Table of Contents

Lab Report (PKG)	2
Batch Data (B16J002)	26
Batch Data (B16J003)	29
Batch Data (B16J017)	31
Batch Data (B16J020)	34
Raw Data (1609013)	36
Raw Data (1610001)	235
Standards PDFs (PKG)	616

United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street Building 201
Richmond, CA 94804

Date: **10/14/2016**

Subject: **Analytical Testing Results - Project R17S02**
SDG: 16274B

From: **Peter Husby, Director**
EPA Region 9 Laboratory
EMD-3-1

To: **Alana Lee**
California Site Cleanup Section 3
SFD-7-3

Attached are the results from the analysis of samples from the **MEW 2016 Sewer Pathway Investigation** project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy.

A full documentation package for these data, including raw data and sample custody documentation, is on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Eugenia McNaughton at the Region 9 Quality Assurance Office.

If you have any questions, please ask for Richard Bauer, the Lab Project Manager at (510)412-2300.

Analyses included in this report:

Volatile Organic Compounds by GC/MS

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
F6008-92816-844	1609102-01	Water	09/28/16 08:44	09/30/16 13:25
F6008-92816-1133	1609102-02	Water	09/28/16 11:33	09/30/16 13:25
F6008-92816-1425	1609102-03	Water	09/28/16 14:25	09/30/16 13:25
F6008-92816-1830	1609102-04	Water	09/28/16 18:30	09/30/16 13:25
F6008-92816-2303	1609102-05	Water	09/28/16 23:03	09/30/16 13:25
Blank-92916-900	1609102-06	Water	09/28/16 09:00	09/30/16 13:25
F6006-92816-952	1609102-07	Water	09/28/16 09:52	09/30/16 13:25
F6006-92816-1215	1609102-08	Water	09/28/16 12:15	09/30/16 13:25
F6006-92816-1448	1609102-09	Water	09/28/16 14:48	09/30/16 13:25
F6006-92816-1755	1609102-10	Water	09/28/16 17:55	09/30/16 13:25
F6006-92816-2236	1609102-11	Water	09/28/16 22:36	09/30/16 13:25
F6006-92916-1050	1609102-12	Water	09/29/16 10:50	09/30/16 13:25
DUP	1609102-13	Water	09/28/16 00:00	09/30/16 13:25

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 1609102-01									**Water - Sampled: 09/28/16 08:44**
Sample ID: F6008-92816-844									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride	RE1	ND	U	1	ug/L	B16J017	10/05/16	10/05/16	524.2
1,1-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane	RE1	ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane	RE1	ND	U	1	"	"	"	"	524.2
cis-1,2-Dichloroethene	RE1	0.5	C1, J	1	"	"	"	"	524.2
Chloroform	RE1	3.5		1	"	"	"	"	524.2
Benzene	RE1	ND	U	1	"	"	"	"	524.2
Trichloroethene	RE1	1.5		1	"	"	"	"	524.2
Tetrachloroethene	RE1	ND	U	1	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4	*RE1*		100 %	*65-149%*		"	"	"	
Surrogate: Toluene-d8	*RE1*		99 %	*85-114%*		"	"	"	
Surrogate: 4-Bromofluorobenzene	*RE1*		100 %	*82-111%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4	*RE1*		101 %	*76-118%*		"	"	"	
Lab ID: 1609102-02									**Water - Sampled: 09/28/16 11:33**
Sample ID: F6008-92816-1133									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride	RE1	ND	U	1	ug/L	B16J017	10/05/16	10/05/16	524.2
1,1-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane	RE1	ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane	RE1	ND	U	1	"	"	"	"	524.2
cis-1,2-Dichloroethene	RE1	0.6	C1, J	1	"	"	"	"	524.2
Chloroform	RE1	6.6		1	"	"	"	"	524.2
Benzene	RE1	ND	U	1	"	"	"	"	524.2
Trichloroethene	RE1	1.7		1	"	"	"	"	524.2
Tetrachloroethene	RE1	ND	U	1	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4	*RE1*		101 %	*65-149%*		"	"	"	
Surrogate: Toluene-d8	*RE1*		99 %	*85-114%*		"	"	"	
Surrogate: 4-Bromofluorobenzene	*RE1*		98 %	*82-111%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4	*RE1*		100 %	*76-118%*		"	"	"	
Lab ID: 1609102-03									**Water - Sampled: 09/28/16 14:25**
Sample ID: F6008-92816-1425									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride	RE1	ND	U	1	ug/L	B16J017	10/05/16	10/05/16	524.2
1,1-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane	RE1	ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane	RE1	ND	U	1	"	"	"	"	524.2

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Alana Lee	**California Site Cleanup Section 3**	**SDG:**	16274B
Project Number: R17S02	**75 Hawthorne Street**	**Reported:**	10/14/16 13:58
Project: MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**		

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 1609102-03									**Water - Sampled: 09/28/16 14:25**
Sample ID: F6008-92816-1425									**Volatile Organic Compounds by EPA Method 524.2**
cis-1,2-Dichloroethene	RE1	ND	U	1	ug/L	B16J017	10/05/16	10/05/16	524.2
Chloroform	RE1	7.2		1	"	"	"	"	524.2
Benzene	RE1	ND	U	1	"	"	"	"	524.2
Trichloroethene	RE1	1.5		1	"	"	"	"	524.2
Tetrachloroethene	RE1	ND	U	1	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4	*RE1*		100 %	*65-149%*		"	"	"	
Surrogate: Toluene-d8	*RE1*		99 %	*85-114%*		"	"	"	
Surrogate: 4-Bromofluorobenzene	*RE1*		100 %	*82-111%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4	*RE1*		100 %	*76-118%*		"	"	"	
Lab ID: 1609102-04									**Water - Sampled: 09/28/16 18:30**
Sample ID: F6008-92816-1830									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride	RE1	ND	U	1	ug/L	B16J017	10/05/16	10/05/16	524.2
1,1-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane	RE1	ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane	RE1	ND	U	1	"	"	"	"	524.2
cis-1,2-Dichloroethene	RE1	0.5	C1, J	1	"	"	"	"	524.2
Chloroform	RE1	4.9		1	"	"	"	"	524.2
Benzene	RE1	ND	U	1	"	"	"	"	524.2
Trichloroethene	RE1	1.6		1	"	"	"	"	524.2
Tetrachloroethene	RE1	ND	U	1	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4	*RE1*		102 %	*65-149%*		"	"	"	
Surrogate: Toluene-d8	*RE1*		99 %	*85-114%*		"	"	"	
Surrogate: 4-Bromofluorobenzene	*RE1*		101 %	*82-111%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4	*RE1*		98 %	*76-118%*		"	"	"	
Lab ID: 1609102-05									**Water - Sampled: 09/28/16 23:03**
Sample ID: F6008-92816-2303									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride	RE2	ND	U	1	ug/L	B16J020	10/06/16	10/06/16	524.2
1,1-Dichloroethene	RE2	ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane	RE2	ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene	RE2	ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane	RE2	ND	U	1	"	"	"	"	524.2
cis-1,2-Dichloroethene	RE2	0.6	C1, J	1	"	"	"	"	524.2
Chloroform	RE2	2.8		1	"	"	"	"	524.2
Benzene	RE2	ND	U	1	"	"	"	"	524.2
Trichloroethene	RE2	1.8		1	"	"	"	"	524.2
Tetrachloroethene	RE2	ND	U	1	"	"	"	"	524.2

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Alana Lee	**California Site Cleanup Section 3**	**SDG:** 16274B	
Project Number: R17S02	**75 Hawthorne Street**	**Reported:** 10/14/16 13:58	
Project: MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**		

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 1609102-05									**Water - Sampled: 09/28/16 23:03**
Sample ID: F6008-92816-2303									**Volatile Organic Compounds by EPA Method 524.2**
Surrogate: 1,2-Dichloroethane-d4	*RE2*		101 %	*65-149%*		*B16J020*	*10/06/16*	*10/06/16*	
Surrogate: Toluene-d8	*RE2*		98 %	*85-114%*		*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene	*RE2*		97 %	*82-111%*		*"*	*"*	*"*	
Surrogate: 1,2-Dichlorobenzene-d4	*RE2*		98 %	*76-118%*		*"*	*"*	*"*	
Lab ID: 1609102-06									**Water - Sampled: 09/28/16 09:00**
Sample ID: Blank-92916-900									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride		ND	U	0.5	ug/L	B16J003	10/03/16	10/03/16	524.2
1,1-Dichloroethene		ND	U	0.5	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	U	0.5	"	"	"	"	524.2
trans-1,2-Dichloroethene		ND	U	0.5	"	"	"	"	524.2
1,1-Dichloroethane		ND	U	0.5	"	"	"	"	524.2
cis-1,2-Dichloroethene		ND	U	0.5	"	"	"	"	524.2
Chloroform		ND	U	0.5	"	"	"	"	524.2
Benzene		ND	U	0.5	"	"	"	"	524.2
Trichloroethene		ND	U	0.5	"	"	"	"	524.2
Tetrachloroethene		ND	U	0.5	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			103 %	*65-149%*		*"*	*"*	*"*	
Surrogate: Toluene-d8			112 %	*85-114%*		*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene			89 %	*82-111%*		*"*	*"*	*"*	
Surrogate: 1,2-Dichlorobenzene-d4			93 %	*76-118%*		*"*	*"*	*"*	
Lab ID: 1609102-07									**Water - Sampled: 09/28/16 09:52**
Sample ID: F6006-92816-952									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride	RE1	ND	U	1	ug/L	B16J017	10/05/16	10/05/16	524.2
1,1-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane	RE1	ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane	RE1	ND	U	1	"	"	"	"	524.2
cis-1,2-Dichloroethene	RE1	ND	U	1	"	"	"	"	524.2
Chloroform	RE1	3.9		1	"	"	"	"	524.2
Benzene	RE1	ND	U	1	"	"	"	"	524.2
Trichloroethene	RE1	1.5		1	"	"	"	"	524.2
Tetrachloroethene	RE1	ND	U	1	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4	*RE1*		101 %	*65-149%*		*"*	*"*	*"*	
Surrogate: Toluene-d8	*RE1*		98 %	*85-114%*		*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene	*RE1*		97 %	*82-111%*		*"*	*"*	*"*	
Surrogate: 1,2-Dichlorobenzene-d4	*RE1*		99 %	*76-118%*		*"*	*"*	*"*	
Lab ID: 1609102-08									**Water - Sampled: 09/28/16 12:15**

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 1609102-08									**Water - Sampled: 09/28/16 12:15**
Sample ID: F6006-92816-1215									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride	RE2	ND	U	1	ug/L	B16J020	10/06/16	10/06/16	524.2
1,1-Dichloroethene	RE2	ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane	RE2	ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene	RE2	ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane	RE2	ND	U	1	"	"	"	"	524.2
cis-1,2-Dichloroethene	RE2	ND	U	1	"	"	"	"	524.2
Chloroform	RE2	5.7		1	"	"	"	"	524.2
Benzene	RE2	ND	U	1	"	"	"	"	524.2
Trichloroethene	RE2	1.4		1	"	"	"	"	524.2
Tetrachloroethene	RE2	ND	U	1	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4	*RE2*		99 %	*65-149%*		"	"	"	
Surrogate: Toluene-d8	*RE2*		99 %	*85-114%*		"	"	"	
Surrogate: 4-Bromofluorobenzene	*RE2*		99 %	*82-111%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4	*RE2*		102 %	*76-118%*		"	"	"	
Lab ID: 1609102-09									**Water - Sampled: 09/28/16 14:48**
Sample ID: F6006-92816-1448									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride	RE2	ND	U	1	ug/L	B16J020	10/06/16	10/06/16	524.2
1,1-Dichloroethene	RE2	ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane	RE2	ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene	RE2	ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane	RE2	ND	U	1	"	"	"	"	524.2
cis-1,2-Dichloroethene	RE2	ND	U	1	"	"	"	"	524.2
Chloroform	RE2	6.6		1	"	"	"	"	524.2
Benzene	RE2	ND	U	1	"	"	"	"	524.2
Trichloroethene	RE2	1.2		1	"	"	"	"	524.2
Tetrachloroethene	RE2	ND	U	1	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4	*RE2*		100 %	*65-149%*		"	"	"	
Surrogate: Toluene-d8	*RE2*		99 %	*85-114%*		"	"	"	
Surrogate: 4-Bromofluorobenzene	*RE2*		98 %	*82-111%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4	*RE2*		98 %	*76-118%*		"	"	"	
Lab ID: 1609102-10									**Water - Sampled: 09/28/16 17:55**
Sample ID: F6006-92816-1755									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride		ND	U	1	ug/L	B16J017	10/05/16	10/05/16	524.2
1,1-Dichloroethene		ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene		ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane		ND	U	1	"	"	"	"	524.2

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Alana Lee	**California Site Cleanup Section 3**	**SDG:** 16274B	
Project Number: R17S02	**75 Hawthorne Street**	**Reported:** 10/14/16 13:58	
Project: MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**		

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 1609102-10									**Water - Sampled: 09/28/16 17:55**
Sample ID: F6006-92816-1755									**Volatile Organic Compounds by EPA Method 524.2**
cis-1,2-Dichloroethene		0.6	C1, J	1	ug/L	B16J017	10/05/16	10/05/16	524.2
Chloroform		4.3	J, Q4	1	"	"	"	"	524.2
Benzene		ND	U	1	"	"	"	"	524.2
Trichloroethene		1.7	J, Q4	1	"	"	"	"	524.2
Tetrachloroethene		ND	U	1	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			100 %	*65-149%*		"	"	"	
Surrogate: Toluene-d8			99 %	*85-114%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			97 %	*82-111%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			100 %	*76-118%*		"	"	"	
Lab ID: 1609102-11									**Water - Sampled: 09/28/16 22:36**
Sample ID: F6006-92816-2236									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride		ND	U	1	ug/L	B16J017	10/05/16	10/05/16	524.2
1,1-Dichloroethene		ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene		ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane		ND	U	1	"	"	"	"	524.2
cis-1,2-Dichloroethene		0.6	C1, J	1	"	"	"	"	524.2
Chloroform		3.5		1	"	"	"	"	524.2
Benzene		ND	U	1	"	"	"	"	524.2
Trichloroethene		1.7		1	"	"	"	"	524.2
Tetrachloroethene		ND	U	1	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			98 %	*65-149%*		"	"	"	
Surrogate: Toluene-d8			100 %	*85-114%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			96 %	*82-111%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			99 %	*76-118%*		"	"	"	
Lab ID: 1609102-12									**Water - Sampled: 09/29/16 10:50**
Sample ID: F6006-92916-1050									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride		ND	U	1	ug/L	B16J017	10/05/16	10/05/16	524.2
1,1-Dichloroethene		ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene		ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane		ND	U	1	"	"	"	"	524.2
cis-1,2-Dichloroethene		0.9	C1, J	1	"	"	"	"	524.2
Chloroform		4.6		1	"	"	"	"	524.2
Benzene		ND	U	1	"	"	"	"	524.2
Trichloroethene		1.9		1	"	"	"	"	524.2
Tetrachloroethene		ND	U	1	"	"	"	"	524.2

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Alana Lee	**California Site Cleanup Section 3**	**SDG:** 16274B	
Project Number: R17S02	**75 Hawthorne Street**	**Reported:** 10/14/16 13:58	
Project: MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**		

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 1609102-12									**Water - Sampled: 09/29/16 10:50**
Sample ID: F6006-92916-1050									**Volatile Organic Compounds by EPA Method 524.2**
Surrogate: 1,2-Dichloroethane-d4			100 %	*65-149%*		*B16J017*	*10/05/16*	*10/05/16*	
Surrogate: Toluene-d8			100 %	*85-114%*		*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene			99 %	*82-111%*		*"*	*"*	*"*	
Surrogate: 1,2-Dichlorobenzene-d4			100 %	*76-118%*		*"*	*"*	*"*	
Lab ID: 1609102-13									**Water - Sampled: 09/28/16 00:00**
Sample ID: DUP									**Volatile Organic Compounds by EPA Method 524.2**
Vinyl chloride		ND	U	1	ug/L	B16J017	10/05/16	10/05/16	524.2
1,1-Dichloroethene		ND	U	1	"	"	"	"	524.2
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	U	1	"	"	"	"	524.2
trans-1,2-Dichloroethene		ND	U	1	"	"	"	"	524.2
1,1-Dichloroethane		ND	U	1	"	"	"	"	524.2
cis-1,2-Dichloroethene		1.0		1	"	"	"	"	524.2
Chloroform		4.5		1	"	"	"	"	524.2
Benzene		ND	U	1	"	"	"	"	524.2
Trichloroethene		2.1		1	"	"	"	"	524.2
Tetrachloroethene		ND	U	1	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			102 %	*65-149%*		*"*	*"*	*"*	
Surrogate: Toluene-d8			100 %	*85-114%*		*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene			99 %	*82-111%*		*"*	*"*	*"*	
Surrogate: 1,2-Dichlorobenzene-d4			100 %	*76-118%*		*"*	*"*	*"*	

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Volatile Organic Compounds by EPA Method 524.2 - Quality Control

EPA Region 9 Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B16J002 - 5030 P&T VOA										
Blank (B16J002-BLK1)				Prepared & Analyzed: 10/04/16						
Vinyl chloride	ND	0.5	ug/L							U
1,1-Dichloroethene	ND	0.5	ug/L							U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.5	ug/L							U
trans-1,2-Dichloroethene	ND	0.5	ug/L							J, Q2, U
1,1-Dichloroethane	ND	0.5	ug/L							U
cis-1,2-Dichloroethene	ND	0.5	ug/L							U
Chloroform	ND	0.5	ug/L							U
Benzene	ND	0.5	ug/L							U
Trichloroethene	ND	0.5	ug/L							U
Tetrachloroethene	ND	0.5	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	*5.12*		ug/L	*5.00*		*102*	*65-149*			
Surrogate: Toluene-d8	*4.93*		ug/L	*5.00*		*99*	*85-114*			
Surrogate: 4-Bromofluorobenzene	*4.74*		ug/L	*5.00*		*95*	*82-111*			
Surrogate: 1,2-Dichlorobenzene-d4	*4.73*		ug/L	*5.00*		*95*	*76-118*			
Batch B16J003 - 5030 P&T VOA										
Blank (B16J003-BLK1)				Prepared & Analyzed: 10/03/16						
Vinyl chloride	ND	0.5	ug/L							U
1,1-Dichloroethene	ND	0.5	ug/L							U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.5	ug/L							U
trans-1,2-Dichloroethene	ND	0.5	ug/L							U
1,1-Dichloroethane	ND	0.5	ug/L							U
cis-1,2-Dichloroethene	ND	0.5	ug/L							U
Chloroform	ND	0.5	ug/L							U
Benzene	ND	0.5	ug/L							U
Trichloroethene	ND	0.5	ug/L							U
Tetrachloroethene	ND	0.5	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	*5.10*		ug/L	*5.00*		*102*	*65-149*			
Surrogate: Toluene-d8	*5.55*		ug/L	*5.00*		*111*	*85-114*			
Surrogate: 4-Bromofluorobenzene	*4.41*		ug/L	*5.00*		*88*	*82-111*			
Surrogate: 1,2-Dichlorobenzene-d4	*4.59*		ug/L	*5.00*		*92*	*76-118*			

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Volatile Organic Compounds by EPA Method 524.2 - Quality Control

EPA Region 9 Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B16J003 - 5030 P&T VOA										
LCS (B16J003-BS1)				Prepared & Analyzed: 10/03/16						
Dichlorodifluoromethane	4.64	0.5	ug/L	5.00		93	53-153		200	
Chloromethane	4.14	0.5	ug/L	5.00		83	70-124		200	
Vinyl chloride	4.70	0.5	ug/L	5.00		94	70-130		200	
Bromomethane	4.14	0.5	ug/L	5.00		83	58-172		200	
Chloroethane	4.86	0.5	ug/L	5.00		97	75-135		200	
Trichlorofluoromethane	4.89	0.5	ug/L	5.00		98	74-141		200	
1,1-Dichloroethene	4.76	0.5	ug/L	5.00		95	70-130		200	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.04	0.5	ug/L	5.00		101	73-139		200	
Acetone	39.9	4.0	ug/L	40.0		100	60-125		200	
Dichloromethane	4.71	0.5	ug/L	5.00		94	70-130		200	
trans-1,2-Dichloroethene	4.72	0.5	ug/L	5.00		94	70-130		200	
tert-Butyl methyl ether (MTBE)	20.8	2.0	ug/L	20.0		104	74-127		200	
1,1-Dichloroethane	4.72	0.5	ug/L	5.00		94	85-117		200	
2,2-Dichloropropane	5.44	0.5	ug/L	5.00		109	61-163		200	
cis-1,2-Dichloroethene	4.75	0.5	ug/L	5.00		95	70-130		200	
2-Butanone (MEK)	42.6	4.0	ug/L	40.0		107	67-123		200	
Bromochloromethane	4.89	0.5	ug/L	5.00		98	84-114		200	
Chloroform	4.78	0.5	ug/L	5.00		96	70-130		200	
1,1,1-Trichloroethane	5.04	0.5	ug/L	5.00		101	70-130		200	
Carbon tetrachloride	5.14	0.5	ug/L	5.00		103	70-130		200	
1,1-Dichloropropene	4.92	0.5	ug/L	5.00		98	88-120		200	
Benzene	4.98	0.5	ug/L	5.00		100	70-130		200	
1,2-Dichloroethane	5.15	0.5	ug/L	5.00		103	70-130		200	
Trichloroethene	4.97	0.5	ug/L	5.00		99	70-130		200	
1,2-Dichloropropane	5.13	0.5	ug/L	5.00		103	70-130		200	
Dibromomethane	5.14	0.5	ug/L	5.00		103	79-118		200	
Bromodichloromethane	5.13	0.5	ug/L	5.00		103	70-130		200	
cis-1,3-Dichloropropene	5.74	0.5	ug/L	5.00		115	79-127		200	
Toluene	5.29	0.5	ug/L	5.00		106	70-130		200	
trans-1,3-Dichloropropene	5.86	0.5	ug/L	5.00		117	75-135		200	
1,1,2-Trichloroethane	5.27	0.5	ug/L	5.00		105	70-130		200	
Tetrachloroethene	5.03	0.5	ug/L	5.00		101	70-130		200	
1,3-Dichloropropane	5.39	0.5	ug/L	5.00		108	82-116		200	
Chlorodibromomethane	5.41	0.5	ug/L	5.00		108	70-130		200	
1,2-Dibromoethane (EDB)	5.35	0.5	ug/L	5.00		107	85-114		200	
Chlorobenzene	5.08	0.5	ug/L	5.00		102	70-130		200	
1,1,1,2-Tetrachloroethane	5.32	0.5	ug/L	5.00		106	86-122		200	
Ethylbenzene	5.29	0.5	ug/L	5.00		106	70-130		200	
m&p-Xylene	10.3	1.0	ug/L	10.0		103	70-130		200	
o-Xylene	5.28	0.5	ug/L	5.00		106	70-130		200	
Styrene	5.28	0.5	ug/L	5.00		106	70-130		200	
Bromoform	5.50	0.5	ug/L	5.00		110	70-130		200	
Isopropylbenzene	5.30	0.5	ug/L	5.00		106	90-118		200	

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Volatile Organic Compounds by EPA Method 524.2 - Quality Control

EPA Region 9 Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B16J003 - 5030 P&T VOA										
LCS (B16J003-BS1)				Prepared & Analyzed: 10/03/16						
Bromobenzene	5.18	0.5	ug/L	5.00		104	90-110		200	
1,1,2,2-Tetrachloroethane	5.40	0.5	ug/L	5.00		108	76-122		200	
1,2,3-Trichloropropane	5.39	0.5	ug/L	5.00		108	77-119		200	
Propylbenzene	5.35	0.5	ug/L	5.00		107	89-120		200	
2-Chlorotoluene	5.15	0.5	ug/L	5.00		103	88-114		200	
4-Chlorotoluene	5.18	0.5	ug/L	5.00		104	90-112		200	
1,3,5-Trimethylbenzene	5.13	0.5	ug/L	5.00		103	90-115		200	
tert-Butylbenzene	5.17	0.5	ug/L	5.00		103	89-118		200	
1,2,4-Trimethylbenzene	5.22	0.5	ug/L	5.00		104	90-112		200	
sec-Butylbenzene	5.26	0.5	ug/L	5.00		105	87-122		200	
1,3-Dichlorobenzene	5.18	0.5	ug/L	5.00		104	88-111		200	
p-Isopropyltoluene	5.25	0.5	ug/L	5.00		105	89-119		200	
1,4-Dichlorobenzene	5.18	0.5	ug/L	5.00		104	70-130		200	
1,2-Dichlorobenzene	5.21	0.5	ug/L	5.00		104	70-130		200	
Butylbenzene	5.25	0.5	ug/L	5.00		105	86-123		200	
1,2-Dibromo-3-chloropropane	22.6	2.0	ug/L	20.0		113	68-134		200	
1,2,4-Trichlorobenzene	5.30	0.5	ug/L	5.00		106	70-130		200	
Hexachlorobutadiene	4.86	0.5	ug/L	5.00		97	81-123		200	
Naphthalene	5.77	0.5	ug/L	5.00		115	54-144		200	
1,2,3-Trichlorobenzene	5.27	0.5	ug/L	5.00		105	73-122		200	
Surrogate: 1,2-Dichloroethane-d4	*5.11*		ug/L	*5.00*		*102*	*65-149*			
Surrogate: Toluene-d8	*5.31*		ug/L	*5.00*		*106*	*85-114*			
Surrogate: 4-Bromofluorobenzene	*5.06*		ug/L	*5.00*		*101*	*82-111*			
Surrogate: 1,2-Dichlorobenzene-d4	*5.17*		ug/L	*5.00*		*103*	*76-118*			
Batch B16J017 - 5030 P&T VOA										
Blank (B16J017-BLK1)				Prepared & Analyzed: 10/05/16						
Vinyl chloride	ND	0.5	ug/L							U
1,1-Dichloroethene	ND	0.5	ug/L							U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.5	ug/L							U
trans-1,2-Dichloroethene	ND	0.5	ug/L							U
1,1-Dichloroethane	ND	0.5	ug/L							U
cis-1,2-Dichloroethene	ND	0.5	ug/L							U
Chloroform	ND	0.5	ug/L							U
Benzene	ND	0.5	ug/L							U
Trichloroethene	ND	0.5	ug/L							U
Tetrachloroethene	ND	0.5	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	*4.86*		ug/L	*5.00*		*97*	*65-149*			
Surrogate: Toluene-d8	*4.99*		ug/L	*5.00*		*100*	*85-114*			
Surrogate: 4-Bromofluorobenzene	*4.81*		ug/L	*5.00*		*96*	*82-111*			
Surrogate: 1,2-Dichlorobenzene-d4	*4.67*		ug/L	*5.00*		*93*	*76-118*			

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Volatile Organic Compounds by EPA Method 524.2 - Quality Control

EPA Region 9 Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B16J017 - 5030 P&T VOA										
LCS (B16J017-BS1)				Prepared & Analyzed: 10/05/16						
Vinyl chloride	5.09	0.5	ug/L	5.00		102	70-130		200	
1,1-Dichloroethene	4.93	0.5	ug/L	5.00		99	70-130		200	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.41	0.5	ug/L	5.00		108	73-139		200	
trans-1,2-Dichloroethene	4.78	0.5	ug/L	5.00		96	70-130		200	
1,1-Dichloroethane	4.63	0.5	ug/L	5.00		93	85-117		200	
cis-1,2-Dichloroethene	4.64	0.5	ug/L	5.00		93	70-130		200	
Chloroform	4.61	0.5	ug/L	5.00		92	70-130		200	
Benzene	4.67	0.5	ug/L	5.00		93	70-130		200	
Trichloroethene	4.83	0.5	ug/L	5.00		97	70-130		200	
Tetrachloroethene	4.97	0.5	ug/L	5.00		99	70-130		200	
Surrogate: 1,2-Dichloroethane-d4	*4.57*		ug/L	*5.00*		*91*	*65-149*			
Surrogate: Toluene-d8	*5.05*		ug/L	*5.00*		*101*	*85-114*			
Surrogate: 4-Bromofluorobenzene	*4.82*		ug/L	*5.00*		*96*	*82-111*			
Surrogate: 1,2-Dichlorobenzene-d4	*4.76*		ug/L	*5.00*		*95*	*76-118*			
Matrix Spike (B16J017-MS1)		**Source: 1609102-10**		Prepared & Analyzed: 10/05/16						
Vinyl chloride	5.22		ug/L	5.00	0.00	104	77-127		20	
1,1-Dichloroethene	5.30		ug/L	5.00	0.00	106	80-126		20	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.47		ug/L	5.00	0.00	109	73-139		20	
trans-1,2-Dichloroethene	5.08		ug/L	5.00	0.00	102	86-119		20	
1,1-Dichloroethane	5.64		ug/L	5.00	0.00	113	85-117		20	
cis-1,2-Dichloroethene	5.12		ug/L	5.00	0.556	91	87-113		20	
Chloroform	6.89		ug/L	5.00	4.32	51	85-117		20	
Benzene	4.88		ug/L	5.00	0.00	98	86-112		20	
Trichloroethene	5.67		ug/L	5.00	1.68	80	90-112		20	
Tetrachloroethene	4.90		ug/L	5.00	0.00	98	87-118		20	
Surrogate: 1,2-Dichloroethane-d4	*4.82*		ug/L	*5.00*		*96*	*65-149*			
Surrogate: Toluene-d8	*5.00*		ug/L	*5.00*		*100*	*85-114*			
Surrogate: 4-Bromofluorobenzene	*5.18*		ug/L	*5.00*		*104*	*82-111*			
Surrogate: 1,2-Dichlorobenzene-d4	*5.04*		ug/L	*5.00*		*101*	*76-118*			

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Volatile Organic Compounds by EPA Method 524.2 - Quality Control

EPA Region 9 Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B16J017 - 5030 P&T VOA										
Matrix Spike Dup (B16J017-MSD1)		**Source: 1609102-10**		Prepared & Analyzed: 10/05/16						
Vinyl chloride	5.29		ug/L	5.00	0.00	106	77-127	1	20	
1,1-Dichloroethene	5.22		ug/L	5.00	0.00	104	80-126	2	20	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.55		ug/L	5.00	0.00	111	73-139	1	20	
trans-1,2-Dichloroethene	4.99		ug/L	5.00	0.00	100	86-119	2	20	
cis-1,2-Dichloroethene	5.08		ug/L	5.00	0.556	90	87-113	0.9	20	
Chloroform	7.05		ug/L	5.00	4.32	55	85-117	2	20	
Benzene	4.77		ug/L	5.00	0.00	95	86-112	2	20	
Trichloroethene	5.57		ug/L	5.00	1.68	78	90-112	2	20	
Tetrachloroethene	4.87		ug/L	5.00	0.00	97	87-118	0.7	20	
Surrogate: 1,2-Dichloroethane-d4	*4.93*		ug/L	*5.00*		*99*	*65-149*			
Surrogate: Toluene-d8	*4.98*		ug/L	*5.00*		*100*	*85-114*			
Surrogate: 4-Bromofluorobenzene	*5.12*		ug/L	*5.00*		*102*	*82-111*			
Surrogate: 1,2-Dichlorobenzene-d4	*5.02*		ug/L	*5.00*		*100*	*76-118*			
Batch B16J020 - 5030 P&T VOA										
Blank (B16J020-BLK1)				Prepared & Analyzed: 10/06/16						
Vinyl chloride	ND	0.5	ug/L							U
1,1-Dichloroethene	ND	0.5	ug/L							U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.5	ug/L							U
trans-1,2-Dichloroethene	ND	0.5	ug/L							U
1,1-Dichloroethane	ND	0.5	ug/L							U
cis-1,2-Dichloroethene	ND	0.5	ug/L							U
Chloroform	ND	0.5	ug/L							U
Benzene	ND	0.5	ug/L							U
Trichloroethene	ND	0.5	ug/L							U
Tetrachloroethene	ND	0.5	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	*4.83*		ug/L	*5.00*		*97*	*65-149*			
Surrogate: Toluene-d8	*5.01*		ug/L	*5.00*		*100*	*85-114*			
Surrogate: 4-Bromofluorobenzene	*4.71*		ug/L	*5.00*		*94*	*82-111*			
Surrogate: 1,2-Dichlorobenzene-d4	*4.65*		ug/L	*5.00*		*93*	*76-118*			

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Volatile Organic Compounds by EPA Method 524.2 - Quality Control

EPA Region 9 Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B16J020 - 5030 P&T VOA										
LCS (B16J020-BS1)				Prepared & Analyzed: 10/06/16						
Vinyl chloride	4.91	0.5	ug/L	5.00		98	70-130		200	
1,1-Dichloroethene	5.00	0.5	ug/L	5.00		100	70-130		200	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.13	0.5	ug/L	5.00		103	73-139		200	
trans-1,2-Dichloroethene	4.67	0.5	ug/L	5.00		93	70-130		200	
1,1-Dichloroethane	4.95	0.5	ug/L	5.00		99	85-117		200	
cis-1,2-Dichloroethene	4.70	0.5	ug/L	5.00		94	70-130		200	
Chloroform	4.70	0.5	ug/L	5.00		94	70-130		200	
Benzene	4.58	0.5	ug/L	5.00		92	70-130		200	
Trichloroethene	4.72	0.5	ug/L	5.00		94	70-130		200	
Tetrachloroethene	4.69	0.5	ug/L	5.00		94	70-130		200	
Surrogate: 1,2-Dichloroethane-d4	*4.79*		ug/L	*5.00*		*96*	*65-149*			
Surrogate: Toluene-d8	*5.01*		ug/L	*5.00*		*100*	*85-114*			
Surrogate: 4-Bromofluorobenzene	*4.96*		ug/L	*5.00*		*99*	*82-111*			
Surrogate: 1,2-Dichlorobenzene-d4	*5.02*		ug/L	*5.00*		*100*	*76-118*			
Batch S16J003 - B16J002										
Instrument Blank (S16J003-IBL1)				Prepared: 10/03/16 Analyzed: 10/04/16						
Dichlorodifluoromethane	ND	0.5	ug/L							U
Chloromethane	ND	0.5	ug/L							U
Vinyl chloride	ND	0.5	ug/L							U
Bromomethane	ND	0.5	ug/L							U
Chloroethane	ND	0.5	ug/L							U
Trichlorofluoromethane	ND	0.5	ug/L							U
1,1-Dichloroethene	ND	0.5	ug/L							U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.5	ug/L							U
Acetone	ND	4.0	ug/L							U
Dichloromethane	ND	0.5	ug/L							U
trans-1,2-Dichloroethene	ND	0.5	ug/L							U
tert-Butyl methyl ether (MTBE)	ND	2.0	ug/L							U
1,1-Dichloroethane	ND	0.5	ug/L							U
2,2-Dichloropropane	ND	0.5	ug/L							U
cis-1,2-Dichloroethene	ND	0.5	ug/L							U
2-Butanone (MEK)	ND	4.0	ug/L							U
Bromochloromethane	ND	0.5	ug/L							U
Chloroform	ND	0.5	ug/L							U
1,1,1-Trichloroethane	ND	0.5	ug/L							U
Carbon tetrachloride	ND	0.5	ug/L							U
1,1-Dichloropropene	ND	0.5	ug/L							U
Benzene	ND	0.5	ug/L							U
1,2-Dichloroethane	ND	0.5	ug/L							U
Trichloroethene	ND	0.5	ug/L							U
1,2-Dichloropropane	ND	0.5	ug/L							U

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Volatile Organic Compounds by EPA Method 524.2 - Quality Control

EPA Region 9 Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch S16J003 - B16J002										
Instrument Blank (S16J003-IBL1)				Prepared: 10/03/16 Analyzed: 10/04/16						
Dibromomethane	ND	0.5	ug/L							U
Bromodichloromethane	ND	0.5	ug/L							U
cis-1,3-Dichloropropene	ND	0.5	ug/L							U
Toluene	ND	0.5	ug/L							U
trans-1,3-Dichloropropene	ND	0.5	ug/L							U
1,1,2-Trichloroethane	ND	0.5	ug/L							U
Tetrachloroethene	ND	0.5	ug/L							U
1,3-Dichloropropane	ND	0.5	ug/L							U
Chlorodibromomethane	ND	0.5	ug/L							U
1,2-Dibromoethane (EDB)	ND	0.5	ug/L							U
Chlorobenzene	ND	0.5	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L							U
Ethylbenzene	ND	0.5	ug/L							U
m&p-Xylene	ND	1.0	ug/L							U
o-Xylene	ND	0.5	ug/L							U
Styrene	ND	0.5	ug/L							U
Bromoform	ND	0.5	ug/L							U
Isopropylbenzene	ND	0.5	ug/L							U
Bromobenzene	ND	0.5	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L							U
1,2,3-Trichloropropane	ND	0.5	ug/L							U
Propylbenzene	ND	0.5	ug/L							U
2-Chlorotoluene	ND	0.5	ug/L							U
4-Chlorotoluene	ND	0.5	ug/L							U
1,3,5-Trimethylbenzene	ND	0.5	ug/L							U
tert-Butylbenzene	ND	0.5	ug/L							U
1,2,4-Trimethylbenzene	ND	0.5	ug/L							U
sec-Butylbenzene	ND	0.5	ug/L							U
1,3-Dichlorobenzene	ND	0.5	ug/L							U
p-Isopropyltoluene	ND	0.5	ug/L							U
1,4-Dichlorobenzene	ND	0.5	ug/L							U
1,2-Dichlorobenzene	ND	0.5	ug/L							U
Butylbenzene	ND	0.5	ug/L							U
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							U
1,2,4-Trichlorobenzene	ND	0.5	ug/L							U
Hexachlorobutadiene	ND	0.5	ug/L							U
Naphthalene	ND	0.5	ug/L							U
1,2,3-Trichlorobenzene	ND	0.5	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	*5.14*		ug/L				*65-149*			
Surrogate: Toluene-d8	*5.01*		ug/L				*85-114*			
Surrogate: 4-Bromofluorobenzene	*4.79*		ug/L				*82-111*			
Surrogate: 1,2-Dichlorobenzene-d4	*4.64*		ug/L				*76-118*			

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Qualifiers and Comments

Q4	The matrix spike and/or matrix spike duplicate associated with this sample did not meet recovery criteria for this analyte (see MS/MSD results for this batch in QC summary)
Q2	The laboratory control standard associated with this sample did not meet recovery criteria for this analyte (see LCS results for this batch in QC summary).
J	The reported result for this analyte should be considered an estimated value.
C1	The reported concentration for this analyte is below the quantitation limit.
U	Not Detected
NR	Not Reported
RE1, RE2, etc:	Result is from a sample re-analysis.

United States Environmental Protection Agency
Region 9 Laboratory
1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager:	Alana Lee	**California Site Cleanup Section 3**		**SDG:**	16274B
Project Number:	R17S02	**75 Hawthorne Street**		**Reported:**	10/14/16 13:58
Project:	MEW 2016 Sewer Pathway Investigation	**San Francisco CA, 94105**			

Sample Receiving: DUP sample did not have time recorded on COC or sample label. JC 09/30/16

VOC: Samples were run 2x dilution due to suspicion that non-target compounds may harm GC/MS system. YNB 10/05/16

VOC: The project had a short analytes list. Although some of the compounds in the initial calibration were outside the QC limits, all project target analytes were within QC limits. ZAR 10/13/16

WORK ORDER

Printed: 9/30/2016 2:16:17PM

1609102

EPA Region 9 Laboratory

Client: **California Site Cleanup Section 3**
Project: **MEW 2016 Sewer Pathway Investigation**
Project Number: **R17S02**

Report To:
California Site Cleanup Section 3
Alana Lee
75 Hawthorne Street
San Francisco, CA 94105
Phone: (415) 972-3141
Fax: (415) 947-3526

Project Contact
California Site Cleanup Section 3
Alana Lee
75 Hawthorne Street
San Francisco, CA 94105
Phone :(415) 972-3141
Fax: (415) 947-3526

Shipping Containers	Description	Temp C	Custody Seals?	Containers Intact?	Labels COC Agree?	Preservation Confirmed?	Received on Ice?	Comments
Default Cooler	Cooler 1	6	Yes	Yes	Yes	No	Yes	

Date Due:	10/15/16 17:00 (14 day TAT)	SDG:	16274B
Received By:	Tatyana Dadiomov	Date Received:	09/30/16 13:25
Logged In By:	Jessica Caldeira	Date Logged In:	09/30/16 13:53

Analysis	Hold Time Expires	Comments
1609102-01 F6008-92816-844 [Water] Sampled 09/28/16 08:44 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes
1609102-02 F6008-92816-1133 [Water] Sampled 09/28/16 11:33 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes
1609102-03 F6008-92816-1425 [Water] Sampled 09/28/16 14:25 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes
1609102-04 F6008-92816-1830 [Water] Sampled 09/28/16 18:30 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes
1609102-05 F6008-92816-2303 [Water] Sampled 09/28/16 23:03 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes
1609102-06 Blank-92916-900 [Water] Sampled 09/28/16 09:00 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes

WORK ORDER

Printed: 9/30/2016 2:16:17PM

1609102

EPA Region 9 Laboratory

Client: California Site Cleanup Section 3 **Project Number:** R17S02
Project: MEW 2016 Sewer Pathway Investigation

Analysis	Hold Time Expires	Comments

Analysis	Expires	Comments
1609102-07 F6006-92816-952 [Water] Sampled 09/28/16 09:52 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes
1609102-08 F6006-92816-1215 [Water] Sampled 09/28/16 12:15 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes
1609102-09 F6006-92816-1448 [Water] Sampled 09/28/16 14:48 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes
1609102-10 F6006-92816-1755 [Water] Sampled 09/28/16 17:55 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes
1609102-11 F6006-92816-2236 [Water] Sampled 09/28/16 22:36 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes
1609102-12 F6006-92916-1050 [Water] Sampled 09/29/16 10:50 (GMT-08:00) Pacific Time (US &		
VOCs	10/13/16	10 analytes
1609102-13 DUP [Water] Sampled 09/28/16 00:00 (GMT-08:00) Pacific Time (US &		
VOCs	10/12/16	10 analytes

Reviewed By Date

UK UNIVERSITY OF KENTUCKY

CHAIN OF CUSTODY RECORD

Client Contact Information	Project Manager: Alana Lee	R9 Project No: R17S02
Company: EPA Region 9	Phone: (415) 972-3141	
Address: 75 Hawthorne Street	Project Name: MEW OU3 Sewer Pathway Investigation	Analysis Turnaround Time
City/State/Zip: San Francisco, CA 94105-3972	Location: Mountain View, California	X Normal:
Phone: (415) 972-3141	Sampler Name(s): Kelly Pennell, Mohammadyousef Roghani, Elham Shirazi, Evan Willett	Rush (specify):_____ days

Location ID	Vial/Sample number	Sample collection time: Date (mm/dd/yy)	Time	Temp. (F)	Notes	Analysis	Matrix
F6008	F6008-92816-844	09/28/16	8:44		3 AB HCl ICE AB=AIR BUBBLE	EPA analytical method 524.2 VOCs (PCE, TCE, Cis and Trans 1,2 DCE and Chloroform)	Sanitary Sewer water
F6008	F6008-92816-1133	09/28/16	11:33		3AB HCl ICE		
F6008	F6008-92816-1425	09/28/16	14:25		3 NAB HCl ICE NAB=NO AIR BUBBLE		
F6008	F6008-92816-1830	09/28/16	18:30		1AB - 2NAB HCl ICE		
F6008	F6008-92816-2303	09/28/16	23:03		3NAB HCl ICE		
Blank	Blank-92916-900	09/29/16	9:00		HCl ICE		

Special Instructions/Notes: DUE TO SUSPENDED PARTICLES IT WAS EXTREMELY DIFFICULT TO PREVENT AIR BUBBLES. IF POSSIBLE, PLEASE ANALYZE VIALS WITH NO AIR BUBBLE (NAB). NOTE ON REPORT IF VIAL ANALYZED HAD AB.
AB-AIRBUBBLE; NAB-NO AIR BUBBLE

Relinquished by: (signature)	Date/Time:	Received by: (signature)	Date/Time:
Kelly Pennell	9/29/16 1700	[illegible]	9/29/2016 1700
Alana Lee	9/30/16 1325	[illegible]	30 TO 9-29-16 13:25
			Hand delivered

Lab Use Only	Courier Name	Shipment Condition	Custody Seal Intact	Custody Seal Number
			Yes No None	

Table of Contents

UK UNIVERSITY OF KENTUCKY

CHAIN OF CUSTODY RECORD

Client Contact Information	Project Manager: Alana Lee	R9 Project No: R17S02
Company: EPA Region 9	Phone: (415) 972-3141	
Address: 75 Hawthorne Street	Project Name: MEW OU3 Sewer Pathway Investigation	Analysis Turnaround Time
City/State/Zip: San Francisco, CA 94105-3972	Location: Mountain View, California	✓ Normal:
Phone: (415) 972-3141	Sampler Name(s): Kelly Pennell, Mohammadyousef Roghani, Elham Shirazi, Evan Willett	Rush (specify):_____ days

Location ID	Vial/Sample number	Sample collection time Date (mm/dd/yy)	Time	Temp. (F)	Notes	Analysis	Matrix
F6006	F6006-92816-952	09/28/16	9:52		3 samples - 1 with AB 2 wo AB HCl+ICE	EPA analytical method 524.2 VOCs (PCE, TCE, Cis and Trans 1,2 DCE and Chloroform)	Sanitary Sewer water
F6006	F6006-92816-1215	09/28/16	12:15		1 NAB - 2AB HCl+ICE		
F6006	F6006-92816-1448	09/28/16	14:48		NAB HCl+ICE		
F6006	F6006-92816-1755	09/28/16	17:55		2 AB - 1 NAB HCl+ICE		
F6006	F6006-92816-2236	09/28/16	22:36		2 AB - 1 NAB		

Special Instructions/Notes: See page 1

Relinquished by: (signature) Kelly Pennell	Date/Time: 9/29/2016 1700	Received by: (signature) Alana Lee	Date/Time: 9/29/16 1700
Relinquished by: (signature) Alana Lee	Date/Time: 9/30/2016 1325	Received by: (signature) Hadlow	Date/Time: 3070 9-29-16 13:25
Relinquished by: (signature)	Date/Time:	Received by: (signature)	Date/Time:

Lab Use Only	Courier Name	Shipment Condition	Custody Seal Intact	Custody Seal Number
			Yes No None	

Table of Contents

UK UNIVERSITY OF KENTUCKY

CHAIN OF CUSTODY RECORD

Client Contact Information	Project Manager: Alana Lee	R9 Project No: R17S02
Company: EPA Region 9	Phone: (415) 972-3141	
Address: 75 Hawthorne Street	Project Name: MEW OU3 Sewer Pathway Investigation	Analysis Turnaround Time
City/State/Zip: San Francisco, CA 94105-3972	Location: Mountain View, California	X Normal:
Phone: (415) 972-3141	Sampler Name(s): Kelly Pennell, Mohammadyousef Roghani, Elham Shirazi, Evan Willett	Rush (specify):_____ days

Location ID	Vial/Sample number	Sample collection time: Date (mm/dd/yy)	Sample collection time: Time	Temp. (F)	Notes	Analysis	Matrix
F6006	F6006-92916-1050	09/29/16	10:50		3 AB HCL + ICE	EPA analytical method 524.2 VOCs (PCE, TCE, Cis and Trans 1,2 DCE and Chloroform)	Sanitary Sewer water
DUP	DUP	09/28/16	[redacted]		DUP 3 AB, 1 NAB HCL+ICE		

Special Instructions/Notes: See page 1

Relinquished by: (signature) Kelly Pennell	Date/Time: 9/29/2016 1700	Received by: (signature) Alana Lee	Date/Time: 9/29/2016 1700
Relinquished by: (signature) Alana Lee	Date/Time: 9/30/2016 1325	Received by: (signature) [illegible]	Date/Time: 30-TD 9-29-16 13-25
Relinquished by: (signature)	Date/Time:	Received by: (signature)	Date/Time:

Lab Use Only	Courier Name	Shipment Condition	Custody Seal Intact	Custody Seal Number
			Yes No None	

Table of Contents

Cooler/Box/Env 1 of 1

U.S. Environmental Protection Agency
Region 9 Richmond Laboratory

1337 South 46th Street
Richmond, CA 94804

Sample Receipt Checklist

Project No: R17S02 **Work Order No(s):** 1609102 **Date:** 9/30/16 **by** TD

CUSTODY SEALS Intact

☒ Yes ☐ No ☐ N/A- None

Check if applies: ☐ External Seals ☐ Internal Seals ☒ Hand Delivered

TEMPERATURE 6 °C Within Acceptable Range

☒ Yes ☐ No ☐ Ambient OK

Check if applies:
☐ Provided Temp Blank ☒ Between 6°C to 10°C ☐ Still cooling (sampled today & iced)
☐ Previously Frozen ☐ Insufficient/Melted Ice ☐ Delivery Delay

SAMPLE CONTAINERS Intact

☒ Yes ☐ No

If not intact, was volume recoverable for analysis? ☐ Yes ☐ No ☒ N/A

Check if applies: ☐ Bottle/Jar/Vial broken ☐ Cap broken or loose ☐ Other _____

CHAIN OF CUSTODY Received

☒ Yes ☐ No

COC complete and consistent with labels ☒ Yes ☐ No ☐ N/A

Check if applies: ☐ Not relinquished ☐ Inconsistency resolved ☐ Follow-up needed (see comments)

TAT and analyses match scheduling ☒ Yes ☐ No ☐ N/A

Check if applies: ☐ Preliminary Results ☐ Rush Request ☐ 7-day TAT

Within hold times ☐ Expires today ☒ Yes ☐ No ☐ N/A

All shipping and sample containers accounted for ☒ Yes ☐ No ☐ N/A

PRESERVATION / FILTRATION

☒ N/A No chem. pres./filtra.

Check if applies: ☐ Sample Receiving to preserve
☐ Analyst to filter and/or preserve

Preserved and/or filtered samples correctly identified ☐ Yes ☐ No ☒ N/A

Preserved samples (non-VOA vials) measured at correct pH ☐ Yes ☐ No ☒ N/A

Preservation/measured pH _____

Sample Receiving Preservation and/or pH Adjustments*

Sample ID	Initial pH	Pres.	Date/time Pres. added	Adjusted pH	pH after 16-hrs (metals)	Date/time of pH recheck	Rechecked by

*(continue on back, if needed)

FOLLOW-UP / COMMENTS

BATCH

B16J002

PREPARATION BENCH SHEET

B16J002

EPA Region 9 Laboratory

Project: R17S02

Printed: 10/5/2016 12:40:19PM

Matrix: Water **Analysis: VOCs** **Prepared using: Volatiles - 5030 P&T VOA** **Surrogate used: 1640027**

Lab Number	SampleName	Prepared	Initial (mL)	Final (mL)	Source ID	Spike ID 1	ul Spike 1	ul Surrogate	Sample pH	Prepared by	Extraction Comments
1609102-01 A	F6008-92816-844	10/04/16 11:36	1.25	25				1	<2	EM	10 analytes
1609102-02 A	F6008-92816-1133	10/04/16 11:36	1.25	25				1	<2	EM	10 analytes
1609102-03 A	F6008-92816-1425	10/04/16 11:36	1.25	25				1	<2	EM	10 analytes
1609102-04 A	F6008-92816-1830	10/04/16 11:36	1.25	25				1	<2	EM	10 analytes
1609102-05 A	F6008-92816-2303	10/04/16 11:36	1.25	25				1	<2	EM	10 analytes
1609102-07 A	F6006-92816-952	10/04/16 11:36	1.25	25				1	<2	EM	10 analytes
1609102-08 A	F6006-92816-1215	10/04/16 11:36	1.25	25				1	<2	EM	10 analytes
1609102-09 A	F6006-92816-1448	10/04/16 11:36	1.25	25				1	<2	EM	10 analytes
B16J002-BLK1	Blank	10/04/16 11:36	25	25				1		EM	
B16J002-BS1	LCS	10/04/16 11:36	25	25		1640082	5	1		EM	

Batch Comments

HP5973H

Reagents

Reagent #	Description

Spike Witness: EM 9/30/16

Table of Contents

PREPARATION BENCH SHEET

B16J002

EPA Region 9 Laboratory

Project: R17S02

Printed: 10/5/2016 12:40:19PM

Matrix: Water **Analysis: QC** **Prepared using: Volatiles - 5030 P&T VOA** **Surrogate used: 1640027**

Lab Number	SampleName	Prepared	Initial (mL)	Final (mL)	Source ID	Spike ID 1	ul Spike 1	ul Surrogate	Sample pH	Prepared by	Extraction Comments

Spike Witness: EM 9/30/16

Page 28 of 774 1609102 DATA_PKG (Rev1).PDF 10/14/16 14:07:43

Table of Contents

BATCH

B16J003

PREPARATION BENCH SHEET

B16J003

EPA Region 9 Laboratory

Project: R17S02

Printed: 10/3/2016 3:07:22PM

Matrix: Water **Analysis: VOCs** **Prepared using: Volatiles - 5030 P&T VOA** **Surrogate used: 1640027**

Lab Number	SampleName	Prepared	Initial (mL)	Final (mL)	Source ID	Spike ID 1	ul Spike 1	ul Surrogate	Sample pH	Prepared by	Extraction Comments
1609102-06 A	Blank-92916-900	10/03/16 12:22	25	25				1	<2	YNB	10 analytes
B16J003-BLK1	Blank	10/03/16 06:22	25	25				1		YNB	
B16J003-BS1	LCS	10/03/16 06:22	25	25		1640082	5	1		YNB	

Batch Comments

HP5973F

Reagents

Reagent #	Description

Table of Contents

BATCH

B16J017

PREPARATION BENCH SHEET

B16J017

EPA Region 9 Laboratory

Project: R17S02

Printed: 10/6/2016 12:57:48PM

Matrix: Water **Analysis: VOCs** **Prepared using: Volatiles - 5030 P&T VOA** **Surrogate used: 1640027**

Lab Number	SampleName	Prepared	Initial (mL)	Final (mL)	Source ID	Spike ID 1	ul Spike 1	ul Surrogate	Sample pH	Prepared by	Extraction Comments
1609102-01RE1 B	F6008-92816-844	10/05/16 08:36	12.5	25				1	<2	YNB	10 analytes
1609102-02RE1 B	F6008-92816-1133	10/05/16 08:36	12.5	25				1	<2	YNB	10 analytes
1609102-03RE1 B	F6008-92816-1425	10/05/16 08:36	12.5	25				1	<2	YNB	10 analytes
1609102-04RE1 B	F6008-92816-1830	10/05/16 08:36	12.5	25				1	<2	YNB	10 analytes
1609102-05RE1 B	F6008-92816-2303	10/05/16 08:36	12.5	25				1	<2	YNB	10 analytes
1609102-07RE1 B	F6006-92816-952	10/05/16 08:36	12.5	25				1	<2	YNB	10 analytes
1609102-08RE1 B	F6006-92816-1215	10/05/16 08:36	12.5	25				1	<2	YNB	10 analytes
1609102-09RE1 B	F6006-92816-1448	10/05/16 08:36	12.5	25				1	<2	YNB	10 analytes
1609102-10 A	F6006-92816-1755	10/05/16 13:18	12.5	25				1	<2	YNB	10 analytes
1609102-11 A	F6006-92816-2236	10/05/16 13:18	12.5	25				1	<2	YNB	10 analytes
1609102-12 A	F6006-92916-1050	10/05/16 13:18	12.5	25				1	<2	YNB	10 analytes
1609102-13 A	DUP	10/05/16 13:18	12.5	25				1	<2	YNB	10 analytes
B16J017-BLK1	Blank	10/05/16 06:18	25	25				1		YNB	
B16J017-BS1	LCS	10/05/16 06:18	25	25		1640082	5	1		YNB	
B16J017-MS1	Matrix Spike	10/05/16 13:18	25	25	1609102-10	1640082	5	1	<2	YNB	B, 2X
B16J017-MSD1	Matrix Spike Dup	10/05/16 13:18	25	25	1609102-10	1640082	5	1	<2	YNB	B, 2X

Batch Comments

HP5973H

MS/MSD failed on IS area. It is not enough samples to repeat MS /MSD on the same sample. MS/MSD will be rerun based on 16090102-11

Table of Contents

PREPARATION BENCH SHEET

B16J017

EPA Region 9 Laboratory

Project: R17S02

Printed: 10/6/2016 12:57:48PM

Matrix: Water **Analysis: QC** **Prepared using: Volatiles - 5030 P&T VOA** **Surrogate used: 1640027**

Lab Number	SampleName	Prepared	Initial (mL)	Final (mL)	Source ID	Spike ID 1	ul Spike 1	ul Surrogate	Sample pH	Prepared by	Extraction Comments

Reagents

Reagent #	Description

Table of Contents

BATCH

B16J020

PREPARATION BENCH SHEET

B16J020

EPA Region 9 Laboratory

Project: R17S02

Printed: 10/6/2016 3:26:00PM

Matrix: Water **Analysis: VOCs** **Prepared using: Volatiles - 5030 P&T VOA** **Surrogate used: 1640027**

Lab Number	SampleName	Prepared	Initial (mL)	Final (mL)	Source ID	Spike ID 1	ul Spike 1	ul Surrogate	Sample pH	Prepared by	Extraction Comments
1609102-05RE2 C	F6008-92816-2303	10/06/16 08:00	12.5	25				1	<2	YNB	10 analytes
1609102-08RE2 C	F6006-92816-1215	10/06/16 08:00	12.5	25				1	<2	YNB	10 analytes
1609102-09RE2 C	F6006-92816-1448	10/06/16 08:00	12.5	25				1	<2	YNB	10 analytes
1609102-11RE1 A	F6006-92816-2236	10/05/16 08:36	12.5	25				1		YNB	Added for BatchQC in: B16J020
B16J020-BLK1	Blank	10/06/16 06:56	25	25				1		YNB	
B16J020-BS1	LCS	10/06/16 06:56	25	25		1641052	5	1		YNB	
B16J020-MS1	Matrix Spike	10/06/16 10:56	25	25	1609102-11	1641052	5	1	<2	YNB	
B16J020-MSD1	Matrix Spike Dup	10/06/16 10:56	25	25	1609102-11	1641052	5	1	<2	YNB	

Batch Comments

HP5973H

Reagents

Reagent #	Description

Table of Contents

Calibration

1609013

Table of Contents

Method Path : C:\msdchem\1\2016\method\
Method File : 091216FVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Tue Sep 13 09:00:16 2016
Response Via : Initial Calibration

Calibration Files
0.5 =091216F07.D 1.0 =091216F08.D 2.0 =091216F09.D 5.0 =091216F10.D 10.0=091216F11.D
25.0=091216F12.D

		Compound	0.5	1.0	2.0	5.0	10.0	25.0	Avg		%RSD
1)	I	Dichloromethane-d2	----------ISTD----------								
2)	TMC	Dichlorodifluo...	5.939	5.790	5.449	5.671	5.374	5.696	5.653		3.73
3)	TMC	Chloromethane	5.900	5.557	5.403	5.672	5.256	5.495	5.547		4.02
4)	TCM	Vinyl chloride	5.375	5.219	5.248	5.430	5.186	5.514	5.329		2.46
5)	TCM	Bromomethane	1.944	1.928	2.064	2.401	2.454	2.806	2.266		15.34
6)	TMC	Chloroethane	3.267	3.112	3.260	3.401	3.146	3.141	3.221		3.39
7)	TMC	Trichlorofluor...	7.813	7.597	7.282	7.803	7.404	7.983	7.647		3.51
8)	TMC	1,1-Dichloroet...	4.879	4.778	4.714	5.004	4.760	5.060	4.866		2.89
9)	TCM	1,1,2-Trichlor...	4.802	4.849	4.512	4.823	4.509	4.829	4.721		3.46
10)	TCM	Acetone	0.370	0.301	0.280	0.264	0.264	0.286	0.294		13.57
11)	TCM	Carbon disulfide	1.385	1.303	1.272	1.366	1.294	1.401	1.337	E1	4.03
12)	TMC	Dichloromethane	4.824	4.433	4.320	4.353	4.189	4.401	4.420		4.87
13)	TCM	tert-Butyl alc...	0.063	0.060	0.066	0.063	0.065	0.070	0.064		5.31
14)	TMC	trans-1,2-Dich...	5.480	5.373	5.279	5.655	5.295	5.653	5.456		3.10
15)	TCM	tert-Butyl met...	5.215	5.081	5.270	5.455	5.555	6.175	5.458		7.15
16)	TCM	1,1-Dichloroet...	7.968	7.832	7.820	8.164	7.713	8.193	7.948		2.47
17)	TMC	Diisopropyl ether	9.505	9.048	9.435	9.662	9.505	9.688	9.474		2.44
18)	TCM	Ethyl-tert-but...	6.615	6.521	6.661	7.037	7.046	7.646	6.921		6.04
19)	TCM	2,2-Dichloropr...	4.910	4.752	4.658	5.157	4.959	5.494	4.988		6.06
20)	TMC	cis-1,2-Dichlo...	5.679	5.476	5.473	5.779	5.527	5.911	5.641		3.19
21)	TCM	2-Butanone (MEK)	0.430	0.435	0.438	0.440	0.447	0.494	0.447		5.33
22)	TMC	Bromochloromet...	2.005	1.957	1.971	2.075	2.055	2.207	2.045		4.49
23)	TCM	Chloroform	8.249	8.031	8.086	8.499	8.191	8.697	8.292		3.10
24)	I	Fluorobenzene	----------ISTD----------								
25)	TCM	1,1,1-Trichlor...	0.364	0.351	0.360	0.367	0.359	0.384	0.364		3.08
26)	TCM	Carbon tetrach...	0.317	0.316	0.326	0.339	0.335	0.362	0.333		5.17
27)	TCM	1,1-Dichloropr...	0.356	0.353	0.356	0.365	0.352	0.368	0.358		1.86
28)	S	1,2-Dichloroet...	0.131	0.129	0.132	0.126	0.131	0.130	0.130		1.67
29)	TMC	Benzene	1.061	1.030	1.046	1.062	1.039	1.086	1.054		1.90
30)	TCM	1,2-Dichloroet...	0.183	0.173	0.184	0.181	0.184	0.191	0.183		3.26
31)	TCM	tert-Amyl meth...	0.265	0.261	0.276	0.271	0.290	0.317	0.280		7.31
32)	TMC	Trichloroethene	0.284	0.279	0.282	0.285	0.279	0.295	0.284		2.09
33)	TMC	1,2-Dichloropr...	0.195	0.195	0.200	0.198	0.198	0.210	0.199		2.78
34)	TMC	Dibromomethane	0.080	0.077	0.083	0.081	0.083	0.087	0.082		4.20
35)	TCM	Bromodichlorom...	0.233	0.228	0.238	0.241	0.246	0.266	0.242		5.51
36)	TCM	cis-1,3-Dichlo...	0.199	0.192	0.256	0.235	0.259	0.304	0.241		17.37
37)	I	Chlorobenzene-d5	----------ISTD----------								
38)	TMC	4-Methyl-2-pen...	0.066	0.069	0.082	0.084	0.090	0.097	0.081		14.84
39)	S	Toluene-d8	1.344	1.370	1.352	1.359	1.329	1.272	1.338		2.62
40)	TMC	Toluene	0.917	0.918	0.928	0.987	0.969	1.021	0.957		4.45
41)	TCM	trans-1,3-Dich...	0.165	0.174	0.188	0.215	0.240	0.280	0.210		20.89
42)	TCM	1,1,2-Trichlor...	0.131	0.133	0.135	0.135	0.138	0.143	0.136		3.25
43)	TCM	Tetrachloroethene	0.441	0.443	0.450	0.476	0.466	0.501	0.463		5.00
44)	TMC	1,3-Dichloropr...	0.261	0.260	0.277	0.290	0.295	0.314	0.283		7.44
45)	TCM	2-Hexanone	0.041	0.044	0.050	0.054	0.059	0.066	0.052		17.45
46)	TCM	Chlorodibromom...	0.185	0.193	0.205	0.209	0.221	0.240	0.209		9.47
47)	TMC	1,2-Dibromoeth...	0.133	0.137	0.144	0.148	0.155	0.167	0.147		8.42
48)	TMC	Chlorobenzene	1.035	1.028	1.049	1.078	1.078	1.162	1.072		4.59
49)	TCM	1,1,1,2-Tetrac...	0.285	0.275	0.289	0.307	0.313	0.349	0.303		8.77
50)	TCM	Ethylbenzene	1.573	1.698	1.827	2.004	2.001	2.052	1.859		10.41
51)	TCM	m&p-Xylene	0.666	0.722	0.769	0.824	0.829	0.907	0.786		10.89
52)	TCM	o-Xylene	0.543	0.606	0.676	0.757	0.767	0.866	0.702		16.77
53)	TCM	Styrene	0.918	1.021	1.124	1.200	1.229	1.379	1.145		14.21
54)	TCM	Bromoform	0.098	0.102	0.109	0.115	0.127	0.146	0.116		15.29
55)	TCM	Isopropylbenzene	1.469	1.647	1.838	2.067	2.101	2.193	1.886		15.11
56)	S	4-Bromofluorob...	0.454	0.462	0.472	0.464	0.482	0.486	0.470		2.63
57)	TCM	Bromobenzene	0.393	0.398	0.417	0.437	0.451	0.498	0.432		9.04
58)	TCM	1,1,2,2-Tetrac...	0.170	0.169	0.180	0.175	0.182	0.195	0.178		5.36
59)	TMC	1,2,3-Trichlor...	0.115	0.116	0.123	0.122	0.128	0.135	0.123		6.08

Table of Contents

Method Path : C:\msdchem\1\2016\method\
Method File : 091216FVW.M
Title : Volatile Organic Analysis - 524.2 Method

60)	TCM	Propylbenzene	1.984	2.156	2.354	2.570	2.576	2.397	2.340	9.98
61)	TCM	2-Chlorotoluene	1.243	1.294	1.368	1.447	1.462	1.563	1.396	8.44
62)	TCM	4-Chlorotoluene	1.358	1.425	1.539	1.655	1.679	1.808	1.577	10.69
63)	TCM	1,3,5-Trimethy...	1.494	1.614	1.727	1.851	1.848	1.981	1.752	10.13
64)	TCM	tert-Butylbenzene	1.195	1.325	1.462	1.560	1.529	1.722	1.465	12.66
65)	TCM	1,2,4-Trimethy...	1.473	1.603	1.760	1.887	1.907	1.988	1.770	11.19
66)	TCM	sec-Butylbenzene	1.934	2.096	2.291	2.489	2.460	2.418	2.281	9.78
67)	TCM	1,3-Dichlorobe...	0.949	0.943	1.000	1.055	1.066	1.123	1.023	6.96
68)	TCM	p-Isopropyltol...	1.650	1.839	2.036	2.219	2.230	2.258	2.039	12.18
69)	TCM	1,4-Dichlorobe...	0.932	0.939	0.991	1.034	1.060	1.127	1.014	7.42
70)	S	1,2-Dichlorobe...	0.495	0.505	0.520	0.512	0.524	0.505	0.510	2.05
71)	TCM	1,2-Dichlorobe...	0.811	0.788	0.826	0.845	0.846	0.866	0.830	3.37
72)	TCM	Butylbenzene	1.689	1.798	1.922	2.050	2.019	2.018	1.916	7.55
73)	TMC	1,2-Dibromo-3-...	0.021	0.021	0.024	0.022	0.023	0.024	0.022	5.31
74)	TCM	1,2,4-Trichlor...	0.505	0.515	0.578	0.607	0.637	0.675	0.586	11.47
75)	TCM	Hexachlorobuta...	0.473	0.481	0.480	0.427	0.394	0.390	0.441	9.74
76)	TCM	Naphthalene	0.406	0.450	0.574	0.624	0.683	0.722	0.576	21.93
77)	TCM	1,2,3-Trichlor...	0.399	0.420	0.468	0.454	0.464	0.474	0.446	6.80

(#) = Out of Range

Method Path : C:\msdchem\1\2016\method\
Method File : 091216FVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Tue Sep 13 09:00:16 2016
Response Via : Initial Calibration

Total Cpnds : 77

PK#			Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I		Dichloromethane-d2	53	3.801	1.000	A	3	A	A
2		T	Dichlorodifluoromethane	85	1.459	0.384	A	1	A	B
3		T	Chloromethane	50	1.653	0.435	A	3	A	B
4		T	Vinyl chloride	62	1.751	0.461	A	2	A	B
5		T	Bromomethane	94	2.091	0.550	A	1	A	B
6		T	Chloroethane	64	2.207	0.581	A	1	A	B
7		T	Trichlorofluoromethane	101	2.499	0.657	A	1	A	B
8		T	1,1-Dichloroethene	96	3.132	0.824	A	2	A	B
9		T	1,1,2-Trichloro-1,2,2-trifl...	101	3.156	0.830	A	2	A	B
10		T	Acetone	43	3.241	0.853	A	1	A	B
11		T	Carbon disulfide	76	3.387	0.891	A	1	A	B
12		T	Dichloromethane	84	3.837	1.010	A	2	A	B
13		T	tert-Butyl alcohol	59	4.184	1.101	A	2	A	B
14		T	trans-1,2-Dichloroethene	96	4.275	1.125	A	2	A	B
15		T	tert-Butyl methyl ether (MTBE)	73	4.336	1.141	A	2	A	B
16		T	1,1-Dichloroethane	63	4.963	1.306	A	2	A	B
17		T	Diisopropyl ether	45	5.182	1.363	A	2	A	B
18		T	Ethyl-tert-butyl ether	59	5.772	1.518	A	1	A	B
19		T	2,2-Dichloropropane	77	5.893	1.550	A	2	A	B
20		T	cis-1,2-Dichloroethene	96	5.912	1.555	A	2	A	B
21		T	2-Butanone (MEK)	43	6.015	1.583	A	2	A	B
22		T	Bromochloromethane	128	6.289	1.655	A	2	A	B
23		T	Chloroform	83	6.465	1.701	A	2	A	B
24	I		Fluorobenzene	96	7.779	1.000	A	2	A	B
25		T	1,1,1-Trichloroethane	97	6.703	0.862	A	2	A	B
26		T	Carbon tetrachloride	117	6.964	0.895	A	1	A	B
27		T	1,1-Dichloropropene	75	6.976	0.897	A	2	A	B
28		S	1,2-Dichloroethane-d4	65	7.232	0.930	A	2	A	B
29		T	Benzene	78	7.305	0.939	A	1	A	B
30		T	1,2-Dichloroethane	62	7.354	0.945	A	2	A	B
31		T	tert-Amyl methyl ether	73	7.585	0.975	A	2	A	B
32		T	Trichloroethene	95	8.369	1.076	A	2	A	B
33		T	1,2-Dichloropropane	63	8.728	1.122	A	2	A	B
34		T	Dibromomethane	93	8.905	1.145	A	2	A	B
35		T	Bromodichloromethane	83	9.209	1.184	A	2	A	B
36		T	cis-1,3-Dichloropropene	75	9.951	1.279	A	2	A	B
37	I		Chlorobenzene-d5	117	12.780	1.000	A	1	A	B
38		T	4-Methyl-2-pentanone (MIBK)	43	10.280	0.804	A	2	A	B
39		S	Toluene-d8	98	10.371	0.811	A	1	A	B
40		T	Toluene	92	10.474	0.820	A	1	A	B
41		T	trans-1,3-Dichloropropene	75	10.894	0.852	A	2	A	B
42		T	1,1,2-Trichloroethane	83	11.180	0.875	A	2	A	B
43		T	Tetrachloroethene	166	11.375	0.890	A	2	A	B
44		T	1,3-Dichloropropane	76	11.448	0.896	A	1	A	B
45		T	2-Hexanone	43	11.679	0.914	A	1	A	B
46		T	Chlorodibromomethane	129	11.807	0.924	A	2	A	B
47		T	1,2-Dibromoethane (EDB)	107	11.965	0.936	A	2	A	B
48		T	Chlorobenzene	112	12.823	1.003	A	2	A	B
49		T	1,1,1,2-Tetrachloroethane	131	12.993	1.017	A	2	A	B
50		T	Ethylbenzene	91	13.054	1.021	A	1	A	B
51		T	m&p-Xylene	106	13.267	1.038	A	1	A	B
52		T	o-Xylene	106	13.936	1.090	A	1	A	B
53		T	Styrene	104	13.966	1.093	A	2	A	B
54		T	Bromoform	173	14.246	1.115	A	2	A	B
55		T	Isopropylbenzene	105	14.611	1.143	A	1	A	B
56		S	4-Bromofluorobenzene	95	14.842	1.161	A	2	A	B

Table of Contents

57	T	Bromobenzene	156	15.067	1.179	A	2	A	B
58	T	1,1,2,2-Tetrachloroethane	83	15.159	1.186	A	2	A	B
59	T	1,2,3-Trichloropropane	75	15.195	1.189	A	1	A	B
60	T	Propylbenzene	91	15.335	1.200	A	1	A	B
61	T	2-Chlorotoluene	91	15.439	1.208	A	1	A	B
62	T	4-Chlorotoluene	91	15.639	1.224	A	1	A	B
63	T	1,3,5-Trimethylbenzene	105	15.670	1.226	A	1	A	B
64	T	tert-Butylbenzene	119	16.236	1.270	A	2	A	B
65	T	1,2,4-Trimethylbenzene	105	16.321	1.277	A	1	A	B
66	T	sec-Butylbenzene	105	16.631	1.301	A	1	A	B
67	T	1,3-Dichlorobenzene	146	16.765	1.312	A	2	A	B
68	T	p-Isopropyltoluene	119	16.911	1.323	A	2	A	B
69	T	1,4-Dichlorobenzene	146	16.929	1.325	A	2	A	B
70	S	1,2-Dichlorobenzene-d4	152	17.543	1.373	A	2	A	B
71	T	1,2-Dichlorobenzene	146	17.580	1.376	A	2	A	B
72	T	Butylbenzene	91	17.647	1.381	A	1	A	B
73	T	1,2-Dibromo-3-chloropropane	75	18.997	1.486	A	2	A	B
74	T	1,2,4-Trichlorobenzene	180	20.506	1.605	A	2	A	B
75	T	Hexachlorobutadiene	225	20.871	1.633	A	2	A	B
76	T	Naphthalene	128	20.926	1.637	A	2	A	B
77	T	1,2,3-Trichlorobenzene	180	21.370	1.672	A	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

091216FVW.M Tue Sep 13 09:06:43 2016 INS_6890_3

Edit Compounds -- Compound #32 -- Trichloroethene

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
  - Dichloromethane-d2
  - Fluorobenzene
    - 1,1,1-Trichloroethane
    - Carbon tetrachloride
    - 1,1-Dichloropropene
    - 1,2-Dichloroethane-d4
    - Benzene
    - 1,2-Dichloroethane
    - tert-Amyl methyl ether
    - Trichloroethene
    - 1,2-Dichloropropane
    - Dibromomethane
    - Bromodichloromethane
    - cis-1,3-Dichloropropene
  - Chlorobenzene-d5

Identification | Calibration | User-Defined | Advanced | Reporting

Name: Trichloroethene | Concentration Units: ug/L | Compound Type: TMC

Signals to Be Used for Quantitation

Ret Time: 8.369 | RRT: 1.076

Extract signals from - 0.200 + 0.200 Min %

This is 8.169 to 8.569 minutes

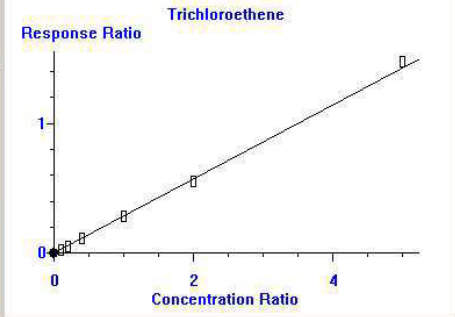
Quant signal: Target Ion | % Uncertainty

m/z	Relative Response (Abs)	
Target	94.90	100.00
Q1	129.90	119.60	20.00
Q2	131.90	116.00	20.00
Q3	0.00	0.00	20.00

Level	Concentration	Response
0.5	0.500000	59781.000000
1.0	1.000000	118417.000000
2.0	2.000000	243744.000000
5.0	5.000000	607932.000000
10.0	10.000000	1238216.000000
25.0	25.000000	3383454.000000
CC	5.000000	607932.000000

Quantitation Options

Quantitation type	Target compound
Sample ISTD Concentration	-1.000000
Measure response by	Area
Identify by	Meets qualifiers, Best RT
Maximum number of hits	9
Subtraction Method	Extend Area Quant
Curve Fit	Avg of Response Factors
Weight	Equal weighting



OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

U.S. EPA Region 9 Laboratory

Discrepancy #: D16-013

Form Initiator: Adriane Scheele **Entry Date:** 7/7/2016

Case:	Project:	SDG:
All Cases	NA	NA

SOP:	Analysis:	Rev.:	Analyst:	Date:
354	VOC Analysis in Water	11	All Analysts	

SOP:	Prep:	Rev.:	Analyst:	Date:

Discrepancy Type (check all that apply):

LCS:

- ☐ High
- ☐ Low
- ☐ Frequency

MS/MSD:

- ☐ High
- ☐ Low
- ☐ RPD
- ☐ Frequency

Holding Time:

- ☐ Prep/extract
- ☐ Analysis

Blank:

- ☐ MB
- ☐ IB
- ☐ CB
- ☐ Frequency

Surrogate:

- ☐ High
- ☐ Low
- ☐ Frequency

Calibration:

- ☑ ICAL
- ☐ SVC
- ☐ CCAL
- ☐ QLS
- ☐ Frequency

Other:

- ☑ Other (describe)

Daily prepared QC standards (CCV, QLS, BS)

Describe Discrepancy:

Initial calibration standards were prepared in a 50-mL volumetric flask instead of a 50-mL syringe for instrument HP5973H on June 16, 2016 and AG5975DV on June 22, 2016. SOP 354 R11 specifies the use of a 50-mL syringe. EPA Method 524.2 Revision 4.1 (1995) allows the preparation of calibration standards in volumetric flasks or gas tight syringes. No adverse impact on data quality is expected.

Daily QC standards (CCVs, QLSs, and BSs) were also prepared using a volumetric flask subsequent to the initial calibration. No adverse impact on data quality is expected.

Describe Corrective Actions:

Discrepancy form will be attached to LIMS calibration for documentation. LIMS calibration numbers are 1606022 and 1606026.

U.S. EPA Region 9 Laboratory

Discrepancy #: D16-013

Approvals:

Supervisor (EPA or ESAT): Adriane Scheele	Date: 7/7/2016
EPA Team Leader or ESAT QA/QC: Richard Bauer	Date: 7/8/2016
EPA Lab QAO: Barbara Bates	Date: 7/8/2016
Check if Corrective Action Form Generated: ☐	Form #:

QAO Comments:

SOP Revision to follow.

SEQUENCE

S16I043

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	CALIBRATION	SEQUENCE #:	S16I043
BATCH #:	HP5973F, 09/12/16	ANALYSIS:	524.2 WATER

	CHECKLIST ITEM	N/A	ANALYST Y/N	REVIEWER Y/N	IDENTIFY OUTLIERS / COMMENTS
DOCUMENTATION	ANALYST: Bench sheet(s) attached? REVIEWER: Bench sheet(s) reviewed?	✔			
	ANALYST: Sequence log(s) attached? REVIEWER: Sequence log(s) reviewed?		Y	Y	
	ANALYST: Every run has a PDF in LIMS? REVIEWER: Every PDF reviewed?		Y	Y	
INITIAL CALIBRATION	Date of Initial Calibration used: If applicable, note date of "Last Update" in Comments.	Tue Sept 13 09:00:16 2016			
	Initial Calibration ID (LIMS number):	1609013			
	ICAL within QC criteria?		Y	Y	trans1.3DCP, Naphthalene
	SCV within QC criteria?		Y	Y	Dichlorodifluoromethane
INSTRUMENT / QC CHECKS	Tune or degradation checks within QC criteria?		Y	Y	
	CCV(s) within QC criteria?	✔			
	QLS(s) within QC criteria?	✔			
	CB(s) or storage blank(s) within QC criteria?	✔			
	Other instrument checks within QC criteria? Specify if applicable.	✔			
BATCH QCs	Method blanks < 1/2 QL?		Y	Y	
	LCS(s) or SRM(s) within QC criteria?	✔			
	MSs/MSDs and/or DUPs within QC criteria?	✔			
	Other method-specific QCs within QC criteria? Specify if applicable.	✔			

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	CALIBRATION	SEQUENCE #:	S16I043
BATCH #:	HP5973F, 09/12/16	ANALYSIS:	524.2 WATER

	CHECKLIST ITEM	N/A	ANALYST Y/N	REVIEWER Y/N	IDENTIFY OUTLIERS / COMMENTS
IS / SS	Internal standards within QC criteria?	☐	Y	Y	
	Surrogates within QC criteria?	✔			
SAMPLE DATA	Were samples prepared & analyzed within holding time?	✔			
	If samples need to be re-run, were RE(s) made in LIMS?	✔			
	Do any samples need to be re-digested or re-extracted?	✔			
	Were all data qualifiers appropriately applied?	✔			
	Are problems, anomalies, discrepancies documented in LIMS? Specify if applicable.	✔			
MANUAL INT	Were manual integrations performed and documented? Specify if applicable.	☐	Y	Y	CAL1 and SCV files

APPROVALS	ANALYST INITIALS & DATE:	YNB 09/13/16
	REVIEWED BY:	Ziyad Rajabi (affiliate) Digitally signed by Ziyad Rajabi (affiliate) Date: 2016.09.20 15:10:01 -07'00' SIGN HERE

COMMENTS

Injection Log

Operator: YNB
Directory: C:\msdchem\1\2016\data\091216FW\

Vial	File Name	Mult	Sample Info	Misc Info	Date Acquired
50	091216F01.D	1	PREP-TUN1	0.5ng EM 1153V	12 Sep 2016 13:05
50	091216F02.D	1	PREP-TUN1	0.5ng EM 1400V	12 Sep 2016 13:46
50	091216F03.D	1	PREP	0.5ng EM 1400V	12 Sep 2016 13:55
50	091216F04.D	1	S16I043-TUN1	0.5ng EM 1153V	12 Sep 2016 14:30
11	091216F05.D	0	BLANK	BLANK, WATER	12 Sep 2016 14:52
12	091216F06.D	0	S16I043-IBL1	BLANK, WATER	12 Sep 2016 15:25
13	091216F07.D	0	S16I043-CAL1	0.5ug/L, WATER	12 Sep 2016 15:57
14	091216F08.D	0	S16I043-CAL2	1ug/L, WATER	12 Sep 2016 16:30
15	091216F09.D	0	S16I043-CAL3	2ug/L, WATER	12 Sep 2016 17:03
16	091216F10.D	0	S16I043-CAL4	5ug/L, WATER	12 Sep 2016 17:36
17	091216F11.D	0	S16I043-CAL5	10ug/L, WATER	12 Sep 2016 18:09
18	091216F12.D	0	S16I043-CAL6	25ug/L, WATER	12 Sep 2016 18:42
19	091216F13.D	0	BLANK	BLKL, WATER	12 Sep 2016 19:15
20	091216F14.D	0	S16I043-SCV1	5ug/L, WATER	12 Sep 2016 19:48

GC/MS QA-QC Check Report

Table of Contents

Tune File : C:\msdchem\1\2016\data\091216FW\091216F04.D
Tune Time : 12 Sep 2016 14:30

Daily Calibration File : C:\msdchem\1\2016\data\091216FW\091216F10.D

File	Sample	Surrogate Recovery %				Internal Standard Responses		
						103916	2134250	1481290
091216F05.D	BLANK	100	112	91	92	104924	2094969	1401359
091216F06.D	S16I043-IBL1	103	98	91	93	110336	2183131	1501052
091216F07.D	S16I043-CAL1	101	100	97	97	104363	2104197	1435549
091216F08.D	S16I043-CAL2	100	102	98	99	105705	2125561	1446141
091216F09.D	S16I043-CAL3	102	101	100	102	110913	2158858	1491600
091216F10.D	S16I043-CAL4	97	102	99	100	103916	2134253	1481289
091216F11.D	S16I043-CAL5	101	99	103	103	110890	2217473	1600872
091216F12.D	S16I043-CAL6	100	95	103	99	112495	2294557	1772555
091216F13.D	BLANK	100	99	90	94	106718	2146181	1486365
091216F14.D	S16I043-SCV1	99	100	100	101	108461	2195293	1549398

(fails) - fails 12hr time check * - fails criteria

Created: Tue Sep 13 09:04:28 2016 HP5973F

Analysis Sequence

S16I043

Project:
Analysis:

Instrument: HP5973F **Calibration ID:** 1609013 Printed: 09/13/2016 9:17 am

Lab Number	Sample Name	Order	Analyzed Date	STD ID	ISTD ID	Sequenced By	File ID	Comments
S16I043-TUN1	MS Tune	1	9/12/16 14:30	1629049		YNB	091216F04.D	
S16I043-IBL1	Instrument Blank	2	9/12/16 15:25			YNB	091216F06.D	
S16I043-CAL1	Cal Standard	3	9/12/16 15:57	1638011		YNB	091216F07.D	
S16I043-CAL2	Cal Standard	4	9/12/16 16:30	1638012		YNB	091216F08.D	
S16I043-CAL3	Cal Standard	5	9/12/16 17:03	1638013		YNB	091216F09.D	
S16I043-CAL4	Cal Standard	6	9/12/16 17:36	1638015		YNB	091216F10.D	
S16I043-CAL5	Cal Standard	7	9/12/16 18:09	1638016		YNB	091216F11.D	
S16I043-CAL6	Cal Standard	8	9/12/16 18:42	1638017		YNB	091216F12.D	
S16I043-SCV1	Secondary Cal Check	9	9/12/16 19:48	1638021		YNB	091216F14.D	

Sequence Comments

Reagents

Reagent # **Description**

Table of Contents

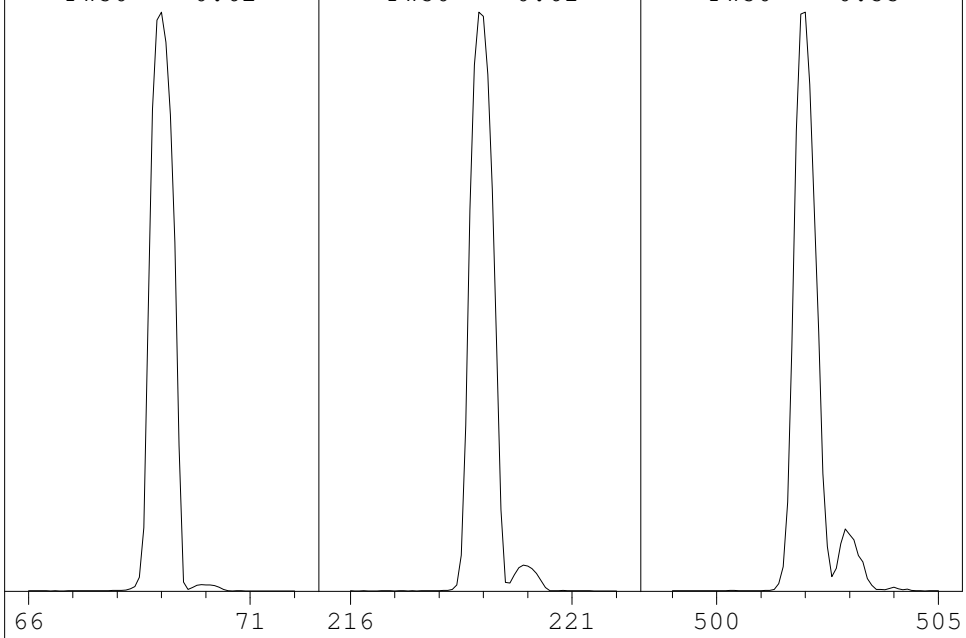
SEQUENCE DATA

S16I043

S16I043-TUN1

Mon Sep 12 14:25:52 2016 Instrum
C:\msdchem\1\5973N\BFB091216F.u US63810222

Mass	69.00	Mass	218.90	Mass	502.00
Ab	626009	Ab	466737	Ab	32789
Pw50	0.62	Pw50	0.61	Pw50	0.55

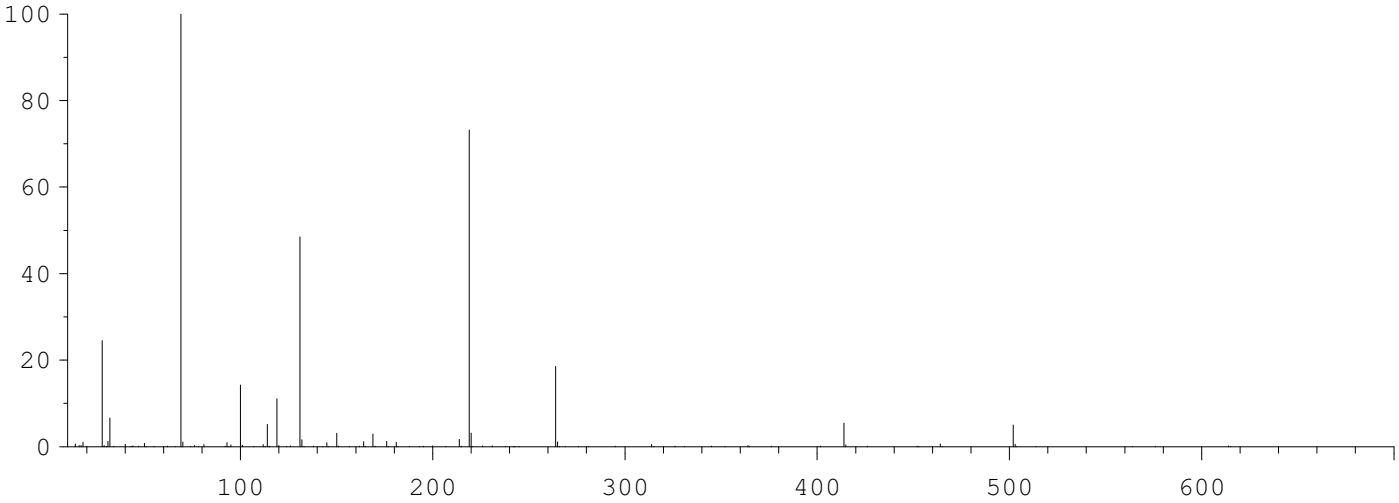


Ion Pol	Pos	MassGain	695
		MassOffs	-8
Emission	34.6	AmuGain	2727
EIEnrgy	69.9	AmuOffs	127
Filament	1	Wid219	-0.001
		DC Pol	Neg
Repeller	28.28		
IonFcus	88.3	HEDEnab	On
EntLens	16.5	EMVolts	1024
EntOffs	18.07		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	230	Turbo Speed	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
108 peaks Base: 69.00 Abundance: 581696



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	581696	100.00	70.00	6479	1.11
219.00	425536	73.15	220.00	18448	4.34
502.00	29032	4.99	503.00	3085	10.63

Air/Water Check: H20~1.04% N2~24.49% O2~6.60% CO2~0.22% N2/H2O~2364.16%

Column(1) Flow: 1 Column(2): 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 502; EM Gain 88020
Repeller Maximum 35 volts using ion 219; Gain Factor 0.88

MassGain Values(Samples): 695(3) 695(2) 695(1) 695(0) 695(FS)

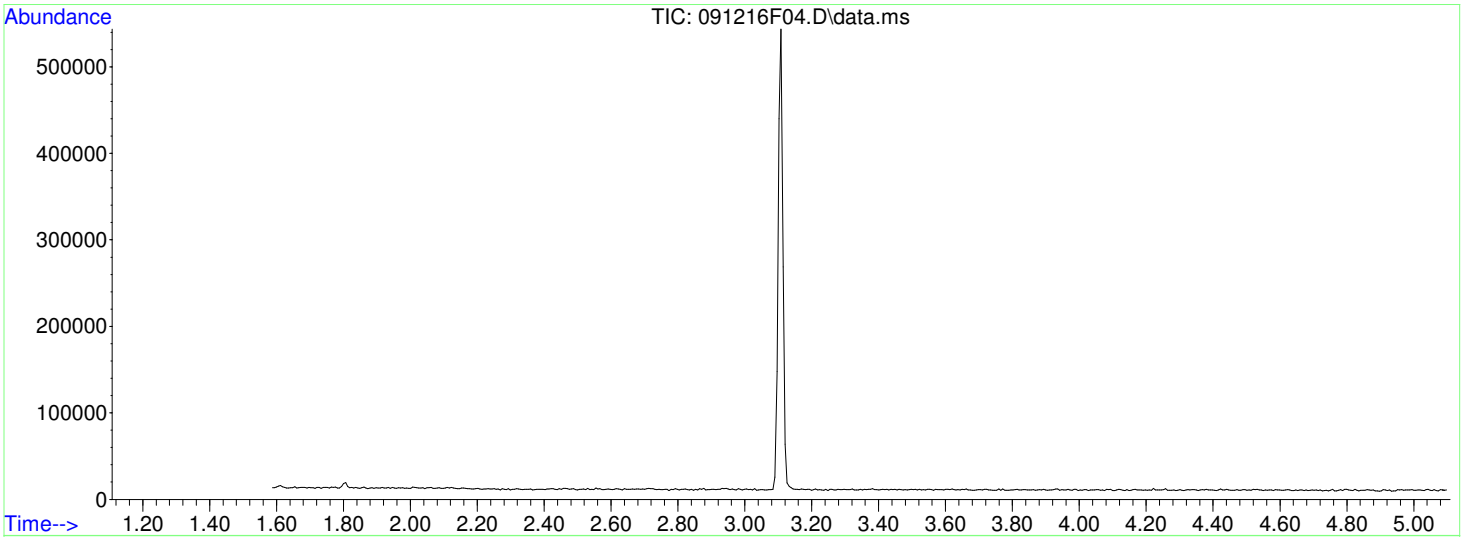
TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	127.0	127.0	127.0	127.0	127.0	127.0	127.0
Entrance Lens Offset:	18.1	18.1	18.1	18.1	18.1	18.1	18.1

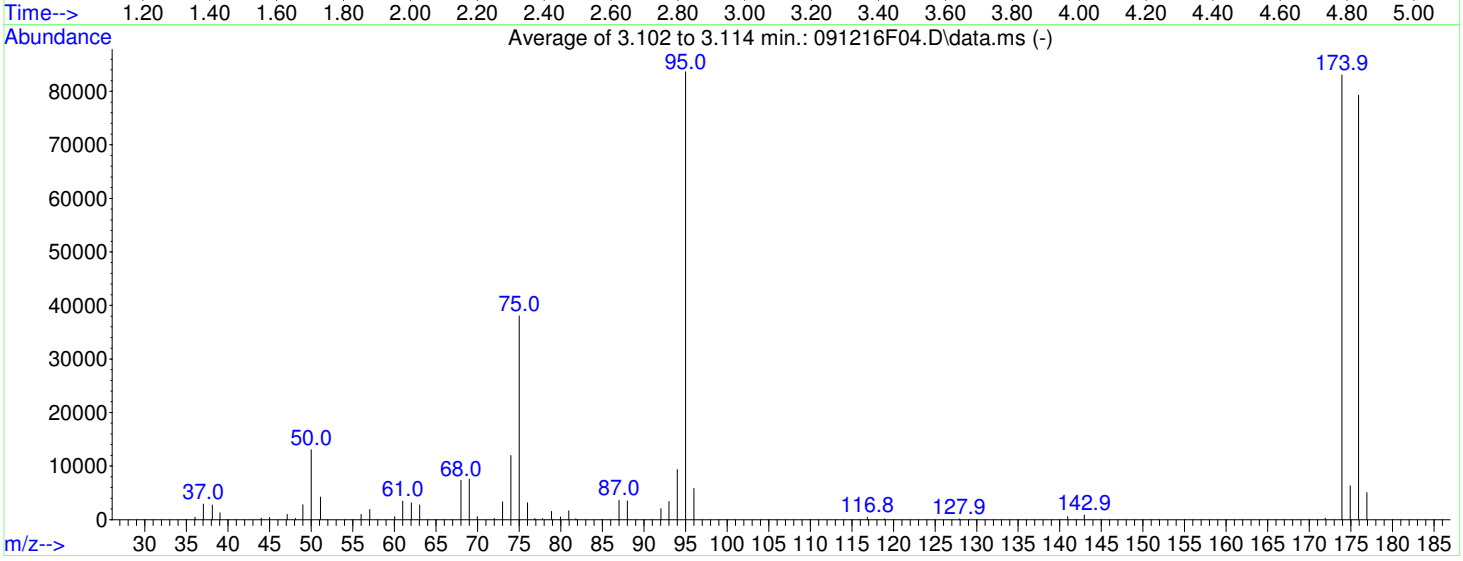
Table of Contents

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F04.D
Acq On : 12 Sep 2016 14:30
InstName : HP5973F
Operator : YNB
Sample : S16I043-TUN1
Misc : 0.5ng EM 1153V
ALS Vial : 50 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\2016\method\091216FVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Tue Aug 30 08:59:22 2016





AutoFind: Scans 250, 251, 252; Background Corrected with Scan 245

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.6	13049	PASS
75	95	30	60	45.5	38037	PASS
95	95	100	100	100.0	83677	PASS
96	95	5	9	7.0	5846	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	99.3	83069	PASS
175	174	5	9	7.6	6312	PASS
176	174	95	101	95.5	79304	PASS
177	176	5	9	6.4	5047	PASS

Average of 3.102 to 3.114 min.: 091216F04.D\data.ms
S16I043-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	432	56.00	1000	74.00	11985	92.05	2062
37.05	2912	57.05	1881	75.00	38037	93.00	3376
38.10	2748	60.05	550	76.00	3149	94.00	9339
39.05	1303	61.00	3417	76.90	198	95.00	83677
44.00	296	62.05	3144	77.80	186	96.00	5846
45.00	416	63.05	2716	78.90	1531	116.85	427
47.10	986	68.00	7318	79.95	490	118.90	181
48.10	212	69.00	7549	80.95	1629	127.90	167
49.00	2752	69.95	558	81.80	175	140.95	574
50.00	13049	72.00	213	87.00	3597	142.95	896
51.10	4235	73.00	3317	88.00	3525	171.90	277

Average of 3.102 to 3.114 min.: 091216F04.D\data.ms
S16I043-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
173.90	83069						
174.90	6312						
175.90	79304						
176.90	5047						

S16I043-CAL1

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F07.D
Acq On : 12 Sep 2016 15:57
Operator : YNB
Sample : S16I043-CAL1
Misc : 0.5ug/L, WATER
ALS Vial : 13 Sample Multiplier: 1

M.I. Performed By:
YNB at 8:55 am, Sep 13, 2016

M.I. Approved By:
ZAR at 3:10 pm, Sep 20, 2016

Quant Time: Sep 13 08:54:46 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:07:52 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.807	53	104363	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2104197	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1435549	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.238	65	274618	5.03	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	=	100.60%	
39) Toluene-d8	10.371	98	1929722	5.02	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	=	100.40%	
56) 4-Bromofluorobenzene	14.842	95	652094	4.83	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	=	96.60%	
70) 1,2-Dichlorobenzene-d4	17.544	152	711001	4.85	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	=	97.00%	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.465	85	61977	0.53	ug/L	99
3) Chloromethane	1.641	50	61570m	0.53	ug/L	
4) Vinyl chloride	1.751	62	56100	0.50	ug/L	96
5) Bromomethane	2.097	94	20286	0.43	ug/L	83
6) Chloroethane	2.213	64	34095	0.51	ug/L	99
7) Trichlorofluoromethane	2.505	101	81538	0.51	ug/L	98
8) 1,1-Dichloroethene	3.132	96	50917	0.50	ug/L	98
9) 1,1,2-Trichloro-1,2,2-...	3.162	101	50111	0.51	ug/L	99
10) Acetone	3.247	43	30922	5.04	ug/L	84
11) Carbon disulfide	3.393	76	144578	0.52	ug/L	99
12) Dichloromethane	3.843	84	50341	0.55	ug/L #	14
13) tert-Butyl alcohol	4.190	59	13126	9.66	ug/L #	81
14) trans-1,2-Dichloroethene	4.281	96	57187	0.50	ug/L	100
15) tert-Butyl methyl ethe...	4.342	73	217714	1.91	ug/L	97
16) 1,1-Dichloroethane	4.963	63	83161	0.50	ug/L	99
17) Diisopropyl ether	5.188	45	396794	2.01	ug/L	98
18) Ethyl-tert-butyl ether	5.778	59	276149	1.91	ug/L	100
19) 2,2-Dichloropropane	5.893	77	51241	0.49	ug/L	99
20) cis-1,2-Dichloroethene	5.918	96	59268	0.50	ug/L	99
21) 2-Butanone (MEK)	6.021	43	35868	3.82	ug/L	98
22) Bromochloromethane	6.295	128	20923	0.49	ug/L	98
23) Chloroform	6.465	83	86094	0.50	ug/L	99
25) 1,1,1-Trichloroethane	6.703	97	76672	0.50	ug/L	98
26) Carbon tetrachloride	6.964	117	66729	0.48	ug/L	99
27) 1,1-Dichloropropene	6.976	75	75010	0.50	ug/L	99
29) Benzene	7.305	78	223356	0.50	ug/L	100
30) 1,2-Dichloroethane	7.360	62	38498	0.50	ug/L	99
31) tert-Amyl methyl ether	7.591	73	223380	1.90	ug/L	97
32) Trichloroethene	8.376	95	59781	0.50	ug/L	99
33) 1,2-Dichloropropane	8.728	63	41091	0.49	ug/L	99
34) Dibromomethane	8.911	93	16848	0.49	ug/L	99
35) Bromodichloromethane	9.209	83	48991	0.48	ug/L	99
36) cis-1,3-Dichloropropene	9.951	75	41881	0.41	ug/L	99
38) 4-Methyl-2-pentanone (...	10.280	43	75817	3.24	ug/L	97
40) Toluene	10.480	92	131588	0.48	ug/L	99
41) trans-1,3-Dichloropropene	10.894	75	23620	0.39	ug/L	98
42) 1,1,2-Trichloroethane	11.180	83	18802	0.48	ug/L	97
43) Tetrachloroethene	11.381	166	63284	0.48	ug/L	98
44) 1,3-Dichloropropane	11.448	76	37454	0.46	ug/L	96
45) 2-Hexanone	11.679	43	47646	3.17	ug/L	91
46) Chlorodibromomethane	11.807	129	26612	0.44	ug/L	98
47) 1,2-Dibromoethane (EDB)	11.965	107	19058	0.45	ug/L #	98

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F07.D
Acq On : 12 Sep 2016 15:57
Operator : YNB
Sample : S16I043-CAL1
Misc : 0.5ug/L, WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 13 08:54:46 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:07:52 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) Chlorobenzene	12.829	112	148597	0.48 ug/L	94
49) 1,1,1,2-Tetrachloroethane	12.993	131	40941	0.47 ug/L	98
50) Ethylbenzene	13.054	91	225846	0.42 ug/L	100
51) m&p-Xylene	13.267	106	191183	0.85 ug/L	100
52) o-Xylene	13.942	106	77890	0.39 ug/L	97
53) Styrene	13.972	104	131765	0.40 ug/L	99
54) Bromoform	14.240	173	14019	0.42 ug/L	99
55) Isopropylbenzene	14.611	105	210943	0.39 ug/L	100
57) Bromobenzene	15.067	156	56367	0.45 ug/L	98
58) 1,1,2,2-Tetrachloroethane	15.159	83	24439	0.48 ug/L	98
59) 1,2,3-Trichloropropane	15.195	75	16452	0.46 ug/L	99
60) Propylbenzene	15.335	91	284877	0.42 ug/L	100
61) 2-Chlorotoluene	15.439	91	178408	0.45 ug/L	99
62) 4-Chlorotoluene	15.639	91	195009	0.43 ug/L	99
63) 1,3,5-Trimethylbenzene	15.670	105	214478	0.43 ug/L	99
64) tert-Butylbenzene	16.236	119	171514	0.41 ug/L	97
65) 1,2,4-Trimethylbenzene	16.321	105	211479	0.42 ug/L	99
66) sec-Butylbenzene	16.631	105	277696	0.42 ug/L	99
67) 1,3-Dichlorobenzene	16.759	146	136237	0.46 ug/L	99
68) p-Isopropyltoluene	16.917	119	236876	0.40 ug/L	98
69) 1,4-Dichlorobenzene	16.929	146	133730	0.46 ug/L	99
71) 1,2-Dichlorobenzene	17.580	146	116418	0.49 ug/L	95
72) Butylbenzene	17.647	91	242468	0.44 ug/L	99
73) 1,2-Dibromo-3-chloropr...	18.991	75	11915	1.85 ug/L	99
74) 1,2,4-Trichlorobenzene	20.500	180	72469	0.43 ug/L	97
75) Hexachlorobutadiene	20.865	225	67955	0.54 ug/L	99
76) Naphthalene	20.920	128	58257	0.35 ug/L	97
77) 1,2,3-Trichlorobenzene	21.370	180	57234	0.45 ug/L	99

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

Quantitation Report (QT Reviewed)

ata Path : C:\msdchem\1\2016\data\091216FW\
ata File : 091216F07.D
cq On : 12 Sep 2016 15:57
perator : YNB
ample : S16I043-CAL1
isc : 0.5ug/L, WATER
LS Vial : 13 Sample Multiplier: 1

_uant Time: Sep 13 08:54:46 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:07:52 2016
Response via : Initial Calibration

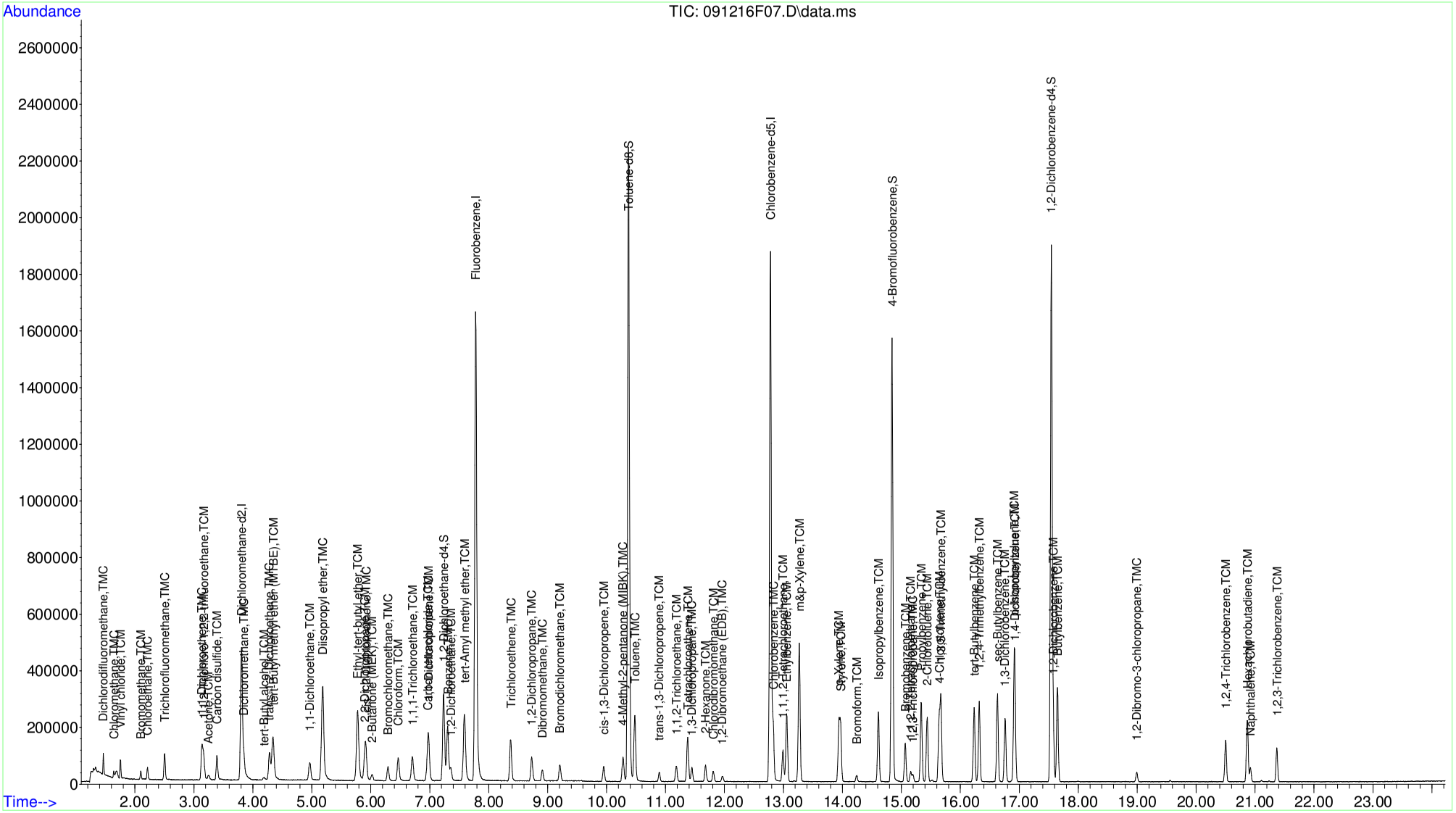
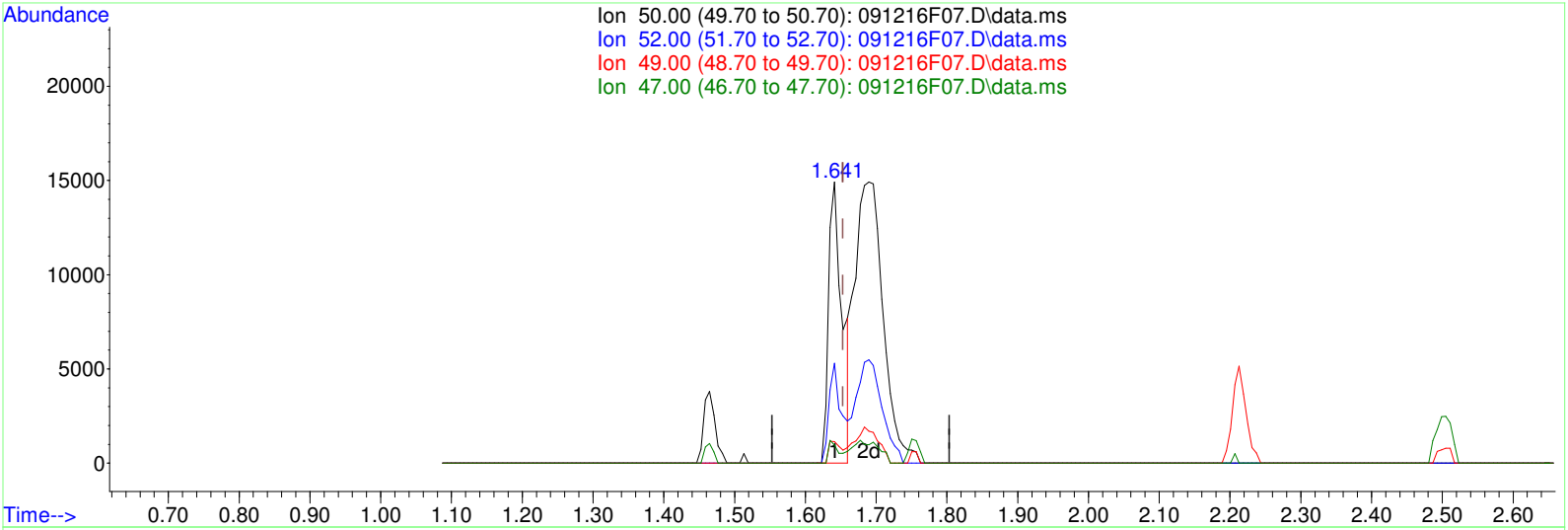


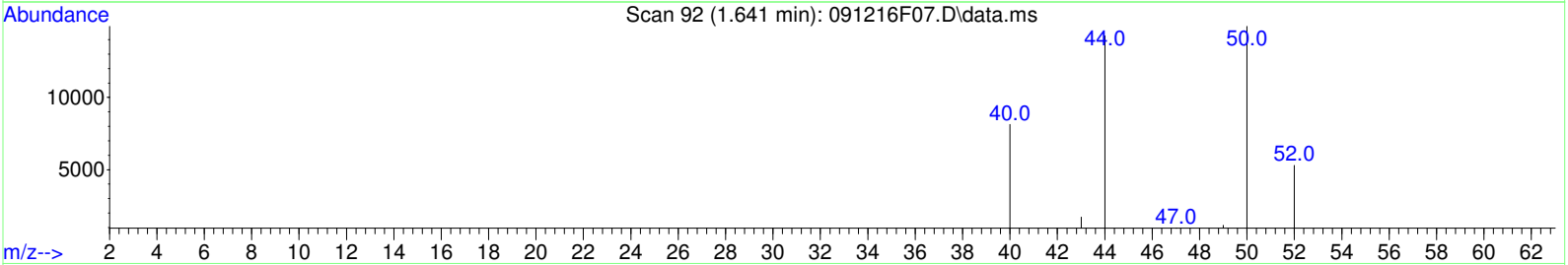
Table of Contents

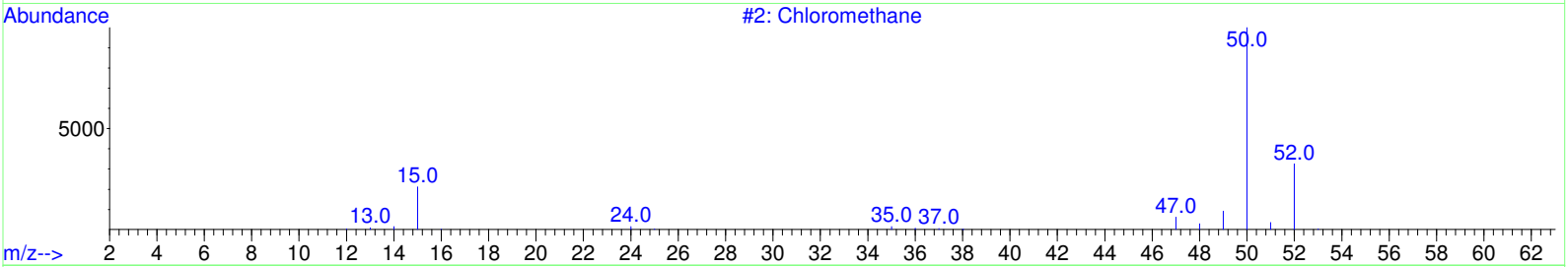
Table of Contents

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F07.D
Acq On : 12 Sep 2016 15:57
Operator : YNB
Sample : S16I043-CAL1
Misc : 0.5ug/L, WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 13 08:54:46 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:07:52 2016
Response via : Initial Calibration







TIC: 091216F07.D\data.ms

(3) Chloromethane (TMC)

1.641min (-0.012) 0.17 ug/L

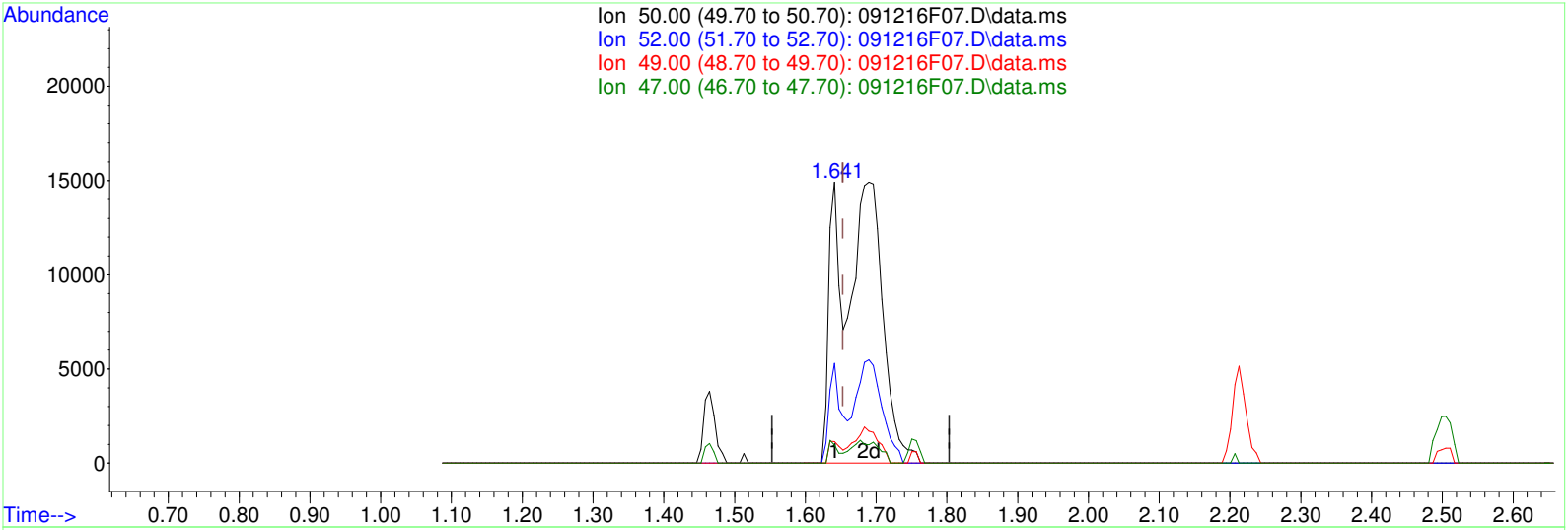
response 19965

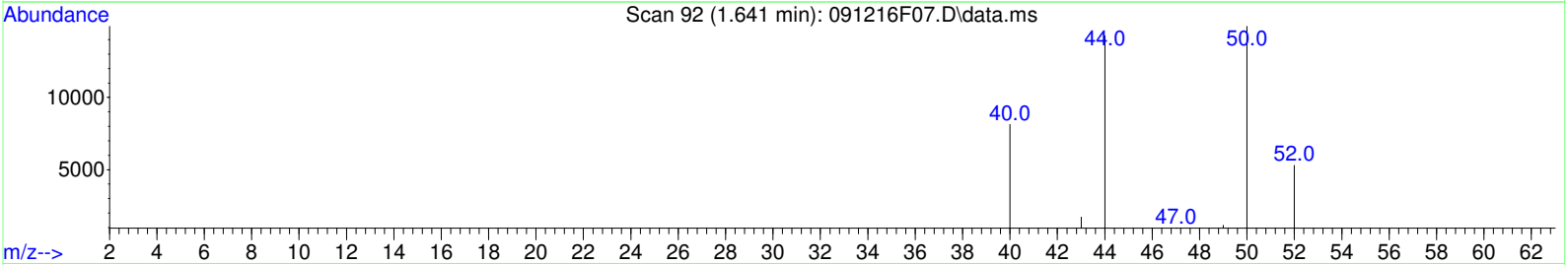
Ion	Exp%	Act%
50.00	100.00	100.00
52.00	32.80	32.69
49.00	9.60	7.17
47.00	6.90	5.91

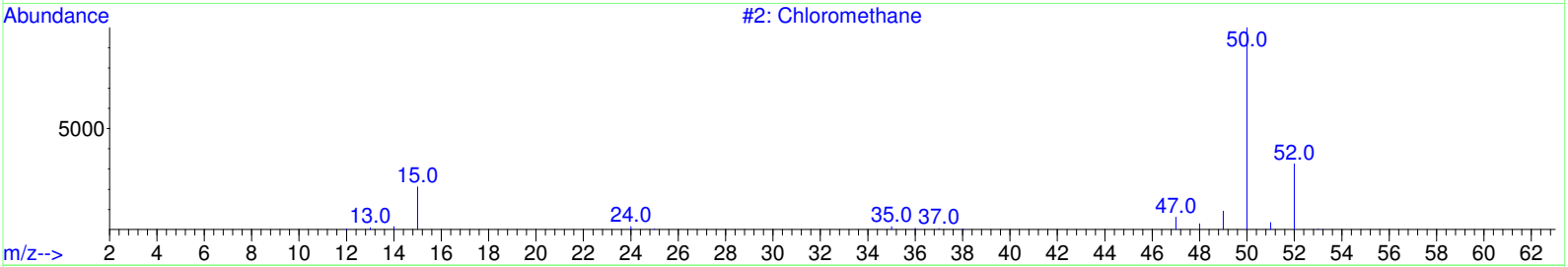
Before MI:
Peak CROPPED

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F07.D
Acq On : 12 Sep 2016 15:57
Operator : YNB
Sample : S16I043-CAL1
Misc : 0.5ug/L, WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 13 08:54:46 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:07:52 2016
Response via : Initial Calibration







TIC: 091216F07.D\data.ms

(3) Chloromethane (TMC)

1.641min (-0.012) 0.53 ug/L m

response 61570

Ion	Exp%	Act%
50.00	100.00	100.00
52.00	32.80	10.60#
49.00	9.60	2.33
47.00	6.90	1.92

M.I. Performed By:

YNB at 8:56 am, Sep 13, 2016

M.I. Approved By:

ZAR at 3:10 pm, Sep 20, 2016

Before Manual Integration

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F07.D
Acq On : 12 Sep 2016 15:57
Operator : YNB
Sample : S16I043-CAL1
Misc : 0.5ug/L, WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 13 08:54:46 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:07:52 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.807	53	104363	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2104197	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1435549	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.238	65	274618	5.03	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 100.60%		
39) Toluene-d8	10.371	98	1929722	5.02	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.40%		
56) 4-Bromofluorobenzene	14.842	95	652094	4.83	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 96.60%		
70) 1,2-Dichlorobenzene-d4	17.544	152	711001	4.85	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 97.00%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.465	85	61977	0.53	ug/L	99
4) Vinyl chloride	1.751	62	56100	0.50	ug/L	96
5) Bromomethane	2.097	94	20286	0.43	ug/L	83
6) Chloroethane	2.213	64	34095	0.51	ug/L	99
7) Trichlorofluoromethane	2.505	101	81538	0.51	ug/L	98
8) 1,1-Dichloroethene	3.132	96	50917	0.50	ug/L	98
9) 1,1,2-Trichloro-1,2,2-...	3.162	101	50111	0.51	ug/L	99
10) Acetone	3.247	43	30922	5.04	ug/L	84
11) Carbon disulfide	3.393	76	144578	0.52	ug/L	99
12) Dichloromethane	3.843	84	50341	0.55	ug/L #	14
13) tert-Butyl alcohol	4.190	59	13126	9.66	ug/L #	81
14) trans-1,2-Dichloroethene	4.281	96	57187	0.50	ug/L	100
15) tert-Butyl methyl ethe...	4.342	73	217714	1.91	ug/L	97
16) 1,1-Dichloroethane	4.963	63	83161	0.50	ug/L	99
17) Diisopropyl ether	5.188	45	396794	2.01	ug/L	98
18) Ethyl-tert-butyl ether	5.778	59	276149	1.91	ug/L	100
19) 2,2-Dichloropropane	5.893	77	51241	0.49	ug/L	99
20) cis-1,2-Dichloroethene	5.918	96	59268	0.50	ug/L	99
21) 2-Butanone (MEK)	6.021	43	35868	3.82	ug/L	98
22) Bromochloromethane	6.295	128	20923	0.49	ug/L	98
23) Chloroform	6.465	83	86094	0.50	ug/L	99
25) 1,1,1-Trichloroethane	6.703	97	76672	0.50	ug/L	98
26) Carbon tetrachloride	6.964	117	66729	0.48	ug/L	99
27) 1,1-Dichloropropene	6.976	75	75010	0.50	ug/L	99
29) Benzene	7.305	78	223356	0.50	ug/L	100
30) 1,2-Dichloroethane	7.360	62	38498	0.50	ug/L	99
31) tert-Amyl methyl ether	7.591	73	223380	1.90	ug/L	97
32) Trichloroethene	8.376	95	59781	0.50	ug/L	99
33) 1,2-Dichloropropane	8.728	63	41091	0.49	ug/L	99
34) Dibromomethane	8.911	93	16848	0.49	ug/L	99
35) Bromodichloromethane	9.209	83	48991	0.48	ug/L	99
36) cis-1,3-Dichloropropene	9.951	75	41881	0.41	ug/L	99
38) 4-Methyl-2-pentanone (...	10.280	43	75817	3.24	ug/L	97
40) Toluene	10.480	92	131588	0.48	ug/L	99
41) trans-1,3-Dichloropropene	10.894	75	23620	0.39	ug/L	98
42) 1,1,2-Trichloroethane	11.180	83	18802	0.48	ug/L	97
43) Tetrachloroethene	11.381	166	63284	0.48	ug/L	98
44) 1,3-Dichloropropane	11.448	76	37454	0.46	ug/L	96
45) 2-Hexanone	11.679	43	47646	3.17	ug/L	91
46) Chlorodibromomethane	11.807	129	26612	0.44	ug/L	98
47) 1,2-Dibromoethane (EDB)	11.965	107	19058	0.45	ug/L #	98
48) Chlorobenzene	12.829	112	148597	0.48	ug/L	94

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F07.D
Acq On : 12 Sep 2016 15:57
Operator : YNB
Sample : S16I043-CAL1
Misc : 0.5ug/L, WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 13 08:54:46 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:07:52 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 1,1,1,2-Tetrachloroethane	12.993	131	40941	0.47 ug/L	98
50) Ethylbenzene	13.054	91	225846	0.42 ug/L	100
51) m&p-Xylene	13.267	106	191183	0.85 ug/L	100
52) o-Xylene	13.942	106	77890	0.39 ug/L	97
53) Styrene	13.972	104	131765	0.40 ug/L	99
54) Bromoform	14.240	173	14019	0.42 ug/L	99
55) Isopropylbenzene	14.611	105	210943	0.39 ug/L	100
57) Bromobenzene	15.067	156	56367	0.45 ug/L	98
58) 1,1,2,2-Tetrachloroethane	15.159	83	24439	0.48 ug/L	98
59) 1,2,3-Trichloropropane	15.195	75	16452	0.46 ug/L	99
60) Propylbenzene	15.335	91	284877	0.42 ug/L	100
61) 2-Chlorotoluene	15.439	91	178408	0.45 ug/L	99
62) 4-Chlorotoluene	15.639	91	195009	0.43 ug/L	99
63) 1,3,5-Trimethylbenzene	15.670	105	214478	0.43 ug/L	99
64) tert-Butylbenzene	16.236	119	171514	0.41 ug/L	97
65) 1,2,4-Trimethylbenzene	16.321	105	211479	0.42 ug/L	99
66) sec-Butylbenzene	16.631	105	277696	0.42 ug/L	99
67) 1,3-Dichlorobenzene	16.759	146	136237	0.46 ug/L	99
68) p-Isopropyltoluene	16.917	119	236876	0.40 ug/L	98
69) 1,4-Dichlorobenzene	16.929	146	133730	0.46 ug/L	99
71) 1,2-Dichlorobenzene	17.580	146	116418	0.49 ug/L	95
72) Butylbenzene	17.647	91	242468	0.44 ug/L	99
73) 1,2-Dibromo-3-chloropr...	18.991	75	11915	1.85 ug/L	99
74) 1,2,4-Trichlorobenzene	20.500	180	72469	0.43 ug/L	97
75) Hexachlorobutadiene	20.865	225	67955	0.54 ug/L	99
76) Naphthalene	20.920	128	58257	0.35 ug/L	97
77) 1,2,3-Trichlorobenzene	21.370	180	57234	0.45 ug/L	99

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

Quantitation Report (Not Reviewed)

ata Path : C:\msdchem\1\2016\data\091216FW\
ata File : 091216F07.D
cq On : 12 Sep 2016 15:57
perator : YNB
ample : S16I043-CAL1
isc : 0.5ug/L, WATER
LS Vial : 13 Sample Multiplier: 1

_uant Time: Sep 13 08:54:46 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:07:52 2016
Response via : Initial Calibration

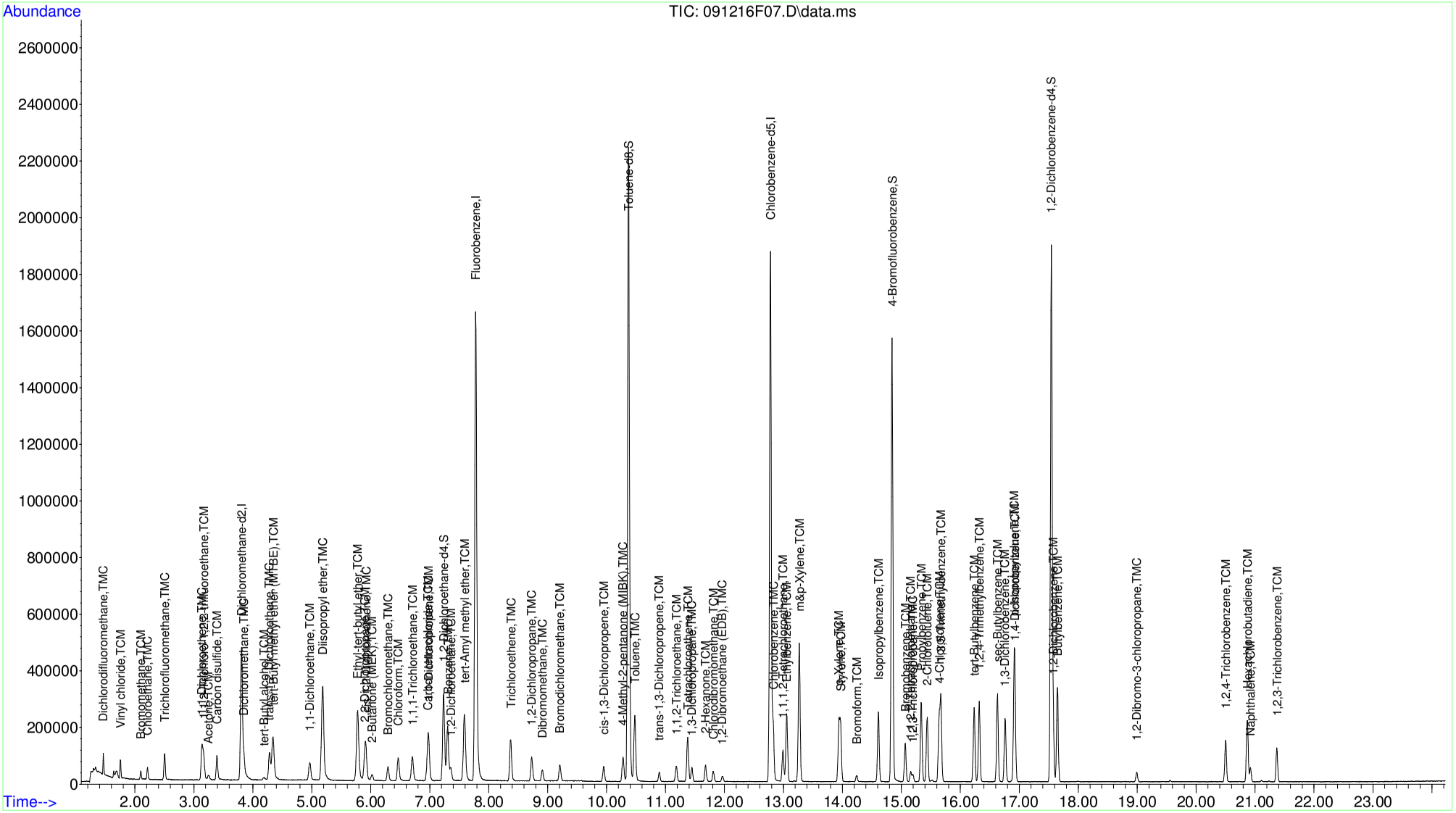
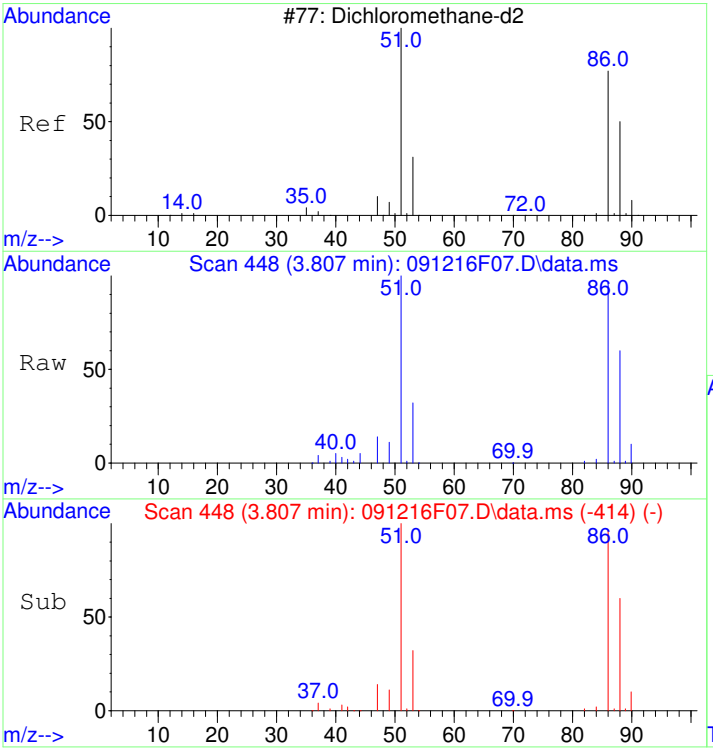


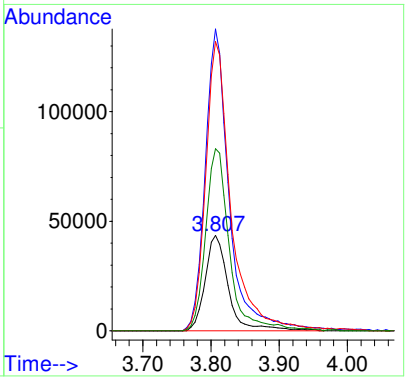
Table of Contents

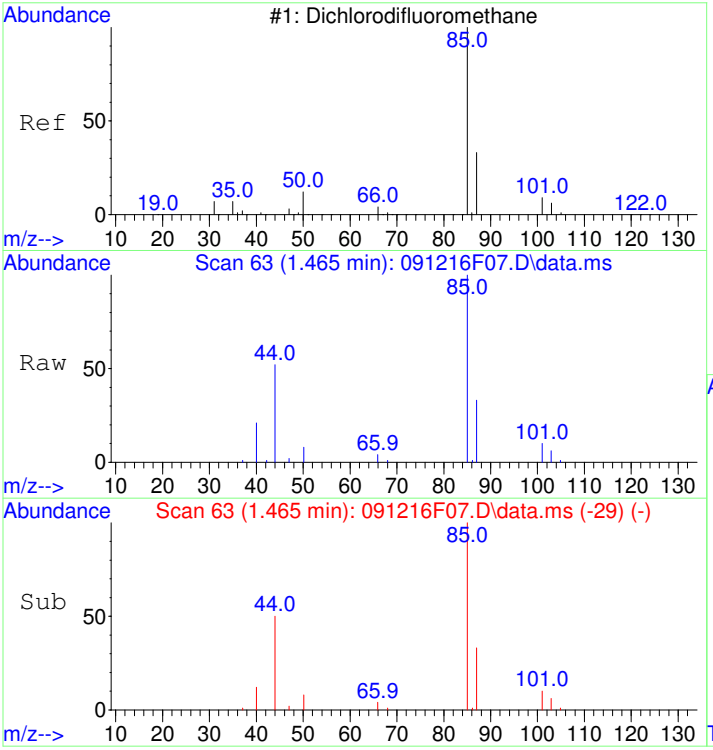


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.807 min Scan# 448
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 53 Resp: 104363

Ion	Ratio	Lower	Upper
53	100		
51	327.6	428.6	468.6#
86	330.4	0.0	20.0#
88	195.6	219.5	259.5#

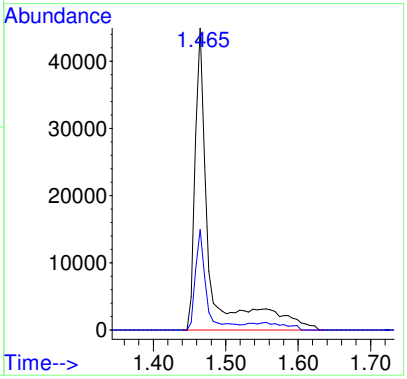


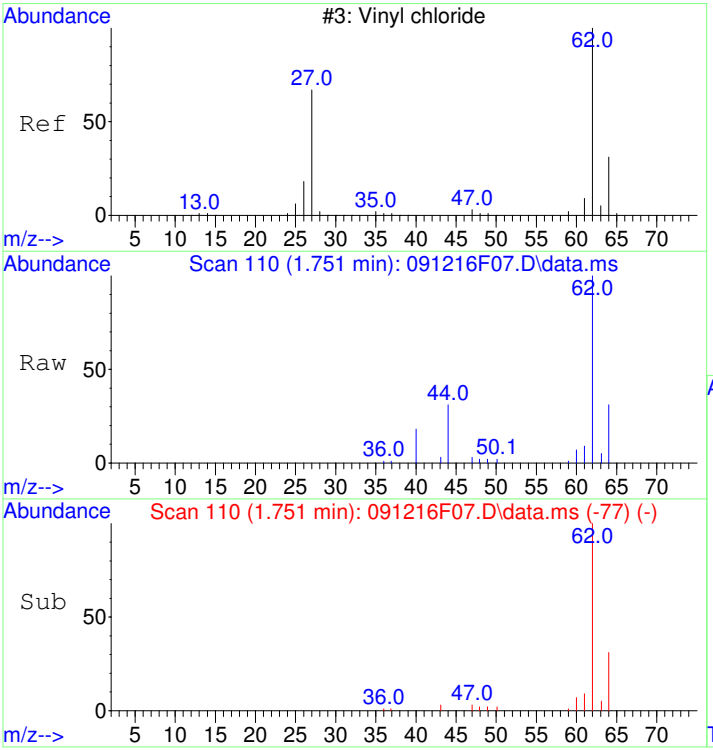


#2
Dichlorodifluoromethane
Concen: 0.53 ug/L
RT: 1.465 min Scan# 63
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 85 Resp: 61977

Ion	Ratio	Lower	Upper
85	100		
87	31.7	12.3	52.3

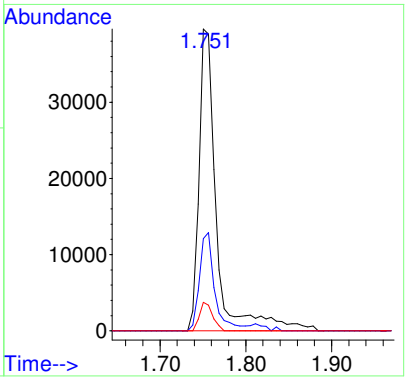


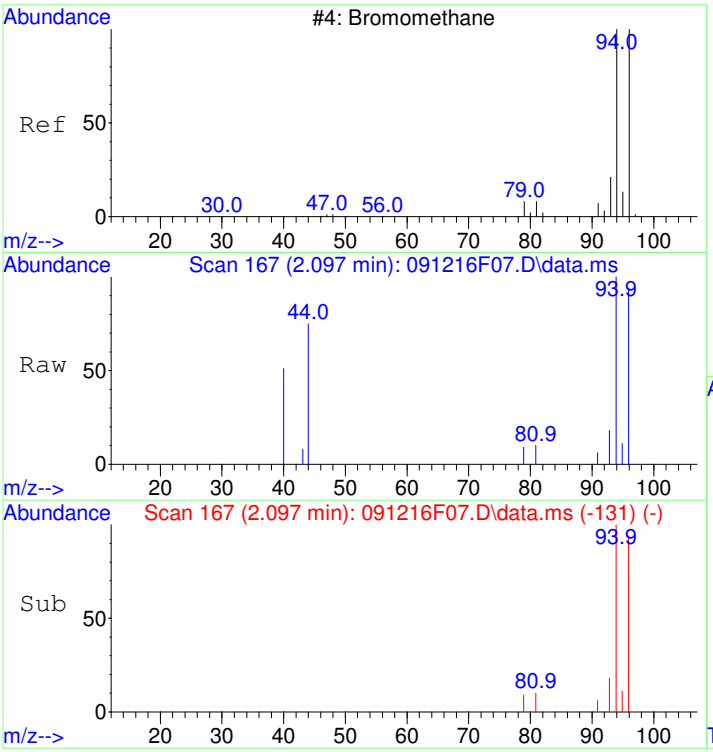


#4
Vinyl chloride
Concen: 0.50 ug/L
RT: 1.751 min Scan# 110
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 62 Resp: 56100

Ion	Ratio	Lower	Upper
62	100		
64	30.5	12.6	52.6
61	7.1	0.0	28.1

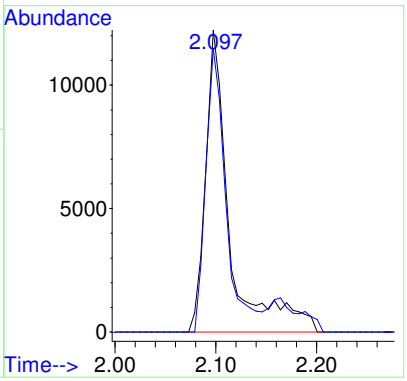


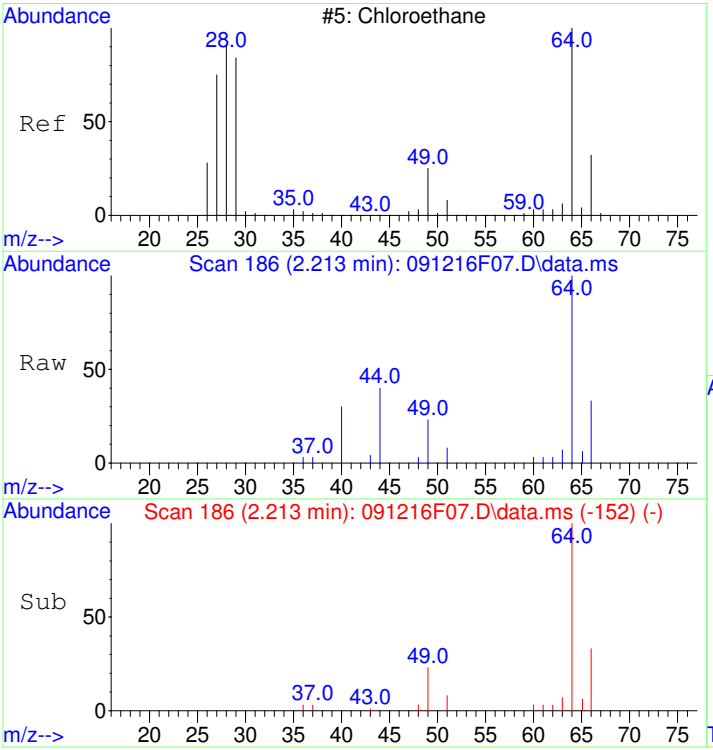


#5
Bromomethane
Concen: 0.43 ug/L
RT: 2.097 min Scan# 167
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 94 Resp: 20286

Ion	Ratio	Lower	Upper
94	100		
96	78.8	75.0	115.0

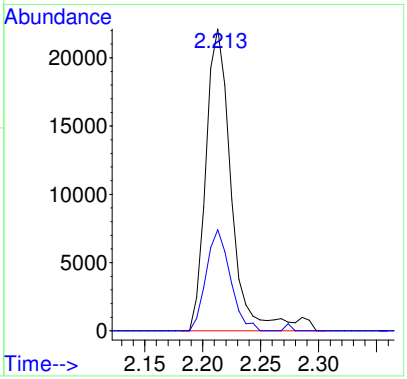


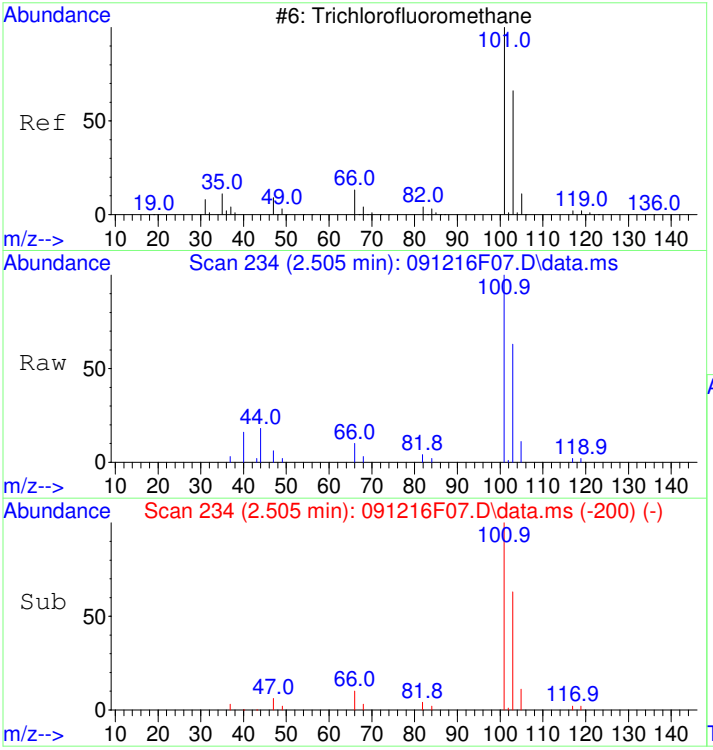


#6
Chloroethane
Concen: 0.51 ug/L
RT: 2.213 min Scan# 186
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 64 Resp: 34095

Ion	Ratio	Lower	Upper
64	100		
66	31.5	12.1	52.1

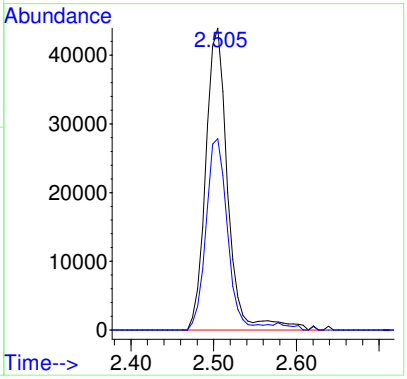


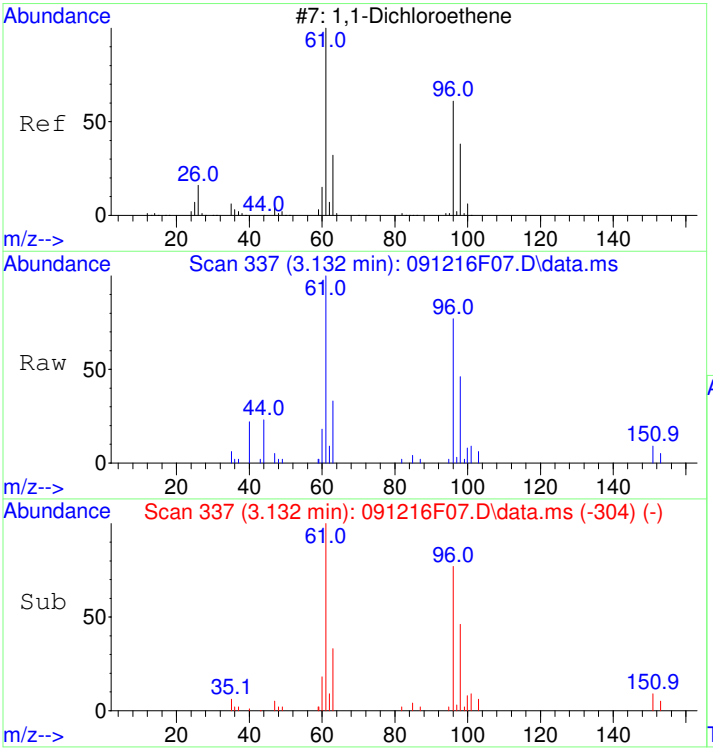


#7
Trichlorofluoromethane
Concen: 0.51 ug/L
RT: 2.505 min Scan# 234
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:101 Resp: 81538

Ion	Ratio	Lower	Upper
101	100		
103	63.7	45.1	85.1

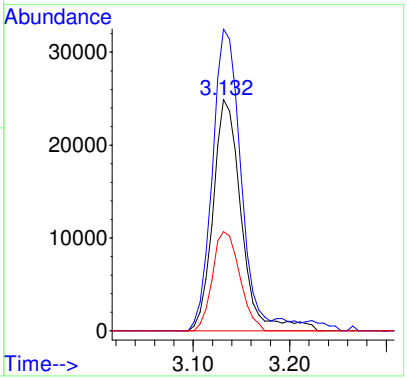


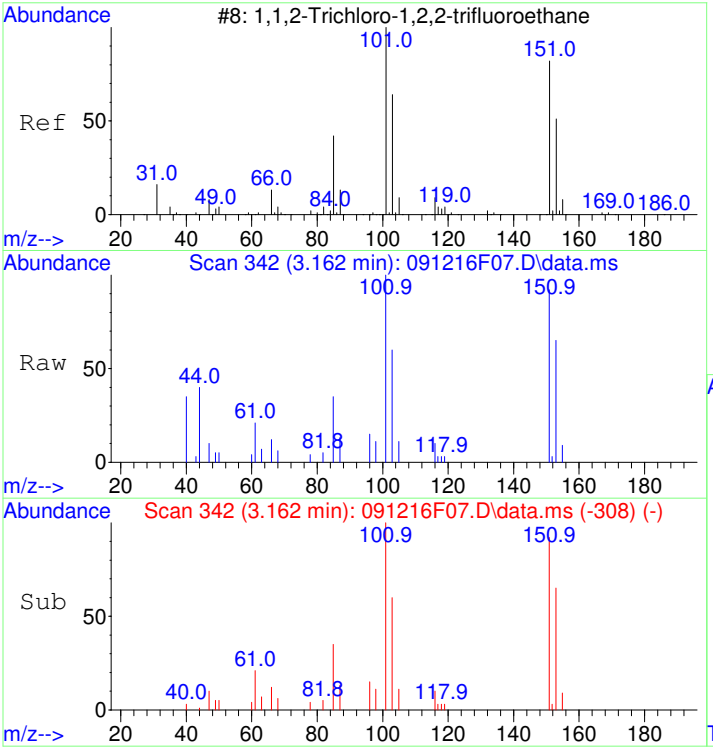


#8
1,1-Dichloroethene
Concen: 0.50 ug/L
RT: 3.132 min Scan# 337
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 96 Resp: 50917

Ion	Ratio	Lower	Upper
96	100		
61	136.3	115.4	155.4
63	41.2	24.0	64.0

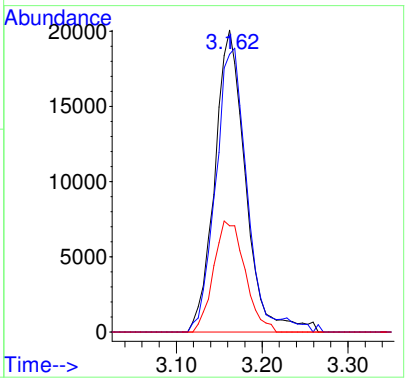


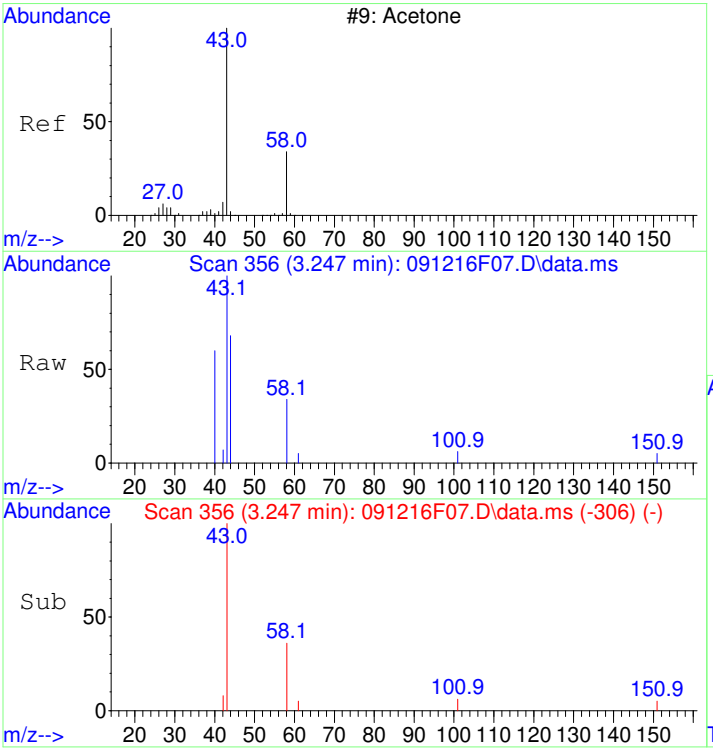


#9
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 0.51 ug/L
RT: 3.162 min Scan# 342
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:101 Resp: 50111

Ion	Ratio	Lower	Upper
101	100		
151	96.4	76.3	116.3
85	37.4	18.8	58.8

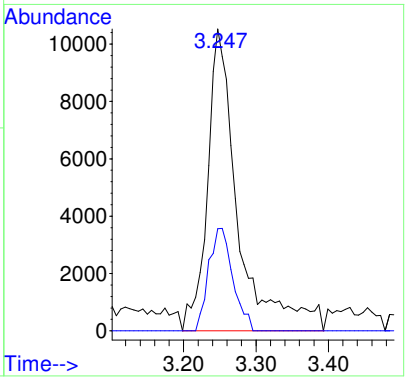


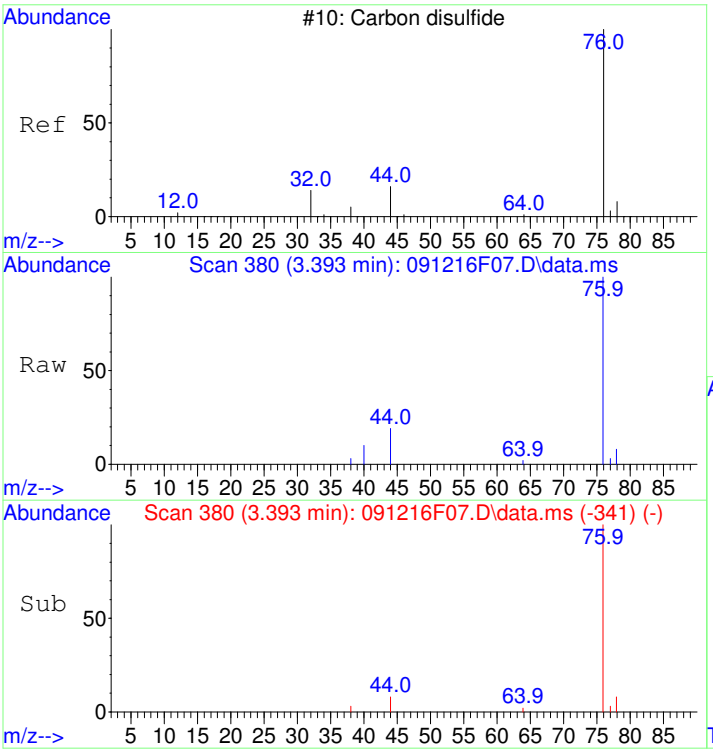


#10
Acetone
Concen: 5.04 ug/L
RT: 3.247 min Scan# 356
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 43 Resp: 30922

Ion	Ratio	Lower	Upper
43	100		
58	26.8	16.3	56.3

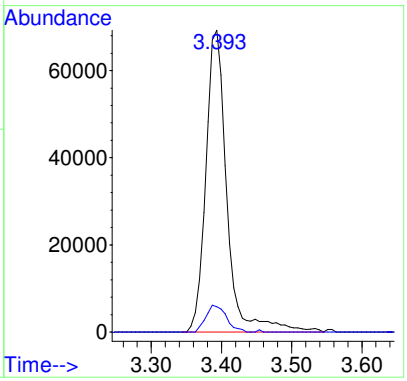


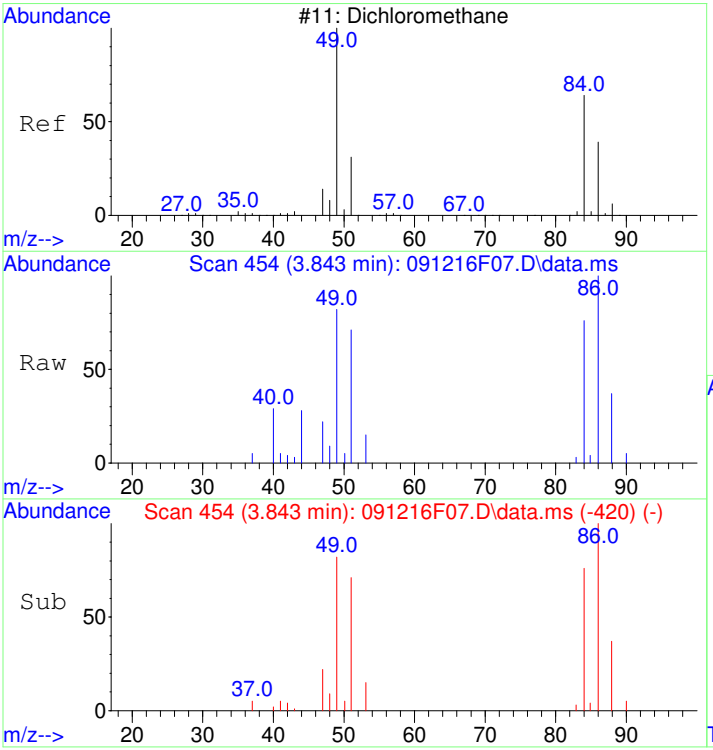


#11
Carbon disulfide
Concen: 0.52 ug/L
RT: 3.393 min Scan# 380
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 76 Resp: 144578

Ion	Ratio	Lower	Upper
76	100		
78	8.7	0.0	29.2

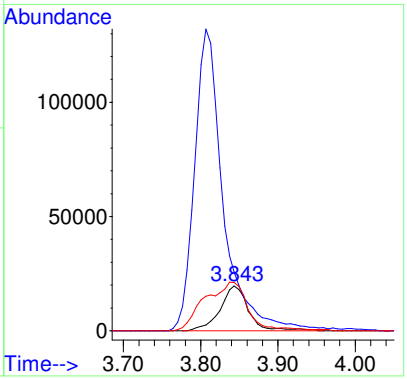


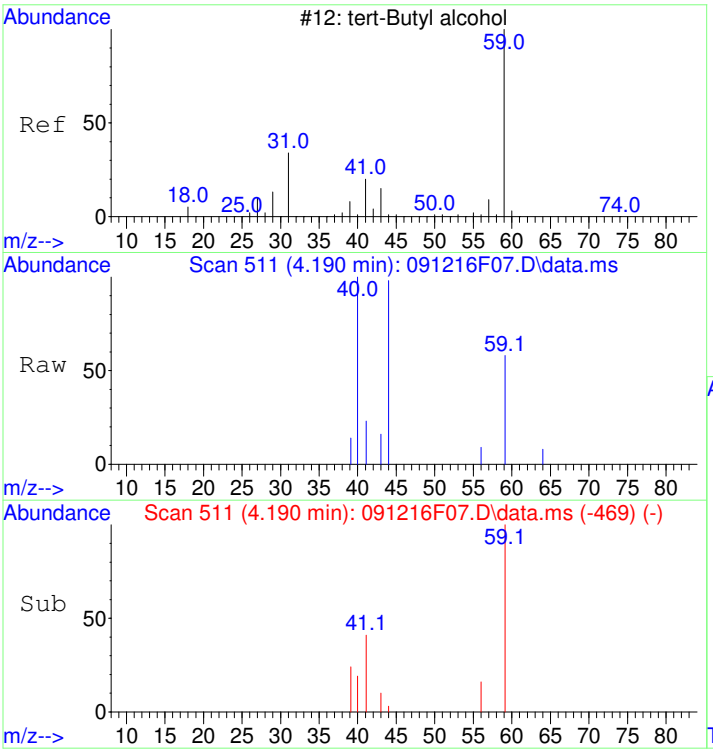


#12
Dichloromethane
Concen: 0.55 ug/L
RT: 3.843 min Scan# 454
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 84 Resp: 50341

Ion	Ratio	Lower	Upper
84	100		
86	0.0	113.2	153.2#
49	166.7	90.1	130.1#

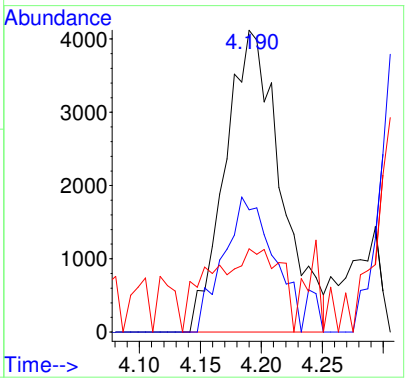


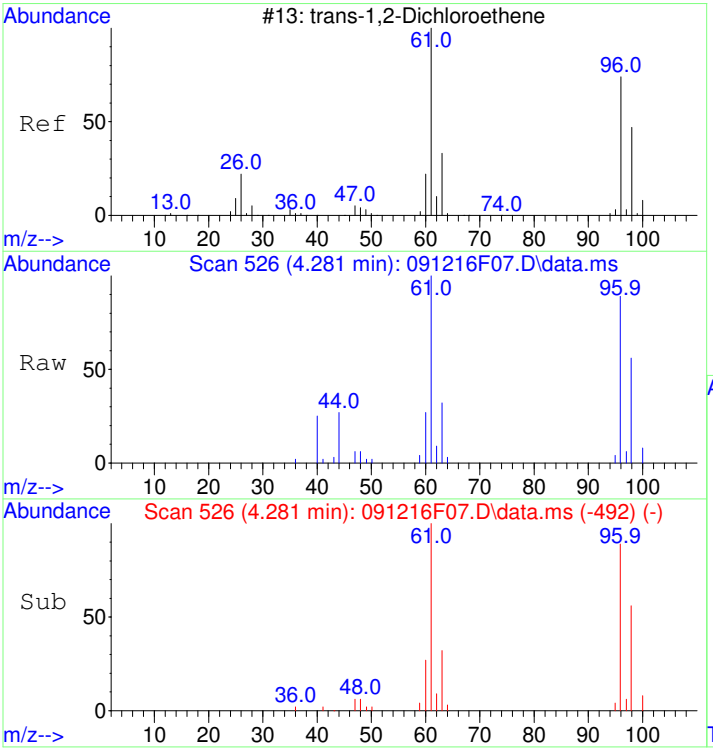


#13
tert-Butyl alcohol
Concen: 9.66 ug/L
RT: 4.190 min Scan# 511
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 59 Resp: 13126

Ion	Ratio	Lower	Upper
59	100		
41	40.1	16.5	56.5
43	34.8	0.0	31.9#

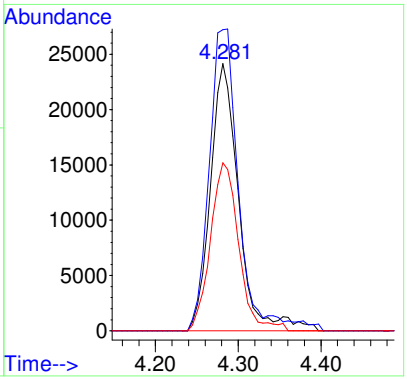


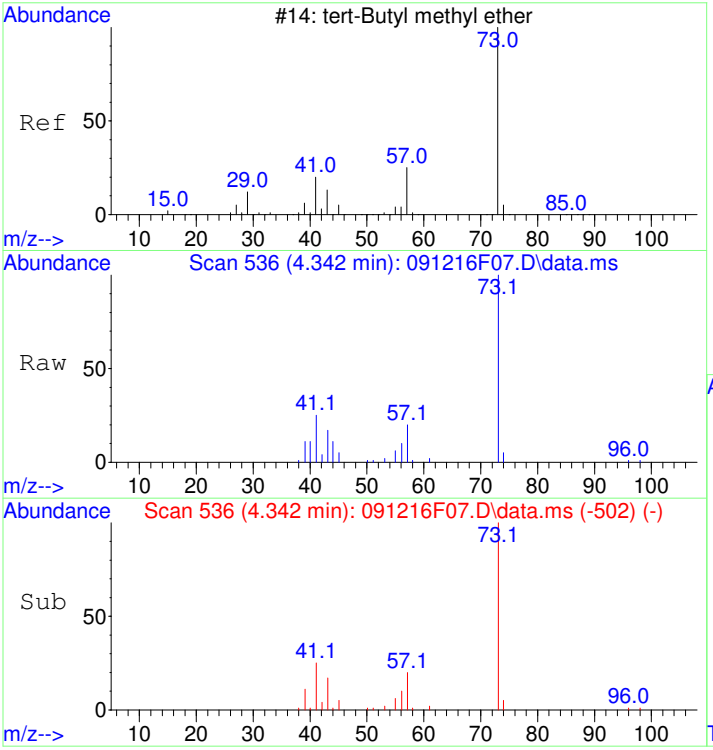


#14
trans-1,2-Dichloroethene
Concen: 0.50 ug/L
RT: 4.281 min Scan# 526
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 96 Resp: 57187

Ion	Ratio	Lower	Upper
96	100		
61	118.0	98.1	138.1
98	62.9	43.5	83.5

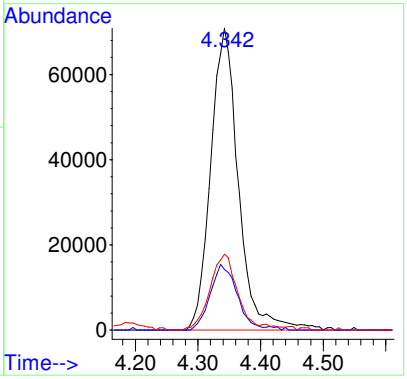


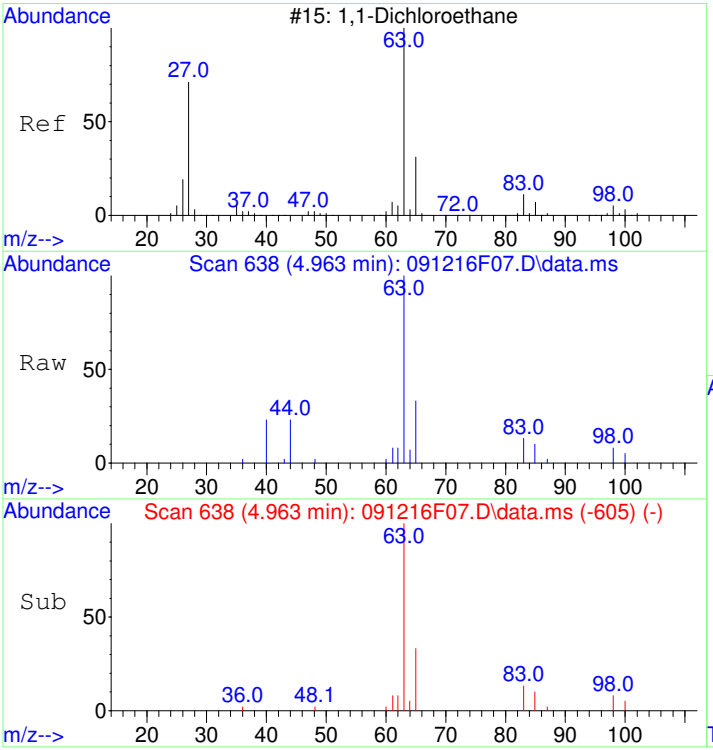


#15
tert-Butyl methyl ether (MTBE)
Concen: 1.91 ug/L
RT: 4.342 min Scan# 536
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 73 Resp: 217714

Ion	Ratio	Lower	Upper
73	100		
57	21.5	1.0	41.0
41	25.9	3.6	43.6

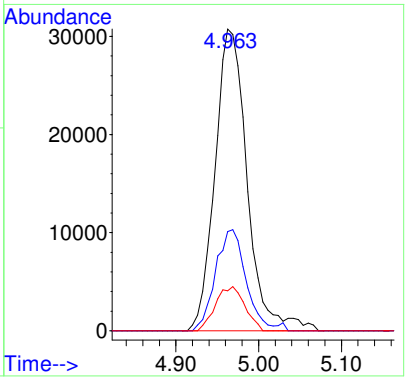


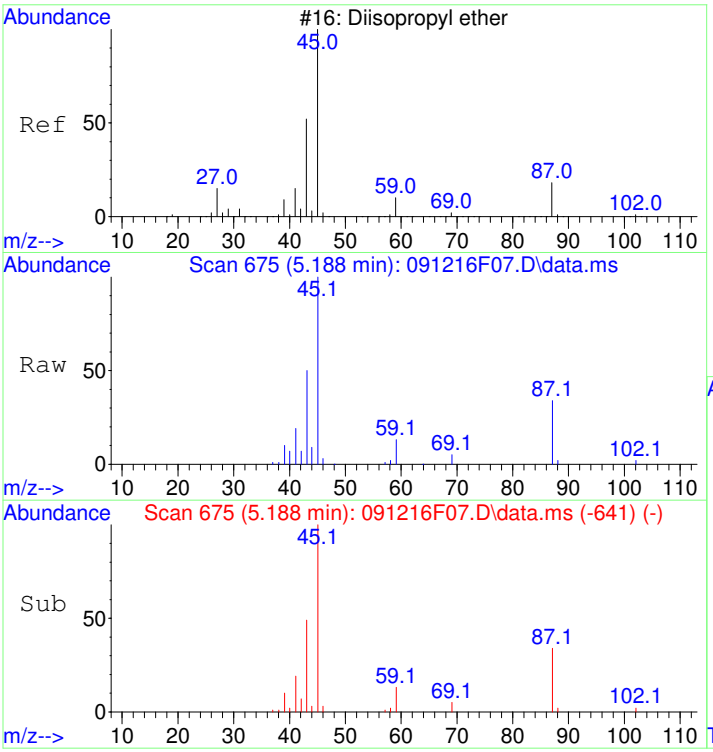


#16
1,1-Dichloroethane
Concen: 0.50 ug/L
RT: 4.963 min Scan# 638
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 63 Resp: 83161

Ion	Ratio	Lower	Upper
63	100		
65	32.0	12.2	52.2
83	13.3	0.0	33.8

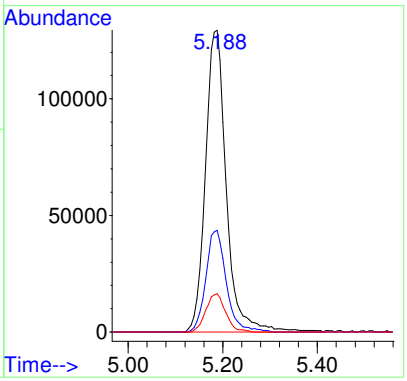


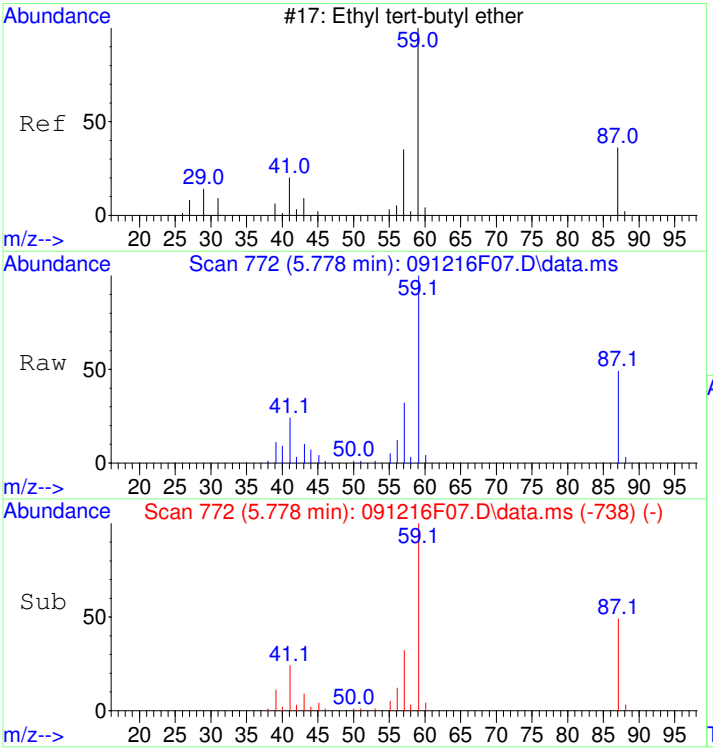


#17
Diisopropyl ether
Concen: 2.01 ug/L
RT: 5.188 min Scan# 675
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 45 Resp: 396794

Ion	Ratio	Lower	Upper
45	100		
87	33.0	14.6	54.6
59	12.1	0.0	32.6

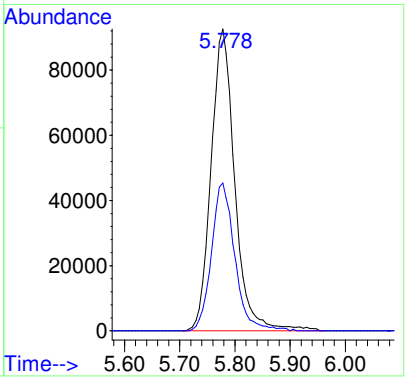


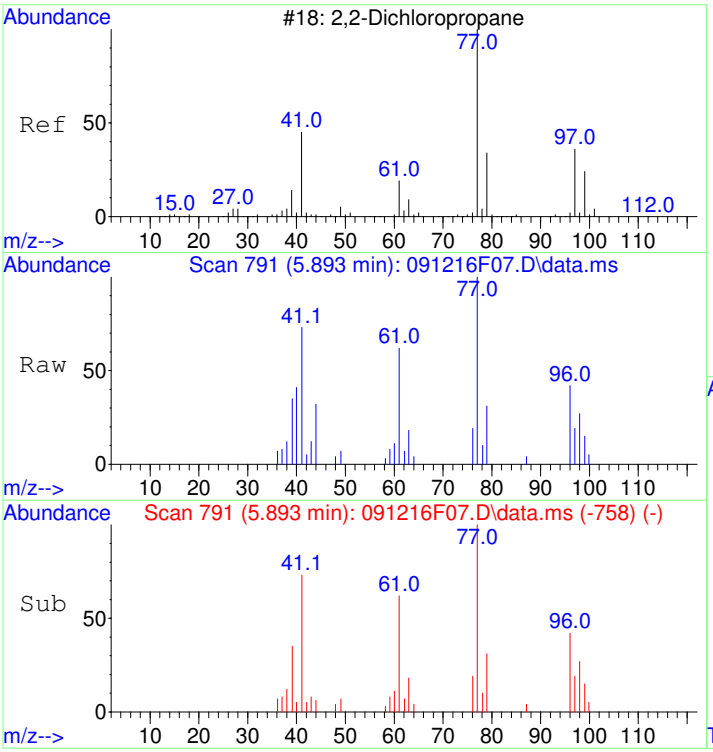


#18
Ethyl-tert-butyl ether
Concen: 1.91 ug/L
RT: 5.778 min Scan# 772
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 59 Resp: 276149

Ion	Ratio	Lower	Upper
59	100		
87	48.2	28.0	68.0

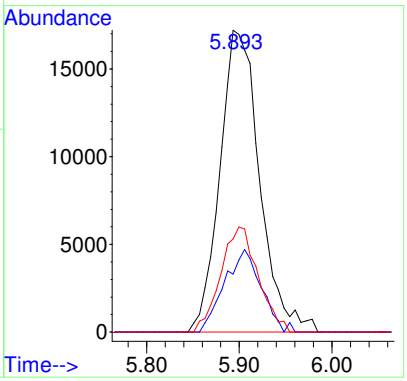


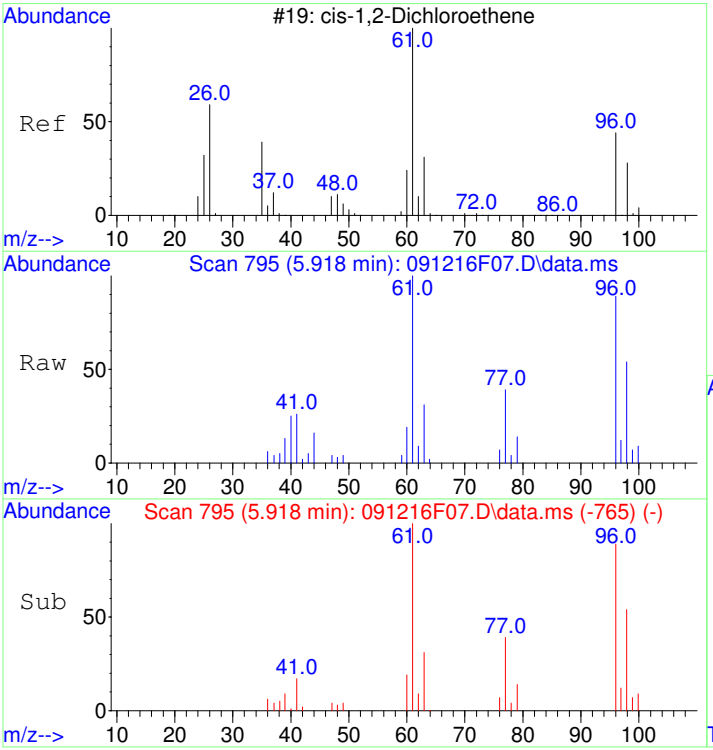


#19
2,2-Dichloropropane
Concen: 0.49 ug/L
RT: 5.893 min Scan# 791
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 77 Resp: 51241

Ion	Ratio	Lower	Upper
77	100		
97	25.3	5.8	45.8
79	32.8	12.1	52.1

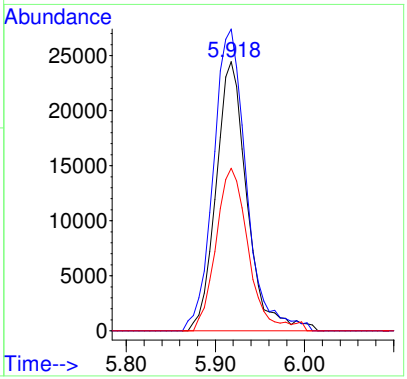


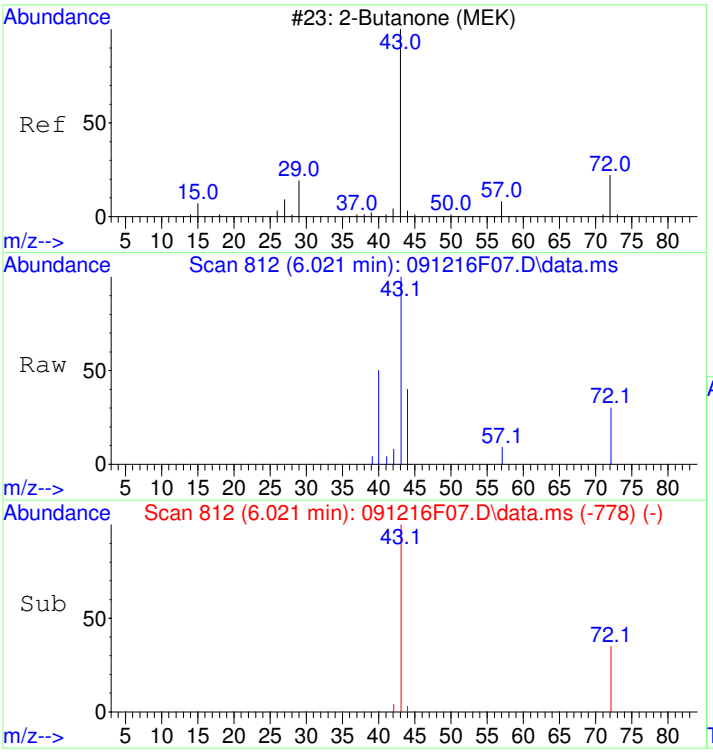


#20
cis-1,2-Dichloroethene
Concen: 0.50 ug/L
RT: 5.918 min Scan# 795
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 96 Resp: 59268

Ion	Ratio	Lower	Upper
96	100		
61	119.3	100.4	140.4
98	63.1	44.6	84.6

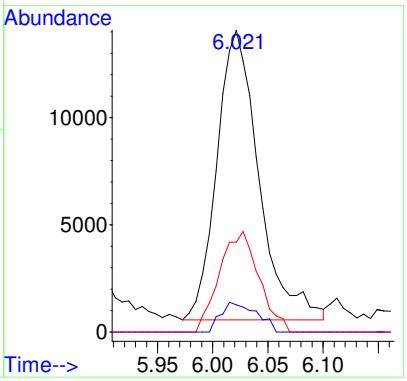


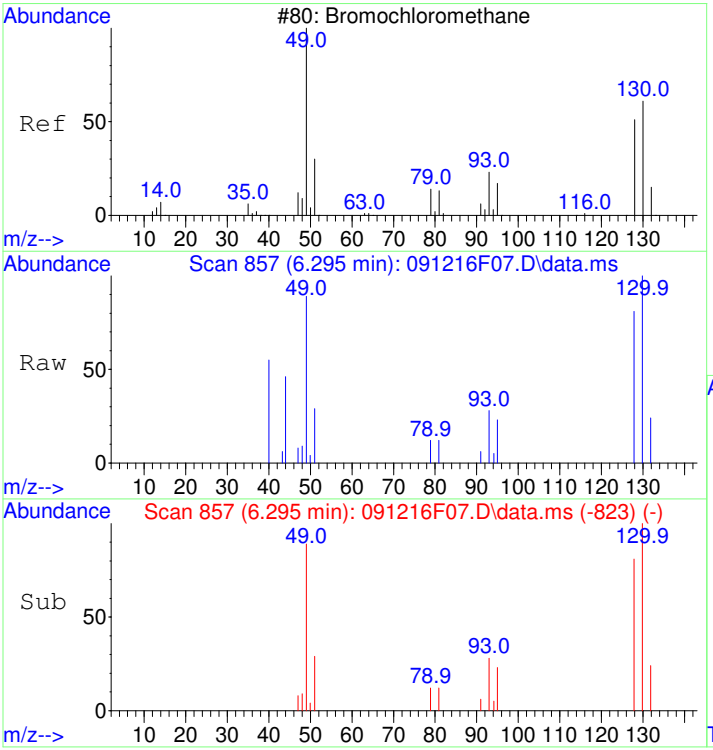


#21
2-Butanone (MEK)
Concen: 3.82 ug/L
RT: 6.021 min Scan# 812
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 43 Resp: 35868

Ion	Ratio	Lower	Upper
43	100		
57	8.7	0.0	30.1
72	32.7	12.0	52.0

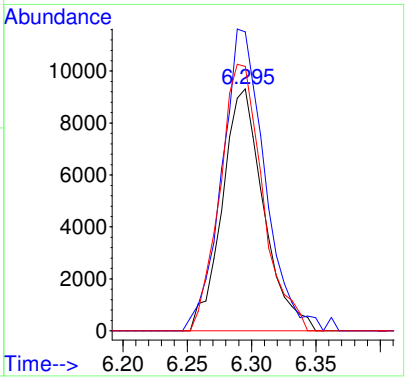


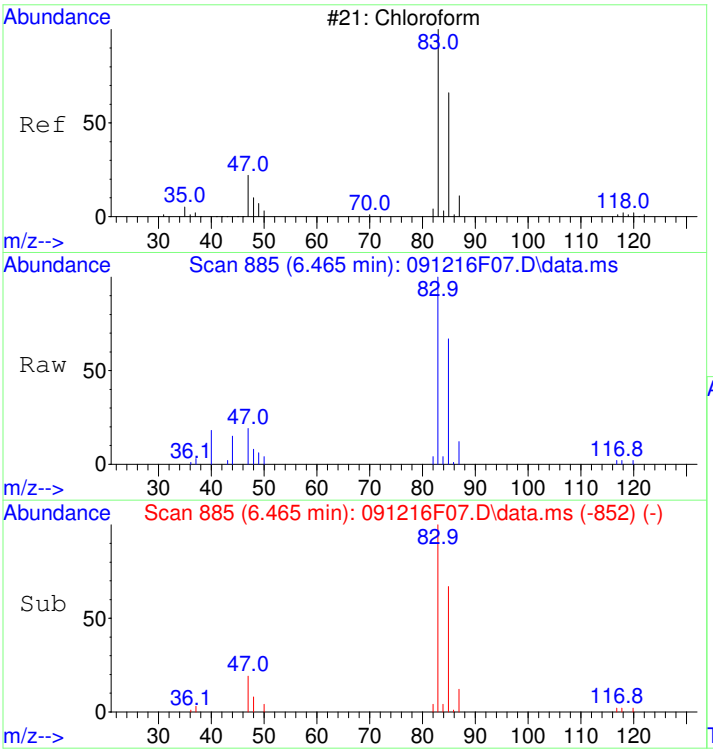


#22
Bromochloromethane
Concen: 0.49 ug/L
RT: 6.295 min Scan# 857
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:128 Resp: 20923

Ion	Ratio	Lower	Upper
128	100		
130	129.8	110.6	150.6
49	113.1	96.9	136.9

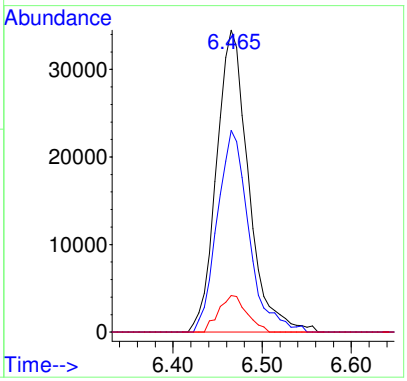


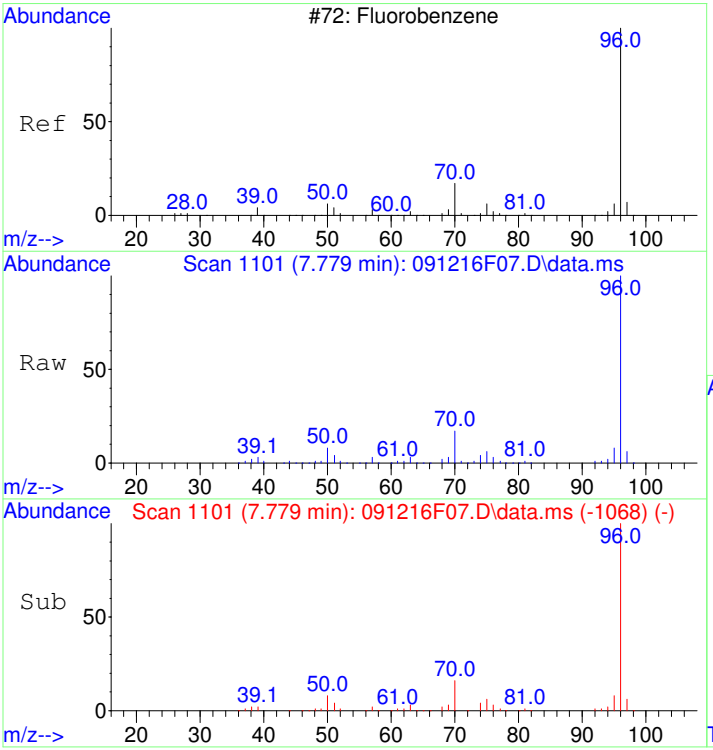


#23
Chloroform
Concen: 0.50 ug/L
RT: 6.465 min Scan# 885
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 83 Resp: 86094

Ion	Ratio	Lower	Upper
83	100		
85	66.1	45.5	85.5
87	10.6	0.0	30.6

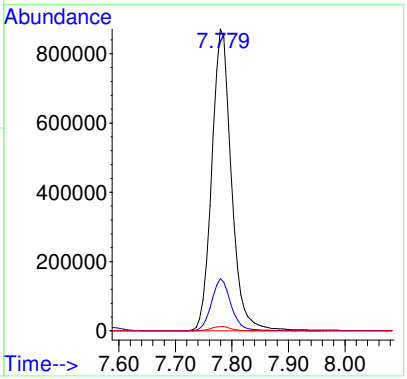


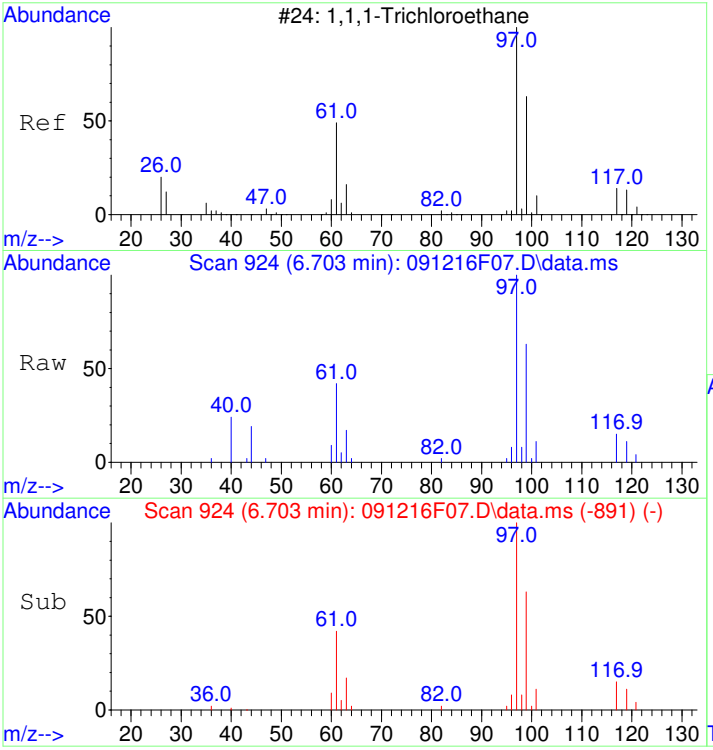


#24
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.779 min Scan# 1101
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 96 Resp: 2104197

Ion	Ratio	Lower	Upper
96	100		
70	17.2	0.0	37.3
77	1.5	0.0	21.6

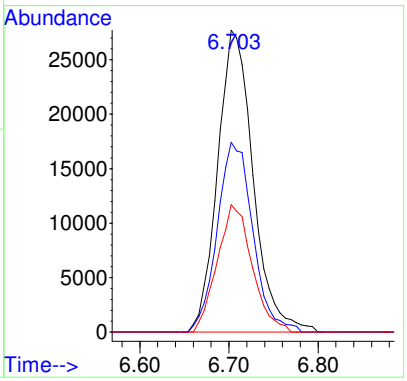


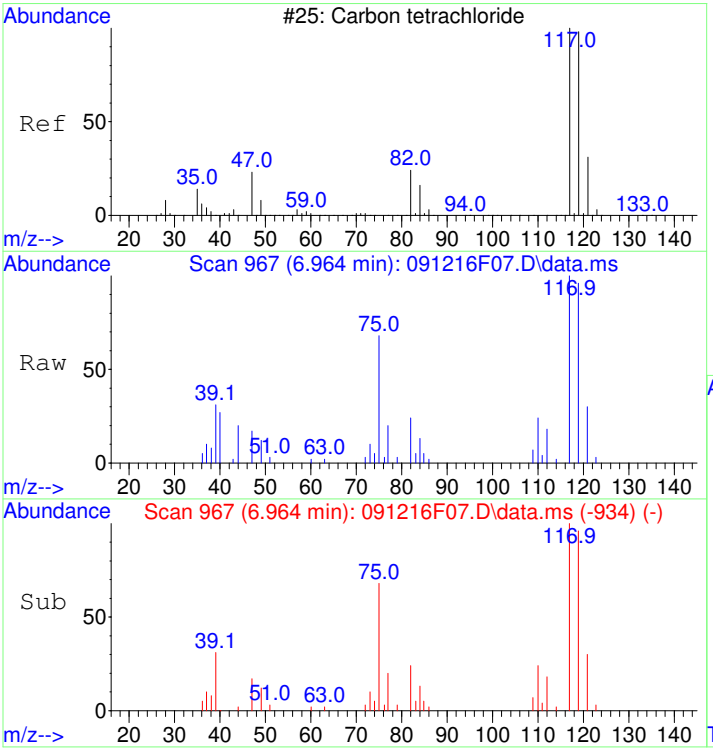


#25
1,1,1-Trichloroethane
Concen: 0.50 ug/L
RT: 6.703 min Scan# 924
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 97 Resp: 76672

Ion	Ratio	Lower	Upper
97	100		
99	63.0	44.5	84.5
61	41.3	22.1	62.1

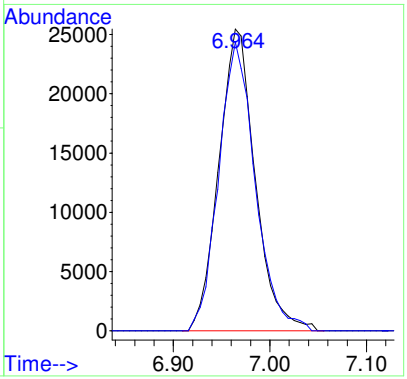


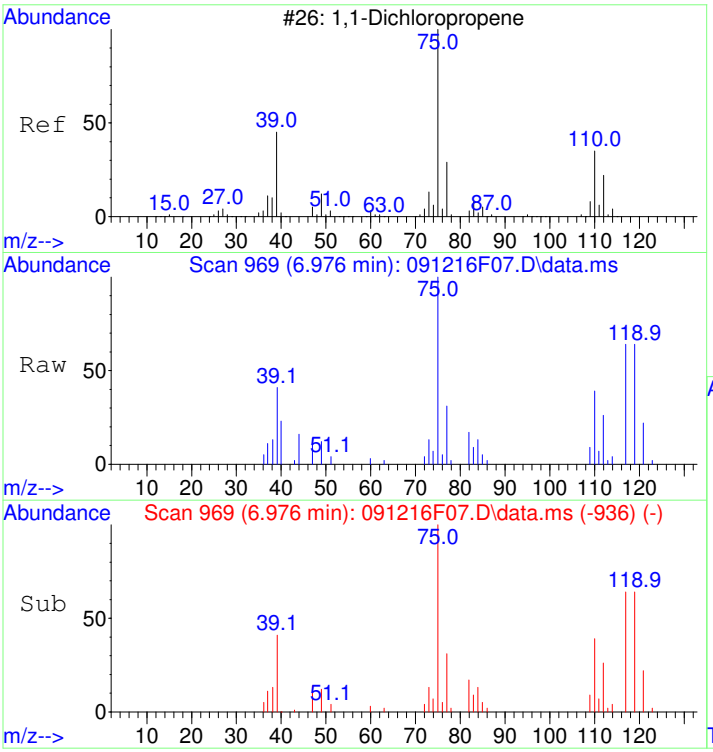


#26
Carbon tetrachloride
Concen: 0.48 ug/L
RT: 6.964 min Scan# 967
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:117 Resp: 66729

Ion	Ratio	Lower	Upper
117	100		
119	96.0	76.6	116.6

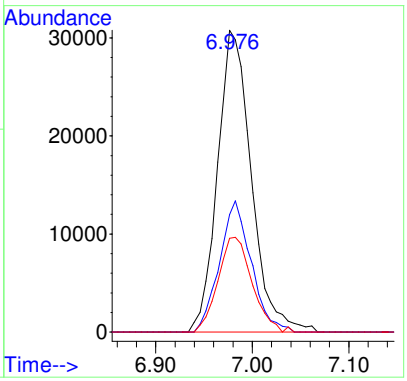


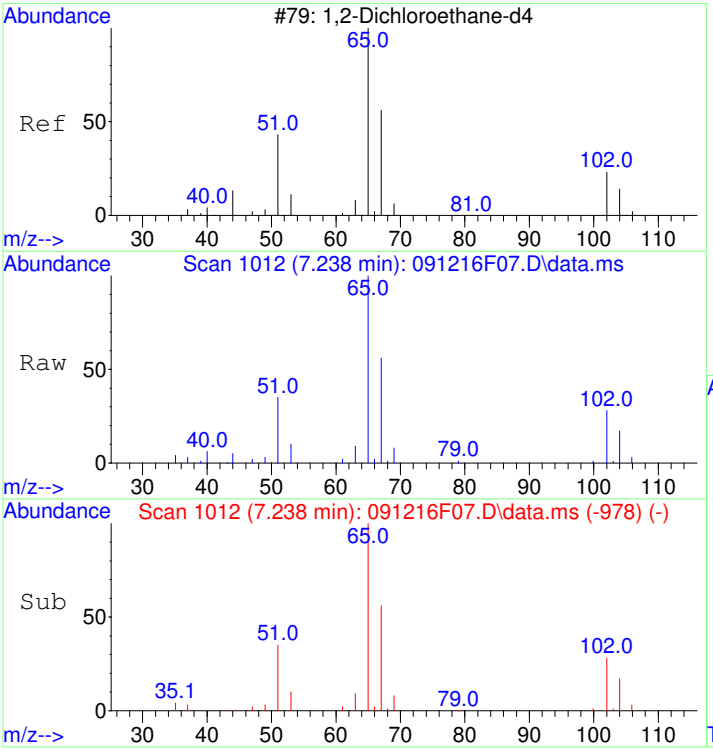


#27
1,1-Dichloropropene
Concen: 0.50 ug/L
RT: 6.976 min Scan# 969
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 75 Resp: 75010

Ion	Ratio	Lower	Upper
75	100		
110	40.7	20.8	60.8
77	31.7	11.0	51.0

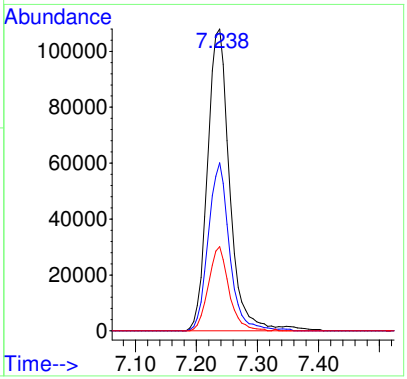


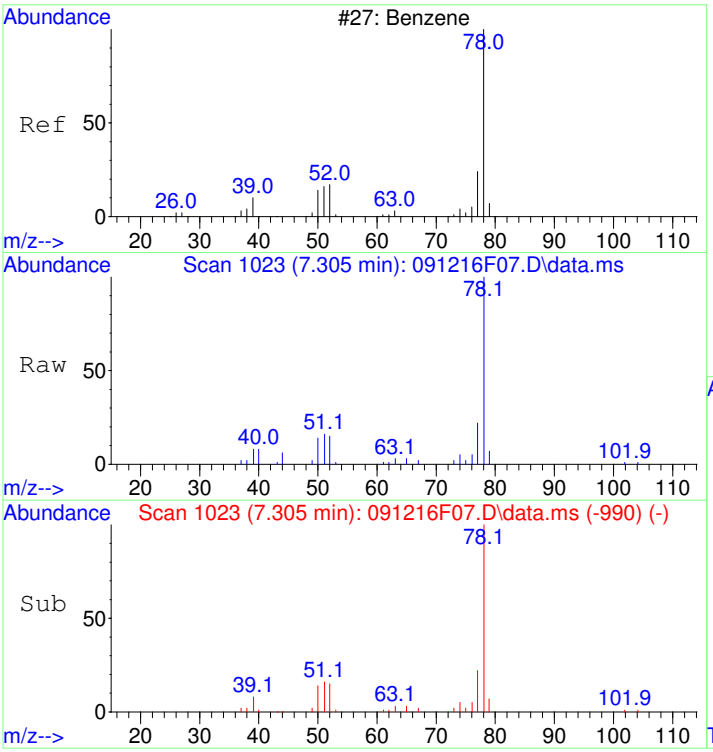


#28
1,2-Dichloroethane-d4
Concen: 5.03 ug/L
RT: 7.238 min Scan# 1012
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 65 Resp: 274618

Ion	Ratio	Lower	Upper
65	100		
67	53.3	35.3	75.3
102	25.8	6.5	46.5

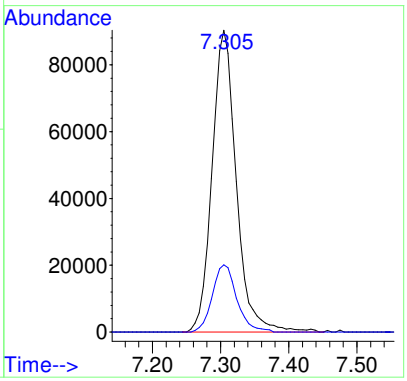


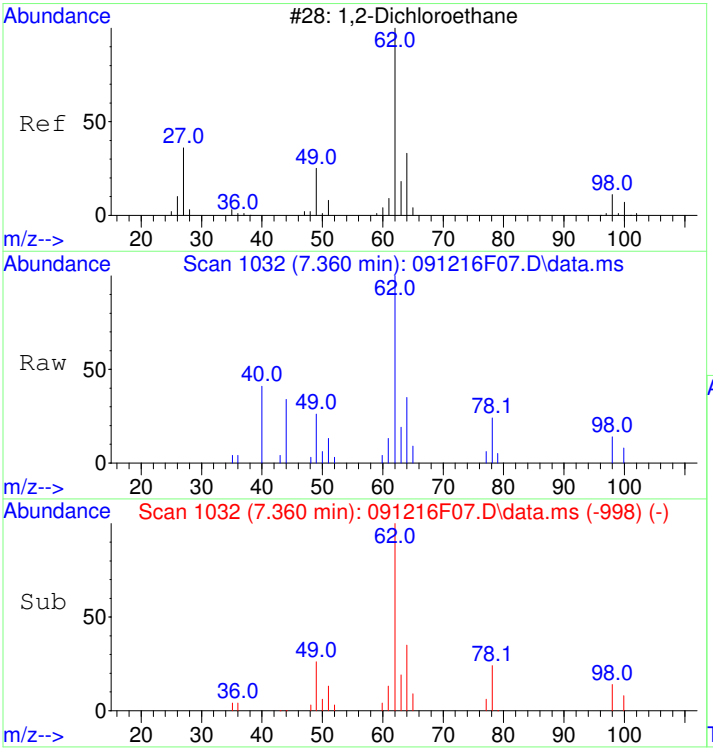


#29
Benzene
Concen: 0.50 ug/L
RT: 7.305 min Scan# 1023
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 78 Resp: 223356

Ion	Ratio	Lower	Upper
78	100		
77	22.6	2.5	42.5

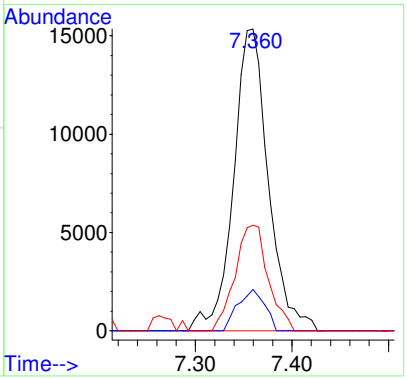


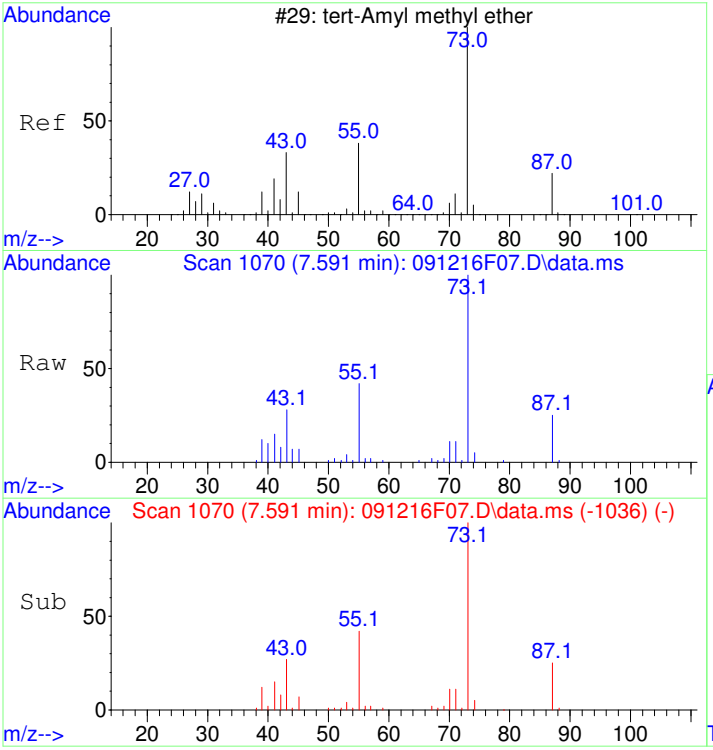


#30
1,2-Dichloroethane
Concen: 0.50 ug/L
RT: 7.360 min Scan# 1032
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 62 Resp: 38498

Ion	Ratio	Lower	Upper
62	100		
98	10.6	0.0	31.2
64	33.3	13.0	53.0

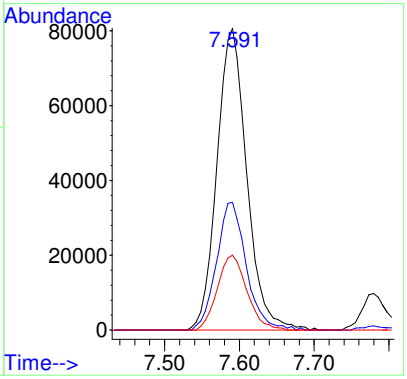


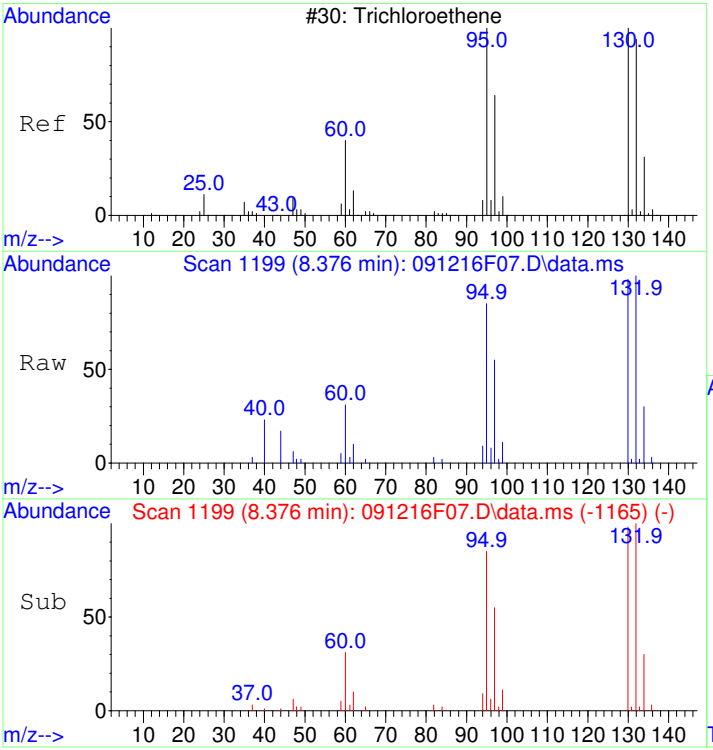


#31
tert-Amyl methyl ether
Concen: 1.90 ug/L
RT: 7.591 min Scan# 1070
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 73 Resp: 223380

Ion	Ratio	Lower	Upper
73	100		
55	42.2	20.5	60.5
87	24.6	5.7	45.7

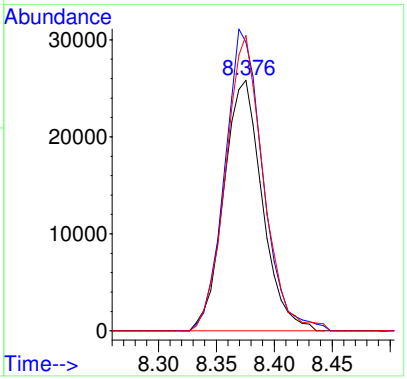


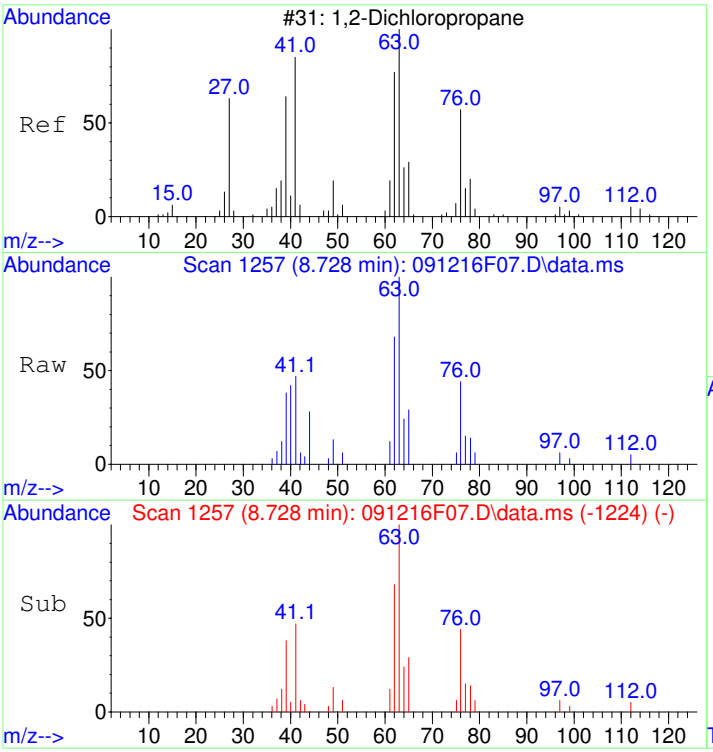


#32
Trichloroethene
Concen: 0.50 ug/L
RT: 8.376 min Scan# 1199
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 95 Resp: 59781

Ion	Ratio	Lower	Upper
95	100		
130	118.7	99.6	139.6
132	115.5	96.0	136.0

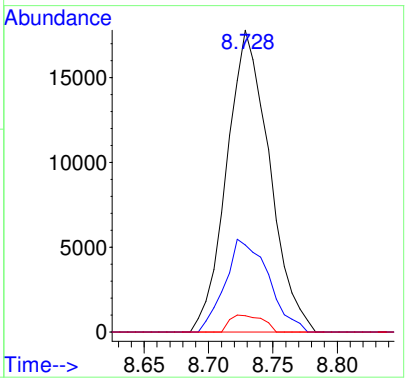


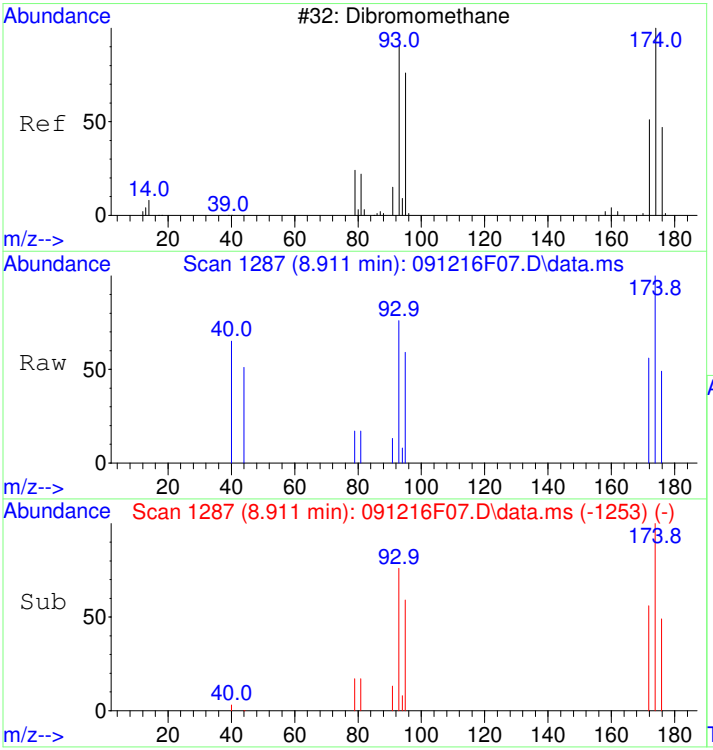


#33
1,2-Dichloropropane
Concen: 0.49 ug/L
RT: 8.728 min Scan# 1257
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 63 Resp: 41091

Ion	Ratio	Lower	Upper
63	100		
65	31.4	11.3	51.3
112	4.4	0.0	25.5

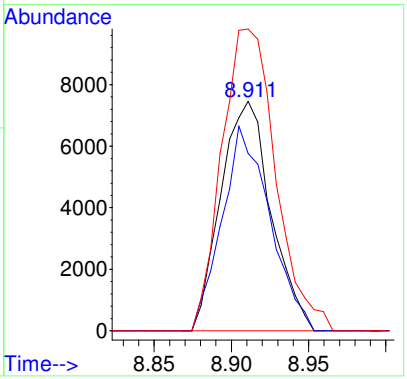


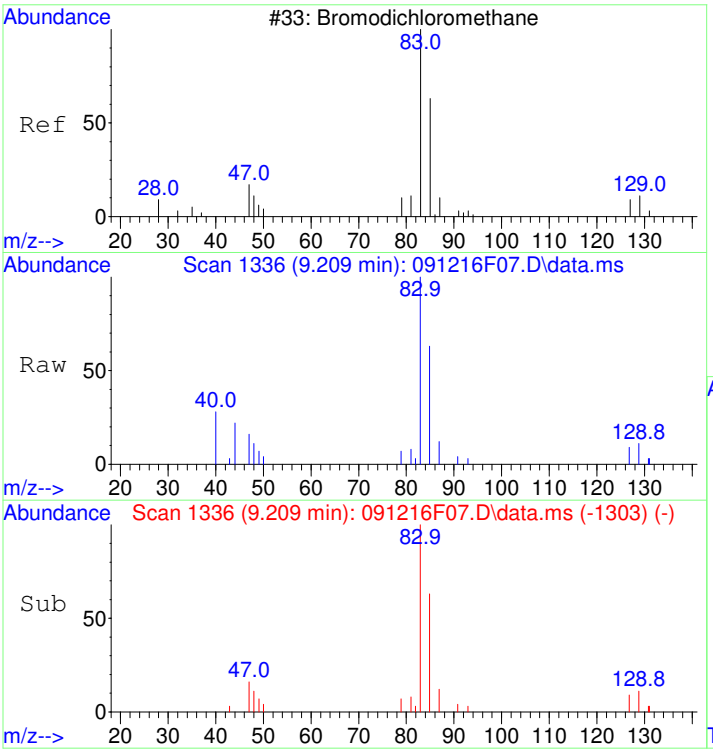


#34
Dibromomethane
Concen: 0.49 ug/L
RT: 8.911 min Scan# 1287
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 93 Resp: 16848

Ion	Ratio	Lower	Upper
93	100		
95	84.9	65.2	105.2
174	142.0	123.2	163.2

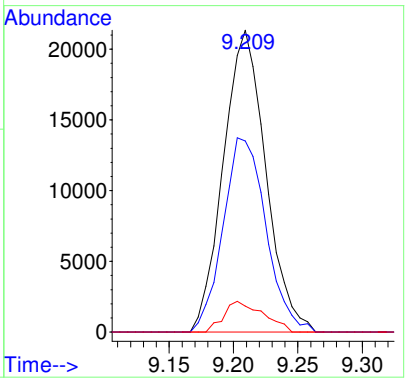


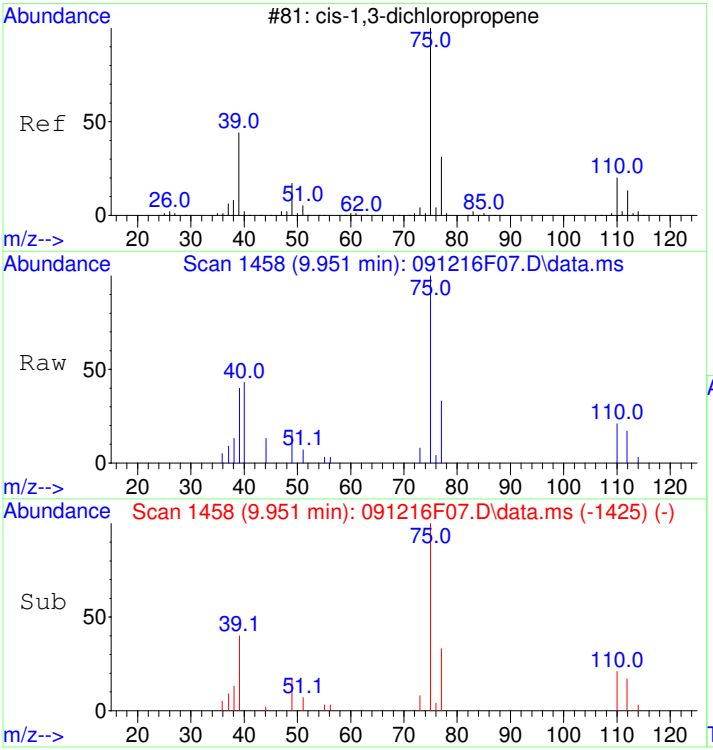


#35
Bromodichloromethane
Concen: 0.48 ug/L
RT: 9.209 min Scan# 1336
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 83 Resp: 48991

Ion	Ratio	Lower	Upper
83	100		
85	64.9	44.4	84.4
127	9.5	0.0	29.6

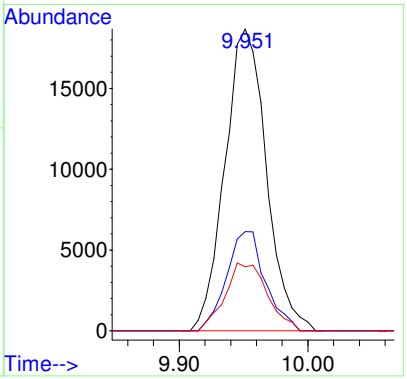


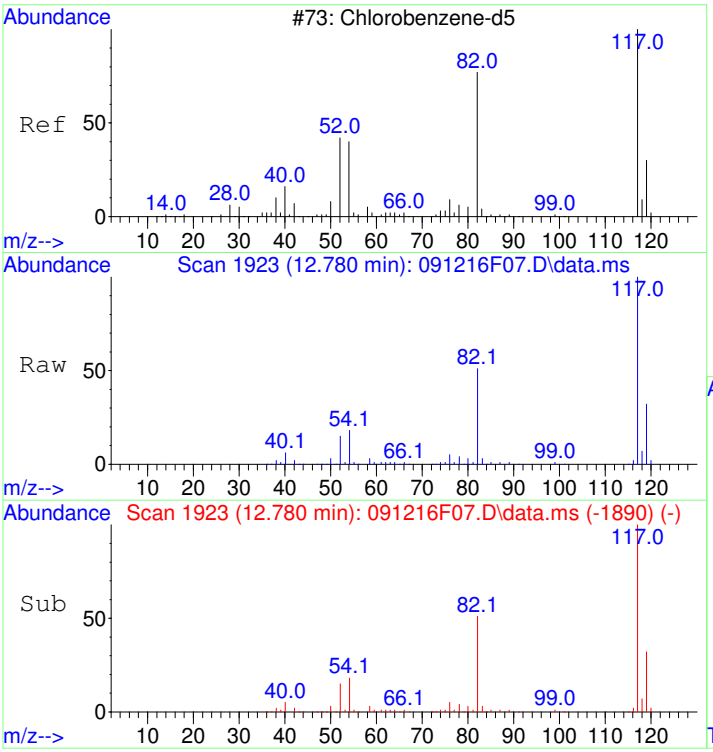


#36
cis-1,3-Dichloropropene
Concen: 0.41 ug/L
RT: 9.951 min Scan# 1458
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 75 Resp: 41881

Ion	Ratio	Lower	Upper
75	100		
77	30.8	11.0	51.0
110	22.8	3.9	43.9

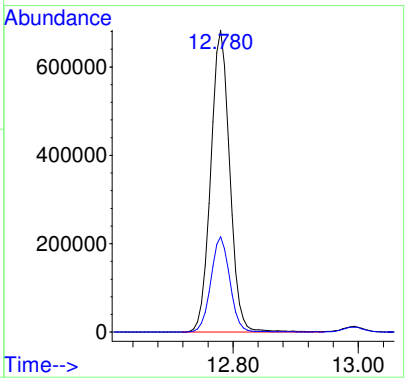


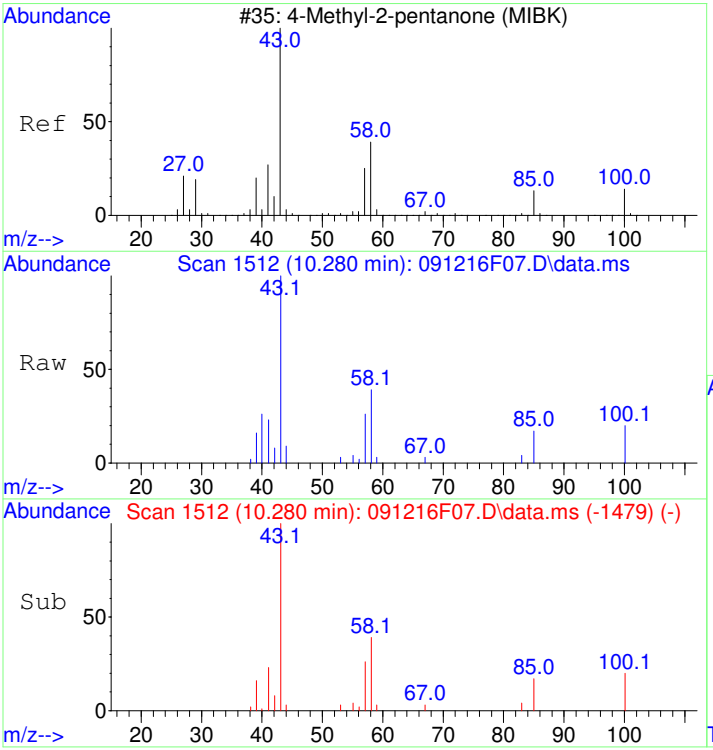


#37
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.780 min Scan# 1923
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:117 Resp: 1435549

Ion	Ratio	Lower	Upper
117	100		
119	31.5	11.9	51.9

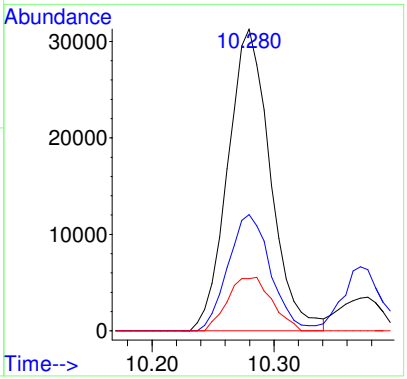


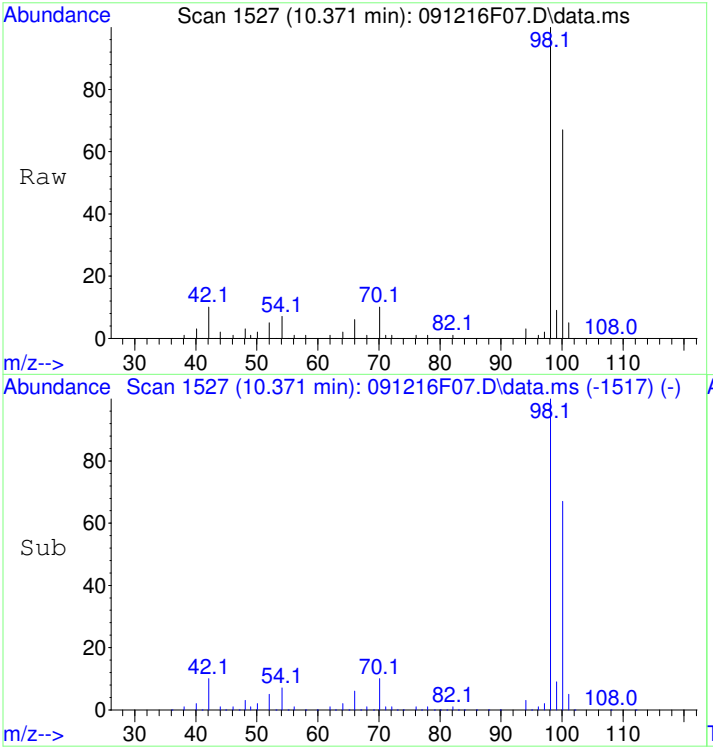


#38
4-Methyl-2-pentanone (MIBK)
Concen: 3.24 ug/L
RT: 10.280 min Scan# 1512
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 43 Resp: 75817

Ion	Ratio	Lower	Upper
43	100		
58	38.5	21.0	61.0
85	18.4	0.0	38.9

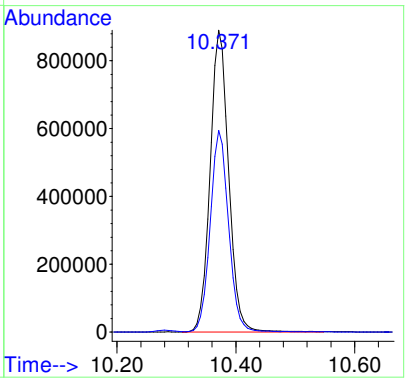


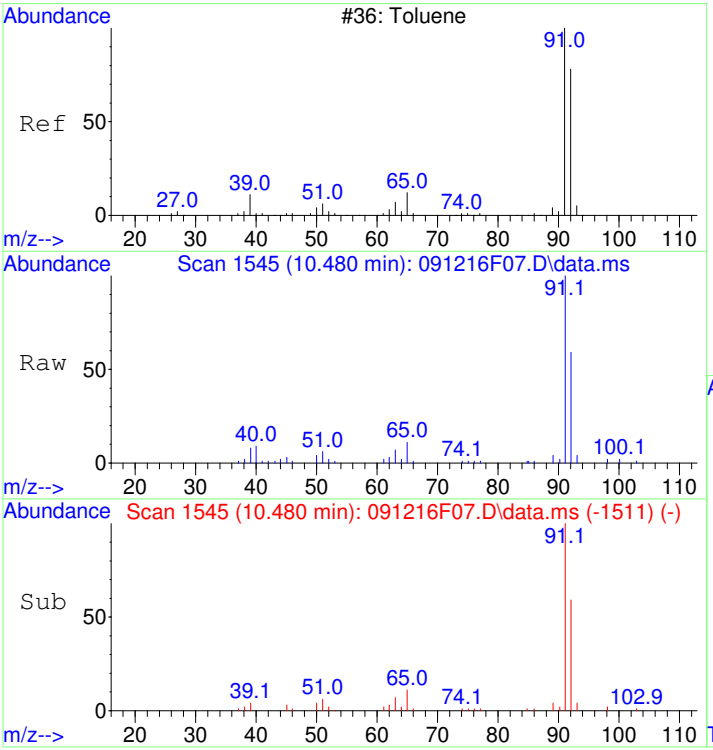


#39
Toluene-d8
Concen: 5.02 ug/L
RT: 10.371 min Scan# 1527
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 98 Resp: 1929722

Ion	Ratio	Lower	Upper
98	100		
100	65.9	46.3	86.3

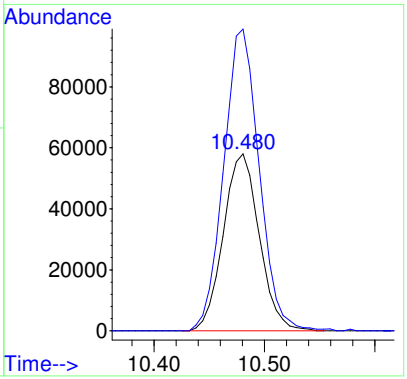


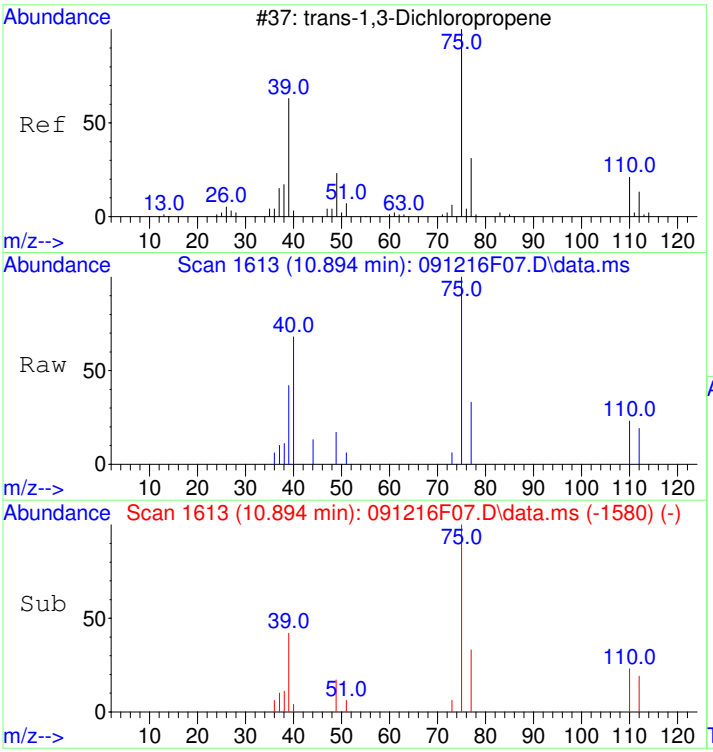


#40
Toluene
Concen: 0.48 ug/L
RT: 10.480 min Scan# 1545
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 92 Resp: 131588

Ion	Ratio	Lower	Upper
92	100		
91	168.4	150.4	190.4

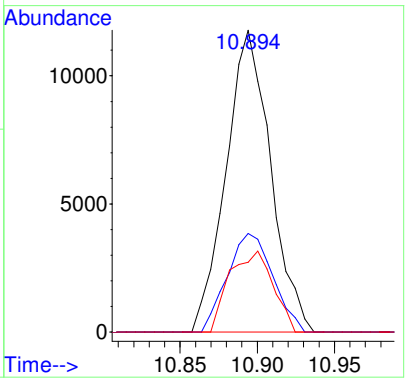


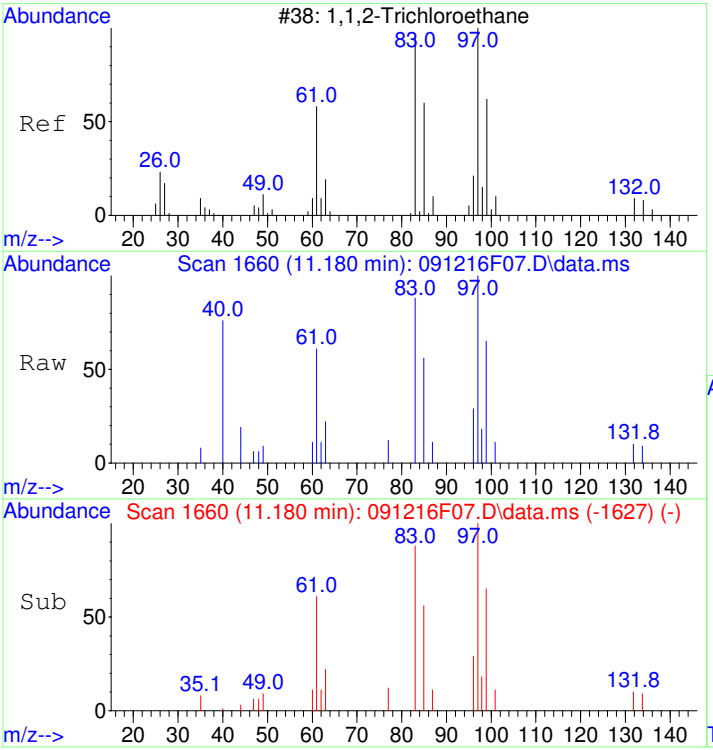


#41
trans-1,3-Dichloropropene
Concen: 0.39 ug/L
RT: 10.894 min Scan# 1613
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 75 Resp: 23620

Ion	Ratio	Lower	Upper
75	100		
77	33.4	11.5	51.5
110	26.3	5.9	45.9

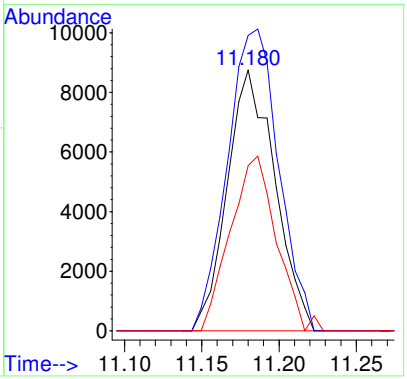


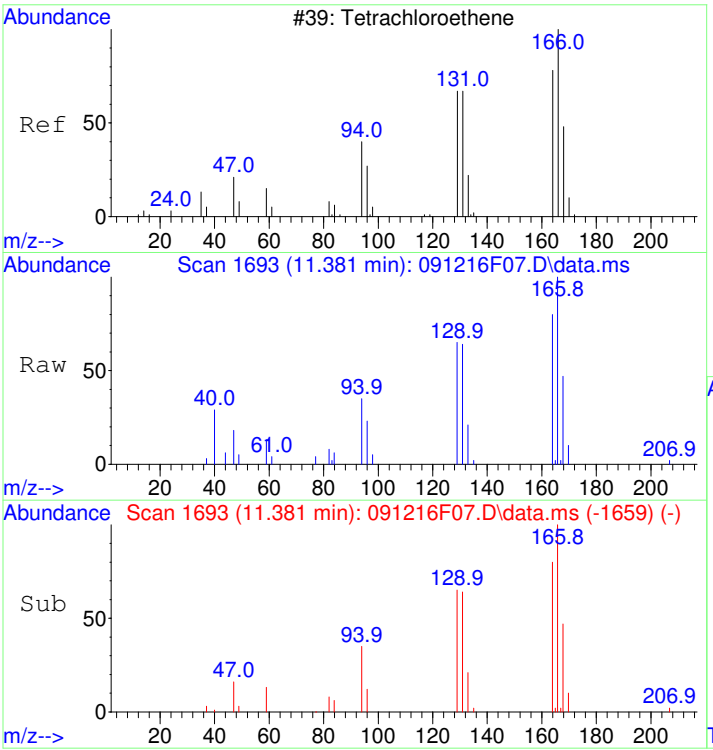


#42
1,1,2-Trichloroethane
Concen: 0.48 ug/L
RT: 11.180 min Scan# 1660
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 83 Resp: 18802

Ion	Ratio	Lower	Upper
83	100		
97	124.4	100.6	140.6
85	64.7	43.9	83.9

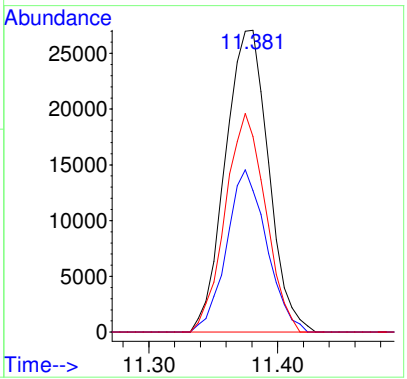


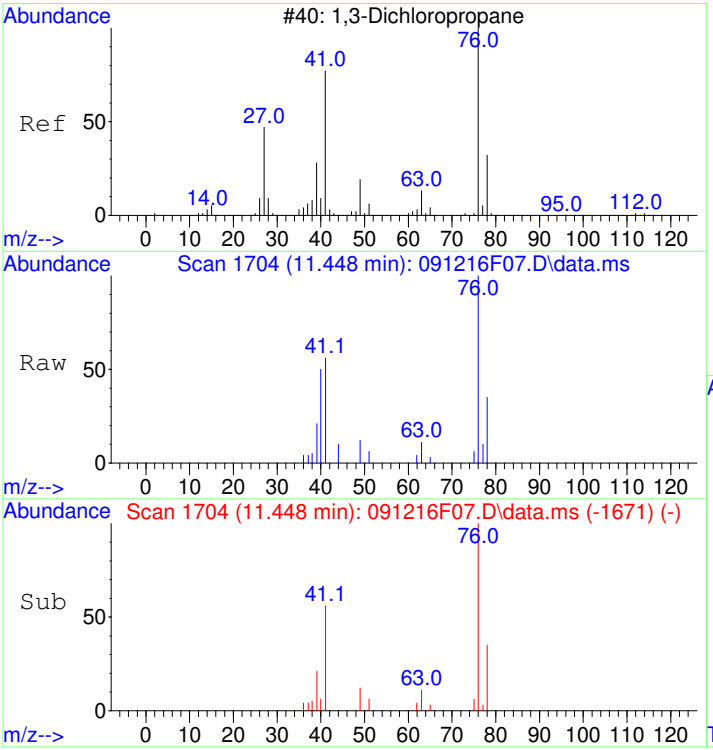


#43
Tetrachloroethene
Concen: 0.48 ug/L
RT: 11.381 min Scan# 1693
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:166 Resp: 63284

Ion	Ratio	Lower	Upper
166	100		
168	49.7	28.1	68.1
129	67.5	46.3	86.3

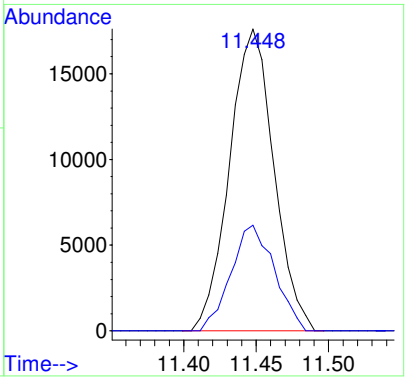


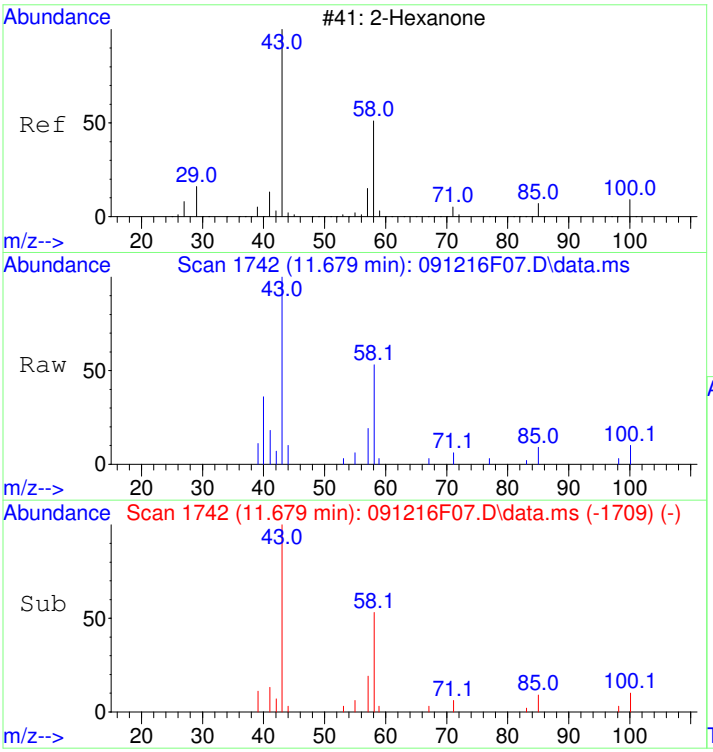


#44
1,3-Dichloropropane
Concen: 0.46 ug/L
RT: 11.448 min Scan# 1704
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 76 Resp: 37454

Ion	Ratio	Lower	Upper
76	100		
78	34.2	11.9	51.9

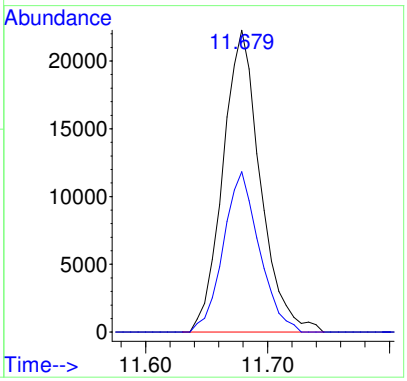


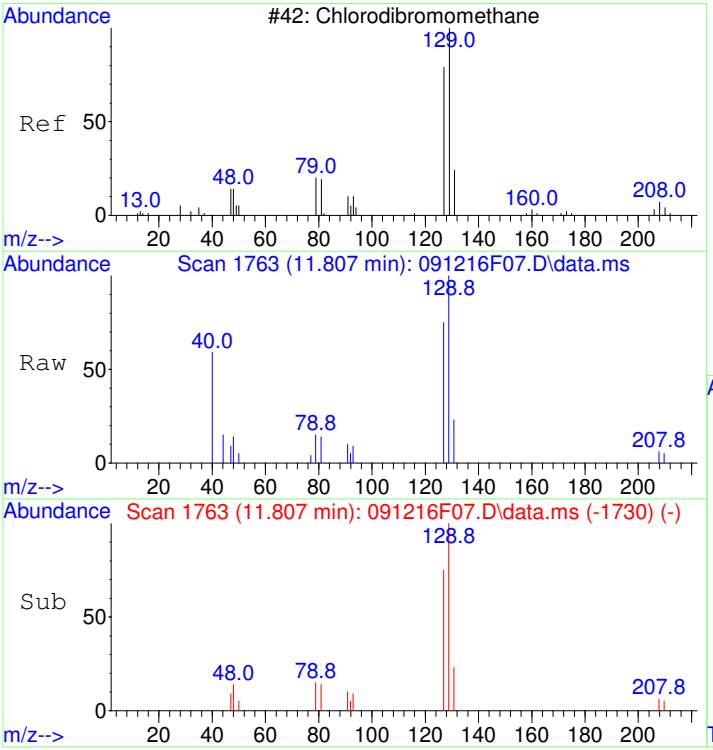


#45
2-Hexanone
Concen: 3.17 ug/L
RT: 11.679 min Scan# 1742
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 43 Resp: 47646

Ion	Ratio	Lower	Upper
43	100		
58	51.0	37.3	77.3

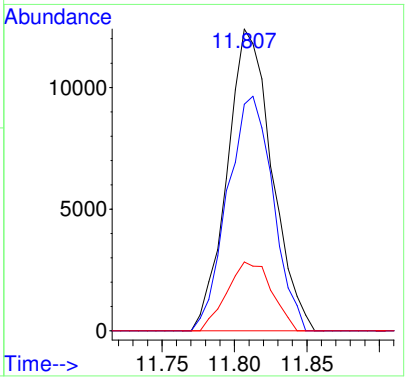


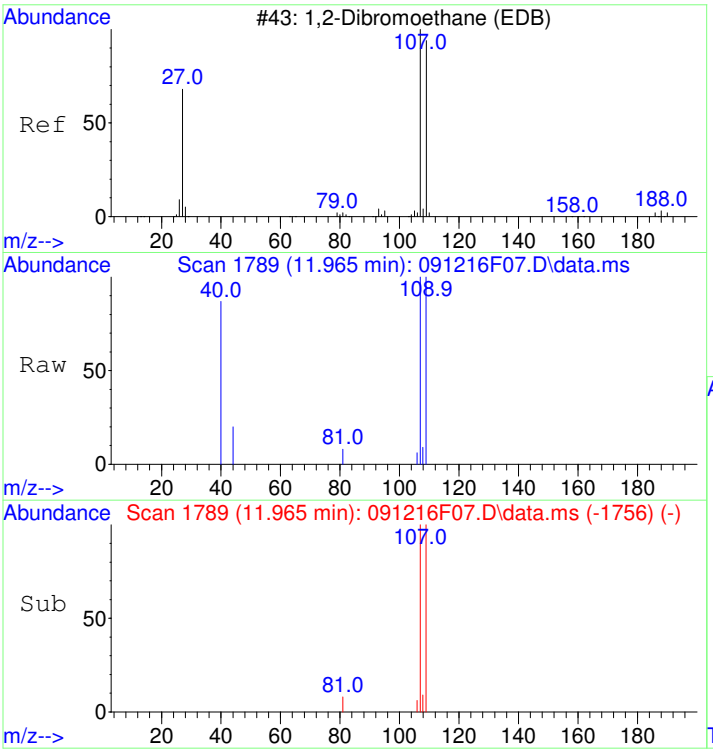


#46
Chlorodibromomethane
Concen: 0.44 ug/L
RT: 11.807 min Scan# 1763
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:129 Resp: 26612

Ion	Ratio	Lower	Upper
129	100		
127	79.0	57.6	97.6
131	22.8	4.4	44.4

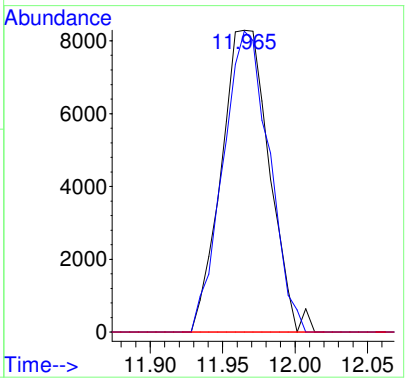


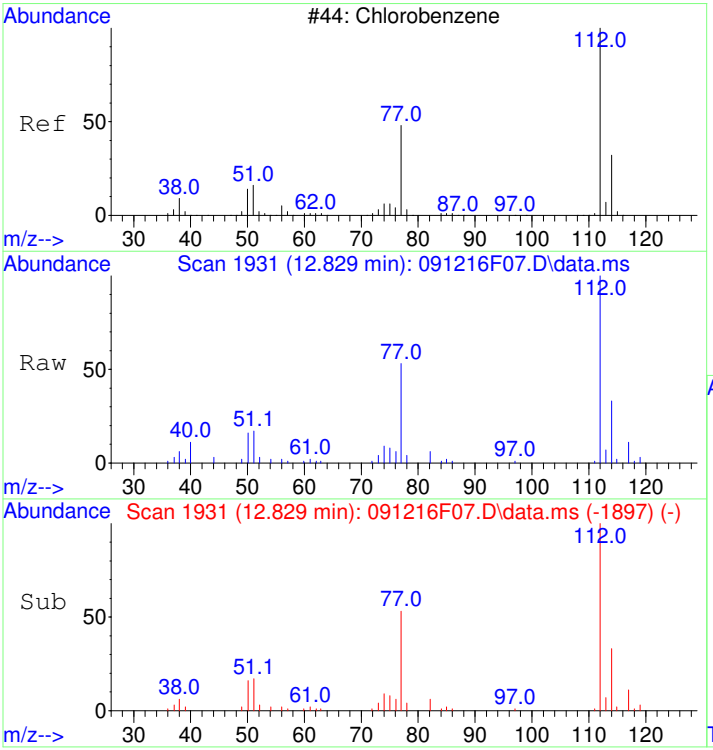


#47
1,2-Dibromoethane (EDB)
Concen: 0.45 ug/L
RT: 11.965 min Scan# 1789
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:107 Resp: 19058

Ion	Ratio	Lower	Upper
107	100		
109	96.2	74.8	114.8
188	0.0	0.0	24.3

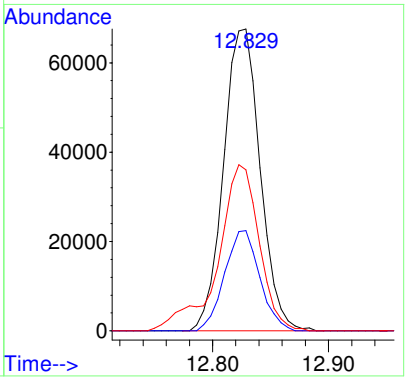


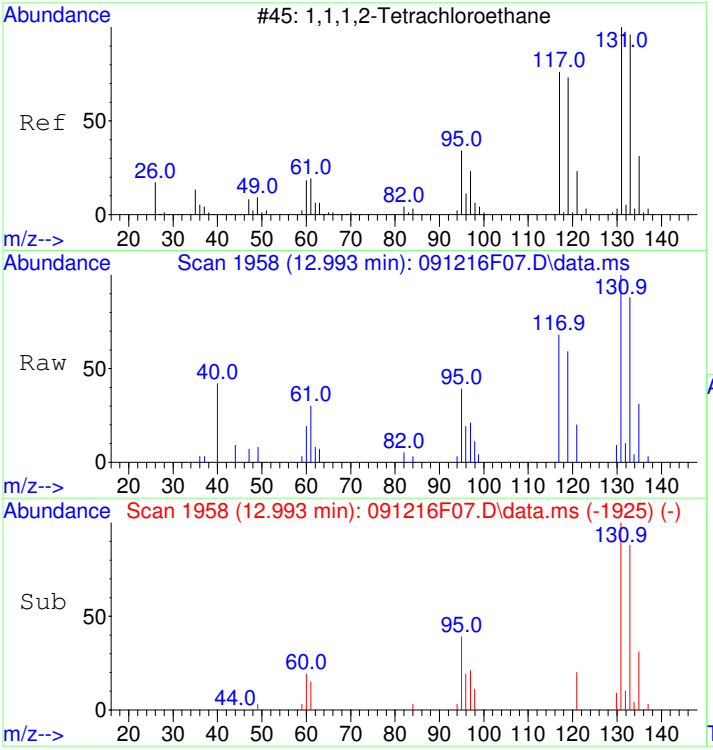


#48
Chlorobenzene
Concen: 0.48 ug/L
RT: 12.829 min Scan# 1931
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:112 Resp: 148597

Ion	Ratio	Lower	Upper
112	100		
114	31.9	11.9	51.9
77	61.7	34.5	74.5

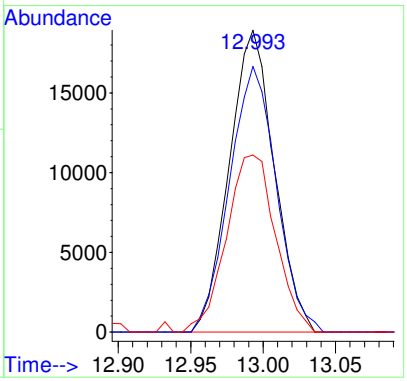


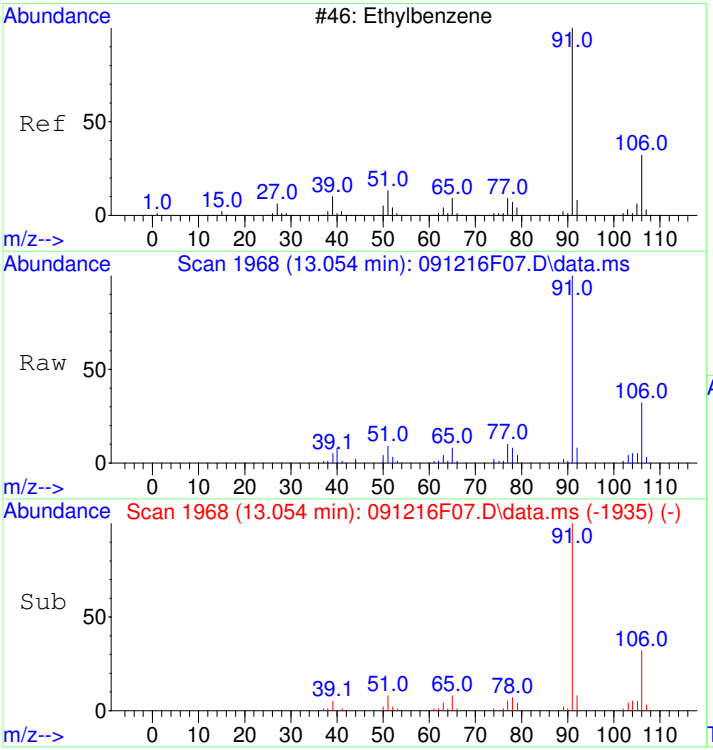


#49
1,1,1,2-Tetrachloroethane
Concen: 0.47 ug/L
RT: 12.993 min Scan# 1958
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:131 Resp: 40941

Ion	Ratio	Lower	Upper
131	100		
133	91.6	75.0	115.0
119	63.9	43.4	83.4

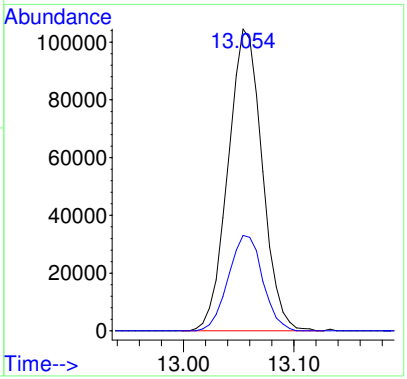


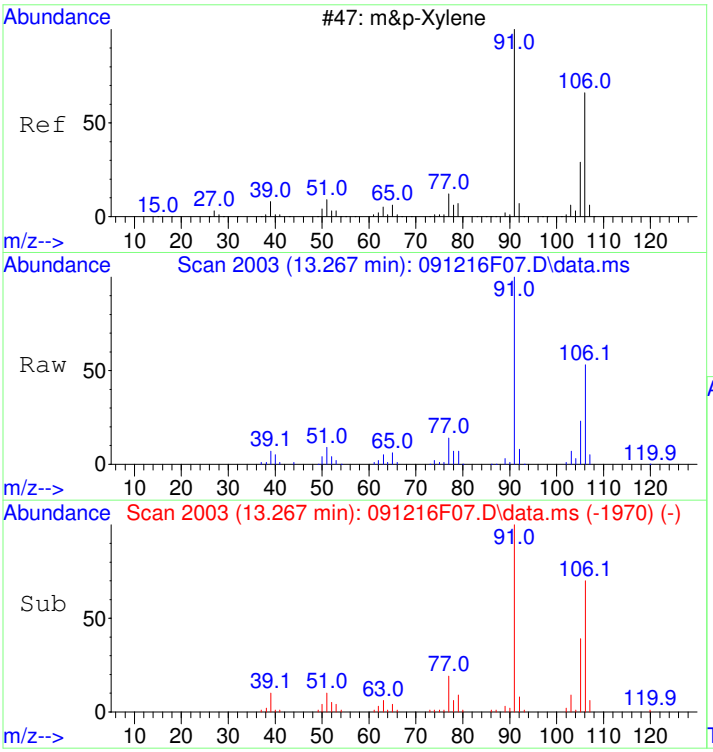


#50
Ethylbenzene
Concen: 0.42 ug/L
RT: 13.054 min Scan# 1968
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 91 Resp: 225846

Ion	Ratio	Lower	Upper
91	100		
106	31.8	12.0	52.0

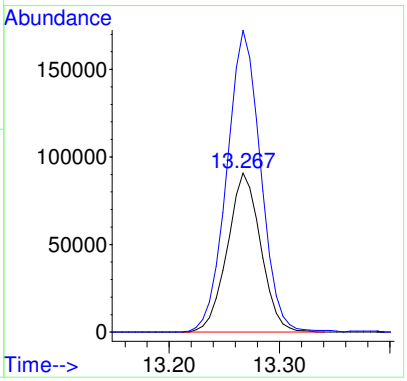


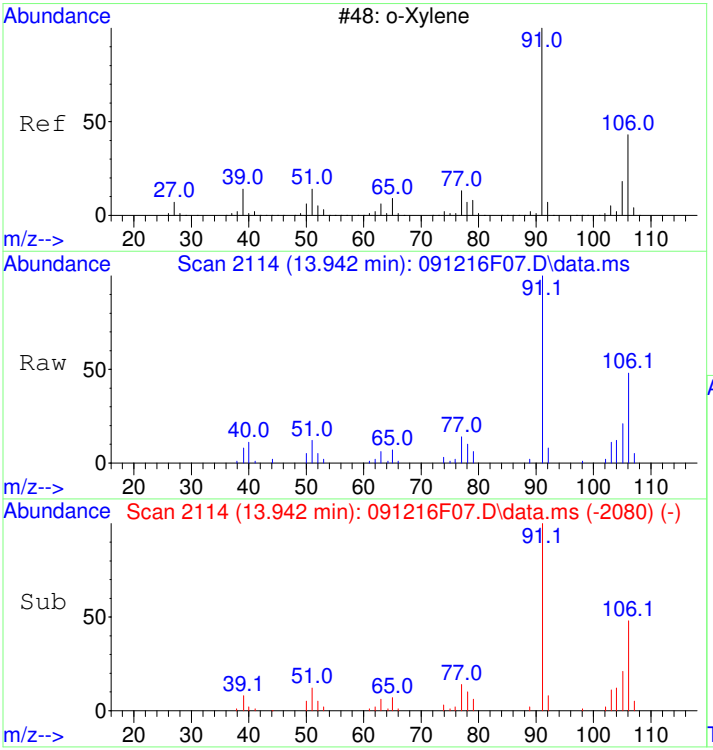


#51
m&p-Xylene
Concen: 0.85 ug/L
RT: 13.267 min Scan# 2003
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:106 Resp: 191183

Ion	Ratio	Lower	Upper
106	100		
91	193.0	172.5	212.5

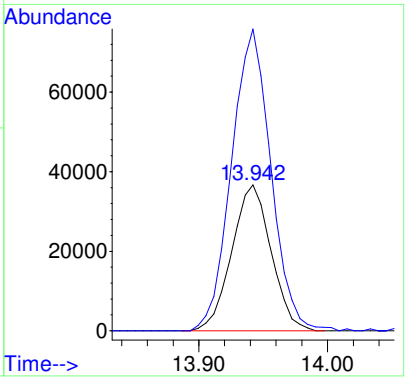


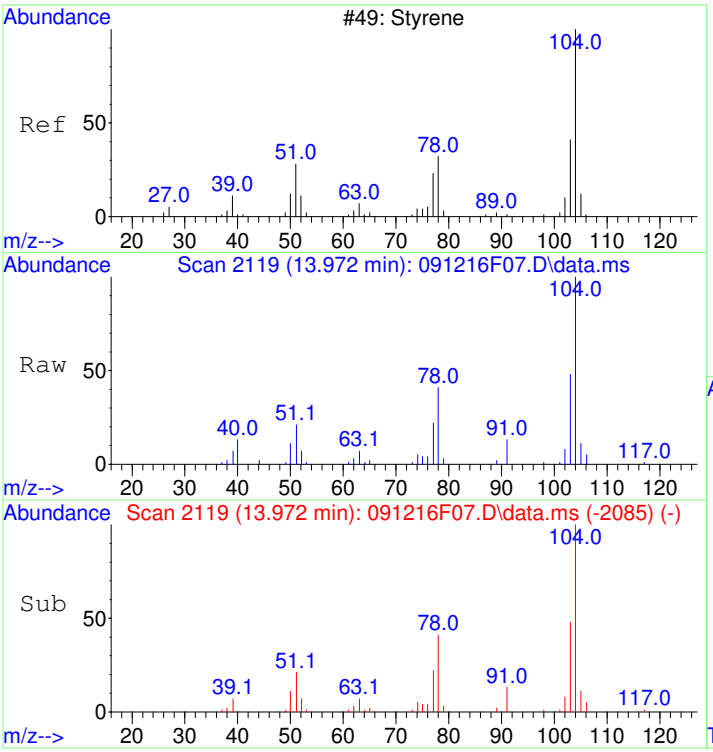


#52
o-Xylene
Concen: 0.39 ug/L
RT: 13.942 min Scan# 2114
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:106 Resp: 77890

Ion	Ratio	Lower	Upper
106	100		
91	207.6	183.2	223.2

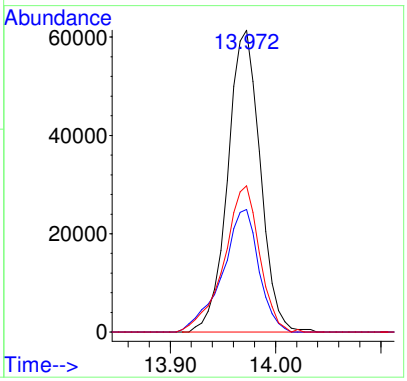


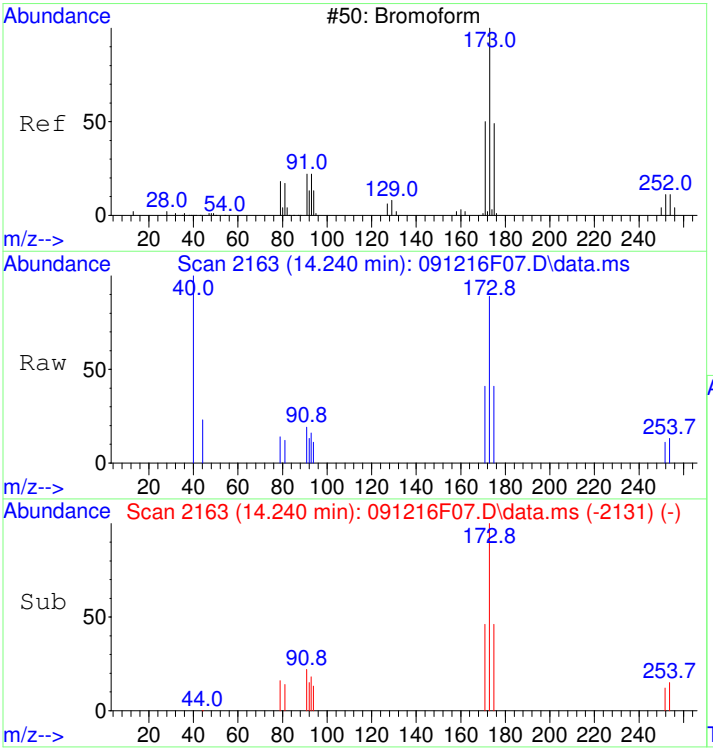


#53
Styrene
Concen: 0.40 ug/L
RT: 13.972 min Scan# 2119
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:104 Resp: 131765

Ion	Ratio	Lower	Upper
104	100		
78	45.6	25.0	65.0
103	53.1	33.9	73.9

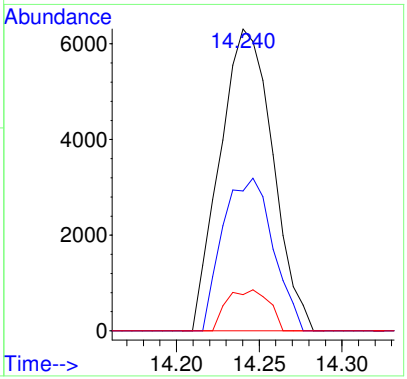


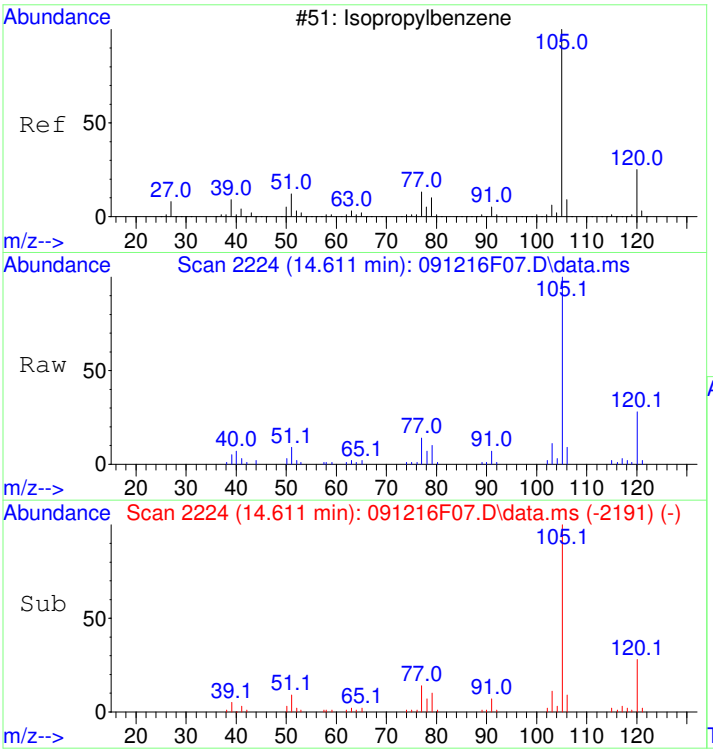


#54
Bromoform
Concen: 0.42 ug/L
RT: 14.240 min Scan# 2163
Delta R.T. -0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:173 Resp: 14019

Ion	Ratio	Lower	Upper
173	100		
175	48.2	28.6	68.6
252	10.9	0.0	32.7

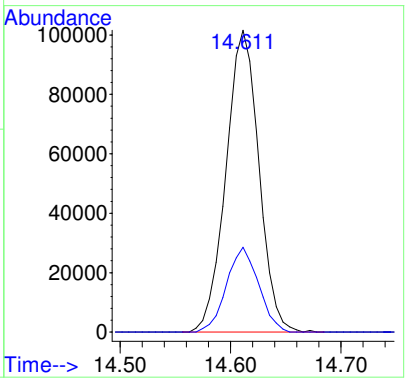


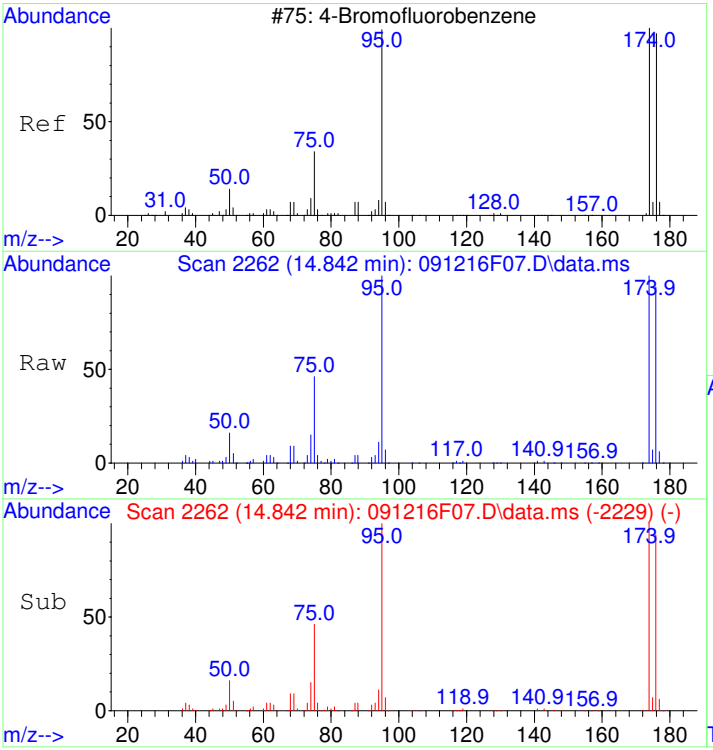


#55
Isopropylbenzene
Concen: 0.39 ug/L
RT: 14.611 min Scan# 2224
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:105 Resp: 210943

Ion	Ratio	Lower	Upper
105	100		
120	27.4	7.4	47.4

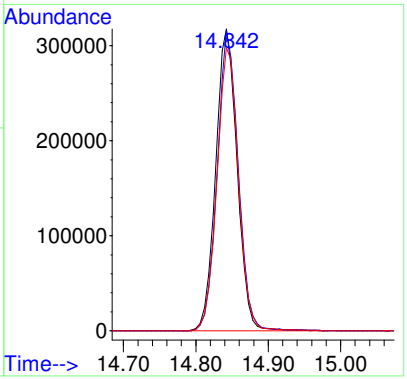


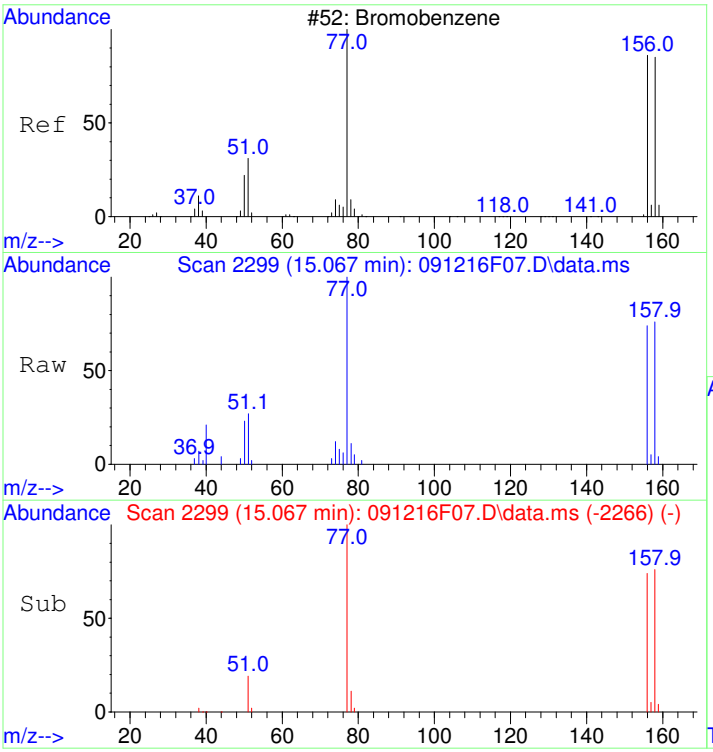


#56
4-Bromofluorobenzene
Concen: 4.83 ug/L
RT: 14.842 min Scan# 2262
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 95 Resp: 652094

Ion	Ratio	Lower	Upper
95	100		
174	97.6	78.7	118.7
176	94.1	75.6	115.6

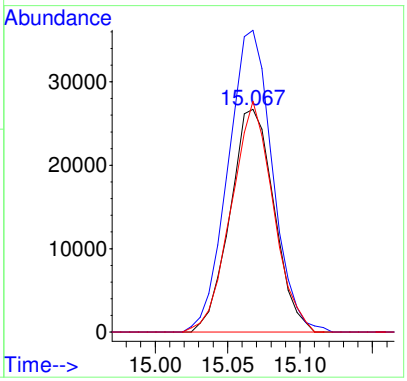


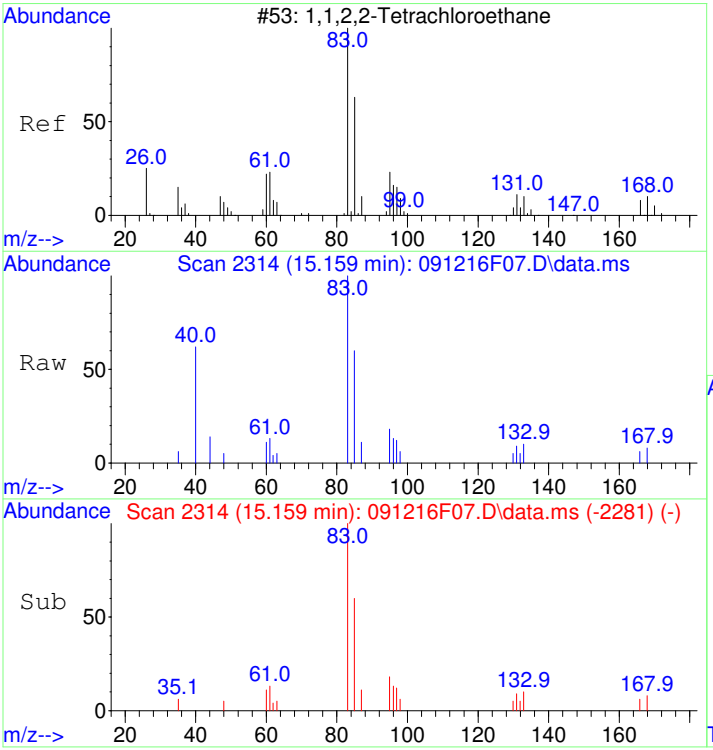


#57
Bromobenzene
Concen: 0.45 ug/L
RT: 15.067 min Scan# 2299
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:156 Resp: 56367

Ion	Ratio	Lower	Upper
156	100		
77	137.0	114.7	154.7
158	98.7	77.4	117.4

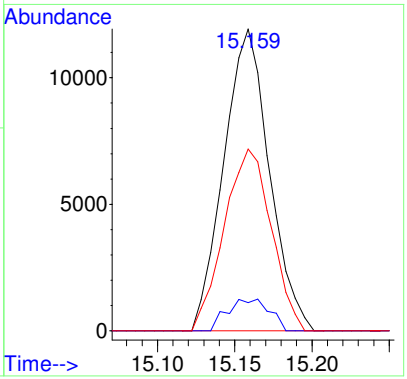


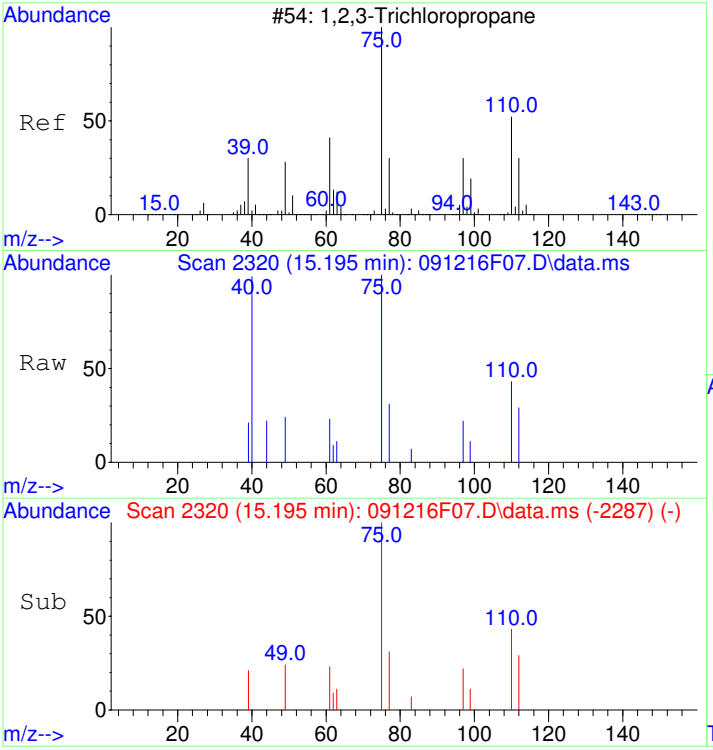


#58
1,1,2,2-Tetrachloroethane
Concen: 0.48 ug/L
RT: 15.159 min Scan# 2314
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 83 Resp: 24439

Ion	Ratio	Lower	Upper
83	100		
131	9.8	0.0	30.3
85	62.1	44.1	84.1

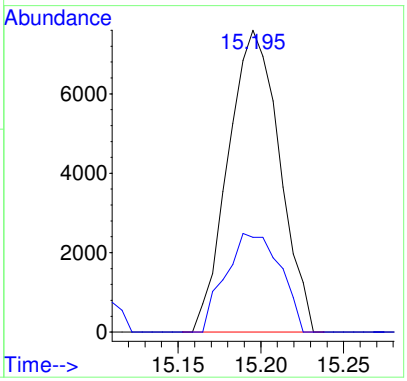


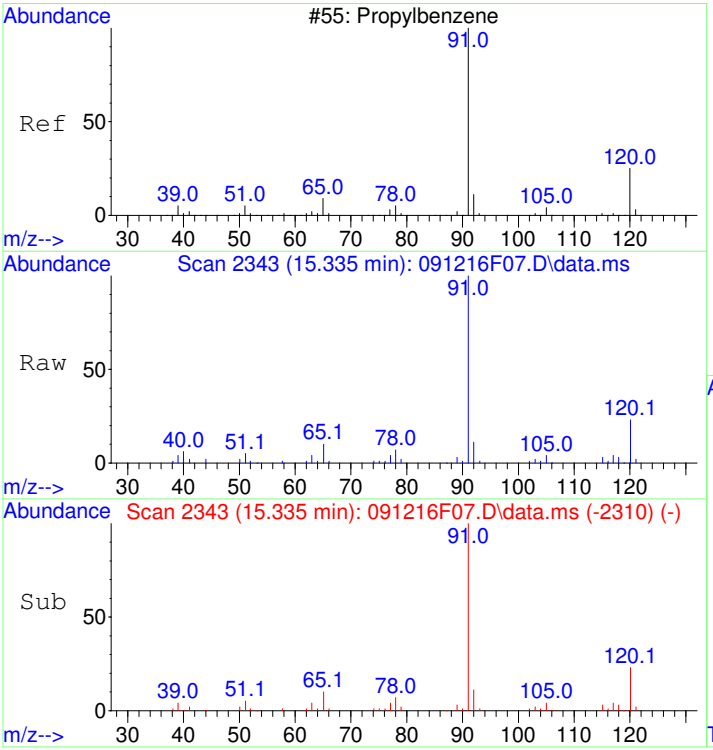


#59
1,2,3-Trichloropropane
Concen: 0.46 ug/L
RT: 15.195 min Scan# 2320
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 75 Resp: 16452

Ion	Ratio	Lower	Upper
75	100		
77	34.7	14.2	54.2

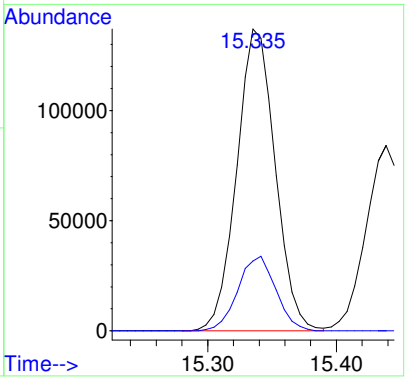


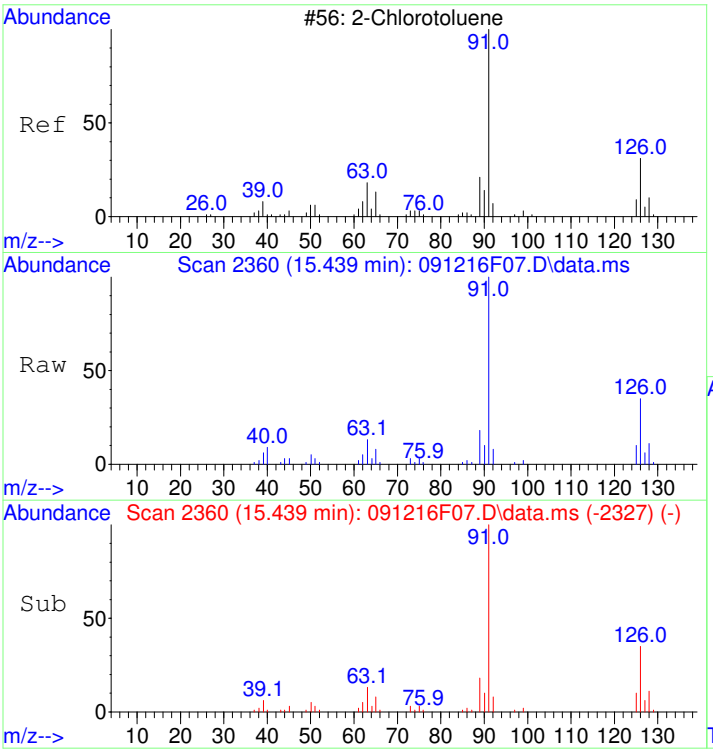


#60
Propylbenzene
Concen: 0.42 ug/L
RT: 15.335 min Scan# 2343
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 91 Resp: 284877

Ion	Ratio	Lower	Upper
91	100		
120	24.3	4.3	44.3

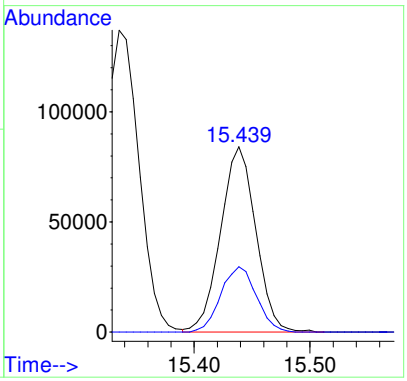


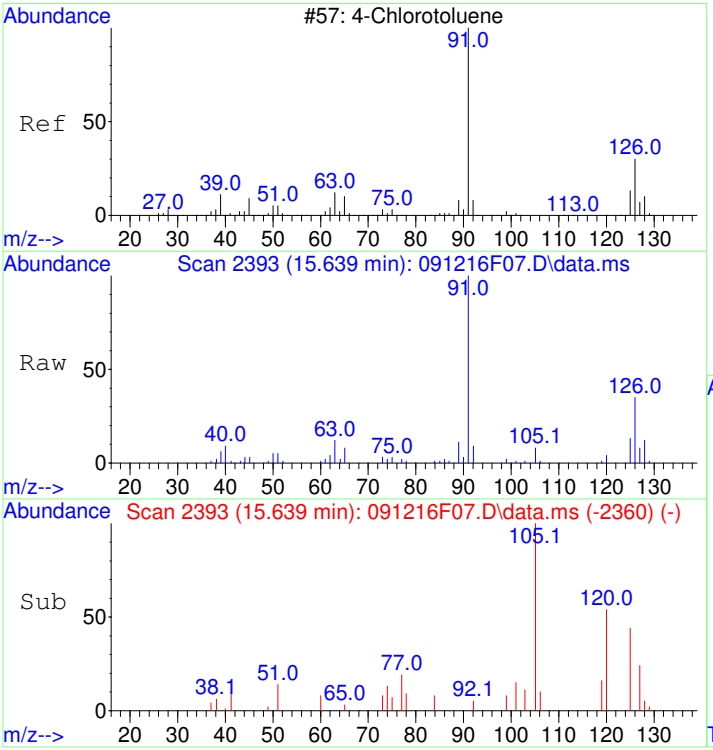


#61
2-Chlorotoluene
Concen: 0.45 ug/L
RT: 15.439 min Scan# 2360
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 91 Resp: 178408

Ion	Ratio	Lower	Upper
91	100		
126	35.4	16.2	56.2

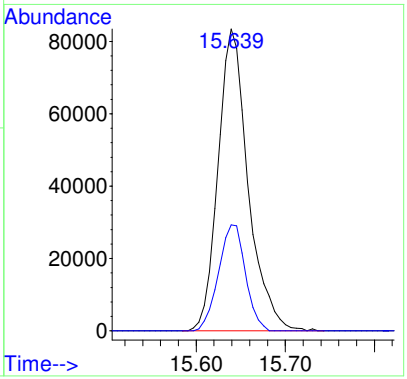


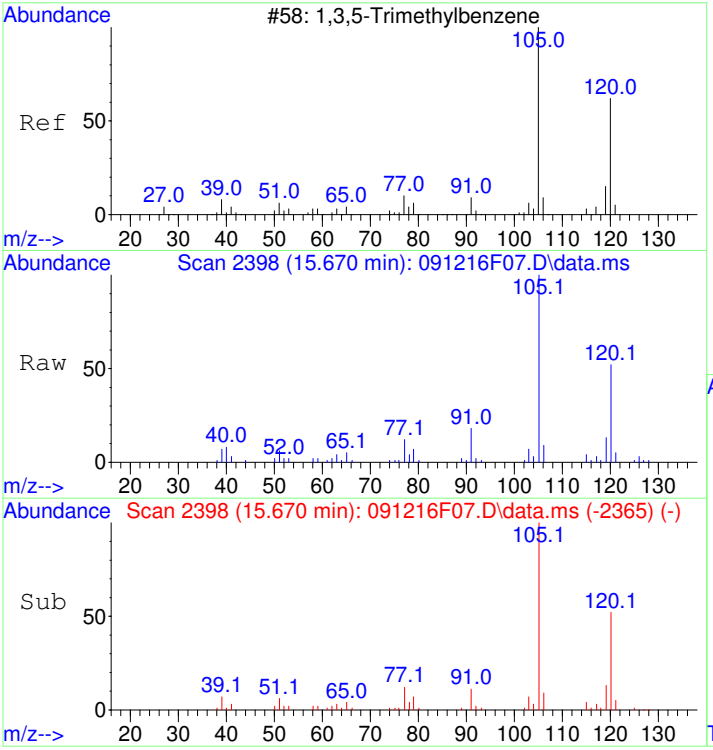


#62
4-Chlorotoluene
Concen: 0.43 ug/L
RT: 15.639 min Scan# 2393
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 91 Resp: 195009

Ion	Ratio	Lower	Upper
91	100		
126	31.4	12.2	52.2

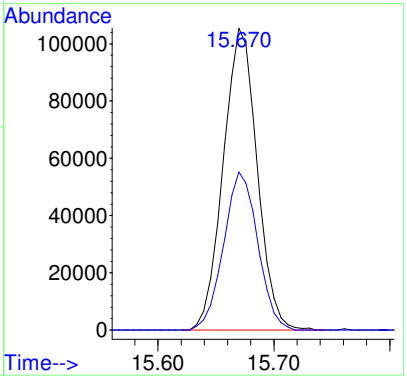


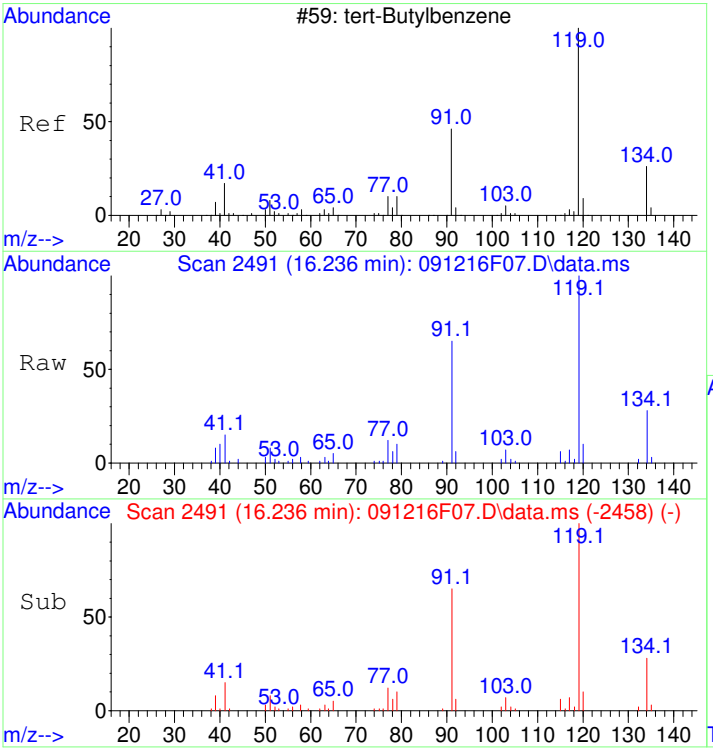


#63
1,3,5-Trimethylbenzene
Concen: 0.43 ug/L
RT: 15.670 min Scan# 2398
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:105 Resp: 214478

Ion	Ratio	Lower	Upper
105	100		
120	52.7	32.1	72.1

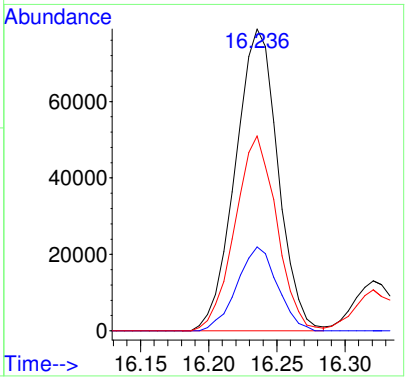


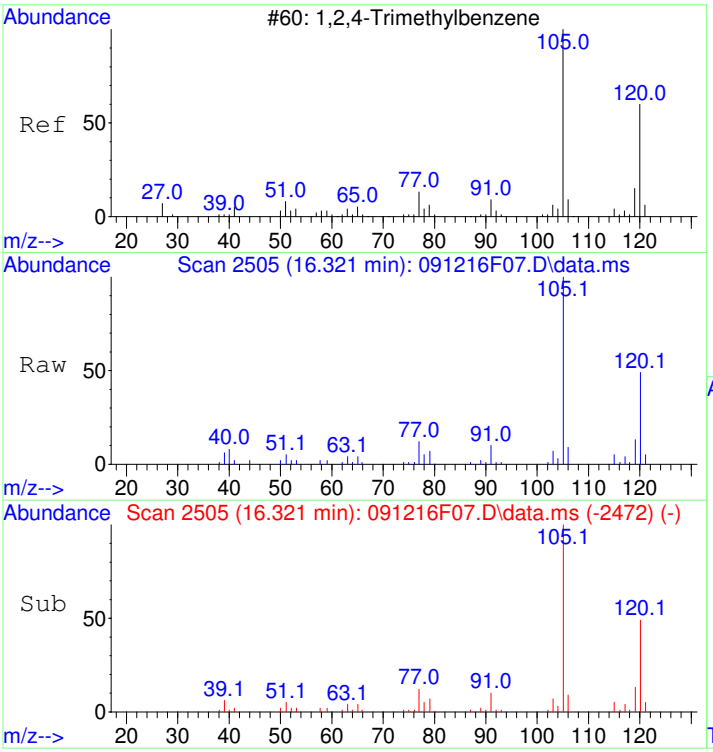


#64
tert-Butylbenzene
Concen: 0.41 ug/L
RT: 16.236 min Scan# 2491
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:119 Resp: 171514

Ion	Ratio	Lower	Upper
119	100		
134	26.4	7.1	47.1
91	63.2	40.5	80.5

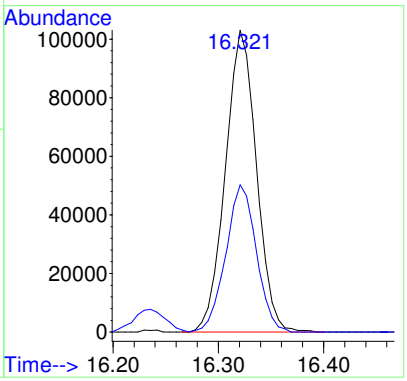


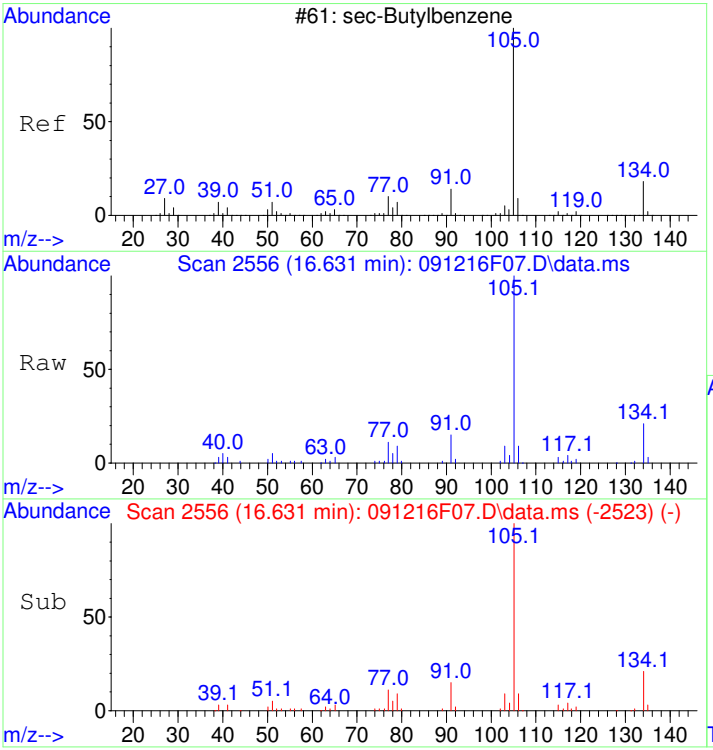


#65
1,2,4-Trimethylbenzene
Concen: 0.42 ug/L
RT: 16.321 min Scan# 2505
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:105 Resp: 211479

Ion	Ratio	Lower	Upper
105	100		
120	48.0	28.9	68.9

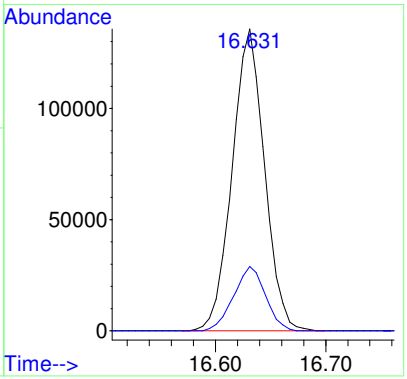


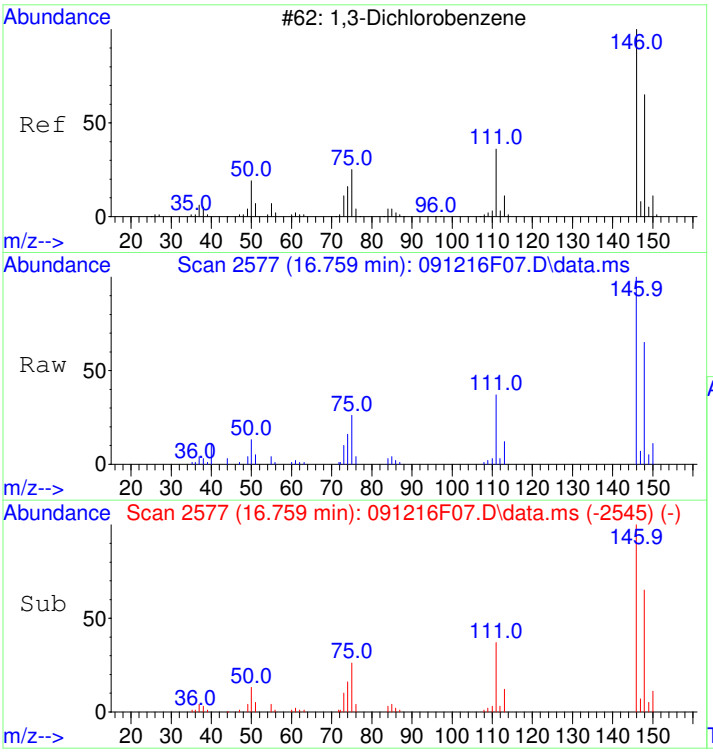


#66
sec-Butylbenzene
Concen: 0.42 ug/L
RT: 16.631 min Scan# 2556
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:105 Resp: 277696

Ion	Ratio	Lower	Upper
105	100		
134	20.9	1.3	41.3

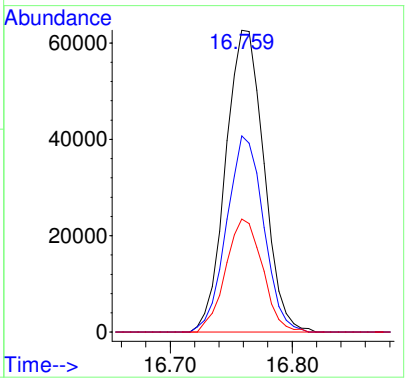


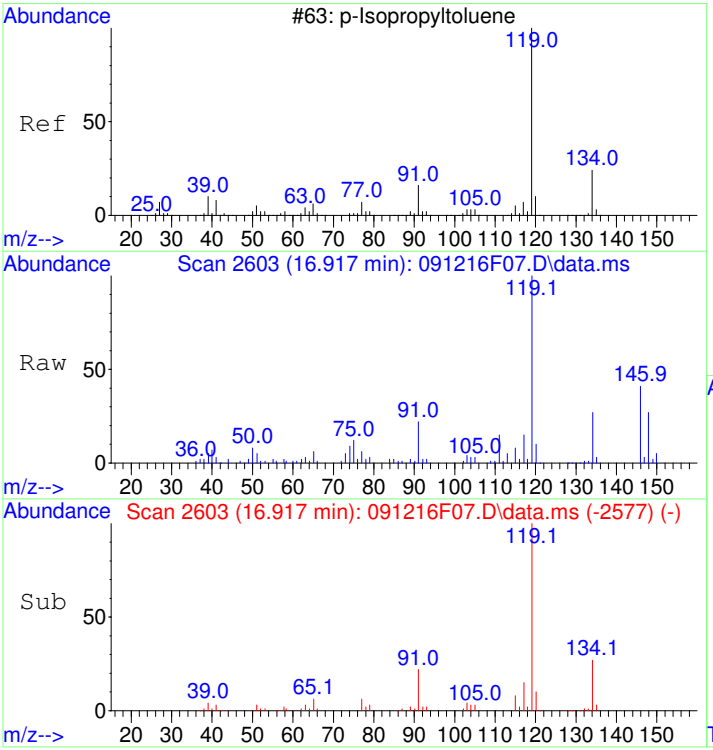


#67
1,3-Dichlorobenzene
Concen: 0.46 ug/L
RT: 16.759 min Scan# 2577
Delta R.T. -0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:146 Resp: 136237

Ion	Ratio	Lower	Upper
146	100		
148	63.0	43.9	83.9
111	36.3	16.1	56.1

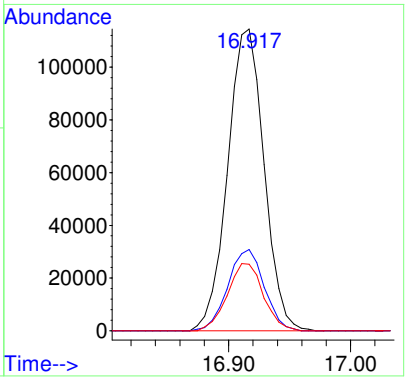


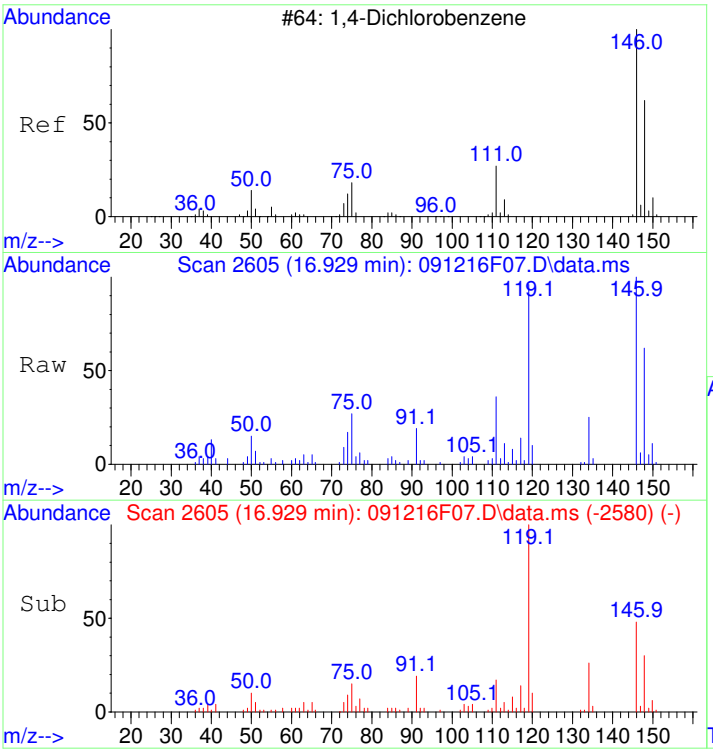


#68
p-Isopropyltoluene
Concen: 0.40 ug/L
RT: 16.917 min Scan# 2603
Delta R.T. 0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:119 Resp: 236876

Ion	Ratio	Lower	Upper
119	100		
134	27.0	7.3	47.3
91	22.1	0.4	40.4

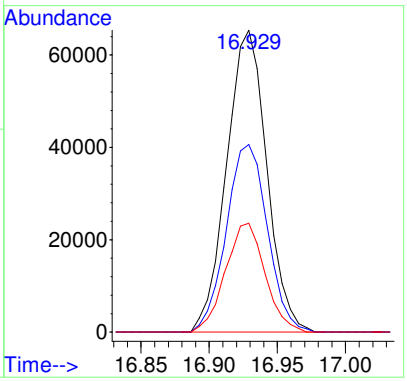


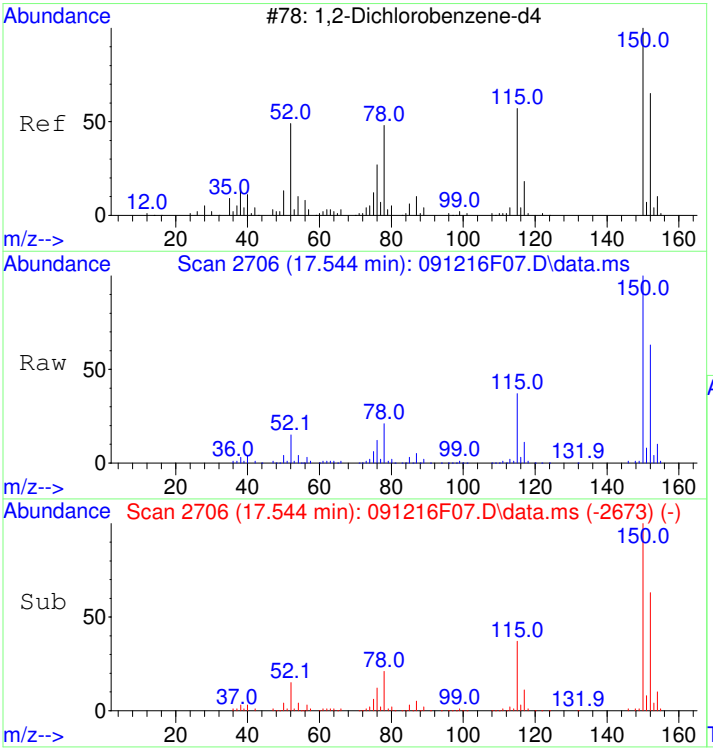


#69
1,4-Dichlorobenzene
Concen: 0.46 ug/L
RT: 16.929 min Scan# 2605
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:146 Resp: 133730

Ion	Ratio	Lower	Upper
146	100		
148	63.6	44.0	84.0
111	35.6	14.7	54.7

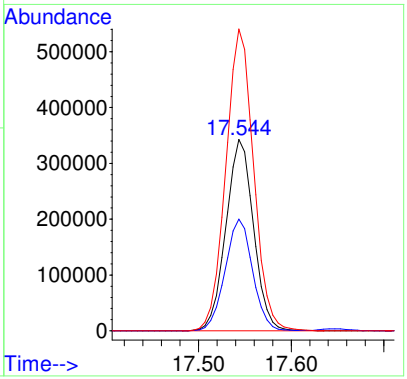


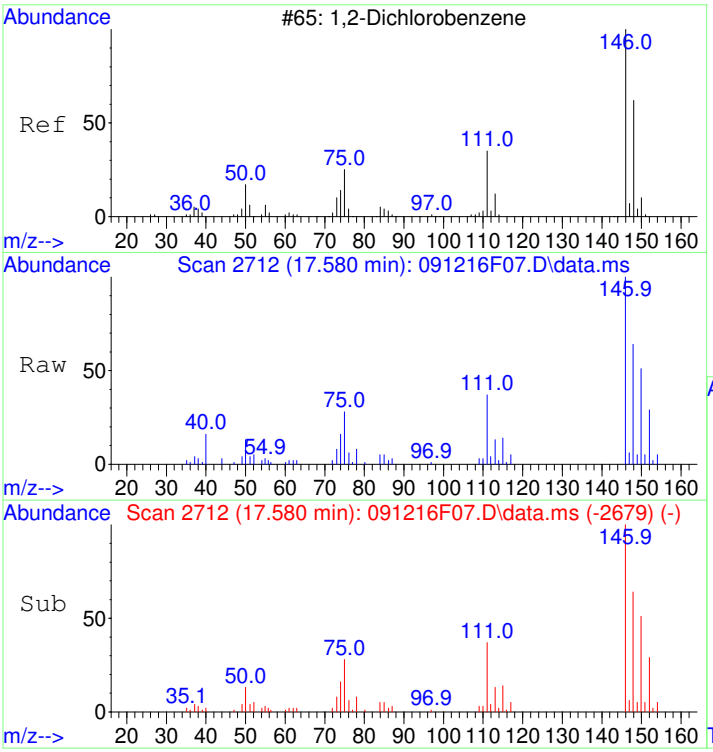


#70
1,2-Dichlorobenzene-d4
Concen: 4.85 ug/L
RT: 17.544 min Scan# 2706
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:152 Resp: 711001

Ion	Ratio	Lower	Upper
152	100		
115	58.0	38.1	78.1
150	158.7	155.0	195.0

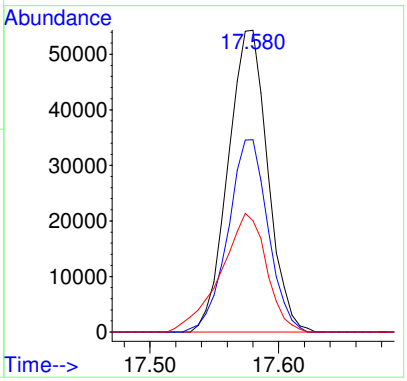


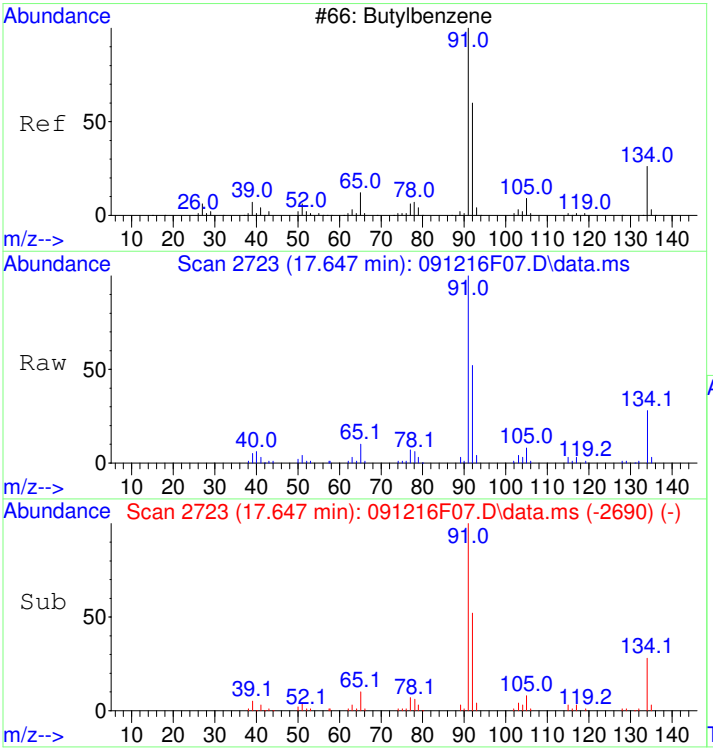


#71
1,2-Dichlorobenzene
Concen: 0.49 ug/L
RT: 17.580 min Scan# 2712
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:146 Resp: 116418

Ion	Ratio	Lower	Upper
146	100		
148	64.3	43.8	83.8
111	45.3	18.5	58.5

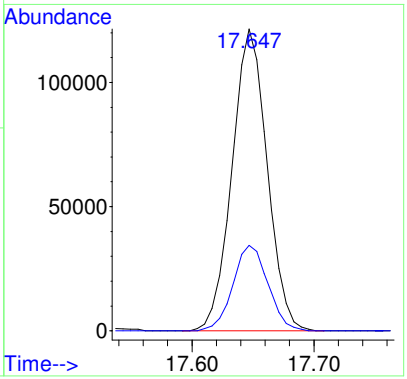


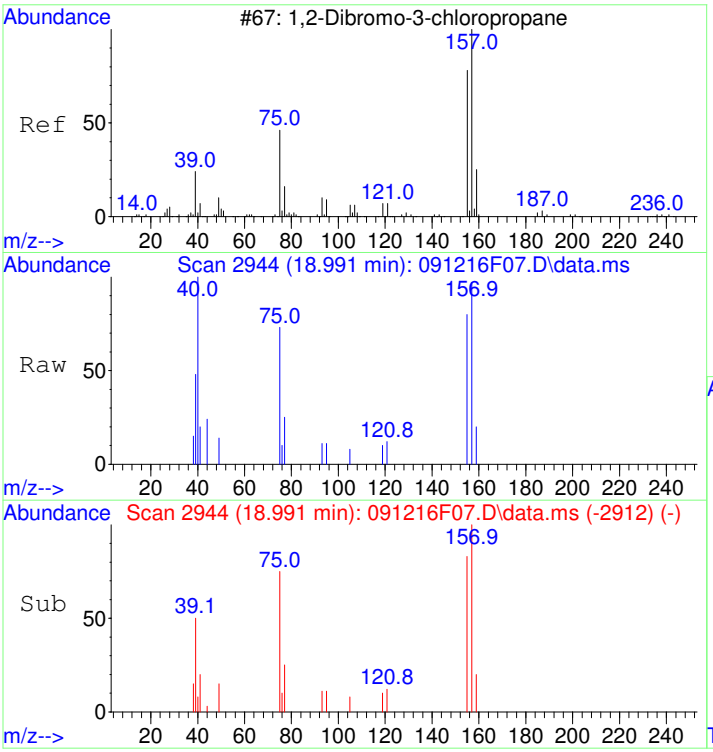


#72
Butylbenzene
Concen: 0.44 ug/L
RT: 17.647 min Scan# 2723
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 91 Resp: 242468

Ion	Ratio	Lower	Upper
91	100		
134	28.2	8.9	48.9

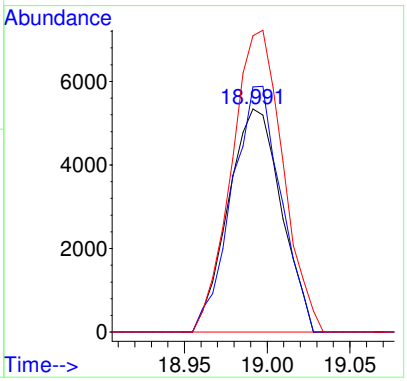


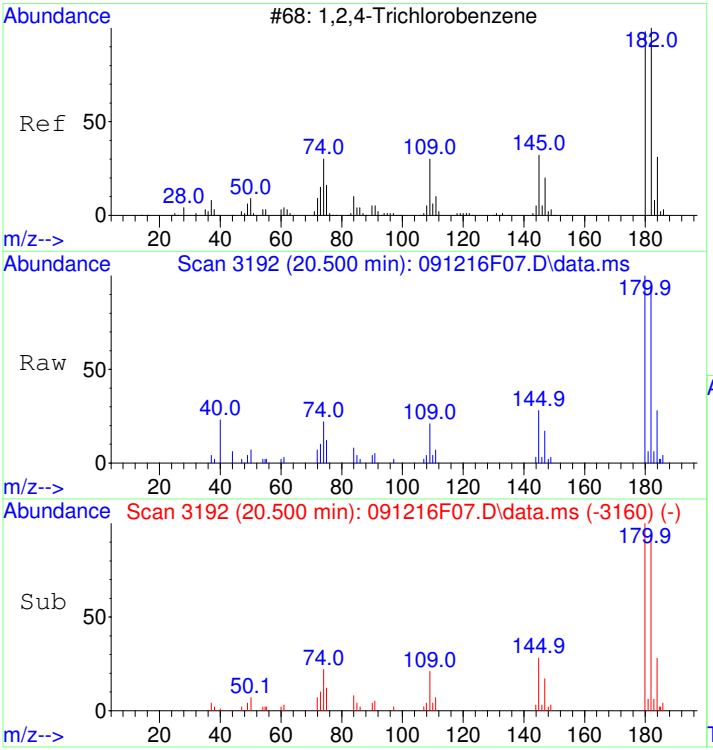


#73
1,2-Dibromo-3-chloropropane
Concen: 1.85 ug/L
RT: 18.991 min Scan# 2944
Delta R.T. -0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion: 75 Resp: 11915

Ion	Ratio	Lower	Upper
75	100		
155	102.1	83.0	123.0
157	131.0	113.1	153.1

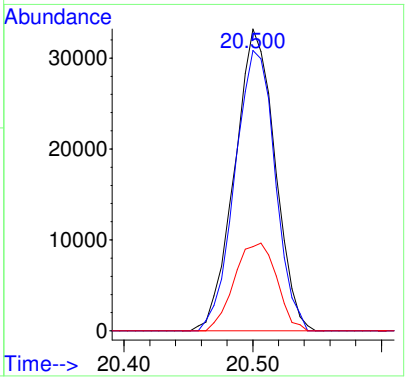


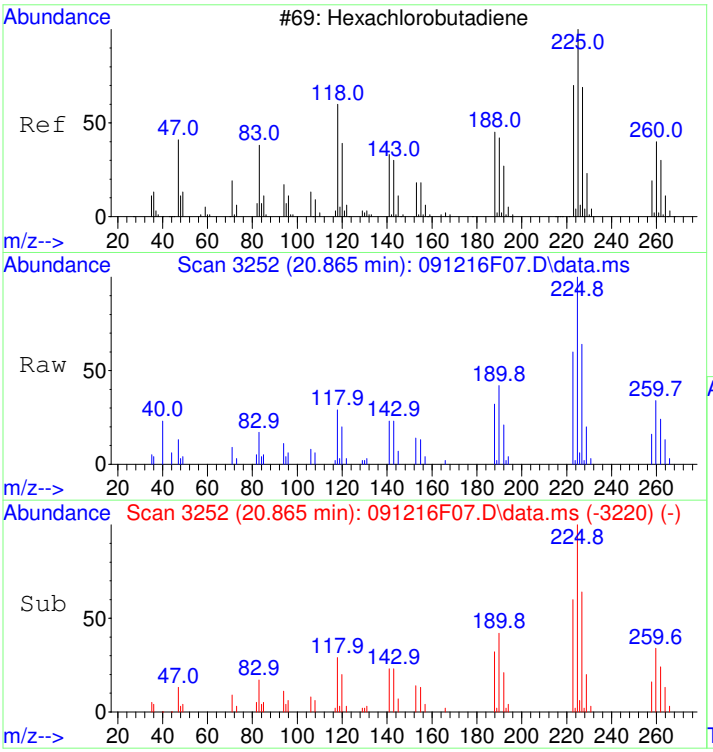


#74
1,2,4-Trichlorobenzene
Concen: 0.43 ug/L
RT: 20.500 min Scan# 3192
Delta R.T. -0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:180 Resp: 72469

Ion	Ratio	Lower	Upper
180	100		
182	92.5	75.9	115.9
184	30.5	10.6	50.6

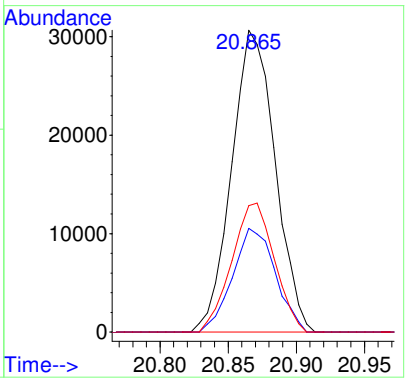


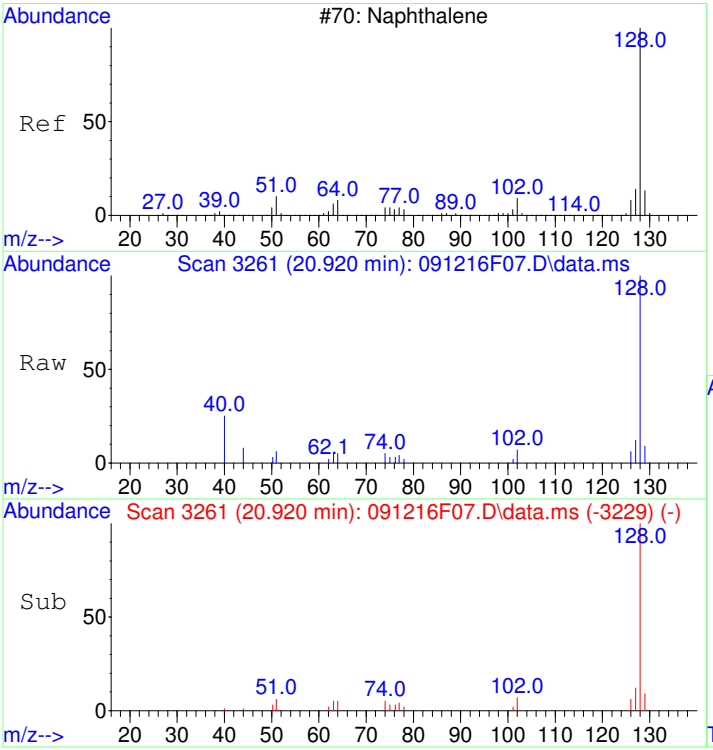


#75
Hexachlorobutadiene
Concen: 0.54 ug/L
RT: 20.865 min Scan# 3252
Delta R.T. -0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:225 Resp: 67955

Ion	Ratio	Lower	Upper
225	100		
260	33.8	14.0	54.0
190	41.9	22.4	62.4

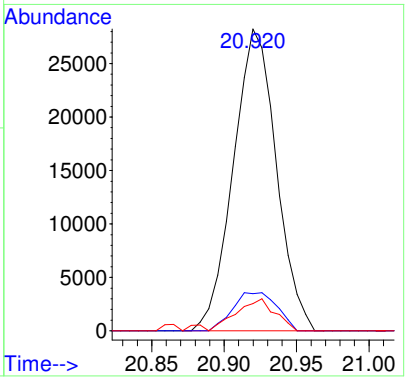


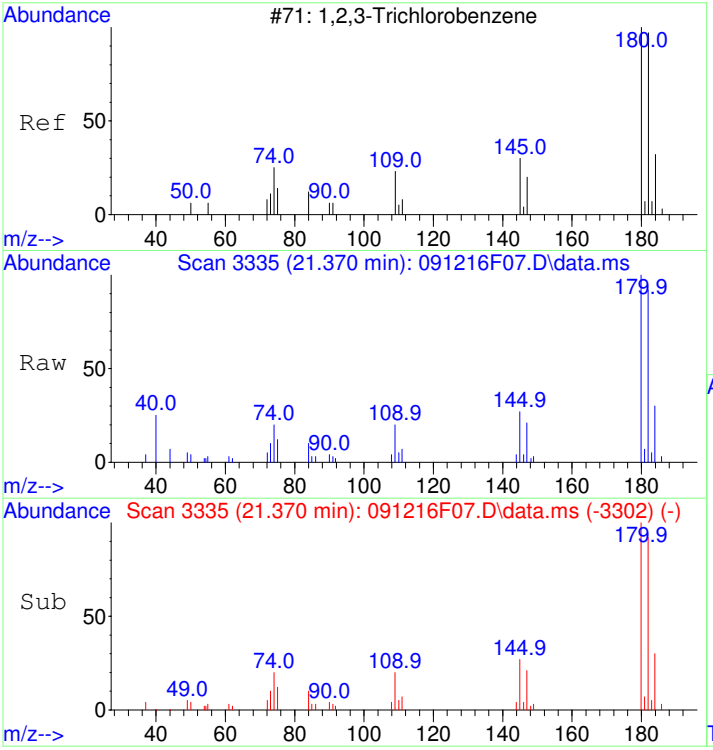


#76
Naphthalene
Concen: 0.35 ug/L
RT: 20.920 min Scan# 3261
Delta R.T. -0.006 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:128 Resp: 58257

Ion	Ratio	Lower	Upper
128	100		
127	13.1	0.0	32.2
129	9.5	0.0	30.7

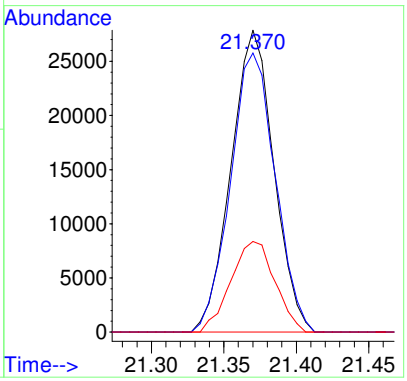




#77
1,2,3-Trichlorobenzene
Concen: 0.45 ug/L
RT: 21.370 min Scan# 3335
Delta R.T. 0.000 min
Lab File: 091216F07.D
Acq: 12 Sep 2016 15:57

Tgt Ion:180 Resp: 57234

Ion	Ratio	Lower	Upper
180	100		
182	96.4	74.8	114.8
184	30.9	10.7	50.7



S16I043-CAL2

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F08.D
Acq On : 12 Sep 2016 16:30
Operator : YNB
Sample : S16I043-CAL2
Misc : 1ug/L, WATER
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 13 08:56:43 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:55:32 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.807	53	105705	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2125561	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1446141	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	274723	4.99	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	=	99.80%	
39) Toluene-d8	10.371	98	1981579	5.12	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	=	102.40%	
56) 4-Bromofluorobenzene	14.842	95	667938	4.91	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	=	98.20%	
70) 1,2-Dichlorobenzene-d4	17.543	152	730680	4.95	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	=	99.00%	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.458	85	122401	1.02	ug/L	99
3) Chloromethane	1.665	50	117488	1.00	ug/L #	95
4) Vinyl chloride	1.750	62	110337	0.98	ug/L	99
5) Bromomethane	2.097	94	40763	0.85	ug/L	99
6) Chloroethane	2.213	64	65797	0.97	ug/L	100
7) Trichlorofluoromethane	2.499	101	160614	0.99	ug/L	100
8) 1,1-Dichloroethene	3.131	96	101018	0.98	ug/L	98
9) 1,1,2-Trichloro-1,2,2-...	3.162	101	102516	1.03	ug/L	98
10) Acetone	3.247	43	50845	8.19	ug/L	89
11) Carbon disulfide	3.387	76	275452	0.97	ug/L	99
12) Dichloromethane	3.837	84	93712	1.00	ug/L #	27
13) tert-Butyl alcohol	4.190	59	25281	18.48	ug/L	85
14) trans-1,2-Dichloroethene	4.281	96	113583	0.98	ug/L	100
15) tert-Butyl methyl ethe...	4.342	73	429659	3.72	ug/L	98
16) 1,1-Dichloroethane	4.963	63	165572	0.99	ug/L	99
17) Diisopropyl ether	5.182	45	765120	3.82	ug/L	100
18) Ethyl-tert-butyl ether	5.778	59	551478	3.77	ug/L	100
19) 2,2-Dichloropropane	5.899	77	100453	0.95	ug/L	98
20) cis-1,2-Dichloroethene	5.918	96	115775	0.97	ug/L	99
21) 2-Butanone (MEK)	6.021	43	73510	7.72	ug/L	96
22) Bromochloromethane	6.289	128	41365	0.96	ug/L	99
23) Chloroform	6.465	83	169779	0.97	ug/L	100
25) 1,1,1-Trichloroethane	6.703	97	149261	0.96	ug/L	99
26) Carbon tetrachloride	6.964	117	134421	0.95	ug/L	99
27) 1,1-Dichloropropene	6.982	75	149904	0.98	ug/L	100
29) Benzene	7.305	78	437704	0.98	ug/L	99
30) 1,2-Dichloroethane	7.360	62	73527	0.95	ug/L	99
31) tert-Amyl methyl ether	7.591	73	443973	3.73	ug/L	98
32) Trichloroethene	8.376	95	118417	0.98	ug/L	98
33) 1,2-Dichloropropane	8.728	63	82804	0.98	ug/L	99
34) Dibromomethane	8.911	93	32758	0.94	ug/L	99
35) Bromodichloromethane	9.209	83	96965	0.94	ug/L	99
36) cis-1,3-Dichloropropene	9.951	75	81687	0.80	ug/L	99
38) 4-Methyl-2-pentanone (...	10.280	43	159651	6.78	ug/L	98
40) Toluene	10.480	92	265615	0.96	ug/L	98
41) trans-1,3-Dichloropropene	10.894	75	50449	0.83	ug/L	100
42) 1,1,2-Trichloroethane	11.180	83	38344	0.98	ug/L	99
43) Tetrachloroethene	11.375	166	128266	0.96	ug/L	100
44) 1,3-Dichloropropane	11.448	76	75195	0.92	ug/L	97
45) 2-Hexanone	11.679	43	102268	6.74	ug/L	95
46) Chlorodibromomethane	11.813	129	55691	0.92	ug/L	97
47) 1,2-Dibromoethane (EDB)	11.965	107	39700	0.93	ug/L	99

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F08.D
Acq On : 12 Sep 2016 16:30
Operator : YNB
Sample : S16I043-CAL2
Misc : 1ug/L, WATER
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 13 08:56:43 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:55:32 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) Chlorobenzene	12.823	112	297221	0.96 ug/L	98
49) 1,1,1,2-Tetrachloroethane	12.993	131	79568	0.91 ug/L	97
50) Ethylbenzene	13.054	91	491197	0.91 ug/L	99
51) m&p-Xylene	13.267	106	417802	1.84 ug/L	99
52) o-Xylene	13.942	106	175415	0.86 ug/L	100
53) Styrene	13.972	104	295285	0.89 ug/L	99
54) Bromoform	14.246	173	29495	0.88 ug/L	99
55) Isopropylbenzene	14.611	105	476382	0.87 ug/L	99
57) Bromobenzene	15.067	156	115169	0.92 ug/L	100
58) 1,1,2,2-Tetrachloroethane	15.159	83	48792	0.95 ug/L	98
59) 1,2,3-Trichloropropane	15.195	75	33669	0.94 ug/L	100
60) Propylbenzene	15.341	91	623532	0.92 ug/L	99
61) 2-Chlorotoluene	15.439	91	374299	0.93 ug/L	99
62) 4-Chlorotoluene	15.639	91	412050	0.90 ug/L	100
63) 1,3,5-Trimethylbenzene	15.670	105	466804	0.92 ug/L	100
64) tert-Butylbenzene	16.235	119	383130	0.90 ug/L	98
65) 1,2,4-Trimethylbenzene	16.321	105	463703	0.91 ug/L	100
66) sec-Butylbenzene	16.631	105	606163	0.92 ug/L	100
67) 1,3-Dichlorobenzene	16.765	146	272633	0.92 ug/L	100
68) p-Isopropyltoluene	16.911	119	531998	0.90 ug/L	99
69) 1,4-Dichlorobenzene	16.929	146	271672	0.93 ug/L	100
71) 1,2-Dichlorobenzene	17.574	146	227926	0.95 ug/L	97
72) Butylbenzene	17.647	91	519975	0.94 ug/L	100
73) 1,2-Dibromo-3-chloropr...	18.985	75	24742	3.82 ug/L	96
74) 1,2,4-Trichlorobenzene	20.506	180	148923	0.88 ug/L	99
75) Hexachlorobutadiene	20.865	225	139148	1.09 ug/L	99
76) Naphthalene	20.920	128	130051	0.78 ug/L	100
77) 1,2,3-Trichlorobenzene	21.370	180	121393	0.94 ug/L	99

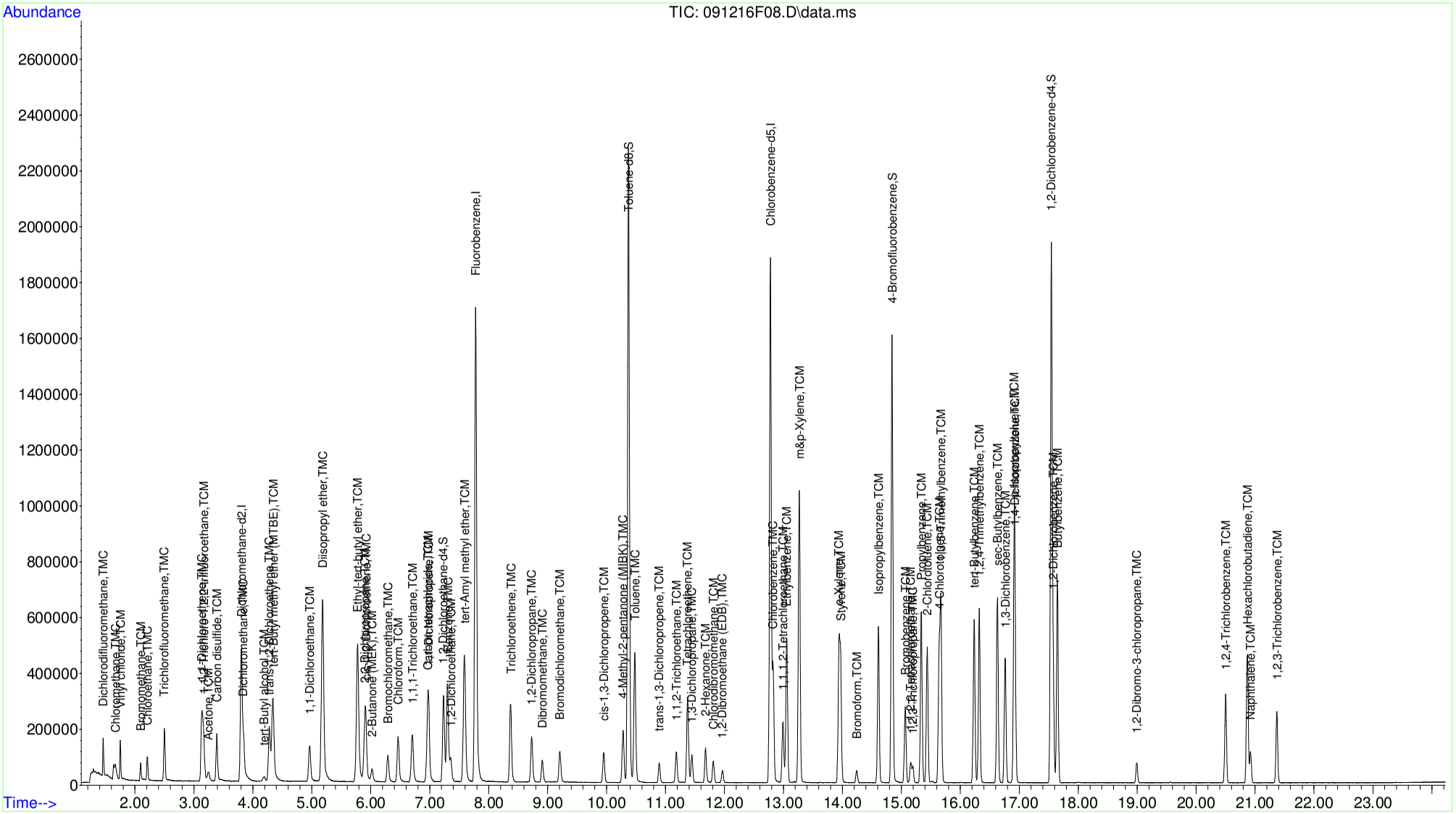
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Table of Contents

Quantitation Report (Not Reviewed)

ata Path : C:\msdchem\1\2016\data\091216FW\
ata File : 091216F08.D
cq On : 12 Sep 2016 16:30
perator : YNB
ample : S16I043-CAL2
isc : 1ug/L, WATER
LS Vial : 14 Sample Multiplier: 1

_uant Time: Sep 13 08:56:43 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:55:32 2016
Response via : Initial Calibration



S16I043-CAL3

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F09.D
Acq On : 12 Sep 2016 17:03
Operator : YNB
Sample : S16I043-CAL3
Misc : 2ug/L, WATER
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 13 08:57:08 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:57:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.801	53	110913	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2158858	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1491600	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	284610	5.09	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	=	101.80%	
39) Toluene-d8	10.371	98	2016046	5.05	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	=	101.00%	
56) 4-Bromofluorobenzene	14.842	95	703585	5.02	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	=	100.40%	
70) 1,2-Dichlorobenzene-d4	17.543	152	775037	5.09	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	=	101.80%	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.458	85	241746	1.93	ug/L	99
3) Chloromethane	1.665	50	239714	1.95	ug/L	100
4) Vinyl chloride	1.750	62	232843	1.97	ug/L	97
5) Bromomethane	2.097	94	91575	1.82	ug/L	99
6) Chloroethane	2.207	64	144611	2.02	ug/L	100
7) Trichlorofluoromethane	2.499	101	323062	1.90	ug/L	98
8) 1,1-Dichloroethene	3.131	96	209148	1.94	ug/L	99
9) 1,1,2-Trichloro-1,2,2-...	3.162	101	200159	1.91	ug/L	99
10) Acetone	3.247	43	99540	15.28	ug/L	97
11) Carbon disulfide	3.387	76	564514	1.90	ug/L	100
12) Dichloromethane	3.837	84	191663	1.95	ug/L #	34
13) tert-Butyl alcohol	4.184	59	58317	40.77	ug/L	95
14) trans-1,2-Dichloroethene	4.281	96	234214	1.94	ug/L	99
15) tert-Butyl methyl ethe...	4.336	73	935142	7.72	ug/L	98
16) 1,1-Dichloroethane	4.963	63	346926	1.97	ug/L	100
17) Diisopropyl ether	5.182	45	1674426	7.97	ug/L	99
18) Ethyl-tert-butyl ether	5.772	59	1182135	7.70	ug/L	100
19) 2,2-Dichloropropane	5.899	77	206643	1.87	ug/L	100
20) cis-1,2-Dichloroethene	5.918	96	242796	1.94	ug/L	99
21) 2-Butanone (MEK)	6.015	43	155335	15.66	ug/L	99
22) Bromochloromethane	6.289	128	87439	1.93	ug/L	98
23) Chloroform	6.465	83	358744	1.95	ug/L	98
25) 1,1,1-Trichloroethane	6.702	97	310991	1.98	ug/L	99
26) Carbon tetrachloride	6.964	117	281519	1.96	ug/L	99
27) 1,1-Dichloropropene	6.976	75	307649	1.99	ug/L	100
29) Benzene	7.305	78	903105	1.98	ug/L	100
30) 1,2-Dichloroethane	7.353	62	158867	2.01	ug/L	100
31) tert-Amyl methyl ether	7.585	73	952052	7.88	ug/L	99
32) Trichloroethene	8.369	95	243744	1.99	ug/L	99
33) 1,2-Dichloropropane	8.728	63	172846	2.01	ug/L	100
34) Dibromomethane	8.905	93	71768	2.03	ug/L	99
35) Bromodichloromethane	9.209	83	205271	1.97	ug/L	100
36) cis-1,3-Dichloropropene	9.951	75	221380	2.13	ug/L	97
38) 4-Methyl-2-pentanone (...	10.280	43	390788	16.08	ug/L	99
40) Toluene	10.480	92	553732	1.94	ug/L	100
41) trans-1,3-Dichloropropene	10.894	75	112117	1.79	ug/L	99
42) 1,1,2-Trichloroethane	11.180	83	80250	1.98	ug/L	98
43) Tetrachloroethene	11.375	166	268386	1.94	ug/L	99
44) 1,3-Dichloropropane	11.448	76	165348	1.96	ug/L	99
45) 2-Hexanone	11.679	43	240476	15.37	ug/L	99
46) Chlorodibromomethane	11.813	129	122363	1.96	ug/L	98
47) 1,2-Dibromoethane (EDB)	11.965	107	85724	1.95	ug/L	98

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F09.D
Acq On : 12 Sep 2016 17:03
Operator : YNB
Sample : S16I043-CAL3
Misc : 2ug/L, WATER
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 13 08:57:08 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:57:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) Chlorobenzene	12.823	112	626074	1.96 ug/L	98
49) 1,1,1,2-Tetrachloroethane	12.993	131	172619	1.91 ug/L	98
50) Ethylbenzene	13.054	91	1089782	1.96 ug/L	100
51) m&p-Xylene	13.267	106	917508	3.91 ug/L	99
52) o-Xylene	13.942	106	403368	1.92 ug/L	99
53) Styrene	13.972	104	670649	1.96 ug/L	100
54) Bromoform	14.240	173	65331	1.88 ug/L	100
55) Isopropylbenzene	14.611	105	1096495	1.95 ug/L	99
57) Bromobenzene	15.067	156	248999	1.93 ug/L	99
58) 1,1,2,2-Tetrachloroethane	15.159	83	107130	2.01 ug/L	100
59) 1,2,3-Trichloropropane	15.195	75	73597	2.00 ug/L	99
60) Propylbenzene	15.335	91	1404231	2.01 ug/L	100
61) 2-Chlorotoluene	15.438	91	816114	1.96 ug/L	99
62) 4-Chlorotoluene	15.639	91	918089	1.95 ug/L	100
63) 1,3,5-Trimethylbenzene	15.670	105	1030368	1.97 ug/L	100
64) tert-Butylbenzene	16.235	119	872153	2.00 ug/L	99
65) 1,2,4-Trimethylbenzene	16.321	105	1050047	1.99 ug/L	99
66) sec-Butylbenzene	16.631	105	1366650	2.01 ug/L	100
67) 1,3-Dichlorobenzene	16.759	146	596483	1.96 ug/L	100
68) p-Isopropyltoluene	16.911	119	1214476	2.00 ug/L	100
69) 1,4-Dichlorobenzene	16.929	146	591297	1.95 ug/L	100
71) 1,2-Dichlorobenzene	17.574	146	492661	1.99 ug/L	99
72) Butylbenzene	17.647	91	1146606	2.01 ug/L	100
73) 1,2-Dibromo-3-chloropr...	18.991	75	56460	8.44 ug/L	97
74) 1,2,4-Trichlorobenzene	20.500	180	344729	1.97 ug/L	99
75) Hexachlorobutadiene	20.871	225	286597	2.18 ug/L	100
76) Naphthalene	20.920	128	342672	1.99 ug/L	100
77) 1,2,3-Trichlorobenzene	21.370	180	279306	2.10 ug/L	100

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

Quantitation Report (Not Reviewed)

ata Path : C:\msdchem\1\2016\data\091216FW\
ata File : 091216F09.D
cq On : 12 Sep 2016 17:03
perator : YNB
ample : S16I043-CAL3
isc : 2ug/L, WATER
LS Vial : 15 Sample Multiplier: 1

_uant Time: Sep 13 08:57:08 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:57:00 2016
Response via : Initial Calibration

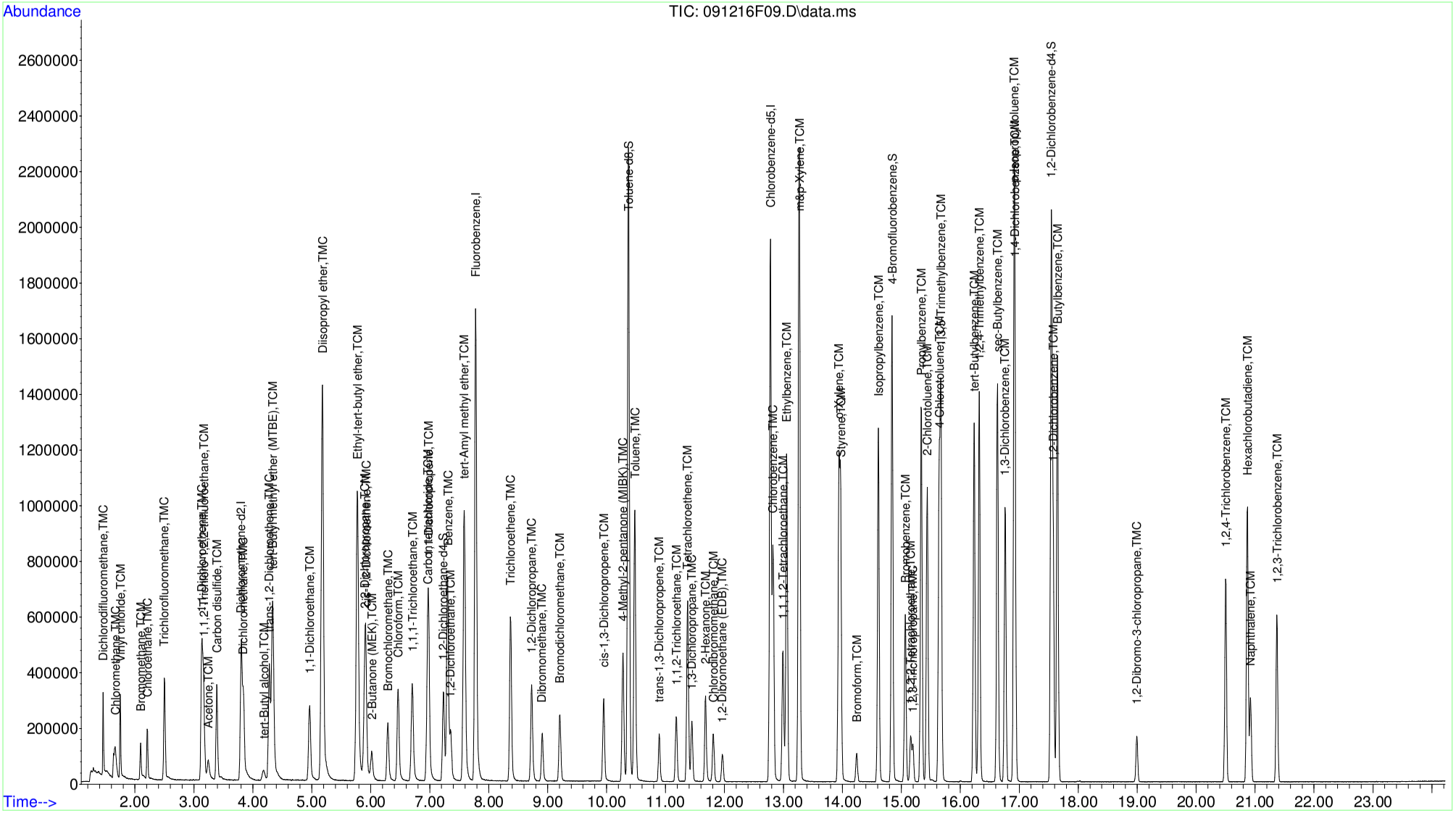


Table of Contents

S16I043-CAL4

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F10.D
Acq On : 12 Sep 2016 17:36
Operator : YNB
Sample : S16I043-CAL4
Misc : 5ug/L, WATER
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 13 08:57:34 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:57:22 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.801	53	103916	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2134253	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1481289	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	267946	4.84	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery = 96.80%			
39) Toluene-d8	10.371	98	2012742	5.08	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery = 101.60%			
56) 4-Bromofluorobenzene	14.842	95	687660	4.94	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery = 98.80%			
70) 1,2-Dichlorobenzene-d4	17.543	152	758286	5.02	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery = 100.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.459	85	589259	5.02	ug/L	100
3) Chloromethane	1.653	50	589391	5.11	ug/L	100
4) Vinyl chloride	1.751	62	564276	5.10	ug/L	100
5) Bromomethane	2.091	94	249466	5.30	ug/L	100
6) Chloroethane	2.207	64	353397	5.28	ug/L	100
7) Trichlorofluoromethane	2.499	101	810858	5.10	ug/L	100
8) 1,1-Dichloroethene	3.132	96	519998	5.14	ug/L	100
9) 1,1,2-Trichloro-1,2,2-...	3.156	101	501163	5.11	ug/L	100
10) Acetone	3.241	43	219187	35.85	ug/L	100
11) Carbon disulfide	3.387	76	1419261	5.11	ug/L	100
12) Dichloromethane	3.837	84	452363	4.92	ug/L	100
13) tert-Butyl alcohol	4.184	59	131841	98.38	ug/L	99
14) trans-1,2-Dichloroethene	4.275	96	587666	5.18	ug/L	100
15) tert-Butyl methyl ethe...	4.336	73	2267308	19.99	ug/L	100
16) 1,1-Dichloroethane	4.963	63	848394	5.14	ug/L	100
17) Diisopropyl ether	5.182	45	4016198	20.40	ug/L	100
18) Ethyl-tert-butyl ether	5.772	59	2925174	20.33	ug/L	100
19) 2,2-Dichloropropane	5.893	77	535855	5.17	ug/L	100
20) cis-1,2-Dichloroethene	5.912	96	600497	5.12	ug/L	100
21) 2-Butanone (MEK)	6.015	43	365570	39.33	ug/L	100
22) Bromochloromethane	6.289	128	215638	5.07	ug/L	100
23) Chloroform	6.465	83	883219	5.12	ug/L	100
25) 1,1,1-Trichloroethane	6.703	97	784014	5.04	ug/L	100
26) Carbon tetrachloride	6.964	117	724125	5.10	ug/L	100
27) 1,1-Dichloropropene	6.976	75	778044	5.09	ug/L	100
29) Benzene	7.305	78	2265929	5.04	ug/L	100
30) 1,2-Dichloroethane	7.354	62	385480	4.94	ug/L	100
31) tert-Amyl methyl ether	7.585	73	2317484	19.39	ug/L	100
32) Trichloroethene	8.369	95	607932	5.02	ug/L	100
33) 1,2-Dichloropropane	8.728	63	421531	4.96	ug/L	100
34) Dibromomethane	8.905	93	172373	4.94	ug/L	100
35) Bromodichloromethane	9.209	83	513902	4.98	ug/L	100
36) cis-1,3-Dichloropropene	9.951	75	501744	4.88	ug/L	100
38) 4-Methyl-2-pentanone (...	10.280	43	999837	41.43	ug/L	100
40) Toluene	10.474	92	1461711	5.16	ug/L	100
41) trans-1,3-Dichloropropene	10.894	75	318526	5.11	ug/L	100
42) 1,1,2-Trichloroethane	11.180	83	199305	4.96	ug/L	100
43) Tetrachloroethene	11.375	166	705105	5.14	ug/L	100
44) 1,3-Dichloropropane	11.448	76	428923	5.12	ug/L	100
45) 2-Hexanone	11.679	43	637850	41.05	ug/L	100
46) Chlorodibromomethane	11.807	129	309229	5.00	ug/L	100
47) 1,2-Dibromoethane (EDB)	11.965	107	219647	5.03	ug/L	100

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F10.D
Acq On : 12 Sep 2016 17:36
Operator : YNB
Sample : S16I043-CAL4
Misc : 5ug/L, WATER
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 13 08:57:34 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:57:22 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
48) Chlorobenzene	12.823	112	1597466	5.03	ug/L	100
49) 1,1,1,2-Tetrachloroethane	12.993	131	454049	5.06	ug/L	100
50) Ethylbenzene	13.054	91	2968514	5.39	ug/L	100
51) m&p-Xylene	13.267	106	2441288	10.48	ug/L	100
52) o-Xylene	13.936	106	1120920	5.39	ug/L	100
53) Styrene	13.966	104	1778183	5.24	ug/L	100
54) Bromoform	14.246	173	170870	4.96	ug/L	100
55) Isopropylbenzene	14.611	105	3061499	5.48	ug/L	100
57) Bromobenzene	15.067	156	647254	5.05	ug/L	100
58) 1,1,2,2-Tetrachloroethane	15.159	83	259164	4.90	ug/L	100
59) 1,2,3-Trichloropropane	15.195	75	180867	4.95	ug/L	100
60) Propylbenzene	15.335	91	3807268	5.49	ug/L	100
61) 2-Chlorotoluene	15.439	91	2143576	5.18	ug/L	100
62) 4-Chlorotoluene	15.639	91	2451980	5.25	ug/L	100
63) 1,3,5-Trimethylbenzene	15.670	105	2741936	5.28	ug/L	100
64) tert-Butylbenzene	16.236	119	2310604	5.32	ug/L	100
65) 1,2,4-Trimethylbenzene	16.321	105	2794867	5.33	ug/L	100
66) sec-Butylbenzene	16.631	105	3687582	5.46	ug/L	100
67) 1,3-Dichlorobenzene	16.765	146	1563324	5.16	ug/L	100
68) p-Isopropyltoluene	16.911	119	3287427	5.44	ug/L	100
69) 1,4-Dichlorobenzene	16.929	146	1532040	5.10	ug/L	100
71) 1,2-Dichlorobenzene	17.580	146	1251071	5.09	ug/L	100
72) Butylbenzene	17.647	91	3037099	5.35	ug/L	100
73) 1,2-Dibromo-3-chloropr...	18.997	75	132568	19.96	ug/L	100
74) 1,2,4-Trichlorobenzene	20.506	180	898559	5.18	ug/L	100
75) Hexachlorobutadiene	20.871	225	632988	4.85	ug/L	100
76) Naphthalene	20.926	128	924759	5.41	ug/L	100
77) 1,2,3-Trichlorobenzene	21.370	180	672257	5.08	ug/L	100

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

Quantitation Report (Not Reviewed)

ata Path : C:\msdchem\1\2016\data\091216FW\
ata File : 091216F10.D
cq On : 12 Sep 2016 17:36
perator : YNB
ample : S16I043-CAL4
isc : 5ug/L, WATER
LS Vial : 16 Sample Multiplier: 1

uant Time: Sep 13 08:57:34 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:57:22 2016
Response via : Initial Calibration

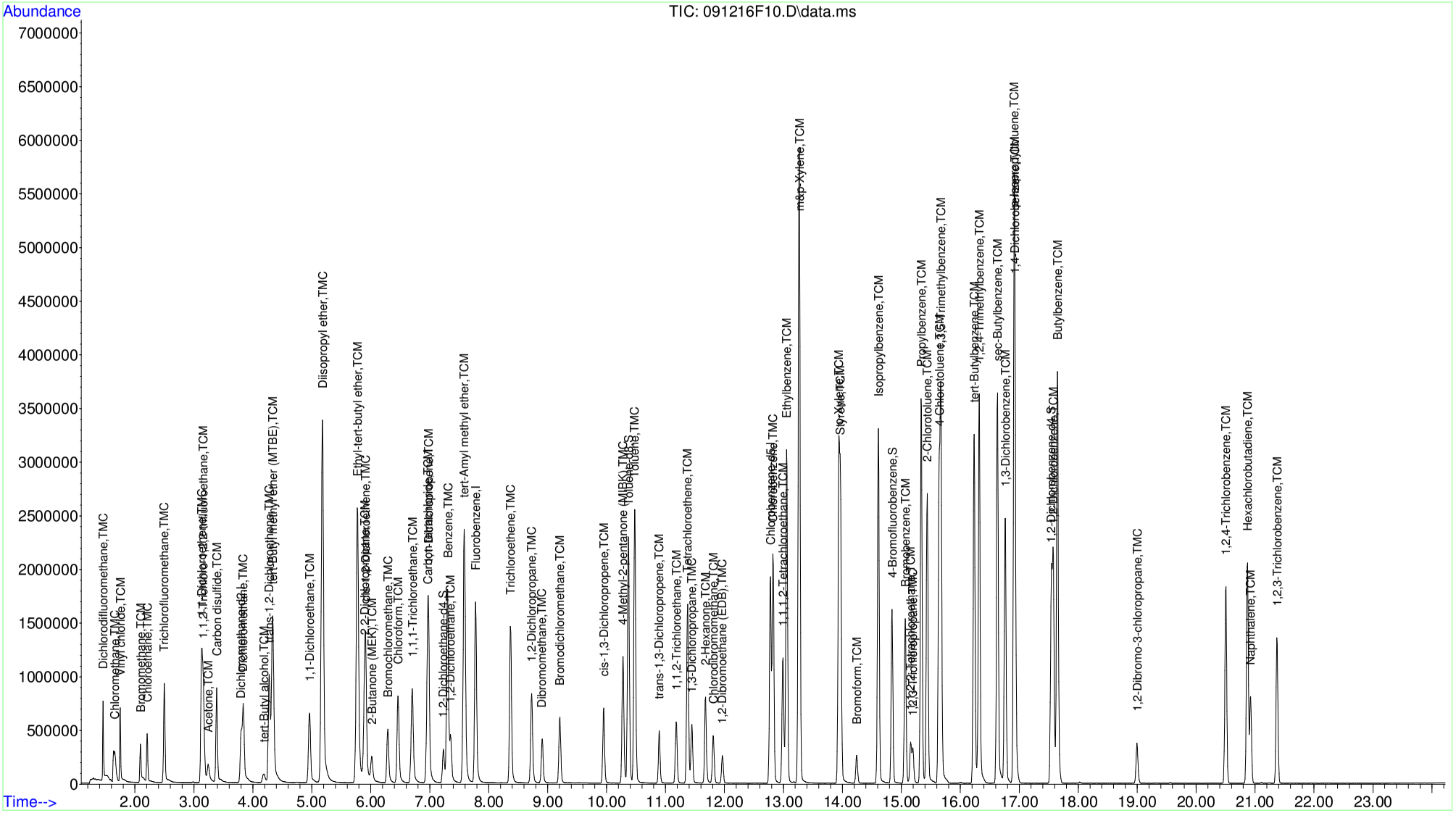
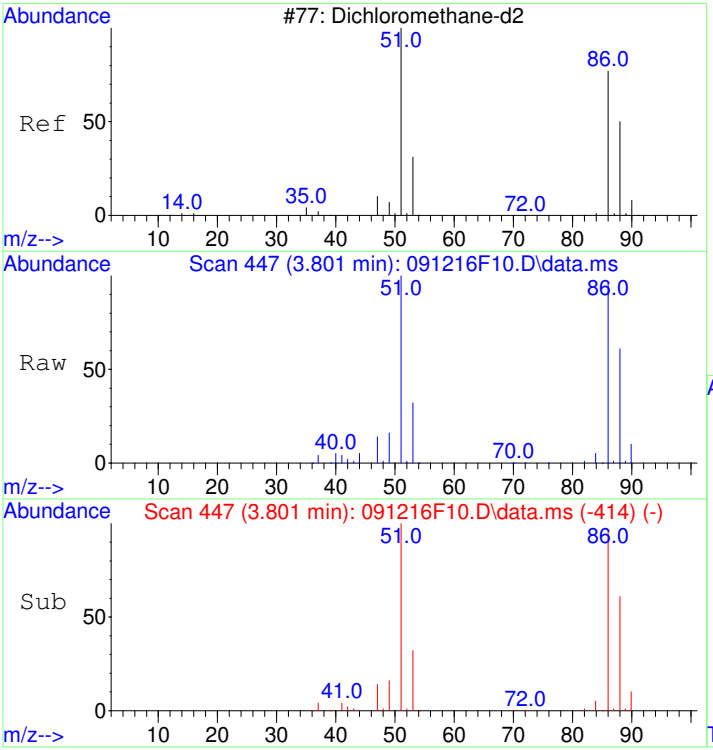


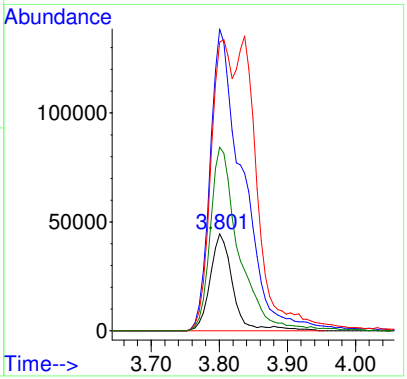
Table of Contents

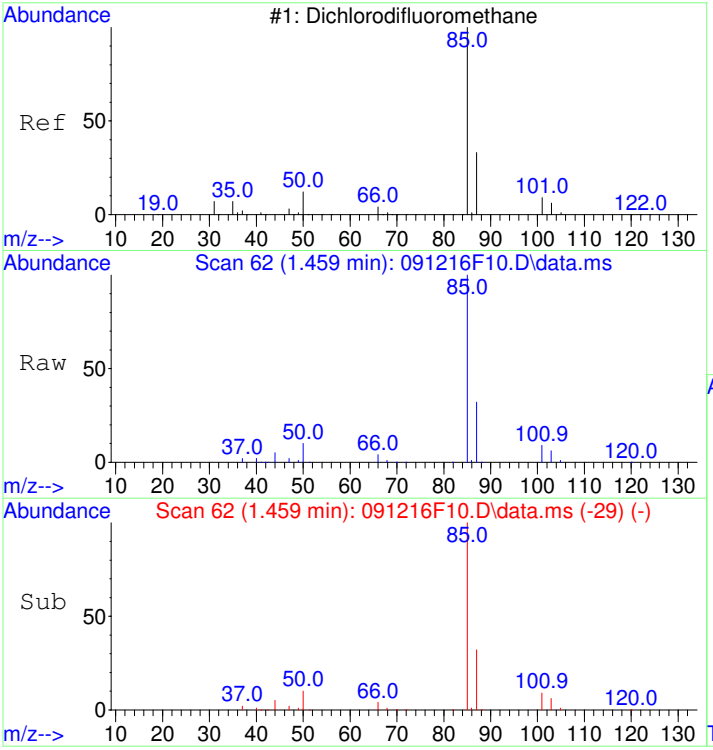


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.801 min Scan# 447
Delta R.T. -0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 53 Resp: 103916

Ion	Ratio	Lower	Upper
53	100		
51	448.6	428.6	468.6
86	0.0	0.0	20.0
88	239.5	219.5	259.5

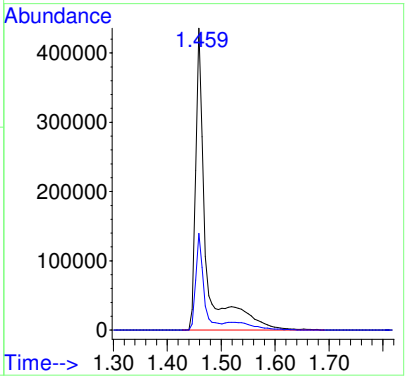


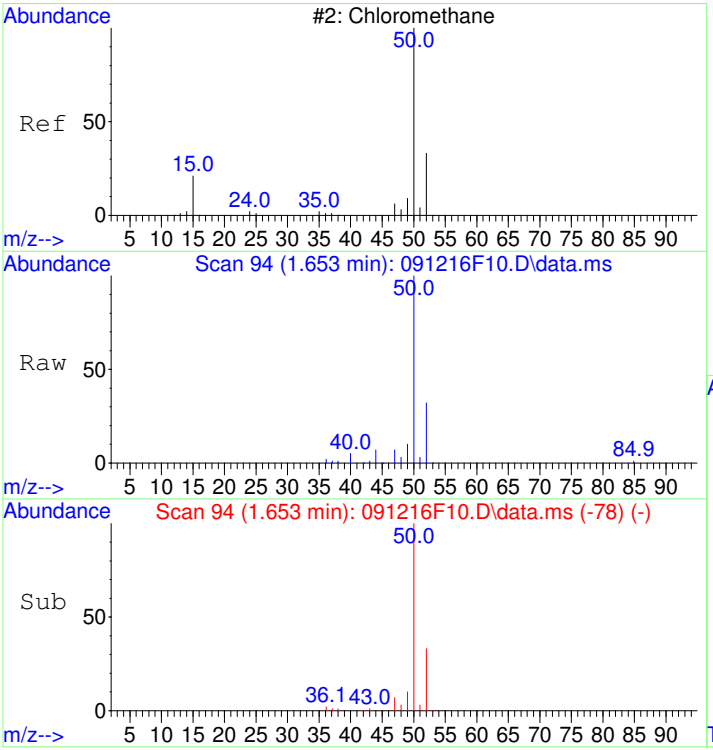


#2
Dichlorodifluoromethane
Concen: 5.02 ug/L
RT: 1.459 min Scan# 62
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 85 Resp: 589259

Ion	Ratio	Lower	Upper
85	100		
87	32.3	12.3	52.3

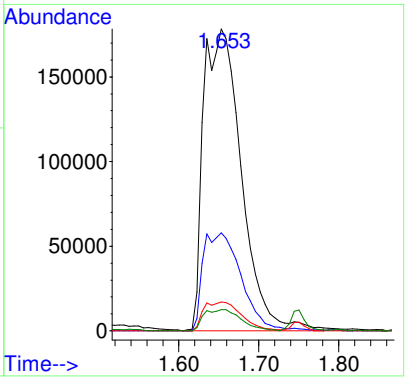


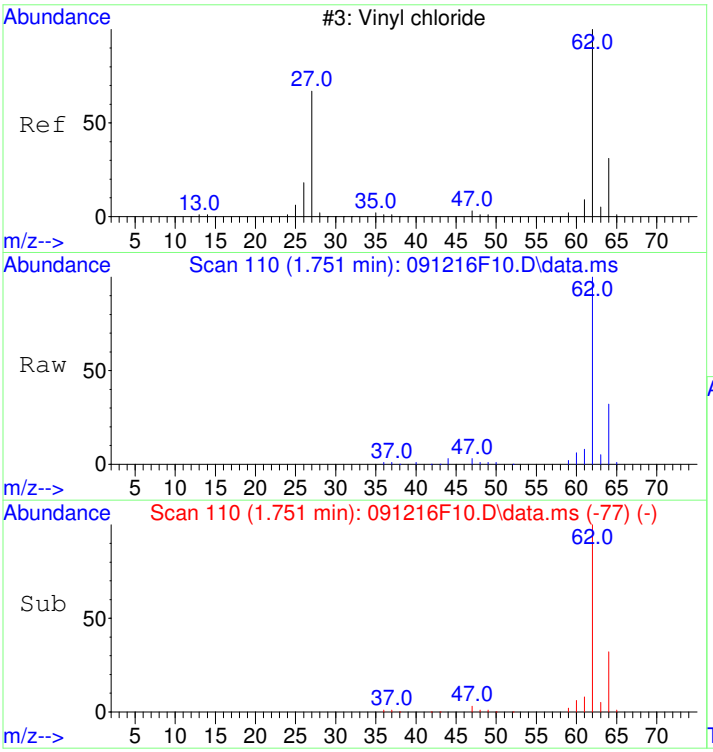


#3
Chloromethane
Concen: 5.11 ug/L
RT: 1.653 min Scan# 94
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 50 Resp: 589391

Ion	Ratio	Lower	Upper
50	100		
52	32.8	12.8	52.8
49	9.6	0.0	29.6
47	6.9	0.0	26.9

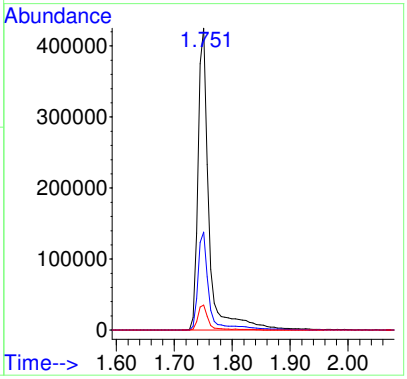


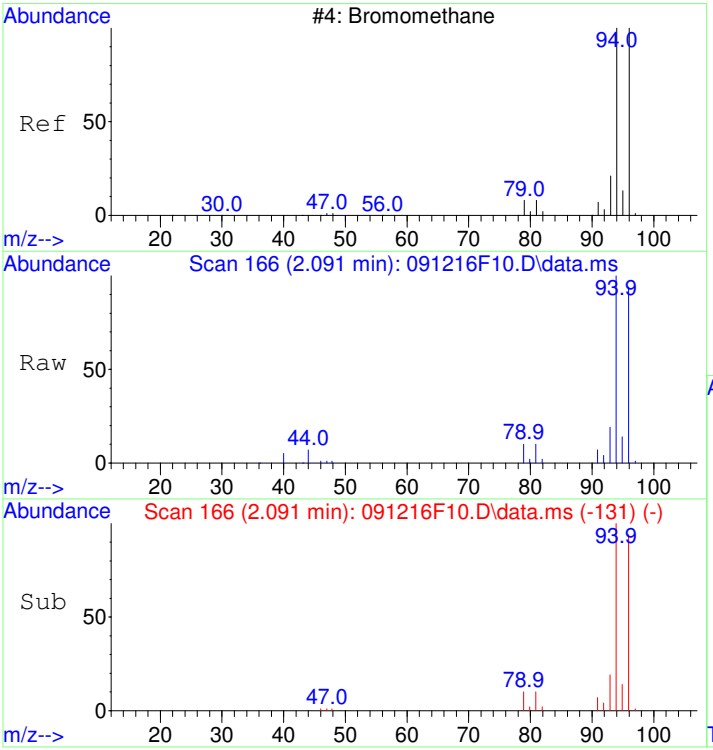


#4
Vinyl chloride
Concen: 5.10 ug/L
RT: 1.751 min Scan# 110
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 62 Resp: 564276

Ion	Ratio	Lower	Upper
62	100		
64	32.6	12.6	52.6
61	8.1	0.0	28.1

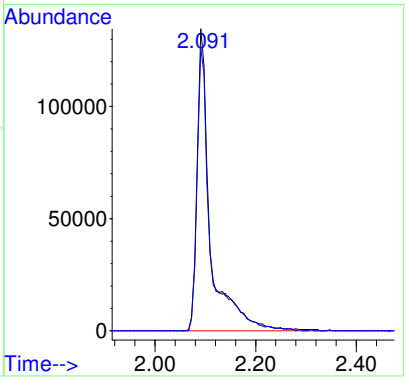


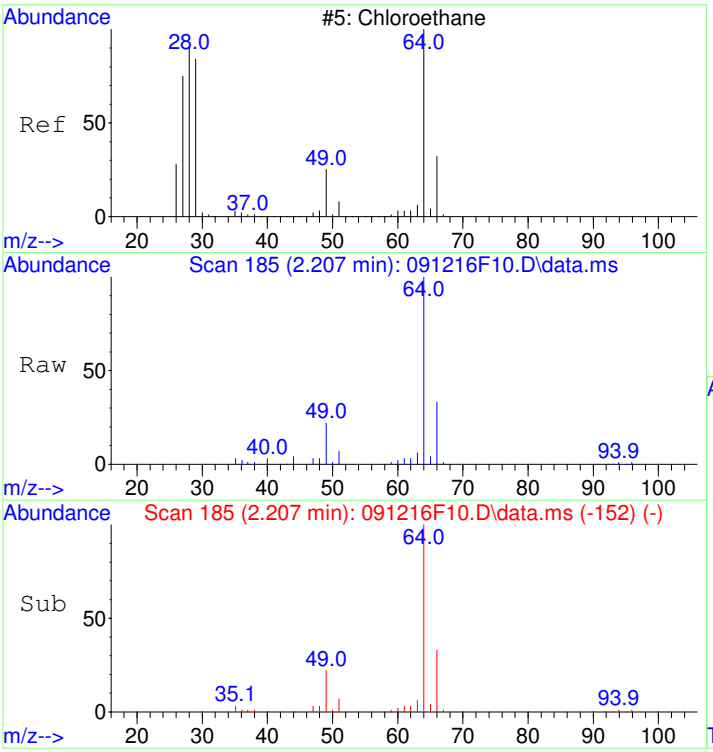


#5
Bromomethane
Concen: 5.30 ug/L
RT: 2.091 min Scan# 166
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 94 Resp: 249466

Ion	Ratio	Lower	Upper
94	100		
96	95.0	75.0	115.0

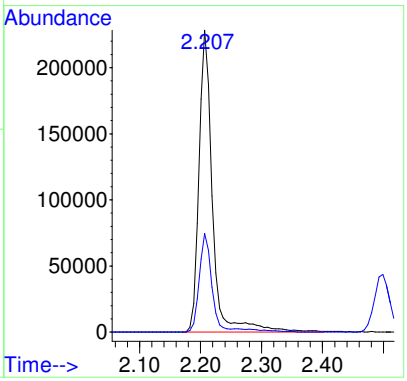


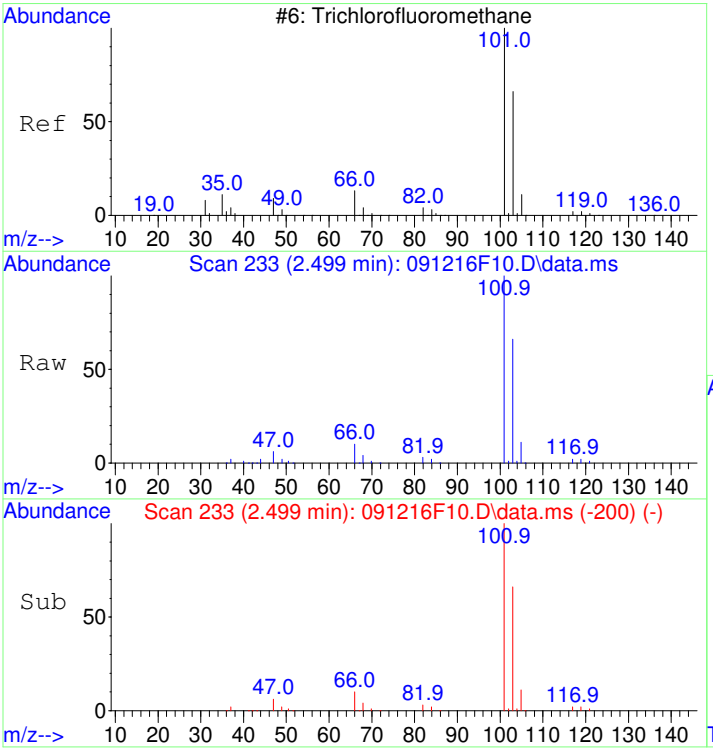


#6
Chloroethane
Concen: 5.28 ug/L
RT: 2.207 min Scan# 185
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 64 Resp: 353397

Ion	Ratio	Lower	Upper
64	100		
66	32.1	12.1	52.1

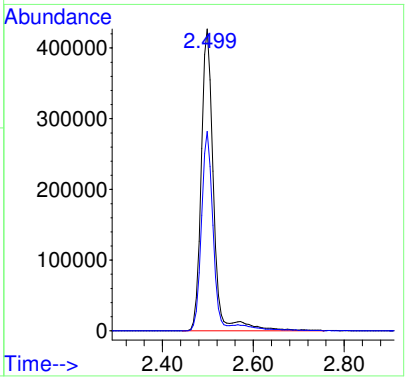


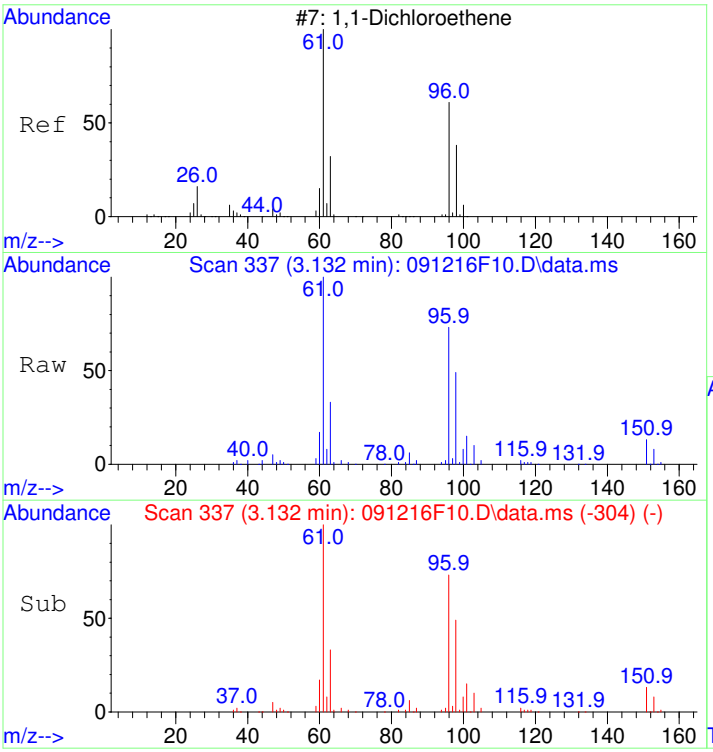


#7
Trichlorofluoromethane
Concen: 5.10 ug/L
RT: 2.499 min Scan# 233
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:101 Resp: 810858

Ion	Ratio	Lower	Upper
101	100		
103	65.1	45.1	85.1

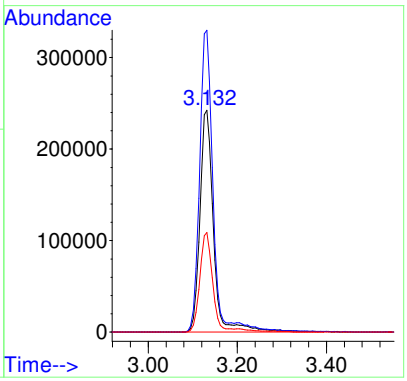


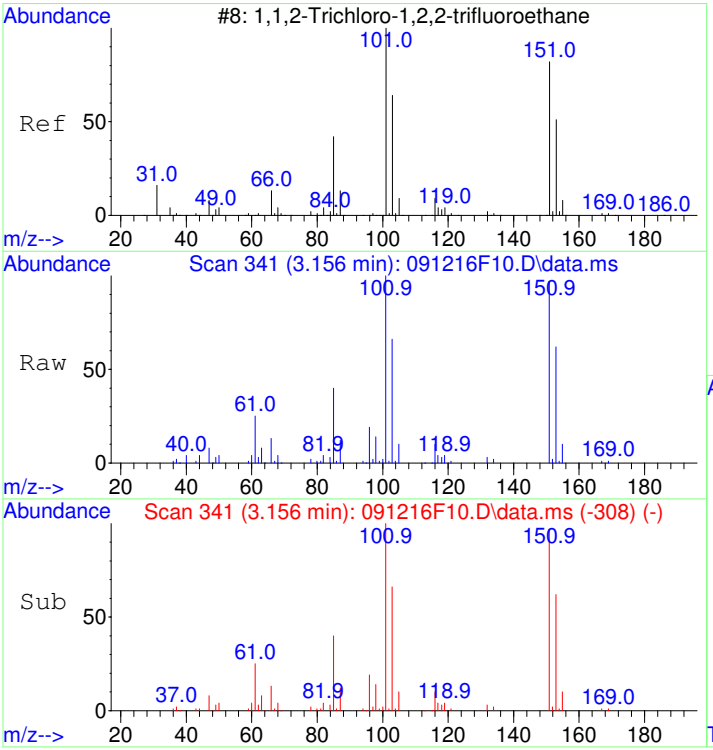


#8
1,1-Dichloroethene
Concen: 5.14 ug/L
RT: 3.132 min Scan# 337
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 96 Resp: 519998

Ion	Ratio	Lower	Upper
96	100		
61	135.5	115.4	155.4
63	44.0	24.0	64.0

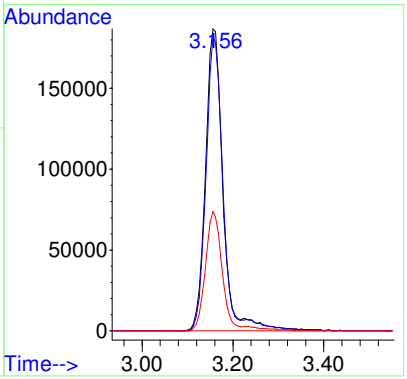


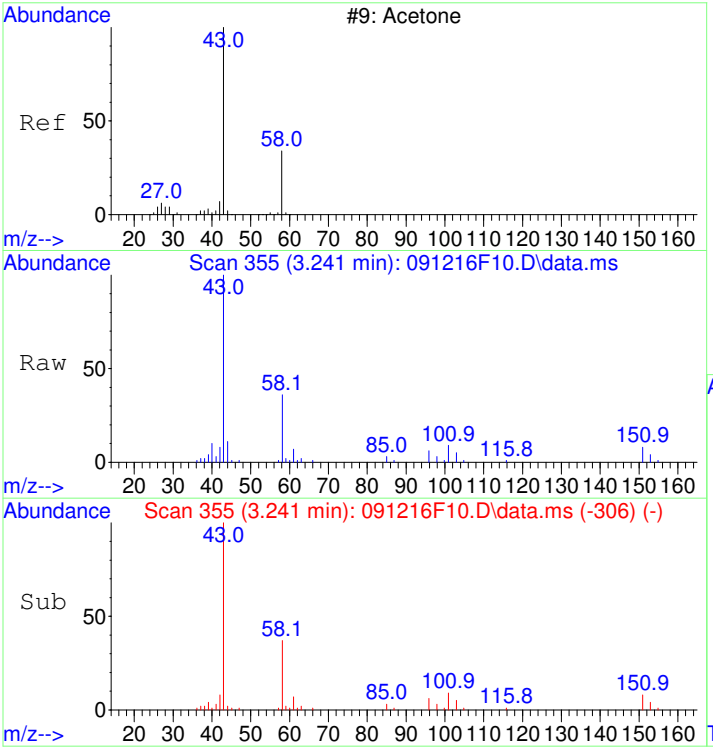


#9
1,1,2-Trichloro-1,2,2-trifluoroetnane
Concen: 5.11 ug/L
RT: 3.156 min Scan# 341
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:101 Resp: 501163

Ion	Ratio	Lower	Upper
101	100		
151	96.3	76.3	116.3
85	38.8	18.8	58.8

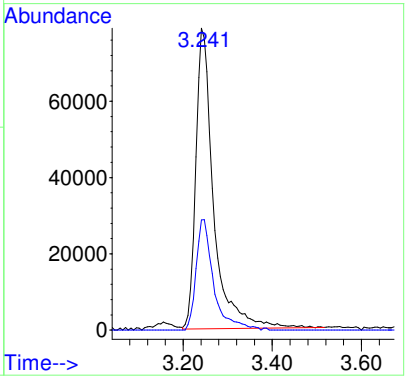


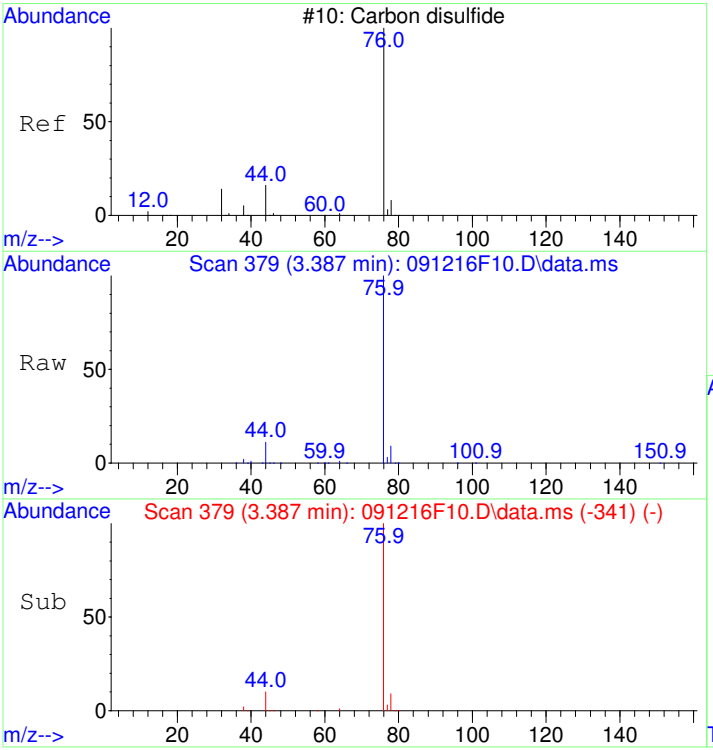


#10
Acetone
Concen: 35.85 ug/L
RT: 3.241 min Scan# 355
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 43 Resp: 219187

Ion	Ratio	Lower	Upper
43	100		
58	36.3	16.3	56.3

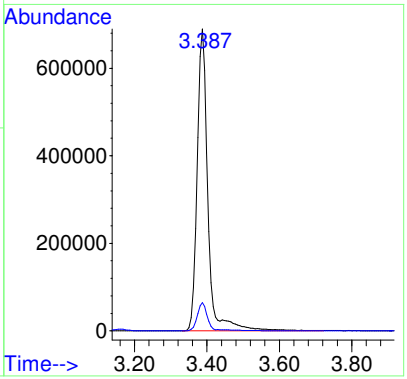


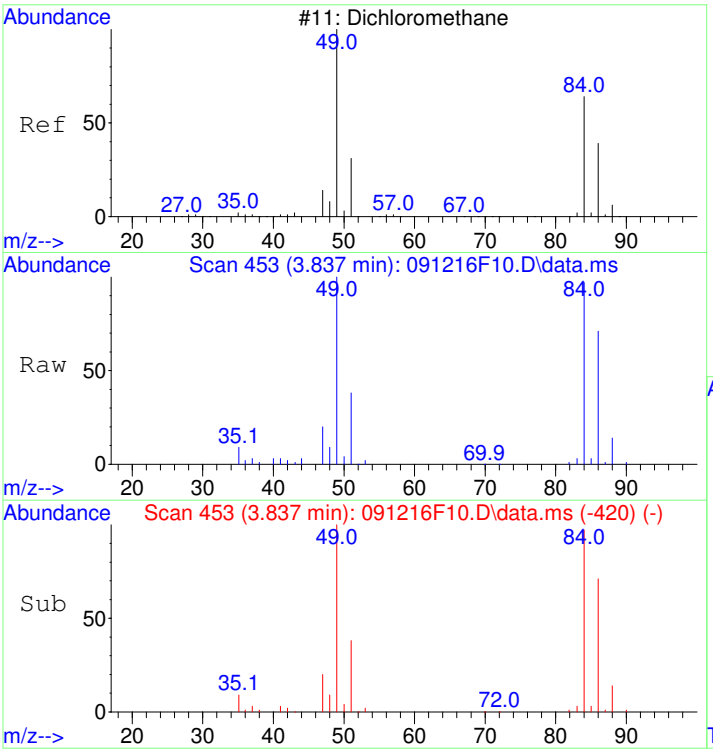


#11
Carbon disulfide
Concen: 5.11 ug/L
RT: 3.387 min Scan# 379
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 76 Resp: 1419261

Ion	Ratio	Lower	Upper
76	100		
78	9.2	0.0	29.2

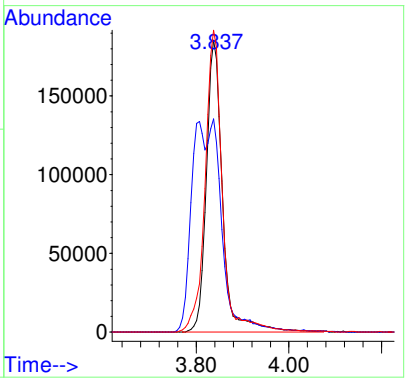


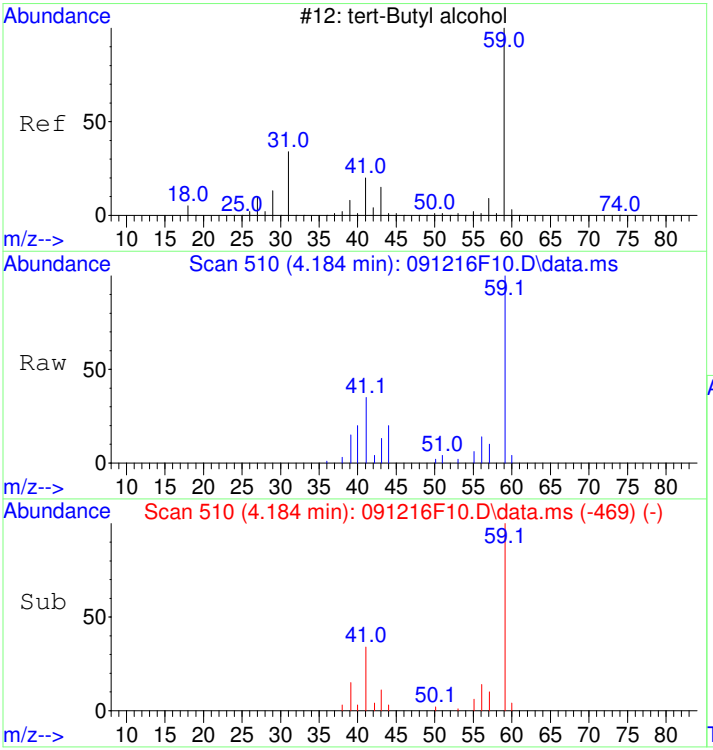


#12
Dichloromethane
Concen: 4.92 ug/L
RT: 3.837 min Scan# 453
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 84 Resp: 452363

Ion	Ratio	Lower	Upper
84	100		
86	133.2	113.2	153.2
49	110.1	90.1	130.1

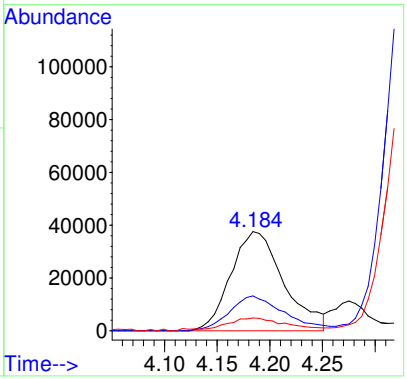


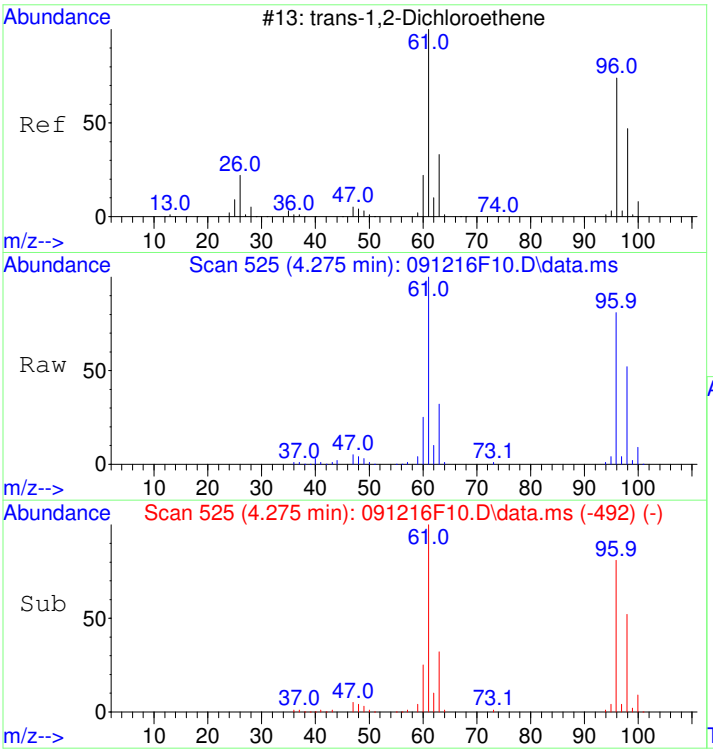


#13
tert-Butyl alcohol
Concen: 98.38 ug/L
RT: 4.184 min Scan# 510
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 59 Resp: 131841

Ion	Ratio	Lower	Upper
59	100		
41	36.0	16.5	56.5
43	11.7	0.0	31.9

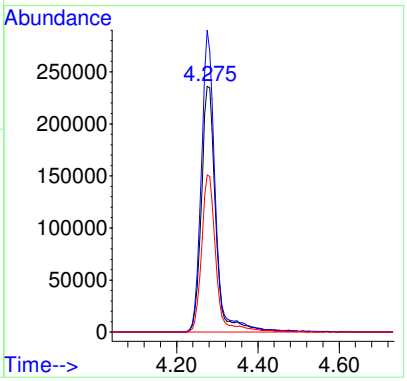


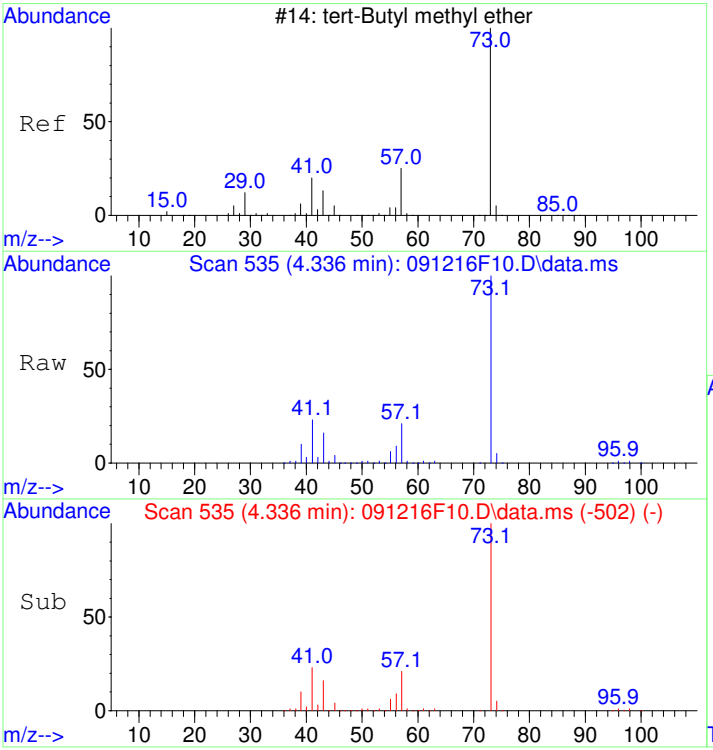


#14
trans-1,2-Dichloroethene
Concen: 5.18 ug/L
RT: 4.275 min Scan# 525
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 96 Resp: 587666

Ion	Ratio	Lower	Upper
96	100		
61	118.1	98.1	138.1
98	63.5	43.5	83.5

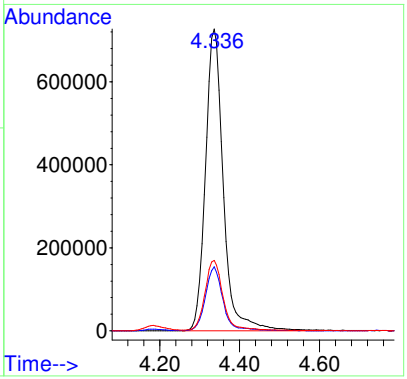


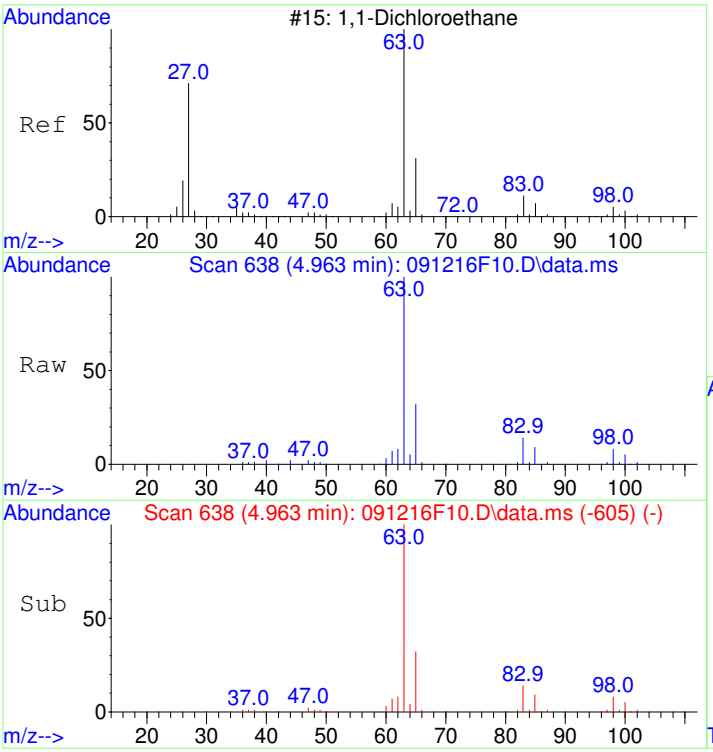


#15
tert-Butyl methyl ether (MTBE)
Concen: 19.99 ug/L
RT: 4.336 min Scan# 535
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 73 Resp: 2267308

Ion	Ratio	Lower	Upper
73	100		
57	21.0	1.0	41.0
41	23.6	3.6	43.6

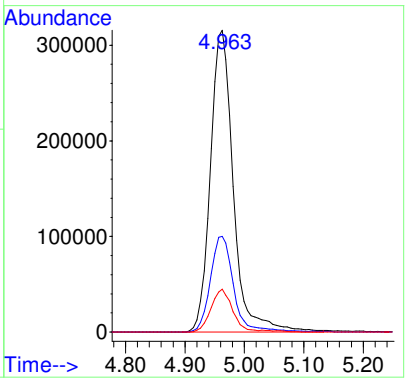


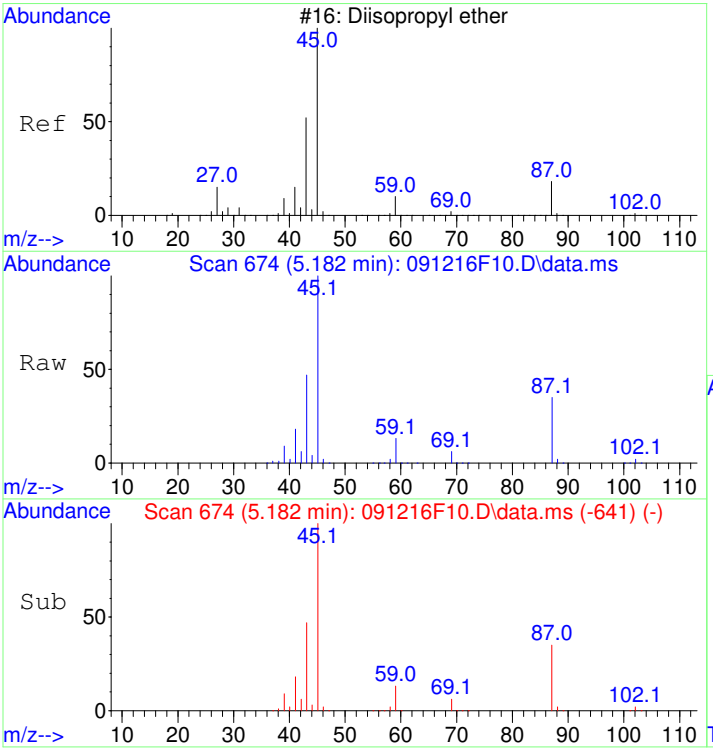


#16
1,1-Dichloroethane
Concen: 5.14 ug/L
RT: 4.963 min Scan# 638
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 63 Resp: 848394

Ion	Ratio	Lower	Upper
63	100		
65	32.2	12.2	52.2
83	13.8	0.0	33.8

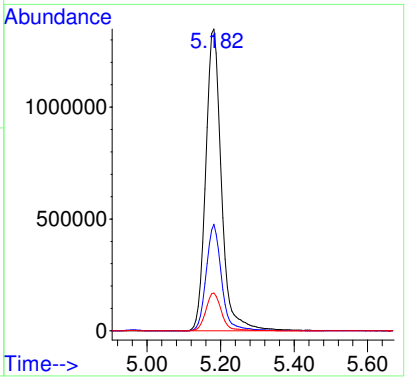


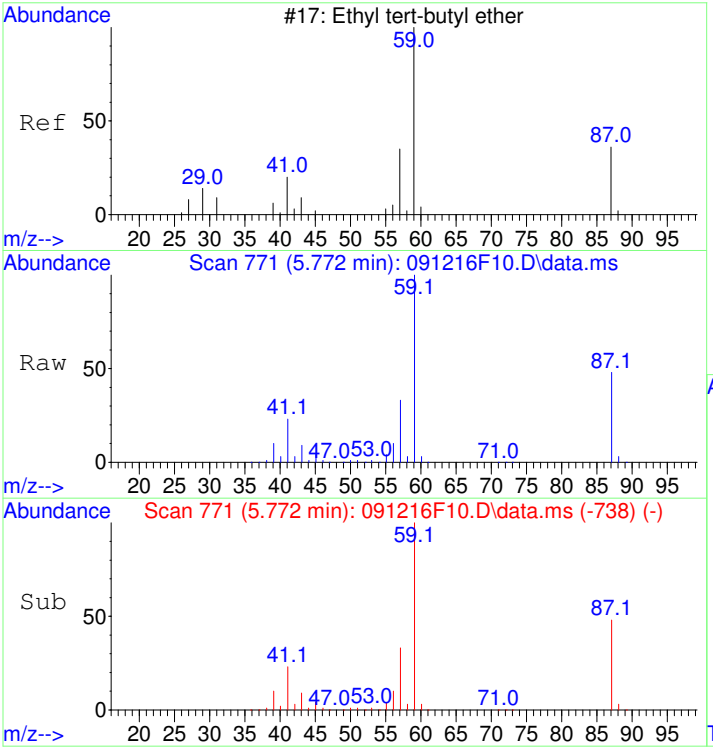


#17
Diisopropyl ether
Concen: 20.40 ug/L
RT: 5.182 min Scan# 674
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 45 Resp: 4016198

Ion	Ratio	Lower	Upper
45	100		
87	34.6	14.6	54.6
59	12.6	0.0	32.6

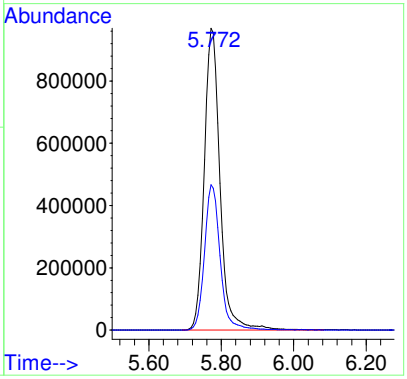


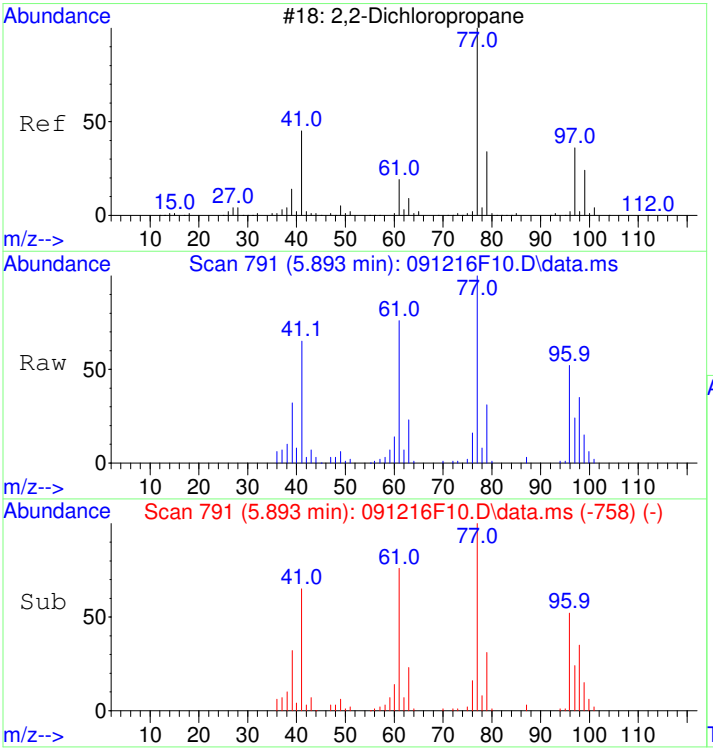


#18
Ethyl-tert-butyl ether
Concen: 20.33 ug/L
RT: 5.772 min Scan# 771
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 59 Resp: 2925174

Ion	Ratio	Lower	Upper
59	100		
87	48.0	28.0	68.0

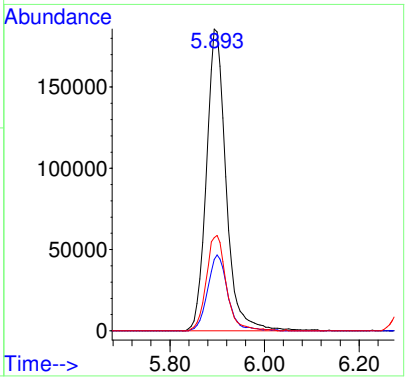


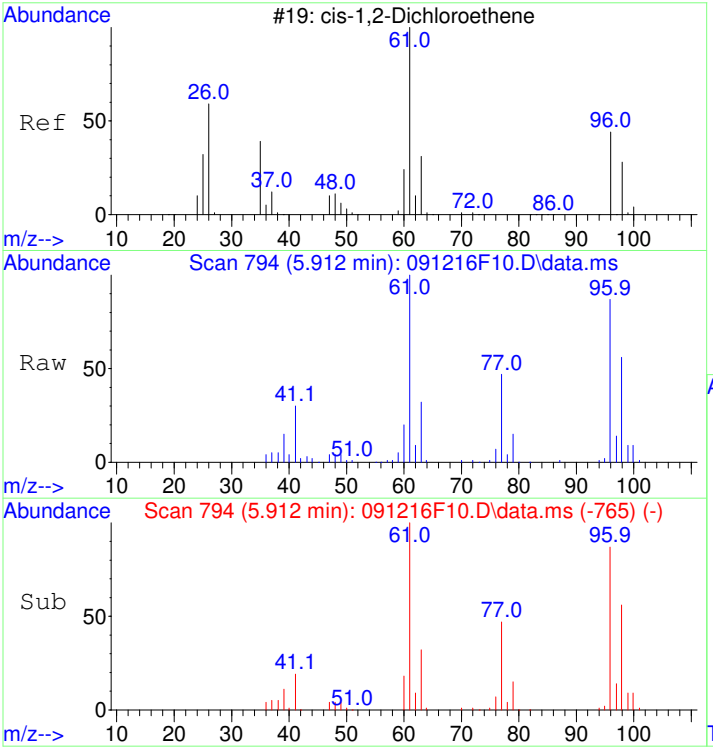


#19
2,2-Dichloropropane
Concen: 5.17 ug/L
RT: 5.893 min Scan# 791
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 77 Resp: 535855

Ion	Ratio	Lower	Upper
77	100		
97	25.8	5.8	45.8
79	32.1	12.1	52.1

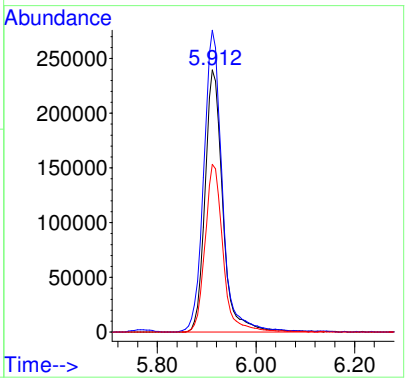


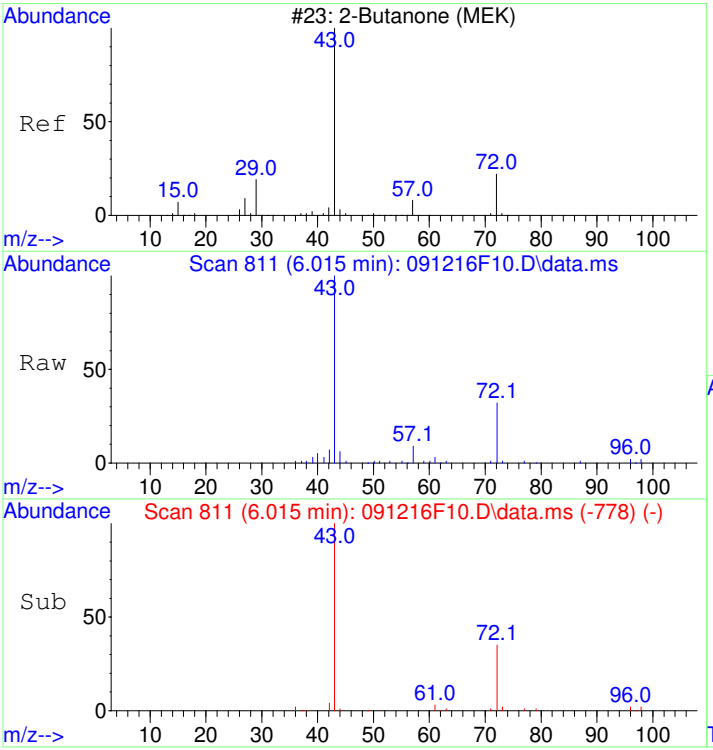


#20
cis-1,2-Dichloroethene
Concen: 5.12 ug/L
RT: 5.912 min Scan# 794
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 96 Resp: 600497

Ion	Ratio	Lower	Upper
96	100		
61	120.4	100.4	140.4
98	64.6	44.6	84.6

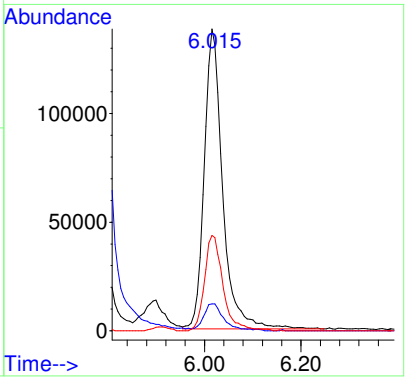


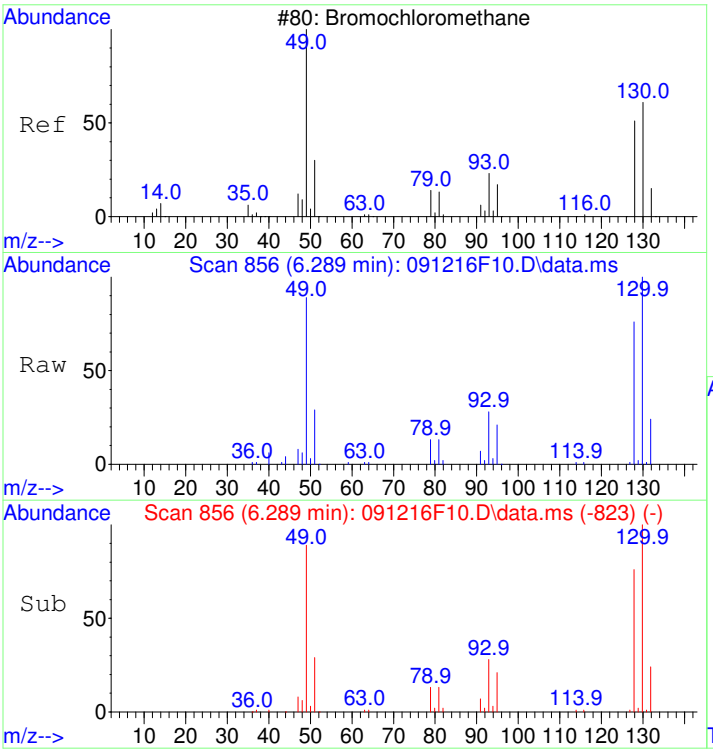


#21
2-Butanone (MEK)
Concen: 39.33 ug/L
RT: 6.015 min Scan# 811
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 43 Resp: 365570

Ion	Ratio	Lower	Upper
43	100		
57	10.1	0.0	30.1
72	32.0	12.0	52.0

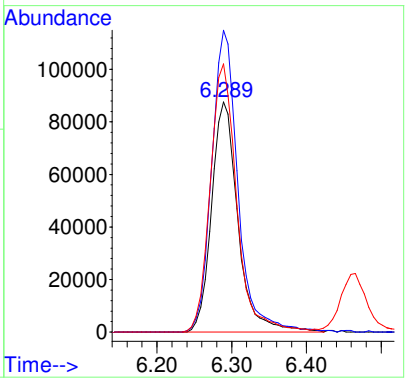


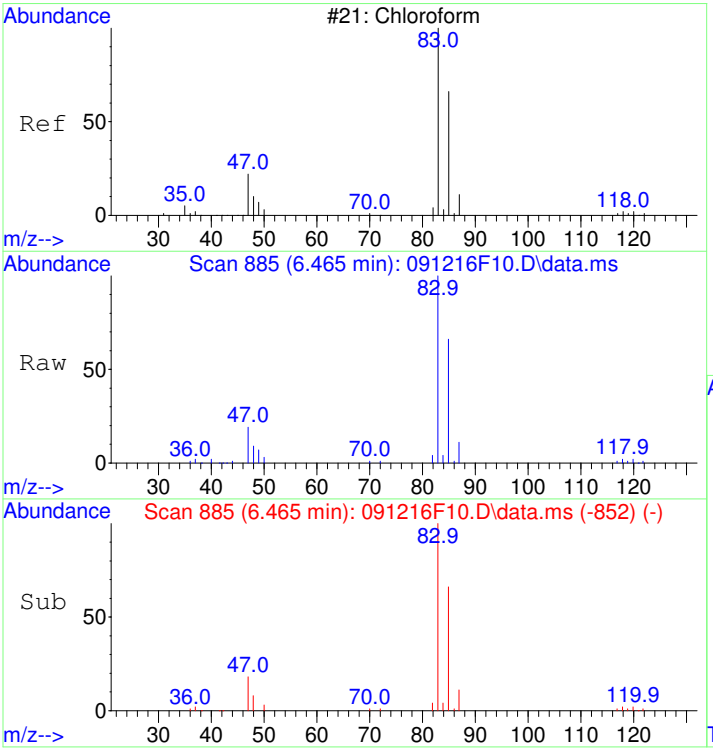


#22
Bromochloromethane
Concen: 5.07 ug/L
RT: 6.289 min Scan# 856
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:128 Resp: 215638

Ion	Ratio	Lower	Upper
128	100		
130	130.6	110.6	150.6
49	116.9	96.9	136.9

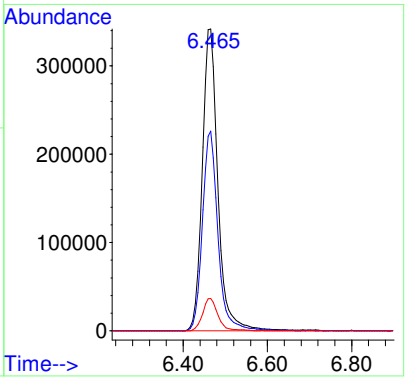


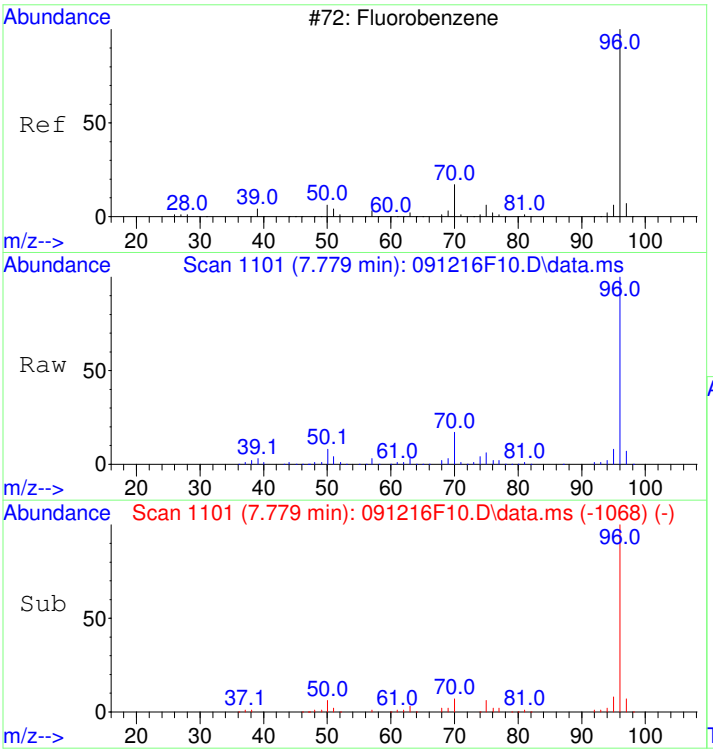


#23
Chloroform
Concen: 5.12 ug/L
RT: 6.465 min Scan# 885
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 83 Resp: 883219

Ion	Ratio	Lower	Upper
83	100		
85	65.5	45.5	85.5
87	10.6	0.0	30.6

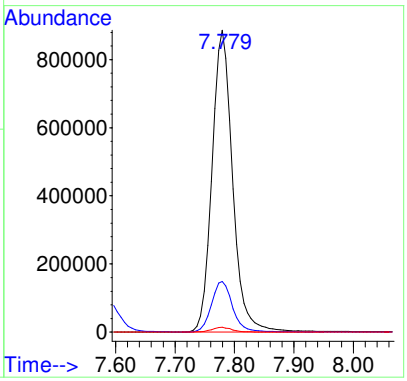


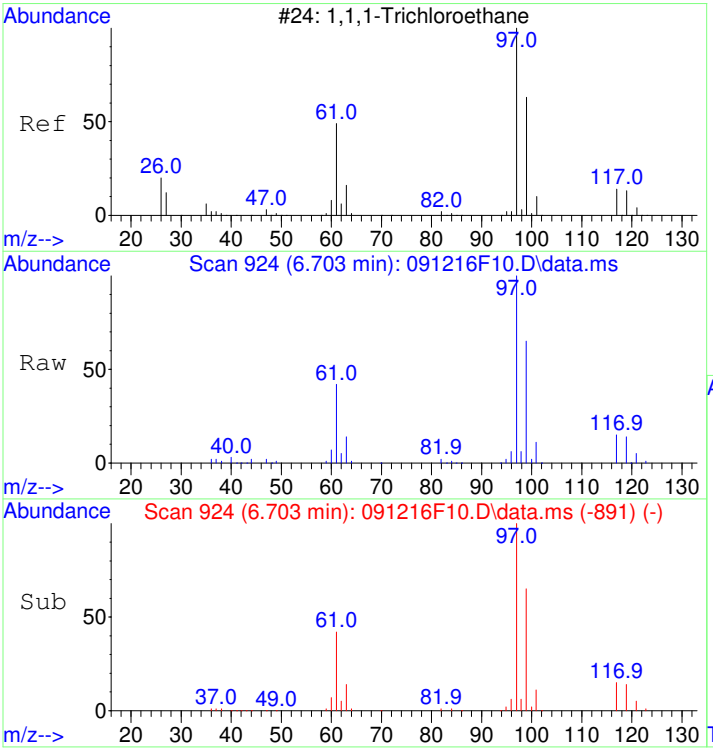


#24
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.779 min Scan# 1101
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 96 Resp: 2134253

Ion	Ratio	Lower	Upper
96	100		
70	17.3	0.0	37.3
77	1.6	0.0	21.6

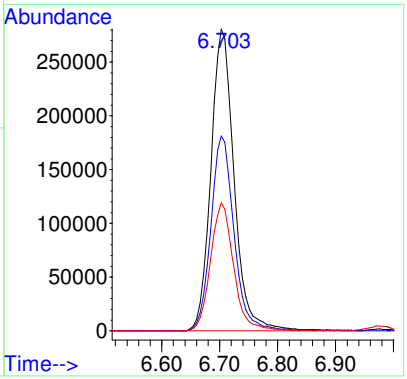


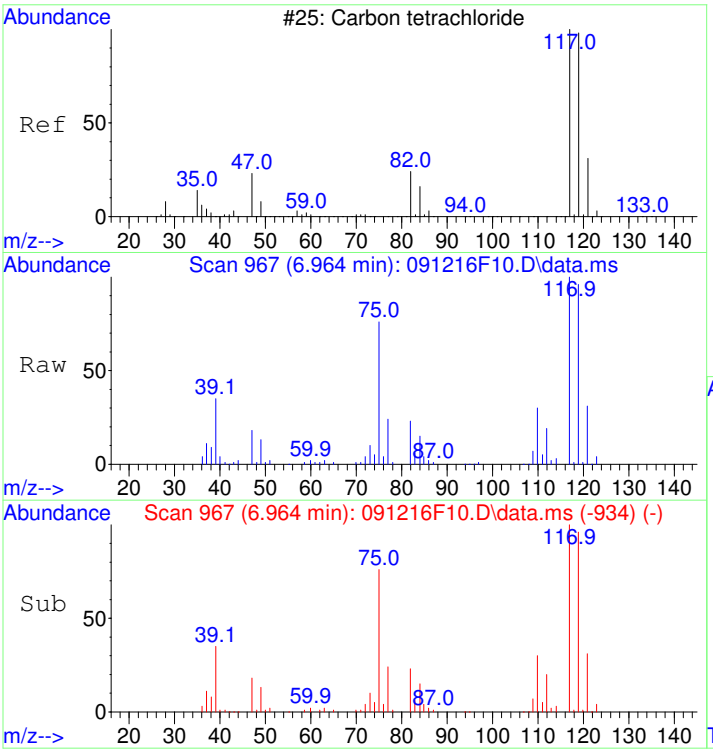


#25
1,1,1-Trichloroethane
Concen: 5.04 ug/L
RT: 6.703 min Scan# 924
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 97 Resp: 784014

Ion	Ratio	Lower	Upper
97	100		
99	64.5	44.5	84.5
61	42.1	22.1	62.1

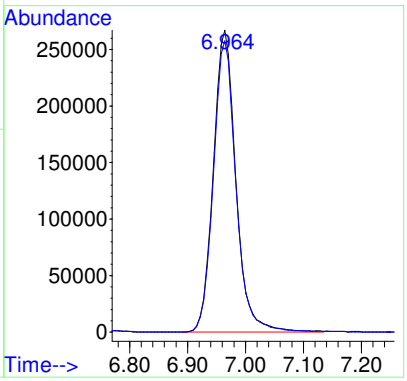


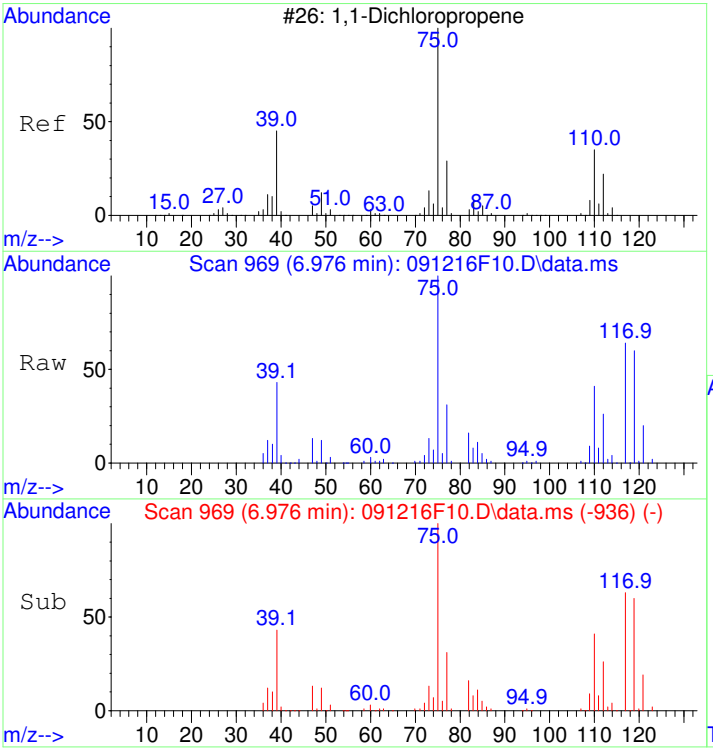


#26
Carbon tetrachloride
Concen: 5.10 ug/L
RT: 6.964 min Scan# 967
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:117 Resp: 724125

Ion	Ratio	Lower	Upper
117	100		
119	96.6	76.6	116.6

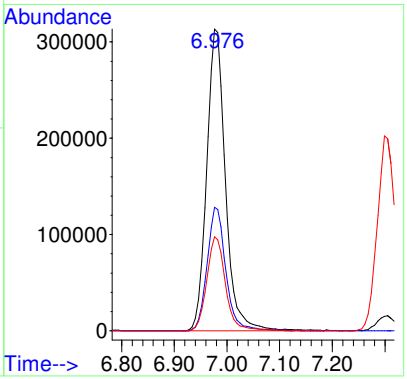


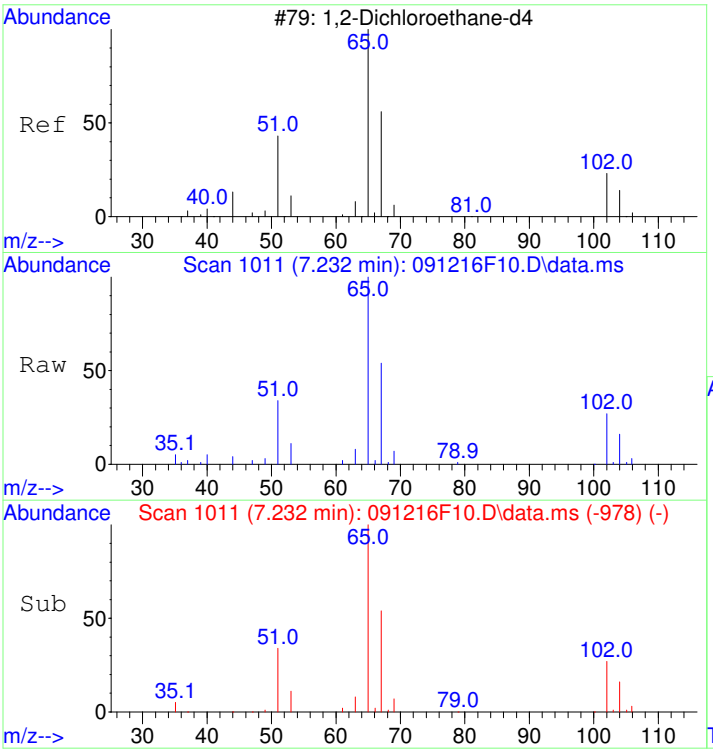


#27
1,1-Dichloropropene
Concen: 5.09 ug/L
RT: 6.976 min Scan# 969
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 75 Resp: 778044

Ion	Ratio	Lower	Upper
75	100		
110	40.8	20.8	60.8
77	31.0	11.0	51.0

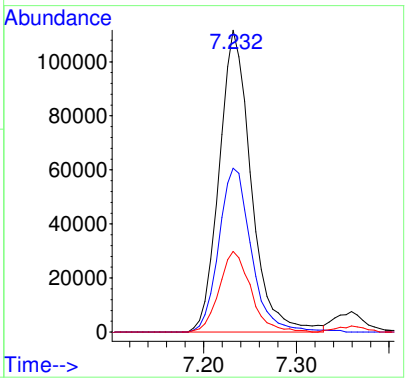


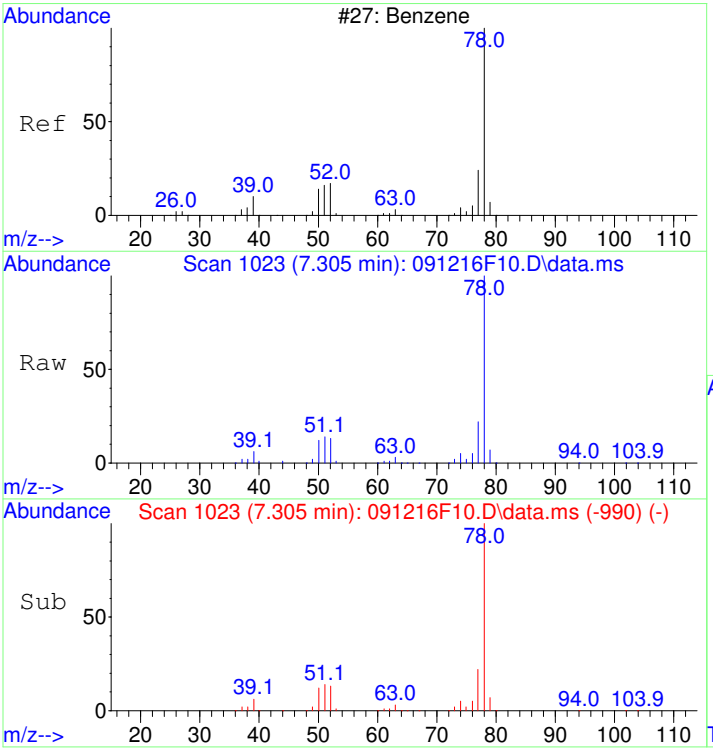


#28
1,2-Dichloroethane-d4
Concen: 4.84 ug/L
RT: 7.232 min Scan# 1011
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 65 Resp: 267946

Ion	Ratio	Lower	Upper
65	100		
67	55.3	35.3	75.3
102	26.5	6.5	46.5

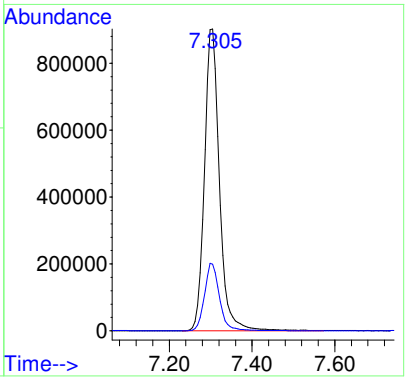


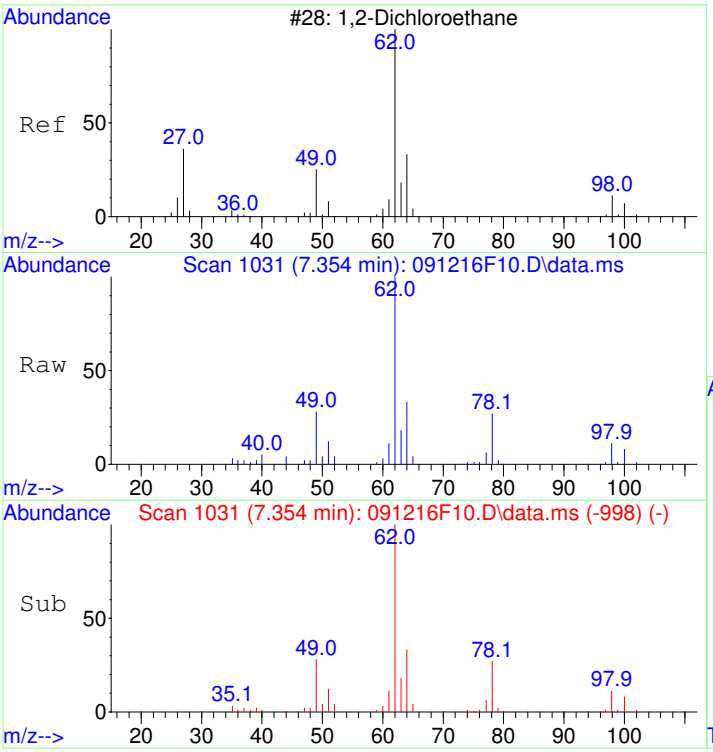


#29
Benzene
Concen: 5.04 ug/L
RT: 7.305 min Scan# 1023
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 78 Resp: 2265929

Ion	Ratio	Lower	Upper
78	100		
77	22.5	2.5	42.5

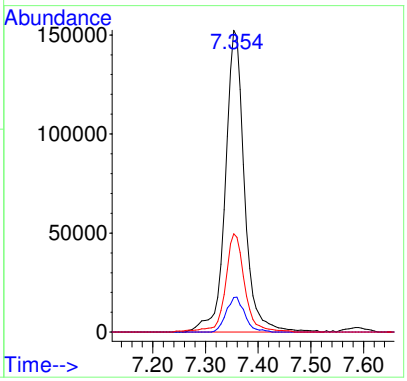


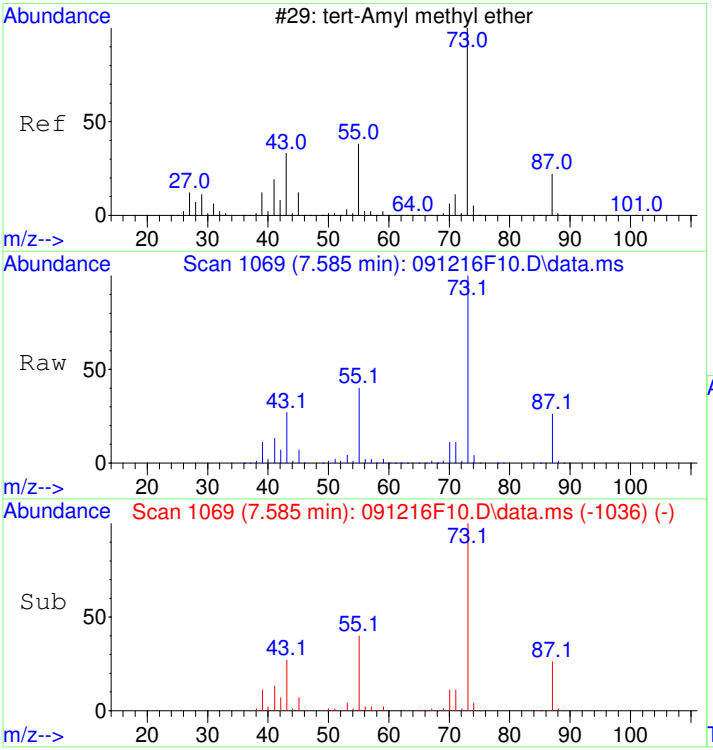


#30
1,2-Dichloroethane
Concen: 4.94 ug/L
RT: 7.354 min Scan# 1031
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 62 Resp: 385480

Ion	Ratio	Lower	Upper
62	100		
98	11.2	0.0	31.2
64	33.0	13.0	53.0

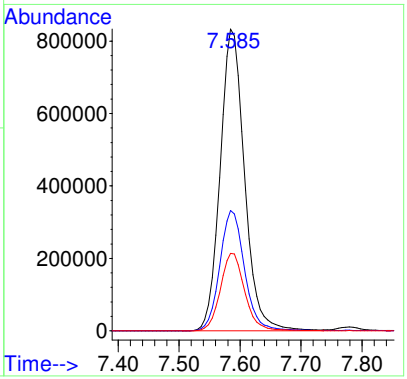


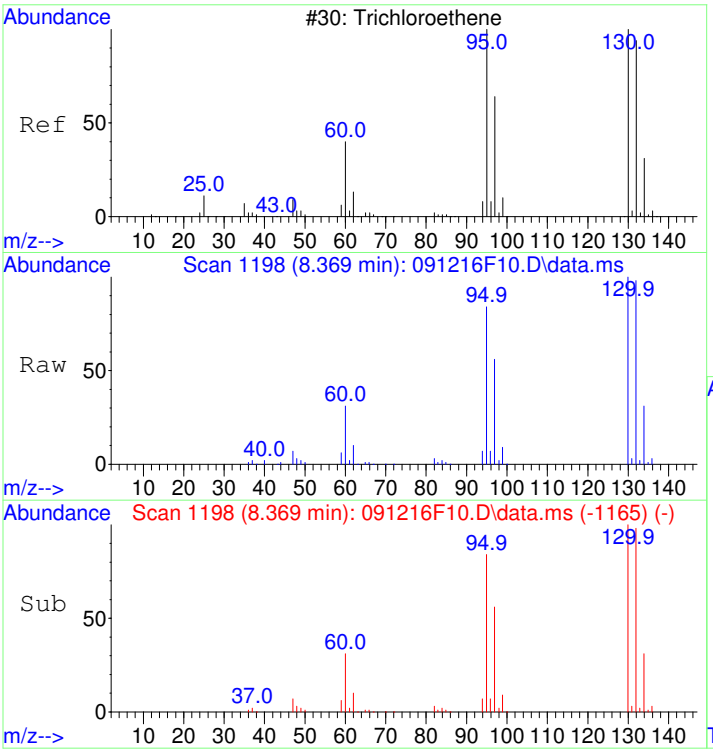


#31
tert-Amyl methyl ether
Concen: 19.39 ug/L
RT: 7.585 min Scan# 1069
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 73 Resp: 2317484

Ion	Ratio	Lower	Upper
73	100		
55	40.5	20.5	60.5
87	25.7	5.7	45.7

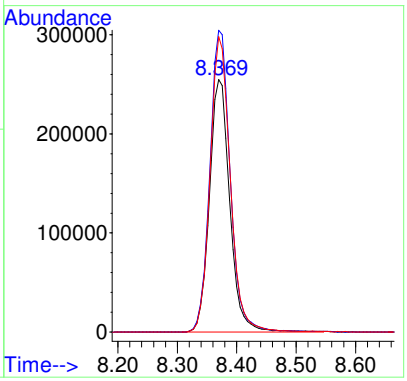


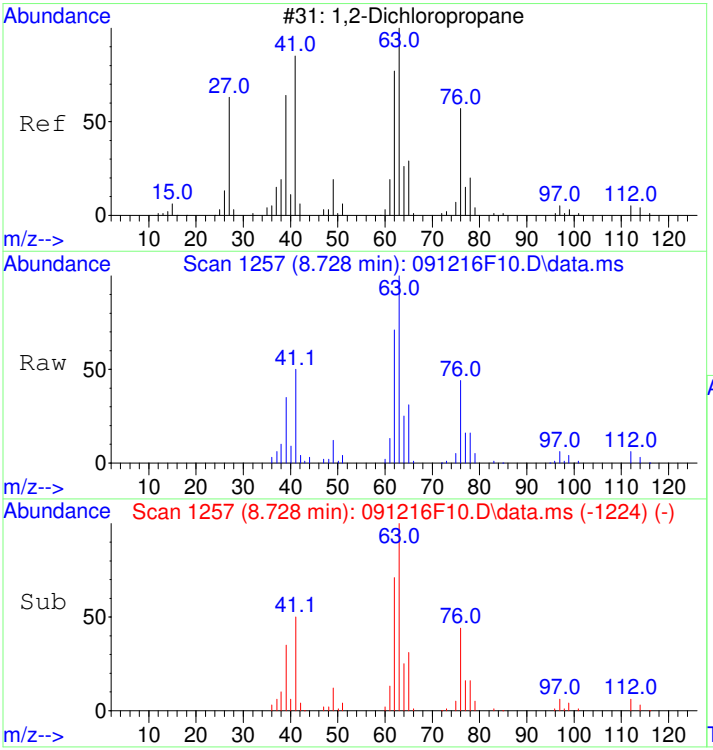


#32
Trichloroethene
Concen: 5.02 ug/L
RT: 8.369 min Scan# 1198
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 95 Resp: 607932

Ion	Ratio	Lower	Upper
95	100		
130	119.6	99.6	139.6
132	116.0	96.0	136.0

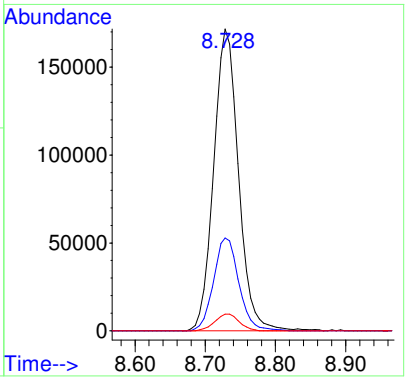


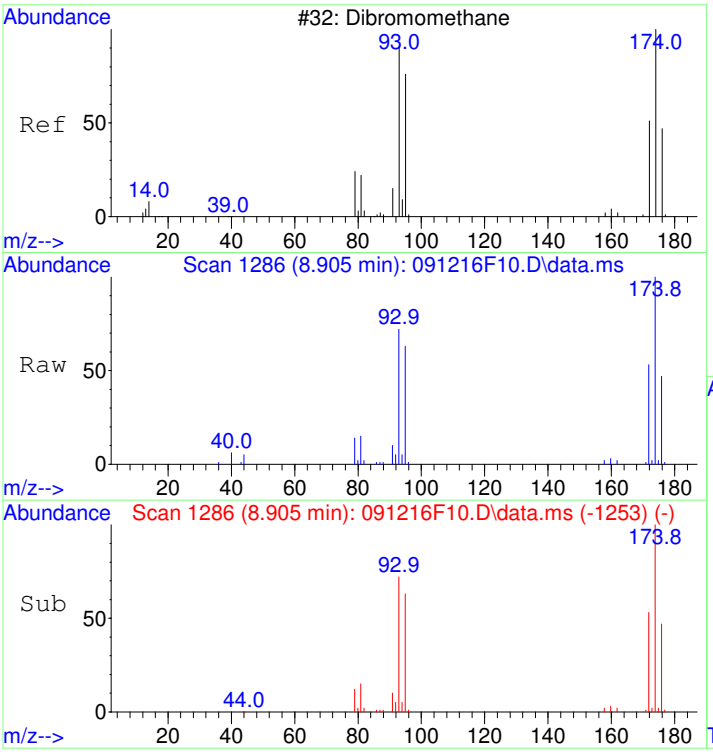


#33
1,2-Dichloropropane
Concen: 4.96 ug/L
RT: 8.728 min Scan# 1257
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 63 Resp: 421531

Ion	Ratio	Lower	Upper
63	100		
65	31.3	11.3	51.3
112	5.5	0.0	25.5

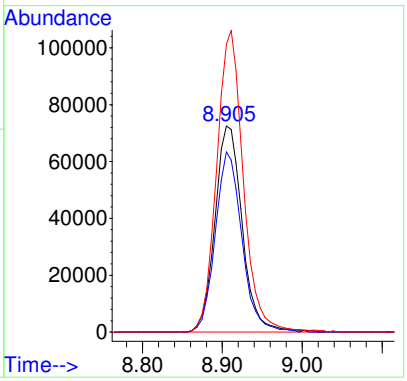


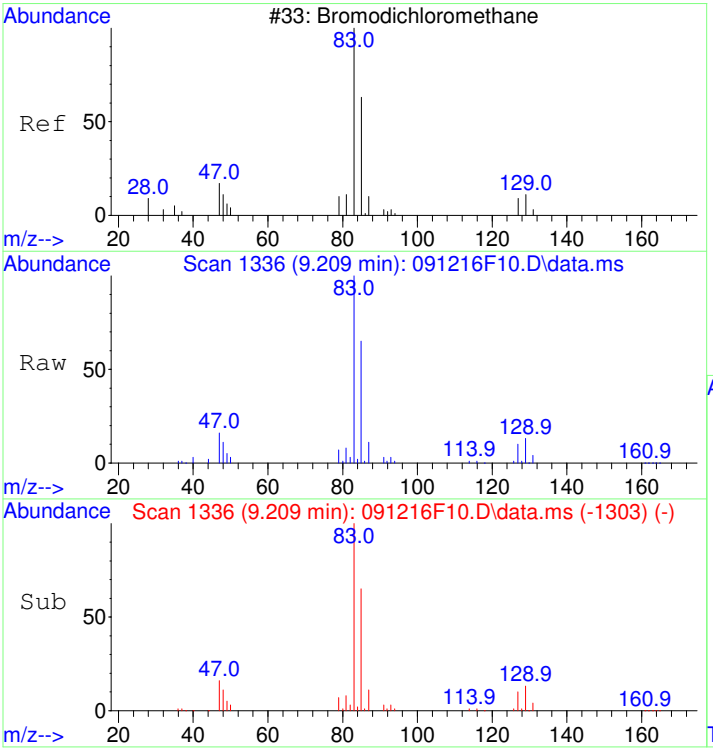


#34
Dibromomethane
Concen: 4.94 ug/L
RT: 8.905 min Scan# 1286
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 93 Resp: 172373

Ion	Ratio	Lower	Upper
93	100		
95	85.2	65.2	105.2
174	143.2	123.2	163.2

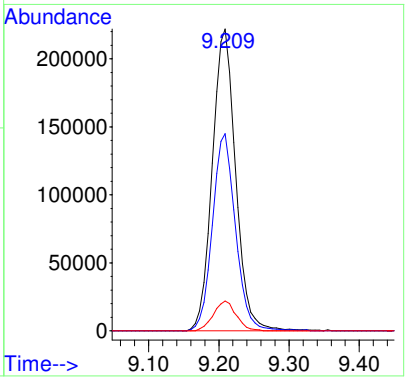


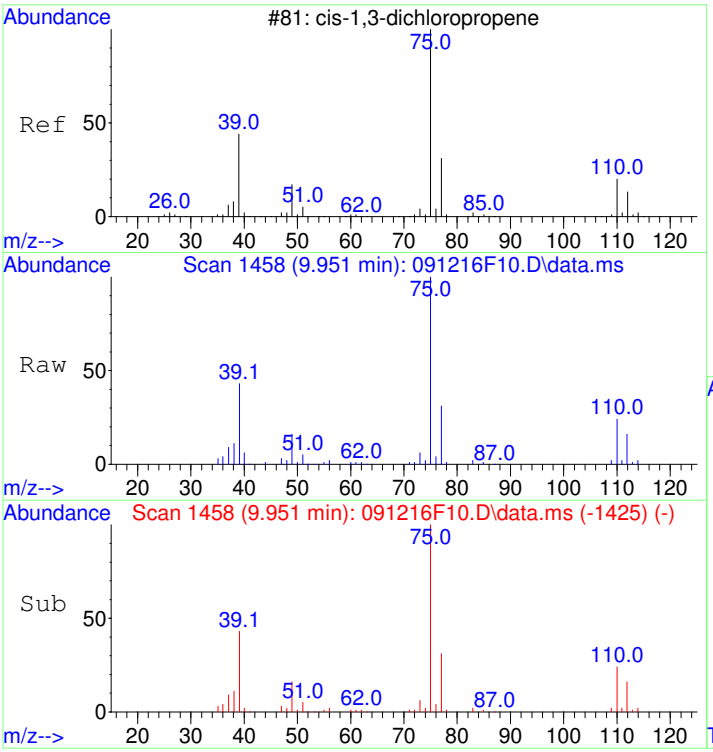


#35
Bromodichloromethane
Concen: 4.98 ug/L
RT: 9.209 min Scan# 1336
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 83 Resp: 513902

Ion	Ratio	Lower	Upper
83	100		
85	64.4	44.4	84.4
127	9.6	0.0	29.6

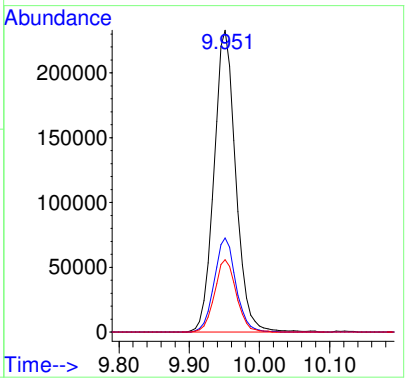


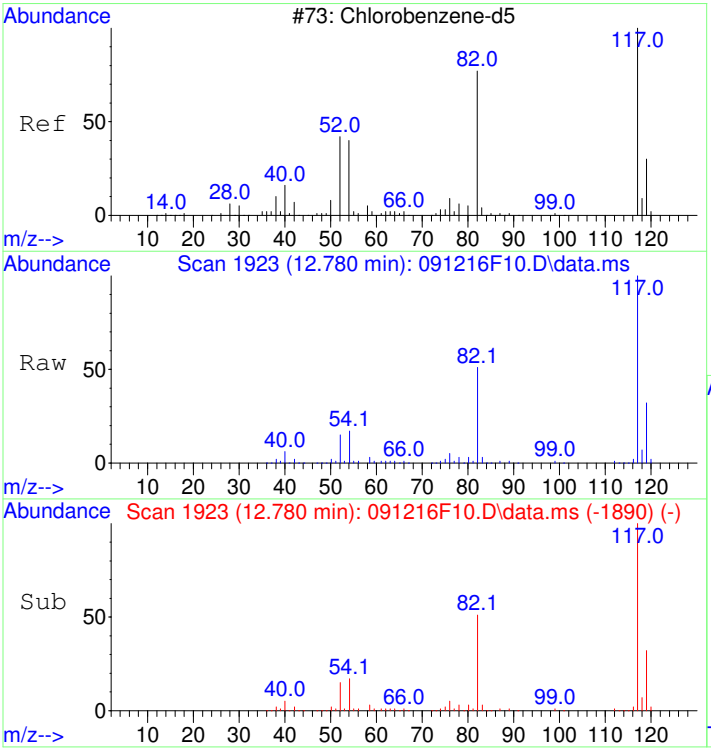


#36
cis-1,3-Dichloropropene
Concen: 4.88 ug/L
RT: 9.951 min Scan# 1458
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 75 Resp: 501744

Ion	Ratio	Lower	Upper
75	100		
77	31.0	11.0	51.0
110	23.9	3.9	43.9

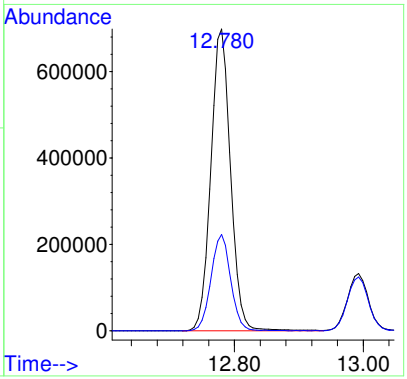


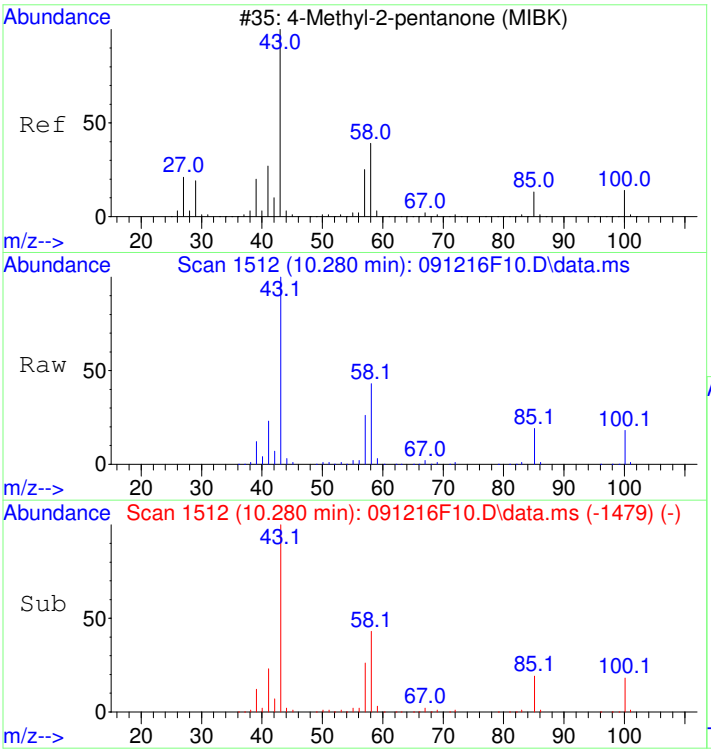


#37
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.780 min Scan# 1923
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:117 Resp: 1481289

Ion	Ratio	Lower	Upper
117	100		
119	31.9	11.9	51.9

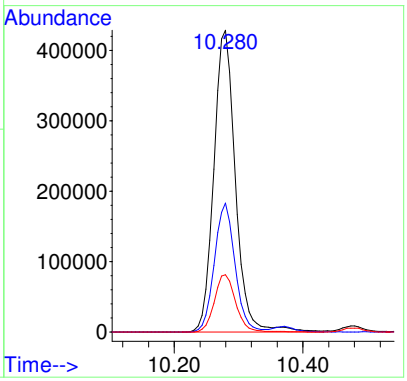


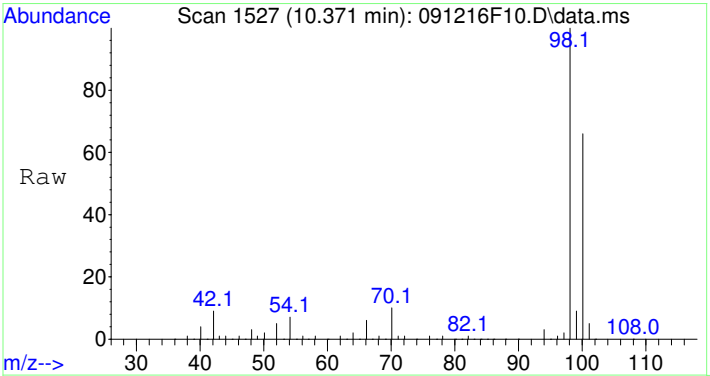


#38
4-Methyl-2-pentanone (MIBK)
Concen: 41.43 ug/L
RT: 10.280 min Scan# 1512
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 43 Resp: 999837

Ion	Ratio	Lower	Upper
43	100		
58	41.0	21.0	61.0
85	18.9	0.0	38.9

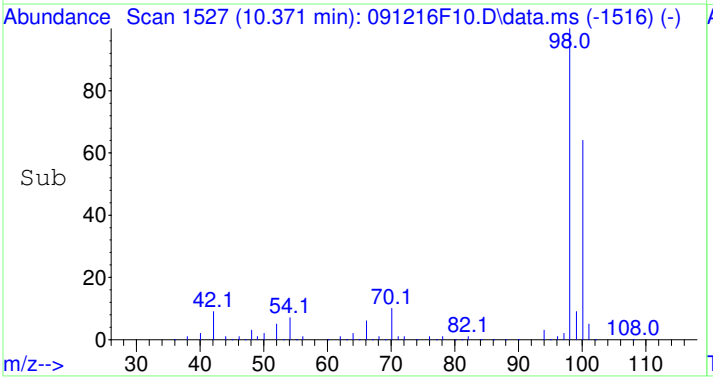


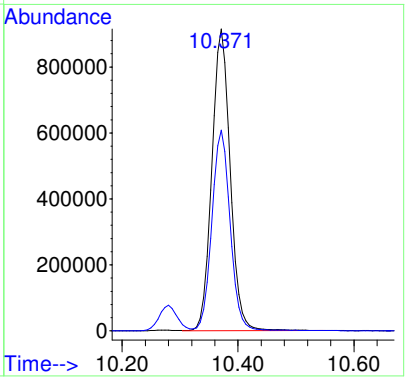


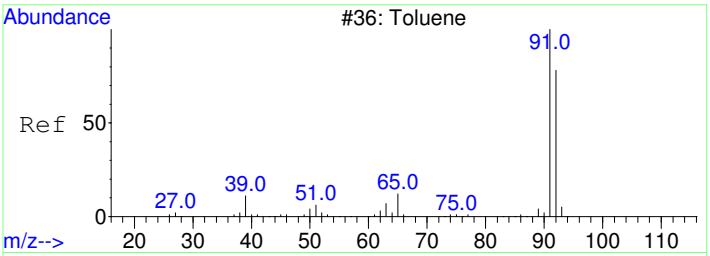
#39
Toluene-d8
Concen: 5.08 ug/L
RT: 10.371 min Scan# 1527
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 98 Resp: 2012742

Ion	Ratio	Lower	Upper
98	100		
100	66.3	46.3	86.3



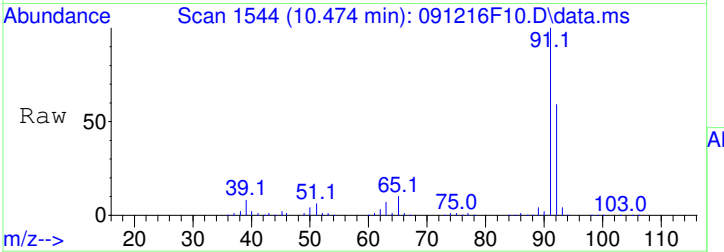


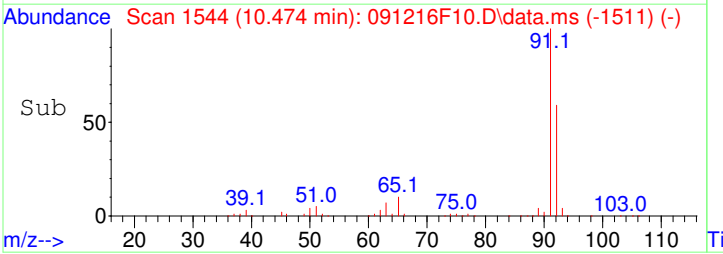


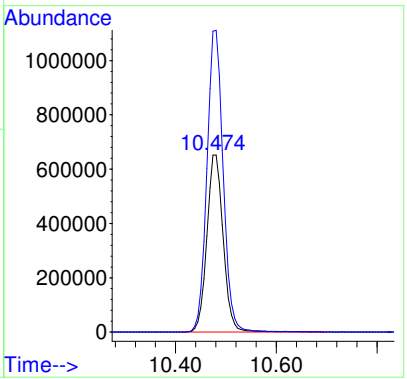
#40
Toluene
Concen: 5.16 ug/L
RT: 10.474 min Scan# 1544
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

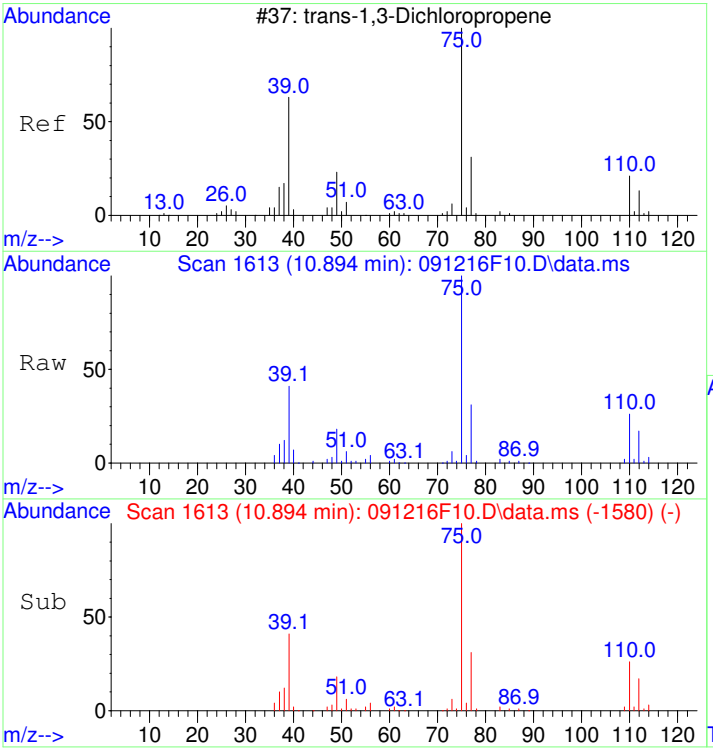
Tgt Ion: 92 Resp: 1461711

Ion	Ratio	Lower	Upper
92	100		
91	170.4	150.4	190.4





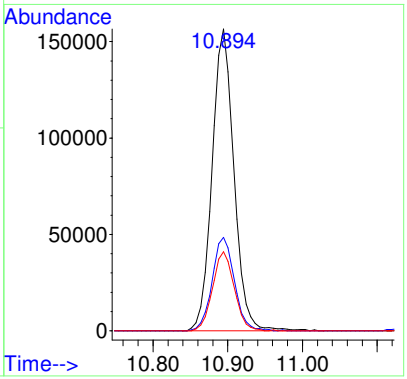


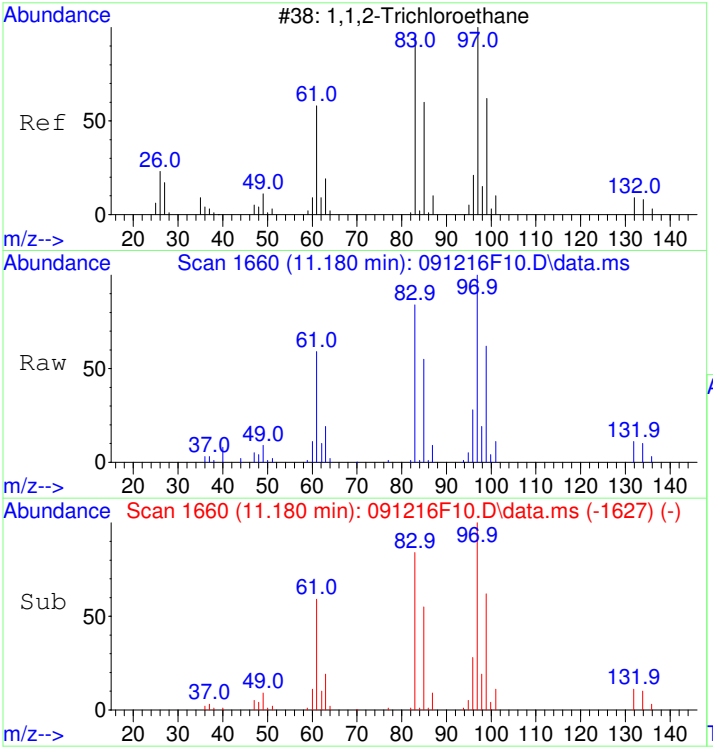


#41
trans-1,3-Dichloropropene
Concen: 5.11 ug/L
RT: 10.894 min Scan# 1613
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 75 Resp: 318526

Ion	Ratio	Lower	Upper
75	100		
77	31.5	11.5	51.5
110	25.9	5.9	45.9

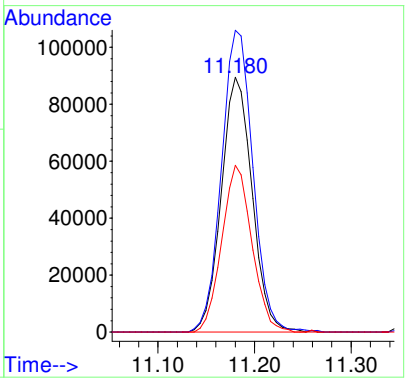


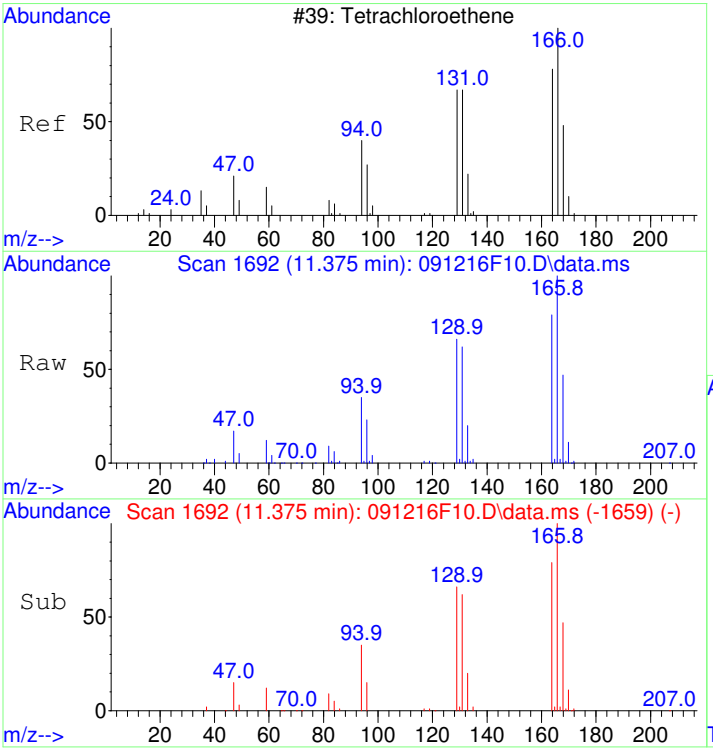


#42
1,1,2-Trichloroethane
Concen: 4.96 ug/L
RT: 11.180 min Scan# 1660
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 83 Resp: 199305

Ion	Ratio	Lower	Upper
83	100		
97	120.6	100.6	140.6
85	63.9	43.9	83.9

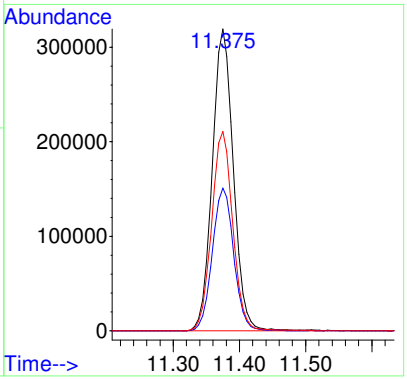


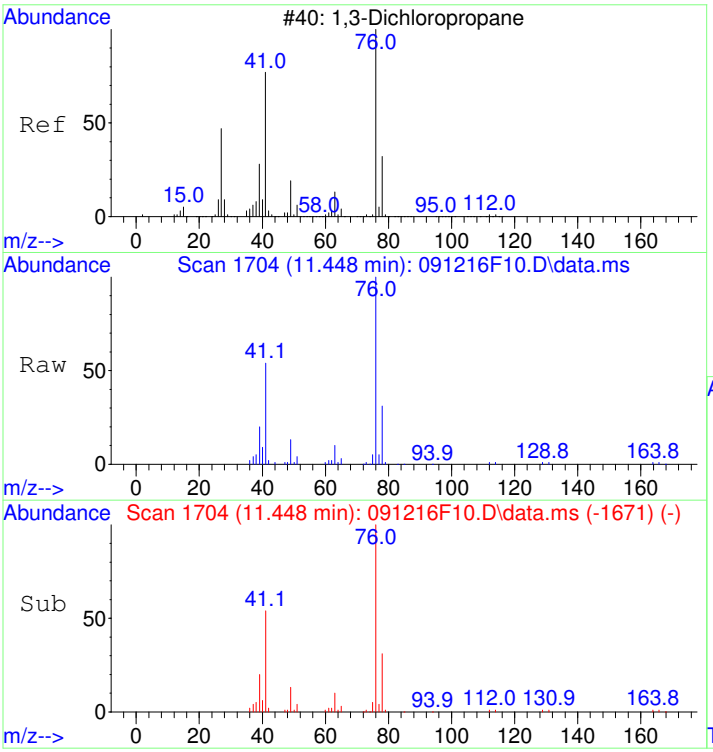


#43
Tetrachloroethene
Concen: 5.14 ug/L
RT: 11.375 min Scan# 1692
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:166 Resp: 705105

Ion	Ratio	Lower	Upper
166	100		
168	48.1	28.1	68.1
129	66.3	46.3	86.3

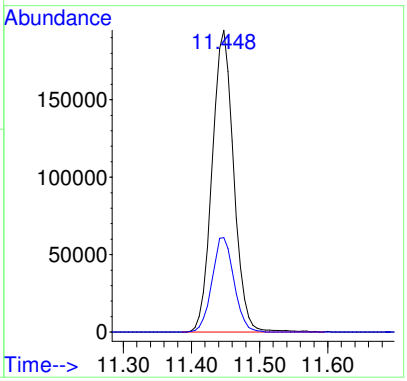


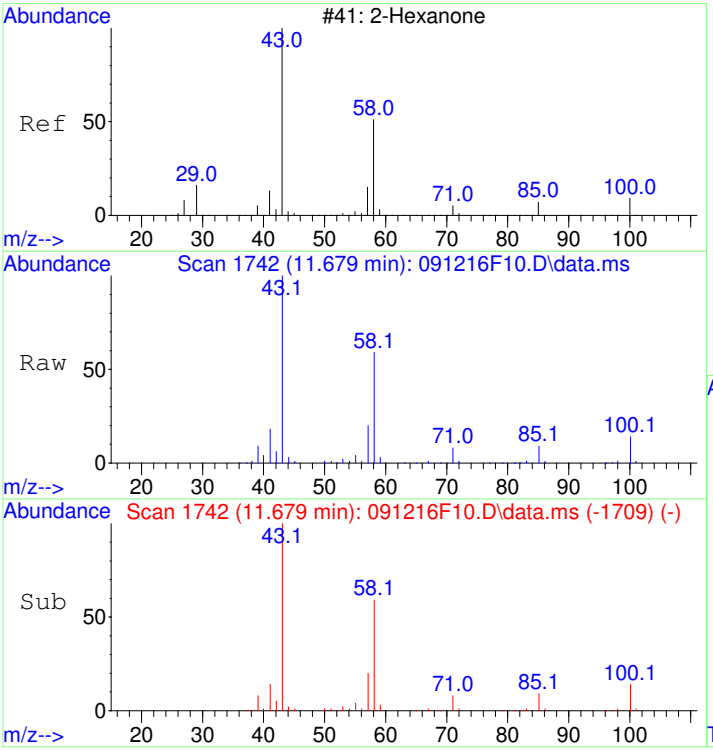


#44
1,3-Dichloropropane
Concen: 5.12 ug/L
RT: 11.448 min Scan# 1704
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 76 Resp: 428923

Ion	Ratio	Lower	Upper
76	100		
78	31.9	11.9	51.9

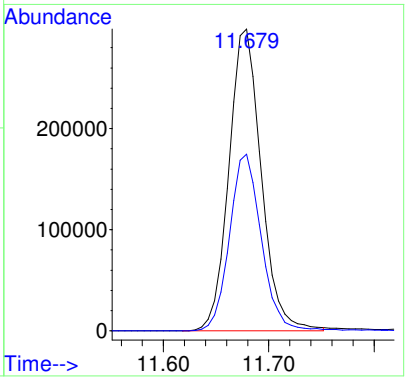


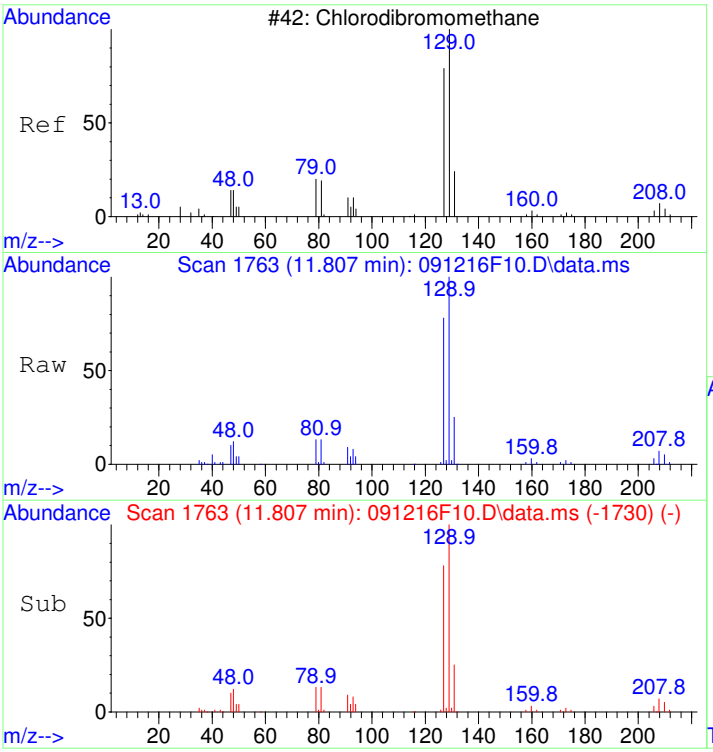


#45
2-Hexanone
Concen: 41.05 ug/L
RT: 11.679 min Scan# 1742
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 43 Resp: 637850

Ion	Ratio	Lower	Upper
43	100		
58	57.4	37.3	77.3

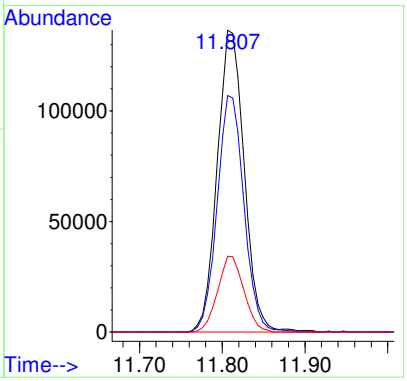


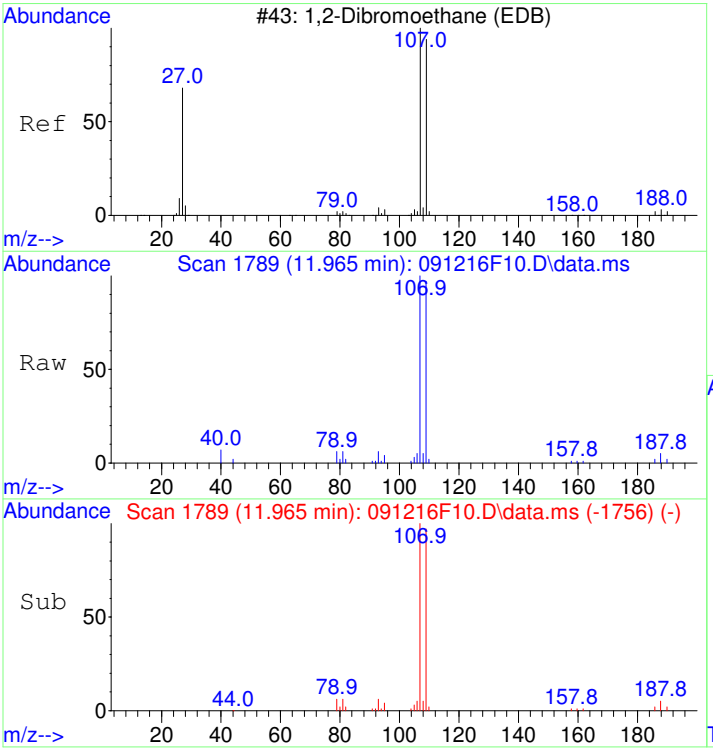


#46
Chlorodibromomethane
Concen: 5.00 ug/L
RT: 11.807 min Scan# 1763
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:129 Resp: 309229

Ion	Ratio	Lower	Upper
129	100		
127	77.6	57.6	97.6
131	24.4	4.4	44.4

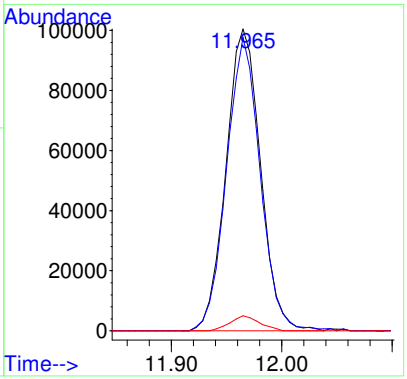


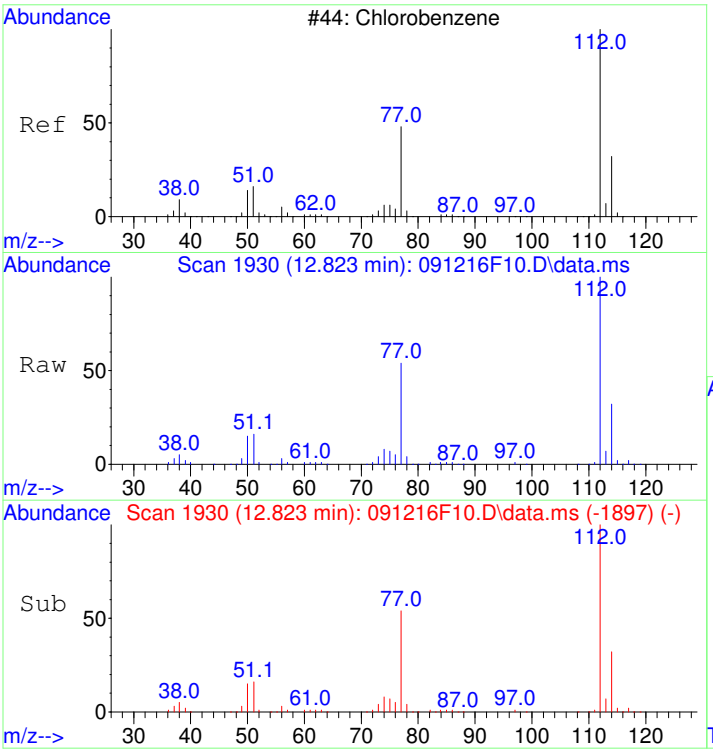


#47
1,2-Dibromoethane (EDB)
Concen: 5.03 ug/L
RT: 11.965 min Scan# 1789
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:107 Resp: 219647

Ion	Ratio	Lower	Upper
107	100		
109	94.8	74.8	114.8
188	4.3	0.0	24.3

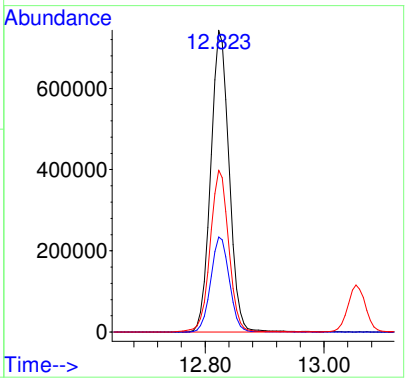


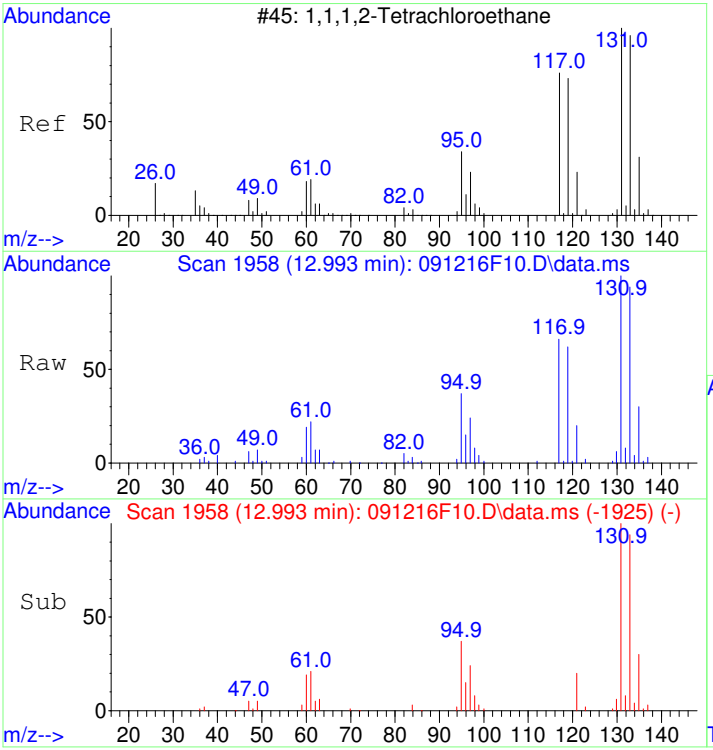


#48
Chlorobenzene
Concen: 5.03 ug/L
RT: 12.823 min Scan# 1930
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:112 Resp: 1597466

Ion	Ratio	Lower	Upper
112	100		
114	31.9	11.9	51.9
77	54.5	34.5	74.5

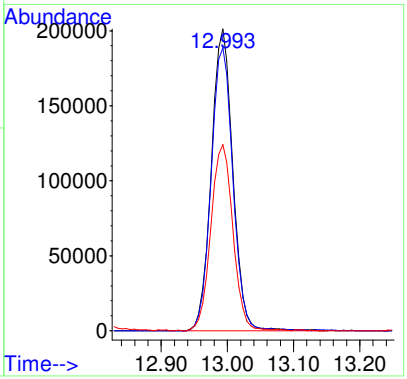


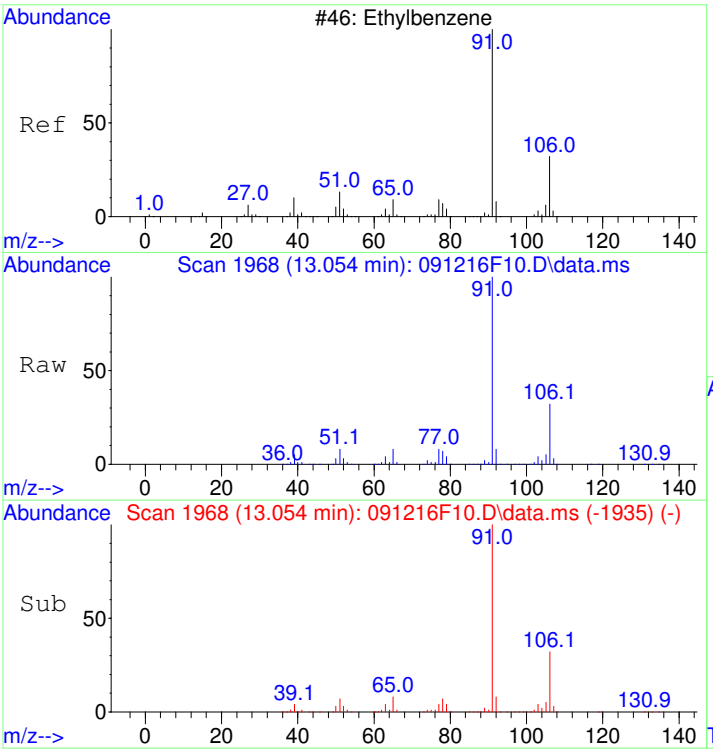


#49
1,1,1,2-Tetrachloroethane
Concen: 5.06 ug/L
RT: 12.993 min Scan# 1958
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:131 Resp: 454049

Ion	Ratio	Lower	Upper
131	100		
133	95.0	75.0	115.0
119	63.4	43.4	83.4

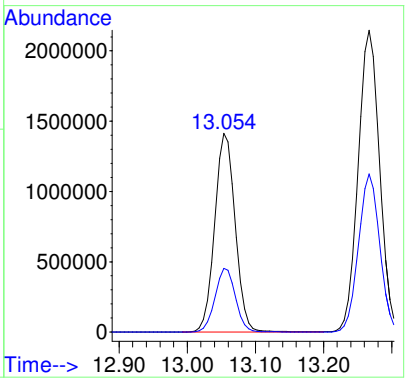


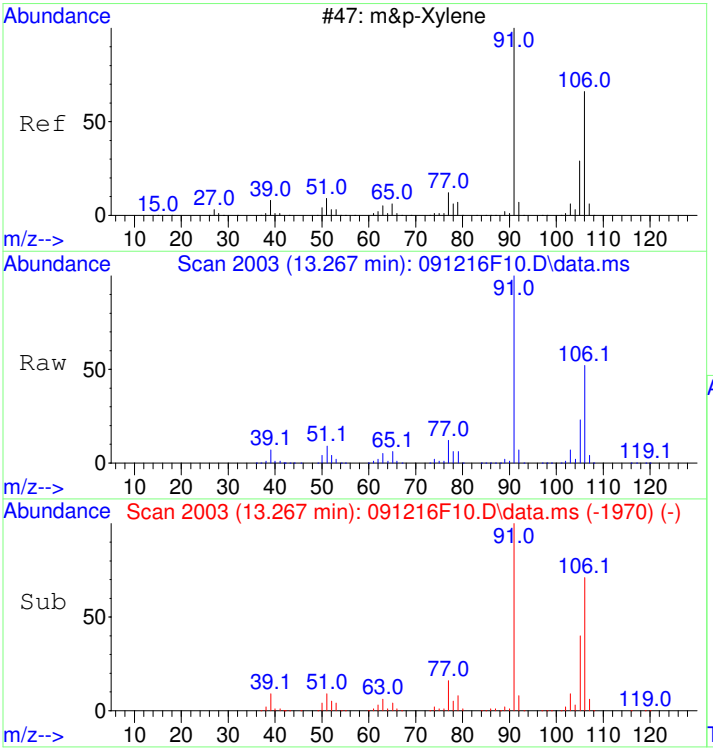


#50
Ethylbenzene
Concen: 5.39 ug/L
RT: 13.054 min Scan# 1968
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 91 Resp: 2968514

Ion	Ratio	Lower	Upper
91	100		
106	32.0	12.0	52.0

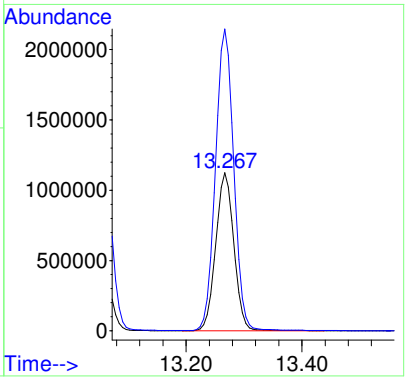


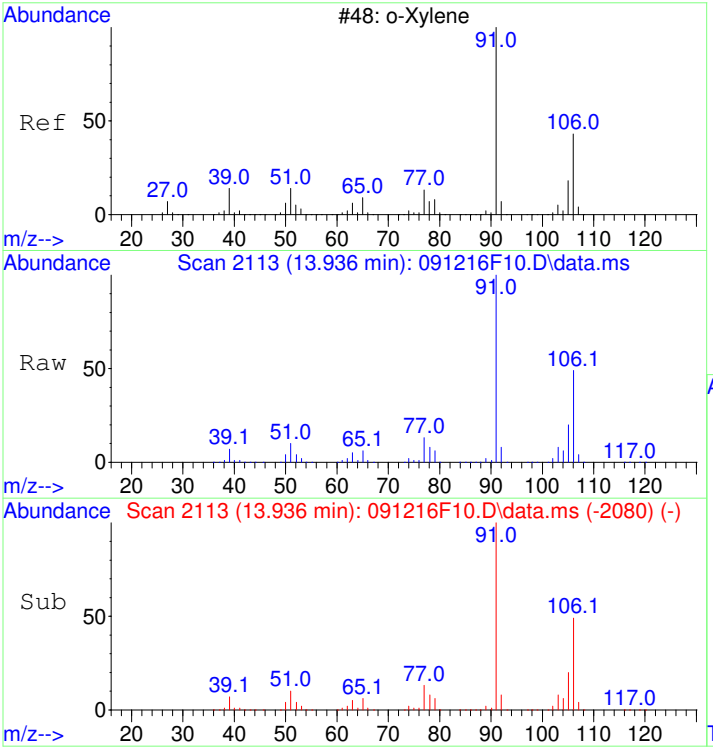


#51
m&p-Xylene
Concen: 10.48 ug/L
RT: 13.267 min Scan# 2003
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:106 Resp: 2441288

Ion	Ratio	Lower	Upper
106	100		
91	192.5	172.5	212.5

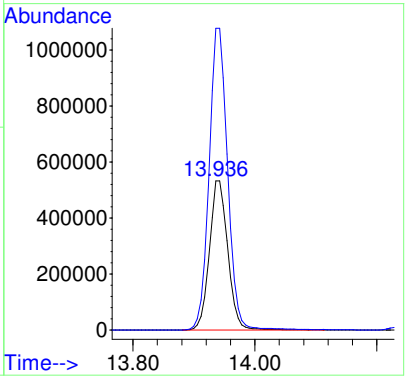


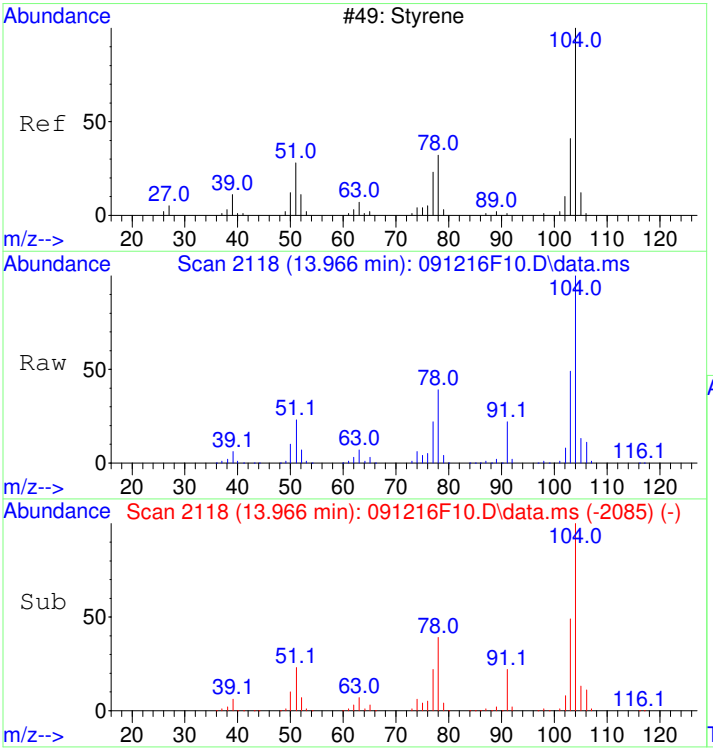


#52
o-Xylene
Concen: 5.39 ug/L
RT: 13.936 min Scan# 2113
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:106 Resp: 1120920

Ion	Ratio	Lower	Upper
106	100		
91	203.2	183.2	223.2

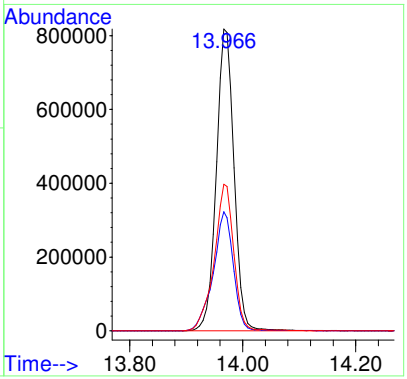


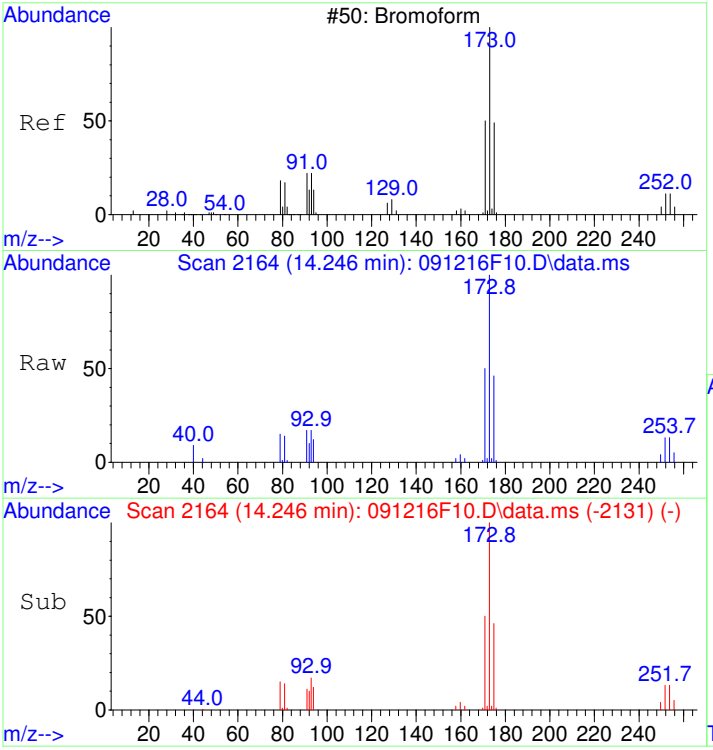


#53
Styrene
Concen: 5.24 ug/L
RT: 13.966 min Scan# 2118
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:104 Resp: 1778183

Ion	Ratio	Lower	Upper
104	100		
78	45.1	25.0	65.0
103	53.9	33.9	73.9

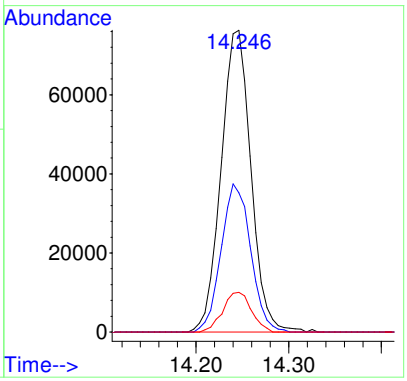


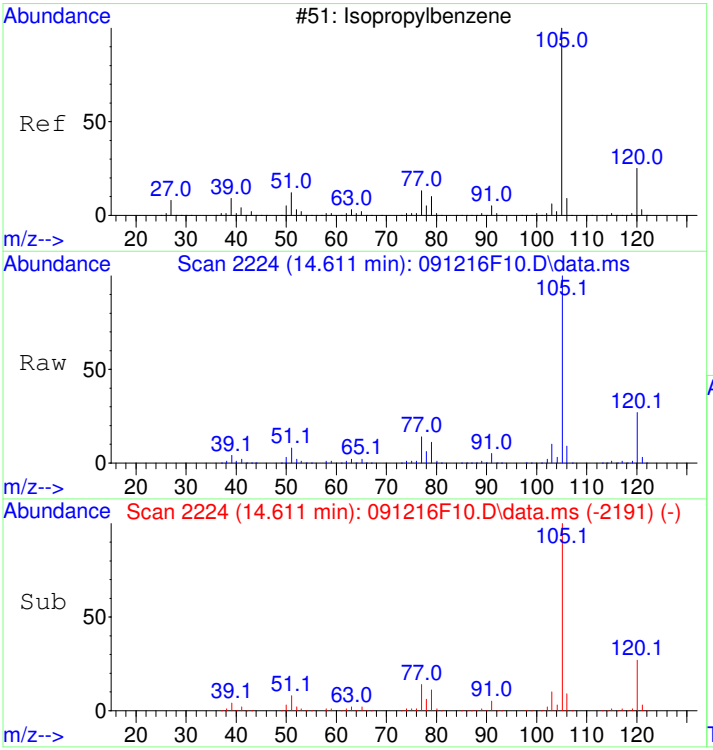


#54
Bromoform
Concen: 4.96 ug/L
RT: 14.246 min Scan# 2164
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:173 Resp: 170870

Ion	Ratio	Lower	Upper
173	100		
175	48.6	28.6	68.6
252	12.7	0.0	32.7

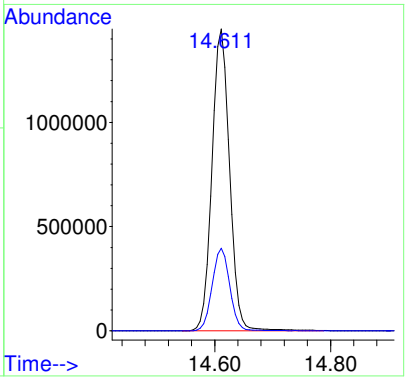


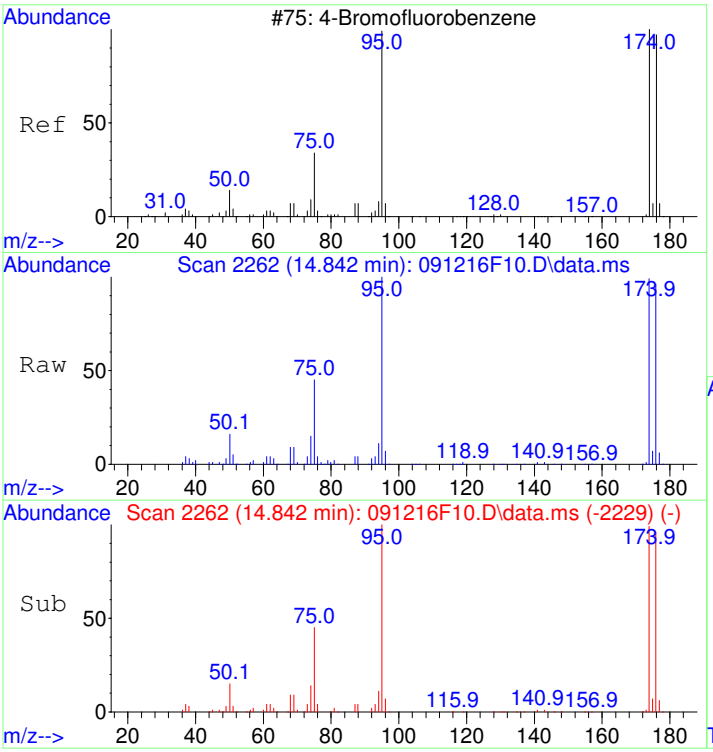


#55
Isopropylbenzene
Concen: 5.48 ug/L
RT: 14.611 min Scan# 2224
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:105 Resp: 3061499

Ion	Ratio	Lower	Upper
105	100		
120	27.4	7.4	47.4

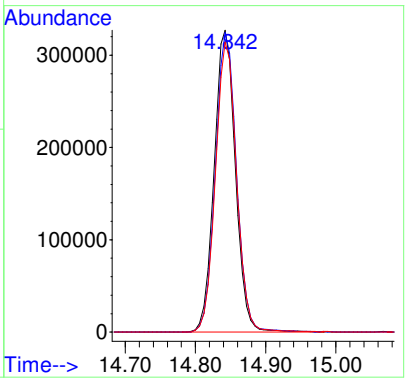


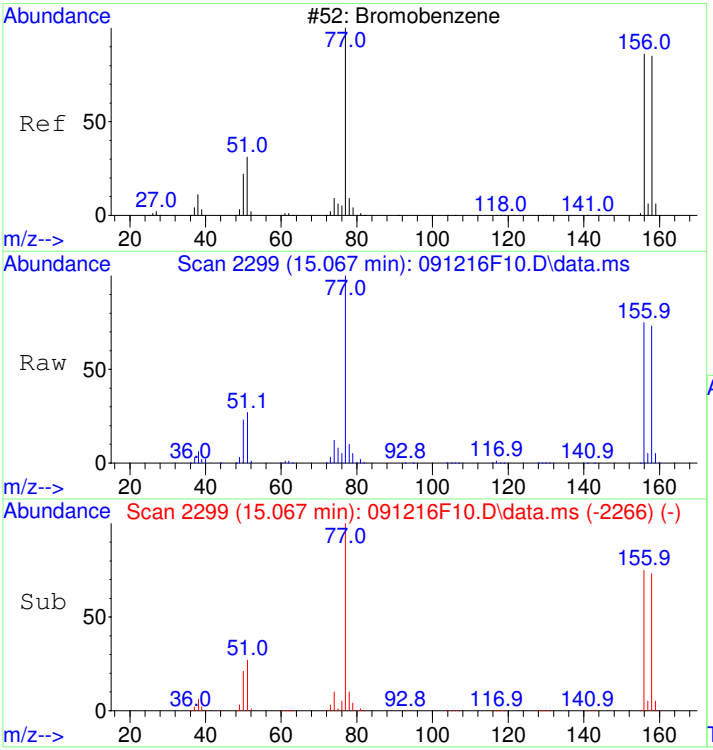


#56
4-Bromofluorobenzene
Concen: 4.94 ug/L
RT: 14.842 min Scan# 2262
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 95 Resp: 687660

Ion	Ratio	Lower	Upper
95	100		
174	98.7	78.7	118.7
176	95.6	75.6	115.6

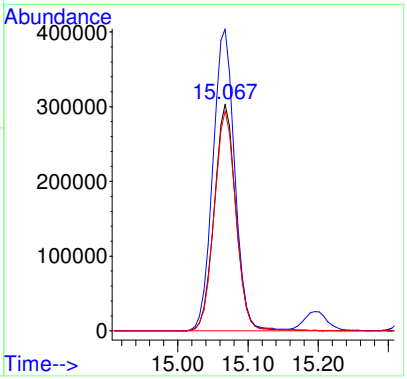


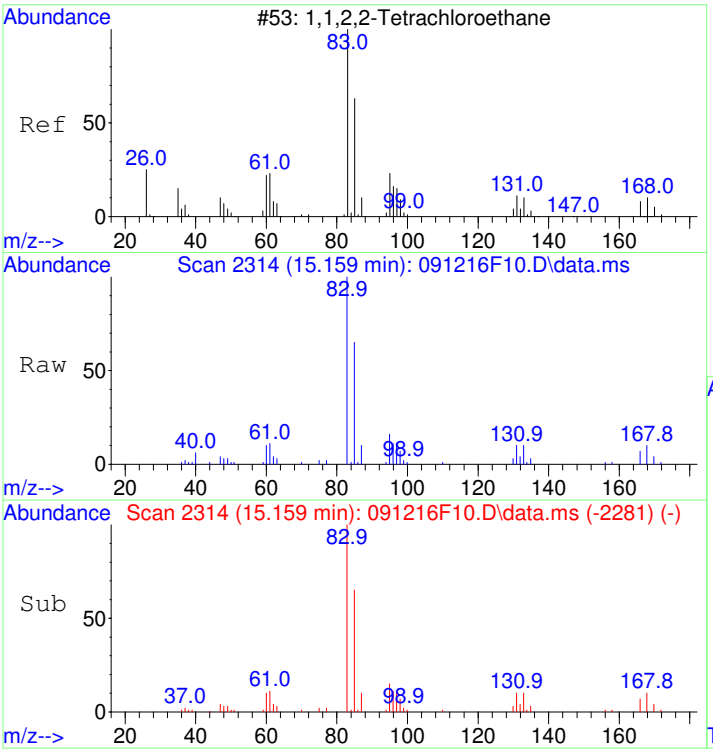


#57
Bromobenzene
Concen: 5.05 ug/L
RT: 15.067 min Scan# 2299
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:156 Resp: 647254

Ion	Ratio	Lower	Upper
156	100		
77	134.7	114.7	154.7
158	97.4	77.4	117.4

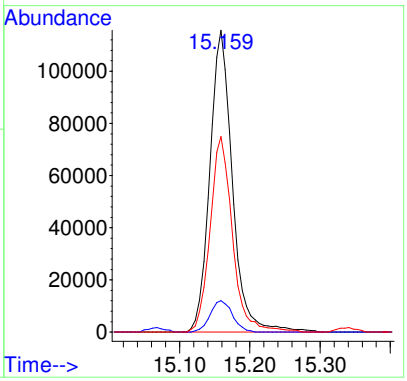


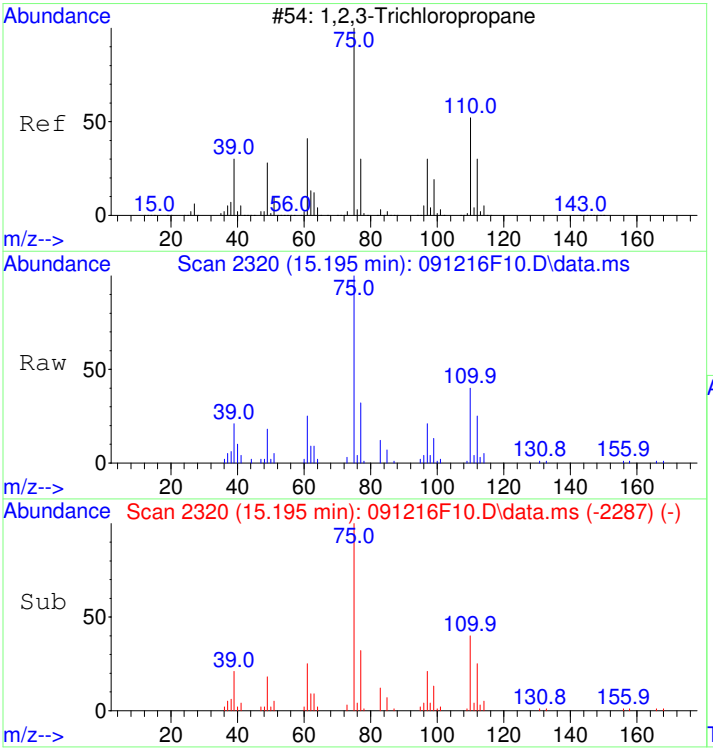


#58
1,1,2,2-Tetrachloroethane
Concen: 4.90 ug/L
RT: 15.159 min Scan# 2314
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 83 Resp: 259164

Ion	Ratio	Lower	Upper
83	100		
131	10.3	0.0	30.3
85	64.1	44.1	84.1

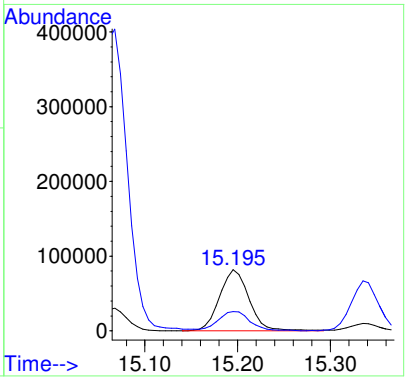


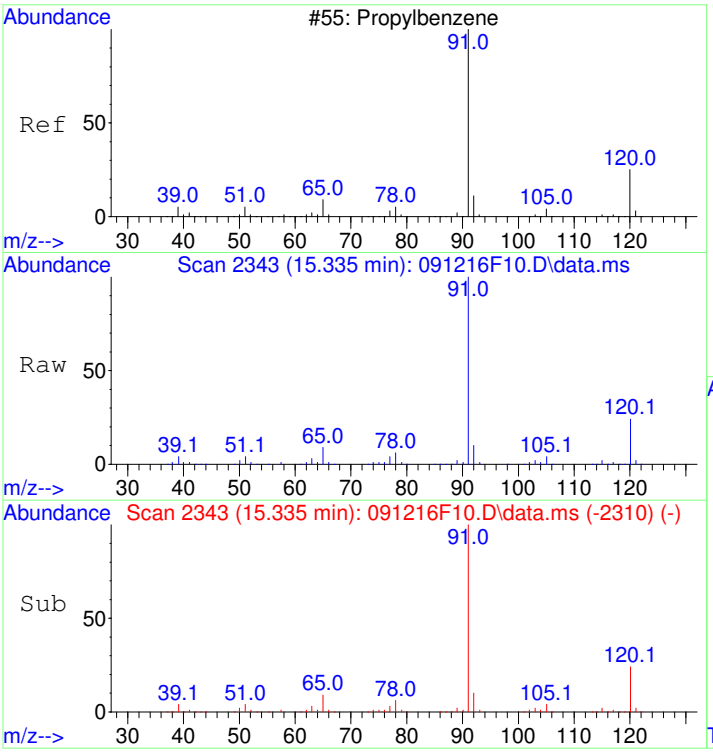


#59
1,2,3-Trichloropropane
Concen: 4.95 ug/L
RT: 15.195 min Scan# 2320
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 75 Resp: 180867

Ion	Ratio	Lower	Upper
75	100		
77	34.2	14.2	54.2

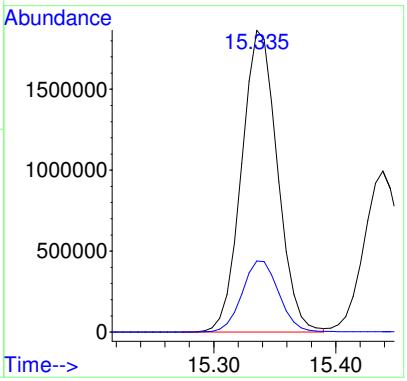


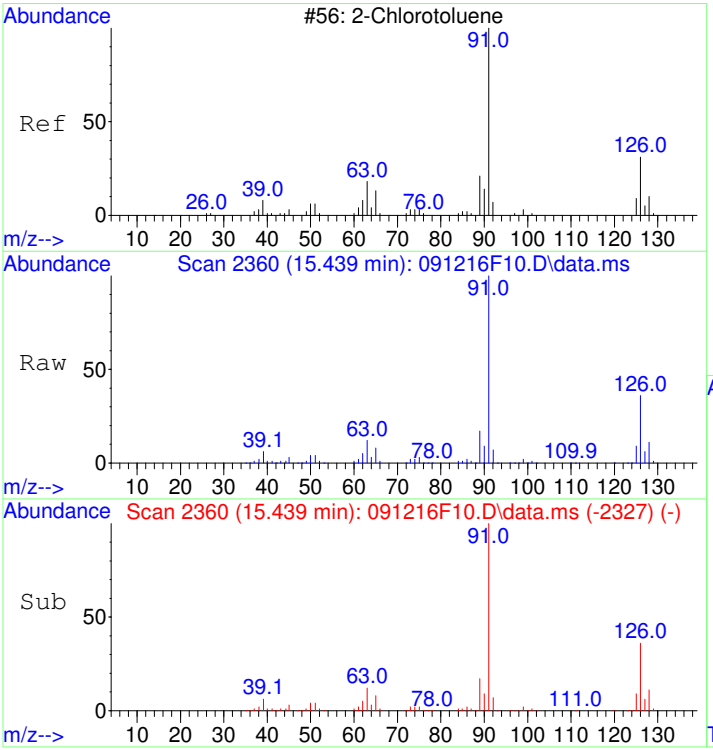


#60
Propylbenzene
Concen: 5.49 ug/L
RT: 15.335 min Scan# 2343
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 91 Resp: 3807268

Ion	Ratio	Lower	Upper
91	100		
120	24.3	4.3	44.3

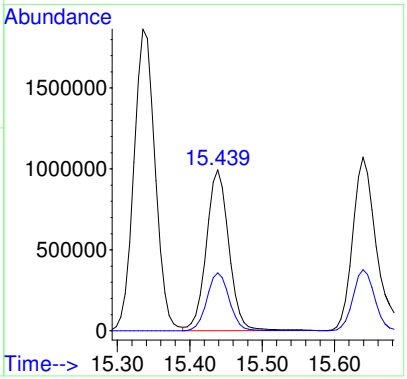


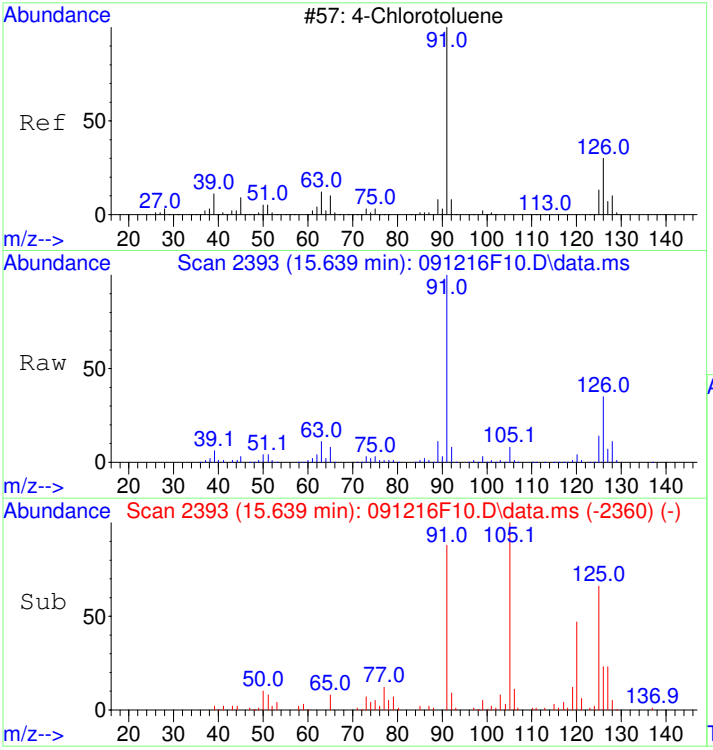


#61
2-Chlorotoluene
Concen: 5.18 ug/L
RT: 15.439 min Scan# 2360
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 91 Resp: 2143576

Ion	Ratio	Lower	Upper
91	100		
126	36.2	16.2	56.2

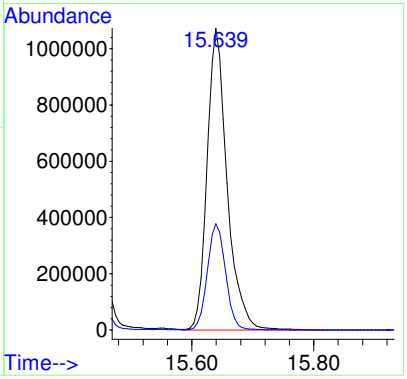


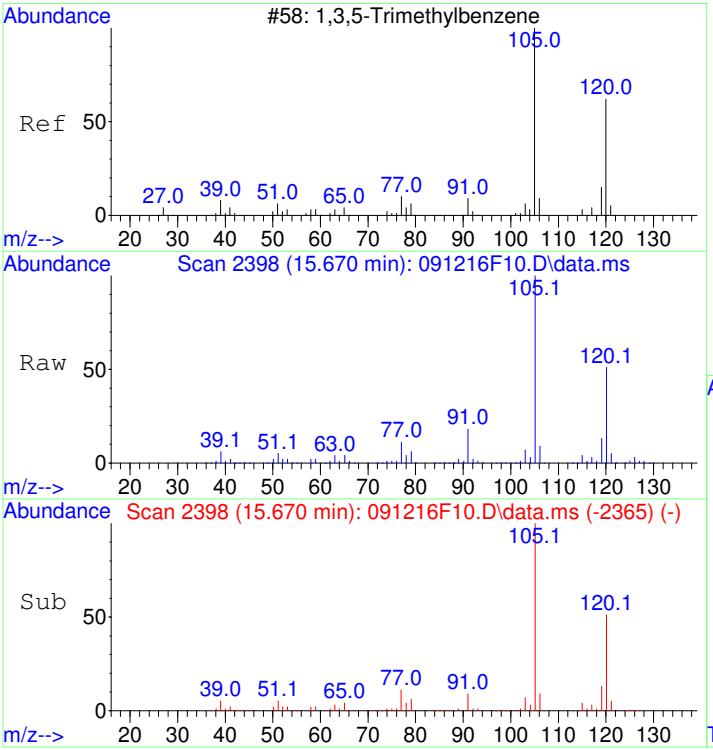


#62
4-Chlorotoluene
Concen: 5.25 ug/L
RT: 15.639 min Scan# 2393
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 91 Resp: 2451980

Ion	Ratio	Lower	Upper
91	100		
126	32.2	12.2	52.2

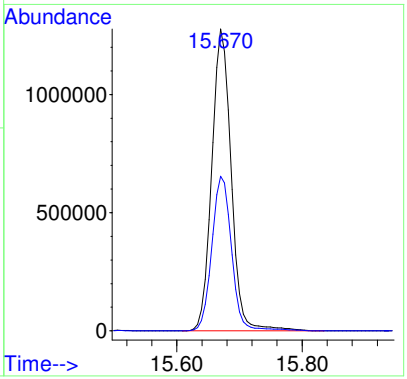


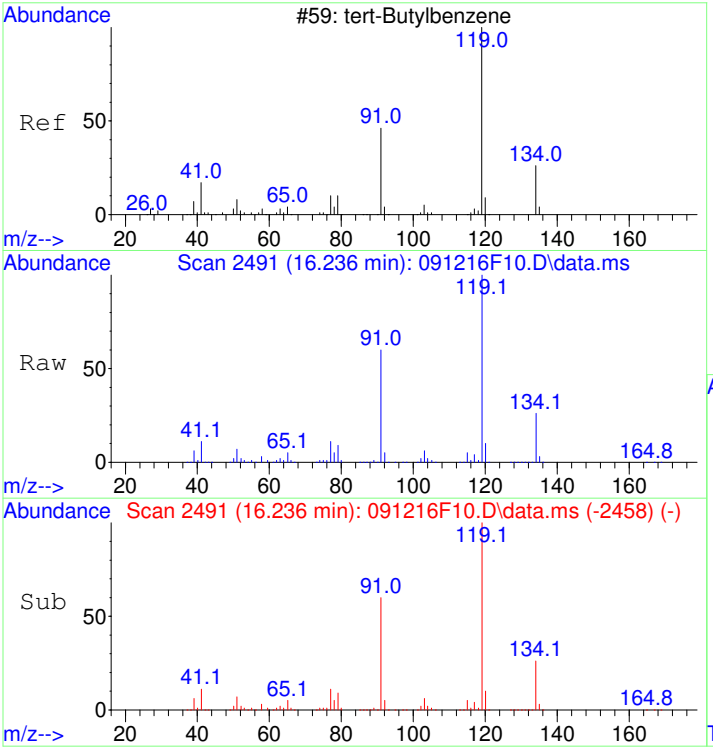


#63
1,3,5-Trimethylbenzene
Concen: 5.28 ug/L
RT: 15.670 min Scan# 2398
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:105 Resp: 2741936

Ion	Ratio	Lower	Upper
105	100		
120	52.1	32.1	72.1

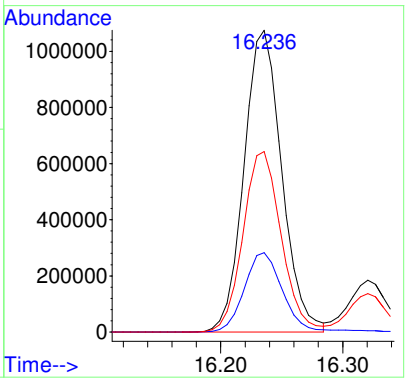


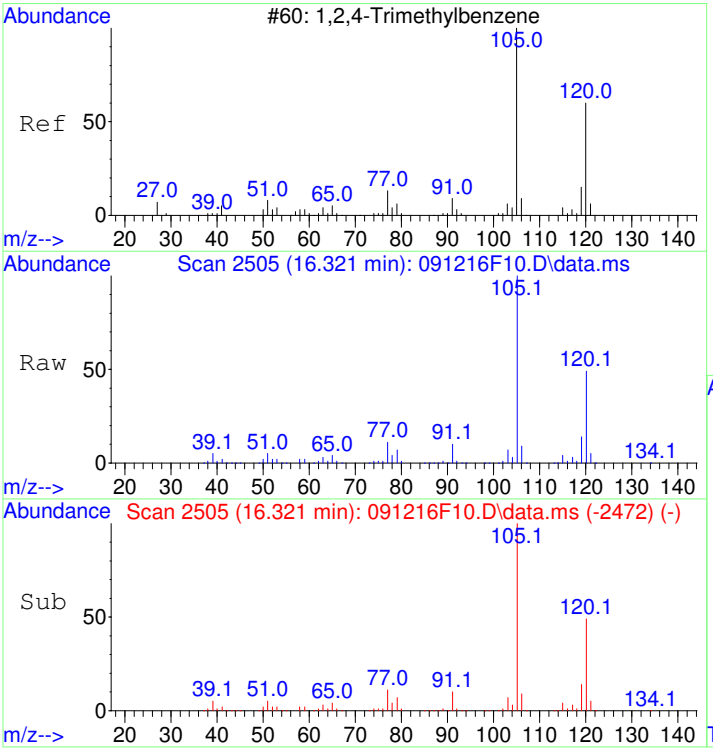


#64
tert-Butylbenzene
Concen: 5.32 ug/L
RT: 16.236 min Scan# 2491
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:119 Resp: 2310604

Ion	Ratio	Lower	Upper
119	100		
134	27.1	7.1	47.1
91	60.5	40.5	80.5

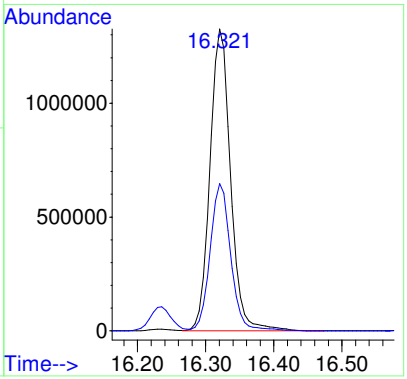


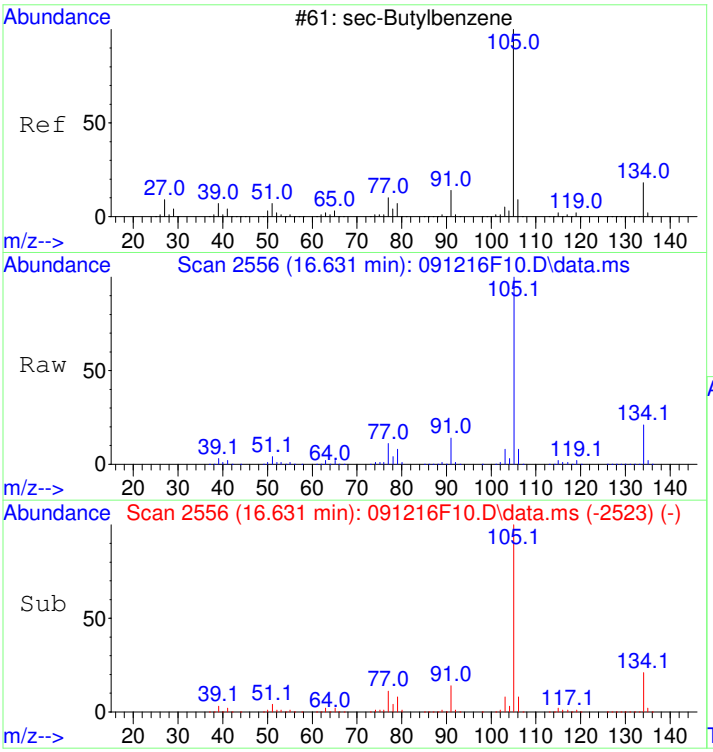


#65
1,2,4-Trimethylbenzene
Concen: 5.33 ug/L
RT: 16.321 min Scan# 2505
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:105 Resp: 2794867

Ion	Ratio	Lower	Upper
105	100		
120	48.9	28.9	68.9

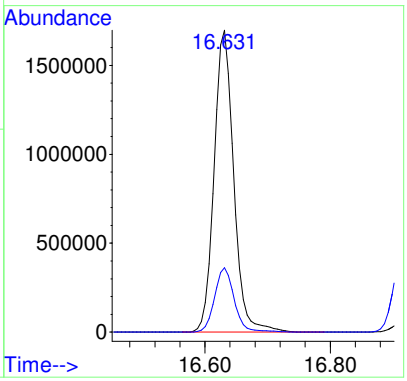


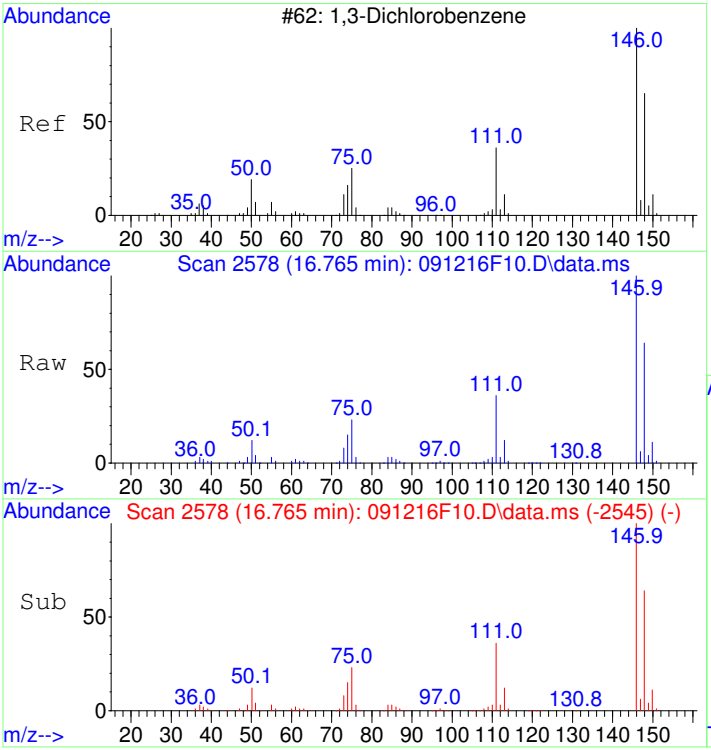


#66
sec-Butylbenzene
Concen: 5.46 ug/L
RT: 16.631 min Scan# 2556
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:105 Resp: 3687582

Ion	Ratio	Lower	Upper
105	100		
134	21.3	1.3	41.3

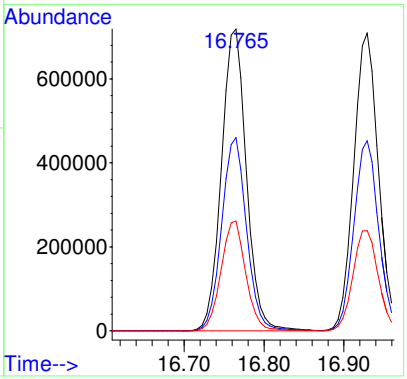


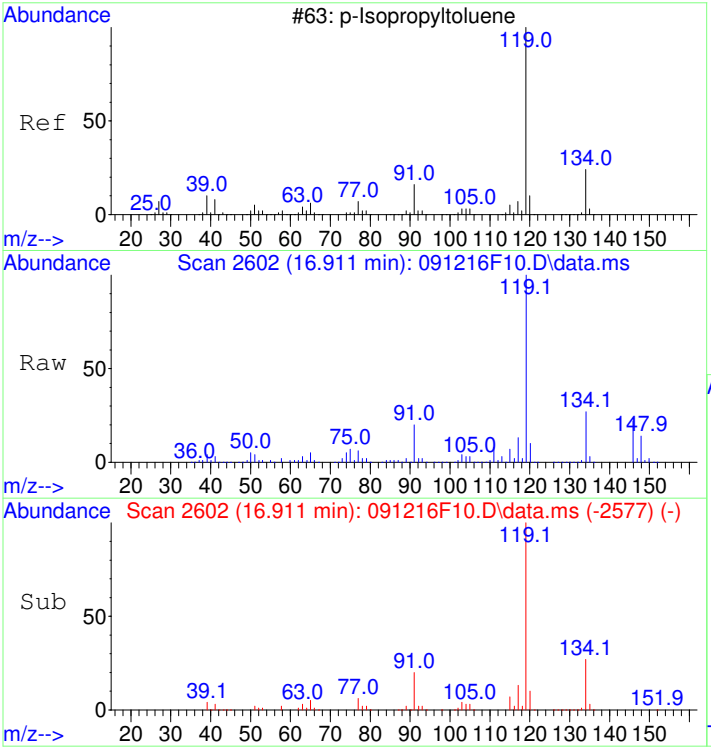


#67
1,3-Dichlorobenzene
Concen: 5.16 ug/L
RT: 16.765 min Scan# 2578
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:146 Resp: 1563324

Ion	Ratio	Lower	Upper
146	100		
148	63.9	43.9	83.9
111	36.1	16.1	56.1

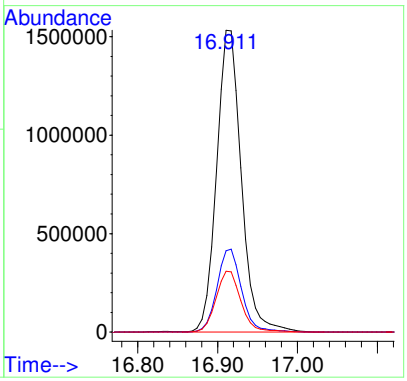


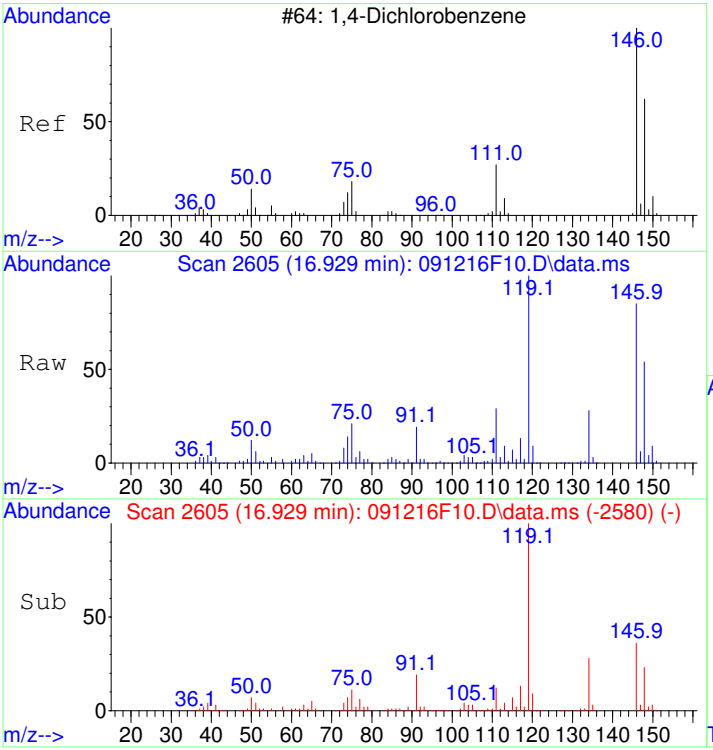


#68
p-Isopropyltoluene
Concen: 5.44 ug/L
RT: 16.911 min Scan# 2602
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:119 Resp: 3287427

Ion	Ratio	Lower	Upper
119	100		
134	27.3	7.3	47.3
91	20.4	0.4	40.4

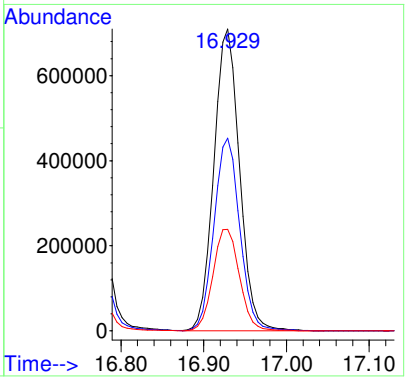


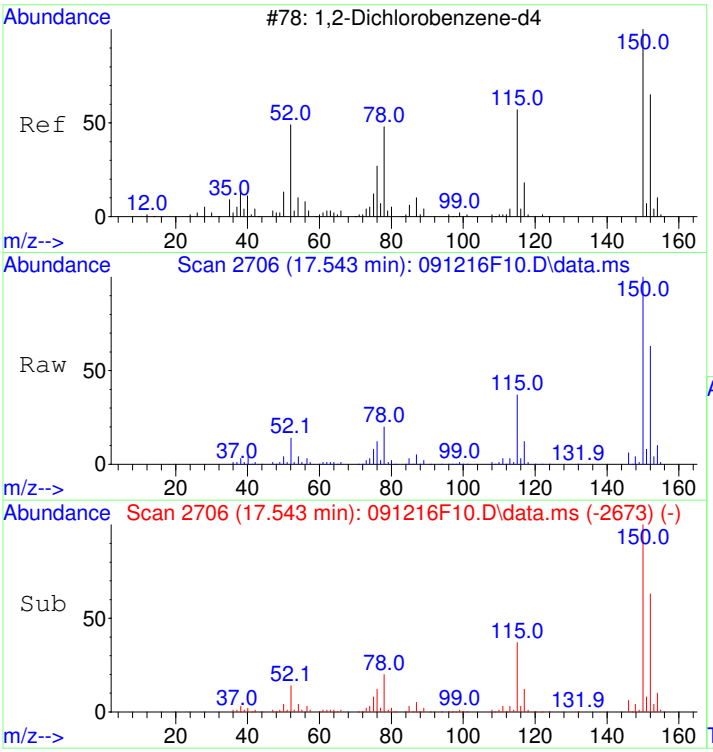


#69
1,4-Dichlorobenzene
Concen: 5.10 ug/L
RT: 16.929 min Scan# 2605
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:146 Resp: 1532040

Ion	Ratio	Lower	Upper
146	100		
148	64.0	44.0	84.0
111	34.7	14.7	54.7

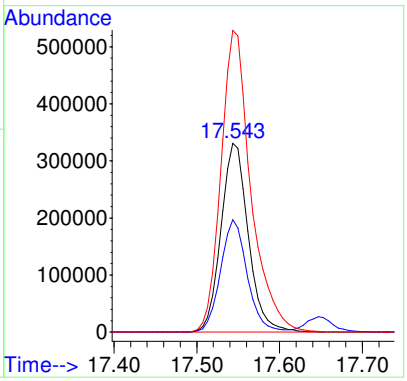


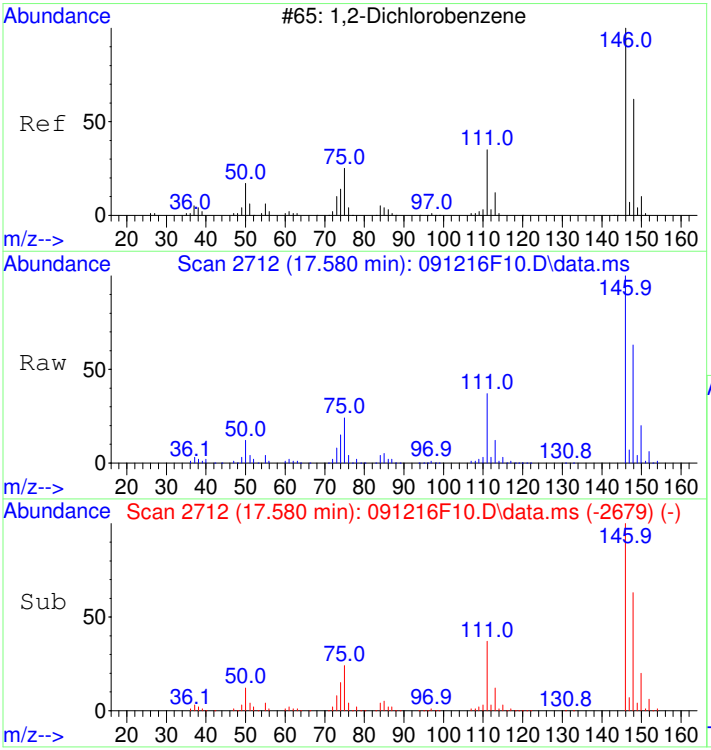


#70
1,2-Dichlorobenzene-d4
Concen: 5.02 ug/L
RT: 17.543 min Scan# 2706
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:152 Resp: 758286

Ion	Ratio	Lower	Upper
152	100		
115	58.1	38.1	78.1
150	175.0	155.0	195.0

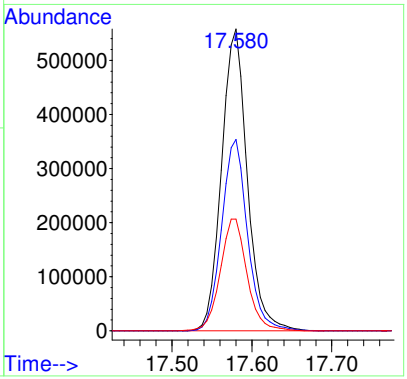


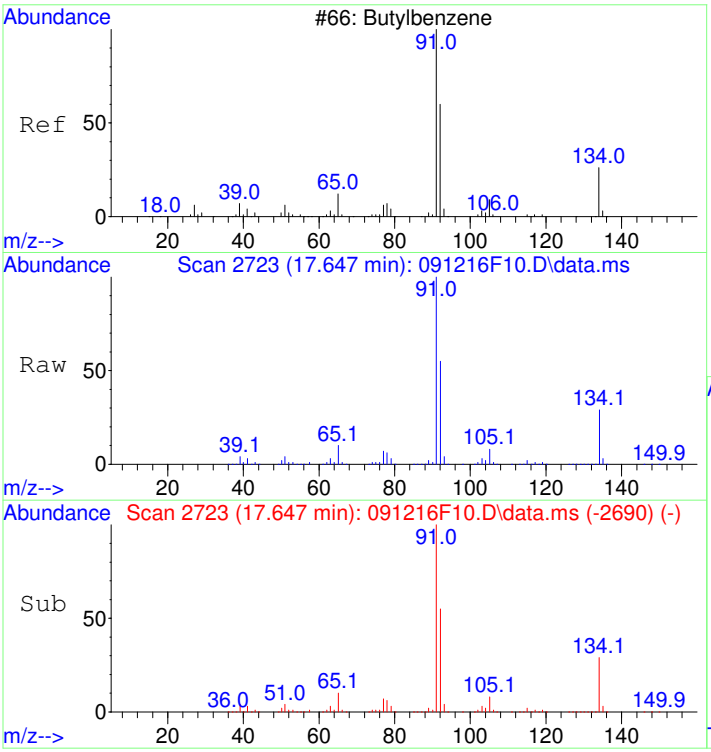


#71
1,2-Dichlorobenzene
Concen: 5.09 ug/L
RT: 17.580 min Scan# 2712
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:146 Resp: 1251071

Ion	Ratio	Lower	Upper
146	100		
148	63.8	43.8	83.8
111	38.5	18.5	58.5

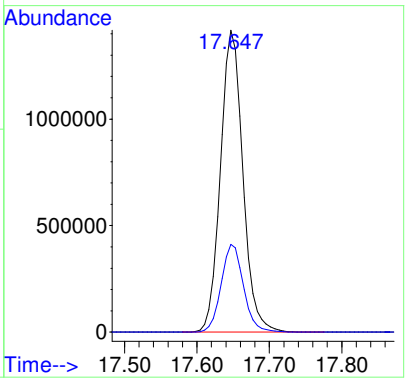


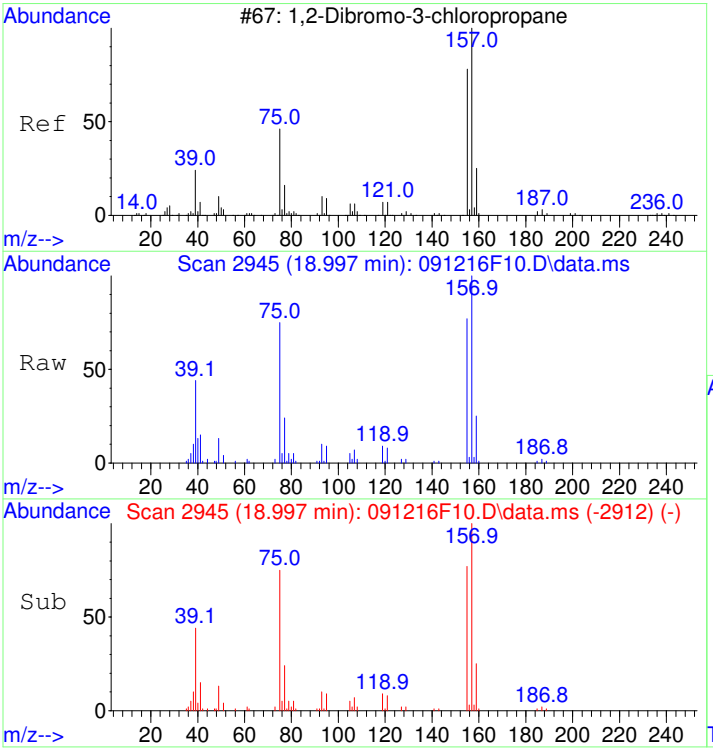


#72
Butylbenzene
Concen: 5.35 ug/L
RT: 17.647 min Scan# 2723
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 91 Resp: 3037099

Ion	Ratio	Lower	Upper
91	100		
134	28.9	8.9	48.9

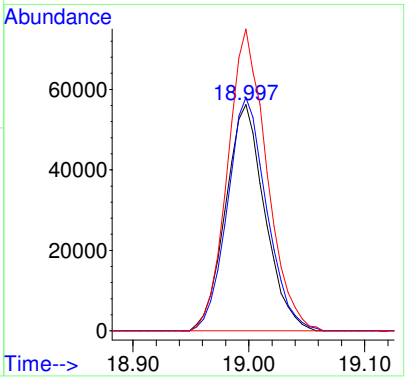


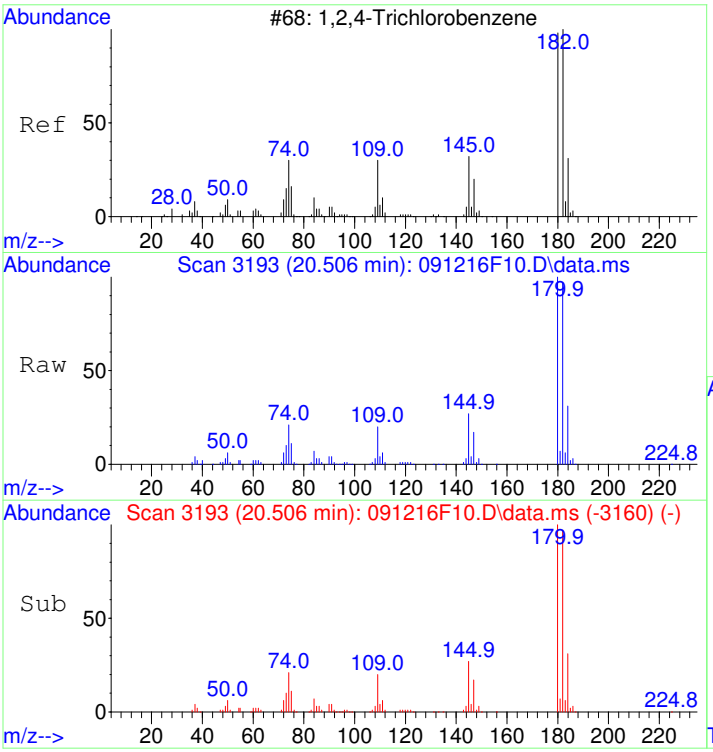


#73
1,2-Dibromo-3-chloropropane
Concen: 19.96 ug/L
RT: 18.997 min Scan# 2945
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion: 75 Resp: 132568

Ion	Ratio	Lower	Upper
75	100		
155	103.0	83.0	123.0
157	133.1	113.1	153.1

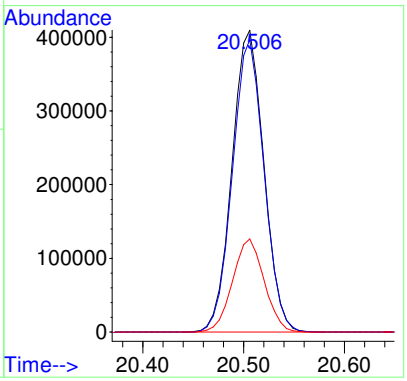


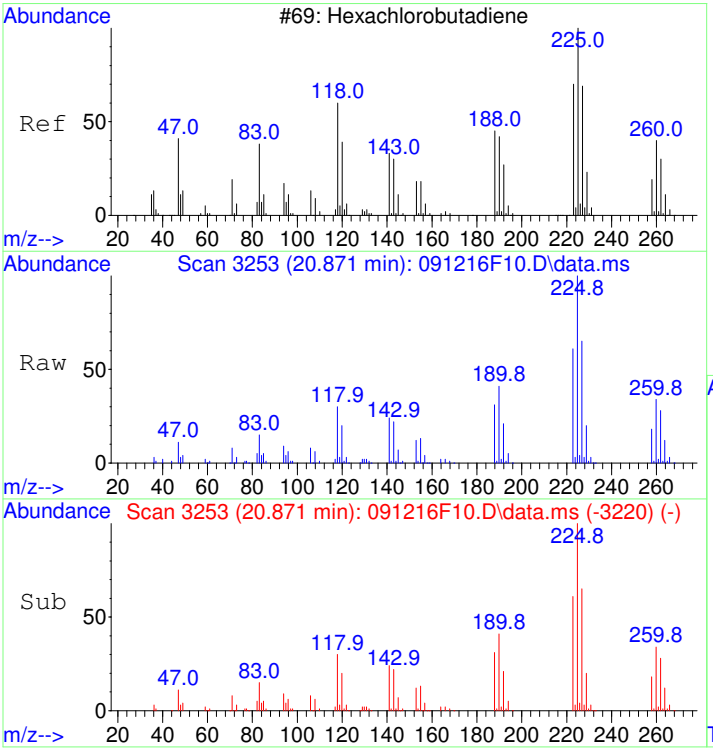


#74
1,2,4-Trichlorobenzene
Concen: 5.18 ug/L
RT: 20.506 min Scan# 3193
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:180 Resp: 898559

Ion	Ratio	Lower	Upper
180	100		
182	95.9	75.9	115.9
184	30.6	10.6	50.6

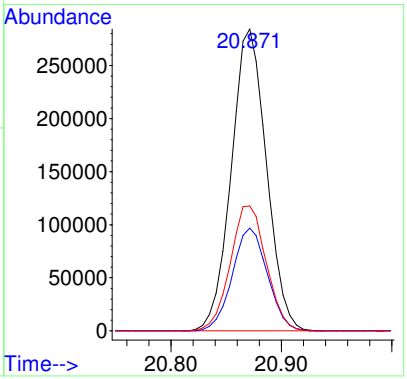


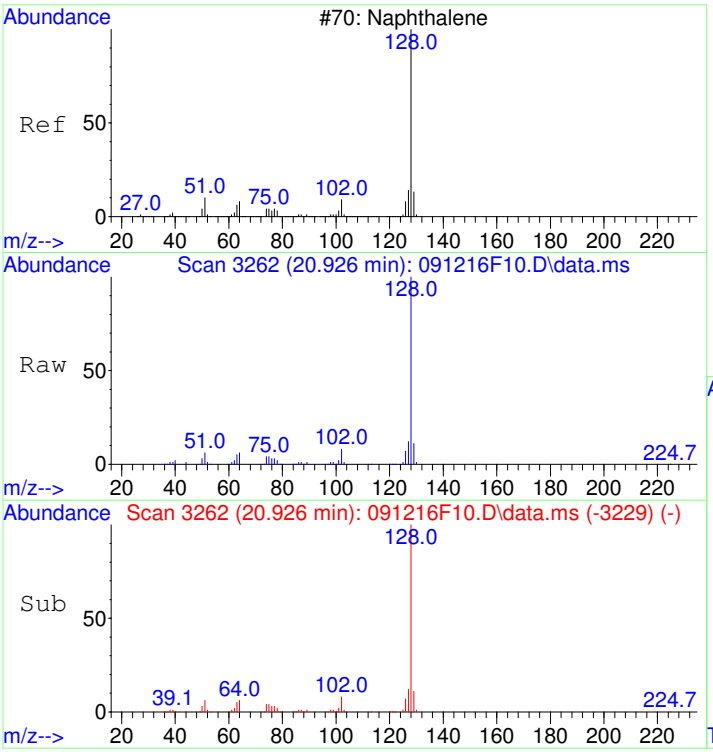


#75
Hexachlorobutadiene
Concen: 4.85 ug/L
RT: 20.871 min Scan# 3253
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:225 Resp: 632988

Ion	Ratio	Lower	Upper
225	100		
260	34.0	14.0	54.0
190	42.4	22.4	62.4

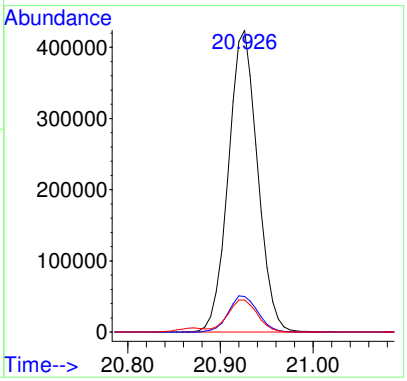


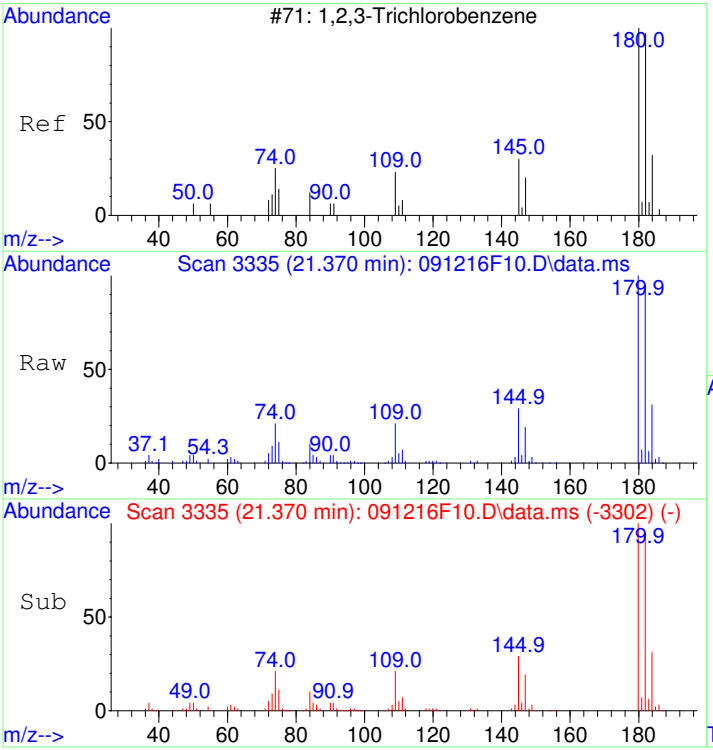


#76
Naphthalene
Concen: 5.41 ug/L
RT: 20.926 min Scan# 3262
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:128 Resp: 924759

Ion	Ratio	Lower	Upper
128	100		
127	12.2	0.0	32.2
129	10.7	0.0	30.7

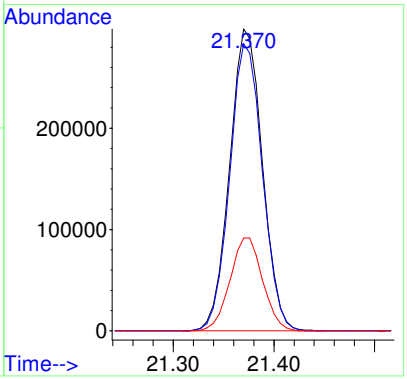




#77
1,2,3-Trichlorobenzene
Concen: 5.08 ug/L
RT: 21.370 min Scan# 3335
Delta R.T. 0.000 min
Lab File: 091216F10.D
Acq: 12 Sep 2016 17:36

Tgt Ion:180 Resp: 672257

Ion	Ratio	Lower	Upper
180	100		
182	94.8	74.8	114.8
184	30.7	10.7	50.7



LSC Area Percent Report

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F10.D
Acq On : 12 Sep 2016 17:36
Operator : YNB
Sample : S16I043-CAL4
Misc : 5ug/L, WATER
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 50 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0.3 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\2016\method\091216FVW.M
Title : Volatile Organic Analysis - 524.2 Method

Signal : TIC: 091216F10.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	1.586	82	83	88	rVB	18806	18645	0.14%	0.007%
2	1.635	88	91	92	rBV	284394	280892	2.07%	0.110%
3	1.751	106	110	134	rVB	691669	904220	6.66%	0.355%
4	2.091	161	166	180	rBV	358554	633435	4.66%	0.249%
5	2.207	180	185	193	rVB	442193	608361	4.48%	0.239%
6	2.499	226	233	243	rBV	921740	1647218	12.13%	0.647%
7	2.979	309	312	316	rBV3	7403	12459	0.09%	0.005%
8	3.132	328	337	350	rBV2	1253339	4321841	31.82%	1.697%
9	3.241	350	355	370	rVB	161215	443769	3.27%	0.174%
10	3.387	371	379	387	rBV	872351	1641208	12.08%	0.645%
11	3.837	450	453	479	rVB	732117	1588545	11.70%	0.624%
12	4.184	500	510	517	rBV	80591	260746	1.92%	0.102%
13	4.275	517	525	529	rVV	1003864	2313412	17.03%	0.909%
14	4.336	529	535	565	rVB	1546750	4741117	34.91%	1.862%
15	4.963	628	638	657	rBV	648896	1722295	12.68%	0.676%
16	5.182	661	674	714	rVB	3376702	10020537	73.78%	3.935%
17	5.772	758	771	783	rBV	2560847	7509749	55.29%	2.949%
18	5.906	784	793	804	rVV2	1406984	4208330	30.98%	1.653%
19	6.015	805	811	823	rVB	234924	628492	4.63%	0.247%
20	6.289	848	856	874	rBV	498815	1201644	8.85%	0.472%
21	6.465	875	885	908	rVB	805933	2049406	15.09%	0.805%
22	6.703	913	924	948	rBV	874653	2427832	17.87%	0.953%
23	6.976	956	969	989	rBV4	1744965	5037676	37.09%	1.978%
24	7.232	1002	1011	1016	rBV2	311171	739679	5.45%	0.290%
25	7.299	1016	1022	1029	rBV	1674634	3895776	28.68%	1.530%
26	7.585	1058	1069	1091	rBV	2358701	6569549	48.37%	2.580%
27	7.779	1091	1101	1121	rVB	1679386	4039584	29.74%	1.586%
28	8.369	1186	1198	1217	rBV	1458297	3464927	25.51%	1.361%
29	8.728	1247	1257	1272	rBV	833423	2049886	15.09%	0.805%
30	8.911	1278	1287	1301	rBV	406912	951477	7.01%	0.374%
31	9.209	1327	1336	1349	rBV	612435	1402885	10.33%	0.551%
32	9.951	1448	1458	1471	rBV	700646	1500681	11.05%	0.589%
33	10.280	1502	1512	1519	rBV	1179346	2658291	19.57%	1.044%
34	10.371	1519	1527	1536	rVV	2292574	5100993	37.56%	2.003%
35	10.474	1536	1544	1566	rVB	2546016	5711733	42.05%	2.243%
36	10.894	1603	1613	1622	rBV	488556	997896	7.35%	0.392%
37	11.180	1649	1660	1672	rBV	570580	1268730	9.34%	0.498%
38	11.375	1683	1692	1699	rBV	1667022	3713964	27.34%	1.459%
39	11.448	1699	1704	1717	rVB	543624	1170955	8.62%	0.460%
40	11.679	1734	1742	1754	rBV	801239	1700079	12.52%	0.668%

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F10.D
Acq On : 12 Sep 2016 17:36
Operator : YNB
Sample : S16I043-CAL4
Misc : 5ug/L, WATER
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 50 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0.3 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\2016\method\091216FVW.M
Title : Volatile Organic Analysis - 524.2 Method

41	11.807	1755	1763	1772	rVB	437627	965793	7.11%	0.379%
42	11.965	1781	1789	1798	rBV	256997	550988	4.06%	0.216%
43	12.780	1913	1923	1926	rBV	1925403	4040962	29.75%	1.587%
44	12.823	1926	1930	1945	rVV	2135216	4548338	33.49%	1.786%
45	12.993	1949	1958	1962	rVV	1164080	2607429	19.20%	1.024%
46	13.054	1962	1968	1983	rVV	3102436	6539882	48.15%	2.568%
47	13.175	1986	1988	1993	rVB3	8431	10925	0.08%	0.004%
48	13.267	1993	2003	2021	rBV	5922064	12982008	95.58%	5.098%
49	13.942	2102	2114	2141	rBV2	3240977	11367175	83.69%	4.464%
50	14.240	2154	2163	2173	rBV	259839	573648	4.22%	0.225%
51	14.611	2212	2224	2238	rBV	3305859	7014394	51.64%	2.755%
52	14.842	2253	2262	2279	rVB	1616509	3344226	24.62%	1.313%
53	15.067	2288	2299	2307	rBV	1534226	3269760	24.07%	1.284%
54	15.159	2307	2314	2317	rBV	364650	770770	5.67%	0.303%
55	15.335	2334	2343	2352	rBV	3580844	7373551	54.29%	2.896%
56	15.439	2352	2360	2385	rVV	2698151	5875389	43.26%	2.307%
57	15.670	2385	2398	2425	rVB2	3744030	13281650	97.78%	5.216%
58	16.004	2447	2453	2460	rBV2	8113	15805	0.12%	0.006%
59	16.236	2480	2491	2498	rBV	3252308	7080146	52.13%	2.781%
60	16.321	2498	2505	2530	rVB	3629608	7799403	57.42%	3.063%
61	16.631	2540	2556	2570	rBV	3638259	7980738	58.76%	3.134%
62	16.765	2570	2578	2593	rVV	2468805	5448859	40.12%	2.140%
63	16.917	2593	2603	2622	rVB2	5692111	13582546	100.00%	5.334%
64	17.550	2695	2707	2708	rBV	2050450	3743141	27.56%	1.470%
65	17.647	2717	2723	2737	rVB	3835565	8277143	60.94%	3.251%
66	18.024	2780	2785	2793	rVB5	11622	22498	0.17%	0.009%
67	18.997	2936	2945	2956	rVB	375681	878632	6.47%	0.345%
68	19.569	3034	3039	3042	rVB3	5795	10616	0.08%	0.004%
69	20.506	3180	3193	3204	rBV	1831442	4067357	29.95%	1.597%
70	20.871	3243	3253	3258	rBV	2055161	4737889	34.88%	1.861%
71	20.926	3258	3262	3275	rVB	807300	1660566	12.23%	0.652%
72	21.370	3325	3335	3349	rVB	1355736	3046853	22.43%	1.197%

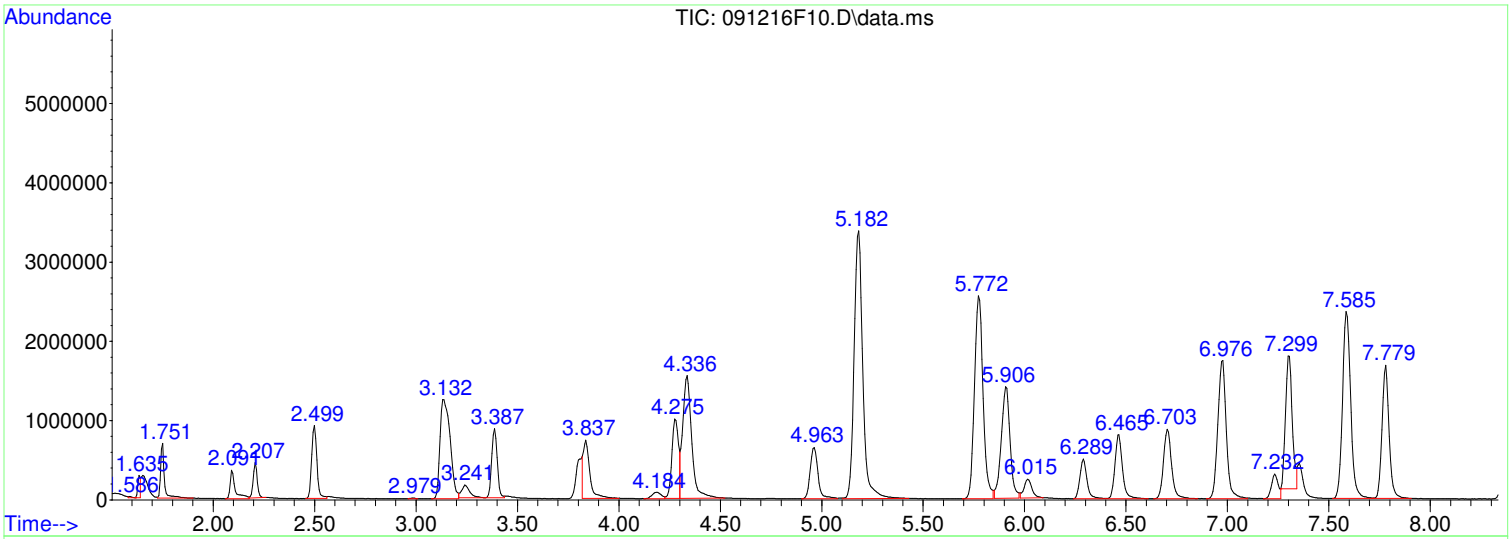
Sum of corrected areas: 254627994

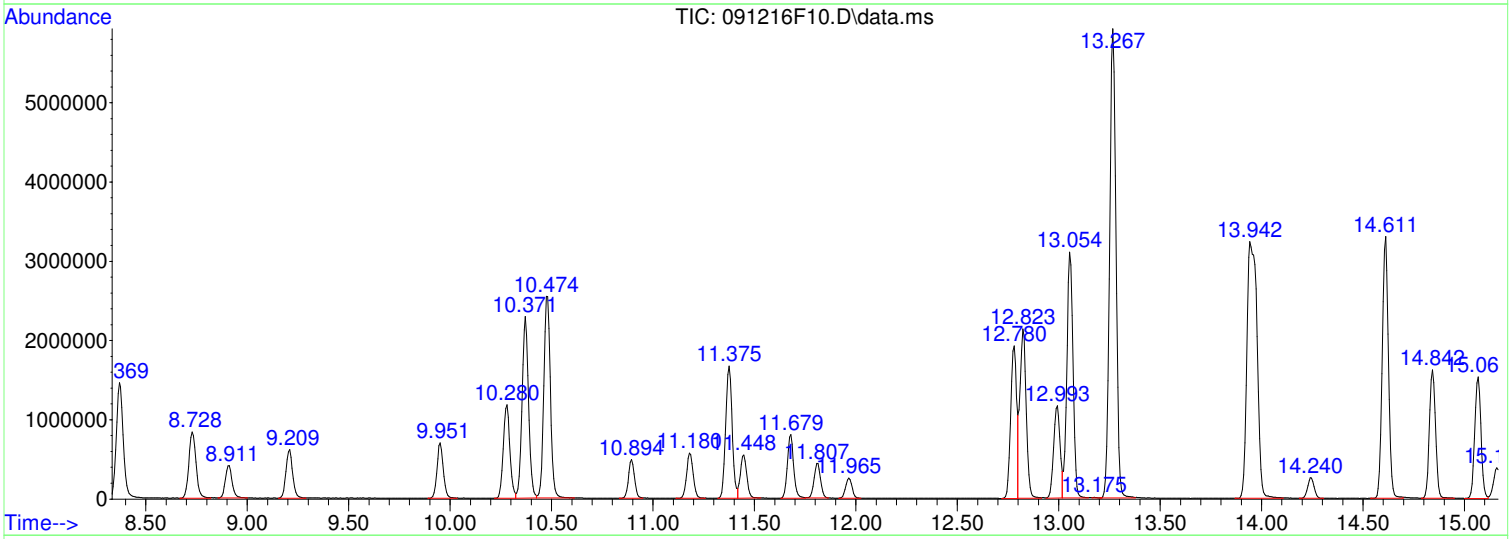
Table of Contents

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F10.D
Acq On : 12 Sep 2016 17:36
Operator : YNB
Sample : S16I043-CAL4
Misc : 5ug/L, WATER
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P





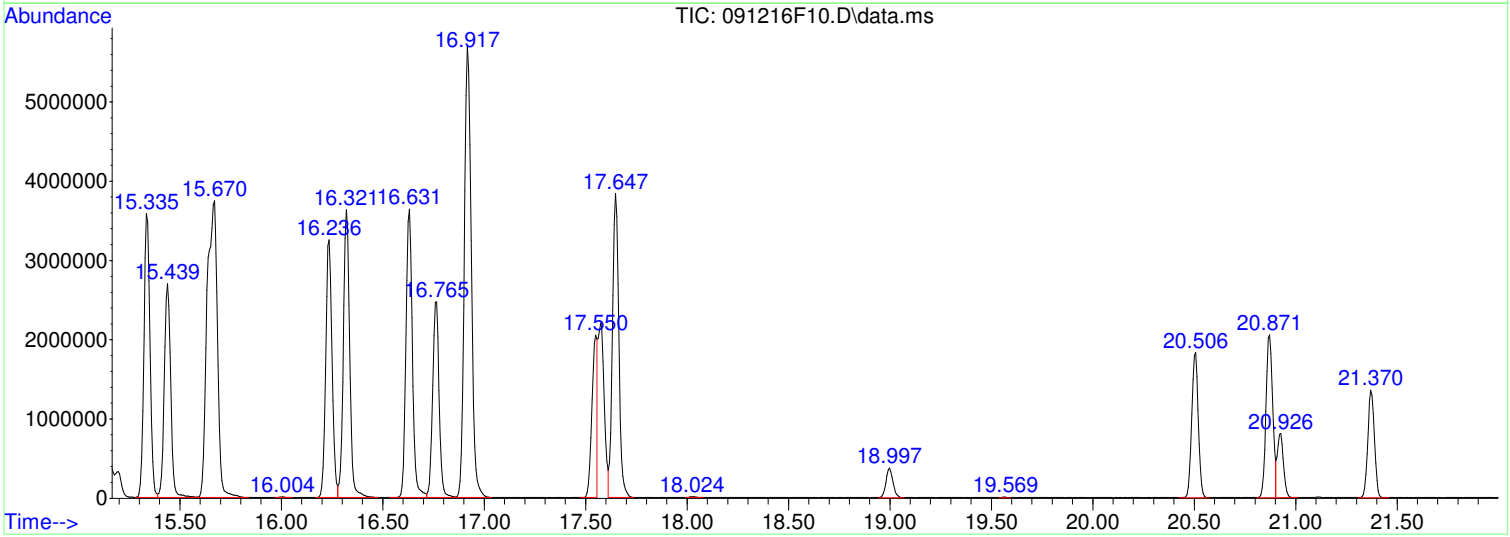


Table of Contents

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F10.D
Acq On : 12 Sep 2016 17:36
Operator : YNB
Sample : S16I043-CAL4
Misc : 5ug/L, WATER
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected
****

Tentatively Identified Compound (LSC) summary

```
  Data Path : C:\msdchem\1\2016\data\091216FW\
  Data File : 091216F10.D
  Acq On    : 12 Sep 2016  17:36
  Operator  : YNB
  Sample    : S16I043-CAL4
  Misc      : 5ug/L, WATER
  ALS Vial  : 16   Sample Multiplier: 1

  Quant Method : C:\msdchem\1\2016\method\091216FVW.M
  Quant Title  : Volatile Organic Analysis  -  524.2 Method

  TIC Library   : C:\DATABASE\NIST98.L
  TIC Integration Parameters: LSCINT.P

                                                      |--Internal Standard---|
  TIC Top Hit name      RT  EstConc Units Response |#    RT     Resp  Conc|
-----------------------------------------------------------------------------
```

S16I043-CAL5

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F11.D
Acq On : 12 Sep 2016 18:09
Operator : YNB
Sample : S16I043-CAL5
Misc : 10ug/L, WATER
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 13 08:59:51 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:59:42 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.801	53	110890	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2217473	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1600872	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	289447	5.04	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery = 100.80%			
39) Toluene-d8	10.371	98	2127351	4.97	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery = 99.40%			
56) 4-Bromofluorobenzene	14.842	95	772113	5.13	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery = 102.60%			
70) 1,2-Dichlorobenzene-d4	17.544	152	838650	5.13	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery = 102.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.459	85	1191781	9.51	ug/L	100
3) Chloromethane	1.659	50	1165619	9.47	ug/L	100
4) Vinyl chloride	1.751	62	1150047	9.73	ug/L	99
5) Bromomethane	2.091	94	544200	10.83	ug/L	100
6) Chloroethane	2.207	64	697829	9.77	ug/L	100
7) Trichlorofluoromethane	2.499	101	1642151	9.68	ug/L	100
8) 1,1-Dichloroethene	3.132	96	1055657	9.78	ug/L	99
9) 1,1,2-Trichloro-1,2,2-...	3.156	101	1000081	9.55	ug/L	99
10) Acetone	3.247	43	467602	71.67	ug/L	99
11) Carbon disulfide	3.387	76	2869443	9.68	ug/L	100
12) Dichloromethane	3.837	84	928995	9.48	ug/L #	82
13) tert-Butyl alcohol	4.184	59	288150	201.50	ug/L	98
14) trans-1,2-Dichloroethene	4.281	96	1174415	9.71	ug/L	99
15) tert-Butyl methyl ethe...	4.336	73	4928006	40.71	ug/L	98
16) 1,1-Dichloroethane	4.963	63	1710615	9.70	ug/L	100
17) Diisopropyl ether	5.182	45	8432348	40.13	ug/L	99
18) Ethyl-tert-butyl ether	5.778	59	6250242	40.72	ug/L	100
19) 2,2-Dichloropropane	5.900	77	1099710	9.94	ug/L	100
20) cis-1,2-Dichloroethene	5.912	96	1225700	9.80	ug/L	99
21) 2-Butanone (MEK)	6.021	43	793486	80.00	ug/L	100
22) Bromochloromethane	6.289	128	455796	10.05	ug/L	98
23) Chloroform	6.465	83	1816547	9.88	ug/L	99
25) 1,1,1-Trichloroethane	6.703	97	1592248	9.85	ug/L	100
26) Carbon tetrachloride	6.964	117	1487343	10.08	ug/L	100
27) 1,1-Dichloropropene	6.976	75	1560347	9.82	ug/L	99
29) Benzene	7.305	78	4608300	9.86	ug/L	100
30) 1,2-Dichloroethane	7.360	62	817371	10.09	ug/L	100
31) tert-Amyl methyl ether	7.591	73	5138508	41.38	ug/L	98
32) Trichloroethene	8.369	95	1238216	9.83	ug/L	100
33) 1,2-Dichloropropane	8.728	63	878459	9.94	ug/L	100
34) Dibromomethane	8.905	93	366037	10.09	ug/L	99
35) Bromodichloromethane	9.209	83	1089432	10.16	ug/L	100
36) cis-1,3-Dichloropropene	9.951	75	1147246	10.74	ug/L	99
38) 4-Methyl-2-pentanone (...	10.280	43	2308778	88.52	ug/L	99
40) Toluene	10.480	92	3101273	10.13	ug/L	100
41) trans-1,3-Dichloropropene	10.894	75	767966	11.41	ug/L	100
42) 1,1,2-Trichloroethane	11.180	83	440367	10.14	ug/L	100
43) Tetrachloroethene	11.375	166	1491170	10.06	ug/L	100
44) 1,3-Dichloropropane	11.448	76	945659	10.44	ug/L	99
45) 2-Hexanone	11.679	43	1510254	89.90	ug/L	98
46) Chlorodibromomethane	11.813	129	706240	10.57	ug/L	99
47) 1,2-Dibromoethane (EDB)	11.965	107	497046	10.54	ug/L	100

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F11.D
Acq On : 12 Sep 2016 18:09
Operator : YNB
Sample : S16I043-CAL5
Misc : 10ug/L, WATER
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 13 08:59:51 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:59:42 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) Chlorobenzene	12.823	112	3450046	10.05 ug/L	99
49) 1,1,1,2-Tetrachloroethane	12.993	131	1000755	10.32 ug/L	99
50) Ethylbenzene	13.054	91	6408179	10.76 ug/L	100
51) m&p-Xylene	13.267	106	5305745	21.08 ug/L	100
52) o-Xylene	13.942	106	2454507	10.91 ug/L	99
53) Styrene	13.972	104	3935652	10.73 ug/L	99
54) Bromoform	14.246	173	407104	10.94 ug/L	100
55) Isopropylbenzene	14.611	105	6727157	11.14 ug/L	100
57) Bromobenzene	15.068	156	1444876	10.44 ug/L	99
58) 1,1,2,2-Tetrachloroethane	15.159	83	582887	10.21 ug/L	100
59) 1,2,3-Trichloropropane	15.195	75	410654	10.41 ug/L	98
60) Propylbenzene	15.341	91	8247603	11.01 ug/L	100
61) 2-Chlorotoluene	15.439	91	4680991	10.47 ug/L	100
62) 4-Chlorotoluene	15.639	91	5375943	10.64 ug/L	100
63) 1,3,5-Trimethylbenzene	15.676	105	5917690	10.55 ug/L	100
64) tert-Butylbenzene	16.236	119	4894971	10.43 ug/L	99
65) 1,2,4-Trimethylbenzene	16.321	105	6106534	10.78 ug/L	100
66) sec-Butylbenzene	16.631	105	7877135	10.78 ug/L	100
67) 1,3-Dichlorobenzene	16.765	146	3412341	10.42 ug/L	100
68) p-Isopropyltoluene	16.917	119	7141431	10.94 ug/L	99
69) 1,4-Dichlorobenzene	16.929	146	3394743	10.46 ug/L	99
71) 1,2-Dichlorobenzene	17.580	146	2707637	10.19 ug/L	99
72) Butylbenzene	17.647	91	6465148	10.54 ug/L	100
73) 1,2-Dibromo-3-chloropr...	18.997	75	290043	40.41 ug/L	95
74) 1,2,4-Trichlorobenzene	20.506	180	2039468	10.87 ug/L	100
75) Hexachlorobutadiene	20.871	225	1262029	8.94 ug/L	99
76) Naphthalene	20.926	128	2186438	11.85 ug/L	100
77) 1,2,3-Trichlorobenzene	21.376	180	1485168	10.39 ug/L	100

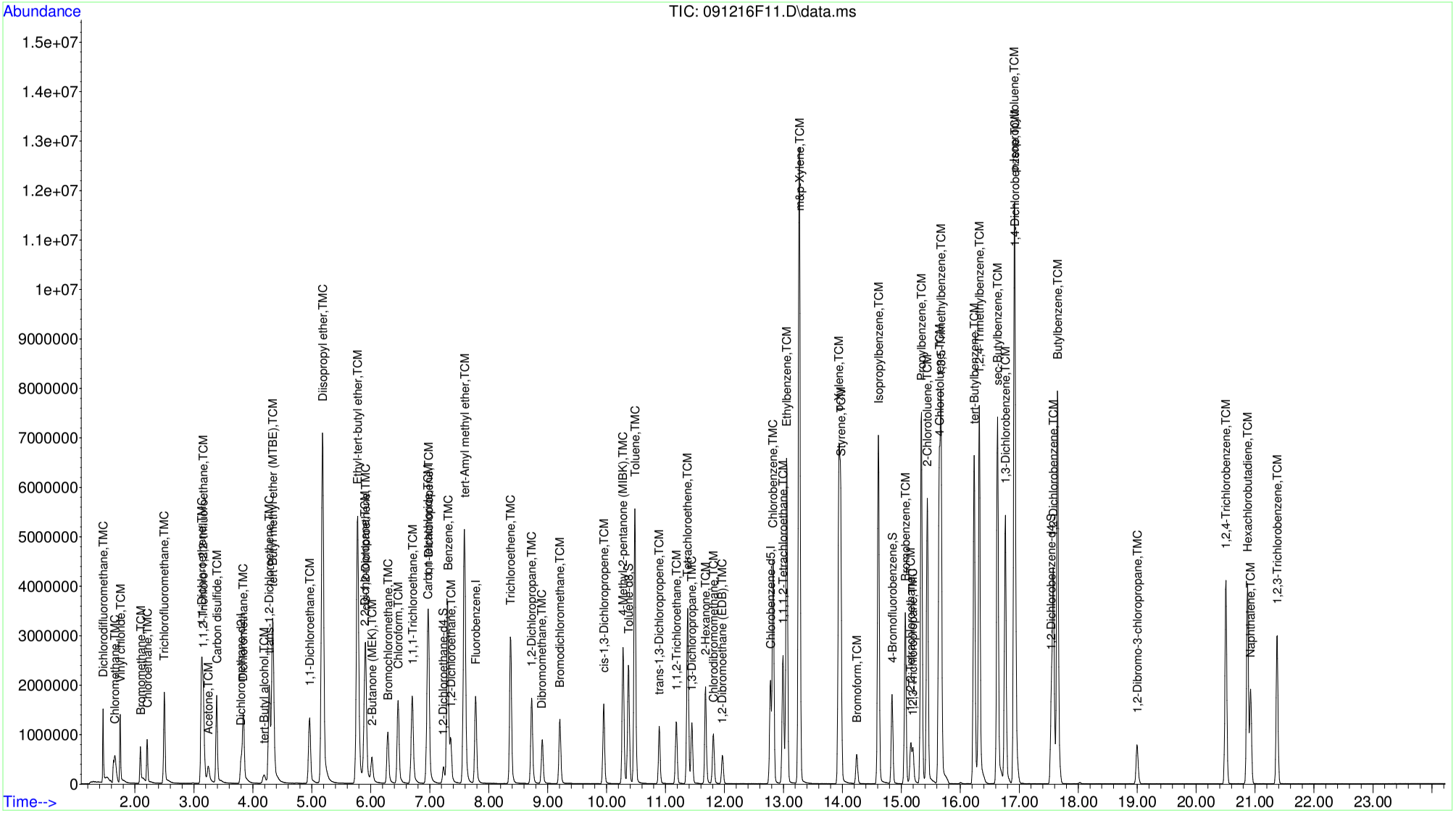
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Table of Contents

Quantitation Report (Not Reviewed)

ata Path : C:\msdchem\1\2016\data\091216FW\
ata File : 091216F11.D
cq On : 12 Sep 2016 18:09
perator : YNB
ample : S16I043-CAL5
isc : 10ug/L, WATER
LS Vial : 17 Sample Multiplier: 1

_uant Time: Sep 13 08:59:51 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 08:59:42 2016
Response via : Initial Calibration



S16I043-CAL6

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F12.D
Acq On : 12 Sep 2016 18:42
Operator : YNB
Sample : S16I043-CAL6
Misc : 25ug/L, WATER
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 13 09:00:08 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.801	53	112495	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2294557	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1772555	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.238	65	298396	5.02	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery = 100.40%			
39) Toluene-d8	10.371	98	2254824	4.75	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery = 95.00%			
56) 4-Bromofluorobenzene	14.842	95	861742	5.17	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery = 103.40%			
70) 1,2-Dichlorobenzene-d4	17.550	152	895931	4.95	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery = 99.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.459	85	3204119	25.19	ug/L	100
3) Chloromethane	1.659	50	3091061	24.77	ug/L	100
4) Vinyl chloride	1.744	62	3101709	25.87	ug/L	99
5) Bromomethane	2.091	94	1578450	30.96	ug/L	100
6) Chloroethane	2.201	64	1766967	24.38	ug/L	100
7) Trichlorofluoromethane	2.493	101	4490497	26.10	ug/L	99
8) 1,1-Dichloroethene	3.125	96	2846345	26.00	ug/L	98
9) 1,1,2-Trichloro-1,2,2-...	3.156	101	2716158	25.57	ug/L	99
10) Acetone	3.241	43	1289016	194.75	ug/L	99
11) Carbon disulfide	3.381	76	7881568	26.20	ug/L	99
12) Dichloromethane	3.837	84	2475379	24.89	ug/L #	71
13) tert-Butyl alcohol	4.190	59	788271	543.37	ug/L	95
14) trans-1,2-Dichloroethene	4.275	96	3179443	25.90	ug/L	98
15) tert-Butyl methyl ethe...	4.336	73	13894231	113.14	ug/L	96
16) 1,1-Dichloroethane	4.963	63	4608219	25.77	ug/L	99
17) Diisopropyl ether	5.182	45	21797034	102.26	ug/L	97
18) Ethyl-tert-butyl ether	5.778	59	17202578	110.47	ug/L	98
19) 2,2-Dichloropropane	5.900	77	3090459	27.54	ug/L	100
20) cis-1,2-Dichloroethene	5.912	96	3324923	26.20	ug/L	98
21) 2-Butanone (MEK)	6.015	43	2224909	221.12	ug/L	99
22) Bromochloromethane	6.289	128	1241415	26.98	ug/L	97
23) Chloroform	6.459	83	4891793	26.22	ug/L	99
25) 1,1,1-Trichloroethane	6.703	97	4408792	26.37	ug/L	98
26) Carbon tetrachloride	6.964	117	4154769	27.21	ug/L	100
27) 1,1-Dichloropropene	6.976	75	4226424	25.70	ug/L	99
29) Benzene	7.305	78	12457649	25.76	ug/L	99
30) 1,2-Dichloroethane	7.360	62	2194626	26.18	ug/L	99
31) tert-Amyl methyl ether	7.591	73	14528507	113.08	ug/L	96
32) Trichloroethene	8.370	95	3383454	25.96	ug/L	99
33) 1,2-Dichloropropane	8.728	63	2407619	26.33	ug/L	100
34) Dibromomethane	8.905	93	1001407	26.68	ug/L	98
35) Bromodichloromethane	9.209	83	3052165	27.50	ug/L	100
36) cis-1,3-Dichloropropene	9.951	75	3493104	31.59	ug/L	100
38) 4-Methyl-2-pentanone (...	10.280	43	6902397	239.02	ug/L	98
40) Toluene	10.480	92	9048317	26.68	ug/L	97
41) trans-1,3-Dichloropropene	10.894	75	2482364	33.29	ug/L	100
42) 1,1,2-Trichloroethane	11.186	83	1270739	26.44	ug/L	99
43) Tetrachloroethene	11.375	166	4441543	27.07	ug/L	99
44) 1,3-Dichloropropane	11.448	76	2783448	27.76	ug/L	100
45) 2-Hexanone	11.679	43	4675621	251.38	ug/L	97
46) Chlorodibromomethane	11.813	129	2129427	28.77	ug/L	99
47) 1,2-Dibromoethane (EDB)	11.965	107	1478274	28.30	ug/L	100

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F12.D
Acq On : 12 Sep 2016 18:42
Operator : YNB
Sample : S16I043-CAL6
Misc : 25ug/L, WATER
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 13 09:00:08 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:00 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
48)	Chlorobenzene	12.829	112	10301872	27.11	ug/L		98
49)	1,1,1,2-Tetrachloroethane	12.993	131	3095613	28.82	ug/L		99
50)	Ethylbenzene	13.060	91	18188327	27.59	ug/L		96
51)	m&p-Xylene	13.273	106	16075466	57.68	ug/L	#	71
52)	o-Xylene	13.942	106	7678383	30.83	ug/L		97
53)	Styrene	13.972	104	12221952	30.10	ug/L		98
54)	Bromoform	14.246	173	1290821	31.33	ug/L		100
55)	Isopropylbenzene	14.611	105	19437789	29.07	ug/L		96
57)	Bromobenzene	15.068	156	4412748	28.79	ug/L		99
58)	1,1,2,2-Tetrachloroethane	15.159	83	1726812	27.31	ug/L		100
59)	1,2,3-Trichloropropane	15.201	75	1194511	27.34	ug/L		98
60)	Propylbenzene	15.335	91	21243868	25.61	ug/L		90
61)	2-Chlorotoluene	15.445	91	13850579	27.98	ug/L		99
62)	4-Chlorotoluene	15.645	91	16022331	28.65	ug/L		98
63)	1,3,5-Trimethylbenzene	15.676	105	17553634	28.25	ug/L		97
64)	tert-Butylbenzene	16.236	119	15263787	29.38	ug/L		99
65)	1,2,4-Trimethylbenzene	16.327	105	17620002	28.08	ug/L		97
66)	sec-Butylbenzene	16.631	105	21429133	26.50	ug/L		95
67)	1,3-Dichlorobenzene	16.765	146	9951673	27.45	ug/L		99
68)	p-Isopropyltoluene	16.917	119	20014738	27.69	ug/L		97
69)	1,4-Dichlorobenzene	16.929	146	9990526	27.79	ug/L		99
71)	1,2-Dichlorobenzene	17.580	146	7676824	26.08	ug/L		99
72)	Butylbenzene	17.653	91	17887854	26.33	ug/L		97
73)	1,2-Dibromo-3-chloropr...	18.997	75	840283	105.72	ug/L		92
74)	1,2,4-Trichlorobenzene	20.506	180	5979701	28.79	ug/L		99
75)	Hexachlorobutadiene	20.871	225	3452852	22.09	ug/L		98
76)	Naphthalene	20.926	128	6396697	31.30	ug/L		100
77)	1,2,3-Trichlorobenzene	21.376	180	4204773	26.57	ug/L		99

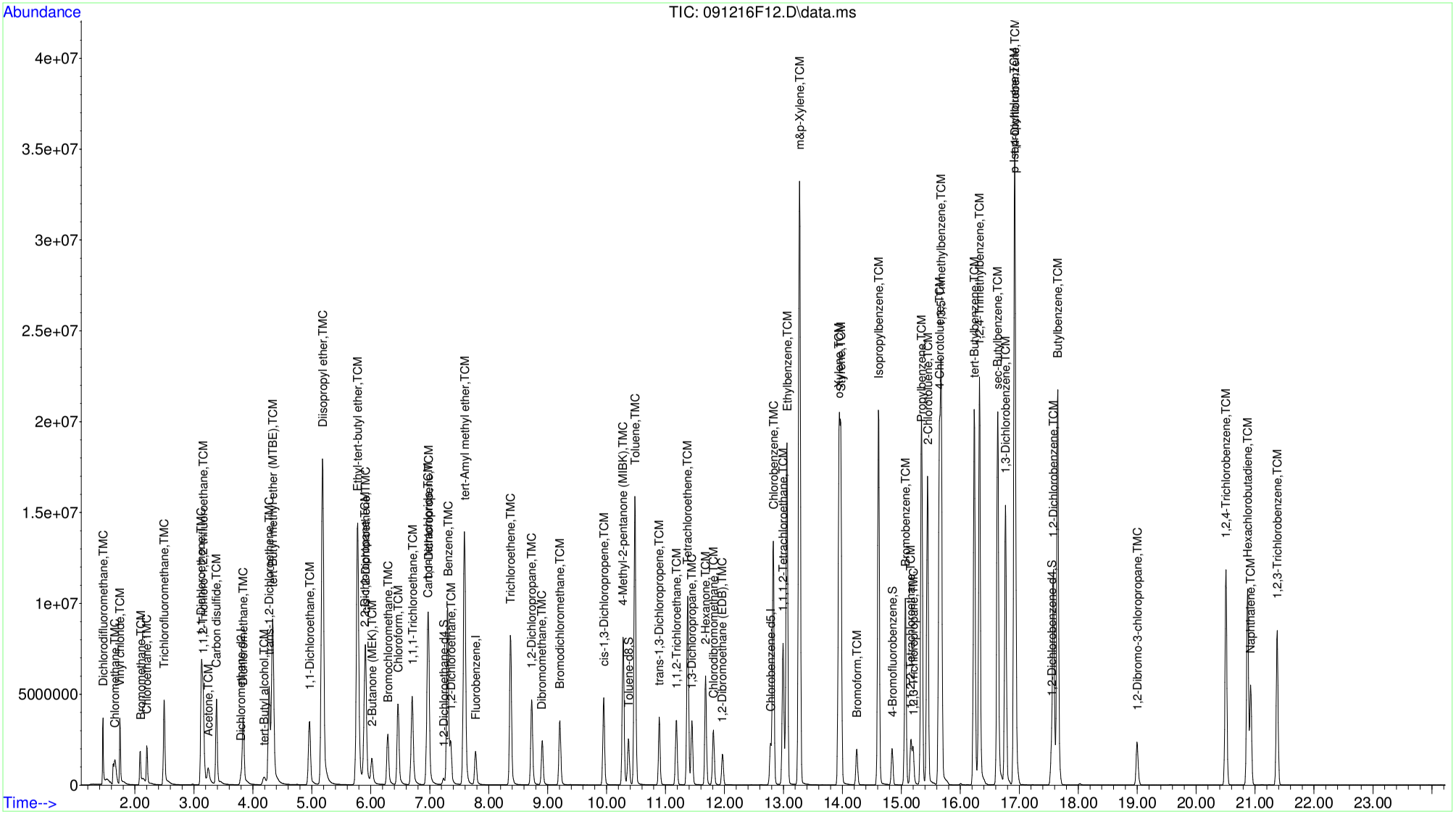
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Table of Contents

Quantitation Report (Not Reviewed)

ata Path : C:\msdchem\1\2016\data\091216FW\
ata File : 091216F12.D
cq On : 12 Sep 2016 18:42
perator : YNB
ample : S16I043-CAL6
isc : 25ug/L, WATER
LS Vial : 18 Sample Multiplier: 1

uant Time: Sep 13 09:00:08 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:00 2016
Response via : Initial Calibration



S16I043-SCV1

C:\msdchem\1\2016\data\091216FW\091216F14.D

Data File Name 1216F14.D
Data File Path \2016\data\091216FW\
Operator YNB
Sample Name 6I043-SCV1
Instrument Name HP5973F

1 OUT

#	Name	RT	Amount	on column	RECOVERY	QC	LIMIT	STATUS
1)	Dichloromethane-d2	3.81	5	5.00	100%	70	130	PASS
2)	Dichlorodifluoromethane	1.46	5	3.07	61%	70	130	FAIL
3)	Chloromethane	1.69	5	4.12	82%	70	130	PASS
4)	Vinyl chloride	1.75	5	4.18	84%	70	130	PASS
5)	Bromomethane	2.10	5	4.97	99%	70	130	PASS
6)	Chloroethane	2.21	5	4.50	90%	70	130	PASS
7)	Trichlorofluoromethane	2.50	5	4.54	91%	70	130	PASS
8)	1,1-Dichloroethene	3.14	5	4.57	91%	70	130	PASS
9)	1,1,2-Trichloro-1,2,2-trifluoroethane	3.16	5	4.48	90%	70	130	PASS
10)	Acetone	3.25	40	37.34	93%	70	130	PASS
11)	Carbon disulfide	3.39	5	4.93	99%	70	130	PASS
12)	Dichloromethane	3.84	5	4.63	93%	70	130	PASS
13)	tert-Butyl alcohol	4.19	100	107.69	108%	70	130	PASS
14)	trans-1,2-Dichloroethene	4.28	5	4.72	94%	70	130	PASS
15)	tert-Butyl methyl ether (MTBE)	4.34	20	20.79	104%	70	130	PASS
16)	1,1-Dichloroethane	4.97	5	4.56	91%	70	130	PASS
17)	Diisopropyl ether	5.18	20	20.27	101%	70	130	PASS
18)	Ethyl-tert-butyl ether	5.78	20	21.07	105%	70	130	PASS
19)	2,2-Dichloropropane	5.90	5	4.10	82%	70	130	PASS
20)	cis-1,2-Dichloroethene	5.92	5	4.69	94%	70	130	PASS
21)	2-Butanone (MEK)	6.02	40	40.62	102%	70	130	PASS
22)	Bromochloromethane	6.29	5	4.94	99%	70	130	PASS
23)	Chloroform	6.47	5	4.62	92%	70	130	PASS
24)	Fluorobenzene	7.78	5	5.00	100%	70	130	PASS
25)	1,1,1-Trichloroethane	6.71	5	4.56	91%	70	130	PASS
26)	Carbon tetrachloride	6.96	5	4.51	90%	70	130	PASS
27)	1,1-Dichloropropene	6.98	5	4.48	90%	70	130	PASS
28)	1,2-Dichloroethane-d4	7.23	5	4.95	99%	70	130	PASS
29)	Benzene	7.30	5	4.69	94%	70	130	PASS
30)	1,2-Dichloroethane	7.36	5	4.83	97%	70	130	PASS
31)	tert-Amyl methyl ether	7.59	20	20.78	104%	70	130	PASS
32)	Trichloroethene	8.37	5	4.59	92%	70	130	PASS
33)	1,2-Dichloropropane	8.73	5	4.79	96%	70	130	PASS
34)	Dibromomethane	8.91	5	4.88	98%	70	130	PASS
35)	Bromodichloromethane	9.21	5	4.76	95%	70	130	PASS
36)	cis-1,3-Dichloropropene	9.95	5	4.90	98%	70	130	PASS
37)	Chlorobenzene-d5	12.78	5	5.00	100%	70	130	PASS
38)	4-Methyl-2-pentanone (MIBK)	10.28	40	42.48	106%	70	130	PASS
39)	Toluene-d8	10.37	5	4.99	100%	70	130	PASS
40)	Toluene	10.48	5	4.71	94%	70	130	PASS
41)	trans-1,3-Dichloropropene	10.89	5	4.75	95%	70	130	PASS
42)	1,1,2-Trichloroethane	11.18	5	4.84	97%	70	130	PASS

C:\msdchem\1\2016\data\091216FW\091216F14.D

43) Tetrachloroethene	11.37	5	4.50	90%	70	130	PASS
44) 1,3-Dichloropropane	11.45	5	4.98	100%	70	130	PASS
45) 2-Hexanone	11.68	40	42.42	106%	70	130	PASS
46) Chlorodibromomethane	11.81	5	5.01	100%	70	130	PASS
47) 1,2-Dibromoethane (EDB)	11.96	5	4.96	99%	70	130	PASS
48) Chlorobenzene	12.82	5	4.68	94%	70	130	PASS
49) 1,1,1,2-Tetrachloroethane	12.99	5	4.72	94%	70	130	PASS
50) Ethylbenzene	13.05	5	4.85	97%	70	130	PASS
51) m&p-Xylene	13.27	10	9.58	96%	70	130	PASS
52) o-Xylene	13.94	5	4.85	97%	70	130	PASS
53) Styrene	13.97	5	4.90	98%	70	130	PASS
54) Bromoform	14.25	5	4.90	98%	70	130	PASS
55) Isopropylbenzene	14.61	5	4.99	100%	70	130	PASS
56) 4-Bromofluorobenzene	14.84	5	5.00	100%	70	130	PASS
57) Bromobenzene	15.07	5	4.77	95%	70	130	PASS
58) 1,1,2,2-Tetrachloroethane	15.16	5	4.90	98%	70	130	PASS
59) 1,2,3-Trichloropropane	15.20	5	4.93	99%	70	130	PASS
60) Propylbenzene	15.34	5	4.92	98%	70	130	PASS
61) 2-Chlorotoluene	15.44	5	4.77	95%	70	130	PASS
62) 4-Chlorotoluene	15.64	5	4.82	96%	70	130	PASS
63) 1,3,5-Trimethylbenzene	15.67	5	4.82	96%	70	130	PASS
64) tert-Butylbenzene	16.24	5	4.81	96%	70	130	PASS
65) 1,2,4-Trimethylbenzene	16.32	5	4.75	95%	70	130	PASS
66) sec-Butylbenzene	16.63	5	4.79	96%	70	130	PASS
67) 1,3-Dichlorobenzene	16.76	5	4.77	95%	70	130	PASS
68) p-Isopropyltoluene	16.92	5	4.71	94%	70	130	PASS
69) 1,4-Dichlorobenzene	16.93	5	4.78	96%	70	130	PASS
70) 1,2-Dichlorobenzene-d4	17.54	5	5.05	101%	70	130	PASS
71) 1,2-Dichlorobenzene	17.58	5	4.77	95%	70	130	PASS
72) Butylbenzene	17.65	5	4.74	95%	70	130	PASS
73) 1,2-Dibromo-3-chloropropane	19.00	5	4.62	92%	70	130	PASS
74) 1,2,4-Trichlorobenzene	20.51	5	4.79	96%	70	130	PASS
75) Hexachlorobutadiene	20.87	5	4.32	86%	70	130	PASS
76) Naphthalene	20.93	5	5.35	107%	70	130	PASS
77) 1,2,3-Trichlorobenzene	21.38	5	5.11	102%	70	130	PASS

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F14.D
Acq On : 12 Sep 2016 19:48
Operator : YNB
Sample : S16I043-SCV1
Misc : 5ug/L, WATER
ALS Vial : 20 Sample Multiplier: 1

M.I. Performed By:
YNB at 9:01 am, Sep 13, 2016

M.I. Approved By:
ZAR at 3:11 pm, Sep 20, 2016

Quant Time: Sep 13 09:00:42 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.807	53	108461	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2195293	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1549398	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	281507	4.95	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	=	99.00%	
39) Toluene-d8	10.371	98	2068668	4.99	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	=	99.80%	
56) 4-Bromofluorobenzene	14.842	95	727824	5.00	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	=	100.00%	
70) 1,2-Dichlorobenzene-d4	17.543	152	798375	5.05	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	=	101.00%	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.465	85	375878	3.07	ug/L	99
3) Chloromethane	1.690	50	495394m	4.12	ug/L	
4) Vinyl chloride	1.750	62	483366	4.18	ug/L	99
5) Bromomethane	2.097	94	244274	4.97	ug/L	99
6) Chloroethane	2.213	64	314775	4.50	ug/L	99
7) Trichlorofluoromethane	2.505	101	752633	4.54	ug/L	100
8) 1,1-Dichloroethene	3.138	96	481919	4.57	ug/L	100
9) 1,1,2-Trichloro-1,2,2-...	3.162	101	458829	4.48	ug/L	100
10) Acetone	3.247	43	238273	37.34	ug/L	98
11) Carbon disulfide	3.393	76	1429152	4.93	ug/L	100
12) Dichloromethane	3.843	84	444271	4.63	ug/L #	38
13) tert-Butyl alcohol	4.190	59	150618	107.69	ug/L	98
14) trans-1,2-Dichloroethene	4.281	96	559179	4.72	ug/L	99
15) tert-Butyl methyl ethe...	4.342	73	2461915	20.79	ug/L	100
16) 1,1-Dichloroethane	4.969	63	787076	4.56	ug/L	99
17) Diisopropyl ether	5.182	45	4165496	20.27	ug/L	99
18) Ethyl-tert-butyl ether	5.778	59	3162909	21.07	ug/L	100
19) 2,2-Dichloropropane	5.899	77	444135	4.10	ug/L	99
20) cis-1,2-Dichloroethene	5.918	96	573282	4.69	ug/L	99
21) 2-Butanone (MEK)	6.021	43	394035	40.62	ug/L	99
22) Bromochloromethane	6.295	128	219334	4.94	ug/L	98
23) Chloroform	6.465	83	830390	4.62	ug/L	99
25) 1,1,1-Trichloroethane	6.709	97	729475	4.56	ug/L	100
26) Carbon tetrachloride	6.964	117	658194	4.51	ug/L	99
27) 1,1-Dichloropropene	6.982	75	704334	4.48	ug/L	99
29) Benzene	7.305	78	2171330	4.69	ug/L	100
30) 1,2-Dichloroethane	7.360	62	387141	4.83	ug/L	100
31) tert-Amyl methyl ether	7.591	73	2554169	20.78	ug/L	99
32) Trichloroethene	8.369	95	572609	4.59	ug/L	99
33) 1,2-Dichloropropane	8.728	63	419353	4.79	ug/L	98
34) Dibromomethane	8.911	93	175230	4.88	ug/L	99
35) Bromodichloromethane	9.209	83	505972	4.76	ug/L	100
36) cis-1,3-Dichloropropene	9.951	75	518502	4.90	ug/L	99
38) 4-Methyl-2-pentanone (...	10.280	43	1072205	42.48	ug/L	100
40) Toluene	10.480	92	1395815	4.71	ug/L	100
41) trans-1,3-Dichloropropene	10.894	75	309273	4.75	ug/L	100
42) 1,1,2-Trichloroethane	11.180	83	203221	4.84	ug/L	99
43) Tetrachloroethene	11.375	166	645564	4.50	ug/L	99
44) 1,3-Dichloropropane	11.448	76	436871	4.98	ug/L	99
45) 2-Hexanone	11.679	43	689696	42.42	ug/L	99
46) Chlorodibromomethane	11.813	129	324194	5.01	ug/L	100
47) 1,2-Dibromoethane (EDB)	11.965	107	226592	4.96	ug/L	99

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F14.D
Acq On : 12 Sep 2016 19:48
Operator : YNB
Sample : S16I043-SCV1
Misc : 5ug/L, WATER
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 13 09:00:42 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
48) Chlorobenzene	12.823	112	1552682	4.68	ug/L	100
49) 1,1,1,2-Tetrachloroethane	12.993	131	443357	4.72	ug/L	99
50) Ethylbenzene	13.054	91	2795462	4.85	ug/L	100
51) m&p-Xylene	13.267	106	2333851	9.58	ug/L	100
52) o-Xylene	13.942	106	1055655	4.85	ug/L	100
53) Styrene	13.972	104	1738883	4.90	ug/L	99
54) Bromoform	14.246	173	176567	4.90	ug/L	98
55) Isopropylbenzene	14.611	105	2916328	4.99	ug/L	100
57) Bromobenzene	15.067	156	639192	4.77	ug/L	99
58) 1,1,2,2-Tetrachloroethane	15.159	83	270777	4.90	ug/L	99
59) 1,2,3-Trichloropropane	15.195	75	188146	4.93	ug/L	98
60) Propylbenzene	15.335	91	3568924	4.92	ug/L	100
61) 2-Chlorotoluene	15.439	91	2062464	4.77	ug/L	100
62) 4-Chlorotoluene	15.639	91	2353574	4.82	ug/L	99
63) 1,3,5-Trimethylbenzene	15.670	105	2617588	4.82	ug/L	100
64) tert-Butylbenzene	16.235	119	2185791	4.81	ug/L	99
65) 1,2,4-Trimethylbenzene	16.321	105	2602377	4.75	ug/L	100
66) sec-Butylbenzene	16.631	105	3385696	4.79	ug/L	100
67) 1,3-Dichlorobenzene	16.765	146	1512775	4.77	ug/L	100
68) p-Isopropyltoluene	16.917	119	2977005	4.71	ug/L	100
69) 1,4-Dichlorobenzene	16.929	146	1502614	4.78	ug/L	100
71) 1,2-Dichlorobenzene	17.580	146	1228298	4.77	ug/L	100
72) Butylbenzene	17.647	91	2817337	4.74	ug/L	100
73) 1,2-Dibromo-3-chloropr...	18.997	75	32078	4.62	ug/L	99
74) 1,2,4-Trichlorobenzene	20.506	180	869501	4.79	ug/L	100
75) Hexachlorobutadiene	20.871	225	589675	4.32	ug/L	99
76) Naphthalene	20.926	128	955934	5.35	ug/L	99
77) 1,2,3-Trichlorobenzene	21.376	180	706958	5.11	ug/L	99

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

Table of Contents

Quantitation Report (QT Reviewed)

ata Path : C:\msdchem\1\2016\data\091216FW\
ata File : 091216F14.D
cq On : 12 Sep 2016 19:48
perator : YNB
ample : S16I043-SCV1
isc : 5ug/L, WATER
LS Vial : 20 Sample Multiplier: 1

uant Time: Sep 13 09:00:42 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

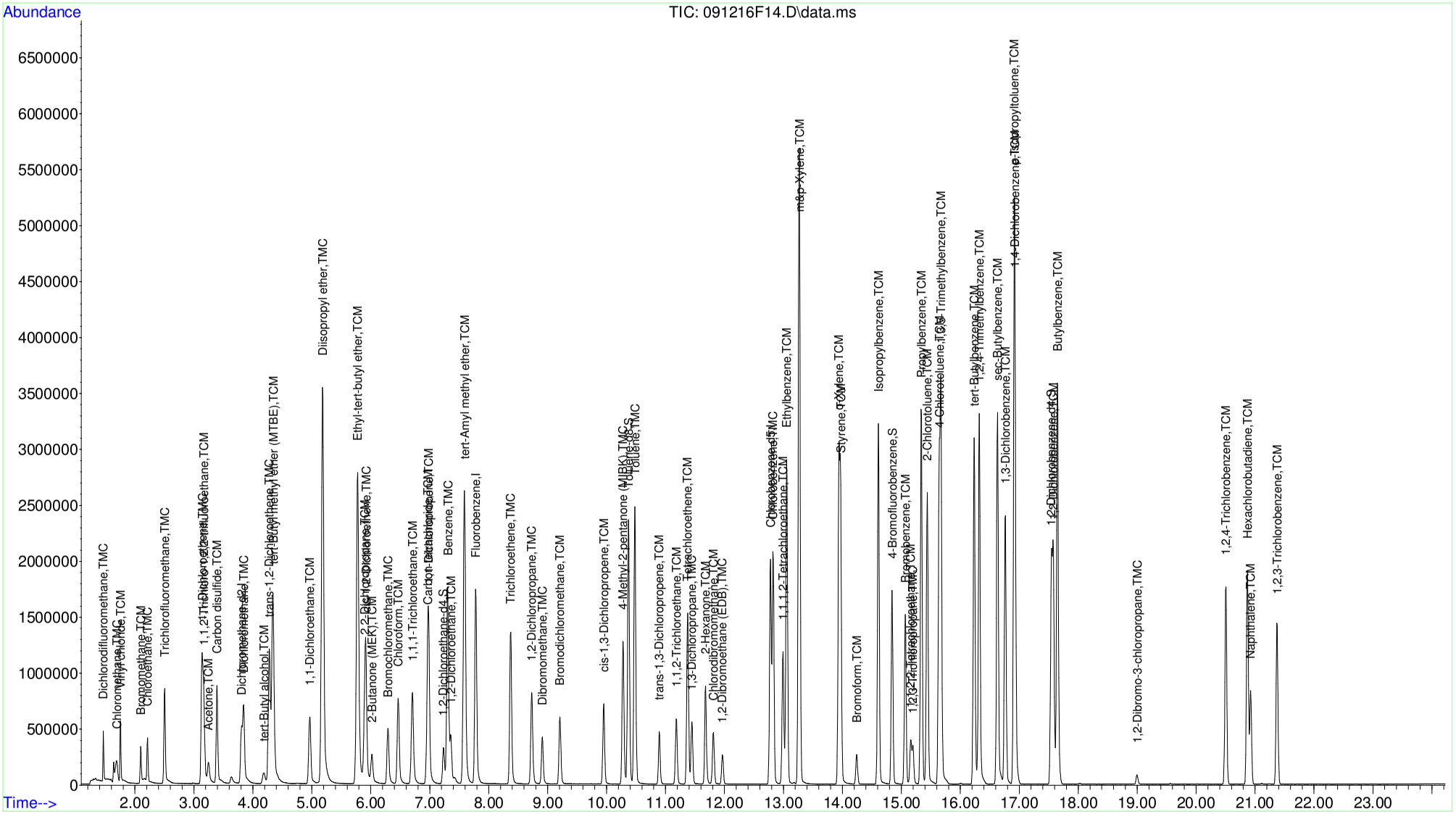
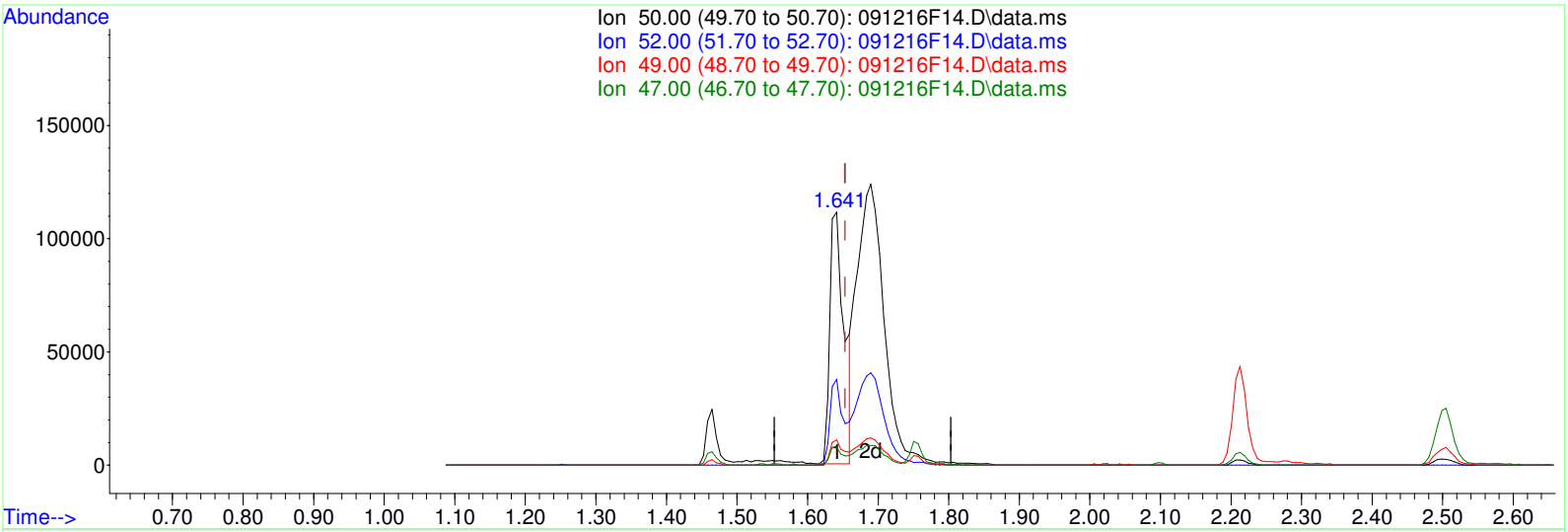
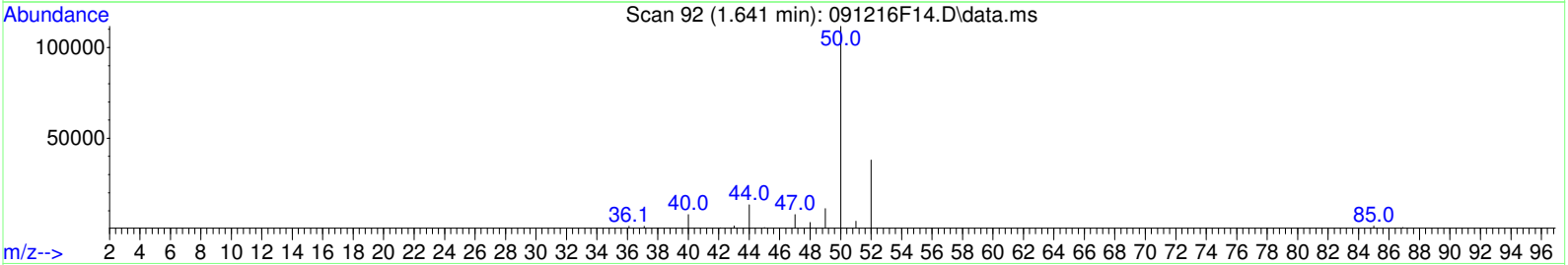


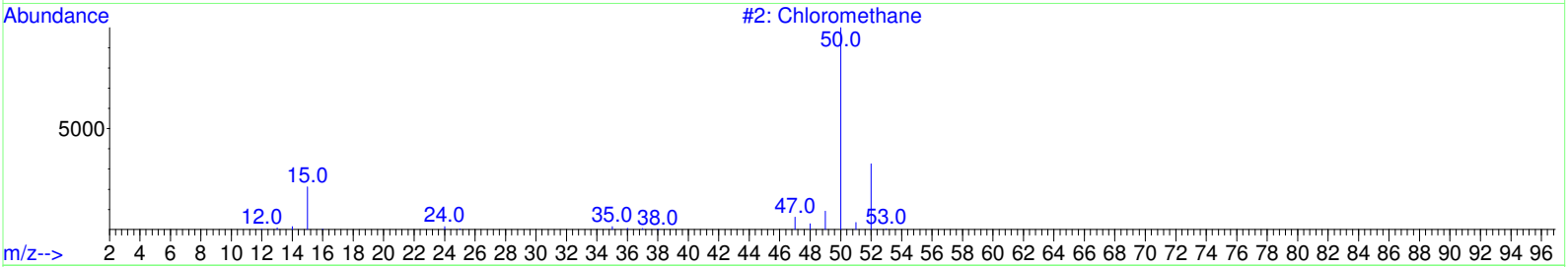
Table of Contents

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F14.D
Acq On : 12 Sep 2016 19:48
Operator : YNB
Sample : S16I043-SCV1
Misc : 5ug/L, WATER
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 13 09:00:42 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration







TIC: 091216F14.D\data.ms

(3) Chloromethane (TMC)

1.641min (-0.012) 1.31 ug/L

response 157789

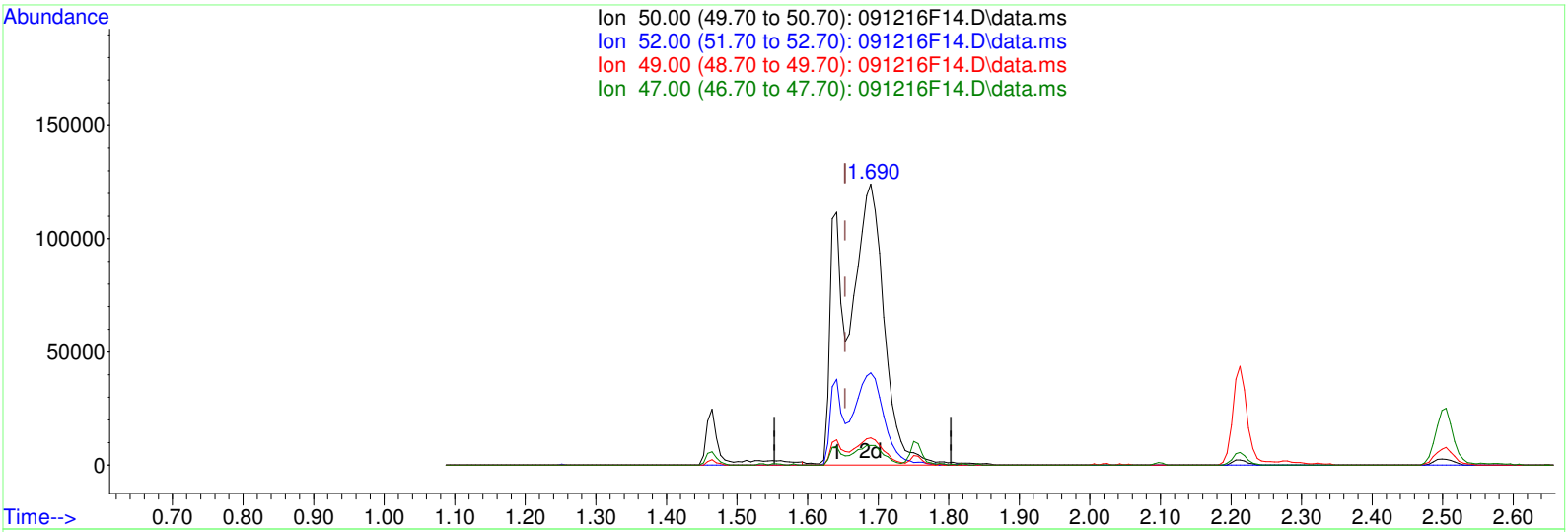
Ion	Exp%	Act%
50.00	100.00	100.00
52.00	32.80	33.19
49.00	9.60	10.00
47.00	6.90	7.30

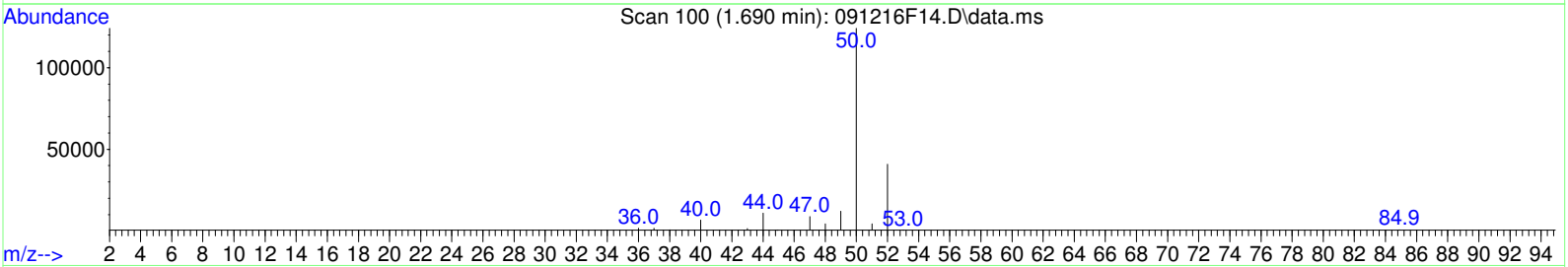
Before MI:
Peak CROPPED

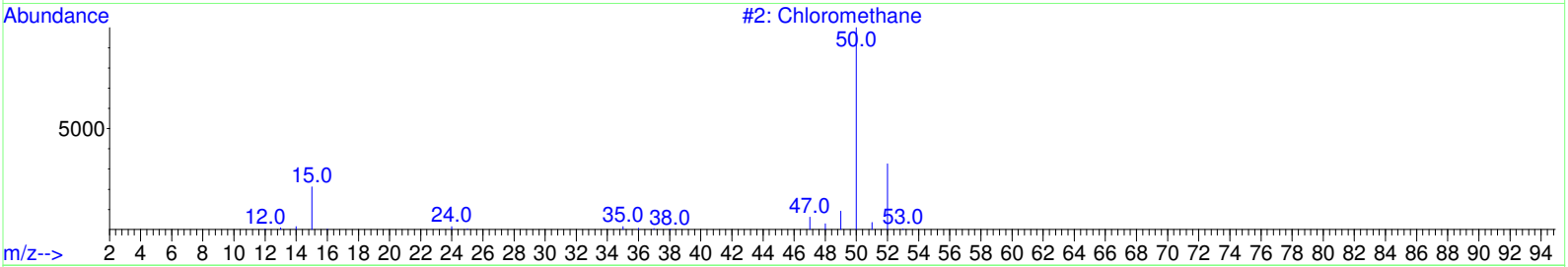
Table of Contents

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F14.D
Acq On : 12 Sep 2016 19:48
Operator : YNB
Sample : S16I043-SCV1
Misc : 5ug/L, WATER
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 13 09:00:42 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration







TIC: 091216F14.D\data.ms

(3) Chloromethane (TMC)

1.690min (+ 0.036) 4.12 ug/L m

response 495394

Ion	Exp%	Act%
50.00	100.00	100.00
52.00	32.80	10.57#
49.00	9.60	3.18
47.00	6.90	2.32

M.I. Performed By:

YNB at 9:02 am, Sep 13, 2016

M.I. Approved By:

ZAR at 3:11 pm, Sep 20, 2016

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F14.D
Acq On : 12 Sep 2016 19:48
Operator : YNB
Sample : S16I043-SCV1
Misc : 5ug/L, WATER
ALS Vial : 20 Sample Multiplier: 1

Before Manual Integration

Quant Time: Sep 13 09:00:42 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.807	53	108461	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2195293	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1549398	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	281507	4.95	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery = 99.00%			
39) Toluene-d8	10.371	98	2068668	4.99	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery = 99.80%			
56) 4-Bromofluorobenzene	14.842	95	727824	5.00	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery = 100.00%			
70) 1,2-Dichlorobenzene-d4	17.543	152	798375	5.05	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery = 101.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.465	85	375878	3.07	ug/L	99
3) Chloromethane	1.641	50	157789	1.31	ug/L	99
4) Vinyl chloride	1.750	62	483366	4.18	ug/L	99
5) Bromomethane	2.097	94	244274	4.97	ug/L	99
6) Chloroethane	2.213	64	314775	4.50	ug/L	99
7) Trichlorofluoromethane	2.505	101	752633	4.54	ug/L	100
8) 1,1-Dichloroethene	3.138	96	481919	4.57	ug/L	100
9) 1,1,2-Trichloro-1,2,2-...	3.162	101	458829	4.48	ug/L	100
10) Acetone	3.247	43	238273	37.34	ug/L	98
11) Carbon disulfide	3.393	76	1429152	4.93	ug/L	100
12) Dichloromethane	3.843	84	444271	4.63	ug/L #	38
13) tert-Butyl alcohol	4.190	59	150618	107.69	ug/L	98
14) trans-1,2-Dichloroethene	4.281	96	559179	4.72	ug/L	99
15) tert-Butyl methyl ethe...	4.342	73	2461915	20.79	ug/L	100
16) 1,1-Dichloroethane	4.969	63	787076	4.56	ug/L	99
17) Diisopropyl ether	5.182	45	4165496	20.27	ug/L	99
18) Ethyl-tert-butyl ether	5.778	59	3162909	21.07	ug/L	100
19) 2,2-Dichloropropane	5.899	77	444135	4.10	ug/L	99
20) cis-1,2-Dichloroethene	5.918	96	573282	4.69	ug/L	99
21) 2-Butanone (MEK)	6.021	43	394035	40.62	ug/L	99
22) Bromochloromethane	6.295	128	219334	4.94	ug/L	98
23) Chloroform	6.465	83	830390	4.62	ug/L	99
25) 1,1,1-Trichloroethane	6.709	97	729475	4.56	ug/L	100
26) Carbon tetrachloride	6.964	117	658194	4.51	ug/L	99
27) 1,1-Dichloropropene	6.982	75	704334	4.48	ug/L	99
29) Benzene	7.305	78	2171330	4.69	ug/L	100
30) 1,2-Dichloroethane	7.360	62	387141	4.83	ug/L	100
31) tert-Amyl methyl ether	7.591	73	2554169	20.78	ug/L	99
32) Trichloroethene	8.369	95	572609	4.59	ug/L	99
33) 1,2-Dichloropropane	8.728	63	419353	4.79	ug/L	98
34) Dibromomethane	8.911	93	175230	4.88	ug/L	99
35) Bromodichloromethane	9.209	83	505972	4.76	ug/L	100
36) cis-1,3-Dichloropropene	9.951	75	518502	4.90	ug/L	99
38) 4-Methyl-2-pentanone (...	10.280	43	1072205	42.48	ug/L	100
40) Toluene	10.480	92	1395815	4.71	ug/L	100
41) trans-1,3-Dichloropropene	10.894	75	309273	4.75	ug/L	100
42) 1,1,2-Trichloroethane	11.180	83	203221	4.84	ug/L	99
43) Tetrachloroethene	11.375	166	645564	4.50	ug/L	99
44) 1,3-Dichloropropane	11.448	76	436871	4.98	ug/L	99
45) 2-Hexanone	11.679	43	689696	42.42	ug/L	99
46) Chlorodibromomethane	11.813	129	324194	5.01	ug/L	100
47) 1,2-Dibromoethane (EDB)	11.965	107	226592	4.96	ug/L	99

Data Path : C:\msdchem\1\2016\data\091216FW\
Data File : 091216F14.D
Acq On : 12 Sep 2016 19:48
Operator : YNB
Sample : S16I043-SCV1
Misc : 5ug/L, WATER
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 13 09:00:42 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
48) Chlorobenzene	12.823	112	1552682	4.68	ug/L	100
49) 1,1,1,2-Tetrachloroethane	12.993	131	443357	4.72	ug/L	99
50) Ethylbenzene	13.054	91	2795462	4.85	ug/L	100
51) m&p-Xylene	13.267	106	2333851	9.58	ug/L	100
52) o-Xylene	13.942	106	1055655	4.85	ug/L	100
53) Styrene	13.972	104	1738883	4.90	ug/L	99
54) Bromoform	14.246	173	176567	4.90	ug/L	98
55) Isopropylbenzene	14.611	105	2916328	4.99	ug/L	100
57) Bromobenzene	15.067	156	639192	4.77	ug/L	99
58) 1,1,2,2-Tetrachloroethane	15.159	83	270777	4.90	ug/L	99
59) 1,2,3-Trichloropropane	15.195	75	188146	4.93	ug/L	98
60) Propylbenzene	15.335	91	3568924	4.92	ug/L	100
61) 2-Chlorotoluene	15.439	91	2062464	4.77	ug/L	100
62) 4-Chlorotoluene	15.639	91	2353574	4.82	ug/L	99
63) 1,3,5-Trimethylbenzene	15.670	105	2617588	4.82	ug/L	100
64) tert-Butylbenzene	16.235	119	2185791	4.81	ug/L	99
65) 1,2,4-Trimethylbenzene	16.321	105	2602377	4.75	ug/L	100
66) sec-Butylbenzene	16.631	105	3385696	4.79	ug/L	100
67) 1,3-Dichlorobenzene	16.765	146	1512775	4.77	ug/L	100
68) p-Isopropyltoluene	16.917	119	2977005	4.71	ug/L	100
69) 1,4-Dichlorobenzene	16.929	146	1502614	4.78	ug/L	100
71) 1,2-Dichlorobenzene	17.580	146	1228298	4.77	ug/L	100
72) Butylbenzene	17.647	91	2817337	4.74	ug/L	100
73) 1,2-Dibromo-3-chloropr...	18.997	75	32078	4.62	ug/L	99
74) 1,2,4-Trichlorobenzene	20.506	180	869501	4.79	ug/L	100
75) Hexachlorobutadiene	20.871	225	589675	4.32	ug/L	99
76) Naphthalene	20.926	128	955934	5.35	ug/L	99
77) 1,2,3-Trichlorobenzene	21.376	180	706958	5.11	ug/L	99

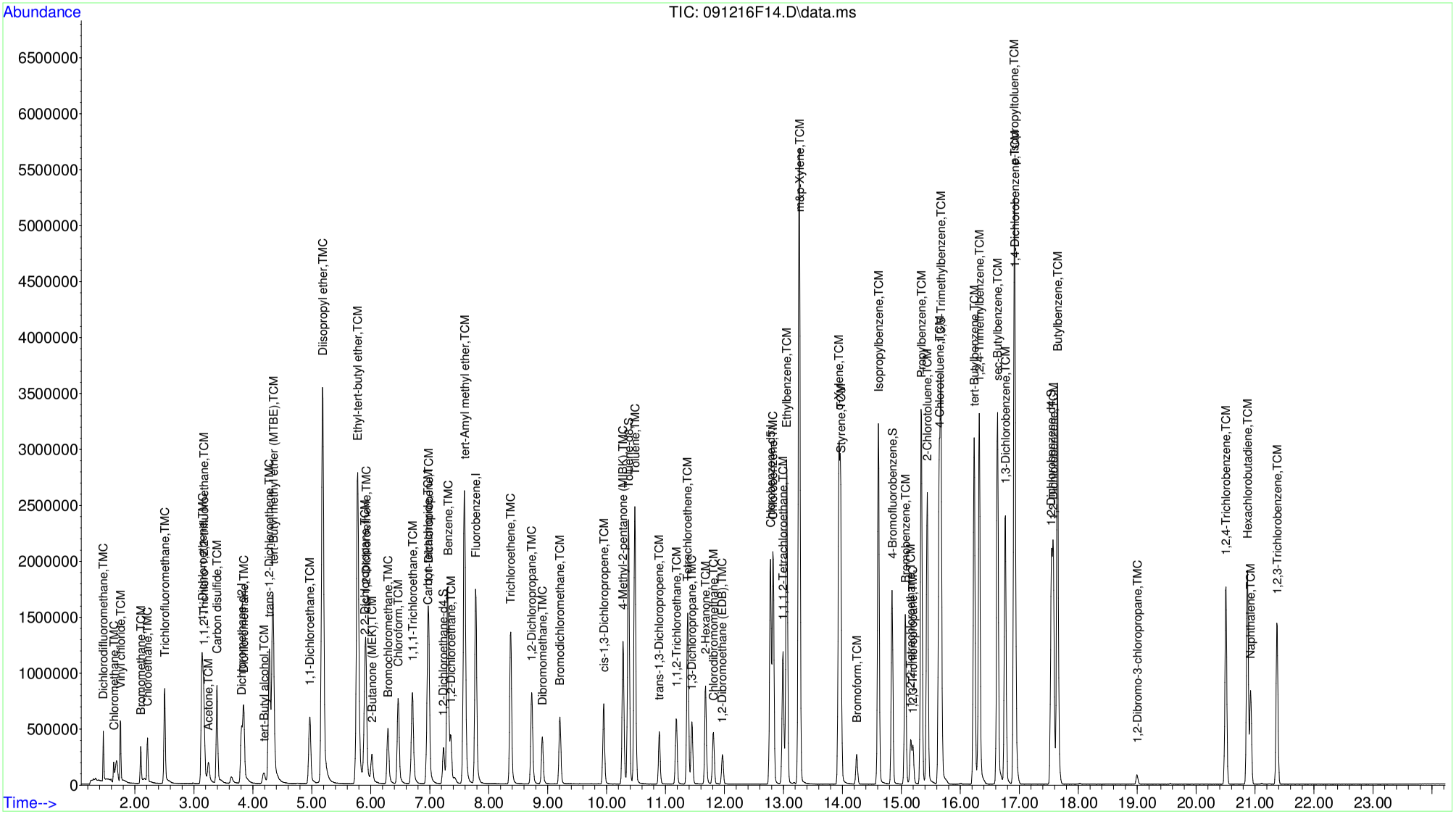
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Table of Contents

Quantitation Report (Not Reviewed)

ata Path : C:\msdchem\1\2016\data\091216FW\
ata File : 091216F14.D
cq On : 12 Sep 2016 19:48
perator : YNB
ample : S16I043-SCV1
isc : 5ug/L, WATER
LS Vial : 20 Sample Multiplier: 1

uant Time: Sep 13 09:00:42 2016
Quant Method : C:\msdchem\1\2016\method\091216FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration



SEQUENCE

S16J005

Analysis Sequence

S16J005

Project: R17S02
Analysis: VOCs

Instrument: HP5973F **Calibration ID:** 1609013 Printed: 10/03/2016 3:04 pm

Lab Number	Sample Name	Order	Analyzed Date	STD ID	ISTD ID	Sequenced By	File ID	Comments
S16J005-TUN1	MS Tune	1	10/3/16 10:14	1629049		YNB	100316F02.D	
S16J005-TUN2	MS Tune	2	10/3/16 10:23	1629049		YNB	100316F03.D	
S16J005-CCV1	Calibration Check	3	10/3/16 11:18	1640083		YNB	100316F05.D	
B16J003-BS1	LCS	4	10/3/16 11:18			YNB	100316F05.D	
S16J005-CRL1	Instrument RL Check	5	10/3/16 11:51	1640084		YNB	100316F06.D	
B16J003-BLK1	Blank	6	10/3/16 12:24			YNB	100316F07.D	
1609102-06 A	Blank-92916-900	7	10/3/16 13:30			YNB	100316F09.D	

Sequence Comments

Reagents

Reagent #	Description

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	B16J003	SEQUENCE #:	S16J005
BATCH #:	HP5973F, 10/03/16	ANALYSIS:	524.2 WATER, MEW 2016 Sewer

	CHECKLIST ITEM	N/A	ANALYST Y/N	REVIEWER Y/N	IDENTIFY OUTLIERS / COMMENTS
DOCUMENTATION	ANALYST: Bench sheet(s) attached? REVIEWER: Bench sheet(s) reviewed?	☐	Y	Y	
	ANALYST: Sequence log(s) attached? REVIEWER: Sequence log(s) reviewed?	☐	Y	Y	
	ANALYST: Every run has a PDF in LIMS? REVIEWER: Every PDF reviewed?	☐	Y	Y	
INITIAL CALIBRATION	Date of Initial Calibration used: If applicable, note date of "Last Update" in Comments.	Tue Sept 13 09:00:16 2016			
	Initial Calibration ID (LIMS number):	1609013			
	ICAL within QC criteria?	✔			trans1.3DCP, Naphthalene
	SCV within QC criteria?	✔			Dichlorodifluoromethane
INSTRUMENT / QC CHECKS	Tune or degradation checks within QC criteria?	☐	Y	Y	
	CCV(s) within QC criteria?	☐	Y	Y	TBA
	QLS(s) within QC criteria?	☐	Y	Y	TBA
	CB(s) or storage blank(s) within QC criteria?	✔			
	Other instrument checks within QC criteria? Specify if applicable.	✔			
BATCH QCs	Method blanks < 1/2 QL?	☐	Y	Y	
	LCS(s) or SRM(s) within QC criteria?	☐	Y	Y	
	MSs/MSDs and/or DUPs within QC criteria?	✔			
	Other method-specific QCs within QC criteria? Specify if applicable.	✔			

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	B16J003	SEQUENCE #:	S16J005
BATCH #:	HP5973F, 10/03/16	ANALYSIS:	524.2 WATER, MEW 2016 Sewer

	CHECKLIST ITEM	N/A	ANALYST Y/N	REVIEWER Y/N	IDENTIFY OUTLIERS / COMMENTS
IS / SS	Internal standards within QC criteria?	☐	Y		
	Surrogates within QC criteria?	☐	Y		
SAMPLE DATA	Were samples prepared & analyzed within holding time?	☐	Y		
	If samples need to be re-run, were RE(s) made in LIMS?	✔			
	Do any samples need to be re-digested or re-extracted?	✔			
	Were all data qualifiers appropriately applied?	☐	Y	Y	
	Are problems, anomalies, discrepancies documented in LIMS? Specify if applicable.	✔			
MANUAL INT	Were manual integrations performed and documented? Specify if applicable.	✔			

APPROVALS	ANALYST INITIALS & DATE:	YNB 10/03/16
	REVIEWED BY:	NICK KISH (affiliate) Digitally signed by NICK KISH (affiliate) Date: 2016.10.06 10:27:49 -07'00' SIGN HERE

COMMENTS

FORM #: Q015
REV #: 1

Injection Log

Operator: YNB
Directory: C:\msdchem\1\2016\data\100316FW\

Vial	File Name	Mult	Sample Info	Misc Info	Date Acquired
50	100316F01.D	1	PREP-TUN1	0.5ng EM 1153V	3 Oct 2016 9:54
50	100316F02.D	1	S16J005-TUN1	0.5ng EM 1153V	3 Oct 2016 10:14
51	100316F03.D	1	S16J005-TUN2	0.5ng EM 1153V	3 Oct 2016 10:23
11	100316F04.D	0	PREP	BLANK, WATER	3 Oct 2016 10:45
12	100316F05.D	0	CCV1@B16J003-BS1	5ug/L, WATER	3 Oct 2016 11:18
13	100316F06.D	0	S16J005-CRL1	0.5ug/L, WATER	3 Oct 2016 11:51
14	100316F07.D	0	B16J003-BLK1	BLK, WATER	3 Oct 2016 12:24
21	100316F08.D	0	S16J005-SB1	SB 09/26/16, WATER	3 Oct 2016 12:57
22	100316F09.D	0	1609102-06	, WATER	3 Oct 2016 13:30

GC/MS QA-QC Check Report

Table of Contents

Tune File : C:\msdchem\1\2016\data\100316FW\100316F03.D
Tune Time : 3 Oct 2016 10:23

Daily Calibration File : C:\msdchem\1\2016\data\100316FW\100316F05.D

File	Sample	Surrogate Recovery %				Internal Standard Responses			
						121954	2352590	1646860	
100316F05.D	S16J005-CCV1	102	106	101	103	121954	2352586	1646863	
100316F06.D	S16J005-CRL1	100	111	96	98	117228	2304667	1563109	
100316F07.D	B16J003-BLK1	102	111	88	92	120220	2309262	1559568	
100316F08.D	S16J005-SB1	103	107	88	92	118077	2314975	1528684	09/26/16
100316F09.D	1609102-06	103	112	89	93	124218	2365710	1575465	

(fails) - fails 12hr time check * - fails criteria

Created: Mon Oct 03 14:55:39 2016 HP5973F

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F08.D
Acq On : 3 Oct 2016 12:57
Operator : YNB
Sample : S16J005-SB1
Misc : SB 09/26/16, WATER
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Oct 03 13:38:50 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.807	53	118077	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2314975	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1528684	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.238	65	309650	5.16	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 103.20%		
39) Toluene-d8	10.371	98	2182765	5.34	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 106.80%		
56) 4-Bromofluorobenzene	14.842	95	629513	4.38	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 87.60%		
70) 1,2-Dichlorobenzene-d4	17.544	152	716909	4.60	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 92.00%		

Target Compounds Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F08.D
Acq On : 3 Oct 2016 12:57
Operator : YNB
Sample : S16J005-SB1
Misc : SB 09/26/16, WATER
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Oct 03 13:38:50 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

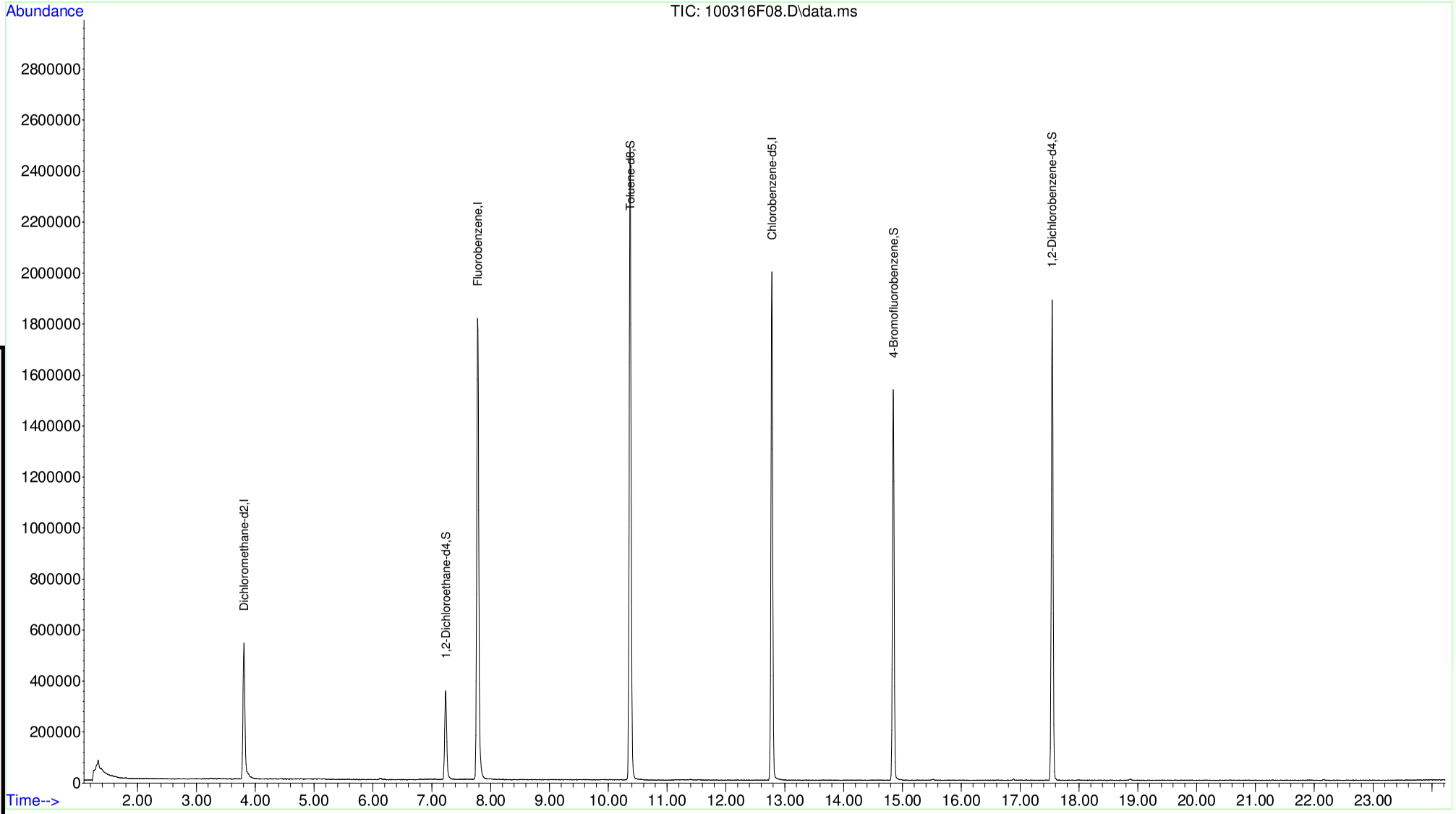
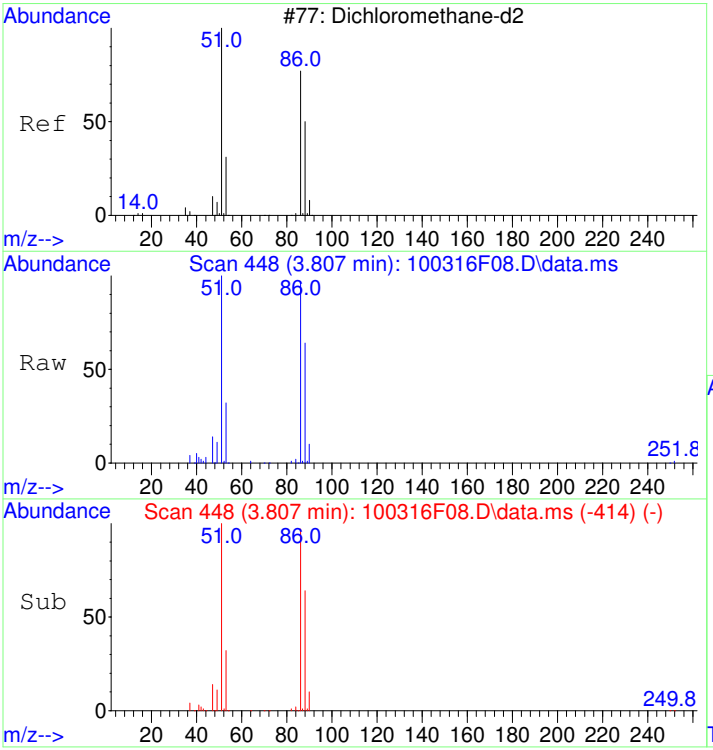


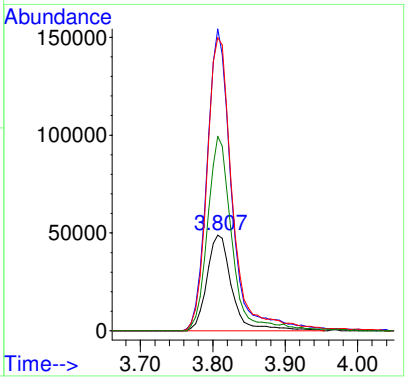
Table of Contents

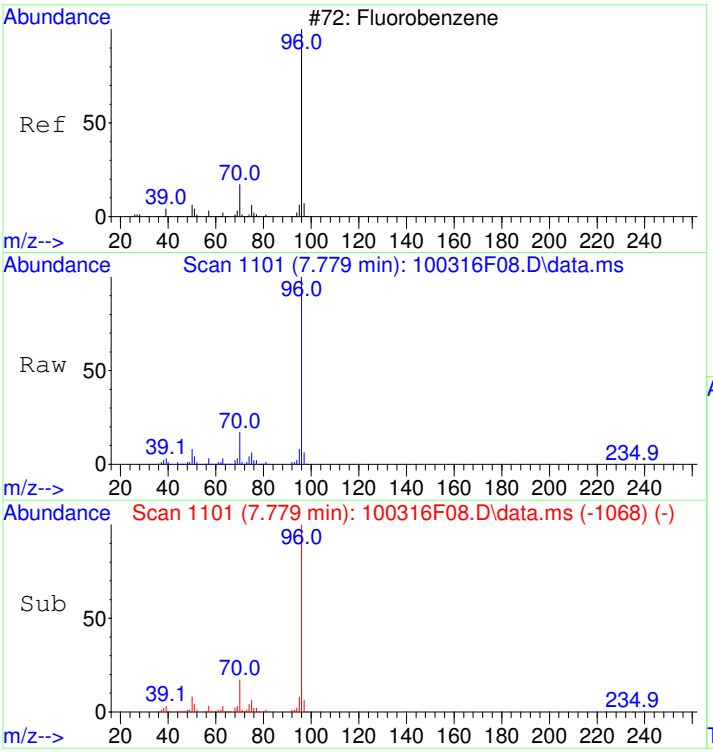


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.807 min Scan# 448
Delta R.T. 0.006 min
Lab File: 100316F08.D
Acq: 3 Oct 2016 12:57

Tgt Ion: 53 Resp: 118077

Ion	Ratio	Lower	Upper
53	100		
51	312.0	428.6	468.6#
86	313.7	0.0	20.0#
88	198.9	219.5	259.5#

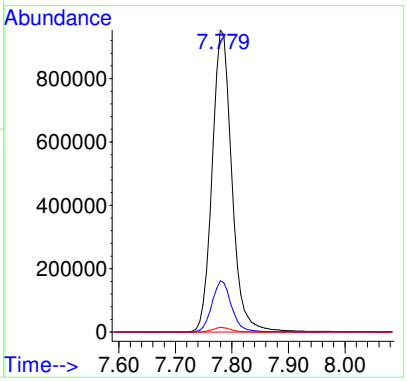


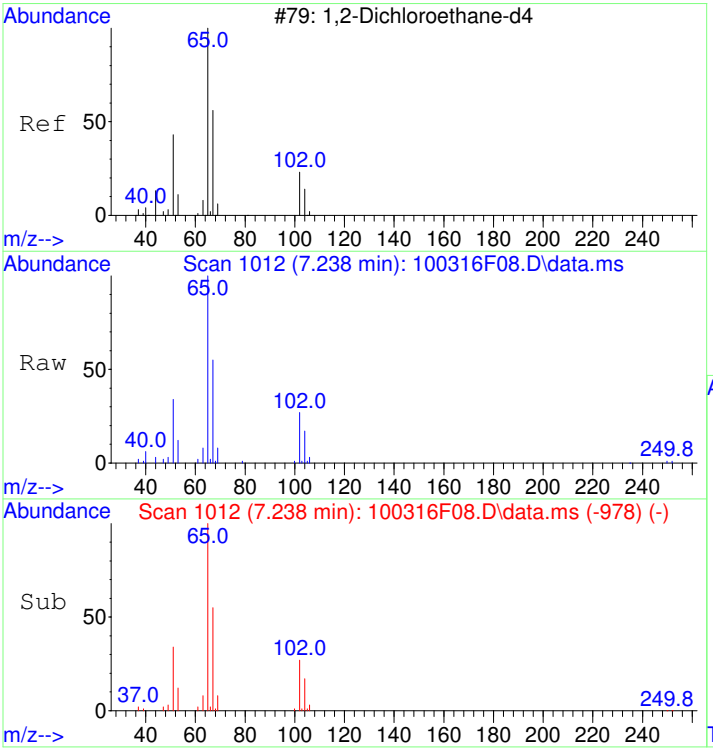


#24
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.779 min Scan# 1101
Delta R.T. 0.000 min
Lab File: 100316F08.D
Acq: 3 Oct 2016 12:57

Tgt Ion: 96 Resp: 2314975

Ion	Ratio	Lower	Upper
96	100		
70	17.0	0.0	37.3
77	1.5	0.0	21.6

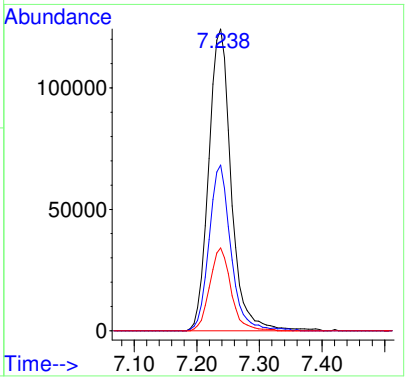


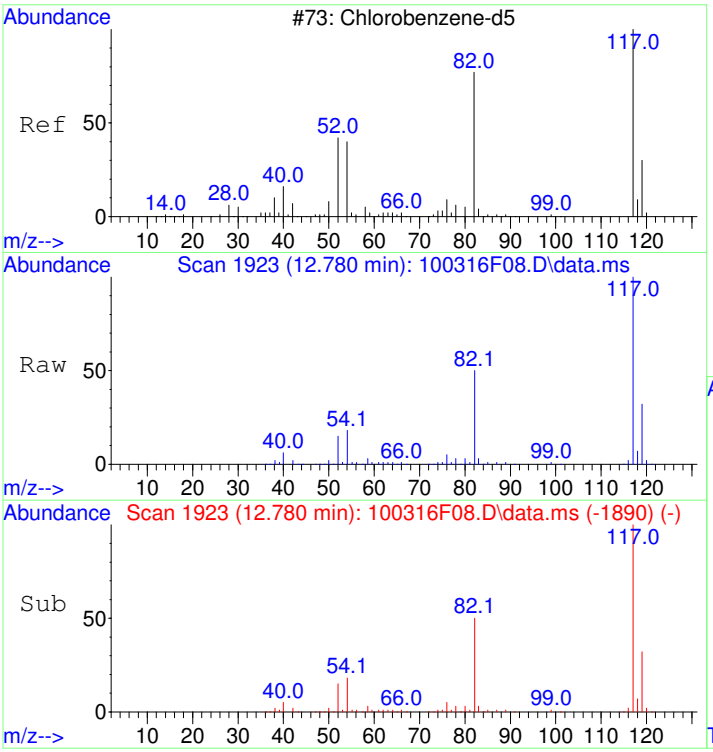


#28
1,2-Dichloroethane-d4
Concen: 5.16 ug/L
RT: 7.238 min Scan# 1012
Delta R.T. 0.006 min
Lab File: 100316F08.D
Acq: 3 Oct 2016 12:57

Tgt Ion: 65 Resp: 309650

Ion	Ratio	Lower	Upper
65	100		
67	53.4	35.3	75.3
102	26.0	6.5	46.5

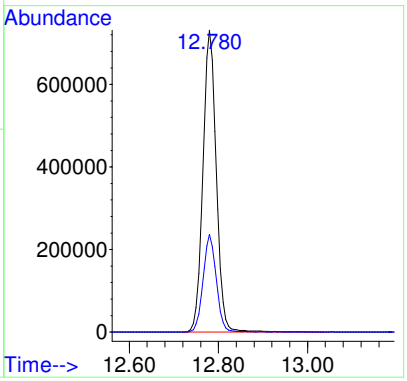


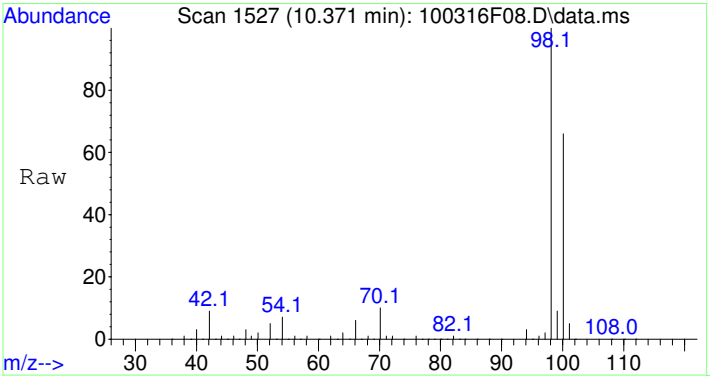


#37
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.780 min Scan# 1923
Delta R.T. 0.000 min
Lab File: 100316F08.D
Acq: 3 Oct 2016 12:57

Tgt Ion:117 Resp: 1528684

Ion	Ratio	Lower	Upper
117	100		
119	31.9	11.9	51.9

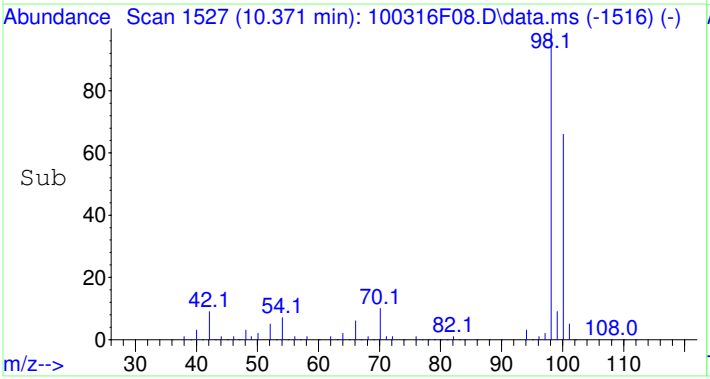


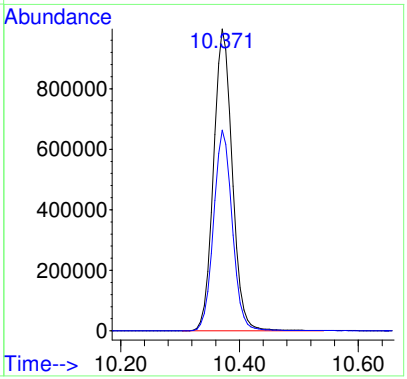


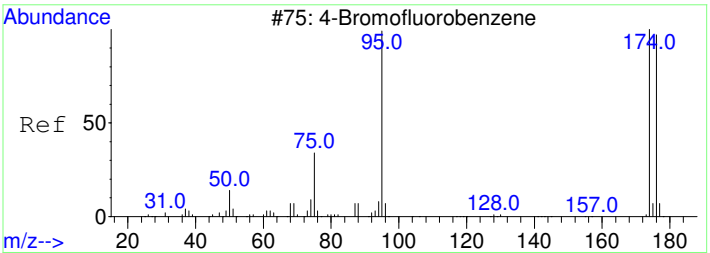
#39
Toluene-d8
Concen: 5.34 ug/L
RT: 10.371 min Scan# 1527
Delta R.T. 0.000 min
Lab File: 100316F08.D
Acq: 3 Oct 2016 12:57

Tgt Ion: 98 Resp: 2182765

Ion	Ratio	Lower	Upper
98	100		
100	66.4	46.3	86.3



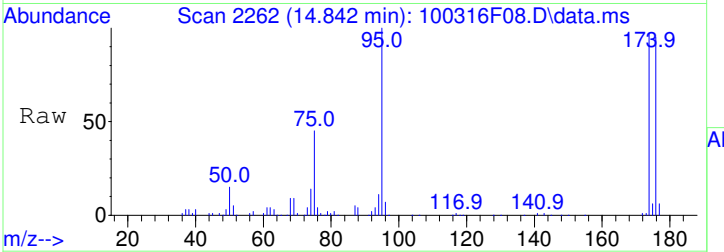


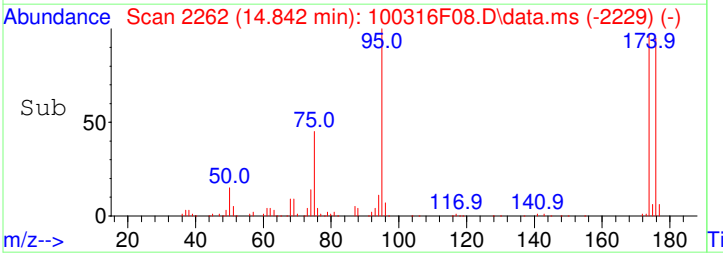


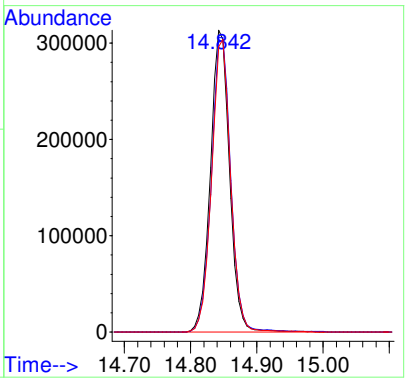
#56
4-Bromofluorobenzene
Concen: 4.38 ug/L
RT: 14.842 min Scan# 2262
Delta R.T. 0.000 min
Lab File: 100316F08.D
Acq: 3 Oct 2016 12:57

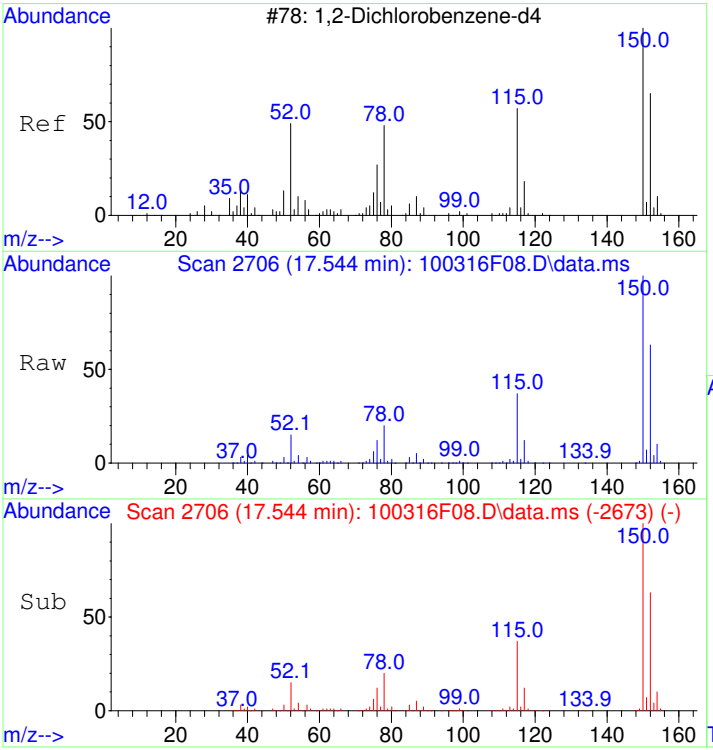
Tgt Ion: 95 Resp: 629513

Ion	Ratio	Lower	Upper
95	100		
174	99.0	78.7	118.7
176	96.2	75.6	115.6





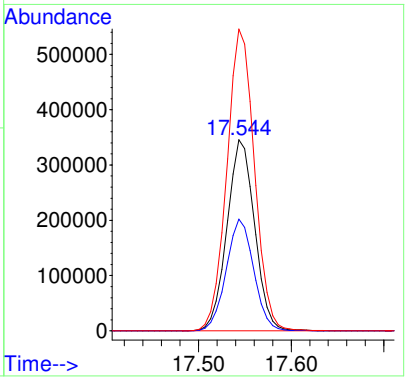




#70
1,2-Dichlorobenzene-d4
Concen: 4.60 ug/L
RT: 17.544 min Scan# 2706
Delta R.T. 0.000 min
Lab File: 100316F08.D
Acq: 3 Oct 2016 12:57

Tgt Ion:152 Resp: 716909

Ion	Ratio	Lower	Upper
152	100		
115	58.1	38.1	78.1
150	157.7	155.0	195.0



LSC Area Percent Report

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F08.D
Acq On : 3 Oct 2016 12:57
Operator : YNB
Sample : S16J005-SB1
Misc : SB 09/26/16, WATER
ALS Vial : 21 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 50 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0.3 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\2016\method\100316FVW.M
Title : Volatile Organic Analysis - 524.2 Method

Signal : TIC: 100316F08.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.807	440	448	466	rBV	533316	1271212	23.27%	5.513%
2	7.238	1001	1012	1027	rBV	348590	844460	15.46%	3.663%
3	7.779	1092	1101	1122	rBV	1806359	4339524	79.44%	18.821%
4	10.371	1515	1527	1542	rBV	2481973	5462617	100.00%	23.692%
5	12.780	1913	1923	1946	rBV	1993746	4163443	76.22%	18.057%
6	14.842	2252	2262	2271	rBV	1531675	3056352	55.95%	13.256%
7	16.880	2593	2597	2603	rVB3	5787	10879	0.20%	0.047%
8	17.544	2697	2706	2721	rBV	1885082	3908305	71.55%	16.951%

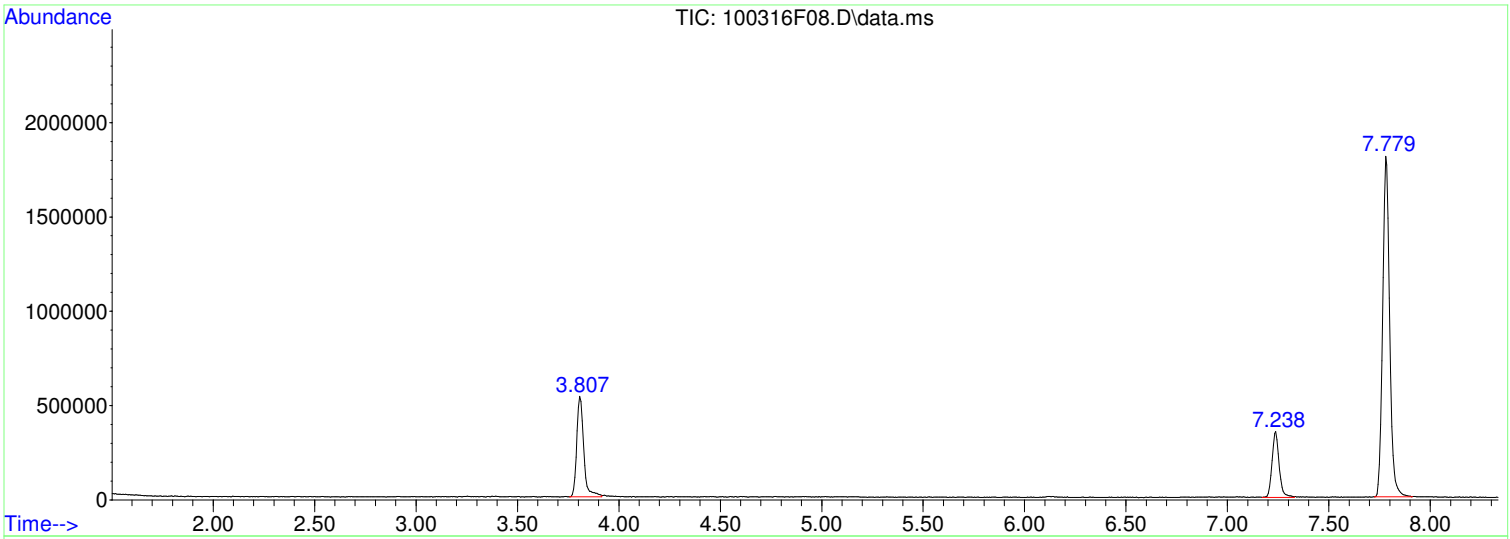
Sum of corrected areas: 23056792

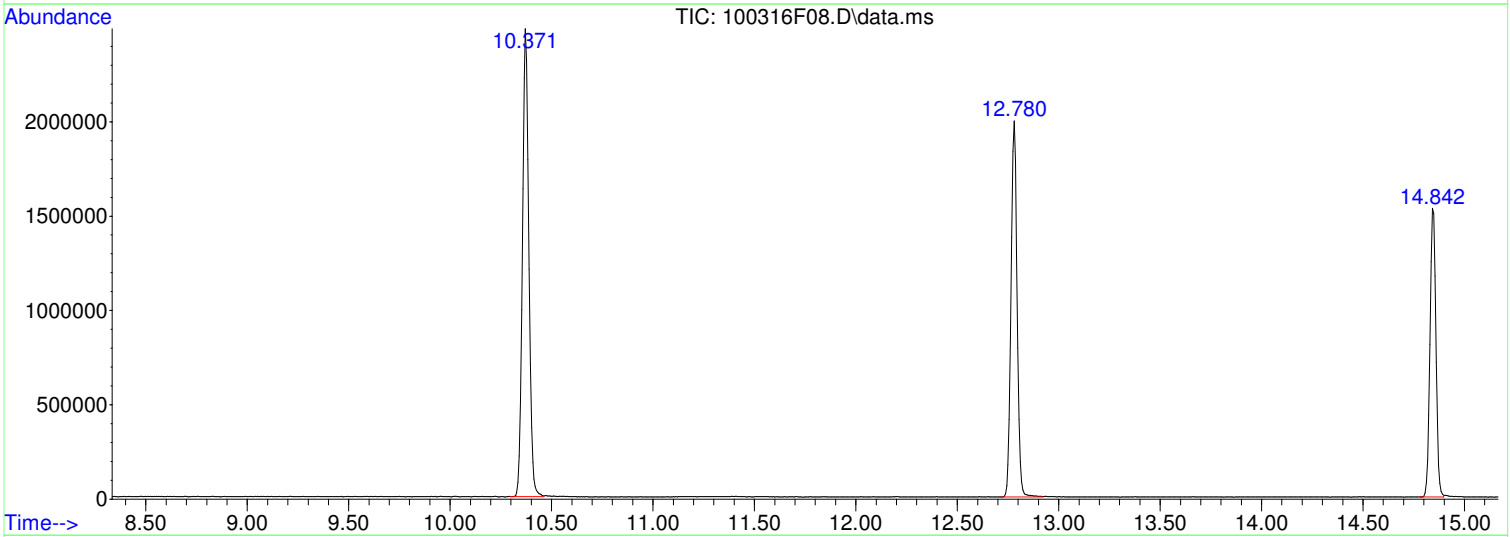
Table of Contents

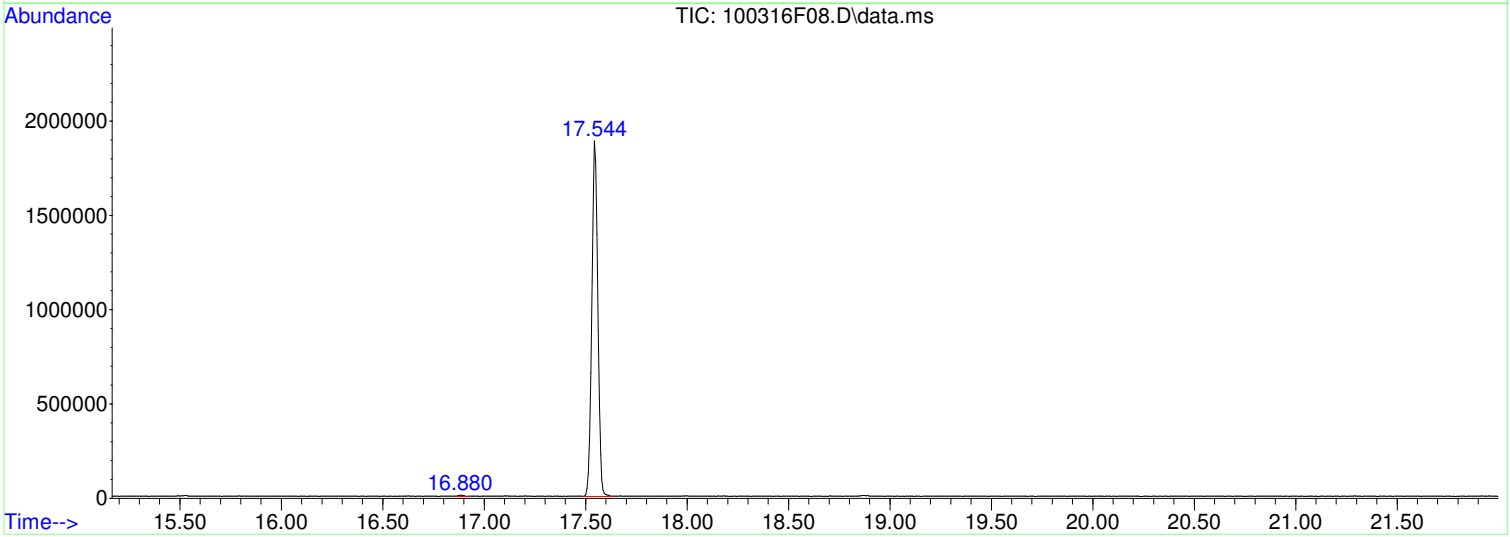
Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F08.D
Acq On : 3 Oct 2016 12:57
Operator : YNB
Sample : S16J005-SB1
Misc : SB 09/26/16, WATER
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P







Library Search Compound Report

Table of Contents

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F08.D
Acq On : 3 Oct 2016 12:57
Operator : YNB
Sample : S16J005-SB1
Misc : SB 09/26/16, WATER
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected
****

Tentatively Identified Compound (LSC) summary

```
  Data Path : C:\msdchem\1\2016\data\100316FW\
  Data File : 100316F08.D
  Acq On    :  3 Oct 2016  12:57
  Operator  : YNB
  Sample    : S16J005-SB1
  Misc      : SB 09/26/16, WATER
  ALS Vial  : 21   Sample Multiplier: 1

  Quant Method : C:\msdchem\1\2016\method\100316FVW.M
  Quant Title  : Volatile Organic Analysis  -  524.2 Method

  TIC Library   : C:\DATABASE\NIST98.L
  TIC Integration Parameters: LSCINT.P

                                                      |--Internal Standard---|
  TIC Top Hit name      RT  EstConc Units Response |#    RT     Resp  Conc|
-------------------------------------------------------------------------------
```

SEQUENCE DATA

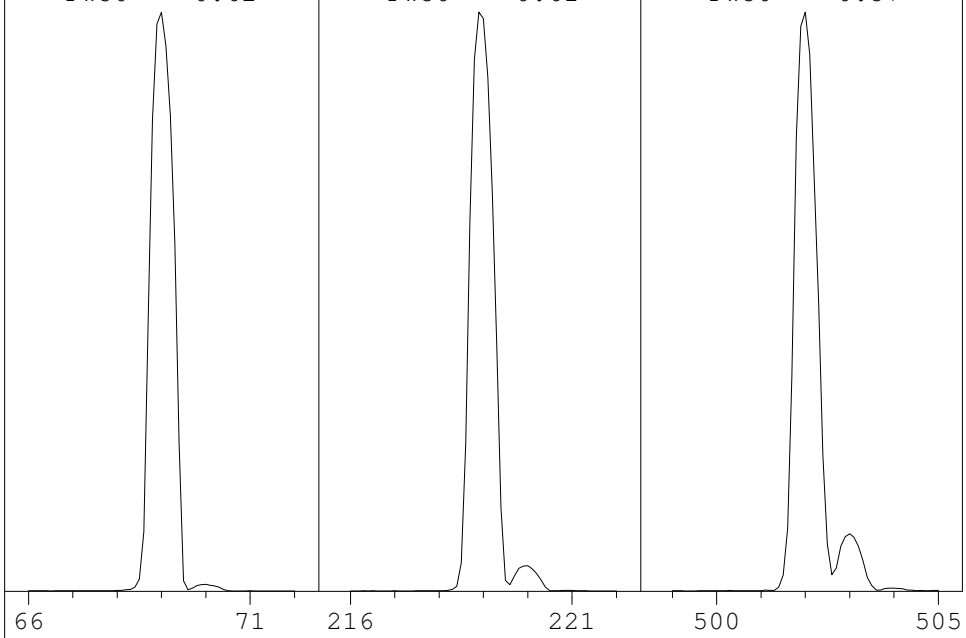
S16J005

S16J005-TUN2

Mon Oct 03 09:40:16 2016 Instrum

C:\msdchem\1\5973N\BFB100316F.u US63810222

Mass 69.00	Mass 218.90	Mass 502.00
Ab 654851	Ab 470728	Ab 36220
Pw50 0.62	Pw50 0.61	Pw50 0.57



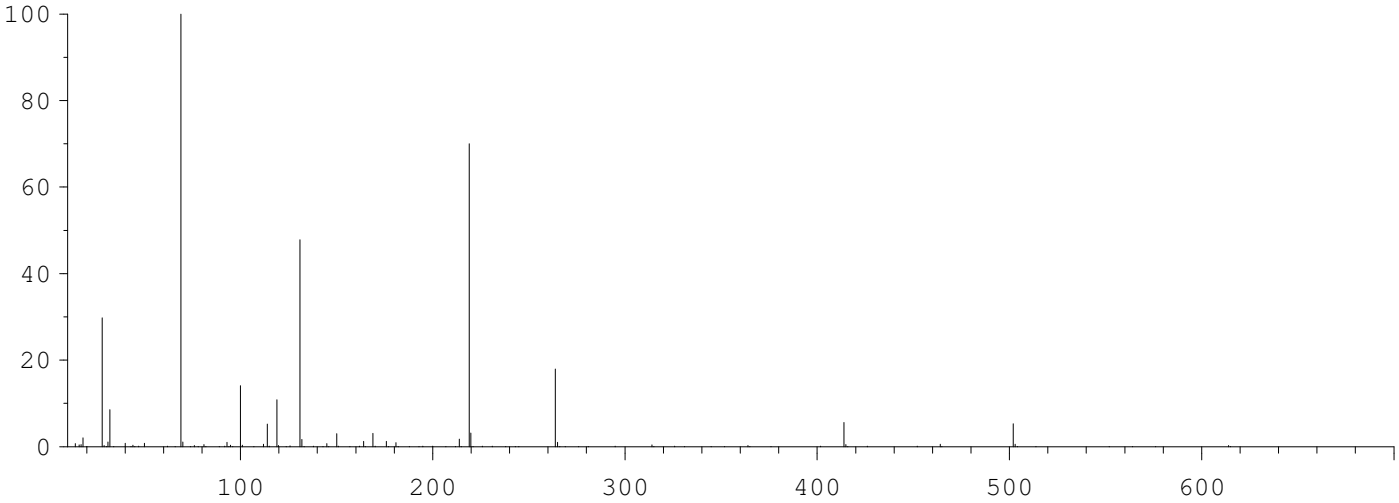
Ion Pol	Pos	MassGain	698
		MassOffs	-8
Emission	34.6	AmuGain	2727
EIEnrgy	69.9	AmuOffs	127
Filament	1	Wid219	-0.001
		DC Pol	Neg
Repeller	28.28		
IonFcus	88.3	HEDEnab	On
EntLens	16.5	EMVolts	1024
EntOffs	18.07		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	230	Turbo Speed	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10

110 peaks Base: 69.00 Abundance: 604160



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	604160	100.00	70.00	6644	1.10
219.00	423040	70.02	219.90	19160	4.53
502.00	31840	5.27	503.00	3405	10.69

Air/Water Check: H20~2.07% N2~29.75% O2~8.52% CO2~0.32% N2/H2O~1439.77%

Column(1) Flow: 1 Column(2): 0 ml/min. Interface Temp: 230

Ramp Criteria:

Ion Focus Maximum 90 volts using ion 502; EM Gain 88649

Repeller Maximum 35 volts using ion 219; Gain Factor 0.89

MassGain Values(Samples): 697(3) 697(2) 697(1) 697(0) 698(FS)

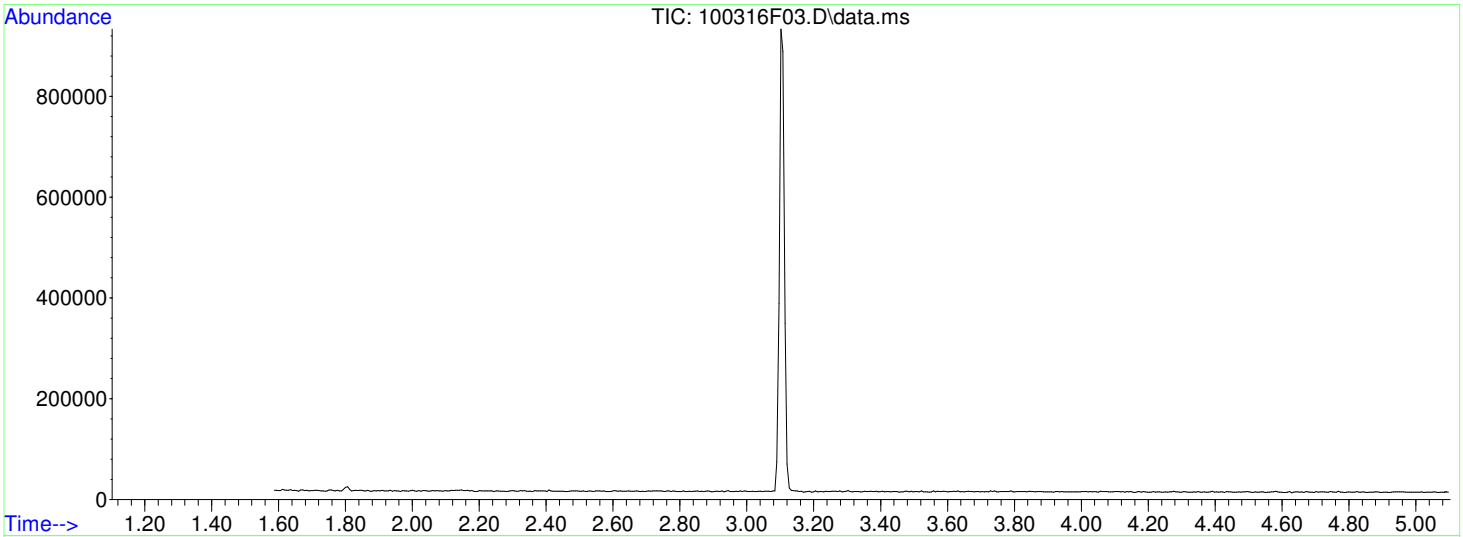
TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	127.0	127.0	127.0	127.0	127.0	127.0	127.0
Entrance Lens Offset:	18.1	18.1	18.1	18.1	18.1	18.1	18.1

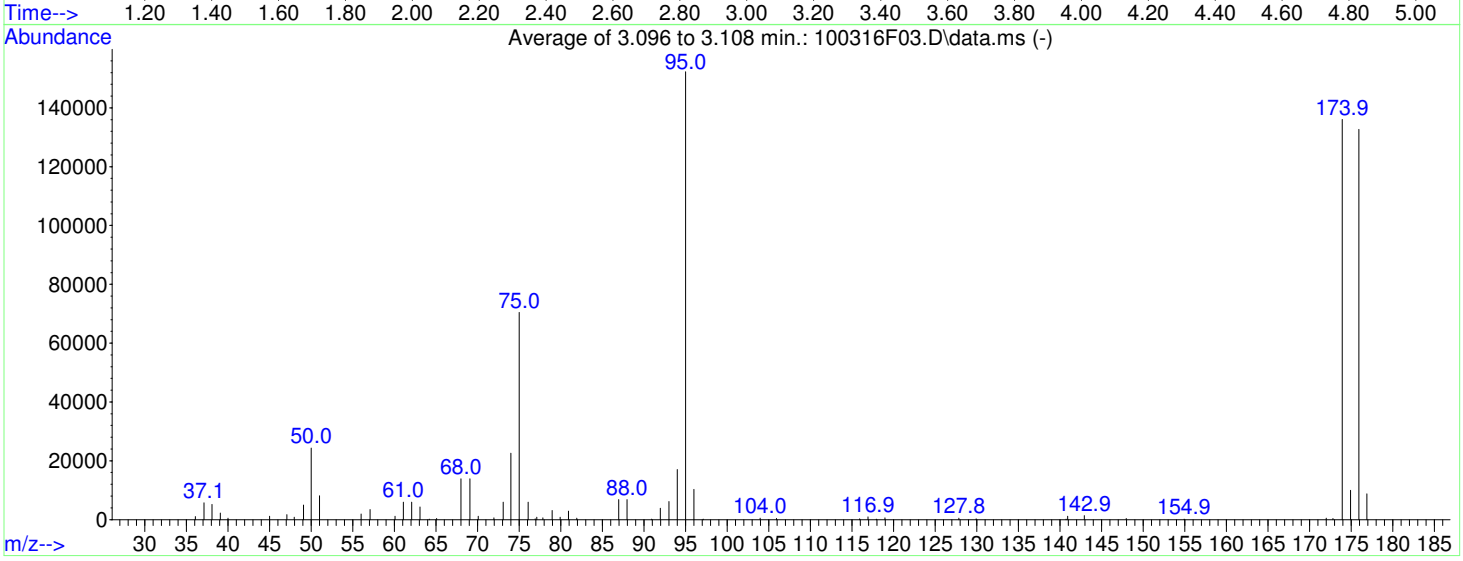
Table of Contents

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F03.D
Acq On : 3 Oct 2016 10:23
InstName : HP5973F
Operator : YNB
Sample : S16J005-TUN2
Misc : 0.5ng EM 1153V
ALS Vial : 51 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\2016\method\100316FVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Tue Sep 13 09:00:16 2016





AutoFind: Scans 249, 250, 251; Background Corrected with Scan 244

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.9	24291	PASS
75	95	30	60	46.2	70437	PASS
95	95	100	100	100.0	152333	PASS
96	95	5	9	6.8	10319	PASS
173	174	0.00	2	0.3	357	PASS
174	95	50	120	89.3	136101	PASS
175	174	5	9	7.4	10007	PASS
176	174	95	101	97.5	132648	PASS
177	176	5	9	6.6	8782	PASS

Average of 3.096 to 3.108 min.: 100316F03.D\data.ms
S16J005-TUN2
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	1022	56.00	1874	71.95	634	81.90	498
37.10	5726	57.05	3425	73.05	5964	86.95	6764
38.05	5186	60.05	1202	74.00	22565	87.95	6834
39.05	2223	61.05	5938	75.00	70437	90.90	208
40.00	491	62.05	5883	76.05	5959	91.95	3873
45.00	1179	63.05	4343	76.90	247	93.00	6154
47.05	1675	64.20	185	77.10	849	94.00	17000
47.95	791	65.05	363	77.85	552	95.00	152333
49.05	5008	68.00	13875	78.95	3058	96.00	10319
50.00	24291	69.05	13931	79.90	801	97.10	178
51.00	8153	70.05	1114	80.90	2922	103.95	493

Average of 3.096 to 3.108 min.: 100316F03.D\data.ms
S16J005-TUN2
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
105.90	430	154.90	188				
115.90	268	172.00	465				
116.90	956	172.80	357				
117.90	173	173.90	136101				
118.95	663	174.90	10007				
127.85	460	175.90	132648				
129.90	273	176.85	8782				
140.70	200						
140.90	1165						
142.90	1385						
147.95	405						

S16J005-CCV1

Evaluate Continuing Calibration Report

Table of Contents

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F05.D
Acq On : 3 Oct 2016 11:18
Operator : YNB
Sample : S16J005-CCV1@B16J003-BS1
Misc : 5ug/L, WATER
ALS Vial : 12 Sample Multiplier: 1

1 OUT

Quant Time: Oct 03 11:57:13 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.03min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Dichloromethane-d2	1.000	1.000	0.0	117	0.00
2	TMC	Dichlorodifluoromethane	5.653	5.251	7.1	109	0.00
3	TMC	Chloromethane	5.547	4.593	17.2	95	0.00
4	TCM	Vinyl chloride	5.329	5.011	6.0	108	0.00
5	TCM	Bromomethane	2.266	1.878	17.1	92	0.00
6	TMC	Chloroethane	3.221	3.130	2.8	108	0.00
7	TMC	Trichlorofluoromethane	7.647	7.481	2.2	113	0.00
8	TMC	1,1-Dichloroethene	4.866	4.636	4.7	109	0.00
9	TCM	1,1,2-Trichloro-1,2,2-trifl	4.721	4.763	-0.9	116	0.00
10	TCM	Acetone	0.294	0.294	0.0	131	0.00
11	TCM	Carbon disulfide	13.369	14.341	-7.3	123	0.00
12	TMC	Dichloromethane	4.420	4.163	5.8	112	0.00
13	TCM	tert-Butyl alcohol	0.064	0.091	-42.2#	169#	0.00
14	TMC	trans-1,2-Dichloroethene	5.456	5.150	5.6	107	0.00
15	TCM	tert-Butyl methyl ether (MT	5.458	5.672	-3.9	122	0.00
16	TCM	1,1-Dichloroethane	7.948	7.500	5.6	108	0.00
17	TMC	Diisopropyl ether	9.474	9.437	0.4	115	0.00
18	TCM	Ethyl-tert-butyl ether	6.921	7.280	-5.2	121	0.00
19	TCM	2,2-Dichloropropane	4.988	5.427	-8.8	124	0.00
20	TMC	cis-1,2-Dichloroethene	5.641	5.364	4.9	109	0.00
21	TCM	2-Butanone (MEK)	0.447	0.476	-6.5	127	0.00
22	TMC	Bromochloromethane	2.045	1.998	2.3	113	0.00
23	TCM	Chloroform	8.292	7.932	4.3	110	0.00
24	I	Fluorobenzene	1.000	1.000	0.0	110	0.00
25	TCM	1,1,1-Trichloroethane	0.364	0.368	-1.1	110	0.00
26	TCM	Carbon tetrachloride	0.333	0.342	-2.7	111	0.00
27	TCM	1,1-Dichloropropene	0.358	0.353	1.4	107	0.00
28	S	1,2-Dichloroethane-d4	0.130	0.132	-1.5	116	0.00
29	TMC	Benzene	1.054	1.049	0.5	109	0.00
30	TCM	1,2-Dichloroethane	0.183	0.188	-2.7	115	0.00
31	TCM	tert-Amyl methyl ether	0.280	0.309	-10.4	126	0.00
32	TMC	Trichloroethene	0.284	0.282	0.7	109	0.00
33	TMC	1,2-Dichloropropane	0.199	0.205	-3.0	114	0.00
34	TMC	Dibromomethane	0.082	0.084	-2.4	115	0.00
35	TCM	Bromodichloromethane	0.242	0.248	-2.5	114	0.00
36	TCM	cis-1,3-Dichloropropene	0.241	0.277	-14.9	130	0.00
37	I	Chlorobenzene-d5	1.000	1.000	0.0	111	0.00
38	TMC	4-Methyl-2-pentanone (MIBK)	0.081	0.088	-8.6	116	0.00
39	S	Toluene-d8	1.338	1.420	-6.1	116	0.00
40	TMC	Toluene	0.957	1.012	-5.7	114	0.00
41	TCM	trans-1,3-Dichloropropene	0.210	0.246	-17.1	127	0.00
42	TCM	1,1,2-Trichloroethane	0.136	0.143	-5.1	118	0.00
43	TCM	Tetrachloroethene	0.463	0.465	-0.4	109	0.00
44	TMC	1,3-Dichloropropane	0.283	0.305	-7.8	117	0.00
45	TCM	2-Hexanone	0.052	0.062	-19.2	127	0.00
46	TCM	Chlorodibromomethane	0.209	0.226	-8.1	120	0.00
47	TMC	1,2-Dibromoethane (EDB)	0.147	0.158	-7.5	118	0.00
48	TMC	Chlorobenzene	1.072	1.089	-1.6	112	0.00
49	TCM	1,1,1,2-Tetrachloroethane	0.303	0.322	-6.3	117	0.00
50	TCM	Ethylbenzene	1.859	1.967	-5.8	109	0.00
51	TCM	m&p-Xylene	0.786	0.807	-2.7	109	0.00
52	TCM	o-Xylene	0.702	0.741	-5.6	109	0.00

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F05.D
Acq On : 3 Oct 2016 11:18
Operator : YNB
Sample : S16J005-CCV1@B16J003-BS1
Misc : 5ug/L, WATER
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 03 11:57:13 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.03min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
53	TCM	Styrene	1.145	1.210	-5.7	112	0.00
54	TCM	Bromoform	0.116	0.128	-10.3	123	0.00
55	TCM	Isopropylbenzene	1.886	2.001	-6.1	108	0.00
56	S	4-Bromofluorobenzene	0.470	0.475	-1.1	114	0.00
57	TCM	Bromobenzene	0.432	0.448	-3.7	114	0.00
58	TCM	1,1,2,2-Tetrachloroethane	0.178	0.193	-8.4	122	0.00
59	TMC	1,2,3-Trichloropropane	0.123	0.133	-8.1	121	0.00
60	TCM	Propylbenzene	2.340	2.504	-7.0	108	0.00
61	TCM	2-Chlorotoluene	1.396	1.439	-3.1	111	0.00
62	TCM	4-Chlorotoluene	1.577	1.634	-3.6	110	0.00
63	TCM	1,3,5-Trimethylbenzene	1.752	1.799	-2.7	108	0.00
64	TCM	tert-Butylbenzene	1.465	1.516	-3.5	108	0.00
65	TCM	1,2,4-Trimethylbenzene	1.770	1.849	-4.5	109	0.00
66	TCM	sec-Butylbenzene	2.281	2.402	-5.3	107	0.00
67	TCM	1,3-Dichlorobenzene	1.023	1.059	-3.5	112	0.00
68	TCM	p-Isopropyltoluene	2.039	2.139	-4.9	107	0.00
69	TCM	1,4-Dichlorobenzene	1.014	1.051	-3.6	113	0.00
70	S	1,2-Dichlorobenzene-d4	0.510	0.528	-3.5	115	0.00
71	TCM	1,2-Dichlorobenzene	0.830	0.865	-4.2	114	0.00
72	TCM	Butylbenzene	1.916	2.010	-4.9	109	0.00
73	TMC	1,2-Dibromo-3-chloropropane	0.022	0.025	-13.6	126	0.00
74	TCM	1,2,4-Trichlorobenzene	0.586	0.621	-6.0	114	0.00
75	TCM	Hexachlorobutadiene	0.441	0.429	2.7	112	0.00
76	TCM	Naphthalene	0.576	0.665	-15.5	119	0.00
77	TCM	1,2,3-Trichlorobenzene	0.446	0.470	-5.4	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1

C:\msdchem\1\2016\data\100316FW\100316F05.D

Data File Name)0316F05.D
Data File Path I\2016\data\100316FW\
Operator YNB
Sample Name CV1@B16J003-BS1
Instrument Name HP5973F

#	Name	RT	Amount	on column	RECOVERY	QC	LIMIT	STATUS
1)	Dichloromethane-d2	3.80	5	5.00	100%	70	130	PASS
2)	Dichlorodifluoromethane	1.46	5	4.64	93%	53	130	PASS
3)	Chloromethane	1.65	5	4.14	83%	70	124	PASS
4)	Vinyl chloride	1.74	5	4.70	94%	77	127	PASS
5)	Bromomethane	2.09	5	4.14	83%	58	172	PASS
6)	Chloroethane	2.21	5	4.86	97%	75	135	PASS
7)	Trichlorofluoromethane	2.50	5	4.89	98%	74	141	PASS
8)	1,1-Dichloroethene	3.13	5	4.76	95%	80	126	PASS
9)	1,1,2-Trichloro-1,2,2-trifluoroethane	3.16	5	5.04	101%	73	139	PASS
10)	Acetone	3.24	40	39.92	100%	60	125	PASS
11)	Carbon disulfide	3.39	5	5.36	107%	72	121	PASS
12)	Dichloromethane	3.84	5	4.71	94%	73	114	PASS
13)	tert-Butyl alcohol	4.18	100	141.47	141%	42	161	PASS
14)	trans-1,2-Dichloroethene	4.28	5	4.72	94%	86	119	PASS
15)	tert-Butyl methyl ether (MTBE)	4.34	20	20.78	104%	74	127	PASS
16)	1,1-Dichloroethane	4.96	5	4.72	94%	85	117	PASS
17)	Diisopropyl ether	5.18	20	19.92	100%	80	117	PASS
18)	Ethyl-tert-butyl ether	5.77	20	21.04	105%	67	133	PASS
19)	2,2-Dichloropropane	5.89	5	5.44	109%	61	163	PASS
20)	cis-1,2-Dichloroethene	5.91	5	4.75	95%	87	113	PASS
21)	2-Butanone (MEK)	6.02	40	42.62	107%	67	123	PASS
22)	Bromochloromethane	6.29	5	4.89	98%	84	114	PASS
23)	Chloroform	6.47	5	4.78	96%	85	117	PASS
24)	Fluorobenzene	7.78	5	5.00	100%	70	130	PASS
25)	1,1,1-Trichloroethane	6.70	5	5.04	101%	85	126	PASS
26)	Carbon tetrachloride	6.96	5	5.14	103%	77	140	PASS
27)	1,1-Dichloropropene	6.98	5	4.92	98%	88	120	PASS
28)	1,2-Dichloroethane-d4	7.23	5	5.11	102%	65	149	PASS
29)	Benzene	7.30	5	4.98	100%	86	112	PASS
30)	1,2-Dichloroethane	7.35	5	5.15	103%	78	121	PASS
31)	tert-Amyl methyl ether	7.58	20	22.08	110%	63	134	PASS
32)	Trichloroethene	8.37	5	4.97	99%	90	112	PASS
33)	1,2-Dichloropropane	8.73	5	5.13	103%	83	114	PASS
34)	Dibromomethane	8.90	5	5.14	103%	79	118	PASS
35)	Bromodichloromethane	9.21	5	5.13	103%	82	120	PASS
36)	cis-1,3-Dichloropropene	9.95	5	5.74	115%	79	127	PASS
37)	Chlorobenzene-d5	12.78	5	5.00	100%	70	130	PASS
38)	4-Methyl-2-pentanone (MIBK)	10.28	40	43.18	108%	68	132	PASS
39)	Toluene-d8	10.37	5	5.31	106%	85	114	PASS
40)	Toluene	10.48	5	5.29	106%	87	113	PASS
41)	trans-1,3-Dichloropropene	10.89	5	5.86	117%	75	135	PASS
42)	1,1,2-Trichloroethane	11.18	5	5.27	105%	79	116	PASS

C:\msdchem\1\2016\data\100316FW\100316F05.D

43) Tetrachloroethene	11.37	5	5.03	101%	87	118	PASS
44) 1,3-Dichloropropane	11.45	5	5.39	108%	82	116	PASS
45) 2-Hexanone	11.68	40	46.96	117%	64	134	PASS
46) Chlorodibromomethane	11.81	5	5.41	108%	80	125	PASS
47) 1,2-Dibromoethane (EDB)	11.96	5	5.35	107%	85	114	PASS
48) Chlorobenzene	12.82	5	5.08	102%	88	110	PASS
49) 1,1,1,2-Tetrachloroethane	12.99	5	5.32	106%	86	122	PASS
50) Ethylbenzene	13.05	5	5.29	106%	89	117	PASS
51) m&p-Xylene	13.27	10	10.26	103%	90	113	PASS
52) o-Xylene	13.94	5	5.28	106%	90	111	PASS
53) Styrene	13.97	5	5.28	106%	86	113	PASS
54) Bromoform	14.24	5	5.50	110%	70	138	PASS
55) Isopropylbenzene	14.61	5	5.30	106%	90	118	PASS
56) 4-Bromofluorobenzene	14.84	5	5.06	101%	82	111	PASS
57) Bromobenzene	15.07	5	5.18	104%	90	110	PASS
58) 1,1,2,2-Tetrachloroethane	15.16	5	5.40	108%	76	122	PASS
59) 1,2,3-Trichloropropane	15.20	5	5.39	108%	77	119	PASS
60) Propylbenzene	15.34	5	5.35	107%	89	120	PASS
61) 2-Chlorotoluene	15.44	5	5.15	103%	88	114	PASS
62) 4-Chlorotoluene	15.64	5	5.18	104%	90	112	PASS
63) 1,3,5-Trimethylbenzene	15.67	5	5.13	103%	90	115	PASS
64) tert-Butylbenzene	16.24	5	5.17	103%	89	118	PASS
65) 1,2,4-Trimethylbenzene	16.32	5	5.22	104%	90	112	PASS
66) sec-Butylbenzene	16.63	5	5.26	105%	87	122	PASS
67) 1,3-Dichlorobenzene	16.76	5	5.18	104%	88	111	PASS
68) p-Isopropyltoluene	16.92	5	5.25	105%	89	119	PASS
69) 1,4-Dichlorobenzene	16.93	5	5.18	104%	87	111	PASS
70) 1,2-Dichlorobenzene-d4	17.54	5	5.17	103%	76	118	PASS
71) 1,2-Dichlorobenzene	17.57	5	5.21	104%	86	111	PASS
72) Butylbenzene	17.65	5	5.25	105%	86	123	PASS
73) 1,2-Dibromo-3-chloropropane	19.00	20	22.65	113%	68	134	PASS
74) 1,2,4-Trichlorobenzene	20.51	5	5.30	106%	77	119	PASS
75) Hexachlorobutadiene	20.87	5	4.86	97%	81	123	PASS
76) Naphthalene	20.93	5	5.77	115%	54	144	PASS
77) 1,2,3-Trichlorobenzene	21.37	5	5.27	105%	73	122	PASS

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F05.D
Acq On : 3 Oct 2016 11:18
Operator : YNB
Sample : S16J005-CCV1@B16J003-BS1
Misc : 5ug/L, WATER
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 03 11:57:13 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.801	53	121954	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2352586	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1646863	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	311630	5.11	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery = 102.20%			
39) Toluene-d8	10.371	98	2338521	5.31	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery = 106.20%			
56) 4-Bromofluorobenzene	14.842	95	782859	5.06	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery = 101.20%			
70) 1,2-Dichlorobenzene-d4	17.544	152	869526	5.17	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery = 103.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.459	85	640387	4.64	ug/L	99
3) Chloromethane	1.653	50	560083	4.14	ug/L	99
4) Vinyl chloride	1.744	62	611055	4.70	ug/L	99
5) Bromomethane	2.091	94	229031	4.14	ug/L	99
6) Chloroethane	2.207	64	381736	4.86	ug/L	99
7) Trichlorofluoromethane	2.499	101	912296	4.89	ug/L	100
8) 1,1-Dichloroethene	3.132	96	565406	4.76	ug/L	99
9) 1,1,2-Trichloro-1,2,2-...	3.156	101	580856	5.04	ug/L	99
10) Acetone	3.241	43	286428	39.92	ug/L	100
11) Carbon disulfide	3.387	76	1748950	5.36	ug/L	100
12) Dichloromethane	3.837	84	507740	4.71	ug/L #	38
13) tert-Butyl alcohol	4.184	59	222492	141.47	ug/L	94
14) trans-1,2-Dichloroethene	4.275	96	628098	4.72	ug/L	99
15) tert-Butyl methyl ethe...	4.336	73	2766708	20.78	ug/L	98
16) 1,1-Dichloroethane	4.963	63	914600	4.72	ug/L	100
17) Diisopropyl ether	5.182	45	4603324	19.92	ug/L	99
18) Ethyl-tert-butyl ether	5.772	59	3551194	21.04	ug/L	100
19) 2,2-Dichloropropane	5.893	77	661855	5.44	ug/L	99
20) cis-1,2-Dichloroethene	5.912	96	654140	4.75	ug/L	99
21) 2-Butanone (MEK)	6.015	43	464862	42.62	ug/L	100
22) Bromochloromethane	6.289	128	243659	4.89	ug/L	98
23) Chloroform	6.465	83	967316	4.78	ug/L	100
25) 1,1,1-Trichloroethane	6.703	97	864842	5.04	ug/L	100
26) Carbon tetrachloride	6.964	117	804871	5.14	ug/L	100
27) 1,1-Dichloropropene	6.976	75	830400	4.92	ug/L	99
29) Benzene	7.305	78	2467609	4.98	ug/L	100
30) 1,2-Dichloroethane	7.354	62	442374	5.15	ug/L	99
31) tert-Amyl methyl ether	7.585	73	2909167	22.08	ug/L	97
32) Trichloroethene	8.370	95	664328	4.97	ug/L	98
33) 1,2-Dichloropropane	8.728	63	481382	5.13	ug/L	99
34) Dibromomethane	8.905	93	197675	5.14	ug/L	100
35) Bromodichloromethane	9.209	83	583694	5.13	ug/L	100
36) cis-1,3-Dichloropropene	9.951	75	650521	5.74	ug/L	98
38) 4-Methyl-2-pentanone (...	10.280	43	1158605	43.18	ug/L	95
40) Toluene	10.480	92	1667141	5.29	ug/L	99
41) trans-1,3-Dichloropropene	10.894	75	405934	5.86	ug/L	99
42) 1,1,2-Trichloroethane	11.180	83	235392	5.27	ug/L	100
43) Tetrachloroethene	11.375	166	766152	5.03	ug/L	100
44) 1,3-Dichloropropane	11.448	76	502186	5.39	ug/L	100
45) 2-Hexanone	11.679	43	811458	46.96	ug/L	98
46) Chlorodibromomethane	11.813	129	372312	5.41	ug/L	99
47) 1,2-Dibromoethane (EDB)	11.965	107	259691	5.35	ug/L	100

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F05.D
Acq On : 3 Oct 2016 11:18
Operator : YNB
Sample : S16J005-CCV1@B16J003-BS1
Misc : 5ug/L, WATER
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 03 11:57:13 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) Chlorobenzene	12.823	112	1794054	5.08 ug/L	100
49) 1,1,1,2-Tetrachloroethane	12.993	131	530550	5.32 ug/L	99
50) Ethylbenzene	13.054	91	3239457	5.29 ug/L	100
51) m&p-Xylene	13.267	106	2657195	10.26 ug/L	99
52) o-Xylene	13.942	106	1220553	5.28 ug/L	99
53) Styrene	13.972	104	1993038	5.28 ug/L	100
54) Bromoform	14.240	173	210625	5.50 ug/L	99
55) Isopropylbenzene	14.611	105	3294717	5.30 ug/L	100
57) Bromobenzene	15.068	156	737042	5.18 ug/L	99
58) 1,1,2,2-Tetrachloroethane	15.159	83	317291	5.40 ug/L	100
59) 1,2,3-Trichloropropane	15.195	75	218742	5.39 ug/L	99
60) Propylbenzene	15.335	91	4123572	5.35 ug/L	100
61) 2-Chlorotoluene	15.439	91	2369067	5.15 ug/L	99
62) 4-Chlorotoluene	15.639	91	2690245	5.18 ug/L	99
63) 1,3,5-Trimethylbenzene	15.670	105	2962980	5.13 ug/L	100
64) tert-Butylbenzene	16.236	119	2496794	5.17 ug/L	100
65) 1,2,4-Trimethylbenzene	16.321	105	3044860	5.22 ug/L	99
66) sec-Butylbenzene	16.631	105	3955046	5.26 ug/L	100
67) 1,3-Dichlorobenzene	16.759	146	1744161	5.18 ug/L	100
68) p-Isopropyltoluene	16.917	119	3523308	5.25 ug/L	100
69) 1,4-Dichlorobenzene	16.929	146	1730692	5.18 ug/L	100
71) 1,2-Dichlorobenzene	17.574	146	1423874	5.21 ug/L	99
72) Butylbenzene	17.647	91	3310452	5.25 ug/L	99
73) 1,2-Dibromo-3-chloropr...	18.998	75	167285	22.65 ug/L	98
74) 1,2,4-Trichlorobenzene	20.506	180	1023111	5.30 ug/L	100
75) Hexachlorobutadiene	20.871	225	706376	4.86 ug/L	99
76) Naphthalene	20.926	128	1095864	5.77 ug/L	100
77) 1,2,3-Trichlorobenzene	21.370	180	774295	5.27 ug/L	99

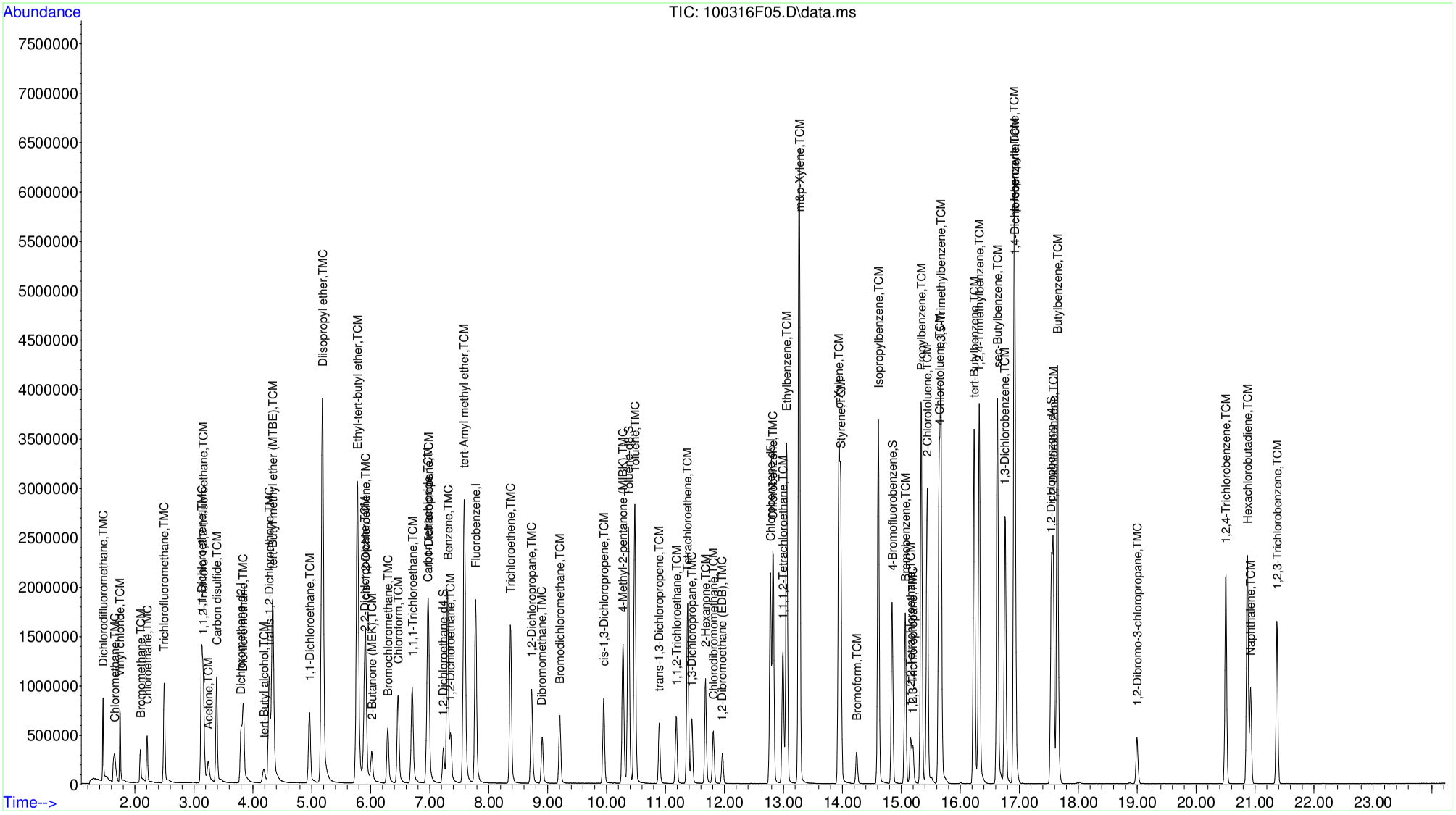
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Table of Contents

Quantitation Report (Not Reviewed)

ata Path : C:\msdchem\1\2016\data\100316FW\
ata File : 100316F05.D
cq On : 3 Oct 2016 11:18
perator : YNB
ample : S16J005-CCV1@B16J003-BS1
isc : 5ug/L, WATER
LS Vial : 12 Sample Multiplier: 1

uant Time: Oct 03 11:57:13 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration



B16J003-BS1

Evaluate Continuing Calibration Report

Table of Contents

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F05.D
Acq On : 3 Oct 2016 11:18
Operator : YNB
Sample : S16J005-CCV1@B16J003-BS1
Misc : 5ug/L, WATER
ALS Vial : 12 Sample Multiplier: 1

1 OUT

Quant Time: Oct 03 11:57:13 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.03min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Dichloromethane-d2	1.000	1.000	0.0	117	0.00
2	TMC	Dichlorodifluoromethane	5.653	5.251	7.1	109	0.00
3	TMC	Chloromethane	5.547	4.593	17.2	95	0.00
4	TCM	Vinyl chloride	5.329	5.011	6.0	108	0.00
5	TCM	Bromomethane	2.266	1.878	17.1	92	0.00
6	TMC	Chloroethane	3.221	3.130	2.8	108	0.00
7	TMC	Trichlorofluoromethane	7.647	7.481	2.2	113	0.00
8	TMC	1,1-Dichloroethene	4.866	4.636	4.7	109	0.00
9	TCM	1,1,2-Trichloro-1,2,2-trifl	4.721	4.763	-0.9	116	0.00
10	TCM	Acetone	0.294	0.294	0.0	131	0.00
11	TCM	Carbon disulfide	13.369	14.341	-7.3	123	0.00
12	TMC	Dichloromethane	4.420	4.163	5.8	112	0.00
13	TCM	tert-Butyl alcohol	0.064	0.091	-42.2#	169#	0.00
14	TMC	trans-1,2-Dichloroethene	5.456	5.150	5.6	107	0.00
15	TCM	tert-Butyl methyl ether (MT	5.458	5.672	-3.9	122	0.00
16	TCM	1,1-Dichloroethane	7.948	7.500	5.6	108	0.00
17	TMC	Diisopropyl ether	9.474	9.437	0.4	115	0.00
18	TCM	Ethyl-tert-butyl ether	6.921	7.280	-5.2	121	0.00
19	TCM	2,2-Dichloropropane	4.988	5.427	-8.8	124	0.00
20	TMC	cis-1,2-Dichloroethene	5.641	5.364	4.9	109	0.00
21	TCM	2-Butanone (MEK)	0.447	0.476	-6.5	127	0.00
22	TMC	Bromochloromethane	2.045	1.998	2.3	113	0.00
23	TCM	Chloroform	8.292	7.932	4.3	110	0.00
24	I	Fluorobenzene	1.000	1.000	0.0	110	0.00
25	TCM	1,1,1-Trichloroethane	0.364	0.368	-1.1	110	0.00
26	TCM	Carbon tetrachloride	0.333	0.342	-2.7	111	0.00
27	TCM	1,1-Dichloropropene	0.358	0.353	1.4	107	0.00
28	S	1,2-Dichloroethane-d4	0.130	0.132	-1.5	116	0.00
29	TMC	Benzene	1.054	1.049	0.5	109	0.00
30	TCM	1,2-Dichloroethane	0.183	0.188	-2.7	115	0.00
31	TCM	tert-Amyl methyl ether	0.280	0.309	-10.4	126	0.00
32	TMC	Trichloroethene	0.284	0.282	0.7	109	0.00
33	TMC	1,2-Dichloropropane	0.199	0.205	-3.0	114	0.00
34	TMC	Dibromomethane	0.082	0.084	-2.4	115	0.00
35	TCM	Bromodichloromethane	0.242	0.248	-2.5	114	0.00
36	TCM	cis-1,3-Dichloropropene	0.241	0.277	-14.9	130	0.00
37	I	Chlorobenzene-d5	1.000	1.000	0.0	111	0.00
38	TMC	4-Methyl-2-pentanone (MIBK)	0.081	0.088	-8.6	116	0.00
39	S	Toluene-d8	1.338	1.420	-6.1	116	0.00
40	TMC	Toluene	0.957	1.012	-5.7	114	0.00
41	TCM	trans-1,3-Dichloropropene	0.210	0.246	-17.1	127	0.00
42	TCM	1,1,2-Trichloroethane	0.136	0.143	-5.1	118	0.00
43	TCM	Tetrachloroethene	0.463	0.465	-0.4	109	0.00
44	TMC	1,3-Dichloropropane	0.283	0.305	-7.8	117	0.00
45	TCM	2-Hexanone	0.052	0.062	-19.2	127	0.00
46	TCM	Chlorodibromomethane	0.209	0.226	-8.1	120	0.00
47	TMC	1,2-Dibromoethane (EDB)	0.147	0.158	-7.5	118	0.00
48	TMC	Chlorobenzene	1.072	1.089	-1.6	112	0.00
49	TCM	1,1,1,2-Tetrachloroethane	0.303	0.322	-6.3	117	0.00
50	TCM	Ethylbenzene	1.859	1.967	-5.8	109	0.00
51	TCM	m&p-Xylene	0.786	0.807	-2.7	109	0.00
52	TCM	o-Xylene	0.702	0.741	-5.6	109	0.00

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F05.D
Acq On : 3 Oct 2016 11:18
Operator : YNB
Sample : S16J005-CCV1@B16J003-BS1
Misc : 5ug/L, WATER
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 03 11:57:13 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.03min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
53	TCM	Styrene	1.145	1.210	-5.7	112	0.00
54	TCM	Bromoform	0.116	0.128	-10.3	123	0.00
55	TCM	Isopropylbenzene	1.886	2.001	-6.1	108	0.00
56	S	4-Bromofluorobenzene	0.470	0.475	-1.1	114	0.00
57	TCM	Bromobenzene	0.432	0.448	-3.7	114	0.00
58	TCM	1,1,2,2-Tetrachloroethane	0.178	0.193	-8.4	122	0.00
59	TMC	1,2,3-Trichloropropane	0.123	0.133	-8.1	121	0.00
60	TCM	Propylbenzene	2.340	2.504	-7.0	108	0.00
61	TCM	2-Chlorotoluene	1.396	1.439	-3.1	111	0.00
62	TCM	4-Chlorotoluene	1.577	1.634	-3.6	110	0.00
63	TCM	1,3,5-Trimethylbenzene	1.752	1.799	-2.7	108	0.00
64	TCM	tert-Butylbenzene	1.465	1.516	-3.5	108	0.00
65	TCM	1,2,4-Trimethylbenzene	1.770	1.849	-4.5	109	0.00
66	TCM	sec-Butylbenzene	2.281	2.402	-5.3	107	0.00
67	TCM	1,3-Dichlorobenzene	1.023	1.059	-3.5	112	0.00
68	TCM	p-Isopropyltoluene	2.039	2.139	-4.9	107	0.00
69	TCM	1,4-Dichlorobenzene	1.014	1.051	-3.6	113	0.00
70	S	1,2-Dichlorobenzene-d4	0.510	0.528	-3.5	115	0.00
71	TCM	1,2-Dichlorobenzene	0.830	0.865	-4.2	114	0.00
72	TCM	Butylbenzene	1.916	2.010	-4.9	109	0.00
73	TMC	1,2-Dibromo-3-chloropropane	0.022	0.025	-13.6	126	0.00
74	TCM	1,2,4-Trichlorobenzene	0.586	0.621	-6.0	114	0.00
75	TCM	Hexachlorobutadiene	0.441	0.429	2.7	112	0.00
76	TCM	Naphthalene	0.576	0.665	-15.5	119	0.00
77	TCM	1,2,3-Trichlorobenzene	0.446	0.470	-5.4	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1

C:\msdchem\1\2016\data\100316FW\100316F05.D

Data File Name)0316F05.D
Data File Path I\2016\data\100316FW\
Operator YNB
Sample Name CV1@B16J003-BS1
Instrument Name HP5973F

#	Name	RT	Amount	on column	RECOVERY	QC	LIMIT	STATUS
1)	Dichloromethane-d2	3.80	5	5.00	100%	70	130	PASS
2)	Dichlorodifluoromethane	1.46	5	4.64	93%	53	130	PASS
3)	Chloromethane	1.65	5	4.14	83%	70	124	PASS
4)	Vinyl chloride	1.74	5	4.70	94%	77	127	PASS
5)	Bromomethane	2.09	5	4.14	83%	58	172	PASS
6)	Chloroethane	2.21	5	4.86	97%	75	135	PASS
7)	Trichlorofluoromethane	2.50	5	4.89	98%	74	141	PASS
8)	1,1-Dichloroethene	3.13	5	4.76	95%	80	126	PASS
9)	1,1,2-Trichloro-1,2,2-trifluoroethane	3.16	5	5.04	101%	73	139	PASS
10)	Acetone	3.24	40	39.92	100%	60	125	PASS
11)	Carbon disulfide	3.39	5	5.36	107%	72	121	PASS
12)	Dichloromethane	3.84	5	4.71	94%	73	114	PASS
13)	tert-Butyl alcohol	4.18	100	141.47	141%	42	161	PASS
14)	trans-1,2-Dichloroethene	4.28	5	4.72	94%	86	119	PASS
15)	tert-Butyl methyl ether (MTBE)	4.34	20	20.78	104%	74	127	PASS
16)	1,1-Dichloroethane	4.96	5	4.72	94%	85	117	PASS
17)	Diisopropyl ether	5.18	20	19.92	100%	80	117	PASS
18)	Ethyl-tert-butyl ether	5.77	20	21.04	105%	67	133	PASS
19)	2,2-Dichloropropane	5.89	5	5.44	109%	61	163	PASS
20)	cis-1,2-Dichloroethene	5.91	5	4.75	95%	87	113	PASS
21)	2-Butanone (MEK)	6.02	40	42.62	107%	67	123	PASS
22)	Bromochloromethane	6.29	5	4.89	98%	84	114	PASS
23)	Chloroform	6.47	5	4.78	96%	85	117	PASS
24)	Fluorobenzene	7.78	5	5.00	100%	70	130	PASS
25)	1,1,1-Trichloroethane	6.70	5	5.04	101%	85	126	PASS
26)	Carbon tetrachloride	6.96	5	5.14	103%	77	140	PASS
27)	1,1-Dichloropropene	6.98	5	4.92	98%	88	120	PASS
28)	1,2-Dichloroethane-d4	7.23	5	5.11	102%	65	149	PASS
29)	Benzene	7.30	5	4.98	100%	86	112	PASS
30)	1,2-Dichloroethane	7.35	5	5.15	103%	78	121	PASS
31)	tert-Amyl methyl ether	7.58	20	22.08	110%	63	134	PASS
32)	Trichloroethene	8.37	5	4.97	99%	90	112	PASS
33)	1,2-Dichloropropane	8.73	5	5.13	103%	83	114	PASS
34)	Dibromomethane	8.90	5	5.14	103%	79	118	PASS
35)	Bromodichloromethane	9.21	5	5.13	103%	82	120	PASS
36)	cis-1,3-Dichloropropene	9.95	5	5.74	115%	79	127	PASS
37)	Chlorobenzene-d5	12.78	5	5.00	100%	70	130	PASS
38)	4-Methyl-2-pentanone (MIBK)	10.28	40	43.18	108%	68	132	PASS
39)	Toluene-d8	10.37	5	5.31	106%	85	114	PASS
40)	Toluene	10.48	5	5.29	106%	87	113	PASS
41)	trans-1,3-Dichloropropene	10.89	5	5.86	117%	75	135	PASS
42)	1,1,2-Trichloroethane	11.18	5	5.27	105%	79	116	PASS

C:\msdchem\1\2016\data\100316FW\100316F05.D

43) Tetrachloroethene	11.37	5	5.03	101%	87	118	PASS
44) 1,3-Dichloropropane	11.45	5	5.39	108%	82	116	PASS
45) 2-Hexanone	11.68	40	46.96	117%	64	134	PASS
46) Chlorodibromomethane	11.81	5	5.41	108%	80	125	PASS
47) 1,2-Dibromoethane (EDB)	11.96	5	5.35	107%	85	114	PASS
48) Chlorobenzene	12.82	5	5.08	102%	88	110	PASS
49) 1,1,1,2-Tetrachloroethane	12.99	5	5.32	106%	86	122	PASS
50) Ethylbenzene	13.05	5	5.29	106%	89	117	PASS
51) m&p-Xylene	13.27	10	10.26	103%	90	113	PASS
52) o-Xylene	13.94	5	5.28	106%	90	111	PASS
53) Styrene	13.97	5	5.28	106%	86	113	PASS
54) Bromoform	14.24	5	5.50	110%	70	138	PASS
55) Isopropylbenzene	14.61	5	5.30	106%	90	118	PASS
56) 4-Bromofluorobenzene	14.84	5	5.06	101%	82	111	PASS
57) Bromobenzene	15.07	5	5.18	104%	90	110	PASS
58) 1,1,2,2-Tetrachloroethane	15.16	5	5.40	108%	76	122	PASS
59) 1,2,3-Trichloropropane	15.20	5	5.39	108%	77	119	PASS
60) Propylbenzene	15.34	5	5.35	107%	89	120	PASS
61) 2-Chlorotoluene	15.44	5	5.15	103%	88	114	PASS
62) 4-Chlorotoluene	15.64	5	5.18	104%	90	112	PASS
63) 1,3,5-Trimethylbenzene	15.67	5	5.13	103%	90	115	PASS
64) tert-Butylbenzene	16.24	5	5.17	103%	89	118	PASS
65) 1,2,4-Trimethylbenzene	16.32	5	5.22	104%	90	112	PASS
66) sec-Butylbenzene	16.63	5	5.26	105%	87	122	PASS
67) 1,3-Dichlorobenzene	16.76	5	5.18	104%	88	111	PASS
68) p-Isopropyltoluene	16.92	5	5.25	105%	89	119	PASS
69) 1,4-Dichlorobenzene	16.93	5	5.18	104%	87	111	PASS
70) 1,2-Dichlorobenzene-d4	17.54	5	5.17	103%	76	118	PASS
71) 1,2-Dichlorobenzene	17.57	5	5.21	104%	86	111	PASS
72) Butylbenzene	17.65	5	5.25	105%	86	123	PASS
73) 1,2-Dibromo-3-chloropropane	19.00	20	22.65	113%	68	134	PASS
74) 1,2,4-Trichlorobenzene	20.51	5	5.30	106%	77	119	PASS
75) Hexachlorobutadiene	20.87	5	4.86	97%	81	123	PASS
76) Naphthalene	20.93	5	5.77	115%	54	144	PASS
77) 1,2,3-Trichlorobenzene	21.37	5	5.27	105%	73	122	PASS

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F05.D
Acq On : 3 Oct 2016 11:18
Operator : YNB
Sample : S16J005-CCV1@B16J003-BS1
Misc : 5ug/L, WATER
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 03 11:57:13 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.801	53	121954	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2352586	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1646863	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	311630	5.11	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery = 102.20%			
39) Toluene-d8	10.371	98	2338521	5.31	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery = 106.20%			
56) 4-Bromofluorobenzene	14.842	95	782859	5.06	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery = 101.20%			
70) 1,2-Dichlorobenzene-d4	17.544	152	869526	5.17	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery = 103.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.459	85	640387	4.64	ug/L	99
3) Chloromethane	1.653	50	560083	4.14	ug/L	99
4) Vinyl chloride	1.744	62	611055	4.70	ug/L	99
5) Bromomethane	2.091	94	229031	4.14	ug/L	99
6) Chloroethane	2.207	64	381736	4.86	ug/L	99
7) Trichlorofluoromethane	2.499	101	912296	4.89	ug/L	100
8) 1,1-Dichloroethene	3.132	96	565406	4.76	ug/L	99
9) 1,1,2-Trichloro-1,2,2-...	3.156	101	580856	5.04	ug/L	99
10) Acetone	3.241	43	286428	39.92	ug/L	100
11) Carbon disulfide	3.387	76	1748950	5.36	ug/L	100
12) Dichloromethane	3.837	84	507740	4.71	ug/L #	38
13) tert-Butyl alcohol	4.184	59	222492	141.47	ug/L	94
14) trans-1,2-Dichloroethene	4.275	96	628098	4.72	ug/L	99
15) tert-Butyl methyl ethe...	4.336	73	2766708	20.78	ug/L	98
16) 1,1-Dichloroethane	4.963	63	914600	4.72	ug/L	100
17) Diisopropyl ether	5.182	45	4603324	19.92	ug/L	99
18) Ethyl-tert-butyl ether	5.772	59	3551194	21.04	ug/L	100
19) 2,2-Dichloropropane	5.893	77	661855	5.44	ug/L	99
20) cis-1,2-Dichloroethene	5.912	96	654140	4.75	ug/L	99
21) 2-Butanone (MEK)	6.015	43	464862	42.62	ug/L	100
22) Bromochloromethane	6.289	128	243659	4.89	ug/L	98
23) Chloroform	6.465	83	967316	4.78	ug/L	100
25) 1,1,1-Trichloroethane	6.703	97	864842	5.04	ug/L	100
26) Carbon tetrachloride	6.964	117	804871	5.14	ug/L	100
27) 1,1-Dichloropropene	6.976	75	830400	4.92	ug/L	99
29) Benzene	7.305	78	2467609	4.98	ug/L	100
30) 1,2-Dichloroethane	7.354	62	442374	5.15	ug/L	99
31) tert-Amyl methyl ether	7.585	73	2909167	22.08	ug/L	97
32) Trichloroethene	8.370	95	664328	4.97	ug/L	98
33) 1,2-Dichloropropane	8.728	63	481382	5.13	ug/L	99
34) Dibromomethane	8.905	93	197675	5.14	ug/L	100
35) Bromodichloromethane	9.209	83	583694	5.13	ug/L	100
36) cis-1,3-Dichloropropene	9.951	75	650521	5.74	ug/L	98
38) 4-Methyl-2-pentanone (...	10.280	43	1158605	43.18	ug/L	95
40) Toluene	10.480	92	1667141	5.29	ug/L	99
41) trans-1,3-Dichloropropene	10.894	75	405934	5.86	ug/L	99
42) 1,1,2-Trichloroethane	11.180	83	235392	5.27	ug/L	100
43) Tetrachloroethene	11.375	166	766152	5.03	ug/L	100
44) 1,3-Dichloropropane	11.448	76	502186	5.39	ug/L	100
45) 2-Hexanone	11.679	43	811458	46.96	ug/L	98
46) Chlorodibromomethane	11.813	129	372312	5.41	ug/L	99
47) 1,2-Dibromoethane (EDB)	11.965	107	259691	5.35	ug/L	100

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F05.D
Acq On : 3 Oct 2016 11:18
Operator : YNB
Sample : S16J005-CCV1@B16J003-BS1
Misc : 5ug/L, WATER
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 03 11:57:13 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) Chlorobenzene	12.823	112	1794054	5.08 ug/L	100
49) 1,1,1,2-Tetrachloroethane	12.993	131	530550	5.32 ug/L	99
50) Ethylbenzene	13.054	91	3239457	5.29 ug/L	100
51) m&p-Xylene	13.267	106	2657195	10.26 ug/L	99
52) o-Xylene	13.942	106	1220553	5.28 ug/L	99
53) Styrene	13.972	104	1993038	5.28 ug/L	100
54) Bromoform	14.240	173	210625	5.50 ug/L	99
55) Isopropylbenzene	14.611	105	3294717	5.30 ug/L	100
57) Bromobenzene	15.068	156	737042	5.18 ug/L	99
58) 1,1,2,2-Tetrachloroethane	15.159	83	317291	5.40 ug/L	100
59) 1,2,3-Trichloropropane	15.195	75	218742	5.39 ug/L	99
60) Propylbenzene	15.335	91	4123572	5.35 ug/L	100
61) 2-Chlorotoluene	15.439	91	2369067	5.15 ug/L	99
62) 4-Chlorotoluene	15.639	91	2690245	5.18 ug/L	99
63) 1,3,5-Trimethylbenzene	15.670	105	2962980	5.13 ug/L	100
64) tert-Butylbenzene	16.236	119	2496794	5.17 ug/L	100
65) 1,2,4-Trimethylbenzene	16.321	105	3044860	5.22 ug/L	99
66) sec-Butylbenzene	16.631	105	3955046	5.26 ug/L	100
67) 1,3-Dichlorobenzene	16.759	146	1744161	5.18 ug/L	100
68) p-Isopropyltoluene	16.917	119	3523308	5.25 ug/L	100
69) 1,4-Dichlorobenzene	16.929	146	1730692	5.18 ug/L	100
71) 1,2-Dichlorobenzene	17.574	146	1423874	5.21 ug/L	99
72) Butylbenzene	17.647	91	3310452	5.25 ug/L	99
73) 1,2-Dibromo-3-chloropr...	18.998	75	167285	22.65 ug/L	98
74) 1,2,4-Trichlorobenzene	20.506	180	1023111	5.30 ug/L	100
75) Hexachlorobutadiene	20.871	225	706376	4.86 ug/L	99
76) Naphthalene	20.926	128	1095864	5.77 ug/L	100
77) 1,2,3-Trichlorobenzene	21.370	180	774295	5.27 ug/L	99

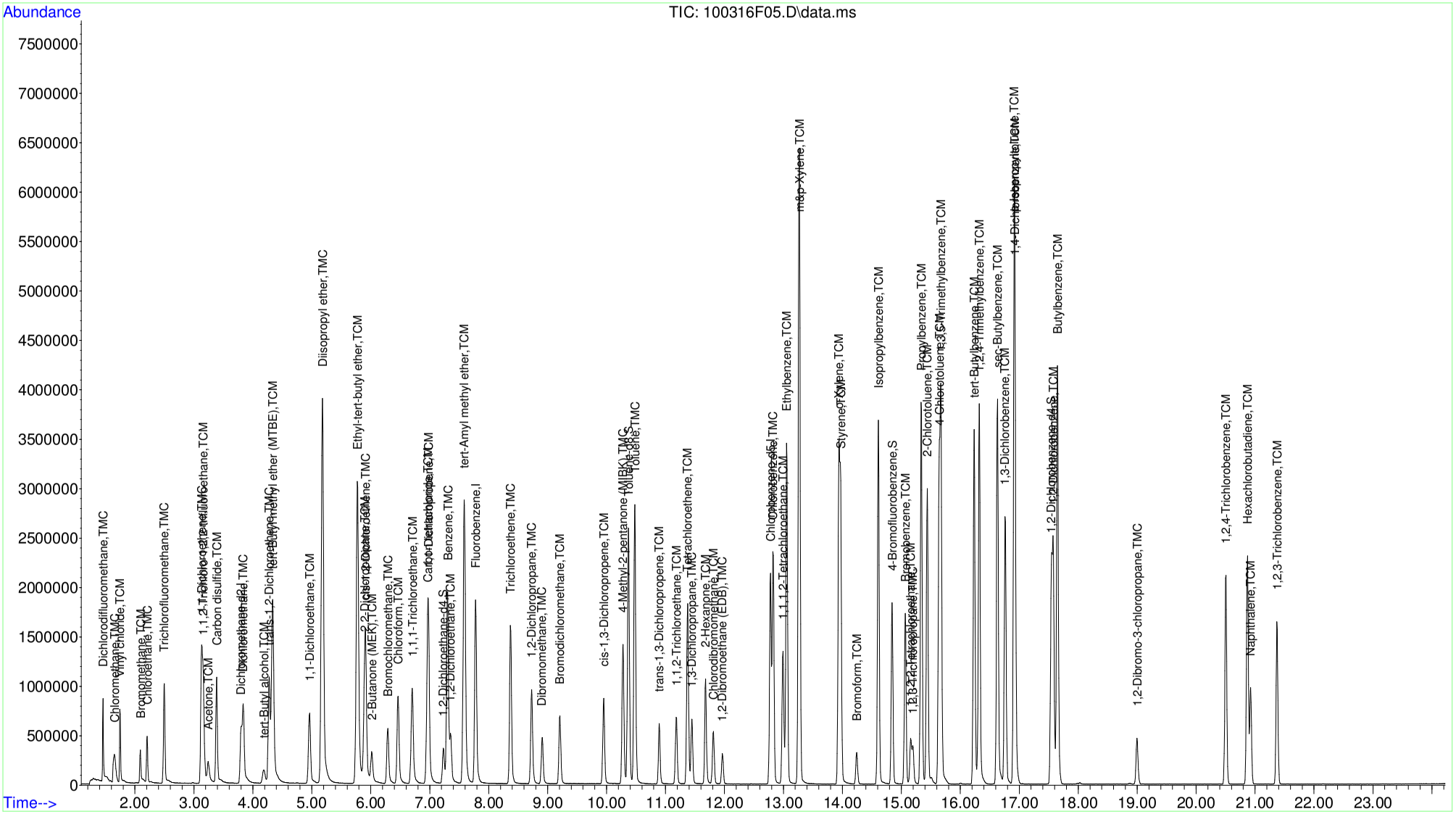
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Table of Contents

Quantitation Report (Not Reviewed)

ata Path : C:\msdchem\1\2016\data\100316FW\
ata File : 100316F05.D
cq On : 3 Oct 2016 11:18
perator : YNB
ample : S16J005-CCV1@B16J003-BS1
isc : 5ug/L, WATER
LS Vial : 12 Sample Multiplier: 1

_uant Time: Oct 03 11:57:13 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration



S16J005-CRL1

C:\msdchem\1\2016\data\100316FW\100316F06.D

1 OUT

Data File Name 00316F06.D
Data File Path \1\2016\data\100316FW\
Operator YNB
Sample Name 16J005-CRL1
Instrument Name HP5973F

#	Name	RT	Amount	on column	RECOVERY	QC	LIMIT	STATUS
1)	Dichloromethane-d2	3.80	5	5.00	100%	60	140	PASS
2)	Dichlorodifluoromethane	1.46	0.50	0.48	97%	60	140	PASS
3)	Chloromethane	1.65	0.50	0.48	97%	60	140	PASS
4)	Vinyl chloride	1.75	0.50	0.49	98%	60	140	PASS
5)	Bromomethane	2.09	0.50	0.44	88%	60	140	PASS
6)	Chloroethane	2.21	0.50	0.51	103%	60	140	PASS
7)	Trichlorofluoromethane	2.50	0.50	0.51	103%	60	140	PASS
8)	1,1-Dichloroethene	3.13	0.50	0.50	100%	60	140	PASS
9)	1,1,2-Trichloro-1,2,2-trifluoroethane	3.16	0.50	0.53	105%	60	140	PASS
10)	Acetone	3.25	4	4.50	113%	60	140	PASS
11)	Carbon disulfide	3.39	0.50	0.56	112%	60	140	PASS
12)	Dichloromethane	3.84	0.50	0.56	112%	60	140	PASS
13)	tert-Butyl alcohol	4.18	10	16.09	161%	60	140	FAIL
14)	trans-1,2-Dichloroethene	4.28	0.50	0.50	101%	60	140	PASS
15)	tert-Butyl methyl ether (MTBE)	4.34	2	2.03	101%	60	140	PASS
16)	1,1-Dichloroethane	4.96	0.50	0.50	101%	60	140	PASS
17)	Diisopropyl ether	5.18	2	2.01	100%	60	140	PASS
18)	Ethyl-tert-butyl ether	5.77	2	2.05	103%	60	140	PASS
19)	2,2-Dichloropropane	5.89	0.50	0.53	105%	60	140	PASS
20)	cis-1,2-Dichloroethene	5.92	0.50	0.50	101%	60	140	PASS
21)	2-Butanone (MEK)	6.02	4	4.75	119%	60	140	PASS
22)	Bromochloromethane	6.29	0.50	0.49	98%	60	140	PASS
23)	Chloroform	6.47	0.50	0.51	101%	60	140	PASS
24)	Fluorobenzene	7.78	5.00	5.00	100%	60	140	PASS
25)	1,1,1-Trichloroethane	6.71	0.50	0.50	101%	60	140	PASS
26)	Carbon tetrachloride	6.96	0.50	0.49	98%	60	140	PASS
27)	1,1-Dichloropropene	6.98	0.50	0.50	100%	60	140	PASS
28)	1,2-Dichloroethane-d4	7.23	5.00	4.98	100%	60	140	PASS
29)	Benzene	7.30	0.50	0.51	102%	60	140	PASS
30)	1,2-Dichloroethane	7.36	0.50	0.51	102%	60	140	PASS
31)	tert-Amyl methyl ether	7.59	2	2.07	103%	60	140	PASS
32)	Trichloroethene	8.37	0.50	0.52	104%	60	140	PASS
33)	1,2-Dichloropropane	8.73	0.50	0.50	100%	60	140	PASS
34)	Dibromomethane	8.91	0.50	0.51	101%	60	140	PASS
35)	Bromodichloromethane	9.21	0.50	0.48	97%	60	140	PASS
36)	cis-1,3-Dichloropropene	9.95	0.50	0.51	102%	60	140	PASS
37)	Chlorobenzene-d5	12.78	5.00	5.00	100%	60	140	PASS
38)	4-Methyl-2-pentanone (MIBK)	10.28	4	4.13	103%	60	140	PASS
39)	Toluene-d8	10.37	5.00	5.53	111%	60	140	PASS
40)	Toluene	10.48	0.50	0.55	110%	60	140	PASS
41)	trans-1,3-Dichloropropene	10.89	0.50	0.47	93%	60	140	PASS
42)	1,1,2-Trichloroethane	11.18	0.50	0.51	102%	60	140	PASS

C:\msdchem\1\2016\data\100316FW\100316F06.D

43) Tetrachloroethene	11.37	0.50	0.50	100%	60	140	PASS
44) 1,3-Dichloropropane	11.45	0.50	0.49	98%	60	140	PASS
45) 2-Hexanone	11.68	4	3.49	87%	60	140	PASS
46) Chlorodibromomethane	11.81	0.50	0.46	92%	60	140	PASS
47) 1,2-Dibromoethane (EDB)	11.96	0.50	0.49	97%	60	140	PASS
48) Chlorobenzene	12.82	0.50	0.51	101%	60	140	PASS
49) 1,1,1,2-Tetrachloroethane	12.99	0.50	0.49	98%	60	140	PASS
50) Ethylbenzene	13.06	0.50	0.42	85%	60	140	PASS
51) m&p-Xylene	13.27	1	0.85	85%	60	140	PASS
52) o-Xylene	13.94	0.50	0.38	77%	60	140	PASS
53) Styrene	13.97	0.50	0.40	81%	60	140	PASS
54) Bromoform	14.24	0.50	0.46	92%	60	140	PASS
55) Isopropylbenzene	14.61	0.50	0.37	75%	60	140	PASS
56) 4-Bromofluorobenzene	14.84	5.00	4.80	96%	60	140	PASS
57) Bromobenzene	15.07	0.50	0.47	94%	60	140	PASS
58) 1,1,2,2-Tetrachloroethane	15.16	0.50	0.52	104%	60	140	PASS
59) 1,2,3-Trichloropropane	15.20	0.50	0.52	104%	60	140	PASS
60) Propylbenzene	15.34	0.50	0.42	84%	60	140	PASS
61) 2-Chlorotoluene	15.44	0.50	0.45	91%	60	140	PASS
62) 4-Chlorotoluene	15.64	0.50	0.43	86%	60	140	PASS
63) 1,3,5-Trimethylbenzene	15.67	0.50	0.43	86%	60	140	PASS
64) tert-Butylbenzene	16.24	0.50	0.40	80%	60	140	PASS
65) 1,2,4-Trimethylbenzene	16.32	0.50	0.41	82%	60	140	PASS
66) sec-Butylbenzene	16.63	0.50	0.42	84%	60	140	PASS
67) 1,3-Dichlorobenzene	16.76	0.50	0.48	96%	60	140	PASS
68) p-Isopropyltoluene	16.92	0.50	0.40	80%	60	140	PASS
69) 1,4-Dichlorobenzene	16.93	0.50	0.49	97%	60	140	PASS
70) 1,2-Dichlorobenzene-d4	17.54	5.00	4.91	98%	60	140	PASS
71) 1,2-Dichlorobenzene	17.58	0.50	0.52	103%	60	140	PASS
72) Butylbenzene	17.65	0.50	0.44	88%	60	140	PASS
73) 1,2-Dibromo-3-chloropropane	18.99	2.00	2.08	104%	60	140	PASS
74) 1,2,4-Trichlorobenzene	20.50	0.50	0.43	87%	60	140	PASS
75) Hexachlorobutadiene	20.87	0.50	0.57	115%	60	140	PASS
76) Naphthalene	20.93	0.50	0.35	71%	60	140	PASS
77) 1,2,3-Trichlorobenzene	21.37	0.50	0.47	95%	60	140	PASS

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F06.D
Acq On : 3 Oct 2016 11:51
Operator : YNB
Sample : S16J005-CRL1
Misc : 0.5ug/L, WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 03 12:17:55 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.801	53	117228	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2304667	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1563109	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	297698	4.98	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	=	99.60%	
39) Toluene-d8	10.371	98	2310899	5.53	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	=	110.60%	
56) 4-Bromofluorobenzene	14.842	95	705611	4.80	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	=	96.00%	
70) 1,2-Dichlorobenzene-d4	17.544	152	783266	4.91	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	=	98.20%	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.459	85	63950	0.48	ug/L	95
3) Chloromethane	1.653	50	63077	0.48	ug/L	97
4) Vinyl chloride	1.751	62	61425	0.49	ug/L	94
5) Bromomethane	2.091	94	23480	0.44	ug/L	98
6) Chloroethane	2.207	64	38779	0.51	ug/L	95
7) Trichlorofluoromethane	2.499	101	92095	0.51	ug/L	96
8) 1,1-Dichloroethene	3.132	96	57108	0.50	ug/L	98
9) 1,1,2-Trichloro-1,2,2-...	3.156	101	58149	0.53	ug/L	99
10) Acetone	3.247	43	31042	4.50	ug/L	96
11) Carbon disulfide	3.387	76	175168	0.56	ug/L	99
12) Dichloromethane	3.837	84	58047	0.56	ug/L #	18
13) tert-Butyl alcohol	4.184	59	24328	16.09	ug/L	91
14) trans-1,2-Dichloroethene	4.281	96	64590	0.50	ug/L	98
15) tert-Butyl methyl ethe...	4.336	73	259787	2.03	ug/L	99
16) 1,1-Dichloroethane	4.963	63	93708	0.50	ug/L	97
17) Diisopropyl ether	5.182	45	445405	2.01	ug/L	100
18) Ethyl-tert-butyl ether	5.772	59	332884	2.05	ug/L	100
19) 2,2-Dichloropropane	5.893	77	61519	0.53	ug/L	97
20) cis-1,2-Dichloroethene	5.918	96	66769	0.50	ug/L	97
21) 2-Butanone (MEK)	6.015	43	49828	4.75	ug/L	93
22) Bromochloromethane	6.289	128	23573	0.49	ug/L	98
23) Chloroform	6.465	83	98237	0.51	ug/L	99
25) 1,1,1-Trichloroethane	6.709	97	84678	0.50	ug/L	99
26) Carbon tetrachloride	6.964	117	75126	0.49	ug/L	100
27) 1,1-Dichloropropene	6.976	75	82574	0.50	ug/L	98
29) Benzene	7.305	78	247620	0.51	ug/L	98
30) 1,2-Dichloroethane	7.360	62	42848	0.51	ug/L	94
31) tert-Amyl methyl ether	7.591	73	266771	2.07	ug/L	100
32) Trichloroethene	8.369	95	68248	0.52	ug/L	96
33) 1,2-Dichloropropane	8.728	63	46143	0.50	ug/L	98
34) Dibromomethane	8.911	93	19060	0.51	ug/L	98
35) Bromodichloromethane	9.209	83	53831	0.48	ug/L	99
36) cis-1,3-Dichloropropene	9.951	75	56833	0.51	ug/L	98
38) 4-Methyl-2-pentanone (...	10.280	43	105288	4.13	ug/L	95
40) Toluene	10.480	92	164159	0.55	ug/L	98
41) trans-1,3-Dichloropropene	10.894	75	30694	0.47	ug/L	98
42) 1,1,2-Trichloroethane	11.180	83	21639	0.51	ug/L	98
43) Tetrachloroethene	11.375	166	72497	0.50	ug/L	99
44) 1,3-Dichloropropane	11.448	76	43187	0.49	ug/L	99
45) 2-Hexanone	11.679	43	57274	3.49	ug/L	91
46) Chlorodibromomethane	11.813	129	30132	0.46	ug/L	96
47) 1,2-Dibromoethane (EDB)	11.965	107	22401	0.49	ug/L	99

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F06.D
Acq On : 3 Oct 2016 11:51
Operator : YNB
Sample : S16J005-CRL1
Misc : 0.5ug/L, WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 03 12:17:55 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) Chlorobenzene	12.823	112	169215	0.51 ug/L	94
49) 1,1,1,2-Tetrachloroethane	12.993	131	46316	0.49 ug/L	94
50) Ethylbenzene	13.060	91	245718	0.42 ug/L	100
51) m&p-Xylene	13.267	106	210018	0.85 ug/L	99
52) o-Xylene	13.942	106	84522	0.38 ug/L	99
53) Styrene	13.966	104	144865	0.40 ug/L	99
54) Bromoform	14.240	173	16673	0.46 ug/L	99
55) Isopropylbenzene	14.611	105	220907	0.37 ug/L	99
57) Bromobenzene	15.067	156	63623	0.47 ug/L	99
58) 1,1,2,2-Tetrachloroethane	15.159	83	29118	0.52 ug/L	98
59) 1,2,3-Trichloropropane	15.195	75	19948	0.52 ug/L	97
60) Propylbenzene	15.341	91	308583	0.42 ug/L	99
61) 2-Chlorotoluene	15.439	91	197844	0.45 ug/L	98
62) 4-Chlorotoluene	15.639	91	212444	0.43 ug/L	99
63) 1,3,5-Trimethylbenzene	15.670	105	235405	0.43 ug/L	100
64) tert-Butylbenzene	16.236	119	183902	0.40 ug/L	97
65) 1,2,4-Trimethylbenzene	16.321	105	226050	0.41 ug/L	99
66) sec-Butylbenzene	16.631	105	297870	0.42 ug/L	99
67) 1,3-Dichlorobenzene	16.759	146	153289	0.48 ug/L	99
68) p-Isopropyltoluene	16.917	119	253888	0.40 ug/L	98
69) 1,4-Dichlorobenzene	16.929	146	153763	0.49 ug/L	100
71) 1,2-Dichlorobenzene	17.580	146	133730	0.52 ug/L	94
72) Butylbenzene	17.647	91	264644	0.44 ug/L	100
73) 1,2-Dibromo-3-chloropr...	18.991	75	14547	2.08 ug/L	98
74) 1,2,4-Trichlorobenzene	20.500	180	79439	0.43 ug/L	100
75) Hexachlorobutadiene	20.871	225	79065	0.57 ug/L	99
76) Naphthalene	20.926	128	63543	0.35 ug/L	99
77) 1,2,3-Trichlorobenzene	21.370	180	66214	0.47 ug/L	99

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

Quantitation Report (Not Reviewed)

ata Path : C:\msdchem\1\2016\data\100316FW\
ata File : 100316F06.D
cq On : 3 Oct 2016 11:51
perator : YNB
ample : S16J005-CRL1
isc : 0.5ug/L, WATER
LS Vial : 13 Sample Multiplier: 1

_uant Time: Oct 03 12:17:55 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

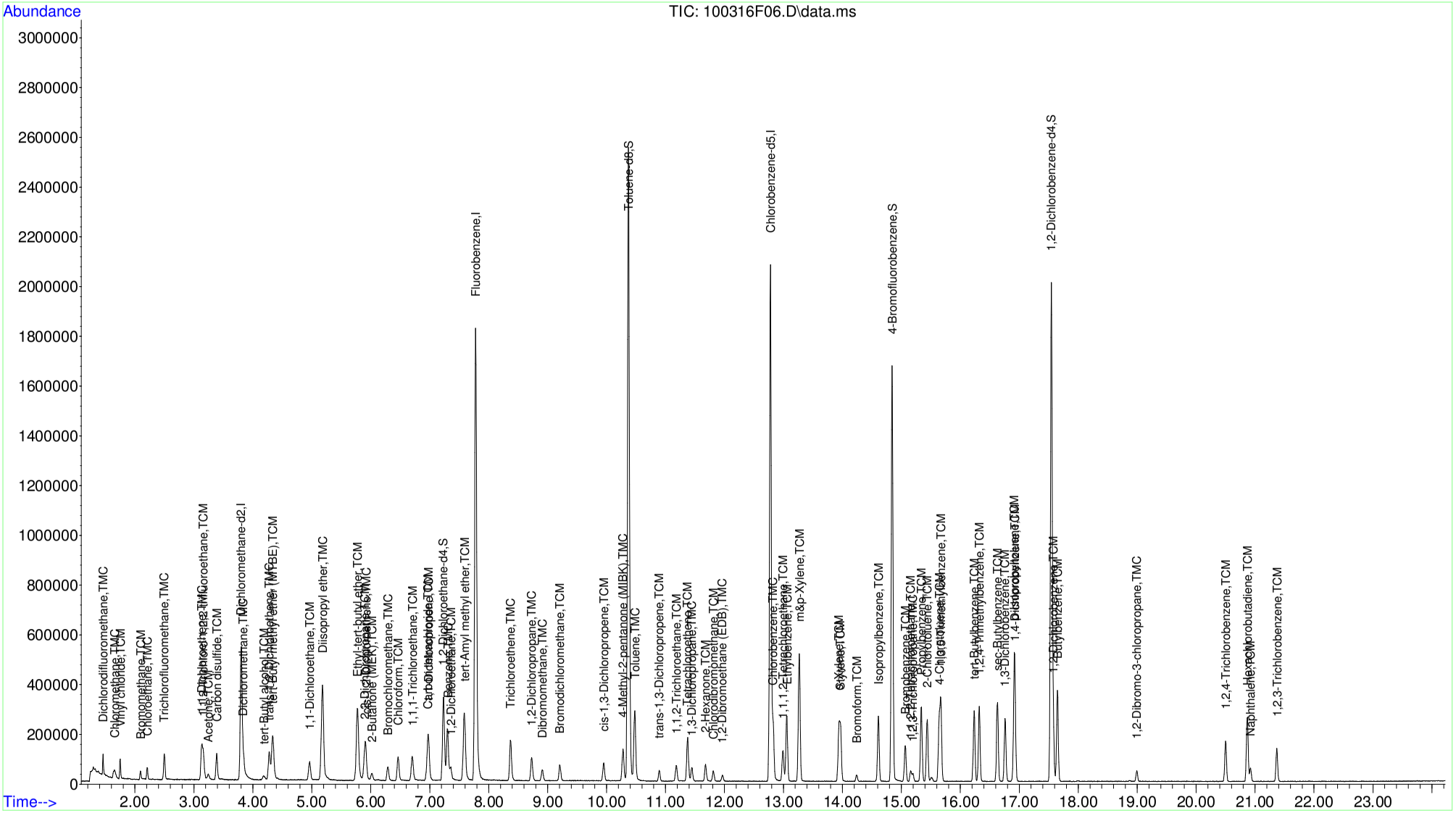


Table of Contents

Page 219 of 774 1609102 DATA_PKG (Rev1).PDF 10/14/16 14:07:43

B16J003-BLK1

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F07.D
Acq On : 3 Oct 2016 12:24
Operator : YNB
Sample : B16J003-BLK1
Misc : BLK, WATER
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 03 13:00:21 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.801	53	120220	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2309262	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1559568	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	305286	5.10	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery = 102.00%			
39) Toluene-d8	10.371	98	2316426	5.55	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery = 111.00%			
56) 4-Bromofluorobenzene	14.842	95	646688	4.41	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery = 88.20%			
70) 1,2-Dichlorobenzene-d4	17.543	152	730897	4.59	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery = 91.80%			

Target Compounds Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F07.D
Acq On : 3 Oct 2016 12:24
Operator : YNB
Sample : B16J003-BLK1
Misc : BLK, WATER
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 03 13:00:21 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

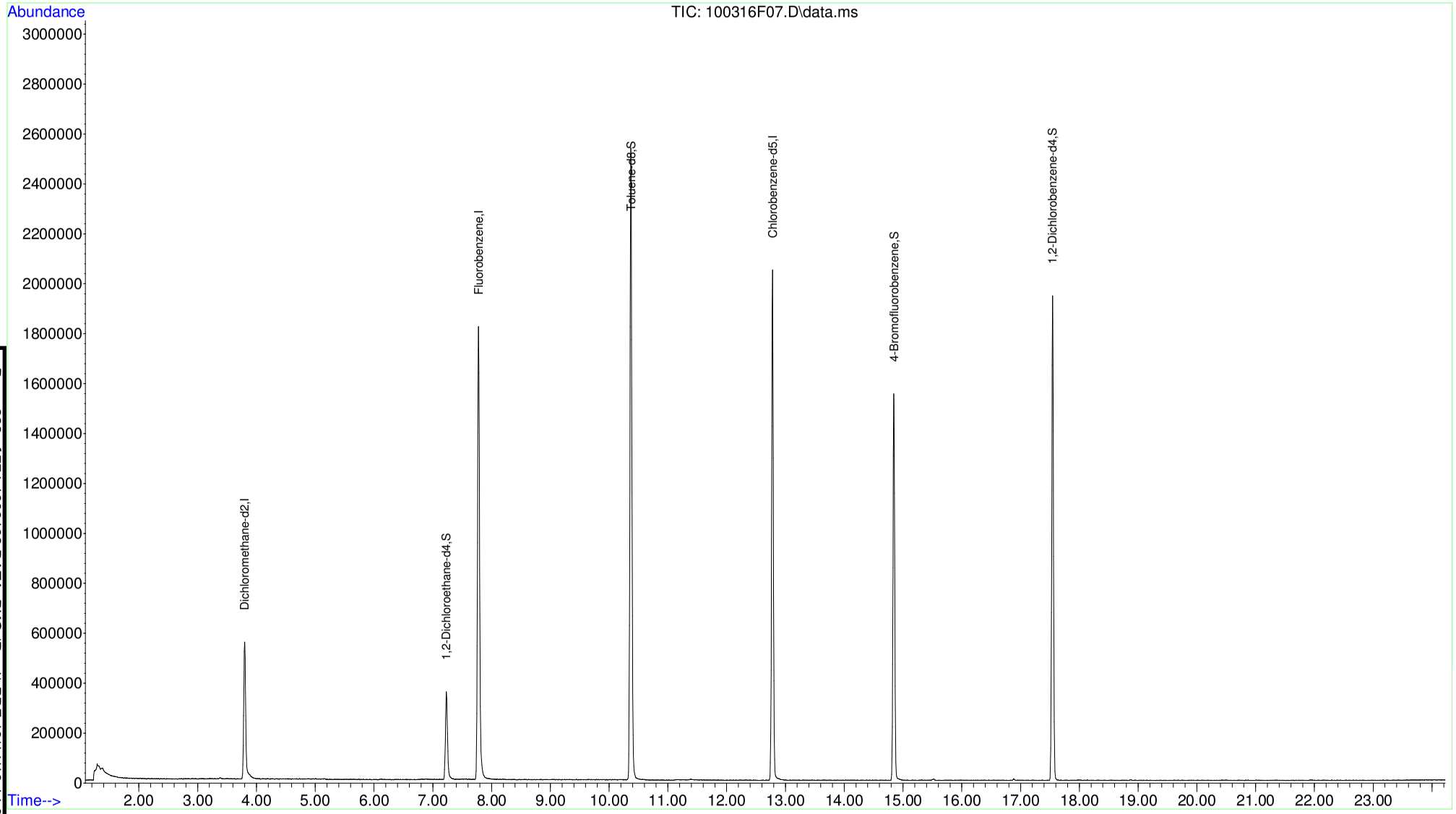
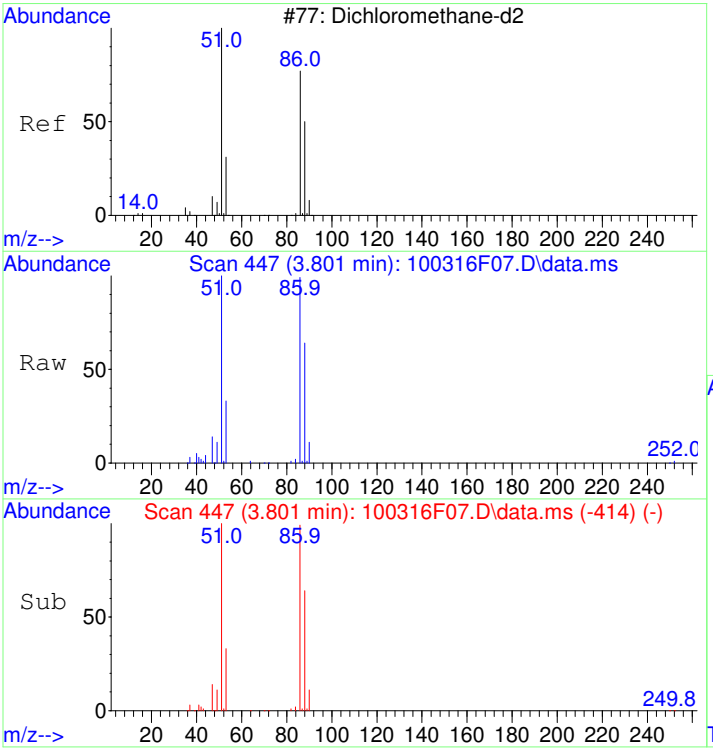


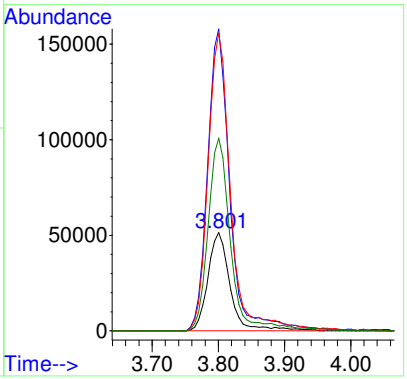
Table of Contents

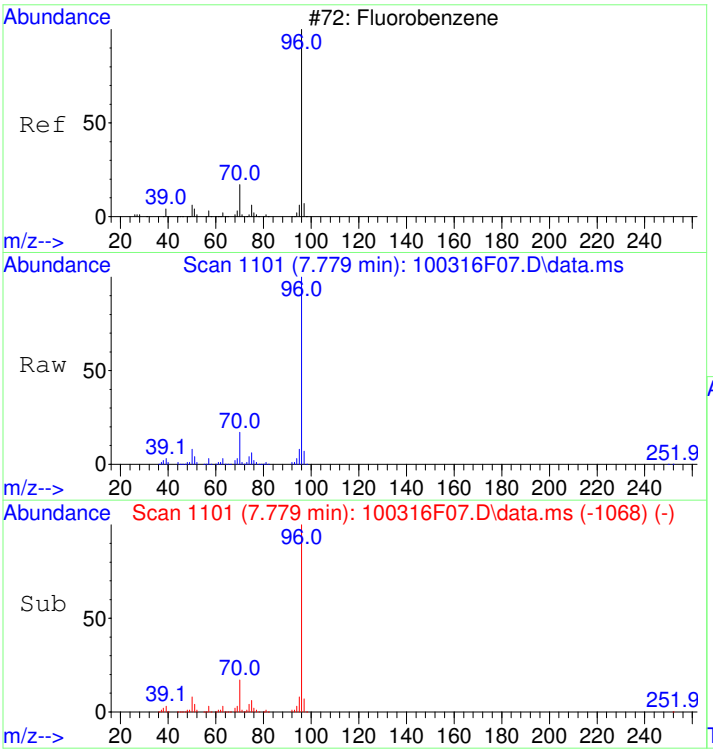


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.801 min Scan# 447
Delta R.T. -0.000 min
Lab File: 100316F07.D
Acq: 3 Oct 2016 12:24

Tgt Ion: 53 Resp: 120220

Ion	Ratio	Lower	Upper
53	100		
51	309.4	428.6	468.6#
86	309.4	0.0	20.0#
88	198.4	219.5	259.5#

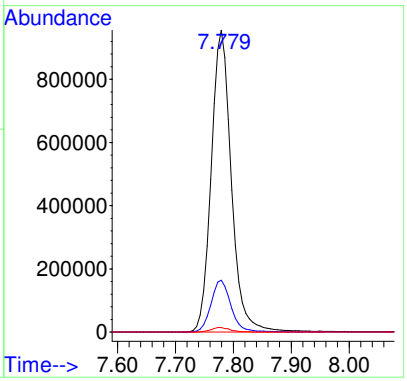


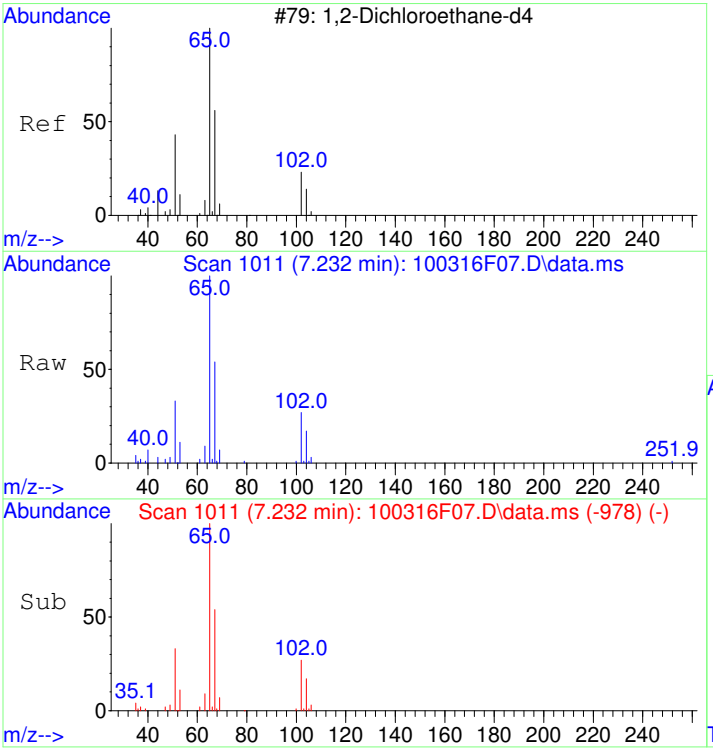


#24
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.779 min Scan# 1101
Delta R.T. -0.000 min
Lab File: 100316F07.D
Acq: 3 Oct 2016 12:24

Tgt Ion: 96 Resp: 2309262

Ion	Ratio	Lower	Upper
96	100		
70	17.2	0.0	37.3
77	1.5	0.0	21.6

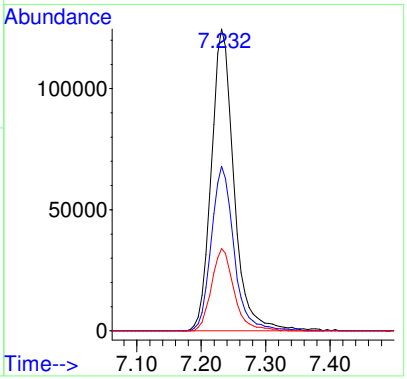


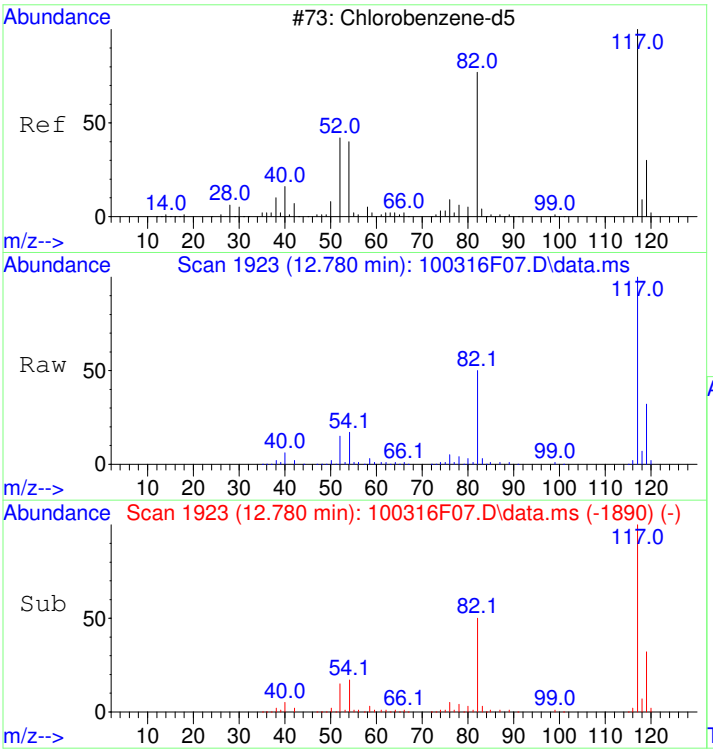


#28
1,2-Dichloroethane-d4
Concen: 5.10 ug/L
RT: 7.232 min Scan# 1011
Delta R.T. -0.000 min
Lab File: 100316F07.D
Acq: 3 Oct 2016 12:24

Tgt Ion: 65 Resp: 305286

Ion	Ratio	Lower	Upper
65	100		
67	54.5	35.3	75.3
102	27.0	6.5	46.5

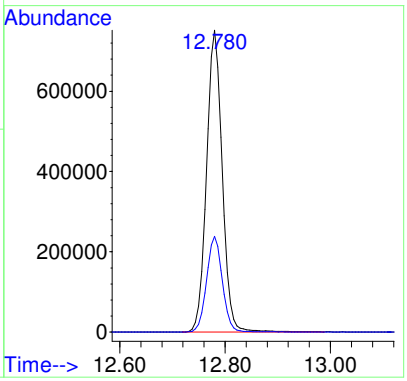


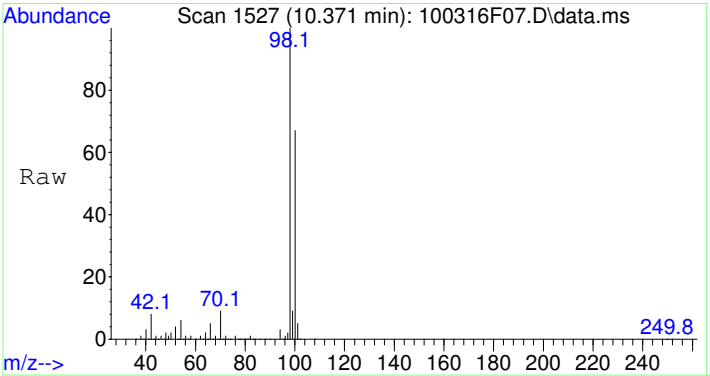


#37
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.780 min Scan# 1923
Delta R.T. -0.000 min
Lab File: 100316F07.D
Acq: 3 Oct 2016 12:24

Tgt Ion:117 Resp: 1559568

Ion	Ratio	Lower	Upper
117	100		
119	31.9	11.9	51.9

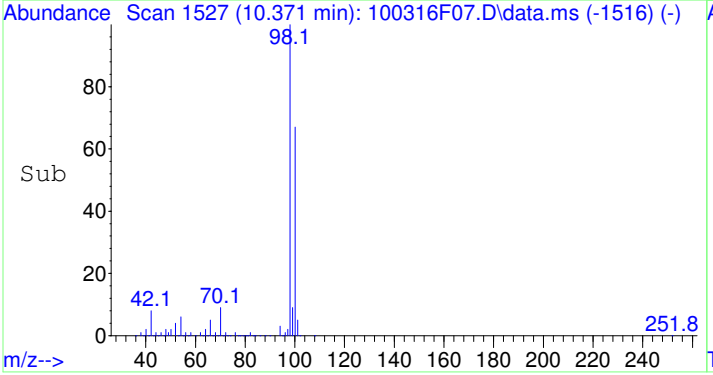


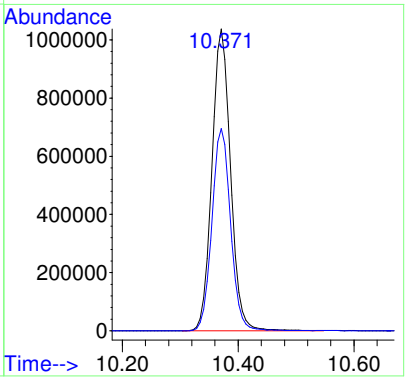


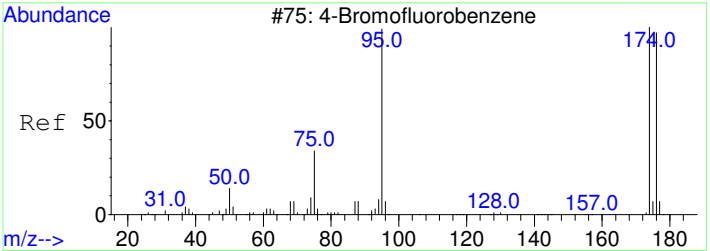
#39
Toluene-d8
Concen: 5.55 ug/L
RT: 10.371 min Scan# 1527
Delta R.T. -0.000 min
Lab File: 100316F07.D
Acq: 3 Oct 2016 12:24

Tgt Ion: 98 Resp: 2316426

Ion	Ratio	Lower	Upper
98	100		
100	67.3	46.3	86.3



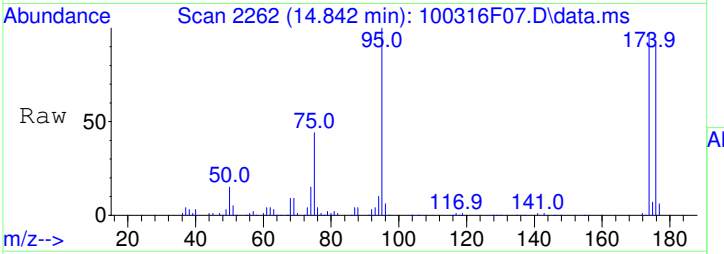


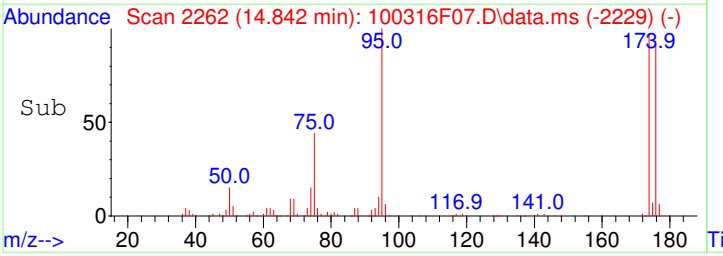


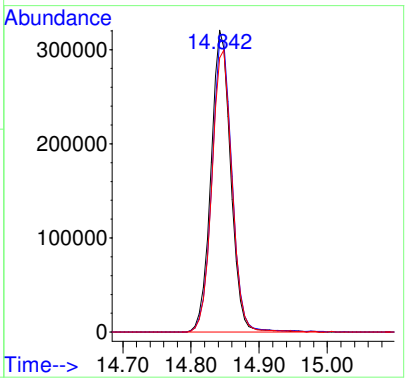
#56
4-Bromofluorobenzene
Concen: 4.41 ug/L
RT: 14.842 min Scan# 2262
Delta R.T. -0.000 min
Lab File: 100316F07.D
Acq: 3 Oct 2016 12:24

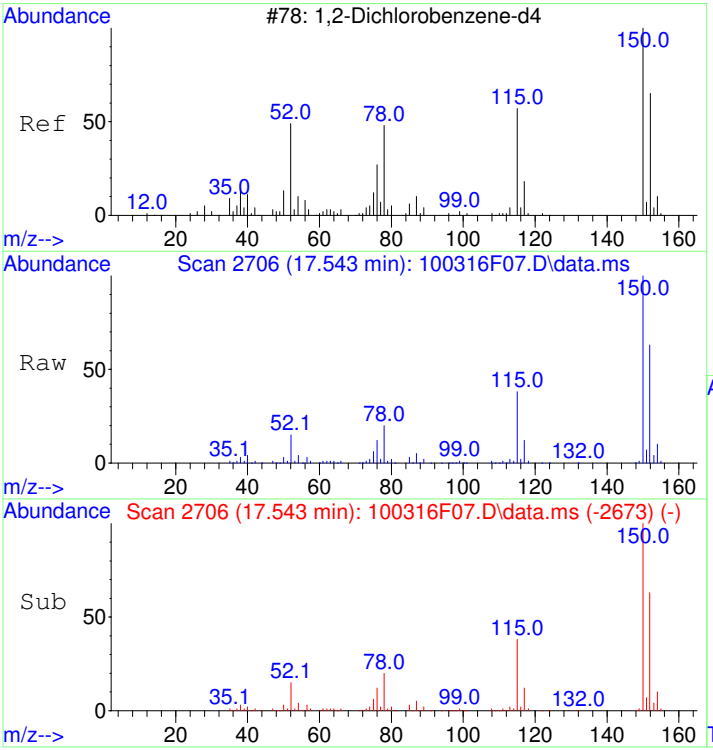
Tgt Ion: 95 Resp: 646688

Ion	Ratio	Lower	Upper
95	100		
174	98.6	78.7	118.7
176	94.9	75.6	115.6





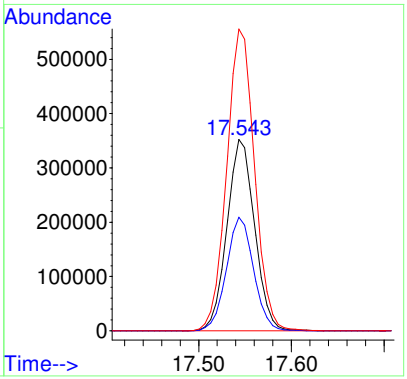




#70
1,2-Dichlorobenzene-d4
Concen: 4.59 ug/L
RT: 17.543 min Scan# 2706
Delta R.T. -0.000 min
Lab File: 100316F07.D
Acq: 3 Oct 2016 12:24

Tgt Ion:152 Resp: 730897

Ion	Ratio	Lower	Upper
152	100		
115	58.4	38.1	78.1
150	158.7	155.0	195.0



1609102-06

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F09.D
Acq On : 3 Oct 2016 13:30
Operator : YNB
Sample : 1609102-06
Misc : , WATER
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Oct 03 14:54:59 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichloromethane-d2	3.801	53	124218	5.00	ug/L	# 0.00
24) Fluorobenzene	7.779	96	2365710	5.00	ug/L	0.00
37) Chlorobenzene-d5	12.780	117	1575465	5.00	ug/L	0.00
System Monitoring Compounds						
28) 1,2-Dichloroethane-d4	7.232	65	317273	5.17	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery = 103.40%			
39) Toluene-d8	10.371	98	2366302	5.61	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery = 112.20%			
56) 4-Bromofluorobenzene	14.842	95	658089	4.44	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery = 88.80%			
70) 1,2-Dichlorobenzene-d4	17.543	152	746230	4.64	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery = 92.80%			
Target Compounds						Qvalue
10) Acetone	3.235	43	21350	2.92	ug/L	95
48) Chlorobenzene	12.823	112	113518	0.34	ug/L	90

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\2016\data\100316FW\
Data File : 100316F09.D
Acq On : 3 Oct 2016 13:30
Operator : YNB
Sample : 1609102-06
Misc : , WATER
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Oct 03 14:54:59 2016
Quant Method : C:\msdchem\1\2016\method\100316FVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Sep 13 09:00:16 2016
Response via : Initial Calibration

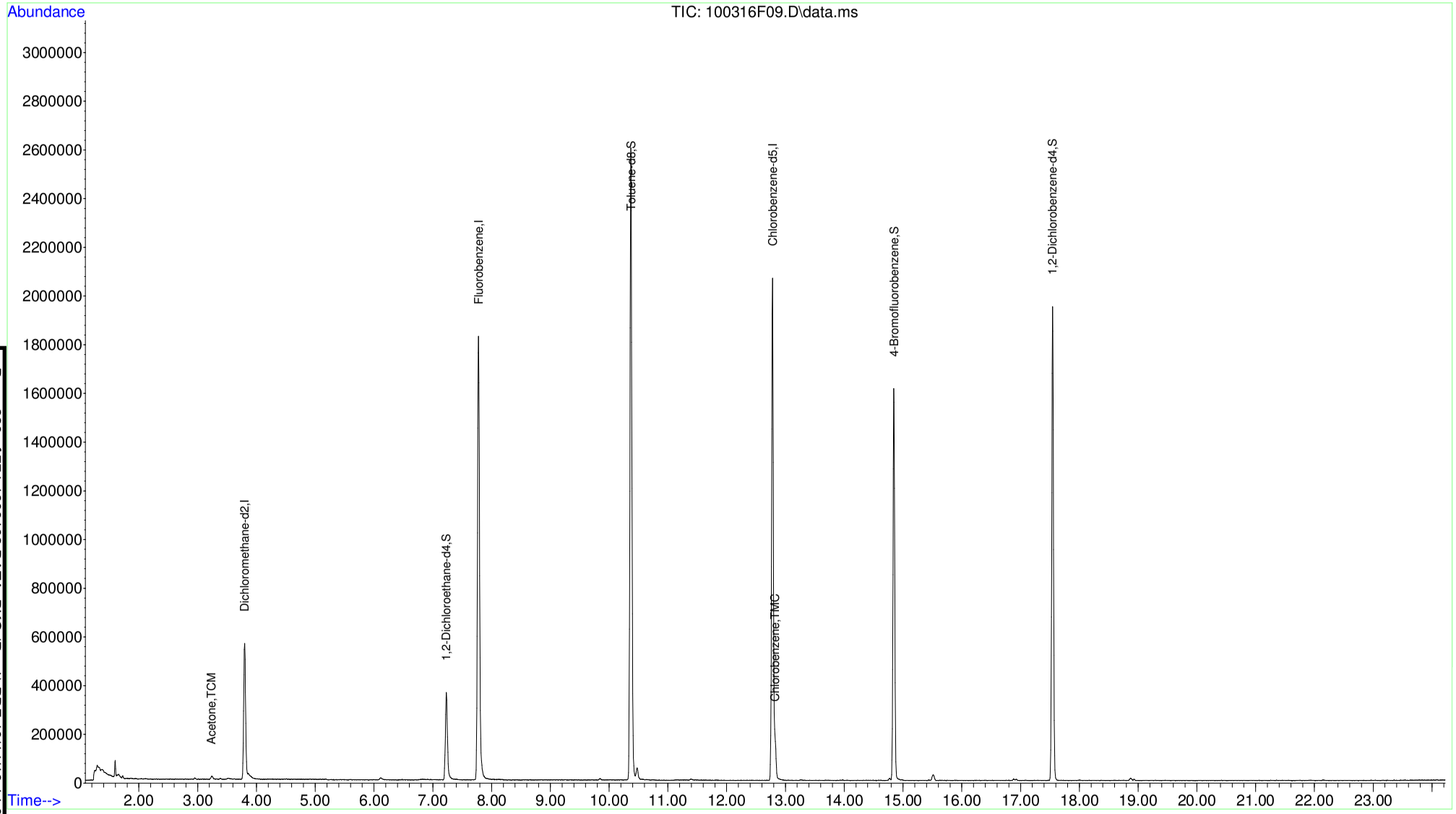
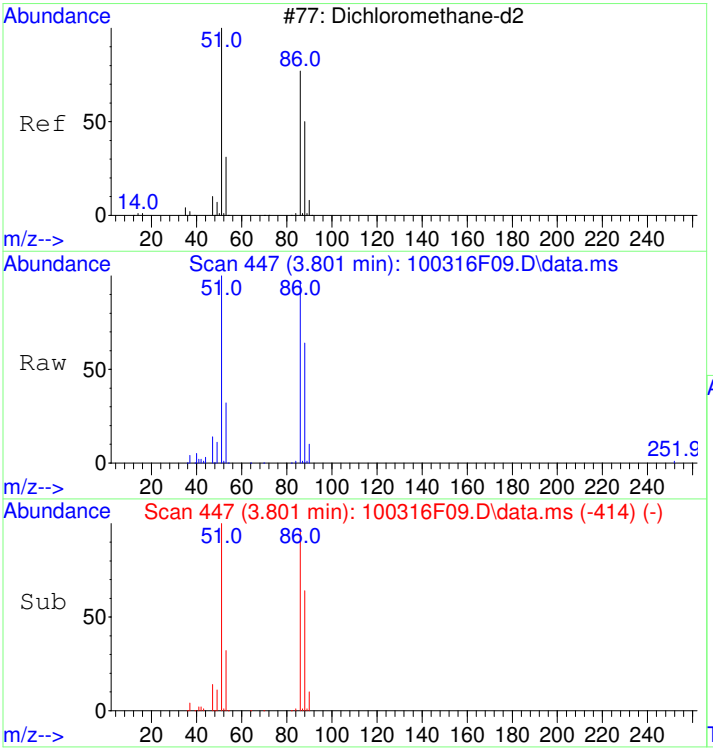


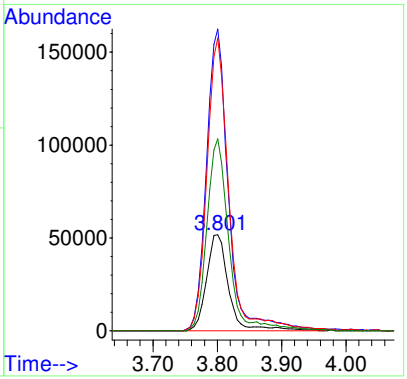
Table of Contents

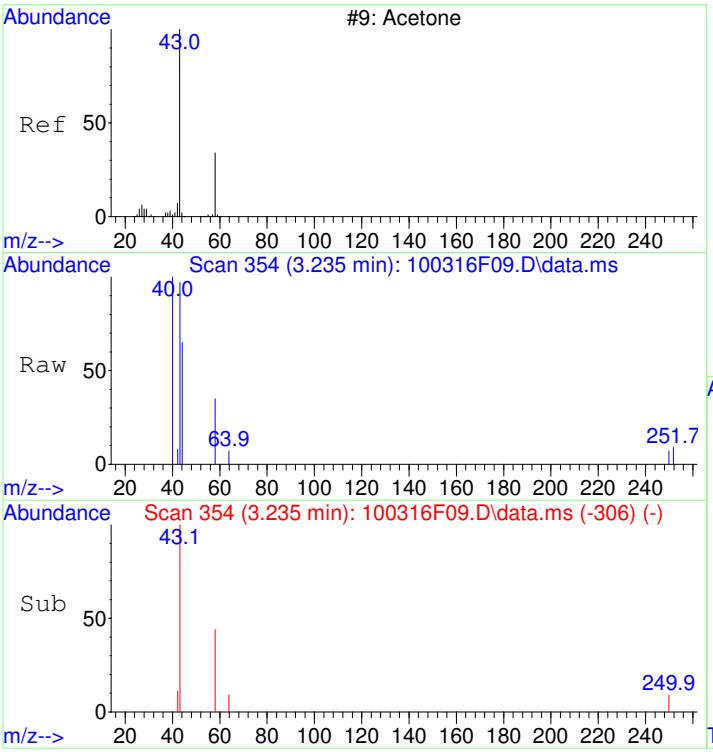


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.801 min Scan# 447
Delta R.T. -0.000 min
Lab File: 100316F09.D
Acq: 3 Oct 2016 13:30

Tgt Ion: 53 Resp: 124218

Ion	Ratio	Lower	Upper
53	100		
51	312.6	428.6	468.6#
86	301.5	0.0	20.0#
88	197.5	219.5	259.5#

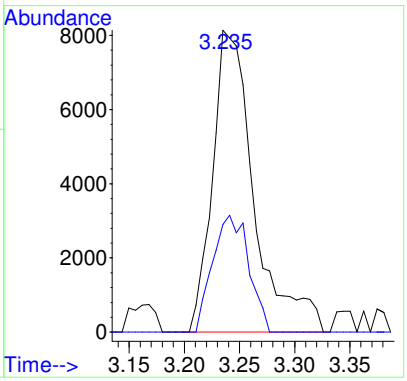


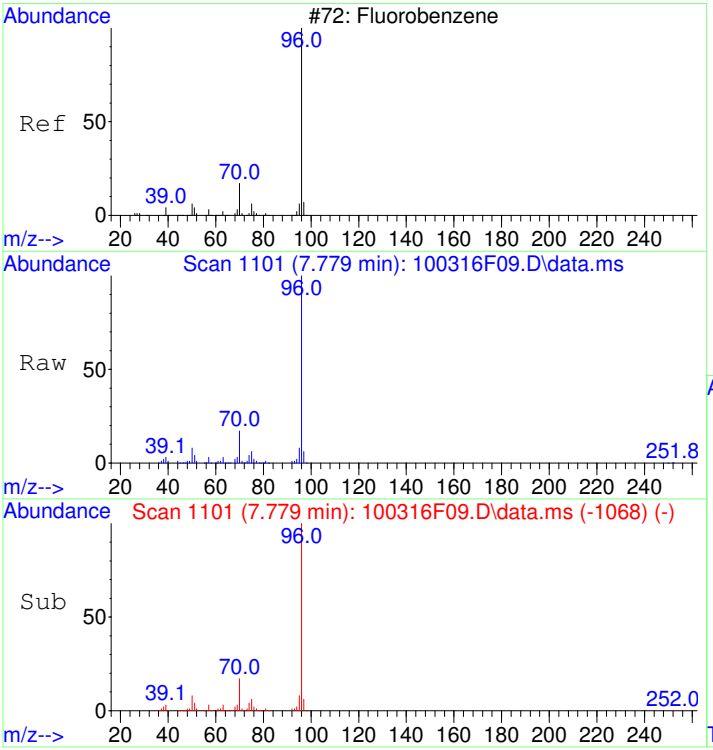


#10
Acetone
Concen: 2.92 ug/L
RT: 3.235 min Scan# 354
Delta R.T. -0.006 min
Lab File: 100316F09.D
Acq: 3 Oct 2016 13:30

Tgt Ion: 43 Resp: 21350

Ion	Ratio	Lower	Upper
43	100		
58	33.6	16.3	56.3

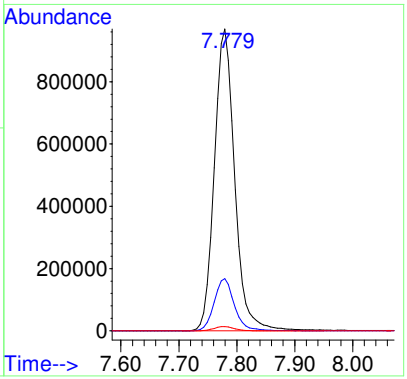


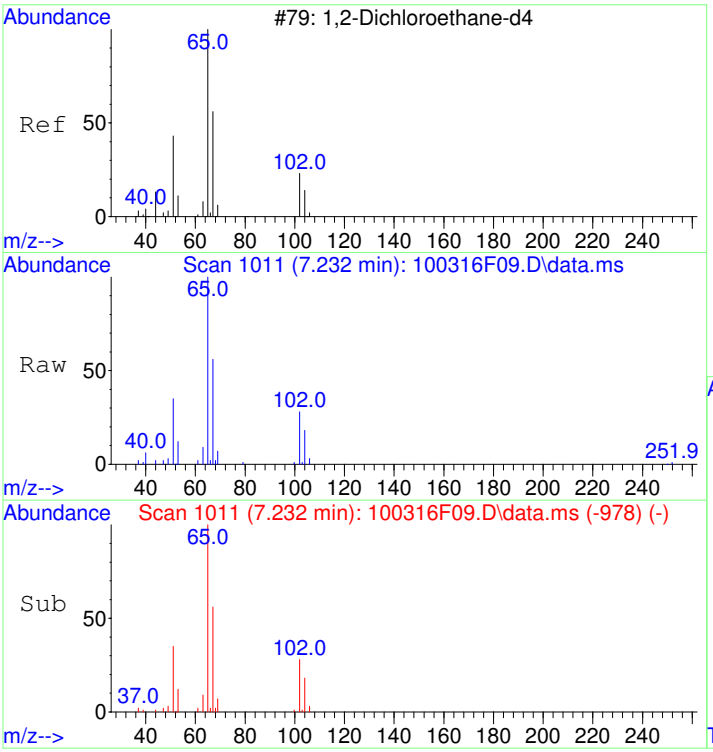


#24
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.779 min Scan# 1101
Delta R.T. -0.000 min
Lab File: 100316F09.D
Acq: 3 Oct 2016 13:30

Tgt Ion: 96 Resp: 2365710

Ion	Ratio	Lower	Upper
96	100		
70	17.2	0.0	37.3
77	1.5	0.0	21.6

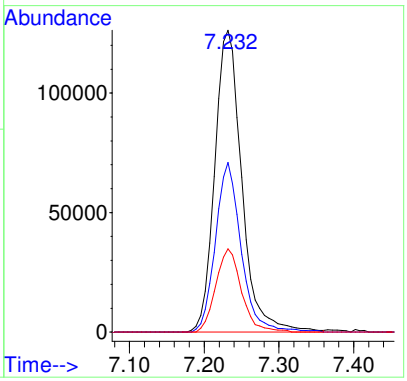


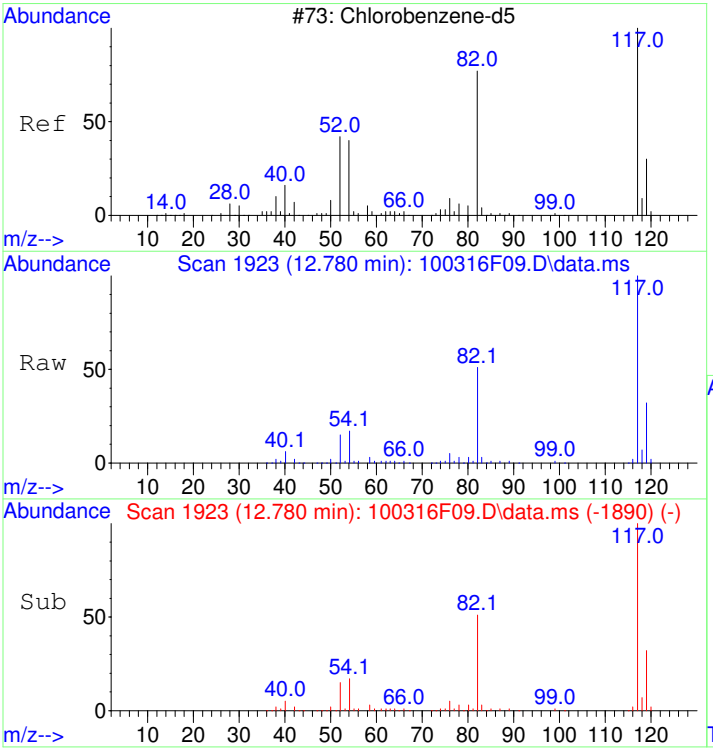


#28
1,2-Dichloroethane-d4
Concen: 5.17 ug/L
RT: 7.232 min Scan# 1011
Delta R.T. -0.000 min
Lab File: 100316F09.D
Acq: 3 Oct 2016 13:30

Tgt Ion: 65 Resp: 317273

Ion	Ratio	Lower	Upper
65	100		
67	53.5	35.3	75.3
102	26.2	6.5	46.5

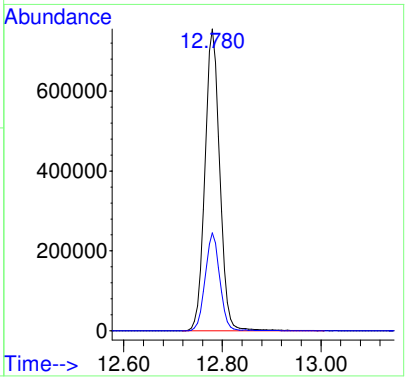


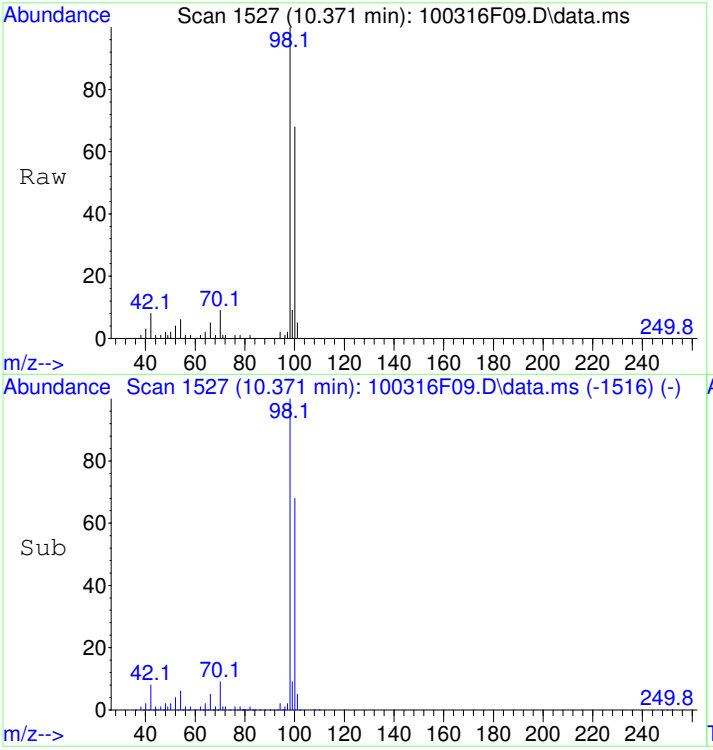


#37
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.780 min Scan# 1923
Delta R.T. -0.000 min
Lab File: 100316F09.D
Acq: 3 Oct 2016 13:30

Tgt Ion:117 Resp: 1575465

Ion	Ratio	Lower	Upper
117	100		
119	32.0	11.9	51.9

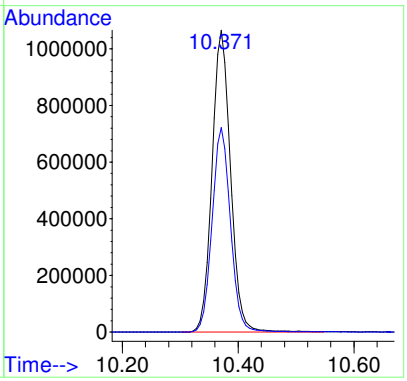


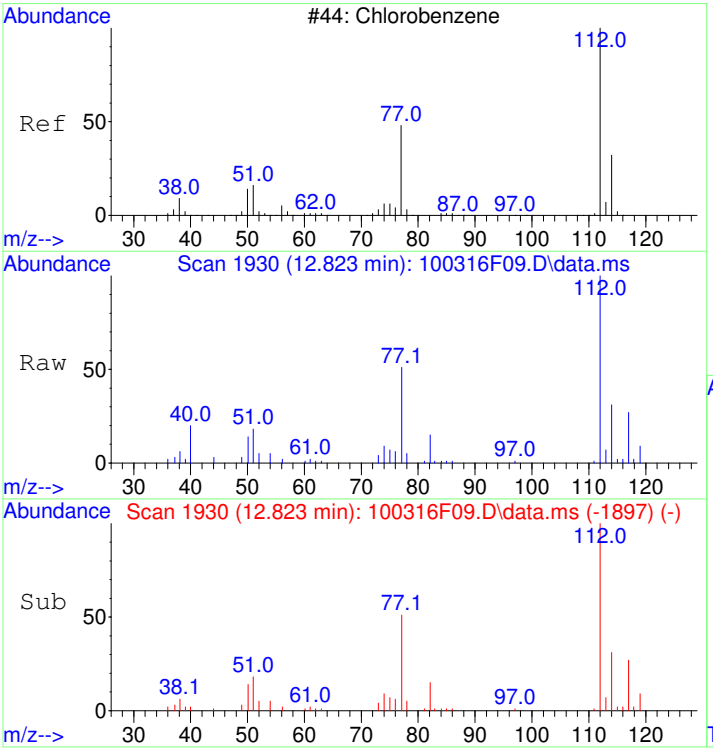


#39
Toluene-d8
Concen: 5.61 ug/L
RT: 10.371 min Scan# 1527
Delta R.T. -0.000 min
Lab File: 100316F09.D
Acq: 3 Oct 2016 13:30

Tgt Ion: 98 Resp: 2366302

Ion	Ratio	Lower	Upper
98	100		
100	67.3	46.3	86.3

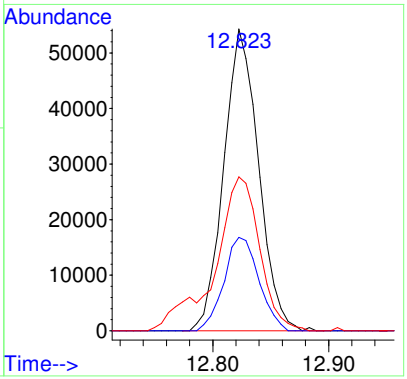


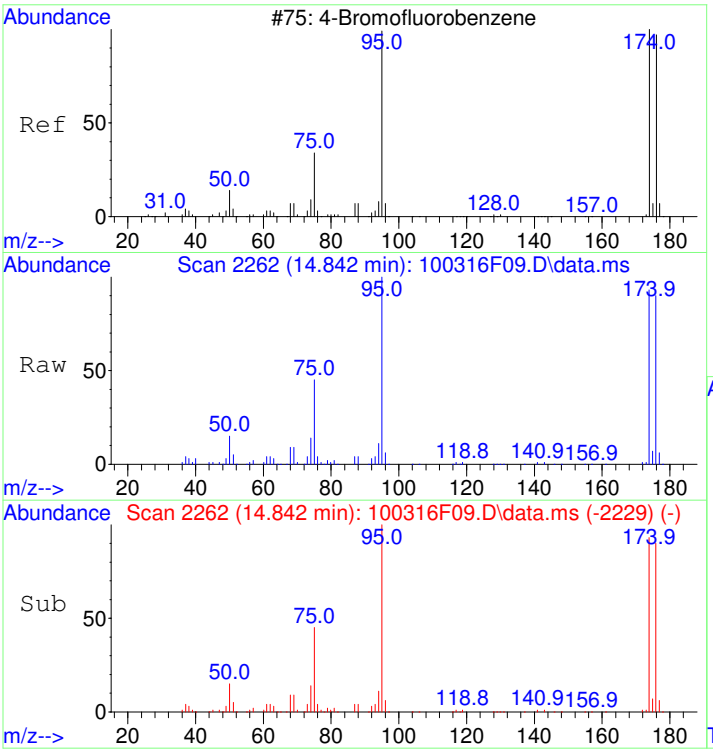


#48
Chlorobenzene
Concen: 0.34 ug/L
RT: 12.823 min Scan# 1930
Delta R.T. -0.000 min
Lab File: 100316F09.D
Acq: 3 Oct 2016 13:30

Tgt Ion:112 Resp: 113518

Ion	Ratio	Lower	Upper
112	100		
114	31.2	11.9	51.9
77	65.5	34.5	74.5

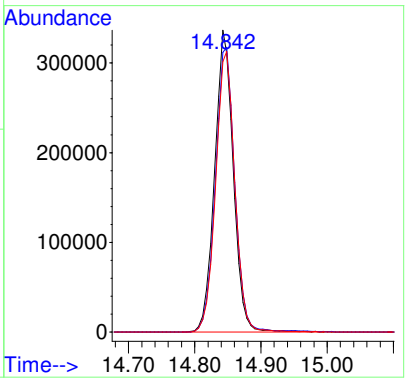


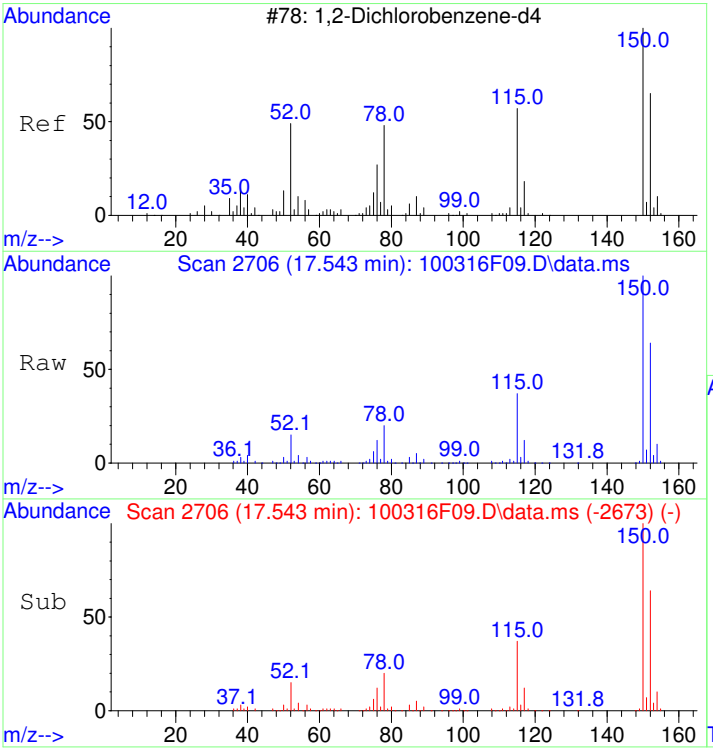


#56
4-Bromofluorobenzene
Concen: 4.44 ug/L
RT: 14.842 min Scan# 2262
Delta R.T. -0.000 min
Lab File: 100316F09.D
Acq: 3 Oct 2016 13:30

Tgt Ion: 95 Resp: 658089

Ion	Ratio	Lower	Upper
95	100		
174	98.1	78.7	118.7
176	95.4	75.6	115.6

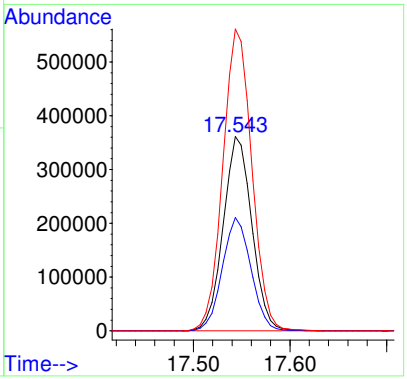




#70
1,2-Dichlorobenzene-d4
Concen: 4.64 ug/L
RT: 17.543 min Scan# 2706
Delta R.T. -0.000 min
Lab File: 100316F09.D
Acq: 3 Oct 2016 13:30

Tgt Ion:152 Resp: 746230

Ion	Ratio	Lower	Upper
152	100		
115	58.2	38.1	78.1
150	157.0	155.0	195.0



Calibration

1610001

Table of Contents

Method Path : C:\MSDCHEM\1\METHODS\
Method File : 092216HVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Mon Oct 03 08:37:03 2016
Response Via : Initial Calibration

Calibration Files
0.5 =092216H06.D 1.0 =092216H07.D 2.0 =092216H08.D 5.0 =092216H09.D 10.0=092216H10.D
25.0=092216H11.D

		Compound	0.5	1.0	2.0	5.0	10.0	25.0	Avg	%RSD
1)	I	Dichloromethane-d2	----------ISTD----------							
2)	TMC	Dichlorodifluo...	3.844	3.642	3.642	3.488	3.434	3.474	3.587	4.28
3)	TMC	Chloromethane	4.565	4.212	4.281	4.075	3.988	3.909	4.171	5.68
4)	TCM	Vinyl chloride	4.589	4.313	4.473	4.346	4.278	4.329	4.388	2.71
5)	TCM	Bromomethane	2.675	2.276	2.387	2.539	2.797	2.550	2.537	7.43
6)	TMC	Chloroethane	3.073	2.866	2.873	2.770	2.748	2.819	2.858	4.08
7)	TMC	Trichlorofluor...	6.809	6.650	6.818	6.681	6.661	6.878	6.750	1.44
8)	TMC	1,1-Dichloroet...	4.321	4.140	4.246	4.180	4.192	4.395	4.246	2.27
9)	TCM	1,1,2-Trichlor...	4.020	3.904	3.916	3.849	3.788	3.990	3.911	2.20
10)	TCM	Acetone	0.268	0.248	0.249	0.210	0.209	0.209	0.232	11.18
11)	TCM	Carbon disulfide	1.239	1.190	1.230	1.189	1.172	1.212	1.205 E1	2.17
12)	TMC	Dichloromethane	4.432	3.817	3.781	3.598	3.587	3.615	3.805	8.48
13)	TCM	tert-Butyl alc...	0.049	0.053	0.050	0.050	0.052	0.037	0.048	12.17
14)	TMC	trans-1,2-Dich...	5.129	4.720	4.928	4.825	4.792	4.250	4.774	6.15
15)	TCM	tert-Butyl met...	5.264	4.848	4.952	4.902	5.062	4.666	4.949	4.09
16)	TCM	1,1-Dichloroet...	6.948	5.535	5.727	5.689	5.717	6.136	5.959	8.80
17)	TMC	Diisopropyl ether	8.920	7.809	8.117	8.043	8.211	8.837	8.323	5.42
18)	TCM	Ethyl-tert-but...	4.047	3.345	3.372	3.354	3.677	4.689	3.747	14.32
19)	TCM	2,2-Dichloropr...	1.682	1.503	1.473	1.682	2.121	3.195	1.943	33.75#
20)	TMC	cis-1,2-Dichlo...	4.107	3.739	3.861	3.883	3.947	4.372	3.985	5.64
21)	TCM	2-Butanone (MEK)	0.368	0.305	0.344	0.320	0.327	0.347	0.335	6.65
22)	TMC	Bromochloromet...	1.347	1.227	1.266	1.261	1.262	1.323	1.281	3.48
23)	TCM	Chloroform	5.830	5.498	5.577	5.642	5.690	6.160	5.733	4.14
24)	I	Fluorobenzene	----------ISTD----------							
25)	TCM	1,1,1-Trichlor...	0.237	0.225	0.243	0.269	0.307	0.383	0.278	21.44
26)	TCM	Carbon tetrach...	0.122	0.122	0.138	0.169	0.215	0.308	0.179	40.41#
27)	TCM	1,1-Dichloropr...	0.369	0.349	0.365	0.364	0.362	0.390	0.367	3.62
28)	S	1,2-Dichloroet...	0.137	0.133	0.132	0.131	0.133	0.136	0.134	1.76
29)	TMC	Benzene	1.110	1.054	1.102	1.102	1.089	1.164	1.103	3.23
30)	TCM	1,2-Dichloroet...	0.186	0.171	0.177	0.178	0.178	0.189	0.180	3.62
31)	TCM	tert-Amyl meth...	0.226	0.205	0.216	0.244	0.279	0.353	0.254	21.67
32)	TMC	Trichloroethene	0.289	0.275	0.285	0.287	0.281	0.305	0.287	3.47
33)	TMC	1,2-Dichloropr...	0.200	0.186	0.194	0.202	0.203	0.215	0.200	4.88
34)	TMC	Dibromomethane	0.080	0.073	0.072	0.074	0.074	0.079	0.075	4.00
35)	TCM	Bromodichlorom...	0.151	0.150	0.160	0.185	0.205	0.242	0.182	19.92
36)	TCM	cis-1,3-Dichlo...	0.152	0.139	0.161	0.189	0.224	0.276	0.190	27.21
37)	I	Chlorobenzene-d5	----------ISTD----------							
38)	TMC	4-Methyl-2-pen...	0.089	0.081	0.086	0.085	0.086	0.090	0.086	3.86
39)	S	Toluene-d8	1.358	1.373	1.382	1.384	1.369	1.357	1.370	0.86
40)	TMC	Toluene	1.069	1.021	1.049	1.045	1.052	1.123	1.060	3.23
41)	TCM	trans-1,3-Dich...	0.096	0.094	0.110	0.146	0.191	0.252	0.148	42.23#
42)	TCM	1,1,2-Trichlor...	0.131	0.126	0.136	0.135	0.135	0.138	0.134	3.42
43)	TCM	Tetrachloroethene	0.498	0.484	0.486	0.486	0.481	0.522	0.493	3.08
44)	TMC	1,3-Dichloropr...	0.301	0.273	0.293	0.297	0.292	0.300	0.292	3.56
45)	TCM	2-Hexanone	0.051	0.049	0.052	0.054	0.055	0.057	0.053	5.74
46)	TCM	Chlorodibromom...	0.087	0.090	0.102	0.130	0.159	0.201	0.128	35.01#
47)	TMC	1,2-Dibromoeth...	0.102	0.102	0.116	0.139	0.148	0.158	0.127	19.20
48)	TMC	Chlorobenzene	1.100	1.054	1.083	1.074	1.079	1.156	1.091	3.20
49)	TCM	1,1,1,2-Tetrac...	0.106	0.106	0.128	0.175	0.220	0.290	0.171	42.82#
50)	TCM	Ethylbenzene	1.987	1.904	1.992	2.016	2.020	2.191	2.018	4.69
51)	TCM	m&p-Xylene	0.810	0.784	0.815	0.837	0.852	0.976	0.845	8.07
52)	TCM	o-Xylene	0.753	0.745	0.761	0.783	0.786	0.881	0.785	6.33
53)	TCM	Styrene	1.127	1.118	1.159	1.207	1.216	1.403	1.205	8.71
54)	TCM	Bromoform	0.029	0.033	0.037	0.047	0.065	0.088	0.050	45.43#
55)	TCM	Isopropylbenzene	1.919	1.903	1.985	2.055	2.086	2.341	2.048	7.84
56)	S	4-Bromofluorob...	0.422	0.425	0.423	0.427	0.432	0.426	0.426	0.84
57)	TCM	Bromobenzene	0.404	0.390	0.401	0.404	0.407	0.445	0.408	4.59
58)	TCM	1,1,2,2-Tetrac...	0.131	0.128	0.135	0.147	0.153	0.159	0.142	9.02
59)	TMC	1,2,3-Trichlor...	0.106	0.104	0.105	0.108	0.111	0.113	0.108	3.18

Table of Contents

Method Path : C:\MSDCHEM\1\METHODS\
Method File : 092216HVW.M
Title : Volatile Organic Analysis - 524.2 Method

60)	TCM	Propylbenzene	2.293	2.241	2.341	2.393	2.443	2.669	2.397	6.31
61)	TCM	2-Chlorotoluene	1.315	1.264	1.300	1.333	1.342	1.474	1.338	5.38
62)	TCM	4-Chlorotoluene	1.504	1.451	1.503	1.549	1.566	1.762	1.556	6.99
63)	TCM	1,3,5-Trimethy...	1.646	1.592	1.669	1.724	1.753	1.995	1.730	8.21
64)	TCM	tert-Butylbenzene	1.436	1.420	1.460	1.504	1.524	1.747	1.515	7.94
65)	TCM	1,2,4-Trimethy...	1.624	1.600	1.682	1.727	1.771	2.004	1.735	8.43
66)	TCM	sec-Butylbenzene	2.107	2.021	2.154	2.223	2.261	2.576	2.224	8.66
67)	TCM	1,3-Dichlorobe...	0.915	0.865	0.887	0.914	0.935	1.054	0.928	7.13
68)	TCM	p-Isopropyltol...	1.790	1.772	1.851	1.964	2.045	2.360	1.964	11.24
69)	TCM	1,4-Dichlorobe...	0.884	0.822	0.871	0.895	0.934	1.092	0.916	10.21
70)	S	1,2-Dichlorobe...	0.417	0.418	0.422	0.429	0.432	0.446	0.427	2.54
71)	TCM	1,2-Dichlorobe...	0.712	0.689	0.709	0.717	0.727	0.800	0.726	5.29
72)	TCM	Butylbenzene	1.598	1.584	1.654	1.695	1.725	1.950	1.701	7.85
73)	TMC	1,2-Dibromo-3-...	0.005	0.005	0.006	0.010	0.014	0.019	0.010#	59.84#
74)	TCM	1,2,4-Trichlor...	0.516	0.488	0.517	0.526	0.538	0.597	0.530	6.94
75)	TCM	Hexachlorobuta...	0.312	0.310	0.305	0.317	0.320	0.363	0.321	6.61
76)	TCM	Naphthalene	0.560	0.558	0.574	0.606	0.618	0.658	0.595	6.56
77)	TCM	1,2,3-Trichlor...	0.402	0.384	0.394	0.405	0.410	0.445	0.407	5.17

(#) = Out of Range

Method Path : C:\MSDCHEM\1\METHODS\
Method File : 092216HVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Mon Oct 03 08:37:03 2016
Response Via : Initial Calibration

Total Cpnds : 77

PK#			Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I		Dichloromethane-d2	53	3.550	1.000	A	3	A	B
2		T	Dichlorodifluoromethane	85	1.392	0.392	A	1	A	B
3		T	Chloromethane	50	1.617	0.455	A	3	A	B
4		T	Vinyl chloride	62	1.659	0.467	A	2	A	B
5		T	Bromomethane	94	1.975	0.556	A	1	A	B
6		T	Chloroethane	64	2.079	0.585	A	1	A	B
7		T	Trichlorofluoromethane	101	2.352	0.663	A	1	A	B
8		T	1,1-Dichloroethene	96	2.924	0.824	A	2	A	B
9		T	1,1,2-Trichloro-1,2,2-trifl...	101	2.942	0.829	A	2	A	B
10		T	Acetone	43	3.040	0.856	A	1	A	B
11		T	Carbon disulfide	76	3.161	0.890	A	1	A	B
12		T	Dichloromethane	84	3.587	1.010	A	2	A	B
13		T	tert-Butyl alcohol	59	3.903	1.099	A	2	A	L
14		T	trans-1,2-Dichloroethene	96	3.982	1.122	A	2	A	B
15		T	tert-Butyl methyl ether (MTBE)	73	4.031	1.135	A	2	A	B
16		T	1,1-Dichloroethane	63	4.663	1.313	A	2	A	B
17		T	Diisopropyl ether	45	4.864	1.370	A	2	A	B
18		T	Ethyl-tert-butyl ether	59	5.436	1.531	A	1	A	B
19		T	2,2-Dichloropropane	77	5.582	1.572	A	2	A	B
20		T	cis-1,2-Dichloroethene	96	5.600	1.577	A	2	A	B
21		T	2-Butanone (MEK)	43	5.697	1.605	A	2	A	B
22		T	Bromochloromethane	128	5.977	1.683	A	2	A	B
23		T	Chloroform	83	6.141	1.730	A	2	A	B
24	I		Fluorobenzene	96	7.449	1.000	A	2	A	B
25		T	1,1,1-Trichloroethane	97	6.366	0.855	A	2	A	B
26		T	Carbon tetrachloride	117	6.615	0.888	A	1	A	B
27		T	1,1-Dichloropropene	75	6.640	0.891	A	2	A	B
28		S	1,2-Dichloroethane-d4	65	6.901	0.927	A	2	A	B
29		T	Benzene	78	6.974	0.936	A	1	A	B
30		T	1,2-Dichloroethane	62	7.023	0.943	A	2	A	B
31		T	tert-Amyl methyl ether	73	7.224	0.970	A	2	A	B
32		T	Trichloroethene	95	8.020	1.077	A	2	A	B
33		T	1,2-Dichloropropane	63	8.385	1.126	A	2	A	B
34		T	Dibromomethane	93	8.561	1.149	A	2	A	B
35		T	Bromodichloromethane	83	8.859	1.189	A	2	A	B
36		T	cis-1,3-Dichloropropene	75	9.595	1.288	A	2	A	B
37	I		Chlorobenzene-d5	117	12.393	1.000	A	1	A	B
38		T	4-Methyl-2-pentanone (MIBK)	43	9.918	0.800	A	2	A	B
39		S	Toluene-d8	98	10.003	0.807	A	1	A	B
40		T	Toluene	92	10.112	0.816	A	1	A	B
41		T	trans-1,3-Dichloropropene	75	10.544	0.851	A	2	A	B
42		T	1,1,2-Trichloroethane	83	10.830	0.874	A	2	A	B
43		T	Tetrachloroethene	166	10.988	0.887	A	2	A	B
44		T	1,3-Dichloropropane	76	11.085	0.894	A	1	A	B
45		T	2-Hexanone	43	11.310	0.913	A	1	A	B
46		T	Chlorodibromomethane	129	11.444	0.923	A	2	A	B
47		T	1,2-Dibromoethane (EDB)	107	11.590	0.935	A	2	A	B
48		T	Chlorobenzene	112	12.435	1.003	A	2	A	B
49		T	1,1,1,2-Tetrachloroethane	131	12.612	1.018	A	2	A	B
50		T	Ethylbenzene	91	12.666	1.022	A	1	A	B
51		T	m&p-Xylene	106	12.879	1.039	A	1	A	B
52		T	o-Xylene	106	13.548	1.093	A	1	A	B
53		T	Styrene	104	13.579	1.096	A	2	A	B
54		T	Bromoform	173	13.858	1.118	A	2	A	B
55		T	Isopropylbenzene	105	14.211	1.147	A	1	A	B
56		S	4-Bromofluorobenzene	95	14.448	1.166	A	2	A	B

Table of Contents

57	T	Bromobenzene	156	14.667	1.184	A	2	A	B
58	T	1,1,2,2-Tetrachloroethane	83	14.789	1.193	A	2	A	B
59	T	1,2,3-Trichloropropane	75	14.819	1.196	A	1	A	B
60	T	Propylbenzene	91	14.935	1.205	A	1	A	B
61	T	2-Chlorotoluene	91	15.032	1.213	A	1	A	B
62	T	4-Chlorotoluene	91	15.233	1.229	A	1	A	B
63	T	1,3,5-Trimethylbenzene	105	15.269	1.232	A	1	A	B
64	T	tert-Butylbenzene	119	15.817	1.276	A	2	A	B
65	T	1,2,4-Trimethylbenzene	105	15.914	1.284	A	1	A	B
66	T	sec-Butylbenzene	105	16.212	1.308	A	1	A	B
67	T	1,3-Dichlorobenzene	146	16.346	1.319	A	2	A	B
68	T	p-Isopropyltoluene	119	16.498	1.331	A	2	A	B
69	T	1,4-Dichlorobenzene	146	16.516	1.333	A	2	A	B
70	S	1,2-Dichlorobenzene-d4	152	17.130	1.382	A	2	A	B
71	T	1,2-Dichlorobenzene	146	17.160	1.385	A	2	A	B
72	T	Butylbenzene	91	17.227	1.390	A	1	A	B
73	T	1,2-Dibromo-3-chloropropane	75	18.590	1.500	A	2	A	B
74	T	1,2,4-Trichlorobenzene	180	20.067	1.619	A	2	A	B
75	T	Hexachlorobutadiene	225	20.414	1.647	A	2	A	B
76	T	Naphthalene	128	20.493	1.654	A	2	A	B
77	T	1,2,3-Trichlorobenzene	180	20.937	1.689	A	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

092216HVW.M Mon Oct 03 08:37:44 2016

C:\MSDChem\1\DATA\10255KAA\10255KC4.D

Duplicate RT REPORT

Instrument Name: HP5973H
Sample Name: S16J002-SCV1
Misc Inao: 5ug/L, WATER
Date Acquired: 9/22/2016
QLast Update: Mon Oct 03 08:37:03 20
Operator: YNB

#	Name	RT	CONC	Qion	
1)	Dichloromethane-d2	3.551	5.000	53	3.168
2)	Dichlorodifluoromethane	1.392	3.344	85	
3)	Chloromethane	1.617	4.149	50	
4)	Vinyl chloride	1.660	4.296	62	
5)	Bromomethane	1.976	4.648	94	
6)	Chloroethane	2.079	4.488	64	
7)	Trichlorofluoromethane	2.353	4.847	101	
8)	1,1-Dichloroethene	2.925	4.888	96	
9)	1,1,2-Trichloro-1,2,2-trifluoroethane	2.955	5.031	101	
10)	Acetone	3.040	37.915	43	
11)	Carbon disulfide	3.168	5.430	76	
12)	Dichloromethane	3.587	4.755	84	
13)	tert-Butyl alcohol	3.904	103.083	59	
14)	trans-1,2-Dichloroethene	3.983	4.195	96	
15)	tert-Butyl methyl ether (MTBE)	4.031	17.270	73	
16)	1,1-Dichloroethane	4.664	4.640	63	
17)	Diisopropyl ether	4.877	19.590	45	
18)	Ethyl-tert-butyl ether	5.448	19.583	59	
19)	2,2-Dichloropropane	5.588	4.252	77	
20)	cis-1,2-Dichloroethene	5.600	4.848	96	
21)	2-Butanone (MEK)	5.698	39.566	43	
22)	Bromochloromethane	5.977	4.872	128	
23)	Chloroform	6.148	4.788	83	
24)	Fluorobenzene	7.461	5.000	96	7.230
25)	1,1,1-Trichloroethane	6.373	5.222	97	
26)	Carbon tetrachloride	6.622	5.249	117	
27)	1,1-Dichloropropene	6.646	4.785	75	
28)	1,2-Dichloroethane-d4	6.908	5.043	65	
29)	Benzene	6.981	4.890	78	
30)	1,2-Dichloroethane	7.029	4.911	62	
31)	tert-Amyl methyl ether	7.230	20.637	73	
32)	Trichloroethene	8.021	4.803	95	
33)	1,2-Dichloropropane	8.386	4.962	63	
34)	Dibromomethane	8.562	4.899	93	
35)	Bromodichloromethane	8.866	5.481	83	
36)	cis-1,3-Dichloropropene	9.602	5.173	75	
37)	Chlorobenzene-d5	12.393	5.000	117	11.597
38)	4-Methyl-2-pentanone (MIBK)	9.918	40.269	43	
39)	Toluene-d8	10.009	4.995	98	
40)	Toluene	10.113	4.779	92	
41)	trans-1,3-Dichloropropene	10.544	5.102	75	

C:\MSDChem\1\DATA\10255KAA\10255KC4.D

42)	1,1,2-Trichloroethane	10.830	4.954	83	
43)	Tetrachloroethene	10.988	4.594	166	
44)	1,3-Dichloropropane	11.086	4.984	76	
45)	2-Hexanone	11.311	41.225	43	
46)	Chlorodibromomethane	11.451	5.769	129	
47)	1,2-Dibromoethane (EDB)	11.597	5.656	107	
48)	Chlorobenzene	12.442	4.778	112	
49)	1,1,1,2-Tetrachloroethane	12.612	5.605	131	
50)	Ethylbenzene	12.667	4.825	91	
51)	m&p-Xylene	12.880	9.541	106	
52)	o-Xylene	13.549	4.699	106	
53)	Styrene	13.585	4.824	104	
54)	Bromoform	13.859	5.327	173	
55)	Isopropylbenzene	14.211	4.883	105	
56)	4-Bromofluorobenzene	14.449	5.004	95	
57)	Bromobenzene	14.661	4.782	156	
58)	1,1,2,2-Tetrachloroethane	14.789	5.182	83	
59)	1,2,3-Trichloropropane	14.820	5.132	75	
60)	Propylbenzene	14.935	4.819	91	
61)	2-Chlorotoluene	15.032	4.832	91	
62)	4-Chlorotoluene	15.239	4.810	91	
63)	1,3,5-Trimethylbenzene	15.270	4.838	105	
64)	tert-Butylbenzene	15.817	4.806	119	0.000
65)	1,2,4-Trimethylbenzene	15.914	4.684	105	0.000
66)	sec-Butylbenzene	16.212	4.789	105	
67)	1,3-Dichlorobenzene	16.346	4.726	146	
68)	p-Isopropyltoluene	16.498	4.701	119	
69)	1,4-Dichlorobenzene	16.516	4.712	146	
70)	1,2-Dichlorobenzene-d4	17.131	4.945	152	0.000
71)	1,2-Dichlorobenzene	17.161	4.795	146	0.000
72)	Butylbenzene	17.228	4.753	91	0.000
73)	1,2-Dibromo-3-chloropropane	18.584	4.906	75	0.000
74)	1,2,4-Trichlorobenzene	20.068	4.672	180	0.000
75)	Hexachlorobutadiene	0.000	4.589	225	0.000
76)	Naphthalene	20.493	4.975	128	0.000
77)	1,2,3-Trichlorobenzene	20.937	4.986	180	0.000

C:\MSDChem\1\DATA\10255KAA\10255KC4.D

CALIBRATION REPORT

Instrument Name: HP5973H
Sample Name: S16J002-SCV1
Misc Info: 5ug/L, WATER
Date Acquired: 9/22/2016
QLast Update: Mon Oct 03 08:37:03 20
Operator: YNB

#	Name	L1	L2	L3	L4	L5	L6
1)	Dichloromethane-d2	5.00	5.00	5.00	5.00	5.00	5.00
2)	Dichlorodifluoromethane	0.50	1.00	2.00	5.00	10.00	25.00
3)	Chloromethane	0.50	1.00	2.00	5.00	10.00	25.00
4)	Vinyl chloride	0.50	1.00	2.00	5.00	10.00	25.00
5)	Bromomethane	0.50	1.00	2.00	5.00	10.00	25.00
6)	Chloroethane	0.50	1.00	2.00	5.00	10.00	25.00
7)	Trichlorofluoromethane	0.50	1.00	2.00	5.00	10.00	25.00
8)	1,1-Dichloroethene	0.50	1.00	2.00	5.00	10.00	25.00
9)	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	1.00	2.00	5.00	10.00	25.00
10)	Acetone	4.00	8.00	16.00	40.00	80.00	200.00
11)	Carbon disulfide	0.50	1.00	2.00	5.00	10.00	25.00
12)	Dichloromethane	0.50	1.00	2.00	5.00	10.00	25.00
13)	tert-Butyl alcohol	10.00	20.00	40.00	100.00	200.00	500.00
14)	trans-1,2-Dichloroethene	0.50	1.00	2.00	5.00	10.00	25.00
15)	tert-Butyl methyl ether (MTBE)	2.00	4.00	8.00	20.00	40.00	100.00
16)	1,1-Dichloroethane	0.50	1.00	2.00	5.00	10.00	25.00
17)	Diisopropyl ether	2.00	4.00	8.00	20.00	40.00	100.00
18)	Ethyl-tert-butyl ether	2.00	4.00	8.00	20.00	40.00	100.00
19)	2,2-Dichloropropane	0.50	1.00	2.00	5.00	10.00	25.00
20)	cis-1,2-Dichloroethene	0.50	1.00	2.00	5.00	10.00	25.00
21)	2-Butanone (MEK)	4.00	8.00	16.00	40.00	80.00	200.00
22)	Bromochloromethane	0.50	1.00	2.00	5.00	10.00	25.00
23)	Chloroform	0.50	1.00	2.00	5.00	10.00	25.00
24)	Fluorobenzene	5.00	5.00	5.00	5.00	5.00	5.00
25)	1,1,1-Trichloroethane	0.50	1.00	2.00	5.00	10.00	25.00
26)	Carbon tetrachloride	0.50	1.00	2.00	5.00	10.00	25.00
27)	1,1-Dichloropropene	0.50	1.00	2.00	5.00	10.00	25.00
28)	1,2-Dichloroethane-d4	5.00	5.00	5.00	5.00	5.00	5.00
29)	Benzene	0.50	1.00	2.00	5.00	10.00	25.00
30)	1,2-Dichloroethane	0.50	1.00	2.00	5.00	10.00	25.00
31)	tert-Amyl methyl ether	2.00	4.00	8.00	20.00	40.00	100.00
32)	Trichloroethene	0.50	1.00	2.00	5.00	10.00	25.00
33)	1,2-Dichloropropane	0.50	1.00	2.00	5.00	10.00	25.00
34)	Dibromomethane	0.50	1.00	2.00	5.00	10.00	25.00
35)	Bromodichloromethane	0.50	1.00	2.00	5.00	10.00	25.00
36)	cis-1,3-Dichloropropene	0.50	1.00	2.00	5.00	10.00	25.00
37)	Chlorobenzene-d5	5.00	5.00	5.00	5.00	5.00	5.00
38)	4-Methyl-2-pentanone (MIBK)	4.00	8.00	16.00	40.00	80.00	200.00
39)	Toluene-d8	5.00	5.00	5.00	5.00	5.00	5.00
40)	Toluene	0.50	1.00	2.00	5.00	10.00	25.00
41)	trans-1,3-Dichloropropene	0.50	1.00	2.00	5.00	10.00	25.00
42)	1,1,2-Trichloroethane	0.50	1.00	2.00	5.00	10.00	25.00

C:\MSDChem\1\DATA\10255KAA\10255KC4.D

43)	Tetrachloroethene	0.50	1.00	2.00	5.00	10.00	25.00
44)	1,3-Dichloropropane	0.50	1.00	2.00	5.00	10.00	25.00
45)	2-Hexanone	4.00	8.00	16.00	40.00	80.00	200.00
46)	Chlorodibromomethane	0.50	1.00	2.00	5.00	10.00	25.00
47)	1,2-Dibromoethane (EDB)	0.50	1.00	2.00	5.00	10.00	25.00
48)	Chlorobenzene	0.50	1.00	2.00	5.00	10.00	25.00
49)	1,1,1,2-Tetrachloroethane	0.50	1.00	2.00	5.00	10.00	25.00
50)	Ethylbenzene	0.50	1.00	2.00	5.00	10.00	25.00
51)	m&p-Xylene	1.00	2.00	4.00	10.00	20.00	50.00
52)	o-Xylene	0.50	1.00	2.00	5.00	10.00	25.00
53)	Styrene	0.50	1.00	2.00	5.00	10.00	25.00
54)	Bromoform	0.50	1.00	2.00	5.00	10.00	25.00
55)	Isopropylbenzene	0.50	1.00	2.00	5.00	10.00	25.00
56)	4-Bromofluorobenzene	5.00	5.00	5.00	5.00	5.00	5.00
57)	Bromobenzene	0.50	1.00	2.00	5.00	10.00	25.00
58)	1,1,2,2-Tetrachloroethane	0.50	1.00	2.00	5.00	10.00	25.00
59)	1,2,3-Trichloropropane	0.50	1.00	2.00	5.00	10.00	25.00
60)	Propylbenzene	0.50	1.00	2.00	5.00	10.00	25.00
61)	2-Chlorotoluene	0.50	1.00	2.00	5.00	10.00	25.00
62)	4-Chlorotoluene	0.50	1.00	2.00	5.00	10.00	25.00
63)	1,3,5-Trimethylbenzene	0.50	1.00	2.00	5.00	10.00	25.00
64)	tert-Butylbenzene	0.50	1.00	2.00	5.00	10.00	25.00
65)	1,2,4-Trimethylbenzene	0.50	1.00	2.00	5.00	10.00	25.00
66)	sec-Butylbenzene	0.50	1.00	2.00	5.00	10.00	25.00
67)	1,3-Dichlorobenzene	0.50	1.00	2.00	5.00	10.00	25.00
68)	p-Isopropyltoluene	0.50	1.00	2.00	5.00	10.00	25.00
69)	1,4-Dichlorobenzene	0.50	1.00	2.00	5.00	10.00	25.00
70)	1,2-Dichlorobenzene-d4	5.00	5.00	5.00	5.00	5.00	5.00
71)	1,2-Dichlorobenzene	0.50	1.00	2.00	5.00	10.00	25.00
72)	Butylbenzene	0.50	1.00	2.00	5.00	10.00	25.00
73)	1,2-Dibromo-3-chloropropane	2.00	4.00	8.00	20.00	40.00	100.00
74)	1,2,4-Trichlorobenzene	0.50	1.00	2.00	5.00	10.00	25.00
75)	Hexachlorobutadiene	0.50	1.00	2.00	5.00	10.00	25.00
76)	Naphthalene	0.50	1.00	2.00	5.00	10.00	25.00
77)	1,2,3-Trichlorobenzene	0.50	1.00	2.00	5.00	10.00	25.00

C:\MSDChem\1\DATA\10255KAA\10255KC4.D

CALIBRATION REPORT

Instrument Name: HP5973H
Sample Name: S16J002-SCV1
Misc Info: 5ug/L, WATER
Date Acquired: 9/22/2016
QLast Update: Mon Oct 03 08:37:03 20
Operator: YNB

#	Name	L1	L2	L3	L4	L5	L6
1)	Dichloromethane-d2	93683	92466	90831	91616	90637	90601
2)	Dichlorodifluoromethane	36012	67343	132316	319544	622563	1573832
3)	Chloromethane	42764	77890	155525	373365	722850	1770680
4)	Vinyl chloride	42988	79754	162502	398200	775418	1960958
5)	Bromomethane	25057	42093	86718	232577	507094	1155104
6)	Chloroethane	28787	52997	104390	253757	498057	1276919
7)	Trichlorofluoromethane	63793	122982	247729	612070	1207537	3115688
8)	1,1-Dichloroethene	40477	76555	154253	382996	759829	1991151
9)	1,1,2-Trichloro-1,2,2-trifluoroethane	37657	72205	142292	352652	686581	1807514
10)	Acetone	20060	36715	72495	154015	303812	755885
11)	Carbon disulfide	116101	220161	446855	1089272	2124215	5491406
12)	Dichloromethane	41524	70587	137383	329664	650163	1637549
13)	tert-Butyl alcohol	9153	19648	36033	91404	190159	334650
14)	trans-1,2-Dichloroethene	48053	87285	179047	442070	868576	1925172
15)	tert-Butyl methyl ether (MTBE)	197266	358595	719685	1796424	3670107	8454665
16)	1,1-Dichloroethane	65089	102357	208081	521232	1036372	2779825
17)	Diisopropyl ether	334267	577666	1179657	2947357	5953534	16013600
18)	Ethyl-tert-butyl ether	151654	247446	490078	1229030	2666038	8496692
19)	2,2-Dichloropropane	15753	27800	53526	154123	384433	1447368
20)	cis-1,2-Dichloroethene	38474	69152	140289	355759	715501	1980645
21)	2-Butanone (MEK)	27558	45147	99858	234313	474344	1258278
22)	Bromochloromethane	12615	22691	45999	115567	228784	599402
23)	Chloroform	54614	101679	202642	516897	1031428	2790696
24)	Fluorobenzene	1343831	1302338	1267374	1249203	1249453	1228588
25)	1,1,1-Trichloroethane	31789	58716	123296	336584	767962	2354394
26)	Carbon tetrachloride	16427	31860	69999	211092	538217	1893184
27)	1,1-Dichloropropene	49573	90951	185104	455117	903760	2394573
28)	1,2-Dichloroethane-d4	184109	173469	166774	164091	166360	167321
29)	Benzene	149147	274534	558407	1376364	2720624	7148718
30)	1,2-Dichloroethane	24948	44604	89563	222760	444000	1162072
31)	tert-Amyl methyl ether	121434	213394	438480	1219888	2792893	8669255
32)	Trichloroethene	38853	71711	144647	358301	703009	1872997
33)	1,2-Dichloropropane	26871	48439	98345	251810	507076	1322047
34)	Dibromomethane	10691	19048	36736	92241	185837	483496
35)	Bromodichloromethane	20320	39002	81220	230951	512980	1484956
36)	cis-1,3-Dichloropropene	20486	36188	81626	236636	558624	1696133
37)	Chlorobenzene-d5	929321	887336	866609	858742	860762	868634
38)	4-Methyl-2-pentanone (MIBK)	66380	114716	237248	586448	1188118	3131982
39)	Toluene-d8	1261611	1218517	1197943	1188405	1178490	1178383
40)	Toluene	99330	181240	363710	897708	1811789	4875388
41)	trans-1,3-Dichloropropene	8955	16746	38179	125619	329404	1093704
42)	1,1,2-Trichloroethane	12153	22290	47304	116202	232061	599676

C:\MSDChem\1\DATA\10255KAA\10255KC4.D

43)	Tetrachloroethene	46268	85927	168634	417547	828826	2266340
44)	1,3-Dichloropropane	27950	48385	101500	254771	502164	1304161
45)	2-Hexanone	38135	69187	144394	373352	753267	1996058
46)	Chlorodibromomethane	8054	15998	35454	111275	272870	872297
47)	1,2-Dibromoethane (EDB)	9447	18079	40039	119463	255325	688159
48)	Chlorobenzene	102231	187091	375450	922036	1858285	5018542
49)	1,1,1,2-Tetrachloroethane	9891	18812	44280	150640	377925	1258554
50)	Ethylbenzene	184630	337858	690534	1731561	3476669	9517565
51)	m&p-Xylene	150523	278093	564854	1437081	2933080	8479934
52)	o-Xylene	69979	132166	263822	672346	1352846	3824453
53)	Styrene	104711	198479	401590	1036828	2094222	6093108
54)	Bromoform	2696	5858	12924	40761	111260	383247
55)	Isopropylbenzene	178370	337701	688185	1764369	3591300	10167938
56)	4-Bromofluorobenzene	392402	376850	366399	366938	371874	369639
57)	Bromobenzene	37501	69249	138941	347256	700199	1931756
58)	1,1,2,2-Tetrachloroethane	12129	22634	46948	126464	262901	691232
59)	1,2,3-Trichloropropane	9808	18540	36447	92639	190551	490816
60)	Propylbenzene	213061	397763	811582	2055111	4206448	11592208
61)	2-Chlorotoluene	122186	224311	450672	1144401	2310912	6400784
62)	4-Chlorotoluene	139803	257526	520962	1330287	2696630	7653654
63)	1,3,5-Trimethylbenzene	152940	282583	578678	1480734	3018273	8666787
64)	tert-Butylbenzene	133406	252055	506132	1291784	2624217	7588850
65)	1,2,4-Trimethylbenzene	150935	283930	583128	1483392	3049184	8703686
66)	sec-Butylbenzene	195765	358661	746535	1908949	3892907	11189845
67)	1,3-Dichlorobenzene	85050	153431	307560	784766	1609408	4576449
68)	p-Isopropyltoluene	166338	314411	641586	1686895	3520754	10250865
69)	1,4-Dichlorobenzene	82120	145853	301935	768744	1608199	4743646
70)	1,2-Dichlorobenzene-d4	387513	370867	365539	368353	371970	387176
71)	1,2-Dichlorobenzene	66209	122317	245831	615998	1250967	3474569
72)	Butylbenzene	148494	281153	573226	1455422	2969998	8468466
73)	1,2-Dibromo-3-chloropropane	1694	3300	8660	34292	97485	330648
74)	1,2,4-Trichlorobenzene	47985	86519	179258	451316	925636	2594688
75)	Hexachlorobutadiene	28985	55039	105621	272067	551010	1576703
76)	Naphthalene	51996	98968	199029	520450	1063630	2855701
77)	1,2,3-Trichlorobenzene	37379	68063	136427	347670	706097	1932773

Table of Contents

Method Path : C:\MSDCHEM\1\METHODS\
Method File : MEW100416HVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Wed Oct 05 11:20:39 2016
Response Via : Initial Calibration

Calibration Files
0.5 =100416H03.D 1.0 =100416H04.D 2.0 =100416H05.D 5.0 =100416H06.D 10.0=100416H07.D
25.0=100416H08.D

		Compound	0.5	1.0	2.0	5.0	10.0	25.0	Avg	%RSD
1)	I	Dichloromethane-d2	----------ISTD----------							
2)	TCM	Vinyl chloride	3.944	3.995	4.071	4.211	4.027	4.162	4.068	2.50
3)	TMC	1,1-Dichloroet...	4.104	4.197	4.145	4.353	4.276	4.743	4.303	5.43
4)	TCM	1,1,2-Trichlor...	4.252	4.234	4.164	4.269	4.030	4.588	4.256	4.34
5)	TMC	trans-1,2-Dich...	4.726	4.798	4.958	5.184	5.161	5.672	5.083	6.74
6)	TCM	1,1-Dichloroet...	3.669	3.410	3.745	3.920	4.017	4.518	3.880	9.72
7)	TMC	cis-1,2-Dichlo...	2.632	2.678	2.644	2.815	2.968	3.453	2.865	11.00
8)	TCM	Chloroform	3.963	3.834	3.896	4.160	4.185	4.802	4.140	8.54
9)	I	Fluorobenzene	----------ISTD----------							
10)	S	1,2-Dichloroet...	0.126	0.126	0.128	0.139	0.127	0.123	0.128	4.35
11)	TMC	Benzene	0.978	0.974	1.008	1.062	1.067	1.165	1.042	6.92
12)	TMC	Trichloroethene	0.267	0.252	0.269	0.278	0.269	0.306	0.273	6.54
13)	I	Chlorobenzene-d5	----------ISTD----------							
14)	S	Toluene-d8	1.398	1.421	1.439	1.406	1.416	1.397	1.413	1.13
15)	TCM	Tetrachloroethene	0.463	0.484	0.489	0.482	0.487	0.558	0.494	6.67
16)	S	4-Bromofluorob...	0.377	0.383	0.385	0.398	0.389	0.390	0.387	1.90
17)	S	1,2-Dichlorobe...	0.389	0.398	0.419	0.425	0.426	0.446	0.417	4.92

(#) = Out of Range

Compound #2: Vinyl chloride (Page 3)

Lvl ID	Conc	Response	Lvl ID	Conc	Response
0.5	0.500000	151990.000			
1.0	1.000000	304722.000			
2.0	2.000000	630168.000			
5.0	5.000000	1606385.000			
10.0	10.000000	3035552.000			
25.0	25.000000	8240398.000			
CC	5.000000	1606385.000			

Area Correction Mass: 0.00

Correction Factor: 0.0000

	Sum?	Integration Parameter File	
Tgt		rteint.p	Browse...
Q1	☐		Browse...
Q2	☐		Browse...
Q3	☐		Browse...

Prev | Next | Plot | Page 1 | Page 2 | OK | Cancel | Help

Method Path : C:\MSDCHEM\1\METHODS\
Method File : MEW100416HVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Wed Oct 05 11:20:39 2016
Response Via : Initial Calibration

Total Cpnds : 17

PK#			Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I		Dichloromethane-d2	53	3.550	1.000	A	3	A	B
2		T	Vinyl chloride	62	1.658	0.467	A	2	A	B
3		T	1,1-Dichloroethene	96	2.923	0.824	A	2	A	B
4		T	1,1,2-Trichloro-1,2,2-trifl...	101	2.947	0.830	A	2	A	B
5		T	trans-1,2-Dichloroethene	96	3.987	1.123	A	2	A	B
6		T	1,1-Dichloroethane	63	4.662	1.314	A	2	A	B
7		T	cis-1,2-Dichloroethene	96	5.599	1.577	A	2	A	B
8		T	Chloroform	83	6.146	1.732	A	2	A	B
9	I		Fluorobenzene	96	7.454	1.000	A	2	A	B
10	S		1,2-Dichloroethane-d4	65	6.906	0.927	A	2	A	B
11		T	Benzene	78	6.973	0.936	A	1	A	B
12		T	Trichloroethene	95	8.025	1.077	A	2	A	B
13	I		Chlorobenzene-d5	117	12.392	1.000	A	1	A	B
14	S		Toluene-d8	98	10.008	0.808	A	1	A	B
15		T	Tetrachloroethene	166	10.987	0.887	A	2	A	B
16	S		4-Bromofluorobenzene	95	14.447	1.166	A	2	A	B
17	S		1,2-Dichlorobenzene-d4	152	17.129	1.382	A	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

MEW100416HVW.M Wed Oct 05 11:20:57 2016

U.S. EPA Region 9 Laboratory

Discrepancy #: D16-013

Form Initiator: Adriane Scheele **Entry Date:** 7/7/2016

Case:	Project:	SDG:
All Cases	NA	NA

SOP:	Analysis:	Rev.:	Analyst:	Date:
354	VOC Analysis in Water	11	All Analysts	

SOP:	Prep:	Rev.:	Analyst:	Date:

Discrepancy Type (check all that apply):

LCS:

- ☐ High
- ☐ Low
- ☐ Frequency

MS/MSD:

- ☐ High
- ☐ Low
- ☐ RPD
- ☐ Frequency

Holding Time:

- ☐ Prep/extract
- ☐ Analysis

Blank:

- ☐ MB
- ☐ IB
- ☐ CB
- ☐ Frequency

Surrogate:

- ☐ High
- ☐ Low
- ☐ Frequency

Calibration:

- ☑ ICAL
- ☐ SVC
- ☐ CCAL
- ☐ QLS
- ☐ Frequency

Other:

- ☑ Other (describe)

Daily prepared QC standards (CCV, QLS, BS)

Describe Discrepancy:

Initial calibration standards were prepared in a 50-mL volumetric flask instead of a 50-mL syringe for instrument HP5973H on June 16, 2016 and AG5975DV on June 22, 2016. SOP 354 R11 specifies the use of a 50-mL syringe. EPA Method 524.2 Revision 4.1 (1995) allows the preparation of calibration standards in volumetric flasks or gas tight syringes. No adverse impact on data quality is expected.

Daily QC standards (CCVs, QLSs, and BSs) were also prepared using a volumetric flask subsequent to the initial calibration. No adverse impact on data quality is expected.

Describe Corrective Actions:

Discrepancy form will be attached to LIMS calibration for documentation. LIMS calibration numbers are 1606022 and 1606026.

U.S. EPA Region 9 Laboratory

Discrepancy #: D16-013

Approvals:

Supervisor (EPA or ESAT): Adriane Scheele	Date: 7/7/2016
EPA Team Leader or ESAT QA/QC: Richard Bauer	Date: 7/8/2016
EPA Lab QAO: Barbara Bates	Date: 7/8/2016
Check if Corrective Action Form Generated: ☐	Form #:

QAO Comments:

SOP Revision to follow.

SEQUENCE

S16J002

Analysis Sequence

S16J002

Project:
Analysis:

Instrument: HP5973H **Calibration ID:** 1610001 Printed: 10/03/2016 9:22 am

Lab Number	Sample Name	Order	Analyzed Date	STD ID	ISTD ID	Sequenced By	File ID	Comments
S16J002-TUN1	MS Tune	1	9/22/16 11:16	1629049		YNB	092216H01.D	
S16J002-IBL1	Instrument Blank	2	9/22/16 13:27			YNB	092216H05.D	
S16J002-CAL1	Cal Standard	3	9/22/16 14:03	1640040		YNB	092216H06.D	
S16J002-CAL2	Cal Standard	4	9/22/16 14:38	1640041		YNB	092216H07.D	
S16J002-CAL3	Cal Standard	5	9/22/16 15:14	1640018		YNB	092216H08.D	
S16J002-CAL4	Cal Standard	6	9/22/16 15:49	1640039		YNB	092216H09.D	
S16J002-CAL5	Cal Standard	7	9/22/16 16:25	1640043		YNB	092216H10.D	
S16J002-CAL6	Cal Standard	8	9/22/16 17:01	1640044		YNB	092216H11.D	
S16J002-SCV1	Secondary Cal Check	9	9/22/16 18:12	1640016		YNB	092216H13.D	

Sequence Comments

Reagents

Reagent # **Description**

Table of Contents

SEQUENCE DATA

S16J002

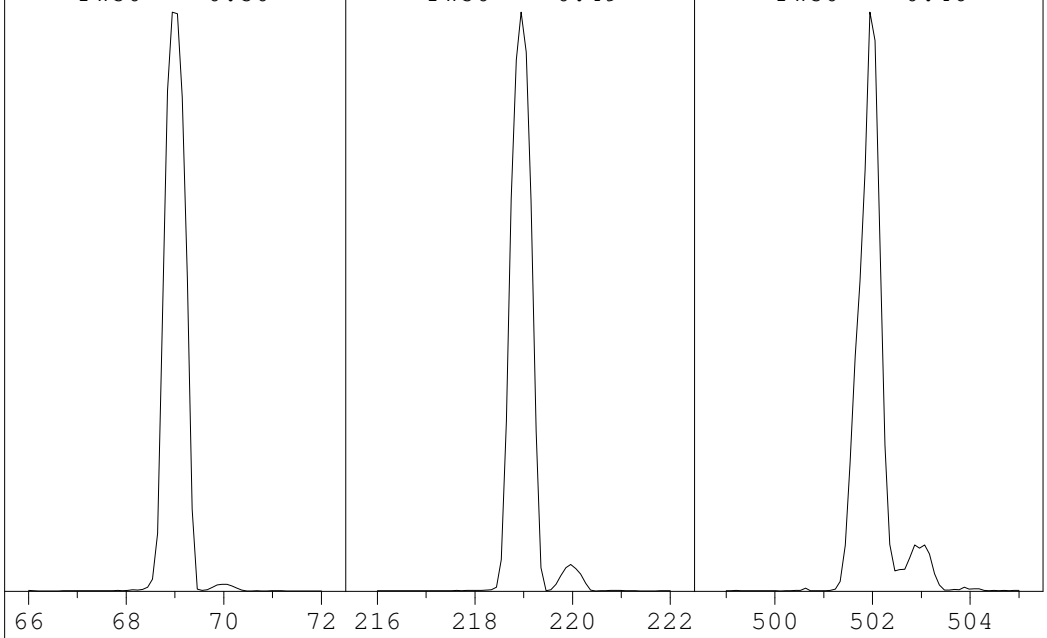
S16J002-TUN1

Thu Sep 22 11:10:03 2016 Instrum

C:\msdchem\1\5973\BFB092216HS.u

Table of Contents

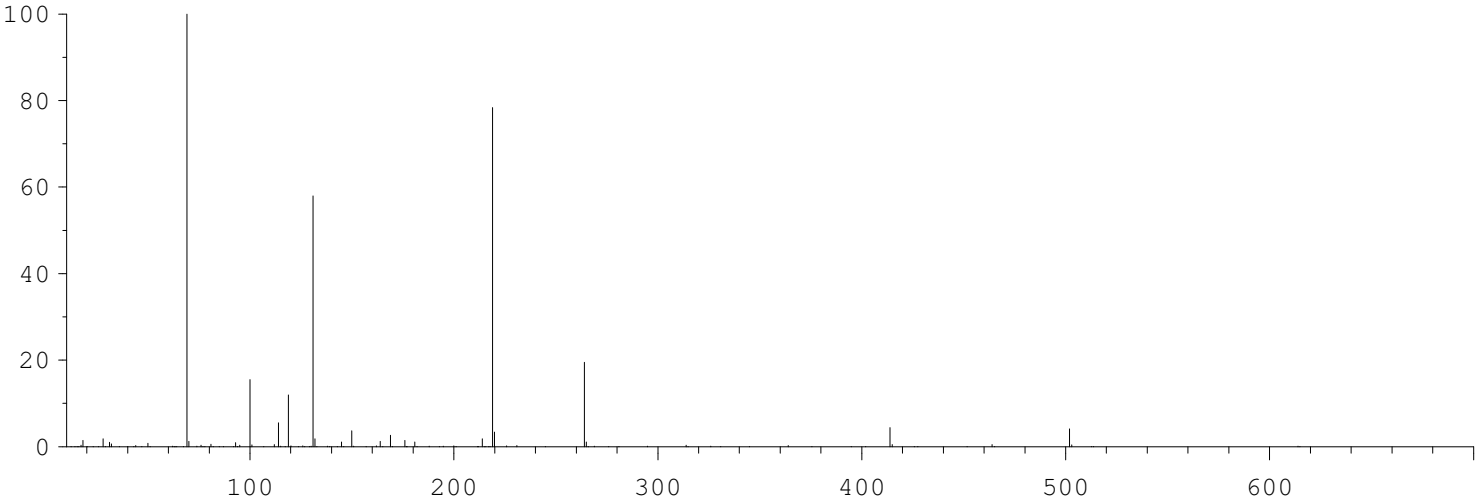
Mass	68.95	Mass	218.95	Mass	501.95
Ab	543126	Ab	413836	Ab	23318
Pw50	0.50	Pw50	0.49	Pw50	0.46



Ion Pol	POS	MassGain	-233
		MassOffs	-11
Emission	34.6	AmuGain	1873
EIEnrgy	69.9	AmuOffs	131
Filament	1	Wid219	-0.031
		DC Pol	NEG
Repeller	15.38		
IonFcus	74.0	HEDEnab	ON
EntLens	12.0	EMVolts	929
EntOffs	13.30		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	TurboSpd	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10

120 peaks Base: 69.05 Abundance: 457024



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	457024	100.00	70.05	5563	1.22
218.95	358016	78.34	219.95	15268	4.26
501.95	18880	4.13	503.05	1876	9.94

Air/Water Check: H20~1.42% N2~1.82% O2~0.63% CO2~0.28% N2/H2O~128.31%

Column Flow: Front: 0.996 Back: 0 ml/min. Interface Temp: 230

Ramp Criteria:

Ion Focus Maximum 90 volts using ion 69; EM Gain 295606

Repeller Maximum 20 volts using ion 219;

MassGain Values @Samples: -231@3 -231@2 -231@1 -231@0 -233@FS

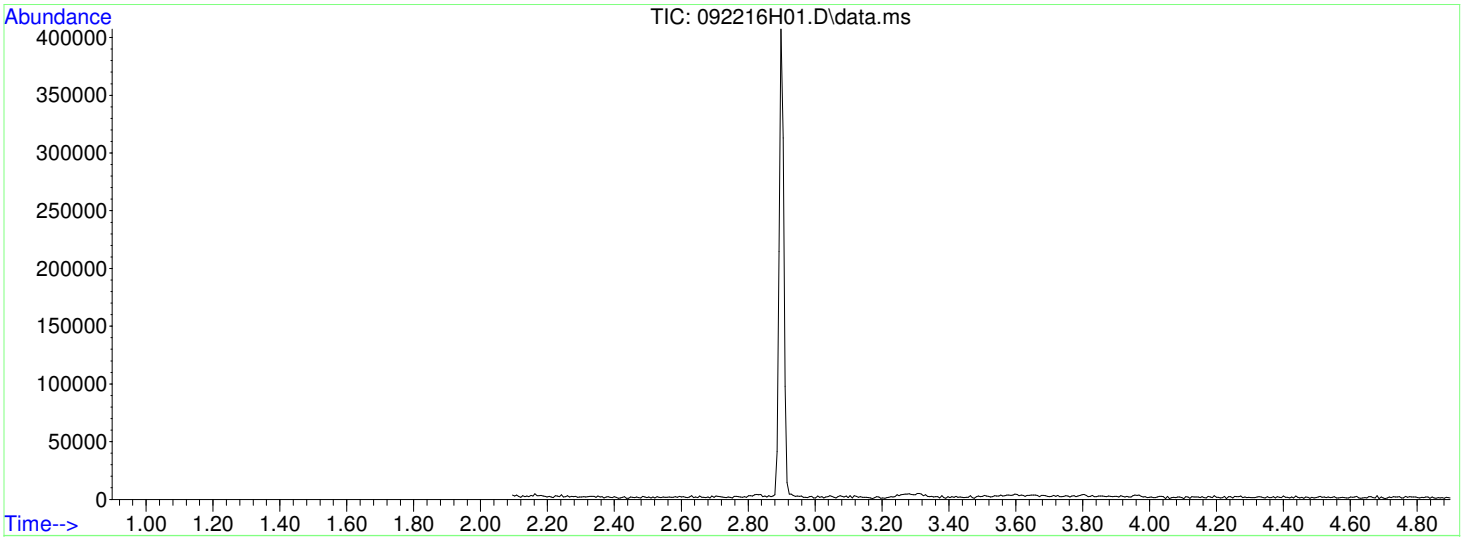
TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	131.0	131.0	131.0	131.0	131.0	131.0	131.0
Entrance Lens Offset:	13.3	13.3	13.3	13.3	13.3	13.3	13.3

Table of Contents

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H01.D
Instrument: HP5973H
Acq On : 22 Sep 2016 11:16 am
Operator : YNB
Sample : S16J002-TUN1
Misc : 0.5mL, EM 976
ALS Vial : 50 Sample Multiplier: 1

Integration File: C45.P

Method : C:\MSDCHEM\1\METHODS\092216HVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Fri Sep 23 09:06:39 2016



AutoFind: Scans 132, 133, 134; Background Corrected with Scan 127

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.3	10236	PASS
75	95	30	60	43.3	28944	PASS
95	95	100	100	100.0	66842	PASS
96	95	5	9	6.7	4465	PASS
173	174	0.00	2	0.3	149	PASS
174	95	50	120	86.9	58072	PASS
175	174	5	9	7.3	4249	PASS
176	174	95	101	98.2	57024	PASS
177	176	5	9	7.3	4150	PASS

Average of 2.892 to 2.904 min.: 092216H01.D\data.ms
S16J002-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	572	50.05	10236	67.05	101	77.85	303
37.05	2291	51.05	2882	68.00	6032	78.90	1460
38.05	2232	52.15	101	69.05	6165	79.95	453
39.10	1078	55.25	142	70.00	630	80.95	1649
40.15	126	56.05	972	71.05	127	86.95	2769
43.10	33	57.05	1605	72.10	366	87.95	2343
44.00	259	59.95	487	73.00	2630	90.95	129
45.05	387	61.00	2458	74.05	10074	91.95	1601
47.10	734	62.05	2614	75.05	28944	93.00	2385
48.15	274	63.05	2059	76.05	2471	94.05	7252
49.05	1899	63.95	128	77.05	167	95.05	66842

Average of 2.892 to 2.904 min.: 092216H01.D\data.ms
S16J002-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.00	4465	172.75	126				
96.95	102	172.95	149				
104.05	114	173.95	58072				
105.85	385	174.90	4249				
116.90	390	175.95	57024				
118.90	343	176.95	4150				
130.05	116	218.95	122				
136.95	237						
140.85	564						
142.90	712						
154.85	152						

S16J002-CAL1

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H06.D
Sample : S16J002-CAL1
Instrument: HP5973H
Acq On : 22 Sep 2016 2:03 pm
Operator : YNB
Misc : 0.5ug/L, WATER
ALS Vial : 31
Multiplier: 1

Quant Time: Oct 03 08:34:06 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Fri Sep 23 09:06:39 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.557	53	93683	5.000 ug/L	0.00
24) Fluorobenzene	7.455	96	1343831	5.000 ug/L	0.00
37) Chlorobenzene-d5	12.393	117	929321	5.000 ug/L	0.00
System Monitoring Compounds					
28) 1,2-Dichloroethane-d4	6.908	65	184109	5.121 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 102.40%	
39) Toluene-d8	10.009	98	1261611	4.953 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.00%	
56) 4-Bromofluorobenzene	14.449	95	392402	4.959 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 99.20%	
70) 1,2-Dichlorobenzene-d4	17.131	152	387513	4.880 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 97.60%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.392	85	36012	0.536 ug/L	96
3) Chloromethane	1.599	50	42764	0.547 ug/L #	100
4) Vinyl chloride	1.660	62	42988	0.523 ug/L	98
5) Bromomethane	1.976	94	25057	0.527 ug/L	93
6) Chloroethane	2.079	64	28787	0.538 ug/L	89
7) Trichlorofluoromethane	2.341	101	63793	0.505 ug/L	89
8) 1,1-Dichloroethene	2.919	96	40477	0.509 ug/L	100
9) 1,1,2-Trichloro-1,2,2-...	2.949	101	37657	0.514 ug/L	99
10) Acetone	3.040	43	20060	4.610 ug/L	98
11) Carbon disulfide	3.162	76	116101	0.514 ug/L	93
12) Dichloromethane	3.587	84	41524	0.582 ug/L #	49
13) tert-Butyl alcohol	3.916	59	9153	10.078 ug/L #	86
14) trans-1,2-Dichloroethene	3.983	96	48053	0.537 ug/L	96
15) tert-Butyl methyl ethe...	4.037	73	197266	2.127 ug/L	93
16) 1,1-Dichloroethane	4.658	63	65089	0.583 ug/L	99
17) Diisopropyl ether	4.871	45	334267	2.144 ug/L	94
18) Ethyl-tert-butyl ether	5.442	59	151654	2.160 ug/L	91
19) 2,2-Dichloropropane	5.582	77	15753	0.433 ug/L	91
20) cis-1,2-Dichloroethene	5.594	96	38474	0.515 ug/L #	77
21) 2-Butanone (MEK)	5.710	43	27558	4.398 ug/L	93
22) Bromochloromethane	5.977	128	12615	0.526 ug/L #	78
23) Chloroform	6.142	83	54614	0.508 ug/L	99
25) 1,1,1-Trichloroethane	6.367	97	31789	0.426 ug/L	96
26) Carbon tetrachloride	6.610	117	16427	0.341 ug/L	98
27) 1,1-Dichloropropene	6.646	75	49573	0.503 ug/L	95
29) Benzene	6.975	78	149147	0.503 ug/L	99
30) 1,2-Dichloroethane	7.030	62	24948	0.516 ug/L	97
31) tert-Amyl methyl ether	7.236	73	121434	1.779 ug/L #	61
32) Trichloroethene	8.015	95	38853	0.503 ug/L	89
33) 1,2-Dichloropropane	8.386	63	26871	0.500 ug/L	97
34) Dibromomethane	8.562	93	10691	0.528 ug/L	94
35) Bromodichloromethane	8.866	83	20320	0.415 ug/L	98
36) cis-1,3-Dichloropropene	9.596	75	20486	0.401 ug/L	98
38) 4-Methyl-2-pentanone (...	9.924	43	66380	4.141 ug/L	97
40) Toluene	10.113	92	99330	0.504 ug/L	98
41) trans-1,3-Dichloropropene	10.545	75	8955	0.325 ug/L	95
42) 1,1,2-Trichloroethane	10.836	83	12153	0.490 ug/L	99
43) Tetrachloroethene	10.988	166	46268	0.505 ug/L	97
44) 1,3-Dichloropropane	11.086	76	27950	0.514 ug/L	97

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H06.D
Sample : S16J002-CAL1
Instrument: HP5973H
Acq On : 22 Sep 2016 2:03 pm
Operator : YNB
Misc : 0.5ug/L, WATER
ALS Vial : 31
Multiplier: 1

Quant Time: Oct 03 08:34:06 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Fri Sep 23 09:06:39 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
45) 2-Hexanone	11.317	43	38135	3.864 ug/L	95
46) Chlorodibromomethane	11.445	129	8054	0.339 ug/L	95
47) 1,2-Dibromoethane (EDB)	11.591	107	9447	0.399 ug/L #	96
48) Chlorobenzene	12.436	112	102231	0.504 ug/L	99
49) 1,1,1,2-Tetrachloroethane	12.612	131	9891	0.312 ug/L	95
50) Ethylbenzene	12.667	91	184630	0.492 ug/L	97
51) m&p-Xylene	12.880	106	150523	0.958 ug/L	91
52) o-Xylene	13.549	106	69979	0.480 ug/L	90
53) Styrene	13.585	104	104711	0.468 ug/L	93
54) Bromoform	13.859	173	2696	0.290 ug/L #	85
55) Isopropylbenzene	14.205	105	178370	0.469 ug/L	97
57) Bromobenzene	14.662	156	37501	0.494 ug/L #	86
58) 1,1,2,2-Tetrachloroethane	14.789	83	12129	0.459 ug/L	97
59) 1,2,3-Trichloropropane	14.820	75	9808	0.490 ug/L	95
60) Propylbenzene	14.929	91	213061	0.478 ug/L	96
61) 2-Chlorotoluene	15.033	91	122186	0.491 ug/L	94
62) 4-Chlorotoluene	15.239	91	139803	0.483 ug/L	93
63) 1,3,5-Trimethylbenzene	15.270	105	152940	0.476 ug/L	94
64) tert-Butylbenzene	15.817	119	133406	0.474 ug/L	90
65) 1,2,4-Trimethylbenzene	15.914	105	150935	0.468 ug/L	93
66) sec-Butylbenzene	16.212	105	195765	0.474 ug/L	99
67) 1,3-Dichlorobenzene	16.346	146	85050	0.493 ug/L	97
68) p-Isopropyltoluene	16.498	119	166338	0.456 ug/L	94
69) 1,4-Dichlorobenzene	16.516	146	82120	0.482 ug/L	96
71) 1,2-Dichlorobenzene	17.161	146	66209	0.491 ug/L	96
72) Butylbenzene	17.228	91	148494	0.470 ug/L	95
74) 1,2,4-Trichlorobenzene	20.062	180	47985	0.487 ug/L	98
75) Hexachlorobutadiene	20.415	225	28985	0.486 ug/L	99
76) Naphthalene	20.494	128	51996	0.470 ug/L	99
77) 1,2,3-Trichlorobenzene	20.931	180	37379	0.495 ug/L	98

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

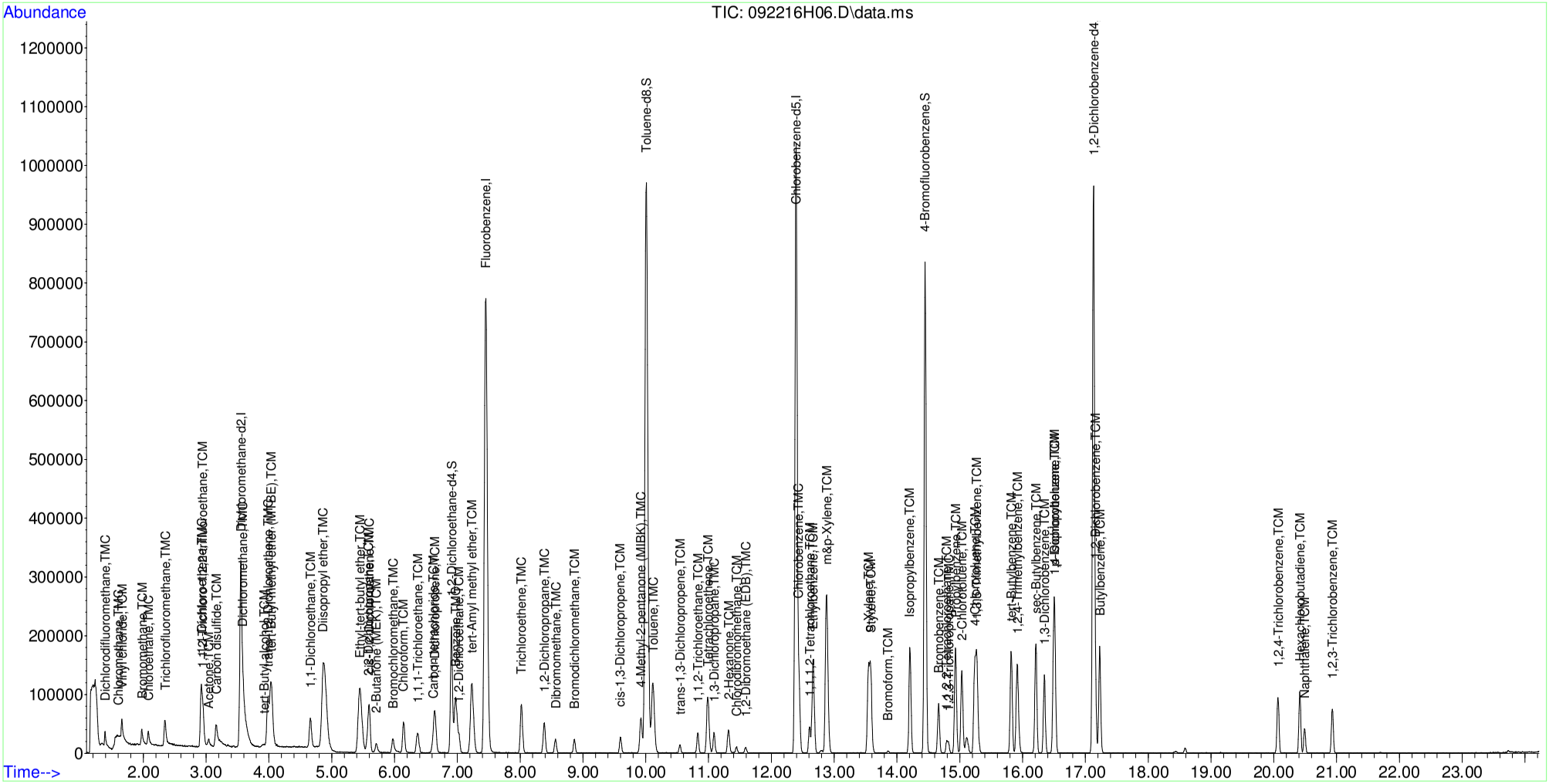
Table of Contents

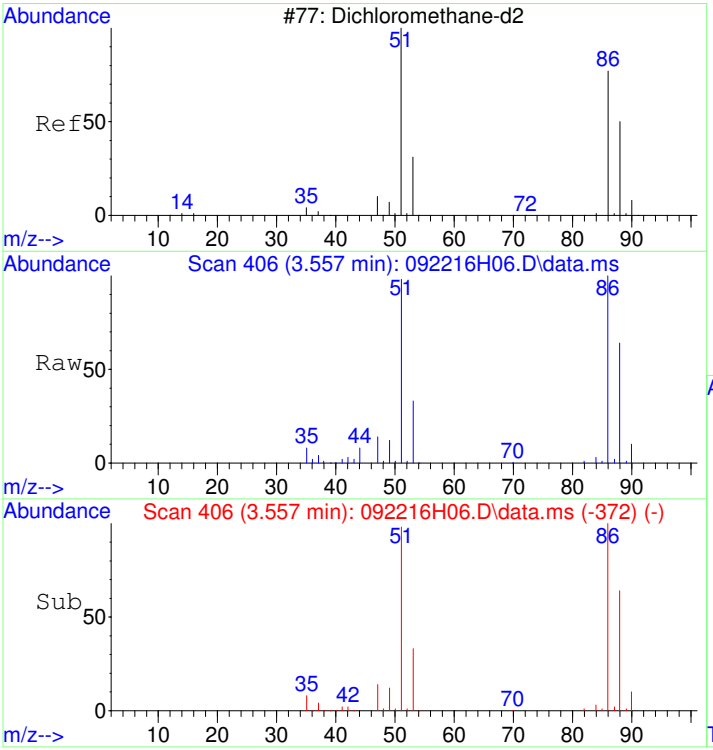
Quantitation Report (Not Reviewed)

ata Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
ata File : 092216H06.D
ample : S16J002-CAL1
nstrument: HP5973H
cq On : 22 Sep 2016 2:03 pm
perator : YNB
isc : 0.5ug/L, WATER
LS Vial : 31
ultiplier: 1

Quant Time: Oct 03 08:34:06 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Fri Sep 23 09:06:39 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

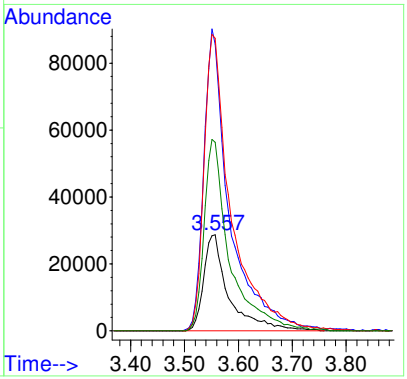


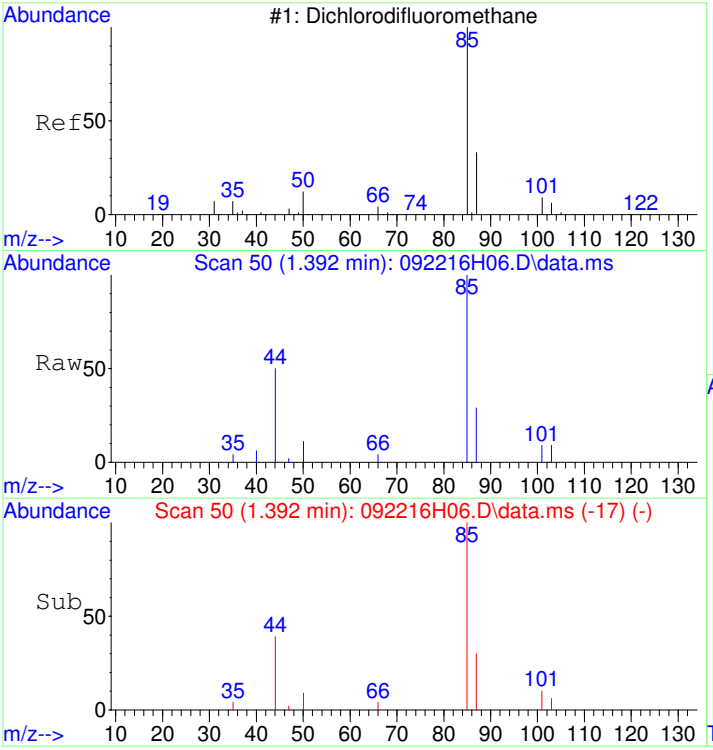


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.557 min Scan# 406
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 53 Resp: 93683

Ion	Ratio	Lower	Upper
53	100		
51	320.1	382.3	422.3#
86	332.9	486.4	526.4#
88	201.3	206.4	246.4#

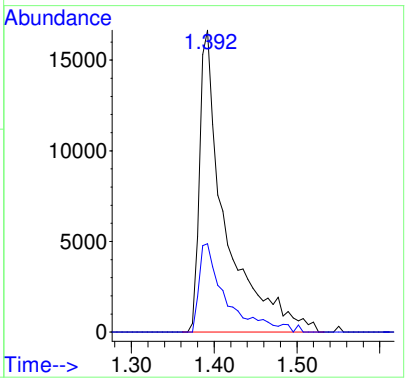


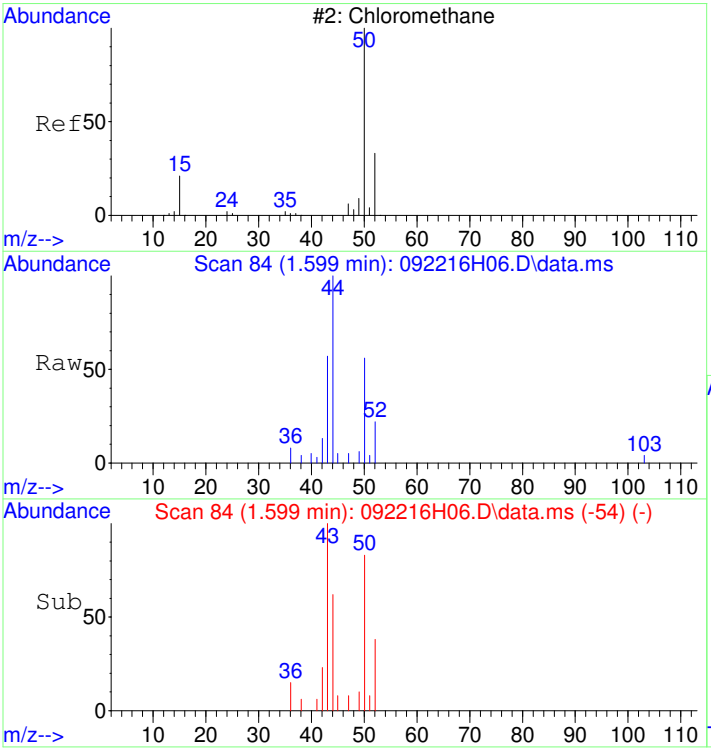


#2
Dichlorodifluoromethane
Concen: 0.54 ug/L
RT: 1.392 min Scan# 50
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 85 Resp: 36012

Ion	Ratio	Lower	Upper
85	100		
87	30.6	12.6	52.6

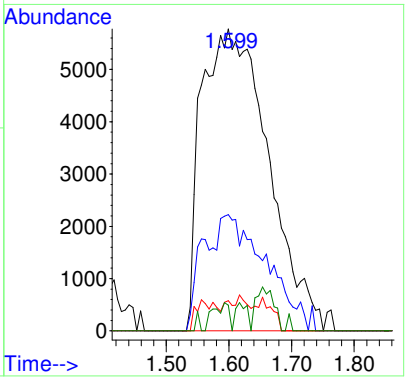


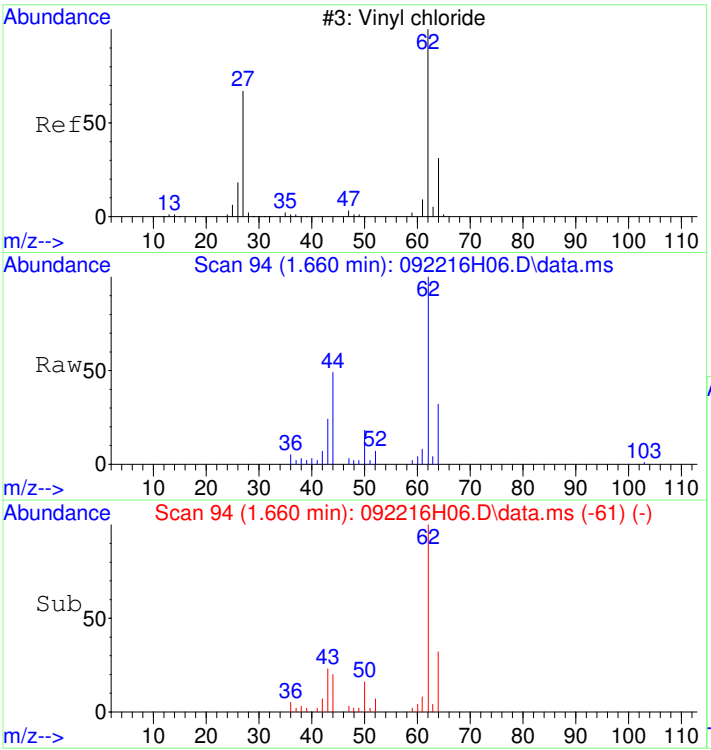


#3
Chloromethane
Concen: 0.55 ug/L
RT: 1.599 min Scan# 84
Delta R.T. -0.018 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 50 Resp: 42764

Ion	Ratio	Lower	Upper
50	100		
52	10.6	0.0	20.0
49	0.0	0.0	20.0
47	2.2	0.0	20.0

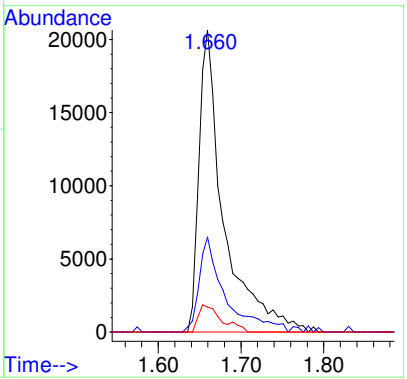


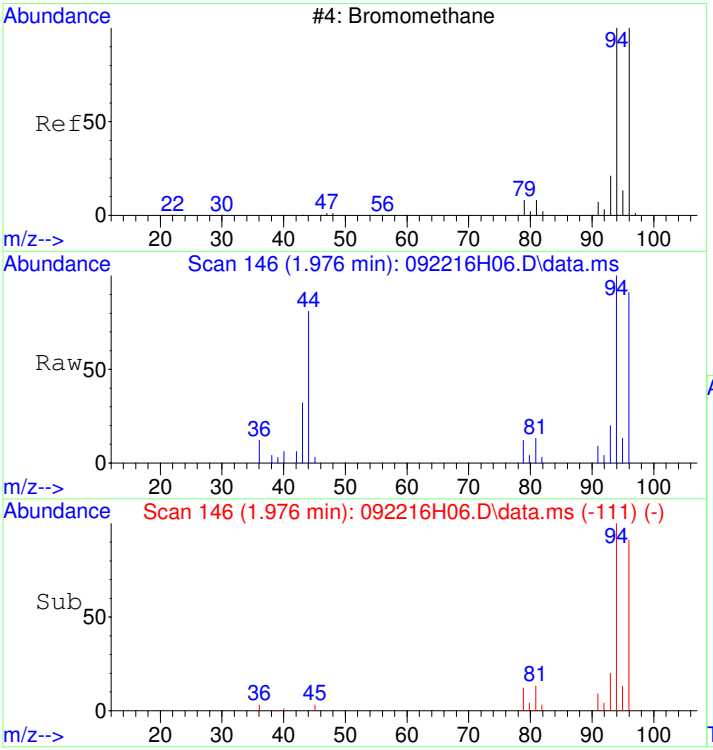


#4
Vinyl chloride
Concen: 0.52 ug/L
RT: 1.660 min Scan# 94
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 62 Resp: 42988

Ion	Ratio	Lower	Upper
62	100		
64	33.0	11.9	51.9
61	8.4	0.0	27.8

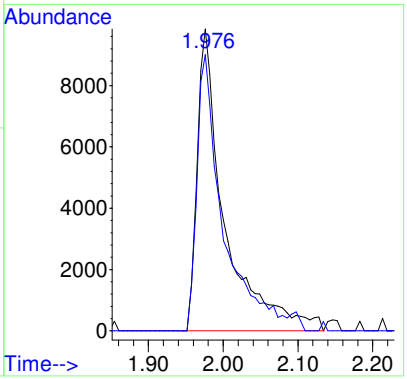


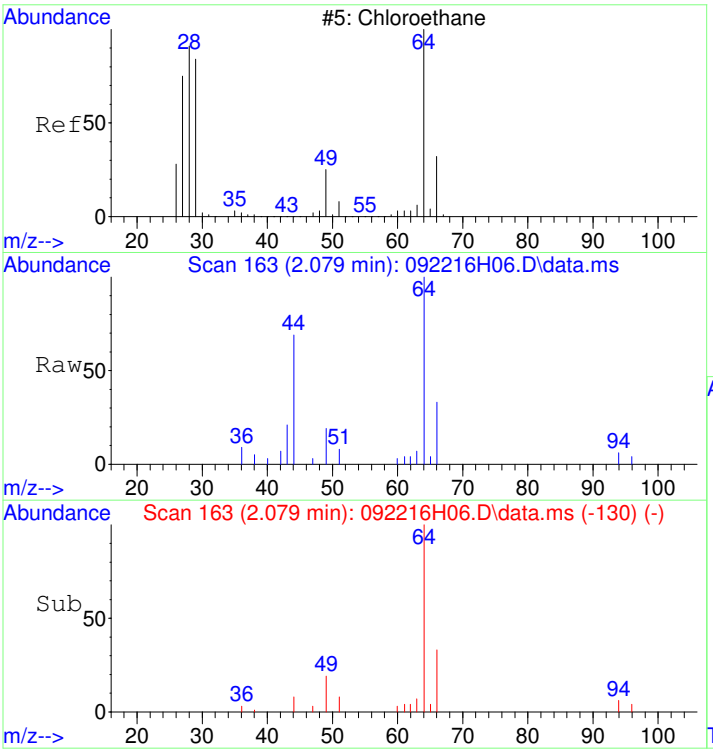


#5
Bromomethane
Concen: 0.53 ug/L
RT: 1.976 min Scan# 146
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 94 Resp: 25057

Ion	Ratio	Lower	Upper
94	100		
96	86.8	73.3	113.3

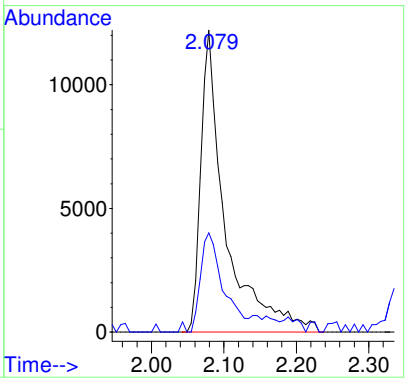


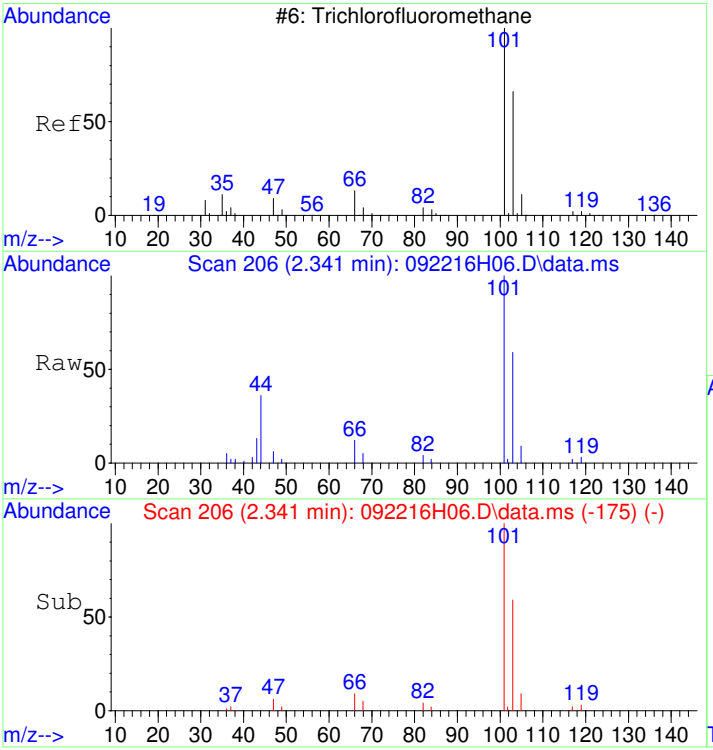


#6
Chloroethane
Concen: 0.54 ug/L
RT: 2.079 min Scan# 163
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 64 Resp: 28787

Ion	Ratio	Lower	Upper
64	100		
66	26.3	12.3	52.3

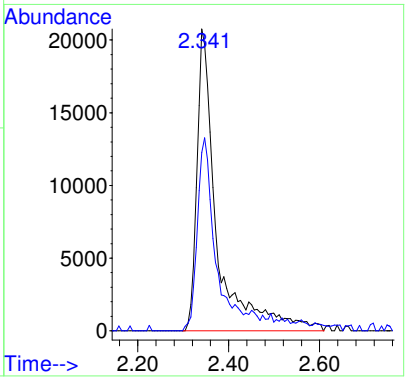


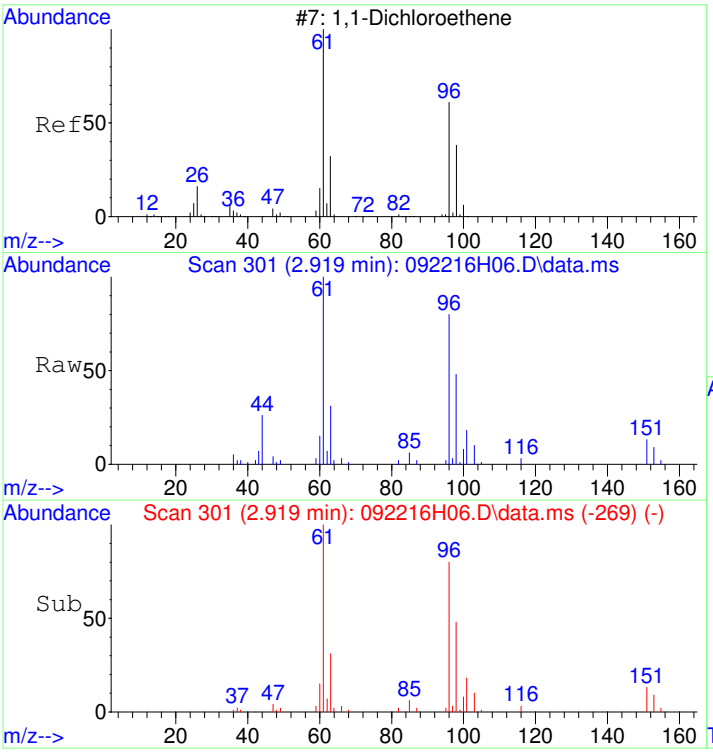


#7
Trichlorofluoromethane
Concen: 0.50 ug/L
RT: 2.341 min Scan# 206
Delta R.T. -0.012 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:101 Resp: 63793

Ion	Ratio	Lower	Upper
101	100		
103	56.1	44.8	84.8

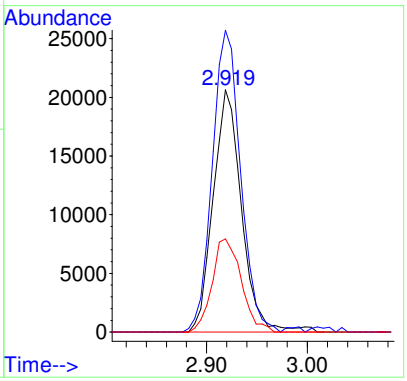


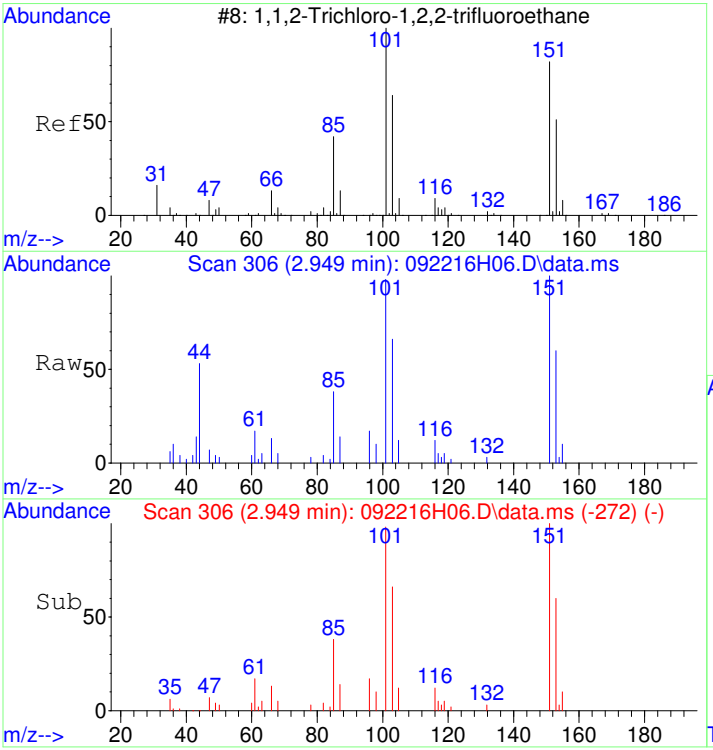


#8
1,1-Dichloroethene
Concen: 0.51 ug/L
RT: 2.919 min Scan# 301
Delta R.T. -0.006 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 96 Resp: 40477

Ion	Ratio	Lower	Upper
96	100		
61	124.0	103.8	143.8
63	39.6	20.3	60.3

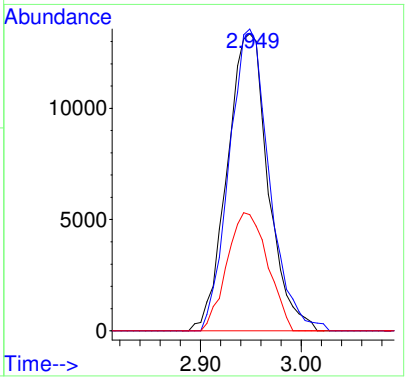


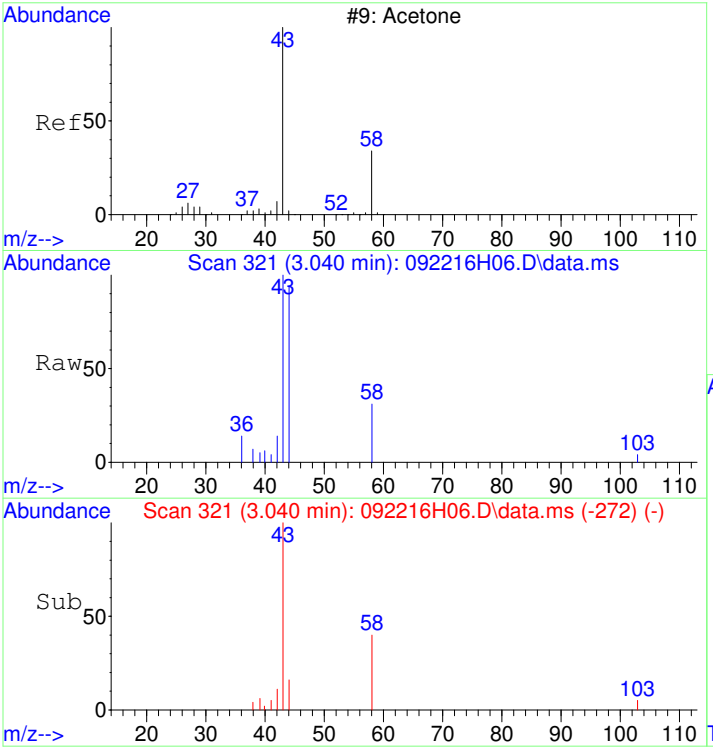


#9
1,1,2-Trichloro-1,2,2-trifluoroetnane
Concen: 0.51 ug/L
RT: 2.949 min Scan# 306
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:101 Resp: 37657

Ion	Ratio	Lower	Upper
101	100		
151	99.3	80.7	120.7
85	39.5	20.0	60.0

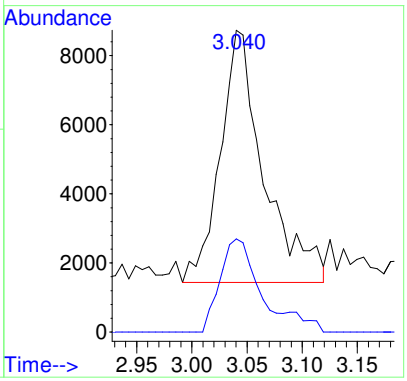


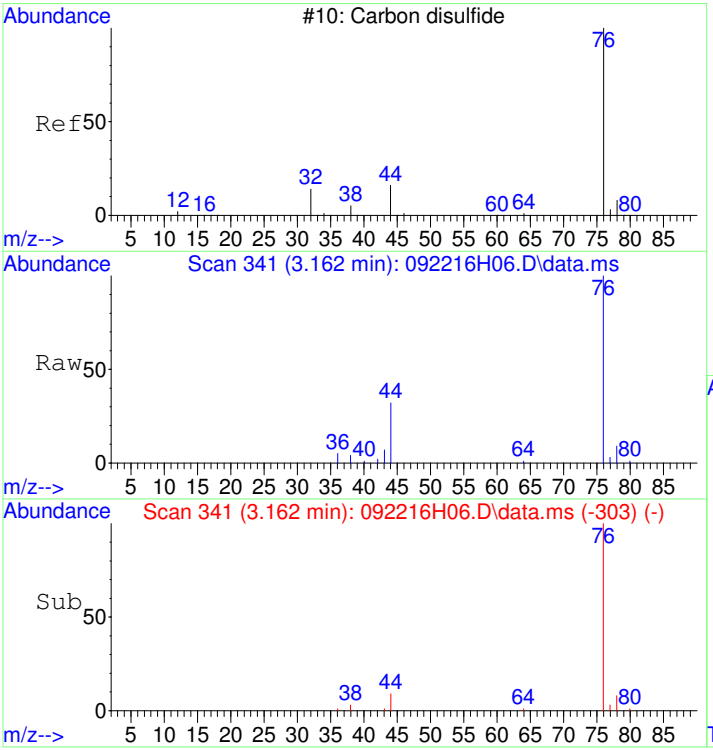


#10
Acetone
Concen: 4.61 ug/L
RT: 3.040 min Scan# 321
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 43 Resp: 20060

Ion	Ratio	Lower	Upper
43	100		
58	35.5	16.5	56.5

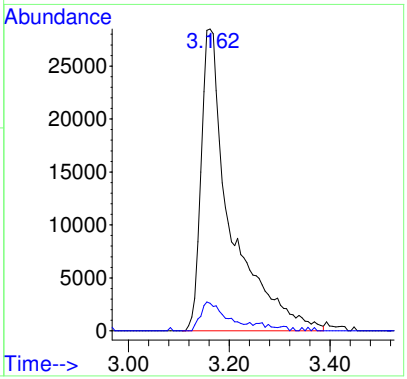


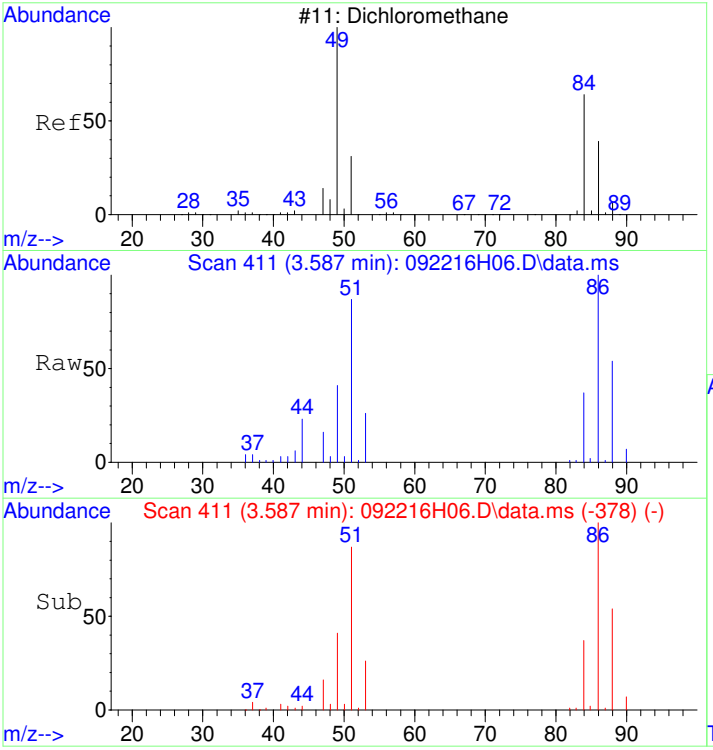


#11
Carbon disulfide
Concen: 0.51 ug/L
RT: 3.162 min Scan# 341
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 76 Resp: 116101

Ion	Ratio	Lower	Upper
76	100		
78	6.4	0.0	29.1

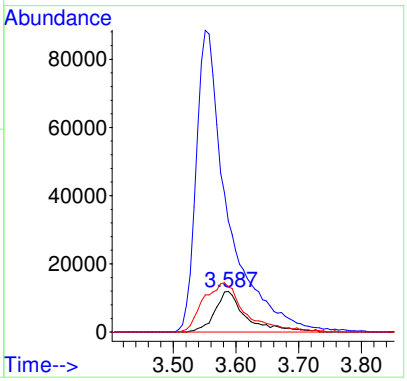


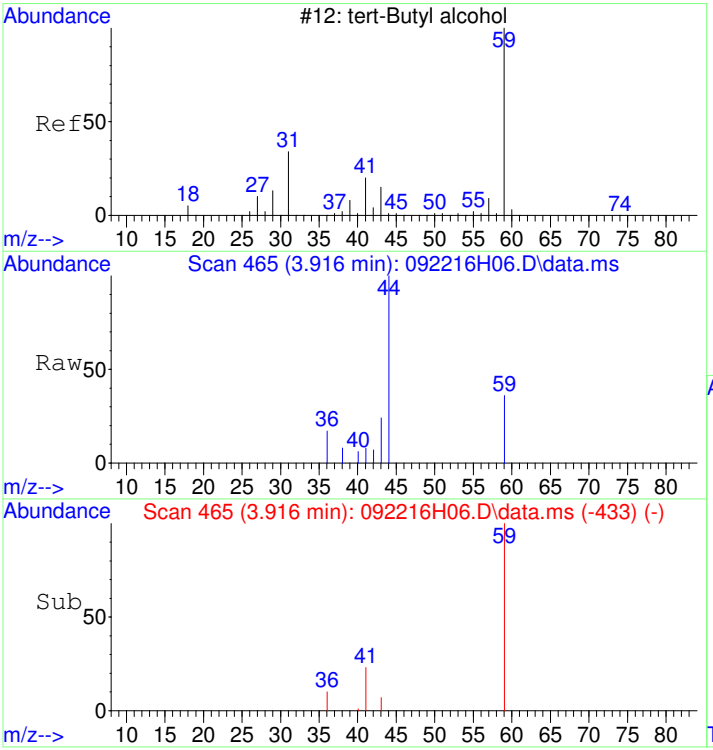


#12
Dichloromethane
Concen: 0.58 ug/L
RT: 3.587 min Scan# 411
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 84 Resp: 41524

Ion	Ratio	Lower	Upper
84	100		
86	0.0	0.0	20.0
49	161.5	88.5	128.5#

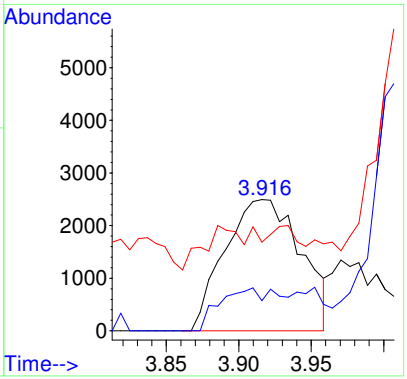


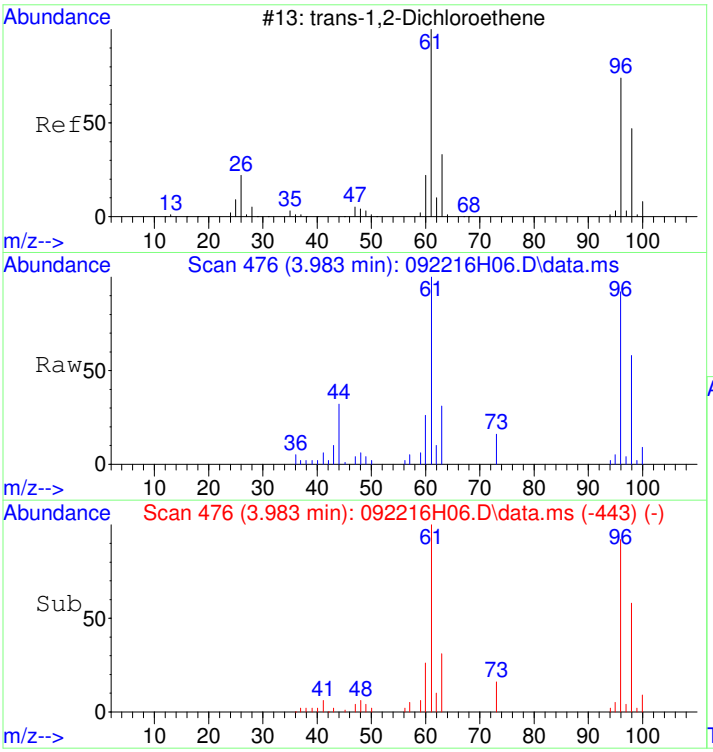


#13
tert-Butyl alcohol
Concen: 10.08 ug/L
RT: 3.916 min Scan# 465
Delta R.T. 0.013 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 59 Resp: 9153

Ion	Ratio	Lower	Upper
59	100		
41	17.8	0.0	37.5
43	0.0	0.0	33.0

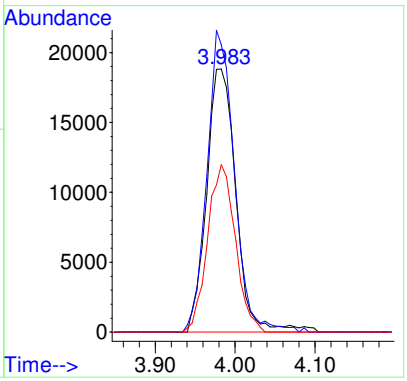


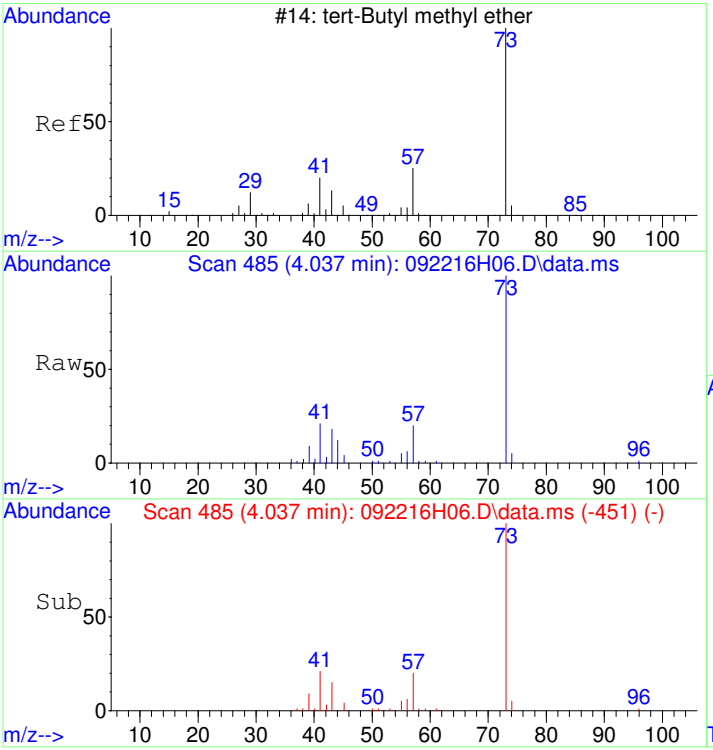


#14
trans-1,2-Dichloroethene
Concen: 0.54 ug/L
RT: 3.983 min Scan# 476
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 96 Resp: 48053

Ion	Ratio	Lower	Upper
96	100		
61	107.2	90.4	130.4
98	60.1	43.8	83.8

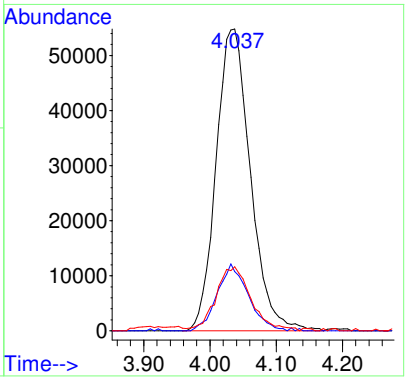


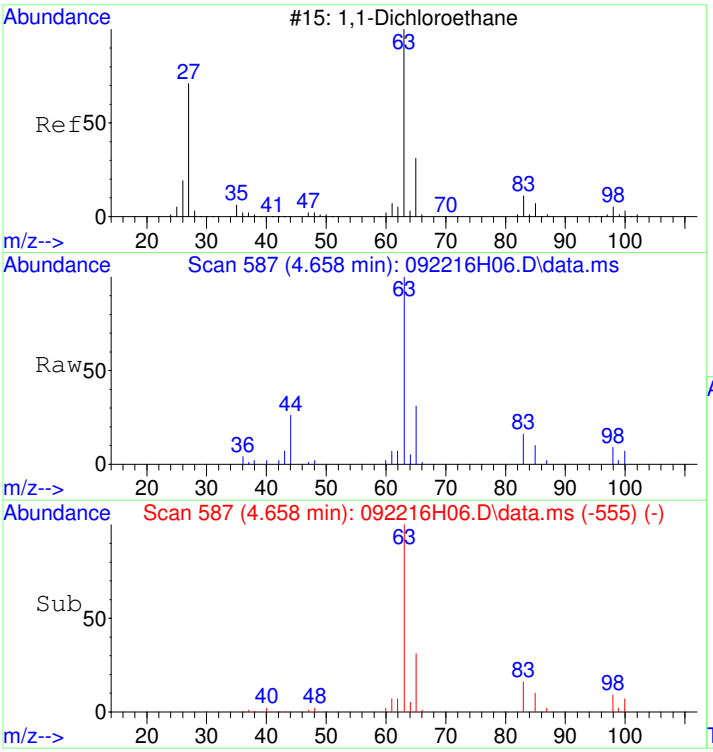


#15
tert-Butyl methyl ether (MTBE)
Concen: 2.13 ug/L
RT: 4.037 min Scan# 485
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 73 Resp: 197266

Ion	Ratio	Lower	Upper
73	100		
57	20.0	0.0	39.6
41	21.7	0.0	35.2

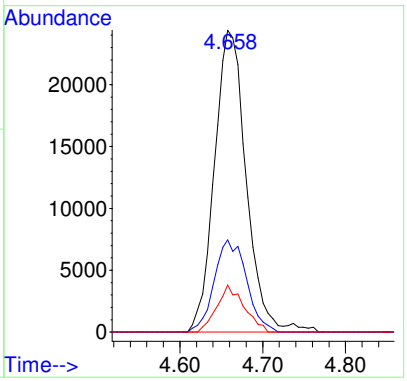


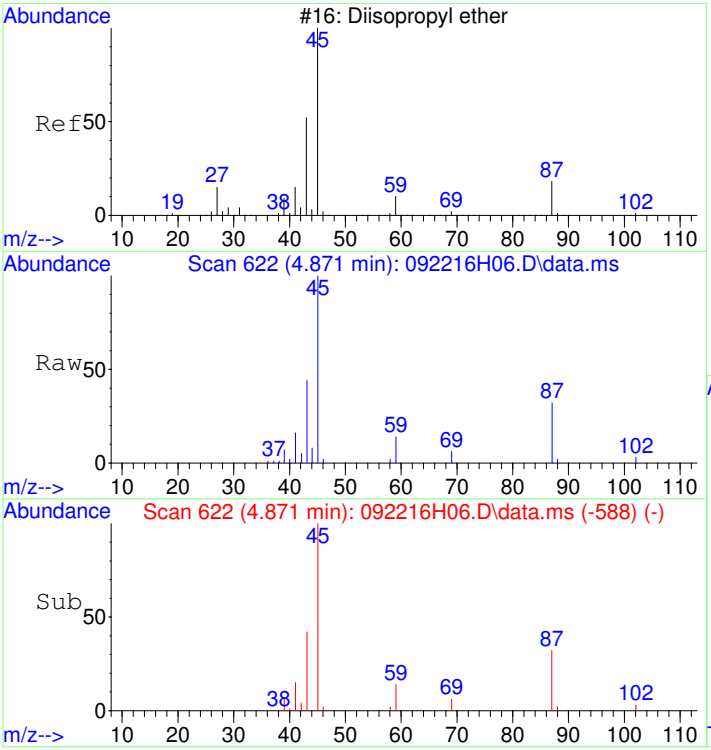


#16
1,1-Dichloroethane
Concen: 0.58 ug/L
RT: 4.658 min Scan# 587
Delta R.T. -0.006 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 63 Resp: 65089

Ion	Ratio	Lower	Upper
63	100		
65	30.9	11.5	51.5
83	13.3	0.0	33.5

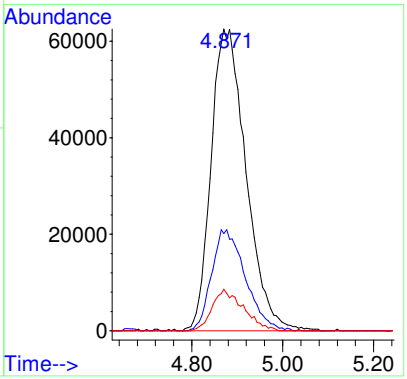


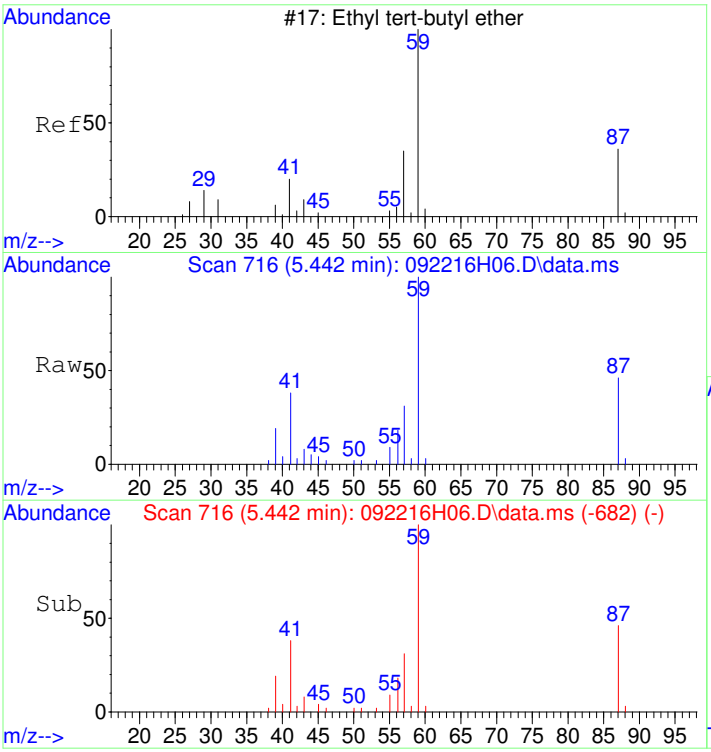


#17
Diisopropyl ether
Concen: 2.14 ug/L
RT: 4.871 min Scan# 622
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 45 Resp: 334267

Ion	Ratio	Lower	Upper
45	100		
87	32.3	8.2	48.2
59	12.3	0.0	31.1

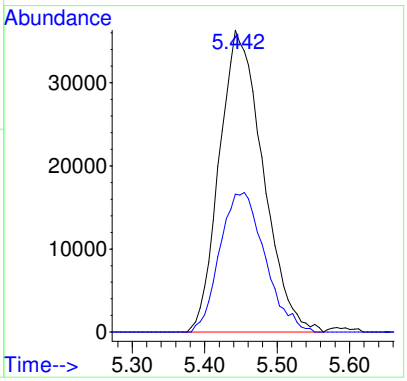


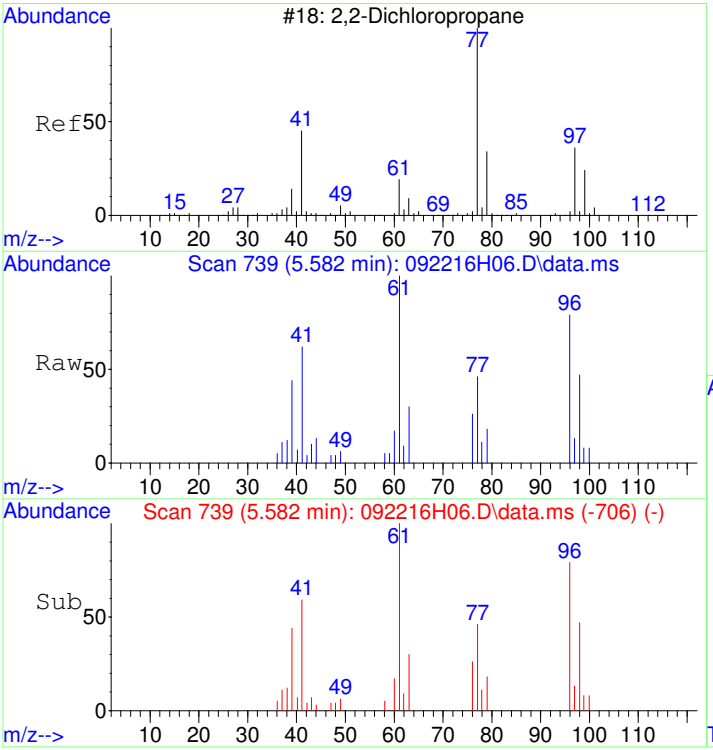


#18
Ethyl-tert-butyl ether
Concen: 2.16 ug/L
RT: 5.442 min Scan# 716
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 59 Resp: 151654

Ion	Ratio	Lower	Upper
59	100		
87	47.8	22.3	62.3

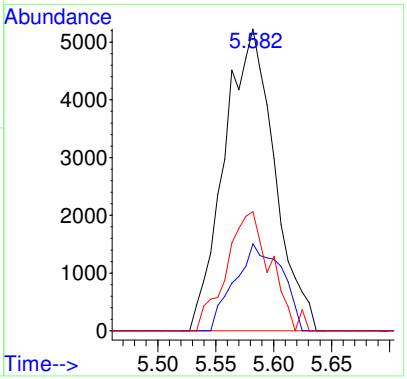


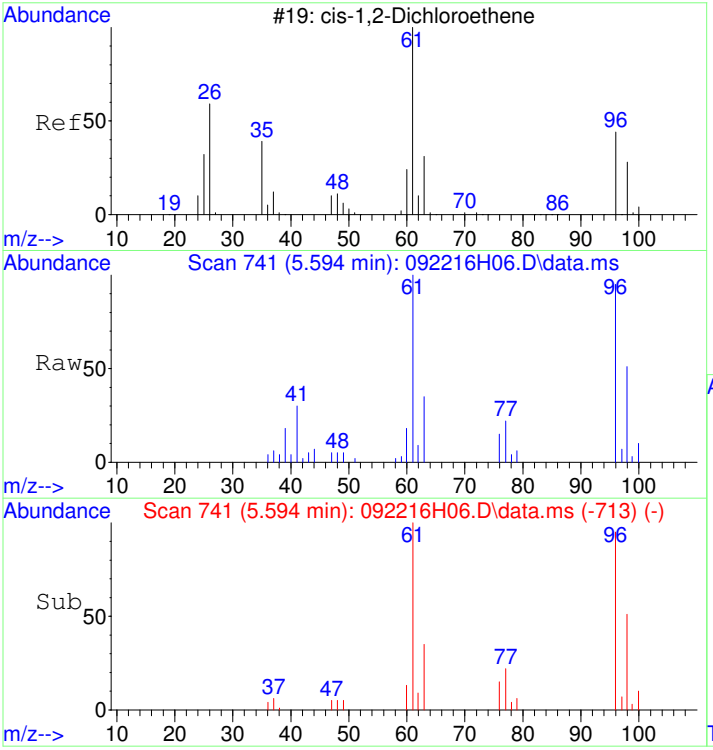


#19
2,2-Dichloropropane
Concen: 0.43 ug/L
RT: 5.582 min Scan# 739
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 77 Resp: 15753

Ion	Ratio	Lower	Upper
77	100		
97	26.9	0.0	39.8
79	34.9	11.9	51.9

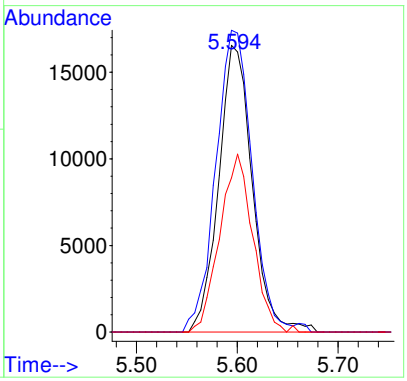


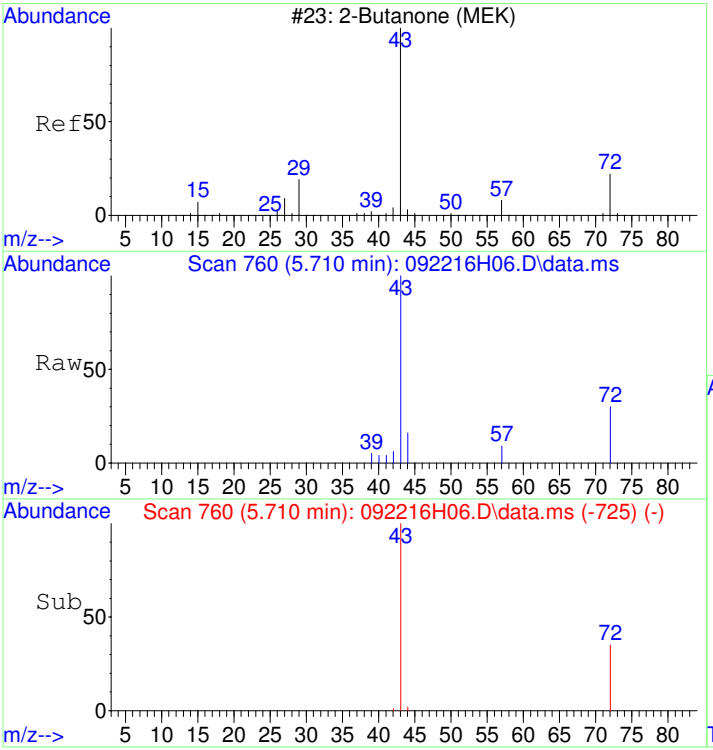


#20
cis-1,2-Dichloroethene
Concen: 0.52 ug/L
RT: 5.594 min Scan# 741
Delta R.T. -0.006 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 96 Resp: 38474

Ion	Ratio	Lower	Upper
96	100		
61	114.0	133.7	173.7#
98	60.8	45.0	85.0

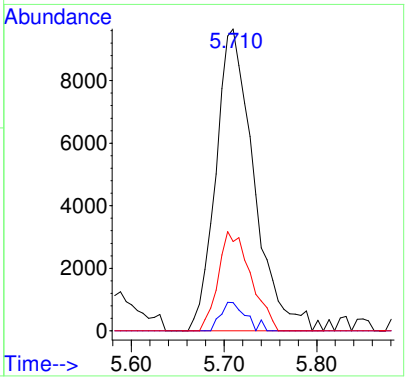


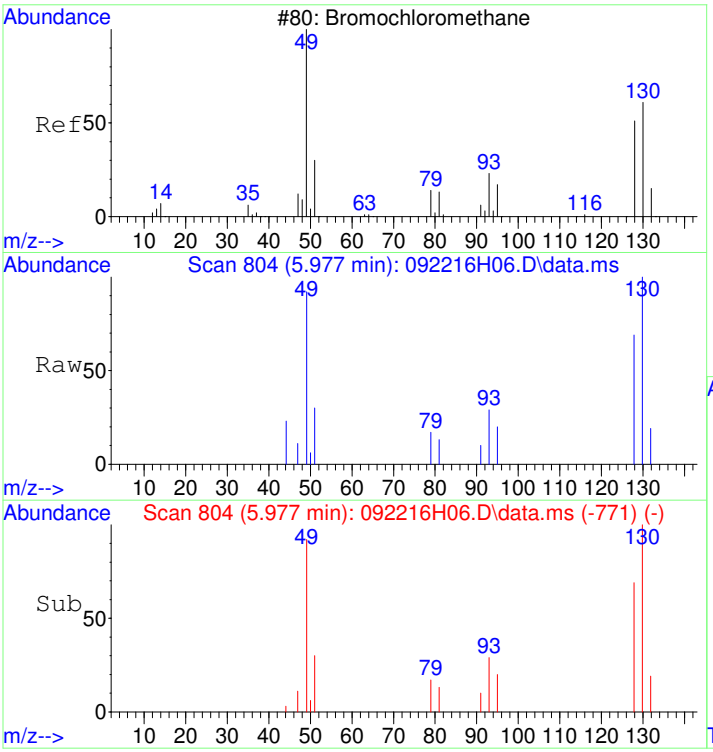


#21
2-Butanone (MEK)
Concen: 4.40 ug/L
RT: 5.710 min Scan# 760
Delta R.T. 0.013 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 43 Resp: 27558

Ion	Ratio	Lower	Upper
43	100		
57	6.2	0.0	27.8
72	28.0	4.3	44.3

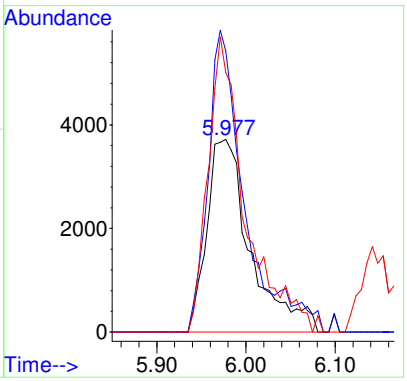


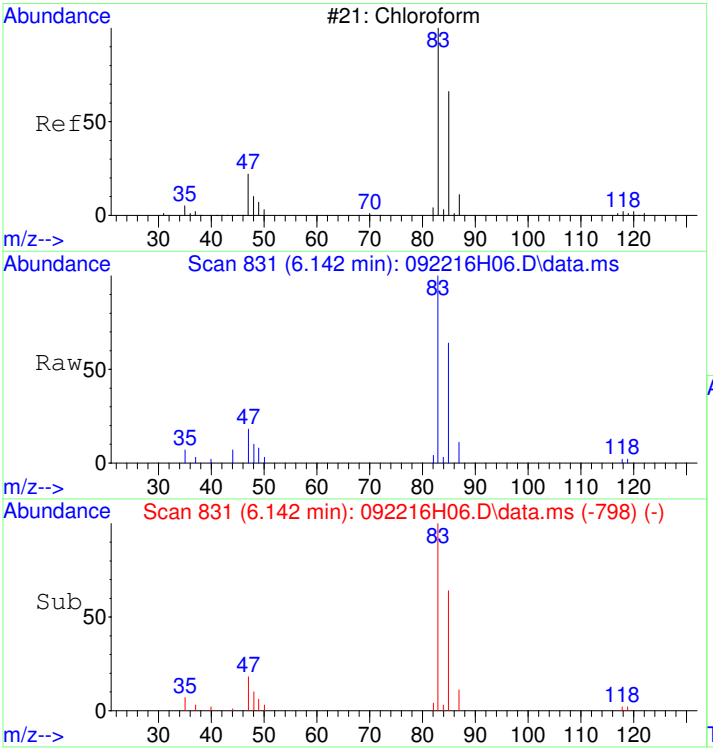


#22
Bromochloromethane
Concen: 0.53 ug/L
RT: 5.977 min Scan# 804
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:128 Resp: 12615

Ion	Ratio	Lower	Upper
128	100		
130	103.5	110.4	150.4#
49	131.4	139.9	179.9#

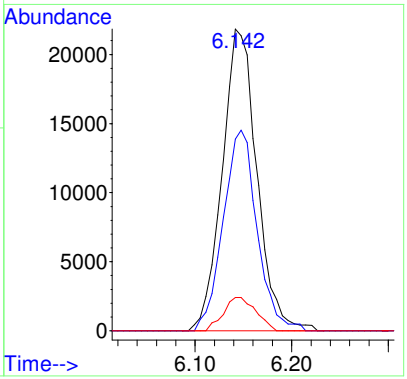


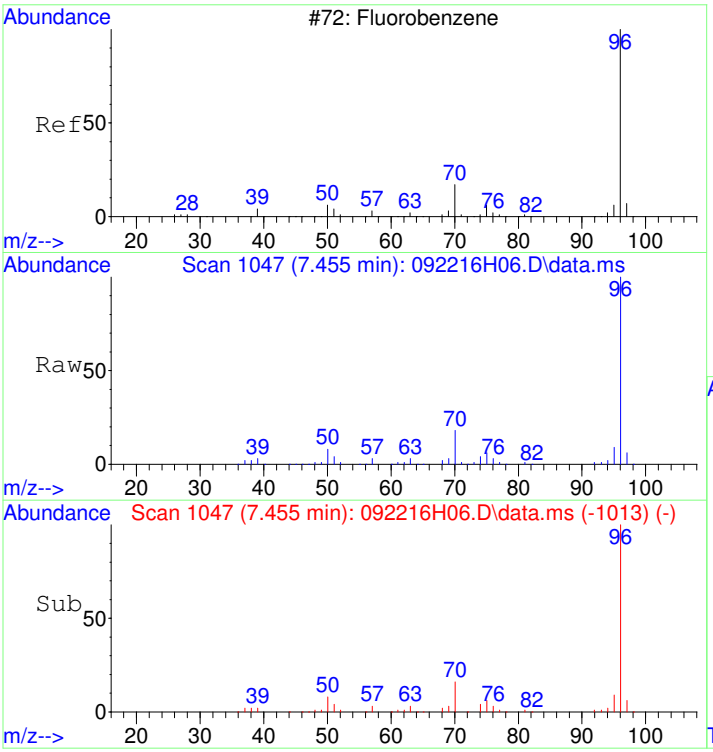


#23
Chloroform
Concen: 0.51 ug/L
RT: 6.142 min Scan# 831
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 83 Resp: 54614

Ion	Ratio	Lower	Upper
83	100		
85	65.0	43.8	83.8
87	10.3	0.0	30.2

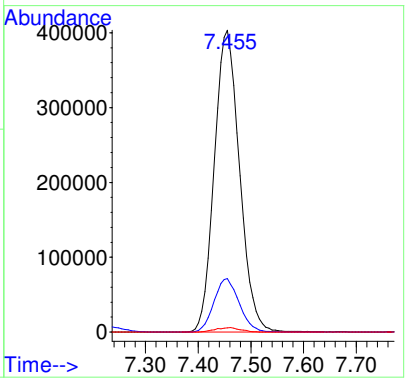


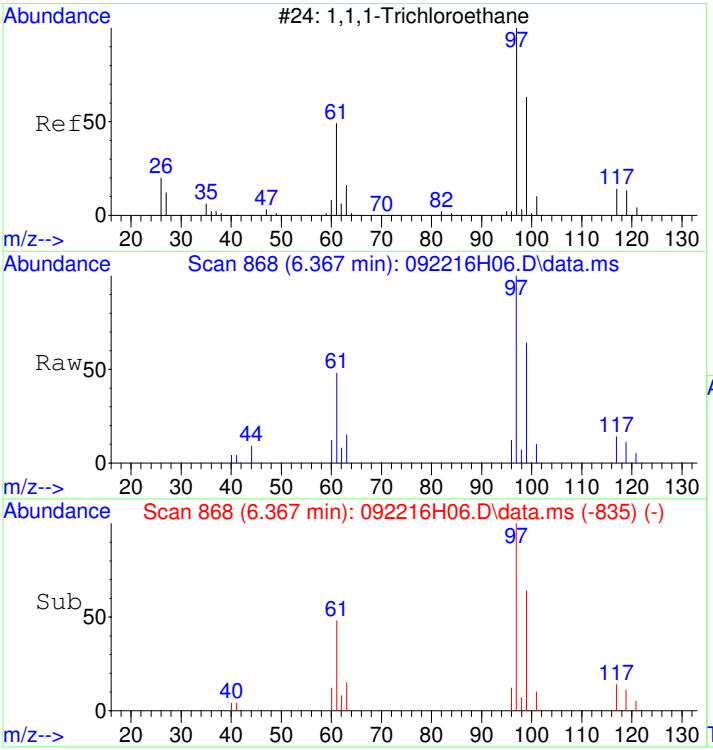


#24
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.455 min Scan# 1047
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 96 Resp: 1343831

Ion	Ratio	Lower	Upper
96	100		
70	17.7	0.0	39.9
77	1.5	0.0	21.8

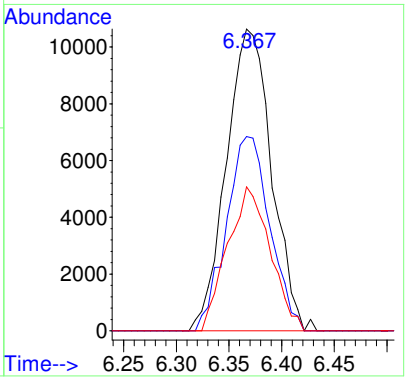


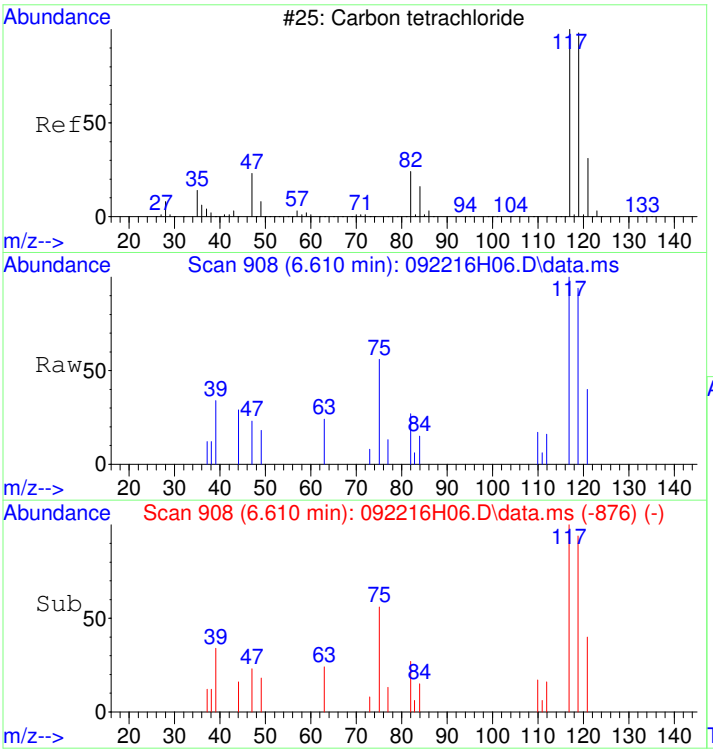


#25
1,1,1-Trichloroethane
Concen: 0.43 ug/L
RT: 6.367 min Scan# 868
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 97 Resp: 31789

Ion	Ratio	Lower	Upper
97	100		
99	61.9	44.7	84.7
61	45.0	22.5	62.5

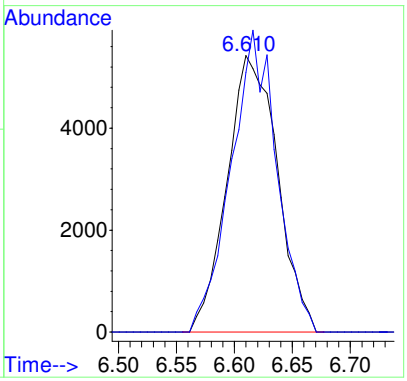


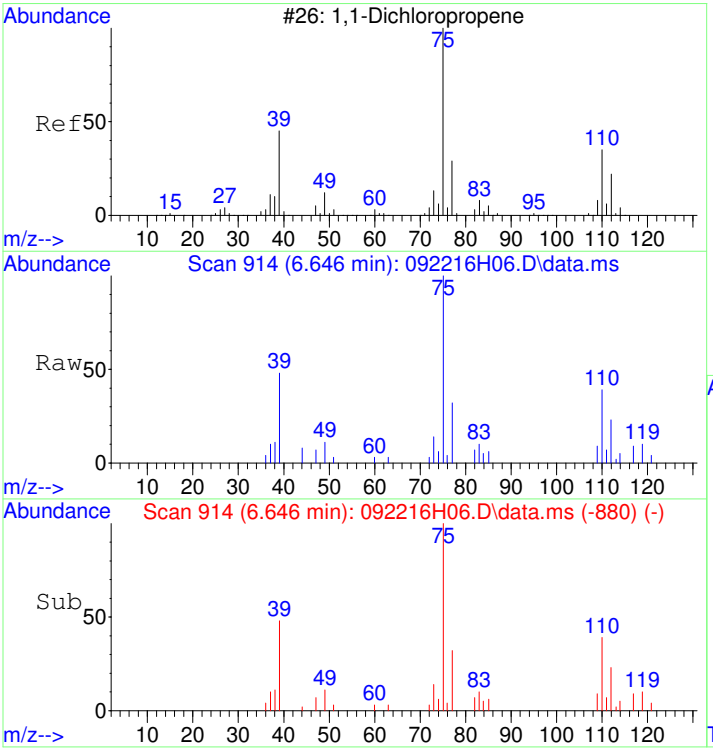


#26
Carbon tetrachloride
Concen: 0.34 ug/L
RT: 6.610 min Scan# 908
Delta R.T. -0.006 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:117 Resp: 16427

Ion	Ratio	Lower	Upper
117	100		
119	99.0	76.7	116.7

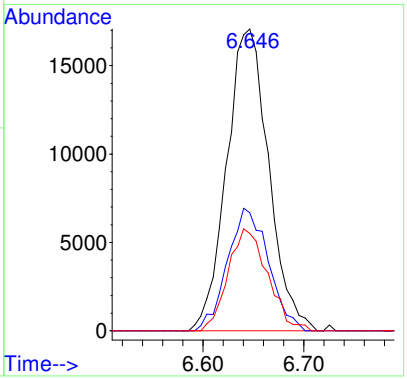


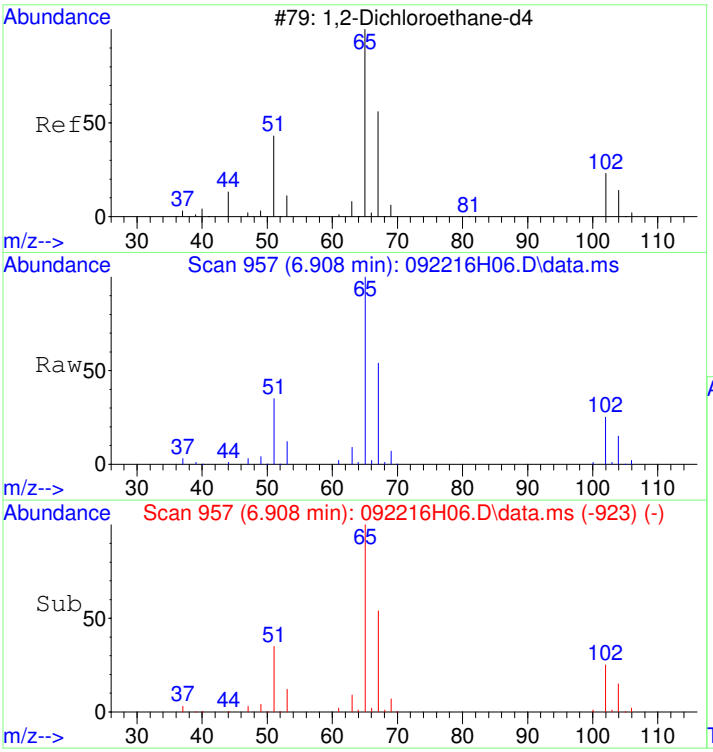


#27
1,1-Dichloropropene
Concen: 0.50 ug/L
RT: 6.646 min Scan# 914
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 75 Resp: 49573

Ion	Ratio	Lower	Upper
75	100		
110	39.5	15.8	55.8
77	31.8	10.4	50.4

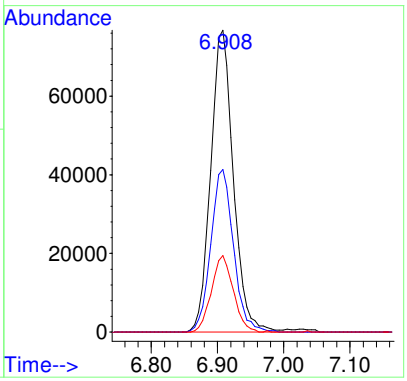


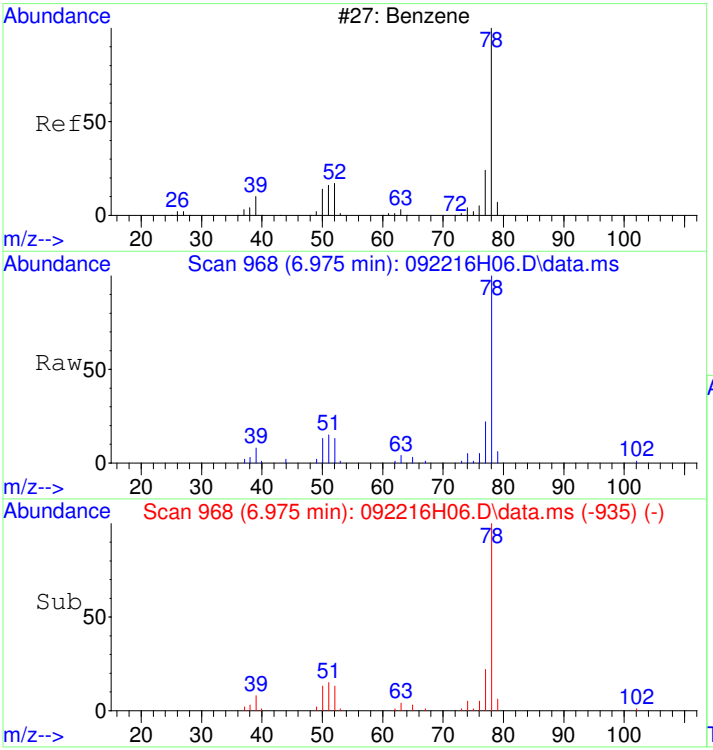


#28
1,2-Dichloroethane-d4
Concen: 5.12 ug/L
RT: 6.908 min Scan# 957
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 65 Resp: 184109

Ion	Ratio	Lower	Upper
65	100		
67	53.5	28.5	68.5
102	24.2	0.0	36.0

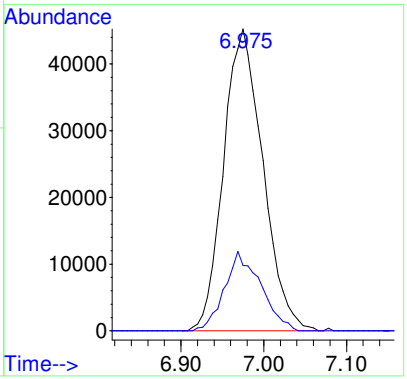


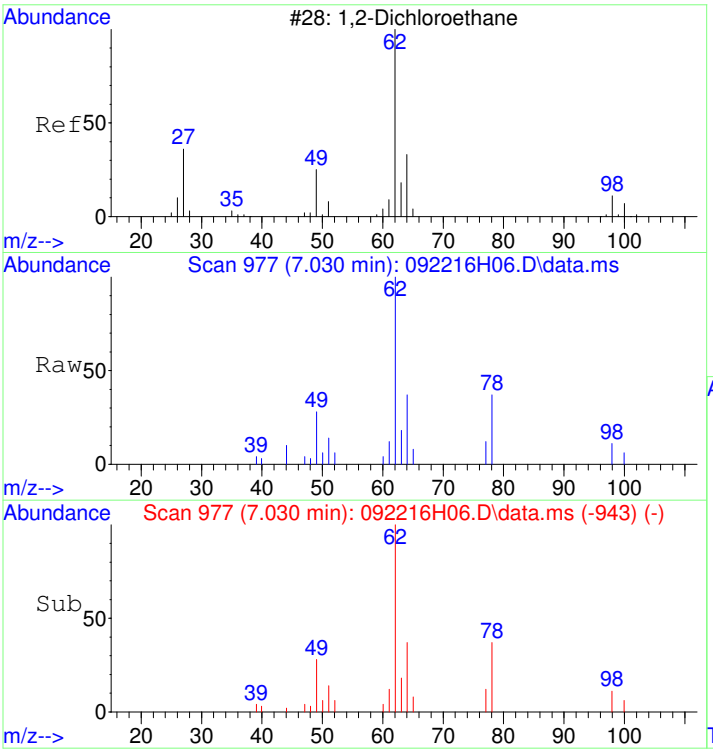


#29
Benzene
Concen: 0.50 ug/L
RT: 6.975 min Scan# 968
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 78 Resp: 149147

Ion	Ratio	Lower	Upper
78	100		
77	24.1	3.4	43.4

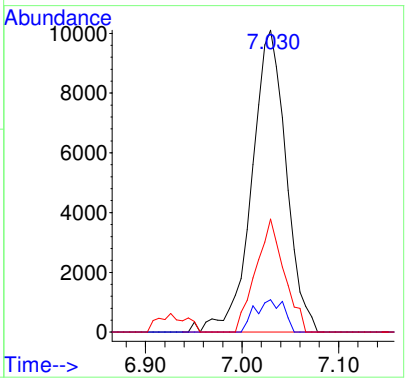


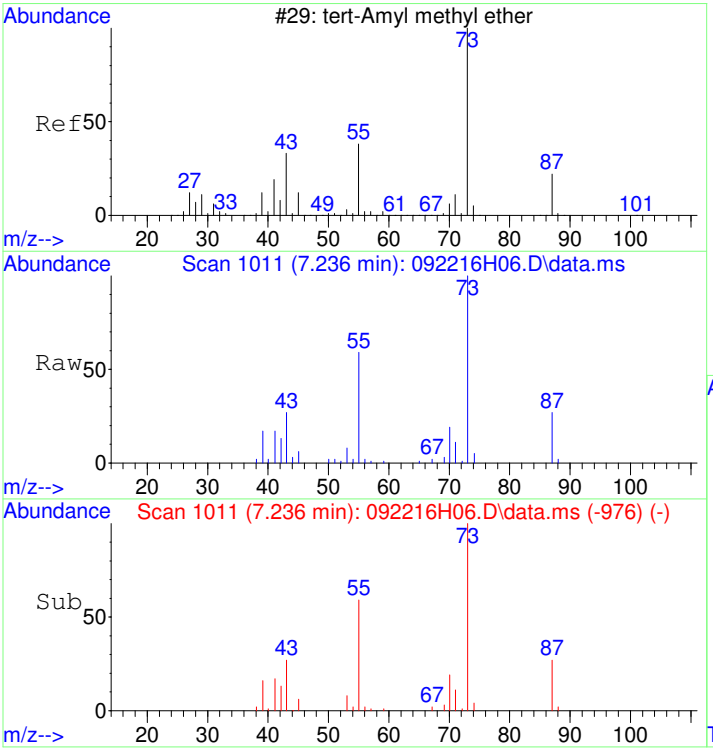


#30
1,2-Dichloroethane
Concen: 0.52 ug/L
RT: 7.030 min Scan# 977
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 62 Resp: 24948

Ion	Ratio	Lower	Upper
62	100		
98	9.1	0.0	27.1
64	31.0	12.1	52.1

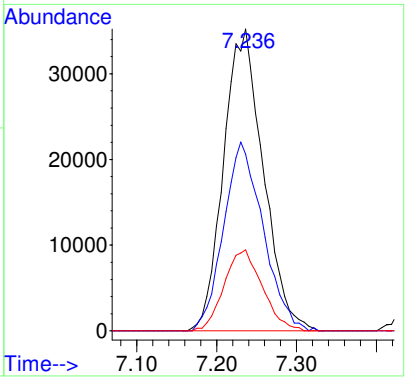


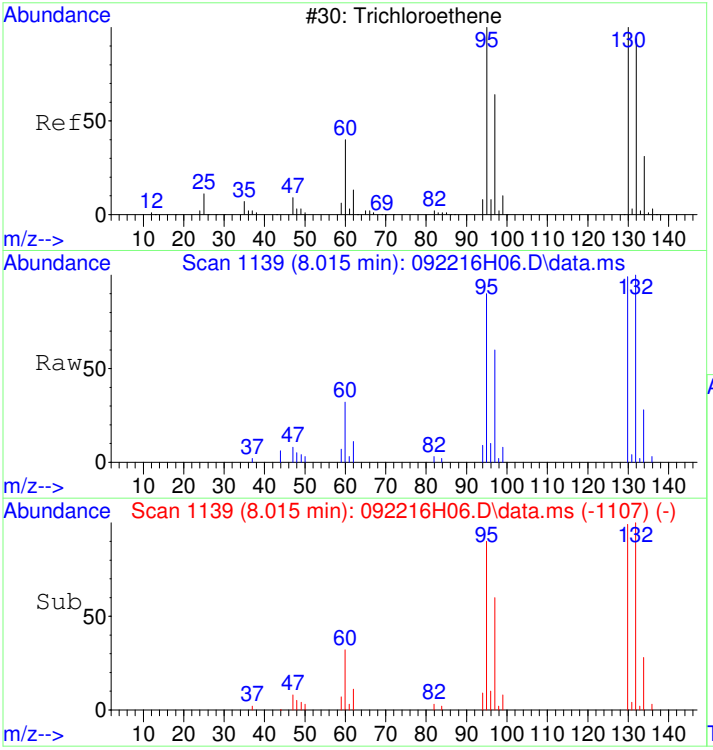


#31
tert-Amyl methyl ether
Concen: 1.78 ug/L
RT: 7.236 min Scan# 1011
Delta R.T. 0.013 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 73 Resp: 121434

Ion	Ratio	Lower	Upper
73	100		
55	62.3	3.8	43.8#
87	25.8	4.9	44.9

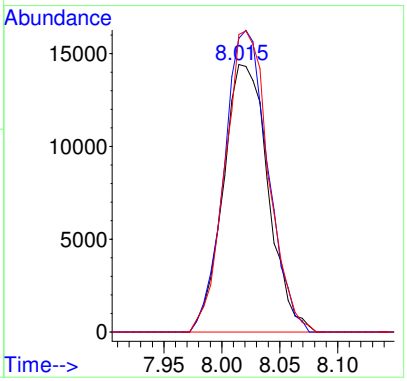


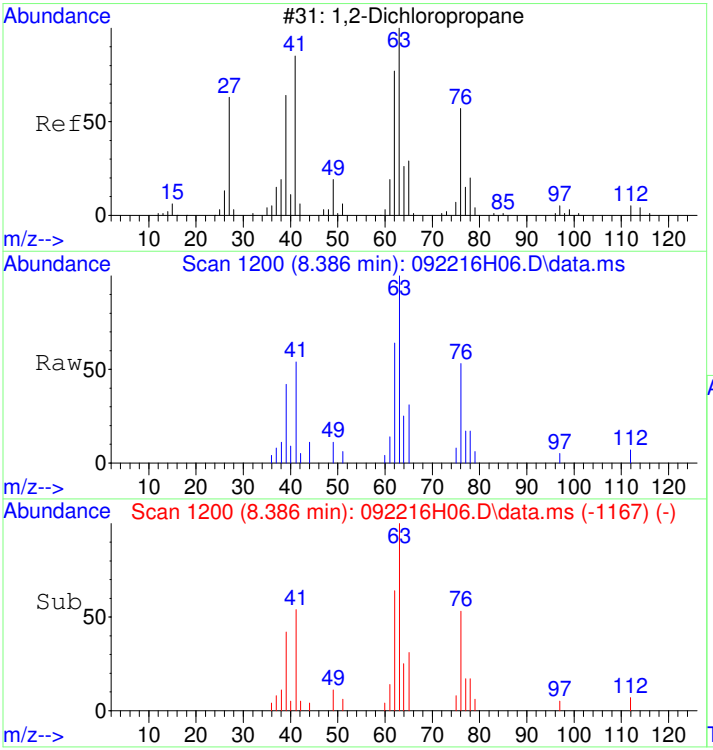


#32
Trichloroethene
Concen: 0.50 ug/L
RT: 8.015 min Scan# 1139
Delta R.T. -0.006 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 95 Resp: 38853

Ion	Ratio	Lower	Upper
95	100		
130	109.7	80.6	120.6
132	109.2	77.3	117.3

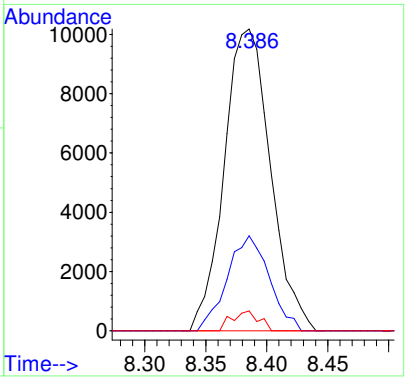


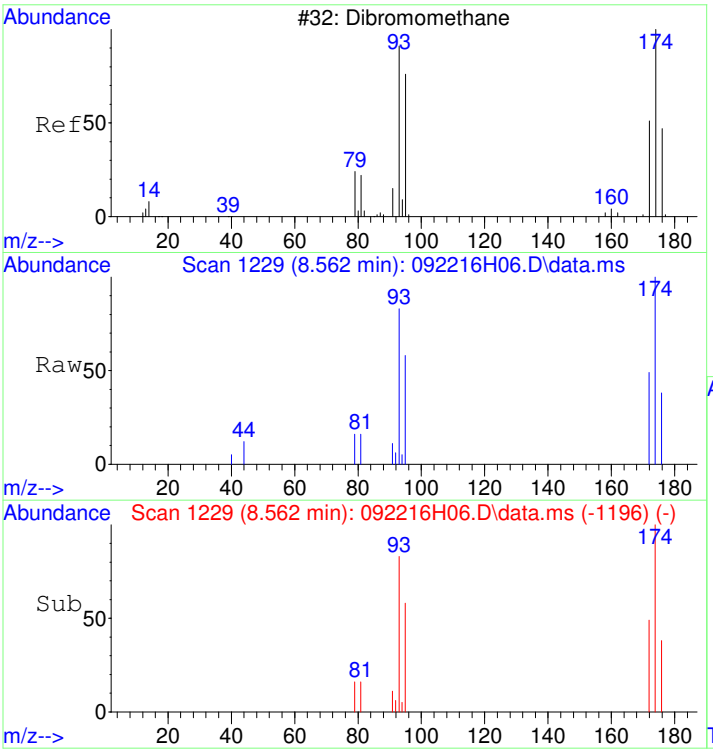


#33
1,2-Dichloropropane
Concen: 0.50 ug/L
RT: 8.386 min Scan# 1200
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 63 Resp: 26871

Ion	Ratio	Lower	Upper
63	100		
65	28.6	10.6	50.6
112	3.9	0.0	24.2

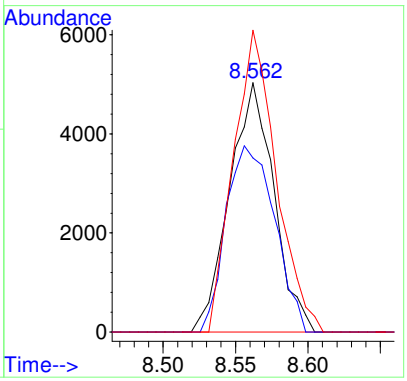


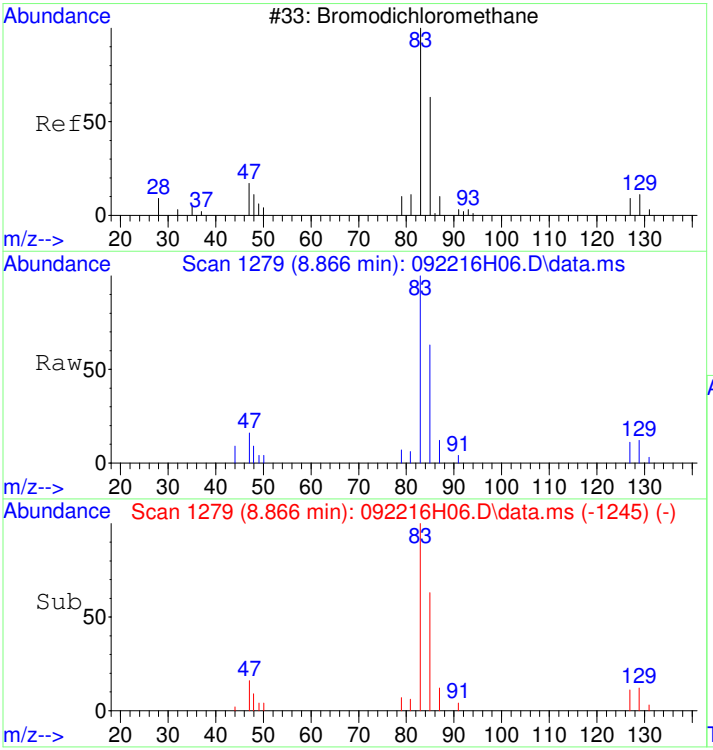


#34
Dibromomethane
Concen: 0.53 ug/L
RT: 8.562 min Scan# 1229
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 93 Resp: 10691

Ion	Ratio	Lower	Upper
93	100		
95	82.0	62.4	102.4
174	116.7	86.6	126.6

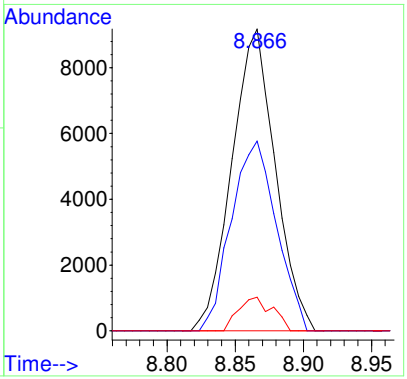


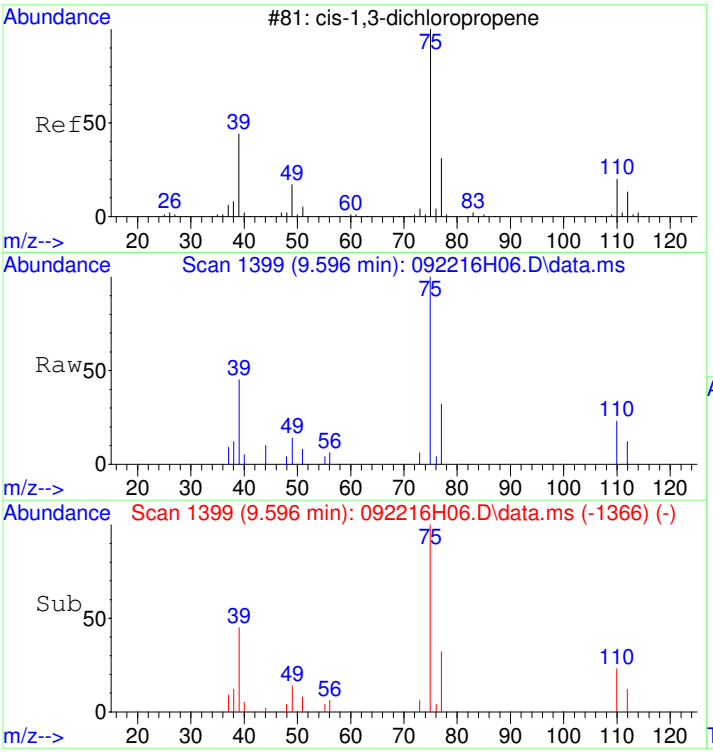


#35
Bromodichloromethane
Concen: 0.41 ug/L
RT: 8.866 min Scan# 1279
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 83 Resp: 20320

Ion	Ratio	Lower	Upper
83	100		
85	65.2	43.6	83.6
127	8.7	0.0	28.6

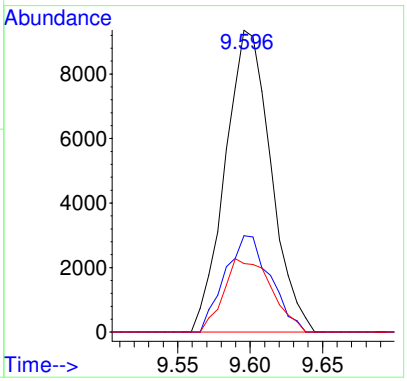


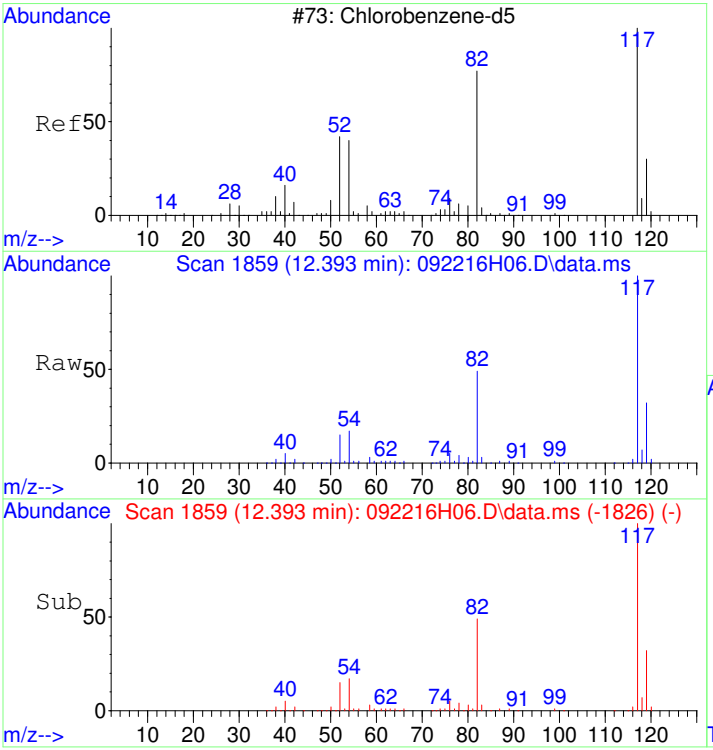


#36
cis-1,3-Dichloropropene
Concen: 0.40 ug/L
RT: 9.596 min Scan# 1399
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 75 Resp: 20486

Ion	Ratio	Lower	Upper
75	100		
77	31.8	11.5	51.5
110	25.3	3.2	43.2

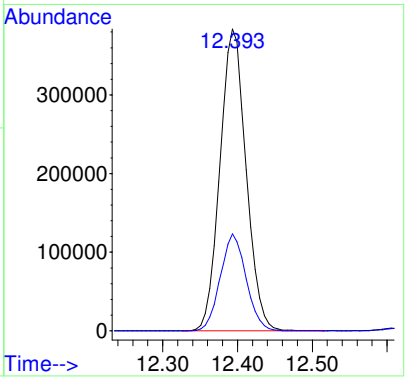


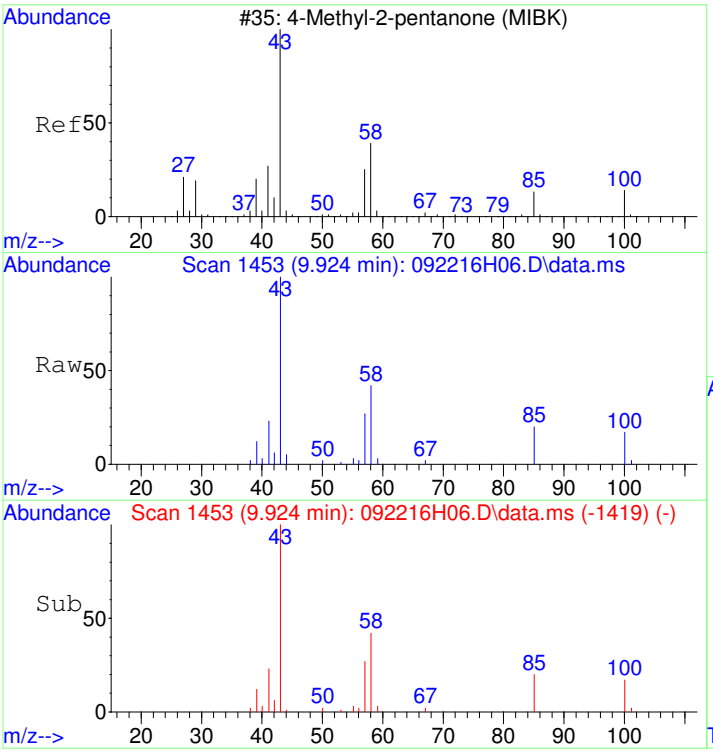


#37
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.393 min Scan# 1859
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:117 Resp: 929321

Ion	Ratio	Lower	Upper
117	100		
119	31.7	12.0	52.0

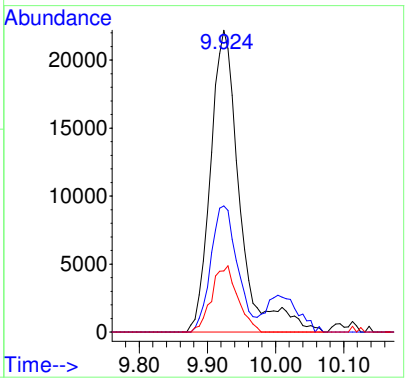


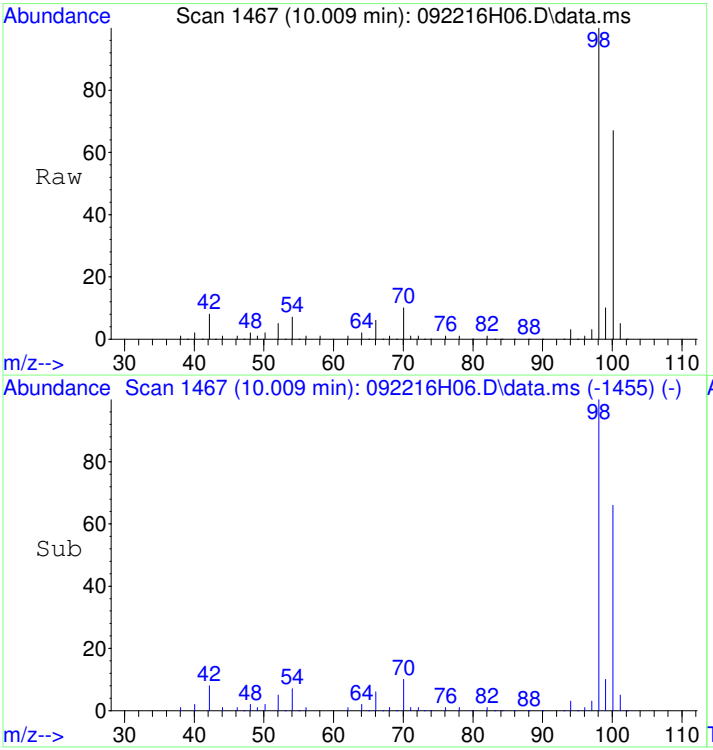


#38
4-Methyl-2-pentanone (MIBK)
Concen: 4.14 ug/L
RT: 9.924 min Scan# 1453
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 43 Resp: 66380

Ion	Ratio	Lower	Upper
43	100		
58	38.5	17.0	57.0
85	19.6	0.0	37.9

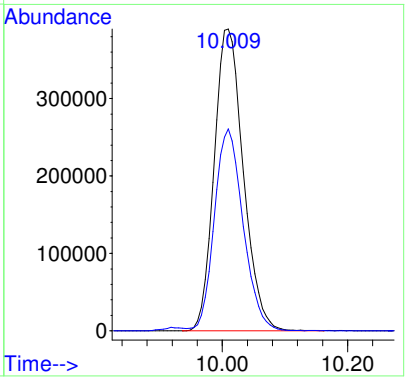


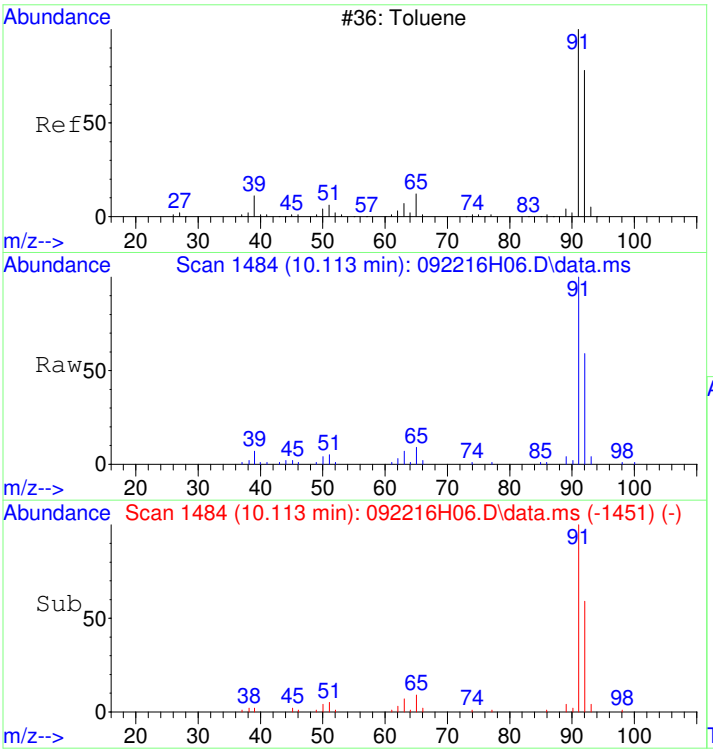


#39
Toluene-d8
Concen: 4.95 ug/L
RT: 10.009 min Scan# 1467
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 98 Resp: 1261611

Ion	Ratio	Lower	Upper
98	100		
100	66.0	45.7	85.7

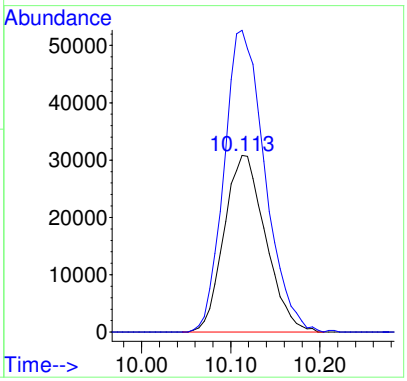


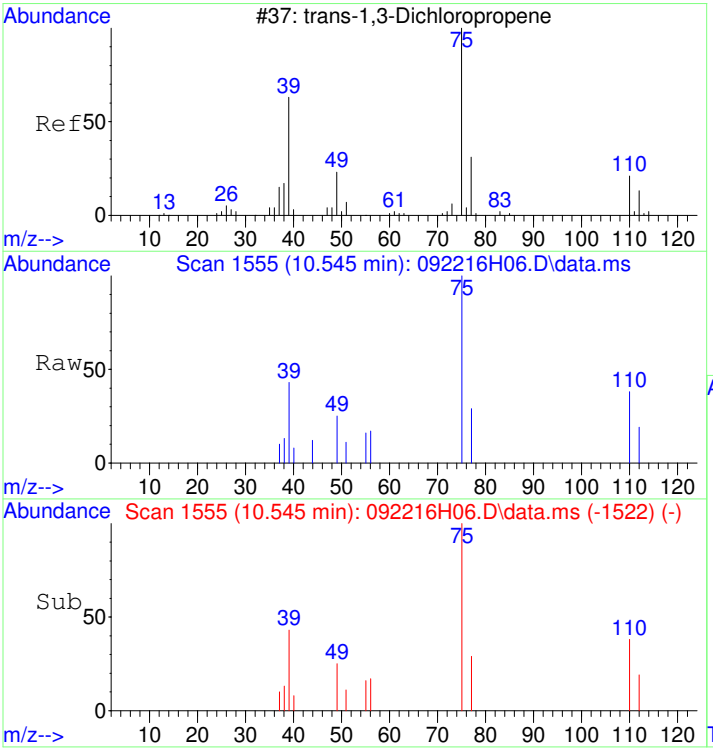


#40
Toluene
Concen: 0.50 ug/L
RT: 10.113 min Scan# 1484
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 92 Resp: 99330

Ion	Ratio	Lower	Upper
92	100		
91	168.3	151.6	191.6

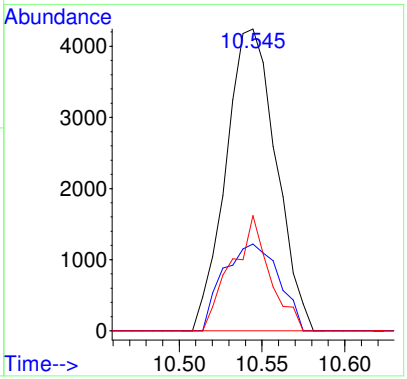


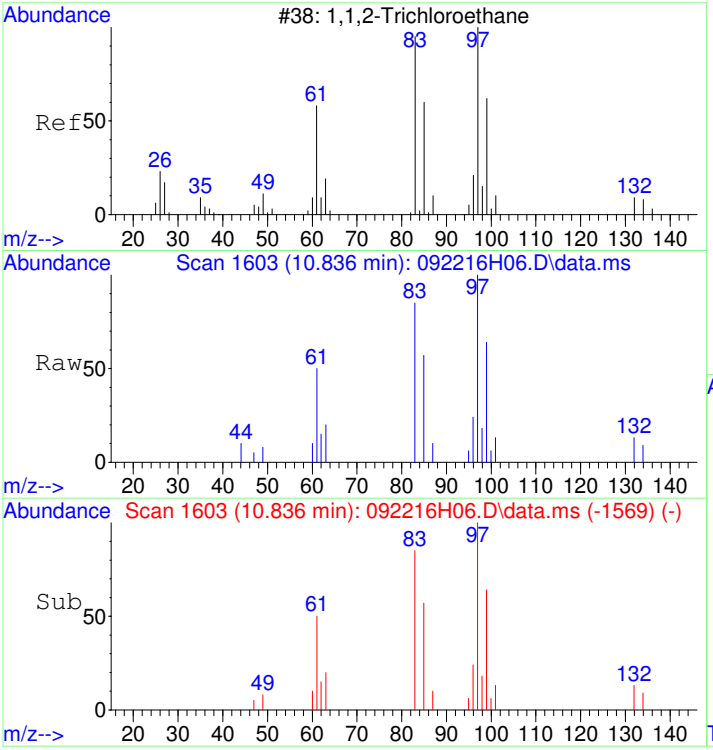


#41
trans-1,3-Dichloropropene
Concen: 0.32 ug/L
RT: 10.545 min Scan# 1555
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 75 Resp: 8955

Ion	Ratio	Lower	Upper
75	100		
77	31.7	12.0	52.0
110	29.1	3.8	43.8

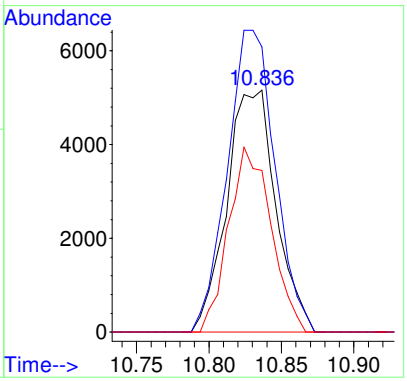


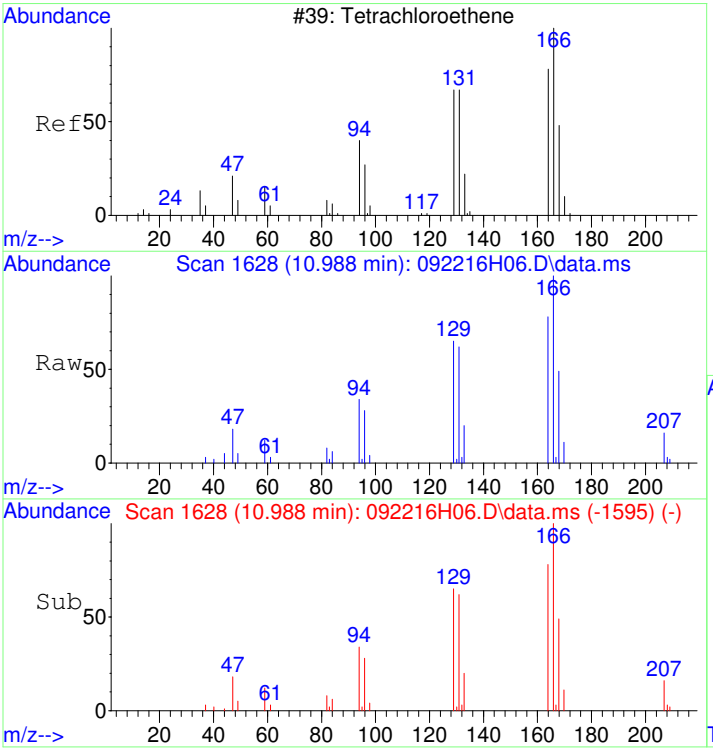


#42
1,1,2-Trichloroethane
Concen: 0.49 ug/L
RT: 10.836 min Scan# 1603
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 83 Resp: 12153

Ion	Ratio	Lower	Upper
83	100		
97	121.3	100.9	140.9
85	66.0	44.5	84.5

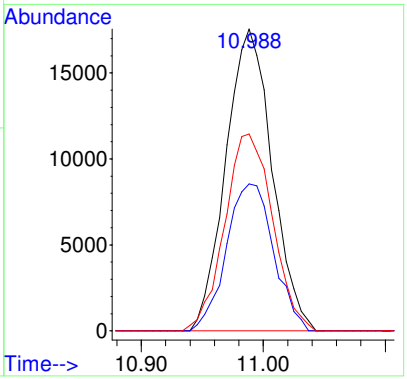


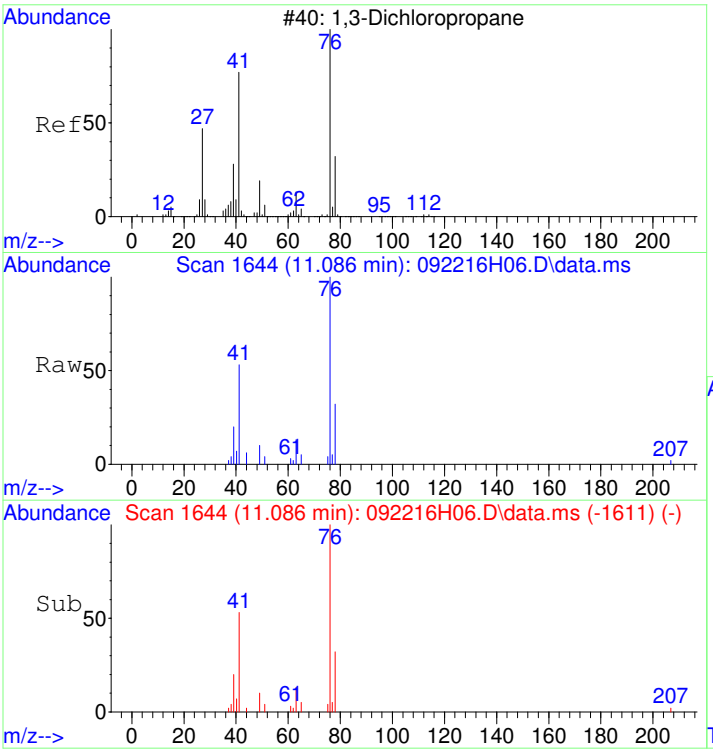


#43
Tetrachloroethene
Concen: 0.50 ug/L
RT: 10.988 min Scan# 1628
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:166 Resp: 46268

Ion	Ratio	Lower	Upper
166	100		
168	49.7	28.0	68.0
129	67.5	49.8	89.8

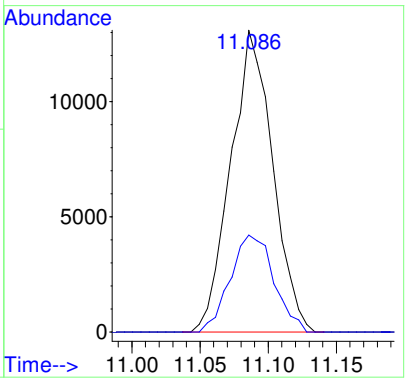


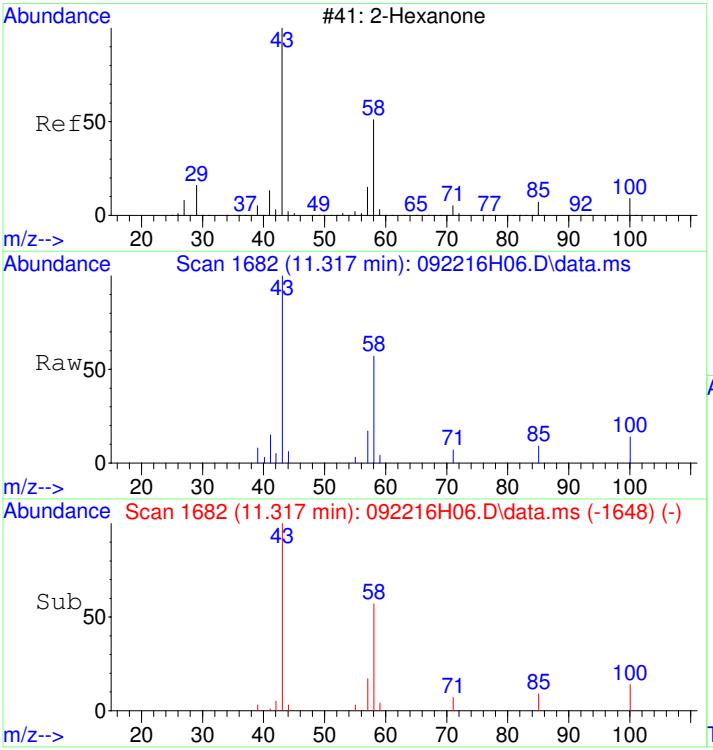


#44
1,3-Dichloropropane
Concen: 0.51 ug/L
RT: 11.086 min Scan# 1644
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 76 Resp: 27950

Ion	Ratio	Lower	Upper
76	100		
78	33.5	11.7	51.7

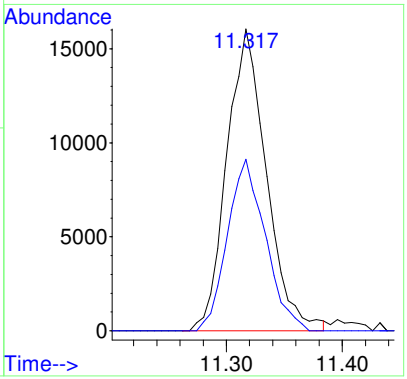


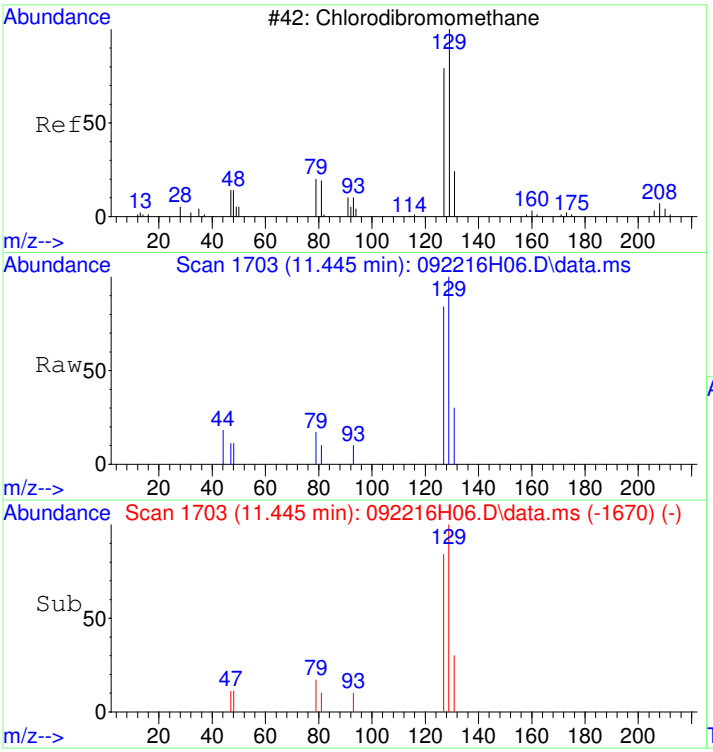


#45
2-Hexanone
Concen: 3.86 ug/L
RT: 11.317 min Scan# 1682
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 43 Resp: 38135

Ion	Ratio	Lower	Upper
43	100		
58	54.5	31.3	71.3

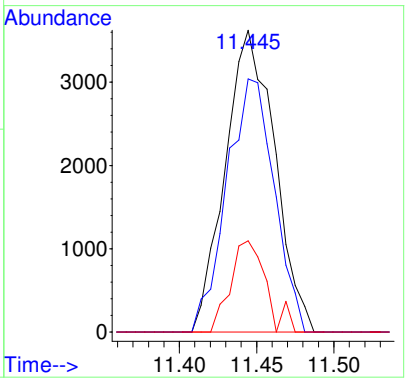


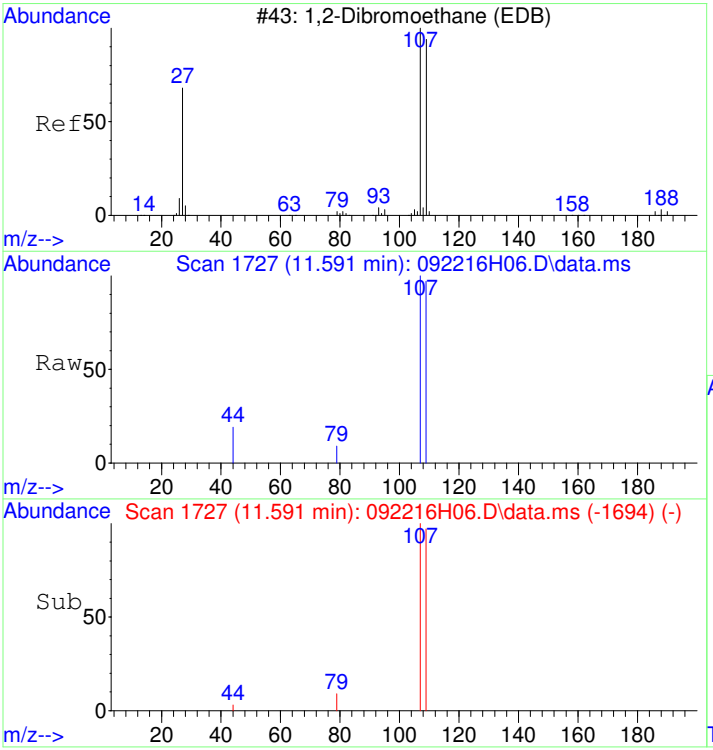


#46
Chlorodibromomethane
Concen: 0.34 ug/L
RT: 11.445 min Scan# 1703
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:129 Resp: 8054

Ion	Ratio	Lower	Upper
129	100		
127	80.6	56.6	96.6
131	21.8	4.6	44.6

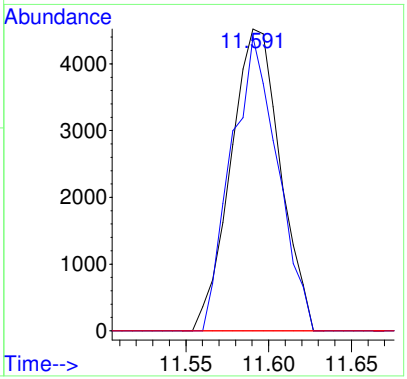


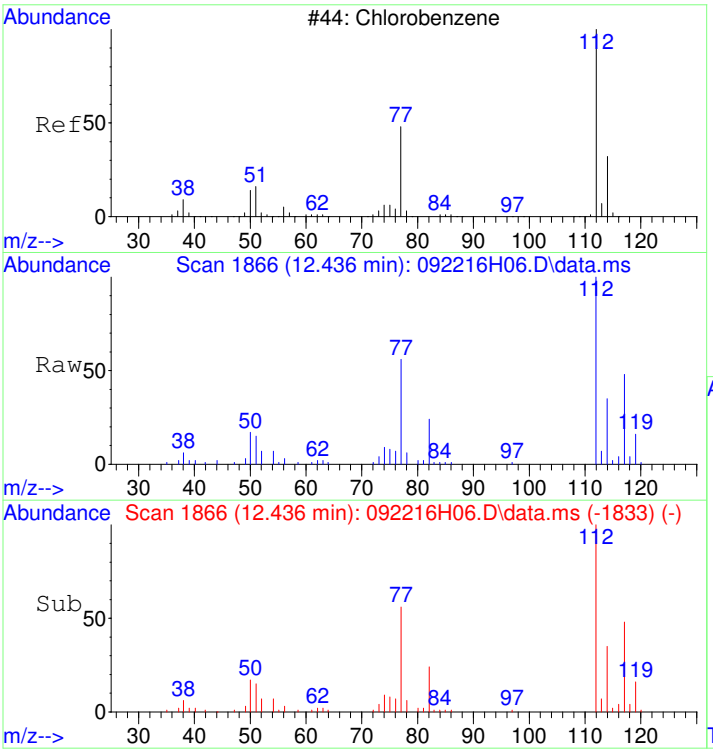


#47
1,2-Dibromoethane (EDB)
Concen: 0.40 ug/L
RT: 11.591 min Scan# 1727
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:107 Resp: 9447

Ion	Ratio	Lower	Upper
107	100		
109	91.0	74.8	114.8
188	0.0	0.0	23.9

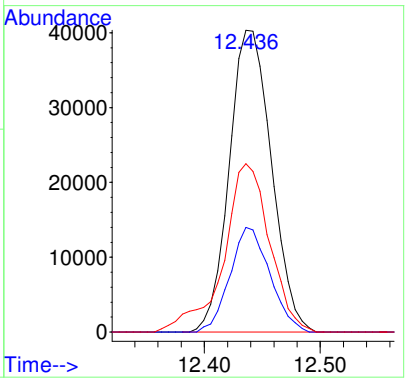


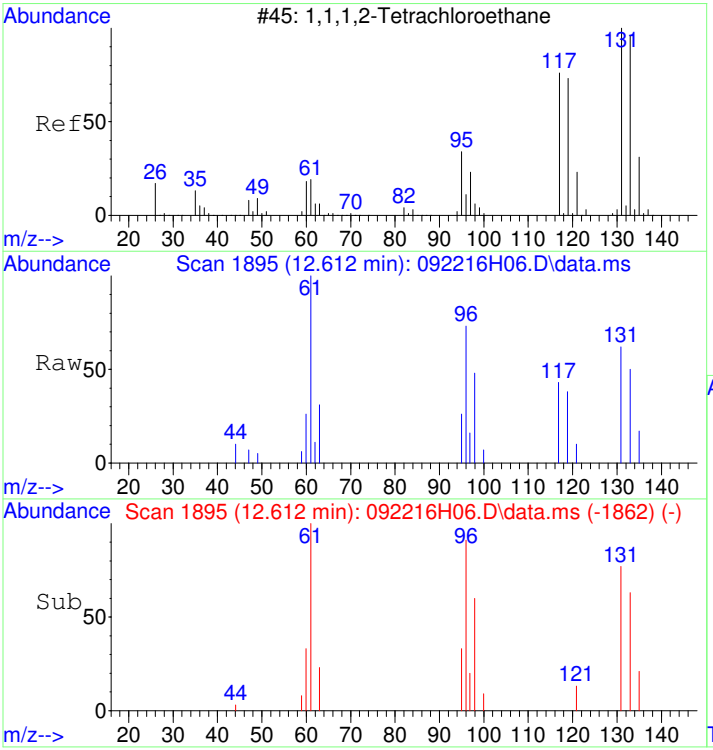


#48
Chlorobenzene
Concen: 0.50 ug/L
RT: 12.436 min Scan# 1866
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:112 Resp: 102231

Ion	Ratio	Lower	Upper
112	100		
114	32.8	11.9	51.9
77	60.9	41.8	81.8

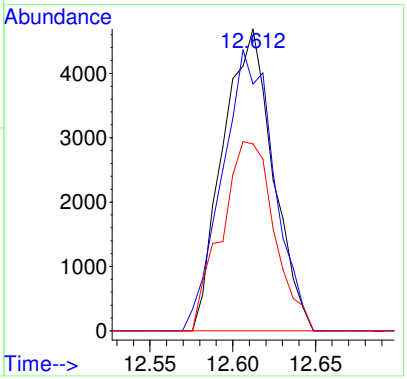


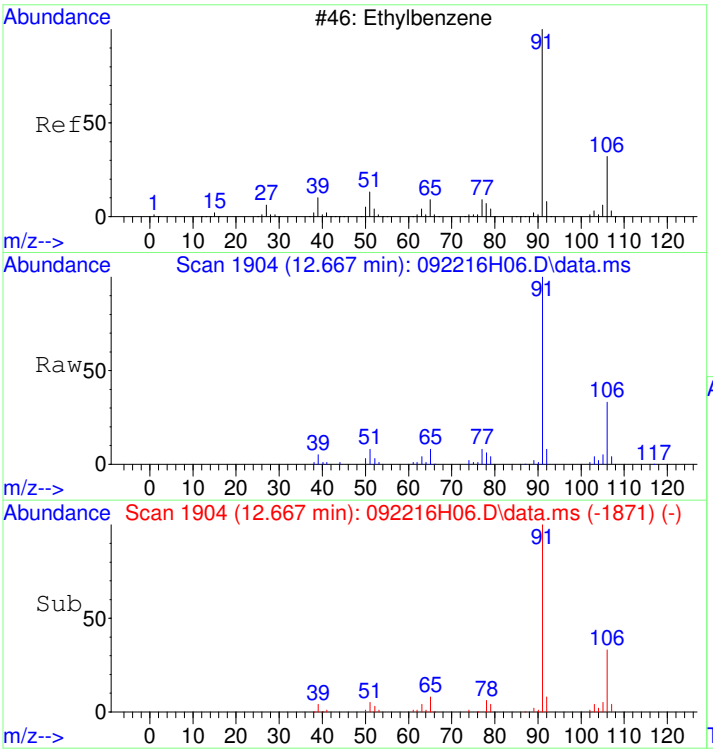


#49
1,1,1,2-Tetrachloroethane
Concen: 0.31 ug/L
RT: 12.612 min Scan# 1895
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:131 Resp: 9891

Ion	Ratio	Lower	Upper
131	100		
133	96.2	74.5	114.5
119	65.9	38.8	78.8

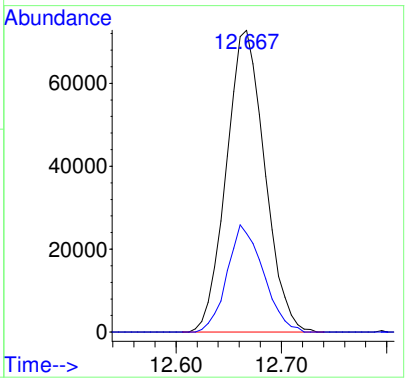


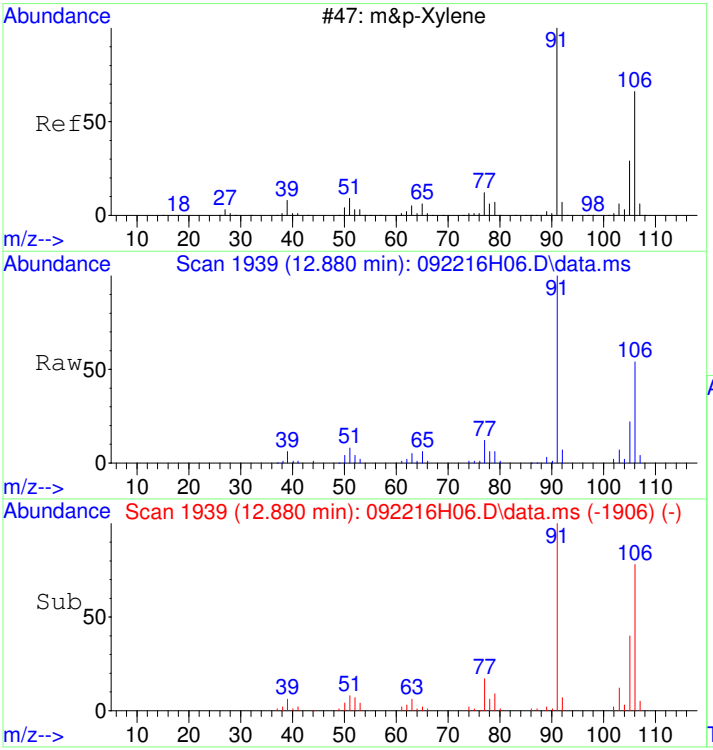


#50
Ethylbenzene
Concen: 0.49 ug/L
RT: 12.667 min Scan# 1904
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 91 Resp: 184630

Ion	Ratio	Lower	Upper
91	100		
106	33.4	11.6	51.6

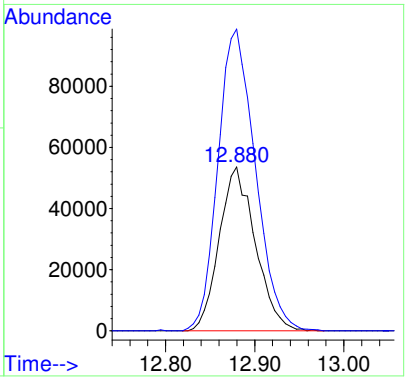


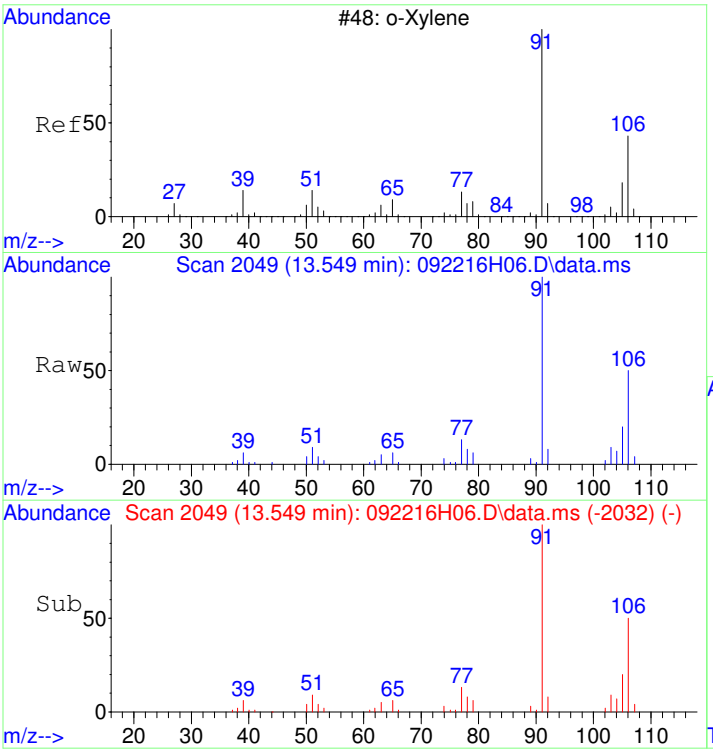


#51
m&p-Xylene
Concen: 0.96 ug/L
RT: 12.880 min Scan# 1939
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:106 Resp: 150523

Ion	Ratio	Lower	Upper
106	100		
91	190.6	184.6	224.6

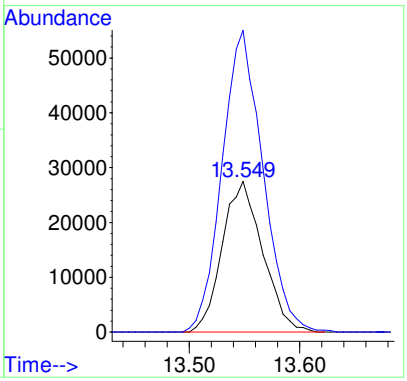


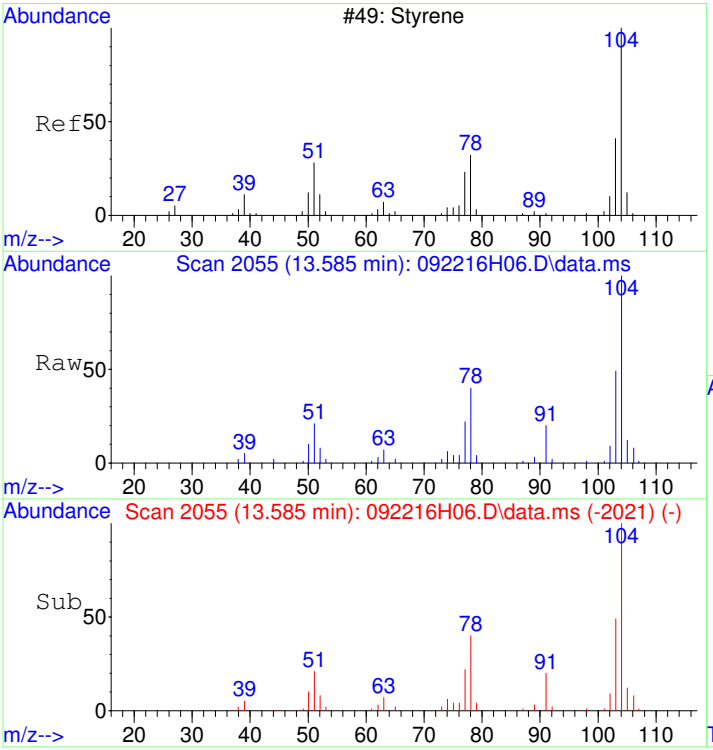


#52
o-Xylene
Concen: 0.48 ug/L
RT: 13.549 min Scan# 2049
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:106 Resp: 69979

Ion	Ratio	Lower	Upper
106	100		
91	201.9	197.9	237.9

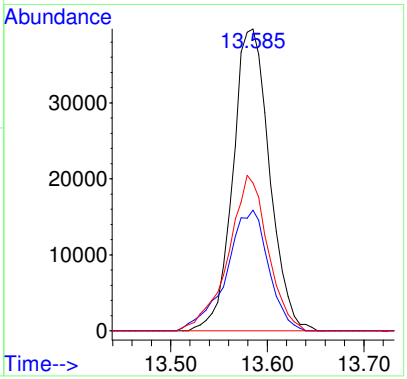


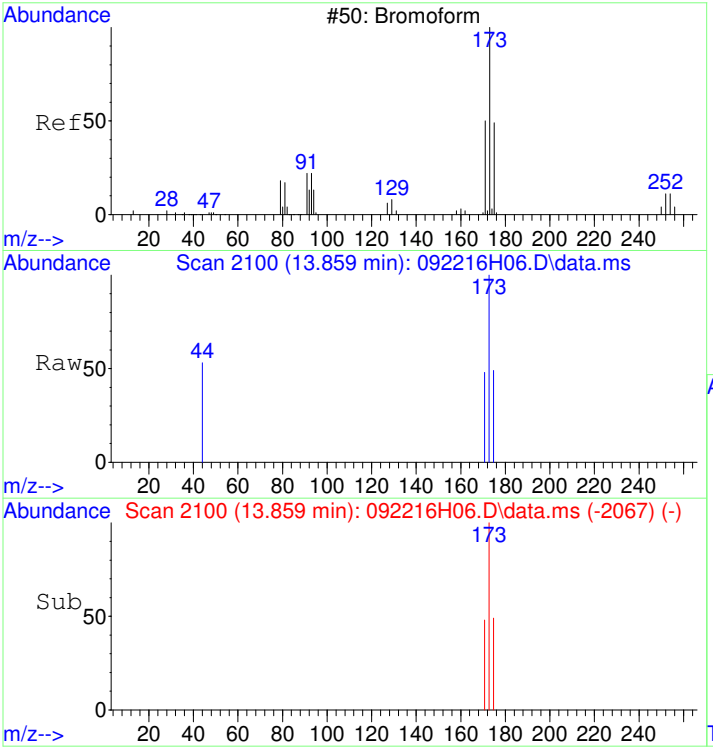


#53
Styrene
Concen: 0.47 ug/L
RT: 13.585 min Scan# 2055
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:104 Resp: 104711

Ion	Ratio	Lower	Upper
104	100		
78	45.9	35.0	75.0
103	55.7	34.5	74.5

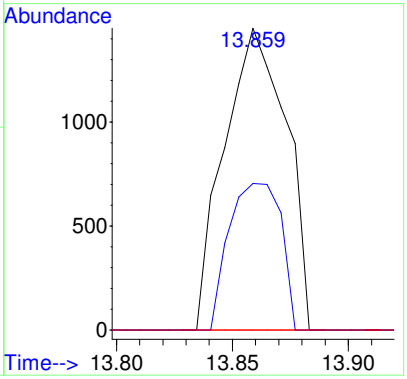


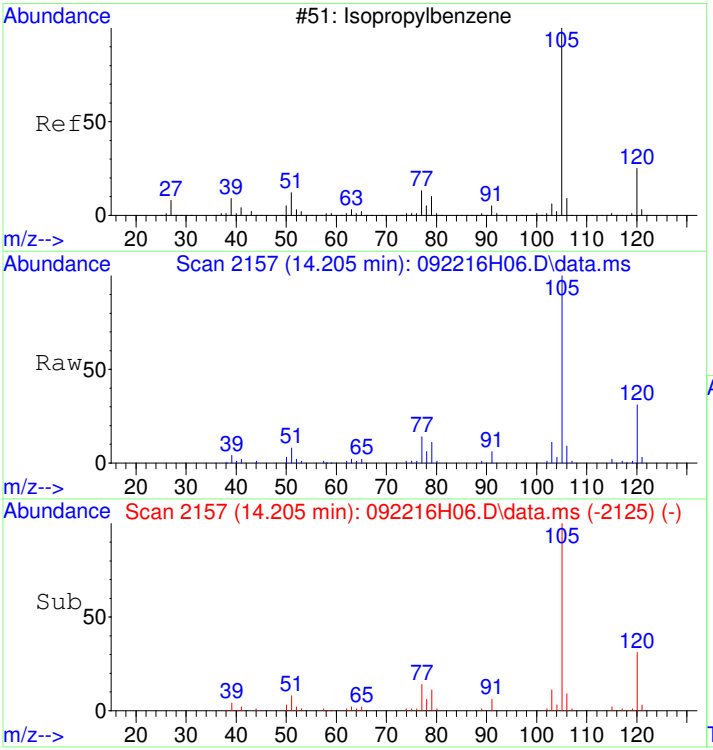


#54
Bromoform
Concen: 0.29 ug/L
RT: 13.859 min Scan# 2100
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:173 Resp: 2696

Ion	Ratio	Lower	Upper
173	100		
175	40.9	29.3	69.3
252	0.0	0.0	30.7

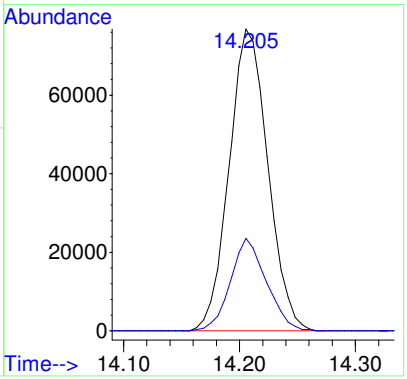


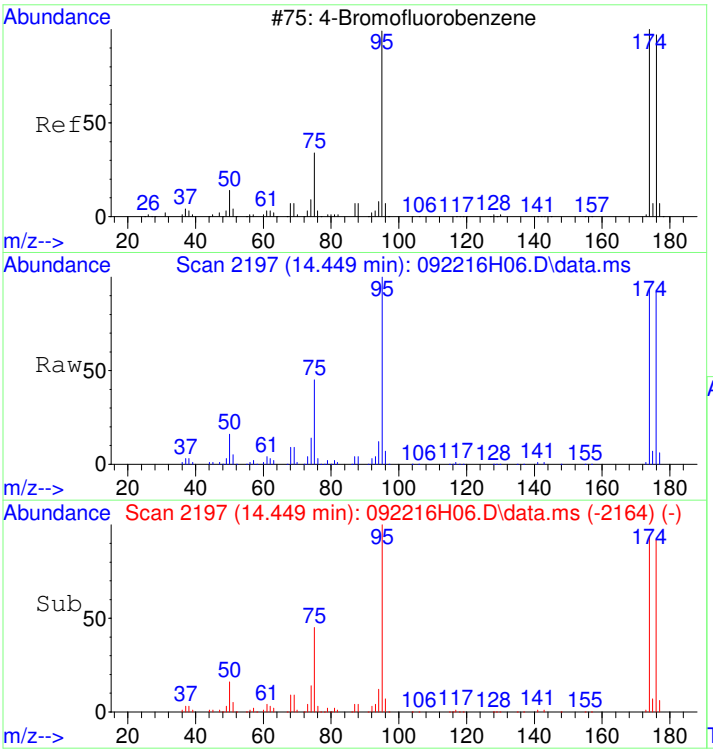


#55
Isopropylbenzene
Concen: 0.47 ug/L
RT: 14.205 min Scan# 2157
Delta R.T. -0.006 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:105 Resp: 178370

Ion	Ratio	Lower	Upper
105	100		
120	28.4	7.0	47.0

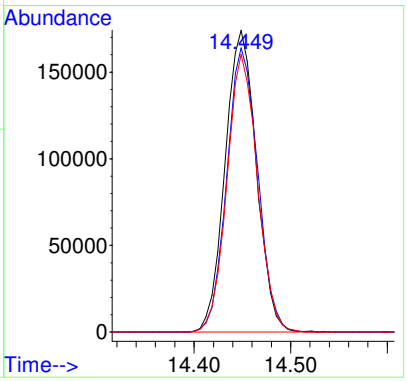


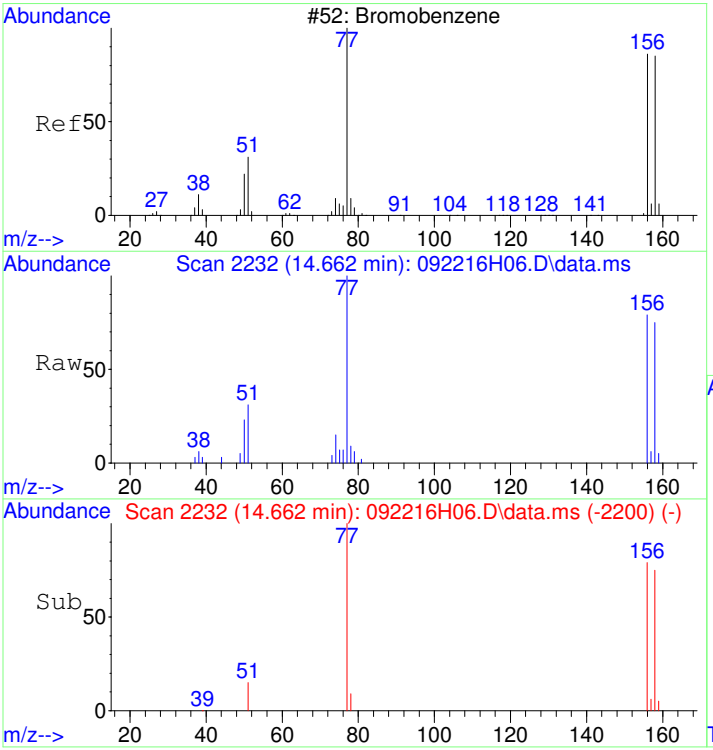


#56
4-Bromofluorobenzene
Concen: 4.96 ug/L
RT: 14.449 min Scan# 2197
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 95 Resp: 392402

Ion	Ratio	Lower	Upper
95	100		
174	93.1	64.4	104.4
176	89.3	61.8	101.8

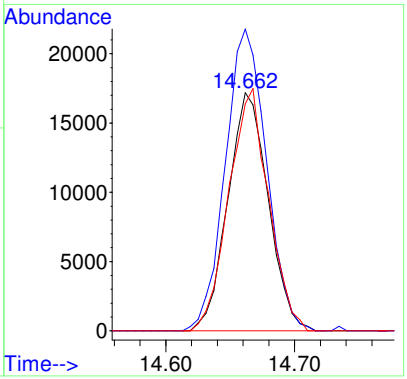


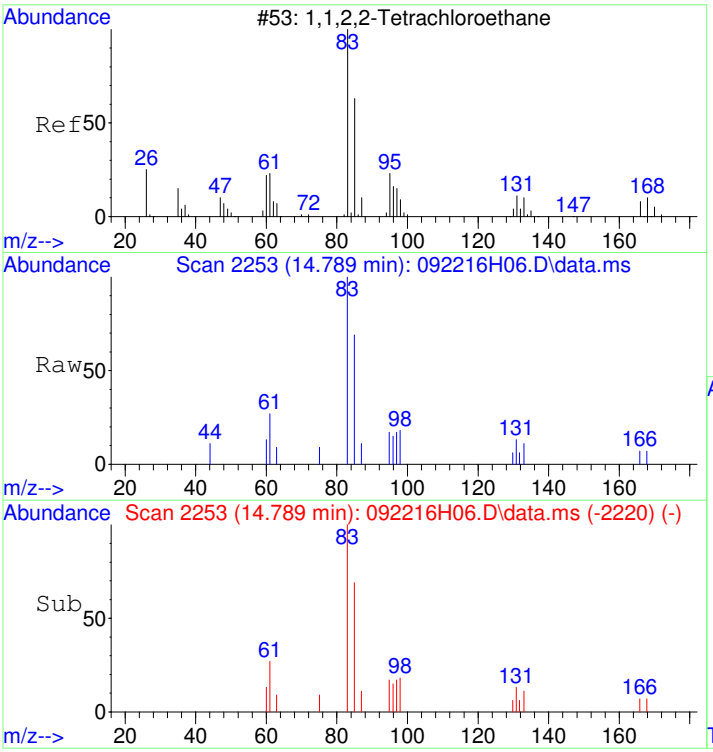


#57
Bromobenzene
Concen: 0.49 ug/L
RT: 14.662 min Scan# 2232
Delta R.T. -0.006 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:156 Resp: 37501

Ion	Ratio	Lower	Upper
156	100		
77	129.5	135.4	175.4#
158	100.3	77.0	117.0

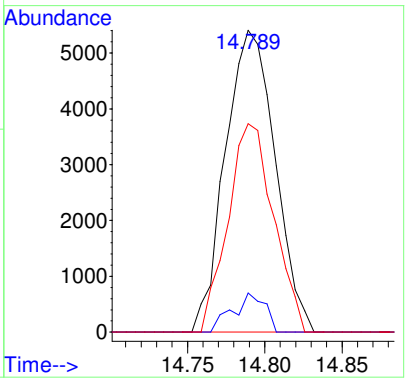


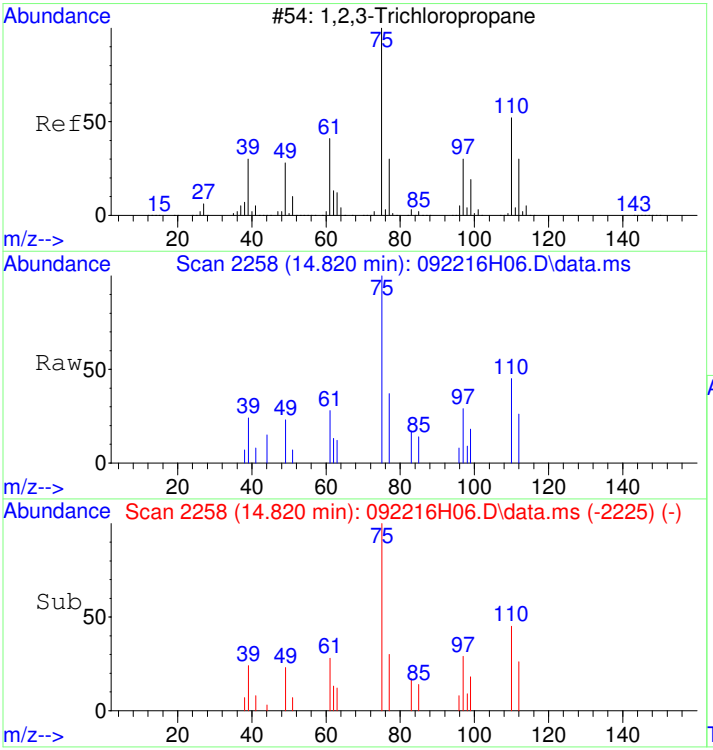


#58
1,1,2,2-Tetrachloroethane
Concen: 0.46 ug/L
RT: 14.789 min Scan# 2253
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 83 Resp: 12129

Ion	Ratio	Lower	Upper
83	100		
131	8.3	0.0	30.8
85	63.1	44.6	84.6

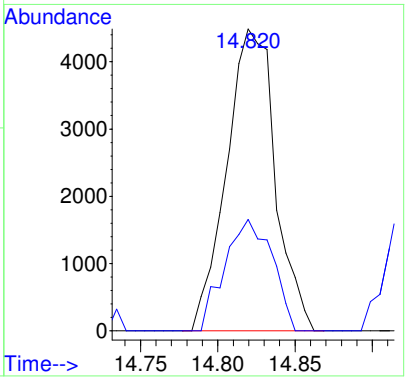


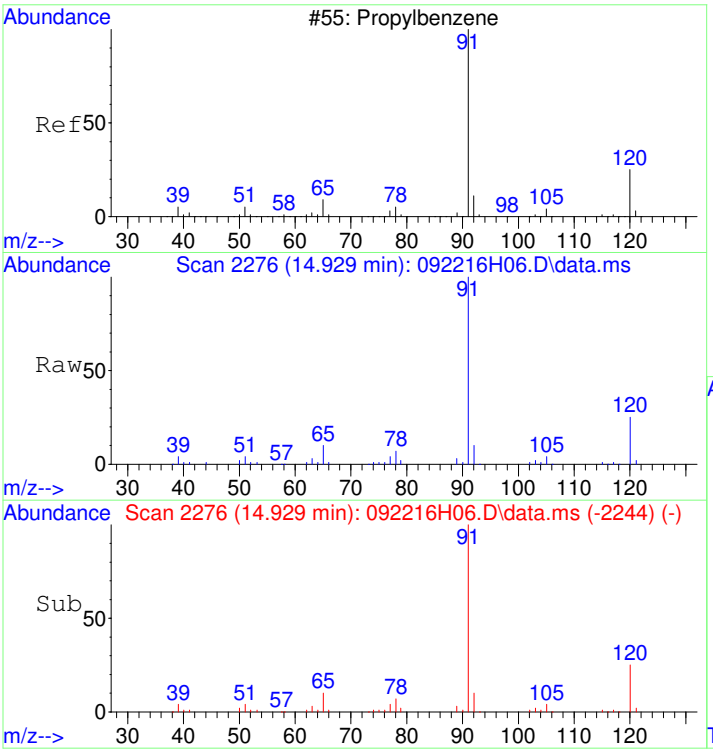


#59
1,2,3-Trichloropropane
Concen: 0.49 ug/L
RT: 14.820 min Scan# 2258
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 75 Resp: 9808

Ion	Ratio	Lower	Upper
75	100		
77	36.2	13.4	53.4

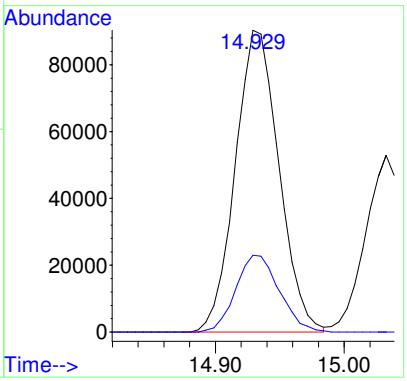


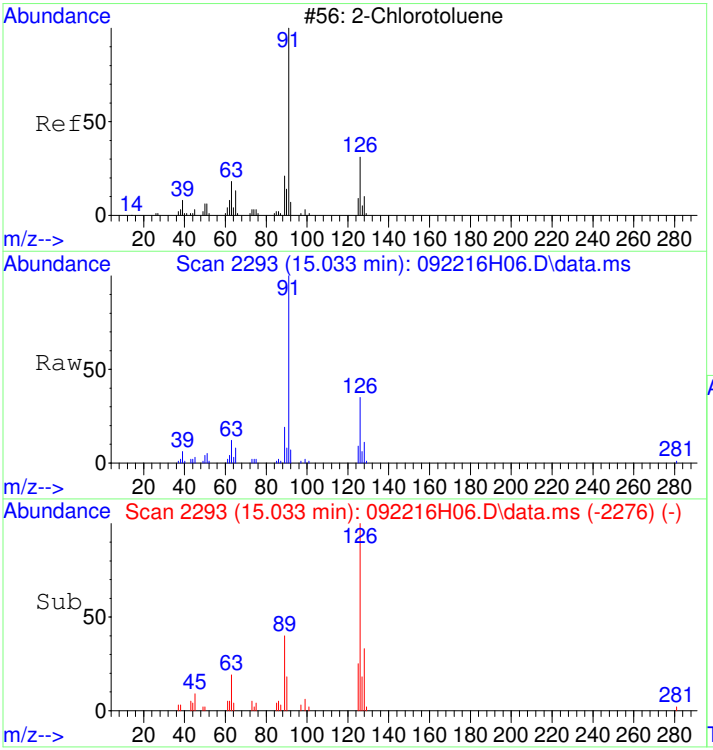


#60
Propylbenzene
Concen: 0.48 ug/L
RT: 14.929 min Scan# 2276
Delta R.T. -0.006 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 91 Resp: 213061

Ion	Ratio	Lower	Upper
91	100		
120	25.4	3.4	43.4

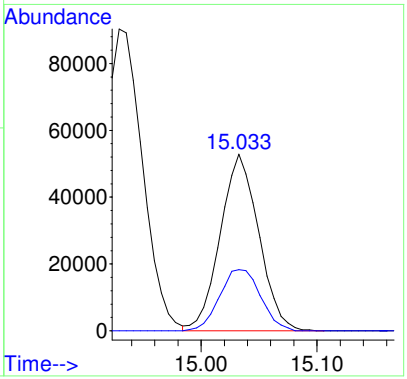


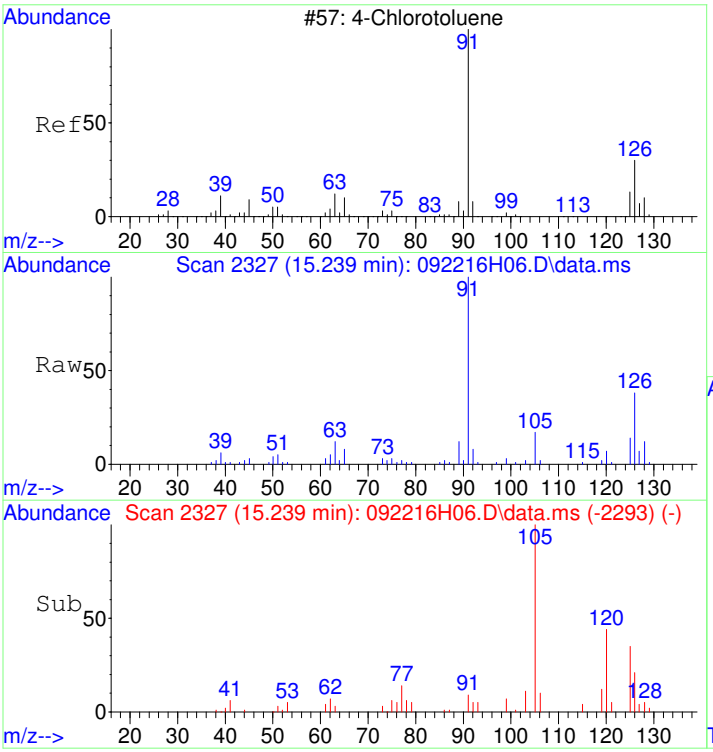


#61
2-Chlorotoluene
Concen: 0.49 ug/L
RT: 15.033 min Scan# 2293
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 91 Resp: 122186

Ion	Ratio	Lower	Upper
91	100		
126	37.0	13.7	53.7

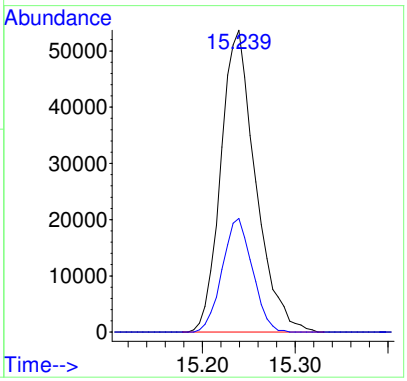


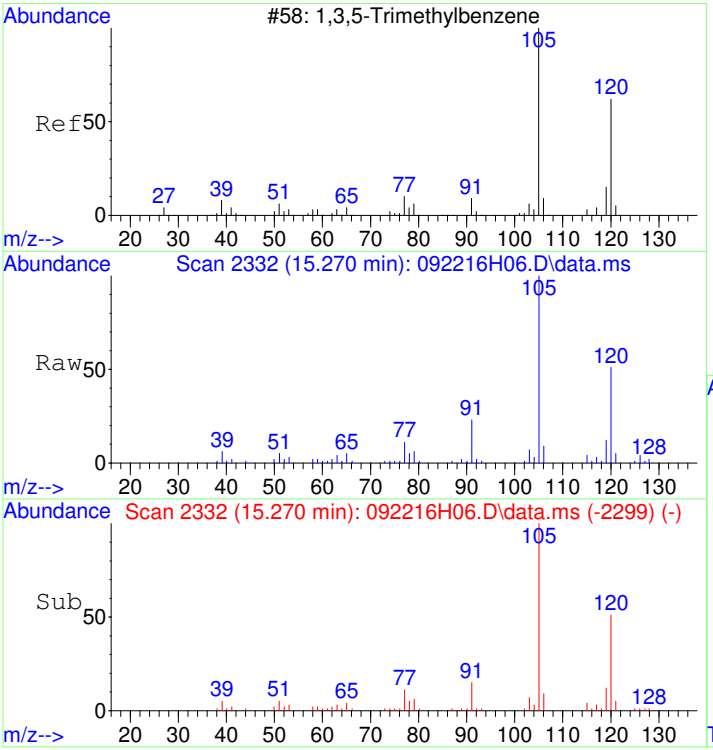


#62
4-Chlorotoluene
Concen: 0.48 ug/L
RT: 15.239 min Scan# 2327
Delta R.T. 0.007 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 91 Resp: 139803

Ion	Ratio	Lower	Upper
91	100		
126	32.7	8.8	48.8

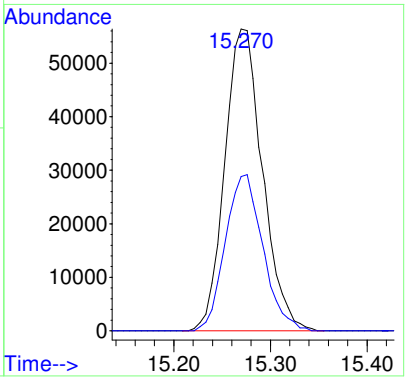


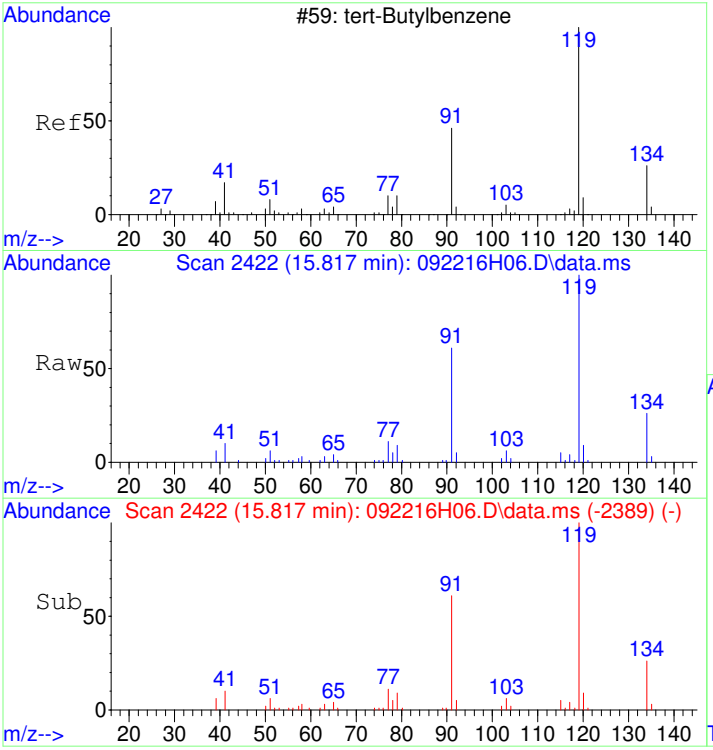


#63
1,3,5-Trimethylbenzene
Concen: 0.48 ug/L
RT: 15.270 min Scan# 2332
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:105 Resp: 152940

Ion	Ratio	Lower	Upper
105	100		
120	51.5	27.6	67.6

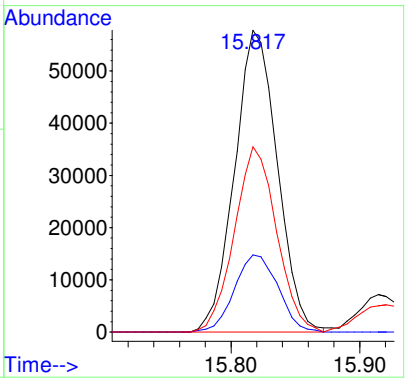


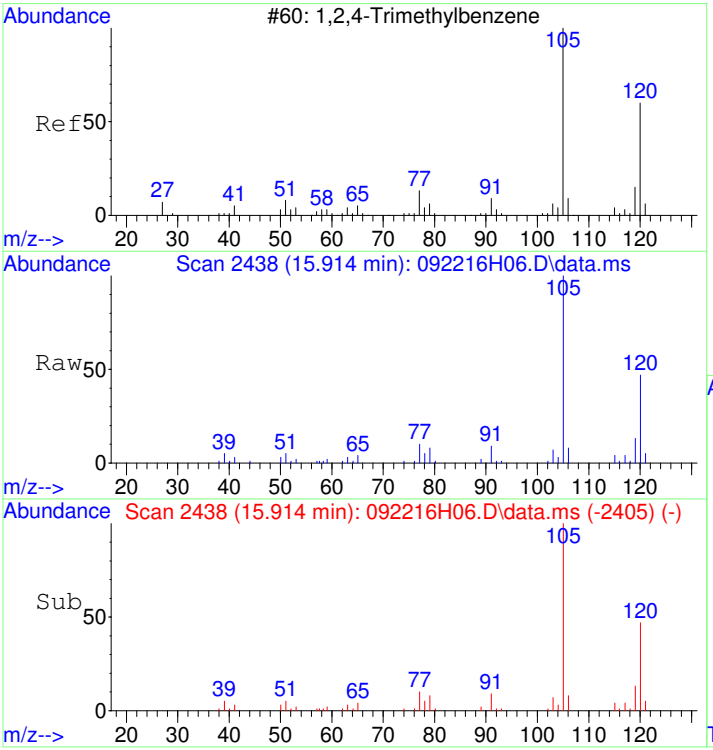


#64
tert-Butylbenzene
Concen: 0.47 ug/L
RT: 15.817 min Scan# 2422
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:119 Resp: 133406

Ion	Ratio	Lower	Upper
119	100		
134	26.0	5.1	45.1
91	60.4	51.0	91.0

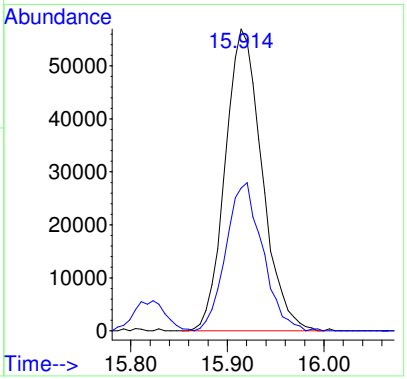


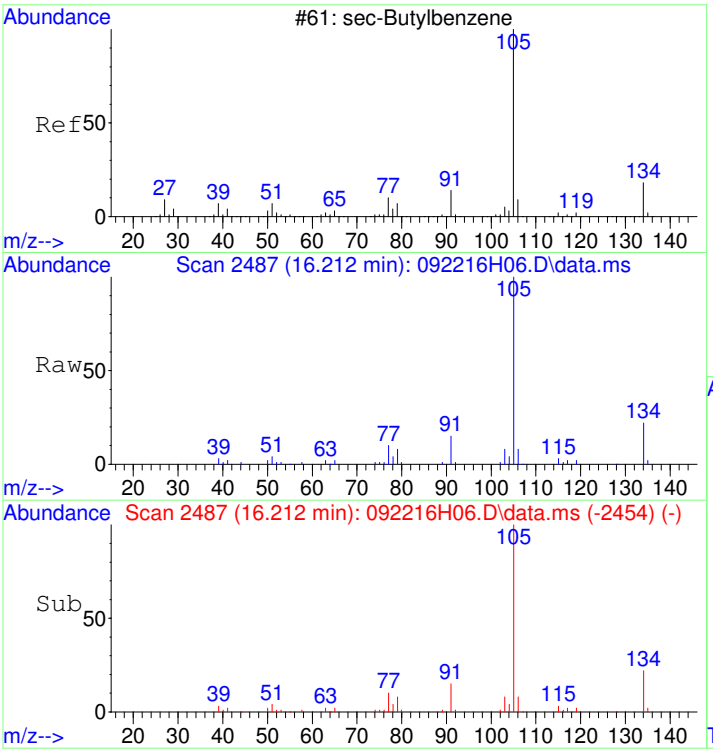


#65
1,2,4-Trimethylbenzene
Concen: 0.47 ug/L
RT: 15.914 min Scan# 2438
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:105 Resp: 150935

Ion	Ratio	Lower	Upper
105	100		
120	49.0	24.7	64.7

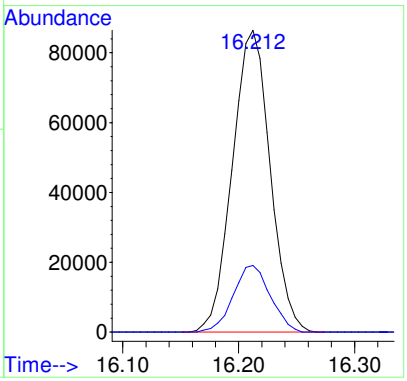


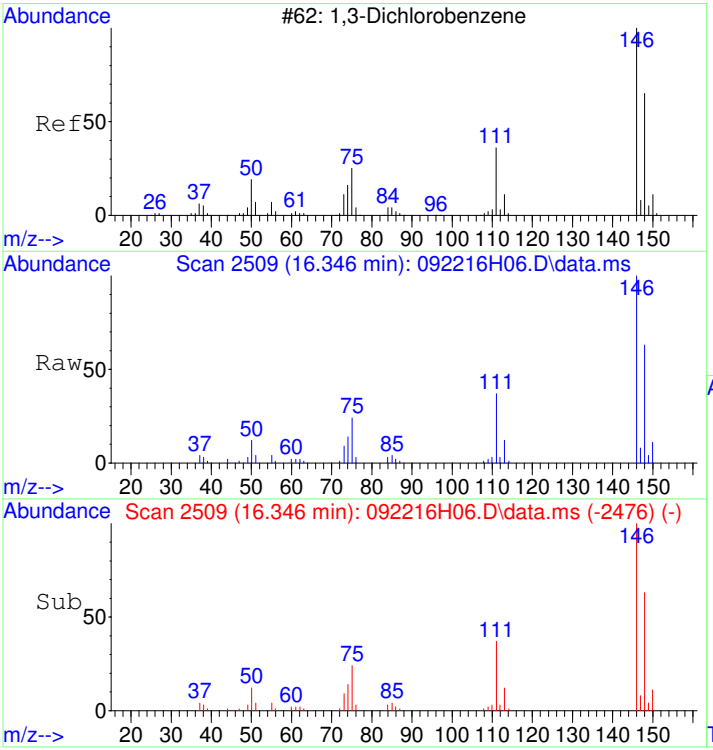


#66
sec-Butylbenzene
Concen: 0.47 ug/L
RT: 16.212 min Scan# 2487
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:105 Resp: 195765

Ion	Ratio	Lower	Upper
105	100		
134	21.7	1.0	41.0

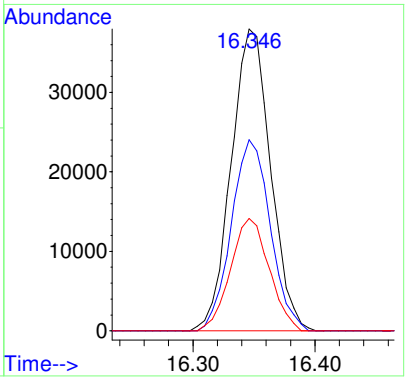


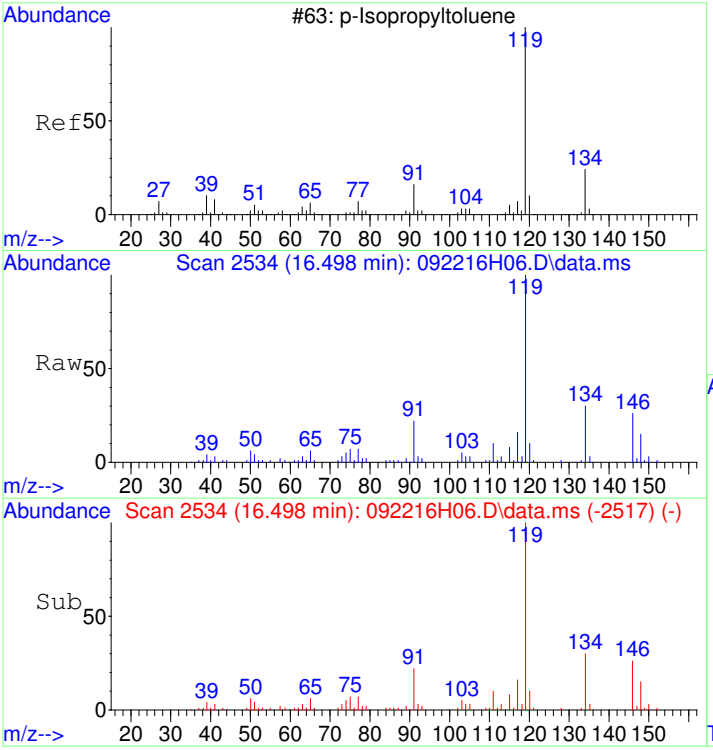


#67
1,3-Dichlorobenzene
Concen: 0.49 ug/L
RT: 16.346 min Scan# 2509
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:146 Resp: 85050

Ion	Ratio	Lower	Upper
146	100		
148	62.6	44.1	84.1
111	36.6	19.0	59.0

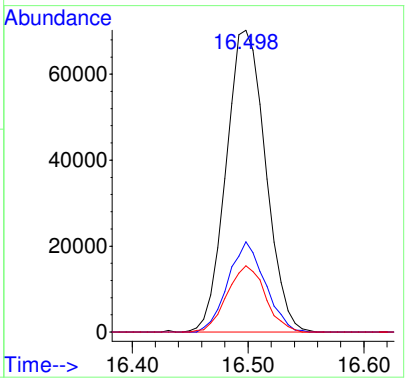


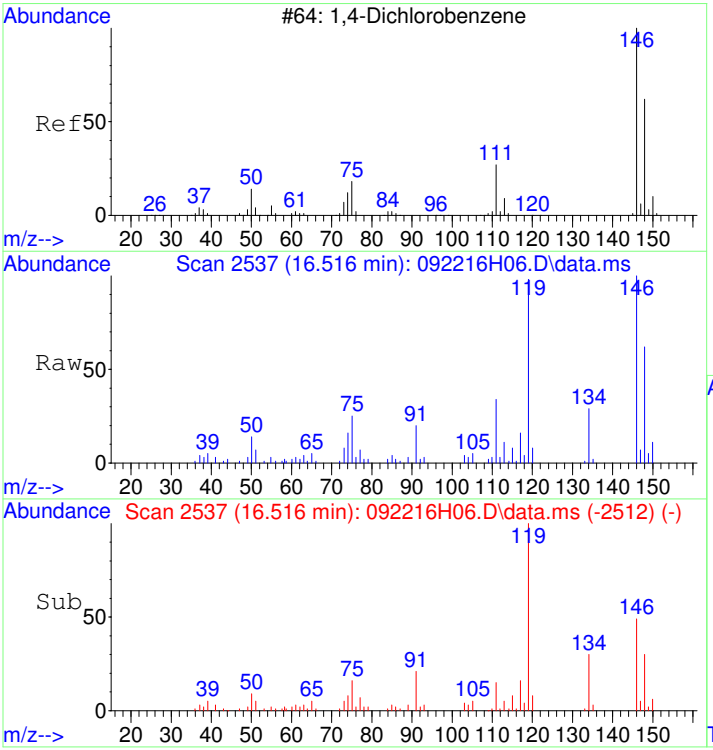


#68
p-Isopropyltoluene
Concen: 0.46 ug/L
RT: 16.498 min Scan# 2534
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:119 Resp: 166338

Ion	Ratio	Lower	Upper
119	100		
134	28.1	6.9	46.9
91	21.3	5.8	45.8

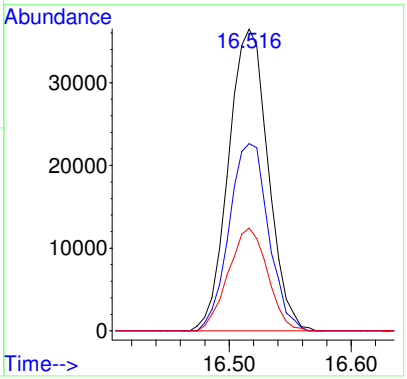


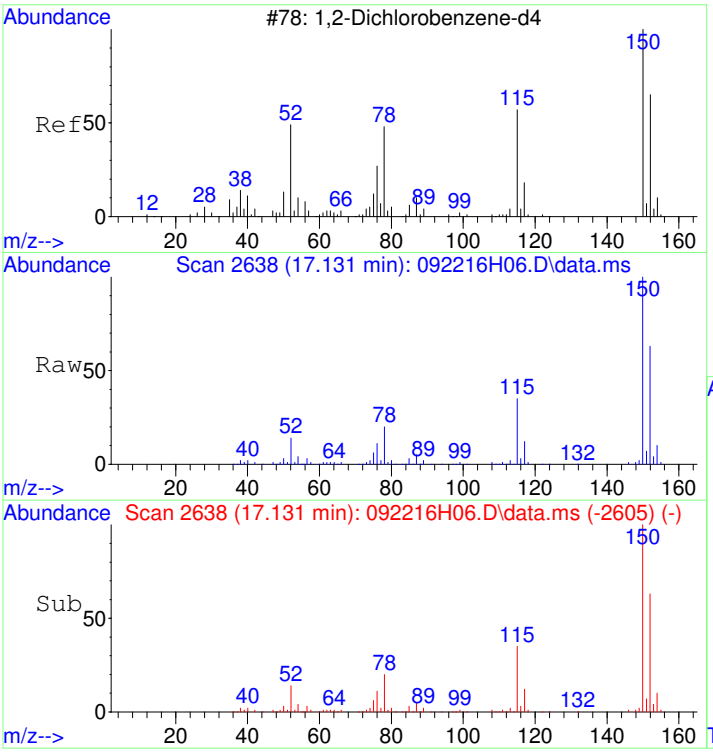


#69
1,4-Dichlorobenzene
Concen: 0.48 ug/L
RT: 16.516 min Scan# 2537
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:146 Resp: 82120

Ion	Ratio	Lower	Upper
146	100		
148	61.8	43.9	83.9
111	33.7	17.7	57.7

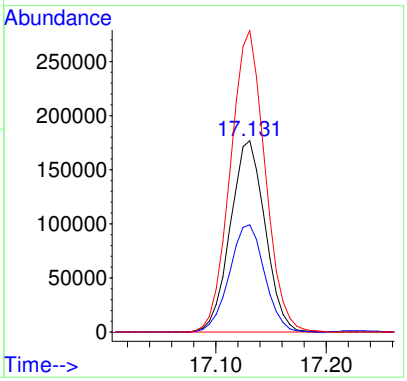


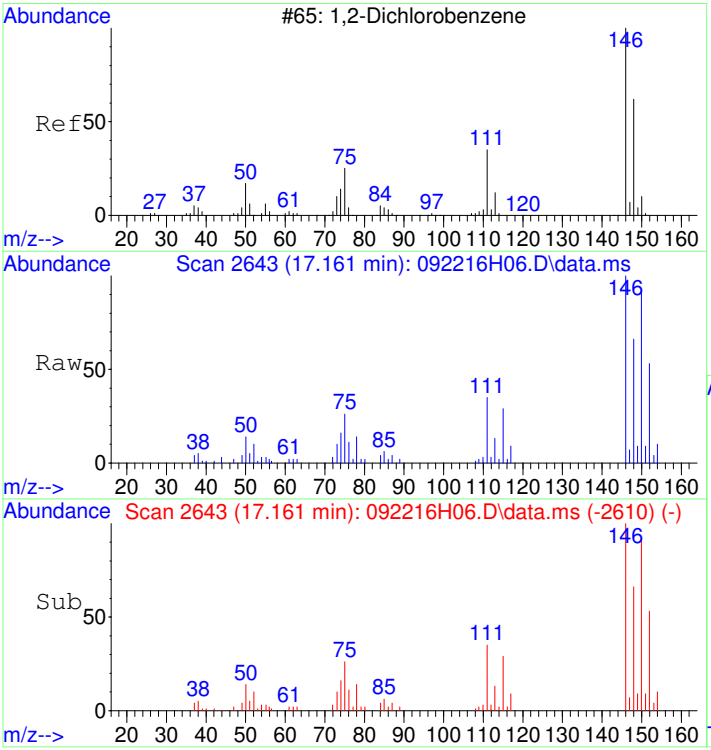


#70
1,2-Dichlorobenzene-d4
Concen: 4.88 ug/L
RT: 17.131 min Scan# 2638
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:152 Resp: 387513

Ion	Ratio	Lower	Upper
152	100		
115	56.8	43.0	83.0
150	157.0	153.1	193.1

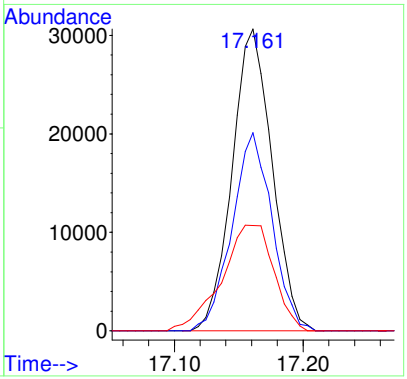


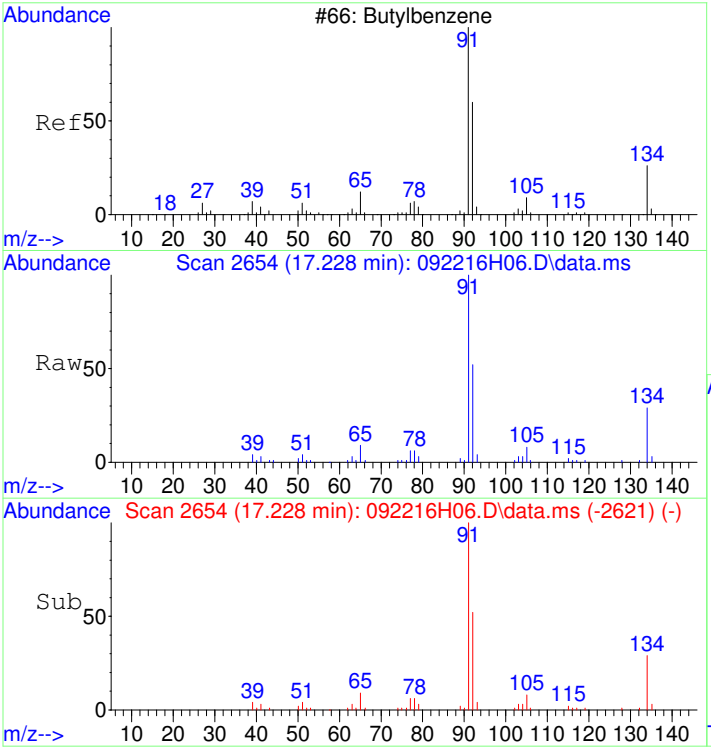


#71
1,2-Dichlorobenzene
Concen: 0.49 ug/L
RT: 17.161 min Scan# 2643
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:146 Resp: 66209

Ion	Ratio	Lower	Upper
146	100		
148	65.6	43.6	83.6
111	45.6	21.1	61.1

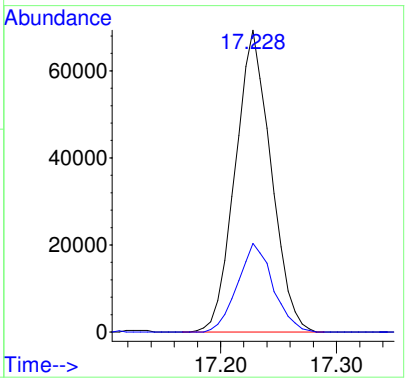


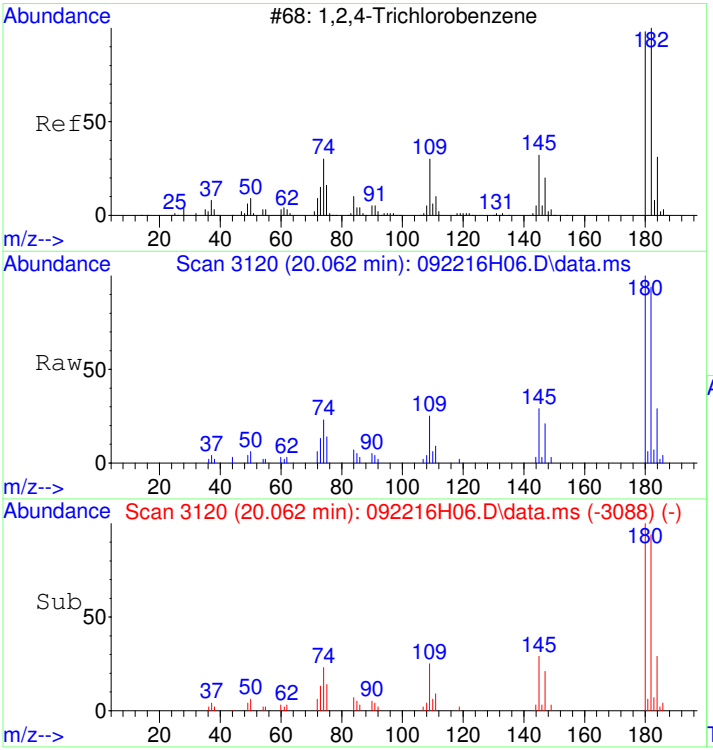


#72
Butylbenzene
Concen: 0.47 ug/L
RT: 17.228 min Scan# 2654
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion: 91 Resp: 148494

Ion	Ratio	Lower	Upper
91	100		
134	29.3	6.8	46.8

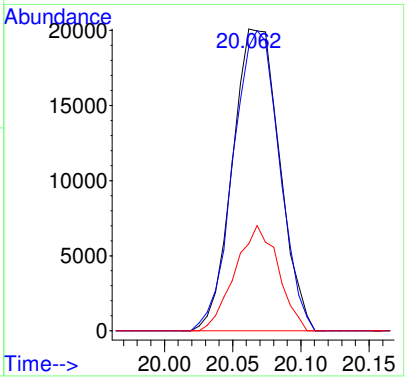


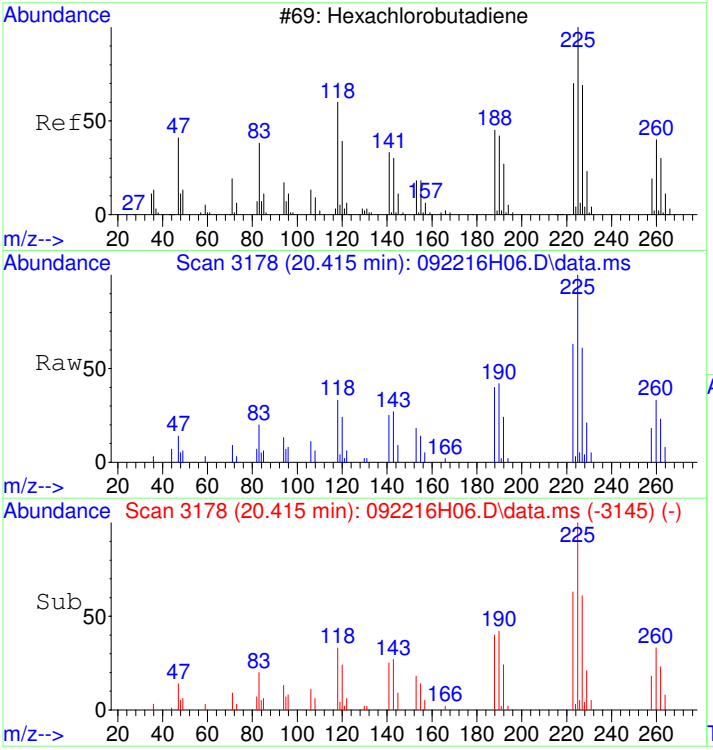


#74
1,2,4-Trichlorobenzene
Concen: 0.49 ug/L
RT: 20.062 min Scan# 3120
Delta R.T. -0.006 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:180 Resp: 47985

Ion	Ratio	Lower	Upper
180	100		
182	97.4	75.8	115.8
184	32.0	10.6	50.6

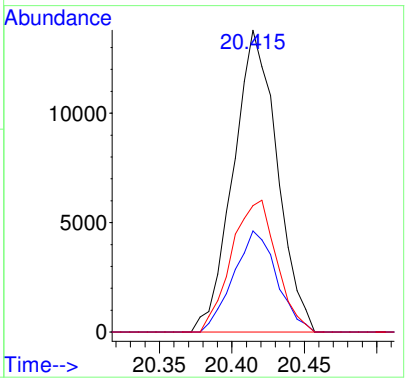


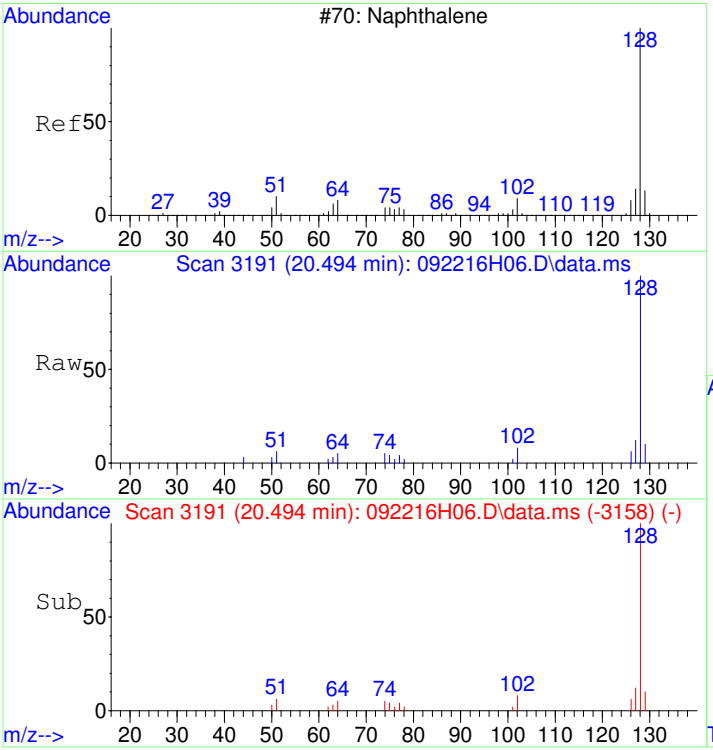


#75
Hexachlorobutadiene
Concen: 0.49 ug/L
RT: 20.415 min Scan# 3178
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:225 Resp: 28985

Ion	Ratio	Lower	Upper
225	100		
260	33.2	12.4	52.4
190	45.2	25.9	65.9

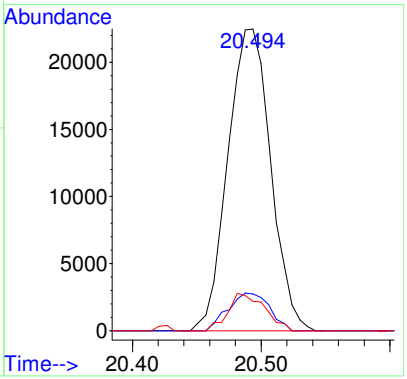


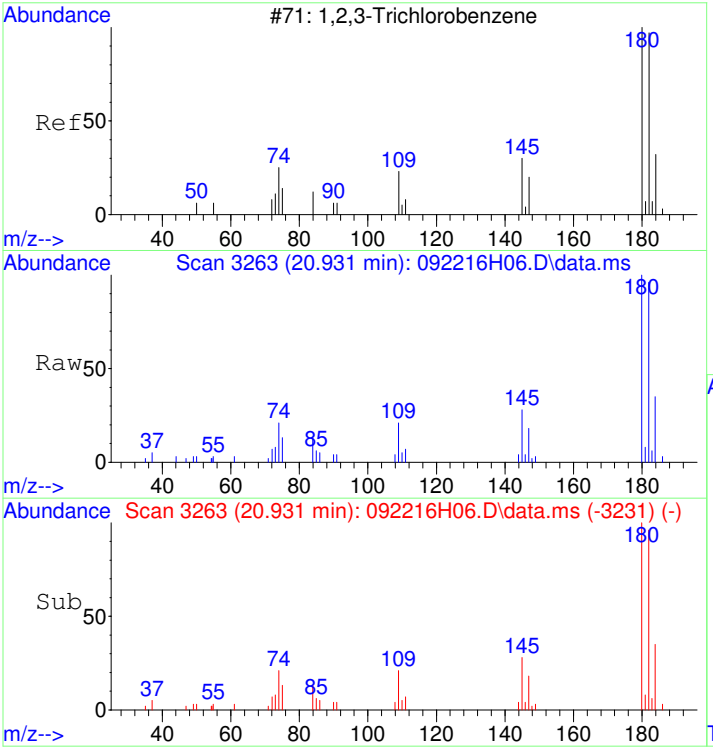


#76
Naphthalene
Concen: 0.47 ug/L
RT: 20.494 min Scan# 3191
Delta R.T. 0.001 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:128 Resp: 51996

Ion	Ratio	Lower	Upper
128	100		
127	12.2	0.0	32.4
129	10.6	0.0	30.4

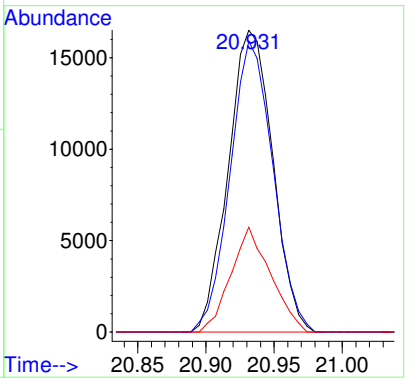




#77
1,2,3-Trichlorobenzene
Concen: 0.49 ug/L
RT: 20.931 min Scan# 3263
Delta R.T. -0.006 min
Lab File: 092216H06.D
Acq: 22 Sep 2016 2:03 pm

Tgt Ion:180 Resp: 37379

Ion	Ratio	Lower	Upper
180	100		
182	92.7	74.8	114.8
184	31.1	10.6	50.6



S16J002-CAL2

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H07.D
Sample : S16J002-CAL2
Instrument: HP5973H
Acq On : 22 Sep 2016 2:38 pm
Operator : YNB
Misc : 1ug/L, WATER
ALS Vial : 32
Multiplier: 1

Quant Time: Oct 03 08:34:42 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:34:22 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	92466	5.000 ug/L	0.00
24) Fluorobenzene	7.449	96	1302338	5.000 ug/L	0.00
37) Chlorobenzene-d5	12.393	117	887336	5.000 ug/L	0.00
System Monitoring Compounds					
28) 1,2-Dichloroethane-d4	6.902	65	173469	4.979 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 99.60%	
39) Toluene-d8	10.003	98	1218517	5.010 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.20%	
56) 4-Bromofluorobenzene	14.443	95	376850	4.987 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 99.80%	
70) 1,2-Dichlorobenzene-d4	17.131	152	370867	4.891 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 97.80%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.392	85	67343	1.015 ug/L	99
3) Chloromethane	1.617	50	77890	1.010 ug/L #	100
4) Vinyl chloride	1.660	62	79754	0.983 ug/L	97
5) Bromomethane	1.976	94	42093	0.897 ug/L #	71
6) Chloroethane	2.079	64	52997	1.003 ug/L	96
7) Trichlorofluoromethane	2.347	101	122982	0.985 ug/L	94
8) 1,1-Dichloroethene	2.919	96	76555	0.975 ug/L	100
9) 1,1,2-Trichloro-1,2,2-...	2.949	101	72205	0.998 ug/L	96
10) Acetone	3.040	43	36715	8.549 ug/L	98
11) Carbon disulfide	3.162	76	220161	0.988 ug/L	93
12) Dichloromethane	3.581	84	70587	1.003 ug/L #	72
13) tert-Butyl alcohol	3.910	59	19648	21.919 ug/L	82
14) trans-1,2-Dichloroethene	3.977	96	87285	0.989 ug/L	99
15) tert-Butyl methyl ethe...	4.031	73	358595	3.918 ug/L	92
16) 1,1-Dichloroethane	4.664	63	102357	0.929 ug/L	100
17) Diisopropyl ether	4.859	45	577666	3.753 ug/L	94
18) Ethyl-tert-butyl ether	5.436	59	247446	3.571 ug/L	92
19) 2,2-Dichloropropane	5.576	77	27800	0.774 ug/L	90
20) cis-1,2-Dichloroethene	5.600	96	69152	0.938 ug/L #	79
21) 2-Butanone (MEK)	5.698	43	45147	7.299 ug/L	90
22) Bromochloromethane	5.965	128	22691	0.958 ug/L #	75
23) Chloroform	6.142	83	101679	0.959 ug/L	98
25) 1,1,1-Trichloroethane	6.367	97	58716	0.812 ug/L	97
26) Carbon tetrachloride	6.622	117	31860	0.682 ug/L	100
27) 1,1-Dichloropropene	6.640	75	90951	0.953 ug/L	95
29) Benzene	6.969	78	274534	0.955 ug/L	99
30) 1,2-Dichloroethane	7.024	62	44604	0.952 ug/L	96
31) tert-Amyl methyl ether	7.224	73	213394	3.226 ug/L #	58
32) Trichloroethene	8.015	95	71711	0.959 ug/L	92
33) 1,2-Dichloropropane	8.386	63	48439	0.930 ug/L	99
34) Dibromomethane	8.556	93	19048	0.970 ug/L	96
35) Bromodichloromethane	8.860	83	39002	0.822 ug/L	99
36) cis-1,3-Dichloropropene	9.596	75	36188	0.730 ug/L	98
38) 4-Methyl-2-pentanone (...	9.918	43	114716	7.496 ug/L	94
40) Toluene	10.113	92	181240	0.963 ug/L	99
41) trans-1,3-Dichloropropene	10.545	75	16746	0.636 ug/L	98
42) 1,1,2-Trichloroethane	10.818	83	22290	0.941 ug/L	96
43) Tetrachloroethene	10.982	166	85927	0.982 ug/L	96
44) 1,3-Dichloropropane	11.092	76	48385	0.932 ug/L	98

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H07.D
Sample : S16J002-CAL2
Instrument: HP5973H
Acq On : 22 Sep 2016 2:38 pm
Operator : YNB
Misc : 1ug/L, WATER
ALS Vial : 32
Multiplier: 1

Quant Time: Oct 03 08:34:42 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:34:22 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
45) 2-Hexanone	11.311	43	69187	7.341 ug/L	87
46) Chlorodibromomethane	11.445	129	15998	0.704 ug/L	98
47) 1,2-Dibromoethane (EDB)	11.585	107	18079	0.799 ug/L #	97
48) Chlorobenzene	12.436	112	187091	0.966 ug/L	96
49) 1,1,1,2-Tetrachloroethane	12.612	131	18812	0.621 ug/L	94
50) Ethylbenzene	12.667	91	337858	0.943 ug/L	97
51) m&p-Xylene	12.874	106	278093	1.853 ug/L	90
52) o-Xylene	13.549	106	132166	0.949 ug/L #	86
53) Styrene	13.579	104	198479	0.928 ug/L	93
54) Bromoform	13.859	173	5858	0.661 ug/L #	88
55) Isopropylbenzene	14.206	105	337701	0.929 ug/L	98
57) Bromobenzene	14.668	156	69249	0.955 ug/L #	90
58) 1,1,2,2-Tetrachloroethane	14.789	83	22634	0.898 ug/L	96
59) 1,2,3-Trichloropropane	14.814	75	18540	0.969 ug/L	97
60) Propylbenzene	14.929	91	397763	0.935 ug/L	96
61) 2-Chlorotoluene	15.033	91	224311	0.945 ug/L	96
62) 4-Chlorotoluene	15.239	91	257526	0.933 ug/L	94
63) 1,3,5-Trimethylbenzene	15.270	105	282583	0.920 ug/L	94
64) tert-Butylbenzene	15.817	119	252055	0.937 ug/L	91
65) 1,2,4-Trimethylbenzene	15.914	105	283930	0.922 ug/L	95
66) sec-Butylbenzene	16.206	105	358661	0.909 ug/L	97
67) 1,3-Dichlorobenzene	16.346	146	153431	0.931 ug/L	98
68) p-Isopropyltoluene	16.498	119	314411	0.902 ug/L	96
69) 1,4-Dichlorobenzene	16.516	146	145853	0.897 ug/L	98
71) 1,2-Dichlorobenzene	17.161	146	122317	0.950 ug/L	99
72) Butylbenzene	17.222	91	281153	0.931 ug/L	95
73) 1,2-Dibromo-3-chloropr...	18.584	75	3300	1.903 ug/L #	73
74) 1,2,4-Trichlorobenzene	20.068	180	86519	0.919 ug/L	98
75) Hexachlorobutadiene	20.415	225	55039	0.966 ug/L	97
76) Naphthalene	20.488	128	98968	0.937 ug/L	100
77) 1,2,3-Trichlorobenzene	20.932	180	68063	0.943 ug/L	99

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

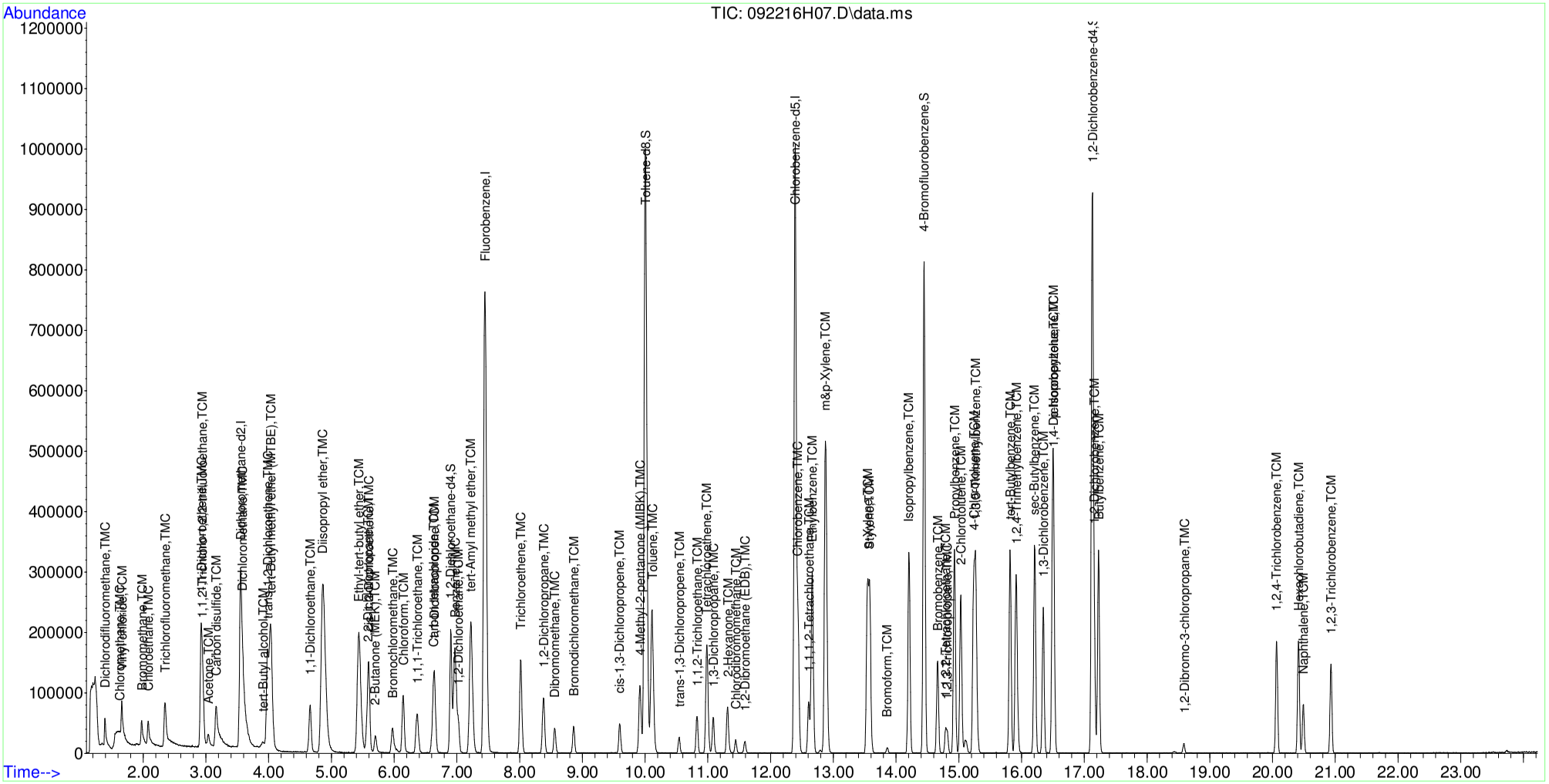
Table of Contents

Quantitation Report (Not Reviewed)

ata Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
ata File : 092216H07.D
ample : S16J002-CAL2
nstrument: HP5973H
cq On : 22 Sep 2016 2:38 pm
perator : YNB
isc : 1ug/L, WATER
LS Vial : 32
ultiplier: 1

Quant Time: Oct 03 08:34:42 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:34:22 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M



S16J002-CAL3

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H08.D
Sample : S16J002-CAL3
Instrument: HP5973H
Acq On : 22 Sep 2016 3:14 pm
Operator : YNB
Misc : 2ug/L, WATER
ALS Vial : 33
Multiplier: 1

Quant Time: Oct 03 08:35:07 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:34:50 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.552	53	90831	5.000 ug/L	0.00
24) Fluorobenzene	7.444	96	1267374	5.000 ug/L	0.00
37) Chlorobenzene-d5	12.395	117	866609	5.000 ug/L	0.00
System Monitoring Compounds					
28) 1,2-Dichloroethane-d4	6.903	65	166774	4.918 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 98.40%	
39) Toluene-d8	10.005	98	1197943	5.043 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.80%	
56) 4-Bromofluorobenzene	14.450	95	366399	4.965 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 99.40%	
70) 1,2-Dichlorobenzene-d4	17.126	152	365539	4.936 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 98.80%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.394	85	132316	2.030 ug/L	99
3) Chloromethane	1.600	50	155525	2.052 ug/L #	100
4) Vinyl chloride	1.661	62	162502	2.039 ug/L	98
5) Bromomethane	1.977	94	86718	1.881 ug/L	100
6) Chloroethane	2.081	64	104390	2.011 ug/L	97
7) Trichlorofluoromethane	2.348	101	247729	2.021 ug/L	97
8) 1,1-Dichloroethene	2.920	96	154253	2.000 ug/L	97
9) 1,1,2-Trichloro-1,2,2-...	2.944	101	142292	2.003 ug/L	97
10) Acetone	3.042	43	72495	17.183 ug/L	95
11) Carbon disulfide	3.163	76	446855	2.041 ug/L	93
12) Dichloromethane	3.583	84	137383	1.987 ug/L #	91
13) tert-Butyl alcohol	3.911	59	36033	40.921 ug/L #	76
14) trans-1,2-Dichloroethene	3.984	96	179047	2.065 ug/L	99
15) tert-Butyl methyl ethe...	4.027	73	719685	8.005 ug/L	92
16) 1,1-Dichloroethane	4.659	63	208081	1.922 ug/L	99
17) Diisopropyl ether	4.860	45	1179657	7.803 ug/L	93
18) Ethyl-tert-butyl ether	5.438	59	490078	7.199 ug/L	93
19) 2,2-Dichloropropane	5.577	77	53526	1.517 ug/L	90
20) cis-1,2-Dichloroethene	5.596	96	140289	1.938 ug/L #	80
21) 2-Butanone (MEK)	5.699	43	99858	16.435 ug/L	93
22) Bromochloromethane	5.973	128	45999	1.977 ug/L #	87
23) Chloroform	6.143	83	202642	1.946 ug/L	99
25) 1,1,1-Trichloroethane	6.368	97	123296	1.752 ug/L	97
26) Carbon tetrachloride	6.611	117	69999	1.541 ug/L	99
27) 1,1-Dichloropropene	6.642	75	185104	1.992 ug/L	95
29) Benzene	6.970	78	558407	1.996 ug/L	99
30) 1,2-Dichloroethane	7.025	62	89563	1.965 ug/L	97
31) tert-Amyl methyl ether	7.226	73	438480	6.812 ug/L #	60
32) Trichloroethene	8.016	95	144647	1.987 ug/L	90
33) 1,2-Dichloropropane	8.381	63	98345	1.940 ug/L	99
34) Dibromomethane	8.557	93	36736	1.923 ug/L	91
35) Bromodichloromethane	8.861	83	81220	1.759 ug/L	97
36) cis-1,3-Dichloropropene	9.597	75	81626	1.692 ug/L	98
38) 4-Methyl-2-pentanone (...	9.920	43	237248	15.873 ug/L	93
40) Toluene	10.108	92	363710	1.980 ug/L	99
41) trans-1,3-Dichloropropene	10.546	75	38179	1.485 ug/L	98
42) 1,1,2-Trichloroethane	10.826	83	47304	2.044 ug/L	98
43) Tetrachloroethene	10.984	166	168634	1.974 ug/L	98
44) 1,3-Dichloropropane	11.087	76	101500	2.002 ug/L	99

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H08.D
Sample : S16J002-CAL3
Instrument: HP5973H
Acq On : 22 Sep 2016 3:14 pm
Operator : YNB
Misc : 2ug/L, WATER
ALS Vial : 33
Multiplier: 1

Quant Time: Oct 03 08:35:07 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:34:50 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
45) 2-Hexanone	11.312	43	144394	15.688 ug/L	89
46) Chlorodibromomethane	11.446	129	35454	1.598 ug/L	98
47) 1,2-Dibromoethane (EDB)	11.592	107	40039	1.812 ug/L	99
48) Chlorobenzene	12.437	112	375450	1.986 ug/L	94
49) 1,1,1,2-Tetrachloroethane	12.608	131	44280	1.496 ug/L	98
50) Ethylbenzene	12.662	91	690534	1.974 ug/L	97
51) m&p-Xylene	12.875	106	564854	3.855 ug/L	90
52) o-Xylene	13.544	106	263822	1.940 ug/L	88
53) Styrene	13.581	104	401590	1.923 ug/L	93
54) Bromoform	13.866	173	12924	1.493 ug/L	92
55) Isopropylbenzene	14.207	105	688185	1.939 ug/L	98
57) Bromobenzene	14.669	156	138941	1.963 ug/L	91
58) 1,1,2,2-Tetrachloroethane	14.791	83	46948	1.906 ug/L	96
59) 1,2,3-Trichloropropane	14.821	75	36447	1.951 ug/L	99
60) Propylbenzene	14.931	91	811582	1.954 ug/L	96
61) 2-Chlorotoluene	15.028	91	450672	1.943 ug/L	96
62) 4-Chlorotoluene	15.235	91	520962	1.932 ug/L	93
63) 1,3,5-Trimethylbenzene	15.271	105	578678	1.930 ug/L	95
64) tert-Butylbenzene	15.818	119	506132	1.927 ug/L	91
65) 1,2,4-Trimethylbenzene	15.916	105	583128	1.939 ug/L	95
66) sec-Butylbenzene	16.208	105	746535	1.937 ug/L	99
67) 1,3-Dichlorobenzene	16.348	146	307560	1.912 ug/L	98
68) p-Isopropyltoluene	16.500	119	641586	1.885 ug/L	95
69) 1,4-Dichlorobenzene	16.518	146	301935	1.901 ug/L	98
71) 1,2-Dichlorobenzene	17.162	146	245831	1.954 ug/L	98
72) Butylbenzene	17.229	91	573226	1.944 ug/L	95
73) 1,2-Dibromo-3-chloropr...	18.579	75	8660	5.114 ug/L #	73
74) 1,2,4-Trichlorobenzene	20.069	180	179258	1.950 ug/L	98
75) Hexachlorobutadiene	20.416	225	105621	1.898 ug/L	100
76) Naphthalene	20.489	128	199029	1.928 ug/L	99
77) 1,2,3-Trichlorobenzene	20.933	180	136427	1.936 ug/L	99

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

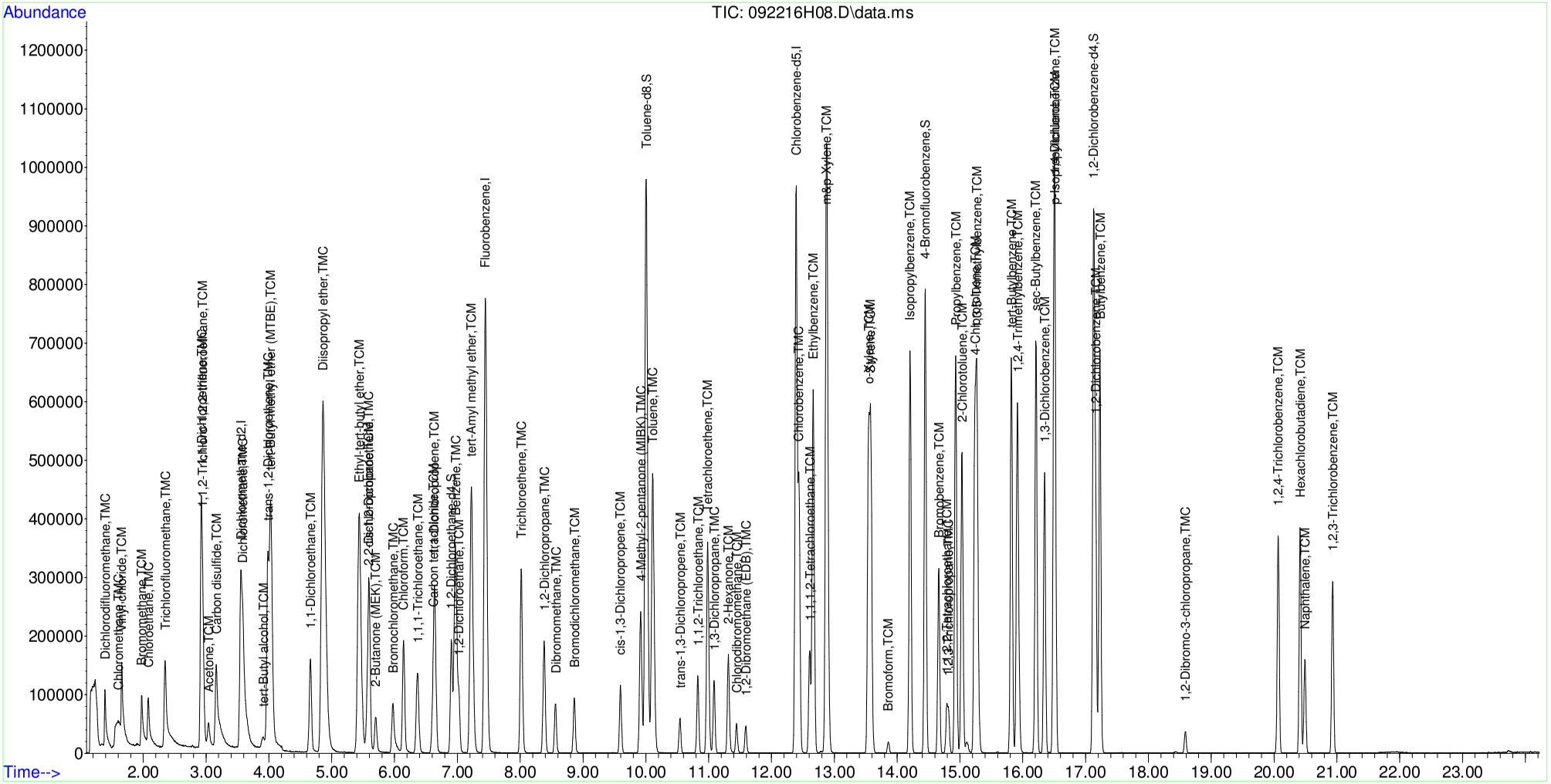
Table of Contents

Quantitation Report (Not Reviewed)

ata Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
ata File : 092216H08.D
ample : S16J002-CAL3
nstrument: HP5973H
cq On : 22 Sep 2016 3:14 pm
perator : YNB
isc : 2ug/L, WATER
LS Vial : 33
ultiplier: 1

Quant Time: Oct 03 08:35:07 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:34:50 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M



S16J002-CAL4

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H09.D
Sample : S16J002-CAL4
Instrument: HP5973H
Acq On : 22 Sep 2016 3:49 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 34
Multiplier: 1

Quant Time: Oct 03 08:35:37 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:35:18 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.550	53	91616	5.000 ug/L	0.00
24) Fluorobenzene	7.449	96	1249203	5.000 ug/L	0.00
37) Chlorobenzene-d5	12.393	117	858742	5.000 ug/L	0.00
System Monitoring Compounds					
28) 1,2-Dichloroethane-d4	6.901	65	164091	4.910 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 98.20%	
39) Toluene-d8	10.003	98	1188405	5.049 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 101.00%	
56) 4-Bromofluorobenzene	14.448	95	366938	5.018 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 100.40%	
70) 1,2-Dichlorobenzene-d4	17.130	152	368353	5.020 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.40%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.392	85	319544	4.861 ug/L	100
3) Chloromethane	1.617	50	373365	4.885 ug/L #	100
4) Vinyl chloride	1.659	62	398200	4.953 ug/L	98
5) Bromomethane	1.975	94	232577	5.003 ug/L	100
6) Chloroethane	2.079	64	253757	4.846 ug/L	98
7) Trichlorofluoromethane	2.352	101	612070	4.950 ug/L	95
8) 1,1-Dichloroethene	2.924	96	382996	4.923 ug/L	98
9) 1,1,2-Trichloro-1,2,2-...	2.942	101	352652	4.921 ug/L	95
10) Acetone	3.040	43	154015	36.193 ug/L	96
11) Carbon disulfide	3.161	76	1089272	4.932 ug/L	100
12) Dichloromethane	3.587	84	329664	4.728 ug/L #	99
13) tert-Butyl alcohol	3.903	59	91404	102.913 ug/L	91
14) trans-1,2-Dichloroethene	3.982	96	442070	5.054 ug/L	99
15) tert-Butyl methyl ethe...	4.031	73	1796424	19.811 ug/L	93
16) 1,1-Dichloroethane	4.663	63	521232	4.774 ug/L	100
17) Diisopropyl ether	4.864	45	2947357	19.328 ug/L	93
18) Ethyl-tert-butyl ether	5.436	59	1229030	17.899 ug/L	92
19) 2,2-Dichloropropane	5.582	77	154123	4.330 ug/L	93
20) cis-1,2-Dichloroethene	5.600	96	355759	4.872 ug/L #	79
21) 2-Butanone (MEK)	5.697	43	234313	38.235 ug/L	89
22) Bromochloromethane	5.977	128	115567	4.923 ug/L #	86
23) Chloroform	6.141	83	516897	4.921 ug/L	99
25) 1,1,1-Trichloroethane	6.366	97	336584	4.853 ug/L	98
26) Carbon tetrachloride	6.615	117	211092	4.714 ug/L	100
27) 1,1-Dichloropropene	6.640	75	455117	4.969 ug/L	95
29) Benzene	6.974	78	1376364	4.992 ug/L	100
30) 1,2-Dichloroethane	7.023	62	222760	4.958 ug/L	98
31) tert-Amyl methyl ether	7.224	73	1219888	19.228 ug/L #	70
32) Trichloroethene	8.020	95	358301	4.994 ug/L	91
33) 1,2-Dichloropropane	8.385	63	251810	5.040 ug/L	100
34) Dibromomethane	8.561	93	92241	4.899 ug/L	90
35) Bromodichloromethane	8.859	83	230951	5.073 ug/L	98
36) cis-1,3-Dichloropropene	9.595	75	236636	4.978 ug/L	97
38) 4-Methyl-2-pentanone (...	9.918	43	586448	39.596 ug/L	89
40) Toluene	10.112	92	897708	4.931 ug/L	99
41) trans-1,3-Dichloropropene	10.544	75	125619	4.929 ug/L	97
42) 1,1,2-Trichloroethane	10.830	83	116202	5.068 ug/L	98
43) Tetrachloroethene	10.988	166	417547	4.931 ug/L	98
44) 1,3-Dichloropropane	11.085	76	254771	5.072 ug/L	99

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H09.D
Sample : S16J002-CAL4
Instrument: HP5973H
Acq On : 22 Sep 2016 3:49 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 34
Multiplier: 1

Quant Time: Oct 03 08:35:37 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:35:18 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
45) 2-Hexanone	11.310	43	373352	40.934 ug/L	88
46) Chlorodibromomethane	11.444	129	111275	5.062 ug/L	99
47) 1,2-Dibromoethane (EDB)	11.590	107	119463	5.456 ug/L	99
48) Chlorobenzene	12.435	112	922036	4.921 ug/L	93
49) 1,1,1,2-Tetrachloroethane	12.612	131	150640	5.135 ug/L	98
50) Ethylbenzene	12.666	91	1731561	4.995 ug/L	97
51) m&p-Xylene	12.879	106	1437081	9.896 ug/L	90
52) o-Xylene	13.548	106	672346	4.989 ug/L	89
53) Styrene	13.579	104	1036828	5.010 ug/L	93
54) Bromoform	13.858	173	40761	4.752 ug/L	99
55) Isopropylbenzene	14.211	105	1764369	5.016 ug/L	98
57) Bromobenzene	14.667	156	347256	4.951 ug/L	91
58) 1,1,2,2-Tetrachloroethane	14.789	83	126464	5.182 ug/L	100
59) 1,2,3-Trichloropropane	14.819	75	92639	5.004 ug/L	100
60) Propylbenzene	14.935	91	2055111	4.992 ug/L	96
61) 2-Chlorotoluene	15.032	91	1144401	4.980 ug/L	95
62) 4-Chlorotoluene	15.233	91	1330287	4.978 ug/L	94
63) 1,3,5-Trimethylbenzene	15.269	105	1480734	4.983 ug/L	95
64) tert-Butylbenzene	15.817	119	1291784	4.964 ug/L	91
65) 1,2,4-Trimethylbenzene	15.914	105	1483392	4.979 ug/L	95
66) sec-Butylbenzene	16.212	105	1908949	4.998 ug/L	100
67) 1,3-Dichlorobenzene	16.346	146	784766	4.923 ug/L	98
68) p-Isopropyltoluene	16.498	119	1686895	5.002 ug/L	95
69) 1,4-Dichlorobenzene	16.516	146	768744	4.885 ug/L	98
71) 1,2-Dichlorobenzene	17.160	146	615998	4.942 ug/L	98
72) Butylbenzene	17.227	91	1455422	4.982 ug/L	95
73) 1,2-Dibromo-3-chloropr...	18.590	75	34292	20.435 ug/L #	71
74) 1,2,4-Trichlorobenzene	20.067	180	451316	4.955 ug/L	100
75) Hexachlorobutadiene	20.414	225	272067	4.933 ug/L	99
76) Naphthalene	20.493	128	520450	5.089 ug/L	99
77) 1,2,3-Trichlorobenzene	20.937	180	347670	4.979 ug/L	99

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

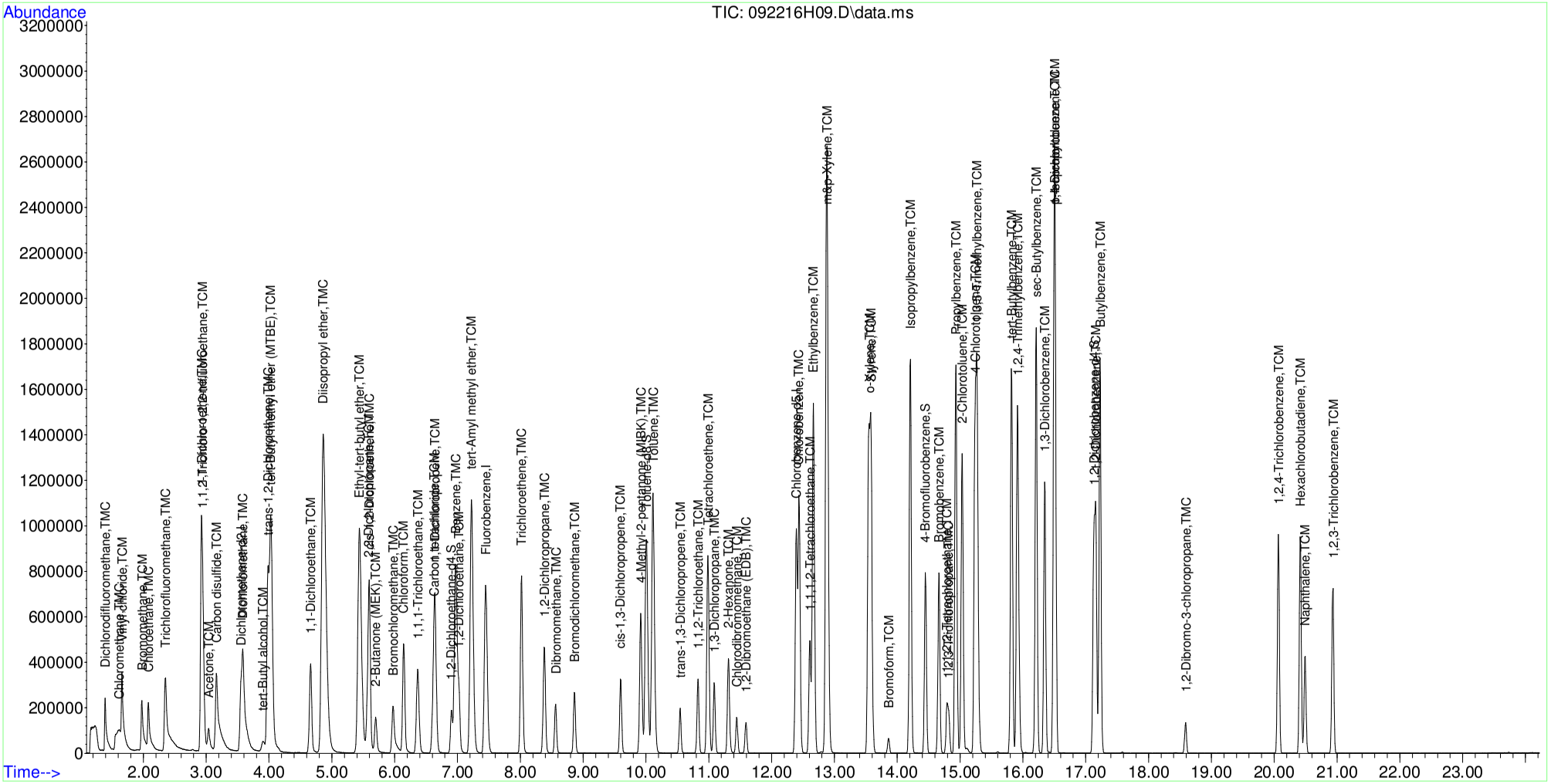
Table of Contents

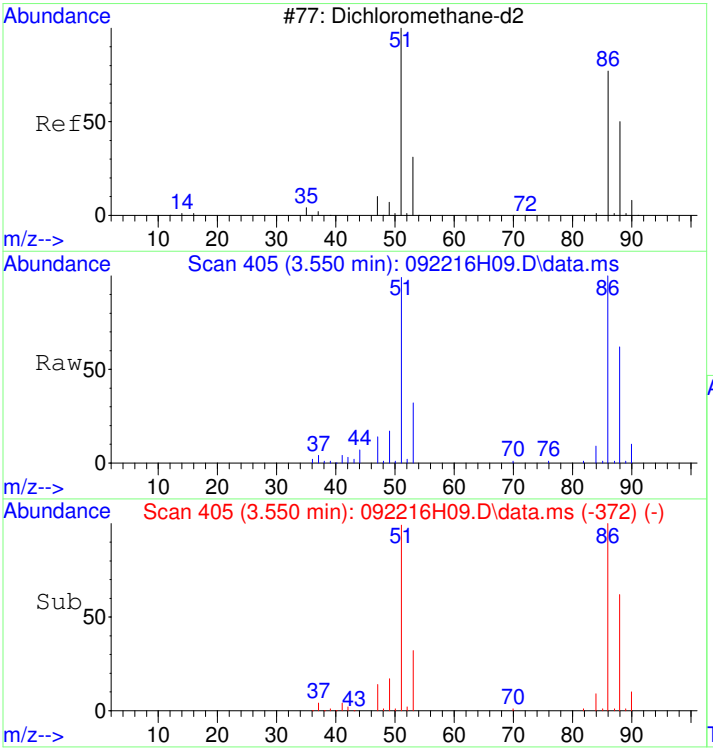
Quantitation Report (Not Reviewed)

ata Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
ata File : 092216H09.D
ample : S16J002-CAL4
nstrument: HP5973H
cq On : 22 Sep 2016 3:49 pm
perator : YNB
isc : 5ug/L, WATER
LS Vial : 34
ultiplier: 1

Quant Time: Oct 03 08:35:37 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:35:18 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

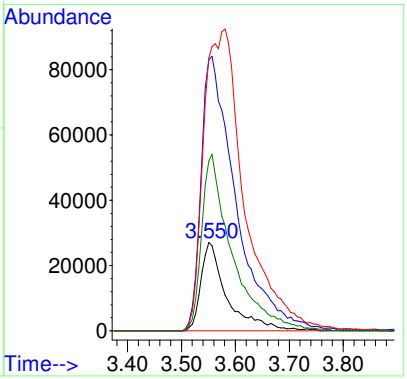


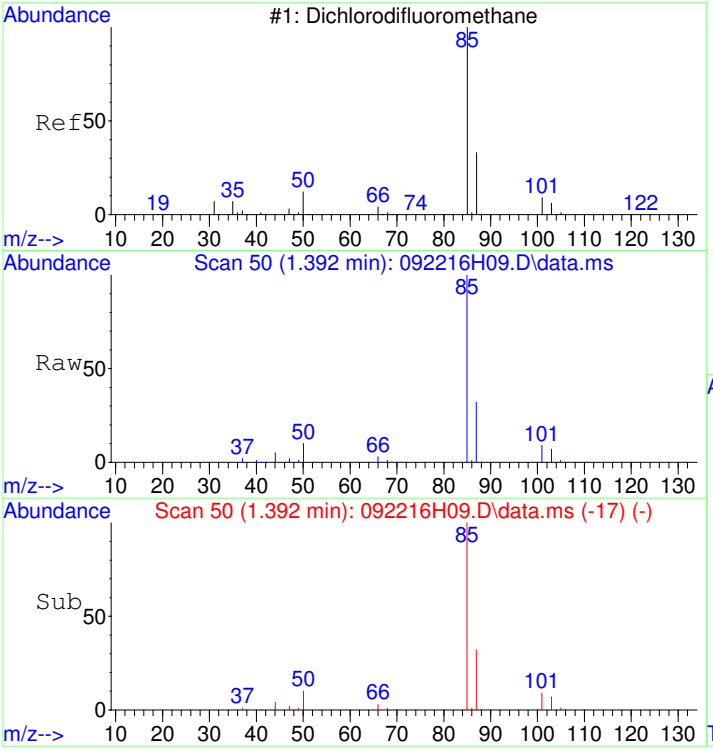


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.550 min Scan# 405
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 53 Resp: 91616

Ion	Ratio	Lower	Upper
53	100		
51	415.4	382.3	422.3
86	0.0	486.4	526.4#
88	232.9	206.4	246.4

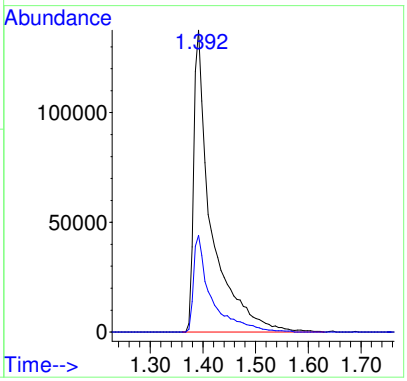


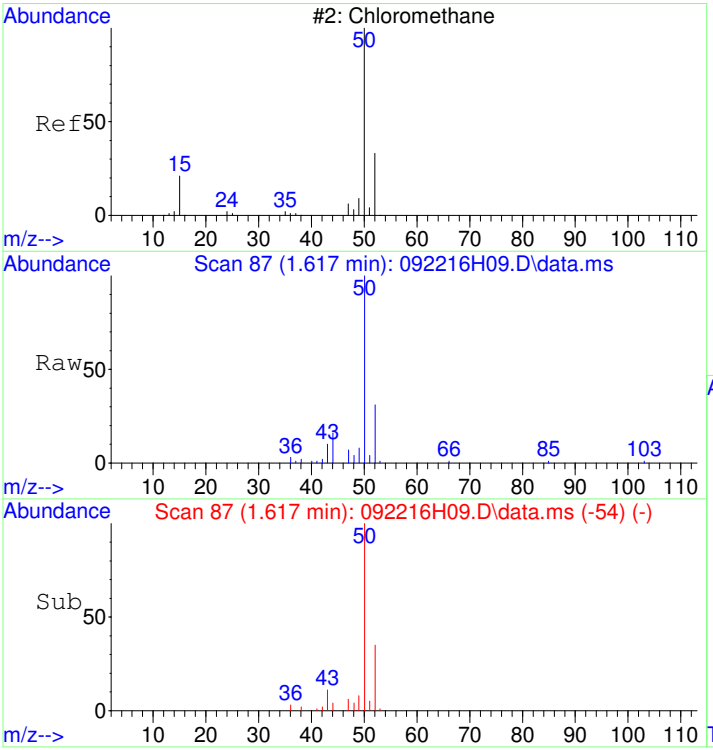


#2
Dichlorodifluoromethane
Concen: 4.86 ug/L
RT: 1.392 min Scan# 50
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 85 Resp: 319544

Ion	Ratio	Lower	Upper
85	100		
87	32.3	12.6	52.6

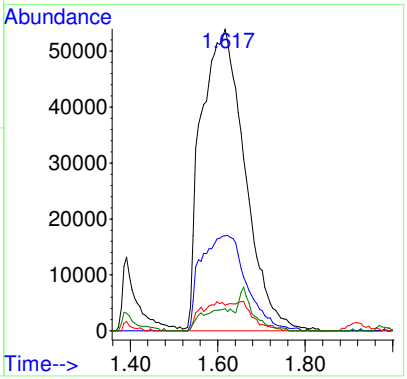


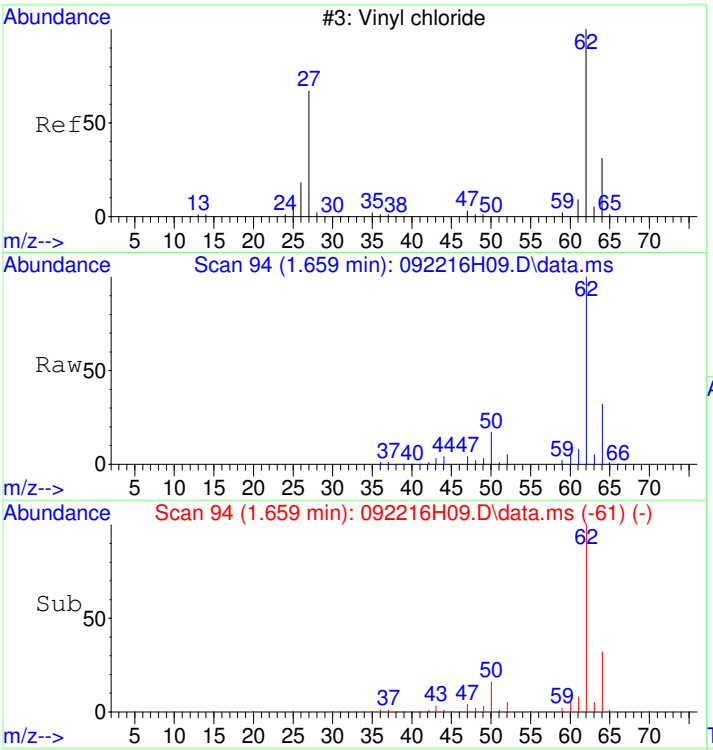


#3
Chloromethane
Concen: 4.88 ug/L
RT: 1.617 min Scan# 87
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 50 Resp: 373365

Ion	Ratio	Lower	Upper
50	100		
52	32.9	0.0	20.0#
49	0.0	0.0	20.0
47	0.0	0.0	20.0

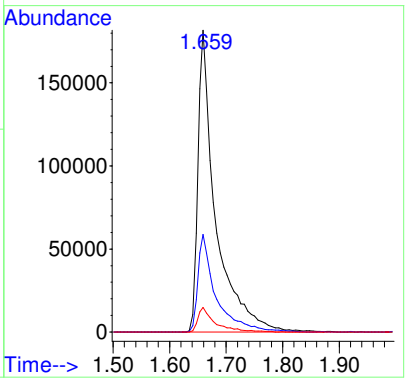


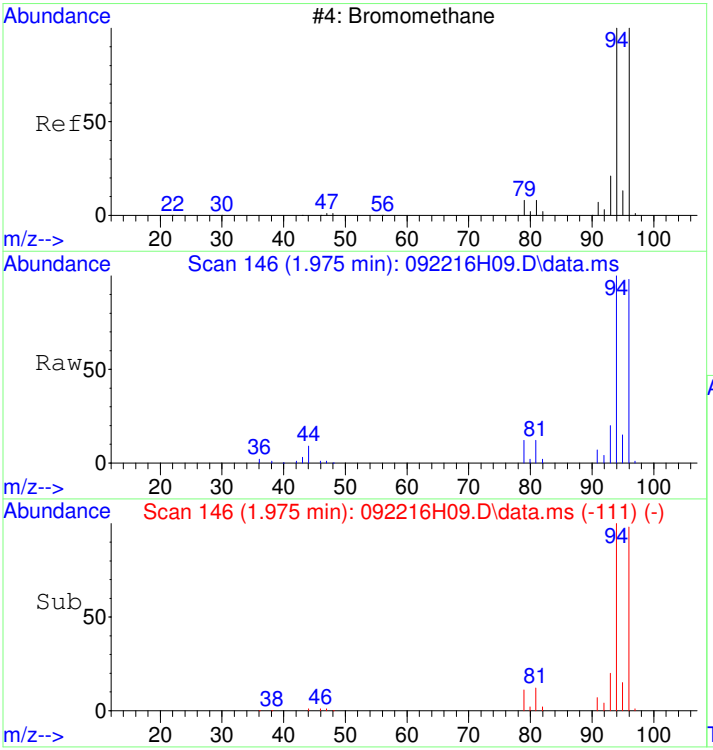


#4
Vinyl chloride
Concen: 4.95 ug/L
RT: 1.659 min Scan# 94
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 62 Resp: 398200

Ion	Ratio	Lower	Upper
62	100		
64	32.9	11.9	51.9
61	8.0	0.0	27.8

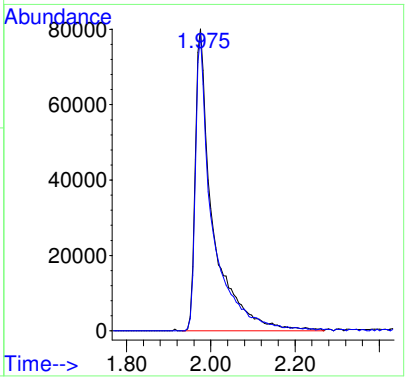


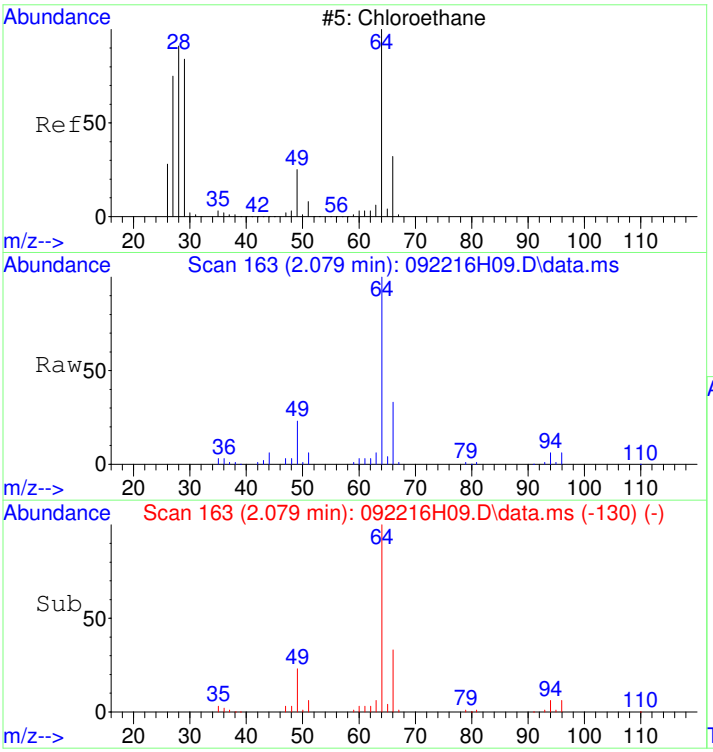


#5
Bromomethane
Concen: 5.00 ug/L
RT: 1.975 min Scan# 146
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 94 Resp: 232577

Ion	Ratio	Lower	Upper
94	100		
96	93.7	73.3	113.3

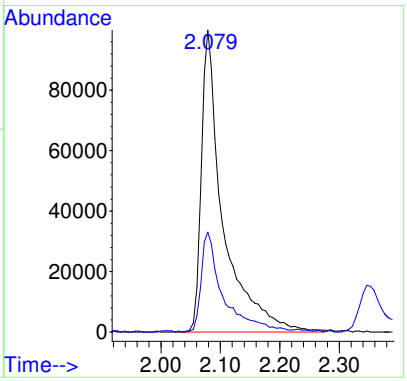


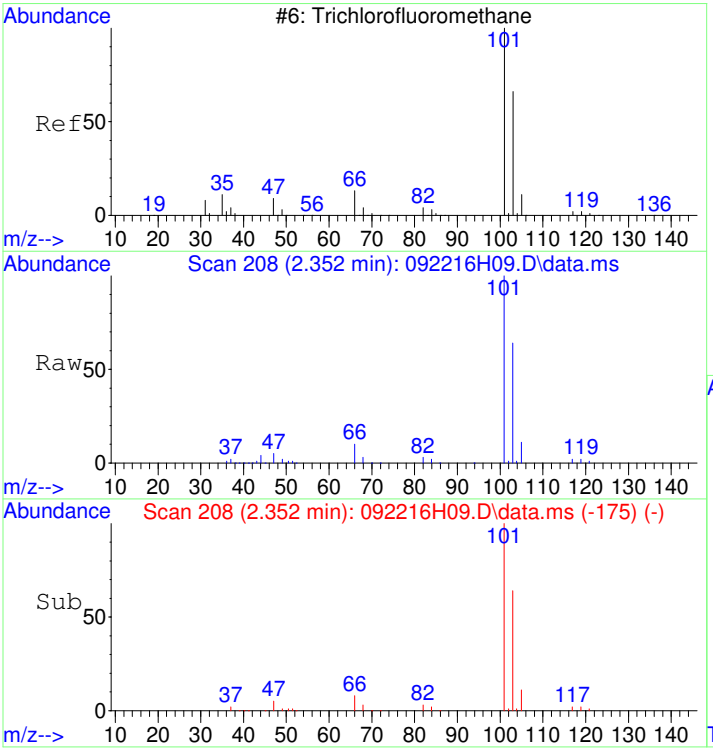


#6
Chloroethane
Concen: 4.85 ug/L
RT: 2.079 min Scan# 163
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 64 Resp: 253757

Ion	Ratio	Lower	Upper
64	100		
66	33.4	12.3	52.3

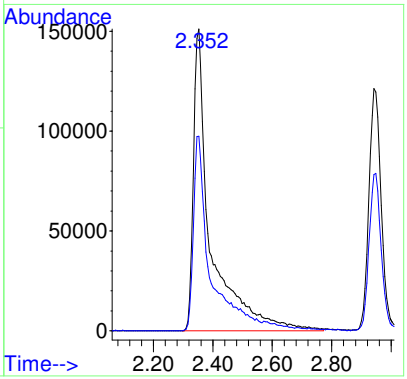


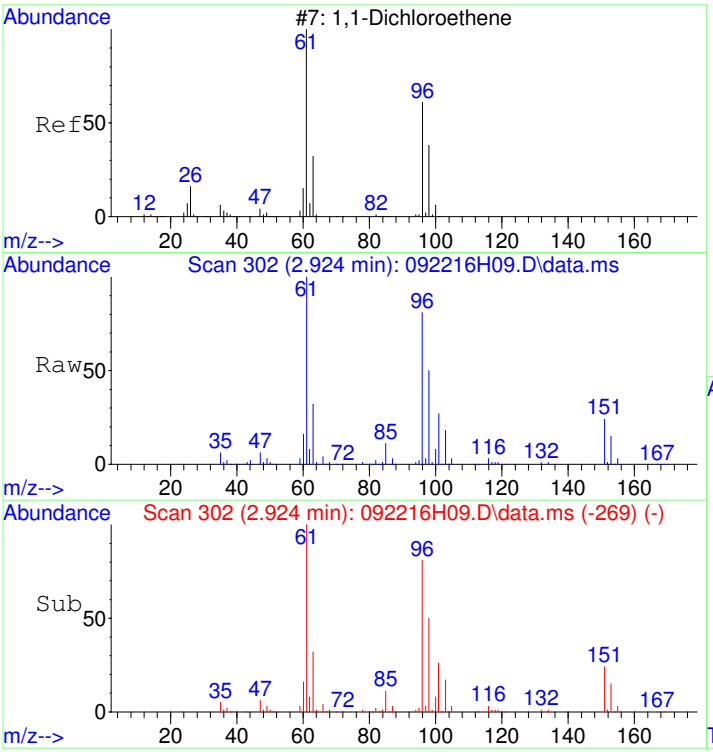


#7
Trichlorofluoromethane
Concen: 4.95 ug/L
RT: 2.352 min Scan# 208
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:101 Resp: 612070

Ion	Ratio	Lower	Upper
101	100		
103	61.2	44.8	84.8

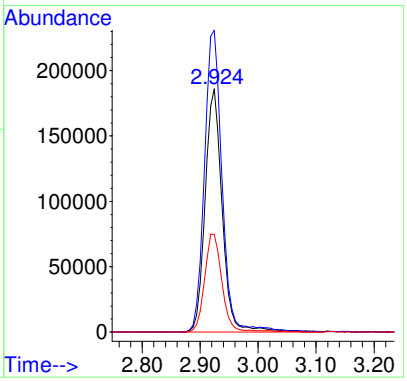


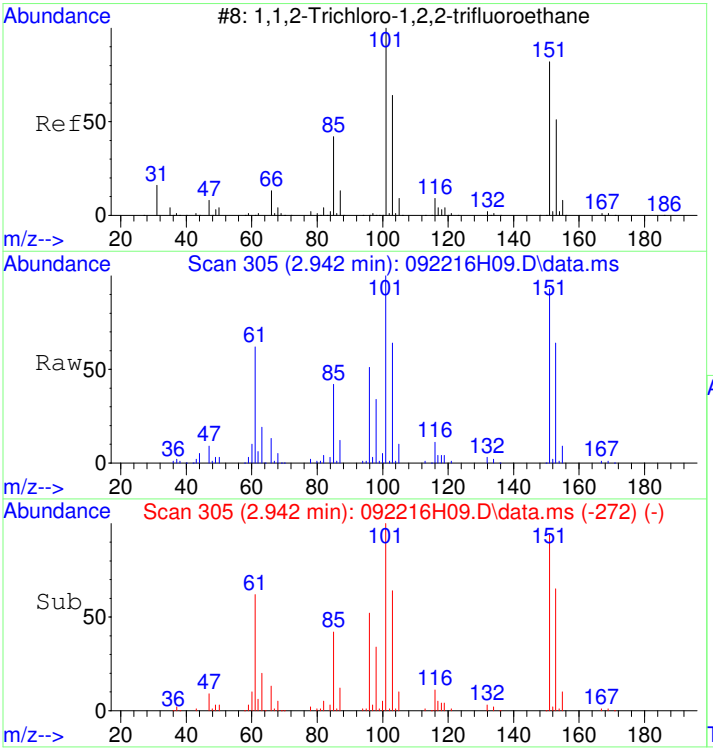


#8
1,1-Dichloroethene
Concen: 4.92 ug/L
RT: 2.924 min Scan# 302
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 96 Resp: 382996

Ion	Ratio	Lower	Upper
96	100		
61	127.4	103.8	143.8
63	40.4	20.3	60.3

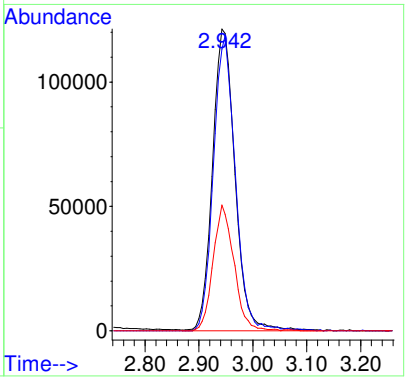


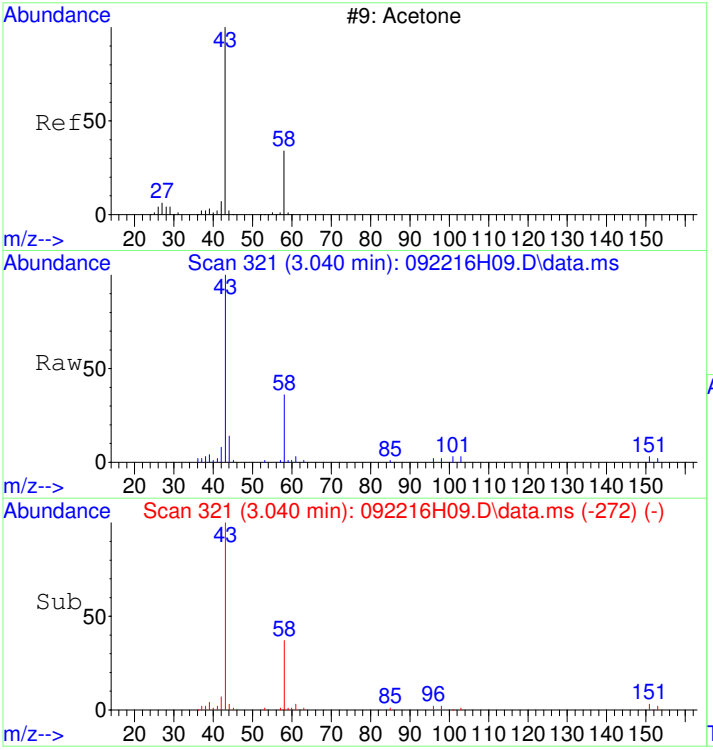


#9
1,1,2-Trichloro-1,2,2-trifluoroetnane
Concen: 4.92 ug/L
RT: 2.942 min Scan# 305
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:101 Resp: 352652

Ion	Ratio	Lower	Upper
101	100		
151	94.9	80.7	120.7
85	38.6	20.0	60.0

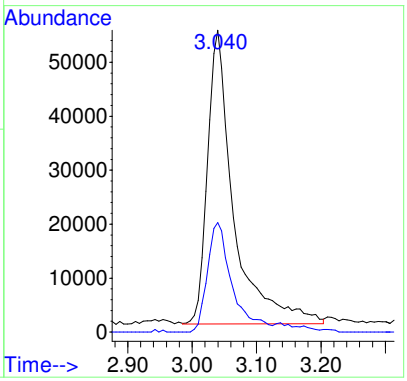


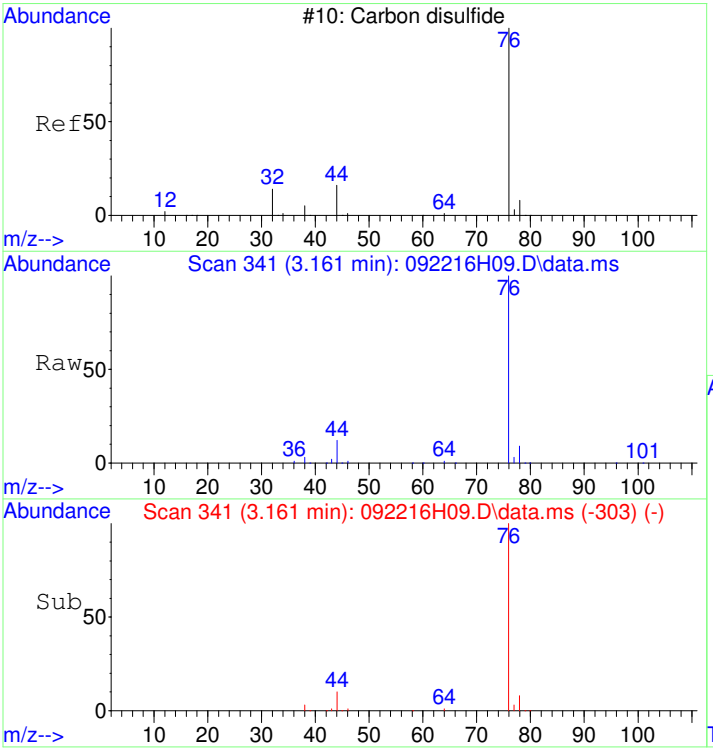


#10
Acetone
Concen: 36.19 ug/L
RT: 3.040 min Scan# 321
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 43 Resp: 154015

Ion	Ratio	Lower	Upper
43	100		
58	38.6	16.5	56.5

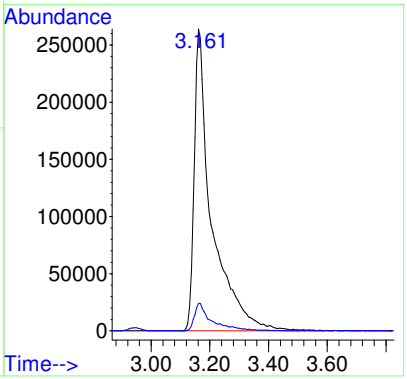


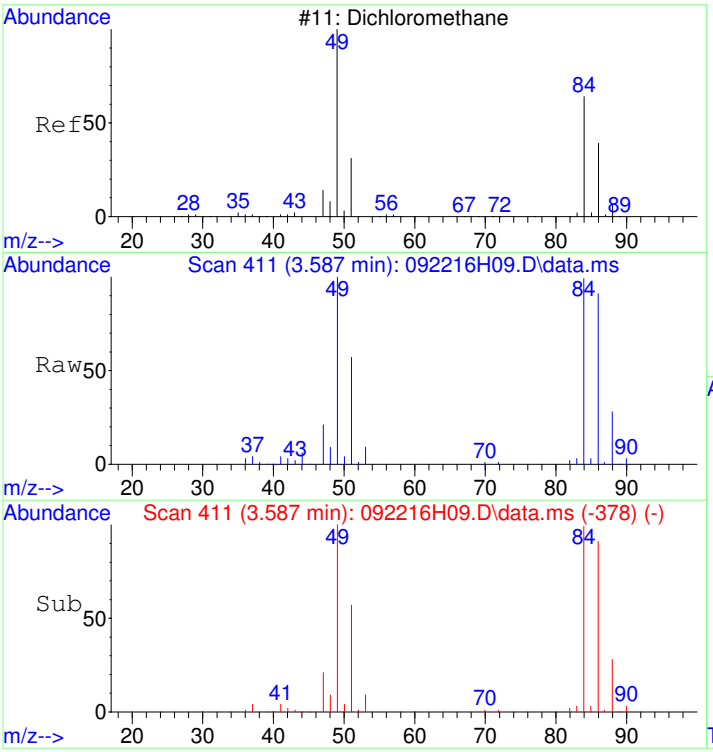


#11
Carbon disulfide
Concen: 4.93 ug/L
RT: 3.161 min Scan# 341
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 76 Resp: 1089272

Ion	Ratio	Lower	Upper
76	100		
78	9.2	0.0	29.1

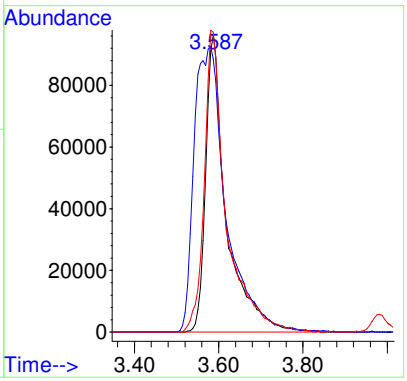


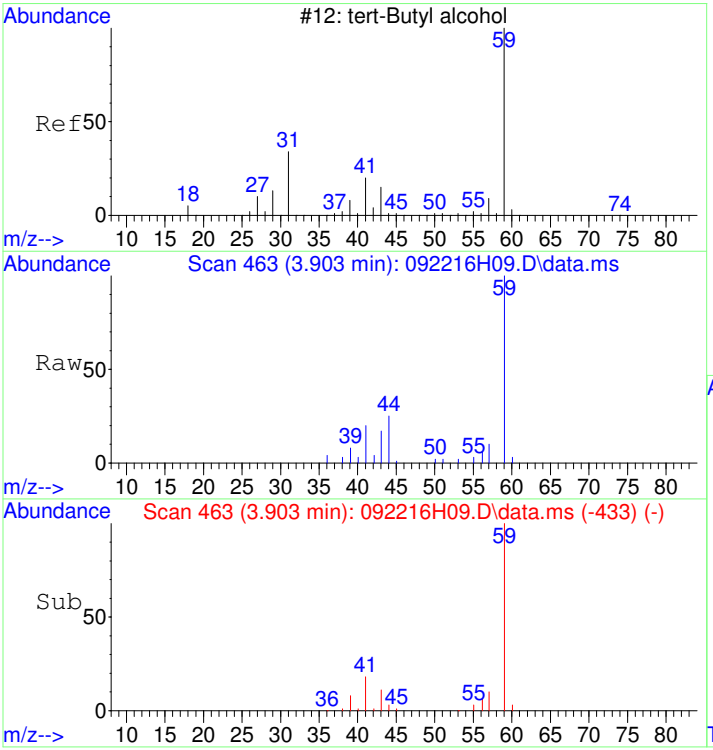


#12
Dichloromethane
Concen: 4.73 ug/L
RT: 3.587 min Scan# 411
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 84 Resp: 329664

Ion	Ratio	Lower	Upper
84	100		
86	147.7	0.0	20.0#
49	107.6	88.5	128.5

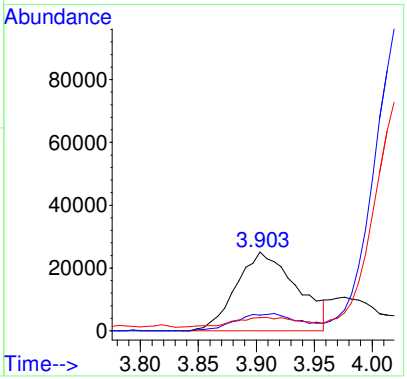


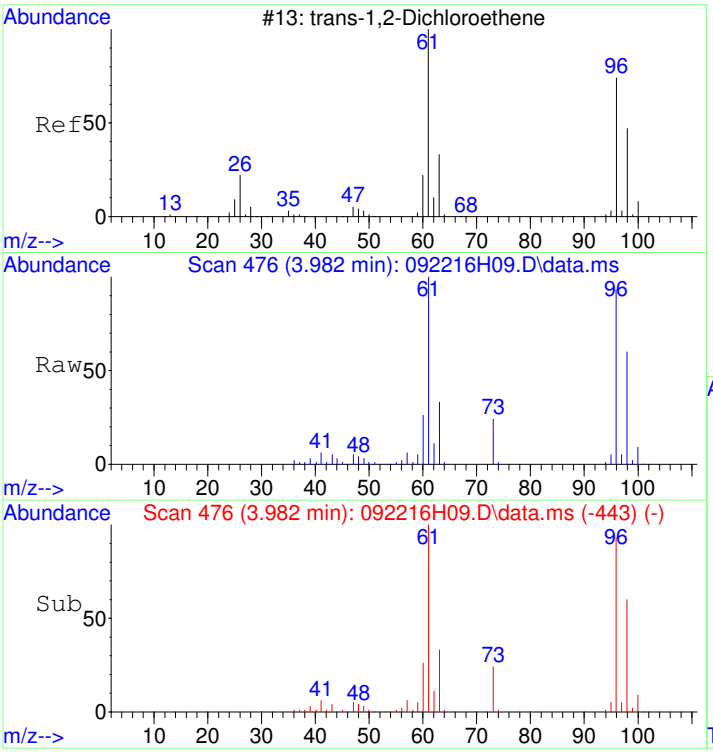


#13
tert-Butyl alcohol
Concen: 102.91 ug/L
RT: 3.903 min Scan# 463
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 59 Resp: 91404

Ion	Ratio	Lower	Upper
59	100		
41	23.5	0.0	37.5
43	13.9	0.0	33.0

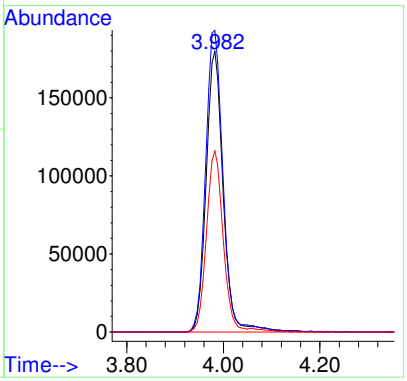


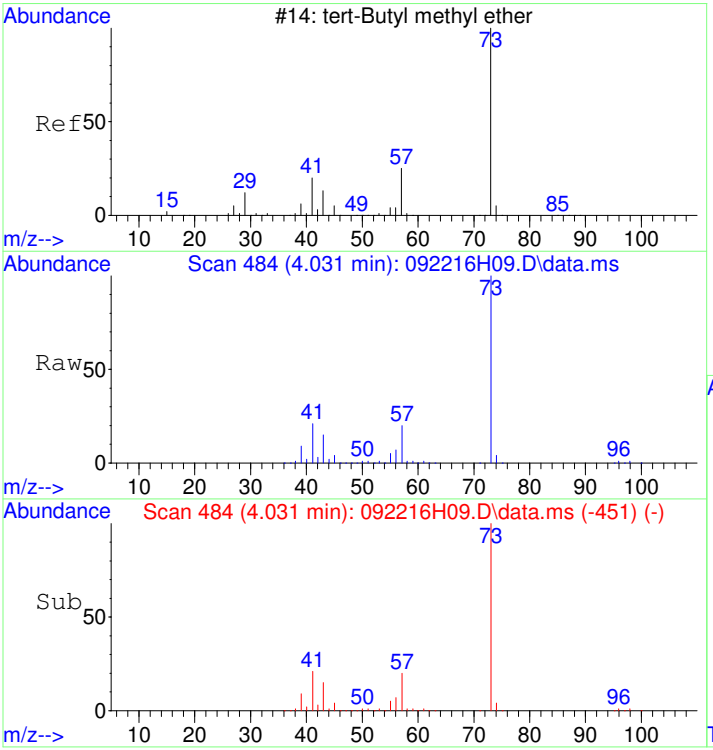


#14
trans-1,2-Dichloroethene
Concen: 5.05 ug/L
RT: 3.982 min Scan# 476
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 96 Resp: 442070

Ion	Ratio	Lower	Upper
96	100		
61	109.7	90.4	130.4
98	62.4	43.8	83.8

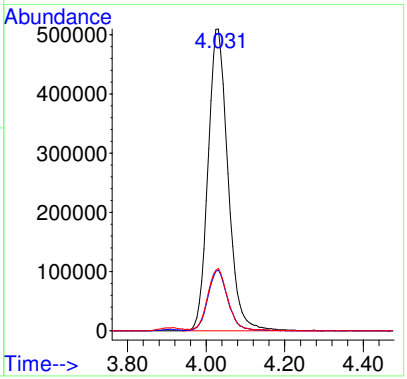


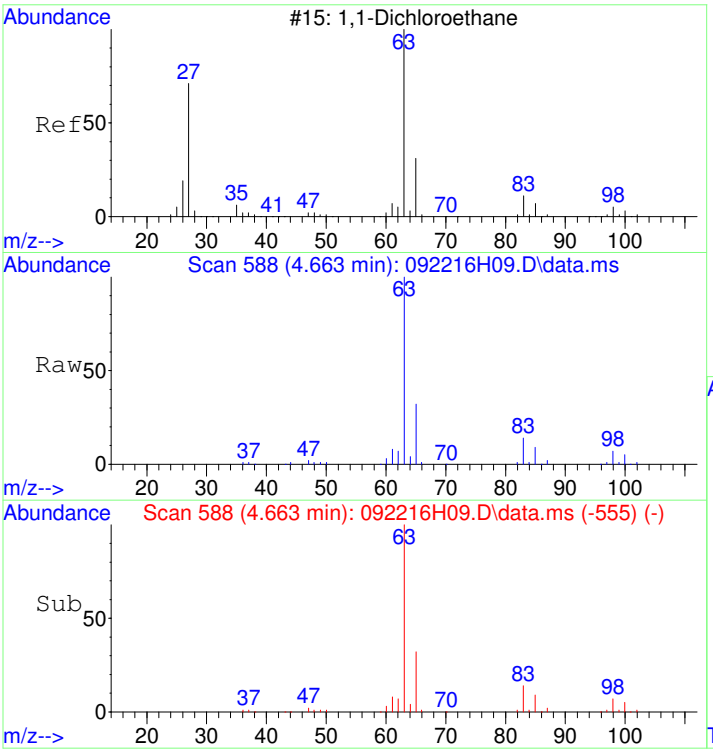


#15
tert-Butyl methyl ether (MTBE)
Concen: 19.81 ug/L
RT: 4.031 min Scan# 484
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 73 Resp: 1796424

Ion	Ratio	Lower	Upper
73	100		
57	20.2	0.0	39.6
41	20.9	0.0	35.2

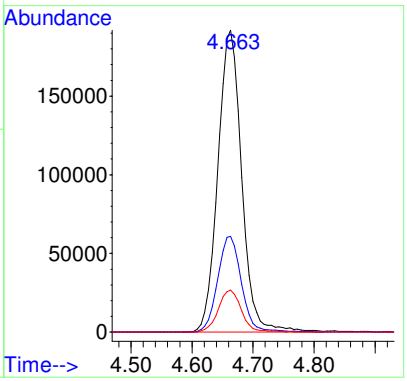


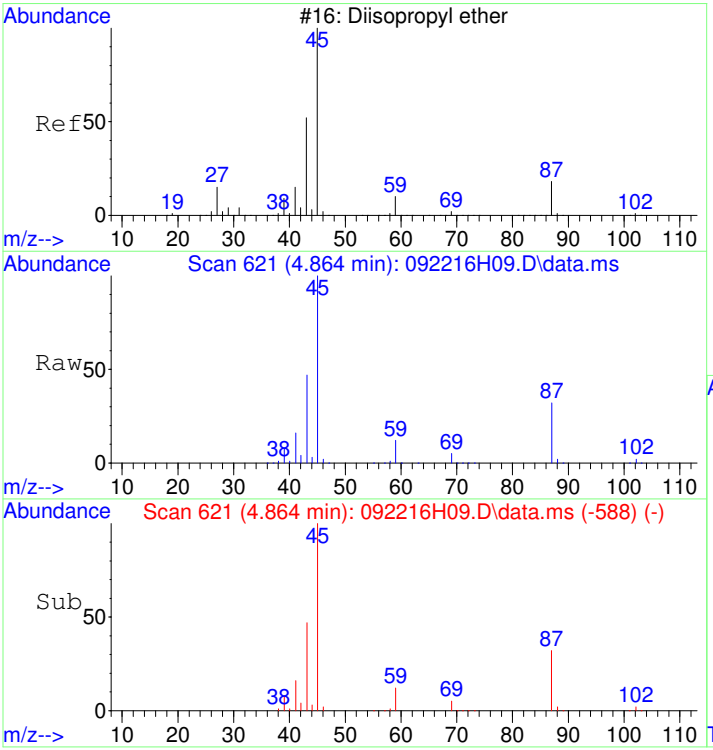


#16
1,1-Dichloroethane
Concen: 4.77 ug/L
RT: 4.663 min Scan# 588
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 63 Resp: 521232

Ion	Ratio	Lower	Upper
63	100		
65	31.6	11.5	51.5
83	13.5	0.0	33.5

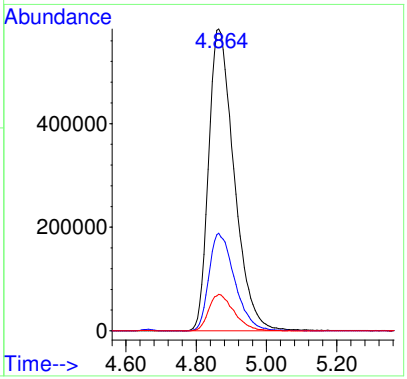


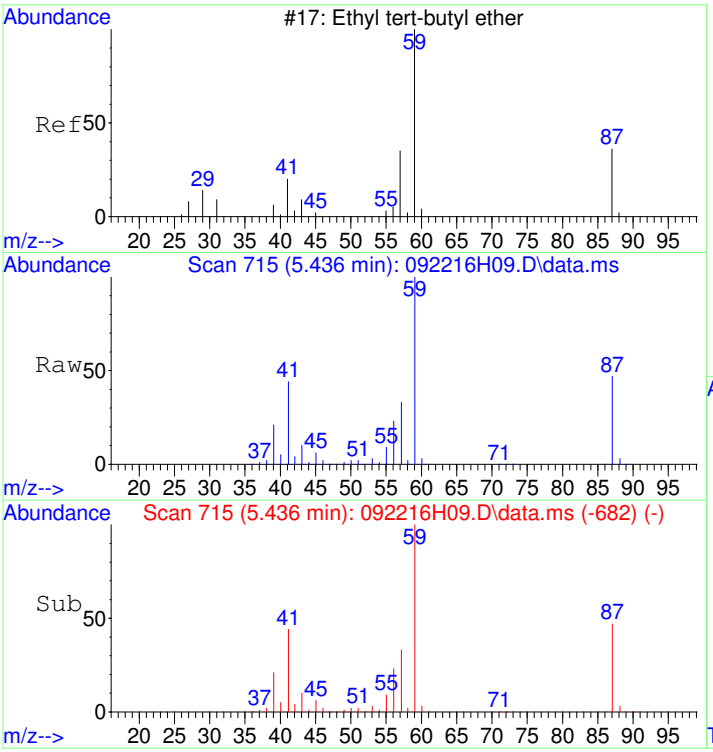


#17
Diisopropyl ether
Concen: 19.33 ug/L
RT: 4.864 min Scan# 621
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 45 Resp: 2947357

Ion	Ratio	Lower	Upper
45	100		
87	32.6	8.2	48.2
59	12.1	0.0	31.1

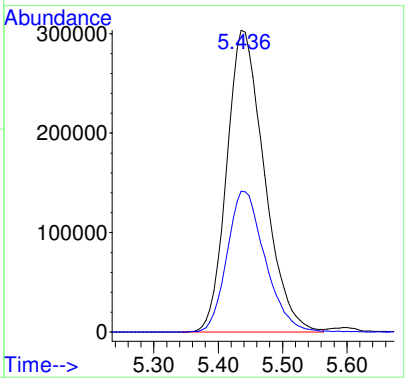


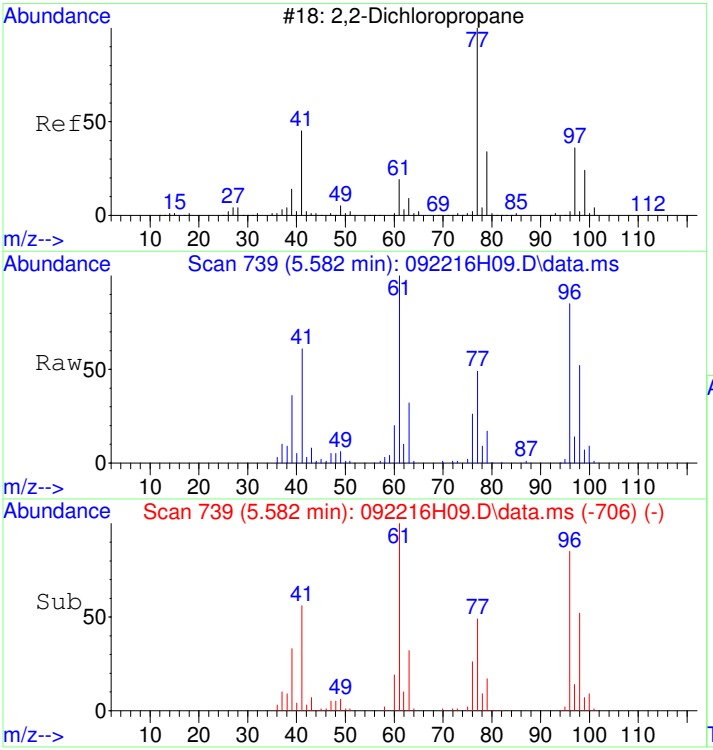


#18
Ethyl-tert-butyl ether
Concen: 17.90 ug/L
RT: 5.436 min Scan# 715
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 59 Resp: 1229030

Ion	Ratio	Lower	Upper
59	100		
87	47.4	22.3	62.3

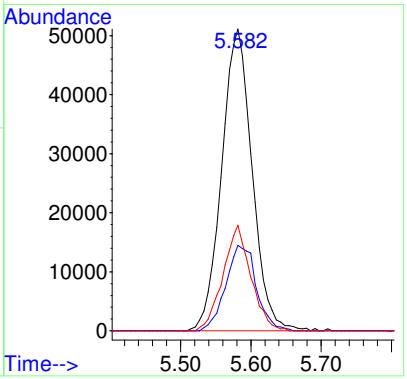


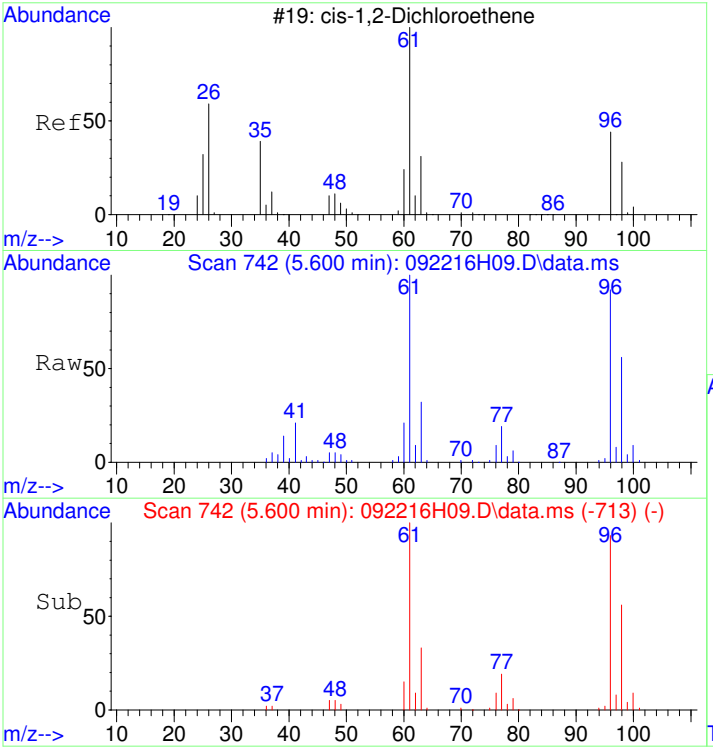


#19
2,2-Dichloropropane
Concen: 4.33 ug/L
RT: 5.582 min Scan# 739
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 77 Resp: 154123

Ion	Ratio	Lower	Upper
77	100		
97	28.4	0.0	39.8
79	32.0	11.9	51.9

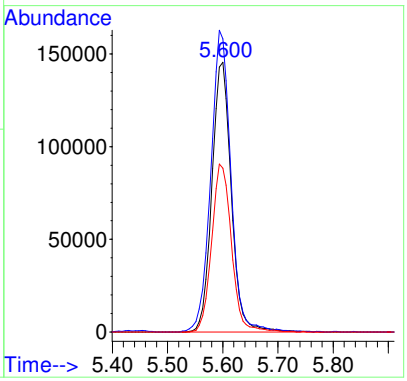


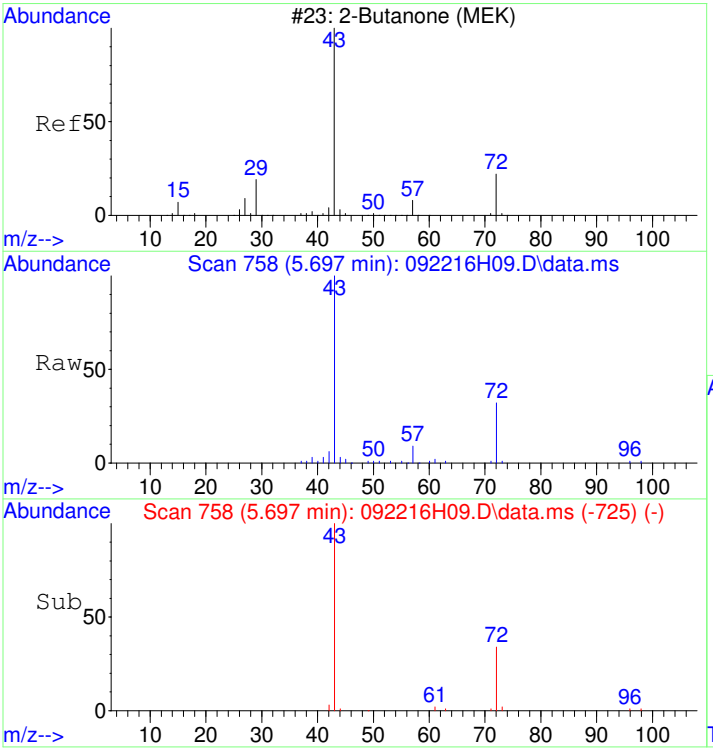


#20
cis-1,2-Dichloroethene
Concen: 4.87 ug/L
RT: 5.600 min Scan# 742
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 96 Resp: 355759

Ion	Ratio	Lower	Upper
96	100		
61	115.9	133.7	173.7#
98	63.6	45.0	85.0

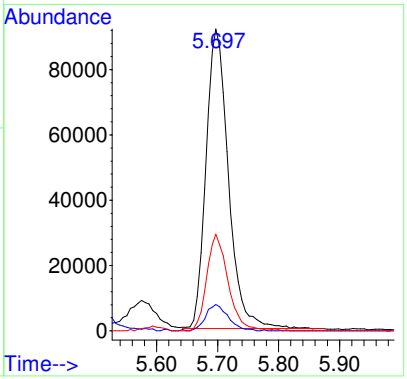


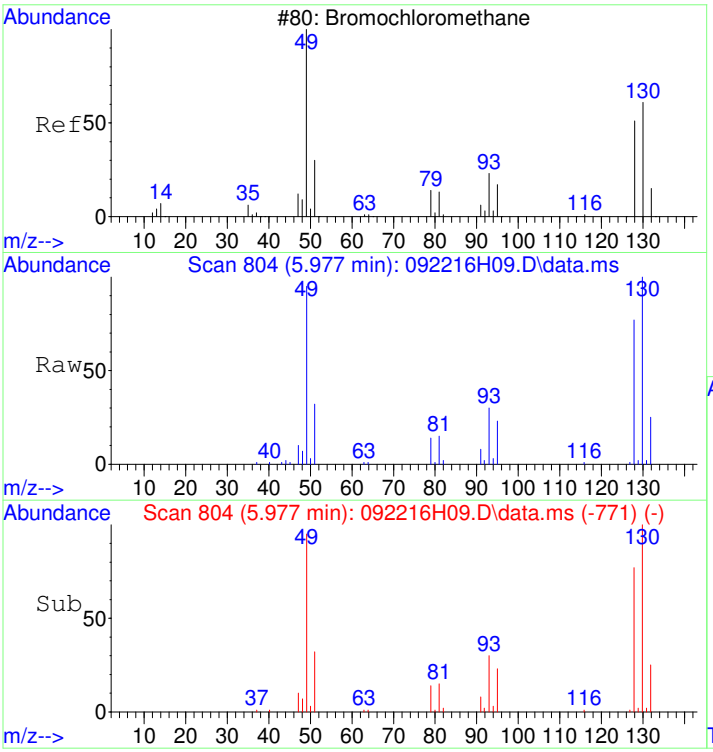


#21
2-Butanone (MEK)
Concen: 38.23 ug/L
RT: 5.697 min Scan# 758
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 43 Resp: 234313

Ion	Ratio	Lower	Upper
43	100		
57	8.8	0.0	27.8
72	30.9	4.3	44.3

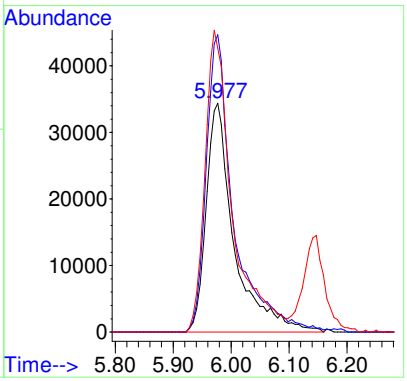


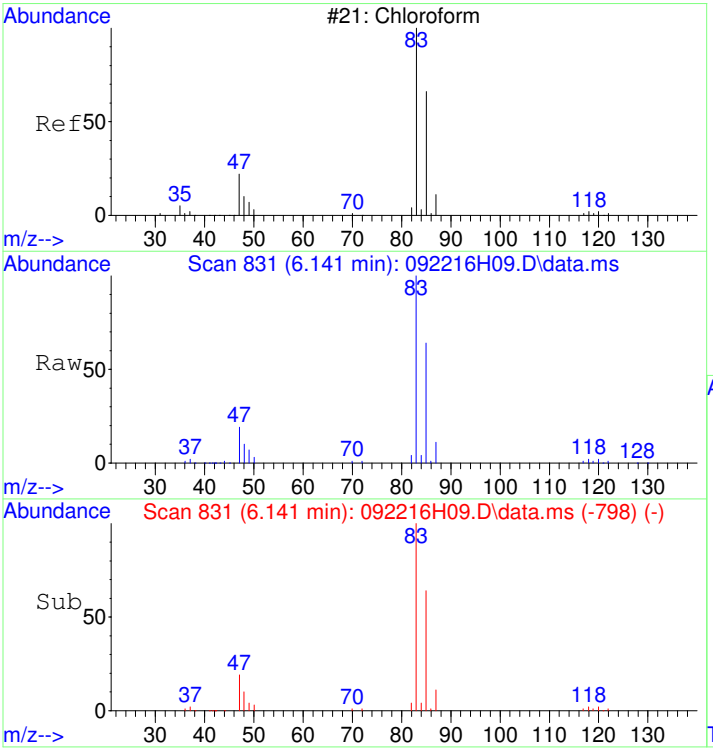


#22
Bromochloromethane
Concen: 4.92 ug/L
RT: 5.977 min Scan# 804
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:128 Resp: 115567

Ion	Ratio	Lower	Upper
128	100		
130	128.1	110.4	150.4
49	127.5	139.9	179.9#

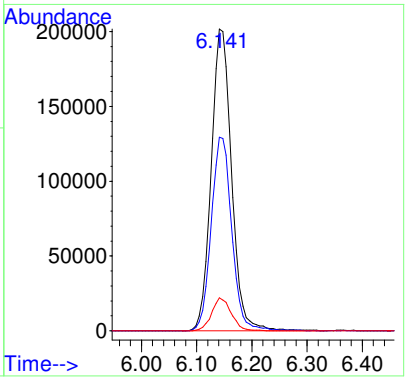


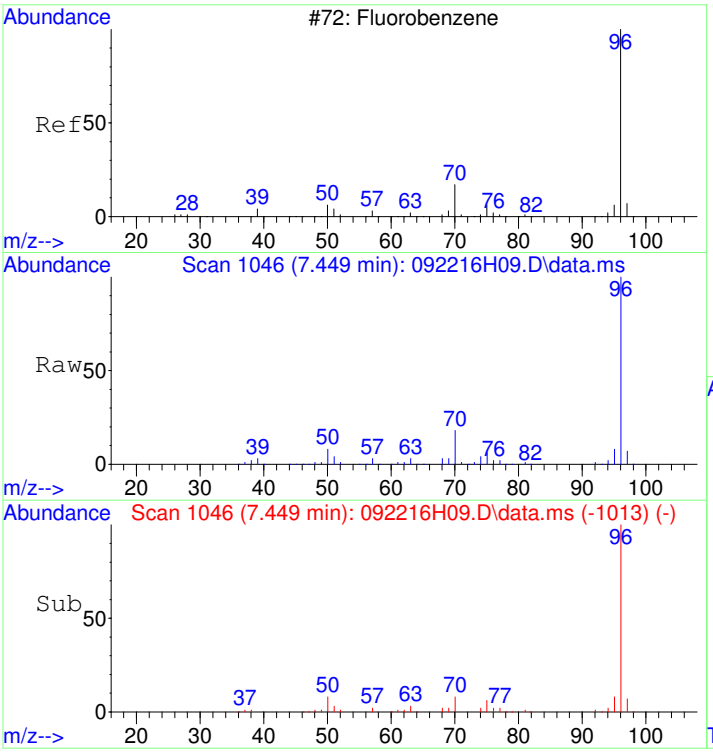


#23
Chloroform
Concen: 4.92 ug/L
RT: 6.141 min Scan# 831
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 83 Resp: 516897

Ion	Ratio	Lower	Upper
83	100		
85	64.8	43.8	83.8
87	10.5	0.0	30.2

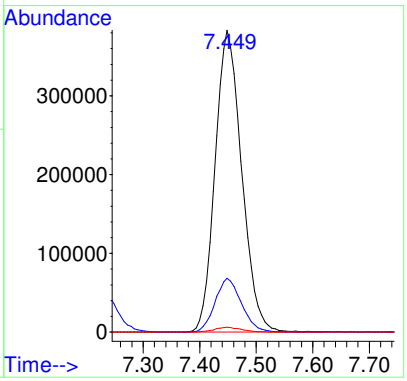


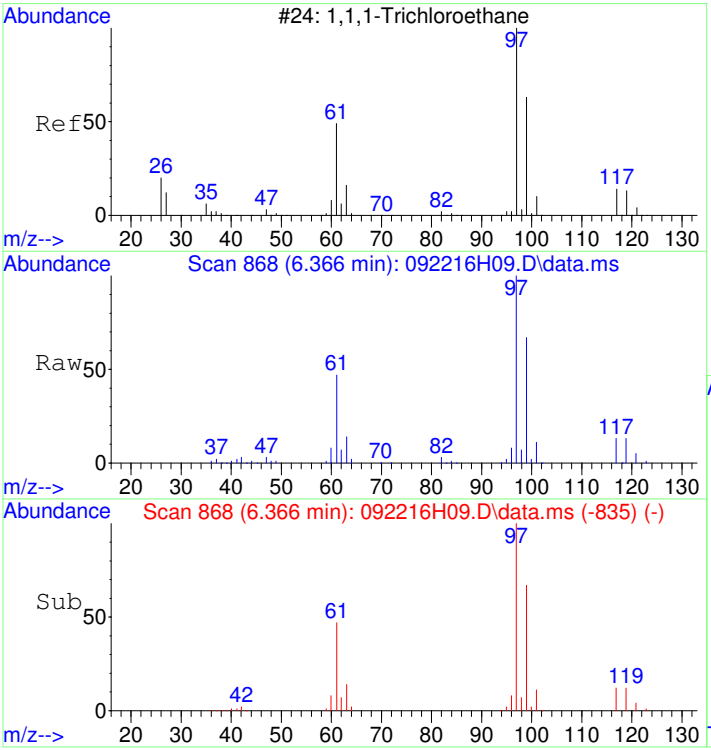


#24
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.449 min Scan# 1046
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 96 Resp: 1249203

Ion	Ratio	Lower	Upper
96	100		
70	17.6	0.0	39.9
77	1.6	0.0	21.8

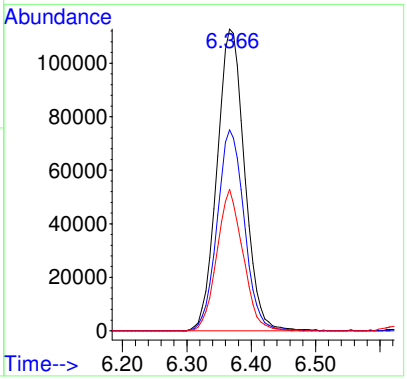


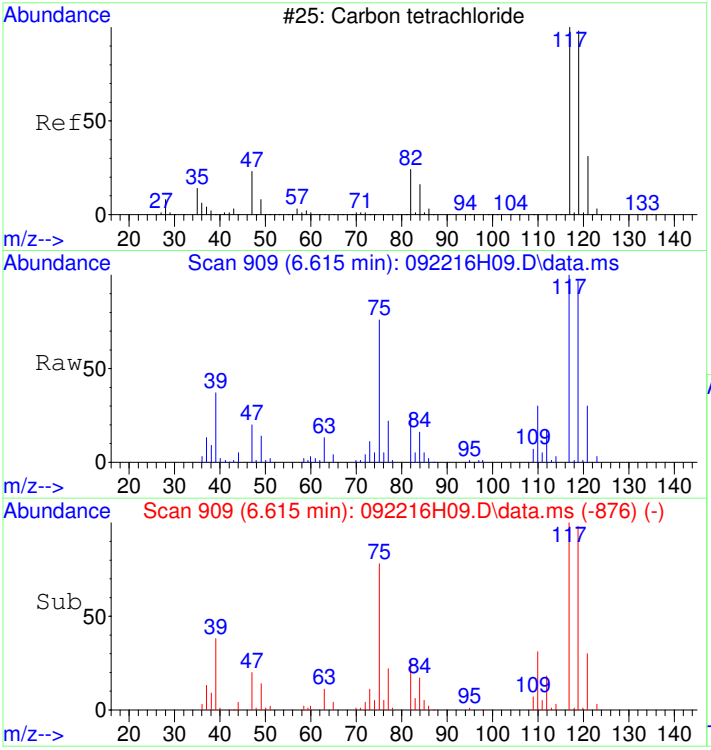


#25
1,1,1-Trichloroethane
Concen: 4.85 ug/L
RT: 6.366 min Scan# 868
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 97 Resp: 336584

Ion	Ratio	Lower	Upper
97	100		
99	65.4	44.7	84.7
61	44.3	22.5	62.5

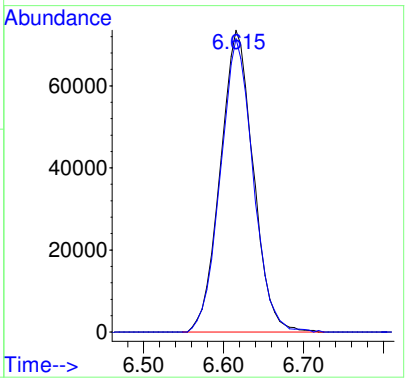


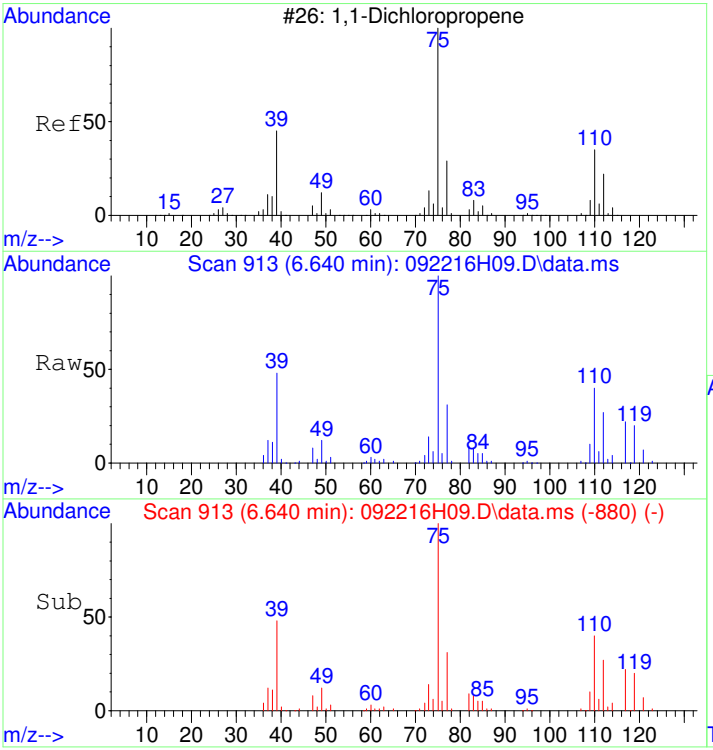


#26
Carbon tetrachloride
Concen: 4.71 ug/L
RT: 6.615 min Scan# 909
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:117 Resp: 211092

Ion	Ratio	Lower	Upper
117	100		
119	96.5	76.7	116.7

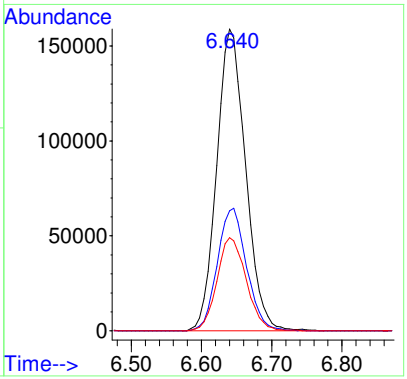


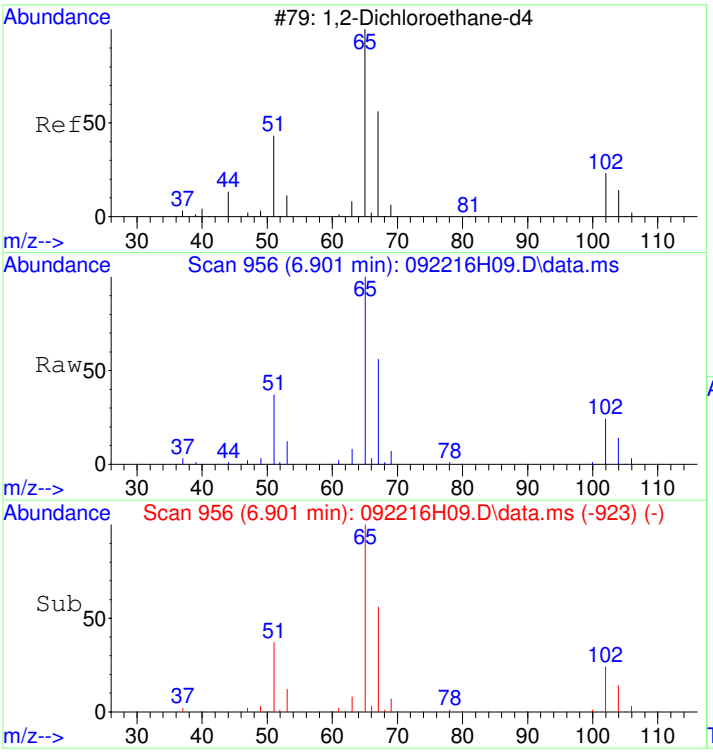


#27
1,1-Dichloropropene
Concen: 4.97 ug/L
RT: 6.640 min Scan# 913
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 75 Resp: 455117

Ion	Ratio	Lower	Upper
75	100		
110	40.9	15.8	55.8
77	31.3	10.4	50.4

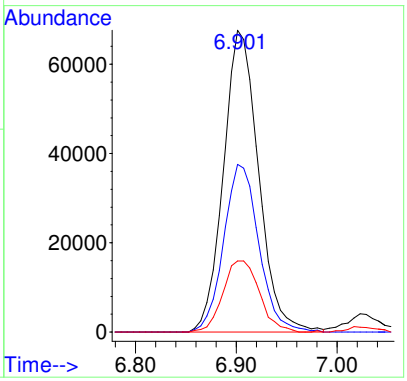


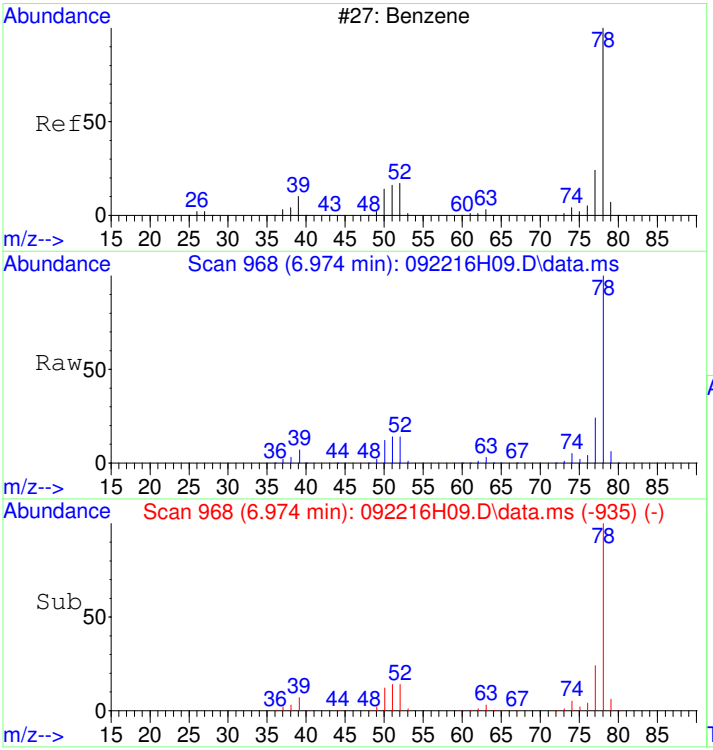


#28
1,2-Dichloroethane-d4
Concen: 4.91 ug/L
RT: 6.901 min Scan# 956
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 65 Resp: 164091

Ion	Ratio	Lower	Upper
65	100		
67	55.6	28.5	68.5
102	24.4	0.0	36.0

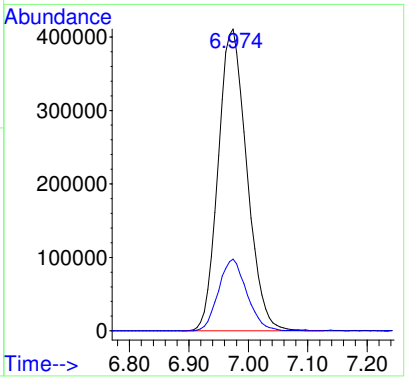


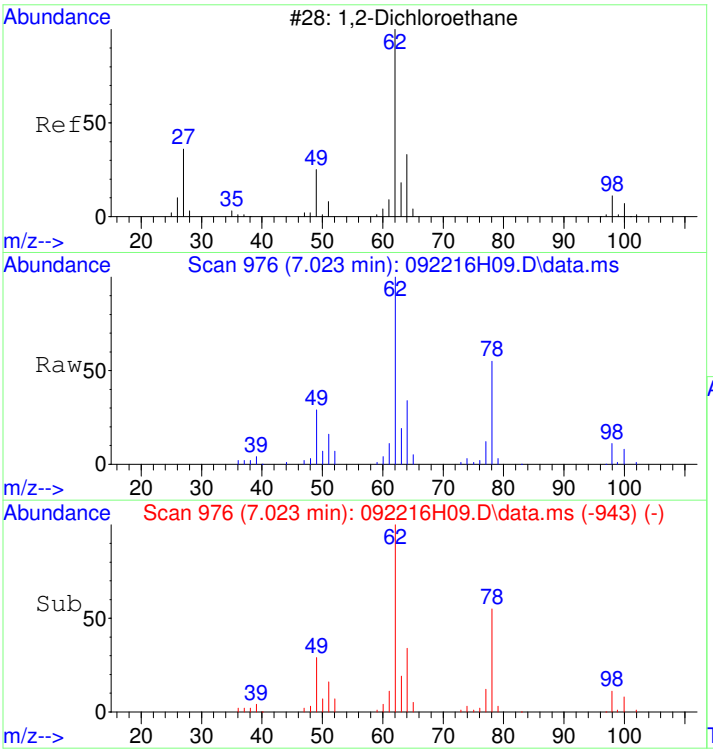


#29
Benzene
Concen: 4.99 ug/L
RT: 6.974 min Scan# 968
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 78 Resp: 1376364

Ion	Ratio	Lower	Upper
78	100		
77	23.4	3.4	43.4

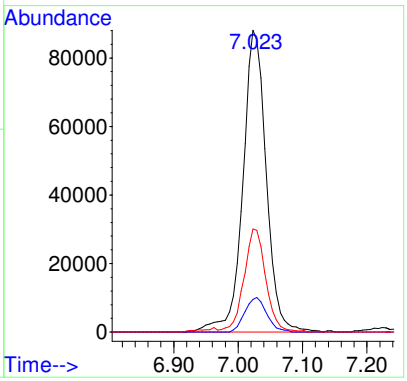


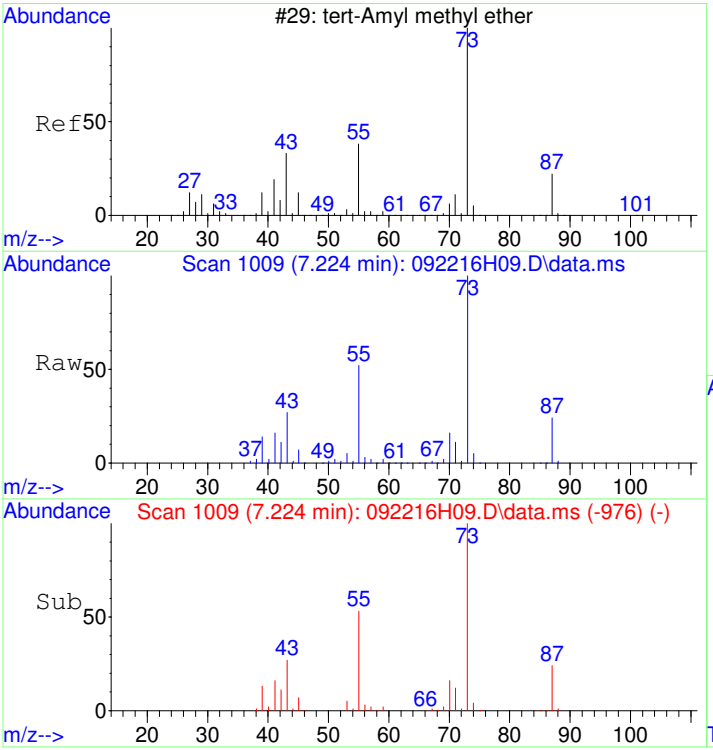


#30
1,2-Dichloroethane
Concen: 4.96 ug/L
RT: 7.023 min Scan# 976
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 62 Resp: 222760

Ion	Ratio	Lower	Upper
62	100		
98	10.7	0.0	27.1
64	31.9	12.1	52.1

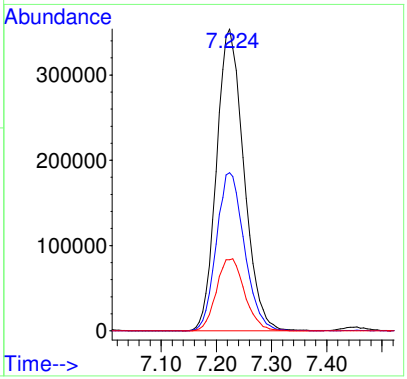


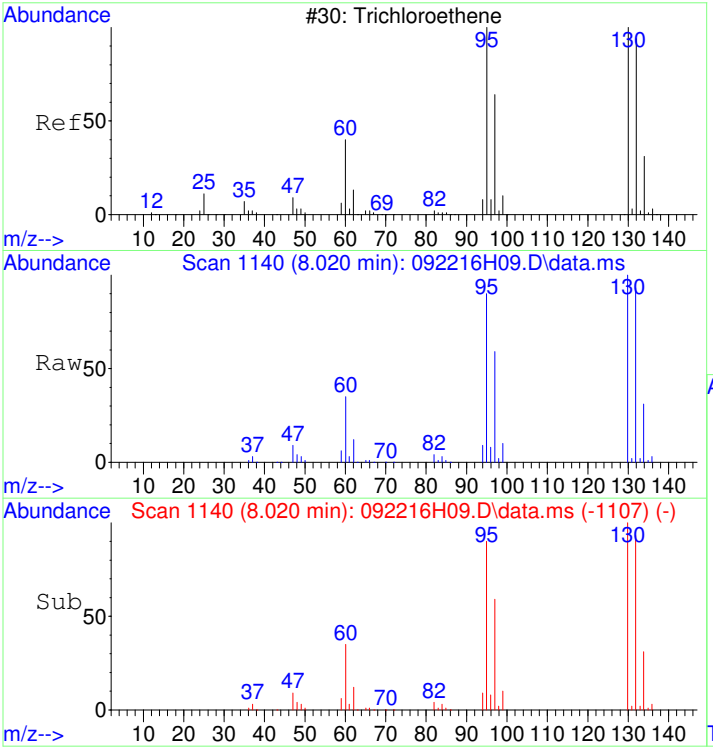


#31
tert-Amyl methyl ether
Concen: 19.23 ug/L
RT: 7.224 min Scan# 1009
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 73 Resp: 1219888

Ion	Ratio	Lower	Upper
73	100		
55	53.7	3.8	43.8#
87	24.6	4.9	44.9

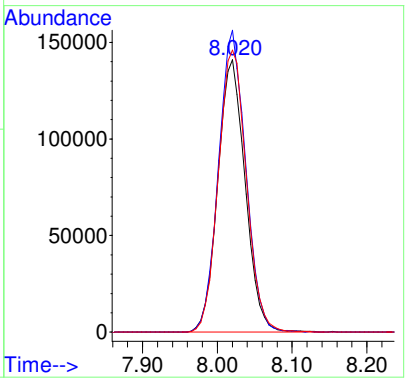


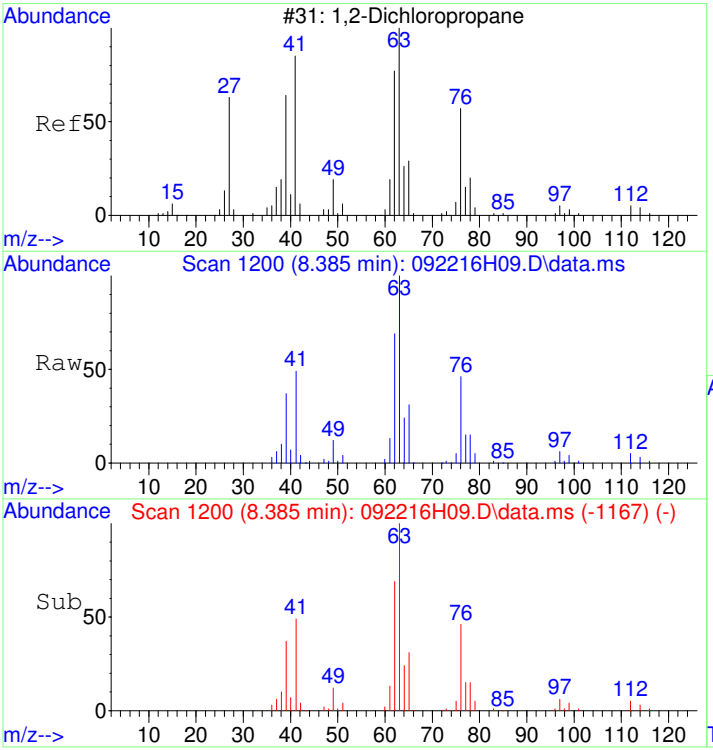


#32
Trichloroethene
Concen: 4.99 ug/L
RT: 8.020 min Scan# 1140
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 95 Resp: 358301

Ion	Ratio	Lower	Upper
95	100		
130	110.0	80.6	120.6
132	106.0	77.3	117.3

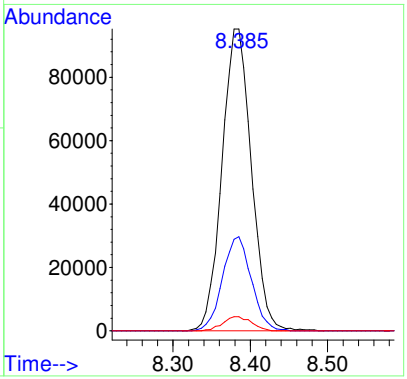


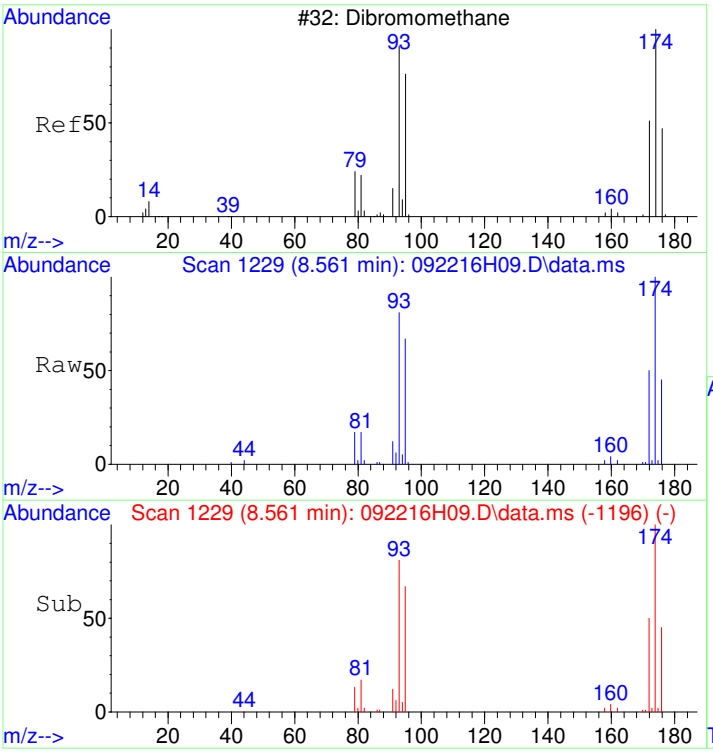


#33
1,2-Dichloropropane
Concen: 5.04 ug/L
RT: 8.385 min Scan# 1200
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 63 Resp: 251810

Ion	Ratio	Lower	Upper
63	100		
65	30.6	10.6	50.6
112	4.6	0.0	24.2

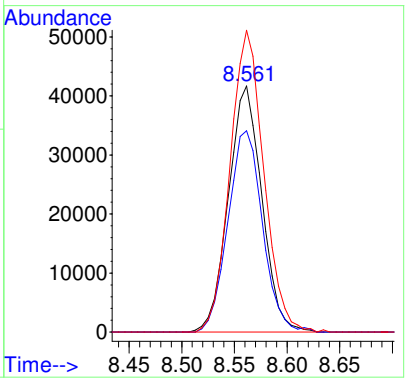


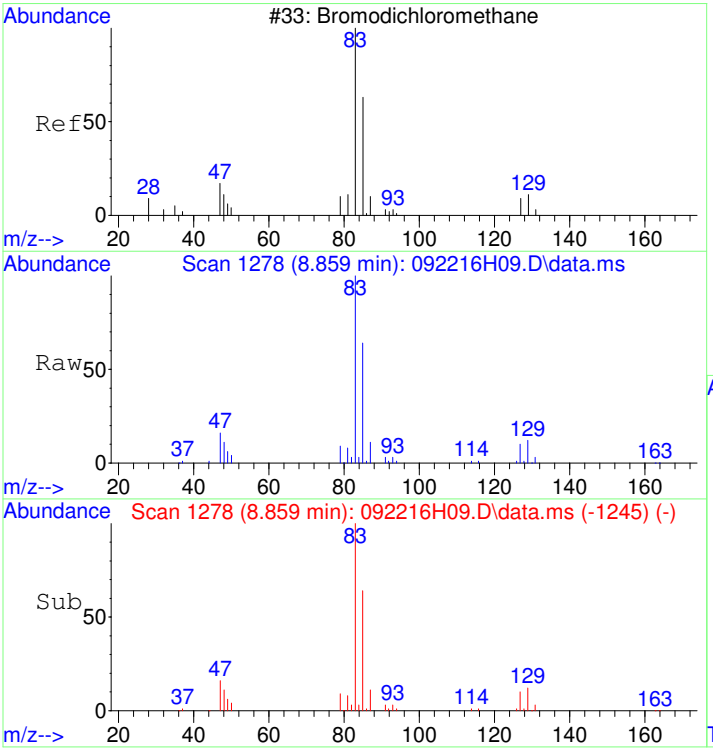


#34
Dibromomethane
Concen: 4.90 ug/L
RT: 8.561 min Scan# 1229
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 93 Resp: 92241

Ion	Ratio	Lower	Upper
93	100		
95	84.3	62.4	102.4
174	123.6	86.6	126.6

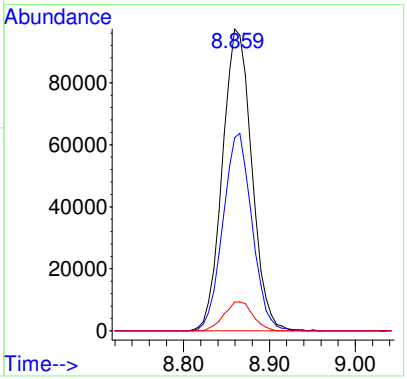


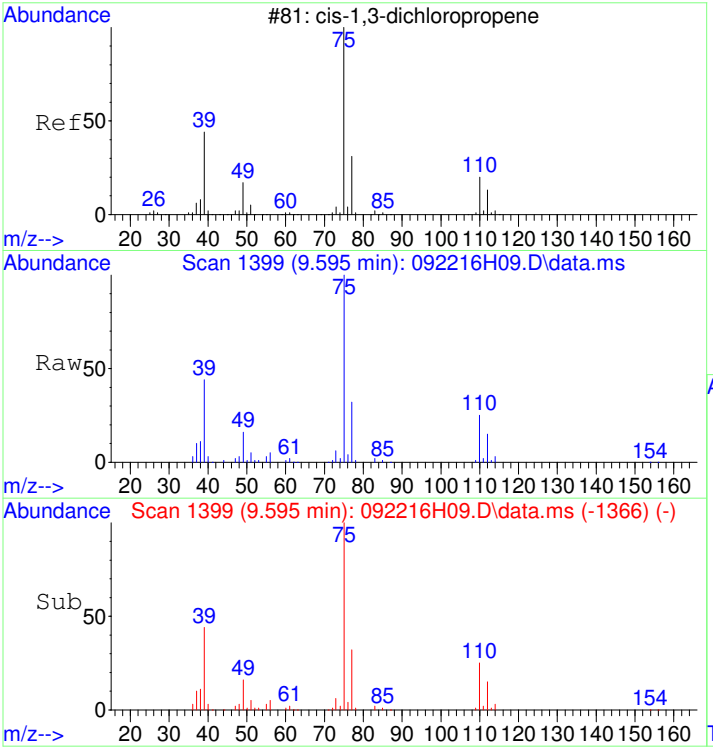


#35
Bromodichloromethane
Concen: 5.07 ug/L
RT: 8.859 min Scan# 1278
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 83 Resp: 230951

Ion	Ratio	Lower	Upper
83	100		
85	64.8	43.6	83.6
127	9.4	0.0	28.6

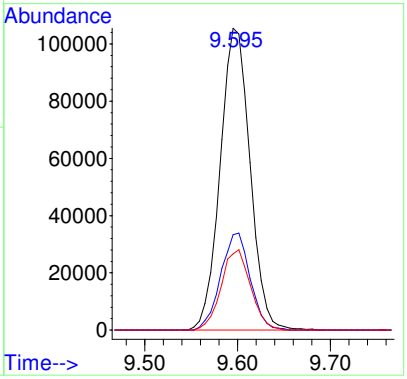


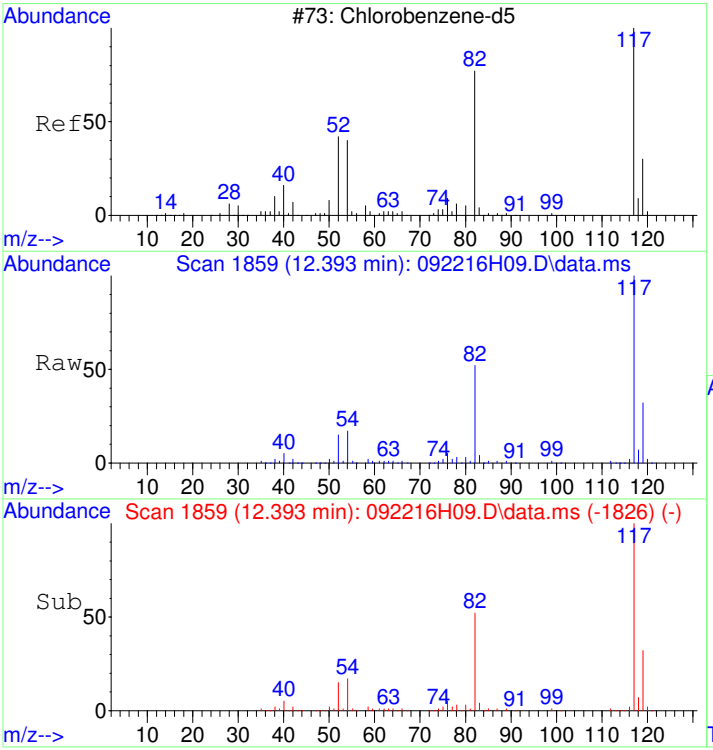


#36
cis-1,3-Dichloropropene
Concen: 4.98 ug/L
RT: 9.595 min Scan# 1399
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 75 Resp: 236636

Ion	Ratio	Lower	Upper
75	100		
77	31.7	11.5	51.5
110	26.2	3.2	43.2

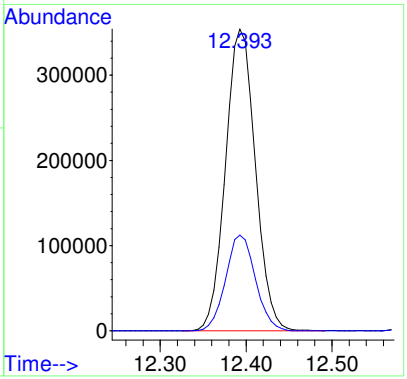


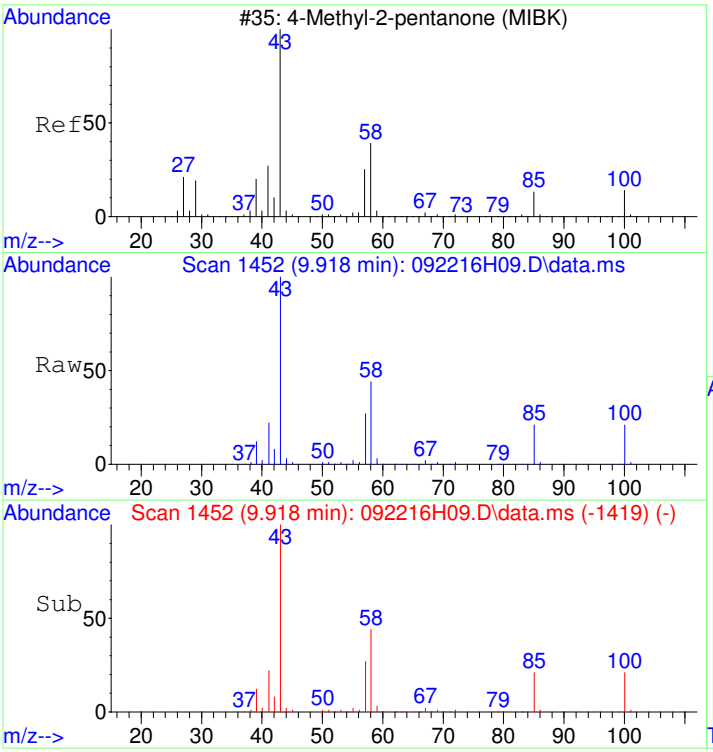


#37
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.393 min Scan# 1859
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:117 Resp: 858742

Ion	Ratio	Lower	Upper
117	100		
119	31.5	12.0	52.0

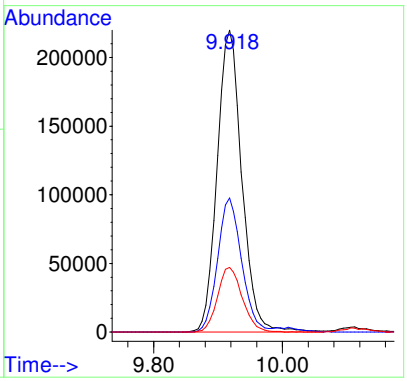


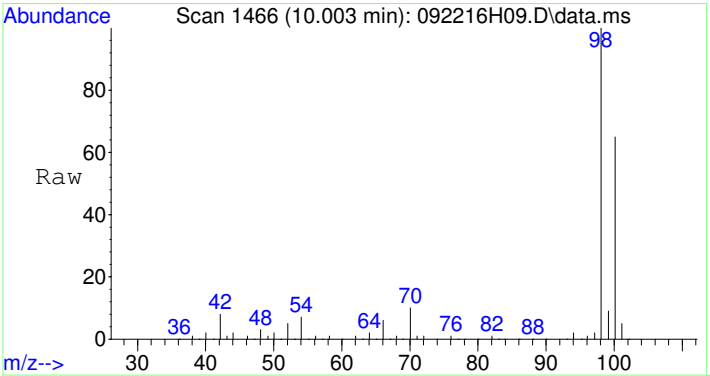


#38
4-Methyl-2-pentanone (MIBK)
Concen: 39.60 ug/L
RT: 9.918 min Scan# 1452
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 43 Resp: 586448

Ion	Ratio	Lower	Upper
43	100		
58	44.7	17.0	57.0
85	21.4	0.0	37.9

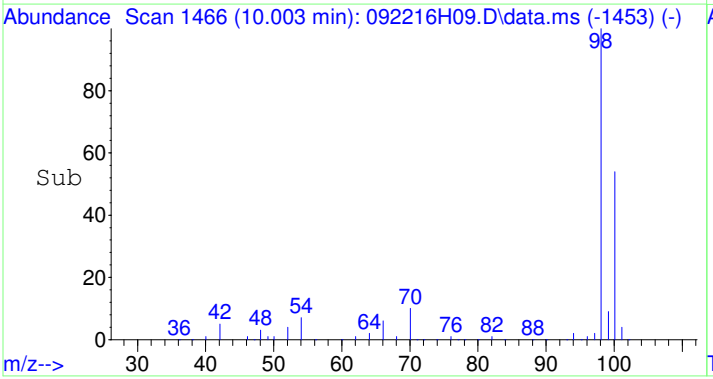


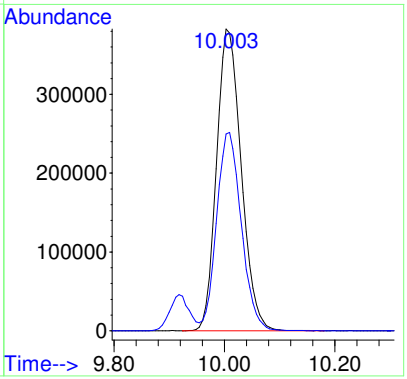


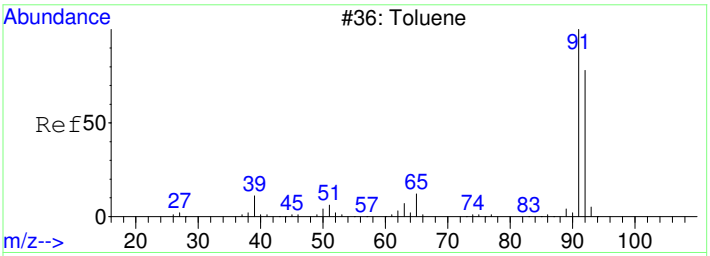
#39
Toluene-d8
Concen: 5.05 ug/L
RT: 10.003 min Scan# 1466
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 98 Resp: 1188405

Ion	Ratio	Lower	Upper
98	100		
100	65.5	45.7	85.7



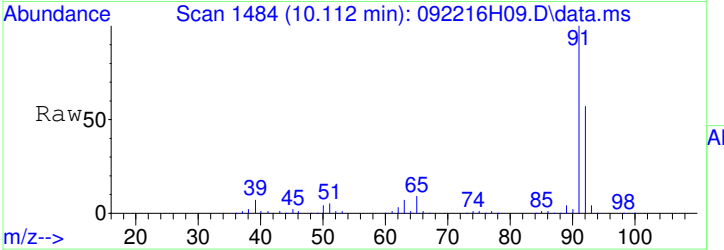


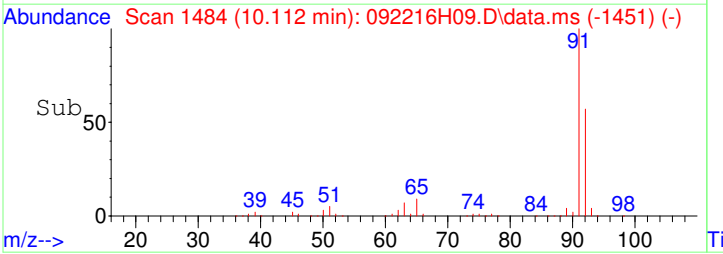


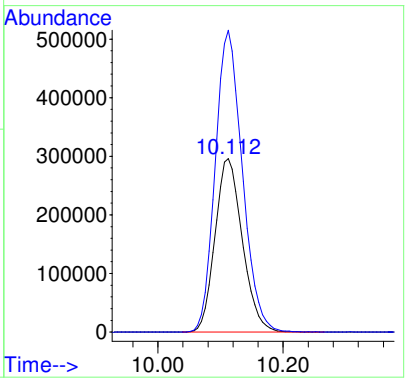
#40
Toluene
Concen: 4.93 ug/L
RT: 10.112 min Scan# 1484
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

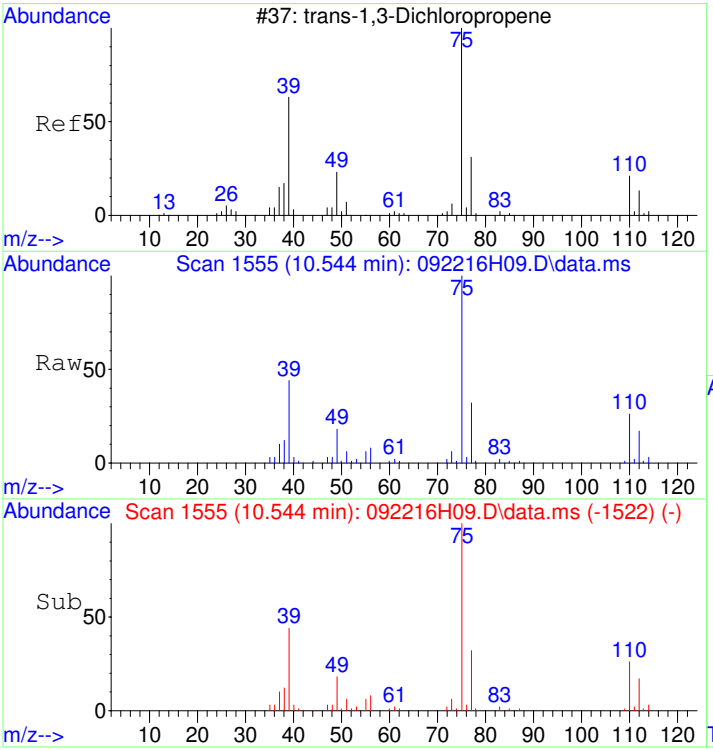
Tgt Ion: 92 Resp: 897708

Ion	Ratio	Lower	Upper
92	100		
91	172.5	151.6	191.6





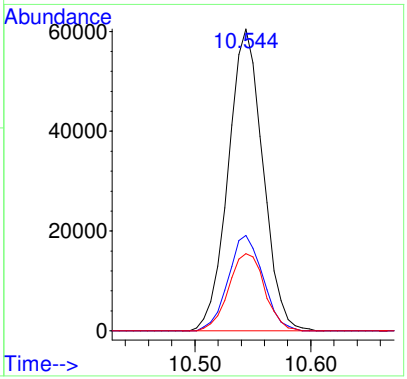


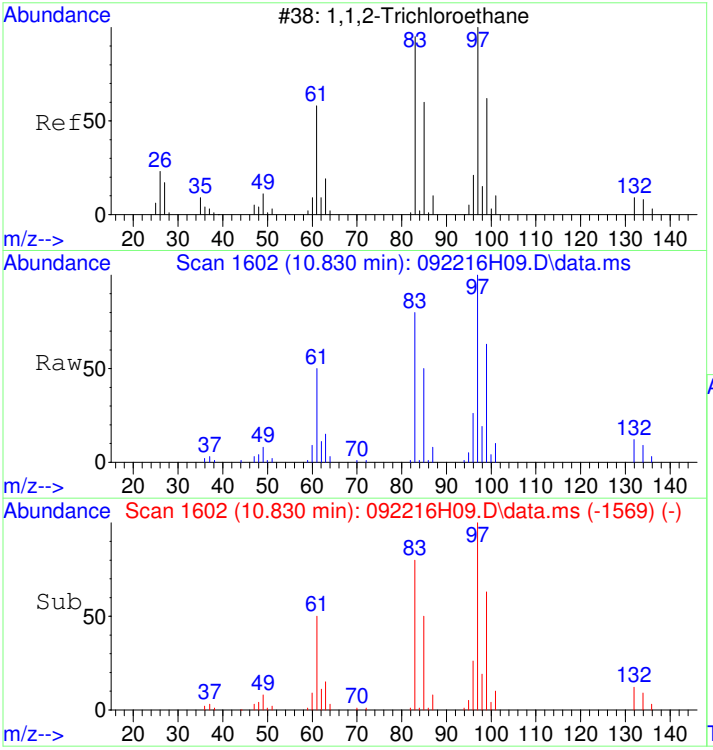


#41
trans-1,3-Dichloropropene
Concen: 4.93 ug/L
RT: 10.544 min Scan# 1555
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 75 Resp: 125619

Ion	Ratio	Lower	Upper
75	100		
77	31.8	12.0	52.0
110	26.7	3.8	43.8

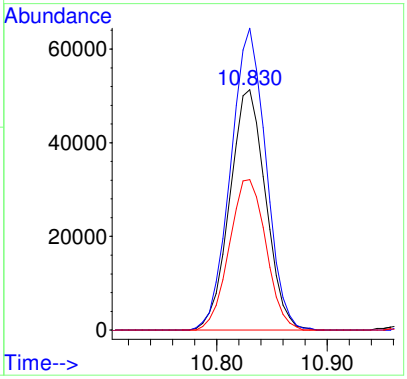


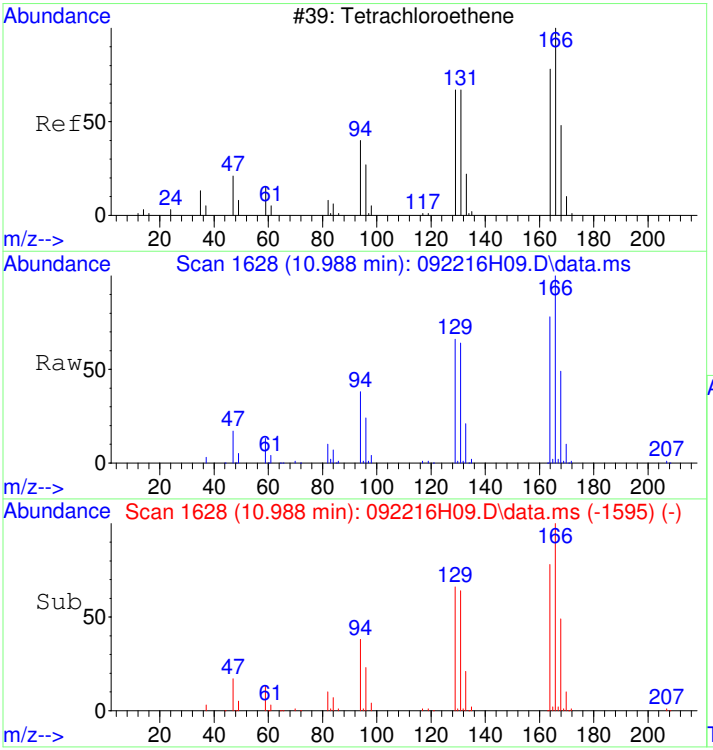


#42
1,1,2-Trichloroethane
Concen: 5.07 ug/L
RT: 10.830 min Scan# 1602
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 83 Resp: 116202

Ion	Ratio	Lower	Upper
83	100		
97	123.4	100.9	140.9
85	64.0	44.5	84.5

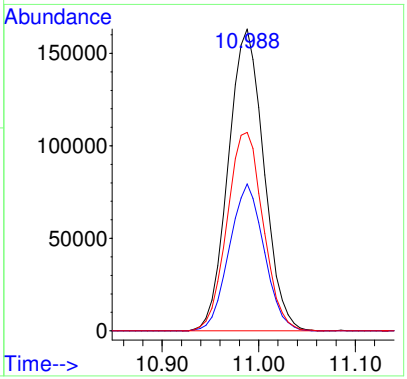


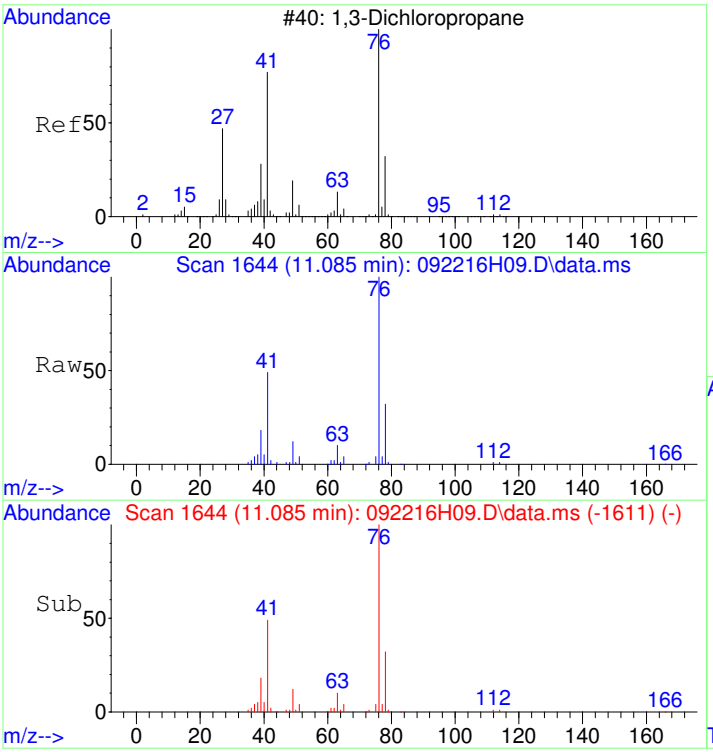


#43
Tetrachloroethene
Concen: 4.93 ug/L
RT: 10.988 min Scan# 1628
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:166 Resp: 417547

Ion	Ratio	Lower	Upper
166	100		
168	47.8	28.0	68.0
129	66.8	49.8	89.8

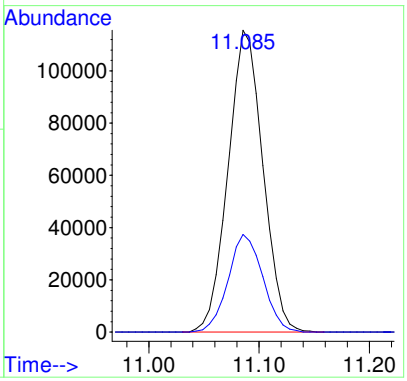


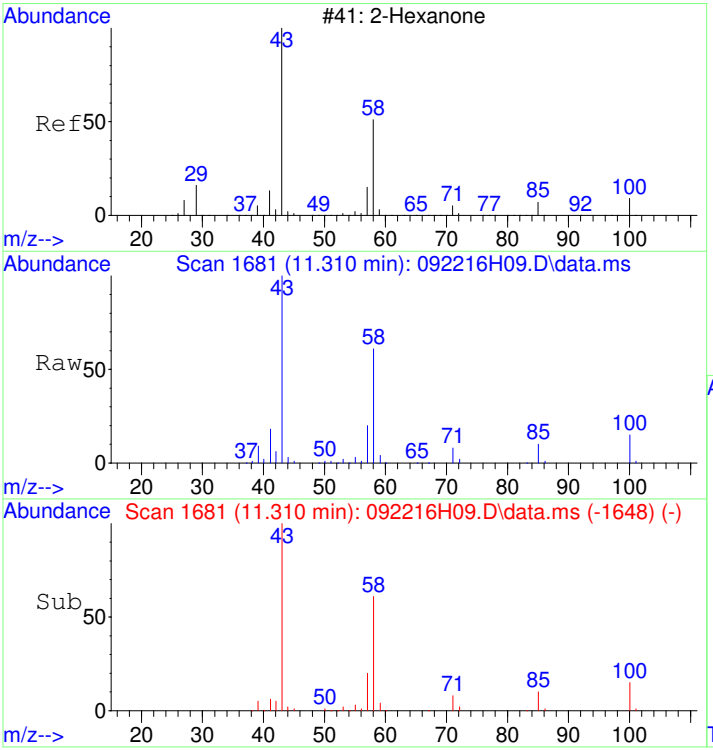


#44
1,3-Dichloropropane
Concen: 5.07 ug/L
RT: 11.085 min Scan# 1644
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 76 Resp: 254771

Ion	Ratio	Lower	Upper
76	100		
78	32.1	11.7	51.7

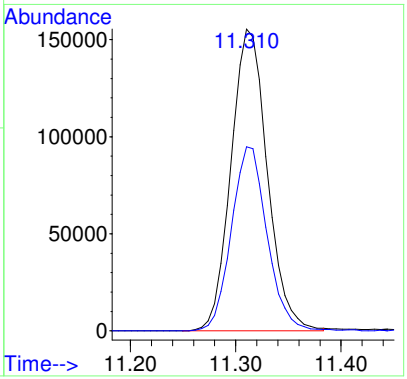


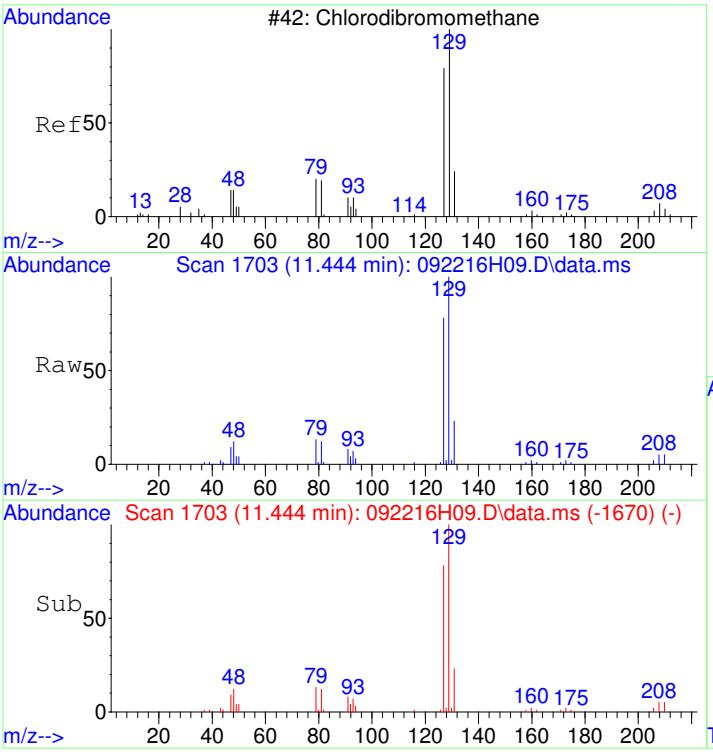


#45
2-Hexanone
Concen: 40.93 ug/L
RT: 11.310 min Scan# 1681
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 43 Resp: 373352

Ion	Ratio	Lower	Upper
43	100		
58	59.7	31.3	71.3

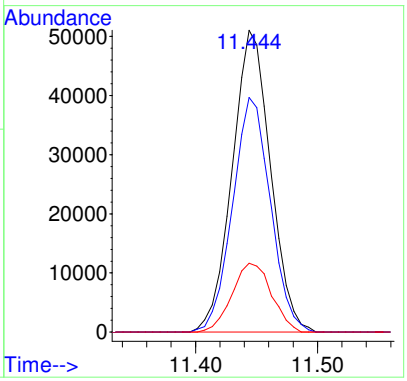


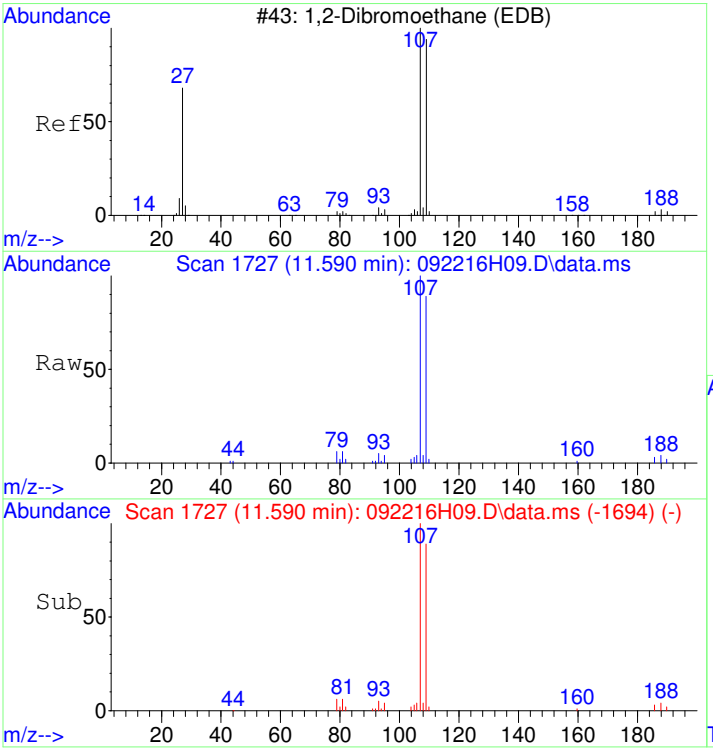


#46
Chlorodibromomethane
Concen: 5.06 ug/L
RT: 11.444 min Scan# 1703
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:129 Resp: 111275

Ion	Ratio	Lower	Upper
129	100		
127	76.9	56.6	96.6
131	23.5	4.6	44.6

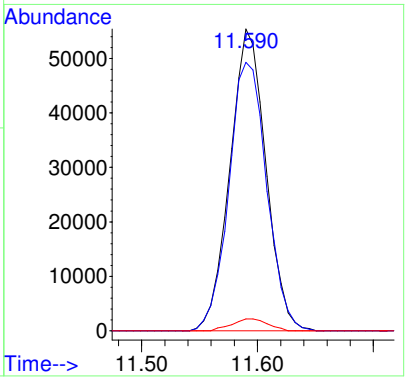


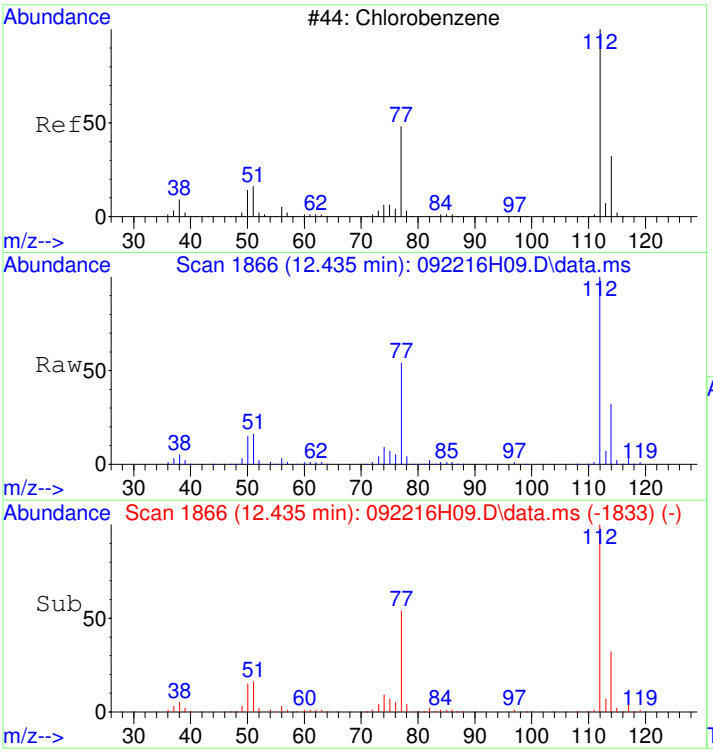


#47
1,2-Dibromoethane (EDB)
Concen: 5.46 ug/L
RT: 11.590 min Scan# 1727
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:107 Resp: 119463

Ion	Ratio	Lower	Upper
107	100		
109	93.7	74.8	114.8
188	4.0	0.0	23.9

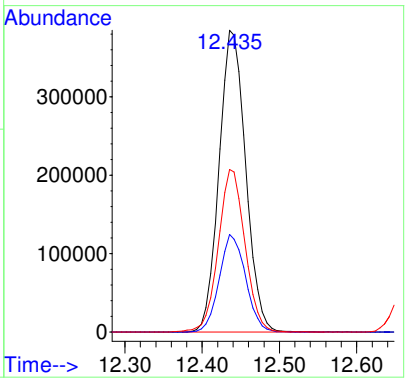


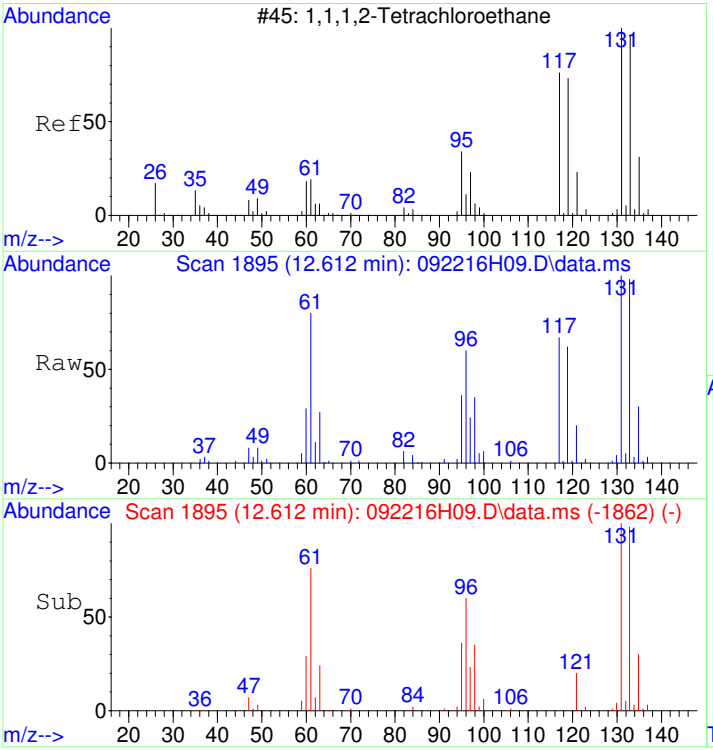


#48
Chlorobenzene
Concen: 4.92 ug/L
RT: 12.435 min Scan# 1866
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:112 Resp: 922036

Ion	Ratio	Lower	Upper
112	100		
114	32.0	11.9	51.9
77	53.9	41.8	81.8

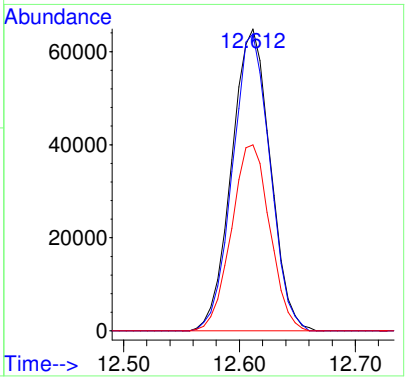


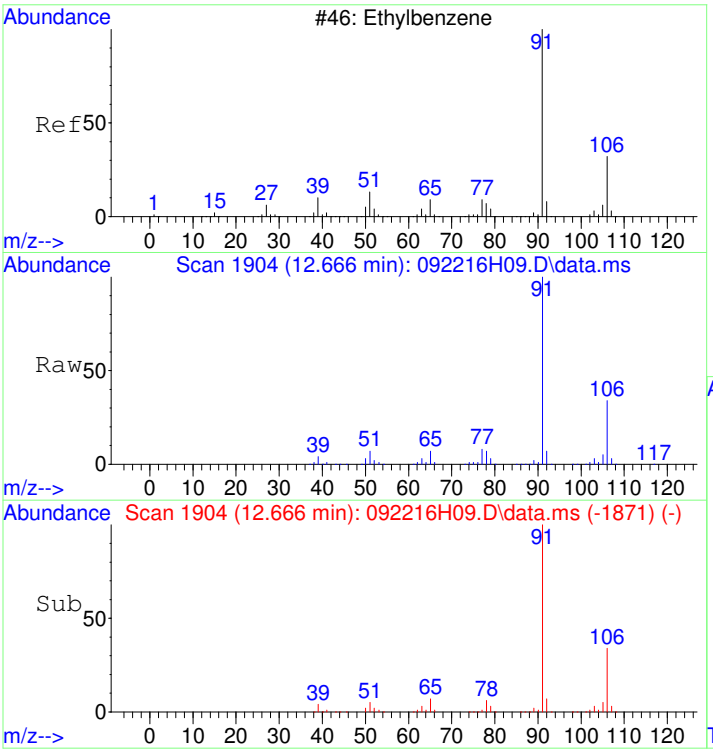


#49
1,1,1,2-Tetrachloroethane
Concen: 5.13 ug/L
RT: 12.612 min Scan# 1895
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:131 Resp: 150640

Ion	Ratio	Lower	Upper
131	100		
133	95.4	74.5	114.5
119	61.2	38.8	78.8

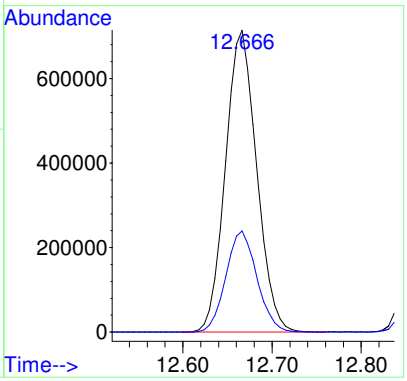


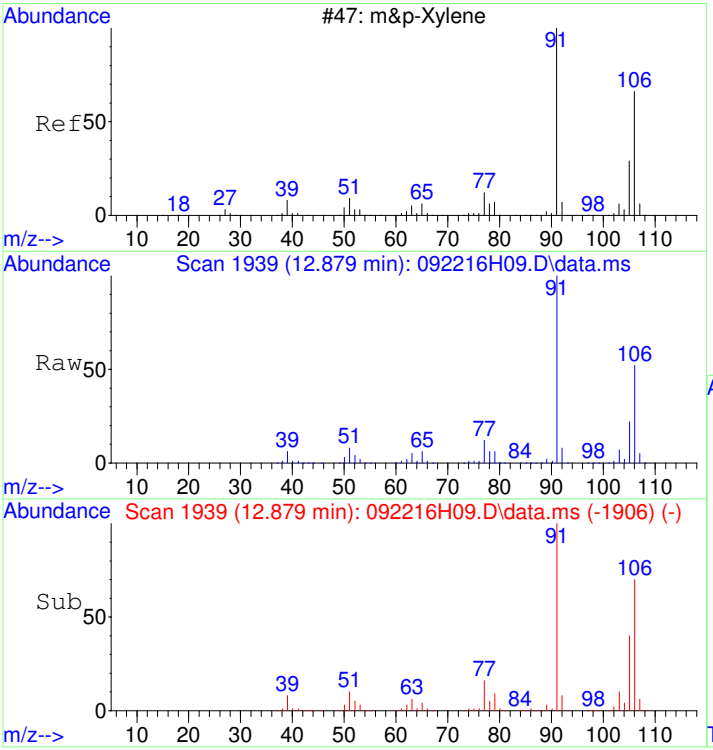


#50
Ethylbenzene
Concen: 5.00 ug/L
RT: 12.666 min Scan# 1904
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 91 Resp: 1731561

Ion	Ratio	Lower	Upper
91	100		
106	33.3	11.6	51.6

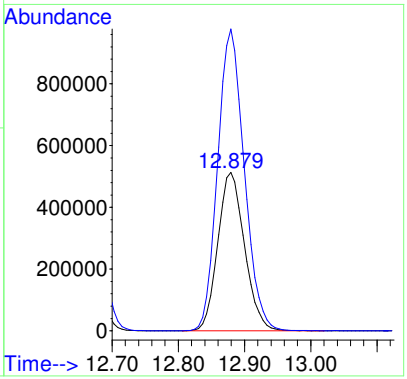


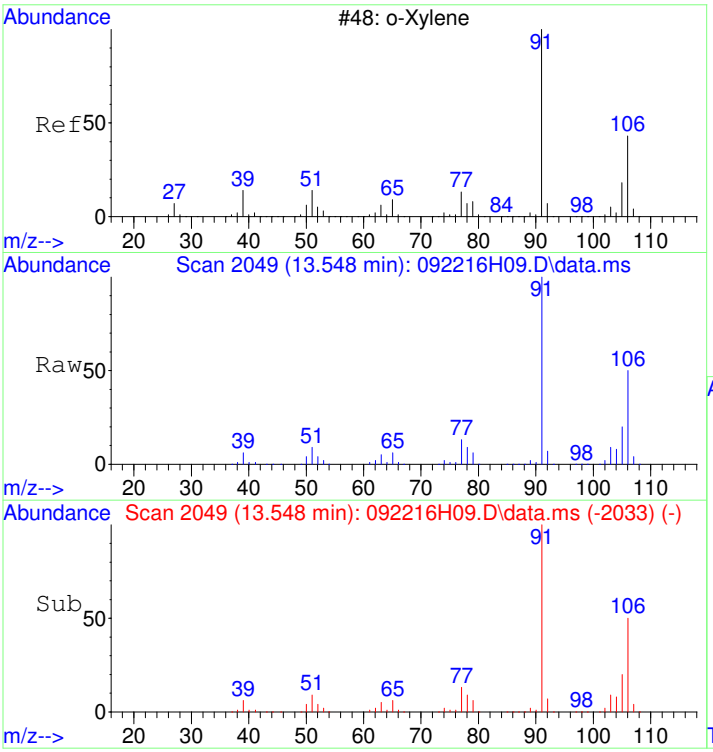


#51
m&p-Xylene
Concen: 9.90 ug/L
RT: 12.879 min Scan# 1939
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:106 Resp: 1437081

Ion	Ratio	Lower	Upper
106	100		
91	189.5	184.6	224.6

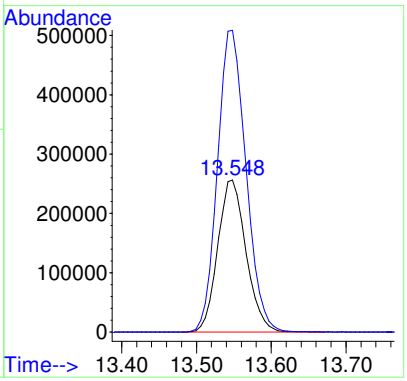


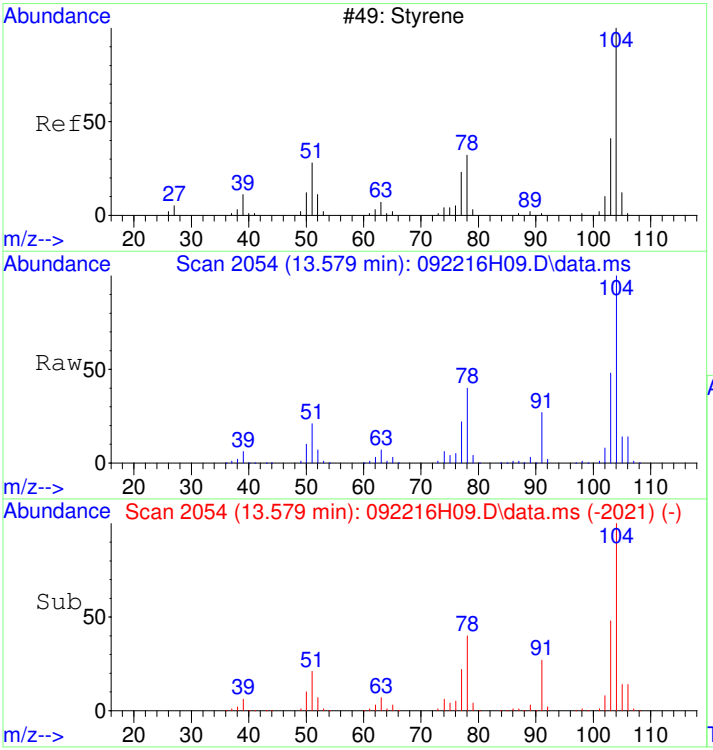


#52
o-Xylene
Concen: 4.99 ug/L
RT: 13.548 min Scan# 2049
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:106 Resp: 672346

Ion	Ratio	Lower	Upper
106	100		
91	199.9	197.9	237.9

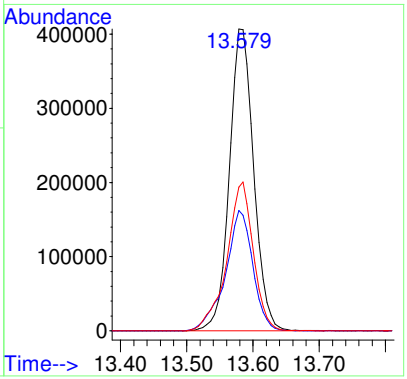


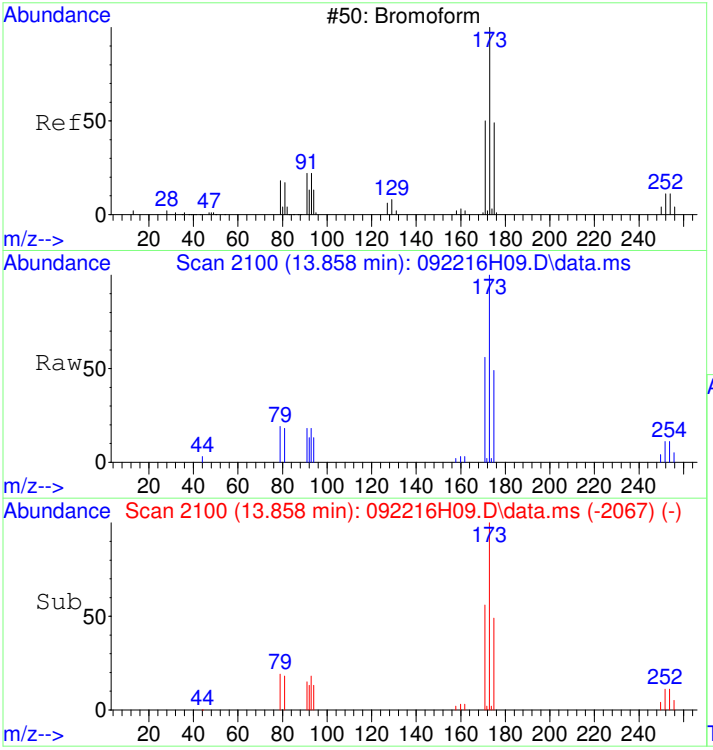


#53
Styrene
Concen: 5.01 ug/L
RT: 13.579 min Scan# 2054
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:104 Resp: 1036828

Ion	Ratio	Lower	Upper
104	100		
78	44.9	35.0	75.0
103	53.8	34.5	74.5

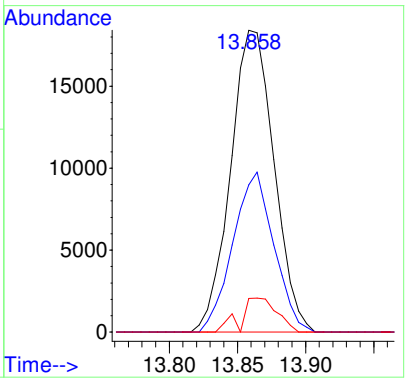


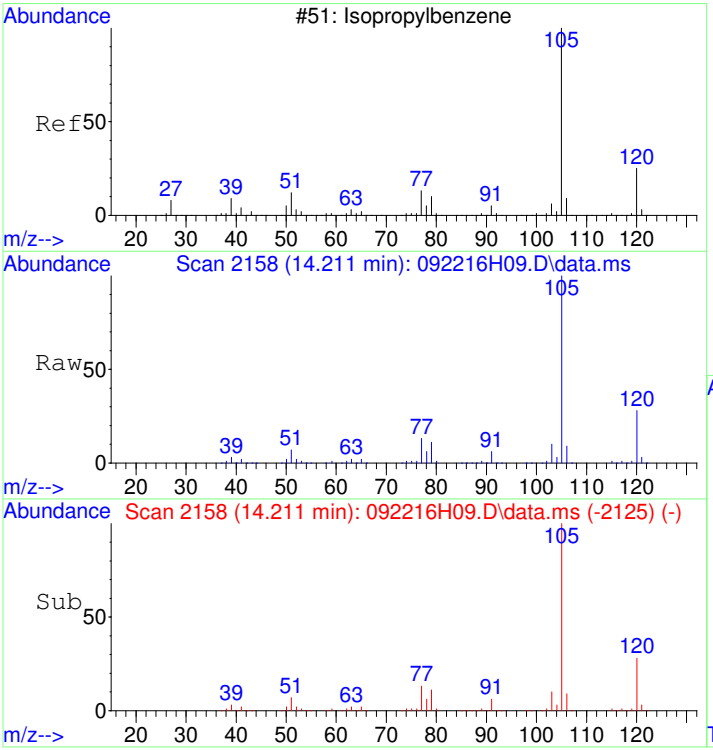


#54
Bromoform
Concen: 4.75 ug/L
RT: 13.858 min Scan# 2100
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:173 Resp: 40761

Ion	Ratio	Lower	Upper
173	100		
175	49.9	29.3	69.3
252	9.4	0.0	30.7

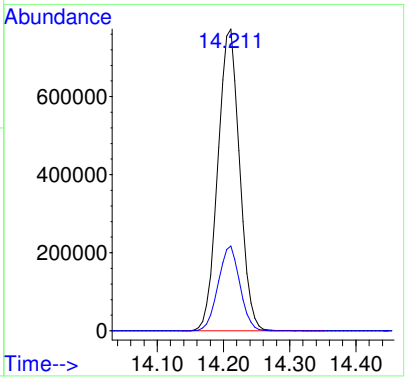


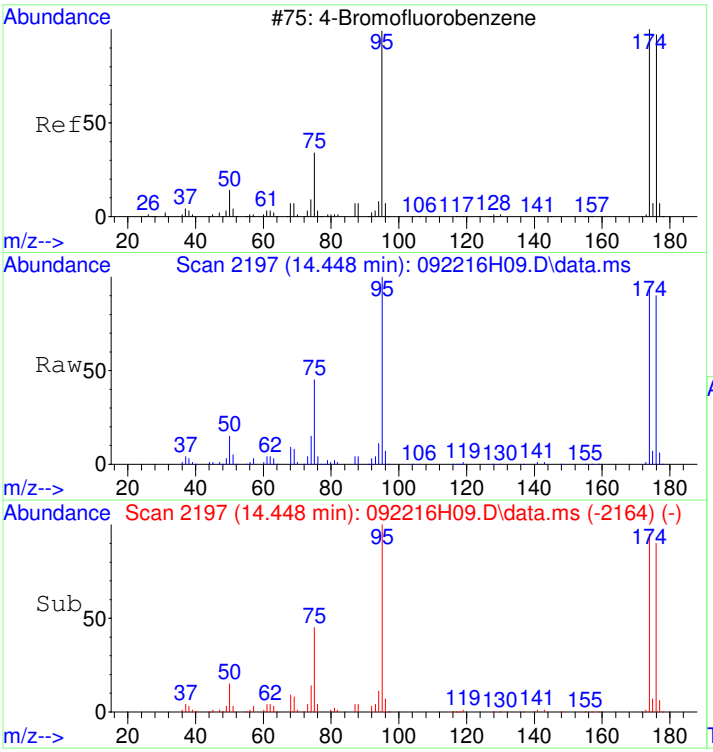


#55
Isopropylbenzene
Concen: 5.02 ug/L
RT: 14.211 min Scan# 2158
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:105 Resp: 1764369

Ion	Ratio	Lower	Upper
105	100		
120	28.0	7.0	47.0

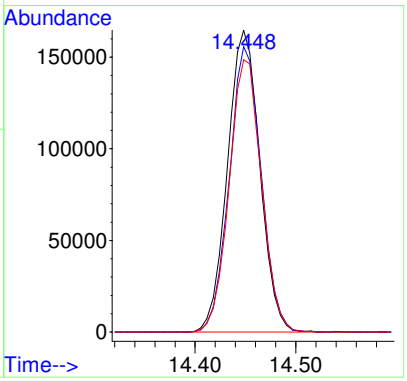


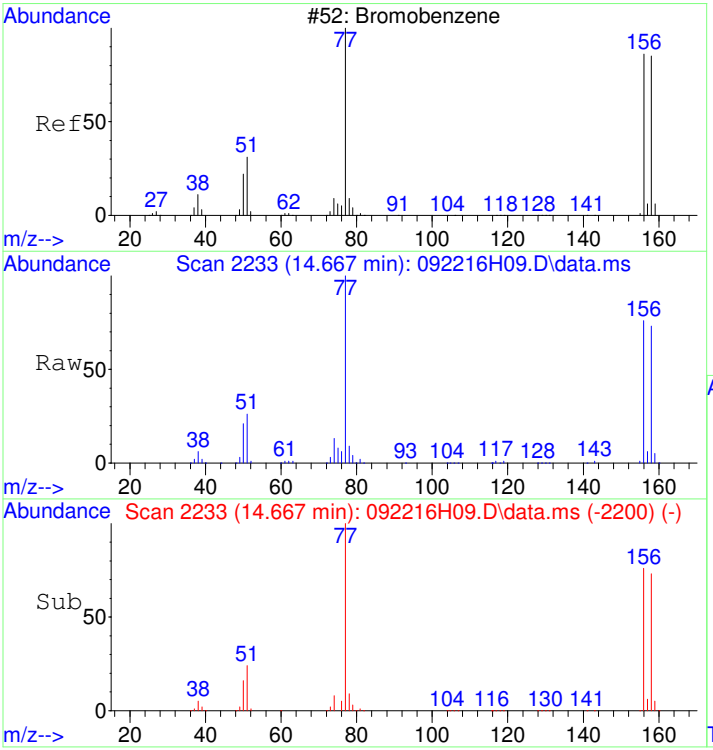


#56
4-Bromofluorobenzene
Concen: 5.02 ug/L
RT: 14.448 min Scan# 2197
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 95 Resp: 366938

Ion	Ratio	Lower	Upper
95	100		
174	93.2	64.4	104.4
176	90.2	61.8	101.8

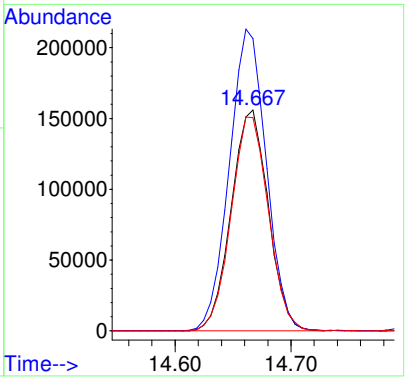


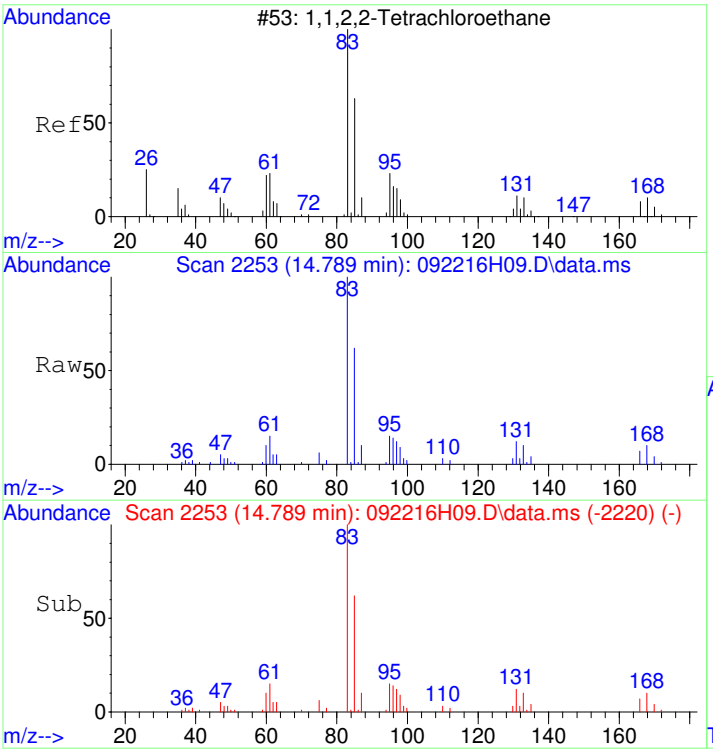


#57
Bromobenzene
Concen: 4.95 ug/L
RT: 14.667 min Scan# 2233
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:156 Resp: 347256

Ion	Ratio	Lower	Upper
156	100		
77	136.2	135.4	175.4
158	97.4	77.0	117.0

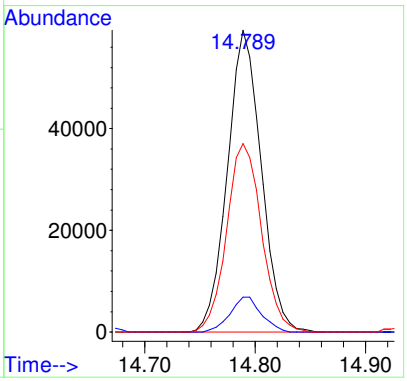


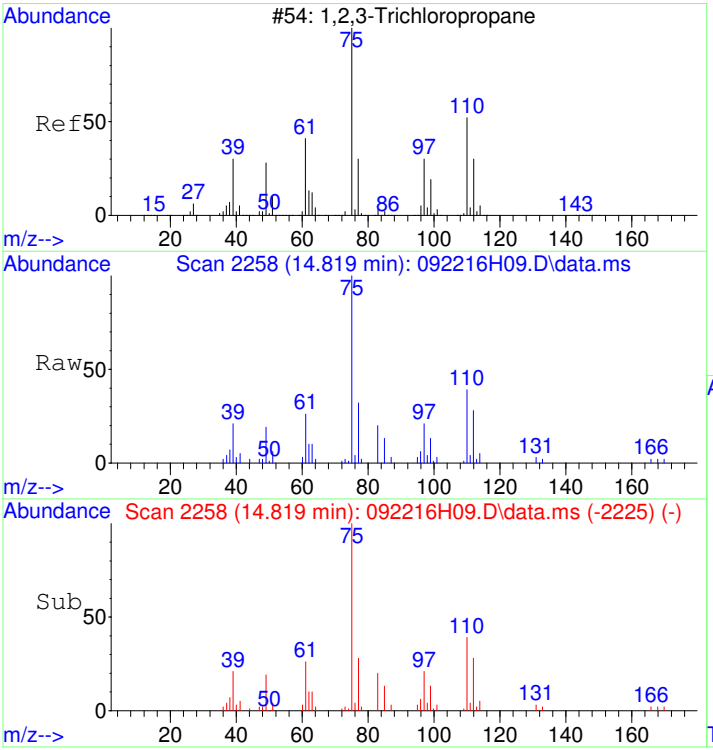


#58
1,1,2,2-Tetrachloroethane
Concen: 5.18 ug/L
RT: 14.789 min Scan# 2253
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 83 Resp: 126464

Ion	Ratio	Lower	Upper
83	100		
131	10.8	0.0	30.8
85	64.3	44.6	84.6

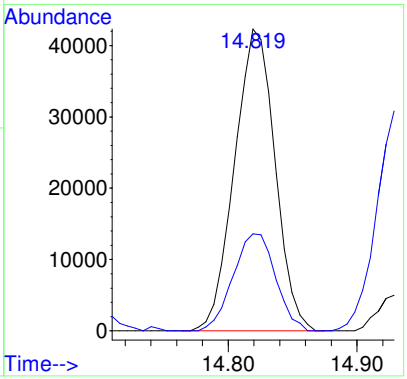


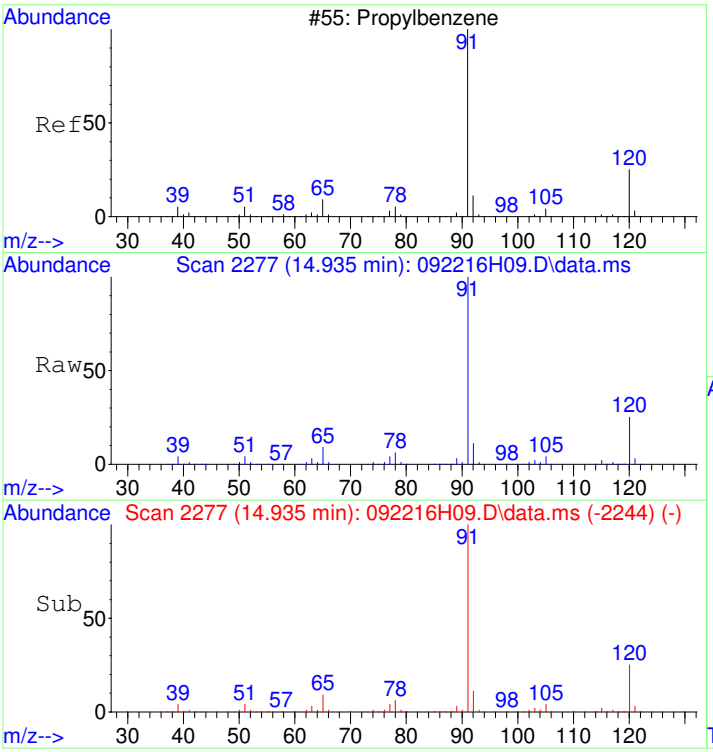


#59
1,2,3-Trichloropropane
Concen: 5.00 ug/L
RT: 14.819 min Scan# 2258
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 75 Resp: 92639

Ion	Ratio	Lower	Upper
75	100		
77	33.6	13.4	53.4

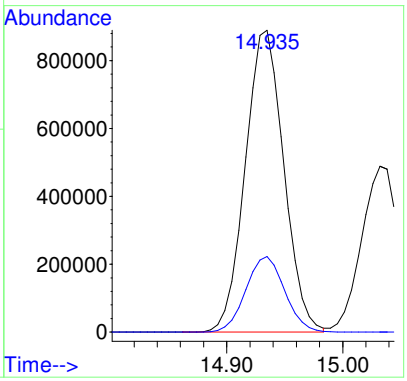


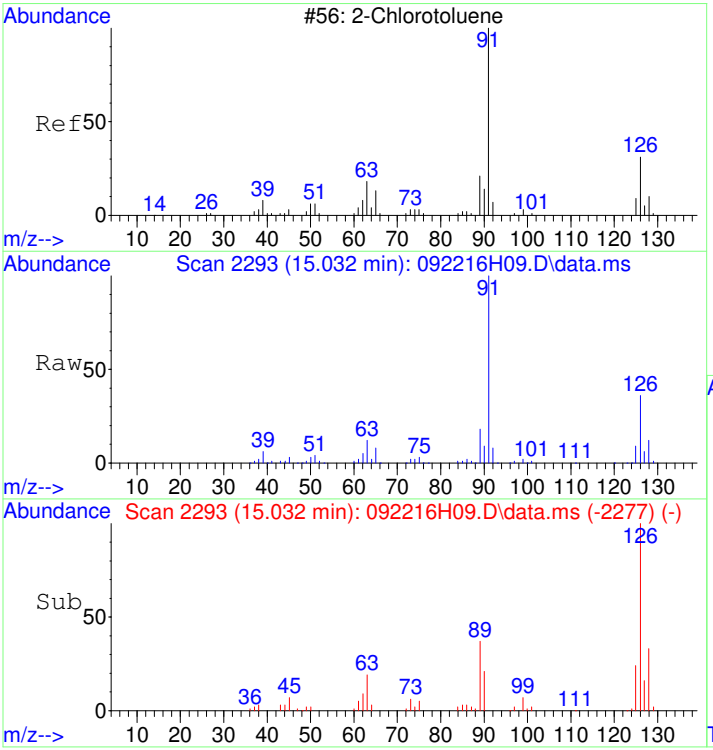


#60
Propylbenzene
Concen: 4.99 ug/L
RT: 14.935 min Scan# 2277
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 91 Resp: 2055111

Ion	Ratio	Lower	Upper
91	100		
120	25.2	3.4	43.4

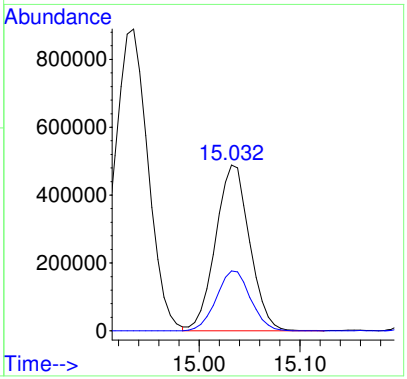


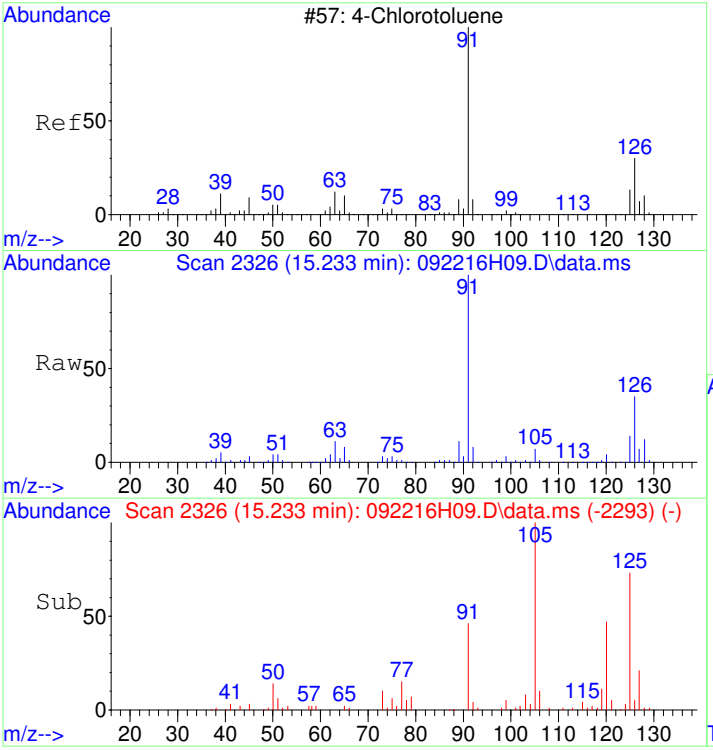


#61
2-Chlorotoluene
Concen: 4.98 ug/L
RT: 15.032 min Scan# 2293
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 91 Resp: 1144401

Ion	Ratio	Lower	Upper
91	100		
126	36.3	13.7	53.7

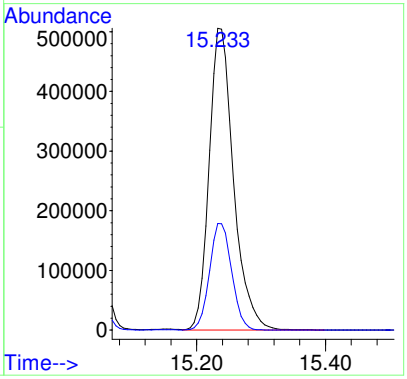


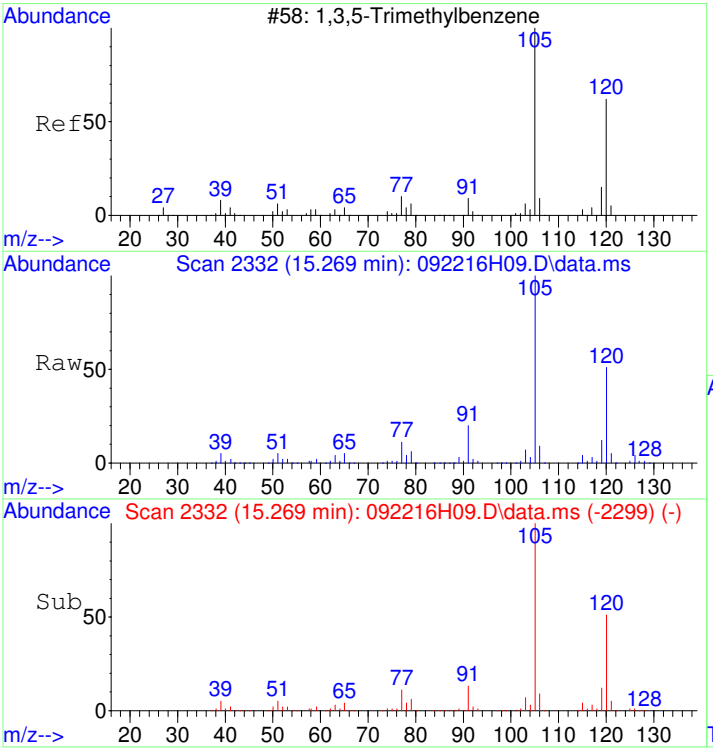


#62
4-Chlorotoluene
Concen: 4.98 ug/L
RT: 15.233 min Scan# 2326
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 91 Resp: 1330287

Ion	Ratio	Lower	Upper
91	100		
126	32.0	8.8	48.8

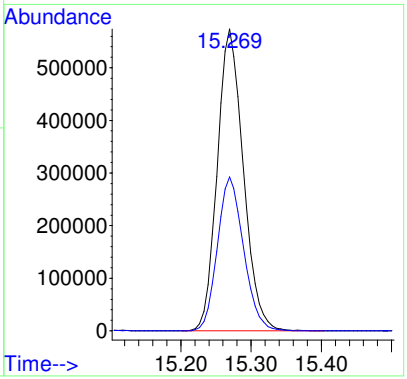


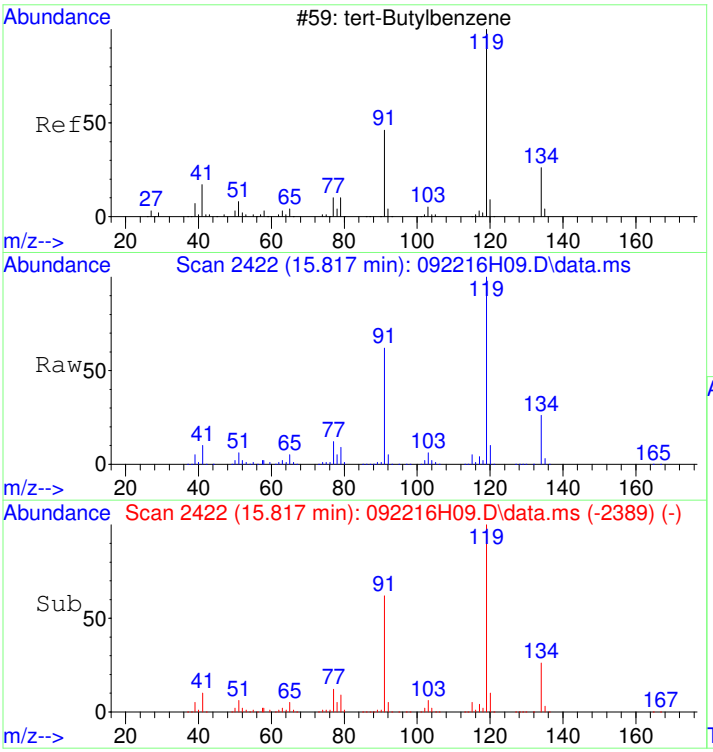


#63
1,3,5-Trimethylbenzene
Concen: 4.98 ug/L
RT: 15.269 min Scan# 2332
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:105 Resp: 1480734

Ion	Ratio	Lower	Upper
105	100		
120	51.1	27.6	67.6

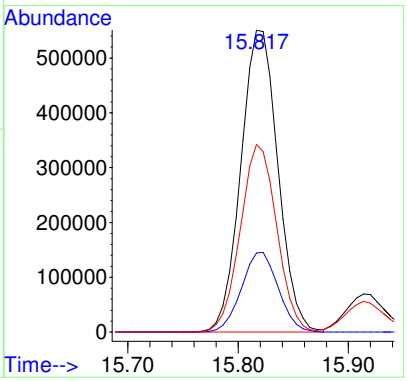


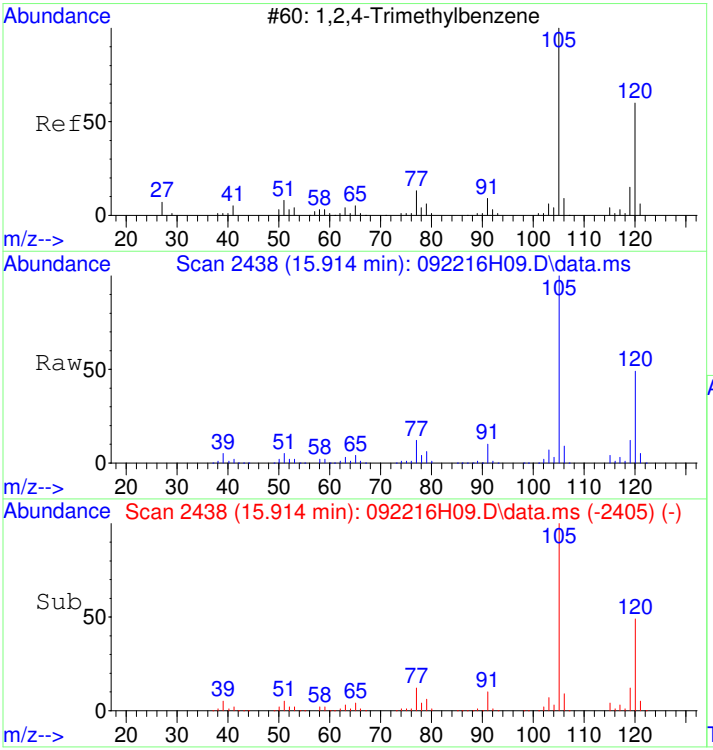


#64
tert-Butylbenzene
Concen: 4.96 ug/L
RT: 15.817 min Scan# 2422
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:119 Resp: 1291784

Ion	Ratio	Lower	Upper
119	100		
134	26.2	5.1	45.1
91	61.1	51.0	91.0

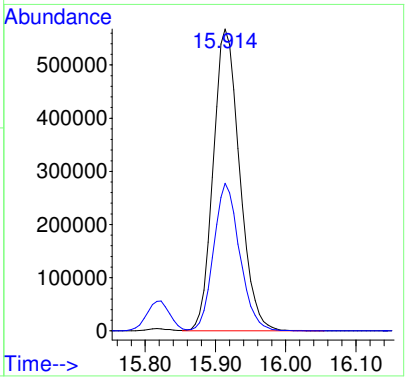


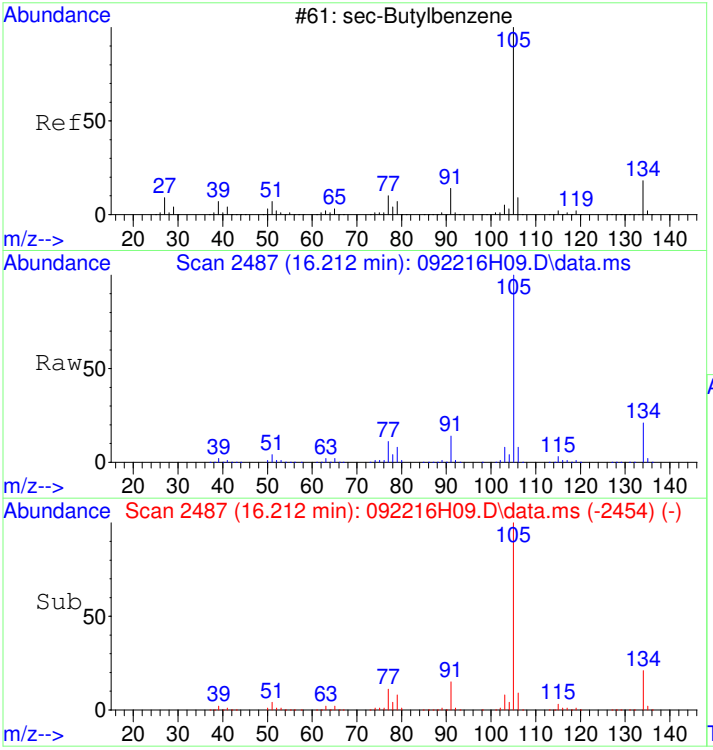


#65
1,2,4-Trimethylbenzene
Concen: 4.98 ug/L
RT: 15.914 min Scan# 2438
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:105 Resp: 1483392

Ion	Ratio	Lower	Upper
105	100		
120	48.2	24.7	64.7

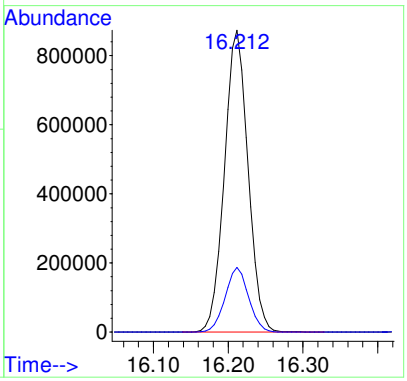


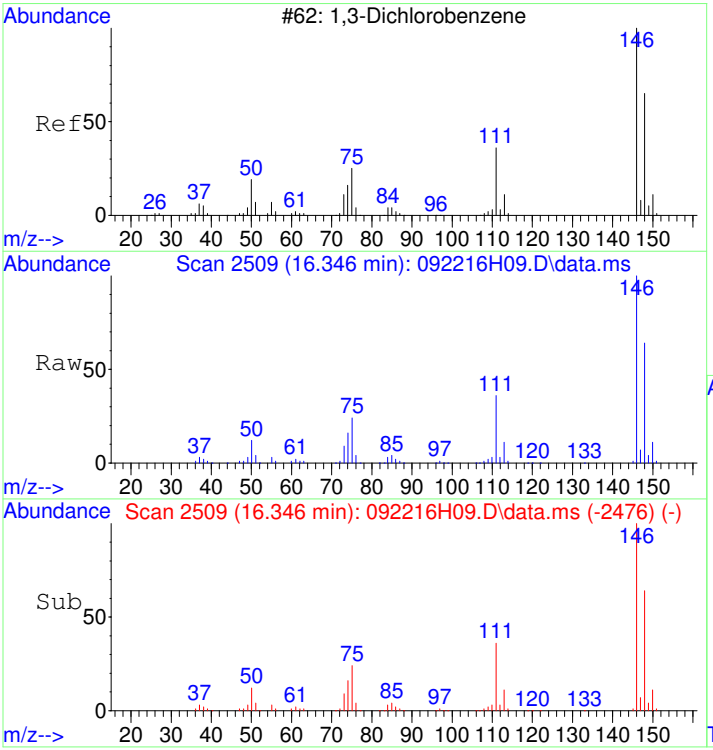


#66
sec-Butylbenzene
Concen: 5.00 ug/L
RT: 16.212 min Scan# 2487
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:105 Resp: 1908949

Ion	Ratio	Lower	Upper
105	100		
134	21.2	1.0	41.0

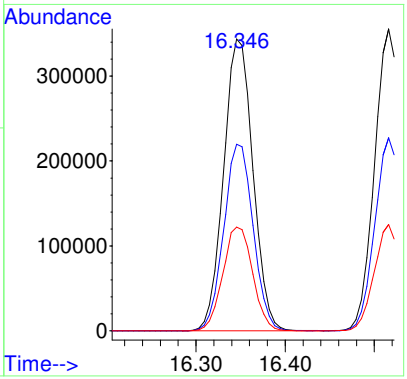


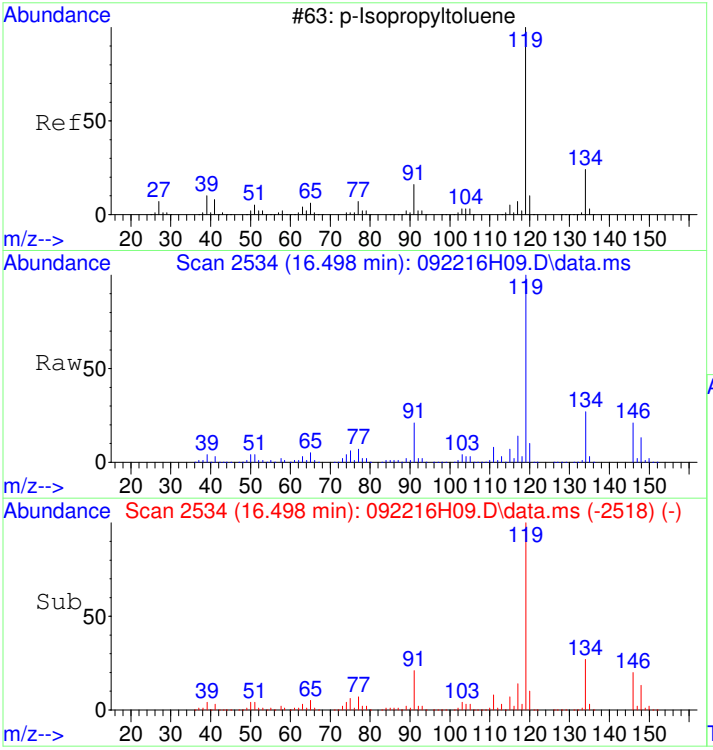


#67
1,3-Dichlorobenzene
Concen: 4.92 ug/L
RT: 16.346 min Scan# 2509
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:146 Resp: 784766

Ion	Ratio	Lower	Upper
146	100		
148	63.9	44.1	84.1
111	36.0	19.0	59.0

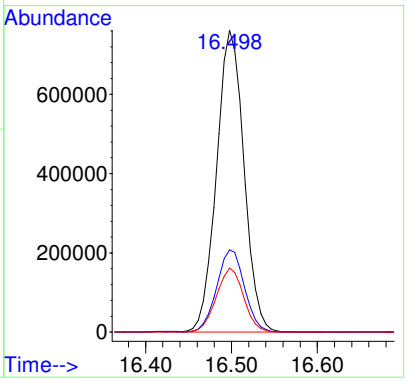


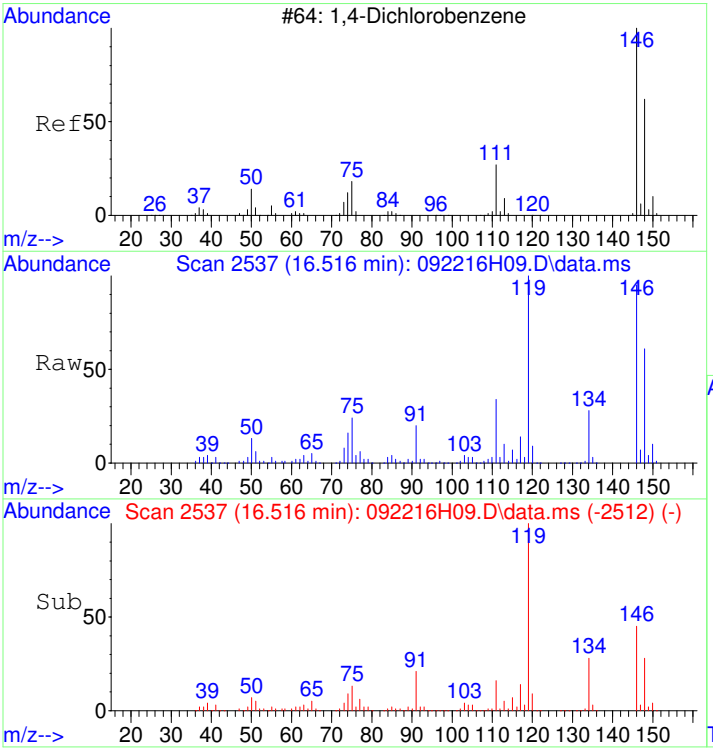


#68
p-Isopropyltoluene
Concen: 5.00 ug/L
RT: 16.498 min Scan# 2534
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:119 Resp: 1686895

Ion	Ratio	Lower	Upper
119	100		
134	27.6	6.9	46.9
91	21.1	5.8	45.8

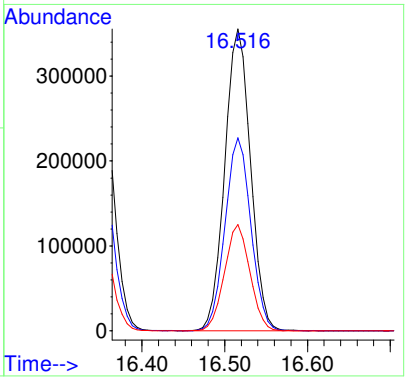


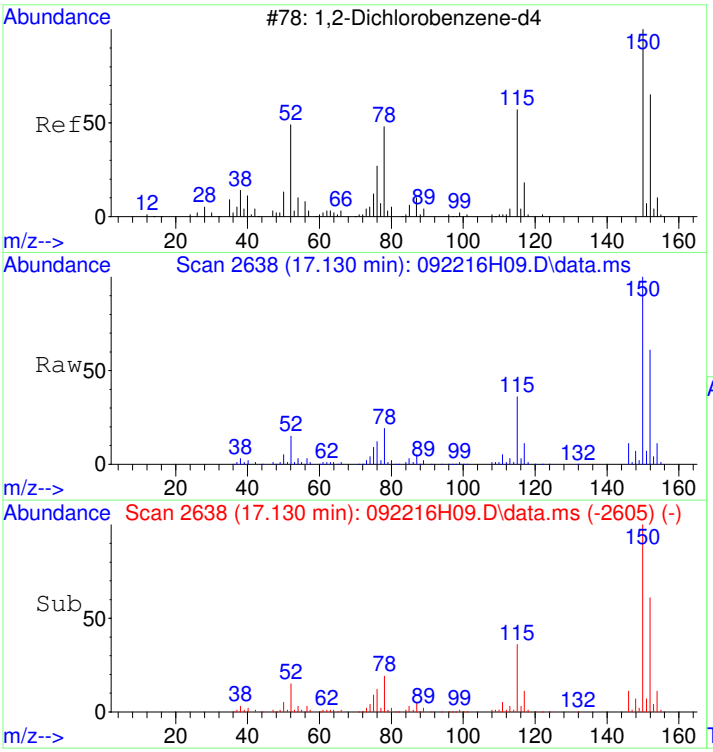


#69
1,4-Dichlorobenzene
Concen: 4.88 ug/L
RT: 16.516 min Scan# 2537
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:146 Resp: 768744

Ion	Ratio	Lower	Upper
146	100		
148	64.0	43.9	83.9
111	34.8	17.7	57.7

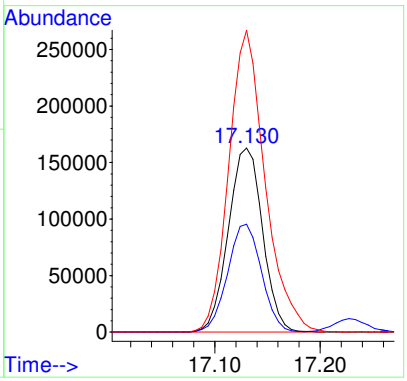


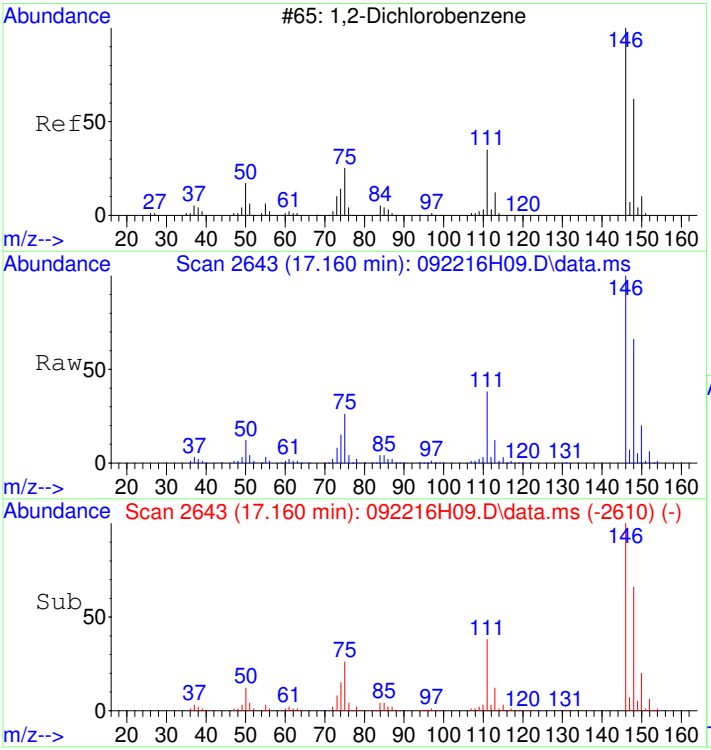


#70
1,2-Dichlorobenzene-d4
Concen: 5.02 ug/L
RT: 17.130 min Scan# 2638
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:152 Resp: 368353

Ion	Ratio	Lower	Upper
152	100		
115	58.1	43.0	83.0
150	173.8	153.1	193.1

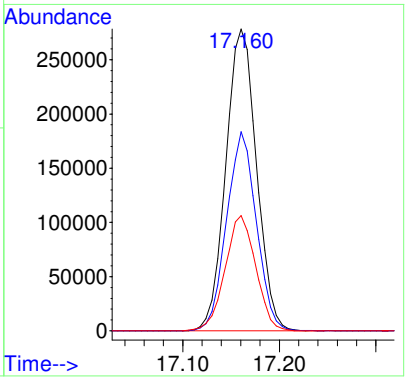


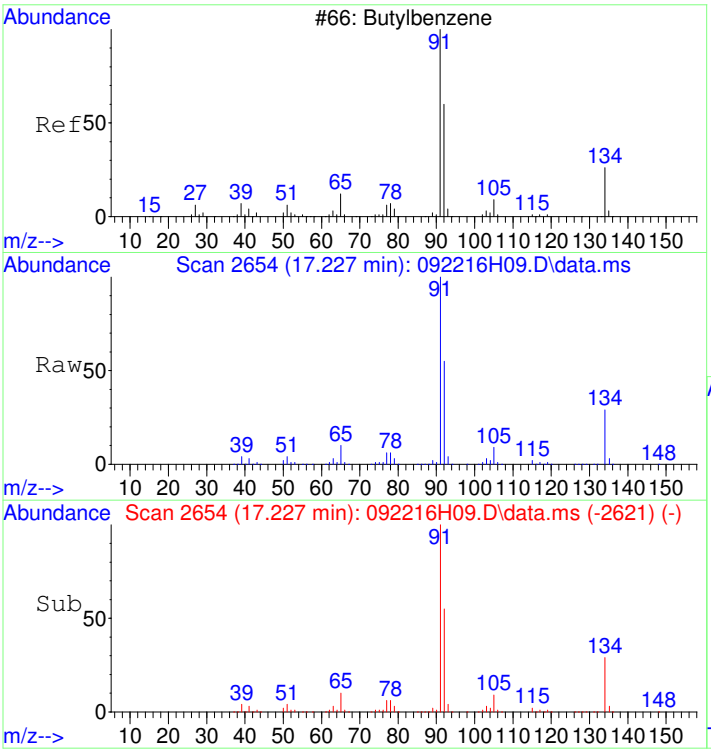


#71
1,2-Dichlorobenzene
Concen: 4.94 ug/L
RT: 17.160 min Scan# 2643
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:146 Resp: 615998

Ion	Ratio	Lower	Upper
146	100		
148	63.9	43.6	83.6
111	38.1	21.1	61.1

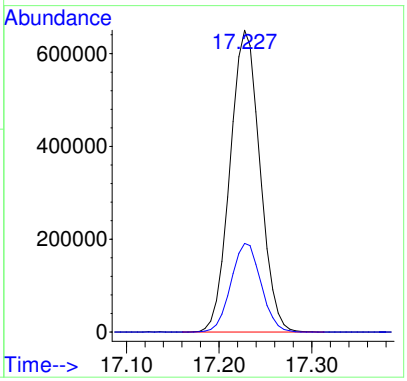


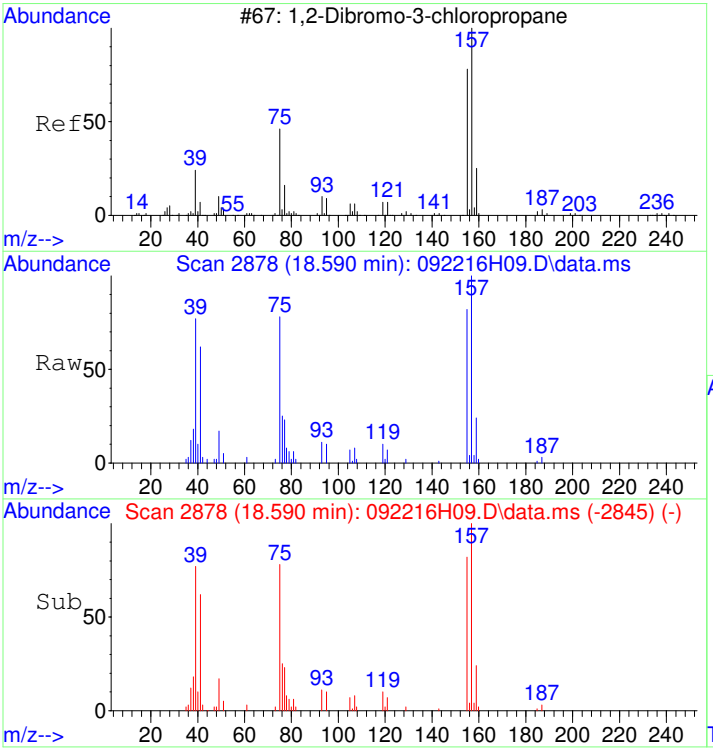


#72
Butylbenzene
Concen: 4.98 ug/L
RT: 17.227 min Scan# 2654
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 91 Resp: 1455422

Ion	Ratio	Lower	Upper
91	100		
134	29.4	6.8	46.8

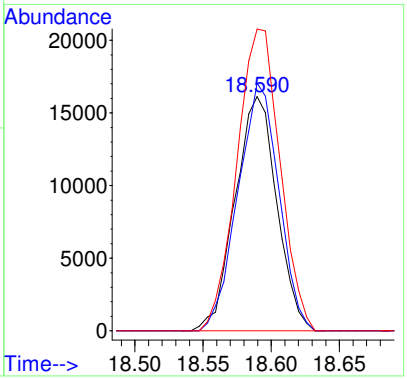


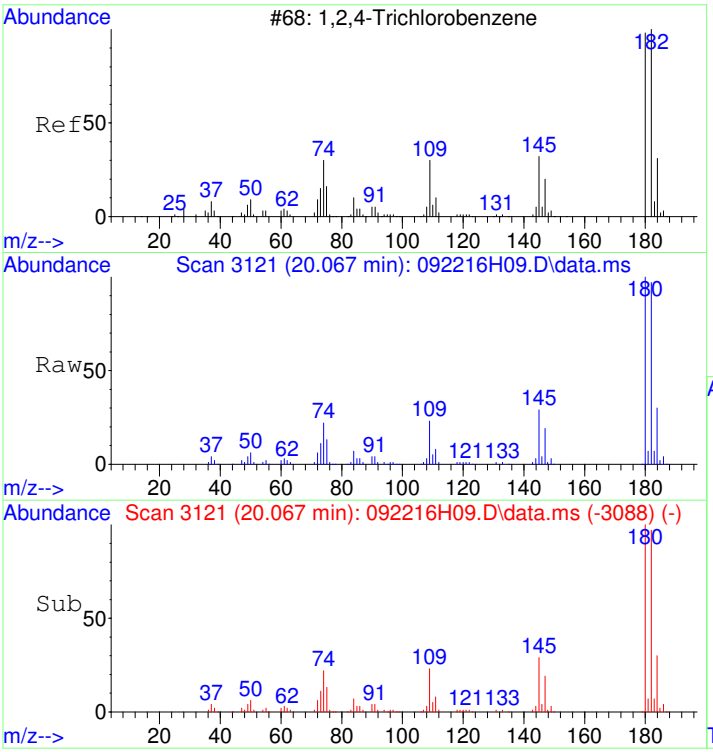


#73
1,2-Dibromo-3-chloropropane
Concen: 20.44 ug/L
RT: 18.590 min Scan# 2878
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion: 75 Resp: 34292

Ion	Ratio	Lower	Upper
75	100		
155	103.4	58.9	98.9#
157	133.1	82.8	122.8#

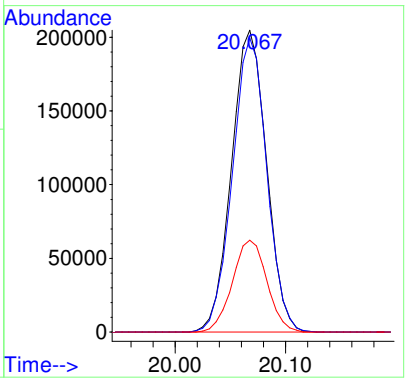


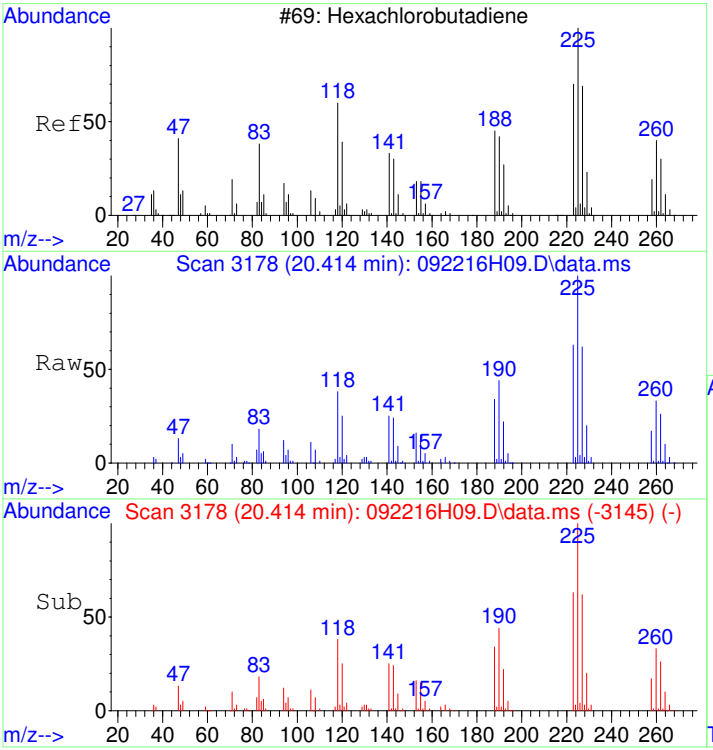


#74
1,2,4-Trichlorobenzene
Concen: 4.96 ug/L
RT: 20.067 min Scan# 3121
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:180 Resp: 451316

Ion	Ratio	Lower	Upper
180	100		
182	95.7	75.8	115.8
184	30.1	10.6	50.6

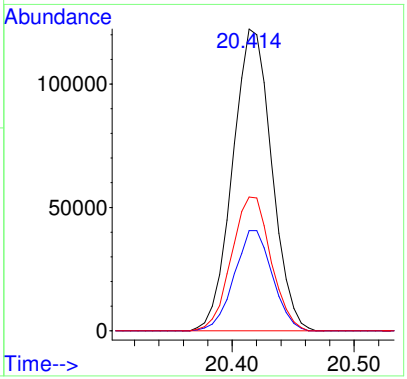


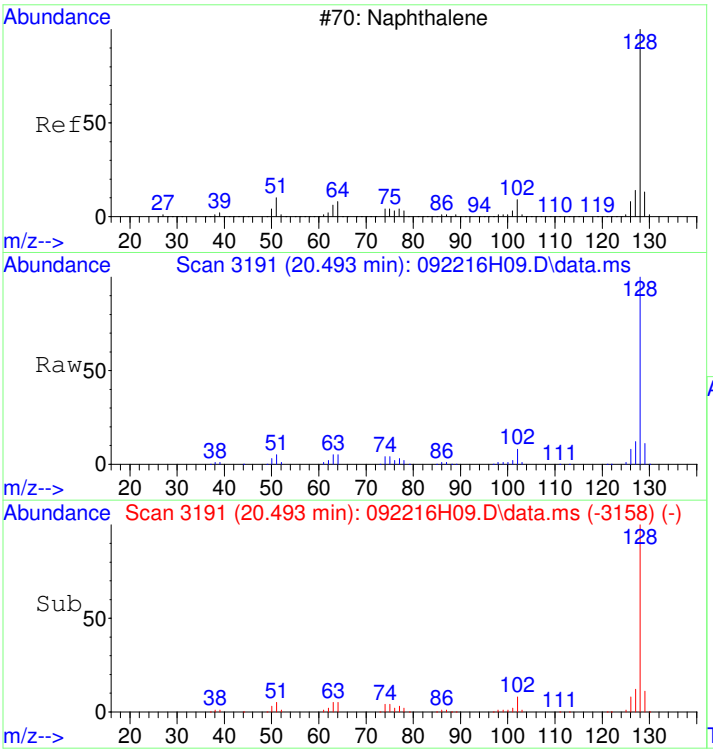


#75
Hexachlorobutadiene
Concen: 4.93 ug/L
RT: 20.414 min Scan# 3178
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:225 Resp: 272067

Ion	Ratio	Lower	Upper
225	100		
260	32.5	12.4	52.4
190	44.7	25.9	65.9

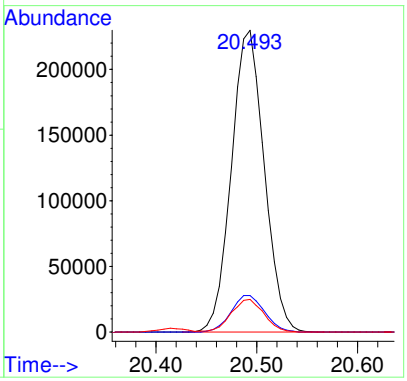


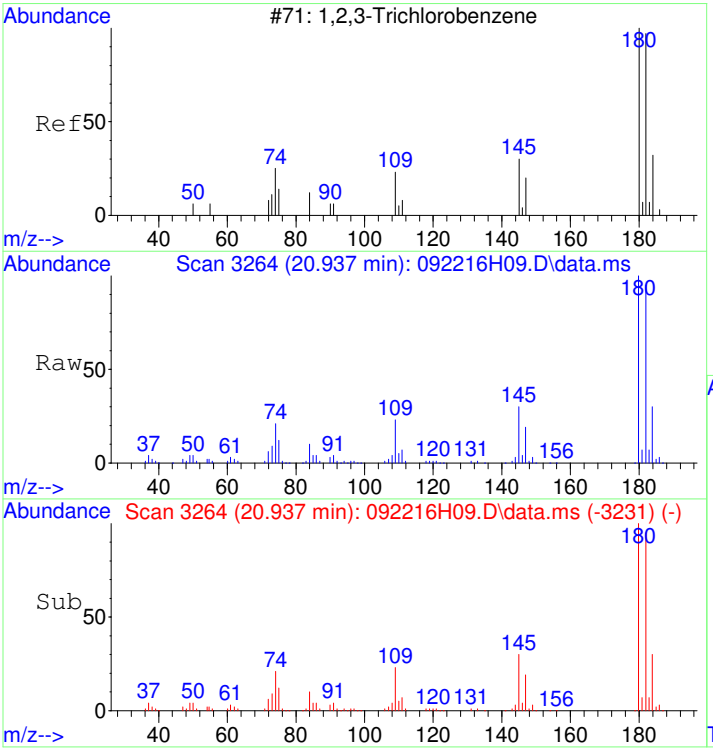


#76
Naphthalene
Concen: 5.09 ug/L
RT: 20.493 min Scan# 3191
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:128 Resp: 520450

Ion	Ratio	Lower	Upper
128	100		
127	12.4	0.0	32.4
129	10.8	0.0	30.4

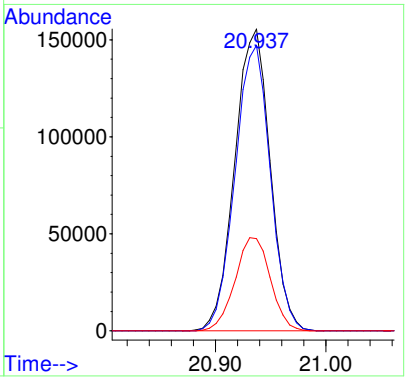




#77
1,2,3-Trichlorobenzene
Concen: 4.98 ug/L
RT: 20.937 min Scan# 3264
Delta R.T. 0.000 min
Lab File: 092216H09.D
Acq: 22 Sep 2016 3:49 pm

Tgt Ion:180 Resp: 347670

Ion	Ratio	Lower	Upper
180	100		
182	93.9	74.8	114.8
184	30.8	10.6	50.6



LSC Area Percent Report

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H09.D
Acq On : 22 Sep 2016 3:49 pm
Operator : YNB
Sample : S16J002-CAL4
Misc : 5ug/L, WATER
ALS Vial : 34 Sample Multiplier: 1

Integration Parameters: C45.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 300 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 10 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\092216HVW.M
Title : Volatile Organic Analysis - 524.2 Method

Signal : TIC: 092216H09.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	1.392	46	50	67	rBV	231079	479307	6.42%	0.340%
2	1.598	73	84	85	rBV	84239	272834	3.65%	0.193%
3	1.659	90	94	121	rVB	341190	831066	11.13%	0.589%
4	1.975	140	146	158	rBV	216570	524049	7.02%	0.371%
5	2.079	158	163	186	rVB	208378	524875	7.03%	0.372%
6	2.352	200	208	234	rBV	319355	1170509	15.67%	0.830%
7	2.924	294	302	316	rBV2	1035992	3163980	42.37%	2.243%
8	3.040	316	321	333	rVV	96692	259076	3.47%	0.184%
9	3.161	333	341	376	rVB	336376	1318439	17.65%	0.935%
10	3.581	398	410	443	rBV3	447648	2140038	28.66%	1.517%
11	3.903	453	463	468	rBV2	42662	134297	1.80%	0.095%
12	3.988	468	477	478	rBV	785986	1570231	21.03%	1.113%
13	4.663	576	588	603	rBV	391538	1048206	14.04%	0.743%
14	4.864	605	621	657	rVV	1399189	7059657	94.53%	5.004%
15	5.436	701	715	731	rBV	987595	4066641	54.45%	2.883%
16	5.594	731	741	751	rVV4	757740	2244172	30.05%	1.591%
17	5.697	751	758	769	rVB	153198	388676	5.20%	0.276%
18	5.971	794	803	823	rBV	205678	674758	9.04%	0.478%
19	6.141	823	831	851	rVB	479407	1226160	16.42%	0.869%
20	6.366	857	868	885	rBV2	367710	1076427	14.41%	0.763%
21	6.640	898	913	928	rBV2	705837	2405726	32.21%	1.705%
22	6.901	947	956	960	rBV2	188157	452094	6.05%	0.320%
23	6.974	960	968	993	rVV2	830596	3302961	44.23%	2.341%
24	7.224	996	1009	1029	rVV2	1113629	3905169	52.29%	2.768%
25	7.449	1033	1046	1065	rBV	737918	2417942	32.38%	1.714%
26	8.020	1128	1140	1161	rVB	779517	1992824	26.68%	1.413%
27	8.379	1188	1199	1216	rBV	465687	1217867	16.31%	0.863%
28	8.561	1220	1229	1240	rVB	215042	483528	6.47%	0.343%
29	8.859	1268	1278	1289	rBV	267060	625896	8.38%	0.444%
30	9.595	1391	1399	1411	rBV	325958	727879	9.75%	0.516%
31	9.918	1441	1452	1459	rBV	614884	1602938	21.46%	1.136%
32	10.003	1459	1466	1476	rVV	938889	2936532	39.32%	2.082%
33	10.112	1476	1484	1504	rVB	1142259	3480258	46.60%	2.467%
34	10.544	1546	1555	1566	rBV	197665	411559	5.51%	0.292%
35	10.830	1591	1602	1612	rBV	325753	733885	9.83%	0.520%
36	10.988	1618	1628	1637	rBV	868466	2234296	29.92%	1.584%
37	11.085	1637	1644	1655	rVB	309621	685382	9.18%	0.486%
38	11.310	1672	1681	1695	rBV	416486	996155	13.34%	0.706%
39	11.444	1695	1703	1713	rVB2	156749	343295	4.60%	0.243%
40	11.590	1719	1727	1740	rVB	134249	295325	3.95%	0.209%

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H09.D
Acq On : 22 Sep 2016 3:49 pm
Operator : YNB
Sample : S16J002-CAL4
Misc : 5ug/L, WATER
ALS Vial : 34 Sample Multiplier: 1

Integration Parameters: C45.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 300 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 10 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\092216HVW.M
Title : Volatile Organic Analysis - 524.2 Method

41	12.393	1848	1859	1863	rBV	986895	2489712	33.34%	1.765%
42	12.435	1863	1866	1880	rVB	1132437	2421859	32.43%	1.717%
43	12.612	1885	1895	1898	rBV	493802	1145402	15.34%	0.812%
44	12.666	1898	1904	1918	rVB	1538172	3740962	50.09%	2.652%
45	12.782	1918	1923	1928	rBV4	5414	13536	0.18%	0.010%
46	12.879	1928	1939	1957	rVB	2667452	7468026	100.00%	5.294%
47	13.554	2037	2050	2051	rBV2	1449972	3197428	42.81%	2.267%
48	13.864	2090	2101	2109	rBV	64451	138602	1.86%	0.098%
49	14.211	2147	2158	2169	rBV	1731780	3984594	53.36%	2.825%
50	14.448	2187	2197	2211	rBV	793615	1744857	23.36%	1.237%
51	14.661	2223	2232	2243	rBV	792813	1772173	23.73%	1.256%
52	14.795	2245	2254	2266	rVB3	220820	777046	10.40%	0.551%
53	14.935	2266	2277	2285	rBV	1706355	3954989	52.96%	2.804%
54	15.032	2285	2293	2302	rVB	1297683	2993434	40.08%	2.122%
55	15.263	2317	2331	2355	rVB2	1760966	7100360	95.08%	5.033%
56	15.604	2380	2387	2395	rBV	6251	13637	0.18%	0.010%
57	15.817	2412	2422	2430	rBV	1690572	3902563	52.26%	2.766%
58	15.914	2430	2438	2455	rVB	1527509	3963365	53.07%	2.810%
59	16.212	2474	2487	2499	rBV	1871322	4096753	54.86%	2.904%
60	16.346	2499	2509	2519	rBV	1191308	2714730	36.35%	1.924%
61	16.504	2525	2535	2551	rVB2	2681160	6902544	92.43%	4.893%
62	17.154	2629	2642	2648	rBV2	1107779	4169816	55.84%	2.956%
63	17.227	2648	2654	2670	rVB	1738214	3874241	51.88%	2.746%
64	18.590	2870	2878	2885	rBV	134881	286837	3.84%	0.203%
65	20.067	3111	3121	3131	rBV	962109	2092409	28.02%	1.483%
66	20.414	3170	3178	3185	rBV	951092	2104853	28.18%	1.492%
67	20.493	3185	3191	3202	rVB	426098	961391	12.87%	0.682%
68	20.937	3254	3264	3273	rBV	723930	1618787	21.68%	1.148%

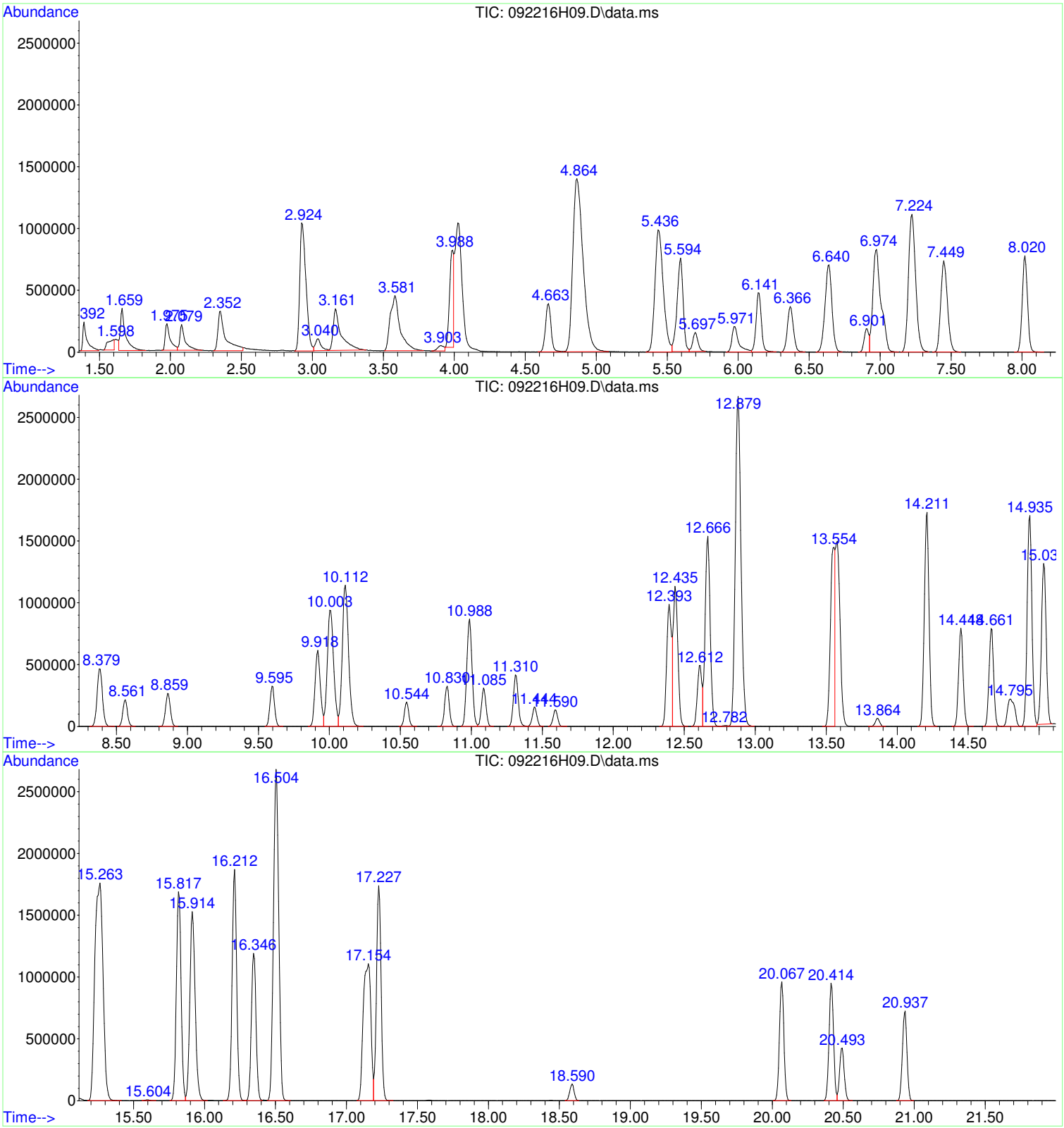
Sum of corrected areas: 141069815

Table of Contents

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Sample : S16J002-CAL4 Inst : HP5973H
Data File : 092216H09.D
Acq On : 22 Sep 2016 3:49 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 34 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M
Quant Title : Volatile Organic Analysis - 524.2 Method

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

```
Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\\
Sample    : S16J002-CAL4                            Inst    : HP5973H
Data File : 092216H09.D
Acq On    : 22 Sep 2016   3:49 pmm
Operator  : YNBB
Misc      : 5ug/L, WATERR
ALS Vial  : 34   Sample Multiplier: 11

Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.MM
Quant Title  : Volatile Organic Analysis  -  524.2 Methodd

TIC Library   : C:\DATABASE\NIST98.LL
TIC Integration Parameters: LSCINT.PP

                                                    |--Internal Standard---|
TIC Top Hit name      RT  EstConc Units Response |#    RT     Resp  Conc|
-------------------------------------------------------------------------------
```

No Library Search Compounds Detected
****

S16J002-CAL5

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H10.D
Sample : S16J002-CAL5
Instrument: HP5973H
Acq On : 22 Sep 2016 4:25 pm
Operator : YNB
Misc : 10ug/L, WATER
ALS Vial : 35
Multiplier: 1

Quant Time: Oct 03 08:36:21 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:36:03 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	90637	5.000 ug/L	0.00
24) Fluorobenzene	7.455	96	1249453	5.000 ug/L	0.00
37) Chlorobenzene-d5	12.393	117	860762	5.000 ug/L	0.00
System Monitoring Compounds					
28) 1,2-Dichloroethane-d4	6.908	65	166360	4.978 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 99.60%	
39) Toluene-d8	10.009	98	1178490	4.995 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.00%	
56) 4-Bromofluorobenzene	14.448	95	371874	5.074 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 101.40%	
70) 1,2-Dichlorobenzene-d4	17.130	152	371970	5.057 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 101.20%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.392	85	622563	9.574 ug/L	100
3) Chloromethane	1.611	50	722850	9.559 ug/L #	100
4) Vinyl chloride	1.659	62	775418	9.749 ug/L	100
5) Bromomethane	1.969	94	507094	11.025 ug/L	99
6) Chloroethane	2.079	64	498057	9.614 ug/L	99
7) Trichlorofluoromethane	2.353	101	1207537	9.869 ug/L	98
8) 1,1-Dichloroethene	2.924	96	759829	9.873 ug/L	98
9) 1,1,2-Trichloro-1,2,2-...	2.949	101	686581	9.684 ug/L	96
10) Acetone	3.040	43	303812	72.165 ug/L	99
11) Carbon disulfide	3.161	76	2124215	9.721 ug/L	100
12) Dichloromethane	3.587	84	650163	9.426 ug/L #	94
13) tert-Butyl alcohol	3.903	59	190159	216.416 ug/L	91
14) trans-1,2-Dichloroethene	3.982	96	868576	10.037 ug/L	100
15) tert-Butyl methyl ethe...	4.031	73	3670107	40.910 ug/L	95
16) 1,1-Dichloroethane	4.664	63	1036372	9.595 ug/L	100
17) Diisopropyl ether	4.876	45	5953534	39.461 ug/L	94
18) Ethyl-tert-butyl ether	5.442	59	2666038	39.247 ug/L	92
19) 2,2-Dichloropropane	5.582	77	384433	10.917 ug/L	93
20) cis-1,2-Dichloroethene	5.600	96	715501	9.905 ug/L #	79
21) 2-Butanone (MEK)	5.697	43	474344	78.095 ug/L	89
22) Bromochloromethane	5.977	128	228784	9.852 ug/L #	86
23) Chloroform	6.147	83	1031428	9.925 ug/L	99
25) 1,1,1-Trichloroethane	6.372	97	767962	11.073 ug/L	99
26) Carbon tetrachloride	6.616	117	538217	12.019 ug/L	99
27) 1,1-Dichloropropene	6.646	75	903760	9.868 ug/L	95
29) Benzene	6.974	78	2720624	9.868 ug/L	100
30) 1,2-Dichloroethane	7.029	62	444000	9.883 ug/L	98
31) tert-Amyl methyl ether	7.230	73	2792893	44.021 ug/L	80
32) Trichloroethene	8.027	95	703009	9.798 ug/L	90
33) 1,2-Dichloropropane	8.385	63	507076	10.149 ug/L	99
34) Dibromomethane	8.562	93	185837	9.870 ug/L	91
35) Bromodichloromethane	8.866	83	512980	11.268 ug/L	99
36) cis-1,3-Dichloropropene	9.595	75	558624	11.750 ug/L	97
38) 4-Methyl-2-pentanone (...	9.918	43	1188118	80.031 ug/L	90
40) Toluene	10.112	92	1811789	9.929 ug/L	100
41) trans-1,3-Dichloropropene	10.544	75	329404	12.895 ug/L	97
42) 1,1,2-Trichloroethane	10.830	83	232061	10.097 ug/L	98
43) Tetrachloroethene	10.988	166	828826	9.766 ug/L	97
44) 1,3-Dichloropropane	11.091	76	502164	9.973 ug/L	99

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H10.D
Sample : S16J002-CAL5
Instrument: HP5973H
Acq On : 22 Sep 2016 4:25 pm
Operator : YNB
Misc : 10ug/L, WATER
ALS Vial : 35
Multiplier: 1

Quant Time: Oct 03 08:36:21 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:36:03 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
45) 2-Hexanone	11.310	43	753267	82.407 ug/L	87
46) Chlorodibromomethane	11.450	129	272870	12.383 ug/L	99
47) 1,2-Dibromoethane (EDB)	11.596	107	255325	11.634 ug/L	99
48) Chlorobenzene	12.442	112	1858285	9.894 ug/L	92
49) 1,1,1,2-Tetrachloroethane	12.612	131	377925	12.852 ug/L	96
50) Ethylbenzene	12.667	91	3476669	10.006 ug/L	98
51) m&p-Xylene	12.879	106	2933080	20.151 ug/L	91
52) o-Xylene	13.548	106	1352846	10.015 ug/L	90
53) Styrene	13.585	104	2094222	10.095 ug/L	93
54) Bromoform	13.865	173	111260	12.941 ug/L	100
55) Isopropylbenzene	14.211	105	3591300	10.185 ug/L	98
57) Bromobenzene	14.667	156	700199	9.959 ug/L	91
58) 1,1,2,2-Tetrachloroethane	14.789	83	262901	10.747 ug/L	100
59) 1,2,3-Trichloropropane	14.819	75	190551	10.269 ug/L	99
60) Propylbenzene	14.935	91	4206448	10.195 ug/L	97
61) 2-Chlorotoluene	15.032	91	2310912	10.033 ug/L	95
62) 4-Chlorotoluene	15.239	91	2696630	10.067 ug/L	93
63) 1,3,5-Trimethylbenzene	15.269	105	3018273	10.134 ug/L	95
64) tert-Butylbenzene	15.823	119	2624217	10.060 ug/L	90
65) 1,2,4-Trimethylbenzene	15.914	105	3049184	10.210 ug/L	95
66) sec-Butylbenzene	16.212	105	3892907	10.169 ug/L	99
67) 1,3-Dichlorobenzene	16.346	146	1609408	10.071 ug/L	97
68) p-Isopropyltoluene	16.498	119	3520754	10.415 ug/L	95
69) 1,4-Dichlorobenzene	16.516	146	1608199	10.194 ug/L	98
71) 1,2-Dichlorobenzene	17.161	146	1250967	10.012 ug/L	97
72) Butylbenzene	17.228	91	2969998	10.143 ug/L	95
73) 1,2-Dibromo-3-chloropr...	18.590	75	97485	57.956 ug/L #	66
74) 1,2,4-Trichlorobenzene	20.068	180	925636	10.140 ug/L	100
75) Hexachlorobutadiene	20.420	225	551010	9.968 ug/L	99
76) Naphthalene	20.493	128	1063630	10.376 ug/L	99
77) 1,2,3-Trichlorobenzene	20.931	180	706097	10.089 ug/L	99

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

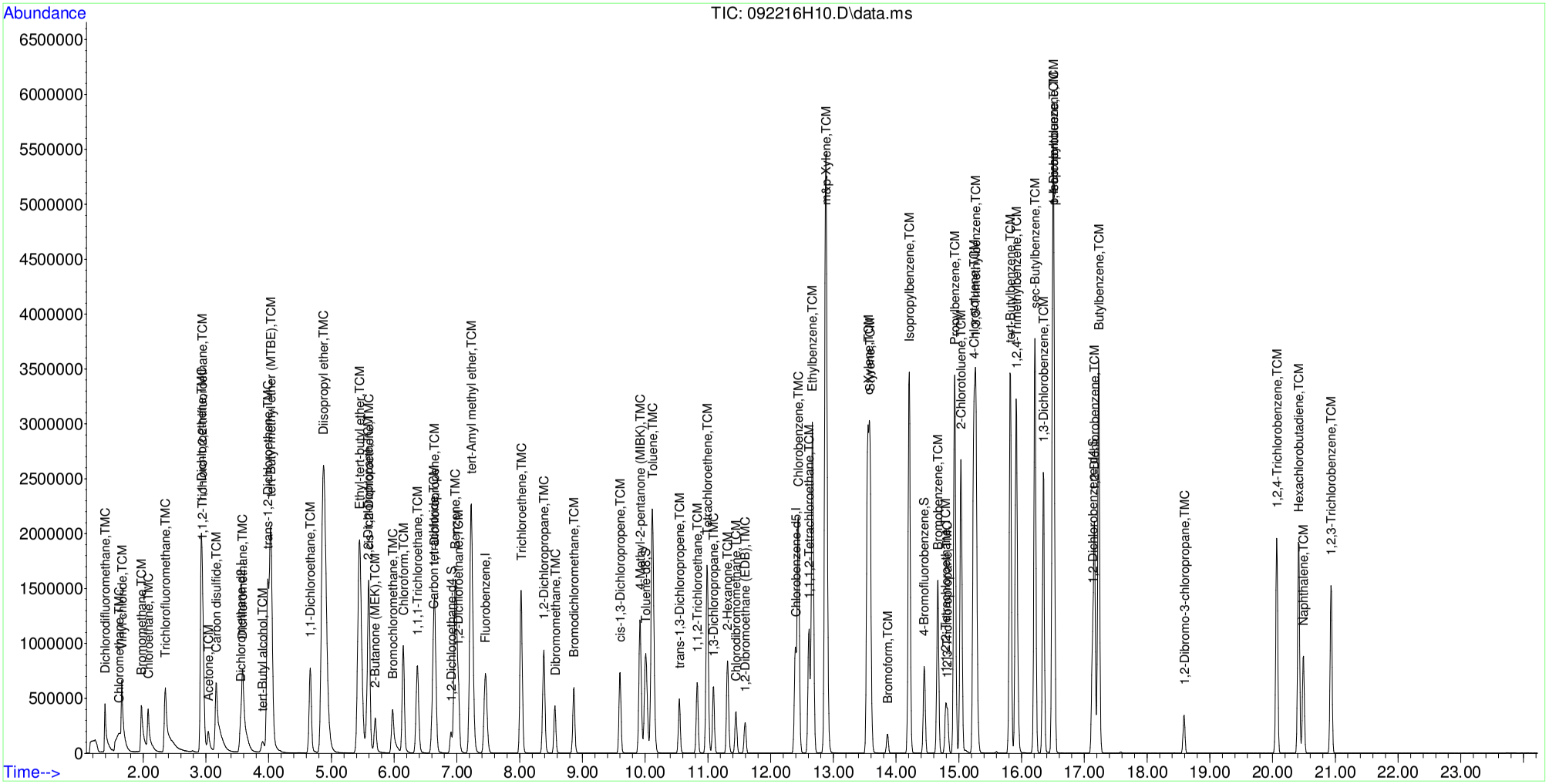
Table of Contents

Quantitation Report (Not Reviewed)

ata Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
ata File : 092216H10.D
ample : S16J002-CAL5
nstrument: HP5973H
cq On : 22 Sep 2016 4:25 pm
perator : YNB
isc : 10ug/L, WATER
LS Vial : 35
ultiplier: 1

Quant Time: Oct 03 08:36:21 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:36:03 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M



S16J002-CAL6

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H11.D
Sample : S16J002-CAL6
Instrument: HP5973H
Acq On : 22 Sep 2016 5:01 pm
Operator : YNB
Misc : 25ug/L, WATER
ALS Vial : 36
Multiplier: 1

Quant Time: Oct 03 08:36:55 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:36:38 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.556	53	90601	5.000 ug/L	0.00
24) Fluorobenzene	7.460	96	1228588	5.000 ug/L	0.01
37) Chlorobenzene-d5	12.392	117	868634	5.000 ug/L	0.00
System Monitoring Compounds					
28) 1,2-Dichloroethane-d4	6.907	65	167321	5.091 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 101.80%	
39) Toluene-d8	10.015	98	1178383	4.949 ug/L	0.01
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.00%	
56) 4-Bromofluorobenzene	14.448	95	369639	4.997 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 100.00%	
70) 1,2-Dichlorobenzene-d4	17.130	152	387176	5.216 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 104.40%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.391	85	1573832	24.212 ug/L	100
3) Chloromethane	1.616	50	1770680	23.425 ug/L #	100
4) Vinyl chloride	1.659	62	1960958	24.664 ug/L	100
5) Bromomethane	1.963	94	1155104	25.124 ug/L #	43
6) Chloroethane	2.072	64	1276919	24.657 ug/L	100
7) Trichlorofluoromethane	2.358	101	3115688	25.475 ug/L	100
8) 1,1-Dichloroethene	2.930	96	1991151	25.883 ug/L	98
9) 1,1,2-Trichloro-1,2,2-...	2.948	101	1807514	25.504 ug/L	97
10) Acetone	3.039	43	755885	179.619 ug/L	97
11) Carbon disulfide	3.167	76	5491406	25.140 ug/L	100
12) Dichloromethane	3.587	84	1637549	23.750 ug/L #	92
13) tert-Butyl alcohol	3.903	59	334650	381.009 ug/L #	74
14) trans-1,2-Dichloroethene	3.982	96	1925172	22.255 ug/L	94
15) tert-Butyl methyl ethe...	4.037	73	8454665	94.281 ug/L	93
16) 1,1-Dichloroethane	4.663	63	2779825	25.745 ug/L	100
17) Diisopropyl ether	4.882	45	16013600	106.182 ug/L	94
18) Ethyl-tert-butyl ether	5.454	59	8496692	125.131 ug/L	93
19) 2,2-Dichloropropane	5.587	77	1447368	41.116 ug/L	95
20) cis-1,2-Dichloroethene	5.600	96	1980645	27.429 ug/L #	79
21) 2-Butanone (MEK)	5.697	43	1258278	207.243 ug/L	90
22) Bromochloromethane	5.977	128	599402	25.822 ug/L #	85
23) Chloroform	6.147	83	2790696	26.864 ug/L	99
25) 1,1,1-Trichloroethane	6.372	97	2354394	34.524 ug/L	97
26) Carbon tetrachloride	6.621	117	1893184	42.996 ug/L	100
27) 1,1-Dichloropropene	6.652	75	2394573	26.590 ug/L	95
29) Benzene	6.986	78	7148718	26.370 ug/L	100
30) 1,2-Dichloroethane	7.029	62	1162072	26.305 ug/L	98
31) tert-Amyl methyl ether	7.229	73	8669255	138.965 ug/L	91
32) Trichloroethene	8.026	95	1872997	26.547 ug/L	89
33) 1,2-Dichloropropane	8.391	63	1322047	26.910 ug/L	99
34) Dibromomethane	8.561	93	483496	26.116 ug/L	91
35) Bromodichloromethane	8.865	83	1484956	33.173 ug/L	99
36) cis-1,3-Dichloropropene	9.601	75	1696133	36.283 ug/L	97
38) 4-Methyl-2-pentanone (...	9.917	43	3131982	209.058 ug/L	90
40) Toluene	10.118	92	4875388	26.476 ug/L	98
41) trans-1,3-Dichloropropene	10.544	75	1093704	42.427 ug/L	96
42) 1,1,2-Trichloroethane	10.830	83	599676	25.856 ug/L	97
43) Tetrachloroethene	10.994	166	2266340	26.461 ug/L	97
44) 1,3-Dichloropropane	11.091	76	1304161	25.667 ug/L	100

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H11.D
Sample : S16J002-CAL6
Instrument: HP5973H
Acq On : 22 Sep 2016 5:01 pm
Operator : YNB
Misc : 25ug/L, WATER
ALS Vial : 36
Multiplier: 1

Quant Time: Oct 03 08:36:55 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:36:38 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
45) 2-Hexanone	11.310	43	1996058	216.388 ug/L	86
46) Chlorodibromomethane	11.450	129	872297	39.226 ug/L	100
47) 1,2-Dibromoethane (EDB)	11.596	107	688159	31.072 ug/L	99
48) Chlorobenzene	12.441	112	5018542	26.478 ug/L	91
49) 1,1,1,2-Tetrachloroethane	12.611	131	1258554	42.411 ug/L	98
50) Ethylbenzene	12.672	91	9517565	27.144 ug/L	98
51) m&p-Xylene	12.885	106	8479934	57.732 ug/L #	85
52) o-Xylene	13.548	106	3824453	28.054 ug/L	90
53) Styrene	13.584	104	6093108	29.104 ug/L	91
54) Bromoform	13.864	173	383247	44.174 ug/L	99
55) Isopropylbenzene	14.211	105	10167938	28.575 ug/L	98
57) Bromobenzene	14.667	156	1931756	27.226 ug/L #	89
58) 1,1,2,2-Tetrachloroethane	14.795	83	691232	28.000 ug/L	100
59) 1,2,3-Trichloropropane	14.819	75	490816	26.211 ug/L	98
60) Propylbenzene	14.934	91	11592208	27.840 ug/L	96
61) 2-Chlorotoluene	15.038	91	6400784	27.538 ug/L	96
62) 4-Chlorotoluene	15.239	91	7653654	28.313 ug/L	93
63) 1,3,5-Trimethylbenzene	15.269	105	8666787	28.835 ug/L	94
64) tert-Butylbenzene	15.822	119	7588850	28.828 ug/L	89
65) 1,2,4-Trimethylbenzene	15.920	105	8703686	28.879 ug/L	95
66) sec-Butylbenzene	16.218	105	11189845	28.966 ug/L	99
67) 1,3-Dichlorobenzene	16.351	146	4576449	28.379 ug/L	96
68) p-Isopropyltoluene	16.503	119	10250865	30.048 ug/L	94
69) 1,4-Dichlorobenzene	16.516	146	4743646	29.798 ug/L	97
71) 1,2-Dichlorobenzene	17.166	146	3474569	27.556 ug/L	96
72) Butylbenzene	17.233	91	8468466	28.658 ug/L	96
73) 1,2-Dibromo-3-chloropr...	18.589	75	330648	194.793 ug/L #	64
74) 1,2,4-Trichlorobenzene	20.067	180	2594688	28.166 ug/L	99
75) Hexachlorobutadiene	20.420	225	1576703	28.264 ug/L	98
76) Naphthalene	20.493	128	2855701	27.605 ug/L	99
77) 1,2,3-Trichlorobenzene	20.937	180	1932773	27.365 ug/L	100

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

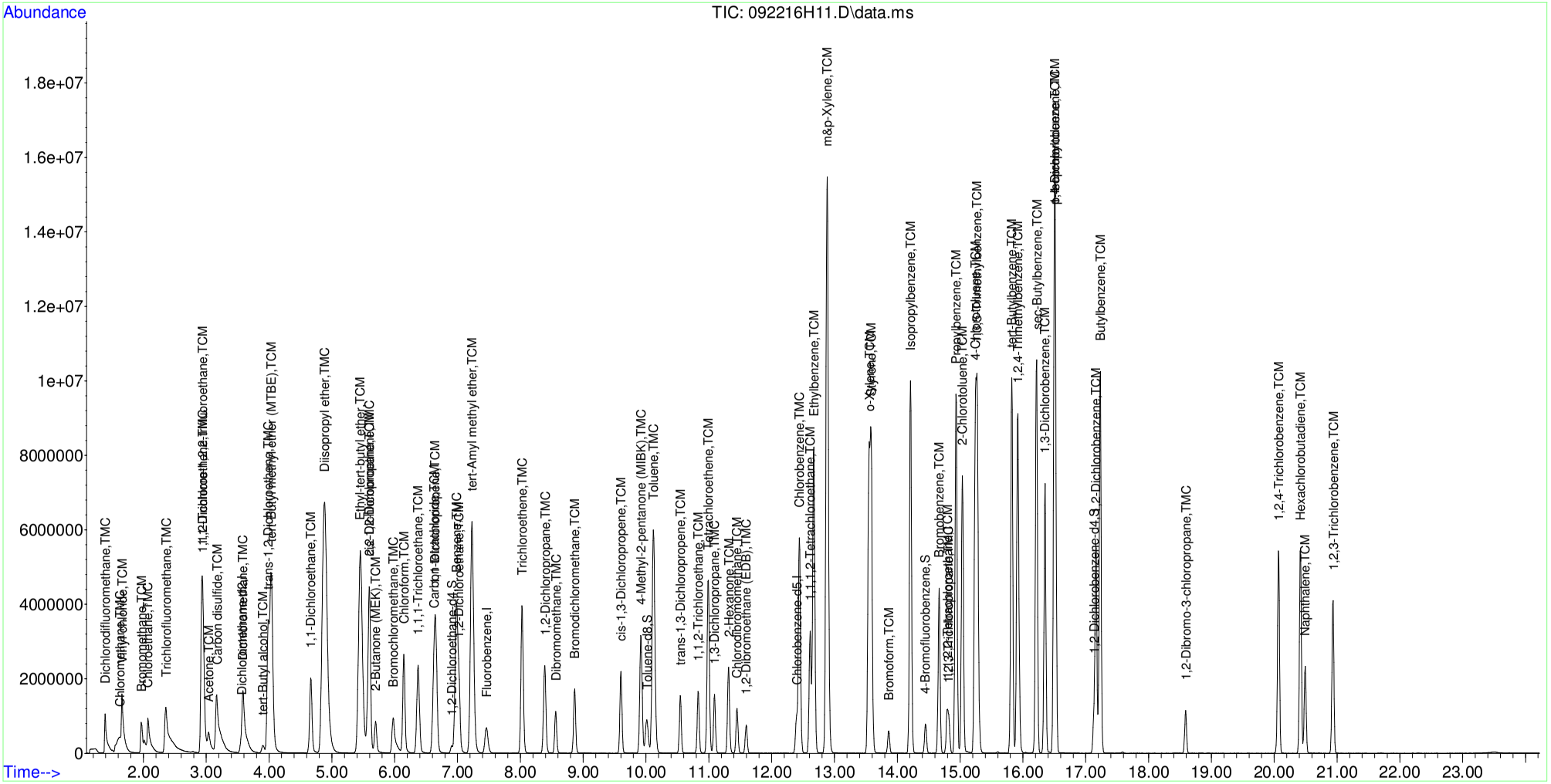
Table of Contents

Quantitation Report (Not Reviewed)

ata Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
ata File : 092216H11.D
ample : S16J002-CAL6
nstrument: HP5973H
cq On : 22 Sep 2016 5:01 pm
perator : YNB
isc : 25ug/L, WATER
LS Vial : 36
ultiplier: 1

Quant Time: Oct 03 08:36:55 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:36:38 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M



S16J002-SCV1

SCV REPORT

Instrument Name: HP5973H
Sample Name: S16J002-SCV1
Misc Info: 5ug/L, WATER
Date Acquired: 9/22/2016 18:12
QLast Update: Mon Oct 03 08:37:03 2016
Operator: YNB

1 OUT

#	Name	Ret Time	Concentration	Amount	%R	QC Limit		STATUS
1)	Dichloromethane-d2	3.55	5.0					
2)	Dichlorodifluoromethane	1.39	3.3	5.0	67%	70	130	FAIL
3)	Chloromethane	1.62	4.1	5.0	83%	70	130	pass
4)	Vinyl chloride	1.66	4.3	5.0	86%	70	130	pass
5)	Bromomethane	1.98	4.6	5.0	93%	70	130	pass
6)	Chloroethane	2.08	4.5	5.0	90%	70	130	pass
7)	Trichlorofluoromethane	2.35	4.8	5.0	97%	70	130	pass
8)	1,1-Dichloroethene	2.92	4.9	5.0	98%	70	130	pass
9)	1,1,2-Trichloro-1,2,2-trifluoroethane	2.95	5.0	5.0	101%	70	130	pass
10)	Acetone	3.04	37.9	40.0	95%	70	130	pass
11)	Carbon disulfide	3.17	5.4	5.0	109%	70	130	pass
12)	Dichloromethane	3.59	4.8	5.0	95%	70	130	pass
13)	tert-Butyl alcohol	3.90	103.1	100.0	103%	70	130	pass
14)	trans-1,2-Dichloroethene	3.98	4.2	5.0	84%	70	130	pass
15)	tert-Butyl methyl ether (MTBE)	4.03	17.3	20.0	86%	70	130	pass
16)	1,1-Dichloroethane	4.66	4.6	5.0	93%	70	130	pass
17)	Diisopropyl ether	4.88	19.6	20.0	98%	70	130	pass
18)	Ethyl-tert-butyl ether	5.45	19.6					
19)	2,2-Dichloropropane	5.59	4.3	5.0	85%	70	130	pass
20)	cis-1,2-Dichloroethene	5.60	4.8	5.0	97%	70	130	pass
21)	2-Butanone (MEK)	5.70	39.6	40.0	99%	70	130	pass
22)	Bromochloromethane	5.98	4.9	5.0	97%	70	130	pass
23)	Chloroform	6.15	4.8	5.0	96%	70	130	pass
24)	Fluorobenzene	7.46	5.0					
25)	1,1,1-Trichloroethane	6.37	5.2	5.0	104%	70	130	pass
26)	Carbon tetrachloride	6.62	5.2	5.0	105%	70	130	pass
27)	1,1-Dichloropropene	6.65	4.8	5.0	96%	70	130	pass
28)	1,2-Dichloroethane-d4	6.91	5.0					
29)	Benzene	6.98	4.9	5.0	98%	70	130	pass
30)	1,2-Dichloroethane	7.03	4.9	5.0	98%	70	130	pass
31)	tert-Amyl methyl ether	7.23	20.6	20.0	103%	70	130	pass
32)	Trichloroethene	8.02	4.8	5.0	96%	70	130	pass
33)	1,2-Dichloropropane	8.39	5.0	5.0	99%	70	130	pass
34)	Dibromomethane	8.56	4.9	5.0	98%	70	130	pass
35)	Bromodichloromethane	8.87	5.5	5.0	110%	70	130	pass
36)	cis-1,3-Dichloropropene	9.60	5.2	5.0	103%	70	130	pass
37)	Chlorobenzene-d5	12.39	5.0					
38)	4-Methyl-2-pentanone (MIBK)	9.92	40.3	40.0	101%	70	130	pass
39)	Toluene-d8	10.01	5.0					
40)	Toluene	10.11	4.8	5.0	96%	70	130	pass
41)	trans-1,3-Dichloropropene	10.54	5.1	5.0	102%	70	130	pass
42)	1,1,2-Trichloroethane	10.83	5.0	5.0	99%	70	130	pass
43)	Tetrachloroethene	10.99	4.6	5.0	92%	70	130	pass
44)	1,3-Dichloropropane	11.09	5.0	5.0	100%	70	130	pass
45)	2-Hexanone	11.31	41.2	40.0	103%	70	130	pass
46)	Chlorodibromomethane	11.45	5.8	5.0	115%	70	130	pass
47)	1,2-Dibromoethane (EDB)	11.60	5.7	5.0	113%	70	130	pass
48)	Chlorobenzene	12.44	4.8	5.0	96%	70	130	pass

49)	1,1,1,2-Tetrachloroethane	12.61	5.6	5.0	112%	70	130	pass
50)	Ethylbenzene	12.67	4.8	5.0	97%	70	130	pass
51)	m&p-Xylene	12.88	9.5	10.0	95%	70	130	pass
52)	o-Xylene	13.55	4.7	5.0	94%	70	130	pass
53)	Styrene	13.59	4.8	5.0	96%	70	130	pass
54)	Bromoform	13.86	5.3	5.0	107%	70	130	pass
55)	Isopropylbenzene	14.21	4.9	5.0	98%	70	130	pass
56)	4-Bromofluorobenzene	14.45	5.0					
57)	Bromobenzene	14.66	4.8	5.0	96%	70	130	pass
58)	1,1,2,2-Tetrachloroethane	14.79	5.2	5.0	104%	70	130	pass
59)	1,2,3-Trichloropropane	14.82	5.1	5.0	103%	70	130	pass
60)	Propylbenzene	14.94	4.8	5.0	96%	70	130	pass
61)	2-Chlorotoluene	15.03	4.8	5.0	97%	70	130	pass
62)	4-Chlorotoluene	15.24	4.8	5.0	96%	70	130	pass
63)	1,3,5-Trimethylbenzene	15.27	4.8	5.0	97%	70	130	pass
64)	tert-Butylbenzene	15.82	4.8	5.0	96%	70	130	pass
65)	1,2,4-Trimethylbenzene	15.91	4.7	5.0	94%	70	130	pass
66)	sec-Butylbenzene	16.21	4.8	5.0	96%	70	130	pass
67)	1,3-Dichlorobenzene	16.35	4.7	5.0	95%	70	130	pass
68)	p-Isopropyltoluene	16.50	4.7	5.0	94%	70	130	pass
69)	1,4-Dichlorobenzene	16.52	4.7	5.0	94%	70	130	pass
70)	1,2-Dichlorobenzene-d4	17.13	4.9					
71)	1,2-Dichlorobenzene	17.16	4.8	5.0	96%	70	130	pass
72)	Butylbenzene	17.23	4.8	5.0	95%	70	130	pass
73)	1,2-Dibromo-3-chloropropane	18.58	4.9	5.0	98%	70	130	pass
74)	1,2,4-Trichlorobenzene	20.07	4.7	5.0	93%	70	130	pass
75)	Hexachlorobutadiene	0.00	4.6	5.0	92%	70	130	pass
76)	Naphthalene	20.49	5.0	5.0	100%	70	130	pass
77)	1,2,3-Trichlorobenzene	20.94	5.0	5.0	100%	70	130	pass

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H13.D
Sample : S16J002-SCV1
Instrument: HP5973H
Acq On : 22 Sep 2016 6:12 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 38
Multiplier: 1

Quant Time: Oct 03 08:38:40 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:37:03 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	87055	5.000 ug/L	0.00
24) Fluorobenzene	7.461	96	1188178	5.000 ug/L	0.01
37) Chlorobenzene-d5	12.393	117	825636	5.000 ug/L	0.00
System Monitoring Compounds					
28) 1,2-Dichloroethane-d4	6.908	65	160279	5.043 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 100.80%	
39) Toluene-d8	10.009	98	1130373	4.995 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.00%	
56) 4-Bromofluorobenzene	14.449	95	351829	5.004 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 100.00%	
70) 1,2-Dichlorobenzene-d4	17.131	152	348888	4.945 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 99.00%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.392	85	208885	3.344 ug/L	100
3) Chloromethane	1.617	50	301325	4.149 ug/L #	100
4) Vinyl chloride	1.660	62	328173	4.296 ug/L	98
5) Bromomethane	1.976	94	205335	4.648 ug/L	99
6) Chloroethane	2.079	64	223323	4.488 ug/L	100
7) Trichlorofluoromethane	2.353	101	569573	4.847 ug/L	97
8) 1,1-Dichloroethene	2.925	96	361333	4.888 ug/L	98
9) 1,1,2-Trichloro-1,2,2-...	2.955	101	342575	5.031 ug/L	97
10) Acetone	3.040	43	153311	37.915 ug/L	99
11) Carbon disulfide	3.168	76	1139551	5.430 ug/L	100
12) Dichloromethane	3.587	84	315030	4.755 ug/L #	99
13) tert-Butyl alcohol	3.904	59	86997	103.083 ug/L	91
14) trans-1,2-Dichloroethene	3.983	96	348646	4.195 ug/L	94
15) tert-Butyl methyl ethe...	4.031	73	1488089	17.270 ug/L	89
16) 1,1-Dichloroethane	4.664	63	481443	4.640 ug/L	100
17) Diisopropyl ether	4.877	45	2838839	19.590 ug/L	93
18) Ethyl-tert-butyl ether	5.448	59	1277701	19.583 ug/L	92
19) 2,2-Dichloropropane	5.588	77	143815	4.252 ug/L	93
20) cis-1,2-Dichloroethene	5.600	96	336371	4.848 ug/L #	78
21) 2-Butanone (MEK)	5.698	43	230823	39.566 ug/L	90
22) Bromochloromethane	5.977	128	108676	4.872 ug/L #	87
23) Chloroform	6.148	83	477885	4.788 ug/L	99
25) 1,1,1-Trichloroethane	6.373	97	344388	5.222 ug/L	99
26) Carbon tetrachloride	6.622	117	223541	5.249 ug/L	100
27) 1,1-Dichloropropene	6.646	75	416777	4.785 ug/L	95
29) Benzene	6.981	78	1282033	4.890 ug/L	99
30) 1,2-Dichloroethane	7.029	62	209830	4.911 ug/L	97
31) tert-Amyl methyl ether	7.230	73	1245059	20.637 ug/L #	73
32) Trichloroethene	8.021	95	327703	4.803 ug/L	91
33) 1,2-Dichloropropane	8.386	63	235750	4.962 ug/L	99
34) Dibromomethane	8.562	93	87710	4.899 ug/L	91
35) Bromodichloromethane	8.866	83	237273	5.481 ug/L	99
36) cis-1,3-Dichloropropene	9.602	75	233884	5.173 ug/L	97
38) 4-Methyl-2-pentanone (...	9.918	43	573420	40.269 ug/L	89
40) Toluene	10.113	92	836520	4.779 ug/L	99
41) trans-1,3-Dichloropropene	10.544	75	125003	5.102 ug/L	97
42) 1,1,2-Trichloroethane	10.830	83	109221	4.954 ug/L	97
43) Tetrachloroethene	10.988	166	374011	4.594 ug/L	98
44) 1,3-Dichloropropane	11.086	76	240724	4.984 ug/L	99

Data Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
Data File : 092216H13.D
Sample : S16J002-SCV1
Instrument: HP5973H
Acq On : 22 Sep 2016 6:12 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 38
Multiplier: 1

Quant Time: Oct 03 08:38:40 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:37:03 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
45) 2-Hexanone	11.311	43	361450	41.225 ug/L	86
46) Chlorodibromomethane	11.451	129	121940	5.769 ug/L	99
47) 1,2-Dibromoethane (EDB)	11.597	107	119062	5.656 ug/L	98
48) Chlorobenzene	12.442	112	860780	4.778 ug/L	93
49) 1,1,1,2-Tetrachloroethane	12.612	131	158104	5.605 ug/L	97
50) Ethylbenzene	12.667	91	1608201	4.825 ug/L	98
51) m&p-Xylene	12.880	106	1332108	9.541 ug/L	91
52) o-Xylene	13.549	106	608932	4.699 ug/L	89
53) Styrene	13.585	104	959951	4.824 ug/L	93
54) Bromoform	13.859	173	43932	5.327 ug/L	96
55) Isopropylbenzene	14.211	105	1651578	4.883 ug/L	98
57) Bromobenzene	14.661	156	322525	4.782 ug/L #	90
58) 1,1,2,2-Tetrachloroethane	14.789	83	121589	5.182 ug/L	99
59) 1,2,3-Trichloropropane	14.820	75	91347	5.132 ug/L	97
60) Propylbenzene	14.935	91	1907391	4.819 ug/L	97
61) 2-Chlorotoluene	15.032	91	1067443	4.832 ug/L	95
62) 4-Chlorotoluene	15.239	91	1235766	4.810 ug/L	93
63) 1,3,5-Trimethylbenzene	15.270	105	1382225	4.838 ug/L	94
64) tert-Butylbenzene	15.817	119	1202627	4.806 ug/L	90
65) 1,2,4-Trimethylbenzene	15.914	105	1341915	4.684 ug/L	94
66) sec-Butylbenzene	16.212	105	1758584	4.789 ug/L	99
67) 1,3-Dichlorobenzene	16.346	146	724418	4.726 ug/L	98
68) p-Isopropyltoluene	16.498	119	1524416	4.701 ug/L	95
69) 1,4-Dichlorobenzene	16.516	146	712996	4.712 ug/L	98
71) 1,2-Dichlorobenzene	17.161	146	574732	4.795 ug/L	98
72) Butylbenzene	17.228	91	1334960	4.753 ug/L	96
73) 1,2-Dibromo-3-chloropr...	18.584	75	7915	4.906 ug/L #	65
74) 1,2,4-Trichlorobenzene	20.068	180	409119	4.672 ug/L	99
75) Hexachlorobutadiene	20.421	225	243345	4.589 ug/L	99
76) Naphthalene	20.493	128	489192	4.975 ug/L	100
77) 1,2,3-Trichlorobenzene	20.937	180	334714	4.986 ug/L	98

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

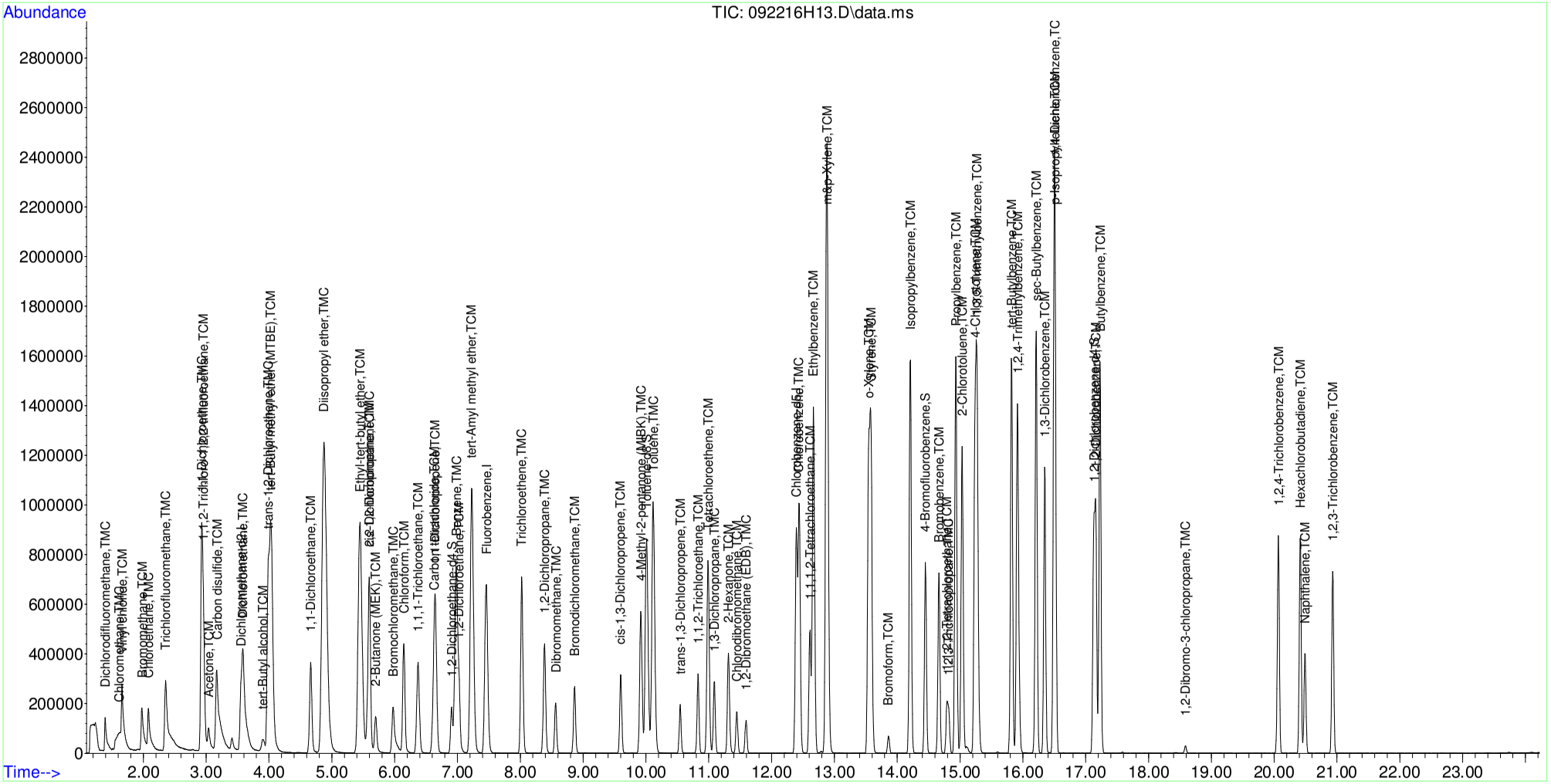
Table of Contents

Quantitation Report (Not Reviewed)

ata Path : D:\MSDCHEM\1\DATA\2016\092216HVW\
ata File : 092216H13.D
ample : S16J002-SCV1
nstrument: HP5973H
cq On : 22 Sep 2016 6:12 pm
perator : YNB
isc : 5ug/L, WATER
LS Vial : 38
ultiplier: 1

Quant Time: Oct 03 08:38:40 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Mon Oct 03 08:37:03 2016
Response via : Initial Calibration

DataAcq Meth:092216HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\092216HVW.M



SEQUENCE

S16J003

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	B16J002	SEQUENCE #:	S16J003
BATCH #:	HP5973H, 10/04/16	ANALYSIS:	524.2 WATER, CALIBRATION,SHORT LIST, R17S02

	CHECKLIST ITEM	N/A	ANALYST Y/N	REVIEWER Y/N	IDENTIFY OUTLIERS / COMMENTS
DOCUMENTATION	ANALYST: Bench sheet(s) attached? REVIEWER: Bench sheet(s) reviewed?	☐	Y	Y	
	ANALYST: Sequence log(s) attached? REVIEWER: Sequence log(s) reviewed?	☐	Y	Y	
	ANALYST: Every run has a PDF in LIMS? REVIEWER: Every PDF reviewed?	☐	Y	Y	
INITIAL CALIBRATION	Date of Initial Calibration used: If applicable, note date of "Last Update" in Comments.	Wed Oct 05 11:20:39 2016			
	Initial Calibration ID (LIMS number):	1610001			
	ICAL within QC criteria?	☐	Y	Y	passed for the short list
	SCV within QC criteria?	☐	Y	Y	passed for short list
INSTRUMENT / QC CHECKS	Tune or degradation checks within QC criteria?	☐	Y	Y	
	CCV(s) within QC criteria?	☑			
	QLS(s) within QC criteria?	☐	Y	Y	SHARE
	CB(s) or storage blank(s) within QC criteria?	☑		Y	
	Other instrument checks within QC criteria? Specify if applicable.	☑			
BATCH QCs	Method blanks < 1/2 QL?	☐	Y	Y	
	LCS(s) or SRM(s) within QC criteria?	☐	Y	Y	
	MSs/MSDs and/or DUPs within QC criteria?	☑			
	Other method-specific QCs within QC criteria? Specify if applicable.	☑			

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	B16J002	SEQUENCE #:	S16J003
BATCH #:	HP5973H, 10/04/16	ANALYSIS:	524.2 WATER, CALIBRATION,SHORT LIST, R17S02

	CHECKLIST ITEM	N/A	ANALYST Y/N	REVIEWER Y/N	IDENTIFY OUTLIERS / COMMENTS
IS / SS	Internal standards within QC criteria?	☐	Y	Y	
	Surrogates within QC criteria?	☐	Y	Y	
SAMPLE DATA	Were samples prepared & analyzed within holding time?	☐	Y	Y	
	If samples need to be re-run, were RE(s) made in LIMS?	☐	Y	Y	20X data not used; rerun 2X
	Do any samples need to be re-digested or re-extracted?	✔			
	Were all data qualifiers appropriately applied?	☐	Y	Y	
	Are problems, anomalies, discrepancies documented in LIMS? Specify if applicable.	✔			
MANUAL INT	Were manual integrations performed and documented? Specify if applicable.	✔			

APPROVALS	ANALYST INITIALS & DATE:	EM/YNB 10/05/16
	REVIEWED BY:	NICK KISH (affiliate) Digitally signed by NICK KISH (affiliate) Date: 2016.10.10 13:01:30 -07'00' SIGN HERE

COMMENTS

Injection Log

Directory: D:\MSDCHEM\1\DATA\2016\100416AHVW

Table of Contents

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	50	100416h01.d	1.	S16J003-TUN1	0.5mL, EM 1212	4 Oct 2016 14:54
2	30	100416h02.d	1.	S16J003-IBL1	BLK, WATER	4 Oct 2016 15:19
3	31	100416h03.d	1.	S16J003-CAL1	0.5ug/L, WATER	4 Oct 2016 15:55
4	32	100416h04.d	1.	S16J003-CAL2	1ug/L, WATER	4 Oct 2016 16:30
5	33	100416h05.d	1.	S16J003-CAL3	2ug/L, WATER	4 Oct 2016 17:06
6	34	100416h06.d	1.	S16J003-CAL4	5ug/L, WATER	4 Oct 2016 17:42
7	35	100416h07.d	1.	S16J003-CAL5	10ug/L, WATER	4 Oct 2016 18:17
8	36	100416h08.d	1.	S16J003-CAL6	25ug/L, WATER	4 Oct 2016 18:53
9	37	100416h09.d	1.	BLANK	BLK, WATER	4 Oct 2016 19:29
10	38	100416h10.d	1.	S16J003-SCV1	5ug/L, WATER	4 Oct 2016 20:04
11	39	100416h11.d	1.	B16J002-BS1	5ug/L, WATER	4 Oct 2016 20:40
12	40	100416h12.d	1.	B16J002-BLK1	BLK, WATER	4 Oct 2016 21:15
13	41	100416h13.d	1.	1609102-01	20X diln V-A, WATER	4 Oct 2016 21:51
14	42	100416h14.d	1.	1609102-02	20X diln V-A, WATER	4 Oct 2016 22:27
15	43	100416h15.d	1.	1609102-03	20X diln V-A, WATER	4 Oct 2016 23:03
16	44	100416h16.d	1.	1609102-04	20X diln V-A, WATER	4 Oct 2016 23:39
17	45	100416h17.d	1.	BLANK	BLK, WATER	5 Oct 2016 00:15
18	46	100416h18.d	1.	1609102-05	20X diln V-A, WATER	5 Oct 2016 00:51
19	47	100416h19.d	1.	1609102-07	20X diln V-A, WATER	5 Oct 2016 01:27
20	48	100416h20.d	1.	1609102-08	20X diln V-A, WATER	5 Oct 2016 02:03
21	49	100416h21.d	1.	1609102-09	20X diln V-A, WATER	5 Oct 2016 02:39
22	50	100416h22.d	1.	BLANK	BLK, WATER	5 Oct 2016 03:15
23	51	100416h23.d	1.	BLANK	BLK, WATER	5 Oct 2016 03:51

GC/MS QA-QC Check Report

Tune File : D:\msdchem\1\DATA\2016\100416AHVW\100416H01.D
Tune Time : 4 Oct 2016 2:54 pm

Daily Calibration File : D:\MSDCHEM\1\DATA\2016\100416AHVW\100416H06.D

File	Sample	Surrogate Recovery %				Internal Standard Responses		
						381446	3760140	2603260
100416H02.D	S16J003-IBL1	103	100	96	93	387759	3868766	2604803
100416H03.D	S16J003-CAL1	100	100	92	94	385369	3927177	2657076
100416H04.D	S16J003-CAL2	99	101	99	95	381376	3830628	2538037
100416H05.D	S16J003-CAL3	100	102	99	100	386999	3913261	2564413
100416H06.D	S16J003-CAL4	109	100	103	102	381446	3760142	2603261
100416H07.D	S16J003-CAL5	99	100	101	102	376894	3923369	2678297
100416H08.D	S16J003-CAL6	96	99	101	107	396003	4079272	2804555
100416H09.D	BLANK	104	101	99	97	396950	3983851	2717491
100416H10.D	S16J003-SCV1	104	99	102	101	377762	3898810	2690237
100416H11.D	B16J002-BS1	104	99	102	101	395754	3989518	2750561
100416H12.D	B16J002-BLK1	102	99	95	95	384600	3901379	2668609
100416H13.D	1609102-01	105	99	98	96	401136	3881086	2646143
100416H14.D	1609102-02	101	99	96	95	371209	3761331	2538734
100416H15.D	1609102-03	103	98	95	93	381879	3803174	2586038
100416H16.D	1609102-04	104	98	96	95	387846	3738884	2503212
100416H17.D	BLANK	103	100	97	94	391509	3702586	2481954
100416H18.D	1609102-05	104	100	96	98	386994	3728816	2479736
100416H19.D	1609102-07	99	102	95	97	372847	3640789	2389749
100416H20.D	1609102-08	101	99	94	95	363087	3630251	2424072
100416H21.D								

```
         1609102-09    105  100   97   95      384426    3566476    2400210
-------------------------------------------------------------------------------
(fails) - fails 12hr time check   * - fails criteria

    Created: Wed Oct 05 14:08:42 2016  HP5973H
```

Analysis Sequence

S16J003

Project: R17S02
Analysis: VOCs

Instrument: HP5973H **Calibration ID:** 1610001 Printed: 10/05/2016 2:15 pm

Lab Number	Sample Name	Order	Analyzed Date	STD ID	ISTD ID	Sequenced By	File ID	Comments
S16J003-TUN1	MS Tune	1	10/4/16 14:54	1629049		EM	100416H01.D	
S16J003-IBL1	Instrument Blank	2	10/4/16 15:19			EM	100416H02.D	
S16J003-CAL1	Cal Standard	3	10/4/16 15:55	1640084		EM	100416H03.D	
S16J003-CAL2	Cal Standard	4	10/4/16 16:30	1640085		EM	100416H04.D	
S16J003-CAL3	Cal Standard	5	10/4/16 17:06	1640086		EM	100416H05.D	
S16J003-CAL4	Cal Standard	6	10/4/16 17:42	1640083		EM	100416H06.D	
S16J003-CAL5	Cal Standard	7	10/4/16 18:17	1640087		EM	100416H07.D	
S16J003-CAL6	Cal Standard	8	10/4/16 18:53	1640088		EM	100416H08.D	
S16J003-SCV1	Secondary Cal Check	9	10/4/16 20:04	1641045		EM	100416H10.D	
B16J002-BLK1	Blank	10	10/4/16 21:15			EM	100416H12.D	
B16J002-BS1	LCS	11	10/4/16 20:40			EM	100416H11.D	
1609102-01 A	F6008-92816-844	12	10/4/16 21:51			EM	100416H13.D	
1609102-02 A	F6008-92816-1133	13	10/4/16 22:27			EM	100416H14.D	
1609102-03 A	F6008-92816-1425	14	10/4/16 23:03			EM	100416H15.D	
1609102-04 A	F6008-92816-1830	15	10/4/16 23:39			EM	100416H16.D	
1609102-05 A	F6008-92816-2303	16	10/5/16 0:51			EM	100416H18.D	
1609102-07 A	F6006-92816-952	17	10/5/16 1:27			EM	100416H19.D	
1609102-08 A	F6006-92816-1215	18	10/5/16 2:03			EM	100416H20.D	
1609102-09 A	F6006-92816-1448	19	10/5/16 2:39			EM	100416H21.D	

Sequence Comments

Analysis Sequence

S16J003

(Continued)

Project: R17S02
Analysis: VOCs

Instrument: HP5973H **Calibration ID:** 1610001 Printed: 10/05/2016 2:15 pm

Lab Number	Sample Name	Order	Analyzed Date	STD ID	ISTD ID	Sequenced By	File ID	Comments

Reagents

Reagent #	Description

Table of Contents

SEQUENCE DATA

S16J003

S16J003-TUN1

Table of Contents

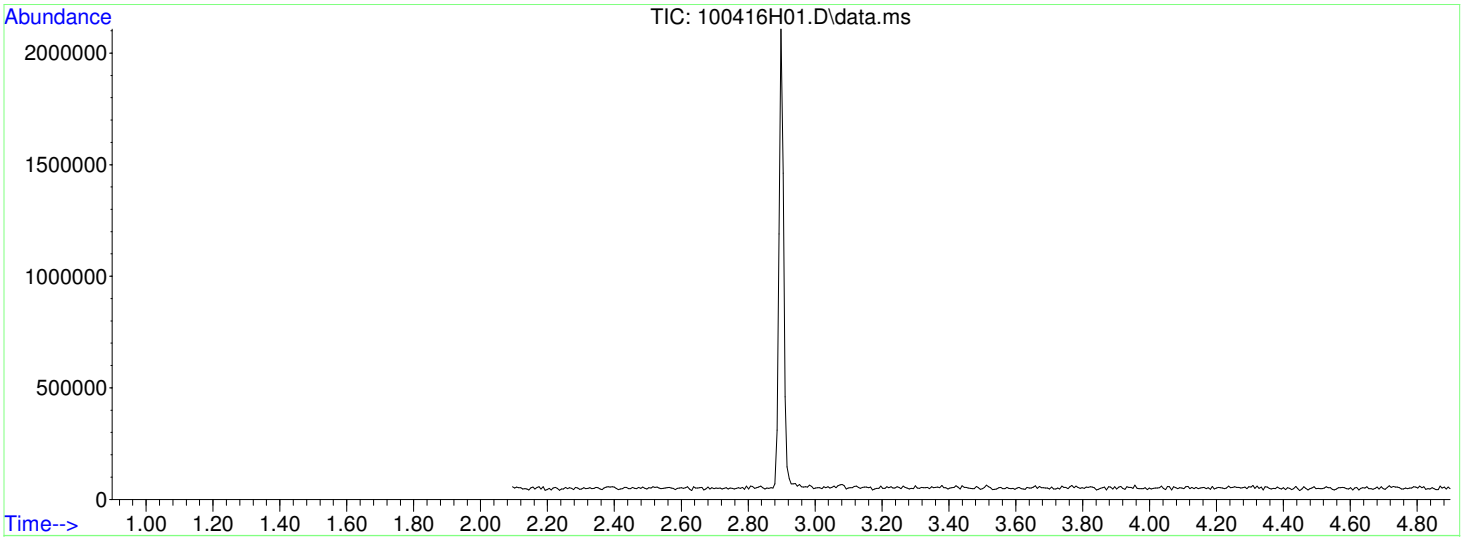
Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H01.D
Instrument: HP5973H
Acq On : 4 Oct 2016 2:54 pm
Operator : EM
Sample : S16J003-TUN1
Misc : 0.5mL, EM 1212
ALS Vial : 50 Sample Multiplier: 1

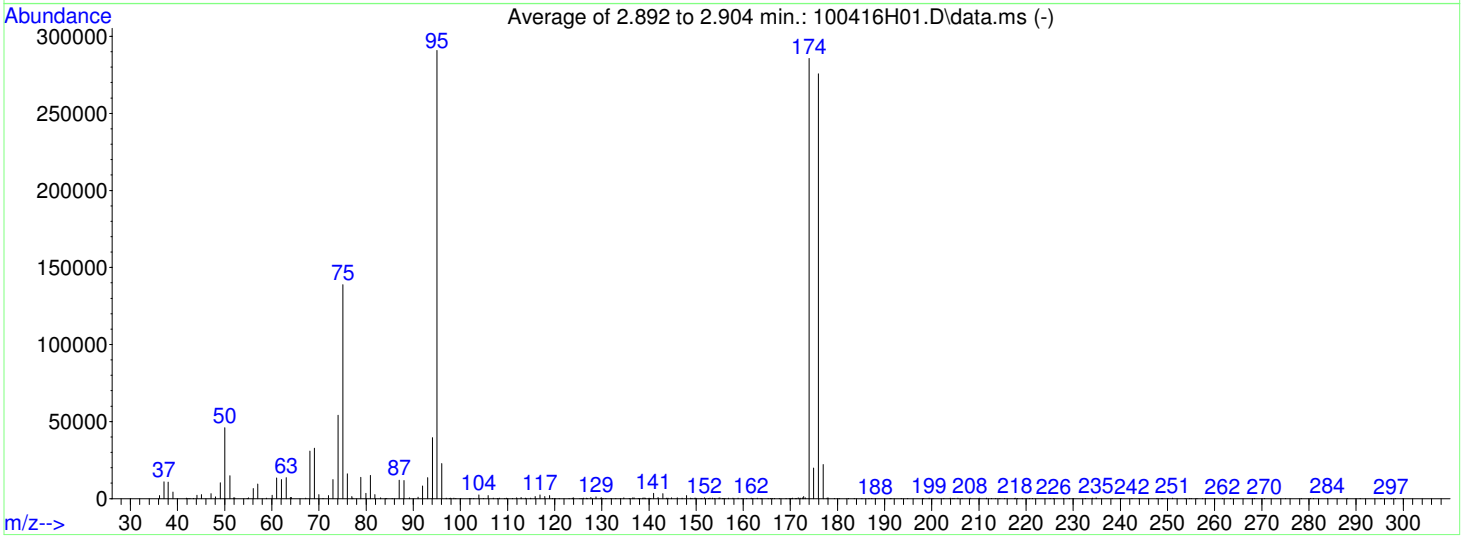
PASS

EM 10/4/16

Integration File: C45.P

Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Tue Oct 04 11:22:16 2016





AutoFind: Scans 132, 133, 134; Background Corrected with Scan 125

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.8	46048	PASS
75	95	30	60	47.8	138952	PASS
95	95	100	100	100.0	290770	PASS
96	95	5	9	7.8	22736	PASS
173	174	0.00	2	0.4	1266	PASS
174	95	50	120	98.3	285717	PASS
175	174	5	9	7.0	19915	PASS
176	174	95	101	96.5	275797	PASS
177	176	5	9	8.1	22209	PASS

Average of 2.892 to 2.904 min.: 100416H01.D\data.ms
S16J003-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.15	1903	48.05	1108	60.05	2212	72.00	2033
37.10	10909	49.05	10272	61.05	13317	73.00	12369
38.00	10643	50.05	46048	62.05	12334	74.05	54077
39.05	4241	51.10	14954	63.05	13703	75.05	138952
41.85	228	51.95	442	63.95	785	76.05	16113
42.25	113	52.15	559	64.15	713	76.95	1317
42.65	111	54.75	155	67.20	296	77.15	346
43.35	149	55.05	609	68.05	30823	78.90	13892
44.10	2244	56.05	6553	69.00	32749	79.95	3434
45.10	2548	57.05	9362	70.00	2586	80.90	15093
47.10	3303	58.85	256	70.85	137	81.85	2588

Average of 2.892 to 2.904 min.: 100416H01.D\data.ms
S16J003-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
83.05	521	95.05	290770	103.95	2352	113.80	323
84.15	119	96.05	22736	104.90	150	114.95	230
84.35	108	97.00	266	105.90	1983	115.90	1400
85.55	196	97.65	107	106.95	270	116.90	2505
87.00	11967	97.95	234	107.85	112	117.90	1429
88.05	11780	98.65	315	108.25	294	118.90	1972
89.20	441	99.05	206	109.45	197	119.55	210
91.00	858	100.05	154	109.75	383	120.05	174
92.00	8249	101.95	100	111.05	179	120.95	178
93.05	13567	102.25	194	111.90	535	123.05	111
94.05	39520	102.85	125	112.85	684	123.75	385

Average of 2.892 to 2.904 min.: 100416H01.D\data.ms
S16J003-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
124.00	435	130.85	138	138.95	489	147.00	282
125.35	115	131.95	121	139.25	327	147.95	1970
125.75	155	132.95	199	140.00	239	148.85	348
126.15	269	133.95	164	140.35	101	149.15	110
126.75	368	134.70	495	140.95	3513	149.75	314
126.95	145	135.85	176	141.90	681	149.95	288
127.70	706	136.60	465	142.95	3326	151.05	169
128.75	1138	136.85	521	143.70	400	151.25	135
129.75	424	137.75	133	144.05	237	151.80	533
129.95	630	138.05	114	144.80	486	152.65	201
130.25	114	138.65	231	146.00	595	152.95	273

Average of 2.892 to 2.904 min.: 100416H01.D\data.ms
S16J003-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
153.50	388	160.75	112	169.05	170	173.95	285717
153.85	205	161.70	351	169.75	135	174.95	19915
154.85	262	162.05	114	170.15	114	175.95	275797
155.05	517	162.95	250	170.45	271	176.95	22209
155.55	145	163.75	182	171.05	190	177.75	250
155.75	201	163.95	209	171.35	157	178.00	515
156.15	160	165.25	117	171.65	576	179.35	102
156.85	417	165.75	141	172.05	231	180.35	100
157.85	301	166.15	115	172.55	514	182.35	126
158.90	234	166.65	168	172.80	1266	183.55	137
159.75	155	167.65	110	173.15	439	185.15	121

Average of 2.892 to 2.904 min.: 100416H01.D\data.ms
S16J003-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
186.65	127	202.55	108	214.45	195	229.15	104
187.25	136	203.90	303	215.45	209	229.95	118
188.05	165	204.45	123	217.55	112	232.55	105
191.15	111	204.75	118	217.70	297	234.05	245
191.35	137	205.55	313	218.15	121	234.85	498
193.55	128	206.45	157	219.15	165	238.25	106
194.85	185	208.10	350	220.75	117	239.95	137
198.05	117	210.15	244	221.35	111	240.15	164
198.25	122	211.60	285	225.05	160	242.45	119
199.45	312	212.65	132	225.85	106	243.95	147
200.25	198	213.55	105	227.95	197	247.75	129

Average of 2.892 to 2.904 min.: 100416H01.D\data.ms

Modified:subtracted

Table of Contents

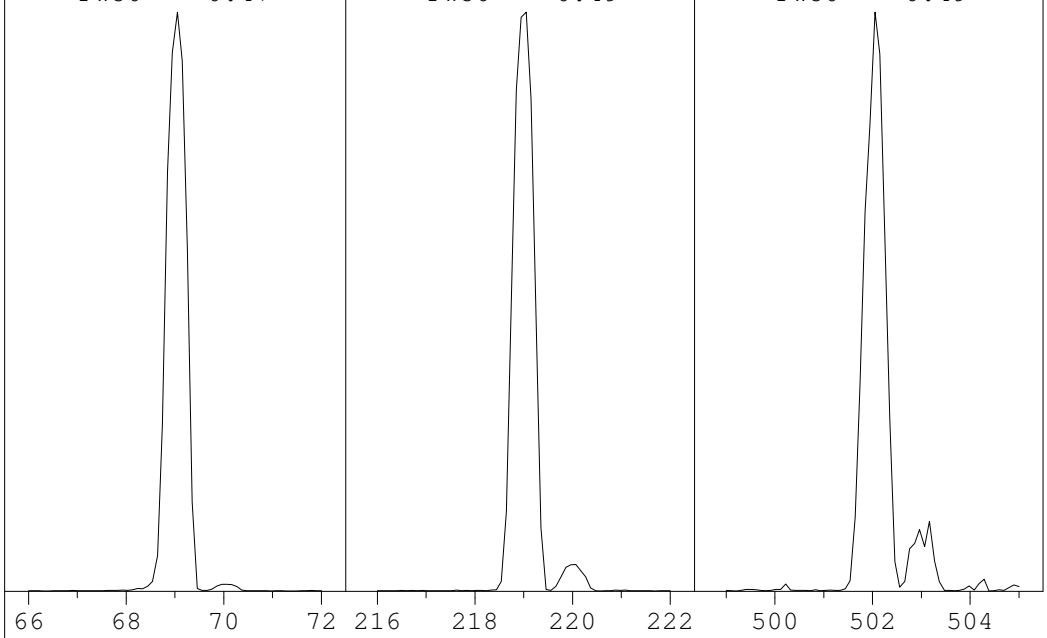
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
248.75	114	263.35	145	295.25	114		
248.95	115	268.05	160	297.45	121		
250.05	188	268.45	112	298.35	105		
251.10	265	270.55	163	299.95	101		
253.75	194	275.05	129				
254.65	177	278.35	122				
255.05	109	280.35	131				
256.25	107	280.95	156				
257.45	114	283.95	222				
258.05	130	288.15	146				
261.65	103	290.85	144				

Tue Oct 04 14:47:57 2016 Instrum

C:\msdchem\1\5973\BFB100416HW.u

Table of Contents

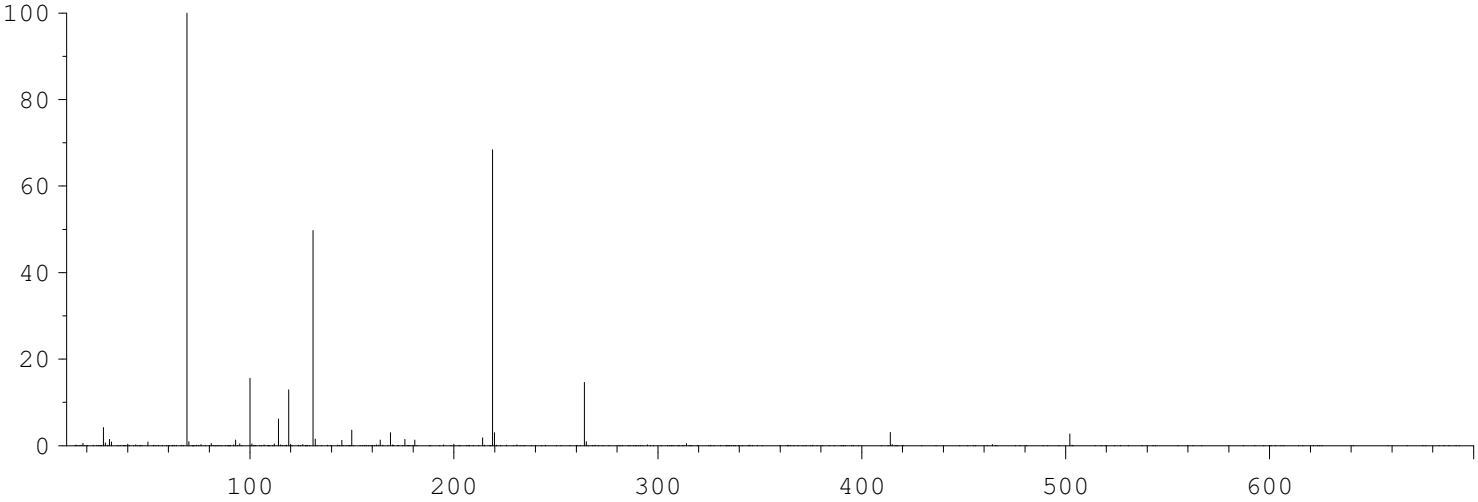
Mass 69.05	Mass 219.05	Mass 502.05
Ab 657206	Ab 455836	Ab 16512
Pw50 0.47	Pw50 0.49	Pw50 0.49



Ion Pol	POS	MassGain	-218
		MassOffs	-11
Emission	34.6	AmuGain	1897
EIEnrgy	69.9	AmuOffs	132
Filament	1	Wid219	-0.002
		DC Pol	NEG
Repeller	13.03		
IonFcus	58.8	HEDEnab	ON
EntLens	8.0	EMVolts	1106
EntOffs	12.30		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	TurboSpd	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10

317 peaks Base: 69.05 Abundance: 558528



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	558528	100.00	70.05	5258	0.94
218.95	381952	68.39	219.95	16832	4.41
502.05	15180	2.72	503.15	806	5.31

Air/Water Check: H20~0.56% N2~4.22% O2~0.83% CO2~0.17% N2/H2O~759.07%

Column Flow: Front: 0.996 Back: 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 69; EM Gain 1431840
Repeller Maximum 20 volts using ion 219;

MassGain Values @Samples: -218@3 -218@2 -218@1 -218@0 -218@FS

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	132.0	132.0	132.0	132.0	132.0	132.0	132.0
Entrance Lens Offset:	12.3	12.3	12.3	12.3	12.3	12.3	12.3

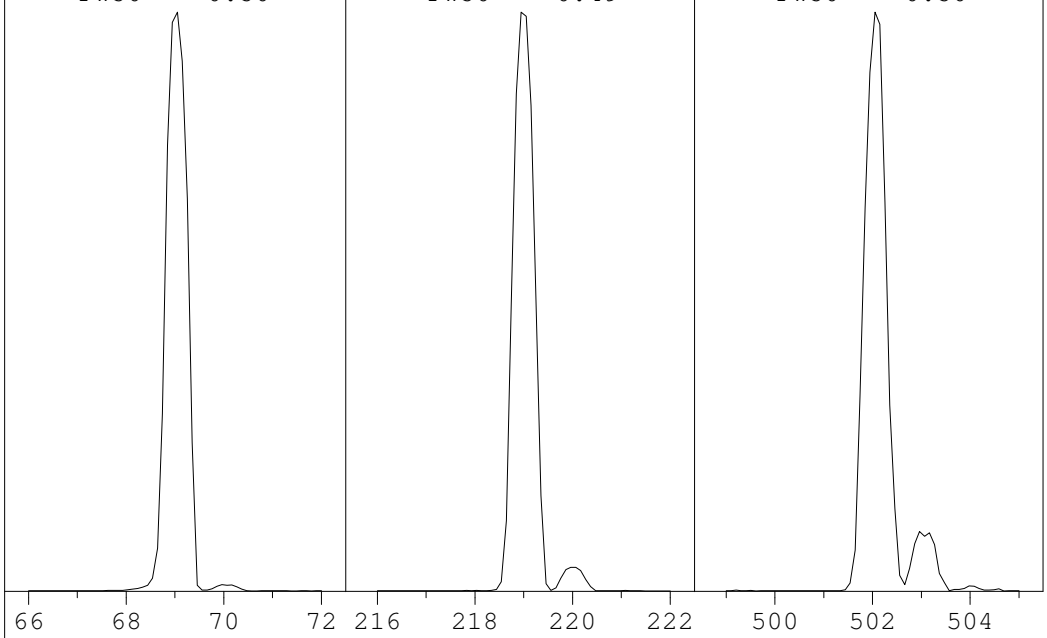
5973 BFB Dynamic Target Tune

Tue Oct 04 12:49:14 2016 Instrum

C:\MSDCHEM\1\5973\bfb.u

Table of Contents

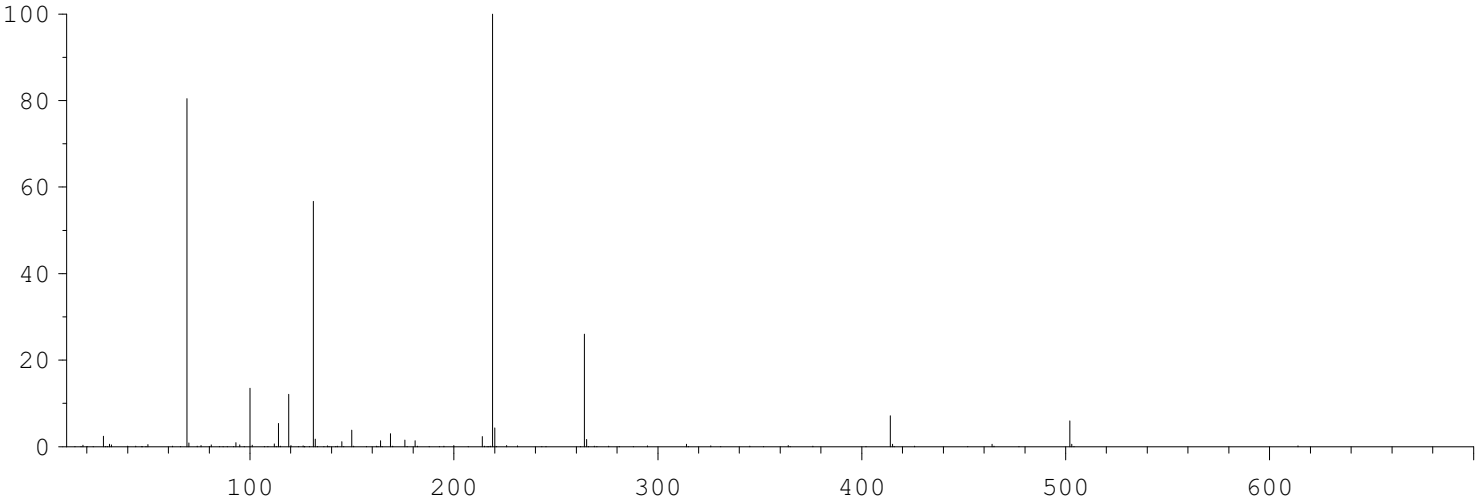
Mass	Ab	Pw50
69.05	455464	0.50
218.95	591175	0.49
502.05	32281	0.50



Ion Pol	POS	MassGain	-218
		MassOffs	-11
Emission	34.6	AmuGain	1897
EIEnrgy	69.9	AmuOffs	132
Filament	1	Wid219	-0.002
		DC Pol	NEG
Repeller	19.90		
IonFcus	56.9	HEDEnab	ON
EntLens	9.5	EMVolts	929
EntOffs	12.30		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	TurboSpd	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10

118 peaks Base: 218.95 Abundance: 502464



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	404096	100.00	70.05	4240	1.05
218.95	502464	124.34	220.05	21656	4.31
502.05	30032	7.43	503.05	2889	9.62

Air/Water Check: H20~0.41% N2~3.02% O2~0.49% CO2~0.19% N2/H2O~731.12%

Column Flow: Front: 0.996 Back: 0 ml/min. Interface Temp: 230

Ramp Criteria:

Ion Focus Maximum 90 volts using ion 69; EM Gain 281914

Repeller Maximum 20 volts using ion 219;

MassGain Values @Samples: -218@3 -218@2 -218@1 -218@0 -218@FS

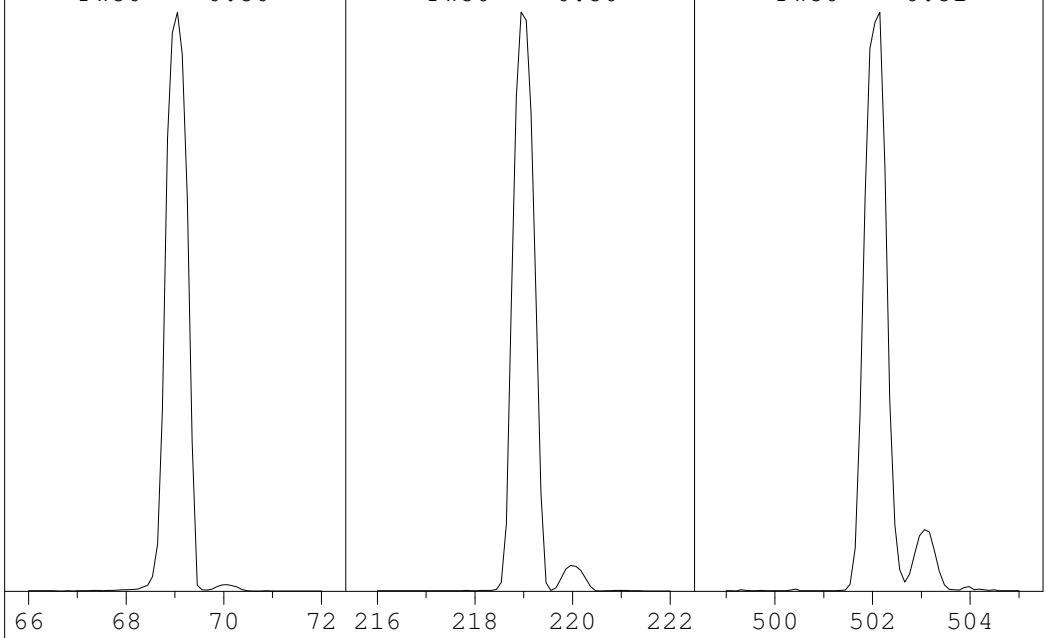
TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	132.0	132.0	132.0	132.0	132.0	132.0	132.0
Entrance Lens Offset:	12.3	12.3	12.3	12.3	12.3	12.3	12.3

Tue Oct 04 12:41:20 2016 Instrum

C:\MSDCHEM\1\5973\atune.u

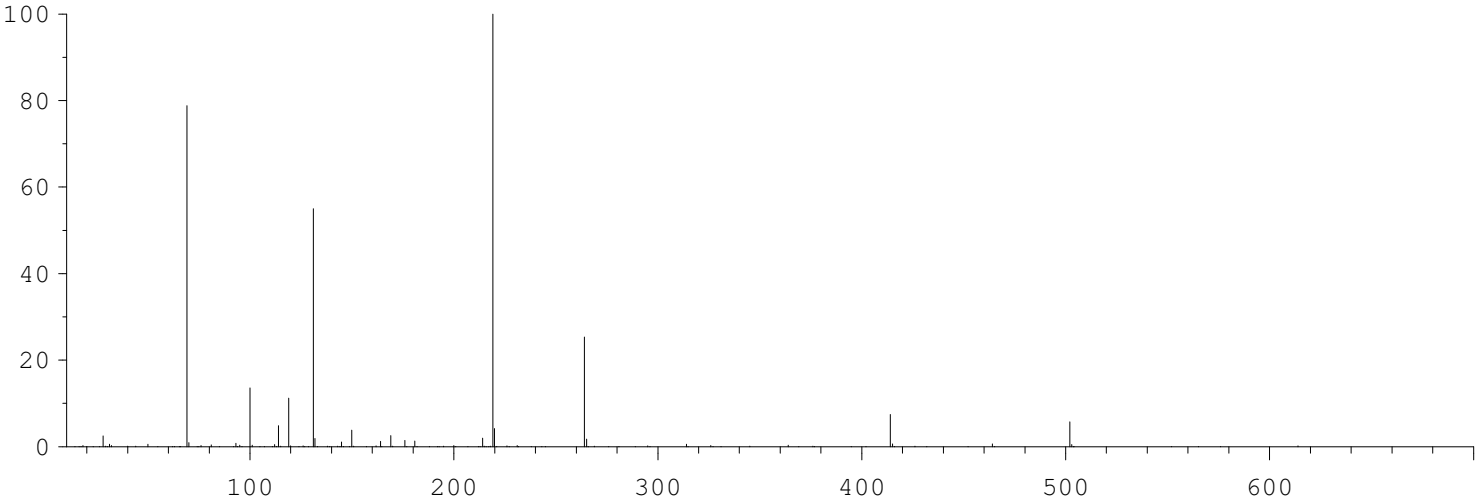
Table of Contents

Mass	69.05	Mass	218.95	Mass	502.15
Ab	502044	Ab	660288	Ab	35263
Pw50	0.50	Pw50	0.50	Pw50	0.51



Ion Pol	POS	MassGain	-217
		MassOffs	-11
Emission	34.6	AmuGain	1896
EIEnrgy	69.9	AmuOffs	132
Filament	1	Wid219	-0.003
		DC Pol	NEG
Repeller	19.90		
IonFcus	59.8	HEDEnab	ON
EntLens	9.5	EMVolts	929
EntOffs	13.30		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	TurboSpd	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
130 peaks Base: 219.05 Abundance: 562048



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	442752	100.00	70.05	5254	1.19
219.05	562048	126.94	219.95	23464	4.17
502.05	32432	7.33	503.05	2768	8.53

Air/Water Check: H20~0.30% N2~3.12% O2~0.37% CO2~0.17% N2/H2O~1047.12%

Column Flow: Front: 0.996 Back: 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 69; EM Gain 290143
Repeller Maximum 20 volts using ion 219;

MassGain Values @Samples: -217@3 -217@2 -217@1 -217@0 -217@FS

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	132.0	132.0	132.0	132.0	132.0	132.0	132.0
Entrance Lens Offset:	13.3	13.3	13.3	13.3	13.3	13.3	13.3

S16J003-IBL1

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H02.D
Sample : S16J003-IBL1
Instrument: HP5973H
Acq On : 4 Oct 2016 3:19 pm
Operator : EM
Misc : BLK, WATER
ALS Vial : 30
Multiplier: 1

Quant Time: Oct 05 11:18:00 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:17:31 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.554	53	387759	5.000 ug/L	0.00
9) Fluorobenzene	7.452	96	3868766	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.396	117	2604803	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.905	65	509846	5.142 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 102.80%	
14) Toluene-d8	10.006	98	3686685	5.008 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.20%	
16) 4-Bromofluorobenzene	14.445	95	965560	4.788 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 95.80%	
17) 1,2-Dichlorobenzene-d4	17.127	152	1007871	4.639 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 92.80%	

Target Compounds Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H02.D
Sample : S16J003-IBL1
Instrument: HP5973H
Acq On : 4 Oct 2016 3:19 pm
Operator : EM
Misc : BLK, WATER
ALS Vial : 30
Multiplier: 1

Quant Time: Oct 05 11:18:00 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:17:31 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

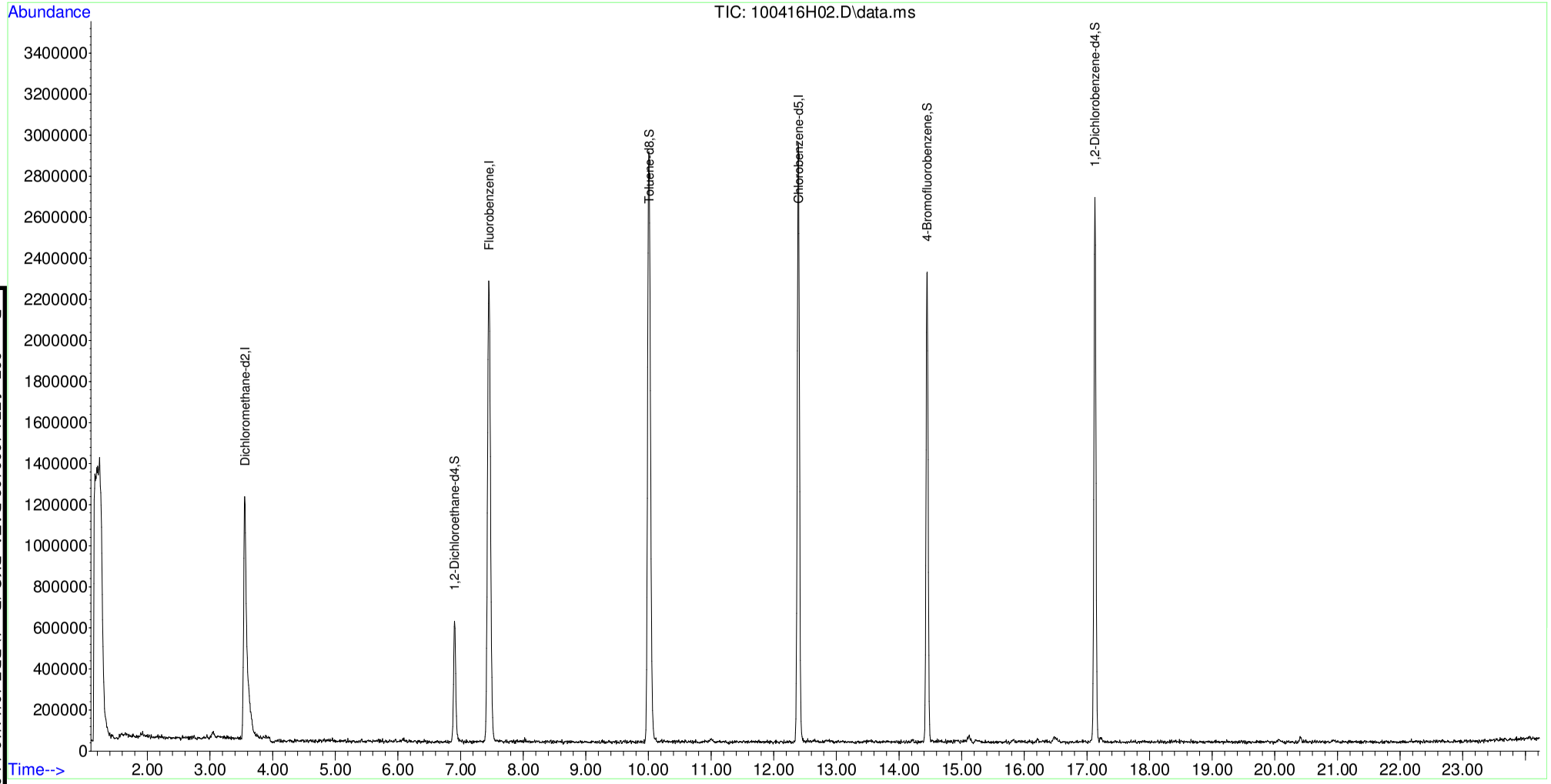
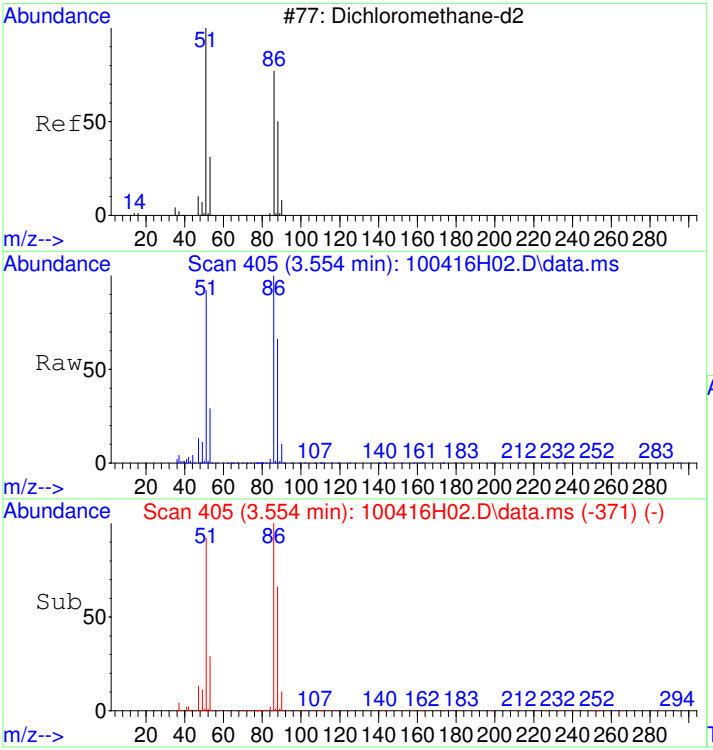


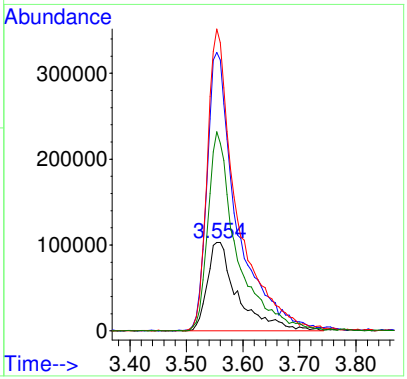
Table of Contents

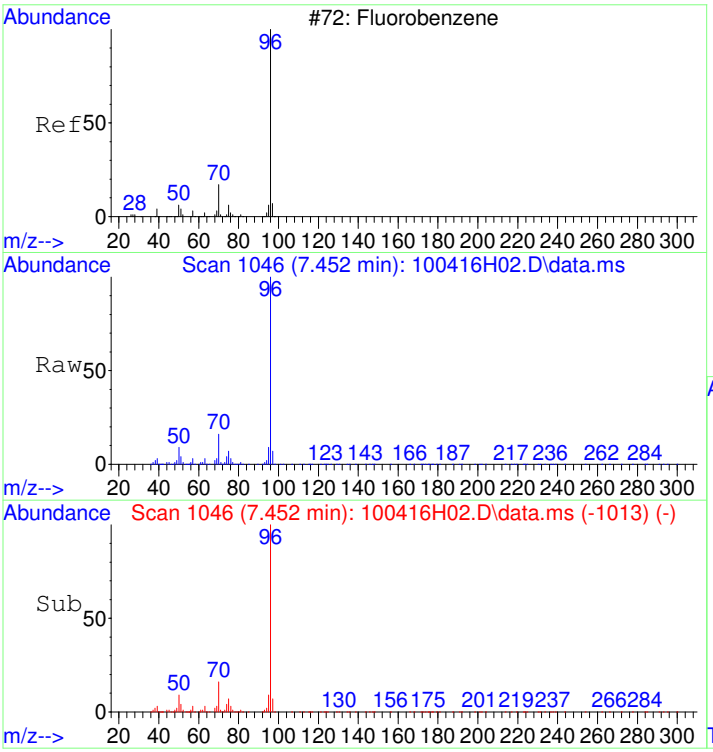


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.554 min Scan# 405
Delta R.T. 0.004 min
Lab File: 100416H02.D
Acq: 4 Oct 2016 3:19 pm

Tgt Ion: 53 Resp: 387759

Ion	Ratio	Lower	Upper
53	100		
51	306.9	386.4	426.4#
86	326.2	0.0	20.0#
88	211.7	231.2	271.2#

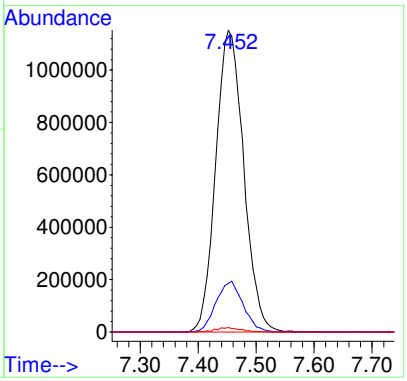


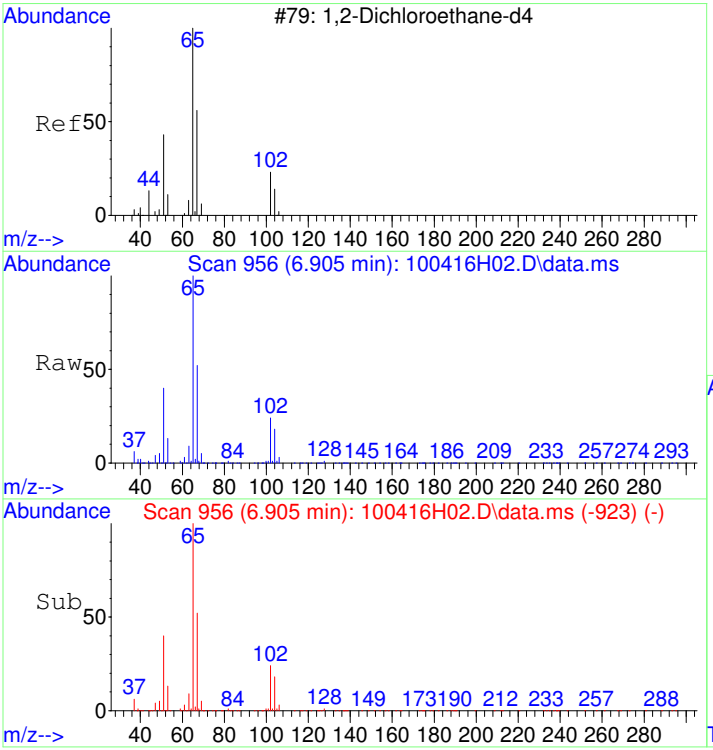


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.452 min Scan# 1046
Delta R.T. -0.002 min
Lab File: 100416H02.D
Acq: 4 Oct 2016 3:19 pm

Tgt Ion: 96 Resp: 3868766

Ion	Ratio	Lower	Upper
96	100		
70	16.4	0.0	36.7
77	1.4	0.0	21.6

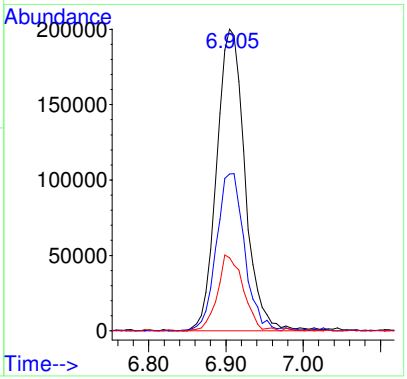


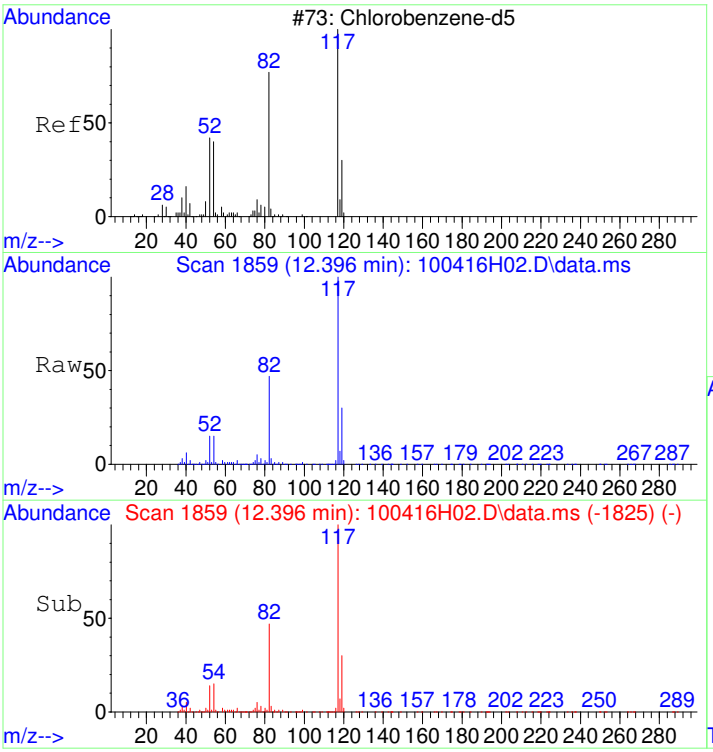


#10
1,2-Dichloroethane-d4
Concen: 5.14 ug/L
RT: 6.905 min Scan# 956
Delta R.T. -0.002 min
Lab File: 100416H02.D
Acq: 4 Oct 2016 3:19 pm

Tgt Ion: 65 Resp: 509846

Ion	Ratio	Lower	Upper
65	100		
67	52.2	31.1	71.1
102	22.9	3.7	43.7

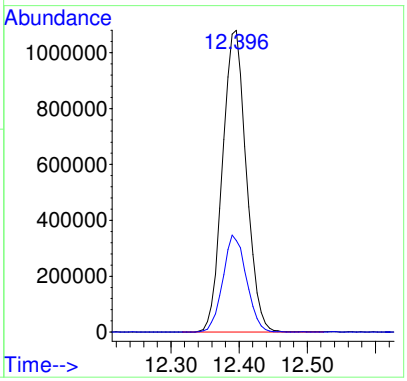


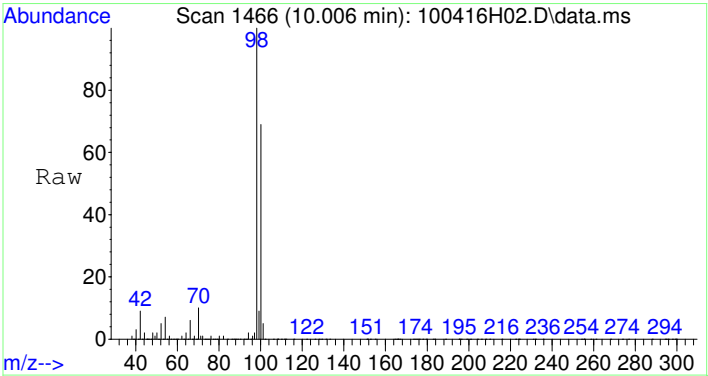


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.396 min Scan# 1859
Delta R.T. 0.004 min
Lab File: 100416H02.D
Acq: 4 Oct 2016 3:19 pm

Tgt Ion:117 Resp: 2604803

Ion	Ratio	Lower	Upper
117	100		
119	31.9	11.9	51.9

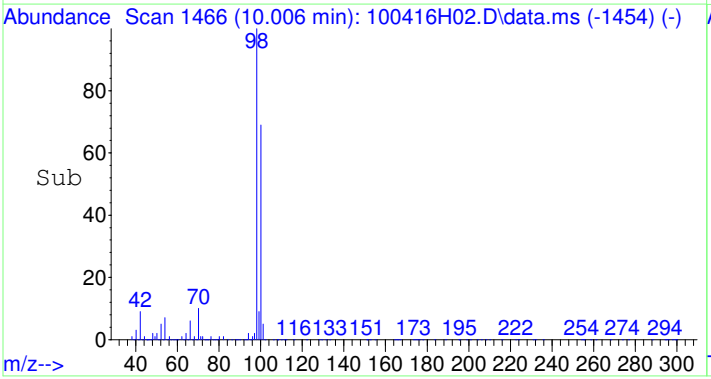


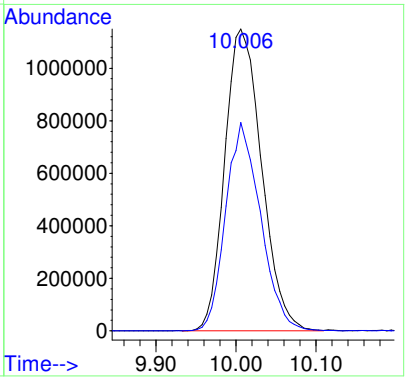


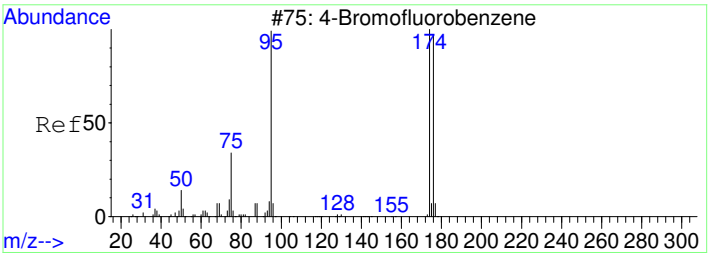
#14
Toluene-d8
Concen: 5.01 ug/L
RT: 10.006 min Scan# 1466
Delta R.T. -0.002 min
Lab File: 100416H02.D
Acq: 4 Oct 2016 3:19 pm

Tgt Ion: 98 Resp: 3686685

Ion	Ratio	Lower	Upper
98	100		
100	65.2	45.2	85.2



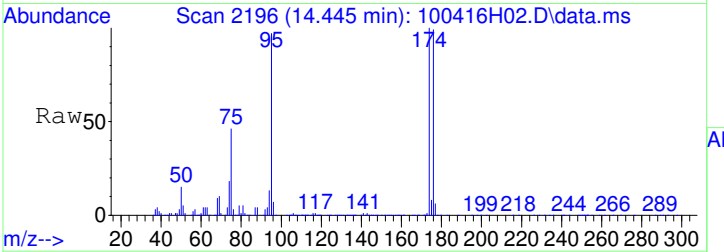


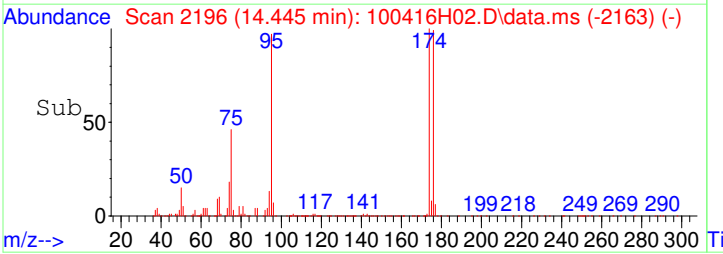


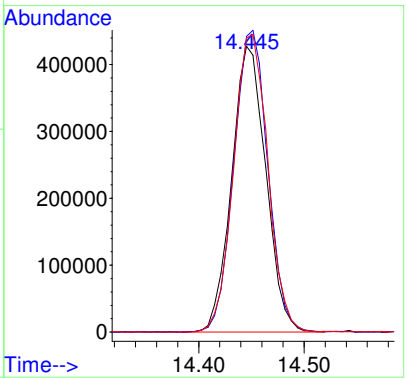
#16
4-Bromofluorobenzene
Concen: 4.79 ug/L
RT: 14.445 min Scan# 2196
Delta R.T. -0.002 min
Lab File: 100416H02.D
Acq: 4 Oct 2016 3:19 pm

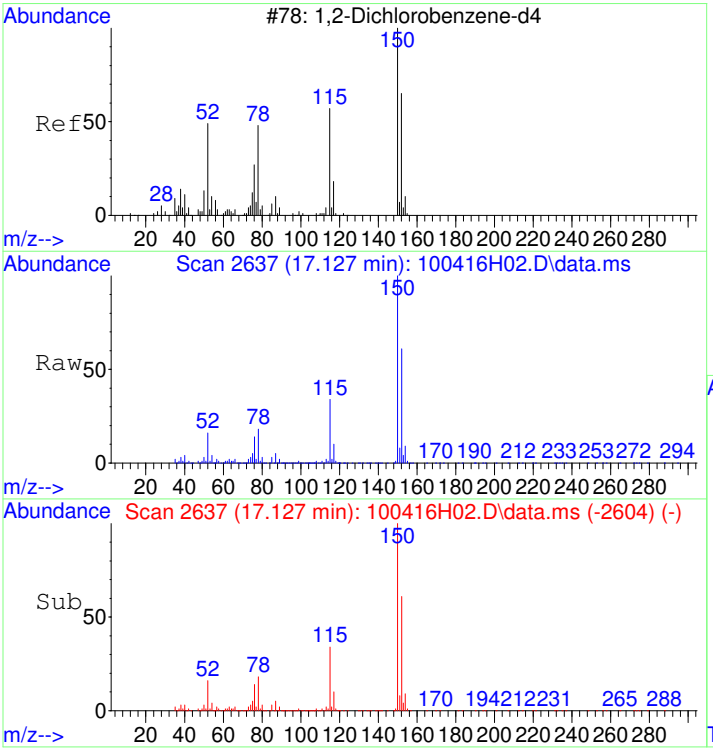
Tgt Ion: 95 Resp: 965560

Ion	Ratio	Lower	Upper
95	100		
174	105.1	84.0	124.0
176	104.5	79.3	119.3





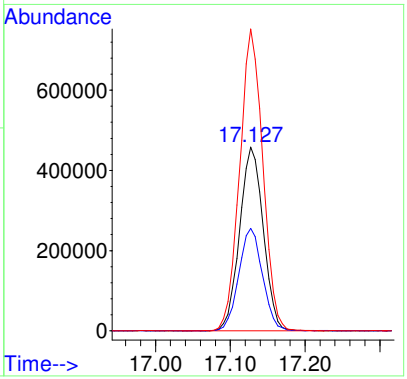




#17
1,2-Dichlorobenzene-d4
Concen: 4.64 ug/L
RT: 17.127 min Scan# 2637
Delta R.T. -0.002 min
Lab File: 100416H02.D
Acq: 4 Oct 2016 3:19 pm

Tgt Ion:152 Resp: 1007871

Ion	Ratio	Lower	Upper
152	100		
115	55.9	35.7	75.7
150	160.9	155.7	195.7



S16J003-CAL1

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H03.D
Sample : S16J003-CAL1
Instrument: HP5973H
Acq On : 4 Oct 2016 3:55 pm
Operator : EM
Misc : 0.5ug/L, WATER
ALS Vial : 31
Multiplier: 1

Quant Time: Oct 04 16:21:03 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Oct 04 11:22:16 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.556	53	385369	5.000 ug/L	0.00
9) Fluorobenzene	7.454	96	3927177	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.392	117	2657076	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.906	65	494704	4.997 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 100.00%	
14) Toluene-d8	10.008	98	3714951	5.015 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.20%	
16) 4-Bromofluorobenzene	14.447	95	1001077	4.576 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 91.60%	
17) 1,2-Dichlorobenzene-d4	17.129	152	1033926	4.689 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 93.80%	

Target Compounds					Qvalue
2) Vinyl chloride	1.658	62	151990	0.496 ug/L	95
3) 1,1-Dichloroethene	2.917	96	158149	0.535 ug/L	85
4) 1,1,2-Trichloro-1,2,2-...	2.954	101	163856	0.580 ug/L	95
5) trans-1,2-Dichloroethene	3.987	96	182130	0.614 ug/L	91
6) 1,1-Dichloroethane	4.656	63	141396	0.376 ug/L	99
7) cis-1,2-Dichloroethene	5.599	96	101422	0.375 ug/L	99
8) Chloroform	6.146	83	152703	0.396 ug/L	91
11) Benzene	6.979	78	383938	0.462 ug/L	98
12) Trichloroethene	8.019	95	104759	0.486 ug/L	99
15) Tetrachloroethene	10.987	166	123011	0.483 ug/L	97

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

Quantitation Report (QT Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H03.D
Sample : S16J003-CAL1
Instrument: HP5973H
Acq On : 4 Oct 2016 3:55 pm
Operator : EM
Misc : 0.5ug/L, WATER
ALS Vial : 31
Multiplier: 1

Quant Time: Oct 04 16:21:03 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Tue Oct 04 11:22:16 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

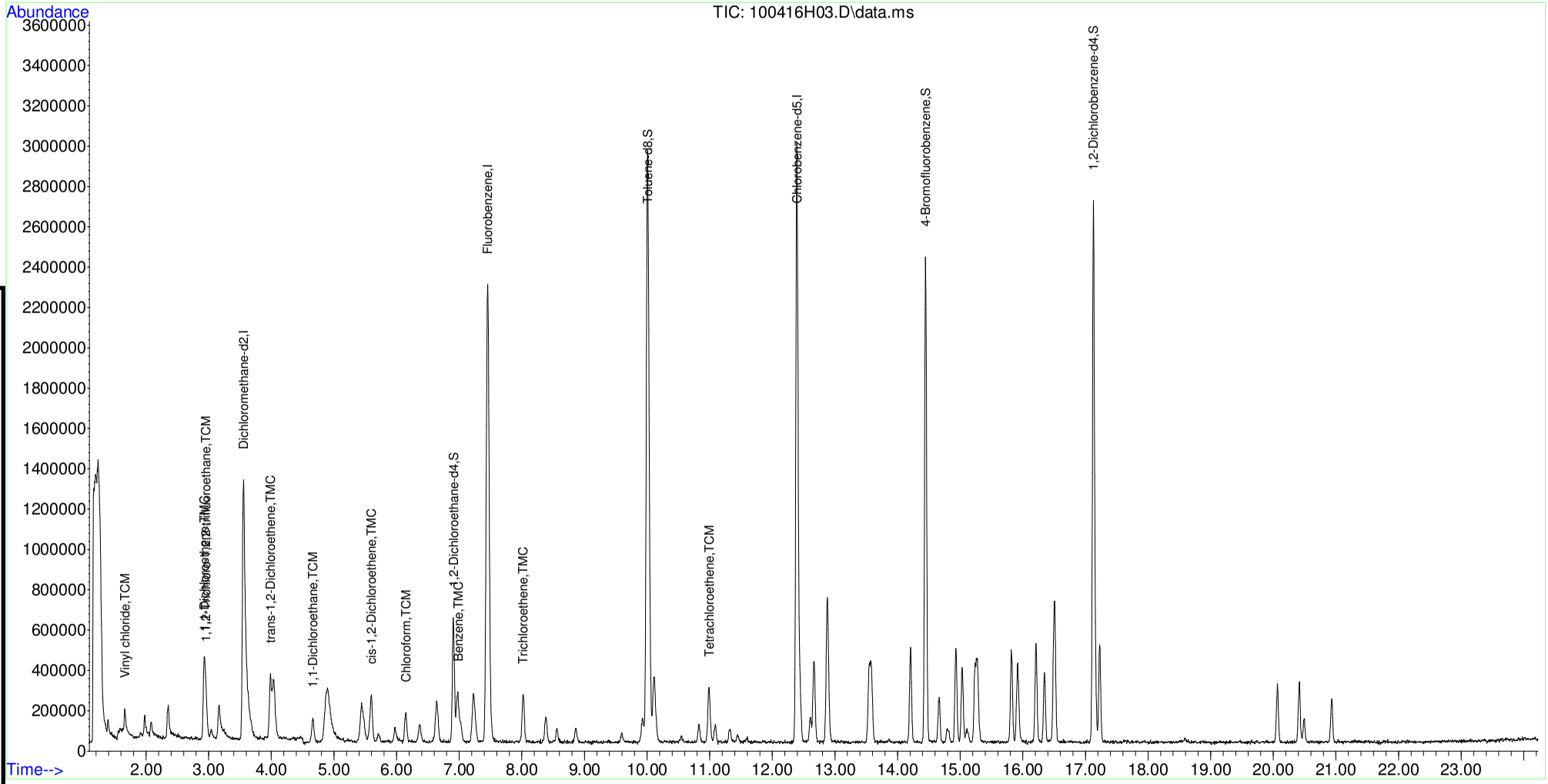
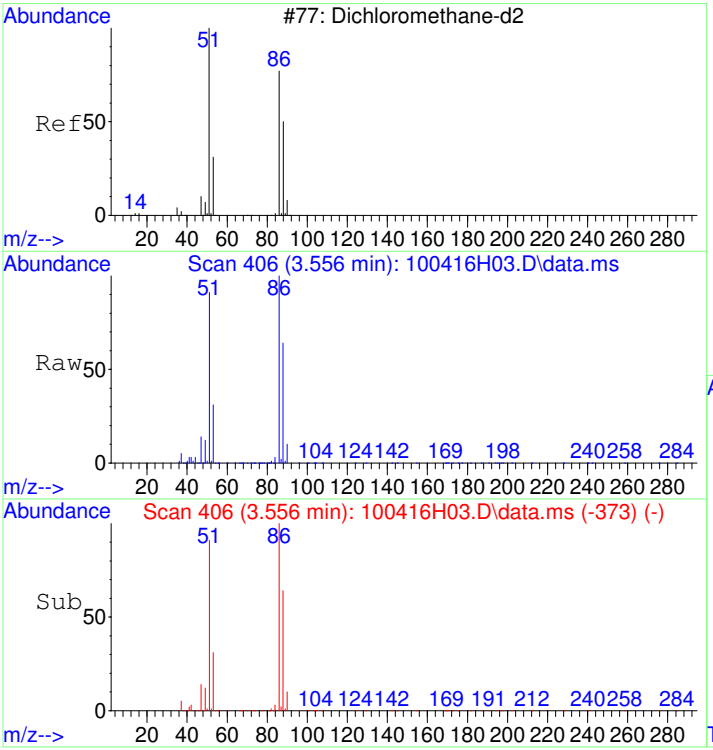


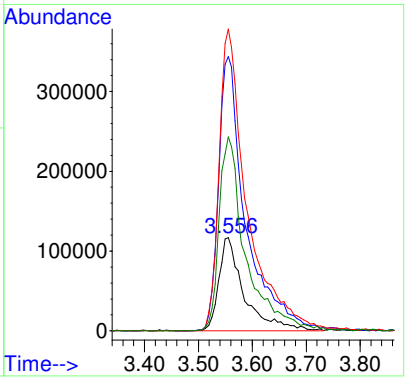
Table of Contents

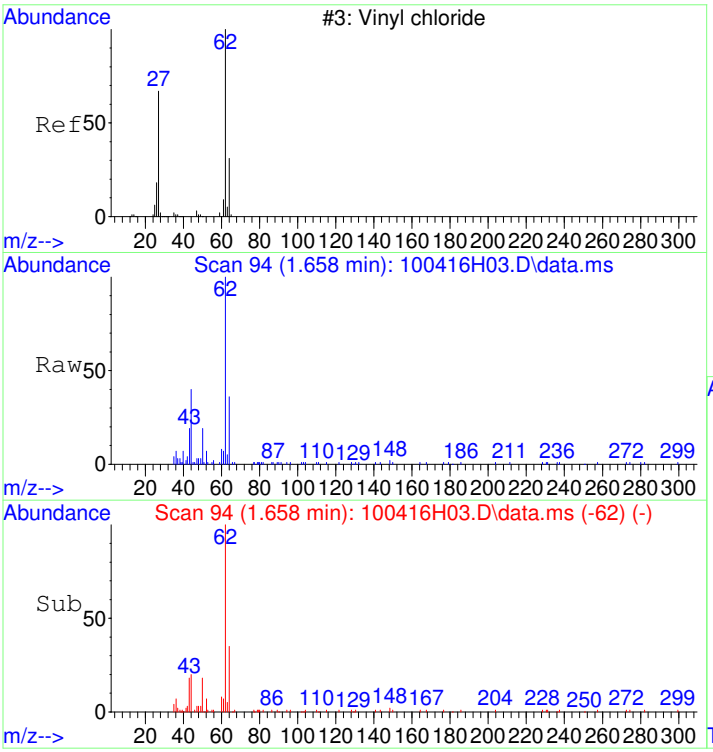


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.556 min Scan# 406
Delta R.T. 0.002 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 53 Resp: 385369

Ion	Ratio	Lower	Upper
53	100		
51	313.2	395.4	435.4#
86	356.2	0.0	20.0#
88	216.4	208.6	248.6

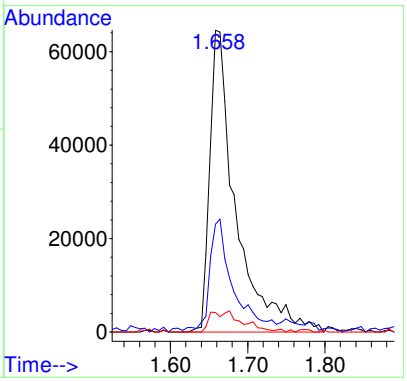


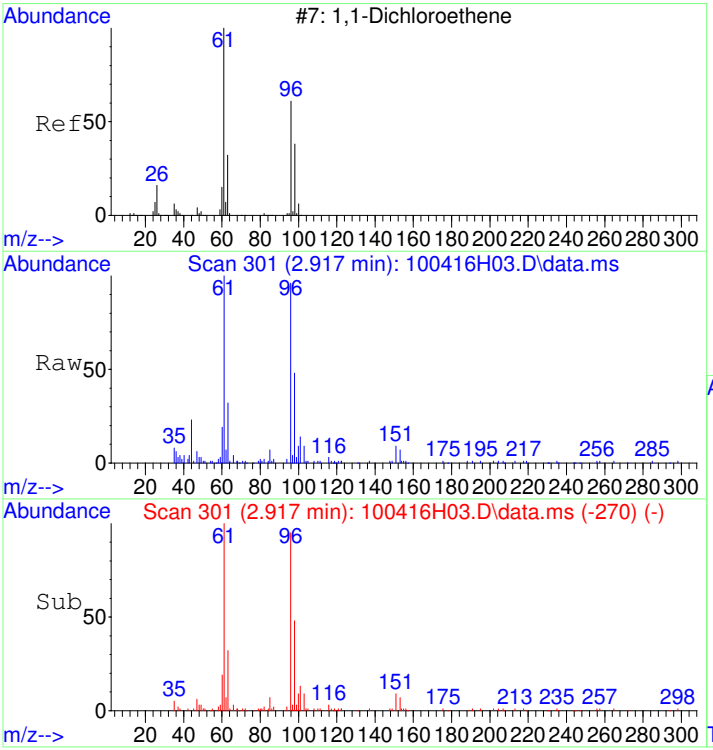


#2
Vinyl chloride
Concen: 0.50 ug/L
RT: 1.658 min Scan# 94
Delta R.T. -0.004 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 62 Resp: 151990

Ion	Ratio	Lower	Upper
62	100		
64	32.9	12.1	52.1
61	1.5	0.0	28.0

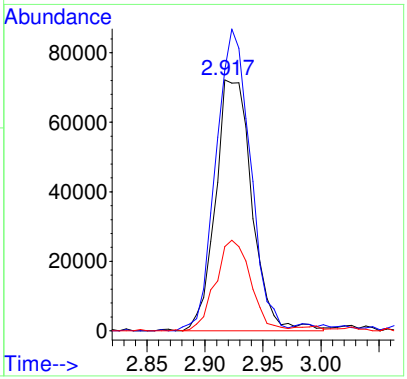


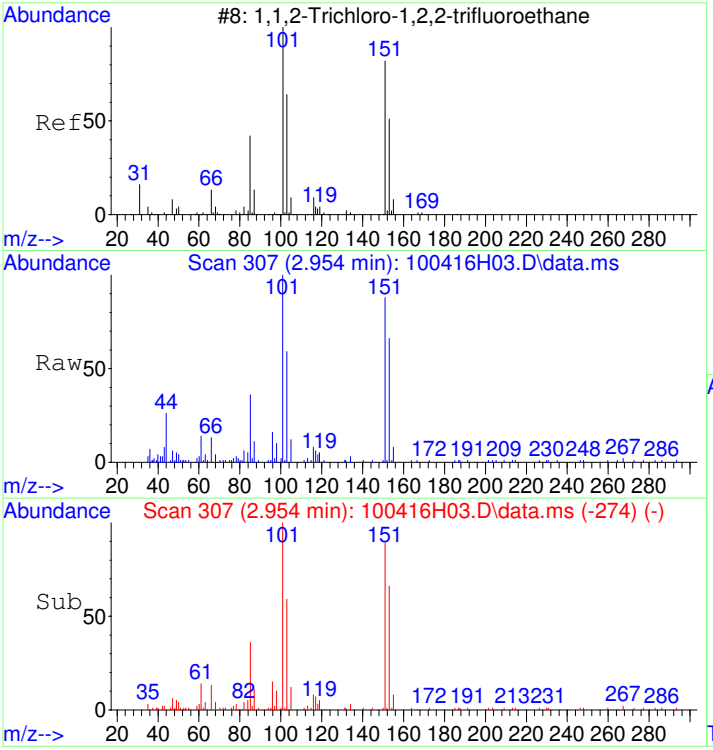


#3
1,1-Dichloroethene
Concen: 0.54 ug/L
RT: 2.917 min Scan# 301
Delta R.T. -0.010 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 96 Resp: 158149

Ion	Ratio	Lower	Upper
96	100		
61	113.5	112.6	152.6
63	35.0	21.3	61.3

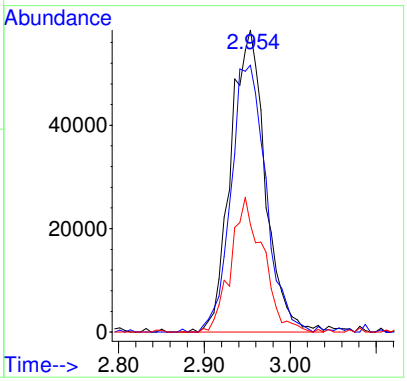


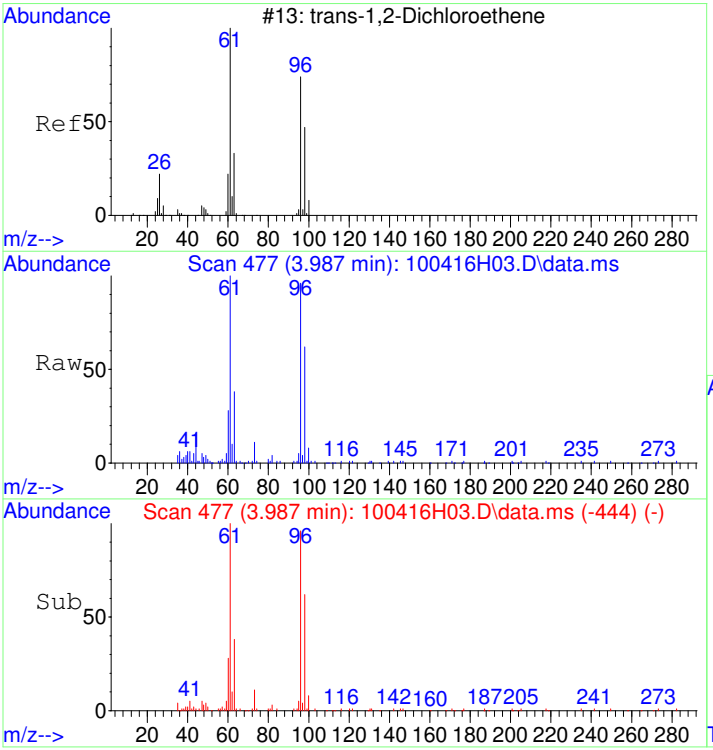


#4
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 0.58 ug/L
RT: 2.954 min Scan# 307
Delta R.T. 0.002 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion:101 Resp: 163856

Ion	Ratio	Lower	Upper
101	100		
151	89.4	74.3	114.3
85	41.7	19.7	59.7

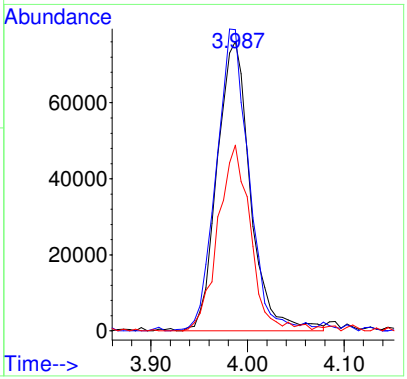


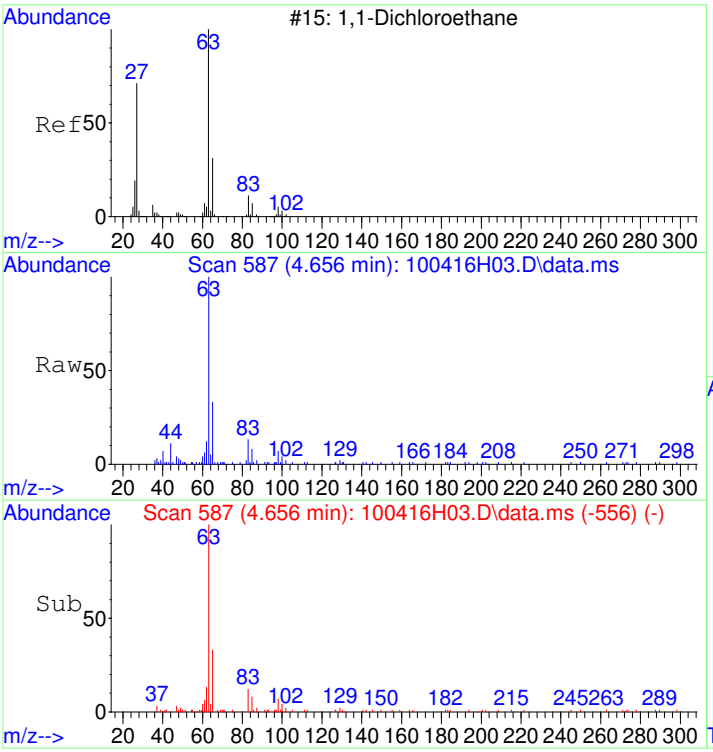


#5
trans-1,2-Dichloroethene
Concen: 0.61 ug/L
RT: 3.987 min Scan# 477
Delta R.T. 0.002 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 96 Resp: 182130

Ion	Ratio	Lower	Upper
96	100		
61	101.6	96.6	136.6
98	62.8	42.5	82.5

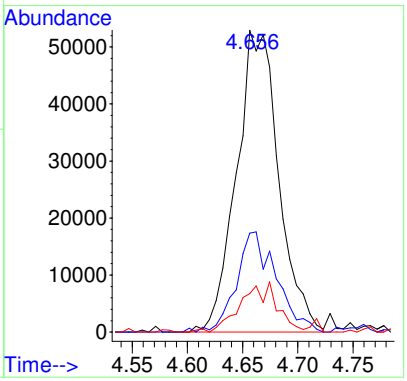


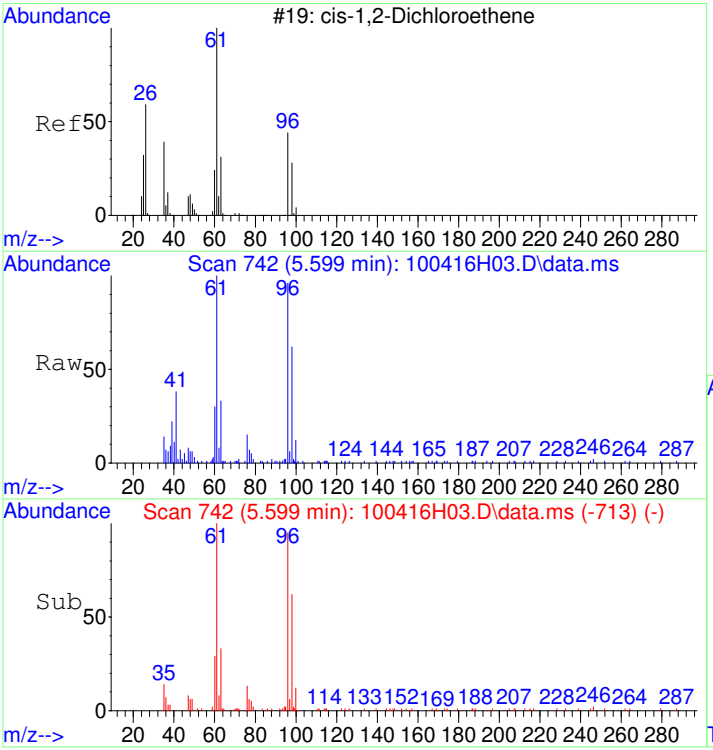


#6
1,1-Dichloroethane
Concen: 0.38 ug/L
RT: 4.656 min Scan# 587
Delta R.T. -0.010 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 63 Resp: 141396

Ion	Ratio	Lower	Upper
63	100		
65	31.5	11.6	51.6
83	14.3	0.0	33.0

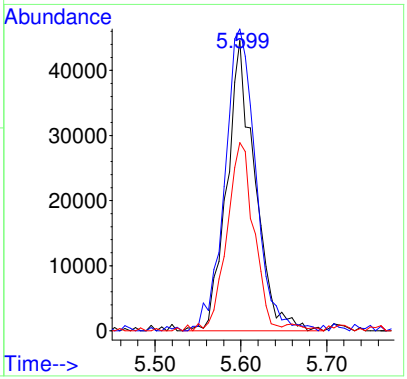


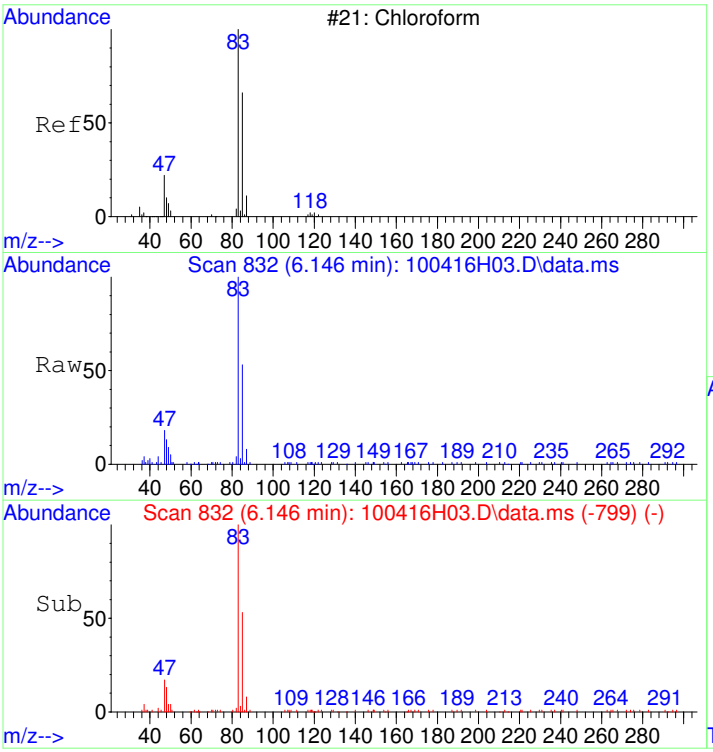


#7
cis-1,2-Dichloroethene
Concen: 0.38 ug/L
RT: 5.599 min Scan# 742
Delta R.T. 0.002 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 96 Resp: 101422

Ion	Ratio	Lower	Upper
96	100		
61	114.4	93.2	133.2
98	62.2	43.0	83.0

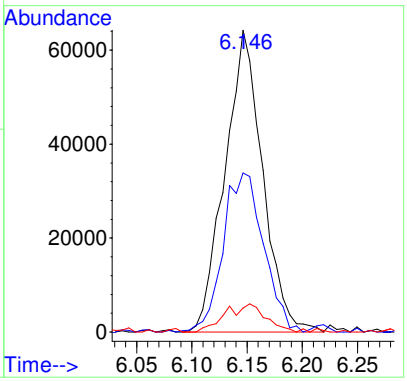


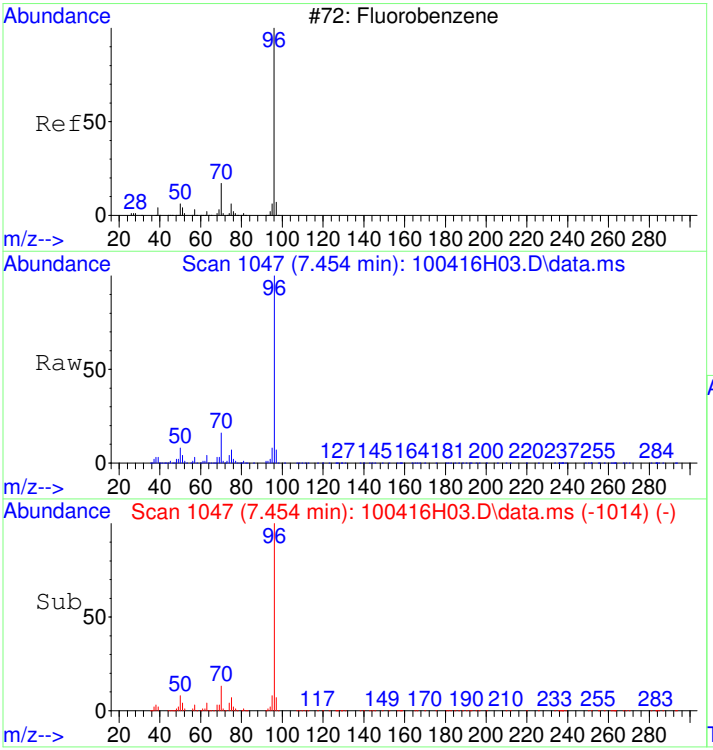


#8
Chloroform
Concen: 0.40 ug/L
RT: 6.146 min Scan# 832
Delta R.T. 0.002 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 83 Resp: 152703

Ion	Ratio	Lower	Upper
83	100		
85	56.5	44.9	84.9
87	10.0	0.0	30.4

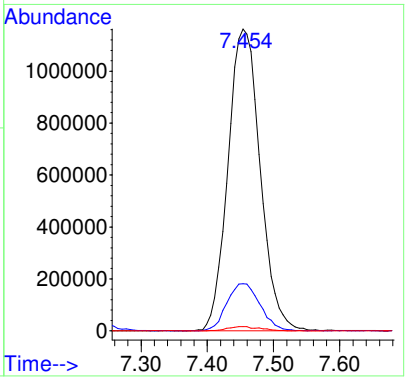


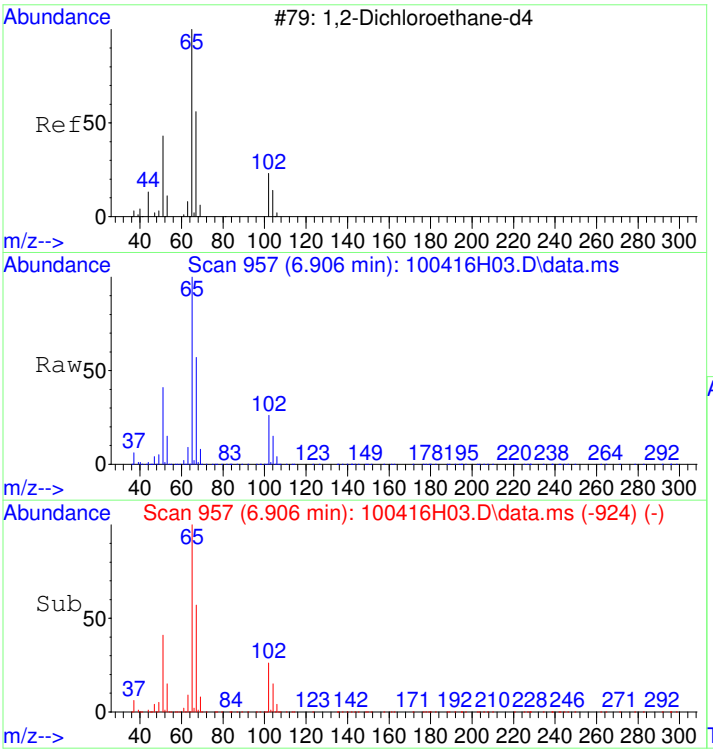


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.454 min Scan# 1047
Delta R.T. 0.002 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 96 Resp: 3927177

Ion	Ratio	Lower	Upper
96	100		
70	16.2	0.0	37.2
77	1.5	0.0	21.5

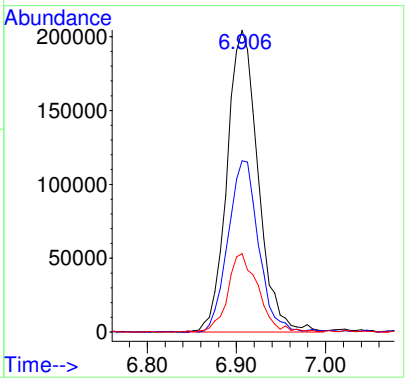


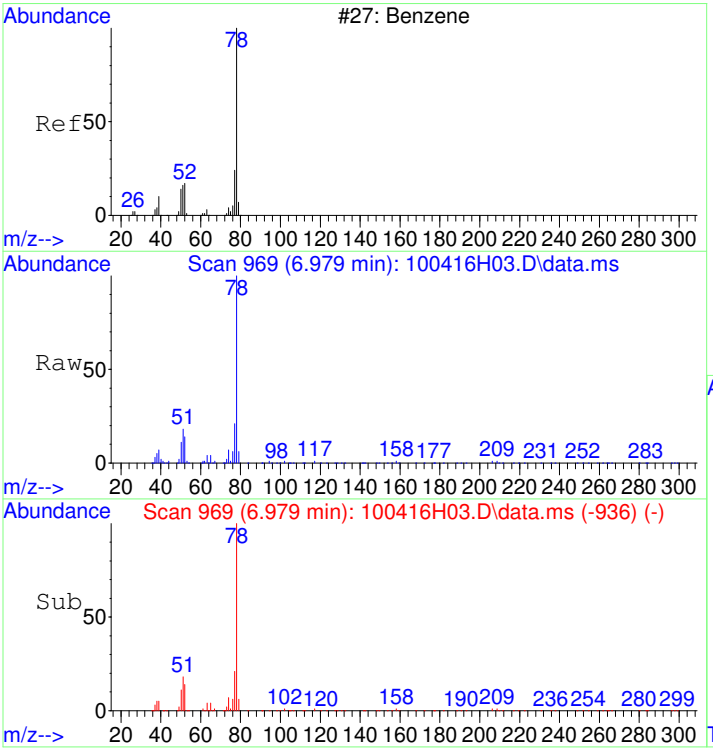


#10
1,2-Dichloroethane-d4
Concen: 5.00 ug/L
RT: 6.906 min Scan# 957
Delta R.T. 0.002 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 65 Resp: 494704

Ion	Ratio	Lower	Upper
65	100		
67	55.4	34.8	74.8
102	25.5	4.5	44.5

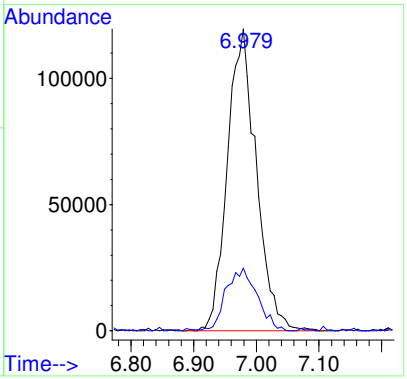


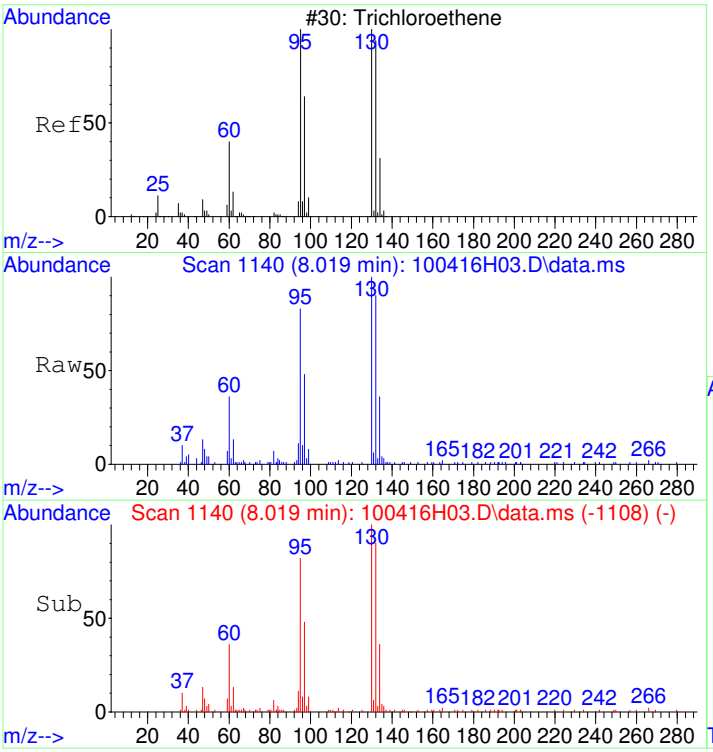


#11
Benzene
Concen: 0.46 ug/L
RT: 6.979 min Scan# 969
Delta R.T. 0.002 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 78 Resp: 383938

Ion	Ratio	Lower	Upper
78	100		
77	22.2	3.3	43.3

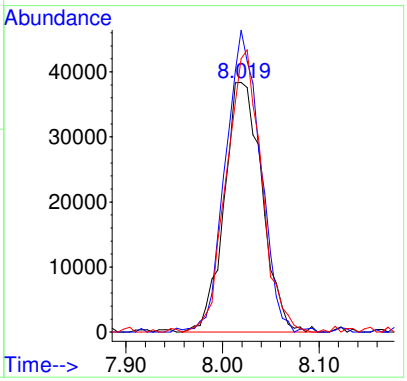


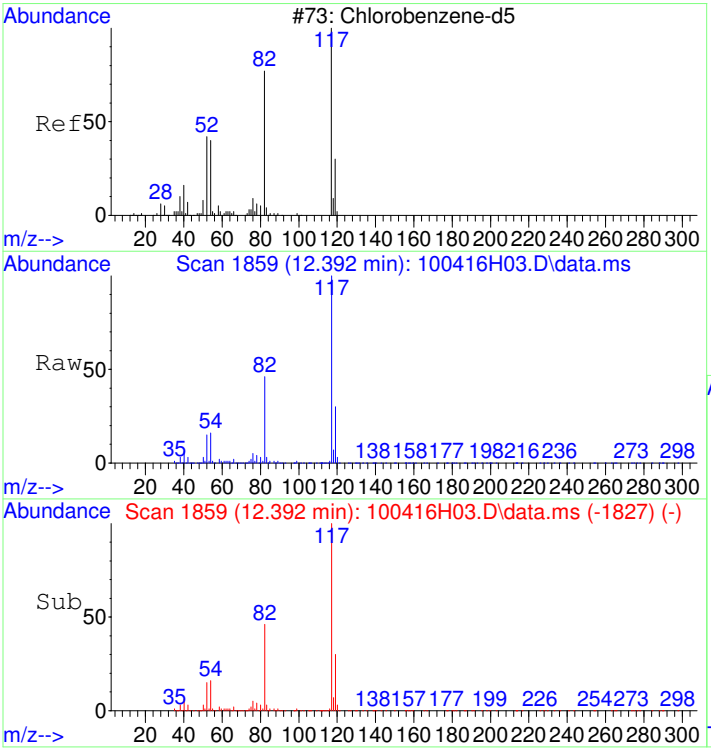


#12
Trichloroethene
Concen: 0.49 ug/L
RT: 8.019 min Scan# 1140
Delta R.T. -0.004 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 95 Resp: 104759

Ion	Ratio	Lower	Upper
95	100		
130	111.4	91.9	131.9
132	105.0	87.3	127.3

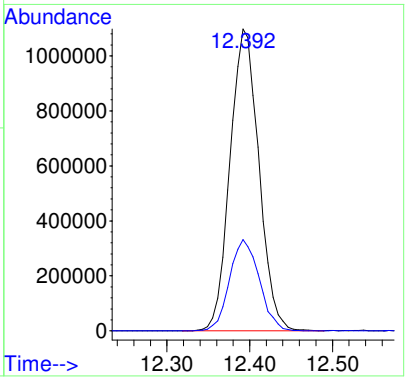


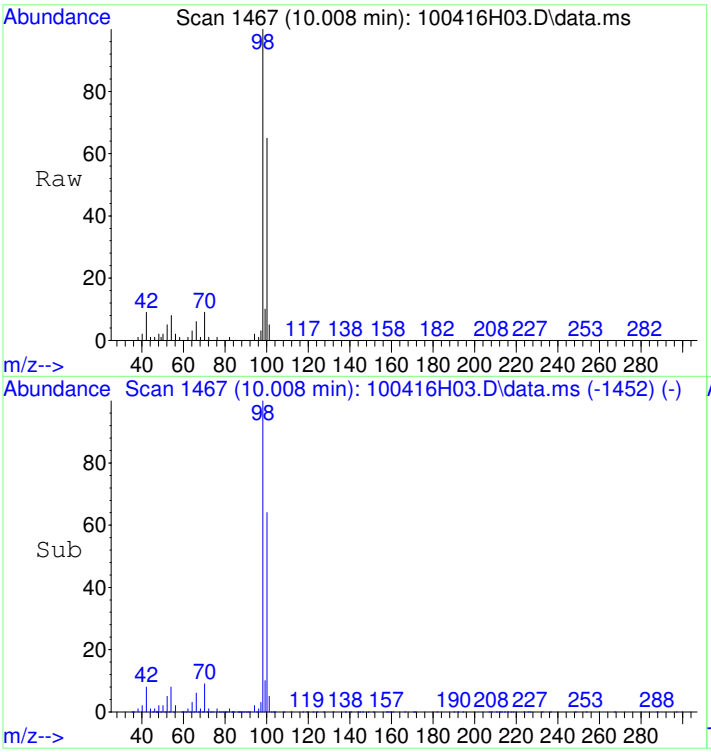


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.392 min Scan# 1859
Delta R.T. -0.004 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion:117 Resp: 2657076

Ion	Ratio	Lower	Upper
117	100		
119	31.1	11.7	51.7

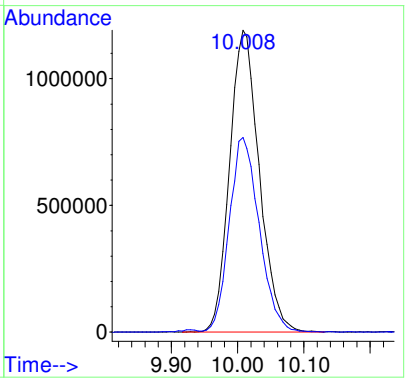


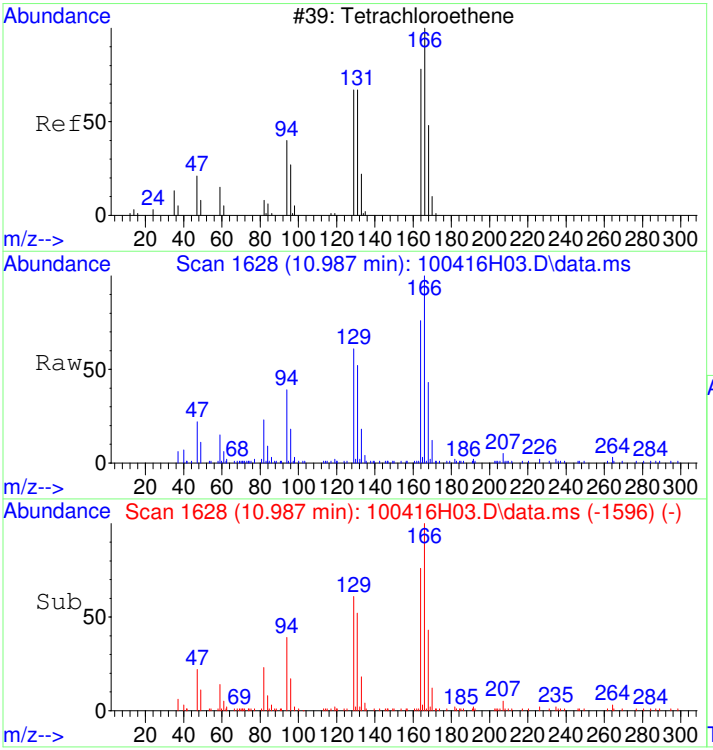


#14
Toluene-d8
Concen: 5.01 ug/L
RT: 10.008 min Scan# 1467
Delta R.T. 0.002 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 98 Resp: 3714951

Ion	Ratio	Lower	Upper
98	100		
100	65.0	45.5	85.5

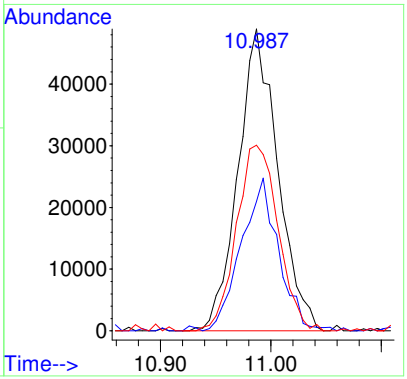


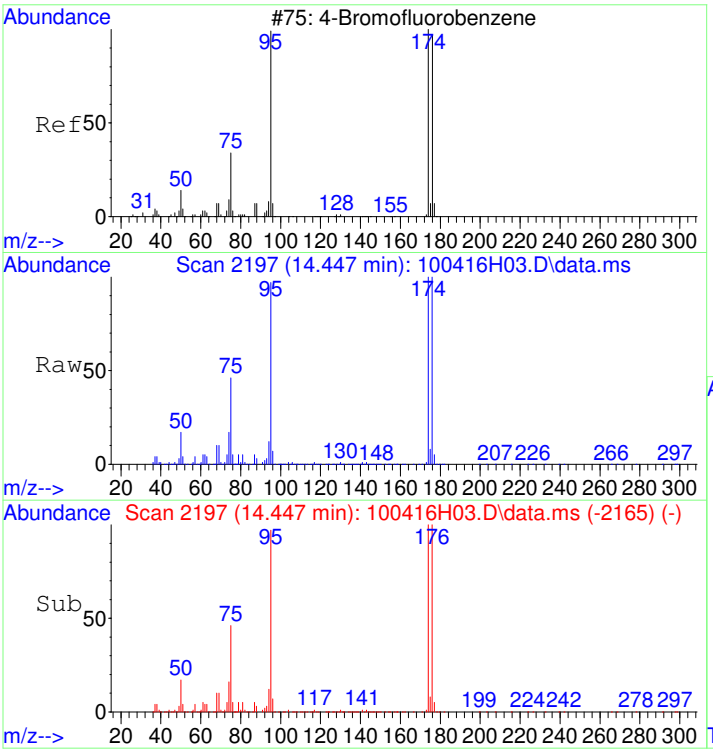


#15
Tetrachloroethene
Concen: 0.48 ug/L
RT: 10.987 min Scan# 1628
Delta R.T. -0.004 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion:166 Resp: 123011

Ion	Ratio	Lower	Upper
166	100		
168	47.6	28.2	68.2
129	64.2	47.2	87.2

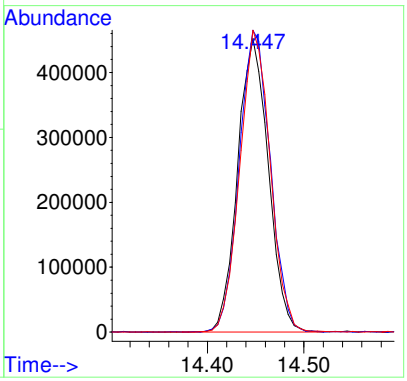


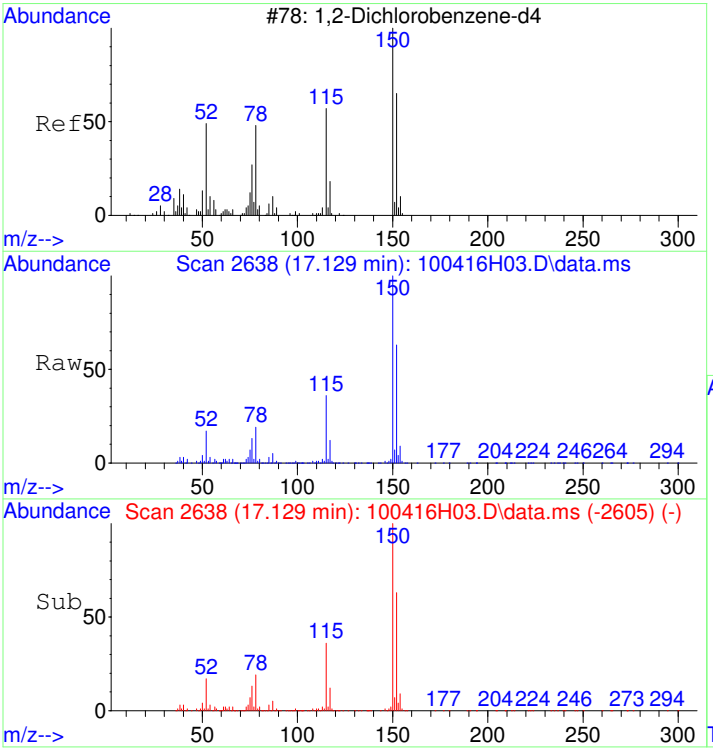


#16
4-Bromofluorobenzene
Concen: 4.58 ug/L
RT: 14.447 min Scan# 2197
Delta R.T. -0.004 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion: 95 Resp: 1001077

Ion	Ratio	Lower	Upper
95	100		
174	104.1	76.4	116.4
176	101.7	72.3	112.3

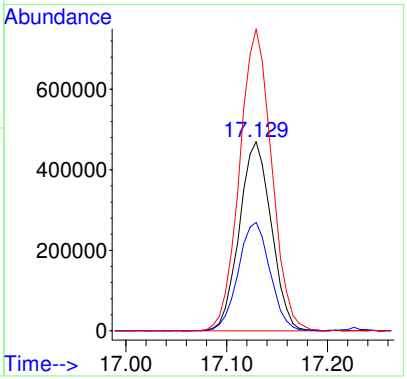




#17
1,2-Dichlorobenzene-d4
Concen: 4.69 ug/L
RT: 17.129 min Scan# 2638
Delta R.T. 0.002 min
Lab File: 100416H03.D
Acq: 4 Oct 2016 3:55 pm

Tgt Ion:152 Resp: 1033926

Ion	Ratio	Lower	Upper
152	100		
115	57.2	36.6	76.6
150	160.7	153.3	193.3



S16J003-CAL2

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H04.D
Sample : S16J003-CAL2
Instrument: HP5973H
Acq On : 4 Oct 2016 4:30 pm
Operator : EM
Misc : 1ug/L, WATER
ALS Vial : 32
Multiplier: 1

Quant Time: Oct 05 11:18:56 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:18:45 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.557	53	381376	5.000 ug/L	0.00
9) Fluorobenzene	7.449	96	3830628	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2538037	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.901	65	484185	4.932 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 98.60%	
14) Toluene-d8	10.009	98	3607459	5.030 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.60%	
16) 4-Bromofluorobenzene	14.448	95	971659	4.945 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 98.80%	
17) 1,2-Dichlorobenzene-d4	17.130	152	1009996	4.771 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 95.40%	

Target Compounds					Qvalue
2) Vinyl chloride	1.659	62	304722	0.982 ug/L	99
3) 1,1-Dichloroethene	2.924	96	320093	0.975 ug/L	96
4) 1,1,2-Trichloro-1,2,2-...	2.949	101	322950	0.995 ug/L	97
5) trans-1,2-Dichloroethene	3.982	96	365996	0.944 ug/L	98
6) 1,1-Dichloroethane	4.664	63	260112	0.879 ug/L	95
7) cis-1,2-Dichloroethene	5.594	96	204245	0.935 ug/L	96
8) Chloroform	6.147	83	292451	0.926 ug/L	98
11) Benzene	6.968	78	746576	0.935 ug/L	97
12) Trichloroethene	8.027	95	193292	0.923 ug/L	94
15) Tetrachloroethene	10.988	166	245814	0.981 ug/L	97

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H04.D
Sample : S16J003-CAL2
Instrument: HP5973H
Acq On : 4 Oct 2016 4:30 pm
Operator : EM
Misc : 1ug/L, WATER
ALS Vial : 32
Multiplier: 1

Quant Time: Oct 05 11:18:56 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:18:45 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

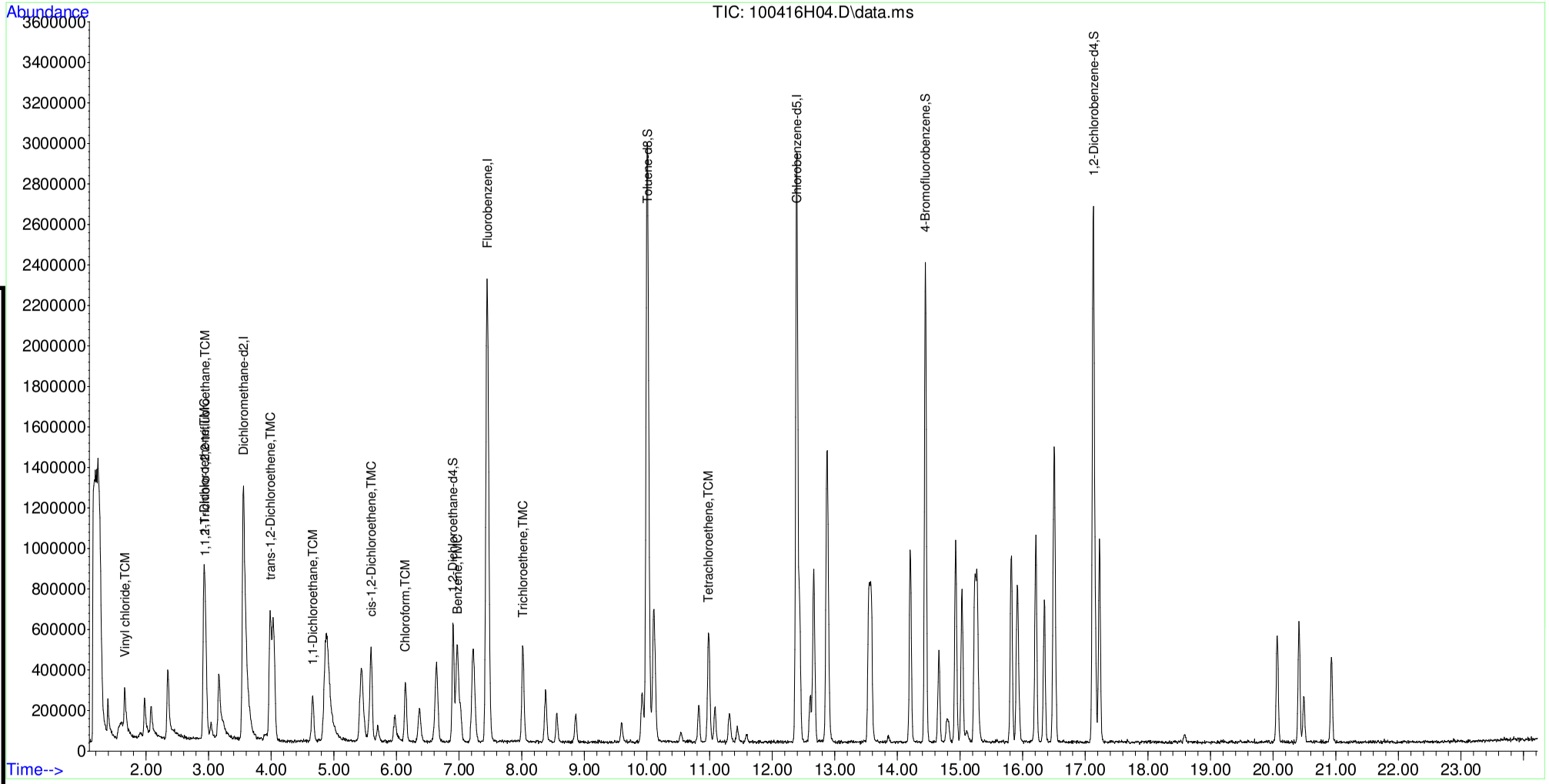


Table of Contents

S16J003-CAL3

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H05.D
Sample : S16J003-CAL3
Instrument: HP5973H
Acq On : 4 Oct 2016 5:06 pm
Operator : EM
Misc : 2ug/L, WATER
ALS Vial : 33
Multiplier: 1

Quant Time: Oct 05 11:19:14 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:19:04 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	386999	5.000 ug/L	0.00
9) Fluorobenzene	7.455	96	3913261	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2564413	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.908	65	499388	4.979 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 99.60%	
14) Toluene-d8	10.009	98	3689999	5.092 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 101.80%	
16) 4-Bromofluorobenzene	14.449	95	987575	4.974 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 99.40%	
17) 1,2-Dichlorobenzene-d4	17.130	152	1073533	5.019 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.40%	

Target Compounds					Qvalue
2) Vinyl chloride	1.659	62	630168	2.001 ug/L	99
3) 1,1-Dichloroethene	2.924	96	641692	1.927 ug/L	99
4) 1,1,2-Trichloro-1,2,2-...	2.949	101	644617	1.957 ug/L	99
5) trans-1,2-Dichloroethene	3.983	96	767526	1.951 ug/L	99
6) 1,1-Dichloroethane	4.658	63	579680	1.930 ug/L	98
7) cis-1,2-Dichloroethene	5.600	96	409345	1.846 ug/L	98
8) Chloroform	6.147	83	603161	1.882 ug/L	99
11) Benzene	6.975	78	1578034	1.934 ug/L	100
12) Trichloroethene	8.014	95	421273	1.968 ug/L	97
15) Tetrachloroethene	10.988	166	501320	1.979 ug/L	99

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H05.D
Sample : S16J003-CAL3
Instrument: HP5973H
Acq On : 4 Oct 2016 5:06 pm
Operator : EM
Misc : 2ug/L, WATER
ALS Vial : 33
Multiplier: 1

Quant Time: Oct 05 11:19:14 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:19:04 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

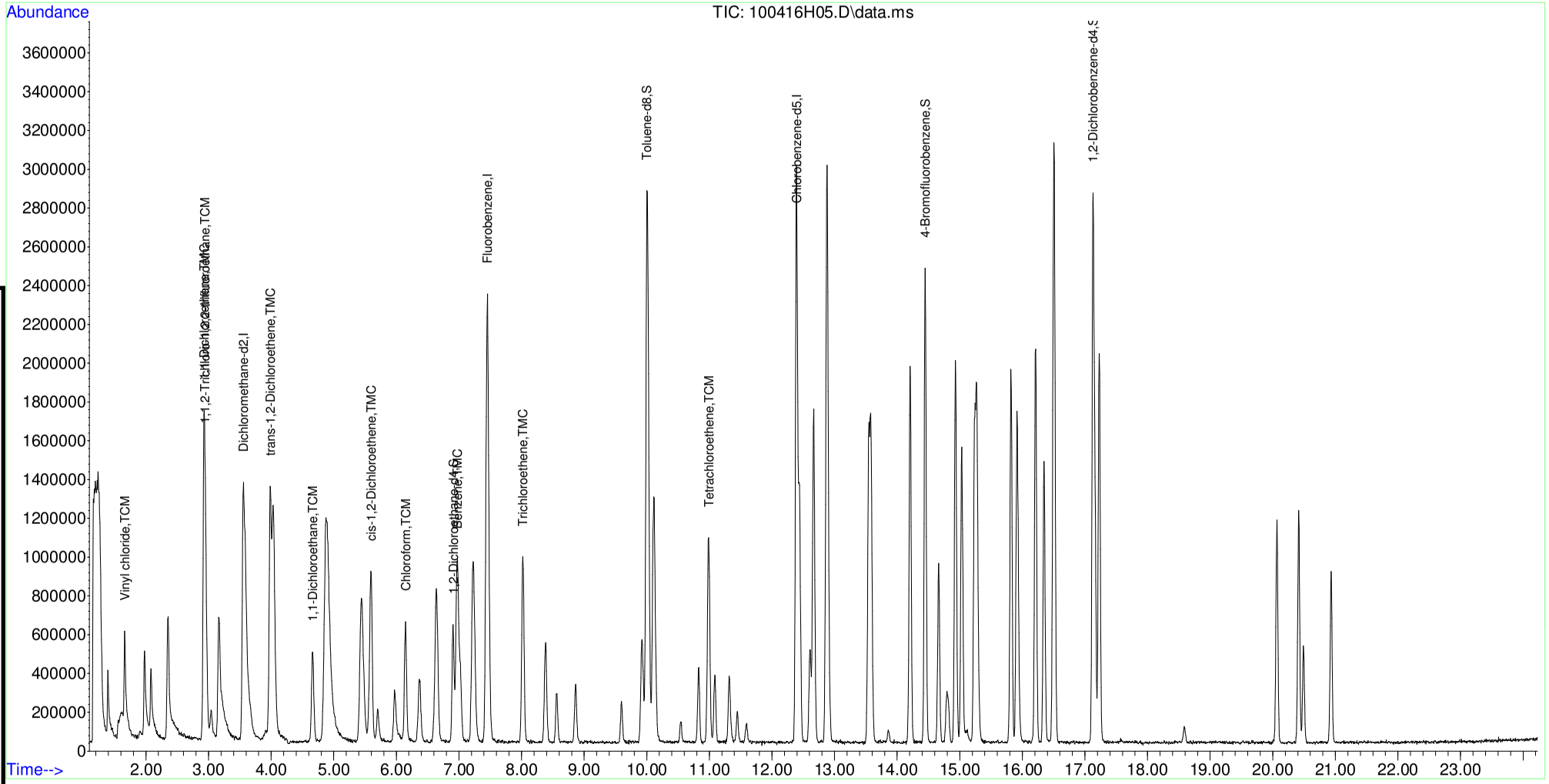


Table of Contents

S16J003-CAL4

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H06.D
Sample : S16J003-CAL4
Instrument: HP5973H
Acq On : 4 Oct 2016 5:42 pm
Operator : EM
Misc : 5ug/L, WATER
ALS Vial : 34
Multiplier: 1

Quant Time: Oct 05 11:19:33 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:19:22 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.550	53	381446	5.000 ug/L	0.00
9) Fluorobenzene	7.454	96	3760142	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.392	117	2603261	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.906	65	522896	5.426 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 108.60%	
14) Toluene-d8	10.008	98	3660154	4.975 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.60%	
16) 4-Bromofluorobenzene	14.447	95	1036996	5.145 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 103.00%	
17) 1,2-Dichlorobenzene-d4	17.129	152	1105777	5.093 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 101.80%	
Target Compounds					Qvalue
2) Vinyl chloride	1.658	62	1606385	5.176 ug/L	100
3) 1,1-Dichloroethene	2.923	96	1660479	5.058 ug/L	100
4) 1,1,2-Trichloro-1,2,2-...	2.947	101	1628549	5.015 ug/L	100
5) trans-1,2-Dichloroethene	3.987	96	1977299	5.099 ug/L	100
6) 1,1-Dichloroethane	4.662	63	1495281	5.052 ug/L	100
7) cis-1,2-Dichloroethene	5.599	96	1073809	4.913 ug/L	100
8) Chloroform	6.146	83	1586826	5.024 ug/L	100
11) Benzene	6.973	78	3993556	5.094 ug/L	100
12) Trichloroethene	8.025	95	1045879	5.086 ug/L	100
15) Tetrachloroethene	10.987	166	1253509	4.876 ug/L	100

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H06.D
Sample : S16J003-CAL4
Instrument: HP5973H
Acq On : 4 Oct 2016 5:42 pm
Operator : EM
Misc : 5ug/L, WATER
ALS Vial : 34
Multiplier: 1

Quant Time: Oct 05 11:19:33 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:19:22 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

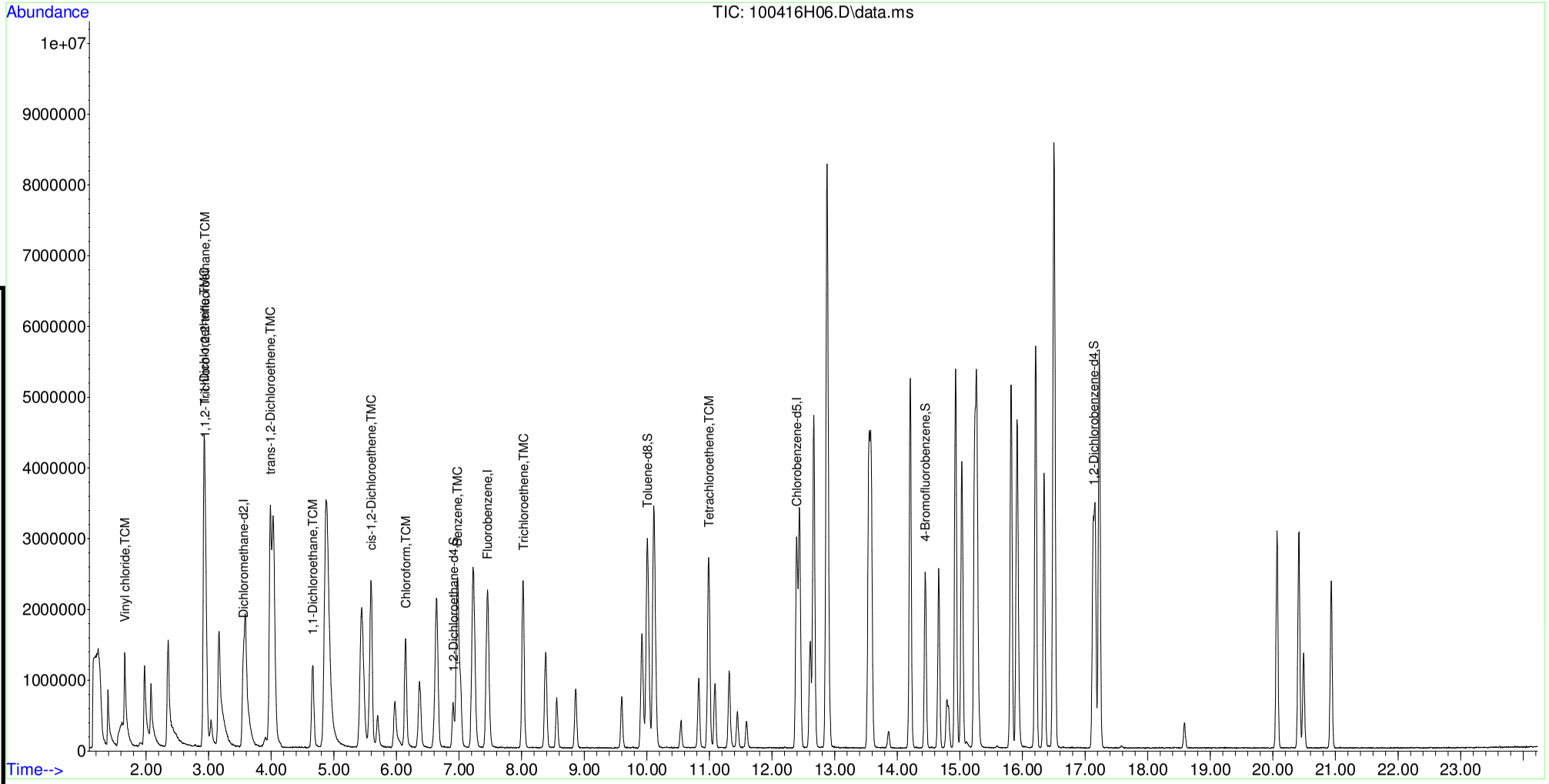
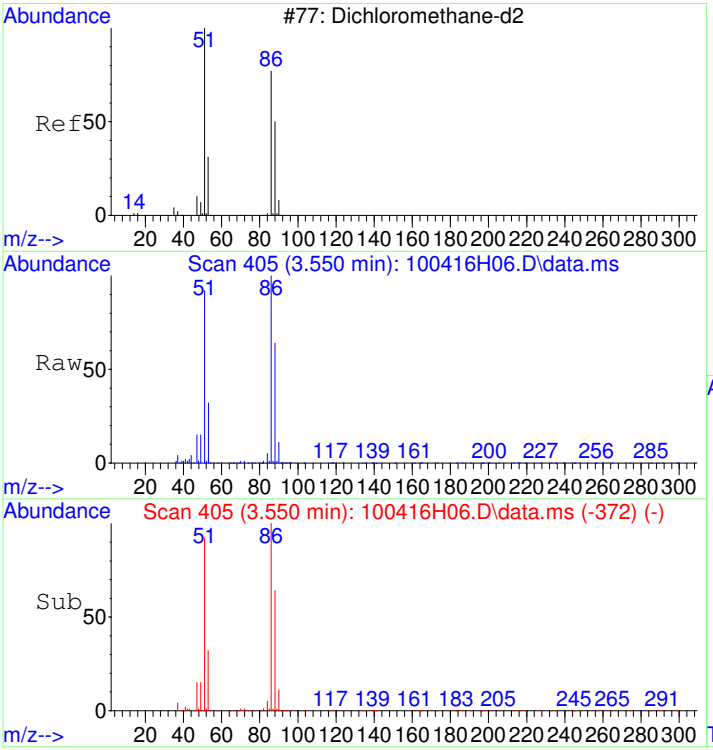


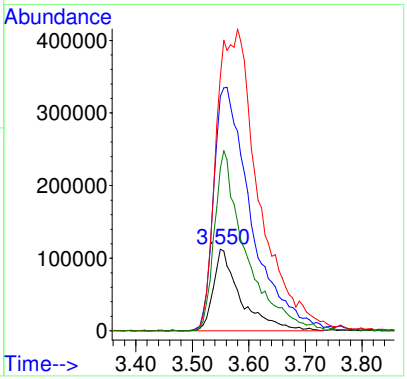
Table of Contents

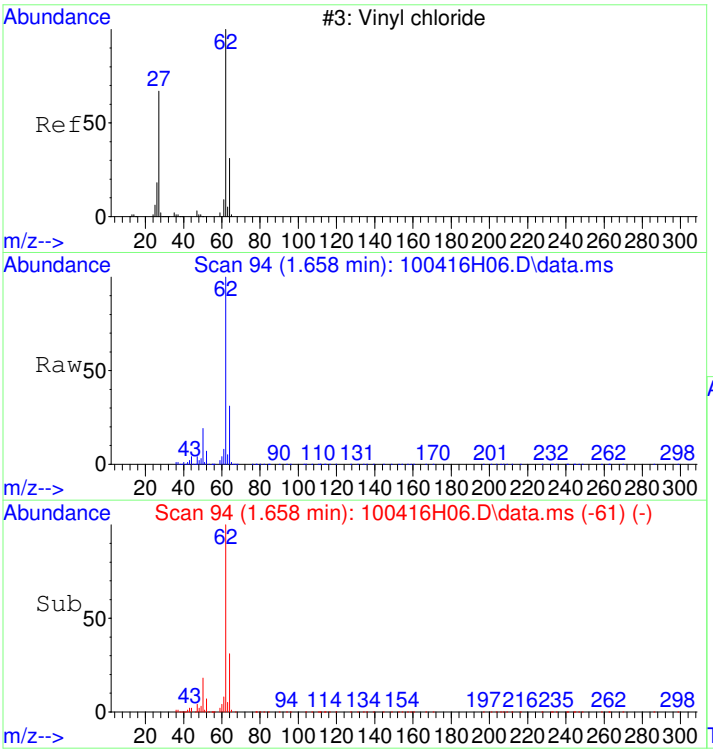


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.550 min Scan# 405
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 53 Resp: 381446

Ion	Ratio	Lower	Upper
53	100		
51	406.4	386.4	426.4
86	0.0	0.0	20.0
88	251.2	231.2	271.2

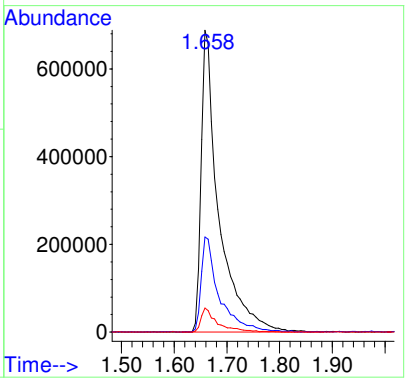


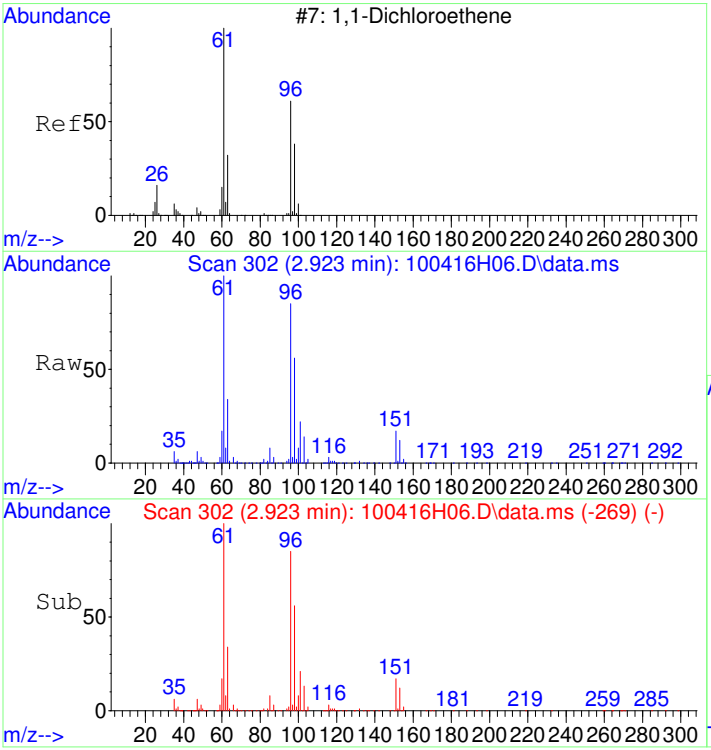


#2
Vinyl chloride
Concen: 5.18 ug/L
RT: 1.658 min Scan# 94
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 62 Resp: 1606385

Ion	Ratio	Lower	Upper
62	100		
64	32.2	12.2	52.2
61	7.5	0.0	27.5

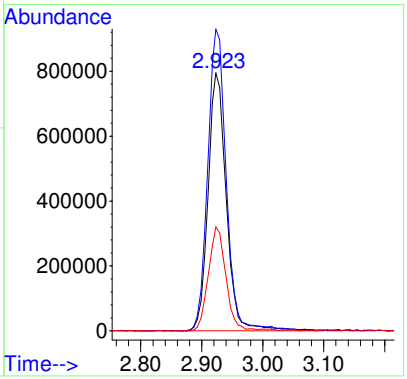


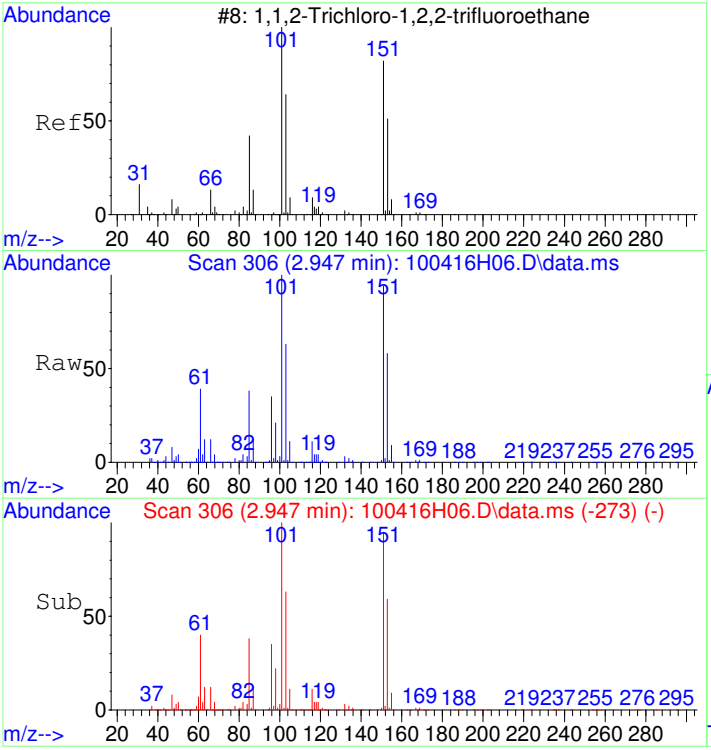


#3
1,1-Dichloroethene
Concen: 5.06 ug/L
RT: 2.923 min Scan# 302
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 96 Resp: 1660479

Ion	Ratio	Lower	Upper
96	100		
61	118.7	98.7	138.7
63	38.6	18.6	58.6

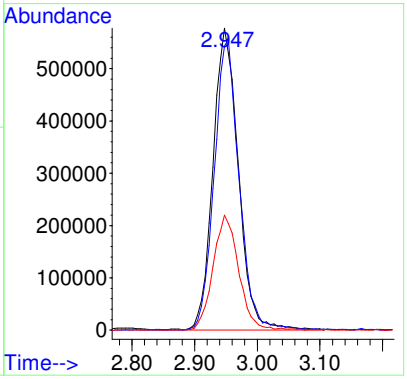


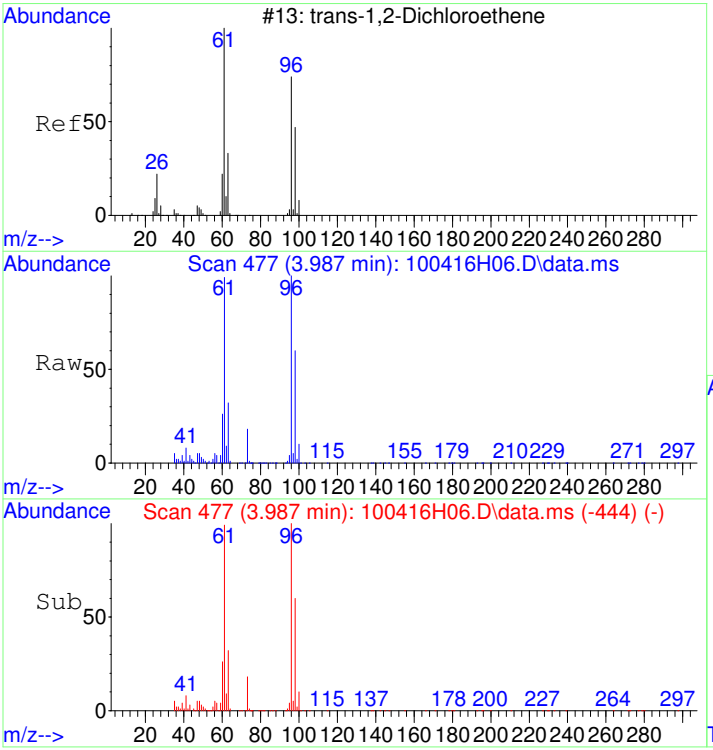


#4
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 5.02 ug/L
RT: 2.947 min Scan# 306
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion:101 Resp: 1628549

Ion	Ratio	Lower	Upper
101	100		
151	94.7	74.7	114.7
85	38.5	18.5	58.5

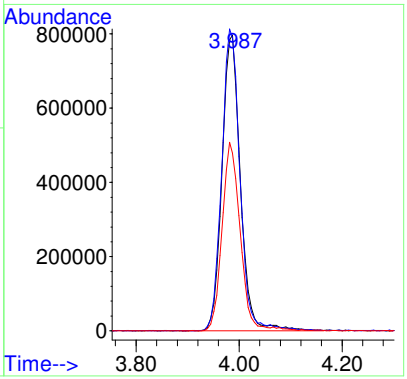


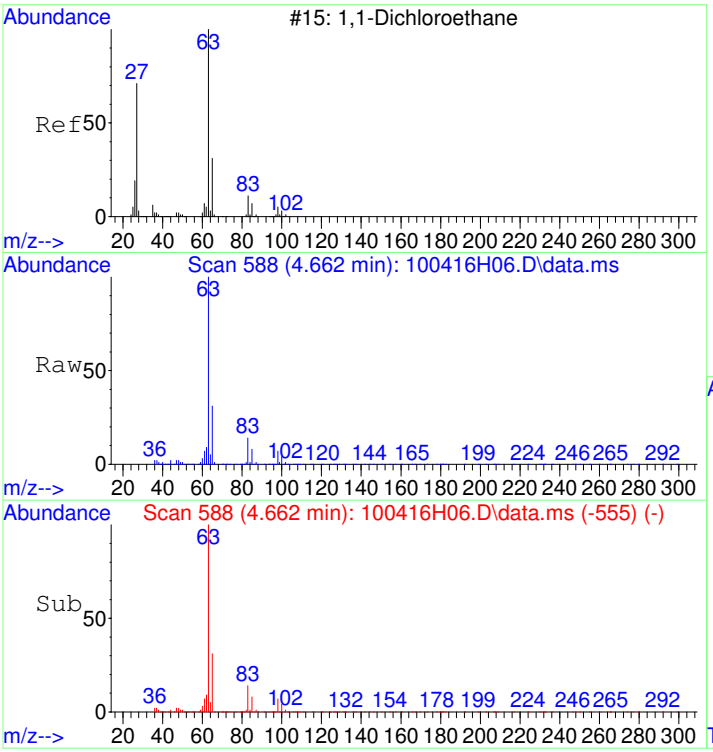


#5
trans-1,2-Dichloroethene
Concen: 5.10 ug/L
RT: 3.987 min Scan# 477
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 96 Resp: 1977299

Ion	Ratio	Lower	Upper
96	100		
61	101.6	81.6	121.6
98	61.8	41.8	81.8

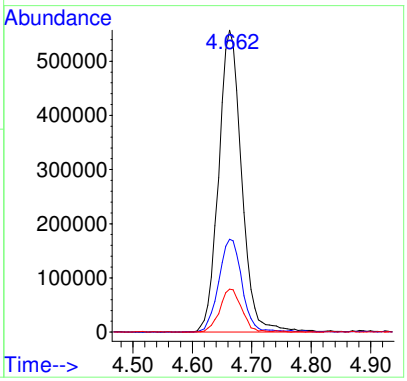


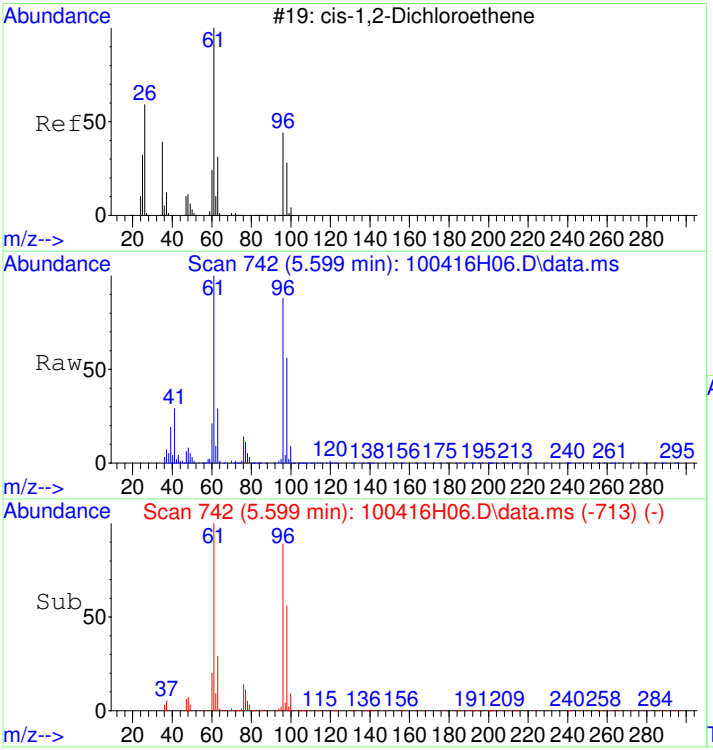


#6
1,1-Dichloroethane
Concen: 5.05 ug/L
RT: 4.662 min Scan# 588
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 63 Resp: 1495281

Ion	Ratio	Lower	Upper
63	100		
65	31.1	11.1	51.1
83	13.6	0.0	33.6

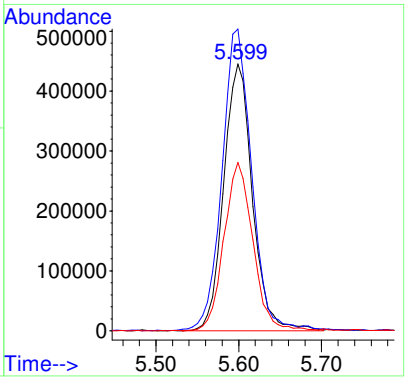


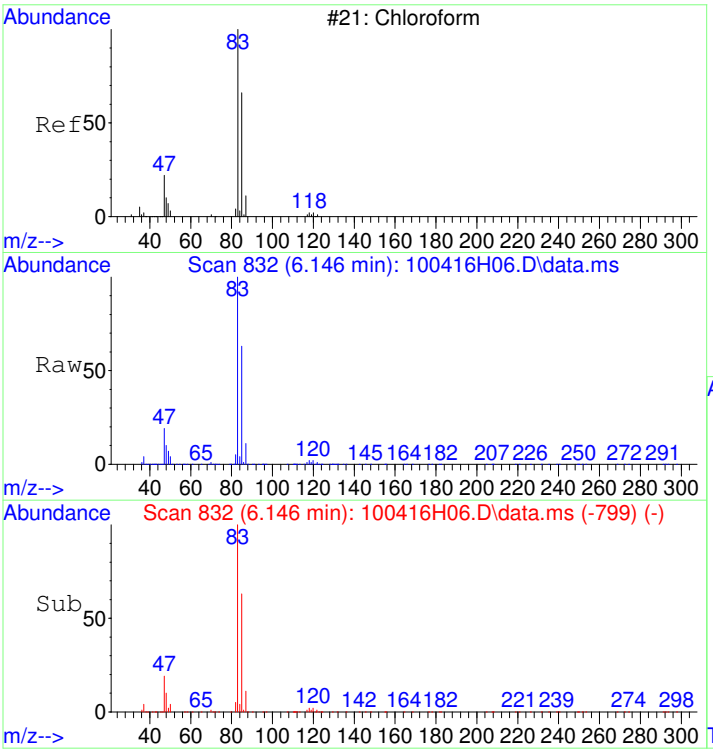


#7
cis-1,2-Dichloroethene
Concen: 4.91 ug/L
RT: 5.599 min Scan# 742
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 96 Resp: 1073809

Ion	Ratio	Lower	Upper
96	100		
61	117.5	97.5	137.5
98	63.4	43.4	83.4

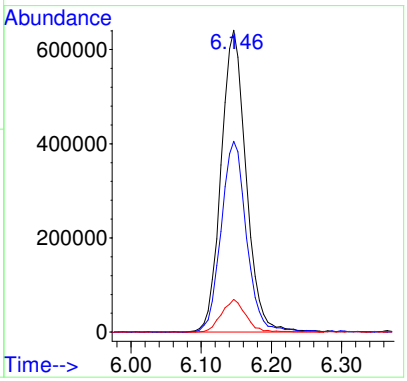


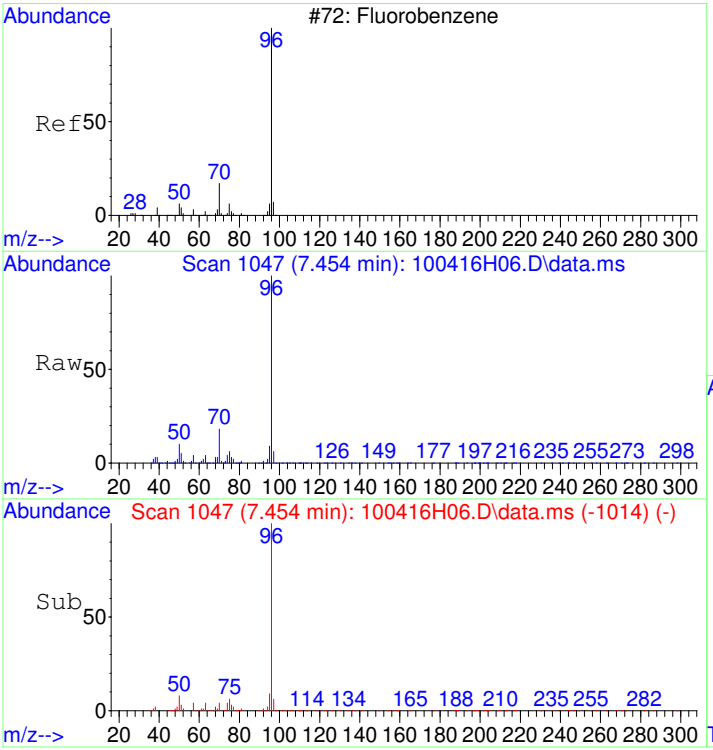


#8
Chloroform
Concen: 5.02 ug/L
RT: 6.146 min Scan# 832
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 83 Resp: 1586826

Ion	Ratio	Lower	Upper
83	100		
85	63.8	43.8	83.8
87	10.6	0.0	30.6

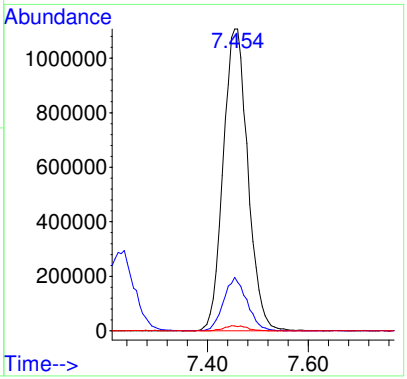


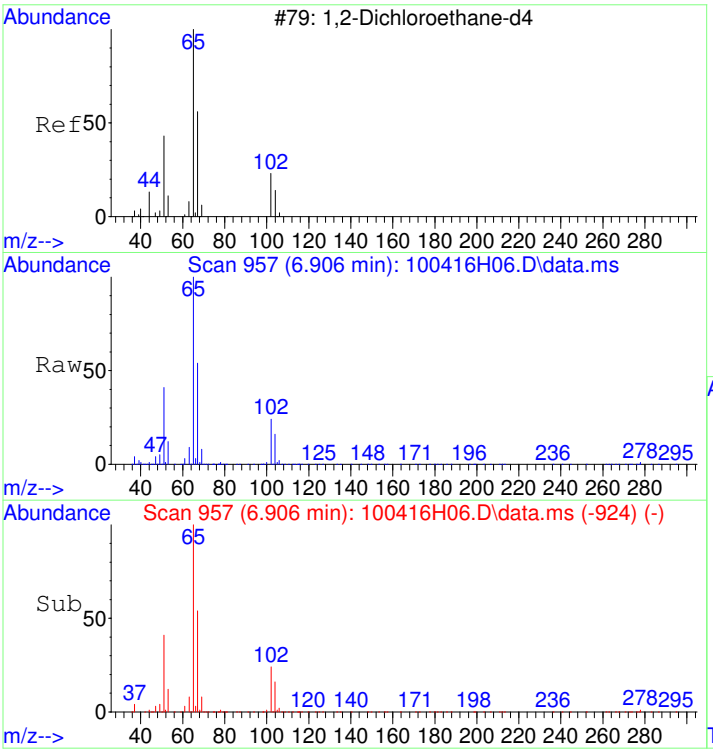


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.454 min Scan# 1047
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 96 Resp: 3760142

Ion	Ratio	Lower	Upper
96	100		
70	16.7	0.0	36.7
77	1.6	0.0	21.6

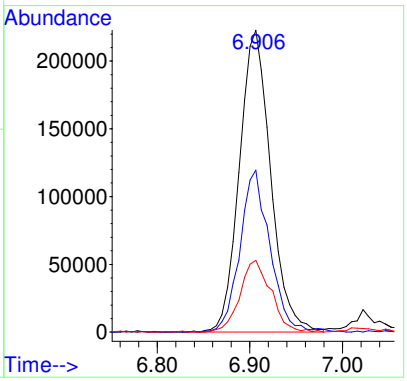


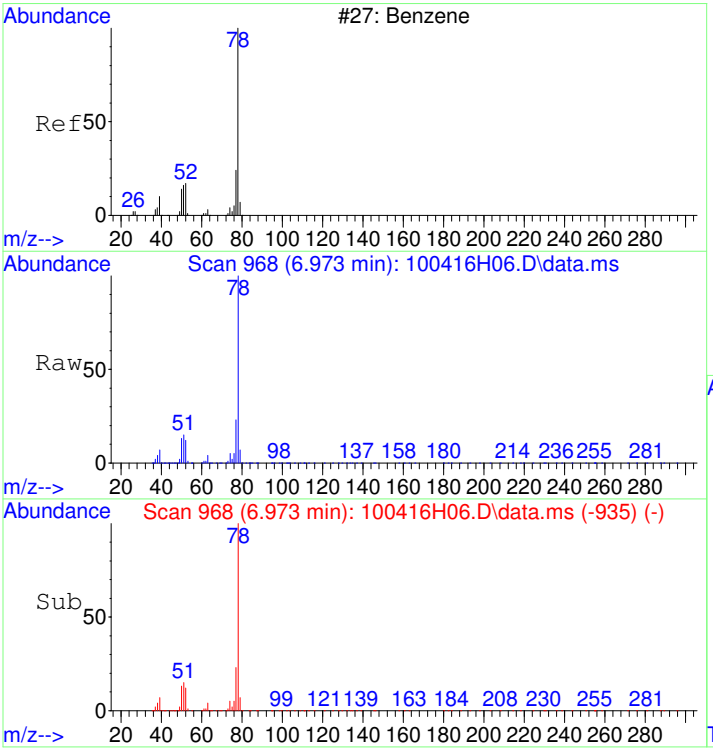


#10
1,2-Dichloroethane-d4
Concen: 5.43 ug/L
RT: 6.906 min Scan# 957
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 65 Resp: 522896

Ion	Ratio	Lower	Upper
65	100		
67	51.1	31.1	71.1
102	23.7	3.7	43.7

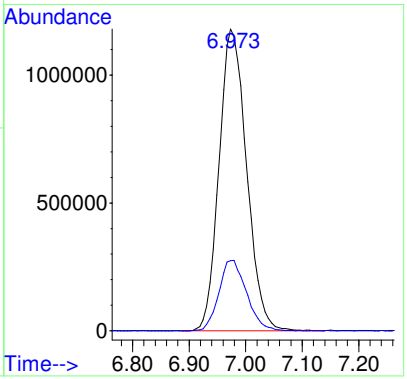


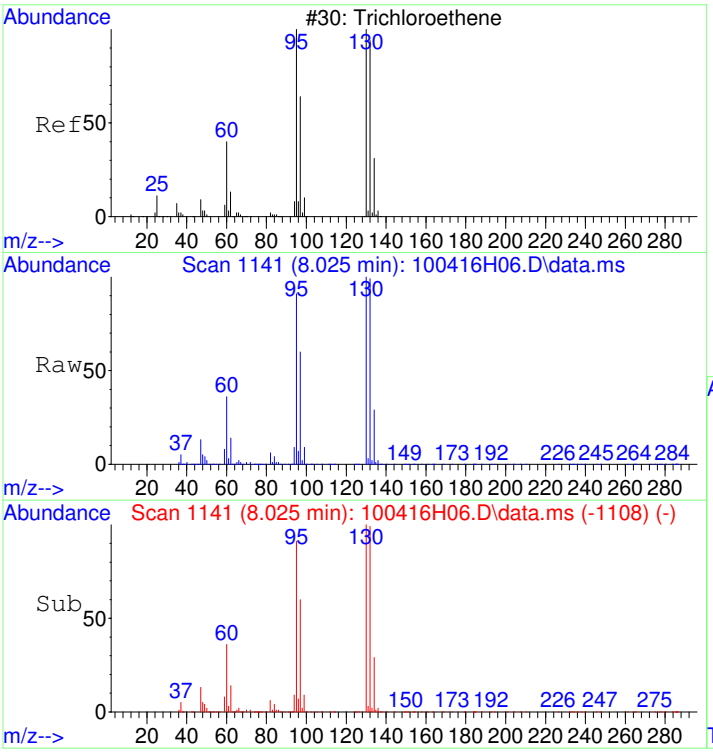


#11
Benzene
Concen: 5.09 ug/L
RT: 6.973 min Scan# 968
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 78 Resp: 3993556

Ion	Ratio	Lower	Upper
78	100		
77	23.5	3.5	43.5

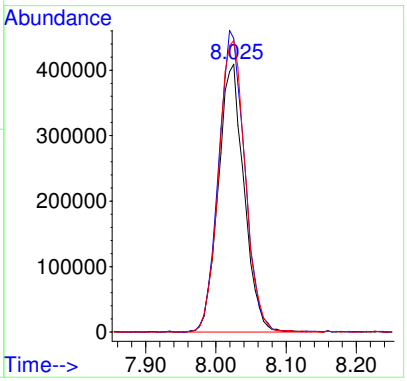


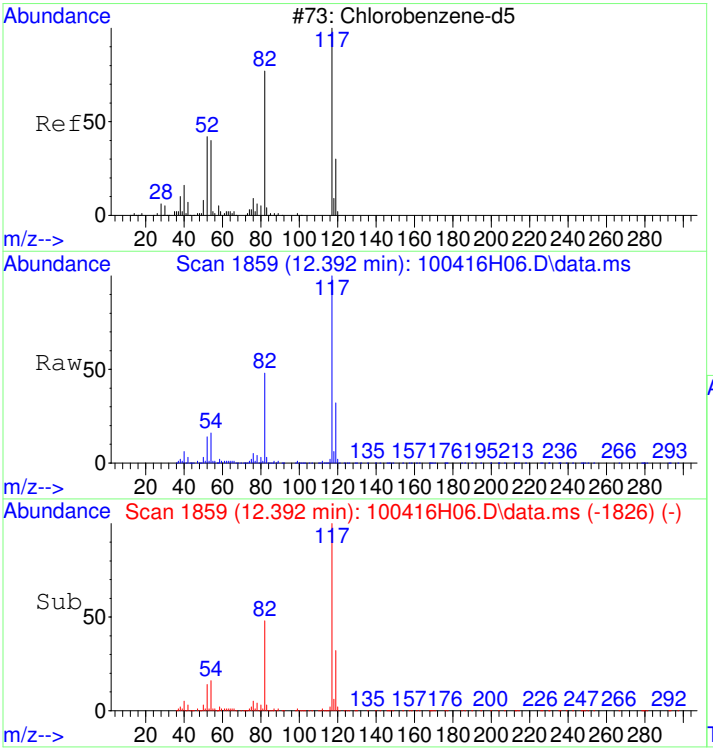


#12
Trichloroethene
Concen: 5.09 ug/L
RT: 8.025 min Scan# 1141
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 95 Resp: 1045879

Ion	Ratio	Lower	Upper
95	100		
130	113.3	93.3	133.3
132	112.5	92.5	132.5

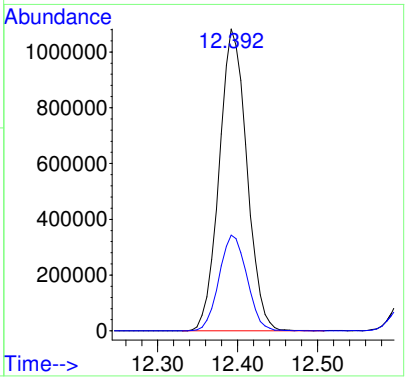


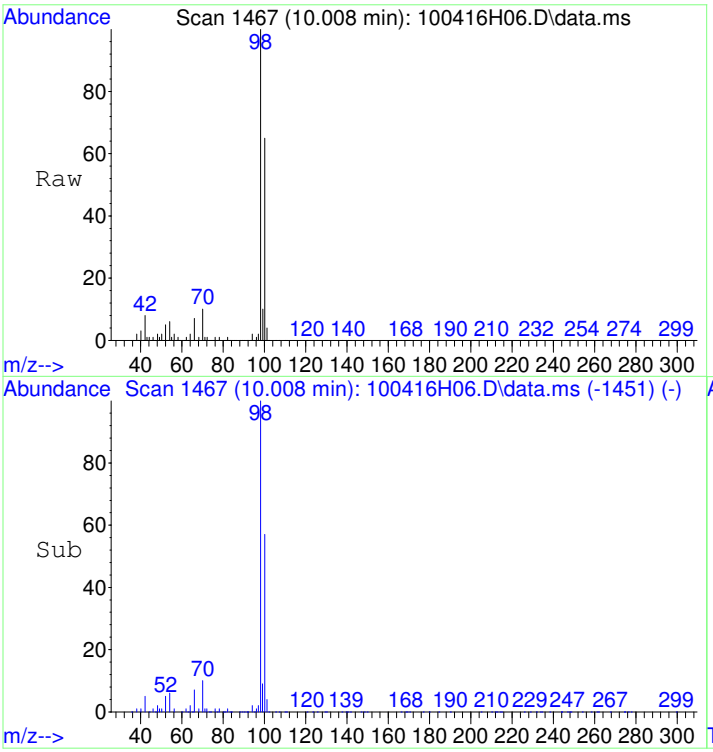


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.392 min Scan# 1859
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion:117 Resp: 2603261

Ion	Ratio	Lower	Upper
117	100		
119	31.9	11.9	51.9

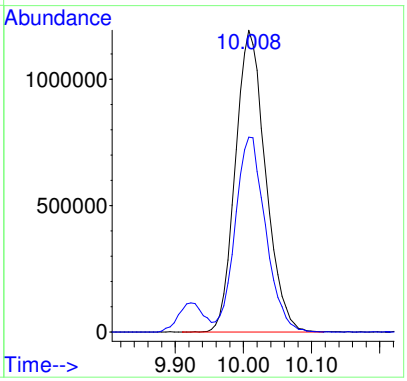


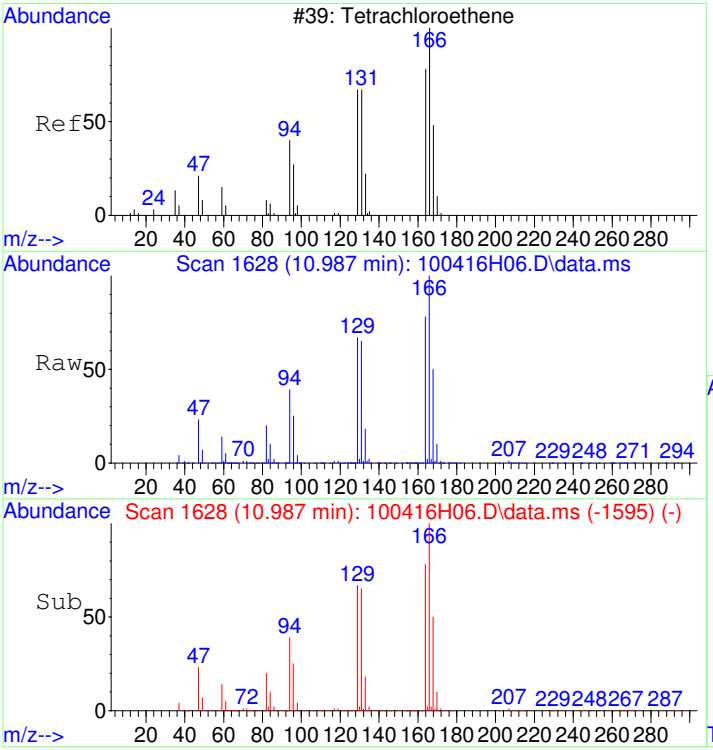


#14
Toluene-d8
Concen: 4.98 ug/L
RT: 10.008 min Scan# 1467
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 98 Resp: 3660154

Ion	Ratio	Lower	Upper
98	100		
100	65.1	45.2	85.2

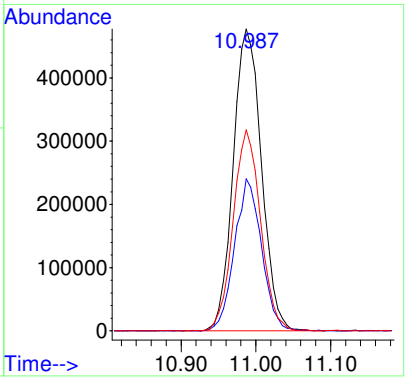


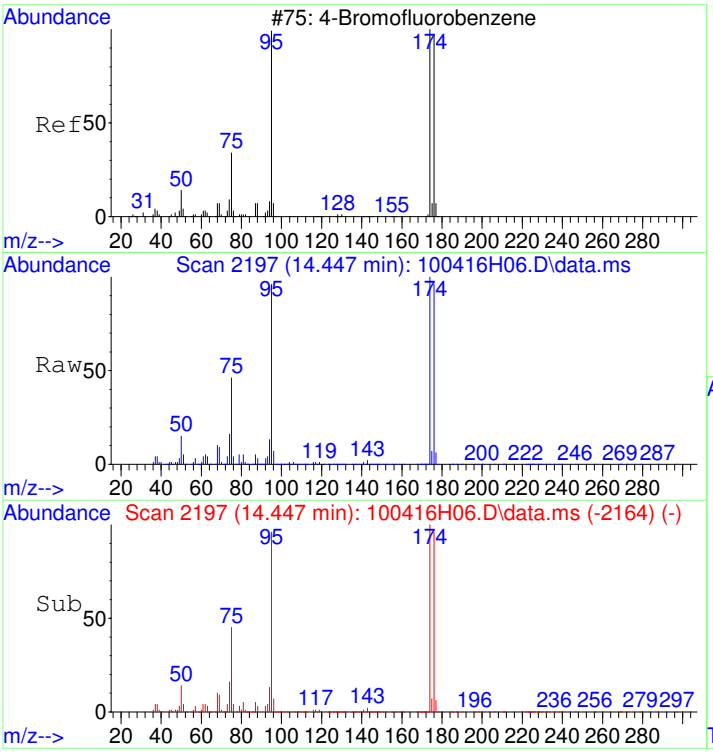


#15
Tetrachloroethene
Concen: 4.88 ug/L
RT: 10.987 min Scan# 1628
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion:166 Resp: 1253509

Ion	Ratio	Lower	Upper
166	100		
168	48.0	28.0	68.0
129	64.6	44.6	84.6

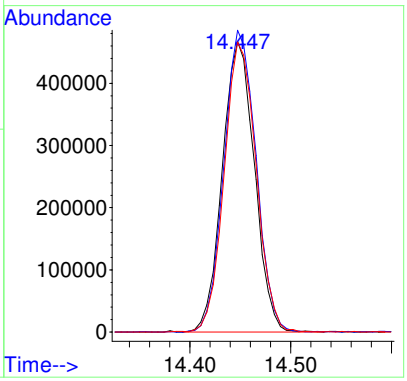


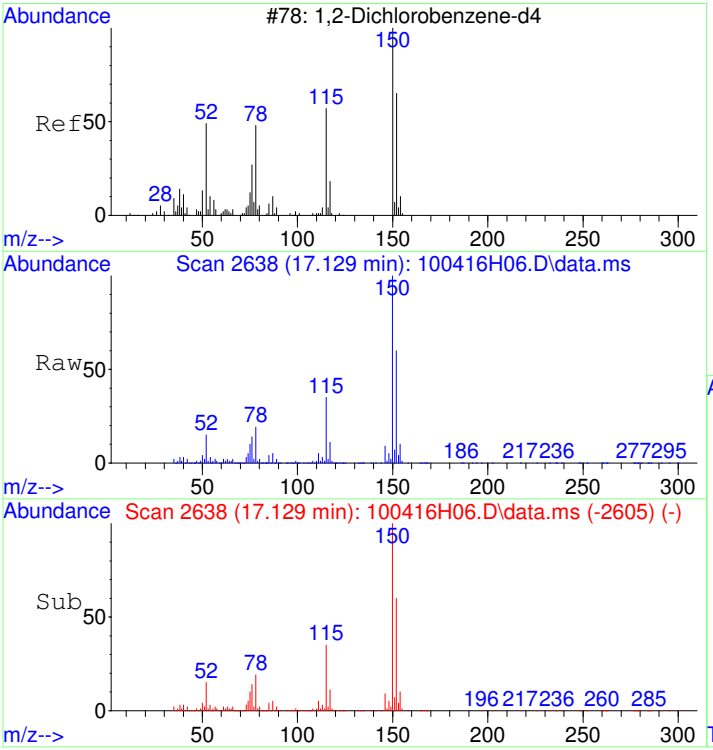


#16
4-Bromofluorobenzene
Concen: 5.15 ug/L
RT: 14.447 min Scan# 2197
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion: 95 Resp: 1036996

Ion	Ratio	Lower	Upper
95	100		
174	104.0	84.0	124.0
176	99.3	79.3	119.3

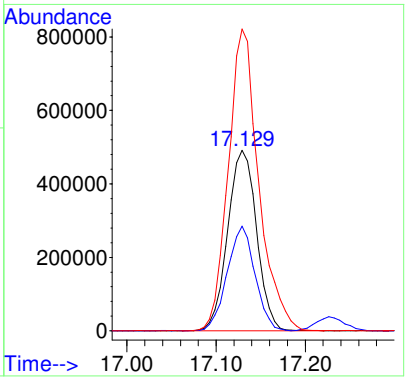




#17
1,2-Dichlorobenzene-d4
Concen: 5.09 ug/L
RT: 17.129 min Scan# 2638
Delta R.T. 0.000 min
Lab File: 100416H06.D
Acq: 4 Oct 2016 5:42 pm

Tgt Ion:152 Resp: 1105777

Ion	Ratio	Lower	Upper
152	100		
115	55.7	35.7	75.7
150	175.7	155.7	195.7



S16J003-CAL5

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H07.D
Sample : S16J003-CAL5
Instrument: HP5973H
Acq On : 4 Oct 2016 6:17 pm
Operator : EM
Misc : 10ug/L, WATER
ALS Vial : 35
Multiplier: 1

Quant Time: Oct 05 11:20:12 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:04 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.557	53	376894	5.000 ug/L	0.00
9) Fluorobenzene	7.449	96	3923369	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2678297	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.901	65	497512	4.948 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 99.00%	
14) Toluene-d8	10.003	98	3793523	5.012 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.20%	
16) 4-Bromofluorobenzene	14.448	95	1042661	5.028 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 100.60%	
17) 1,2-Dichlorobenzene-d4	17.130	152	1140877	5.107 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 102.20%	

Target Compounds					Qvalue
2) Vinyl chloride	1.659	62	3035552	9.899 ug/L	99
3) 1,1-Dichloroethene	2.924	96	3223021	9.937 ug/L	98
4) 1,1,2-Trichloro-1,2,2-...	2.943	101	3037764	9.468 ug/L	98
5) trans-1,2-Dichloroethene	3.982	96	3890399	10.153 ug/L	99
6) 1,1-Dichloroethane	4.657	63	3028203	10.354 ug/L	99
7) cis-1,2-Dichloroethene	5.600	96	2237193	10.360 ug/L	98
8) Chloroform	6.147	83	3154457	10.108 ug/L	98
11) Benzene	6.974	78	8374313	10.238 ug/L	98
12) Trichloroethene	8.014	95	2108290	9.825 ug/L	99
15) Tetrachloroethene	10.988	166	2609116	9.864 ug/L	99

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H07.D
Sample : S16J003-CAL5
Instrument: HP5973H
Acq On : 4 Oct 2016 6:17 pm
Operator : EM
Misc : 10ug/L, WATER
ALS Vial : 35
Multiplier: 1

Quant Time: Oct 05 11:20:12 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:04 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

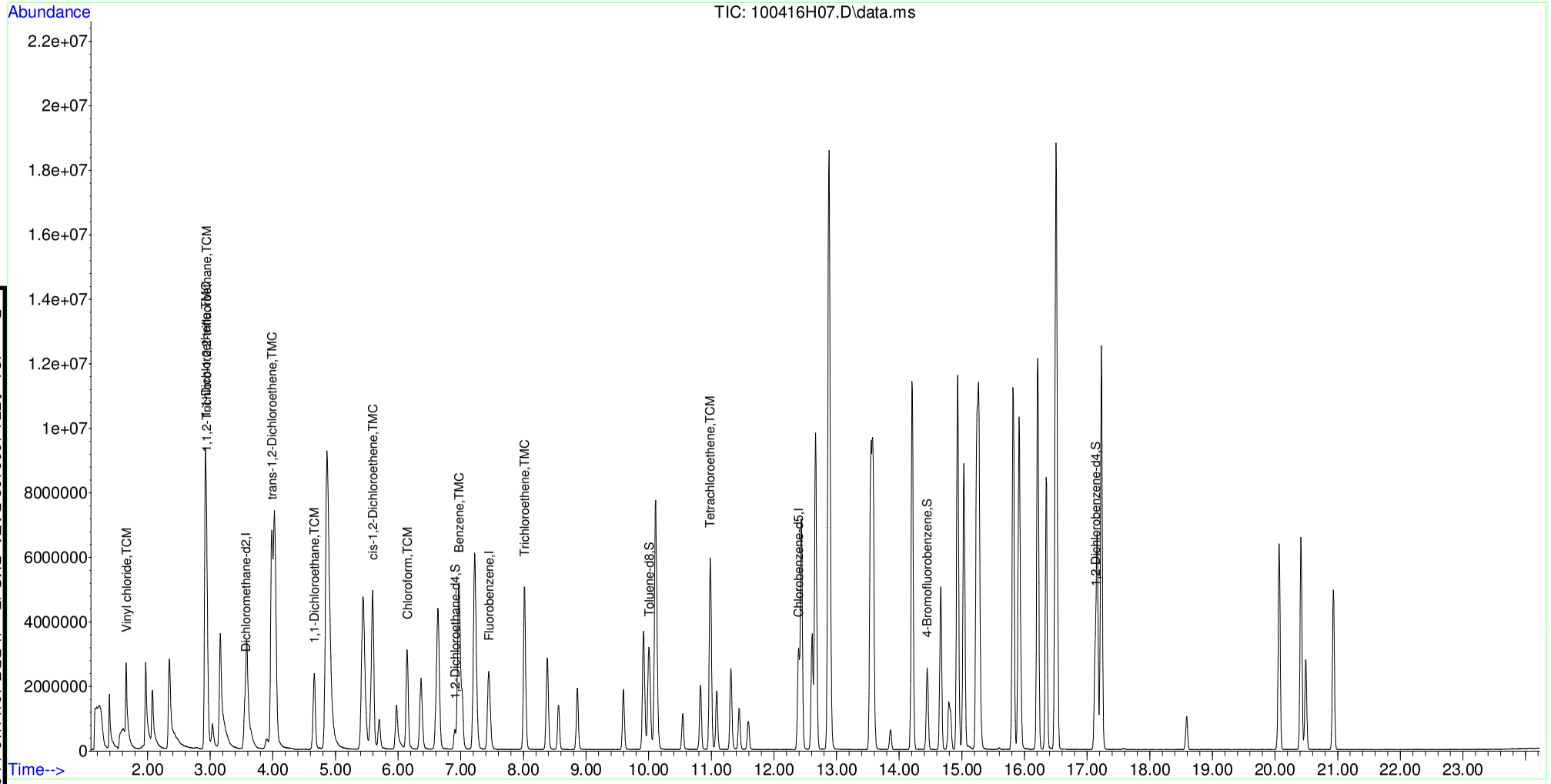


Table of Contents

S16J003-CAL6

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H08.D
Sample : S16J003-CAL6
Instrument: HP5973H
Acq On : 4 Oct 2016 6:53 pm
Operator : EM
Misc : 25ug/L, WATER
ALS Vial : 36
Multiplier: 1

Quant Time: Oct 05 11:20:32 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:23 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.550	53	396003	5.000 ug/L	0.00
9) Fluorobenzene	7.455	96	4079272	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2804555	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.907	65	501731	4.799 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 96.00%	
14) Toluene-d8	10.009	98	3918848	4.944 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 98.80%	
16) 4-Bromofluorobenzene	14.448	95	1094692	5.042 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 100.80%	
17) 1,2-Dichlorobenzene-d4	17.130	152	1249998	5.344 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 106.80%	

Target Compounds					Qvalue
2) Vinyl chloride	1.659	62	8240398	25.574 ug/L	98
3) 1,1-Dichloroethene	2.924	96	9391723	27.558 ug/L	98
4) 1,1,2-Trichloro-1,2,2-...	2.942	101	9083966	26.948 ug/L	97
5) trans-1,2-Dichloroethene	3.982	96	11231347	27.897 ug/L	99
6) 1,1-Dichloroethane	4.663	63	8944862	29.109 ug/L	98
7) cis-1,2-Dichloroethene	5.594	96	6836055	30.128 ug/L	98
8) Chloroform	6.141	83	9508894	29.000 ug/L	99
11) Benzene	6.974	78	23759504	27.937 ug/L	99
12) Trichloroethene	8.020	95	6236084	27.952 ug/L	98
15) Tetrachloroethene	10.988	166	7828002	28.262 ug/L	99

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H08.D
Sample : S16J003-CAL6
Instrument: HP5973H
Acq On : 4 Oct 2016 6:53 pm
Operator : EM
Misc : 25ug/L, WATER
ALS Vial : 36
Multiplier: 1

Quant Time: Oct 05 11:20:32 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:23 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

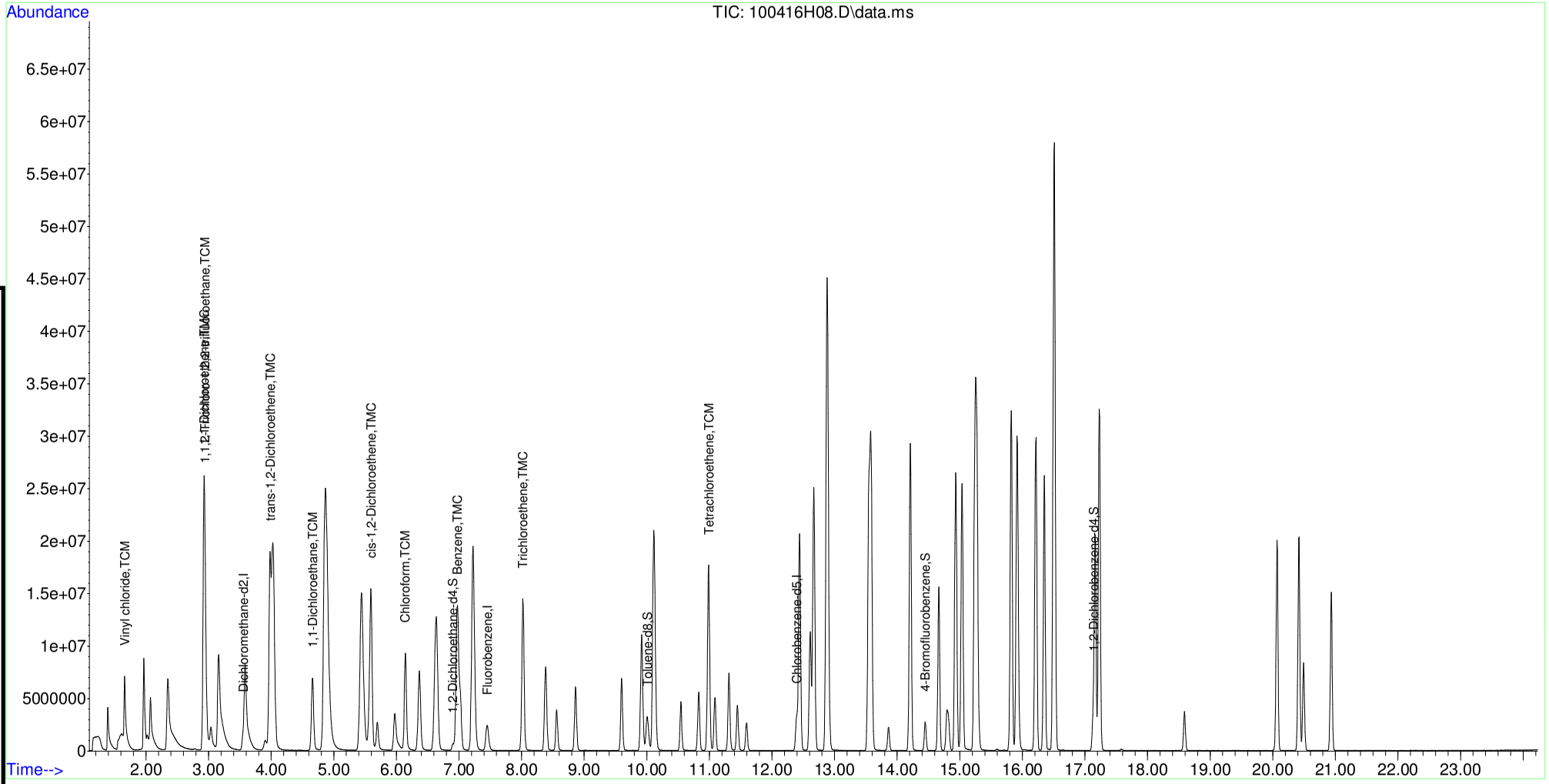


Table of Contents

S16J003-SCV1

LCS REPORT

Instrument Name: HP5973H
Sample Name: S16J003-SCV1
Misc Info: 5ug/L, WATER
Date Acquired: 10/4/2016 20:04
QLast Update: Wed Oct 05 11:20:39 2016
Operator: EM

#	Name	Ret Time	Concentration	Amount	%R	QC Limit		STATUS
2)	Vinyl chloride	1.66	4.3	5.0	86%	70.0	130.0	pass
3)	1,1-Dichloroethene	2.92	4.8	5.0	97%	70.0	130.0	pass
4)	1,1,2-Trichloro-1,2,2-trifluoroethane	2.95	4.8	5.0	95%	70.0	130.0	pass
5)	trans-1,2-Dichloroethene	3.98	3.6	5.0	72%	70.0	130.0	pass
6)	1,1-Dichloroethane	4.66	5.0	5.0	100%	85.0	117.0	pass
7)	cis-1,2-Dichloroethene	5.60	4.8	5.0	96%	70.0	130.0	pass
8)	Chloroform	6.15	4.8	5.0	95%	70.0	130.0	pass
11)	Benzene	6.97	4.8	5.0	97%	70.0	130.0	pass
12)	Trichloroethene	8.02	4.8	5.0	95%	70.0	130.0	pass
14)	Toluene-d8	10.01	4.9	5.0	99%	70.0	130.0	pass
15)	Tetrachloroethene	10.99	4.7	5.0	93%	70.0	130.0	pass
)	0	0.00	0.0	0.0		67.0	133.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				

)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H10.D
Sample : S16J003-SCV1
Instrument: HP5973H
Acq On : 4 Oct 2016 8:04 pm
Operator : EM
Misc : 5ug/L, WATER
ALS Vial : 38
Multiplier: 1

Quant Time: Oct 05 11:22:33 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.557	53	377762	5.000 ug/L	0.00
9) Fluorobenzene	7.455	96	3898810	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2690237	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.907	65	519950	5.204 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 104.00%	
14) Toluene-d8	10.009	98	3750074	4.933 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 98.60%	
16) 4-Bromofluorobenzene	14.448	95	1061621	5.097 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 102.00%	
17) 1,2-Dichlorobenzene-d4	17.130	152	1130835	5.040 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.80%	
Target Compounds					Qvalue
2) Vinyl chloride	1.659	62	1315554	4.280 ug/L	100
3) 1,1-Dichloroethene	2.924	96	1571302	4.833 ug/L	98
4) 1,1,2-Trichloro-1,2,2-...	2.955	101	1530716	4.760 ug/L	99
5) trans-1,2-Dichloroethene	3.982	96	1373052	3.575 ug/L	95
6) 1,1-Dichloroethane	4.663	63	1463759	4.994 ug/L	99
7) cis-1,2-Dichloroethene	5.600	96	1041823	4.813 ug/L	99
8) Chloroform	6.147	83	1488006	4.757 ug/L	98
11) Benzene	6.974	78	3931842	4.837 ug/L	100
12) Trichloroethene	8.020	95	1014151	4.756 ug/L	98
15) Tetrachloroethene	10.988	166	1235984	4.652 ug/L	99

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H10.D
Sample : S16J003-SCV1
Instrument: HP5973H
Acq On : 4 Oct 2016 8:04 pm
Operator : EM
Misc : 5ug/L, WATER
ALS Vial : 38
Multiplier: 1

Quant Time: Oct 05 11:22:33 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

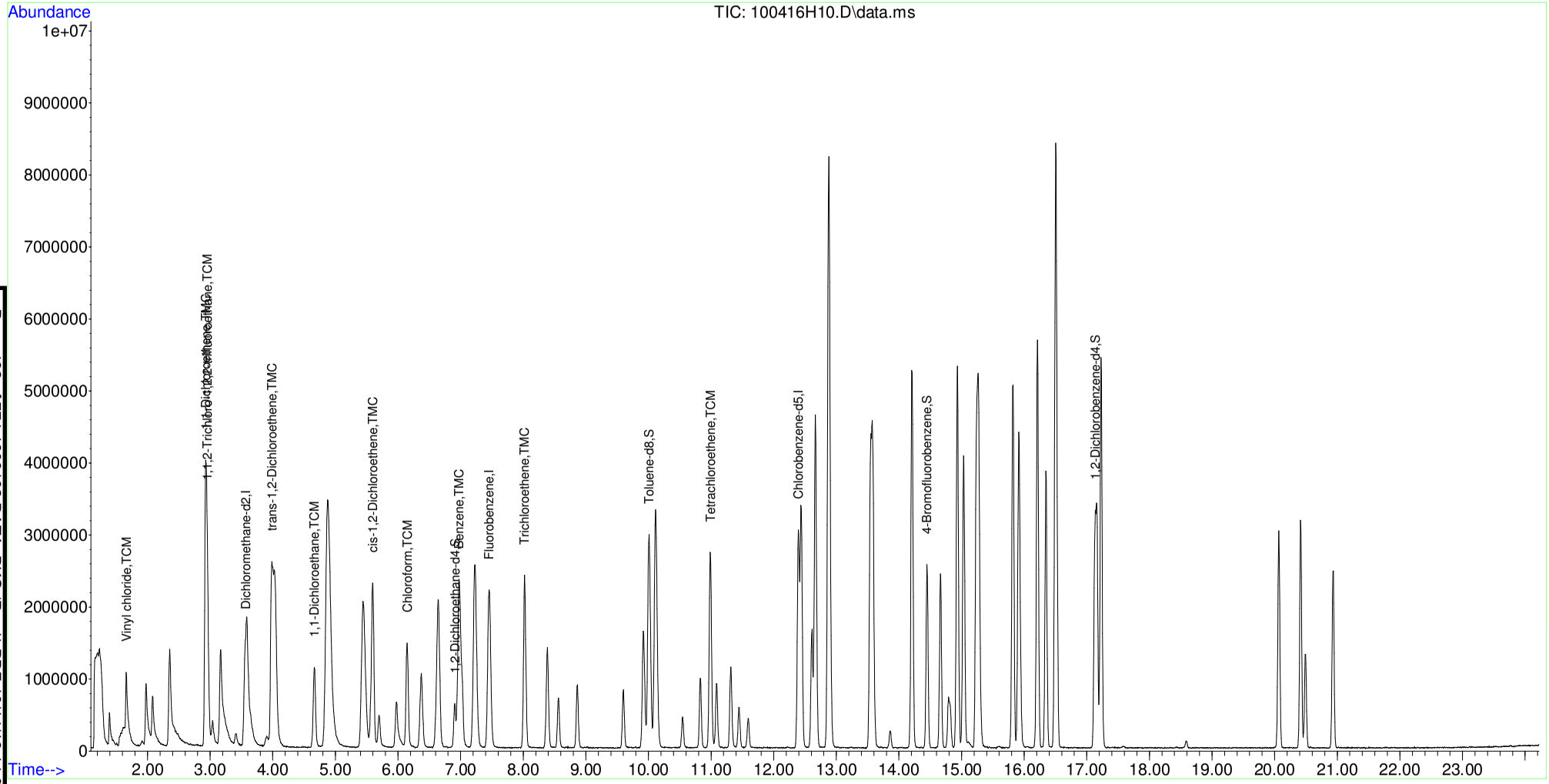


Table of Contents

B16J002-BLK1

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H12.D
Sample : B16J002-BLK1
Instrument: HP5973H
Acq On : 4 Oct 2016 9:15 pm
Operator : EM
Misc : BLK, WATER
ALS Vial : 40
Multiplier: 1

Quant Time: Oct 05 11:30:23 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.558	53	384600	5.000 ug/L	0.00
9) Fluorobenzene	7.444	96	3901379	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.395	117	2668609	5.000 ug/L	0.00

System Monitoring Compounds

10) 1,2-Dichloroethane-d4	6.903	65	511815	5.119 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 102.40%	
14) Toluene-d8	10.005	98	3715481	4.927 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 98.60%	
16) 4-Bromofluorobenzene	14.450	95	978784	4.737 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 94.80%	
17) 1,2-Dichlorobenzene-d4	17.126	152	1051786	4.726 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 94.60%	

Target Compounds Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100416AHVW\
Data File : 100416H12.D
Sample : B16J002-BLK1
Instrument: HP5973H
Acq On : 4 Oct 2016 9:15 pm
Operator : EM
Misc : BLK, WATER
ALS Vial : 40
Multiplier: 1

Quant Time: Oct 05 11:30:23 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100416HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100416HVW.M

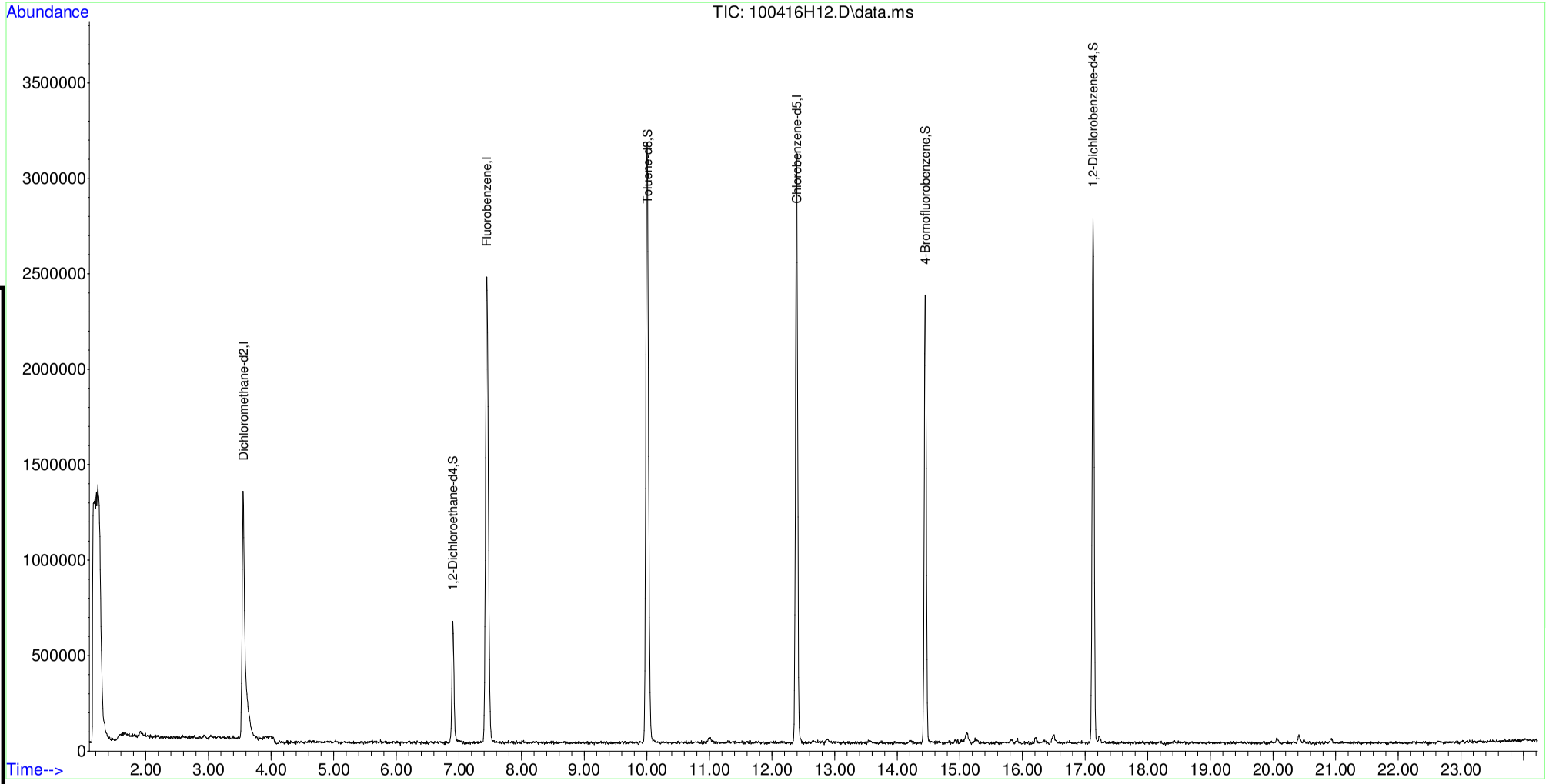
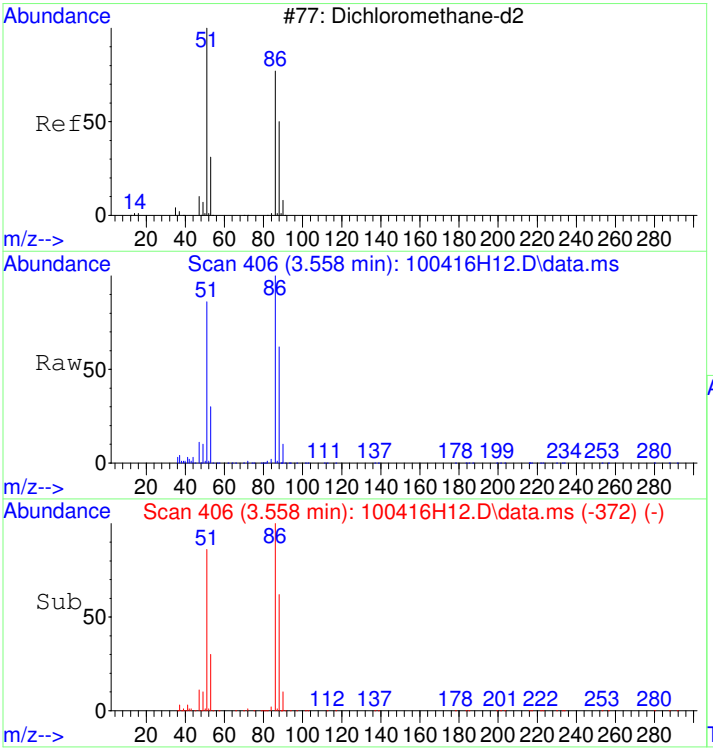


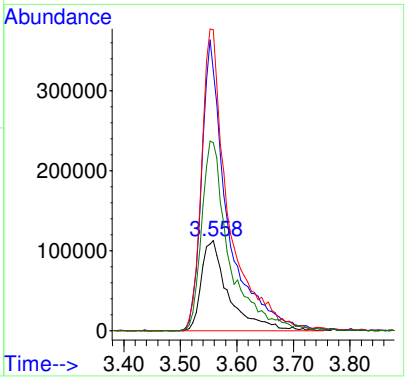
Table of Contents

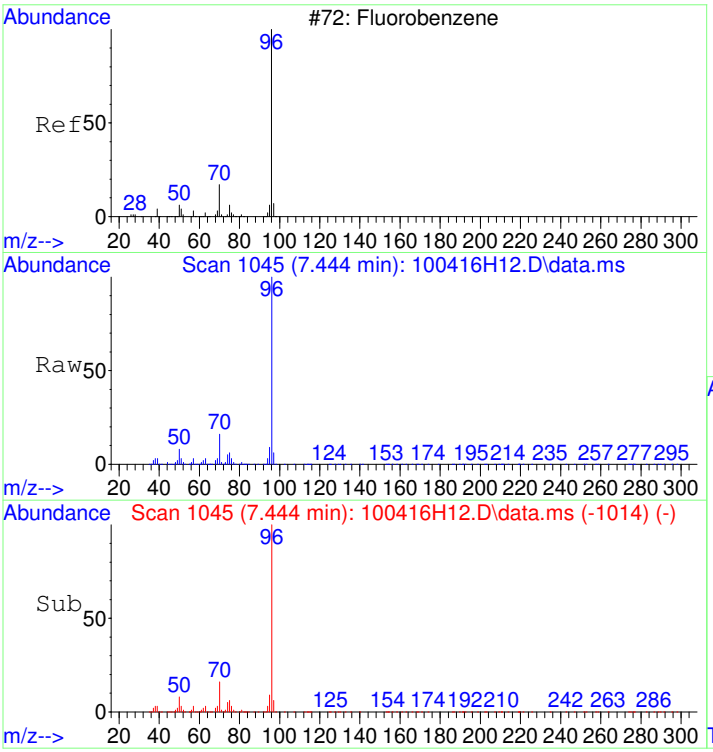


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.558 min Scan# 406
Delta R.T. 0.009 min
Lab File: 100416H12.D
Acq: 4 Oct 2016 9:15 pm

Tgt Ion: 53 Resp: 384600

Ion	Ratio	Lower	Upper
53	100		
51	297.3	386.4	426.4#
86	324.0	0.0	20.0#
88	211.6	231.2	271.2#

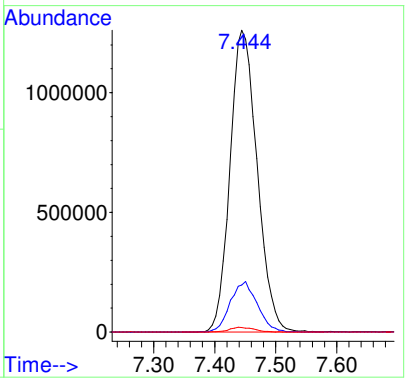


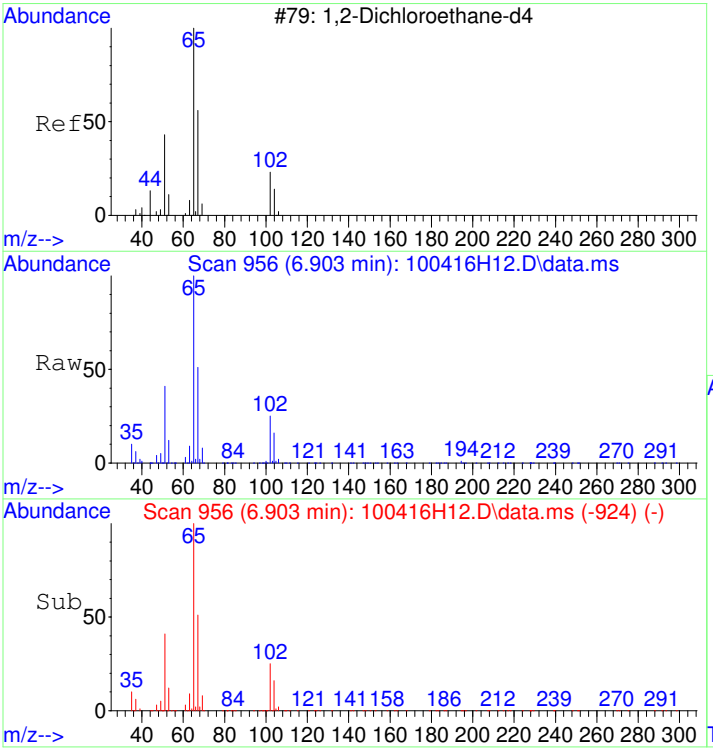


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.444 min Scan# 1045
Delta R.T. -0.009 min
Lab File: 100416H12.D
Acq: 4 Oct 2016 9:15 pm

Tgt Ion: 96 Resp: 3901379

Ion	Ratio	Lower	Upper
96	100		
70	16.7	0.0	36.7
77	1.5	0.0	21.6

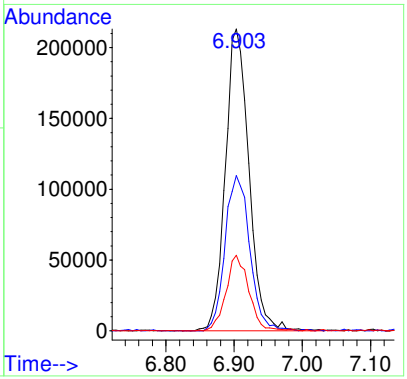


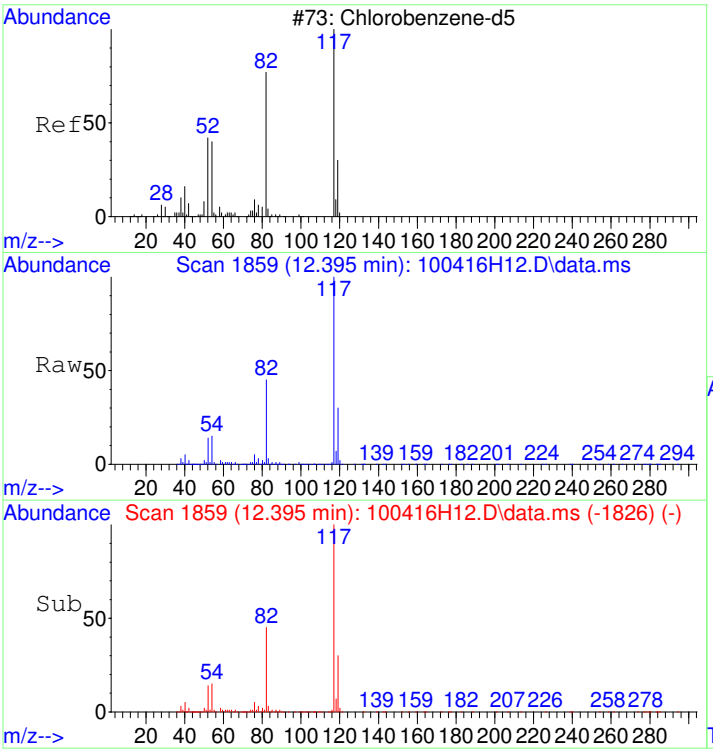


#10
1,2-Dichloroethane-d4
Concen: 5.12 ug/L
RT: 6.903 min Scan# 956
Delta R.T. -0.003 min
Lab File: 100416H12.D
Acq: 4 Oct 2016 9:15 pm

Tgt Ion: 65 Resp: 511815

Ion	Ratio	Lower	Upper
65	100		
67	53.7	31.1	71.1
102	24.1	3.7	43.7

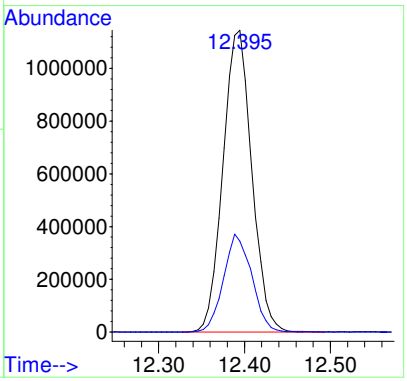


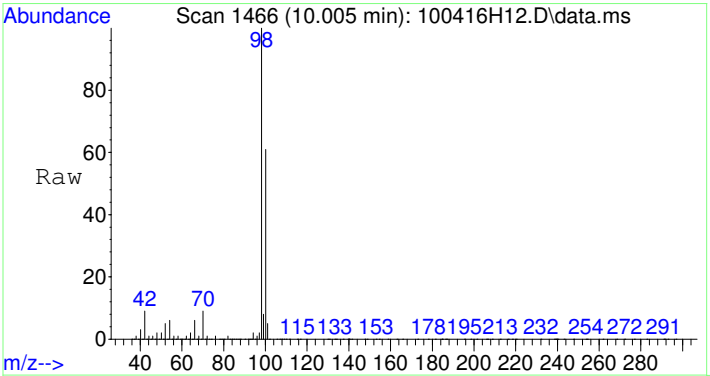


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.395 min Scan# 1859
Delta R.T. 0.003 min
Lab File: 100416H12.D
Acq: 4 Oct 2016 9:15 pm

Tgt Ion:117 Resp: 2668609

Ion	Ratio	Lower	Upper
117	100		
119	31.8	11.9	51.9

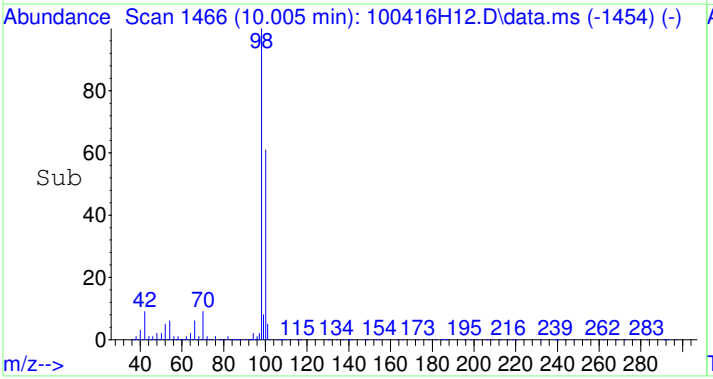


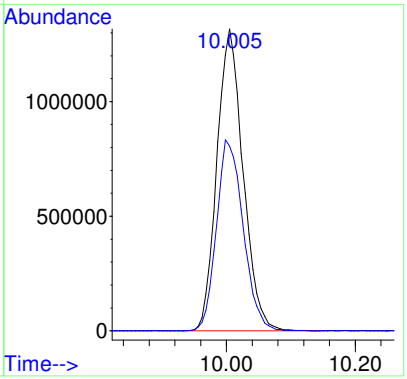


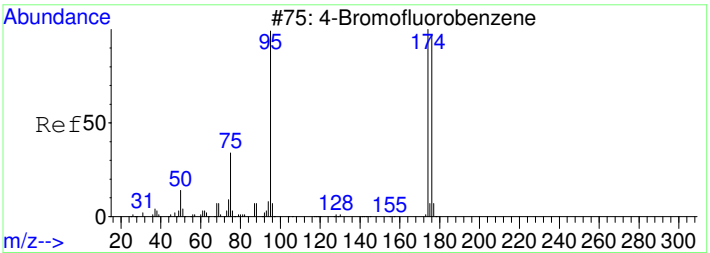
#14
Toluene-d8
Concen: 4.93 ug/L
RT: 10.005 min Scan# 1466
Delta R.T. -0.003 min
Lab File: 100416H12.D
Acq: 4 Oct 2016 9:15 pm

Tgt Ion: 98 Resp: 3715481

Ion	Ratio	Lower	Upper
98	100		
100	64.6	45.1	85.1



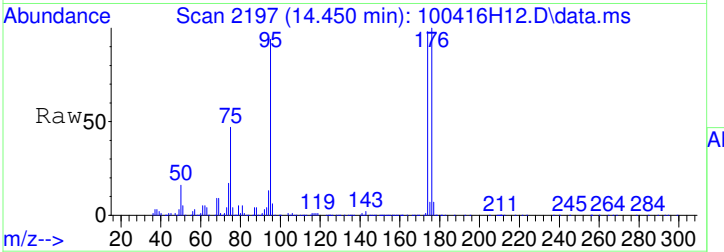


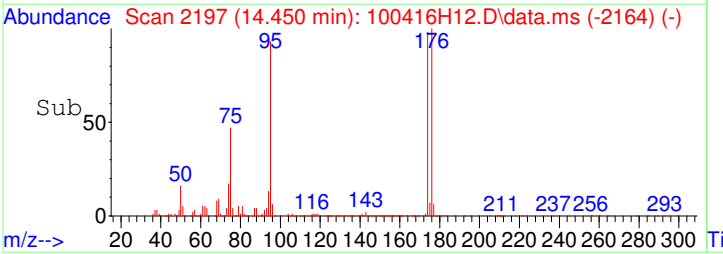


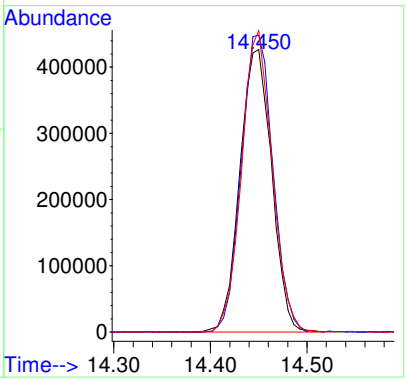
#16
4-Bromofluorobenzene
Concen: 4.74 ug/L
RT: 14.450 min Scan# 2197
Delta R.T. 0.003 min
Lab File: 100416H12.D
Acq: 4 Oct 2016 9:15 pm

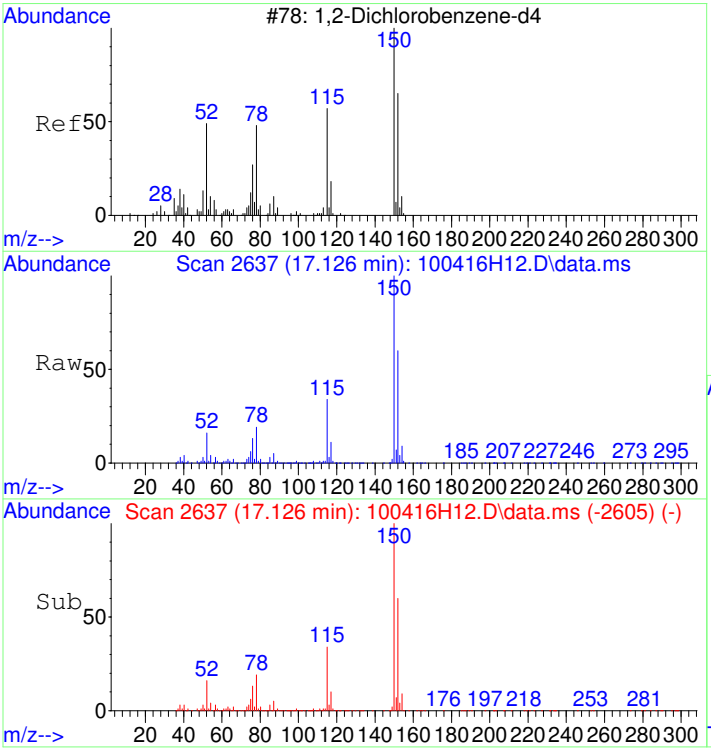
Tgt Ion: 95 Resp: 978784

Ion	Ratio	Lower	Upper
95	100		
174	104.7	84.0	124.0
176	102.3	79.3	119.3





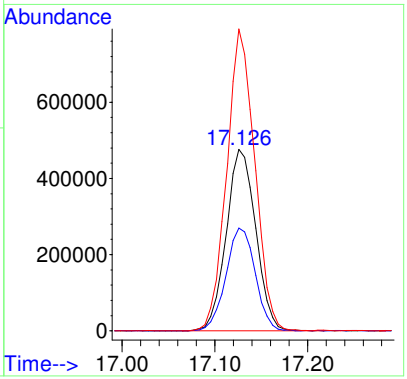




#17
1,2-Dichlorobenzene-d4
Concen: 4.73 ug/L
RT: 17.126 min Scan# 2637
Delta R.T. -0.003 min
Lab File: 100416H12.D
Acq: 4 Oct 2016 9:15 pm

Tgt Ion:152 Resp: 1051786

Ion	Ratio	Lower	Upper
152	100		
115	56.3	35.7	75.7
150	158.2	155.7	195.7



SEQUENCE

S16J026

Analysis Sequence

S16J026

Project: R17S02
Analysis: VOCs

Instrument: HP5973H **Calibration ID:** 1610001 Printed: 10/06/2016 12:43 pm

Lab Number	Sample Name	Order	Analyzed Date	STD ID	ISTD ID	Sequenced By	File ID	Comments
S16J026-TUN1	MS Tune	1	10/5/16 12:04	1629049		YNB	100516H01.D	
S16J026-CCV1	Calibration Check	2	10/5/16 12:29	1640083		YNB	100516H02.D	
B16J017-BS1	LCS	3	10/5/16 12:29			YNB	100516H02.D	
S16J026-CRL1	Instrument RL Check	4	10/5/16 13:04	1640084		YNB	100516H03.D	
B16J017-BLK1	Blank	5	10/5/16 13:40			YNB	100516H04.D	
B16J017-MS1	Matrix Spike	6	10/5/16 21:27			YNB	100516H17.D	
B16J017-MSD1	Matrix Spike Dup	7	10/5/16 22:03			YNB	100516H18.D	
1609102-01RE1 B	F6008-92816-844	8	10/5/16 16:40			YNB	100516H09.D	
1609102-02RE1 B	F6008-92816-1133	9	10/5/16 17:16			YNB	100516H10.D	
1609102-03RE1 B	F6008-92816-1425	10	10/5/16 17:52			YNB	100516H11.D	
1609102-04RE1 B	F6008-92816-1830	11	10/5/16 18:28			YNB	100516H12.D	
1609102-05RE1 B	F6008-92816-2303	12	10/5/16 19:04			YNB	100516H13.D	
1609102-07RE1 B	F6006-92816-952	13	10/5/16 19:40			YNB	100516H14.D	
1609102-08RE1 B	F6006-92816-1215	14	10/5/16 20:16			YNB	100516H15.D	
1609102-09RE1 B	F6006-92816-1448	15	10/5/16 20:52			YNB	100516H16.D	
1609102-10 A	F6006-92816-1755	16	10/5/16 14:16			YNB	100516H05.D	
1609102-11 A	F6006-92816-2236	17	10/5/16 14:52			YNB	100516H06.D	
1609102-12 A	F6006-92916-1050	18	10/5/16 15:28			YNB	100516H07.D	
1609102-13 A	DUP	19	10/5/16 16:04			YNB	100516H08.D	

Sequence Comments

Analysis Sequence

S16J026

(Continued)

Project: R17S02
Analysis: VOCs

Instrument: HP5973H **Calibration ID:** 1610001 Printed: 10/06/2016 12:43 pm

Lab Number	Sample Name	Order	Analyzed Date	STD ID	ISTD ID	Sequenced By	File ID	Comments

Reagents

Reagent #	Description

Table of Contents

Injection Log

Directory: D:\MSDCHEM\1\DATA\2016\100516AHVW

Table of Contents

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	50	100516h01.d	1.	S16J026-TUN1	0.5mL, EM 1212	5 Oct 2016 12:04
2	27	100516h02.d	1.	S16J026-CCV1@B16J017-BS1	5ug/L, WATER	5 Oct 2016 12:29
3	28	100516h03.d	1.	S16J026-CRL1	0.5ug/L, WATER	5 Oct 2016 13:04
4	29	100516h04.d	1.	B16J017-BLK1	BLK, WATER	5 Oct 2016 13:40
5	30	100516h05.d	1.	1609102-10	2X, WATER	5 Oct 2016 14:16
6	31	100516h06.d	1.	1609102-11	2X, WATER	5 Oct 2016 14:52
7	32	100516h07.d	1.	1609102-12	2X, WATER	5 Oct 2016 15:28
8	33	100516h08.d	1.	1609102-13	2X, WATER	5 Oct 2016 16:04
9	34	100516h09.d	1.	1609102-01RE1	2X, WATER	5 Oct 2016 16:40
10	35	100516h10.d	1.	1609102-02RE1	2X, WATER	5 Oct 2016 17:16
11	36	100516h11.d	1.	1609102-03RE1	2X, WATER	5 Oct 2016 17:52
12	37	100516h12.d	1.	1609102-04RE1	2X, WATER	5 Oct 2016 18:28
13	38	100516h13.d	1.	1609102-05RE1	2X, WATER	5 Oct 2016 19:04
14	39	100516h14.d	1.	1609102-07RE1	2X, WATER	5 Oct 2016 19:40
15	40	100516h15.d	1.	1609102-08RE1	2X, WATER	5 Oct 2016 20:16
16	41	100516h16.d	1.	1609102-09RE1	2X, WATER	5 Oct 2016 20:52
17	42	100516h17.d	1.	B16J017-MS1	2X,102-10, WATER SPK	5 Oct 2016 21:27
18	43	100516h18.d	1.	B16J017-MSD1	2X,102-10, WATER SPK	5 Oct 2016 22:03
19	44	100516h19.d	1.	BLANK	BLK, WATER	5 Oct 2016 22:38
20	45	100516h20.d	1.	S16J026-SB1	SB 09/26/16, WATER	5 Oct 2016 23:14
21		100516h21.d	1.	No MS or GC data present		

GC/MS QA-QC Check Report

Table of Contents

Tune File : D:\msdchem\1\DATA\2016\100516AHVW\100516H01.D
Tune Time : 5 Oct 2016 12:04 pm

Daily Calibration File : D:\MSDCHEM\1\DATA\2016\100516AHVW\100516H02.D

File	Sample	Surrogate Recovery %				Internal Standard Responses		
						336201	3429430	2289630
100516H02.D	S16J026-CCV1@	91	101	96	95	336201	3429433	2289633
100516H03.D	S16J026-CRL1	95	103	100	99	321793	3341824	2249577
100516H04.D	B16J017-BLK1	97	100	96	93	320939	3329873	2234758
100516H05.D	1609102-10	100	99	97	100	337082	3336948	2240687
100516H06.D	1609102-11	98	100	96	99	355147	3587825	2407524
100516H07.D	1609102-12	100	100	99	100	354337	3583521	2438506
100516H08.D	1609102-13	102	100	99	100	388364	3854944	2647162
100516H09.D	1609102-01RE1	100	99	100	101	382360	3937023	2687029
100516H10.D	1609102-02RE1	101	99	99	100	393143	4025255	2769281
100516H11.D	1609102-03RE1	100	99	100	100	421699	4208451	2908310
100516H12.D	1609102-04RE1	102	99	101	98	426939	4276987	2960051
100516H13.D	1609102-05RE1	102	100	99	97	436592	4361147	3021542*
100516H14.D	1609102-07RE1	101	98	97	99	432739	4228451	2942655
100516H15.D	1609102-08RE1	101	100	98	100	461073*	4572774*	3163773*
100516H16.D	1609102-09RE1	102	100	98	98	450260*	4446830	3071867*
100516H17.D	B16J017-MS1	96	100	104	101	444072*	4624861*	3149660*
100516H18.D	B16J017-MSD1	99	100	102	100	440348*	4643719*	3183485*
100516H19.D	BLANK	100	99	96	93	436654	4382089	3056736*
100516H20.D	S16J026-SB1	101	100	96	91	417292	4309465	3013773*

2X

(fails) - fails 12hr time check * - fails criteria

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	B16J017	SEQUENCE #:	S16J026
BATCH #:	HP5973H, 10/05/16	ANALYSIS:	524.2 WATER, R17S02

	CHECKLIST ITEM	N/A	ANALYST Y/N	REVIEWER Y/N	IDENTIFY OUTLIERS / COMMENTS
DOCUMENTATION	ANALYST: Bench sheet(s) attached? REVIEWER: Bench sheet(s) reviewed?	☐	Y	Y	
	ANALYST: Sequence log(s) attached? REVIEWER: Sequence log(s) reviewed?	☐	Y	Y	
	ANALYST: Every run has a PDF in LIMS? REVIEWER: Every PDF reviewed?	☐	Y	Y	
INITIAL CALIBRATION	Date of Initial Calibration used: If applicable, note date of "Last Update" in Comments.	Wed Oct 05 11:20:39 2016			
	Initial Calibration ID (LIMS number):	1610001			
	ICAL within QC criteria?	☑			passed for the short list
	SCV within QC criteria?	☑			
INSTRUMENT / QC CHECKS	Tune or degradation checks within QC criteria?	☐	Y	Y	
	CCV(s) within QC criteria?	☑			
	QLS(s) within QC criteria?	☐	Y	Y	
	CB(s) or storage blank(s) within QC criteria?	☑			
	Other instrument checks within QC criteria? Specify if applicable.	☑			
BATCH QCs	Method blanks < 1/2 QL?	☐	Y	Y	
	LCS(s) or SRM(s) within QC criteria?	☐	Y	Y	
	MSs/MSDs and/or DUPs within QC criteria?	☐	Y	Y	
	Other method-specific QCs within QC criteria? Specify if applicable.	☑			

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	B16J017	SEQUENCE #:	S16J026
BATCH #:	HP5973H, 10/05/16	ANALYSIS:	524.2 WATER, R17S02

	CHECKLIST ITEM	N/A	ANALYST Y/N	REVIEWER Y/N	IDENTIFY OUTLIERS / COMMENTS
IS / SS	Internal standards within QC criteria?	☐	Y	Y	failed on 1609102-05re1,-08re1,-09re1, MS/MSD set
	Surrogates within QC criteria?	☐	Y	Y	
SAMPLE DATA	Were samples prepared & analyzed within holding time?	☐	Y	Y	
	If samples need to be re-run, were RE(s) made in LIMS?	☐	Y	Y	
	Do any samples need to be re-digested or re-extracted?	✔			
	Were all data qualifiers appropriately applied?	☐	Y	Y	
	Are problems, anomalies, discrepancies documented in LIMS? Specify if applicable.	✔			
MANUAL INT	Were manual integrations performed and documented? Specify if applicable.	✔			

APPROVALS	ANALYST INITIALS & DATE:	YNB 10/05/16
	REVIEWED BY:	NICK KISH (affiliate) Digitally signed by NICK KISH (affiliate) Date: 2016.10.10 13:03:24 -07'00' SIGN HERE

COMMENTS

SEQUENCE DATA

S16J026

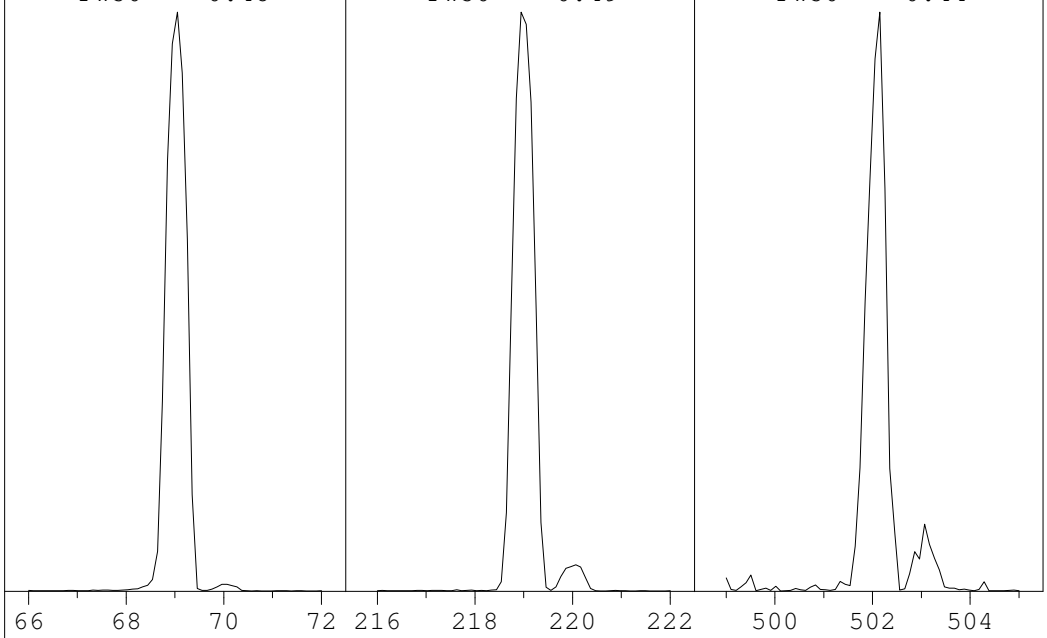
S16J026-TUN1

Wed Oct 05 11:58:41 2016 Instrum

C:\msdchem\1\5973\BFB100516HW.u

Table of Contents

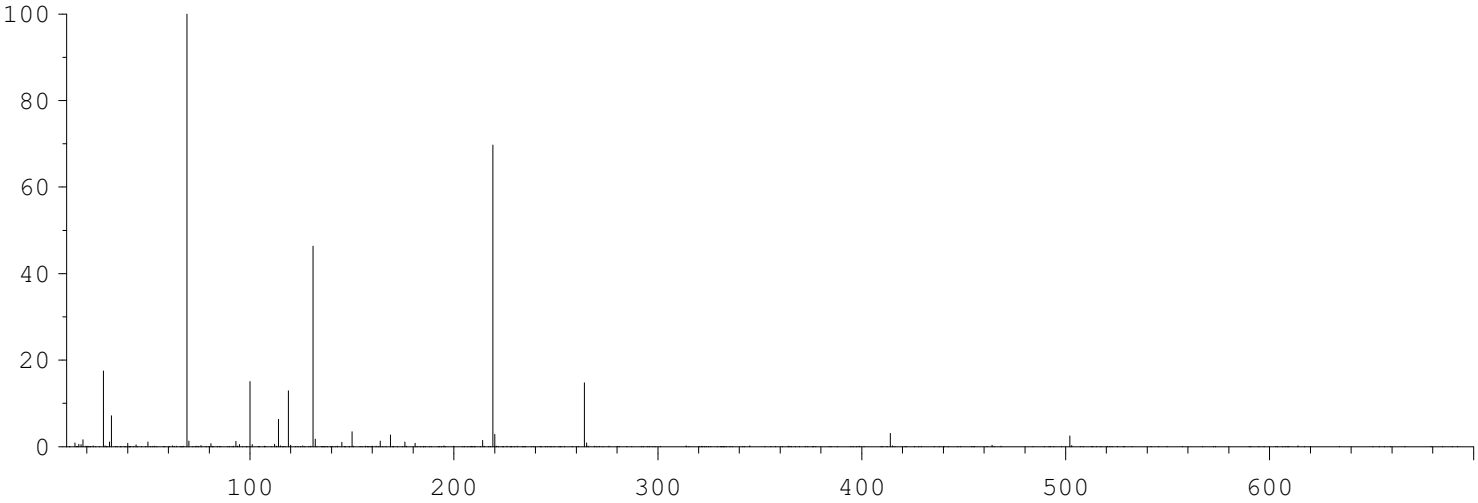
Mass 69.05	Mass 218.95	Mass 502.15
Ab 538324	Ab 359455	Ab 15685
Pw50 0.48	Pw50 0.49	Pw50 0.44



Ion Pol	POS	MassGain	-218
		MassOffs	-11
Emission	34.6	AmuGain	1897
EIEnrgy	69.9	AmuOffs	132
Filament	1	Wid219	-0.002
		DC Pol	NEG
Repeller	13.03		
IonFcus	58.8	HEDEnab	ON
EntLens	8.0	EMVolts	1106
EntOffs	12.30		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	TurboSpd	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10

334 peaks Base: 69.05 Abundance: 445120



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	445120	100.00	70.05	5670	1.27
219.05	310336	69.72	220.05	12831	4.13
502.05	11219	2.52	503.05	1336	11.91

Air/Water Check: H20~1.63% N2~17.52% O2~7.15% CO2~0.42% N2/H2O~1072.61%

Column Flow: Front: 0.996 Back: 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 69; EM Gain 1339966
Repeller Maximum 20 volts using ion 219;

MassGain Values @Samples: -218@3 -218@2 -218@1 -218@0 -218@FS

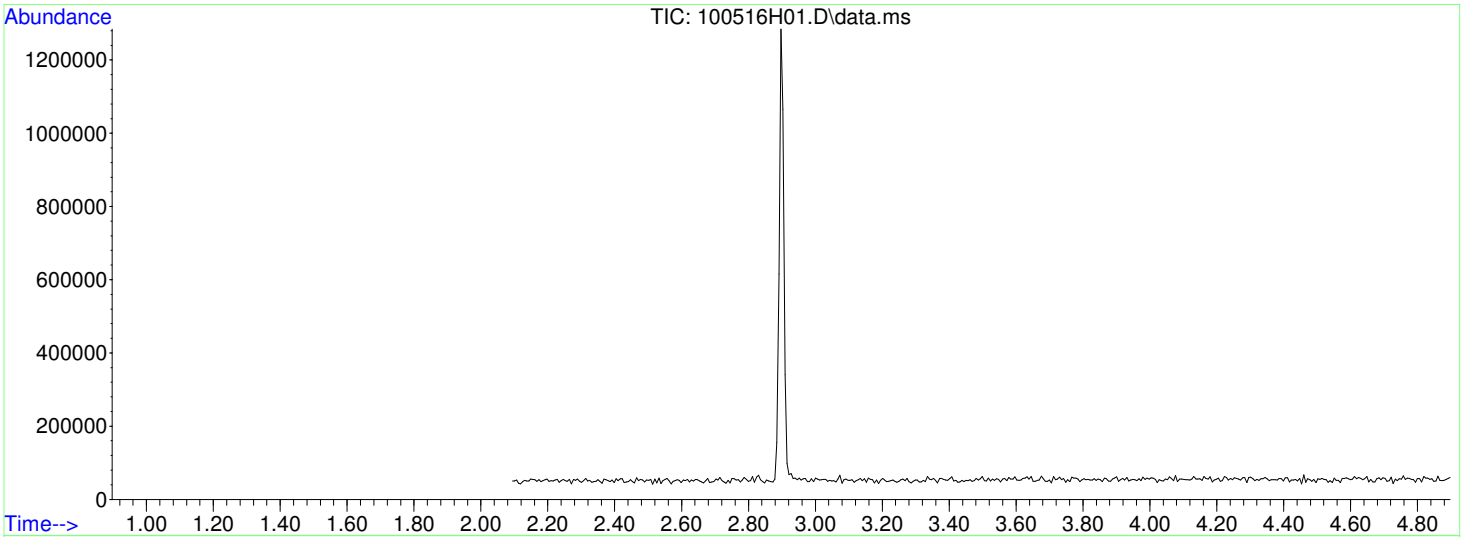
TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	132.0	132.0	132.0	132.0	132.0	132.0	132.0
Entrance Lens Offset:	12.3	12.3	12.3	12.3	12.3	12.3	12.3

Table of Contents

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H01.D
Instrument: HP5973H
Acq On : 5 Oct 2016 12:04 pm
Operator : YNB
Sample : S16J026-TUN1
Misc : 0.5mL, EM 1212
ALS Vial : 50 Sample Multiplier: 1

Integration File: C45.P

Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Wed Oct 05 11:20:39 2016



AutoFind: Scans 132, 133, 134; Background Corrected with Scan 128

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.1	30680	PASS
75	95	30	60	50.9	86181	PASS
95	95	100	100	100.0	169432	PASS
96	95	5	9	8.8	14947	PASS
173	174	0.00	2	0.8	1282	PASS
174	95	50	120	100.5	170322	PASS
175	174	5	9	7.7	13040	PASS
176	174	95	101	98.5	167829	PASS
177	176	5	9	6.5	10890	PASS

Average of 2.891 to 2.903 min.: 100516H01.D\data.ms
S16J026-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.95	372	45.10	833	54.75	261	64.25	178
36.15	950	45.85	534	55.05	887	64.85	342
37.00	6536	46.35	131	56.10	4442	65.65	134
38.10	7347	47.00	1832	57.00	5149	66.25	193
39.05	2241	48.20	1045	58.00	575	66.75	133
41.25	300	49.05	6305	58.35	261	67.05	452
42.00	238	50.05	30680	59.95	2201	68.05	16778
42.25	227	51.00	8166	60.95	7690	69.00	19015
43.20	110	52.15	377	62.00	7242	70.00	2625
44.10	2421	53.35	141	63.05	7648	70.75	119
44.95	1073	53.95	209	64.00	647	71.05	181

Average of 2.891 to 2.903 min.: 100516H01.D\data.ms
S16J026-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
71.35	205	81.90	2593	93.00	8343	104.05	465
72.00	953	82.90	346	94.00	20963	104.65	119
73.00	8790	83.55	184	95.05	169432	104.75	295
74.05	35162	84.20	340	96.00	14947	104.95	261
75.05	86181	84.80	263	97.35	283	105.90	1199
76.05	8905	86.90	8096	98.45	101	107.10	400
77.10	1008	88.00	8224	99.25	105	108.15	295
78.05	726	89.05	403	100.95	282	109.15	110
78.95	10830	90.75	216	101.25	103	109.85	181
79.95	2783	91.10	581	102.25	122	110.15	223
80.95	10286	92.00	6107	103.80	683	110.85	23

Average of 2.891 to 2.903 min.: 100516H01.D\data.ms
S16J026-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
111.05	366	123.75	123	132.05	151	138.55	113
113.00	537	124.55	280	133.25	131	139.35	239
114.90	348	124.95	160	133.95	100	139.65	173
115.35	170	125.75	490	134.15	102	140.15	159
115.85	270	127.95	211	134.85	374	140.90	2630
116.10	562	129.10	360	135.35	154	141.85	539
116.85	266	129.80	396	135.75	326	142.90	3064
117.00	1300	130.05	316	136.15	179	143.85	121
117.90	1416	130.75	125	136.75	362	144.85	211
119.00	1191	131.05	217	137.35	333	145.05	214
121.65	489	131.45	155	138.05	126	145.90	296

Average of 2.891 to 2.903 min.: 100516H01.D\data.ms
S16J026-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
146.90	329	157.00	240	167.45	261	175.95	167829
147.75	127	157.85	144	168.30	235	176.90	10890
148.00	431	158.65	273	168.55	188	177.75	232
151.05	131	159.10	385	169.60	349	177.95	248
152.20	277	159.65	105	170.95	124	178.60	255
152.85	113	160.20	215	171.45	102	181.05	211
153.75	190	161.05	455	171.95	125	181.85	137
153.95	292	162.35	155	172.45	103	182.25	172
154.95	357	164.65	106	172.95	1282	183.15	111
156.20	623	165.85	107	173.95	170322	183.45	187
156.85	190	166.25	330	174.90	13040	183.85	260

Average of 2.891 to 2.903 min.: 100516H01.D\data.ms
S16J026-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
187.95	181	202.15	108	211.85	231	234.75	200
190.55	113	204.55	135	217.15	314	234.95	214
191.95	150	204.75	132	217.75	103	237.95	100
193.05	190	204.95	123	218.25	100	238.75	107
193.65	102	206.05	153	218.45	155	240.35	128
194.15	102	206.85	211	218.75	127	242.95	122
195.95	159	207.15	548	219.65	421	243.65	112
197.25	148	208.05	115	221.25	106	244.25	407
197.65	120	208.55	167	224.15	112	245.15	115
198.75	213	209.15	136	224.65	104	245.60	333
201.25	149	211.05	156	226.15	156	248.05	115

Average of 2.891 to 2.903 min.: 100516H01.D\data.ms

Modified:subtracted

Table of Contents

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
248.85	107	278.25	117	297.75	116		
252.35	170	279.65	153	298.25	108		
254.05	112	284.90	468	299.85	148		
256.85	103	285.75	261				
257.15	102	286.35	148				
261.55	220	287.15	106				
262.75	127	290.15	107				
265.05	256	290.85	129				
270.95	107	294.75	113				
273.05	107	296.60	52				
276.15	134	297.15	158				

S16J026-CCV1

Evaluate Continuing Calibration Report

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H02.D
Sample : S16J026-CCV1@B16J017-BS1
Instrument: HP5973H
Acq On : 5 Oct 2016 12:29 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 27
Multiplier: 1

Quant Time: Oct 05 13:08:38 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.03min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Dichloromethane-d2	1.000	1.000	0.0	88	0.00
2	TCM	Vinyl chloride	4.068	4.141	1.8	87	0.00
3	TMC	1,1-Dichloroethene	4.303	4.245	-1.3	86	0.00
4	TCM	1,1,2-Trichloro-1,2,2-trifl	4.256	4.604	8.2	95	0.00
5	TMC	trans-1,2-Dichloroethene	5.083	4.857	-4.4	83	0.00
6	TCM	1,1-Dichloroethane	3.880	3.593	-7.4	81	0.00
7	TMC	cis-1,2-Dichloroethene	2.865	2.659	-7.2	83	0.00
8	TCM	Chloroform	4.140	3.817	-7.8	81	0.00
9	I	Fluorobenzene	1.000	1.000	0.0	91	0.00
10	S	1,2-Dichloroethane-d4	0.128	0.117	-8.6	77	0.00
11	TMC	Benzene	1.042	0.973	-6.6	84	0.00
12	TMC	Trichloroethene	0.273	0.264	-3.3	87	0.00
13	I	Chlorobenzene-d5	1.000	1.000	0.0	88	0.00
14	S	Toluene-d8	1.413	1.427	1.0	89	0.00
15	TCM	Tetrachloroethene	0.494	0.491	-0.6	90	0.00
16	S	4-Bromofluorobenzene	0.387	0.373	-3.6	82	0.00
17	S	1,2-Dichlorobenzene-d4	0.417	0.397	-4.8	82	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

LCS REPORT

Instrument Name: HP5973H
Sample Name: S16J026-CCV1@B16J017-BS1
Misc Info: 5ug/L, WATER
Date Acquired: 10/5/2016 12:29
QLast Update: Wed Oct 05 11:20:39 2016
Operator: YNB

#	Name	Ret Time	Concentration	Amount	%R	QC Limit		STATUS
2)	Vinyl chloride	1.66	5.1	5.0	102%	70.0	130.0	pass
3)	1,1-Dichloroethene	2.92	4.9	5.0	99%	70.0	130.0	pass
4)	1,1,2-Trichloro-1,2,2-trifluoroethane	2.95	5.4	5.0	108%	70.0	130.0	pass
5)	trans-1,2-Dichloroethene	3.98	4.8	5.0	96%	70.0	130.0	pass
6)	1,1-Dichloroethane	4.66	4.6	5.0	93%	85.0	117.0	pass
7)	cis-1,2-Dichloroethene	5.60	4.6	5.0	93%	70.0	130.0	pass
8)	Chloroform	6.15	4.6	5.0	92%	70.0	130.0	pass
11)	Benzene	6.98	4.7	5.0	93%	70.0	130.0	pass
12)	Trichloroethene	8.03	4.8	5.0	97%	70.0	130.0	pass
14)	Toluene-d8	10.01	5.1	5.0	101%	70.0	130.0	pass
15)	Tetrachloroethene	10.99	5.0	5.0	99%	70.0	130.0	pass
)	0	0.00	0.0	0.0		67.0	133.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				

)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H02.D
Sample : S16J026-CCV1@B16J017-BS1
Instrument: HP5973H
Acq On : 5 Oct 2016 12:29 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 27
Multiplier: 1

Quant Time: Oct 05 13:08:38 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.557	53	336201	5.000 ug/L	0.00
9) Fluorobenzene	7.455	96	3429433	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2289633	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.908	65	402047	4.574 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 91.40%	
14) Toluene-d8	10.009	98	3268130	5.051 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 101.00%	
16) 4-Bromofluorobenzene	14.449	95	854679	4.821 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 96.40%	
17) 1,2-Dichlorobenzene-d4	17.130	152	909728	4.764 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 95.20%	

Target Compounds					Qvalue
2) Vinyl chloride	1.660	62	1392297	5.090 ug/L	99
3) 1,1-Dichloroethene	2.924	96	1427257	4.933 ug/L	98
4) 1,1,2-Trichloro-1,2,2-...	2.949	101	1547879	5.409 ug/L	99
5) trans-1,2-Dichloroethene	3.983	96	1632929	4.777 ug/L	99
6) 1,1-Dichloroethane	4.664	63	1207883	4.630 ug/L	99
7) cis-1,2-Dichloroethene	5.600	96	893906	4.640 ug/L	98
8) Chloroform	6.148	83	1283345	4.610 ug/L	100
11) Benzene	6.981	78	3337851	4.668 ug/L	100
12) Trichloroethene	8.027	95	905926	4.830 ug/L	98
15) Tetrachloroethene	10.988	166	1124689	4.974 ug/L	99

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H02.D
Sample : S16J026-CCV1@B16J017-BS1
Instrument: HP5973H
Acq On : 5 Oct 2016 12:29 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 27
Multiplier: 1

Quant Time: Oct 05 13:08:38 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

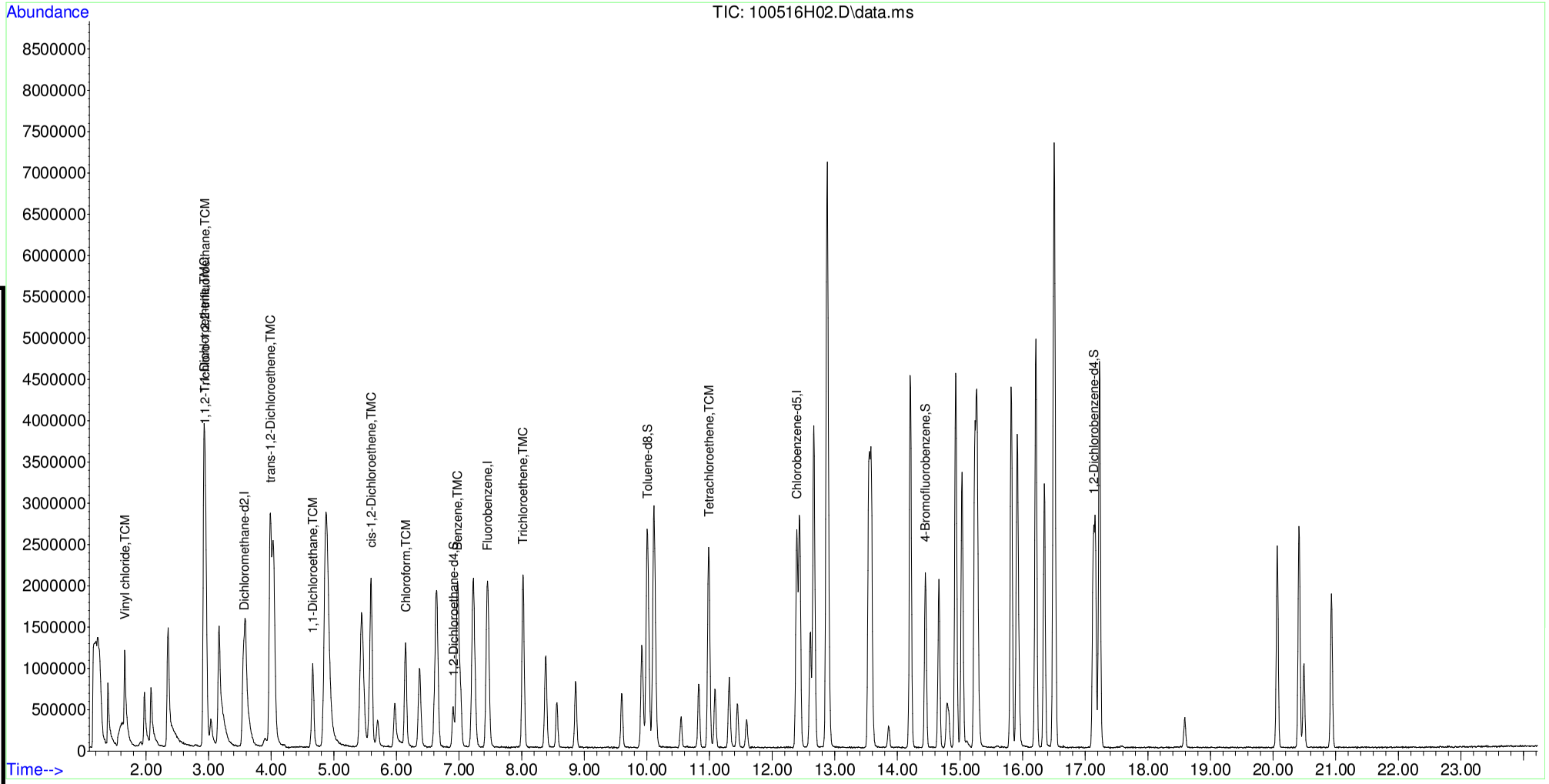


Table of Contents

B16J017-BS1

Evaluate Continuing Calibration Report

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H02.D
Sample : S16J026-CCV1@B16J017-BS1
Instrument: HP5973H
Acq On : 5 Oct 2016 12:29 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 27
Multiplier: 1

Quant Time: Oct 05 13:08:38 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.03min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Dichloromethane-d2	1.000	1.000	0.0	88	0.00
2	TCM	Vinyl chloride	4.068	4.141	1.8	87	0.00
3	TMC	1,1-Dichloroethene	4.303	4.245	-1.3	86	0.00
4	TCM	1,1,2-Trichloro-1,2,2-trifl	4.256	4.604	8.2	95	0.00
5	TMC	trans-1,2-Dichloroethene	5.083	4.857	-4.4	83	0.00
6	TCM	1,1-Dichloroethane	3.880	3.593	-7.4	81	0.00
7	TMC	cis-1,2-Dichloroethene	2.865	2.659	-7.2	83	0.00
8	TCM	Chloroform	4.140	3.817	-7.8	81	0.00
9	I	Fluorobenzene	1.000	1.000	0.0	91	0.00
10	S	1,2-Dichloroethane-d4	0.128	0.117	-8.6	77	0.00
11	TMC	Benzene	1.042	0.973	-6.6	84	0.00
12	TMC	Trichloroethene	0.273	0.264	-3.3	87	0.00
13	I	Chlorobenzene-d5	1.000	1.000	0.0	88	0.00
14	S	Toluene-d8	1.413	1.427	1.0	89	0.00
15	TCM	Tetrachloroethene	0.494	0.491	-0.6	90	0.00
16	S	4-Bromofluorobenzene	0.387	0.373	-3.6	82	0.00
17	S	1,2-Dichlorobenzene-d4	0.417	0.397	-4.8	82	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

LCS REPORT

Instrument Name: HP5973H
Sample Name: S16J026-CCV1@B16J017-BS1
Misc Info: 5ug/L, WATER
Date Acquired: 10/5/2016 12:29
QLast Update: Wed Oct 05 11:20:39 2016
Operator: YNB

#	Name	Ret Time	Concentration	Amount	%R	QC Limit		STATUS
2)	Vinyl chloride	1.66	5.1	5.0	102%	70.0	130.0	pass
3)	1,1-Dichloroethene	2.92	4.9	5.0	99%	70.0	130.0	pass
4)	1,1,2-Trichloro-1,2,2-trifluoroethane	2.95	5.4	5.0	108%	70.0	130.0	pass
5)	trans-1,2-Dichloroethene	3.98	4.8	5.0	96%	70.0	130.0	pass
6)	1,1-Dichloroethane	4.66	4.6	5.0	93%	85.0	117.0	pass
7)	cis-1,2-Dichloroethene	5.60	4.6	5.0	93%	70.0	130.0	pass
8)	Chloroform	6.15	4.6	5.0	92%	70.0	130.0	pass
11)	Benzene	6.98	4.7	5.0	93%	70.0	130.0	pass
12)	Trichloroethene	8.03	4.8	5.0	97%	70.0	130.0	pass
14)	Toluene-d8	10.01	5.1	5.0	101%	70.0	130.0	pass
15)	Tetrachloroethene	10.99	5.0	5.0	99%	70.0	130.0	pass
)	0	0.00	0.0	0.0		67.0	133.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				

)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H02.D
Sample : S16J026-CCV1@B16J017-BS1
Instrument: HP5973H
Acq On : 5 Oct 2016 12:29 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 27
Multiplier: 1

Quant Time: Oct 05 13:08:38 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.557	53	336201	5.000 ug/L	0.00
9) Fluorobenzene	7.455	96	3429433	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2289633	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.908	65	402047	4.574 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 91.40%	
14) Toluene-d8	10.009	98	3268130	5.051 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 101.00%	
16) 4-Bromofluorobenzene	14.449	95	854679	4.821 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 96.40%	
17) 1,2-Dichlorobenzene-d4	17.130	152	909728	4.764 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 95.20%	

Target Compounds					Qvalue
2) Vinyl chloride	1.660	62	1392297	5.090 ug/L	99
3) 1,1-Dichloroethene	2.924	96	1427257	4.933 ug/L	98
4) 1,1,2-Trichloro-1,2,2-...	2.949	101	1547879	5.409 ug/L	99
5) trans-1,2-Dichloroethene	3.983	96	1632929	4.777 ug/L	99
6) 1,1-Dichloroethane	4.664	63	1207883	4.630 ug/L	99
7) cis-1,2-Dichloroethene	5.600	96	893906	4.640 ug/L	98
8) Chloroform	6.148	83	1283345	4.610 ug/L	100
11) Benzene	6.981	78	3337851	4.668 ug/L	100
12) Trichloroethene	8.027	95	905926	4.830 ug/L	98
15) Tetrachloroethene	10.988	166	1124689	4.974 ug/L	99

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H02.D
Sample : S16J026-CCV1@B16J017-BS1
Instrument: HP5973H
Acq On : 5 Oct 2016 12:29 pm
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 27
Multiplier: 1

Quant Time: Oct 05 13:08:38 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

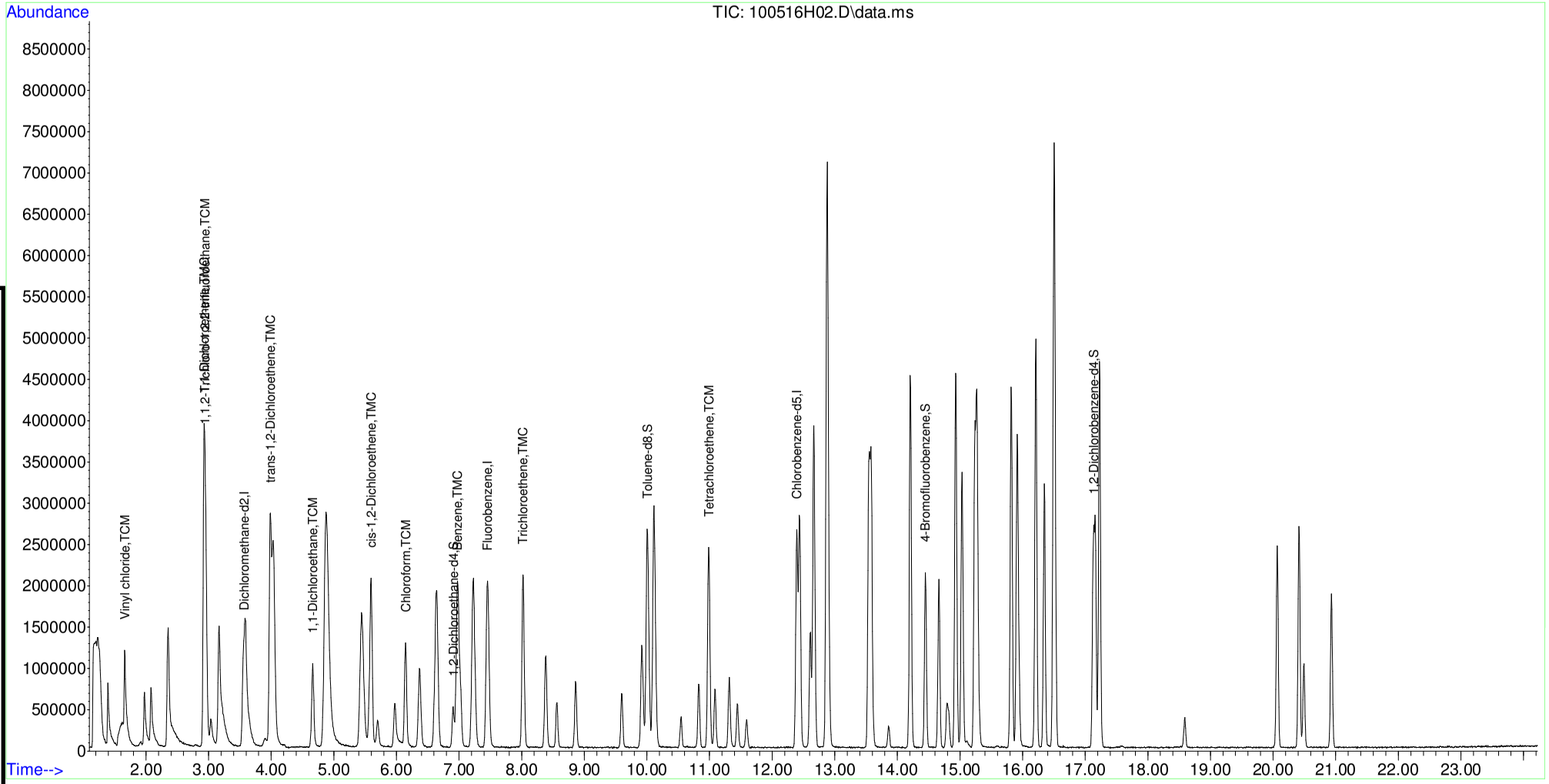


Table of Contents

S16J026-CRL1

QLS REPORT

Instrument Name: HP5973H
Sample Name: S16J026-CRL1
Misc Info: 0.5ug/L, WATER
Date Acquired: 10/5/2016 13:04
QLast Update: Wed Oct 05 11:20:39 2016
Operator: YNB

#	Name	Ret Time	Concentration	Amount	%R	QC Limit		STATUS
1)	Dichloromethane-d2	3.56	5.00	5.0	100.0%	60.0	140.0	pass
2)	Vinyl chloride	1.66	0.47	0.5	94.5%	60.0	140.0	pass
3)	1,1-Dichloroethene	2.92	0.47	0.5	93.9%	60.0	140.0	pass
4)	1,1,2-Trichloro-1,2,2-trifluoroethane	2.96	0.51	0.5	101.8%	60.0	140.0	pass
5)	trans-1,2-Dichloroethene	3.99	0.45	0.5	90.1%	60.0	140.0	pass
6)	1,1-Dichloroethane	4.65	0.61	0.5	122.6%	60.0	140.0	pass
7)	cis-1,2-Dichloroethene	5.60	0.42	0.5	84.5%	60.0	140.0	pass
8)	Chloroform	6.15	0.42	0.5	84.1%	60.0	140.0	pass
9)	Fluorobenzene	7.45	5.00	5.0	100.0%	60.0	140.0	pass
10)	1,2-Dichloroethane-d4	6.91	4.74	5.0	94.8%	60.0	140.0	pass
11)	Benzene	6.97	0.45	0.5	90.9%	60.0	140.0	pass
12)	Trichloroethene	8.02	0.44	0.5	88.8%	60.0	140.0	pass
13)	Chlorobenzene-d5	12.39	5.00	5.0	100.0%	60.0	140.0	pass
14)	Toluene-d8	10.01	5.15	5.0	103.0%	60.0	140.0	pass
15)	Tetrachloroethene	10.99	0.43	0.5	86.8%	60.0	140.0	pass
16)	4-Bromofluorobenzene	14.45	5.00	5.0	100.1%	60.0	140.0	pass
17)	1,2-Dichlorobenzene-d4	17.13	4.96	5.0	99.2%	60.0	140.0	pass
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	

)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H03.D
Sample : S16J026-CRL1
Instrument: HP5973H
Acq On : 5 Oct 2016 1:04 pm
Operator : YNB
Misc : 0.5ug/L, WATER
ALS Vial : 28
Multiplier: 1

Quant Time: Oct 05 13:31:09 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.562	53	321793	5.000 ug/L	0.01
9) Fluorobenzene	7.454	96	3341824	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.392	117	2249577	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.907	65	405957	4.740 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 94.80%	
14) Toluene-d8	10.008	98	3273055	5.148 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 103.00%	
16) 4-Bromofluorobenzene	14.448	95	871509	5.004 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 100.00%	
17) 1,2-Dichlorobenzene-d4	17.129	152	930155	4.958 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 99.20%	

Target Compounds					Qvalue
2) Vinyl chloride	1.665	62	123663	0.472 ug/L	99
3) 1,1-Dichloroethene	2.923	96	129996	0.469 ug/L	97
4) 1,1,2-Trichloro-1,2,2-...	2.960	101	139470	0.509 ug/L	97
5) trans-1,2-Dichloroethene	3.988	96	147375	0.450 ug/L	99
6) 1,1-Dichloroethane	4.651	63	153102	0.613 ug/L	100
7) cis-1,2-Dichloroethene	5.599	96	77875	0.422 ug/L	95
8) Chloroform	6.153	83	112010	0.420 ug/L	98
11) Benzene	6.974	78	316754	0.455 ug/L	99
12) Trichloroethene	8.020	95	81188	0.444 ug/L	96
15) Tetrachloroethene	10.993	166	96444	0.434 ug/L	95

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H03.D
Sample : S16J026-CRL1
Instrument: HP5973H
Acq On : 5 Oct 2016 1:04 pm
Operator : YNB
Misc : 0.5ug/L, WATER
ALS Vial : 28
Multiplier: 1

Quant Time: Oct 05 13:31:09 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

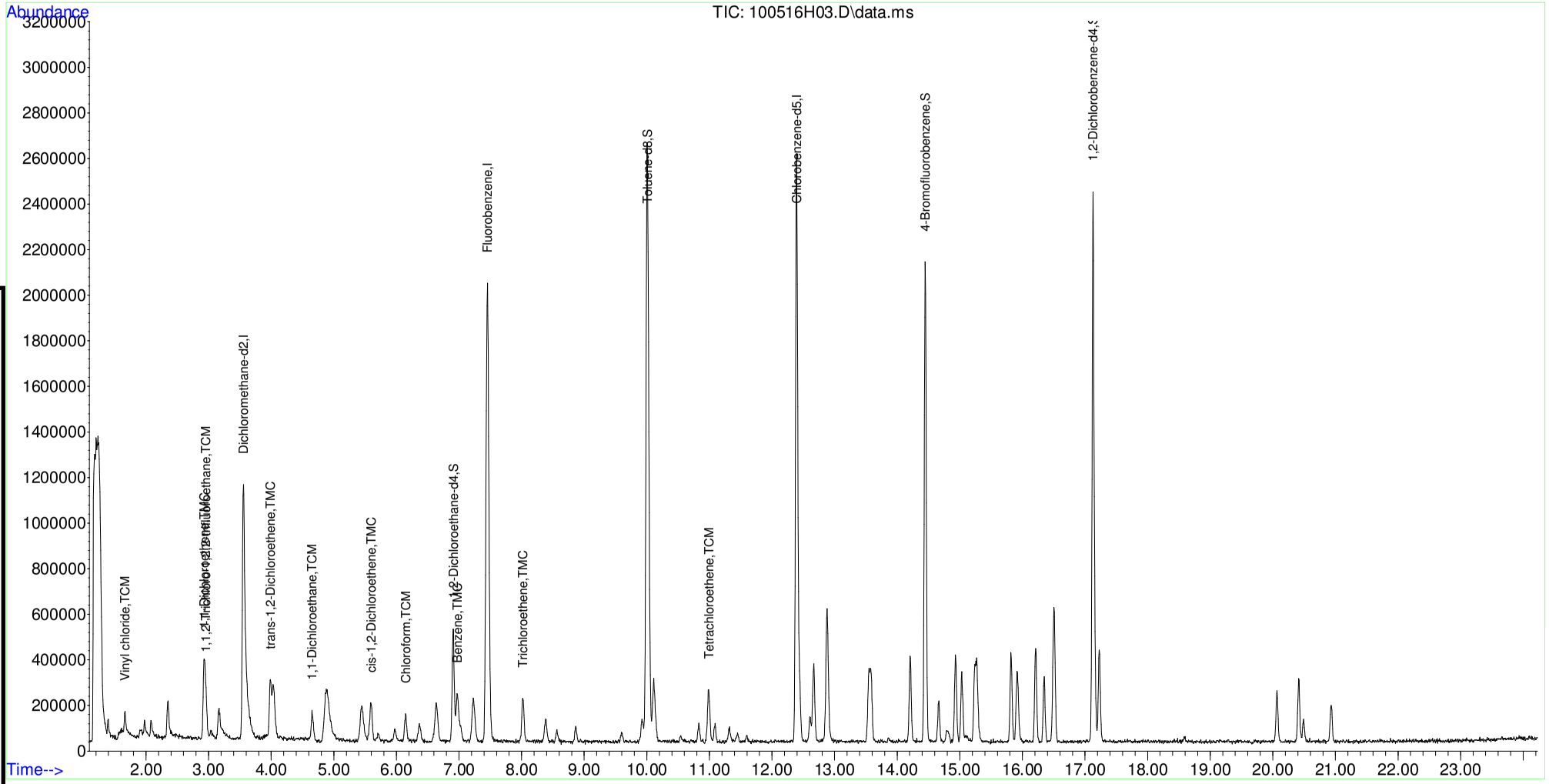


Table of Contents

B16J017-BLK1

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H04.D
Sample : B16J017-BLK1
Instrument: HP5973H
Acq On : 5 Oct 2016 1:40 pm
Operator : YNB
Misc : BLK, WATER
ALS Vial : 29
Multiplier: 1

Quant Time: Oct 05 14:04:49 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Dichloromethane-d2	3.563	53	320939	5.000	ug/L	0.01
9) Fluorobenzene	7.455	96	3329873	5.000	ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2234758	5.000	ug/L	0.00

System Monitoring Compounds

10) 1,2-Dichloroethane-d4	6.907	65	414952	4.862	ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	=	97.20%	
14) Toluene-d8	10.009	98	3151658	4.990	ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	=	99.80%	
16) 4-Bromofluorobenzene	14.448	95	832144	4.810	ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	=	96.20%	
17) 1,2-Dichlorobenzene-d4	17.130	152	870030	4.668	ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	=	93.40%	

Target Compounds Qvalue

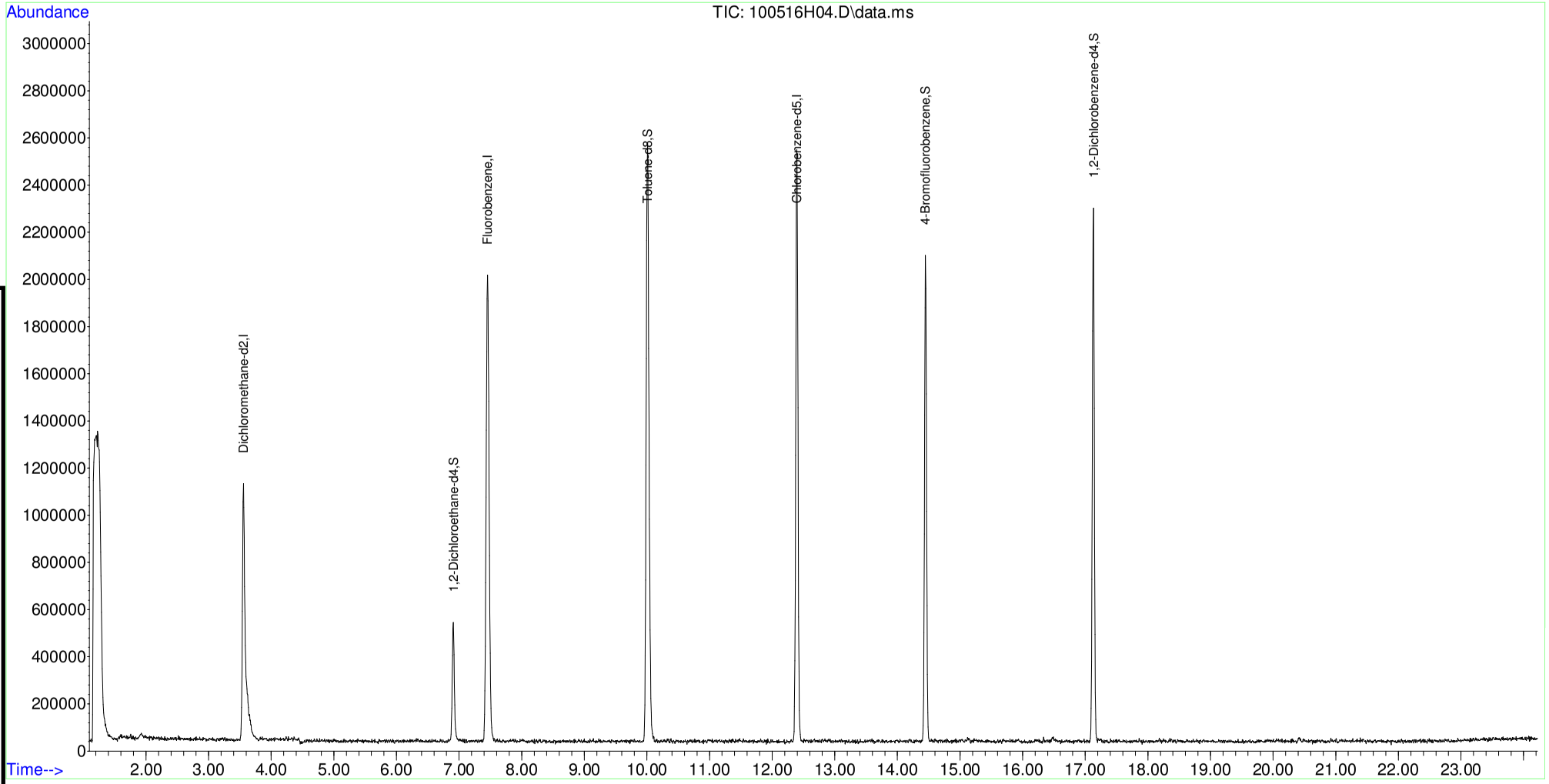
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H04.D
Sample : B16J017-BLK1
Instrument: HP5973H
Acq On : 5 Oct 2016 1:40 pm
Operator : YNB
Misc : BLK, WATER
ALS Vial : 29
Multiplier: 1

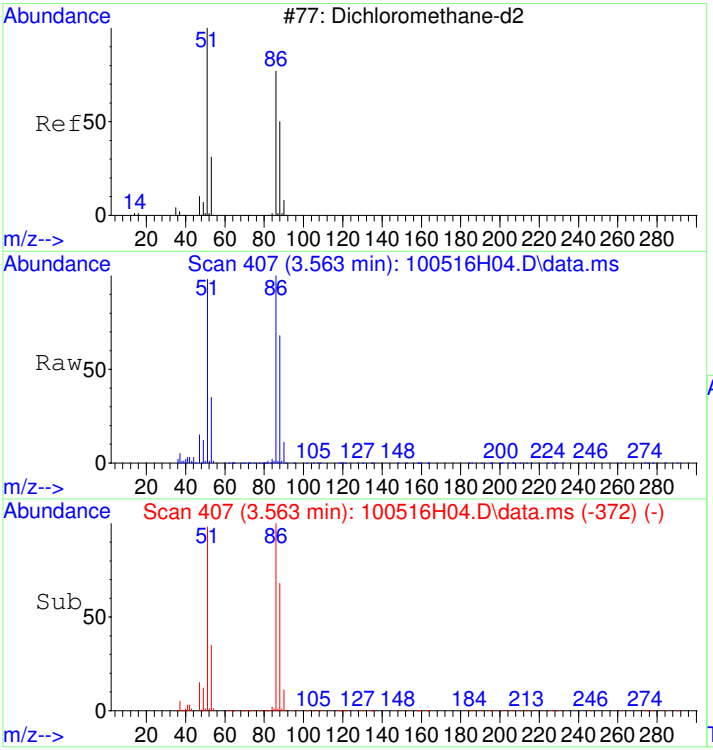
Quant Time: Oct 05 14:04:49 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M



Page 473 of 774 1609102 DATA_PKG (Rev1).PDF 10/14/16 14:07:43

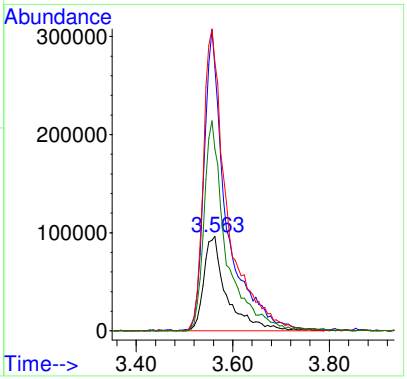
Table of Contents

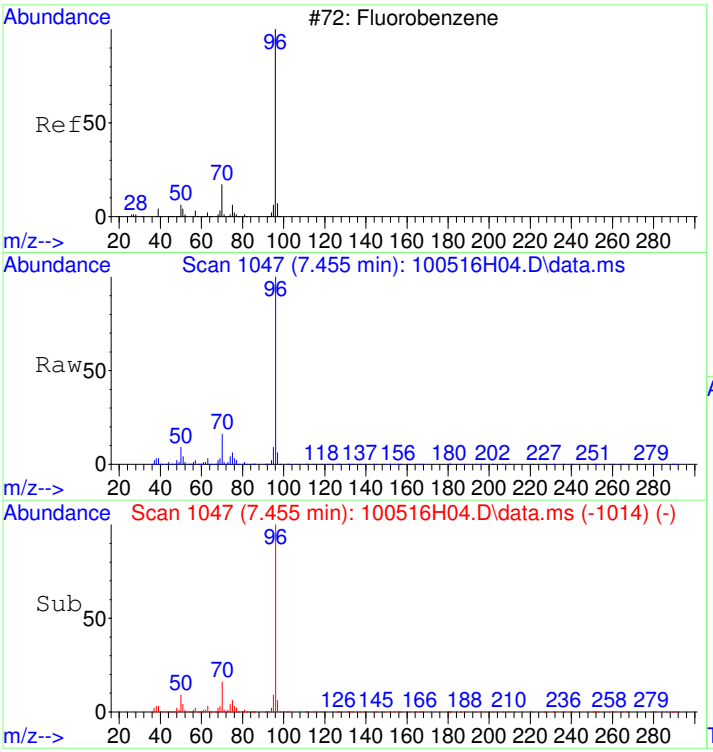


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.563 min Scan# 407
Delta R.T. 0.013 min
Lab File: 100516H04.D
Acq: 5 Oct 2016 1:40 pm

Tgt Ion: 53 Resp: 320939

Ion	Ratio	Lower	Upper
53	100		
51	306.1	386.4	426.4#
86	329.6	0.0	20.0#
88	212.8	231.2	271.2#

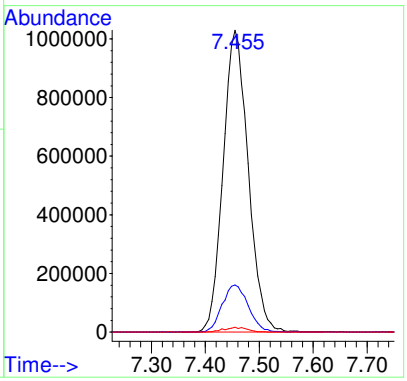


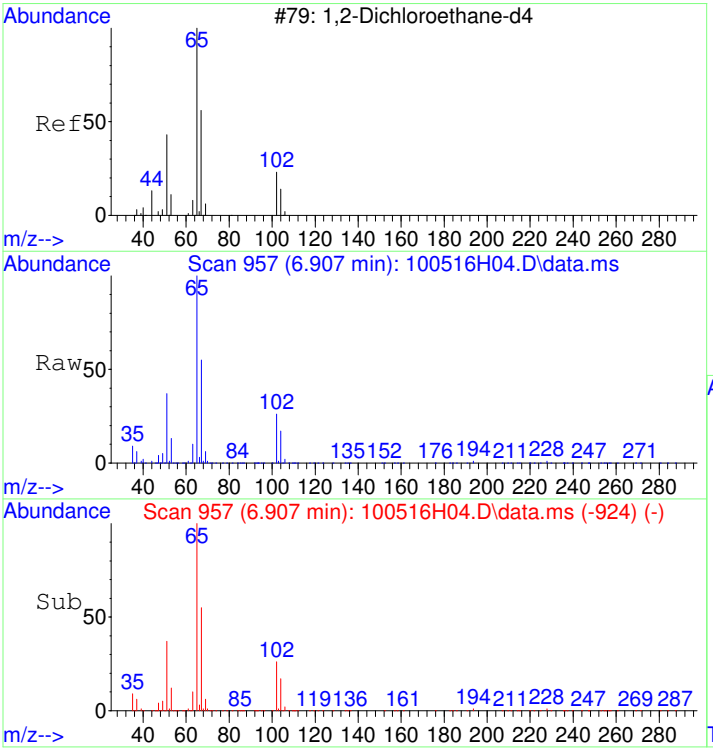


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.455 min Scan# 1047
Delta R.T. 0.001 min
Lab File: 100516H04.D
Acq: 5 Oct 2016 1:40 pm

Tgt Ion: 96 Resp: 3329873

Ion	Ratio	Lower	Upper
96	100		
70	16.3	0.0	36.7
77	1.5	0.0	21.6

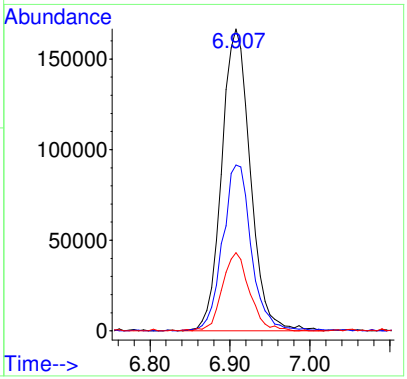


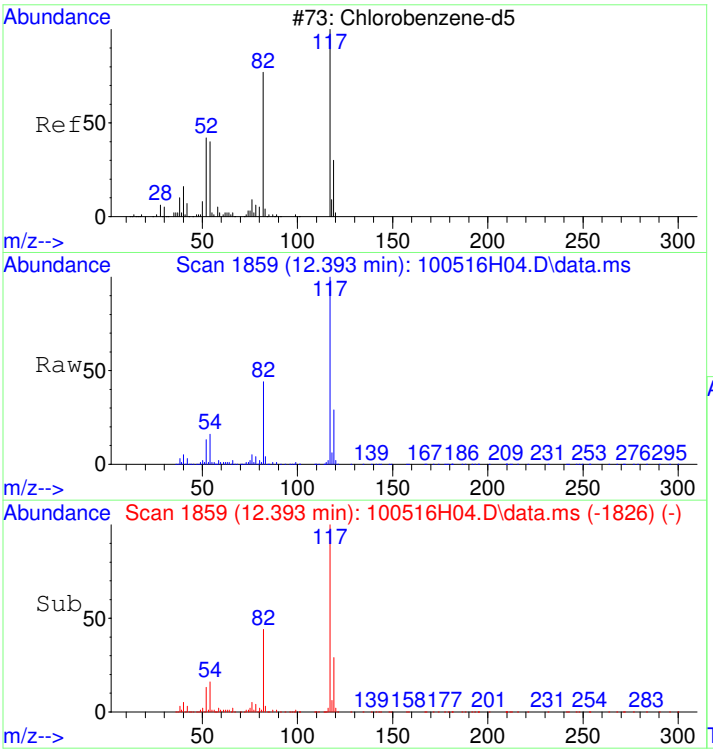


#10
1,2-Dichloroethane-d4
Concen: 4.86 ug/L
RT: 6.907 min Scan# 957
Delta R.T. 0.001 min
Lab File: 100516H04.D
Acq: 5 Oct 2016 1:40 pm

Tgt Ion: 65 Resp: 414952

Ion	Ratio	Lower	Upper
65	100		
67	55.2	31.1	71.1
102	24.6	3.7	43.7

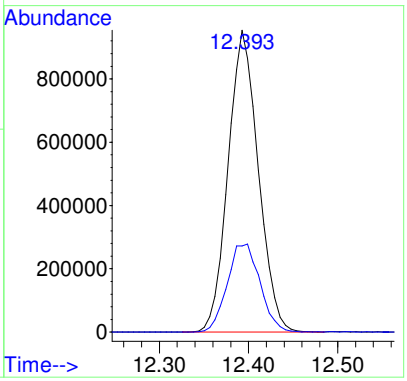


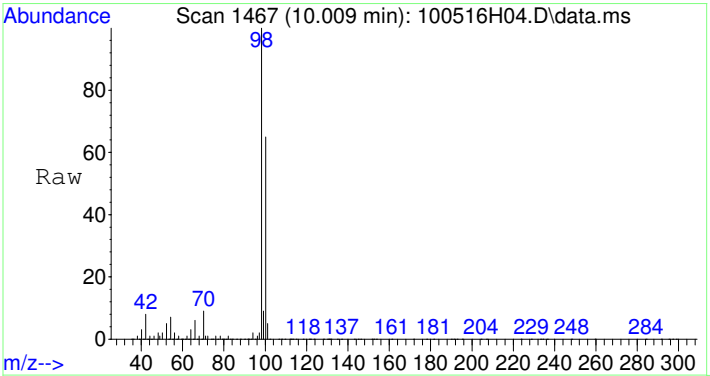


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.393 min Scan# 1859
Delta R.T. 0.001 min
Lab File: 100516H04.D
Acq: 5 Oct 2016 1:40 pm

Tgt Ion:117 Resp: 2234758

Ion	Ratio	Lower	Upper
117	100		
119	31.7	11.9	51.9

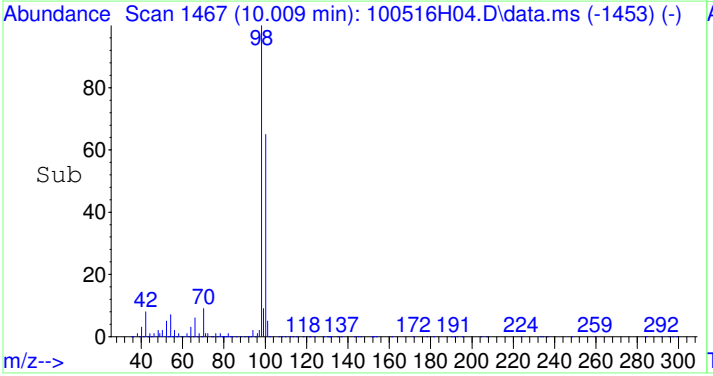


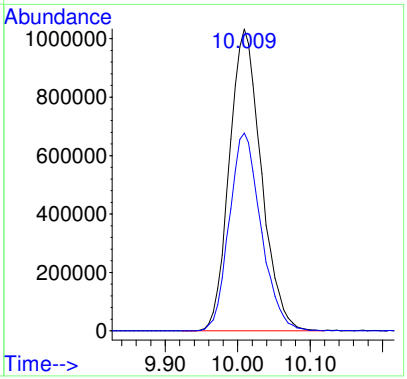


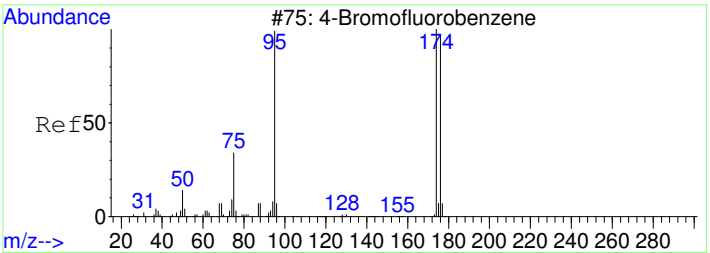
#14
Toluene-d8
Concen: 4.99 ug/L
RT: 10.009 min Scan# 1467
Delta R.T. 0.001 min
Lab File: 100516H04.D
Acq: 5 Oct 2016 1:40 pm

Tgt Ion: 98 Resp: 3151658

Ion	Ratio	Lower	Upper
98	100		
100	65.4	45.1	85.1



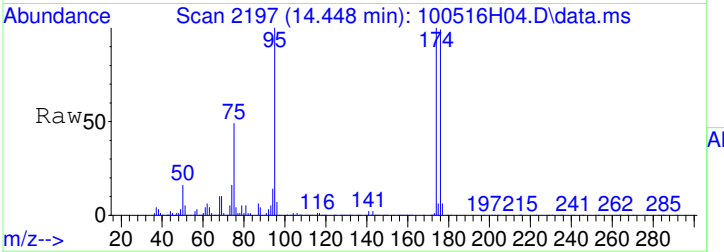


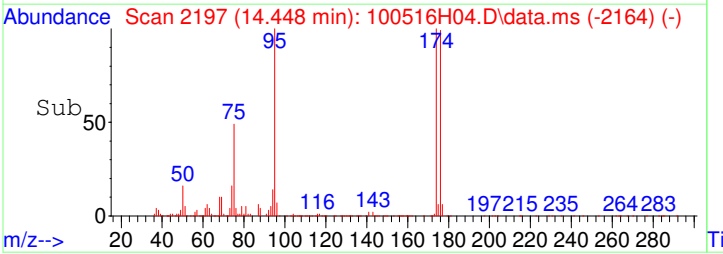


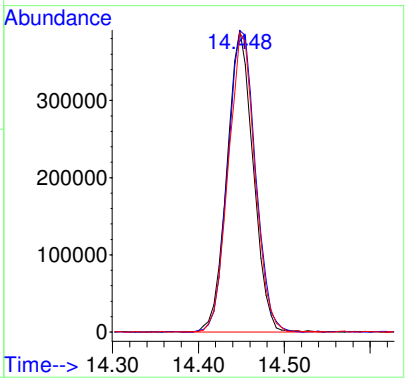
#16
4-Bromofluorobenzene
Concen: 4.81 ug/L
RT: 14.448 min Scan# 2197
Delta R.T. 0.001 min
Lab File: 100516H04.D
Acq: 5 Oct 2016 1:40 pm

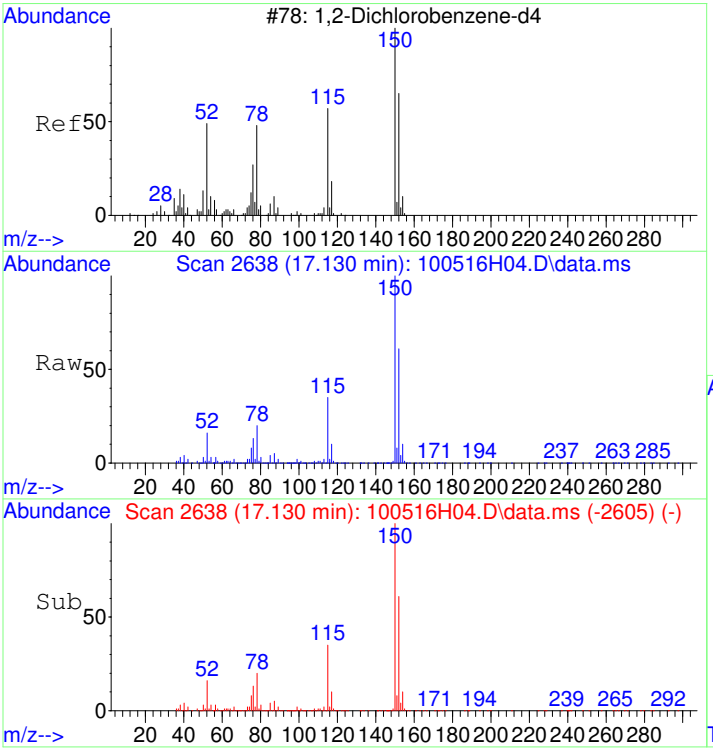
Tgt Ion: 95 Resp: 832144

Ion	Ratio	Lower	Upper
95	100		
174	105.3	84.0	124.0
176	100.6	79.3	119.3





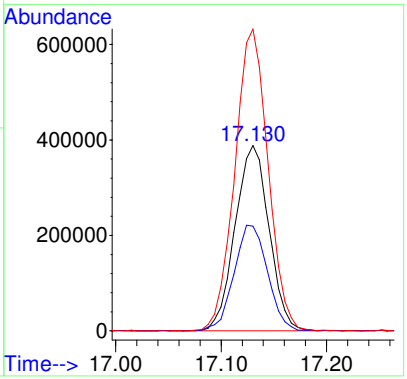




#17
1,2-Dichlorobenzene-d4
Concen: 4.67 ug/L
RT: 17.130 min Scan# 2638
Delta R.T. 0.001 min
Lab File: 100516H04.D
Acq: 5 Oct 2016 1:40 pm

Tgt Ion:152 Resp: 870030

Ion	Ratio	Lower	Upper
152	100		
115	56.3	35.7	75.7
150	159.5	155.7	195.7



B16J017-MS1

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H17.D
Sample : B16J017-MS1
Instrument: HP5973H
Acq On : 5 Oct 2016 9:27 pm
Operator : YNB
Misc : 2X,102-10, WATER SPK
ALS Vial : 42
Multiplier: 1

Quant Time: Oct 06 08:02:12 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	444072	5.000 ug/L	0.00
9) Fluorobenzene	7.461	96	4624861	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	3149660	5.000 ug/L	0.00

IS ↑

System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.908	65	571122	4.818 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 96.40%	
14) Toluene-d8	10.009	98	4449822	4.999 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.00%	
16) 4-Bromofluorobenzene	14.448	95	1262931	5.179 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 103.60%	
17) 1,2-Dichlorobenzene-d4	17.124	152	1323531	5.038 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.80%	

Target Compounds					Qvalue
2) Vinyl chloride	1.659	62	1884203	5.215 ug/L	98
3) 1,1-Dichloroethene	2.924	96	2024178	5.297 ug/L	94
4) 1,1,2-Trichloro-1,2,2-...	2.949	101	2068923	5.473 ug/L	99
5) trans-1,2-Dichloroethene	3.982	96	2291275	5.075 ug/L	98
6) 1,1-Dichloroethane	4.657	63	1941621	5.635 ug/L	99
7) cis-1,2-Dichloroethene	5.600	96	1302565	5.119 ug/L	98
8) Chloroform	6.147	83	2531994	6.886 ug/L	99
11) Benzene	6.974	78	4708226	4.883 ug/L	100
12) Trichloroethene	8.020	95	1433084	5.666 ug/L	98
15) Tetrachloroethene	10.988	166	1524910	4.902 ug/L	100

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H17.D
Sample : B16J017-MS1
Instrument: HP5973H
Acq On : 5 Oct 2016 9:27 pm
Operator : YNB
Misc : 2X,102-10, WATER SPK
ALS Vial : 42
Multiplier: 1

Quant Time: Oct 06 08:02:12 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

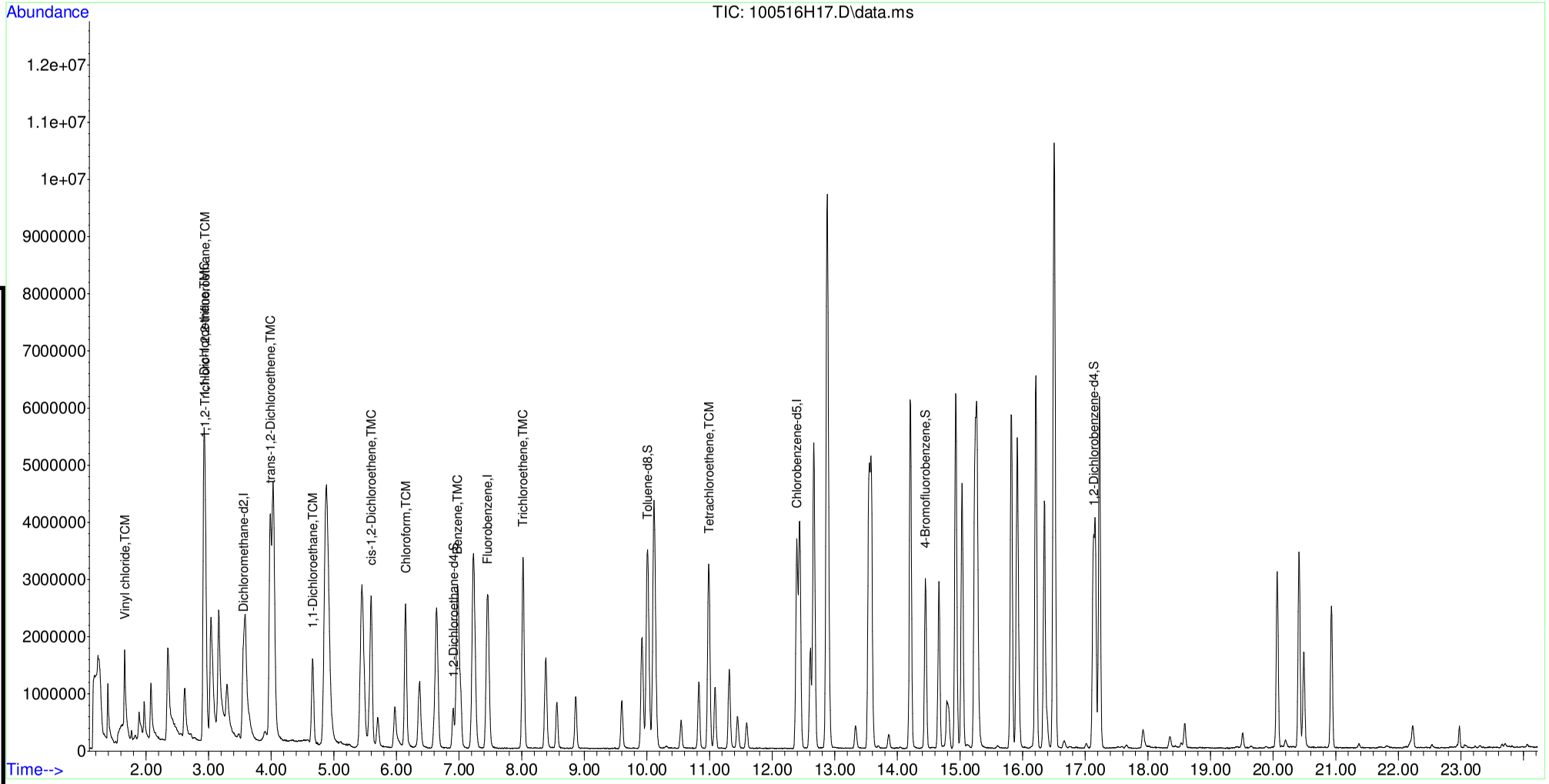


Table of Contents

B16J017-MSD1

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H18.D
Sample : B16J017-MSD1
Instrument: HP5973H
Acq On : 5 Oct 2016 10:03 pm
Operator : YNB
Misc : 2X,102-10, WATER SPK
ALS Vial : 43
Multiplier: 1

Quant Time: Oct 06 08:02:21 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.557	53	440348	5.000 ug/L	0.00
9) Fluorobenzene	7.455	96	4643719	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	3183485	5.000 ug/L	0.00

IS ↑

System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.907	65	586823	4.931 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 98.60%	
14) Toluene-d8	10.009	98	4484862	4.985 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.80%	
16) 4-Bromofluorobenzene	14.448	95	1261215	5.117 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 102.40%	
17) 1,2-Dichlorobenzene-d4	17.130	152	1332824	5.020 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.40%	

Target Compounds					Qvalue
2) Vinyl chloride	1.659	62	1894955	5.289 ug/L	99
3) 1,1-Dichloroethene	2.924	96	1976629	5.216 ug/L	97
4) 1,1,2-Trichloro-1,2,2-...	2.948	101	2081967	5.554 ug/L	99
5) trans-1,2-Dichloroethene	3.982	96	2233830	4.990 ug/L	97
6) 1,1-Dichloroethane	4.663	63	2034485	5.954 ug/L	100
7) cis-1,2-Dichloroethene	5.600	96	1280592	5.075 ug/L	99
8) Chloroform	6.147	83	2569220	7.046 ug/L	98
11) Benzene	6.974	78	4621692	4.774 ug/L	100
12) Trichloroethene	8.020	95	1413993	5.567 ug/L	98
15) Tetrachloroethene	10.994	166	1530213	4.867 ug/L	99

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H18.D
Sample : B16J017-MSD1
Instrument: HP5973H
Acq On : 5 Oct 2016 10:03 pm
Operator : YNB
Misc : 2X,102-10, WATER SPK
ALS Vial : 43
Multiplier: 1

Quant Time: Oct 06 08:02:21 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

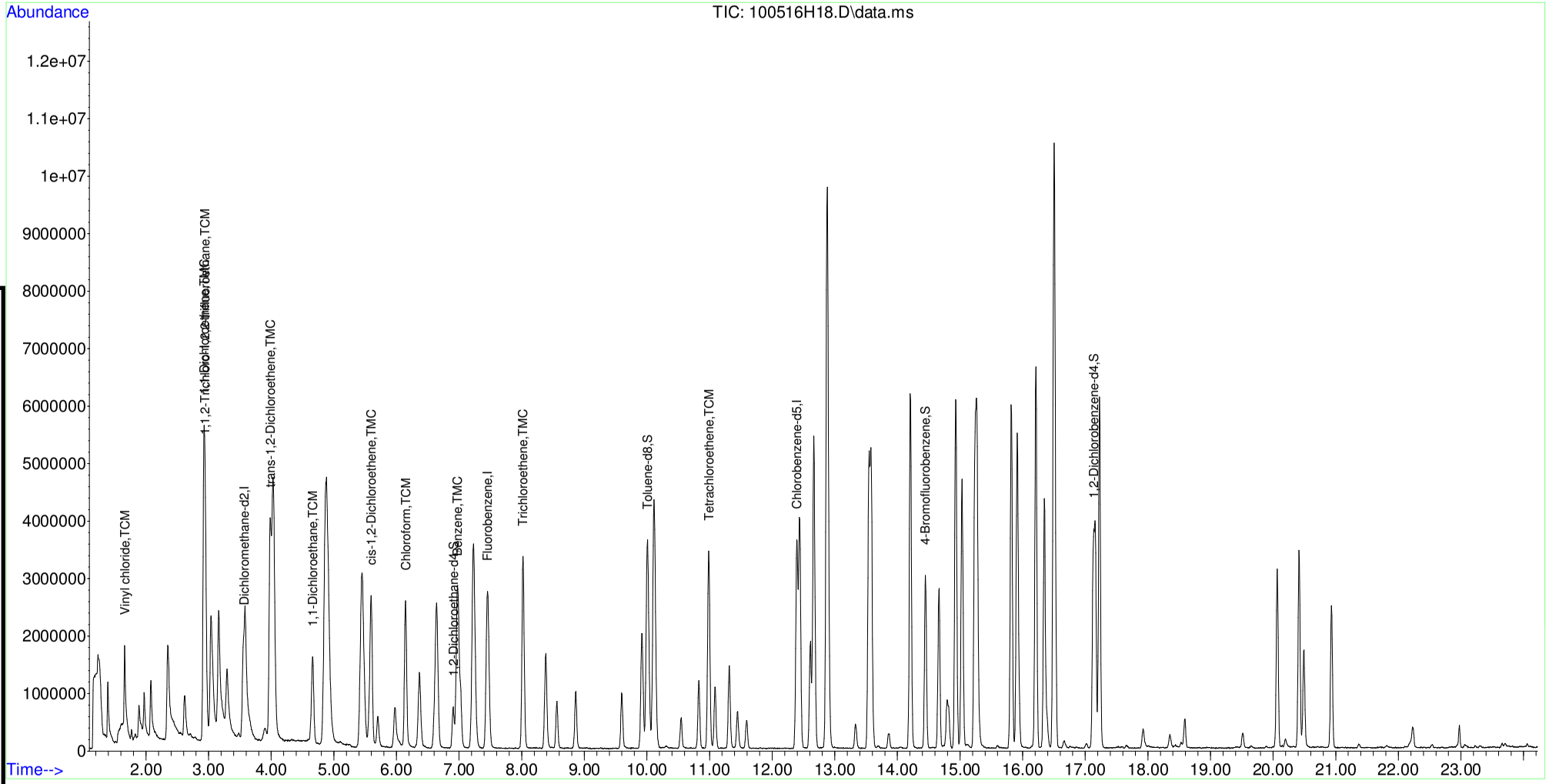


Table of Contents

1609102-01RE1

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H09.D
Sample : 1609102-01RE1
Instrument: HP5973H
Acq On : 5 Oct 2016 4:40 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 34
Multiplier: 1

Quant Time: Oct 06 08:00:04 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.556	53	382360	5.000 ug/L	0.00
9) Fluorobenzene	7.454	96	3937023	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.392	117	2687029	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.913	65	506930	5.024 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 100.40%	
14) Toluene-d8	10.002	98	3773357	4.969 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.40%	
16) 4-Bromofluorobenzene	14.447	95	1036906	4.984 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 99.60%	
17) 1,2-Dichlorobenzene-d4	17.129	152	1127259	5.030 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.60%	
Target Compounds					Qvalue
7) cis-1,2-Dichloroethene	5.599	96	56930	0.260 ug/L	97
8) Chloroform	6.140	83	552251	1.744 ug/L	99
12) Trichloroethene	8.019	95	161344	0.749 ug/L	94

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H09.D
Sample : 1609102-01RE1
Instrument: HP5973H
Acq On : 5 Oct 2016 4:40 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 34
Multiplier: 1

Quant Time: Oct 06 08:00:04 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

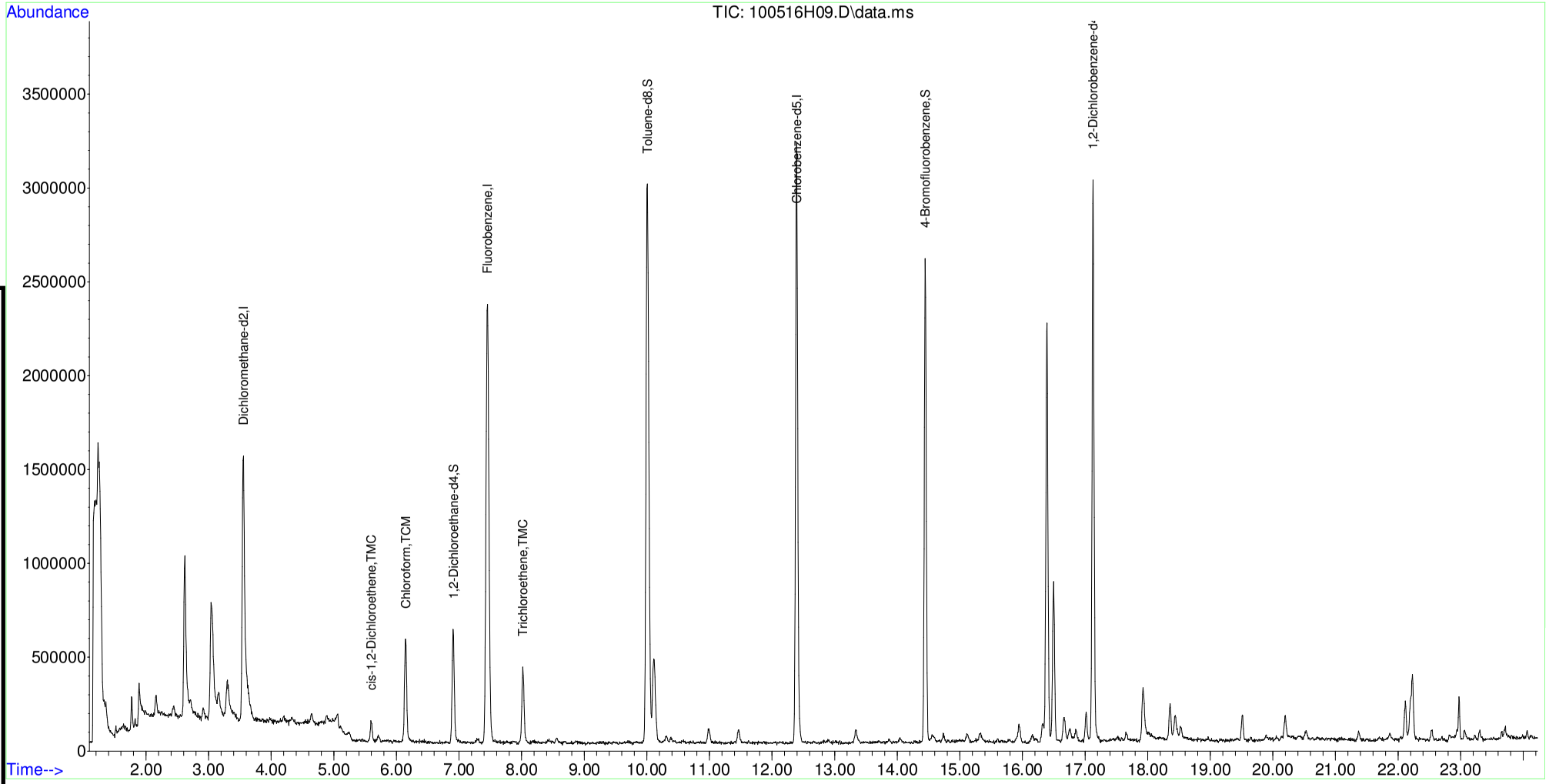
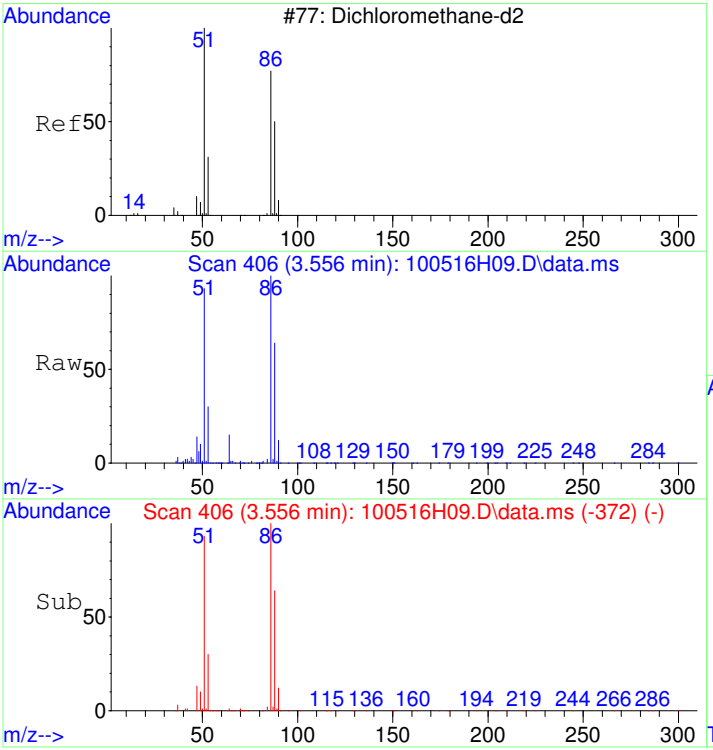


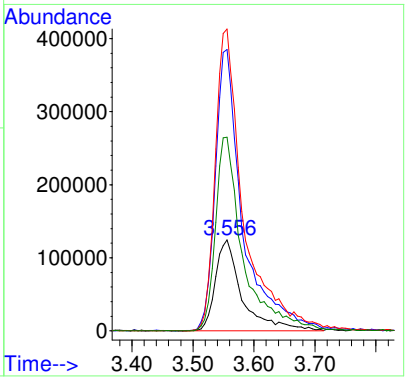
Table of Contents

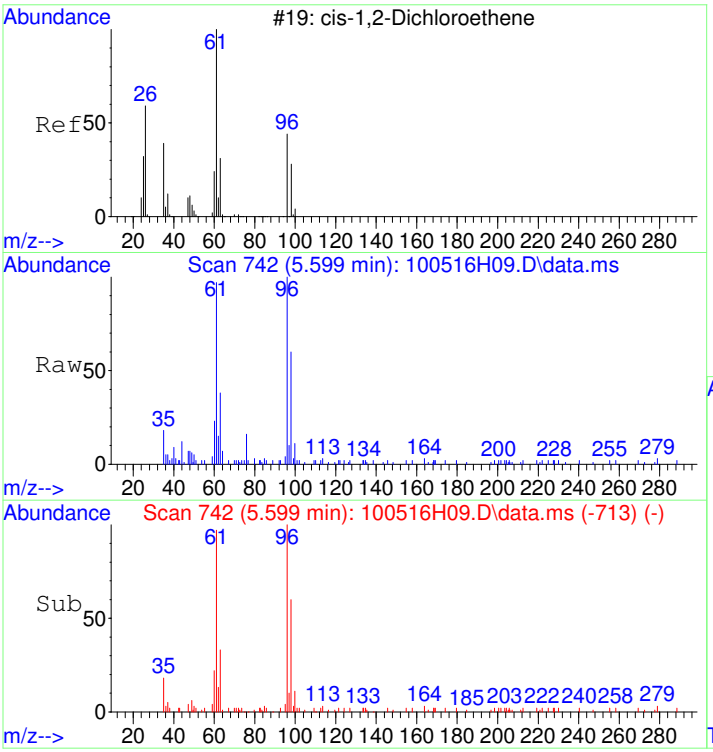


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.556 min Scan# 406
Delta R.T. 0.006 min
Lab File: 100516H09.D
Acq: 5 Oct 2016 4:40 pm

Tgt Ion: 53 Resp: 382360

Ion	Ratio	Lower	Upper
53	100		
51	317.9	386.4	426.4#
86	352.2	0.0	20.0#
88	218.1	231.2	271.2#

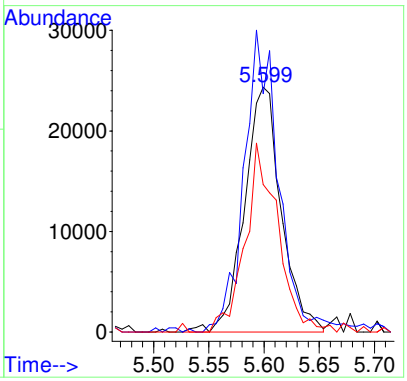


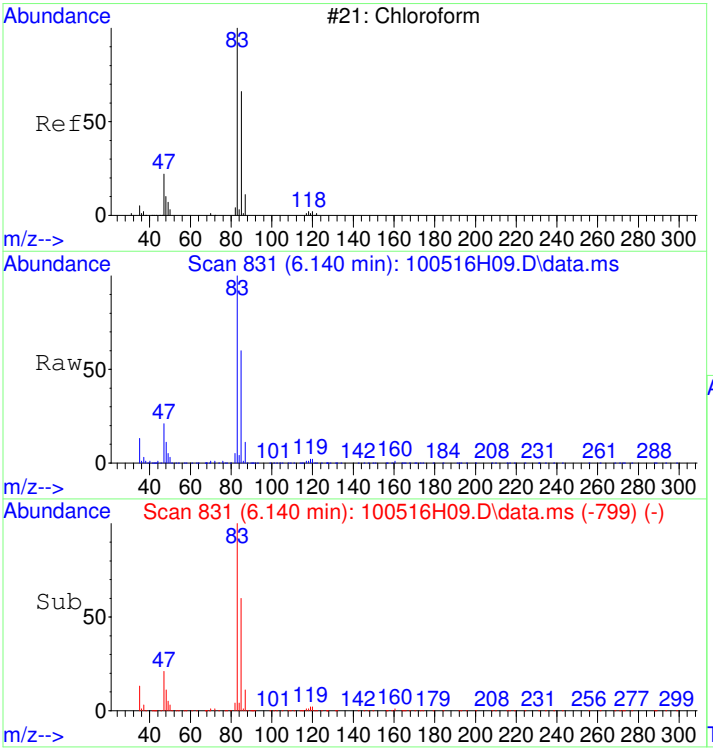


#7
cis-1,2-Dichloroethene
Concen: 0.26 ug/L
RT: 5.599 min Scan# 742
Delta R.T. 0.000 min
Lab File: 100516H09.D
Acq: 5 Oct 2016 4:40 pm

Tgt Ion: 96 Resp: 56930

Ion	Ratio	Lower	Upper
96	100		
61	115.7	97.5	137.5
98	68.1	43.4	83.4

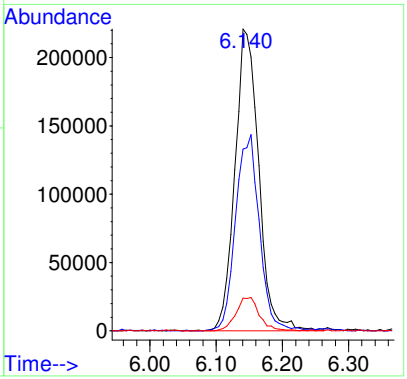


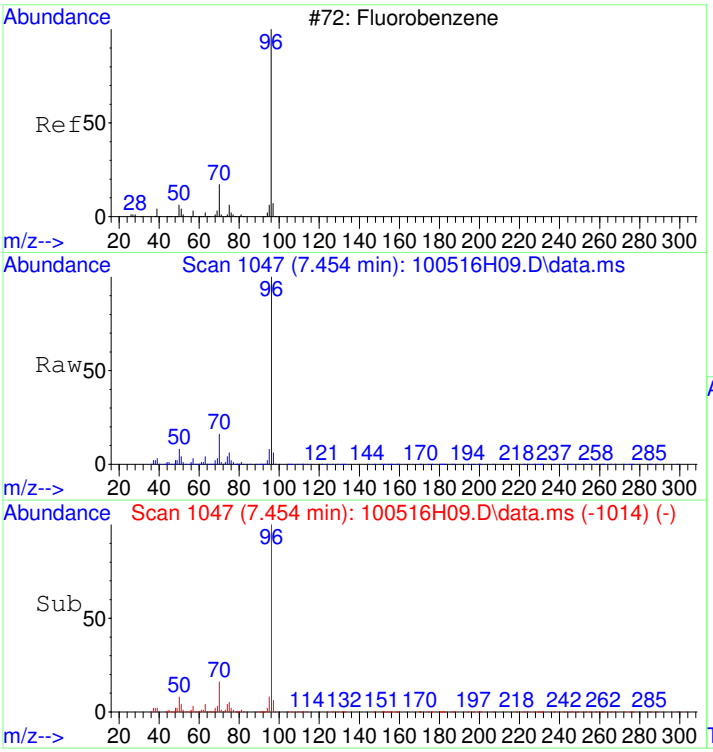


#8
Chloroform
Concen: 1.74 ug/L
RT: 6.140 min Scan# 831
Delta R.T. -0.006 min
Lab File: 100516H09.D
Acq: 5 Oct 2016 4:40 pm

Tgt Ion: 83 Resp: 552251

Ion	Ratio	Lower	Upper
83	100		
85	64.8	43.8	83.8
87	10.9	0.0	30.6

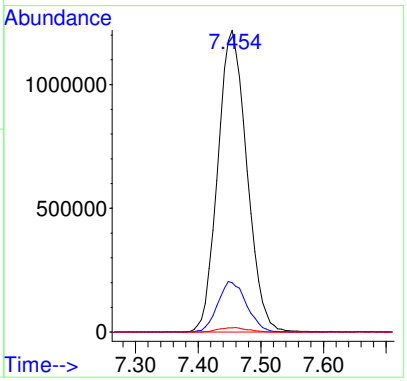


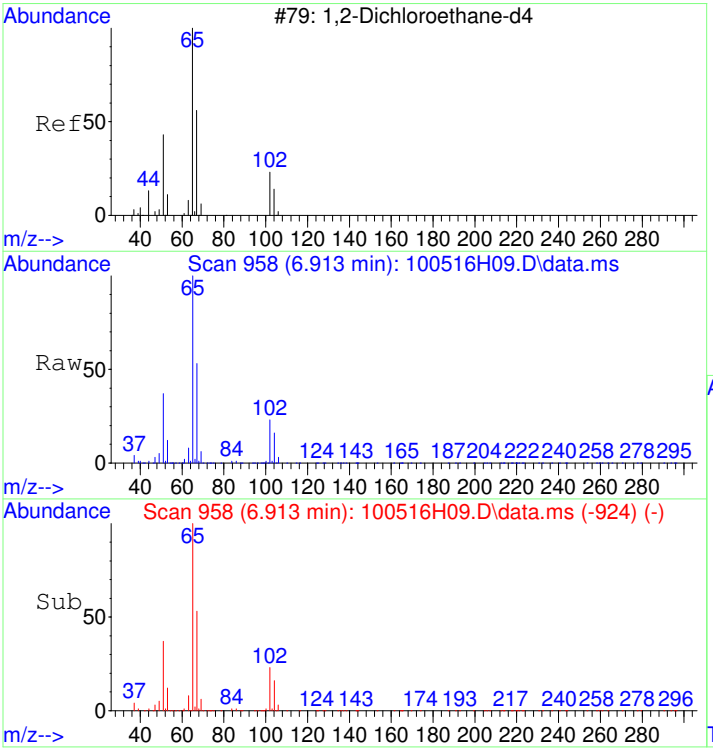


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.454 min Scan# 1047
Delta R.T. 0.000 min
Lab File: 100516H09.D
Acq: 5 Oct 2016 4:40 pm

Tgt Ion: 96 Resp: 3937023

Ion	Ratio	Lower	Upper
96	100		
70	16.6	0.0	36.7
77	1.5	0.0	21.6

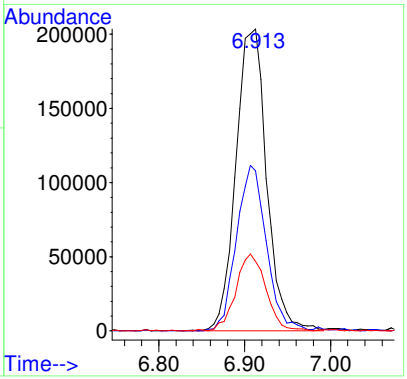


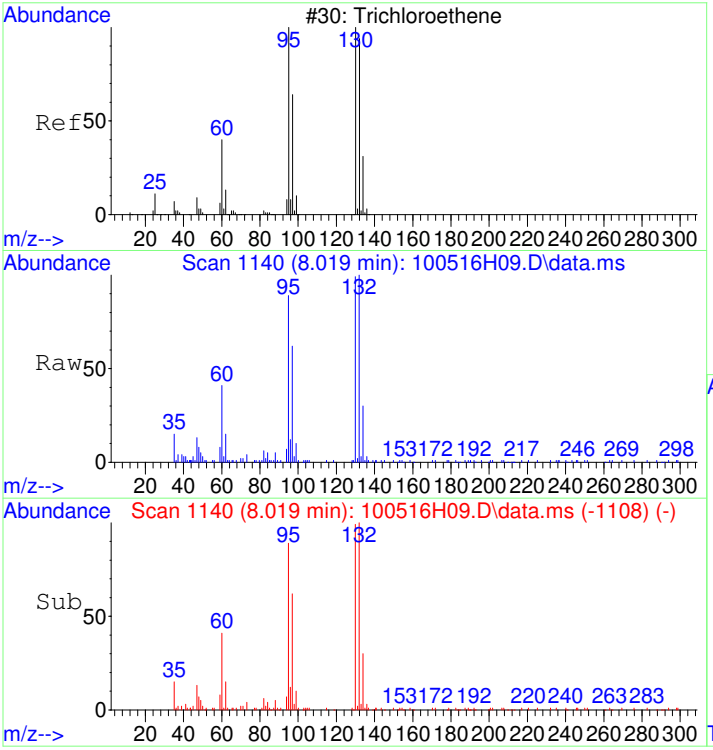


#10
1,2-Dichloroethane-d4
Concen: 5.02 ug/L
RT: 6.913 min Scan# 958
Delta R.T. 0.006 min
Lab File: 100516H09.D
Acq: 5 Oct 2016 4:40 pm

Tgt Ion: 65 Resp: 506930

Ion	Ratio	Lower	Upper
65	100		
67	53.2	31.1	71.1
102	24.8	3.7	43.7

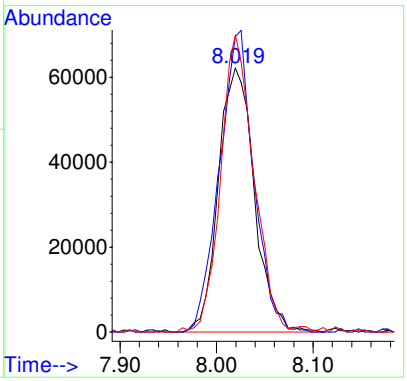


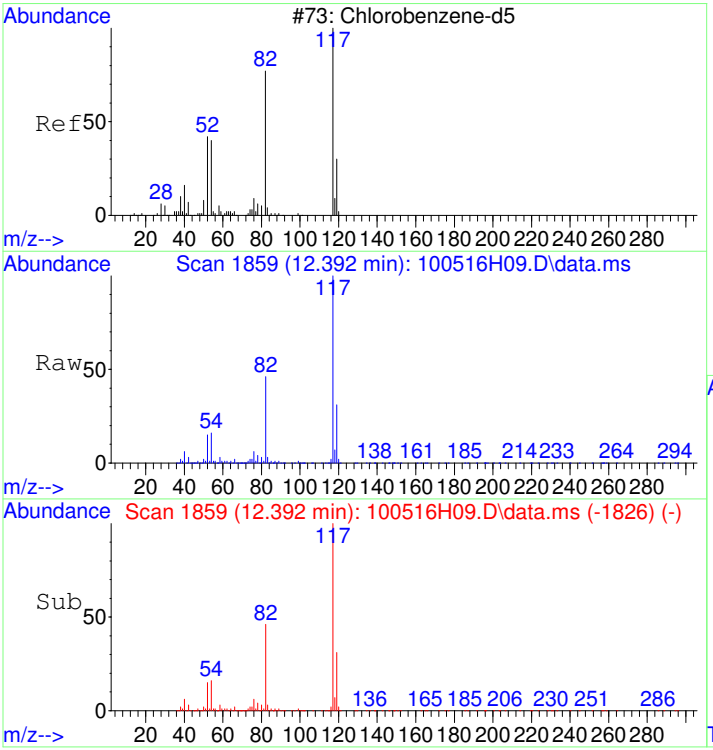


#12
Trichloroethene
Concen: 0.75 ug/L
RT: 8.019 min Scan# 1140
Delta R.T. -0.006 min
Lab File: 100516H09.D
Acq: 5 Oct 2016 4:40 pm

Tgt Ion: 95 Resp: 161344

Ion	Ratio	Lower	Upper
95	100		
130	109.3	93.3	133.3
132	103.5	92.5	132.5

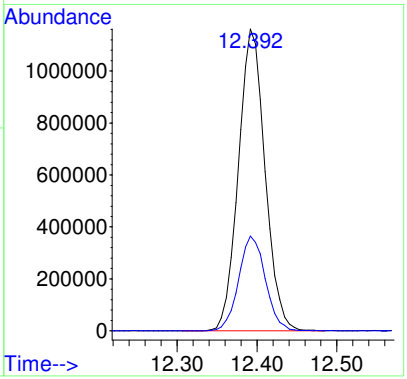


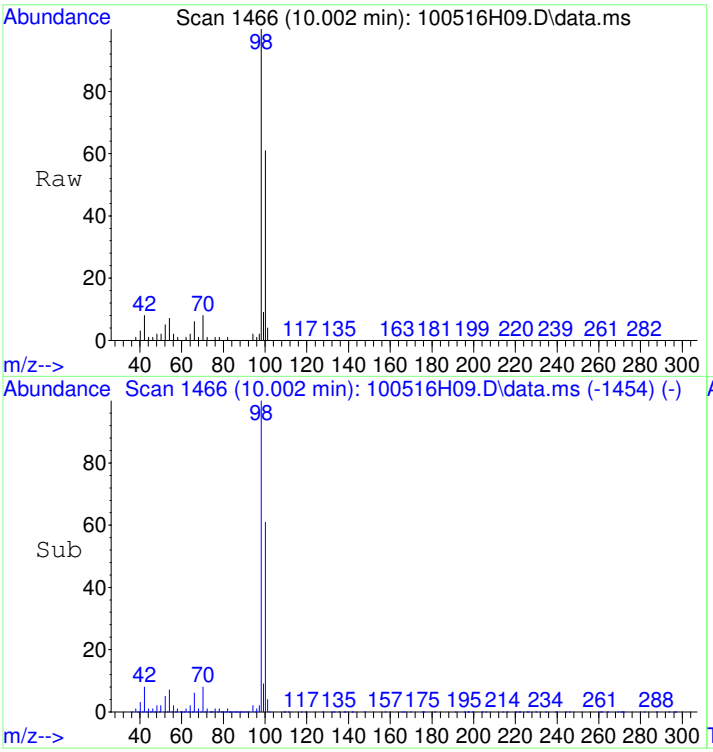


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.392 min Scan# 1859
Delta R.T. 0.000 min
Lab File: 100516H09.D
Acq: 5 Oct 2016 4:40 pm

Tgt Ion:117 Resp: 2687029

Ion	Ratio	Lower	Upper
117	100		
119	31.5	11.9	51.9

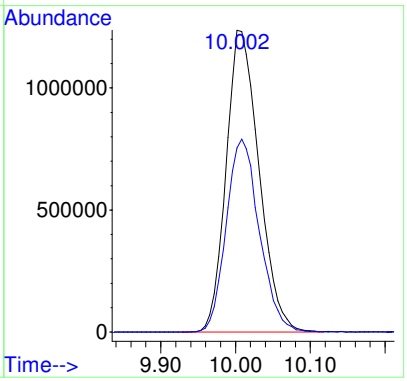


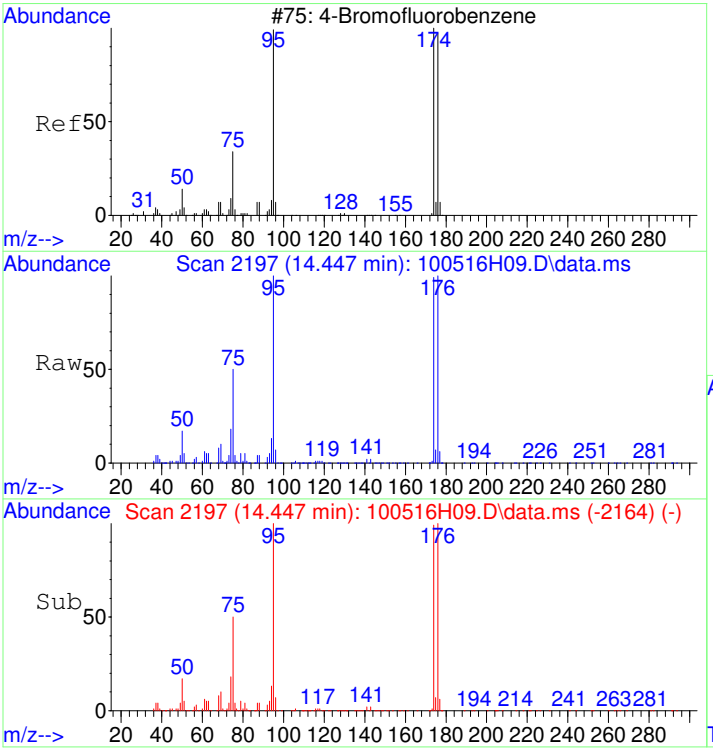


#14
Toluene-d8
Concen: 4.97 ug/L
RT: 10.002 min Scan# 1466
Delta R.T. -0.006 min
Lab File: 100516H09.D
Acq: 5 Oct 2016 4:40 pm

Tgt Ion: 98 Resp: 3773357

Ion	Ratio	Lower	Upper
98	100		
100	64.4	45.1	85.1

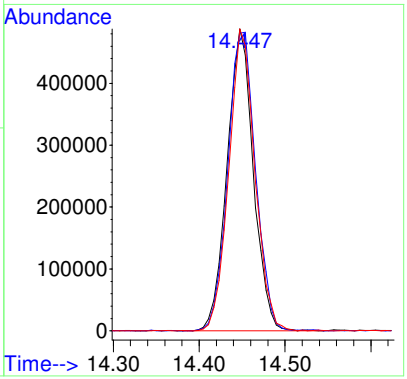


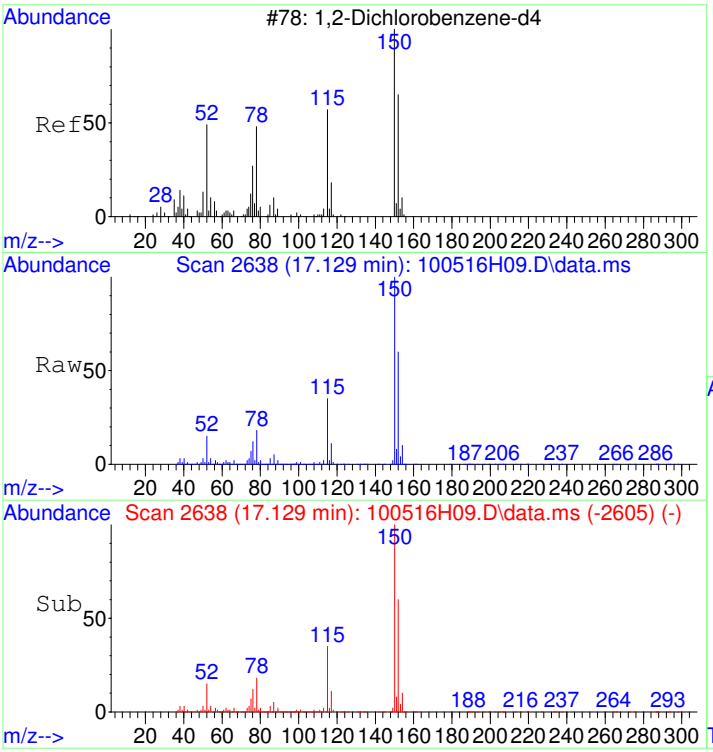


#16
4-Bromofluorobenzene
Concen: 4.98 ug/L
RT: 14.447 min Scan# 2197
Delta R.T. 0.000 min
Lab File: 100516H09.D
Acq: 5 Oct 2016 4:40 pm

Tgt Ion: 95 Resp: 1036906

Ion	Ratio	Lower	Upper
95	100		
174	104.8	84.0	124.0
176	99.1	79.3	119.3

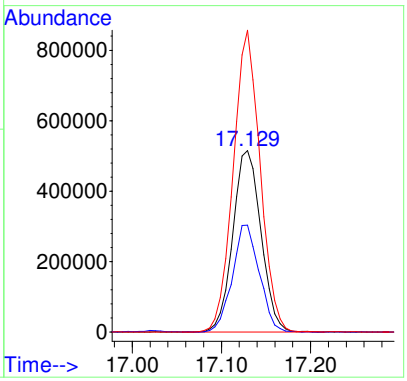




#17
1,2-Dichlorobenzene-d4
Concen: 5.03 ug/L
RT: 17.129 min Scan# 2638
Delta R.T. 0.000 min
Lab File: 100516H09.D
Acq: 5 Oct 2016 4:40 pm

Tgt Ion:152 Resp: 1127259

Ion	Ratio	Lower	Upper
152	100		
115	56.7	35.7	75.7
150	159.0	155.7	195.7



1609102-02RE1

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H10.D
Sample : 1609102-02RE1
Instrument: HP5973H
Acq On : 5 Oct 2016 5:16 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 35
Multiplier: 1

Quant Time: Oct 06 08:00:08 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	393143	5.000 ug/L	0.00
9) Fluorobenzene	7.449	96	4025255	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2769281	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.901	65	521492	5.055 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 101.20%	
14) Toluene-d8	10.003	98	3875483	4.952 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.00%	
16) 4-Bromofluorobenzene	14.448	95	1055973	4.925 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 98.60%	
17) 1,2-Dichlorobenzene-d4	17.124	152	1160053	5.023 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.40%	

Target Compounds					Qvalue
7) cis-1,2-Dichloroethene	5.594	96	66303	0.294 ug/L	92
8) Chloroform	6.147	83	1069576	3.286 ug/L	98
12) Trichloroethene	8.020	95	181793	0.826 ug/L	98

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H10.D
Sample : 1609102-02RE1
Instrument: HP5973H
Acq On : 5 Oct 2016 5:16 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 35
Multiplier: 1

Quant Time: Oct 06 08:00:08 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

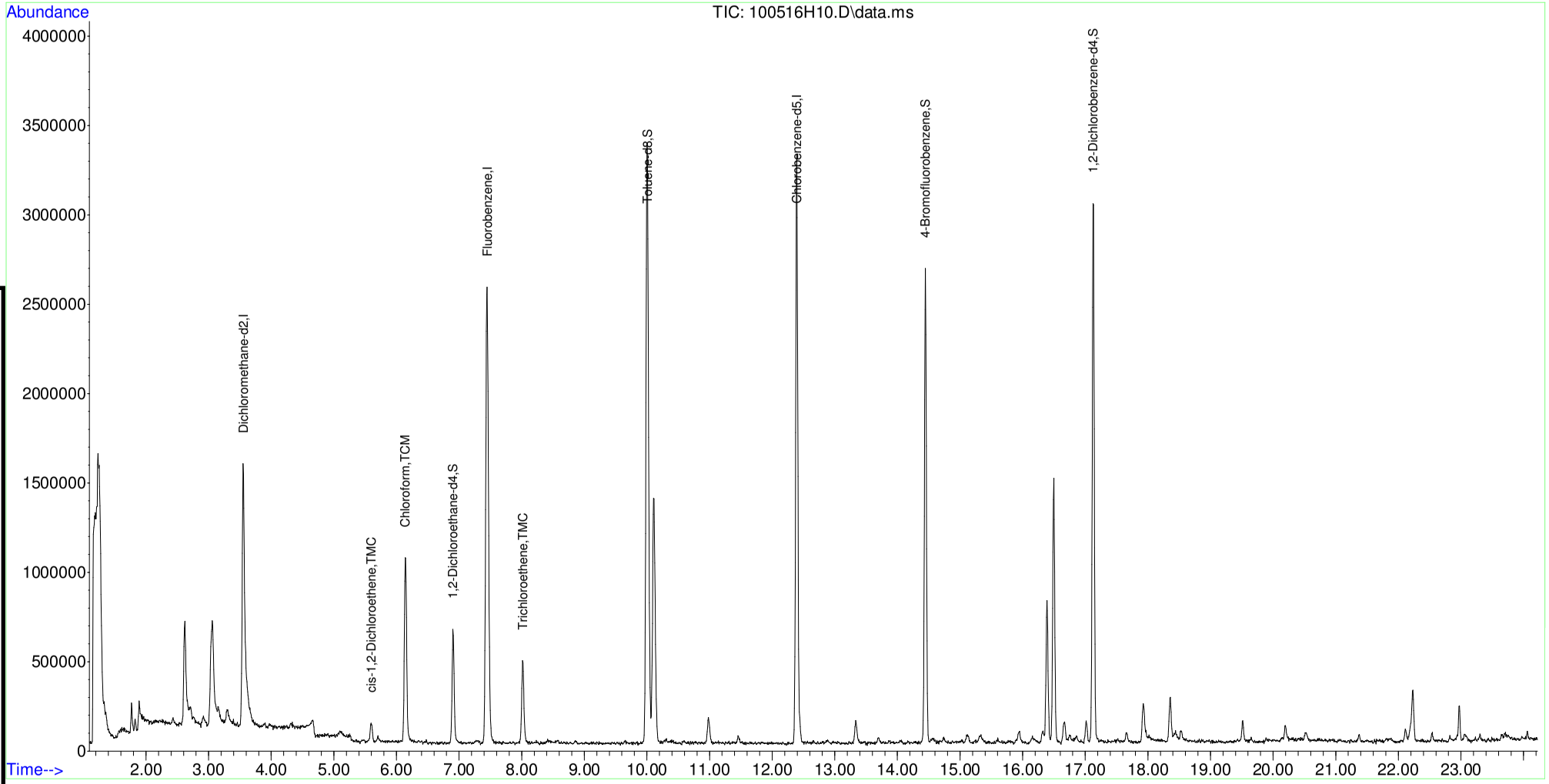
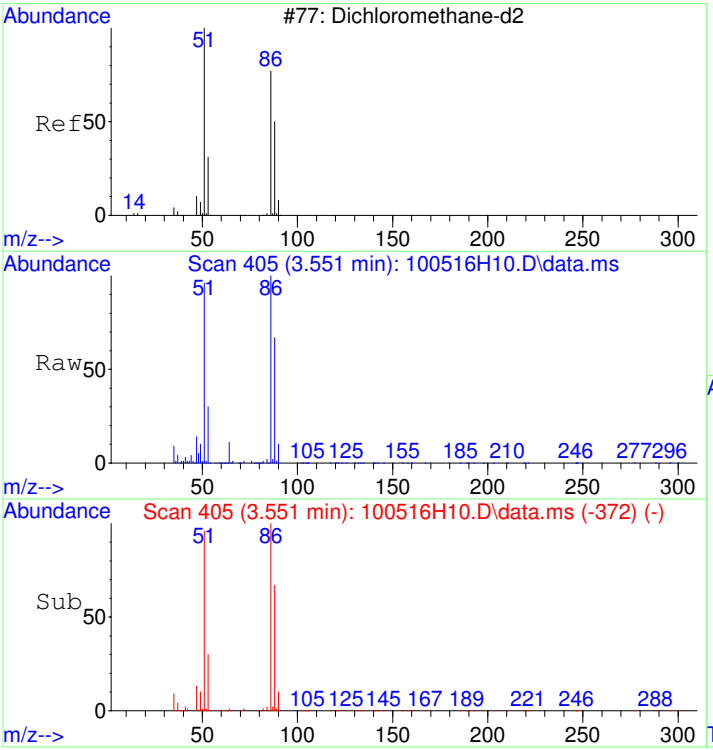


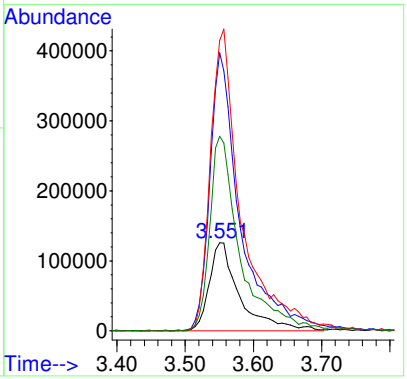
Table of Contents

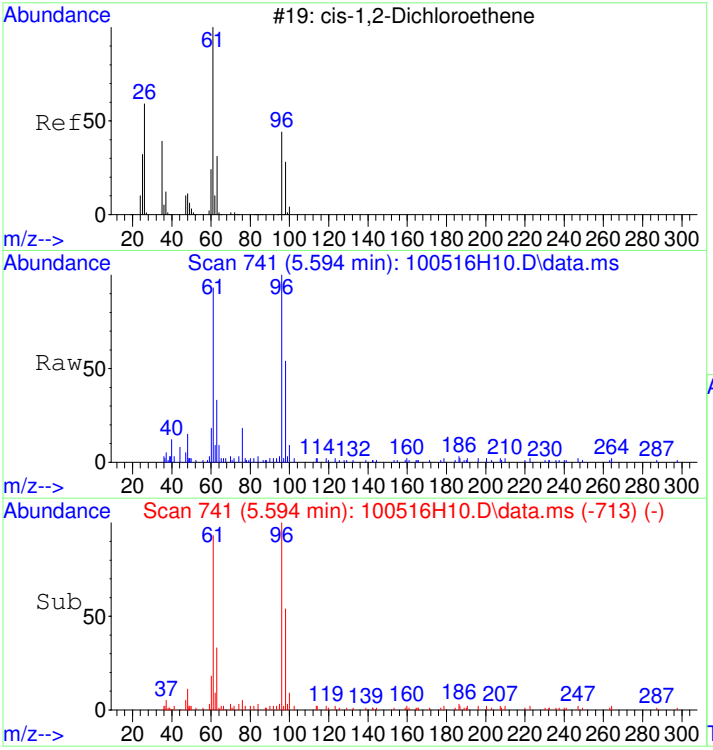


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.551 min Scan# 405
Delta R.T. 0.001 min
Lab File: 100516H10.D
Acq: 5 Oct 2016 5:16 pm

Tgt Ion: 53 Resp: 393143

Ion	Ratio	Lower	Upper
53	100		
51	317.3	386.4	426.4#
86	348.4	0.0	20.0#
88	219.5	231.2	271.2#

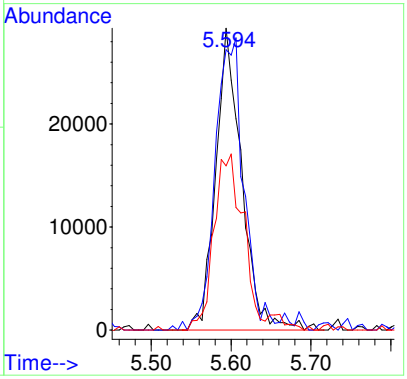


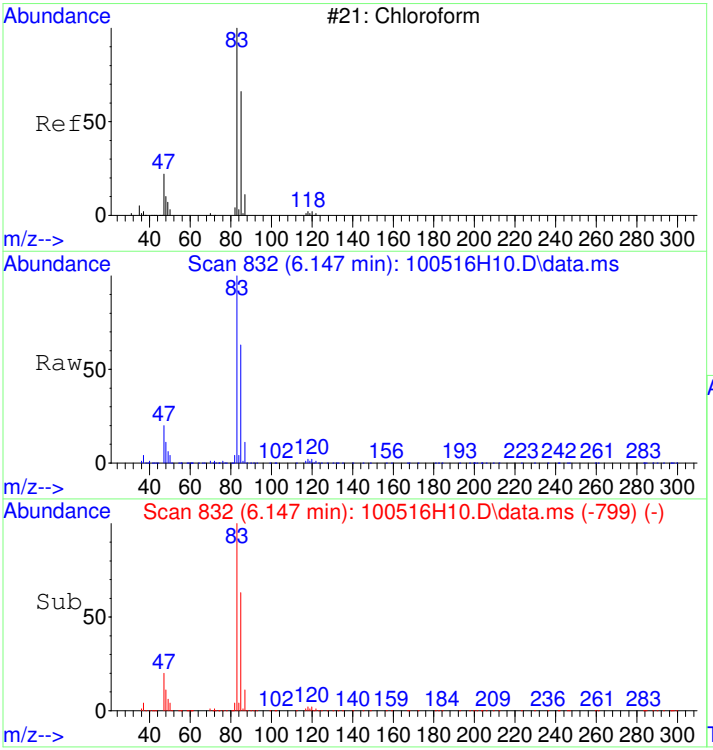


#7
cis-1,2-Dichloroethene
Concen: 0.29 ug/L
RT: 5.594 min Scan# 741
Delta R.T. -0.005 min
Lab File: 100516H10.D
Acq: 5 Oct 2016 5:16 pm

Tgt Ion: 96 Resp: 66303

Ion	Ratio	Lower	Upper
96	100		
61	106.2	97.5	137.5
98	65.6	43.4	83.4

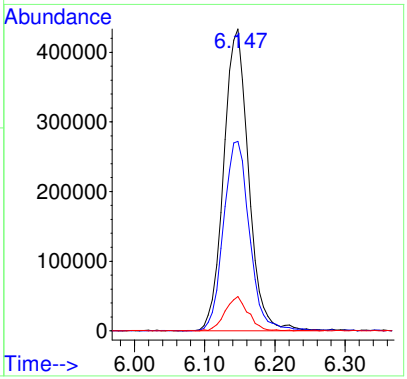


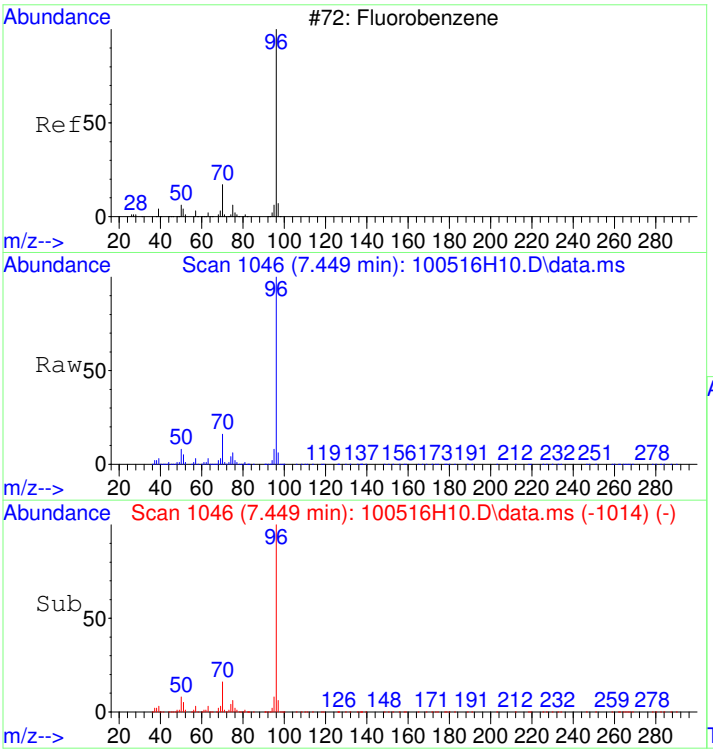


#8
Chloroform
Concen: 3.29 ug/L
RT: 6.147 min Scan# 832
Delta R.T. 0.001 min
Lab File: 100516H10.D
Acq: 5 Oct 2016 5:16 pm

Tgt Ion: 83 Resp: 1069576

Ion	Ratio	Lower	Upper
83	100		
85	65.4	43.8	83.8
87	10.6	0.0	30.6

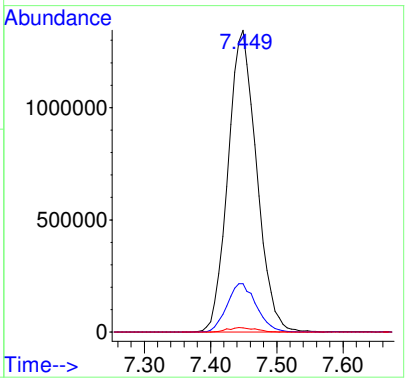


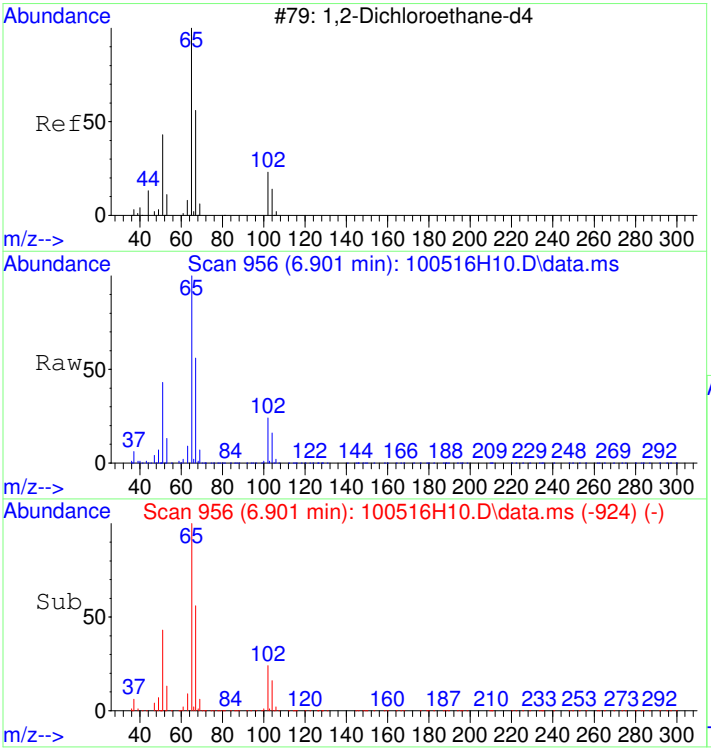


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.449 min Scan# 1046
Delta R.T. -0.005 min
Lab File: 100516H10.D
Acq: 5 Oct 2016 5:16 pm

Tgt Ion: 96 Resp: 4025255

Ion	Ratio	Lower	Upper
96	100		
70	16.5	0.0	36.7
77	1.5	0.0	21.6

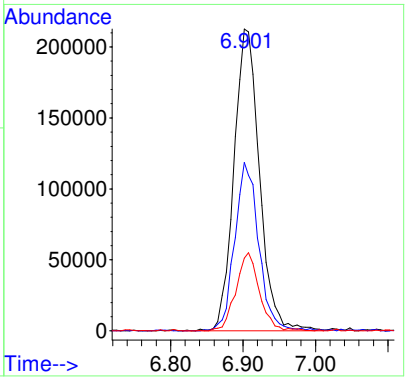


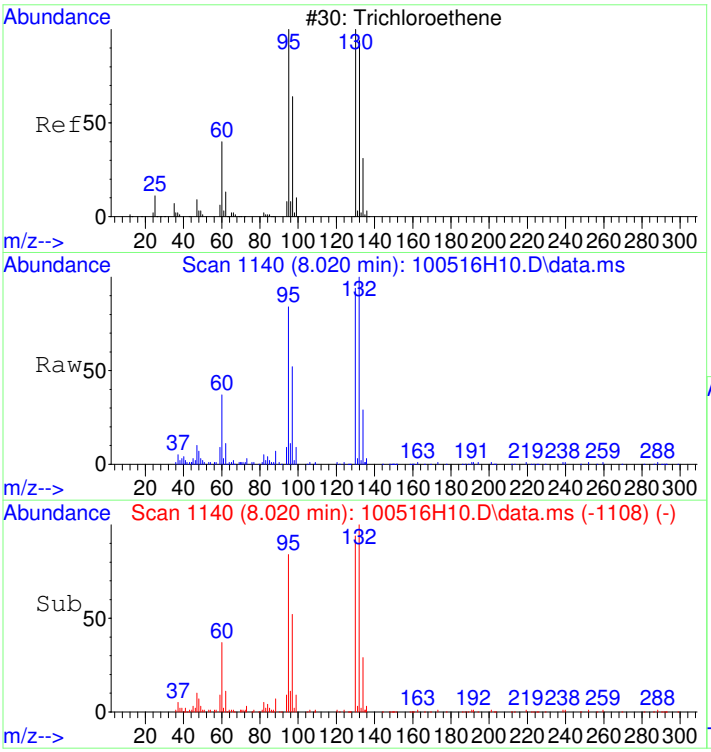


#10
1,2-Dichloroethane-d4
Concen: 5.06 ug/L
RT: 6.901 min Scan# 956
Delta R.T. -0.005 min
Lab File: 100516H10.D
Acq: 5 Oct 2016 5:16 pm

Tgt Ion: 65 Resp: 521492

Ion	Ratio	Lower	Upper
65	100		
67	52.5	31.1	71.1
102	23.9	3.7	43.7

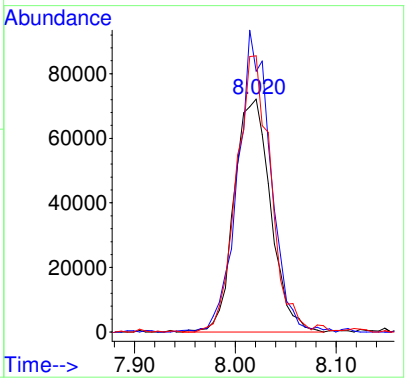


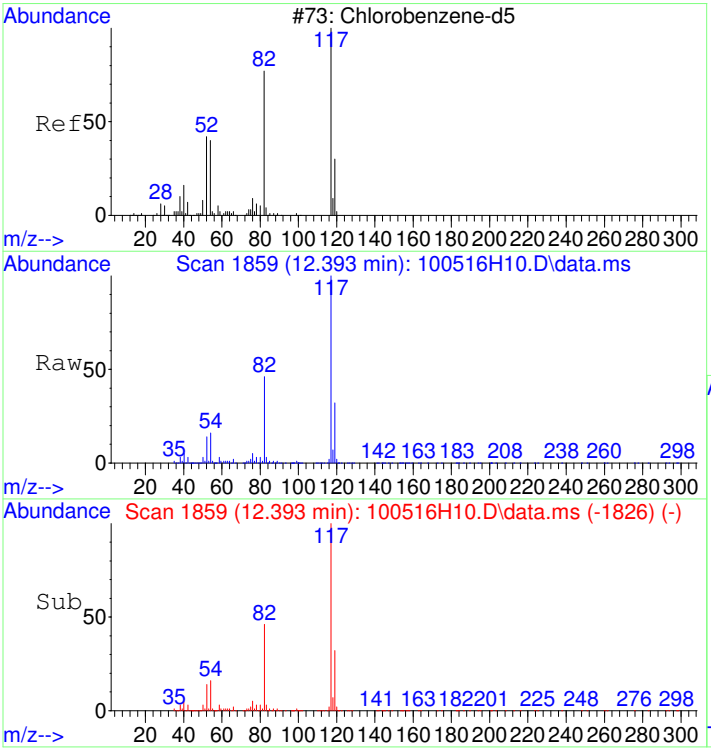


#12
Trichloroethene
Concen: 0.83 ug/L
RT: 8.020 min Scan# 1140
Delta R.T. -0.005 min
Lab File: 100516H10.D
Acq: 5 Oct 2016 5:16 pm

Tgt Ion: 95 Resp: 181793

Ion	Ratio	Lower	Upper
95	100		
130	116.4	93.3	133.3
132	110.8	92.5	132.5

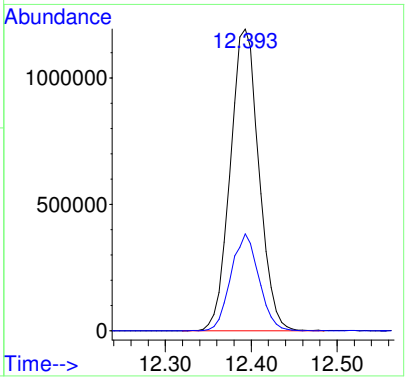


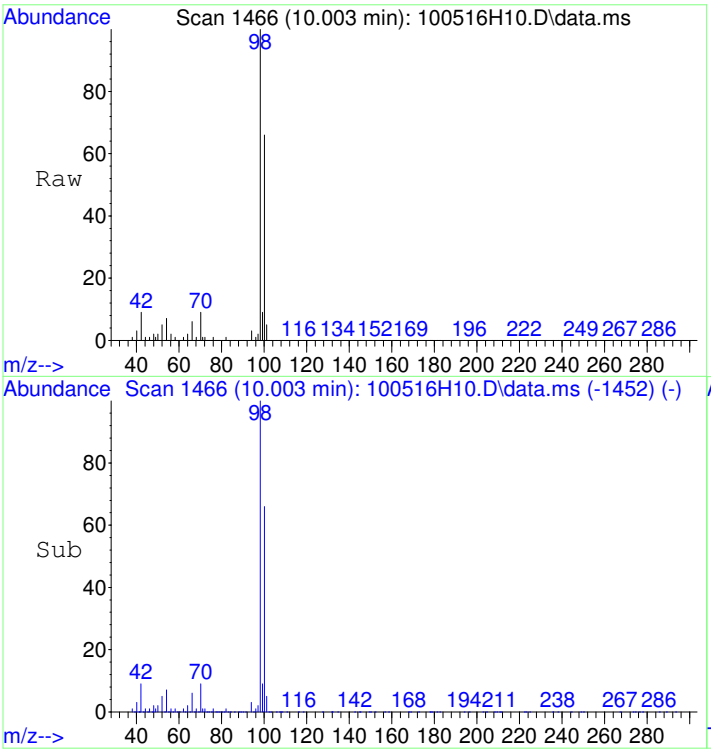


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.393 min Scan# 1859
Delta R.T. 0.001 min
Lab File: 100516H10.D
Acq: 5 Oct 2016 5:16 pm

Tgt Ion:117 Resp: 2769281

Ion	Ratio	Lower	Upper
117	100		
119	31.4	11.9	51.9

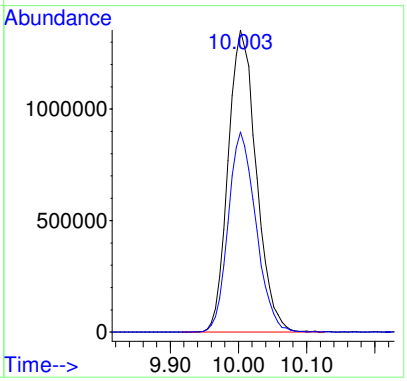


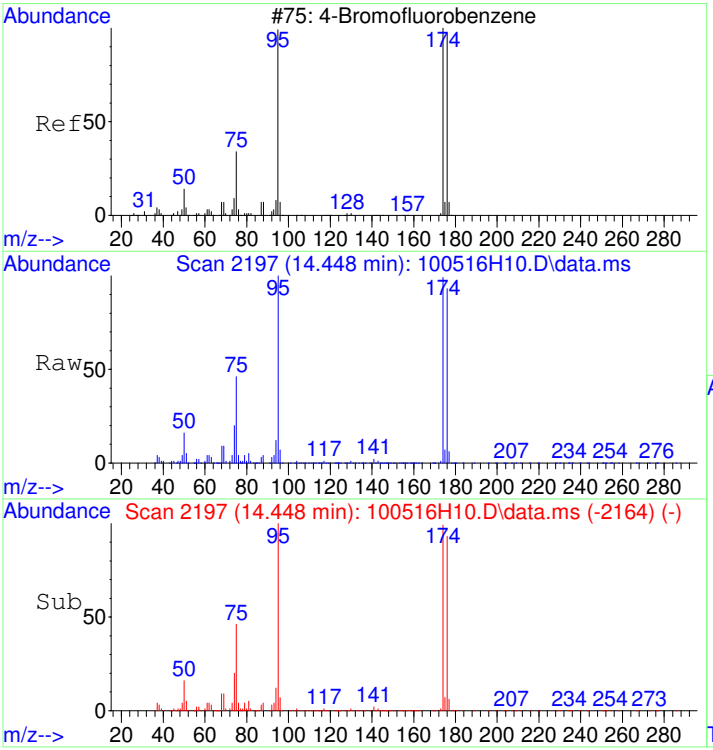


#14
Toluene-d8
Concen: 4.95 ug/L
RT: 10.003 min Scan# 1466
Delta R.T. -0.005 min
Lab File: 100516H10.D
Acq: 5 Oct 2016 5:16 pm

Tgt Ion: 98 Resp: 3875483

Ion	Ratio	Lower	Upper
98	100		
100	65.2	45.1	85.1

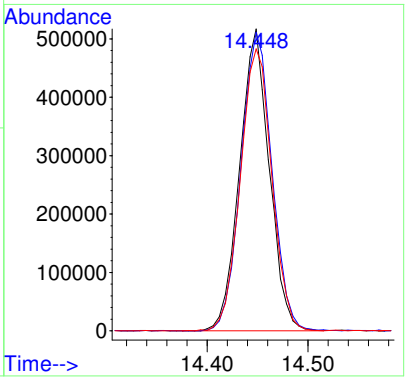


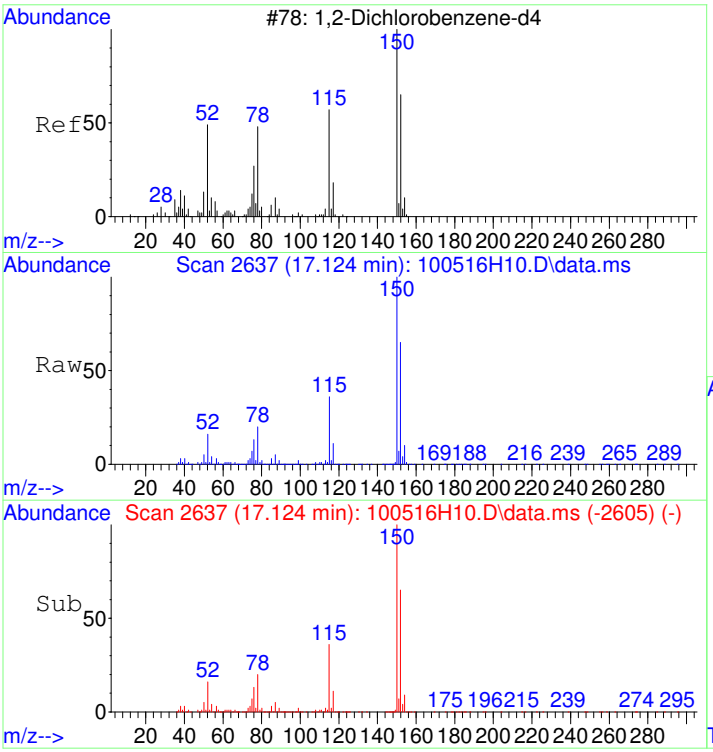


#16
4-Bromofluorobenzene
Concen: 4.93 ug/L
RT: 14.448 min Scan# 2197
Delta R.T. 0.001 min
Lab File: 100516H10.D
Acq: 5 Oct 2016 5:16 pm

Tgt Ion: 95 Resp: 1055973

Ion	Ratio	Lower	Upper
95	100		
174	103.3	84.0	124.0
176	99.1	79.3	119.3

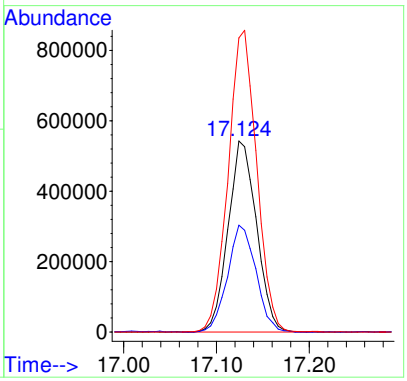




#17
1,2-Dichlorobenzene-d4
Concen: 5.02 ug/L
RT: 17.124 min Scan# 2637
Delta R.T. -0.005 min
Lab File: 100516H10.D
Acq: 5 Oct 2016 5:16 pm

Tgt Ion:152 Resp: 1160053

Ion	Ratio	Lower	Upper
152	100		
115	55.9	35.7	75.7
150	157.7	155.7	195.7



1609102-03RE1

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H11.D
Sample : 1609102-03RE1
Instrument: HP5973H
Acq On : 5 Oct 2016 5:52 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 36
Multiplier: 1

Quant Time: Oct 06 08:00:11 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.550	53	421699	5.000 ug/L	0.00
9) Fluorobenzene	7.448	96	4208451	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.392	117	2908310	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.907	65	539881	5.006 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 100.20%	
14) Toluene-d8	10.008	98	4078427	4.962 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.20%	
16) 4-Bromofluorobenzene	14.448	95	1125310	4.998 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 100.00%	
17) 1,2-Dichlorobenzene-d4	17.130	152	1207796	4.979 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 99.60%	
Target Compounds					Qvalue
8) Chloroform	6.147	83	1259890	3.608 ug/L	98
12) Trichloroethene	8.014	95	173316	0.753 ug/L	94

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H11.D
Sample : 1609102-03RE1
Instrument: HP5973H
Acq On : 5 Oct 2016 5:52 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 36
Multiplier: 1

Quant Time: Oct 06 08:00:11 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

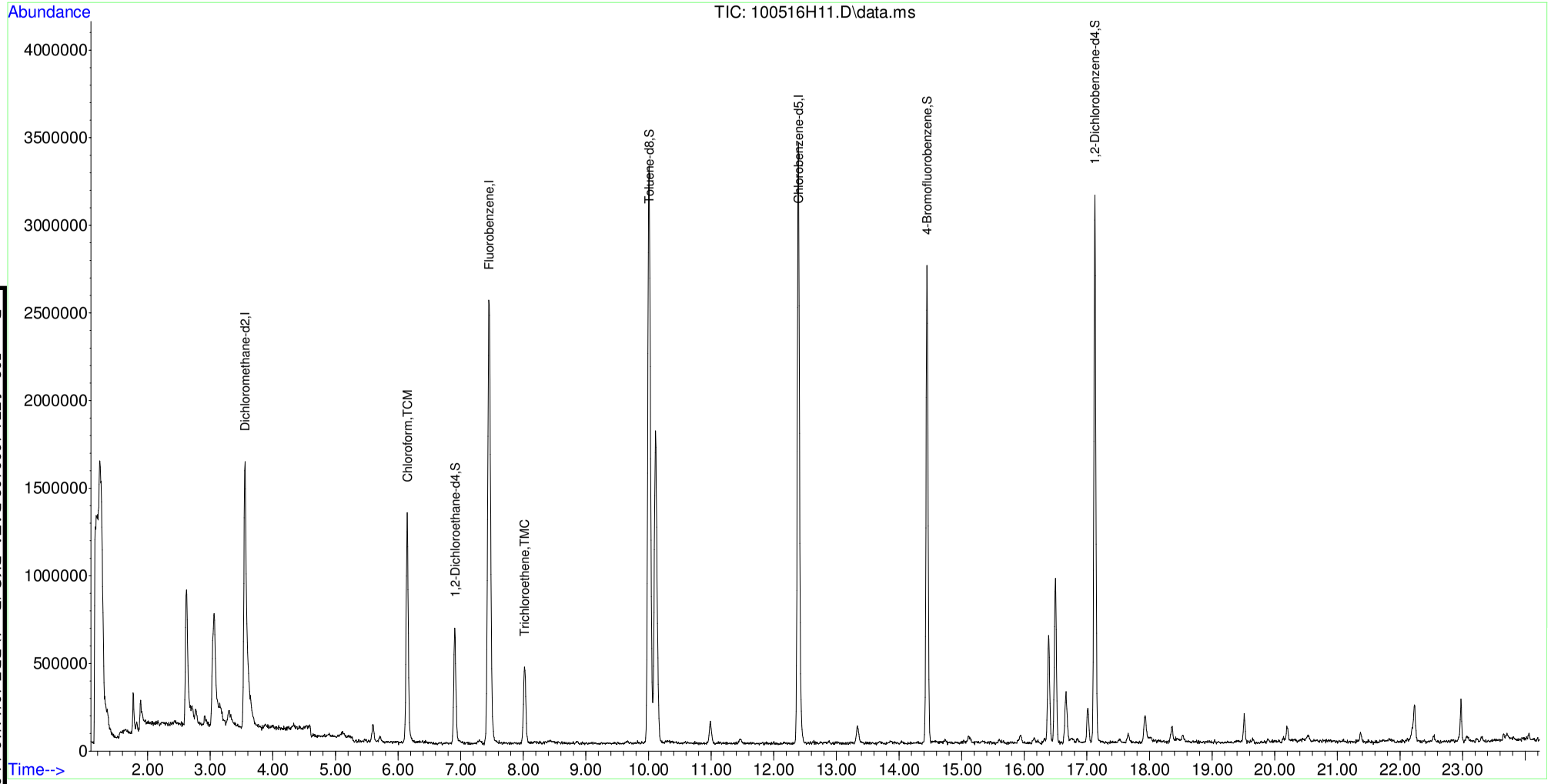
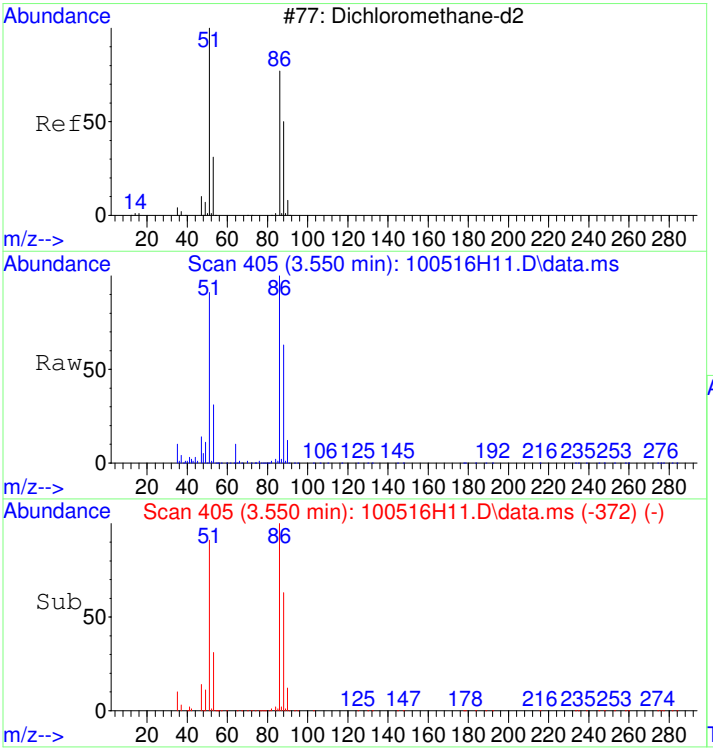


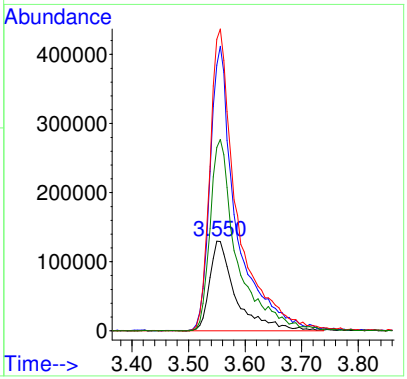
Table of Contents

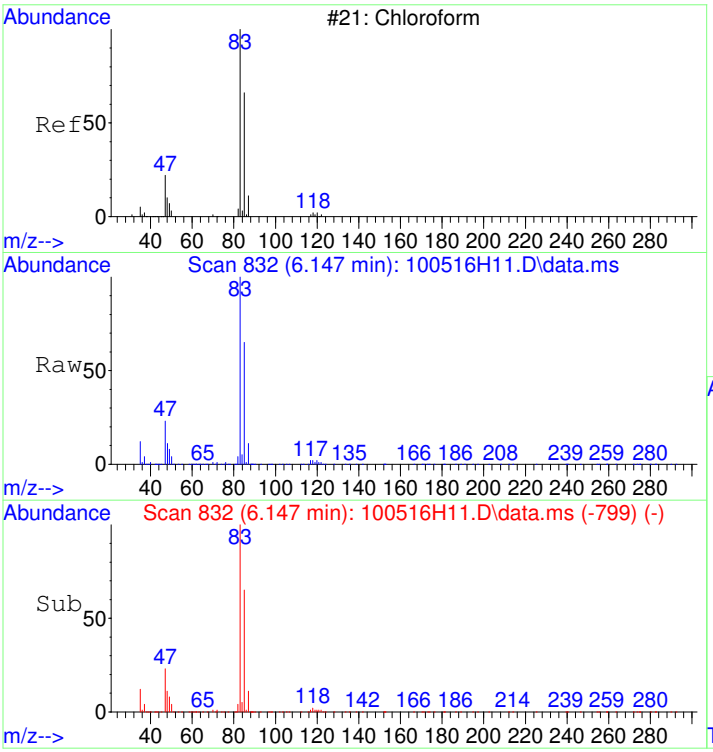


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.550 min Scan# 405
Delta R.T. 0.001 min
Lab File: 100516H11.D
Acq: 5 Oct 2016 5:52 pm

Tgt Ion: 53 Resp: 421699

Ion	Ratio	Lower	Upper
53	100		
51	311.8	386.4	426.4#
86	346.9	0.0	20.0#
88	219.5	231.2	271.2#

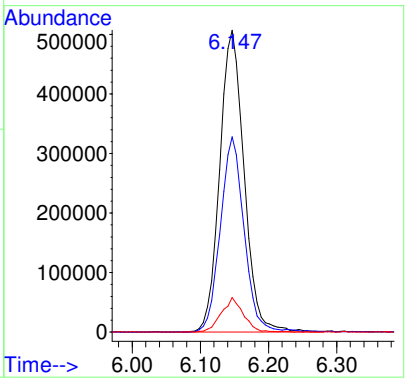


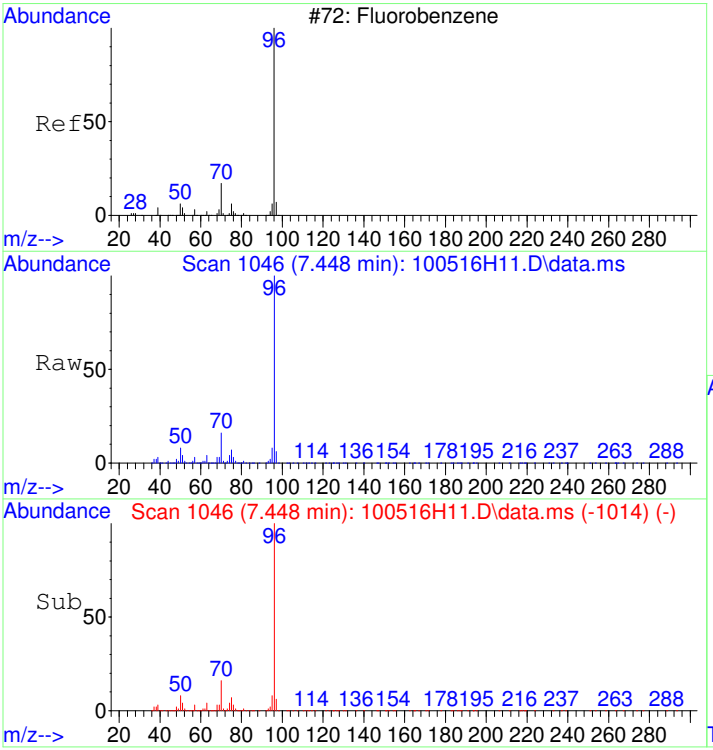


#8
Chloroform
Concen: 3.61 ug/L
RT: 6.147 min Scan# 832
Delta R.T. 0.001 min
Lab File: 100516H11.D
Acq: 5 Oct 2016 5:52 pm

Tgt Ion: 83 Resp: 1259890

Ion	Ratio	Lower	Upper
83	100		
85	62.4	43.8	83.8
87	10.3	0.0	30.6

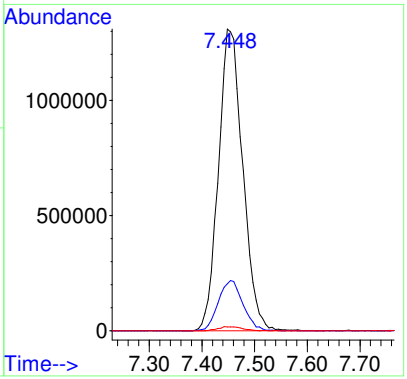


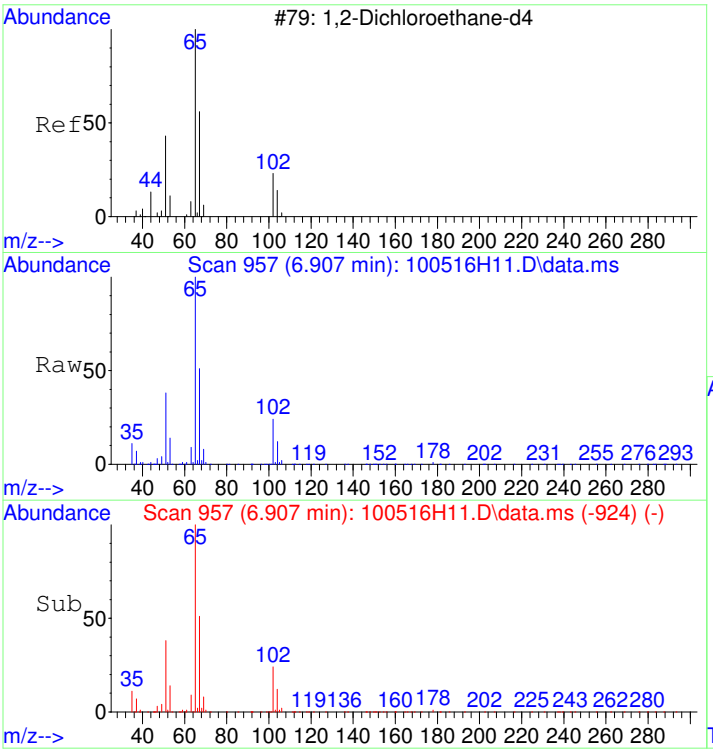


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.448 min Scan# 1046
Delta R.T. -0.006 min
Lab File: 100516H11.D
Acq: 5 Oct 2016 5:52 pm

Tgt Ion: 96 Resp: 4208451

Ion	Ratio	Lower	Upper
96	100		
70	16.9	0.0	36.7
77	1.4	0.0	21.6

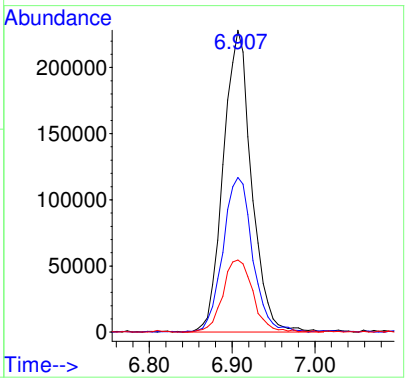


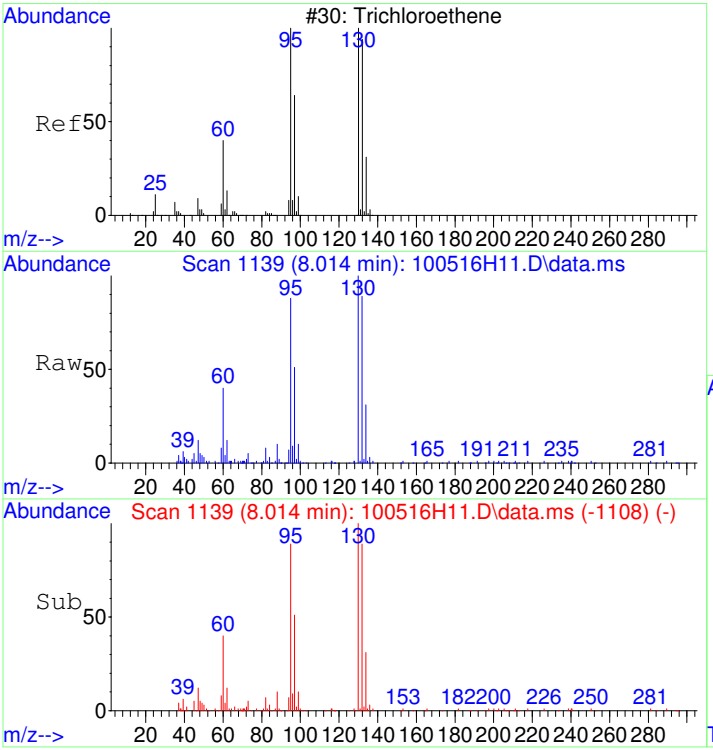


#10
1,2-Dichloroethane-d4
Concen: 5.01 ug/L
RT: 6.907 min Scan# 957
Delta R.T. 0.001 min
Lab File: 100516H11.D
Acq: 5 Oct 2016 5:52 pm

Tgt Ion: 65 Resp: 539881

Ion	Ratio	Lower	Upper
65	100		
67	54.0	31.1	71.1
102	25.7	3.7	43.7

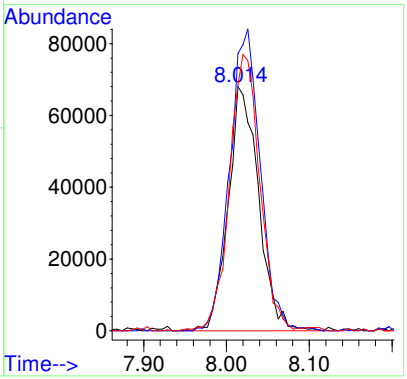


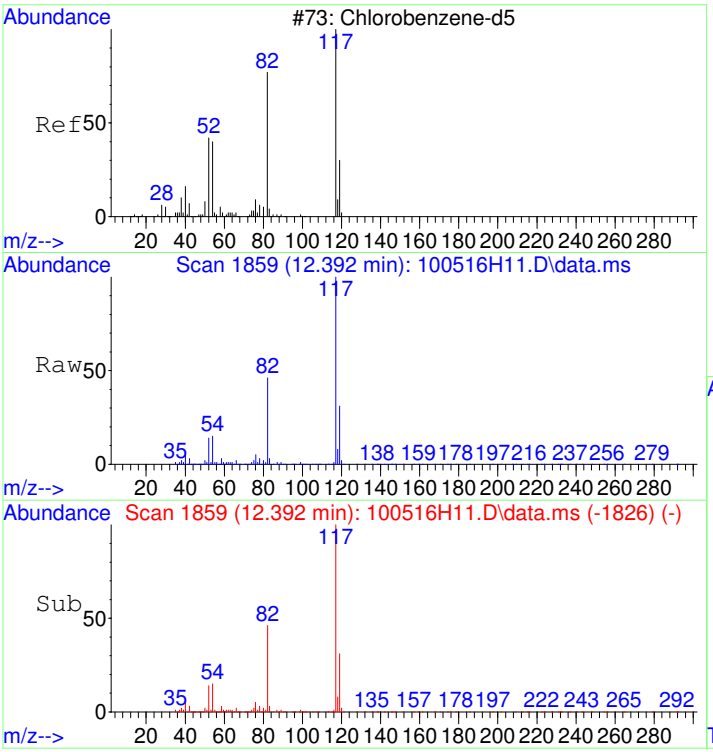


#12
Trichloroethene
Concen: 0.75 ug/L
RT: 8.014 min Scan# 1139
Delta R.T. -0.012 min
Lab File: 100516H11.D
Acq: 5 Oct 2016 5:52 pm

Tgt Ion: 95 Resp: 173316

Ion	Ratio	Lower	Upper
95	100		
130	124.7	93.3	133.3
132	113.5	92.5	132.5

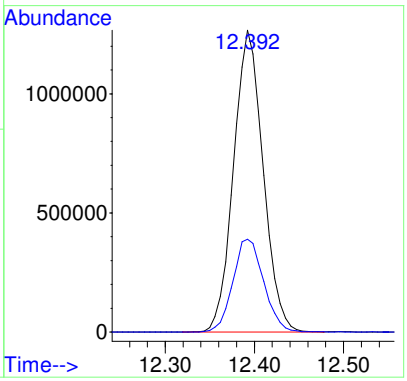


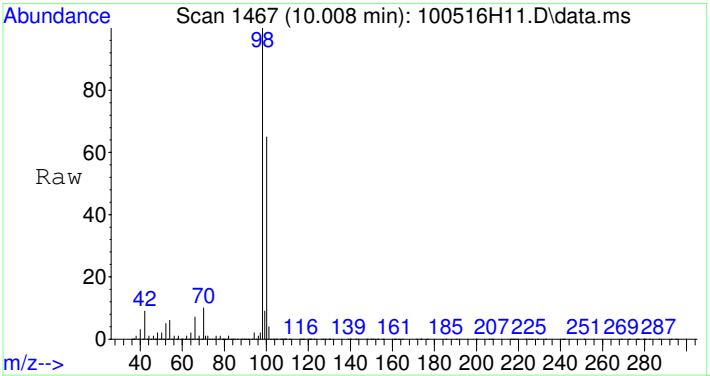


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.392 min Scan# 1859
Delta R.T. 0.001 min
Lab File: 100516H11.D
Acq: 5 Oct 2016 5:52 pm

Tgt Ion:117 Resp: 2908310

Ion	Ratio	Lower	Upper
117	100		
119	32.1	11.9	51.9

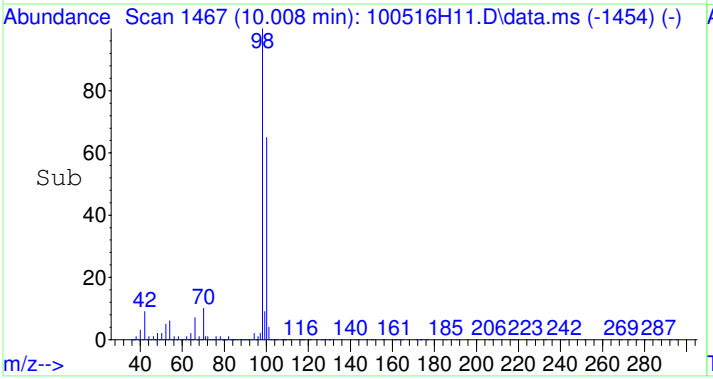


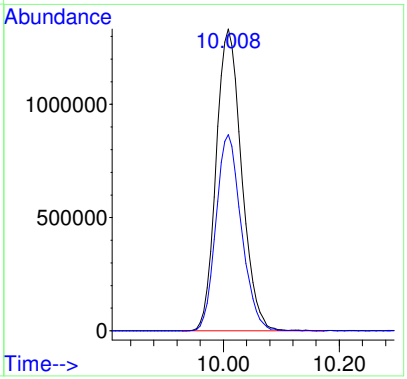


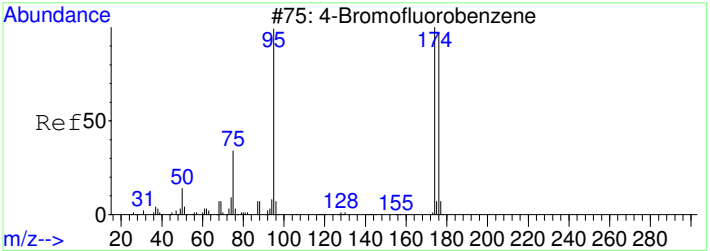
#14
Toluene-d8
Concen: 4.96 ug/L
RT: 10.008 min Scan# 1467
Delta R.T. 0.001 min
Lab File: 100516H11.D
Acq: 5 Oct 2016 5:52 pm

Tgt Ion: 98 Resp: 4078427

Ion	Ratio	Lower	Upper
98	100		
100	64.6	45.1	85.1



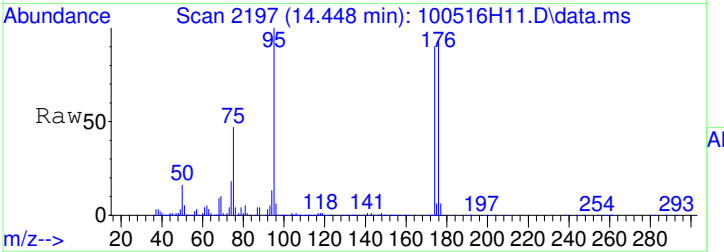


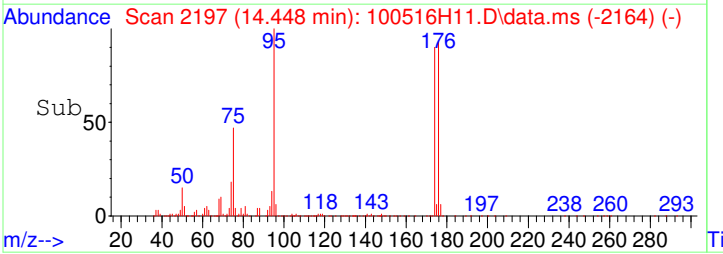


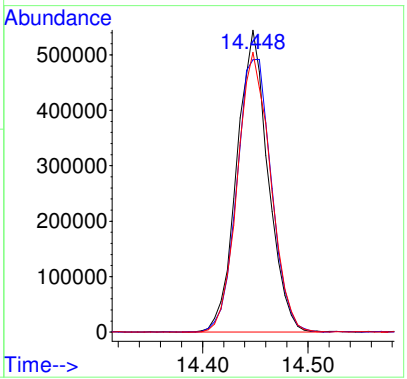
#16
4-Bromofluorobenzene
Concen: 5.00 ug/L
RT: 14.448 min Scan# 2197
Delta R.T. 0.001 min
Lab File: 100516H11.D
Acq: 5 Oct 2016 5:52 pm

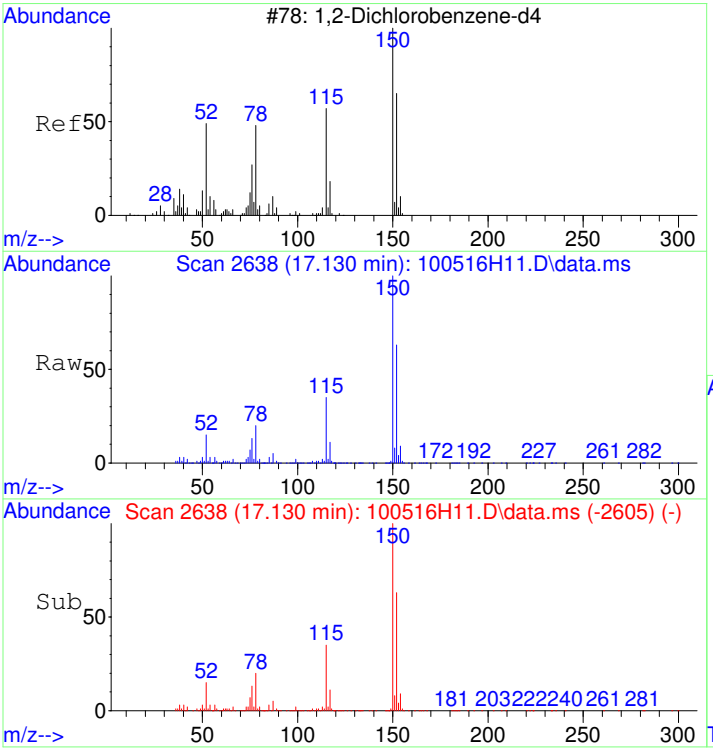
Tgt Ion: 95 Resp: 1125310

Ion	Ratio	Lower	Upper
95	100		
174	99.8	84.0	124.0
176	97.7	79.3	119.3





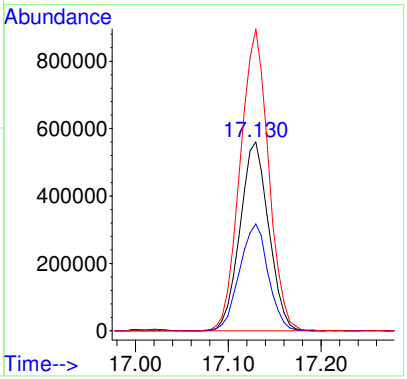




#17
1,2-Dichlorobenzene-d4
Concen: 4.98 ug/L
RT: 17.130 min Scan# 2638
Delta R.T. 0.001 min
Lab File: 100516H11.D
Acq: 5 Oct 2016 5:52 pm

Tgt Ion:152 Resp: 1207796

Ion	Ratio	Lower	Upper
152	100		
115	56.5	35.7	75.7
150	158.1	155.7	195.7



1609102-04RE1

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H12.D
Sample : 1609102-04RE1
Instrument: HP5973H
Acq On : 5 Oct 2016 6:28 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 37
Multiplier: 1

Quant Time: Oct 06 08:00:15 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.552	53	426939	5.000 ug/L	0.00
9) Fluorobenzene	7.450	96	4276987	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.394	117	2960051	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.903	65	559577	5.105 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 102.20%	
14) Toluene-d8	10.004	98	4120822	4.926 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 98.60%	
16) 4-Bromofluorobenzene	14.450	95	1160843	5.065 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 101.40%	
17) 1,2-Dichlorobenzene-d4	17.126	152	1215709	4.924 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 98.40%	

Target Compounds					Qvalue
7) cis-1,2-Dichloroethene	5.601	96	65375	0.267 ug/L	92
8) Chloroform	6.143	83	861521	2.437 ug/L	98
12) Trichloroethene	8.016	95	190149	0.813 ug/L	96

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H12.D
Sample : 1609102-04RE1
Instrument: HP5973H
Acq On : 5 Oct 2016 6:28 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 37
Multiplier: 1

Quant Time: Oct 06 08:00:15 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

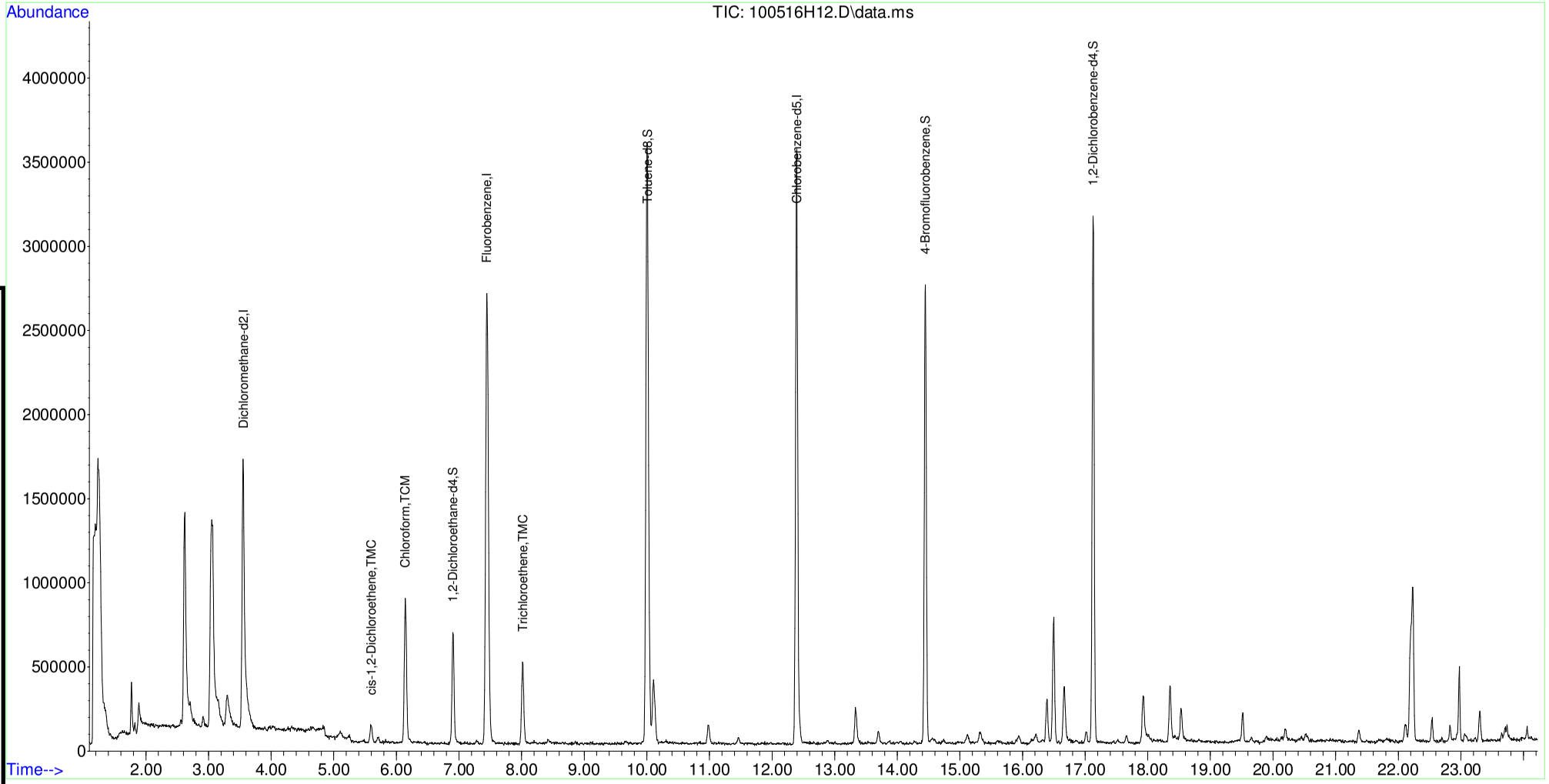
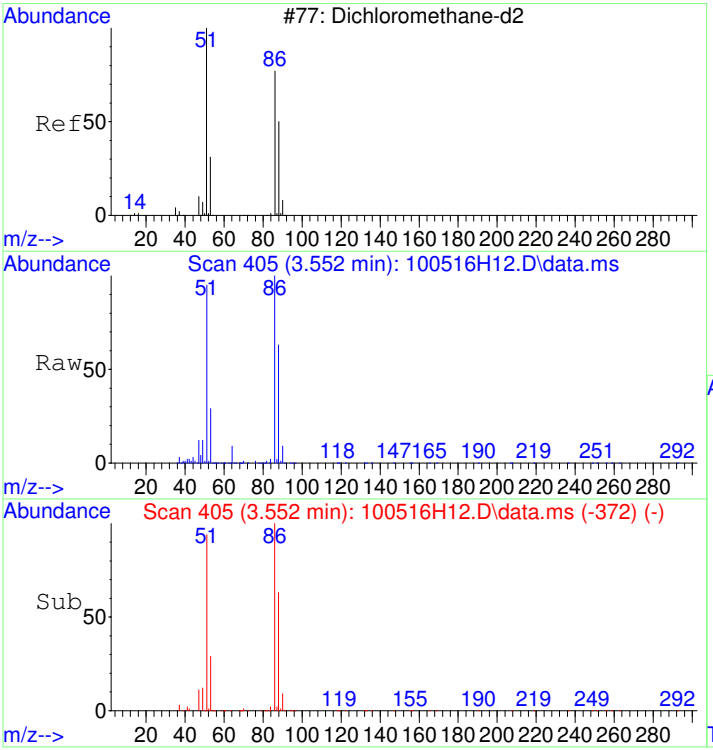


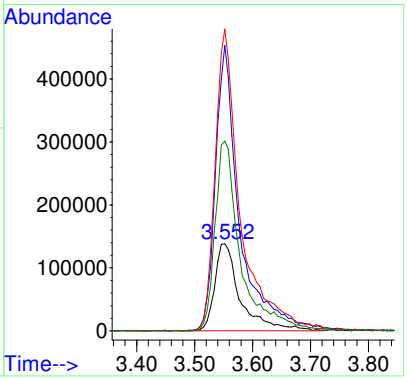
Table of Contents

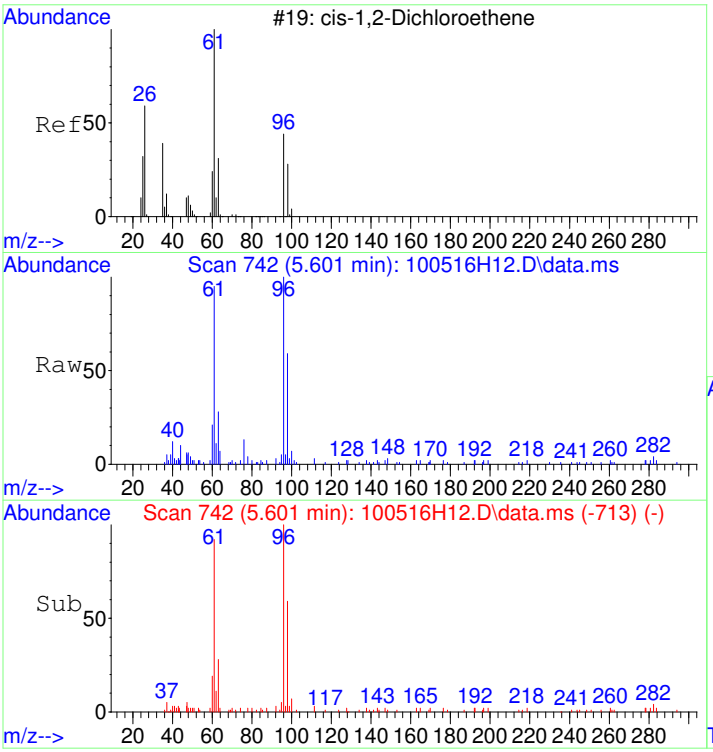


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.552 min Scan# 405
Delta R.T. 0.003 min
Lab File: 100516H12.D
Acq: 5 Oct 2016 6:28 pm

Tgt Ion: 53 Resp: 426939

Ion	Ratio	Lower	Upper
53	100		
51	309.0	386.4	426.4#
86	341.6	0.0	20.0#
88	216.7	231.2	271.2#

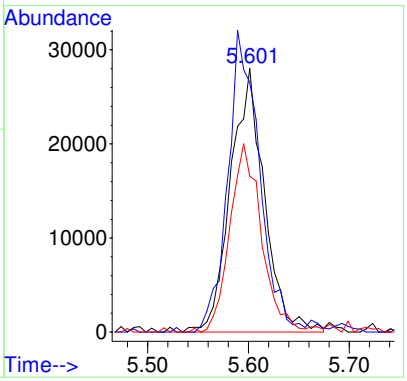


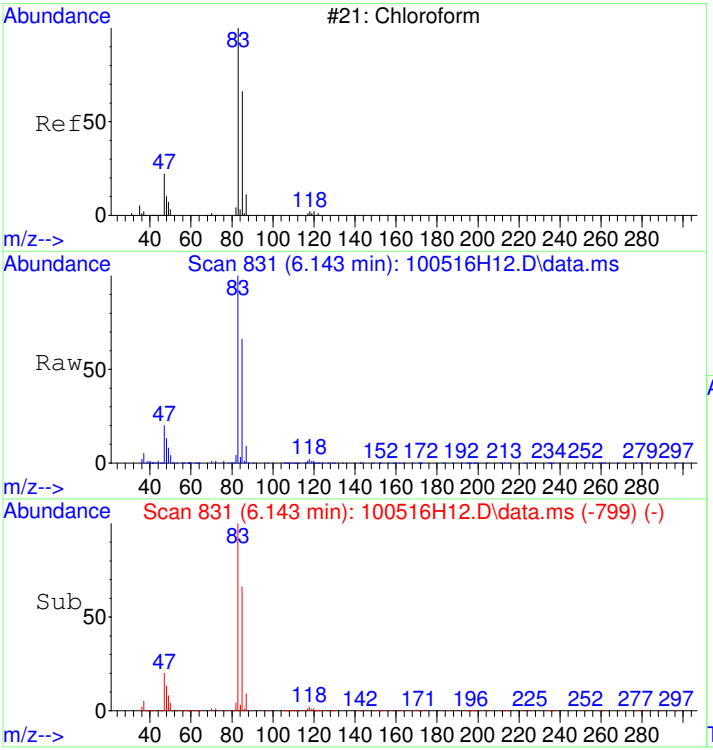


#7
cis-1,2-Dichloroethene
Concen: 0.27 ug/L
RT: 5.601 min Scan# 742
Delta R.T. 0.003 min
Lab File: 100516H12.D
Acq: 5 Oct 2016 6:28 pm

Tgt Ion: 96 Resp: 65375

Ion	Ratio	Lower	Upper
96	100		
61	106.5	97.5	137.5
98	66.7	43.4	83.4

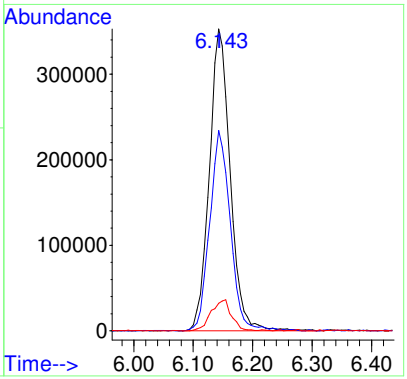


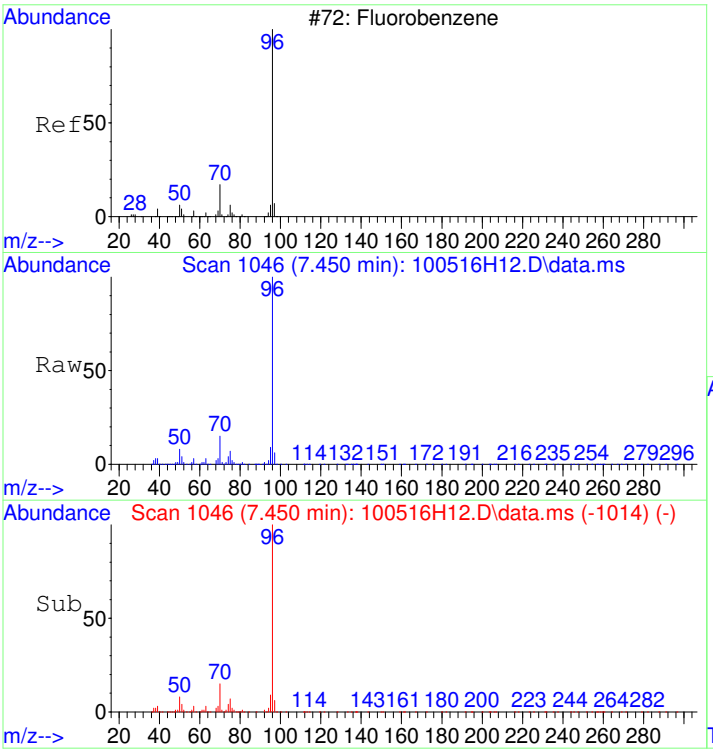


#8
Chloroform
Concen: 2.44 ug/L
RT: 6.143 min Scan# 831
Delta R.T. -0.004 min
Lab File: 100516H12.D
Acq: 5 Oct 2016 6:28 pm

Tgt Ion: 83 Resp: 861521

Ion	Ratio	Lower	Upper
83	100		
85	65.5	43.8	83.8
87	10.0	0.0	30.6

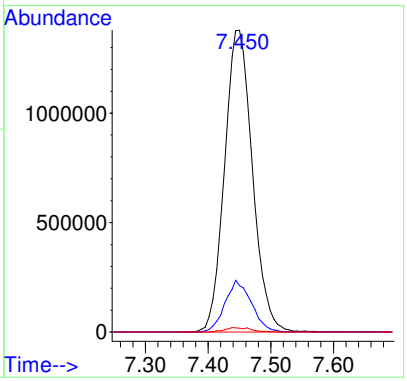


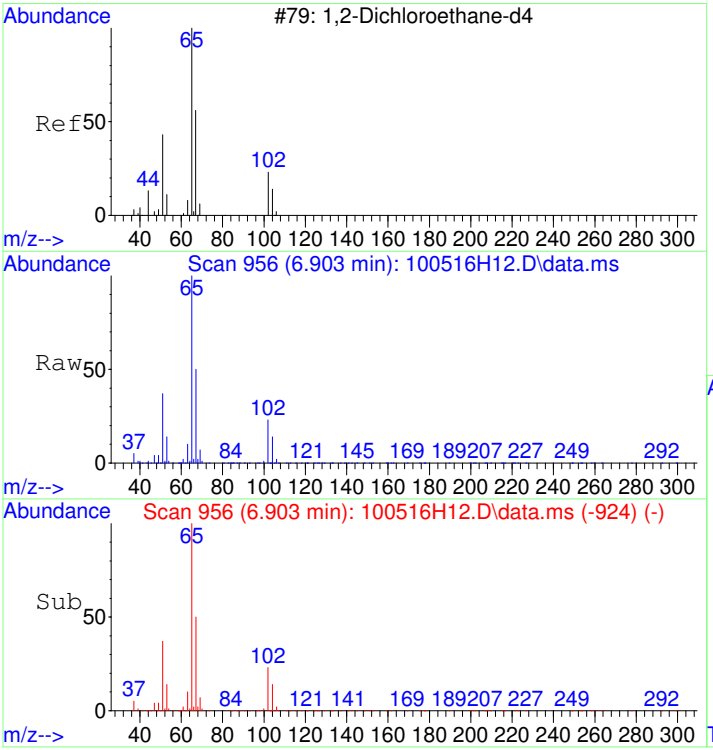


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.450 min Scan# 1046
Delta R.T. -0.003 min
Lab File: 100516H12.D
Acq: 5 Oct 2016 6:28 pm

Tgt Ion: 96 Resp: 4276987

Ion	Ratio	Lower	Upper
96	100		
70	16.2	0.0	36.7
77	1.5	0.0	21.6

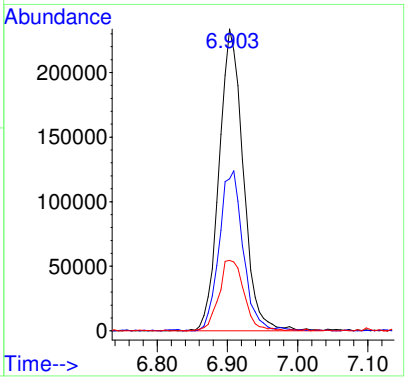


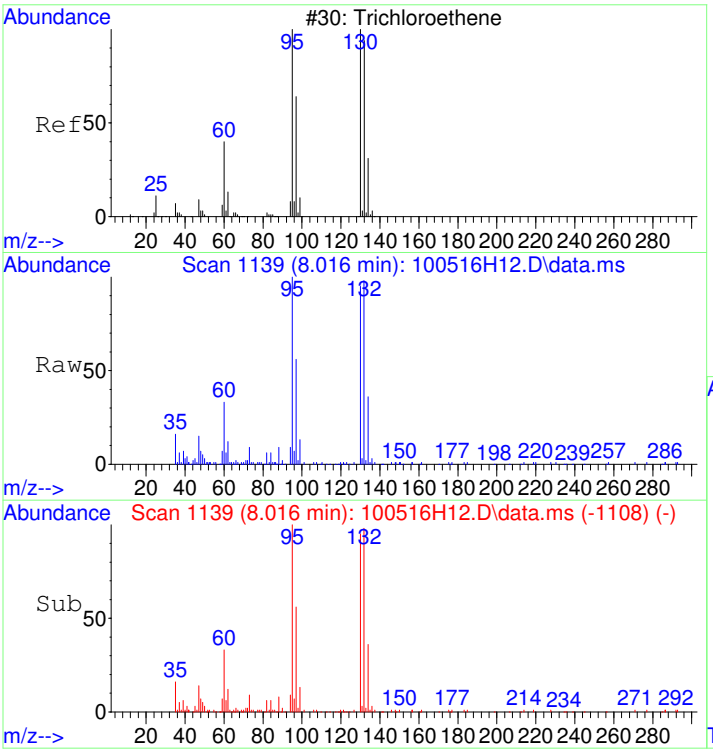


#10
1,2-Dichloroethane-d4
Concen: 5.11 ug/L
RT: 6.903 min Scan# 956
Delta R.T. -0.004 min
Lab File: 100516H12.D
Acq: 5 Oct 2016 6:28 pm

Tgt Ion: 65 Resp: 559577

Ion	Ratio	Lower	Upper
65	100		
67	52.2	31.1	71.1
102	24.4	3.7	43.7

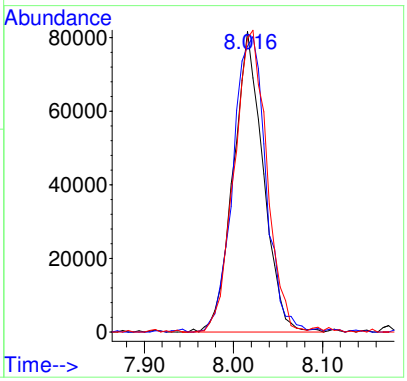


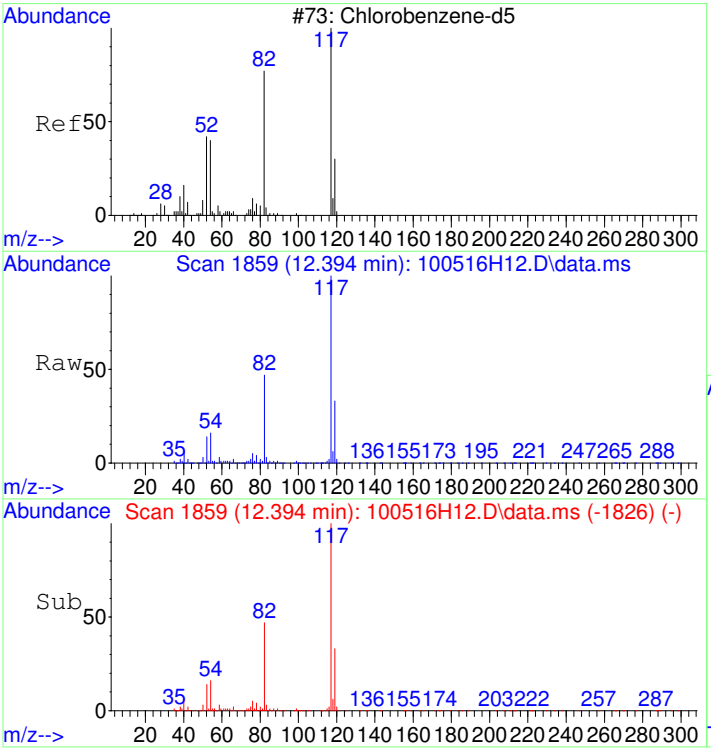


#12
Trichloroethene
Concen: 0.81 ug/L
RT: 8.016 min Scan# 1139
Delta R.T. -0.010 min
Lab File: 100516H12.D
Acq: 5 Oct 2016 6:28 pm

Tgt Ion: 95 Resp: 190149

Ion	Ratio	Lower	Upper
95	100		
130	108.2	93.3	133.3
132	109.0	92.5	132.5

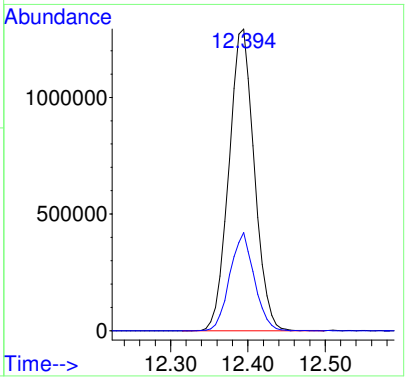


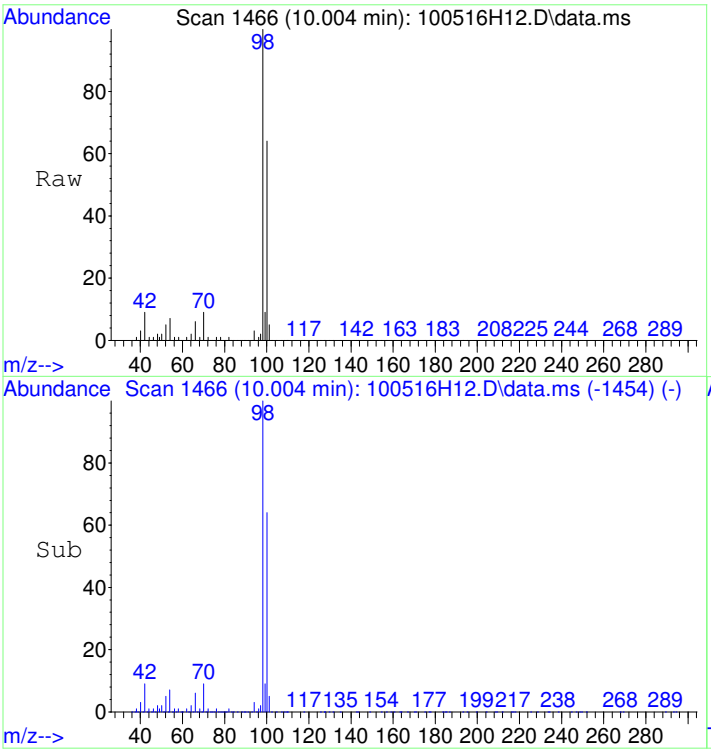


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.394 min Scan# 1859
Delta R.T. 0.003 min
Lab File: 100516H12.D
Acq: 5 Oct 2016 6:28 pm

Tgt Ion:117 Resp: 2960051

Ion	Ratio	Lower	Upper
117	100		
119	31.3	11.9	51.9

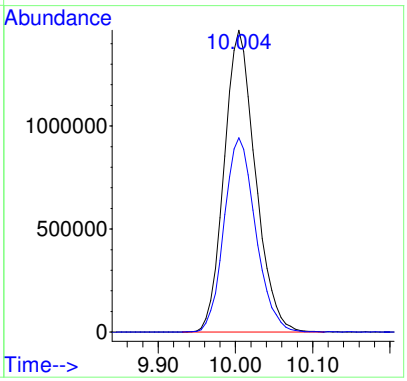


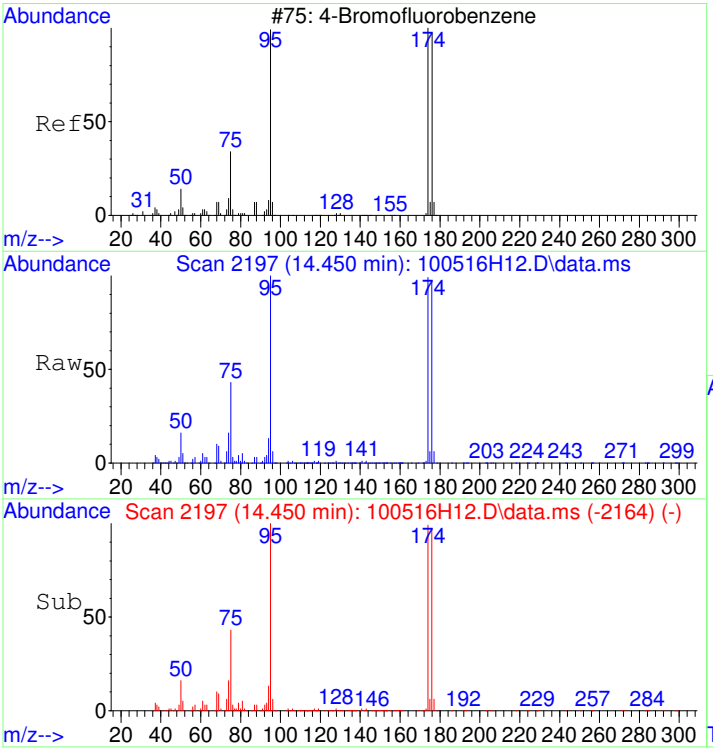


#14
Toluene-d8
Concen: 4.93 ug/L
RT: 10.004 min Scan# 1466
Delta R.T. -0.004 min
Lab File: 100516H12.D
Acq: 5 Oct 2016 6:28 pm

Tgt Ion: 98 Resp: 4120822

Ion	Ratio	Lower	Upper
98	100		
100	64.9	45.1	85.1

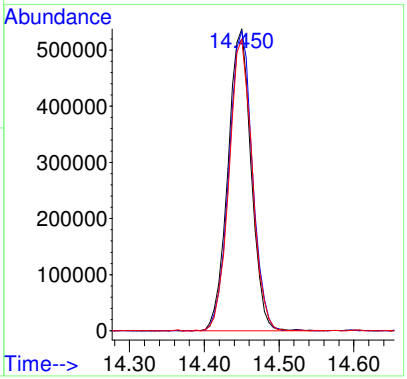


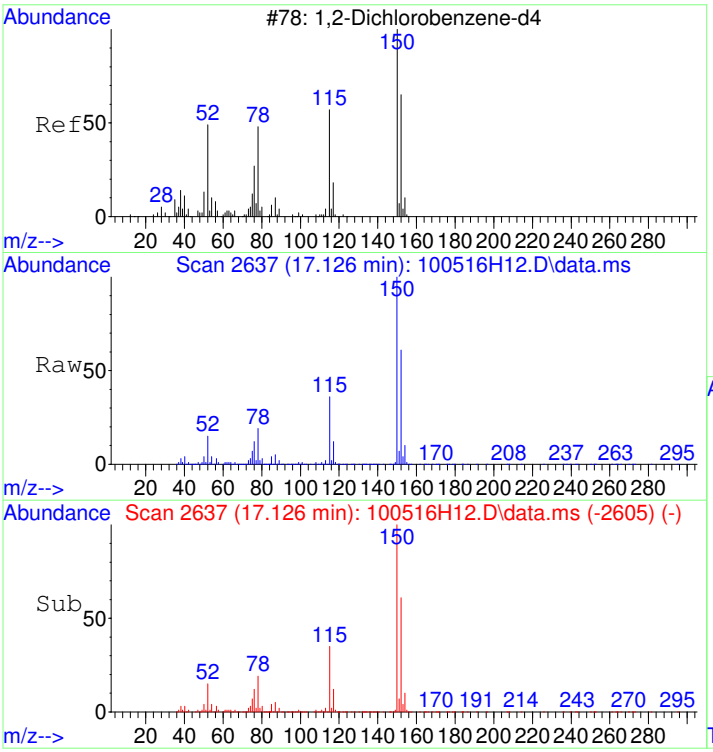


#16
4-Bromofluorobenzene
Concen: 5.07 ug/L
RT: 14.450 min Scan# 2197
Delta R.T. 0.003 min
Lab File: 100516H12.D
Acq: 5 Oct 2016 6:28 pm

Tgt Ion: 95 Resp: 1160843

Ion	Ratio	Lower	Upper
95	100		
174	100.2	84.0	124.0
176	95.9	79.3	119.3

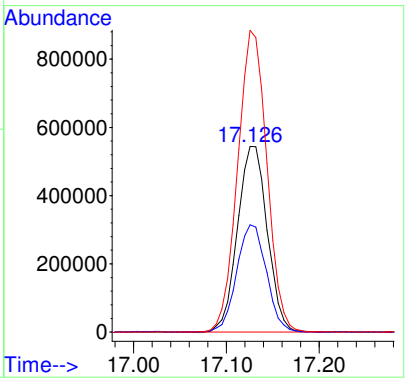




#17
1,2-Dichlorobenzene-d4
Concen: 4.92 ug/L
RT: 17.126 min Scan# 2637
Delta R.T. -0.004 min
Lab File: 100516H12.D
Acq: 5 Oct 2016 6:28 pm

Tgt Ion:152 Resp: 1215709

Ion	Ratio	Lower	Upper
152	100		
115	57.5	35.7	75.7
150	159.5	155.7	195.7



1609102-07RE1

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H14.D
Sample : 1609102-07RE1
Instrument: HP5973H
Acq On : 5 Oct 2016 7:40 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 39
Multiplier: 1

Quant Time: Oct 06 08:00:23 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.550	53	432739	5.000 ug/L	0.00
9) Fluorobenzene	7.448	96	4228451	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.392	117	2942655	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.907	65	548720	5.063 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 101.20%	
14) Toluene-d8	10.002	98	4070935	4.895 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 98.00%	
16) 4-Bromofluorobenzene	14.448	95	1103286	4.843 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 96.80%	
17) 1,2-Dichlorobenzene-d4	17.130	152	1220678	4.974 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 99.40%	
Target Compounds					Qvalue
8) Chloroform	6.147	83	700131	1.954 ug/L	99
12) Trichloroethene	8.020	95	177488	0.767 ug/L	98

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H14.D
Sample : 1609102-07RE1
Instrument: HP5973H
Acq On : 5 Oct 2016 7:40 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 39
Multiplier: 1

Quant Time: Oct 06 08:00:23 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

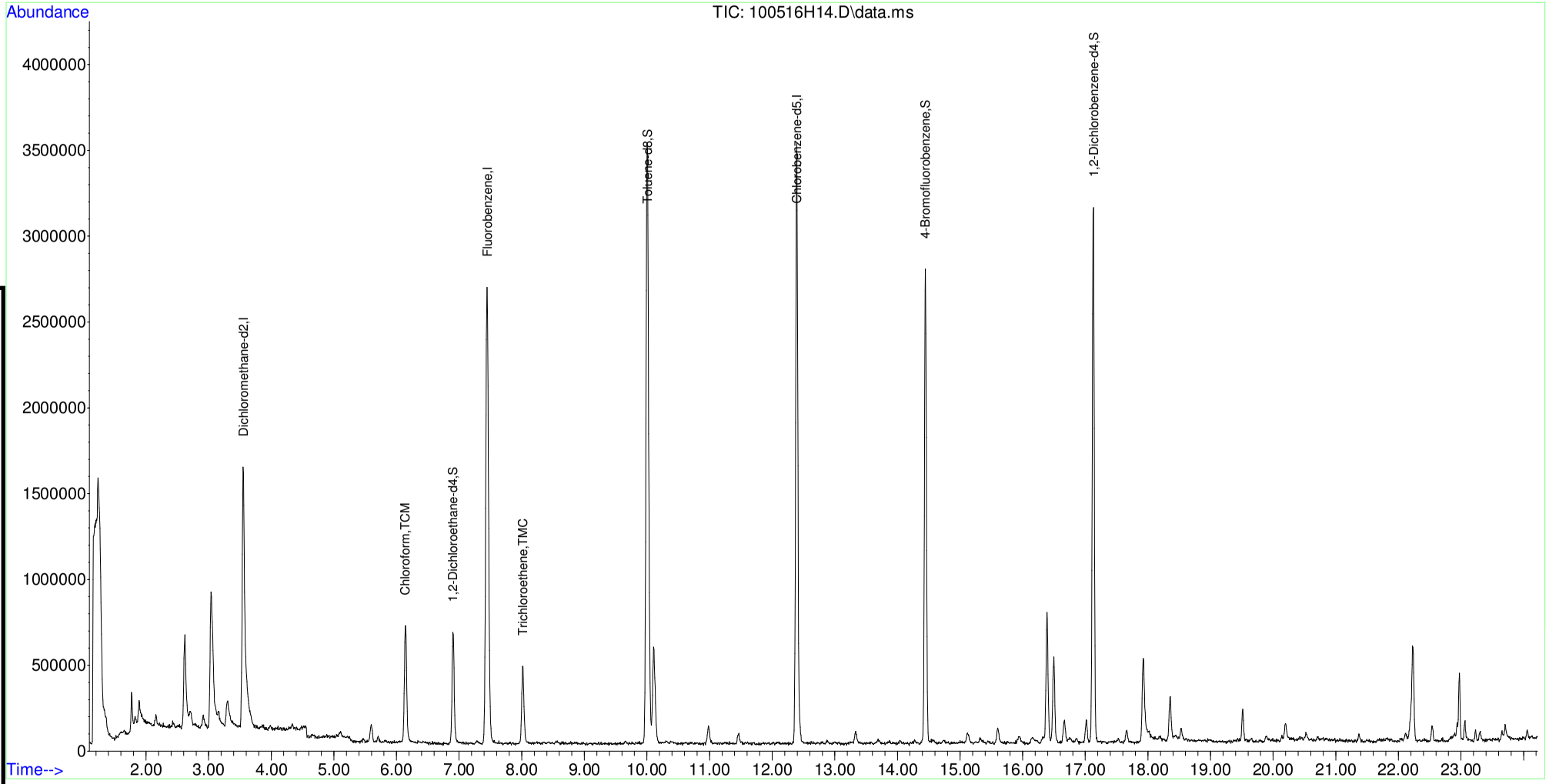
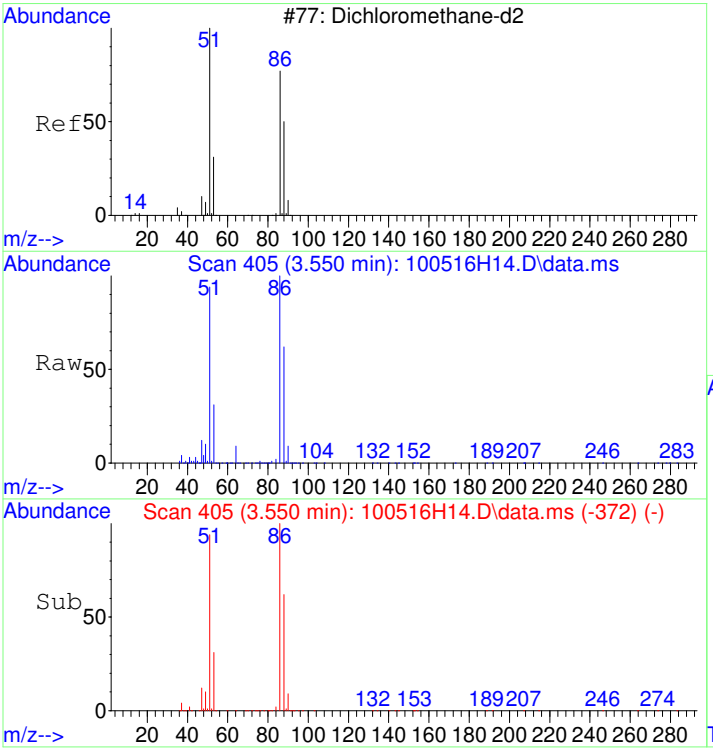


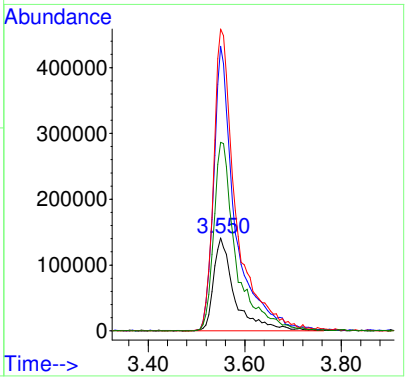
Table of Contents

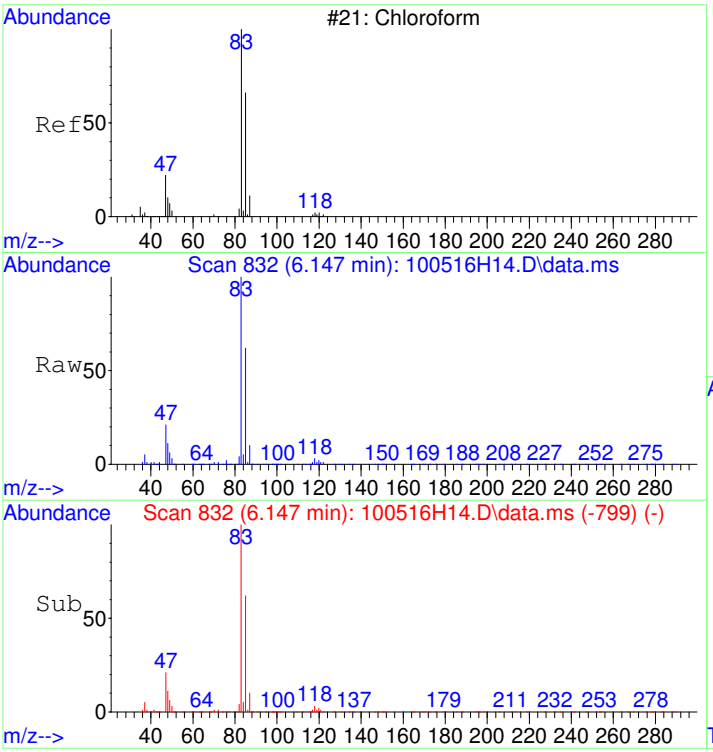


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.550 min Scan# 405
Delta R.T. 0.000 min
Lab File: 100516H14.D
Acq: 5 Oct 2016 7:40 pm

Tgt Ion: 53 Resp: 432739

Ion	Ratio	Lower	Upper
53	100		
51	307.4	386.4	426.4#
86	339.2	0.0	20.0#
88	214.4	231.2	271.2#

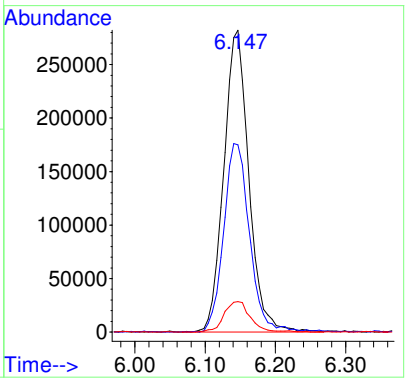


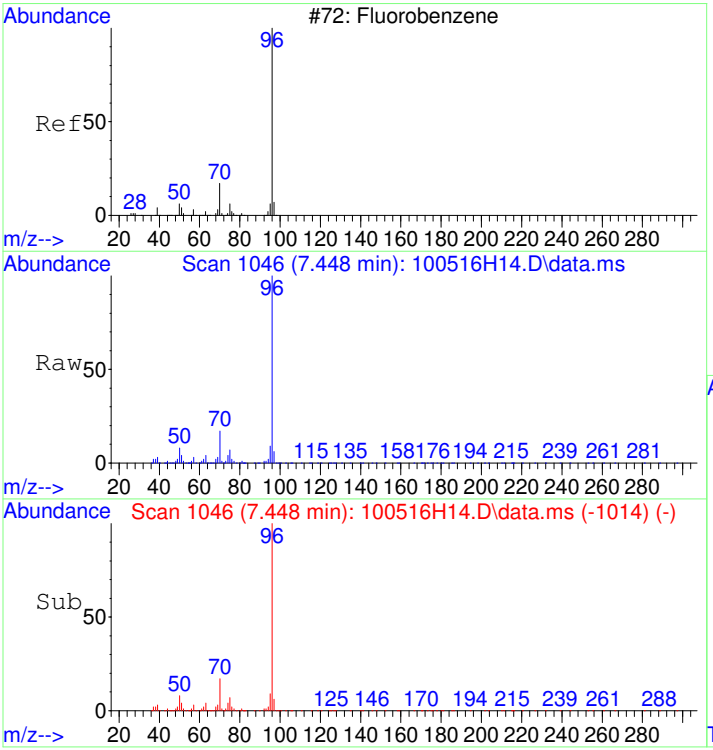


#8
Chloroform
Concen: 1.95 ug/L
RT: 6.147 min Scan# 832
Delta R.T. 0.001 min
Lab File: 100516H14.D
Acq: 5 Oct 2016 7:40 pm

Tgt Ion: 83 Resp: 700131

Ion	Ratio	Lower	Upper
83	100		
85	64.4	43.8	83.8
87	10.5	0.0	30.6

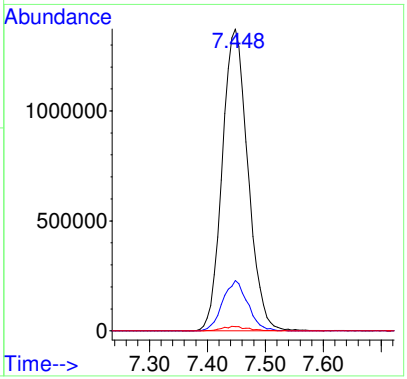


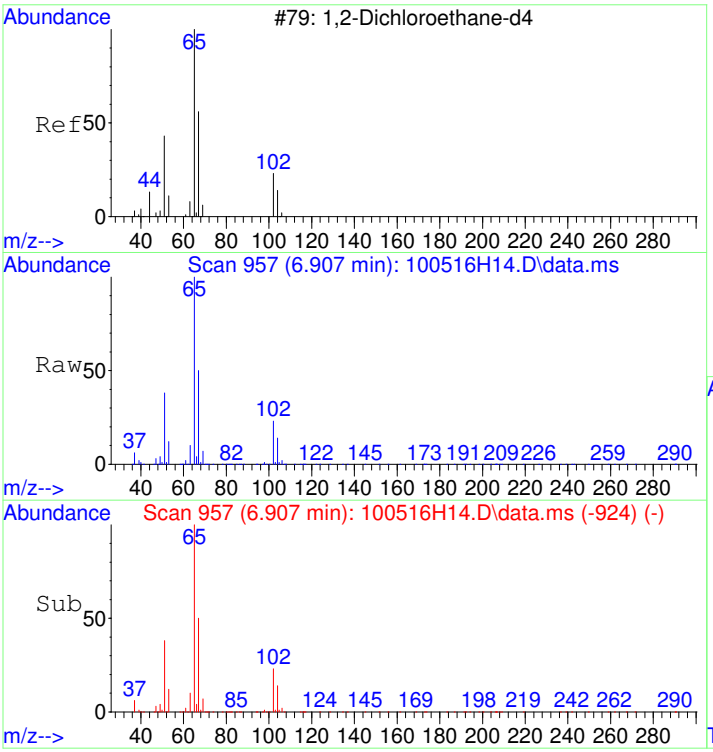


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.448 min Scan# 1046
Delta R.T. -0.006 min
Lab File: 100516H14.D
Acq: 5 Oct 2016 7:40 pm

Tgt Ion: 96 Resp: 4228451

Ion	Ratio	Lower	Upper
96	100		
70	16.3	0.0	36.7
77	1.5	0.0	21.6

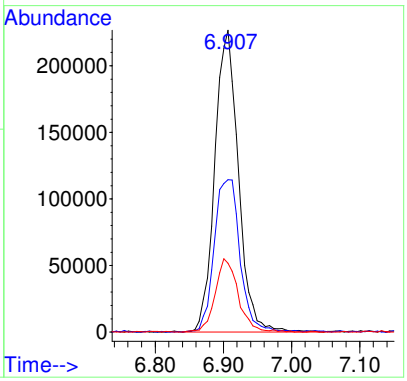


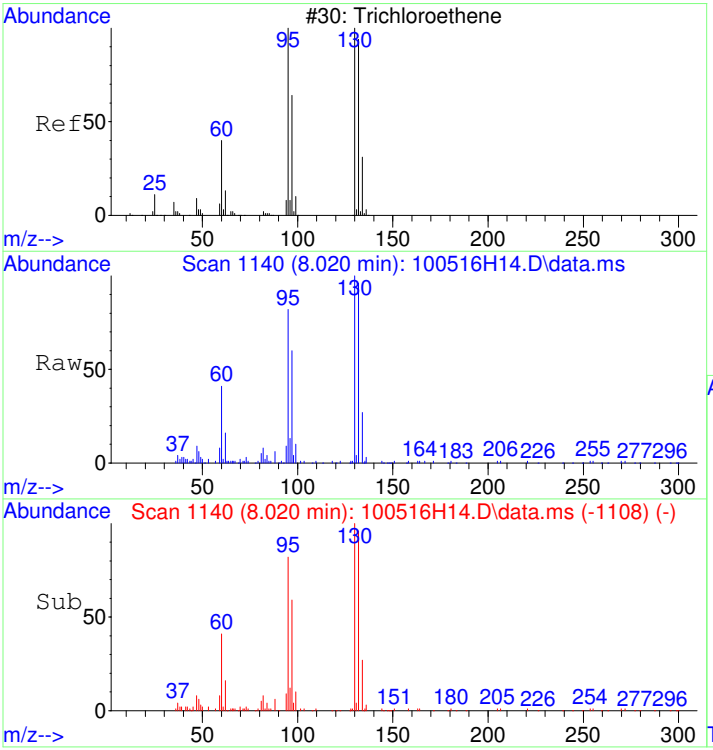


#10
1,2-Dichloroethane-d4
Concen: 5.06 ug/L
RT: 6.907 min Scan# 957
Delta R.T. 0.001 min
Lab File: 100516H14.D
Acq: 5 Oct 2016 7:40 pm

Tgt Ion: 65 Resp: 548720

Ion	Ratio	Lower	Upper
65	100		
67	55.1	31.1	71.1
102	23.8	3.7	43.7

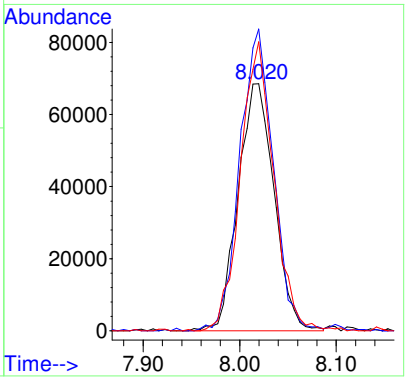


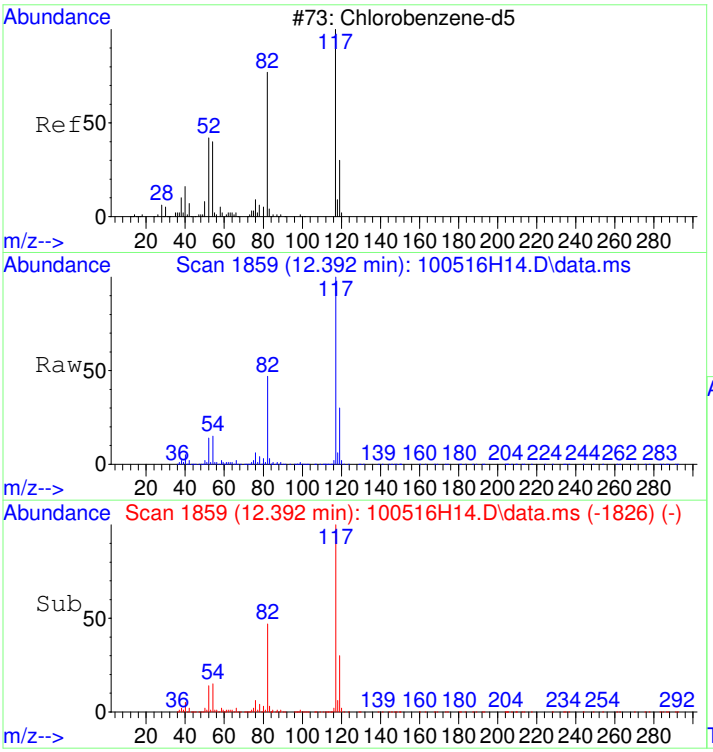


#12
Trichloroethene
Concen: 0.77 ug/L
RT: 8.020 min Scan# 1140
Delta R.T. -0.006 min
Lab File: 100516H14.D
Acq: 5 Oct 2016 7:40 pm

Tgt Ion: 95 Resp: 177488

Ion	Ratio	Lower	Upper
95	100		
130	113.8	93.3	133.3
132	108.3	92.5	132.5

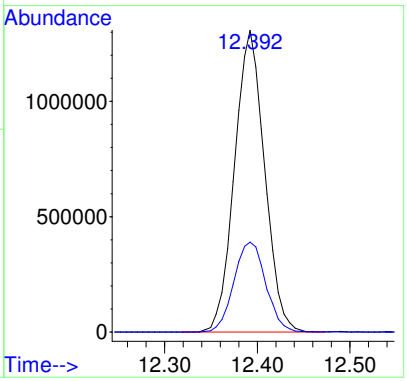


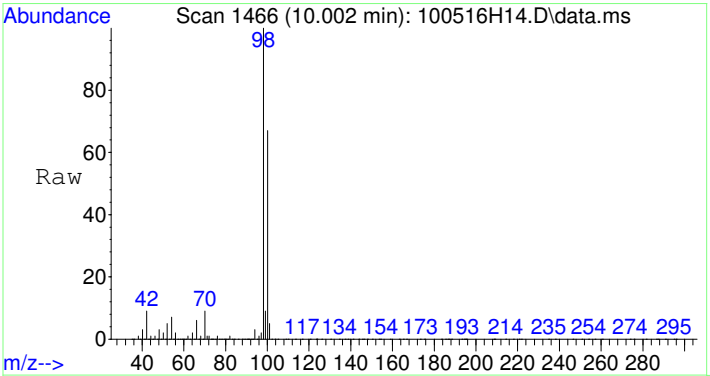


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.392 min Scan# 1859
Delta R.T. 0.001 min
Lab File: 100516H14.D
Acq: 5 Oct 2016 7:40 pm

Tgt Ion:117 Resp: 2942655

Ion	Ratio	Lower	Upper
117	100		
119	31.7	11.9	51.9

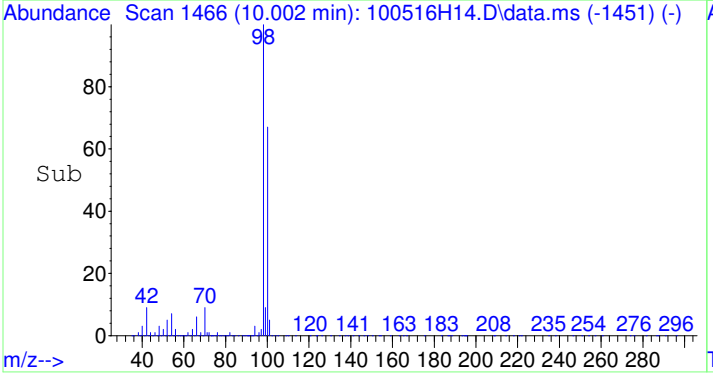


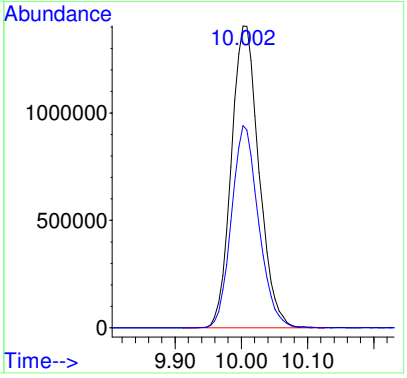


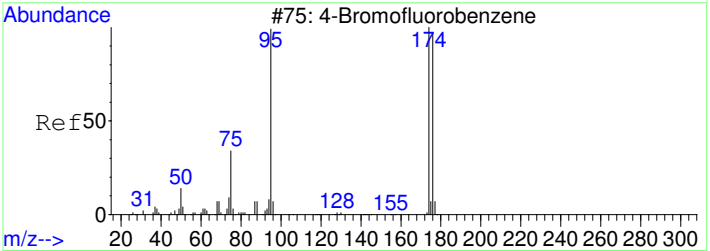
#14
Toluene-d8
Concen: 4.90 ug/L
RT: 10.002 min Scan# 1466
Delta R.T. -0.006 min
Lab File: 100516H14.D
Acq: 5 Oct 2016 7:40 pm

Tgt Ion: 98 Resp: 4070935

Ion	Ratio	Lower	Upper
98	100		
100	65.7	45.1	85.1



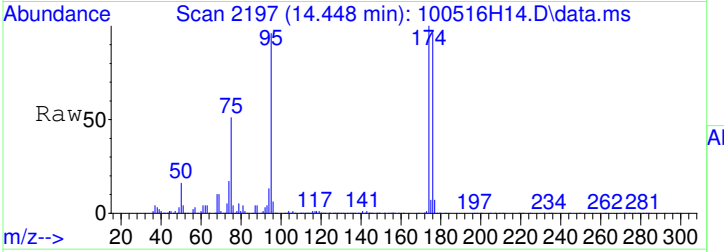


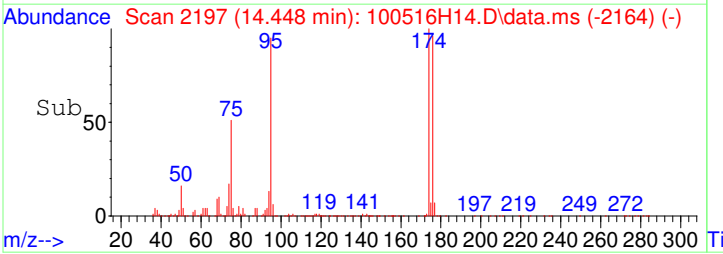


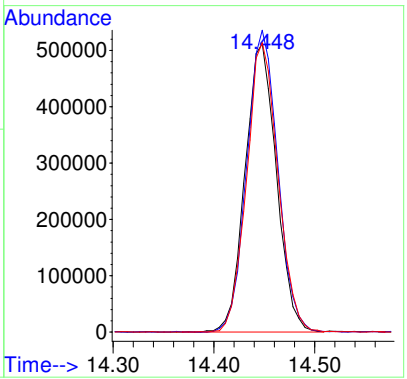
#16
4-Bromofluorobenzene
Concen: 4.84 ug/L
RT: 14.448 min Scan# 2197
Delta R.T. 0.001 min
Lab File: 100516H14.D
Acq: 5 Oct 2016 7:40 pm

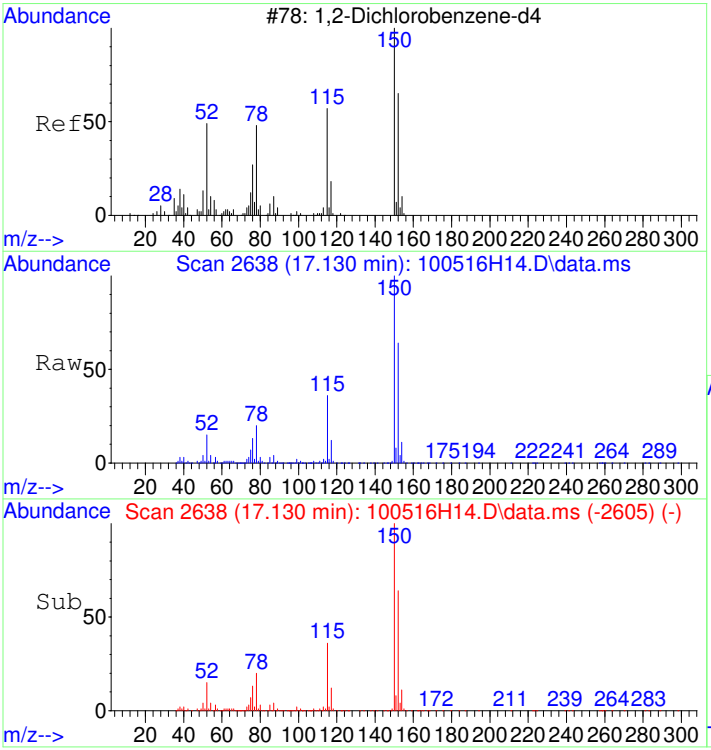
Tgt Ion: 95 Resp: 1103286

Ion	Ratio	Lower	Upper
95	100		
174	103.9	84.0	124.0
176	100.4	79.3	119.3





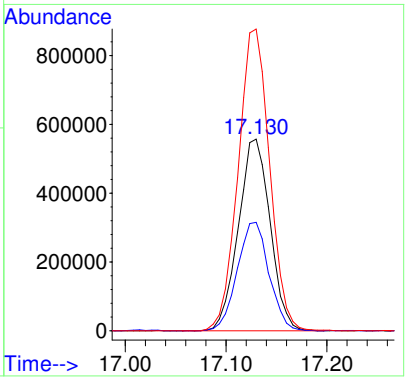




#17
1,2-Dichlorobenzene-d4
Concen: 4.97 ug/L
RT: 17.130 min Scan# 2638
Delta R.T. 0.001 min
Lab File: 100516H14.D
Acq: 5 Oct 2016 7:40 pm

Tgt Ion:152 Resp: 1220678

Ion	Ratio	Lower	Upper
152	100		
115	56.6	35.7	75.7
150	155.8	155.7	195.7



1609102-10

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H05.D
Sample : 1609102-10
Instrument: HP5973H
Acq On : 5 Oct 2016 2:16 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 30
Multiplier: 1

Quant Time: Oct 05 14:59:00 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.556	53	337082	5.000 ug/L	0.00
9) Fluorobenzene	7.454	96	3336948	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.392	117	2240687	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.907	65	427174	4.995 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 100.00%	
14) Toluene-d8	10.002	98	3144628	4.966 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.40%	
16) 4-Bromofluorobenzene	14.448	95	842286	4.855 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 97.20%	
17) 1,2-Dichlorobenzene-d4	17.130	152	938618	5.022 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.40%	
Target Compounds					Qvalue
7) cis-1,2-Dichloroethene	5.599	96	53608	0.278 ug/L	87
8) Chloroform	6.147	83	602470	2.159 ug/L	99
12) Trichloroethene	8.020	95	153374	0.840 ug/L	96

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H05.D
Sample : 1609102-10
Instrument: HP5973H
Acq On : 5 Oct 2016 2:16 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 30
Multiplier: 1

Quant Time: Oct 05 14:59:00 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

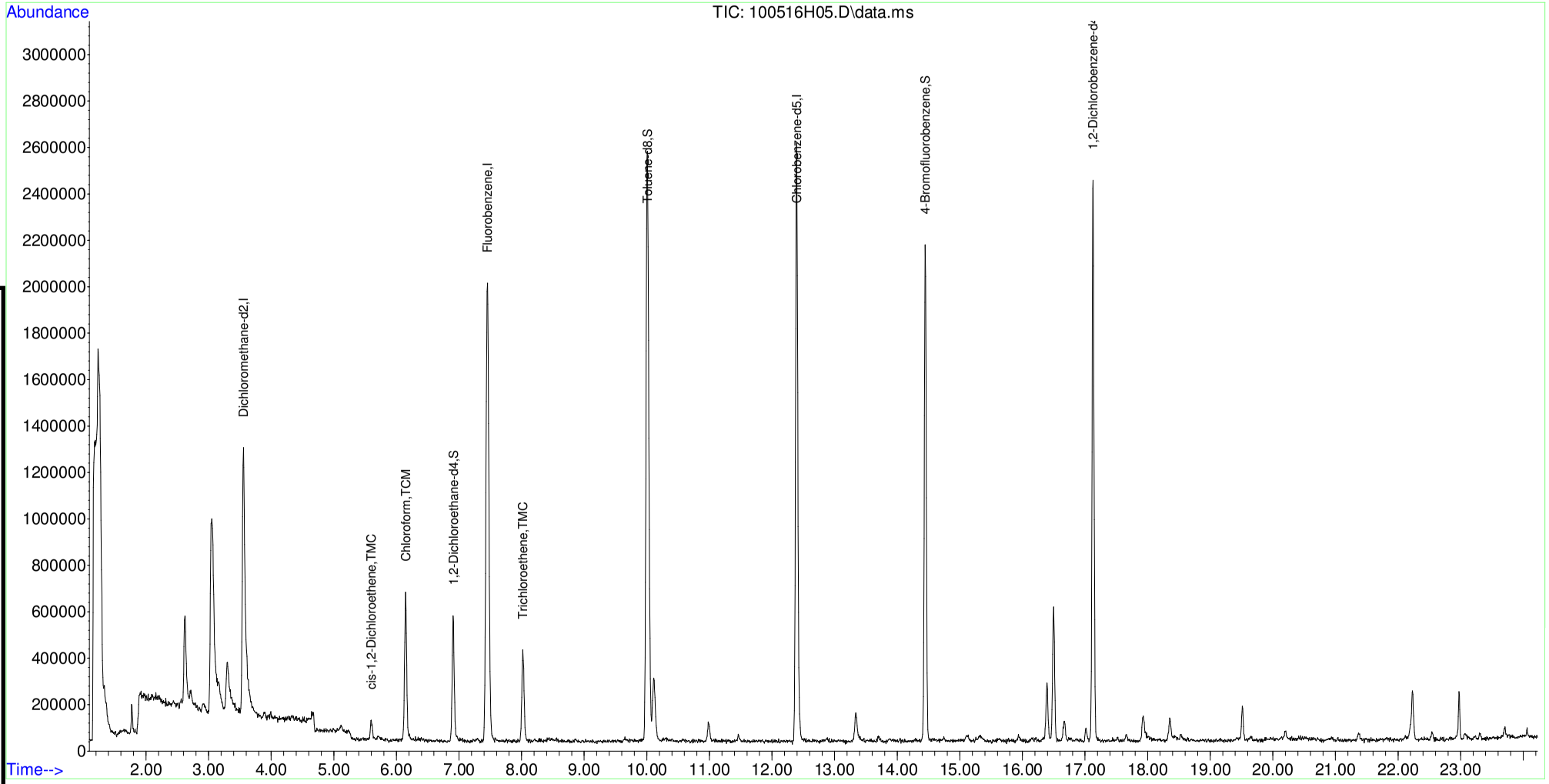
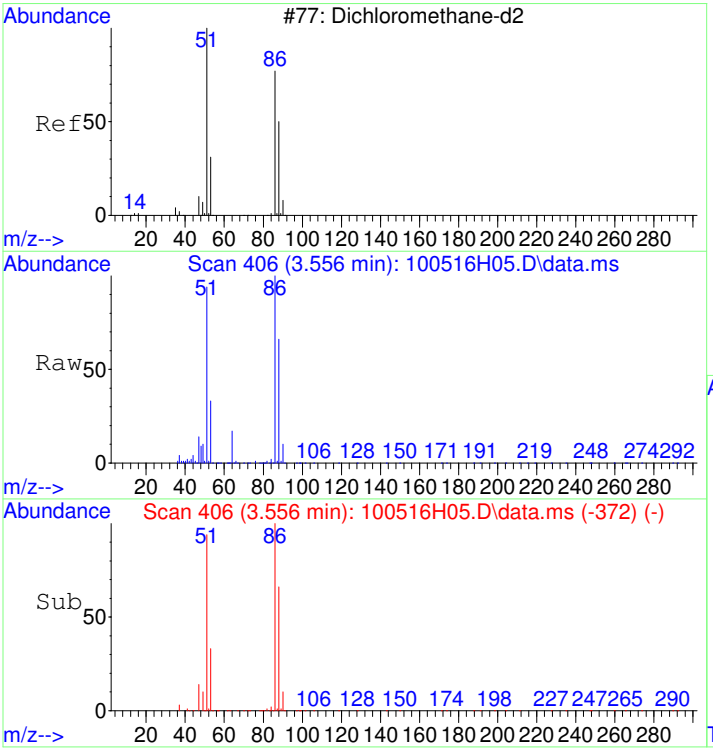


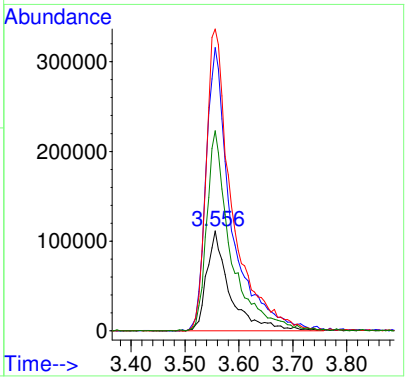
Table of Contents

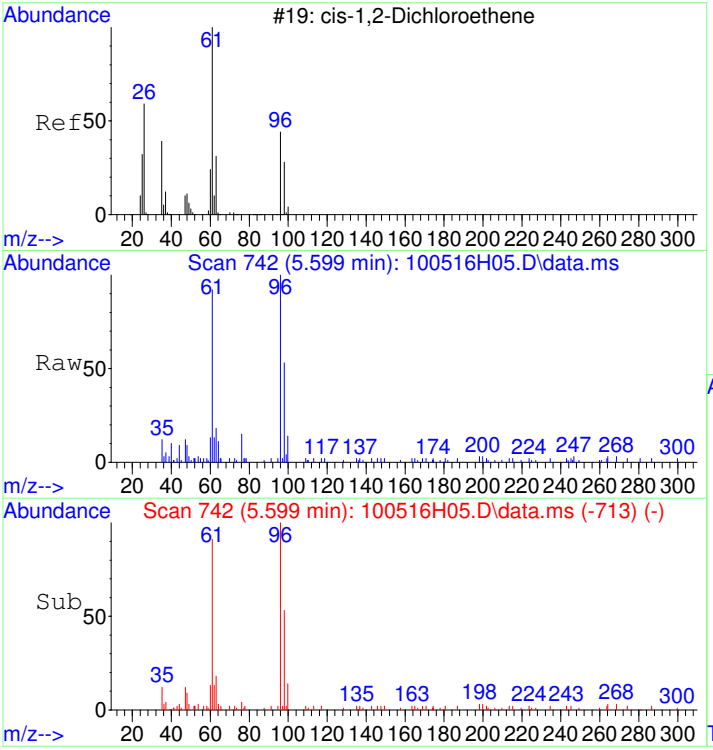


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.556 min Scan# 406
Delta R.T. 0.007 min
Lab File: 100516H05.D
Acq: 5 Oct 2016 2:16 pm

Tgt Ion: 53 Resp: 337082

Ion	Ratio	Lower	Upper
53	100		
51	306.3	386.4	426.4#
86	334.7	0.0	20.0#
88	207.7	231.2	271.2#

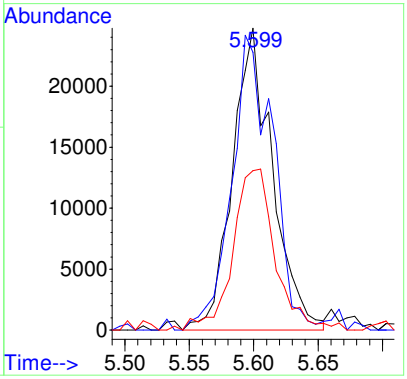


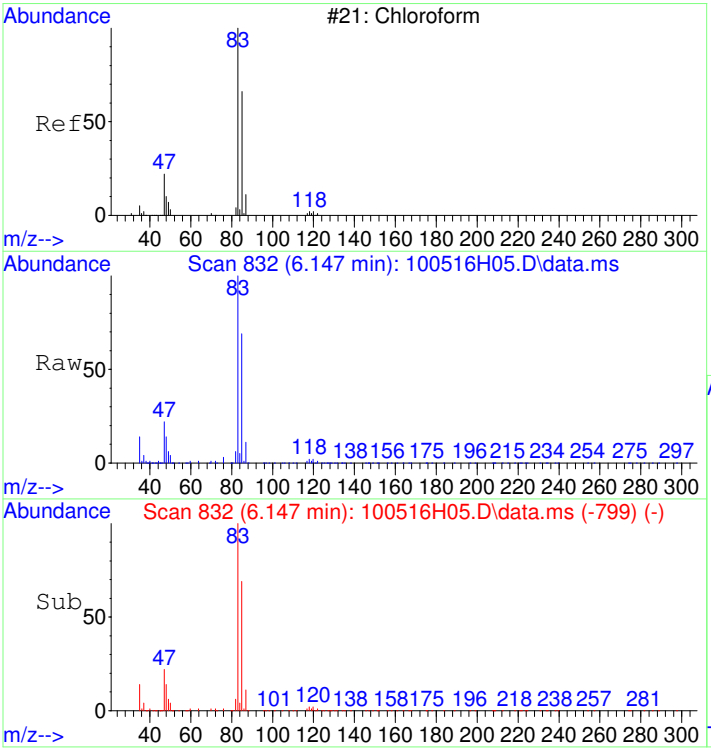


#7
cis-1,2-Dichloroethene
Concen: 0.28 ug/L
RT: 5.599 min Scan# 742
Delta R.T. 0.000 min
Lab File: 100516H05.D
Acq: 5 Oct 2016 2:16 pm

Tgt Ion: 96 Resp: 53608

Ion	Ratio	Lower	Upper
96	100		
61	100.5	97.5	137.5
98	56.5	43.4	83.4

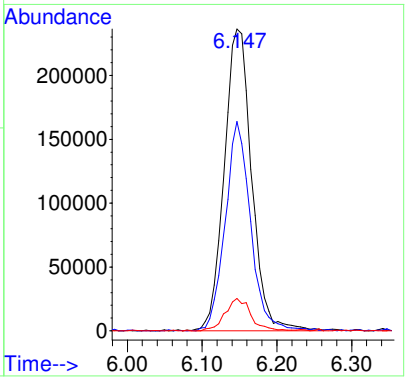


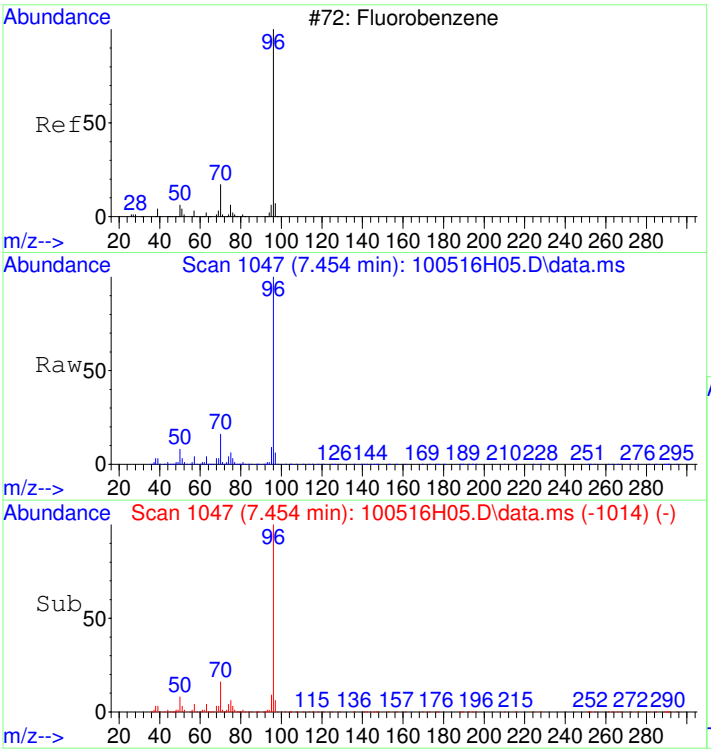


#8
Chloroform
Concen: 2.16 ug/L
RT: 6.147 min Scan# 832
Delta R.T. 0.000 min
Lab File: 100516H05.D
Acq: 5 Oct 2016 2:16 pm

Tgt Ion: 83 Resp: 602470

Ion	Ratio	Lower	Upper
83	100		
85	64.2	43.8	83.8
87	10.0	0.0	30.6

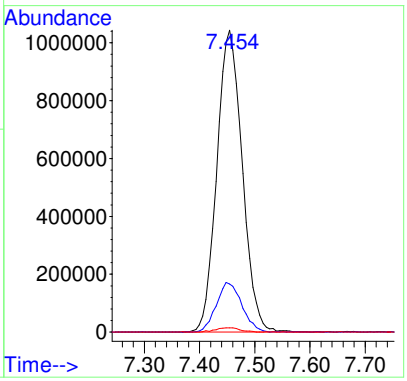


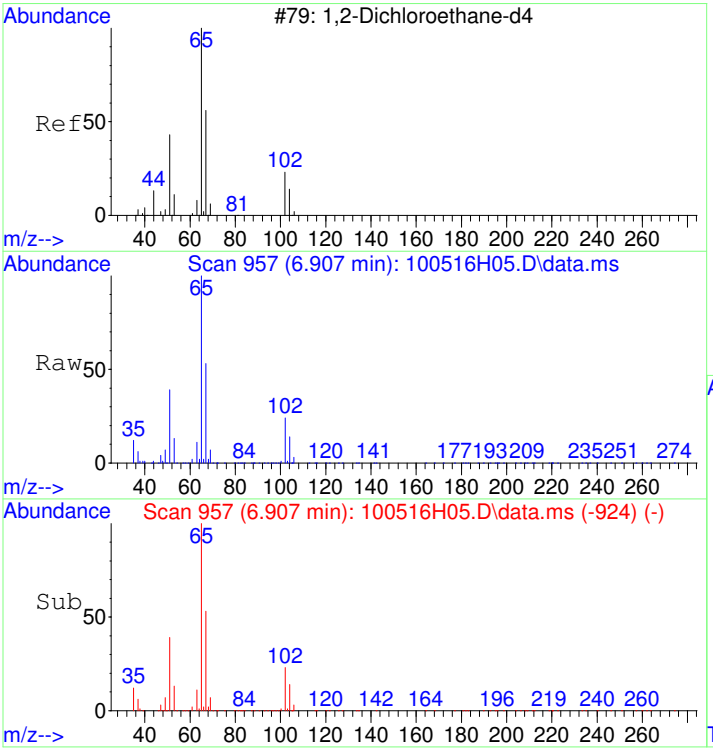


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.454 min Scan# 1047
Delta R.T. 0.000 min
Lab File: 100516H05.D
Acq: 5 Oct 2016 2:16 pm

Tgt Ion: 96 Resp: 3336948

Ion	Ratio	Lower	Upper
96	100		
70	16.4	0.0	36.7
77	1.4	0.0	21.6

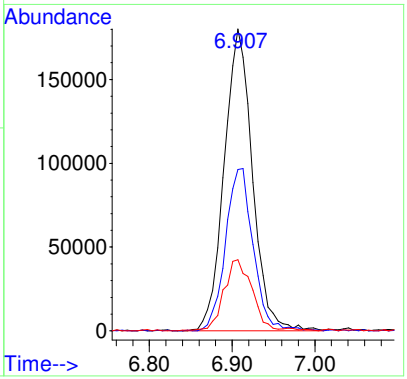


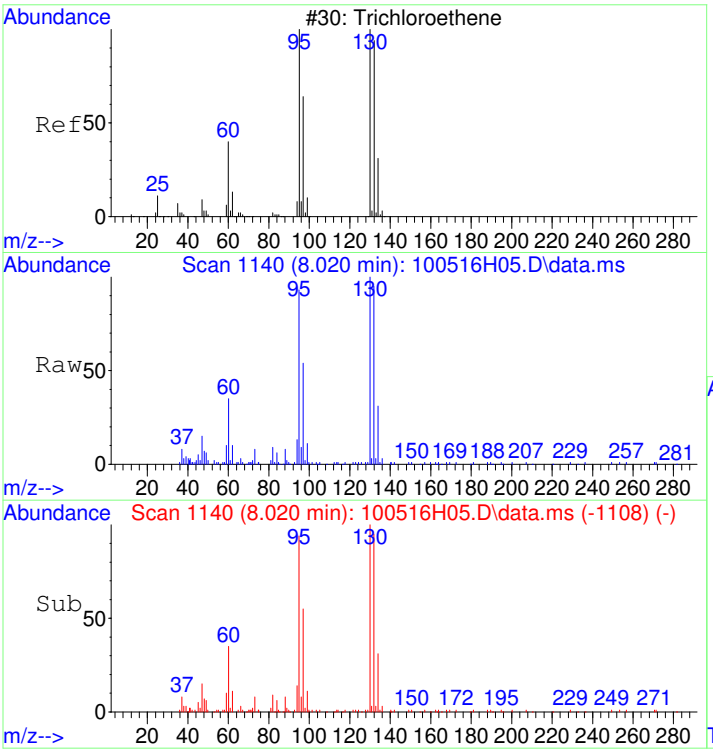


#10
1,2-Dichloroethane-d4
Concen: 5.00 ug/L
RT: 6.907 min Scan# 957
Delta R.T. 0.000 min
Lab File: 100516H05.D
Acq: 5 Oct 2016 2:16 pm

Tgt Ion: 65 Resp: 427174

Ion	Ratio	Lower	Upper
65	100		
67	52.8	31.1	71.1
102	23.3	3.7	43.7

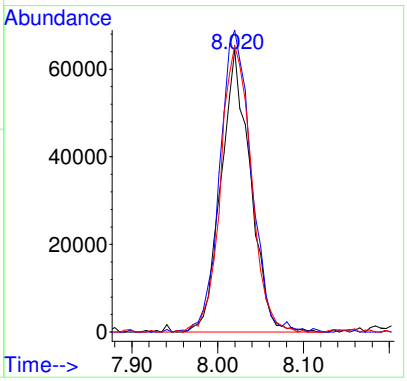


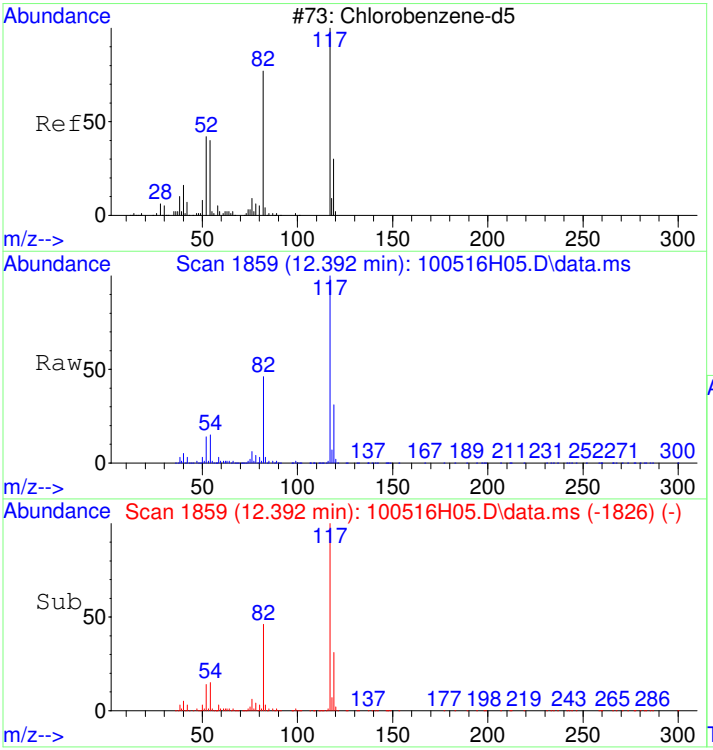


#12
Trichloroethene
Concen: 0.84 ug/L
RT: 8.020 min Scan# 1140
Delta R.T. -0.006 min
Lab File: 100516H05.D
Acq: 5 Oct 2016 2:16 pm

Tgt Ion: 95 Resp: 153374

Ion	Ratio	Lower	Upper
95	100		
130	114.2	93.3	133.3
132	105.7	92.5	132.5

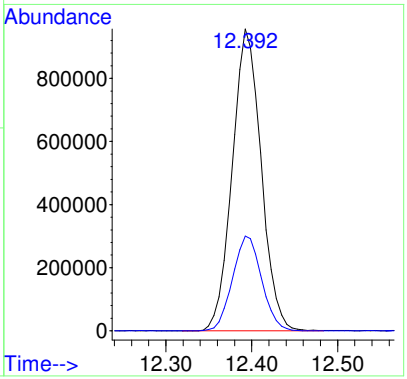


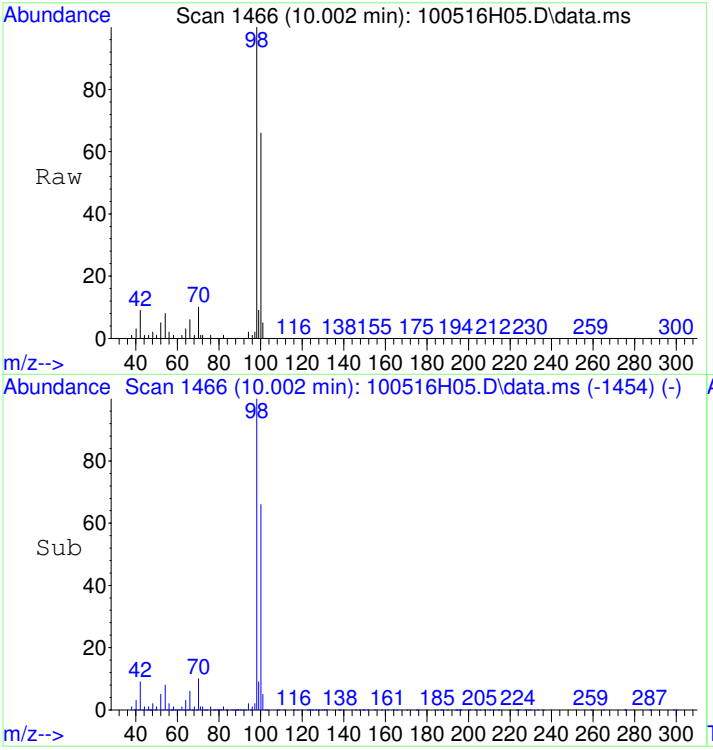


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.392 min Scan# 1859
Delta R.T. 0.000 min
Lab File: 100516H05.D
Acq: 5 Oct 2016 2:16 pm

Tgt Ion:117 Resp: 2240687

Ion	Ratio	Lower	Upper
117	100		
119	31.6	11.9	51.9

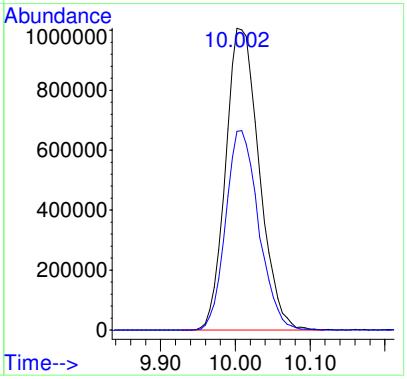


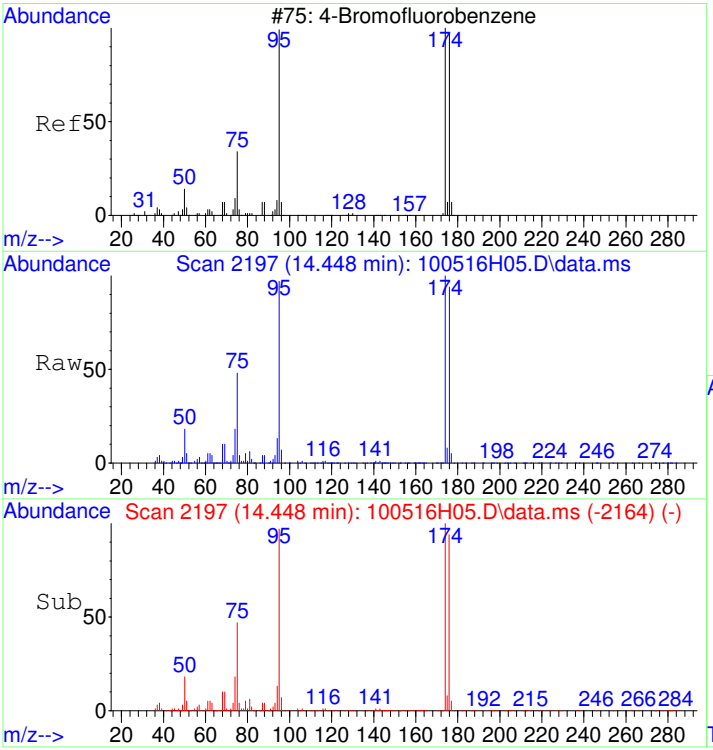


#14
Toluene-d8
Concen: 4.97 ug/L
RT: 10.002 min Scan# 1466
Delta R.T. -0.006 min
Lab File: 100516H05.D
Acq: 5 Oct 2016 2:16 pm

Tgt Ion: 98 Resp: 3144628

Ion	Ratio	Lower	Upper
98	100		
100	64.8	45.1	85.1

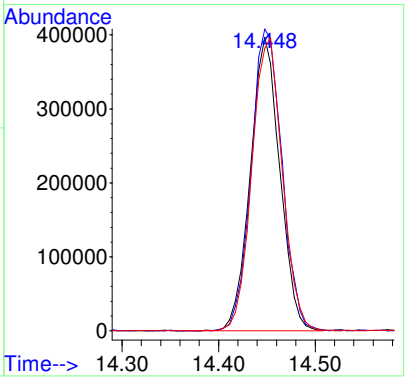


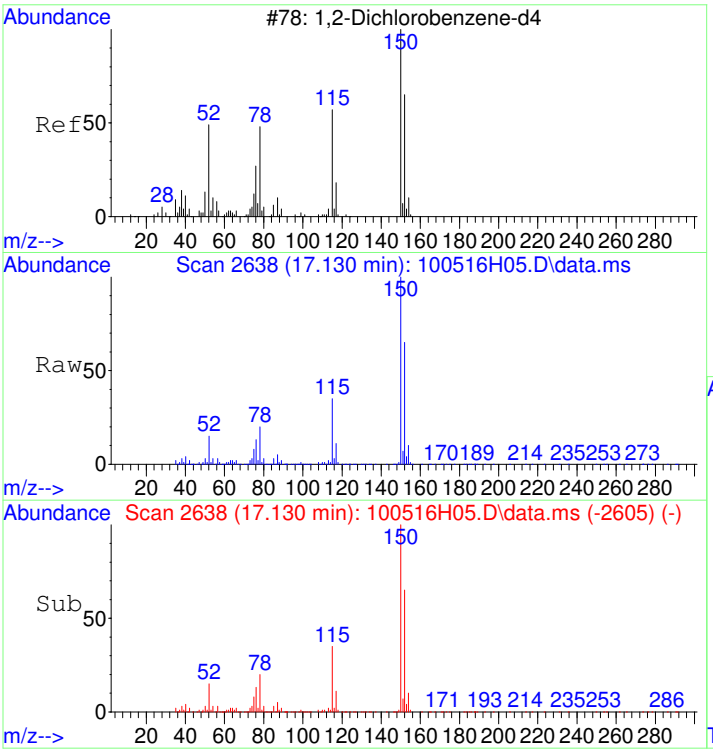


#16
4-Bromofluorobenzene
Concen: 4.86 ug/L
RT: 14.448 min Scan# 2197
Delta R.T. 0.000 min
Lab File: 100516H05.D
Acq: 5 Oct 2016 2:16 pm

Tgt Ion: 95 Resp: 842286

Ion	Ratio	Lower	Upper
95	100		
174	106.7	84.0	124.0
176	102.8	79.3	119.3

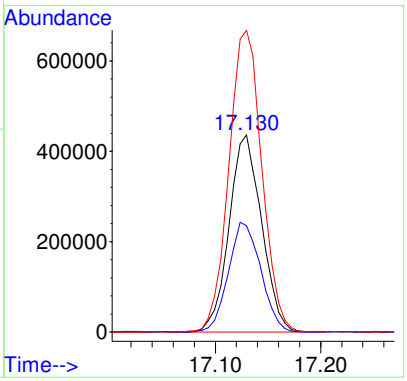




#17
1,2-Dichlorobenzene-d4
Concen: 5.02 ug/L
RT: 17.130 min Scan# 2638
Delta R.T. 0.000 min
Lab File: 100516H05.D
Acq: 5 Oct 2016 2:16 pm

Tgt Ion:152 Resp: 938618

Ion	Ratio	Lower	Upper
152	100		
115	55.5	35.7	75.7
150	155.4	155.7	195.7#



1609102-11

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H06.D
Sample : 1609102-11
Instrument: HP5973H
Acq On : 5 Oct 2016 2:52 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 31
Multiplier: 1

Quant Time: Oct 05 15:53:54 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.547	53	355147	5.000 ug/L	0.00
9) Fluorobenzene	7.445	96	3587825	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.389	117	2407524	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.903	65	450073	4.895 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 97.80%	
14) Toluene-d8	10.005	98	3394893	4.990 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.80%	
16) 4-Bromofluorobenzene	14.444	95	897043	4.813 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 96.20%	
17) 1,2-Dichlorobenzene-d4	17.126	152	993784	4.949 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 99.00%	
Target Compounds					Qvalue
7) cis-1,2-Dichloroethene	5.590	96	57640	0.283 ug/L	90
8) Chloroform	6.143	83	514366	1.749 ug/L	100
12) Trichloroethene	8.016	95	162779	0.830 ug/L	99

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H06.D
Sample : 1609102-11
Instrument: HP5973H
Acq On : 5 Oct 2016 2:52 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 31
Multiplier: 1

Quant Time: Oct 05 15:53:54 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

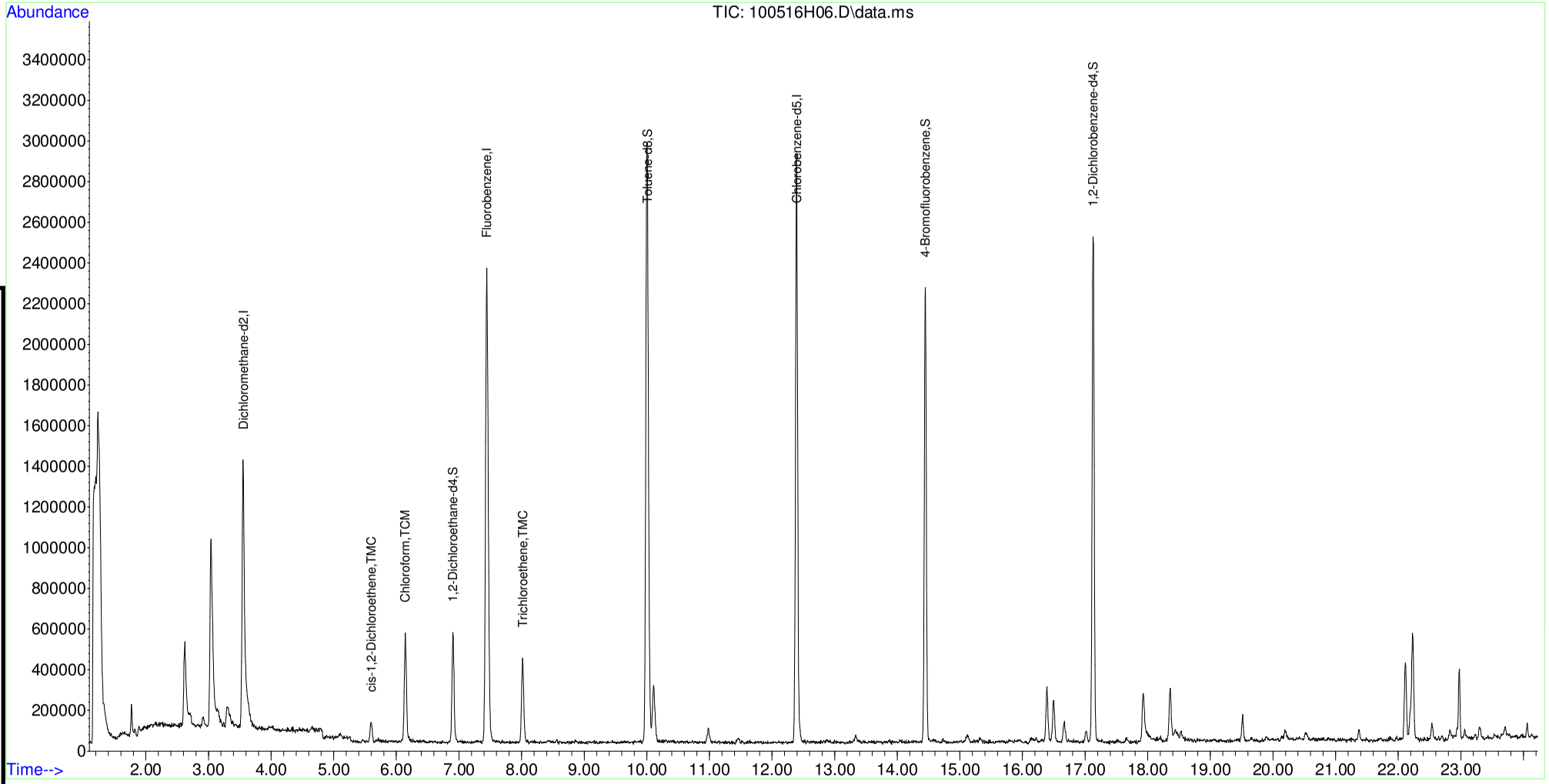
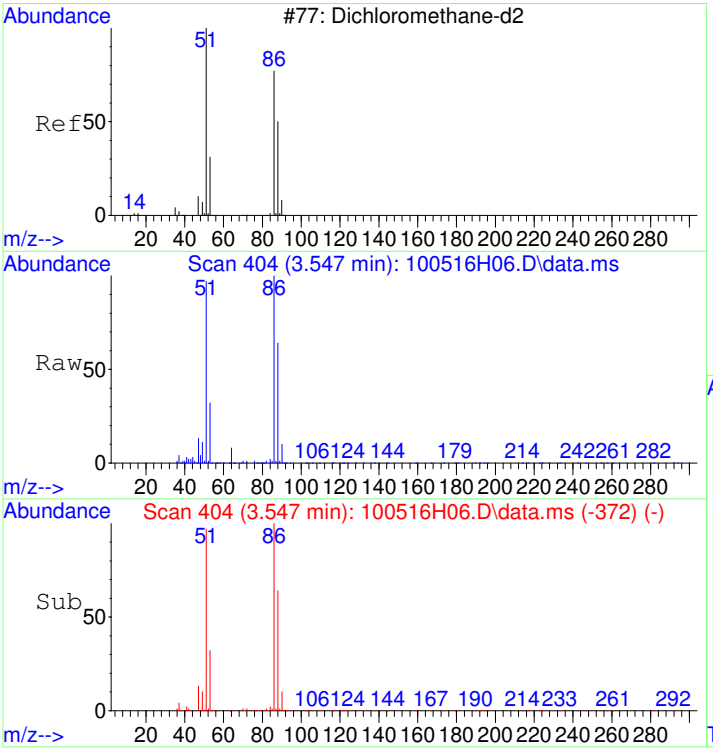


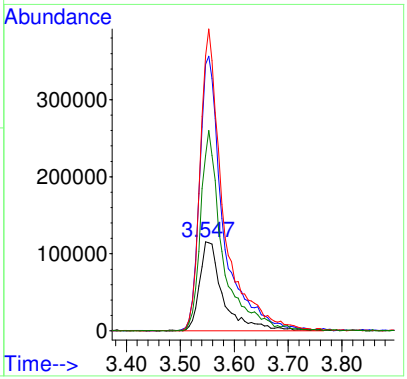
Table of Contents

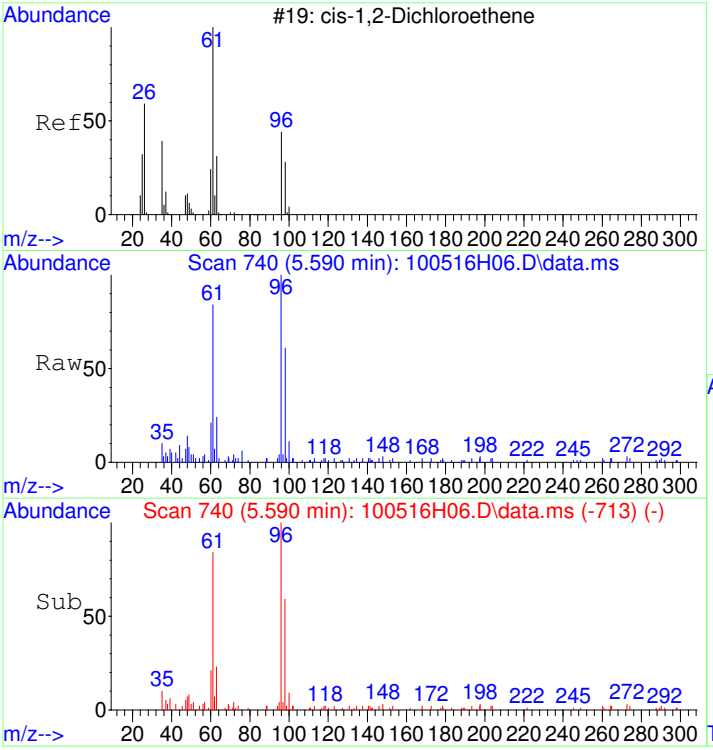


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.547 min Scan# 404
Delta R.T. -0.003 min
Lab File: 100516H06.D
Acq: 5 Oct 2016 2:52 pm

Tgt Ion: 53 Resp: 355147

Ion	Ratio	Lower	Upper
53	100		
51	304.1	386.4	426.4#
86	331.8	0.0	20.0#
88	211.5	231.2	271.2#

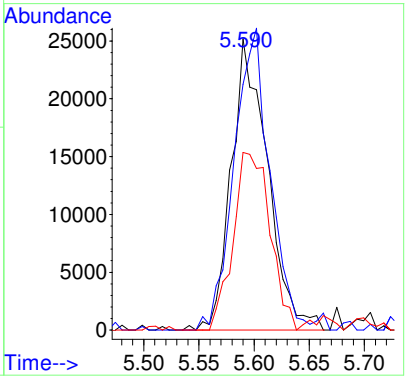


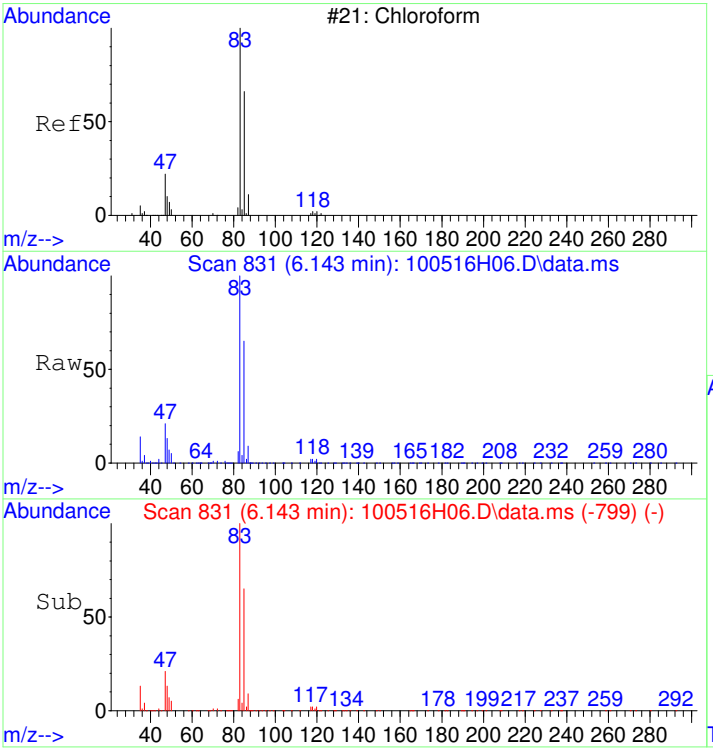


#7
cis-1,2-Dichloroethene
Concen: 0.28 ug/L
RT: 5.590 min Scan# 740
Delta R.T. -0.009 min
Lab File: 100516H06.D
Acq: 5 Oct 2016 2:52 pm

Tgt Ion: 96 Resp: 57640

Ion	Ratio	Lower	Upper
96	100		
61	102.2	97.5	137.5
98	62.4	43.4	83.4

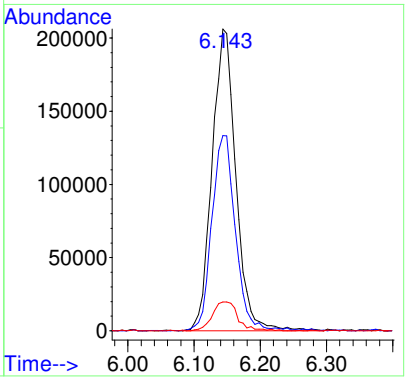


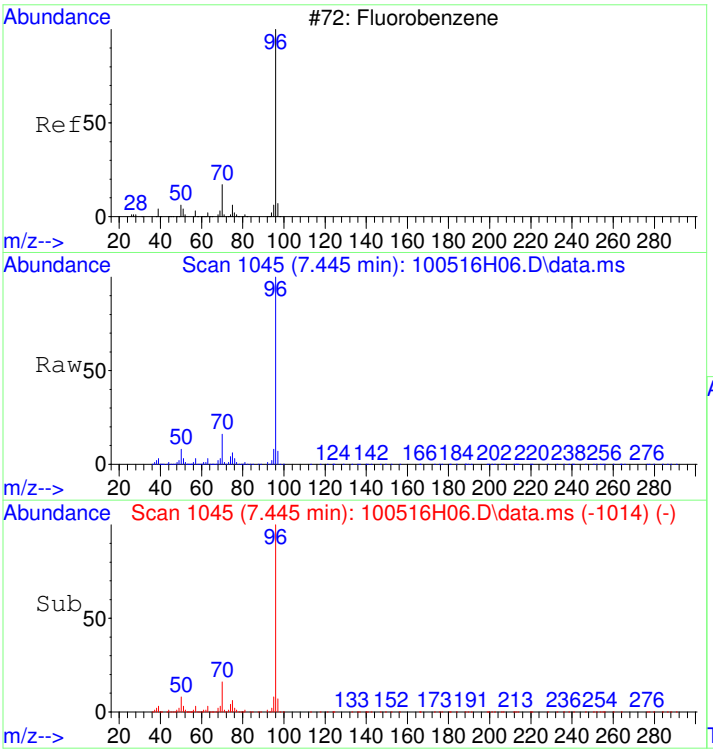


#8
Chloroform
Concen: 1.75 ug/L
RT: 6.143 min Scan# 831
Delta R.T. -0.003 min
Lab File: 100516H06.D
Acq: 5 Oct 2016 2:52 pm

Tgt Ion: 83 Resp: 514366

Ion	Ratio	Lower	Upper
83	100		
85	64.1	43.8	83.8
87	10.4	0.0	30.6

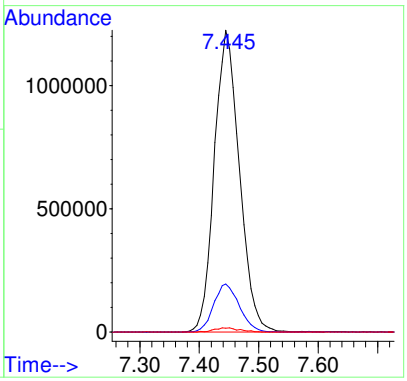


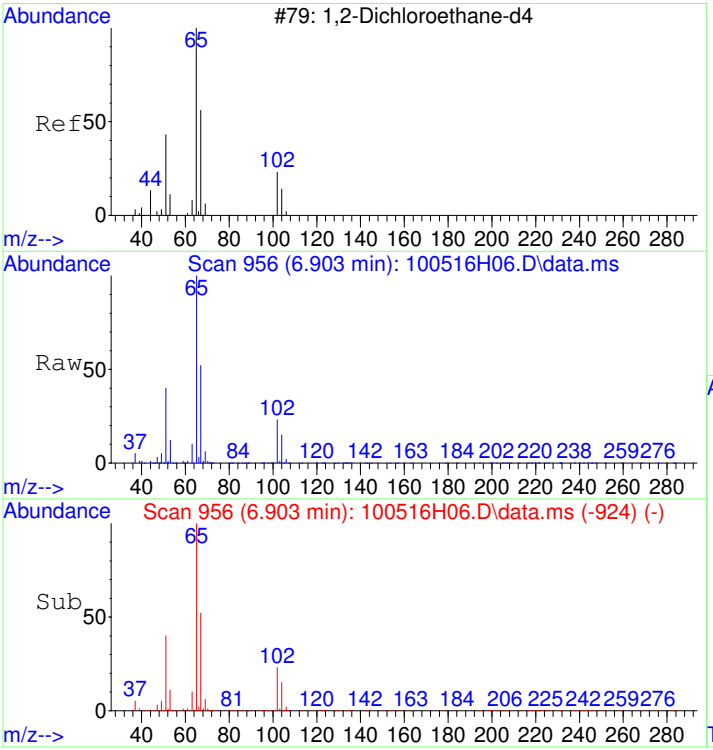


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.445 min Scan# 1045
Delta R.T. -0.009 min
Lab File: 100516H06.D
Acq: 5 Oct 2016 2:52 pm

Tgt Ion: 96 Resp: 3587825

Ion	Ratio	Lower	Upper
96	100		
70	16.4	0.0	36.7
77	1.5	0.0	21.6

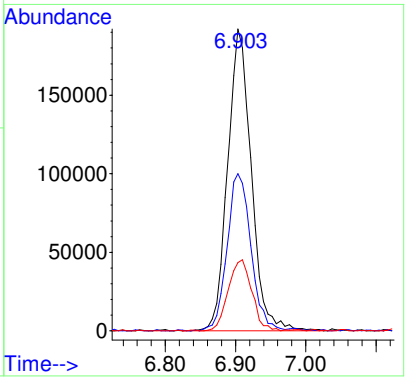


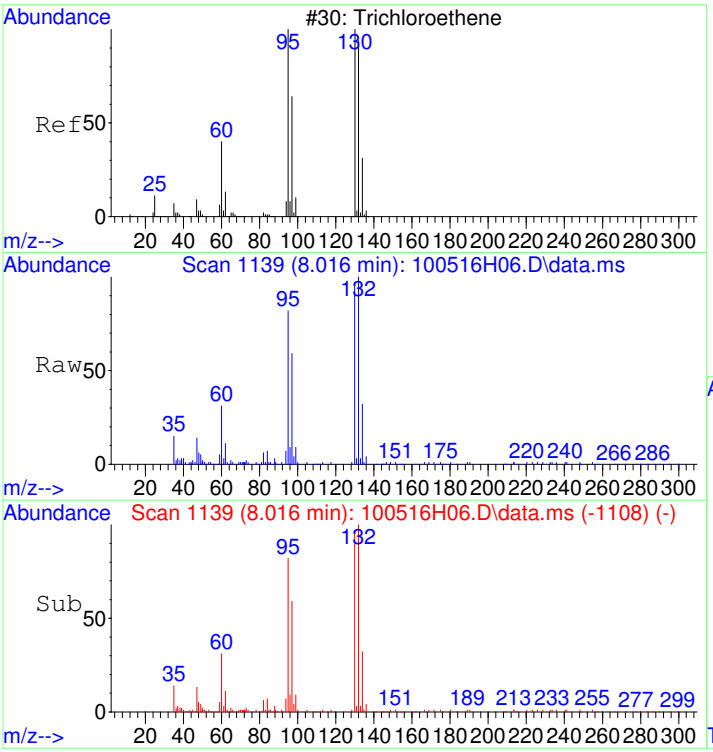


#10
1,2-Dichloroethane-d4
Concen: 4.89 ug/L
RT: 6.903 min Scan# 956
Delta R.T. -0.003 min
Lab File: 100516H06.D
Acq: 5 Oct 2016 2:52 pm

Tgt Ion: 65 Resp: 450073

Ion	Ratio	Lower	Upper
65	100		
67	52.6	31.1	71.1
102	23.6	3.7	43.7

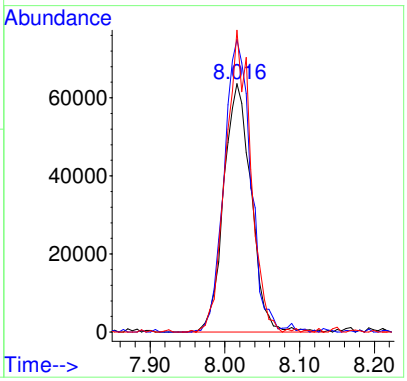


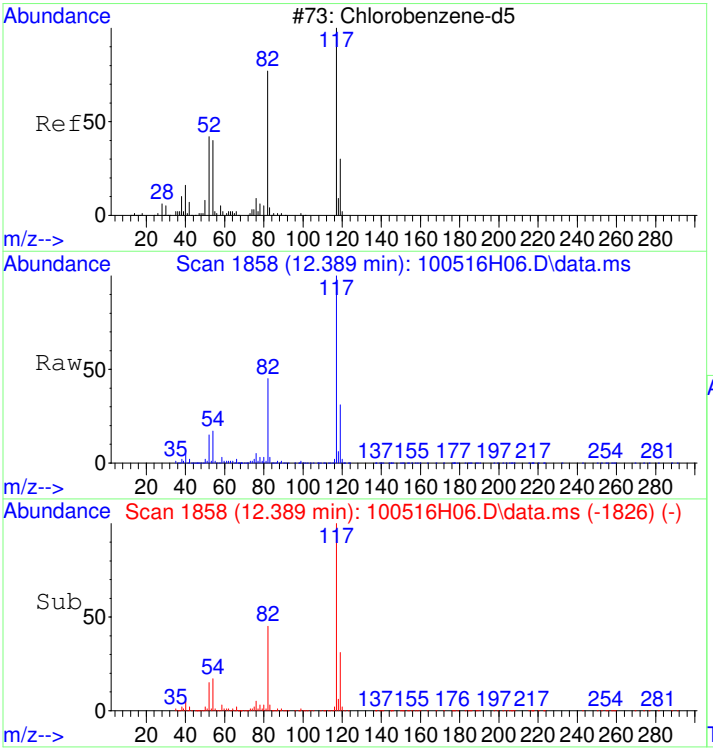


#12
Trichloroethene
Concen: 0.83 ug/L
RT: 8.016 min Scan# 1139
Delta R.T. -0.009 min
Lab File: 100516H06.D
Acq: 5 Oct 2016 2:52 pm

Tgt Ion: 95 Resp: 162779

Ion	Ratio	Lower	Upper
95	100		
130	114.1	93.3	133.3
132	111.7	92.5	132.5

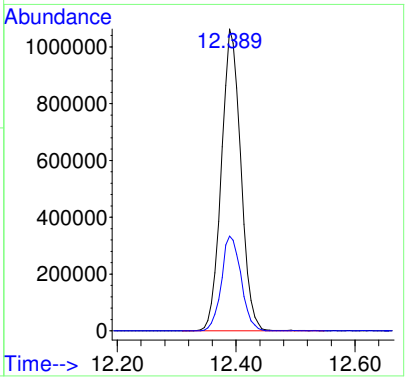


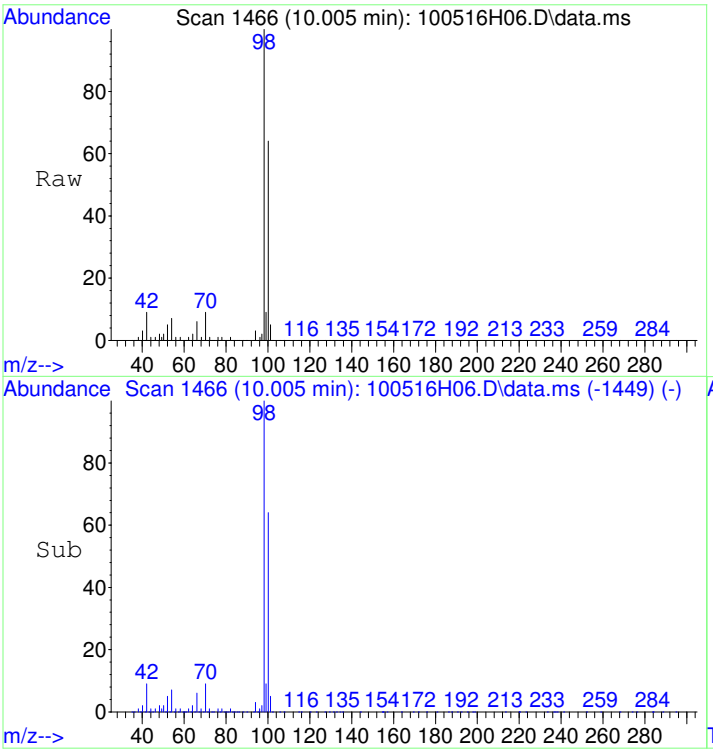


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.389 min Scan# 1858
Delta R.T. -0.003 min
Lab File: 100516H06.D
Acq: 5 Oct 2016 2:52 pm

Tgt Ion:117 Resp: 2407524

Ion	Ratio	Lower	Upper
117	100		
119	31.7	11.9	51.9

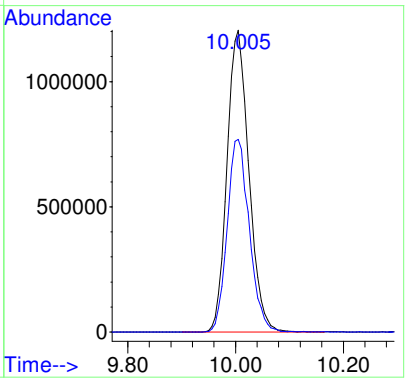


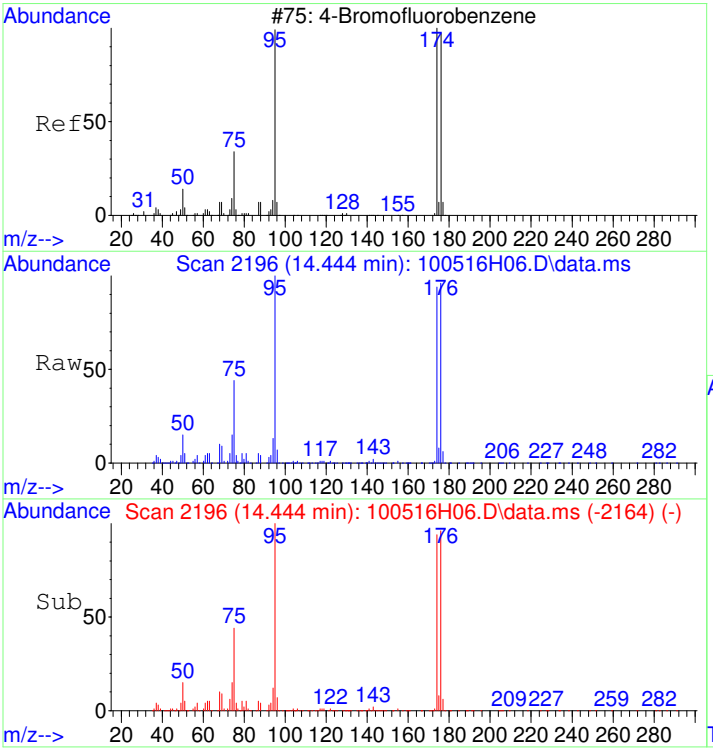


#14
Toluene-d8
Concen: 4.99 ug/L
RT: 10.005 min Scan# 1466
Delta R.T. -0.003 min
Lab File: 100516H06.D
Acq: 5 Oct 2016 2:52 pm

Tgt Ion: 98 Resp: 3394893

Ion	Ratio	Lower	Upper
98	100		
100	64.5	45.1	85.1

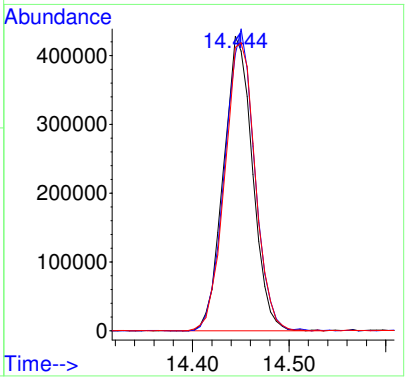


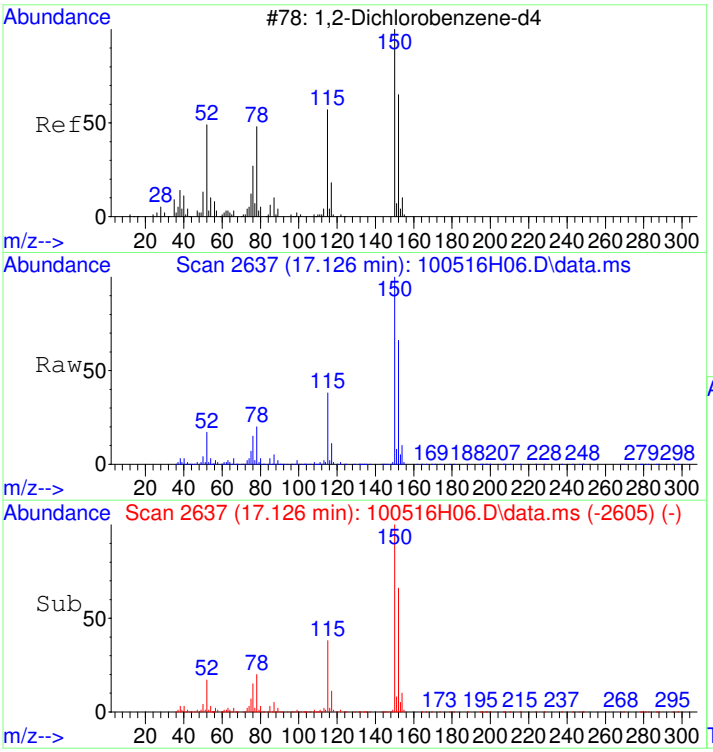


#16
4-Bromofluorobenzene
Concen: 4.81 ug/L
RT: 14.444 min Scan# 2196
Delta R.T. -0.003 min
Lab File: 100516H06.D
Acq: 5 Oct 2016 2:52 pm

Tgt Ion: 95 Resp: 897043

Ion	Ratio	Lower	Upper
95	100		
174	104.6	84.0	124.0
176	102.4	79.3	119.3

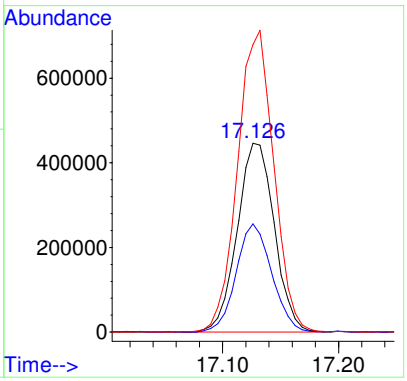




#17
1,2-Dichlorobenzene-d4
Concen: 4.95 ug/L
RT: 17.126 min Scan# 2637
Delta R.T. -0.003 min
Lab File: 100516H06.D
Acq: 5 Oct 2016 2:52 pm

Tgt Ion:152 Resp: 993784

Ion	Ratio	Lower	Upper
152	100		
115	54.9	35.7	75.7
150	156.5	155.7	195.7



1609102-12

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H07.D
Sample : 1609102-12
Instrument: HP5973H
Acq On : 5 Oct 2016 3:28 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 32
Multiplier: 1

Quant Time: Oct 05 15:54:08 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.556	53	354337	5.000 ug/L	0.00
9) Fluorobenzene	7.455	96	3583521	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2438506	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.907	65	457965	4.987 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 99.80%	
14) Toluene-d8	10.009	98	3456134	5.015 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.40%	
16) 4-Bromofluorobenzene	14.448	95	936026	4.958 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 99.20%	
17) 1,2-Dichlorobenzene-d4	17.130	152	1019381	5.012 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.20%	

Target Compounds					Qvalue
7) cis-1,2-Dichloroethene	5.594	96	89625	0.441 ug/L	93
8) Chloroform	6.141	83	674182	2.298 ug/L	99
12) Trichloroethene	8.020	95	189726	0.968 ug/L	98

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H07.D
Sample : 1609102-12
Instrument: HP5973H
Acq On : 5 Oct 2016 3:28 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 32
Multiplier: 1

Quant Time: Oct 05 15:54:08 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

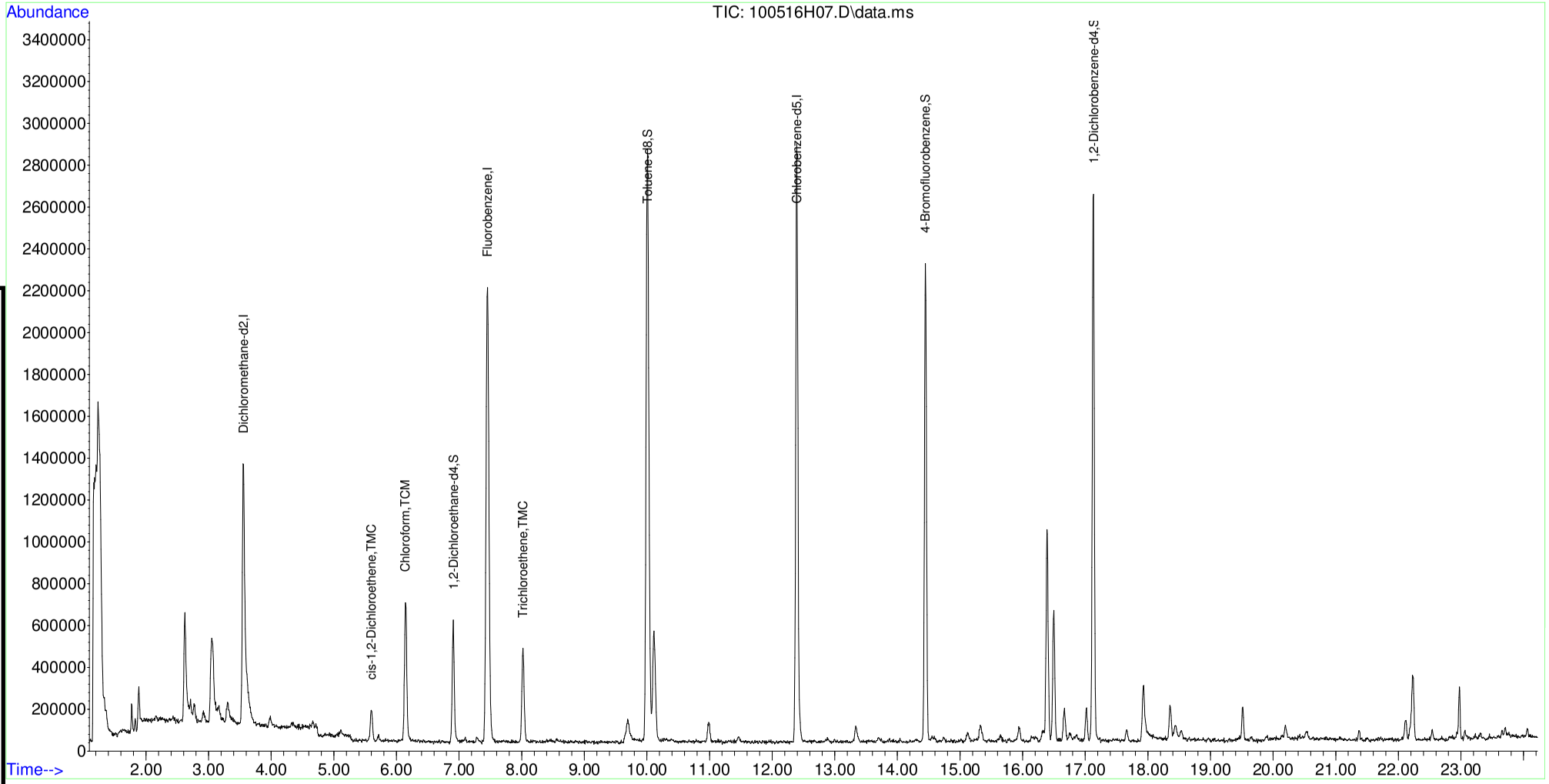
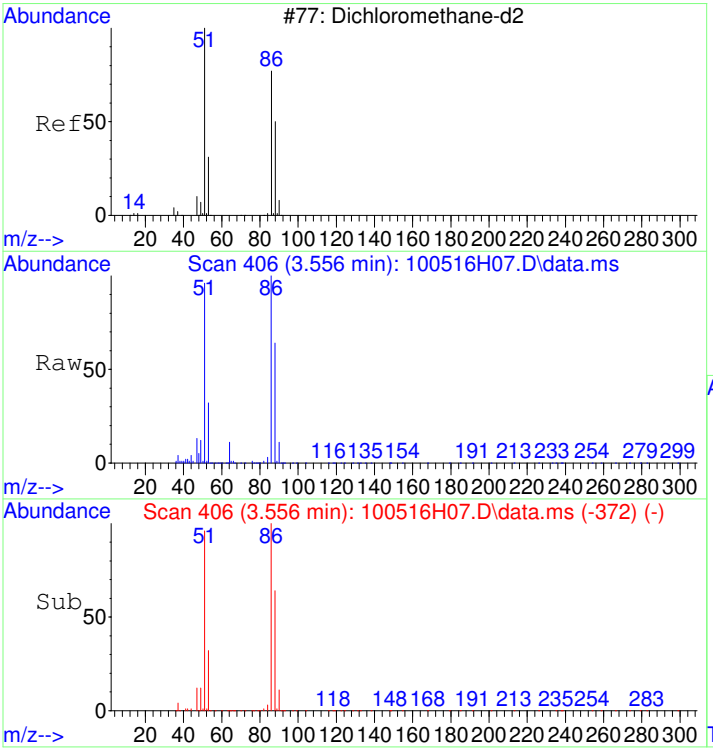


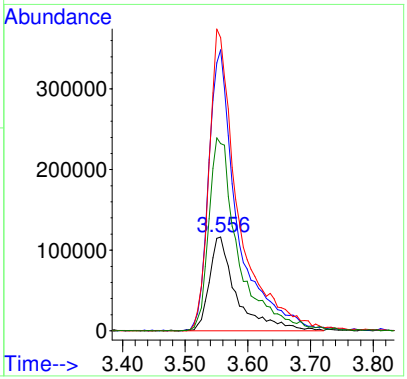
Table of Contents

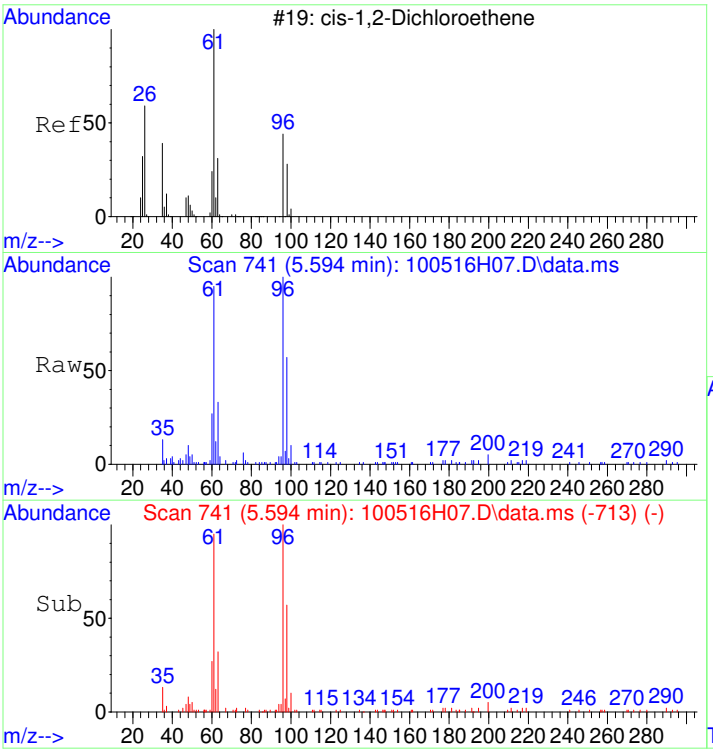


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.556 min Scan# 406
Delta R.T. 0.007 min
Lab File: 100516H07.D
Acq: 5 Oct 2016 3:28 pm

Tgt Ion: 53 Resp: 354337

Ion	Ratio	Lower	Upper
53	100		
51	313.5	386.4	426.4#
86	343.4	0.0	20.0#
88	223.6	231.2	271.2#

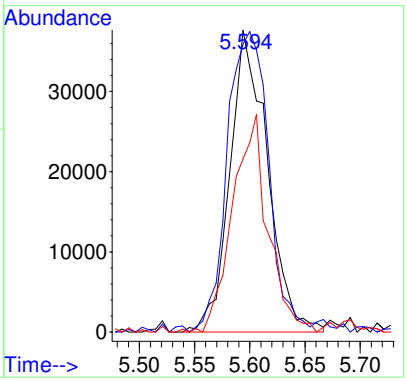


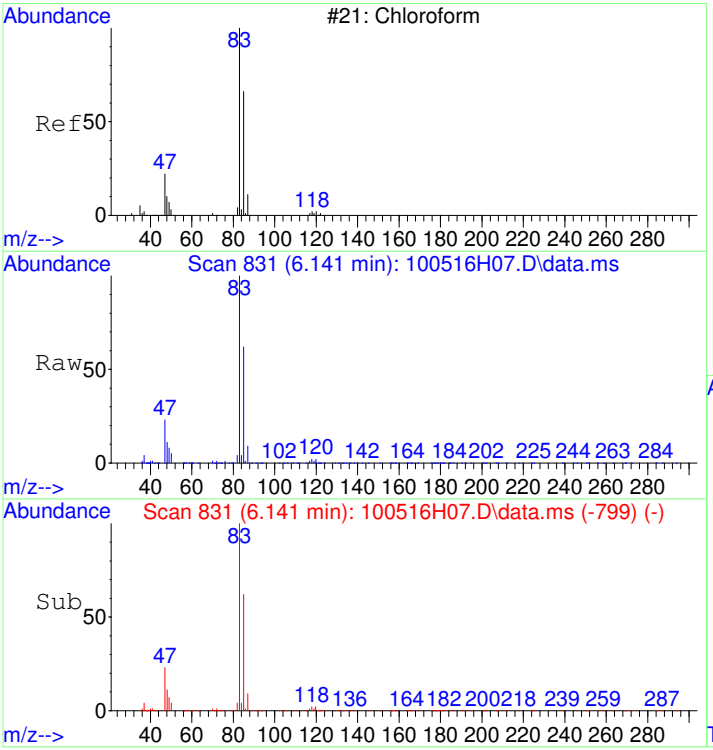


#7
cis-1,2-Dichloroethene
Concen: 0.44 ug/L
RT: 5.594 min Scan# 741
Delta R.T. -0.005 min
Lab File: 100516H07.D
Acq: 5 Oct 2016 3:28 pm

Tgt Ion: 96 Resp: 89625

Ion	Ratio	Lower	Upper
96	100		
61	109.2	97.5	137.5
98	67.6	43.4	83.4

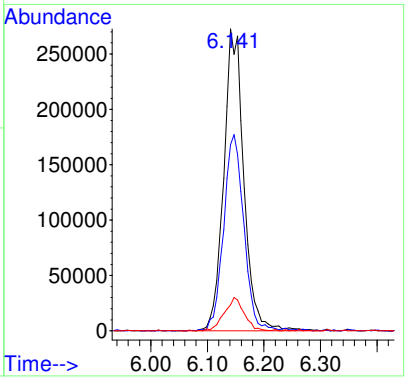


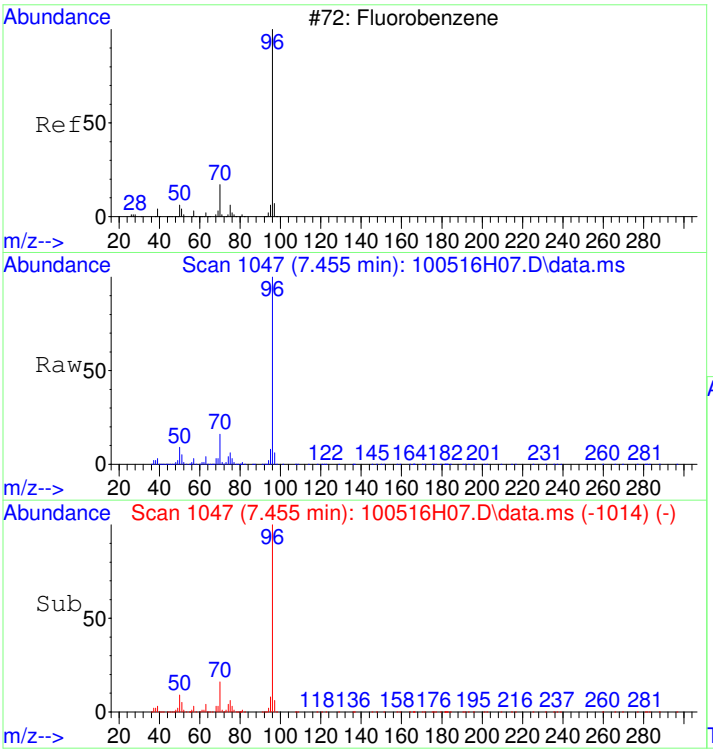


#8
Chloroform
Concen: 2.30 ug/L
RT: 6.141 min Scan# 831
Delta R.T. -0.005 min
Lab File: 100516H07.D
Acq: 5 Oct 2016 3:28 pm

Tgt Ion: 83 Resp: 674182

Ion	Ratio	Lower	Upper
83	100		
85	65.0	43.8	83.8
87	10.9	0.0	30.6

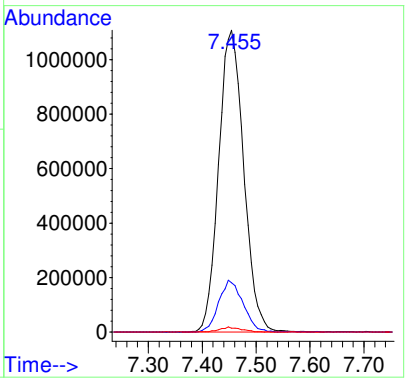


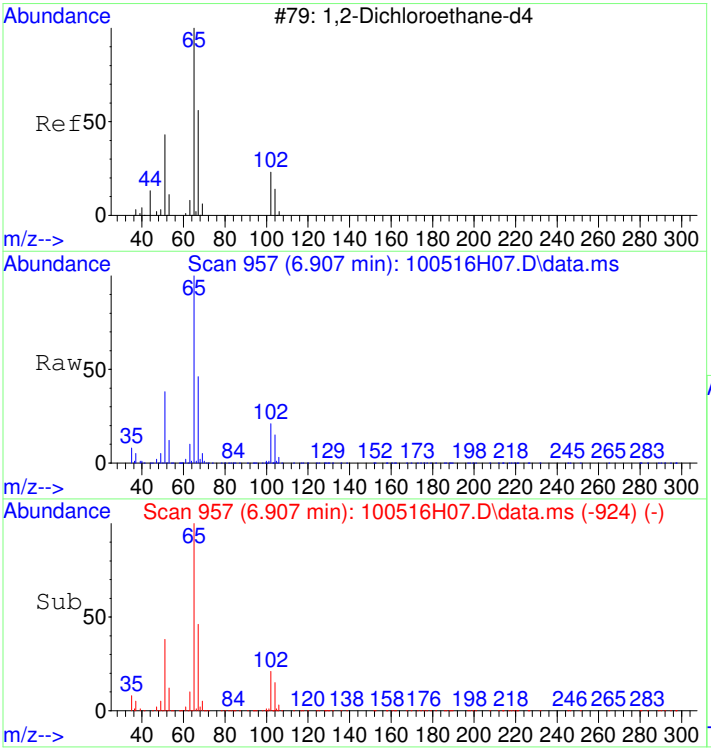


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.455 min Scan# 1047
Delta R.T. 0.001 min
Lab File: 100516H07.D
Acq: 5 Oct 2016 3:28 pm

Tgt Ion: 96 Resp: 3583521

Ion	Ratio	Lower	Upper
96	100		
70	16.6	0.0	36.7
77	1.5	0.0	21.6

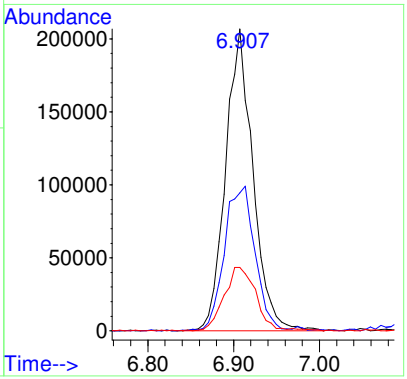


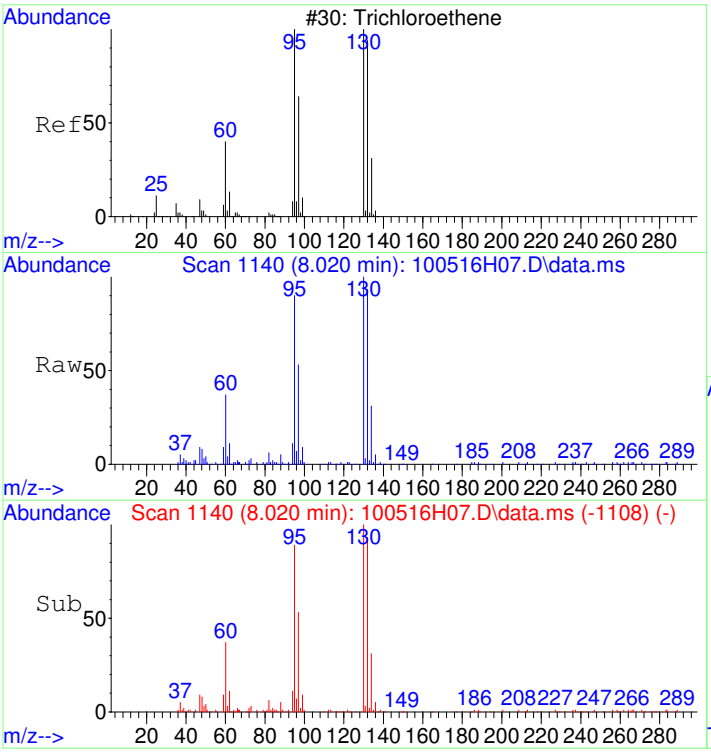


#10
1,2-Dichloroethane-d4
Concen: 4.99 ug/L
RT: 6.907 min Scan# 957
Delta R.T. 0.001 min
Lab File: 100516H07.D
Acq: 5 Oct 2016 3:28 pm

Tgt Ion: 65 Resp: 457965

Ion	Ratio	Lower	Upper
65	100		
67	53.6	31.1	71.1
102	24.1	3.7	43.7

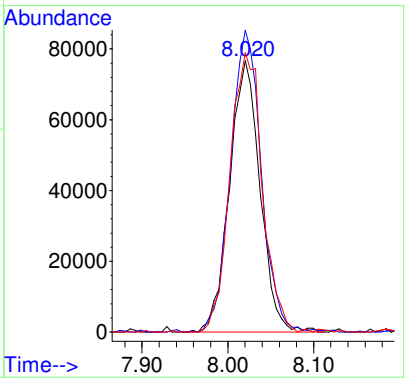


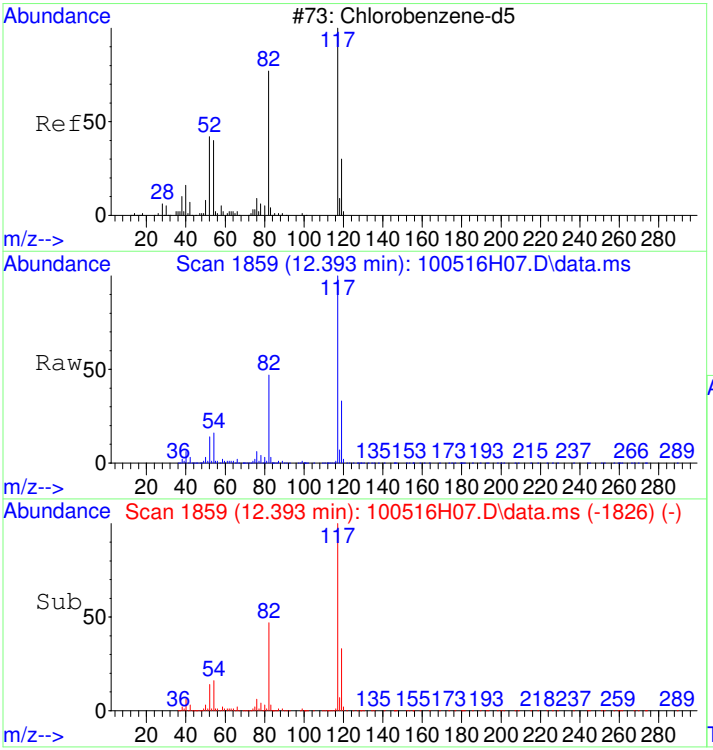


#12
Trichloroethene
Concen: 0.97 ug/L
RT: 8.020 min Scan# 1140
Delta R.T. -0.005 min
Lab File: 100516H07.D
Acq: 5 Oct 2016 3:28 pm

Tgt Ion: 95 Resp: 189726

Ion	Ratio	Lower	Upper
95	100		
130	112.0	93.3	133.3
132	109.2	92.5	132.5

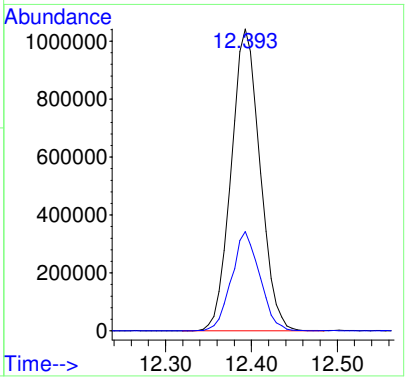


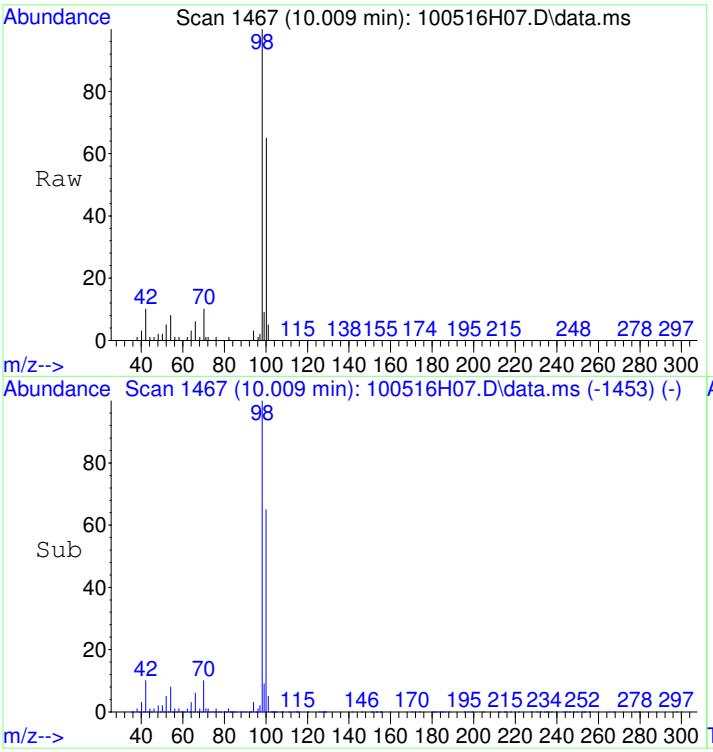


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.393 min Scan# 1859
Delta R.T. 0.001 min
Lab File: 100516H07.D
Acq: 5 Oct 2016 3:28 pm

Tgt Ion:117 Resp: 2438506

Ion	Ratio	Lower	Upper
117	100		
119	32.1	11.9	51.9

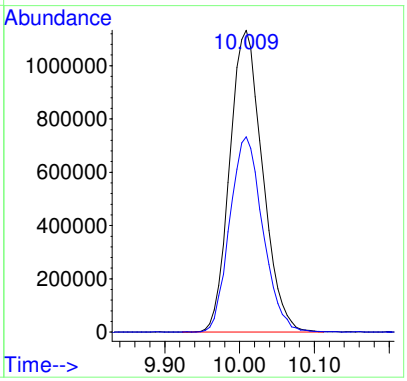


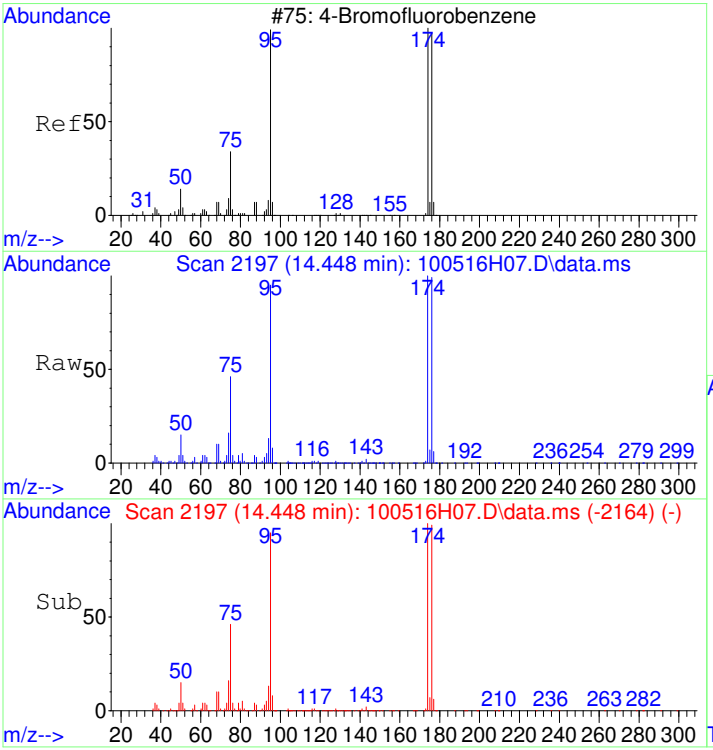


#14
Toluene-d8
Concen: 5.02 ug/L
RT: 10.009 min Scan# 1467
Delta R.T. 0.001 min
Lab File: 100516H07.D
Acq: 5 Oct 2016 3:28 pm

Tgt Ion: 98 Resp: 3456134

Ion	Ratio	Lower	Upper
98	100		
100	65.0	45.1	85.1

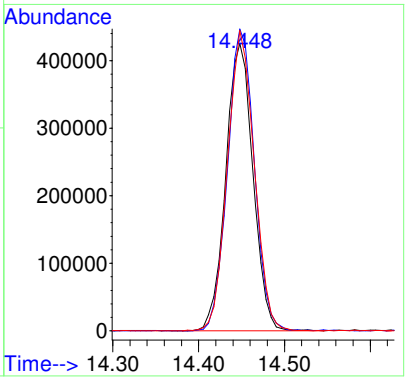


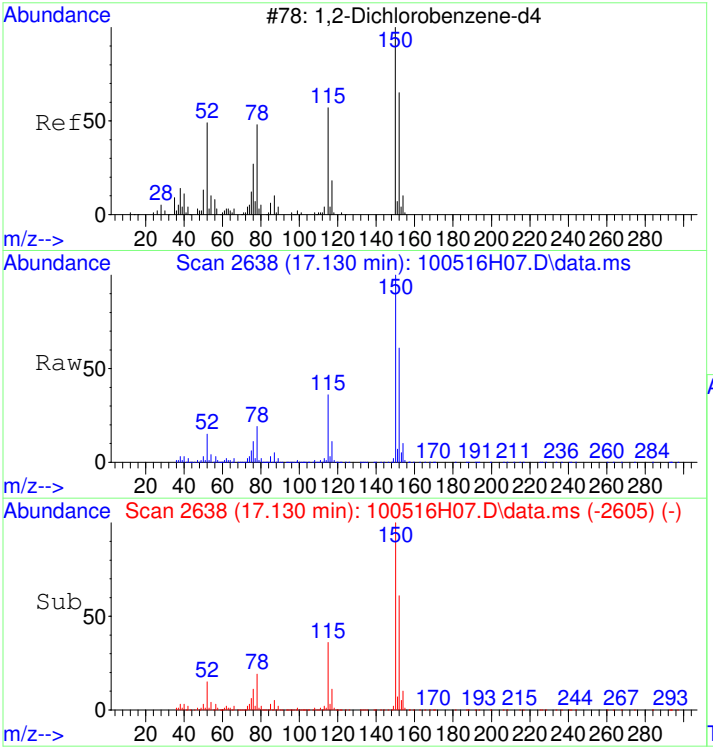


#16
4-Bromofluorobenzene
Concen: 4.96 ug/L
RT: 14.448 min Scan# 2197
Delta R.T. 0.001 min
Lab File: 100516H07.D
Acq: 5 Oct 2016 3:28 pm

Tgt Ion: 95 Resp: 936026

Ion	Ratio	Lower	Upper
95	100		
174	103.6	84.0	124.0
176	102.8	79.3	119.3

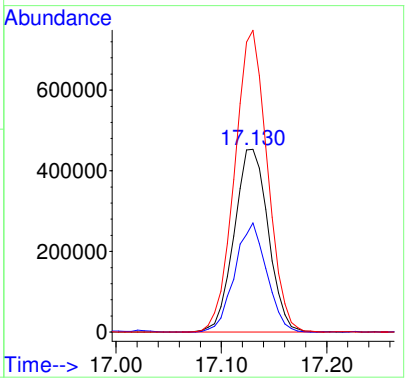




#17
1,2-Dichlorobenzene-d4
Concen: 5.01 ug/L
RT: 17.130 min Scan# 2638
Delta R.T. 0.001 min
Lab File: 100516H07.D
Acq: 5 Oct 2016 3:28 pm

Tgt Ion:152 Resp: 1019381

Ion	Ratio	Lower	Upper
152	100		
115	56.2	35.7	75.7
150	159.1	155.7	195.7



1609102-13

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H08.D
Sample : 1609102-13
Instrument: HP5973H
Acq On : 5 Oct 2016 4:04 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 33
Multiplier: 1

Quant Time: Oct 06 08:00:02 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	388364	5.000 ug/L	0.00
9) Fluorobenzene	7.449	96	3854944	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.393	117	2647162	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.908	65	504468	5.106 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 102.20%	
14) Toluene-d8	10.009	98	3724995	4.979 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.60%	
16) 4-Bromofluorobenzene	14.449	95	1015989	4.957 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 99.20%	
17) 1,2-Dichlorobenzene-d4	17.131	152	1106780	5.013 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.20%	
Target Compounds					Qvalue
7) cis-1,2-Dichloroethene	5.594	96	106395	0.478 ug/L	95
8) Chloroform	6.148	83	729455	2.268 ug/L	99
12) Trichloroethene	8.027	95	224437	1.065 ug/L	97

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100516AHVW\
Data File : 100516H08.D
Sample : 1609102-13
Instrument: HP5973H
Acq On : 5 Oct 2016 4:04 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 33
Multiplier: 1

Quant Time: Oct 06 08:00:02 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100516HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100516HVW.M

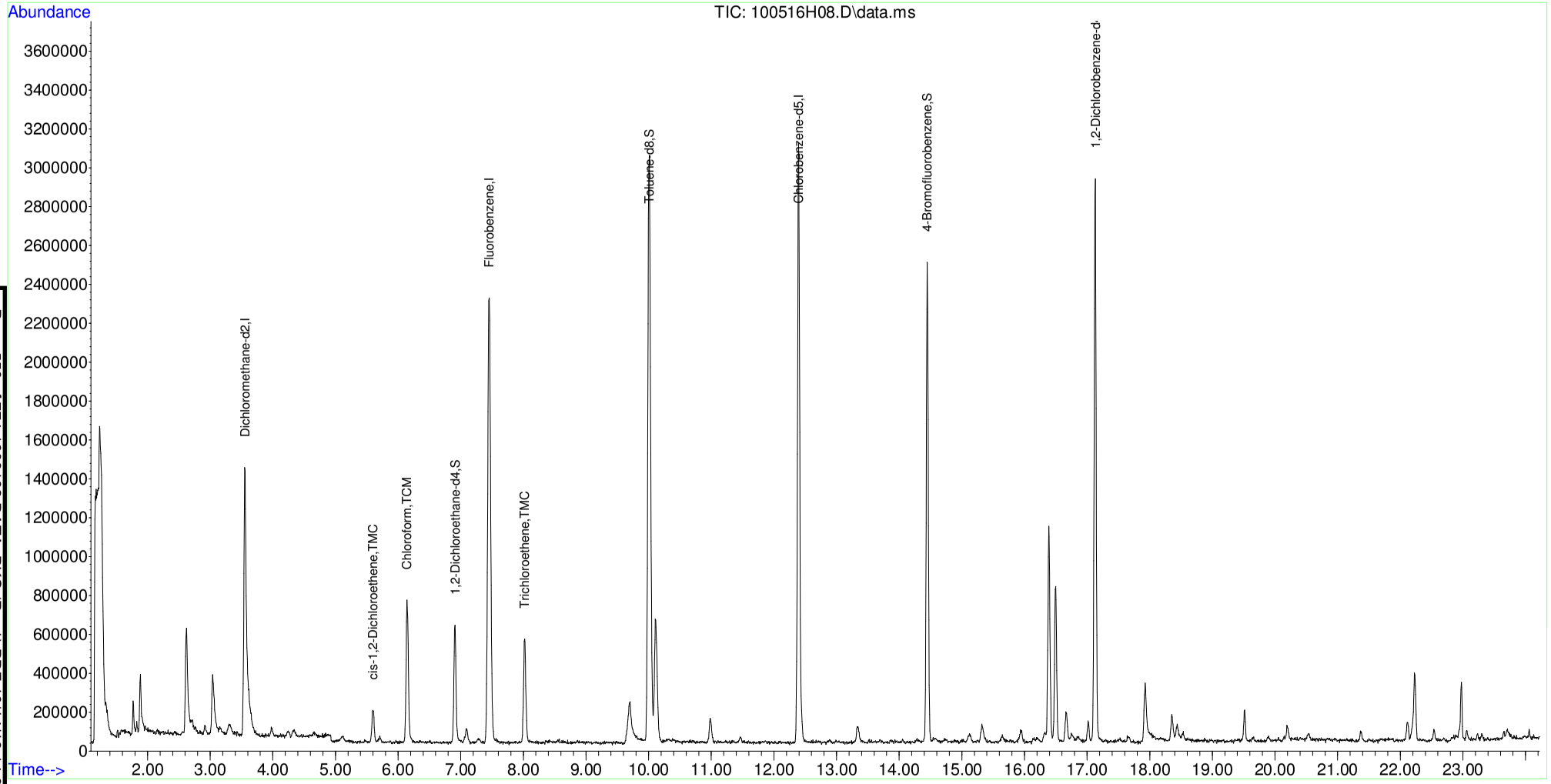
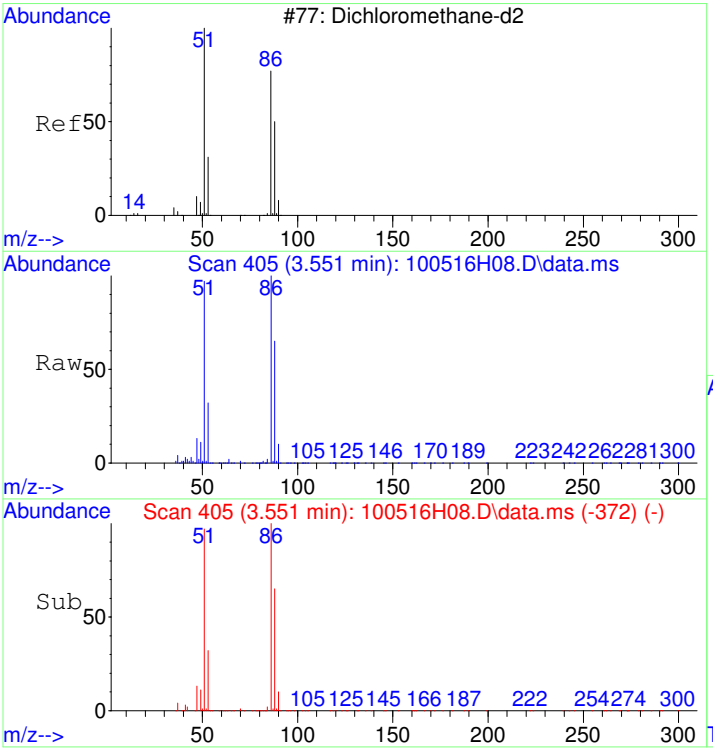


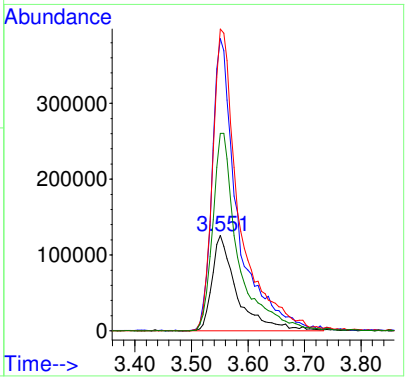
Table of Contents

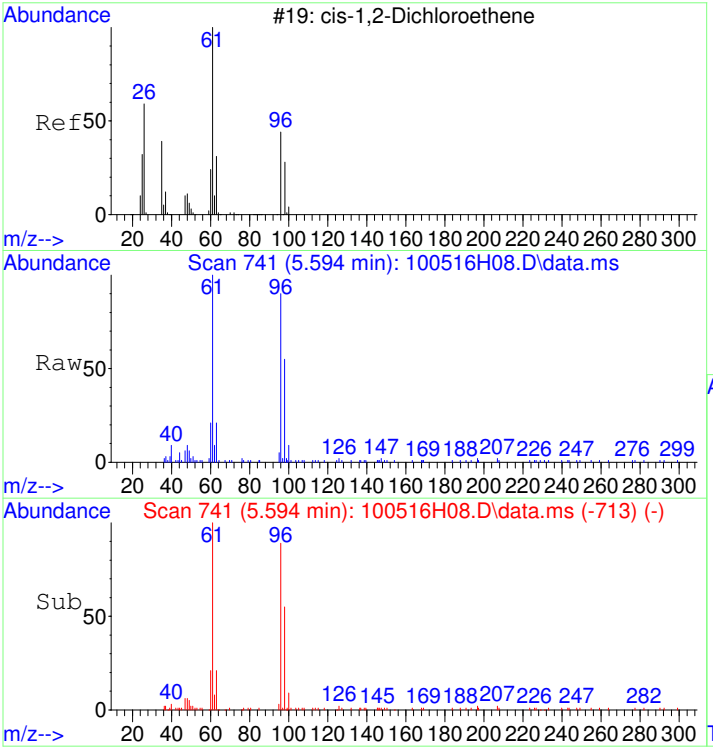


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.551 min Scan# 405
Delta R.T. 0.001 min
Lab File: 100516H08.D
Acq: 5 Oct 2016 4:04 pm

Tgt Ion: 53 Resp: 388364

Ion	Ratio	Lower	Upper
53	100		
51	308.9	386.4	426.4#
86	336.0	0.0	20.0#
88	210.7	231.2	271.2#

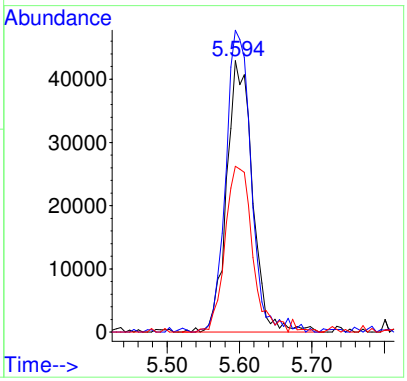


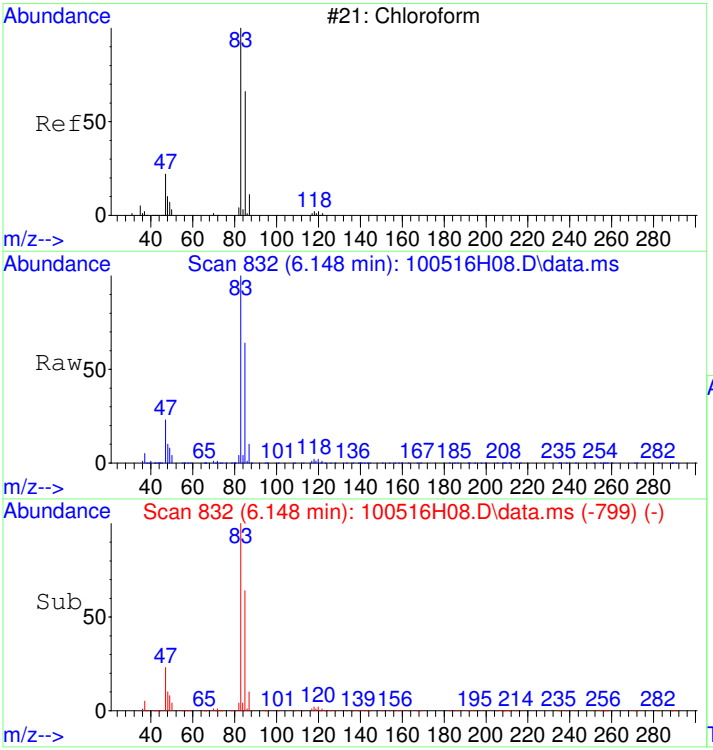


#7
cis-1,2-Dichloroethene
Concen: 0.48 ug/L
RT: 5.594 min Scan# 741
Delta R.T. -0.005 min
Lab File: 100516H08.D
Acq: 5 Oct 2016 4:04 pm

Tgt Ion: 96 Resp: 106395

Ion	Ratio	Lower	Upper
96	100		
61	109.4	97.5	137.5
98	64.6	43.4	83.4

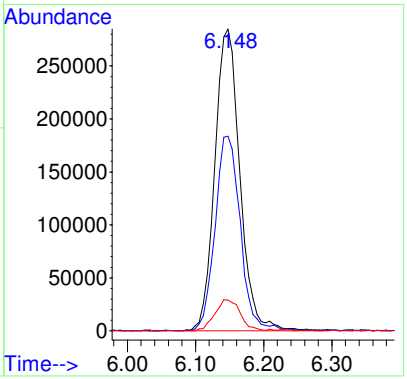


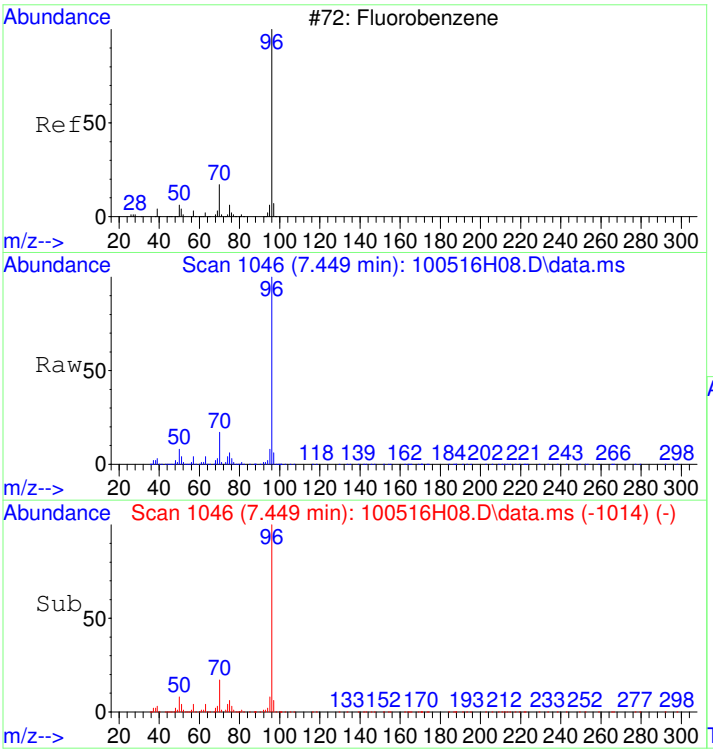


#8
Chloroform
Concen: 2.27 ug/L
RT: 6.148 min Scan# 832
Delta R.T. 0.001 min
Lab File: 100516H08.D
Acq: 5 Oct 2016 4:04 pm

Tgt Ion: 83 Resp: 729455

Ion	Ratio	Lower	Upper
83	100		
85	64.9	43.8	83.8
87	10.5	0.0	30.6

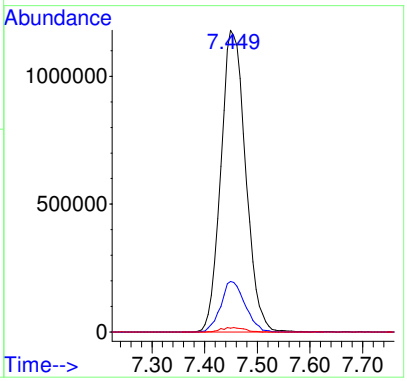


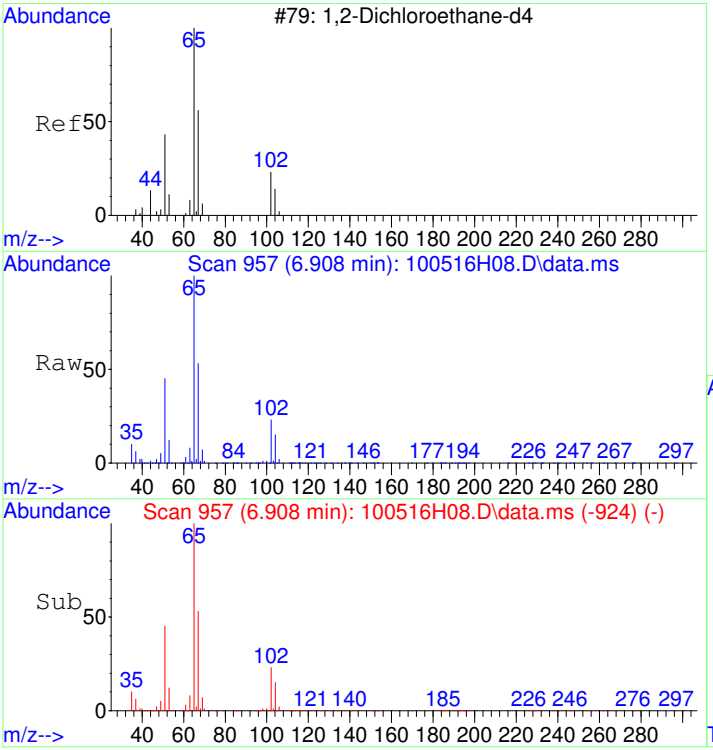


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.449 min Scan# 1046
Delta R.T. -0.005 min
Lab File: 100516H08.D
Acq: 5 Oct 2016 4:04 pm

Tgt Ion: 96 Resp: 3854944

Ion	Ratio	Lower	Upper
96	100		
70	16.6	0.0	36.7
77	1.5	0.0	21.6

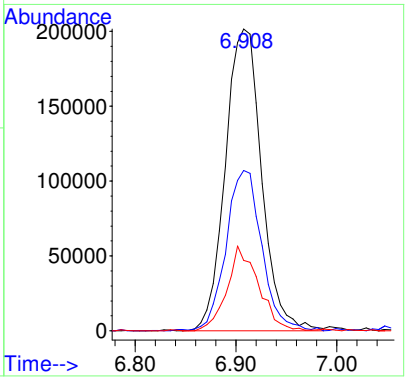


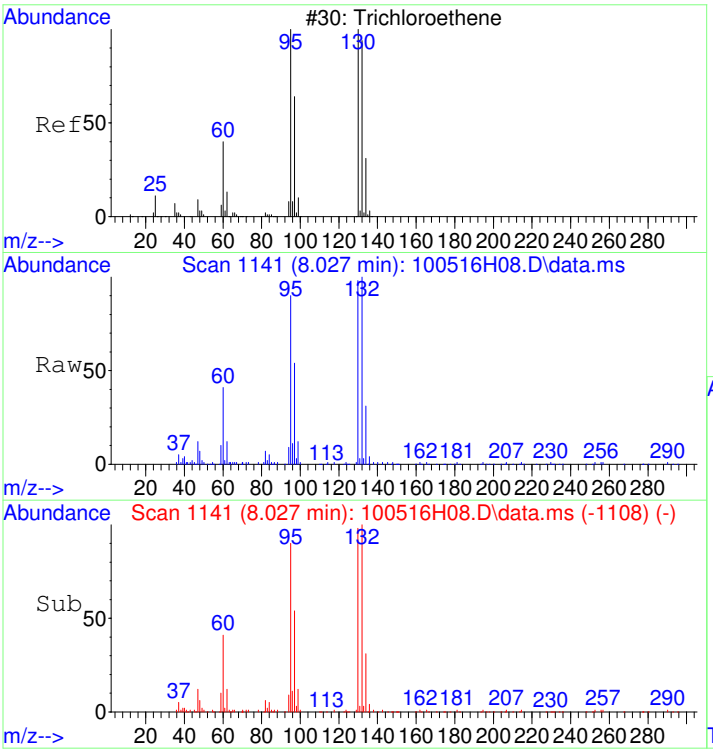


#10
1,2-Dichloroethane-d4
Concen: 5.11 ug/L
RT: 6.908 min Scan# 957
Delta R.T. 0.001 min
Lab File: 100516H08.D
Acq: 5 Oct 2016 4:04 pm

Tgt Ion: 65 Resp: 504468

Ion	Ratio	Lower	Upper
65	100		
67	52.4	31.1	71.1
102	24.4	3.7	43.7

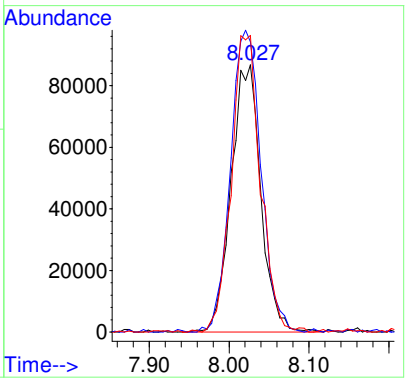


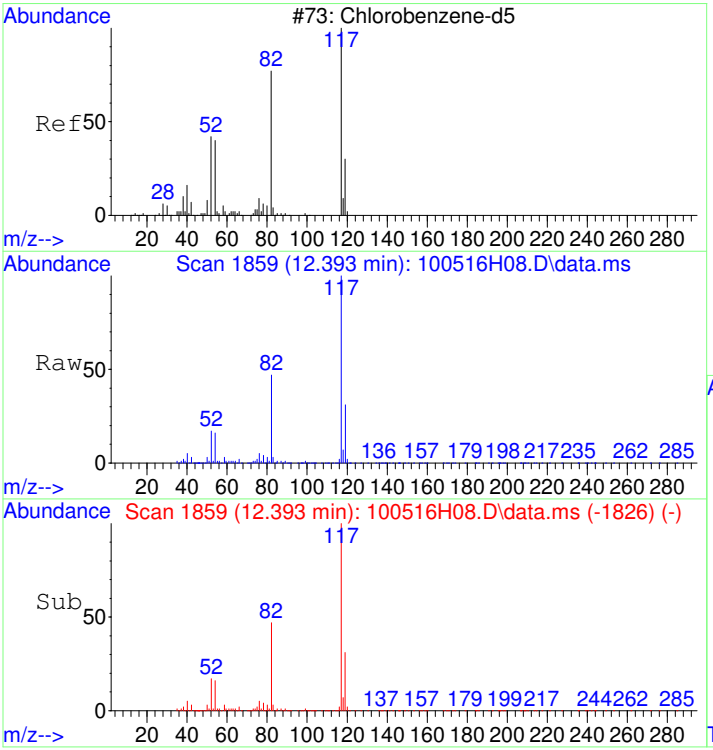


#12
Trichloroethene
Concen: 1.06 ug/L
RT: 8.027 min Scan# 1141
Delta R.T. 0.001 min
Lab File: 100516H08.D
Acq: 5 Oct 2016 4:04 pm

Tgt Ion: 95 Resp: 224437

Ion	Ratio	Lower	Upper
95	100		
130	116.1	93.3	133.3
132	109.0	92.5	132.5

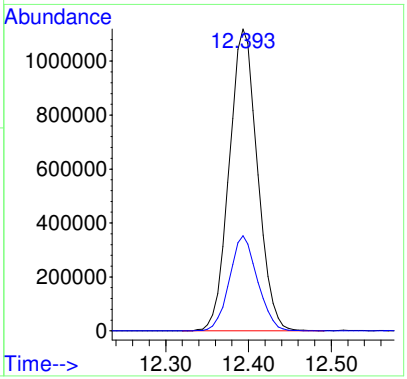


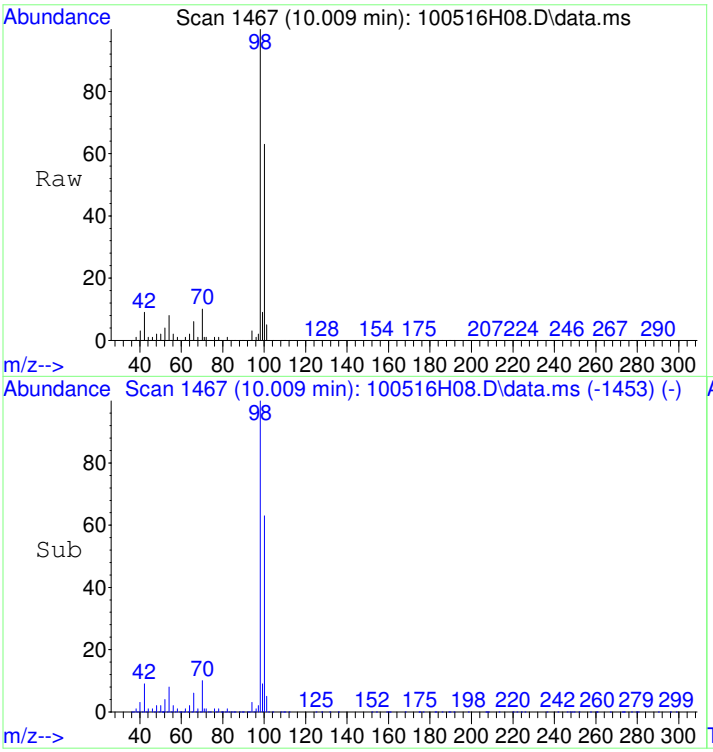


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.393 min Scan# 1859
Delta R.T. 0.001 min
Lab File: 100516H08.D
Acq: 5 Oct 2016 4:04 pm

Tgt Ion:117 Resp: 2647162

Ion	Ratio	Lower	Upper
117	100		
119	31.2	11.9	51.9

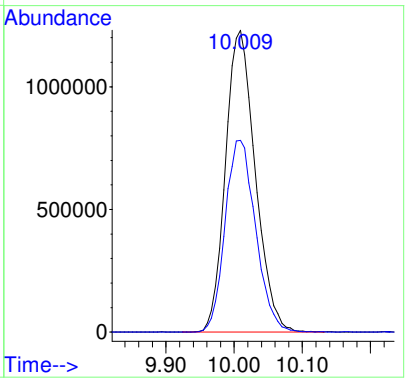


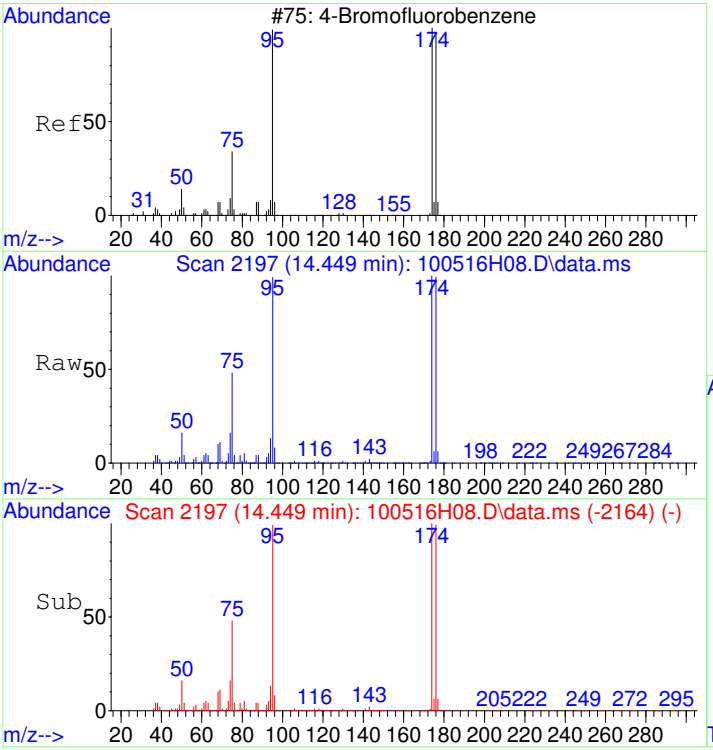


#14
Toluene-d8
Concen: 4.98 ug/L
RT: 10.009 min Scan# 1467
Delta R.T. 0.001 min
Lab File: 100516H08.D
Acq: 5 Oct 2016 4:04 pm

Tgt Ion: 98 Resp: 3724995

Ion	Ratio	Lower	Upper
98	100		
100	65.0	45.1	85.1

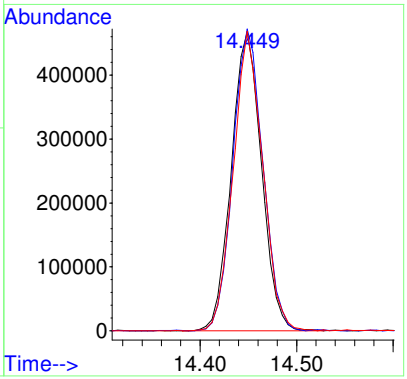


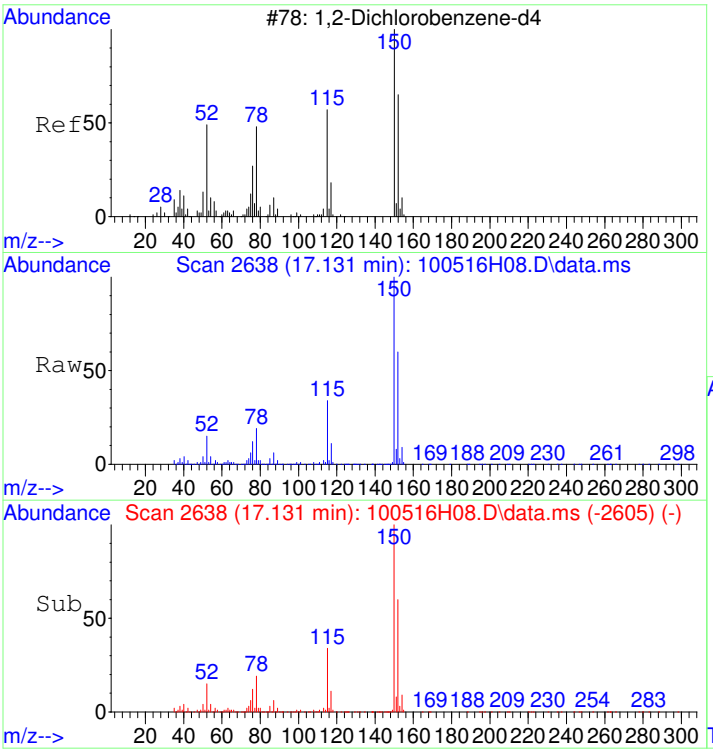


#16
4-Bromofluorobenzene
Concen: 4.96 ug/L
RT: 14.449 min Scan# 2197
Delta R.T. 0.001 min
Lab File: 100516H08.D
Acq: 5 Oct 2016 4:04 pm

Tgt Ion: 95 Resp: 1015989

Ion	Ratio	Lower	Upper
95	100		
174	100.5	84.0	124.0
176	97.7	79.3	119.3

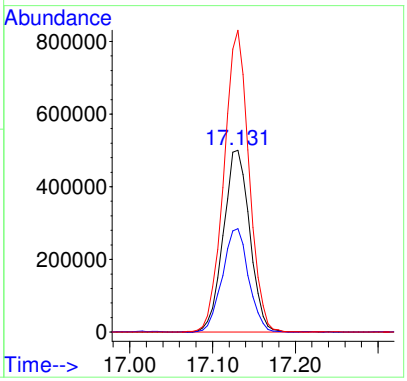




#17
1,2-Dichlorobenzene-d4
Concen: 5.01 ug/L
RT: 17.131 min Scan# 2638
Delta R.T. 0.001 min
Lab File: 100516H08.D
Acq: 5 Oct 2016 4:04 pm

Tgt Ion:152 Resp: 1106780

Ion	Ratio	Lower	Upper
152	100		
115	56.7	35.7	75.7
150	158.1	155.7	195.7



SEQUENCE

S16J031

Analysis Sequence

S16J031

Project: R17S02
Analysis: VOCs

Instrument: HP5973H **Calibration ID:** 1610001 Printed: 10/06/2016 3:22 pm

Lab Number	Sample Name	Order	Analyzed Date	STD ID	ISTD ID	Sequenced By	File ID	Comments
S16J031-TUN1	MS Tune	1	10/6/16 8:44	1629049		YNB	100616H01.D	
S16J031-CCV1	Calibration Check	2	10/6/16 9:44	1641053		YNB	100616H03.D	
S16J031-CRL1	Instrument RL Check	3	10/6/16 10:20	1641054		YNB	100616H04.D	
B16J020-BS1	LCS	4	10/6/16 9:44			YNB	100616H03.D	
B16J020-BLK1	Blank	5	10/6/16 10:56			YNB	100616H05.D	
B16J020-MS1	Matrix Spike	6	10/6/16 11:31			YNB	100616H06.D	
B16J020-MSD1	Matrix Spike Dup	7	10/6/16 12:13			YNB	100616H07.D	
1609102-05RE2 C	F6008-92816-2303	8	10/6/16 13:25			YNB	100616H09.D	
1609102-08RE2 C	F6006-92816-1215	9	10/6/16 14:01			YNB	100616H10.D	
1609102-09RE2 C	F6006-92816-1448	10	10/6/16 14:37			YNB	100616H11.D	
1609102-11RE1 A	F6006-92816-2236	11						

Sequence Comments

Reagents

Reagent #	Description

Table of Contents

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	B16J020	SEQUENCE #:	S16J031
BATCH #:	HP5973H, 10/06/16	ANALYSIS:	524.2 WATER, R17S02

	CHECKLIST ITEM	N/A	ANALYST Y/N	REVIEWER Y/N	IDENTIFY OUTLIERS / COMMENTS
DOCUMENTATION	ANALYST: Bench sheet(s) attached? REVIEWER: Bench sheet(s) reviewed?	☐	Y	Y	
	ANALYST: Sequence log(s) attached? REVIEWER: Sequence log(s) reviewed?	☐	Y	Y	
	ANALYST: Every run has a PDF in LIMS? REVIEWER: Every PDF reviewed?	☐	Y	Y	
INITIAL CALIBRATION	Date of Initial Calibration used: If applicable, note date of "Last Update" in Comments.	Wed Oct 05 11:20:39 2016			
	Initial Calibration ID (LIMS number):	1610001			
	ICAL within QC criteria?	✔			passed for the short list
	SCV within QC criteria?	✔			
INSTRUMENT / QC CHECKS	Tune or degradation checks within QC criteria?	☐	Y	Y	
	CCV(s) within QC criteria?	☐	Y	Y	
	QLS(s) within QC criteria?	☐	Y	Y	
	CB(s) or storage blank(s) within QC criteria?	✔			
	Other instrument checks within QC criteria? Specify if applicable.	✔			
BATCH QCs	Method blanks < 1/2 QL?	☐	Y	Y	
	LCS(s) or SRM(s) within QC criteria?	☐	Y	Y	
	MSs/MSDs and/or DUPs within QC criteria?	☐	Y	N	not use, bad injection
	Other method-specific QCs within QC criteria? Specify if applicable.	✔		Y	

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	B16J020	SEQUENCE #:	S16J031
BATCH #:	HP5973H, 10/06/16	ANALYSIS:	524.2 WATER, R17S02

	CHECKLIST ITEM	N/A	ANALYST Y/N	REVIEWER Y/N	IDENTIFY OUTLIERS / COMMENTS
IS / SS	Internal standards within QC criteria?	☐	Y	Y	
	Surrogates within QC criteria?	☐	Y	Y	
SAMPLE DATA	Were samples prepared & analyzed within holding time?	☐	Y	Y	
	If samples need to be re-run, were RE(s) made in LIMS?	☐	Y	Y	
	Do any samples need to be re-digested or re-extracted?	✔			
	Were all data qualifiers appropriately applied?	☐	Y	Y	
	Are problems, anomalies, discrepancies documented in LIMS? Specify if applicable.	✔			
MANUAL INT	Were manual integrations performed and documented? Specify if applicable.	✔			

APPROVALS	ANALYST INITIALS & DATE:	YNB 10/06/16
	REVIEWED BY:	NICK KISH (affiliate) Digitally signed by NICK KISH (affiliate) Date: 2016.10.10 12:44:22 -07'00' SIGN HERE

COMMENTS

FORM #: Q015
REV #: 1

Injection Log

Directory: D:\MSDCHEM\1\DATA\2016\100616AHVW

Table of Contents

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	50	100616h01.d	1.	S16J031-TUN1	0.5mL, EM 1212	6 Oct 2016 08:44
2	27	100616h02.d	1.	PREP	5ug/L, WATER	6 Oct 2016 09:09
3	28	100616h03.d	1.	S16J031-CCV1@B16J020-BS1	5ug/L, WATER	6 Oct 2016 09:44
4	29	100616h04.d	1.	S16J031-CRL1	0.5ug/L, WATER	6 Oct 2016 10:20
5	30	100616h05.d	1.	B16J020-BLK1	BLK, WATER	6 Oct 2016 10:56
6	31	100616h06.d	1.	B16J020-MS1	2X,102-11, WATER SPK	6 Oct 2016 11:31
7	32	100616h07.d	1.	B16J020-MSD1	2X,102-11, WATER SPK	6 Oct 2016 12:13
8	33	100616h08.d	1.	BLANK	2X, WATER	6 Oct 2016 12:49
9	34	100616h09.d	1.	1609102-05RE2	2X, WATER	6 Oct 2016 13:25
10	35	100616h10.d	1.	1609102-08RE2	2X, WATER	6 Oct 2016 14:01
11	36	100616h11.d	1.	1609102-09RE2	2X, WATER	6 Oct 2016 14:37
12		100616h12.d	1.	No MS or GC data present		

GC/MS QA-QC Check Report

Table of Contents

Tune File : D:\msdchem\1\DATA\2016\100616AHVW\100616H01.D
Tune Time : 6 Oct 2016 8:44 am

Daily Calibration File : D:\MSDCHEM\1\DATA\2016\100616AHVW\100616H03.D

File	Sample	Surrogate Recovery %				Internal Standard Responses			
						380348	4035530	2678390	
100616H03.D									
	S16J031-CCV1@	96	100	99	100	380348	4035534	2678387	
100616H04.D									
	S16J031-CRL1	100	99	97	97	362915	3643889	2481331	
100616H05.D									
	B16J020-BLK1	97	100	94	93	347481	3547049	2424535	
100616H06.D									
	B16J020-MS1	149*	92	110	121*	453984	3868328	2920881	NU
100616H07.D									
	B16J020-MSD1	152*	90	104	117	486013	4047494	3051782	NU
100616H08.D									
	BLANK	99	101	98	93	363396	3572406	2419294	
100616H09.D									
	1609102-05RE2	101	98	97	98	356960	3504737	2421461	2X
100616H10.D									
	1609102-08RE2	99	99	99	102	379784	3671342	2531511	2X
100616H11.D									
	1609102-09RE2	100	99	98	98	399316	3872404	2671457	2X

(fails) - fails 12hr time check * - fails criteria

Created: Thu Oct 06 15:09:55 2016 HP5973H

SEQUENCE DATA

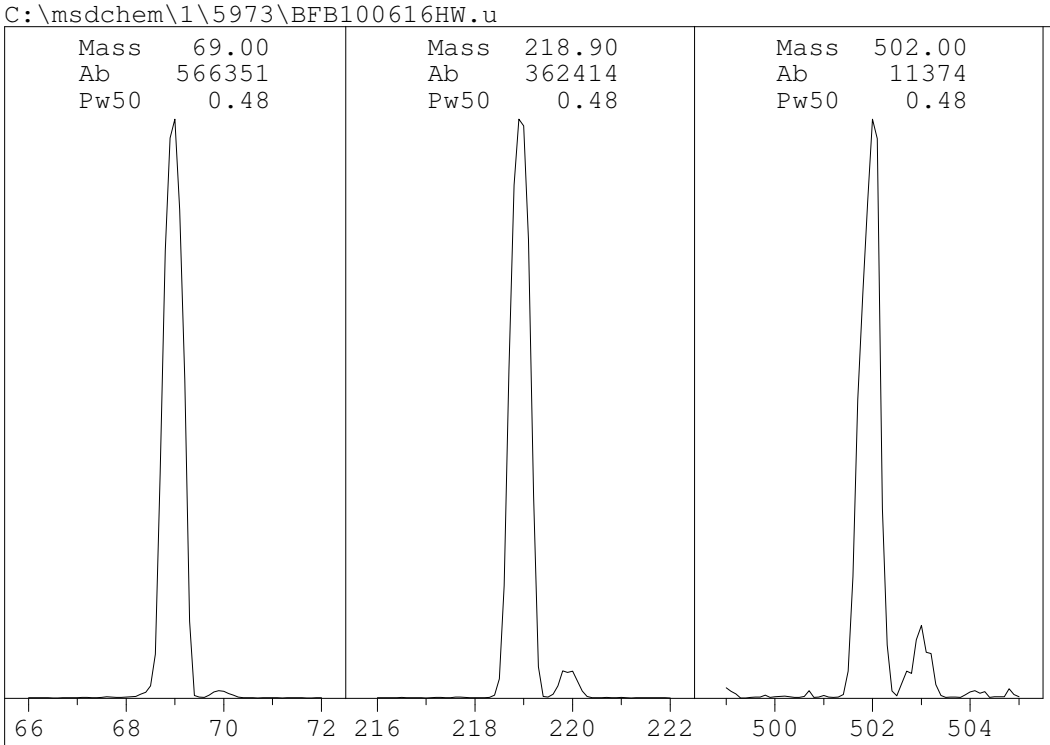
S16J031

S16J031-TUN1

Thu Oct 06 08:38:03 2016 Instrum

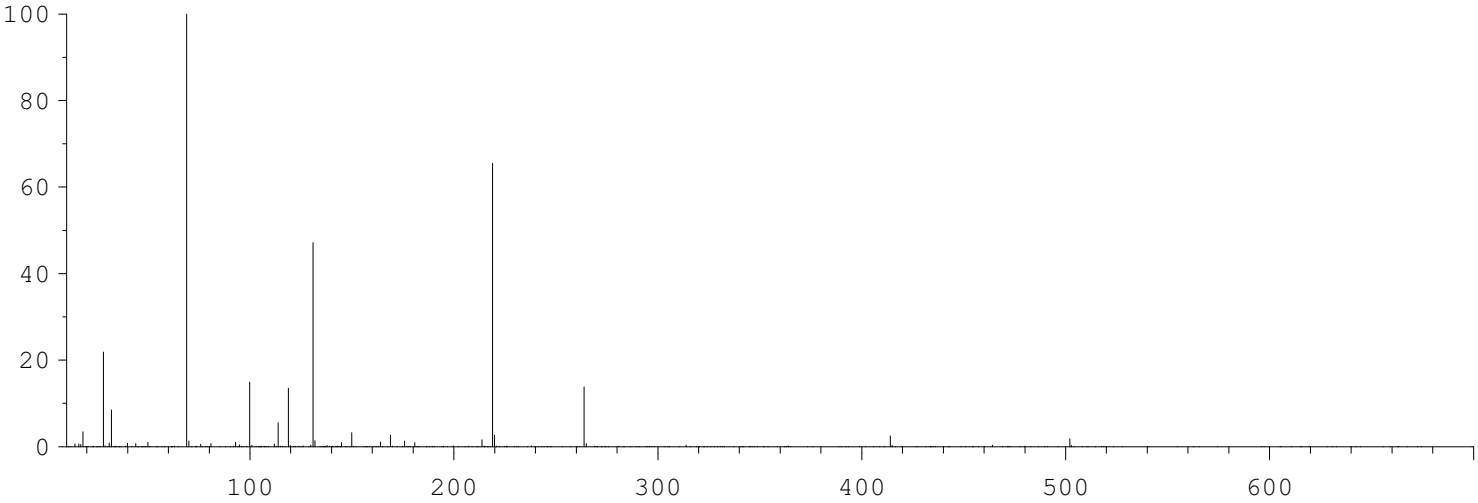
C:\msdchem\1\5973\BFB100616HW.u

Table of Contents



Ion Pol	POS	MassGain	-226
		MassOffs	-12
Emission	34.6	AmuGain	1897
EIEnrgy	69.9	AmuOffs	132
Filament	1	Wid219	-0.002
		DC Pol	NEG
Repeller	13.03		
IonFcus	58.8	HEDEnab	ON
EntLens	8.0	EMVolts	1106
EntOffs	12.30		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	TurboSpd	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
325 peaks Base: 69.00 Abundance: 473792



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	473792	100.00	70.00	6272	1.32
218.90	310272	65.49	219.90	12534	4.04
502.00	8813	1.86	502.80	1417	16.08

Air/Water Check: H2O~3.48% N2~21.88% O2~8.51% CO2~0.69% N2/H2O~628.56%

Column Flow: Front: 0.996 Back: 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 69; EM Gain 1329429
Repeller Maximum 20 volts using ion 219;

MassGain Values @Samples: -226@3 -226@2 -226@1 -226@0 -226@FS

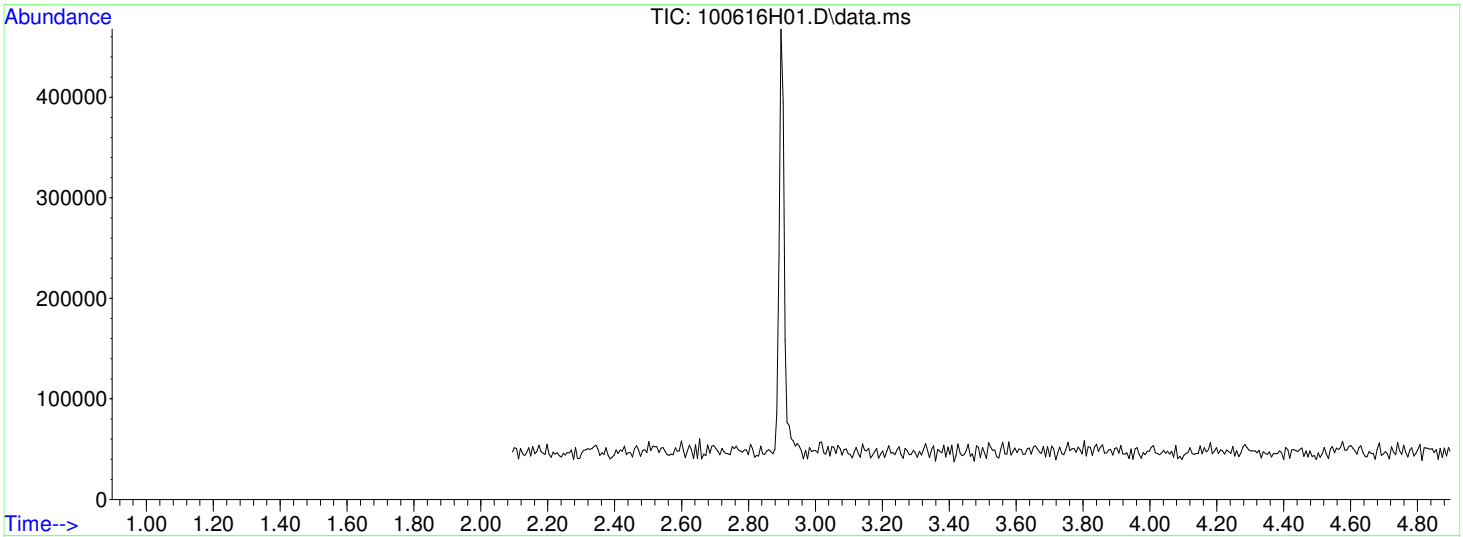
TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	132.0	132.0	132.0	132.0	132.0	132.0	132.0
Entrance Lens Offset:	12.3	12.3	12.3	12.3	12.3	12.3	12.3

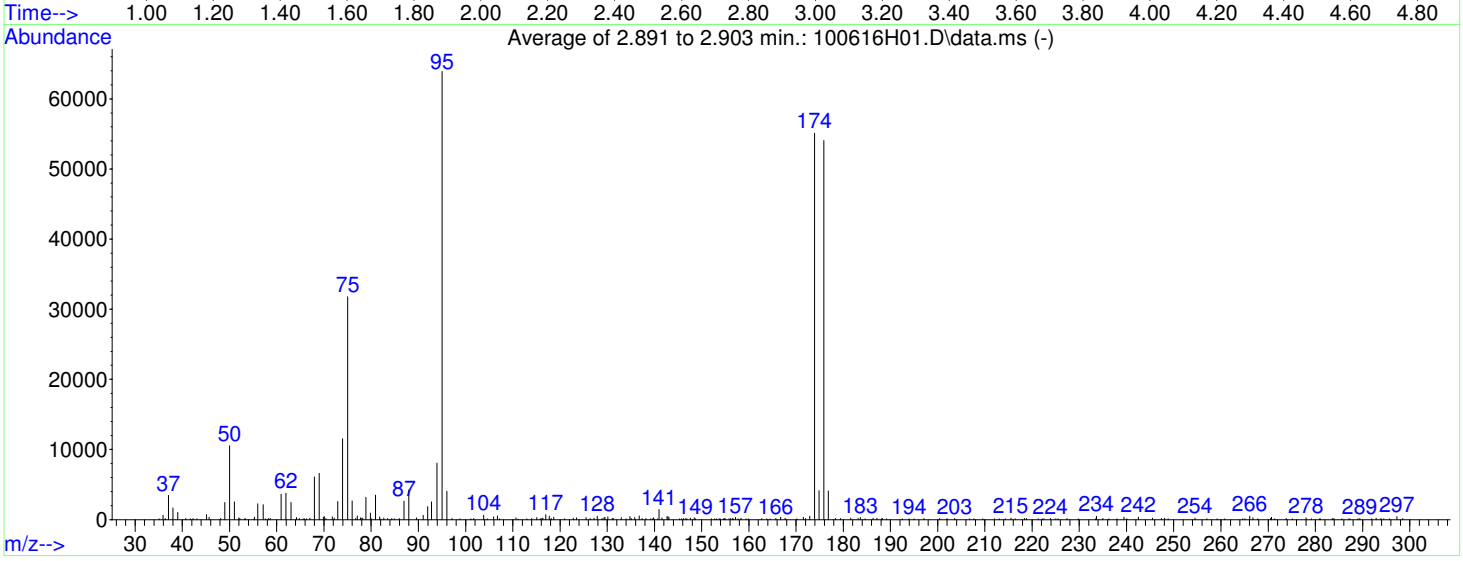
Table of Contents

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H01.D
Instrument: HP5973H
Acq On : 6 Oct 2016 8:44 am
Operator : YNB
Sample : S16J031-TUN1
Misc : 0.5mL, EM 1212
ALS Vial : 50 Sample Multiplier: 1

Integration File: C45.P

Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M
Title : Volatile Organic Analysis - 524.2 Method
Last Update : Wed Oct 05 11:20:39 2016





AutoFind: Scans 132, 133, 134; Background Corrected with Scan 128

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.5	10534	PASS
75	95	30	60	49.7	31784	PASS
95	95	100	100	100.0	63888	PASS
96	95	5	9	6.3	4048	PASS
173	174	0.00	2	0.9	476	PASS
174	95	50	120	86.2	55096	PASS
175	174	5	9	7.5	4135	PASS
176	174	95	101	98.1	54035	PASS
177	176	5	9	7.6	4081	PASS

Average of 2.891 to 2.903 min.: 100616H01.D\data.ms
S16J031-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.10	127	45.70	359	55.95	2255	65.90	127
35.90	612	48.10	178	57.10	2141	66.30	117
36.40	143	49.00	2421	57.60	105	67.05	186
37.05	3427	50.00	10534	58.30	145	67.95	6109
38.00	1669	51.00	2542	58.60	170	69.00	6582
39.00	1022	51.95	243	60.95	3654	69.90	324
40.70	156	52.20	169	61.95	3781	70.05	454
41.70	104	53.20	109	63.00	2432	70.40	143
42.30	147	53.40	121	64.20	287	71.80	393
43.10	113	55.05	95	64.80	183	72.20	190
45.10	700	55.30	339	65.60	120	72.95	2603

Average of 2.891 to 2.903 min.: 100616H01.D\data.ms
S16J031-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
73.95	11514	80.90	3495	91.00	610	104.60	118
75.00	31784	81.80	393	91.95	1856	105.90	381
76.00	2687	82.05	59	92.80	2517	106.75	508
76.70	164	82.70	187	93.95	8047	107.20	103
77.05	541	83.50	161	95.00	63888	110.65	254
77.70	272	84.40	142	96.00	4048	111.15	71
77.90	186	85.00	135	97.10	158	113.00	103
78.20	185	85.90	143	98.80	117	114.00	140
78.85	3169	86.95	2607	101.10	139	115.05	309
79.80	946	87.95	4241	101.70	149	115.80	106
80.00	157	89.60	244	103.80	632	116.00	107

Average of 2.891 to 2.903 min.: 100616H01.D\data.ms
S16J031-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
116.20	176	127.20	186	135.10	163	142.70	418
116.40	195	127.90	461	135.80	305	142.90	432
116.95	705	128.90	179	136.75	514	143.10	291
117.75	478	129.30	261	137.40	142	145.30	127
118.10	182	129.55	358	138.20	172	145.70	103
118.70	354	130.15	402	139.20	139	146.20	159
121.00	113	131.10	181	139.60	125	146.70	142
122.80	199	131.30	149	139.80	236	146.90	100
123.50	257	133.00	299	140.70	109	147.60	209
125.50	306	134.00	117	141.00	1434	148.40	243
126.40	145	134.80	444	141.55	263	148.70	109

Average of 2.891 to 2.903 min.: 100616H01.D\data.ms
S16J031-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
152.10	109	156.70	124	167.70	205	181.60	223
152.80	108	157.20	302	170.20	100	183.10	144
153.20	109	157.70	114	171.55	350	183.60	293
153.70	108	158.30	226	172.00	143	184.60	137
153.90	101	159.40	121	172.90	476	186.30	189
154.60	127	159.90	107	173.90	55096	187.10	208
154.80	149	162.70	147	174.85	4135	188.10	114
155.10	134	163.80	127	175.90	54035	188.30	140
155.80	119	164.50	102	176.85	4081	189.20	110
156.10	163	165.70	148	178.30	171	192.50	115
156.50	151	166.75	347	179.40	165	193.90	129

Average of 2.891 to 2.903 min.: 100616H01.D\data.ms
S16J031-TUN1
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
195.00	108	215.50	213	229.80	120	248.10	192
197.10	156	216.40	103	233.40	102	248.80	115
200.40	149	218.40	172	233.65	495	254.50	188
202.00	162	218.80	155	235.00	179	257.00	125
203.60	168	221.30	129	236.30	124	259.20	131
206.80	135	222.20	105	238.00	108	260.80	118
207.70	132	222.50	100	239.45	332	264.60	138
209.60	102	223.90	169	240.10	121	265.10	113
212.00	126	225.00	132	242.50	357	266.10	476
213.00	131	225.50	114	245.50	187	266.80	239
214.30	131	227.40	160	247.40	141	267.80	130

Average of 2.891 to 2.903 min.: 100616H01.D\data.ms

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
270.50	141	285.60	117	298.50	155		
270.70	345	287.10	118				
271.40	127	287.30	108				
273.80	144	289.00	115				
275.10	112	289.40	169				
278.00	233	291.90	100				
279.20	119	292.90	230				
280.90	102	293.90	155				
281.10	113	294.50	104				
283.60	152	295.70	120				
283.90	165	297.30	458				

S16J031-CCV1

Evaluate Continuing Calibration Report

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H03.D
Sample : S16J031-CCV1@B16J020-BS1
Instrument: HP5973H
Acq On : 6 Oct 2016 9:44 am
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 28
Multiplier: 1

Quant Time: Oct 06 10:29:40 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.03min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Dichloromethane-d2	1.000	1.000	0.0	100	0.00
2	TCM	Vinyl chloride	4.068	3.992	-1.9	95	0.00
3	TMC	1,1-Dichloroethene	4.303	4.307	0.1	99	0.00
4	TCM	1,1,2-Trichloro-1,2,2-trifl	4.256	4.365	2.6	102	0.00
5	TMC	trans-1,2-Dichloroethene	5.083	4.750	-6.6	91	0.00
6	TCM	1,1-Dichloroethane	3.880	3.838	-1.1	98	0.00
7	TMC	cis-1,2-Dichloroethene	2.865	2.691	-6.1	95	0.00
8	TCM	Chloroform	4.140	3.891	-6.0	93	0.00
9	I	Fluorobenzene	1.000	1.000	0.0	107	0.00
10	S	1,2-Dichloroethane-d4	0.128	0.123	-3.9	95	0.00
11	TMC	Benzene	1.042	0.956	-8.3	97	0.00
12	TMC	Trichloroethene	0.273	0.258	-5.5	99	0.00
13	I	Chlorobenzene-d5	1.000	1.000	0.0	103	0.00
14	S	Toluene-d8	1.413	1.417	0.3	104	0.00
15	TCM	Tetrachloroethene	0.494	0.463	-6.3	99	0.00
16	S	4-Bromofluorobenzene	0.387	0.384	-0.8	99	0.00
17	S	1,2-Dichlorobenzene-d4	0.417	0.419	0.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

LCS REPORT

Instrument Name: HP5973H
Sample Name: S16J031-CCV1@B16J020-BS1
Misc Info: 5ug/L, WATER
Date Acquired: 10/6/2016 9:44
QLast Update: Wed Oct 05 11:20:39 2016
Operator: YNB

#	Name	Ret Time	Concentration	Amount	%R	QC Limit		STATUS
2)	Vinyl chloride	1.66	4.9	5.0	98%	70.0	130.0	pass
3)	1,1-Dichloroethene	2.92	5.0	5.0	100%	70.0	130.0	pass
4)	1,1,2-Trichloro-1,2,2-trifluoroethane	2.95	5.1	5.0	103%	70.0	130.0	pass
5)	trans-1,2-Dichloroethene	3.98	4.7	5.0	93%	70.0	130.0	pass
6)	1,1-Dichloroethane	4.66	4.9	5.0	99%	85.0	117.0	pass
7)	cis-1,2-Dichloroethene	5.59	4.7	5.0	94%	70.0	130.0	pass
8)	Chloroform	6.14	4.7	5.0	94%	70.0	130.0	pass
11)	Benzene	6.98	4.6	5.0	92%	70.0	130.0	pass
12)	Trichloroethene	8.02	4.7	5.0	94%	70.0	130.0	pass
14)	Toluene-d8	10.01	5.0	5.0	100%	70.0	130.0	pass
15)	Tetrachloroethene	10.98	4.7	5.0	94%	70.0	130.0	pass
)	0	0.00	0.0	0.0		67.0	133.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				

)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H03.D
Sample : S16J031-CCV1@B16J020-BS1
Instrument: HP5973H
Acq On : 6 Oct 2016 9:44 am
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 28
Multiplier: 1

Quant Time: Oct 06 10:29:40 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	380348	5.000 ug/L	0.00
9) Fluorobenzene	7.456	96	4035534	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.396	117	2678387	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.903	65	495220	4.788 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 95.80%	
14) Toluene-d8	10.005	98	3794602	5.013 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.20%	
16) 4-Bromofluorobenzene	14.446	95	1027548	4.955 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 99.20%	
17) 1,2-Dichlorobenzene-d4	17.129	152	1121936	5.022 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.40%	

Target Compounds					Qvalue
2) Vinyl chloride	1.659	62	1518365	4.906 ug/L	99
3) 1,1-Dichloroethene	2.924	96	1638090	5.004 ug/L	98
4) 1,1,2-Trichloro-1,2,2-...	2.948	101	1660362	5.128 ug/L	99
5) trans-1,2-Dichloroethene	3.983	96	1806780	4.672 ug/L	98
6) 1,1-Dichloroethane	4.664	63	1459825	4.946 ug/L	100
7) cis-1,2-Dichloroethene	5.595	96	1023395	4.696 ug/L	98
8) Chloroform	6.142	83	1479962	4.699 ug/L	100
11) Benzene	6.976	78	3856771	4.584 ug/L	100
12) Trichloroethene	8.022	95	1040627	4.715 ug/L	97
15) Tetrachloroethene	10.985	166	1239396	4.686 ug/L	99

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H03.D
Sample : S16J031-CCV1@B16J020-BS1
Instrument: HP5973H
Acq On : 6 Oct 2016 9:44 am
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 28
Multiplier: 1

Quant Time: Oct 06 10:29:40 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

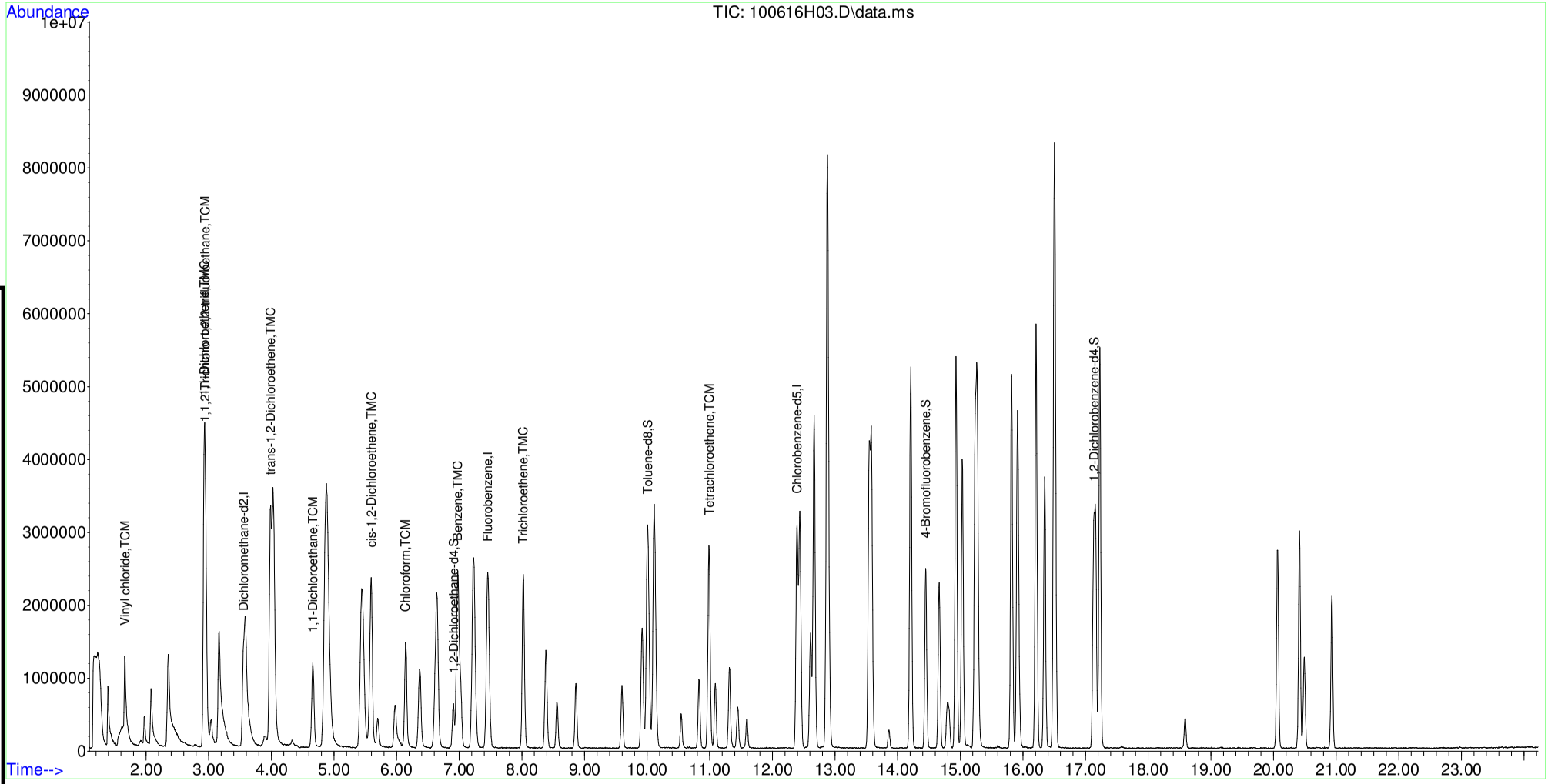


Table of Contents

S16J031-CRL1

QLS REPORT

Instrument Name: HP5973H
Sample Name: S16J031-CRL1
Misc Info: 0.5ug/L, WATER
Date Acquired: 10/6/2016 10:20
QLast Update: Wed Oct 05 11:20:39 2016
Operator: YNB

#	Name	Ret Time	Concentration	Amount	%R	QC Limit		STATUS
1)	Dichloromethane-d2	3.55	5.00	5.0	100.0%	60.0	140.0	pass
2)	Vinyl chloride	1.66	0.50	0.5	99.9%	60.0	140.0	pass
3)	1,1-Dichloroethene	2.92	0.52	0.5	104.3%	60.0	140.0	pass
4)	1,1,2-Trichloro-1,2,2-trifluoroethane	2.94	0.57	0.5	114.0%	60.0	140.0	pass
5)	trans-1,2-Dichloroethene	3.98	0.48	0.5	96.8%	60.0	140.0	pass
6)	1,1-Dichloroethane	4.66	0.52	0.5	103.8%	60.0	140.0	pass
7)	cis-1,2-Dichloroethene	5.60	0.47	0.5	94.1%	60.0	140.0	pass
8)	Chloroform	6.14	0.47	0.5	93.1%	60.0	140.0	pass
9)	Fluorobenzene	7.45	5.00	5.0	100.0%	60.0	140.0	pass
10)	1,2-Dichloroethane-d4	6.91	5.00	5.0	100.1%	60.0	140.0	pass
11)	Benzene	6.98	0.50	0.5	99.8%	60.0	140.0	pass
12)	Trichloroethene	8.02	0.51	0.5	101.6%	60.0	140.0	pass
13)	Chlorobenzene-d5	12.39	5.00	5.0	100.0%	60.0	140.0	pass
14)	Toluene-d8	10.01	4.97	5.0	99.4%	60.0	140.0	pass
15)	Tetrachloroethene	10.99	0.52	0.5	103.2%	60.0	140.0	pass
16)	4-Bromofluorobenzene	14.45	4.85	5.0	97.1%	60.0	140.0	pass
17)	1,2-Dichlorobenzene-d4	17.13	4.86	5.0	97.1%	60.0	140.0	pass
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	
)	)	0.00	0.00	0.0		60.0	140.0	

)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0
)	)	0.00	0.00	0.0	60.0	140.0

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H04.D
Sample : S16J031-CRL1
Instrument: HP5973H
Acq On : 6 Oct 2016 10:20 am
Operator : YNB
Misc : 0.5ug/L, WATER
ALS Vial : 29
Multiplier: 1

Quant Time: Oct 06 10:49:55 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.548	53	362915	5.000 ug/L	0.00
9) Fluorobenzene	7.454	96	3643889	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.394	117	2481331	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.906	65	467326	5.004 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 100.00%	
14) Toluene-d8	10.009	98	3485606	4.971 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.40%	
16) 4-Bromofluorobenzene	14.450	95	932571	4.854 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 97.00%	
17) 1,2-Dichlorobenzene-d4	17.127	152	1005079	4.857 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 97.20%	

Target Compounds					Qvalue
2) Vinyl chloride	1.663	62	147547	0.500 ug/L	90
3) 1,1-Dichloroethene	2.922	96	162909	0.522 ug/L	96
4) 1,1,2-Trichloro-1,2,2-...	2.940	101	176134	0.570 ug/L	97
5) trans-1,2-Dichloroethene	3.980	96	178607	0.484 ug/L	95
6) 1,1-Dichloroethane	4.656	63	146188	0.519 ug/L #	60
7) cis-1,2-Dichloroethene	5.599	96	97883	0.471 ug/L	95
8) Chloroform	6.140	83	139831	0.465 ug/L	96
11) Benzene	6.979	78	379215	0.499 ug/L	97
12) Trichloroethene	8.020	95	101263	0.508 ug/L	94
15) Tetrachloroethene	10.995	166	126398	0.516 ug/L	97

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H04.D
Sample : S16J031-CRL1
Instrument: HP5973H
Acq On : 6 Oct 2016 10:20 am
Operator : YNB
Misc : 0.5ug/L, WATER
ALS Vial : 29
Multiplier: 1

Quant Time: Oct 06 10:49:55 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

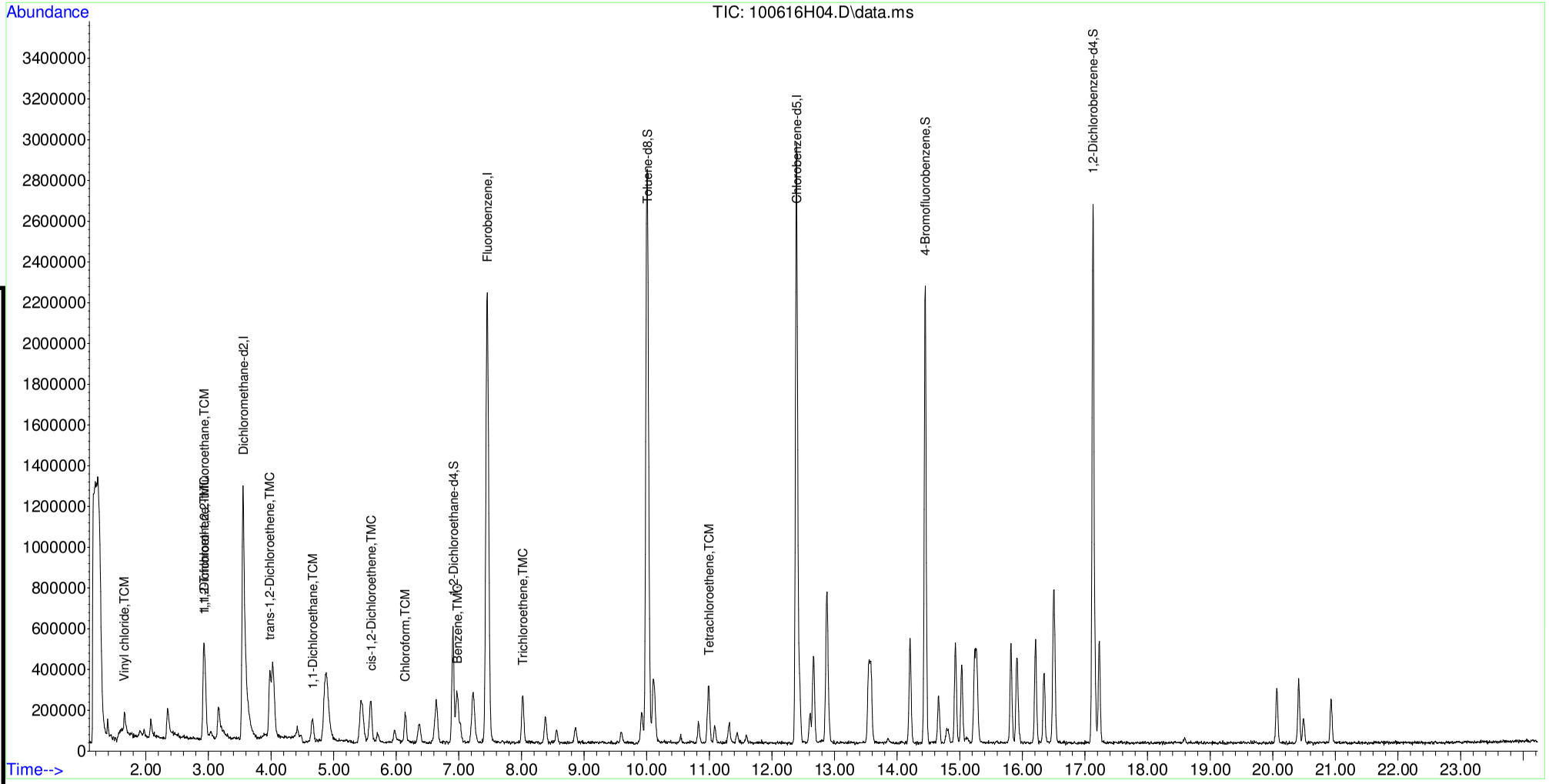


Table of Contents

B16J020-BS1

Evaluate Continuing Calibration Report

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H03.D
Sample : S16J031-CCV1@B16J020-BS1
Instrument: HP5973H
Acq On : 6 Oct 2016 9:44 am
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 28
Multiplier: 1

Quant Time: Oct 06 10:29:40 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.03min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Dichloromethane-d2	1.000	1.000	0.0	100	0.00
2	TCM	Vinyl chloride	4.068	3.992	-1.9	95	0.00
3	TMC	1,1-Dichloroethene	4.303	4.307	0.1	99	0.00
4	TCM	1,1,2-Trichloro-1,2,2-trifl	4.256	4.365	2.6	102	0.00
5	TMC	trans-1,2-Dichloroethene	5.083	4.750	-6.6	91	0.00
6	TCM	1,1-Dichloroethane	3.880	3.838	-1.1	98	0.00
7	TMC	cis-1,2-Dichloroethene	2.865	2.691	-6.1	95	0.00
8	TCM	Chloroform	4.140	3.891	-6.0	93	0.00
9	I	Fluorobenzene	1.000	1.000	0.0	107	0.00
10	S	1,2-Dichloroethane-d4	0.128	0.123	-3.9	95	0.00
11	TMC	Benzene	1.042	0.956	-8.3	97	0.00
12	TMC	Trichloroethene	0.273	0.258	-5.5	99	0.00
13	I	Chlorobenzene-d5	1.000	1.000	0.0	103	0.00
14	S	Toluene-d8	1.413	1.417	0.3	104	0.00
15	TCM	Tetrachloroethene	0.494	0.463	-6.3	99	0.00
16	S	4-Bromofluorobenzene	0.387	0.384	-0.8	99	0.00
17	S	1,2-Dichlorobenzene-d4	0.417	0.419	0.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

LCS REPORT

Instrument Name: HP5973H
Sample Name: S16J031-CCV1@B16J020-BS1
Misc Info: 5ug/L, WATER
Date Acquired: 10/6/2016 9:44
QLast Update: Wed Oct 05 11:20:39 2016
Operator: YNB

#	Name	Ret Time	Concentration	Amount	%R	QC Limit		STATUS
2)	Vinyl chloride	1.66	4.9	5.0	98%	70.0	130.0	pass
3)	1,1-Dichloroethene	2.92	5.0	5.0	100%	70.0	130.0	pass
4)	1,1,2-Trichloro-1,2,2-trifluoroethane	2.95	5.1	5.0	103%	70.0	130.0	pass
5)	trans-1,2-Dichloroethene	3.98	4.7	5.0	93%	70.0	130.0	pass
6)	1,1-Dichloroethane	4.66	4.9	5.0	99%	85.0	117.0	pass
7)	cis-1,2-Dichloroethene	5.59	4.7	5.0	94%	70.0	130.0	pass
8)	Chloroform	6.14	4.7	5.0	94%	70.0	130.0	pass
11)	Benzene	6.98	4.6	5.0	92%	70.0	130.0	pass
12)	Trichloroethene	8.02	4.7	5.0	94%	70.0	130.0	pass
14)	Toluene-d8	10.01	5.0	5.0	100%	70.0	130.0	pass
15)	Tetrachloroethene	10.98	4.7	5.0	94%	70.0	130.0	pass
)	0	0.00	0.0	0.0		67.0	133.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0		70.0	130.0	
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				
)	0	0.00	0.0	0.0				

)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0	70.0	130.0
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		
)	0	0.00	0.0	0.0		

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H03.D
Sample : S16J031-CCV1@B16J020-BS1
Instrument: HP5973H
Acq On : 6 Oct 2016 9:44 am
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 28
Multiplier: 1

Quant Time: Oct 06 10:29:40 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	380348	5.000 ug/L	0.00
9) Fluorobenzene	7.456	96	4035534	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.396	117	2678387	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.903	65	495220	4.788 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 95.80%	
14) Toluene-d8	10.005	98	3794602	5.013 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.20%	
16) 4-Bromofluorobenzene	14.446	95	1027548	4.955 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 99.20%	
17) 1,2-Dichlorobenzene-d4	17.129	152	1121936	5.022 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 100.40%	

Target Compounds					Qvalue
2) Vinyl chloride	1.659	62	1518365	4.906 ug/L	99
3) 1,1-Dichloroethene	2.924	96	1638090	5.004 ug/L	98
4) 1,1,2-Trichloro-1,2,2-...	2.948	101	1660362	5.128 ug/L	99
5) trans-1,2-Dichloroethene	3.983	96	1806780	4.672 ug/L	98
6) 1,1-Dichloroethane	4.664	63	1459825	4.946 ug/L	100
7) cis-1,2-Dichloroethene	5.595	96	1023395	4.696 ug/L	98
8) Chloroform	6.142	83	1479962	4.699 ug/L	100
11) Benzene	6.976	78	3856771	4.584 ug/L	100
12) Trichloroethene	8.022	95	1040627	4.715 ug/L	97
15) Tetrachloroethene	10.985	166	1239396	4.686 ug/L	99

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H03.D
Sample : S16J031-CCV1@B16J020-BS1
Instrument: HP5973H
Acq On : 6 Oct 2016 9:44 am
Operator : YNB
Misc : 5ug/L, WATER
ALS Vial : 28
Multiplier: 1

Quant Time: Oct 06 10:29:40 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

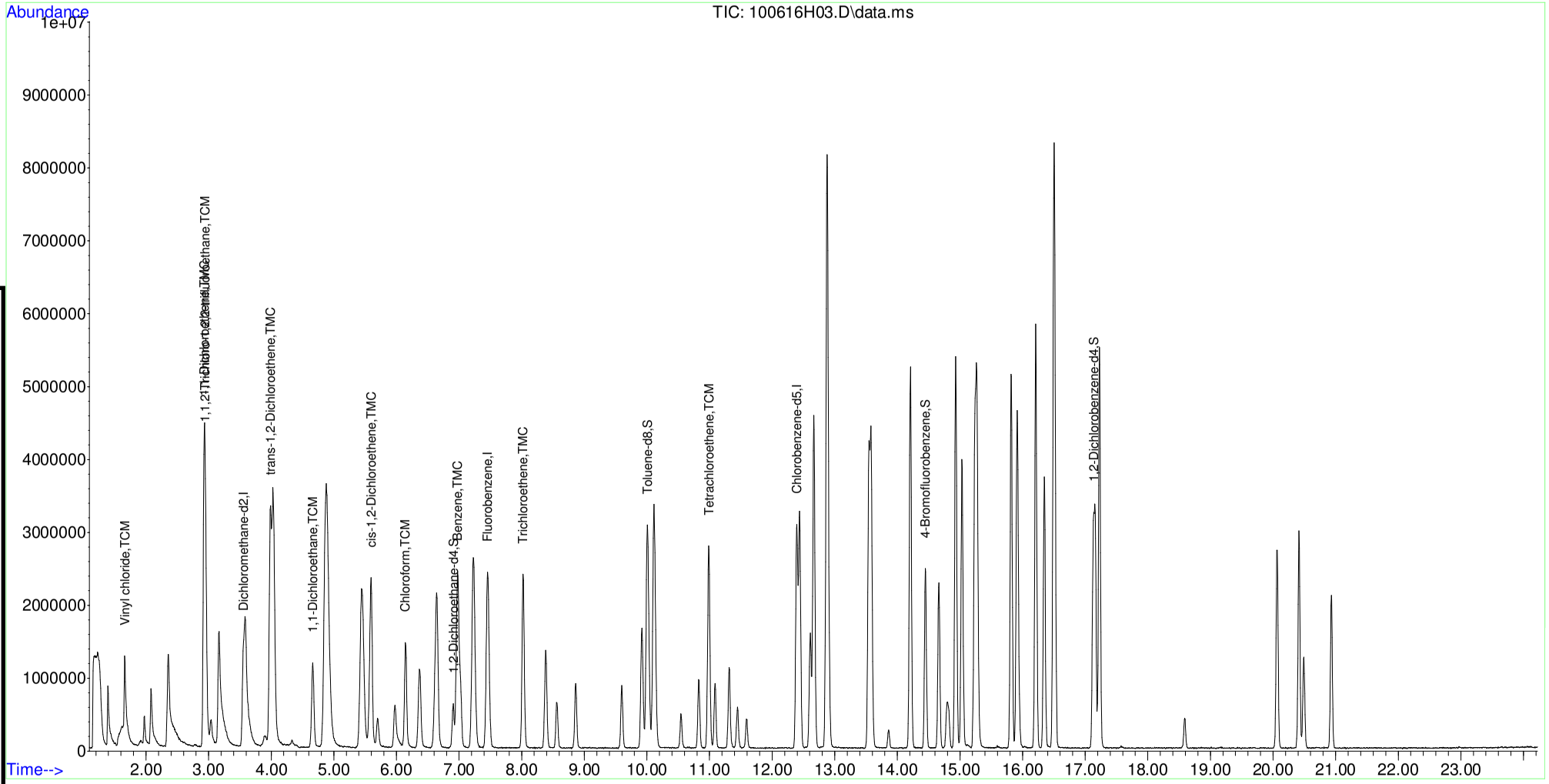


Table of Contents

B16J020-BLK1

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H05.D
Sample : B16J020-BLK1
Instrument: HP5973H
Acq On : 6 Oct 2016 10:56 am
Operator : YNB
Misc : BLK, WATER
ALS Vial : 30
Multiplier: 1

Quant Time: Oct 06 11:34:17 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.553	53	347481	5.000 ug/L	0.00
9) Fluorobenzene	7.446	96	3547049	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.392	117	2424535	5.000 ug/L	0.00

System Monitoring Compounds

10) 1,2-Dichloroethane-d4	6.905	65	438869	4.828 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 96.60%	
14) Toluene-d8	10.001	98	3430421	5.007 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 100.20%	
16) 4-Bromofluorobenzene	14.448	95	884757	4.713 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 94.20%	
17) 1,2-Dichlorobenzene-d4	17.131	152	940920	4.653 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 93.00%	

Target Compounds Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H05.D
Sample : B16J020-BLK1
Instrument: HP5973H
Acq On : 6 Oct 2016 10:56 am
Operator : YNB
Misc : BLK, WATER
ALS Vial : 30
Multiplier: 1

Quant Time: Oct 06 11:34:17 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

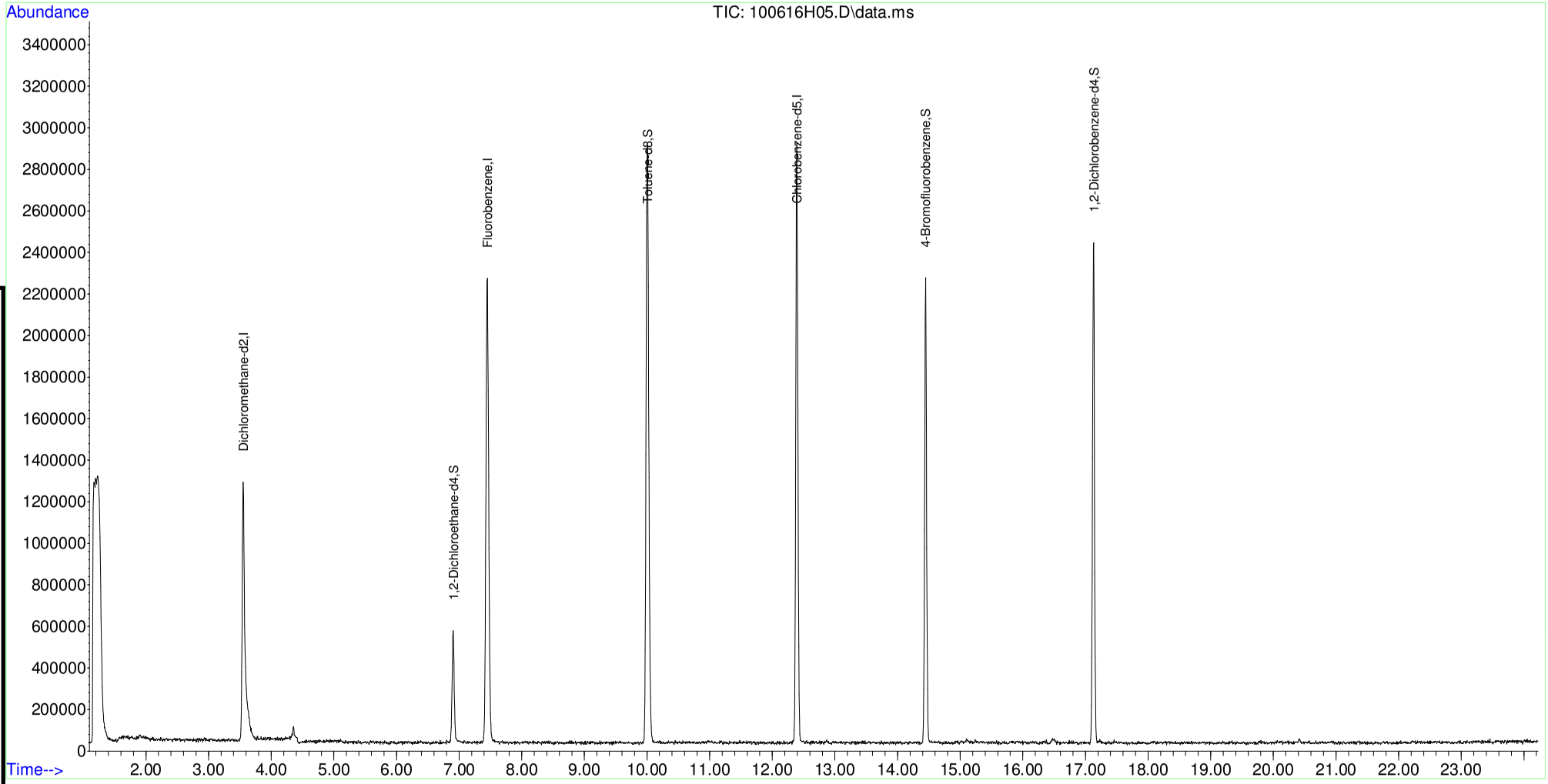
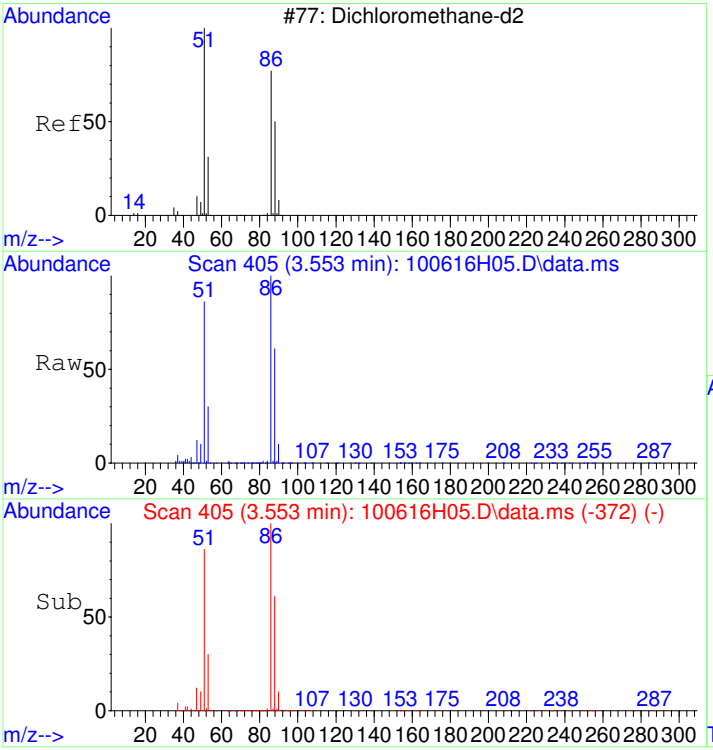


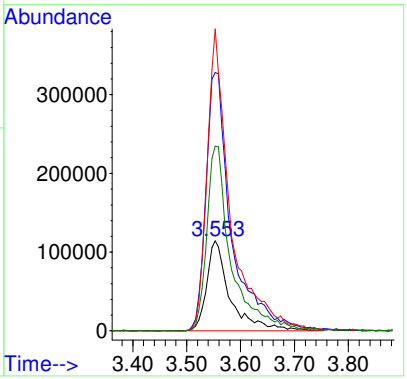
Table of Contents

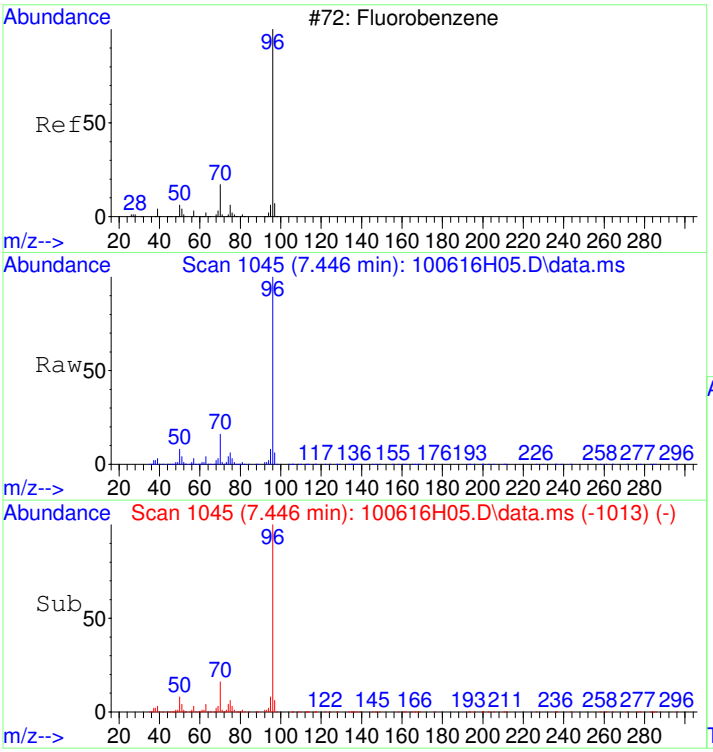


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.553 min Scan# 405
Delta R.T. 0.003 min
Lab File: 100616H05.D
Acq: 6 Oct 2016 10:56 am

Tgt Ion: 53 Resp: 347481

Ion	Ratio	Lower	Upper
53	100		
51	312.2	386.4	426.4#
86	332.9	0.0	20.0#
88	211.6	231.2	271.2#

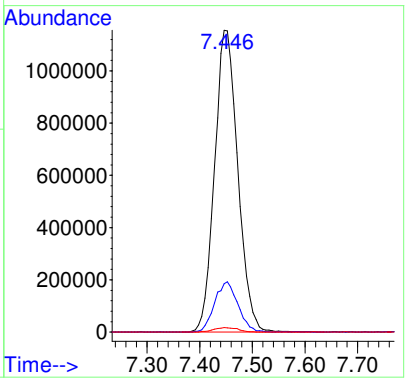


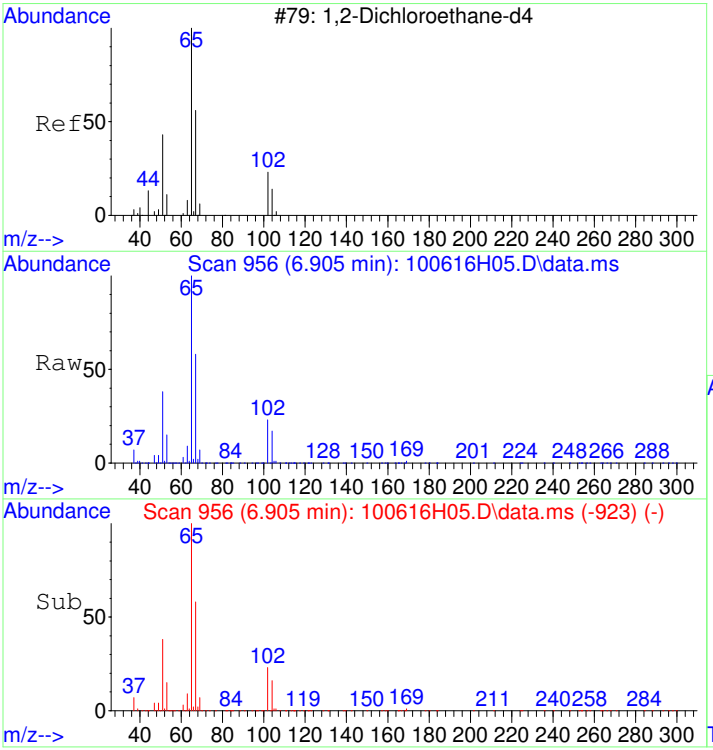


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.446 min Scan# 1045
Delta R.T. -0.007 min
Lab File: 100616H05.D
Acq: 6 Oct 2016 10:56 am

Tgt Ion: 96 Resp: 3547049

Ion	Ratio	Lower	Upper
96	100		
70	16.7	0.0	36.7
77	1.6	0.0	21.6

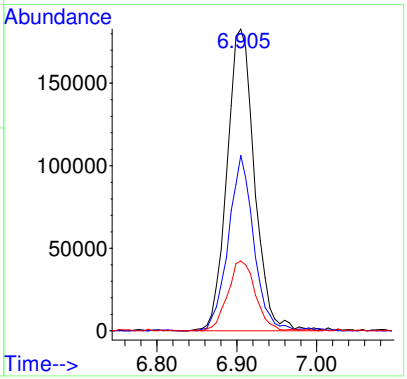


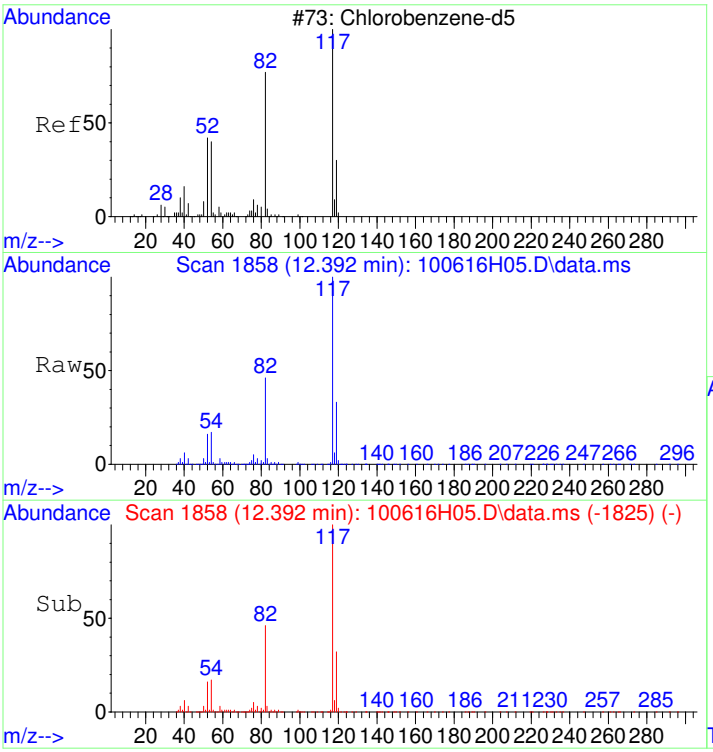


#10
1,2-Dichloroethane-d4
Concen: 4.83 ug/L
RT: 6.905 min Scan# 956
Delta R.T. -0.001 min
Lab File: 100616H05.D
Acq: 6 Oct 2016 10:56 am

Tgt Ion: 65 Resp: 438869

Ion	Ratio	Lower	Upper
65	100		
67	53.6	31.1	71.1
102	23.3	3.7	43.7

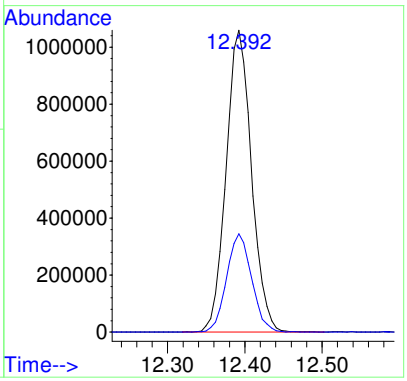


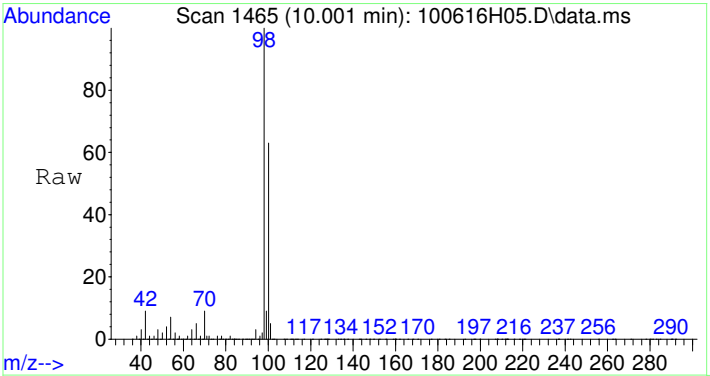


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.392 min Scan# 1858
Delta R.T. 0.000 min
Lab File: 100616H05.D
Acq: 6 Oct 2016 10:56 am

Tgt Ion:117 Resp: 2424535

Ion	Ratio	Lower	Upper
117	100		
119	32.1	11.9	51.9

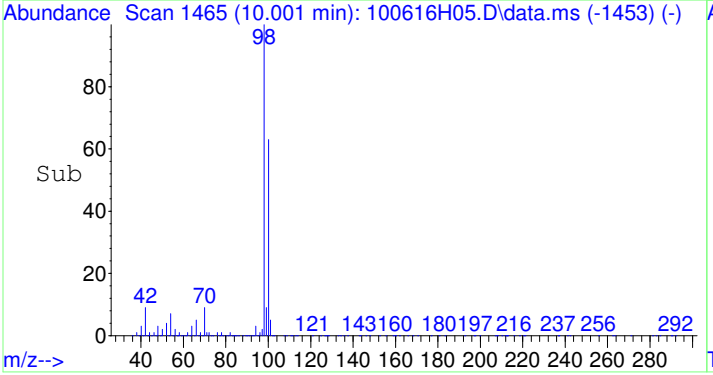


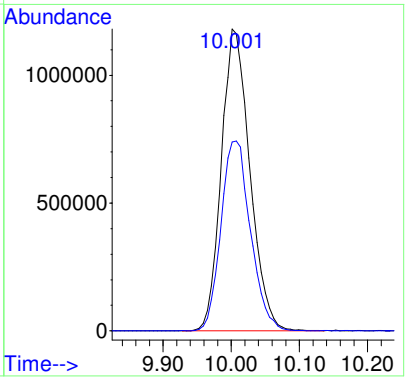


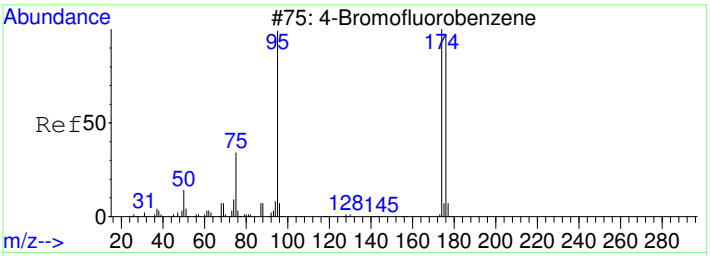
#14
Toluene-d8
Concen: 5.01 ug/L
RT: 10.001 min Scan# 1465
Delta R.T. -0.006 min
Lab File: 100616H05.D
Acq: 6 Oct 2016 10:56 am

Tgt Ion: 98 Resp: 3430421

Ion	Ratio	Lower	Upper
98	100		
100	65.0	45.1	85.1



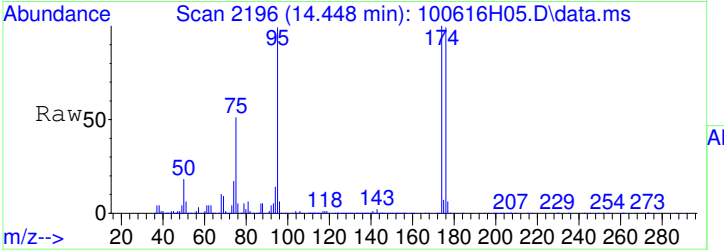


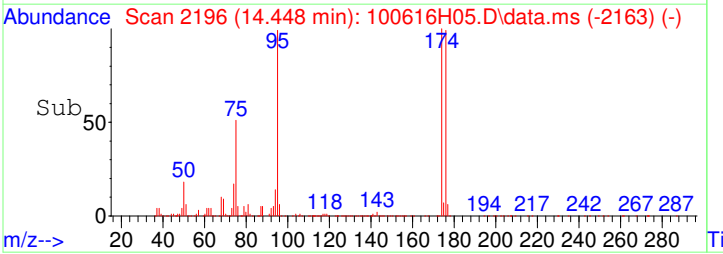


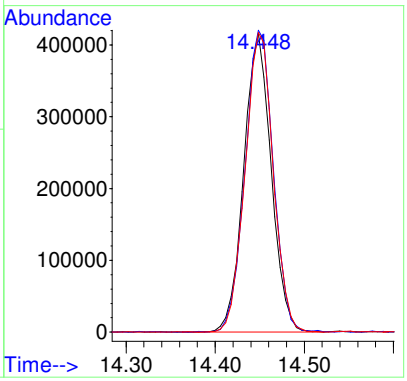
#16
4-Bromofluorobenzene
Concen: 4.71 ug/L
RT: 14.448 min Scan# 2196
Delta R.T. 0.001 min
Lab File: 100616H05.D
Acq: 6 Oct 2016 10:56 am

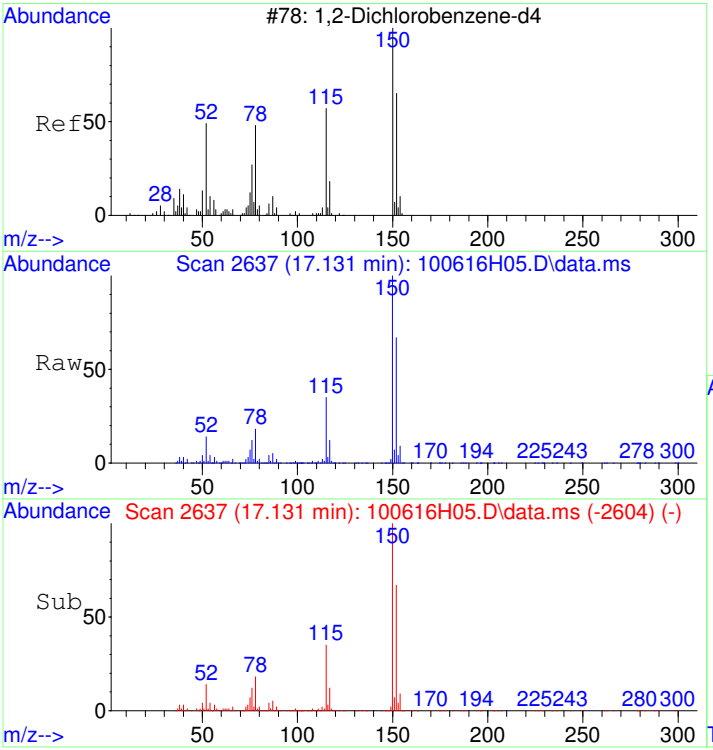
Tgt Ion: 95 Resp: 884757

Ion	Ratio	Lower	Upper
95	100		
174	104.2	84.0	124.0
176	102.7	79.3	119.3





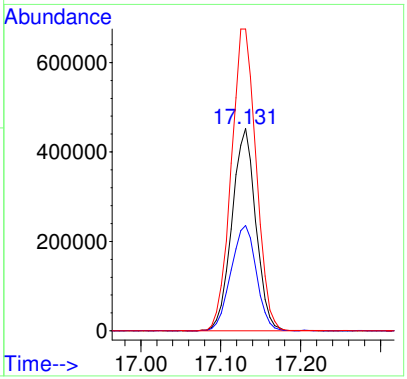




#17
1,2-Dichlorobenzene-d4
Concen: 4.65 ug/L
RT: 17.131 min Scan# 2637
Delta R.T. 0.002 min
Lab File: 100616H05.D
Acq: 6 Oct 2016 10:56 am

Tgt Ion:152 Resp: 940920

Ion	Ratio	Lower	Upper
152	100		
115	55.4	35.7	75.7
150	155.7	155.7	195.7



1609102-05RE2

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H09.D
Sample : 1609102-05RE2
Instrument: HP5973H
Acq On : 6 Oct 2016 1:25 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 34
Multiplier: 1

Quant Time: Oct 06 14:17:53 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	356960	5.000 ug/L	0.00
9) Fluorobenzene	7.445	96	3504737	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.391	117	2421461	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.903	65	451675	5.029 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 100.60%	
14) Toluene-d8	10.006	98	3357392	4.906 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 98.20%	
16) 4-Bromofluorobenzene	14.447	95	910643	4.857 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 97.20%	
17) 1,2-Dichlorobenzene-d4	17.123	152	989207	4.898 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 98.00%	
Target Compounds					Qvalue
7) cis-1,2-Dichloroethene	5.595	96	62556	0.306 ug/L	92
8) Chloroform	6.143	83	416800	1.410 ug/L	97
12) Trichloroethene	8.017	95	175664	0.916 ug/L	97

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H09.D
Sample : 1609102-05RE2
Instrument: HP5973H
Acq On : 6 Oct 2016 1:25 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 34
Multiplier: 1

Quant Time: Oct 06 14:17:53 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

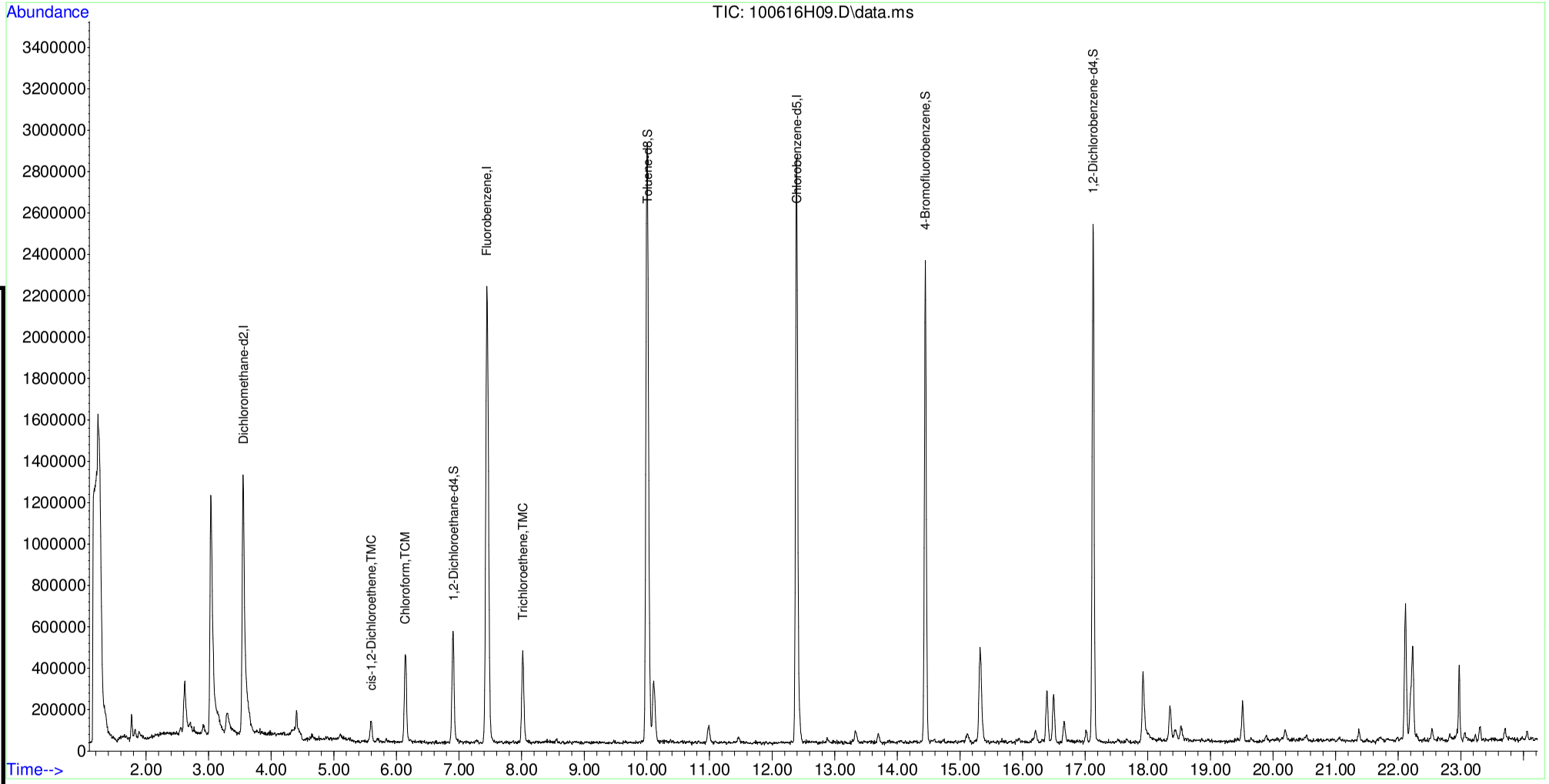
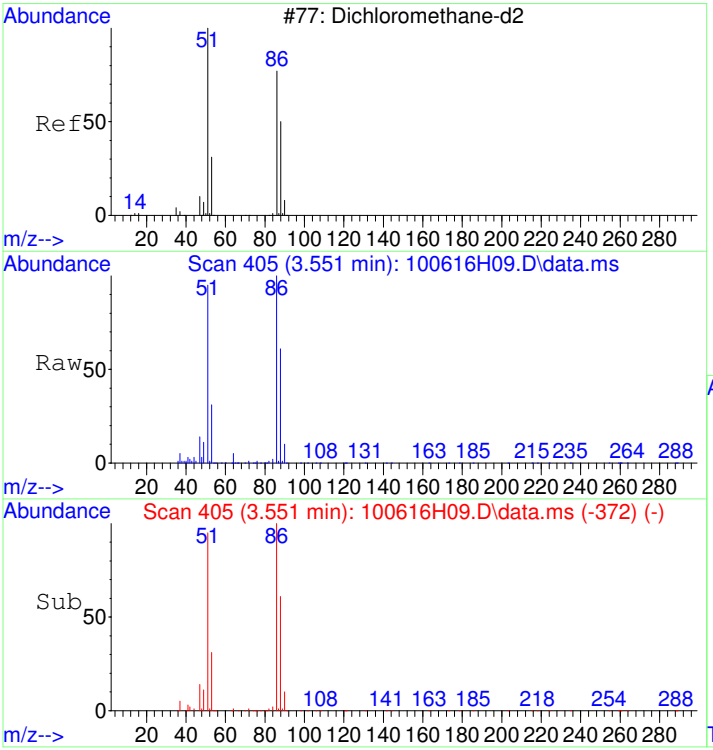


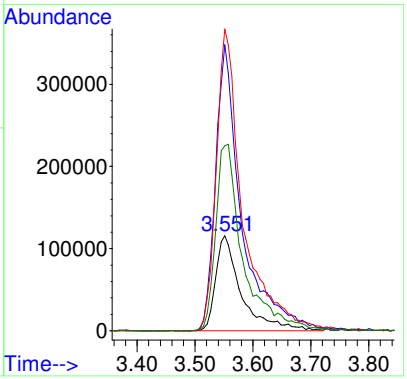
Table of Contents

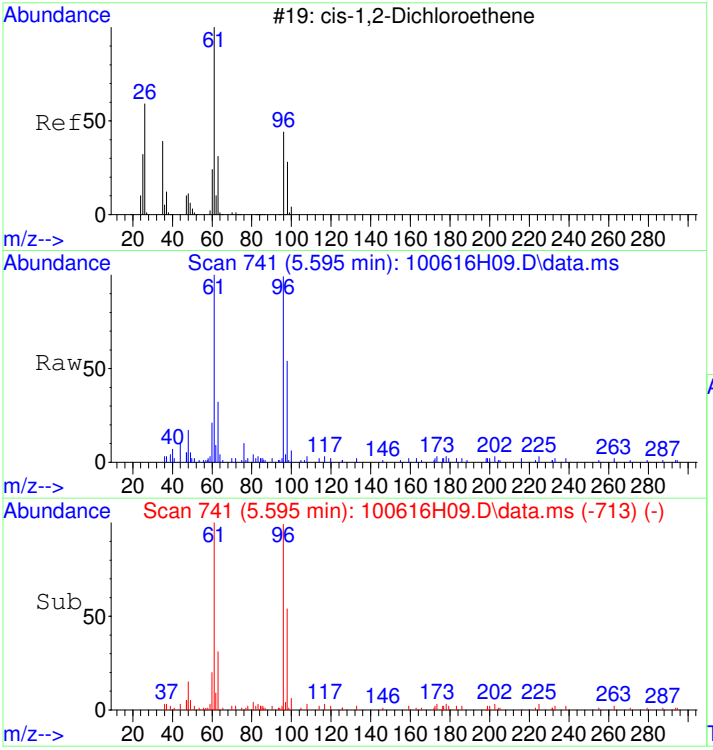


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.551 min Scan# 405
Delta R.T. 0.002 min
Lab File: 100616H09.D
Acq: 6 Oct 2016 1:25 pm

Tgt Ion: 53 Resp: 356960

Ion	Ratio	Lower	Upper
53	100		
51	306.7	386.4	426.4#
86	329.1	0.0	20.0#
88	209.1	231.2	271.2#

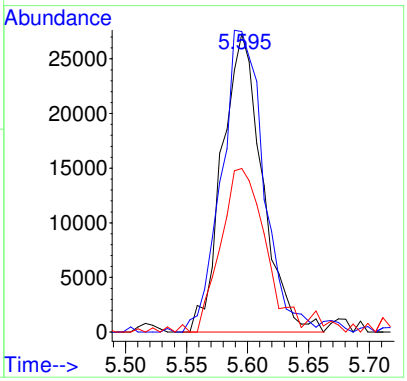


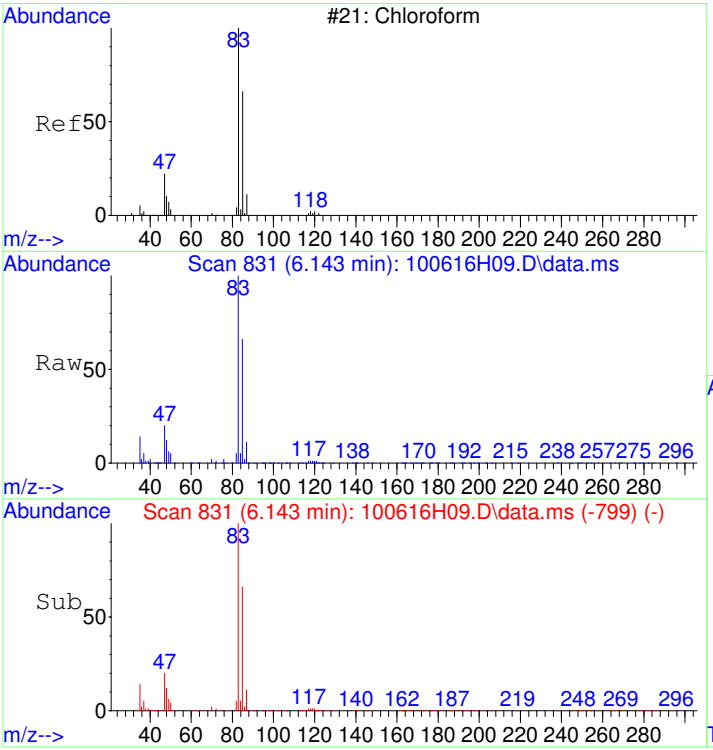


#7
cis-1,2-Dichloroethene
Concen: 0.31 ug/L
RT: 5.595 min Scan# 741
Delta R.T. -0.004 min
Lab File: 100616H09.D
Acq: 6 Oct 2016 1:25 pm

Tgt Ion: 96 Resp: 62556

Ion	Ratio	Lower	Upper
96	100		
61	106.5	97.5	137.5
98	60.2	43.4	83.4

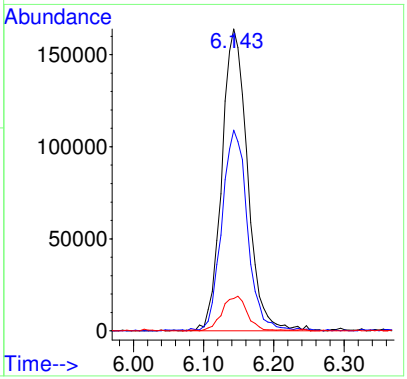


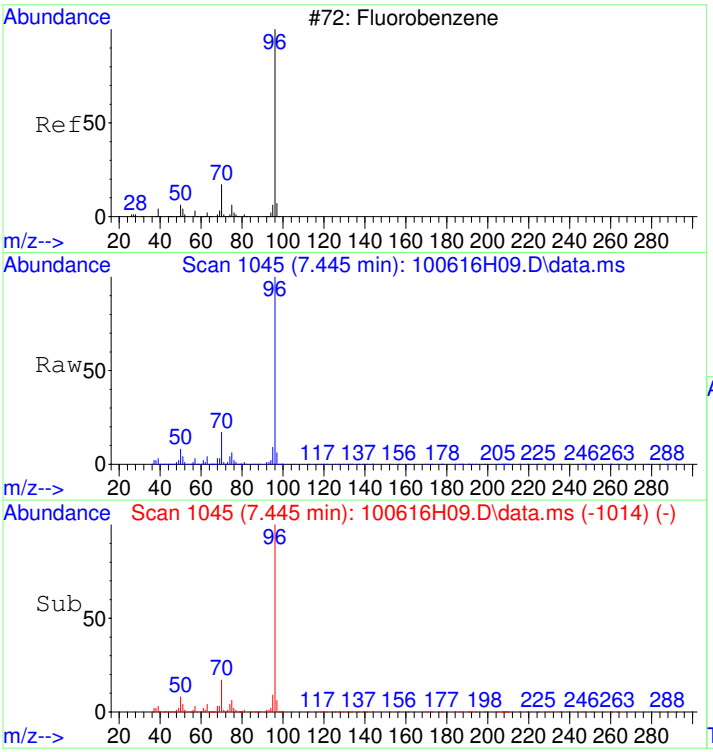


#8
Chloroform
Concen: 1.41 ug/L
RT: 6.143 min Scan# 831
Delta R.T. -0.003 min
Lab File: 100616H09.D
Acq: 6 Oct 2016 1:25 pm

Tgt Ion: 83 Resp: 416800

Ion	Ratio	Lower	Upper
83	100		
85	66.3	43.8	83.8
87	11.4	0.0	30.6

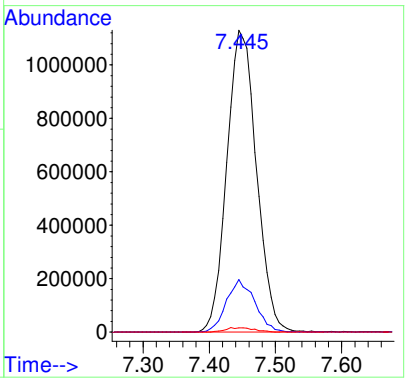


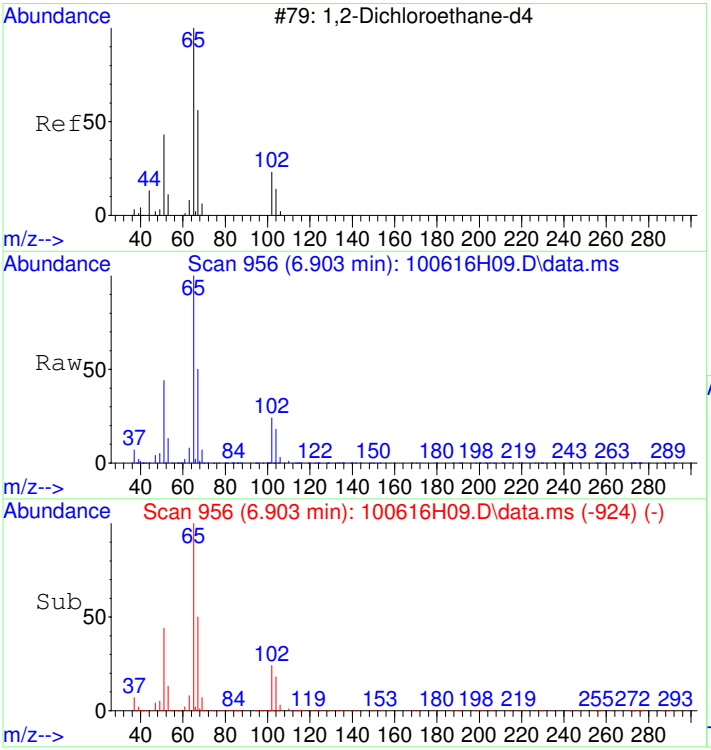


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.445 min Scan# 1045
Delta R.T. -0.009 min
Lab File: 100616H09.D
Acq: 6 Oct 2016 1:25 pm

Tgt Ion: 96 Resp: 3504737

Ion	Ratio	Lower	Upper
96	100		
70	16.7	0.0	36.7
77	1.5	0.0	21.6

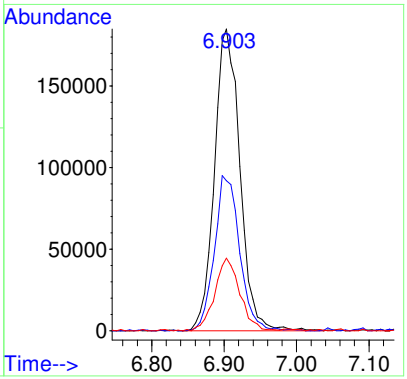


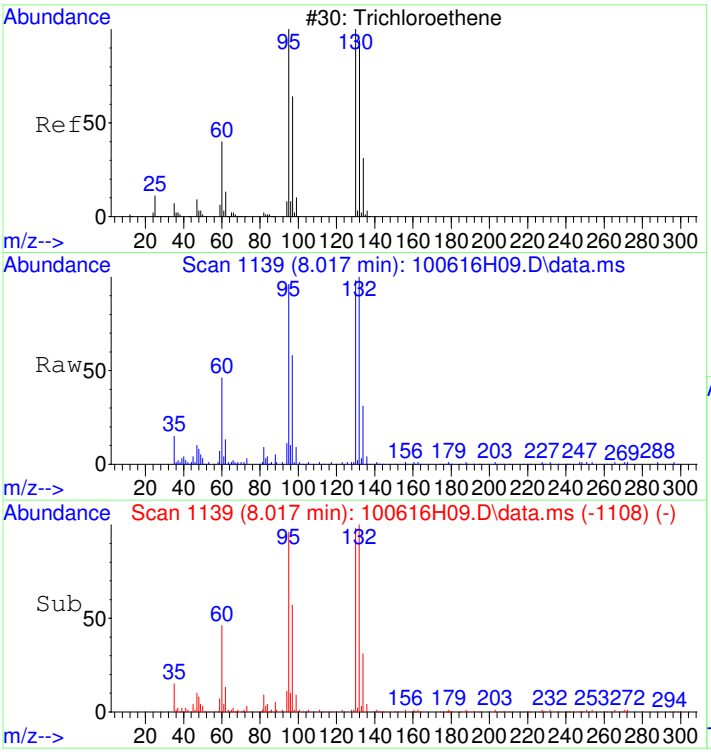


#10
1,2-Dichloroethane-d4
Concen: 5.03 ug/L
RT: 6.903 min Scan# 956
Delta R.T. -0.003 min
Lab File: 100616H09.D
Acq: 6 Oct 2016 1:25 pm

Tgt Ion: 65 Resp: 451675

Ion	Ratio	Lower	Upper
65	100		
67	51.2	31.1	71.1
102	23.8	3.7	43.7

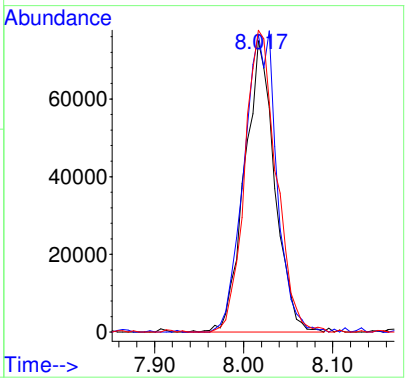


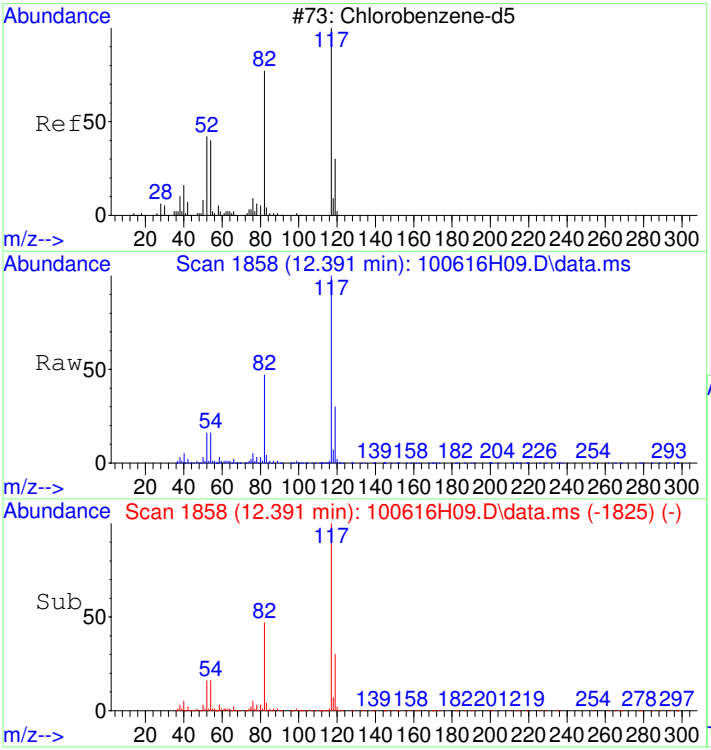


#12
Trichloroethene
Concen: 0.92 ug/L
RT: 8.017 min Scan# 1139
Delta R.T. -0.009 min
Lab File: 100616H09.D
Acq: 6 Oct 2016 1:25 pm

Tgt Ion: 95 Resp: 175664

Ion	Ratio	Lower	Upper
95	100		
130	112.1	93.3	133.3
132	108.3	92.5	132.5

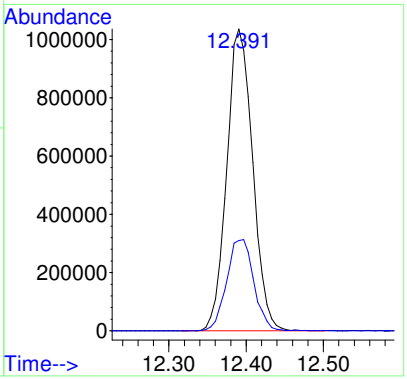


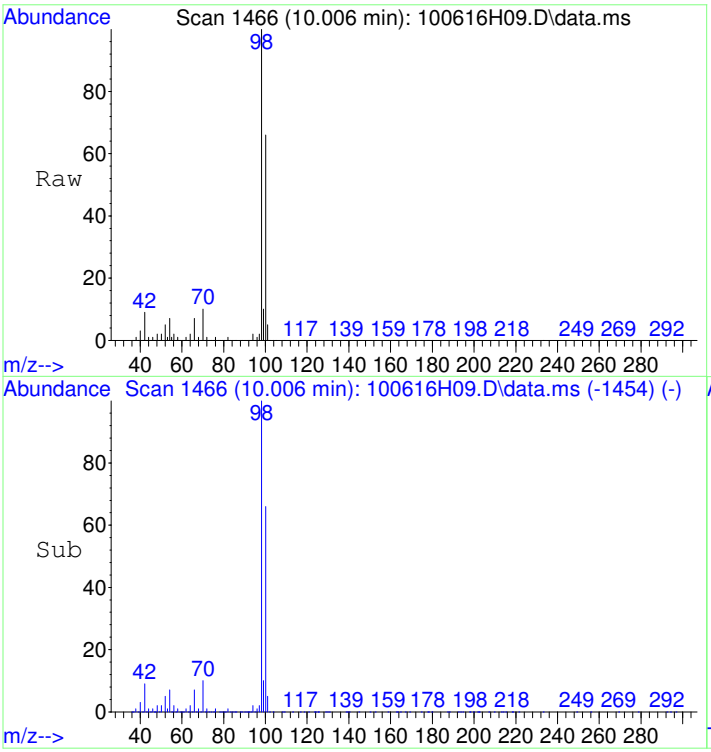


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.391 min Scan# 1858
Delta R.T. -0.001 min
Lab File: 100616H09.D
Acq: 6 Oct 2016 1:25 pm

Tgt Ion:117 Resp: 2421461

Ion	Ratio	Lower	Upper
117	100		
119	31.6	11.9	51.9

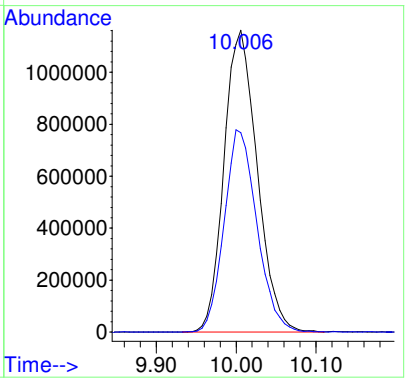


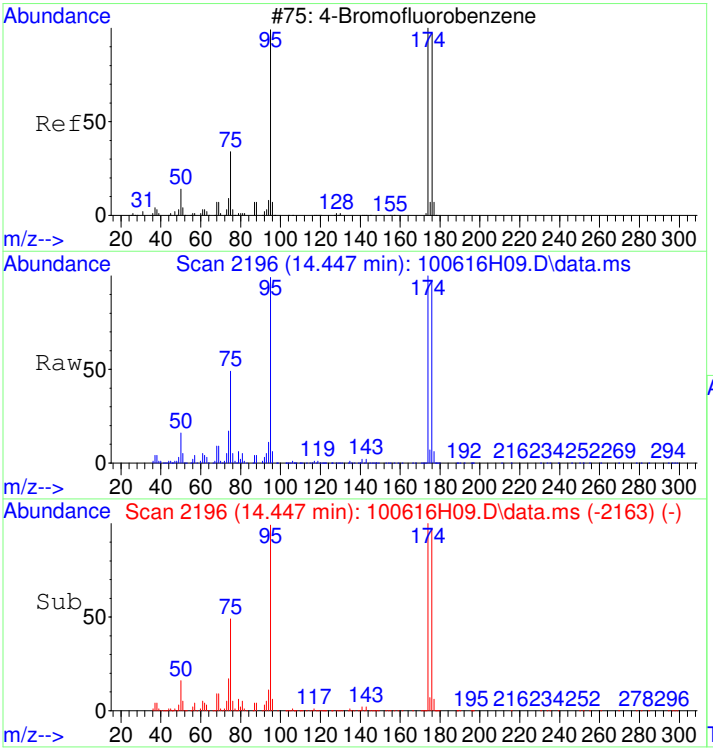


#14
Toluene-d8
Concen: 4.91 ug/L
RT: 10.006 min Scan# 1466
Delta R.T. -0.002 min
Lab File: 100616H09.D
Acq: 6 Oct 2016 1:25 pm

Tgt Ion: 98 Resp: 3357392

Ion	Ratio	Lower	Upper
98	100		
100	66.0	45.1	85.1

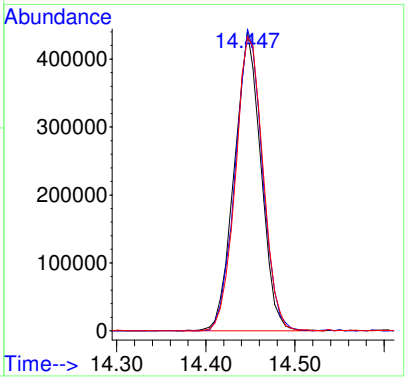


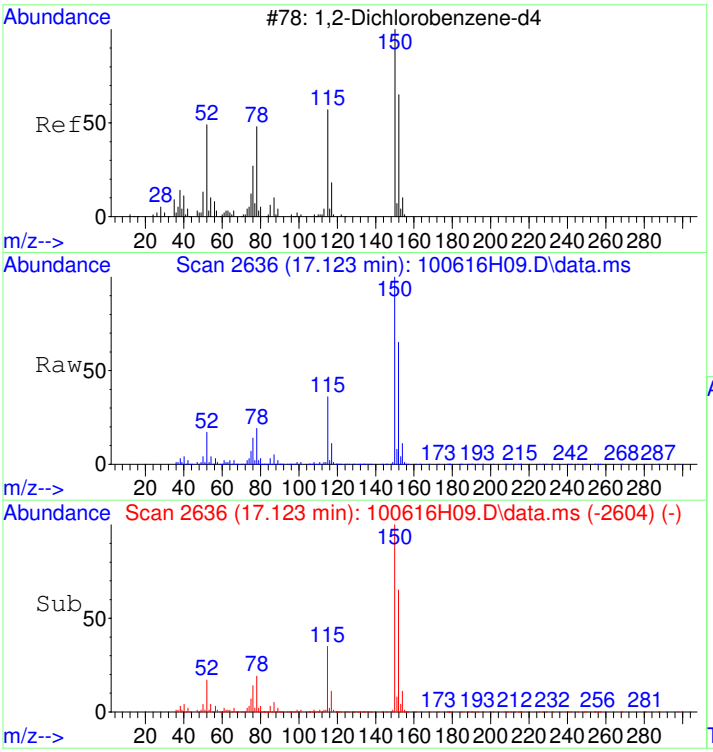


#16
4-Bromofluorobenzene
Concen: 4.86 ug/L
RT: 14.447 min Scan# 2196
Delta R.T. -0.001 min
Lab File: 100616H09.D
Acq: 6 Oct 2016 1:25 pm

Tgt Ion: 95 Resp: 910643

Ion	Ratio	Lower	Upper
95	100		
174	102.2	84.0	124.0
176	101.4	79.3	119.3

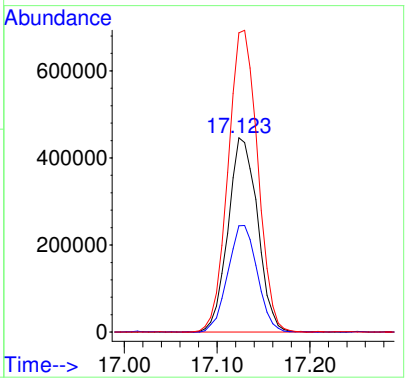




#17
1,2-Dichlorobenzene-d4
Concen: 4.90 ug/L
RT: 17.123 min Scan# 2636
Delta R.T. -0.006 min
Lab File: 100616H09.D
Acq: 6 Oct 2016 1:25 pm

Tgt Ion:152 Resp: 989207

Ion	Ratio	Lower	Upper
152	100		
115	54.8	35.7	75.7
150	155.9	155.7	195.7



1609102-08RE2

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H10.D
Sample : 1609102-08RE2
Instrument: HP5973H
Acq On : 6 Oct 2016 2:01 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 35
Multiplier: 1

Quant Time: Oct 06 15:09:12 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.551	53	379784	5.000 ug/L	0.00
9) Fluorobenzene	7.444	96	3671342	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.390	117	2531511	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.903	65	465266	4.945 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 98.80%	
14) Toluene-d8	10.006	98	3537254	4.944 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 98.80%	
16) 4-Bromofluorobenzene	14.446	95	972500	4.962 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 99.20%	
17) 1,2-Dichlorobenzene-d4	17.123	152	1075756	5.095 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 102.00%	
Target Compounds					Qvalue
8) Chloroform	6.143	83	903115	2.872 ug/L	97
12) Trichloroethene	8.022	95	143709	0.716 ug/L	95

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H10.D
Sample : 1609102-08RE2
Instrument: HP5973H
Acq On : 6 Oct 2016 2:01 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 35
Multiplier: 1

Quant Time: Oct 06 15:09:12 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

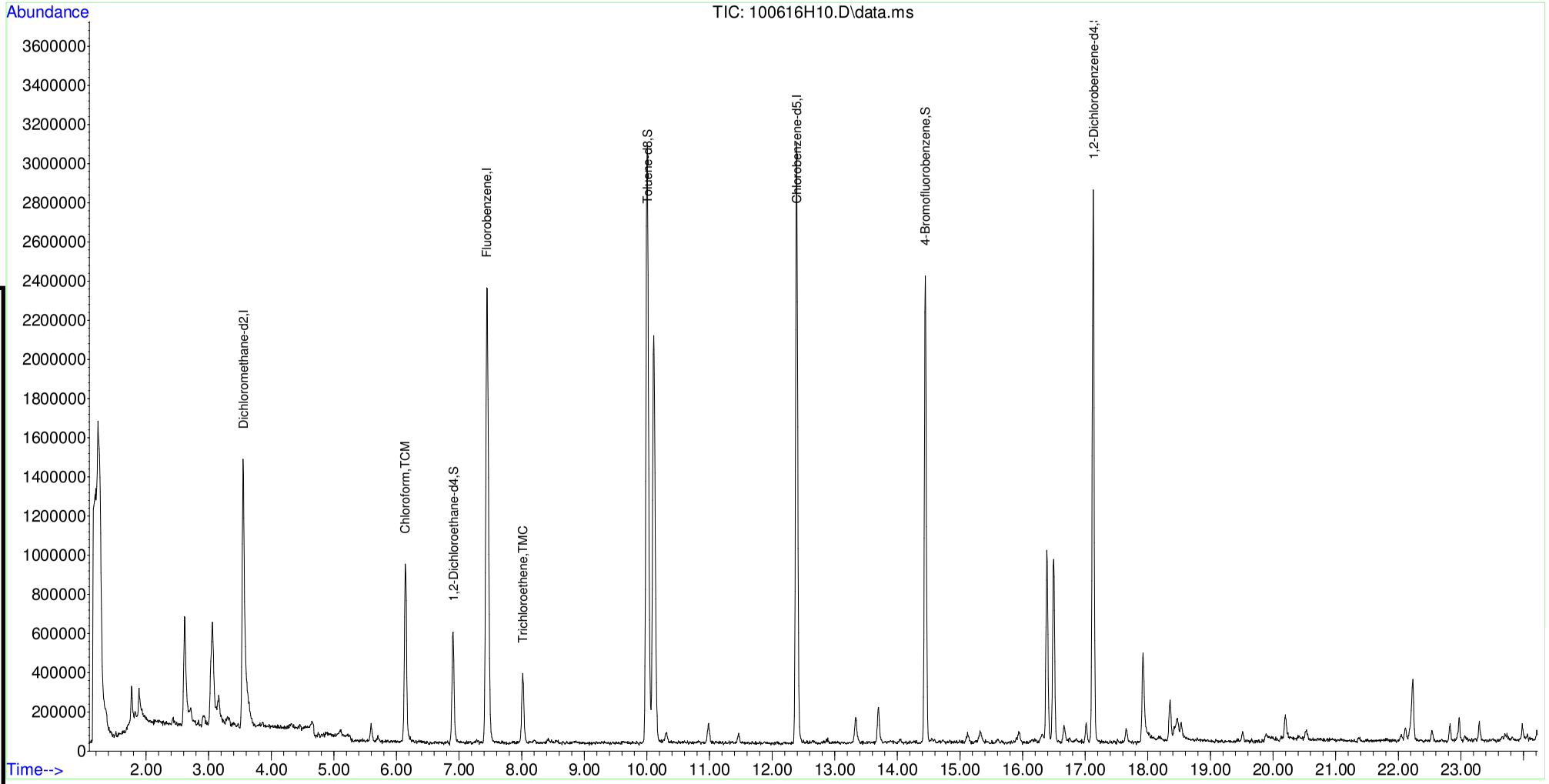
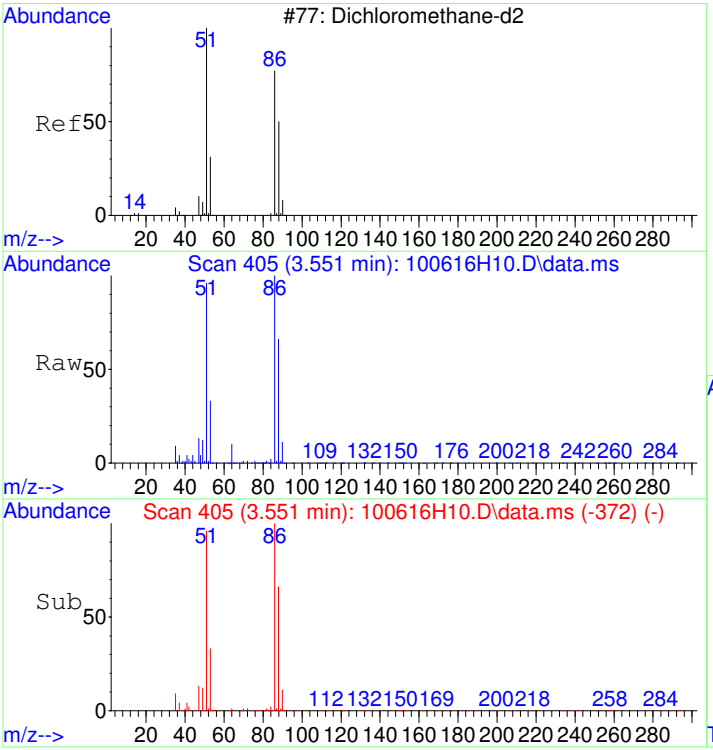


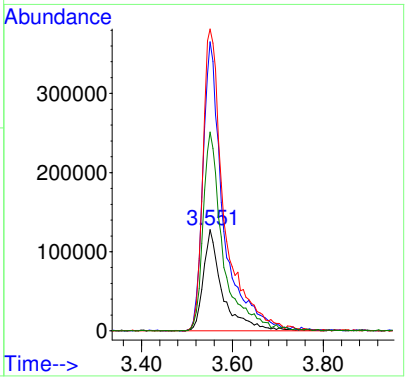
Table of Contents

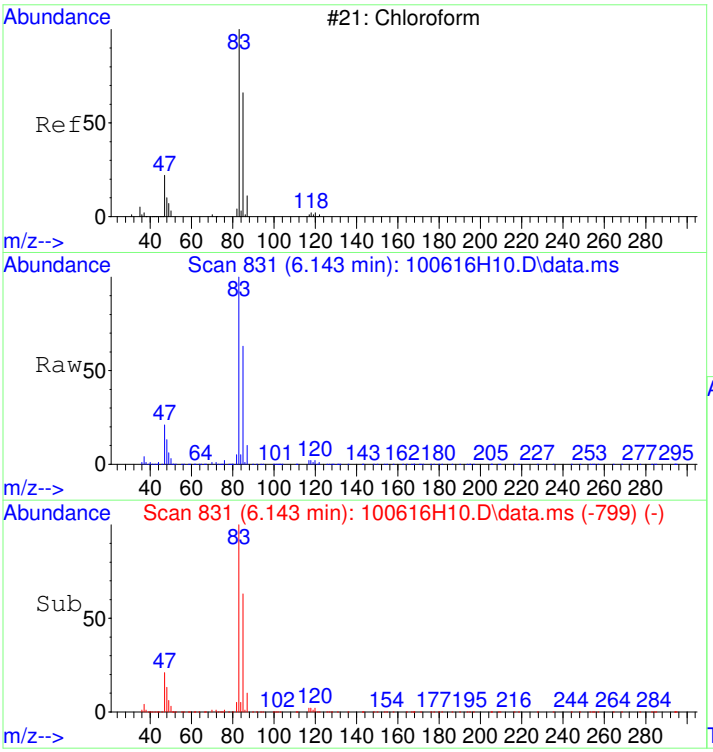


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.551 min Scan# 405
Delta R.T. 0.001 min
Lab File: 100616H10.D
Acq: 6 Oct 2016 2:01 pm

Tgt Ion: 53 Resp: 379784

Ion	Ratio	Lower	Upper
53	100		
51	300.8	386.4	426.4#
86	328.4	0.0	20.0#
88	201.1	231.2	271.2#

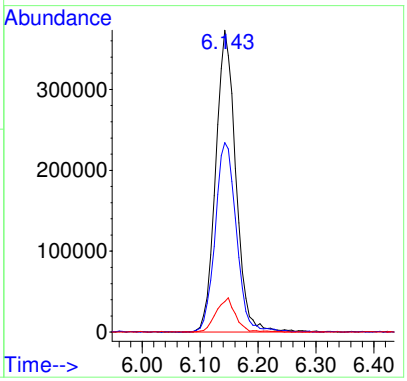


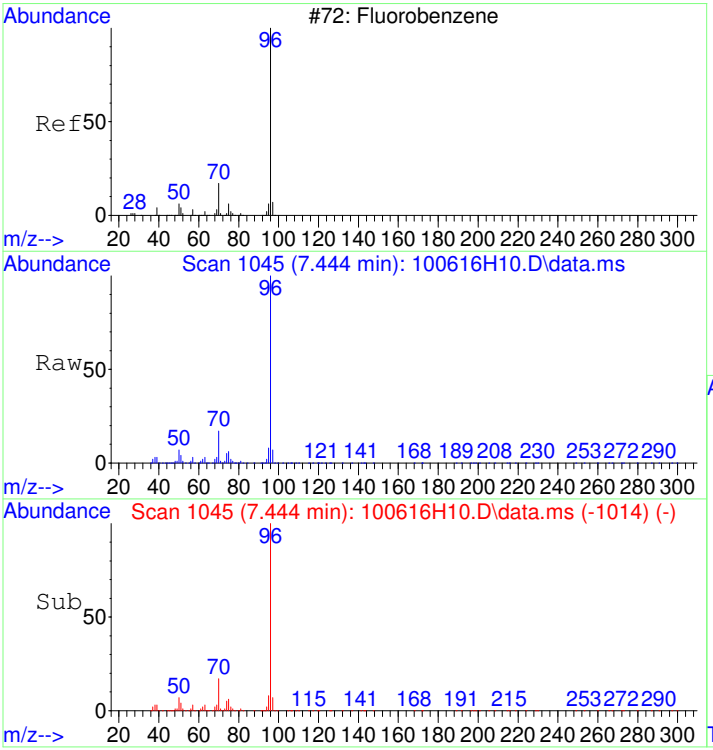


#8
Chloroform
Concen: 2.87 ug/L
RT: 6.143 min Scan# 831
Delta R.T. -0.004 min
Lab File: 100616H10.D
Acq: 6 Oct 2016 2:01 pm

Tgt Ion: 83 Resp: 903115

Ion	Ratio	Lower	Upper
83	100		
85	66.2	43.8	83.8
87	10.9	0.0	30.6

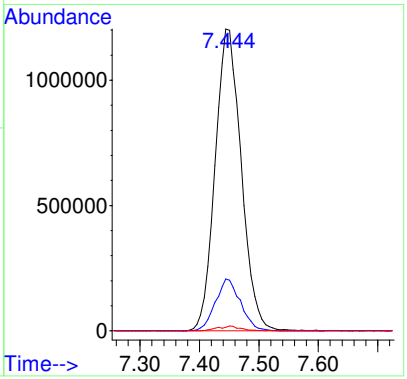


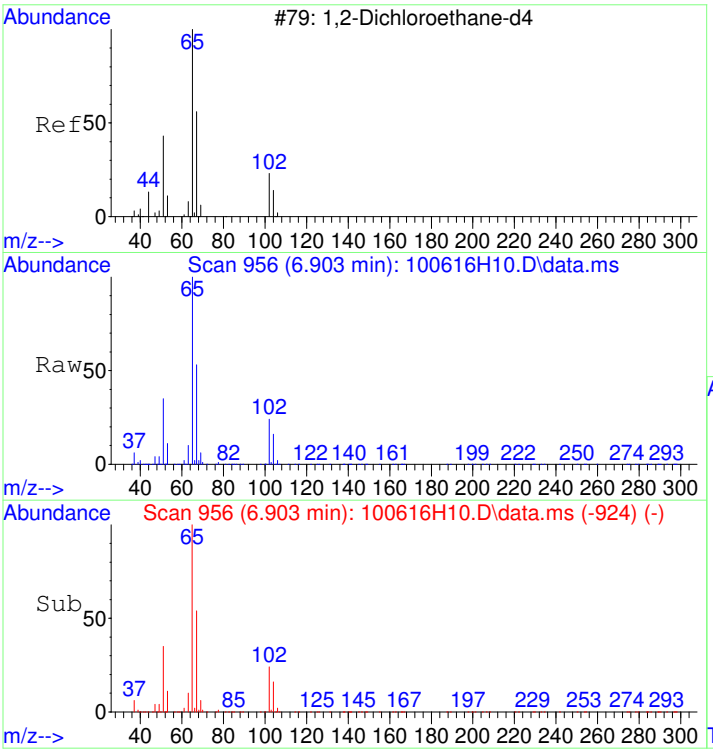


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.444 min Scan# 1045
Delta R.T. -0.009 min
Lab File: 100616H10.D
Acq: 6 Oct 2016 2:01 pm

Tgt Ion: 96 Resp: 3671342

Ion	Ratio	Lower	Upper
96	100		
70	16.5	0.0	36.7
77	1.4	0.0	21.6

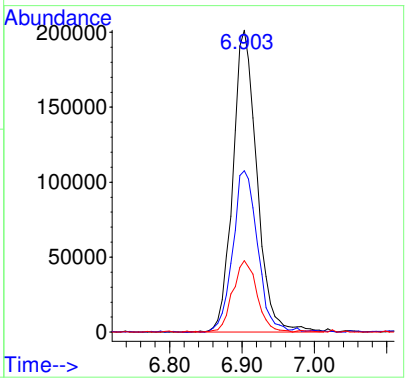


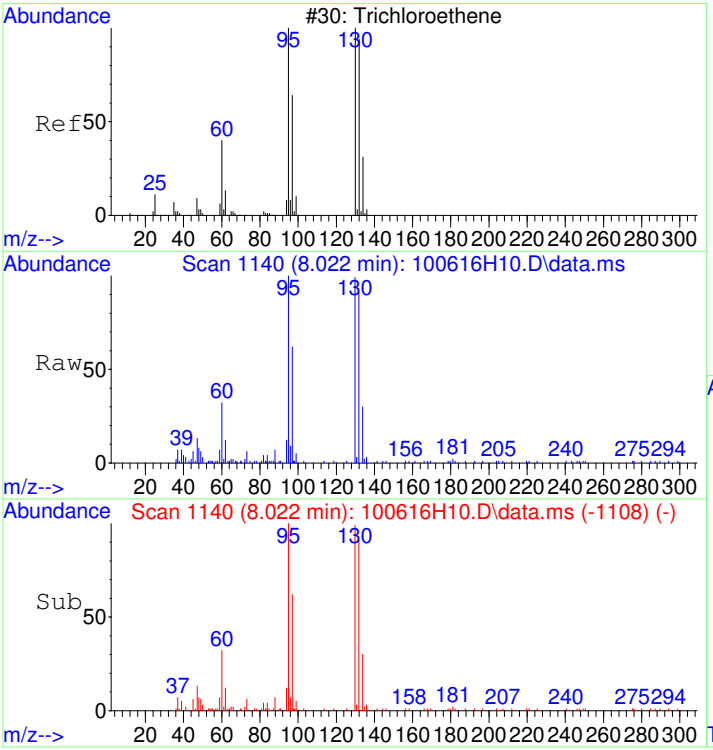


#10
1,2-Dichloroethane-d4
Concen: 4.94 ug/L
RT: 6.903 min Scan# 956
Delta R.T. -0.003 min
Lab File: 100616H10.D
Acq: 6 Oct 2016 2:01 pm

Tgt Ion: 65 Resp: 465266

Ion	Ratio	Lower	Upper
65	100		
67	54.8	31.1	71.1
102	23.8	3.7	43.7

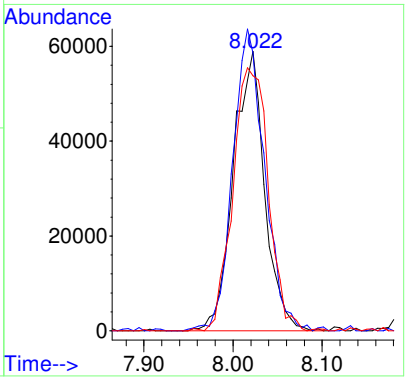


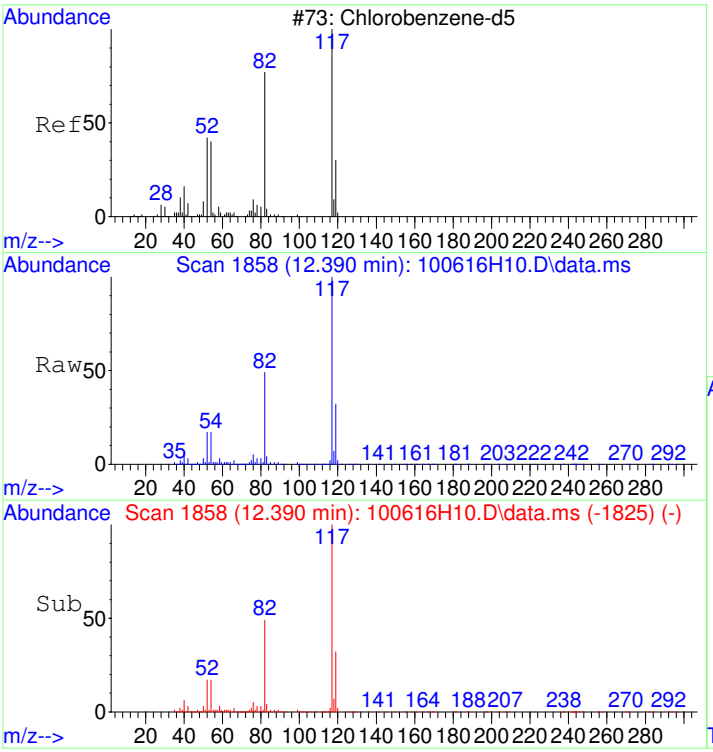


#12
Trichloroethene
Concen: 0.72 ug/L
RT: 8.022 min Scan# 1140
Delta R.T. -0.003 min
Lab File: 100616H10.D
Acq: 6 Oct 2016 2:01 pm

Tgt Ion: 95 Resp: 143709

Ion	Ratio	Lower	Upper
95	100		
130	109.6	93.3	133.3
132	106.5	92.5	132.5

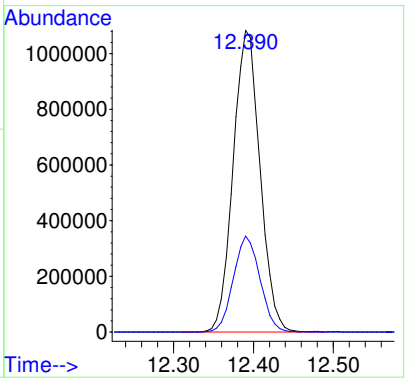


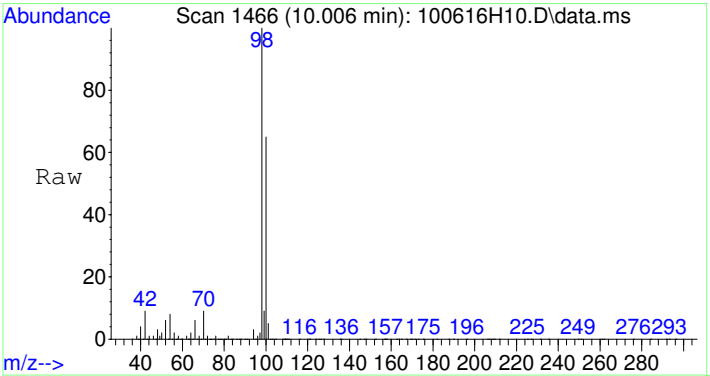


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.390 min Scan# 1858
Delta R.T. -0.002 min
Lab File: 100616H10.D
Acq: 6 Oct 2016 2:01 pm

Tgt Ion:117 Resp: 2531511

Ion	Ratio	Lower	Upper
117	100		
119	31.6	11.9	51.9

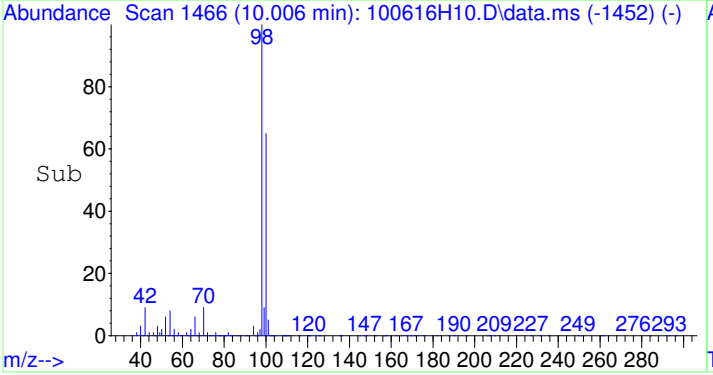


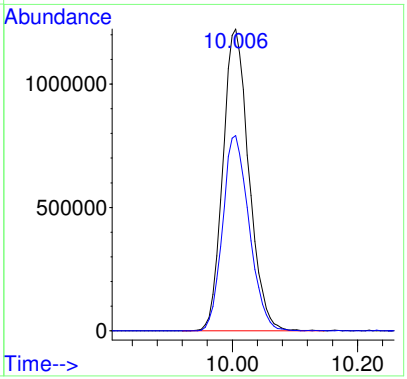


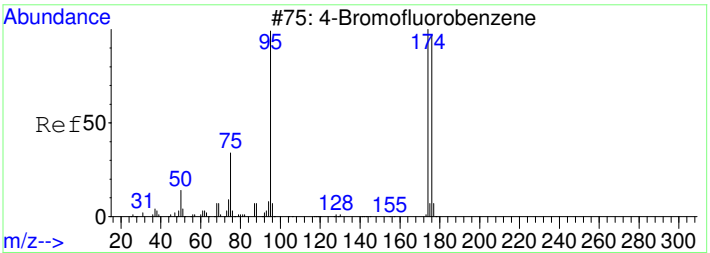
#14
Toluene-d8
Concen: 4.94 ug/L
RT: 10.006 min Scan# 1466
Delta R.T. -0.002 min
Lab File: 100616H10.D
Acq: 6 Oct 2016 2:01 pm

Tgt Ion: 98 Resp: 3537254

Ion	Ratio	Lower	Upper
98	100		
100	65.9	45.1	85.1



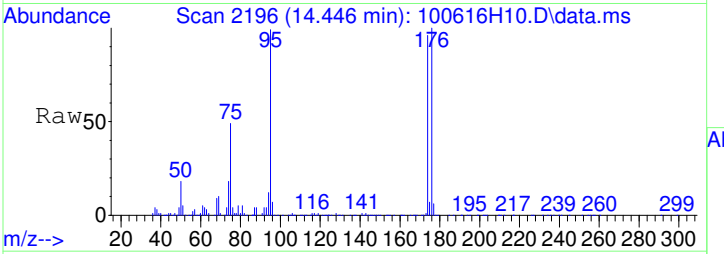


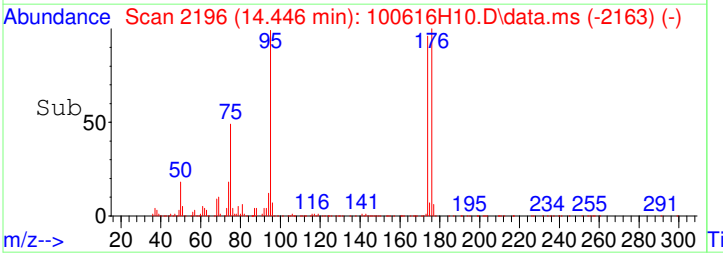


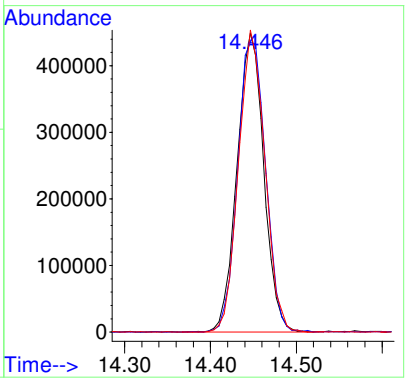
#16
4-Bromofluorobenzene
Concen: 4.96 ug/L
RT: 14.446 min Scan# 2196
Delta R.T. -0.001 min
Lab File: 100616H10.D
Acq: 6 Oct 2016 2:01 pm

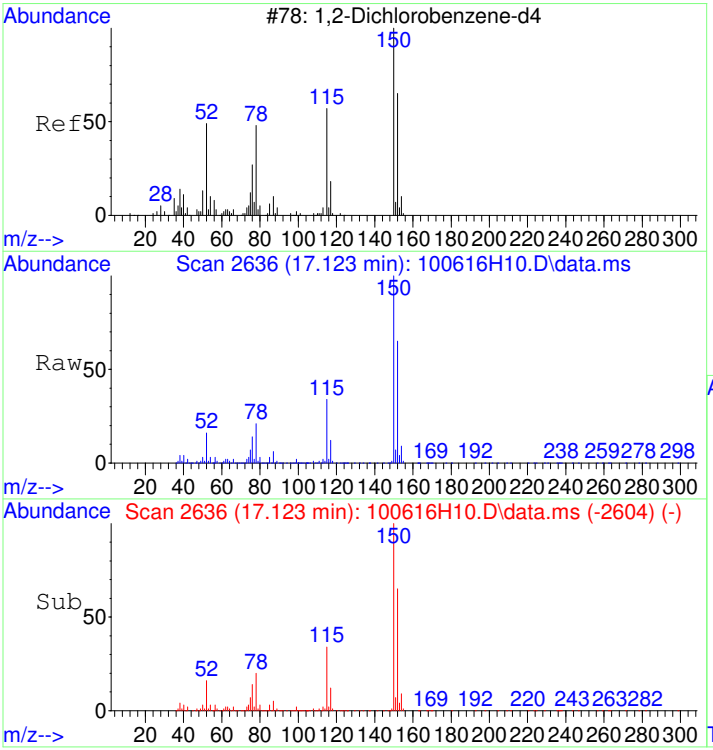
Tgt Ion: 95 Resp: 972500

Ion	Ratio	Lower	Upper
95	100		
174	101.9	84.0	124.0
176	99.3	79.3	119.3





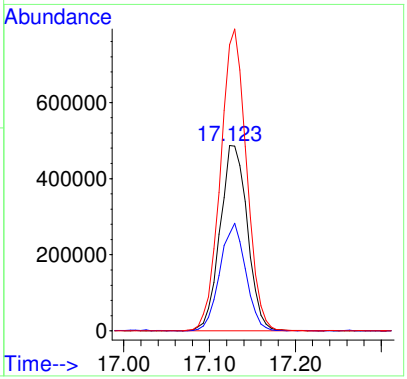




#17
1,2-Dichlorobenzene-d4
Concen: 5.10 ug/L
RT: 17.123 min Scan# 2636
Delta R.T. -0.006 min
Lab File: 100616H10.D
Acq: 6 Oct 2016 2:01 pm

Tgt Ion:152 Resp: 1075756

Ion	Ratio	Lower	Upper
152	100		
115	54.9	35.7	75.7
150	155.6	155.7	195.7#



1609102-09RE2

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H11.D
Sample : 1609102-09RE2
Instrument: HP5973H
Acq On : 6 Oct 2016 2:37 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 36
Multiplier: 1

Quant Time: Oct 06 15:09:22 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Dichloromethane-d2	3.547	53	399316	5.000 ug/L	0.00
9) Fluorobenzene	7.452	96	3872404	5.000 ug/L	0.00
13) Chlorobenzene-d5	12.392	117	2671457	5.000 ug/L	0.00
System Monitoring Compounds					
10) 1,2-Dichloroethane-d4	6.905	65	496976	5.008 ug/L	0.00
Spiked Amount 5.000	Range 65 - 149		Recovery	= 100.20%	
14) Toluene-d8	10.007	98	3742474	4.957 ug/L	0.00
Spiked Amount 5.000	Range 85 - 114		Recovery	= 99.20%	
16) 4-Bromofluorobenzene	14.448	95	1012768	4.897 ug/L	0.00
Spiked Amount 5.000	Range 82 - 111		Recovery	= 98.00%	
17) 1,2-Dichlorobenzene-d4	17.131	152	1089916	4.892 ug/L	0.00
Spiked Amount 5.000	Range 76 - 118		Recovery	= 97.80%	
Target Compounds					Qvalue
8) Chloroform	6.144	83	1083932	3.278 ug/L	98
12) Trichloroethene	8.024	95	130356	0.615 ug/L	98

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

Quantitation Report (Not Reviewed)

Data Path : D:\MSDCHEM\1\DATA\2016\100616AHVW\
Data File : 100616H11.D
Sample : 1609102-09RE2
Instrument: HP5973H
Acq On : 6 Oct 2016 2:37 pm
Operator : YNB
Misc : 2X, WATER
ALS Vial : 36
Multiplier: 1

Quant Time: Oct 06 15:09:22 2016
Quant Title : Volatile Organic Analysis - 524.2 Method
QLast Update : Wed Oct 05 11:20:39 2016
Response via : Initial Calibration

DataAcq Meth:MEW100616HVW.M
Quant Method : C:\MSDCHEM\1\METHODS\MEW100616HVW.M

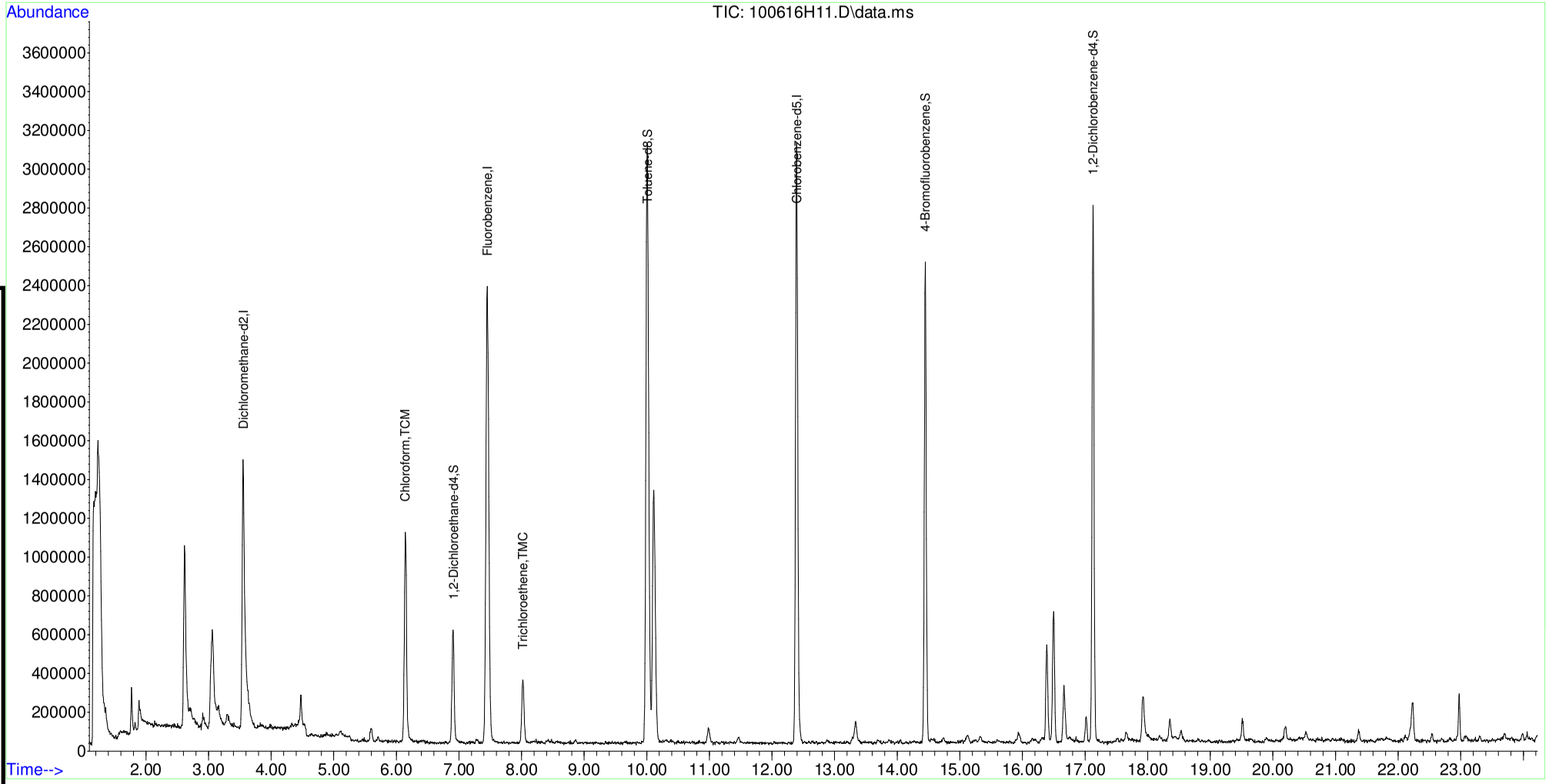
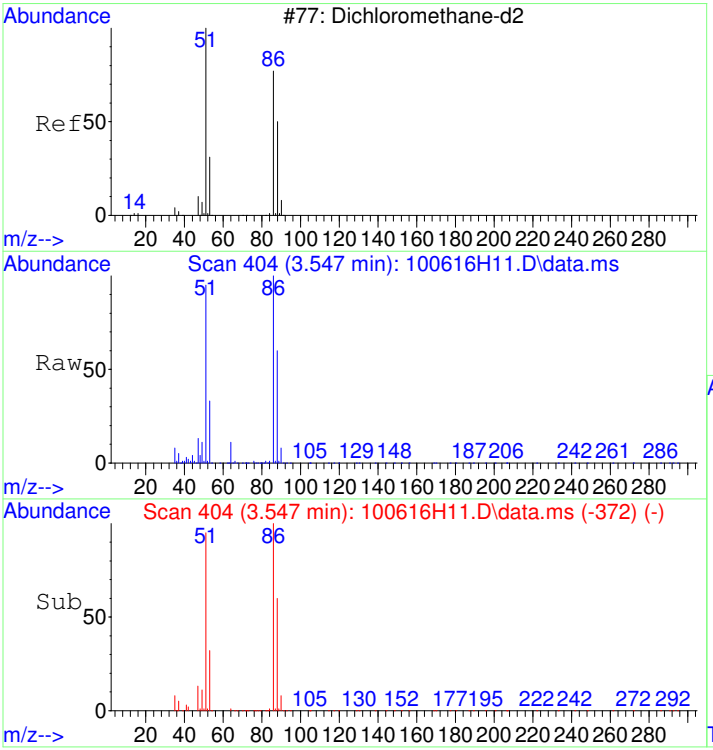


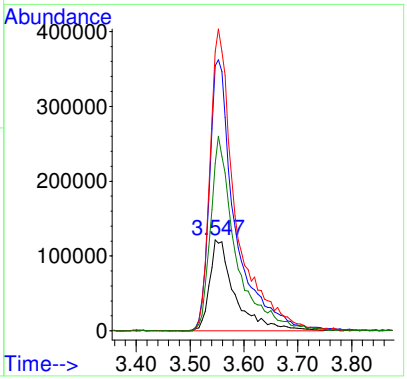
Table of Contents

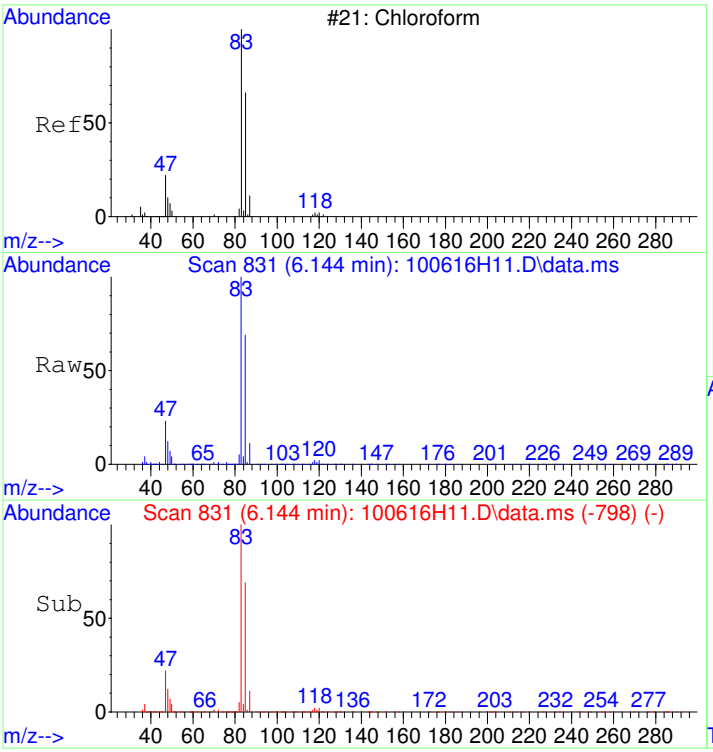


#1
Dichloromethane-d2
Concen: 5.00 ug/L
RT: 3.547 min Scan# 404
Delta R.T. -0.003 min
Lab File: 100616H11.D
Acq: 6 Oct 2016 2:37 pm

Tgt Ion: 53 Resp: 399316

Ion	Ratio	Lower	Upper
53	100		
51	299.0	386.4	426.4#
86	337.0	0.0	20.0#
88	212.5	231.2	271.2#

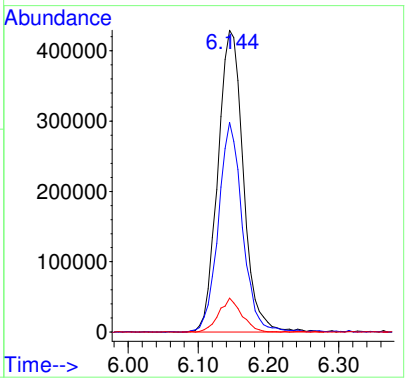


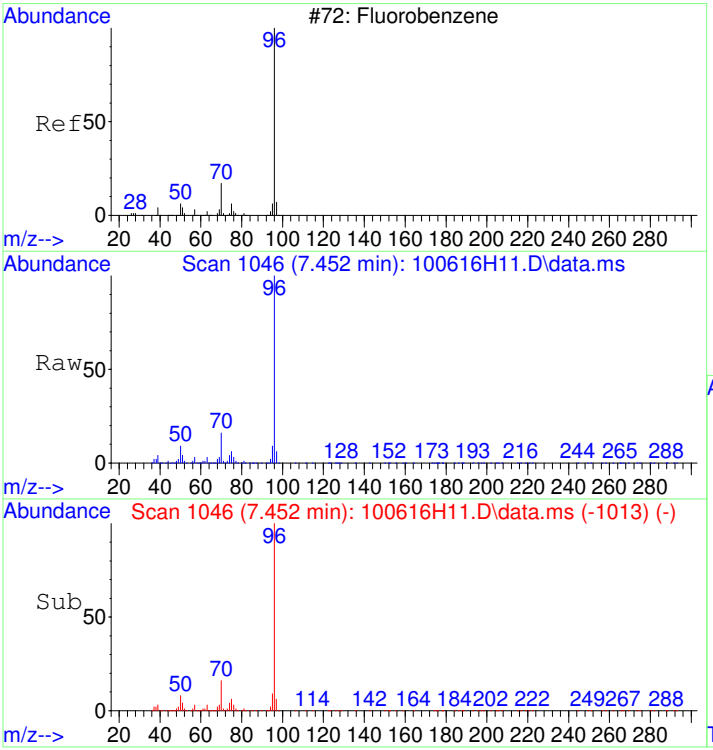


#8
Chloroform
Concen: 3.28 ug/L
RT: 6.144 min Scan# 831
Delta R.T. -0.002 min
Lab File: 100616H11.D
Acq: 6 Oct 2016 2:37 pm

Tgt Ion: 83 Resp: 1083932

Ion	Ratio	Lower	Upper
83	100		
85	65.7	43.8	83.8
87	10.2	0.0	30.6

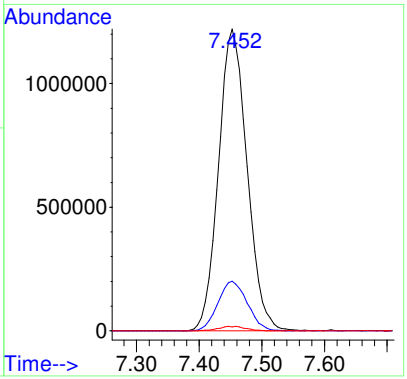


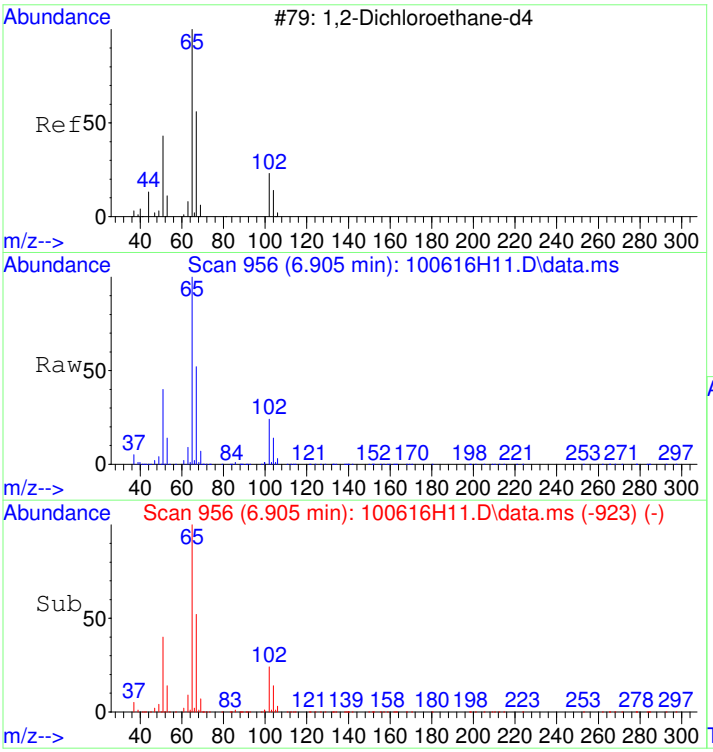


#9
Fluorobenzene
Concen: 5.00 ug/L
RT: 7.452 min Scan# 1046
Delta R.T. -0.001 min
Lab File: 100616H11.D
Acq: 6 Oct 2016 2:37 pm

Tgt Ion: 96 Resp: 3872404

Ion	Ratio	Lower	Upper
96	100		
70	16.9	0.0	36.7
77	1.4	0.0	21.6

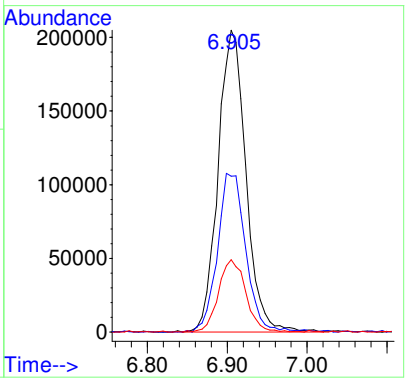


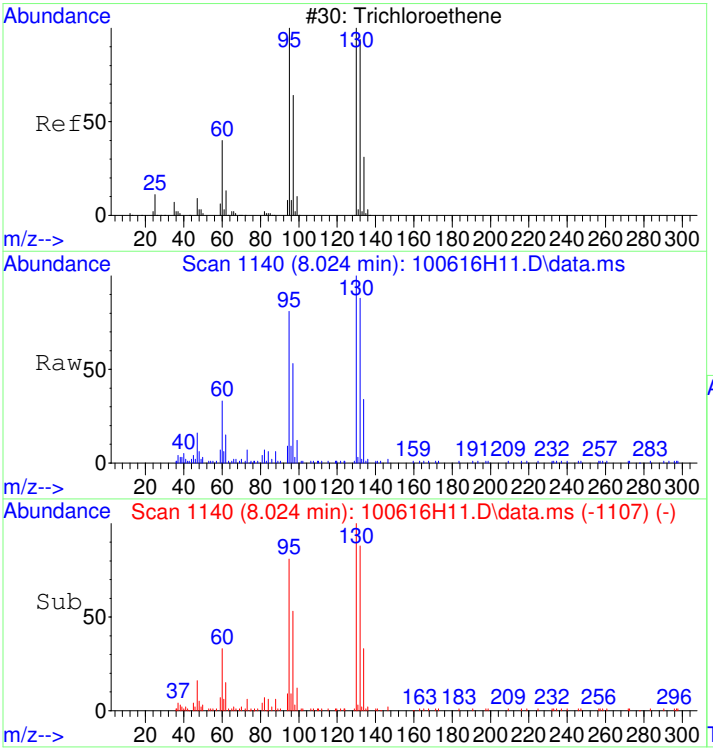


#10
1,2-Dichloroethane-d4
Concen: 5.01 ug/L
RT: 6.905 min Scan# 956
Delta R.T. -0.002 min
Lab File: 100616H11.D
Acq: 6 Oct 2016 2:37 pm

Tgt Ion: 65 Resp: 496976

Ion	Ratio	Lower	Upper
65	100		
67	53.1	31.1	71.1
102	23.6	3.7	43.7

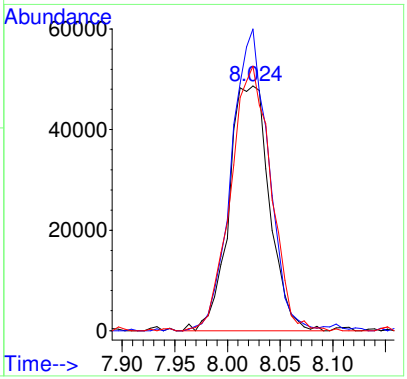


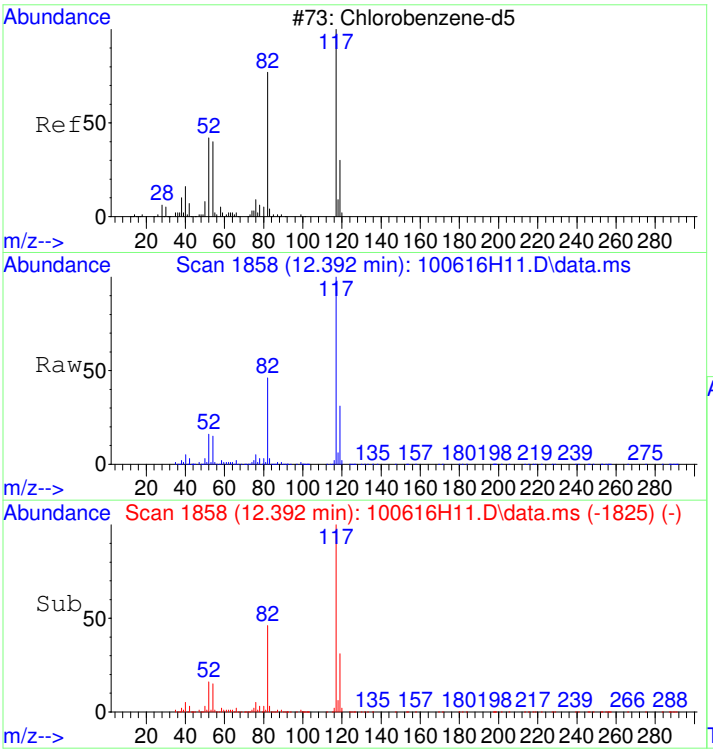


#12
Trichloroethene
Concen: 0.62 ug/L
RT: 8.024 min Scan# 1140
Delta R.T. -0.001 min
Lab File: 100616H11.D
Acq: 6 Oct 2016 2:37 pm

Tgt Ion: 95 Resp: 130356

Ion	Ratio	Lower	Upper
95	100		
130	113.2	93.3	133.3
132	107.4	92.5	132.5

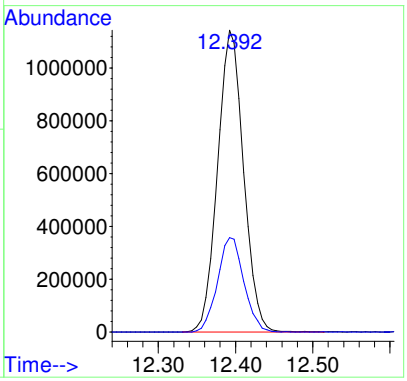


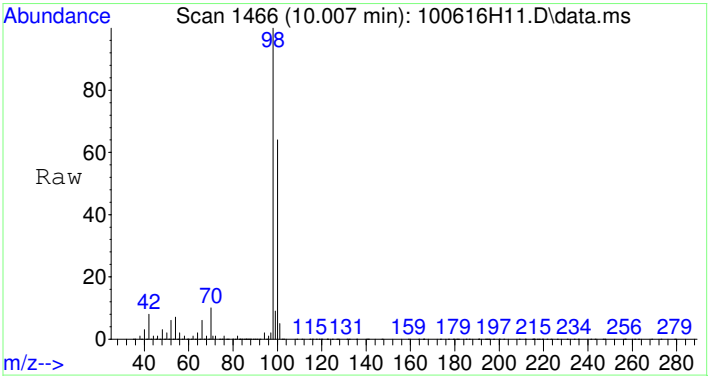


#13
Chlorobenzene-d5
Concen: 5.00 ug/L
RT: 12.392 min Scan# 1858
Delta R.T. 0.000 min
Lab File: 100616H11.D
Acq: 6 Oct 2016 2:37 pm

Tgt Ion:117 Resp: 2671457

Ion	Ratio	Lower	Upper
117	100		
119	31.8	11.9	51.9

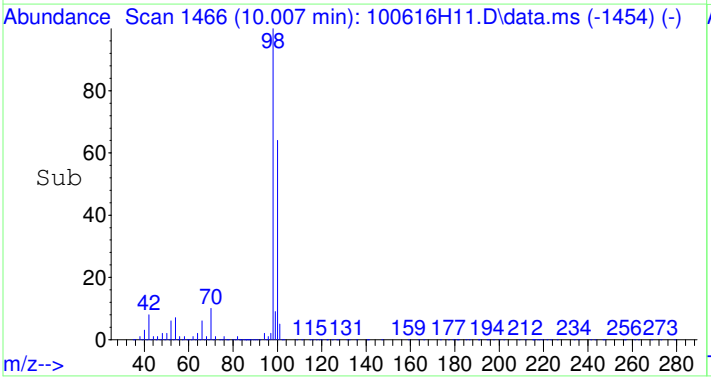


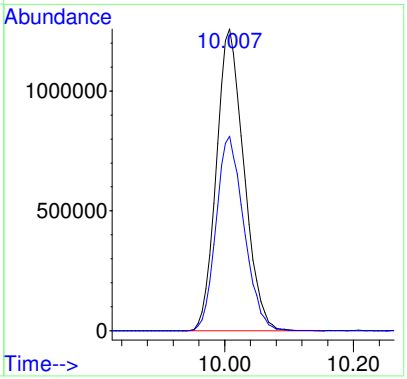


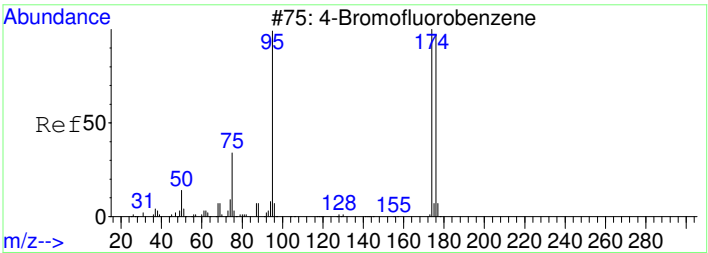
#14
Toluene-d8
Concen: 4.96 ug/L
RT: 10.007 min Scan# 1466
Delta R.T. -0.001 min
Lab File: 100616H11.D
Acq: 6 Oct 2016 2:37 pm

Tgt Ion: 98 Resp: 3742474

Ion	Ratio	Lower	Upper
98	100		
100	65.2	45.1	85.1



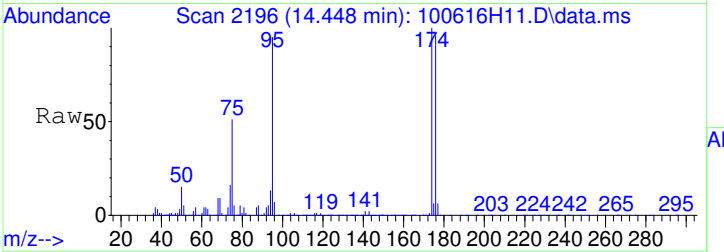


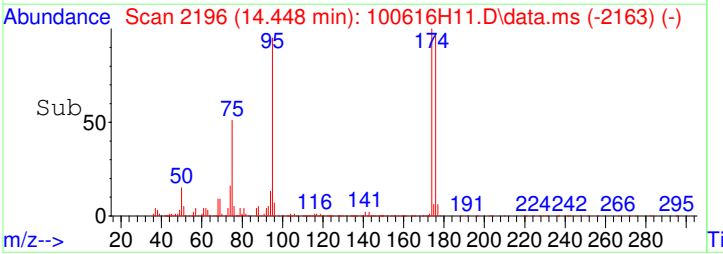


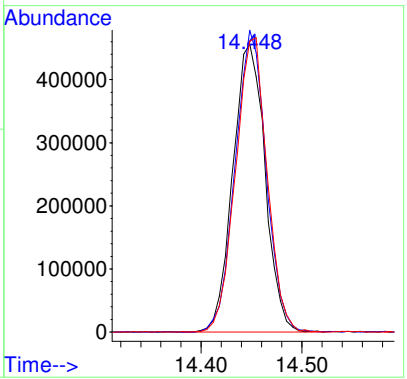
#16
4-Bromofluorobenzene
Concen: 4.90 ug/L
RT: 14.448 min Scan# 2196
Delta R.T. 0.001 min
Lab File: 100616H11.D
Acq: 6 Oct 2016 2:37 pm

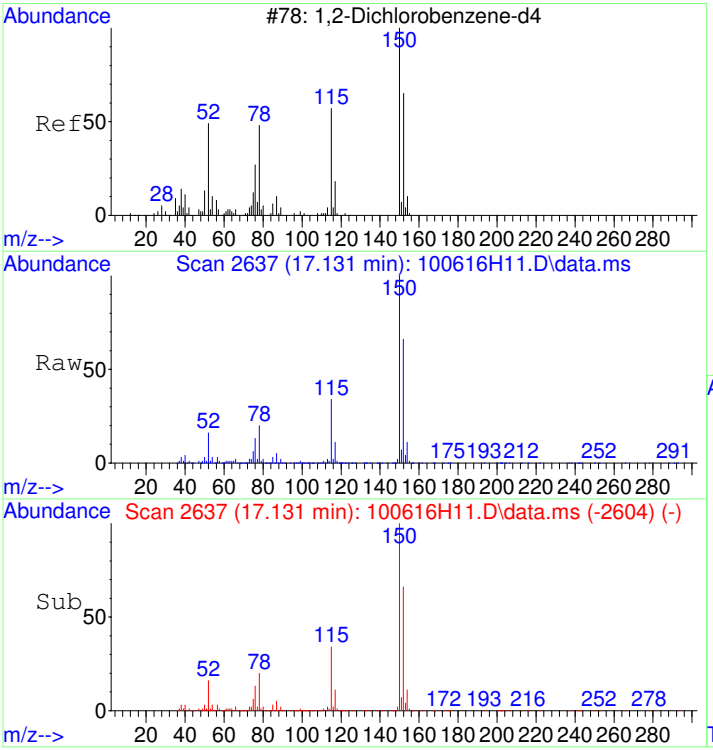
Tgt Ion: 95 Resp: 1012768

Ion	Ratio	Lower	Upper
95	100		
174	100.7	84.0	124.0
176	100.0	79.3	119.3





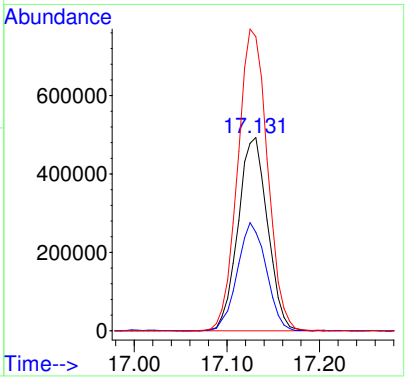




#17
1,2-Dichlorobenzene-d4
Concen: 4.89 ug/L
RT: 17.131 min Scan# 2637
Delta R.T. 0.002 min
Lab File: 100616H11.D
Acq: 6 Oct 2016 2:37 pm

Tgt Ion:152 Resp: 1089916

Ion	Ratio	Lower	Upper
152	100		
115	55.0	35.7	75.7
150	157.6	155.7	195.7



Analytical Standard Record

EPA Region 9 Laboratory

1444014

Description:	Custom VOA IS/SS. Mix	Expires:	10/31/19
Standard Type:	Internal Standard	Prepared:	10/27/14
Solvent:	P&T Methanol	Prepared By:	** Vendor **
Final Volume (mls):	2	Department:	Volatiles
Vials:	1	Last Edit:	10/27/14 11:46 by YNB

RESTEK Cat No. 566692, bar code AU006636, MAN EXP 10/31/19

Analyte	CAS Number	Concentration	Units
Toluene-d8	2037-26-5	10000	ppm
Fluorobenzene	462-06-6	10000	ppm
Dichloromethane-d2	1665-00-5	10000	ppm
Chlorobenzene-d5	3114-55-4	10000	ppm
4-Bromofluorobenzene	460-00-4	10000	ppm
1,2-Dichloroethane-d4	17060-07-0	10000	ppm
1,2-Dichlorobenzene-d4	2199-69-1	10000	ppm

Reviewed By Date

CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 566692 **Lot No.:** A0106500

Description : Custom VOA IS/SS Mix

Custom VOA IS/SS Mix 10,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2019 **Storage:** 0°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Methylene chloride-d2		10,020.0 µg/mL	+/- 58.8030 µg/mL	Gravimetric
	CAS # 1665-00-5	(Lot MKBR5023V)		+/- 113.2723 µg/mL	Unstressed
	Purity 99%			+/- 130.2642 µg/mL	Stressed
2	1,2-Dichloroethane-d4		10,002.0 µg/mL	+/- 58.6973 µg/mL	Gravimetric
	CAS # 17060-07-0	(Lot 14C-191)		+/- 113.0688 µg/mL	Unstressed
	Purity 99%			+/- 130.0302 µg/mL	Stressed
3	Fluorobenzene		10,008.0 µg/mL	+/- 58.7326 µg/mL	Gravimetric
	CAS # 462-06-6	(Lot 1380033)		+/- 113.1366 µg/mL	Unstressed
	Purity 99%			+/- 130.1082 µg/mL	Stressed
4	Toluene-d8		10,036.0 µg/mL	+/- 58.8969 µg/mL	Gravimetric
	CAS # 2037-26-5	(Lot 13I-050)		+/- 113.4532 µg/mL	Unstressed
	Purity 99%			+/- 130.4722 µg/mL	Stressed
5	Chlorobenzene-d5		10,018.0 µg/mL	+/- 58.7912 µg/mL	Gravimetric
	CAS # 3114-55-4	(Lot PR-22736)		+/- 113.2497 µg/mL	Unstressed
	Purity 99%			+/- 130.2382 µg/mL	Stressed
6	1-Bromo-4-fluorobenzene (BFB)		10,028.0 µg/mL	+/- 58.8499 µg/mL	Gravimetric
	CAS # 460-00-4	(Lot 20401KOV)		+/- 113.3627 µg/mL	Unstressed
	Purity 99%			+/- 130.3682 µg/mL	Stressed
7	1,2-Dichlorobenzene-d4		10,018.0 µg/mL	+/- 58.7912 µg/mL	Gravimetric
	CAS # 2199-69-1	(Lot PR-24501/04193DB1)		+/- 113.2497 µg/mL	Unstressed
	Purity 99%			+/- 130.2382 µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

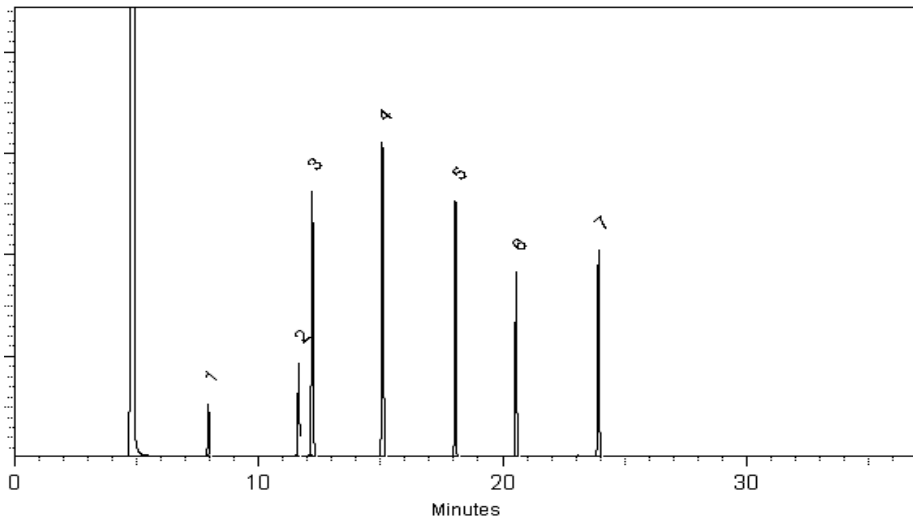
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brandon Reish - Mix Technician

Date Mixed: 09-Oct-2014 **Balance:** 1127510105

Jennifer L. Pollino - QC Analyst

Date Passed: 13-Oct-2014

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Analytical Standard Record

EPA Region 9 Laboratory

1444015

Description:	Custom VOA IS/SS. Mix	Expires:	10/31/19
Standard Type:	Internal Standard	Prepared:	10/27/14
Solvent:	P&T Methanol	Prepared By:	** Vendor **
Final Volume (mls):	2	Department:	Volatiles
Vials:	1	Last Edit:	10/27/14 11:47 by YNB

RESTEK Cat No. 566692, bar code AU006637, MAN EXP 10/31/19

Analyte	CAS Number	Concentration	Units
Toluene-d8	2037-26-5	10000	ppm
Fluorobenzene	462-06-6	10000	ppm
Dichloromethane-d2	1665-00-5	10000	ppm
Chlorobenzene-d5	3114-55-4	10000	ppm
4-Bromofluorobenzene	460-00-4	10000	ppm
1,2-Dichloroethane-d4	17060-07-0	10000	ppm
1,2-Dichlorobenzene-d4	2199-69-1	10000	ppm

Reviewed By Date

CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 566692 **Lot No.:** A0106500

Description : Custom VOA IS/SS Mix

Custom VOA IS/SS Mix 10,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2019 **Storage:** 0°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Methylene chloride-d2		10,020.0 µg/mL	+/- 58.8030 µg/mL	Gravimetric
	CAS # 1665-00-5	(Lot MKBR5023V)		+/- 113.2723 µg/mL	Unstressed
	Purity 99%			+/- 130.2642 µg/mL	Stressed
2	1,2-Dichloroethane-d4		10,002.0 µg/mL	+/- 58.6973 µg/mL	Gravimetric
	CAS # 17060-07-0	(Lot 14C-191)		+/- 113.0688 µg/mL	Unstressed
	Purity 99%			+/- 130.0302 µg/mL	Stressed
3	Fluorobenzene		10,008.0 µg/mL	+/- 58.7326 µg/mL	Gravimetric
	CAS # 462-06-6	(Lot 1380033)		+/- 113.1366 µg/mL	Unstressed
	Purity 99%			+/- 130.1082 µg/mL	Stressed
4	Toluene-d8		10,036.0 µg/mL	+/- 58.8969 µg/mL	Gravimetric
	CAS # 2037-26-5	(Lot 13I-050)		+/- 113.4532 µg/mL	Unstressed
	Purity 99%			+/- 130.4722 µg/mL	Stressed
5	Chlorobenzene-d5		10,018.0 µg/mL	+/- 58.7912 µg/mL	Gravimetric
	CAS # 3114-55-4	(Lot PR-22736)		+/- 113.2497 µg/mL	Unstressed
	Purity 99%			+/- 130.2382 µg/mL	Stressed
6	1-Bromo-4-fluorobenzene (BFB)		10,028.0 µg/mL	+/- 58.8499 µg/mL	Gravimetric
	CAS # 460-00-4	(Lot 20401KOV)		+/- 113.3627 µg/mL	Unstressed
	Purity 99%			+/- 130.3682 µg/mL	Stressed
7	1,2-Dichlorobenzene-d4		10,018.0 µg/mL	+/- 58.7912 µg/mL	Gravimetric
	CAS # 2199-69-1	(Lot PR-24501/04193DB1)		+/- 113.2497 µg/mL	Unstressed
	Purity 99%			+/- 130.2382 µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

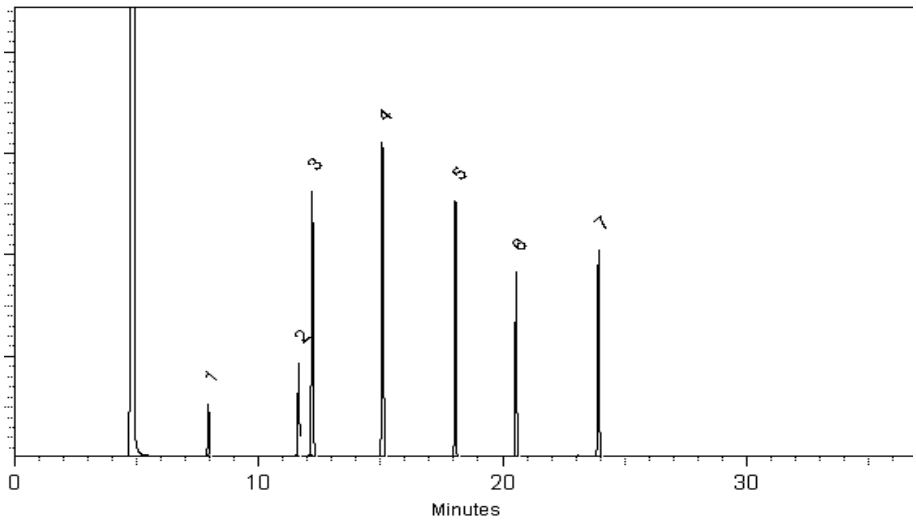
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brandon Reish - Mix Technician

Date Mixed: 09-Oct-2014 **Balance:** 1127510105

Jennifer L. Pollino - QC Analyst

Date Passed: 13-Oct-2014

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Analytical Standard Record

EPA Region 9 Laboratory

1520038

Description:	VOA Calif.Oxygenates Mix, Stock	**Expires:**	10/31/19
Standard Type:	Other Solution	**Prepared:**	05/11/15
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	05/11/15 15:34 by YNB
Vendor:	Restek	**Lot Numbe**	A0106588

RESTEK Cat no. 30465 L, bar code #AU007120

Analyte	CAS Number	Concentration (ppm)
tert-Butyl methyl ether (MTBE)	1634-04-4	2000
tert-Butyl alcohol	75-65-0	10000
tert-Amyl methyl ether	994-05-8	2000
Ethyl tert-butyl ether	637-92-3	2000
Diisopropyl ether	108-20-3	2000

CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30465 **Lot No.:** A0106588

Description : California Oxygenates Mixture #1

California Oxygenates Mixture #1 2000-10000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2019 **Storage:** 0°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	tert-Butanol (TBA)		10,062.0 µg/mL	+/- 58.9152	µg/mL	Gravimetric
	CAS # 75-65-0	(Lot SHBD0362V)		+/- 213.5026	µg/mL	Unstressed
	Purity 99%			+/- 214.4489	µg/mL	Stressed
2	Methyl-tert-butyl ether (MTBE)		2,014.0 µg/mL	+/- 11.8193	µg/mL	Gravimetric
	CAS # 1634-04-4	(Lot SHBF1193V)		+/- 42.7419	µg/mL	Unstressed
	Purity 99%			+/- 42.9313	µg/mL	Stressed
3	Diisopropyl ether (DIPE)		2,014.8 µg/mL	+/- 11.8240	µg/mL	Gravimetric
	CAS # 108-20-3	(Lot SHBB6268V)		+/- 42.7589	µg/mL	Unstressed
	Purity 99%			+/- 42.9483	µg/mL	Stressed
4	Ethyl-tert-butyl ether (ETBE)		2,010.8 µg/mL	+/- 11.8005	µg/mL	Gravimetric
	CAS # 637-92-3	(Lot MKBR1623V)		+/- 42.6740	µg/mL	Unstressed
	Purity 99%			+/- 42.8630	µg/mL	Stressed
5	tert-Amyl methyl ether (TAME)		2,014.8 µg/mL	+/- 11.8240	µg/mL	Gravimetric
	CAS # 994-05-8	(Lot OS1028/4V)		+/- 42.7589	µg/mL	Unstressed
	Purity 99%			+/- 42.9483	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

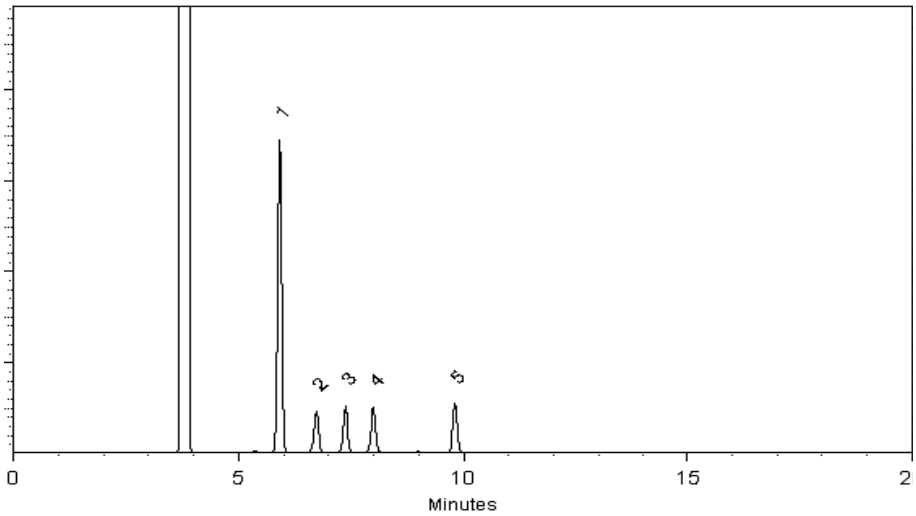
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 15-Oct-2014 **Balance:** 1125113331

Jodi E. Breon - QA Analyst

Date Passed: 17-Oct-2014

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Analytical Standard Record

EPA Region 9 Laboratory

1530071

Description:	VOA Carbon Disulfide, Single Calibration	**Expires:**	12/31/16
Standard Type:	Other Solution	**Prepared:**	07/23/15
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	07/23/15 13:25 by YNB
Vendor:	Supelco	**Lot Numbe**	LC04808

Supelco; Cat #40363 ; bar code #AU007286, MAN.EXP. 12/31/16

Analyte	CAS Number	Concentration (ppm)
Carbon disulfide	75-15-0	5000

Certificate of Analysis

DESCRIPTION: Carbon disulfide

CATALOG NO.: 40363 MFG DATE: Dec-2013

LOT NO.: LC04808 EXPIRATION DATE: Dec-2016

SOLVENT: METHANOL

ANALYTE	CAS NUMBER	PERCENT PURITY(1)	WEIGHT(2) CONCENTRATION	ANALYTICAL(3) CONCENTRATION	STD DEV	SUPELCO LOT NO
CARBON DISULFIDE	75-15-0	99.9 (a)	5001	4915	+/- 106.8	LB94260

(1) Determined by capillary GC-FID, unless otherwise noted.
a) GC; detector FPD

(2) NIST traceable weights are used to verify balance calibration with the preparation of each lot. Concentration of analyte in solution is ug/ml +/- 0.5%, uncertainty based upon balance and Class A volumetric glassware. Weights are corrected for analytes less than 98% pure.

(3) Determined by chromatographic analysis against an independently prepared reference lot. Mean of replicate injections.

Duane Funk

Duane Funk
Quality Manager

Supelco warrants that its products conform to the information contained in this publication. Purchaser must determine the suitability of the product for its particular use. Please see the latest catalog or order invoice and packing slip for additional terms and conditions of sale.

SUPELCO Analytical
595 North Harrison Road
Bellefonte, PA 16823-0048 USA
Phone (814) 359-3441

Analytical Standard Record

EPA Region 9 Laboratory

1545035

Description:	VOC: 1,1,2-Trichlorofluoroethane(Freon 1	**Expires:**	07/31/18
Standard Type:	Other Solution	**Prepared:**	11/03/15
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	11/03/15 13:08 by YNB
Vendor:	Restek	**Lot Numbe**	A0112394

RESTEK Cat#30462, Lot# A0112394; bar code #AU007605

Analyte	CAS Number	Concentration (ppm)
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2000

RESTEK® CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30462 **Lot No.:** A0112394

Description : 1,1,2-Trichlorotrifluoroethane Standard

1,1,2-Trichlorotrifluoroethane Standard 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2018 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,1,2-Trichlorotrifluoroethane (CFC-113) **CAS #** 76-13-1 (Lot 00001135) **Purity** 99%	2,017.3 µg/mL	+/- 11.8388 +/- 22.8052 +/- 26.2262	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

A4007603	1545033
04	34
05	35
06	36
07	37

Analytical Standard Record

EPA Region 9 Laboratory

1545036

Description:	VOC: 1,1,2-Trichlorofluoroethane(Freon 1	**Expires:**	07/31/18
Standard Type:	Other Solution	**Prepared:**	11/03/15
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	11/03/15 13:08 by YNB
Vendor:	Restek	**Lot Numbe**	A0112394

RESTEK Cat#30462, Lot# A0112394; bar code #AU007606

Analyte	CAS Number	Concentration (ppm)
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2000

RESTEK® CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30462 **Lot No.:** A0112394

Description : 1,1,2-Trichlorotrifluoroethane Standard

1,1,2-Trichlorotrifluoroethane Standard 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2018 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,1,2-Trichlorotrifluoroethane (CFC-113) **CAS #** 76-13-1 (Lot 00001135) **Purity** 99%	2,017.3 µg/mL	+/- 11.8388 +/- 22.8052 +/- 26.2262	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

A4007603	1545033
04	34
05	35
06	36
07	37

Analytical Standard Record

EPA Region 9 Laboratory

1552038

Description:	VOA BFB TUNING CPD	**Expires:**	08/31/20
Standard Type:	Other Solution	**Prepared:**	08/31/15
Solvent:	Solvent Lot #	**Prepared By:**	** Vendor **
Final Volume (mls):	1	**Department:**	Volatiles
Vials:	1	**Last Edit:**	12/23/15 11:55 by EM
Vendor:	Restek	**Lot Numbe**	A0111332

RESTEK Cat No. 30003, , bar code# AU007639

Analyte	CAS Number	Concentration (ppm)
4-Bromofluorobenzene	460-00-4	5000

RESTEK® CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30003 **Lot No.:** A0111332

Description : VOA Tuning Compound Mix

VOA Tuning Compound Mix 5,000µg/mL, P&T Methanol, 1mL/ampul

1552038-41
AU007638-42

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1-Bromo-4-fluorobenzene (BFB) **CAS #** 460-00-4 (Lot 20401KOV) **Purity** 99%	5,012.0 µg/mL	+/- 29.4132	µg/mL	Gravimetric
			+/- 56.6587	µg/mL	Unstressed
			+/- 65.1581	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30258 **Lot No.:** A0112955

Description : Carbon Disulfide Standard

Carbon Disulfide Standard 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Carbon disulfide	2,007.0 µg/mL	+/-	11.9212	µg/mL	Gravimetric
	CAS # 75-15-0 (Lot C30Y997)		+/-	22.7633	µg/mL	Unstressed
	Purity 98%		+/-	26.1571	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

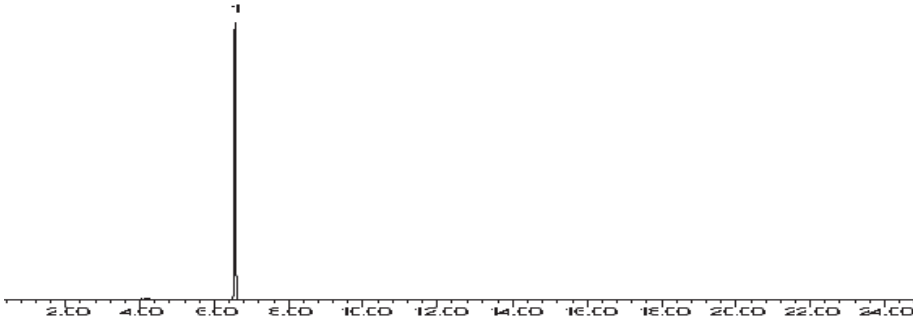
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brandon Reish - Mix Technician

Date Mixed: 31-Jul-2015 **Balance:** 1125113331

Diane Shaffer - QA Analyst

Date Passed: 04-Aug-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Analytical Standard Record

EPA Region 9 Laboratory

1607060

Description:	VOA Carbon Disulfide , Single Calibratio	**Expires:**	02/07/20
Standard Type:	Other Solution	**Prepared:**	02/09/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	1	**Department:**	Volatiles
Vials:	1	**Last Edit:**	02/09/16 13:58 by YNB
Vendor:	Restek	**Lot Numbe**	A0112955

Restek Cat# 30258; Lot# A0112955 bar code AU007914

Analyte	CAS Number	Concentration (ppm)
Carbon disulfide	75-15-0	2000

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30258 **Lot No.:** A0112955

Description : Carbon Disulfide Standard

Carbon Disulfide Standard 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Carbon disulfide	2,007.0 µg/mL	+/- 11.9212	µg/mL	Gravimetric
	CAS # 75-15-0 (Lot C30Y997)		+/- 22.7633	µg/mL	Unstressed
	Purity 98%		+/- 26.1571	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

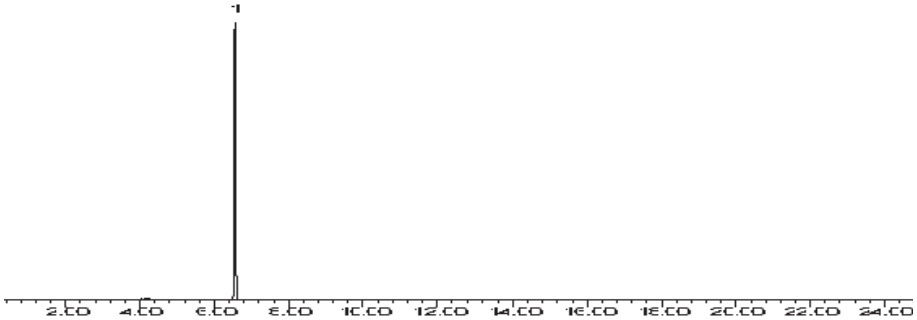
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brandon Reish - Mix Technician

Date Mixed: 31-Jul-2015 **Balance:** 1125113331

Diane Shaffer - QA Analyst

Date Passed: 04-Aug-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Analytical Standard Record

EPA Region 9 Laboratory

1607061

Description:	VOA Carbon Disulfide , Single Calibratio	**Expires:**	07/31/20
Standard Type:	Other Solution	**Prepared:**	02/09/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	1	**Department:**	Volatiles
Vials:	1	**Last Edit:**	02/09/16 13:58 by YNB
Vendor:	Restek	**Lot Numbe**	A0112955

Restek Cat# 30258; Lot# A0112955 bar code AU007915

Analyte	CAS Number	Concentration (ppm)
Carbon disulfide	75-15-0	2000

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30042 **Lot No.:** A0115510

Description : 502.2 Calibration Mix #1

502.2 Calibration Mix #1 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2022 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Dichlorodifluoromethane (CFC-12)	2,001.5 µg/mL	+/- 13.4132	µg/mL	Gravimetric
	CAS # 75-71-8 (Lot Q167-08)		+/- 112.4208	µg/mL	Unstressed
	Purity 99%		+/- 115.0421	µg/mL	Stressed
2	Chloromethane (methyl chloride)	2,000.1 µg/mL	+/- 12.8932	µg/mL	Gravimetric
	CAS # 74-87-3 (Lot SHBF7067V)		+/- 112.2818	µg/mL	Unstressed
	Purity 99%		+/- 114.9027	µg/mL	Stressed
3	Vinyl chloride	1,987.3 µg/mL	+/- 15.8711	µg/mL	Gravimetric
	CAS # 75-01-4 (Lot 25LPST)		+/- 111.9532	µg/mL	Unstressed
	Purity 99%		+/- 114.5483	µg/mL	Stressed
4	Bromomethane (methyl bromide)	2,012.7 µg/mL	+/- 14.8170	µg/mL	Gravimetric
	CAS # 74-83-9 (Lot 101604)		+/- 113.2138	µg/mL	Unstressed
	Purity 99%		+/- 115.8460	µg/mL	Stressed
5	Chloroethane (ethyl chloride)	1,990.5 µg/mL	+/- 12.7615	µg/mL	Gravimetric
	CAS # 75-00-3 (Lot SHBD1717V)		+/- 111.7354	µg/mL	Unstressed
	Purity 99%		+/- 114.3439	µg/mL	Stressed
6	Trichlorofluoromethane (CFC-11)	2,002.6 µg/mL	+/- 13.6846	µg/mL	Gravimetric
	CAS # 75-69-4 (Lot SHBF6387V)		+/- 112.5160	µg/mL	Unstressed
	Purity 99%		+/- 115.1381	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

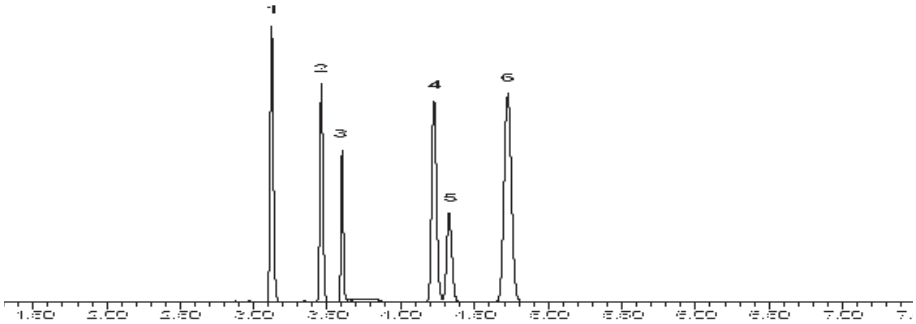
Carrier Gas:
helium-constant flow 2.0 mL/min.

Temp. Program:
40°C (hold 6 min.) to 100°C
@ 6°C/min.

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Rebecca Sauer

Date Mixed: 18-Nov-2015 **Balance:** 1125113331

Diane Shaffer

Diane Shaffer - QA Analyst

Date Passed: 24-Nov-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Analytical Standard Record

EPA Region 9 Laboratory

1607066

Description:	VOA 502.2 Calibration Mix # 1, Stock	**Expires:**	07/31/22
Standard Type:	Other Solution	**Prepared:**	02/09/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	1	**Department:**	Volatiles
Vials:	1	**Last Edit:**	02/09/16 14:07 by YNB
Vendor:	Restek	**Lot Numbe**	A0115510

RESTEK Cat#30042 Lot # A0115510, bar code AU007925

Analyte	CAS Number	Concentration (ppm)
Vinyl chloride	75-01-4	2000
Trichlorofluoromethane	75-69-4	2000
Dichlorodifluoromethane	75-71-8	2000
Chloromethane	74-87-3	2000
Chloroethane	75-00-3	2000
Bromomethane	74-83-9	2000

Analytical Standard Record

EPA Region 9 Laboratory

1615040

Description:	VOA Calibration MIX #1 stock	**Expires:**	11/30/18
Standard Type:	Other Solution	**Prepared:**	04/04/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	04/04/16 15:25 by YNB
Vendor:	Restek	**Lot Numbe**	A0113616

RESTEK Cat # 30006 , bar code AU008053

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	5000
4-Methyl-2-pentanone (MIBK)	108-10-1	5000
2-Hexanone	591-78-6	5000
2-Butanone (MEK)	78-93-3	5000

RESTEK® CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30006 **Lot No.:** A0113616

Description : VOA Calibration Mix #1

VOA Calibration Mix #1 5,000µg/mL, P&T Methanol/Water(90:10), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2018 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Acetone **CAS #** 67-64-1 **Purity** 99%	(Lot 07196AK)	5,006.4 µg/mL	+/- 29.1076 +/- 266.4296 +/- 266.7234	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	2-Butanone (MEK) **CAS #** 78-93-3 **Purity** 99%	(Lot BCBK4358V)	5,001.5 µg/mL	+/- 29.0792 +/- 266.1688 +/- 266.4623	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	4-Methyl-2-pentanone (MIBK) **CAS #** 108-10-1 **Purity** 99%	(Lot SHBF9556V)	5,008.3 µg/mL	+/- 29.1187 +/- 266.5307 +/- 266.8246	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	2-Hexanone **CAS #** 591-78-6 **Purity** 99%	(Lot MKBN7380V)	5,007.1 µg/mL	+/- 29.1117 +/- 266.4668 +/- 266.7607	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

AU008052	1615039
53	40
54	41
55	42
56	43

Analytical Standard Record

EPA Region 9 Laboratory

1615041

Description:	VOA Calibration MIX #1 stock	**Expires:**	11/30/18
Standard Type:	Other Solution	**Prepared:**	04/04/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	04/04/16 15:25 by YNB
Vendor:	Restek	**Lot Numbe**	A0113616

RESTEK Cat # 30006 , bar code AU008054

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	5000
4-Methyl-2-pentanone (MIBK)	108-10-1	5000
2-Hexanone	591-78-6	5000
2-Butanone (MEK)	78-93-3	5000

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30006 **Lot No.:** A0113616

Description : VOA Calibration Mix #1

VOA Calibration Mix #1 5,000µg/mL, P&T Methanol/Water(90:10), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2018 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Acetone **CAS #** 67-64-1 **Purity** 99%	(Lot 07196AK)	5,006.4 µg/mL	+/- 29.1076 µg/mL +/- 266.4296 µg/mL +/- 266.7234 µg/mL		Gravimetric Unstressed Stressed
2	2-Butanone (MEK) **CAS #** 78-93-3 **Purity** 99%	(Lot BCBK4358V)	5,001.5 µg/mL	+/- 29.0792 µg/mL +/- 266.1688 µg/mL +/- 266.4623 µg/mL		Gravimetric Unstressed Stressed
3	4-Methyl-2-pentanone (MIBK) **CAS #** 108-10-1 **Purity** 99%	(Lot SHBF9556V)	5,008.3 µg/mL	+/- 29.1187 µg/mL +/- 266.5307 µg/mL +/- 266.8246 µg/mL		Gravimetric Unstressed Stressed
4	2-Hexanone **CAS #** 591-78-6 **Purity** 99%	(Lot MKBN7380V)	5,007.1 µg/mL	+/- 29.1117 µg/mL +/- 266.4668 µg/mL +/- 266.7607 µg/mL		Gravimetric Unstressed Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

AU008052	1615039
53	40
54	41
55	42
56	43

Analytical Standard Record

EPA Region 9 Laboratory

1615134

Description:	VOA Freon 113, stock	**Expires:**	11/30/18
Standard Type:	Reference Material	**Prepared:**	11/16/15
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	1	**Department:**	Volatiles
Vials:	1	**Last Edit:**	04/08/16 12:27 by EM
Vendor:	Supelco	**Lot Numbe**	XA17184V

Supelco, CAT#CRM47944, bar code #AU008057

Analyte	CAS Number	Concentration (ppm)	SRM Control Limits
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2000	0-200

TraceCERT®
Traceable Certified Reference Materials

SUPELCO
Solutions within.™
595 North Harrison Road · Bellefonte, PA
16823-0048 USA · Phone(814)359-3441

Certificate of Analysis

Description: Freon 113, 1x1ml, 2000µg/ml in methanol

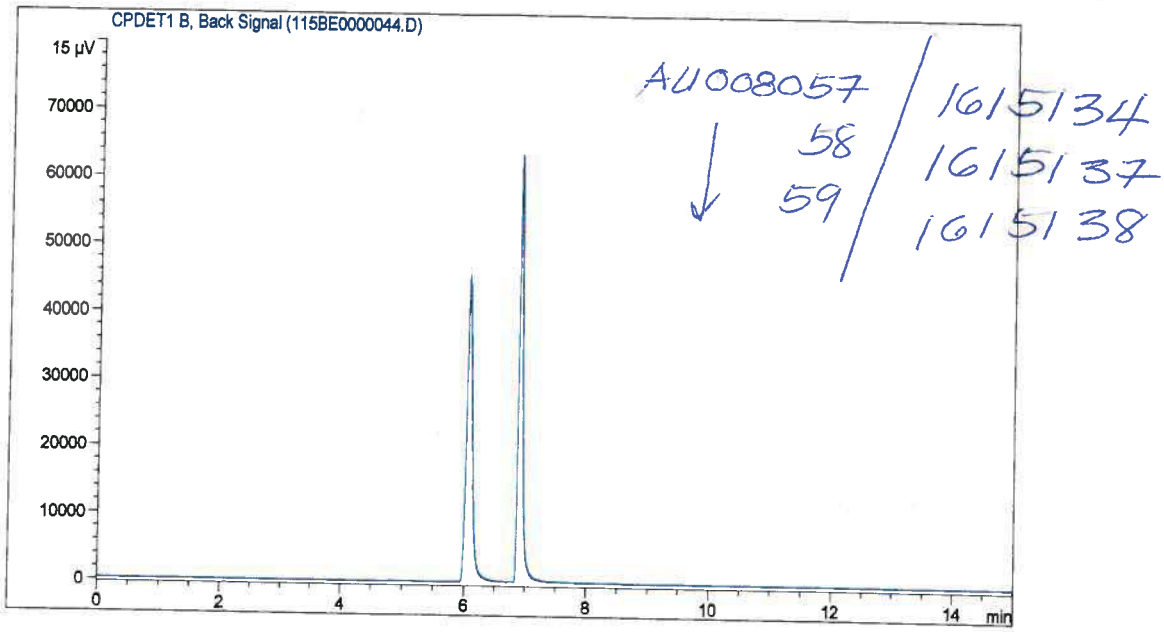
Part Number: CRM47944

Lot Number: XA17184V

Expiration Date: November 2018

Storage: Refrigerate

Analytical Method Parameters:
Column: VOCOL 105m x 0.53mm x 3.0µm df
40°C to 200°C at 8°C/min
Detector: HALL, 1000°C
Injection Volume: 1 µL



Elution	Analyte	Lot Number	CAS Number	Chromatographic Purity %	Certified Gravimetric Conc. µg/ml	Expanded Uncertainty µg/ml	Analytical Conc. µg/ml
1.	Freon 113	LA33286	76-13-1	99.9	1998.0	±220	1938.8
	Internal Standard	N/A	N/A	N/A	N/A	N/A	N/A

ANAB ACCREDITED TESTING LABORATORY
Cert# AT-1607

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER
Cert# AR-1606

Produced in double accredited laboratory fulfilling
ISO/IEC 17025 and
ISO Guide 34

SIGMA-ALDRICH®

Analytical Standard Record

EPA Region 9 Laboratory

1615140

Description:	VOA VOC Mix 6, Stock	**Expires:**	02/28/17
Standard Type:	Other Solution	**Prepared:**	02/01/15
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	1.5	**Department:**	Volatiles
Vials:	1	**Last Edit:**	04/08/16 12:40 by EM
Vendor:	Supelco	**Lot Numbe**	LC16135V

Supelco, Cat# 48799-U, Bar Code AU008061

Analyte	CAS Number	Concentration (ppm)
Vinyl chloride	75-01-4	2000
Trichlorofluoromethane	75-69-4	2000
Dichlorodifluoromethane	75-71-8	2000
Chloromethane	74-87-3	2000
Chloroethane	75-00-3	2000
Bromomethane	74-83-9	2000

Certificate of Analysis

DESCRIPTION: Volatile Organic Compounds Mix 6

CATALOG NO.: 48799-U

MFG DATE: Nov-2015

LOT NO.: LC16135V

EXPIRATION DATE: Feb-2017

SOLVENT: METHANOL

ANALYTE (1)	CAS NUMBER	PERCENT PURITY(2)	WEIGHT(3)	ANALYTICAL(4) CONCENTRATION		STD DEV	SUPELCO LOT NO
BROMOMETHANE	74-83-9	99.9 (a)	2000	2030	+/-	18.3	LB22203
CHLOROETHANE	75-00-3	99.9 (a)	2000	2029	+/-	5.4	LB55667
CHLOROMETHANE	74-87-3	99.9 (a)	2000	2063	+/-	31.5	LB64986
DICHLORODIFLUOROMETHANE	75-71-8	99.9 (a)	2000	1867	+/-	60.6	LB68837
TRICHLOROFLUOROMETHANE	75-69-4	99.9 (a)	2000	2086	+/-	34.5	LA91320
VINYL CHLORIDE	75-01-4	99.9 (a)	2000	2031	+/-	17.1	LB66643

AU008060 — 1615139
↓ 61 — 1615140

(1) Listed in alphabetical order.
(2) Determined by capillary GC-FID, unless otherwise noted.
a) GC; detector HALL
(3) NIST traceable weights are used to verify balance calibration with the preparation of each lot. Concentration of analyte in solution is ug/ml +/- 0.5%, based upon balance and Class A volumetric glassware tolerances. Weights are corrected for analytes less than 98% pure.
(4) Determined by chromatographic analysis against an independently prepared reference lot. Mean of replicate injections.

Duane Funk

Duane Funk
Quality Manager

Supelco warrants that its products conform to the information contained in this publication. Purchaser must determine the suitability of the product for its particular use. Please see the latest catalog or order invoice and packing slip for additional terms and conditions of sale.
Supelco is a Sigma-Aldrich Company.

SUPELCO
Solutions within.
595 North Harrison Road
Bellefonte, PA 16823-0048 USA
Phone (814) 359-3441

Analytical Standard Record

EPA Region 9 Laboratory

1618013

Description:	VOA 502.2 CAL 2000 MEGA MIX, Stock	**Expires:**	12/31/17
Standard Type:	Other Solution	**Prepared:**	04/25/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	1	**Department:**	Volatiles
Vials:	1	**Last Edit:**	04/25/16 09:35 by YNB
Vendor:	Restek	**Lot Numbe**	A0115992

RESTEK, catalog # 30431, Barcode AU008076

Analyte	CAS Number	Concentration (ppm)
1,2-Dibromoethane (EDB)	106-93-4	2000
Bromobenzene	108-86-1	2000
Benzene	71-43-2	2000
4-Chlorotoluene	106-43-4	2000
2-Chlorotoluene	95-49-8	2000
2,2-Dichloropropane	594-20-7	2000
1,4-Dichlorobenzene	106-46-7	2000
1,3-Dichloropropane	142-28-9	2000
1,3-Dichlorobenzene	541-73-1	2000
1,3,5-Trimethylbenzene	108-67-8	2000
1,2-Dichloropropane	78-87-5	2000
1,1,1,2-Tetrachloroethane	630-20-6	2000
1,2-Dichlorobenzene	95-50-1	2000
Bromoform	75-25-2	2000
1,2-Dibromo-3-chloropropane	96-12-8	2000
1,2,4-Trimethylbenzene	95-63-6	2000
1,2,4-Trichlorobenzene	120-82-1	2000
1,2,3-Trichloropropane	96-18-4	2000
1,2,3-Trichlorobenzene	87-61-6	2000
1,1-Dichloropropene	563-58-6	2000
1,1-Dichloroethene	75-35-4	2000
1,1-Dichloroethane	75-34-3	2000
1,1,2-Trichloroethane	79-00-5	2000
1,1,2,2-Tetrachloroethane	79-34-5	2000
1,1,1-Trichloroethane	71-55-6	2000
1,2-Dichloroethane	107-06-2	2000
Hexachlorobutadiene	87-68-3	2000
trans-1,3-Dichloropropene	10061-02-6	2000
trans-1,2-Dichloroethene	156-60-5	2000
Toluene	108-88-3	2000

Analytical Standard Record

EPA Region 9 Laboratory

1618013

Tetrachloroethene	127-18-4	2000
tert-Butylbenzene	98-06-6	2000
Styrene	100-42-5	2000
sec-Butylbenzene	135-98-8	2000
Propylbenzene	103-65-1	2000
p-Isopropyltoluene	99-87-6	2000
o-Xylene	95-47-6	2000
Naphthalene	91-20-3	2000
Bromochloromethane	74-97-5	2000
Isopropylbenzene	98-82-8	2000
Bromodichloromethane	75-27-4	2000
Ethylbenzene	100-41-4	2000
Dichloromethane	75-09-2	2000
Dibromomethane	74-95-3	2000
cis-1,3-Dichloropropene	10061-01-5	2000
cis-1,2-Dichloroethene	156-59-2	2000
Chloroform	67-66-3	2000
Chlorodibromomethane	124-48-1	2000
Chlorobenzene	108-90-7	2000
Carbon tetrachloride	56-23-5	2000
Butylbenzene	104-51-8	2000
Trichloroethene	79-01-6	2000
m&p-Xylene	179601-23-1	4000

CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30431 **Lot No.:** A0115992

Description : 502.2 CAL2000 Mega-Mix

502.2 CAL2000 Mega-Mix 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : December 31, 2017 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,1-dichloroethene		2,002.3 µg/mL	+/- 15.3746	µg/mL	Gravimetric
	CAS # 75-35-4	(Lot SHBD6170V)		+/- 90.7413	µg/mL	Unstressed
	Purity 99%			+/- 100.5728	µg/mL	Stressed
2	Methylene chloride (dichloromethane)		2,001.1 µg/mL	+/- 15.3655	µg/mL	Gravimetric
	CAS # 75-09-2	(Lot SHBF9870V)		+/- 90.6879	µg/mL	Unstressed
	Purity 99%			+/- 100.5136	µg/mL	Stressed
3	trans-1,2-Dichloroethene		2,000.4 µg/mL	+/- 15.3603	µg/mL	Gravimetric
	CAS # 156-60-5	(Lot MKBH9850V)		+/- 90.6570	µg/mL	Unstressed
	Purity 99%			+/- 100.4794	µg/mL	Stressed
4	1,1-Dichloroethane		2,000.6 µg/mL	+/- 15.3620	µg/mL	Gravimetric
	CAS # 75-34-3	(Lot 00008621)		+/- 90.6670	µg/mL	Unstressed
	Purity 99%			+/- 100.4904	µg/mL	Stressed
5	2,2-Dichloropropane		2,007.4 µg/mL	+/- 15.4144	µg/mL	Gravimetric
	CAS # 594-20-7	(Lot BCBH9246V)		+/- 90.9738	µg/mL	Unstressed
	Purity 98%			+/- 100.8304	µg/mL	Stressed
6	cis-1,2-Dichloroethene		2,009.7 µg/mL	+/- 15.4322	µg/mL	Gravimetric
	CAS # 156-59-2	(Lot MKBQ2835V)		+/- 91.0788	µg/mL	Unstressed
	Purity 99%			+/- 100.9469	µg/mL	Stressed
7	chloroform		2,001.0 µg/mL	+/- 15.3648	µg/mL	Gravimetric
	CAS # 67-66-3	(Lot SHBD7581V)		+/- 90.6835	µg/mL	Unstressed
	Purity 98%			+/- 100.5087	µg/mL	Stressed

8	Bromochloromethane			2,002.7	µg/mL	+/-	15.3779	µg/mL	Gravimetric
	CAS #	74-97-5	(Lot 00004559)			+/-	90.7582	µg/mL	Unstressed
	Purity	99%				+/-	100.5915	µg/mL	Stressed
9	1,1,1-trichloroethane			2,001.9	µg/mL	+/-	15.3715	µg/mL	Gravimetric
	CAS #	71-55-6	(Lot B14QT1124)			+/-	90.7232	µg/mL	Unstressed
	Purity	99%				+/-	100.5527	µg/mL	Stressed
10	1,1-Dichloropropene			2,000.2	µg/mL	+/-	15.3587	µg/mL	Gravimetric
	CAS #	563-58-6	(Lot PR09161302)			+/-	90.6451	µg/mL	Unstressed
	Purity	98%				+/-	100.4662	µg/mL	Stressed
11	carbon tetrachloride			2,004.2	µg/mL	+/-	15.3893	µg/mL	Gravimetric
	CAS #	56-23-5	(Lot SHBC1410V)			+/-	90.8283	µg/mL	Unstressed
	Purity	99%				+/-	100.6693	µg/mL	Stressed
12	1,2-Dichloroethane			2,001.3	µg/mL	+/-	15.3674	µg/mL	Gravimetric
	CAS #	107-06-2	(Lot SHBC6595V)			+/-	90.6987	µg/mL	Unstressed
	Purity	99%				+/-	100.5256	µg/mL	Stressed
13	Benzene			2,000.2	µg/mL	+/-	15.3593	µg/mL	Gravimetric
	CAS #	71-43-2	(Lot SHBF0424V)			+/-	90.6483	µg/mL	Unstressed
	Purity	99%				+/-	100.4697	µg/mL	Stressed
14	Trichloroethene			2,011.8	µg/mL	+/-	15.4480	µg/mL	Gravimetric
	CAS #	79-01-6	(Lot SHBF0943V)			+/-	91.1746	µg/mL	Unstressed
	Purity	99%				+/-	101.0530	µg/mL	Stressed
15	1,2-Dichloropropane			2,003.5	µg/mL	+/-	15.3837	µg/mL	Gravimetric
	CAS #	78-87-5	(Lot 01113D0V)			+/-	90.7948	µg/mL	Unstressed
	Purity	99%				+/-	100.6321	µg/mL	Stressed
16	bromodichloromethane			2,000.5	µg/mL	+/-	15.3609	µg/mL	Gravimetric
	CAS #	75-27-4	(Lot 150916JLM)			+/-	90.6607	µg/mL	Unstressed
	Purity	99%				+/-	100.4834	µg/mL	Stressed
17	Dibromomethane			2,001.1	µg/mL	+/-	15.3658	µg/mL	Gravimetric
	CAS #	74-95-3	(Lot 10169264)			+/-	90.6868	µg/mL	Unstressed
	Purity	99%				+/-	100.5124	µg/mL	Stressed
18	cis-1,3-Dichloropropene			2,005.0	µg/mL	+/-	15.3958	µg/mL	Gravimetric
	CAS #	10061-01-5	(Lot 22119)			+/-	90.8664	µg/mL	Unstressed
	Purity	99%				+/-	100.7115	µg/mL	Stressed
19	Toluene			2,001.2	µg/mL	+/-	15.3668	µg/mL	Gravimetric
	CAS #	108-88-3	(Lot SHBF7904V)			+/-	90.6925	µg/mL	Unstressed
	Purity	99%				+/-	100.5186	µg/mL	Stressed
20	trans-1,3-Dichloropropene			2,002.8	µg/mL	+/-	15.3787	µg/mL	Gravimetric
	CAS #	10061-02-6	(Lot C579534)			+/-	90.7658	µg/mL	Unstressed
	Purity	99%				+/-	100.5999	µg/mL	Stressed
21	1,1,2-Trichloroethane			2,005.0	µg/mL	+/-	15.3953	µg/mL	Gravimetric
	CAS #	79-00-5	(Lot FGB01)			+/-	90.8637	µg/mL	Unstressed
	Purity	99%				+/-	100.7084	µg/mL	Stressed
22	1,3-Dichloropropane			2,001.0	µg/mL	+/-	15.3654	µg/mL	Gravimetric
	CAS #	142-28-9	(Lot BCBG2162V)			+/-	90.6845	µg/mL	Unstressed
	Purity	99%				+/-	100.5099	µg/mL	Stressed
23	Tetrachloroethene			2,004.5	µg/mL	+/-	15.3916	µg/mL	Gravimetric
	CAS #	127-18-4	(Lot SHBD9374V)			+/-	90.8419	µg/mL	Unstressed
	Purity	99%				+/-	100.6843	µg/mL	Stressed

24	dibromochloromethane			2,000.7	µg/mL	+/-	15.3621	µg/mL	Gravimetric
	CAS # 124-48-1	(Lot 150915JLM)				+/-	90.6675	µg/mL	Unstressed
	Purity 98%					+/-	100.4910	µg/mL	Stressed
25	1,2-Dibromoethane (EDB)			2,000.9	µg/mL	+/-	15.3645	µg/mL	Gravimetric
	CAS # 106-93-4	(Lot BCBH3877V)				+/-	90.6789	µg/mL	Unstressed
	Purity 99%					+/-	100.5036	µg/mL	Stressed
26	Chlorobenzene			2,001.3	µg/mL	+/-	15.3669	µg/mL	Gravimetric
	CAS # 108-90-7	(Lot SHBF0505V)				+/-	90.6960	µg/mL	Unstressed
	Purity 99%					+/-	100.5226	µg/mL	Stressed
27	1,1,1,2-Tetrachloroethane			2,001.8	µg/mL	+/-	15.3714	µg/mL	Gravimetric
	CAS # 630-20-6	(Lot MKBF2316V)				+/-	90.7197	µg/mL	Unstressed
	Purity 99%					+/-	100.5488	µg/mL	Stressed
28	Ethylbenzene			2,002.0	µg/mL	+/-	15.3725	µg/mL	Gravimetric
	CAS # 100-41-4	(Lot SHBD6720V)				+/-	90.7265	µg/mL	Unstressed
	Purity 99%					+/-	100.5563	µg/mL	Stressed
29	m-Xylene			2,000.5	µg/mL	+/-	15.3616	µg/mL	Gravimetric
	CAS # 108-38-3	(Lot SHBF1720V)				+/-	90.6619	µg/mL	Unstressed
	Purity 99%					+/-	100.4847	µg/mL	Stressed
30	p-Xylene			2,000.5	µg/mL	+/-	15.3614	µg/mL	Gravimetric
	CAS # 106-42-3	(Lot SHBF3427V)				+/-	90.6607	µg/mL	Unstressed
	Purity 99%					+/-	100.4835	µg/mL	Stressed
31	o-Xylene			2,000.3	µg/mL	+/-	15.3599	µg/mL	Gravimetric
	CAS # 95-47-6	(Lot SHBC8668V)				+/-	90.6518	µg/mL	Unstressed
	Purity 98%					+/-	100.4736	µg/mL	Stressed
32	Styrene			2,000.3	µg/mL	+/-	15.3597	µg/mL	Gravimetric
	CAS # 100-42-5	(Lot 10182421)				+/-	90.6505	µg/mL	Unstressed
	Purity 99%					+/-	100.4722	µg/mL	Stressed
33	Isopropylbenzene (cumene)			2,000.1	µg/mL	+/-	15.3585	µg/mL	Gravimetric
	CAS # 98-82-8	(Lot 10169400)				+/-	90.6437	µg/mL	Unstressed
	Purity 99%					+/-	100.4647	µg/mL	Stressed
34	bromoform			2,000.8	µg/mL	+/-	15.3634	µg/mL	Gravimetric
	CAS # 75-25-2	(Lot SHBC3410V)				+/-	90.6752	µg/mL	Unstressed
	Purity 99%					+/-	100.4995	µg/mL	Stressed
35	1,1,2,2-Tetrachloroethane			2,001.9	µg/mL	+/-	15.3717	µg/mL	Gravimetric
	CAS # 79-34-5	(Lot CFA4D)				+/-	90.7241	µg/mL	Unstressed
	Purity 99%					+/-	100.5537	µg/mL	Stressed
36	1,2,3-Trichloropropane			2,000.8	µg/mL	+/-	15.3637	µg/mL	Gravimetric
	CAS # 96-18-4	(Lot 1428739V)				+/-	90.6743	µg/mL	Unstressed
	Purity 99%					+/-	100.4986	µg/mL	Stressed
37	n-Propylbenzene			2,000.3	µg/mL	+/-	15.3599	µg/mL	Gravimetric
	CAS # 103-65-1	(Lot MKBQ8049V)				+/-	90.6517	µg/mL	Unstressed
	Purity 99%					+/-	100.4734	µg/mL	Stressed
38	Bromobenzene			2,001.3	µg/mL	+/-	15.3673	µg/mL	Gravimetric
	CAS # 108-86-1	(Lot MKBD4032V)				+/-	90.6959	µg/mL	Unstressed
	Purity 99%					+/-	100.5224	µg/mL	Stressed
39	1,3,5-Trimethylbenzene			2,000.6	µg/mL	+/-	15.3624	µg/mL	Gravimetric
	CAS # 108-67-8	(Lot BCBJ3305V)				+/-	90.6664	µg/mL	Unstressed
	Purity 99%					+/-	100.4898	µg/mL	Stressed

40	2-Chlorotoluene			2,000.9	µg/mL	+/-	15.3641	µg/mL	Gravimetric
	CAS #	95-49-8	(Lot MKBH8892V)			+/-	90.6766	µg/mL	Unstressed
	Purity	99%				+/-	100.5011	µg/mL	Stressed
41	4-Chlorotoluene			2,000.5	µg/mL	+/-	15.3616	µg/mL	Gravimetric
	CAS #	106-43-4	(Lot MKBB7205V)			+/-	90.6619	µg/mL	Unstressed
	Purity	99%				+/-	100.4847	µg/mL	Stressed
42	1,2,4-Trimethylbenzene			2,000.4	µg/mL	+/-	15.3608	µg/mL	Gravimetric
	CAS #	95-63-6	(Lot MKBJ6229V)			+/-	90.6573	µg/mL	Unstressed
	Purity	98%				+/-	100.4797	µg/mL	Stressed
43	sec-Butylbenzene			2,000.1	µg/mL	+/-	15.3585	µg/mL	Gravimetric
	CAS #	135-98-8	(Lot MKBK3151V)			+/-	90.6437	µg/mL	Unstressed
	Purity	99%				+/-	100.4647	µg/mL	Stressed
44	p-Isopropyltoluene (p-Cymene)			2,000.7	µg/mL	+/-	15.3627	µg/mL	Gravimetric
	CAS #	99-87-6	(Lot MKBK4439V)			+/-	90.6687	µg/mL	Unstressed
	Purity	99%				+/-	100.4923	µg/mL	Stressed
45	1,3-Dichlorobenzene			2,002.7	µg/mL	+/-	15.3777	µg/mL	Gravimetric
	CAS #	541-73-1	(Lot BCBC1891V)			+/-	90.7595	µg/mL	Unstressed
	Purity	99%				+/-	100.5929	µg/mL	Stressed
46	1,4-Dichlorobenzene			2,002.6	µg/mL	+/-	15.3767	µg/mL	Gravimetric
	CAS #	106-46-7	(Lot MKBS1350V)			+/-	90.7540	µg/mL	Unstressed
	Purity	99%				+/-	100.5869	µg/mL	Stressed
47	n-Butylbenzene			2,000.3	µg/mL	+/-	15.3600	µg/mL	Gravimetric
	CAS #	104-51-8	(Lot 09418JJV)			+/-	90.6528	µg/mL	Unstressed
	Purity	99%				+/-	100.4747	µg/mL	Stressed
48	tert-Butylbenzene			2,001.1	µg/mL	+/-	15.3658	µg/mL	Gravimetric
	CAS #	98-06-6	(Lot S52237V)			+/-	90.6868	µg/mL	Unstressed
	Purity	99%				+/-	100.5124	µg/mL	Stressed
49	1,2-Dichlorobenzene			2,002.9	µg/mL	+/-	15.3794	µg/mL	Gravimetric
	CAS #	95-50-1	(Lot SHBD7331V)			+/-	90.7694	µg/mL	Unstressed
	Purity	99%				+/-	100.6040	µg/mL	Stressed
50	1,2-Dibromo-3-chloropropane			2,000.8	µg/mL	+/-	15.3639	µg/mL	Gravimetric
	CAS #	96-12-8	(Lot 150618JLM)			+/-	90.6755	µg/mL	Unstressed
	Purity	99%				+/-	100.4998	µg/mL	Stressed
51	1,2,4-Trichlorobenzene			2,000.4	µg/mL	+/-	15.3603	µg/mL	Gravimetric
	CAS #	120-82-1	(Lot SHBC5541V)			+/-	90.6540	µg/mL	Unstressed
	Purity	98%				+/-	100.4760	µg/mL	Stressed
52	Hexachlorobutadiene			1,999.9	µg/mL	+/-	15.3569	µg/mL	Gravimetric
	CAS #	87-68-3	(Lot J31X013)			+/-	90.6340	µg/mL	Unstressed
	Purity	98%				+/-	100.4539	µg/mL	Stressed
53	Naphthalene			2,000.3	µg/mL	+/-	15.3599	µg/mL	Gravimetric
	CAS #	91-20-3	(Lot MKBH4351V)			+/-	90.6517	µg/mL	Unstressed
	Purity	99%				+/-	100.4734	µg/mL	Stressed
54	1,2,3-Trichlorobenzene			2,000.0	µg/mL	+/-	15.3577	µg/mL	Gravimetric
	CAS #	87-61-6	(Lot 12912PFV)			+/-	90.6392	µg/mL	Unstressed
	Purity	99%				+/-	100.4596	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

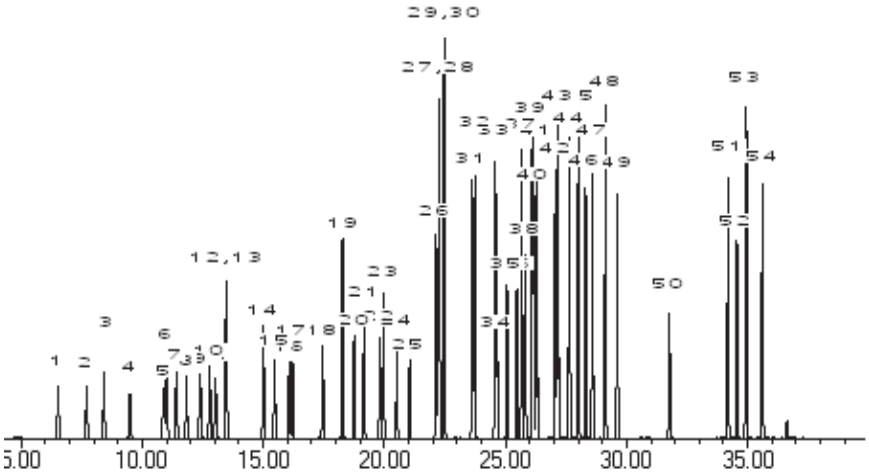
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min. (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 15-Dec-2015 **Balance:** 1125113331

Amanda Miller - QC Analyst

Date Passed: 18-Dec-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Analytical Standard Record

EPA Region 9 Laboratory

1622038

Description:	VOA 502/524 VOC Mix, Stock	**Expires:**	05/31/17
Standard Type:	Other Solution	**Prepared:**	05/24/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	1.15	**Department:**	Volatiles
Vials:	1	**Last Edit:**	05/24/16 11:47 by YNB
Vendor:	Supelco	**Lot Numbe**	Lot# LC14518V

Supelco, Cat # 502111, Lot# LC14518V, bar code AU008160

Analyte	CAS Number	Concentration (ppm)
1,2-Dibromo-3-chloropropane	96-12-8	2000
1,1,1,2-Tetrachloroethane	630-20-6	2000
Benzene	71-43-2	2000
4-Chlorotoluene	106-43-4	2000
2-Chlorotoluene	95-49-8	2000
2,2-Dichloropropane	594-20-7	2000
1,4-Dichlorobenzene	106-46-7	2000
1,3-Dichloropropane	142-28-9	2000
1,3-Dichlorobenzene	541-73-1	2000
1,3,5-Trimethylbenzene	108-67-8	2000
1,2-Dichloropropane	78-87-5	2000
1,2-Dichloroethane	107-06-2	2000
Bromochloromethane	74-97-5	2000
1,2-Dibromoethane (EDB)	106-93-4	2000
Bromodichloromethane	75-27-4	2000
1,2,4-Trimethylbenzene	95-63-6	2000
1,2,4-Trichlorobenzene	120-82-1	2000
1,2,3-Trimethylbenzene	526-73-8	2000
1,2,3-Trichloropropane	96-18-4	2000
1,2,3-Trichlorobenzene	87-61-6	2000
1,1-Dichloropropene	563-58-6	2000
1,1-Dichloroethene	75-35-4	2000
1,1-Dichloroethane	75-34-3	2000
1,1,2-Trichloroethane	79-00-5	2000
1,1,2,2-Tetrachloroethane	79-34-5	2000
1,1,1-Trichloroethane	71-55-6	2000
1,2-Dichlorobenzene	95-50-1	2000
Hexachlorobutadiene	87-68-3	2000
trans-1,3-Dichloropropene	10061-02-6	2000
trans-1,2-Dichloroethene	156-60-5	2000

Analytical Standard Record

EPA Region 9 Laboratory

1622038

Toluene	108-88-3	2000
Tetrachloroethene	127-18-4	2000
tert-Butylbenzene	98-06-6	2000
Styrene	100-42-5	2000
sec-Butylbenzene	135-98-8	2000
Propylbenzene	103-65-1	2000
p-Isopropyltoluene	99-87-6	2000
o-Xylene	95-47-6	2000
Naphthalene	91-20-3	2000
Bromobenzene	108-86-1	2000
Isopropylbenzene	98-82-8	2000
Trichloroethene	79-01-6	2000
Ethylbenzene	100-41-4	2000
Dichloromethane	75-09-2	2000
Dibromomethane	74-95-3	2000
cis-1,3-Dichloropropene	10061-01-5	2000
cis-1,2-Dichloroethene	156-59-2	2000
Chloroform	67-66-3	2000
Chlorodibromomethane	124-48-1	2000
Chlorobenzene	108-90-7	2000
Carbon tetrachloride	56-23-5	2000
Butylbenzene	104-51-8	2000
Bromoform	75-25-2	2000
m&p-Xylene	179601-23-1	4000

Certificate of Analysis

DESCRIPTION: 502/524 Volatile Organics Calibration Mix

CATALOG NO.: 502111 MFG DATE: May-2015
LOT NO.: LC14518V EXPIRATION DATE: May-2017

SOLVENT: METHANOL

ANALYTE (1)	CAS NUMBER	PERCENT PURITY(2)	WEIGHT(3) CONCENTRATION	ANALYTICAL(4) CONCENTRATION	STD DEV	SUPELCO LOT NO
BENZENE	71-43-2	99.9	2000	1961	+/- 123.1	LC03683
BROMOBENZENE	108-86-1	99.9	2001	2079	+/- 17.2	LB99843
BROMOCHLOROMETHANE	74-97-5	99.3	2000	1979	+/- 100.0	LB39040
BROMODICHLOROMETHANE	75-27-4	98.3	2000	2006	+/- 54.9	LC08591
BROMOFORM	75-25-2	99.9	2000	2036	+/- 61.4	LB99100
CARBON TETRACHLORIDE	56-23-5	99.9	2000	1956	+/- 133.1	LA55583
CHLOROBENZENE	108-90-7	99.9	2000	2061	+/- 41.0	LB93949
CHLOROFORM	67-66-3	99.9	2000	1967	+/- 112.7	LB97804
CIS 1,3-DICHLOROPROPENE (Z)	10061-01-5	99.5	2000	2011	+/- 22.0	LB96292
CIS-1,2-DICHLOROETHYLENE	156-59-2	99.3	2000	1956	+/- 50.6	LB73428
CUMENE	98-82-8	99.9	2000	2073	+/- 26.5	LB89580
DIBROMOCHLOROMETHANE	124-48-1	95.2	2000	2120	+/- 9.3	LB89245
DIBROMOMETHANE	74-95-3	98.9	2000	2056	+/- 51.0	LB81118
ETHYLBENZENE	100-41-4	99.9	2000	2069	+/- 18.8	LB69556
HEXACHLOROBUTADIENE	87-68-3	99.9	2000	2077	+/- 129.1	LB75566
M-XYLENE (5)	108-38-3	99.9	2000	*****		LB87531
METHYLENE CHLORIDE	75-09-2	99.9	2000	1992	+/- 107.7	LC06280
N-BUTYLBENZENE	104-51-8	99.9	2000	2061	+/- 71.0	LB81630
N-PROPYLBENZENE	103-65-1	99.9	2000	2080	+/- 23.7	LB69017

(1) Listed in alphabetical order.
(2) Determined by capillary GC-FID, unless otherwise noted.
(3) NIST traceable weights are used to verify balance calibration with the preparation of each lot. Concentration of analyte in solution is ug/ml +/- 0.5%, based upon balance and Class A volumetric glassware tolerances. Weights are corrected for analytes less than 98% pure.
(4) Determined by chromatographic analysis against an independently prepared reference lot. Mean of replicate injections.
(5) These products coelute and are not quantified in the final mix.

AU008159	1622037
60	38
61	39

Duane Funk

Duane Funk
Quality Manager

Supelco warrants that its products conform to the information contained in this publication. Purchaser must determine the suitability of the product for its particular use. Please see the latest catalog or order invoice and packing slip for additional terms and conditions of sale.
Supelco is a Sigma-Aldrich Company.

SUPELCO®
Solutions within.™
595 North Harrison Road
Bellefonte, PA 16823-0048 USA
Phone (814) 359-3441

Certificate of Analysis

DESCRIPTION: 502/524 Volatile Organics Calibration Mix

CATALOG NO.: 502111 MFG DATE: May-2015
LOT NO.: LC14518V EXPIRATION DATE: May-2017

SOLVENT: METHANOL

ANALYTE (1)	CAS NUMBER	PERCENT PURITY(2)	WEIGHT(3)	ANALYTICAL(4) CONCENTRATION		STD DEV	SUPELCO LOT NO
NAPHTHALENE	91-20-3	99.9	2000	2084	+/-	92.8	LB83148
O-XYLENE	95-47-6	99.5	2000	2086	+/-	40.1	LB92424
P-ISOPROPYLTOLUENE	99-87-6	99.2	2001	2080	+/-	40.5	LB40003
P-XYLENE (5)	106-42-3	99.9	2000	*****			LB73203
SEC-BUTYLBENZENE	135-98-8	99.8	2000	2066	+/-	32.9	LB77150
STYRENE	100-42-5	99.9	2000	2054	+/-	21.8	LC02684
TERT-BUTYLBENZENE	98-06-6	99.8	2000	2046	+/-	19.3	LB40373
TETRACHLOROETHENE	127-18-4	99.9	2000	2018	+/-	94.7	LB67182
TOLUENE	108-88-3	99.9	2000	2032	+/-	77.5	LC09354
TRANS 1,3-DICHLOROPROPENE (E)	10061-02-6	99.3	2000	2050	+/-	94.7	LC11733
TRANS-1,2-DICHLOROETHYLENE	156-60-5	99.6	2000	1944	+/-	131.7	LB82639
TRICHLOROETHYLENE	79-01-6	98.4	2000	2009	+/-	127.1	LB56674
1,1-DICHLOROETHANE	75-34-3	99.1	2000	1932	+/-	107.6	LB68167
1,1-DICHLOROETHYLENE	75-35-4	99.9	2000	2051	+/-	123.2	LC08188
1,1-DICHLOROPROPENE	563-58-6	99.9	2000	1976	+/-	97.0	LC11148
1,1,1-TRICHLOROETHANE	71-55-6	97.2	2000	2016	+/-	118.9	LC06533
1,1,1,2-TETRACHLOROETHANE	630-20-6	99.3	2000	2061	+/-	35.8	LB94313
1,1,2-TRICHLOROETHANE	79-00-5	99.9	2000	2014	+/-	21.7	LB87978
1,1,2,2-TETRACHLOROETHANE	79-34-5	99.9	2000	2070	+/-	13.1	LB51327

(1) Listed in alphabetical order.
(2) Determined by capillary GC-FID, unless otherwise noted.
(3) NIST traceable weights are used to verify balance calibration with the preparation of each lot. Concentration of analyte in solution is ug/ml +/- 0.5%, based upon balance and Class A volumetric glassware tolerances. Weights are corrected for analytes less than 98% pure.
(4) Determined by chromatographic analysis against an independently prepared reference lot. Mean of replicate injections.
(5) These products coelute and are not quantified in the final mix.

Duane Funk

Duane Funk
Quality Manager

Supelco warrants that its products conform to the information contained in this publication. Purchaser must determine the suitability of the product for its particular use. Please see the latest catalog or order invoice and packing slip for additional terms and conditions of sale.
Supelco is a Sigma-Aldrich Company.

SUPELCO®
Solutions within.™
595 North Harrison Road
Bellefonte, PA 16823-0048 USA
Phone (814) 359-3441

Certificate of Analysis

DESCRIPTION: 502/524 Volatile Organics Calibration Mix

CATALOG NO.: 502111 MFG DATE: May-2015
LOT NO.: LC14518V EXPIRATION DATE: May-2017

SOLVENT: METHANOL

ANALYTE (1)	CAS NUMBER	PERCENT PURITY(2)	WEIGHT(3) CONCENTRATION	ANALYTICAL(4) CONCENTRATION	STD DEV	SUPELCO LOT NO
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	98.1	2001	2042	+/- 58.8	LB06608
1,2-DIBROMOETHANE	106-93-4	99.9	2000	2000	+/- 67.3	LB42792
1,2-DICHLOROBENZENE	95-50-1	99.5	2000	2074	+/- 53.7	LB58923
1,2-DICHLOROETHANE	107-06-2	99.9	2000	1945	+/- 69.2	LB74294
1,2-DICHLOROPROPANE	78-87-5	99.9	2000	2045	+/- 125.0	LB08115
1,2,3-TRICHLOROBENZENE	87-61-6	99.9	2000	2020	+/- 129.2	LA50762
1,2,3-TRICHLOROPROPANE	96-18-4	99.9	2000	2088	+/- 44.2	LB82841
1,2,4-TRICHLOROBENZENE	120-82-1	98.8	2000	2059	+/- 104.0	LB48083
1,2,4-TRIMETHYLBENZENE	95-63-6	98.9	2000	2029	+/- 13.3	LB97224
1,3-DICHLOROBENZENE	541-73-1	99.9	2000	2079	+/- 53.3	LB68066
1,3-DICHLOROPROPANE	142-28-9	99.9	2000	2053	+/- 46.8	LC10811
1,3,5-TRIMETHYLBENZENE	108-67-8	99.3	2000	2086	+/- 13.9	LB82157
1,4-DICHLOROBENZENE	106-46-7	99.9	2000	2037	+/- 27.7	LB90630
2-CHLOROTOLUENE	95-49-8	99.9	2000	2066	+/- 19.3	LC01464
2,2-DICHLOROPROPANE	594-20-7	99.9	2000	1985	+/- 95.7	LC11610
4-CHLOROTOLUENE	106-43-4	99.9	2000	2032	+/- 35.6	LC02742

(1) Listed in alphabetical order.
(2) Determined by capillary GC-FID, unless otherwise noted.
(3) NIST traceable weights are used to verify balance calibration with the preparation of each lot. Concentration of analyte in solution is ug/ml +/- 0.5%, based upon balance and Class A volumetric glassware tolerances. Weights are corrected for analytes less than 98% pure.
(4) Determined by chromatographic analysis against an independently prepared reference lot. Mean of replicate injections.
(5) These products coelute and are not quantified in the final mix.

Duane Funk

Duane Funk
Quality Manager

Supelco warrants that its products conform to the information contained in this publication. Purchaser must determine the suitability of the product for its particular use. Please see the latest catalog or order invoice and packing slip for additional terms and conditions of sale.
Supelco is a Sigma-Aldrich Company.

SUPELCO
Solutions within.™
595 North Harrison Road
Bellefonte, PA 16823-0048 USA
Phone (814) 359-3441

Analytical Standard Record

EPA Region 9 Laboratory

1622044

Description:	VOA 8240B Standard Mix 2, Stock	**Expires:**	04/30/18
Standard Type:	Other Solution	**Prepared:**	05/24/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	1	**Department:**	Volatiles
Vials:	1	**Last Edit:**	05/24/16 11:57 by YNB
Vendor:	Supelco	**Lot Numbe**	XA13205V

Supelco; Cat # 47364, Lot #XA13205V, bar code #AU008149

Analyte	CAS Number	Concentration (ppm)
Isobutanol	78-83-1	2000
Acrylonitrile	107-13-1	2000
Acetonitrile	75-05-8	2000
Acetone	67-64-1	2000
4-Methyl-2-pentanone (MIBK)	108-10-1	2000
2-Hexanone	591-78-6	2000
2-Butanone (MEK)	78-93-3	2000

TraceCERT®
Traceable Certified Reference Materials

SUPELCO
Solutions within.™
595 North Harrison Road · Bellefonte, PA
16823-0048 USA · Phone(814)359-3441

Certificate of Analysis

Description: EPA 8240B Calibration Mix, 1x1ml, 2000µg/ml in methanol:water (80:20)

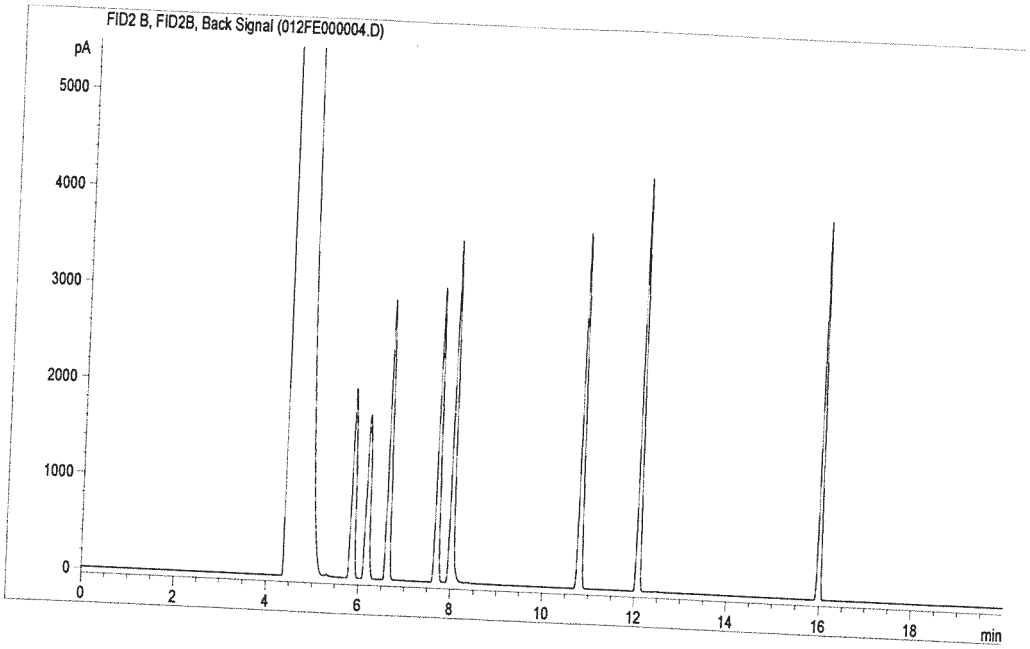
Part Number: 47364

Lot Number: XA13205V

Expiration Date: April 2018

Storage: Refrigerate

Analytical Method Parameters:
Column: VOCOL 105 m x 0.53 mm, 3.0 µm df
40°C to 200°C at 8°C/min
Detector: FID, 250°C
Injection Volume: 1 µL



Elution	Analyte	Lot Number	CAS Number	Chromatographic Purity %	Certified Gravimetric Conc. µg/ml	Expanded Uncertainty µg/ml	Analytical Conc. µg/ml
1.	Acetone	LB96895	67-64-1	99.9	1998.0	±95	2050.4
2.	Acetonitrile	LB99176	75-05-8	99.9	1998.0	±88	2040.3
3.	Acrylonitrile	LB65897	107-13-1	99.9	1999.2	±96	2048.1
4.	2-Butanone	LB97056	78-93-3	99.9	1998.4	±76	2045.8
5.	Isobutanol	LB51364	78-83-1	99.9	1998.0	±74	2028.4
6.	4-Methyl-2-Pentanone	LB88392	108-10-1	99.9	1998.4	±69	2036.5
7.	2-Hexanone	LB95109	591-78-6	99.7	1994.4	±68	2034.6
	Internal Standard	N/A	N/A	N/A	N/A	N/A	N/A

A4008148 | 1622043
49 | 44
50 | 45

ACLASS ACCREDITED TESTING
Cert# AT-1607

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER
Cert# AR-1606

Produced in double accredited laboratory fulfilling
ISO/IEC 17025 and
ISO Guide 34

SIGMA-ALDRICH®

Analytical Standard Record

EPA Region 9 Laboratory

1622045

Description:	VOA 8240B Standard Mix 2, Stock	**Expires:**	04/30/18
Standard Type:	Other Solution	**Prepared:**	05/24/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	1	**Department:**	Volatiles
Vials:	1	**Last Edit:**	05/24/16 11:57 by YNB
Vendor:	Supelco	**Lot Numbe**	XA13205V

Supelco; Cat # 47364, Lot #XA13205V, bar code #AU008150

Analyte	CAS Number	Concentration (ppm)
Isobutanol	78-83-1	2000
Acrylonitrile	107-13-1	2000
Acetonitrile	75-05-8	2000
Acetone	67-64-1	2000
4-Methyl-2-pentanone (MIBK)	108-10-1	2000
2-Hexanone	591-78-6	2000
2-Butanone (MEK)	78-93-3	2000

TraceCERT®
Traceable Certified Reference Materials

SUPELCO
Solutions within.™
595 North Harrison Road · Bellefonte, PA
16823-0048 USA · Phone(814)359-3441

Certificate of Analysis

Description: EPA 8240B Calibration Mix, 1x1ml, 2000µg/ml in methanol:water (80:20)

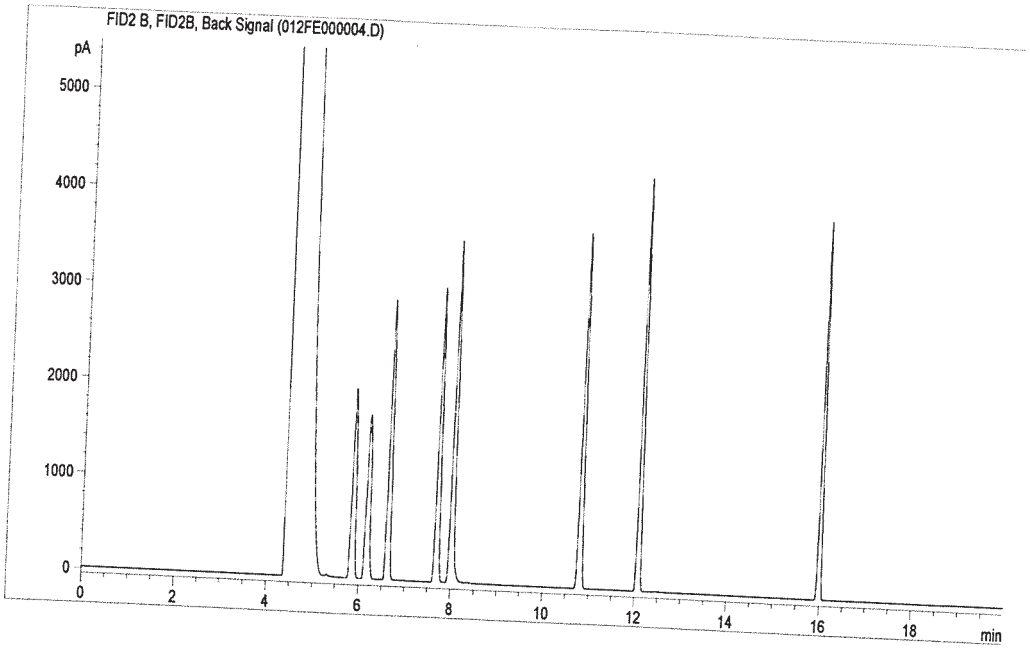
Part Number: 47364

Lot Number: XA13205V

Expiration Date: April 2018

Storage: Refrigerate

Analytical Method Parameters:
Column: VOCOL 105 m x 0.53 mm, 3.0 µm df
40°C to 200°C at 8°C/min
Detector: FID, 250°C
Injection Volume: 1 µL



Elution	Analyte	Lot Number	CAS Number	Chromatographic Purity %	Certified Gravimetric Conc. µg/ml	Expanded Uncertainty µg/ml	Analytical Conc. µg/ml
1.	Acetone	LB96895	67-64-1	99.9	1998.0	±95	2050.4
2.	Acetonitrile	LB99176	75-05-8	99.9	1998.0	±88	2040.3
3.	Acrylonitrile	LB65897	107-13-1	99.9	1999.2	±96	2048.1
4.	2-Butanone	LB97056	78-93-3	99.9	1998.4	±76	2045.8
5.	Isobutanol	LB51364	78-83-1	99.9	1998.0	±74	2028.4
6.	4-Methyl-2-Pentanone	LB88392	108-10-1	99.9	1998.4	±69	2036.5
7.	2-Hexanone	LB95109	591-78-6	99.7	1994.4	±68	2034.6
	Internal Standard	N/A	N/A	N/A	N/A	N/A	N/A

A4008148 | 1622043
49 | 44
50 | 45

ACLASS ACCREDITED TESTING
Cert# AT-1607

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER
Cert# AR-1606

Produced in double accredited laboratory fulfilling
ISO/IEC 17025 and
ISO Guide 34

SIGMA-ALDRICH®

Analytical Standard Record

EPA Region 9 Laboratory

1622048

Description:	VOA Calif.Oxygenates Mix, Stock	**Expires:**	04/30/17
Standard Type:	Other Solution	**Prepared:**	05/24/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	05/24/16 12:07 by YNB
Vendor:	Supelco	**Lot Numbe**	XA13449V

SUPELCO Cat # 4M6872-U Lot # XA13449V, bar code #AU008152

Analyte	CAS Number	Concentration (ppm)
tert-Butyl methyl ether (MTBE)	1634-04-4	2000
tert-Butyl alcohol	75-65-0	10000
tert-Amyl methyl ether	994-05-8	2000
Ethyl tert-butyl ether	637-92-3	2000
Diisopropyl ether	108-20-3	2000

TraceCERT®
Traceable Certified Reference Materials

SUPELCO
Solutions within.™
595 North Harrison Road · Bellefonte, PA
16823-0048 USA · Phone(814)359-3441

Certificate of Analysis

Description: California Oxygenates Mix, 5x1ml, Varied in methanol

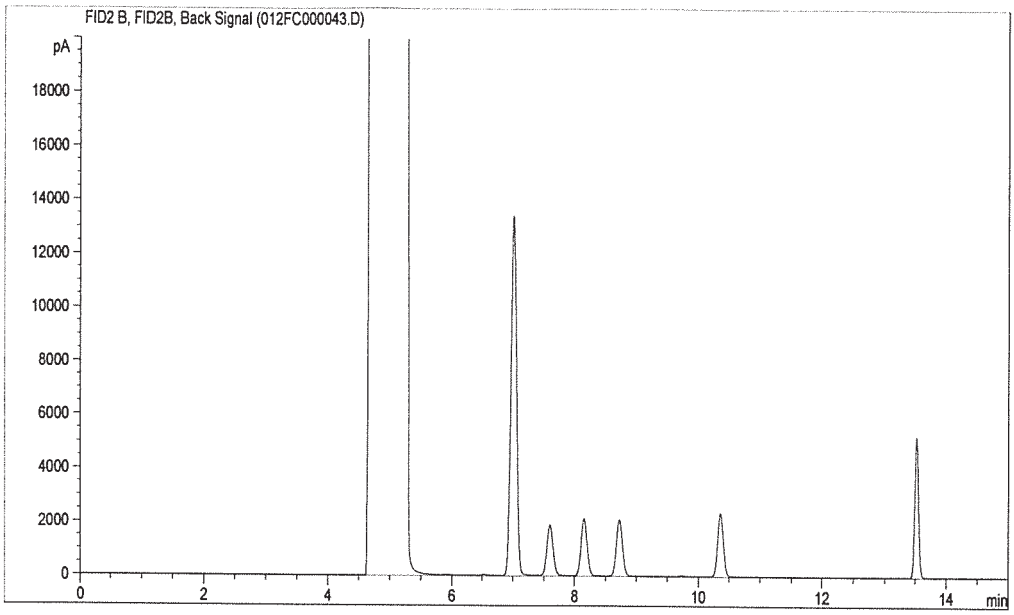
Part Number: 4M6872-U

Lot Number: XA13449V

Expiration Date: April 2017

Storage: Refrigerate

Analytical Method Parameters:
Column: VOCOL 105m x .53mm x 3.0um
40C (2 min) to 150°C at 8°C/min
Detector: FID, 250°C
Injection Volume: 1 uL



Elution	Analyte	Lot Number	CAS Number	Chromatographic Purity %	Certified Gravimetric Conc. µg/ml	Expanded Uncertainty µg/ml	Analytical Conc. µg/ml
1.	tert-Butyl alcohol	LB80628	75-65-0	99.6	9961.0	±360	10045.9
2.	Methyl tert-butyl ether	LB88393	1634-04-4	99.9	2001.0	±90	1976.9
3.	tert-Butyl Ethyl Ether	LB93761	637-92-3	99.9	1999.0	±71	1978.5
4.	Isopropyl Ether	LB83278	108-20-3	99.2	1985.0	±64	1966.6
5.	tert-Amyl Methyl Ether	LB62732	994-05-8	99.1	1985.0	±50	2008.9
	Internal Standard	N/A	N/A	N/A	N/A	N/A	N/A

A4008151	1622047
52	48
53	49
54	50
55	57

ACLASS ACCREDITED TESTING
Cert# AT-1607

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER
Cert# AR-1606

Produced in double accredited laboratory fulfilling
ISO/IEC 17025 and
ISO Guide 34

SIGMA-ALDRICH®

Analytical Standard Record

EPA Region 9 Laboratory

1622049

Description:	VOA Calif.Oxygenates Mix, Stock	**Expires:**	04/30/17
Standard Type:	Other Solution	**Prepared:**	05/24/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	05/24/16 12:07 by YNB
Vendor:	Supelco	**Lot Numbe**	XA13449V

SUPELCO Cat # 4M6872-U Lot # XA13449V, bar code #AU008153

Analyte	CAS Number	Concentration (ppm)
tert-Butyl methyl ether (MTBE)	1634-04-4	2000
tert-Butyl alcohol	75-65-0	10000
tert-Amyl methyl ether	994-05-8	2000
Ethyl tert-butyl ether	637-92-3	2000
Diisopropyl ether	108-20-3	2000

TraceCERT®
Traceable Certified Reference Materials

SUPELCO
Solutions within.™
595 North Harrison Road · Bellefonte, PA
16823-0048 USA · Phone(814)359-3441

Certificate of Analysis

Description: California Oxygenates Mix, 5x1ml, Varied in methanol

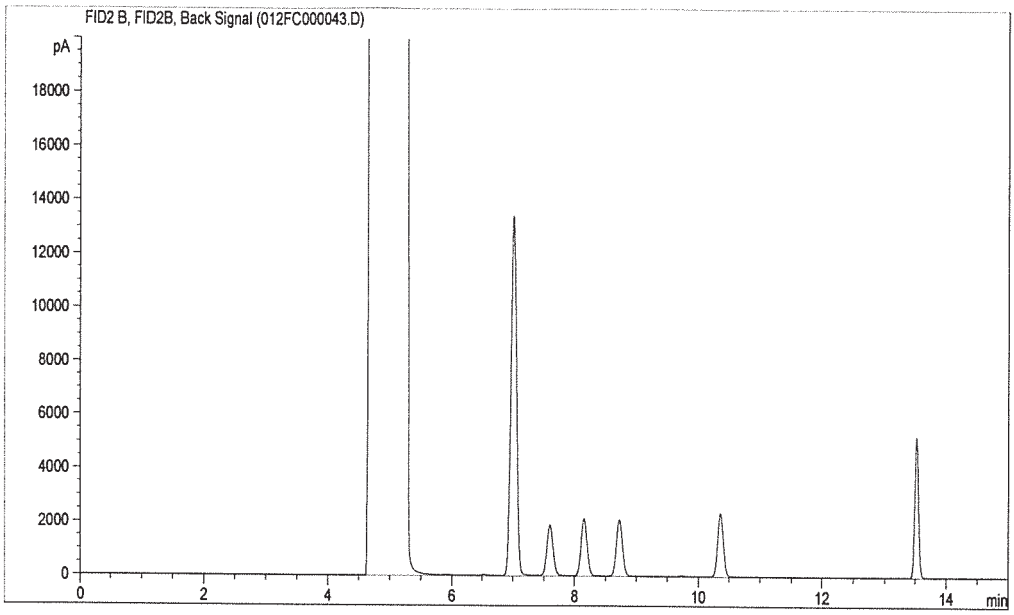
Part Number: 4M6872-U

Lot Number: XA13449V

Expiration Date: April 2017

Storage: Refrigerate

Analytical Method Parameters:
Column: VOCOL 105m x .53mm x 3.0um
40C (2 min) to 150°C at 8°C/min
Detector: FID, 250°C
Injection Volume: 1 uL



Elution	Analyte	Lot Number	CAS Number	Chromatographic Purity %	Certified Gravimetric Conc. µg/ml	Expanded Uncertainty µg/ml	Analytical Conc. µg/ml
1.	tert-Butyl alcohol	LB80628	75-65-0	99.6	9961.0	±360	10045.9
2.	Methyl tert-butyl ether	LB88393	1634-04-4	99.9	2001.0	±90	1976.9
3.	tert-Butyl Ethyl Ether	LB93761	637-92-3	99.9	1999.0	±71	1978.5
4.	Isopropyl Ether	LB83278	108-20-3	99.2	1985.0	±64	1966.6
5.	tert-Amyl Methyl Ether	LB62732	994-05-8	99.1	1985.0	±50	2008.9
	Internal Standard	N/A	N/A	N/A	N/A	N/A	N/A

A4008151	1622047
52	48
53	49
54	50
55	57

ACLASS ACCREDITED TESTING
Cert# AT-1607

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER
Cert# AR-1606

Produced in double accredited laboratory fulfilling
ISO/IEC 17025 and
ISO Guide 34

SIGMA-ALDRICH®

Analytical Standard Record

EPA Region 9 Laboratory

1627022

Description:	VOA DBCP, Single Fortifying Calibration	**Expires:**	02/21/21
Standard Type:	Other Solution	**Prepared:**	06/28/16
Solvent:	MeOH	**Prepared By:**	** Vendor **
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	06/28/16 13:33 by YNB
Vendor:	Restek	**Lot Numbe**	A0117407

Restek; catalog # 30270, Lot # A0117407, bar code #AU008203

Analyte	CAS Number	Concentration (ppm)
1,2-Dibromo-3-chloropropane	96-12-8	2000

CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30270 **Lot No.:** A0117407

Description : 1,2-Dibromo-3-chloropropane Standard

1,2-Dibromo-3-Chloropropane 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	1,2-Dibromo-3-chloropropane	1,996.0 µg/mL	+/-	20.1072	µg/mL	Gravimetric
	CAS # 96-12-8 (Lot 150618JLM)		+/-	113.1119	µg/mL	Unstressed
	Purity ----%		+/-	115.7035	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

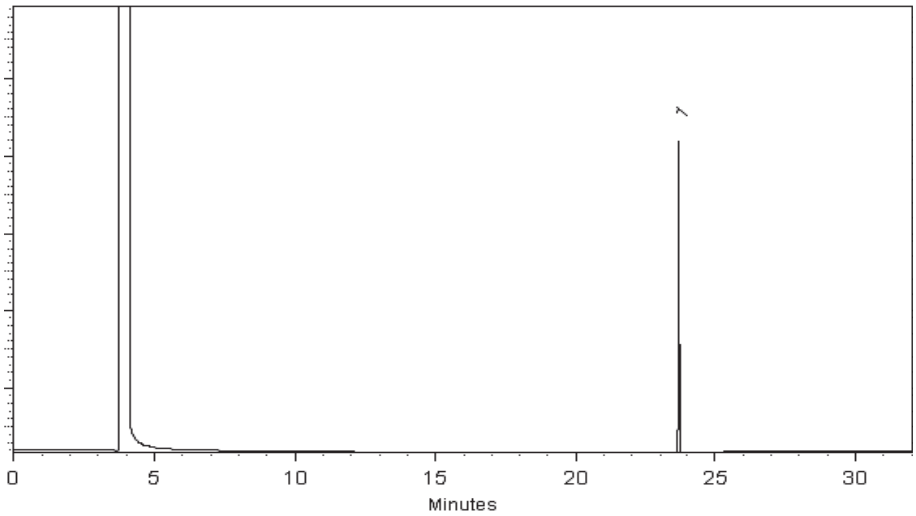
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Isaiah Harrison - Mix Technician

Date Mixed: 18-Feb-2016 **Balance:** B251644995

Jodi E. Breon - QA Analyst

Date Passed: 22-Feb-2016

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Analytical Standard Record

EPA Region 9 Laboratory

1629049

Description:	VOA BFB_07/12/16 (tuning std)	**Expires:**	01/04/17
Standard Type:	Other Solution	**Prepared:**	07/12/16
Solvent:	MeOH DP303	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	10	**Department:**	Volatiles
Vials:	1	**Last Edit:**	07/12/16 09:40 by YNB
Vendor:	*Prepared*	**Lot Numbe**	A0111332

BFB tune std; RESTEK Cat#30003, Lot# AO111332

Analyte	CAS Number	Concentration (ppm)
4-Bromofluorobenzene	460-00-4	50

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1552038	VOA BFB TUNING CPD	08/31/15	** Vendor **	08/31/20	12/23/15 11:55 by EM	0.1

Analytical Standard Record

EPA Region 9 Laboratory

1638001

Description:	VOA ISA_VOC 125 ppm	**Expires:**	09/25/16
Standard Type:	Surrogate Spike	**Prepared:**	09/12/16
Solvent:	MeOH/ Lot # DP303	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	10	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/12/16 08:04 by YNB
Vendor:	*Prepared*	**Lot Numbe**	123

Analyte	CAS Number	Concentration (ppm)
Toluene-d8	2037-26-5	125
Fluorobenzene	462-06-6	125
Dichloromethane-d2	1665-00-5	125
Chlorobenzene-d5	3114-55-4	125
4-Bromofluorobenzene	460-00-4	125
1,2-Dichloroethane-d4	17060-07-0	125
1,2-Dichlorobenzene-d4	2199-69-1	125

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1444014	Custom VOA IS/SS. Mix	10/27/14	** Vendor **	10/31/19	10/27/14 11:46 by YNB	0.125

Analytical Standard Record

EPA Region 9 Laboratory

1638002

Description:	VOA DW_041 LCS 25ppm	**Expires:**	09/18/16
Standard Type:	Analyte Spike	**Prepared:**	09/12/16
Solvent:	MeOH#DP303	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/12/16 09:14 by YNB
Vendor:	*Prepared*	**Lot Numbe**	123

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	200
1,3-Dichloropropane	142-28-9	25
1,4-Dichlorobenzene	106-46-7	25
2,2-Dichloropropane	594-20-7	25
2-Butanone (MEK)	78-93-3	200
2-Chlorotoluene	95-49-8	25
2-Hexanone	591-78-6	200
Butylbenzene	104-51-8	25
4-Methyl-2-pentanone (MIBK)	108-10-1	200
1,2-Dichloropropane	78-87-5	25
Benzene	71-43-2	25
Bromobenzene	108-86-1	25
Bromochloromethane	74-97-5	25
Bromodichloromethane	75-27-4	25
Bromoform	75-25-2	25
1,1,1,2-Tetrachloroethane	630-20-6	25
4-Chlorotoluene	106-43-4	25
1,2,3-Trichloropropane	96-18-4	25
1,1,1-Trichloroethane	71-55-6	25
1,1,2,2-Tetrachloroethane	79-34-5	25
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	25
1,1,2-Trichloroethane	79-00-5	25
1,1-Dichloroethane	75-34-3	25
1,1-Dichloroethene	75-35-4	25
1,3-Dichlorobenzene	541-73-1	25
1,2,3-Trichlorobenzene	87-61-6	25
1,3,5-Trimethylbenzene	108-67-8	25
1,2,4-Trichlorobenzene	120-82-1	25
1,2,4-Trimethylbenzene	95-63-6	25
1,2-Dibromo-3-chloropropane	96-12-8	100

Analytical Standard Record

EPA Region 9 Laboratory

1638002

1,2-Dibromoethane (EDB)	106-93-4	25
1,2-Dichlorobenzene	95-50-1	25
1,2-Dichloroethane	107-06-2	25
Carbon disulfide	75-15-0	25
1,1-Dichloropropene	563-58-6	25
tert-Butylbenzene	98-06-6	25
o-Xylene	95-47-6	25
p-Isopropyltoluene	99-87-6	25
Propylbenzene	103-65-1	25
sec-Butylbenzene	135-98-8	25
Styrene	100-42-5	25
tert-Amyl methyl ether	994-05-8	100
Bromomethane	74-83-9	25
tert-Butyl methyl ether (MTBE)	1634-04-4	100
Isopropylbenzene	98-82-8	25
Tetrachloroethene	127-18-4	25
Toluene	108-88-3	25
trans-1,2-Dichloroethene	156-60-5	25
trans-1,3-Dichloropropene	10061-02-6	25
Trichloroethene	79-01-6	25
Trichlorofluoromethane	75-69-4	25
tert-Butyl alcohol	75-65-0	500
Dibromomethane	74-95-3	25
Carbon tetrachloride	56-23-5	25
Chlorobenzene	108-90-7	25
Chlorodibromomethane	124-48-1	25
Chloroethane	75-00-3	25
Chloroform	67-66-3	25
Chloromethane	74-87-3	25
Naphthalene	91-20-3	25
cis-1,3-Dichloropropene	10061-01-5	25
m&p-Xylene	179601-23-1	50
Dichlorodifluoromethane	75-71-8	25
Dichloromethane	75-09-2	25
Diisopropyl ether	108-20-3	100
Ethyl tert-butyl ether	637-92-3	100
Ethylbenzene	100-41-4	25
Hexachlorobutadiene	87-68-3	25
Vinyl chloride	75-01-4	25

Analytical Standard Record

EPA Region 9 Laboratory

1638002

cis-1,2-Dichloroethene	156-59-2	25

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1607060	VOA Carbon Disulfide , Single Calibra	02/09/16	** Vendor **	02/07/20	02/09/16 13:58 by YNB	0.025
1545036	VOC: 1,1,2-Trichlorofluoroethane(Freo	11/03/15	** Vendor **	07/31/18	11/03/15 13:08 by YNB	0.025
1627022	VOA DBCP, Single Fortifying Calibrati	06/28/16	** Vendor **	02/21/21	06/28/16 13:33 by YNB	0.075
1615040	VOA Calibration MIX #1 stock	04/04/16	** Vendor **	11/30/18	04/04/16 15:25 by YNB	0.08
1618013	VOA 502.2 CAL 2000 MEGA MIX, St	04/25/16	** Vendor **	12/31/17	04/25/16 09:35 by YNB	0.025
1607066	VOA 502.2 Calibration Mix # 1, Stock	02/09/16	** Vendor **	07/31/22	02/09/16 14:07 by YNB	0.025
1520038	VOA Calif.Oxygenates Mix, Stock	05/11/15	** Vendor **	10/31/19	05/11/15 15:34 by YNB	0.1

Analytical Standard Record

EPA Region 9 Laboratory

1638011

Description:	CRL W	**Expires:**	09/18/16
Standard Type:	Other Solution	**Prepared:**	09/12/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/12/16 09:33 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.004
1,1,1,2-Tetrachloroethane	630-20-6	0.0005
1,3-Dichloropropane	142-28-9	0.0005
1,4-Dichlorobenzene	106-46-7	0.0005
2,2-Dichloropropane	594-20-7	0.0005
2-Butanone (MEK)	78-93-3	0.004
2-Chlorotoluene	95-49-8	0.0005
2-Hexanone	591-78-6	0.004
1,3,5-Trimethylbenzene	108-67-8	0.0005
4-Chlorotoluene	106-43-4	0.0005
1,2-Dichloropropane	78-87-5	0.0005
Acetone	67-64-1	0.004
Benzene	71-43-2	0.0005
Bromobenzene	108-86-1	0.0005
Bromochloromethane	74-97-5	0.0005
Bromodichloromethane	75-27-4	0.0005
Bromoform	75-25-2	0.0005
Bromomethane	74-83-9	0.0005
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.0005
1,1,1-Trichloroethane	71-55-6	0.0005
1,1,2,2-Tetrachloroethane	79-34-5	0.0005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.0005
1,1,2-Trichloroethane	79-00-5	0.0005
1,1-Dichloroethane	75-34-3	0.0005
1,1-Dichloroethene	75-35-4	0.0005
1,1-Dichloropropene	563-58-6	0.0005
1,3-Dichlorobenzene	541-73-1	0.0005
1,2,3-Trichloropropane	96-18-4	0.0005
Carbon tetrachloride	56-23-5	0.0005

Analytical Standard Record

EPA Region 9 Laboratory

1638011

1,2,4-Trimethylbenzene	95-63-6	0.0005
1,2-Dibromo-3-chloropropane	96-12-8	0.002
1,2-Dibromoethane (EDB)	106-93-4	0.0005
1,2-Dichlorobenzene	95-50-1	0.0005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.0005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.0005
tert-Butylbenzene	98-06-6	0.0005
Naphthalene	91-20-3	0.0005
o-Xylene	95-47-6	0.0005
p-Isopropyltoluene	99-87-6	0.0005
Propylbenzene	103-65-1	0.0005
sec-Butylbenzene	135-98-8	0.0005
Styrene	100-42-5	0.0005
tert-Amyl methyl ether	994-05-8	0.002
Butylbenzene	104-51-8	0.0005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.002
Hexachlorobutadiene	87-68-3	0.0005
Tetrachloroethene	127-18-4	0.0005
Toluene	108-88-3	0.0005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.0005
trans-1,3-Dichloropropene	10061-02-6	0.0005
Trichloroethene	79-01-6	0.0005
Trichlorofluoromethane	75-69-4	0.0005
tert-Butyl alcohol	75-65-0	0.01
Dibromomethane	74-95-3	0.0005
Vinyl chloride	75-01-4	0.0005
Chlorobenzene	108-90-7	0.0005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.0005
Chloroethane	75-00-3	0.0005
Chloroform	67-66-3	0.0005
Chloromethane	74-87-3	0.0005
m&p-Xylene	179601-23-1	0.001
cis-1,3-Dichloropropene	10061-01-5	0.0005
Isopropylbenzene	98-82-8	0.0005
Dichlorodifluoromethane	75-71-8	0.0005

Analytical Standard Record

EPA Region 9 Laboratory

1638011

Dichloromethane	75-09-2	0.0005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.002
Ethyl tert-butyl ether	637-92-3	0.002
Ethylbenzene	100-41-4	0.0005
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.0005
cis-1,2-Dichloroethene	156-59-2	0.0005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1638001	VOA ISA_VOC 125 ppm	09/12/16	Yelena Borinshteyn	09/25/16	09/12/16 08:04 by YNB	0.002
1638002	VOA DW_041 LCS 25ppm	09/12/16	Yelena Borinshteyn	09/18/16	09/12/16 09:14 by YNB	0.001

Analytical Standard Record

EPA Region 9 Laboratory

1638012

Description:	CAL2 W	**Expires:**	09/18/16
Standard Type:	Other Solution	**Prepared:**	09/12/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/12/16 09:33 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.008
1,1,1,2-Tetrachloroethane	630-20-6	0.001
1,3-Dichloropropane	142-28-9	0.001
1,4-Dichlorobenzene	106-46-7	0.001
2,2-Dichloropropane	594-20-7	0.001
2-Butanone (MEK)	78-93-3	0.008
2-Chlorotoluene	95-49-8	0.001
2-Hexanone	591-78-6	0.008
1,3,5-Trimethylbenzene	108-67-8	0.001
4-Chlorotoluene	106-43-4	0.001
1,2-Dichloropropane	78-87-5	0.001
Acetone	67-64-1	0.008
Benzene	71-43-2	0.001
Bromobenzene	108-86-1	0.001
Bromochloromethane	74-97-5	0.001
Bromodichloromethane	75-27-4	0.001
Bromoform	75-25-2	0.001
Bromomethane	74-83-9	0.001
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.001
1,1,1-Trichloroethane	71-55-6	0.001
1,1,2,2-Tetrachloroethane	79-34-5	0.001
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.001
1,1,2-Trichloroethane	79-00-5	0.001
1,1-Dichloroethane	75-34-3	0.001
1,1-Dichloroethene	75-35-4	0.001
1,1-Dichloropropene	563-58-6	0.001
1,3-Dichlorobenzene	541-73-1	0.001
1,2,3-Trichloropropane	96-18-4	0.001
Carbon tetrachloride	56-23-5	0.001

Analytical Standard Record

EPA Region 9 Laboratory

1638012

1,2,4-Trimethylbenzene	95-63-6	0.001
1,2-Dibromo-3-chloropropane	96-12-8	0.004
1,2-Dibromoethane (EDB)	106-93-4	0.001
1,2-Dichlorobenzene	95-50-1	0.001
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.001
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.001
tert-Butylbenzene	98-06-6	0.001
Naphthalene	91-20-3	0.001
o-Xylene	95-47-6	0.001
p-Isopropyltoluene	99-87-6	0.001
Propylbenzene	103-65-1	0.001
sec-Butylbenzene	135-98-8	0.001
Styrene	100-42-5	0.001
tert-Amyl methyl ether	994-05-8	0.004
Butylbenzene	104-51-8	0.001
tert-Butyl methyl ether (MTBE)	1634-04-4	0.004
Hexachlorobutadiene	87-68-3	0.001
Tetrachloroethene	127-18-4	0.001
Toluene	108-88-3	0.001
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.001
trans-1,3-Dichloropropene	10061-02-6	0.001
Trichloroethene	79-01-6	0.001
Trichlorofluoromethane	75-69-4	0.001
tert-Butyl alcohol	75-65-0	0.02
Dibromomethane	74-95-3	0.001
Vinyl chloride	75-01-4	0.001
Chlorobenzene	108-90-7	0.001
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.001
Chloroethane	75-00-3	0.001
Chloroform	67-66-3	0.001
Chloromethane	74-87-3	0.001
m&p-Xylene	179601-23-1	0.002
cis-1,3-Dichloropropene	10061-01-5	0.001
Isopropylbenzene	98-82-8	0.001
Dichlorodifluoromethane	75-71-8	0.001

Analytical Standard Record

EPA Region 9 Laboratory

1638012

Dichloromethane	75-09-2	0.001
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.004
Ethyl tert-butyl ether	637-92-3	0.004
Ethylbenzene	100-41-4	0.001
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.001
cis-1,2-Dichloroethene	156-59-2	0.001

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1638001	VOA ISA_VOC 125 ppm	09/12/16	Yelena Borinshteyn	09/25/16	09/12/16 08:04 by YNB	0.002
1638002	VOA DW_041 LCS 25ppm	09/12/16	Yelena Borinshteyn	09/18/16	09/12/16 09:14 by YNB	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1638013

Description:	CAL3 W	**Expires:**	09/18/16
Standard Type:	Other Solution	**Prepared:**	09/12/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/12/16 09:33 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.016
1,1,1,2-Tetrachloroethane	630-20-6	0.002
1,3-Dichloropropane	142-28-9	0.002
1,4-Dichlorobenzene	106-46-7	0.002
2,2-Dichloropropane	594-20-7	0.002
2-Butanone (MEK)	78-93-3	0.016
2-Chlorotoluene	95-49-8	0.002
2-Hexanone	591-78-6	0.016
1,3,5-Trimethylbenzene	108-67-8	0.002
4-Chlorotoluene	106-43-4	0.002
1,2-Dichloropropane	78-87-5	0.002
Acetone	67-64-1	0.016
Benzene	71-43-2	0.002
Bromobenzene	108-86-1	0.002
Bromochloromethane	74-97-5	0.002
Bromodichloromethane	75-27-4	0.002
Bromoform	75-25-2	0.002
Bromomethane	74-83-9	0.002
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.002
1,1,1-Trichloroethane	71-55-6	0.002
1,1,2,2-Tetrachloroethane	79-34-5	0.002
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.002
1,1,2-Trichloroethane	79-00-5	0.002
1,1-Dichloroethane	75-34-3	0.002
1,1-Dichloroethene	75-35-4	0.002
1,1-Dichloropropene	563-58-6	0.002
1,3-Dichlorobenzene	541-73-1	0.002
1,2,3-Trichloropropane	96-18-4	0.002
Carbon tetrachloride	56-23-5	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1638013

1,2,4-Trimethylbenzene	95-63-6	0.002
1,2-Dibromo-3-chloropropane	96-12-8	0.008
1,2-Dibromoethane (EDB)	106-93-4	0.002
1,2-Dichlorobenzene	95-50-1	0.002
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.002
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.002
tert-Butylbenzene	98-06-6	0.002
Naphthalene	91-20-3	0.002
o-Xylene	95-47-6	0.002
p-Isopropyltoluene	99-87-6	0.002
Propylbenzene	103-65-1	0.002
sec-Butylbenzene	135-98-8	0.002
Styrene	100-42-5	0.002
tert-Amyl methyl ether	994-05-8	0.008
Butylbenzene	104-51-8	0.002
tert-Butyl methyl ether (MTBE)	1634-04-4	0.008
Hexachlorobutadiene	87-68-3	0.002
Tetrachloroethene	127-18-4	0.002
Toluene	108-88-3	0.002
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.002
trans-1,3-Dichloropropene	10061-02-6	0.002
Trichloroethene	79-01-6	0.002
Trichlorofluoromethane	75-69-4	0.002
tert-Butyl alcohol	75-65-0	0.04
Dibromomethane	74-95-3	0.002
Vinyl chloride	75-01-4	0.002
Chlorobenzene	108-90-7	0.002
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.002
Chloroethane	75-00-3	0.002
Chloroform	67-66-3	0.002
Chloromethane	74-87-3	0.002
m&p-Xylene	179601-23-1	0.004
cis-1,3-Dichloropropene	10061-01-5	0.002
Isopropylbenzene	98-82-8	0.002
Dichlorodifluoromethane	75-71-8	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1638013

Dichloromethane	75-09-2	0.002
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.008
Ethyl tert-butyl ether	637-92-3	0.008
Ethylbenzene	100-41-4	0.002
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.002
cis-1,2-Dichloroethene	156-59-2	0.002

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1638001	VOA ISA_VOC 125 ppm	09/12/16	Yelena Borinshteyn	09/25/16	09/12/16 08:04 by YNB	0.002
1638002	VOA DW_041 LCS 25ppm	09/12/16	Yelena Borinshteyn	09/18/16	09/12/16 09:14 by YNB	0.004

Analytical Standard Record

EPA Region 9 Laboratory

1638015

Description:	CCV W	**Expires:**	09/18/16
Standard Type:	Other Solution	**Prepared:**	09/12/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/12/16 09:33 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.04
1,1,1,2-Tetrachloroethane	630-20-6	0.005
1,3-Dichloropropane	142-28-9	0.005
1,4-Dichlorobenzene	106-46-7	0.005
2,2-Dichloropropane	594-20-7	0.005
2-Butanone (MEK)	78-93-3	0.04
2-Chlorotoluene	95-49-8	0.005
2-Hexanone	591-78-6	0.04
1,3,5-Trimethylbenzene	108-67-8	0.005
4-Chlorotoluene	106-43-4	0.005
1,2-Dichloropropane	78-87-5	0.005
Acetone	67-64-1	0.04
Benzene	71-43-2	0.005
Bromobenzene	108-86-1	0.005
Bromochloromethane	74-97-5	0.005
Bromodichloromethane	75-27-4	0.005
Bromoform	75-25-2	0.005
Bromomethane	74-83-9	0.005
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.005
1,1,1-Trichloroethane	71-55-6	0.005
1,1,2,2-Tetrachloroethane	79-34-5	0.005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.005
1,1,2-Trichloroethane	79-00-5	0.005
1,1-Dichloroethane	75-34-3	0.005
1,1-Dichloroethene	75-35-4	0.005
1,1-Dichloropropene	563-58-6	0.005
1,3-Dichlorobenzene	541-73-1	0.005
1,2,3-Trichloropropane	96-18-4	0.005
Carbon tetrachloride	56-23-5	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1638015

1,2,4-Trimethylbenzene	95-63-6	0.005
1,2-Dibromo-3-chloropropane	96-12-8	0.02
1,2-Dibromoethane (EDB)	106-93-4	0.005
1,2-Dichlorobenzene	95-50-1	0.005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.005
tert-Butylbenzene	98-06-6	0.005
Naphthalene	91-20-3	0.005
o-Xylene	95-47-6	0.005
p-Isopropyltoluene	99-87-6	0.005
Propylbenzene	103-65-1	0.005
sec-Butylbenzene	135-98-8	0.005
Styrene	100-42-5	0.005
tert-Amyl methyl ether	994-05-8	0.02
Butylbenzene	104-51-8	0.005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.02
Hexachlorobutadiene	87-68-3	0.005
Tetrachloroethene	127-18-4	0.005
Toluene	108-88-3	0.005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.005
trans-1,3-Dichloropropene	10061-02-6	0.005
Trichloroethene	79-01-6	0.005
Trichlorofluoromethane	75-69-4	0.005
tert-Butyl alcohol	75-65-0	0.1
Dibromomethane	74-95-3	0.005
Vinyl chloride	75-01-4	0.005
Chlorobenzene	108-90-7	0.005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.005
Chloroethane	75-00-3	0.005
Chloroform	67-66-3	0.005
Chloromethane	74-87-3	0.005
m&p-Xylene	179601-23-1	0.01
cis-1,3-Dichloropropene	10061-01-5	0.005
Isopropylbenzene	98-82-8	0.005
Dichlorodifluoromethane	75-71-8	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1638015

Dichloromethane	75-09-2	0.005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.02
Ethyl tert-butyl ether	637-92-3	0.02
Ethylbenzene	100-41-4	0.005
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.005
cis-1,2-Dichloroethene	156-59-2	0.005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1638001	VOA ISA_VOC 125 ppm	09/12/16	Yelena Borinshteyn	09/25/16	09/12/16 08:04 by YNB	0.002
1638002	VOA DW_041 LCS 25ppm	09/12/16	Yelena Borinshteyn	09/18/16	09/12/16 09:14 by YNB	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1638016

Description:	CAL5 W	**Expires:**	09/18/16
Standard Type:	Other Solution	**Prepared:**	09/12/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/12/16 09:34 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.08
1,1,1,2-Tetrachloroethane	630-20-6	0.01
1,3-Dichloropropane	142-28-9	0.01
1,4-Dichlorobenzene	106-46-7	0.01
2,2-Dichloropropane	594-20-7	0.01
2-Butanone (MEK)	78-93-3	0.08
2-Chlorotoluene	95-49-8	0.01
2-Hexanone	591-78-6	0.08
1,3,5-Trimethylbenzene	108-67-8	0.01
4-Chlorotoluene	106-43-4	0.01
1,2-Dichloropropane	78-87-5	0.01
Acetone	67-64-1	0.08
Benzene	71-43-2	0.01
Bromobenzene	108-86-1	0.01
Bromochloromethane	74-97-5	0.01
Bromodichloromethane	75-27-4	0.01
Bromoform	75-25-2	0.01
Bromomethane	74-83-9	0.01
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.01
1,1,1-Trichloroethane	71-55-6	0.01
1,1,2,2-Tetrachloroethane	79-34-5	0.01
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.01
1,1,2-Trichloroethane	79-00-5	0.01
1,1-Dichloroethane	75-34-3	0.01
1,1-Dichloroethene	75-35-4	0.01
1,1-Dichloropropene	563-58-6	0.01
1,3-Dichlorobenzene	541-73-1	0.01
1,2,3-Trichloropropane	96-18-4	0.01
Carbon tetrachloride	56-23-5	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1638016

1,2,4-Trimethylbenzene	95-63-6	0.01
1,2-Dibromo-3-chloropropane	96-12-8	0.04
1,2-Dibromoethane (EDB)	106-93-4	0.01
1,2-Dichlorobenzene	95-50-1	0.01
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.01
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.01
tert-Butylbenzene	98-06-6	0.01
Naphthalene	91-20-3	0.01
o-Xylene	95-47-6	0.01
p-Isopropyltoluene	99-87-6	0.01
Propylbenzene	103-65-1	0.01
sec-Butylbenzene	135-98-8	0.01
Styrene	100-42-5	0.01
tert-Amyl methyl ether	994-05-8	0.04
Butylbenzene	104-51-8	0.01
tert-Butyl methyl ether (MTBE)	1634-04-4	0.04
Hexachlorobutadiene	87-68-3	0.01
Tetrachloroethene	127-18-4	0.01
Toluene	108-88-3	0.01
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.01
trans-1,3-Dichloropropene	10061-02-6	0.01
Trichloroethene	79-01-6	0.01
Trichlorofluoromethane	75-69-4	0.01
tert-Butyl alcohol	75-65-0	0.2
Dibromomethane	74-95-3	0.01
Vinyl chloride	75-01-4	0.01
Chlorobenzene	108-90-7	0.01
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.01
Chloroethane	75-00-3	0.01
Chloroform	67-66-3	0.01
Chloromethane	74-87-3	0.01
m&p-Xylene	179601-23-1	0.02
cis-1,3-Dichloropropene	10061-01-5	0.01
Isopropylbenzene	98-82-8	0.01
Dichlorodifluoromethane	75-71-8	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1638016

Dichloromethane	75-09-2	0.01
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.04
Ethyl tert-butyl ether	637-92-3	0.04
Ethylbenzene	100-41-4	0.01
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.01
cis-1,2-Dichloroethene	156-59-2	0.01

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1638001	VOA ISA_VOC 125 ppm	09/12/16	Yelena Borinshteyn	09/25/16	09/12/16 08:04 by YNB	0.002
1638002	VOA DW_041 LCS 25ppm	09/12/16	Yelena Borinshteyn	09/18/16	09/12/16 09:14 by YNB	0.02

Analytical Standard Record

EPA Region 9 Laboratory

1638017

Description:	CAL6 W	**Expires:**	09/18/16
Standard Type:	Other Solution	**Prepared:**	09/12/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/12/16 09:34 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.2
1,1,1,2-Tetrachloroethane	630-20-6	0.025
1,3-Dichloropropane	142-28-9	0.025
1,4-Dichlorobenzene	106-46-7	0.025
2,2-Dichloropropane	594-20-7	0.025
2-Butanone (MEK)	78-93-3	0.2
2-Chlorotoluene	95-49-8	0.025
2-Hexanone	591-78-6	0.2
1,3,5-Trimethylbenzene	108-67-8	0.025
4-Chlorotoluene	106-43-4	0.025
1,2-Dichloropropane	78-87-5	0.025
Acetone	67-64-1	0.2
Benzene	71-43-2	0.025
Bromobenzene	108-86-1	0.025
Bromochloromethane	74-97-5	0.025
Bromodichloromethane	75-27-4	0.025
Bromoform	75-25-2	0.025
Bromomethane	74-83-9	0.025
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.025
1,1,1-Trichloroethane	71-55-6	0.025
1,1,2,2-Tetrachloroethane	79-34-5	0.025
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.025
1,1,2-Trichloroethane	79-00-5	0.025
1,1-Dichloroethane	75-34-3	0.025
1,1-Dichloroethene	75-35-4	0.025
1,1-Dichloropropene	563-58-6	0.025
1,3-Dichlorobenzene	541-73-1	0.025
1,2,3-Trichloropropane	96-18-4	0.025
Carbon tetrachloride	56-23-5	0.025

Analytical Standard Record

EPA Region 9 Laboratory

1638017

1,2,4-Trimethylbenzene	95-63-6	0.025
1,2-Dibromo-3-chloropropane	96-12-8	0.1
1,2-Dibromoethane (EDB)	106-93-4	0.025
1,2-Dichlorobenzene	95-50-1	0.025
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.025
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.025
tert-Butylbenzene	98-06-6	0.025
Naphthalene	91-20-3	0.025
o-Xylene	95-47-6	0.025
p-Isopropyltoluene	99-87-6	0.025
Propylbenzene	103-65-1	0.025
sec-Butylbenzene	135-98-8	0.025
Styrene	100-42-5	0.025
tert-Amyl methyl ether	994-05-8	0.1
Butylbenzene	104-51-8	0.025
tert-Butyl methyl ether (MTBE)	1634-04-4	0.1
Hexachlorobutadiene	87-68-3	0.025
Tetrachloroethene	127-18-4	0.025
Toluene	108-88-3	0.025
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.025
trans-1,3-Dichloropropene	10061-02-6	0.025
Trichloroethene	79-01-6	0.025
Trichlorofluoromethane	75-69-4	0.025
tert-Butyl alcohol	75-65-0	0.5
Dibromomethane	74-95-3	0.025
Vinyl chloride	75-01-4	0.025
Chlorobenzene	108-90-7	0.025
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.025
Chloroethane	75-00-3	0.025
Chloroform	67-66-3	0.025
Chloromethane	74-87-3	0.025
m&p-Xylene	179601-23-1	0.05
cis-1,3-Dichloropropene	10061-01-5	0.025
Isopropylbenzene	98-82-8	0.025
Dichlorodifluoromethane	75-71-8	0.025

Analytical Standard Record

EPA Region 9 Laboratory

1638017

Dichloromethane	75-09-2	0.025
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.1
Ethyl tert-butyl ether	637-92-3	0.1
Ethylbenzene	100-41-4	0.025
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.025
cis-1,2-Dichloroethene	156-59-2	0.025

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1638001	VOA ISA_VOC 125 ppm	09/12/16	Yelena Borinshteyn	09/25/16	09/12/16 08:04 by YNB	0.002
1638002	VOA DW_041 LCS 25ppm	09/12/16	Yelena Borinshteyn	09/18/16	09/12/16 09:14 by YNB	0.05

Analytical Standard Record

EPA Region 9 Laboratory

1638019

Description:	VOA SCV_VOC 25ppm	**Expires:**	09/18/16
Standard Type:	Analyte Spike	**Prepared:**	09/12/16
Solvent:	MeOH #DP303	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/12/16 09:37 by YNB
Vendor:	*Prepared*	**Lot Numbe**	123

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	200
1,3-Dichloropropane	142-28-9	25
1,4-Dichlorobenzene	106-46-7	25
2,2-Dichloropropane	594-20-7	25
2-Butanone (MEK)	78-93-3	200
2-Chlorotoluene	95-49-8	25
2-Hexanone	591-78-6	200
Bromomethane	74-83-9	25
4-Methyl-2-pentanone (MIBK)	108-10-1	200
1,2-Dichloropropane	78-87-5	25
Acetonitrile	75-05-8	200
Acrylonitrile	107-13-1	200
Benzene	71-43-2	25
Bromobenzene	108-86-1	25
Bromochloromethane	74-97-5	25
Bromodichloromethane	75-27-4	25
1,1,1,2-Tetrachloroethane	630-20-6	25
4-Chlorotoluene	106-43-4	25
1,2,3-Trimethylbenzene	526-73-8	25
1,1,1-Trichloroethane	71-55-6	25
1,1,2,2-Tetrachloroethane	79-34-5	25
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	25
1,1,2-Trichloroethane	79-00-5	25
1,1-Dichloroethane	75-34-3	25
1,1-Dichloroethene	75-35-4	25
1,1-Dichloropropene	563-58-6	25
1,3-Dichlorobenzene	541-73-1	25
1,2,3-Trichloropropane	96-18-4	25
1,3,5-Trimethylbenzene	108-67-8	25
1,2,4-Trichlorobenzene	120-82-1	25

Analytical Standard Record

EPA Region 9 Laboratory

1638019

1,2,4-Trimethylbenzene	95-63-6	25
1,2-Dibromo-3-chloropropane	96-12-8	25
1,2-Dibromoethane (EDB)	106-93-4	25
1,2-Dichlorobenzene	95-50-1	25
1,2-Dichloroethane	107-06-2	25
Butylbenzene	104-51-8	25
1,2,3-Trichlorobenzene	87-61-6	25
tert-Butyl methyl ether (MTBE)	1634-04-4	100
Naphthalene	91-20-3	25
o-Xylene	95-47-6	25
p-Isopropyltoluene	99-87-6	25
Propylbenzene	103-65-1	25
sec-Butylbenzene	135-98-8	25
Styrene	100-42-5	25
Bromoform	75-25-2	25
tert-Butyl alcohol	75-65-0	500
Isobutanol	78-83-1	200
tert-Butylbenzene	98-06-6	25
Tetrachloroethene	127-18-4	25
Toluene	108-88-3	25
trans-1,2-Dichloroethene	156-60-5	25
trans-1,3-Dichloropropene	10061-02-6	25
Trichloroethene	79-01-6	25
Trichlorofluoromethane	75-69-4	25
tert-Amyl methyl ether	994-05-8	100
Dibromomethane	74-95-3	25
Carbon disulfide	75-15-0	25
Carbon tetrachloride	56-23-5	25
Chlorobenzene	108-90-7	25
Chlorodibromomethane	124-48-1	25
Chloroethane	75-00-3	25
Chloroform	67-66-3	25
Chloromethane	74-87-3	25
m&p-Xylene	179601-23-1	50
cis-1,3-Dichloropropene	10061-01-5	25
Isopropylbenzene	98-82-8	25
Dichlorodifluoromethane	75-71-8	25
Dichloromethane	75-09-2	25
Diisopropyl ether	108-20-3	100

Analytical Standard Record

EPA Region 9 Laboratory

1638019

Ethyl tert-butyl ether	637-92-3	100
Ethylbenzene	100-41-4	25
Hexachlorobutadiene	87-68-3	25
Vinyl chloride	75-01-4	25
cis-1,2-Dichloroethene	156-59-2	25

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1622048	VOA Calif.Oxygenates Mix, Stock	05/24/16	** Vendor **	04/30/17	05/24/16 12:07 by YNB	0.1
1622044	VOA 8240B Standard Mix 2, Stock	05/24/16	** Vendor **	04/30/18	05/24/16 11:57 by YNB	0.2
1530071	VOA Carbon Disulfide, Single Calibrati	07/23/15	** Vendor **	12/31/16	07/23/15 13:25 by YNB	0.01
1615140	VOA VOC Mix 6, Stock	02/01/15	** Vendor **	02/28/17	04/08/16 12:40 by EM	0.025
1615134	VOA Freon 113, stock	11/16/15	** Vendor **	11/30/18	04/08/16 12:27 by EM	0.025
1622038	VOA 502/524 VOC Mix, Stock	05/24/16	** Vendor **	05/31/17	05/24/16 11:47 by YNB	0.025

Analytical Standard Record

EPA Region 9 Laboratory

1638021

Description:	SCV W	**Expires:**	09/18/16
Standard Type:	Other Solution	**Prepared:**	09/12/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/12/16 09:37 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.04
1,1,1,2-Tetrachloroethane	630-20-6	0.005
1,3-Dichloropropane	142-28-9	0.005
1,4-Dichlorobenzene	106-46-7	0.005
2,2-Dichloropropane	594-20-7	0.005
2-Butanone (MEK)	78-93-3	0.04
2-Chlorotoluene	95-49-8	0.005
2-Hexanone	591-78-6	0.04
1,3,5-Trimethylbenzene	108-67-8	0.005
4-Chlorotoluene	106-43-4	0.005
1,2-Dichloropropane	78-87-5	0.005
Acetone	67-64-1	0.04
Acetonitrile	75-05-8	0.04
Acrylonitrile	107-13-1	0.04
Benzene	71-43-2	0.005
Bromobenzene	108-86-1	0.005
Bromochloromethane	74-97-5	0.005
Bromodichloromethane	75-27-4	0.005
Bromoform	75-25-2	0.005
4-Bromofluorobenzene	460-00-4	0.005
1,2,3-Trimethylbenzene	526-73-8	0.005
1,1,1-Trichloroethane	71-55-6	0.005
1,1,2,2-Tetrachloroethane	79-34-5	0.005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.005
1,1,2-Trichloroethane	79-00-5	0.005
1,1-Dichloroethane	75-34-3	0.005
1,1-Dichloroethene	75-35-4	0.005
1,1-Dichloropropene	563-58-6	0.005
1,3-Dichlorobenzene	541-73-1	0.005
1,2,3-Trichloropropane	96-18-4	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1638021

Carbon disulfide	75-15-0	0.005
1,2,4-Trichlorobenzene	120-82-1	0.005
1,2,4-Trimethylbenzene	95-63-6	0.005
1,2-Dibromo-3-chloropropane	96-12-8	0.005
1,2-Dibromoethane (EDB)	106-93-4	0.005
1,2-Dichlorobenzene	95-50-1	0.005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.02
m&p-Xylene	179601-23-1	0.01
Naphthalene	91-20-3	0.005
o-Xylene	95-47-6	0.005
p-Isopropyltoluene	99-87-6	0.005
Propylbenzene	103-65-1	0.005
sec-Butylbenzene	135-98-8	0.005
Styrene	100-42-5	0.005
Bromomethane	74-83-9	0.005
tert-Butyl alcohol	75-65-0	0.1
Hexachlorobutadiene	87-68-3	0.005
tert-Butylbenzene	98-06-6	0.005
Tetrachloroethene	127-18-4	0.005
Toluene	108-88-3	0.005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.005
trans-1,3-Dichloropropene	10061-02-6	0.005
Trichloroethene	79-01-6	0.005
Trichlorofluoromethane	75-69-4	0.005
tert-Amyl methyl ether	994-05-8	0.02
Dibromomethane	74-95-3	0.005
Vinyl chloride	75-01-4	0.005
Carbon tetrachloride	56-23-5	0.005
Chlorobenzene	108-90-7	0.005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.005
Chloroethane	75-00-3	0.005
Chloroform	67-66-3	0.005
Chloromethane	74-87-3	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1638021

Isopropylbenzene	98-82-8	0.005
cis-1,3-Dichloropropene	10061-01-5	0.005
Isobutanol	78-83-1	0.04
Dichlorodifluoromethane	75-71-8	0.005
Dichloromethane	75-09-2	0.005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.02
Ethyl tert-butyl ether	637-92-3	0.02
Ethylbenzene	100-41-4	0.005
Fluorobenzene	462-06-6	0.005
Butylbenzene	104-51-8	0.005
cis-1,2-Dichloroethene	156-59-2	0.005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1638019	VOA SCV_VOC 25ppm	09/12/16	Yelena Borinshteyn	09/18/16	09/12/16 09:37 by YNB	0.01
1638001	VOA ISA_VOC 125 ppm	09/12/16	Yelena Borinshteyn	09/25/16	09/12/16 08:04 by YNB	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1639014

Description:	VOA ISA_VOC 125 ppm	**Expires:**	10/02/16
Standard Type:	Surrogate Spike	**Prepared:**	09/20/16
Solvent:	MeOH/ Lot # DP303	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	10	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/20/16 08:32 by YNB
Vendor:	*Prepared*	**Lot Numbe**	123

Analyte	CAS Number	Concentration (ppm)
Toluene-d8	2037-26-5	125
Fluorobenzene	462-06-6	125
Dichloromethane-d2	1665-00-5	125
Chlorobenzene-d5	3114-55-4	125
4-Bromofluorobenzene	460-00-4	125
1,2-Dichloroethane-d4	17060-07-0	125
1,2-Dichlorobenzene-d4	2199-69-1	125

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1444014	Custom VOA IS/SS. Mix	10/27/14	** Vendor **	10/31/19	10/27/14 11:46 by YNB	0.125

Analytical Standard Record

EPA Region 9 Laboratory

1640001

Description:	VOA DW_043 LCS 25ppm	**Expires:**	10/02/16
Standard Type:	Analyte Spike	**Prepared:**	09/26/16
Solvent:	MeOH#DP303	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/26/16 08:11 by YNB
Vendor:	*Prepared*	**Lot Numbe**	123

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	200
1,3-Dichloropropane	142-28-9	25
1,4-Dichlorobenzene	106-46-7	25
2,2-Dichloropropane	594-20-7	25
2-Butanone (MEK)	78-93-3	200
2-Chlorotoluene	95-49-8	25
2-Hexanone	591-78-6	200
Butylbenzene	104-51-8	25
4-Methyl-2-pentanone (MIBK)	108-10-1	200
1,2-Dichloropropane	78-87-5	25
Benzene	71-43-2	25
Bromobenzene	108-86-1	25
Bromochloromethane	74-97-5	25
Bromodichloromethane	75-27-4	25
Bromoform	75-25-2	25
1,1,1,2-Tetrachloroethane	630-20-6	25
4-Chlorotoluene	106-43-4	25
1,2,3-Trichloropropane	96-18-4	25
1,1,1-Trichloroethane	71-55-6	25
1,1,2,2-Tetrachloroethane	79-34-5	25
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	25
1,1,2-Trichloroethane	79-00-5	25
1,1-Dichloroethane	75-34-3	25
1,1-Dichloroethene	75-35-4	25
1,3-Dichlorobenzene	541-73-1	25
1,2,3-Trichlorobenzene	87-61-6	25
1,3,5-Trimethylbenzene	108-67-8	25
1,2,4-Trichlorobenzene	120-82-1	25
1,2,4-Trimethylbenzene	95-63-6	25
1,2-Dibromo-3-chloropropane	96-12-8	100

Analytical Standard Record

EPA Region 9 Laboratory

1640001

1,2-Dibromoethane (EDB)	106-93-4	25
1,2-Dichlorobenzene	95-50-1	25
1,2-Dichloroethane	107-06-2	25
Carbon disulfide	75-15-0	25
1,1-Dichloropropene	563-58-6	25
tert-Butylbenzene	98-06-6	25
o-Xylene	95-47-6	25
p-Isopropyltoluene	99-87-6	25
Propylbenzene	103-65-1	25
sec-Butylbenzene	135-98-8	25
Styrene	100-42-5	25
tert-Amyl methyl ether	994-05-8	100
Bromomethane	74-83-9	25
tert-Butyl methyl ether (MTBE)	1634-04-4	100
Isopropylbenzene	98-82-8	25
Tetrachloroethene	127-18-4	25
Toluene	108-88-3	25
trans-1,2-Dichloroethene	156-60-5	25
trans-1,3-Dichloropropene	10061-02-6	25
Trichloroethene	79-01-6	25
Trichlorofluoromethane	75-69-4	25
tert-Butyl alcohol	75-65-0	500
Dibromomethane	74-95-3	25
Carbon tetrachloride	56-23-5	25
Chlorobenzene	108-90-7	25
Chlorodibromomethane	124-48-1	25
Chloroethane	75-00-3	25
Chloroform	67-66-3	25
Chloromethane	74-87-3	25
Naphthalene	91-20-3	25
cis-1,3-Dichloropropene	10061-01-5	25
m&p-Xylene	179601-23-1	50
Dichlorodifluoromethane	75-71-8	25
Dichloromethane	75-09-2	25
Diisopropyl ether	108-20-3	100
Ethyl tert-butyl ether	637-92-3	100
Ethylbenzene	100-41-4	25
Hexachlorobutadiene	87-68-3	25
Vinyl chloride	75-01-4	25

Analytical Standard Record

EPA Region 9 Laboratory

1640001

cis-1,2-Dichloroethene	156-59-2	25

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1627022	VOA DBCP, Single Fortifying Calibrati	06/28/16	** Vendor **	02/21/21	06/28/16 13:33 by YNB	0.075
1607060	VOA Carbon Disulfide , Single Calibra	02/09/16	** Vendor **	02/07/20	02/09/16 13:58 by YNB	0.025
1615040	VOA Calibration MIX #1 stock	04/04/16	** Vendor **	11/30/18	04/04/16 15:25 by YNB	0.08
1545036	VOC: 1,1,2-Trichlorofluoroethane(Freo	11/03/15	** Vendor **	07/31/18	11/03/15 13:08 by YNB	0.025
1618013	VOA 502.2 CAL 2000 MEGA MIX, St	04/25/16	** Vendor **	12/31/17	04/25/16 09:35 by YNB	0.025
1607066	VOA 502.2 Calibration Mix # 1, Stock	02/09/16	** Vendor **	07/31/22	02/09/16 14:07 by YNB	0.025
1520038	VOA Calif.Oxygenates Mix, Stock	05/11/15	** Vendor **	10/31/19	05/11/15 15:34 by YNB	0.1

Analytical Standard Record

EPA Region 9 Laboratory

1640015

Description:	VOA SCV_VOC 25ppm	**Expires:**	10/03/16
Standard Type:	Analyte Spike	**Prepared:**	09/27/16
Solvent:	MeOH #DP303	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/27/16 11:32 by YNB
Vendor:	*Prepared*	**Lot Numbe**	123

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	200
1,3-Dichloropropane	142-28-9	25
1,4-Dichlorobenzene	106-46-7	25
2,2-Dichloropropane	594-20-7	25
2-Butanone (MEK)	78-93-3	200
2-Chlorotoluene	95-49-8	25
2-Hexanone	591-78-6	200
Bromomethane	74-83-9	25
4-Methyl-2-pentanone (MIBK)	108-10-1	200
1,2-Dichloropropane	78-87-5	25
Acetonitrile	75-05-8	200
Acrylonitrile	107-13-1	200
Benzene	71-43-2	25
Bromobenzene	108-86-1	25
Bromochloromethane	74-97-5	25
Bromodichloromethane	75-27-4	25
1,1,1,2-Tetrachloroethane	630-20-6	25
4-Chlorotoluene	106-43-4	25
1,2,3-Trimethylbenzene	526-73-8	25
1,1,1-Trichloroethane	71-55-6	25
1,1,2,2-Tetrachloroethane	79-34-5	25
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	25
1,1,2-Trichloroethane	79-00-5	25
1,1-Dichloroethane	75-34-3	25
1,1-Dichloroethene	75-35-4	25
1,1-Dichloropropene	563-58-6	25
1,3-Dichlorobenzene	541-73-1	25
1,2,3-Trichloropropane	96-18-4	25
1,3,5-Trimethylbenzene	108-67-8	25
1,2,4-Trichlorobenzene	120-82-1	25

Analytical Standard Record

EPA Region 9 Laboratory

1640015

1,2,4-Trimethylbenzene	95-63-6	25
1,2-Dibromo-3-chloropropane	96-12-8	25
1,2-Dibromoethane (EDB)	106-93-4	25
1,2-Dichlorobenzene	95-50-1	25
1,2-Dichloroethane	107-06-2	25
Butylbenzene	104-51-8	25
1,2,3-Trichlorobenzene	87-61-6	25
tert-Butyl methyl ether (MTBE)	1634-04-4	100
Naphthalene	91-20-3	25
o-Xylene	95-47-6	25
p-Isopropyltoluene	99-87-6	25
Propylbenzene	103-65-1	25
sec-Butylbenzene	135-98-8	25
Styrene	100-42-5	25
Bromoform	75-25-2	25
tert-Butyl alcohol	75-65-0	500
Isobutanol	78-83-1	200
tert-Butylbenzene	98-06-6	25
Tetrachloroethene	127-18-4	25
Toluene	108-88-3	25
trans-1,2-Dichloroethene	156-60-5	25
trans-1,3-Dichloropropene	10061-02-6	25
Trichloroethene	79-01-6	25
Trichlorofluoromethane	75-69-4	25
tert-Amyl methyl ether	994-05-8	100
Dibromomethane	74-95-3	25
Carbon disulfide	75-15-0	25
Carbon tetrachloride	56-23-5	25
Chlorobenzene	108-90-7	25
Chlorodibromomethane	124-48-1	25
Chloroethane	75-00-3	25
Chloroform	67-66-3	25
Chloromethane	74-87-3	25
m&p-Xylene	179601-23-1	50
cis-1,3-Dichloropropene	10061-01-5	25
Isopropylbenzene	98-82-8	25
Dichlorodifluoromethane	75-71-8	25
Dichloromethane	75-09-2	25
Diisopropyl ether	108-20-3	100

Analytical Standard Record

EPA Region 9 Laboratory

1640015

Ethyl tert-butyl ether	637-92-3	100
Ethylbenzene	100-41-4	25
Hexachlorobutadiene	87-68-3	25
Vinyl chloride	75-01-4	25
cis-1,2-Dichloroethene	156-59-2	25

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1530071	VOA Carbon Disulfide, Single Calibrati	07/23/15	** Vendor **	12/31/16	07/23/15 13:25 by YNB	0.01
1615140	VOA VOC Mix 6, Stock	02/01/15	** Vendor **	02/28/17	04/08/16 12:40 by EM	0.025
1615134	VOA Freon 113, stock	11/16/15	** Vendor **	11/30/18	04/08/16 12:27 by EM	0.025
1622038	VOA 502/524 VOC Mix, Stock	05/24/16	** Vendor **	05/31/17	05/24/16 11:47 by YNB	0.025
1622048	VOA Calif.Oxygenates Mix, Stock	05/24/16	** Vendor **	04/30/17	05/24/16 12:07 by YNB	0.1
1622045	VOA 8240B Standard Mix 2, Stock	05/24/16	** Vendor **	04/30/18	05/24/16 11:57 by YNB	0.2

Analytical Standard Record

EPA Region 9 Laboratory

1640016

Description:	SCV W	**Expires:**	10/02/16
Standard Type:	Other Solution	**Prepared:**	09/27/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/27/16 11:34 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.04
1,1,1,2-Tetrachloroethane	630-20-6	0.005
1,3-Dichloropropane	142-28-9	0.005
1,4-Dichlorobenzene	106-46-7	0.005
2,2-Dichloropropane	594-20-7	0.005
2-Butanone (MEK)	78-93-3	0.04
2-Chlorotoluene	95-49-8	0.005
2-Hexanone	591-78-6	0.04
1,3,5-Trimethylbenzene	108-67-8	0.005
4-Chlorotoluene	106-43-4	0.005
1,2-Dichloropropane	78-87-5	0.005
Acetone	67-64-1	0.04
Acetonitrile	75-05-8	0.04
Acrylonitrile	107-13-1	0.04
Benzene	71-43-2	0.005
Bromobenzene	108-86-1	0.005
Bromochloromethane	74-97-5	0.005
Bromodichloromethane	75-27-4	0.005
Bromoform	75-25-2	0.005
4-Bromofluorobenzene	460-00-4	0.005
1,2,3-Trimethylbenzene	526-73-8	0.005
1,1,1-Trichloroethane	71-55-6	0.005
1,1,2,2-Tetrachloroethane	79-34-5	0.005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.005
1,1,2-Trichloroethane	79-00-5	0.005
1,1-Dichloroethane	75-34-3	0.005
1,1-Dichloroethene	75-35-4	0.005
1,1-Dichloropropene	563-58-6	0.005
1,3-Dichlorobenzene	541-73-1	0.005
1,2,3-Trichloropropane	96-18-4	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1640016

Carbon disulfide	75-15-0	0.005
1,2,4-Trichlorobenzene	120-82-1	0.005
1,2,4-Trimethylbenzene	95-63-6	0.005
1,2-Dibromo-3-chloropropane	96-12-8	0.005
1,2-Dibromoethane (EDB)	106-93-4	0.005
1,2-Dichlorobenzene	95-50-1	0.005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.02
m&p-Xylene	179601-23-1	0.01
Naphthalene	91-20-3	0.005
o-Xylene	95-47-6	0.005
p-Isopropyltoluene	99-87-6	0.005
Propylbenzene	103-65-1	0.005
sec-Butylbenzene	135-98-8	0.005
Styrene	100-42-5	0.005
Bromomethane	74-83-9	0.005
tert-Butyl alcohol	75-65-0	0.1
Hexachlorobutadiene	87-68-3	0.005
tert-Butylbenzene	98-06-6	0.005
Tetrachloroethene	127-18-4	0.005
Toluene	108-88-3	0.005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.005
trans-1,3-Dichloropropene	10061-02-6	0.005
Trichloroethene	79-01-6	0.005
Trichlorofluoromethane	75-69-4	0.005
tert-Amyl methyl ether	994-05-8	0.02
Dibromomethane	74-95-3	0.005
Vinyl chloride	75-01-4	0.005
Carbon tetrachloride	56-23-5	0.005
Chlorobenzene	108-90-7	0.005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.005
Chloroethane	75-00-3	0.005
Chloroform	67-66-3	0.005
Chloromethane	74-87-3	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1640016

Isopropylbenzene	98-82-8	0.005
cis-1,3-Dichloropropene	10061-01-5	0.005
Isobutanol	78-83-1	0.04
Dichlorodifluoromethane	75-71-8	0.005
Dichloromethane	75-09-2	0.005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.02
Ethyl tert-butyl ether	637-92-3	0.02
Ethylbenzene	100-41-4	0.005
Fluorobenzene	462-06-6	0.005
Butylbenzene	104-51-8	0.005
cis-1,2-Dichloroethene	156-59-2	0.005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1639014	VOA ISA_VOC 125 ppm	09/20/16	Yelena Borinshteyn	10/02/16	09/20/16 08:32 by YNB	0.002
1640015	VOA SCV_VOC 25ppm	09/27/16	Yelena Borinshteyn	10/03/16	09/27/16 11:32 by YNB	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1640018

Description:	CAL3 W	**Expires:**	10/02/16
Standard Type:	Other Solution	**Prepared:**	09/27/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/27/16 11:35 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.016
1,1,1,2-Tetrachloroethane	630-20-6	0.002
1,3-Dichloropropane	142-28-9	0.002
1,4-Dichlorobenzene	106-46-7	0.002
2,2-Dichloropropane	594-20-7	0.002
2-Butanone (MEK)	78-93-3	0.016
2-Chlorotoluene	95-49-8	0.002
2-Hexanone	591-78-6	0.016
1,3,5-Trimethylbenzene	108-67-8	0.002
4-Chlorotoluene	106-43-4	0.002
1,2-Dichloropropane	78-87-5	0.002
Acetone	67-64-1	0.016
Benzene	71-43-2	0.002
Bromobenzene	108-86-1	0.002
Bromochloromethane	74-97-5	0.002
Bromodichloromethane	75-27-4	0.002
Bromoform	75-25-2	0.002
Bromomethane	74-83-9	0.002
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.002
1,1,1-Trichloroethane	71-55-6	0.002
1,1,2,2-Tetrachloroethane	79-34-5	0.002
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.002
1,1,2-Trichloroethane	79-00-5	0.002
1,1-Dichloroethane	75-34-3	0.002
1,1-Dichloroethene	75-35-4	0.002
1,1-Dichloropropene	563-58-6	0.002
1,3-Dichlorobenzene	541-73-1	0.002
1,2,3-Trichloropropane	96-18-4	0.002
Carbon tetrachloride	56-23-5	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1640018

1,2,4-Trimethylbenzene	95-63-6	0.002
1,2-Dibromo-3-chloropropane	96-12-8	0.008
1,2-Dibromoethane (EDB)	106-93-4	0.002
1,2-Dichlorobenzene	95-50-1	0.002
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.002
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.002
tert-Butylbenzene	98-06-6	0.002
Naphthalene	91-20-3	0.002
o-Xylene	95-47-6	0.002
p-Isopropyltoluene	99-87-6	0.002
Propylbenzene	103-65-1	0.002
sec-Butylbenzene	135-98-8	0.002
Styrene	100-42-5	0.002
tert-Amyl methyl ether	994-05-8	0.008
Butylbenzene	104-51-8	0.002
tert-Butyl methyl ether (MTBE)	1634-04-4	0.008
Hexachlorobutadiene	87-68-3	0.002
Tetrachloroethene	127-18-4	0.002
Toluene	108-88-3	0.002
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.002
trans-1,3-Dichloropropene	10061-02-6	0.002
Trichloroethene	79-01-6	0.002
Trichlorofluoromethane	75-69-4	0.002
tert-Butyl alcohol	75-65-0	0.04
Dibromomethane	74-95-3	0.002
Vinyl chloride	75-01-4	0.002
Chlorobenzene	108-90-7	0.002
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.002
Chloroethane	75-00-3	0.002
Chloroform	67-66-3	0.002
Chloromethane	74-87-3	0.002
m&p-Xylene	179601-23-1	0.004
cis-1,3-Dichloropropene	10061-01-5	0.002
Isopropylbenzene	98-82-8	0.002
Dichlorodifluoromethane	75-71-8	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1640018

Dichloromethane	75-09-2	0.002
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.008
Ethyl tert-butyl ether	637-92-3	0.008
Ethylbenzene	100-41-4	0.002
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.002
cis-1,2-Dichloroethene	156-59-2	0.002

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640001	VOA DW_043 LCS 25ppm	09/26/16	Yelena Borinshteyn	10/02/16	09/26/16 08:11 by YNB	0.004
1639014	VOA ISA_VOC 125 ppm	09/20/16	Yelena Borinshteyn	10/02/16	09/20/16 08:32 by YNB	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1640027

Description:	VOA ISA_VOC 125 ppm	**Expires:**	10/10/16
Standard Type:	Surrogate Spike	**Prepared:**	09/28/16
Solvent:	MeOH/ Lot # DP303	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	10	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/28/16 10:21 by YNB
Vendor:	*Prepared*	**Lot Numbe**	123

Analyte	CAS Number	Concentration (ppm)
Toluene-d8	2037-26-5	125
Fluorobenzene	462-06-6	125
Dichloromethane-d2	1665-00-5	125
Chlorobenzene-d5	3114-55-4	125
4-Bromofluorobenzene	460-00-4	125
1,2-Dichloroethane-d4	17060-07-0	125
1,2-Dichlorobenzene-d4	2199-69-1	125

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1444015	Custom VOA IS/SS. Mix	10/27/14	** Vendor **	10/31/19	10/27/14 11:47 by YNB	0.125

Analytical Standard Record

EPA Region 9 Laboratory

1640039

Description:	CCV W	**Expires:**	10/02/16
Standard Type:	Other Solution	**Prepared:**	09/28/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/28/16 13:14 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.04
1,1,1,2-Tetrachloroethane	630-20-6	0.005
1,3-Dichloropropane	142-28-9	0.005
1,4-Dichlorobenzene	106-46-7	0.005
2,2-Dichloropropane	594-20-7	0.005
2-Butanone (MEK)	78-93-3	0.04
2-Chlorotoluene	95-49-8	0.005
2-Hexanone	591-78-6	0.04
1,3,5-Trimethylbenzene	108-67-8	0.005
4-Chlorotoluene	106-43-4	0.005
1,2-Dichloropropane	78-87-5	0.005
Acetone	67-64-1	0.04
Benzene	71-43-2	0.005
Bromobenzene	108-86-1	0.005
Bromochloromethane	74-97-5	0.005
Bromodichloromethane	75-27-4	0.005
Bromoform	75-25-2	0.005
Bromomethane	74-83-9	0.005
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.005
1,1,1-Trichloroethane	71-55-6	0.005
1,1,2,2-Tetrachloroethane	79-34-5	0.005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.005
1,1,2-Trichloroethane	79-00-5	0.005
1,1-Dichloroethane	75-34-3	0.005
1,1-Dichloroethene	75-35-4	0.005
1,1-Dichloropropene	563-58-6	0.005
1,3-Dichlorobenzene	541-73-1	0.005
1,2,3-Trichloropropane	96-18-4	0.005
Carbon tetrachloride	56-23-5	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1640039

1,2,4-Trimethylbenzene	95-63-6	0.005
1,2-Dibromo-3-chloropropane	96-12-8	0.02
1,2-Dibromoethane (EDB)	106-93-4	0.005
1,2-Dichlorobenzene	95-50-1	0.005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.005
tert-Butylbenzene	98-06-6	0.005
Naphthalene	91-20-3	0.005
o-Xylene	95-47-6	0.005
p-Isopropyltoluene	99-87-6	0.005
Propylbenzene	103-65-1	0.005
sec-Butylbenzene	135-98-8	0.005
Styrene	100-42-5	0.005
tert-Amyl methyl ether	994-05-8	0.02
Butylbenzene	104-51-8	0.005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.02
Hexachlorobutadiene	87-68-3	0.005
Tetrachloroethene	127-18-4	0.005
Toluene	108-88-3	0.005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.005
trans-1,3-Dichloropropene	10061-02-6	0.005
Trichloroethene	79-01-6	0.005
Trichlorofluoromethane	75-69-4	0.005
tert-Butyl alcohol	75-65-0	0.1
Dibromomethane	74-95-3	0.005
Vinyl chloride	75-01-4	0.005
Chlorobenzene	108-90-7	0.005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.005
Chloroethane	75-00-3	0.005
Chloroform	67-66-3	0.005
Chloromethane	74-87-3	0.005
m&p-Xylene	179601-23-1	0.01
cis-1,3-Dichloropropene	10061-01-5	0.005
Isopropylbenzene	98-82-8	0.005
Dichlorodifluoromethane	75-71-8	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1640039

Dichloromethane	75-09-2	0.005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.02
Ethyl tert-butyl ether	637-92-3	0.02
Ethylbenzene	100-41-4	0.005
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.005
cis-1,2-Dichloroethene	156-59-2	0.005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640001	VOA DW_043 LCS 25ppm	09/26/16	Yelena Borinshteyn	10/02/16	09/26/16 08:11 by YNB	0.01
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1640040

Description:	CRL W	**Expires:**	10/02/16
Standard Type:	Other Solution	**Prepared:**	09/28/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/28/16 13:15 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.004
1,1,1,2-Tetrachloroethane	630-20-6	0.0005
1,3-Dichloropropane	142-28-9	0.0005
1,4-Dichlorobenzene	106-46-7	0.0005
2,2-Dichloropropane	594-20-7	0.0005
2-Butanone (MEK)	78-93-3	0.004
2-Chlorotoluene	95-49-8	0.0005
2-Hexanone	591-78-6	0.004
1,3,5-Trimethylbenzene	108-67-8	0.0005
4-Chlorotoluene	106-43-4	0.0005
1,2-Dichloropropane	78-87-5	0.0005
Acetone	67-64-1	0.004
Benzene	71-43-2	0.0005
Bromobenzene	108-86-1	0.0005
Bromochloromethane	74-97-5	0.0005
Bromodichloromethane	75-27-4	0.0005
Bromoform	75-25-2	0.0005
Bromomethane	74-83-9	0.0005
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.0005
1,1,1-Trichloroethane	71-55-6	0.0005
1,1,2,2-Tetrachloroethane	79-34-5	0.0005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.0005
1,1,2-Trichloroethane	79-00-5	0.0005
1,1-Dichloroethane	75-34-3	0.0005
1,1-Dichloroethene	75-35-4	0.0005
1,1-Dichloropropene	563-58-6	0.0005
1,3-Dichlorobenzene	541-73-1	0.0005
1,2,3-Trichloropropane	96-18-4	0.0005
Carbon tetrachloride	56-23-5	0.0005

Analytical Standard Record

EPA Region 9 Laboratory

1640040

1,2,4-Trimethylbenzene	95-63-6	0.0005
1,2-Dibromo-3-chloropropane	96-12-8	0.002
1,2-Dibromoethane (EDB)	106-93-4	0.0005
1,2-Dichlorobenzene	95-50-1	0.0005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.0005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.0005
tert-Butylbenzene	98-06-6	0.0005
Naphthalene	91-20-3	0.0005
o-Xylene	95-47-6	0.0005
p-Isopropyltoluene	99-87-6	0.0005
Propylbenzene	103-65-1	0.0005
sec-Butylbenzene	135-98-8	0.0005
Styrene	100-42-5	0.0005
tert-Amyl methyl ether	994-05-8	0.002
Butylbenzene	104-51-8	0.0005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.002
Hexachlorobutadiene	87-68-3	0.0005
Tetrachloroethene	127-18-4	0.0005
Toluene	108-88-3	0.0005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.0005
trans-1,3-Dichloropropene	10061-02-6	0.0005
Trichloroethene	79-01-6	0.0005
Trichlorofluoromethane	75-69-4	0.0005
tert-Butyl alcohol	75-65-0	0.01
Dibromomethane	74-95-3	0.0005
Vinyl chloride	75-01-4	0.0005
Chlorobenzene	108-90-7	0.0005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.0005
Chloroethane	75-00-3	0.0005
Chloroform	67-66-3	0.0005
Chloromethane	74-87-3	0.0005
m&p-Xylene	179601-23-1	0.001
cis-1,3-Dichloropropene	10061-01-5	0.0005
Isopropylbenzene	98-82-8	0.0005
Dichlorodifluoromethane	75-71-8	0.0005

Analytical Standard Record

EPA Region 9 Laboratory

1640040

Dichloromethane	75-09-2	0.0005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.002
Ethyl tert-butyl ether	637-92-3	0.002
Ethylbenzene	100-41-4	0.0005
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.0005
cis-1,2-Dichloroethene	156-59-2	0.0005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1640001	VOA DW_043 LCS 25ppm	09/26/16	Yelena Borinshteyn	10/02/16	09/26/16 08:11 by YNB	0.001

Analytical Standard Record

EPA Region 9 Laboratory

1640041

Description:	CAL2 W	**Expires:**	10/02/16
Standard Type:	Other Solution	**Prepared:**	09/28/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/28/16 13:16 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.008
1,1,1,2-Tetrachloroethane	630-20-6	0.001
1,3-Dichloropropane	142-28-9	0.001
1,4-Dichlorobenzene	106-46-7	0.001
2,2-Dichloropropane	594-20-7	0.001
2-Butanone (MEK)	78-93-3	0.008
2-Chlorotoluene	95-49-8	0.001
2-Hexanone	591-78-6	0.008
1,3,5-Trimethylbenzene	108-67-8	0.001
4-Chlorotoluene	106-43-4	0.001
1,2-Dichloropropane	78-87-5	0.001
Acetone	67-64-1	0.008
Benzene	71-43-2	0.001
Bromobenzene	108-86-1	0.001
Bromochloromethane	74-97-5	0.001
Bromodichloromethane	75-27-4	0.001
Bromoform	75-25-2	0.001
Bromomethane	74-83-9	0.001
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.001
1,1,1-Trichloroethane	71-55-6	0.001
1,1,2,2-Tetrachloroethane	79-34-5	0.001
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.001
1,1,2-Trichloroethane	79-00-5	0.001
1,1-Dichloroethane	75-34-3	0.001
1,1-Dichloroethene	75-35-4	0.001
1,1-Dichloropropene	563-58-6	0.001
1,3-Dichlorobenzene	541-73-1	0.001
1,2,3-Trichloropropane	96-18-4	0.001
Carbon tetrachloride	56-23-5	0.001

Analytical Standard Record

EPA Region 9 Laboratory

1640041

1,2,4-Trimethylbenzene	95-63-6	0.001
1,2-Dibromo-3-chloropropane	96-12-8	0.004
1,2-Dibromoethane (EDB)	106-93-4	0.001
1,2-Dichlorobenzene	95-50-1	0.001
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.001
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.001
tert-Butylbenzene	98-06-6	0.001
Naphthalene	91-20-3	0.001
o-Xylene	95-47-6	0.001
p-Isopropyltoluene	99-87-6	0.001
Propylbenzene	103-65-1	0.001
sec-Butylbenzene	135-98-8	0.001
Styrene	100-42-5	0.001
tert-Amyl methyl ether	994-05-8	0.004
Butylbenzene	104-51-8	0.001
tert-Butyl methyl ether (MTBE)	1634-04-4	0.004
Hexachlorobutadiene	87-68-3	0.001
Tetrachloroethene	127-18-4	0.001
Toluene	108-88-3	0.001
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.001
trans-1,3-Dichloropropene	10061-02-6	0.001
Trichloroethene	79-01-6	0.001
Trichlorofluoromethane	75-69-4	0.001
tert-Butyl alcohol	75-65-0	0.02
Dibromomethane	74-95-3	0.001
Vinyl chloride	75-01-4	0.001
Chlorobenzene	108-90-7	0.001
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.001
Chloroethane	75-00-3	0.001
Chloroform	67-66-3	0.001
Chloromethane	74-87-3	0.001
m&p-Xylene	179601-23-1	0.002
cis-1,3-Dichloropropene	10061-01-5	0.001
Isopropylbenzene	98-82-8	0.001
Dichlorodifluoromethane	75-71-8	0.001

Analytical Standard Record

EPA Region 9 Laboratory

1640041

Dichloromethane	75-09-2	0.001
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.004
Ethyl tert-butyl ether	637-92-3	0.004
Ethylbenzene	100-41-4	0.001
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.001
cis-1,2-Dichloroethene	156-59-2	0.001

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1640001	VOA DW_043 LCS 25ppm	09/26/16	Yelena Borinshteyn	10/02/16	09/26/16 08:11 by YNB	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1640043

Description:	CAL5 W	**Expires:**	10/02/16
Standard Type:	Other Solution	**Prepared:**	09/28/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/28/16 13:16 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.08
1,1,1,2-Tetrachloroethane	630-20-6	0.01
1,3-Dichloropropane	142-28-9	0.01
1,4-Dichlorobenzene	106-46-7	0.01
2,2-Dichloropropane	594-20-7	0.01
2-Butanone (MEK)	78-93-3	0.08
2-Chlorotoluene	95-49-8	0.01
2-Hexanone	591-78-6	0.08
1,3,5-Trimethylbenzene	108-67-8	0.01
4-Chlorotoluene	106-43-4	0.01
1,2-Dichloropropane	78-87-5	0.01
Acetone	67-64-1	0.08
Benzene	71-43-2	0.01
Bromobenzene	108-86-1	0.01
Bromochloromethane	74-97-5	0.01
Bromodichloromethane	75-27-4	0.01
Bromoform	75-25-2	0.01
Bromomethane	74-83-9	0.01
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.01
1,1,1-Trichloroethane	71-55-6	0.01
1,1,2,2-Tetrachloroethane	79-34-5	0.01
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.01
1,1,2-Trichloroethane	79-00-5	0.01
1,1-Dichloroethane	75-34-3	0.01
1,1-Dichloroethene	75-35-4	0.01
1,1-Dichloropropene	563-58-6	0.01
1,3-Dichlorobenzene	541-73-1	0.01
1,2,3-Trichloropropane	96-18-4	0.01
Carbon tetrachloride	56-23-5	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1640043

1,2,4-Trimethylbenzene	95-63-6	0.01
1,2-Dibromo-3-chloropropane	96-12-8	0.04
1,2-Dibromoethane (EDB)	106-93-4	0.01
1,2-Dichlorobenzene	95-50-1	0.01
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.01
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.01
tert-Butylbenzene	98-06-6	0.01
Naphthalene	91-20-3	0.01
o-Xylene	95-47-6	0.01
p-Isopropyltoluene	99-87-6	0.01
Propylbenzene	103-65-1	0.01
sec-Butylbenzene	135-98-8	0.01
Styrene	100-42-5	0.01
tert-Amyl methyl ether	994-05-8	0.04
Butylbenzene	104-51-8	0.01
tert-Butyl methyl ether (MTBE)	1634-04-4	0.04
Hexachlorobutadiene	87-68-3	0.01
Tetrachloroethene	127-18-4	0.01
Toluene	108-88-3	0.01
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.01
trans-1,3-Dichloropropene	10061-02-6	0.01
Trichloroethene	79-01-6	0.01
Trichlorofluoromethane	75-69-4	0.01
tert-Butyl alcohol	75-65-0	0.2
Dibromomethane	74-95-3	0.01
Vinyl chloride	75-01-4	0.01
Chlorobenzene	108-90-7	0.01
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.01
Chloroethane	75-00-3	0.01
Chloroform	67-66-3	0.01
Chloromethane	74-87-3	0.01
m&p-Xylene	179601-23-1	0.02
cis-1,3-Dichloropropene	10061-01-5	0.01
Isopropylbenzene	98-82-8	0.01
Dichlorodifluoromethane	75-71-8	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1640043

Dichloromethane	75-09-2	0.01
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.04
Ethyl tert-butyl ether	637-92-3	0.04
Ethylbenzene	100-41-4	0.01
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.01
cis-1,2-Dichloroethene	156-59-2	0.01

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640001	VOA DW_043 LCS 25ppm	09/26/16	Yelena Borinshteyn	10/02/16	09/26/16 08:11 by YNB	0.02
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1640044

Description:	CAL6 W	**Expires:**	10/02/16
Standard Type:	Other Solution	**Prepared:**	09/28/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/28/16 13:17 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.2
1,1,1,2-Tetrachloroethane	630-20-6	0.025
1,3-Dichloropropane	142-28-9	0.025
1,4-Dichlorobenzene	106-46-7	0.025
2,2-Dichloropropane	594-20-7	0.025
2-Butanone (MEK)	78-93-3	0.2
2-Chlorotoluene	95-49-8	0.025
2-Hexanone	591-78-6	0.2
1,3,5-Trimethylbenzene	108-67-8	0.025
4-Chlorotoluene	106-43-4	0.025
1,2-Dichloropropane	78-87-5	0.025
Acetone	67-64-1	0.2
Benzene	71-43-2	0.025
Bromobenzene	108-86-1	0.025
Bromochloromethane	74-97-5	0.025
Bromodichloromethane	75-27-4	0.025
Bromoform	75-25-2	0.025
Bromomethane	74-83-9	0.025
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.025
1,1,1-Trichloroethane	71-55-6	0.025
1,1,2,2-Tetrachloroethane	79-34-5	0.025
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.025
1,1,2-Trichloroethane	79-00-5	0.025
1,1-Dichloroethane	75-34-3	0.025
1,1-Dichloroethene	75-35-4	0.025
1,1-Dichloropropene	563-58-6	0.025
1,3-Dichlorobenzene	541-73-1	0.025
1,2,3-Trichloropropane	96-18-4	0.025
Carbon tetrachloride	56-23-5	0.025

Analytical Standard Record

EPA Region 9 Laboratory

1640044

1,2,4-Trimethylbenzene	95-63-6	0.025
1,2-Dibromo-3-chloropropane	96-12-8	0.1
1,2-Dibromoethane (EDB)	106-93-4	0.025
1,2-Dichlorobenzene	95-50-1	0.025
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.025
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.025
tert-Butylbenzene	98-06-6	0.025
Naphthalene	91-20-3	0.025
o-Xylene	95-47-6	0.025
p-Isopropyltoluene	99-87-6	0.025
Propylbenzene	103-65-1	0.025
sec-Butylbenzene	135-98-8	0.025
Styrene	100-42-5	0.025
tert-Amyl methyl ether	994-05-8	0.1
Butylbenzene	104-51-8	0.025
tert-Butyl methyl ether (MTBE)	1634-04-4	0.1
Hexachlorobutadiene	87-68-3	0.025
Tetrachloroethene	127-18-4	0.025
Toluene	108-88-3	0.025
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.025
trans-1,3-Dichloropropene	10061-02-6	0.025
Trichloroethene	79-01-6	0.025
Trichlorofluoromethane	75-69-4	0.025
tert-Butyl alcohol	75-65-0	0.5
Dibromomethane	74-95-3	0.025
Vinyl chloride	75-01-4	0.025
Chlorobenzene	108-90-7	0.025
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.025
Chloroethane	75-00-3	0.025
Chloroform	67-66-3	0.025
Chloromethane	74-87-3	0.025
m&p-Xylene	179601-23-1	0.05
cis-1,3-Dichloropropene	10061-01-5	0.025
Isopropylbenzene	98-82-8	0.025
Dichlorodifluoromethane	75-71-8	0.025

Analytical Standard Record

EPA Region 9 Laboratory

1640044

Dichloromethane	75-09-2	0.025
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.1
Ethyl tert-butyl ether	637-92-3	0.1
Ethylbenzene	100-41-4	0.025
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.025
cis-1,2-Dichloroethene	156-59-2	0.025

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640001	VOA DW_043 LCS 25ppm	09/26/16	Yelena Borinshteyn	10/02/16	09/26/16 08:11 by YNB	0.05
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1640082

Description:	VOA DW_044 LCS 25ppm	**Expires:**	10/06/16
Standard Type:	Analyte Spike	**Prepared:**	09/30/16
Solvent:	MeOH#DP303	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/30/16 07:43 by YNB
Vendor:	*Prepared*	**Lot Numbe**	123

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	200
1,3-Dichloropropane	142-28-9	25
1,4-Dichlorobenzene	106-46-7	25
2,2-Dichloropropane	594-20-7	25
2-Butanone (MEK)	78-93-3	200
2-Chlorotoluene	95-49-8	25
2-Hexanone	591-78-6	200
Butylbenzene	104-51-8	25
4-Methyl-2-pentanone (MIBK)	108-10-1	200
1,2-Dichloropropane	78-87-5	25
Benzene	71-43-2	25
Bromobenzene	108-86-1	25
Bromochloromethane	74-97-5	25
Bromodichloromethane	75-27-4	25
Bromoform	75-25-2	25
1,1,1,2-Tetrachloroethane	630-20-6	25
4-Chlorotoluene	106-43-4	25
1,2,3-Trichloropropane	96-18-4	25
1,1,1-Trichloroethane	71-55-6	25
1,1,2,2-Tetrachloroethane	79-34-5	25
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	25
1,1,2-Trichloroethane	79-00-5	25
1,1-Dichloroethane	75-34-3	25
1,1-Dichloroethene	75-35-4	25
1,3-Dichlorobenzene	541-73-1	25
1,2,3-Trichlorobenzene	87-61-6	25
1,3,5-Trimethylbenzene	108-67-8	25
1,2,4-Trichlorobenzene	120-82-1	25
1,2,4-Trimethylbenzene	95-63-6	25
1,2-Dibromo-3-chloropropane	96-12-8	100

Analytical Standard Record

EPA Region 9 Laboratory

1640082

1,2-Dibromoethane (EDB)	106-93-4	25
1,2-Dichlorobenzene	95-50-1	25
1,2-Dichloroethane	107-06-2	25
Carbon disulfide	75-15-0	25
1,1-Dichloropropene	563-58-6	25
tert-Butylbenzene	98-06-6	25
o-Xylene	95-47-6	25
p-Isopropyltoluene	99-87-6	25
Propylbenzene	103-65-1	25
sec-Butylbenzene	135-98-8	25
Styrene	100-42-5	25
tert-Amyl methyl ether	994-05-8	100
Bromomethane	74-83-9	25
tert-Butyl methyl ether (MTBE)	1634-04-4	100
Isopropylbenzene	98-82-8	25
Tetrachloroethene	127-18-4	25
Toluene	108-88-3	25
trans-1,2-Dichloroethene	156-60-5	25
trans-1,3-Dichloropropene	10061-02-6	25
Trichloroethene	79-01-6	25
Trichlorofluoromethane	75-69-4	25
tert-Butyl alcohol	75-65-0	500
Dibromomethane	74-95-3	25
Carbon tetrachloride	56-23-5	25
Chlorobenzene	108-90-7	25
Chlorodibromomethane	124-48-1	25
Chloroethane	75-00-3	25
Chloroform	67-66-3	25
Chloromethane	74-87-3	25
Naphthalene	91-20-3	25
cis-1,3-Dichloropropene	10061-01-5	25
m&p-Xylene	179601-23-1	50
Dichlorodifluoromethane	75-71-8	25
Dichloromethane	75-09-2	25
Diisopropyl ether	108-20-3	100
Ethyl tert-butyl ether	637-92-3	100
Ethylbenzene	100-41-4	25
Hexachlorobutadiene	87-68-3	25
Vinyl chloride	75-01-4	25

Analytical Standard Record

EPA Region 9 Laboratory

1640082

cis-1,2-Dichloroethene	156-59-2	25

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1627022	VOA DBCP, Single Fortifying Calibrati	06/28/16	** Vendor **	02/21/21	06/28/16 13:33 by YNB	0.075
1618013	VOA 502.2 CAL 2000 MEGA MIX, St	04/25/16	** Vendor **	12/31/17	04/25/16 09:35 by YNB	0.025
1607066	VOA 502.2 Calibration Mix # 1, Stock	02/09/16	** Vendor **	07/31/22	02/09/16 14:07 by YNB	0.025
1520038	VOA Calif.Oxygenates Mix, Stock	05/11/15	** Vendor **	10/31/19	05/11/15 15:34 by YNB	0.1
1615041	VOA Calibration MIX #1 stock	04/04/16	** Vendor **	11/30/18	04/04/16 15:25 by YNB	0.08
1607061	VOA Carbon Disulfide , Single Calibra	02/09/16	** Vendor **	07/31/20	02/09/16 13:58 by YNB	0.025
1545035	VOC: 1,1,2-Trichlorofluoroethane(Freo	11/03/15	** Vendor **	07/31/18	11/03/15 13:08 by YNB	0.025

Analytical Standard Record

EPA Region 9 Laboratory

1640083

Description:	CCV W	**Expires:**	10/06/16
Standard Type:	Other Solution	**Prepared:**	09/30/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/30/16 07:47 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.04
1,1,1,2-Tetrachloroethane	630-20-6	0.005
1,3-Dichloropropane	142-28-9	0.005
1,4-Dichlorobenzene	106-46-7	0.005
2,2-Dichloropropane	594-20-7	0.005
2-Butanone (MEK)	78-93-3	0.04
2-Chlorotoluene	95-49-8	0.005
2-Hexanone	591-78-6	0.04
1,3,5-Trimethylbenzene	108-67-8	0.005
4-Chlorotoluene	106-43-4	0.005
1,2-Dichloropropane	78-87-5	0.005
Acetone	67-64-1	0.04
Benzene	71-43-2	0.005
Bromobenzene	108-86-1	0.005
Bromochloromethane	74-97-5	0.005
Bromodichloromethane	75-27-4	0.005
Bromoform	75-25-2	0.005
Bromomethane	74-83-9	0.005
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.005
1,1,1-Trichloroethane	71-55-6	0.005
1,1,2,2-Tetrachloroethane	79-34-5	0.005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.005
1,1,2-Trichloroethane	79-00-5	0.005
1,1-Dichloroethane	75-34-3	0.005
1,1-Dichloroethene	75-35-4	0.005
1,1-Dichloropropene	563-58-6	0.005
1,3-Dichlorobenzene	541-73-1	0.005
1,2,3-Trichloropropane	96-18-4	0.005
Carbon tetrachloride	56-23-5	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1640083

1,2,4-Trimethylbenzene	95-63-6	0.005
1,2-Dibromo-3-chloropropane	96-12-8	0.02
1,2-Dibromoethane (EDB)	106-93-4	0.005
1,2-Dichlorobenzene	95-50-1	0.005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.005
tert-Butylbenzene	98-06-6	0.005
Naphthalene	91-20-3	0.005
o-Xylene	95-47-6	0.005
p-Isopropyltoluene	99-87-6	0.005
Propylbenzene	103-65-1	0.005
sec-Butylbenzene	135-98-8	0.005
Styrene	100-42-5	0.005
tert-Amyl methyl ether	994-05-8	0.02
Butylbenzene	104-51-8	0.005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.02
Hexachlorobutadiene	87-68-3	0.005
Tetrachloroethene	127-18-4	0.005
Toluene	108-88-3	0.005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.005
trans-1,3-Dichloropropene	10061-02-6	0.005
Trichloroethene	79-01-6	0.005
Trichlorofluoromethane	75-69-4	0.005
tert-Butyl alcohol	75-65-0	0.1
Dibromomethane	74-95-3	0.005
Vinyl chloride	75-01-4	0.005
Chlorobenzene	108-90-7	0.005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.005
Chloroethane	75-00-3	0.005
Chloroform	67-66-3	0.005
Chloromethane	74-87-3	0.005
m&p-Xylene	179601-23-1	0.01
cis-1,3-Dichloropropene	10061-01-5	0.005
Isopropylbenzene	98-82-8	0.005
Dichlorodifluoromethane	75-71-8	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1640083

Dichloromethane	75-09-2	0.005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.02
Ethyl tert-butyl ether	637-92-3	0.02
Ethylbenzene	100-41-4	0.005
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.005
cis-1,2-Dichloroethene	156-59-2	0.005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1640082	VOA DW_044 LCS 25ppm	09/30/16	Yelena Borinshteyn	10/06/16	09/30/16 07:43 by YNB	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1640084

Description:	CRL W	**Expires:**	10/06/16
Standard Type:	Other Solution	**Prepared:**	09/30/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/30/16 07:47 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.004
1,1,1,2-Tetrachloroethane	630-20-6	0.0005
1,3-Dichloropropane	142-28-9	0.0005
1,4-Dichlorobenzene	106-46-7	0.0005
2,2-Dichloropropane	594-20-7	0.0005
2-Butanone (MEK)	78-93-3	0.004
2-Chlorotoluene	95-49-8	0.0005
2-Hexanone	591-78-6	0.004
1,3,5-Trimethylbenzene	108-67-8	0.0005
4-Chlorotoluene	106-43-4	0.0005
1,2-Dichloropropane	78-87-5	0.0005
Acetone	67-64-1	0.004
Benzene	71-43-2	0.0005
Bromobenzene	108-86-1	0.0005
Bromochloromethane	74-97-5	0.0005
Bromodichloromethane	75-27-4	0.0005
Bromoform	75-25-2	0.0005
Bromomethane	74-83-9	0.0005
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.0005
1,1,1-Trichloroethane	71-55-6	0.0005
1,1,2,2-Tetrachloroethane	79-34-5	0.0005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.0005
1,1,2-Trichloroethane	79-00-5	0.0005
1,1-Dichloroethane	75-34-3	0.0005
1,1-Dichloroethene	75-35-4	0.0005
1,1-Dichloropropene	563-58-6	0.0005
1,3-Dichlorobenzene	541-73-1	0.0005
1,2,3-Trichloropropane	96-18-4	0.0005
Carbon tetrachloride	56-23-5	0.0005

Analytical Standard Record

EPA Region 9 Laboratory

1640084

1,2,4-Trimethylbenzene	95-63-6	0.0005
1,2-Dibromo-3-chloropropane	96-12-8	0.002
1,2-Dibromoethane (EDB)	106-93-4	0.0005
1,2-Dichlorobenzene	95-50-1	0.0005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.0005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.0005
tert-Butylbenzene	98-06-6	0.0005
Naphthalene	91-20-3	0.0005
o-Xylene	95-47-6	0.0005
p-Isopropyltoluene	99-87-6	0.0005
Propylbenzene	103-65-1	0.0005
sec-Butylbenzene	135-98-8	0.0005
Styrene	100-42-5	0.0005
tert-Amyl methyl ether	994-05-8	0.002
Butylbenzene	104-51-8	0.0005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.002
Hexachlorobutadiene	87-68-3	0.0005
Tetrachloroethene	127-18-4	0.0005
Toluene	108-88-3	0.0005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.0005
trans-1,3-Dichloropropene	10061-02-6	0.0005
Trichloroethene	79-01-6	0.0005
Trichlorofluoromethane	75-69-4	0.0005
tert-Butyl alcohol	75-65-0	0.01
Dibromomethane	74-95-3	0.0005
Vinyl chloride	75-01-4	0.0005
Chlorobenzene	108-90-7	0.0005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.0005
Chloroethane	75-00-3	0.0005
Chloroform	67-66-3	0.0005
Chloromethane	74-87-3	0.0005
m&p-Xylene	179601-23-1	0.001
cis-1,3-Dichloropropene	10061-01-5	0.0005
Isopropylbenzene	98-82-8	0.0005
Dichlorodifluoromethane	75-71-8	0.0005

Analytical Standard Record

EPA Region 9 Laboratory

1640084

Dichloromethane	75-09-2	0.0005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.002
Ethyl tert-butyl ether	637-92-3	0.002
Ethylbenzene	100-41-4	0.0005
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.0005
cis-1,2-Dichloroethene	156-59-2	0.0005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1640082	VOA DW_044 LCS 25ppm	09/30/16	Yelena Borinshteyn	10/06/16	09/30/16 07:43 by YNB	0.001

Analytical Standard Record

EPA Region 9 Laboratory

1640085

Description:	CAL2 W	**Expires:**	10/06/16
Standard Type:	Other Solution	**Prepared:**	09/30/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/30/16 07:48 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.008
1,1,1,2-Tetrachloroethane	630-20-6	0.001
1,3-Dichloropropane	142-28-9	0.001
1,4-Dichlorobenzene	106-46-7	0.001
2,2-Dichloropropane	594-20-7	0.001
2-Butanone (MEK)	78-93-3	0.008
2-Chlorotoluene	95-49-8	0.001
2-Hexanone	591-78-6	0.008
1,3,5-Trimethylbenzene	108-67-8	0.001
4-Chlorotoluene	106-43-4	0.001
1,2-Dichloropropane	78-87-5	0.001
Acetone	67-64-1	0.008
Benzene	71-43-2	0.001
Bromobenzene	108-86-1	0.001
Bromochloromethane	74-97-5	0.001
Bromodichloromethane	75-27-4	0.001
Bromoform	75-25-2	0.001
Bromomethane	74-83-9	0.001
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.001
1,1,1-Trichloroethane	71-55-6	0.001
1,1,2,2-Tetrachloroethane	79-34-5	0.001
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.001
1,1,2-Trichloroethane	79-00-5	0.001
1,1-Dichloroethane	75-34-3	0.001
1,1-Dichloroethene	75-35-4	0.001
1,1-Dichloropropene	563-58-6	0.001
1,3-Dichlorobenzene	541-73-1	0.001
1,2,3-Trichloropropane	96-18-4	0.001
Carbon tetrachloride	56-23-5	0.001

Analytical Standard Record

EPA Region 9 Laboratory

1640085

1,2,4-Trimethylbenzene	95-63-6	0.001
1,2-Dibromo-3-chloropropane	96-12-8	0.004
1,2-Dibromoethane (EDB)	106-93-4	0.001
1,2-Dichlorobenzene	95-50-1	0.001
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.001
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.001
tert-Butylbenzene	98-06-6	0.001
Naphthalene	91-20-3	0.001
o-Xylene	95-47-6	0.001
p-Isopropyltoluene	99-87-6	0.001
Propylbenzene	103-65-1	0.001
sec-Butylbenzene	135-98-8	0.001
Styrene	100-42-5	0.001
tert-Amyl methyl ether	994-05-8	0.004
Butylbenzene	104-51-8	0.001
tert-Butyl methyl ether (MTBE)	1634-04-4	0.004
Hexachlorobutadiene	87-68-3	0.001
Tetrachloroethene	127-18-4	0.001
Toluene	108-88-3	0.001
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.001
trans-1,3-Dichloropropene	10061-02-6	0.001
Trichloroethene	79-01-6	0.001
Trichlorofluoromethane	75-69-4	0.001
tert-Butyl alcohol	75-65-0	0.02
Dibromomethane	74-95-3	0.001
Vinyl chloride	75-01-4	0.001
Chlorobenzene	108-90-7	0.001
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.001
Chloroethane	75-00-3	0.001
Chloroform	67-66-3	0.001
Chloromethane	74-87-3	0.001
m&p-Xylene	179601-23-1	0.002
cis-1,3-Dichloropropene	10061-01-5	0.001
Isopropylbenzene	98-82-8	0.001
Dichlorodifluoromethane	75-71-8	0.001

Analytical Standard Record

EPA Region 9 Laboratory

1640085

Dichloromethane	75-09-2	0.001
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.004
Ethyl tert-butyl ether	637-92-3	0.004
Ethylbenzene	100-41-4	0.001
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.001
cis-1,2-Dichloroethene	156-59-2	0.001

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1640082	VOA DW_044 LCS 25ppm	09/30/16	Yelena Borinshteyn	10/06/16	09/30/16 07:43 by YNB	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1640086

Description:	CAL3 W	**Expires:**	10/06/16
Standard Type:	Other Solution	**Prepared:**	09/30/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/30/16 07:48 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.016
1,1,1,2-Tetrachloroethane	630-20-6	0.002
1,3-Dichloropropane	142-28-9	0.002
1,4-Dichlorobenzene	106-46-7	0.002
2,2-Dichloropropane	594-20-7	0.002
2-Butanone (MEK)	78-93-3	0.016
2-Chlorotoluene	95-49-8	0.002
2-Hexanone	591-78-6	0.016
1,3,5-Trimethylbenzene	108-67-8	0.002
4-Chlorotoluene	106-43-4	0.002
1,2-Dichloropropane	78-87-5	0.002
Acetone	67-64-1	0.016
Benzene	71-43-2	0.002
Bromobenzene	108-86-1	0.002
Bromochloromethane	74-97-5	0.002
Bromodichloromethane	75-27-4	0.002
Bromoform	75-25-2	0.002
Bromomethane	74-83-9	0.002
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.002
1,1,1-Trichloroethane	71-55-6	0.002
1,1,2,2-Tetrachloroethane	79-34-5	0.002
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.002
1,1,2-Trichloroethane	79-00-5	0.002
1,1-Dichloroethane	75-34-3	0.002
1,1-Dichloroethene	75-35-4	0.002
1,1-Dichloropropene	563-58-6	0.002
1,3-Dichlorobenzene	541-73-1	0.002
1,2,3-Trichloropropane	96-18-4	0.002
Carbon tetrachloride	56-23-5	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1640086

1,2,4-Trimethylbenzene	95-63-6	0.002
1,2-Dibromo-3-chloropropane	96-12-8	0.008
1,2-Dibromoethane (EDB)	106-93-4	0.002
1,2-Dichlorobenzene	95-50-1	0.002
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.002
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.002
tert-Butylbenzene	98-06-6	0.002
Naphthalene	91-20-3	0.002
o-Xylene	95-47-6	0.002
p-Isopropyltoluene	99-87-6	0.002
Propylbenzene	103-65-1	0.002
sec-Butylbenzene	135-98-8	0.002
Styrene	100-42-5	0.002
tert-Amyl methyl ether	994-05-8	0.008
Butylbenzene	104-51-8	0.002
tert-Butyl methyl ether (MTBE)	1634-04-4	0.008
Hexachlorobutadiene	87-68-3	0.002
Tetrachloroethene	127-18-4	0.002
Toluene	108-88-3	0.002
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.002
trans-1,3-Dichloropropene	10061-02-6	0.002
Trichloroethene	79-01-6	0.002
Trichlorofluoromethane	75-69-4	0.002
tert-Butyl alcohol	75-65-0	0.04
Dibromomethane	74-95-3	0.002
Vinyl chloride	75-01-4	0.002
Chlorobenzene	108-90-7	0.002
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.002
Chloroethane	75-00-3	0.002
Chloroform	67-66-3	0.002
Chloromethane	74-87-3	0.002
m&p-Xylene	179601-23-1	0.004
cis-1,3-Dichloropropene	10061-01-5	0.002
Isopropylbenzene	98-82-8	0.002
Dichlorodifluoromethane	75-71-8	0.002

Analytical Standard Record

EPA Region 9 Laboratory

1640086

Dichloromethane	75-09-2	0.002
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.008
Ethyl tert-butyl ether	637-92-3	0.008
Ethylbenzene	100-41-4	0.002
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.002
cis-1,2-Dichloroethene	156-59-2	0.002

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1640082	VOA DW_044 LCS 25ppm	09/30/16	Yelena Borinshteyn	10/06/16	09/30/16 07:43 by YNB	0.004

Analytical Standard Record

EPA Region 9 Laboratory

1640087

Description:	CAL5 W	**Expires:**	10/06/16
Standard Type:	Other Solution	**Prepared:**	09/30/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/30/16 07:48 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.08
1,1,1,2-Tetrachloroethane	630-20-6	0.01
1,3-Dichloropropane	142-28-9	0.01
1,4-Dichlorobenzene	106-46-7	0.01
2,2-Dichloropropane	594-20-7	0.01
2-Butanone (MEK)	78-93-3	0.08
2-Chlorotoluene	95-49-8	0.01
2-Hexanone	591-78-6	0.08
1,3,5-Trimethylbenzene	108-67-8	0.01
4-Chlorotoluene	106-43-4	0.01
1,2-Dichloropropane	78-87-5	0.01
Acetone	67-64-1	0.08
Benzene	71-43-2	0.01
Bromobenzene	108-86-1	0.01
Bromochloromethane	74-97-5	0.01
Bromodichloromethane	75-27-4	0.01
Bromoform	75-25-2	0.01
Bromomethane	74-83-9	0.01
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.01
1,1,1-Trichloroethane	71-55-6	0.01
1,1,2,2-Tetrachloroethane	79-34-5	0.01
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.01
1,1,2-Trichloroethane	79-00-5	0.01
1,1-Dichloroethane	75-34-3	0.01
1,1-Dichloroethene	75-35-4	0.01
1,1-Dichloropropene	563-58-6	0.01
1,3-Dichlorobenzene	541-73-1	0.01
1,2,3-Trichloropropane	96-18-4	0.01
Carbon tetrachloride	56-23-5	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1640087

1,2,4-Trimethylbenzene	95-63-6	0.01
1,2-Dibromo-3-chloropropane	96-12-8	0.04
1,2-Dibromoethane (EDB)	106-93-4	0.01
1,2-Dichlorobenzene	95-50-1	0.01
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.01
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.01
tert-Butylbenzene	98-06-6	0.01
Naphthalene	91-20-3	0.01
o-Xylene	95-47-6	0.01
p-Isopropyltoluene	99-87-6	0.01
Propylbenzene	103-65-1	0.01
sec-Butylbenzene	135-98-8	0.01
Styrene	100-42-5	0.01
tert-Amyl methyl ether	994-05-8	0.04
Butylbenzene	104-51-8	0.01
tert-Butyl methyl ether (MTBE)	1634-04-4	0.04
Hexachlorobutadiene	87-68-3	0.01
Tetrachloroethene	127-18-4	0.01
Toluene	108-88-3	0.01
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.01
trans-1,3-Dichloropropene	10061-02-6	0.01
Trichloroethene	79-01-6	0.01
Trichlorofluoromethane	75-69-4	0.01
tert-Butyl alcohol	75-65-0	0.2
Dibromomethane	74-95-3	0.01
Vinyl chloride	75-01-4	0.01
Chlorobenzene	108-90-7	0.01
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.01
Chloroethane	75-00-3	0.01
Chloroform	67-66-3	0.01
Chloromethane	74-87-3	0.01
m&p-Xylene	179601-23-1	0.02
cis-1,3-Dichloropropene	10061-01-5	0.01
Isopropylbenzene	98-82-8	0.01
Dichlorodifluoromethane	75-71-8	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1640087

Dichloromethane	75-09-2	0.01
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.04
Ethyl tert-butyl ether	637-92-3	0.04
Ethylbenzene	100-41-4	0.01
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.01
cis-1,2-Dichloroethene	156-59-2	0.01

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1640082	VOA DW_044 LCS 25ppm	09/30/16	Yelena Borinshteyn	10/06/16	09/30/16 07:43 by YNB	0.02

Analytical Standard Record

EPA Region 9 Laboratory

1640088

Description:	CAL6 W	**Expires:**	10/06/16
Standard Type:	Other Solution	**Prepared:**	09/30/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	09/30/16 07:48 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.2
1,1,1,2-Tetrachloroethane	630-20-6	0.025
1,3-Dichloropropane	142-28-9	0.025
1,4-Dichlorobenzene	106-46-7	0.025
2,2-Dichloropropane	594-20-7	0.025
2-Butanone (MEK)	78-93-3	0.2
2-Chlorotoluene	95-49-8	0.025
2-Hexanone	591-78-6	0.2
1,3,5-Trimethylbenzene	108-67-8	0.025
4-Chlorotoluene	106-43-4	0.025
1,2-Dichloropropane	78-87-5	0.025
Acetone	67-64-1	0.2
Benzene	71-43-2	0.025
Bromobenzene	108-86-1	0.025
Bromochloromethane	74-97-5	0.025
Bromodichloromethane	75-27-4	0.025
Bromoform	75-25-2	0.025
Bromomethane	74-83-9	0.025
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.025
1,1,1-Trichloroethane	71-55-6	0.025
1,1,2,2-Tetrachloroethane	79-34-5	0.025
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.025
1,1,2-Trichloroethane	79-00-5	0.025
1,1-Dichloroethane	75-34-3	0.025
1,1-Dichloroethene	75-35-4	0.025
1,1-Dichloropropene	563-58-6	0.025
1,3-Dichlorobenzene	541-73-1	0.025
1,2,3-Trichloropropane	96-18-4	0.025
Carbon tetrachloride	56-23-5	0.025

Analytical Standard Record

EPA Region 9 Laboratory

1640088

1,2,4-Trimethylbenzene	95-63-6	0.025
1,2-Dibromo-3-chloropropane	96-12-8	0.1
1,2-Dibromoethane (EDB)	106-93-4	0.025
1,2-Dichlorobenzene	95-50-1	0.025
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.025
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.025
tert-Butylbenzene	98-06-6	0.025
Naphthalene	91-20-3	0.025
o-Xylene	95-47-6	0.025
p-Isopropyltoluene	99-87-6	0.025
Propylbenzene	103-65-1	0.025
sec-Butylbenzene	135-98-8	0.025
Styrene	100-42-5	0.025
tert-Amyl methyl ether	994-05-8	0.1
Butylbenzene	104-51-8	0.025
tert-Butyl methyl ether (MTBE)	1634-04-4	0.1
Hexachlorobutadiene	87-68-3	0.025
Tetrachloroethene	127-18-4	0.025
Toluene	108-88-3	0.025
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.025
trans-1,3-Dichloropropene	10061-02-6	0.025
Trichloroethene	79-01-6	0.025
Trichlorofluoromethane	75-69-4	0.025
tert-Butyl alcohol	75-65-0	0.5
Dibromomethane	74-95-3	0.025
Vinyl chloride	75-01-4	0.025
Chlorobenzene	108-90-7	0.025
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.025
Chloroethane	75-00-3	0.025
Chloroform	67-66-3	0.025
Chloromethane	74-87-3	0.025
m&p-Xylene	179601-23-1	0.05
cis-1,3-Dichloropropene	10061-01-5	0.025
Isopropylbenzene	98-82-8	0.025
Dichlorodifluoromethane	75-71-8	0.025

Analytical Standard Record

EPA Region 9 Laboratory

1640088

Dichloromethane	75-09-2	0.025
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.1
Ethyl tert-butyl ether	637-92-3	0.1
Ethylbenzene	100-41-4	0.025
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.025
cis-1,2-Dichloroethene	156-59-2	0.025

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1640082	VOA DW_044 LCS 25ppm	09/30/16	Yelena Borinshteyn	10/06/16	09/30/16 07:43 by YNB	0.05

Analytical Standard Record

EPA Region 9 Laboratory

1641034

Description:	VOA SCV_VOC 25ppm	**Expires:**	10/11/16
Standard Type:	Analyte Spike	**Prepared:**	10/04/16
Solvent:	MeOH #DP303	**Prepared By:**	Estrellita Manuel
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	10/04/16 18:53 by EM
Vendor:	*Prepared*	**Lot Numbe**	123

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	200
1,3-Dichloropropane	142-28-9	25
1,4-Dichlorobenzene	106-46-7	25
2,2-Dichloropropane	594-20-7	25
2-Butanone (MEK)	78-93-3	200
2-Chlorotoluene	95-49-8	25
2-Hexanone	591-78-6	200
Bromomethane	74-83-9	25
4-Methyl-2-pentanone (MIBK)	108-10-1	200
1,2-Dichloropropane	78-87-5	25
Acetonitrile	75-05-8	200
Acrylonitrile	107-13-1	200
Benzene	71-43-2	25
Bromobenzene	108-86-1	25
Bromochloromethane	74-97-5	25
Bromodichloromethane	75-27-4	25
1,1,1,2-Tetrachloroethane	630-20-6	25
4-Chlorotoluene	106-43-4	25
1,2,3-Trimethylbenzene	526-73-8	25
1,1,1-Trichloroethane	71-55-6	25
1,1,2,2-Tetrachloroethane	79-34-5	25
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	25
1,1,2-Trichloroethane	79-00-5	25
1,1-Dichloroethane	75-34-3	25
1,1-Dichloroethene	75-35-4	25
1,1-Dichloropropene	563-58-6	25
1,3-Dichlorobenzene	541-73-1	25
1,2,3-Trichloropropane	96-18-4	25
1,3,5-Trimethylbenzene	108-67-8	25
1,2,4-Trichlorobenzene	120-82-1	25

Analytical Standard Record

EPA Region 9 Laboratory

1641034

1,2,4-Trimethylbenzene	95-63-6	25
1,2-Dibromo-3-chloropropane	96-12-8	25
1,2-Dibromoethane (EDB)	106-93-4	25
1,2-Dichlorobenzene	95-50-1	25
1,2-Dichloroethane	107-06-2	25
Butylbenzene	104-51-8	25
1,2,3-Trichlorobenzene	87-61-6	25
tert-Butyl methyl ether (MTBE)	1634-04-4	100
Naphthalene	91-20-3	25
o-Xylene	95-47-6	25
p-Isopropyltoluene	99-87-6	25
Propylbenzene	103-65-1	25
sec-Butylbenzene	135-98-8	25
Styrene	100-42-5	25
Bromoform	75-25-2	25
tert-Butyl alcohol	75-65-0	500
Isobutanol	78-83-1	200
tert-Butylbenzene	98-06-6	25
Tetrachloroethene	127-18-4	25
Toluene	108-88-3	25
trans-1,2-Dichloroethene	156-60-5	25
trans-1,3-Dichloropropene	10061-02-6	25
Trichloroethene	79-01-6	25
Trichlorofluoromethane	75-69-4	25
tert-Amyl methyl ether	994-05-8	100
Dibromomethane	74-95-3	25
Carbon disulfide	75-15-0	25
Carbon tetrachloride	56-23-5	25
Chlorobenzene	108-90-7	25
Chlorodibromomethane	124-48-1	25
Chloroethane	75-00-3	25
Chloroform	67-66-3	25
Chloromethane	74-87-3	25
m&p-Xylene	179601-23-1	50
cis-1,3-Dichloropropene	10061-01-5	25
Isopropylbenzene	98-82-8	25
Dichlorodifluoromethane	75-71-8	25
Dichloromethane	75-09-2	25
Diisopropyl ether	108-20-3	100

Analytical Standard Record

EPA Region 9 Laboratory

1641034

Ethyl tert-butyl ether	637-92-3	100
Ethylbenzene	100-41-4	25
Hexachlorobutadiene	87-68-3	25
Vinyl chloride	75-01-4	25
cis-1,2-Dichloroethene	156-59-2	25

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1530071	VOA Carbon Disulfide, Single Calibrati	07/23/15	** Vendor **	12/31/16	07/23/15 13:25 by YNB	0.01
1615140	VOA VOC Mix 6, Stock	02/01/15	** Vendor **	02/28/17	04/08/16 12:40 by EM	0.025
1615134	VOA Freon 113, stock	11/16/15	** Vendor **	11/30/18	04/08/16 12:27 by EM	0.025
1622038	VOA 502/524 VOC Mix, Stock	05/24/16	** Vendor **	05/31/17	05/24/16 11:47 by YNB	0.025
1622045	VOA 8240B Standard Mix 2, Stock	05/24/16	** Vendor **	04/30/18	05/24/16 11:57 by YNB	0.2
1622049	VOA Calif.Oxygenates Mix, Stock	05/24/16	** Vendor **	04/30/17	05/24/16 12:07 by YNB	0.1

Analytical Standard Record

EPA Region 9 Laboratory

1641045

Description:	SCV W	**Expires:**	10/10/16
Standard Type:	Other Solution	**Prepared:**	10/04/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	10/05/16 14:13 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.04
1,1,1,2-Tetrachloroethane	630-20-6	0.005
1,3-Dichloropropane	142-28-9	0.005
1,4-Dichlorobenzene	106-46-7	0.005
2,2-Dichloropropane	594-20-7	0.005
2-Butanone (MEK)	78-93-3	0.04
2-Chlorotoluene	95-49-8	0.005
2-Hexanone	591-78-6	0.04
1,3,5-Trimethylbenzene	108-67-8	0.005
4-Chlorotoluene	106-43-4	0.005
1,2-Dichloropropane	78-87-5	0.005
Acetone	67-64-1	0.04
Acetonitrile	75-05-8	0.04
Acrylonitrile	107-13-1	0.04
Benzene	71-43-2	0.005
Bromobenzene	108-86-1	0.005
Bromochloromethane	74-97-5	0.005
Bromodichloromethane	75-27-4	0.005
Bromoform	75-25-2	0.005
4-Bromofluorobenzene	460-00-4	0.005
1,2,3-Trimethylbenzene	526-73-8	0.005
1,1,1-Trichloroethane	71-55-6	0.005
1,1,2,2-Tetrachloroethane	79-34-5	0.005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.005
1,1,2-Trichloroethane	79-00-5	0.005
1,1-Dichloroethane	75-34-3	0.005
1,1-Dichloroethene	75-35-4	0.005
1,1-Dichloropropene	563-58-6	0.005
1,3-Dichlorobenzene	541-73-1	0.005
1,2,3-Trichloropropane	96-18-4	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1641045

Carbon disulfide	75-15-0	0.005
1,2,4-Trichlorobenzene	120-82-1	0.005
1,2,4-Trimethylbenzene	95-63-6	0.005
1,2-Dibromo-3-chloropropane	96-12-8	0.005
1,2-Dibromoethane (EDB)	106-93-4	0.005
1,2-Dichlorobenzene	95-50-1	0.005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.02
m&p-Xylene	179601-23-1	0.01
Naphthalene	91-20-3	0.005
o-Xylene	95-47-6	0.005
p-Isopropyltoluene	99-87-6	0.005
Propylbenzene	103-65-1	0.005
sec-Butylbenzene	135-98-8	0.005
Styrene	100-42-5	0.005
Bromomethane	74-83-9	0.005
tert-Butyl alcohol	75-65-0	0.1
Hexachlorobutadiene	87-68-3	0.005
tert-Butylbenzene	98-06-6	0.005
Tetrachloroethene	127-18-4	0.005
Toluene	108-88-3	0.005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.005
trans-1,3-Dichloropropene	10061-02-6	0.005
Trichloroethene	79-01-6	0.005
Trichlorofluoromethane	75-69-4	0.005
tert-Amyl methyl ether	994-05-8	0.02
Dibromomethane	74-95-3	0.005
Vinyl chloride	75-01-4	0.005
Carbon tetrachloride	56-23-5	0.005
Chlorobenzene	108-90-7	0.005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.005
Chloroethane	75-00-3	0.005
Chloroform	67-66-3	0.005
Chloromethane	74-87-3	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1641045

Isopropylbenzene	98-82-8	0.005
cis-1,3-Dichloropropene	10061-01-5	0.005
Isobutanol	78-83-1	0.04
Dichlorodifluoromethane	75-71-8	0.005
Dichloromethane	75-09-2	0.005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.02
Ethyl tert-butyl ether	637-92-3	0.02
Ethylbenzene	100-41-4	0.005
Fluorobenzene	462-06-6	0.005
Butylbenzene	104-51-8	0.005
cis-1,2-Dichloroethene	156-59-2	0.005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1641034	VOA SCV_VOC 25ppm	10/04/16	Estrellita Manuel	10/11/16	10/04/16 18:53 by EM	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1641052

Description:	VOA DW_045 LCS 25ppm	**Expires:**	10/12/16
Standard Type:	Analyte Spike	**Prepared:**	10/06/16
Solvent:	MeOH#DP303	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	2	**Department:**	Volatiles
Vials:	1	**Last Edit:**	10/06/16 08:09 by YNB
Vendor:	*Prepared*	**Lot Numbe**	123

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	200
1,3-Dichloropropane	142-28-9	25
1,4-Dichlorobenzene	106-46-7	25
2,2-Dichloropropane	594-20-7	25
2-Butanone (MEK)	78-93-3	200
2-Chlorotoluene	95-49-8	25
2-Hexanone	591-78-6	200
Butylbenzene	104-51-8	25
4-Methyl-2-pentanone (MIBK)	108-10-1	200
1,2-Dichloropropane	78-87-5	25
Benzene	71-43-2	25
Bromobenzene	108-86-1	25
Bromochloromethane	74-97-5	25
Bromodichloromethane	75-27-4	25
Bromoform	75-25-2	25
1,1,1,2-Tetrachloroethane	630-20-6	25
4-Chlorotoluene	106-43-4	25
1,2,3-Trichloropropane	96-18-4	25
1,1,1-Trichloroethane	71-55-6	25
1,1,2,2-Tetrachloroethane	79-34-5	25
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	25
1,1,2-Trichloroethane	79-00-5	25
1,1-Dichloroethane	75-34-3	25
1,1-Dichloroethene	75-35-4	25
1,3-Dichlorobenzene	541-73-1	25
1,2,3-Trichlorobenzene	87-61-6	25
1,3,5-Trimethylbenzene	108-67-8	25
1,2,4-Trichlorobenzene	120-82-1	25
1,2,4-Trimethylbenzene	95-63-6	25
1,2-Dibromo-3-chloropropane	96-12-8	100

Analytical Standard Record

EPA Region 9 Laboratory

1641052

1,2-Dibromoethane (EDB)	106-93-4	25
1,2-Dichlorobenzene	95-50-1	25
1,2-Dichloroethane	107-06-2	25
Carbon disulfide	75-15-0	25
1,1-Dichloropropene	563-58-6	25
tert-Butylbenzene	98-06-6	25
o-Xylene	95-47-6	25
p-Isopropyltoluene	99-87-6	25
Propylbenzene	103-65-1	25
sec-Butylbenzene	135-98-8	25
Styrene	100-42-5	25
tert-Amyl methyl ether	994-05-8	100
Bromomethane	74-83-9	25
tert-Butyl methyl ether (MTBE)	1634-04-4	100
Isopropylbenzene	98-82-8	25
Tetrachloroethene	127-18-4	25
Toluene	108-88-3	25
trans-1,2-Dichloroethene	156-60-5	25
trans-1,3-Dichloropropene	10061-02-6	25
Trichloroethene	79-01-6	25
Trichlorofluoromethane	75-69-4	25
tert-Butyl alcohol	75-65-0	500
Dibromomethane	74-95-3	25
Carbon tetrachloride	56-23-5	25
Chlorobenzene	108-90-7	25
Chlorodibromomethane	124-48-1	25
Chloroethane	75-00-3	25
Chloroform	67-66-3	25
Chloromethane	74-87-3	25
Naphthalene	91-20-3	25
cis-1,3-Dichloropropene	10061-01-5	25
m&p-Xylene	179601-23-1	50
Dichlorodifluoromethane	75-71-8	25
Dichloromethane	75-09-2	25
Diisopropyl ether	108-20-3	100
Ethyl tert-butyl ether	637-92-3	100
Ethylbenzene	100-41-4	25
Hexachlorobutadiene	87-68-3	25
Vinyl chloride	75-01-4	25

Analytical Standard Record

EPA Region 9 Laboratory

1641052

cis-1,2-Dichloroethene	156-59-2	25

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1627022	VOA DBCP, Single Fortifying Calibrati	06/28/16	** Vendor **	02/21/21	06/28/16 13:33 by YNB	0.075
1618013	VOA 502.2 CAL 2000 MEGA MIX, St	04/25/16	** Vendor **	12/31/17	04/25/16 09:35 by YNB	0.025
1607066	VOA 502.2 Calibration Mix # 1, Stock	02/09/16	** Vendor **	07/31/22	02/09/16 14:07 by YNB	0.025
1520038	VOA Calif.Oxygenates Mix, Stock	05/11/15	** Vendor **	10/31/19	05/11/15 15:34 by YNB	0.1
1615041	VOA Calibration MIX #1 stock	04/04/16	** Vendor **	11/30/18	04/04/16 15:25 by YNB	0.08
1607061	VOA Carbon Disulfide , Single Calibra	02/09/16	** Vendor **	07/31/20	02/09/16 13:58 by YNB	0.025
1545035	VOC: 1,1,2-Trichlorofluoroethane(Freo	11/03/15	** Vendor **	07/31/18	11/03/15 13:08 by YNB	0.025

Analytical Standard Record

EPA Region 9 Laboratory

1641053

Description:	CCV W	**Expires:**	10/10/16
Standard Type:	Other Solution	**Prepared:**	10/06/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	10/06/16 08:11 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.04
1,1,1,2-Tetrachloroethane	630-20-6	0.005
1,3-Dichloropropane	142-28-9	0.005
1,4-Dichlorobenzene	106-46-7	0.005
2,2-Dichloropropane	594-20-7	0.005
2-Butanone (MEK)	78-93-3	0.04
2-Chlorotoluene	95-49-8	0.005
2-Hexanone	591-78-6	0.04
1,3,5-Trimethylbenzene	108-67-8	0.005
4-Chlorotoluene	106-43-4	0.005
1,2-Dichloropropane	78-87-5	0.005
Acetone	67-64-1	0.04
Benzene	71-43-2	0.005
Bromobenzene	108-86-1	0.005
Bromochloromethane	74-97-5	0.005
Bromodichloromethane	75-27-4	0.005
Bromoform	75-25-2	0.005
Bromomethane	74-83-9	0.005
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.005
1,1,1-Trichloroethane	71-55-6	0.005
1,1,2,2-Tetrachloroethane	79-34-5	0.005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.005
1,1,2-Trichloroethane	79-00-5	0.005
1,1-Dichloroethane	75-34-3	0.005
1,1-Dichloroethene	75-35-4	0.005
1,1-Dichloropropene	563-58-6	0.005
1,3-Dichlorobenzene	541-73-1	0.005
1,2,3-Trichloropropane	96-18-4	0.005
Carbon tetrachloride	56-23-5	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1641053

1,2,4-Trimethylbenzene	95-63-6	0.005
1,2-Dibromo-3-chloropropane	96-12-8	0.02
1,2-Dibromoethane (EDB)	106-93-4	0.005
1,2-Dichlorobenzene	95-50-1	0.005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.005
tert-Butylbenzene	98-06-6	0.005
Naphthalene	91-20-3	0.005
o-Xylene	95-47-6	0.005
p-Isopropyltoluene	99-87-6	0.005
Propylbenzene	103-65-1	0.005
sec-Butylbenzene	135-98-8	0.005
Styrene	100-42-5	0.005
tert-Amyl methyl ether	994-05-8	0.02
Butylbenzene	104-51-8	0.005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.02
Hexachlorobutadiene	87-68-3	0.005
Tetrachloroethene	127-18-4	0.005
Toluene	108-88-3	0.005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.005
trans-1,3-Dichloropropene	10061-02-6	0.005
Trichloroethene	79-01-6	0.005
Trichlorofluoromethane	75-69-4	0.005
tert-Butyl alcohol	75-65-0	0.1
Dibromomethane	74-95-3	0.005
Vinyl chloride	75-01-4	0.005
Chlorobenzene	108-90-7	0.005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.005
Chloroethane	75-00-3	0.005
Chloroform	67-66-3	0.005
Chloromethane	74-87-3	0.005
m&p-Xylene	179601-23-1	0.01
cis-1,3-Dichloropropene	10061-01-5	0.005
Isopropylbenzene	98-82-8	0.005
Dichlorodifluoromethane	75-71-8	0.005

Analytical Standard Record

EPA Region 9 Laboratory

1641053

Dichloromethane	75-09-2	0.005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.02
Ethyl tert-butyl ether	637-92-3	0.02
Ethylbenzene	100-41-4	0.005
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.005
cis-1,2-Dichloroethene	156-59-2	0.005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1641052	VOA DW_045 LCS 25ppm	10/06/16	Yelena Borinshteyn	10/12/16	10/06/16 08:09 by YNB	0.01

Analytical Standard Record

EPA Region 9 Laboratory

1641054

Description:	CRL W	**Expires:**	10/10/16
Standard Type:	Other Solution	**Prepared:**	10/06/16
Solvent:	WATER	**Prepared By:**	Yelena Borinshteyn
Final Volume (mls):	50	**Department:**	Volatiles
Vials:	1	**Last Edit:**	10/06/16 08:11 by YNB
Vendor:	Restek	**Lot Numbe**	N/A

Analyte	CAS Number	Concentration (ppm)
4-Methyl-2-pentanone (MIBK)	108-10-1	0.004
1,1,1,2-Tetrachloroethane	630-20-6	0.0005
1,3-Dichloropropane	142-28-9	0.0005
1,4-Dichlorobenzene	106-46-7	0.0005
2,2-Dichloropropane	594-20-7	0.0005
2-Butanone (MEK)	78-93-3	0.004
2-Chlorotoluene	95-49-8	0.0005
2-Hexanone	591-78-6	0.004
1,3,5-Trimethylbenzene	108-67-8	0.0005
4-Chlorotoluene	106-43-4	0.0005
1,2-Dichloropropane	78-87-5	0.0005
Acetone	67-64-1	0.004
Benzene	71-43-2	0.0005
Bromobenzene	108-86-1	0.0005
Bromochloromethane	74-97-5	0.0005
Bromodichloromethane	75-27-4	0.0005
Bromoform	75-25-2	0.0005
Bromomethane	74-83-9	0.0005
4-Bromofluorobenzene	460-00-4	0.005
1,2,4-Trichlorobenzene	120-82-1	0.0005
1,1,1-Trichloroethane	71-55-6	0.0005
1,1,2,2-Tetrachloroethane	79-34-5	0.0005
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.0005
1,1,2-Trichloroethane	79-00-5	0.0005
1,1-Dichloroethane	75-34-3	0.0005
1,1-Dichloroethene	75-35-4	0.0005
1,1-Dichloropropene	563-58-6	0.0005
1,3-Dichlorobenzene	541-73-1	0.0005
1,2,3-Trichloropropane	96-18-4	0.0005
Carbon tetrachloride	56-23-5	0.0005

Analytical Standard Record

EPA Region 9 Laboratory

1641054

1,2,4-Trimethylbenzene	95-63-6	0.0005
1,2-Dibromo-3-chloropropane	96-12-8	0.002
1,2-Dibromoethane (EDB)	106-93-4	0.0005
1,2-Dichlorobenzene	95-50-1	0.0005
1,2-Dichlorobenzene-d4	2199-69-1	0.005
1,2-Dichloroethane	107-06-2	0.0005
1,2-Dichloroethane-d4	17060-07-0	0.005
1,2,3-Trichlorobenzene	87-61-6	0.0005
tert-Butylbenzene	98-06-6	0.0005
Naphthalene	91-20-3	0.0005
o-Xylene	95-47-6	0.0005
p-Isopropyltoluene	99-87-6	0.0005
Propylbenzene	103-65-1	0.0005
sec-Butylbenzene	135-98-8	0.0005
Styrene	100-42-5	0.0005
tert-Amyl methyl ether	994-05-8	0.002
Butylbenzene	104-51-8	0.0005
tert-Butyl methyl ether (MTBE)	1634-04-4	0.002
Hexachlorobutadiene	87-68-3	0.0005
Tetrachloroethene	127-18-4	0.0005
Toluene	108-88-3	0.0005
Toluene-d8	2037-26-5	0.005
trans-1,2-Dichloroethene	156-60-5	0.0005
trans-1,3-Dichloropropene	10061-02-6	0.0005
Trichloroethene	79-01-6	0.0005
Trichlorofluoromethane	75-69-4	0.0005
tert-Butyl alcohol	75-65-0	0.01
Dibromomethane	74-95-3	0.0005
Vinyl chloride	75-01-4	0.0005
Chlorobenzene	108-90-7	0.0005
Chlorobenzene-d5	3114-55-4	0.005
Chlorodibromomethane	124-48-1	0.0005
Chloroethane	75-00-3	0.0005
Chloroform	67-66-3	0.0005
Chloromethane	74-87-3	0.0005
m&p-Xylene	179601-23-1	0.001
cis-1,3-Dichloropropene	10061-01-5	0.0005
Isopropylbenzene	98-82-8	0.0005
Dichlorodifluoromethane	75-71-8	0.0005

Analytical Standard Record

EPA Region 9 Laboratory

1641054

Dichloromethane	75-09-2	0.0005
Dichloromethane-d2	1665-00-5	0.005
Diisopropyl ether	108-20-3	0.002
Ethyl tert-butyl ether	637-92-3	0.002
Ethylbenzene	100-41-4	0.0005
Fluorobenzene	462-06-6	0.005
Carbon disulfide	75-15-0	0.0005
cis-1,2-Dichloroethene	156-59-2	0.0005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1640027	VOA ISA_VOC 125 ppm	09/28/16	Yelena Borinshteyn	10/10/16	09/28/16 10:21 by YNB	0.002
1641052	VOA DW_045 LCS 25ppm	10/06/16	Yelena Borinshteyn	10/12/16	10/06/16 08:09 by YNB	0.001