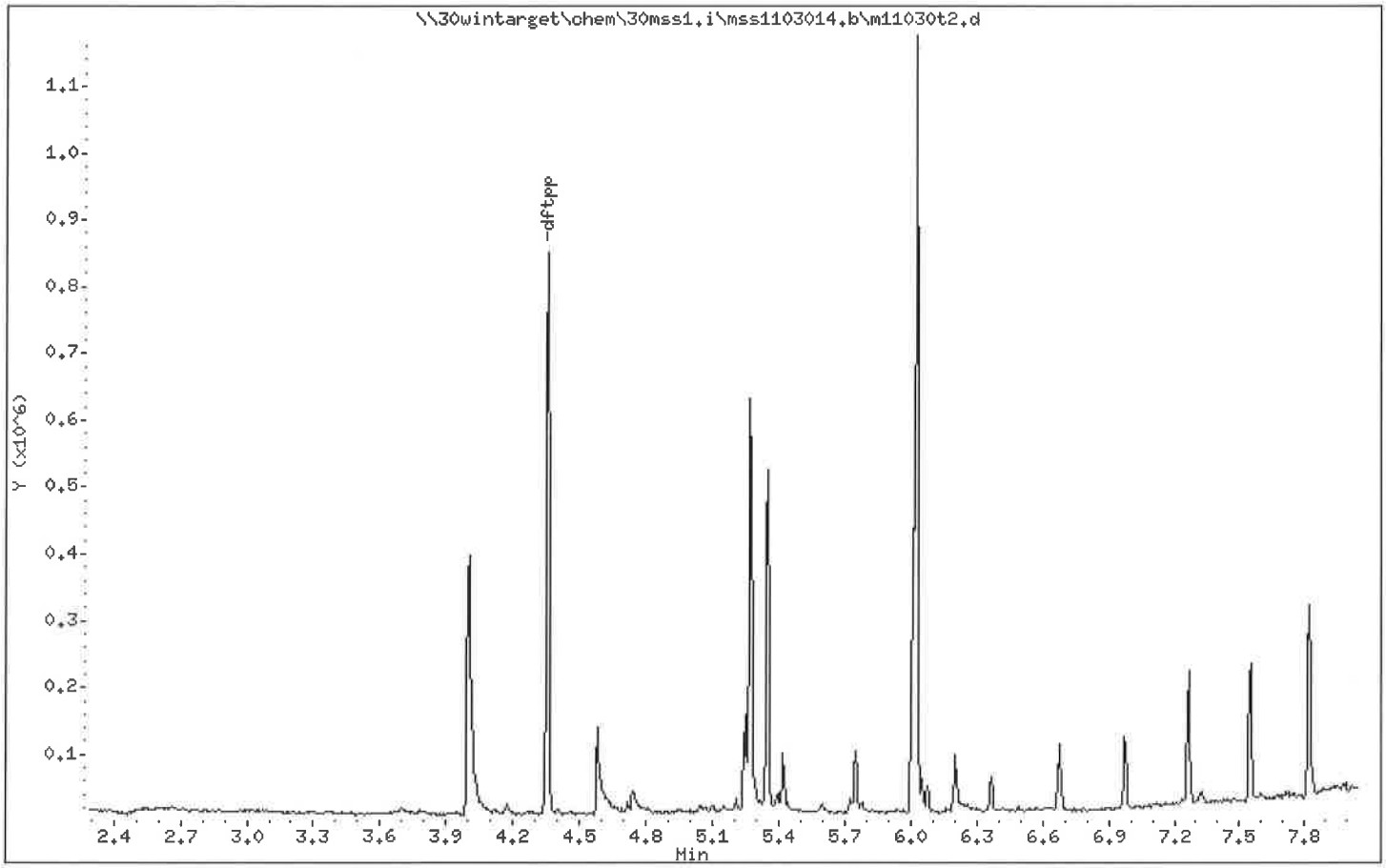
Instrument: 30mss1.i

Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18



Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m11030t2.d

Date : 30-OCT-2014 09:20

Client ID:

Instrument: 30mss1.i

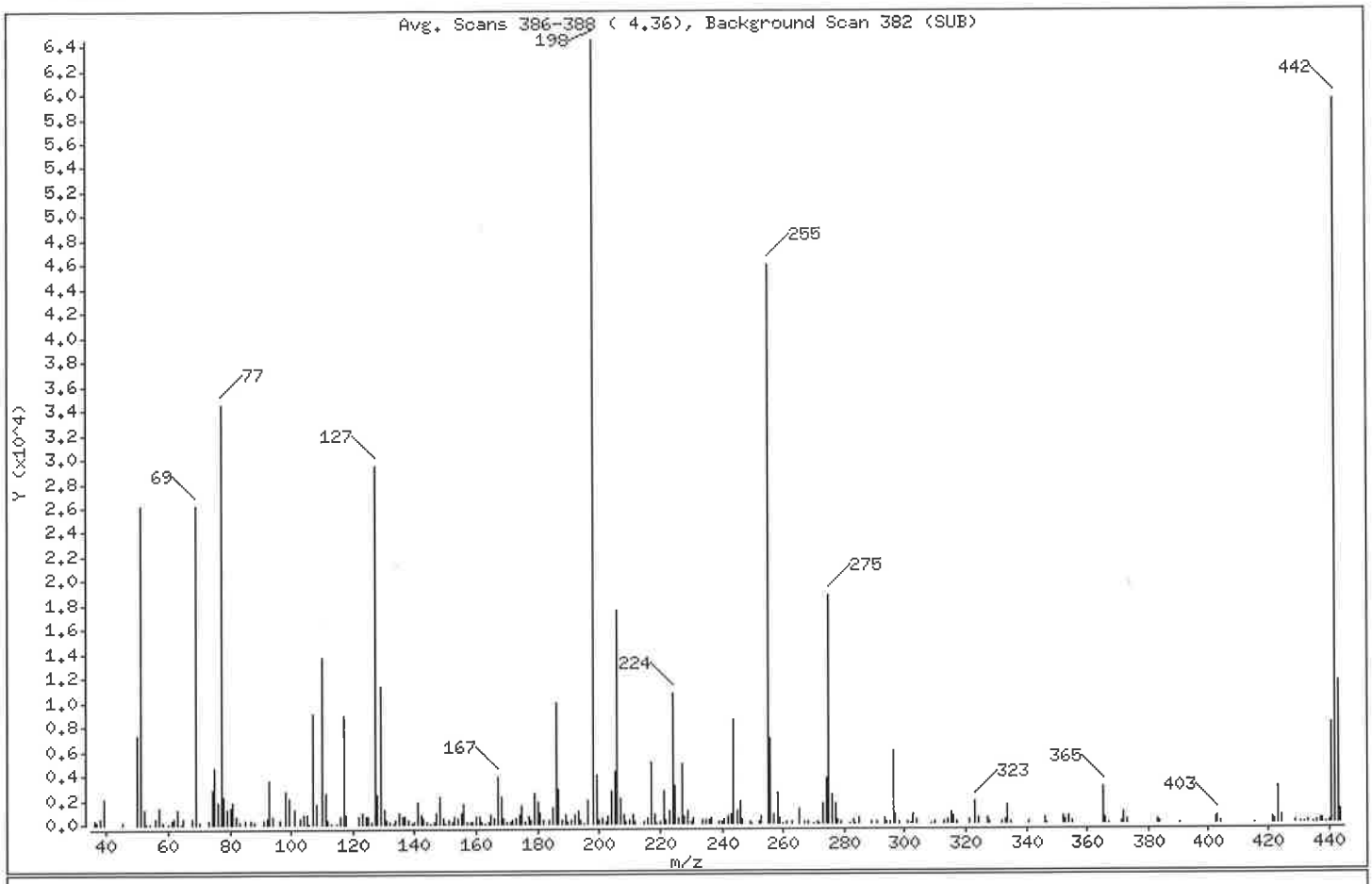
Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 80.00% of mass 198	40.57
68	Less than 2.00% of mass 69	0.65 (1.61)
69	Mass 69 relative abundance	40.59
70	Less than 2.00% of mass 69	0.12 (0.30)
127	25.00 - 75.00% of mass 198	45.66
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.23
275	10.00 - 30.00% of mass 198	29.12
365	Greater than 0.75% of mass 198	4.58
441	Present, but less than mass 443	12.75
442	40.00 - 110.00% of mass 198	92.22
443	15.00 - 24.00% of mass 442	17.96 (19.47)

Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m11030t2.d

Date : 30-OCT-2014 09:20

Client ID:

Instrument: 30mss1.i

Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18

Data File: m11030t2.d
Spectrum: Avg. Scans 386-388 (4.36), Background Scan 382 (SUB)
Location of Maximum: 198.00
Number of points: 272

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	225	133.00	70	204.00	2660	291.00	101
37.00	222	134.00	286	205.00	4365	293.00	432
38.00	484	135.00	907	206.00	17600	294.00	134
39.00	2082	136.00	566	207.00	2081	295.00	176
45.00	119	137.00	542	208.00	718	296.00	5988
50.00	7276	138.00	254	209.00	182	297.00	789
51.00	26152	139.00	55	210.00	300	298.00	75
52.00	1203	140.00	125	211.00	675	301.00	89
53.00	69	141.00	1725	212.00	103	302.00	51
54.00	60	142.00	669	215.00	217	303.00	729
56.00	406	143.00	389	216.00	480	304.00	264
57.00	1400	144.00	156	217.00	5121	309.00	61
58.00	86	145.00	64	218.00	790	310.00	149
60.00	51	146.00	167	219.00	53	313.00	118
61.00	276	147.00	880	220.00	167	314.00	271
62.00	405	148.00	2251	221.00	2703	315.00	882
63.00	1129	149.00	447	222.00	261	316.00	661
64.00	65	150.00	68	223.00	1086	317.00	136
65.00	421	151.00	243	224.00	10643	321.00	258
68.00	422	152.00	192	225.00	3080	323.00	1820
69.00	26168	153.00	584	226.00	390	324.00	480
70.00	79	154.00	396	227.00	4860	327.00	494
73.00	235	155.00	887	228.00	623	328.00	200
74.00	2852	156.00	1582	229.00	1030	332.00	218
75.00	4582	157.00	210	230.00	116	333.00	270
76.00	1743	158.00	187	231.00	422	334.00	1480
77.00	34512	159.00	212	234.00	253	335.00	183
78.00	2279	160.00	521	235.00	245	341.00	165
79.00	1261	161.00	587	236.00	301	346.00	393
80.00	1336	162.00	87	237.00	470	347.00	52
81.00	1731	163.00	60	239.00	160	352.00	579
82.00	581	164.00	107	240.00	109	353.00	339
83.00	77	165.00	709	241.00	262	354.00	580
85.00	229	166.00	390	242.00	554	355.00	171
87.00	250	167.00	3884	243.00	803	365.00	2956

Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m11030t2.d

Date : 30-OCT-2014 09:20

Client ID:

Instrument: 30mss1.i

Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18

Data File: m11030t2.d
Spectrum: Avg. Scans 386-388 (4.36), Background Scan 382 (SUB)
Location of Maximum: 198.00
Number of points: 272

m/z	Y	m/z	Y	m/z	Y	m/z	Y
88.00	214	168.00	2199	244.00	8486	366.00	505
91.00	236	169.00	416	245.00	1090	367.00	70
92.00	410	170.00	133	246.00	1769	371.00	115
93.00	3493	171.00	133	247.00	303	372.00	922
94.00	588	172.00	361	249.00	181	373.00	304
96.00	360	173.00	499	250.00	64	383.00	292
98.00	2727	174.00	767	252.00	150	384.00	114
99.00	2035	175.00	1458	253.00	566	390.00	65
101.00	1237	176.00	202	255.00	45936	402.00	463
103.00	392	177.00	601	256.00	6994	403.00	595
104.00	737	178.00	267	257.00	690	404.00	127
105.00	725	179.00	2548	258.00	2503	415.00	53
106.00	70	180.00	1783	259.00	506	421.00	459
107.00	9131	181.00	855	260.00	51	422.00	288
108.00	1577	182.00	267	261.00	155	423.00	2982
110.00	13666	184.00	320	263.00	125	424.00	658
111.00	2584	185.00	1357	265.00	1174	429.00	143
112.00	287	186.00	9975	267.00	108	431.00	71
113.00	59	187.00	2787	268.00	142	432.00	64
115.00	66	188.00	231	270.00	56	433.00	139
116.00	613	189.00	691	271.00	81	435.00	74
117.00	8951	190.00	139	272.00	67	436.00	176
118.00	712	191.00	243	273.00	1706	437.00	236
122.00	520	192.00	788	274.00	3739	438.00	300
123.00	964	193.00	1076	275.00	18776	439.00	55
124.00	536	194.00	285	276.00	2437	440.00	126
125.00	586	195.00	71	277.00	1661	441.00	8222
126.00	164	196.00	1964	278.00	273	442.00	59456
127.00	29440	198.00	64472	279.00	78	443.00	11577
128.00	2337	199.00	4016	282.00	57	444.00	1108
129.00	11231	200.00	359	283.00	345		
130.00	1127	201.00	445	284.00	69		
131.00	255	202.00	155	285.00	461		
132.00	199	203.00	569	289.00	119		

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

METHOD BLANK RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: OEXT/21399 **Prepared:** 10/29/14
Method(s): EPA 3546 / EPA 8270C
Associated Lab Samples: 30133009001, 30133009002, 30133009003

CAS No.	Parameters	Results	Units	Reporting Limit	MDL	Analyzed	Qual
105-67-9	2,4-Dimethylphenol	0.33 U	mg/kg	0.33	0.059	10/30/14	
51-28-5	2,4-Dinitrophenol	0.83 U	mg/kg	0.83	0.30	10/30/14	
91-57-6	2-Methylnaphthalene	0.33 U	mg/kg	0.33	0.040	10/30/14	
95-48-7	2-Methylphenol(o-Cresol)	0.33 U	mg/kg	0.33	0.059	10/30/14	
	3&4-Methylphenol(m&p Cresol)	0.67 U	mg/kg	0.67	0.067	10/30/14	
100-02-7	4-Nitrophenol	0.33 U	mg/kg	0.33	0.14	10/30/14	
92-52-4	Biphenyl (Diphenyl)	0.33 U	mg/kg	0.33	0.061	10/30/14	
117-81-7	bis(2-Ethylhexyl)phthalate	0.33 U	mg/kg	0.33	0.11	10/30/14	
84-74-2	Di-n-butylphthalate	0.33 U	mg/kg	0.33	0.055	10/30/14	
84-66-2	Diethylphthalate	0.33 U	mg/kg	0.33	0.037	10/30/14	
108-95-2	Phenol	0.33 U	mg/kg	0.33	0.081	10/30/14	
110-86-1	Pyridine	0.83 U	mg/kg	0.83	0.28	10/30/14	

Type	Sample	Matrix
BLANK	809326	Solid

REPORT OF LABORATORY ANALYSIS

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Data file : \\30wintarget\chem\30mss1.i\mss1103014.b\m1103015.d
Lab Smp Id: 809326 Client Smp ID: MB
Inj Date : 30-OCT-2014 14:49
Operator : DJL Inst ID: 30mss1.i
Smp Info : 809326
Misc Info : 6936
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Meth Date : 25-Nov-2014 12:50 dlee Quant Type: ISTD
Cal Date : 08-OCT-2014 13:40 Cal File: m11008y7.d
Als bottle: 18 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	5000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.000	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.449	3.450	(1.000)	105514	4.00000		
* 2 Naphthalene-d8 IS	136	4.453	4.454	(1.000)	394927	4.00000		
* 3 Acenaphthene-d8 IS	164	5.885	5.891	(1.000)	233180	4.00000		
* 4 Phenanthrene-d10 IS	188	7.258	7.264	(1.000)	402198	4.00000		
* 5 Chrysene-d12 IS	240	10.047	10.058	(1.000)	437295	4.00000		
* 6 Perylene-d12 IS	264	11.387	11.394	(1.000)	274641	4.00000		
$ 7 2-Fluorophenol	112	2.482	2.483	(0.720)	201313	6.19242	2060	
$ 8 Phenol-d5	99	3.177	3.183	(0.921)	305370	6.99027	2330	
$ 9 Nitrobenzene-d5	128	3.882	3.888	(0.872)	76080	4.22266	1410	
$ 10 2-Fluorobiphenyl	172	5.329	5.336	(0.906)	375838	4.13445	1380	
$ 11 2,4,6-Tribromophenol (S)	330	6.542	6.548	(0.901)	87223	5.14561	1720	
$ 12 Terphenyl-d14	244	8.978	8.984	(0.894)	494647	4.54624	1520	
13 N-Nitrosodimethylamine	74	Compound Not Detected.						
14 Pyridine	79	Compound Not Detected.						
15 Benzaldehyde	77	Compound Not Detected.						
16 Phenol	94	Compound Not Detected.						
17 Aniline	66	Compound Not Detected.						
18 bis(2-Chloroethyl)ether	63	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
19 2-Chlorophenol	128	Compound Not Detected.						
20 1,3-Dichlorobenzene	146	Compound Not Detected.						
21 1,4-Dichlorobenzene	146	Compound Not Detected.						
22 Benzyl Alcohol	79	Compound Not Detected.						
23 o-Cresol	108	Compound Not Detected.						
24 1,2-Dichlorobenzene	146	Compound Not Detected.						
25 Bis(2-Chloroisopropyl)ethe	45	Compound Not Detected.						
26 m/p-cresol	108	Compound Not Detected.						
28 N-Nitroso-di-n-propylamine	70	Compound Not Detected.						
29 Acetophenone	105	Compound Not Detected.						
30 Hexachloroethane	116	Compound Not Detected.						
31 Nitrobenzene	77	Compound Not Detected.						
32 Isophorone	82	Compound Not Detected.						
33 2,4-Dimethylphenol	107	Compound Not Detected.						
34 2-Nitrophenol	139	Compound Not Detected.						
35 Bis(2-Chloroethoxy)methane	93	Compound Not Detected.						
36 Benzoic Acid	105	Compound Not Detected.						
37 2,4-Dichlorophenol	162	Compound Not Detected.						
38 2,6-Dichlorophenol	162	Compound Not Detected.						
39 1,2,4-Trichlorobenzene	179	Compound Not Detected.						
40 Naphthalene	128	Compound Not Detected.						
41 4-Chloroaniline	65	Compound Not Detected.						
42 Hexachlorobutadiene	224	Compound Not Detected.						
43 Caprolactam	55	Compound Not Detected.						
44 4-Chloro-3-methylphenol	107	Compound Not Detected.						
45 2-Methylnaphthalene	142	Compound Not Detected.						
46 1-Methylnaphthalene	142	Compound Not Detected.						
47 Hexachlorocyclopentadiene	236	Compound Not Detected.						
48 1,2,4,5-Tetrachlorobenzene	216	Compound Not Detected.						
49 2,4,6-Trichlorophenol	195	Compound Not Detected.						
50 2,4,5-Trichlorophenol	195	Compound Not Detected.						
51 Biphenyl	154	Compound Not Detected.						
52 2-Chloronaphthalene	164	Compound Not Detected.						
53 2-Nitroaniline	138	Compound Not Detected.						
54 Dimethylphthalate	163	Compound Not Detected.						
55 2,6-Dinitrotoluene	165	Compound Not Detected.						
56 Acenaphthylene	152	Compound Not Detected.						
57 3-Nitroaniline	65	Compound Not Detected.						
58 Acenaphthene	153	Compound Not Detected.						
59 2,4-Dinitrophenol	184	Compound Not Detected.						
60 Dibenzofuran	168	Compound Not Detected.						
61 4-Nitrophenol	109	Compound Not Detected.						
62 2,4-Dinitrotoluene	165	Compound Not Detected.						
63 2,3,4,6-Tetrachlorophenol	232	Compound Not Detected.						
64 Diethylphthalate	149	Compound Not Detected.						
65 4-Chlorophenyl-phenylether	204	Compound Not Detected.						
66 Fluorene	166	Compound Not Detected.						
67 4-Nitroaniline	108	Compound Not Detected.						
68 4,6-Dinitro-2-methylphenol	198	Compound Not Detected.						
69 N-Nitrosodiphenylamine	169	Compound Not Detected.						
70 Azobenzene	77	Compound Not Detected.						
71 1,2-Diphenylhydrazine	77	Compound Not Detected.						
72 4-Bromophenyl-phenylether	248	Compound Not Detected.						
73 Hexachlorobenzene	283	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
74 Atrazine	200	Compound Not Detected.						
75 Pentachlorophenol	265	Compound Not Detected.						
76 Phenanthrene	178	Compound Not Detected.						
77 Anthracene	178	Compound Not Detected.						
78 Carbazole	167	Compound Not Detected.						
79 Di-n-butylphthalate	149	Compound Not Detected.						
80 Fluoranthene	202	Compound Not Detected.						
81 Pyrene	202	Compound Not Detected.						
82 Butylbenzylphthalate	149	Compound Not Detected.						
83 3,3'-Dichlorobenzidine	251	Compound Not Detected.						
84 bis(2-Ethylhexyl)phthalate	149	Compound Not Detected.						
85 Benzo[a]anthracene	228	Compound Not Detected.						
86 Chrysene	228	Compound Not Detected.						
87 Di-n-octylphthalate	149	Compound Not Detected.						
88 Benzo[b]fluoranthene	252	Compound Not Detected.						
89 Benzo[k]fluoranthene	252	Compound Not Detected.						
90 Benzo[a]pyrene	252	Compound Not Detected.						
91 Dibenz[a,h]anthracene	278	Compound Not Detected.						
92 Indeno[1,2,3-cd]pyrene	276	Compound Not Detected.						
93 Benzo[g,h,i]perylene	276	Compound Not Detected.						

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m1103015.d
Lab Smp Id: 809326
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: 6936

Calibration Date: 30-OCT-2014
Calibration Time: 09:32
Client Smp ID: MB
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF	
1 1,4-dichlorobenze	122838	61419	245676	105514	-14.10	
2 Naphthalene-d8 I	464340	232170	928680	394927	-14.95	
3 Acenaphthene-d8	281285	140643	562570	233180	-17.10	
4 Phenanthrene-d10	519996	259998	1039992	402198	-22.65	
5 Chrysene-d12 IS	541372	270686	1082744	437295	-19.22	
6 Perylene-d12 IS	563702	281851	1127404	274641	-51.28	<

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.45	2.95	3.95	3.45	-0.03
2 Naphthalene-d8 I	4.45	3.95	4.95	4.45	-0.02
3 Acenaphthene-d8	5.89	5.39	6.39	5.89	-0.11
4 Phenanthrene-d10	7.26	6.76	7.76	7.26	-0.09
5 Chrysene-d12 IS	10.06	9.56	10.56	10.05	-0.11
6 Perylene-d12 IS	11.39	10.89	11.89	11.39	-0.05

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

RECOVERY REPORT

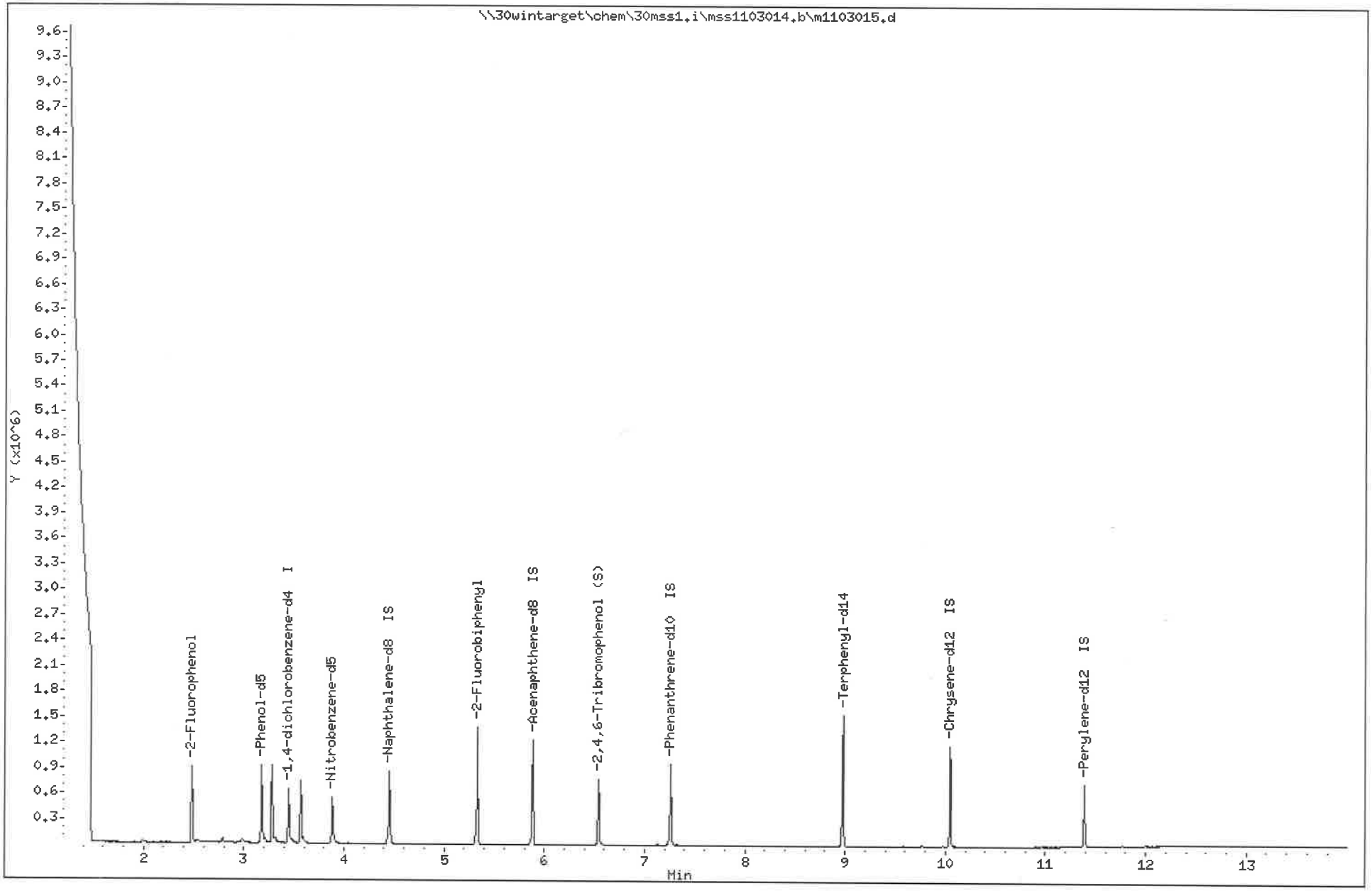
Client Name:
Sample Matrix: SOLID
Lab Smp Id: 809326
Level: LOW
Data Type: MS DATA
SpikeList File: 625.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: 6936

Client SDG: 30133009
Fraction: SV
Client Smp ID: MB
Operator: DJL
SampleType: BLANK
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 7 2-Fluorophenol	2500	2060	82.57	25-121
$ 8 Phenol-d5	2500	2330	93.20	24-113
$ 9 Nitrobenzene-d5	1670	1410	84.45	23-120
$ 10 2-Fluorobiphenyl	1670	1380	82.69	30-115
$ 11 2,4,6-Tribromophen	2500	1720	68.61	19-122
$ 12 Terphenyl-d14	1670	1520	90.92	18-137

Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m1103015.d
Date : 30-OCT-2014 14:49
Client ID: MB
Sample Info: 809326
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss1.i
Operator: DJL
Column diameter: 0.18



Data File: \\30wintarget\chem\30mss1.i\mss1103014.b/m1103015.d (ManInt: all
Injection Date: 30-OCT-2014 14:49
Instrument: 30mss1.i
Lab Sample ID: 809326
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

LAB CONTROL SAMPLE RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: OEXT/21399 **LCS Prepared:** 10/29/14
Method(s): EPA 3546 / EPA 8270C **LCSD Prepared:**

Analyte	LCS % Rec	LCSD % Rec	RPD	QC Limits % Rec	QC Limits RPD	Spike Conc	LCS Conc	LCSD Conc	Units	LCS Analyzed	LCSD Analyzed	LCS Qual	LCSD Qual
2,4-Dimethylphenol	86			66-135		3.3	2.9		mg/kg	10/30/14			
2,4-Dinitrophenol	83			10-185		3.3	2.8		mg/kg	10/30/14			
2-Methylnaphthalene	83			56-121		3.3	2.8		mg/kg	10/30/14			
2-Methylphenol(o-Cresol)	99			63-130		3.3	3.3		mg/kg	10/30/14			
3&4-Methylphenol(m&p Cresol)	97			60-130		3.3	3.2		mg/kg	10/30/14			
4-Nitrophenol	95			19-139		3.3	3.2		mg/kg	10/30/14			
Biphenyl (Diphenyl)							0.33 U		mg/kg	10/30/14			
bis(2-Ethylhexyl)phthalate	98			66-150		3.3	3.3		mg/kg	10/30/14			
Di-n-butylphthalate	98			74-127		3.3	3.3		mg/kg	10/30/14			
Diethylphthalate	94			70-132		3.3	3.1		mg/kg	10/30/14			
Phenol	105			49-126		3.3	3.5		mg/kg	10/30/14			
Pyridine	109			10-175		3.3	3.6		mg/kg	10/30/14			

Type	Sample
LCS	809327

REPORT OF LABORATORY ANALYSIS

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Data file : \\30wintarget\chem\30mss1.i\mss1103014.b\m1103013.d
Lab Smp Id: 809327 Client Smp ID: MBLCS
Inj Date : 30-OCT-2014 14:10
Operator : DJL Inst ID: 30mss1.i
Smp Info : 809327
Misc Info : 6936
Comment :
Method : \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Meth Date : 25-Nov-2014 12:50 dlee Quant Type: ISTD
Cal Date : 08-OCT-2014 13:40 Cal File: m11008y7.d
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	5000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.000	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)	REVIEW CODE
* 1 1,4-dichlorobenzene-d4 IS	152	3.443	3.450	(1.000)	109706	4.00000		
* 2 Naphthalene-d8 IS	136	4.453	4.454	(1.000)	458042	4.00000		
* 3 Acenaphthene-d8 IS	164	5.890	5.891	(1.000)	265915	4.00000		
* 4 Phenanthrene-d10 IS	188	7.263	7.264	(1.000)	476167	4.00000		
* 5 Chrysene-d12 IS	240	10.057	10.058	(1.000)	525847	4.00000		
* 6 Perylene-d12 IS	264	11.393	11.394	(1.000)	437735	4.00000		
$ 7 2-Fluorophenol	112	2.477	2.483	(0.719)	235356	6.96295	2320	
$ 8 Phenol-d5	99	3.176	3.183	(0.922)	324209	7.13793	2380	
$ 9 Nitrobenzene-d5	128	3.881	3.888	(0.872)	85109	4.07289	1360	
$ 10 2-Fluorobiphenyl	172	5.329	5.336	(0.905)	431007	4.15766	1380	
$ 11 2,4,6-Tribromophenol (S)	330	6.547	6.548	(0.901)	114065	5.68380	1890	
$ 12 Terphenyl-d14	244	8.978	8.984	(0.893)	581448	4.44409	1480	
13 N-Nitrosodimethylamine	74	1.360	1.366	(0.231)	267154	9.53746	3180	
14 Pyridine	79	1.365	1.361	(0.397)	424595	10.8949	3630	
15 Benzaldehyde	77	Compound Not Detected.						
16 Phenol	94	3.187	3.194	(0.926)	509542	10.4992	3500(Q)	
17 Aniline	66	3.203	3.210	(0.930)	210647	12.0747	4020	
18 bis(2-Chloroethyl)ether	63	3.246	3.252	(0.943)	258977	9.00225	3000	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
19 2-Chlorophenol	128	3.289	3.295	(0.955)	352064	9.76647	3260	
20 1,3-Dichlorobenzene	146	3.401	3.407	(0.988)	373807	8.79241	2930	
21 1,4-Dichlorobenzene	146	3.459	3.466	(1.005)	436593	9.41635	3140	
22 Benzyl Alcohol	79	3.561	3.567	(1.034)	357521	10.7880	3600	
23 o-Cresol	108	3.646	3.653	(1.059)	349753	9.90178	3300	
24 1,2-Dichlorobenzene	146	3.577	3.583	(1.039)	360480	8.61320	2870	
25 Bis(2-Chloroisopropyl)ethe	45	3.657	3.664	(1.062)	473786	8.83270	2940	
26 m/p-cresol	108	3.769	3.776	(1.095)	361665	9.74300	3250	
28 N-Nitroso-di-n-propylamine	70	3.769	3.776	(1.095)	325119	9.75117	3250	
29 Acetophenone	105	3.764	3.770	(1.093)	391145	6.96002	2320	
30 Hexachloroethane	117	3.839	3.840	(1.115)	172608	9.93126	3310	
31 Nitrobenzene	77	3.898	3.904	(0.875)	441946	8.51195	2840	
32 Isophorone	82	4.090	4.091	(0.918)	817349	8.94855	2980	
33 2,4-Dimethylphenol	107	4.186	4.187	(0.940)	397143	8.59868	2870	
34 2-Nitrophenol	139	4.149	4.155	(0.932)	195243	8.24005	2750	
35 Bis(2-Chloroethoxy)methane	93	4.255	4.262	(0.956)	460340	8.93858	2980	
36 Benzoic Acid	105	4.282	4.289	(0.962)	245317	9.25538	3080(QM)	LT
37 2,4-Dichlorophenol	162	4.346	4.353	(0.976)	320616	8.57361	2860	
38 2,6-Dichlorophenol	162	Compound Not Detected.						
39 1,2,4-Trichlorobenzene	180	4.405	4.406	(0.989)	375849	8.34437	2780	
40 Naphthalene	128	4.469	4.470	(1.004)	1099240	8.78705	2930	
41 4-Chloroaniline	65	4.517	4.524	(1.014)	107043	9.50963	3170	
42 Hexachlorobutadiene	225	4.565	4.572	(1.025)	293517	8.98157	2990	
43 Caprolactam	55	Compound Not Detected.						
44 4-Chloro-3-methylphenol	107	4.918	4.924	(1.104)	338821	9.48551	3160	
45 2-Methylnaphthalene	142	5.030	5.031	(1.130)	727818	8.27397	2760	
46 1-Methylnaphthalene	142	5.110	5.111	(1.148)	698734	8.79573	2930	
47 Hexachlorocyclopentadiene	237	5.158	5.159	(0.876)	196297	6.01434	2000	
48 1,2,4,5-Tetrachlorobenzene	216	Compound Not Detected.						
49 2,4,6-Trichlorophenol	196	5.265	5.272	(0.894)	292065	10.2175	3400	
50 2,4,5-Trichlorophenol	196	5.303	5.309	(0.900)	271450	9.69149	3230	
51 Biphenyl	154	Compound Not Detected.						
52 2-Chloronaphthalene	164	5.431	5.432	(0.922)	236473	9.15825	3050	
53 2-Nitroaniline	138	5.522	5.523	(0.937)	220241	9.10359	3030	
54 Dimethylphthalate	163	5.671	5.672	(0.963)	833137	8.92834	2980	
55 2,6-Dinitrotoluene	165	5.719	5.720	(0.971)	192032	9.12572	3040	
56 Acenaphthylene	152	5.773	5.774	(0.980)	1134885	8.51402	2840	
57 3-Nitroaniline	65	5.858	5.865	(0.995)	177550	13.5927	4530(M)	CO
58 Acenaphthene	153	5.917	5.918	(1.005)	771405	8.99847	3000	
59 2,4-Dinitrophenol	184	5.949	5.950	(1.010)	87715	8.28398	2760	
60 Dibenzofuran	168	6.056	6.057	(1.028)	997876	8.63821	2880	
61 4-Nitrophenol	109	6.018	6.025	(1.022)	135537	9.53711	3180(Q)	
62 2,4-Dinitrotoluene	165	6.050	6.052	(1.027)	249358	9.19629	3060	
63 2,3,4,6-Tetrachlorophenol	232	6.163	6.164	(1.790)	221928	9.46835	3160	
64 Diethylphthalate	149	6.248	6.249	(1.061)	863744	9.38510	3130	
65 4-Chlorophenyl-phenylether	204	6.339	6.340	(1.076)	470718	9.06308	3020	
66 Fluorene	166	6.339	6.340	(1.076)	895226	9.05227	3020	
67 4-Nitroaniline	108	6.366	6.372	(1.081)	125395	19.1591	6390	
68 4,6-Dinitro-2-methylphenol	198	6.387	6.388	(0.879)	135271	9.26939	3090	
69 N-Nitrosodiphenylamine	169	6.440	6.442	(0.887)	704363	9.12642	3040	
70 Azobenzene	77	6.472	6.474	(0.891)	842659	8.49269	2830	
71 1,2-Diphenylhydrazine	77	6.472	6.474	(0.891)	842659	8.50143	2830	
72 4-Bromophenyl-phenylether	248	6.782	6.783	(0.934)	309501	8.84193	2950	
73 Hexachlorobenzene	284	6.846	6.848	(0.943)	356120	8.61859	2870	
74 Atrazine	200	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
75 Pentachlorophenol	266	7.065	7.072	(0.973)	221761	11.5502	3850	
76 Phenanthrene	178	7.290	7.291	(1.004)	1273980	9.73527	3240	
77 Anthracene	178	7.343	7.350	(1.011)	1163811	9.22436	3070	
78 Carbazole	167	7.525	7.526	(1.036)	952702	9.22864	3080	
79 Di-n-butylphthalate	149	7.920	7.921	(1.090)	1436738	9.77215	3260	
80 Fluoranthene	202	8.567	8.568	(1.179)	1381717	9.68213	3230	
81 Pyrene	202	8.802	8.803	(0.875)	1408468	8.80586	2940	
82 Butylbenzylphthalate	149	9.507	9.508	(0.945)	643619	10.3837	3460	
83 3,3'-Dichlorobenzidine	251	Compound Not Detected.						
84 bis(2-Ethylhexyl)phthalate	149	10.100	10.101	(1.004)	939636	9.76942	3260	
85 Benzo[a]anthracene	228	10.046	10.047	(0.999)	1464420	9.98666	3330	
86 Chrysene	228	10.084	10.085	(1.003)	1368186	10.0846	3360	
87 Di-n-octylphthalate	149	10.725	10.726	(1.066)	1449423	9.94493	3310	
88 Benzo[b]fluoranthene	252	11.067	11.068	(0.971)	1367455	11.8626	3950	
89 Benzo[k]fluoranthene	252	11.088	11.089	(0.973)	1323406	11.0575	3680	
90 Benzo[a]pyrene	252	11.350	11.351	(0.996)	1173046	9.81064	3270	
91 Dibenz[a,h]anthracene	278	12.231	12.238	(1.074)	722242	5.65047	1880	
92 Indeno[1,2,3-cd]pyrene	276	12.226	12.232	(1.073)	813806	5.36665	1790	
93 Benzo[g,h,i]perylene	276	12.429	12.441	(1.091)	606353	4.77215	1590	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss1.i
Lab File ID: m1103013.d
Lab Smp Id: 809327
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: 6936

Calibration Date: 30-OCT-2014
Calibration Time: 09:32
Client Smp ID: MBLCS
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	122838	61419	245676	109706	-10.69
2 Naphthalene-d8 I	464340	232170	928680	458042	-1.36
3 Acenaphthene-d8	281285	140643	562570	265915	-5.46
4 Phenanthrene-d10	519996	259998	1039992	476167	-8.43
5 Chrysene-d12 IS	541372	270686	1082744	525847	-2.87
6 Perylene-d12 IS	563702	281851	1127404	437735	-22.35

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 1,4-dichlorobenze	3.45	2.95	3.95	3.44	-0.19
2 Naphthalene-d8 I	4.45	3.95	4.95	4.45	-0.03
3 Acenaphthene-d8	5.89	5.39	6.39	5.89	-0.02
4 Phenanthrene-d10	7.26	6.76	7.76	7.26	-0.02
5 Chrysene-d12 IS	10.06	9.56	10.56	10.06	-0.01
6 Perylene-d12 IS	11.39	10.89	11.89	11.39	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 809327
Level: LOW
Data Type: MS DATA
SpikeList File: 625.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30mss1.i\mss1103014.b\8270100814b.m
Misc Info: 6936

Client SDG: 30133009
Fraction: SV
Client Smp ID: MBLCS
Operator: DJL
SampleType: LCS
Quant Type: ISTD

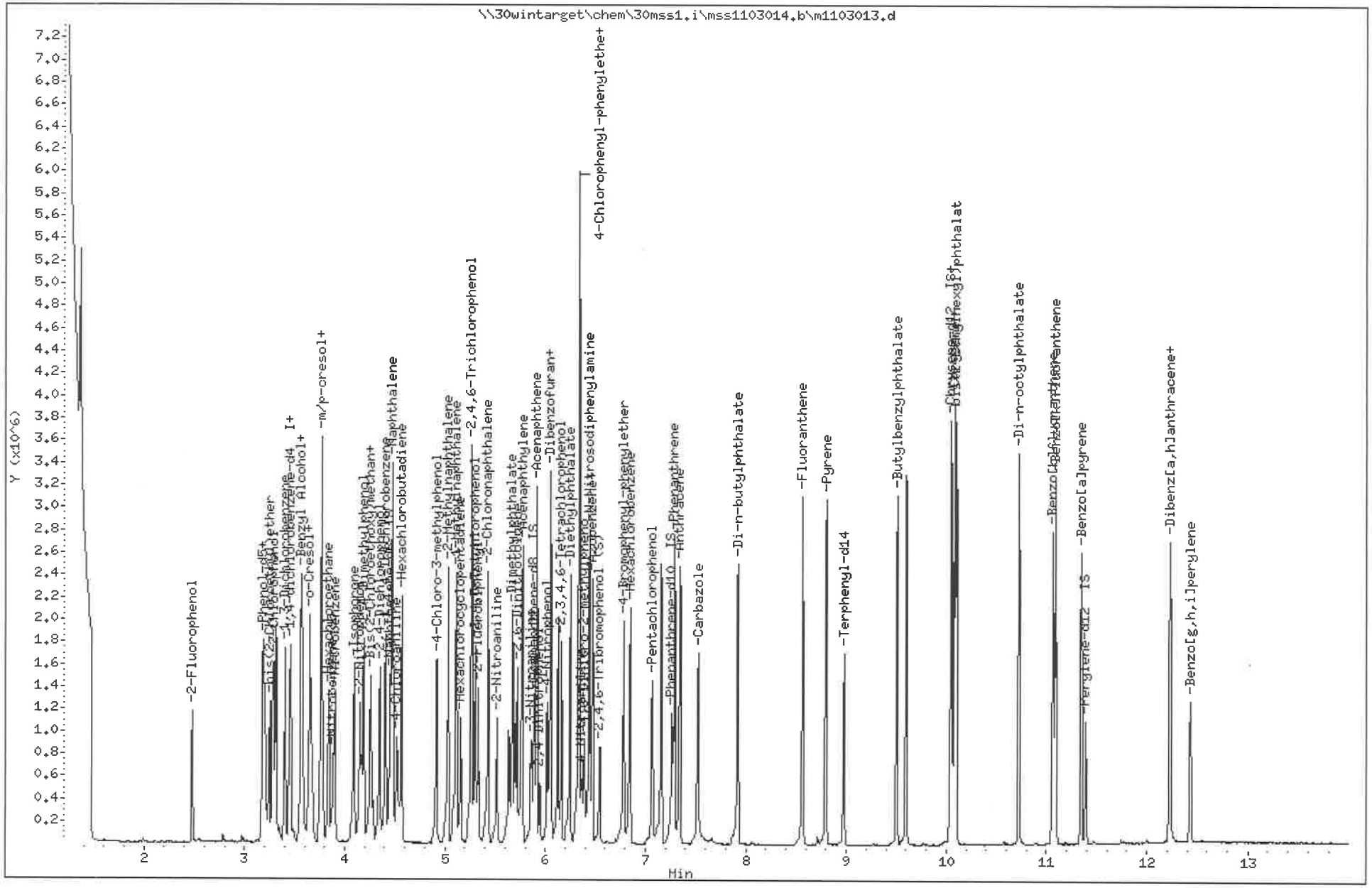
SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
13 N-Nitrosodimethyla	3330	3180	95.37	1-230
18 bis(2-Chloroethyl)	3330	3000	90.02	12-158
16 Phenol	3330	3500	104.99	5-112
19 2-Chlorophenol	3330	3260	97.66	23-134
20 1,3-Dichlorobenzen	3330	2930	87.92	1-172
21 1,4-Dichlorobenzen	3330	3140	94.16	20-124
24 1,2-Dichlorobenzen	3330	2870	86.13	32-129
25 Bis(2-Chloroisopro	3330	2940	88.33	36-166
30 Hexachloroethane	3330	3310	99.31	40-113
28 N-Nitroso-di-n-pro	3330	3250	97.51	1-230
31 Nitrobenzene	3330	2840	85.12	35-180
32 Isophorone	3330	2980	89.49	21-196
34 2-Nitrophenol	3330	2750	82.40	29-182
33 2,4-Dimethylphenol	3330	2870	85.99	32-119
35 Bis(2-Chloroethoxy	3330	2980	89.39	33-184
37 2,4-Dichlorophenol	3330	2860	85.74	39-135
39 1,2,4-Trichloroben	3330	2780	83.44	44-142
40 Naphthalene	3330	2930	87.87	21-133
42 Hexachlorobutadien	3330	2990	89.82	24-116
44 4-Chloro-3-methylp	3330	3160	94.86	22-147
47 Hexachlorocyclopen	3330	2000	60.14	24-116
49 2,4,6-Trichlorophe	3330	3400	102.18	37-144
52 2-Chloronaphthalen	3330	3050	91.58	60-118
56 Acenaphthylene	3330	2840	85.14	33-145
54 Dimethylphthalate	3330	2980	89.28	1-112
55 2,6-Dinitrotoluene	3330	3040	91.26	50-158
58 Acenaphthene	3330	3000	89.98	27-133
59 2,4-Dinitrophenol	3330	2760	82.84	1-191
62 2,4-Dinitrotoluene	3330	3060	91.96	39-139
61 4-Nitrophenol	3330	3180	95.37	1-132
66 Fluorene	3330	3020	90.52	59-121
65 4-Chlorophenyl-phe	3330	3020	90.63	25-158
64 Diethylphthalate	3330	3130	93.85	1-114
68 4,6-Dinitro-2-meth	3330	3090	92.69	1-181
69 N-Nitrosodiphenyla	3330	3040	91.26	1-230
72 4-Bromophenyl-phen	3330	2950	88.42	53-127
73 Hexachlorobenzene	3330	2870	86.19	1-152
75 Pentachlorophenol	3330	3850	115.50	14-176
76 Phenanthrene	3330	3240	97.35	54-120
77 Anthracene	3330	3070	92.24	27-133

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
79 Di-n-butylphthalat	3330	3260	97.72	1-118
80 Fluoranthene	3330	3230	96.82	26-137
81 Pyrene	3330	2940	88.06	52-115
82 Butylbenzylphthala	3330	3460	103.84	1-152
83 3,3'-Dichlorobenz	3330	0.000	*	1-262
85 Benzo[a]anthracene	3330	3330	99.87	33-143
86 Chrysene	3330	3360	100.85	17-168
84 bis(2-Ethylhexyl)p	3330	3260	97.69	8-158
87 Di-n-octylphthalat	3330	3310	99.45	4-146
88 Benzo[b]fluoranthe	3330	3950	118.63	24-159
89 Benzo[k]fluoranthe	3330	3680	110.57	11-162
90 Benzo[a]pyrene	3330	3270	98.11	17-163
92 Indeno[1,2,3-cd]py	3330	1790	53.67	1-171
91 Dibenz[a,h]anthrac	3330	1880	56.50	1-227
93 Benzo[g,h,i]peryle	3330	1590	47.72	1-219

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 7 2-Fluorophenol	2500	2320	92.84	25-121
$ 8 Phenol-d5	2500	2380	95.17	24-113
$ 9 Nitrobenzene-d5	1670	1360	81.46	23-120
$ 10 2-Fluorobiphenyl	1670	1380	83.15	30-115
$ 11 2,4,6-Tribromophen	2500	1890	75.78	19-122
$ 12 Terphenyl-d14	1670	1480	88.88	18-137

Data File: \\30wintarget\chem\30mss1.i\mss1103014.b\m1103013.d
Date : 30-OCT-2014 14:10
Client ID: MBLCS
Sample Info: 809327
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss1.i
Operator: DJL
Column diameter: 0.18



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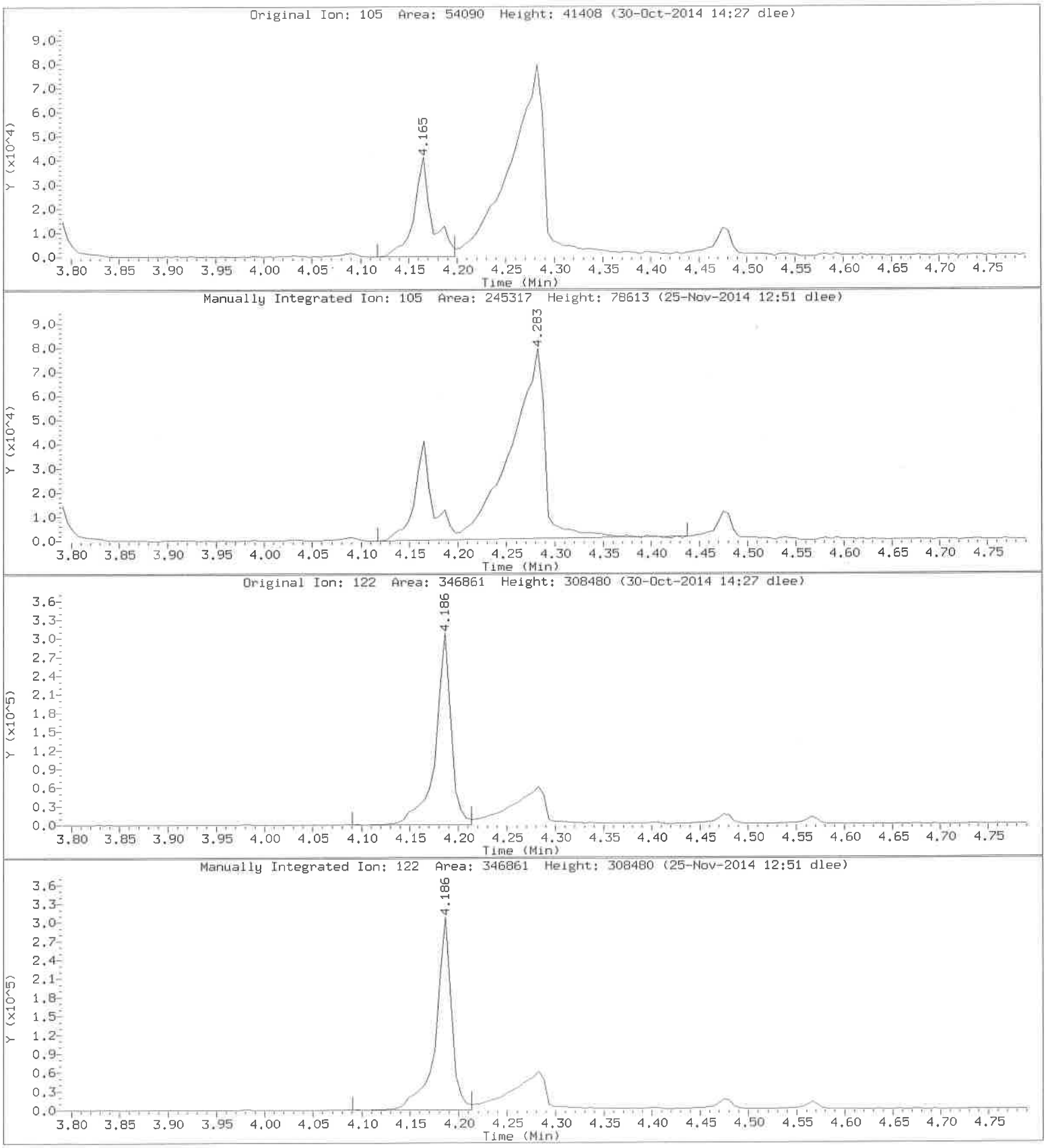
Injection Date: 30-OCT-2014 14:10
Instrument: 30mss1.i
Lab Sample ID: 809327

Compound: Benzoic Acid
CAS Number: 65-85-0



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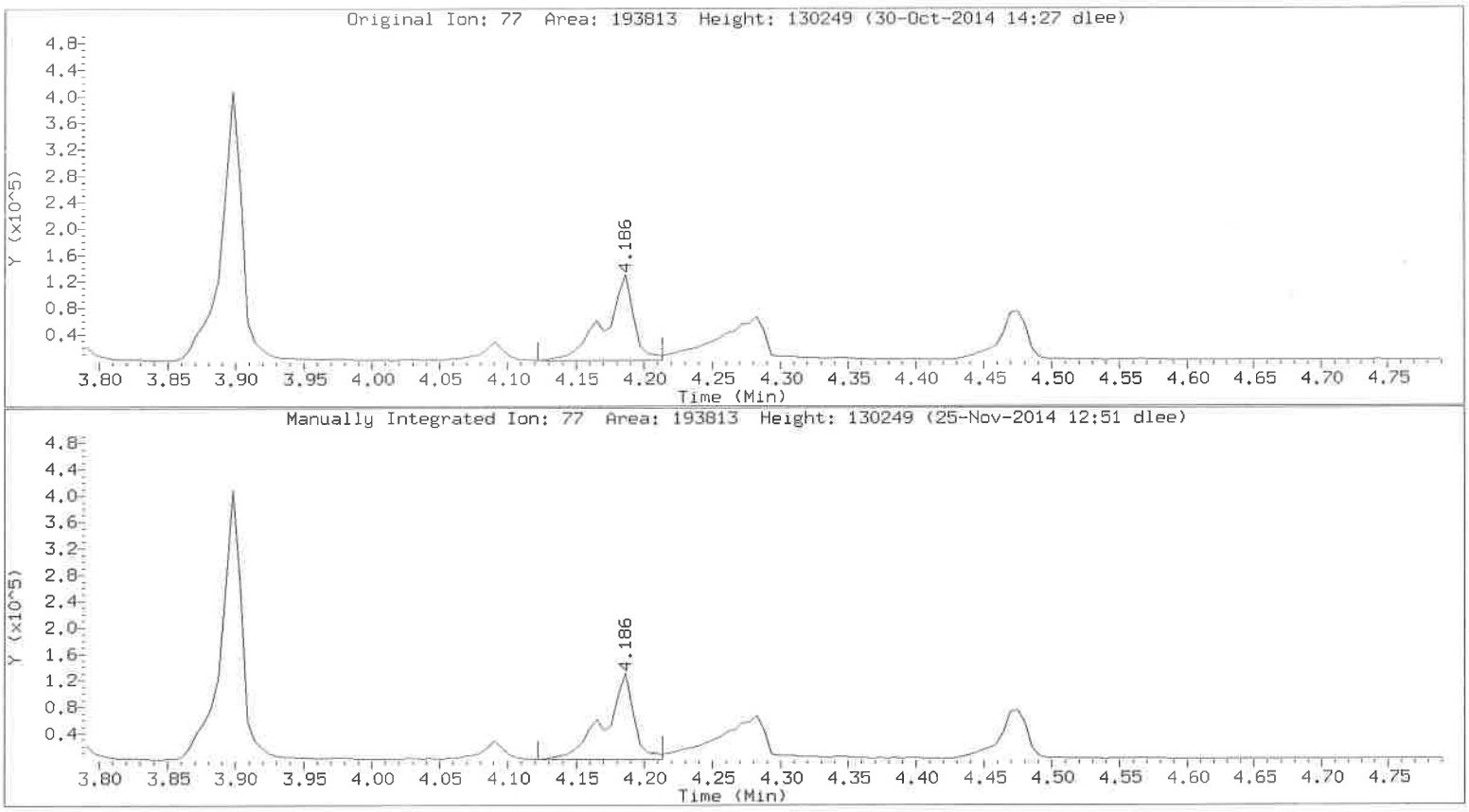
Injection Date: 30-OCT-2014 14:10
Instrument: 30mss1.i
Lab Sample ID: 809327



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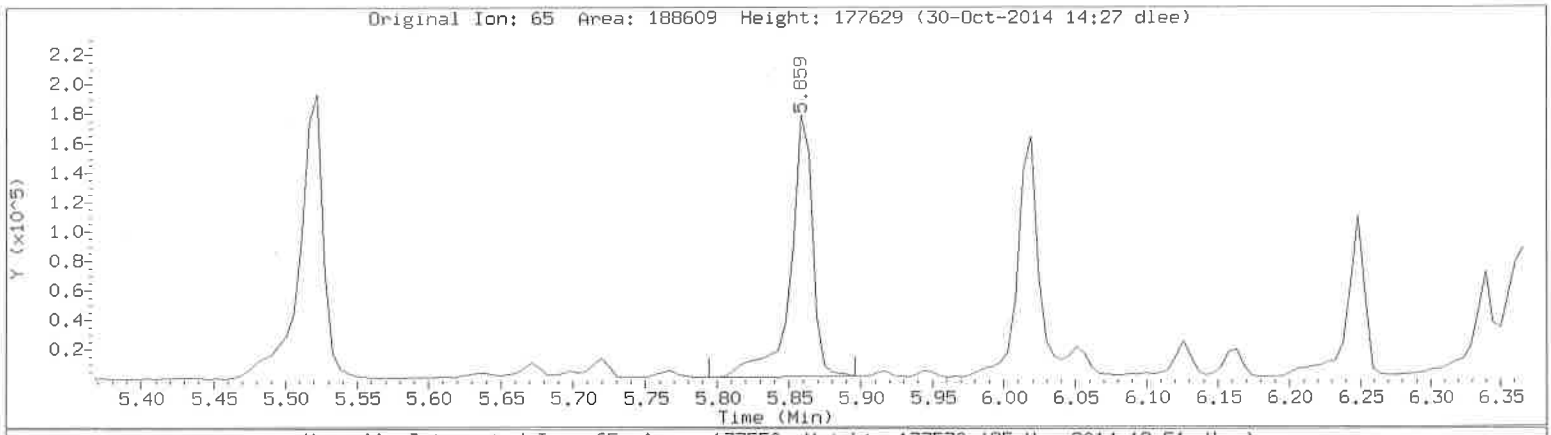
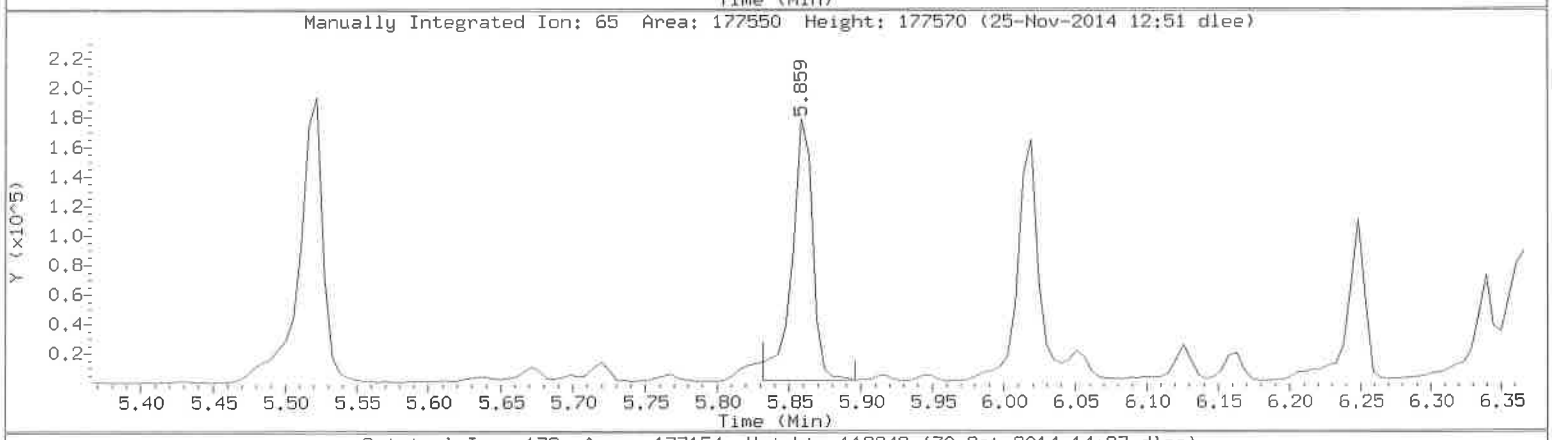
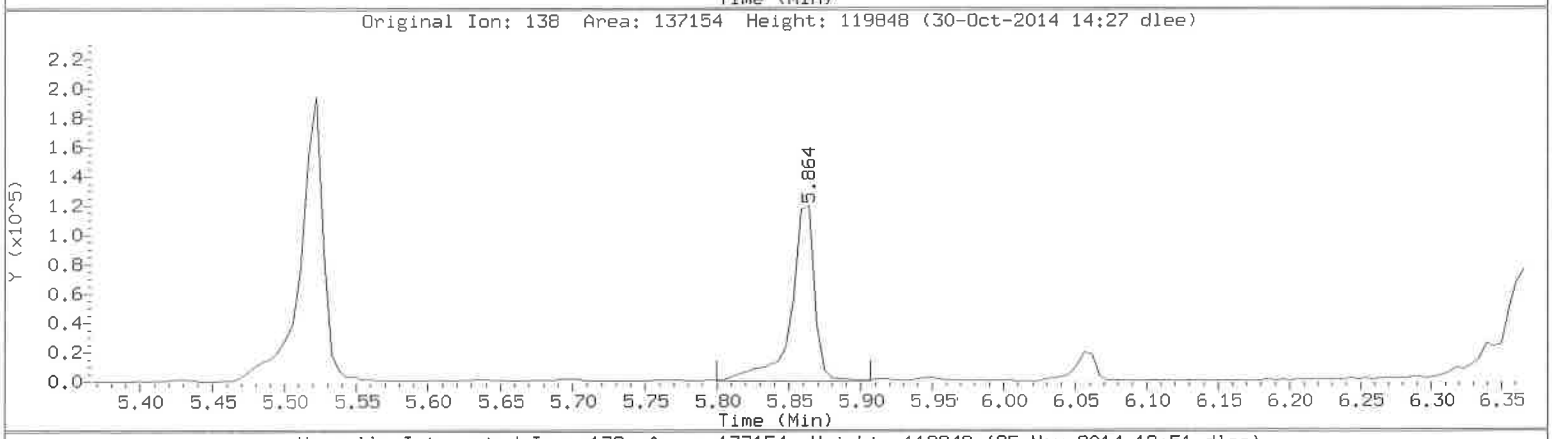
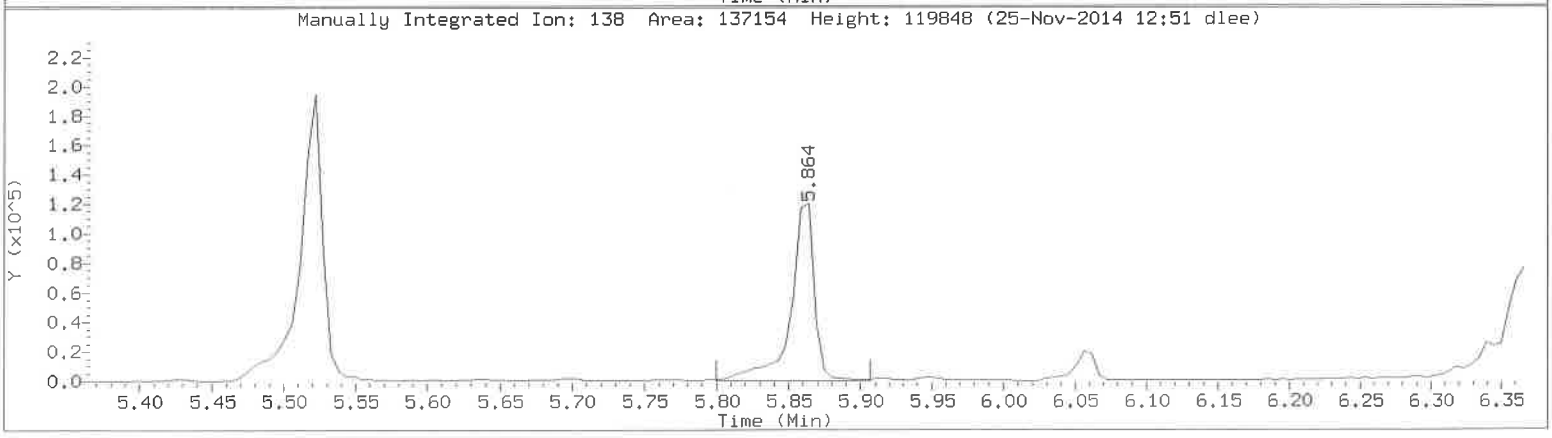
Injection Date: 30-OCT-2014 14:10
Instrument: 30mss1.i
Lab Sample ID: 809327

Compound: 3-Nitroaniline
CAS Number: 99-09-2









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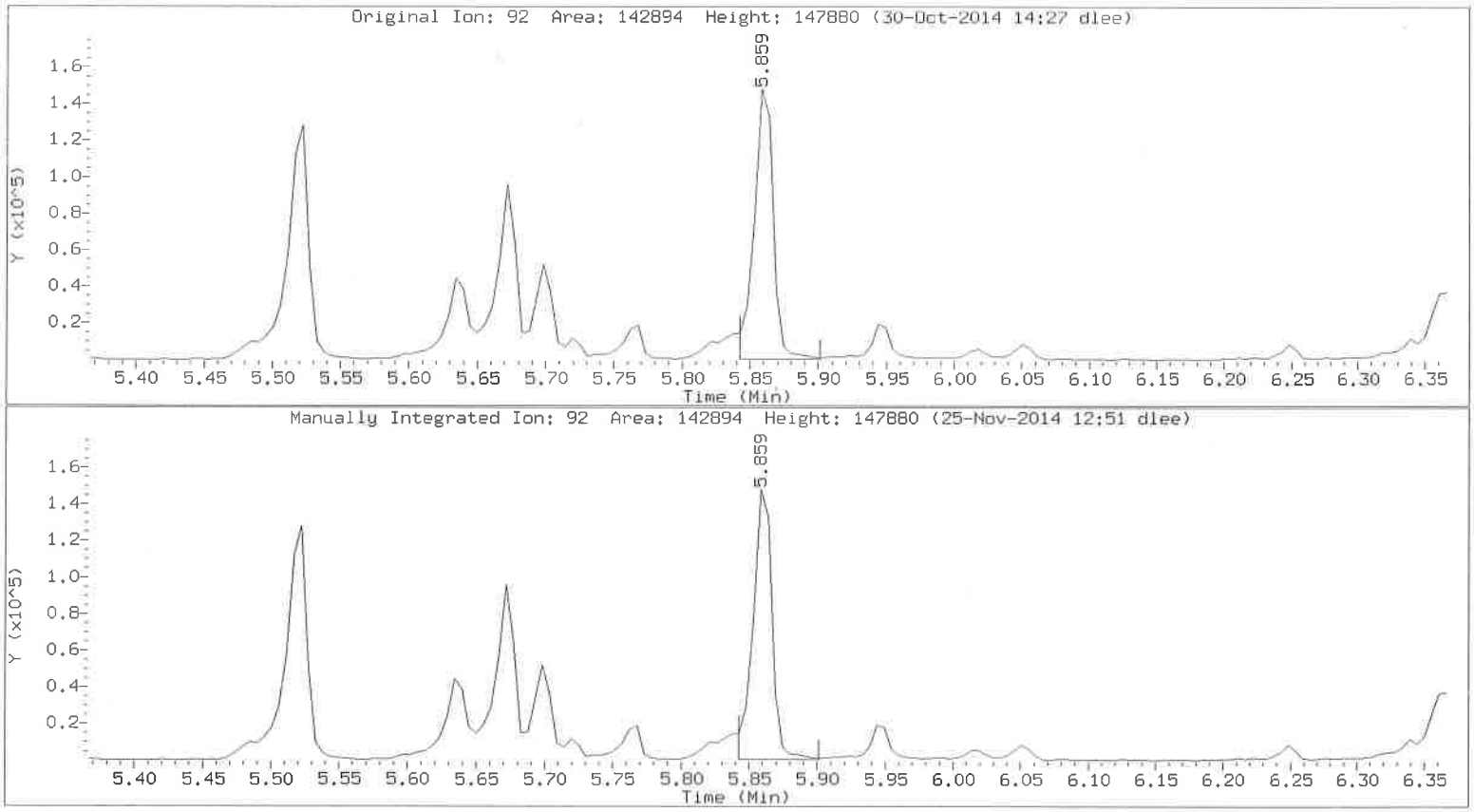
Injection Date: 30-OCT-2014 14:10
Instrument: 30mss1.i
Lab Sample ID: 809327



Pace Analytical Services, Inc.-PGH
BNA Solid Extraction

Matrix: Solid
LIMS QC Batch #: 21399 | 165211
Analytical Method: BNA 8270
Extraction Method: 3546
Turbo Vap #: 6, 5, 3
Logbook ID: 1-OX007-4
SOP ID: PGH-O-022

Solvent	Lot #	Surrogate: BNA XIII 166-01; 50/75ppm; 0.5 ml
CH_2Cl_2	XIII 176-03	Martix Spike: TCL XIII 169-04; 100ppm; 0.5 ml
Na_2SO_4	XIII 172-03	Extraction/ Start Time/Date: 1530 10/29/14
Sand	XIII 159-02	Extraction/ End Time Date: 2030 10/29/14

F.P. FC 010518

Balance ID: TS4KD

Date	Project #	Sample ID	Analyst	Initial Volume (g)	Final Volume (mL)	Comments
10/29/14	30132925	BLK	AC	15.0	5	
		LCS		15.0		
		30132925-001 1		15.40		
	30132866	30132866-001 1		15.05		
	30132867	30132867-001 1		15.31		
	30133009	30133009-001 2		15.16		
		002 2		15.10		
		003 1		15.39		
	30132646	30132646-003 2		15.35		
		005 1		15.46		
		006 1		15.32		
		008 1		15.13		
		008MS 1		15.16		
		008MSD 1		15.22		
	30133076	30133076-001 1		15.34		

AC
10/29/14

Peer Review: 11/25/14

INSTRUMENT RUN LOG
Pace Analytical Services, Inc

Instrument: 30mss1.i
Column RTX-5MS 20m X 0.18mm Helium
Misc. Prep Info [G]:
Misc. Prep Info [L]: DCM. V-38-8D
Misc. Prep Info [S]:
ISTD lot: ~~V-45-8~~ V-53-1, V-55-9
Tune std: DFTPP 10-9-14 V-46-1

Method: 8270/625

Surr. lot: see Extraction log G,
Cal. std: V-55-8 ICV / curve

Path/File	Lab ID	Mtrx/Batch	Type	DF	Method	Date	Time	Oper	Comments
1/m11008t1.d	tune	G/V-46-1	DFTPP	1	sw846tun	10/08/14	08:25	DJL	
1/m11008z1.d	1PPM TCL	N/V-55-1	CALIB_1	1	8270100814b	10/08/14	08:39	DJL	failed curve
1/m11008z2.d	2PPM TCL	N/V-55-2	CALIB_2	1	8270100814b	10/08/14	08:59	DJL	
1/m11008z3.d	4PPM TCL	N/V-55-3	CALIB_3	1	8270100814b	10/08/14	09:19	DJL	
1/m11008z4.d	8PPM TCL	N/V-55-4	CALIB_4	1	8270100814b	10/08/14	09:39	DJL	
1/m11008z5.d	12PPM TCL	N/V-55-5	CALIB_5	1	8270100814b	10/08/14	09:58	DJL	
1/m11008z6.d	16PPM TCL	N/V-55-6	CALIB_6	1	8270100814b	10/08/14	10:18	DJL	
1/m11008z7.d	20PPM TCL	N/V-55-7	CALIB_7	1	8270100814b	10/08/14	10:38	DJL	
1/m11008t2.d	tune	G/V-46-1	DFTPP	1	sw846tun	10/08/14	11:25	DJL	
1/m11008y1.d	1PPM TCL	N/V-55-1	CALIB_1	1	8270100814b	10/08/14	11:41	DJL	
1/m11008y2.d	2PPM TCL	N/V-55-2	CALIB_2	1	8270100814b	10/08/14	12:00	DJL	
1/m11008y3.d	4PPM TCL	N/V-55-3	CALIB_3	1	8270100814b	10/08/14	12:20	DJL	
1/m11008y4.d	8PPM TCL	N/V-55-4	CALIB_4	1	8270100814b	10/08/14	12:40	DJL	
1/m11008y5.d	12PPM TCL	N/V-55-5	CALIB_5	1	8270100814b	10/08/14	13:00	DJL	
1/m11008y6.d	16PPM TCL	N/V-55-6	CALIB_6	1	8270100814b	10/08/14	13:20	DJL	
1/m11008y7.d	20PPM TCL	N/V-55-7	CALIB_7	1	8270100814b	10/08/14	13:40	DJL	
1/m11008y8.d	8PPM TCL ICV	N/V-55-8	CCALIB_4	1	8270100814b	10/08/14	14:00	DJL	
1/m11008s1.d	8PPM Benzidine	N/V-48-7	CCALIB_4	1	benzidine100114b	10/08/14	14:19	DJL	
1/m1100801.d	798919	N/6863	LCS	10	8270100814b	10/08/14	14:39	DJL	
1/m1100802.d	30131193001	N/6863	SAMPLE	10	8270100814b	10/08/14	14:59	DJL	
1/m1100803.d	30131193002	N/6863	SAMPLE	10	8270100814b	10/08/14	15:19	DJL	
1/m1100804.d	798918	N/6863	BLANK	10	8270100814b	10/08/14	15:39	DJL	
1/m1100805.d	798920	N/6863	MS	10	8270100814b	10/08/14	15:59	DJL	
1/m1100806.d	798921	N/6863	MSD	10	8270100814b	10/08/14	16:19	DJL	
1/m1100807.d	30131193001	N/6863	SAMPLE	50	8270100814b	10/08/14	16:38	DJL	
1/m1100808.d	798920	N/6863	MS	50	8270100814b	10/08/14	16:58	DJL	
1/m1100809.d	798921	N/6863	MSD	50	8270100814b	10/08/14	17:18	DJL	
1/m1100810.d	798746	S/6864	LCS	1	8270100814b	10/08/14	17:38	DJL	
1/m1100811.d	30130486001	S/6864	SAMPLE	1	8270100814b	10/08/14	17:58	DJL	
1/m1100812.d	798747	S/6864	MS	1	8270100814b	10/08/14	18:17	DJL	
1/m1100813.d	798748	S/6864	MSD	1	8270100814b	10/08/14	18:37	DJL	
1/m1100814.d	30130899001	S/6864	SAMPLE	10	8270100814b	10/08/14	18:57	DJL	

Check Maintenance Items Performed:

- ✓ Changed septum
- ✓ Cleaned liner
- ✓ Replaced/Cleaned gold seal
- ✓ Clipped column
- ___ Changed trap (lot #_____)
- ___ Cleaned MS source
- ___ Changed column (lot #_____)
- ___ Other minor parts replaced _____
- ___ No maintenance performed today

Additional Comments:

Run Order Verified: DJL

File Path 1: \\30wintarget\chem\30mss1.i\mss1100814.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 07:08 10/09/2014

Reviewed By/Date: _____

INSTRUMENT RUN LOG

Pace Analytical Services, Inc

Instrument: 30mss1.i

Column RTX-5MS 20m X 0.18mm Helium Method:

Misc. Prep Info [G]:

Misc. Prep Info [L]:

Misc. Prep Info [S]:

see p.1

ISTD lot: V-45-8 Surr. lot:

Tune std: _____ Cal. std: _____

Path/File	Lab ID	Mtrx/Batch	Type	DF	Method	Date	Time	Oper	Comments
1/m1100815.d	30130899002	S/6864	SAMPLE	10	8270100814b	10/08/14	19:17	DJL	
1/m1100816.d	30131024001	S/6864	SAMPLE	1	8270100814b	10/08/14	19:37	DJL	
1/m1100817.d	798745	S/6864	BLANK	1	8270100814b	10/08/14	19:57	DJL	
1/m1100818.d	798849	L/6865	BLANK	1	8270100814b	10/08/14	20:16	DJL	
1/m1100819.d	798850	L/6865	LCS	1	8270100814b	10/08/14	20:36	DJL	
1/m1100820.d	798853	L/6865	BLANK	1	8270100814b	10/08/14	20:56	DJL	
1/m1100821.d	798854	L/6865	BLANK	1	8270100814b	10/08/14	21:16	DJL	
1/m1100822.d	30130500002	S/6865	SAMPLE	1	8270100814b	10/08/14	21:36	DJL	
1/m1100823.d	30131100001	S/6865	SAMPLE	1	8270100814b	10/08/14	21:56	DJL	
1/m1100824.d	30130622001	S/6865	SAMPLE	1	8270100814b	10/08/14	22:16	DJL	
1/m1100825.d	798851	S/6865	MS	1	8270100814b	10/08/14	22:35	DJL	
1/m1100826.d	798852	S/6865	MSD	1	8270100814b	10/08/14	22:55	DJL	
1/m1100827.d	30130819001	S/6865	SAMPLE	1	8270100814b	10/08/14	23:15	DJL	

File Path 1: \\30wintarget\chem\30mss1.i\mss1100814.b

Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one

Report Date: 07:08 10/09/2014 Reviewed By/Date: _____ Page: 2 of 2

INSTRUMENT RUN LOG
Pace Analytical Services, Inc

Instrument: 30mss1.i
Column RXI-5MS 20m X 0.18mm He DCR 10-31-14 Method: 8270 | DCR
Misc. Prep Info [G]:
Misc. Prep Info [L]: DCM: ~~V-4~~ V-56-3
Misc. Prep Info [S]:
ISTD lot: V-55-9 / V-57-1 Surr. lot: see extraction logs
Tune std: V-46-1 Cal. std: V-55-4, V-48-7

Path/File	Lab ID	Mtrx/Batch	Type	DF	Method	Date	Time	Oper	Comments
1/m11030t1.d	tune	G/V-46-1	DFTPP	1	sw846tun	10/30/14	08:34	DJL	
1/m11030t2.d	tune	G/V-46-1	DFTPP	1	sw846tun	10/30/14	09:20	DJL	
1/m11030s1.d	8PPM TCL	N/V-55-4	CCALIB_4	1	8270100814b	10/30/14	09:32	DJL	
1/m11030s2.d	8PPM Benzidine	N/V-48-7	CCALIB_4	1	benzidine100114b	10/30/14	09:52	DJL	
1/m1103001.d	809327	S/6936	LCS	1	8270100814b	10/30/14	10:12	DJL	
1/m1103002.d	30133076001	S/6936	SAMPLE	1	8270100814b	10/30/14	10:32	DJL	
1/m1103003.d	30132866001	S/6936	SAMPLE	1	8270100814b	10/30/14	10:51	DJL	
1/m1103004.d	30132867001	S/6936	SAMPLE	1	8270100814b	10/30/14	11:11	DJL	
1/m1103005.d	30132646003	S/6936	SAMPLE	1	8270100814b	10/30/14	11:31	DJL	
1/m1103006.d	30132646005	S/6936	SAMPLE	1	8270100814b	10/30/14	11:51	DJL	
1/m1103007.d	30132646006	S/6936	SAMPLE	1	8270100814b	10/30/14	12:11	DJL	
1/m1103008.d	30132646008	S/6936	SAMPLE	1	8270100814b	10/30/14	12:31	DJL	
1/m1103009.d	30133009001	S/6936	SAMPLE	1	8270100814b	10/30/14	12:51	DJL	
1/m1103010.d	30133009002	S/6936	SAMPLE	1	8270100814b	10/30/14	13:10	DJL	
1/m1103011.d	30133009003	S/6936	SAMPLE	1	8270100814b	10/30/14	13:30	DJL	
1/m1103012.d	30132925001	S/6936	SAMPLE	10	8270100814b	10/30/14	13:50	DJL	
1/m1103013.d	809327	S/6936	LCS	1	8270100814b	10/30/14	14:10	DJL	
1/m1103014.d	809329	S/6936	MSD	1	8270100814b	10/30/14	14:30	DJL	
1/m1103015.d	809326	S/6936	BLANK	1	8270100814b	10/30/14	14:49	DJL	
1/m1103016.d	809328	S/6936	MS	1	8270100814b	10/30/14	15:09	DJL	
1/m1103017.d	30132934001	S/6939	SAMPLE	1	8270100814b	10/30/14	15:29	DJL	
1/m1103018.d	30133005001	N/6939	SAMPLE	1	8270100814b	10/30/14	15:49	DJL	
1/m1103019.d	30132945002	S/6939	SAMPLE	1	8270100814b	10/30/14	16:09	DJL	
1/m1103020.d	30132525001	S/6939	SAMPLE	1	8270100814b	10/30/14	16:29	DJL	
1/m1103021.d	30132838002	S/6939	SAMPLE	1	8270100814b	10/30/14	16:49	DJL	
1/m1103022.d	30132869001	S/6939	SAMPLE	1	8270100814b	10/30/14	17:09	DJL	
1/m1103023.d	30132945001	S/6939	SAMPLE	1	8270100814b	10/30/14	17:29	DJL	
1/m1103024.d	809925	L/6942	BLANK	1	8270100814b	10/30/14	17:49	DJL	
1/m1103025.d	809926	L/6942	LCS	1	8270100814b	10/30/14	18:08	DJL	
1/m1103026.d	30132106001	S/6942	SAMPLE	1	8270100814b	10/30/14	18:28	DJL	
1/m1103027.d	809927	S/6942	MS	1	8270100814b	10/30/14	18:48	DJL	
1/m1103028.d	809928	S/6942	MSD	1	8270100814b	10/30/14	19:08	DJL	

Check Maintenance Items Performed:

- ✓ Changed septum
- ✓ Cleaned liner
- ___ Replaced/Cleaned gold seal
- ✓ Clipped column
- ___ Changed trap (lot #_____)
- ___ Cleaned MS source
- ___ Changed column (lot #_____)
- ___ Other minor parts replaced _____
- ___ No maintenance performed today

Additional Comments:

Run Order Verified: DJL

File Path 1: \\30wintarget\chem\30mss1.i\mss1103014.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 08:04 10/31/2014

Reviewed By/Date: CLB 10-31-14

Project Number: 30133009

PAH Data

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORM

	Yes	No
1. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	✓	
2. GC/MS Tune Specifications a. BFB Meets Criteria b. DFTPP Meets Criteria	✓	
3. GC/MS Tuning Frequency performed every 24 hours for 600 Series and 12 hours for 8000 Series	✓	
4. GC/MS Calibration – Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	✓	✓ see comment below
5. GC/MS Calibration Requirements		
a. Calibration Check Compounds	✓	
b. System Performance Check Compounds	✓	
6. Blank Contamination If yes, list compounds And concentrations in each blank		✓
a. VOA Fraction		
b. B/N Fraction		
c. Acid Fraction		
7. Surrogate Recoveries Meet Criteria	✓	
If not met, list those compounds and their recoveries which fall outside the acceptable range		
a. VOA Fraction		
b. B/N Fraction		
c. Acid Fraction		
If not met, were the calculations checked and the results qualified as "estimates"?	NA	
8. Matrix Spike/Matrix Spike Duplication Recoveries Meet Criteria (If not met, list those compounds and their recoveries which fall outside the acceptable range)	✓	
a. VOA Fraction		
b. B/N Fraction		
c. Acid Fraction		
9. Internal Standard Area/Retention Time Shift Meet Criteria	✓	
10. Extraction Holding Times Met	✓	
If not met, list number of days exceeded for each sample:		
11. Analysis Holding Time Met	✓	
If not met, list number of days exceeded for each sample:		

Additional Comments Quinoline Initial Calibration performed in excess of 30 days of sample analysis.

Analyst: Daniel Lee / [signature] Date: 11/25/14 / 11/25/14 Project # 30133009

Dept. Group Leader: [signature] Date: 11/25/14

Q:\Deliverables\Data Pkg Forms\Deliverables Forms\NJ Conformance Form (Q017 Rev0 22Jan2007).doc

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SURROGATE RECOVERY SUMMARY

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: OEXT / 21490
Method(s): EPA 3546 / EPA 8270C by SIM

Lab ID	Type	Client Sample ID	Dilution	Sur1 % Rec	Sur1 Qual	Sur2 % Rec	Sur2 Qual	Sur3 % Rec	Sur3 Qual	Sur4 % Rec	Sur4 Qual	Sur5 % Rec	Sur5 Qual	Sur6 % Rec	Sur6 Qual
30133009001		AOI-5_PECO-B2_12-13_10222014	1	63		78									
812361	BLANK		1	63		89									
30133009002		AOI-5_PECO-B5_14-16_10232014	1	76		90									
30133009003		AOI-5_PECO-B6_12-14_10242014	1	78		81									
812362	LCS		1	82		104									
812363	MS		1	71		85									
812364	MSD		1	74		88									
			QC Limits:	35-141		64-141									
			Sample Limits:	35-141		64-141									

Sur 1: 2-Fluorobiphenyl (S)
Sur 2: Terphenyl-d14 (S)

Date: 11/25/2014 01:17 PM

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

LAB CONTROL SAMPLE RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: OEXT/21490 **LCS Prepared:** 11/05/14
Method(s): EPA 3546 / EPA 8270C by SIM **LCSD Prepared:**

Analyte	LCS % Rec	LCSD % Rec	RPD	QC Limits % Rec	QC Limits RPD	Spike Conc	LCS Conc	LCSD Conc	Units	LCS Analyzed	LCSD Analyzed	LCS Qual	LCSD Qual
Acenaphthene	85			43-113		0.13	0.11		mg/kg	11/07/14			
Anthracene	101			59-115		0.13	0.13		mg/kg	11/07/14			
Benzo(a)anthracene	99			62-122		0.13	0.13		mg/kg	11/07/14			
Benzo(a)pyrene	86			56-113		0.13	0.11		mg/kg	11/07/14			
Benzo(b)fluoranthene	95			43-138		0.13	0.13		mg/kg	11/07/14			
Benzo(g,h,i)perylene	96			47-143		0.13	0.13		mg/kg	11/07/14			
Benzo(k)fluoranthene	110			52-138		0.13	0.15		mg/kg	11/07/14			
Chrysene	109			64-119		0.13	0.15		mg/kg	11/07/14			
Dibenz(a,h)anthracene	98			59-133		0.13	0.13		mg/kg	11/07/14			
Fluoranthene	97			64-122		0.13	0.13		mg/kg	11/07/14			
Fluorene	83			46-114		0.13	0.11		mg/kg	11/07/14			
Indeno(1,2,3-cd)pyrene	97			59-132		0.13	0.13		mg/kg	11/07/14			
Naphthalene	89			47-108		0.13	0.12		mg/kg	11/07/14			
Phenanthrene	94			42-122		0.13	0.13		mg/kg	11/07/14			
Pyrene	100			64-117		0.13	0.13		mg/kg	11/07/14			
Quinoline	93			45-124		0.13	0.12		mg/kg	11/10/14			

Type	Sample
LCS	812362

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

MATRIX SPIKE SAMPLE RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: OEXT/21490
Method(s): EPA 3546 / EPA 8270C by SIM

MS Prepared: 11/05/14
MSD Prepared: 11/05/14

Analyte	Units	Sample Conc	Spike Conc MS	Spike Conc MSD	Result MS	Result MSD	Dilution MS	Dilution MSD	% Recovery MS	% Recovery MSD	QC Limits %Recovery	RPD	Max RPD	Analyzed Date MS	Analyzed Date MSD	Qualifier(s) MS	Qualifier(s) MSD
Acenaphthene	mg/kg	0.0084 U	0.17	0.17	0.12	0.13	1	1	73	79	43-113	6	20	11/07/14	11/07/14		
Anthracene	mg/kg	0.0084 U	0.17	0.17	0.14	0.15	1	1	84	88	59-115	3	20	11/07/14	11/07/14		
Benzo(a)anthracene	mg/kg	0.0084 U	0.17	0.17	0.14	0.15	1	1	84	88	62-122	3	20	11/07/14	11/07/14		
Benzo(a)pyrene	mg/kg	0.0084 U	0.17	0.17	0.13	0.14	1	1	79	82	56-113	2	20	11/07/14	11/07/14		
Benzo(b)fluoranthene	mg/kg	0.0084 U	0.17	0.17	0.15	0.15	1	1	89	92	43-138	1	20	11/07/14	11/07/14		
Benzo(g,h,i)perylene	mg/kg	0.0084 U	0.17	0.17	0.14	0.14	1	1	84	85	47-143	1	20	11/07/14	11/07/14		
Benzo(k)fluoranthene	mg/kg	0.0084 U	0.17	0.17	0.15	0.16	1	1	91	94	52-138	1	20	11/07/14	11/07/14		
Chrysene	mg/kg	0.0084 U	0.17	0.17	0.15	0.15	1	1	88	91	64-119	1	20	11/07/14	11/07/14		
Dibenz(a,h)anthracene	mg/kg	0.0084 U	0.17	0.17	0.14	0.14	1	1	84	87	59-133	1	20	11/07/14	11/07/14		
Fluoranthene	mg/kg	0.0084 U	0.17	0.17	0.14	0.14	1	1	84	86	64-122	0	20	11/07/14	11/07/14		
Fluorene	mg/kg	0.0084 U	0.17	0.17	0.13	0.13	1	1	76	78	46-114	0	20	11/07/14	11/07/14		
Indeno(1,2,3-cd)pyrene	mg/kg	0.0084 U	0.17	0.17	0.14	0.14	1	1	83	86	59-132	1	20	11/07/14	11/07/14		
Naphthalene	mg/kg	0.0084 U	0.17	0.17	0.13	0.14	1	1	79	83	47-108	2	20	11/07/14	11/07/14		
Phenanthrene	mg/kg	0.0084 U	0.17	0.17	0.14	0.14	1	1	83	85	42-122	1	20	11/07/14	11/07/14		
Pyrene	mg/kg	0.0084 U	0.17	0.17	0.14	0.15	1	1	85	87	64-117	1	20	11/07/14	11/07/14		
Quinoline	mg/kg	0.0084 U	0.17	0.17	0.19	0.17	1	1	111	100	45-124	12	20	11/10/14	11/10/14		

Type	Sample	Client Sample ID
MS	812363	30133378004
MSD	812364	30133378004

REPORT OF LABORATORY ANALYSIS

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FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

MB

Lab Name: Contract:

Lab Code: Case No.: -- SAS No.: SDG No.: 30133009

Lab File ID: M3110701 Lab Sample ID: 812361

Instrument ID: 30MSS3 Date Extracted:

Matrix: (soil/water) SOIL Date Analyzed: 11/07/14

Level:(low/med) LOW Time Analyzed: 1451

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	MBLCS	812362	M3110702	11/07/14
02	AOI-5_PECO-B	30133009001	M3110703	11/07/14
03	AOI-5_PECO-B	30133009002	M3110704	11/07/14
04	AOI-5_PECO-B	30133009003	M3110705	11/07/14
05	AOI5_PECO-B4	812363	M3110709	11/07/14
06	AOI5_PECO-B4	812364	M3110710	11/07/14
07				
08				
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19				
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30				

COMMENTS:

FORM IV SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

in SAMPLE NO.

MB

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: M2111002 Lab Sample ID: 812361

Instrument ID: 30MSS2 Date Extracted: ~~07/11/91~~ 11/25/14

Matrix: (soil/water) SOIL Date Analyzed: 11/10/14

Level:(low/med) LOW Time Analyzed: 1149

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	in SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	MBLCS	812362	M2111001	11/10/14
02	AOI5_PECO-B4	812363	M2111007	11/10/14
03	AOI5_PECO-B4	812364	M2111008	11/10/14
04	AOI-5_PECO-B	30133009002	M2111010	11/10/14
05	AOI-5_PECO-B	30133009001	M2111012	11/10/14
06	AOI-5_PECO-B	30133009003	M2111013	11/10/14
07				
08				
09				
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COMMENTS:

FORM IV SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: -- SAS No.: SDG No.: 30133009

Lab File ID (Standard): M31107S1 Date Analyzed: 11/07/14

Instrument ID: 30MSS3 Time Analyzed: 1432

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	144127	3.78	90862	4.92	127784	5.99
	UPPER LIMIT	288254	4.28	181724	5.42	255568	6.49
	LOWER LIMIT	72064	3.28	45431	4.42	63892	5.49
	CLIENT SAMPLE NO.						
01	MB	174216	3.78	118657	4.92	161050	5.99
02	MBLCS	114331	3.78	74407	4.91	106392	5.99
03	AOI-5_PECO-B	181475	3.78	125907	4.91	176577	5.99
04	AOI-5_PECO-B	102227	3.78	73249	4.92	128231	6.01
05	AOI-5_PECO-B	137916	3.78	86852	4.92	148668	6.00
06	AOI5_PECO-B4	139625	3.77	94498	4.91	136763	5.99
07	AOI5_PECO-B4	124546	3.78	84871	4.91	123366	5.99
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Naphthalene-d8 IS
IS2 = Acenaphthene-d8 IS
IS3 = Phenanthrene-d10 IS

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: -- SAS No.: SDG No.: 30133009

Lab File ID (Standard): M31107S1 Date Analyzed: 11/07/14

Instrument ID: 30MSS3 Time Analyzed: 1432

		IS4 AREA #	RT #	IS5 AREA #	RT #	AREA #	RT #
	12 HOUR STD	178001	8.33	150117	9.63		
	UPPER LIMIT	356002	8.83	300234	10.13		
	LOWER LIMIT	89001	7.83	75059	9.13		
	CLIENT SAMPLE NO.						
01	MB	215553	8.33	178746	9.63		
02	MBLCS	143006	8.33	124095	9.63		
03	AOI-5_PECO-B	240133	8.33	202727	9.63		
04	AOI-5_PECO-B	142124	8.36	114730	9.64		
05	AOI-5_PECO-B	179666	8.34	147264	9.63		
06	AOI5_PECO-B4	174301	8.33	139861	9.62		
07	AOI5_PECO-B4	158437	8.33	125218	9.62		
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 = Chrysene-d12 IS
IS5 = Perylene-d12 IS

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID (Standard): M21110S2 Date Analyzed: 11/10/14

Instrument ID: 30MSS2 Time Analyzed: 1119

		IS1 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	67129	4.35				
	UPPER LIMIT	134258	4.85				
	LOWER LIMIT	33565	3.85				
	CLIENT SAMPLE NO.						
01	MBLCS	71016	4.36				
02	MB	98676	4.35				
03	AOI5_PECO-B4	76199	4.36				
04	AOI5_PECO-B4	87919	4.36				
05	AOI-5_PECO-B	102116	4.36				
06	AOI-5_PECO-B	86310	4.36				
07	AOI-5_PECO-B	93573	4.36				
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Naphthalene-d8 IS

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Matrix: Solid
% Moisture: 20.5395
Acode: 8270 MSSV PAH by SIM
Prep/Method: EPA 3546 / EPA 8270C by SIM

Sample: AOI-5_PECO-B2_12-13_10222014
Lab ID: 30133009001
Collected: 10/22/14 15:00
Received: 10/28/14 10:15

Results reported on a "dry-weight" basis

CAS No.	Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	Qual
83-32-9	Acenaphthene	**0.0082 U**	mg/kg	0.0082	0.0015	1	11/05/14 15:15	11/07/14 15:26	
120-12-7	Anthracene	**0.0082 U**	mg/kg	0.0082	0.0011	1	11/05/14 15:15	11/07/14 15:26	
56-55-3	Benzo(a)anthracene	**0.0082 U**	mg/kg	0.0082	0.00055	1	11/05/14 15:15	11/07/14 15:26	
50-32-8	Benzo(a)pyrene	**0.0082 U**	mg/kg	0.0082	0.00048	1	11/05/14 15:15	11/07/14 15:26	
205-99-2	Benzo(b)fluoranthene	**0.0082 U**	mg/kg	0.0082	0.00077	1	11/05/14 15:15	11/07/14 15:26	
191-24-2	Benzo(g,h,i)perylene	**0.0082 U**	mg/kg	0.0082	0.00067	1	11/05/14 15:15	11/07/14 15:26	
207-08-9	Benzo(k)fluoranthene	**0.0082 U**	mg/kg	0.0082	0.00041	1	11/05/14 15:15	11/07/14 15:26	
218-01-9	Chrysene	**0.0082 U**	mg/kg	0.0082	0.0010	1	11/05/14 15:15	11/07/14 15:26	
53-70-3	Dibenz(a,h)anthracene	**0.0082 U**	mg/kg	0.0082	0.00063	1	11/05/14 15:15	11/07/14 15:26	
206-44-0	Fluoranthene	**0.0082 U**	mg/kg	0.0082	0.00076	1	11/05/14 15:15	11/07/14 15:26	
86-73-7	Fluorene	**0.0082 U**	mg/kg	0.0082	0.0014	1	11/05/14 15:15	11/07/14 15:26	
193-39-5	Indeno(1,2,3-cd)pyrene	**0.0082 U**	mg/kg	0.0082	0.00045	1	11/05/14 15:15	11/07/14 15:26	
91-20-3	Naphthalene	**0.0082 U**	mg/kg	0.0082	0.0022	1	11/05/14 15:15	11/07/14 15:26	
85-01-8	Phenanthrene	**0.0082 U**	mg/kg	0.0082	0.0011	1	11/05/14 15:15	11/07/14 15:26	
129-00-0	Pyrene	**0.0082 U**	mg/kg	0.0082	0.00086	1	11/05/14 15:15	11/07/14 15:26	
91-22-5	Quinoline	**0.0082 U**	mg/kg	0.0082	0.0020	1	11/05/14 15:15	11/10/14 14:22	
Surrogates									
321-60-8	2-Fluorobiphenyl (S)	**63**	%	35-141		1	11/05/14 15:15	11/07/14 15:26	
1718-51-0	Terphenyl-d14 (S)	**78**	%	64-141		1	11/05/14 15:15	11/07/14 15:26	

REPORT OF LABORATORY ANALYSIS

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Date: 11/25/2014 01:17 PM

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3110714.b\m3110703.d
Lab Smp Id: 30133009001 Client Smp ID: AOI-5_PECO-B2_12-13
Inj Date : 07-NOV-2014 15:26
Operator : JSH Inst ID: 30mss3.i
Smp Info : 30133009001
Misc Info : 6965
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Meth Date : 25-Nov-2014 13:37 dlee Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22 Cal File: m31008z6.d
Als bottle: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.360	Weigth of sample extracted (g)
M	20.540	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	3.776	3.781	(1.000)	181475	4.00000		
* 2 Acenaphthene-d8 IS	164	4.913	4.917	(1.000)	125907	4.00000		
* 3 Phenanthrene-d10 IS	188	5.986	5.988	(1.000)	176577	4.00000		
* 4 Chrysene-d12 IS	240	8.328	8.332	(1.000)	240133	4.00000		
* 5 Perylene-d12 IS	264	9.625	9.627	(1.000)	202727	4.00000		
$ 6 2-Fluorobiphenyl	172	4.458	4.461	(0.907)	113238	3.13158	162	
$ 7 Terphenyl-d14	244	7.320	7.325	(1.223)	158982	3.89098	201	
8 Naphthalene	128	Compound Not Detected.						
9 2-methylnaphthalene	142	Compound Not Detected.						
10 1-methylnaphthalene	142	Compound Not Detected.						
11 Acenaphthylene	152	Compound Not Detected.						
12 Acenaphthene	153	Compound Not Detected.						
13 Fluorene	166	Compound Not Detected.						
14 Phenanthrene	178	Compound Not Detected.						
15 Anthracene	178	Compound Not Detected.						
16 Fluoranthene	202	Compound Not Detected.						
17 Pyrene	202	Compound Not Detected.						
18 Benzo[a]anthracene	228	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
19 Chrysene	228	Compound Not Detected.						
20 Benzo[b]fluoranthene	252	Compound Not Detected.						
21 Benzo[k]fluoranthene	252	Compound Not Detected.						
22 Benzo[a]pyrene	252	Compound Not Detected.						
23 Dibenz[a,h]anthracene	278	Compound Not Detected.						
24 Indeno[1,2,3-cd]pyrene	276	Compound Not Detected.						
25 Benzo[g,h,i]perylene	276	Compound Not Detected.						

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m3110703.d
Lab Smp Id: 30133009001
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: 6965

Calibration Date: 07-NOV-2014
Calibration Time: 14:32
Client Smp ID: AOI-5_PECO-B2_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	144127	72064	288254	181475	25.91
2 Acenaphthene-d8	90862	45431	181724	125907	38.57
3 Phenanthrene-d10	127784	63892	255568	176577	38.18
4 Chrysene-d12 IS	178001	89001	356002	240133	34.91
5 Perylene-d12 IS	150117	75059	300234	202727	35.05

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	3.78	3.28	4.28	3.78	-0.14
2 Acenaphthene-d8	4.92	4.42	5.42	4.91	-0.07
3 Phenanthrene-d10	5.99	5.49	6.49	5.99	-0.04
4 Chrysene-d12 IS	8.33	7.83	8.83	8.33	-0.04
5 Perylene-d12 IS	9.63	9.13	10.13	9.63	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

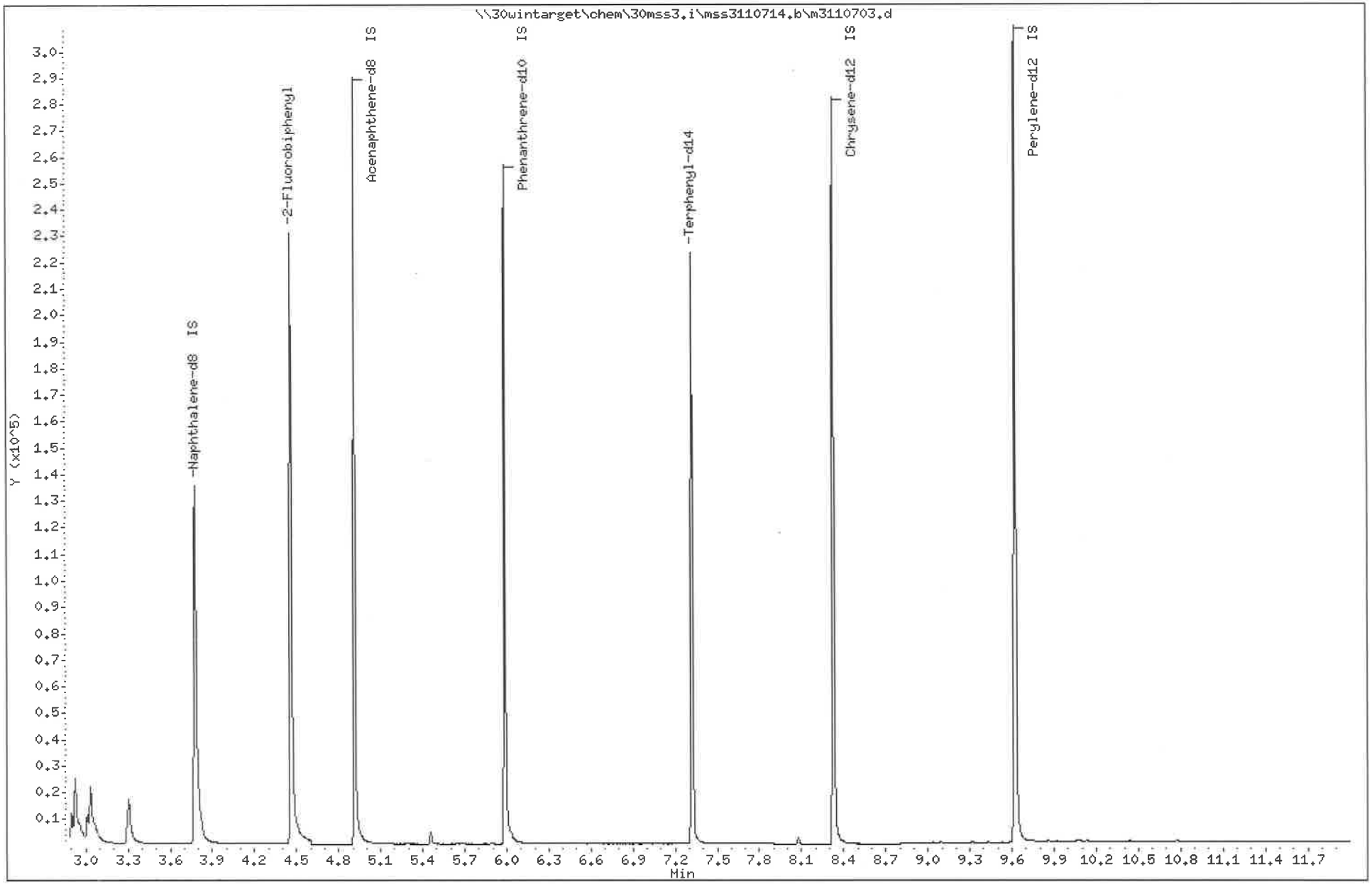
RECOVERY REPORT

Client Name: Sunoco_Langan
Client SDG: 30133009
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: 30133009001
Client Smp ID: AOI-5_PECO-B2_12-13
Level: LOW
Operator: JSH
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: water.spk
Quant Type: ISTD
Sublist File: all.sub
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: 6965

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 6 2-Fluorobiphenyl	259	162	62.63	35-141
$ 7 Terphenyl-d14	259	201	77.82	64-141

Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110703.d
Date : 07-NOV-2014 15:26
Client ID: AOI-5_PECO-B2_12-13
Sample Info: 30133009001
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss3.i
Operator: JSH
Column diameter: 0.25



Data File: \\30wintarget\chem\30mss3.i\mss3110714.b/m3110703.d (ManInt: all
Injection Date: 07-NOV-2014 15:26
Instrument: 30mss3.i
Lab Sample ID: 30133009001
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m2111012.d
Lab Smp Id: 30133009001 Client Smp ID: AOI-5_PECO-B2_12-13
Inj Date : 10-NOV-2014 14:22
Operator : DJL Inst ID: 30mss2.i
Smp Info : 30133009001
Misc Info : 6965
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Meth Date : 25-Nov-2014 13:15 dlee Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 14
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: quin.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.360	Weigth of sample extracted (g)
M	20.540	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)
* 1 Naphthalene-d8 IS	136	4.357	4.347	(1.000)	86310	4.00000	
4 Quinoline	129	Compound Not Detected.					

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m2111012.d
Lab Smp Id: 30133009001
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Misc Info: 6965

Calibration Date: 10-NOV-2014
Calibration Time: 11:19
Client Smp ID: AOI-5_PECO-B2_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	67129	33565	134258	86310	28.57

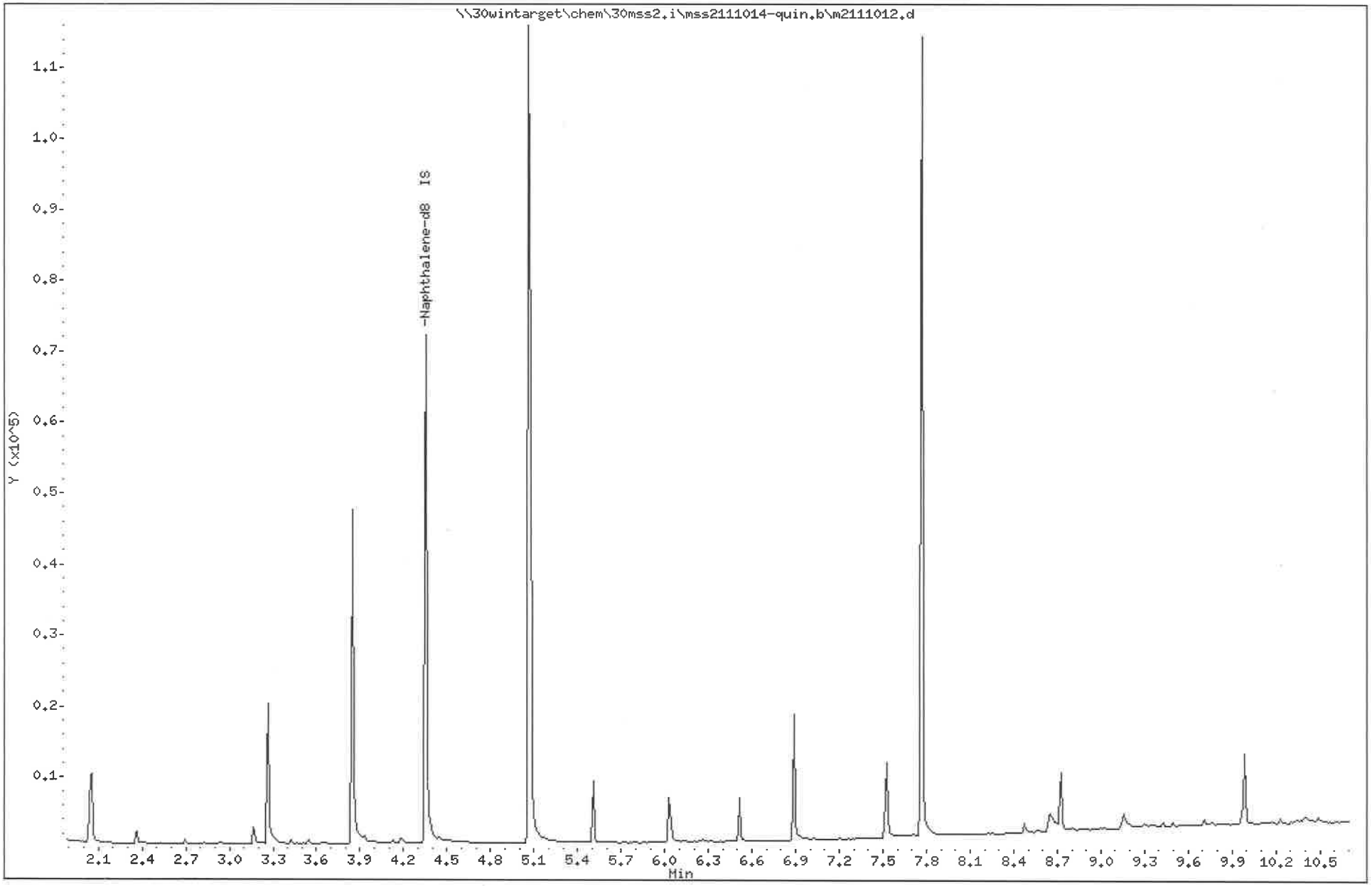
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.35	3.85	4.85	4.36	0.24

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m2111012.d
Date : 10-NOV-2014 14:22
Client ID: AOI-5_PECO-B2_12-13
Sample Info: 30133009001
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss2.i

Operator: DJL
Column diameter: 0.25



Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b/m2111012.d (ManInt
Injection Date: 10-NOV-2014 14:22
Instrument: 30mss2.i
Lab Sample ID: 30133009001
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Matrix: Solid
% Moisture: 16.1389
Acode: 8270 MSSV PAH by SIM
Prep/Method: EPA 3546 / EPA 8270C by SIM

Sample: AOI-5_PECO-B5_14-16_10232014
Lab ID: 30133009002
Collected: 10/23/14 14:30
Received: 10/28/14 10:15

Results reported on a "dry-weight" basis

CAS No.	Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	Qual
83-32-9	Acenaphthene	**0.060**	mg/kg	0.0079	0.0014	1	11/05/14 15:15	11/07/14 15:43	
120-12-7	Anthracene	**0.066**	mg/kg	0.0079	0.0010	1	11/05/14 15:15	11/07/14 15:43	
56-55-3	Benzo(a)anthracene	**0.030**	mg/kg	0.0079	0.00053	1	11/05/14 15:15	11/07/14 15:43	
50-32-8	Benzo(a)pyrene	**0.0029J**	mg/kg	0.0079	0.00046	1	11/05/14 15:15	11/07/14 15:43	
205-99-2	Benzo(b)fluoranthene	**0.0060J**	mg/kg	0.0079	0.00074	1	11/05/14 15:15	11/07/14 15:43	
191-24-2	Benzo(g,h,i)perylene	**0.0079 U**	mg/kg	0.0079	0.00064	1	11/05/14 15:15	11/07/14 15:43	
207-08-9	Benzo(k)fluoranthene	**0.0058J**	mg/kg	0.0079	0.00039	1	11/05/14 15:15	11/07/14 15:43	
218-01-9	Chrysene	**0.080**	mg/kg	0.0079	0.00099	1	11/05/14 15:15	11/07/14 15:43	
53-70-3	Dibenz(a,h)anthracene	**0.0079 U**	mg/kg	0.0079	0.00060	1	11/05/14 15:15	11/07/14 15:43	
206-44-0	Fluoranthene	**0.044**	mg/kg	0.0079	0.00073	1	11/05/14 15:15	11/07/14 15:43	
86-73-7	Fluorene	**0.11**	mg/kg	0.0079	0.0013	1	11/05/14 15:15	11/07/14 15:43	
193-39-5	Indeno(1,2,3-cd)pyrene	**0.0079 U**	mg/kg	0.0079	0.00043	1	11/05/14 15:15	11/07/14 15:43	
91-20-3	Naphthalene	**0.016**	mg/kg	0.0079	0.0021	1	11/05/14 15:15	11/07/14 15:43	
85-01-8	Phenanthrene	**0.11**	mg/kg	0.0079	0.0010	1	11/05/14 15:15	11/07/14 15:43	
129-00-0	Pyrene	**0.13**	mg/kg	0.0079	0.00083	1	11/05/14 15:15	11/07/14 15:43	
91-22-5	Quinoline	**0.0079 U**	mg/kg	0.0079	0.0019	1	11/05/14 15:15	11/10/14 13:51	
Surrogates									
321-60-8	2-Fluorobiphenyl (S)	**76**	%	35-141		1	11/05/14 15:15	11/07/14 15:43	
1718-51-0	Terphenyl-d14 (S)	**90**	%	64-141		1	11/05/14 15:15	11/07/14 15:43	

REPORT OF LABORATORY ANALYSIS

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Date: 11/25/2014 01:17 PM

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3110714.b\m3110704.d
Lab Smp Id: 30133009002 Client Smp ID: AOI-5_PECO-B5_14-16
Inj Date : 07-NOV-2014 15:43
Operator : JSH Inst ID: 30mss3.i
Smp Info : 30133009002
Misc Info : 6965
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Meth Date : 25-Nov-2014 13:37 dlee Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22 Cal File: m31008z6.d
Als bottle: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.180	Weigth of sample extracted (g)
M	16.139	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	3.781	3.781	(1.000)	102227	4.00000	(Q)	
* 2 Acenaphthene-d8 IS	164	4.922	4.917	(1.000)	73249	4.00000		
* 3 Phenanthrene-d10 IS	188	6.009	5.988	(1.000)	128231	4.00000	(QMH)	WP
* 4 Chrysene-d12 IS	240	8.355	8.332	(1.000)	142124	4.00000		
* 5 Perylene-d12 IS	264	9.639	9.627	(1.000)	114730	4.00000		
$ 6 2-Fluorobiphenyl	172	4.460	4.461	(0.906)	79687	3.78798	209	
$ 7 Terphenyl-d14	244	7.353	7.325	(1.232)	133739	4.50724	249(H)	WP
8 Naphthalene	128	3.786	3.796	(1.001)	5477	0.19912	11.0(QM)	BA
9 2-methylnaphthalene	142	Compound Not Detected.						
10 1-methylnaphthalene	142	Compound Not Detected.						
11 Acenaphthylene	152	4.825	4.827	(0.980)	4231	0.12223	6.75(QMH)	BA
12 Acenaphthene	153	4.942	4.938	(1.004)	16184	0.76976	42.5(Q)	
13 Fluorene	166	5.298	5.291	(1.076)	35671	1.41465	78.2(QM)	BA
14 Phenanthrene	178	6.030	6.007	(1.010)	51553	1.35493	74.8(QH)	WP
15 Anthracene	178	6.072	6.049	(1.010)	31975	0.84583	46.7(QMH)	WP
16 Fluoranthene	202	6.979	7.009	(1.169)	20884	0.45557	25.2(QH)	WP
17 Pyrene	202	7.195	7.216	(1.205)	12242	0.26968	14.9(QH)	WP
18 Benzo[a]anthracene	228	8.346	8.322	(0.999)	14506	0.38687	21.4(QH)	WP

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
19 Chrysene	228	8.378	8.356	(1.003)	33253	1.02008	56.4(QH)	WP
20 Benzo[b]fluoranthene	252	9.315	9.299	(0.966)	2694	0.07599	4.20	
21 Benzo[k]fluoranthene	252	9.315	9.323	(0.966)	2694	0.07343	4.06	
22 Benzo[a]pyrene	252	Compound Not Detected.						WP
23 Dibenz[a,h]anthracene	278	Compound Not Detected.						
24 Indeno[1,2,3-cd]pyrene	276	Compound Not Detected.						
25 Benzo[g,h,i]perylene	276	Compound Not Detected.						

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m3110704.d
Lab Smp Id: 30133009002
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: 6965

Calibration Date: 07-NOV-2014
Calibration Time: 14:32
Client Smp ID: AOI-5_PECO-B5_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	144127	72064	288254	102227	-29.07
2 Acenaphthene-d8	90862	45431	181724	73249	-19.38
3 Phenanthrene-d10	127784	63892	255568	128231	0.35
4 Chrysene-d12 IS	178001	89001	356002	142124	-20.16
5 Perylene-d12 IS	150117	75059	300234	114730	-23.57

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	3.78	3.28	4.28	3.78	-0.00
2 Acenaphthene-d8	4.92	4.42	5.42	4.92	0.10
3 Phenanthrene-d10	5.99	5.49	6.49	6.01	0.35
4 Chrysene-d12 IS	8.33	7.83	8.83	8.36	0.29
5 Perylene-d12 IS	9.63	9.13	10.13	9.64	0.12

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

RECOVERY REPORT

Client Name: Sunoco_Langan
Sample Matrix: SOLID
Lab Smp Id: 30133009002
Level: LOW
Data Type: MS DATA
SpikeList File: water.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: 6965

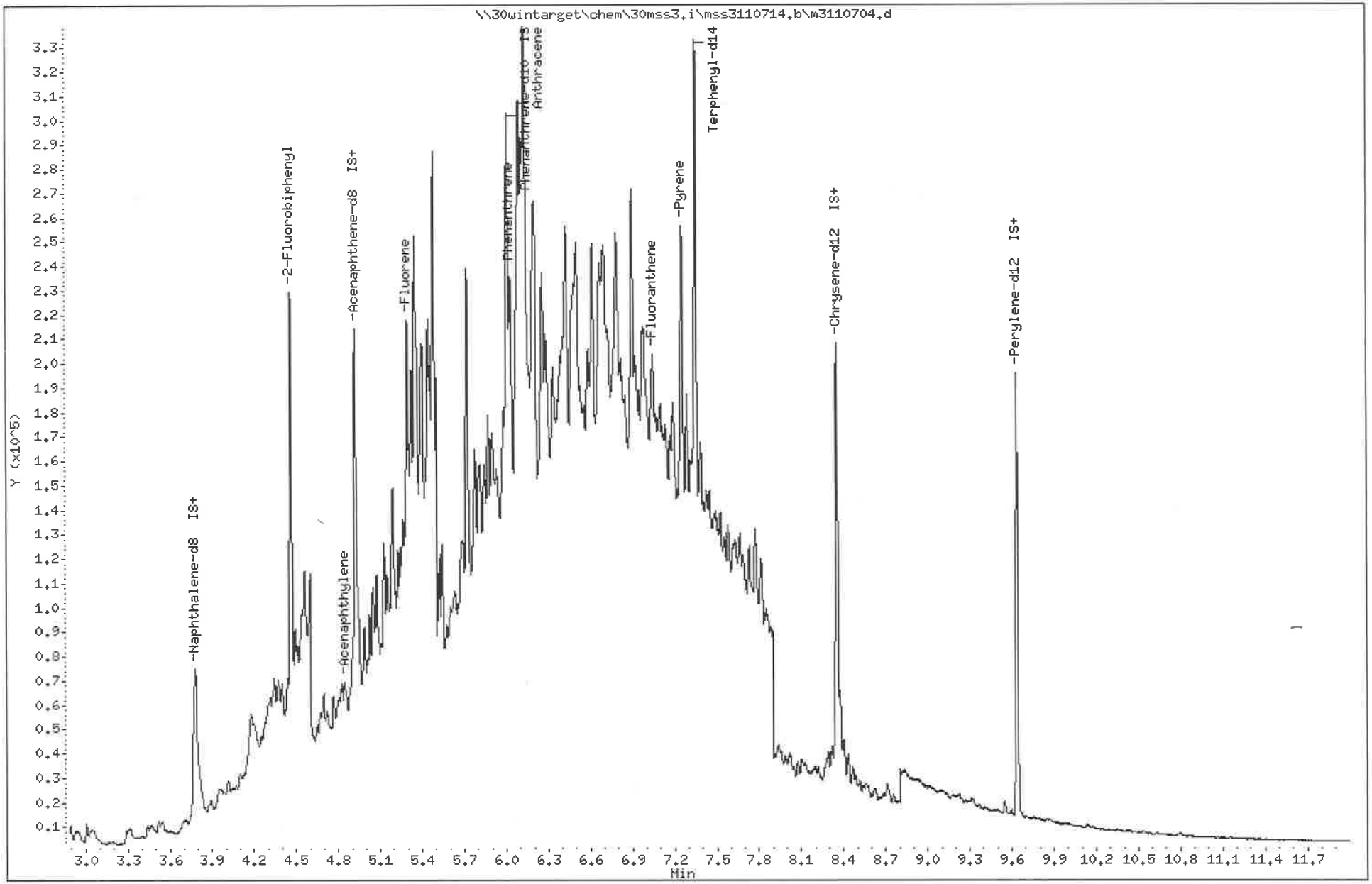
Client SDG: 30133009
Fraction: SV
Client Smp ID: AOI-5_PECO-B5_14-16
Operator: JSH
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 6 2-Fluorobiphenyl	276	209	75.76	35-141
$ 7 Terphenyl-d14	276	249	90.14	64-141

Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110704.d
Date : 07-NOV-2014 15:43
Client ID: AOI-5_PECO-B5_14-16
Sample Info: 30133009002
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss3.i

Operator: JSH
Column diameter: 0.25



Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110704.d

Date : 07-NOV-2014 15:43

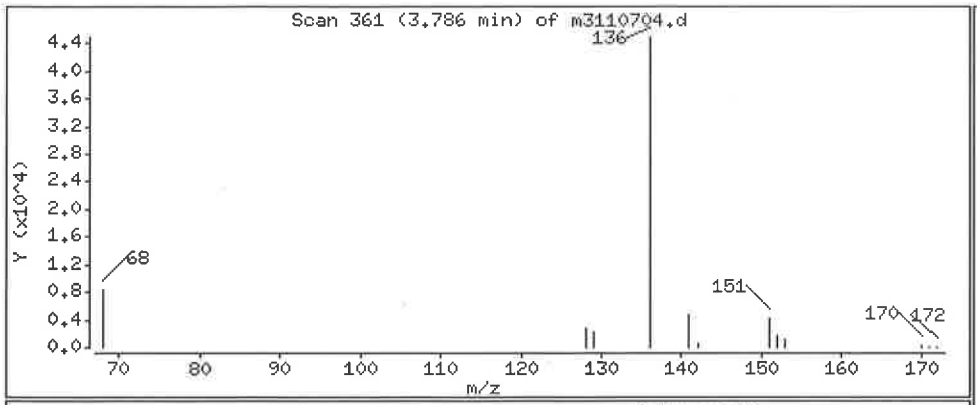
Client ID: AOI-5_PECO-B5_14-16 Instrument: 30mss3.i

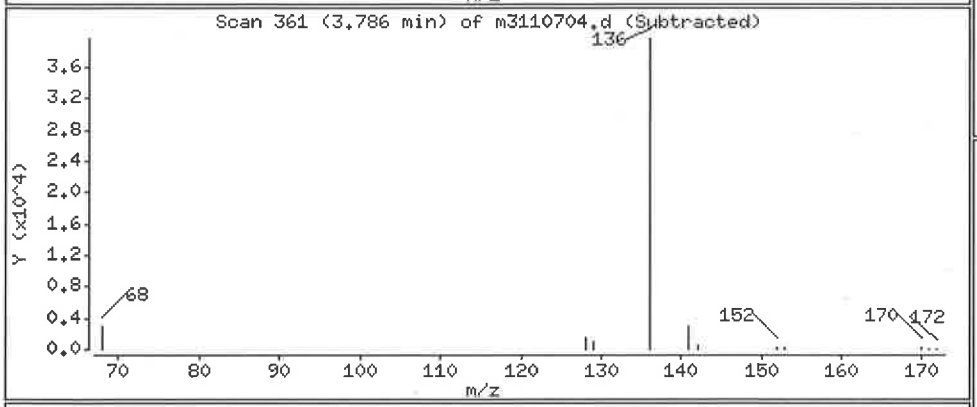
Sample Info: 30133009002

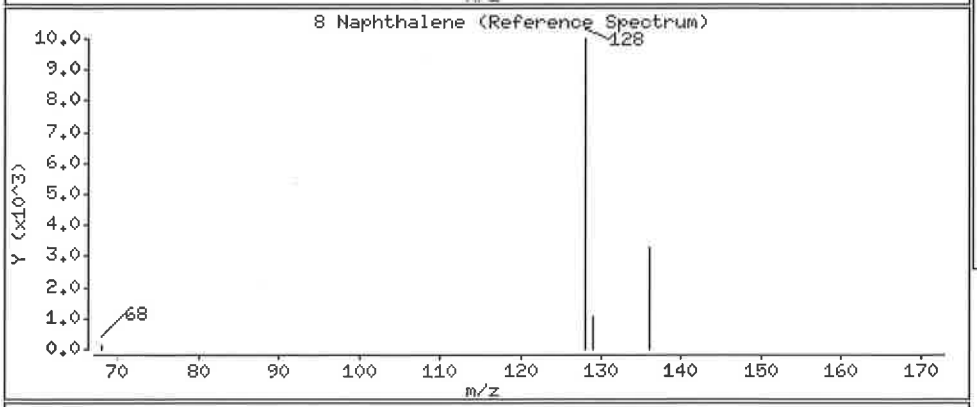
Volume Injected (uL): 1.0 Operator: JSH

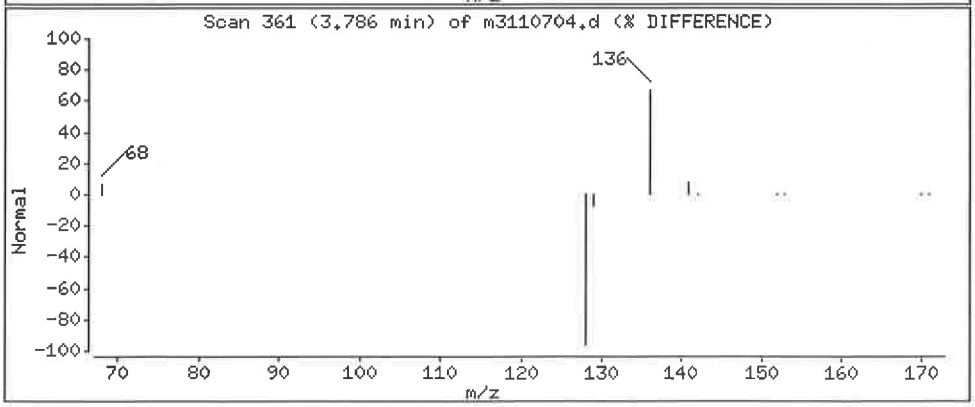
Column phase: RTX-5MS Column diameter: 0.25

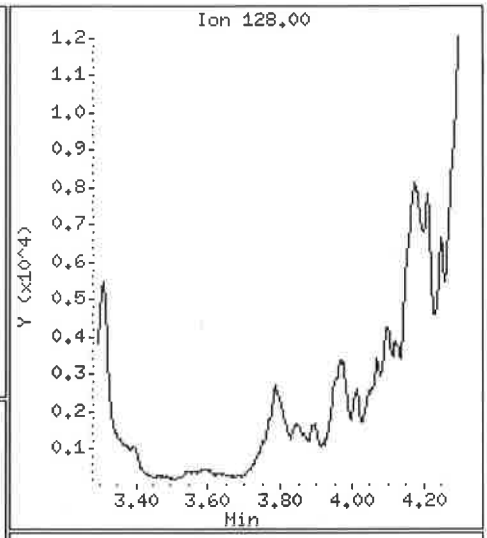
8 Naphthalene Concentration: 11.0 ug/Kg

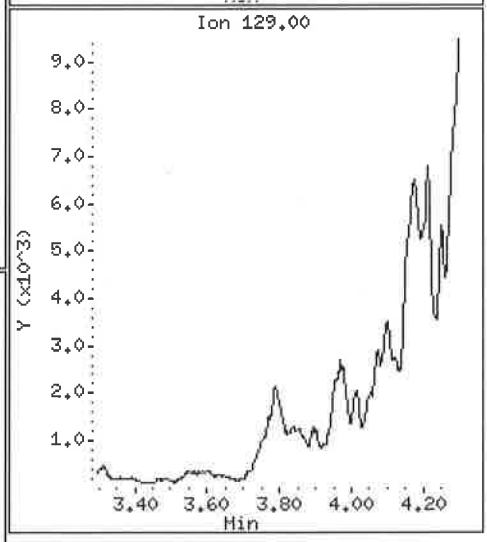












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Date : 07-NOV-2014 15:43

Client ID: AOI-5_PECO-B5_14-16

Instrument: 30mss3.i

Sample Info: 30133009002

Volume Injected (uL): 1.0

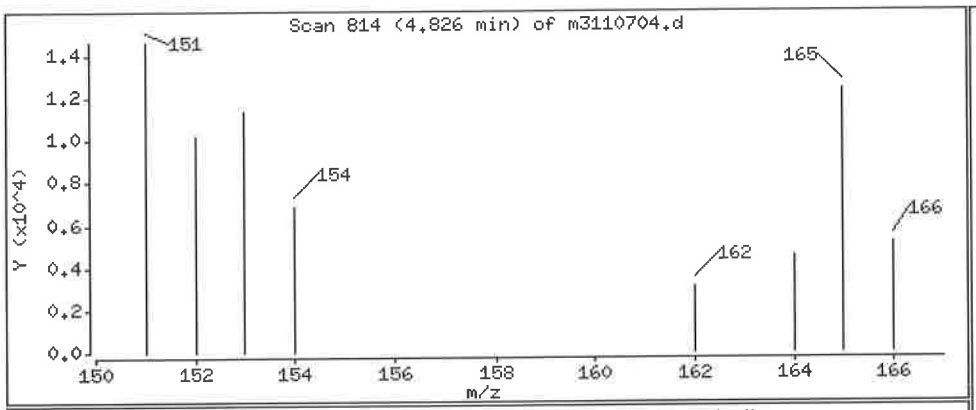
Operator: JSH

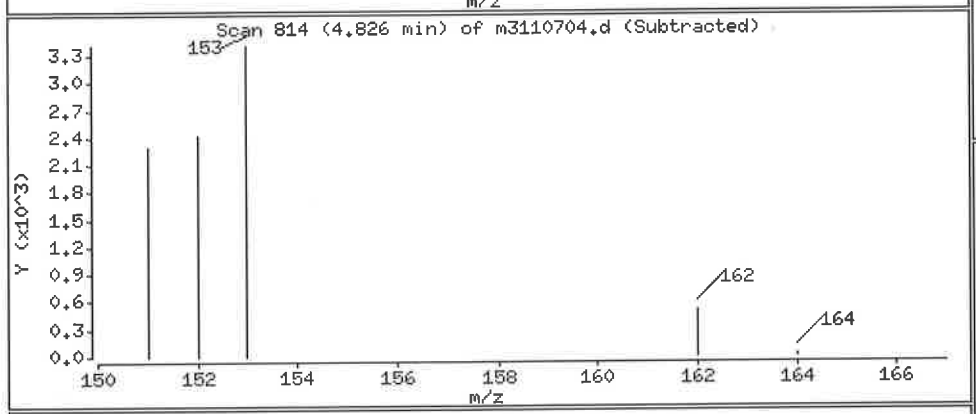
Column phase: RTX-5MS

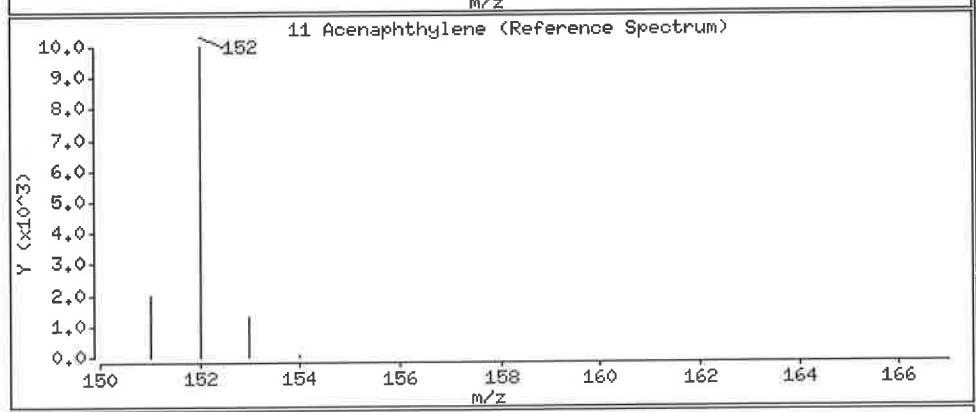
Column diameter: 0.25

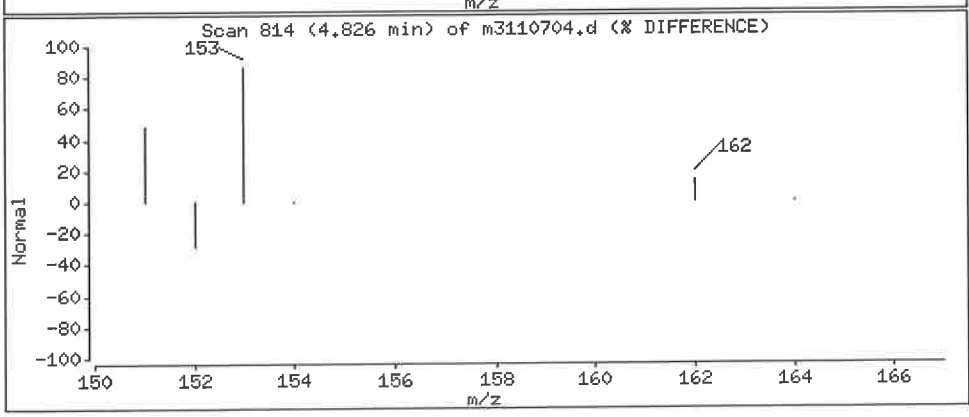
11 Acenaphthylene

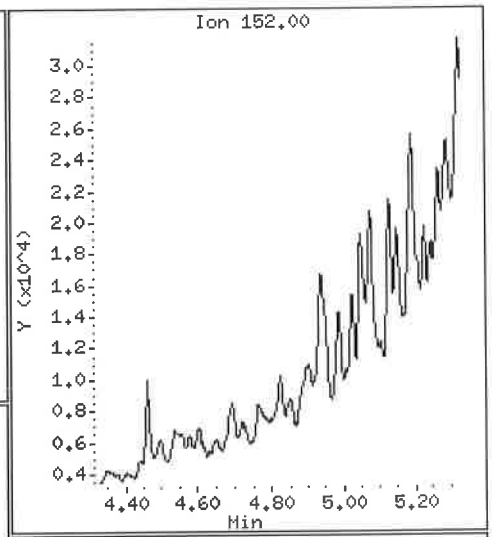
Concentration: 6.75 ug/Kg

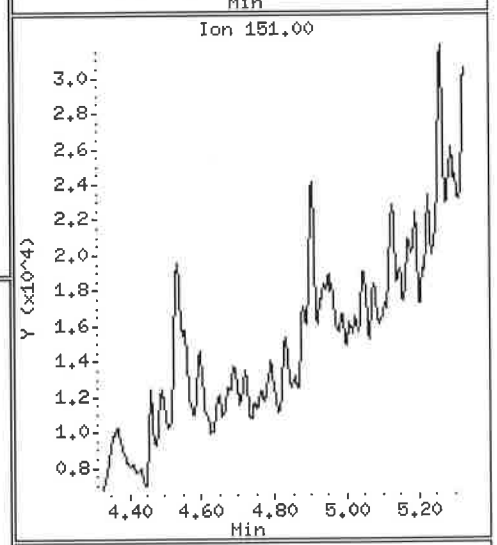


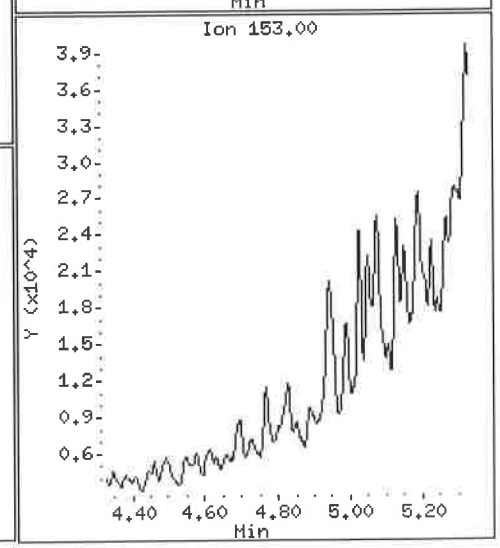












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110704.d

Date : 07-NOV-2014 15:43

Client ID: AOI-5_PECO-B5_14-16

Instrument: 30mss3.i

Sample Info: 30133009002

Volume Injected (uL): 1.0

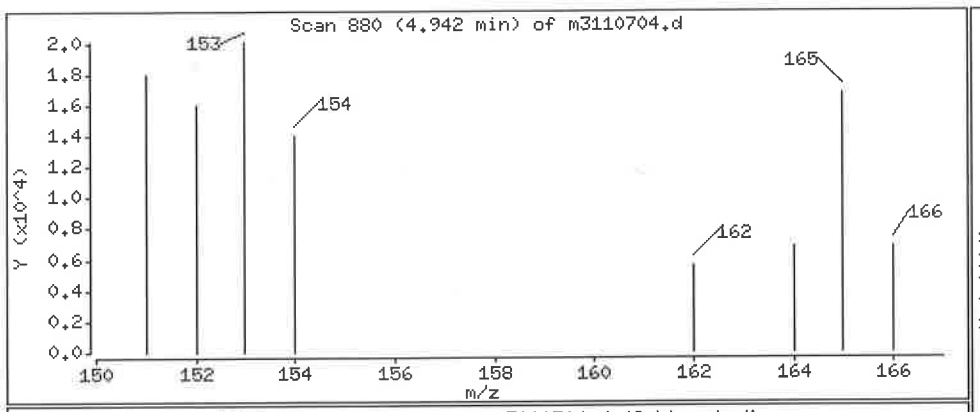
Operator: JSH

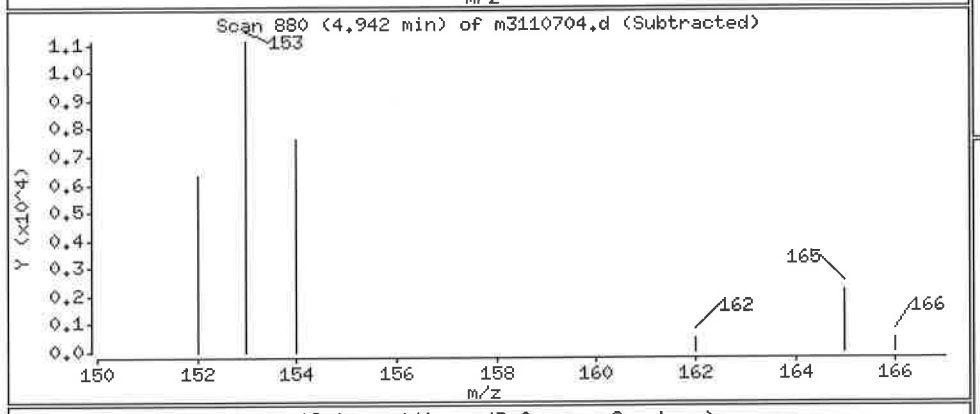
Column phase: RTX-5MS

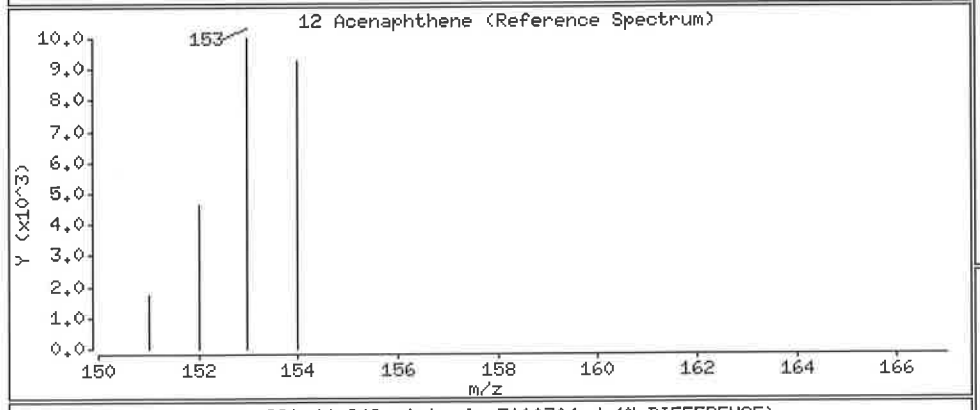
Column diameter: 0.25

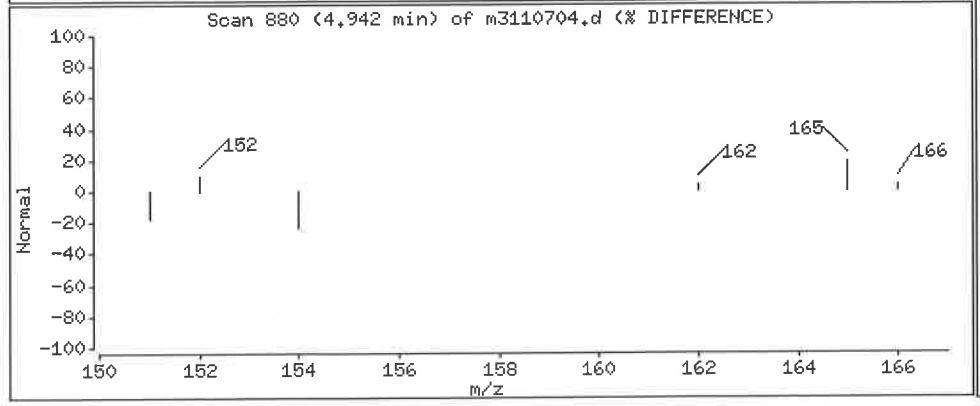
12 Acenaphthene

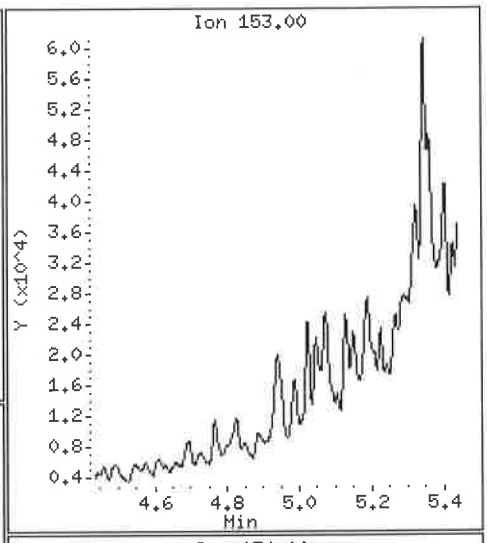
Concentration: 42.5 ug/Kg

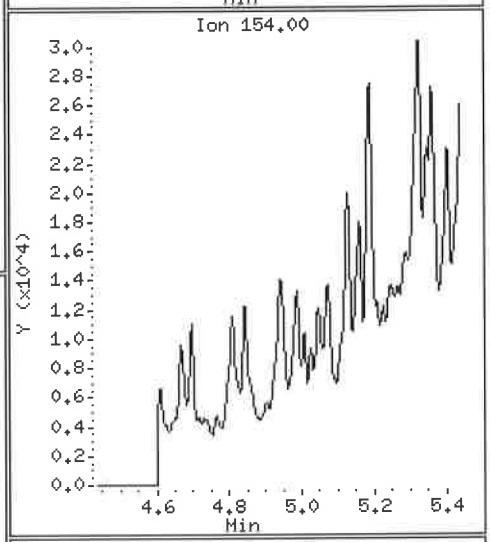


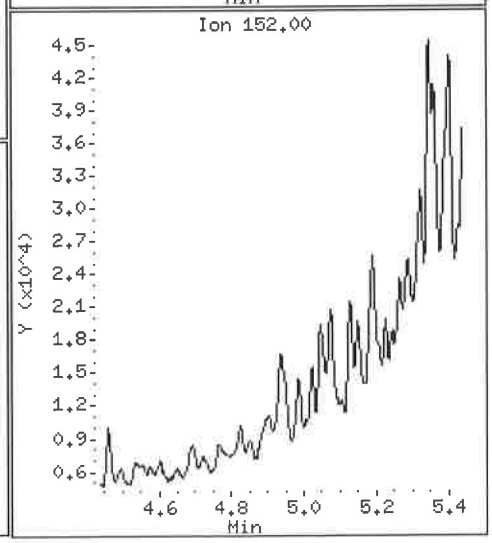












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Date : 07-NOV-2014 15:43

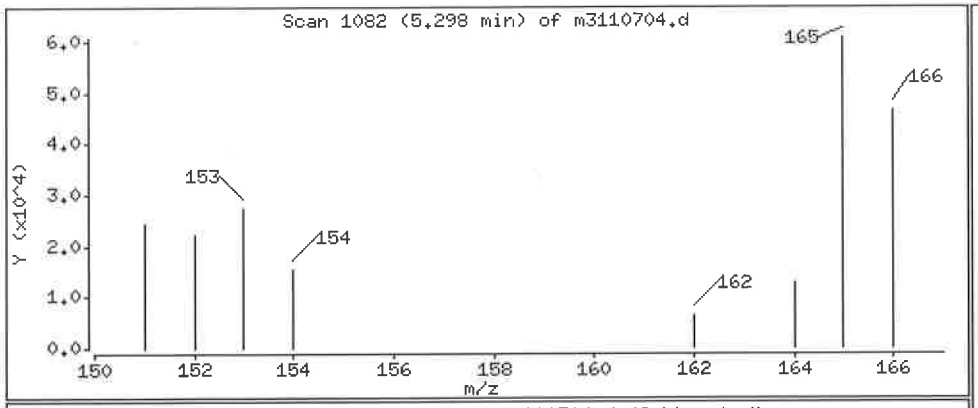
Client ID: AOI-5_PECO-B5_14-16 Instrument: 30mss3.i

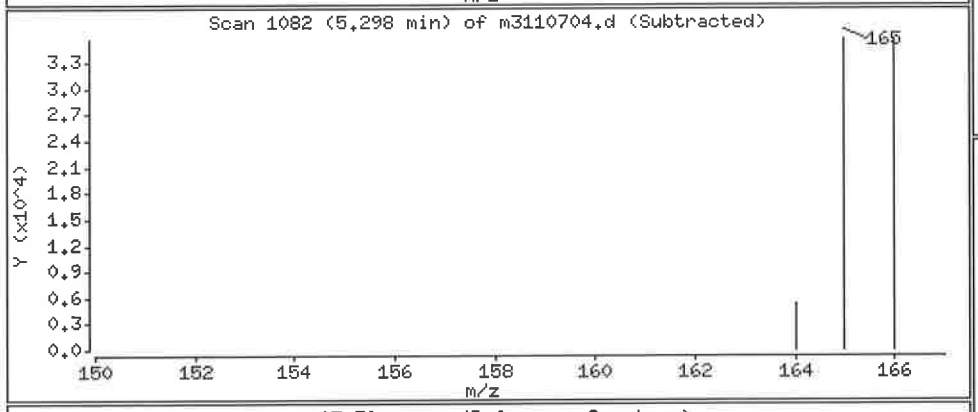
Sample Info: 30133009002

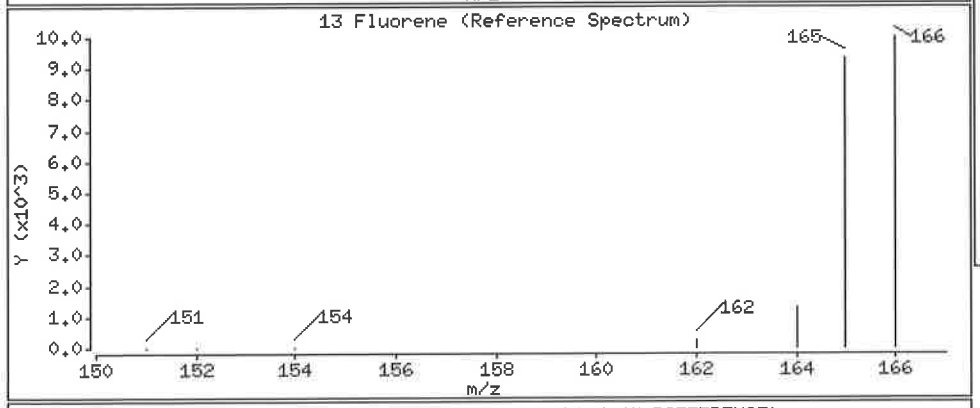
Volume Injected (uL): 1.0 Operator: JSH

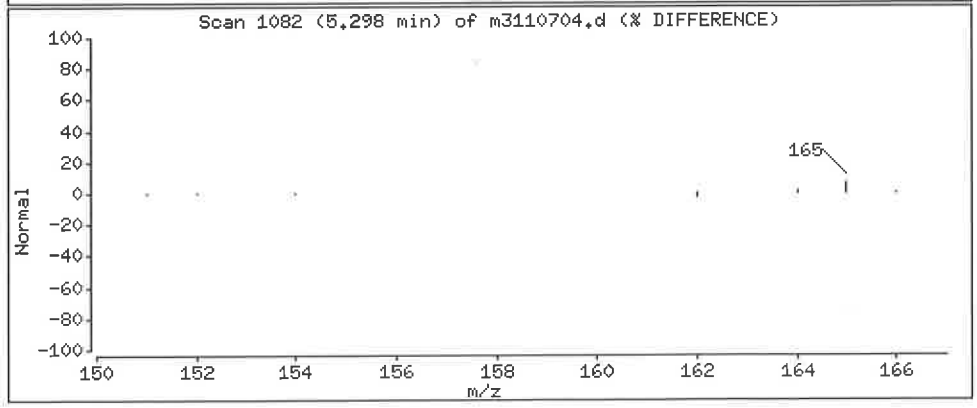
Column phase: RTX-5MS Column diameter: 0.25

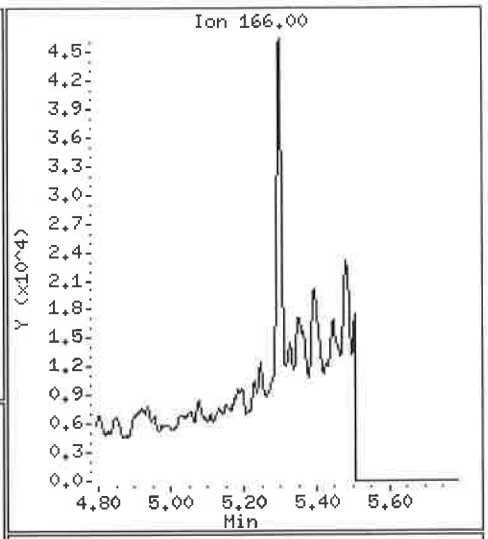
13 Fluorene Concentration: 78.2 ug/Kg

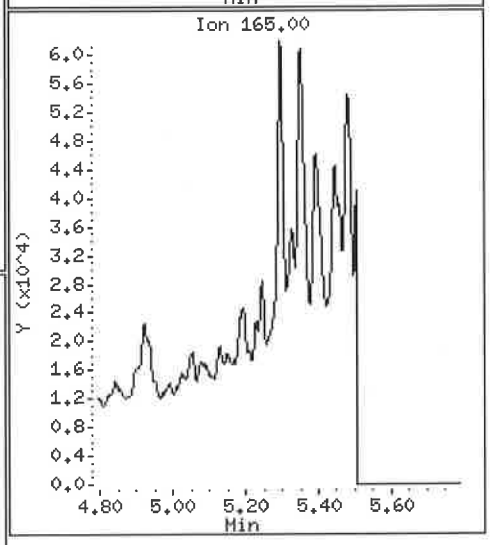












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Date : 07-NOV-2014 15:43

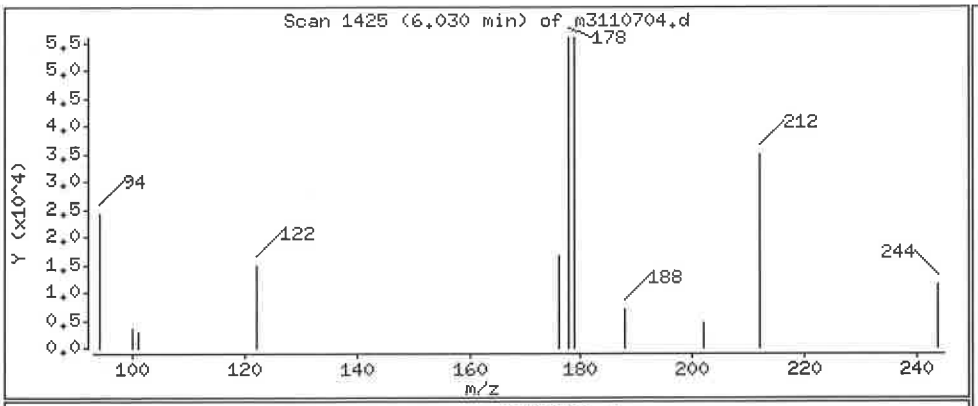
Client ID: AOI-5_PECO-B5_14-16 Instrument: 30mss3.i

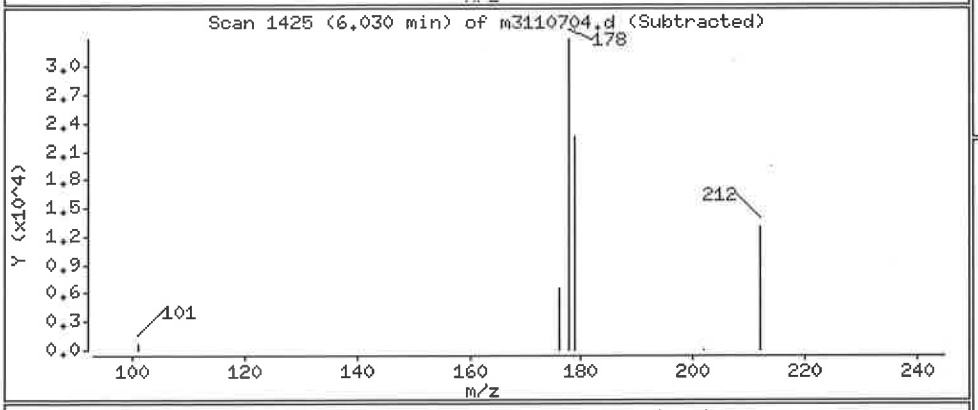
Sample Info: 30133009002

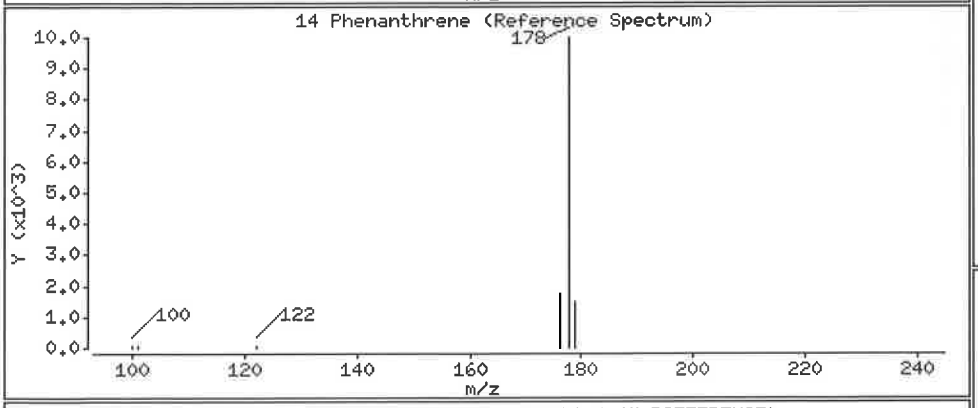
Volume Injected (uL): 1.0 Operator: JSH

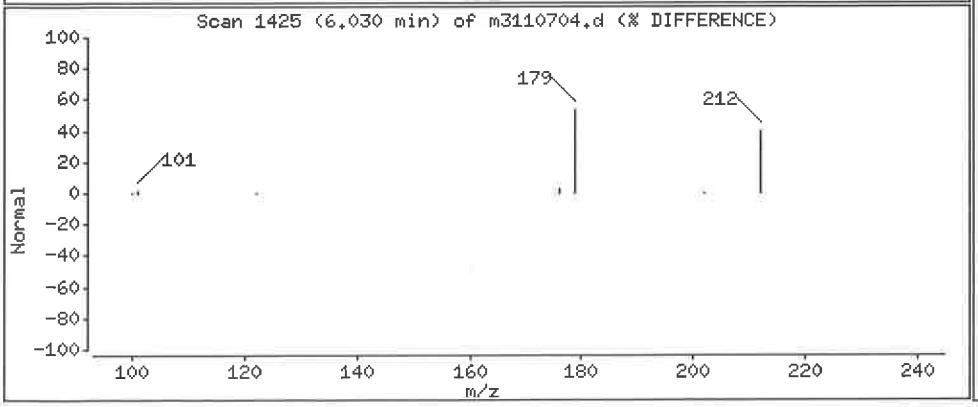
Column phase: RTX-5MS Column diameter: 0.25

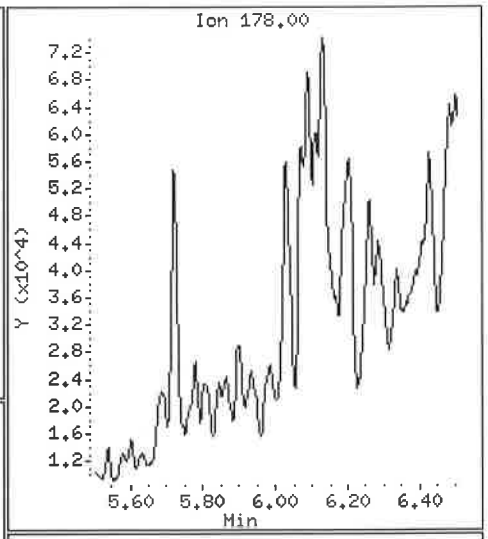
14 Phenanthrene Concentration: 74.8 ug/Kg

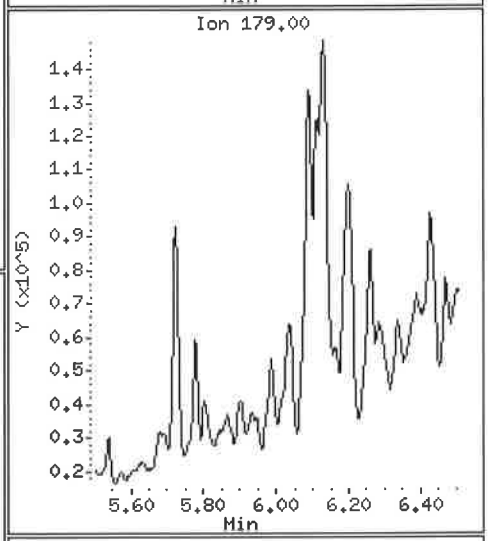


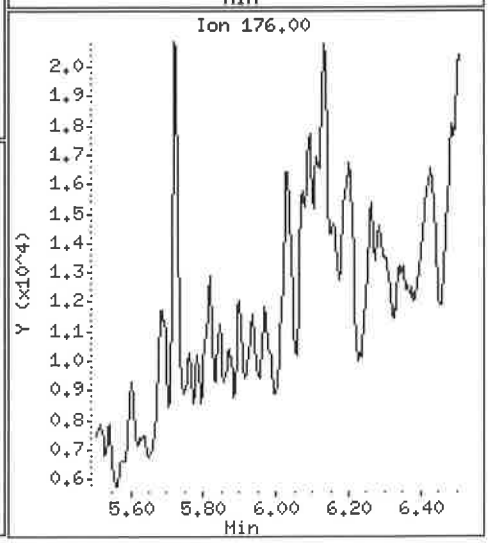












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110704.d

Date : 07-NOV-2014 15:43

Client ID: AOI-5_PECO-B5_14-16

Instrument: 30mss3.i

Sample Info: 30133009002

Volume Injected (uL): 1.0

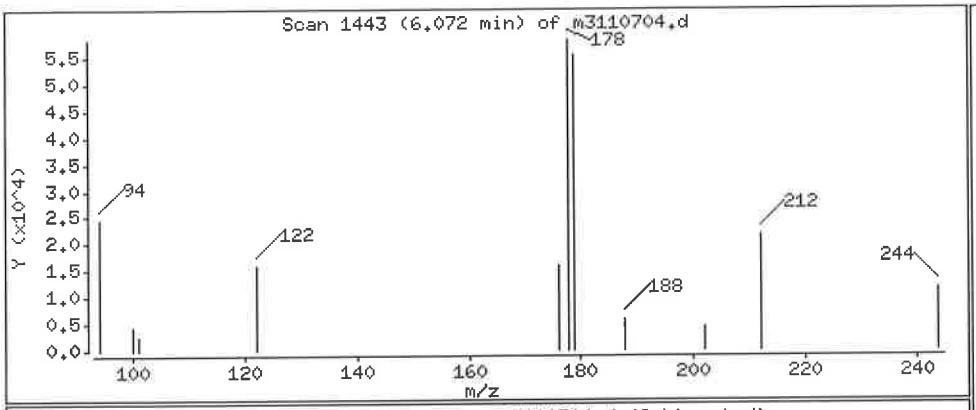
Operator: JSH

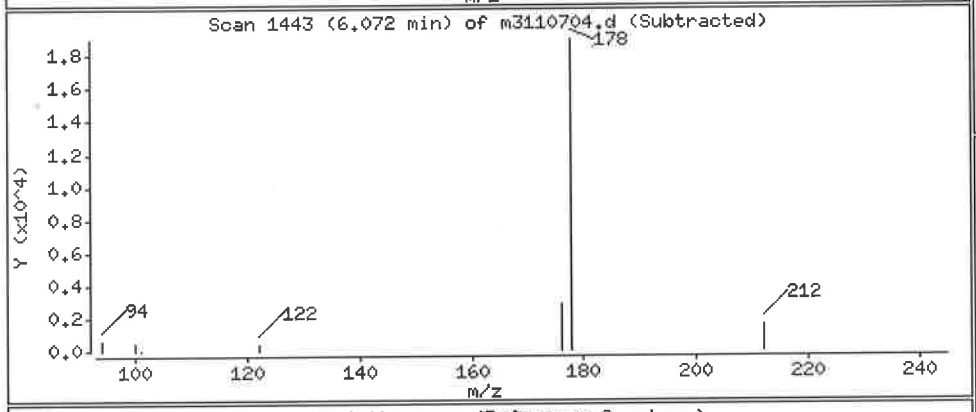
Column phase: RTX-5MS

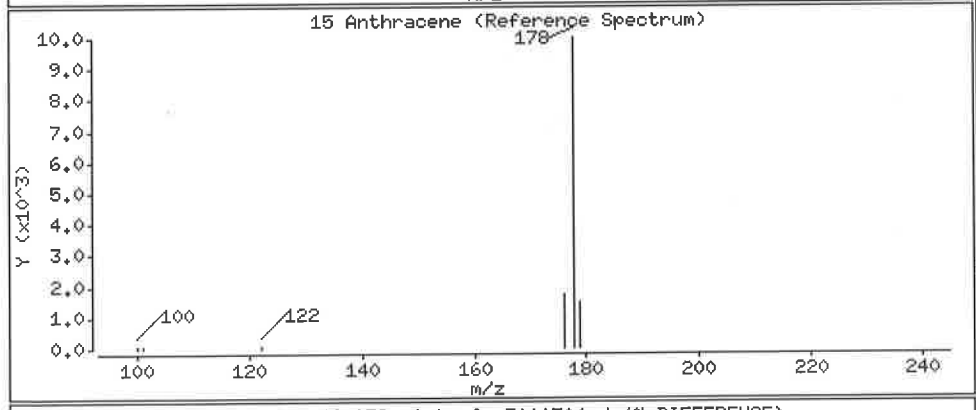
Column diameter: 0.25

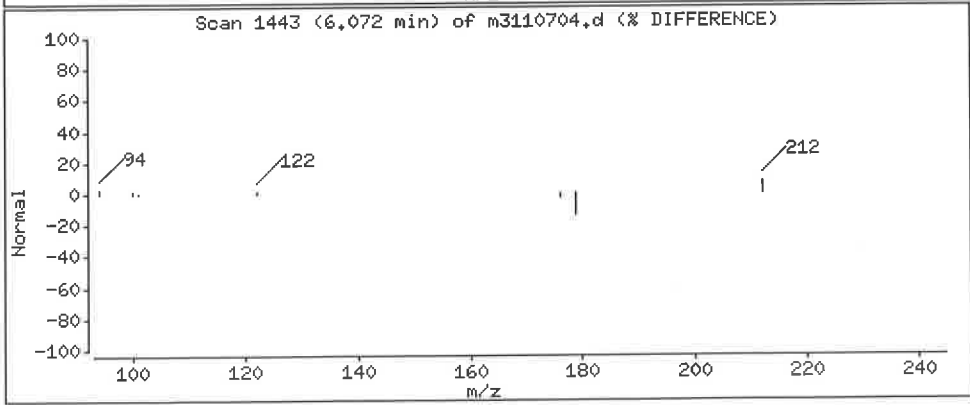
15 Anthracene

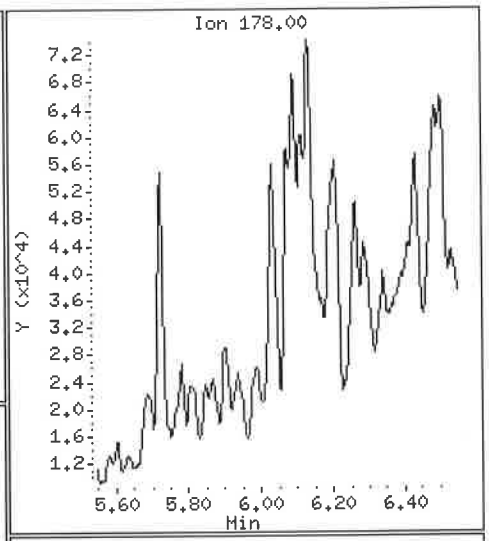
Concentration: 46.7 ug/Kg

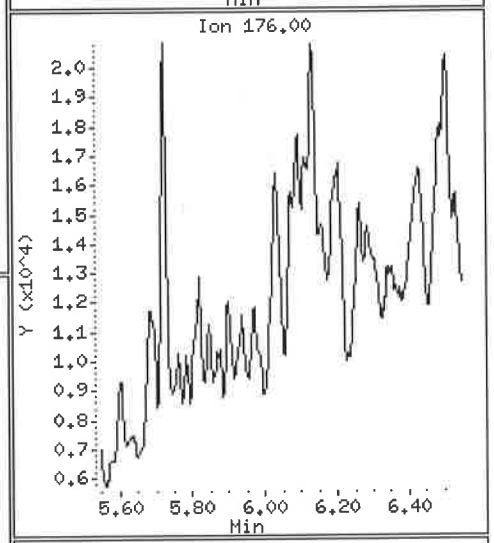


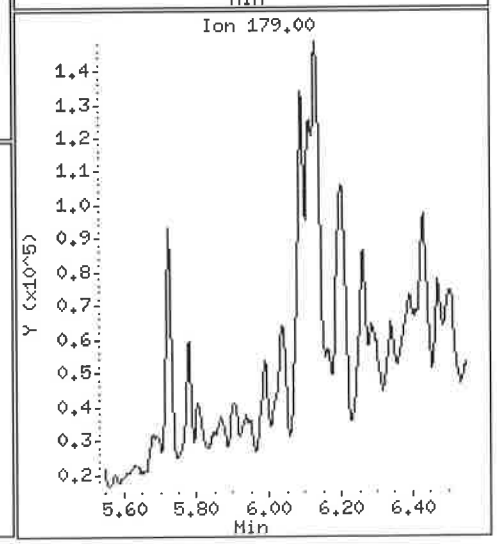












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110704.d

Date : 07-NOV-2014 15:43

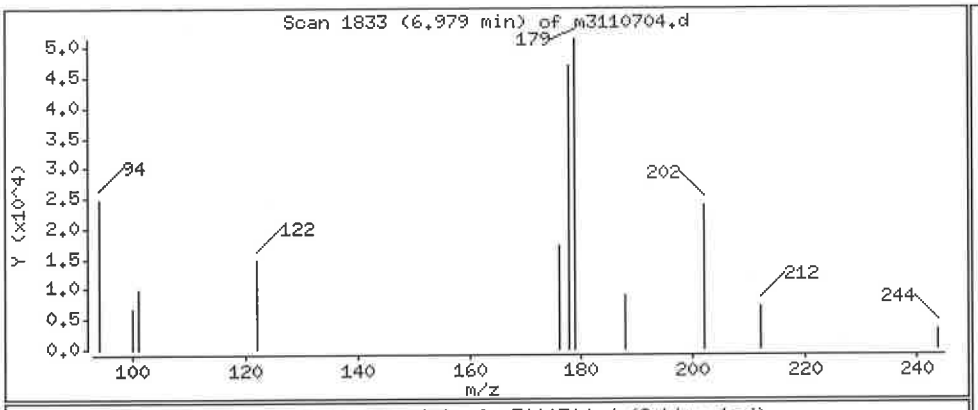
Client ID: AOI-5_PECO-B5_14-16 Instrument: 30mss3.i

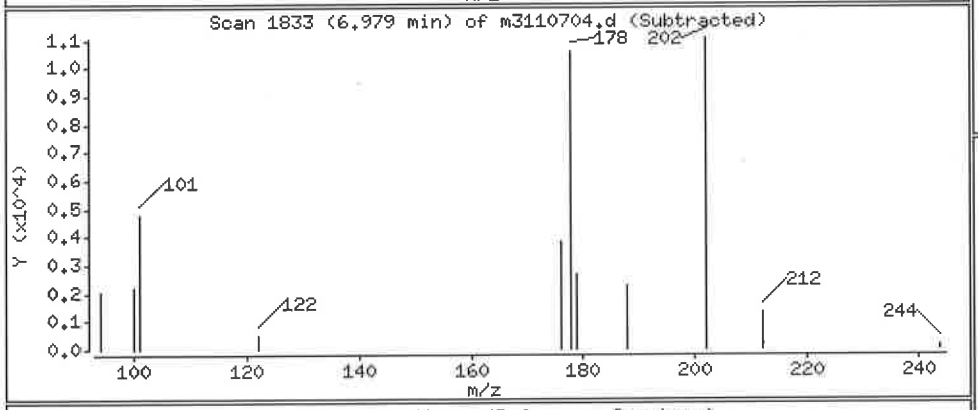
Sample Info: 30133009002

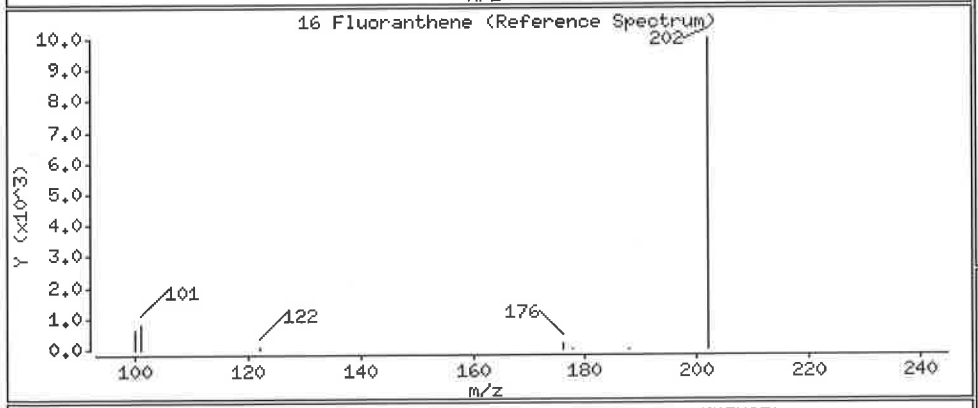
Volume Injected (uL): 1.0 Operator: JSH

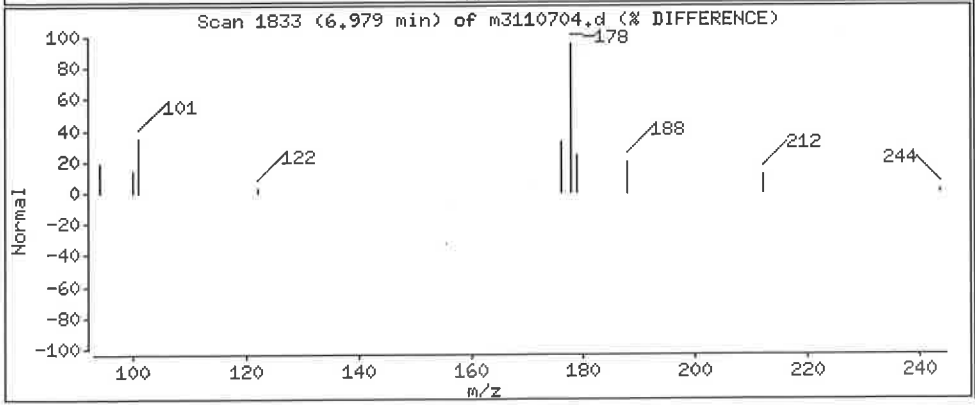
Column phase: RTX-5MS Column diameter: 0.25

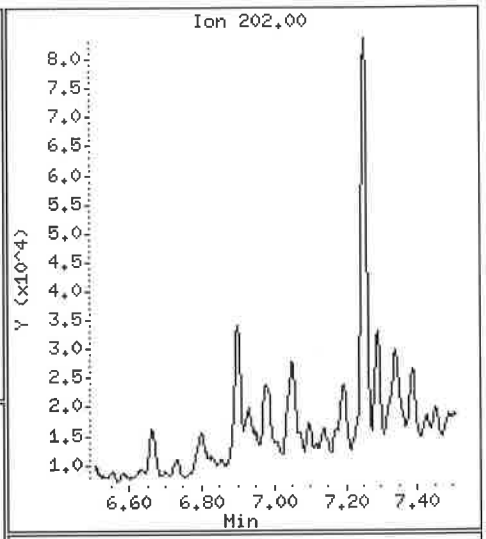
16 Fluoranthene Concentration: 25.2 ug/Kg

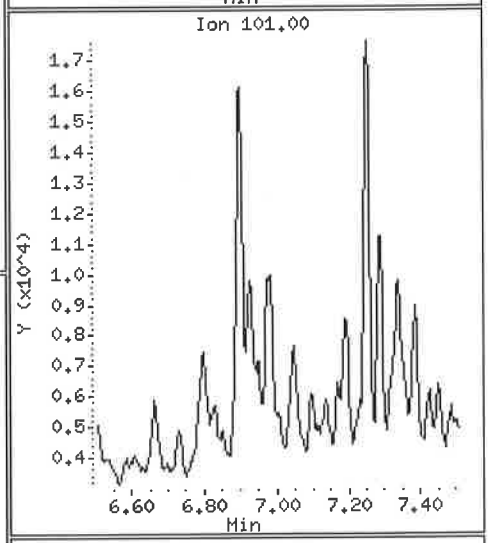


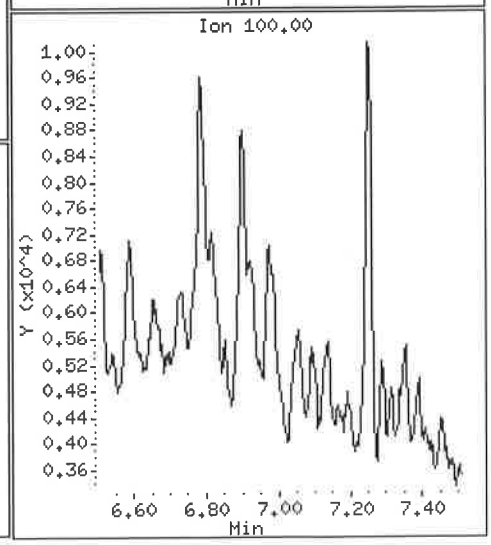












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Date : 07-NOV-2014 15:43

Client ID: AOI-5_PECO-B5_14-16

Instrument: 30mss3.i

Sample Info: 30133009002

Volume Injected (uL): 1.0

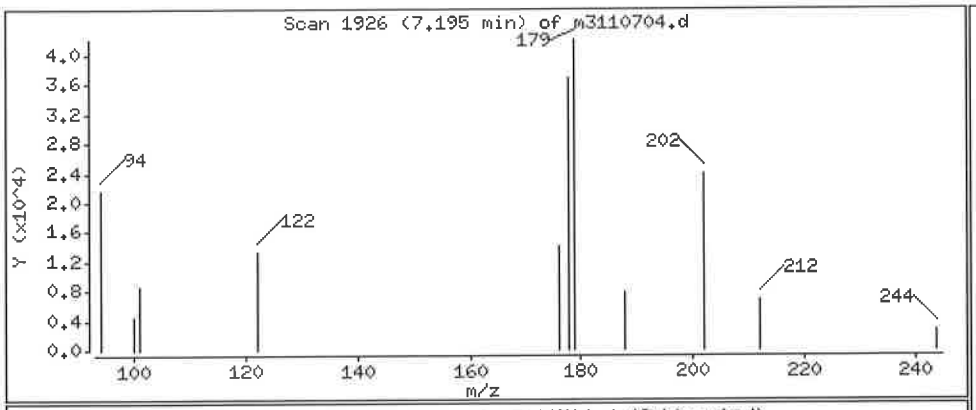
Operator: JSH

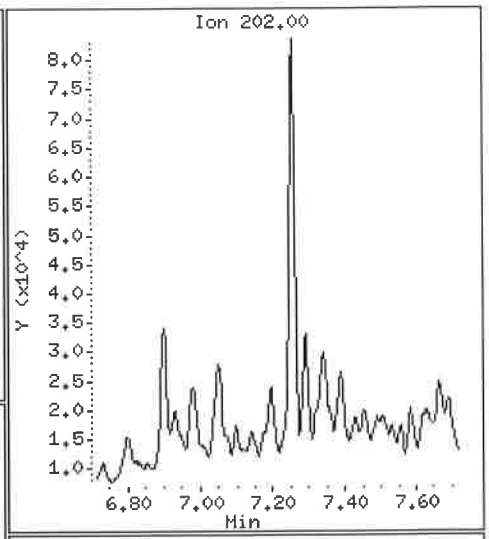
Column phase: RTX-5MS

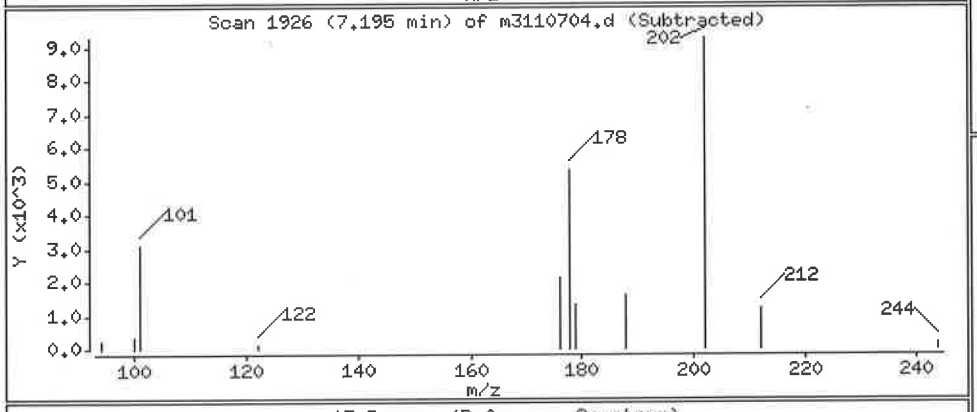
Column diameter: 0.25

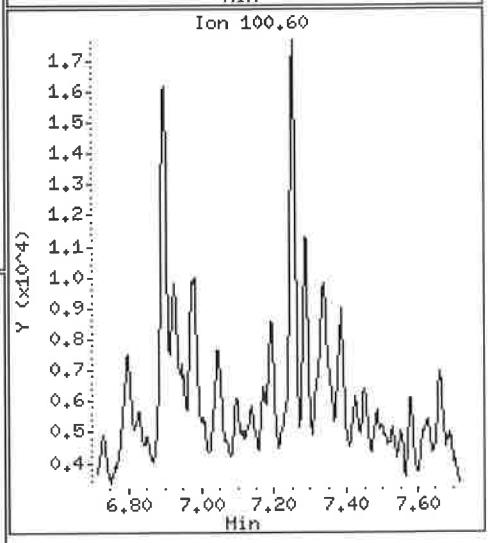
17 Pyrene

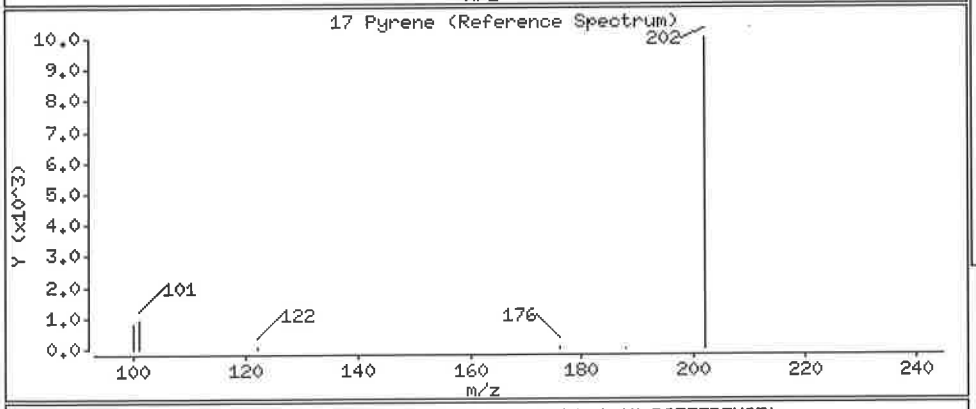
Concentration: 14.9 ug/Kg

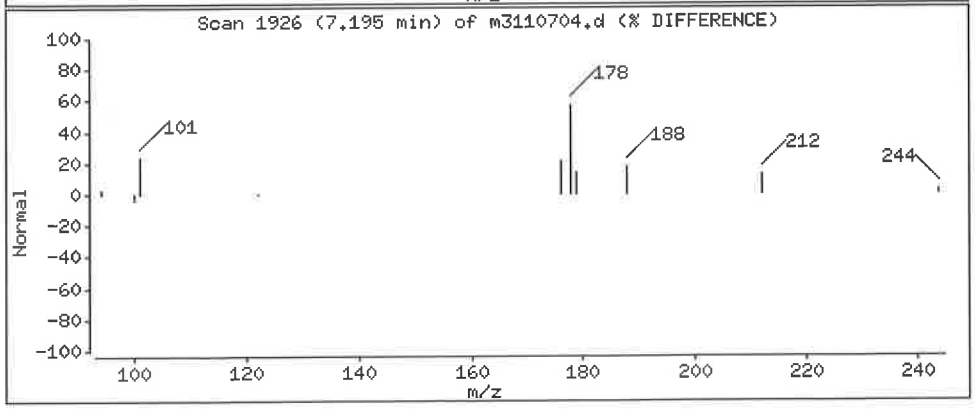












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Date : 07-NOV-2014 15:43

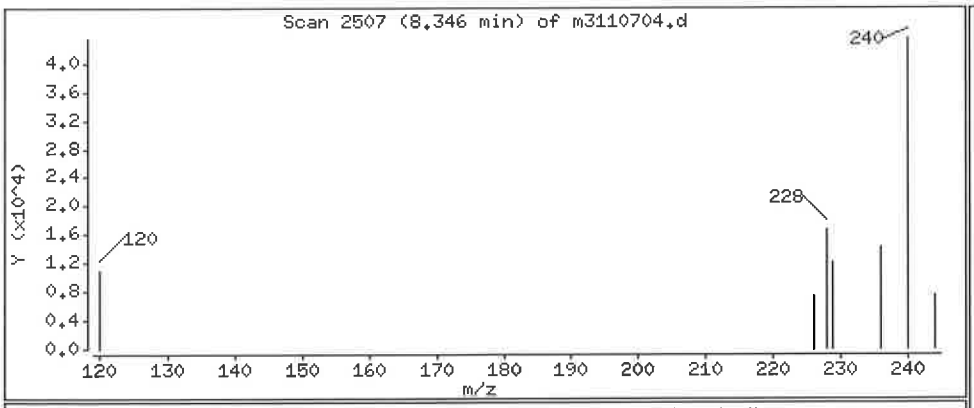
Client ID: AOI-5_PECO-B5_14-16 Instrument: 30mss3.i

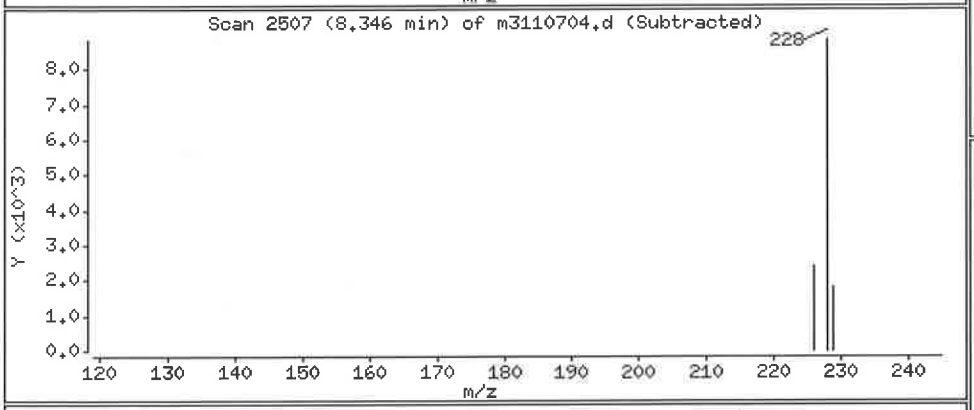
Sample Info: 30133009002

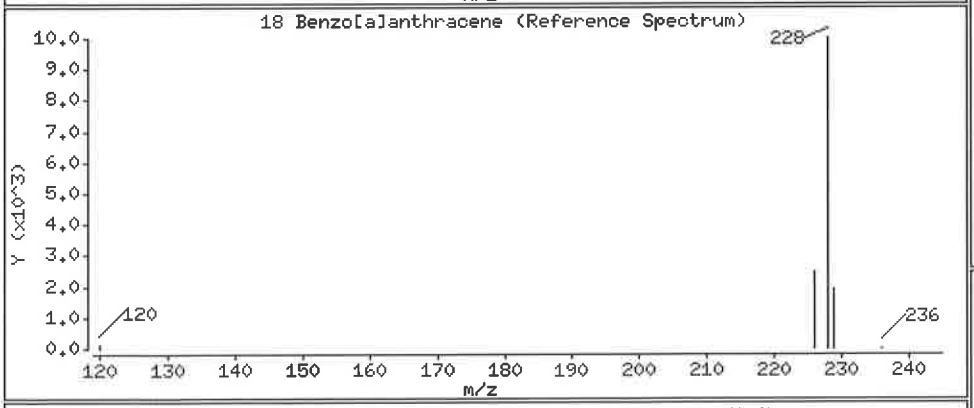
Volume Injected (uL): 1.0 Operator: JSH

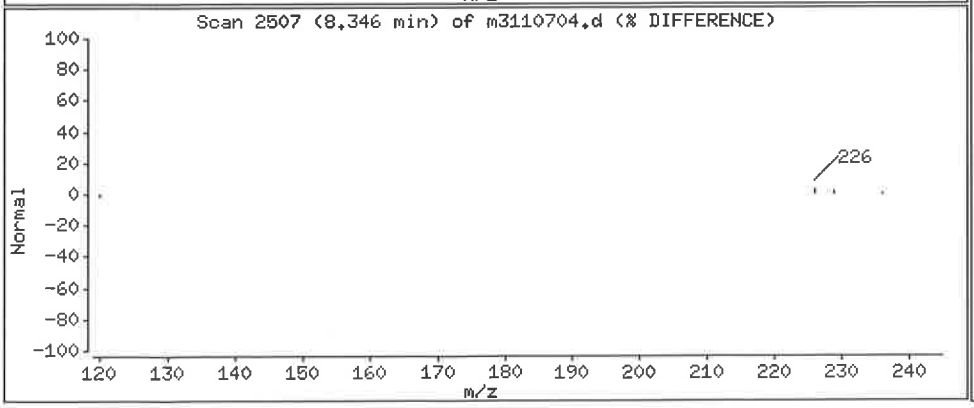
Column phase: RTX-5MS Column diameter: 0.25

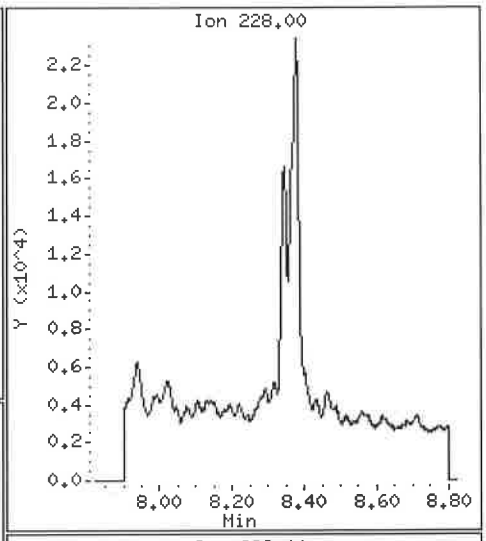
18 Benzo[a]anthracene Concentration: 21.4 ug/Kg

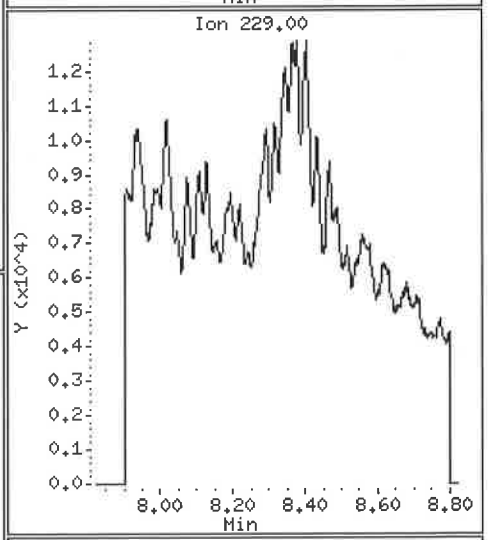


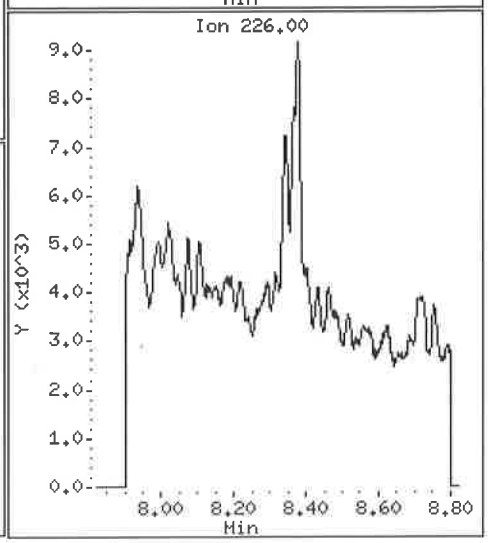












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Date : 07-NOV-2014 15:43

Client ID: AOI-5_PECO-B5_14-16

Instrument: 30mss3.i

Sample Info: 30133009002

Volume Injected (uL): 1.0

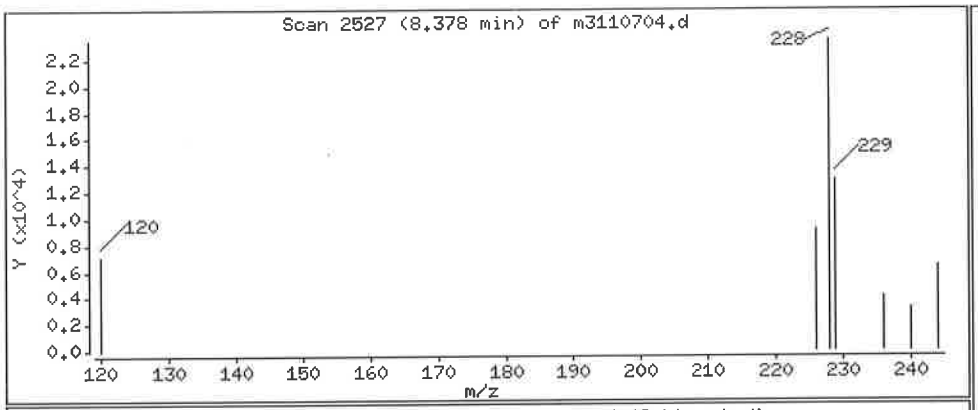
Operator: JSH

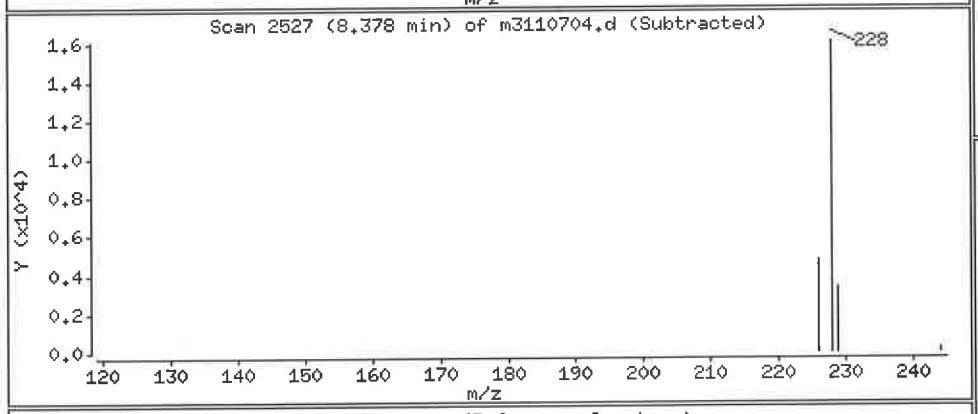
Column phase: RTX-5MS

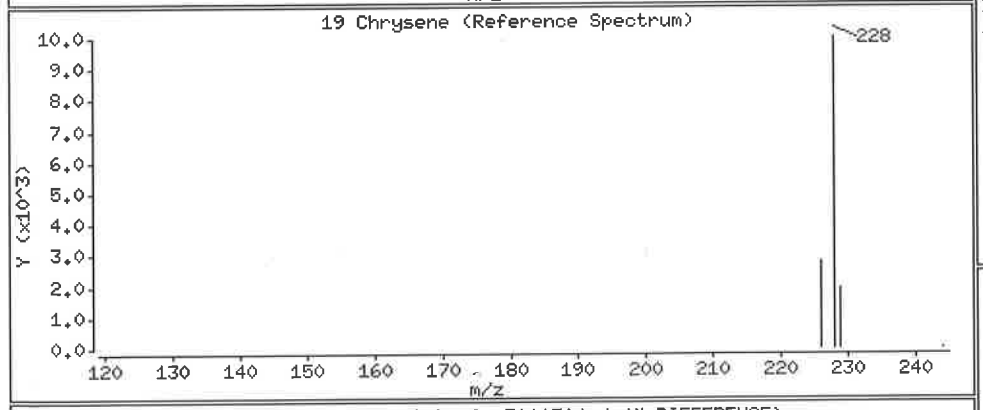
Column diameter: 0.25

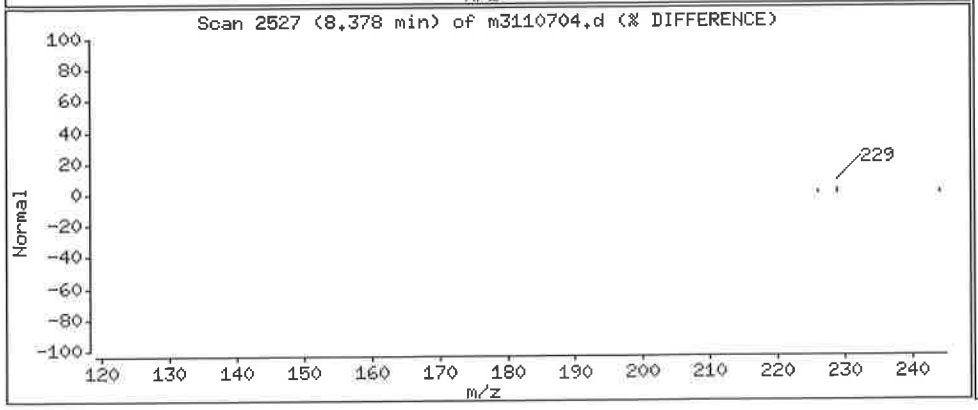
19 Chrysene

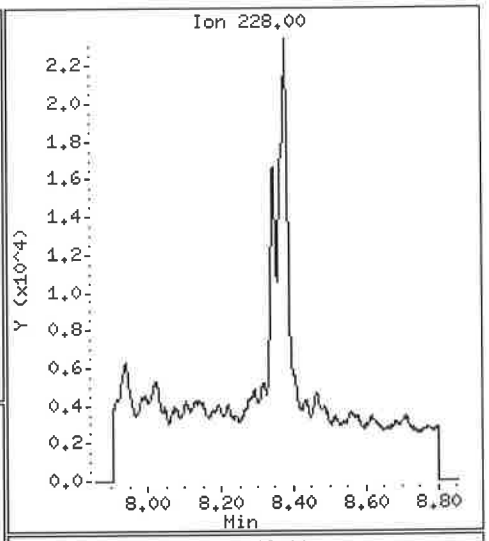
Concentration: 56.4 ug/Kg

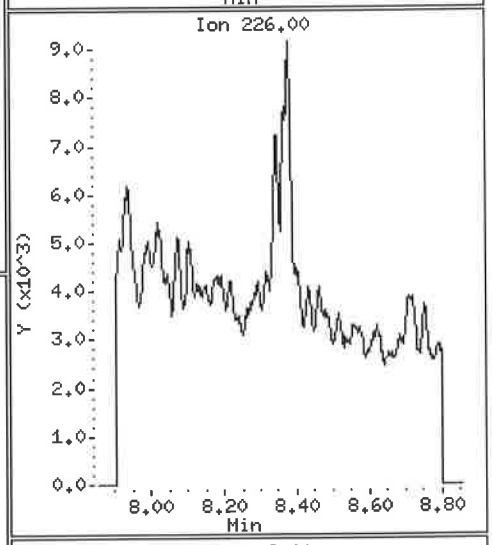


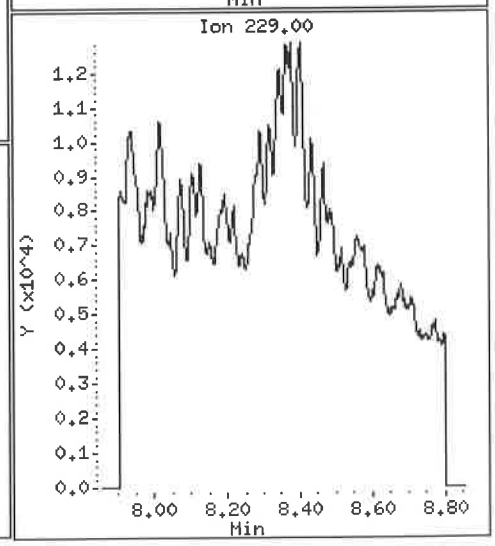












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Date : 07-NOV-2014 15:43

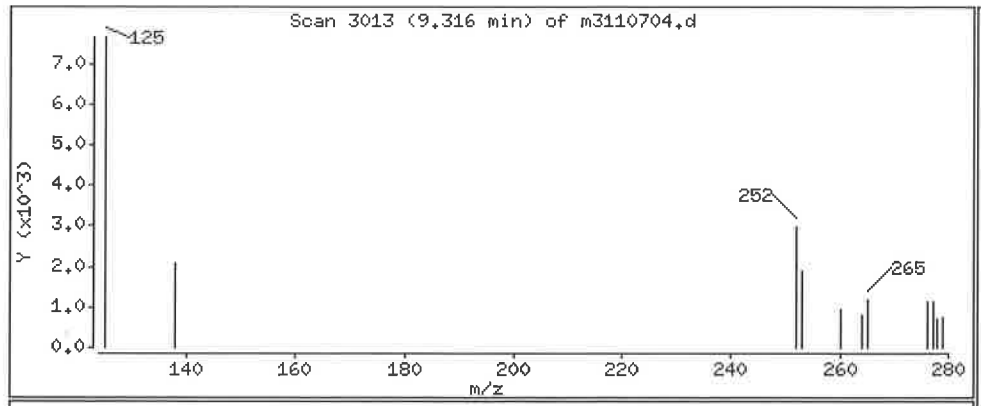
Client ID: AOI-5_PECO-B5_14-16 Instrument: 30mss3.i

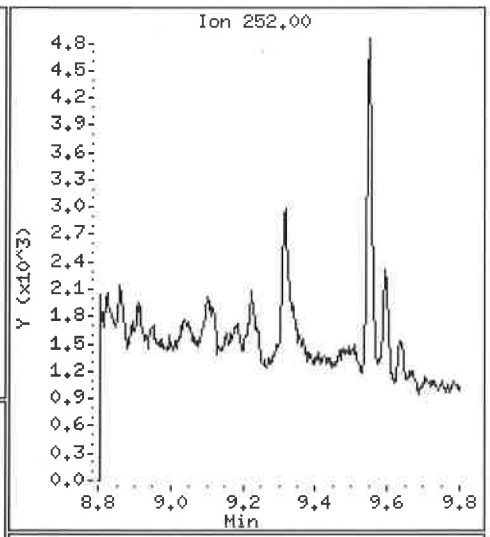
Sample Info: 30133009002

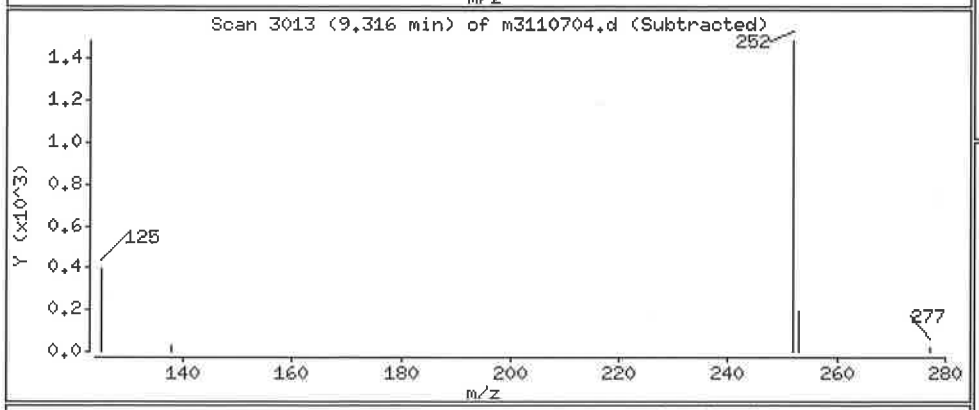
Volume Injected (uL): 1.0 Operator: JSH

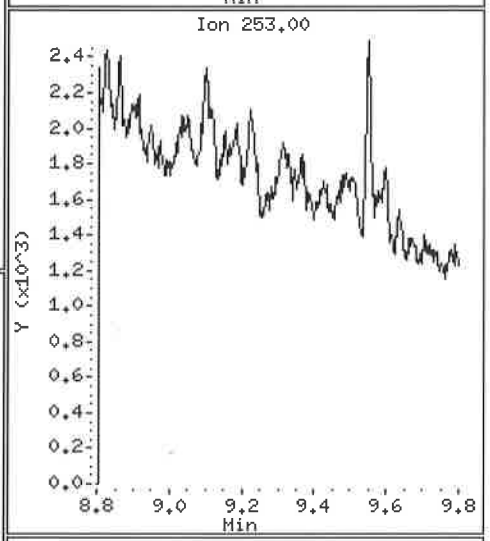
Column phase: RTX-5MS Column diameter: 0.25

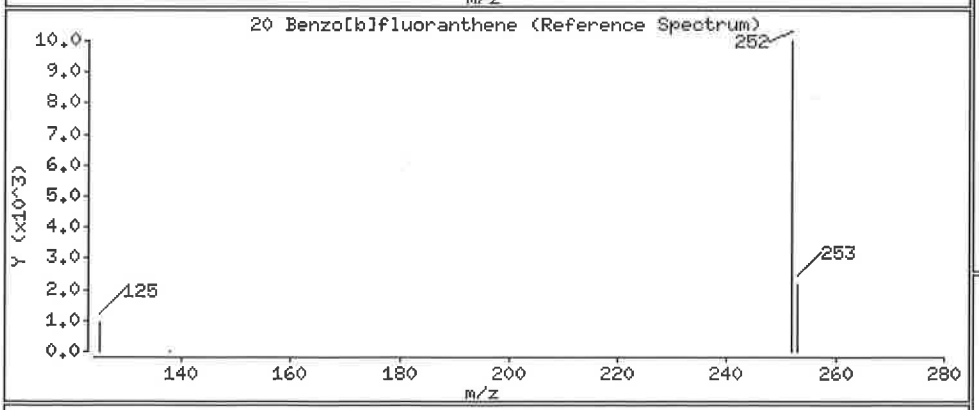
20 Benzo[b]fluoranthene Concentration: 4.20 ug/Kg

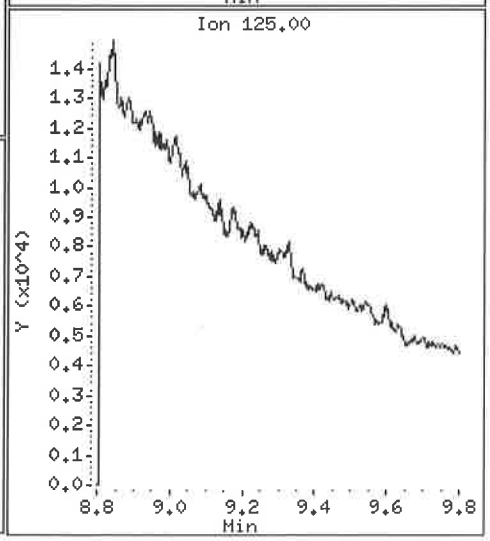


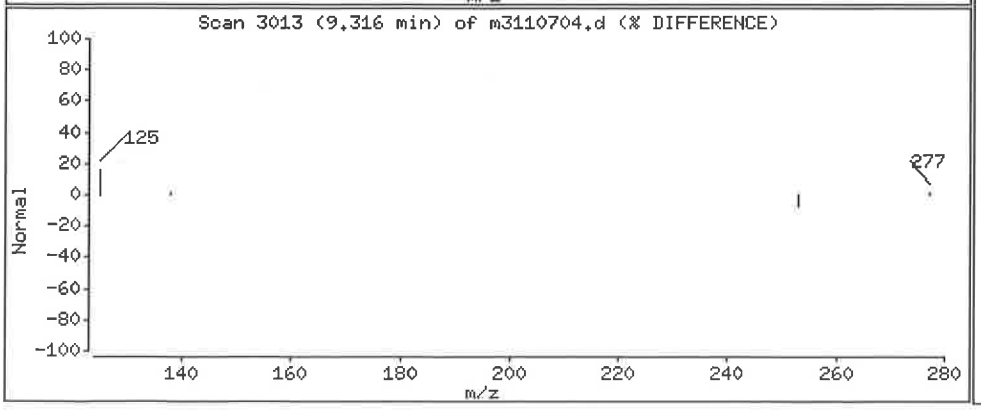












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Date : 07-NOV-2014 15:43

Client ID: AOI-5_PECO-B5_14-16

Instrument: 30mss3.i

Sample Info: 30133009002

Volume Injected (uL): 1.0

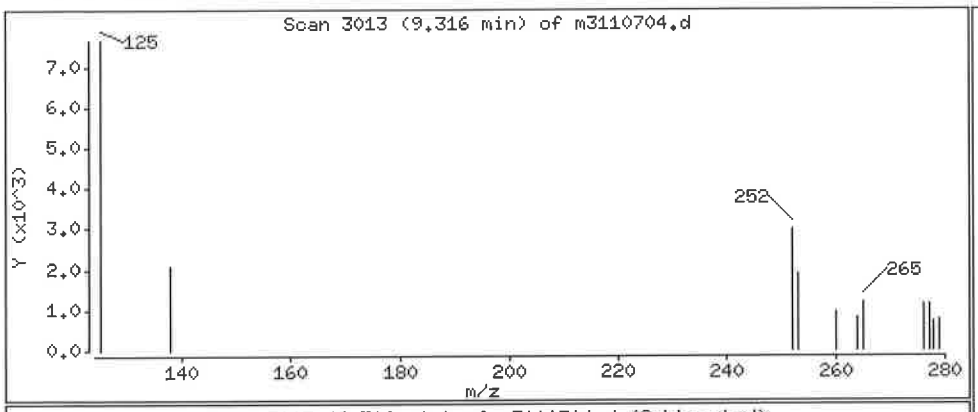
Operator: JSH

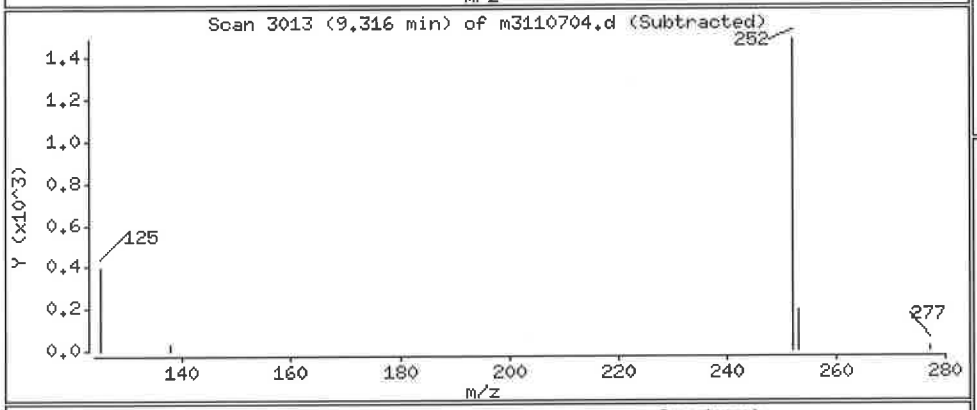
Column phase: RTX-5MS

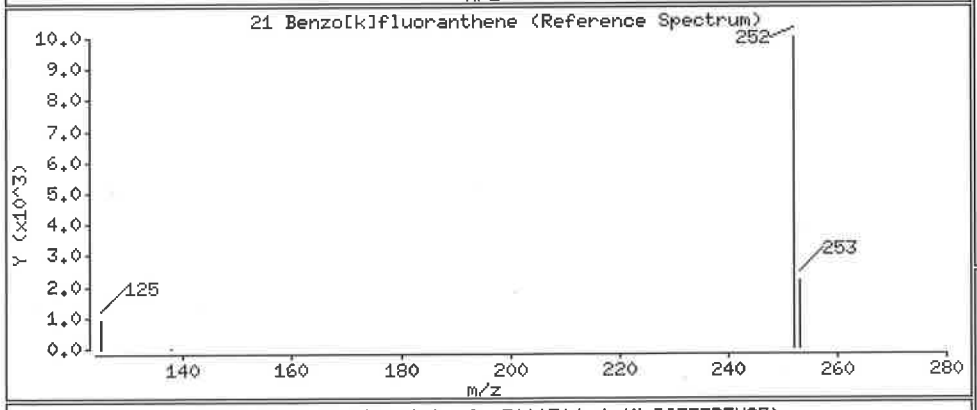
Column diameter: 0.25

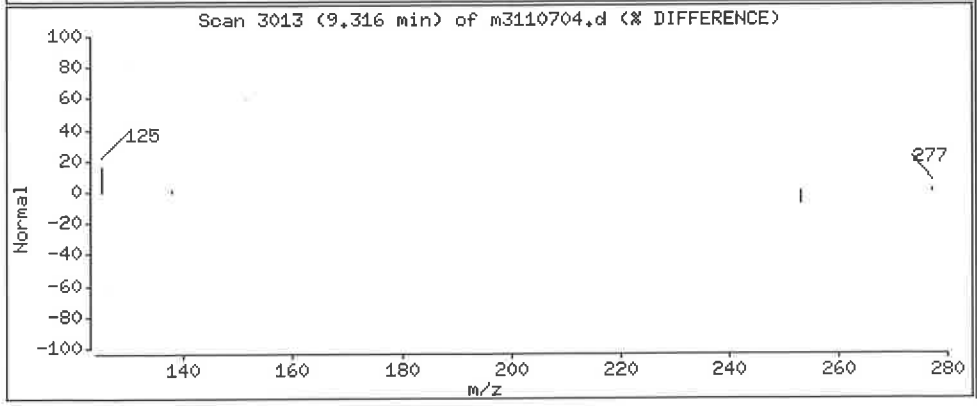
21 Benzo[k]fluoranthene

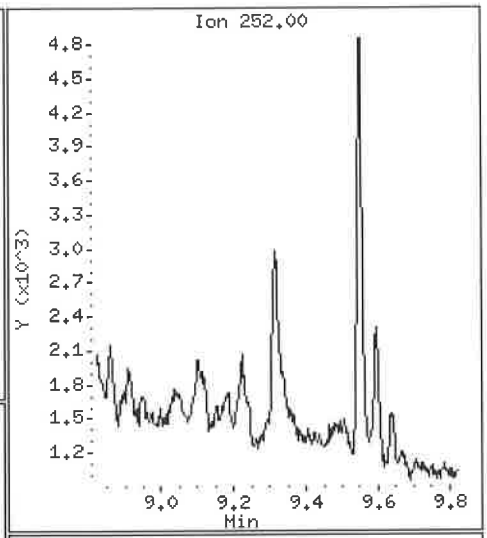
Concentration: 4.06 ug/Kg

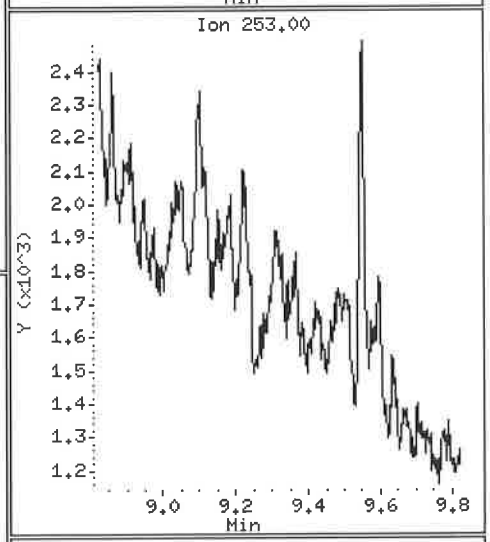


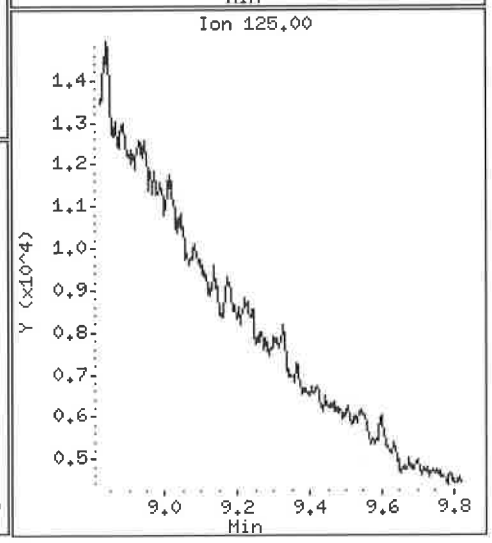












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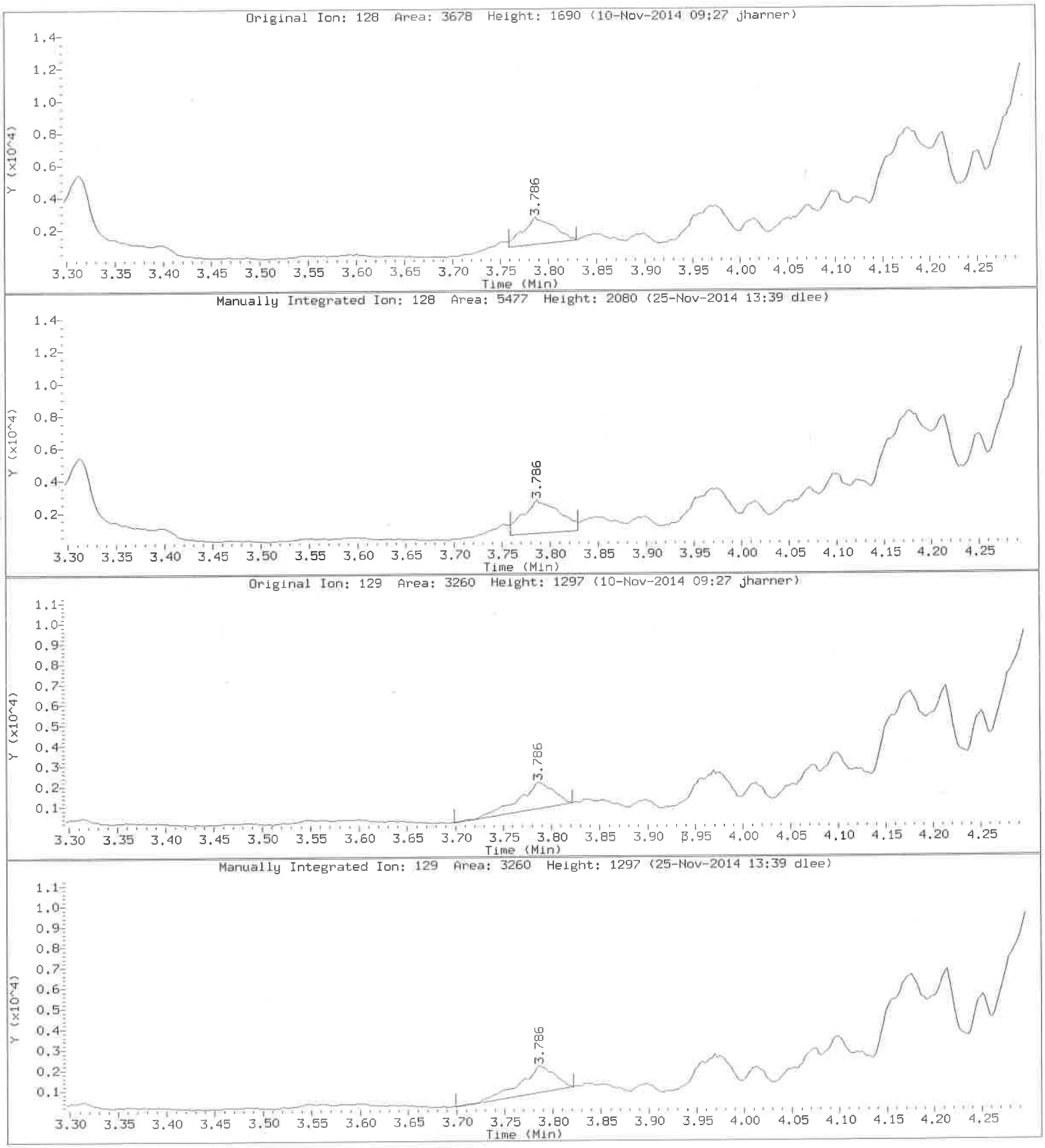
Injection Date: 07-NOV-2014 15:43
Instrument: 30mss3.i
Lab Sample ID: 30133009002

Compound: Naphthalene
CAS Number: 91-20-3



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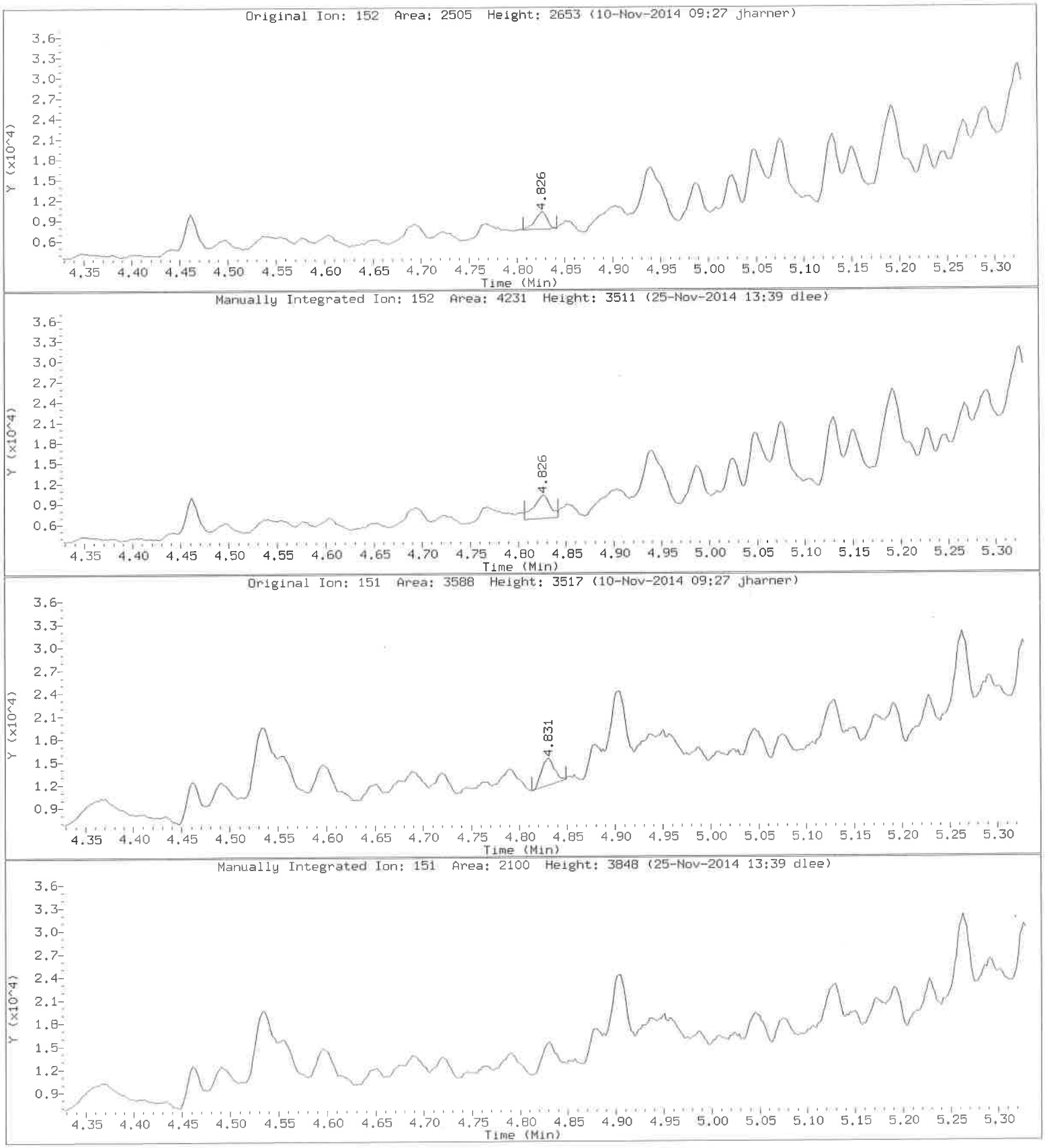
Injection Date: 07-NOV-2014 15:43
Instrument: 30mss3.i
Lab Sample ID: 30133009002

Compound: Acenaphthylene
CAS Number: 208-96-8



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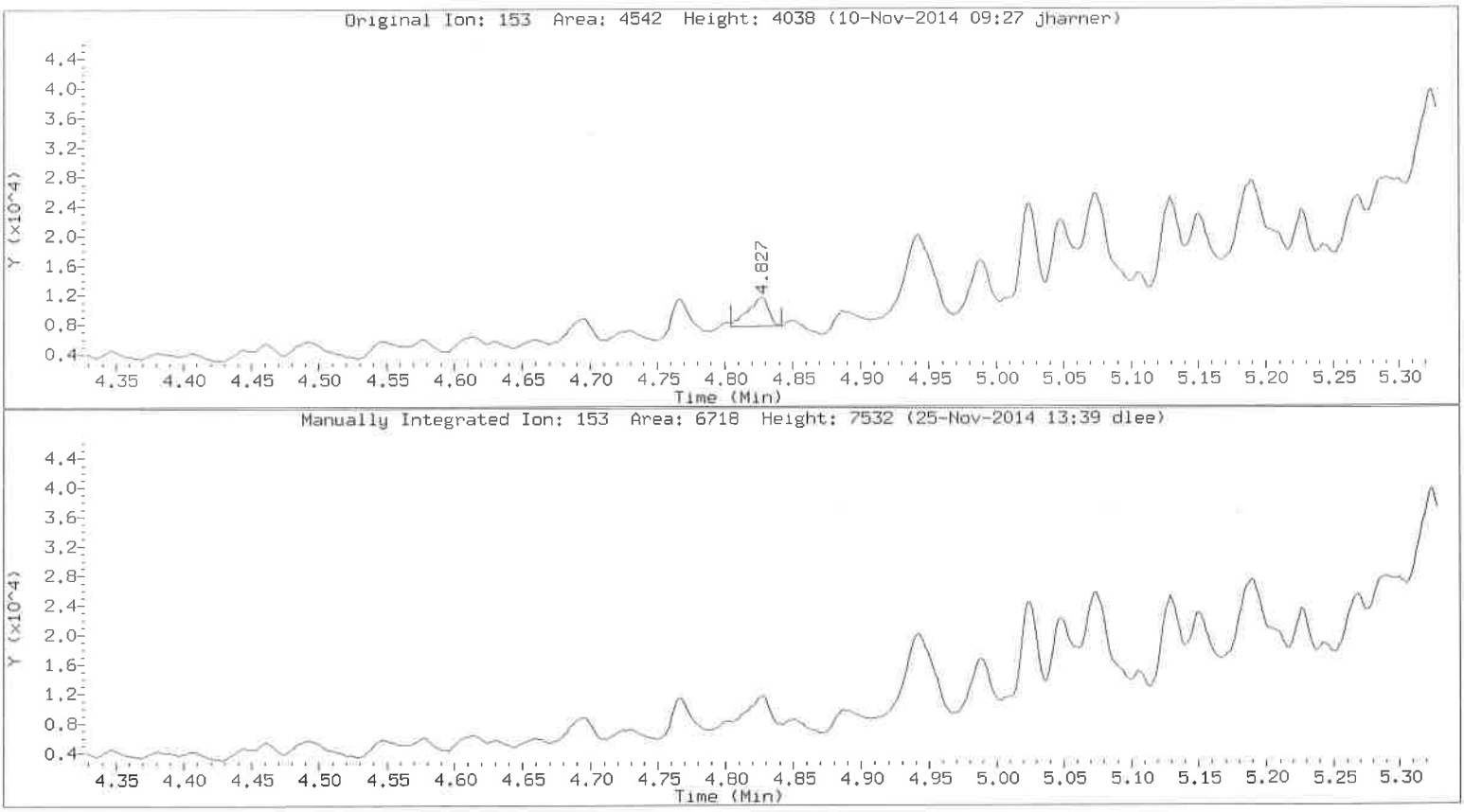
Instrument: 30mss3.i
Lab Sample ID: 30133009002



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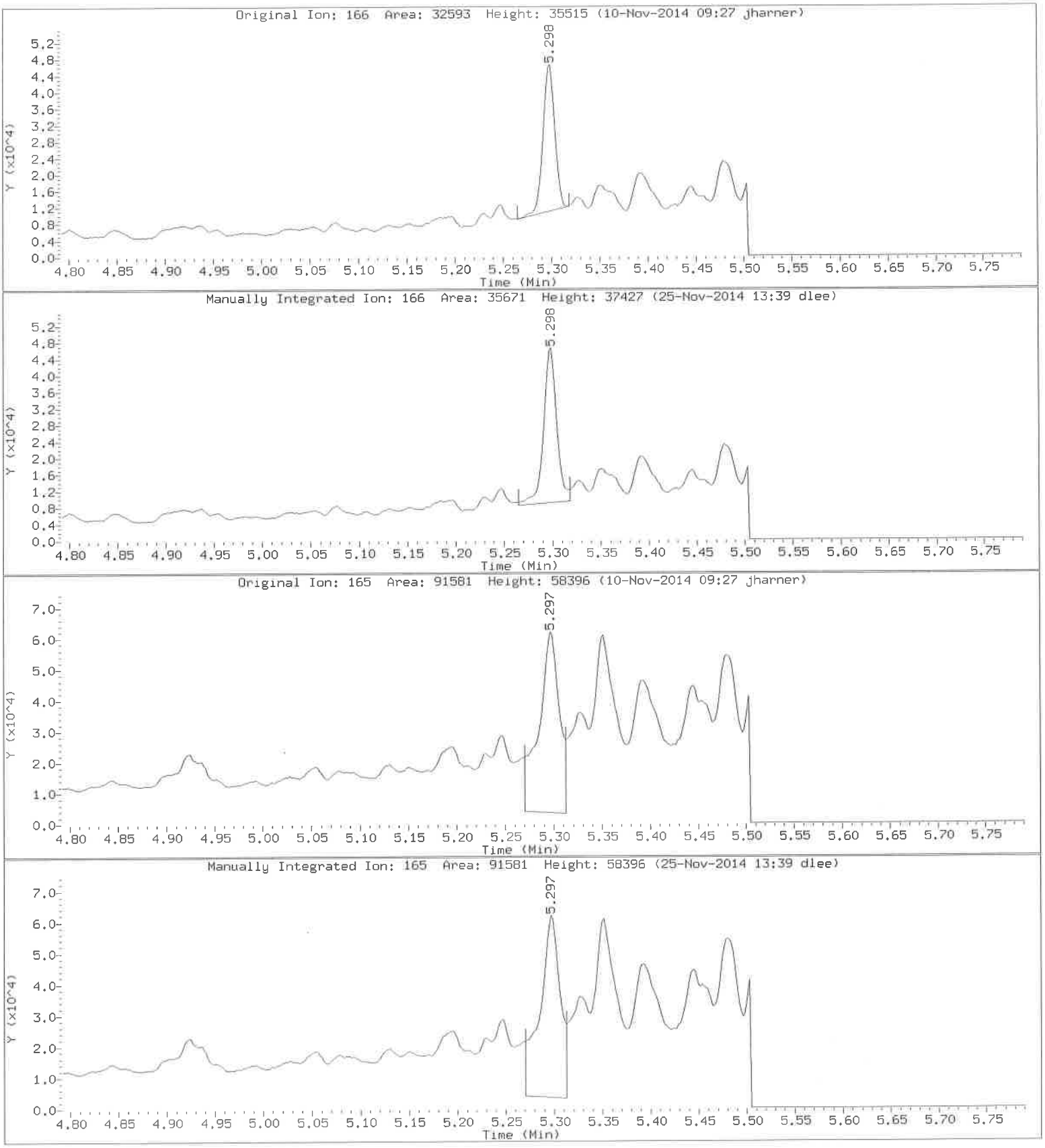
Injection Date: 07-NOV-2014 15:43
Instrument: 30mss3.i
Lab Sample ID: 30133009002

Compound: Fluorene
CAS Number: 86-73-7



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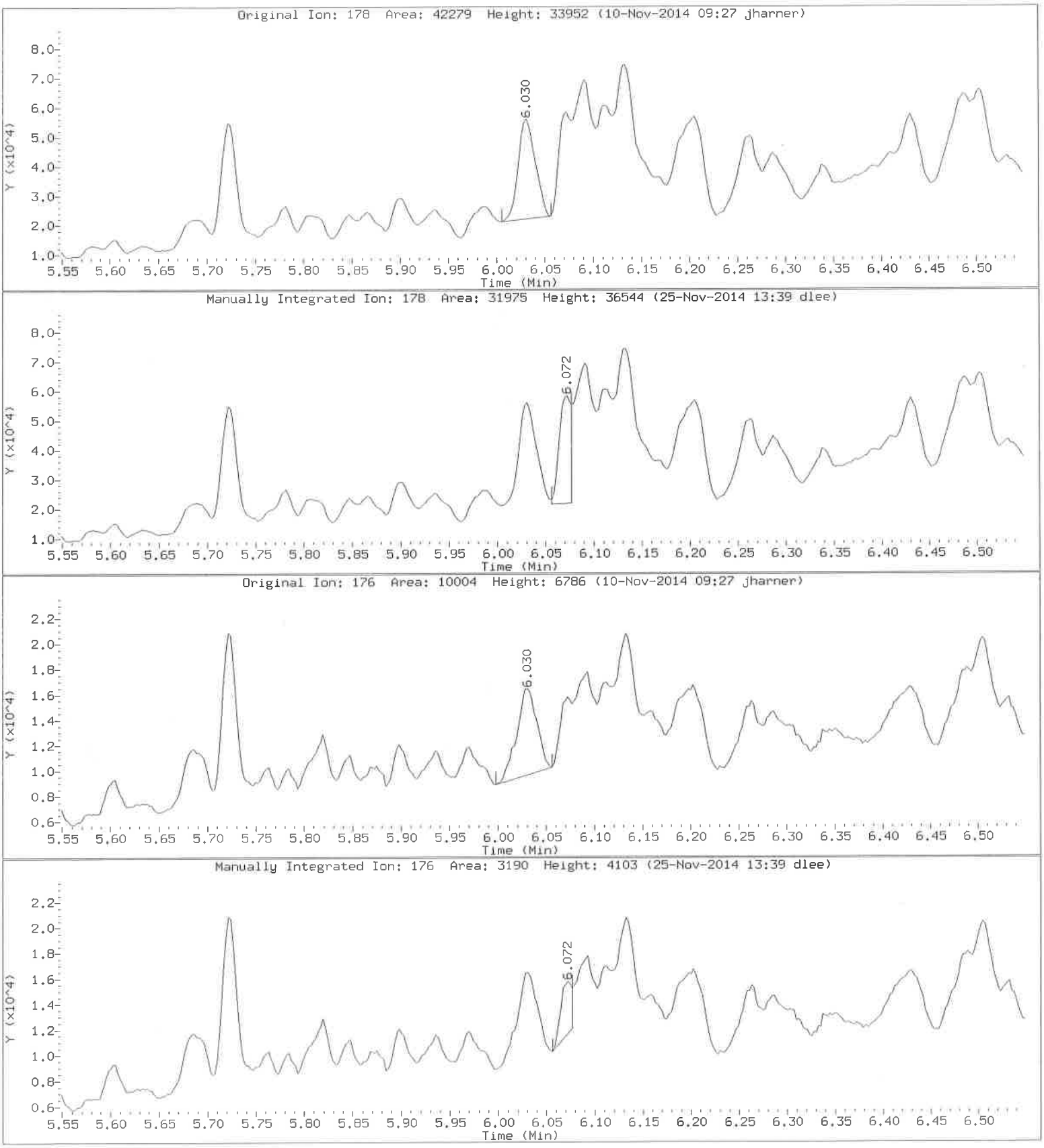
Injection Date: 07-NOV-2014 15:43
Instrument: 30mss3.i
Lab Sample ID: 30133009002

Compound: Anthracene
CAS Number: 120-12-7



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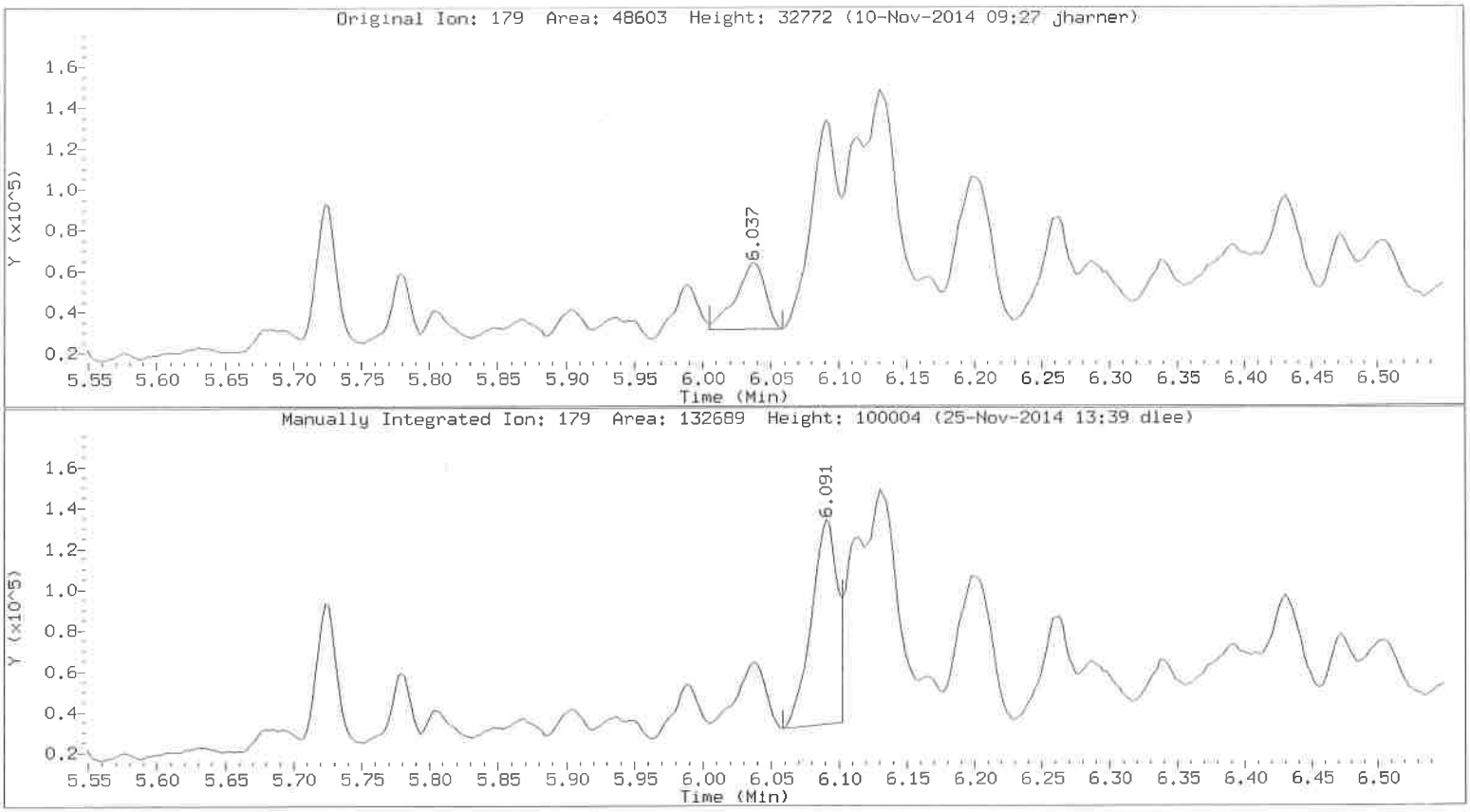
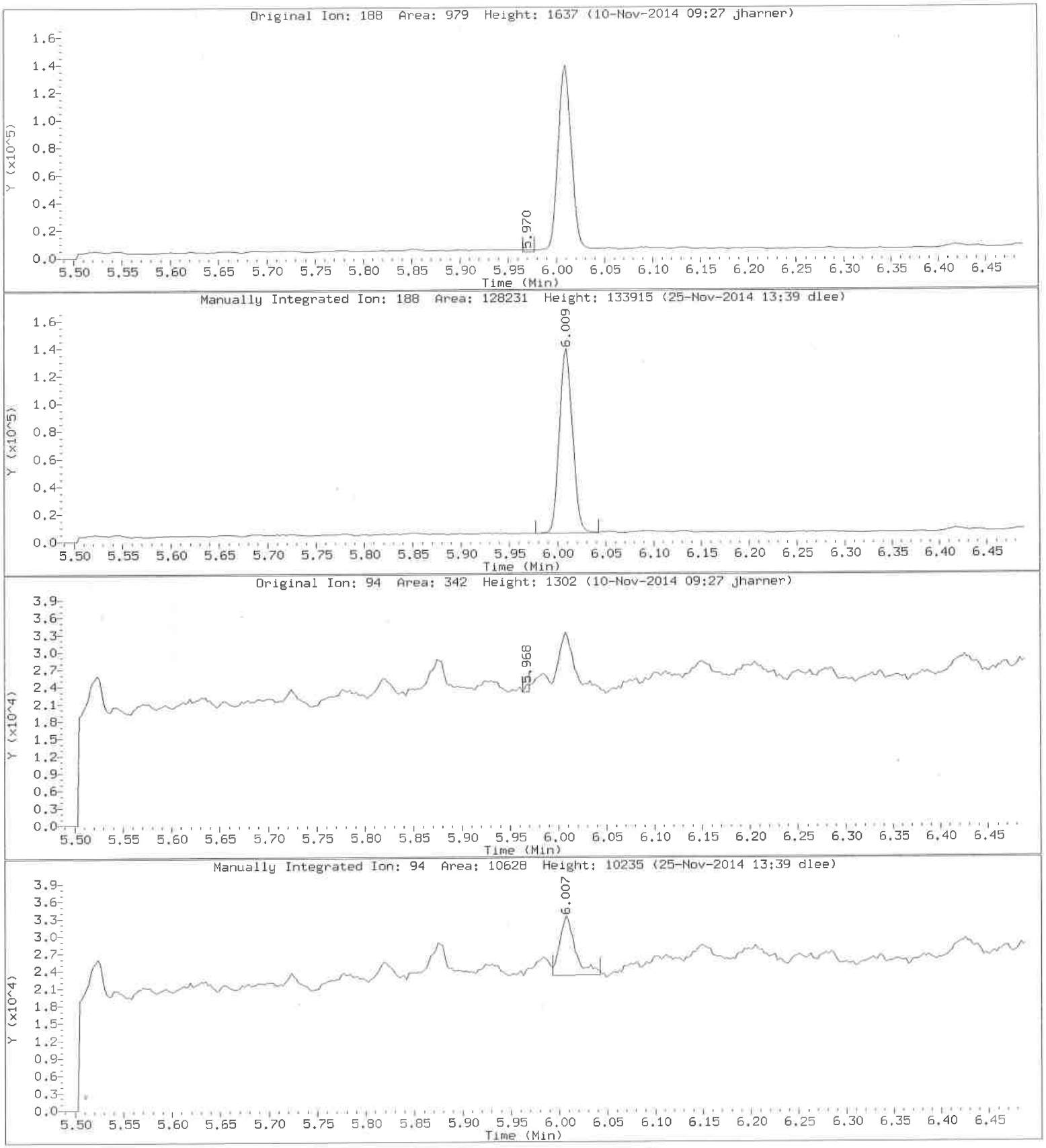
Injection Date: 07-NOV-2014 15:43
Instrument: 30mss3.i
Lab Sample ID: 30133009002



Data File: \\30wintarget\chem\30mss3.i\mss3110714.b/m3110704.d (ManInt: all
Injection Date: 07-NOV-2014 15:43
Instrument: 30mss3.i
Lab Sample ID: 30133009002

Compound: Phenanthrene-d10 IS
CAS Number: 1517-22-2



Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m2111010.d
Lab Smp Id: 30133009002 Client Smp ID: AOI-5_PECO-B5_14-16
Inj Date : 10-NOV-2014 13:51
Operator : DJL Inst ID: 30mss2.i
Smp Info : 30133009002
Misc Info : 6965
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Meth Date : 25-Nov-2014 13:15 dlee Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 12
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: quin.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.180	Weigth of sample extracted (g)
M	16.139	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)
* 1 Naphthalene-d8 IS	136	4.357	4.347	(1.000)	102116	4.00000	(Q)
4 Quinoline	129	Compound Not Detected.					

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m2111010.d
Lab Smp Id: 30133009002
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Misc Info: 6965

Calibration Date: 10-NOV-2014
Calibration Time: 11:19
Client Smp ID: AOI-5_PECO-B5_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	67129	33565	134258	102116	52.12

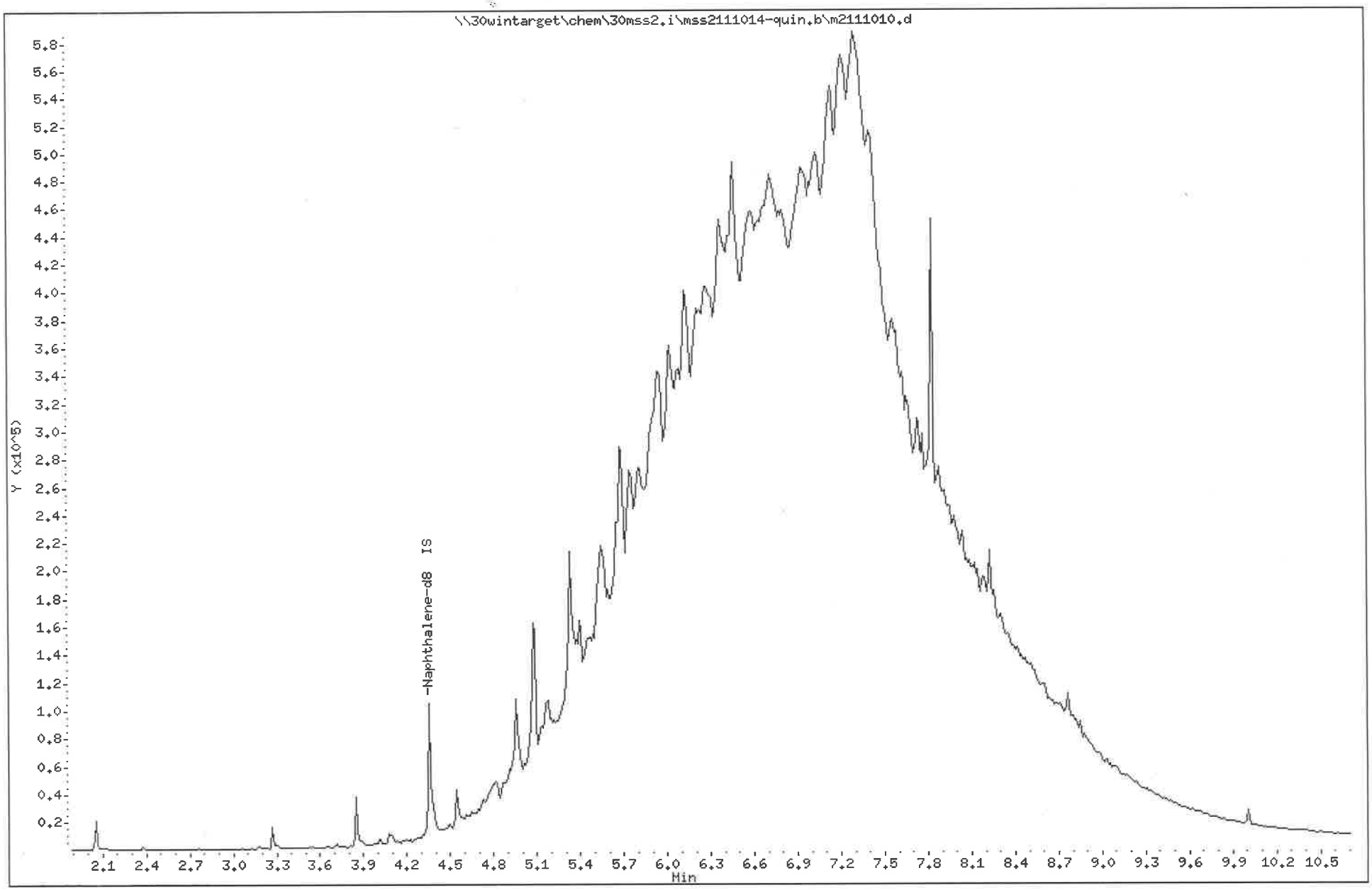
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.35	3.85	4.85	4.36	0.24

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m2111010.d
Date : 10-NOV-2014 13:51
Client ID: AOI-5_PECO-B5_14-16
Sample Info: 30133009002
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss2.i

Operator: DJL
Column diameter: 0.25



Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b/m2111010.d (ManInt
Injection Date: 10-NOV-2014 13:51
Instrument: 30mss2.i
Lab Sample ID: 30133009002
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

Matrix: Solid
% Moisture: 21.5405
Acode: 8270 MSSV PAH by SIM
Prep/Method: EPA 3546 / EPA 8270C by SIM

Sample: AOI-5_PECO-B6_12-14_10242014
Lab ID: 30133009003
Collected: 10/24/14 11:30
Received: 10/28/14 10:15

Results reported on a "dry-weight" basis

CAS No.	Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	Qual
83-32-9	Acenaphthene	**0.064**	mg/kg	0.0084	0.0015	1	11/05/14 15:15	11/07/14 16:01	
120-12-7	Anthracene	**0.035**	mg/kg	0.0084	0.0011	1	11/05/14 15:15	11/07/14 16:01	
56-55-3	Benzo(a)anthracene	**0.018**	mg/kg	0.0084	0.00056	1	11/05/14 15:15	11/07/14 16:01	
50-32-8	Benzo(a)pyrene	**0.0075J**	mg/kg	0.0084	0.00049	1	11/05/14 15:15	11/07/14 16:01	
205-99-2	Benzo(b)fluoranthene	**0.0049J**	mg/kg	0.0084	0.00078	1	11/05/14 15:15	11/07/14 16:01	
191-24-2	Benzo(g,h,i)perylene	**0.0085**	mg/kg	0.0084	0.00068	1	11/05/14 15:15	11/07/14 16:01	
207-08-9	Benzo(k)fluoranthene	**0.0049J**	mg/kg	0.0084	0.00042	1	11/05/14 15:15	11/07/14 16:01	
218-01-9	Chrysene	**0.043**	mg/kg	0.0084	0.0011	1	11/05/14 15:15	11/07/14 16:01	
53-70-3	Dibenz(a,h)anthracene	**0.0084 U**	mg/kg	0.0084	0.00064	1	11/05/14 15:15	11/07/14 16:01	
206-44-0	Fluoranthene	**0.018**	mg/kg	0.0084	0.00078	1	11/05/14 15:15	11/07/14 16:01	
86-73-7	Fluorene	**0.081**	mg/kg	0.0084	0.0014	1	11/05/14 15:15	11/07/14 16:01	
193-39-5	Indeno(1,2,3-cd)pyrene	**0.0014J**	mg/kg	0.0084	0.00046	1	11/05/14 15:15	11/07/14 16:01	
91-20-3	Naphthalene	**0.066**	mg/kg	0.0084	0.0022	1	11/05/14 15:15	11/07/14 16:01	
85-01-8	Phenanthrene	**0.24**	mg/kg	0.0084	0.0011	1	11/05/14 15:15	11/07/14 16:01	
129-00-0	Pyrene	**0.078**	mg/kg	0.0084	0.00088	1	11/05/14 15:15	11/07/14 16:01	
91-22-5	Quinoline	**0.017 U**	mg/kg	0.017	0.0041	2	11/05/14 15:15	11/10/14 14:37	
Surrogates									
321-60-8	2-Fluorobiphenyl (S)	**78**	%	35-141		1	11/05/14 15:15	11/07/14 16:01	
1718-51-0	Terphenyl-d14 (S)	**81**	%	64-141		1	11/05/14 15:15	11/07/14 16:01	

REPORT OF LABORATORY ANALYSIS

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Date: 11/25/2014 01:17 PM

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3110714.b\m3110705.d
Lab Smp Id: 30133009003 Client Smp ID: AOI-5_PECO-B6_12-14
Inj Date : 07-NOV-2014 16:01
Operator : JSH Inst ID: 30mss3.i
Smp Info : 30133009003
Misc Info : 6965
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Meth Date : 25-Nov-2014 13:37 dlee Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22 Cal File: m31008z6.d
Als bottle: 7
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.230	Weigth of sample extracted (g)
M	21.541	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	3.781	3.781	(1.000)	137916	4.00000	(Q)	
* 2 Acenaphthene-d8 IS	164	4.924	4.917	(1.000)	86852	4.00000	(M)	BA
* 3 Phenanthrene-d10 IS	188	6.002	5.988	(1.000)	148668	4.00000	(QM)	BA
* 4 Chrysene-d12 IS	240	8.340	8.332	(1.000)	179666	4.00000		
* 5 Perylene-d12 IS	264	9.632	9.627	(1.000)	147264	4.00000		
$ 6 2-Fluorobiphenyl	172	4.463	4.461	(0.906)	97317	3.90149	201	
$ 7 Terphenyl-d14	244	7.335	7.325	(1.222)	139001	4.04060	208	
8 Naphthalene	128	3.789	3.796	(1.002)	29411	0.79257	40.8(QM)	BA
9 2-methylnaphthalene	142	4.241	4.238	(1.122)	7952	0.31293	16.1	
10 1-methylnaphthalene	142	4.306	4.303	(1.139)	52761	2.35230	121(QM)	GT
11 Acenaphthylene	152	4.827	4.827	(0.980)	7078	0.17245	8.88(QM)	BA
12 Acenaphthene	153	4.938	4.938	(1.003)	19186	0.76962	39.6(Q)	
13 Fluorene	166	5.296	5.291	(1.076)	28961	0.96865	49.9(QM)	BA
14 Phenanthrene	178	6.021	6.007	(1.003)	124278	2.81730	145(Q)	
15 Anthracene	178	6.063	6.049	(1.010)	18442	0.42078	21.7(Q)	
16 Fluoranthene	202	7.021	7.009	(1.170)	11606	0.21837	11.2(Q)	
17 Pyrene	202	7.230	7.216	(1.205)	48959	0.93025	47.9(Q)	
18 Benzo[a]anthracene	228	8.328	8.322	(0.999)	10301	0.21732	11.2	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
19 Chrysene	228	8.364	8.356	(1.003)	21377	0.51874	26.7(Q)	
20 Benzo[b]fluoranthene	252	9.306	9.299	(0.966)	2647	0.05817	3.00(QM)	WP
21 Benzo[k]fluoranthene	252	9.306	9.323	(0.966)	2785	0.05914	3.05(QM)	WP
22 Benzo[a]pyrene	252	9.588	9.583	(0.995)	4145	0.08935	4.60	
23 Dibenz[a,h]anthracene	278	Compound Not Detected.						
24 Indeno[1,2,3-cd]pyrene	276	Compound Not Detected.						WP
25 Benzo[g,h,i]perylene	276	10.793	10.788	(1.121)	4574	0.10100	5.20(Q)	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m3110705.d
Lab Smp Id: 30133009003
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: 6965

Calibration Date: 07-NOV-2014
Calibration Time: 14:32
Client Smp ID: AOI-5_PECO-B6_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	144127	72064	288254	137916	-4.31
2 Acenaphthene-d8	90862	45431	181724	86852	-4.41
3 Phenanthrene-d10	127784	63892	255568	148668	16.34
4 Chrysene-d12 IS	178001	89001	356002	179666	0.94
5 Perylene-d12 IS	150117	75059	300234	147264	-1.90

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	3.78	3.28	4.28	3.78	0.00
2 Acenaphthene-d8	4.92	4.42	5.42	4.92	0.14
3 Phenanthrene-d10	5.99	5.49	6.49	6.00	0.23
4 Chrysene-d12 IS	8.33	7.83	8.83	8.34	0.10
5 Perylene-d12 IS	9.63	9.13	10.13	9.63	0.05

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

RECOVERY REPORT

Client Name: Sunoco_Langan
Sample Matrix: SOLID
Lab Smp Id: 30133009003
Level: LOW
Data Type: MS DATA
SpikeList File: water.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: 6965

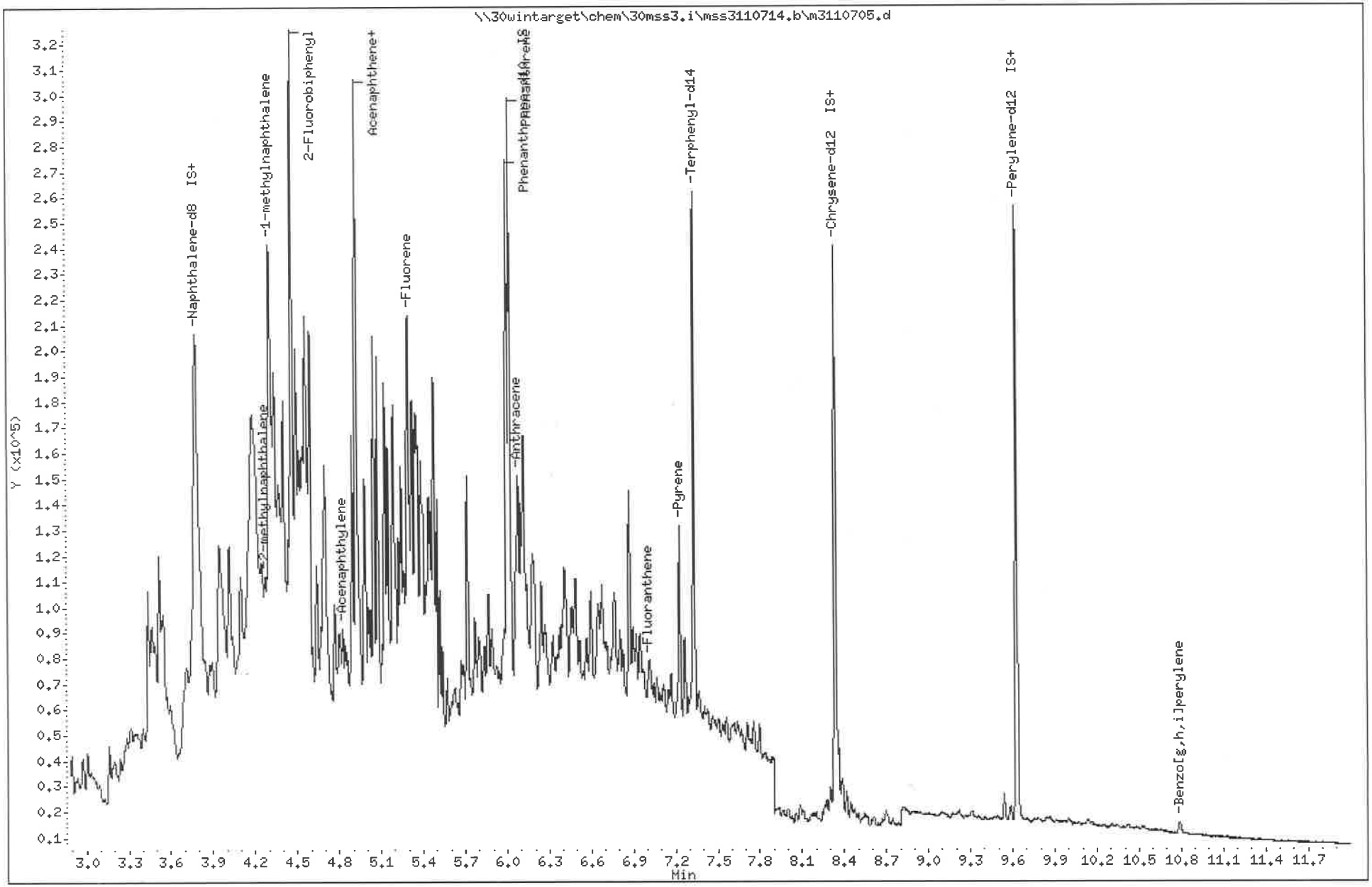
Client SDG: 30133009
Fraction: SV
Client Smp ID: AOI-5_PECO-B6_12-14
Operator: JSH
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 6 2-Fluorobiphenyl	258	201	78.03	35-141
$ 7 Terphenyl-d14	258	208	80.81	64-141

Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110705.d
Date : 07-NOV-2014 16:01
Client ID: AOI-5_PECO-B6_12-14
Sample Info: 30133009003
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss3.i

Operator: JSH
Column diameter: 0.25



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Date : 07-NOV-2014 16:01

Client ID: AOI-5_PECO-B6_12-14

Instrument: 30mss3.i

Sample Info: 30133009003

Volume Injected (uL): 1.0

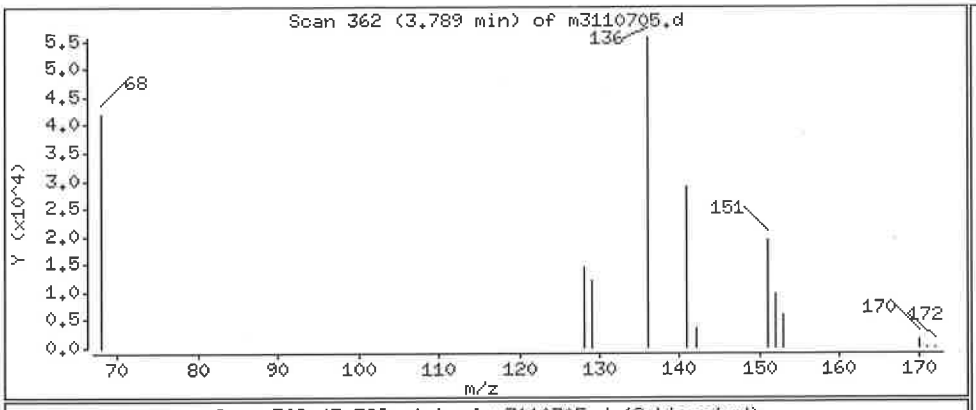
Operator: JSH

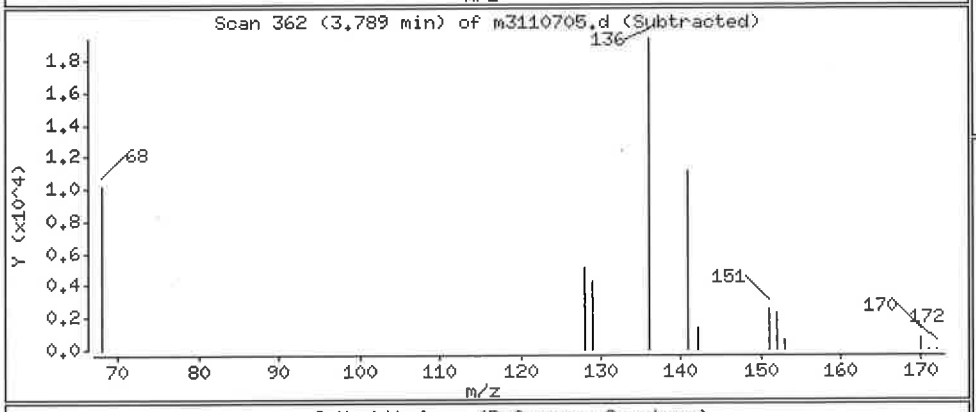
Column phase: RTX-5MS

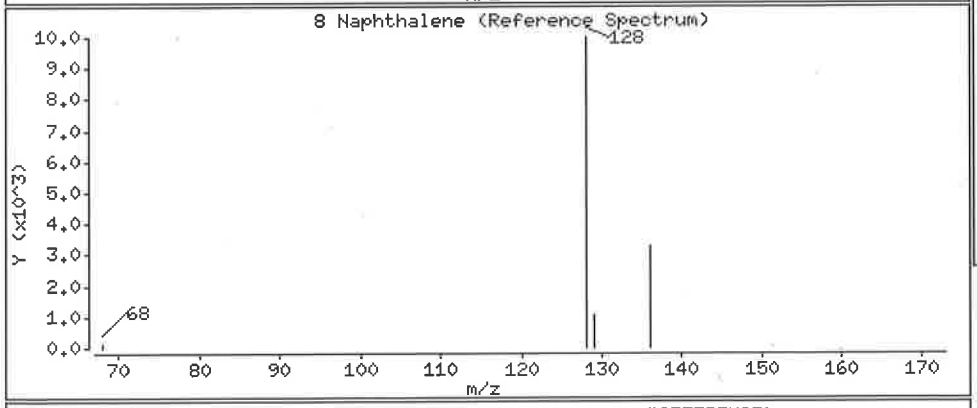
Column diameter: 0.25

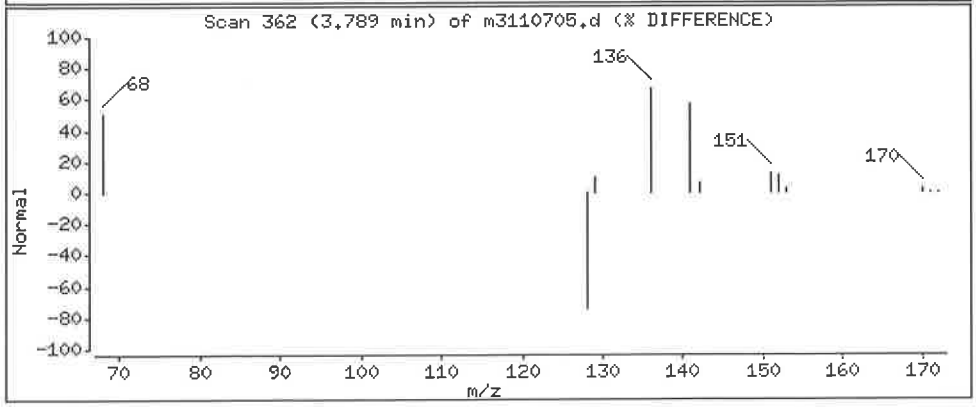
8 Naphthalene

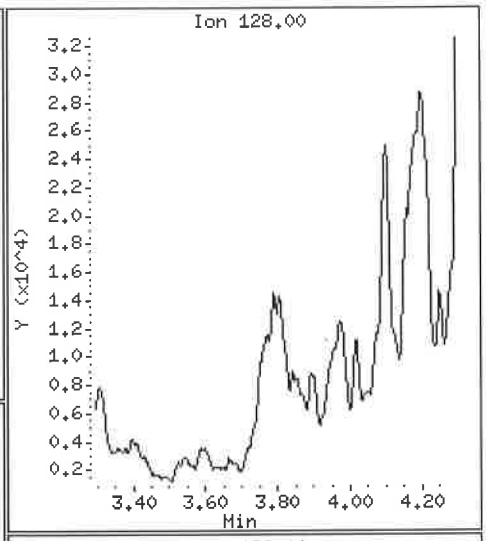
Concentration: 40.8 ug/Kg

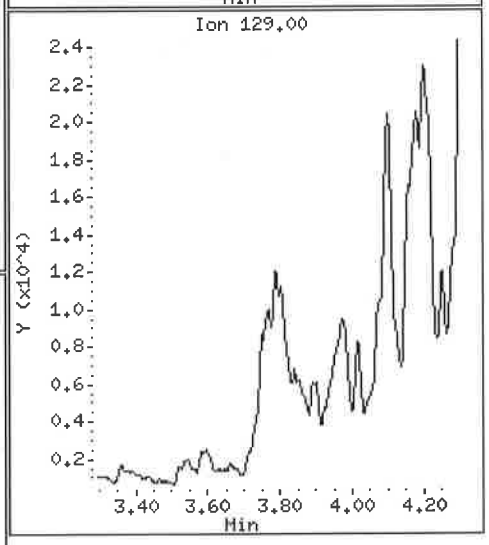












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110705.d

Date : 07-NOV-2014 16:01

Client ID: AOI-5_PECO-B6_12-14

Instrument: 30mss3.i

Sample Info: 30133009003

Volume Injected (uL): 1.0

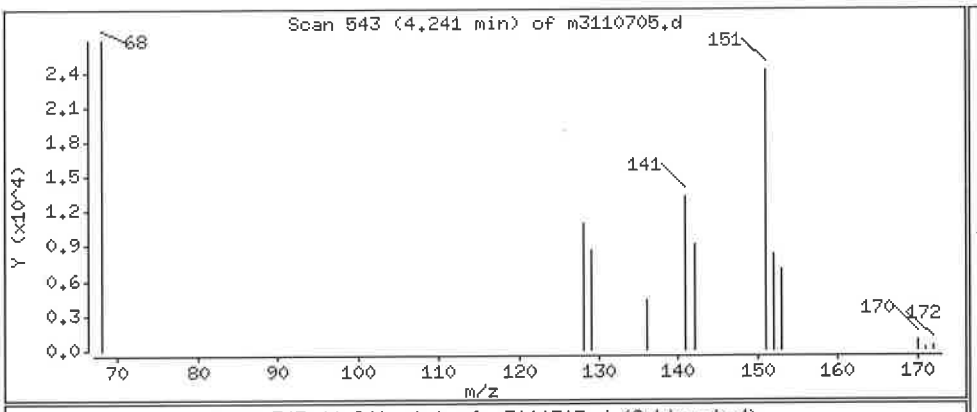
Operator: JSH

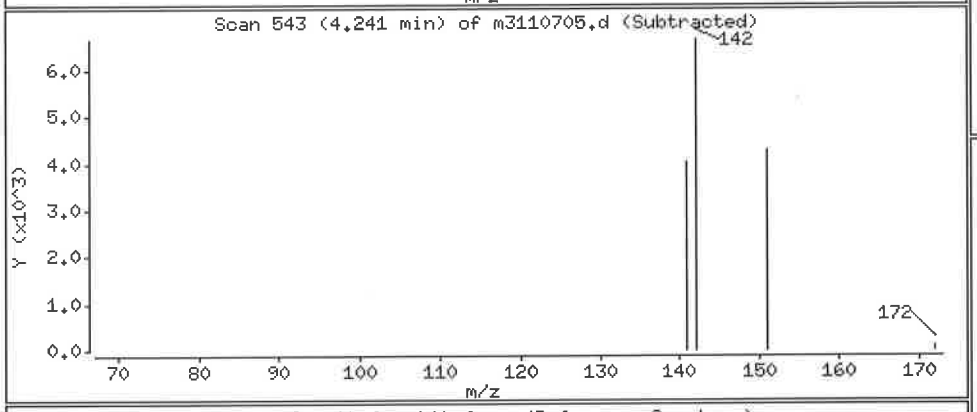
Column phase: RTX-5MS

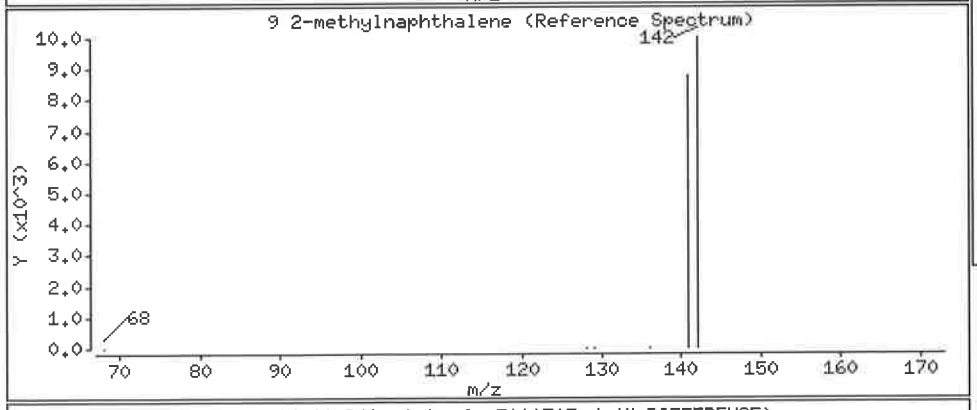
Column diameter: 0.25

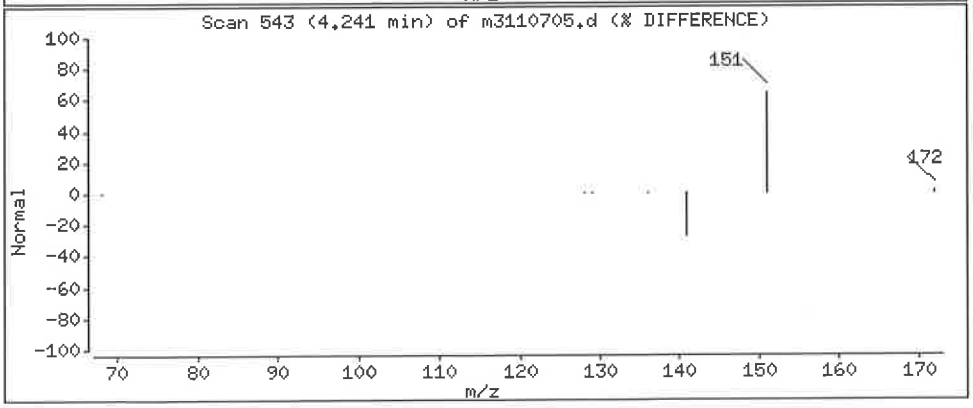
9 2-methylnaphthalene

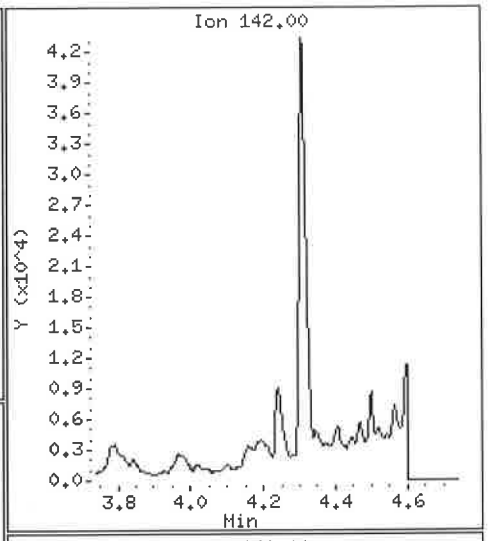
Concentration: 16.1 ug/Kg

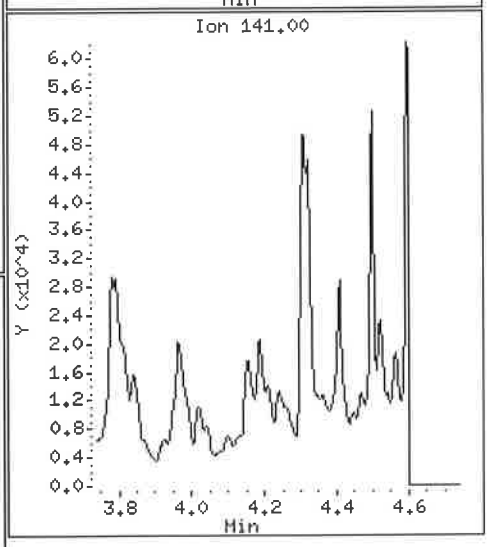












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110705.d

Date : 07-NOV-2014 16:01

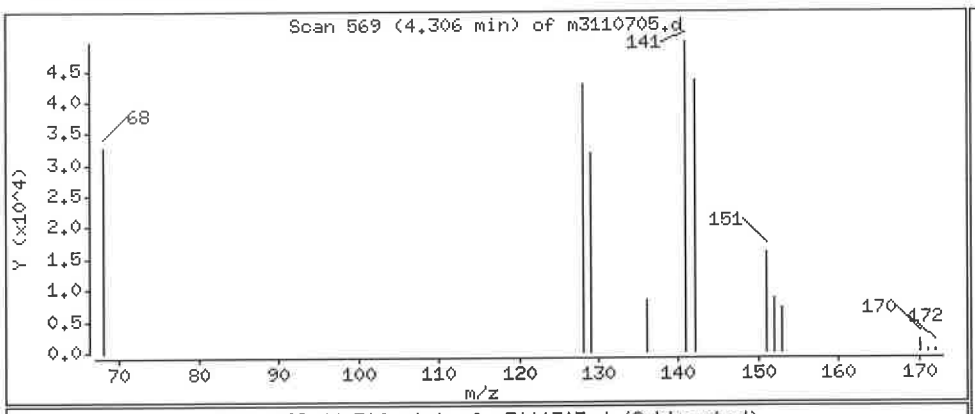
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

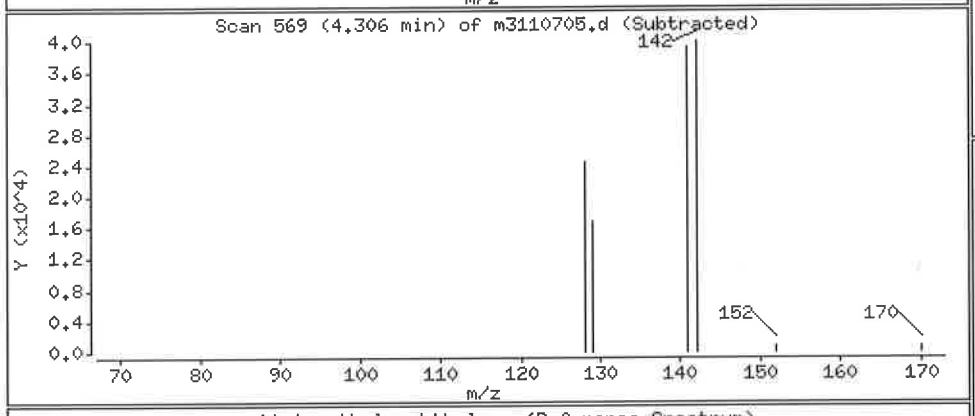
Sample Info: 30133009003

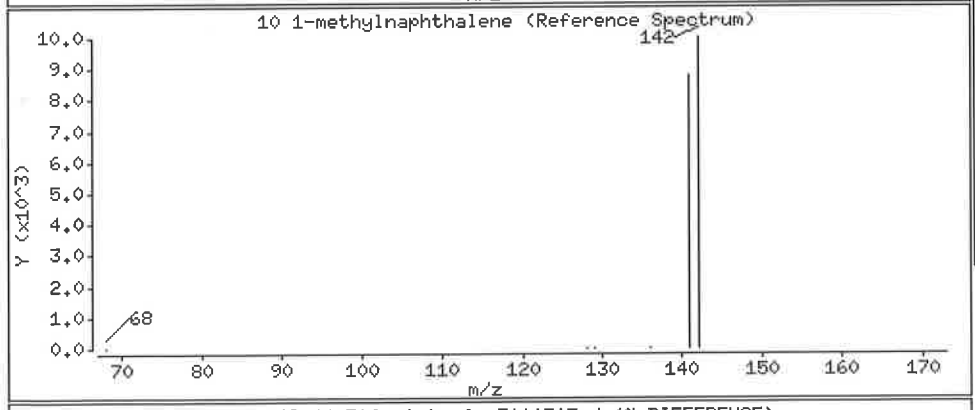
Volume Injected (uL): 1.0 Operator: JSH

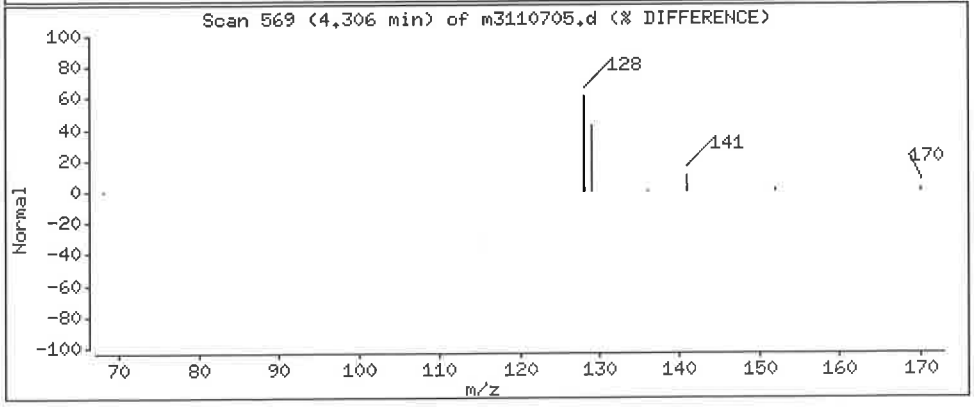
Column phase: RTX-5MS Column diameter: 0.25

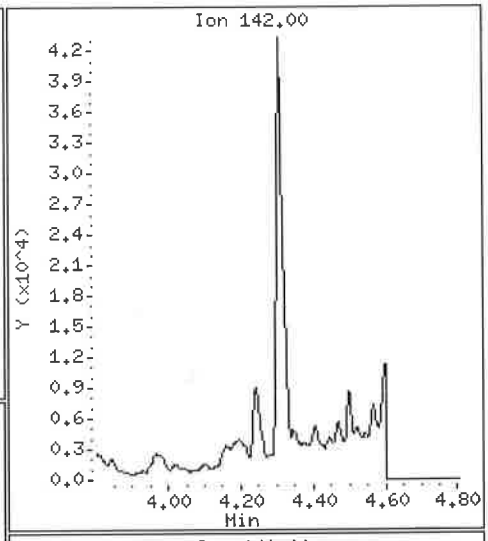
10 1-methylnaphthalene Concentration: 121 ug/Kg

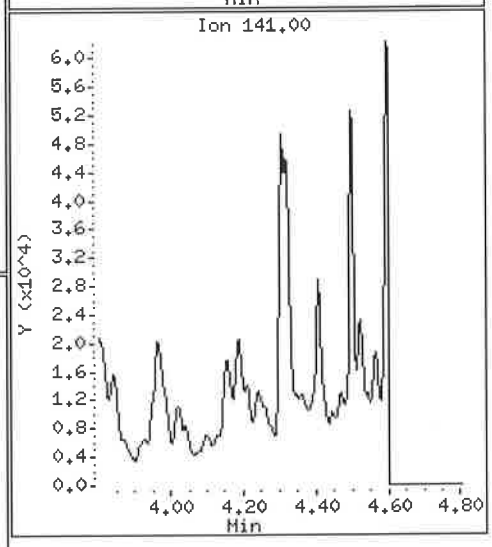












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110705.d

Date : 07-NOV-2014 16:01

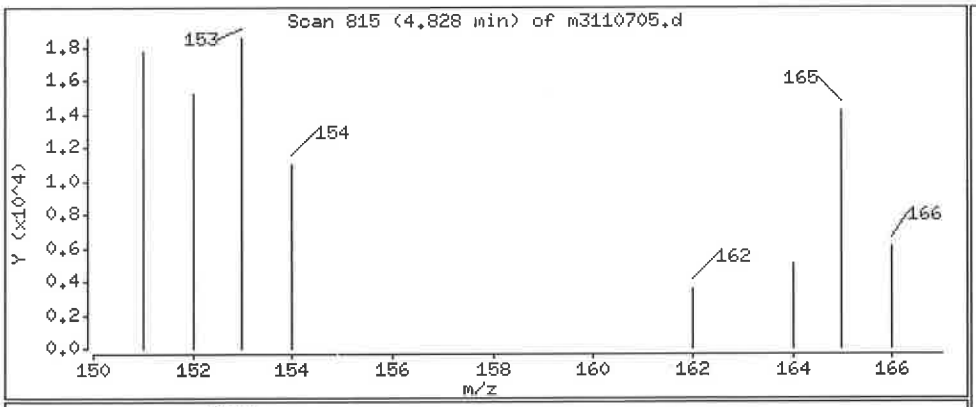
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

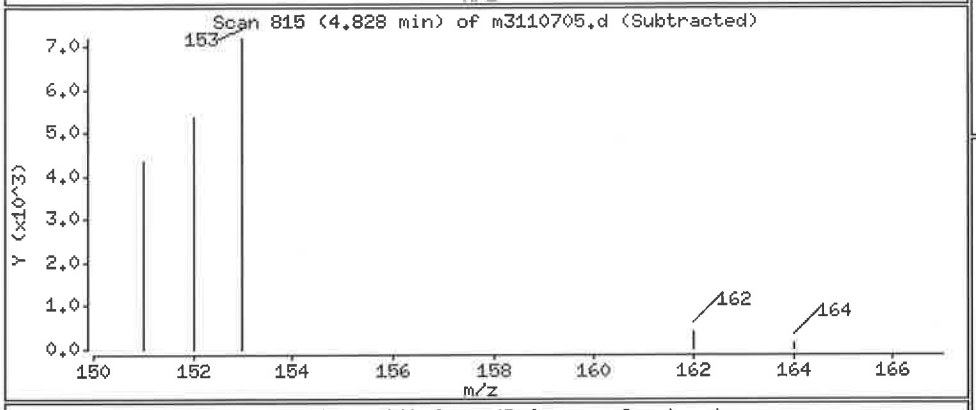
Sample Info: 30133009003

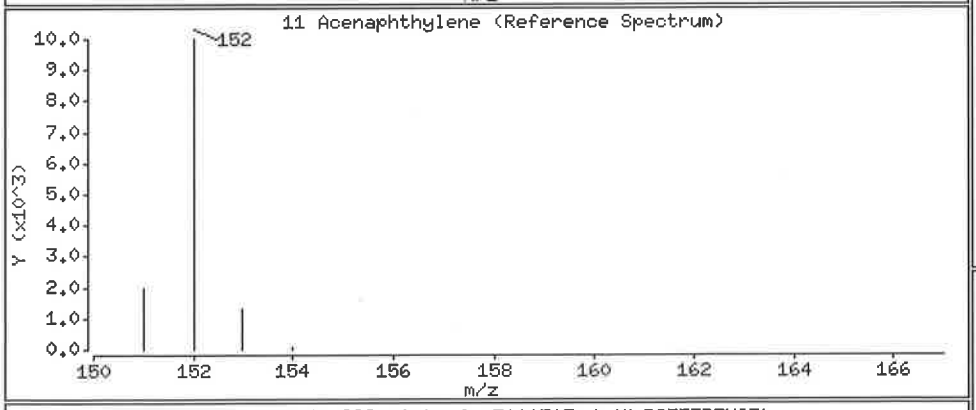
Volume Injected (uL): 1.0 Operator: JSH

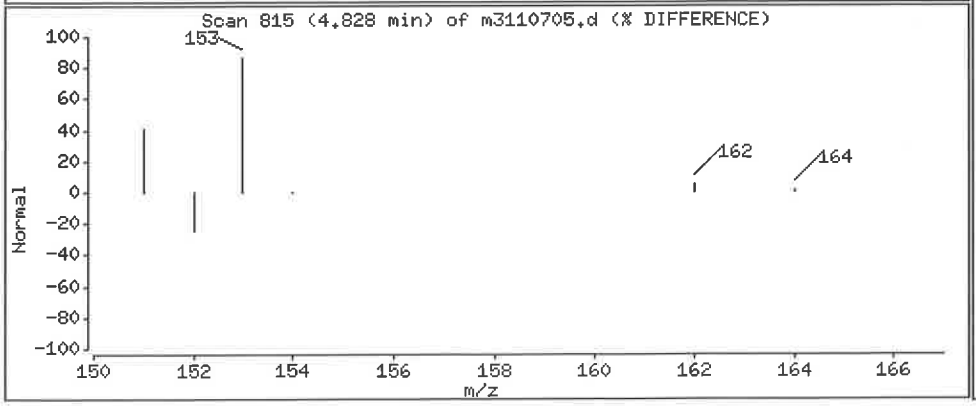
Column phase: RTX-5MS Column diameter: 0.25

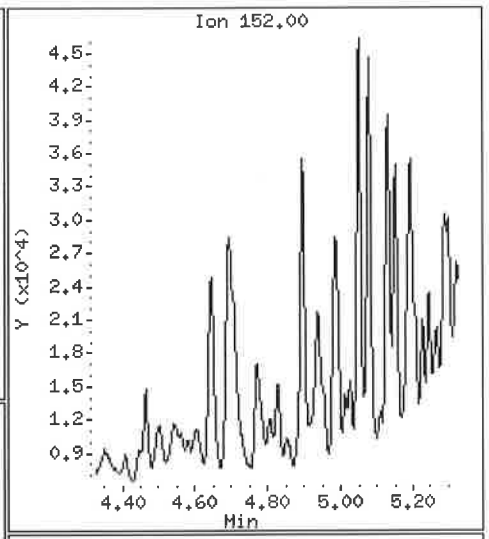
11 Acenaphthylene Concentration: 8.88 ug/Kg

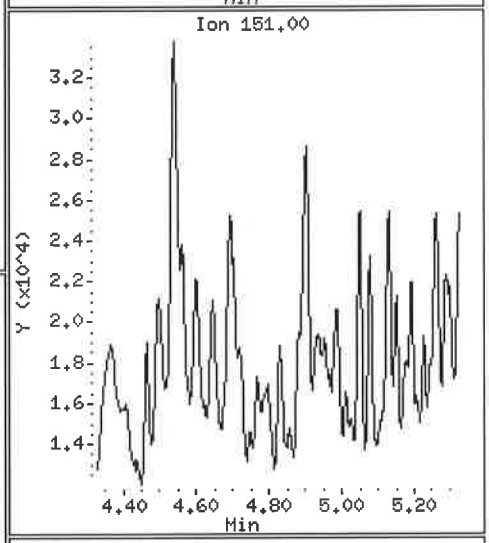


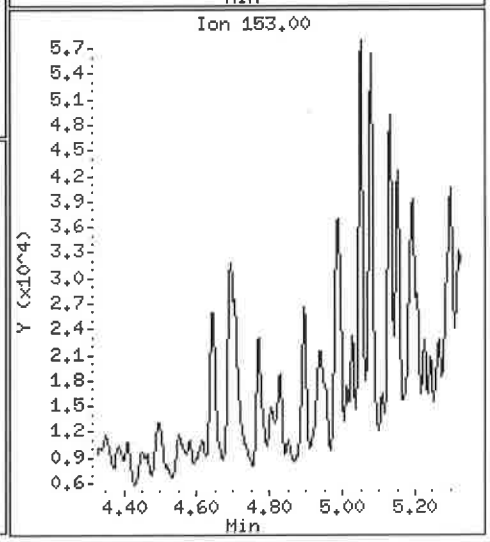












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110705.d

Date : 07-NOV-2014 16:01

Client ID: AOI-5_PECO-B6_12-14

Instrument: 30mss3.i

Sample Info: 30133009003

Volume Injected (uL): 1.0

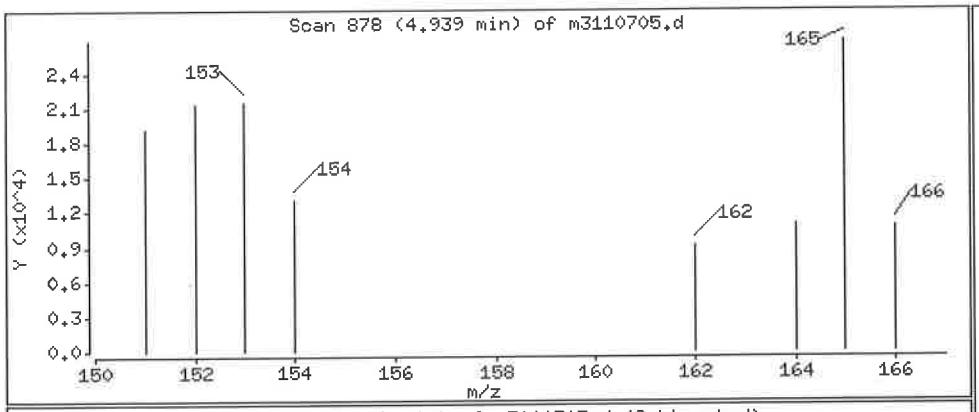
Operator: JSH

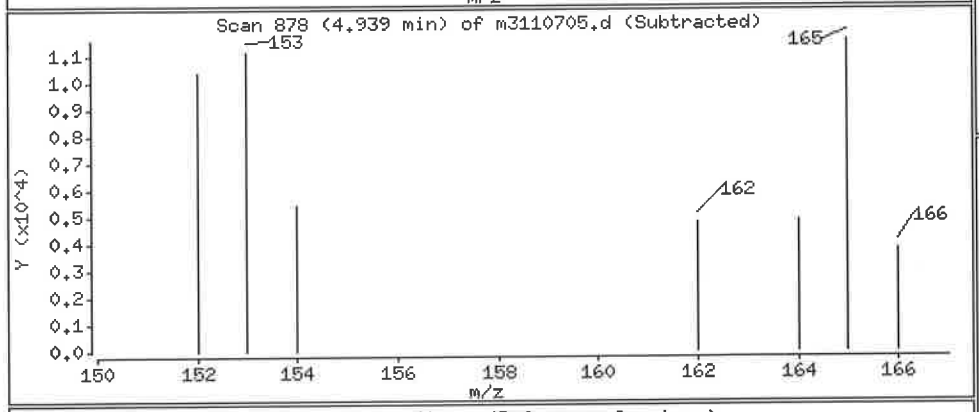
Column phase: RTX-5MS

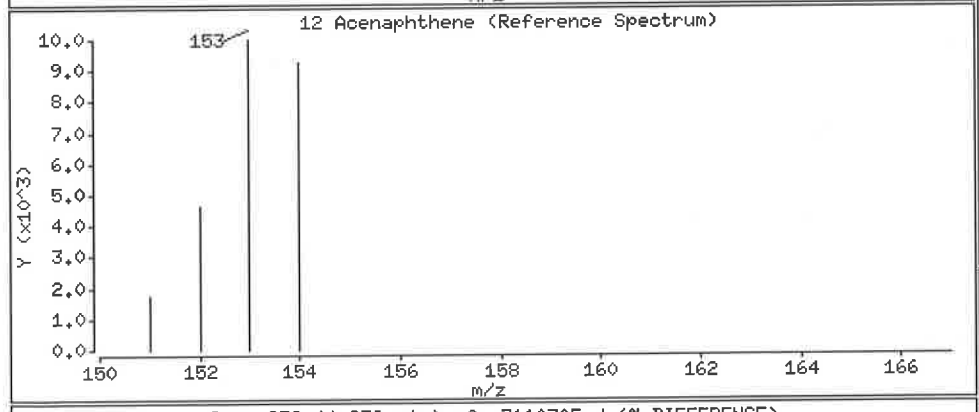
Column diameter: 0.25

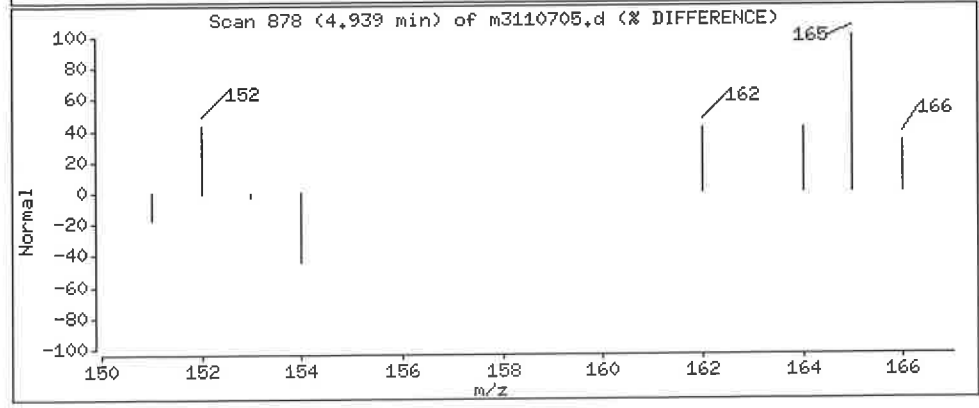
12 Acenaphthene

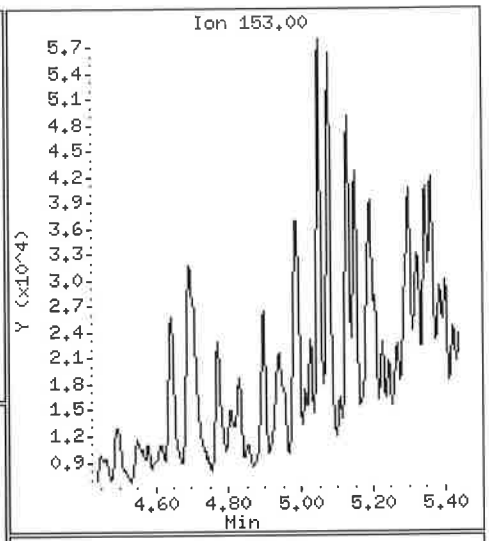
Concentration: 39.6 ug/Kg

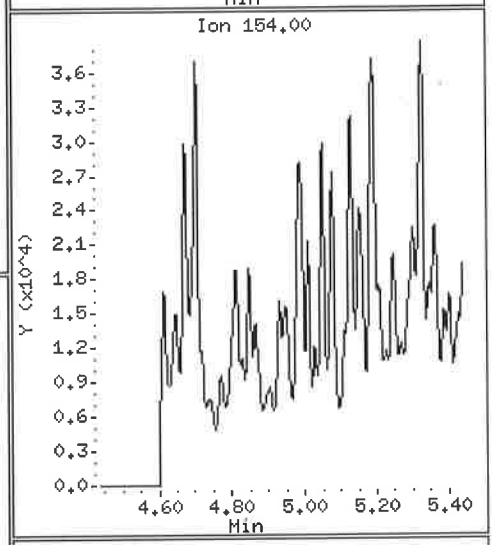


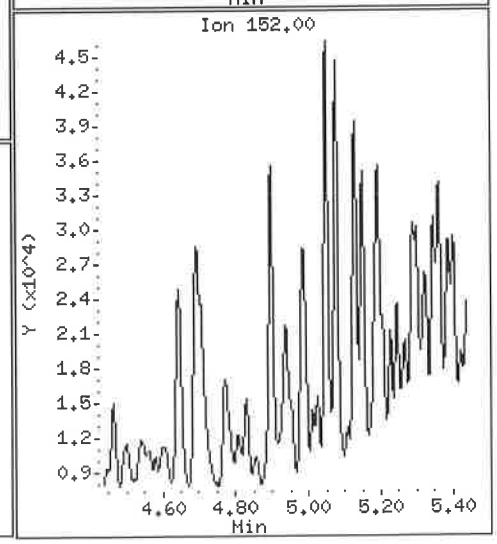












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Date : 07-NOV-2014 16:01

Client ID: AOI-5_PECO-B6_12-14

Instrument: 30mss3.i

Sample Info: 30133009003

Volume Injected (uL): 1.0

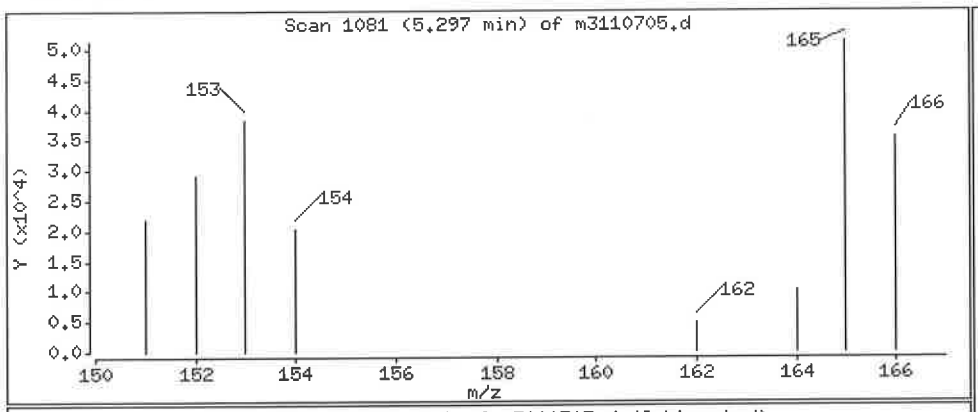
Operator: JSH

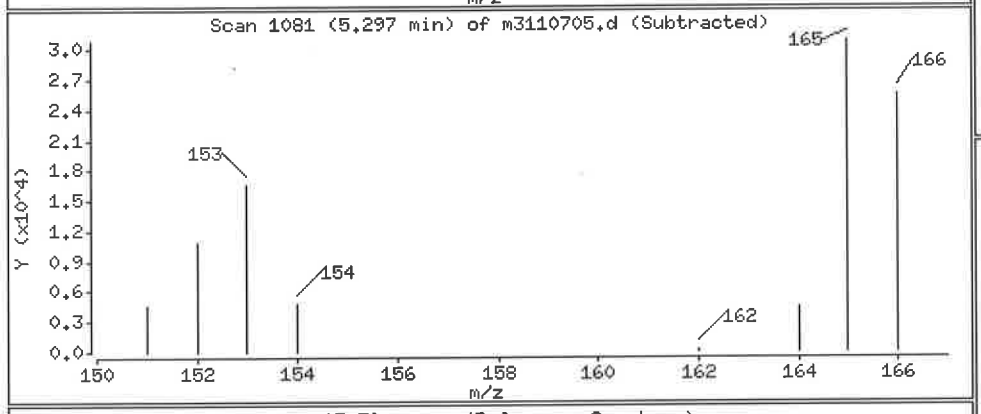
Column phase: RTX-5MS

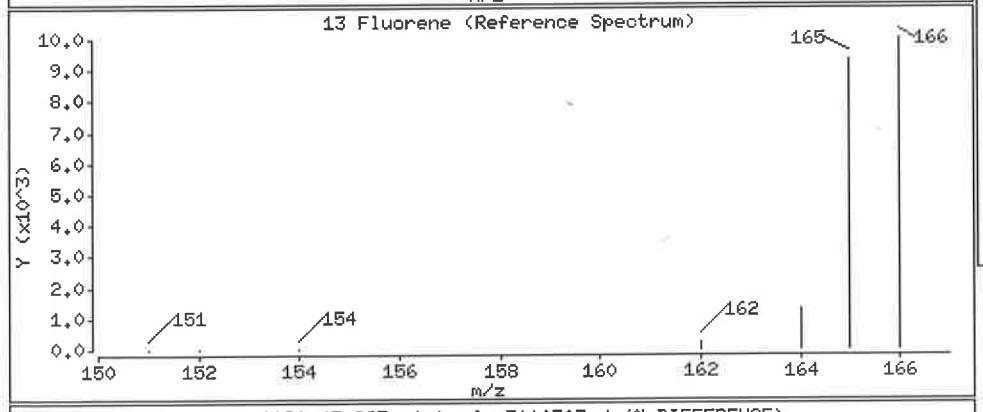
Column diameter: 0.25

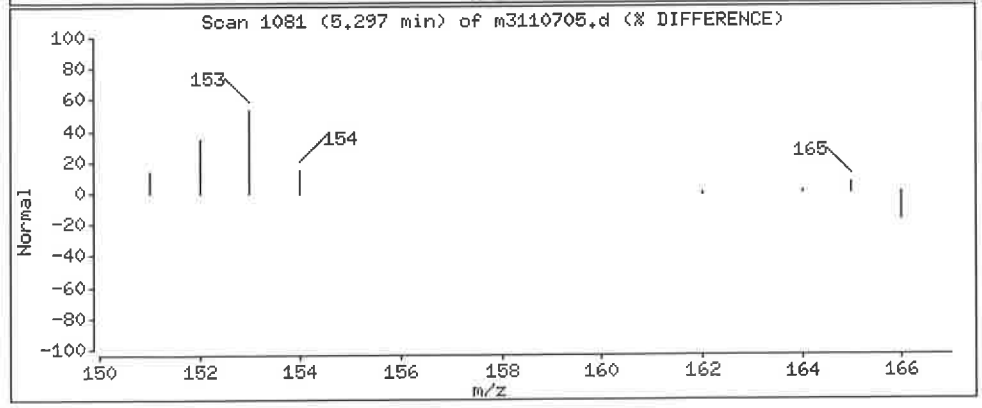
13 Fluorene

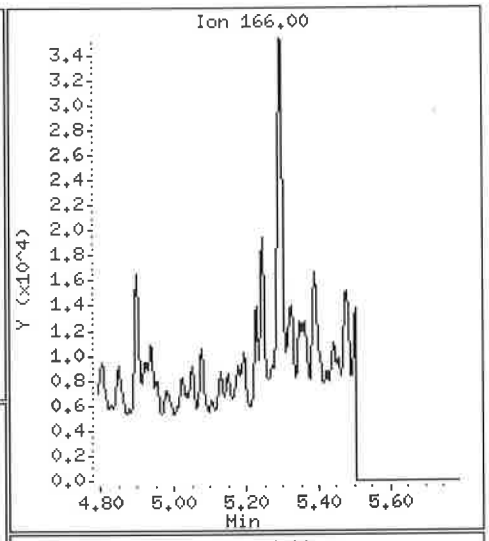
Concentration: 49.9 ug/Kg

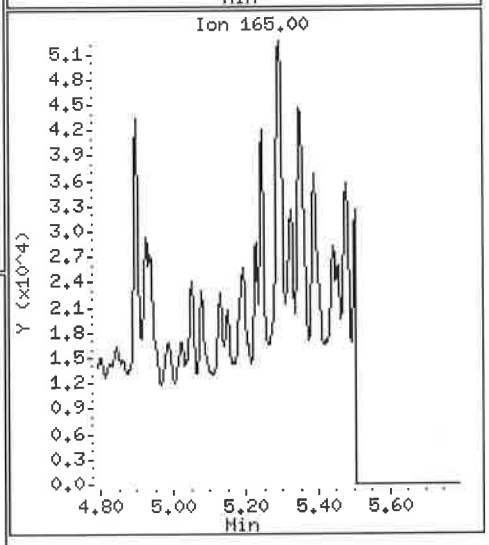












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Date : 07-NOV-2014 16:01

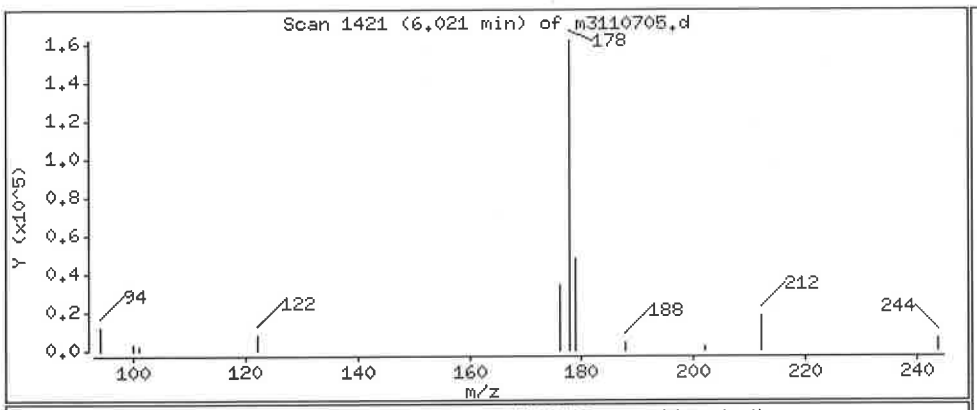
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

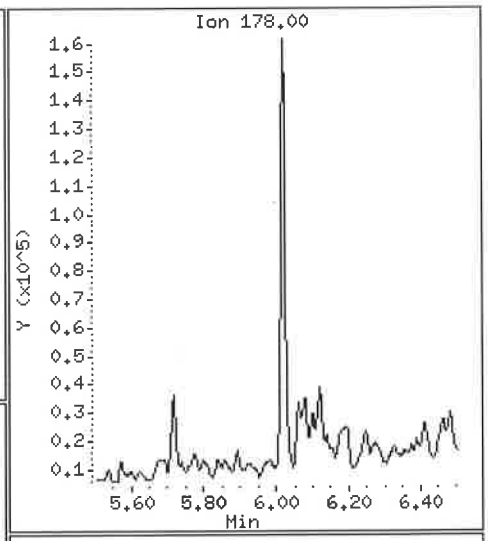
Sample Info: 30133009003

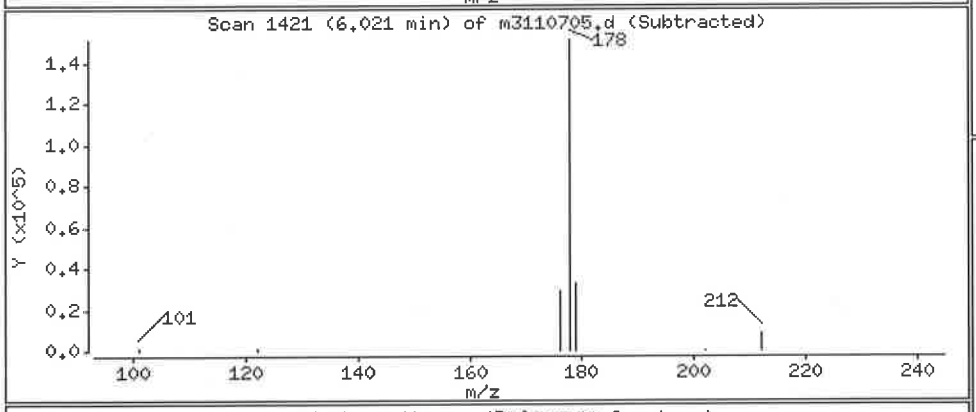
Volume Injected (uL): 1.0 Operator: JSH

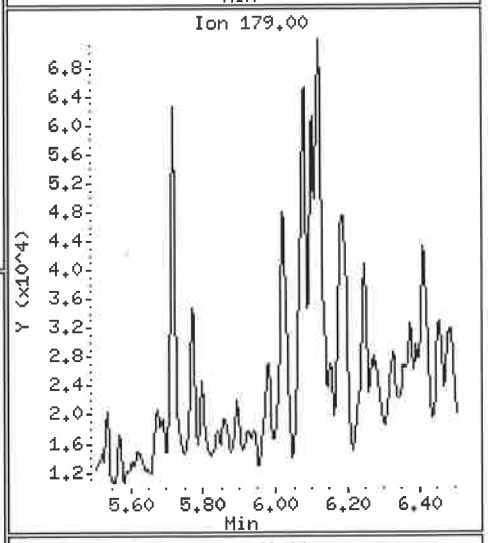
Column phase: RTX-5MS Column diameter: 0.25

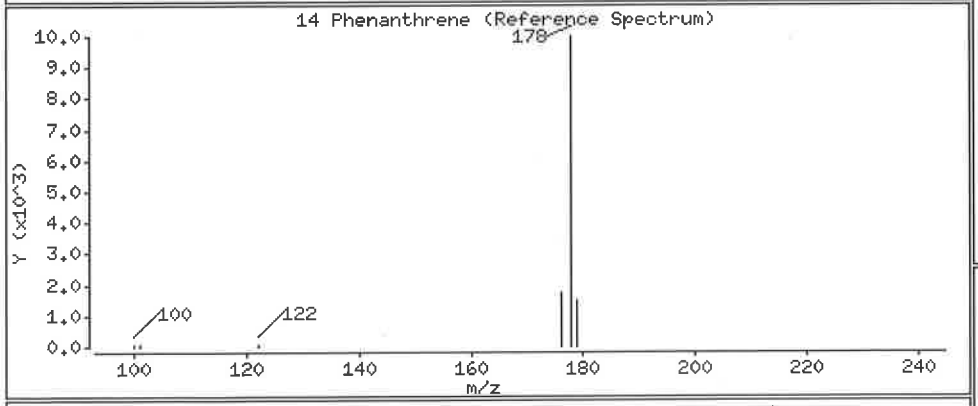
14 Phenanthrene Concentration: 145 ug/Kg

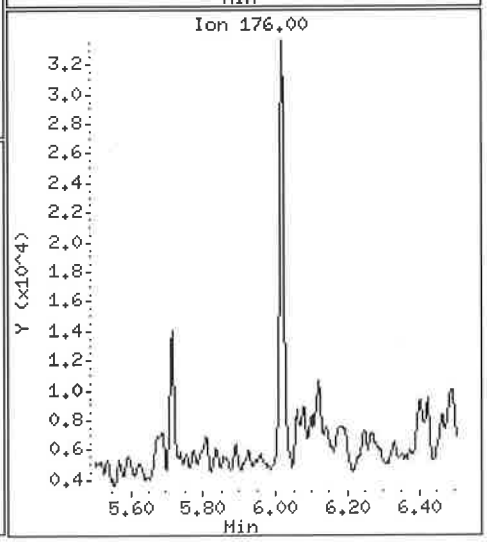


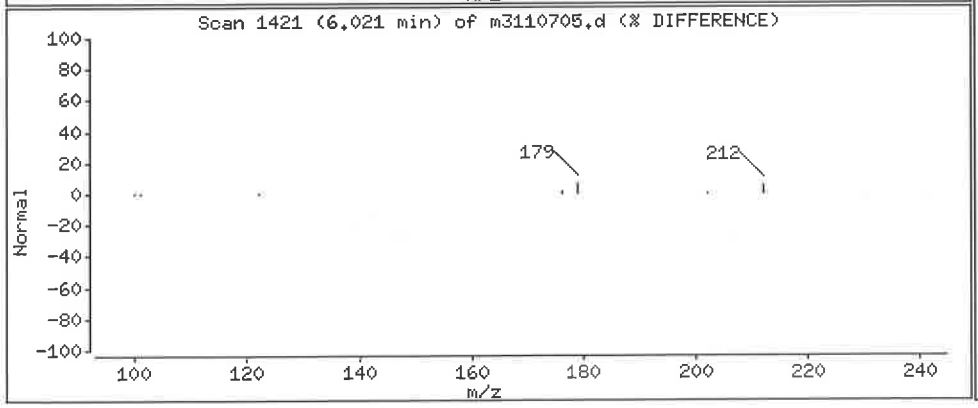












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110705.d

Date : 07-NOV-2014 16:01

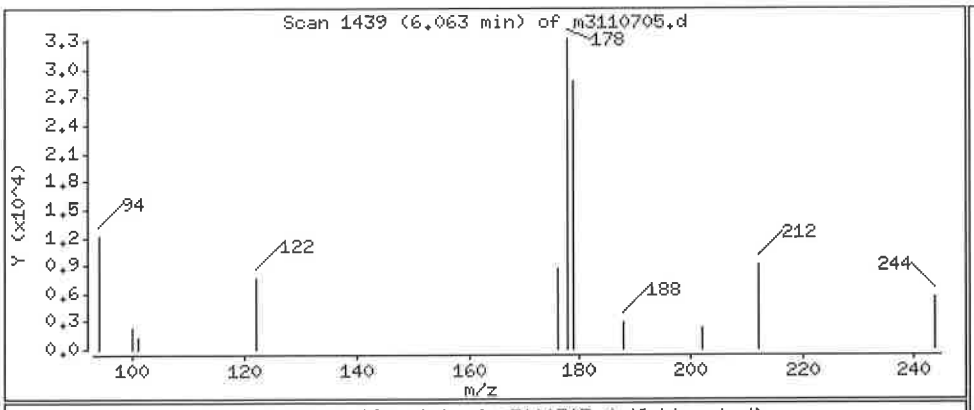
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

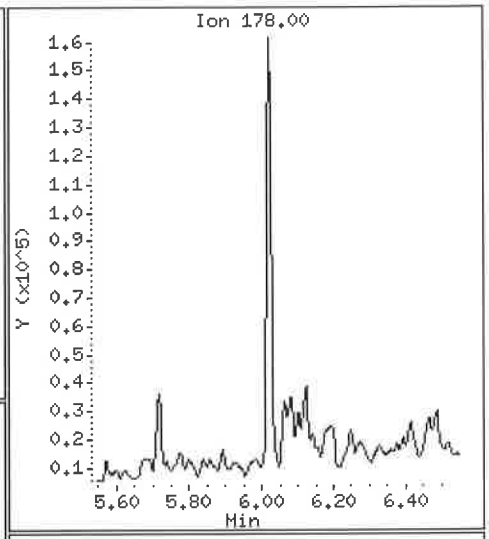
Sample Info: 30133009003

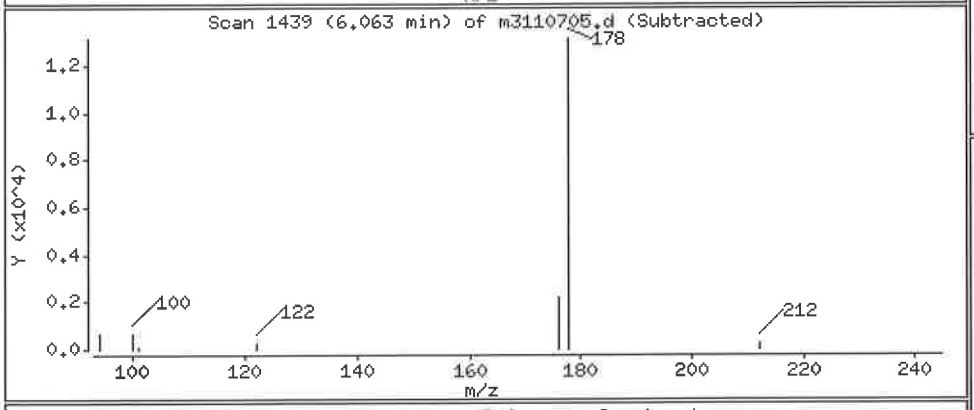
Volume Injected (uL): 1.0 Operator: JSH

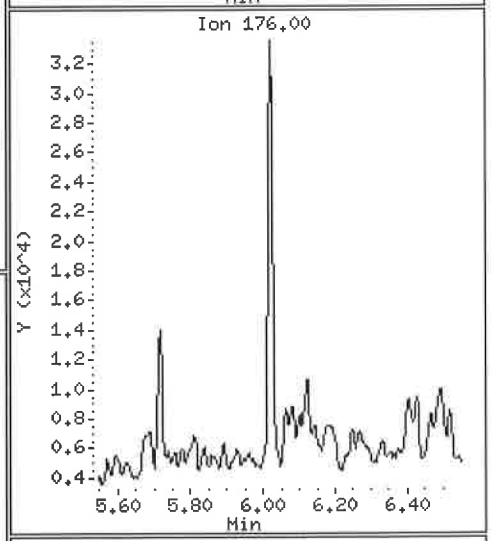
Column phase: RTX-5MS Column diameter: 0.25

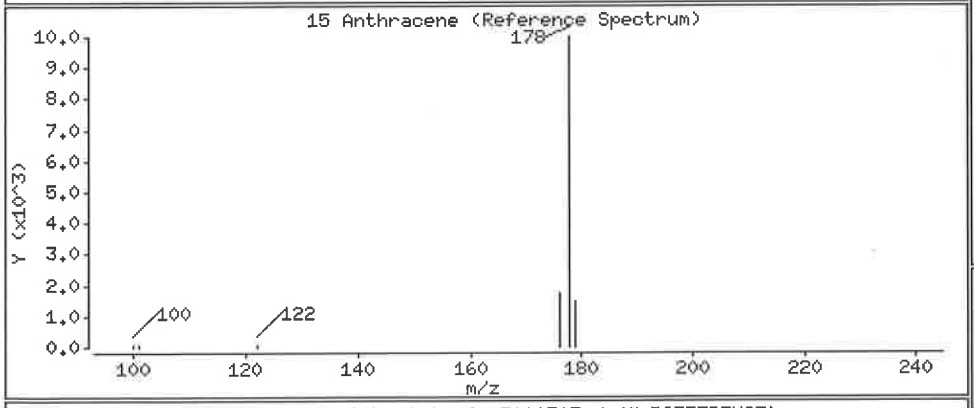
15 Anthracene Concentration: 21.7 ug/Kg

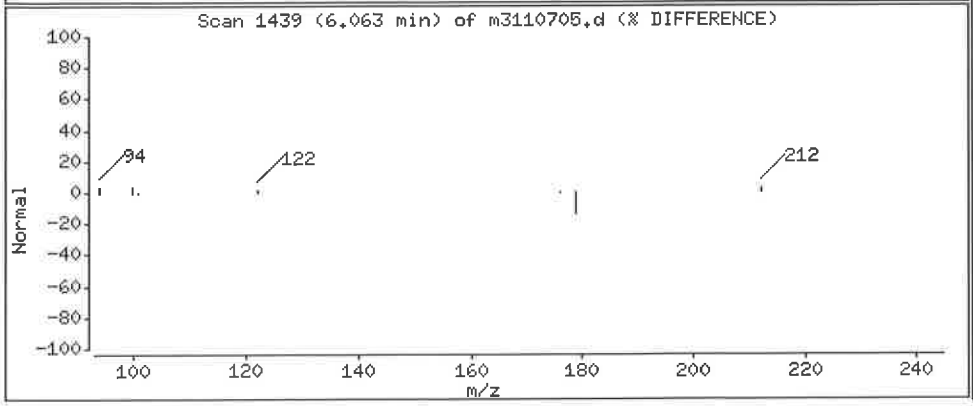


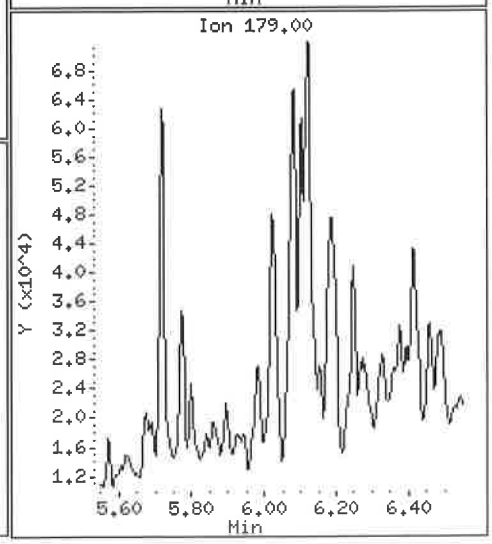












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Date : 07-NOV-2014 16:01

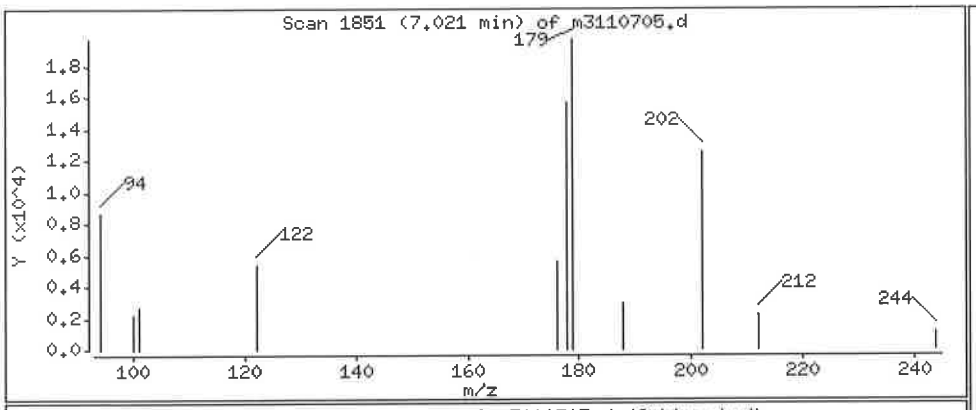
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

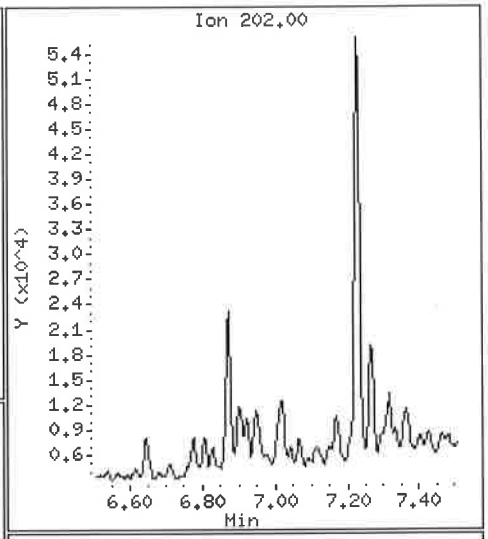
Sample Info: 30133009003

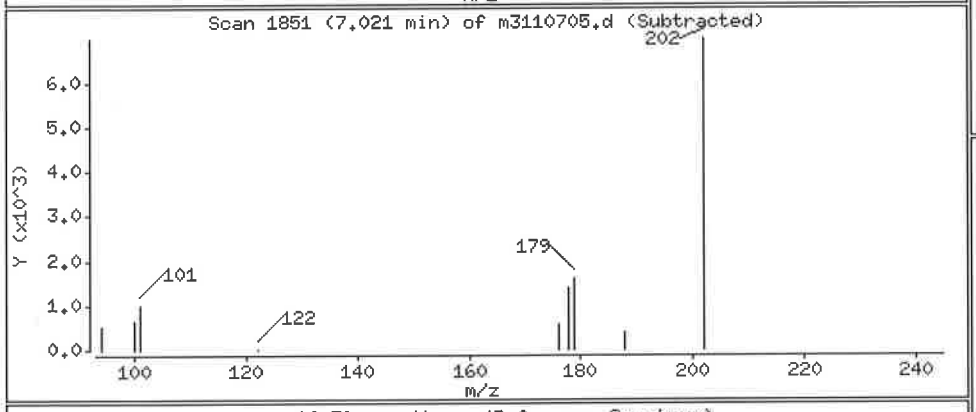
Volume Injected (uL): 1.0 Operator: JSH

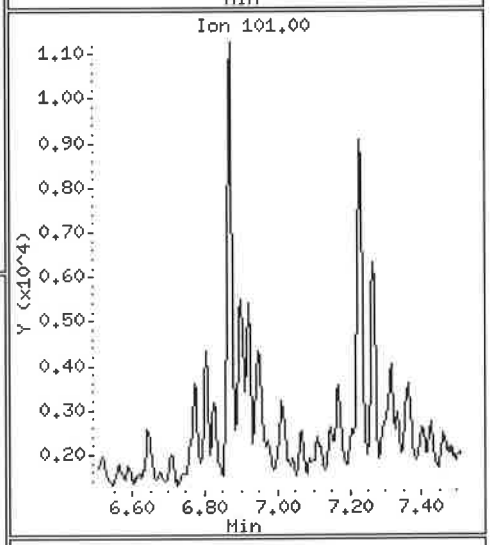
Column phase: RTX-5MS Column diameter: 0.25

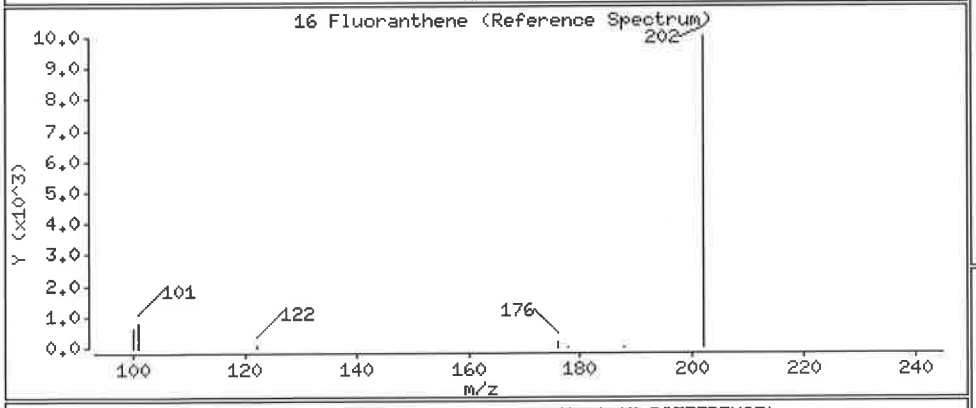
16 Fluoranthene Concentration: 11.2 ug/Kg

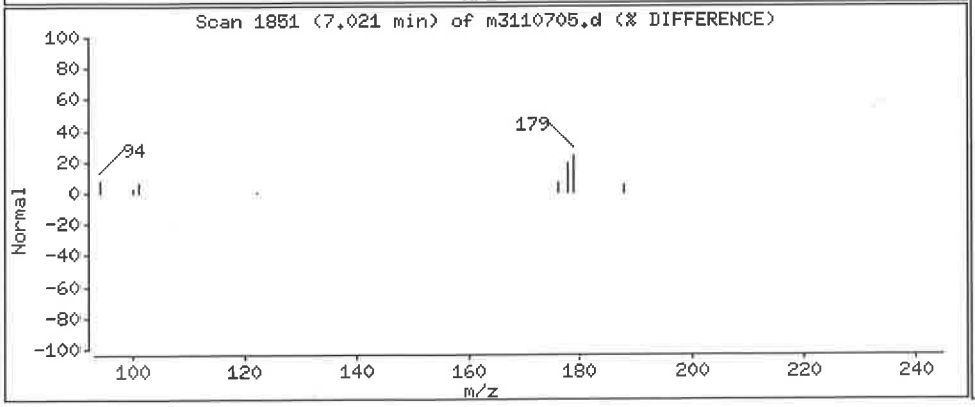


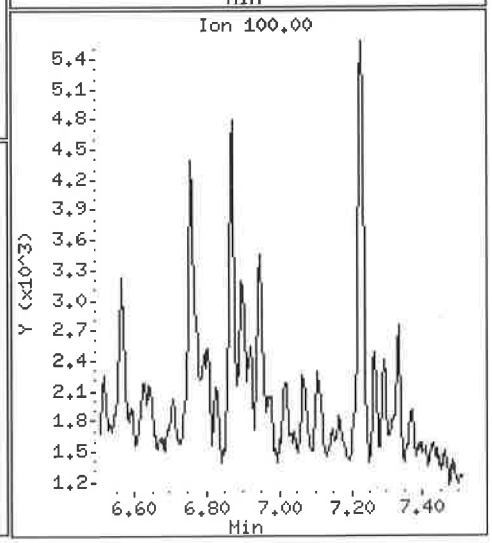












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Date : 07-NOV-2014 16:01

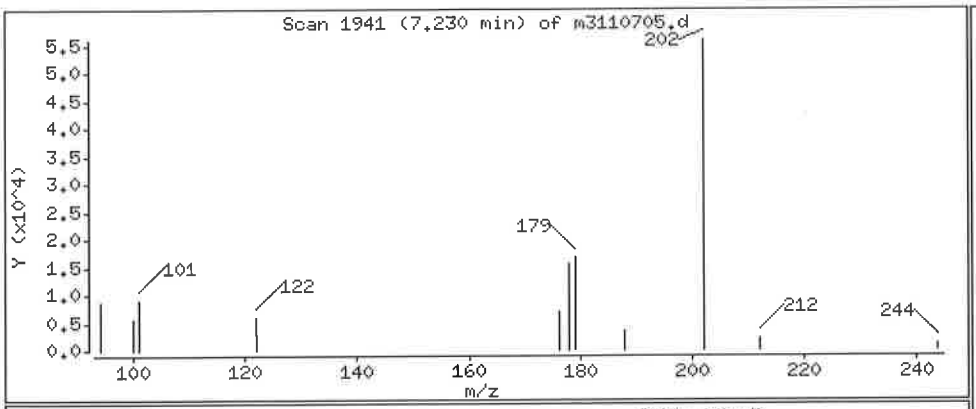
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

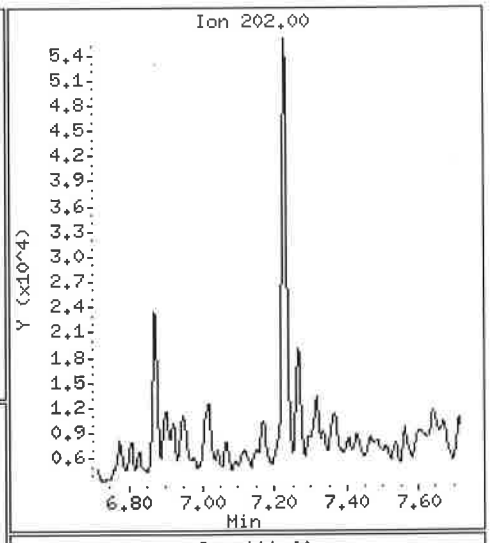
Sample Info: 30133009003

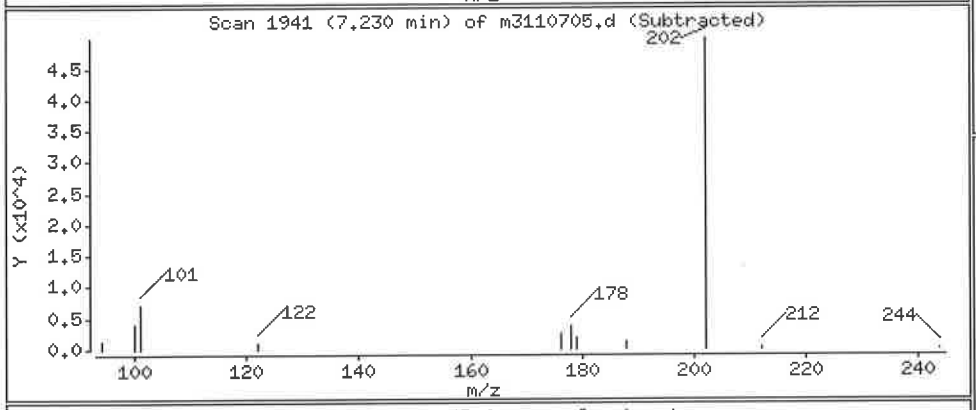
Volume Injected (uL): 1.0 Operator: JSH

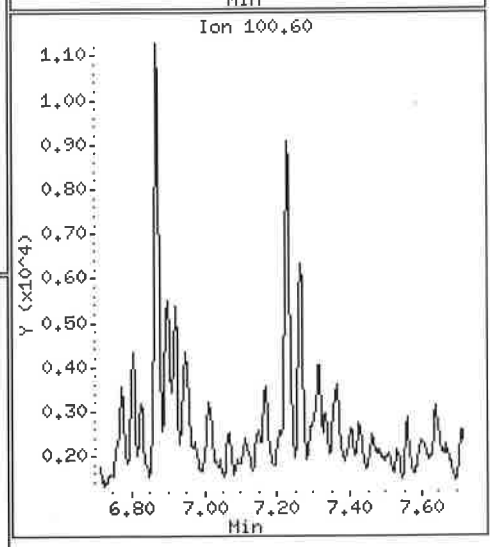
Column phase: RTX-5MS Column diameter: 0.25

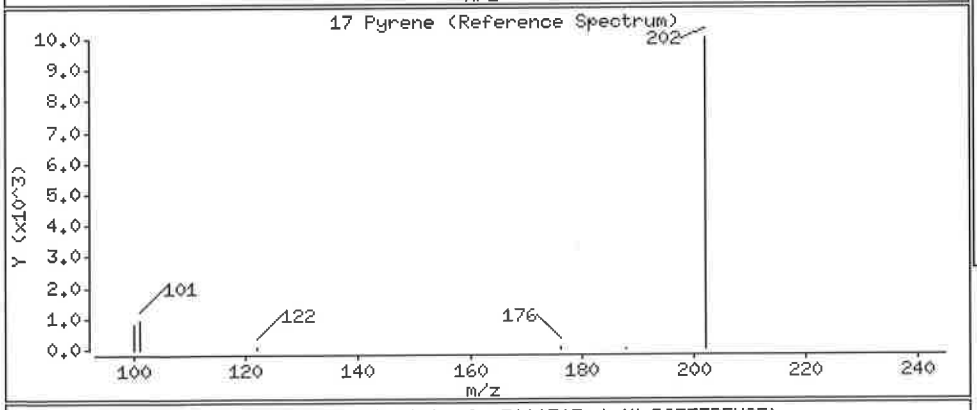
17 Pyrene Concentration: 47.9 ug/Kg

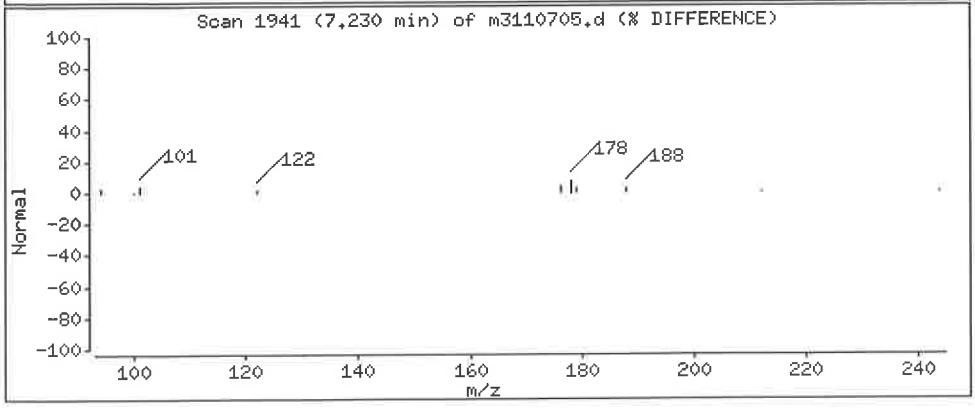












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Date : 07-NOV-2014 16:01

Client ID: AOI-5_PECO-B6_12-14

Instrument: 30mss3.i

Sample Info: 30133009003

Volume Injected (uL): 1.0

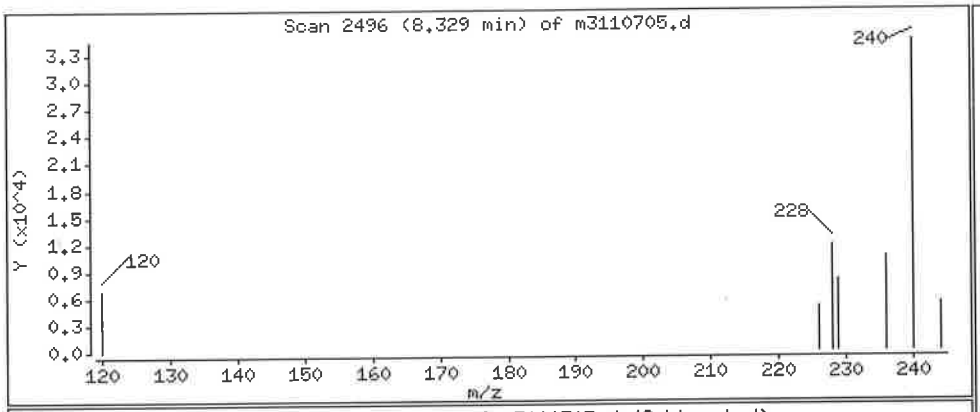
Operator: JSH

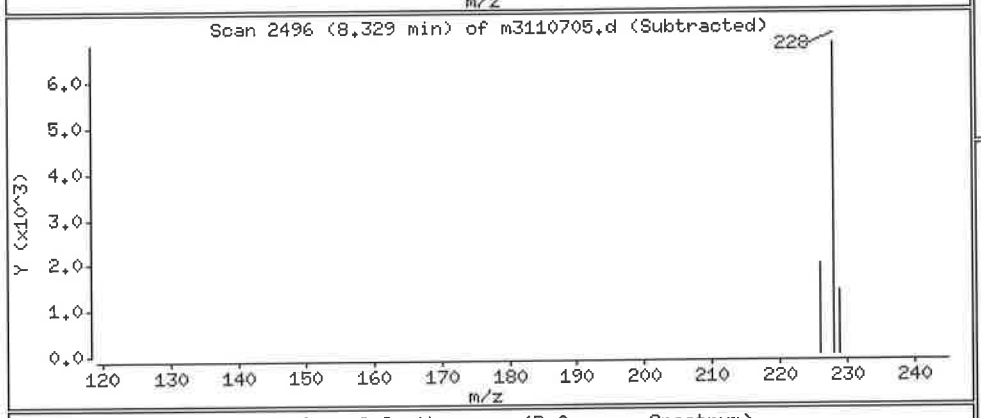
Column phase: RTX-5MS

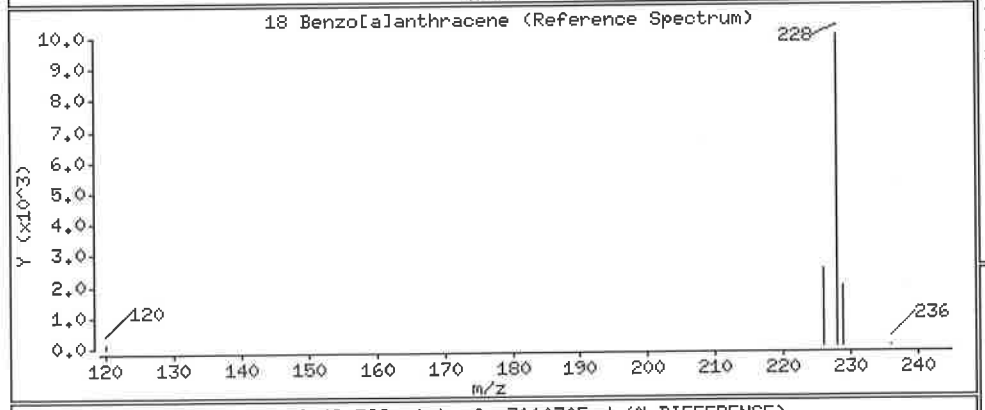
Column diameter: 0.25

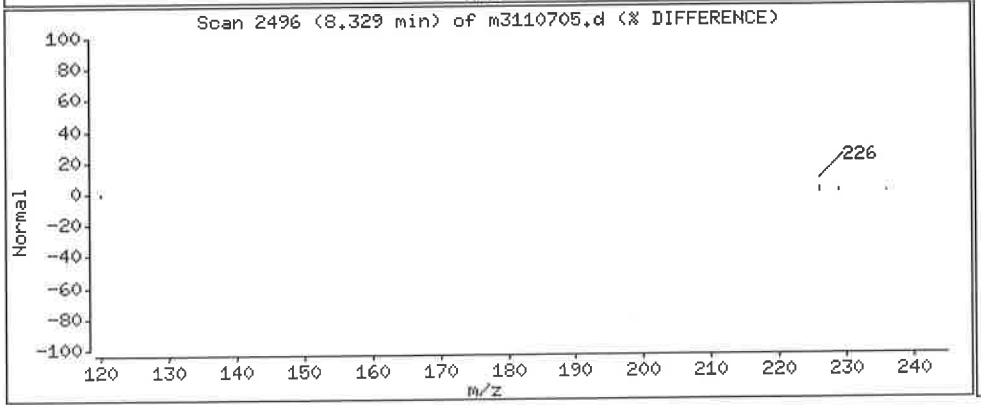
18 Benzo[a]anthracene

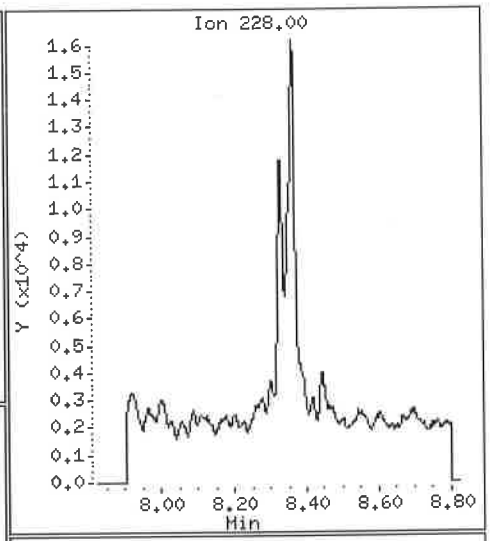
Concentration: 11.2 ug/Kg

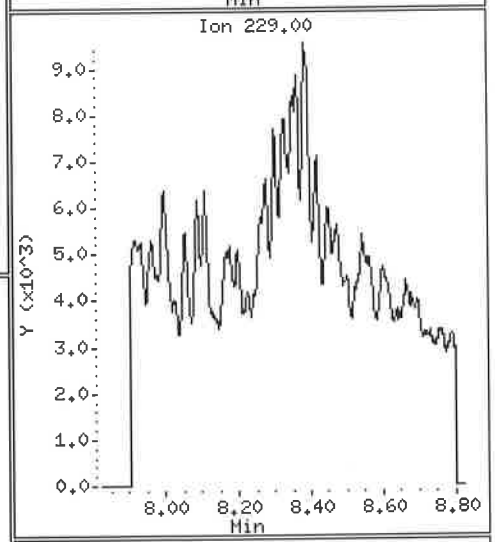


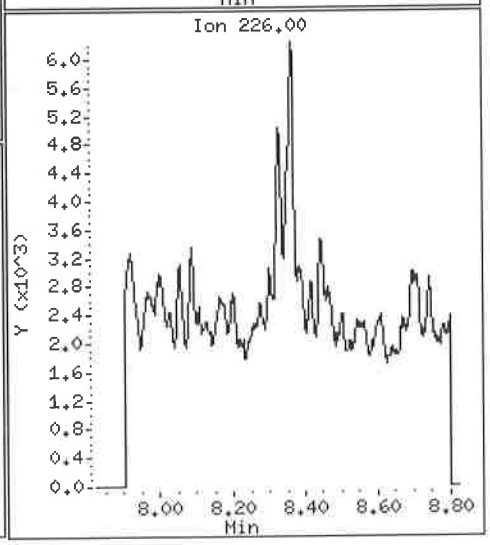












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110705.d

Date : 07-NOV-2014 16:01

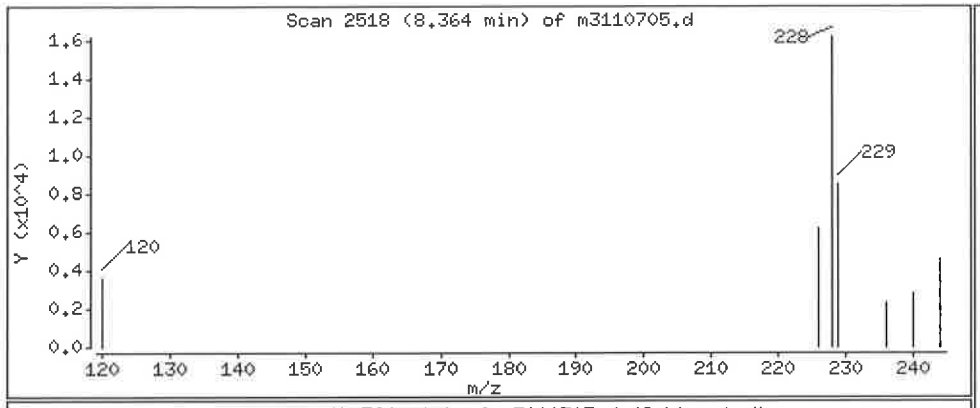
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

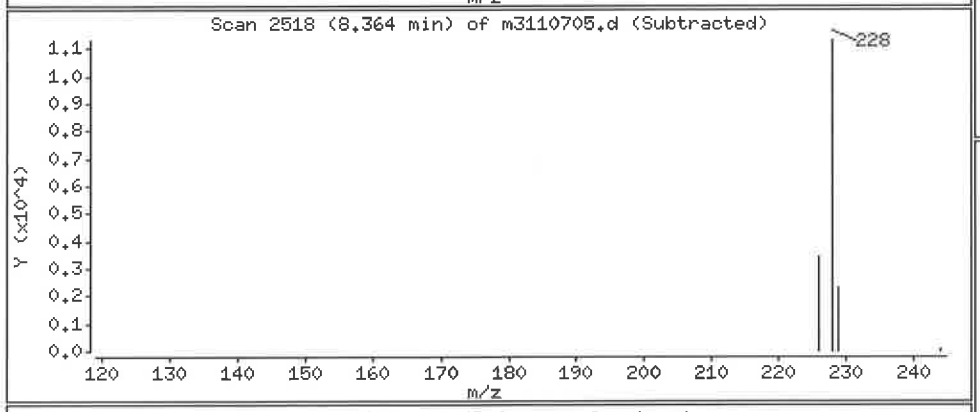
Sample Info: 30133009003

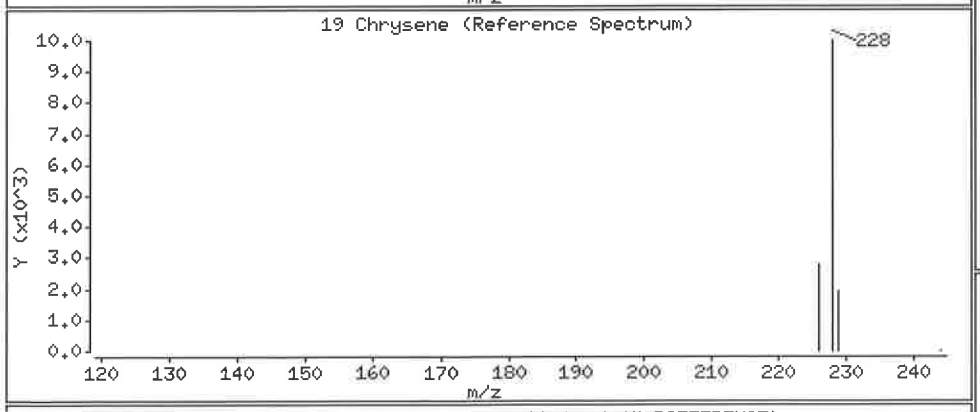
Volume Injected (uL): 1.0 Operator: JSH

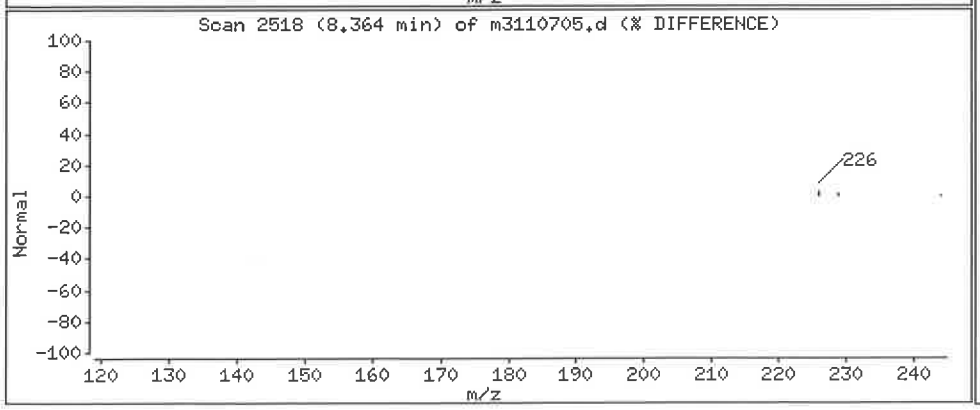
Column phase: RTX-5MS Column diameter: 0.25

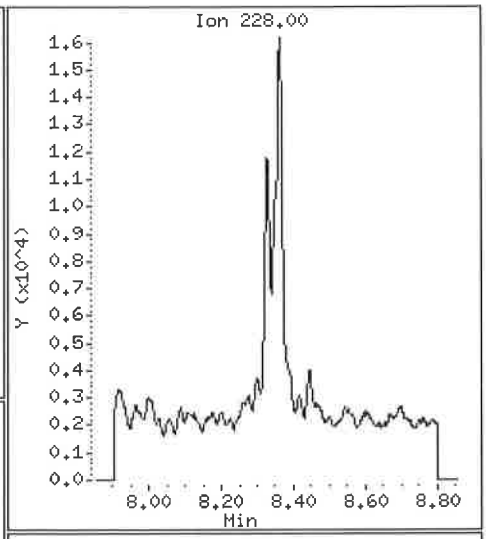
19 Chrysene Concentration: 26.7 ug/Kg

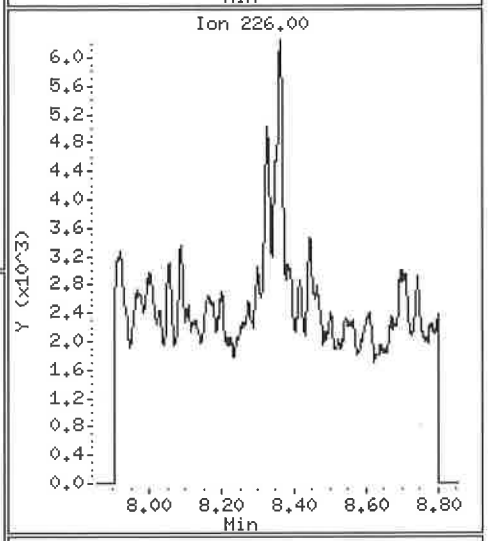


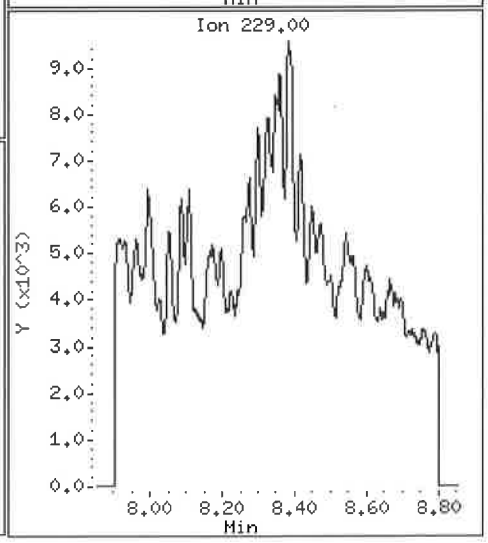












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110705.d

Date : 07-NOV-2014 16:01

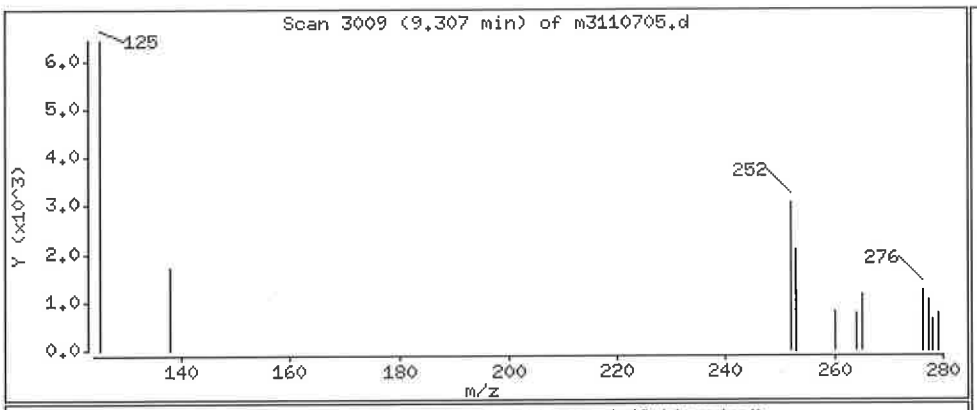
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

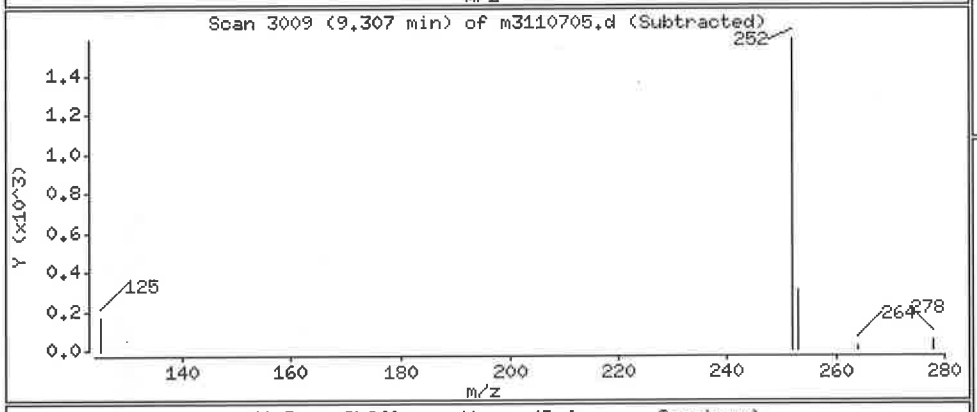
Sample Info: 30133009003

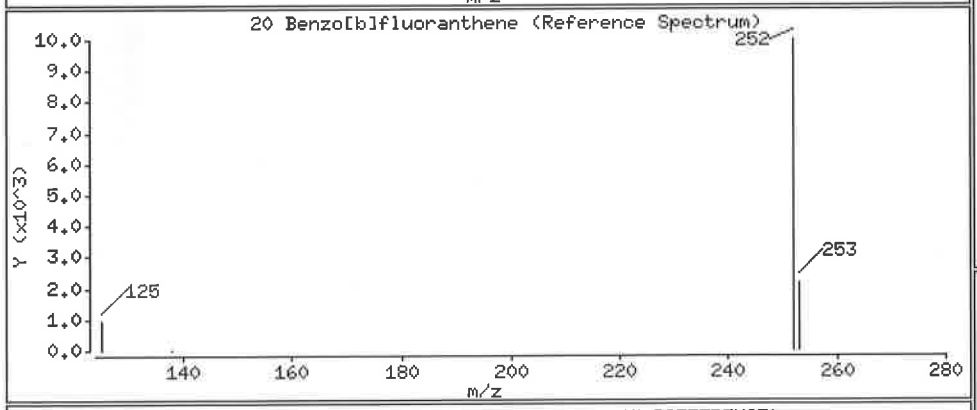
Volume Injected (uL): 1.0 Operator: JSH

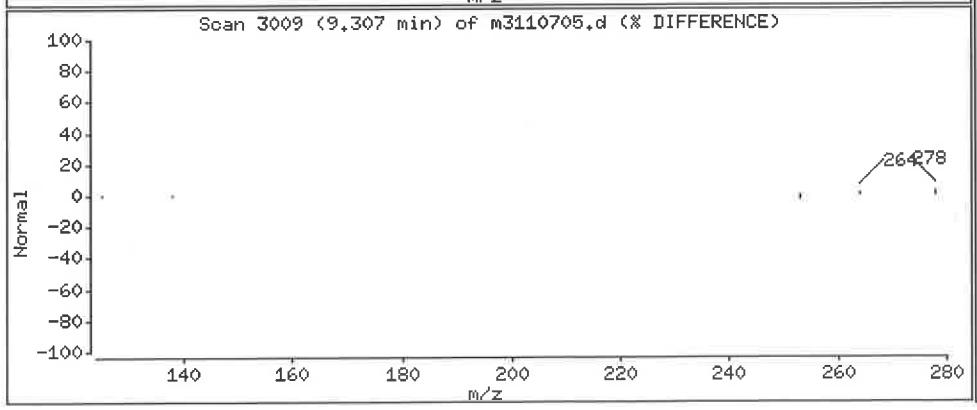
Column phase: RTX-5MS Column diameter: 0.25

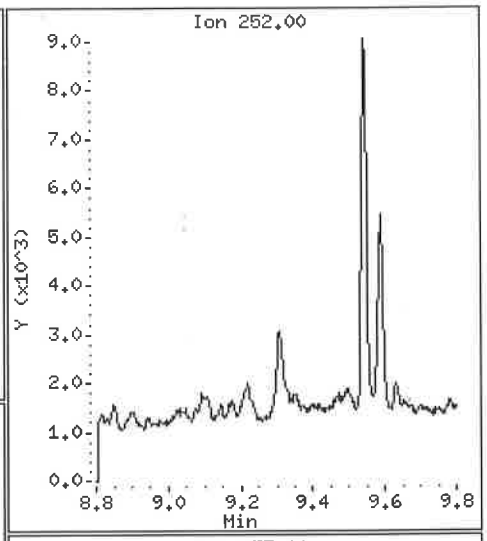
20 Benzo[b]fluoranthene Concentration: 3.00 ug/Kg

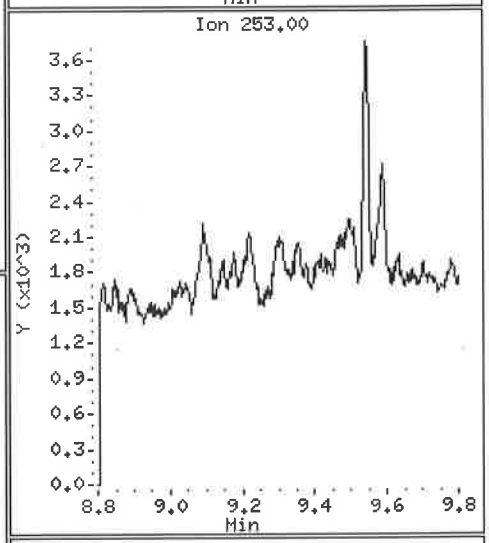


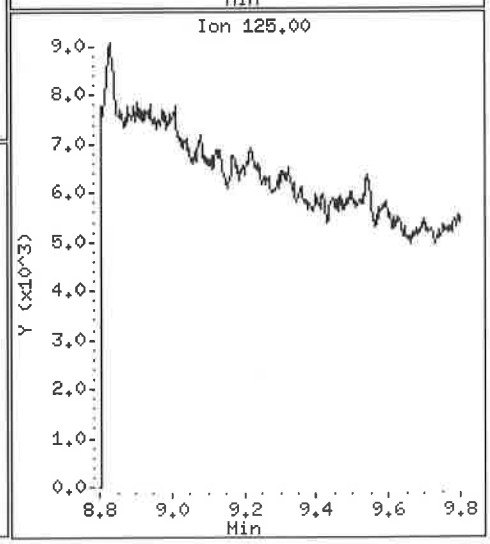












Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110705.d

Date : 07-NOV-2014 16:01

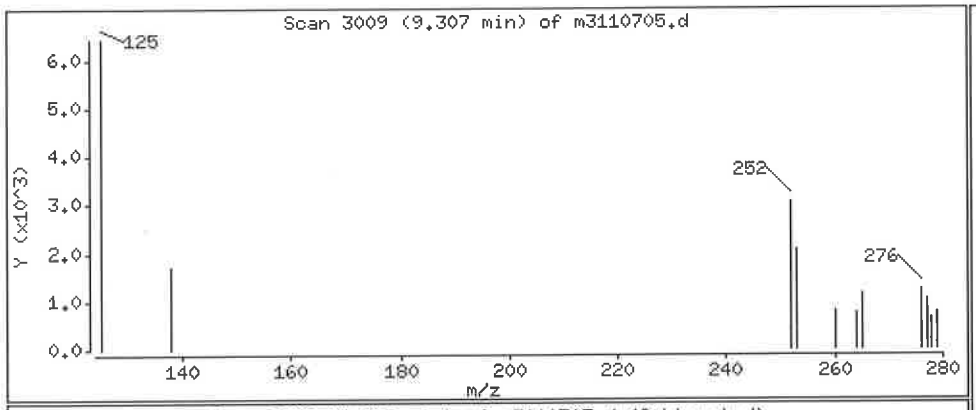
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

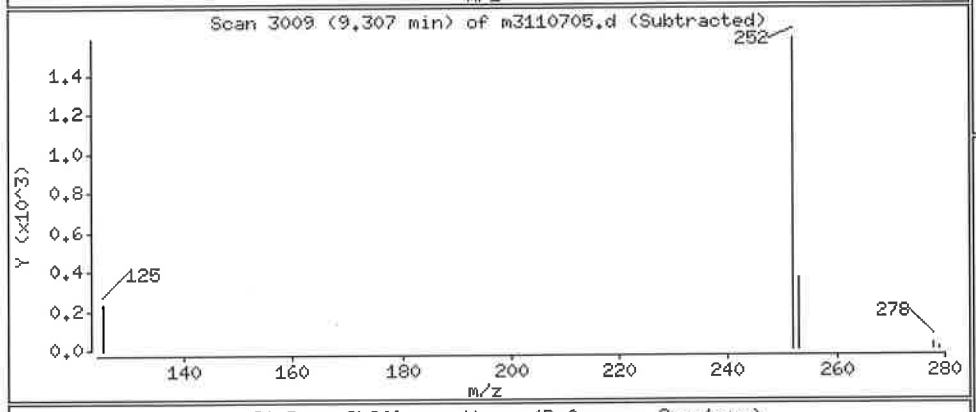
Sample Info: 30133009003

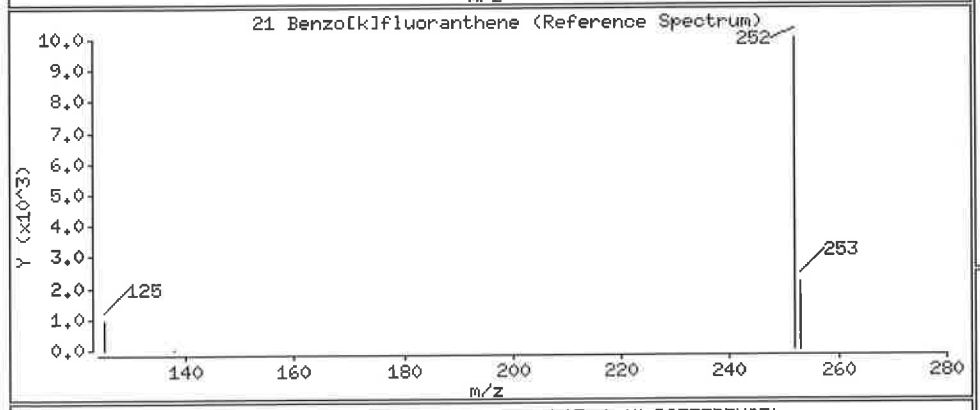
Volume Injected (uL): 1.0 Operator: JSH

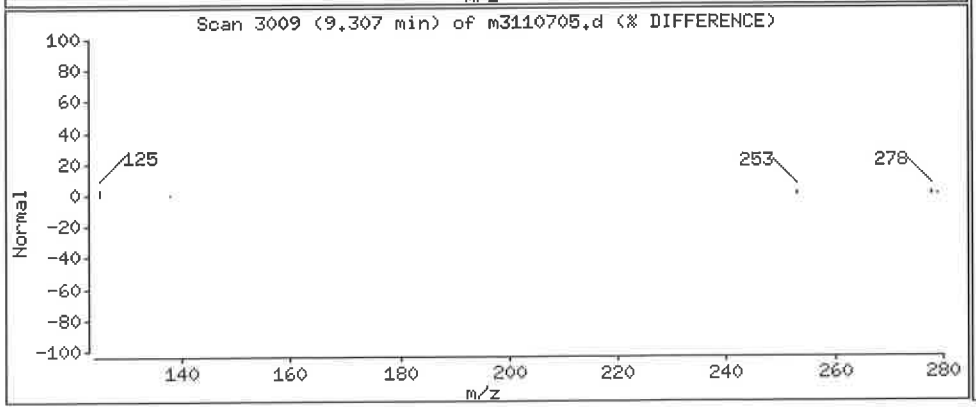
Column phase: RTX-5MS Column diameter: 0.25

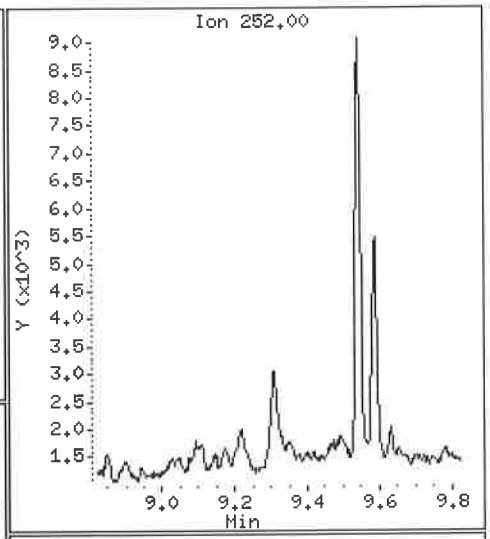
21 Benzo[k]fluoranthene Concentration: 3.05 ug/Kg

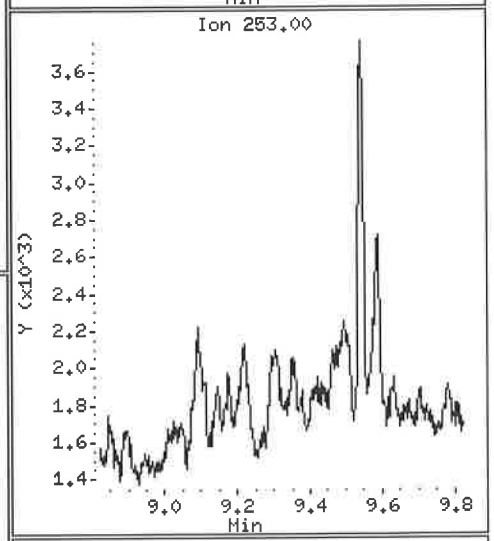


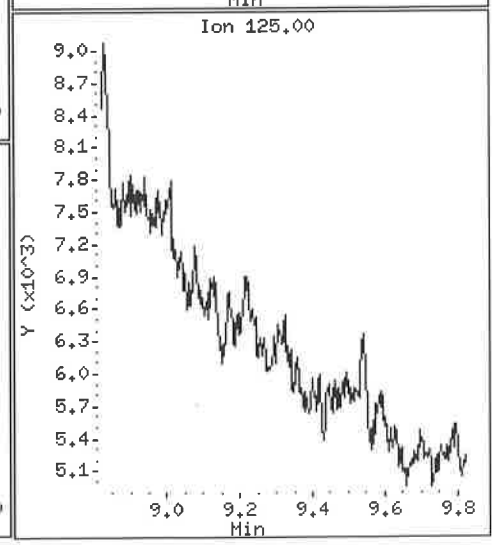












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Date : 07-NOV-2014 16:01

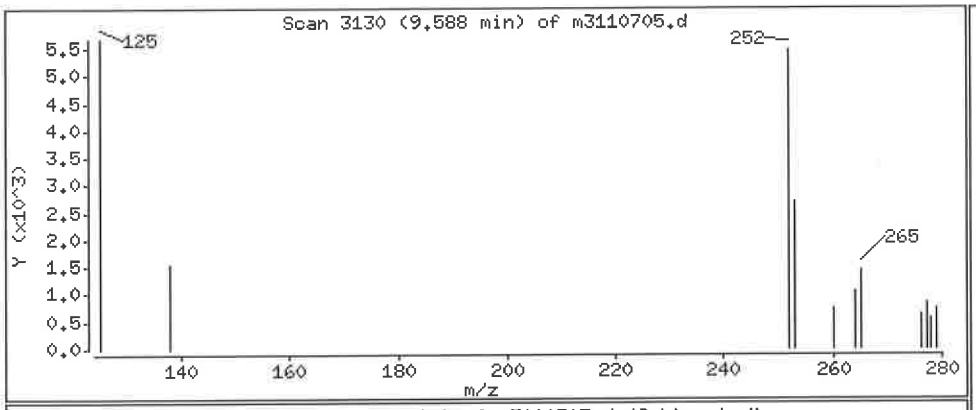
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

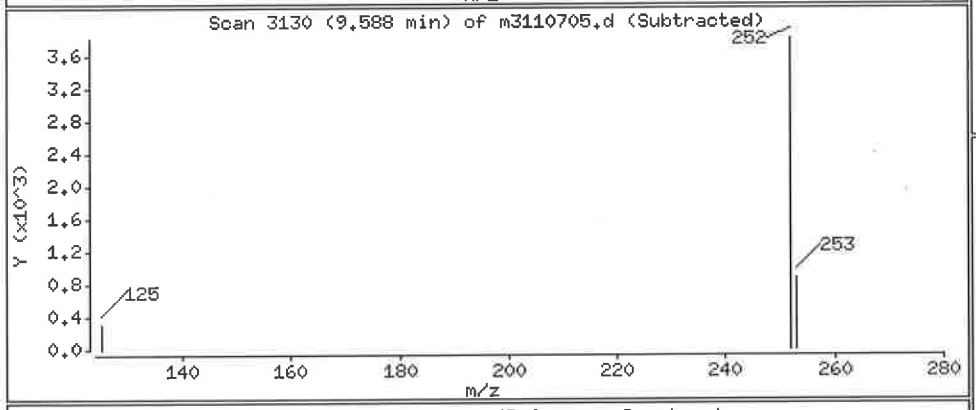
Sample Info: 30133009003

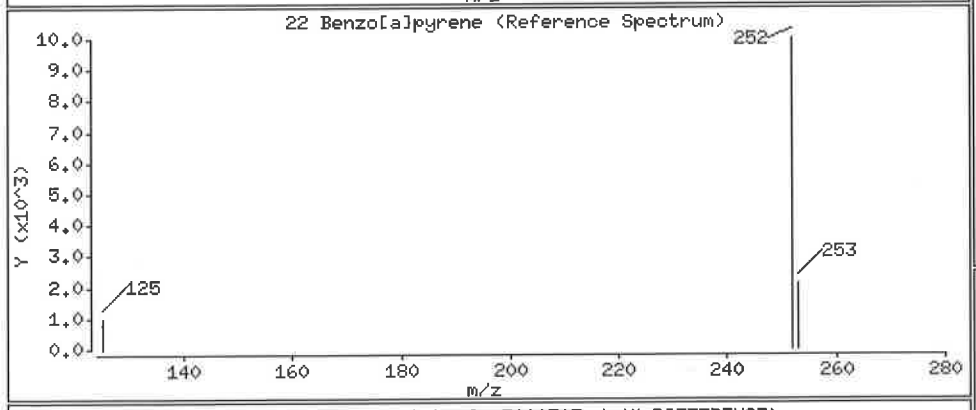
Volume Injected (uL): 1.0 Operator: JSH

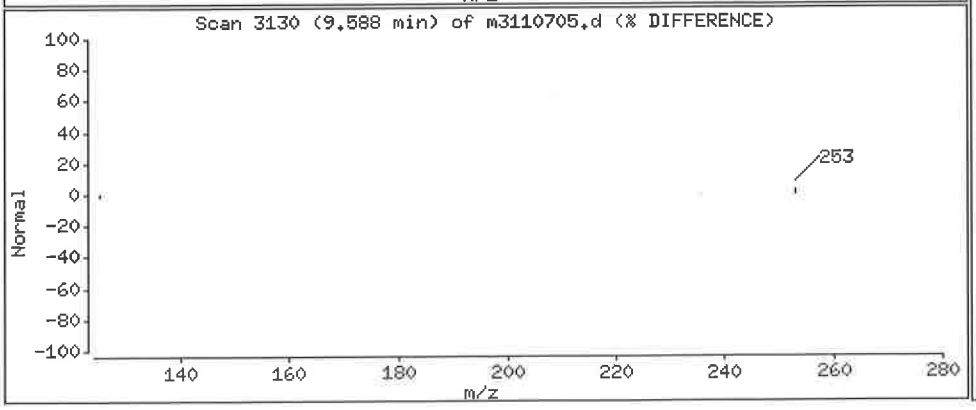
Column phase: RTX-5MS Column diameter: 0.25

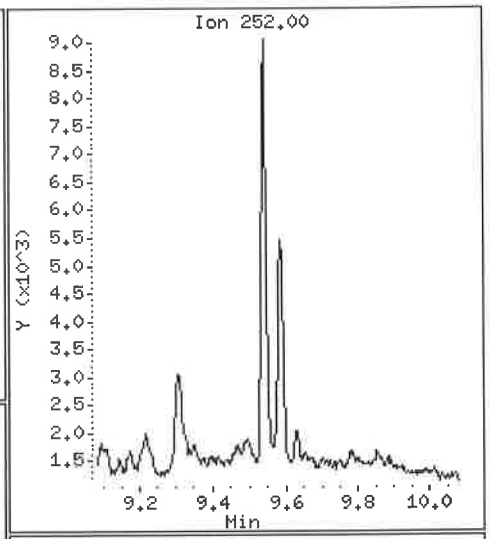
22 Benzo[a]pyrene Concentration: 4.60 ug/Kg

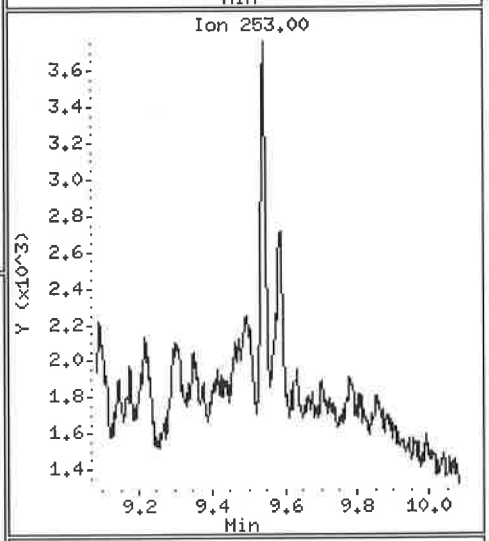


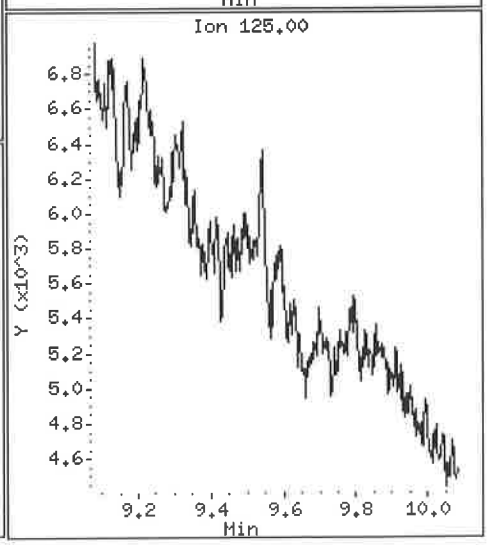












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Date : 07-NOV-2014 16:01

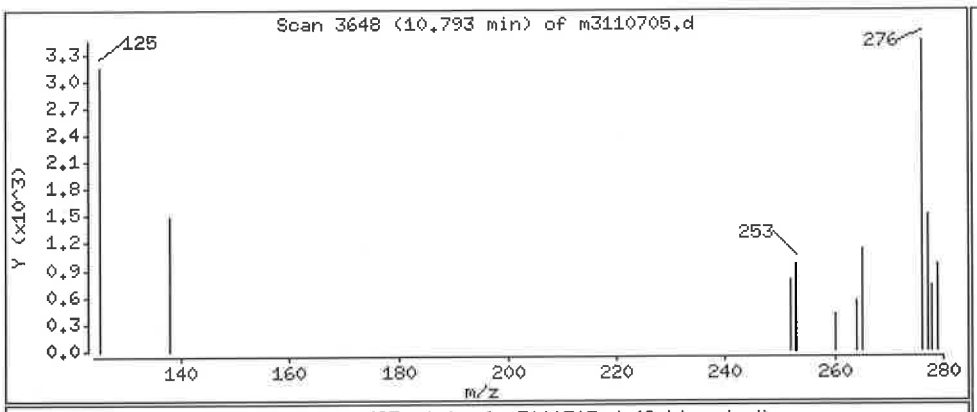
Client ID: AOI-5_PECO-B6_12-14 Instrument: 30mss3.i

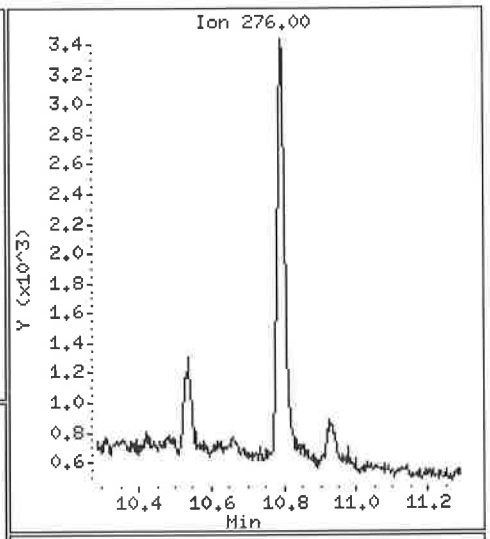
Sample Info: 30133009003

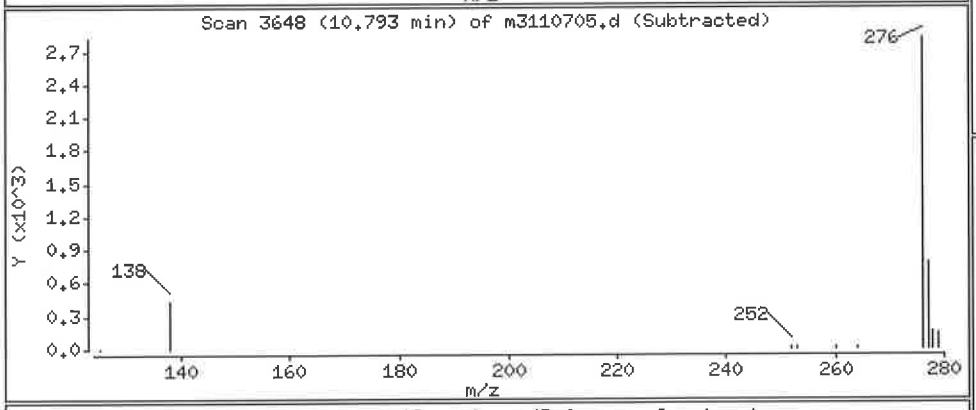
Volume Injected (uL): 1.0 Operator: JSH

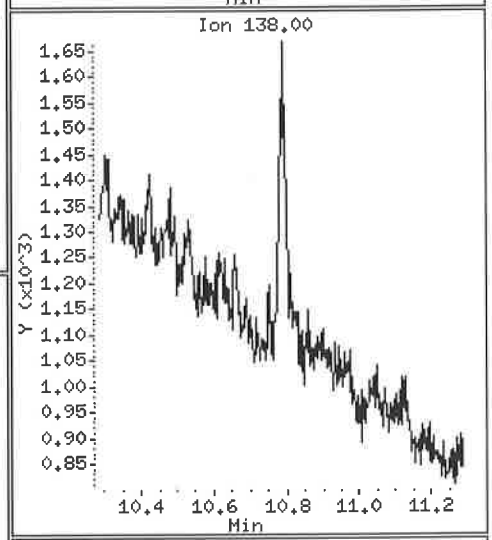
Column phase: RTX-5MS Column diameter: 0.25

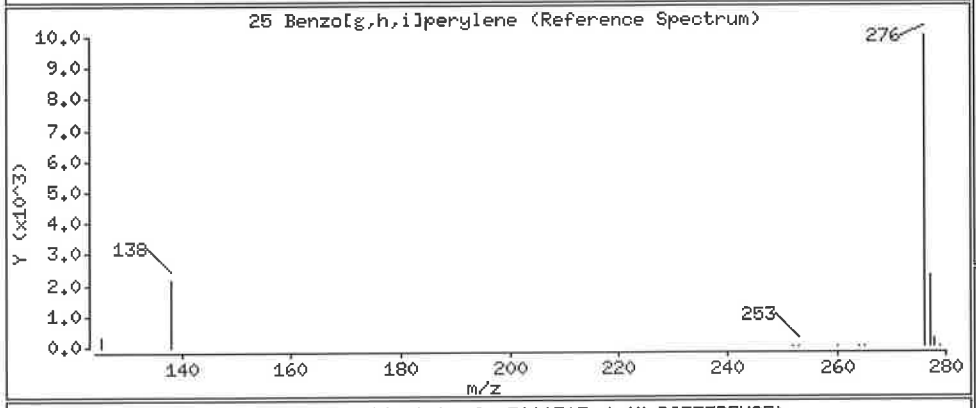
25 Benzo[g,h,i]perylene Concentration: 5.20 ug/Kg

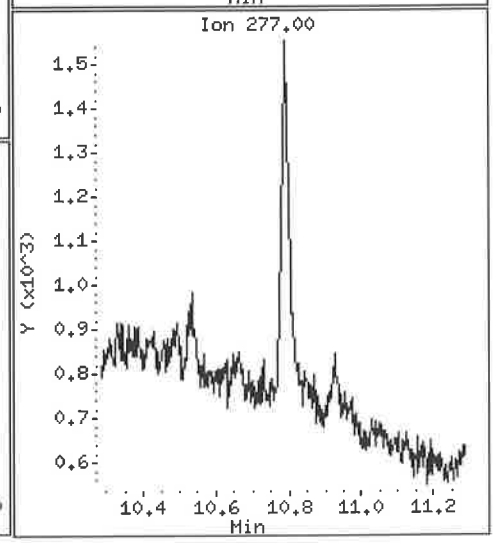


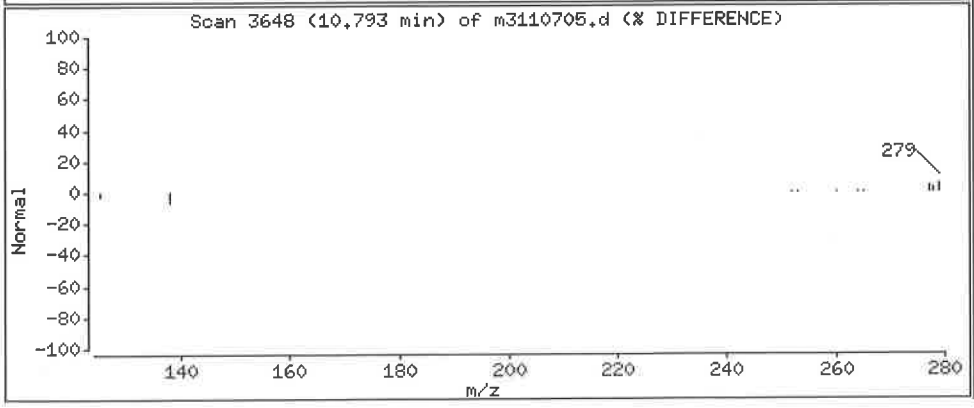












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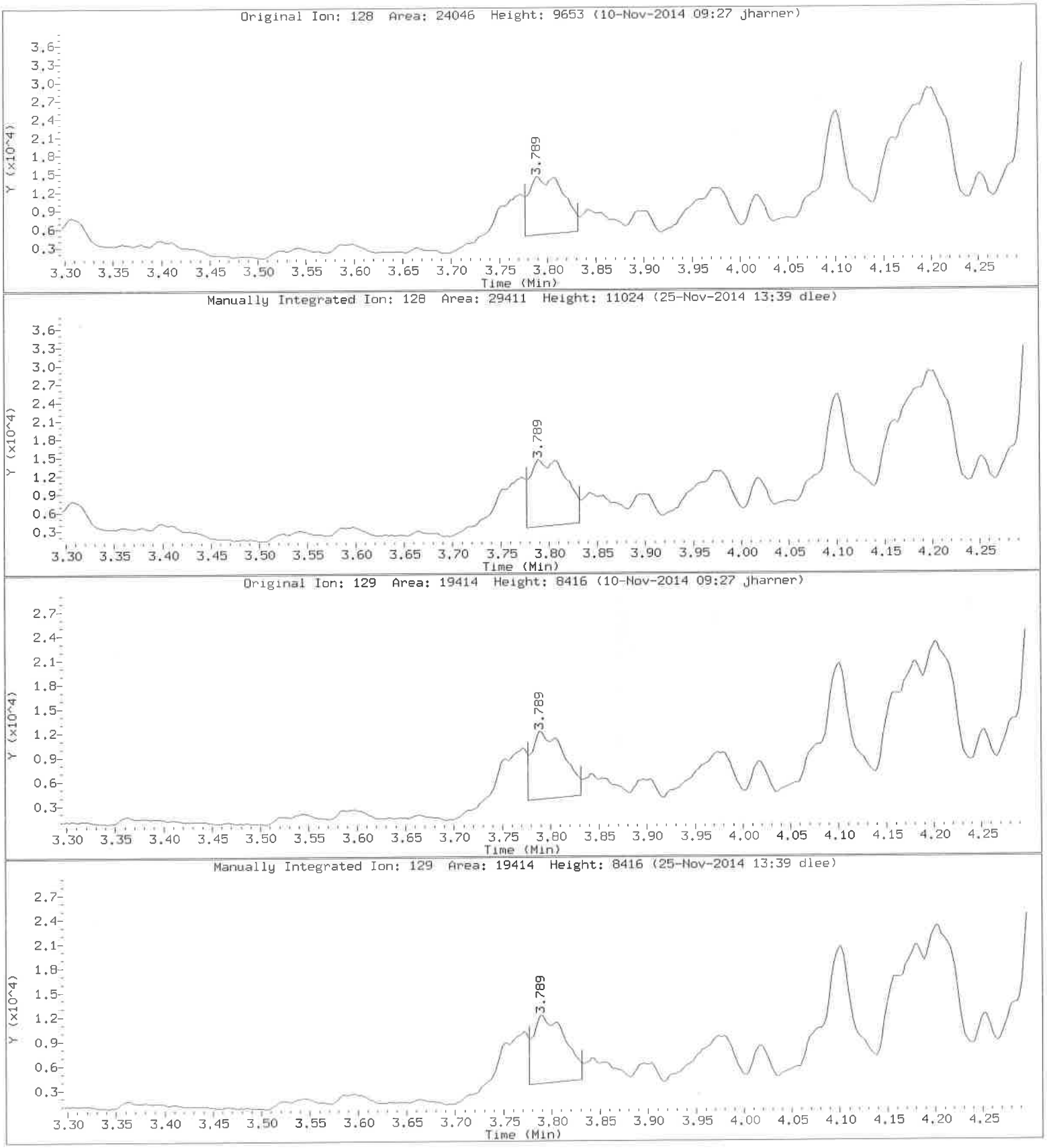
Injection Date: 07-NOV-2014 16:01
Instrument: 30mss3.i
Lab Sample ID: 30133009003

Compound: Naphthalene
CAS Number: 91-20-3



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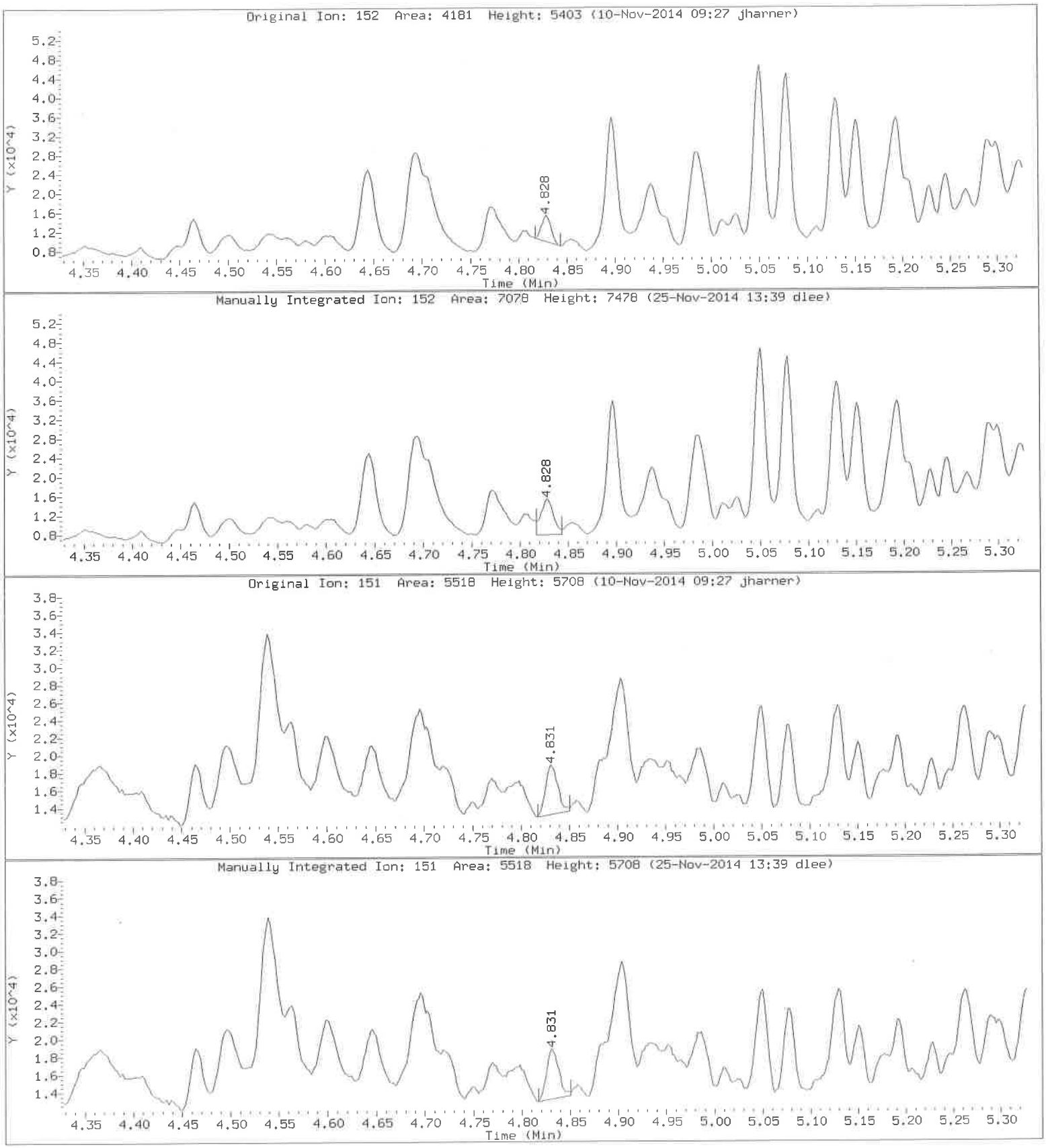
Injection Date: 07-NOV-2014 16:01
Instrument: 30mss3.i
Lab Sample ID: 30133009003

Compound: Acenaphthylene
CAS Number: 208-96-8



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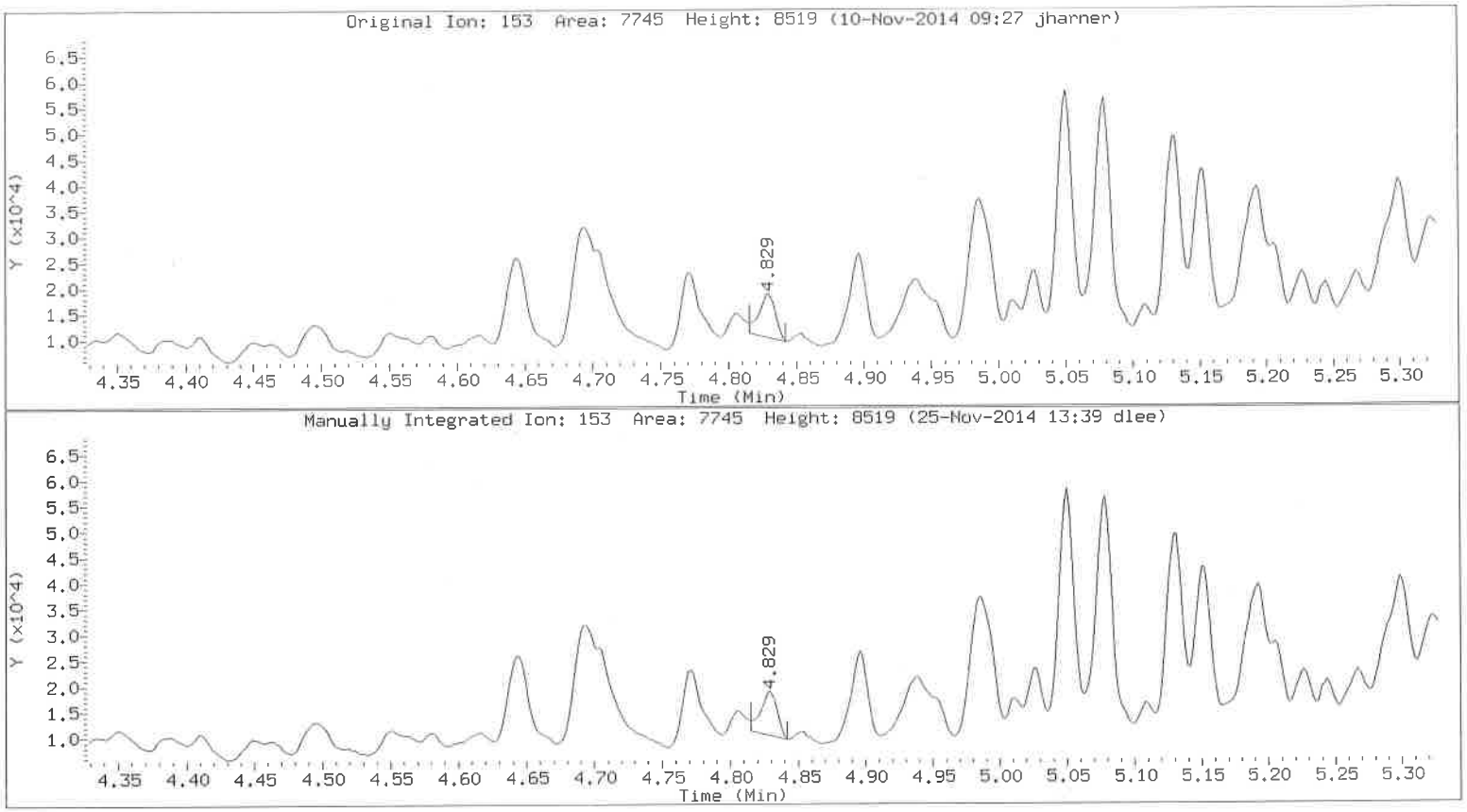
Instrument: 30mss3.i
Lab Sample ID: 30133009003



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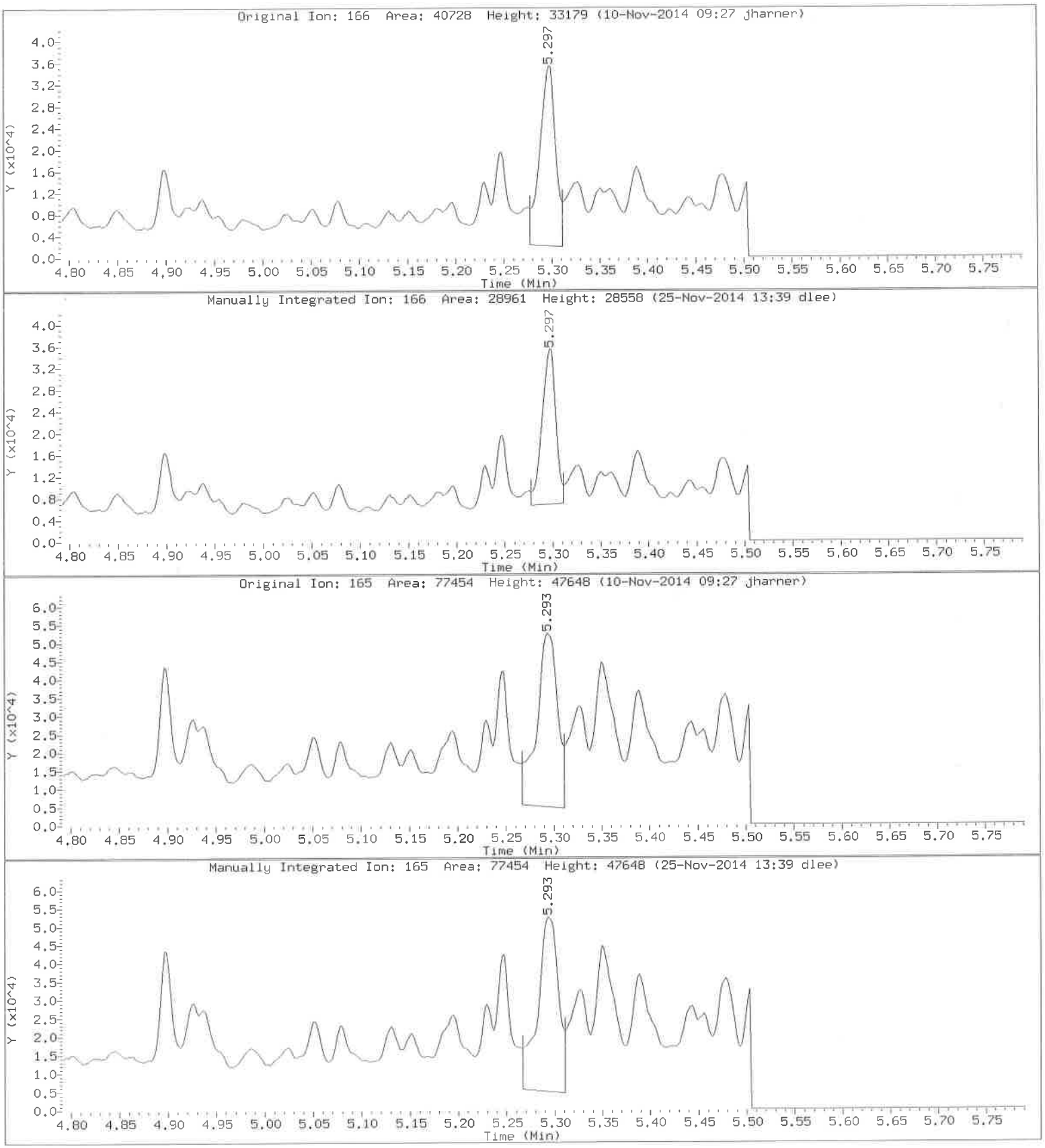
Injection Date: 07-NOV-2014 16:01
Instrument: 30mss3.i
Lab Sample ID: 30133009003

Compound: Fluorene
CAS Number: 86-73-7



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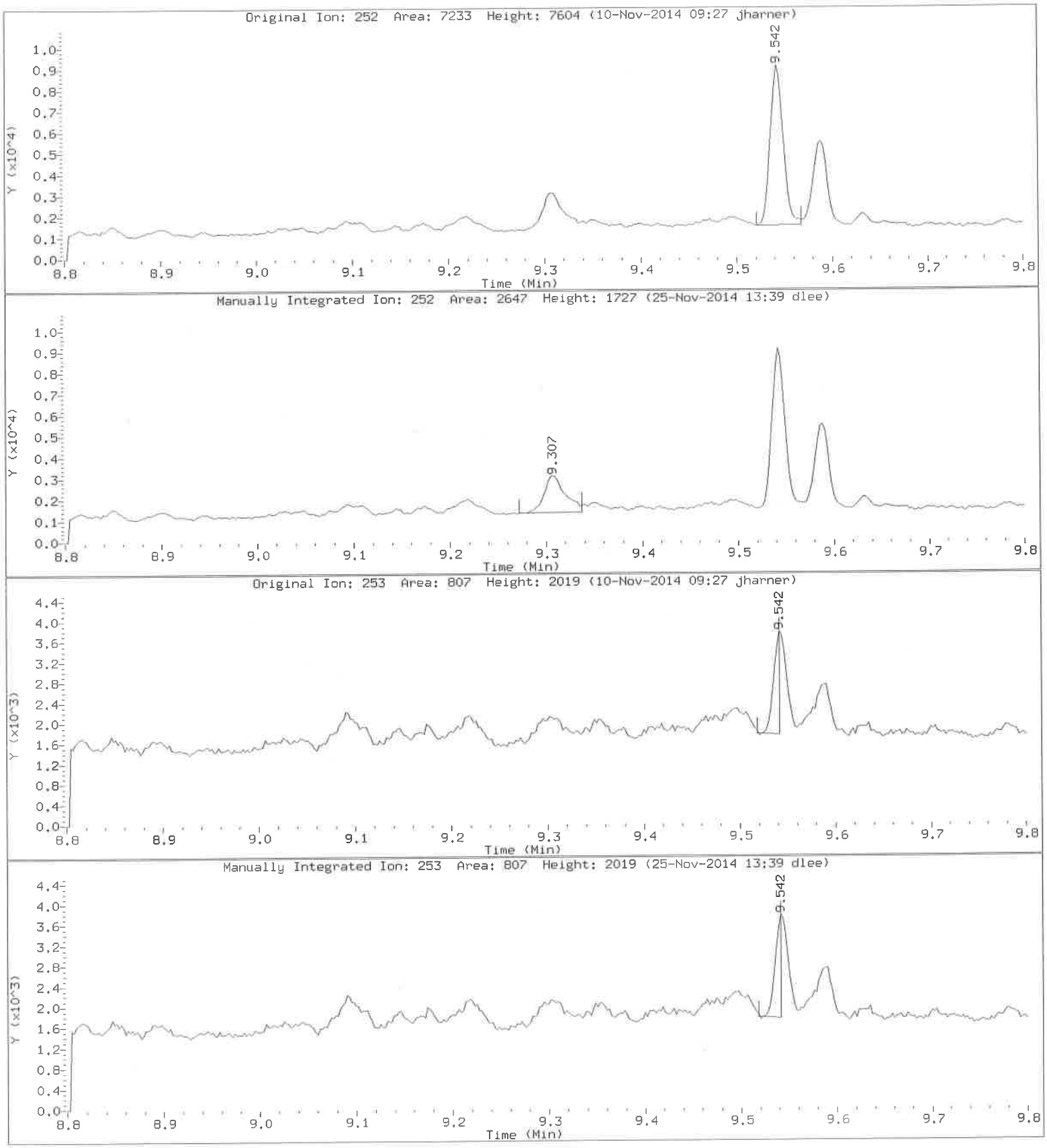
Injection Date: 07-NOV-2014 16:01
Instrument: 30mss3.i
Lab Sample ID: 30133009003

Compound: Benzo[b]fluoranthene
CAS Number: 205-99-2



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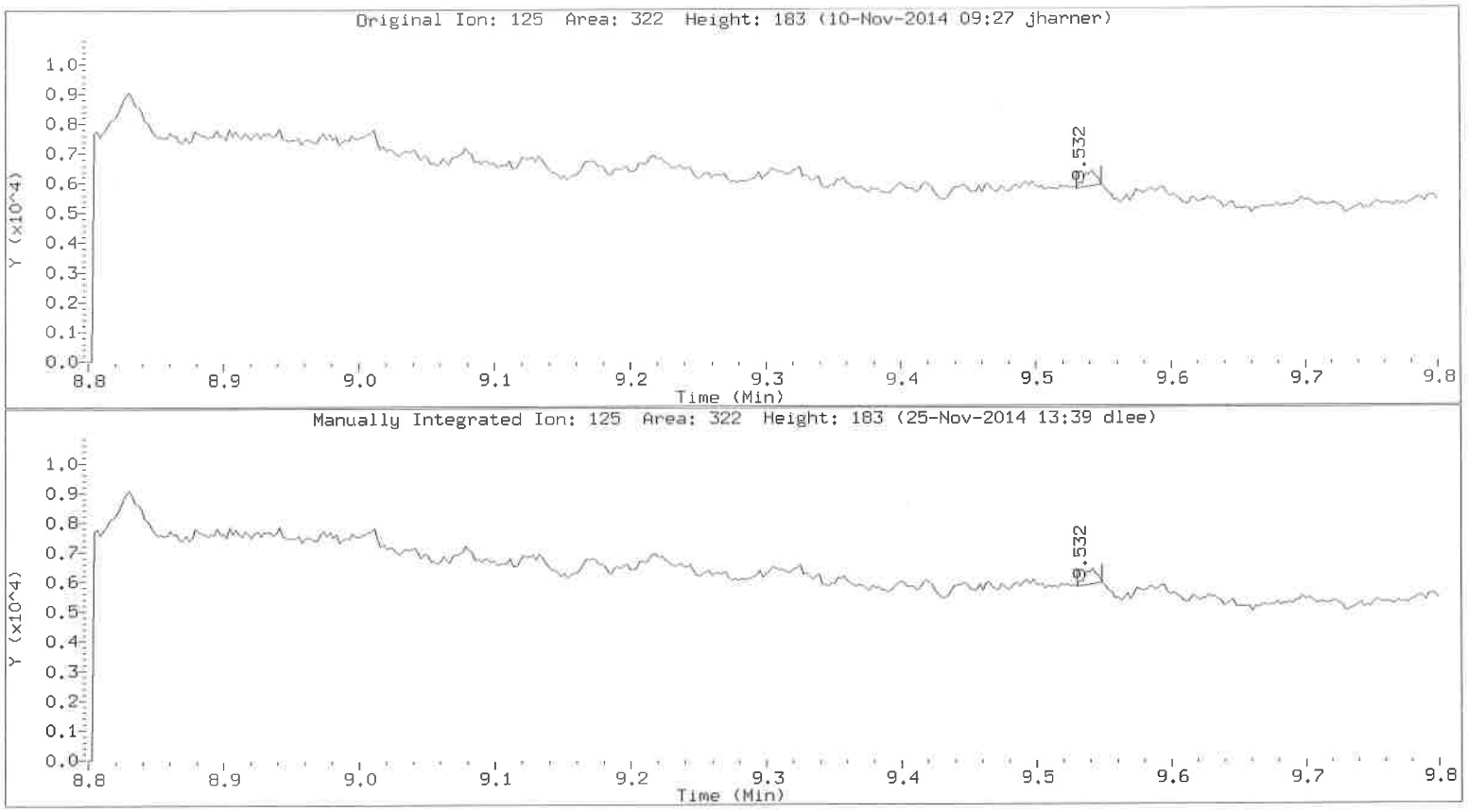
Instrument: 30mss3.i
Lab Sample ID: 30133009003



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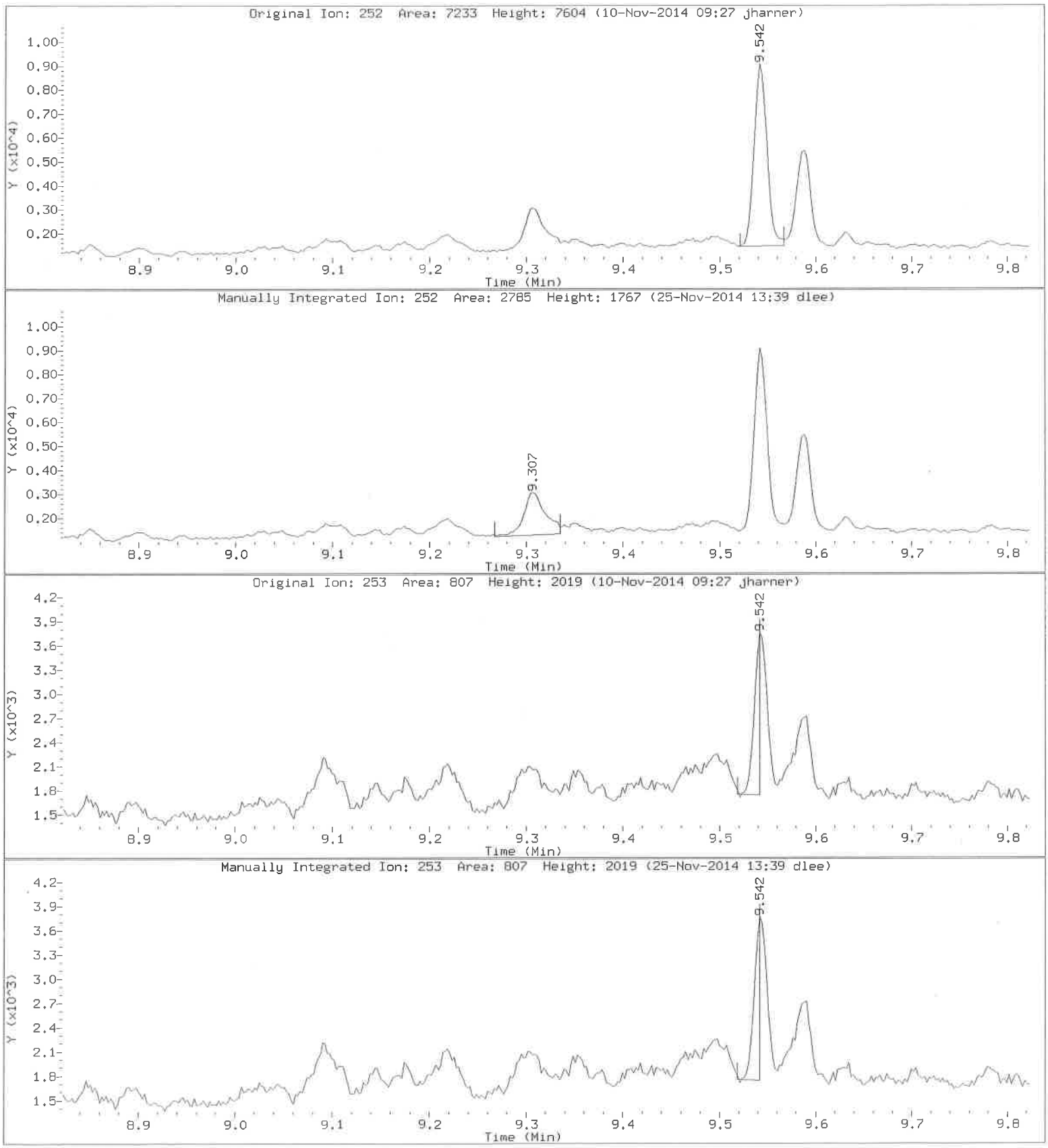
Injection Date: 07-NOV-2014 16:01
Instrument: 30mss3.i
Lab Sample ID: 30133009003

Compound: Benzo[k]fluoranthene
CAS Number: 207-08-9



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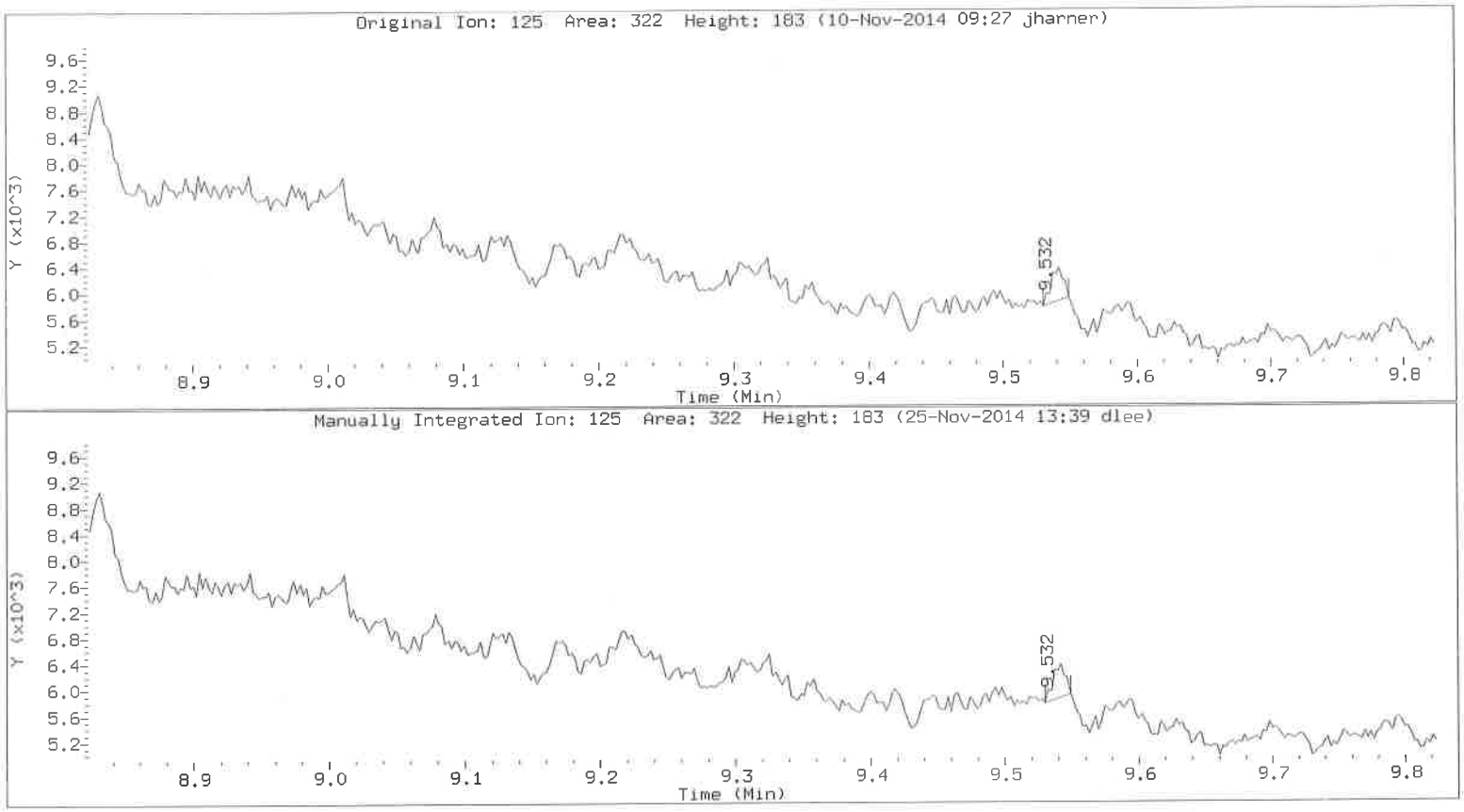
Instrument: 30mss3.i
Lab Sample ID: 30133009003



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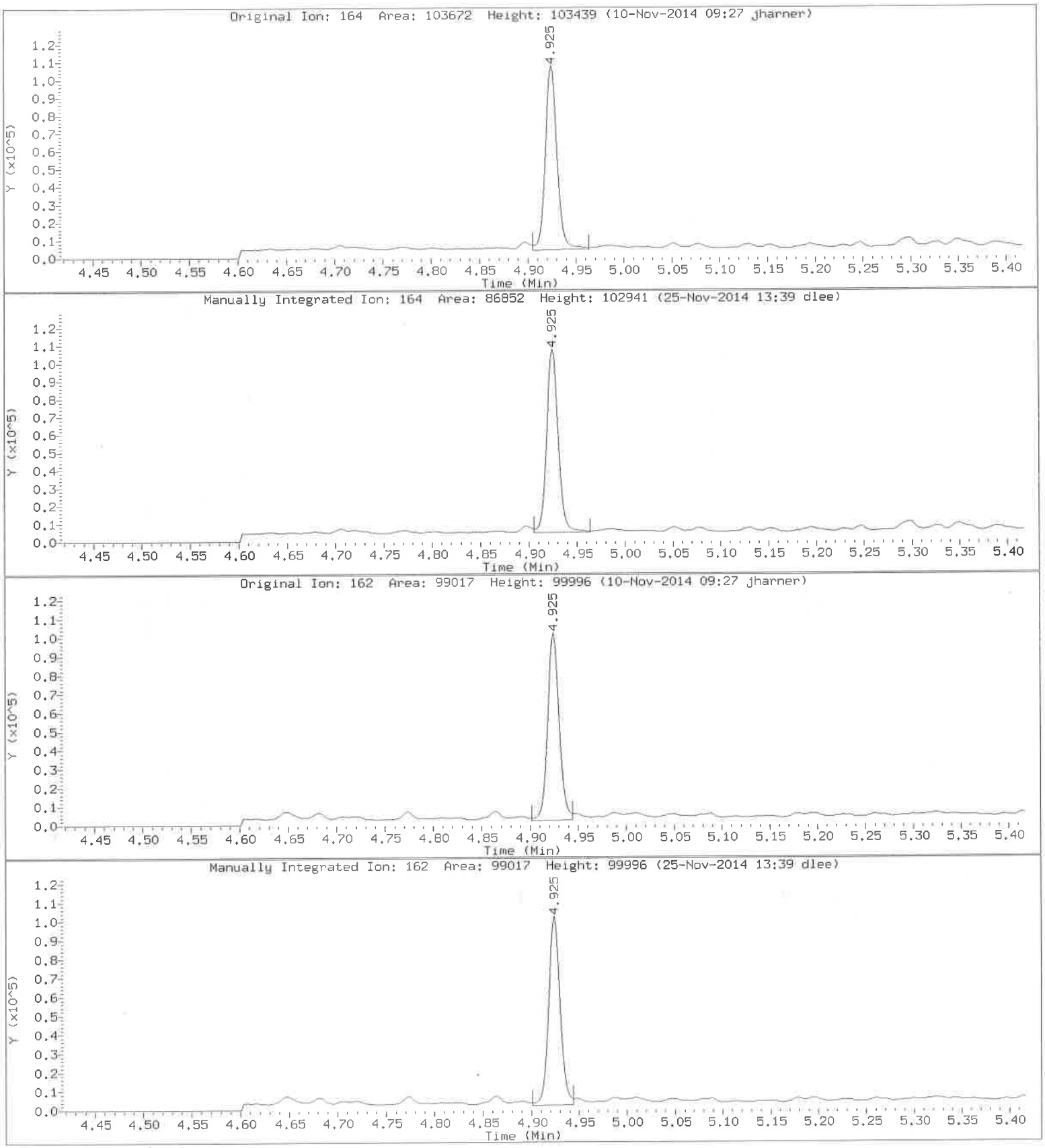
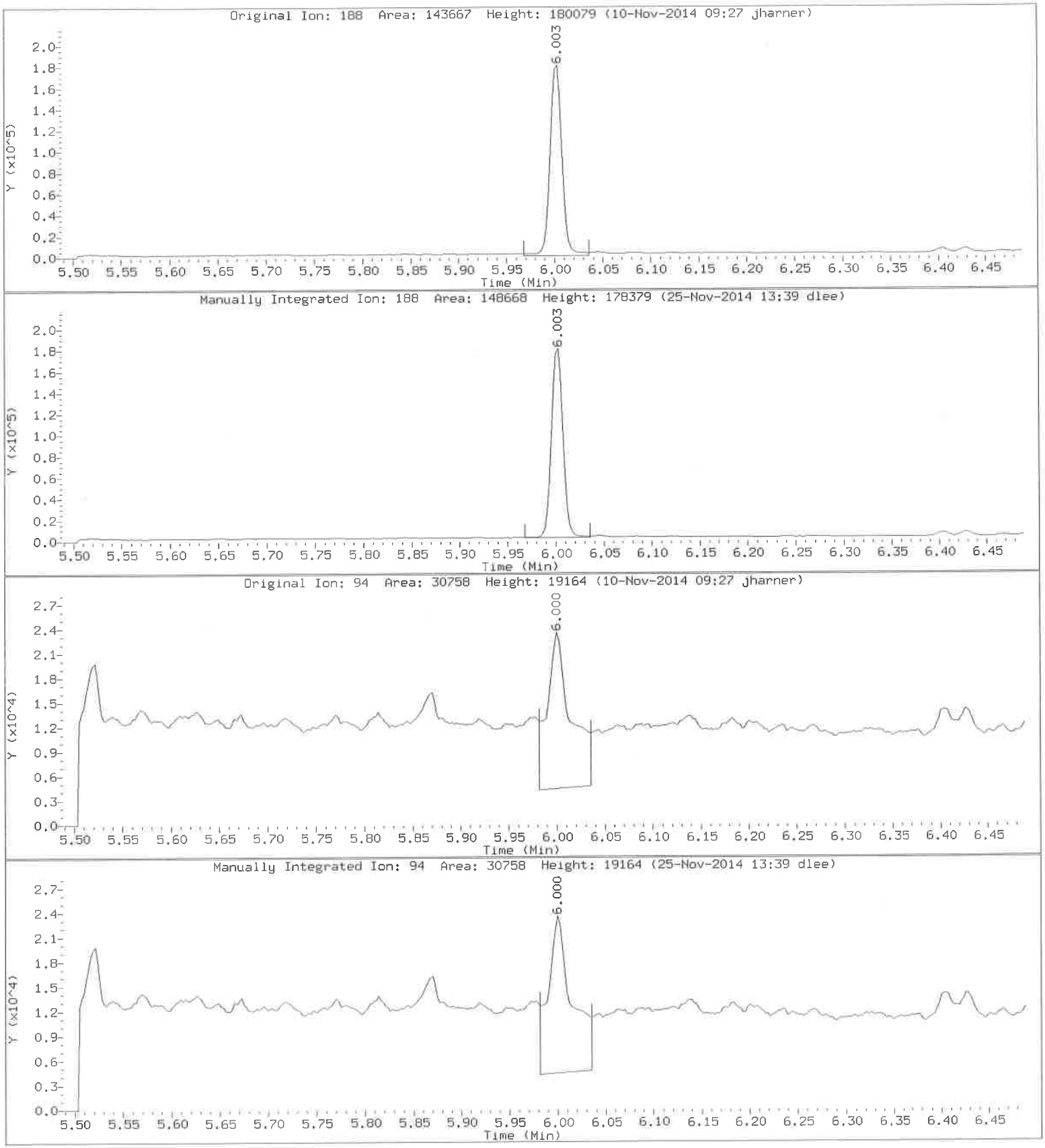
Injection Date: 07-NOV-2014 16:01
Instrument: 30mss3.i
Lab Sample ID: 30133009003

Compound: Acenaphthene-d8 IS
CAS Number: 15067-26-2



Data File: \\30wintarget\chem\30mss3.i\mss3110714.b/m3110705.d (ManInt: all
Injection Date: 07-NOV-2014 16:01
Instrument: 30mss3.i
Lab Sample ID: 30133009003

Compound: Phenanthrene-d10 IS
CAS Number: 1517-22-2



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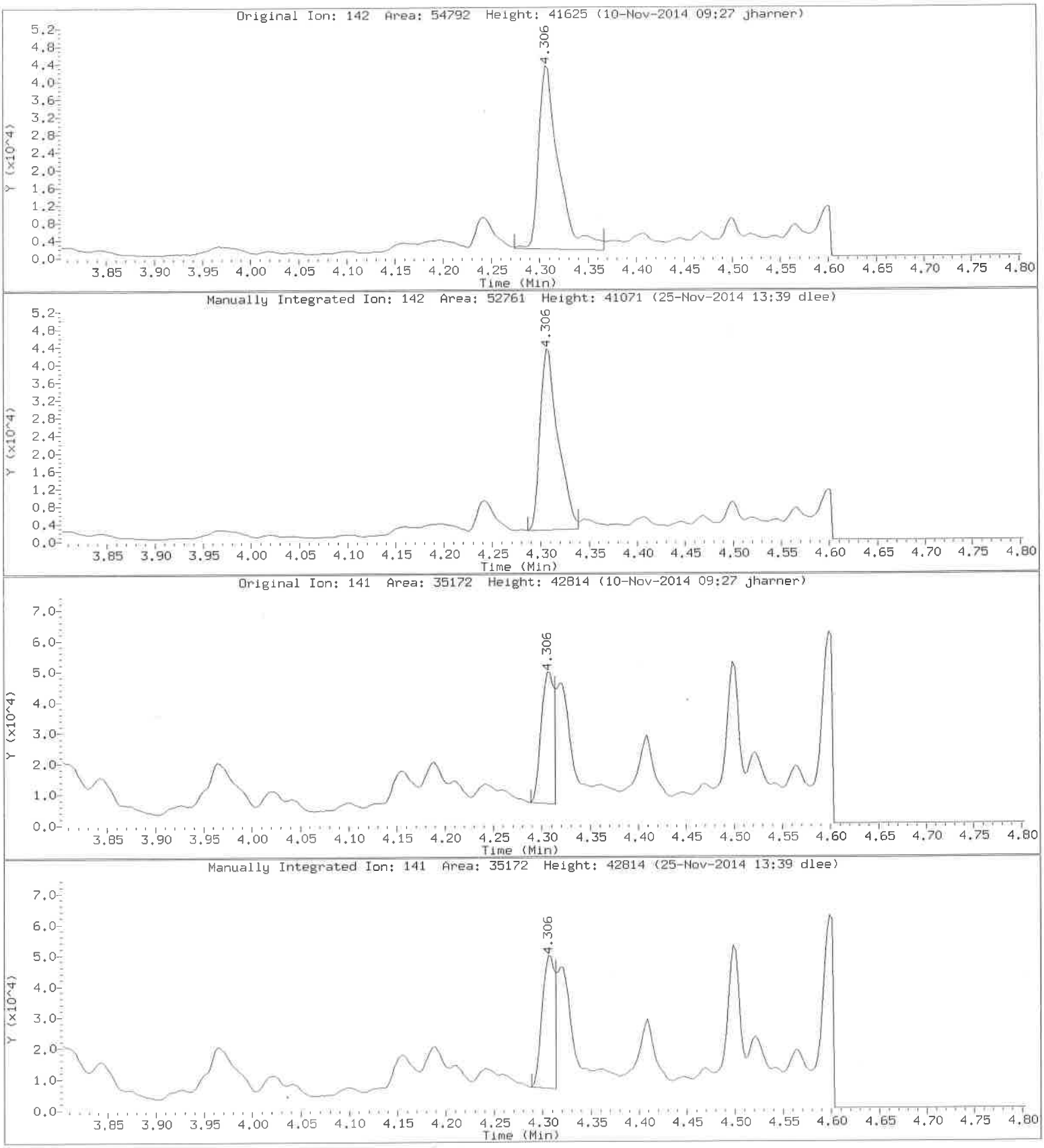
Injection Date: 07-NOV-2014 16:01
Instrument: 30mss3.i
Lab Sample ID: 30133009003

Compound: 1-methylnaphthalene
CAS Number: 90-12-0



Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m2111013.d
Lab Smp Id: 30133009003 Client Smp ID: AOI-5_PECO-B6_12-14
Inj Date : 10-NOV-2014 14:37
Operator : DJL Inst ID: 30mss2.i
Smp Info : 30133009003x2
Misc Info : 6965
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Meth Date : 25-Nov-2014 13:15 dlee Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 15
Dil Factor: 2.00000
Integrator: Falcon Compound Sublist: quin.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	2.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.230	Weigth of sample extracted (g)
M	21.541	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)
* 1 Naphthalene-d8 IS	136	4.357	4.347	(1.000)	93573	4.00000	(Q)
4 Quinoline	129	Compound Not Detected.					

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m2111013.d
Lab Smp Id: 30133009003
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Misc Info: 6965

Calibration Date: 10-NOV-2014
Calibration Time: 11:19
Client Smp ID: AOI-5_PECO-B6_1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	67129	33565	134258	93573	39.39

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.35	3.85	4.85	4.36	0.24

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m2111013.d

Date : 10-NOV-2014 14:37

Client ID: AOI-5_PECO-B6_12-14

Instrument: 30mss2.i

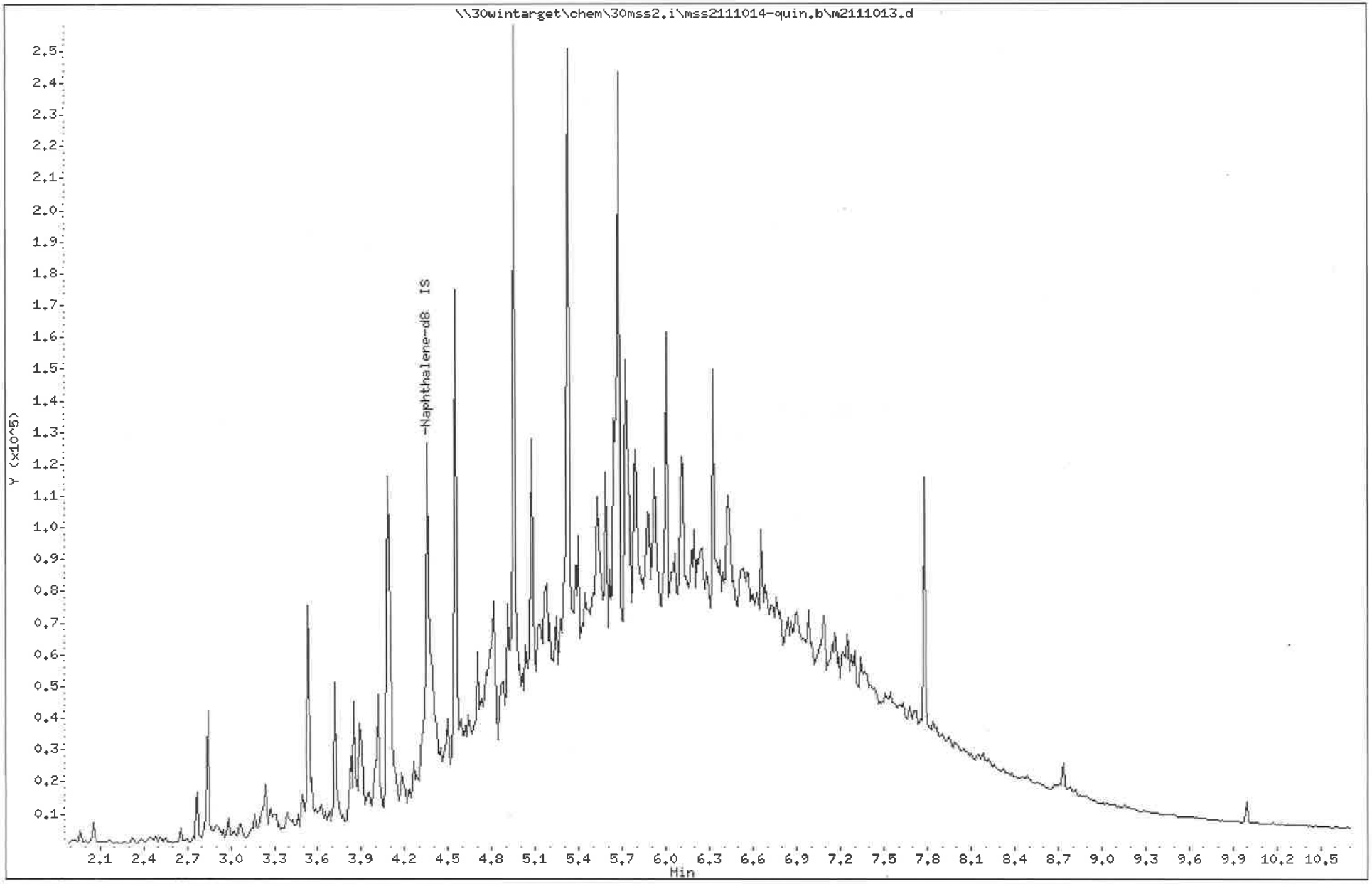
Sample Info: 30133009003x2

Volume Injected (uL): 1.0

Operator: DJL

Column phase: RTX-5MS

Column diameter: 0.25



Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b/m2111013.d (ManInt
Injection Date: 10-NOV-2014 14:37
Instrument: 30mss2.i
Lab Sample ID: 30133009003
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS3 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.25 (mm) Calibration Time(s): 1354 1522

LAB FILE ID: RF0.1: M31008Z1 RF0.2: M31008Z2 RF0.5: M31008Z3
RF2: M31008Z4 RF5: M31008Z5

COMPOUND	RF0.1	RF0.2	RF0.5	RF2	RF5
Naphthalene	1.141	1.037	1.038	1.051	1.150
Acenaphthylene	1.810	1.857	1.828	1.802	2.093
Acenaphthene	1.196	1.108	1.106	1.134	1.234
Fluorene	1.562	1.403	1.231	1.315	1.432
Phenanthrene	1.274	1.150	1.110	1.184	1.298
Anthracene	1.214	1.124	1.082	1.171	1.276
Fluoranthene	1.383	1.262	1.638	1.427	1.402
Pyrene	1.438	1.168	1.686	1.409	1.345
Benzo[a]anthracene	1.154	0.983	0.983	1.015	1.153
Chrysene	0.956	0.847	0.869	0.894	1.009
Benzo[b]fluoranthene	1.306	1.118	1.029	1.312	1.427
Benzo[k]fluoranthene	1.384	1.135	1.119	1.357	1.459
Benzo[a]pyrene	1.325	1.178	1.219	1.236	1.406
Indeno[1,2,3-cd]pyrene	1.443	1.258	1.278	1.571	1.423
Dibenz[a,h]anthracene	1.190	1.055	1.067	1.330	1.203
Benzo[g,h,i]perylene	1.290	1.096	1.033	1.332	1.180
2-methylnaphthalene	0.753	0.679	0.776	0.733	0.780
1-methylnaphthalene	0.659	0.621	0.698	0.651	0.678
Terphenyl-d14	1.077	0.741	1.085	0.885	0.849
2-Fluorobiphenyl	1.151	1.087	1.140	1.142	1.231

FORM VI SV

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS3 Calibration Date(s): 10/08/14 10/08/14

Column: RTX-5MS ID: 0.25 (mm) Calibration Time(s): 1354 1522

RF20: M31008Z6

COMPOUND	RF20	CURVE	COEFFICENT A1	%RSD OR R^2
Naphthalene	1.041	AVRG	1.07625444	5.0
Acenaphthylene	1.951	AVRG	1.89032306	6.0
Acenaphthene	1.110	AVRG	1.14811706	4.7
Fluorene	1.319	AVRG	1.37697381	8.4
Phenanthrene	1.106	AVRG	1.18687030	6.9
Anthracene	1.210	AVRG	1.17922296	5.9
Fluoranthene	1.467	AVRG	1.42996285	8.6
Pyrene	1.450	AVRG	1.41604616	11.9
Benzo[a]anthracene	1.043	AVRG	1.05529267	7.5
Chrysene	0.930	AVRG	0.91746232	6.5
Benzo[b]fluoranthene	1.224	AVRG	1.23593737	11.7
Benzo[k]fluoranthene	1.220	AVRG	1.27911645	11.0
Benzo[a]pyrene	1.197	AVRG	1.26006082	7.0
Indeno[1,2,3-cd]pyrene	1.735	AVRG	1.45152491	12.4
Dibenz[a,h]anthracene	1.481	AVRG	1.22106164	13.3
Benzo[g,h,i]perylene	1.449	AVRG	1.23005984	12.7
2-methylnaphthalene	0.701	AVRG	0.73700158	5.5
1-methylnaphthalene	0.595	AVRG	0.65052757	5.8
Terphenyl-d14	0.916	AVRG	0.92558094	14.5
2-Fluorobiphenyl	1.142	AVRG	1.14878435	4.0

FORM VI SV

Pace Analytical Services, Inc

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2014 13:54
End Cal Date : 08-OCT-2014 15:22
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Last Edit : 08-Oct-2014 15:55 30mss3.i

Calibration File Names:
Level 1: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z1.d
Level 2: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z2.d
Level 3: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z3.d
Level 4: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z4.d
Level 5: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z5.d
Level 6: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z6.d

Compound	0.1000000 Level 1	0.2000000 Level 2	0.5000000 Level 3	2.0000 Level 4	5.0000 Level 5	20.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
8 Naphthalene	1.14067	1.03704	1.03789	1.05129	1.14985	1.04078	AVRG		1.07625		4.99609
9 2-methylnaphthalene	0.75298	0.67918	0.77563	0.73269	0.78026	0.70127	AVRG		0.73700		5.51379
10 1-methylnaphthalene	0.65916	0.62132	0.69805	0.65100	0.67839	0.59525	AVRG		0.65053		5.75905
11 Acenaphthylene	1.81028	1.85720	1.82849	1.80225	2.09287	1.95084	AVRG		1.89032		5.97437
12 Acenaphthene	1.19609	1.10781	1.10601	1.13417	1.23431	1.11032	AVRG		1.14812		4.73073
13 Fluorene	1.56163	1.40315	1.23098	1.31468	1.43224	1.31918	AVRG		1.37697		8.36725
14 Phenanthrene	1.27396	1.15015	1.10968	1.18360	1.29805	1.10578	AVRG		1.18687		6.93144
15 Anthracene	1.21360	1.12355	1.08161	1.17139	1.27557	1.20963	AVRG		1.17922		5.88481
16 Fluoranthene	1.38331	1.26191	1.63818	1.42728	1.40232	1.46678	AVRG		1.42996		8.61624
17 Pyrene	1.43798	1.16798	1.68579	1.40909	1.34492	1.45052	AVRG		1.41605		11.86209
18 Benzo[a]anthracene	1.15447	0.98278	0.98328	1.01516	1.15289	1.04317	AVRG		1.05529		7.52880
19 Chrysene	0.95629	0.84711	0.86901	0.89379	1.00877	0.92980	AVRG		0.91746		6.51344
20 Benzo[b]fluoranthene	1.30623	1.11780	1.02903	1.31181	1.42699	1.22377	AVRG		1.23594		11.67543
21 Benzo[k]fluoranthene	1.38364	1.13507	1.11901	1.35733	1.45945	1.22021	AVRG		1.27912		11.02387

Pace Analytical Services, Inc

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2014 13:54
End Cal Date : 08-OCT-2014 15:22
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Last Edit : 08-Oct-2014 15:55 30mss3.i

Compound	0.1000000 Level 1	0.2000000 Level 2	0.5000000 Level 3	2.0000 Level 4	5.0000 Level 5	20.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
22 Benzo[a]pyrene	1.32539	1.17750	1.21873	1.23597	1.40553	1.19725	AVRG		1.26006		6.96213
23 Dibenz[a,h]anthracene	1.18974	1.05488	1.06749	1.32964	1.20341	1.48121	AVRG		1.22106		13.30453
24 Indeno[1,2,3-cd]pyrene	1.44312	1.25849	1.27767	1.57141	1.42349	1.73495	AVRG		1.45152		12.44074
25 Benzo[g,h,i]perylene	1.28955	1.09584	1.03345	1.33239	1.17964	1.44949	AVRG		1.23006		12.66629
$ 6 2-Fluorobiphenyl	1.15061	1.08663	1.14053	1.14249	1.23067	1.14178	AVRG		1.14878		4.03217
$ 7 Terphenyl-d14	1.07720	0.74145	1.08477	0.88541	0.84872	0.91593	AVRG		0.92558		14.48284

Pace Analytical Services, Inc

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2014 13:54
End Cal Date : 08-OCT-2014 15:22
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Last Edit : 08-Oct-2014 15:55 30mss3.i

Average %RSD Results.
Calculated Average %RSD = 8.46331
Maximun Average %RSD = 15.00000
* Passed Average %RSD Test.

Curve	Formula	Units
Averaged	Amt = Rsp/ml	Response

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z1.d
Lab Smp Id: 0.1 ppm PAH
Inj Date : 08-OCT-2014 13:54
Operator : JSH Inst ID: 30mss3.i
Smp Info : 0.1 ppm PAH
Misc Info : V-55-10
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Meth Date : 08-Oct-2014 17:03 30mss3.i Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22 Cal File: m31008z6.d
Als bottle: 91 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCTARG

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	4.038	4.041	(1.000)	151770	4.00000	(H)	WP
* 2 Acenaphthene-d8 IS	164	5.196	5.195	(1.000)	94107	4.00000	(H)	WP
* 3 Phenanthrene-d10 IS	188	6.306	6.310	(1.000)	140475	4.00000	(H)	WP
* 4 Chrysene-d12 IS	240	8.694	8.697	(1.000)	198810	4.00000		
* 5 Perylene-d12 IS	264	10.005	10.007	(1.000)	160707	4.00000		
$ 6 2-Fluorobiphenyl	172	4.720	4.720	(0.898)	2707	0.10000	0.100	
$ 7 Terphenyl-d14	244	7.668	7.670	(1.196)	3783	0.10000	0.116	
8 Naphthalene	128	4.053	4.053	(0.971)	4328	0.10000	0.106	
9 2-methylnaphthalene	142	4.498	4.498	(1.077)	2857	0.10000	0.102(H)	WP
10 1-methylnaphthalene	142	4.565	4.563	(1.093)	2501	0.10000	0.101	
11 Acenaphthylene	152	5.102	5.103	(0.970)	4259	0.10000	0.0958(H)	WP
12 Acenaphthene	153	5.217	5.218	(0.992)	2814	0.10000	0.104	
13 Fluorene	166	5.578	5.580	(1.061)	3674	0.10000	0.113(H)	WP
14 Phenanthrene	178	6.324	6.329	(0.986)	4474	0.10000	0.107(H)	WP
15 Anthracene	178	6.366	6.370	(0.993)	4262	0.10000	0.103	
16 Fluoranthene	202	7.350	7.354	(1.146)	4858	0.10000	0.0967	
17 Pyrene	202	7.564	7.568	(1.179)	5050	0.10000	0.102	
18 Benzo[a]anthracene	228	8.681	8.685	(0.999)	5738	0.10000	0.109	
19 Chrysene	228	8.718	8.722	(1.003)	4753	0.10000	0.104	
20 Benzo[b]fluoranthene	252	9.666	9.669	(0.966)	5248	0.10000	0.106	
21 Benzo[k]fluoranthene	252	9.689	9.693	(0.968)	5559	0.10000	0.108(H)	WP
22 Benzo[a]pyrene	252	9.954	9.958	(0.995)	5325	0.10000	0.105(Q)	
23 Dibenz[a,h]anthracene	278	11.024	11.030	(1.102)	4780	0.10000	0.0974	
24 Indeno[1,2,3-cd]pyrene	276	11.022	11.030	(1.102)	5798	0.10000	0.0994	
25 Benzo[g,h,i]perylene	276	11.317	11.325	(1.131)	5181	0.10000	0.105	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m31008z1.d
Lab Smp Id: 0.1 ppm PAH
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Misc Info: V-55-10

Calibration Date: 08-OCT-2014
Calibration Time: 16:32

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	165449	82725	330898	151770	-8.27
2 Acenaphthene-d8	97214	48607	194428	94107	-3.20
3 Phenanthrene-d10	138406	69203	276812	140475	1.49
4 Chrysene-d12 IS	181749	90875	363498	198810	9.39
5 Perylene-d12 IS	146727	73364	293454	160707	9.53

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.04	3.54	4.54	4.04	-0.07
2 Acenaphthene-d8	5.20	4.70	5.70	5.20	0.01
3 Phenanthrene-d10	6.31	5.81	6.81	6.31	-0.06
4 Chrysene-d12 IS	8.70	8.20	9.20	8.69	-0.03
5 Perylene-d12 IS	10.01	9.51	10.51	10.01	-0.01

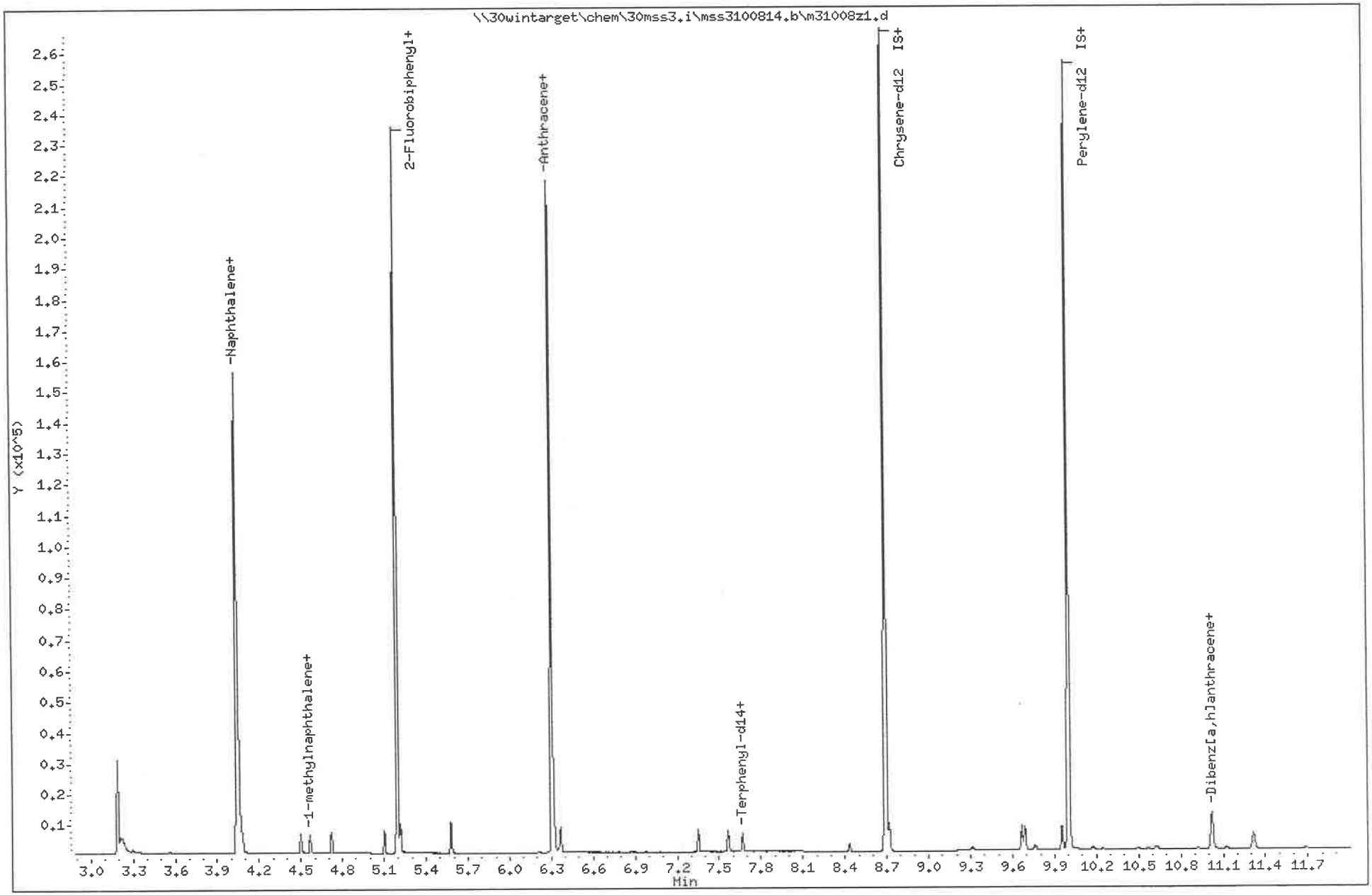
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z1.d
Date : 08-OCT-2014 13:54
Client ID:
Sample Info: 0.1 ppm PAH

Instrument: 30mss3.i

Operator: JSH
Column diameter: 0.25

Column phase: RTX-5MS



Data File: \\30wintarget\chem\30mss3.i\mss3100814.b/m31008z1.d (ManInt: all
Injection Date: 08-OCT-2014 13:54
Instrument: 30mss3.i
Lab Sample ID: 0.1 ppm PAH
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z2.d
Lab Smp Id: 0.2 ppm PAH
Inj Date : 08-OCT-2014 14:12
Operator : JSH Inst ID: 30mss3.i
Smp Info : 0.2 ppm PAH
Misc Info : V-55-11
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Meth Date : 08-Oct-2014 17:03 30mss3.i Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22 Cal File: m31008z6.d
Als bottle: 92 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCTARG

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	4.038	4.041	(1.000)	140669	4.00000	(H)	WP
* 2 Acenaphthene-d8 IS	164	5.193	5.195	(1.000)	87831	4.00000	(H)	WP
* 3 Phenanthrene-d10 IS	188	6.305	6.310	(1.000)	134574	4.00000	(H)	WP
* 4 Chrysene-d12 IS	240	8.692	8.697	(1.000)	144610	4.00000		
* 5 Perylene-d12 IS	264	10.002	10.007	(1.000)	149401	4.00000		
$ 6 2-Fluorobiphenyl	172	4.718	4.720	(0.896)	4772	0.20000	0.189	
$ 7 Terphenyl-d14	244	7.666	7.670	(1.195)	4989	0.20000	0.160	
8 Naphthalene	128	4.053	4.053	(0.972)	7294	0.20000	0.193	
9 2-methylnaphthalene	142	4.496	4.498	(1.079)	4777	0.20000	0.184(H)	WP
10 1-methylnaphthalene	142	4.563	4.563	(1.095)	4370	0.20000	0.191	
11 Acenaphthylene	152	5.100	5.103	(0.968)	8156	0.20000	0.196(H)	WP
12 Acenaphthene	153	5.216	5.218	(0.990)	4865	0.20000	0.193	
13 Fluorene	166	5.578	5.580	(1.059)	6162	0.20000	0.204(H)	WP
14 Phenanthrene	178	6.324	6.329	(0.986)	7739	0.20000	0.194(H)	WP
15 Anthracene	178	6.366	6.370	(0.993)	7560	0.20000	0.190	
16 Fluoranthene	202	7.349	7.354	(1.146)	8491	0.20000	0.176	
17 Pyrene	202	7.563	7.568	(1.179)	7859	0.20000	0.165	
18 Benzo[a]anthracene	228	8.681	8.685	(0.999)	7106	0.20000	0.186	
19 Chrysene	228	8.716	8.722	(1.003)	6125	0.20000	0.185	
20 Benzo[b]fluoranthene	252	9.665	9.669	(0.966)	8350	0.20000	0.181	
21 Benzo[k]fluoranthene	252	9.688	9.693	(0.969)	8479	0.20000	0.177(H)	WP
22 Benzo[a]pyrene	252	9.953	9.958	(0.995)	8796	0.20000	0.187	
23 Dibenz[a,h]anthracene	278	11.021	11.030	(1.102)	7880	0.20000	0.173	
24 Indeno[1,2,3-cd]pyrene	276	11.019	11.030	(1.102)	9401	0.20000	0.173	
25 Benzo[g,h,i]perylene	276	11.316	11.325	(1.131)	8186	0.20000	0.178	

QC Flag Legend

H - Operator selected an alternate compound hit.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m31008z2.d
Lab Smp Id: 0.2 ppm PAH
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Misc Info: V-55-11

Calibration Date: 08-OCT-2014
Calibration Time: 16:32

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	165449	82725	330898	140669	-14.98
2 Acenaphthene-d8	97214	48607	194428	87831	-9.65
3 Phenanthrene-d10	138406	69203	276812	134574	-2.77
4 Chrysene-d12 IS	181749	90875	363498	144610	-20.43
5 Perylene-d12 IS	146727	73364	293454	149401	1.82

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.04	3.54	4.54	4.04	-0.06
2 Acenaphthene-d8	5.20	4.70	5.70	5.19	-0.03
3 Phenanthrene-d10	6.31	5.81	6.81	6.31	-0.07
4 Chrysene-d12 IS	8.70	8.20	9.20	8.69	-0.05
5 Perylene-d12 IS	10.01	9.51	10.51	10.00	-0.05

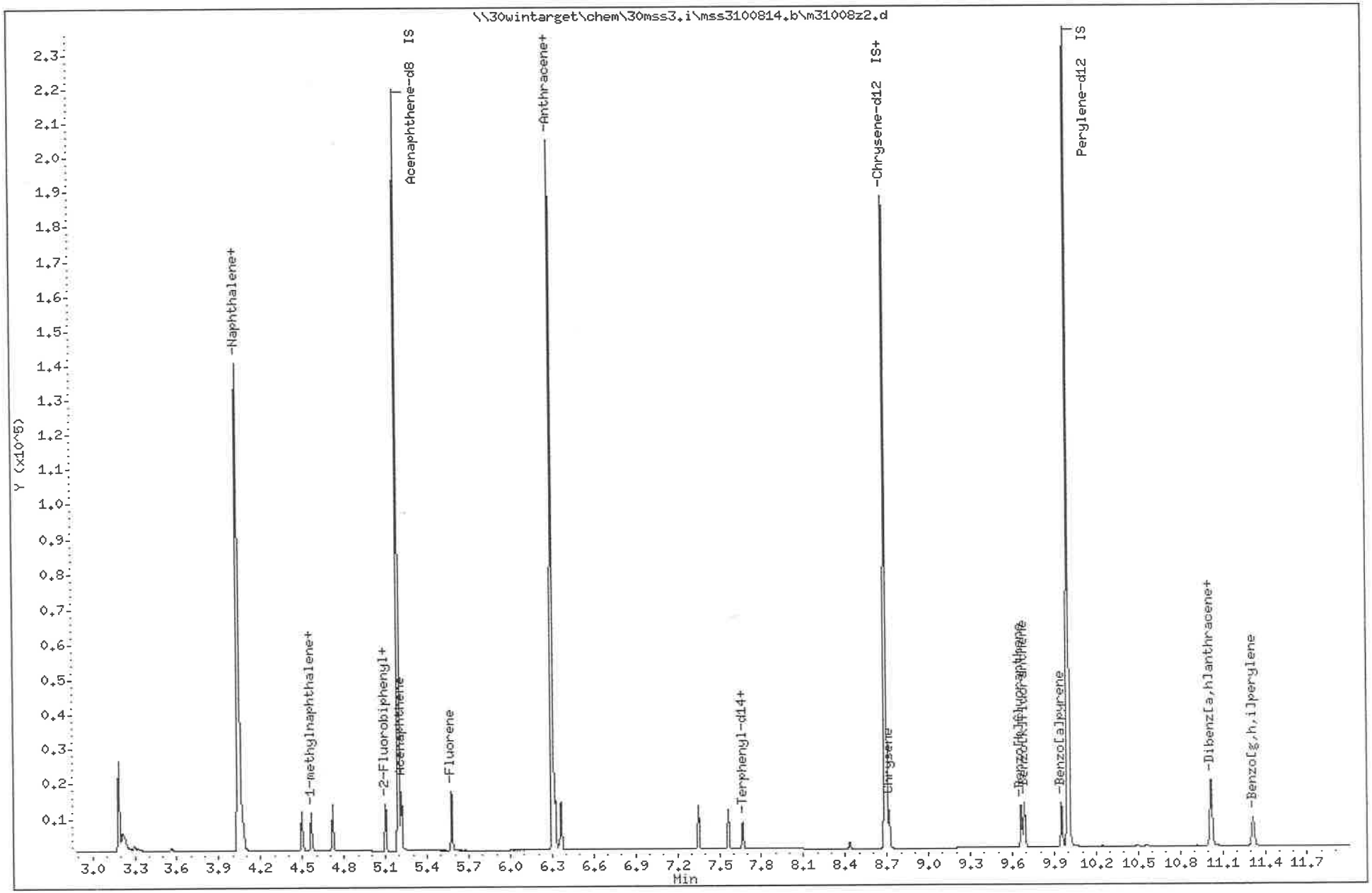
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z2.d
Date : 08-OCT-2014 14:12
Client ID:
Sample Info: 0.2 ppm PAH

Instrument: 30mss3.i

Operator: JSH
Column diameter: 0.25

Column phase: RTX-5MS



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Injection Date: 08-OCT-2014 14:12
Instrument: 30mss3.i
Lab Sample ID: 0.2 ppm PAH
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z3.d
Lab Smp Id: 0.5 ppm PAH
Inj Date : 08-OCT-2014 14:29
Operator : JSH Inst ID: 30mss3.i
Smp Info : 0.5 ppm PAH
Misc Info : V-55-12
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Meth Date : 08-Oct-2014 17:03 30mss3.i Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22 Cal File: m31008z6.d
Als bottle: 93 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCTARG

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	4.038	4.041	(1.000)	148917	4.00000	(H)	WP
* 2 Acenaphthene-d8 IS	164	5.193	5.195	(1.000)	100122	4.00000	(H)	WP
* 3 Phenanthrene-d10 IS	188	6.303	6.310	(1.000)	126545	4.00000	(H)	WP
* 4 Chrysene-d12 IS	240	8.692	8.697	(1.000)	155349	4.00000		
* 5 Perylene-d12 IS	264	10.002	10.007	(1.000)	159327	4.00000		
$ 6 2-Fluorobiphenyl	172	4.718	4.720	(0.896)	14274	0.50000	0.496	
$ 7 Terphenyl-d14	244	7.666	7.670	(1.196)	17159	0.50000	0.586	
8 Naphthalene	128	4.051	4.053	(0.978)	19320	0.50000	0.482	
9 2-methylnaphthalene	142	4.496	4.498	(1.086)	14438	0.50000	0.526(H)	WP
10 1-methylnaphthalene	142	4.563	4.563	(1.102)	12994	0.50000	0.536	
11 Acenaphthylene	152	5.100	5.103	(0.968)	22884	0.50000	0.484(H)	WP
12 Acenaphthene	153	5.214	5.218	(0.990)	13842	0.50000	0.482	
13 Fluorene	166	5.576	5.580	(1.059)	15406	0.50000	0.447(H)	WP
14 Phenanthrene	178	6.324	6.329	(0.987)	17553	0.50000	0.467(H)	WP
15 Anthracene	178	6.366	6.370	(0.993)	17109	0.50000	0.459	
16 Fluoranthene	202	7.349	7.354	(1.147)	25913	0.50000	0.573	
17 Pyrene	202	7.563	7.568	(1.180)	26666	0.50000	0.595	
18 Benzo[a]anthracene	228	8.681	8.685	(0.999)	19094	0.50000	0.466	
19 Chrysene	228	8.716	8.722	(1.003)	16875	0.50000	0.474	
20 Benzo[b]fluoranthene	252	9.665	9.669	(0.966)	20494	0.50000	0.416	
21 Benzo[k]fluoranthene	252	9.688	9.693	(0.969)	22286	0.50000	0.437(H)	WP
22 Benzo[a]pyrene	252	9.951	9.958	(0.995)	24272	0.50000	0.484	
23 Dibenz[a,h]anthracene	278	11.021	11.030	(1.102)	21260	0.50000	0.437	
24 Indeno[1,2,3-cd]pyrene	276	11.021	11.030	(1.102)	25446	0.50000	0.440(M)	LT
25 Benzo[g,h,i]perylene	276	11.316	11.325	(1.131)	20582	0.50000	0.420	

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m31008z3.d
Lab Smp Id: 0.5 ppm PAH
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Misc Info: V-55-12

Calibration Date: 08-OCT-2014
Calibration Time: 16:32

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

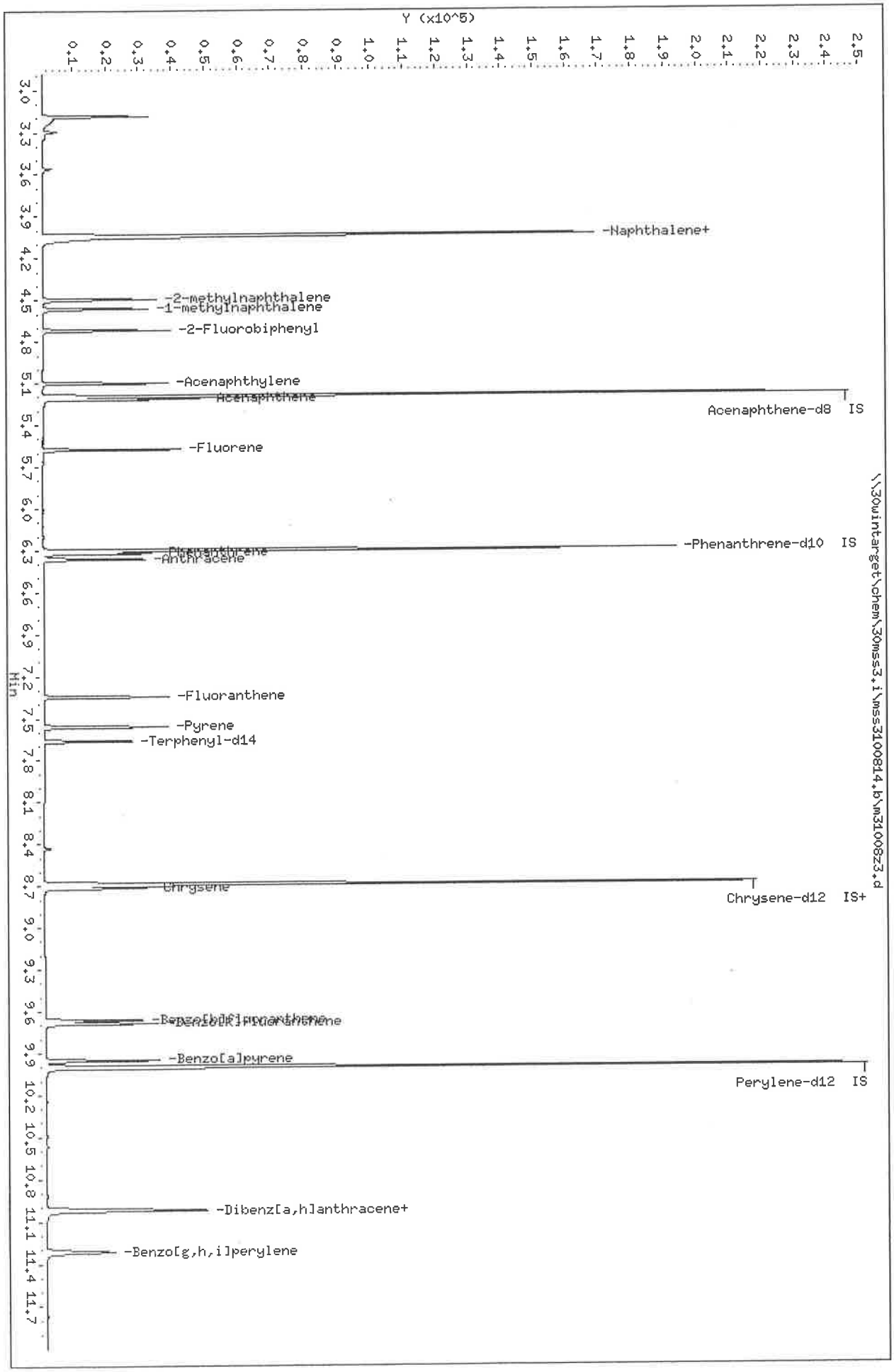
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	165449	82725	330898	148917	-9.99
2 Acenaphthene-d8	97214	48607	194428	100122	2.99
3 Phenanthrene-d10	138406	69203	276812	126545	-8.57
4 Chrysene-d12 IS	181749	90875	363498	155349	-14.53
5 Perylene-d12 IS	146727	73364	293454	159327	8.59

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.04	3.54	4.54	4.04	-0.06
2 Acenaphthene-d8	5.20	4.70	5.70	5.19	-0.03
3 Phenanthrene-d10	6.31	5.81	6.81	6.30	-0.11
4 Chrysene-d12 IS	8.70	8.20	9.20	8.69	-0.05
5 Perylene-d12 IS	10.01	9.51	10.51	10.00	-0.05

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

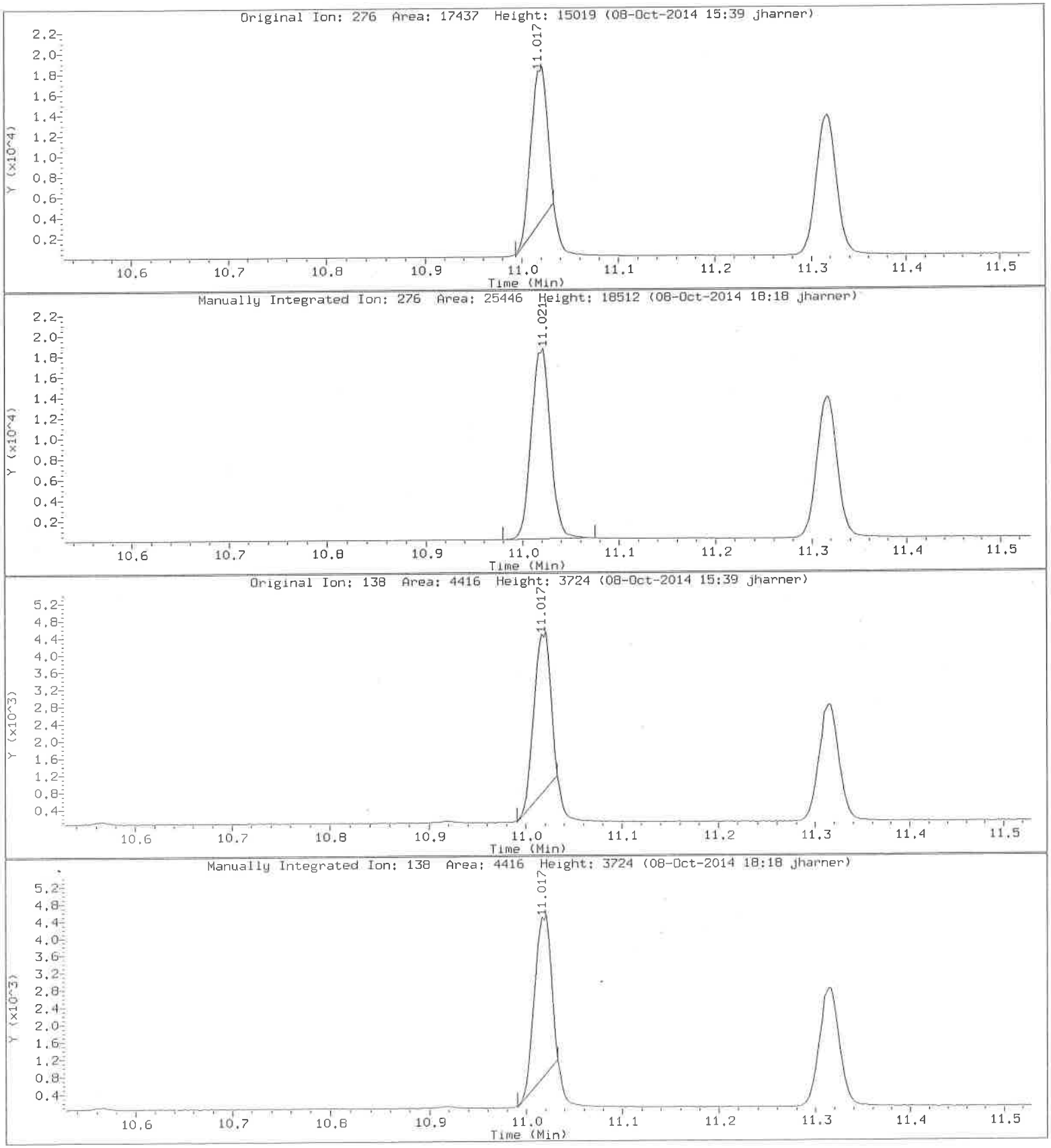
Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z3.d
Date : 08-OCT-2014 14:29
Client ID:
Sample Info: 0.5 ppm PAH
Column phase: RTX-5MS

Instrument: 30mss3.i
Operator: JSH
Column diameter: 0.25



Data File: \\30wintarget\chem\30mss3.i\mss3100814.b/m31008z3.d (ManInt: all
Injection Date: 08-OCT-2014 14:29
Instrument: 30mss3.i
Lab Sample ID: 0.5 ppm PAH

Compound: Indeno[1,2,3-cd]pyrene
CAS Number: 193-39-5



Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z4.d
Lab Smp Id: 2 ppm PAH
Inj Date : 08-OCT-2014 14:47
Operator : JSH
Smp Info : 2 ppm PAH
Misc Info : V-55-13
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Meth Date : 08-Oct-2014 17:03 30mss3.i
Cal Date : 08-OCT-2014 15:22
Als bottle: 94
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.14
Processing Host: SVOCTARG

Inst ID: 30mss3.i

Quant Type: ISTD
Cal File: m31008z6.d
Calibration Sample, Level: 4

Compound Sublist: all.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	4.038	4.041	(1.000)	156522	4.00000	(H)	WP
* 2 Acenaphthene-d8 IS	164	5.193	5.195	(1.000)	99976	4.00000	(H)	WP
* 3 Phenanthrene-d10 IS	188	6.305	6.310	(1.000)	153793	4.00000	(H)	WP
* 4 Chrysene-d12 IS	240	8.693	8.697	(1.000)	162599	4.00000		
* 5 Perylene-d12 IS	264	10.002	10.007	(1.000)	158488	4.00000		
$ 6 2-Fluorobiphenyl	172	4.718	4.720	(0.896)	57111	2.00000	1.99	
$ 7 Terphenyl-d14	244	7.666	7.670	(1.196)	68085	2.00000	1.91	
8 Naphthalene	128	4.053	4.053	(0.976)	82275	2.00000	1.95	
9 2-methylnaphthalene	142	4.495	4.498	(1.082)	57341	2.00000	1.99(H)	WP
10 1-methylnaphthalene	142	4.563	4.563	(1.099)	50948	2.00000	2.00	
11 Acenaphthylene	152	5.101	5.103	(0.969)	90091	2.00000	1.91(H)	WP
12 Acenaphthene	153	5.214	5.218	(0.991)	56695	2.00000	1.98	
13 Fluorene	166	5.576	5.580	(1.059)	65718	2.00000	1.91(H)	WP
14 Phenanthrene	178	6.324	6.329	(0.987)	91015	2.00000	1.99(H)	WP
15 Anthracene	178	6.366	6.370	(0.993)	90076	2.00000	1.99	
16 Fluoranthene	202	7.349	7.354	(1.147)	109753	2.00000	2.00	
17 Pyrene	202	7.563	7.568	(1.180)	108354	2.00000	1.99	
18 Benzo[a]anthracene	228	8.682	8.685	(0.999)	82532	2.00000	1.92	
19 Chrysene	228	8.717	8.722	(1.003)	72665	2.00000	1.95	
20 Benzo[b]fluoranthene	252	9.665	9.669	(0.966)	103953	2.00000	2.12	
21 Benzo[k]fluoranthene	252	9.688	9.693	(0.969)	107560	2.00000	2.12(H)	WP
22 Benzo[a]pyrene	252	9.955	9.958	(0.995)	97943	2.00000	1.96	
23 Dibenz[a,h]anthracene	278	11.023	11.030	(1.102)	105366	2.00000	2.18	
24 Indeno[1,2,3-cd]pyrene	276	11.023	11.030	(1.102)	124525	2.00000	2.16	
25 Benzo[g,h,i]perylene	276	11.318	11.325	(1.132)	105584	2.00000	2.17	

QC Flag Legend

H - Operator selected an alternate compound hit.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m31008z4.d
Lab Smp Id: 2 ppm PAH
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Misc Info: V-55-13

Calibration Date: 08-OCT-2014
Calibration Time: 16:32

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	165449	82725	330898	156522	-5.40
2 Acenaphthene-d8	97214	48607	194428	99976	2.84
3 Phenanthrene-d10	138406	69203	276812	153793	11.12
4 Chrysene-d12 IS	181749	90875	363498	162599	-10.54
5 Perylene-d12 IS	146727	73364	293454	158488	8.02

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.04	3.54	4.54	4.04	-0.06
2 Acenaphthene-d8	5.20	4.70	5.70	5.19	-0.03
3 Phenanthrene-d10	6.31	5.81	6.81	6.31	-0.07
4 Chrysene-d12 IS	8.70	8.20	9.20	8.69	-0.04
5 Perylene-d12 IS	10.01	9.51	10.51	10.00	-0.05

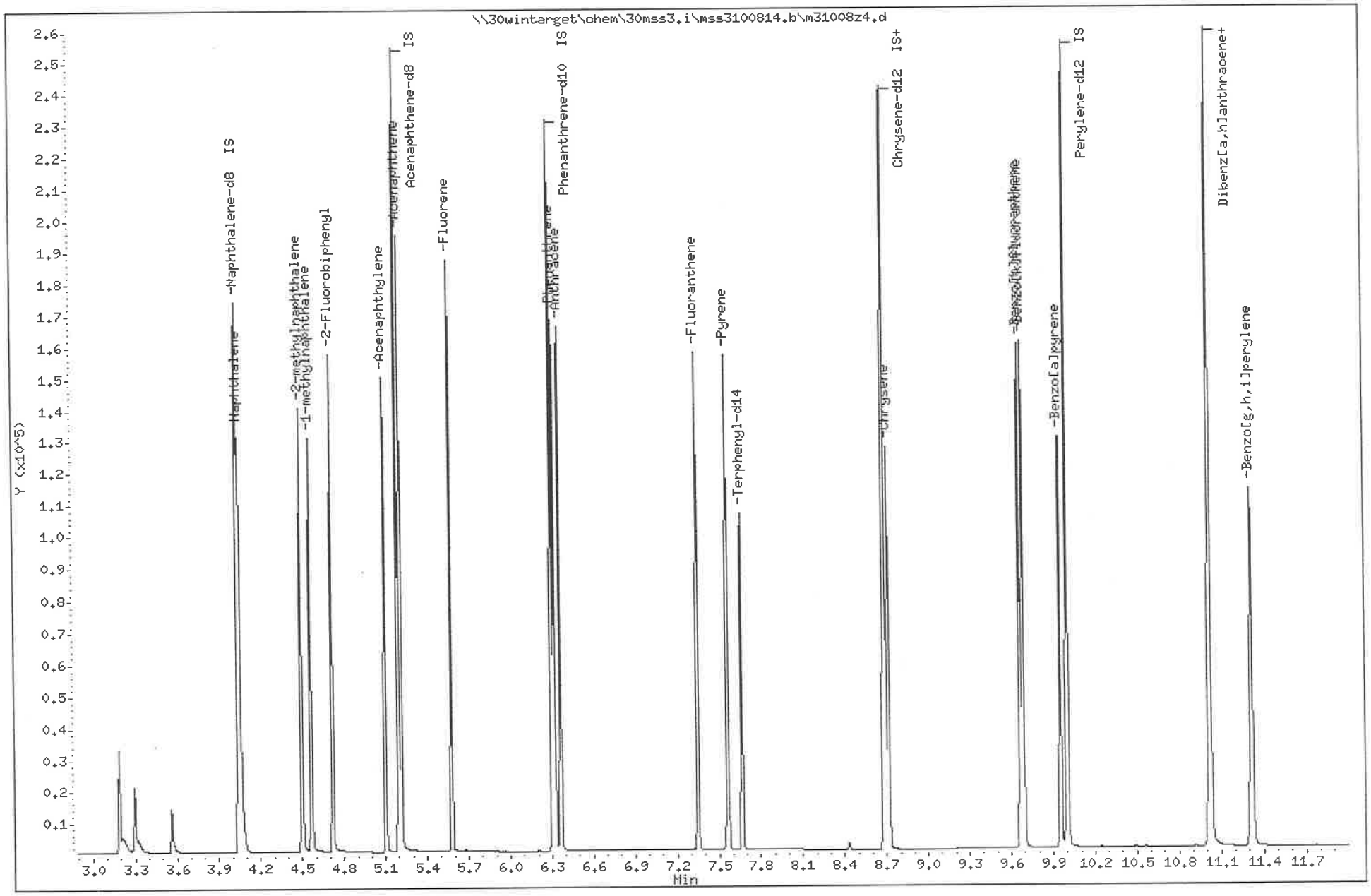
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z4.d
Date : 08-OCT-2014 14:47
Client ID:
Sample Info: 2 ppm PAH

Column phase: RTX-5MS

Instrument: 30mss3.i

Operator: JSH
Column diameter: 0.25



Data File: \\30wintarget\chem\30mss3.i\mss3100814.b/m31008z4.d (ManInt: all
Injection Date: 08-OCT-2014 14:47
Instrument: 30mss3.i
Lab Sample ID: 2 ppm PAH
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z5.d
Lab Smp Id: 5 ppm PAH
Inj Date : 08-OCT-2014 15:05
Operator : JSH
Inst ID: 30mss3.i
Smp Info : 5 ppm PAH
Misc Info : V-55-14
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Meth Date : 08-Oct-2014 17:03 30mss3.i
Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22
Cal File: m31008z6.d
Als bottle: 95
Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon
Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCTARG

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	4.038	4.041	(1.000)	151113	4.00000	(H)	WP
* 2 Acenaphthene-d8 IS	164	5.193	5.195	(1.000)	92836	4.00000	(H)	WP
* 3 Phenanthrene-d10 IS	188	6.305	6.310	(1.000)	138812	4.00000	(H)	WP
* 4 Chrysene-d12 IS	240	8.695	8.697	(1.000)	187326	4.00000		
* 5 Perylene-d12 IS	264	10.002	10.007	(1.000)	151365	4.00000		
$ 6 2-Fluorobiphenyl	172	4.718	4.720	(0.896)	142813	5.00000	5.36	
$ 7 Terphenyl-d14	244	7.668	7.670	(1.197)	147266	5.00000	4.58	
8 Naphthalene	128	4.053	4.053	(0.977)	217196	5.00000	5.34	
9 2-methylnaphthalene	142	4.495	4.498	(1.083)	147384	5.00000	5.29(H)	WP
10 1-methylnaphthalene	142	4.563	4.563	(1.099)	128141	5.00000	5.21	
11 Acenaphthylene	152	5.100	5.103	(0.969)	242867	5.00000	5.54(H)	WP
12 Acenaphthene	153	5.216	5.218	(0.991)	143235	5.00000	5.38	
13 Fluorene	166	5.578	5.580	(1.060)	166204	5.00000	5.20(H)	WP
14 Phenanthrene	178	6.324	6.329	(0.987)	225231	5.00000	5.47(H)	WP
15 Anthracene	178	6.366	6.370	(0.994)	221330	5.00000	5.41	
16 Fluoranthene	202	7.352	7.354	(1.148)	243323	5.00000	4.90	
17 Pyrene	202	7.563	7.568	(1.199)	233363	5.00000	4.75(QMH)	WP
18 Benzo[a]anthracene	228	8.684	8.685	(0.999)	269958	5.00000	5.46	
19 Chrysene	228	8.719	8.722	(1.003)	236212	5.00000	5.50	
20 Benzo[b]fluoranthene	252	9.667	9.669	(0.967)	269995	5.00000	5.77	
21 Benzo[k]fluoranthene	252	9.693	9.693	(0.969)	276137	5.00000	5.70(H)	WP
22 Benzo[a]pyrene	252	9.955	9.958	(0.995)	265935	5.00000	5.58	
23 Dibenz[a,h]anthracene	278	11.030	11.030	(1.103)	227692	5.00000	4.93	
24 Indeno[1,2,3-cd]pyrene	276	11.028	11.030	(1.103)	269334	5.00000	4.90	
25 Benzo[g,h,i]perylene	276	11.328	11.325	(1.133)	223195	5.00000	4.80	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m31008z5.d
Lab Smp Id: 5 ppm PAH
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Misc Info: V-55-14

Calibration Date: 08-OCT-2014
Calibration Time: 16:32

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	165449	82725	330898	151113	-8.66
2 Acenaphthene-d8	97214	48607	194428	92836	-4.50
3 Phenanthrene-d10	138406	69203	276812	138812	0.29
4 Chrysene-d12 IS	181749	90875	363498	187326	3.07
5 Perylene-d12 IS	146727	73364	293454	151365	3.16

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.04	3.54	4.54	4.04	-0.06
2 Acenaphthene-d8	5.20	4.70	5.70	5.19	-0.03
3 Phenanthrene-d10	6.31	5.81	6.81	6.31	-0.07
4 Chrysene-d12 IS	8.70	8.20	9.20	8.70	-0.02
5 Perylene-d12 IS	10.01	9.51	10.51	10.00	-0.05

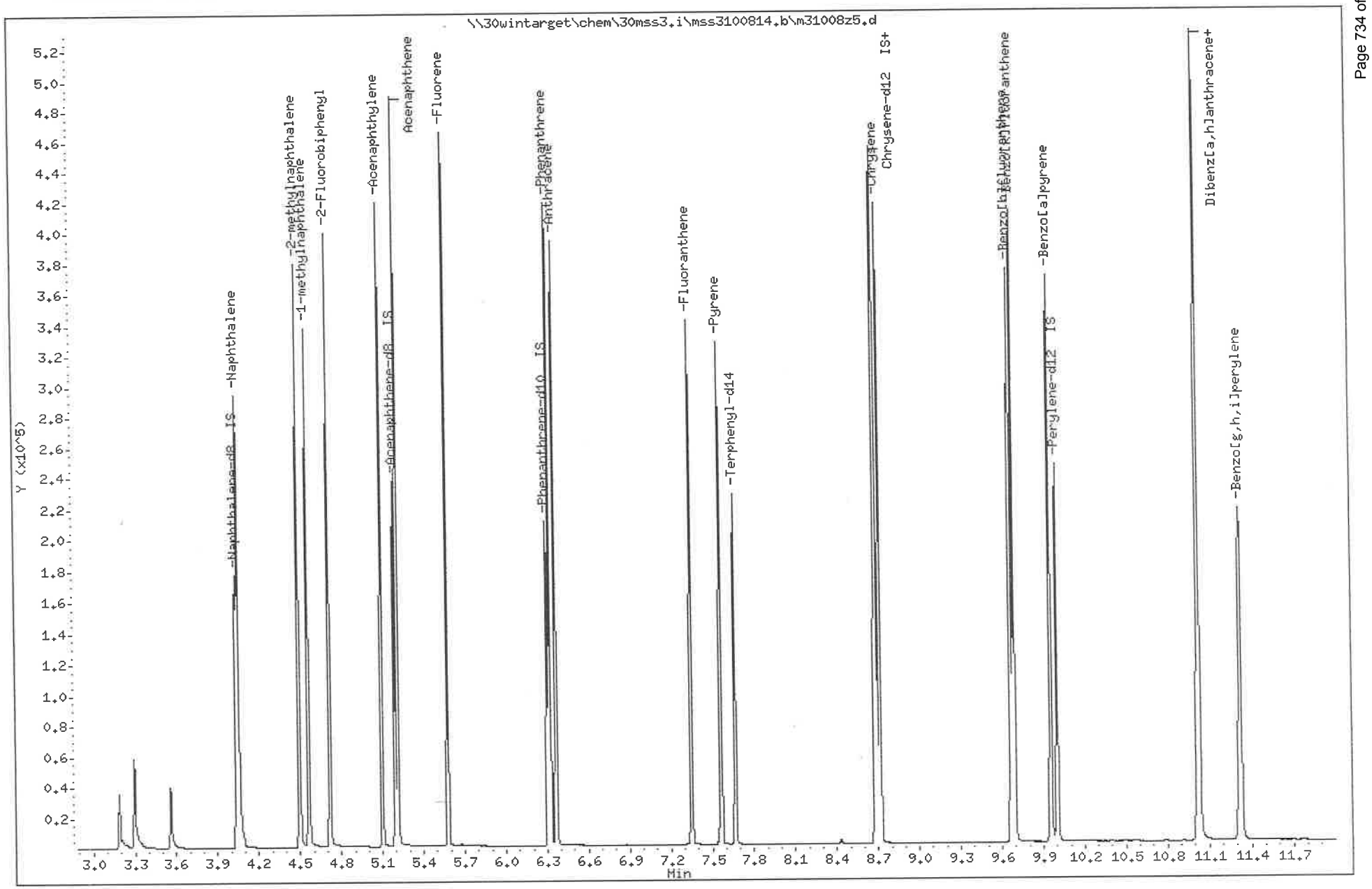
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z5.d
Date : 08-OCT-2014 15:05
Client ID:
Sample Info: 5 ppm PAH

Instrument: 30mss3.i

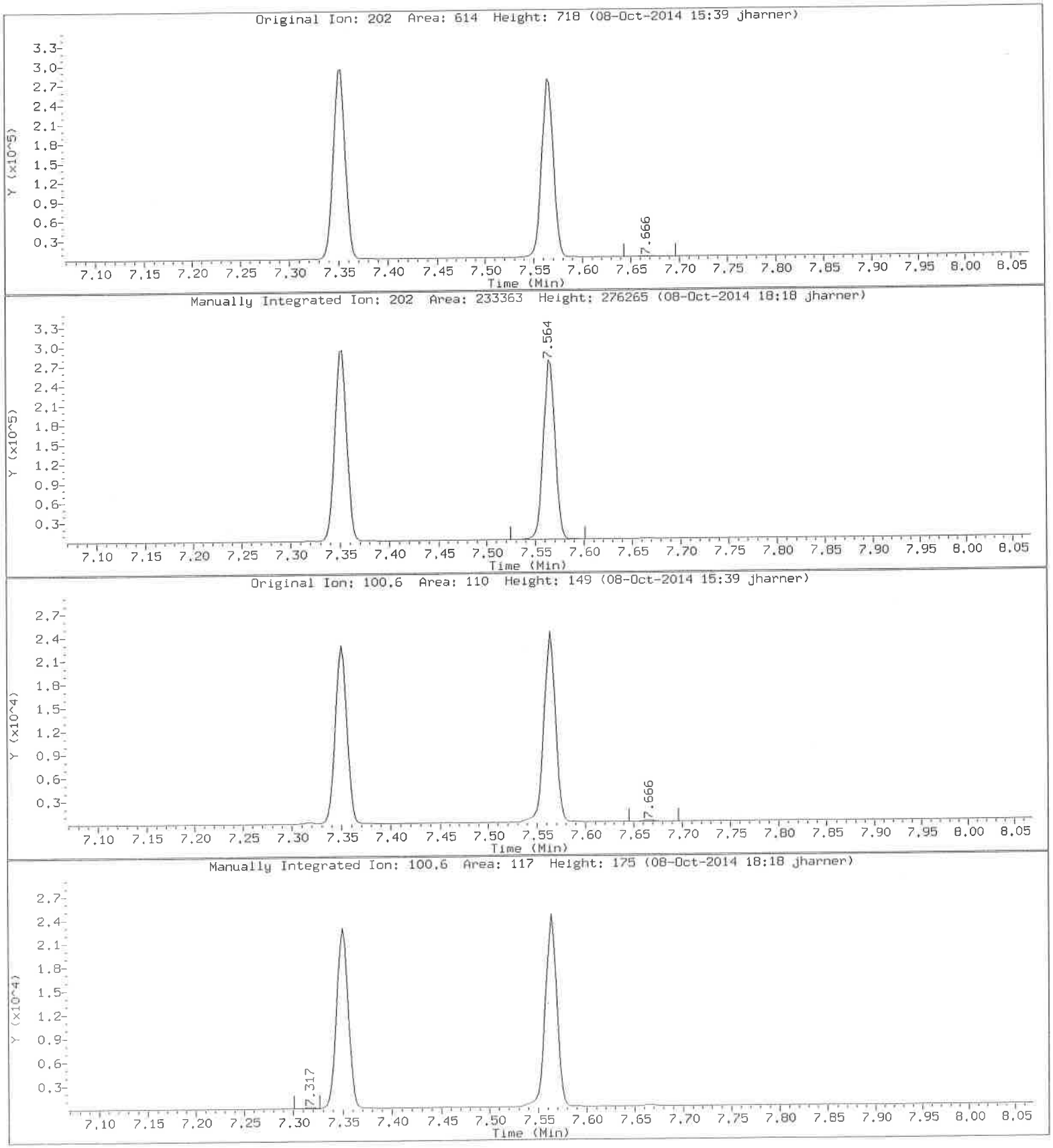
Operator: JSH
Column diameter: 0.25

Column phase: RTX-5MS



Data File: \\30wintarget\chem\30mss3.i\mss3100814.b/m31008z5.d (ManInt: all
Injection Date: 08-OCT-2014 15:05
Instrument: 30mss3.i
Lab Sample ID: 5 ppm PAH

Compound: Pyrene
CAS Number: 129-00-0



Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z6.d
Lab Smp Id: 20 ppm PAH
Inj Date : 08-OCT-2014 15:22
Operator : JSH
Inst ID: 30mss3.i
Smp Info : 20 ppm PAH
Misc Info : V-55-15
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Meth Date : 08-Oct-2014 17:03 30mss3.i
Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22
Cal File: m31008z6.d
Als bottle: 96
Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon
Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCTARG

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	4.038	4.041	(1.000)	159628	4.00000	(H)	WP
* 2 Acenaphthene-d8 IS	164	5.192	5.195	(1.000)	91819	4.00000	(H)	WP
* 3 Phenanthrene-d10 IS	188	6.306	6.310	(1.000)	138815	4.00000	(H)	WP
* 4 Chrysene-d12 IS	240	8.702	8.697	(1.000)	189701	4.00000		
* 5 Perylene-d12 IS	264	10.006	10.007	(1.000)	136385	4.00000		
$ 6 2-Fluorobiphenyl	172	4.720	4.720	(0.897)	524184	20.0000	19.9	
$ 7 Terphenyl-d14	244	7.671	7.670	(1.200)	635725	20.0000	19.8	
8 Naphthalene	128	4.053	4.053	(0.981)	830687	20.0000	19.3	
9 2-methylnaphthalene	142	4.498	4.498	(1.089)	559712	20.0000	19.0(H)	WP
10 1-methylnaphthalene	142	4.565	4.563	(1.105)	475096	20.0000	18.3	
11 Acenaphthylene	152	5.102	5.103	(0.969)	895623	20.0000	20.6(AH)	WP
12 Acenaphthene	153	5.219	5.218	(0.992)	509742	20.0000	19.3	
13 Fluorene	166	5.580	5.580	(1.060)	605627	20.0000	19.2(H)	WP
14 Phenanthrene	178	6.329	6.329	(0.990)	767495	20.0000	18.6(H)	WP
15 Anthracene	178	6.371	6.370	(0.996)	839573	20.0000	20.5(A)	
16 Fluoranthene	202	7.357	7.354	(1.151)	1018055	20.0000	20.5(A)	
17 Pyrene	202	7.573	7.568	(1.184)	1006773	20.0000	20.5(AH)	WP
18 Benzo[a]anthracene	228	8.691	8.685	(0.999)	989454	20.0000	19.8	
19 Chrysene	228	8.731	8.722	(1.003)	881919	20.0000	20.3(A)	
20 Benzo[b]fluoranthene	252	9.680	9.669	(0.967)	834522	20.0000	19.8	
21 Benzo[k]fluoranthene	252	9.708	9.693	(0.970)	832094	20.0000	19.1(H)	WP
22 Benzo[a]pyrene	252	9.971	9.958	(0.997)	816432	20.0000	19.0	
23 Dibenz[a,h]anthracene	278	11.057	11.030	(1.105)	1010075	20.0000	24.3(A)	
24 Indeno[1,2,3-cd]pyrene	276	11.057	11.030	(1.105)	1183108	20.0000	23.9(A)	
25 Benzo[g,h,i]perylene	276	11.357	11.325	(1.135)	988442	20.0000	23.6(A)	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
H - Operator selected an alternate compound hit.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m31008z6.d
Lab Smp Id: 20 ppm PAH
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Misc Info: V-55-15

Calibration Date: 08-OCT-2014
Calibration Time: 16:32

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	165449	82725	330898	159628	-3.52
2 Acenaphthene-d8	97214	48607	194428	91819	-5.55
3 Phenanthrene-d10	138406	69203	276812	138815	0.30
4 Chrysene-d12 IS	181749	90875	363498	189701	4.38
5 Perylene-d12 IS	146727	73364	293454	136385	-7.05

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.04	3.54	4.54	4.04	-0.07
2 Acenaphthene-d8	5.20	4.70	5.70	5.19	-0.06
3 Phenanthrene-d10	6.31	5.81	6.81	6.31	-0.06
4 Chrysene-d12 IS	8.70	8.20	9.20	8.70	0.06
5 Perylene-d12 IS	10.01	9.51	10.51	10.01	-0.01

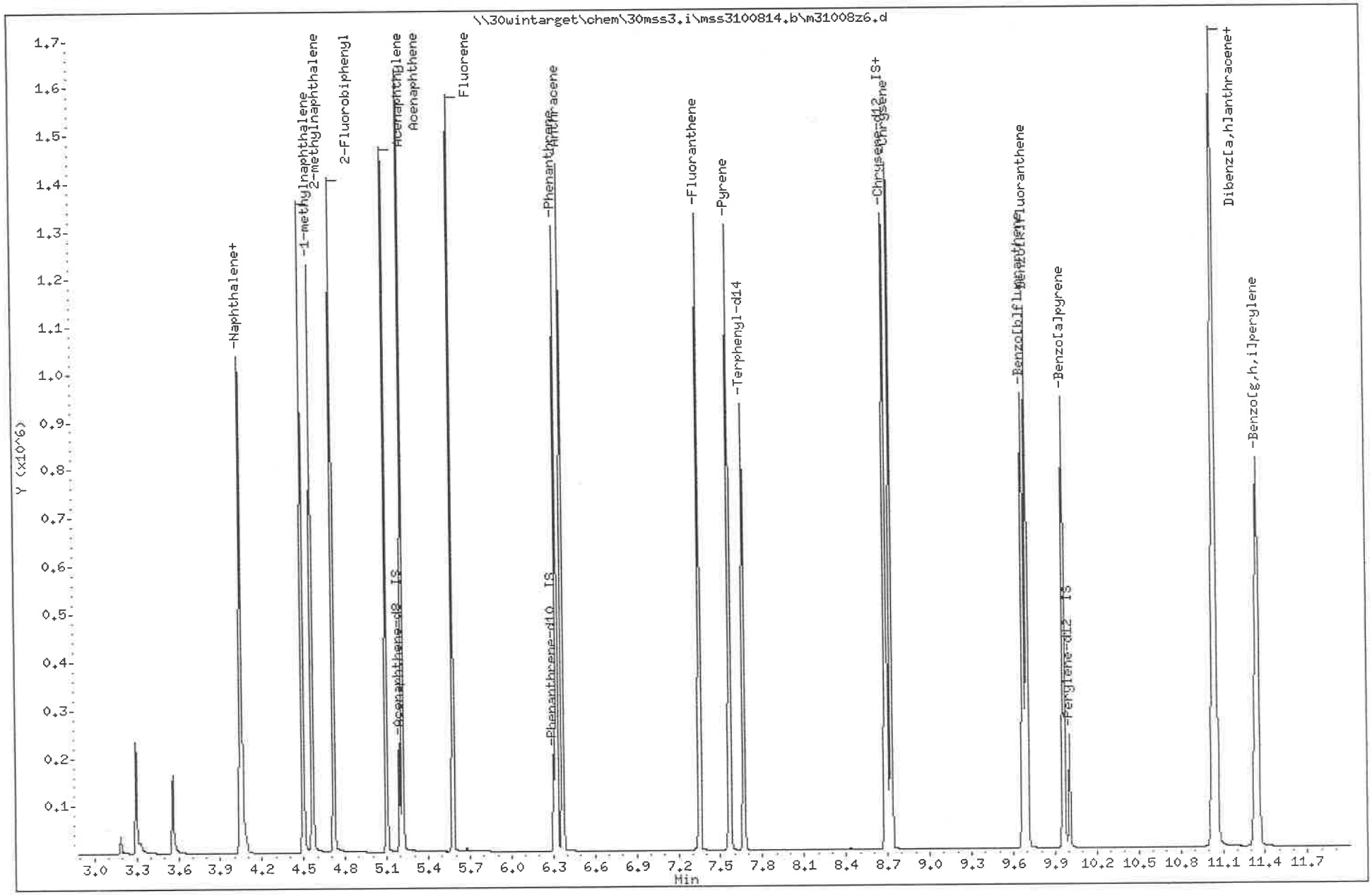
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z6.d
Date : 08-OCT-2014 15:22
Client ID:
Sample Info: 20 ppm PAH

Instrument: 30mss3.i

Operator: JSH
Column diameter: 0.25

Column phase: RTX-5MS



Data File: \\30wintarget\chem\30mss3.i\mss3100814.b/m31008z6.d (ManInt: all
Injection Date: 08-OCT-2014 15:22
Instrument: 30mss3.i
Lab Sample ID: 20 ppm PAH
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Pace Analytical Services, Inc

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss3.i Injection Date: 08-OCT-2014 16:32
Lab File ID: m31008z8.d Init. Cal. Date(s): 08-OCT-2014 08-OCT-2014
Analysis Type: Init. Cal. Times: 13:54 15:22
Lab Sample ID: 2 ppm PAH ICV Quant Type: ISTD
Method: \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 6 2-Fluorobiphenyl	1.14878	1.13039	0.050	-1.60096	20.00000	Averaged
$ 7 Terphenyl-d14	0.92558	0.94492	0.050	2.08893	20.00000	Averaged
8 Naphthalene	1.07625	1.02378	0.050	-4.87530	20.00000	Averaged
9 2-methylnaphthalene	0.73700	0.69641	0.050	-5.50794	20.00000	Averaged
10 1-methylnaphthalene	0.65053	0.60741	0.050	-6.62751	20.00000	Averaged
11 Acenaphthylene	1.89032	1.93351	0.050	2.28450	20.00000	Averaged
12 Acenaphthene	1.14812	1.10143	0.050	-4.06678	20.00000	Averaged
13 Fluorene	1.37697	1.23077	0.050	-10.61782	20.00000	Averaged
14 Phenanthrene	1.18687	1.15470	0.050	-2.71015	20.00000	Averaged
15 Anthracene	1.17922	1.14420	0.050	-2.97009	20.00000	Averaged
16 Fluoranthene	1.42996	1.39610	0.050	-2.36840	20.00000	Averaged
17 Pyrene	1.41605	1.45242	0.050	2.56887	20.00000	Averaged
18 Benzo[a]anthracene	1.05529	0.99761	0.050	-5.46636	20.00000	Averaged
19 Chrysene	0.91746	0.93963	0.050	2.41571	20.00000	Averaged
20 Benzo[b]fluoranthene	1.23594	1.20316	0.050	-2.65206	20.00000	Averaged
21 Benzo[k]fluoranthene	1.27912	1.32021	0.050	3.21241	20.00000	Averaged
22 Benzo[a]pyrene	1.26006	1.20828	0.050	-4.10901	20.00000	Averaged
23 Dibenz[a,h]anthracene	1.22106	1.02201	0.050	-16.30178	20.00000	Averaged
24 Indeno[1,2,3-cd]pyrene	1.45152	1.22078	0.050	-15.89644	20.00000	Averaged
25 Benzo[g,h,i]perylene	1.23006	1.02077	0.050	-17.01489	20.00000	Averaged

Average %D / Drift Results.

Calculated Average %D/Drift = 5.76780
Maximun Average %D/Drift = 15.00000
* Passed Average %D/Drift Test.

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z8.d
Lab Smp Id: 2 ppm PAH ICV
Inj Date : 08-OCT-2014 16:32
Operator : JSH Inst ID: 30mss3.i
Smp Info : 2 ppm PAH ICV
Misc Info : V-56-2
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Meth Date : 08-Oct-2014 18:19 30mss3.i Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22 Cal File: m31008z6.d
Als bottle: 97 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCTARG

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	4.041	4.041	(1.000)	165449	4.00000		
* 2 Acenaphthene-d8 IS	164	5.195	5.195	(1.000)	97214	4.00000		
* 3 Phenanthrene-d10 IS	188	6.310	6.310	(1.000)	138406	4.00000		
* 4 Chrysene-d12 IS	240	8.697	8.697	(1.000)	181749	4.00000		
* 5 Perylene-d12 IS	264	10.007	10.007	(1.000)	146727	4.00000		
$ 6 2-Fluorobiphenyl	172	4.720	4.720	(0.909)	54945	2.00000	1.97	
$ 7 Terphenyl-d14	244	7.670	7.670	(1.216)	65391	2.00000	2.04	
8 Naphthalene	128	4.053	4.053	(1.003)	84692	2.00000	1.90	
9 2-methylnaphthalene	142	4.498	4.498	(1.113)	57610	2.00000	1.89	
10 1-methylnaphthalene	142	4.563	4.563	(1.129)	50248	2.00000	1.87	
11 Acenaphthylene	152	5.103	5.103	(0.982)	93982	2.00000	2.04	
12 Acenaphthene	153	5.218	5.218	(1.004)	53537	2.00000	1.92	
13 Fluorene	166	5.580	5.580	(1.074)	59824	2.00000	1.79	
14 Phenanthrene	178	6.329	6.329	(1.003)	79909	2.00000	1.94	
15 Anthracene	178	6.370	6.370	(1.010)	79182	2.00000	1.94	
16 Fluoranthene	202	7.354	7.354	(1.165)	96614	2.00000	1.95	
17 Pyrene	202	7.568	7.568	(1.199)	100512	2.00000	2.05	
18 Benzo[a]anthracene	228	8.685	8.685	(0.999)	90657	2.00000	1.89	
19 Chrysene	228	8.722	8.722	(1.003)	85388	2.00000	2.05	
20 Benzo[b]fluoranthene	252	9.669	9.669	(0.966)	88268	2.00000	1.95	
21 Benzo[k]fluoranthene	252	9.693	9.693	(0.969)	96855	2.00000	2.06	
22 Benzo[a]pyrene	252	9.958	9.958	(0.995)	88644	2.00000	1.92	
23 Dibenz[a,h]anthracene	278	11.030	11.030	(1.102)	74978	2.00000	1.67	
24 Indeno[1,2,3-cd]pyrene	276	11.030	11.030	(1.102)	89561	2.00000	1.68	
25 Benzo[g,h,i]perylene	276	11.325	11.325	(1.132)	74887	2.00000	1.66	

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m31008z8.d
Lab Smp Id: 2 ppm PAH ICV
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3100814.b\100814pahcd.m
Misc Info: V-56-2

Calibration Date: 08-OCT-2014
Calibration Time: 15:40
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	156522	78261	313044	165449	5.70
2 Acenaphthene-d8	99976	49988	199952	97214	-2.76
3 Phenanthrene-d10	153793	76897	307586	138406	-10.01
4 Chrysene-d12 IS	162599	81300	325198	181749	11.78
5 Perylene-d12 IS	158488	79244	316976	146727	-7.42

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.04	3.54	4.54	4.04	0.06
2 Acenaphthene-d8	5.19	4.69	5.69	5.20	0.03
3 Phenanthrene-d10	6.31	5.81	6.81	6.31	0.07
4 Chrysene-d12 IS	8.69	8.19	9.19	8.70	0.04
5 Perylene-d12 IS	10.00	9.50	10.50	10.01	0.05

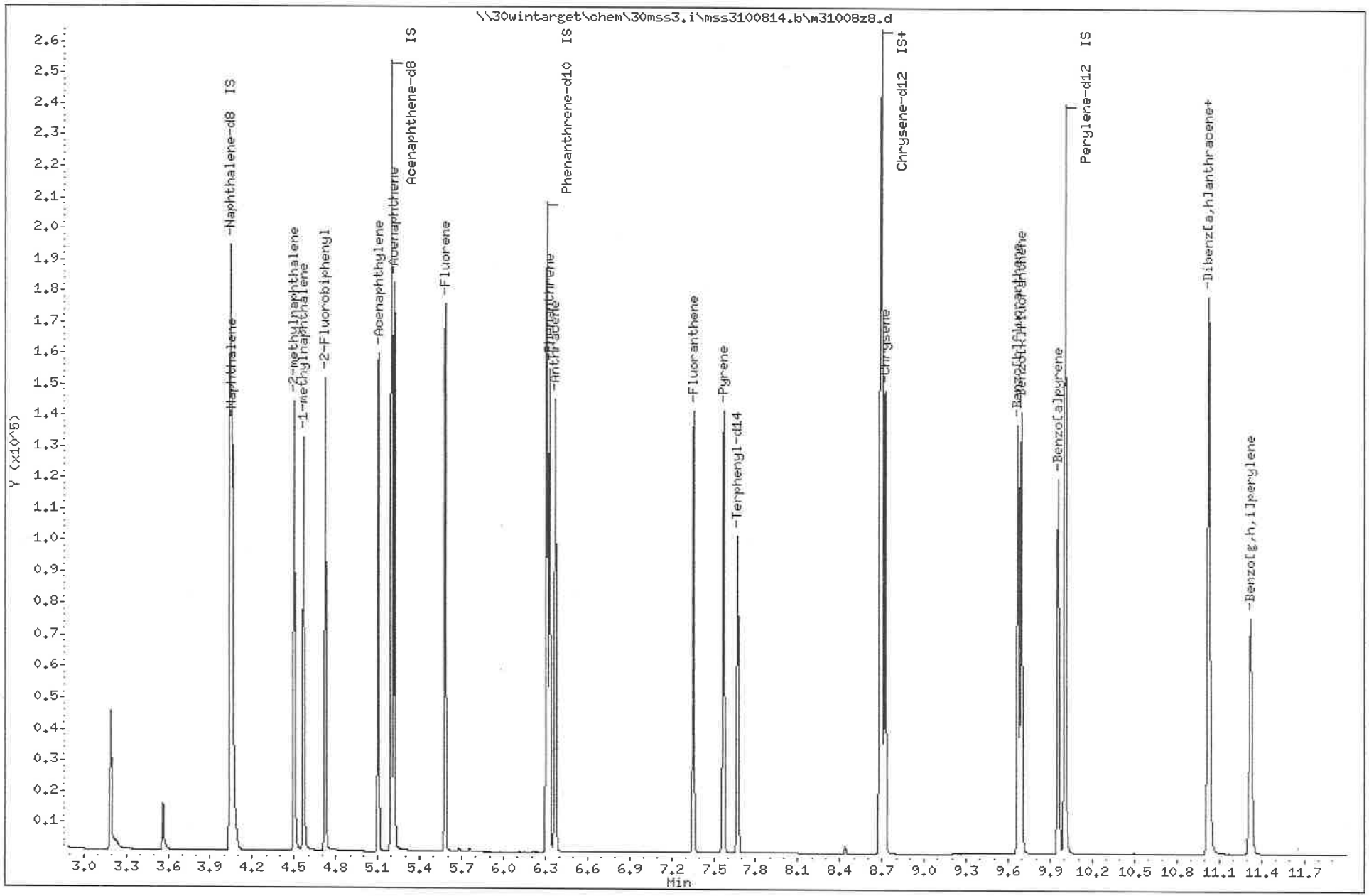
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008z8.d
Date : 08-OCT-2014 16:32
Client ID:
Sample Info: 2 ppm PAH ICV

Column phase: RTX-5MS

Instrument: 30mss3.i

Operator: JSH
Column diameter: 0.25



Data File: \\30wintarget\chem\30mss3.i\mss3100814.b/m31008z8.d (ManInt: all
Injection Date: 08-OCT-2014 16:32
Instrument: 30mss3.i
Lab Sample ID: 2 ppm PAH ICV
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS2 Calibration Date(s): 08/22/14 08/22/14

Column: RTX-5MS ID: 0.25 (mm) Calibration Time(s): 1828 1945

LAB FILE ID: RF0.1: M20822Z1 RF0.2: M20822Z2 RF0.5: M20822Z3
RF2: M20822Z4 RF5: M20822Z5

COMPOUND	RF0.1	RF0.2	RF0.5	RF2	RF5
Quinoline	0.529	0.512	0.588	0.619	0.664
Nitrobenzene-d5		0.132	0.133	0.145	0.152
Terphenyl-d14	0.788	0.689	0.655	0.687	0.823
2-Fluorobiphenyl	0.786	0.775	0.786	0.864	0.915

FORM VI SV

FORM 6
SEMIVOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS2 Calibration Date(s): 08/22/14 08/22/14

Column: RTX-5MS ID: 0.25 (mm) Calibration Time(s): 1828 1945

RF20: M20822Z6

COMPOUND	RF20	CURVE	COEFFICENT A1	%RSD OR R^2	
Quinoline	0.760	AVRG	0.61176773	15.0	
Nitrobenzene-d5	0.164	AVRG	0.14543222	9.2	<-
Terphenyl-d14	0.840	AVRG	0.74686455	10.6	
2-Fluorobiphenyl	0.805	AVRG	0.82189099	6.8	

FORM VI SV

Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 22-AUG-2014 18:28
End Cal Date : 22-AUG-2014 19:45
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Last Edit : 11-Sep-2014 12:38 mklunk

Calibration File Names:
Level 1: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z1.d
Level 2: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z2.d
Level 3: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z3.d
Level 4: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z4.d
Level 5: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z5.d
Level 6: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z6.d

Compound	0.1000000 Level 1	0.2000000 Level 2	0.5000000 Level 3	2.0000 Level 4	5.0000 Level 5	20.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
2 Nitrobenzene-d5	+++++	0.13218	0.13320	0.14549	0.15237	0.16391	AVRG		0.14543		9.19105
4 Quinoline	0.52925	0.51168	0.58764	0.61866	0.66364	0.75975	AVRG		0.61177		14.98942
$ 3 2-Fluorobiphenyl	0.78578	0.77461	0.78628	0.86427	0.91545	0.80496	AVRG		0.82189		6.80567
$ 5 Terphenyl-d14	0.78822	0.68882	0.65468	0.68669	0.82284	0.83994	AVRG		0.74686		10.64999

Pace Analytical Services Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 22-AUG-2014 18:28
End Cal Date : 22-AUG-2014 19:45
Quant Method : ISTD
Target Version : 4.14
Integrator : Falcon
Method file : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Last Edit : 11-Sep-2014 12:38 mklunk

Average %RSD Results.	
Calculated Average %RSD =	10.40903
Maximun Average %RSD =	15.00000
* Passed Average %RSD Test.	

Curve	Formula	Units
Averaged	Amt = Rsp/ml	Response

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z1.d
Lab Smp Id: Quinoline 0.1ppm
Inj Date : 22-AUG-2014 18:28
Operator : MAK Inst ID: 30mss2.i
Smp Info : Quinoline 0.1ppm
Misc Info : v-47-8
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Meth Date : 11-Sep-2014 12:36 mklunk Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 91 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: 30MKLUNK0319

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)
2 Nitrobenzene-d5	128	4.077	4.077	(0.889)	431	0.10000	0.0906
* 1 Naphthalene-d8 IS	136	4.586	4.586	(1.000)	130826	4.00000	
4 Quinoline	129	4.824	4.824	(1.052)	1731	0.10000	0.0865
$ 3 2-Fluorobiphenyl	172	5.292	5.292	(1.154)	2570	0.10000	0.0956
$ 5 Terphenyl-d14	244	8.063	8.063	(1.758)	2578	0.10000	0.106

Data File: m20822z1.d
Report Date: 11-Sep-2014 12:37

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m20822z1.d
Lab Smp Id: Quinoline 0.1ppm
Analysis Type: SV
Quant Type: ISTD
Operator: MAK
Method File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.u
Misc Info: v-47-8

Calibration Date: 22-AUG-2014
Calibration Time: 20:00

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	99661	49831	199322	130826	31.27

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.59	4.09	5.09	4.59	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

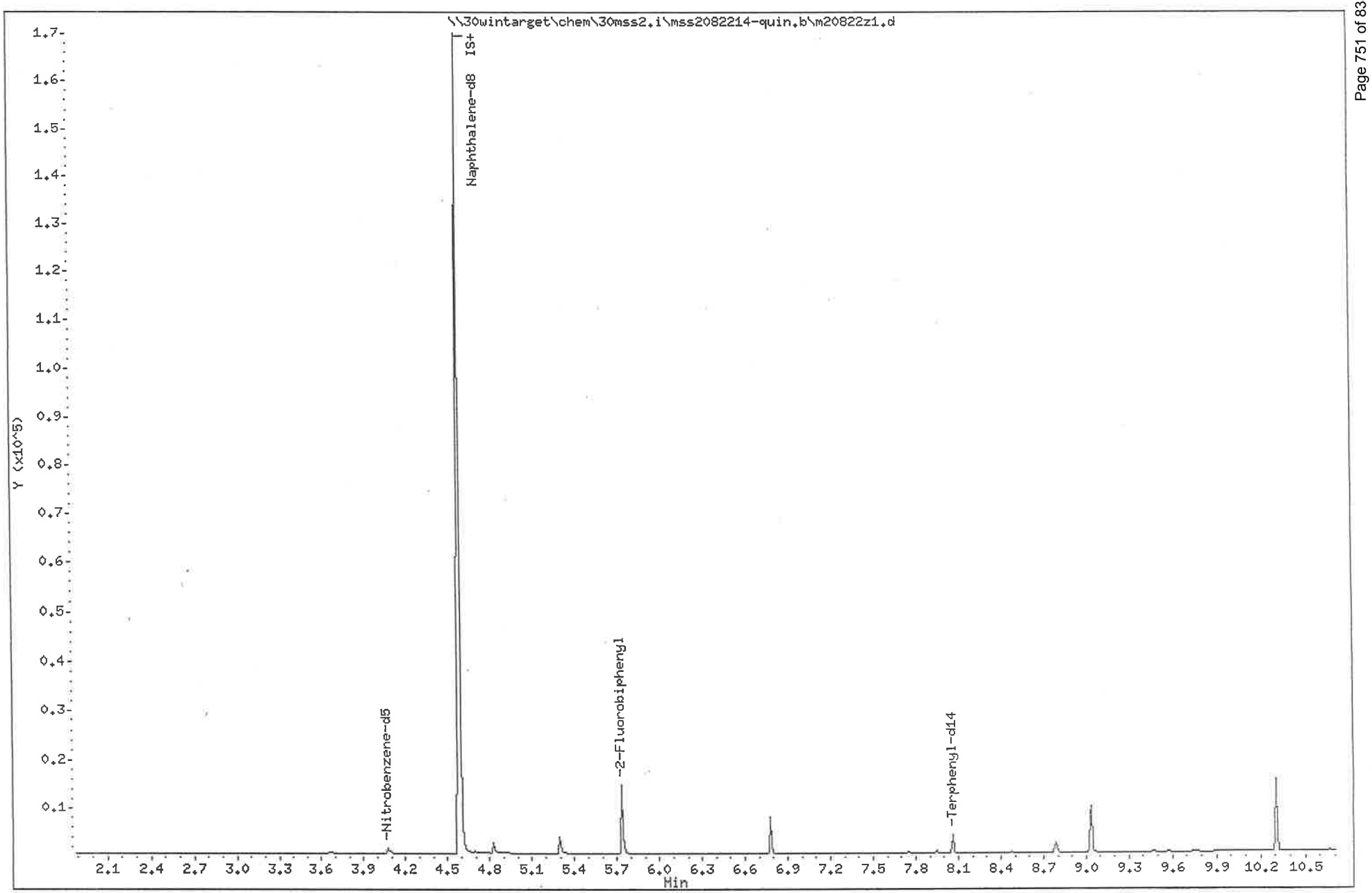
Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z1.d
Date : 22-AUG-2014 18:28
Client ID:
Sample Info: Quinoline 0.1ppm

Instrument: 30mss2.i

Operator: MAK

Column phase: RTX-5MS

Column diameter: 0.25



Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z2.d
Lab Smp Id: Quinoline 0.2ppm
Inj Date : 22-AUG-2014 18:43
Operator : MAK
Inst ID: 30mss2.i
Smp Info : Quinoline 0.2ppm
Misc Info : v-47-9
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Meth Date : 11-Sep-2014 12:36 mklunk
Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45
Cal File: m20822z6.d
Als bottle: 92
Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon
Compound Sublist: all.sub
Target Version: 4.14
Processing Host: 30MKLUNK0319

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)
2 Nitrobenzene-d5	128	4.087	4.077	(0.891)	829	0.20000	0.182
* 1 Naphthalene-d8 IS	136	4.586	4.586	(1.000)	125431	4.00000	
4 Quinoline	129	4.824	4.824	(1.052)	3209	0.20000	0.167
$ 3 2-Fluorobiphenyl	172	5.292	5.292	(1.154)	4858	0.20000	0.188
$ 5 Terphenyl-d14	244	8.063	8.063	(1.758)	4320	0.20000	0.184

Data File: m20822z2.d
Report Date: 11-Sep-2014 12:37

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m20822z2.d
Lab Smp Id: Quinoline 0.2ppm
Analysis Type: SV
Quant Type: ISTD
Operator: MAK
Method File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Misc Info: v-47-9

Calibration Date: 22-AUG-2014
Calibration Time: 20:00

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	99661	49831	199322	125431	25.86

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.59	4.09	5.09	4.59	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

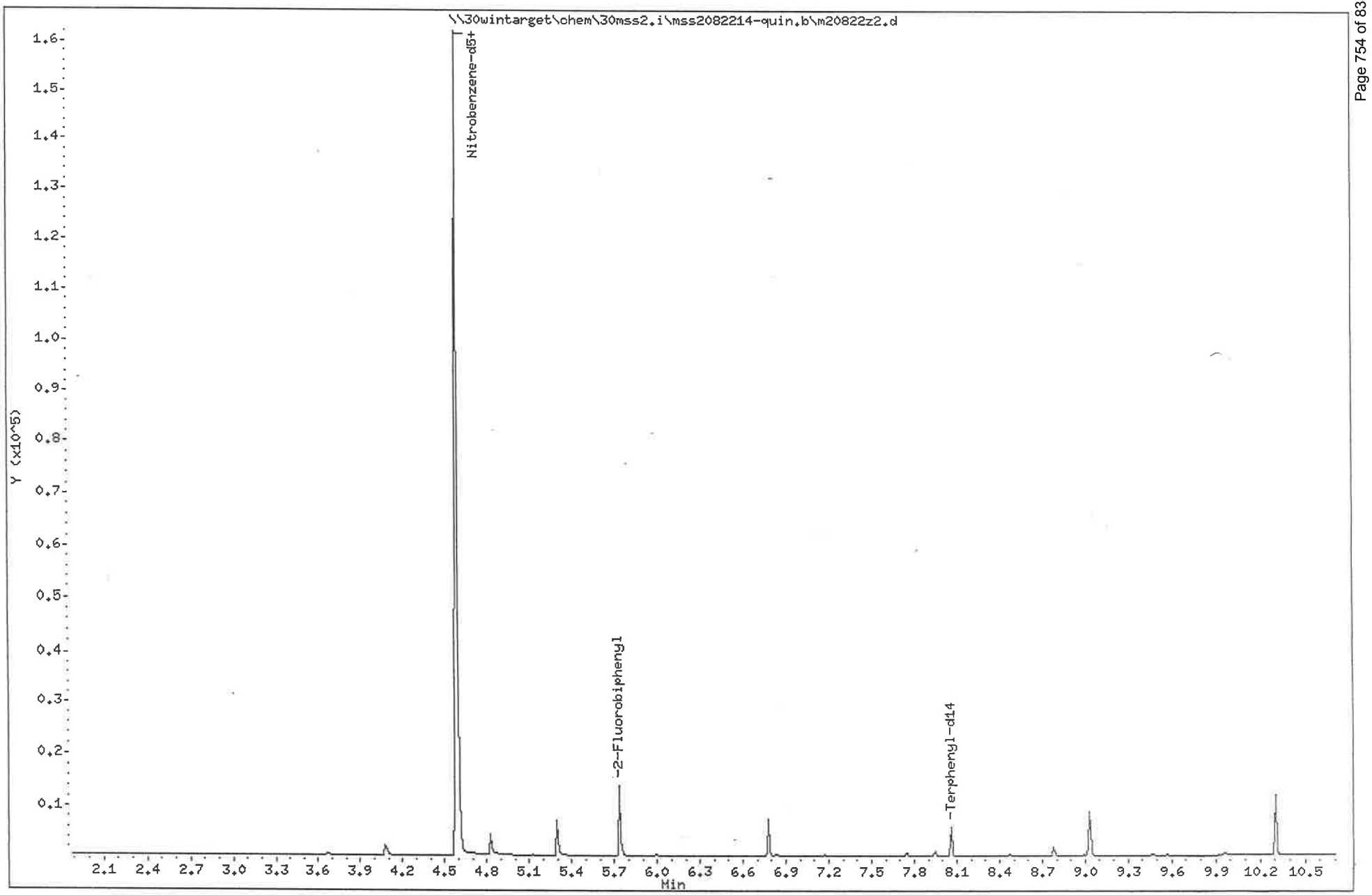
Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z2.d
Date : 22-AUG-2014 18:43
Client ID:
Sample Info: Quinoline 0.2ppm

Instrument: 30mss2.i

Operator: MAK

Column phase: RTX-5MS

Column diameter: 0.25



Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z3.d
Lab Smp Id: Quinoline 0.5ppm
Inj Date : 22-AUG-2014 18:58
Operator : MAK Inst ID: 30mss2.i
Smp Info : Quinoline 0.5ppm
Misc Info : v-47-10
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Meth Date : 11-Sep-2014 12:36 mklunk Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 93 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: 30MKLUNK0319

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)
2 Nitrobenzene-d5	128	4.077	4.077	(0.889)	1832	0.50000	0.458
* 1 Naphthalene-d8 IS	136	4.586	4.586	(1.000)	110027	4.00000	
4 Quinoline	129	4.825	4.824	(1.052)	8082	0.50000	0.480
$ 3 2-Fluorobiphenyl	172	5.292	5.292	(1.154)	10814	0.50000	0.478
$ 5 Terphenyl-d14	244	8.063	8.063	(1.758)	9004	0.50000	0.438

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m20822z3.d
Lab Smp Id: Quinoline 0.5ppm
Analysis Type: SV
Quant Type: ISTD
Operator: MAK
Method File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Misc Info: v-47-10

Calibration Date: 22-AUG-2014
Calibration Time: 20:00
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	99661	49831	199322	110027	10.40

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.59	4.09	5.09	4.59	0.00

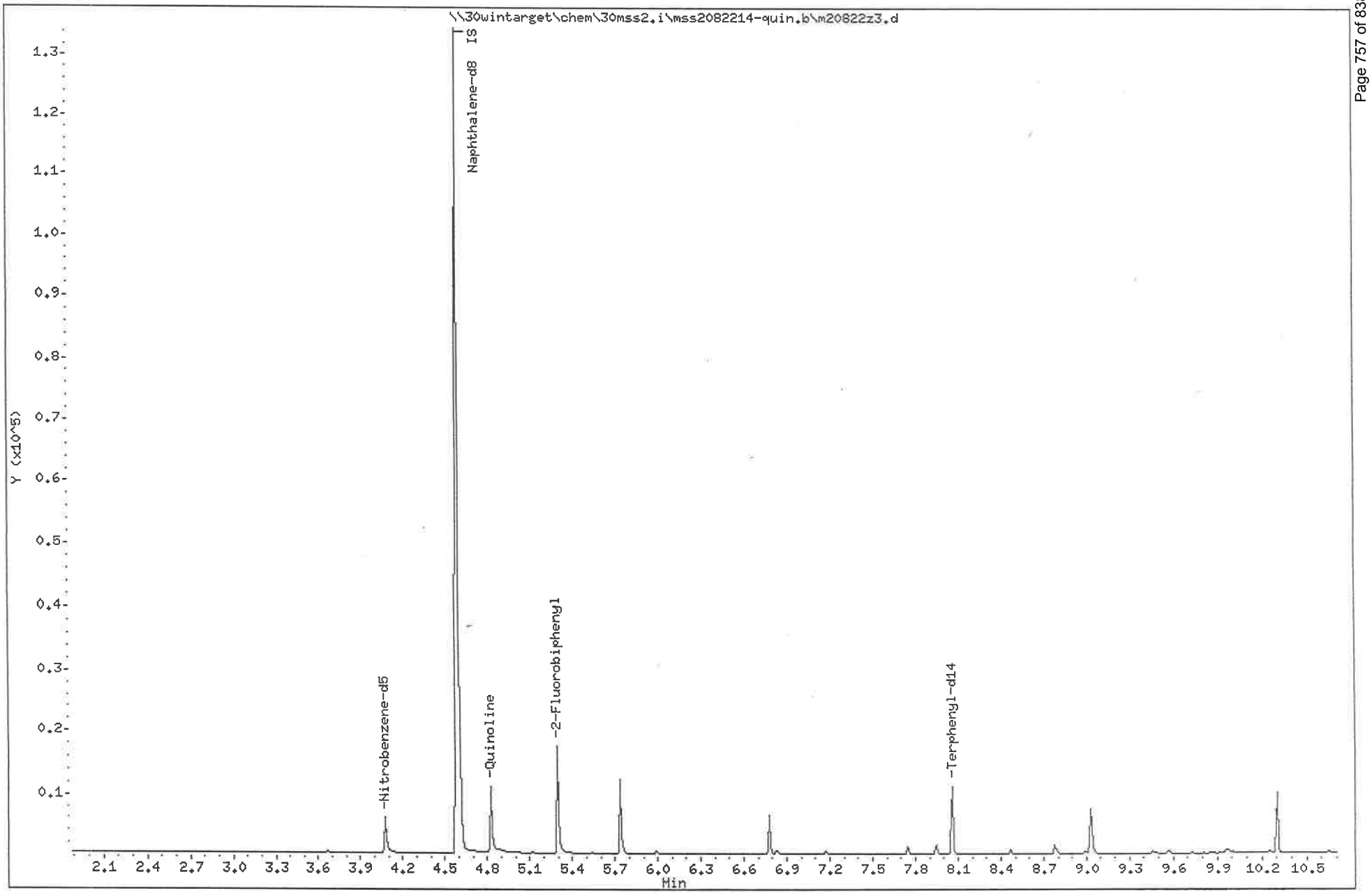
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z3.d
Date : 22-AUG-2014 18:58
Client ID:
Sample Info: Quinoline 0.5ppm

Instrument: 30mss2.i

Operator: MAK
Column diameter: 0.25

Column phase: RTX-5MS



Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z4.d
Lab Smp Id: Quinoline 2ppm
Inj Date : 22-AUG-2014 19:14
Operator : MAK Inst ID: 30mss2.i
Smp Info : Quinoline 2ppm
Misc Info : v-47-11
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Meth Date : 11-Sep-2014 12:36 mklunk Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 94 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: 30MKLUNK0319

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)
2 Nitrobenzene-d5	128	4.077	4.077	(0.889)	7250	2.00000	2.00
* 1 Naphthalene-d8 IS	136	4.586	4.586	(1.000)	99661	4.00000	
4 Quinoline	129	4.825	4.824	(1.052)	30828	2.00000	2.02
$ 3 2-Fluorobiphenyl	172	5.292	5.292	(1.154)	43067	2.00000	2.10
$ 5 Terphenyl-d14	244	8.063	8.063	(1.758)	34218	2.00000	1.84

Data File: m20822z4.d
Report Date: 11-Sep-2014 12:37

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m20822z4.d
Lab Smp Id: Quinoline 2ppm
Analysis Type: SV
Quant Type: ISTD
Operator: MAK
Method File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Misc Info: v-47-11

Calibration Date: 22-AUG-2014
Calibration Time: 20:00

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	99661	49831	199322	99661	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.59	4.09	5.09	4.59	0.00

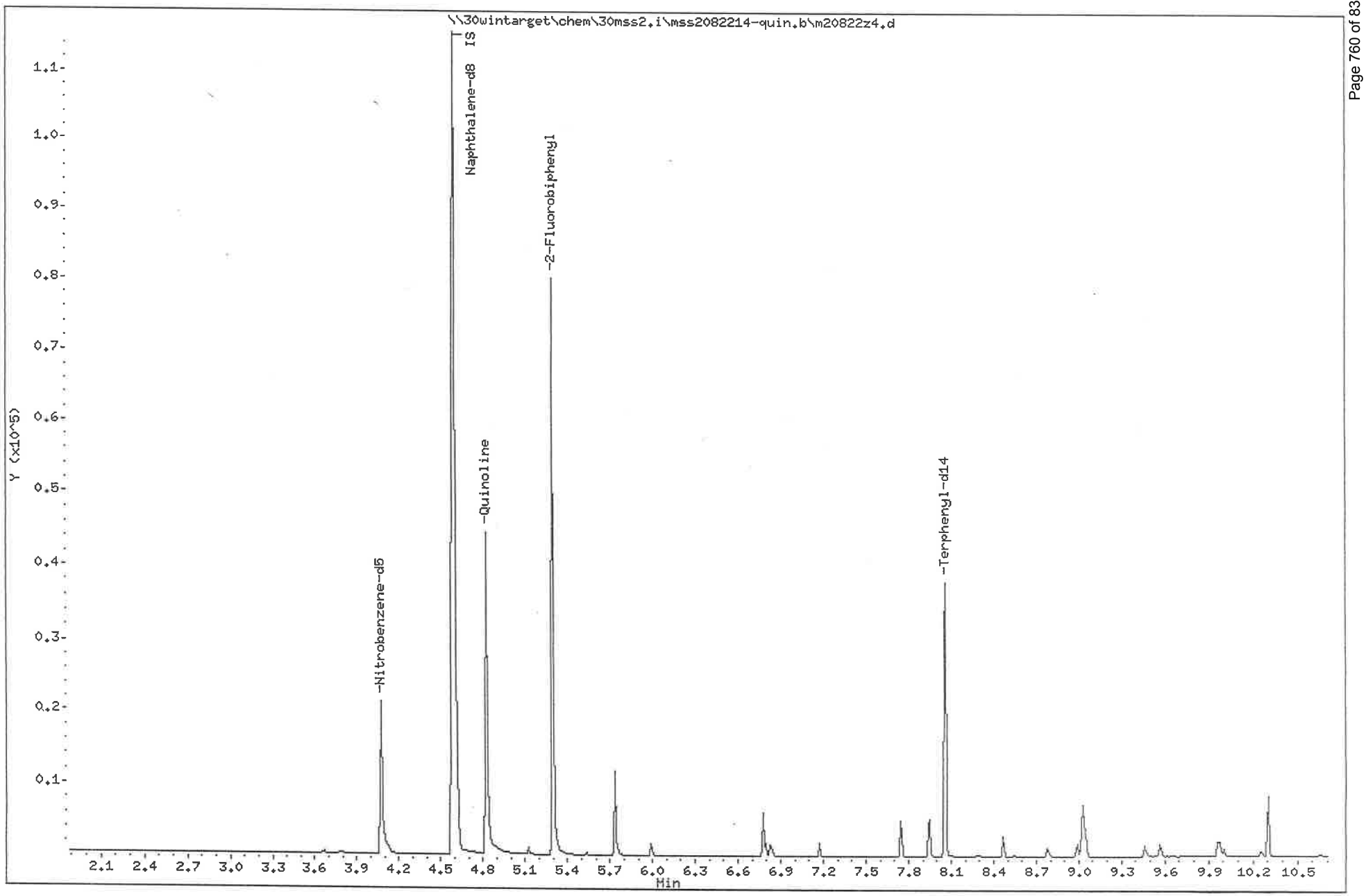
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z4.d
Date : 22-AUG-2014 19:14
Client ID:
Sample Info: Quinoline 2ppm

Instrument: 30mss2.i

Operator: MAK
Column diameter: 0.25

Column phase: RTX-5MS



Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z5.d
Lab Smp Id: Quinoline 5ppm
Inj Date : 22-AUG-2014 19:29
Operator : MAK Inst ID: 30mss2.i
Smp Info : Quinoline 5ppm
Misc Info : v-47-12
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Meth Date : 11-Sep-2014 12:36 mklunk Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 95 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: 30MKLUNK0319

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)
2 Nitrobenzene-d5	128	4.077	4.077	(0.889)	25048	5.00000	5.24
* 1 Naphthalene-d8 IS	136	4.586	4.586	(1.000)	131514	4.00000	
4 Quinoline	129	4.824	4.824	(1.052)	109097	5.00000	5.42
$ 3 2-Fluorobiphenyl	172	5.291	5.292	(1.154)	150493	5.00000	5.57
$ 5 Terphenyl-d14	244	8.063	8.063	(1.758)	135268	5.00000	5.51

Data File: m20822z5.d
Report Date: 11-Sep-2014 12:37

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m20822z5.d
Lab Smp Id: Quinoline 5ppm
Analysis Type: SV
Quant Type: ISTD
Operator: MAK
Method File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Misc Info: v-47-12

Calibration Date: 22-AUG-2014
Calibration Time: 20:00

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	99661	49831	199322	131514	31.96

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.59	4.09	5.09	4.59	-0.00

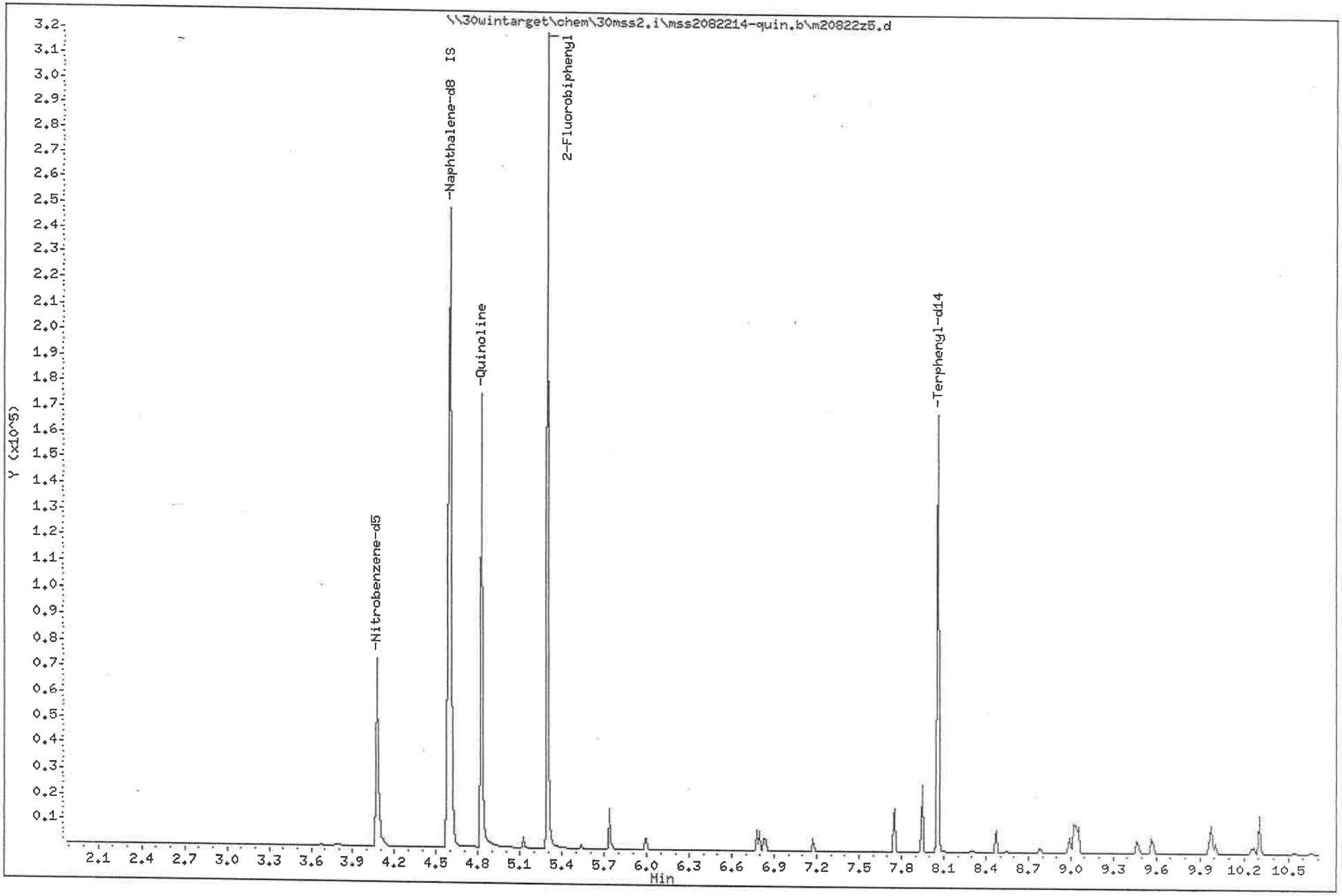
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z5.d
Date : 22-AUG-2014 19:29
Client ID:
Sample Info: Quinoline 5ppm

Instrument: 30mss2.i

Operator: MAK
Column diameter: 0.25

Column phase: RTX-5MS



Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z6.d
Lab Smp Id: Quinoline20ppm
Inj Date : 22-AUG-2014 19:45
Operator : MAK Inst ID: 30mss2.i
Smp Info : Quinoline20ppm
Misc Info : v-47-13
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Meth Date : 11-Sep-2014 12:36 mklunk Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 96 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: 30MKLUNK0319

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)
2 Nitrobenzene-d5	128	4.087	4.077	(0.891)	105655	20.0000	22.5(A)
* 1 Naphthalene-d8 IS	136	4.586	4.586	(1.000)	128916	4.00000	
4 Quinoline	129	4.825	4.824	(1.052)	489717	20.0000	24.8(A)
$ 3 2-Fluorobiphenyl	172	5.292	5.292	(1.154)	518862	20.0000	19.6
$ 5 Terphenyl-d14	244	8.063	8.063	(1.758)	541409	20.0000	22.5(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m20822z6.d
Lab Smp Id: Quinoline20ppm
Analysis Type: SV
Quant Type: ISTD
Operator: MAK
Method File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Misc Info: v-47-13

Calibration Date: 22-AUG-2014
Calibration Time: 20:00

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	99661	49831	199322	128916	29.35

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.59	4.09	5.09	4.59	0.00

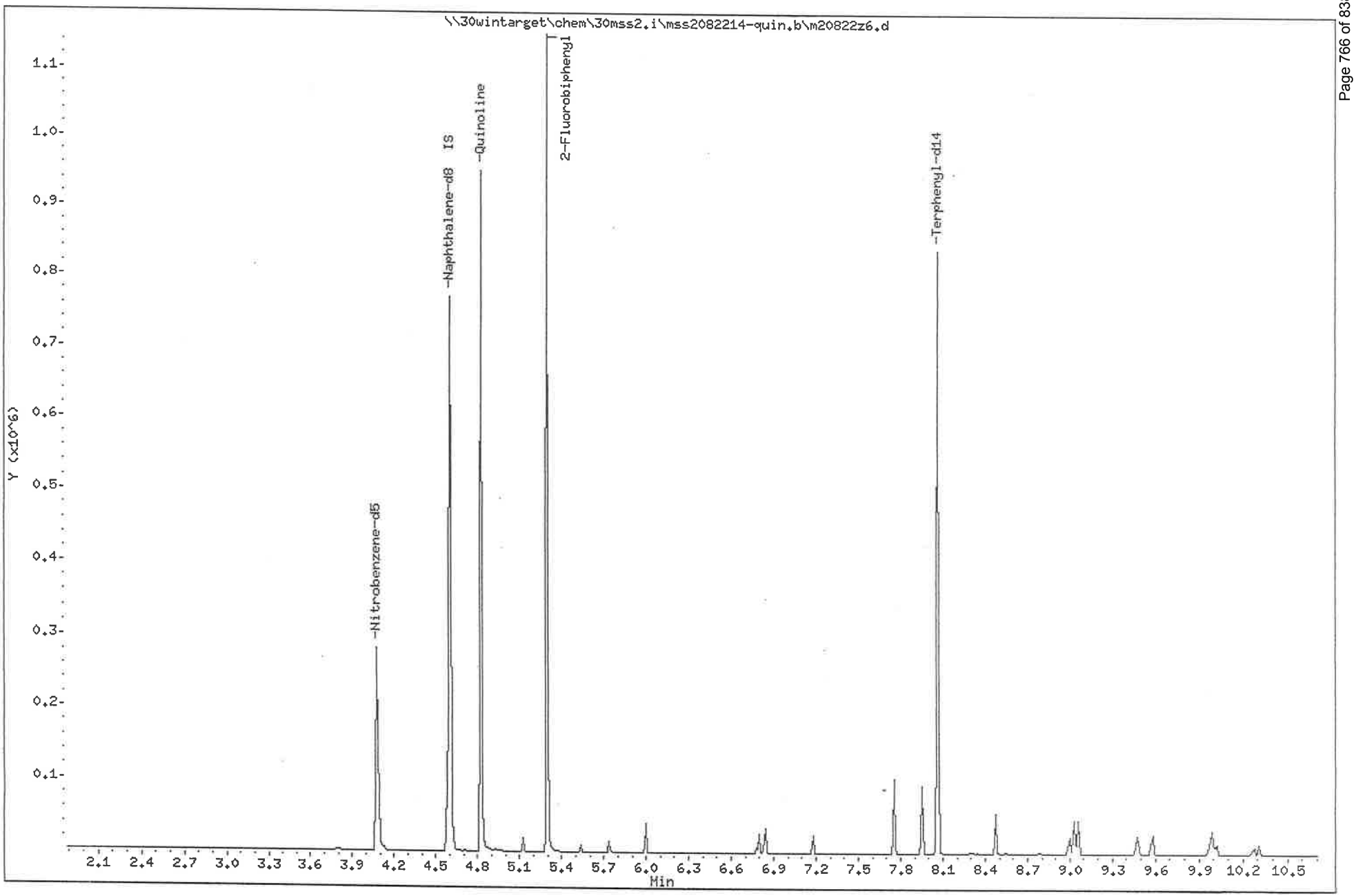
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z6.d
Date : 22-AUG-2014 19:45
Client ID:
Sample Info: Quinoline20ppm

Instrument: 30mss2.i

Operator: MAK
Column diameter: 0.25

Column phase: RTX-5MS



Pace Analytical Services, Inc

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss2.i Injection Date: 22-AUG-2014 20:00
Lab File ID: m20822z7.d Init. Cal. Date(s): 22-AUG-2014 22-AUG-2014
Analysis Type: Init. Cal. Times: 18:28 19:45
Lab Sample ID: Quinoline 2ppm ICV Quant Type: ISTD
Method: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
2 Nitrobenzene-d5	0.14543	0.14243	0.050	-2.06371	20.00000	Averaged
4 Quinoline	0.61177	0.60896	0.050	-0.45919	20.00000	Averaged
$ 3 2-Fluorobiphenyl	0.82189	0.86187	0.050	4.86424	20.00000	Averaged
$ 5 Terphenyl-d14	0.74686	0.72058	0.050	-3.51981	20.00000	Averaged

Average %D / Drift Results.

Calculated Average %D/Drift = 2.72674
Maximun Average %D/Drift = 15.00000
* Passed Average %D/Drift Test.

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z7.d
Lab Smp Id: Quinoline 2ppm ICV
Inj Date : 22-AUG-2014 20:00
Operator : MAK Inst ID: 30mss2.i
Smp Info : Quinoline 2ppm ICV
Misc Info : v-48-1
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Meth Date : 11-Sep-2014 12:38 30mss2.i Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 97 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: 30MKLUNK0319

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)
2 Nitrobenzene-d5	128	4.077	4.077	(0.889)	7137	2.00000	1.96
* 1 Naphthalene-d8 IS	136	4.586	4.586	(1.000)	100217	4.00000	
4 Quinoline	129	4.824	4.824	(1.052)	30514	2.00000	1.99
$ 3 2-Fluorobiphenyl	172	5.292	5.292	(1.154)	43187	2.00000	2.10
$ 5 Terphenyl-d14	244	8.063	8.063	(1.758)	36107	2.00000	1.93

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m20822z7.d
Lab Smp Id: Quinoline 2ppm ICV
Analysis Type: SV
Quant Type: ISTD
Operator: MAK
Method File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m
Misc Info: v-48-1

Calibration Date: 22-AUG-2014
Calibration Time: 19:14
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	99661	49831	199322	100217	0.56

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.59	4.09	5.09	4.59	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss2.i Injection Date: 22-AUG-2014 20:00
Lab File ID: m20822z7.d Init. Cal. Date(s): 22-AUG-2014 22-AUG-2014
Analysis Type: Init. Cal. Times: 18:28 19:45
Lab Sample ID: Quinoline 2ppm ICV Quant Type: ISTD
Method: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\mss2082214-quin.m

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
2 Nitrobenzene-d5	0.14543	0.14243	0.050	-2.06371	20.00000	Averaged
4 Quinoline	0.61177	0.60896	0.050	-0.45919	20.00000	Averaged
$ 3 2-Fluorobiphenyl	0.82189	0.86187	0.050	4.86424	20.00000	Averaged
$ 5 Terphenyl-d14	0.74686	0.72058	0.050	-3.51981	20.00000	Averaged

Average %D / Drift Results.

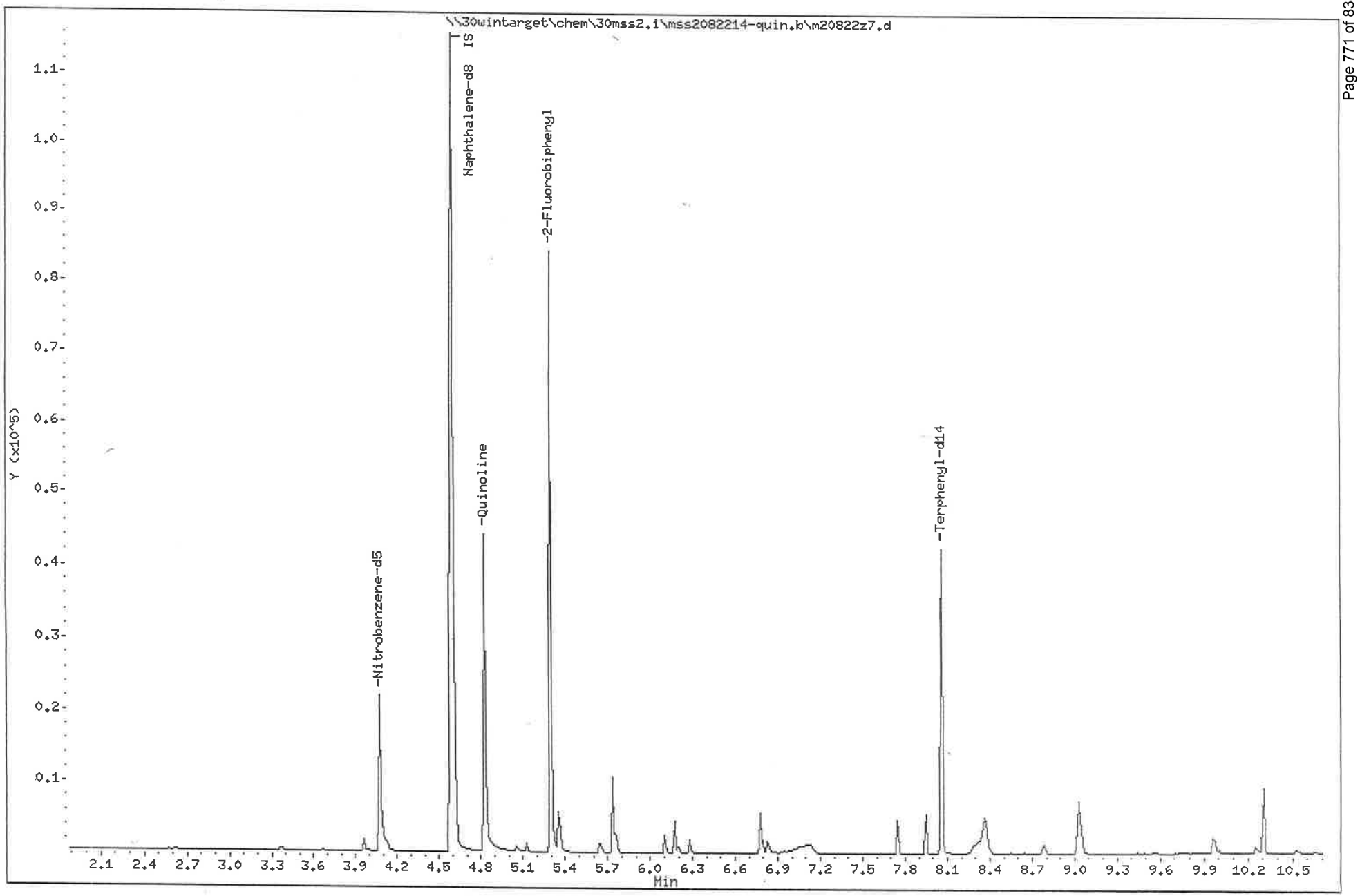
Calculated Average %D/Drift = 2.72674
Maximun Average %D/Drift = 15.00000
* Passed Average %D/Drift Test.

Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822z7.d
Date : 22-AUG-2014 20:00
Client ID:
Sample Info: Quinoline 2ppm ICV

Instrument: 30mss2.i

Operator: MAK
Column diameter: 0.25

Column phase: RTX-5MS



FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS3 Calibration Date: 11/07/14 Time: 1432

Lab File ID: M31107S1 Init. Calib. Date(s): 10/08/14 10/08/14

Init. Calib. Times: 1354 1522

GC Column: RTX-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF2	MIN RRF	%D	MAX %D
Naphthalene	1.076	1.074	0.05	0.2	20.0
Acenaphthylene	1.890	1.832	0.05	3.1	20.0
Acenaphthene	1.148	1.070	0.05	6.8	20.0
Fluorene	1.377	1.326	0.05	3.7	20.0
Phenanthrene	1.187	1.209	0.05	1.8	20.0
Anthracene	1.180	1.226	0.05	3.9	20.0
Fluoranthene	1.430	1.449	0.05	1.3	20.0
Pyrene	1.416	1.515	0.05	7.0	20.0
Benzo[a]anthracene	1.055	1.028	0.05	2.6	20.0
Chrysene	0.918	0.951	0.05	3.6	20.0
Benzo[b]fluoranthene	1.236	1.263	0.05	2.2	20.0
Benzo[k]fluoranthene	1.279	1.384	0.05	8.2	20.0
Benzo[a]pyrene	1.260	1.267	0.05	0.6	20.0
Indeno[1,2,3-cd]pyrene	1.451	1.427	0.05	1.6	20.0
Dibenz[a,h]anthracene	1.221	1.215	0.05	0.5	20.0
Benzo[g,h,i]perylene	1.230	1.244	0.05	1.1	20.0
2-methylnaphthalene	0.737	0.636	0.05	13.7	20.0
1-methylnaphthalene	0.650	0.596	0.05	8.3	20.0
Terphenyl-d14	0.926	0.985	0.05	6.4	20.0
2-Fluorobiphenyl	1.149	1.058	0.05	7.9	20.0

FORM VII SV

Pace Analytical Services, Inc

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss3.i Injection Date: 07-NOV-2014 14:32
Lab File ID: m31107s1.d Init. Cal. Date(s): 08-OCT-2014 08-OCT-2014
Analysis Type: Init. Cal. Times: 13:54 15:22
Lab Sample ID: 2 ppm PAH SIM Quant Type: ISTD
Method: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 6 2-Fluorobiphenyl	1.14878	1.05855	0.050	-7.85474	20.00000	Averaged
$ 7 Terphenyl-d14	0.92558	0.98507	0.050	6.42706	20.00000	Averaged
8 Naphthalene	1.07625	1.07412	0.050	-0.19812	20.00000	Averaged
9 2-methylnaphthalene	0.73700	0.63561	0.050	-13.75784	20.00000	Averaged
10 1-methylnaphthalene	0.65053	0.59647	0.050	-8.30920	20.00000	Averaged
11 Acenaphthylene	1.89032	1.83172	0.050	-3.10001	20.00000	Averaged
12 Acenaphthene	1.14812	1.06991	0.050	-6.81192	20.00000	Averaged
13 Fluorene	1.37697	1.32616	0.050	-3.68989	20.00000	Averaged
14 Phenanthrene	1.18687	1.20929	0.050	1.88903	20.00000	Averaged
15 Anthracene	1.17922	1.22608	0.050	3.97395	20.00000	Averaged
16 Fluoranthene	1.42996	1.44921	0.050	1.34607	20.00000	Averaged
17 Pyrene	1.41605	1.51540	0.050	7.01636	20.00000	Averaged
18 Benzo[a]anthracene	1.05529	1.02798	0.050	-2.58788	20.00000	Averaged
19 Chrysene	0.91746	0.95115	0.050	3.67205	20.00000	Averaged
20 Benzo[b]fluoranthene	1.23594	1.26268	0.050	2.16390	20.00000	Averaged
21 Benzo[k]fluoranthene	1.27912	1.38397	0.050	8.19764	20.00000	Averaged
22 Benzo[a]pyrene	1.26006	1.26724	0.050	0.56961	20.00000	Averaged
23 Dibenz[a,h]anthracene	1.22106	1.21495	0.050	-0.50087	20.00000	Averaged
24 Indeno[1,2,3-cd]pyrene	1.45152	1.42662	0.050	-1.71574	20.00000	Averaged
25 Benzo[g,h,i]perylene	1.23006	1.24402	0.050	1.13462	20.00000	Averaged

Average %D / Drift Results.

Calculated Average %D/Drift = 4.24582
Maximun Average %D/Drift = 15.00000
* Passed Average %D/Drift Test.

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss3.i\mss3110714.b\m31107s1.d
Lab Smp Id: 2 ppm PAH SIM
Inj Date : 07-NOV-2014 14:32
Operator : JSH Inst ID: 30mss3.i
Smp Info : 2 ppm PAH SIM
Misc Info : V-55-13
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Meth Date : 25-Nov-2014 13:40 30mss3.i Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22 Cal File: m31008z6.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	3.781	3.781	(1.000)	144127	4.00000		
* 2 Acenaphthene-d8 IS	164	4.917	4.917	(1.000)	90862	4.00000		
* 3 Phenanthrene-d10 IS	188	5.988	5.988	(1.000)	127784	4.00000		
* 4 Chrysene-d12 IS	240	8.332	8.332	(1.000)	178001	4.00000		
* 5 Perylene-d12 IS	264	9.627	9.627	(1.000)	150117	4.00000	(M)	LT
$ 6 2-Fluorobiphenyl	172	4.461	4.461	(0.907)	48091	2.00000	1.84	
$ 7 Terphenyl-d14	244	7.325	7.325	(1.223)	62938	2.00000	2.13	
8 Naphthalene	128	3.796	3.796	(1.004)	77405	2.00000	2.00	
9 2-methylnaphthalene	142	4.238	4.238	(1.121)	45804	2.00000	1.72	
10 1-methylnaphthalene	142	4.303	4.303	(1.138)	42984	2.00000	1.83	
11 Acenaphthylene	152	4.827	4.827	(0.982)	83217	2.00000	1.94	
12 Acenaphthene	153	4.938	4.938	(1.004)	48607	2.00000	1.86	
13 Fluorene	166	5.291	5.291	(1.076)	60249	2.00000	1.93	
14 Phenanthrene	178	6.007	6.007	(1.003)	77264	2.00000	2.04	
15 Anthracene	178	6.049	6.049	(1.010)	78337	2.00000	2.08	
16 Fluoranthene	202	7.009	7.009	(1.170)	92593	2.00000	2.03	
17 Pyrene	202	7.216	7.216	(1.205)	96822	2.00000	2.14	
18 Benzo[a]anthracene	228	8.322	8.322	(0.999)	91491	2.00000	1.95	
19 Chrysene	228	8.356	8.356	(1.003)	84653	2.00000	2.07	
20 Benzo[b]fluoranthene	252	9.299	9.299	(0.966)	94775	2.00000	2.04	
21 Benzo[k]fluoranthene	252	9.323	9.323	(0.968)	103879	2.00000	2.16	
22 Benzo[a]pyrene	252	9.583	9.583	(0.995)	95117	2.00000	2.01	
23 Dibenz[a,h]anthracene	278	10.530	10.530	(1.094)	91192	2.00000	1.99	
24 Indeno[1,2,3-cd]pyrene	276	10.530	10.530	(1.094)	107080	2.00000	1.96	
25 Benzo[g,h,i]perylene	276	10.788	10.788	(1.121)	93374	2.00000	2.02	

QC Flag Legend

M - Compound response manually integrated.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m31107s1.d
Lab Smp Id: 2 ppm PAH SIM
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: V-55-13

Calibration Date: 06-NOV-2014
Calibration Time: 14:12

Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	156522	78261	313044	144127	-7.92
2 Acenaphthene-d8	99976	49988	199952	90862	-9.12
3 Phenanthrene-d10	153793	76897	307586	127784	-16.91
4 Chrysene-d12 IS	162599	81300	325198	178001	9.47
5 Perylene-d12 IS	158488	79244	316976	150117	-5.28

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.04	3.54	4.54	3.78	-6.37
2 Acenaphthene-d8	5.19	4.69	5.69	4.92	-5.32
3 Phenanthrene-d10	6.31	5.81	6.81	5.99	-5.03
4 Chrysene-d12 IS	8.69	8.19	9.19	8.33	-4.16
5 Perylene-d12 IS	10.00	9.50	10.50	9.63	-3.75

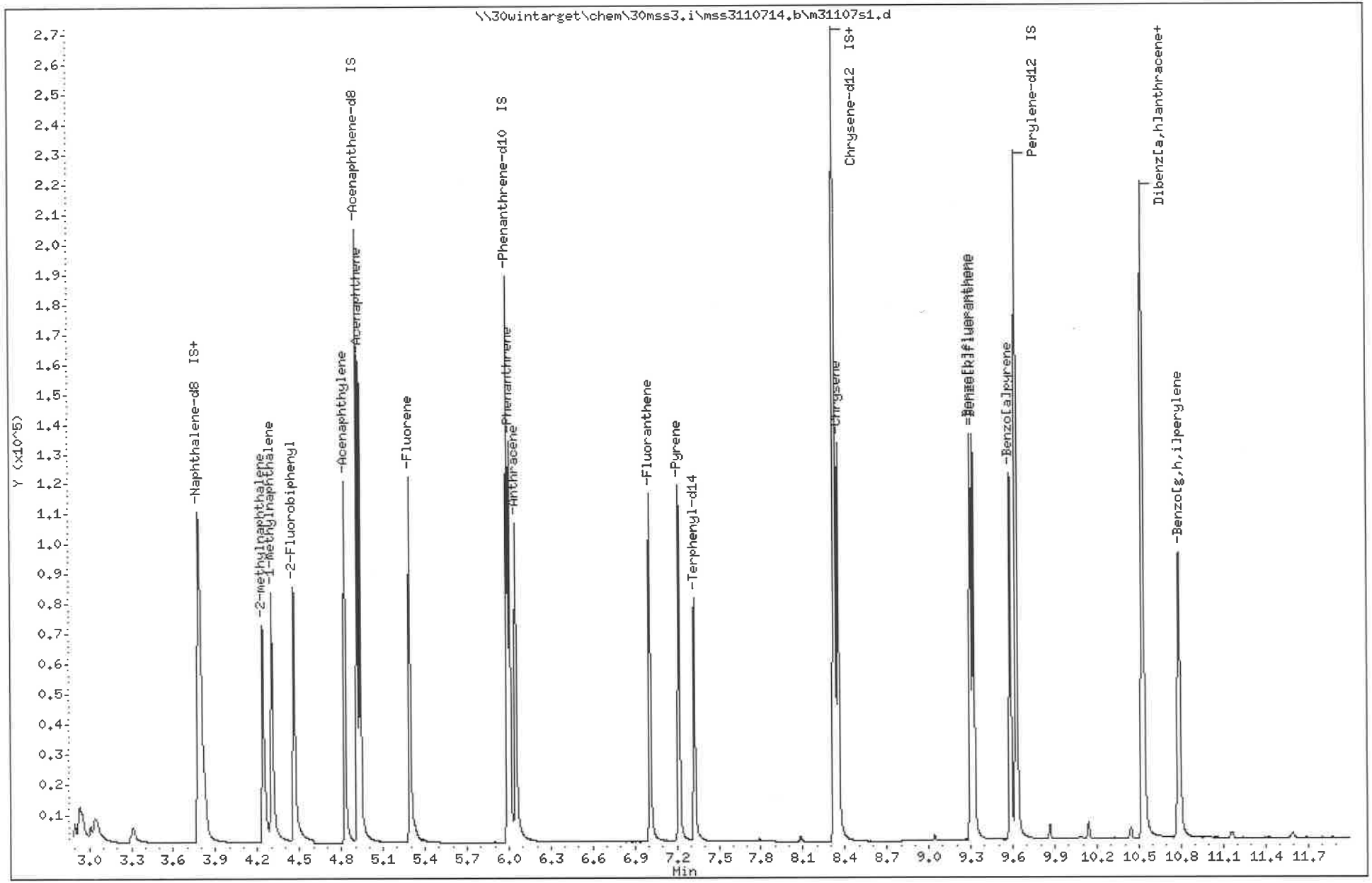
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m31107s1.d
Date : 07-NOV-2014 14:32
Client ID:
Sample Info: 2 ppm PAH SIM

Instrument: 30mss3.i

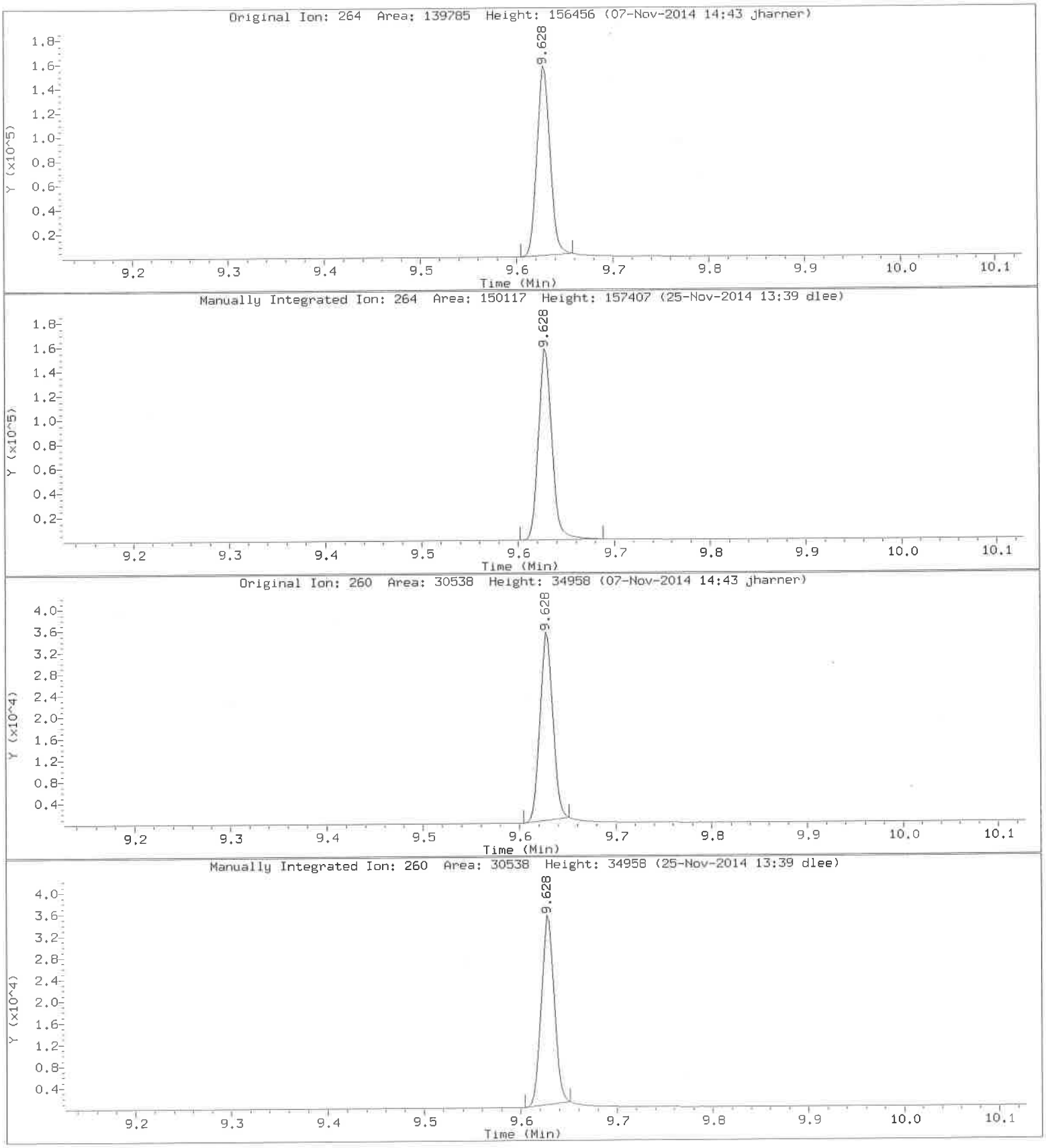
Operator: JSH
Column diameter: 0.25

Column phase: RTX-5MS

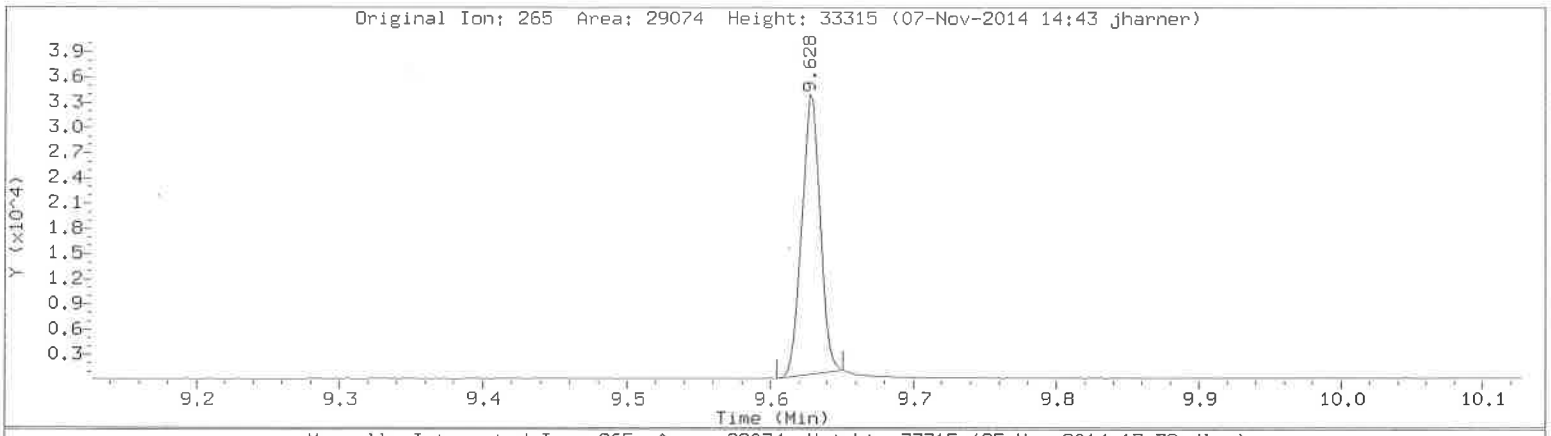


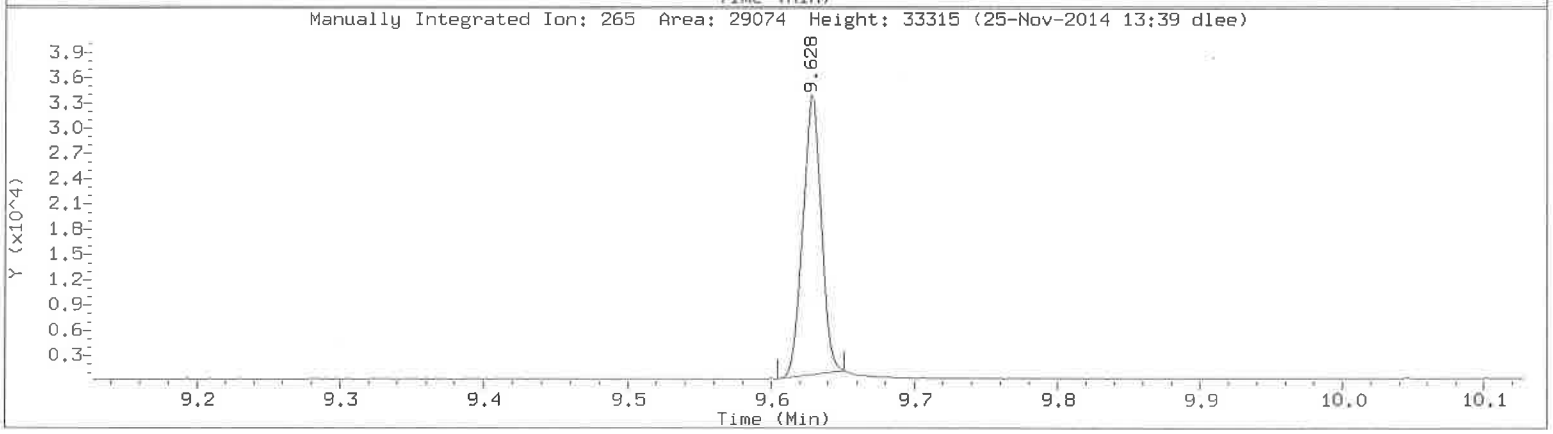
Data File: \\30wintarget\chem\30mss3.i\mss3110714.b/m31107s1.d (ManInt: all
Injection Date: 07-NOV-2014 14:32
Instrument: 30mss3.i
Lab Sample ID: 2 ppm PAH SIM

Compound: Perylene-d12 IS
CAS Number: 1520-96-3



Data File: \\30wintarget\chem\30mss3.i\mss3110714.b/m31107s1.d (ManInt: all
Injection Date: 07-NOV-2014 14:32
Instrument: 30mss3.i
Lab Sample ID: 2 ppm PAH SIM





FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Instrument ID: 30MSS2 Calibration Date: 11/10/14 Time: 1119

Lab File ID: M21110S2 Init. Calib. Date(s): 08/22/14 08/22/14

Init. Calib. Times: 1828 1945

GC Column: RTX-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF2	MIN RRF	%D	MAX %D
Quinoline	0.612	0.646	0.05	5.6	20.0

FORM VII SV

Pace Analytical Services, Inc

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 30mss2.i Injection Date: 10-NOV-2014 11:19
Lab File ID: m21110s2.d Init. Cal. Date(s): 22-AUG-2014 22-AUG-2014
Analysis Type: Init. Cal. Times: 18:28 19:45
Lab Sample ID: 2 PPM QUINOLINE Quant Type: ISTD
Method: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
4 Quinoline	0.61177	0.64589	0.050	5.57777	20.00000	Averaged

Average %D / Drift Results.

Calculated Average %D/Drift = 5.57777
Maximun Average %D/Drift = 15.00000
* Passed Average %D/Drift Test.

Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m21110s2.d
Lab Smp Id: 2 PPM QUINOLINE
Inj Date : 10-NOV-2014 11:19
Operator : DJL Inst ID: 30mss2.i
Smp Info : 2 PPM QUINOLINE
Misc Info : V-47-11
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Meth Date : 25-Nov-2014 13:18 30mss2.i Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: quin.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)
* 1 Naphthalene-d8 IS	136	4.347	4.347	(1.000)	67129	4.00000	
4 Quinoline	129	4.596	4.596	(1.057)	21679	2.00000	2.11

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m21110s2.d
Lab Smp Id: 2 PPM QUINOLINE
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Misc Info: V-47-11

Calibration Date: 10-NOV-2014
Calibration Time: 09:11
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	99661	49831	199322	67129	-32.64

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.59	4.09	5.09	4.35	-5.21

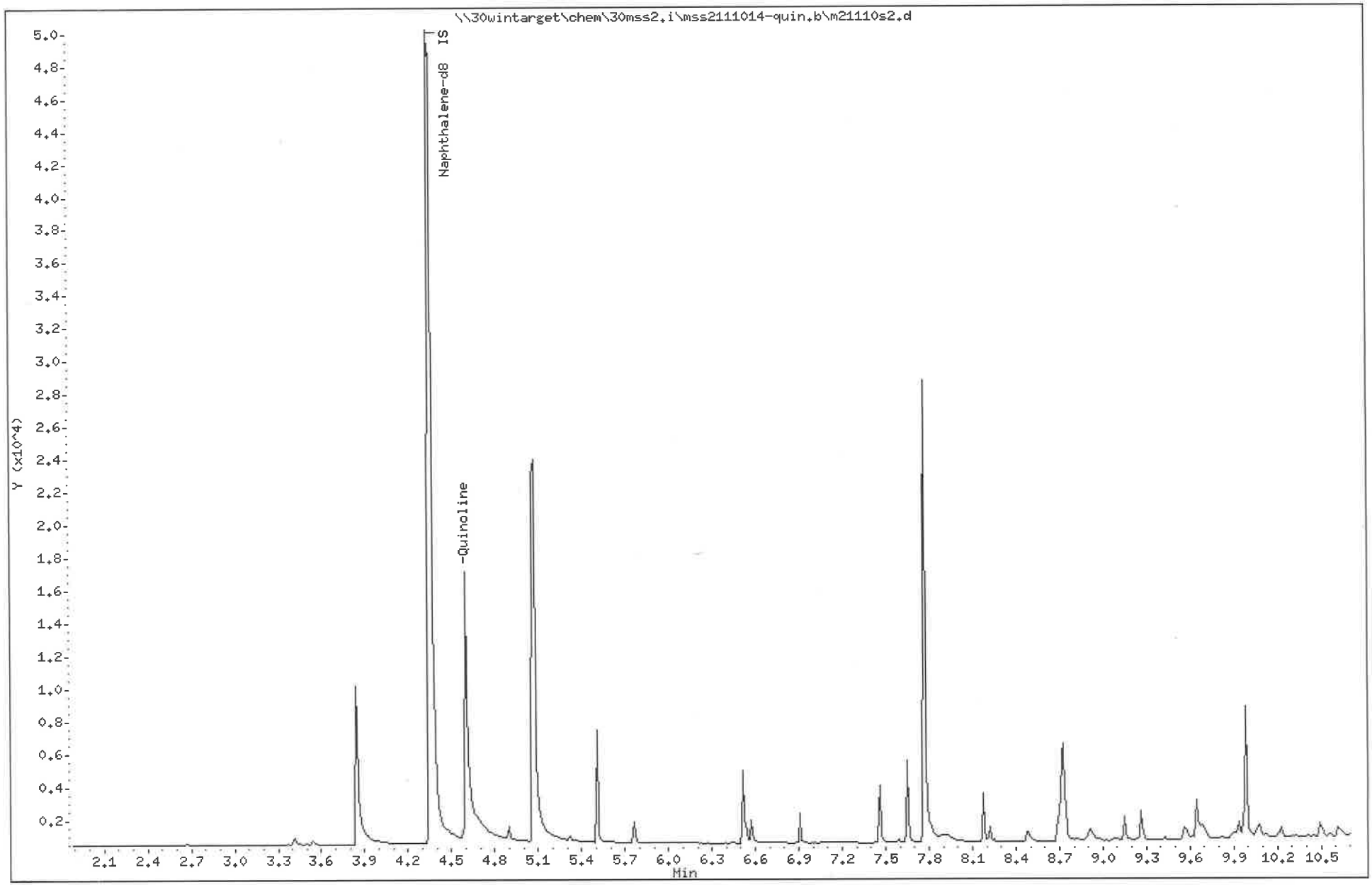
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m21110s2.d
Date : 10-NOV-2014 11:19
Client ID:
Sample Info: 2 PPM QUINOLINE

Instrument: 30mss2.i

Operator: DJL
Column diameter: 0.25

Column phase: RTX-5MS



Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b/m21110s2.d (ManInt
Injection Date: 10-NOV-2014 11:19
Instrument: 30mss2.i
Lab Sample ID: 2 PPM QUINOLINE
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: M20822T1 DFTPP Injection Date: 08/22/14

Instrument ID: 30MSS2 DFTPP Injection Time: 1812

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	58.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	43.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	48.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.4
275	10.0 - 30.0% of mass 198	25.8
365	Greater than 0.75% of mass 198	5.14
441	Present, but less than mass 443	14.8
442	40.0 - 110.0% of mass 198	94.4
443	15.0 - 24.0% of mass 442	19.6 (20.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		QUINOLINE 0.1P	M20822Z1	08/22/14	1828
02		QUINOLINE 0.2P	M20822Z2	08/22/14	1843
03		QUINOLINE 0.5P	M20822Z3	08/22/14	1858
04		QUINOLINE 2PPM	M20822Z4	08/22/14	1914
05		QUINOLINE 5PPM	M20822Z5	08/22/14	1929
06		QUINOLINE20PPM	M20822Z6	08/22/14	1945
07		QUINOLINE 2PPM	M20822Z7	08/22/14	2000
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

DFTPP TUNE/TAILING FACTOR/DEGRADATION SUMMARY RESULTS

DFTPP Ion Abundance/Ratio Criteria Chart

Ion	Abundance Criteria	Base Peak	Other	Test
198	Base Peak, 100% relative abundance	100.00		PASS
51	30 - 80% of mass 198	58.60		PASS
68	Less than 2% of mass 69	0.00	(0.00)	PASS
69	Mass 69 relative abundance	43.21		PASS
70	Less than 2% of mass 69	0.00	(0.00)	PASS
127	25 - 75% of mass 198	48.49		PASS
197	0 - 1% of mass 198	0.00		PASS
199	5 - 9% of mass 198	7.41		PASS
275	10 - 30% of mass 198	25.80		PASS
365	Greater than 1% of mass 198	5.14		PASS
441	Present, but less than mass 443	14.85	(75.75)	PASS
442	Greater than 40% of mass 198	94.45		PASS
443	15 - 24% of mass 442	19.60	(20.75)	PASS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	1.8415033	5.000	PASS
Benzidine	1.2261905	3.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	31986			N/A
4,4-DDE	0	0.0	15.0	PASS
4,4-DDD	2299	6.7	15.0	PASS
4,4-DDD + DDE	2299	6.7	15.0	PASS

Tuning Sample, //30wintarget/chem/30mss2.i/mss2082214-quin.b/m20822t1.d/m20822t1.d,

Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822t1.d

Date : 22-AUG-2014 18:12

Client ID:

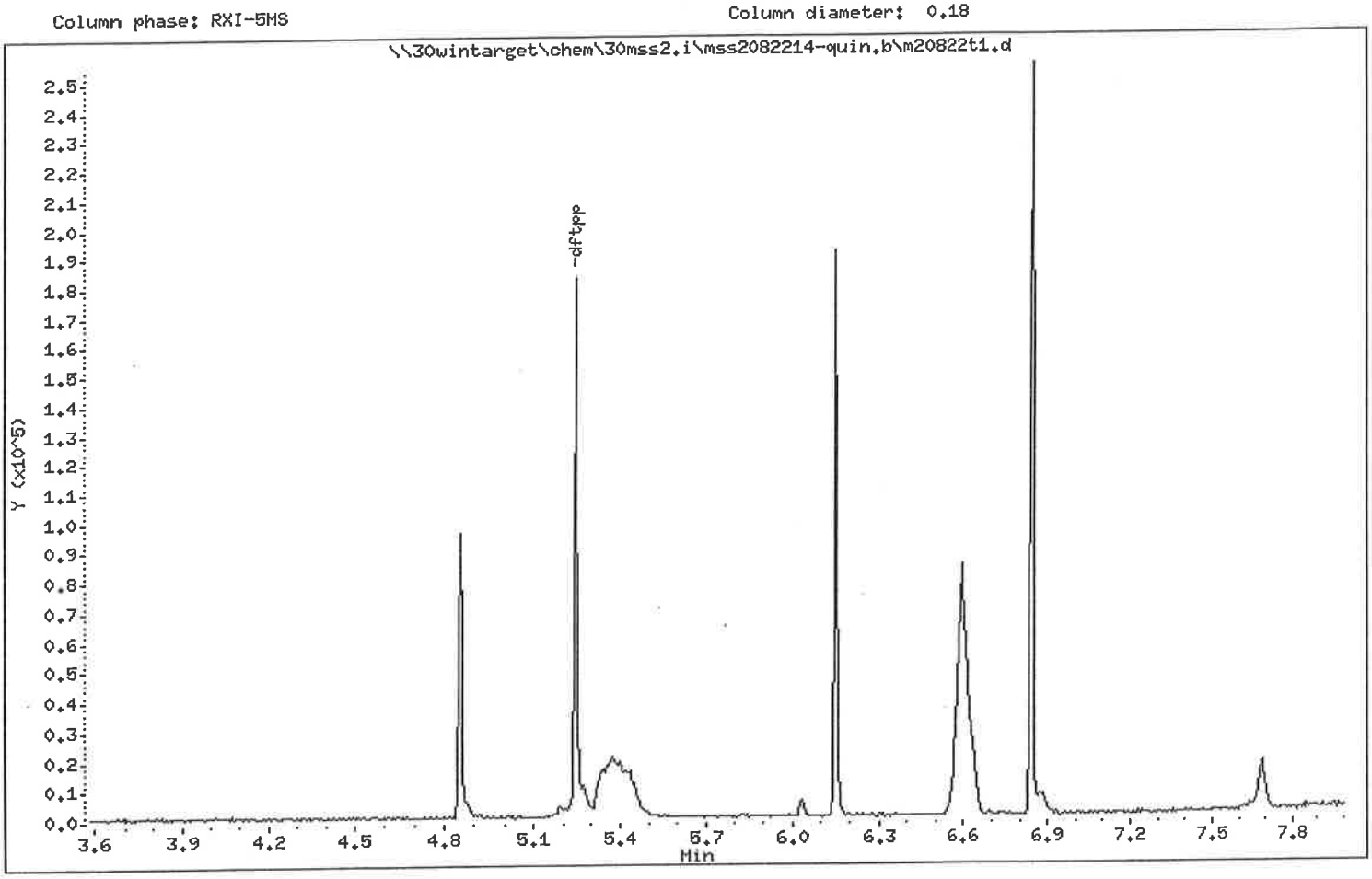
Instrument: 30mss2.i

Sample Info: DFTPP 5 ppm

Operator: MAK

Column phase: RXI-5MS

Column diameter: 0.18



Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822t1.d

Date : 22-AUG-2014 18:12

Client ID:

Instrument: 30mss2.i

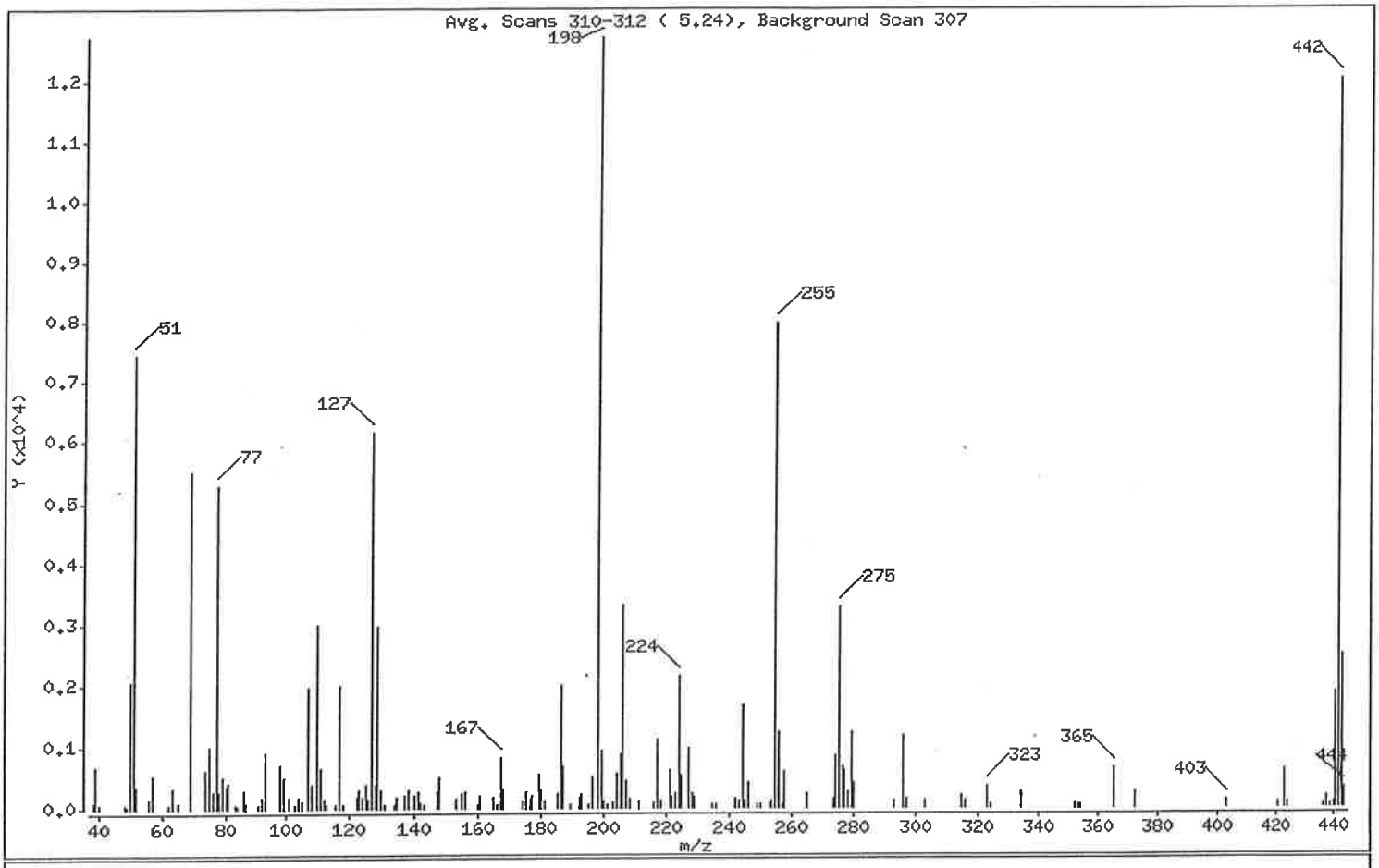
Sample Info: DFTPP 5 ppm

Operator: MAK

Column phase: RXI-5MS

Column diameter: 0.18

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 80.00% of mass 198	58.60
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	43.21
70	Less than 2.00% of mass 69	0.00 (0.00)
127	25.00 - 75.00% of mass 198	48.49
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	7.41
275	10.00 - 30.00% of mass 198	25.80
365	Greater than 0.75% of mass 198	5.14
441	Present, but less than mass 443	14.85
442	40.00 - 110.00% of mass 198	94.45
443	15.00 - 24.00% of mass 442	19.60 (20.75)

Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822t1.d

Date : 22-AUG-2014 18:12

Client ID:

Instrument: 30mss2.i

Sample Info: DFTPP 5 ppm

Operator: MAK

Column phase: RXI-5MS

Column diameter: 0.18

Data File: m20822t1.d
Spectrum: Avg. Scans 310-312 (5.24), Background Scan 307
Location of Maximum: 198.00
Number of points: 160

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	80	116.00	55	187.00	662	257.00	53
39.00	662	117.00	1983	189.00	66	258.00	595
40.00	58	118.00	55	192.00	175	265.00	228
48.00	55	122.00	169	193.00	238	273.00	149
49.00	34	123.00	298	195.00	62	274.00	848
50.00	2041	124.00	164	196.00	506	275.00	3284
51.00	7460	125.00	388	198.00	12731	276.00	661
52.00	342	126.00	136	199.00	943	277.00	621
56.00	157	127.00	6173	200.00	121	278.00	250
57.00	514	128.00	394	201.00	51	279.00	1235
62.00	52	129.00	2966	203.00	91	280.00	400
63.00	326	130.00	279	204.00	550	293.00	124
65.00	78	131.00	50	205.00	874	296.00	1178
69.00	5501	134.00	59	206.00	3304	297.00	156
74.00	622	135.00	179	207.00	430	303.00	126
75.00	1004	137.00	201	208.00	156	315.00	205
76.00	265	138.00	296	211.00	120	316.00	107
77.00	5275	140.00	212	216.00	77	323.00	346
78.00	269	141.00	250	217.00	1105	324.00	56
79.00	486	142.00	84	218.00	106	334.00	274
80.00	359	143.00	66	221.00	605	352.00	87
81.00	418	147.00	254	222.00	174	353.00	51
83.00	66	148.00	503	223.00	238	354.00	61
84.00	19	153.00	143	224.00	2135	365.00	655
86.00	298	155.00	222	225.00	521	372.00	254
87.00	97	156.00	276	227.00	969	403.00	118
91.00	53	160.00	65	228.00	235	421.00	75
92.00	175	161.00	200	229.00	189	423.00	602
93.00	924	165.00	167	235.00	56	424.00	80
98.00	702	166.00	60	236.00	52	437.00	54
99.00	487	167.00	826	242.00	149	438.00	190
101.00	190	168.00	337	243.00	115	439.00	60
103.00	69	174.00	108	244.00	1658	440.00	76
104.00	176	175.00	259	245.00	117	441.00	1890
105.00	120	176.00	135	246.00	423	442.00	12024

Data File: \\30wintarget\chem\30mss2.i\mss2082214-quin.b\m20822t1.d

Date : 22-AUG-2014 18:12

Client ID:

Instrument: 30mss2.i

Sample Info: DFTPP 5 ppm

Operator: MAK

Column phase: RXI-5MS

Column diameter: 0.18

Data File: m20822t1.d
Spectrum: Avg. Scans 310-312 (5.24), Background Scan 307
Location of Maximum: 198.00
Number of points: 160

m/z	Y	m/z	Y	m/z	Y	m/z	Y
107.00	1968	177.00	200	249.00	62	443.00	2495
108.00	367	179.00	571	250.00	61	444.00	314
110.00	2990	180.00	282	253.00	90		
111.00	658	181.00	118	254.00	128		
112.00	153	185.00	249	255.00	7984		
113.00	59	186.00	1999	256.00	1240		

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: M31008T1 DFTPP Injection Date: 10/08/14

Instrument ID: 30MSS3 DFTPP Injection Time: 1341

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	57.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	39.1
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	51.0
197	Less than 1.0% of mass 198	0.4
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.3
275	10.0 - 30.0% of mass 198	28.5
365	Greater than 0.75% of mass 198	4.62
441	Present, but less than mass 443	16.5
442	40.0 - 110.0% of mass 198	105.4
443	15.0 - 24.0% of mass 442	21.4 (20.3)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		0.1 PPM PAH	M31008Z1	10/08/14	1354
02		0.2 PPM PAH	M31008Z2	10/08/14	1412
03		0.5 PPM PAH	M31008Z3	10/08/14	1429
04		2 PPM PAH	M31008Z4	10/08/14	1447
05		5 PPM PAH	M31008Z5	10/08/14	1505
06		20 PPM PAH	M31008Z6	10/08/14	1522
07		2 PPM PAH ICV	M31008Z8	10/08/14	1632
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

DFTPP TUNE/TAILING FACTOR/DEGRADATION SUMMARY RESULTS

DFTPP Ion Abundance/Ratio Criteria Chart

Ion	Abundance Criteria	Base Peak	Other	Test
198	Base Peak, 100% relative abundance	94.84		PASS
51	30 - 80% of mass 198	57.19		PASS
68	Less than 2% of mass 69	0.00	(0.00)	PASS
69	Mass 69 relative abundance	39.11		PASS
70	Less than 2% of mass 69	0.00	(0.00)	PASS
127	25 - 75% of mass 198	51.01		PASS
197	0 - 1% of mass 198	0.44		PASS
199	5 - 9% of mass 198	6.25		PASS
275	10 - 30% of mass 198	28.51		PASS
365	Greater than 1% of mass 198	4.62		PASS
441	Present, but less than mass 443	16.48	(77.14)	PASS
442	Greater than 40% of mass 198	105.44		PASS
443	15 - 24% of mass 442	21.36	(20.26)	PASS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	2.0913462	5.000	PASS
Benzidine	0.9346734	3.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	54164			N/A
4,4-DDE	0	0.0	15.0	PASS
4,4-DDD	0	0.0	15.0	PASS
4,4-DDD + DDE	0	0.0	15.0	PASS

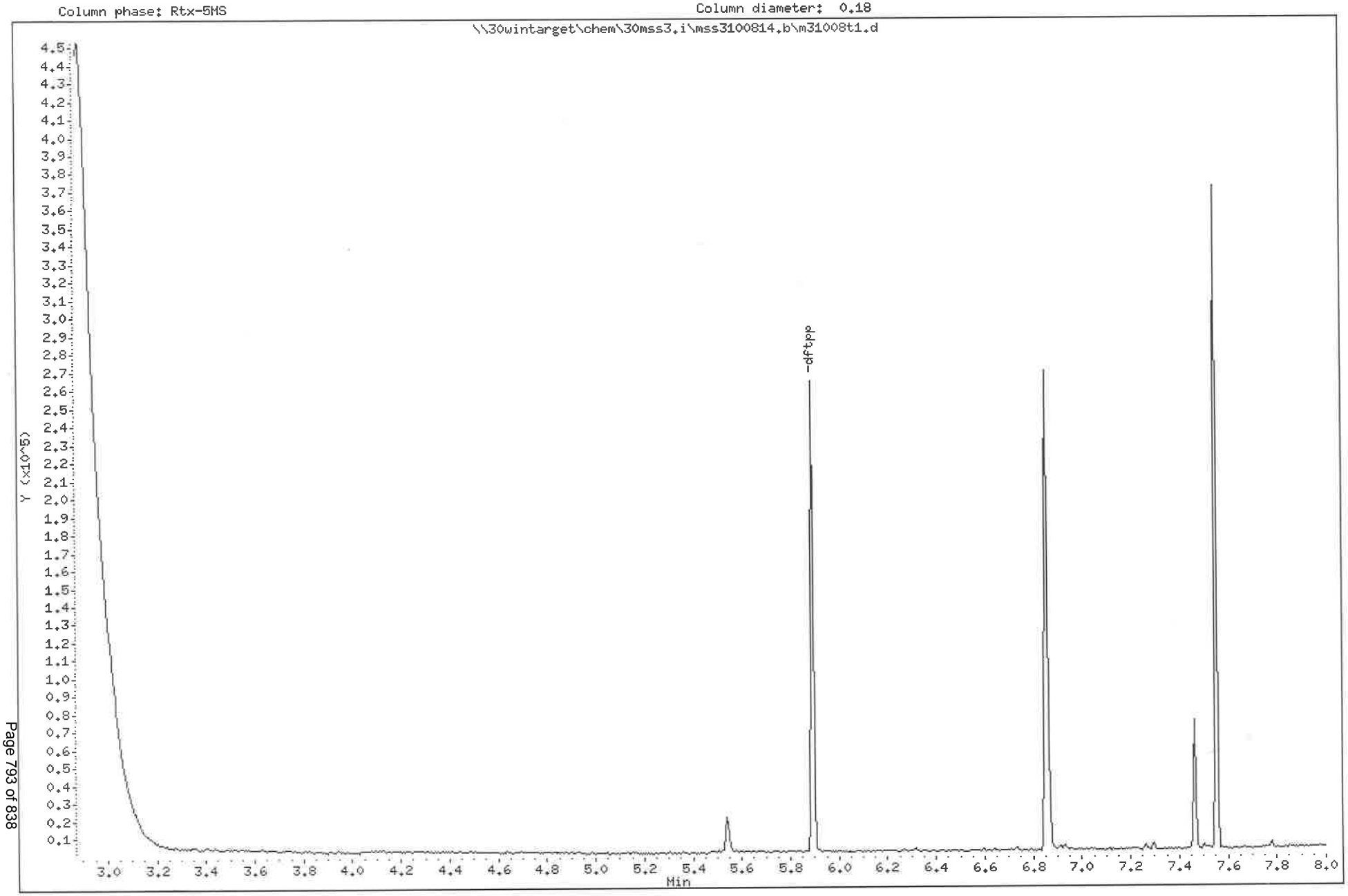
******
Tuning Sample, //30wintarget/chem/30mss3.i/mss3100814.b/m31008t1.d/m31008t1.d,*** P
******

Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008t1.d
Date : 08-OCT-2014 13:41
Client ID:
Sample Info: DFTPP 5 ppm

Instrument: 30mss3.i

Operator: JSH
Column diameter: 0.18

Column phase: Rtx-5MS



Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008t1.d

Date : 08-OCT-2014 13:41

Client ID:

Instrument: 30mss3.i

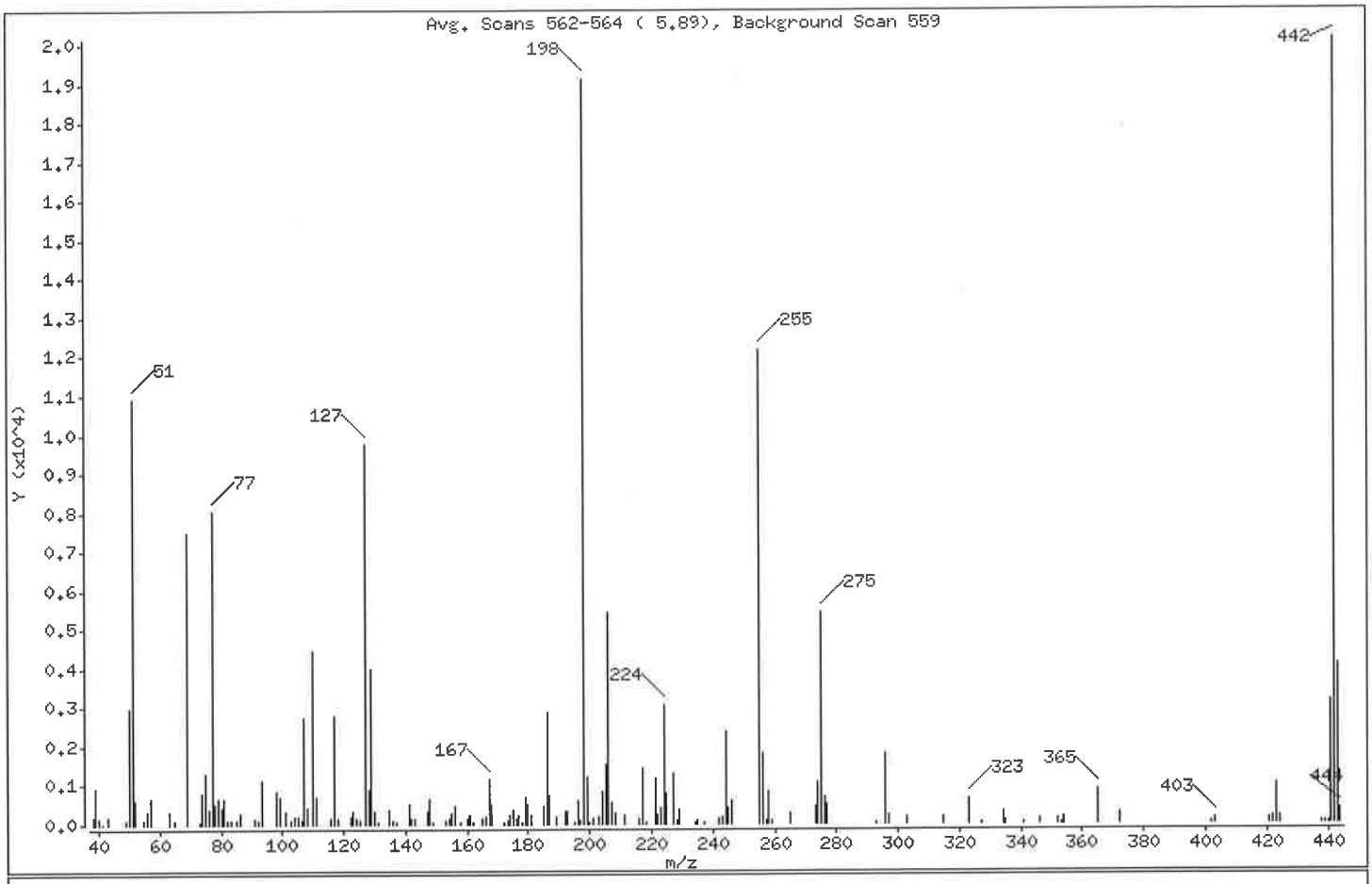
Sample Info: DFTPP 5 ppm

Operator: JSH

Column phase: Rtx-5MS

Column diameter: 0.18

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 80.00% of mass 198	57.19
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	39.11
70	Less than 2.00% of mass 69	0.00 (0.00)
127	25.00 - 75.00% of mass 198	51.01
197	Less than 1.00% of mass 198	0.44
199	5.00 - 9.00% of mass 198	6.25
275	10.00 - 30.00% of mass 198	28.51
365	Greater than 0.75% of mass 198	4.62
441	Present, but less than mass 443	16.48
442	40.00 - 110.00% of mass 198	105.44
443	15.00 - 24.00% of mass 442	21.36 (20.26)

Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008t1.d

Date : 08-OCT-2014 13:41

Client ID:

Instrument: 30mss3.i

Sample Info: DFTPP 5 ppm

Operator: JSH

Column phase: Rtx-5MS

Column diameter: 0.18

Data File: m31008t1.d
Spectrum: Avg. Scans 562-564 (5.89), Background Scan 559
Location of Maximum: 442.00
Number of points: 164

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	171	116.00	156	181.00	215	257.00	81
39.00	910	117.00	2802	185.00	443	258.00	838
40.00	125	118.00	147	186.00	2894	259.00	73
41.00	11	122.00	170	187.00	722	265.00	295
43.00	179	123.00	316	189.00	190	273.00	469
49.00	98	124.00	127	192.00	347	274.00	1077
50.00	2993	125.00	75	193.00	341	275.00	5447
51.00	10925	127.00	9745	195.00	52	276.00	713
52.00	594	128.00	861	196.00	590	277.00	511
55.00	90	129.00	4002	197.00	85	293.00	54
56.00	307	130.00	343	198.00	19104	296.00	1788
57.00	633	131.00	52	199.00	1194	297.00	210
63.00	325	135.00	352	200.00	50	303.00	194
65.00	73	136.00	106	201.00	130	315.00	172
69.00	7472	137.00	56	203.00	196	323.00	629
73.00	59	141.00	508	204.00	820	327.00	53
74.00	791	142.00	129	205.00	1531	334.00	332
75.00	1279	143.00	118	206.00	5425	335.00	104
76.00	350	147.00	323	207.00	567	341.00	51
77.00	8024	148.00	658	208.00	282	346.00	121
78.00	519	149.00	62	211.00	251	352.00	122
79.00	666	153.00	75	216.00	146	353.00	53
80.00	429	154.00	149	217.00	1435	354.00	186
81.00	673	155.00	283	218.00	57	365.00	882
82.00	106	156.00	460	221.00	1144	372.00	280
83.00	89	158.00	56	222.00	214	402.00	54
85.00	93	160.00	118	223.00	439	403.00	148
86.00	291	161.00	210	224.00	3080	421.00	124
91.00	147	162.00	51	225.00	788	422.00	176
92.00	84	165.00	159	227.00	1309	423.00	1001
93.00	1100	166.00	174	228.00	90	424.00	184
98.00	840	167.00	1160	229.00	374	438.00	51
99.00	687	168.00	516	234.00	61	439.00	68
101.00	333	172.00	60	235.00	70	440.00	51
103.00	71	173.00	72	237.00	61	441.00	3148

Data File: \\30wintarget\chem\30mss3.i\mss3100814.b\m31008t1.d

Date : 08-OCT-2014 13:41

Client ID:

Instrument: 30mss3.i

Sample Info: DFTPP 5 ppm

Operator: JSH

Column phase: Rtx-5MS

Column diameter: 0.18

Data File: m31008t1.d
Spectrum: Avg. Scans 562-564 (5.89), Background Scan 559
Location of Maximum: 442.00
Number of points: 164

m/z	Y	m/z	Y	m/z	Y	m/z	Y
104.00	170	174.00	254	242.00	137	442.00	20144
105.00	184	175.00	364	243.00	178	443.00	4081
106.00	72	176.00	121	244.00	2389	444.00	354
107.00	2734	177.00	237	245.00	420		
108.00	421	178.00	53	246.00	592		
110.00	4447	179.00	718	255.00	12152		
111.00	706	180.00	502	256.00	1794		

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Contract:

Lab Code: Case No.: -- SAS No.: SDG No.: 30133009

Lab File ID: M31107T1 DFTPP Injection Date: 11/07/14

Instrument ID: 30MSS3 DFTPP Injection Time: 1415

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	79.1
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	46.8
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	59.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.4
275	10.0 - 30.0% of mass 198	30.0
365	Greater than 0.75% of mass 198	4.02
441	Present, but less than mass 443	16.0
442	40.0 - 110.0% of mass 198	103.1
443	15.0 - 24.0% of mass 442	18.8 (18.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		2 PPM PAH SIM	M31107S1	11/07/14	1432
02	MB	812361	M3110701	11/07/14	1451
03	MBLCS	812362	M3110702	11/07/14	1508
04	AOI-5_PECO-B	30133009001	M3110703	11/07/14	1526
05	AOI-5_PECO-B	30133009002	M3110704	11/07/14	1543
06	AOI-5_PECO-B	30133009003	M3110705	11/07/14	1601
07	AOI5_PECO-B4	812363	M3110709	11/07/14	1711
08	AOI5_PECO-B4	812364	M3110710	11/07/14	1729
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

DFTPP TUNE/TAILING FACTOR/DEGRADATION SUMMARY RESULTS

DFTPP Ion Abundance/Ratio Criteria Chart

Ion	Abundance Criteria	Base Peak	Other	Test
198	Base Peak, 100% relative abundance	96.96		PASS
51	30 - 80% of mass 198	79.10		PASS
68	Less than 2% of mass 69	0.00	(0.00)	PASS
69	Mass 69 relative abundance	46.77		PASS
70	Less than 2% of mass 69	0.00	(0.00)	PASS
127	25 - 75% of mass 198	59.91		PASS
197	0 - 1% of mass 198	0.00		PASS
199	5 - 9% of mass 198	6.36		PASS
275	10 - 30% of mass 198	29.98		PASS
365	Greater than 1% of mass 198	4.02		PASS
441	Present, but less than mass 443	15.98	(84.88)	PASS
442	Greater than 40% of mass 198	103.14		PASS
443	15 - 24% of mass 442	18.82	(18.25)	PASS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test	
Pentachlorophenol	1.3657195	5.000	PASS	
Benzidine	3.6022965	3.000	FAIL	[Failure]

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	23057			N/A
4,4-DDE	375	1.6	15.0	PASS
4,4-DDD	928	3.9	15.0	PASS
4,4-DDD + DDE	1303	5.3	15.0	PASS

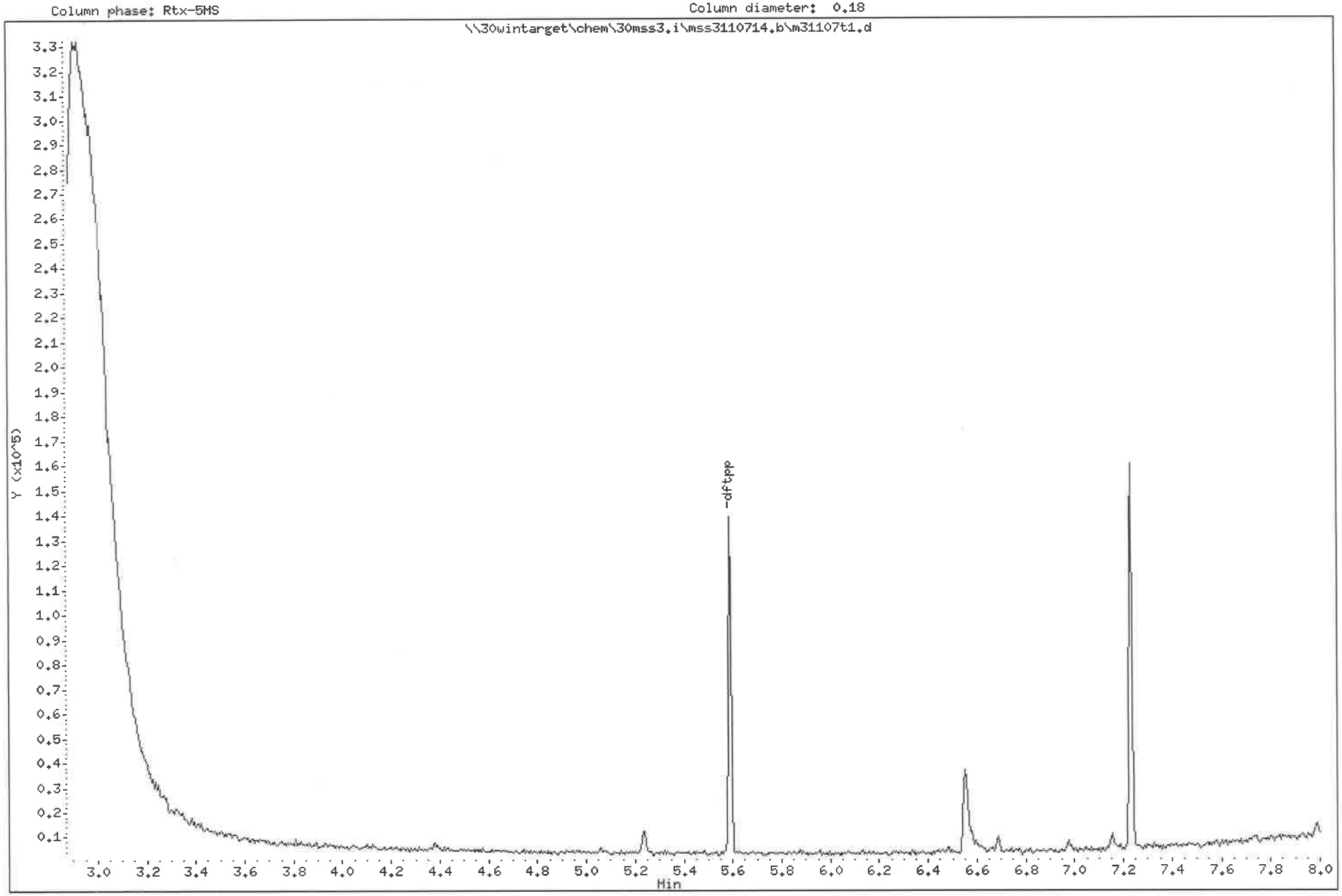
******
Tuning Sample, //30wintarget/chem/30mss3.i/mss3110714.b/m31107t1.d/m31107t1.d,*** F
******

Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m31107t1.d
Date : 07-NOV-2014 14:15
Client ID:
Sample Info: DFTPP 5 ppm

Instrument: 30mss3.i

Operator: JSH
Column diameter: 0.18

Column phase: Rtx-5MS



Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m31107t1.d

Date : 07-NOV-2014 14:15

Client ID:

Instrument: 30mss3.i

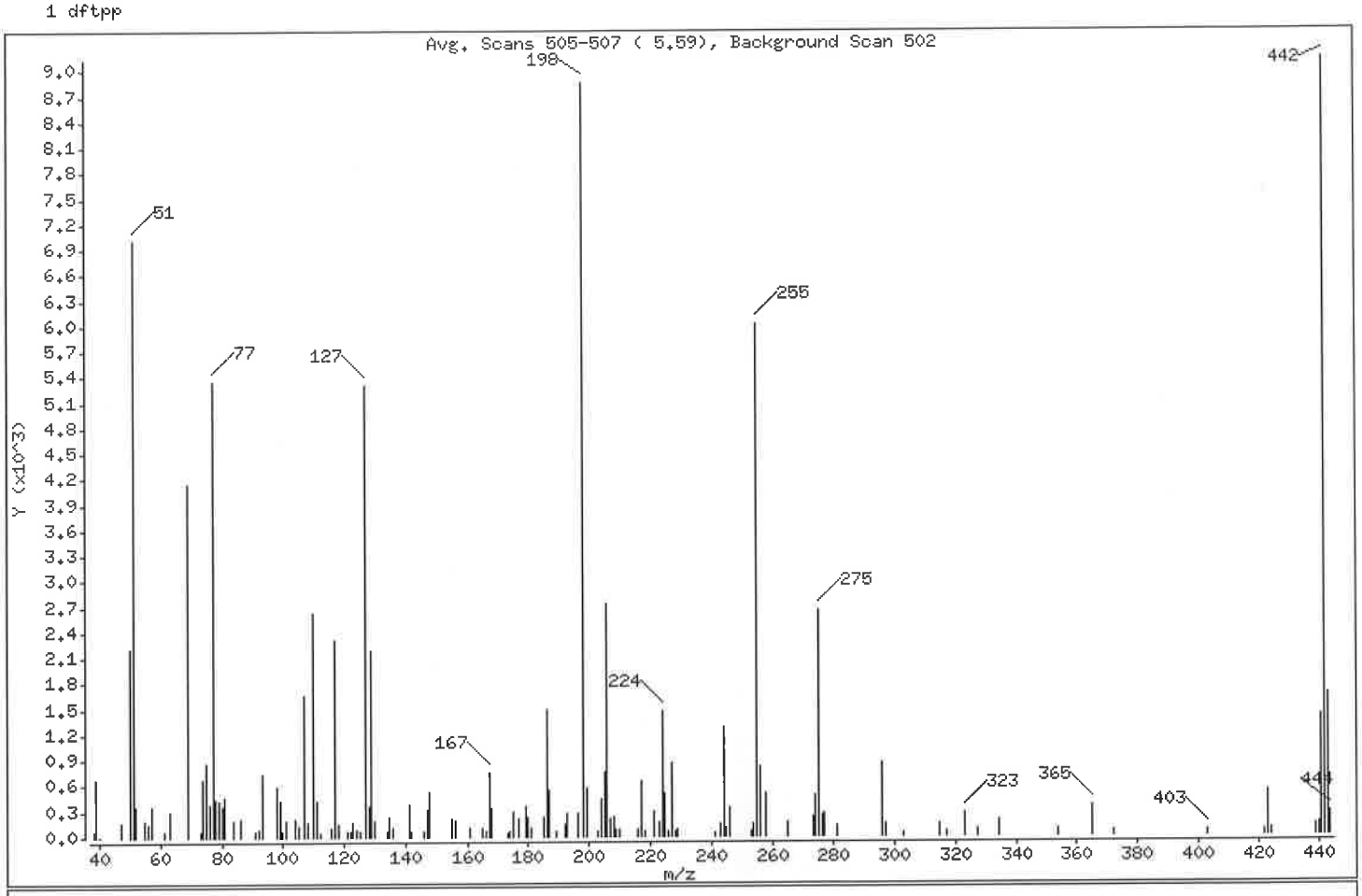
Sample Info: DFTPP 5 ppm

Operator: JSH

Column phase: Rtx-5MS

Column diameter: 0.18

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 80.00% of mass 198	79.10
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	46.77
70	Less than 2.00% of mass 69	0.00 (0.00)
127	25.00 - 75.00% of mass 198	59.91
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.36
275	10.00 - 30.00% of mass 198	29.98
365	Greater than 0.75% of mass 198	4.02
441	Present, but less than mass 443	15.98
442	40.00 - 110.00% of mass 198	103.14
443	15.00 - 24.00% of mass 442	18.82 (18.25)

Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m31107t1.d

Date : 07-NOV-2014 14:15

Client ID:

Instrument: 30mss3.i

Sample Info: DFTPP 5 ppm

Operator: JSH

Column phase: Rtx-5MS

Column diameter: 0.18

Data File: m31107t1.d
Spectrum: Avg. Scans 505-507 (5.59), Background Scan 502
Location of Maximum: 442.00
Number of points: 138

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	57	110.00	2635	180.00	232	253.00	62
39.00	682	111.00	425	181.00	112	254.00	148
40.00	4	112.00	50	185.00	238	255.00	6022
47.00	171	116.00	113	186.00	1490	256.00	825
50.00	2200	117.00	2305	187.00	539	258.00	507
51.00	7006	118.00	153	189.00	53	265.00	175
52.00	361	121.00	65	192.00	139	273.00	242
55.00	193	122.00	58	193.00	268	274.00	475
56.00	139	123.00	158	196.00	275	275.00	2655
57.00	351	124.00	74	198.00	8857	276.00	259
61.00	71	125.00	70	199.00	563	277.00	284
63.00	299	127.00	5306	203.00	56	281.00	132
69.00	4142	128.00	348	204.00	449	296.00	861
73.00	61	129.00	2194	205.00	751	297.00	145
74.00	675	130.00	185	206.00	2735	303.00	50
75.00	868	134.00	73	207.00	220	315.00	140
76.00	374	135.00	235	208.00	237	317.00	54
77.00	5355	136.00	104	209.00	75	323.00	269
78.00	435	141.00	388	210.00	80	327.00	91
79.00	426	142.00	68	216.00	76	334.00	182
80.00	357	146.00	56	217.00	655	354.00	81
81.00	459	147.00	315	218.00	54	365.00	356
84.00	196	148.00	516	221.00	294	372.00	61
86.00	218	155.00	213	223.00	171	403.00	58
91.00	71	156.00	179	224.00	1475	422.00	55
92.00	76	161.00	95	225.00	514	423.00	535
93.00	742	165.00	110	226.00	56	424.00	88
98.00	596	166.00	64	227.00	857	439.00	122
99.00	421	167.00	757	228.00	54	440.00	152
100.00	64	168.00	347	229.00	77	441.00	1415
101.00	188	173.00	52	241.00	50	442.00	9135
104.00	204	174.00	62	243.00	147	443.00	1667
105.00	133	175.00	288	244.00	1285	444.00	266
107.00	1656	177.00	205	245.00	107		
108.00	165	179.00	366	246.00	327		

Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m31107t1.d

Date : 07-NOV-2014 14:15

Client ID:

Instrument: 30mss3.i

Sample Info: DFTPP 5 ppm

Operator: JSH

Column phase: Rtx-5MS

Column diameter: 0.18

Data File: m31107t1.d
Spectrum: Avg. Scans 505-507 (5.59), Background Scan 502
Location of Maximum: 442.00
Number of points: 138

m/z	Y	m/z	Y	m/z	Y	m/z	Y

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 30133009

Lab File ID: M21110T2 DFTPP Injection Date: 11/10/14

Instrument ID: 30MSS2 DFTPP Injection Time: 1107

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	72.9
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	52.1
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	51.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	5.3
275	10.0 - 30.0% of mass 198	27.4
365	Greater than 0.75% of mass 198	5.37
441	Present, but less than mass 443	16.4
442	40.0 - 110.0% of mass 198	101.1
443	15.0 - 24.0% of mass 442	18.2 (18.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		2 PPM QUINOLIN	M21110S2	11/10/14	1119
02	MBLCS	812362	M2111001	11/10/14	1134
03	MB	812361	M2111002	11/10/14	1149
04	AOI5_PECO-B4	812363	M2111007	11/10/14	1306
05	AOI5_PECO-B4	812364	M2111008	11/10/14	1321
06	AOI-5_PECO-B	30133009002	M2111010	11/10/14	1351
07	AOI-5_PECO-B	30133009001	M2111012	11/10/14	1422
08	AOI-5_PECO-B	30133009003	M2111013	11/10/14	1437
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

DFTPP TUNE/TAILING FACTOR/DEGRADATION SUMMARY RESULTS

DFTPP Ion Abundance/Ratio Criteria Chart

Ion	Abundance Criteria	Base Peak	Other	Test
198	Base Peak, 100% relative abundance	98.92		PASS
51	30 - 80% of mass 198	72.87		PASS
68	Less than 2% of mass 69	0.00	(0.00)	PASS
69	Mass 69 relative abundance	52.07		PASS
70	Less than 2% of mass 69	0.00	(0.00)	PASS
127	25 - 75% of mass 198	51.31		PASS
197	0 - 1% of mass 198	0.00		PASS
199	5 - 9% of mass 198	5.34		PASS
275	10 - 30% of mass 198	27.44		PASS
365	Greater than 1% of mass 198	5.37		PASS
441	Present, but less than mass 443	16.40	(90.01)	PASS
442	Greater than 40% of mass 198	101.09		PASS
443	15 - 24% of mass 442	18.22	(18.02)	PASS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test	
Pentachlorophenol	2.8130699	5.000	PASS	
Benzidine	5.3413613	3.000	FAIL	[Failure]

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test	
4,4-DDT	22613			N/A	
4,4-DDE	0	0.0	15.0	PASS	
4,4-DDD	4821	17.6	15.0	FAIL	[Failure]
4,4-DDD + DDE	4821	17.6	15.0	FAIL	[Failure]

*
Tuning Sample, //30wintarget/chem/30mss2.i/mss2111014-quin.b/m21110t2.d/m21110t2.d,
*

Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m21110t2.d

Date : 10-NOV-2014 11:07

Client ID:

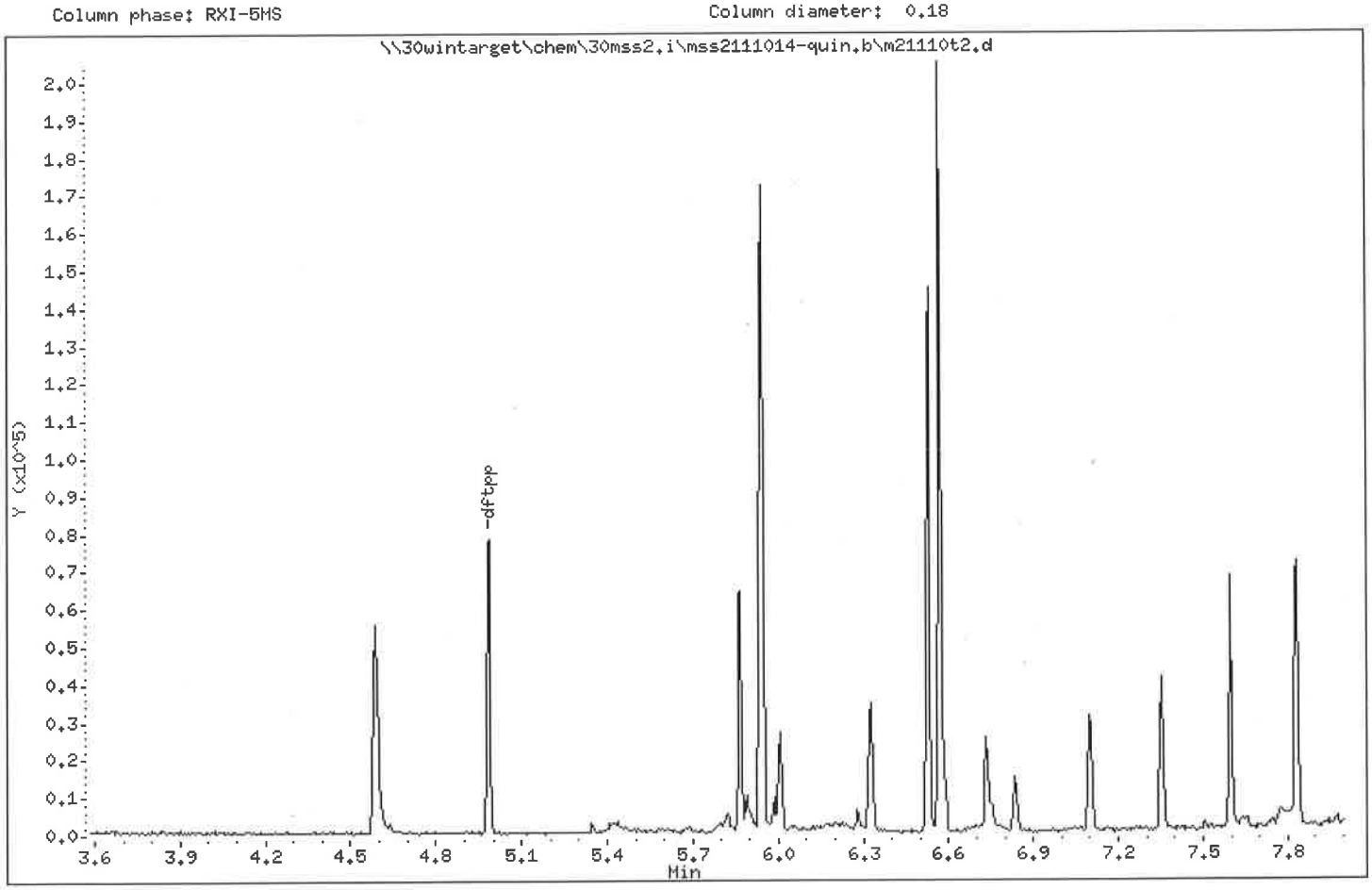
Instrument: 30mss2.i

Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18



Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m21110t2.d

Date : 10-NOV-2014 11:07

Client ID:

Instrument: 30mss2.i

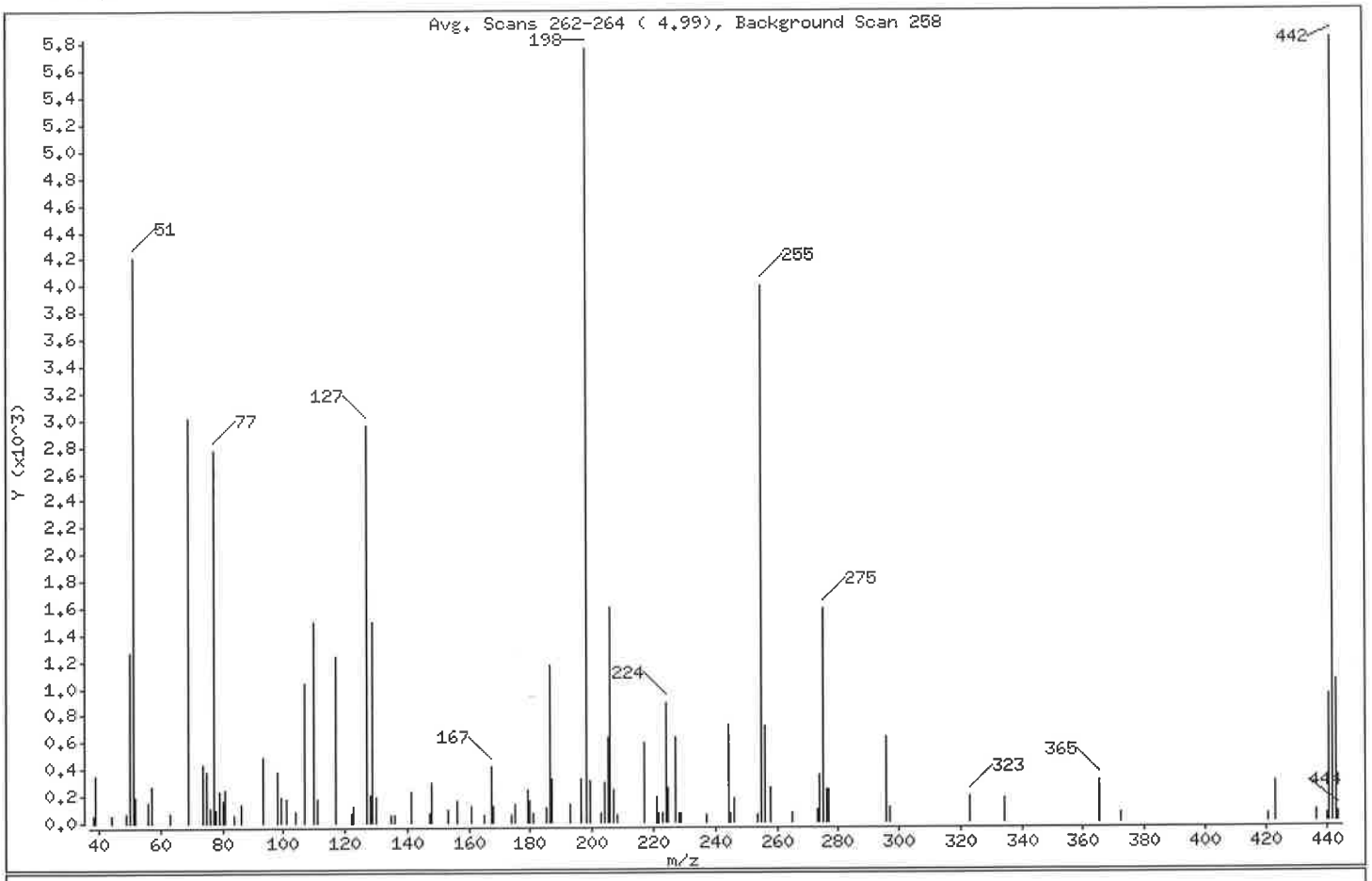
Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 80.00% of mass 198	72.87
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	52.07
70	Less than 2.00% of mass 69	0.00 (0.00)
127	25.00 - 75.00% of mass 198	51.31
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	5.34
275	10.00 - 30.00% of mass 198	27.44
365	Greater than 0.75% of mass 198	5.37
441	Present, but less than mass 443	16.40
442	40.00 - 110.00% of mass 198	101.09
443	15.00 - 24.00% of mass 442	18.22 (18.02)

Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m21110t2.d

Date : 10-NOV-2014 11:07

Client ID:

Instrument: 30mss2.i

Sample Info: DFTPP 5 ppm

Operator: DJL

Column phase: RXI-5MS

Column diameter: 0.18

Data File: m21110t2.d
Spectrum: Avg. Scans 262-264 (4.99), Background Scan 258
Location of Maximum: 442.00
Number of points: 102

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	53	107.00	1031	185.00	108	254.00	58
39.00	356	110.00	1494	186.00	1174	255.00	3997
44.00	50	111.00	178	187.00	320	256.00	706
49.00	70	117.00	1242	193.00	135	258.00	250
50.00	1259	122.00	68	196.00	317	265.00	64
51.00	4204	123.00	119	198.00	5769	273.00	89
52.00	184	127.00	2960	199.00	308	274.00	354
56.00	148	128.00	202	203.00	65	275.00	1583
57.00	270	129.00	1486	204.00	296	276.00	243
63.00	71	130.00	182	205.00	635	277.00	237
69.00	3004	135.00	52	206.00	1602	296.00	637
74.00	424	136.00	57	207.00	244	297.00	108
75.00	378	141.00	223	208.00	58	323.00	183
76.00	106	147.00	67	217.00	585	334.00	177
77.00	2772	148.00	294	221.00	193	365.00	310
78.00	99	153.00	91	222.00	63	372.00	71
79.00	224	156.00	164	223.00	65	421.00	50
80.00	156	161.00	122	224.00	888	423.00	293
81.00	243	165.00	50	225.00	256	437.00	76
84.00	51	167.00	417	227.00	634	440.00	59
86.00	129	168.00	123	228.00	65	441.00	946
93.00	483	174.00	50	229.00	64	442.00	5832
98.00	374	175.00	140	237.00	55	443.00	1051
99.00	185	179.00	247	244.00	726	444.00	73
101.00	181	180.00	164	245.00	67		
104.00	74	181.00	62	246.00	170		

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METHOD BLANK RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: OEXT/21490 **Prepared:** 11/05/14
Method(s): EPA 3546 / EPA 8270C by SIM
Associated Lab Samples: 30133009001, 30133009002, 30133009003

CAS No.	Parameters	Results	Units	Reporting Limit	MDL	Analyzed	Qual
83-32-9	Acenaphthene	0.0067 U	mg/kg	0.0067	0.0012	11/07/14	
120-12-7	Anthracene	0.0067 U	mg/kg	0.0067	0.00086	11/07/14	
56-55-3	Benzo(a)anthracene	0.0067 U	mg/kg	0.0067	0.00045	11/07/14	
50-32-8	Benzo(a)pyrene	0.0067 U	mg/kg	0.0067	0.00039	11/07/14	
205-99-2	Benzo(b)fluoranthene	0.0067 U	mg/kg	0.0067	0.00062	11/07/14	
191-24-2	Benzo(g,h,i)perylene	0.0067 U	mg/kg	0.0067	0.00054	11/07/14	
207-08-9	Benzo(k)fluoranthene	0.0067 U	mg/kg	0.0067	0.00034	11/07/14	
218-01-9	Chrysene	0.0067 U	mg/kg	0.0067	0.00084	11/07/14	
53-70-3	Dibenz(a,h)anthracene	0.0067 U	mg/kg	0.0067	0.00051	11/07/14	
206-44-0	Fluoranthene	0.0067 U	mg/kg	0.0067	0.00062	11/07/14	
86-73-7	Fluorene	0.0067 U	mg/kg	0.0067	0.0011	11/07/14	
193-39-5	Indeno(1,2,3-cd)pyrene	0.0067 U	mg/kg	0.0067	0.00037	11/07/14	
91-20-3	Naphthalene	0.0067 U	mg/kg	0.0067	0.0018	11/07/14	
85-01-8	Phenanthrene	0.0067 U	mg/kg	0.0067	0.00086	11/07/14	
129-00-0	Pyrene	0.0067 U	mg/kg	0.0067	0.00070	11/07/14	
91-22-5	Quinoline	0.0067 U	mg/kg	0.0067	0.0016	11/10/14	

Type	Sample	Matrix
BLANK	812361	Solid

REPORT OF LABORATORY ANALYSIS

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Data file : \\30wintarget\chem\30mss3.i\mss3110714.b\m3110701.d
Lab Smp Id: 812361 Client Smp ID: MB
Inj Date : 07-NOV-2014 14:51
Operator : JSH Inst ID: 30mss3.i
Smp Info : 812361
Misc Info : 6965
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Meth Date : 25-Nov-2014 13:37 dlee Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22 Cal File: m31008z6.d
Als bottle: 3 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.000	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)	REVIEW CODE
* 1 Naphthalene-d8 IS	136	3.779	3.781	(1.000)	174216	4.00000		
* 2 Acenaphthene-d8 IS	164	4.915	4.917	(1.000)	118657	4.00000		
* 3 Phenanthrene-d10 IS	188	5.988	5.988	(1.000)	161050	4.00000		
* 4 Chrysene-d12 IS	240	8.330	8.332	(1.000)	215553	4.00000		
* 5 Perylene-d12 IS	264	9.627	9.627	(1.000)	178746	4.00000		
$ 6 2-Fluorobiphenyl	172	4.461	4.461	(0.908)	106542	3.12643	208	
$ 7 Terphenyl-d14	244	7.323	7.325	(1.223)	165304	4.43576	296	
8 Naphthalene	128	Compound Not Detected.						
9 2-methylnaphthalene	142	Compound Not Detected.						
10 1-methylnaphthalene	142	Compound Not Detected.						
11 Acenaphthylene	152	Compound Not Detected.						
12 Acenaphthene	153	Compound Not Detected.						
13 Fluorene	166	Compound Not Detected.						
14 Phenanthrene	178	Compound Not Detected.						
15 Anthracene	178	Compound Not Detected.						
16 Fluoranthene	202	Compound Not Detected.						
17 Pyrene	202	Compound Not Detected.						
18 Benzo[a]anthracene	228	Compound Not Detected.						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
19 Chrysene	228	Compound Not Detected.						
20 Benzo[b]fluoranthene	252	Compound Not Detected.						
21 Benzo[k]fluoranthene	252	Compound Not Detected.						
22 Benzo[a]pyrene	252	Compound Not Detected.						
23 Dibenz[a,h]anthracene	278	Compound Not Detected.						
24 Indeno[1,2,3-cd]pyrene	276	Compound Not Detected.						
25 Benzo[g,h,i]perylene	276	Compound Not Detected.						

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m3110701.d
Lab Smp Id: 812361
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: 6965

Calibration Date: 07-NOV-2014
Calibration Time: 14:32
Client Smp ID: MB
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	144127	72064	288254	174216	20.88
2 Acenaphthene-d8	90862	45431	181724	118657	30.59
3 Phenanthrene-d10	127784	63892	255568	161050	26.03
4 Chrysene-d12 IS	178001	89001	356002	215553	21.10
5 Perylene-d12 IS	150117	75059	300234	178746	19.07

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	3.78	3.28	4.28	3.78	-0.07
2 Acenaphthene-d8	4.92	4.42	5.42	4.92	-0.04
3 Phenanthrene-d10	5.99	5.49	6.49	5.99	0.00
4 Chrysene-d12 IS	8.33	7.83	8.83	8.33	-0.02
5 Perylene-d12 IS	9.63	9.13	10.13	9.63	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

RECOVERY REPORT

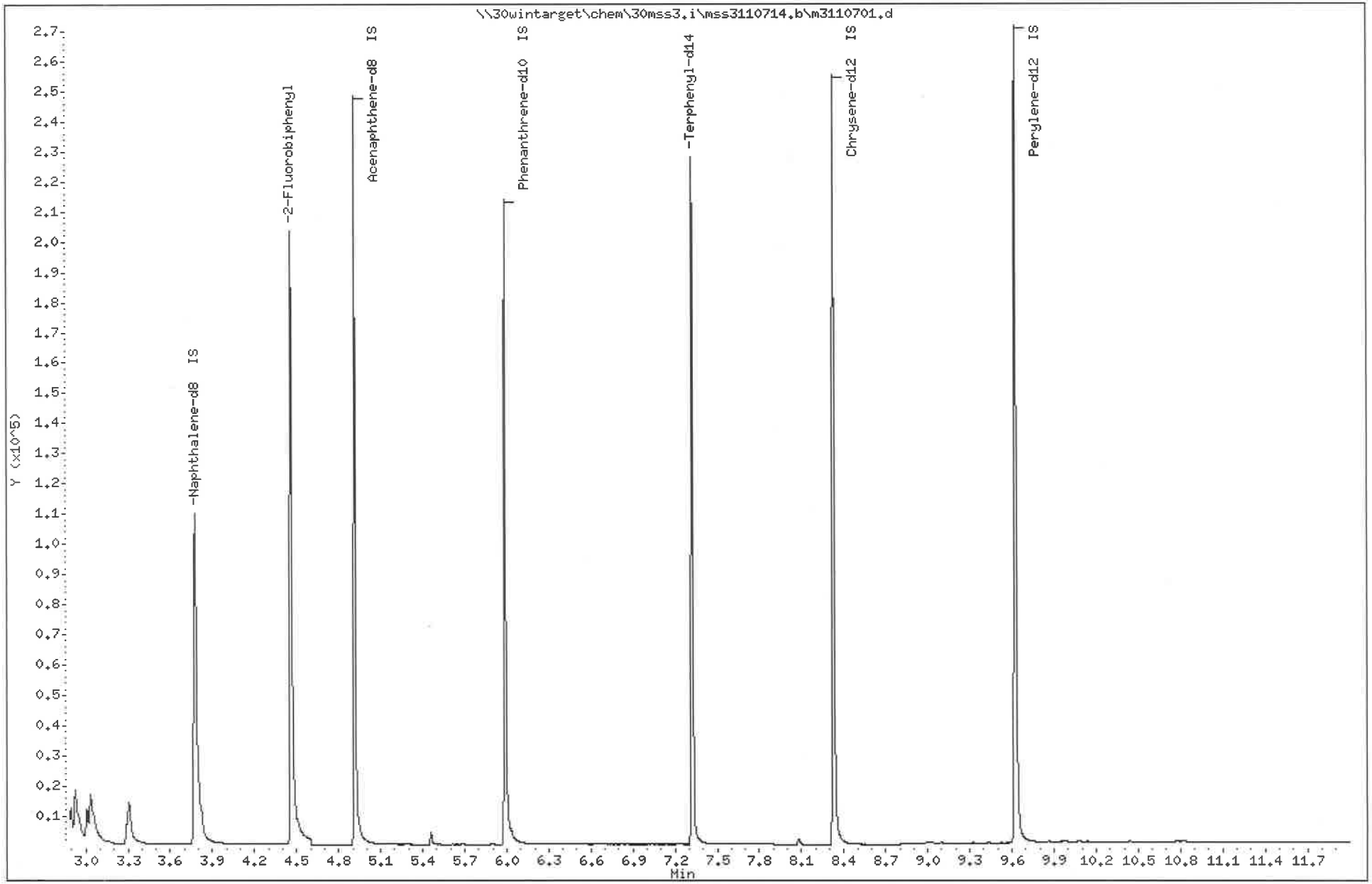
Client Name:
Sample Matrix: SOLID
Lab Smp Id: 812361
Level: LOW
Data Type: MS DATA
SpikeList File: water.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: 6965

Client SDG: 30133009
Fraction: SV
Client Smp ID: MB
Operator: JSH
SampleType: BLANK
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 6 2-Fluorobiphenyl	333	208	62.53	35-141
$ 7 Terphenyl-d14	333	296	88.72	64-141

Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110701.d
Date : 07-NOV-2014 14:51
Client ID: MB
Sample Info: 812361
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss3.i
Operator: JSH
Column diameter: 0.25



Data File: \\30wintarget\chem\30mss3.i\mss3110714.b/m3110701.d (ManInt: all
Injection Date: 07-NOV-2014 14:51
Instrument: 30mss3.i
Lab Sample ID: 812361
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

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Data file : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m2111002.d
Lab Smp Id: 812361 Client Smp ID: MB
Inj Date : 10-NOV-2014 11:49
Operator : DJL Inst ID: 30mss2.i
Smp Info : 812361
Misc Info : 6965
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Meth Date : 25-Nov-2014 13:15 dlee Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: quin.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.000	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)
* 1 Naphthalene-d8 IS	136	4.347	4.347	(1.000)	98676	4.00000	
4 Quinoline	129	Compound Not Detected.					

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m2111002.d
Lab Smp Id: 812361
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Misc Info: 6965

Calibration Date: 10-NOV-2014
Calibration Time: 11:19
Client Smp ID: MB
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	67129	33565	134258	98676	46.99

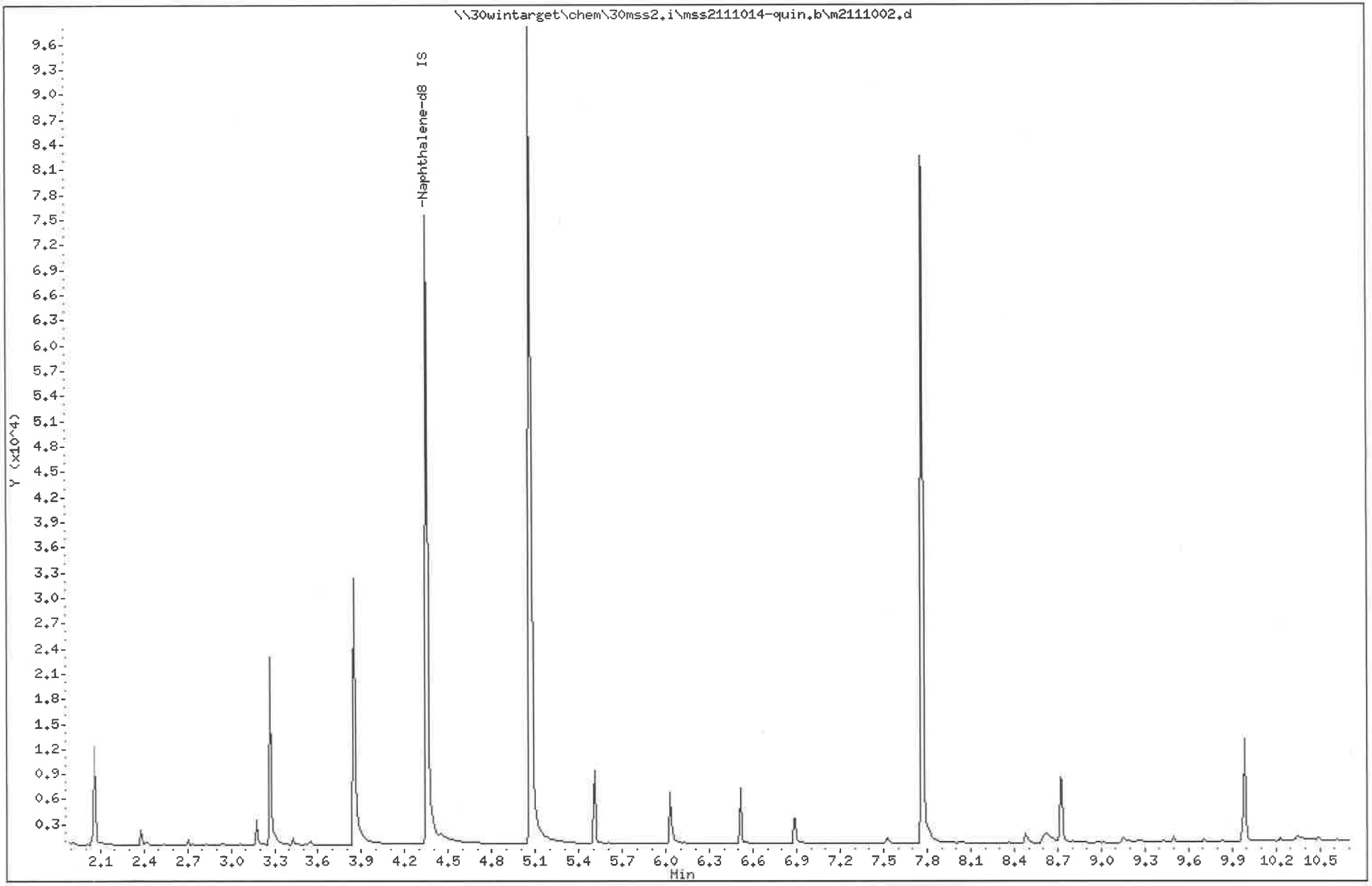
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.35	3.85	4.85	4.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m2111002.d
Date : 10-NOV-2014 11:49
Client ID: MB
Sample Info: 812361
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss2.i

Operator: DJL
Column diameter: 0.25



Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b/m2111002.d (ManInt
Injection Date: 10-NOV-2014 11:49
Instrument: 30mss2.i
Lab Sample ID: 812361
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

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Greensburg, PA 15601
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LAB CONTROL SAMPLE RESULTS

Project: MH Refinery AOI-5
Pace Project No.: 30133009

QB Batch: OEXT/21490 **LCS Prepared:** 11/05/14
Method(s): EPA 3546 / EPA 8270C by SIM **LCSD Prepared:**

Analyte	LCS % Rec	LCSD % Rec	RPD	QC Limits % Rec	QC Limits RPD	Spike Conc	LCS Conc	LCSD Conc	Units	LCS Analyzed	LCSD Analyzed	LCS Qual	LCSD Qual
Acenaphthene	85			43-113		0.13	0.11		mg/kg	11/07/14			
Anthracene	101			59-115		0.13	0.13		mg/kg	11/07/14			
Benzo(a)anthracene	99			62-122		0.13	0.13		mg/kg	11/07/14			
Benzo(a)pyrene	86			56-113		0.13	0.11		mg/kg	11/07/14			
Benzo(b)fluoranthene	95			43-138		0.13	0.13		mg/kg	11/07/14			
Benzo(g,h,i)perylene	96			47-143		0.13	0.13		mg/kg	11/07/14			
Benzo(k)fluoranthene	110			52-138		0.13	0.15		mg/kg	11/07/14			
Chrysene	109			64-119		0.13	0.15		mg/kg	11/07/14			
Dibenz(a,h)anthracene	98			59-133		0.13	0.13		mg/kg	11/07/14			
Fluoranthene	97			64-122		0.13	0.13		mg/kg	11/07/14			
Fluorene	83			46-114		0.13	0.11		mg/kg	11/07/14			
Indeno(1,2,3-cd)pyrene	97			59-132		0.13	0.13		mg/kg	11/07/14			
Naphthalene	89			47-108		0.13	0.12		mg/kg	11/07/14			
Phenanthrene	94			42-122		0.13	0.13		mg/kg	11/07/14			
Pyrene	100			64-117		0.13	0.13		mg/kg	11/07/14			
Quinoline	93			45-124		0.13	0.12		mg/kg	11/10/14			

Type	Sample
LCS	812362

REPORT OF LABORATORY ANALYSIS

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Data file : \\30wintarget\chem\30mss3.i\mss3110714.b\m3110702.d
Lab Smp Id: 812362 Client Smp ID: MBLCS
Inj Date : 07-NOV-2014 15:08
Operator : JSH Inst ID: 30mss3.i
Smp Info : 812362
Misc Info : 6965
Comment :
Method : \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Meth Date : 25-Nov-2014 13:37 dlee Quant Type: ISTD
Cal Date : 08-OCT-2014 15:22 Cal File: m31008z6.d
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.000	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)		REVIEW CODE
* 1 Naphthalene-d8 IS	136	3.776	3.781	(1.000)	114331	4.00000		(Q)	
* 2 Acenaphthene-d8 IS	164	4.913	4.917	(1.000)	74407	4.00000			
* 3 Phenanthrene-d10 IS	188	5.986	5.988	(1.000)	106392	4.00000			
* 4 Chrysene-d12 IS	240	8.327	8.332	(1.000)	143006	4.00000			
* 5 Perylene-d12 IS	264	9.625	9.627	(1.000)	124095	4.00000		(M)	LT
$ 6 2-Fluorobiphenyl	172	4.458	4.461	(0.907)	87152	4.07836	272		
$ 7 Terphenyl-d14	244	7.320	7.325	(1.223)	128450	5.21760	348		
8 Naphthalene	128	3.791	3.796	(1.004)	54938	1.78589	119		
9 2-methylnaphthalene	142	4.236	4.238	(1.122)	31408	1.49097	99.4		
10 1-methylnaphthalene	142	4.300	4.303	(1.139)	32431	1.74418	116		
11 Acenaphthylene	152	4.825	4.827	(0.982)	59584	1.69449	113		
12 Acenaphthene	153	4.934	4.938	(1.004)	36242	1.69696	113		
13 Fluorene	166	5.287	5.291	(1.076)	42283	1.65077	110		
14 Phenanthrene	178	6.004	6.007	(1.003)	59518	1.88537	126		
15 Anthracene	178	6.046	6.049	(1.010)	63085	2.01132	134		
16 Fluoranthene	202	7.004	7.009	(1.170)	74166	1.94998	130		
17 Pyrene	202	7.211	7.216	(1.205)	74993	1.99111	133		
18 Benzo[a]anthracene	228	8.317	8.322	(0.999)	74922	1.98583	132		

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kg)	REVIEW CODE
19 Chrysene	228	8.352	8.356	(1.003)	71527	2.18066	145	
20 Benzo[b]fluoranthene	252	9.294	9.299	(0.966)	72995	1.90372	127	
21 Benzo[k]fluoranthene	252	9.318	9.323	(0.968)	86934	2.19071	146	
22 Benzo[a]pyrene	252	9.578	9.583	(0.995)	66911	1.71164	114	
23 Dibenz[a,h]anthracene	278	10.525	10.530	(1.094)	74570	1.96849	131	
24 Indeno[1,2,3-cd]pyrene	276	10.525	10.530	(1.094)	87098	1.93415	129	
25 Benzo[g,h,i]perylene	276	10.783	10.788	(1.120)	73180	1.91766	128	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss3.i
Lab File ID: m3110702.d
Lab Smp Id: 812362
Analysis Type: SV
Quant Type: ISTD
Operator: JSH
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: 6965

Calibration Date: 07-NOV-2014
Calibration Time: 14:32
Client Smp ID: MBLCS
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	144127	72064	288254	114331	-20.67
2 Acenaphthene-d8	90862	45431	181724	74407	-18.11
3 Phenanthrene-d10	127784	63892	255568	106392	-16.74
4 Chrysene-d12 IS	178001	89001	356002	143006	-19.66
5 Perylene-d12 IS	150117	75059	300234	124095	-17.33

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	3.78	3.28	4.28	3.78	-0.14
2 Acenaphthene-d8	4.92	4.42	5.42	4.91	-0.08
3 Phenanthrene-d10	5.99	5.49	6.49	5.99	-0.04
4 Chrysene-d12 IS	8.33	7.83	8.83	8.33	-0.06
5 Perylene-d12 IS	9.63	9.13	10.13	9.63	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Pace Analytical Services, Inc

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 812362
Level: LOW
Data Type: MS DATA
SpikeList File: water.spk
Sublist File: all.sub
Method File: \\30wintarget\chem\30mss3.i\mss3110714.b\100814pahcd.m
Misc Info: 6965

Client SDG: 30133009
Fraction: SV
Client Smp ID: MBLCS
Operator: JSH
SampleType: LCS
Quant Type: ISTD

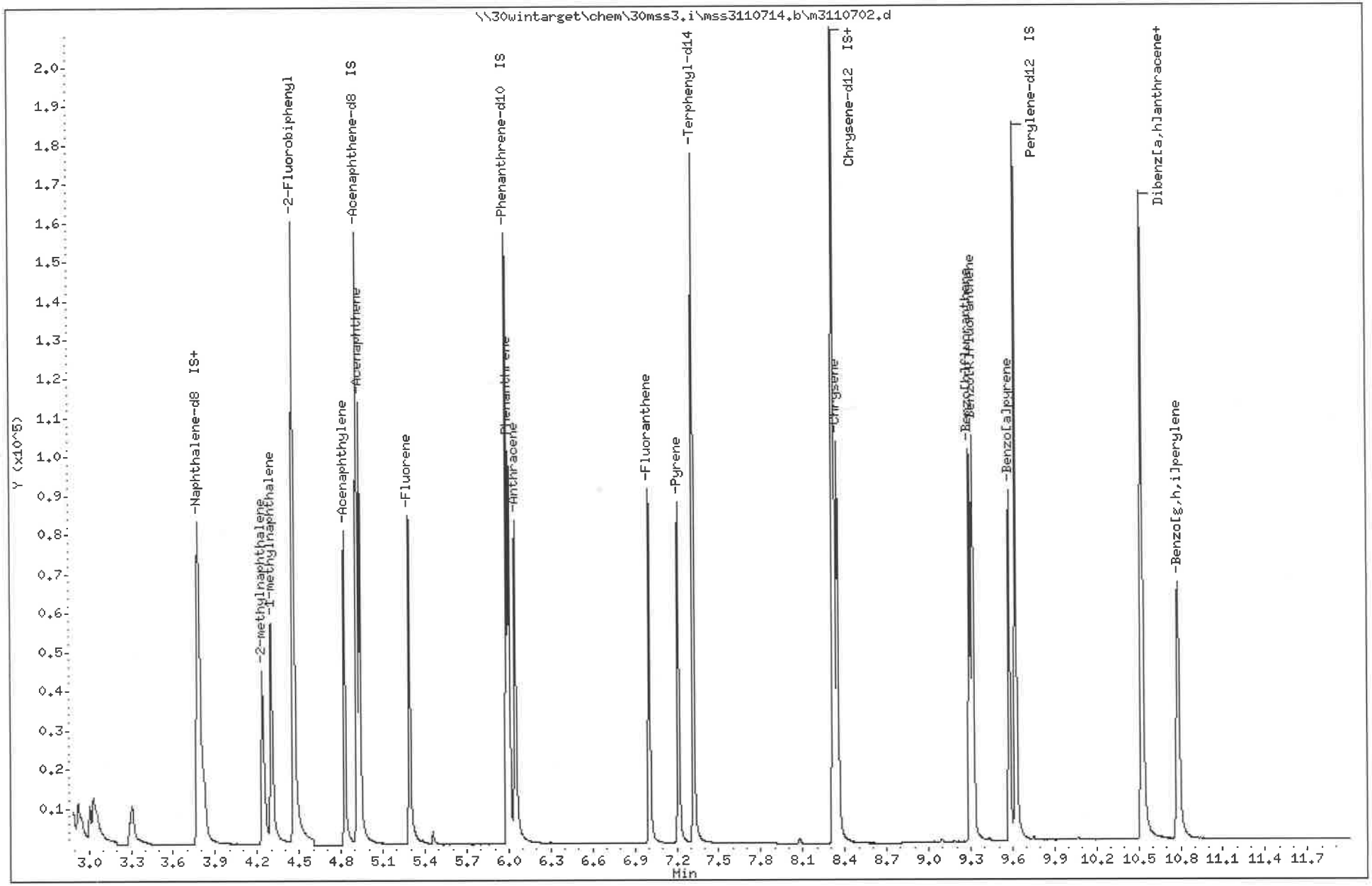
SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
8 Naphthalene	133	119	89.29	42-107
11 Acenaphthylene	133	113	84.72	44-109
12 Acenaphthene	133	113	84.85	48-104
13 Fluorene	133	110	82.54	49-108
14 Phenanthrene	133	126	94.27	50-109
15 Anthracene	133	134	100.57	49-112
16 Fluoranthene	133	130	97.50	65-112
17 Pyrene	133	133	99.56	64-109
18 Benzo[a]anthracene	133	132	99.29	63-109
19 Chrysene	133	145	109.03	62-115
20 Benzo[b]fluoranthe	133	127	95.19	41-139
21 Benzo[k]fluoranthe	133	146	109.54	58-125
22 Benzo[a]pyrene	133	114	85.58	51-98
23 Dibenz[a,h]anthrac	133	131	98.42	55-124
24 Indeno[1,2,3-cd]py	133	129	96.71	54-125
25 Benzo[g,h,i]peryle	133	128	95.88	44-124
9 2-methylnaphthalen	133	99.4	74.55	47-103
10 1-methylnaphthalen	133	116	87.21	10-175

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 6 2-Fluorobiphenyl	333	272	81.57	35-141
$ 7 Terphenyl-d14	333	348	104.35	64-141

Data File: \\30wintarget\chem\30mss3.i\mss3110714.b\m3110702.d
Date : 07-NOV-2014 15:08
Client ID: MBLCS
Sample Info: 812362
Volume Injected (uL): 1.0
Column phase: RTX-5MS

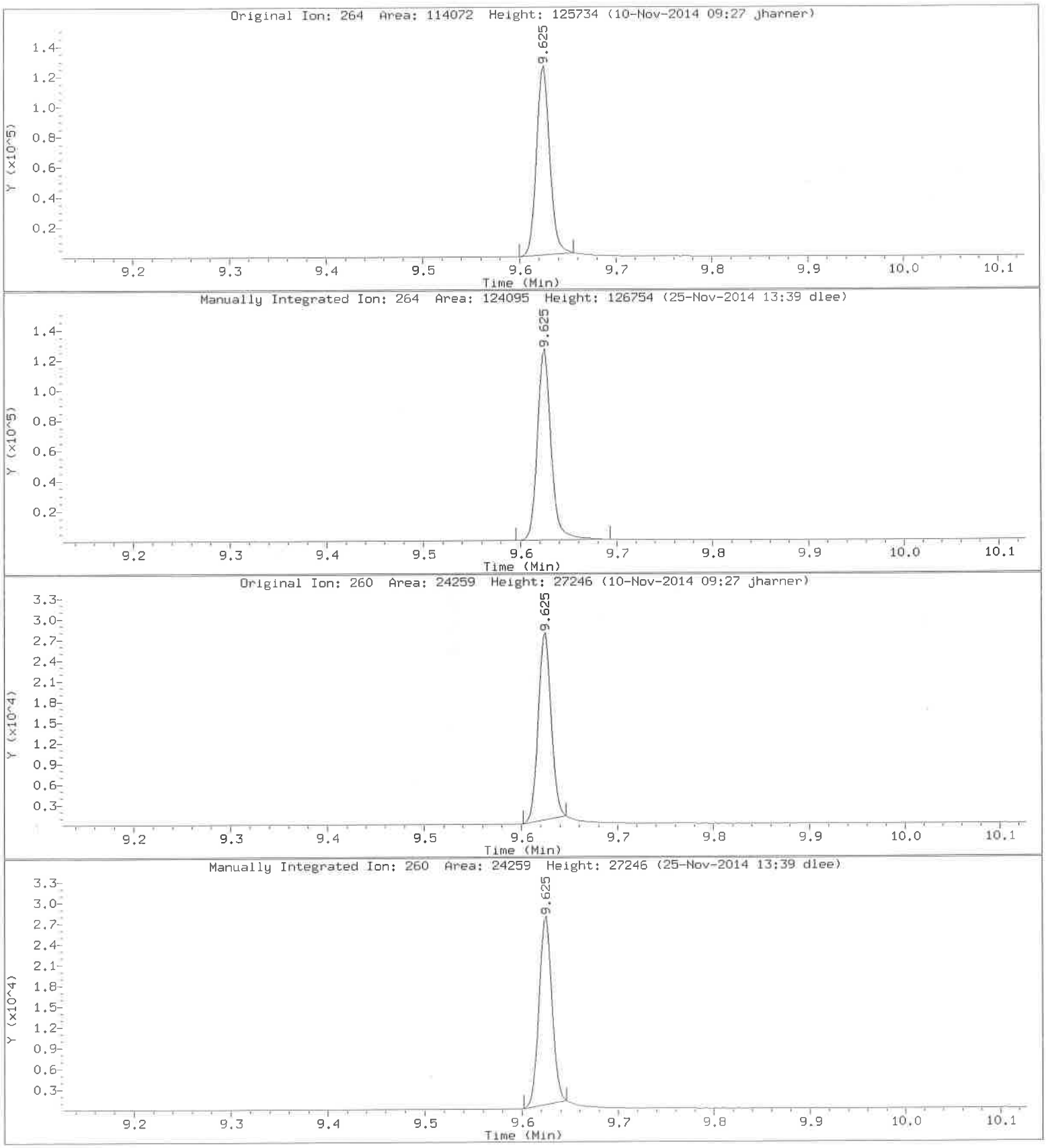
Instrument: 30mss3.i

Operator: JSH
Column diameter: 0.25

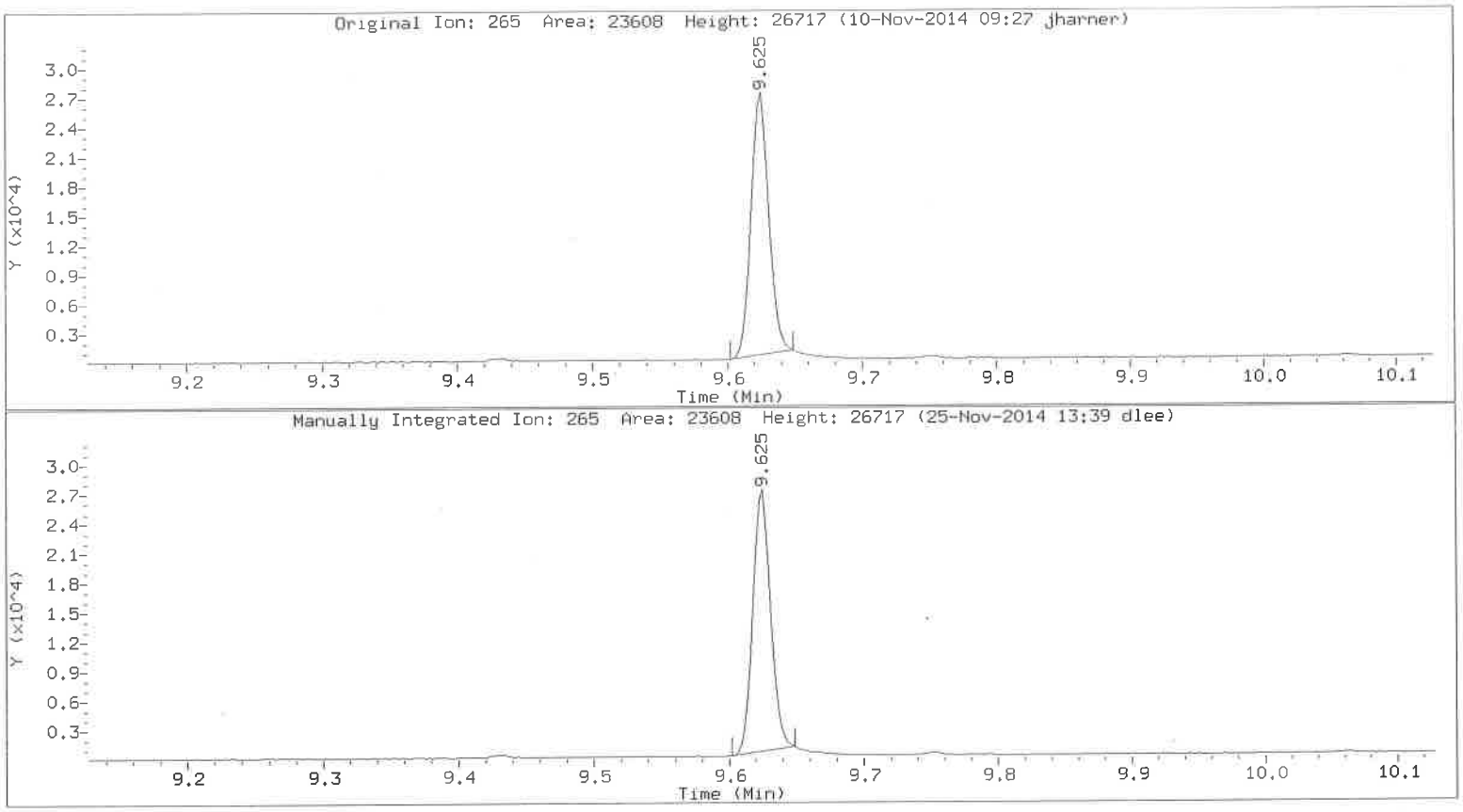


Data File: \\30wintarget\chem\30mss3.i\mss3110714.b/m3110702.d (ManInt: all
Injection Date: 07-NOV-2014 15:08
Instrument: 30mss3.i
Lab Sample ID: 812362

Compound: Perylene-d12 IS
CAS Number: 1520-96-3



Data File: \\30wintarget\chem\30mss3.i\mss3110714.b/m3110702.d (ManInt: all
Injection Date: 07-NOV-2014 15:08
Instrument: 30mss3.i
Lab Sample ID: 812362



Pace Analytical Services, Inc

Data file : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m2111001.d
Lab Smp Id: 812362 Client Smp ID: MBLCS
Inj Date : 10-NOV-2014 11:34
Operator : DJL Inst ID: 30mss2.i
Smp Info : 812362
Misc Info : 6965
Comment :
Method : \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Meth Date : 25-Nov-2014 13:15 dlee Quant Type: ISTD
Cal Date : 22-AUG-2014 19:45 Cal File: m20822z6.d
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: quin.sub
Target Version: 4.14
Processing Host: SVOCMFIVE

Concentration Formula:
Amt * DF * Uf * Vt/(Vi * Ws * (100/(100 - M))) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	15.000	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kg)
* 1 Naphthalene-d8 IS	136	4.357	4.347	(1.000)	71016	4.00000	
4 Quinoline	129	4.617	4.596	(1.060)	20275	1.86672	124(QM)

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: m2111001.d
Report Date: 25-Nov-2014 13:17

Pace Analytical Services, Inc

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 30mss2.i
Lab File ID: m2111001.d
Lab Smp Id: 812362
Analysis Type: SV
Quant Type: ISTD
Operator: DJL
Method File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\mss2082214-quin.m
Misc Info: 6965

Calibration Date: 10-NOV-2014
Calibration Time: 11:19
Client Smp ID: MBLCS
Level: LOW
Sample Type: SOIL

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 4

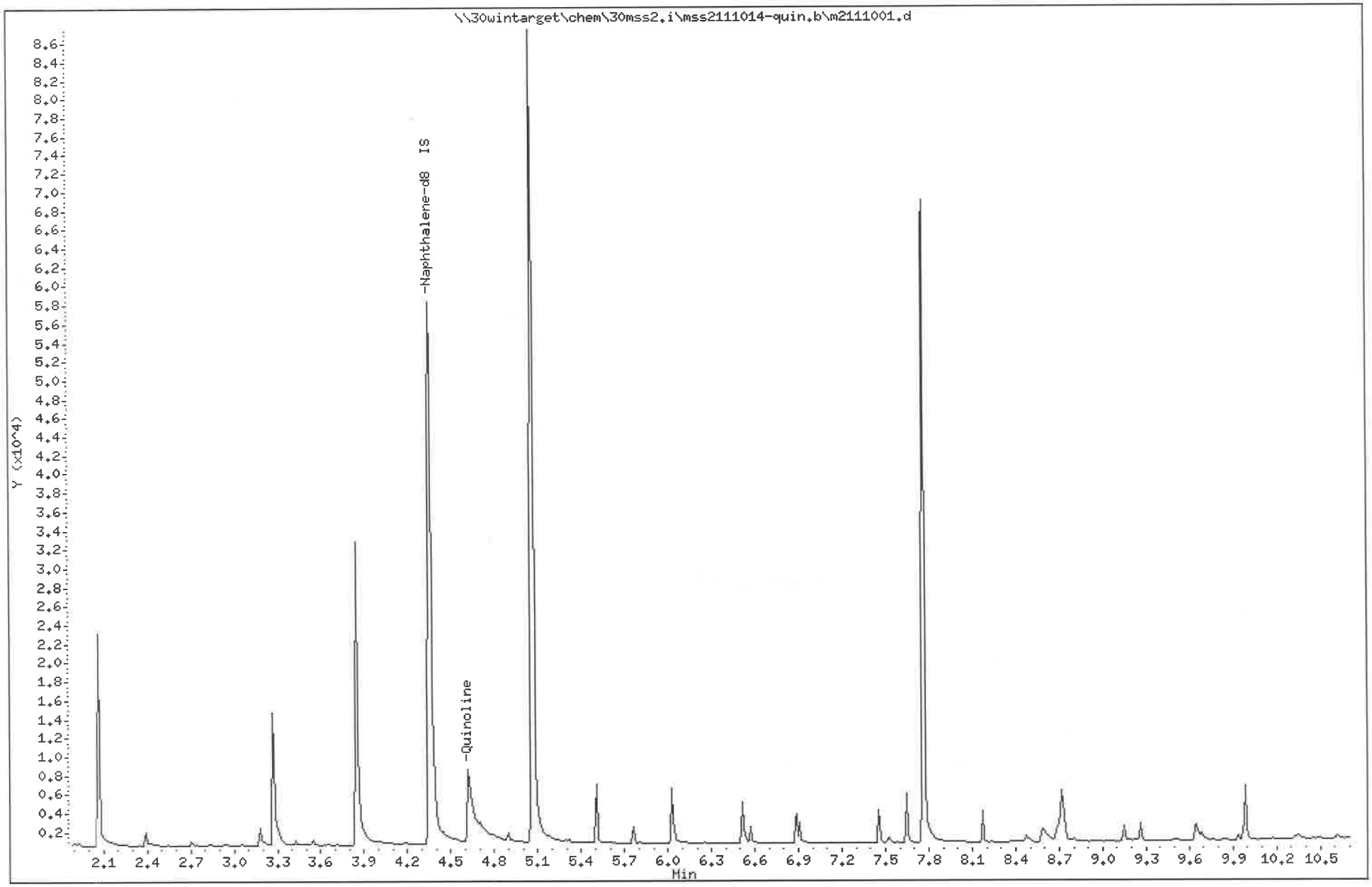
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	67129	33565	134258	71016	5.79

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8 I	4.35	3.85	4.85	4.36	0.24

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

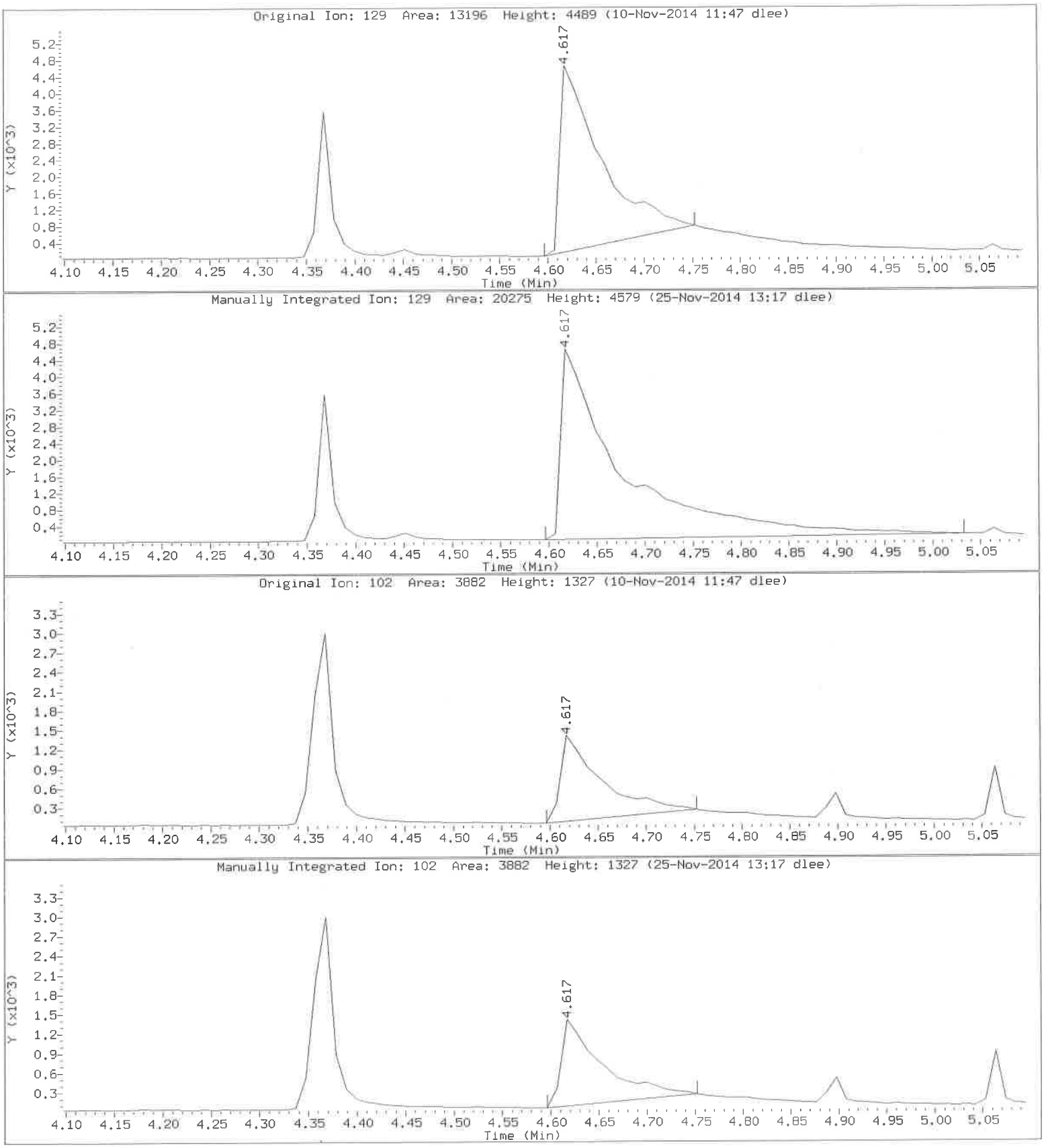
Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b\m2111001.d
Date : 10-NOV-2014 11:34
Client ID: MBLCS
Sample Info: 812362
Volume Injected (uL): 1.0
Column phase: RTX-5MS

Instrument: 30mss2.i
Operator: DJL
Column diameter: 0.25

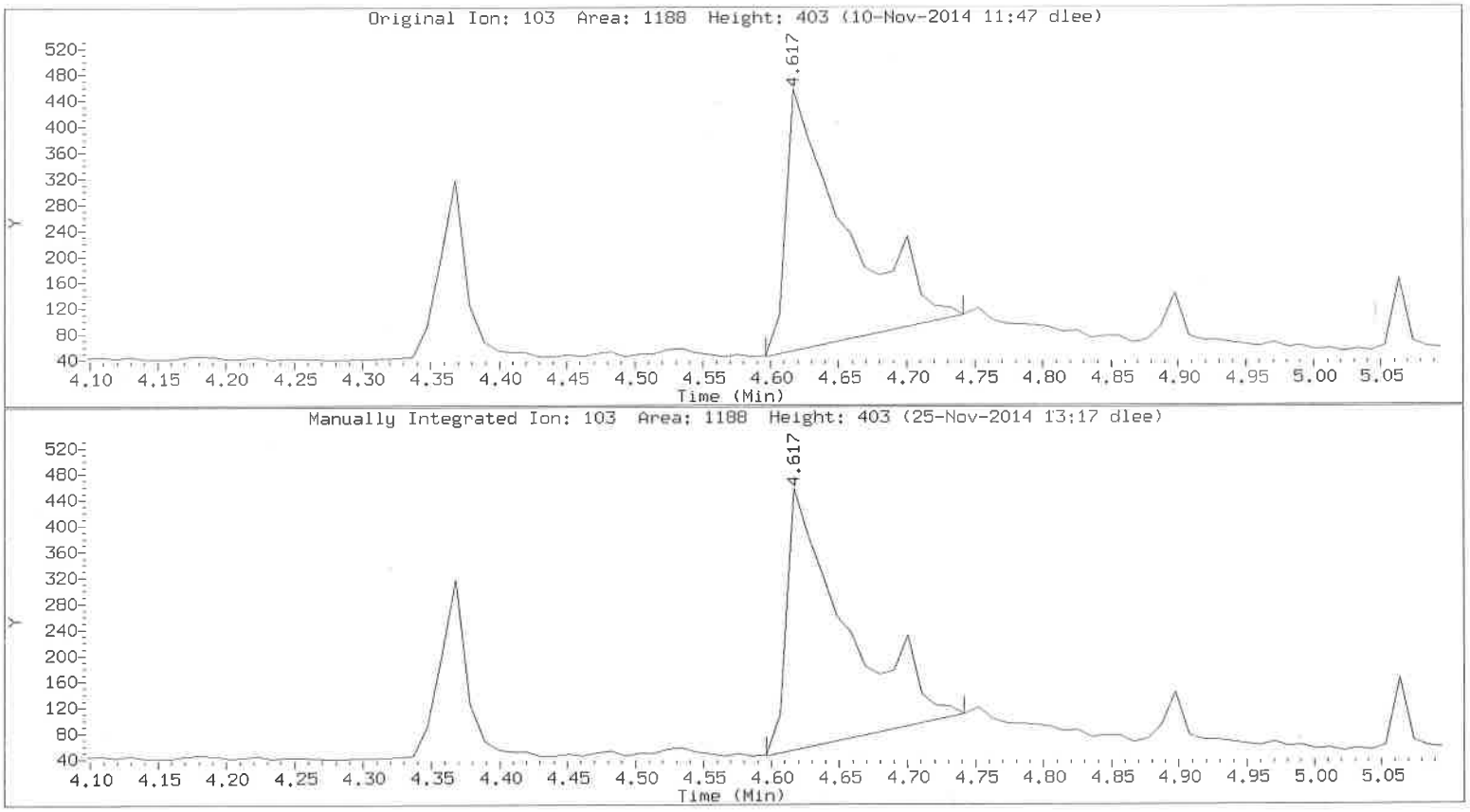


Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b/m2111001.d (ManInt
Injection Date: 10-NOV-2014 11:34
Instrument: 30mss2.i
Lab Sample ID: 812362

Compound: Quinoline
CAS Number: 91-22-5



Data File: \\30wintarget\chem\30mss2.i\mss2111014-quin.b/m2111001.d (ManInt
Injection Date: 10-NOV-2014 11:34
Instrument: 30mss2.i
Lab Sample ID: 812362



Pace Analytical Services, Inc.-PGH
BNA Solid Extraction

Matrix: Solid
LIMS QC Batch #: 21490 | 165890
Analytical Method: BNA 8270 SIM
Extraction Method: 3546
Turbo Vap #: 6,5,3
Logbook ID: 1-OX007-4
SOP ID: PGH-O-022

Solvent	Lot #	
CH_2Cl_2	XIII 179-03	Surrogate: BNA LL XIII 175-04; 10/15ppm; 0.5ml
Na_2SO_4	XIII 172-03	Martix Spike: PAH XIII 133-04; 2ppm; 1ml
Sand	XIII 175-04	Extraction/ Start Time/Date: 1515 11/5/14
		Extraction/ End Time Date: 2145 11/5/14

Balance ID: TS4KD

1:1 Acetone/CH_2Cl_2 XIII 176-06
Hydromatrix XIII 164-03
F.P. FC 010518

Date	Project #	Sample ID	Analyst	Initial Volume (g)	Final Volume (mL)	Comments
11/5/14	30133009	BLK	AC	15.0	1	
		LCS		15.0		
		30133009-001 1		15.36		
		002 1		15.18		
		003 2		15.23		
	30133378	30133378-001 1		15.22		
		002 1		15.23		
		003 1		15.15		
		004 1		15.42		
		004 MS 1		15.12		
		004 MSD 1		15.46		
		QLCS		15.0		QLCS XIII 127-04; 2ppm; 1ml
		004 QMS 1		15.32		
		004 QMSD 1		15.25		

AC
11/5/14

Peer Review: AC 11/5/14

INSTRUMENT RUN LOG
Pace Analytical Services, Inc

Instrument: 30mss2.i
Column RTX-5MS 0m X 0.25mm
Misc. Prep Info [G]:
ISTD lot: V-45-8
Tune std: V-10-1
Cal. std: see curve

Method: 8270
Surr. lot: NA

Path/File	Lab ID	Mtrx/Batch	Type	DF	Method	Date	Time	Oper	Comments
1/m20822t1.d	tune	G/V-10-1	DFTPP	1	sw846tun	8/22/14	18:12	MAK	
1/m20822z1.d	Quinoline 0.1ppm	N/v-47-8	CALIB_1	1	mss2082214-quin	8/22/14	18:28	MAK	
1/m20822z2.d	Quinoline 0.2ppm	N/v-47-9	CALIB_2	1	mss2082214-quin	8/22/14	18:43	MAK	
1/m20822z3.d	Quinoline 0.5ppm	N/v-47-10	CALIB_3	1	mss2082214-quin	8/22/14	18:58	MAK	
1/m20822z4.d	Quinoline 2ppm	N/v-47-11	CALIB_4	1	mss2082214-quin	8/22/14	19:14	MAK	
1/m20822z5.d	Quinoline 5ppm	N/v-47-12	CALIB_5	1	mss2082214-quin	8/22/14	19:29	MAK	
1/m20822z6.d	Quinoline20ppm	N/v-47-13	CALIB_6	1	mss2082214-quin	8/22/14	19:45	MAK	
1/m20822z7.d	Quinoline 2ppm ICV	N/v-48-1	CCALIB_4	1	mss2082214-quin	8/22/14	20:00	MAK	

Check Maintenance Items Performed:

- X Changed septum
- X Cleaned liner
- ___ Replaced/Cleaned gold seal
- ___ Clipped column
- ___ Changed trap (lot #_____)
- ___ Cleaned MS source
- ___ Changed column (lot #_____)
- ___ Other minor parts replaced
- ___ No maintenance performed today

Additional Comments: ~~pH acceptance limits pH<2~~ MAK 9.11.2014

Run Order Verified: MAK

File Path 1: \\30wintarget\chem\30mss2.i\mss2082214-quin.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 07:59 09/10/2014

Reviewed By/Date: SJG 9-11-14

Page: 1 of 1

INSTRUMENT RUN LOG
Pace Analytical Services, Inc

Instrument: 30mss3.i
Column RTX-5MS 0m X 0.25mm
Misc. Prep Info [S]: N/A
ISTD lot: V-55-9
Tune std: V-46-1 / m31008t1.d

Method: 8270 C/D SIM
Solvent: V-38-3D
Surr. lot: N/A
Cal. std: m3100821.d → 26.d + m3100822
V-55-10 → V-55-15 V-56-2

Path/File	Lab ID	Mtrx/Batch	Type	DF	Method	Date	Time	Oper	Comments
1/m31008t1.d	tune	N/V-46-1	DFTPP	1	sw846tun	10/08/14	13:41	JSH	
1/m31008z1.d	0.1 ppm PAH	N/V-55-10	CALIB_1	1	100814pahcd	10/08/14	13:54	JSH	
1/m31008z2.d	0.2 ppm PAH	N/V-55-11	CALIB_2	1	100814pahcd	10/08/14	14:12	JSH	
1/m31008z3.d	0.5 ppm PAH	N/V-55-12	CALIB_3	1	100814pahcd	10/08/14	14:29	JSH	
1/m31008z4.d	2 ppm PAH	N/V-55-13	CALIB_4	1	100814pahcd	10/08/14	14:47	JSH	
1/m31008z5.d	5 ppm PAH	N/V-55-14	CALIB_5	1	100814pahcd	10/08/14	15:05	JSH	
1/m31008z6.d	20 ppm PAH	N/V-55-15	CALIB_6	1	100814pahcd	10/08/14	15:22	JSH	
1/m31008z7.d	2 ppm PAH ICV	N/V-56-1	CCALIB_4	1	100814pahcd	10/08/14	15:40	JSH	Not used
1/m31008z8.d	2 ppm PAH ICV	N/V-56-2	CCALIB_4	1	100814pahcd	10/08/14	16:32	JSH	
1/m3100801.d	797247	S/6857	BLANK	1	100814pahcd	10/08/14	17:20	JSH	
1/m3100802.d	797248	S/6857	LCS	1	100814pahcd	10/08/14	17:38	JSH	
1/m3100803.d	30130771001	S/6857	SAMPLE	2	100814pahcd	10/08/14	17:55	JSH	RP
1/m3100804.d	797249	S/6857	MS	2	100814pahcd	10/08/14	18:13	JSH	
1/m3100805.d	797250	S/6857	MSD	2	100814pahcd	10/08/14	18:30	JSH	
1/m3100806.d	30130771003	S/6857	SAMPLE	2	100814pahcd	10/08/14	18:48	JSH	
1/m3100807.d	30130771005	S/6857	SAMPLE	1	100814pahcd	10/08/14	19:06	JSH	RP
1/m3100808.d	30130771007	S/6857	SAMPLE	1	100814pahcd	10/08/14	19:23	JSH	
1/m3100809.d	30130771009	S/6857	SAMPLE	2	100814pahcd	10/08/14	19:41	JSH	
1/m3100810.d	797471	S/6861	BLANK	1	100814pahcd	10/08/14	19:59	JSH	
1/m3100811.d	797472	S/6861	LCS	1	100814pahcd	10/08/14	20:16	JSH	
1/m3100812.d	30130249011	S/6861	SAMPLE	5	100814pahcd	10/08/14	20:34	JSH	
1/m3100813.d	30130249012	S/6861	SAMPLE	5	100814pahcd	10/08/14	20:51	JSH	
1/m3100814.d	797473	S/6861	MS	5	100814pahcd	10/08/14	21:09	JSH	
1/m3100815.d	797474	S/6861	MSD	5	100814pahcd	10/08/14	21:26	JSH	

JSH 10/9/14

Check Maintenance Items Performed:

- ✓ Changed septum
- ✓ Cleaned liner
- ___ Replaced/Cleaned gold seal
- ✓ Clipped column ~1/2M
- ___ Changed trap (lot #_____)
- ___ Cleaned MS source
- ___ Changed column (lot #_____)
- ___ Other minor parts replaced _____
- ___ No maintenance performed today

Additional Comments:

Run Order Verified: [signature]

File Path 1: \\30wintarget\chem\30mss3.i\mss3100814.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 10:39 10/09/2014

Reviewed By/Date: DJC 10-9-14

INSTRUMENT RUN LOG
Pace Analytical Services, Inc

Instrument: 30mss3.i
Column Rtx-5MS 20m X 0.18mm Hw
Misc. Prep Info [S]: N/A
ISTD lot: V-57-1
Tune std: V-46-1/m31107t1.d

Method: 8270 CID SIM
Solvent: V-56-3
Surr. lot: N/A
Cal. std: V-55-13/m3110751.d

Path/File	Lab ID	Mtrx/Batch	Type	DF	Method	Date	Time	Oper	Comments
1/m31107t1.d	tune	N/V-46-1	DFTPP	1	sw846tun	11/07/14	14:15	JSH	
1/m31107s1.d	2 ppm PAH SIM	N/V-55-13	CCALIB_4	1	100814pahcd	11/07/14	14:32	JSH	
1/m3110701.d	812361	S/6965	BLANK	1	100814pahcd	11/07/14	14:51	JSH	
1/m3110702.d	812362	S/6965	LCS	1	100814pahcd	11/07/14	15:08	JSH	
1/m3110703.d	30133009001	S/6965	SAMPLE	1	100814pahcd	11/07/14	15:26	JSH	
1/m3110704.d	30133009002	S/6965	SAMPLE	1	100814pahcd	11/07/14	15:43	JSH	
1/m3110705.d	30133009003	S/6965	SAMPLE	1	100814pahcd	11/07/14	16:01	JSH	
1/m3110706.d	30133378001	S/6965	SAMPLE	1	100814pahcd	11/07/14	16:18	JSH	RR @ 5x
1/m3110707.d	30133378002	S/6965	SAMPLE	1	100814pahcd	11/07/14	16:36	JSH	
1/m3110708.d	30133378004	S/6965	SAMPLE	1	100814pahcd	11/07/14	16:54	JSH	
1/m3110709.d	812363	S/6965	MS	1	100814pahcd	11/07/14	17:11	JSH	
1/m3110710.d	812364	S/6965	MSD	1	100814pahcd	11/07/14	17:29	JSH	
1/m3110711.d	30133378003	S/6965	SAMPLE	1	100814pahcd	11/07/14	17:46	JSH	
1/m3110712.d	812908	S/6970	BLANK	1	100814pahcd	11/07/14	18:04	JSH	
1/m3110713.d	812909	S/6970	LCS	1	100814pahcd	11/07/14	18:21	JSH	
1/m3110714.d	30132978001	S/6970	SAMPLE	2	100814pahcd	11/07/14	18:39	JSH	
1/m3110715.d	30132978002	S/6970	SAMPLE	1	100814pahcd	11/07/14	18:57	JSH	
1/m3110716.d	30132978003	S/6970	SAMPLE	1	100814pahcd	11/07/14	19:14	JSH	
1/m3110717.d	30132978004	S/6970	SAMPLE	1	100814pahcd	11/07/14	19:32	JSH	
1/m3110718.d	30132978005	S/6970	SAMPLE	1	100814pahcd	11/07/14	19:49	JSH	
1/m3110719.d	30132978006	S/6970	SAMPLE	1	100814pahcd	11/07/14	20:07	JSH	
1/m3110720.d	30132978007	S/6970	SAMPLE	1	100814pahcd	11/07/14	20:24	JSH	
1/m3110721.d	30132978008	S/6970	SAMPLE	2	100814pahcd	11/07/14	20:42	JSH	
1/m3110722.d	30132978009	S/6970	SAMPLE	1	100814pahcd	11/07/14	21:00	JSH	
1/m3110723.d	30132978011	S/6970	SAMPLE	1	100814pahcd	11/07/14	21:17	JSH	
1/m3110724.d	30132978010	S/6970	SAMPLE	5	100814pahcd	11/07/14	21:35	JSH	
1/m3110725.d	30132978021	S/6970	SAMPLE	5	100814pahcd	11/07/14	21:52	JSH	
1/m3110726.d	30132978022	S/6970	SAMPLE	5	100814pahcd	11/07/14	22:10	JSH	
1/m3110727.d	30132978023	S/6970	SAMPLE	5	100814pahcd	11/07/14	22:28	JSH	
1/m3110728.d	812910	S/6970	MS	5	100814pahcd	11/07/14	22:45	JSH	
1/m3110729.d	812911	S/6970	MSD	5	100814pahcd	11/07/14	23:03	JSH	

JSH 11/10/14

Check Maintenance Items Performed:

- ✓ Changed septum
- ✓ Cleaned liner
- ___ Replaced/Cleaned gold seal
- ___ Clipped column
- ___ Changed trap (lot #_____)
- ___ Cleaned MS source
- ___ Changed column (lot #_____)
- ___ Other minor parts replaced _____
- ___ No maintenance performed today

Additional Comments:

Run Order Verified: [signature]

File Path 1: \\30wintarget\chem\30mss3.i\mss3110714.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 09:36 11/10/2014

Reviewed By/Date: DJL 11-10-14

INSTRUMENT RUN LOG
Pace Analytical Services, Inc

Instrument: 30mss2.i
Column RXI-5MS 20m X 0.18mm He
Misc. Prep Info [G]:
Misc. Prep Info [S]: DCM, V-56-3
ISTD lot: V-57-1
Tune std: V-46-1

Method: 8270/625
Surr. lot: see Extraction log(s)
Cal. std: V-47-11

Path/File	Lab ID	Mtrx/Batch	Type	DF	Method	Date	Time	Oper	Comments
1/m21110t1.d	tune	G/V-46-1	DFTPP	1	sw846tun	11/10/14	09:00	DJL	
1/m21110s1.d	2 PPM QUINOLINE	N/V-47-11	CCALIB_4	1	mss2082214-quin	11/10/14	09:11	DJL	
1/m21110t2.d	tune	G/V-46-1	DFTPP	1	sw846tun	11/10/14	11:07	DJL	
1/m21110s2.d	2 PPM QUINOLINE	N/V-47-11	CCALIB_4	1	mss2082214-quin	11/10/14	11:19	DJL	
1/m2111001.d	812362	S/6965	LCS	1	mss2082214-quin	11/10/14	11:34	DJL	
1/m2111002.d	812361	S/6965	BLANK	1	mss2082214-quin	11/10/14	11:49	DJL	
1/m2111003.d	30133378001	S/6965	SAMPLE	1	mss2082214-quin	11/10/14	12:04	DJL	
1/m2111004.d	30133378002	S/6965	SAMPLE	1	mss2082214-quin	11/10/14	12:20	DJL	
1/m2111005.d	30133378003	S/6965	SAMPLE	1	mss2082214-quin	11/10/14	12:35	DJL	
1/m2111006.d	30133378004	S/6965	SAMPLE	1	mss2082214-quin	11/10/14	12:50	DJL	
1/m2111007.d	812363	S/6965	MS	1	mss2082214-quin	11/10/14	13:06	DJL	
1/m2111008.d	812364	S/6965	MSD	1	mss2082214-quin	11/10/14	13:21	DJL	
1/m2111009.d	30133378001	S/6965	SAMPLE	5	mss2082214-quin	11/10/14	13:36	DJL	
1/m2111010.d	30133009002	S/6965	SAMPLE	1	mss2082214-quin	11/10/14	13:51	DJL	
1/m2111011.d	30133009003	S/6965	SAMPLE	1	mss2082214-quin	11/10/14	14:07	DJL	
1/m2111012.d	30133009001	S/6965	SAMPLE	1	mss2082214-quin	11/10/14	14:22	DJL	
1/m2111013.d	30133009003	S/6965	SAMPLE	2	mss2082214-quin	11/10/14	14:37	DJL	

Check Maintenance Items Performed:

___ Changed septum
___ Cleaned liner
___ Replaced/Cleaned gold seal
___ Clipped column
___ Changed trap (lot #_____)
___ Cleaned MS source
___ Changed column (lot #_____)
___ Other minor parts replaced _____
✓ No maintenance performed today

Additional Comments:

Run Order Verified: DJL

File Path 1: \\30wintarget\chem\30mss2.i\mss2111014-quin.b
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Report Date: 14:47 11/10/2014

Reviewed By/Date: GB 11-10-14

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Project Number: 30133009

Percent Moisture Data

Pace Analytical Services, Inc.	
Percent Moisture/%TS	
Analyst	SMW
Instrument	30BAL4

Tray				1	2	Weight		3	Weight		Percent	
#	Sample ID	Tare Mass	Wet Mass	Dry Mass	Dry Mass	Diff	% Diff	Dry Mass	Diff	% Diff	Moisture	Date/Time
1	30133009001	0.96	17.27	13.92		13.92					20.53954629	11/07/14 12:14:44
2	813663	0.98	12.54	10.32		10.32					19.20415224	11/07/14 12:15:00
3	30133009002	0.96	13.91	11.82		11.82					16.13899613	11/07/14 12:15:42
4	813664	0.97	11.23	9.57		9.57					16.17933723	11/07/14 12:15:55
5	30133009003	0.96	15.63	12.47		12.47					21.54055896	11/07/14 12:16:33
6	30133061001	0.94	1.72	1.43		1.43					37.17948717	11/07/14 12:17:16
7	30133178001	0.95	9.95	9.15		9.15					8.888888888	11/07/14 12:17:57
8	30133178002	0.97	11.18	9.17		9.17					19.68658178	11/07/14 12:18:34
9	30133178003	0.99	9.24	7.79		7.79					17.57575757	11/07/14 12:19:15
10	30133178004	0.97	9.76	7.93		7.93					20.81911262	11/07/14 12:19:49
11	30133288001	0.97	18.84	17.81		17.81					5.763850027	11/07/14 12:20:23
12	30133088001	0.97	15.57	13.73		13.73					12.60273972	11/07/14 12:21:01
13	30133088002	0.98	17.96	15.98		15.98					11.66077738	11/07/14 12:21:36
14	30133088003	0.98	17.57	15.73		15.73					11.09101868	11/07/14 12:22:25
15	30133088004	0.99	16.35	15.08		15.08					8.268229166	11/07/14 12:23:05
16	30133462002	0.95	19.51	16.84		16.84					14.38577586	11/07/14 12:23:26
17	30133462003	0.96	13.5	12.33		12.33					9.330143540	11/07/14 12:23:50
18	30133462004	0.97	10.59	8.64		8.64					20.27027027	11/07/14 12:24:45
19	30133462005	0.98	18.17	16.57		16.57					9.307737056	11/07/14 12:25:14
20	30133462006	0.98	10.19	8.25		8.25					21.06406080	11/07/14 12:25:55
21	30133462007	0.98	11.18	9.26		9.26					18.82352941	11/07/14 12:26:23
22	30133462008	0.97	11.51	9.71		9.71					17.07779886	11/07/14 12:26:56