

Atmospheric Analysis & Consulting, Inc.

CLIENT : Soil Water Air Protection Enterprise
PROJECT NAME : Bridgeton Sanitary Landfill Air Quality Assessment
AAC PROJECT NO. : 130827
REPORT DATE : 07/08/2013

On July 3, 2013, Atmospheric Analysis & Consulting, Inc. received four (4) Six-Liter Summa Canisters for Volatile Organic Compounds analysis by EPA method TO-15. Upon receipt each sample was assigned a unique Laboratory ID number as follows:

Client ID	Lab ID	Return Pressure (mmHga)
U1 V-Canister	130827-64122	550.0
U2 W1-Canister	130827-64123	538.8
D-1 IN-Canister	130827-64124	493.0
D-2 W5-Canister	130827-64125	726.1

An initial reading of each canister's vacuum was taken and recorded. Subsequently, each canister was brought to positive pressure using UHP-He and the final pressure was recorded.

TO-15 Analysis - Up to a 500 mL aliquot of sample is concentrated, put through a water and CO₂ management system, cryofocused and injected into the GC/MS (full scan mode) for analysis following EPA Method TO-15 as specified in the SOW.

No problems were encountered during receiving, preparation and/ or analysis of these samples. The test results included in this report meet all requirements of the NELAC Standards and/or AAC SOP# TO.15.10.

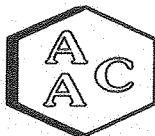
I certify that this data is technically accurate, complete and in compliance with the terms and conditions of the contract. The Laboratory Director or his designee, as verified by the following signature, has authorized the release of the data contained in this hardcopy data package.

If you have any questions or require further explanation of data results, please contact the undersigned.


Marcus Hueppe
Laboratory Director

This report consists of 60 pages.



**SAMPLE RECEIPT / LOG-IN REPORT**

AAC Project 130827

Received By: J. Zachman

<u>Sample Receipt Date</u>	<u>Project Desc</u>	<u>Clients ID</u>	<u>Matrix</u>	<u>Sampling Date/Time</u>	<u>Sampled By</u>	<u>Sample #</u>	<u>Analysis Requested</u>
7/3/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	U-1 V Canister	Summa Canister	6/27/2013	Client	64122	TO15 ASTM D5504
7/3/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	U-2 W1 Canister	Summa Canister	6/27/2013	Client	64123	TO15 ASTM D5504
7/3/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-1 IN Canister	Summa Canister	6/27/2013	Client	64124	TO15 ASTM D5504
7/3/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-2 W5 Canister	Summa Canister	6/27/2013	Client	64125	TO15 ASTM D5504

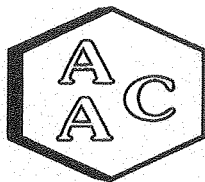
TURN AROUND TIME: Normal (10days)

Lab Due Date: 7/10/2013

Total Samples: 4

REMARKS:

Client returned 4 x Summa canisters + 4 x Flows. "Standard TAT for all analyses. If possible deliver report within 2 weeks. Provide Level IV QC package for all analyses."



CANISTER PRESSURE LOG

Client: Soil Water Air Protection Ent Project No.: 130827
Date: 7/3/2013

Canister #	Sample #	Initial Pressure	Final Pressure
784	64122	550.0	1014.6
792	64123	538.8	1019.9
802	64124	493.0	1021.6
761	64125	726.1	1019.1

CHAIN OF CUSTODY RECORD / ANALYTICAL REQUEST FORM

Bridgeton Sanitary Landfill Air Quality Assessment

SOIL / WATER / AIR PROTECTION ENTERPRISE

Atmospheric Analysis and Consulting Inc.

Canister Sampling Field Data Sheet

GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **U- 1 V** **Canister #784** **Flow #803**

AAC Batch ID: 130827 AAC Sample ID: 64122

SAMPLING INFORMATION

Start Date/Time: **June 27th, 2013 -13:05** Stop Date/Time: **June 27th, 2013 – 17:05**

Start Temp/Pressure*: **33 C / 29.9 psi** Stop Temp/Pressure*: **34 C / 29.9 psi**

Initial Can Pressure**: **- 30** Final Can Pressure**: **- 8**

* Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)

Comments: _____


John Blank

Sampler Name (Print)

June 27th, 2013

Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 – Liter

Sampling Period: 4 – Hour

Canister Serial No.: 784

Flow Controller Serial No: 803

Initial Pressure: 5.0

Certified Flow Rate: 18.0

Return Pressure: 550.0

Certified By/Date: JJ 6/3/2013

Final Pressure: 1014.6

Flow Rate upon Return: 20.5

Date Shipped From Lab: 5/23/2013

Shipped By: JJ

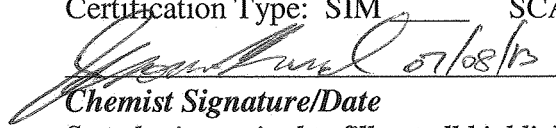
Date Returned to Lab: 7/3/2013

Received By: JJ

Flow Controller Certification File ID: 1303/05301312

Canister Certification File ID: 1303/0521323

Certification Type: SIM _____ SCAN ☒ _____ NJLL _____ PAMS _____ Other _____


Chemist Signature/Date

MM 7/4/13
Lab Manager Signature/Date

Sampler is required to fill out all highlighted sections during sampling.

Atmospheric Analysis and Consulting Inc.

Canister Sampling Field Data Sheet

GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No. **U-2 W1** Canister #**792** Flow # **804**

AAC Batch ID: 130827 AAC Sample ID: 64123

SAMPLING INFORMATION

Start Date/Time: **June 27th, 2013 – 13:20** Stop Date/Time: **June 27th, 2013 – 17:20**

Start Temp/Pressure*: **33 C / 29.90 psi** Stop Temp/Pressure*: **34 C / 29.9 psi**

Initial Can Pressure**: **- 30**

Final Can Pressure**: **- 8**

* Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)

Comments: _____



John Blank

Sampler Name (Print)

June 27th, 2013

Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 – Liter

Sampling Period: 4 – Hour

Canister Serial No.: **792**

Flow Controller Serial No: **804**

Initial Pressure: 5.0

Certified Flow Rate: 18.0

Return Pressure: 538.8

Certified By/Date: JJ 6/3/2013

Final Pressure: 1019.9

Flow Rate upon Return: 20.7

Date Shipped From Lab: 5/23/2013

Shipped By: JJ

Date Returned to Lab: 7/3/2013

Received By: JJ

Flow Controller Certification File ID: 1603/0530312

Canister Certification File ID: 1603/0521327

Certification Type: SIM SCAN ✓ NJLL PAMS Other



Chemist Signature/Date



Lab Manager Signature/Date

Sampler is required to fill out all highlighted sections during sampling.

Atmospheric Analysis and Consulting Inc.

Canister Sampling Field Data Sheet

All remaining sections will be completed upon return by the laboratory.

GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No.: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **D-1 IN Canister #802 Flow Control #718**

AAC Batch ID: 130827 AAC Sample ID: 64124

SAMPLING INFORMATION

Start Date/Time: **June 27th, 2013 – 12:30** Stop Date/Time: **June 27th, 2013 – 16:30**

Start Temp/Pressure*: **32 C / 29.9 psi** Stop Temp/Pressure*: **34 C / 29.96 psi**

Initial Can Pressure**: **- 30**

Final Can Pressure**: **- 10**

* Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)

Comments: **NOTE: The Flow Control Pressure Gage did not operate correctly.**

Value for vacuum pressure was taken from the Tank Pressure Gage



John Blank

June 27th, 2013

LABORATORY INFORMATION

Canister Size: 6 – Liter

Sampling Period: 4 – Hour

Canister Serial No.: **802**

Flow Controller Serial No: **718**

Initial Pressure: 4.5

Certified Flow Rate: 18.0

Return Pressure: 493.0

Certified By/Date: 7/7 5/17/2013

Final Pressure: 1021.6

Flow Rate upon Return: 17.0

Date Shipped From Lab: 5/23/2013

Shipped By: 7/7

Date Returned to Lab: 7/3/2013

Received By: 7/7

Flow Controller Certification File ID: 1103/05141322

Canister Certification File ID: 1103/05211317

Certification Type: SIM ☐ SCAN ☒ NJLL ☐ PAMS ☐ Other ☐


Chemist Signature/Date


Lab Manager Signature/Date

Sampler is required to fill out all highlighted sections during sampling.

Atmospheric Analysis and Consulting Inc.

Canister Sampling Field Data Sheet

All remaining sections will be completed upon return by the laboratory.

GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **D-2 W5** Canister # **761** Flow Control # **813**

AAC Batch ID: 130827 AAC Sample ID: 64125

SAMPLING INFORMATION

Start Date/Time: **June 27, 2013** - 12:45 Stop Date/Time: **June 13, 2013** - 16:45

Start Temp/Pressure*: **32 C / 29.9 psi** Stop Temp/Pressure*: **34 C / 29.96 psi**

Initial Can Pressure**: **- 30**

Final Can Pressure**: **- 1**

* Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)

Comments: _____



John Blank

Sampler Name (Print)

June 27, 2013

Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 - Liter

Sampling Period: 4 - Hour

Canister Serial No.: **761**

Flow Controller Serial No: **813**

Initial Pressure: 4.9

Certified Flow Rate: 18.0

Return Pressure: 726.1

Certified By/Date: JP 6/3/2013

Final Pressure: 1019.1

Flow Rate upon Return: 20.0

Date Shipped From Lab: 5/23/2013

Shipped By: JP

Date Returned to Lab: 7/3/2013

Received By: JP

Flow Controller Certification File ID: 4503/05291305

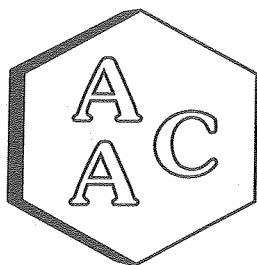
Canister Certification File ID: 1002/05211324

Certification Type: SIM ☐ SCAN ☒ NJLL ☐ PAMS ☐ Other ☐


Chemist Signature/Date


Lab Manager Signature/Date

TO-15 REPORTS



Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

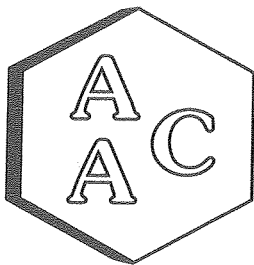
CLIENT : Soil Water Air Protection Enterprise
 PROJECT NO : 130827
 MATRIX : AIR
 UNITS : PPB (v/v)

DATE RECEIVED : 07/03/2013
 DATE REPORTED : 07/08/2013

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	U1 V-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	U2 W1-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	Method Reporting Limit (MRL)
AAC ID	130827-64122				130827-64123				
Date Sampled	06/27/2013				06/27/2013				
Date Analyzed	07/08/2013				07/08/2013				
Can Dilution Factor	1.84				1.89				
	Result	Qualifier	Analysis DF		Result	Qualifier	Analysis DF		
Chlorodifluoromethane	0.28	J	1.0	0.92	0.32	J	1.0	0.95	0.5
Propene	0.81	J	1.0	1.84	1.10	J	1.0	1.89	1.0
Dichlorodifluoromethane	0.57	J	1.0	0.92	0.68	J	1.0	0.95	0.5
Chloromethane	<SRL	U	1.0	0.92	0.53	J	1.0	0.95	0.5
Dichlorotetrafluoroethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Vinyl Chloride	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Methanol	5.39	J	1.0	9.2	12.4		1.0	9.46	5.0
1,3-Butadiene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Bromomethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Chloroethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Dichlorofluoromethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Ethanol	4.28		1.0	3.69	25.3		1.0	3.79	2.0
Vinyl Bromide	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Acetone	5.98		1.0	3.69	8.75		1.0	3.79	2.0
Trichlorofluoromethane	0.24	J	1.0	0.92	0.27	J	1.0	0.95	0.5
2-Propanol (IPA)	0.70	J	1.0	3.69	1.48	J	1.0	3.79	2.0
Acrylonitrile	<SRL	U	1.0	1.84	<SRL	U	1.0	1.89	1.0
1,1-Dichloroethene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Methylene Chloride (DCM)	<SRL	U	1.0	1.84	<SRL	U	1.0	1.89	1.0
Allyl Chloride	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Carbon Disulfide	NR		1.0	0.92	NR		1.0	0.95	0.5
Trichlorotrifluoroethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
trans-1,2-Dichloroethene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
1,1-Dichloroethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Methyl Tert Butyl Ether (MTBE)	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Vinyl Acetate	<SRL	U	1.0	1.84	<SRL	U	1.0	1.89	1.0
2-Butanone (MEK)	<SRL	U	1.0	1.84	2.16		1.0	1.89	1.0
cis-1,2-Dichloroethene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Hexane	1.13		1.0	0.92	0.70	J	1.0	0.95	0.5
Chloroform	0.20	J	1.0	0.92	0.21	J	1.0	0.95	0.5
Ethyl Acetate	<SRL	U	1.0	0.92	1.14		1.0	0.95	0.5
Tetrahydrofuran	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
1,2-Dichloroethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
1,1,1-Trichloroethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5





Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT : Soil Water Air Protection Enterprise
PROJECT NO : 130827
MATRIX : AIR
UNITS : PPB (v/v)

DATE RECEIVED : 07/03/2013
DATE REPORTED : 07/08/2013

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	U1 V-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	U2 W1-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	Method Reporting Limit (MRL)
AAC ID	130827-64122				130827-64123				
Date Sampled	06/27/2013				06/27/2013				
Date Analyzed	07/08/2013				07/08/2013				
Can Dilution Factor	1.84				1.89				
	Result	Qualifier	Analysis DF		Result	Qualifier	Analysis DF		
Benzene	0.37	J	1.0	0.92	0.36	J	1.0	0.95	0.5
Carbon Tetrachloride	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Cyclohexane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
1,2-Dichloropropane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Bromodichloromethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
1,4-Dioxane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Trichloroethene (TCE)	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
2,2,4-Trimethylpentane	0.63	J	1.0	0.92	0.38	J	1.0	0.95	0.5
Heptane	0.61	J	1.0	0.92	0.21	J	1.0	0.95	0.5
cis-1,3-Dichloropropene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
4-Methyl-2-pentanone (MiBK)	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
trans-1,3-Dichloropropene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
1,1,2-Trichloroethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Toluene	2.80		1.0	0.92	1.65		1.0	0.95	0.5
2-Hexanone (MBK)	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Dibromochloromethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
1,2-Dibromoethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Tetrachloroethene (PCE)	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Chlorobenzene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Ethylbenzene	0.31	J	1.0	0.92	0.36	J	1.0	0.95	0.5
m & p-Xylenes	1.14	J	1.0	1.84	1.15	J	1.0	1.89	1.0
Bromoform	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Styrene	<SRL	U	1.0	0.92	0.09	J	1.0	0.95	0.5
1,1,2,2-Tetrachloroethane	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
o-Xylene	0.48	J	1.0	0.92	0.45	J	1.0	0.95	0.5
4-Ethyltoluene	0.20	J	1.0	0.92	0.15	J	1.0	0.95	0.5
1,3,5-Trimethylbenzene	0.20	J	1.0	0.92	0.15	J	1.0	0.95	0.5
1,2,4-Trimethylbenzene	0.70	J	1.0	0.92	0.64	J	1.0	0.95	0.5
Benzyl Chloride (a-Chlorotoluene)	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
1,3-Dichlorobenzene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
1,4-Dichlorobenzene	<SRL	U	1.0	0.92	0.27	J	1.0	0.95	0.5
1,2-Dichlorobenzene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
1,2,4-Trichlorobenzene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
Hexachlorobutadiene	<SRL	U	1.0	0.92	<SRL	U	1.0	0.95	0.5
BFB-Surrogate Std. % Recovery	103%				106%				70-130%
U - Compound was analyzed for, but was not detected at or above the SRL									

U - Compound was analyzed for, but was not detected at or above the SRL.

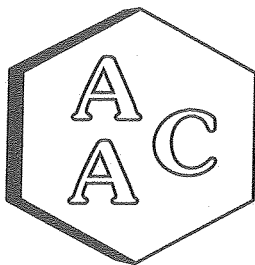
J - Analyte was detected. However the analyte concentration is an estimated value, which is between the Sample Reporting Limit (SRL) and the Sample Quantitation Limit (SQL).

SQL - Sample Quantitation Limit is the Limit Of Quantitation (LOQ) x Dilution Factors.

NR - Not Reported on these analysis.


Marcus Hueppe
Laboratory Director





Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

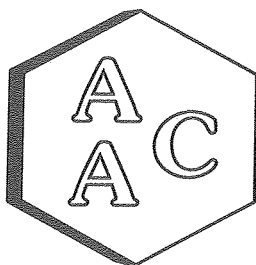
CLIENT : Soil Water Air Protection Enterprise
PROJECT NO : 130827
MATRIX : AIR
UNITS : ug/m3

DATE RECEIVED : 07/03/2013
DATE REPORTED : 07/08/2013

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	U1 V-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	U2 W1-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	Method Reporting Limit (MRL)
AAC ID	130827-64122				130827-64123				
Date Sampled	06/27/2013				06/27/2013				
Date Analyzed	07/08/2013				07/08/2013				
Can Dilution Factor	1.84				1.89				
	Result	Qualifier	Analysis DF		Result	Qualifier	Analysis DF		
Chlorodifluoromethane	1.0	J	1.0	3.3	1.1	J	1.0	3.3	1.8
Propene	1.4	J	1.0	3.2	1.9	J	1.0	3.3	1.7
Dichlorodifluoromethane	2.8	J	1.0	4.6	3.4	J	1.0	4.7	2.5
Chloromethane	<SRL	U	1.0	1.9	1.1	J	1.0	2.0	1.0
Dichlorotetrafluoroethane	<SRL	U	1.0	6.4	<SRL	U	1.0	6.6	3.5
Vinyl Chloride	<SRL	U	1.0	2.4	<SRL	U	1.0	2.4	1.3
Methanol	7.1	J	1.0	12.1	16.2		1.0	12.4	6.6
1,3-Butadiene	<SRL	U	1.0	2.0	<SRL	U	1.0	2.1	1.1
Bromomethane	<SRL	U	1.0	3.6	<SRL	U	1.0	3.7	1.9
Chloroethane	<SRL	U	1.0	2.4	<SRL	U	1.0	2.5	1.3
Dichlorofluoromethane	<SRL	U	1.0	3.9	<SRL	U	1.0	4.0	2.1
Ethanol	8.1		1.0	7.0	47.8		1.0	7.1	3.8
Vinyl Bromide	<SRL	U	1.0	4.0	<SRL	U	1.0	4.1	2.2
Acetone	14.2		1.0	8.8	20.8		1.0	9.0	4.8
Trichlorofluoromethane	1.4	J	1.0	5.2	1.5	J	1.0	5.3	2.8
2-Propanol (IPA)	1.7	J	1.0	9.1	3.6	J	1.0	9.3	4.9
Acrylonitrile	<SRL	U	1.0	4.0	<SRL	U	1.0	4.1	2.2
1,1-Dichloroethene	<SRL	U	1.0	3.7	<SRL	U	1.0	3.8	2.0
Methylene Chloride (DCM)	<SRL	U	1.0	6.4	<SRL	U	1.0	6.6	3.5
Allyl Chloride	<SRL	U	1.0	2.9	<SRL	U	1.0	3.0	1.6
Carbon Disulfide	NR		1.0	2.9	NR		1.0	2.9	1.6
Trichlorotrifluoroethane	<SRL	U	1.0	7.1	<SRL	U	1.0	7.3	3.8
trans-1,2-Dichloroethene	<SRL	U	1.0	3.7	<SRL	U	1.0	3.8	2.0
1,1-Dichloroethane	<SRL	U	1.0	3.7	<SRL	U	1.0	3.8	2.0
Methyl Tert Butyl Ether (MTBE)	<SRL	U	1.0	3.3	<SRL	U	1.0	3.4	1.8
Vinyl Acetate	<SRL	U	1.0	6.5	<SRL	U	1.0	6.7	3.5
2-Butanone (MEK)	<SRL	U	1.0	5.4	6.4		1.0	5.6	2.9
cis-1,2-Dichloroethene	<SRL	U	1.0	3.7	<SRL	U	1.0	3.8	2.0
Hexane	4.0		1.0	3.3	2.5	J	1.0	3.3	1.8
Chloroform	1.0	J	1.0	4.5	1.0	J	1.0	4.6	2.4
Ethyl Acetate	<SRL	U	1.0	3.3	4.1		1.0	3.4	1.8
Tetrahydrofuran	<SRL	U	1.0	2.7	<SRL	U	1.0	2.8	1.5
1,2-Dichloroethane	<SRL	U	1.0	3.7	<SRL	U	1.0	3.8	2.0
1,1,1-Trichloroethane	<SRL	U	1.0	5.0	<SRL	U	1.0	5.2	2.7





Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT : Soil Water Air Protection Enterprise
PROJECT NO : 130827
MATRIX : AIR
UNITS : ug/m3

DATE RECEIVED : 07/03/2013
DATE REPORTED : 07/08/2013

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

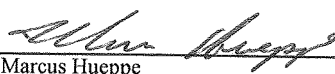
Client ID	U1 V-Canister			Sample Reporting Limit (SRL) (MRLxDf's)	U2 W1-Canister			Sample Reporting Limit (SRL) (MRLxDf's)	Method Reporting Limit (MRL)
AAC ID	130827-64122				130827-64123				
Date Sampled	06/27/2013				06/27/2013				
Date Analyzed	07/08/2013				07/08/2013				
Can Dilution Factor	1.84				1.89				
	Result	Qualifier	Analysis Df		Result	Qualifier	Analysis Df		
Benzene	1.2	J	1.0	2.9	1.2	J	1.0	3.0	1.6
Carbon Tetrachloride	<SRL	U	1.0	5.8	<SRL	U	1.0	6.0	3.1
Cyclohexane	<SRL	U	1.0	3.2	<SRL	U	1.0	3.3	1.7
1,2-Dichloropropane	<SRL	U	1.0	4.3	<SRL	U	1.0	4.4	2.3
Bromodichloromethane	<SRL	U	1.0	6.2	<SRL	U	1.0	6.3	3.4
1,4-Dioxane	<SRL	U	1.0	3.3	<SRL	U	1.0	3.4	1.8
Trichloroethene (TCE)	<SRL	U	1.0	5.0	<SRL	U	1.0	5.1	2.7
2,2,4-Trimethylpentane	2.9	J	1.0	4.3	1.8	J	1.0	4.4	2.3
Heptane	2.5	J	1.0	3.8	0.9	J	1.0	3.9	2.0
cis-1,3-Dichloropropene	<SRL	U	1.0	4.2	<SRL	U	1.0	4.3	2.3
4-Methyl-2-pentanone (MiBK)	<SRL	U	1.0	3.8	<SRL	U	1.0	3.9	2.0
trans-1,3-Dichloropropene	<SRL	U	1.0	4.2	<SRL	U	1.0	4.3	2.3
1,1,2-Trichloroethane	<SRL	U	1.0	5.0	<SRL	U	1.0	5.2	2.7
Toluene	10.6		1.0	3.5	6.2		1.0	3.6	1.9
2-Hexanone (MBK)	<SRL	U	1.0	3.8	<SRL	U	1.0	3.9	2.0
Dibromochloromethane	<SRL	U	1.0	7.9	<SRL	U	1.0	8.1	4.3
1,2-Dibromoethane	<SRL	U	1.0	7.1	<SRL	U	1.0	7.3	3.8
Tetrachloroethene (PCE)	<SRL	U	1.0	6.3	<SRL	U	1.0	6.4	3.4
Chlorobenzene	<SRL	U	1.0	4.2	<SRL	U	1.0	4.4	2.3
Ethylbenzene	1.4	J	1.0	4.0	1.6	J	1.0	4.1	2.2
m & p-Xylenes	5.0	J	1.0	8.0	5.0	J	1.0	8.2	4.3
Bromoform	<SRL	U	1.0	9.5	<SRL	U	1.0	9.8	5.2
Styrene	<SRL	U	1.0	3.9	0.4	J	1.0	4.0	2.1
1,1,2,2-Tetrachloroethane	<SRL	U	1.0	6.3	<SRL	U	1.0	6.5	3.4
o-Xylene	2.1	J	1.0	4.0	2.0	J	1.0	4.1	2.2
4-Ethyltoluene	1.0	J	1.0	4.5	0.7	J	1.0	4.7	2.5
1,3,5-Trimethylbenzene	1.0	J	1.0	4.5	0.7	J	1.0	4.7	2.5
1,2,4-Trimethylbenzene	3.5	J	1.0	4.5	3.2	J	1.0	4.7	2.5
Benzyl Chloride (a-Chlorotoluene)	<SRL	U	1.0	4.8	<SRL	U	1.0	4.9	2.6
1,3-Dichlorobenzene	<SRL	U	1.0	5.5	<SRL	U	1.0	5.7	3.0
1,4-Dichlorobenzene	<SRL	U	1.0	5.5	1.6	J	1.0	5.7	3.0
1,2-Dichlorobenzene	<SRL	U	1.0	5.5	<SRL	U	1.0	5.7	3.0
1,2,4-Trichlorobenzene	<SRL	U	1.0	6.8	<SRL	U	1.0	7.0	3.7
Hexachlorobutadiene	<SRL	U	1.0	9.8	<SRL	U	1.0	10.1	5.3
BFB-Surrogate Std. % Recovery	103%			106%			70-130%		

U - Compound was analyzed for, but was not detected at or above the SRL.

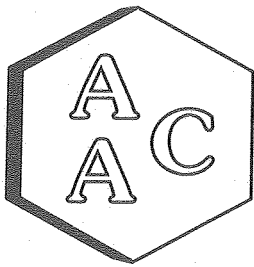
J - Analyte was detected. However the analyte concentration is an estimated value, which is between the Sample Reporting Limit (SRL) and the Sample Quantitation Limit (SQL).

SQL - Sample Quantitation Limit is the Limit Of Quantitation (LOQ) x Dilution Factors.

NR - Not Reported on these analysis.


Marcus Hueppe
Laboratory Director





Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

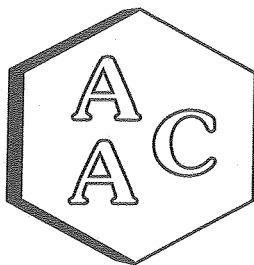
CLIENT : Soil Water Air Protection Enterprise
PROJECT NO : 130827
MATRIX : AIR
UNITS : PPB (v/v)

DATE RECEIVED : 07/03/2013
DATE REPORTED : 07/08/2013

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	D-1 IN-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	D-2 W5-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	Method Reporting Limit (MRL)
AAC ID	130827-64124				130827-64125				
Date Sampled	06/27/2013				06/27/2013				
Date Analyzed	07/08/2013				07/08/2013				
Can Dilution Factor	2.07				1.40				
	Result	Qualifier	Analysis DF		Result	Qualifier	Analysis DF		
Chlorodifluoromethane	0.41	J	1.0	1.04	0.27	J	1.0	0.70	0.5
Propene	1.60	J	1.0	2.07	1.81		1.0	1.40	1.0
Dichlorodifluoromethane	0.68	J	1.0	1.04	0.59	J	1.0	0.70	0.5
Chloromethane	0.48	J	1.0	1.04	0.48	J	1.0	0.70	0.5
Dichlorotetrafluoroethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Vinyl Chloride	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Methanol	25.7		1.0	10.4	11.0		1.0	7.02	5.0
1,3-Butadiene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Bromomethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Chloroethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Dichlorofluoromethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Ethanol	7.85		1.0	4.14	3.20		1.0	2.81	2.0
Vinyl Bromide	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Acetone	8.25		1.0	4.14	25.1		1.0	2.81	2.0
Trichlorofluoromethane	0.29	J	1.0	1.04	0.27	J	1.0	0.70	0.5
2-Propanol (IPA)	2.24	J	1.0	4.14	0.59	J	1.0	2.81	2.0
Acrylonitrile	<SRL	U	1.0	2.07	<SRL	U	1.0	1.40	1.0
1,1-Dichloroethene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Methylene Chloride (DCM)	<SRL	U	1.0	2.07	<SRL	U	1.0	1.40	1.0
Allyl Chloride	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Carbon Disulfide	NR	U	1.0	1.04	NR		1.0	0.70	0.5
Trichlorotrifluoroethane	0.12	J	1.0	1.04	0.10	J	1.0	0.70	0.5
trans-1,2-Dichloroethene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,1-Dichloroethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Methyl Tert Butyl Ether (MTBE)	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Vinyl Acetate	<SRL	U	1.0	2.07	<SRL	U	1.0	1.40	1.0
2-Butanone (MEK)	0.79	J	1.0	2.07	1.38	J	1.0	1.40	1.0
cis-1,2-Dichloroethene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Hexane	0.91	J	1.0	1.04	0.58	J	1.0	0.70	0.5
Chloroform	0.27	J	1.0	1.04	0.11	J	1.0	0.70	0.5
Ethyl Acetate	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Tetrahydrofuran	<SRL	U	1.0	1.04	0.94		1.0	0.70	0.5
1,2-Dichloroethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,1,1-Trichloroethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5





Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT : Soil Water Air Protection Enterprise
PROJECT NO : 130827
MATRIX : AIR
UNITS : PPB (v/v)

DATE RECEIVED : 07/03/2013
DATE REPORTED : 07/08/2013

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

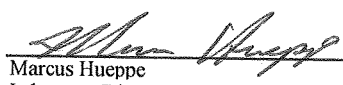
Client ID AAC ID Date Sampled Date Analyzed Can Dilution Factor	D-1 IN-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	D-2 W5-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	Method Reporting Limit (MRL)
	Result	Qualifier	Analysis DF		Result	Qualifier	Analysis DF		
Benzene	0.70	J	1.0	1.04	5.61		1.0	0.70	0.5
Carbon Tetrachloride	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Cyclohexane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,2-Dichloropropane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Bromodichloromethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,4-Dioxane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Trichloroethene (TCE)	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
2,2,4-Trimethylpentane	0.58	J	1.0	1.04	0.22	J	1.0	0.70	0.5
Heptane	0.29	J	1.0	1.04	0.11	J	1.0	0.70	0.5
cis-1,3-Dichloropropene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
4-Methyl-2-pentanone (MiBK)	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
trans-1,3-Dichloropropene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,1,2-Trichloroethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Toluene	2.59		1.0	1.04	0.93		1.0	0.70	0.5
2-Hexanone (MBK)	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Dibromochloromethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,2-Dibromoethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Tetrachloroethene (PCE)	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Chlorobenzene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Ethylbenzene	0.46	J	1.0	1.04	0.24	J	1.0	0.70	0.5
m & p-Xylenes	3.03		1.0	2.07	0.58	J	1.0	1.40	1.0
Bromoform	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Styrene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,1,2,2-Tetrachloroethane	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
o-Xylene	0.85	J	1.0	1.04	0.21	J	1.0	0.70	0.5
4-Ethyltoluene	0.23	J	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,3,5-Trimethylbenzene	0.27	J	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,2,4-Trimethylbenzene	0.85	J	1.0	1.04	0.25	J	1.0	0.70	0.5
Benzyl Chloride (a-Chlorotoluene)	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,3-Dichlorobenzene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,4-Dichlorobenzene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,2-Dichlorobenzene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
1,2,4-Trichlorobenzene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
Hexachlorobutadiene	<SRL	U	1.0	1.04	<SRL	U	1.0	0.70	0.5
BFB-Surrogate Std. % Recovery	103%				101%				70-130%

U - Compound was analyzed for, but was not detected at or above the SRL.

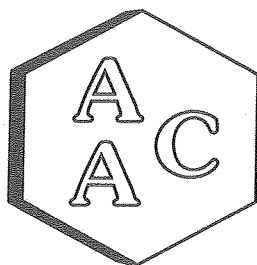
J - Analyte was detected. However the analyte concentration is an estimated value, which is between the Sample Reporting Limit (SRL) and the Sample Quantitation Limit (SQL).

SQL - Sample Quantitation Limit is the Limit Of Quantitation (LOQ) x Dilution Factors.

NR - Not Reported on these analysis.


Marcus Hueppe
Laboratory Director





Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

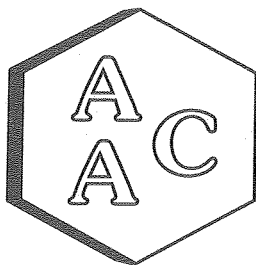
CLIENT : Soil Water Air Protection Enterprise
PROJECT NO : 130827
MATRIX : AIR
UNITS : ug/m3

DATE RECEIVED : 07/03/2013
DATE REPORTED : 07/08/2013

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	D-1 IN-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	D-2 W5-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	Method Reporting Limit (MRL)
AAC ID	130827-64124				130827-64125				
Date Sampled	06/27/2013				06/27/2013				
Date Analyzed	07/08/2013				07/08/2013				
Can Dilution Factor	2.07				1.40				
	Result	Qualifier	Analysis DF		Result	Qualifier	Analysis DF		
Chlorodifluoromethane	1.5	J	1.0	3.7	0.9	J	1.0	2.5	1.8
Propene	2.8	J	1.0	3.6	3.1		1.0	2.4	1.7
Dichlorodifluoromethane	3.4	J	1.0	5.1	2.9	J	1.0	3.5	2.5
Chloromethane	1.0	J	1.0	2.1	1.0	J	1.0	1.4	1.0
Dichlorotetrafluoroethane	<SRL	U	1.0	7.2	<SRL	U	1.0	4.9	3.5
Vinyl Chloride	<SRL	U	1.0	2.6	<SRL	U	1.0	1.8	1.3
Methanol	33.7		1.0	13.6	14.4		1.0	9.2	6.6
1,3-Butadiene	<SRL	U	1.0	2.3	<SRL	U	1.0	1.6	1.1
Bromomethane	<SRL	U	1.0	4.0	<SRL	U	1.0	2.7	1.9
Chloroethane	<SRL	U	1.0	2.7	<SRL	U	1.0	1.9	1.3
Dichlorofluoromethane	<SRL	U	1.0	4.4	<SRL	U	1.0	3.0	2.1
Ethanol	14.8		1.0	7.8	6.0		1.0	5.3	3.8
Vinyl Bromide	<SRL	U	1.0	4.5	<SRL	U	1.0	3.1	2.2
Acetone	19.6		1.0	9.8	59.6		1.0	6.7	4.8
Trichlorofluoromethane	1.6	J	1.0	5.8	1.5	J	1.0	3.9	2.8
2-Propanol (IPA)	5.5	J	1.0	10.2	1.5	J	1.0	6.9	4.9
Acrylonitrile	<SRL	U	1.0	4.5	<SRL	U	1.0	3.0	2.2
1,1-Dichloroethene	<SRL	U	1.0	4.1	<SRL	U	1.0	2.8	2.0
Methylene Chloride (DCM)	<SRL	U	1.0	7.2	<SRL	U	1.0	4.9	3.5
Allyl Chloride	<SRL	U	1.0	3.2	<SRL	U	1.0	2.2	1.6
Carbon Disulfide	NR	U	1.0	3.2	NR		1.0	2.2	1.6
Trichlorotrifluoroethane	1.0	J	1.0	7.9	0.8	J	1.0	5.4	3.8
trans-1,2-Dichloroethene	<SRL	U	1.0	4.1	<SRL	U	1.0	2.8	2.0
1,1-Dichloroethane	<SRL	U	1.0	4.2	<SRL	U	1.0	2.8	2.0
Methyl Tert Butyl Ether (MTBE)	<SRL	U	1.0	3.7	<SRL	U	1.0	2.5	1.8
Vinyl Acetate	<SRL	U	1.0	7.3	<SRL	U	1.0	4.9	3.5
2-Butanone (MEK)	2.3	J	1.0	6.1	4.1	J	1.0	4.1	2.9
cis-1,2-Dichloroethene	<SRL	U	1.0	4.1	<SRL	U	1.0	2.8	2.0
Hexane	3.2	J	1.0	3.7	2.0	J	1.0	2.5	1.8
Chloroform	1.3	J	1.0	5.1	0.6	J	1.0	3.4	2.4
Ethyl Acetate	<SRL	U	1.0	3.7	<SRL	U	1.0	2.5	1.8
Tetrahydrofuran	<SRL	U	1.0	3.1	2.8		1.0	2.1	1.5
1,2-Dichloroethane	<SRL	U	1.0	4.2	<SRL	U	1.0	2.8	2.0
1,1,1-Trichloroethane	<SRL	U	1.0	5.7	<SRL	U	1.0	3.8	2.7





Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT : Soil Water Air Protection Enterprise
PROJECT NO : 130827
MATRIX : AIR
UNITS : ug/m3

DATE RECEIVED : 07/03/2013
DATE REPORTED : 07/08/2013

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID AAC ID Date Sampled Date Analyzed Can Dilution Factor	D-1 IN-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	D-2 W5-Canister			Sample Reporting Limit (SRL) (MRLxDF's)	Method Reporting Limit (MRL)
	130827-64124				130827-64125				
	06/27/2013				06/27/2013				
	07/08/2013				07/08/2013				
	2.07				1.40				
	Result	Qualifier	Analysis DF		Result	Qualifier	Analysis DF		
Benzene	2.3	J	1.0	3.3	17.9		1.0	2.2	1.6
Carbon Tetrachloride	<SRL	U	1.0	6.5	<SRL	U	1.0	4.4	3.1
Cyclohexane	<SRL	U	1.0	3.6	<SRL	U	1.0	2.4	1.7
1,2-Dichloropropane	<SRL	U	1.0	4.8	<SRL	U	1.0	3.2	2.3
Bromodichloromethane	<SRL	U	1.0	6.9	<SRL	U	1.0	4.7	3.4
1,4-Dioxane	<SRL	U	1.0	3.7	<SRL	U	1.0	2.5	1.8
Trichloroethene (TCE)	<SRL	U	1.0	5.6	<SRL	U	1.0	3.8	2.7
2,2,4-Trimethylpentane	2.7	J	1.0	4.8	1.1	J	1.0	3.3	2.3
Heptane	1.2	J	1.0	4.2	0.5	J	1.0	2.9	2.0
cis-1,3-Dichloropropene	<SRL	U	1.0	4.7	<SRL	U	1.0	3.2	2.3
4-Methyl-2-pentanone (MiBK)	<SRL	U	1.0	4.2	<SRL	U	1.0	2.9	2.0
trans-1,3-Dichloropropene	<SRL	U	1.0	4.7	<SRL	U	1.0	3.2	2.3
1,1,2-Trichloroethane	<SRL	U	1.0	5.7	<SRL	U	1.0	3.8	2.7
Toluene	9.8		1.0	3.9	3.5		1.0	2.6	1.9
2-Hexanone (MBK)	<SRL	U	1.0	4.2	<SRL	U	1.0	2.9	2.0
Dibromochloromethane	<SRL	U	1.0	8.8	<SRL	U	1.0	6.0	4.3
1,2-Dibromoethane	<SRL	U	1.0	8.0	<SRL	U	1.0	5.4	3.8
Tetrachloroethene (PCE)	<SRL	U	1.0	7.0	<SRL	U	1.0	4.8	3.4
Chlorobenzene	<SRL	U	1.0	4.8	<SRL	U	1.0	3.2	2.3
Ethylbenzene	2.0	J	1.0	4.5	1.0	J	1.0	3.0	2.2
m & p-Xylenes	13.1		1.0	9.0	2.5	J	1.0	6.1	4.3
Bromoform	<SRL	U	1.0	10.7	<SRL	U	1.0	7.3	5.2
Styrene	<SRL	U	1.0	4.4	<SRL	U	1.0	3.0	2.1
1,1,2,2-Tetrachloroethane	<SRL	U	1.0	7.1	<SRL	U	1.0	4.8	3.4
o-Xylene	3.7	J	1.0	4.5	0.9	J	1.0	3.0	2.2
4-Ethyltoluene	1.1	J	1.0	5.1	<SRL	U	1.0	3.4	2.5
1,3,5-Trimethylbenzene	1.3	J	1.0	5.1	<SRL	U	1.0	3.4	2.5
1,2,4-Trimethylbenzene	4.2	J	1.0	5.1	1.2	J	1.0	3.4	2.5
Benzyl Chloride (a-Chlorotoluene)	<SRL	U	1.0	5.4	<SRL	U	1.0	3.6	2.6
1,3-Dichlorobenzene	<SRL	U	1.0	6.2	<SRL	U	1.0	4.2	3.0
1,4-Dichlorobenzene	<SRL	U	1.0	6.2	<SRL	U	1.0	4.2	3.0
1,2-Dichlorobenzene	<SRL	U	1.0	6.2	<SRL	U	1.0	4.2	3.0
1,2,4-Trichlorobenzene	<SRL	U	1.0	7.7	<SRL	U	1.0	5.2	3.7
Hexachlorobutadiene	<SRL	U	1.0	11.1	<SRL	U	1.0	7.5	5.3
BFB-Surrogate Std. % Recovery	103%			101%			70-130%		
U - Compound was analyzed for, but was not detected at or above the SRL									

U - Compound was analyzed for, but was not detected at or above the SRL.

J - Analyte was detected. However the analyte concentration is an estimated value, which is between the Sample Reporting Limit (SRL) and the Sample Quantitation Limit (SQL).

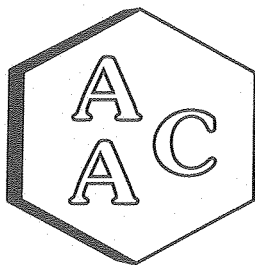
SQL - Sample Quantitation Limit is the Limit Of Quantitation (LOQ) x Dilution Factors.

NR - Not Reported on these analysis.


Marcus Hueppe
Laboratory Director



TO-15 QC REPORT



Atmospheric Analysis & Consulting, Inc.

ANALYSIS DATE : 07/08/2013

INSTRUMENT ID : GC/MS-03

ANALYST : JYG

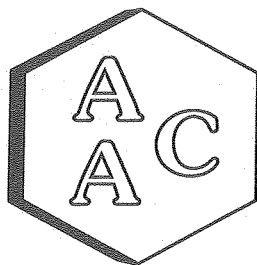
CALIBRATION STD ID : PS041813-01

VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

Continuing Calibration Verification of the 07/02/2013 Calibration

Compounds	Conc	Daily Conc	%REC*
4-BFB (surrogate standard)	10.00	10.28	103
Chlorodifluoromethane	10.10	10.79	107
Propene	11.00	12.03	109
Dichlorodifluoromethane	9.80	10.76	110
Chloromethane	10.10	9.74	96
Dichlorotetrafluoroethane	10.10	10.29	102
Vinyl Chloride	10.20	10.22	100
Methanol	4.90	5.25	107
1,3-Butadiene	10.50	11.08	106
Bromomethane	10.20	8.94	88
Chloroethane	10.00	8.56	86
Dichlorofluoromethane	10.00	10.14	101
Ethanol	9.80	9.89	101
Vinyl Bromide	10.20	9.88	97
Acetone	10.80	9.74	90
Trichlorofluoromethane	10.10	10.72	106
2-Propanol (IPA)	11.00	11.03	100
Acrylonitrile	10.50	10.45	100
1,1-Dichloroethene	10.50	10.72	102
Methylene Chloride (DCM)	10.40	9.43	91
Allyl Chloride	11.00	10.37	94
Carbon Disulfide	10.50	9.50	90
Trichlorotrifluoroethane	10.40	10.17	98
trans-1,2-Dichloroethene	10.40	10.06	97
1,1-Dichloroethane	10.40	10.01	96
Methyl Tert Butyl Ether (MTBE)	10.60	10.80	102
Vinyl Acetate	9.70	9.65	99
2-Butanone (MEK)	10.60	10.54	99
cis-1,2-Dichloroethene	10.60	10.05	95
Hexane	10.70	9.95	93
Chloroform	10.60	10.70	101
Ethyl Acetate	11.00	11.24	102
Tetrahydrofuran	10.80	10.47	97
1,2-Dichloroethane	10.40	10.87	105
1,1,1-Trichloroethane	10.50	10.99	105





Atmospheric Analysis & Consulting, Inc.

ANALYSIS DATE : 07/08/2013

ANALYST : JYG

INSTRUMENT ID : GC/MS-03

CALIBRATION STD ID : PS041813-01

VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

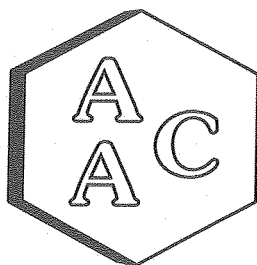
Continuing Calibration Verification of the 07/02/2013 Calibration

Compounds	Conc	Daily Conc	%REC*
Benzene	10.50	9.84	94
Carbon Tetrachloride	10.10	10.53	104
Cyclohexane	10.50	9.78	93
1,2-Dichloropropane	10.50	9.99	95
Bromodichloromethane	10.30	10.51	102
1,4-Dioxane	10.30	10.35	100
Trichloroethene (TCE)	10.30	9.98	97
2,2,4-Trimethylpentane	10.90	10.87	100
Heptane	10.70	10.34	97
cis-1,3-Dichloropropene	11.00	11.08	101
4-Methyl-2-pentanone (MiBK)	10.30	10.34	100
trans-1,3-Dichloropropene	9.80	9.87	101
1,1,2-Trichloroethane	10.60	10.49	99
Toluene	10.60	10.38	98
2-Hexanone (MBK)	10.80	10.96	101
Dibromochloromethane	11.00	11.68	106
1,2-Dibromoethane	10.40	10.35	100
Tetrachloroethene (PCE)	10.40	10.45	100
Chlorobenzene	10.60	10.41	98
Ethylbenzene	10.50	10.43	99
m & p-Xylenes	20.60	19.82	96
Bromoform	10.30	10.39	101
Styrene	10.40	10.76	103
1,1,2,2-Tetrachloroethane	10.60	10.56	100
o-Xylene	10.60	10.76	102
4-Ethyltoluene	10.40	10.74	103
1,3,5-Trimethylbenzene	10.20	10.29	101
1,2,4-Trimethylbenzene	10.20	10.57	104
Benzyl Chloride (a-Chlorotoluene)	10.00	10.03	100
1,3-Dichlorobenzene	10.00	10.32	103
1,4-Dichlorobenzene	10.00	10.02	100
1,2-Dichlorobenzene	10.00	10.08	101
1,2,4-Trichlorobenzene	9.30	9.79	105
Hexachlorobutadiene	9.80	10.46	107

* - %REC should be 70-130%

Marcus Hueppe
Laboratory Director





Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

CLIENT ID : Laboratory Control Spike DATE ANALYZED : 07/08/2013
AAC ID : LCS/LCSD DATE REPORTED : 07/08/2013
MEDIA : Air UNITS : ppbv

TO-15 Laboratory Control Spike Recovery

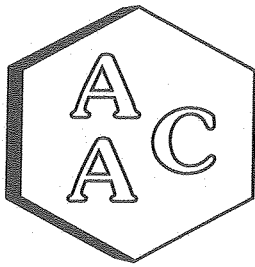
Compound	Sample Conc.	Spike Added	Spike Res	Dup Spike Res	Spike % Rec *	Spike Dup % Rec *	RPD**
1,1-Dichloroethene	0.0	10.50	10.72	10.49	102	100	2.2
Methylene Chloride (DCM)	0.0	10.40	9.43	9.88	91	95	4.7
Benzene	0.0	10.50	9.84	9.84	94	94	0.0
Trichloroethene (TCE)	0.0	10.30	9.98	9.84	97	96	1.4
Toluene	0.0	10.60	10.38	10.38	98	98	0.0
Tetrachloroethene (PCE)	0.0	10.40	10.45	10.54	100	101	0.9
Chlorobenzene	0.0	10.60	10.41	10.33	98	97	0.8
Ethylbenzene	0.0	10.50	10.43	10.41	99	99	0.2
m & p-Xylenes	0.0	20.60	19.82	19.78	96	96	0.2
o-Xylene	0.0	10.60	10.76	10.67	101	101	0.8

* Must be 70-130%

** Must be < 25%


Marcus Hueppe
Laboratory Director





Atmospheric Analysis & Consulting, Inc.

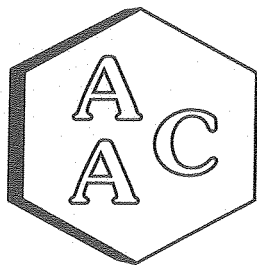
Method Blank Analysis Report

MATRIX : AIR ANALYSIS DATE : 07/08/2013
UNITS : ppbv REPORT DATE : 07/08/2013

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID AAC ID	Method Blank MB 070813	RL
Chlorodifluoromethane	<RL	0.5
Propene	<RL	1.0
Dichlorodifluoromethane	<RL	0.5
Chloromethane	<RL	0.5
Dichlorotetrafluoroethane	<RL	0.5
Vinyl Chloride	<RL	0.5
Methanol	<RL	5.0
1,3-Butadiene	<RL	0.5
Bromomethane	<RL	0.5
Chloroethane	<RL	0.5
Dichlorofluoromethane	<RL	0.5
Ethanol	<RL	2.0
Vinyl Bromide	<RL	0.5
Acetone	<RL	2.0
Trichlorofluoromethane	<RL	0.5
2-Propanol (IPA)	<RL	2.0
Acrylonitrile	<RL	1.0
1,1-Dichloroethene	<RL	0.5
Methylene Chloride (DCM)	<RL	1.0
Allyl Chloride	<RL	0.5
Carbon Disulfide	<RL	0.5
Trichlorotrifluoroethane	<RL	0.5
trans-1,2-Dichloroethene	<RL	0.5
1,1-Dichloroethane	<RL	0.5
Methyl Tert Butyl Ether (MTBE)	<RL	0.5
Vinyl Acetate	<RL	1.0
2-Butanone (MEK)	<RL	1.0
cis-1,2-Dichloroethene	<RL	0.5
Hexane	<RL	0.5
Chloroform	<RL	0.5
Ethyl Acetate	<RL	0.5
Tetrahydrofuran	<RL	0.5
1,2-Dichloroethane	<RL	0.5
1,1,1-Trichloroethane	<RL	0.5
Benzene	<RL	0.5
Carbon Tetrachloride	<RL	0.5
Cyclohexane	<RL	0.5
1,2-Dichloropropane	<RL	0.5
Bromodichloromethane	<RL	0.5
1,4-Dioxane	<RL	0.5
Trichloroethene (TCE)	<RL	0.5
2,2,4-Trimethylpentane	<RL	0.5
Heptane	<RL	0.5





Atmospheric Analysis & Consulting, Inc.

Method Blank Analysis Report

MATRIX : AIR ANALYSIS DATE : 07/08/2013
UNITS : ppbv REPORT DATE : 07/08/2013

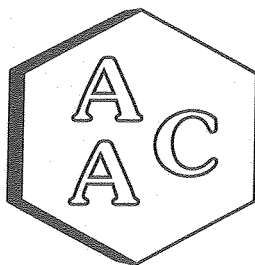
VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	Method Blank	RL
AAC ID	MB 070813	
cis-1,3-Dichloropropene	<RL	0.5
4-Methyl-2-pentanone (MiBK)	<RL	0.5
trans-1,3-Dichloropropene	<RL	0.5
1,1,2-Trichloroethane	<RL	0.5
Toluene	<RL	0.5
2-Hexanone (MBK)	<RL	0.5
Dibromochloromethane	<RL	0.5
1,2-Dibromoethane	<RL	0.5
Tetrachloroethene (PCE)	<RL	0.5
Chlorobenzene	<RL	0.5
Ethylbenzene	<RL	0.5
m & p-Xylenes	<RL	1.0
Bromoform	<RL	0.5
Styrene	<RL	0.5
1,1,2,2-Tetrachloroethane	<RL	0.5
o-Xylene	<RL	0.5
4-Ethyltoluene	<RL	0.5
1,3,5-Trimethylbenzene	<RL	0.5
1,2,4-Trimethylbenzene	<RL	0.5
Benzyl Chloride (a-Chlorotoluene)	<RL	0.5
1,3-Dichlorobenzene	<RL	0.5
1,4-Dichlorobenzene	<RL	0.5
1,2-Dichlorobenzene	<RL	0.5
1,2,4-Trichlorobenzene	<RL	0.5
Hexachlorobutadiene	<RL	0.5
System Monitoring Compounds		
BFB-Surrogate Std. % Recovery	100%	--

RL - Reporting Limit


Marcus Hueppe
Laboratory Director





Atmospheric Analysis & Consulting, Inc.

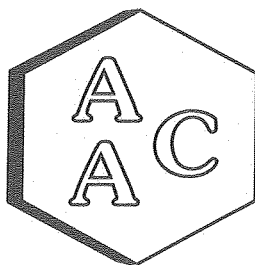
Quality Control/Quality Assurance Report

AAC ID : 130827-64123 DATE ANALYZED : 07/08/2013
 MATRIX : Air DATE REPORTED : 07/08/2013
 UNITS : ppbv

TO-15 Duplicate Analysis

Compound	Sample Conc	Duplicate Conc	% RPD
Chlorodifluoromethane	<SRL	<SRL	0.0
Propene	<SRL	<SRL	0.0
Dichlorodifluoromethane	<SRL	<SRL	0.0
Chloromethane	<SRL	<SRL	0.0
Dichlorotetrafluoroethane	<SRL	<SRL	0.0
Vinyl Chloride	<SRL	<SRL	0.0
Methanol	12.4	12.2	1.6
1,3-Butadiene	<SRL	<SRL	0.0
Bromomethane	<SRL	<SRL	0.0
Chloroethane	<SRL	<SRL	0.0
Dichlorofluoromethane	<SRL	<SRL	0.0
Ethanol	25.3	25.4	0.4
Vinyl Bromide	<SRL	<SRL	0.0
Acetone	8.75	8.61	1.6
Trichlorofluoromethane	<SRL	<SRL	0.0
2-Propanol (IPA)	<SRL	<SRL	0.0
Acrylonitrile	<SRL	<SRL	0.0
1,1-Dichloroethene	<SRL	<SRL	0.0
Methylene Chloride (DCM)	<SRL	<SRL	0.0
Allyl Chloride	<SRL	<SRL	0.0
Carbon Disulfide	1.65	1.55	6.2
Trichlorotrifluoroethane	<SRL	<SRL	0.0
trans-1,2-Dichloroethene	<SRL	<SRL	0.0
1,1-Dichloroethane	<SRL	<SRL	0.0
Methyl Tert Butyl Ether (MTBE)	<SRL	<SRL	0.0
Vinyl Acetate	<SRL	<SRL	0.0
2-Butanone (MEK)	2.16	2.14	0.9
cis-1,2-Dichloroethene	<SRL	<SRL	0.0
Hexane	<SRL	<SRL	0.0
Chloroform	<SRL	<SRL	0.0
Ethyl Acetate	1.14	1.17	2.6
Tetrahydrofuran	<SRL	<SRL	0.0
1,2-Dichloroethane	<SRL	<SRL	0.0
1,1,1-Trichloroethane	<SRL	<SRL	0.0
Benzene	<SRL	<SRL	0.0
Carbon Tetrachloride	<SRL	<SRL	0.0





Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

AAC ID : 130827-64123 DATE ANALYZED : 07/08/2013
MATRIX : Air DATE REPORTED : 07/08/2013
UNITS : ppbv

TO-15 Duplicate Analysis

Compound	Sample Conc	Duplicate Conc	% RPD
Cyclohexane	<SRL	<SRL	0.0
1,2-Dichloropropane	<SRL	<SRL	0.0
Bromodichloromethane	<SRL	<SRL	0.0
1,4-Dioxane	<SRL	<SRL	0.0
Trichloroethene (TCE)	<SRL	<SRL	0.0
2,2,4-Trimethylpentane	<SRL	<SRL	0.0
Heptane	<SRL	<SRL	0.0
cis-1,3-Dichloropropene	<SRL	<SRL	0.0
4-Methyl-2-pentanone (MiBK)	<SRL	<SRL	0.0
trans-1,3-Dichloropropene	<SRL	<SRL	0.0
1,1,2-Trichloroethane	<SRL	<SRL	0.0
Toluene	1.65	1.63	1.2
2-Hexanone (MBK)	<SRL	<SRL	0.0
Dibromochloromethane	<SRL	<SRL	0.0
1,2-Dibromoethane	<SRL	<SRL	0.0
Tetrachloroethene (PCE)	<SRL	<SRL	0.0
Chlorobenzene	<SRL	<SRL	0.0
Ethylbenzene	<SRL	<SRL	0.0
m & p-Xylenes	<SRL	<SRL	0.0
Bromoform	<SRL	<SRL	0.0
Styrene	<SRL	<SRL	0.0
1,1,2,2-Tetrachloroethane	<SRL	<SRL	0.0
o-Xylene	<SRL	<SRL	0.0
4-Ethyltoluene	<SRL	<SRL	0.0
1,3,5-Trimethylbenzene	<SRL	<SRL	0.0
1,2,4-Trimethylbenzene	<SRL	<SRL	0.0
Benzyl Chloride (a-Chlorotoluene)	<SRL	<SRL	0.0
1,3-Dichlorobenzene	<SRL	<SRL	0.0
1,4-Dichlorobenzene	<SRL	<SRL	0.0
1,2-Dichlorobenzene	<SRL	<SRL	0.0
1,2,4-Trichlorobenzene	<SRL	<SRL	0.0
Hexachlorobutadiene	<SRL	<SRL	0.0
System Monitoring Compounds			
BFB-Surrogate Std. % Recovery	106%	106%	0.4

SRL - Sample Reporting Limit


Marcus Hueppe
Laboratory Director



TO-15 RAW DATA

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081305.D
 Acq On : 8 Jul 2013 11:04
 Operator : JJG
 Sample : 130827-64122 x1
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 08 13:06:55 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
Internal Standards						
1) Bromochloromethane	12.350	128	90058	10.00	ppbv	0.00
36) 1,4-Difluorobenzene	14.579	114	484667	10.00	ppbv	0.00
55) Chlorobenzene-d5	20.267	117	458280	10.00	ppbv	-0.02

System Monitoring Compounds						
63) 4-Bromofluorobenzene (BFB)	22.710	174	288480	10.31	ppbv	0.00

Spiked Amount 10.000

Recovery = 103.10%

Target Compounds					Qvalue	
2) Chlorodifluoromethane	4.817	51	4081	0.15 ppbv	#	98
3) Propene	4.781	42	3132	0.44 ppbv	#	76
4) Dichlorodifluoromethane	4.908	85	12664	0.31 ppbv		98
5) Chloromethane	0.000		0	N.D.	d	
6) Dichlorotetrafluoroethane	0.000		0	N.D.		
7) VinylChloride	0.000		0	N.D.		Dev (Min)
8) Methanol	5.831	31	20323m	2.92 ppbv		
9) 1,3-Butadiene	0.000		0	N.D.		
10) Bromomethane	0.000		0	N.D.	d	0.00
11) Chloroethane	0.000		0	N.D.		0.00
12) Dichlorofluoromethane	0.000		0	N.D.		0.02
13) Ethanol	7.097	45	20425m	2.32 ppbv		
14) VinylBromide	0.000		0	N.D.		
15) Acetone	8.002	58	27302	3.24 ppbv	#	0.80
16) Trichlorofluoromethane	7.658	103	3946	0.13 ppbv	#	98
17) 2-Propanol (IPA)	8.256	45	12169m	0.38 ppbv		
18) Acrylonitrile	8.979	52	128	N.D.		
19) 1,1-Dichloroethene	0.000		0	N.D.		Qvalue
20) MethyleneChloride (DCM)	0.000		0	N.D.	d	# 98
21) AllylChloride	0.000		0	N.D.	d	# 76
22) CarbonDisulfide	9.468	76	157714m	4.50 ppbv		98
23) Trichlorotrifluoroethane	0.000		0	N.D.	d	
24) trans-1,2-Dichloroethene	0.000		0	N.D.		
25) 1,1-Dichloroethane	0.000		0	N.D.		Dev (Min)
26) MethylTertButylEther (M...)	0.000		0	N.D.	ppbv	
27) VinylAcetate	0.000		0	N.D.	d	
28) 2-Butanone (MEK)	0.000		0	N.D.	d	0.00
29) cis-1,2-Dichloroethene	0.000		0	N.D.		0.10
30) Hexane	11.458	86	1538	0.61 ppbv		68
31) Chloroform	12.493	83	3780	0.11 ppbv	#	92
32) EthylAcetate	0.000		0	N.D.	d	

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081305.D
 Acq On : 8 Jul 2013 11:04
 Operator : JJG
 Sample : 130827-64122 x1
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 2 Sample Multiplier: 1

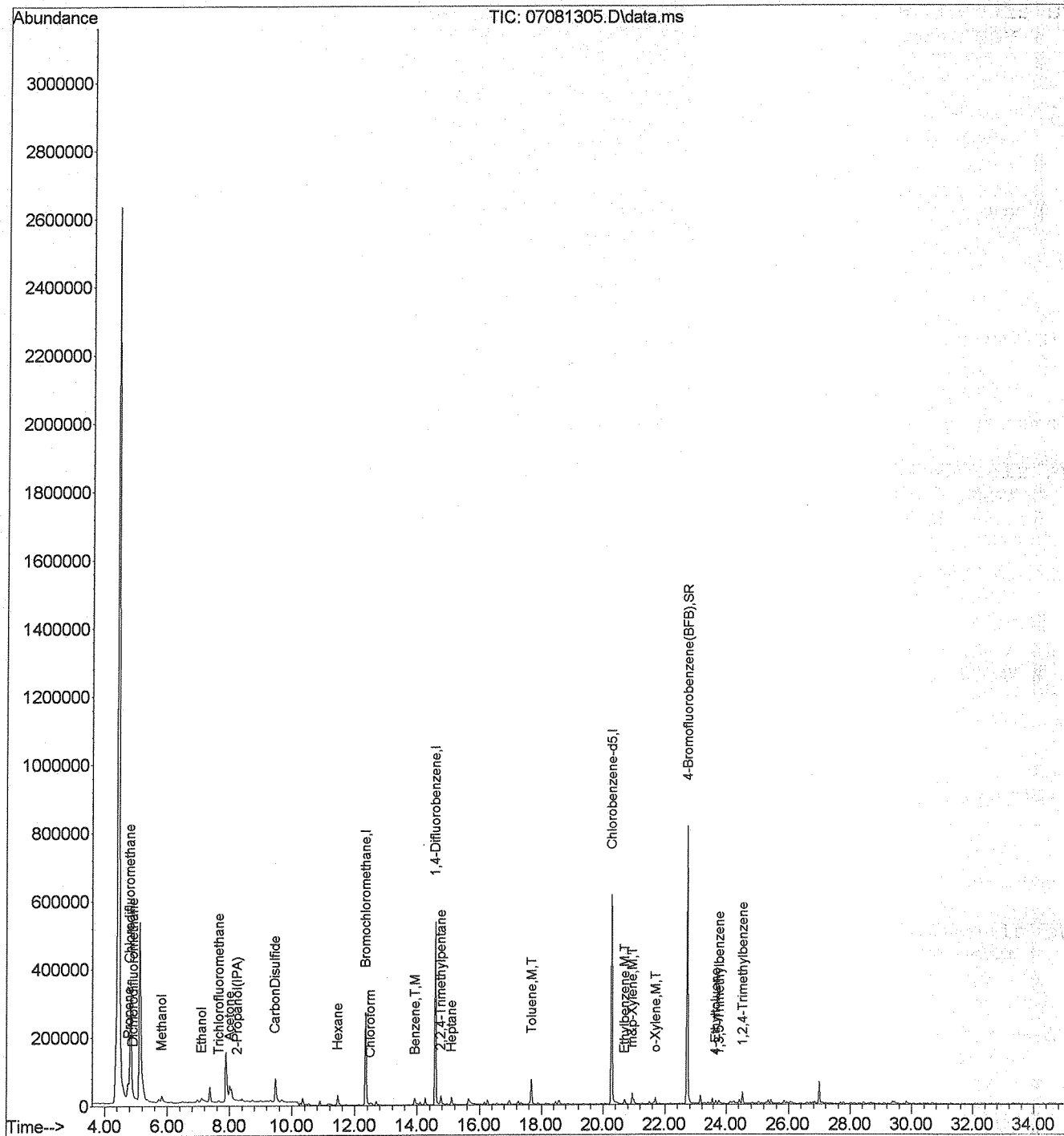
Quant Time: Jul 08 13:06:55 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
33) Tetrahydrofuran	0.000		0	N.D.		
34) 1,2-Dichloroethane	13.598	62	109	N.D.		
35) 1,1,1-Trichloroethane	0.000		0	N.D.		
37) Benzene	13.937	78	8234	0.20	ppbv #	91
38) CarbonTetrachloride	0.000		0	N.D. d		
39) Cyclohexane	0.000		0	N.D. d		
40) 1,2-Dichloropropane	0.000		0	N.D.		
41) Bromodichloromethane	0.000		0	N.D.		
42) 1,4-Dioxane	0.000		0	N.D.		
43) Trichloroethene (TCE)	15.292	130	141	N.D.		
44) 2,2,4-Trimethylpentane	14.757	57	28984	0.34	ppbv	94
45) Heptane	15.096	71	4259	0.33	ppbv #	71
46) cis-1,3-Dichloropropene	0.000		0	N.D.		
47) 4-Methyl-2-pentanone (M...	16.540	58	581	N.D.		
48) trans-1,3-Dichloropropene	17.682	75	582	N.D.		
49) 1,1,2-Trichloroethane	0.000		0	N.D.		
50) Toluene	17.682	91	76898	1.52	ppbv	98
51) 2-Hexanone (MBK)	18.199	58	123	N.D.		
52) Dibromochloromethane	0.000		0	N.D.		
53) 1,2-Dibromoethane	0.000		0	N.D.		
54) Tetrachloroethene (PCE)	19.019	166	110	N.D.		
56) Chlorobenzene	0.000		0	N.D.		
57) Ethylbenzene	20.695	91	12046	0.17	ppbv #	95
58) m&p-Xylene	20.945	106	15202	0.62	ppbv #	90
59) Bromoform	21.836	173	282	N.D.		
60) Styrene	21.658	104	811	N.D.		
61) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
62) o-Xylene	21.694	91	14669	0.26	ppbv #	93
64) 4-Ethyltoluene	23.673	120	2232	0.11	ppbv #	85
65) 1,3,5-Trimethylbenzene	23.780	120	3188	0.11	ppbv #	93
66) 1,2,4-Trimethylbenzene	24.529	120	10940	0.38	ppbv	93
67) BenzylChloride (a-Chlor...	25.171	91	529	N.D.		
68) 1,3-Dichlorobenzene	25.046	146	1269	N.D.		
69) 1,4-Dichlorobenzene	25.278	146	1655	N.D.		
70) 1,2-Dichlorobenzene	25.849	146	784	N.D.		
71) 1,2,4-Trichlorobenzene	0.000		0	N.D. d		
72) Hexachlorobutadiene	30.075	225	561	N.D.		

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

Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081305.D
Acq On : 8 Jul 2013 11:04
Operator : JJG
Sample : 130827-64122 x1
Misc : IS/Surr: PS082712-02 + 500mL
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 08 13:06:55 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration



Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081306.D
 Acq On : 8 Jul 2013 11:52
 Operator : JJG
 Sample : 130827-64123 x1
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 08 13:09:11 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
Internal Standards						
1) Bromochloromethane	12.350	128	78242	10.00	ppbv	0.00
36) 1,4-Difluorobenzene	14.579	114	468455	10.00	ppbv	0.00
55) Chlorobenzene-d5	20.267	117	453219	10.00	ppbv	-0.02

System Monitoring Compounds						
63) 4-Bromofluorobenzene (BFB)	22.710	174	292040	10.56	ppbv	0.00

Spiked Amount 10.000

Recovery = 105.60%

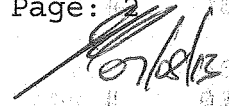
Target Compounds						Qvalue
2) Chlorodifluoromethane	4.836	51	3922	0.17	ppbv #	95
3) Propene	4.799	42	3574	0.58	ppbv #	73
4) Dichlorodifluoromethane	4.908	85	12755	0.36	ppbv	97
5) Chloromethane	5.288	52	1162	0.28	ppbv #	37
6) Dichlorotetrafluoroethane	0.000		0	N.D.		
7) VinylChloride	0.000		0	N.D.		
8) Methanol	5.885	31	39434m	6.53	ppbv	
9) 1,3-Butadiene	0.000		0	N.D.		
10) Bromomethane	0.000		0	N.D. d		
11) Chloroethane	0.000		0	N.D.		
12) Dichlorofluoromethane	0.000		0	N.D.		
13) Ethanol	7.043	45	102556m	13.39	ppbv	
14) VinylBromide	0.000		0	N.D.		
15) Acetone	7.984	58	33784m	4.62	ppbv	
16) Trichlorofluoromethane	7.659	103	3659	0.14	ppbv #	87
17) 2-Propanol (IPA)	8.202	45	21861m	0.78	ppbv	
18) Acrylonitrile	0.000		0	N.D.		
19) 1,1-Dichloroethene	0.000		0	N.D.		
20) MethyleneChloride (DCM)	0.000		0	N.D. d		
21) AllylChloride	9.323	39	119	N.D.		
22) CarbonDisulfide	9.486	76	26404m	0.87	ppbv	
23) Trichlorotrifluoroethane	0.000		0	N.D. d		
24) trans-1,2-Dichloroethene	0.000		0	N.D.		
25) 1,1-Dichloroethane	0.000		0	N.D.		
26) MethylTertButylEther (M...)	0.000		0	N.D.		
27) VinylAcetate	0.000		0	N.D. d		
28) 2-Butanone (MEK)	11.441	72	5588	1.14	ppbv #	54
29) cis-1,2-Dichloroethene	0.000		0	N.D.		
30) Hexane	11.458	86	806	0.37	ppbv #	63
31) Chloroform	12.493	83	3194	0.11	ppbv #	90
32) EthylAcetate	12.047	43	21282	0.60	ppbv #	95

Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081306.D
Acq On : 8 Jul 2013 11:52
Operator : JJG
Sample : 130827-64123 x1
Misc : IS/Surr: PS082712-02 + 500mL
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 08 13:09:11 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration

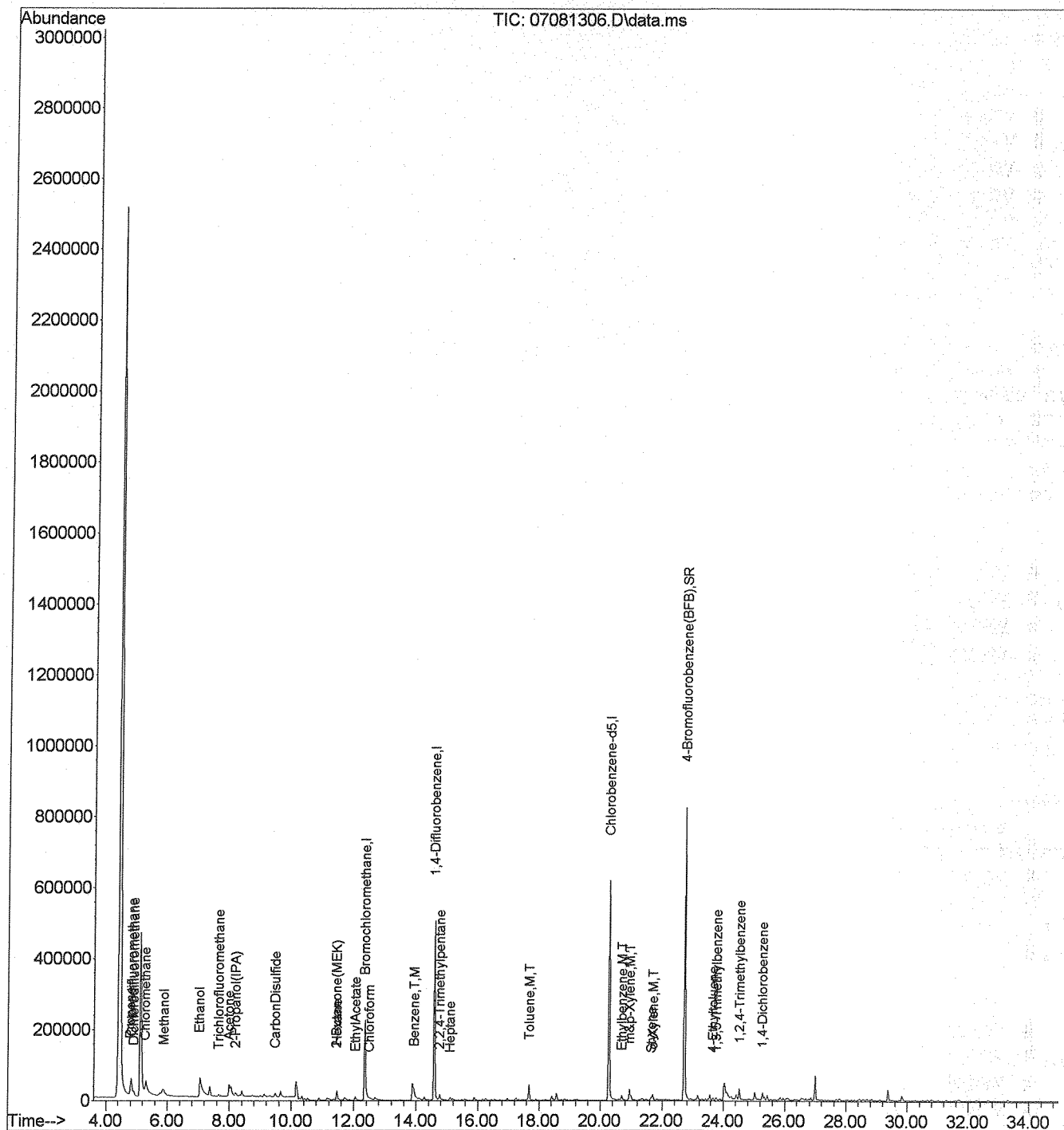
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
33) Tetrahydrofuran	0.000		0	N.D.	d	
34) 1,2-Dichloroethane	13.598	62	339	N.D.		
35) 1,1,1-Trichloroethane	0.000		0	N.D.		
37) Benzene	13.937	78	7285	0.19	ppbv #	92
38) CarbonTetrachloride	0.000		0	N.D.	d	
39) Cyclohexane	14.026	69	107	N.D.		
40) 1,2-Dichloropropane	15.257	63	117	N.D.		
41) Bromodichloromethane	0.000		0	N.D.		
42) 1,4-Dioxane	0.000		0	N.D.		
43) Trichloroethene (TCE)	0.000		0	N.D.		
44) 2,2,4-Trimethylpentane	14.757	57	16240	0.20	ppbv #	89
45) Heptane	15.096	71	1410	0.11	ppbv #	55
46) cis-1,3-Dichloropropene	0.000		0	N.D.		
47) 4-Methyl-2-pentanone (M...	16.558	58	442	N.D.		
48) trans-1,3-Dichloropropene	17.682	75	354	N.D.		
49) 1,1,2-Trichloroethane	0.000		0	N.D.		
50) Toluene	17.682	91	42388	0.87	ppbv	98
51) 2-Hexanone (MBK)	18.270	58	113	N.D.		
52) Dibromochloromethane	0.000		0	N.D.		
53) 1,2-Dibromoethane	0.000		0	N.D.		
54) Tetrachloroethene (PCE)	0.000		0	N.D.		
56) Chlorobenzene	0.000		0	N.D.		
57) Ethylbenzene	20.695	91	13165	0.19	ppbv #	96
58) m&p-Xylene	20.945	106	14724	0.61	ppbv	99
59) Bromoform	0.000		0	N.D.		
60) Styrene	21.658	104	2025	0.05	ppbv #	78
61) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
62) o-Xylene	21.694	91	13209	0.24	ppbv	96
64) 4-Ethyltoluene	23.673	120	1674	0.08	ppbv #	93
65) 1,3,5-Trimethylbenzene	23.780	120	2366	0.08	ppbv #	63
66) 1,2,4-Trimethylbenzene	24.529	120	9472	0.34	ppbv	92
67) BenzylChloride (a-Chlor...	25.171	91	277	N.D.		
68) 1,3-Dichlorobenzene	25.046	146	141	N.D.		
69) 1,4-Dichlorobenzene	25.278	146	5930	0.14	ppbv	95
70) 1,2-Dichlorobenzene	25.849	146	254	N.D.		
71) 1,2,4-Trichlorobenzene	29.451	180	795	N.D.		
72) Hexachlorobutadiene	0.000		0	N.D.		

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



Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081306.D
Acq On : 8 Jul 2013 11:52
Operator : JJG
Sample : 130827-64123 x1
Misc : IS/Surr: PS082712-02 + 500mL
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 08 13:09:11 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration



07/08/13

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081308.D
 Acq On : 8 Jul 2013 13:28
 Operator : JJG
 Sample : 130827-64124 x1
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 08 14:50:48 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.350	128	80297	10.00	ppbv	0.00
36) 1,4-Difluorobenzene	14.579	114	472071	10.00	ppbv	0.00
55) Chlorobenzene-d5	20.267	117	460673	10.00	ppbv	0.02

System Monitoring Compounds						
63) 4-Bromofluorobenzene(BFB)	22.710	174	288342	10.25	ppbv	0.00

Spiked Amount 10.000

Recovery = 102.50%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chlorodifluoromethane	4.835	51	4869	0.20	ppbv	# 94
3) Propene	4.799	42	4915	0.77	ppbv	# 64
4) Dichlorodifluoromethane	4.908	85	12240	0.33	ppbv	# 98
5) Chloromethane	5.306	52	994	0.23	ppbv	# 1
6) Dichlorotetrafluoroethane	0.000		0	N.D.		
7) VinylChloride	0.000		0	N.D.		
8) Methanol	5.867	31	76842	12.40	ppbv	
9) 1,3-Butadiene	0.000		0	N.D.		
10) Bromomethane	0.000		0	N.D.	dbv	0.00
11) Chloroethane	0.000		0	N.D.	dbv	0.00
12) Dichlorofluoromethane	0.000		0	N.D.	dbv	0.02
13) Ethanol	7.115	45	29771	3.79	ppbv	
14) VinylBromide	0.000		0	N.D.		
15) Acetone	7.984	58	29861	3.98	ppbv	0.00
16) Trichlorofluoromethane	7.658	103	3662	0.14	ppbv	# 98
17) 2-Propanol(IPA)	8.219	45	31097	1.08	ppbv	
18) Acrylonitrile	0.000		0	N.D.		
19) 1,1-Dichloroethene	0.000		0	N.D.		
20) MethyleneChloride(DCM)	0.000		0	N.D.	dbv	# 94
21) AllylChloride	0.000		0	N.D.	dbv	# 64
22) CarbonDisulfide	0.000		0	N.D.	dbv	# 98
23) Trichlorotrifluoroethane	8.979	103	901	0.06	ppbv	# 82
24) trans-1,2-Dichloroethene	0.000		0	N.D.		
25) 1,1-Dichloroethane	0.000		0	N.D.		
26) MethylTertButylEther(M...)	0.000		0	N.D.		
27) VinylAcetate	0.000		0	N.D.	d	
28) 2-Butanone(MEK)	11.476	72	1920	0.38	ppbv	# 91
29) cis-1,2-Dichloroethene	0.000		0	N.D.		0.00
30) Hexane	11.476	86	980	0.44	ppbv	# 91
31) Chloroform	12.492	83	3692	0.13	ppbv	# 90
32) EthylAcetate	0.000		0	N.D.	d	

Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081308.D
Acq On : 8 Jul 2013 13:28
Operator : JJG
Sample : 130827-64124 x1
Misc : IS/Surr: PS082712-02 + 500mL
ALS Vial : 4 Sample Multiplier: 1

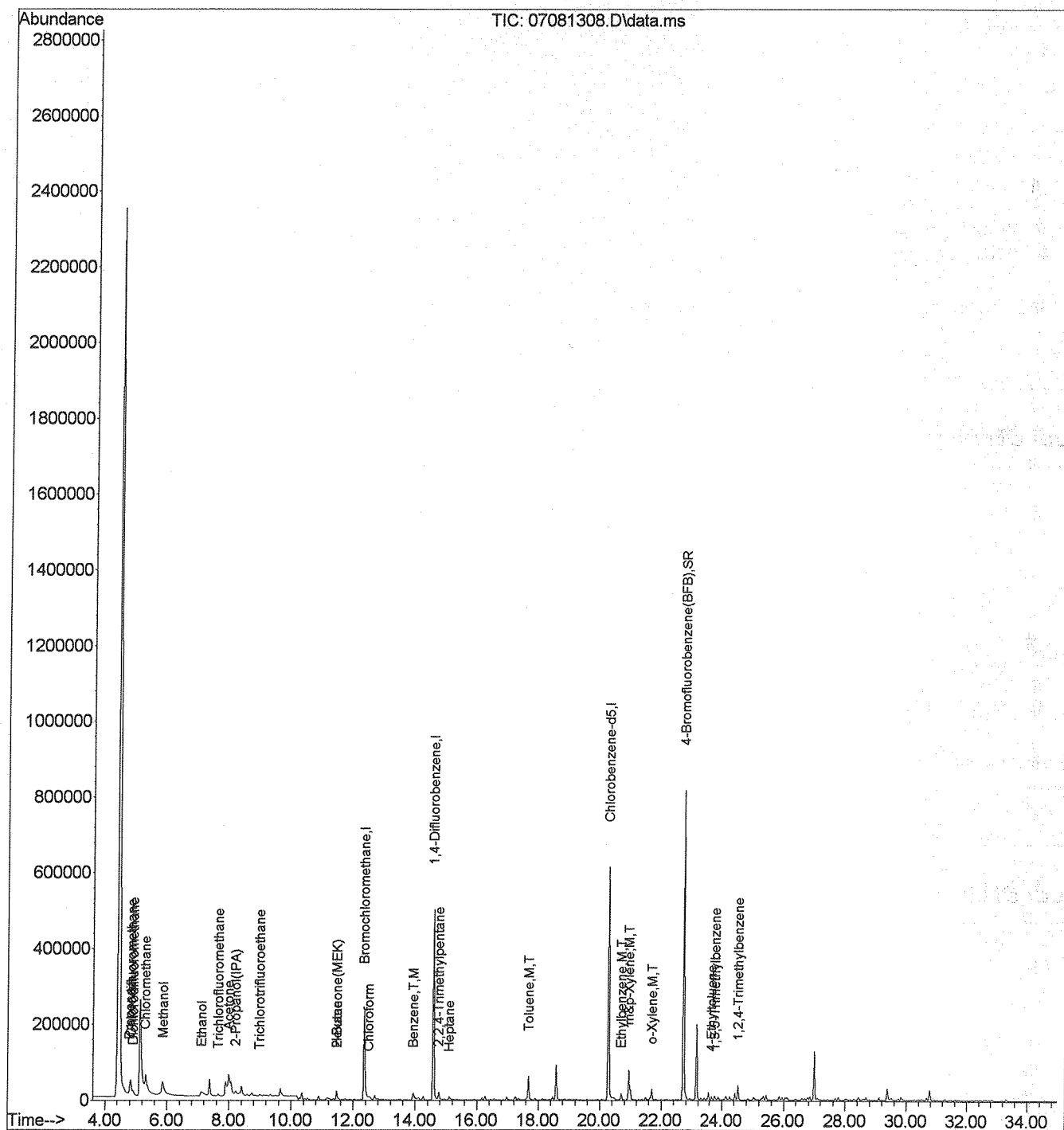
Quant Time: Jul 08 14:50:48 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
33) Tetrahydrofuran	0.000		0	N.D.	d	
34) 1,2-Dichloroethane	0.000		0	N.D.		
35) 1,1,1-Trichloroethane	0.000		0	N.D.		
37) Benzene	13.937	78	13518	0.34	ppbv	95
38) CarbonTetrachloride	0.000		0	N.D.	d	
39) Cyclohexane	0.000		0	N.D.	d	
40) 1,2-Dichloropropane	0.000		0	N.D.		
41) Bromodichloromethane	0.000		0	N.D.		
42) 1,4-Dioxane	0.000		0	N.D.		
43) Trichloroethene (TCE)	0.000		0	N.D.		
44) 2,2,4-Trimethylpentane	14.757	57	23209	0.28	ppbv #	93
45) Heptane	15.096	71	1744	0.14	ppbv #	47
46) cis-1,3-Dichloropropene	0.000		0	N.D.		
47) 4-Methyl-2-pentanone (M...	16.558	58	338	N.D.		
48) trans-1,3-Dichloropropene	17.682	75	708	N.D.		
49) 1,1,2-Trichloroethane	0.000		0	N.D.		
50) Toluene	17.682	91	61460	1.25	ppbv	
51) 2-Hexanone (MBK)	0.000		0	N.D.		
52) Dibromochloromethane	0.000		0	N.D.		
53) 1,2-Dibromoethane	0.000		0	N.D.		
54) Tetrachloroethene (PCE)	0.000		0	N.D.		
56) Chlorobenzene	0.000		0	N.D.		
57) Ethylbenzene	20.695	91	15609	0.22	ppbv #	95
58) m&p-Xylene	20.945	106	36107	1.46	ppbv	89
59) Bromoform	0.000		0	N.D.		
60) Styrene	21.694	104	1032	N.D.		
61) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
62) o-Xylene	21.694	91	23039	0.41	ppbv	98
64) 4-Ethyltoluene	23.673	120	2161	0.11	ppbv	90
65) 1,3,5-Trimethylbenzene	23.780	120	3762	0.13	ppbv #	80
66) 1,2,4-Trimethylbenzene	24.529	120	11690	0.41	ppbv	87
67) BenzylChloride (a-Chlor...	25.100	91	281	N.D.		
68) 1,3-Dichlorobenzene	0.000		0	N.D.		
69) 1,4-Dichlorobenzene	25.278	146	454	N.D.		
70) 1,2-Dichlorobenzene	0.000		0	N.D.		
71) 1,2,4-Trichlorobenzene	29.451	180	260	N.D.		
72) Hexachlorobutadiene	0.000		0	N.D.		

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

Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081308.D
Acq On : 8 Jul 2013 13:28
Operator : JJG
Sample : 130827-64124 x1
Misc : IS/Surr: PS082712-02 + 500mL
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 08 14:50:48 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration



[Signature]
07/08/13

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081309.D
 Acq On : 8 Jul 2013 14:16
 Operator : JJG
 Sample : 130827-64125 x1
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 08 14:55:29 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)

Internal Standards						
1) Bromochloromethane	12.350	128	83069	10.00	ppbv	0.00
36) 1,4-Difluorobenzene	14.579	114	484727	10.00	ppbv	0.00
55) Chlorobenzene-d5	20.267	117	467982	10.00	ppbv	-0.02

System Monitoring Compounds						
63) 4-Bromofluorobenzene (BFB)	22.710	174	288899	10.11	ppbv	0.00

Spiked Amount 10.000

Recovery = 101.10%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue	Dev (Min)
2) Chlorodifluoromethane	4.817	51	4746	0.19	ppbv	#	97
3) Propene	4.781	42	8472	1.29	ppbv		83
4) Dichlorodifluoromethane	4.890	85	15875	0.42	ppbv		98
5) Chloromethane	5.288	52	1470	0.34	ppbv	#	53
6) Dichlorotetrafluoroethane	5.324	135	111	N.D.			
7) VinylChloride	0.000		0	N.D.			
8) Methanol	5.867	31	50257	7.84	ppbv		
9) 1,3-Butadiene	0.000		0	N.D.			
10) Bromomethane	0.000		0	N.D.	d		0.00
11) Chloroethane	0.000		0	N.D.	d		0.00
12) Dichlorofluoromethane	0.000		0	N.D.			0.02
13) Ethanol	7.116	45	18504	2.28	ppbv		
14) VinylBromide	0.000		0	N.D.			
15) Acetone	7.948	58	138847	17.87	ppbv		0.00
16) Trichlorofluoromethane	7.659	103	5259	0.19	ppbv		86
17) 2-Propanol (IPA)	8.220	45	12418	0.42	ppbv	#	1
18) Acrylonitrile	0.000		0	N.D.			
19) 1,1-Dichloroethene	0.000		0	N.D.			
20) MethyleneChloride (DCM)	0.000		0	N.D.	d	#	97
21) AllylChloride	9.342	39	172	N.D.			83
22) CarbonDisulfide	9.468	76	276017	8.54	ppbv		98
23) Trichlorotrifluoroethane	8.980	103	1104	0.07	ppbv	#	89
24) trans-1,2-Dichloroethene	0.000		0	N.D.			
25) 1,1-Dichloroethane	0.000		0	N.D.			
26) MethylTertButylEther (M...)	0.000		0	N.D.			
27) VinylAcetate	0.000		0	N.D.	d		
28) 2-Butanone (MEK)	11.441	72	5133	0.98	ppbv	#	23
29) cis-1,2-Dichloroethene	0.000		0	N.D.			
30) Hexane	11.458	86	942	0.41	ppbv		91
31) Chloroform	12.493	83	2322	0.08	ppbv	#	89
32) EthylAcetate	0.000		0	N.D.	d		

Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081309.D
Acq On : 8 Jul 2013 14:16
Operator : JJG
Sample : 130827-64125 x1
Misc : IS/Surr: PS082712-02 + 500mL
ALS Vial : 5 Sample Multiplier: 1

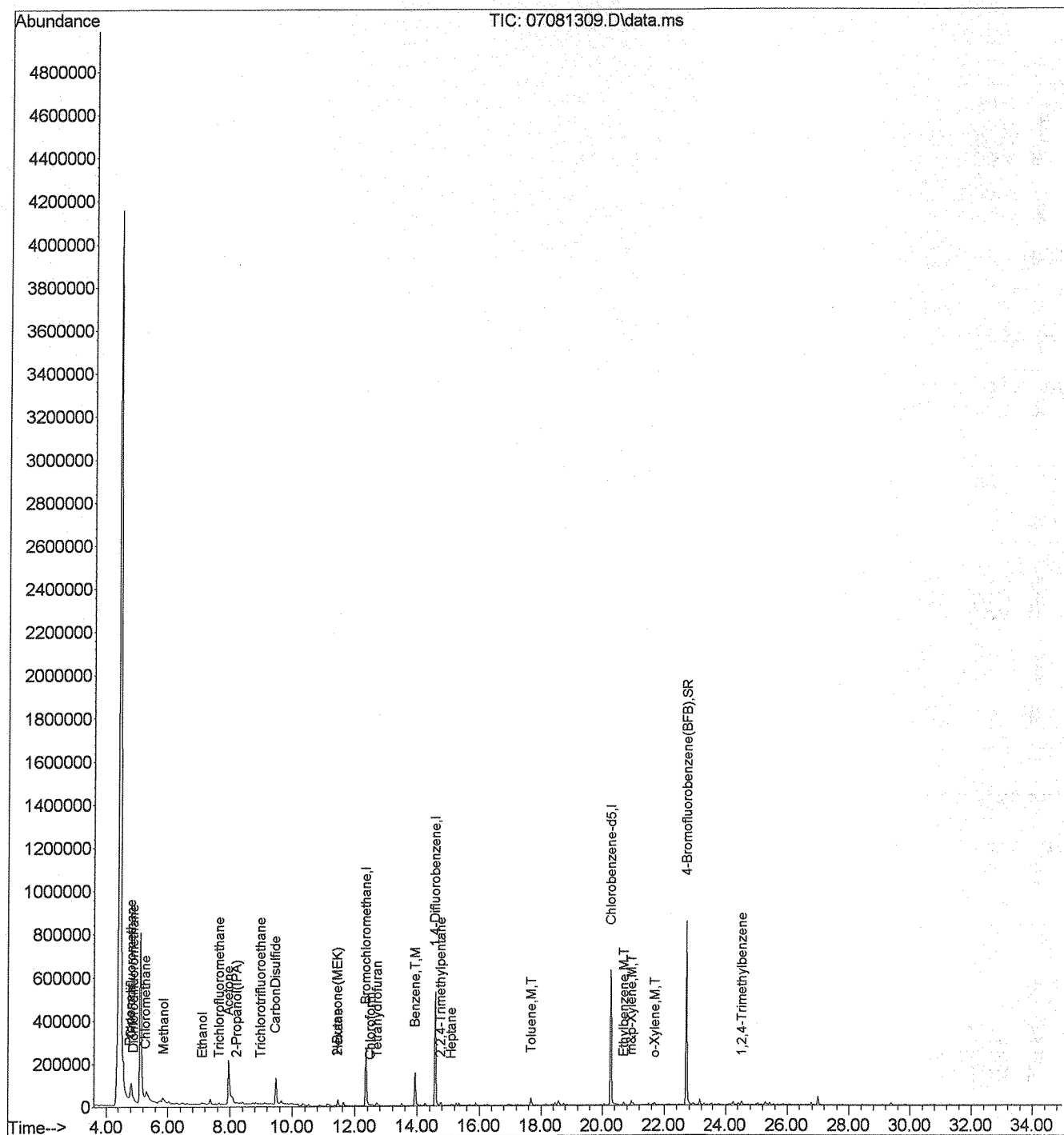
Quant Time: Jul 08 14:55:29 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
33) Tetrahydrofuran	12.707	72	3505	0.67	ppbv #	66
34) 1,2-Dichloroethane	13.598	62	149	N.D.		
35) 1,1,1-Trichloroethane	0.000		0	N.D.		
37) Benzene	13.937	78	1614036	4.00	ppbv	
38) CarbonTetrachloride	0.000		0	N.D.	d	
39) Cyclohexane	0.000		0	N.D.	d	
40) 1,2-Dichloropropane	15.328	63	278	N.D.		
41) Bromodichloromethane	0.000		0	N.D.		
42) 1,4-Dioxane	0.000		0	N.D.		
43) Trichloroethene (TCE)	0.000		0	N.D.		
44) 2,2,4-Trimethylpentane	14.757	57	14033	0.16	ppbv	93
45) Heptane	15.096	71	1010	0.08	ppbv #	15
46) cis-1,3-Dichloropropene	0.000		0	N.D.		
47) 4-Methyl-2-pentanone (M...	16.558	58	414	N.D.		
48) trans-1,3-Dichloropropene	17.682	75	269	N.D.		
49) 1,1,2-Trichloroethane	0.000		0	N.D.	d	
50) Toluene	17.682	91	33499	0.66	ppbv #	98
51) 2-Hexanone (MBK)	18.181	58	746	N.D.		
52) Dibromochloromethane	0.000		0	N.D.		
53) 1,2-Dibromoethane	0.000		0	N.D.		
54) Tetrachloroethene (PCE)	0.000		0	N.D.		
56) Chlorobenzene	0.000		0	N.D.		
57) Ethylbenzene	20.695	91	11695	0.17	ppbv #	95
58) m&p-Xylene	20.945	106	10230	0.41	ppbv	93
59) Bromoform	0.000		0	N.D.		
60) Styrene	21.658	104	556	N.D.		
61) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
62) o-Xylene	21.694	91	8772	0.15	ppbv	99
64) 4-Ethyltoluene	0.000		0	N.D.	d	
65) 1,3,5-Trimethylbenzene	0.000		0	N.D.	d	
66) 1,2,4-Trimethylbenzene	24.529	120	5362	0.18	ppbv #	80
67) BenzylChloride (a-Chlor...	0.000		0	N.D.	d	
68) 1,3-Dichlorobenzene	0.000		0	N.D.		
69) 1,4-Dichlorobenzene	25.278	146	765	N.D.		
70) 1,2-Dichlorobenzene	0.000		0	N.D.		
71) 1,2,4-Trichlorobenzene	29.451	180	139	N.D.		
72) Hexachlorobutadiene	0.000		0	N.D.		

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

Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081309.D
Acq On : 8 Jul 2013 14:16
Operator : JJG
Sample : 130827-64125 x1
Misc : IS/Surr: PS082712-02 + 500mL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 08 14:55:29 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration



07/08/13

TO-15 RAW QC & ICAL SUMMARY



MS #3 Instrument Logbook

Sequence Name: C:\msdchem\1\sequence\2013\070813.S

Comment: GCMS-03

Operator: JJG

Data Path: C:\MSDCHEM\1\MS03\2013\070813\

Instrument Control Pre-Seq Cmd:

Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:

Data Analysis Post-Seq Cmd:

Method Sections To Run

(X) Full Method

() Reprocessing Only

On A Barcode Mismatch

(X) Inject Anyway

() Don't Inject

07/08/13

Line	Sample Name/Misc Info
1) Sample	1 07081301 TO15-5MS TO15 BFB 070813
2) Sample	1 07081302 TO15-5MS TO15 CCV 070813
3) Sample	1 07081303 TO15-5MS TO15 LCSD 070813
4) Sample	1 07081304 TO15-5MS TO15 MB 070813
5) Sample	2 07081305 TO15-5MS 130827-64122 x1
6) Sample	3 07081306 TO15-5MS 130827-64123 x1
7) Sample	3 07081307 TO15-5MS 130827-64123 x1 dp
8) Sample	4 07081308 TO15-5MS 130827-64124 x1
9) Sample	5 07081309 TO15-5MS 130827-64125 x1
10) Sample	6 07081310 TO15-5MS 130831-64157 x1
11) Sample	8 07081311 TO15-5MS Flow Check#070813-01

07/08/13

Comments:

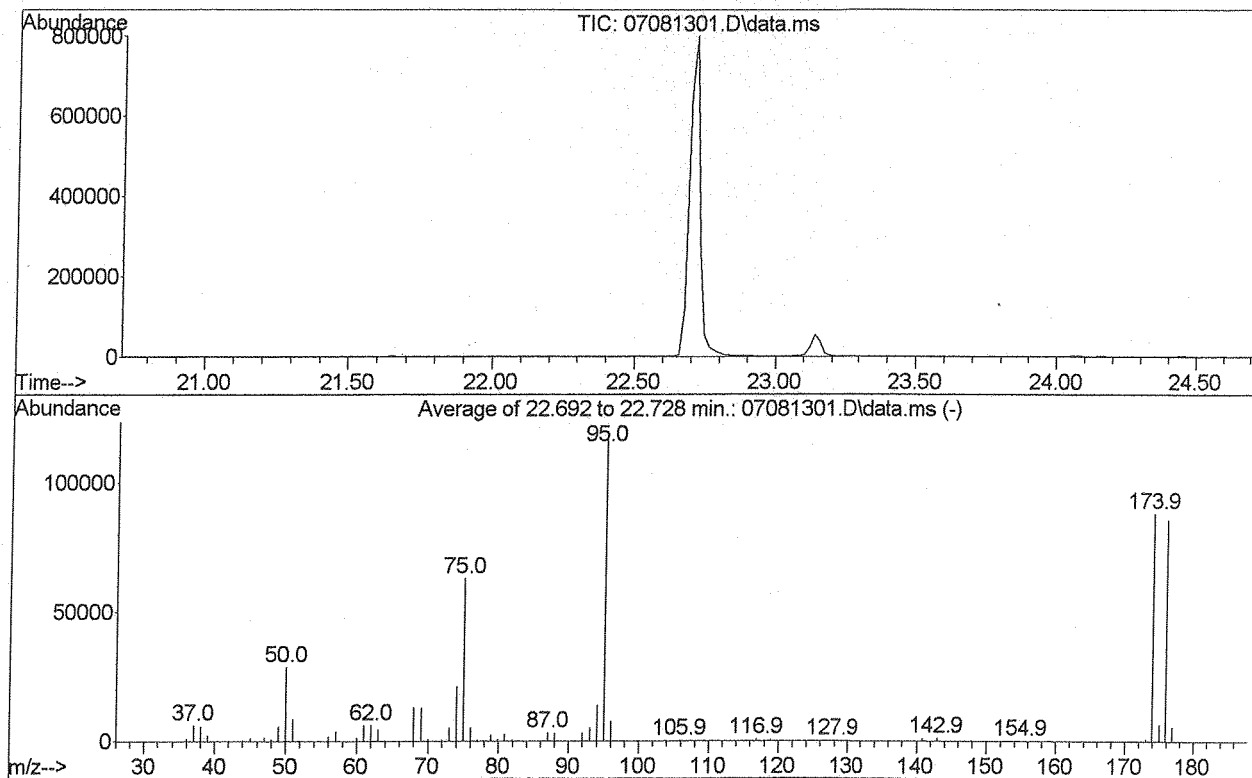
Analyst:

Date:

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081301.D
 Acq On : 8 Jul 2013 7:53 am
 Operator : JJG
 Sample : TO15 BFB 070813
 Misc : IS/Surr: PS082712-02 + 500mL cc#000331
 ALS Vial : 1 Sample Multiplier: 1

Integration File: PAMS.P

Method : C:\msdchem\1\METHODS\2013\070213.M
 Title : TO-15/TO-14
 Last Update : Wed Jul 03 08:16:39 2013



AutoFind: Scans 1064, 1065, 1066; Background Corrected with Scan 1059

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.4	28820	PASS
75	95	30	60	53.4	62968	PASS
95	95	100	100	100.0	117944	PASS
96	95	5	9	6.6	7754	PASS
173	174	0.00	2	1.0	878	PASS
174	95	50	100	74.8	88264	PASS
175	174	5	9	7.4	6520	PASS
176	174	95	101	97.2	85829	PASS
177	176	5	9	6.5	5545	PASS

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081302.D
 Acq On : 8 Jul 2013 8:41
 Operator : JJG
 Sample : TO15 CCV 070813
 Misc : IS/Surr: PS082712-02 + Cal: PS041813-01
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 08 10:03:14 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	12.350	128	90788	10.00	ppbv	0.00
36) 1,4-Difluorobenzene	14.579	114	484639	10.00	ppbv	0.00
55) Chlorobenzene-d5	20.285	117	483957	10.00	ppbv	0.00

System Monitoring Compounds						
63) 4-Bromofluorobenzene (BFB)	22.710	174	303657	10.28	ppbv	0.00

Spiked Amount 10.000 Recovery = 102.80%

Target Compounds						Qvalue
2) Chlorodifluoromethane	4.818	51	295651	10.79	ppbv	98
3) Propene	4.781	42	86481m	12.03	ppbv	
4) Dichlorodifluoromethane	4.908	85	446698	10.76	ppbv	99
5) Chloromethane	5.288	52	46644	9.74	ppbv	100
6) Dichlorotetrafluoroethane	5.324	135	246980	10.29	ppbv	97
7) VinylChloride	5.668	62	157373m	10.22	ppbv	
8) Methanol	5.867	31	36825m	5.25	ppbv	
9) 1,3-Butadiene	5.867	54	118024m	11.08	ppbv	
10) Bromomethane	6.446	96	93187m	8.94	ppbv	
11) Chloroethane	6.736	66	24514m	8.56	ppbv	
12) Dichlorofluoromethane	7.025	67	372807	10.14	ppbv	100
13) Ethanol	7.061	45	87875m	9.89	ppbv	
14) VinylBromide	7.261	108	116899m	9.88	ppbv	
15) Acetone	7.966	58	82694m	9.74	ppbv	
16) Trichlorofluoromethane	7.677	103	324775	10.72	ppbv	99
17) 2-Propanol (IPA)	8.165	45	358101m	11.03	ppbv	
18) Acrylonitrile	8.962	52	117349m	10.45	ppbv	
19) 1,1-Dichloroethene	8.726	96	135527	10.72	ppbv	98
20) MethyleneChloride (DCM)	9.324	84	103342m	9.43	ppbv	
21) AllylChloride	9.305	39	169376m	10.37	ppbv	
22) CarbonDisulfide	9.486	76	335346m	9.50	ppbv	99
23) Trichlorotrifluoroethane	8.998	103	185710	10.17	ppbv	98
24) trans-1,2-Dichloroethene	10.424	96	122633m	10.06	ppbv	
25) 1,1-Dichloroethane	10.906	63	308087	10.01	ppbv	100
26) MethylTertButylEther (M...)	10.442	73	397818	10.80	ppbv	98
27) VinylAcetate	10.888	43	464950m	9.65	ppbv	
28) 2-Butanone (MEK)	11.423	72	60064m	10.54	ppbv	
29) cis-1,2-Dichloroethene	11.904	96	132691	10.05	ppbv	97
30) Hexane	11.476	86	25195	9.95	ppbv	82
31) Chloroform	12.493	83	355019	10.70	ppbv	98
32) EthylAcetate	12.011	43	461525	11.24	ppbv	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081302.D
 Acq On : 8 Jul 2013 8:41
 Operator : JJG
 Sample : TO15 CCV 070813
 Misc : IS/Surr: PS082712-02 + Cal: PS041813-01
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 08 10:03:14 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

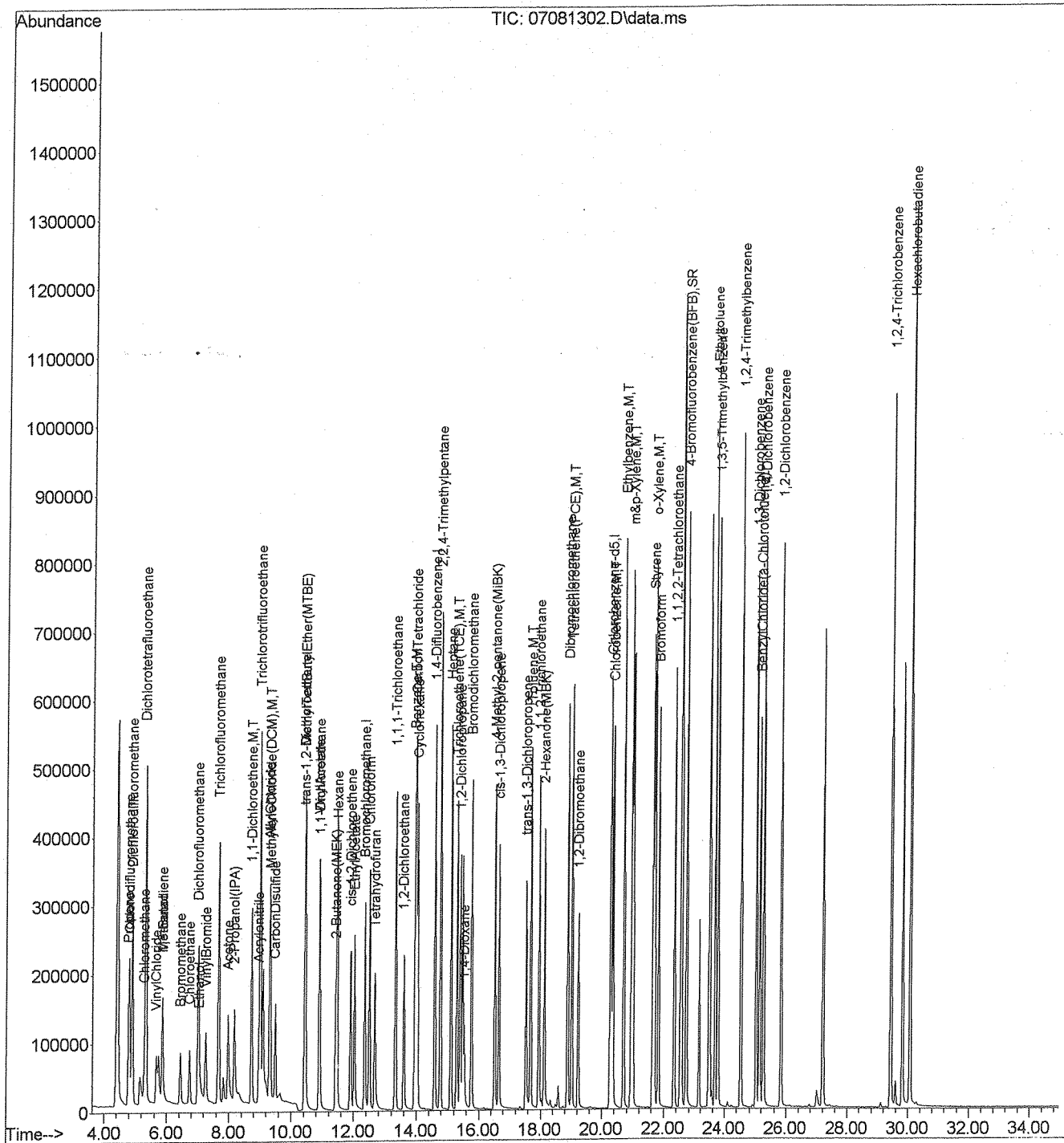
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
33) Tetrahydrofuran	12.671	72	60160	10.47	ppbv	91
34) 1,2-Dichloroethane	13.580	62	309771	10.87	ppbv #	98
35) 1,1,1-Trichloroethane	13.331	97	419888	10.99	ppbv	99
37) Benzene	13.937	78	396966	9.84	ppbv	98
38) CarbonTetrachloride	13.973	117	412234	10.53	ppbv	100
39) Cyclohexane	14.026	69	60142	9.78	ppbv	94
40) 1,2-Dichloropropane	15.399	63	177286	9.99	ppbv	97
41) Bromodichloromethane	15.756	85	259961	10.51	ppbv	99
42) 1,4-Dioxane	15.524	88	94105m	10.35	ppbv	
43) Trichloroethene (TCE)	15.292	130	178795	9.98	ppbv	99
44) 2,2,4-Trimethylpentane	14.757	57	931669	10.87	ppbv	97
45) Heptane	15.096	71	134521	10.34	ppbv #	77
46) cis-1,3-Dichloropropene	16.648	75	276061	11.08	ppbv	97
47) 4-Methyl-2-pentanone (M...	16.523	58	179187	10.34	ppbv	95
48) trans-1,3-Dichloropropene	17.521	75	262923	9.87	ppbv	92
49) 1,1,2-Trichloroethane	17.931	97	188558	10.49	ppbv	97
50) Toluene	17.682	91	524817	10.38	ppbv	99
51) 2-Hexanone (MBK)	18.110	58	229941	10.96	ppbv	88
52) Dibromochloromethane	18.877	129	412856	11.68	ppbv	99
53) 1,2-Dibromoethane	19.233	107	303143	10.35	ppbv	100
54) Tetrachloroethene (PCE)	19.019	166	256700	10.45	ppbv	98
56) Chlorobenzene	20.357	114	133246	10.41	ppbv	97
57) Ethylbenzene	20.695	91	764361	10.43	ppbv	100
58) m&p-Xylene	20.945	106	514535	19.82	ppbv	97
59) Bromoform	21.819	173	388986	10.39	ppbv	98
60) Styrene	21.640	104	436604	10.76	ppbv	99
61) 1,1,2,2-Tetrachloroethane	22.336	83	442787	10.56	ppbv	99
62) o-Xylene	21.694	91	629708	10.76	ppbv	100
64) 4-Ethyltoluene	23.673	120	231581	10.74	ppbv	97
65) 1,3,5-Trimethylbenzene	23.780	120	314598	10.29	ppbv	98
66) 1,2,4-Trimethylbenzene	24.529	120	318060	10.57	ppbv	97
67) BenzylChloride (a-Chlor...	25.153	91	590307	10.03	ppbv	99
68) 1,3-Dichlorobenzene	25.029	146	464477	10.32	ppbv #	92
69) 1,4-Dichlorobenzene	25.260	146	449161m	10.02	ppbv	
70) 1,2-Dichlorobenzene	25.831	146	465276m	10.08	ppbv	
71) 1,2,4-Trichlorobenzene	29.433	180	452955m	9.79	ppbv	
72) Hexachlorobutadiene	30.075	225	433720m	10.46	ppbv	

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

Handwritten signature
 7/8/13

Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081302.D
Acq On : 8 Jul 2013 8:41
Operator : JJG
Sample : TO15 CCV 070813
Misc : IS/Surr: PS082712-02 + Cal: PS041813-01
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 08 10:03:14 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration



Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081303.D
 Acq On : 8 Jul 2013 9:28
 Operator : JJG
 Sample : TO15 LCSD 070813
 Misc : IS/Surr: PS082712-02 + Cal: PS041813-01
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 08 10:05:07 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.350	128	9053202	10.00	ppbv	0.00
36) 1,4-Difluorobenzene	14.579	114	489383	10.00	ppbv	0.00
55) Chlorobenzene-d5	20.285	117	491420	10.00	ppbv	0.00

System Monitoring Compounds						
63) 4-Bromofluorobenzene (BFB)	22.710	174	311412	10.38	ppbv	0.00

Spiked Amount 10.000 Recovery = 103.80%

Target Compounds						Qvalue
2) Chlorodifluoromethane	4.817	51	306582	11.22	ppbv	99
3) Propene	4.781	42	91139	12.72	ppbv	98
4) Dichlorodifluoromethane	4.908	85	474765	11.46	ppbv	99
5) Chloromethane	5.306	52	51714	10.83	ppbv	91
6) Dichlorotetrafluoroethane	5.342	135	272477	11.39	ppbv	94
7) VinylChloride	5.668	62	161579	10.52	ppbv	98
8) Methanol	5.867	31	35728	5.11	ppbv	99
9) 1,3-Butadiene	5.867	54	121812	11.47	ppbv	98
10) Bromomethane	6.446	96	106933	10.29	ppbv	99
11) Chloroethane	6.736	66	26642	9.33	ppbv	99
12) Dichlorofluoromethane	7.025	67	388205	10.59	ppbv	100
13) Ethanol	7.061	45	84934	9.59	ppbv	99
14) VinylBromide	7.260	108	125177	10.61	ppbv	99
15) Acetone	7.966	58	82904	9.79	ppbv	99
16) Trichlorofluoromethane	7.677	103	322994	10.69	ppbv	99
17) 2-Propanol (IPA)	8.165	45	363799	11.23	ppbv	99
18) Acrylonitrile	8.961	52	121328	10.83	ppbv	99
19) 1,1-Dichloroethene	8.726	96	132133	10.49	ppbv	98
20) MethyleneChloride (DCM)	9.323	84	107946	9.88	ppbv	99
21) AllylChloride	9.305	39	173146	10.63	ppbv	99
22) CarbonDisulfide	9.486	76	335262	9.52	ppbv	99
23) Trichlorotrifluoroethane	8.998	103	186570	10.25	ppbv	97
24) trans-1,2-Dichloroethene	10.424	96	124122	10.21	ppbv	99
25) 1,1-Dichloroethane	10.906	63	306342	9.98	ppbv	99
26) MethylTertButylEther (M...)	10.442	73	406033	11.05	ppbv	98
27) VinylAcetate	10.888	43	466529	9.71	ppbv	99
28) 2-Butanone (MEK)	11.423	72	60500	10.64	ppbv	99
29) cis-1,2-Dichloroethene	11.904	96	131931	10.02	ppbv	96
30) Hexane	11.476	86	26967	10.68	ppbv	87
31) Chloroform	12.493	83	362808	10.96	ppbv	98
32) EthylAcetate	12.011	43	464751	11.35	ppbv	96

Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081303.D
Acq On : 8 Jul 2013 9:28
Operator : JJG
Sample : TO15 LCSD 070813
Misc : IS/Surr: PS082712-02 + Cal: PS041813-01
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 08 10:05:07 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration

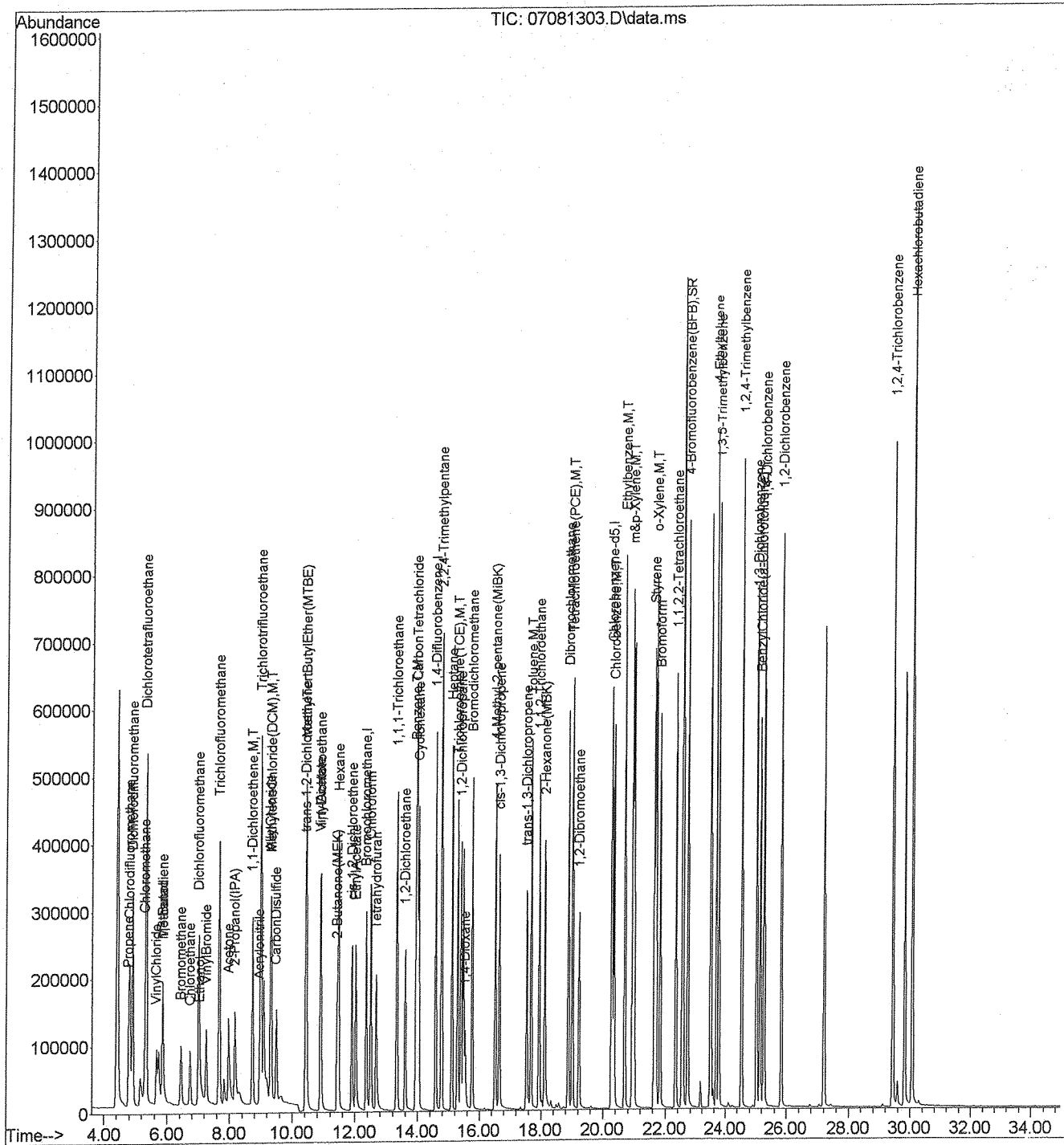
Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
33) Tetrahydrofuran	12.671	72	59849	10.45	ppbv	89
34) 1,2-Dichloroethane	13.598	62	318096	11.19	ppbv	99
35) 1,1,1-Trichloroethane	13.331	97	419804	11.02	ppbv	100
37) Benzene	13.937	78	400984	9.84	ppbv	99
38) CarbonTetrachloride	13.973	117	425025	10.75	ppbv	99
39) Cyclohexane	14.026	69	60599	9.76	ppbv	97
40) 1,2-Dichloropropane	15.399	63	181672	10.14	ppbv	97
41) Bromodichloromethane	15.756	85	266908	10.69	ppbv	99
42) 1,4-Dioxane	15.524	88	91170m	9.93	ppbv	
43) Trichloroethene (TCE)	15.292	130	178086	9.84	ppbv	98
44) 2,2,4-Trimethylpentane	14.775	57	914313	10.56	ppbv	98
45) Heptane	15.096	71	136264	10.37	ppbv	82
46) cis-1,3-Dichloropropene	16.647	75	274018	10.89	ppbv	96
47) 4-Methyl-2-pentanone (M...	16.523	58	177192	10.13	ppbv	97
48) trans-1,3-Dichloropropene	17.521	75	267028	9.93	ppbv	91
49) 1,1,2-Trichloroethane	17.931	97	191529	10.55	ppbv	98
50) Toluene	17.682	91	530183	10.38	ppbv	98
51) 2-Hexanone (MBK)	18.127	58	231348	10.92	ppbv	96
52) Dibromochloromethane	18.876	129	415797	11.65	ppbv	99
53) 1,2-Dibromoethane	19.233	107	306318	10.36	ppbv	100
54) Tetrachloroethene (PCE)	19.019	166	261259	10.54	ppbv	98
56) Chlorobenzene	20.356	114	134284	10.33	ppbv	99
57) Ethylbenzene	20.695	91	774486	10.41	ppbv	99
58) m&p-Xylene	20.945	106	521271	19.78	ppbv	100
59) Bromoform	21.819	173	404432	10.64	ppbv	98
60) Styrene	21.640	104	424828	10.31	ppbv	98
61) 1,1,2,2-Tetrachloroethane	22.336	83	442213	10.38	ppbv	99
62) o-Xylene	21.694	91	634301	10.67	ppbv	100
64) 4-Ethyltoluene	23.673	120	231979	10.59	ppbv	100
65) 1,3,5-Trimethylbenzene	23.780	120	314602	10.13	ppbv	97
66) 1,2,4-Trimethylbenzene	24.529	120	311603	10.20	ppbv	97
67) BenzylChloride (a-Chlor...	25.153	91	600246	10.04	ppbv	99
68) 1,3-Dichlorobenzene	25.046	146	470780	10.30	ppbv	99
69) 1,4-Dichlorobenzene	25.260	146	461266m	10.14	ppbv	
70) 1,2-Dichlorobenzene	25.831	146	474895m	10.14	ppbv	
71) 1,2,4-Trichlorobenzene	29.433	180	450556m	9.59	ppbv	
72) Hexachlorobutadiene	30.075	225	428178m	10.17	ppbv	

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

(QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081303.D
Acq On : 8 Jul 2013 9:28
Operator : JJG
Sample : TO15 LCSD 070813
Misc : IS/Surr: PS082712-02 + Cal: PS041813-01
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 08 10:05:07 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration



Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081304.D
 Acq On : 8 Jul 2013 10:17
 Operator : JJG
 Sample : TO15 MB 070813
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 08 10:53:41 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.350	128	85779	10.00	ppbv	0.00
36) 1,4-Difluorobenzene	14.579	114	491518	10.00	ppbv	0.00
55) Chlorobenzene-d5	20.267	117	467569	10.00	ppbv	-0.02

System Monitoring Compounds						
63) 4-Bromofluorobenzene (BFB)	22.710	174	283923	9.95	ppbv	0.00

Spiked Amount 10.000 Recovery = 99.50%

Target Compounds				Qvalue
2) Chlorodifluoromethane	0.000		0	N.D.
3) Propene	0.000		0	N.D. d
4) Dichlorodifluoromethane	0.000		0	N.D.
5) Chloromethane	0.000		0	N.D.
6) Dichlorotetrafluoroethane	0.000		0	N.D.
7) VinylChloride	0.000		0	N.D. d
8) Methanol	0.000		0	N.D. d
9) 1,3-Butadiene	0.000		0	N.D.
10) Bromomethane	0.000		0	N.D. d
11) Chloroethane	0.000		0	N.D.
12) Dichlorofluoromethane	0.000		0	N.D.
13) Ethanol	7.206	45	110	N.D.
14) VinylBromide	0.000		0	N.D.
15) Acetone	0.000		0	N.D. d
16) Trichlorofluoromethane	0.000		0	N.D.
17) 2-Propanol (IPA)	8.310	45	246	N.D.
18) Acrylonitrile	0.000		0	N.D.
19) 1,1-Dichloroethene	0.000		0	N.D.
20) MethyleneChloride (DCM)	0.000		0	N.D. d
21) AllylChloride	0.000		0	N.D.
22) CarbonDisulfide	9.522	76	827	N.D.
23) Trichlorotrifluoroethane	0.000		0	N.D.
24) trans-1,2-Dichloroethene	0.000		0	N.D.
25) 1,1-Dichloroethane	0.000		0	N.D.
26) MethylTertButylEther (M...)	0.000		0	N.D.
27) VinylAcetate	0.000		0	N.D.
28) 2-Butanone (MEK)	0.000		0	N.D.
29) cis-1,2-Dichloroethene	0.000		0	N.D.
30) Hexane	0.000		0	N.D.
31) Chloroform	0.000		0	N.D.
32) EthylAcetate	0.000		0	N.D.

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081304.D
 Acq On : 8 Jul 2013 10:17
 Operator : JJG
 Sample : TO15 MB 070813
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 1 Sample Multiplier: 1

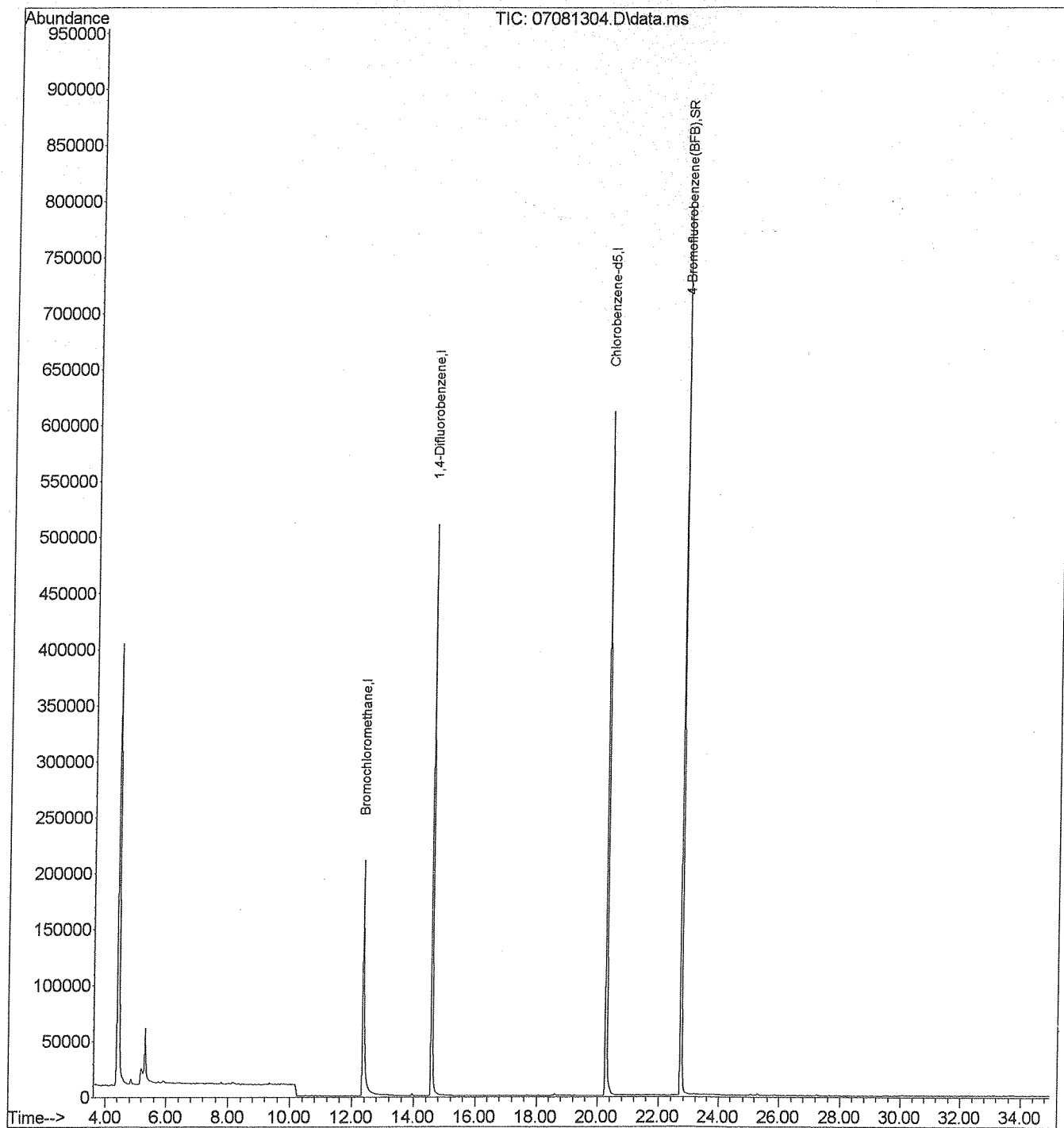
Quant Time: Jul 08 10:53:41 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
33) Tetrahydrofuran	0.000		0	N.D.		
34) 1,2-Dichloroethane	0.000		0	N.D.		
35) 1,1,1-Trichloroethane	0.000		0	N.D.		
37) Benzene	0.000		0	N.D.	d	
38) CarbonTetrachloride	0.000		0	N.D.		
39) Cyclohexane	0.000		0	N.D.		
40) 1,2-Dichloropropane	0.000		0	N.D.		
41) Bromodichloromethane	0.000		0	N.D.		
42) 1,4-Dioxane	0.000		0	N.D.		
43) Trichloroethene (TCE)	0.000		0	N.D.		
44) 2,2,4-Trimethylpentane	0.000		0	N.D.		
45) Heptane	0.000		0	N.D.		
46) cis-1,3-Dichloropropene	0.000		0	N.D.		
47) 4-Methyl-2-pentanone (M...	0.000		0	N.D.		
48) trans-1,3-Dichloropropene	0.000		0	N.D.		
49) 1,1,2-Trichloroethane	0.000		0	N.D.		
50) Toluene	17.699	91	564	N.D.		
51) 2-Hexanone (MBK)	0.000		0	N.D.		
52) Dibromochloromethane	0.000		0	N.D.		
53) 1,2-Dibromoethane	0.000		0	N.D.		
54) Tetrachloroethene (PCE)	0.000		0	N.D.		
56) Chlorobenzene	20.267	114	237	N.D.		
57) Ethylbenzene	20.713	91	435	N.D.		
58) m&p-Xylene	0.000		0	N.D.		
59) Bromoform	0.000		0	N.D.		
60) Styrene	21.694	104	254	N.D.		
61) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
62) o-Xylene	21.712	91	258	N.D.		
64) 4-Ethyltoluene	0.000		0	N.D.		
65) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
66) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
67) BenzylChloride (a-Chlor...	25.224	91	557	N.D.		
68) 1,3-Dichlorobenzene	25.064	146	1015	N.D.		
69) 1,4-Dichlorobenzene	25.296	146	1395	N.D.		
70) 1,2-Dichlorobenzene	25.866	146	627	N.D.		
71) 1,2,4-Trichlorobenzene	29.468	180	608	N.D.		
72) Hexachlorobutadiene	30.057	225	481	N.D.		

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

Data Path : C:\msdchem\1\MS03\2013\070813\
Data File : 07081304.D
Acq On : 8 Jul 2013 10:17
Operator : JJG
Sample : TO15 MB 070813
Misc : IS/Surr: PS082712-02 + 500mL
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 08 10:53:41 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration



07/8/13

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081306.D
 Acq On : 8 Jul 2013 11:52
 Operator : JJG
 Sample : 130827-64123 x1
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 08 13:09:11 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.350	128	78242	10.00	ppbv	0.00
36) 1,4-Difluorobenzene	14.579	114	468455	10.00	ppbv	0.00
55) Chlorobenzene-d5	20.267	117	453219	10.00	ppbv	-0.02

System Monitoring Compounds						
63) 4-Bromofluorobenzene (BFB)	22.710	174	292040	10.56	ppbv	0.00

Spiked Amount 10.000 Recovery = 105.60%

Target Compounds					Qvalue
2) Chlorodifluoromethane	4.836	51	3922	0.17 ppbv	# 95
3) Propene	4.799	42	3574	0.58 ppbv	# 73
4) Dichlorodifluoromethane	4.908	85	12755	0.36 ppbv	# 97
5) Chloromethane	5.288	52	1162	0.28 ppbv	# 37
6) Dichlorotetrafluoroethane	0.000		0	N.D.	
7) VinylChloride	0.000		0	N.D.	
8) Methanol	5.885	31	39434	6.53 ppbv	
9) 1,3-Butadiene	0.000		0	N.D.	
10) Bromomethane	0.000		0	N.D.	
11) Chloroethane	0.000		0	N.D.	
12) Dichlorofluoromethane	0.000		0	N.D.	
13) Ethanol	7.043	45	102556	13.39 ppbv	
14) VinylBromide	0.000		0	N.D.	
15) Acetone	7.984	58	33784	4.62 ppbv	
16) Trichlorofluoromethane	7.659	103	3659	0.14 ppbv	# 87
17) 2-Propanol (IPA)	8.202	45	21861	0.78 ppbv	
18) Acrylonitrile	0.000		0	N.D.	
19) 1,1-Dichloroethene	0.000		0	N.D.	
20) MethyleneChloride (DCM)	0.000		0	N.D.	
21) AllylChloride	9.323	39	119	N.D.	
22) CarbonDisulfide	9.486	76	26404	0.87 ppbv	
23) Trichlorotrifluoroethane	0.000		0	N.D.	
24) trans-1,2-Dichloroethene	0.000		0	N.D.	
25) 1,1-Dichloroethane	0.000		0	N.D.	
26) MethylTertButylEther (M...)	0.000		0	N.D.	
27) VinylAcetate	0.000		0	N.D.	
28) 2-Butanone (MEK)	11.441	72	5588	1.14 ppbv	# 54
29) cis-1,2-Dichloroethene	0.000		0	N.D.	
30) Hexane	11.458	86	806	0.37 ppbv	# 63
31) Chloroform	12.493	83	3194	0.11 ppbv	# 90
32) EthylAcetate	12.047	43	21282	0.60 ppbv	# 95

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081306.D
 Acq On : 8 Jul 2013 11:52
 Operator : JJG
 Sample : 130827-64123 x1
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 08 13:09:11 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

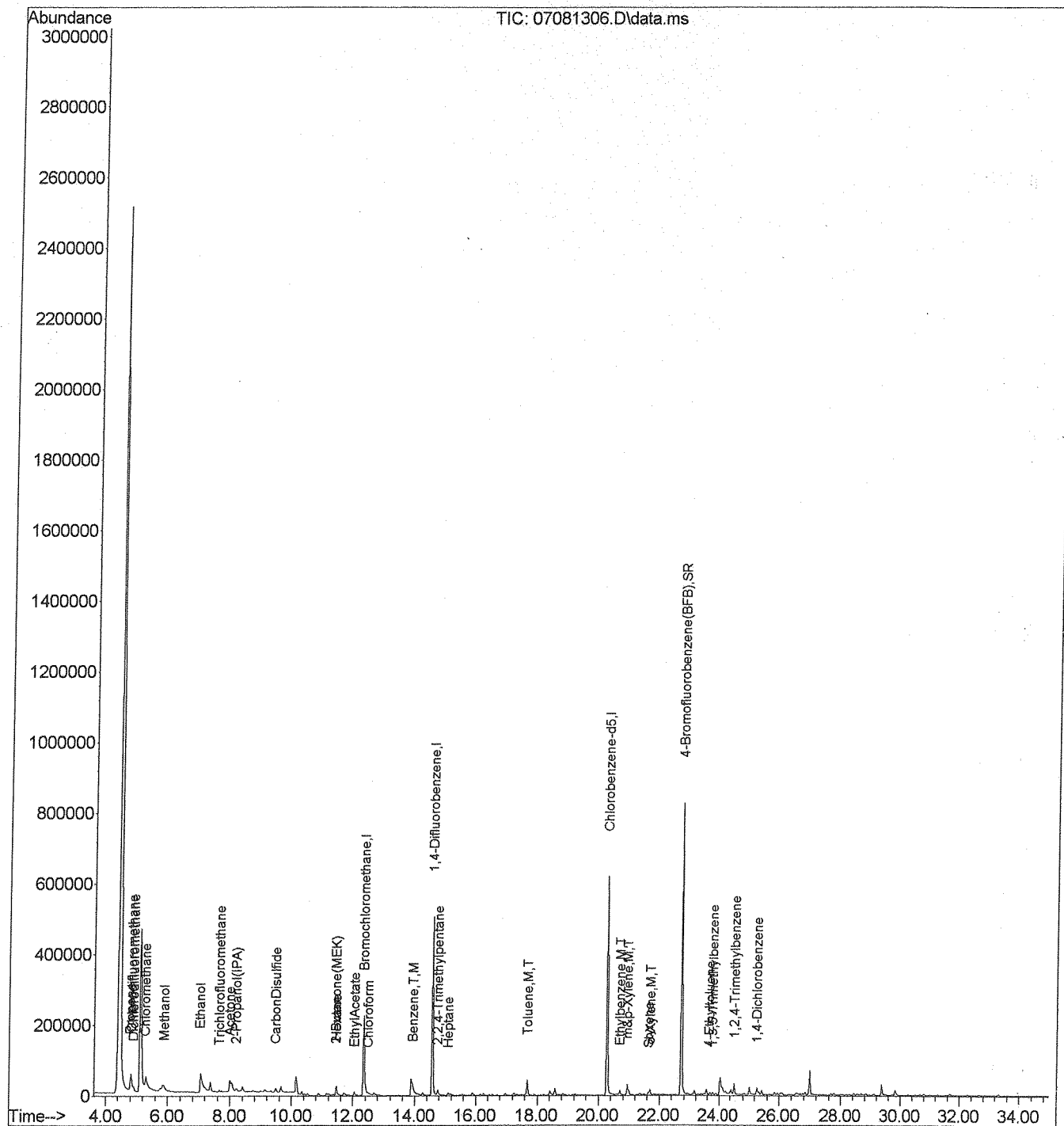
Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
33) Tetrahydrofuran	0.000		0	N.D.	d	
34) 1,2-Dichloroethane	13.598	62	339	N.D.		
35) 1,1,1-Trichloroethane	0.000		0	N.D.		
37) Benzene	13.937	78	7285	0.19	ppbv #	92
38) CarbonTetrachloride	0.000		0	N.D.	d	
39) Cyclohexane	14.026	69	107	N.D.		
40) 1,2-Dichloropropane	15.257	63	117	N.D.		
41) Bromodichloromethane	0.000		0	N.D.		
42) 1,4-Dioxane	0.000		0	N.D.		
43) Trichloroethene (TCE)	0.000		0	N.D.		
44) 2,2,4-Trimethylpentane	14.757	57	16240	0.20	ppbv #	89
45) Heptane	15.096	71	1410	0.11	ppbv #	55
46) cis-1,3-Dichloropropene	0.000		0	N.D.		
47) 4-Methyl-2-pentanone (M...)	16.558	58	442	N.D.		
48) trans-1,3-Dichloropropene	17.682	75	354	N.D.		
49) 1,1,2-Trichloroethane	0.000		0	N.D.		
50) Toluene	17.682	91	42388	0.87	ppbv	98
51) 2-Hexanone (MBK)	18.270	58	113	N.D.		
52) Dibromochloromethane	0.000		0	N.D.		
53) 1,2-Dibromoethane	0.000		0	N.D.		
54) Tetrachloroethene (PCE)	0.000		0	N.D.		
56) Chlorobenzene	0.000		0	N.D.		
57) Ethylbenzene	20.695	91	13165	0.19	ppbv #	96
58) m&p-Xylene	20.945	106	14724	0.61	ppbv	99
59) Bromoform	0.000		0	N.D.		
60) Styrene	21.658	104	2025	0.05	ppbv #	78
61) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
62) o-Xylene	21.694	91	13209	0.24	ppbv	96
64) 4-Ethyltoluene	23.673	120	1674	0.08	ppbv #	93
65) 1,3,5-Trimethylbenzene	23.780	120	2366	0.08	ppbv #	63
66) 1,2,4-Trimethylbenzene	24.529	120	9472	0.34	ppbv	92
67) BenzylChloride (a-Chlor...)	25.171	91	277	N.D.		
68) 1,3-Dichlorobenzene	25.046	146	141	N.D.		
69) 1,4-Dichlorobenzene	25.278	146	5930	0.14	ppbv	95
70) 1,2-Dichlorobenzene	25.849	146	254	N.D.		93
71) 1,2,4-Trichlorobenzene	29.451	180	795	N.D.		
72) Hexachlorobutadiene	0.000		0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081306.D
 Acq On : 8 Jul 2013 11:52
 Operator : JJG
 Sample : 130827-64123 x1
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 08 13:09:11 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration



Handwritten signature and date:
 07/08/13

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081307.D
 Acq On : 8 Jul 2013 12:40
 Operator : JJG
 Sample : 130827-64123 x1 dp
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 08 13:15:02 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	12.350	128	79717	10.00	ppbv	0.00
36) 1,4-Difluorobenzene	14.579	114	480229	10.00	ppbv	0.00
55) Chlorobenzene-d5	20.267	117	457200	10.00	ppbv	-0.02

System Monitoring Compounds						
63) 4-Bromofluorobenzene (BFB)	22.710	174	295958	10.60	ppbv	0.00

Spiked Amount 10.000 Recovery = 106.00%

Target Compounds					Qvalue
2) Chlorodifluoromethane	4.817	51	3873	0.16 ppbv	# 93
3) Propene	4.799	42	3750	0.59 ppbv	# 64
4) Dichlorodifluoromethane	4.908	85	12318	0.34 ppbv	97
5) Chloromethane	5.288	52	1016	0.24 ppbv	# 33
6) Dichlorotetrafluoroethane	0.000		0	N.D.	
7) VinylChloride	0.000		0	N.D.	
8) Methanol	5.867	31	39774	6.46 ppbv	
9) 1,3-Butadiene	0.000		0	N.D.	
10) Bromomethane	0.000		0	N.D. d	
11) Chloroethane	0.000		0	N.D. d	
12) Dichlorofluoromethane	0.000		0	N.D.	
13) Ethanol	7.043	45	104646	13.41 ppbv	
14) VinylBromide	0.000		0	N.D.	
15) Acetone	7.984	58	33915	4.55 ppbv	
16) Trichlorofluoromethane	7.659	103	3794	0.14 ppbv	# 96
17) 2-Propanol (IPA)	8.201	45	21754	0.76 ppbv	
18) Acrylonitrile	0.000		0	N.D.	
19) 1,1-Dichloroethene	0.000		0	N.D.	
20) MethyleneChloride (DCM)	0.000		0	N.D. d	
21) AllylChloride	9.323	39	121	N.D.	
22) CarbonDisulfide	9.486	76	25426	0.82 ppbv	
23) Trichlorotrifluoroethane	8.980	103	580	N.D.	
24) trans-1,2-Dichloroethene	0.000		0	N.D.	
25) 1,1-Dichloroethane	0.000		0	N.D.	
26) MethylTertButylEther (M...)	0.000		0	N.D.	
27) VinylAcetate	0.000		0	N.D. d	
28) 2-Butanone (MEK)	11.441	72	5666	1.13 ppbv	# 28
29) cis-1,2-Dichloroethene	0.000		0	N.D.	
30) Hexane	11.458	86	745	0.33 ppbv	# 54
31) Chloroform	12.493	83	3287	0.11 ppbv	# 87
32) EthylAcetate	12.047	43	22440	0.62 ppbv	# 93

07/08/13

Data Path : C:\msdchem\1\MS03\2013\070813\
 Data File : 07081307.D
 Acq On : 8 Jul 2013 12:40
 Operator : JJG
 Sample : 130827-64123 x1 dp
 Misc : IS/Surr: PS082712-02 + 500mL
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 08 13:15:02 2013
 Quant Method : C:\msdchem\1\METHODS\2013\070213.M
 Quant Title : TO-15/TO-14
 QLast Update : Wed Jul 03 08:16:39 2013
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
33) Tetrahydrofuran	0.000		0	N.D.	d	
34) 1,2-Dichloroethane	13.598	62	450	N.D.		
35) 1,1,1-Trichloroethane	0.000		0	N.D.		
37) Benzene	13.937	78	6842	0.17	ppbv #	89
38) CarbonTetrachloride	0.000		0	N.D.	d	
39) Cyclohexane	14.008	69	118	N.D.		
40) 1,2-Dichloropropane	0.000		0	N.D.		
41) Bromodichloromethane	0.000		0	N.D.		
42) 1,4-Dioxane	0.000		0	N.D.		
43) Trichloroethene (TCE)	0.000		0	N.D.		
44) 2,2,4-Trimethylpentane	14.757	57	16308	0.19	ppbv #	91
45) Heptane	15.096	71	1357	0.11	ppbv #	41
46) cis-1,3-Dichloropropene	0.000		0	N.D.		
47) 4-Methyl-2-pentanone (M...	16.558	58	175	N.D.		
48) trans-1,3-Dichloropropene	17.682	75	365	N.D.		
49) 1,1,2-Trichloroethane	0.000		0	N.D.		
50) Toluene	17.682	91	43121	0.86	ppbv #	97
51) 2-Hexanone (MBK)	0.000		0	N.D.		
52) Dibromochloromethane	0.000		0	N.D.		
53) 1,2-Dibromoethane	0.000		0	N.D.		
54) Tetrachloroethene (PCE)	0.000		0	N.D.		
56) Chlorobenzene	0.000		0	N.D.		
57) Ethylbenzene	20.695	91	13056	0.19	ppbv #	97
58) m&p-Xylene	20.945	106	14511	0.59	ppbv #	85
59) Bromoform	0.000		0	N.D.		
60) Styrene	21.658	104	2344	0.06	ppbv #	78
61) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
62) o-Xylene	21.694	91	13100	0.24	ppbv	95
64) 4-Ethyltoluene	23.673	120	1741	0.09	ppbv	94
65) 1,3,5-Trimethylbenzene	23.780	120	2456	0.09	ppbv #	79
66) 1,2,4-Trimethylbenzene	24.529	120	10168	0.36	ppbv	98
67) BenzylChloride (a-Chlor...	25.171	91	120	N.D.		
68) 1,3-Dichlorobenzene	25.046	146	107	N.D.		
69) 1,4-Dichlorobenzene	25.278	146	5877	0.14	ppbv	94
70) 1,2-Dichlorobenzene	25.849	146	141	N.D.		
71) 1,2,4-Trichlorobenzene	29.451	180	509	N.D.		
72) Hexachlorobutadiene	0.000		0	N.D.		

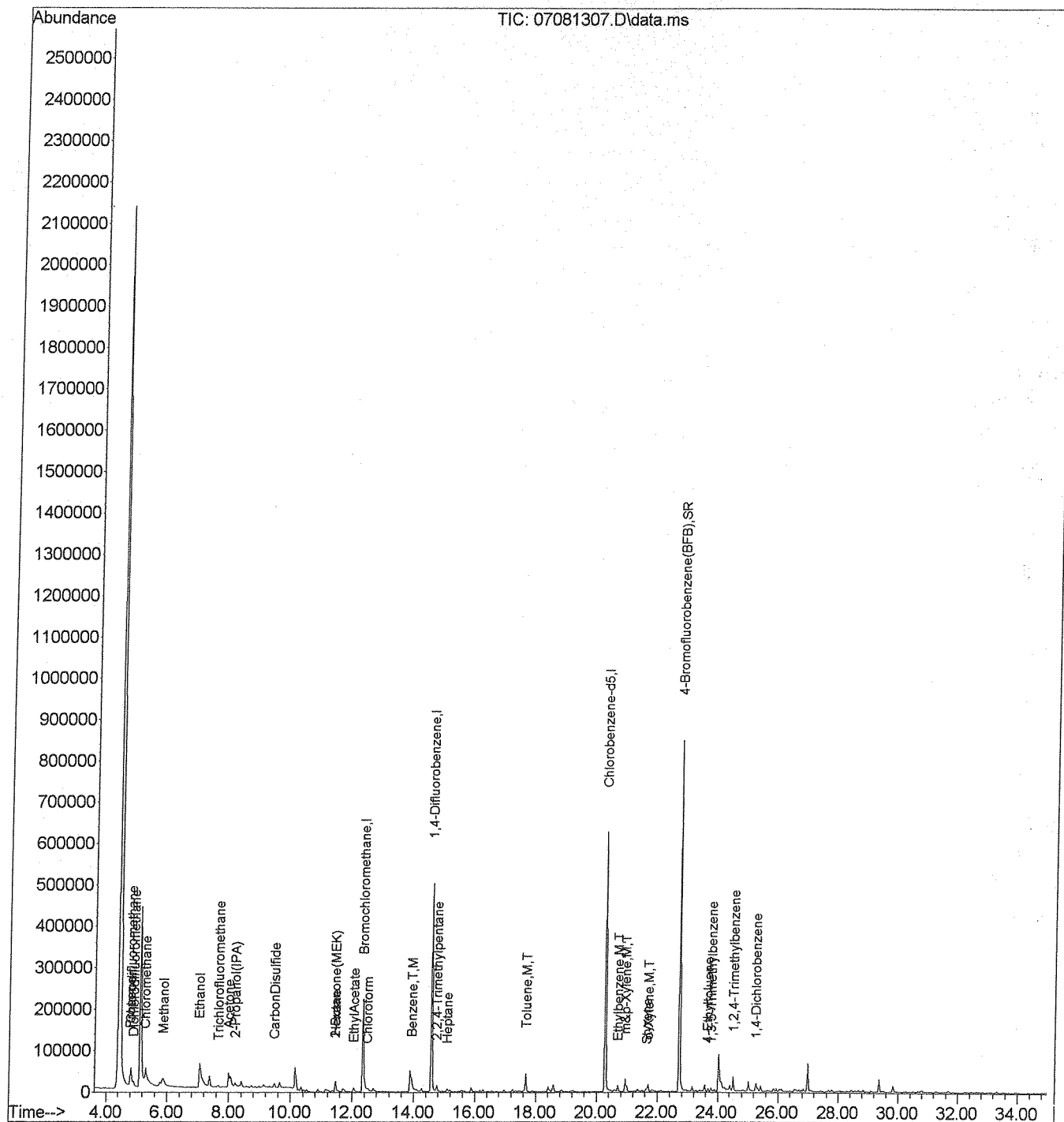
(#) = qualifier out of range (m) = manual integration (+) = signals summed

07/08/13

(QT Reviewed)

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Data Path : C:\msdchem\1\MS03\2013\070813\  
Data File : 07081307.D  
Acq On    : 8 Jul 2013 12:40  
Operator  : JJG  
Sample    : 130827-64123 x1 dp  
Misc      : IS/Surr: PS082712-02 + 500mL  
ALS Vial  : 3 Sample Multiplier: 1
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Quant Time: Jul 08 13:15:02 2013
Quant Method : C:\msdchem\1\METHODS\2013\070213.M
Quant Title : TO-15/TO-14
QLast Update : Wed Jul 03 08:16:39 2013
Response via : Initial Calibration



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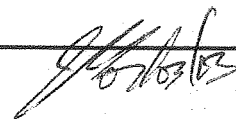
Calibration Status Report MS03 Enhanced

Method Path : C:\msdchem\1\METHODS\2013\
Method File : 070213.M
Title : TO-15/TO-14
Last Update : Wed Jul 03 08:16:39 2013
Response Via : Initial Calibration

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3	2.0	2	10	C:\msdchem\1\MS03\2013\070213\07021324.D
4	5.0	5	10	C:\msdchem\1\MS03\2013\070213\07021323.D
5	10	10	10	C:\msdchem\1\MS03\2013\070213\07021322.D
6	20	20	10	C:\msdchem\1\MS03\2013\070213\07021321.D
7	50	51	10	C:\msdchem\1\MS03\2013\070213\07021320.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.5	Jul 03 08:02 2013	Jul 03 07:58 2013	
2	1.0	Jul 03 08:02 2013	Jul 03 07:41 2013	
3	2.0	Jul 03 08:02 2013	Jul 03 07:39 2013	
4	5.0	Jul 03 08:01 2013	Jul 03 07:37 2013	
5	10	Jul 03 08:01 2013	Jul 03 07:33 2013	
6	20	Jul 03 08:01 2013	Jul 03 07:27 2013	
7	50	Jul 03 08:01 2013	Jul 03 07:00 2013	

070213.M Wed Jul 03 08:18:10 2013



Response Factor Report MS03 Enhanced

Method Path : C:\msdchem\1\METHODS\2013\
 Method File : 070213.M
 Title : TO-15/TO-14
 Last Update : Wed Jul 03 08:16:39 2013
 Response Via : Initial Calibration

Calibration Files
 0.5 =07021326.D 1.0 =07021325.D 2.0 =07021324.D 5.0 =07021323.D 10 =07021322.D 20 =07021321.D
 50 =07021320.D

Compound	0.5	1.0	2.0	5.0	10	20	50	Avg	%RSD
1) I Bromochloromethane				ISTD					
2) Chlorodifluoro...	3.509	3.224	3.053	2.974	2.811	2.690	2.872	3.019	9.15
3) Propene	0.803	0.833	0.776	0.789	0.748	0.766	0.826	0.792	3.92
4) Dichlorodifluo...	4.893	4.799	4.664	4.595	4.321	4.182	4.567	4.574	5.49
5) Chloromethane	0.541	0.516	0.603	0.567	0.549	0.448	0.469	0.527	10.35
6) Dichlorotetra...	2.795	2.759	2.710	2.658	2.586	2.315	2.676	2.643	6.04
7) Vinylchloride	1.822	1.673	1.768	1.749	1.667	1.483	1.709	1.696	6.40
8) Methanol	1.293	1.293	1.035	0.883	0.810	0.701	0.780	0.917	23.55
9) 1,3-Butadiene	1.230	1.234	1.247	1.238	1.193	1.011	1.056	1.173	8.32
10) Bromomethane	1.431	1.260	1.188	1.140	1.082	0.965	0.973	1.148	14.35
11) Chloroethane	0.470	0.379	0.294	0.287	0.266	0.239	0.272	0.315	25.67
12) Dichlorofluoro...	4.293	4.136	4.119	4.023	3.934	3.760	4.091	4.051	4.17
13) Ethanol	1.301	1.140	1.062	0.957	0.837	0.763	0.792	0.979	20.41
14) VinylBromide	1.290	1.272	1.297	1.332	1.305	1.268	1.361	1.303	2.55
15) Acetone	1.198	1.023	0.943	0.866	0.849	0.837	0.831	0.935	14.44
16) Trichlorofluor...	3.474	3.547	3.392	3.303	3.162	3.134	3.351	3.338	4.56
17) 2-Propanol (IPA)	4.040	3.870	3.832	3.643	3.402	3.157	3.094	3.577	10.27
18) Acrylonitrile	1.242	1.230	1.210	1.295	1.241	1.249	1.196	1.237	2.56
19) M,T 1,1-Dichloroet...	1.325	1.378	1.388	1.387	1.321	1.430	1.515	1.392	4.75
20) M,T Methylenechlor...	1.417	1.260	1.215	1.149	1.126	1.142	1.140	1.207	8.67
21) AllylChloride	2.169	2.065	1.901	1.741	1.596	1.545	1.573	1.799	13.98
22) Carbondisulfide	4.220	4.046	4.001	3.770	3.895	3.544	3.748	3.889	5.75
23) Trichlorotrifl...	2.130	2.074	2.035	2.002	1.943	1.911	1.978	2.011	3.76
24) trans-1,2-Dich...	1.294	1.329	1.326	1.349	1.300	1.345	1.456	1.343	4.03
25) 1,1-Dichloroet...	3.738	3.616	3.530	3.494	3.228	3.006	3.121	3.390	8.07
26) MethylTertButy...	4.459	4.276	4.262	4.031	3.734	3.817	3.820	4.057	6.90
27) Vinylacetate	5.682	5.572	5.515	5.518	5.039	4.888	4.921	5.305	6.42
28) 2-Butanone (MEK)	0.555	0.635	0.623	0.675	0.628	0.643	0.636	0.628	5.81

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29)	cis-1,2-Dichlo...	1.507	1.439	1.480	1.478	1.404	1.404	1.404	1.464	1.454	2.71
30)	Hexane	0.285	0.288	0.282	0.284	0.265	0.271	0.278	0.279	3.01	3.01
31)	Chloroform	3.886	3.853	3.745	3.611	3.538	3.443	3.516	3.656	4.74	4.74
32)	Ethylacetate	4.617	4.764	4.793	4.657	4.390	4.229	4.207	4.522	5.43	5.43
33)	Tetrahydrofuran	0.655	0.680	0.629	0.645	0.613	0.609	0.598	0.633	4.59	4.59
34)	1,2-Dichloroeth...	3.232	3.384	3.252	3.173	3.002	2.849	3.086	3.140	5.64	5.64
35)	1,1,1-Trichlor...	4.550	4.470	4.293	4.189	3.932	3.909	4.110	4.208	5.89	5.89
36)	I 1,4-Difluorobenzene	0.909	0.888	0.851	0.794	0.806	0.787	0.791	0.832	6.07	6.07
37)	T,M Benzene	0.840	0.871	0.848	0.805	0.790	0.743	0.757	0.808	5.93	5.93
38)	CarbonTetrachl...	0.141	0.137	0.135	0.121	0.121	0.115	0.117	0.127	8.28	8.28
39)	Cyclohexane	0.399	0.395	0.381	0.361	0.352	0.338	0.337	0.366	7.05	7.05
40)	1,2-Dichloropr...	0.536	0.534	0.522	0.506	0.502	0.478	0.495	0.510	4.15	4.15
41)	Bromodichlorom...	0.169	0.204	0.199	0.191	0.189	0.180	0.181	0.188	6.35	6.35
42)	1,4-Dioxane	0.394	0.371	0.369	0.360	0.368	0.354	0.373	0.370	3.44	3.44
43)	M,T Trichloroethen...	1.947	1.865	1.831	1.744	1.701	1.661	1.633	1.769	6.53	6.53
44)	2,2,4-Trimethy...	0.283	0.281	0.271	0.256	0.267	0.255	0.266	0.268	4.06	4.06
45)	Heptane	0.522	0.524	0.529	0.515	0.516	0.498	0.496	0.514	2.47	2.47
46)	cis-1,3-Dichlo...	0.356	0.383	0.371	0.360	0.351	0.344	0.339	0.357	4.24	4.24
47)	4-Methyl-2-pen...	0.541	0.551	0.561	0.552	0.538	0.539	0.566	0.550	2.01	2.01
48)	trans-1,3-Dich...	0.397	0.380	0.386	0.365	0.363	0.347	0.359	0.371	4.64	4.64
49)	1,1,2-Trichlor...	1.129	1.091	1.086	1.015	1.011	0.975	0.999	1.044	5.51	5.51
50)	M,T Toluene	0.407	0.451	0.429	0.449	0.449	0.426	0.420	0.433	3.99	3.99
51)	2-Hexanone(MBK)	0.725	0.719	0.736	0.727	0.726	0.717	0.757	0.730	1.85	1.85
52)	Dibromochlorom...	0.616	0.613	0.612	0.599	0.599	0.573	0.618	0.604	2.58	2.58
53)	1,2-Dibromoethane	0.522	0.511	0.510	0.489	0.496	0.489	0.531	0.507	3.23	3.23
54)	M,T Tetrachloroeth...	0.275	0.271	0.261	0.256	0.261	0.262	0.267	0.265	2.51	2.51
55)	I Chlorobenzene-d5	1.619	1.598	1.551	1.507	1.487	1.416	1.420	1.514	5.32	5.32
56)	M,T Chlorobenzene	0.567	0.567	0.546	0.529	0.515	0.502	0.528	0.536	4.66	4.66
57)	M,T Ethylbenzene	0.774	0.811	0.814	0.770	0.750	0.757	0.740	0.774	3.75	3.75
58)	M,T m&p-Xylene	0.855	0.894	0.836	0.824	0.796	0.816	0.849	0.839	3.77	3.77
59)	Bromoform	0.924	0.943	0.894	0.861	0.826	0.804	0.815	0.867	6.35	6.35
60)	Styrene	1.355	1.361	1.241	1.166	1.143	1.099	1.101	1.209	9.27	9.27
61)	1,1,2,2-Tetrac...	0.606	0.607	0.612	0.615	0.593	0.606	0.634	0.610	2.06	2.06
62)	M,T o-Xylene	0.442	0.456	0.450	0.453	0.432	0.426	0.459	0.446	2.76	2.76
63)	SR 4-Bromofluorob...										
64)	4-Ethyltoluene										

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65)	1,3,5-Trimethy...	0.659	0.674	0.637	0.610	0.606	0.602	0.636	0.632	4.38
66)	1,2,4-Trimethy...	0.619	0.648	0.608	0.617	0.607	0.610	0.646	0.622	2.86
67)	BenzylChloride...	1.021	1.169	1.187	1.242	1.266	1.279	1.353	1.217	8.68
68)	1,3-Dichlorobe...	0.910	0.954	0.934	0.891	0.912	0.930	0.980	0.930	3.20
69)	1,4-Dichlorobe...	0.929	1.001	0.946	0.887	0.869	0.893	0.956	0.926	5.00
70)	1,2-Dichlorobe...	0.935	1.011	0.990	0.940	0.914	0.912	0.971	0.953	4.02
71)	1,2,4-Trichlor...	0.891	0.961	0.947	0.939	0.960	0.957	1.040	0.956	4.63
72)	Hexachlorobuta...	0.901	0.899	0.856	0.844	0.832	0.821	0.845	0.857	3.67

(#)	= Out of Range									

07/02/13