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United States Environmental Protection Agency
Region 9 Laboratory

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

Date: **5/20/2020**

Subject: **Analytical Testing Results - Project R20S18**
WorkOrder **2005005**

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 OU1 FY2020 Vapor Intrusion 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 Audrey Johnson 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**	**WorkOrder: 2005005**
Project Number: R20S18	**75 Hawthorne Street**	**Reported:** 05/20/20 15:14
Project: MEW OU1 FY2020 Vapor Intrusion Investigation	**San Francisco CA, 94105**	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
272 Ariana-MH3-SS-050820	2005005-01	Air	05/08/20 15:30	05/11/20 08:10
260 Ariana-MH2-SS-050820	2005005-02	Air	05/08/20 15:38	05/11/20 08:10
D9-SC-050820	2005005-03	Air	05/08/20 16:25	05/11/20 08:10
D10-SC-050820	2005005-04	Air	05/08/20 16:35	05/11/20 08:10

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
Project Number: R20S18
Project: MEW OU1 FY2020 Vapor Intrusion Investigation

California Site Cleanup Section 3
75 Hawthorne Street
San Francisco CA, 94105

WorkOrder: 2005005
Reported: 05/20/20 15:14

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2005005-01									**Air - Sampled: 05/08/20 15:30**
Sample ID: 272 Ariana-MH3-SS-050820									**Volatile Organic Compounds by TO-15**
Vinyl chloride		ND	U	5	ug/m³ Air	B20E005	05/11/20	05/11/20	TO-15
1,1-Dichloroethene		ND	U	8	"	"	"	"	TO-15
trans-1,2-Dichloroethene		ND	U	8	"	"	"	"	TO-15
1,1-Dichloroethane		ND	U	8	"	"	"	"	TO-15
cis-1,2-Dichloroethene		5	C1, J	8	"	"	"	"	TO-15
Chloroform		ND	U	10	"	"	"	"	TO-15
Benzene		ND	U	6	"	"	"	"	TO-15
Trichloroethene		20		10	"	"	"	"	TO-15
Tetrachloroethene		ND	U	10	"	"	"	"	TO-15
Lab ID: 2005005-02									**Air - Sampled: 05/08/20 15:38**
Sample ID: 260 Ariana-MH2-SS-050820									**Volatile Organic Compounds by TO-15**
Vinyl chloride		ND	U	5	ug/m³ Air	B20E005	05/11/20	05/11/20	TO-15
1,1-Dichloroethene		ND	U	8	"	"	"	"	TO-15
trans-1,2-Dichloroethene		ND	U	8	"	"	"	"	TO-15
1,1-Dichloroethane		ND	U	8	"	"	"	"	TO-15
cis-1,2-Dichloroethene		20		8	"	"	"	"	TO-15
Chloroform		10		10	"	"	"	"	TO-15
Benzene		ND	U	7	"	"	"	"	TO-15
Trichloroethene		60		10	"	"	"	"	TO-15
Tetrachloroethene		ND	U	10	"	"	"	"	TO-15
Lab ID: 2005005-03									**Air - Sampled: 05/08/20 16:25**
Sample ID: D9-SC-050820									**Volatile Organic Compounds by TO-15**
Vinyl chloride		ND	U	5	ug/m³ Air	B20E005	05/11/20	05/11/20	TO-15
1,1-Dichloroethene		ND	U	8	"	"	"	"	TO-15
trans-1,2-Dichloroethene		ND	U	8	"	"	"	"	TO-15
1,1-Dichloroethane		ND	U	8	"	"	"	"	TO-15
cis-1,2-Dichloroethene		ND	U	8	"	"	"	"	TO-15
Chloroform		ND	U	10	"	"	"	"	TO-15
Benzene		ND	U	6	"	"	"	"	TO-15
Trichloroethene		10		10	"	"	"	"	TO-15
Tetrachloroethene		ND	U	10	"	"	"	"	TO-15
Lab ID: 2005005-04									**Air - Sampled: 05/08/20 16:35**
Sample ID: D10-SC-050820									**Volatile Organic Compounds by TO-15**
Vinyl chloride		ND	U	5	ug/m³ Air	B20E005	05/11/20	05/11/20	TO-15
1,1-Dichloroethene		ND	U	8	"	"	"	"	TO-15
trans-1,2-Dichloroethene		ND	U	8	"	"	"	"	TO-15
1,1-Dichloroethane		ND	U	8	"	"	"	"	TO-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**	**WorkOrder: 2005005**
Project Number: R20S18	**75 Hawthorne Street**	**Reported:** 05/20/20 15:14
Project: MEW OU1 FY2020 Vapor Intrusion Investigation	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2005005-04									**Air - Sampled: 05/08/20 16:35**
Sample ID: D10-SC-050820									**Volatile Organic Compounds by TO-15**
cis-1,2-Dichloroethene		ND	U	8	ug/m³ Air	B20E005	05/11/20	05/11/20	TO-15
Chloroform		ND	U	10	"	"	"	"	TO-15
Benzene		ND	U	6	"	"	"	"	TO-15
Trichloroethene		7	C1, J	10	"	"	"	"	TO-15
Tetrachloroethene		ND	U	10	"	"	"	"	TO-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**	**WorkOrder: 2005005**
Project Number: R20S18	**75 Hawthorne Street**	**Reported:** 05/20/20 15:14
Project: MEW OU1 FY2020 Vapor Intrusion Investigation	**San Francisco CA, 94105**	

Volatile Organic Compounds by TO-15 - Quality Control

EPA Region 9 Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20E005 - Air_Can_Pressure										
Blank (B20E005-BLK1)				Prepared & Analyzed: 05/11/20						
Vinyl chloride	ND	3	ug/m³ Air							U
1,1-Dichloroethene	ND	4	ug/m³ Air							U
trans-1,2-Dichloroethene	ND	4	ug/m³ Air							U
1,1-Dichloroethane	ND	4	ug/m³ Air							U
cis-1,2-Dichloroethene	ND	4	ug/m³ Air							U
Chloroform	ND	5	ug/m³ Air							U
Benzene	ND	3	ug/m³ Air							U
Trichloroethene	ND	5	ug/m³ Air							U
Tetrachloroethene	ND	7	ug/m³ Air							U
LCS (B20E005-BS1)				Prepared & Analyzed: 05/11/20						
1,2-Dichlorotetrafluoroethane	62	7	ug/m³ Air	67.8		92	74-116			
Chloromethane	20	2	ug/m³ Air	22.3		90	73-113			
Vinyl chloride	24	3	ug/m³ Air	26.6		92	68-119			
Bromomethane	36	4	ug/m³ Air	39.6		90	71-122			
Chloroethane	24	3	ug/m³ Air	26.9		89	73-116			
Trichlorofluoromethane	50	6	ug/m³ Air	52.8		95	74-120			
1,1,2-Trichloro-1,2,2-trifluoroethane	73	8	ug/m³ Air	76.6		95	63-126			
1,1-Dichloroethene	37	4	ug/m³ Air	41.2		89	69-119			
Dichloromethane	30	7	ug/m³ Air	34.7		87	76-110			
1,1-Dichloroethane	35	4	ug/m³ Air	38.8		90	76-113			
cis-1,2-Dichloroethene	46	4	ug/m³ Air	40.0		114	74-116			
Chloroform	48	5	ug/m³ Air	50.7		94	77-115			
1,1,1-Trichloroethane	55	5	ug/m³ Air	56.7		96	77-117			
Carbon tetrachloride	62	6	ug/m³ Air	63.5		97	75-121			
Benzene	30	3	ug/m³ Air	32.6		92	81-115			
1,2-Dichloroethane	38	4	ug/m³ Air	40.0		95	74-128			
Trichloroethene	55	5	ug/m³ Air	58.0		95	82-113			
1,2-Dichloropropane	43	5	ug/m³ Air	46.6		91	78-119			
cis-1,3-Dichloropropene	41	5	ug/m³ Air	45.3		91	82-117			
Toluene	35	4	ug/m³ Air	38.4		92	80-120			
trans-1,3-Dichloropropene	39	5	ug/m³ Air	43.5		90	81-122			
1,1,2-Trichloroethane	52	5	ug/m³ Air	55.6		93	81-121			
Tetrachloroethene	67	7	ug/m³ Air	69.1		97	69-122			
1,2-Dibromoethane (EDB)	73	8	ug/m³ Air	79.8		91	81-121			
Chlorobenzene	44	5	ug/m³ Air	47.4		93	80-122			
Ethylbenzene	42	4	ug/m³ Air	44.7		93	80-125			
m&p-Xylene	84	9	ug/m³ Air	88.5		95	80-128			
o-Xylene	41	4	ug/m³ Air	43.4		95	79-130			
Styrene	38	4	ug/m³ Air	41.7		91	76-133			
1,1,2,2-Tetrachloroethane	64	7	ug/m³ Air	67.9		95	78-132			

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**	**WorkOrder: 2005005**
Project Number: R20S18	**75 Hawthorne Street**	**Reported:** 05/20/20 15:14
Project: MEW OU1 FY2020 Vapor Intrusion Investigation	**San Francisco CA, 94105**	

Volatile Organic Compounds by TO-15 - Quality Control

EPA Region 9 Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20E005 - Air_Can_Pressure										
LCS (B20E005-BS1)				Prepared & Analyzed: 05/11/20						
1,3,5-Trimethylbenzene	49	5	ug/m³ Air	50.1		99	78-133			
1,2,4-Trimethylbenzene	49	5	ug/m³ Air	50.1		98	78-133			
1,3-Dichlorobenzene	57	6	ug/m³ Air	60.1		95	76-133			
1,4-Dichlorobenzene	55	6	ug/m³ Air	60.1		92	75-134			
1,2-Dichlorobenzene	57	6	ug/m³ Air	58.9		97	77-134			
1,2,4-Trichlorobenzene	58	7	ug/m³ Air	66.7		86	70-133			
Hexachlorobutadiene	99	10	ug/m³ Air	98.0		101	74-130			
Duplicate (B20E005-DUP1)		**Source: 2005005-01**		Prepared & Analyzed: 05/11/20						
Vinyl chloride	ND	5	ug/m³ Air		ND				20	U
1,1-Dichloroethene	ND	8	ug/m³ Air		ND				20	U
trans-1,2-Dichloroethene	ND	8	ug/m³ Air		ND				20	U
1,1-Dichloroethane	ND	8	ug/m³ Air		ND				20	U
cis-1,2-Dichloroethene	5	8	ug/m³ Air		5			2	20	C1, J
Chloroform	ND	10	ug/m³ Air		ND				20	U
Benzene	ND	6	ug/m³ Air		ND				20	U
Trichloroethene	20	10	ug/m³ Air		20			0	20	
Tetrachloroethene	ND	10	ug/m³ Air		ND				20	U
Batch S20E006 - B20E005										
Instrument Blank (S20E006-IBL1)				Prepared & Analyzed: 05/11/20						
1,2-Dichlorotetrafluoroethane	ND	7	ppbv							U
Chloromethane	ND	2	ppbv							U
Vinyl chloride	ND	3	ppbv							U
Bromomethane	ND	4	ppbv							U
Chloroethane	ND	3	ppbv							U
Trichlorofluoromethane	ND	6	ppbv							U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	8	ppbv							U
1,1-Dichloroethene	ND	4	ppbv							U
Dichloromethane	ND	7	ppbv							U
1,1-Dichloroethane	ND	4	ppbv							U
cis-1,2-Dichloroethene	ND	4	ppbv							U
Chloroform	ND	5	ppbv							U
1,1,1-Trichloroethane	ND	5	ppbv							U
Carbon tetrachloride	ND	6	ppbv							U
Benzene	ND	3	ppbv							U
1,2-Dichloroethane	ND	4	ppbv							U
Trichloroethene	ND	5	ppbv							U
1,2-Dichloropropane	ND	5	ppbv							U
cis-1,3-Dichloropropene	ND	5	ppbv							U
Toluene	ND	4	ppbv							U
trans-1,3-Dichloropropene	ND	5	ppbv							U
1,1,2-Trichloroethane	ND	5	ppbv							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**	**WorkOrder: 2005005**
Project Number: R20S18	**75 Hawthorne Street**	**Reported:** 05/20/20 15:14
Project: MEW OU1 FY2020 Vapor Intrusion Investigation	**San Francisco CA, 94105**	

Volatile Organic Compounds by TO-15 - Quality Control

EPA Region 9 Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch S20E006 - B20E005										
Instrument Blank (S20E006-IBL1)				Prepared & Analyzed: 05/11/20						
Tetrachloroethene	ND	7	ppbv							U
1,2-Dibromoethane (EDB)	ND	8	ppbv							U
Chlorobenzene	ND	5	ppbv							U
Ethylbenzene	ND	4	ppbv							U
m&p-Xylene	ND	9	ppbv							U
o-Xylene	ND	4	ppbv							U
Styrene	ND	4	ppbv							U
1,1,2,2-Tetrachloroethane	ND	7	ppbv							U
1,3,5-Trimethylbenzene	ND	5	ppbv							U
1,2,4-Trimethylbenzene	ND	5	ppbv							U
1,3-Dichlorobenzene	ND	6	ppbv							U
1,4-Dichlorobenzene	ND	6	ppbv							U
1,2-Dichlorobenzene	ND	6	ppbv							U
1,2,4-Trichlorobenzene	ND	7	ppbv							U
Hexachlorobutadiene	ND	10	ppbv							U

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Project Manager: Alana Lee	**California Site Cleanup Section 3**	**WorkOrder: 2005005**
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Project: MEW OU1 FY2020 Vapor Intrusion Investigation	**San Francisco CA, 94105**	

Qualifiers and Comments

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**	**WorkOrder: 2005005**
Project Number: R20S18	**75 Hawthorne Street**	**Reported:** 05/20/20 15:14
Project: MEW OU1 FY2020 Vapor Intrusion Investigation	**San Francisco CA, 94105**	

Sample Receiving: Samples delivered to laboratory, disinfected, and placed on sample receiving counter for logging by Junn, ICF FASP in compliance with COVID-19 modified sample receiving protocol. All sample were assigned to generic shipping container "Modified COVID-19" since they were not received in a container. TD 05/11/20

WORK ORDER

Printed: 5/11/2020 8:57:02AM

2005005

EPA Region 9 Laboratory

Client: **California Site Cleanup Section 3** **Project Number:** **R20S18**
Project: **MEW OU1 FY2020 Vapor Intrusion Investigation**

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
Modified COVID-19	Modified COVID-19	22	No	Yes	Yes	No	No	

Date Due:	05/25/20 17:00 (14 day TAT)	SDG:	20128B
Received By:	Tatyana Dadiomov	Date Received:	05/11/20 08:10
Logged In By:	Tatyana Dadiomov	Date Logged In:	05/11/20 08:42

Analysis	Hold Time Expires	Comments
2005005-01 272 Ariana-MH3-SS-050820 [Air] Sampled 05/08/20 15:30 (GMT-08:00) Pacific Time (US &		**Can #864**
VOCs, Soil Gas	06/07/20	check COC for requested analytes
2005005-02 261 Ariana-MH2-SS-050820 [Air] Sampled 05/08/20 15:38 (GMT-08:00) Pacific Time (US &		**Can #870**
VOCs, Soil Gas	06/07/20	check COC for requested analytes
2005005-03 D9-SC-050820 [Air] Sampled 05/08/20 16:25 (GMT-08:00) Pacific Time (US &		**Can #868**
VOCs, Soil Gas	06/07/20	check COC for requested analytes
2005005-04 D10-SC-050820 [Air] Sampled 05/08/20 16:35 (GMT-08:00) Pacific Time (US &		**Can #647**
VOCs, Soil Gas	06/07/20	check COC for requested analytes

Reviewed By

Date

Bauer, Richard

From: Lee, Alana
Sent: Wednesday, May 20, 2020 2:55 PM
To: Bauer, Richard
Subject: RE: MEW Response: 277 Fairchild Drive - EPA Testing - Preliminary TCE results

Hi Rich,

I noticed some sample ID that should be modified. Could you make these changes in the final report / EDDs.

Please let me know if you have any questions.

Thanks!

Alana

Lab ID 2005002-08 Change to 272Ariana-MH3-SS-050620
Lab ID 2005002-10 Change to 231 Ariana-MH5-SS-050620
Lab ID 2005002-11 Change to 241 Ariana-MH4-SS-050620
Lab ID 2005002-12 Change to 261 Fairchild-MH1-SS-050620

Lab ID 2005005-02 Change to 260 Ariana-MH2-SS-050820

Lab ID 2065008-01 Change to: D9-ShrDrn-PP-3d

From: Bauer, Richard <Bauer.Richard@epa.gov>
Sent: Wednesday, May 20, 2020 2:27 PM
To: Lee, Alana <lee.alana@epa.gov>
Subject: RE: MEW Response: 277 Fairchild Drive - EPA Testing - Preliminary TCE results

I'm at the lab now, generating reports, so if you have sample ID changes, please provide them.

Thanks

Richard Bauer
US EPA Region 9 Laboratory
1337 South 46th Street, Building 201
Richmond, CA 94804
(510) 412-2312

From: Lee, Alana <lee.alana@epa.gov>
Sent: Wednesday, May 20, 2020 10:30 AM
To: Bauer, Richard <Bauer.Richard@epa.gov>; Nagle, Greg <Nagle.Greg@epa.gov>; Hopeman, Bob <Hopeman.Bob@epa.gov>
Subject: RE: MEW Response: 277 Fairchild Drive - EPA Testing - Preliminary TCE results

Hi Rich,

Thanks for the update.

Also, I was reviewing some of the sample IDs and will be requesting some corrections. I will send shortly.

Thanks!
Alana

From: Bauer, Richard <Bauer.Richard@epa.gov>
Sent: Wednesday, May 20, 2020 10:05 AM
To: Lee, Alana <lee.alana@epa.gov>; Nagle, Greg <Nagle.Greg@epa.gov>; Hopeman, Bob <Hopeman.Bob@epa.gov>
Subject: RE: MEW Response: 277 Fairchild Drive - EPA Testing - Preliminary TCE results

Hi Alana:

Here's an update from the lab:

1) Jack Berges, the acting manager for our in-house contractor, will be in the lab today to review the lab data for the canisters and Radiellos and update status in our LIMS. Barring any problems, I should be able to go to the lab tomorrow and generate final reports, EDDs, and full raw data documentation pkgs for all of the MEW samples submitted to the lab. The full raw data documentation packages contain COC and sample login info, instrument calibration data, raw data for all sample and QC analysis runs, and fully traceable standard preparation information. I can post those to a OneDrive folder and give you a link.

2) The analyst who prepared Radiello cartridges and ran the analysis says she did not observe any visible moisture in or on any of the cartridges.

3) I ordered three more boxes of Radiello 130 cartridges for you. They should ship today or tomorrow from Pennsylvania.

Let me know if you need any additional info.

_____
Richard Bauer
US EPA Region 9 Laboratory
1337 South 46th Street, Building 201
Richmond, CA 94804
(510) 412-2312
_____

From: Lee, Alana <lee.alana@epa.gov>
Sent: Tuesday, May 19, 2020 5:34 PM
To: Dreyfus, Bethany <Dreyfus.Bethany@epa.gov>; Stralka, Daniel <Stralka.Daniel@epa.gov>; Plate, Mathew <Plate.Mathew@epa.gov>; Nagle, Greg <Nagle.Greg@epa.gov>; Hopeman, Bob <Hopeman.Bob@epa.gov>; Bauer, Richard <Bauer.Richard@epa.gov>
Subject: MEW Response: 277 Fairchild Drive - EPA Testing - Preliminary TCE results

I will contact you to discuss what we can provide.

Sent: Tuesday, May 19, 2020 5:19 PM
To: Lee, Alana <lee.alana@epa.gov>
Subject: RE: 277 Fairchild Drive - EPA Testing - Preliminary TCE results

Hi Alana,

Thank you for providing the preliminary data EPA obtained during the agency's sampling of the 277 Fairchild Drive property between 6 and 8 May 2020. According to the figure, EPA collected air samples from select manholes along the sanitary sewer, sewer cleanouts of different buildings, and inside select units within buildings that are unoccupied and/or still under construction. As we understand the site conditions during this period, the vapor intrusion mitigation (VIM) system was operational at Building E, but not at Building F.

The EPA data shows widely inconsistent concentrations of TCE being detected at each sample location 1) when using the same sampling instrument throughout a day, 2) between the sampling methods (i.e., different sampling equipment), 3) when samples were collected over consecutive days, and 4) compared to data the MEW Companies previously collected. At some sampling locations, the EPA concentrations reported vary up to three orders of magnitude.

To better understand the EPA data, and to determine which data results could be considered valid/representative, we would appreciate it if you could provide the following additional information:

- daily calibration logs for each instrument
- all field notes documenting the field activities, including specific sampling locations and time for each sample reported
- a map identifying the exact location of each sample collected
- data validation reports
- the intent of the sampling conducted at each location
- information about each sampling method used and the rationale for the use of that method
- the chain of custody forms and laboratory analytical reports, previously referenced

After we have a chance to review the above requested information, we would like to schedule a meeting to discuss the usability of the data obtained, and any proposed path forward.

Thank you for your assistance and working closely with the MEW Companies.

ENVIRONMENTAL PROTECTION AGENCY
Region 9 Laboratory

CHAIN OF CUSTODY RECORD

1337 S. 46th St., Bldg. 201
Richmond, CA 94804-4698

PROJ. NO.: R20SK8

PROJECT NAME: MEW OU1 FY2020

SAMPLERS: (Signature) Juan Masongsong

DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	SOIL GAS (VOCS)						REMARKS
05/08/20	1530	air		X	272 Ariana MH3-SS-050820	1-400mL	X						can: 864 ~100 ug/m³ TCE
05/08/20	1538	air		X	261 Ariana MH2-SS-050820	1-400mL	X						can: 870 ~500 ug/m³ TCE
05/08/20	1625	air		X	D9-SC-050820	1-400mL	X						can: 868 ~20 ug/m³ TCE
05/08/20	1635	air		X	D10-SC-050820	1-400mL	X						can: 647 ~80 ug/m³ TCE
~~05/08/20~~		~~air~~		~~X~~	~~D11-SC-050820~~	~~1-400mL~~	~~X~~						~~can: ~400 ug/m³ TCE~~

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	05/08/20 1930				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Received for Laboratory by: (Signature)	Date / Time	Temp.	Seals Intact (Y/N)	Conditions / Remarks
[signature]	5-11-20 8:10	22		can # 851 is void. 1070

Can #500 are unused
FC 491

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

9-4830

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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

Note in WO memo any items outside acceptable limits.

Project No: R20318 **Work Order No(s):** 2005005 **Date:** 5/11/20 **by** TD

CUSTODY SEALS Are Intact? ☐ Yes ☐ No ☒ N/A-none

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

TEMPERATURE 22 °C

Within Acceptable Range? (If preservation is "store cool at 4°C," use 0-6°C for acceptable range.) ☐ Yes ☐ No ☒ Ambient OK

Measured by: ☒ IR thermometer ☐ Probe thermometer inserted in provided temp. blank

☐ Provided Temp Blank was not used because _____

Check if applies: ☐ No ice present ☐ Insufficient/Melted Ice ☐ Tissue Received Frozen

☐ Still cooling (sampled today & iced) ☐ Delivery Delay ☐ Previously Frozen

SAMPLE CONTAINERS Are Intact? ☒ Yes ☐ No

Check if applies and identify sample IDs in comments:

☐ Bottle/Jar/Vial broken ☐ Cap broken or loose ☐ Insufficient sample amount

☐ Other _____

CHAIN OF CUSTODY

COC forms are present? ☒ Yes ☐ No

COC forms are consistent with sample labels? ☒ Yes ☐ No ☐ N/A-no COC form

Check if applies: ☐ Missing "relinquished by" signature

TAT and analyses match TDF or scheduling? ☒ Yes ☐ No

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

Samples are received within hold times? ☒ Yes ☐ No ☐ N/A-no hold times

Check if applies: ☐ Expires soon; notify analyst ☐ Expired

All shipping and sample containers are accounted for? ☒ Yes ☐ No

PRESERVATION / FILTRATION

Samples were filtered in field? ☐ Yes ☐ No ☒ N/A

Filtration is correctly identified on samples? ☐ Yes ☐ No ☒ N/A

Check if applies: ☐ Analyst to filter

Check if applies: ☐ Notify analyst to check for methyl mercury analysis and low-level mercury analysis by 1631

Samples were preserved in field? ☐ Yes ☐ No ☒ N/A

Check if applies: ☐ Analyst to preserve ☐ Sample Receiving to preserve (see page 2)

Preservation is correctly identified on samples? ☐ Yes ☐ No ☒ N/A

Field-preserved samples (excluding VOA vials for VOC analyses) have correct pH? ☐ Yes ☐ No ☒ N/A

Check if verified:

☐ Sulfide: pH >9 NaOH/Zinc acetate

☐ Cyanide: pH >12 NaOH

☐ Metals: pH <2 HNO_3

☐ Ferrous Iron: pH <2 HCl

☐ TOC/DOC: pH <2 H_2SO_4/H_3PO_4 (not HCl)

☐ Ammonia / Nitrate/Nitrite / TKN / Phosphorus: pH <2 H2SO4

☐ Other: _____

FOLLOW-UP / COMMENTS / UNUSUAL CHARACTERISTICS OBSERVED (for example, sample is pink):

_____

FORM #: Q016
REV #: 2
REV. DATE: 07/29/19

BATCH

B20E005

Batch Date: 05/11/2020

Batch Matrix: Air

Batch Analyses:

VOCs, Soil Gas

PREPARATION BENCH SHEET

B20E005

EPA Region 9 Laboratory

Project: R20S18

Printed: 5/12/2020 9:54:04AM

Matrix: Air **Analysis: VOCs, Soil Gas** **Prepared using: Air - Air_Can_Pressure**

Lab Number	Sample Name	Prepared	Initial	Final	Spike ID	Source ID	ul Spike	Can #	Initial PSI	Final PSI	Initial DF	Final DF	Prepared By	Extraction Comments
2005005-01 A	272 Ariana-MH3-SS-050820	05/11/20 09:56	200	200				864	14.15	28.20	1.0	1.99	EM	check COC for requested analytes
2005005-02 A	261 Ariana-MH2-SS-050820	05/11/20 10:04	200	200				870	13.76	28.23	1.0	2.05	EM	check COC for requested analytes
2005005-03 A	D9-SC-050820	05/11/20 09:58	200	200				868	14.17	28.09	1.0	1.98	EM	check COC for requested analytes
2005005-04 A	D10-SC-050820	05/11/20 10:02	200	200				647	14.37	28.18	1.0	1.96	EM	check COC for requested analytes
B20E005-BLK1	Blank	05/11/20 09:14	200	200									EM	
B20E005-BS1	LCS	05/11/20 09:14	200	200	2018026		100000						EM	
B20E005-DUP1	Duplicate	05/11/20 09:14	200	200		2005005-01		864	14.15	28.20	1.0	1.99	EM	

Batch Comments

Reagents

Reagent # **Description**

PREPARATION BENCH SHEET

B20E005

EPA Region 9 Laboratory

Project: R20S18

Printed: 5/12/2020 9:54:04AM

Matrix: Air **Analysis: QC** **Prepared using: Air - Air_Can_Pressure**

Lab Number	Sample Name	Prepared	Initial	Final	Spike ID	Source ID	ul Spike	Can #	Initial PSI	Final PSI	Initial DF	Final DF	Prepared By	Extraction Comments

TO15 DILUTION LOGBOOK

#19020

DATE/ INITIAL	TIME	LAB SAMPLE #	CLIENT SAMPLE #	CAN ID	INITIAL PRESSURE (PSI)	INITIAL VOL (mL)	FINAL VOL (mL)	FINAL PRESSURE (PSI)	AMBIENT PRESSURE Hg/(PSI)	DILUTION FACTOR
5/11/2020	9:56	2005005-01	272 Ariana MH3-SS	864	14.15	400	400	29.80/14.64	28.20	1.99
↓	10:04	↓ -02	201 Ariana MH2-SS	870	13.76	400	400	—	28.23	2.05
↓	9:58	↓ -03	D9-SC-050820	868	14.17	400	400	—	28.09	1.98
↓	10:02	↓ -04	D10-SC-050820	647	14.37	400	400	—	28.18	1.96

em 5/11/20

em 5/11/20

em 5/12/20

USEPA REGION 9 LABORATORY

TO15 DILUTION LOGBOOK 12-14-16.xls

Reviewed by: WH

Date: 05/12/20

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Calibration

2004002

Calibration Date: 04/01/2020

Instrument: HP5973K

Calibration Analyses:

VOCs, Soil Gas

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Method Path : D:\msdchem\1\2020\METHOD\
Method File : 040120K_TO15AA.M
Title : TO15
Last Update : Thu Apr 02 09:57:00 2020
Response Via : Initial Calibration

REVIEWED
By LLH at 9:57 am, Apr 02, 2020

Calibration Files
1 =040120K07.D 2 =040120K08.D 5 =040120K09.D 10 =040120K10.D 15 =040120K11.D
20 =040120K12.D

		Compound	1	2	5	10	15	20	Avg	%RSD
1)	I	BROMOCHLOROMETHANE	----------ISTD----------							
2)	T	Propene	0.585	0.590	0.571	0.550	0.564	0.568	0.571	2.52
3)	T	Dichlorodifluo...	1.446	1.573	1.518	1.490	1.543	1.568	1.523	3.21
4)	T	1,2-Dichlorote...	1.664	1.764	1.736	1.699	1.761	1.813	1.739	3.04
5)	T	Chloromethane	0.577	0.610	0.586	0.573	0.592	0.594	0.589	2.29
6)	T	Vinyl chloride	0.744	0.814	0.778	0.760	0.768	0.778	0.774	3.02
7)	T	1,3-Butadiene	0.631	0.641	0.614	0.594	0.599	0.601	0.613	3.09
8)	T	Bromomethane	0.527	0.567	0.547	0.521	0.535	0.557	0.542	3.25
9)	T	Chloroethane	0.361	0.381	0.366	0.350	0.361	0.370	0.365	2.87
10)	T	Bromoethene	0.541	0.541	0.523	0.505	0.521	0.543	0.529	2.84
11)	T	Trichlorofluor...	1.406	1.540	1.467	1.402	1.423	1.466	1.450	3.60
12)	T	1,1,2-Trichlor...	1.008	1.075	1.033	0.989	1.008	1.040	1.026	2.97
13)	T	1,1-Dichloroet...	0.883	0.971	0.930	0.893	0.907	0.934	0.920	3.51
14)	T	Acetone	0.965	0.963	0.910	0.870	0.881	0.893	0.914	4.52
15)	T	Carbon disulfide	1.741	1.735	1.678	1.602	1.624	1.662	1.674	3.38
16)	T	2-Propanol	0.854	0.900	0.890	0.876	0.898	0.925	0.891	2.72
17)	T	Allyl chloride	0.827	0.844	0.821	0.792	0.809	0.821	0.819	2.14
18)	T	Dichloromethane	0.918	0.863	0.761	0.708	0.710	0.714	0.779	11.60
19)	T	tert-Butyl met...	1.811	1.816	1.767	1.706	1.760	1.805	1.777	2.37
20)	T	trans-1,2-Dich...	0.873	0.883	0.852	0.821	0.836	0.856	0.854	2.69
21)	T	Hexane	1.172	1.177	1.156	1.124	1.144	1.164	1.156	1.70
22)	T	1,1-Dichloroet...	1.144	1.257	1.192	1.140	1.157	1.177	1.178	3.68
23)	T	Vinyl acetate	1.378	1.431	1.430	1.415	1.452	1.480	1.431	2.40
24)	T	cis-1,2-Dichlo...	0.802	0.874	0.858	0.828	0.839	0.861	0.843	3.11
25)	T	2-Butanone (MEK)	0.336	0.350	0.344	0.337	0.345	0.352	0.344	1.89
26)	T	Ethyl acetate	0.220	0.231	0.211	0.205	0.208	0.211	0.214	4.38
27)	T	Tetrahydrofuran	0.815	0.839	0.827	0.796	0.804	0.818	0.816	1.91
28)	T	Chloroform	1.147	1.242	1.176	1.131	1.147	1.172	1.169	3.37
29)	T	Cyclohexane	1.187	1.200	1.161	1.126	1.143	1.165	1.164	2.34
30)	T	1,1,1-Trichlor...	1.114	1.217	1.172	1.130	1.149	1.173	1.159	3.16
31)	T	Carbon tetrach...	1.149	1.257	1.218	1.176	1.200	1.225	1.204	3.16
32)	I	1,4-DIFLUOROBENZENE	----------ISTD----------							
33)	T	Benzene	0.640	0.700	0.688	0.659	0.651	0.653	0.665	3.56
34)	T	2,2,4-Trimethy...	1.182	1.207	1.190	1.162	1.143	1.144	1.171	2.23
35)	T	1,2-Dichloroet...	0.248	0.276	0.269	0.260	0.256	0.255	0.261	3.86
36)	T	Heptane	0.429	0.439	0.438	0.428	0.421	0.418	0.429	2.06
37)	T	Trichloroethene	0.267	0.293	0.280	0.276	0.273	0.277	0.278	3.04
38)	T	1,2-Dichloropr...	0.239	0.260	0.254	0.249	0.244	0.247	0.249	3.01
39)	T	1,4-Dioxane	0.155	0.157	0.157	0.155	0.154	0.157	0.156	0.89
40)	T	Bromodichlorom...	0.429	0.443	0.435	0.429	0.424	0.429	0.431	1.55
41)	T	cis-1,3-Dichlo...	0.346	0.388	0.389	0.392	0.388	0.397	0.383	4.81
42)	T	4-Methyl-2-pen...	0.466	0.513	0.510	0.507	0.499	0.500	0.499	3.48
43)	I	CHLOROBENZENE-d5	----------ISTD----------							
44)	T	Toluene	0.836	0.915	0.892	0.860	0.848	0.852	0.867	3.46
45)	T	trans-1,3-Dich...	0.354	0.400	0.402	0.399	0.396	0.399	0.392	4.71
46)	T	1,1,2-Trichlor...	0.275	0.295	0.287	0.283	0.278	0.283	0.284	2.50
47)	T	Tetrachloroethene	0.425	0.463	0.446	0.437	0.435	0.445	0.442	2.92
48)	T	2-Hexanone	0.444	0.520	0.525	0.509	0.497	0.498	0.499	5.83
49)	T	Chlorodibromom...	0.467	0.483	0.478	0.472	0.470	0.478	0.475	1.20
50)	T	1,2-Dibromoeth...	0.391	0.434	0.422	0.415	0.412	0.418	0.415	3.46
51)	T	Chlorobenzene	0.687	0.753	0.725	0.708	0.697	0.703	0.712	3.35
52)	T	Ethylbenzene	1.082	1.205	1.169	1.139	1.119	1.128	1.140	3.73
53)	T	m&p-Xylene	0.807	0.909	0.892	0.875	0.861	0.870	0.869	4.00
54)	T	o-Xylene	0.822	0.921	0.917	0.903	0.895	0.899	0.893	4.03
55)	T	Styrene	0.392	0.456	0.461	0.462	0.461	0.467	0.450	6.29
56)	T	Bromoform	0.471	0.504	0.516	0.526	0.529	0.542	0.515	4.88
57)	T	1,1,2,2-Tetrac...	0.600	0.667	0.670	0.666	0.657	0.661	0.654	4.11
58)	T	4-Ethyltoluene	1.310	1.407	1.412	1.415	1.399	1.414	1.393	2.94
59)	T	1,3,5-Trimethy...	0.922	1.067	1.082	1.074	1.059	1.067	1.045	5.83

Table of Contents

Method Path : D:\msdchem\1\2020\METHOD\
Method File : 040120K_TO15AA.M
Title : TO15

60)	T	1,2,4-Trimethy...	0.907	1.065	1.092	1.095	1.082	1.090	1.055	6.95
61)	T	1,3-Dichlorobe...	0.670	0.778	0.801	0.804	0.803	0.815	0.778	7.03
62)	T	1,4-Dichlorobe...	0.667	0.771	0.797	0.806	0.800	0.811	0.775	7.06
63)	T	Benzyl chloride	0.625	0.801	0.886	0.917	0.915	0.924	0.845	13.84
64)	T	1,2-Dichlorobe...	0.658	0.757	0.790	0.790	0.785	0.793	0.762	6.89
65)	T	1,2,4-Trichlor...	0.487	0.587	0.658	0.707	0.732	0.770	0.657	15.94
66)	T	Hexachlorobuta...	0.601	0.678	0.703	0.730	0.741	0.770	0.704	8.45

(#) = Out of Range

REVIEWED
By LLH at 10:00 am, Apr 02, 2020

SCV REPORT

Instrument Name: HP5973K
Sample Name: S20D002-SCV1
Misc Info: 10ppbv
Date Acquired: 4/1/2020 22:24
QLast Update: Thu Apr 02 09:57:00 2020
Operator: LLH

2 OUT

#	Name	Ret Time	Amount	Concentration	%R	QC	LIMIT	STATUS	
1)	BROMOCHLOROMETHANE	16.31	#N/A	19.60	#N/A	70.0	130.0	#N/A	Internal
2)	Propene	5.00	10.00	11.54	115%	70.0	130.0	pass	Subset
3)	Dichlorodifluoromethane	5.10	11.00	11.27	102%	70.0	130.0	pass	Primary
4)	1,2-Dichlorotetrafluoroethane	5.48	11.00	10.29	94%	70.0	130.0	pass	Primary
5)	Chloromethane	5.73	12.00	11.44	95%	70.0	130.0	pass	Primary
6)	Vinyl chloride	6.07	10.00	10.91	109%	70.0	130.0	pass	Primary
7)	1,3-Butadiene	6.17	10.00	10.62	106%	70.0	130.0	pass	Subset
8)	Bromomethane	7.24	11.00	11.51	105%	70.0	130.0	pass	Primary
9)	Chloroethane	7.61	11.00	11.34	103%	70.0	130.0	pass	Primary
10)	Bromoethene	8.25	11.00	12.08	110%	70.0	130.0	pass	Subset
11)	Trichlorofluoromethane	8.38	11.00	10.44	95%	70.0	130.0	pass	Primary
12)	1,1,2-Trichloro-1,2,2-trifluoroethane	10.37	11.00	11.30	103%	70.0	130.0	pass	Primary
13)	1,1-Dichloroethene	10.51	11.00	11.40	104%	70.0	130.0	pass	Primary
14)	Acetone	11.08	10.00	11.38	114%	70.0	130.0	pass	Subset
15)	Carbon disulfide	11.20	12.00	12.20	102%	70.0	130.0	pass	Subset
16)	2-Propanol	11.59	8.50	11.89	140%	70.0	130.0	FAIL	Subset
17)	Allyl chloride	11.96	12.00	11.66	97%	70.0	130.0	pass	Subset
18)	Dichloromethane	12.48	11.00	10.04	91%	70.0	130.0	pass	Primary
19)	tert-Butyl methyl ether (MTBE)	13.02	11.00	11.57	105%	70.0	130.0	pass	Subset
20)	trans-1,2-Dichloroethene	13.11	10.00	10.81	108%	70.0	130.0	pass	Subset
21)	Hexane	13.59	11.00	10.75	98%	70.0	130.0	pass	Subset
22)	1,1-Dichloroethane	14.40	11.00	10.66	97%	70.0	130.0	pass	Primary
23)	Vinyl acetate	14.49	11.00	12.02	109%	70.0	130.0	pass	Subset
24)	cis-1,2-Dichloroethene	15.78	11.00	11.82	107%	70.0	130.0	pass	Primary
25)	2-Butanone (MEK)	15.86	11.00	11.38	103%	70.0	130.0	pass	Subset
26)	Ethyl acetate	15.87	11.00	11.01	100%	70.0	130.0	pass	Subset
27)	Tetrahydrofuran	16.28	9.50	9.56	101%	70.0	130.0	pass	Subset
28)	Chloroform	16.44	11.00	11.17	102%	70.0	130.0	pass	Primary
29)	Cyclohexane	16.62	11.00	10.77	98%	70.0	130.0	pass	Subset
30)	1,1,1-Trichloroethane	16.70	11.00	10.53	96%	70.0	130.0	pass	Primary
31)	Carbon tetrachloride	16.93	11.00	10.93	99%	70.0	130.0	pass	Primary
32)	1,4-DIFLUOROBENZENE	18.22	#N/A	19.60	#N/A	70.0	130.0	#N/A	Internal
33)	Benzene	17.44	10.00	11.04	110%	70.0	130.0	pass	Primary
34)	2,2,4-Trimethylpentane	17.31	11.00	10.83	98%	70.0	130.0	pass	Subset
35)	1,2-Dichloroethane	17.66	11.00	10.51	96%	70.0	130.0	pass	Primary
36)	Heptane	17.68	11.00	10.75	98%	70.0	130.0	pass	Subset
37)	Trichloroethene	18.62	11.00	11.53	105%	70.0	130.0	pass	Primary
38)	1,2-Dichloropropane	19.14	10.00	10.83	108%	70.0	130.0	pass	Primary
39)	1,4-Dioxane	19.32	11.00	11.16	101%	70.0	130.0	pass	Subset
40)	Bromodichloromethane	19.60	11.00	10.56	96%	70.0	130.0	pass	Subset
41)	cis-1,3-Dichloropropene	20.35	10.00	11.08	111%	70.0	130.0	pass	Primary
42)	4-Methyl-2-pentanone (MIBK)	20.55	11.00	11.10	101%	70.0	130.0	pass	Subset
43)	CHLOROBENZENE-d5	23.08	#N/A	19.60	#N/A	70.0	130.0	#N/A	Internal
44)	Toluene	20.80	10.00	11.12	111%	70.0	130.0	pass	Primary
45)	trans-1,3-Dichloropropene	21.29	10.00	10.58	106%	70.0	130.0	pass	Primary
46)	1,1,2-Trichloroethane	21.60	10.00	11.10	111%	70.0	130.0	pass	Primary
47)	Tetrachloroethene	21.64	11.00	11.09	101%	70.0	130.0	pass	Primary
48)	2-Hexanone	21.89	11.00	10.85	99%	70.0	130.0	pass	Subset
49)	Chlorodibromomethane	22.21	11.00	11.03	100%	70.0	130.0	pass	Subset
50)	1,2-Dibromoethane (EDB)	22.45	10.00	11.21	112%	70.0	130.0	pass	Primary

51)	Chlorobenzene	23.13	11.00	10.95	100%	70.0	130.0	pass	Primary
52)	Ethylbenzene	23.20	11.00	11.14	101%	70.0	130.0	pass	Primary
53)	m&p-Xylene	23.38	22.00	22.01	100%	70.0	130.0	pass	Primary
54)	o-Xylene	24.03	10.00	10.91	109%	70.0	130.0	pass	Primary
55)	Styrene	24.08	10.00	18.16	182%	70.0	130.0	FAIL	Primary
56)	Bromoform	24.48	12.00	11.63	97%	70.0	130.0	pass	Subset
57)	1,1,2,2-Tetrachloroethane	25.16	9.90	10.85	110%	70.0	130.0	pass	Primary
58)	4-Ethyltoluene	25.37	11.00	10.92	99%	70.0	130.0	pass	Subset
59)	1,3,5-Trimethylbenzene	25.46	10.00	11.17	112%	70.0	130.0	pass	Primary
60)	1,2,4-Trimethylbenzene	26.07	10.00	11.36	114%	70.0	130.0	pass	Primary
61)	1,3-Dichlorobenzene	26.62	10.00	10.82	108%	70.0	130.0	pass	Primary
62)	1,4-Dichlorobenzene	26.77	9.90	10.75	109%	70.0	130.0	pass	Primary
63)	Benzyl chloride	27.00	11.00	12.97	118%	70.0	130.0	pass	Subset
64)	1,2-Dichlorobenzene	27.39	9.60	10.87	113%	70.0	130.0	pass	Primary
65)	1,2,4-Trichlorobenzene	29.85	9.30	10.38	112%	70.0	130.0	pass	Primary
66)	Hexachlorobutadiene	29.95	9.90	10.42	105%	70.0	130.0	pass	Primary

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RT DUPLICATE REPORT

Instrument Name: HP5973K
Sample Name: S20D002-CAL4
Misc Info: 10ppbv
Date Acquired: 4/1/2020 19:47
QLast Update: Thu Apr 02 09:57:00 2020
Operator: LLH

#	Name	RT	CONC	Qion	
1)	BROMOCHLOROMETHANE	16.313	19.600	49	16.283
2)	Propene	4.998	10.757	41.1	
3)	Dichlorodifluoromethane	5.095	9.971	85	
4)	1,2-Dichlorotetrafluoroethane	5.484	9.358	85	
5)	Chloromethane	5.728	10.614	50	
6)	Vinyl chloride	6.068	10.557	62	
7)	1,3-Butadiene	6.172	10.333	54.1	
8)	Bromomethane	7.237	9.372	93.9	
9)	Chloroethane	7.608	9.523	64	
10)	Bromoethene	8.252	9.855	105.9	
11)	Trichlorofluoromethane	8.374	8.868	100.9	
12)	1,1,2-Trichloro-1,2,2-trifluoroethane	10.382	9.129	150.9	
13)	1,1-Dichloroethene	10.509	9.893	61	
14)	Acetone	11.081	10.209	43.1	
15)	Carbon disulfide	11.197	10.118	75.9	
16)	2-Propanol	11.586	10.791	45.1	
17)	Allyl chloride	11.957	10.517	41.1	
18)	Dichloromethane	12.481	9.015	49	
19)	tert-Butyl methyl ether (MTBE)	13.022	9.906	73.1	
20)	trans-1,2-Dichloroethene	13.107	10.255	61	
21)	Hexane	13.588	9.664	57.1	
22)	1,1-Dichloroethane	14.391	9.073	63	
23)	Vinyl acetate	14.494	10.819	43.1	
24)	cis-1,2-Dichloroethene	15.778	9.680	61	
25)	2-Butanone (MEK)	15.857	9.908	72.1	
26)	Ethyl acetate	15.869	9.687	61	
27)	Tetrahydrofuran	16.283	9.813	42.1	
28)	Chloroform	16.441	9.819	82.9	
29)	Cyclohexane	16.617	9.763	56.1	
30)	1,1,1-Trichloroethane	16.696	9.939	97	
31)	Carbon tetrachloride	16.934	9.808	116.9	
32)	1,4-DIFLUOROBENZENE	18.223	19.600	114	17.676
33)	Benzene	17.439	10.151	78	17.311
34)	2,2,4-Trimethylpentane	17.311	10.358	57.1	
35)	1,2-Dichloroethane	17.658	10.196	62	
36)	Heptane	17.676	10.631	43.1	
37)	Trichloroethene	18.625	10.620	129.9	
38)	1,2-Dichloropropane	19.148	10.233	63	
39)	1,4-Dioxane	19.319	10.329	88	
40)	Bromodichloromethane	19.598	10.506	82.9	
41)	cis-1,3-Dichloropropene	20.347	10.335	75	
42)	4-Methyl-2-pentanone (MIBK)	20.553	11.023	43.1	

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43)	CHLOROBENZENE-d5	23.084	19.600	117	22.439
44)	Toluene	20.803	10.017	91	
45)	trans-1,3-Dichloropropene	21.290	9.823	75	
46)	1,1,2-Trichloroethane	21.600	10.090	96.9	
47)	Tetrachloroethene	21.642	9.897	165.8	
48)	2-Hexanone	21.892	10.737	43.1	
49)	Chlorodibromomethane	22.208	10.907	128.9	
50)	1,2-Dibromoethane (EDB)	22.439	10.271	106.9	
51)	Chlorobenzene	23.133	10.119	112	
52)	Ethylbenzene	23.200	10.256	91	
53)	m&p-Xylene	23.376	20.586	91	
54)	o-Xylene	24.027	10.111	91	
55)	Styrene	24.070	9.854	104	
56)	Bromoform	24.483	11.542	172.8	
57)	1,1,2,2-Tetrachloroethane	25.159	10.138	82.9	
58)	4-Ethyltoluene	25.366	10.319	105.1	
59)	1,3,5-Trimethylbenzene	25.457	10.487	105.1	
60)	1,2,4-Trimethylbenzene	26.065	10.587	105.1	
61)	1,3-Dichlorobenzene	26.625	10.310	145.9	
62)	1,4-Dichlorobenzene	26.771	10.383	145.9	
63)	Benzyl chloride	26.996	12.448	91.1	0.000
64)	1,2-Dichlorobenzene	27.385	10.157	145.9	0.000
65)	1,2,4-Trichlorobenzene	29.849	9.656	179.9	0.000
66)	Hexachlorobutadiene	29.953	9.585	224.8	0.000

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CHEMSTATION CONCENTRATION REPORT

Instrument Name: HP5973K
Sample Name: S20D002-SCV1
Misc Info: 10ppbv
Date Acquired: 4/1/2020 22:24
QLast Update: Thu Apr 02 09:57:00 20
Operator: LLH

#	Name	L1	L2	L3	L4	L5	L6
1)	BROMOCHLOROMETHANE	19.60	19.60	19.60	19.60	19.60	19.60
2)	Propene	1.10	2.20	5.50	11.00	16.50	22.00
3)	Dichlorodifluoromethane	1.02	2.04	5.10	10.20	15.30	20.40
4)	1,2-Dichlorotetrafluoroethane	0.97	1.94	4.85	9.70	14.55	19.40
5)	Chloromethane	1.08	2.16	5.40	10.80	16.20	21.60
6)	Vinyl chloride	1.04	2.08	5.20	10.40	15.60	20.80
7)	1,3-Butadiene	1.03	2.06	5.15	10.30	15.45	20.60
8)	Bromomethane	1.02	2.04	5.10	10.20	15.30	20.40
9)	Chloroethane	1.02	2.04	5.10	10.20	15.30	20.40
10)	Bromoethene	1.09	2.18	5.45	10.90	16.35	21.80
11)	Trichlorofluoromethane	0.94	1.88	4.70	9.40	14.10	18.80
12)	1,1,2-Trichloro-1,2,2-trifluoroethane	1.00	2.00	5.00	10.00	15.00	20.00
13)	1,1-Dichloroethene	1.04	2.08	5.20	10.40	15.60	20.80
14)	Acetone	1.08	2.16	5.40	10.80	16.20	21.60
15)	Carbon disulfide	1.10	2.20	5.50	11.00	16.50	22.00
16)	2-Propanol	1.10	2.20	5.50	11.00	16.50	22.00
17)	Allyl chloride	1.10	2.20	5.50	11.00	16.50	22.00
18)	Dichloromethane	1.00	2.00	5.00	10.00	15.00	20.00
19)	tert-Butyl methyl ether (MTBE)	1.07	2.14	5.35	10.70	16.05	21.40
20)	trans-1,2-Dichloroethene	1.09	2.18	5.45	10.90	16.35	21.80
21)	Hexane	1.02	2.04	5.10	10.20	15.30	20.40
22)	1,1-Dichloroethane	0.96	1.92	4.80	9.60	14.40	19.20
23)	Vinyl acetate	1.10	2.20	5.50	11.00	16.50	22.00
24)	cis-1,2-Dichloroethene	1.01	2.02	5.05	10.10	15.15	20.20
25)	2-Butanone (MEK)	1.05	2.10	5.25	10.50	15.75	21.00
26)	Ethyl acetate	1.03	2.06	5.15	10.30	15.45	20.60
27)	Tetrahydrofuran	1.01	2.02	5.05	10.10	15.15	20.20
28)	Chloroform	1.04	2.08	5.20	10.40	15.60	20.80
29)	Cyclohexane	1.03	2.06	5.15	10.30	15.45	20.60
30)	1,1,1-Trichloroethane	1.04	2.08	5.20	10.40	15.60	20.80
31)	Carbon tetrachloride	1.01	2.02	5.05	10.10	15.15	20.20
32)	1,4-DIFLUOROBENZENE	19.60	19.60	19.60	19.60	19.60	19.60
33)	Benzene	1.02	2.04	5.10	10.20	15.30	20.40
34)	2,2,4-Trimethylpentane	1.03	2.06	5.15	10.30	15.45	20.60
35)	1,2-Dichloroethane	0.99	1.98	4.95	9.90	14.85	19.80
36)	Heptane	1.03	2.06	5.15	10.30	15.45	20.60
37)	Trichloroethene	1.08	2.16	5.40	10.80	16.20	21.60
38)	1,2-Dichloropropane	1.01	2.02	5.05	10.10	15.15	20.20
39)	1,4-Dioxane	1.04	2.08	5.20	10.40	15.60	20.80
40)	Bromodichloromethane	1.04	2.08	5.20	10.40	15.60	20.80
41)	cis-1,3-Dichloropropene	1.00	2.00	5.00	10.00	15.00	20.00
42)	4-Methyl-2-pentanone (MIBK)	1.05	2.10	5.25	10.50	15.75	21.00

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43)	CHLOROBENZENE-d5	19.60	19.60	19.60	19.60	19.60	19.60
44)	Toluene	1.02	2.04	5.10	10.20	15.30	20.40
45)	trans-1,3-Dichloropropene	0.96	1.92	4.80	9.60	14.40	19.20
46)	1,1,2-Trichloroethane	1.02	2.04	5.10	10.20	15.30	20.40
47)	Tetrachloroethene	1.02	2.04	5.10	10.20	15.30	20.40
48)	2-Hexanone	1.03	2.06	5.15	10.30	15.45	20.60
49)	Chlorodibromomethane	1.09	2.18	5.45	10.90	16.35	21.80
50)	1,2-Dibromoethane (EDB)	1.04	2.08	5.20	10.40	15.60	20.80
51)	Chlorobenzene	1.03	2.06	5.15	10.30	15.45	20.60
52)	Ethylbenzene	1.03	2.06	5.15	10.30	15.45	20.60
53)	m&p-Xylene	2.04	4.08	10.20	20.40	30.60	40.80
54)	o-Xylene	1.00	2.00	5.00	10.00	15.00	20.00
55)	Styrene	0.98	1.96	4.90	9.80	14.70	19.60
56)	Bromoform	1.10	2.20	5.50	11.00	16.50	22.00
57)	1,1,2,2-Tetrachloroethane	0.99	1.98	4.95	9.90	14.85	19.80
58)	4-Ethyltoluene	1.02	2.04	5.10	10.20	15.30	20.40
59)	1,3,5-Trimethylbenzene	1.02	2.04	5.10	10.20	15.30	20.40
60)	1,2,4-Trimethylbenzene	1.02	2.04	5.10	10.20	15.30	20.40
61)	1,3-Dichlorobenzene	1.00	2.00	5.00	10.00	15.00	20.00
62)	1,4-Dichlorobenzene	1.00	2.00	5.00	10.00	15.00	20.00
63)	Benzyl chloride	1.10	2.20	5.50	11.00	16.50	22.00
64)	1,2-Dichlorobenzene	0.98	1.96	4.90	9.80	14.70	19.60
65)	1,2,4-Trichlorobenzene	0.90	1.80	4.50	9.00	13.50	18.00
66)	Hexachlorobutadiene	0.92	1.84	4.60	9.20	13.80	18.40

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CALIBRATION AREA REPORT

Instrument Name: HP5973K
Sample Name: S20D002-SCV1
Misc Info: 10ppbv
Date Acquired: 4/1/2020 22:24
QLast Update: Thu Apr 02 09:57:00 202
Operator: LLH

#	Name	L1	L2	L3	L4	L5	L6
1)	BROMOCHLOROMETHANE	288642	281363	283682	290286	292622	298225
2)	Propene	9472	18642	45424	89664	139020	190282
3)	Dichlorodifluoromethane	21718	46056	112015	225112	352411	486584
4)	1,2-Dichlorotetrafluoroethane	23763	49113	121829	244096	382639	535311
5)	Chloromethane	9172	18923	45828	91603	143177	195085
6)	Vinyl chloride	11393	24295	58584	117125	178918	246230
7)	1,3-Butadiene	9576	18947	45736	90677	138207	188278
8)	Bromomethane	7919	16595	40384	78749	122278	172951
9)	Chloroethane	5416	11165	26998	52857	82458	114710
10)	Bromoethene	8679	16933	41247	81594	127092	179996
11)	Trichlorofluoromethane	19459	41551	99794	195120	299527	419265
12)	1,1,2-Trichloro-1,2,2-trifluoroethane	14851	30875	74733	146517	225753	316376
13)	1,1-Dichloroethene	13525	29006	69979	137598	211166	295691
14)	Acetone	15344	29872	71092	139084	213188	293400
15)	Carbon disulfide	28202	54789	133607	261015	400015	556264
16)	2-Propanol	13834	28416	70836	142662	221287	309800
17)	Allyl chloride	13402	26653	65392	128988	199339	274862
18)	Dichloromethane	13522	24778	55048	104812	159015	217341
19)	tert-Butyl methyl ether (MTBE)	28531	55784	136816	270292	421737	587705
20)	trans-1,2-Dichloroethene	14017	27642	67232	132599	204010	283793
21)	Hexane	17598	34457	85339	169753	261324	361381
22)	1,1-Dichloroethane	16178	34642	82809	162135	248766	343874
23)	Vinyl acetate	22323	45192	113818	230577	357766	495405
24)	cis-1,2-Dichloroethene	11923	25339	62690	123887	189705	264564
25)	2-Butanone (MEK)	5197	10547	26164	52408	81094	112474
26)	Ethyl acetate	3331	6825	15753	31318	47919	66250
27)	Tetrahydrofuran	12115	24332	60441	119012	181913	251455
28)	Chloroform	17561	37073	88506	174203	267049	370922
29)	Cyclohexane	18009	35490	86566	171808	263634	365035
30)	1,1,1-Trichloroethane	17060	36346	88178	174031	267699	371170
31)	Carbon tetrachloride	17091	36442	89061	175935	271498	376508
32)	1,4-DIFLUOROBENZENE	890972	860745	856372	865447	900340	930144
33)	Benzene	29664	62729	153339	296759	**457434**	631821
34)	2,2,4-Trimethylpentane	55323	109199	267838	528496	810850	1118236
35)	1,2-Dichloroethane	11153	23960	58160	113676	174427	240019
36)	Heptane	20072	39738	98668	194869	298484	408438
37)	Trichloroethene	13130	27763	66039	131721	203406	283918
38)	1,2-Dichloropropane	10978	23094	56094	111164	169845	236978
39)	1,4-Dioxane	7309	14326	35686	71270	110491	155346
40)	Bromodichloromethane	20265	40479	98886	196791	304152	423378
41)	cis-1,3-Dichloropropene	15744	34118	84951	173129	267525	376436
42)	4-Methyl-2-pentanone (MIBK)	22219	47309	117076	234938	360786	498511

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43)	CHLOROBENZENE-d5	795202	773186	780232	803106	843082	876910
44)	Toluene	34597	73609	181105	359510	557984	777859
45)	trans-1,3-Dichloropropene	13796	30261	76889	156760	245324	342965
46)	1,1,2-Trichloroethane	11391	23777	58343	118349	183171	258527
47)	Tetrachloroethene	17576	37260	90544	182553	286591	406059
48)	2-Hexanone	18548	42229	107554	214775	330606	458759
49)	Chlorodibromomethane	20650	41495	103641	211013	330765	465863
50)	1,2-Dibromoethane (EDB)	16488	35646	87433	176732	276561	388678
51)	Chlorobenzene	28693	61224	148644	298702	463480	648034
52)	Ethylbenzene	45195	97914	239627	480770	743910	1040045
53)	m&p-Xylene	66821	146280	362307	731542	1133129	1589007
54)	o-Xylene	33369	72703	182436	370125	577422	804546
55)	Styrene	15601	35230	89838	185526	291442	409226
56)	Bromoform	21012	43719	113080	237167	375705	533634
57)	1,1,2,2-Tetrachloroethane	24081	52114	132049	270188	419962	585991
58)	4-Ethyltoluene	54210	113216	286638	591258	920900	1290613
59)	1,3,5-Trimethylbenzene	38150	85881	219684	448975	697042	973801
60)	1,2,4-Trimethylbenzene	37541	85707	221660	457716	712165	994956
61)	1,3-Dichlorobenzene	27163	61390	159433	329641	518116	729073
62)	1,4-Dichlorobenzene	27071	60800	158718	330362	516124	725315
63)	Benzyl chloride	27890	69518	193883	413201	649632	909155
64)	1,2-Dichlorobenzene	26172	58542	154020	317029	496433	695249
65)	1,2,4-Trichlorobenzene	17782	41700	117870	260795	425298	620336
66)	Hexachlorobutadiene	22443	49233	128706	275262	439916	634275

CHEMSTATION VS LIMS CONCENTRATION REPORT

Instrument Name: HP5973K
Sample Name: S20D002-SCV1
Misc Info: 10ppbv
Date Acquired: 4/1/2020 22:24
QLast Update: Thu Apr 02 09:57:00 20
Operator: LLH

#	Name	L1	L2	L3	L4	L5	L6
		1	2	5	10	15	20
1)	BROMOCHLOROMETHANE						
2)	Propene	OK	OK	OK	OK	OK	OK
3)	Dichlorodifluoromethane	OK	OK	OK	OK	OK	OK
4)	1,2-Dichlorotetrafluoroethane	OK	OK	OK	OK	OK	OK
5)	Chloromethane	OK	OK	OK	OK	OK	OK
6)	Vinyl chloride	OK	OK	OK	OK	OK	OK
7)	1,3-Butadiene	OK	OK	OK	OK	OK	OK
8)	Bromomethane	OK	OK	OK	OK	OK	OK
9)	Chloroethane	OK	OK	OK	OK	OK	OK
10)	Bromoethene	OK	OK	OK	OK	OK	OK
11)	Trichlorofluoromethane	OK	OK	OK	OK	OK	OK
12)	1,1,2-Trichloro-1,2,2-trifluoroethane	OK	OK	OK	OK	OK	OK
13)	1,1-Dichloroethene	OK	OK	OK	OK	OK	OK
14)	Acetone	OK	OK	OK	OK	OK	OK
15)	Carbon disulfide	OK	OK	OK	OK	OK	OK
16)	2-Propanol	OK	OK	OK	OK	OK	OK
17)	Allyl chloride	OK	OK	OK	OK	OK	OK
18)	Dichloromethane	OK	OK	OK	OK	OK	OK
19)	tert-Butyl methyl ether (MTBE)	OK	OK	OK	OK	OK	OK
20)	trans-1,2-Dichloroethene	OK	OK	OK	OK	OK	OK
21)	Hexane	OK	OK	OK	OK	OK	OK
22)	1,1-Dichloroethane	OK	OK	OK	OK	OK	OK
23)	Vinyl acetate	OK	OK	OK	OK	OK	OK
24)	cis-1,2-Dichloroethene	OK	OK	OK	OK	OK	OK
25)	2-Butanone (MEK)	OK	OK	OK	OK	OK	OK
26)	Ethyl acetate	OK	OK	OK	OK	OK	OK
27)	Tetrahydrofuran	OK	OK	OK	OK	OK	OK
28)	Chloroform	OK	OK	OK	OK	OK	OK
29)	Cyclohexane	OK	OK	OK	OK	OK	OK
30)	1,1,1-Trichloroethane	OK	OK	OK	OK	OK	OK
31)	Carbon tetrachloride	OK	OK	OK	OK	OK	OK
32)	1,4-DIFLUOROBENZENE						
33)	Benzene	OK	OK	OK	OK	OK	OK
34)	2,2,4-Trimethylpentane	OK	OK	OK	OK	OK	OK
35)	1,2-Dichloroethane	OK	OK	OK	OK	OK	OK
36)	Heptane	OK	OK	OK	OK	OK	OK
37)	Trichloroethene	OK	OK	OK	OK	OK	OK
38)	1,2-Dichloropropane	OK	OK	OK	OK	OK	OK
39)	1,4-Dioxane	OK	OK	OK	OK	OK	OK
40)	Bromodichloromethane	OK	OK	OK	OK	OK	OK
41)	cis-1,3-Dichloropropene	OK	OK	OK	OK	OK	OK
42)	4-Methyl-2-pentanone (MIBK)	OK	OK	OK	OK	OK	OK
43)	CHLOROBENZENE-d5						
44)	Toluene	OK	OK	OK	OK	OK	OK
45)	trans-1,3-Dichloropropene	OK	OK	OK	OK	OK	OK
46)	1,1,2-Trichloroethane	OK	OK	OK	OK	OK	OK
47)	Tetrachloroethene	OK	OK	OK	OK	OK	OK

48)	2-Hexanone	OK	OK	OK	OK	OK	OK
49)	Chlorodibromomethane	OK	OK	OK	OK	OK	OK
50)	1,2-Dibromoethane (EDB)	OK	OK	OK	OK	OK	OK
51)	Chlorobenzene	OK	OK	OK	OK	OK	OK
52)	Ethylbenzene	OK	OK	OK	OK	OK	OK
53)	m&p-Xylene	OK	OK	OK	OK	OK	OK
54)	o-Xylene	OK	OK	OK	OK	OK	OK
55)	Styrene	OK	OK	OK	OK	OK	OK
56)	Bromoform	OK	OK	OK	OK	OK	OK
57)	1,1,2,2-Tetrachloroethane	OK	OK	OK	OK	OK	OK
58)	4-Ethyltoluene	OK	OK	OK	OK	OK	OK
59)	1,3,5-Trimethylbenzene	OK	OK	OK	OK	OK	OK
60)	1,2,4-Trimethylbenzene	OK	OK	OK	OK	OK	OK
61)	1,3-Dichlorobenzene	OK	OK	OK	OK	OK	OK
62)	1,4-Dichlorobenzene	OK	OK	OK	OK	OK	OK
63)	Benzyl chloride	OK	OK	OK	OK	OK	OK
64)	1,2-Dichlorobenzene	OK	OK	OK	OK	OK	OK
65)	1,2,4-Trichlorobenzene	OK	OK	OK	OK	OK	OK
66)	Hexachlorobutadiene	OK	OK	OK	OK	OK	OK

LIMS CONCENTRATION REPORT

Instrument Name: HP5973K
Sample Name: S20D002-SCV1
Misc Info: 10ppbv
Date Acquired: 4/1/2020 22:24
QLast Update: Thu Apr 02 09:57:00 2(
Operator: LLH

#	Name	Amount	L1	L2	L3	L4	L5	L6
			1	2	5	10	15	20
1)	BROMOCHLOROMETHANE	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
2)	Propene	0.022	1.10	2.20	5.50	11.00	16.50	22.00
3)	Dichlorodifluoromethane	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
4)	1,2-Dichlorotetrafluoroethane	0.0194	0.97	1.94	4.85	9.70	14.55	19.40
5)	Chloromethane	0.0216	1.08	2.16	5.40	10.80	16.20	21.60
6)	Vinyl chloride	0.0208	1.04	2.08	5.20	10.40	15.60	20.80
7)	1,3-Butadiene	0.0206	1.03	2.06	5.15	10.30	15.45	20.60
8)	Bromomethane	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
9)	Chloroethane	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
10)	Bromoethene	0.0218	1.09	2.18	5.45	10.90	16.35	21.80
11)	Trichlorofluoromethane	0.0188	0.94	1.88	4.70	9.40	14.10	18.80
12)	1,1,2-Trichloro-1,2,2-trifluoroethane	0.02	1.00	2.00	5.00	10.00	15.00	20.00
13)	1,1-Dichloroethene	0.0208	1.04	2.08	5.20	10.40	15.60	20.80
14)	Acetone	0.0216	1.08	2.16	5.40	10.80	16.20	21.60
15)	Carbon disulfide	0.022	1.10	2.20	5.50	11.00	16.50	22.00
16)	2-Propanol	0.022	1.10	2.20	5.50	11.00	16.50	22.00
17)	Allyl chloride	0.022	1.10	2.20	5.50	11.00	16.50	22.00
18)	Dichloromethane	0.02	1.00	2.00	5.00	10.00	15.00	20.00
19)	tert-Butyl methyl ether (MTBE)	0.0214	1.07	2.14	5.35	10.70	16.05	21.40
20)	trans-1,2-Dichloroethene	0.0218	1.09	2.18	5.45	10.90	16.35	21.80
21)	Hexane	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
22)	1,1-Dichloroethane	0.0192	0.96	1.92	4.80	9.60	14.40	19.20
23)	Vinyl acetate	0.022	1.10	2.20	5.50	11.00	16.50	22.00
24)	cis-1,2-Dichloroethene	0.0202	1.01	2.02	5.05	10.10	15.15	20.20
25)	2-Butanone (MEK)	0.021	1.05	2.10	5.25	10.50	15.75	21.00
26)	Ethyl acetate	0.0206	1.03	2.06	5.15	10.30	15.45	20.60
27)	Tetrahydrofuran	0.0202	1.01	2.02	5.05	10.10	15.15	20.20
28)	Chloroform	0.0208	1.04	2.08	5.20	10.40	15.60	20.80
29)	Cyclohexane	0.0206	1.03	2.06	5.15	10.30	15.45	20.60
30)	1,1,1-Trichloroethane	0.0208	1.04	2.08	5.20	10.40	15.60	20.80
31)	Carbon tetrachloride	0.0202	1.01	2.02	5.05	10.10	15.15	20.20
32)	1,4-DIFLUOROBENZENE	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
33)	Benzene	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
34)	2,2,4-Trimethylpentane	0.0206	1.03	2.06	5.15	10.30	15.45	20.60
35)	1,2-Dichloroethane	0.0198	0.99	1.98	4.95	9.90	14.85	19.80
36)	Heptane	0.0206	1.03	2.06	5.15	10.30	15.45	20.60
37)	Trichloroethene	0.0216	1.08	2.16	5.40	10.80	16.20	21.60
38)	1,2-Dichloropropane	0.0202	1.01	2.02	5.05	10.10	15.15	20.20
39)	1,4-Dioxane	0.0208	1.04	2.08	5.20	10.40	15.60	20.80
40)	Bromodichloromethane	0.0208	1.04	2.08	5.20	10.40	15.60	20.80
41)	cis-1,3-Dichloropropene	0.02	1.00	2.00	5.00	10.00	15.00	20.00
42)	4-Methyl-2-pentanone (MIBK)	0.021	1.05	2.10	5.25	10.50	15.75	21.00
43)	CHLOROBENZENE-d5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
44)	Toluene	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
45)	trans-1,3-Dichloropropene	0.0192	0.96	1.92	4.80	9.60	14.40	19.20
46)	1,1,2-Trichloroethane	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
47)	Tetrachloroethene	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
48)	2-Hexanone	0.0206	1.03	2.06	5.15	10.30	15.45	20.60
49)	Chlorodibromomethane	0.0218	1.09	2.18	5.45	10.90	16.35	21.80

50)	1,2-Dibromoethane (EDB)	0.0208	1.04	2.08	5.20	10.40	15.60	20.80
51)	Chlorobenzene	0.0206	1.03	2.06	5.15	10.30	15.45	20.60
52)	Ethylbenzene	0.0206	1.03	2.06	5.15	10.30	15.45	20.60
53)	m&p-Xylene	0.0408	2.04	4.08	10.20	20.40	30.60	40.80
54)	o-Xylene	0.02	1.00	2.00	5.00	10.00	15.00	20.00
55)	Styrene	0.0196	0.98	1.96	4.90	9.80	14.70	19.60
56)	Bromoform	0.022	1.10	2.20	5.50	11.00	16.50	22.00
57)	1,1,2,2-Tetrachloroethane	0.0198	0.99	1.98	4.95	9.90	14.85	19.80
58)	4-Ethyltoluene	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
59)	1,3,5-Trimethylbenzene	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
60)	1,2,4-Trimethylbenzene	0.0204	1.02	2.04	5.10	10.20	15.30	20.40
61)	1,3-Dichlorobenzene	0.02	1.00	2.00	5.00	10.00	15.00	20.00
62)	1,4-Dichlorobenzene	0.02	1.00	2.00	5.00	10.00	15.00	20.00
63)	Benzyl chloride	0.022	1.10	2.20	5.50	11.00	16.50	22.00
64)	1,2-Dichlorobenzene	0.0196	0.98	1.96	4.90	9.80	14.70	19.60
65)	1,2,4-Trichlorobenzene	0.018	0.90	1.80	4.50	9.00	13.50	18.00
66)	Hexachlorobutadiene	0.0184	0.92	1.84	4.60	9.20	13.80	18.40

SEQUENCE

S20D002

Sequence Date: 04/01/2020

Instrument: HP5973K

Sequence Analyses:

VOCs, Soil Gas

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	N / A	SEQUENCE #:	S20D002 04/01/20
BATCH #:	+ INITIAL CALIBRATION	ANALYSIS:	TO15 HP5973K

	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.	04/01/20 Thu Apr 02, 2020 09:57:00			
	Initial Calibration ID (LIMS number):	2004002 / S20D002			
	ICAL within QC criteria?		Y	Y	OK
	SCV within QC criteria?		Y	Y	2-Propanol = 140%; Styrene = 182%
INSTRUMENT / QC CHECKS	Tune or degradation checks within QC criteria?		Y	Y	PASSED
	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?	✔			
	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 #:	N / A	SEQUENCE #:	S20D002	04/01/20
BATCH #:	+ INITIAL CALIBRATION	ANALYSIS:	TO15	HP5973K

	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.	✔			

APPROVALS	ANALYST INITIALS & DATE:	LLH 04/02/20
	REVIEWED BY:	Rajabi, Ziyad Digitally signed by Rajabi, Ziyad Date: 2020.05.20 08:36:07 -07'00' SIGN HERE

COMMENTS

FORM #: Q015
REV #: 1
DATE: 01/13/15

Injection Log

Directory: d:\msdchem\1\2020\DATA\040120K_FSAA

Table of Contents

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	33	040120K01.D	1.	IBL	BLANK	1 Apr 2020 10:22
2	33	040120K02.D	1.	IBL	BLANK	1 Apr 2020 12:46
3	27	040120K03.D	1.	PRIME	STD CHECK	1 Apr 2020 13:51
4	29	040120K04.D	1.	PRIME	STD CHECK	1 Apr 2020 14:42
5	38	040120K05.D	1.	PRIME	STD CHECK	1 Apr 2020 15:35
6	27	040120K06.D	1.	S20D002-TUN1	BFB 1901028	1 Apr 2020 16:26
7	27	040120K07.D	1.	S20D002-CAL1	1.0ppbv	1 Apr 2020 17:16
8	29	040120K08.D	1.	S20D002-CAL2	2.0ppbv	1 Apr 2020 18:06
9	29	040120K09.D	1.	S20D002-CAL3	5.0ppbv	1 Apr 2020 18:56
10	29	040120K10.D	1.	S20D002-CAL4	10ppbv	1 Apr 2020 19:47
11	29	040120K11.D	1.	S20D002-CAL5	15ppbv	1 Apr 2020 20:39
12	29	040120K12.D	1.	S20D002-CAL6	20ppbv	1 Apr 2020 21:31
13	38	040120K13.D	1.	S20D002-SCV1	10ppbv	1 Apr 2020 22:24
14	38	040120K14.D	1.	S20D002SCV1	10ppbv	1 Apr 2020 23:16
15	33	040120K15.D	1.	S20D002-IBL1	200ml BLANK	2 Apr 2020 00:09

GC/MS QA-QC Check Report

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Tune File : D:\msdchem\1\2020\DATA\040120K_FSAA\040120K06.D
Tune Time : 1 Apr 2020 4:26 pm

Daily Calibration File : D:\msdchem\1\2020\DATA\040120K_FSAA\040120K10.D

File	Sample	Surrogate Recovery %		Internal Standard Responses	
			290286	865447	803106
040120K07.D					
	S20D002-CAL1	288642	890972	795202	
040120K08.D					
	S20D002-CAL2	281363	860745	773186	
040120K09.D					
	S20D002-CAL3	283682	856372	780232	
040120K10.D					
	S20D002-CAL4	290286	865447	803106	
040120K11.D					
	S20D002-CAL5	292622	900340	843082	
040120K12.D					
	S20D002-CAL6	298225	930144	876910	
040120K13.D					
	S20D002-SCV1	314982	965414	886908	
040120K14.D					
	S20D002SCV1	305757	957898	881481	NOT USED
040120K15.D					
	S20D002-IBL1	306396	954164	829953	

(fails) - fails 24hr time check * - fails criteria

Created: Thu Apr 02 10:10:00 2020 HP5973K

Analysis Sequence

S20D002

Project:
Analysis:

Instrument: HP5973K **Calibration ID:** 2004002 Printed: 04/02/2020 10:19 am

Lab Number	Sample Name	Order	Analyzed Date	STD ID	ISTD ID	Sequenced By	File ID	Comments
S20D002-TUN1	BFB Tune	1	4/1/20 16:26	1901028		LLH	040120K06.D	
S20D002-CAL1	CAL STD	2	4/1/20 17:16	2014026		LLH	040120K07.D	
S20D002-CAL2	CAL STD	3	4/1/20 18:06	2014027		LLH	040120K08.D	
S20D002-CAL3	CAL STD	4	4/1/20 18:56	2014028		LLH	040120K09.D	
S20D002-CAL4	CAL STD	5	4/1/20 19:47	2014029		LLH	040120K10.D	
S20D002-CAL5	CAL STD	6	4/1/20 20:39	2014030		LLH	040120K11.D	
S20D002-CAL6	CAL STD	7	4/1/20 21:31	2014031		LLH	040120K12.D	
S20D002-SCV1	SCV	8	4/1/20 22:24	2014033		LLH	040120K13.D	
S20D002-IBL1	Instrument Blank	9	4/2/20 0:09		2006146	LLH	040120K15.D	

Sequence Comments

Reagents

Reagent # **Description**

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Sequence Report

I	Name	Inlet	Pos.	Int Std	Cal Std	Sample	Method	Inject	Status
	BLANK	Three	T3	40	0	200	TO-15_A.CTD3	4/1/2020 10:22:57 AM	Canceled
	BLANK	Three	T3	40	40	200	TO-15_A.CTD3	4/1/2020 12:46:43 PM	Canceled
	PRIME	Two	T7	40	0	200	TO-15_A.CTD3	4/1/2020 1:51:32 PM	Completed
	PRIME	Two	T9	40	0	100	TO-15_A.CTD3	4/1/2020 2:42:28 PM	Completed
	PRIME	Three	T8	40	0	200	TO-15_A.CTD3	4/1/2020 3:35:15 PM	Completed
	BFB	Two	T7	40	40	20	TO-15_A.CTD3	4/1/2020 4:26:36 PM	Completed
	CAL1	Two	T7	40	0	20	TO-15_A.CTD3	4/1/2020 5:16:34 PM	Completed
	CAL2	Two	T9	40	0	20	TO-15_A.CTD3	4/1/2020 6:06:22 PM	Completed
	CAL3	Two	T9	40	0	50	TO-15_A.CTD3	4/1/2020 6:56:30 PM	Completed
	CAL4	Two	T9	40	0	100	TO-15_A.CTD3	4/1/2020 7:47:24 PM	Completed
	CAL5	Two	T9	40	0	150	TO-15_A.CTD3	4/1/2020 8:39:12 PM	Completed
	CAL6	Two	T9	40	0	200	TO-15_A.CTD3	4/1/2020 9:31:45 PM	Completed
	SCV1	Three	T8	40	0	200	TO-15_A.CTD3	4/1/2020 10:24:14 PM	Completed
	SCV1	Three	T8	40	0	200	TO-15_A.CTD3	4/1/2020 11:16:43 PM	Completed
	BLANK	Three	T3	40	0	200	TO-15_A.CTD3	4/2/2020 12:09:13 AM	Completed

SEQUENCE DATA

S20D002

S20D002-TUN1

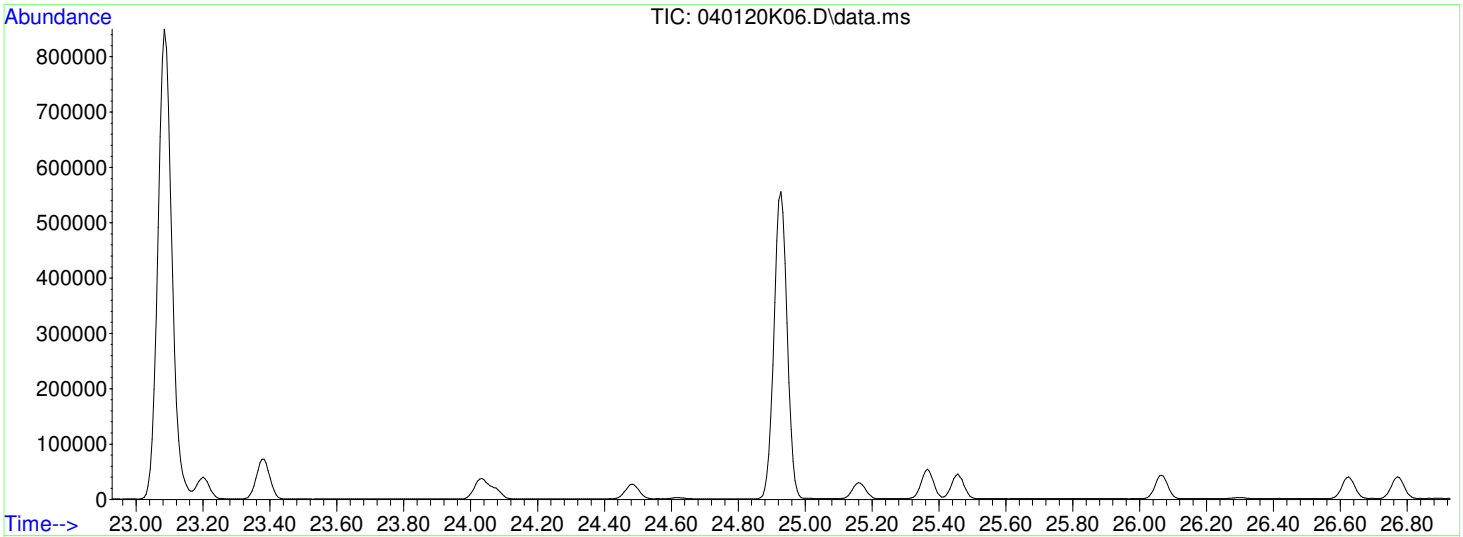
Table of Contents

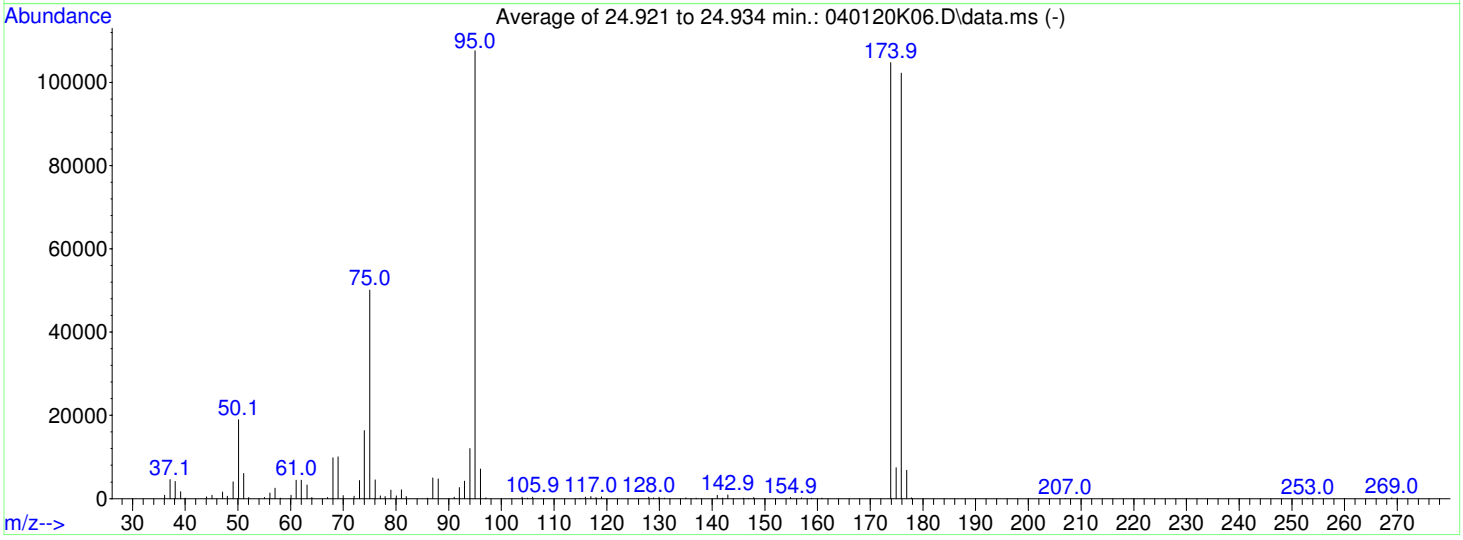
Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K06.D
InstName : HP5973K
Acq On : 1 Apr 2020 4:26 pm
Operator : LLH
Sample : S20D002-TUN1
Misc : BFB 1901028
ALS Vial : 27 Sample Multiplier: 1

REVIEWED
By LLH at 9:45 am, Apr 02, 2020

Integration File: lscint.p

Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Title : TO15
Last Update : Fri Feb 14 10:34:59 2020





AutoFind: Scans 3327, 3328, 3329; Background Corrected with Scan 3312

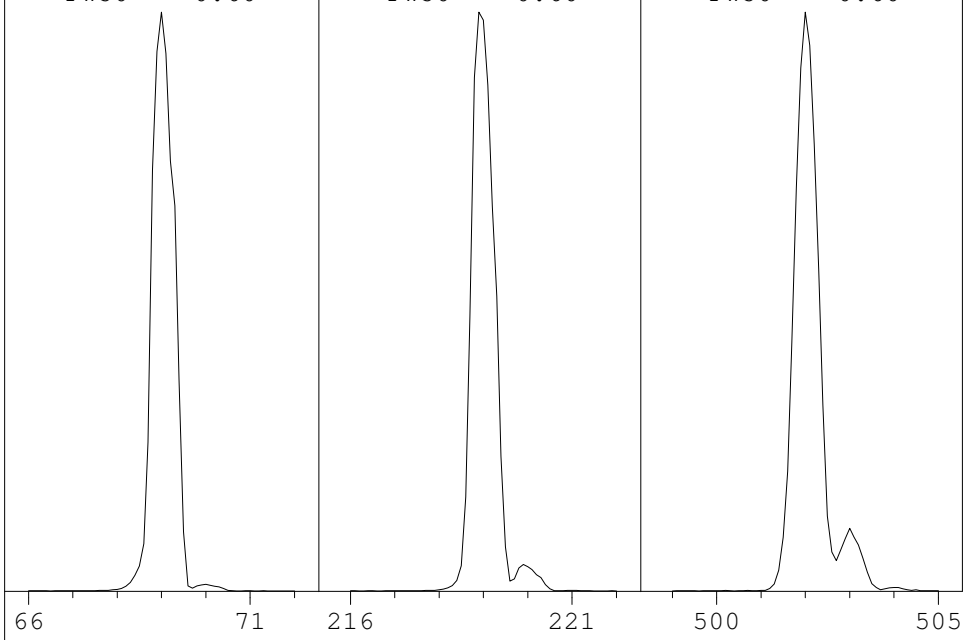
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	17.6	18984	PASS
75	95	30	66	46.5	50088	PASS
95	95	100	100	100.0	107637	PASS
96	95	5	9	6.6	7105	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	97.3	104757	PASS
175	174	4	9	7.1	7448	PASS
176	174	93	101	97.6	102232	PASS
177	176	5	9	6.6	6778	PASS

Autotune

Wed Apr 01 09:52:05 2020 Instrum

C:\MSDCHEM\1\5973N\atune.u US03960556

Mass	69.00	Mass	218.90	Mass	502.00
Ab	431638	Ab	321831	Ab	34280
Pw50	0.60	Pw50	0.60	Pw50	0.60

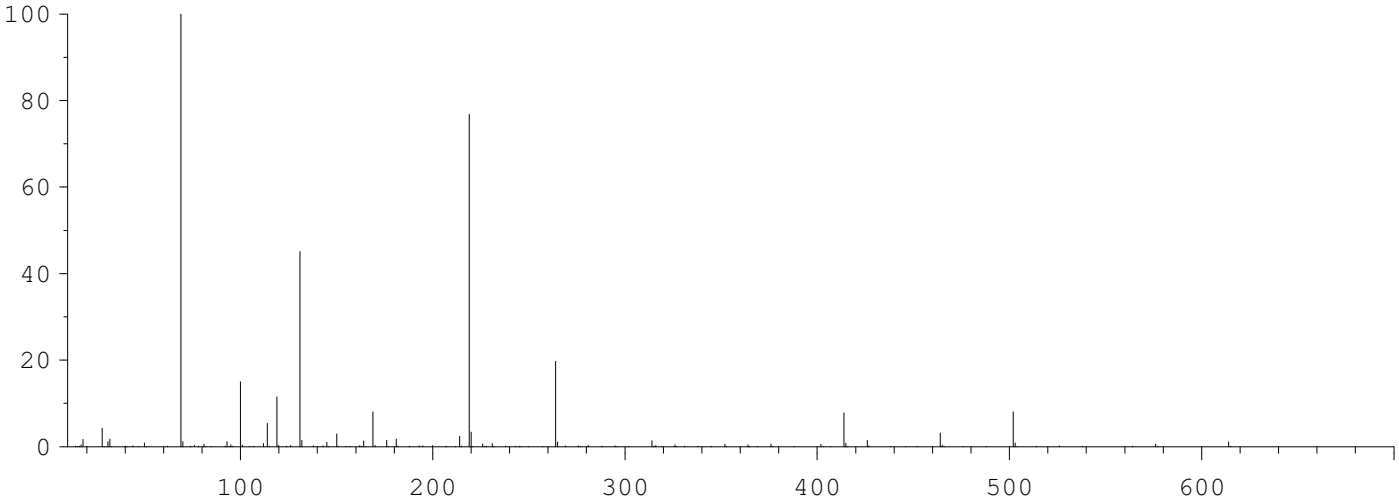


Ion Pol	Pos	MassGain	72
		MassOffs	-8
Emission	34.6	AmuGain	1990
EIEnrgy	69.9	AmuOffs	129
Filament	2	Wid219	-0.031
		DC Pol	Pos
Repeller	34.81		
IonFcus	90.2	HEDEnab	On
EntLens	19.0	EMVolts	1106
EntOffs	19.83		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	230	Turbo Speed	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
138 peaks Base: 69.00 Abundance: 380736



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	380736	100.00	70.00	4293	1.13
219.00	292480	76.82	220.00	12823	4.38
502.00	30640	8.05	503.00	3215	10.49

Air/Water Check: H20~1.68% N2~4.29% O2~1.76% CO2~0.20% N2/H2O~255.00%

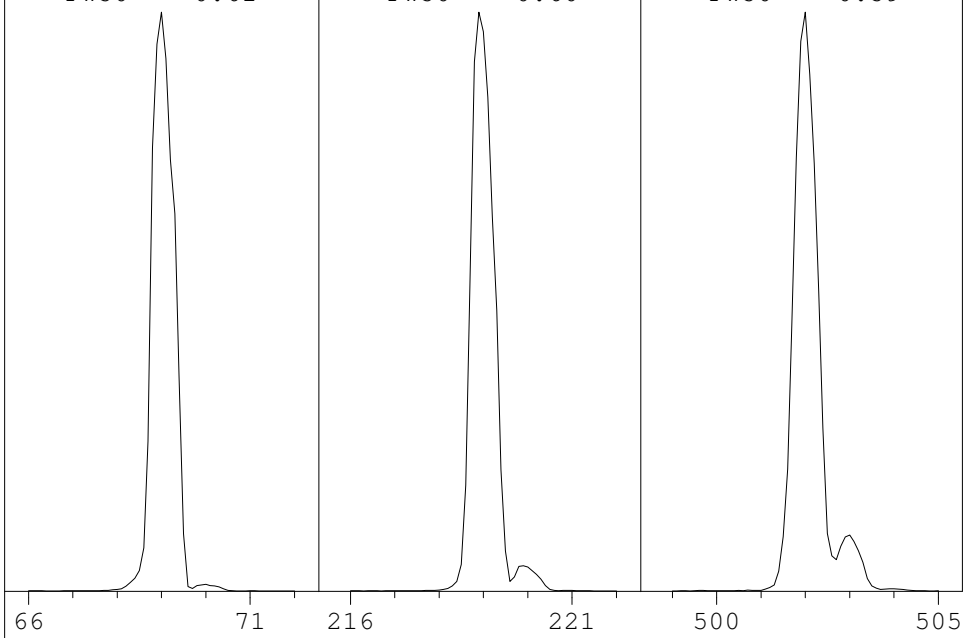
Column(1) Flow: 1.492 Column(2): 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 502; EM Gain 84340
Repeller Maximum 35 volts using ion 219; Gain Factor 0.84

MassGain Values(Samples): 72(3) 72(2) 72(1) 72(0) 72(FS)

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	129.0	129.0	129.0	129.0	129.0	129.0	129.0
Entrance Lens Offset:	19.8	19.8	19.8	19.8	19.8	19.8	19.8

Mass	69.00	Mass	218.90	Mass	502.00
Ab	571588	Ab	382842	Ab	41925
Pw50	0.61	Pw50	0.60	Pw50	0.59

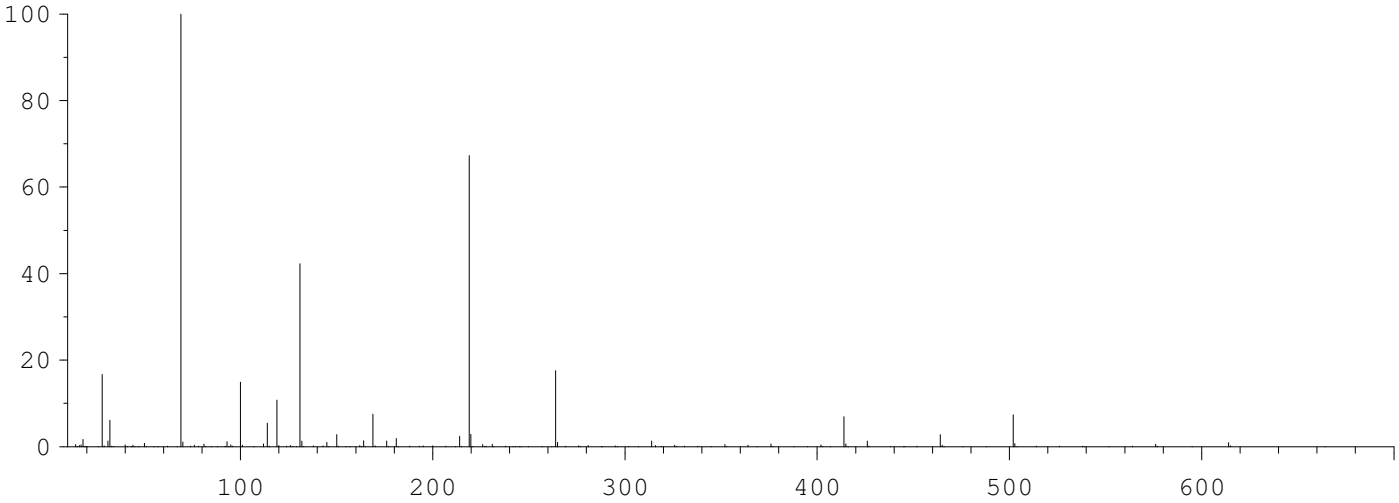


Ion Pol	Pos	MassGain	72
		MassOffs	-8
Emission	34.6	AmuGain	1990
EIEnrgy	69.9	AmuOffs	129
Filament	2	Wid219	-0.031
		DC Pol	Pos
Repeller	32.13		
IonFcus	90.2	HEDEnab	On
EntLens	19.0	EMVolts	1165
EntOffs	19.83		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	230	Turbo Speed	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
158 peaks Base: 69.00 Abundance: 510976



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	510976	100.00	70.00	5453	1.07
219.00	343936	67.31	219.90	14583	4.24
502.00	37816	7.40	502.90	3476	9.19

Air/Water Check: H20~1.69% N2~16.68% O2~6.10% CO2~0.35% N2/H2O~985.16%

Column(1) Flow: 1.492 Column(2): 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 502; EM Gain 131766
Repeller Maximum 35 volts using ion 219; Gain Factor 1.32

MassGain Values(Samples): 72(3) 72(2) 72(1) 72(0) 72(FS)

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	129.0	129.0	129.0	129.0	129.0	129.0	129.0
Entrance Lens Offset:	19.8	19.8	19.8	19.8	19.8	19.8	19.8

S20D002-CAL1

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K07.D
InstName : HP5973K
Acq On : 1 Apr 2020 5:16 pm
Operator : LLH
Sample : S20D002-CAL1
Misc : 1.0ppbv
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Apr 02 09:47:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:46:54 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	16.313	49	288642	19.60	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	890972	19.60	ppbv		0.00
43) CHLOROBENZENE-d5	23.084	117	795202	19.60	ppbv		0.00
Target Compounds							Qvalue
2) Propene	4.985	41	9472	1.14	ppbv		99
3) Dichlorodifluoromethane	5.089	85	21718	0.96	ppbv		100
4) 1,2-Dichlorotetrafluor...	5.484	85	23763	0.90	ppbv		100
5) Chloromethane	5.728	50	9172	1.08	ppbv		99
6) Vinyl chloride	6.068	62	11393	1.07	ppbv		99
7) 1,3-Butadiene	6.172	54	9576	1.14	ppbv		91
8) Bromomethane	7.236	94	7919	0.91	ppbv		99
9) Chloroethane	7.620	64	5416	0.96	ppbv		97
10) Bromoethene	8.252	106	8679	1.00	ppbv		99
11) Trichlorofluoromethane	8.386	101	19459	0.88	ppbv		100
12) 1,1,2-Trichloro-1,2,2-...	10.388	151	14851	0.89	ppbv		99
13) 1,1-Dichloroethene	10.497	61	13525	0.96	ppbv		99
14) Acetone	11.093	43	15344	1.14	ppbv		99
15) Carbon disulfide	11.203	76	28202	1.07	ppbv		98
16) 2-Propanol	11.617	45	13834	1.08	ppbv		95
17) Allyl chloride	11.957	41	13402	1.08	ppbv		98
18) Dichloromethane	12.480	49	13522	1.15	ppbv		99
19) tert-Butyl methyl ethe...	13.034	73	28531	1.02	ppbv		98
20) trans-1,2-Dichloroethene	13.107	61	14017	1.07	ppbv		99
21) Hexane	13.588	57	17598	0.96	ppbv		99
22) 1,1-Dichloroethane	14.391	63	16178	0.89	ppbv		100
23) Vinyl acetate	14.494	43	22323	1.08	ppbv		99
24) cis-1,2-Dichloroethene	15.772	61	11923	0.91	ppbv	#	97
25) 2-Butanone (MEK)	15.875	72	5197	0.96	ppbv	#	96
26) Ethyl acetate	15.869	61	3331	1.05	ppbv	#	89
27) Tetrahydrofuran	16.301	42	12115	1.01	ppbv		100
28) Chloroform	16.447	83	17561	0.98	ppbv		99
29) Cyclohexane	16.623	56	18009	1.01	ppbv		99
30) 1,1,1-Trichloroethane	16.702	97	17060	0.98	ppbv		100
31) Carbon tetrachloride	16.934	117	17091	1.01	ppbv		100
33) Benzene	17.439	78	29664	1.00	ppbv		99
34) 2,2,4-Trimethylpentane	17.311	57	55323	1.07	ppbv		99
35) 1,2-Dichloroethane	17.658	62	11153	1.01	ppbv		100
36) Heptane	17.682	43	20072	1.09	ppbv		100
37) Trichloroethene	18.631	130	13130	1.02	ppbv		99
38) 1,2-Dichloropropane	19.148	63	10978	1.00	ppbv		99
39) 1,4-Dioxane	19.324	88	7309	1.04	ppbv		98
40) Bromodichloromethane	19.604	83	20265	1.10	ppbv		100
41) cis-1,3-Dichloropropene	20.346	75	15744	0.93	ppbv		98
42) 4-Methyl-2-pentanone (...	20.559	43	22219	1.06	ppbv		99
44) Toluene	20.803	91	34597	0.96	ppbv		99
45) trans-1,3-Dichloropropene	21.289	75	13796	0.89	ppbv		99
46) 1,1,2-Trichloroethane	21.600	97	11391	0.97	ppbv		99
47) Tetrachloroethene	21.642	166	17576	0.94	ppbv		99
48) 2-Hexanone	21.892	43	18548	0.97	ppbv		96
49) Chlorodibromomethane	22.208	129	20650	1.15	ppbv		100
50) 1,2-Dibromoethane (EDB)	22.445	107	16488	0.96	ppbv		99
51) Chlorobenzene	23.133	112	28693	0.97	ppbv	#	82
52) Ethylbenzene	23.200	91	45195	0.97	ppbv		100
53) m&p-Xylene	23.376	91	66821	1.89	ppbv		98
54) o-Xylene	24.027	91	33369	0.91	ppbv		100

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K07.D
InstName : HP5973K
Acq On : 1 Apr 2020 5:16 pm
Operator : LLH
Sample : S20D002-CAL1
Misc : 1.0ppbv
ALS Vial : 27 Sample Multiplier: 1

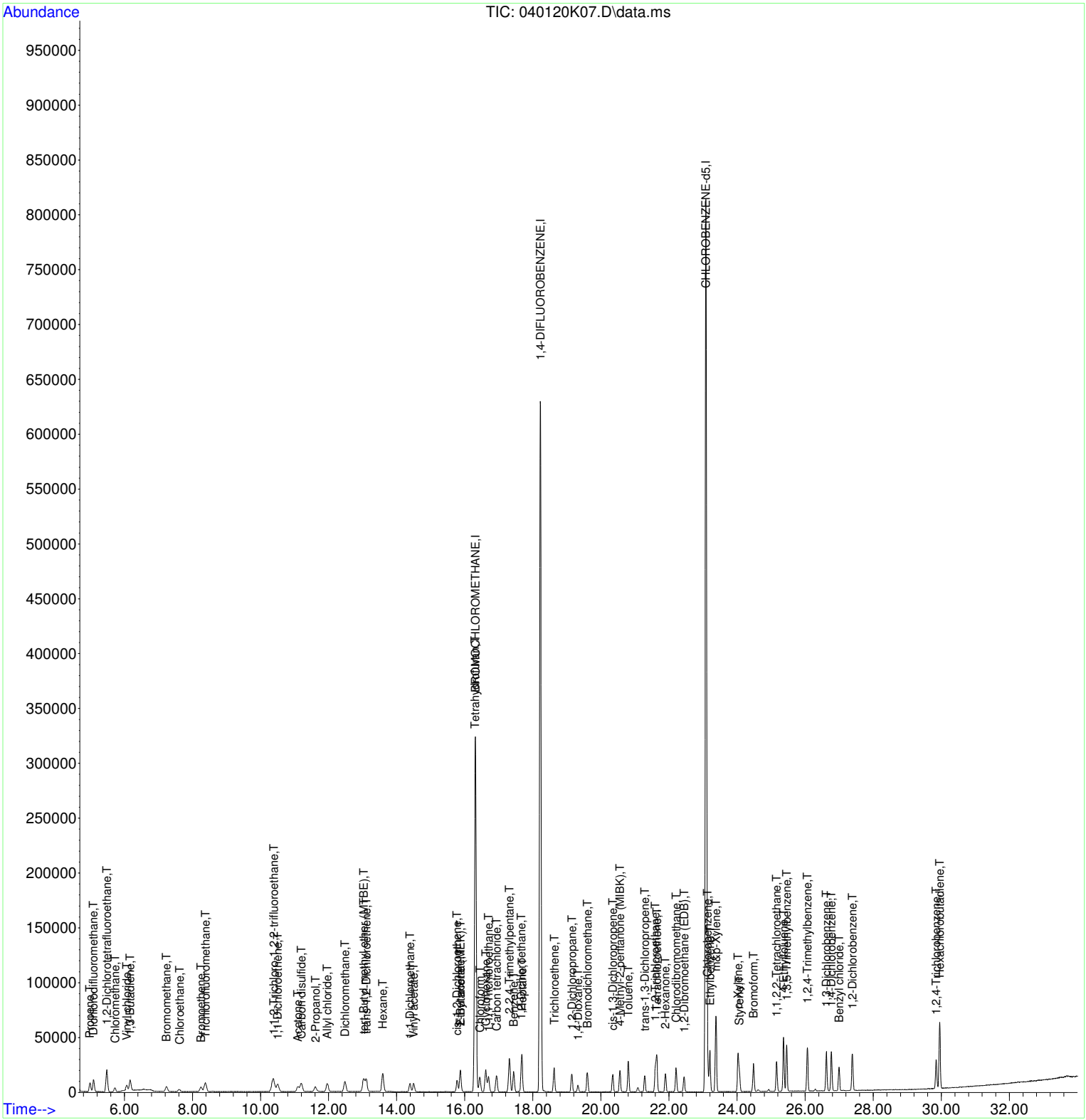
Quant Time: Apr 02 09:47:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:46:54 2020
Response via : Initial Calibration

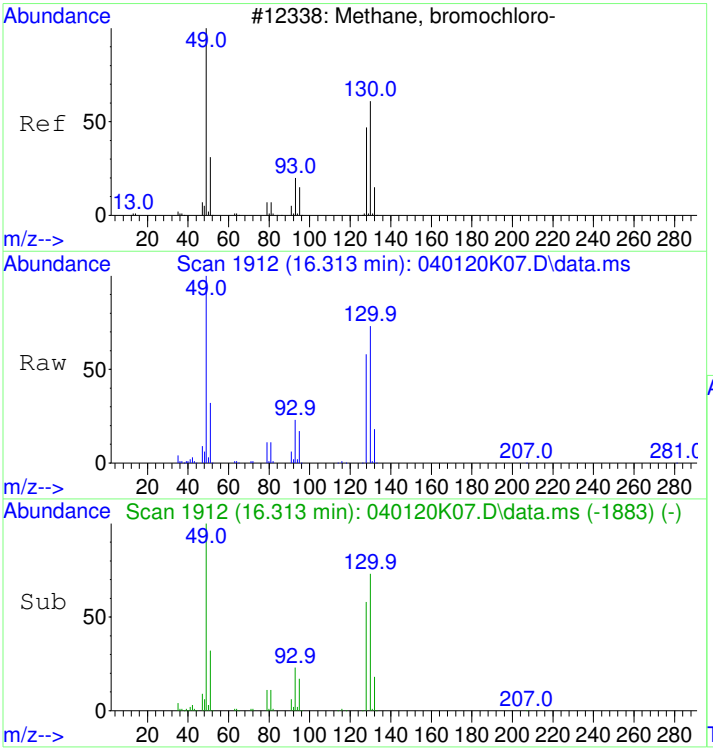
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
55) Styrene	24.070	104	15601	0.80 ppbv	98
56) Bromoform	24.483	173	21012	1.16 ppbv	99
57) 1,1,2,2-Tetrachloroethane	25.159	83	24081	0.91 ppbv	100
58) 4-Ethyltoluene	25.365	105	54210	0.95 ppbv	99
59) 1,3,5-Trimethylbenzene	25.457	105	38150	0.88 ppbv	100
60) 1,2,4-Trimethylbenzene	26.065	105	37541	0.86 ppbv	99
61) 1,3-Dichlorobenzene	26.625	146	27163	0.84 ppbv	100
62) 1,4-Dichlorobenzene	26.771	146	27071	0.85 ppbv	100
63) Benzyl chloride	26.996	91	27890	0.95 ppbv	98
64) 1,2-Dichlorobenzene	27.385	146	26172	0.83 ppbv	99
65) 1,2,4-Trichlorobenzene	29.849	180	17782	0.66 ppbv	99
66) Hexachlorobutadiene	29.952	225	22443	0.78 ppbv	99

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

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K07.D
InstName : HP5973K
Acq On : 1 Apr 2020 5:16 pm
Operator : LLH
Sample : S20D002-CAL1
Misc : 1.0ppbv
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Apr 02 09:47:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:46:54 2020
Response via : Initial Calibration

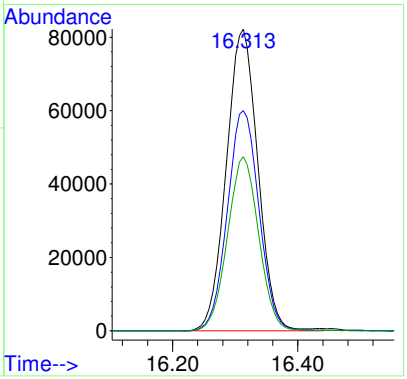


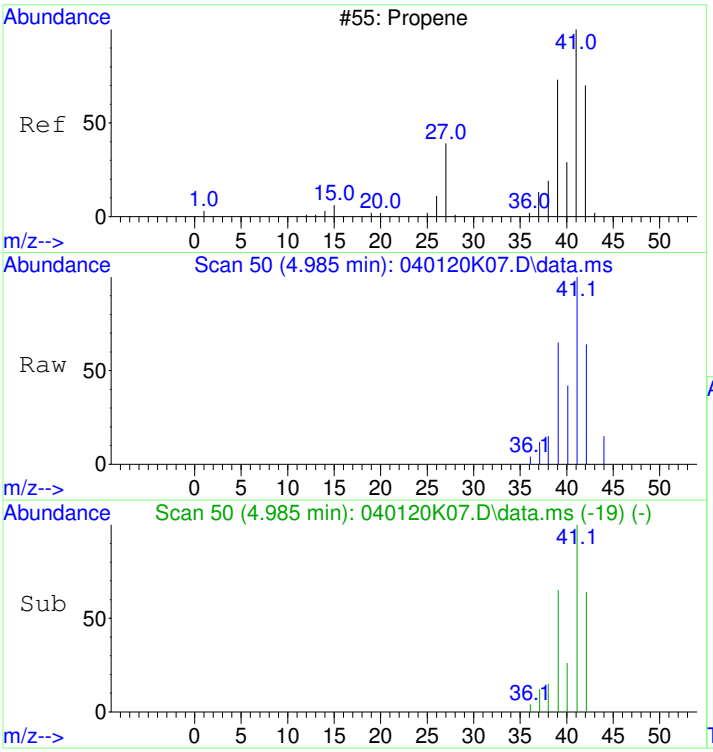


#1
BROMOCHLOROMETHANE
Concen: 19.60 ppbv
RT: 16.313 min Scan# 1912
Delta R.T. 0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 49 Resp: 288642

Ion	Ratio	Lower	Upper
49	100		
130	73.2	51.1	91.1
128	56.5	35.0	75.0

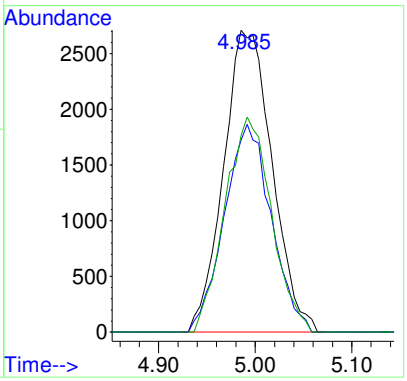


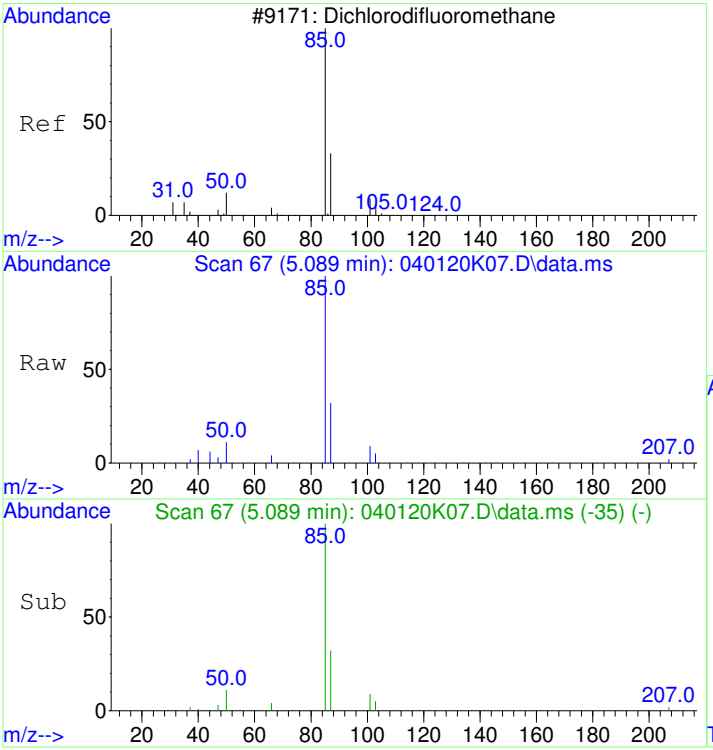


#2
Propene
Concen: 1.14 ppbv
RT: 4.985 min Scan# 50
Delta R.T. -0.012 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 41 Resp: 9472

Ion	Ratio	Lower	Upper
41	100		
42	66.4	47.4	87.4
39	68.2	47.3	87.3

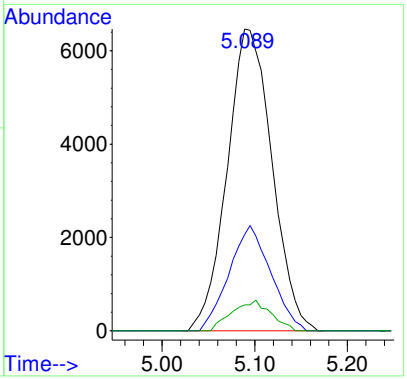


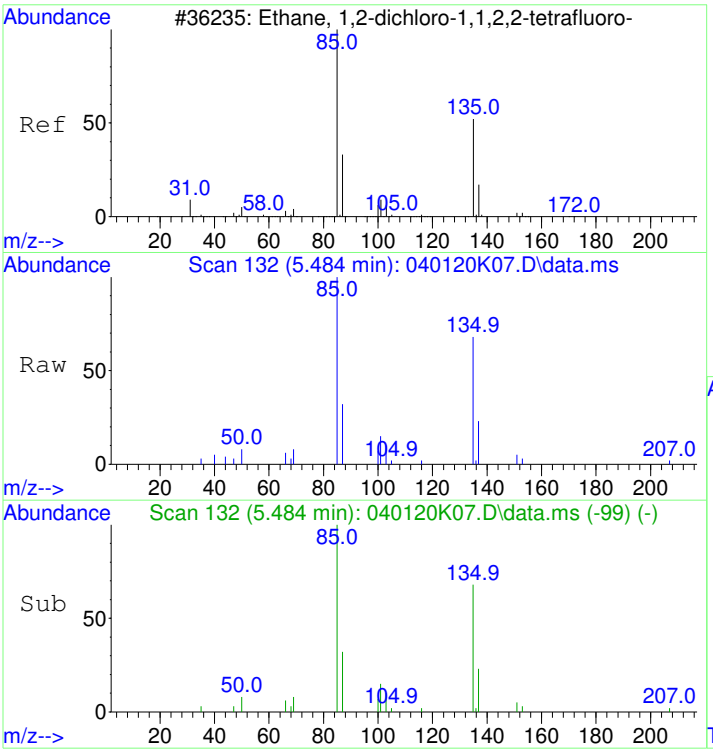


#3
Dichlorodifluoromethane
Concen: 0.96 ppbv
RT: 5.089 min Scan# 67
Delta R.T. -0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 85 Resp: 21718

Ion	Ratio	Lower	Upper
85	100		
87	32.4	12.2	52.2
101	8.8	0.0	28.9

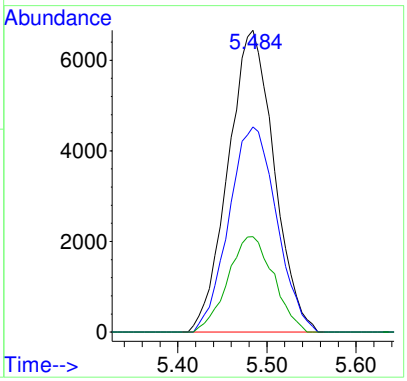


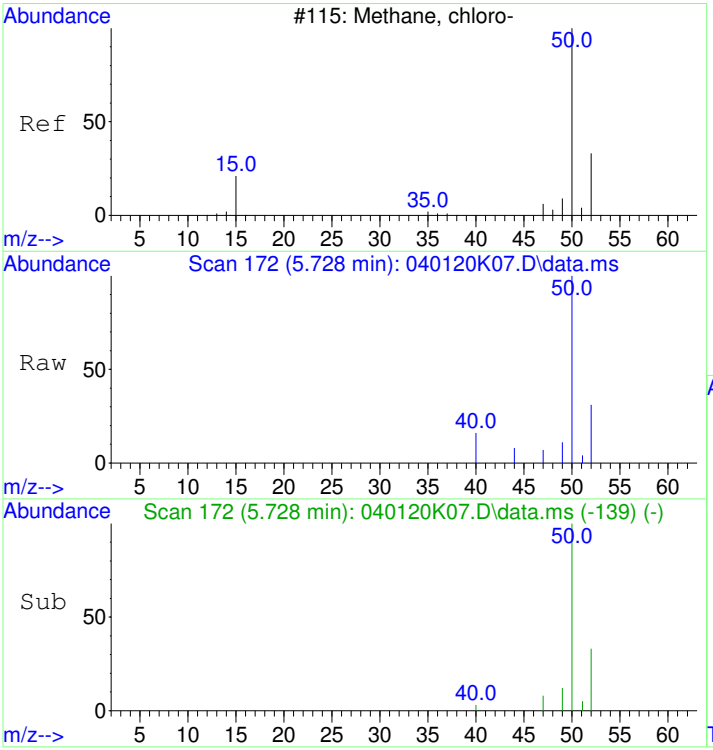


#4
1,2-Dichlorotetrafluoroethane
Concen: 0.90 ppbv
RT: 5.484 min Scan# 132
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 85 Resp: 23763

Ion	Ratio	Lower	Upper
85	100		
135	70.7	50.9	90.9
87	31.5	12.0	52.0

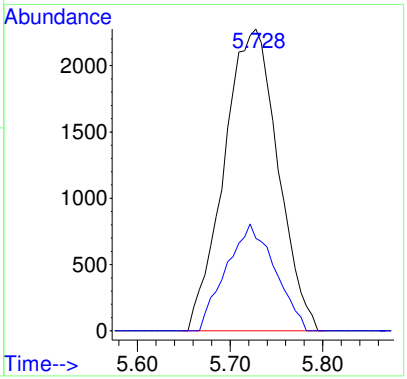


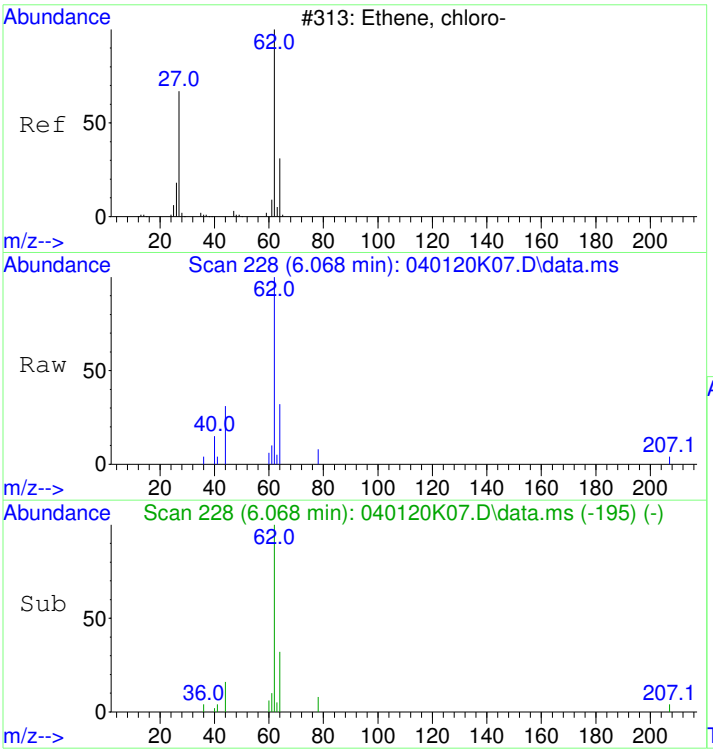


#5
Chloromethane
Concen: 1.08 ppbv
RT: 5.728 min Scan# 172
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 50 Resp: 9172

Ion	Ratio	Lower	Upper
50	100		
52	32.0	12.4	52.4

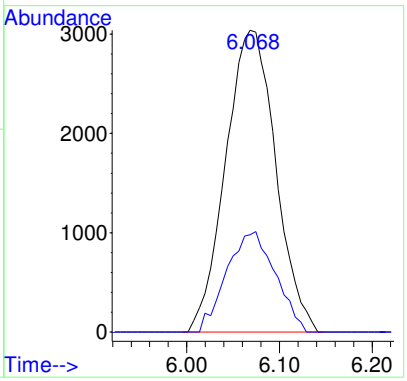


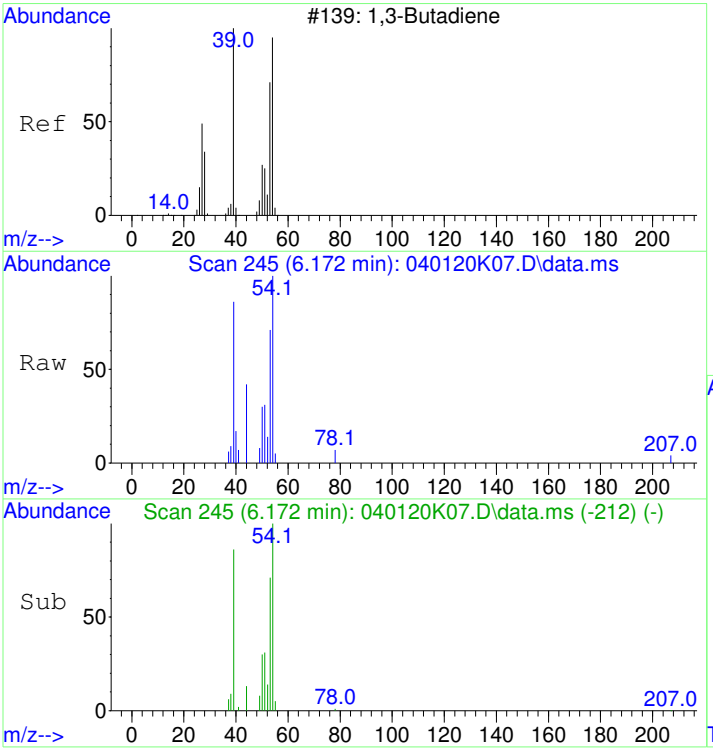


#6
Vinyl chloride
Concen: 1.07 ppbv
RT: 6.068 min Scan# 228
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 62 Resp: 11393

Ion	Ratio	Lower	Upper
62	100		
64	32.3	11.9	51.9

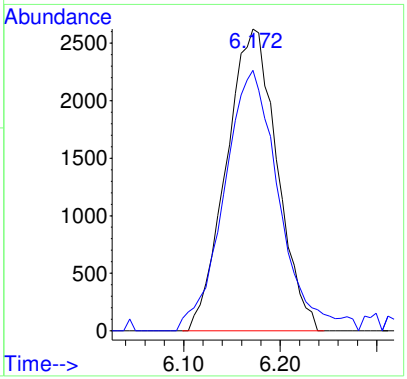


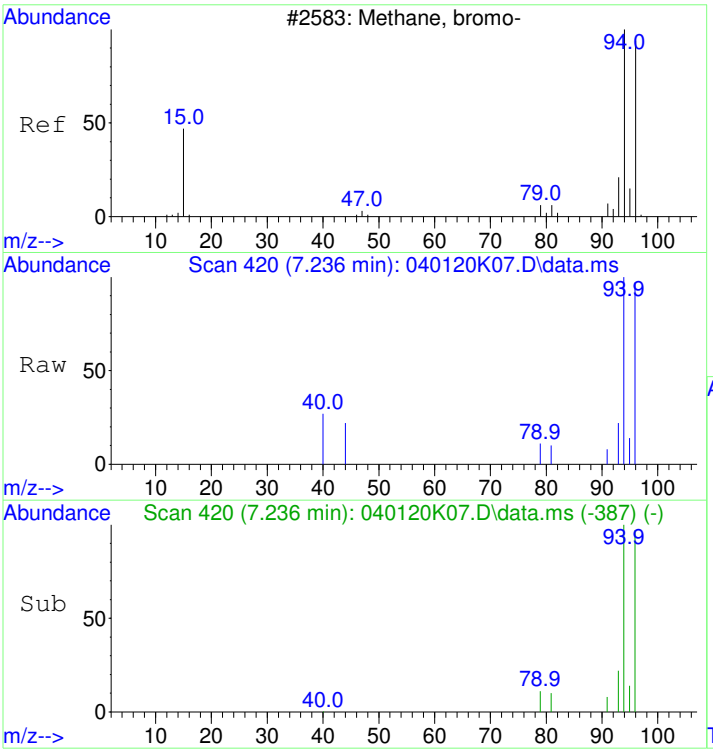


#7
1,3-Butadiene
Concen: 1.14 ppbv
RT: 6.172 min Scan# 245
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 54 Resp: 9576

Ion	Ratio	Lower	Upper
54	100		
39	93.3	65.4	105.4

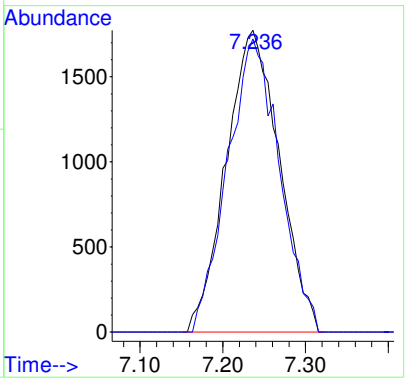


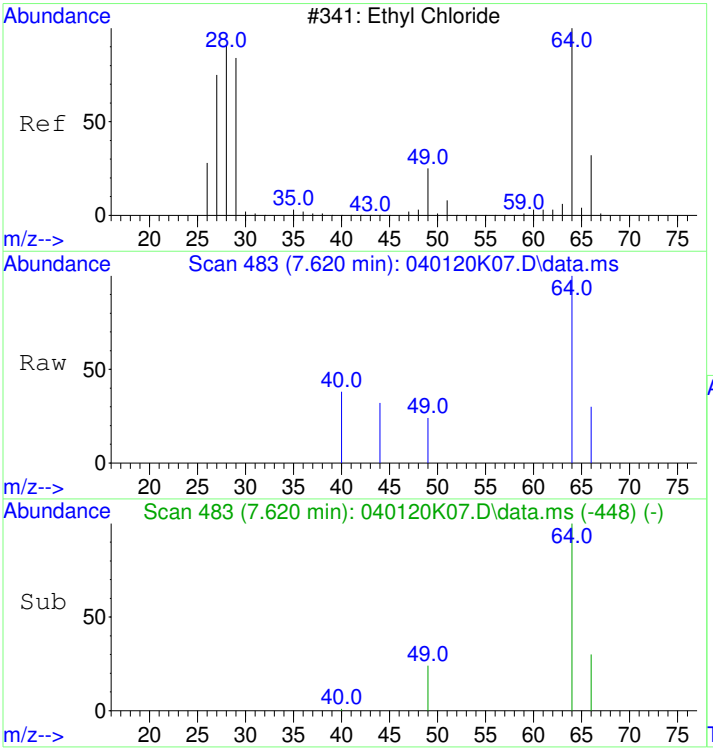


#8
Bromomethane
Concen: 0.91 ppbv
RT: 7.236 min Scan# 420
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 94 Resp: 7919

Ion	Ratio	Lower	Upper
94	100		
96	94.9	74.3	114.3

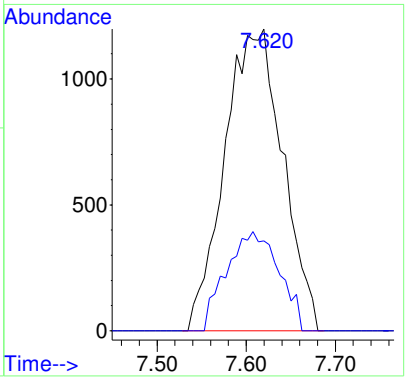


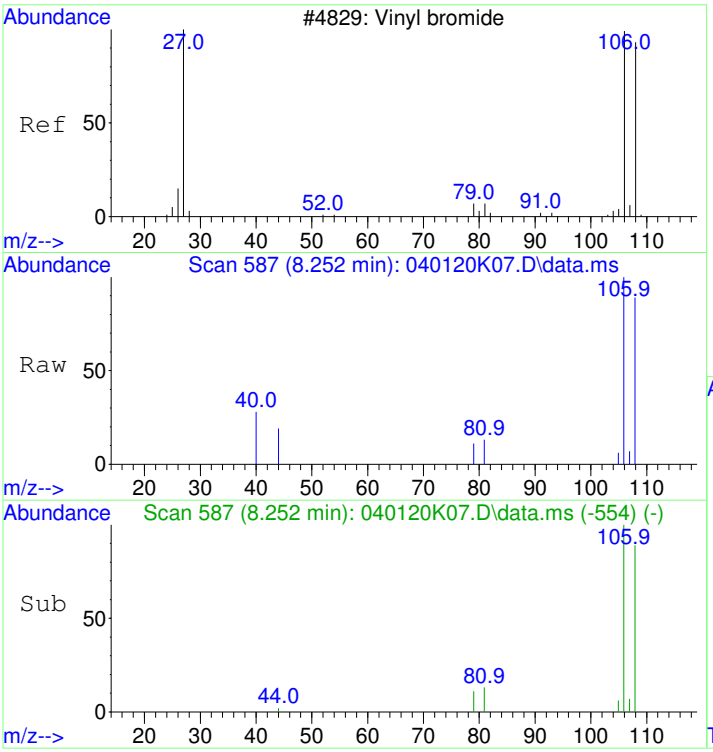


#9
Chloroethane
Concen: 0.96 ppbv
RT: 7.620 min Scan# 483
Delta R.T. 0.012 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 64 Resp: 5416

Ion	Ratio	Lower	Upper
64	100		
66	29.7	11.3	51.3

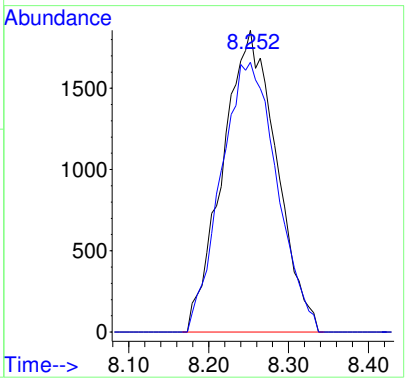


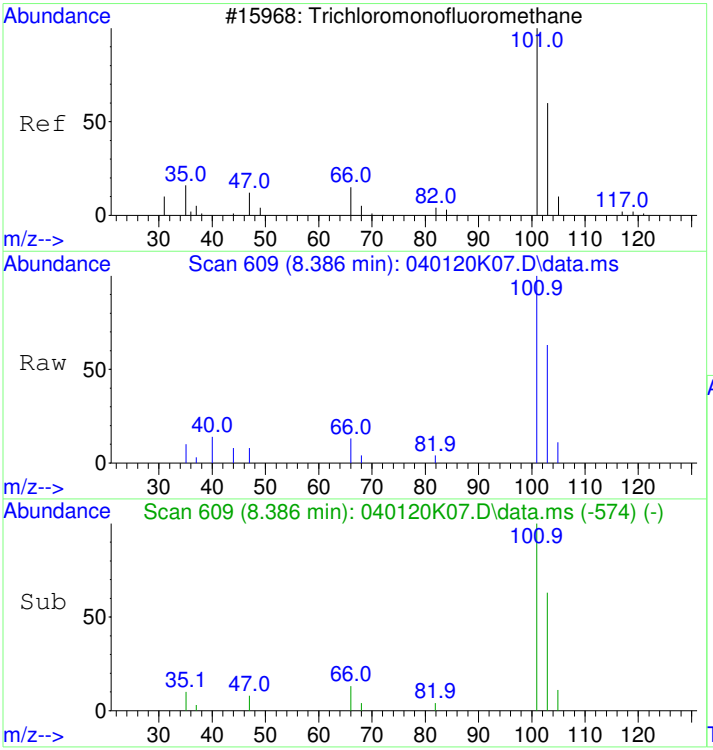


#10
Bromoethene
Concen: 1.00 ppbv
RT: 8.252 min Scan# 587
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:106 Resp: 8679

Ion	Ratio	Lower	Upper
106	100		
108	92.8	0.0	214.2

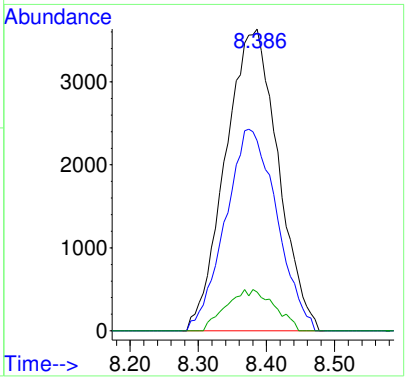


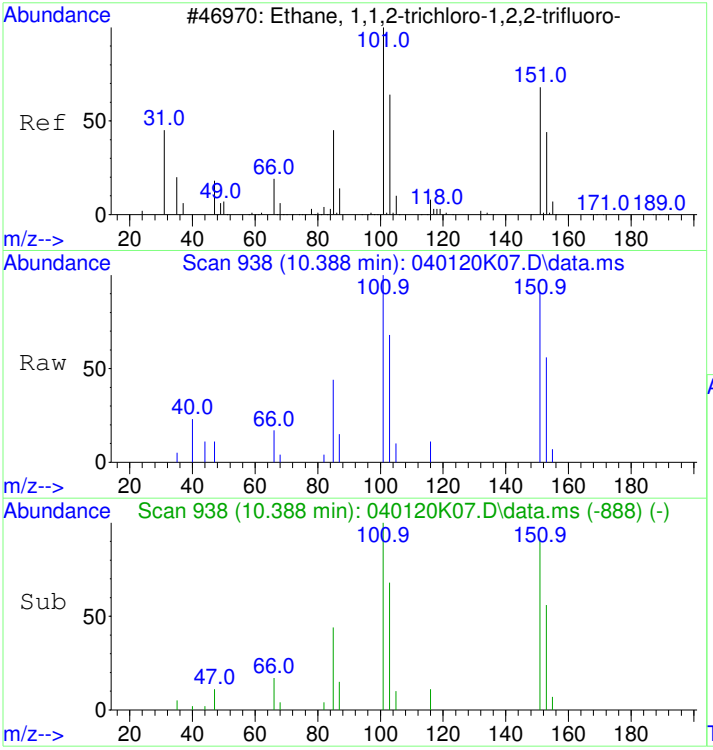


#11
Trichlorofluoromethane
Concen: 0.88 ppbv
RT: 8.386 min Scan# 609
Delta R.T. 0.012 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:101 Resp: 19459

Ion	Ratio	Lower	Upper
101	100		
103	65.3	45.4	85.4
66	12.5	0.0	32.4

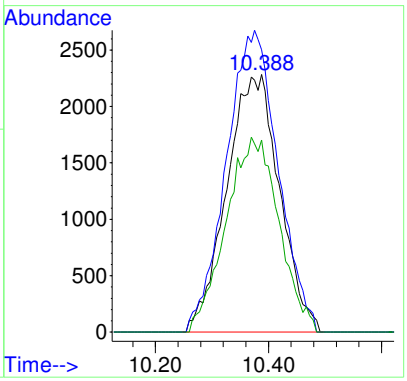


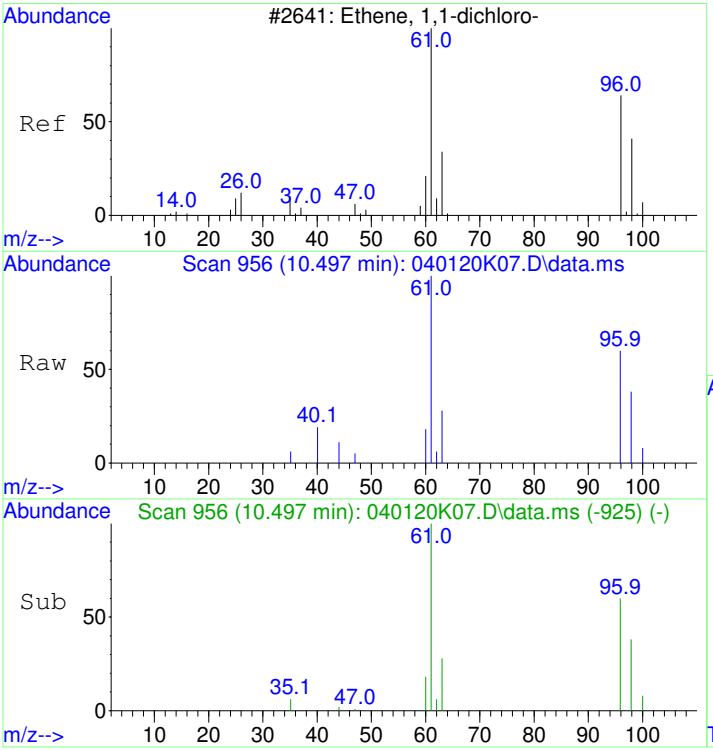


#12
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 0.89 ppbv
RT: 10.388 min Scan# 938
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:151 Resp: 14851

Ion	Ratio	Lower	Upper
151	100		
101	114.8	96.6	136.6
103	75.5	55.0	95.0

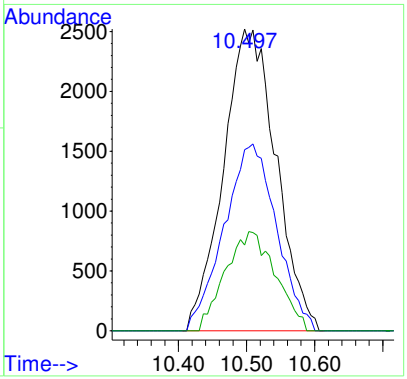


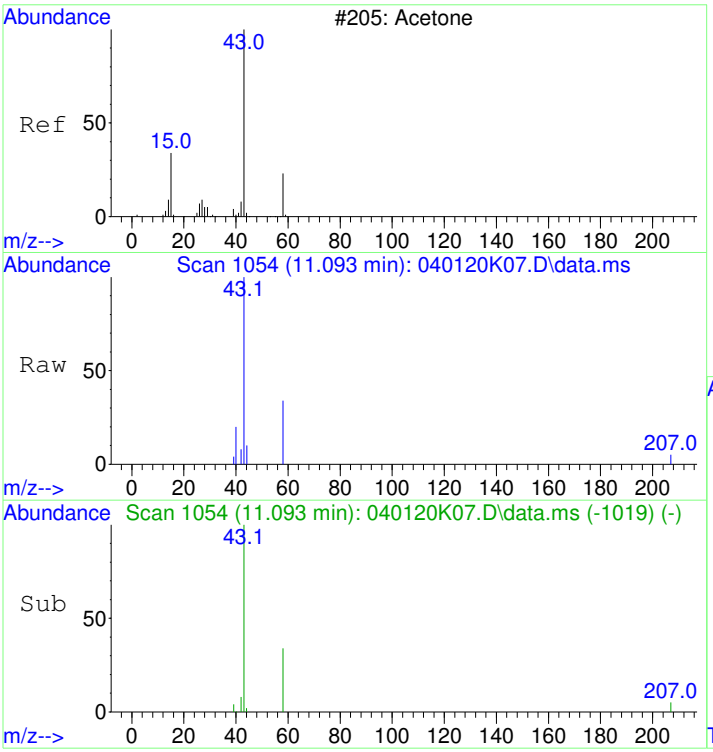


#13
1,1-Dichloroethene
Concen: 0.96 ppbv
RT: 10.497 min Scan# 956
Delta R.T. -0.012 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 61 Resp: 13525

Ion	Ratio	Lower	Upper
61	100		
96	61.5	41.2	81.2
63	31.2	11.9	51.9

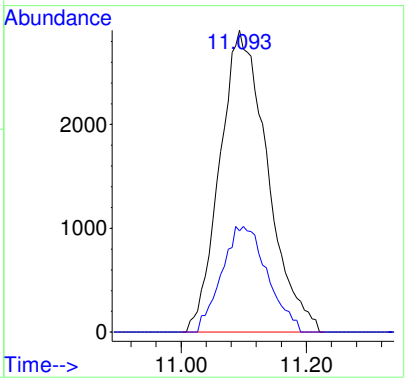


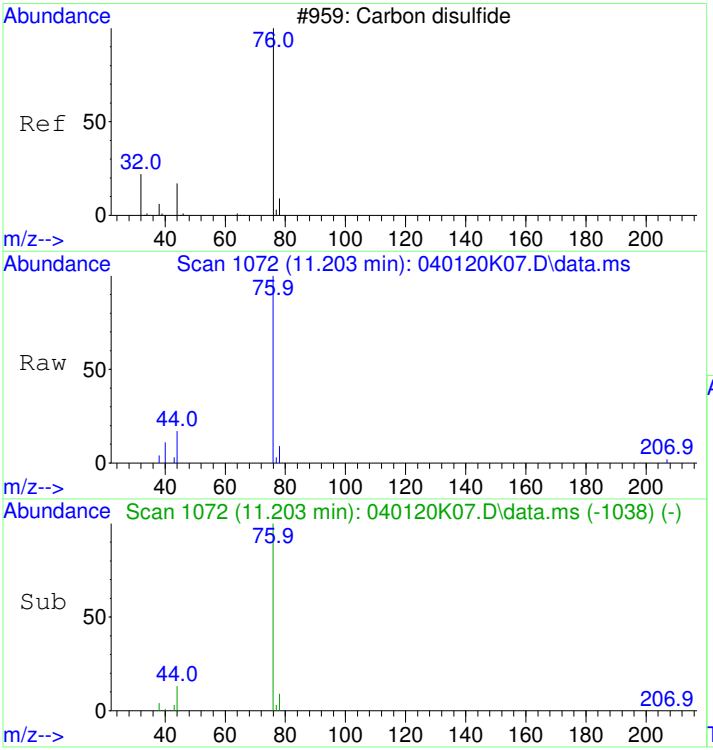


#14
Acetone
Concen: 1.14 ppbv
RT: 11.093 min Scan# 1054
Delta R.T. 0.012 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 43 Resp: 15344

Ion	Ratio	Lower	Upper
43	100		
58	33.6	14.0	54.0

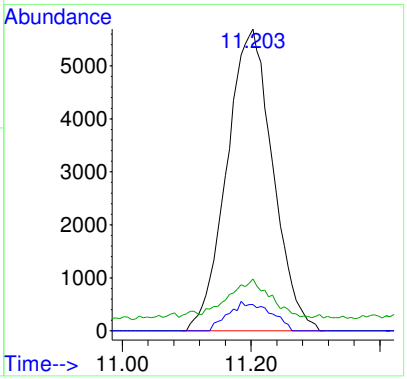


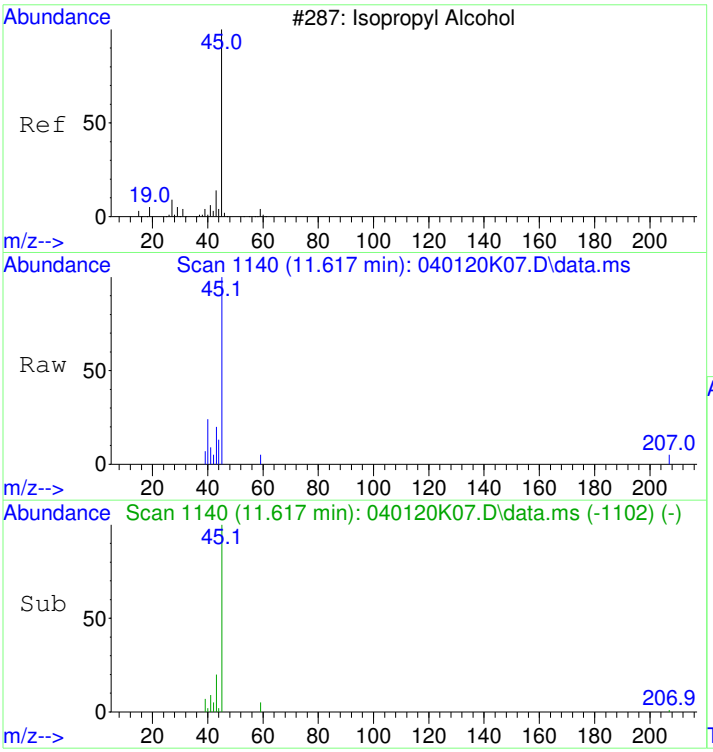


#15
Carbon disulfide
Concen: 1.07 ppbv
RT: 11.203 min Scan# 1072
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 76 Resp: 28202

Ion	Ratio	Lower	Upper
76	100		
78	8.8	0.0	29.1
44	14.1	0.0	32.9

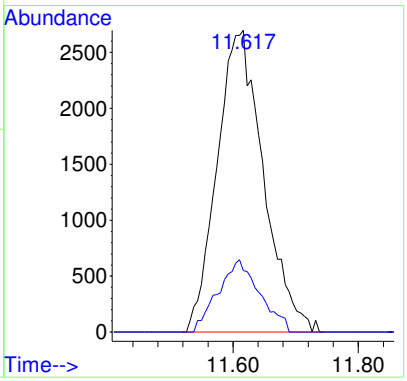


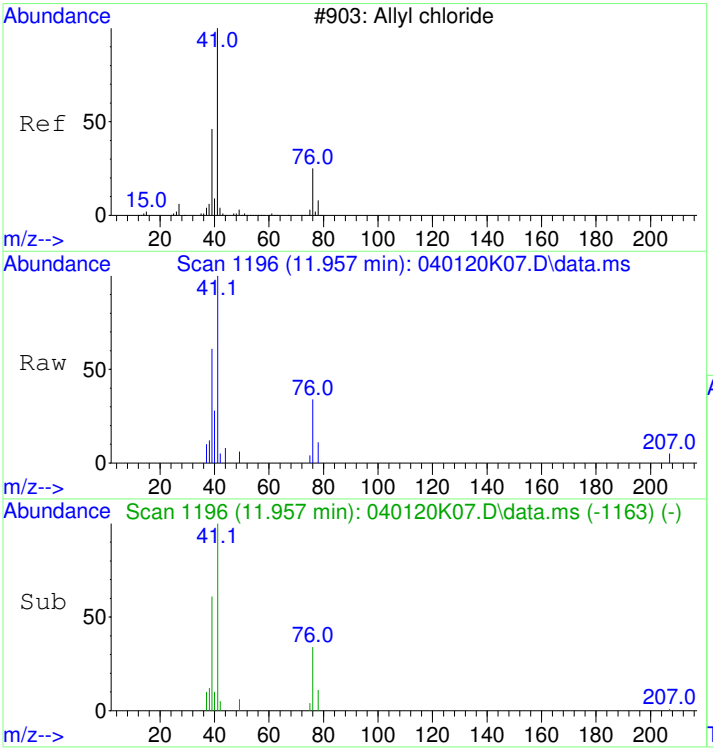


#16
2-Propanol
Concen: 1.08 ppbv
RT: 11.617 min Scan# 1140
Delta R.T. 0.030 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 45 Resp: 13834

Ion	Ratio	Lower	Upper
45	100		
43	21.4	0.0	39.0

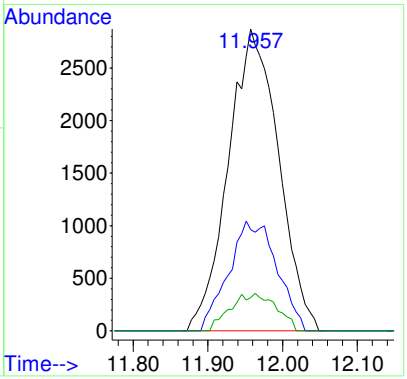


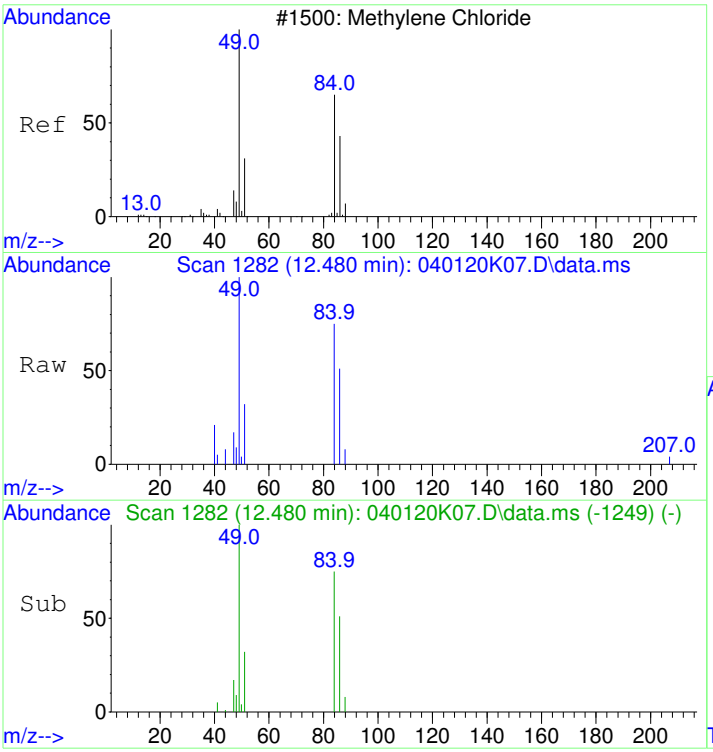


#17
Allyl chloride
Concen: 1.08 ppbv
RT: 11.957 min Scan# 1196
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 41 Resp: 13402

Ion	Ratio	Lower	Upper
41	100		
76	34.8	16.0	56.0
78	11.3	0.0	31.6

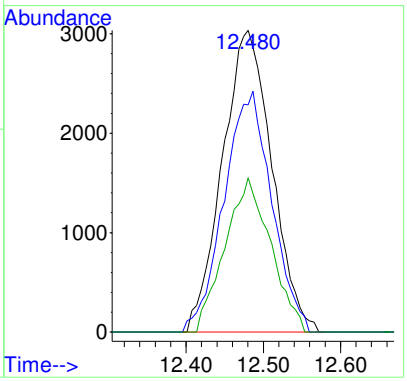


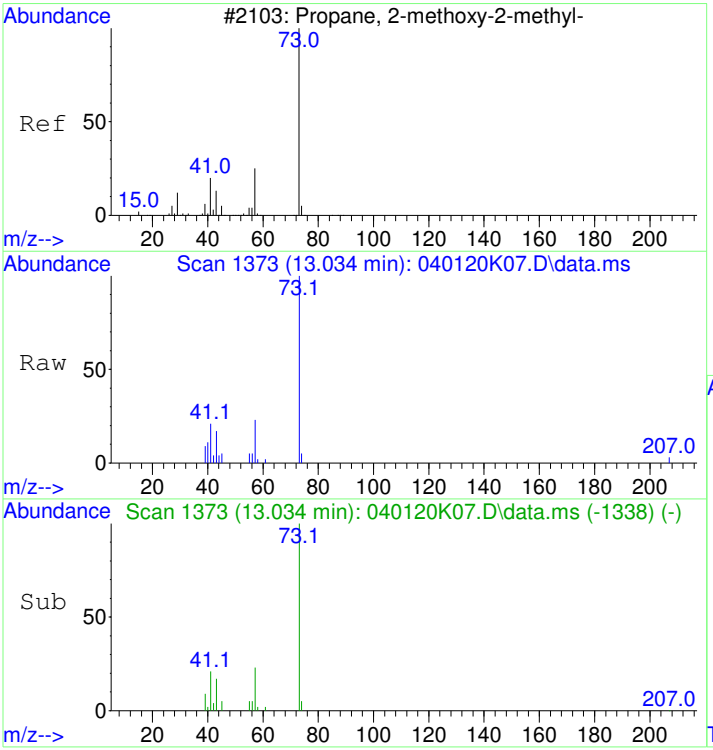


#18
Dichloromethane
Concen: 1.15 ppbv
RT: 12.480 min Scan# 1282
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 49 Resp: 13522

Ion	Ratio	Lower	Upper
49	100		
84	77.0	56.1	96.1
86	47.0	28.5	68.5

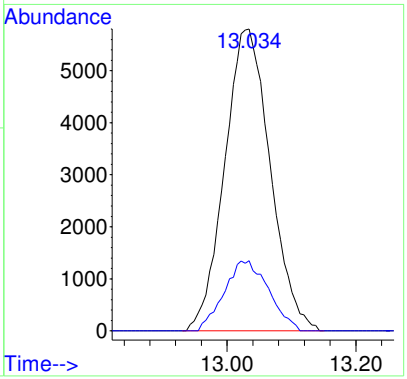


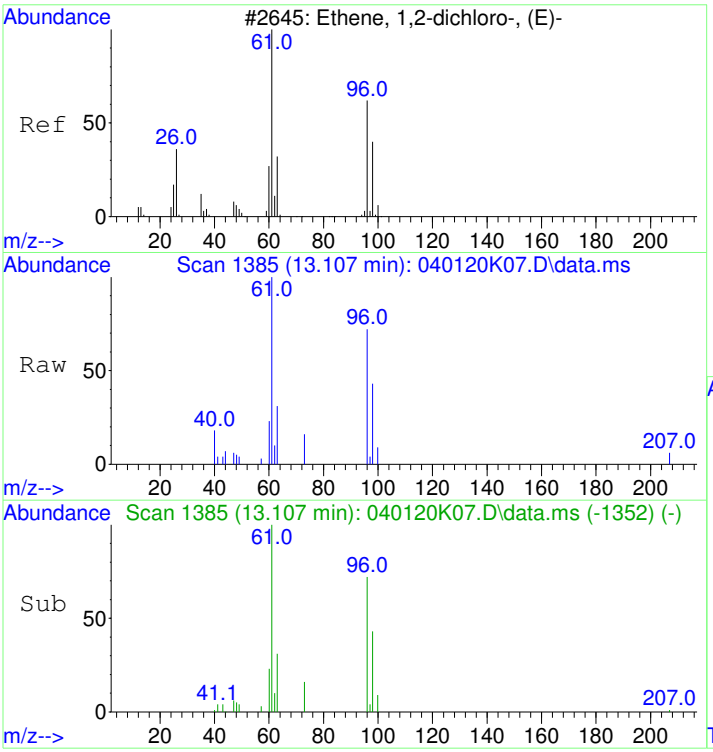


#19
tert-Butyl methyl ether (MTBE)
Concen: 1.02 ppbv
RT: 13.034 min Scan# 1373
Delta R.T. 0.012 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 73 Resp: 28531

Ion	Ratio	Lower	Upper
73	100		
57	22.6	3.7	43.7

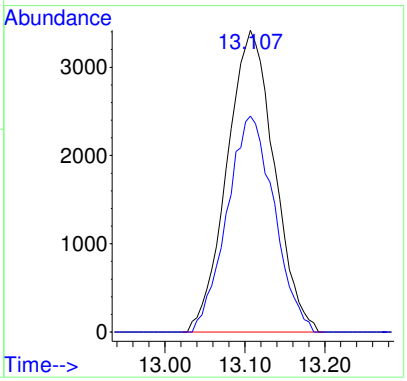


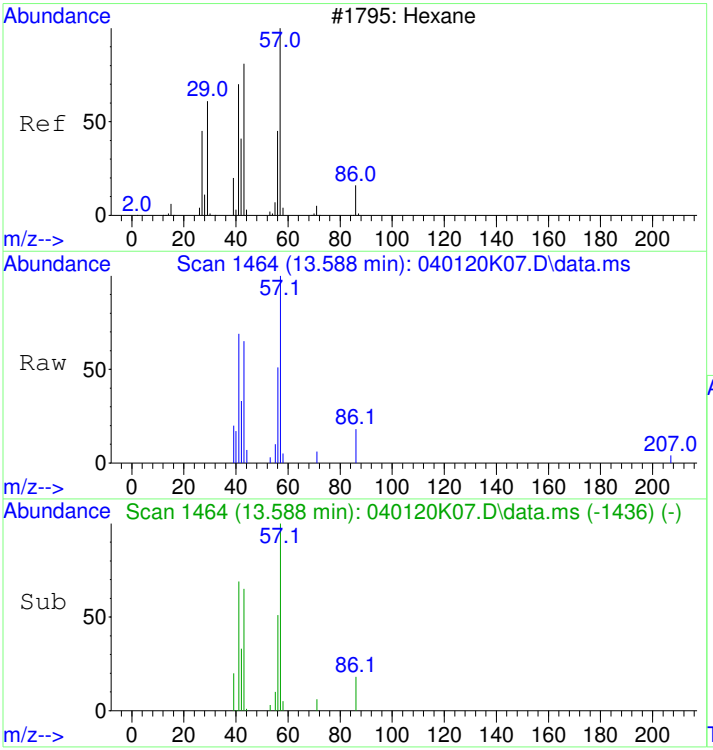


#20
trans-1,2-Dichloroethene
Concen: 1.07 ppbv
RT: 13.107 min Scan# 1385
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 61 Resp: 14017

Ion	Ratio	Lower	Upper
61	100		
96	71.6	50.6	90.6

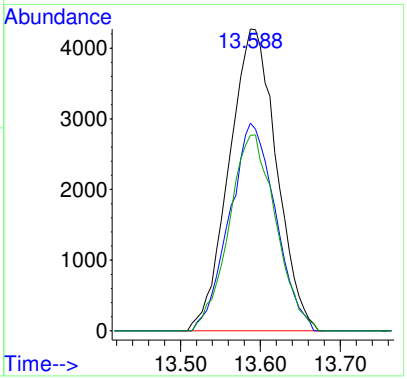


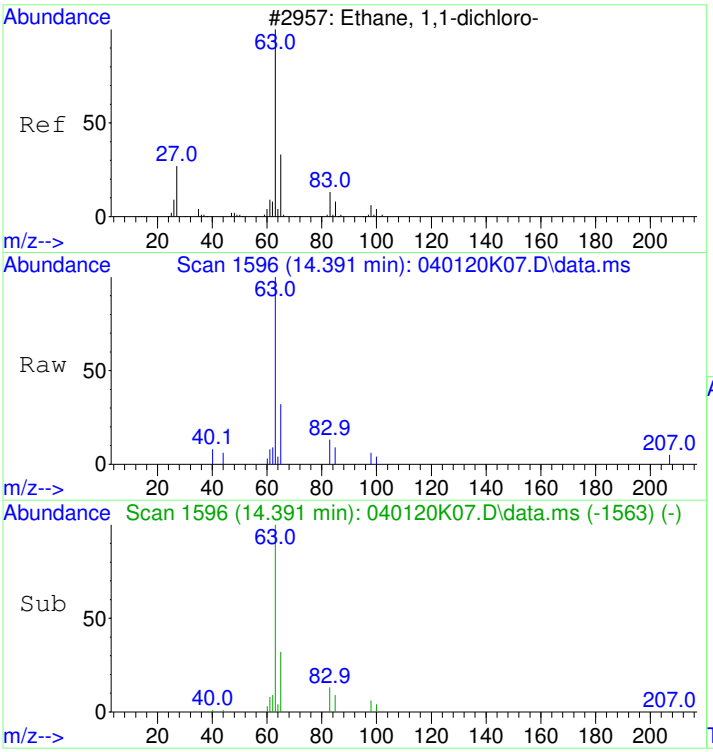


#21
Hexane
Concen: 0.96 ppbv
RT: 13.588 min Scan# 1464
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 57 Resp: 17598

Ion	Ratio	Lower	Upper
57	100		
41	67.0	45.4	85.4
43	64.1	43.4	83.4

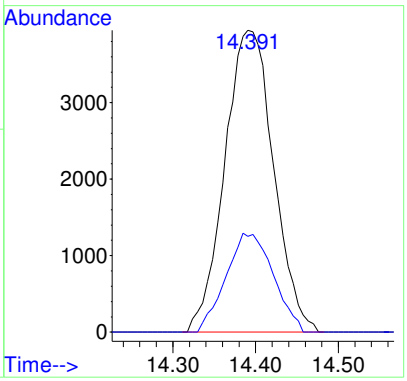


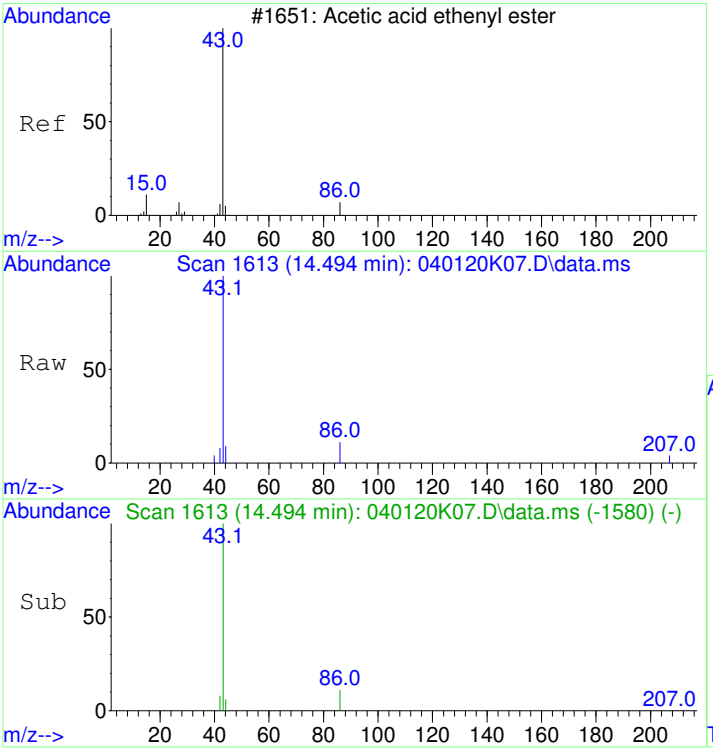


#22
1,1-Dichloroethane
Concen: 0.89 ppbv
RT: 14.391 min Scan# 1596
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 63 Resp: 16178

Ion	Ratio	Lower	Upper
63	100		
65	31.7	11.7	51.7

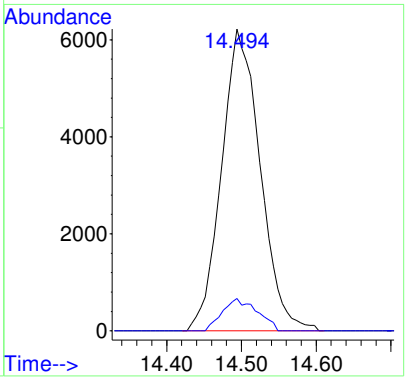


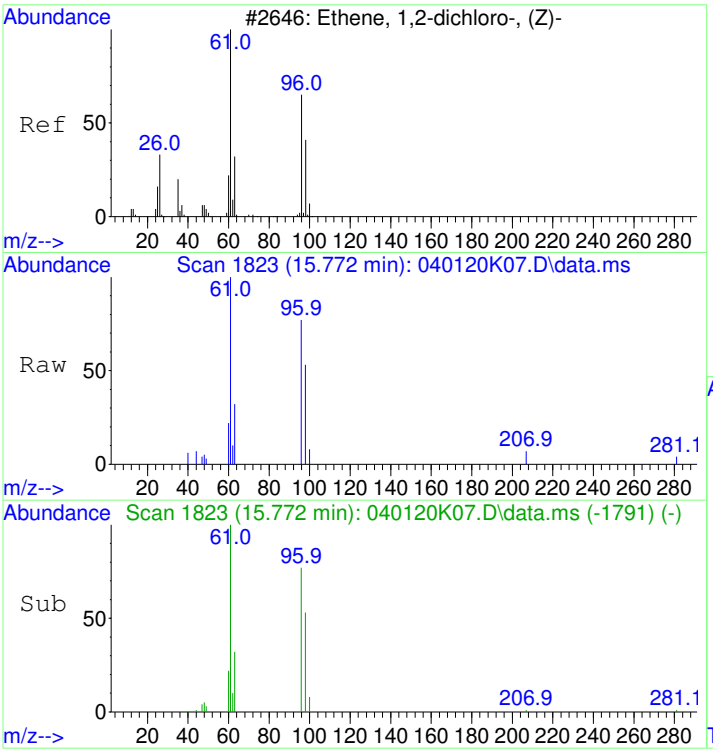


#23
Vinyl acetate
Concen: 1.08 ppbv
RT: 14.494 min Scan# 1613
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 43 Resp: 22323

Ion	Ratio	Lower	Upper
43	100		
86	9.7	0.0	30.0

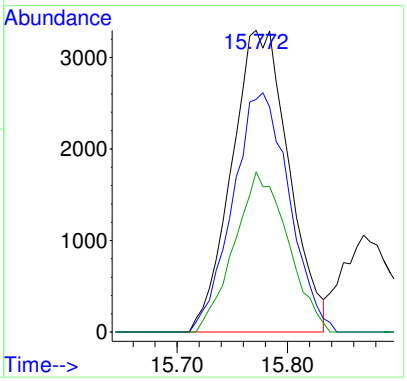


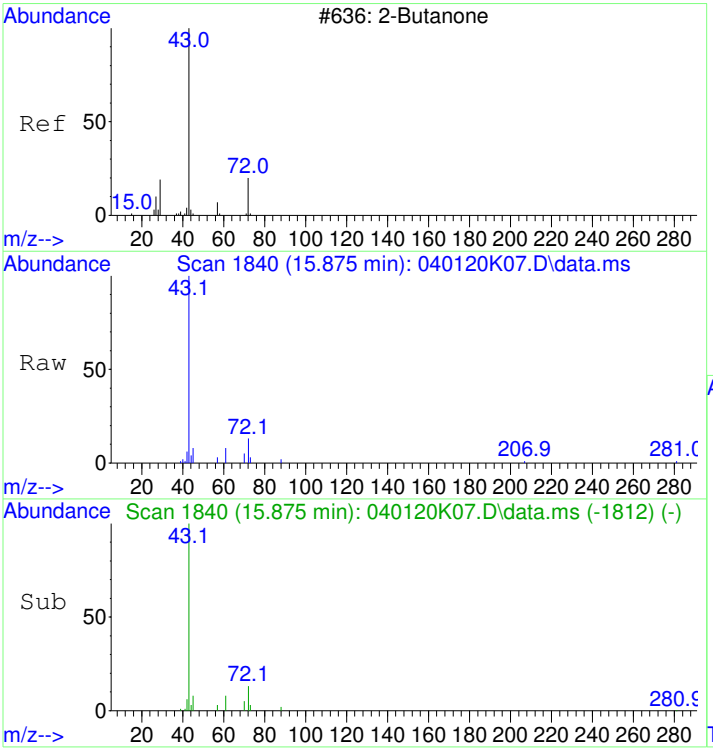


#24
cis-1,2-Dichloroethene
Concen: 0.91 ppbv
RT: 15.772 min Scan# 1823
Delta R.T. -0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 61 Resp: 11923

Ion	Ratio	Lower	Upper
61	100		
96	78.2	55.7	95.7
98	0.0	0.0	20.0

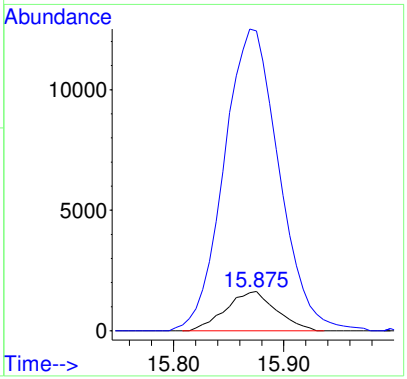


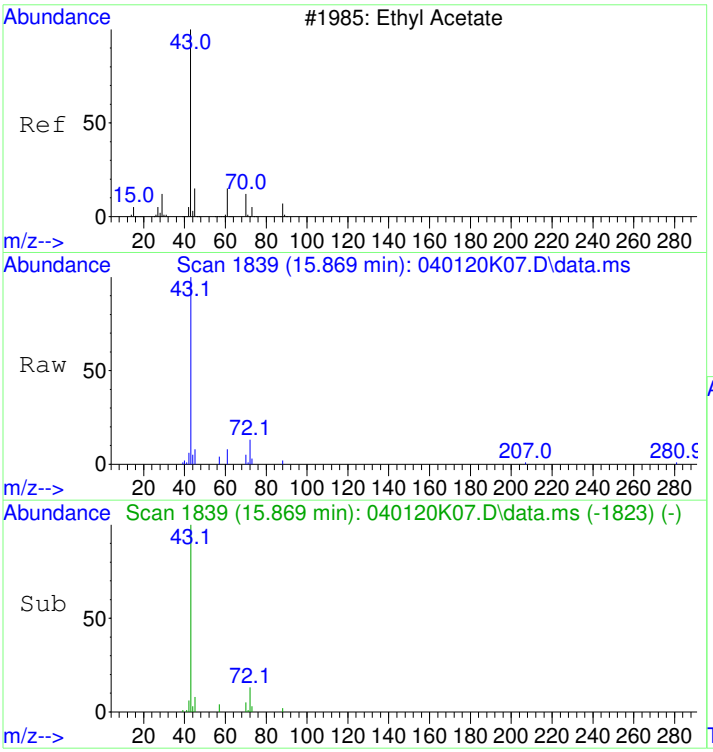


#25
2-Butanone (MEK)
Concen: 0.96 ppbv
RT: 15.875 min Scan# 1840
Delta R.T. 0.018 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 72 Resp: 5197

Ion	Ratio	Lower	Upper
72	100		
43	838.0	812.5	832.5#

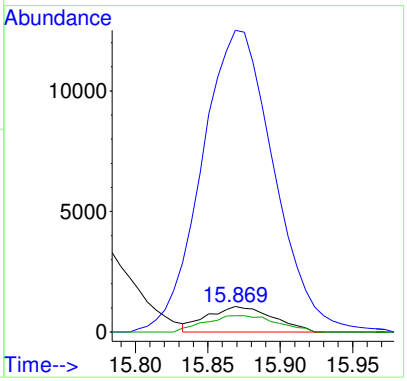


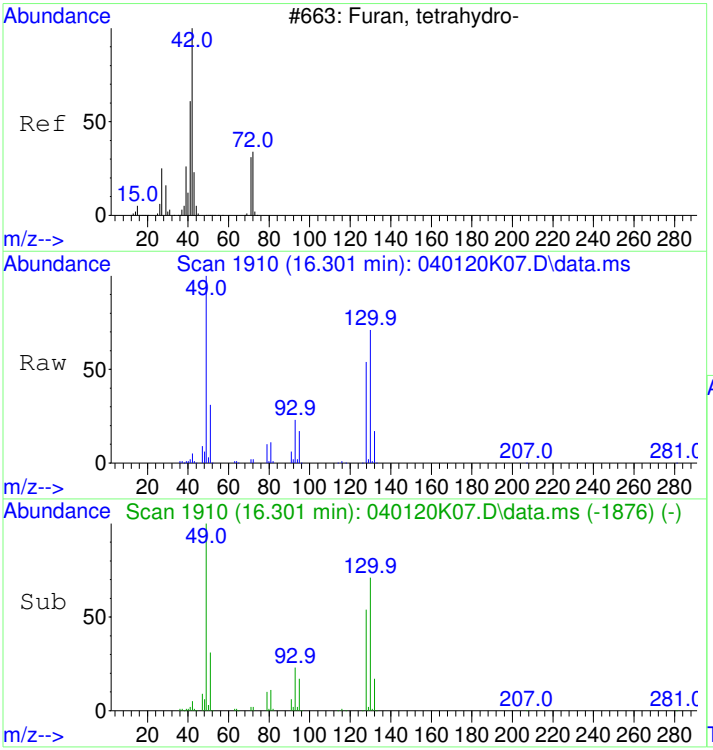


#26
Ethyl acetate
Concen: 1.05 ppbv
RT: 15.869 min Scan# 1839
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 61 Resp: 3331

Ion	Ratio	Lower	Upper
61	100		
43	1307.4	1358.3	1378.3#
70	70.2	66.7	86.7

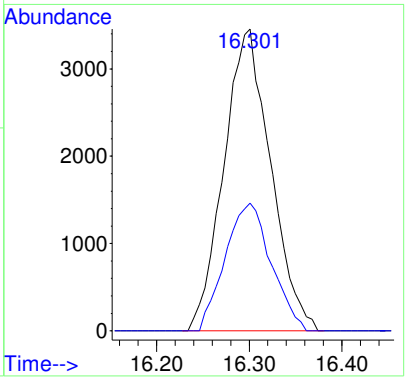


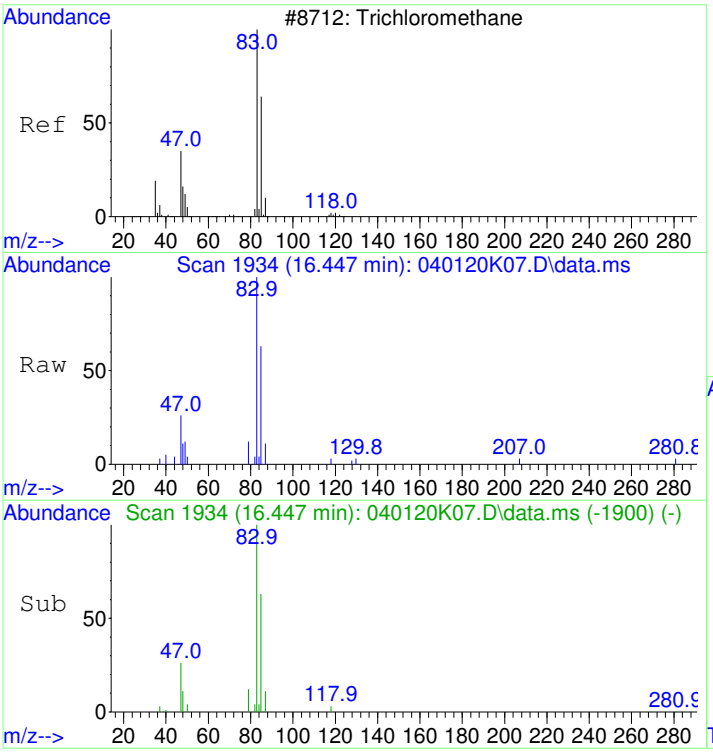


#27
Tetrahydrofuran
Concen: 1.01 ppbv
RT: 16.301 min Scan# 1910
Delta R.T. 0.018 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 42 Resp: 12115

Ion	Ratio	Lower	Upper
42	100		
72	41.5	21.2	61.2

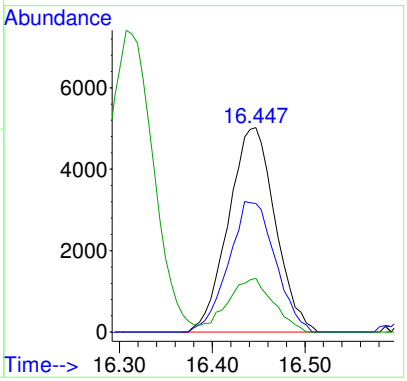


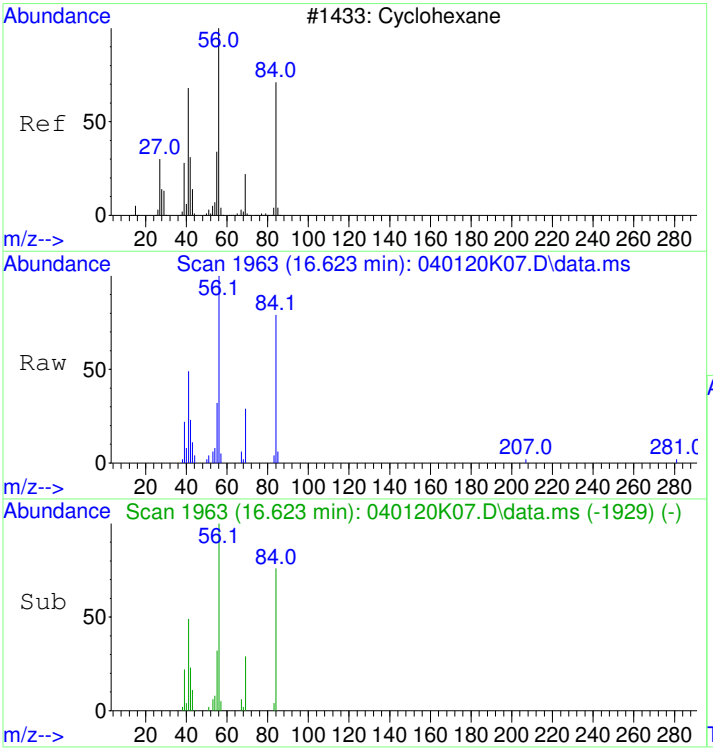


#28
Chloroform
Concen: 0.98 ppbv
RT: 16.447 min Scan# 1934
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 83 Resp: 17561

Ion	Ratio	Lower	Upper
83	100		
85	63.7	44.6	84.6
47	22.5	2.9	42.9

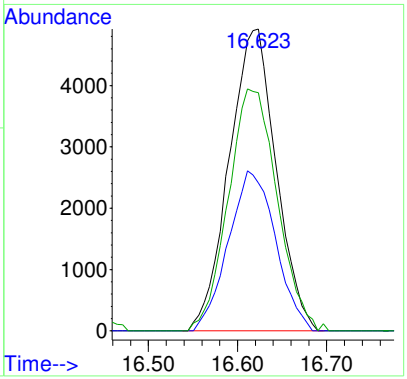


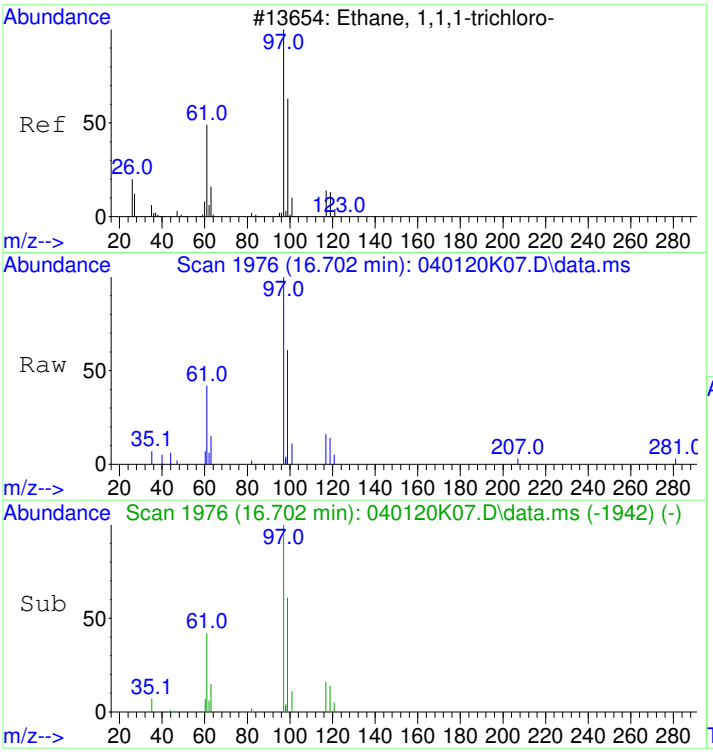


#29
Cyclohexane
Concen: 1.01 ppbv
RT: 16.623 min Scan# 1963
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 56 Resp: 18009

Ion	Ratio	Lower	Upper
56	100		
41	53.1	32.2	72.2
84	83.4	64.7	104.7

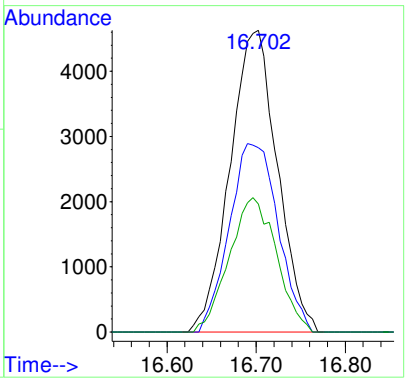


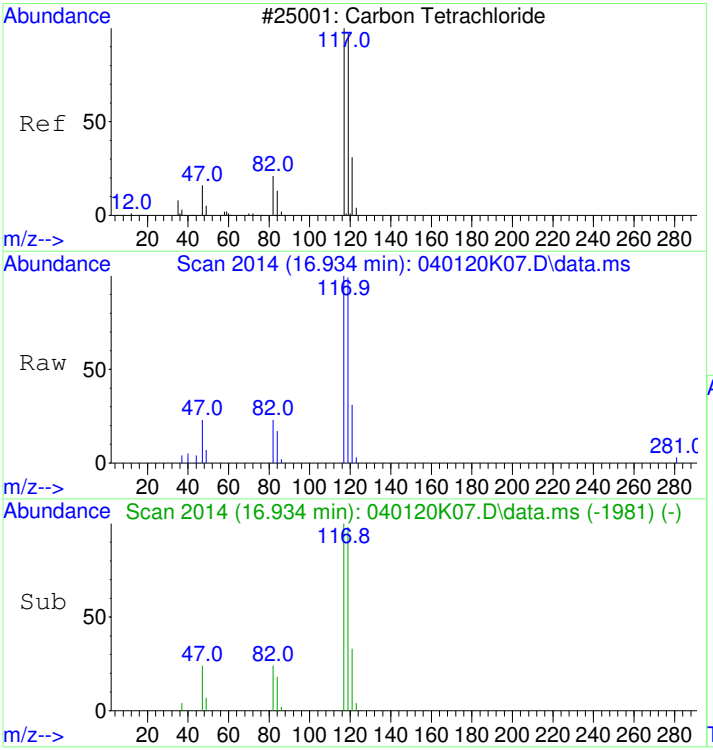


#30
1,1,1-Trichloroethane
Concen: 0.98 ppbv
RT: 16.702 min Scan# 1976
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 97 Resp: 17060

Ion	Ratio	Lower	Upper
97	100		
99	64.2	43.9	83.9
61	44.4	24.2	64.2

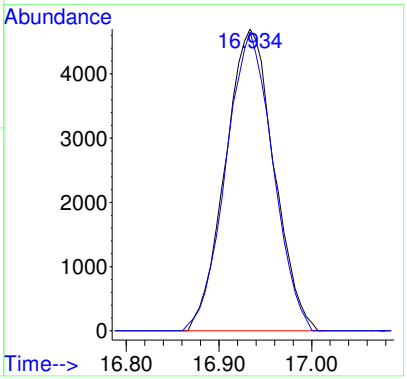


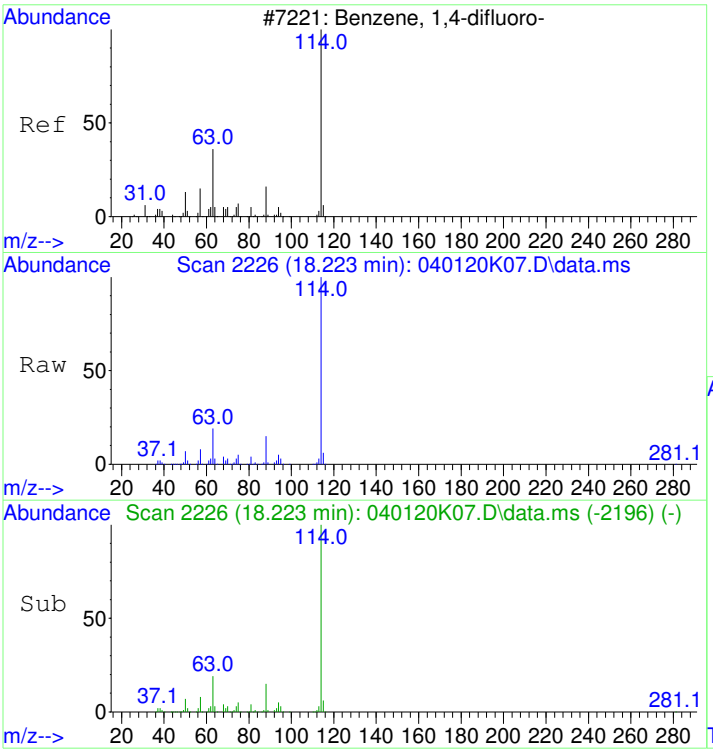


#31
Carbon tetrachloride
Concen: 1.01 ppbv
RT: 16.934 min Scan# 2014
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:117 Resp: 17091

Ion	Ratio	Lower	Upper
117	100		
119	95.7	76.2	116.2

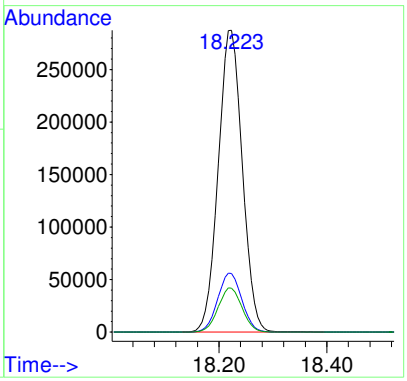


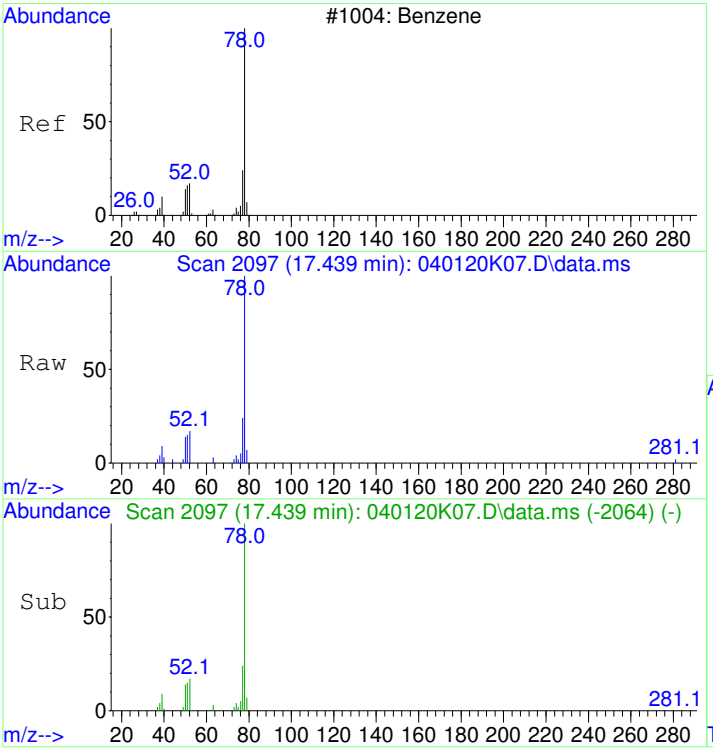


#32
1,4-DIFLUOROBENZENE
Concen: 19.60 ppbv
RT: 18.223 min Scan# 2226
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:114 Resp: 890972

Ion	Ratio	Lower	Upper
114	100		
63	19.5	0.0	39.6
88	14.5	0.0	34.5

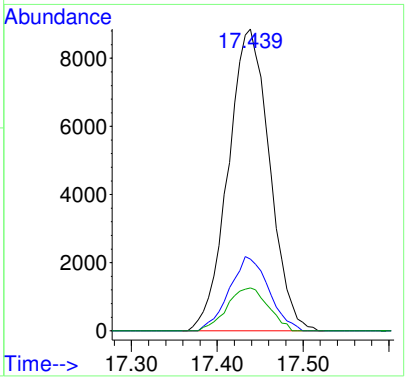


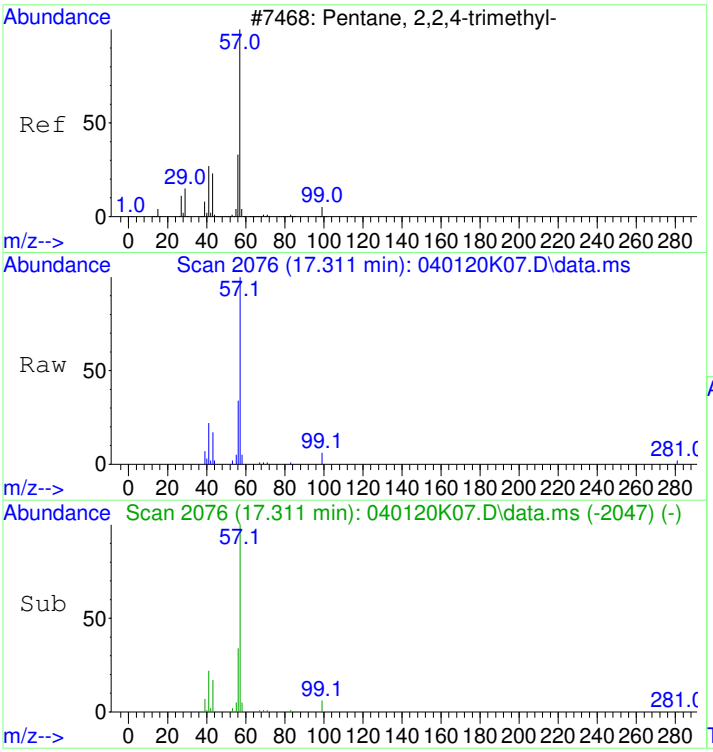


#33
Benzene
Concen: 1.00 ppbv
RT: 17.439 min Scan# 2097
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 78 Resp: 29664

Ion	Ratio	Lower	Upper
78	100		
77	23.4	3.0	43.0
50	14.1	0.0	34.0

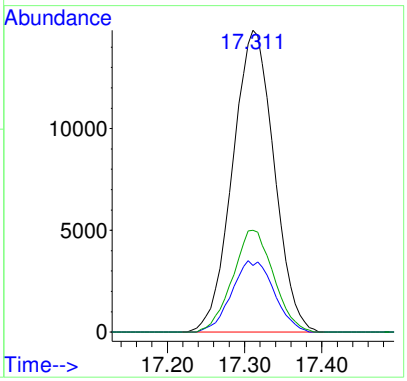


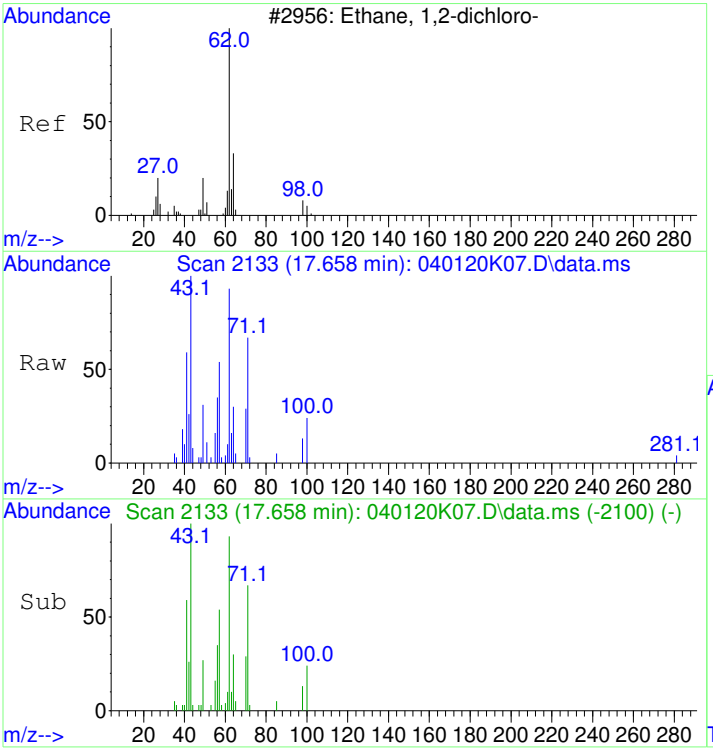


#34
2,2,4-Trimethylpentane
Concen: 1.07 ppbv
RT: 17.311 min Scan# 2076
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 57 Resp: 55323

Ion	Ratio	Lower	Upper
57	100		
41	24.2	3.7	43.7
56	33.4	13.5	53.5

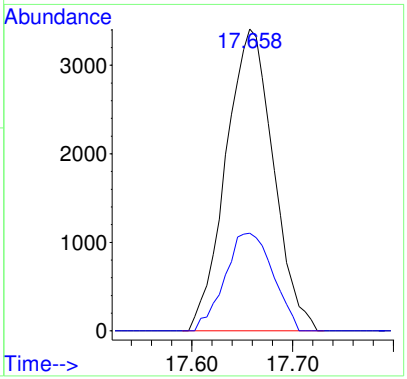


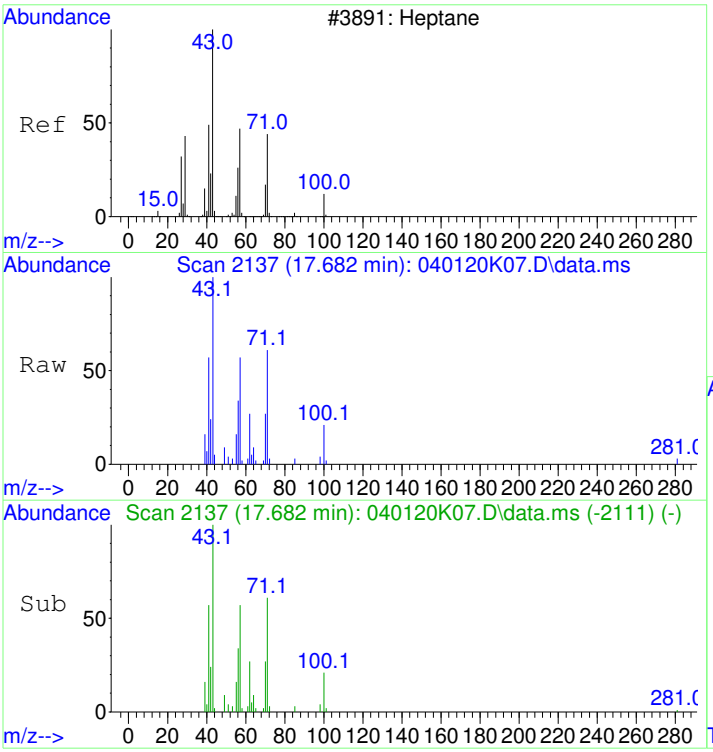


#35
1,2-Dichloroethane
Concen: 1.01 ppbv
RT: 17.658 min Scan# 2133
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 62 Resp: 11153

Ion	Ratio	Lower	Upper
62	100		
64	32.8	12.7	52.7

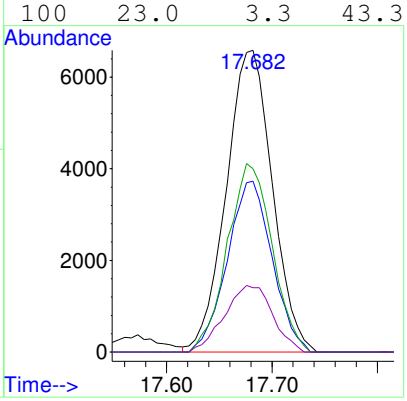


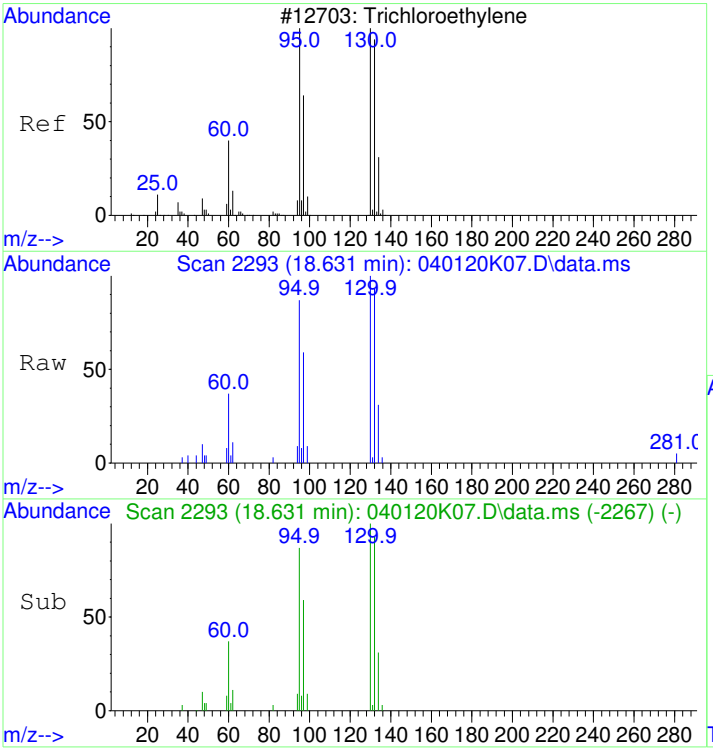


#36
Heptane
Concen: 1.09 ppbv
RT: 17.682 min Scan# 2137
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 43 Resp: 20072

Ion	Ratio	Lower	Upper
43	100		
57	55.0	34.9	74.9
71	60.6	40.9	80.9
100	23.0	3.3	43.3

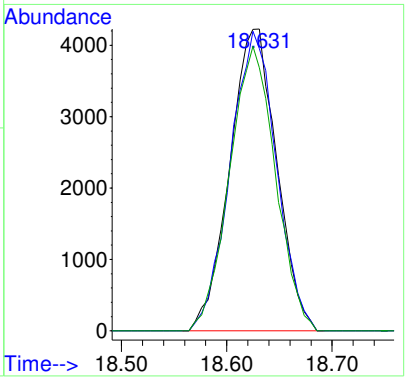


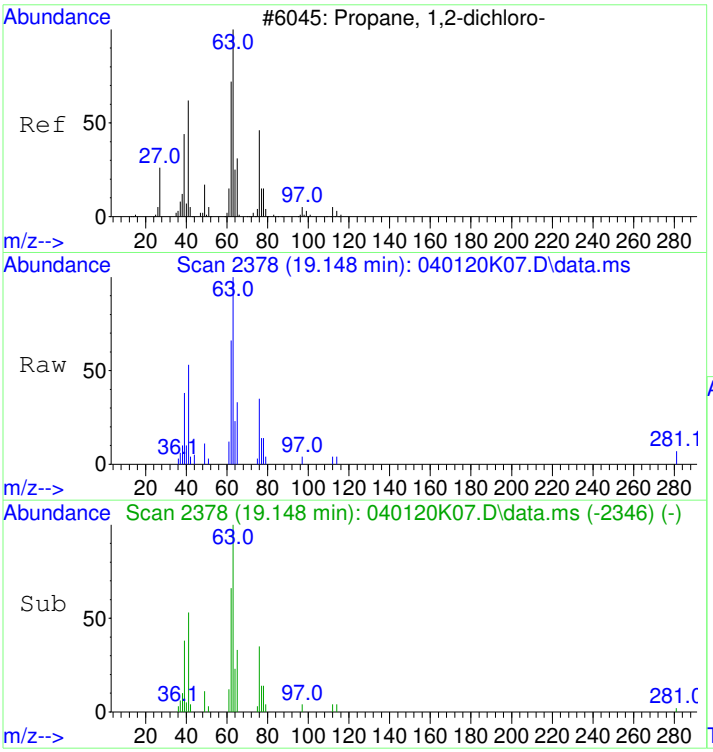


#37
Trichloroethene
Concen: 1.02 ppbv
RT: 18.631 min Scan# 2293
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:130 Resp: 13130

Ion	Ratio	Lower	Upper
130	100		
132	97.4	75.5	115.5
95	91.9	71.3	111.3

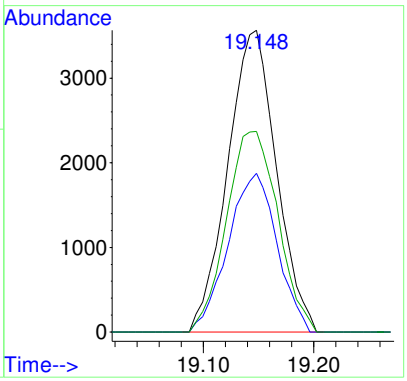


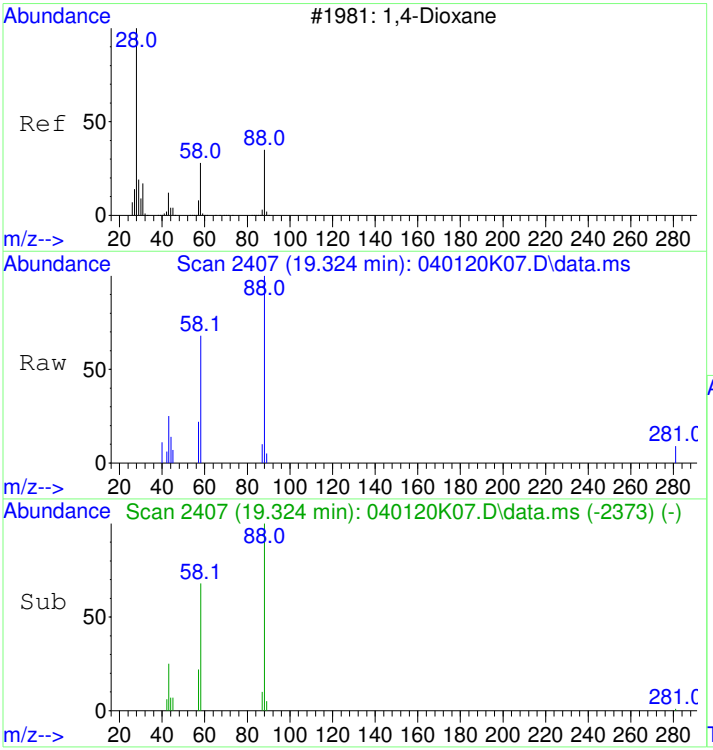


#38
1,2-Dichloropropane
Concen: 1.00 ppbv
RT: 19.148 min Scan# 2378
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 63 Resp: 10978

Ion	Ratio	Lower	Upper
63	100		
41	52.8	31.0	71.0
62	70.2	50.7	90.7

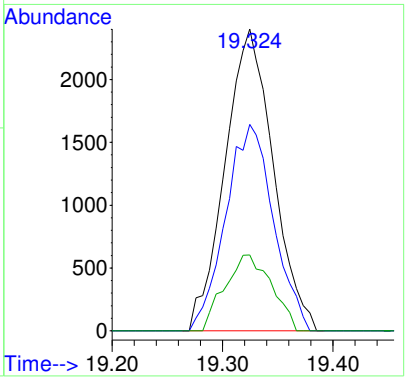


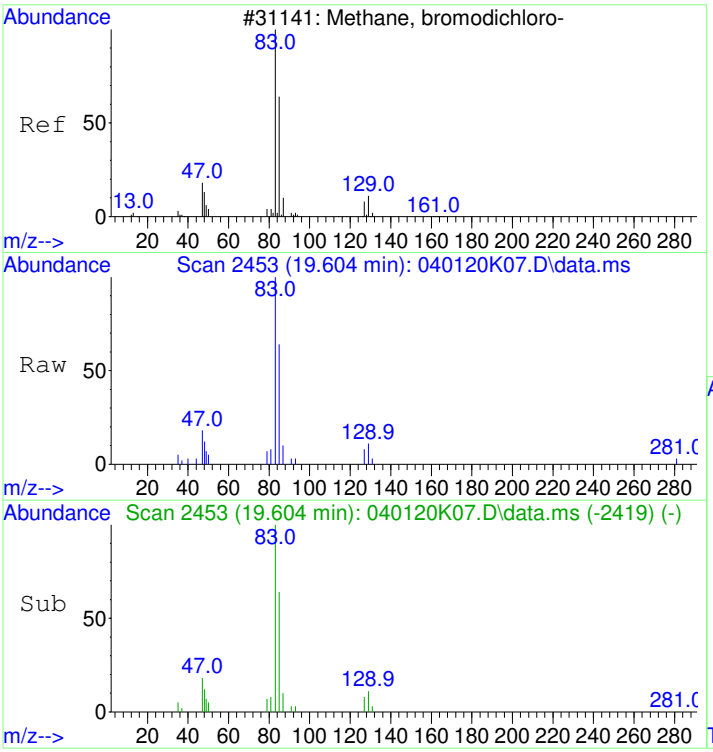


#39
1,4-Dioxane
Concen: 1.04 ppbv
RT: 19.324 min Scan# 2407
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 88 Resp: 7309

Ion	Ratio	Lower	Upper
88	100		
58	67.8	49.5	89.5
43	24.3	5.9	45.9

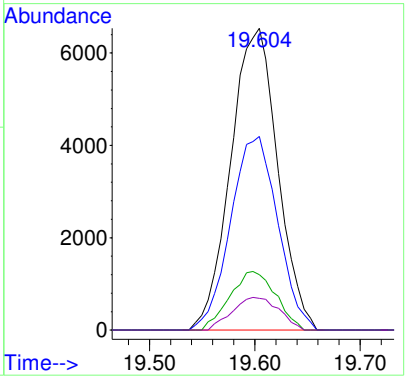


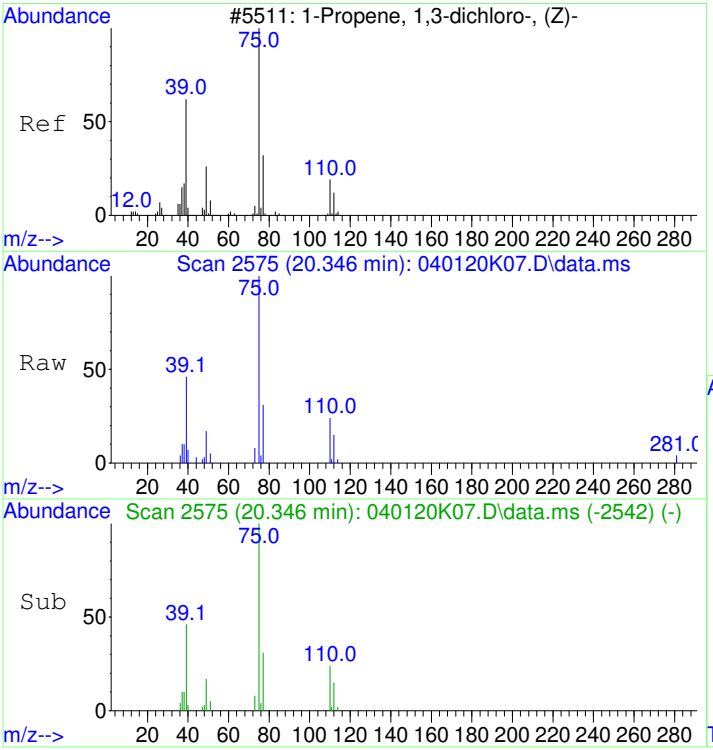


#40
Bromodichloromethane
Concen: 1.10 ppbv
RT: 19.604 min Scan# 2453
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 83 Resp: 20265

Ion	Ratio	Lower	Upper
83	100		
85	64.3	44.5	84.5
47	19.0	0.0	39.2
129	10.8	0.0	31.2

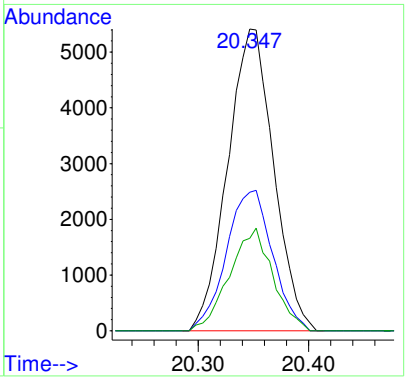


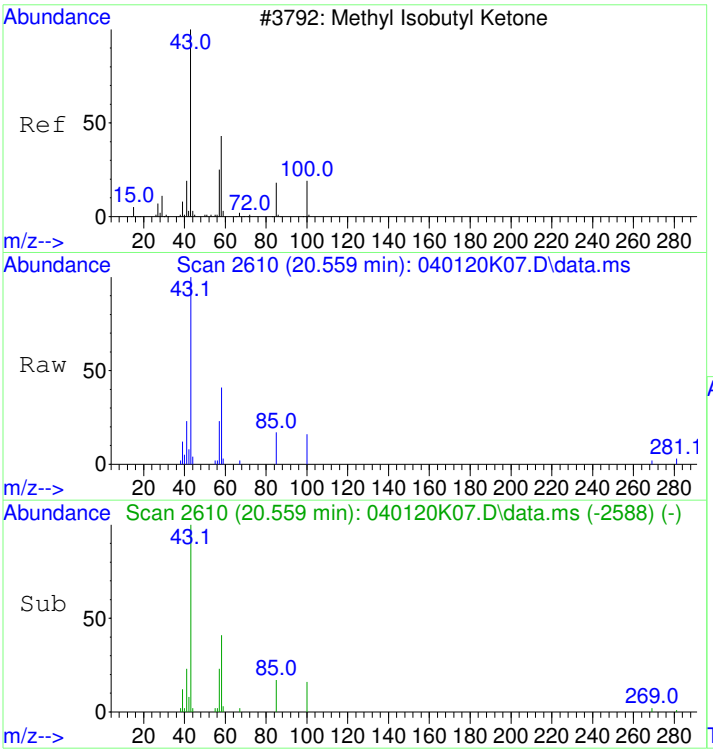


#41
cis-1,3-Dichloropropene
Concen: 0.93 ppbv
RT: 20.346 min Scan# 2575
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 75 Resp: 15744

Ion	Ratio	Lower	Upper
75	100		
39	46.8	25.3	65.3
77	32.0	11.6	51.6

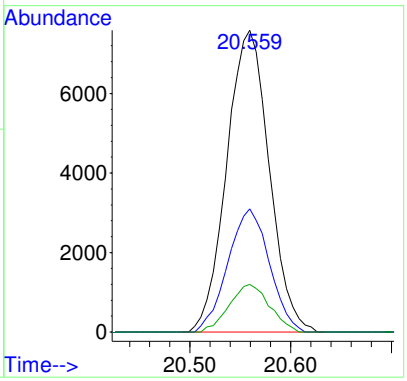


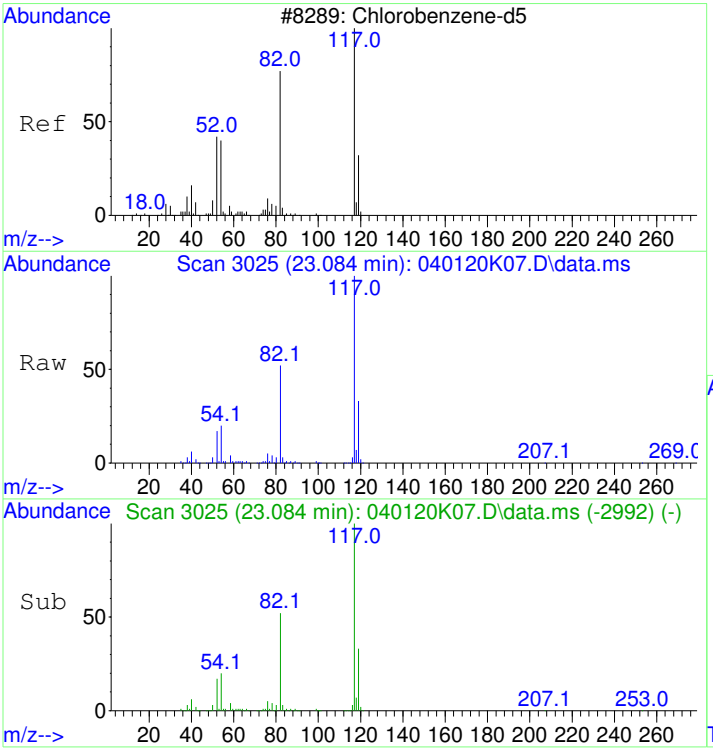


#42
4-Methyl-2-pentanone (MIBK)
Concen: 1.06 ppbv
RT: 20.559 min Scan# 2610
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 43 Resp: 22219

Ion	Ratio	Lower	Upper
43	100		
58	39.9	20.1	60.1
100	15.0	0.0	35.5

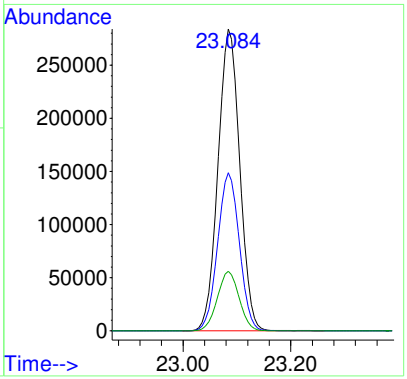


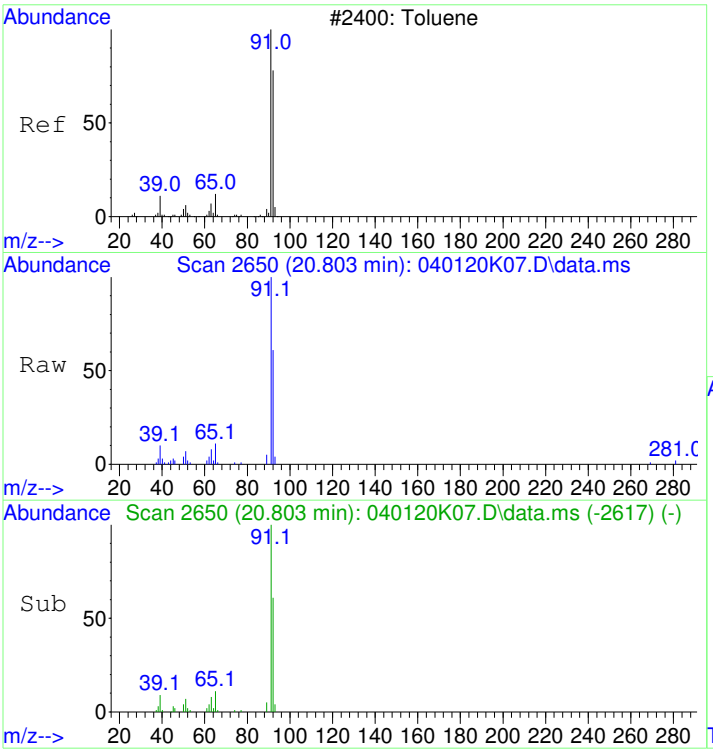


#43
CHLOROBENZENE-d5
Concen: 19.60 ppbv
RT: 23.084 min Scan# 3025
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:117 Resp: 795202

Ion	Ratio	Lower	Upper
117	100		
82	52.3	32.5	72.5
54	19.8	0.0	39.6

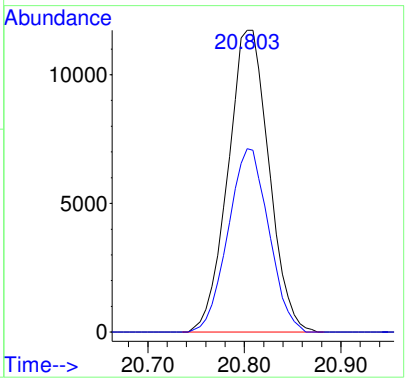


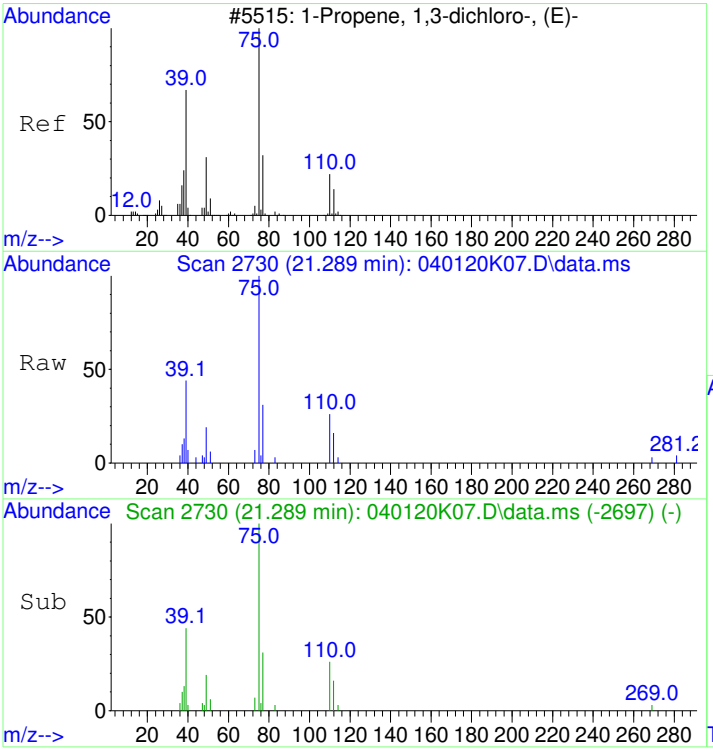


#44
Toluene
Concen: 0.96 ppbv
RT: 20.803 min Scan# 2650
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 91 Resp: 34597

Ion	Ratio	Lower	Upper
91	100		
92	60.3	40.7	80.7

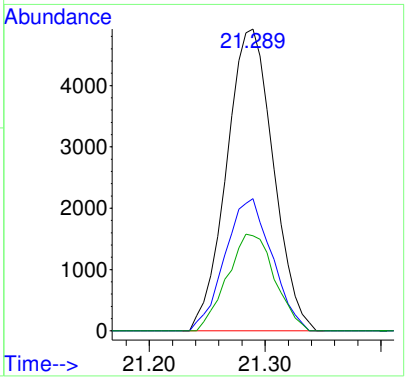


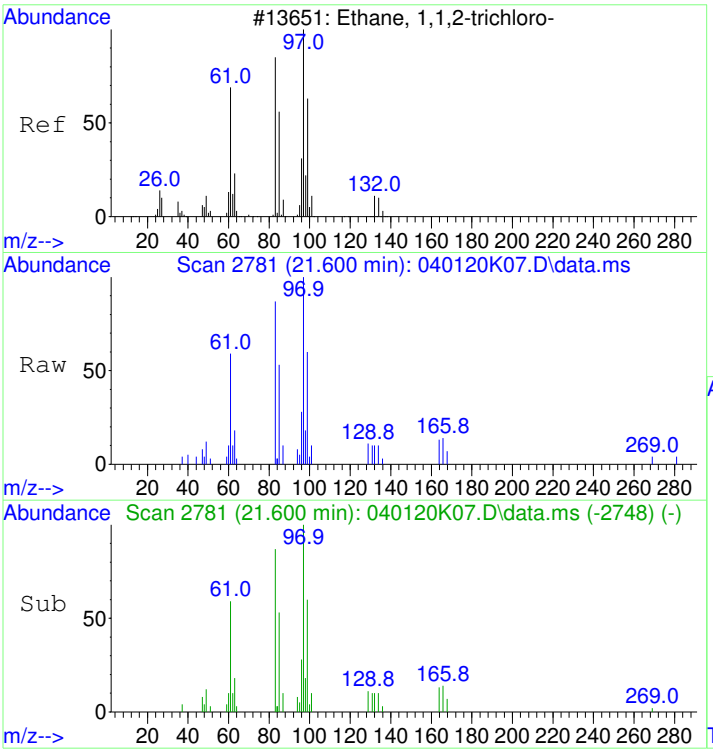


#45
trans-1,3-Dichloropropene
Concen: 0.89 ppbv
RT: 21.289 min Scan# 2730
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 75 Resp: 13796

Ion	Ratio	Lower	Upper
75	100		
39	44.1	25.0	65.0
77	32.5	11.7	51.7

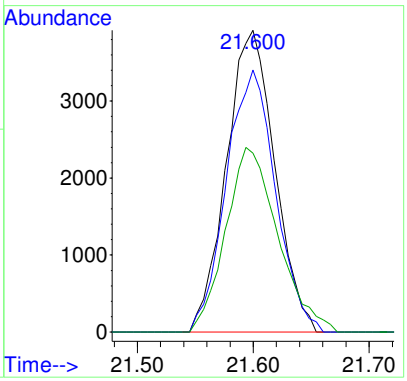


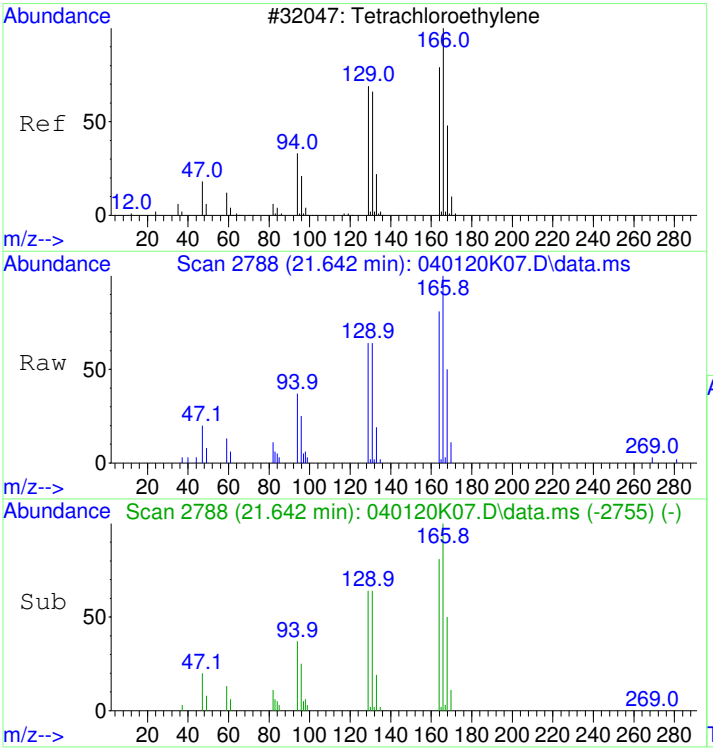


#46
1,1,2-Trichloroethane
Concen: 0.97 ppbv
RT: 21.600 min Scan# 2781
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 97 Resp: 11391

Ion	Ratio	Lower	Upper
97	100		
83	88.3	66.9	106.9
61	66.0	45.0	85.0

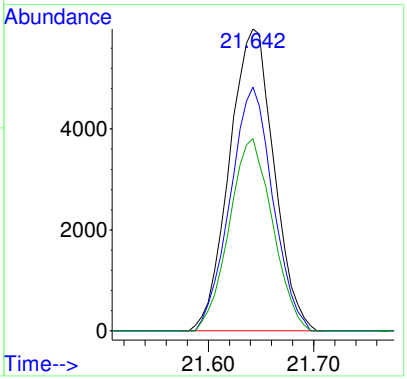


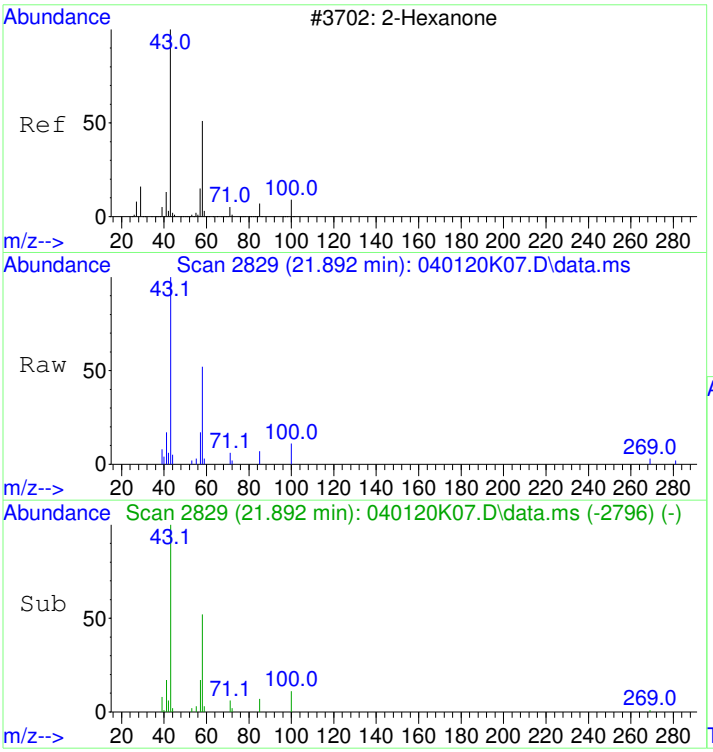


#47
Tetrachloroethene
Concen: 0.94 ppbv
RT: 21.642 min Scan# 2788
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:166 Resp: 17576

Ion	Ratio	Lower	Upper
166	100		
164	77.5	58.4	98.4
131	61.7	43.1	83.1

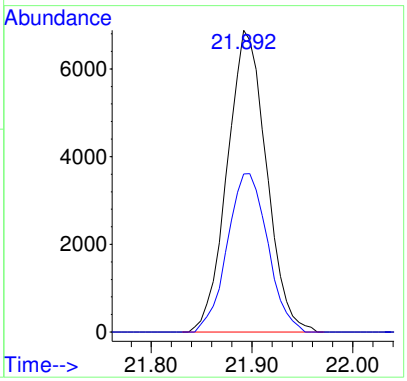


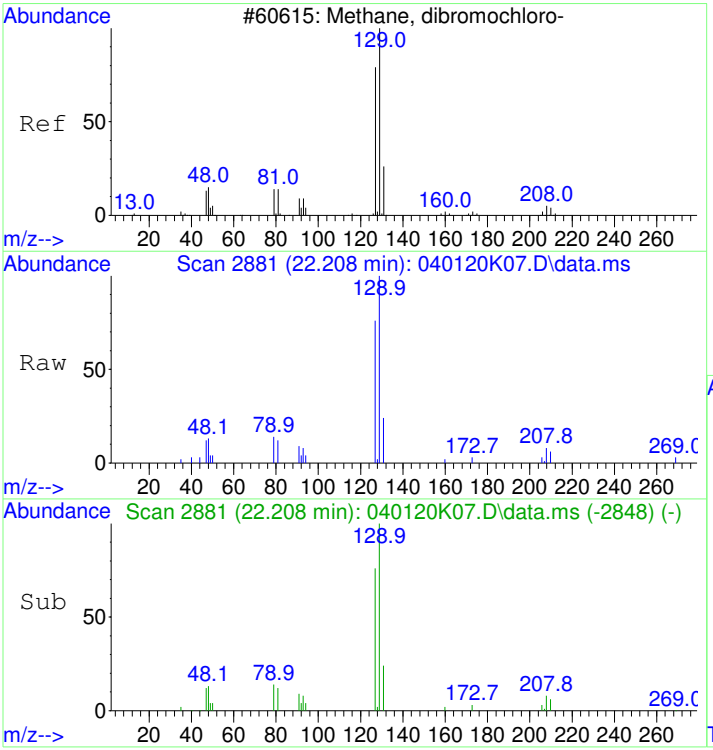


#48
2-Hexanone
Concen: 0.97 ppbv
RT: 21.892 min Scan# 2829
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 43 Resp: 18548

Ion	Ratio	Lower	Upper
43	100		
58	54.2	36.8	76.8

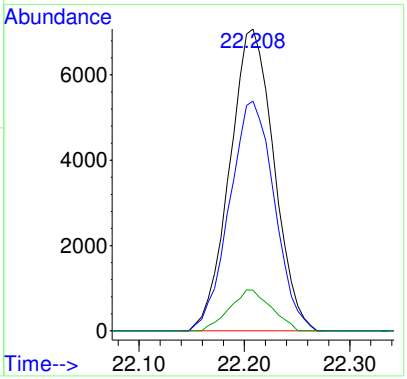


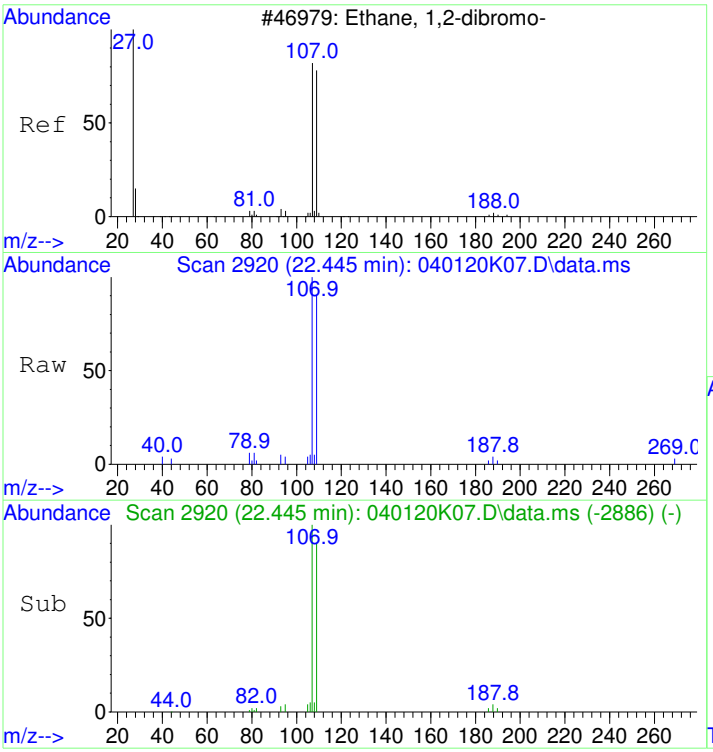


#49
Chlorodibromomethane
Concen: 1.15 ppbv
RT: 22.208 min Scan# 2881
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:129 Resp: 20650

Ion	Ratio	Lower	Upper
129	100		
127	77.3	57.2	97.2
79	12.8	0.0	32.8

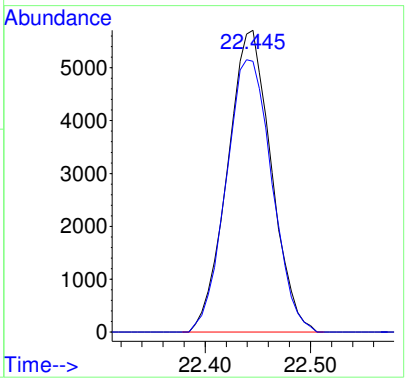


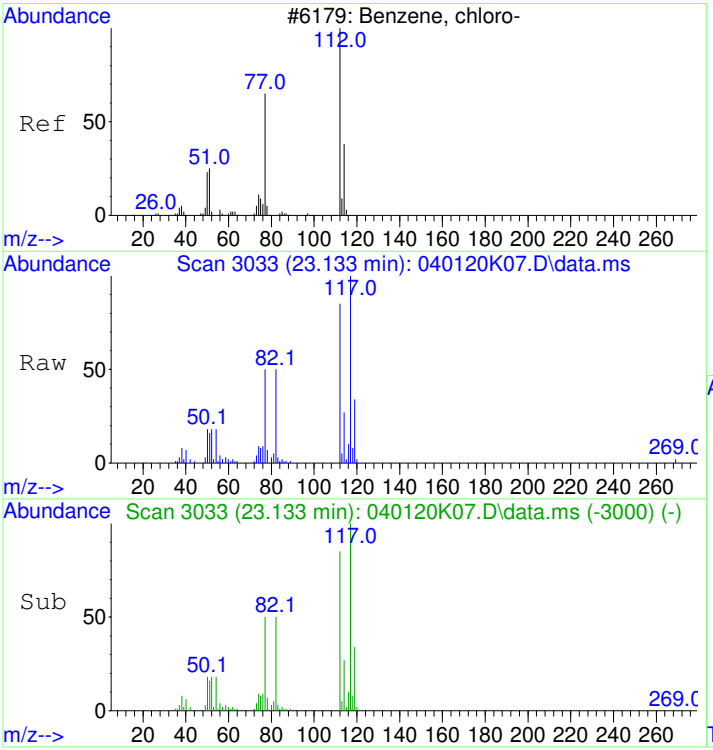


#50
1,2-Dibromoethane (EDB)
Concen: 0.96 ppbv
RT: 22.445 min Scan# 2920
Delta R.T. 0.006 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:107 Resp: 16488

Ion	Ratio	Lower	Upper
107	100		
109	94.5	75.1	115.1

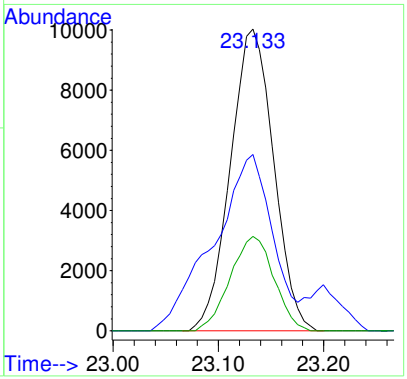


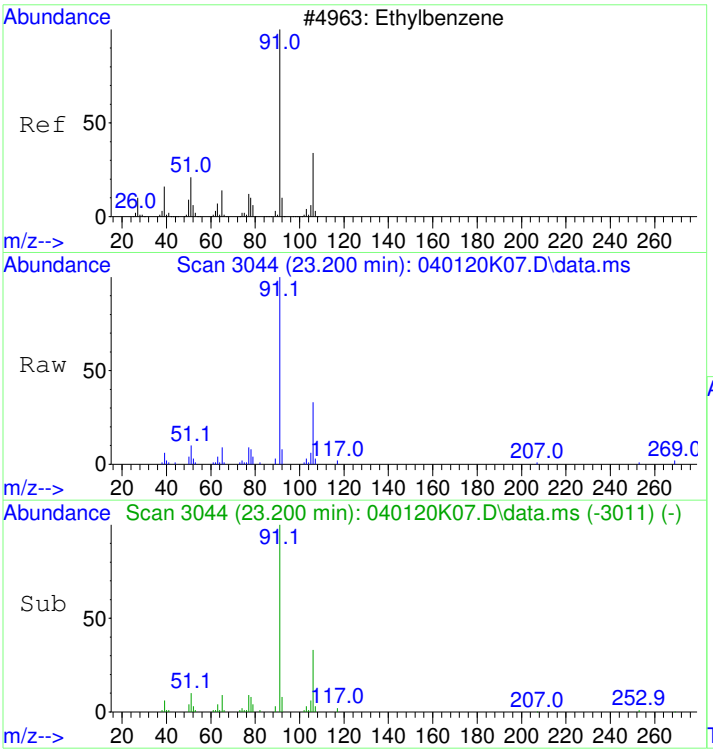


#51
Chlorobenzene
Concen: 0.97 ppbv
RT: 23.133 min Scan# 3033
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:112 Resp: 28693

Ion	Ratio	Lower	Upper
112	100		
77	91.6	50.5	90.5#
114	31.6	12.1	52.1

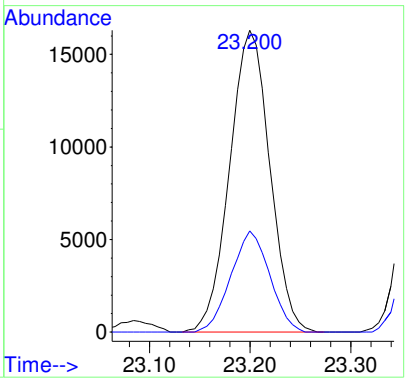


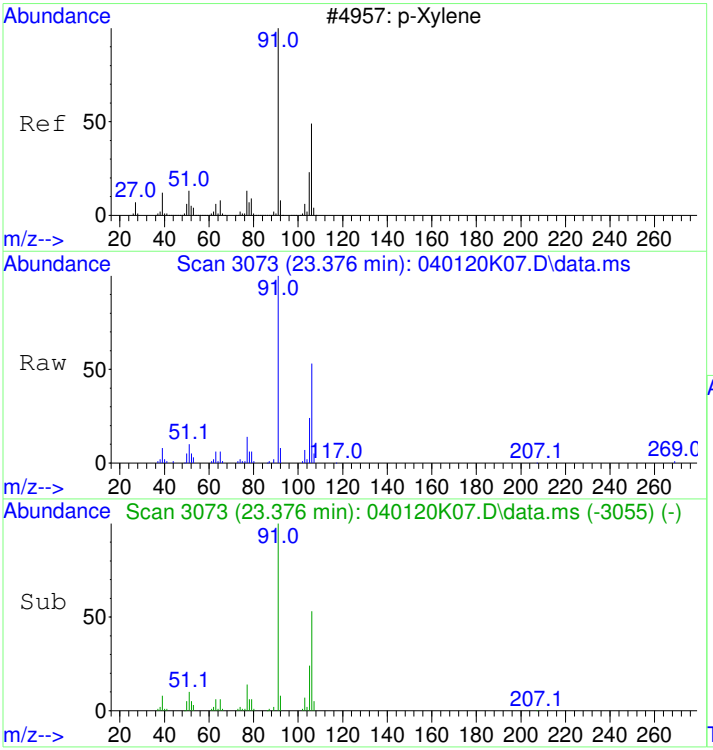


#52
Ethylbenzene
Concen: 0.97 ppbv
RT: 23.200 min Scan# 3044
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 91 Resp: 45195

Ion	Ratio	Lower	Upper
91	100		
106	32.3	12.4	52.4

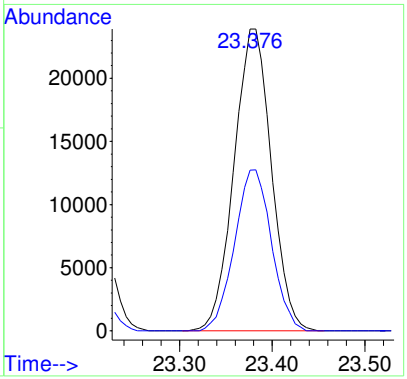


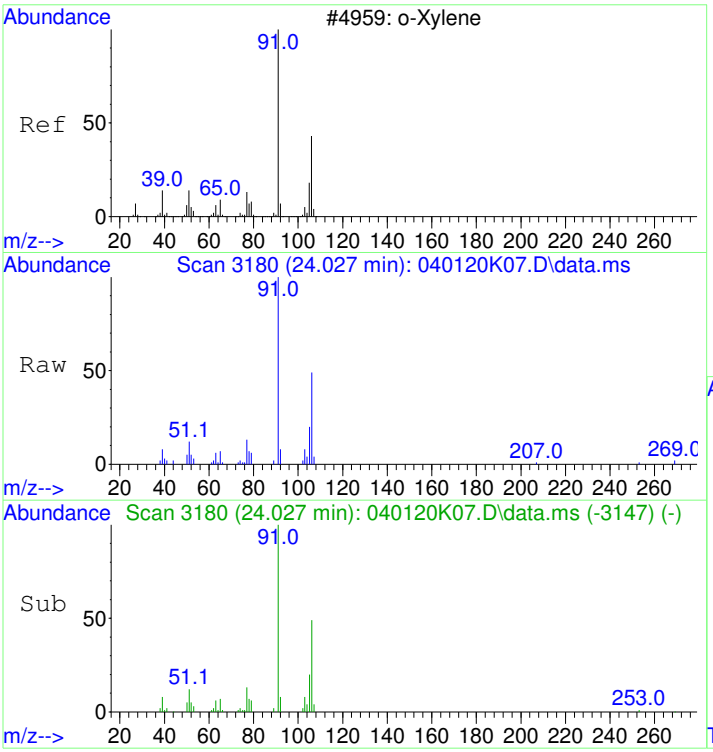


#53
m&p-Xylene
Concen: 1.89 ppbv
RT: 23.376 min Scan# 3073
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 91 Resp: 66821

Ion	Ratio	Lower	Upper
91	100		
106	52.7	34.0	74.0

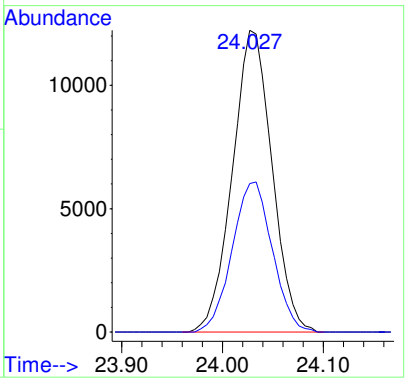


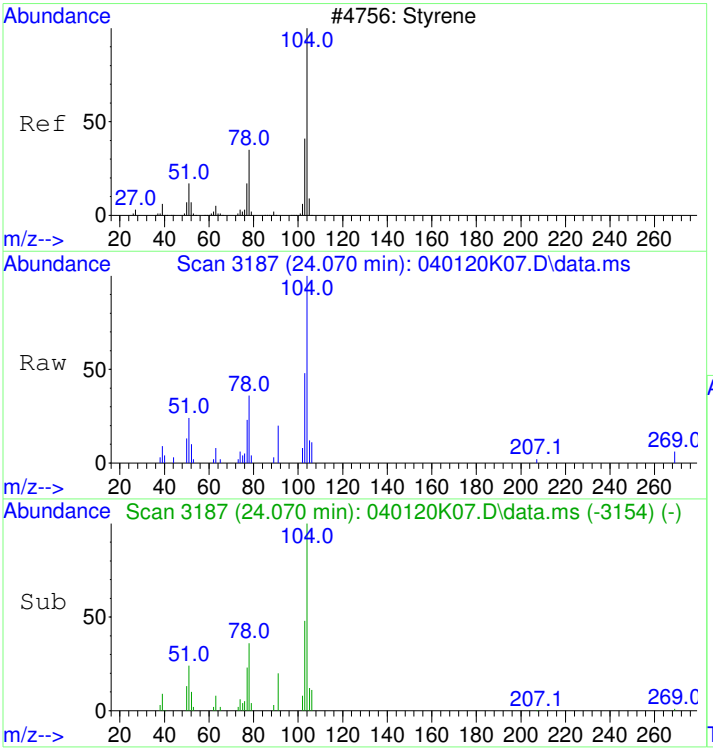


#54
o-Xylene
Concen: 0.91 ppbv
RT: 24.027 min Scan# 3180
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 91 Resp: 33369

Ion	Ratio	Lower	Upper
91	100		
106	50.4	30.7	70.7

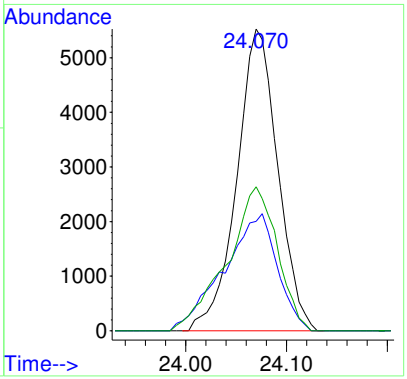


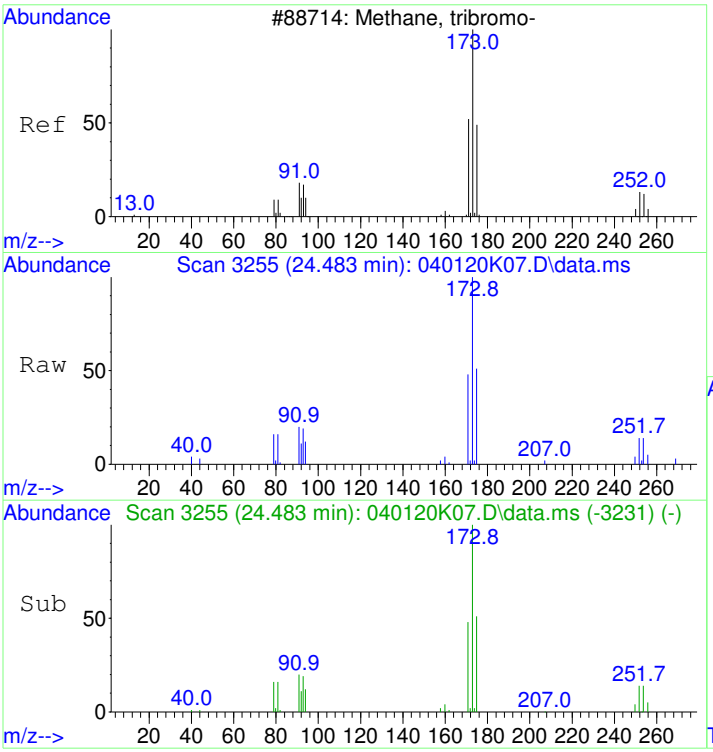


#55
Styrene
Concen: 0.80 ppbv
RT: 24.070 min Scan# 3187
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:104 Resp: 15601

Ion	Ratio	Lower	Upper
104	100		
78	50.7	28.9	68.9
103	58.6	37.1	77.1

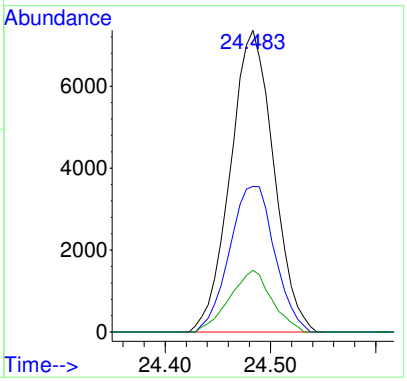


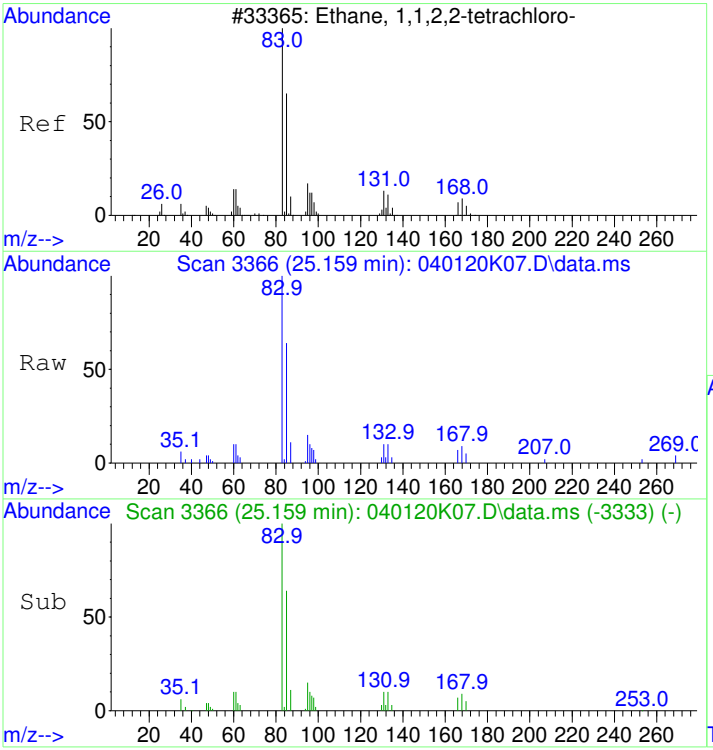


#56
Bromoform
Concen: 1.16 ppbv
RT: 24.483 min Scan# 3255
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:173 Resp: 21012

Ion	Ratio	Lower	Upper
173	100		
171	50.5	30.8	70.8
91	20.0	0.0	39.0

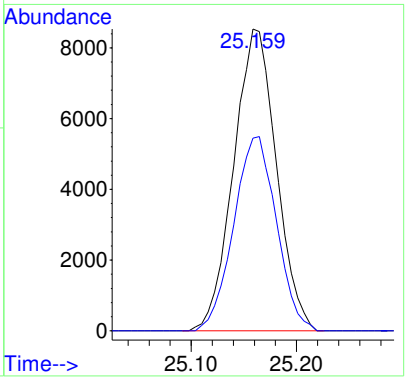


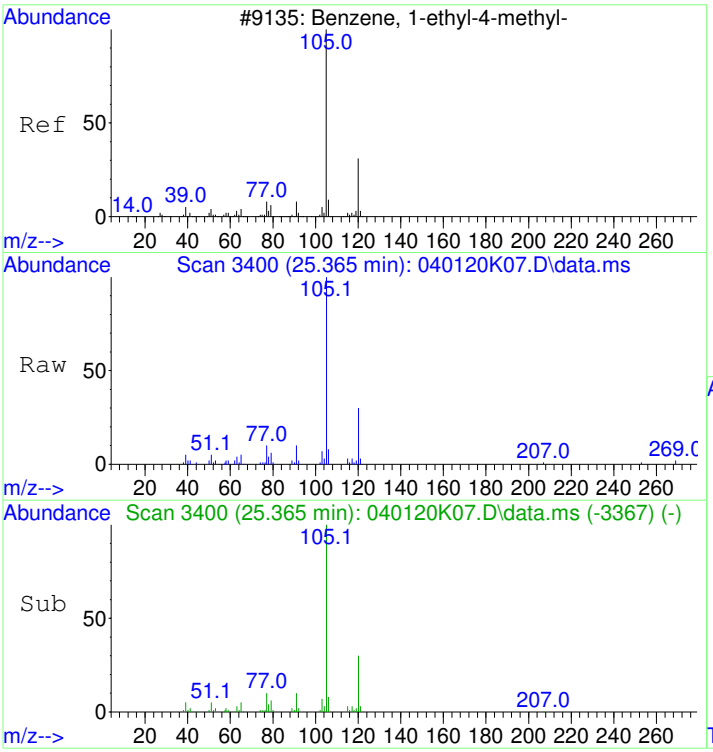


#57
1,1,2,2-Tetrachloroethane
Concen: 0.91 ppbv
RT: 25.159 min Scan# 3366
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 83 Resp: 24081

Ion	Ratio	Lower	Upper
83	100		
85	64.3	44.3	84.3

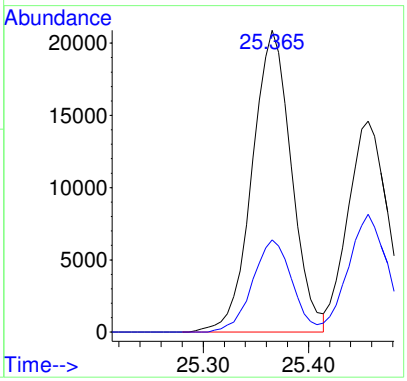


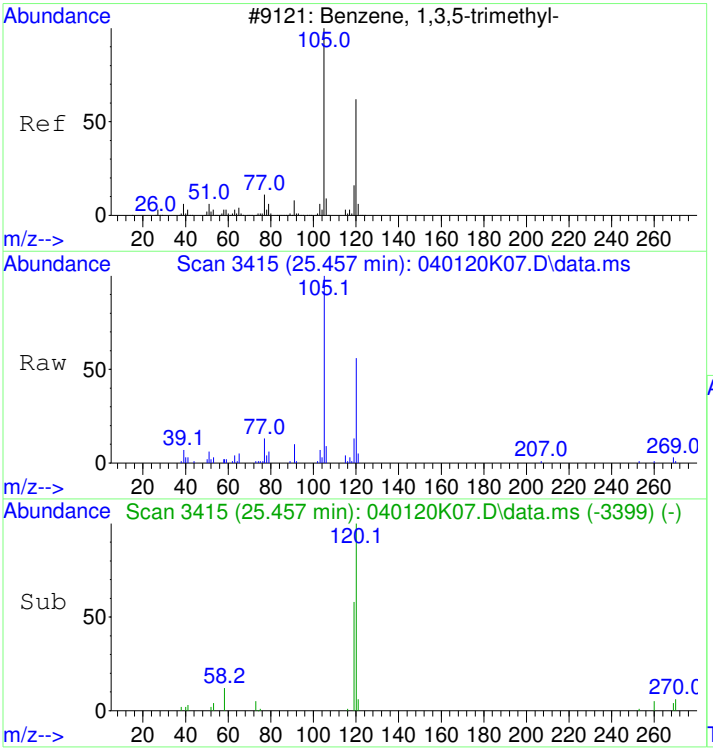


#58
4-Ethyltoluene
Concen: 0.95 ppbv
RT: 25.365 min Scan# 3400
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:105 Resp: 54210

Ion	Ratio	Lower	Upper
105	100		
120	30.6	11.1	51.1

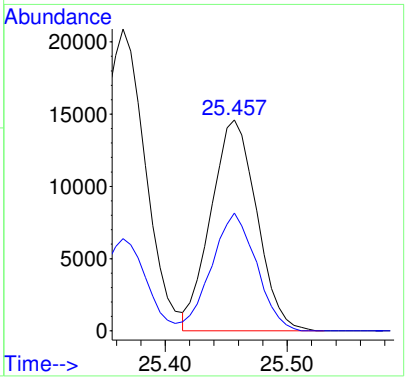


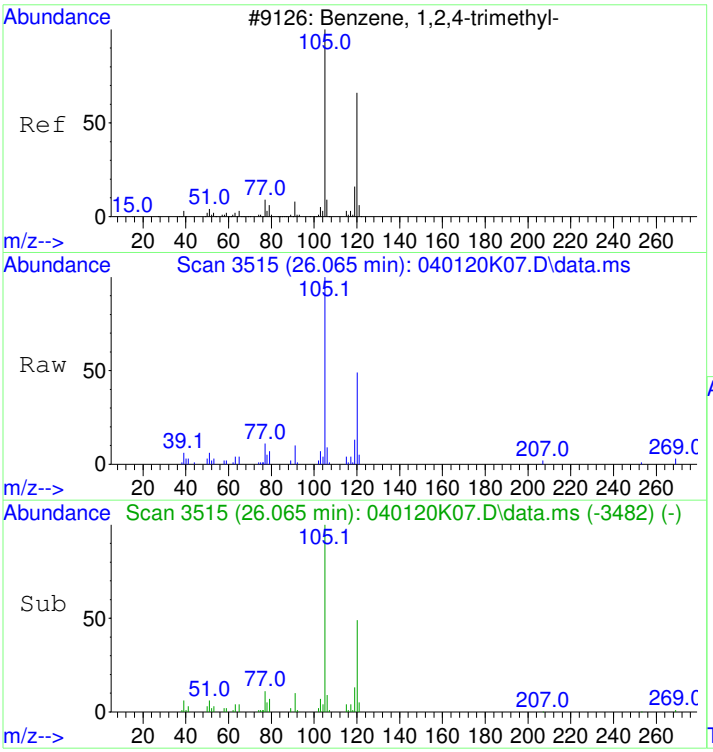


#59
1,3,5-Trimethylbenzene
Concen: 0.88 ppbv
RT: 25.457 min Scan# 3415
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:105 Resp: 38150

Ion	Ratio	Lower	Upper
105	100		
120	54.8	34.9	74.9

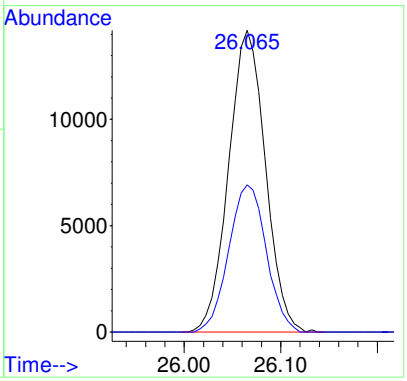


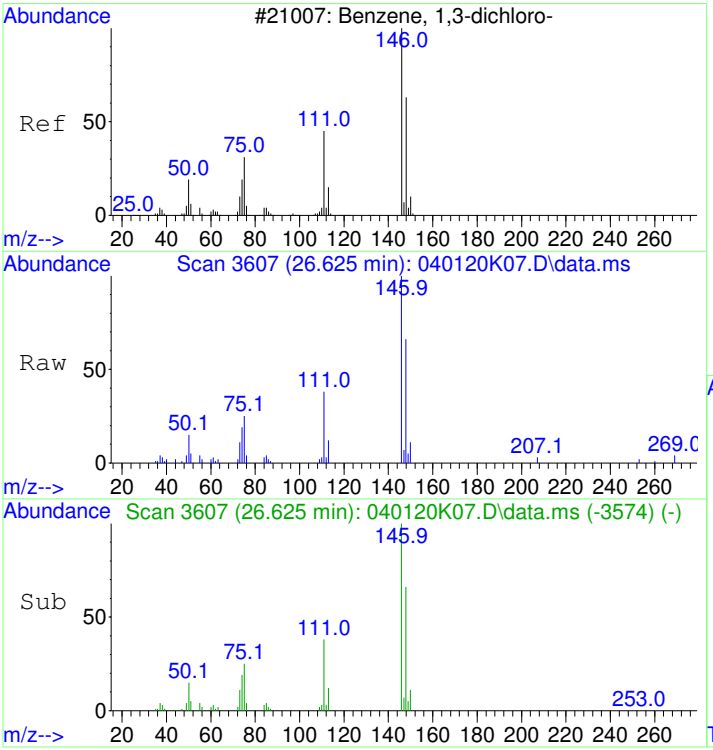


#60
1,2,4-Trimethylbenzene
Concen: 0.86 ppbv
RT: 26.065 min Scan# 3515
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:105 Resp: 37541

Ion	Ratio	Lower	Upper
105	100		
120	49.8	30.4	70.4

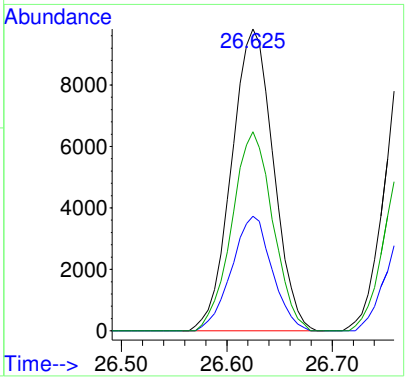


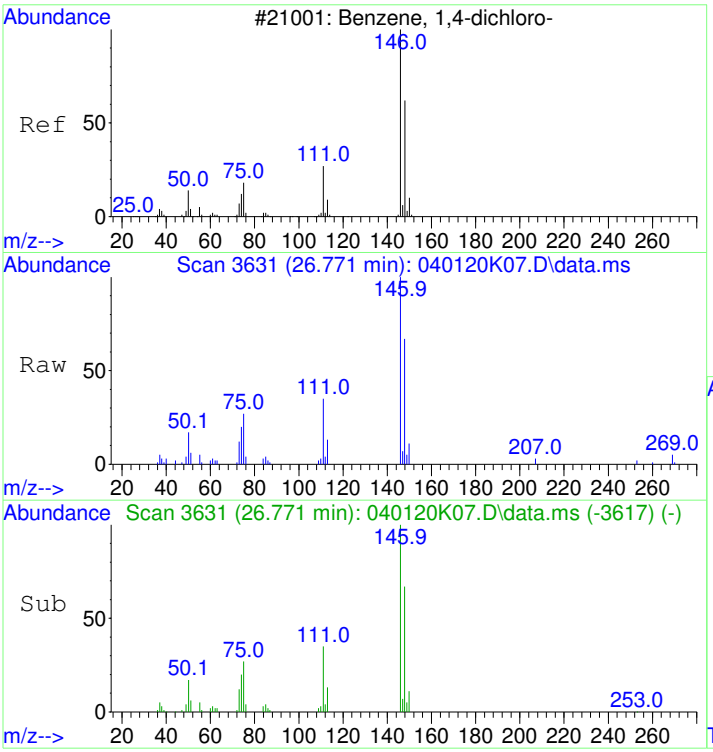


#61
1,3-Dichlorobenzene
Concen: 0.84 ppbv
RT: 26.625 min Scan# 3607
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:146 Resp: 27163

Ion	Ratio	Lower	Upper
146	100		
111	36.7	16.1	56.1
148	64.5	44.5	84.5

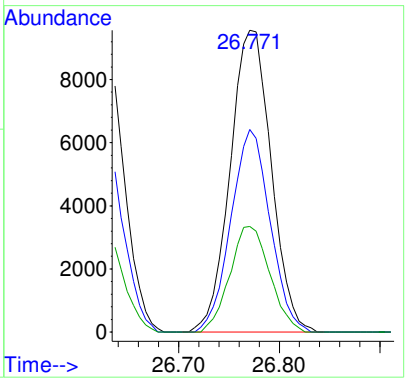


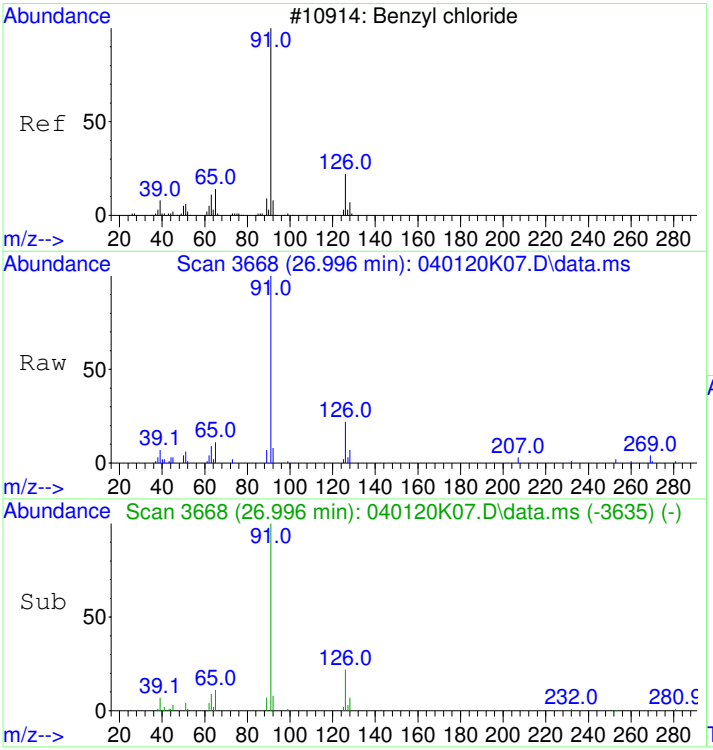


#62
1,4-Dichlorobenzene
Concen: 0.85 ppbv
RT: 26.771 min Scan# 3631
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:146 Resp: 27071

Ion	Ratio	Lower	Upper
146	100		
148	64.0	43.9	83.9
111	34.1	14.3	54.3

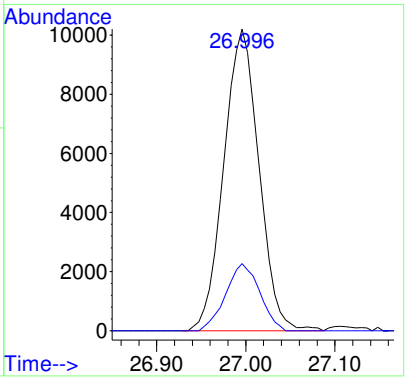


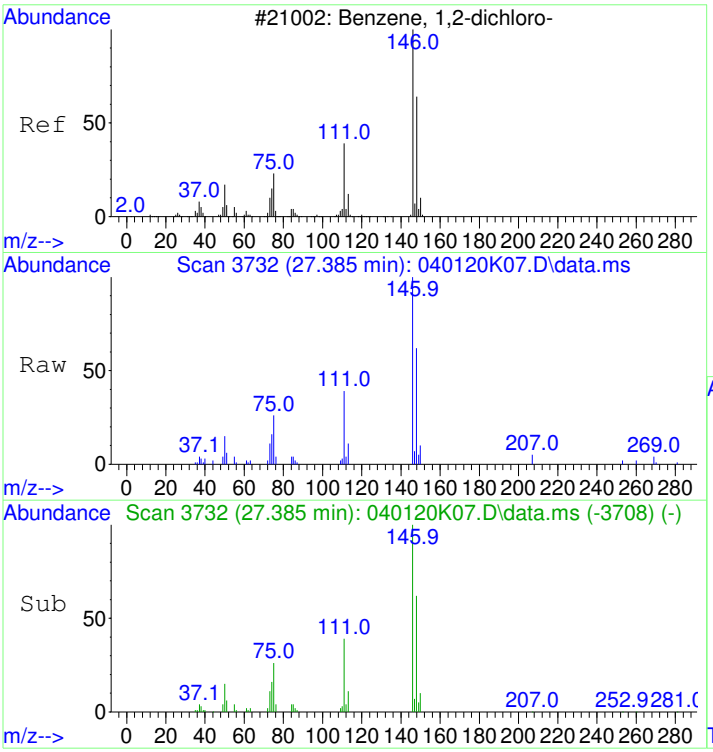


#63
Benzyl chloride
Concen: 0.95 ppbv
RT: 26.996 min Scan# 3668
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion: 91 Resp: 27890

Ion	Ratio	Lower	Upper
91	100		
126	21.5	2.4	42.4

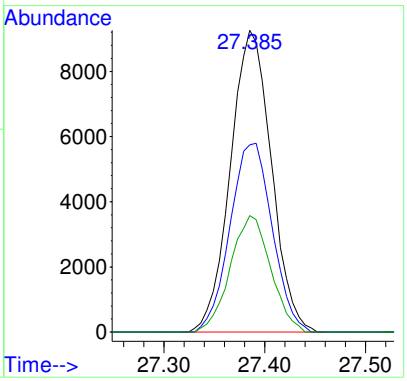


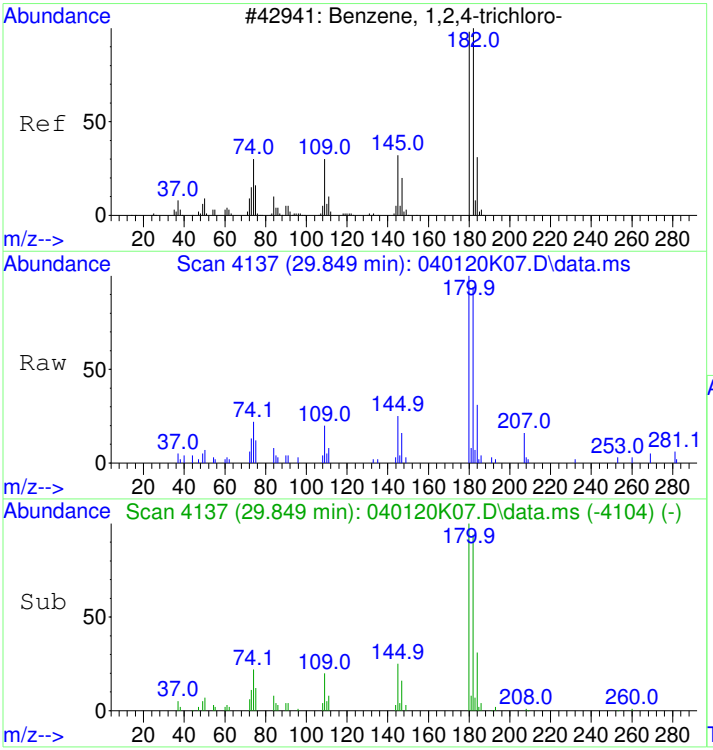


#64
1,2-Dichlorobenzene
Concen: 0.83 ppbv
RT: 27.385 min Scan# 3732
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:146 Resp: 26172

Ion	Ratio	Lower	Upper
146	100		
148	64.5	43.9	83.9
111	38.0	17.3	57.3

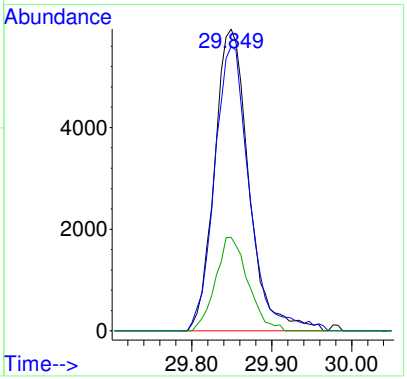


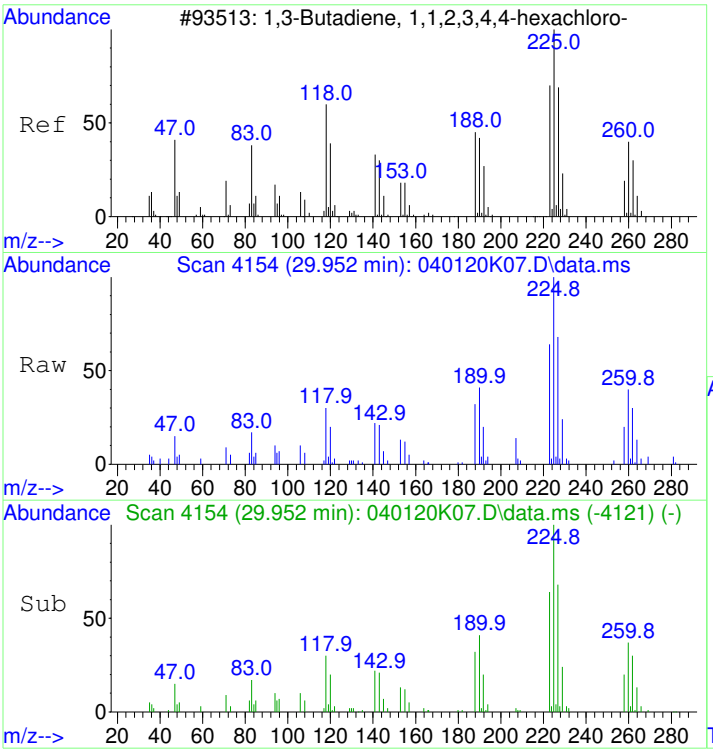


#65
1,2,4-Trichlorobenzene
Concen: 0.66 ppbv
RT: 29.849 min Scan# 4137
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:180 Resp: 17782

Ion	Ratio	Lower	Upper
180	100		
182	95.8	75.9	115.9
184	29.1	10.7	50.7

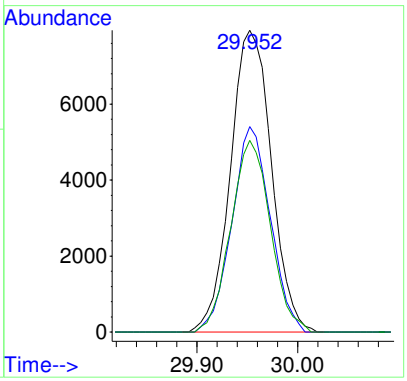




#66
Hexachlorobutadiene
Concen: 0.78 ppbv
RT: 29.952 min Scan# 4154
Delta R.T. -0.000 min
Lab File: 040120K07.D
Acq: 1 Apr 2020 5:16 pm

Tgt Ion:225 Resp: 22443

Ion	Ratio	Lower	Upper
225	100		
227	63.8	44.6	84.6
223	61.4	42.2	82.2



S20D002-CAL2

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K08.D
InstName : HP5973K
Acq On : 1 Apr 2020 6:06 pm
Operator : LLH
Sample : S20D002-CAL2
Misc : 2.0ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Apr 02 09:53:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:53:04 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	16.313	49	281363	19.60	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	860745	19.60	ppbv		0.00
43) CHLOROBENZENE-d5	23.084	117	773186	19.60	ppbv		0.00
Target Compounds							Qvalue
2) Propene	4.997	41	18642	2.33	ppbv		99
3) Dichlorodifluoromethane	5.101	85	46056	2.10	ppbv		100
4) 1,2-Dichlorotetrafluor...	5.484	85	49113	1.93	ppbv		100
5) Chloromethane	5.728	50	18923	2.28	ppbv		100
6) Vinyl chloride	6.068	62	24295	2.33	ppbv		99
7) 1,3-Butadiene	6.172	54	18947	2.30	ppbv		93
8) Bromomethane	7.242	94	16595	2.00	ppbv		99
9) Chloroethane	7.607	64	11165	2.05	ppbv		99
10) Bromoethene	8.252	106	16933	2.04	ppbv		98
11) Trichlorofluoromethane	8.380	101	41551	1.94	ppbv		99
12) 1,1,2-Trichloro-1,2,2-...	10.381	151	30875	1.94	ppbv		100
13) 1,1-Dichloroethene	10.509	61	29006	2.14	ppbv		100
14) Acetone	11.093	43	29872	2.28	ppbv		98
15) Carbon disulfide	11.203	76	54789	2.16	ppbv		99
16) 2-Propanol	11.604	45	28416	2.26	ppbv		97
17) Allyl chloride	11.963	41	26653	2.23	ppbv		99
18) Dichloromethane	12.480	49	24778	2.20	ppbv		99
19) tert-Butyl methyl ethe...	13.028	73	55784	2.07	ppbv		100
20) trans-1,2-Dichloroethene	13.107	61	27642	2.19	ppbv		99
21) Hexane	13.594	57	34457	1.98	ppbv		98
22) 1,1-Dichloroethane	14.397	63	34642	1.99	ppbv		100
23) Vinyl acetate	14.500	43	45192	2.22	ppbv		99
24) cis-1,2-Dichloroethene	15.772	61	25339	2.02	ppbv	#	98
25) 2-Butanone (MEK)	15.869	72	10547	2.02	ppbv	#	97
26) Ethyl acetate	15.869	61	6825	2.20	ppbv	#	86
27) Tetrahydrofuran	16.289	42	24332	2.08	ppbv		99
28) Chloroform	16.441	83	37073	2.15	ppbv		99
29) Cyclohexane	16.617	56	35490	2.06	ppbv		99
30) 1,1,1-Trichloroethane	16.696	97	36346	2.15	ppbv		99
31) Carbon tetrachloride	16.933	117	36442	2.18	ppbv		100
33) Benzene	17.438	78	62729	2.20	ppbv		100
34) 2,2,4-Trimethylpentane	17.311	57	109199	2.19	ppbv		99
35) 1,2-Dichloroethane	17.657	62	23960	2.24	ppbv		99
36) Heptane	17.682	43	39738	2.24	ppbv		100
37) Trichloroethene	18.625	130	27763	2.26	ppbv		100
38) 1,2-Dichloropropane	19.148	63	23094	2.18	ppbv		98
39) 1,4-Dioxane	19.318	88	14326	2.09	ppbv		99
40) Bromodichloromethane	19.604	83	40479	2.25	ppbv		100
41) cis-1,3-Dichloropropene	20.346	75	34118	2.08	ppbv		99
42) 4-Methyl-2-pentanone (...	20.559	43	47309	2.31	ppbv		100
44) Toluene	20.803	91	73609	2.13	ppbv		100
45) trans-1,3-Dichloropropene	21.289	75	30261	2.00	ppbv		99
46) 1,1,2-Trichloroethane	21.593	97	23777	2.10	ppbv		98
47) Tetrachloroethene	21.642	166	37260	2.09	ppbv		99
48) 2-Hexanone	21.892	43	42229	2.25	ppbv		99
49) Chlorodibromomethane	22.208	129	41495	2.32	ppbv		100
50) 1,2-Dibromoethane (EDB)	22.439	107	35646	2.15	ppbv		97
51) Chlorobenzene	23.133	112	61224	2.16	ppbv		93
52) Ethylbenzene	23.200	91	97914	2.18	ppbv		99
53) m&p-Xylene	23.382	91	146280	4.31	ppbv		98
54) o-Xylene	24.027	91	72703	2.06	ppbv		100

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K08.D
InstName : HP5973K
Acq On : 1 Apr 2020 6:06 pm
Operator : LLH
Sample : S20D002-CAL2
Misc : 2.0ppbv
ALS Vial : 29 Sample Multiplier: 1

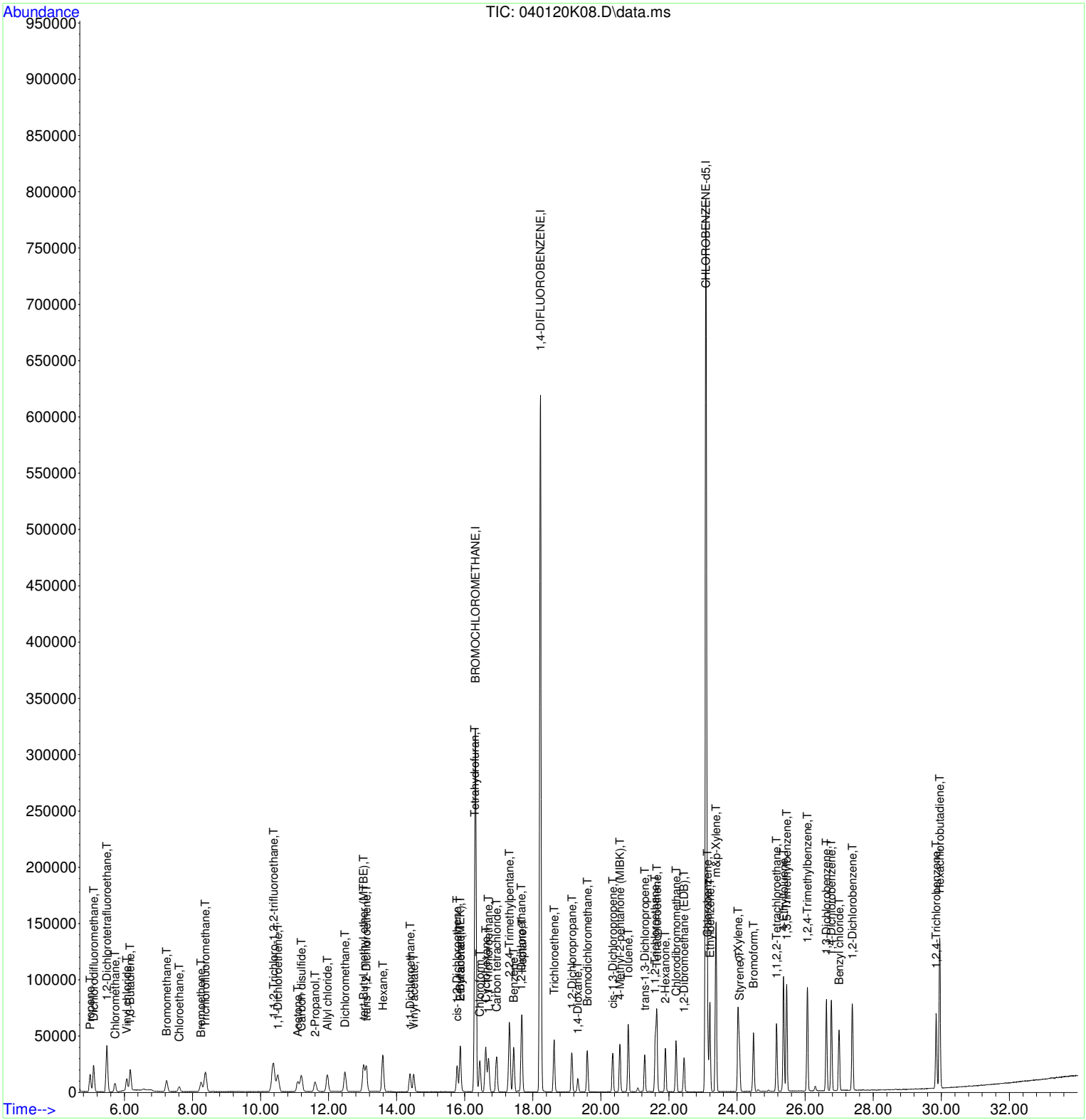
Quant Time: Apr 02 09:53:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:53:04 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
55)	Styrene	24.076	104	35230	1.90 ppbv	99
56)	Bromoform	24.483	173	43719	2.36 ppbv	99
57)	1,1,2,2-Tetrachloroethane	25.158	83	52114	2.04 ppbv	100
58)	4-Ethyltoluene	25.365	105	113216	2.05 ppbv	99
59)	1,3,5-Trimethylbenzene	25.457	105	85881	2.07 ppbv	100
60)	1,2,4-Trimethylbenzene	26.065	105	85707	2.05 ppbv	99
61)	1,3-Dichlorobenzene	26.625	146	61390	1.99 ppbv	100
62)	1,4-Dichlorobenzene	26.771	146	60800	1.98 ppbv	100
63)	Benzyl chloride	26.996	91	69518	2.30 ppbv	98
64)	1,2-Dichlorobenzene	27.385	146	58542	1.94 ppbv	100
65)	1,2,4-Trichlorobenzene	29.849	180	41700	1.59 ppbv	98
66)	Hexachlorobutadiene	29.952	225	49233	1.77 ppbv	100

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

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K08.D
InstName : HP5973K
Acq On : 1 Apr 2020 6:06 pm
Operator : LLH
Sample : S20D002-CAL2
Misc : 2.0ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Apr 02 09:53:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:53:04 2020
Response via : Initial Calibration



S20D002-CAL3

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K09.D
InstName : HP5973K
Acq On : 1 Apr 2020 6:56 pm
Operator : LLH
Sample : S20D002-CAL3
Misc : 5.0ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Apr 02 09:54:03 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:53:58 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	16.307	49	283682	19.60	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	856372	19.60	ppbv		0.00
43) CHLOROBENZENE-d5	23.084	117	780232	19.60	ppbv		0.00
Target Compounds							Qvalue
2) Propene	4.998	41	45424	5.58	ppbv		99
3) Dichlorodifluoromethane	5.095	85	112015	5.05	ppbv		100
4) 1,2-Dichlorotetrafluor...	5.490	85	121829	4.73	ppbv		99
5) Chloromethane	5.728	50	45828	5.42	ppbv		100
6) Vinyl chloride	6.074	62	58584	5.45	ppbv		99
7) 1,3-Butadiene	6.172	54	45736	5.38	ppbv		97
8) Bromomethane	7.236	94	40384	4.84	ppbv		99
9) Chloroethane	7.614	64	26998	4.93	ppbv		99
10) Bromoethene	8.252	106	41247	4.99	ppbv		99
11) Trichlorofluoromethane	8.380	101	99794	4.61	ppbv		99
12) 1,1,2-Trichloro-1,2,2-...	10.376	151	74733	4.68	ppbv		100
13) 1,1-Dichloroethene	10.503	61	69979	5.11	ppbv		99
14) Acetone	11.087	43	71092	5.32	ppbv		100
15) Carbon disulfide	11.197	76	133607	5.23	ppbv		99
16) 2-Propanol	11.586	45	70836	5.50	ppbv		98
17) Allyl chloride	11.963	41	65392	5.42	ppbv		100
18) Dichloromethane	12.480	49	55048	4.82	ppbv		100
19) tert-Butyl methyl ethe...	13.022	73	136816	5.05	ppbv		100
20) trans-1,2-Dichloroethene	13.107	61	67232	5.27	ppbv		100
21) Hexane	13.594	57	85339	4.91	ppbv		99
22) 1,1-Dichloroethane	14.397	63	82809	4.70	ppbv		100
23) Vinyl acetate	14.494	43	113818	5.48	ppbv		99
24) cis-1,2-Dichloroethene	15.778	61	62690	4.96	ppbv	#	100
25) 2-Butanone (MEK)	15.863	72	26164	4.99	ppbv	#	97
26) Ethyl acetate	15.869	61	15753	4.98	ppbv	#	98
27) Tetrahydrofuran	16.289	42	60441	5.10	ppbv		99
28) Chloroform	16.441	83	88506	5.06	ppbv		100
29) Cyclohexane	16.617	56	86566	4.99	ppbv		99
30) 1,1,1-Trichloroethane	16.696	97	88178	5.13	ppbv		99
31) Carbon tetrachloride	16.934	117	89061	5.14	ppbv		100
33) Benzene	17.439	78	153339	5.32	ppbv		99
34) 2,2,4-Trimethylpentane	17.311	57	267838	5.33	ppbv		100
35) 1,2-Dichloroethane	17.658	62	58160	5.35	ppbv		100
36) Heptane	17.676	43	98668	5.50	ppbv		100
37) Trichloroethene	18.625	130	66039	5.36	ppbv		99
38) 1,2-Dichloropropane	19.148	63	56094	5.25	ppbv		99
39) 1,4-Dioxane	19.318	88	35686	5.21	ppbv		100
40) Bromodichloromethane	19.598	83	98886	5.40	ppbv		100
41) cis-1,3-Dichloropropene	20.346	75	84951	5.14	ppbv		99
42) 4-Methyl-2-pentanone (...	20.559	43	117076	5.62	ppbv		100
44) Toluene	20.803	91	181105	5.17	ppbv		100
45) trans-1,3-Dichloropropene	21.289	75	76889	4.98	ppbv		99
46) 1,1,2-Trichloroethane	21.600	97	58343	5.09	ppbv		99
47) Tetrachloroethene	21.642	166	90544	5.01	ppbv		99
48) 2-Hexanone	21.892	43	107554	5.59	ppbv		99
49) Chlorodibromomethane	22.208	129	103641	5.58	ppbv		99
50) 1,2-Dibromoethane (EDB)	22.445	107	87433	5.20	ppbv		99
51) Chlorobenzene	23.133	112	148644	5.16	ppbv		98
52) Ethylbenzene	23.200	91	239627	5.25	ppbv		100
53) m&p-Xylene	23.382	91	362307	10.49	ppbv		99
54) o-Xylene	24.027	91	182436	5.11	ppbv		100

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K09.D
InstName : HP5973K
Acq On : 1 Apr 2020 6:56 pm
Operator : LLH
Sample : S20D002-CAL3
Misc : 5.0ppbv
ALS Vial : 29 Sample Multiplier: 1

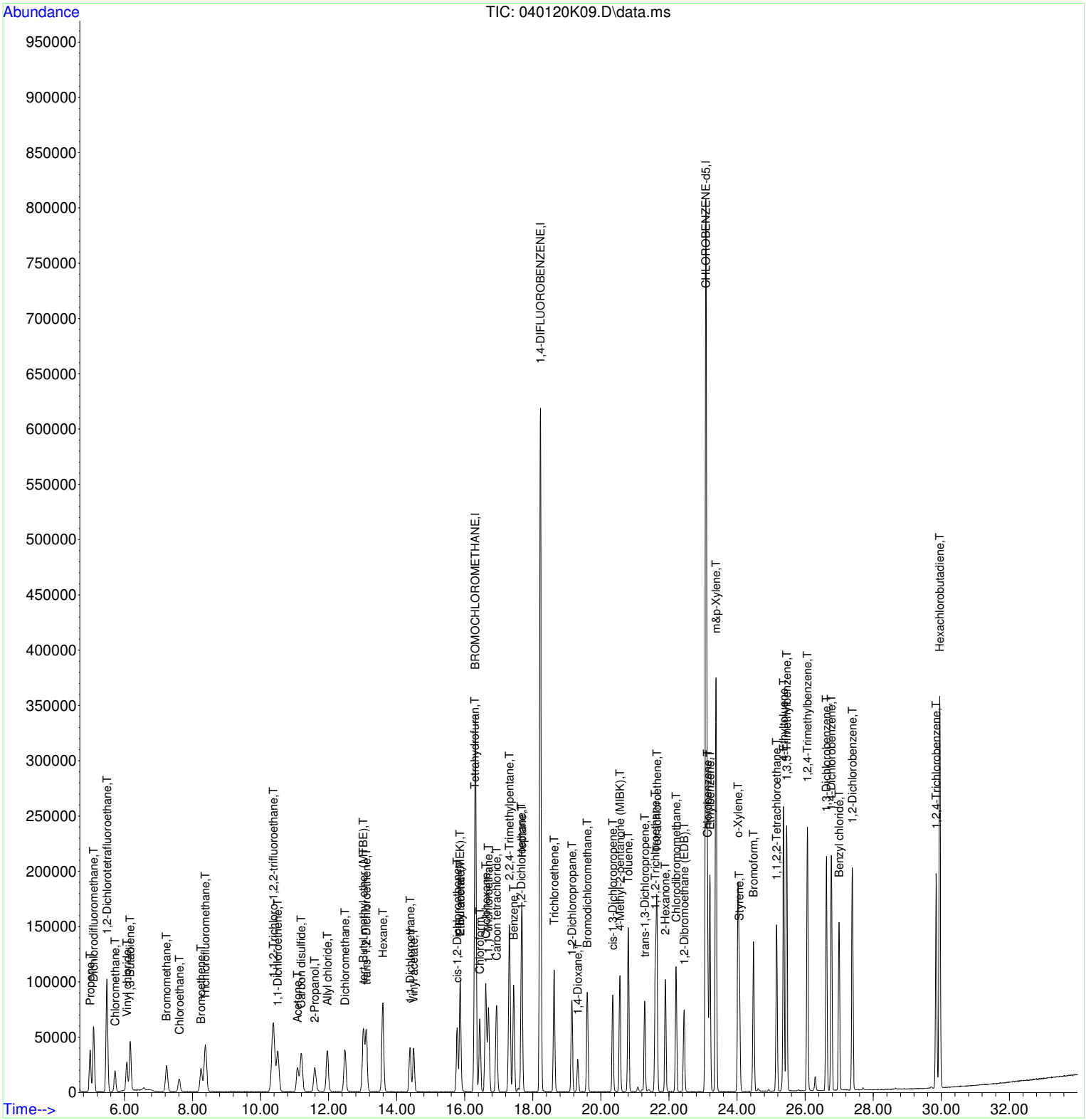
Quant Time: Apr 02 09:54:03 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:53:58 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
55)	Styrene	24.070	104	89838	4.84 ppbv	99
56)	Bromoform	24.483	173	113080	5.81 ppbv	100
57)	1,1,2,2-Tetrachloroethane	25.159	83	132049	5.09 ppbv	100
58)	4-Ethyltoluene	25.365	105	286638	5.12 ppbv	100
59)	1,3,5-Trimethylbenzene	25.457	105	219684	5.25 ppbv	99
60)	1,2,4-Trimethylbenzene	26.065	105	221660	5.24 ppbv	100
61)	1,3-Dichlorobenzene	26.625	146	159433	5.10 ppbv	100
62)	1,4-Dichlorobenzene	26.771	146	158718	5.11 ppbv	100
63)	Benzyl chloride	26.996	91	193883	6.15 ppbv	100
64)	1,2-Dichlorobenzene	27.385	146	154020	5.05 ppbv	100
65)	1,2,4-Trichlorobenzene	29.849	180	117870	4.45 ppbv	99
66)	Hexachlorobutadiene	29.952	225	128706	4.57 ppbv	100

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

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K09.D
InstName : HP5973K
Acq On : 1 Apr 2020 6:56 pm
Operator : LLH
Sample : S20D002-CAL3
Misc : 5.0ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Apr 02 09:54:03 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:53:58 2020
Response via : Initial Calibration



S20D002-CAL4

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K10.D
InstName : HP5973K
Acq On : 1 Apr 2020 7:47 pm
Operator : LLH
Sample : S20D002-CAL4
Misc : 10ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Apr 02 09:55:02 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:54:54 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	16.313	49	290286	19.60	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	865447	19.60	ppbv		0.00
43) CHLOROBENZENE-d5	23.084	117	803106	19.60	ppbv		0.00
Target Compounds							Qvalue
2) Propene	4.998	41	89664	10.76	ppbv		100
3) Dichlorodifluoromethane	5.095	85	225112	9.97	ppbv		100
4) 1,2-Dichlorotetrafluor...	5.484	85	244096	9.36	ppbv		100
5) Chloromethane	5.728	50	91603	10.61	ppbv		100
6) Vinyl chloride	6.068	62	117125	10.56	ppbv		100
7) 1,3-Butadiene	6.172	54	90677	10.33	ppbv		100
8) Bromomethane	7.237	94	78749	9.37	ppbv		100
9) Chloroethane	7.608	64	52857	9.52	ppbv		100
10) Bromoethene	8.252	106	81594	9.85	ppbv		100
11) Trichlorofluoromethane	8.374	101	195120	8.87	ppbv		100
12) 1,1,2-Trichloro-1,2,2-...	10.382	151	146517	9.13	ppbv		100
13) 1,1-Dichloroethene	10.509	61	137598	9.89	ppbv		100
14) Acetone	11.081	43	139084	10.21	ppbv		100
15) Carbon disulfide	11.197	76	261015	10.12	ppbv		100
16) 2-Propanol	11.586	45	142662	10.79	ppbv		100
17) Allyl chloride	11.957	41	128988	10.52	ppbv		100
18) Dichloromethane	12.481	49	104812	9.02	ppbv		100
19) tert-Butyl methyl ethe...	13.022	73	270292	9.91	ppbv		100
20) trans-1,2-Dichloroethene	13.107	61	132599	10.25	ppbv		100
21) Hexane	13.588	57	169753	9.66	ppbv		100
22) 1,1-Dichloroethane	14.391	63	162135	9.07	ppbv		100
23) Vinyl acetate	14.494	43	230577	10.82	ppbv		100
24) cis-1,2-Dichloroethene	15.778	61	123887	9.68	ppbv	#	100
25) 2-Butanone (MEK)	15.857	72	52408	9.91	ppbv		100
26) Ethyl acetate	15.869	61	31318	9.69	ppbv		100
27) Tetrahydrofuran	16.283	42	119012	9.81	ppbv		100
28) Chloroform	16.441	83	174203	9.82	ppbv		100
29) Cyclohexane	16.617	56	171808	9.76	ppbv		100
30) 1,1,1-Trichloroethane	16.696	97	174031	9.94	ppbv		100
31) Carbon tetrachloride	16.934	117	175935	9.81	ppbv		100
33) Benzene	17.439	78	296759	10.15	ppbv		100
34) 2,2,4-Trimethylpentane	17.311	57	528496	10.36	ppbv		100
35) 1,2-Dichloroethane	17.658	62	113676	10.20	ppbv		100
36) Heptane	17.676	43	194869	10.63	ppbv		100
37) Trichloroethene	18.625	130	131721	10.62	ppbv		100
38) 1,2-Dichloropropane	19.148	63	111164	10.23	ppbv		100
39) 1,4-Dioxane	19.319	88	71270	10.33	ppbv		100
40) Bromodichloromethane	19.598	83	196791	10.51	ppbv		100
41) cis-1,3-Dichloropropene	20.347	75	173129	10.34	ppbv		100
42) 4-Methyl-2-pentanone (...	20.553	43	234938	11.02	ppbv		100
44) Toluene	20.803	91	359510	10.02	ppbv		100
45) trans-1,3-Dichloropropene	21.290	75	156760	9.82	ppbv		100
46) 1,1,2-Trichloroethane	21.600	97	118349	10.09	ppbv		100
47) Tetrachloroethene	21.642	166	182553	9.90	ppbv		100
48) 2-Hexanone	21.892	43	214775	10.74	ppbv		100
49) Chlorodibromomethane	22.208	129	211013	10.91	ppbv		100
50) 1,2-Dibromoethane (EDB)	22.439	107	176732	10.27	ppbv		100
51) Chlorobenzene	23.133	112	298702	10.12	ppbv		100
52) Ethylbenzene	23.200	91	480770	10.26	ppbv		100
53) m&p-Xylene	23.376	91	731542	20.59	ppbv		100
54) o-Xylene	24.027	91	370125	10.11	ppbv		100

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K10.D
InstName : HP5973K
Acq On : 1 Apr 2020 7:47 pm
Operator : LLH
Sample : S20D002-CAL4
Misc : 10ppbv
ALS Vial : 29 Sample Multiplier: 1

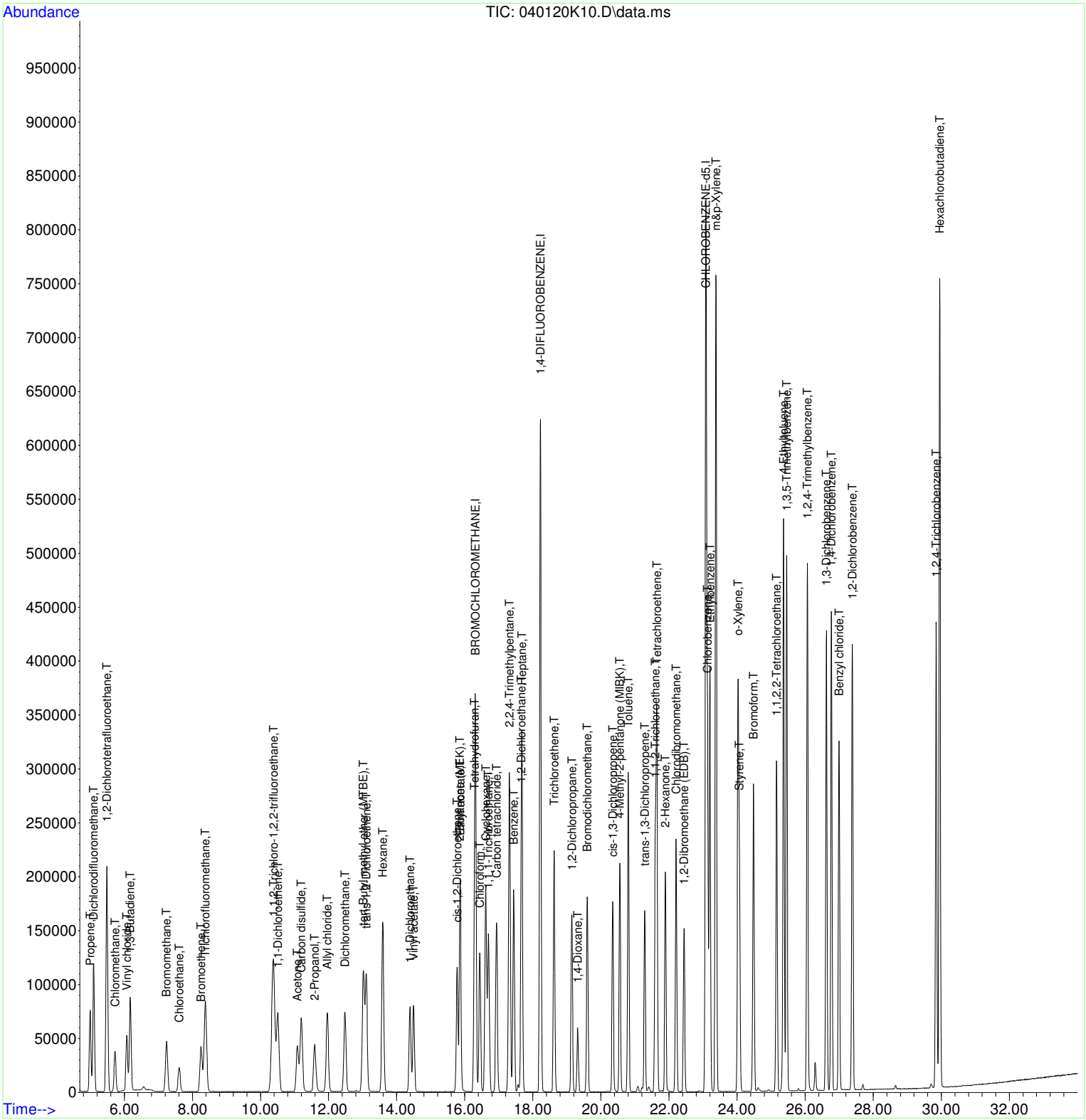
Quant Time: Apr 02 09:55:02 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:54:54 2020
Response via : Initial Calibration

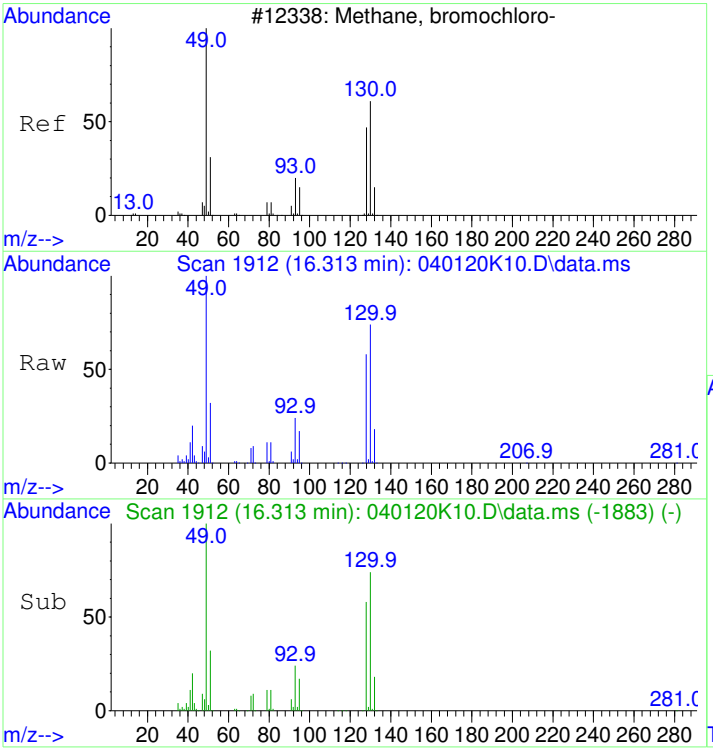
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
55) Styrene	24.070	104	185526	9.85	ppbv	100
56) Bromoform	24.483	173	237167	11.54	ppbv	100
57) 1,1,2,2-Tetrachloroethane	25.159	83	270188	10.14	ppbv	100
58) 4-Ethyltoluene	25.366	105	591258	10.32	ppbv	100
59) 1,3,5-Trimethylbenzene	25.457	105	448975	10.49	ppbv	100
60) 1,2,4-Trimethylbenzene	26.065	105	457716	10.59	ppbv	100
61) 1,3-Dichlorobenzene	26.625	146	329641	10.31	ppbv	100
62) 1,4-Dichlorobenzene	26.771	146	330362	10.38	ppbv	100
63) Benzyl chloride	26.996	91	413201	12.45	ppbv	100
64) 1,2-Dichlorobenzene	27.385	146	317029	10.16	ppbv	100
65) 1,2,4-Trichlorobenzene	29.849	180	260795	9.66	ppbv	100
66) Hexachlorobutadiene	29.953	225	275262	9.59	ppbv	100

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

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K10.D
InstName : HP5973K
Acq On : 1 Apr 2020 7:47 pm
Operator : LLH
Sample : S20D002-CAL4
Misc : 10ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Apr 02 09:55:02 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:54:54 2020
Response via : Initial Calibration

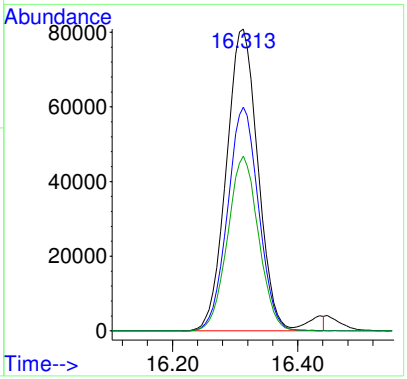


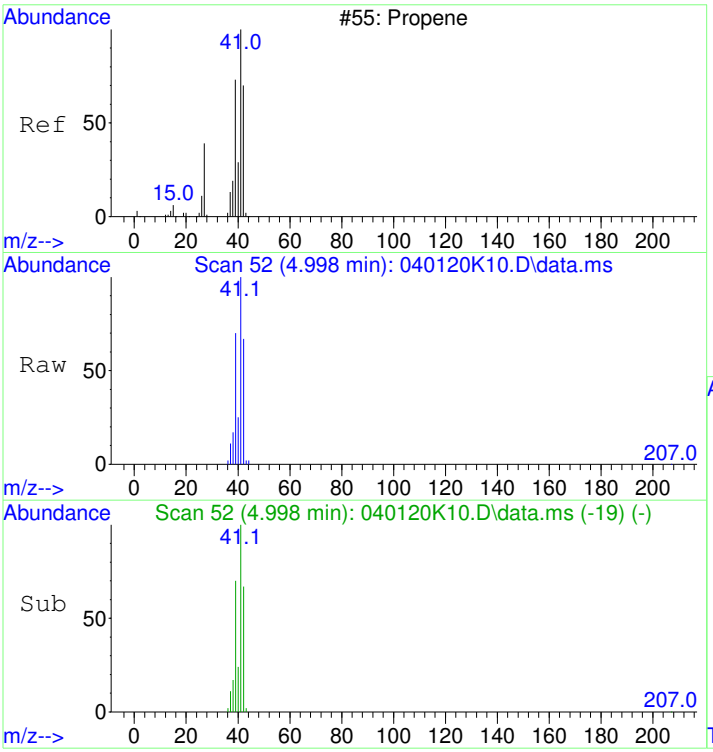


#1
BROMOCHLOROMETHANE
Concen: 19.60 ppbv
RT: 16.313 min Scan# 1912
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 49 Resp: 290286

Ion	Ratio	Lower	Upper
49	100		
130	71.1	51.1	91.1
128	55.0	35.0	75.0

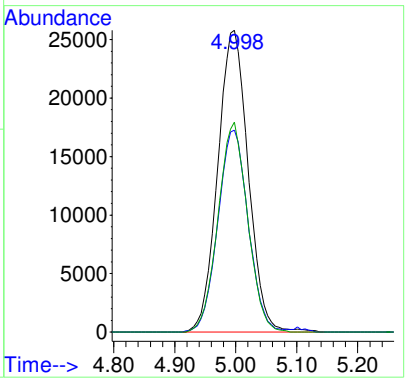


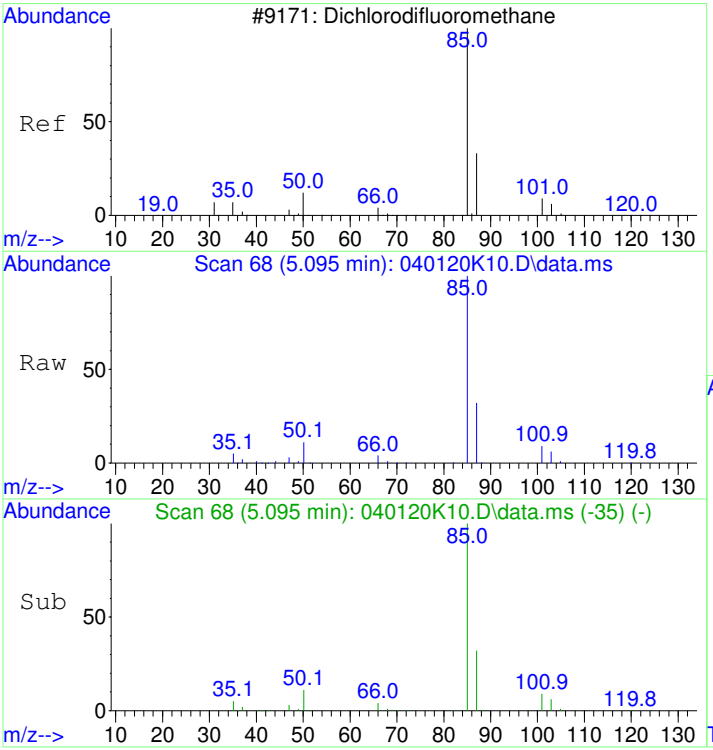


#2
Propene
Concen: 10.76 ppbv
RT: 4.998 min Scan# 52
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 41 Resp: 89664

Ion	Ratio	Lower	Upper
41	100		
42	67.4	47.4	87.4
39	67.3	47.3	87.3

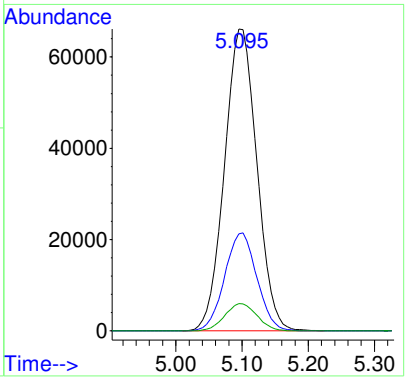


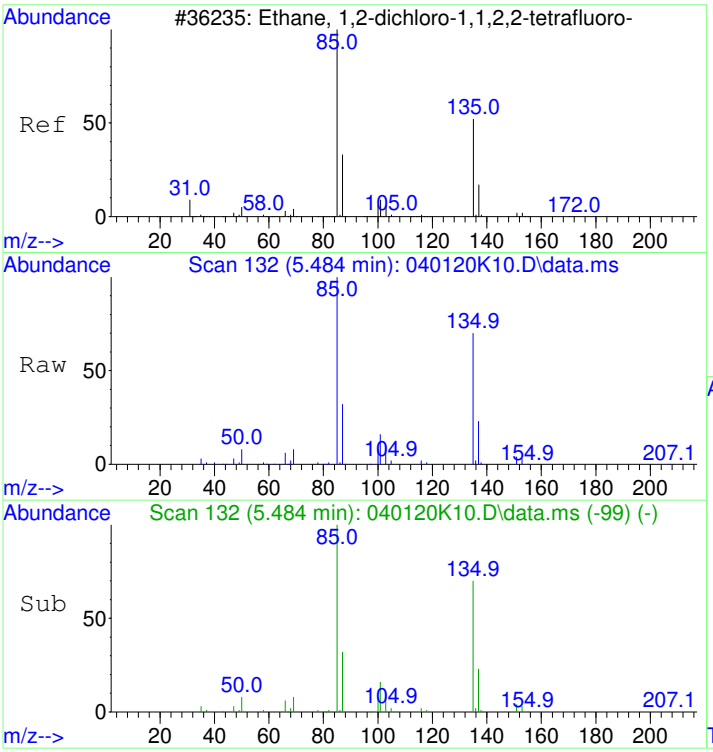


#3
Dichlorodifluoromethane
Concen: 9.97 ppbv
RT: 5.095 min Scan# 68
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 85 Resp: 225112

Ion	Ratio	Lower	Upper
85	100		
87	32.2	12.2	52.2
101	8.9	0.0	28.9

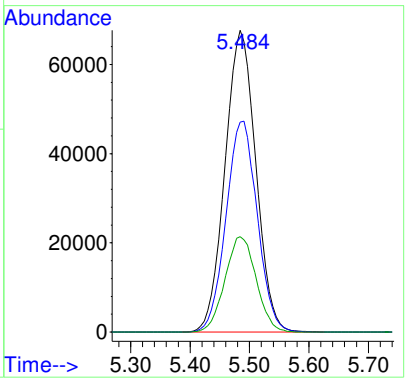


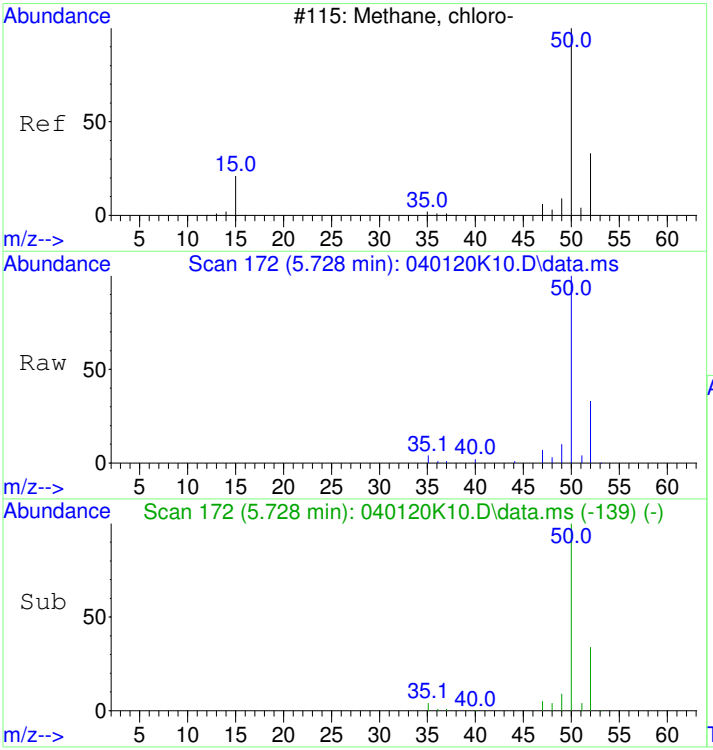


#4
1,2-Dichlorotetrafluoroethane
Concen: 9.36 ppbv
RT: 5.484 min Scan# 132
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 85 Resp: 244096

Ion	Ratio	Lower	Upper
85	100		
135	70.9	50.9	90.9
87	32.0	12.0	52.0

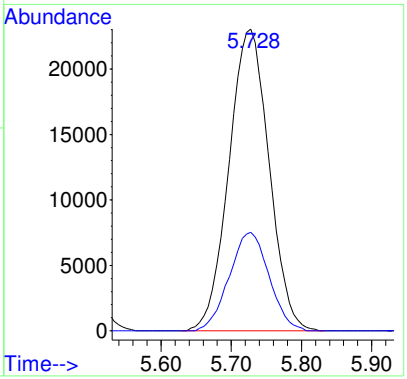


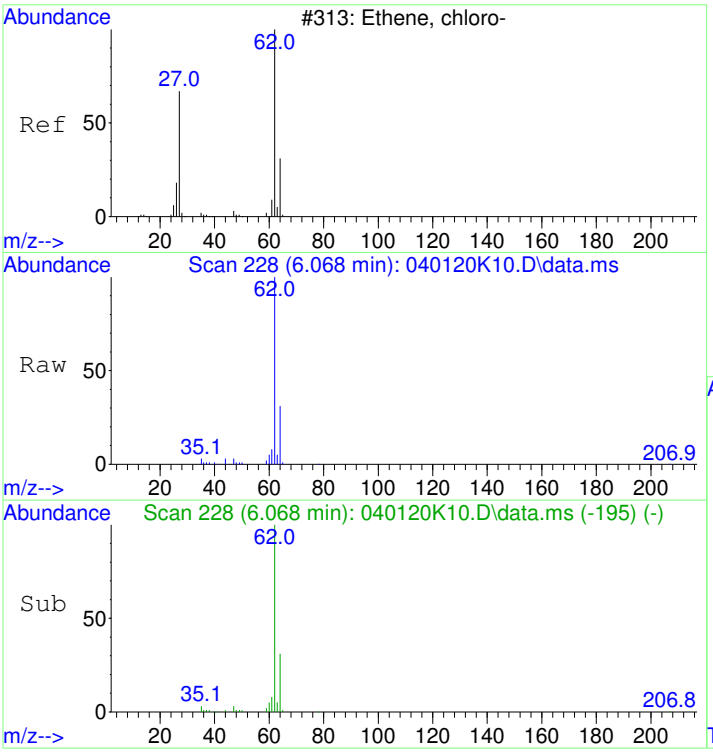


#5
Chloromethane
Concen: 10.61 ppbv
RT: 5.728 min Scan# 172
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 50 Resp: 91603

Ion	Ratio	Lower	Upper
50	100		
52	32.4	12.4	52.4

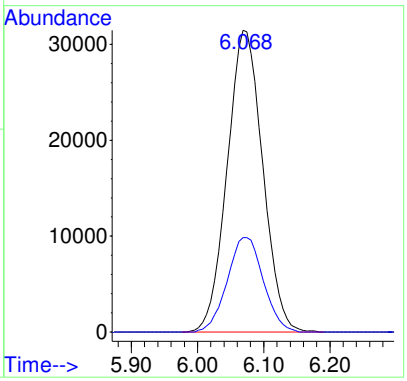


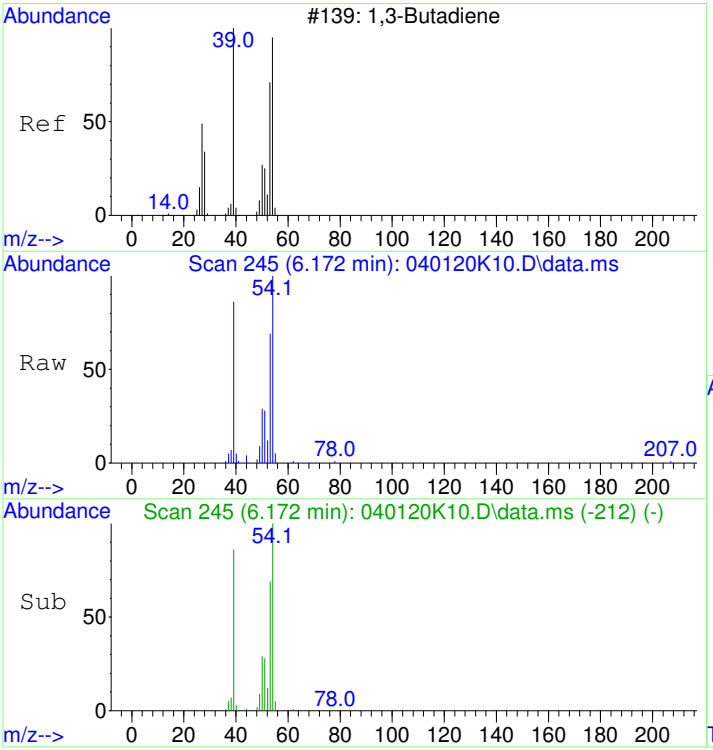


#6
Vinyl chloride
Concen: 10.56 ppbv
RT: 6.068 min Scan# 228
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 62 Resp: 117125

Ion	Ratio	Lower	Upper
62	100		
64	31.9	11.9	51.9

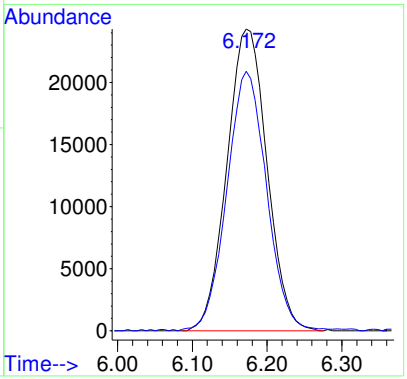


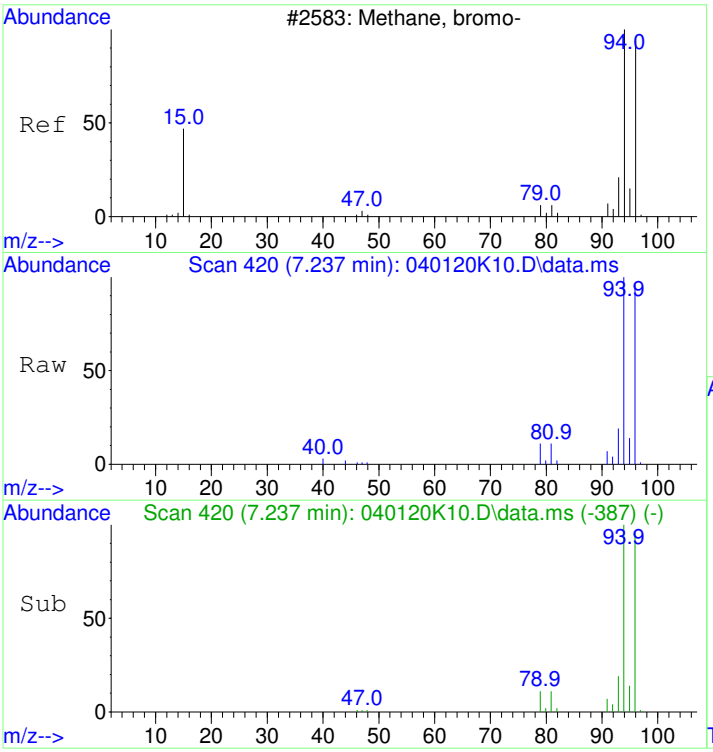


#7
1,3-Butadiene
Concen: 10.33 ppbv
RT: 6.172 min Scan# 245
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 54 Resp: 90677

Ion	Ratio	Lower	Upper
54	100		
39	85.4	65.4	105.4

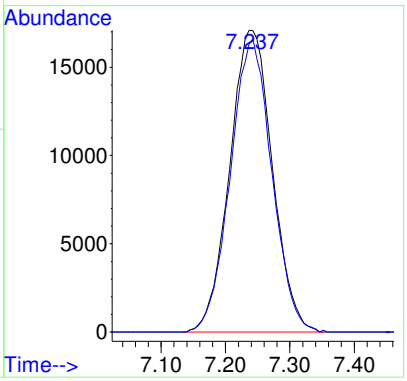


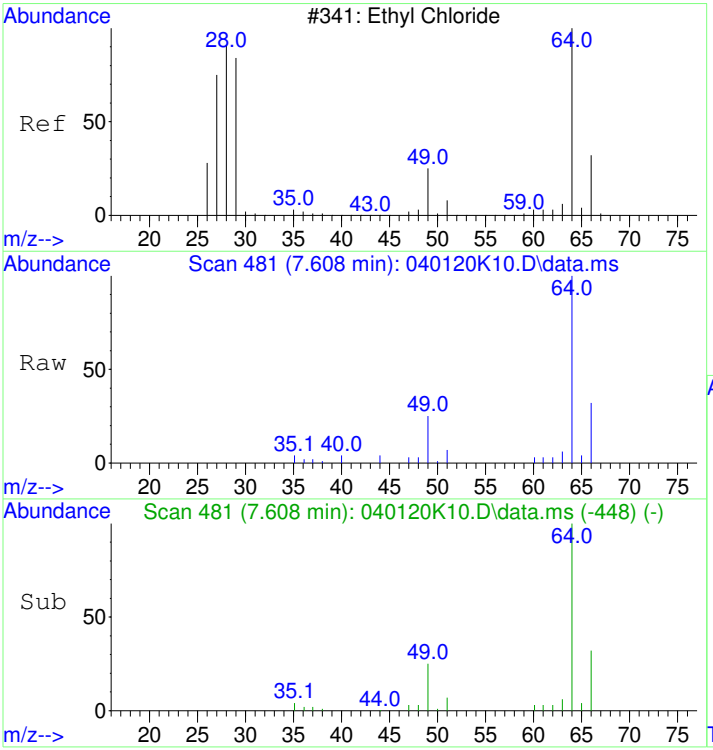


#8
Bromomethane
Concen: 9.37 ppbv
RT: 7.237 min Scan# 420
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 94 Resp: 78749

Ion	Ratio	Lower	Upper
94	100		
96	94.3	74.3	114.3

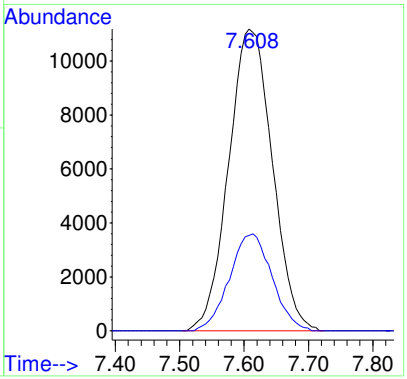


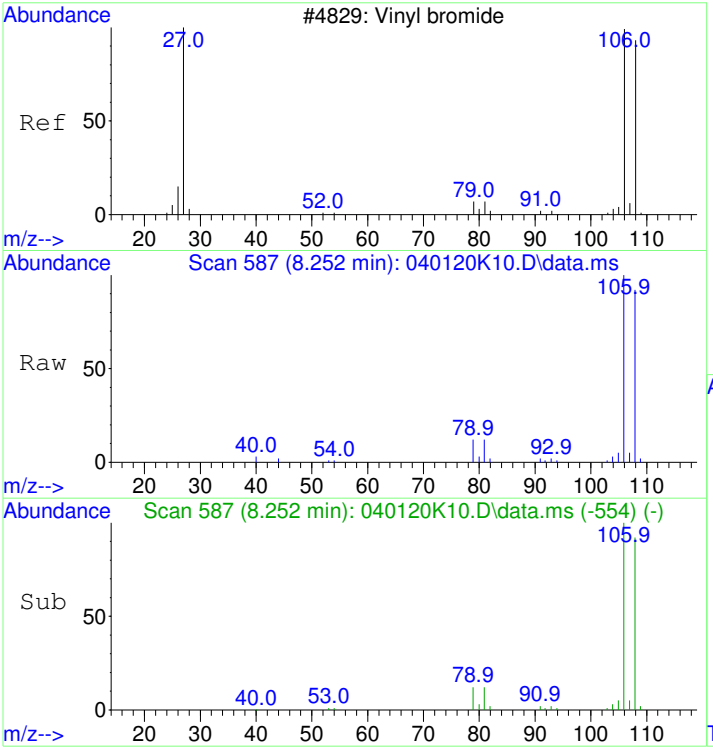


#9
Chloroethane
Concen: 9.52 ppbv
RT: 7.608 min Scan# 481
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 64 Resp: 52857

Ion	Ratio	Lower	Upper
64	100		
66	31.3	11.3	51.3

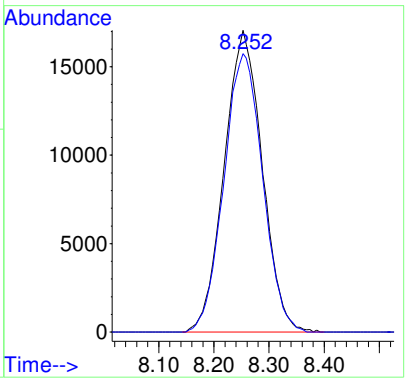


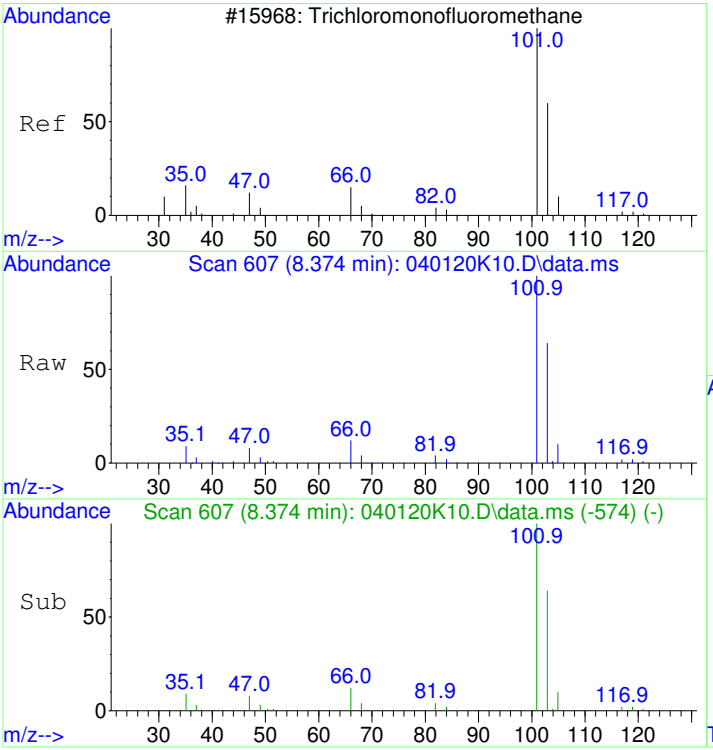


#10
Bromoethene
Concen: 9.85 ppbv
RT: 8.252 min Scan# 587
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:106 Resp: 81594

Ion	Ratio	Lower	Upper
106	100		
108	94.2	0.0	214.2

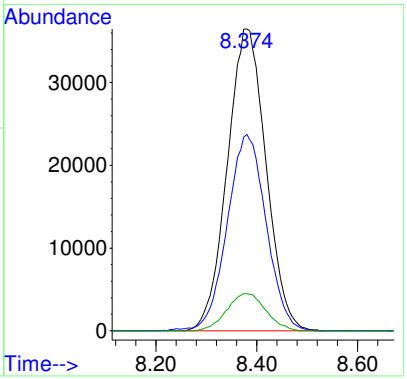


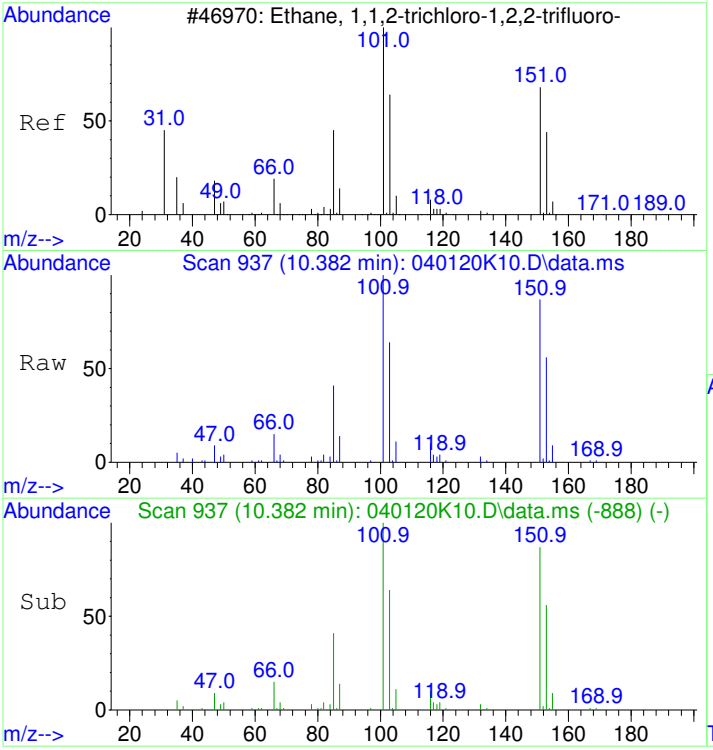


#11
Trichlorofluoromethane
Concen: 8.87 ppbv
RT: 8.374 min Scan# 607
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:101 Resp: 195120

Ion	Ratio	Lower	Upper
101	100		
103	65.4	45.4	85.4
66	12.4	0.0	32.4

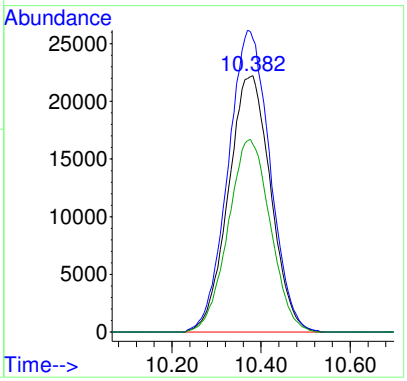


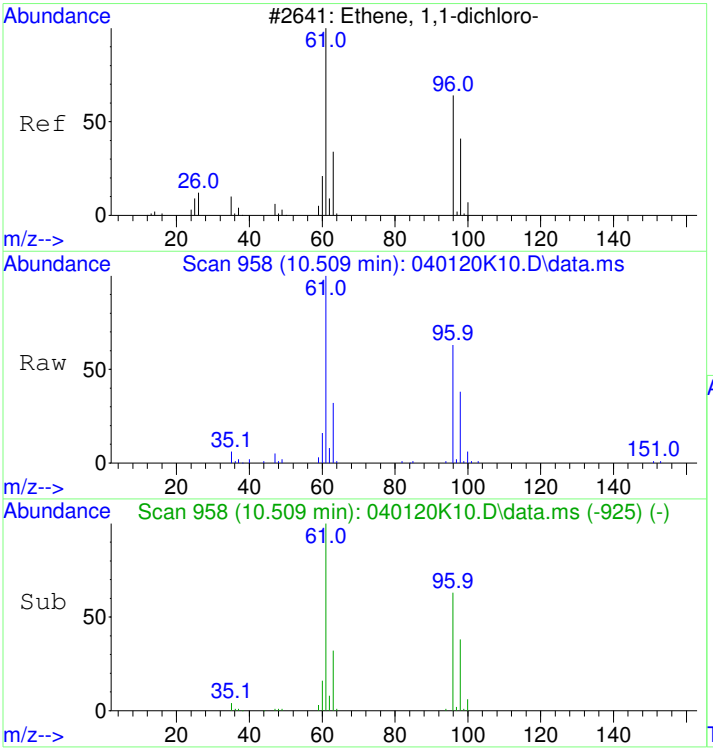


#12
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 9.13 ppbv
RT: 10.382 min Scan# 937
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:151 Resp: 146517

Ion	Ratio	Lower	Upper
151	100		
101	116.6	96.6	136.6
103	75.0	55.0	95.0

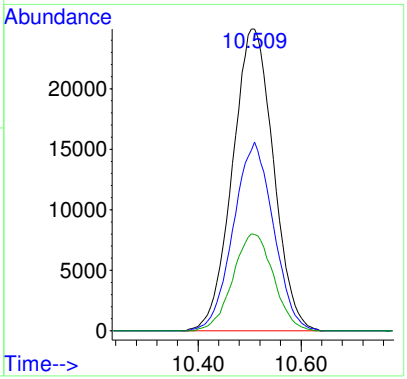


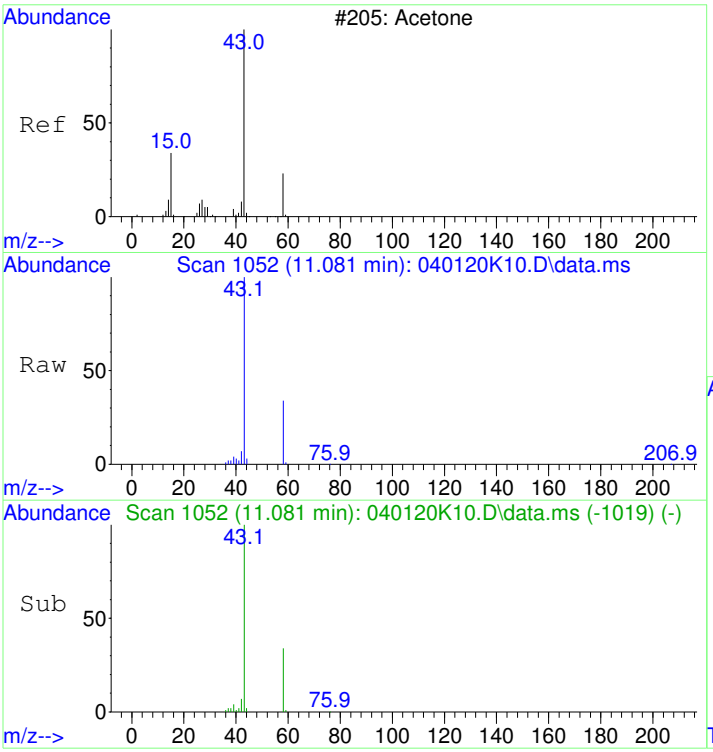


#13
1,1-Dichloroethene
Concen: 9.89 ppbv
RT: 10.509 min Scan# 958
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 61 Resp: 137598

Ion	Ratio	Lower	Upper
61	100		
96	61.2	41.2	81.2
63	31.9	11.9	51.9

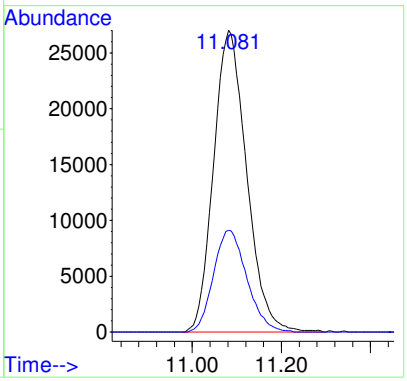


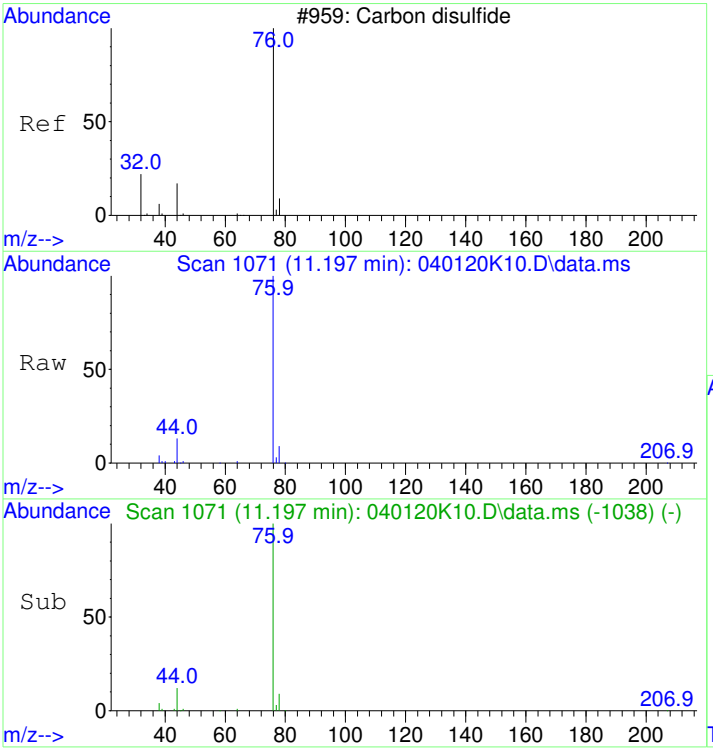


#14
Acetone
Concen: 10.21 ppbv
RT: 11.081 min Scan# 1052
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 43 Resp: 139084

Ion	Ratio	Lower	Upper
43	100		
58	34.0	14.0	54.0

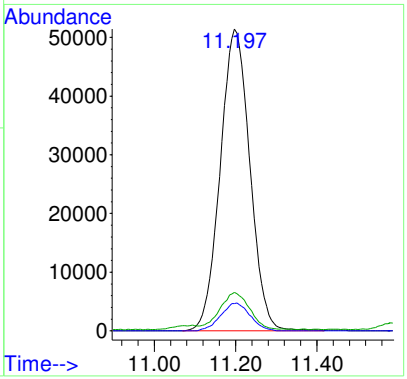


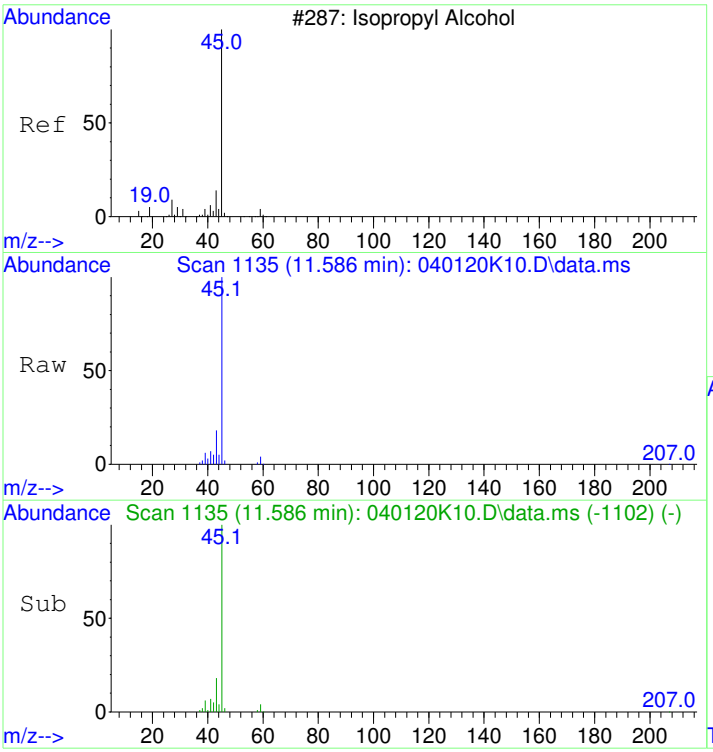


#15
Carbon disulfide
Concen: 10.12 ppbv
RT: 11.197 min Scan# 1071
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 76 Resp: 261015

Ion	Ratio	Lower	Upper
76	100		
78	9.1	0.0	29.1
44	13.0	0.0	32.9

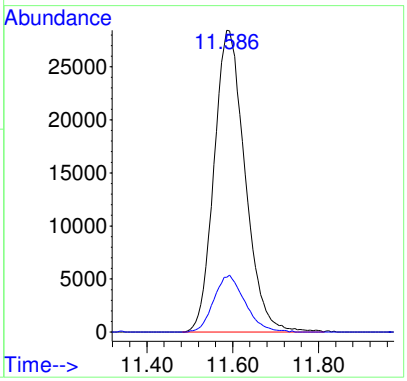


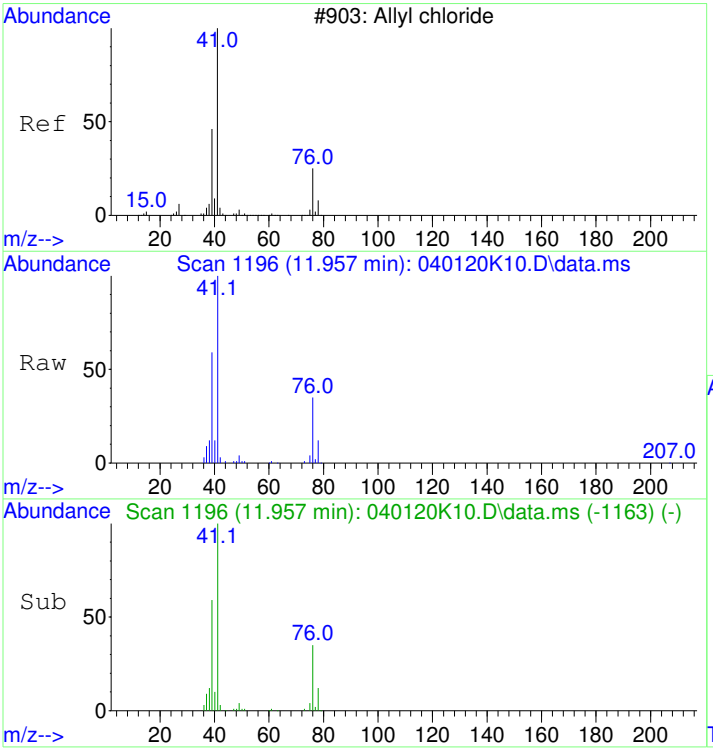


#16
2-Propanol
Concen: 10.79 ppbv
RT: 11.586 min Scan# 1135
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 45 Resp: 142662

Ion	Ratio	Lower	Upper
45	100		
43	19.0	0.0	39.0

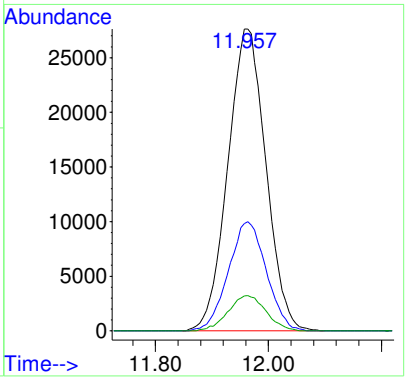


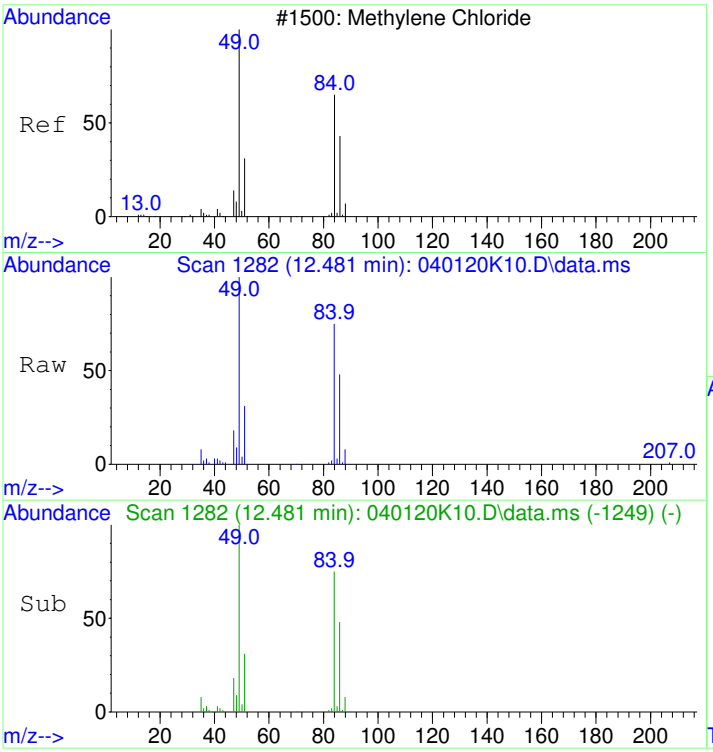


#17
Allyl chloride
Concen: 10.52 ppbv
RT: 11.957 min Scan# 1196
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 41 Resp: 128988

Ion	Ratio	Lower	Upper
41	100		
76	36.0	16.0	56.0
78	11.6	0.0	31.6

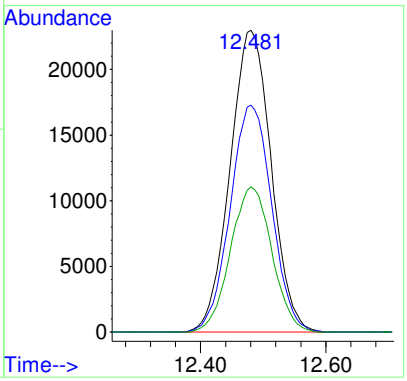


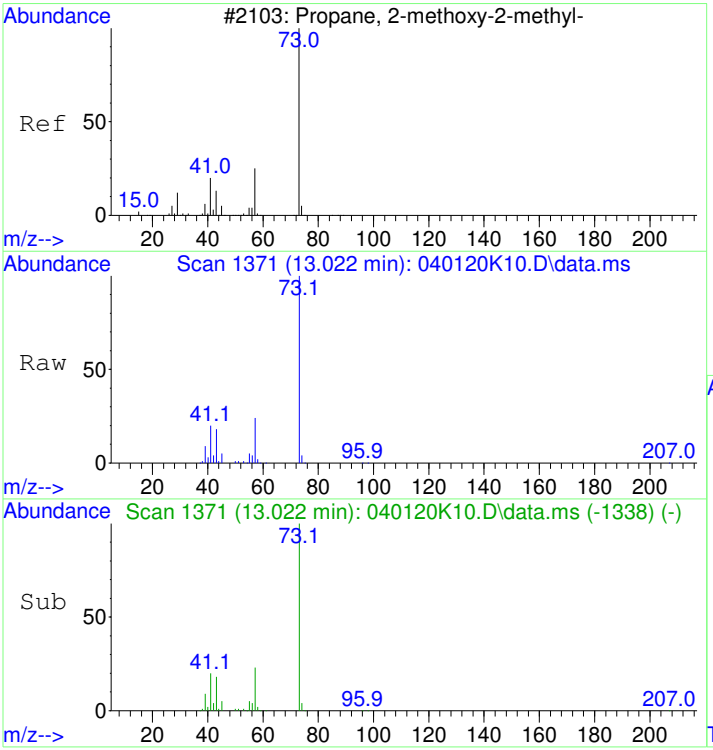


#18
Dichloromethane
Concen: 9.02 ppbv
RT: 12.481 min Scan# 1282
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 49 Resp: 104812

Ion	Ratio	Lower	Upper
49	100		
84	76.1	56.1	96.1
86	48.5	28.5	68.5

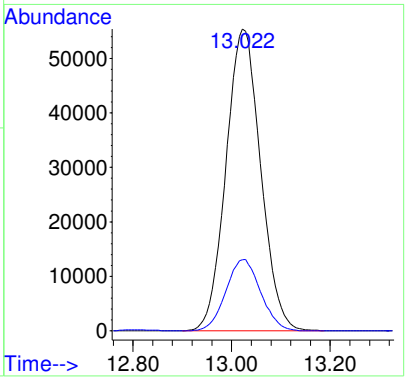


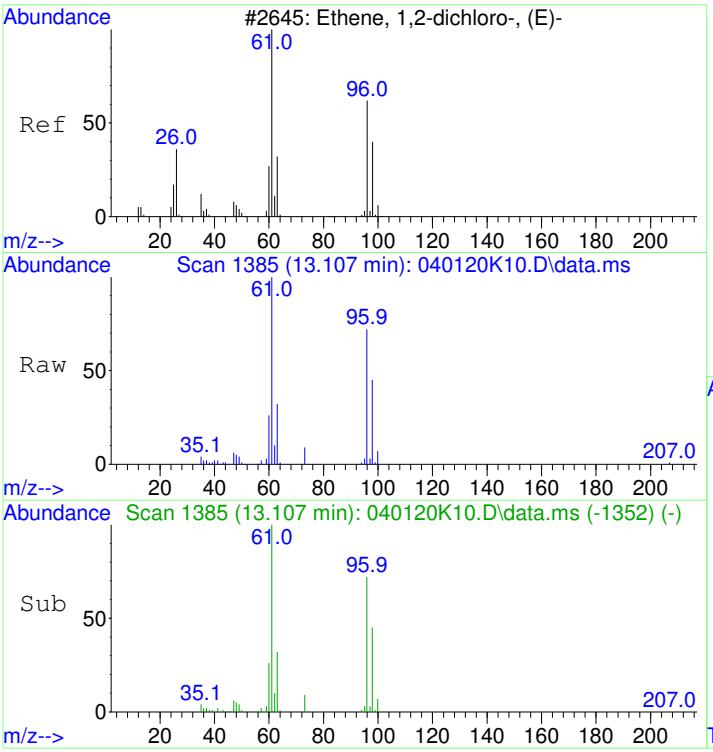


#19
tert-Butyl methyl ether (MTBE)
Concen: 9.91 ppbv
RT: 13.022 min Scan# 1371
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 73 Resp: 270292

Ion	Ratio	Lower	Upper
73	100		
57	23.7	3.7	43.7

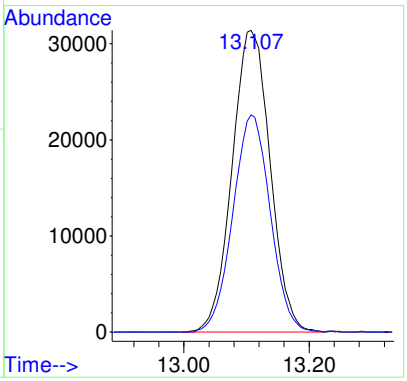


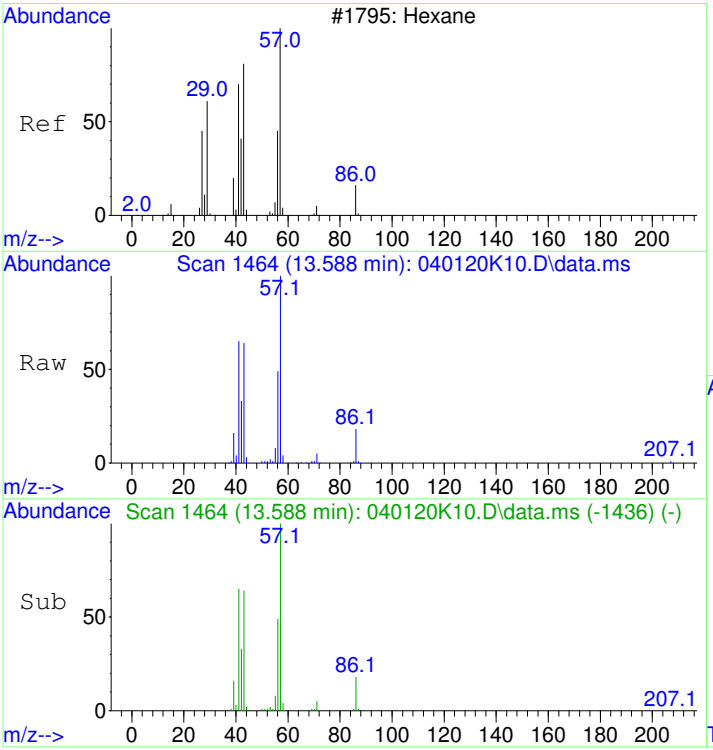


#20
trans-1,2-Dichloroethene
Concen: 10.25 ppbv
RT: 13.107 min Scan# 1385
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 61 Resp: 132599

Ion	Ratio	Lower	Upper
61	100		
96	70.6	50.6	90.6

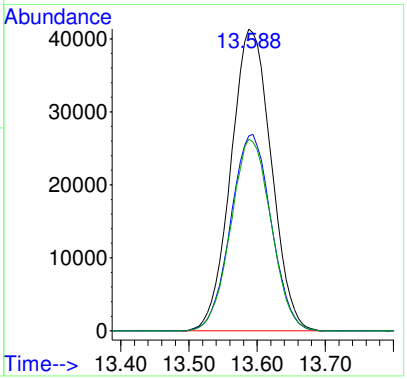


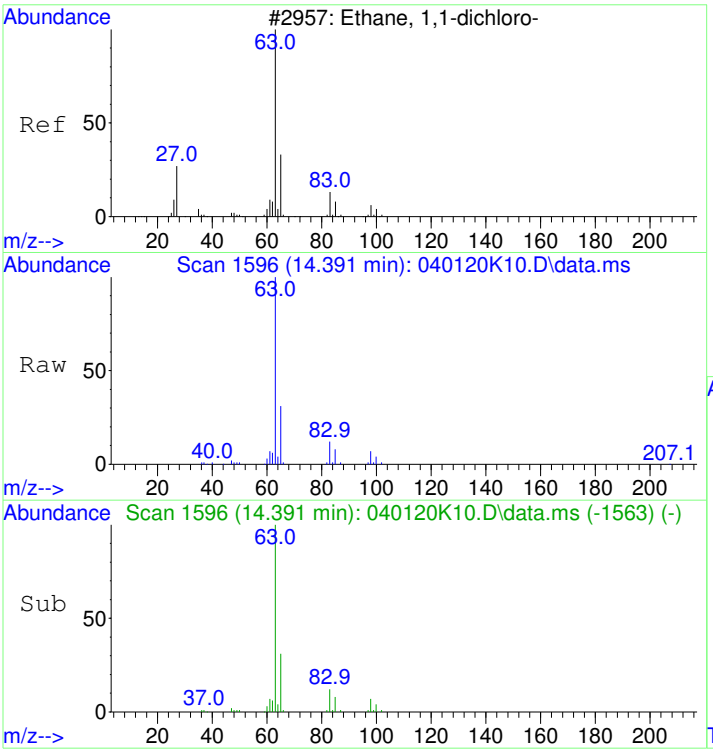


#21
Hexane
Concen: 9.66 ppbv
RT: 13.588 min Scan# 1464
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 57 Resp: 169753

Ion	Ratio	Lower	Upper
57	100		
41	65.4	45.4	85.4
43	63.4	43.4	83.4

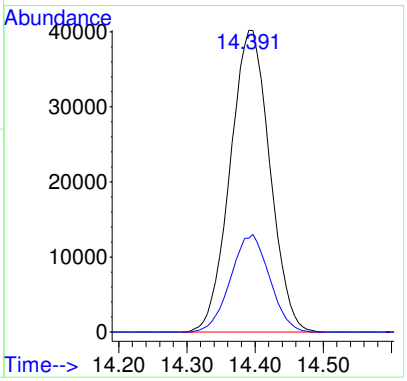


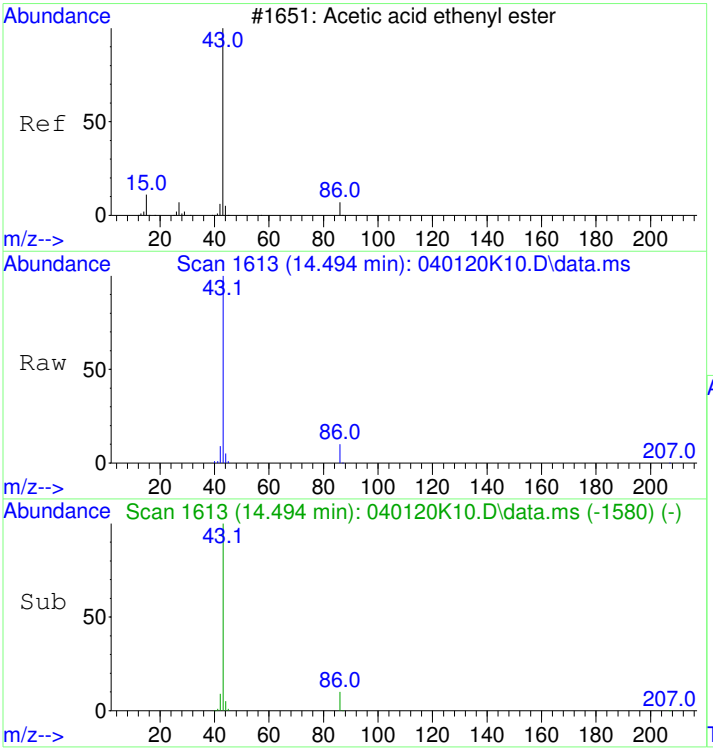


#22
1,1-Dichloroethane
Concen: 9.07 ppbv
RT: 14.391 min Scan# 1596
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 63 Resp: 162135

Ion	Ratio	Lower	Upper
63	100		
65	31.7	11.7	51.7

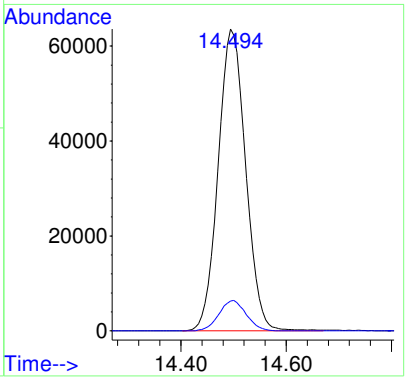


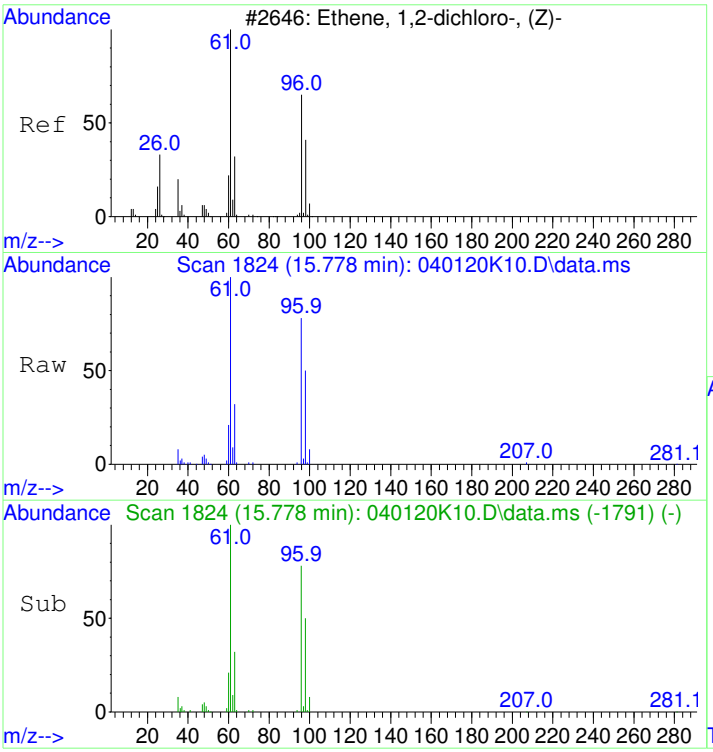


#23
Vinyl acetate
Concen: 10.82 ppbv
RT: 14.494 min Scan# 1613
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 43 Resp: 230577

Ion	Ratio	Lower	Upper
43	100		
86	10.0	0.0	30.0

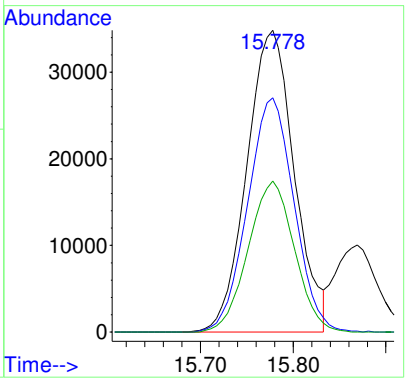


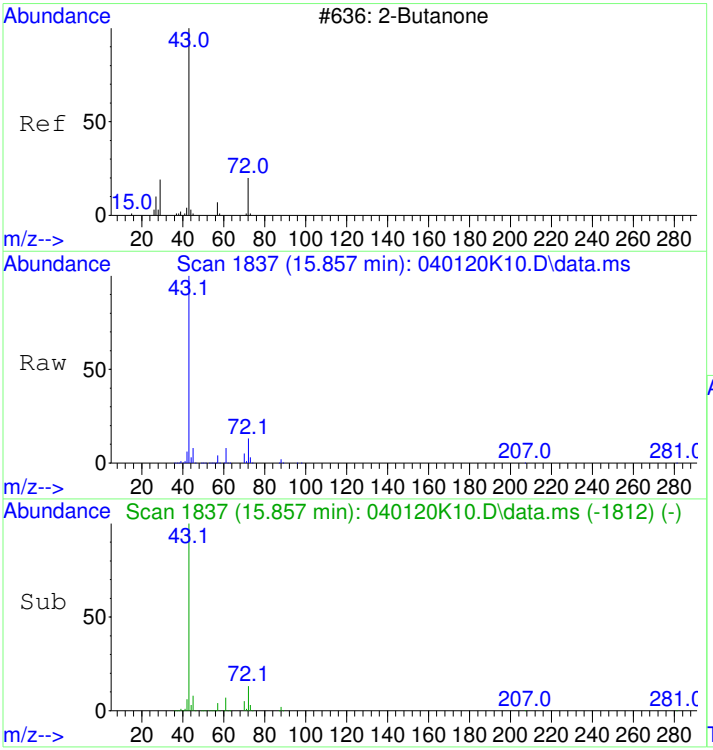


#24
cis-1,2-Dichloroethene
Concen: 9.68 ppbv
RT: 15.778 min Scan# 1824
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 61 Resp: 123887

Ion	Ratio	Lower	Upper
61	100		
96	75.7	55.7	95.7
98	0.0	0.0	20.0

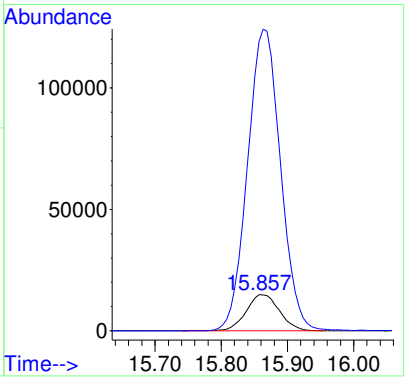


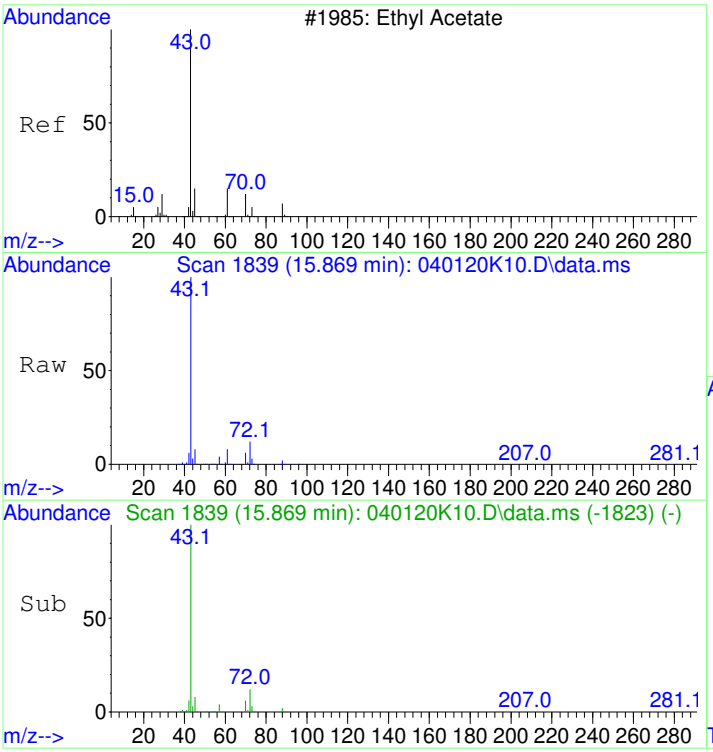


#25
2-Butanone (MEK)
Concen: 9.91 ppbv
RT: 15.857 min Scan# 1837
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 72 Resp: 52408

Ion	Ratio	Lower	Upper
72	100		
43	822.3	812.5	832.5

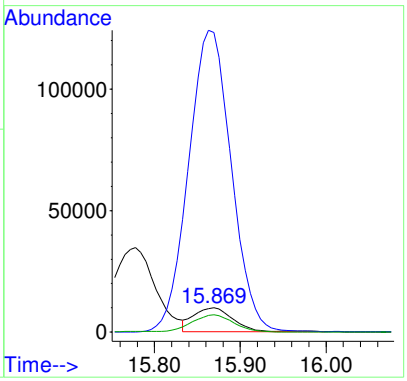


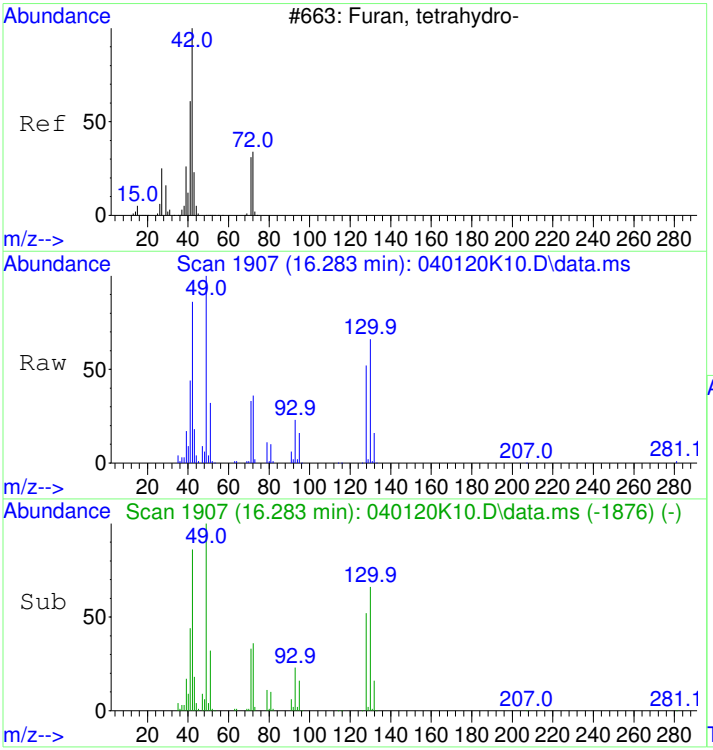


#26
Ethyl acetate
Concen: 9.69 ppbv
RT: 15.869 min Scan# 1839
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 61 Resp: 31318

Ion	Ratio	Lower	Upper
61	100		
43	1368.3	1358.3	1378.3
70	76.7	66.7	86.7

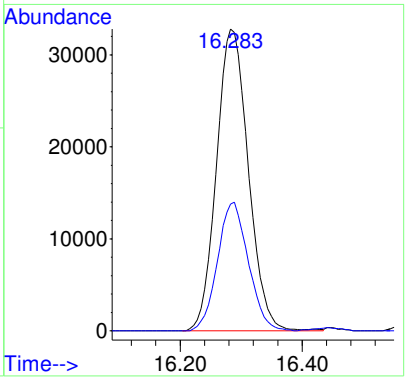


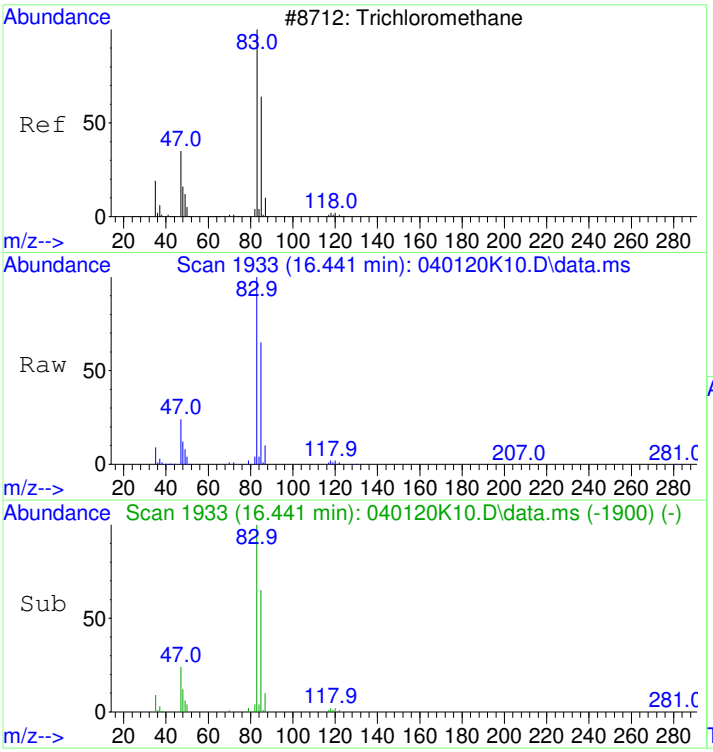


#27
Tetrahydrofuran
Concen: 9.81 ppbv
RT: 16.283 min Scan# 1907
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 42 Resp: 119012

Ion	Ratio	Lower	Upper
42	100		
72	41.2	21.2	61.2

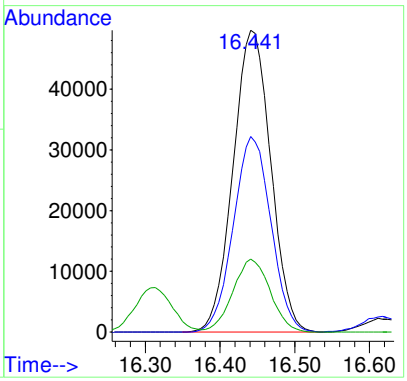


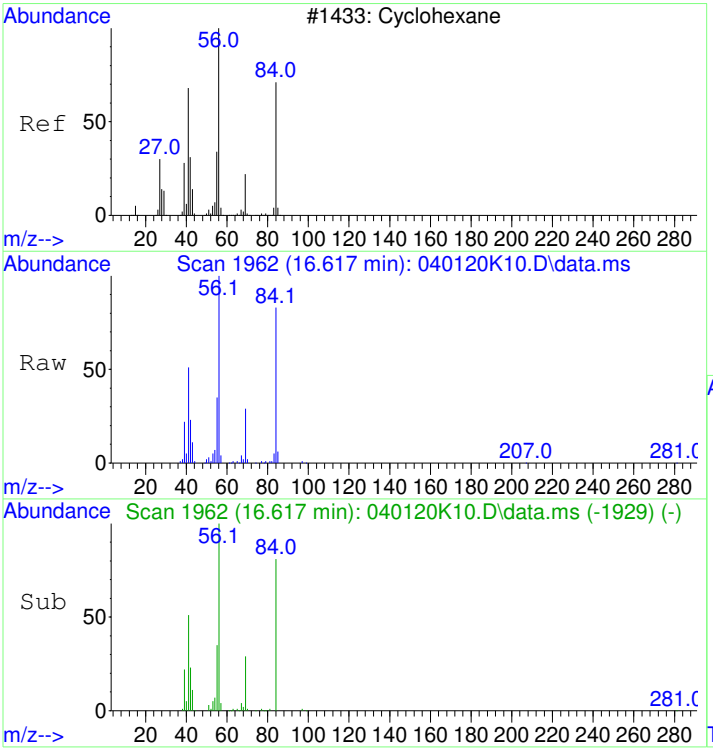


#28
Chloroform
Concen: 9.82 ppbv
RT: 16.441 min Scan# 1933
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 83 Resp: 174203

Ion	Ratio	Lower	Upper
83	100		
85	64.6	44.6	84.6
47	23.0	2.9	42.9

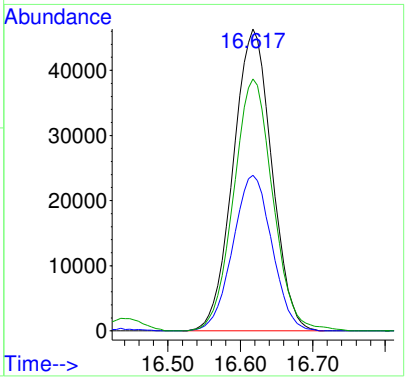


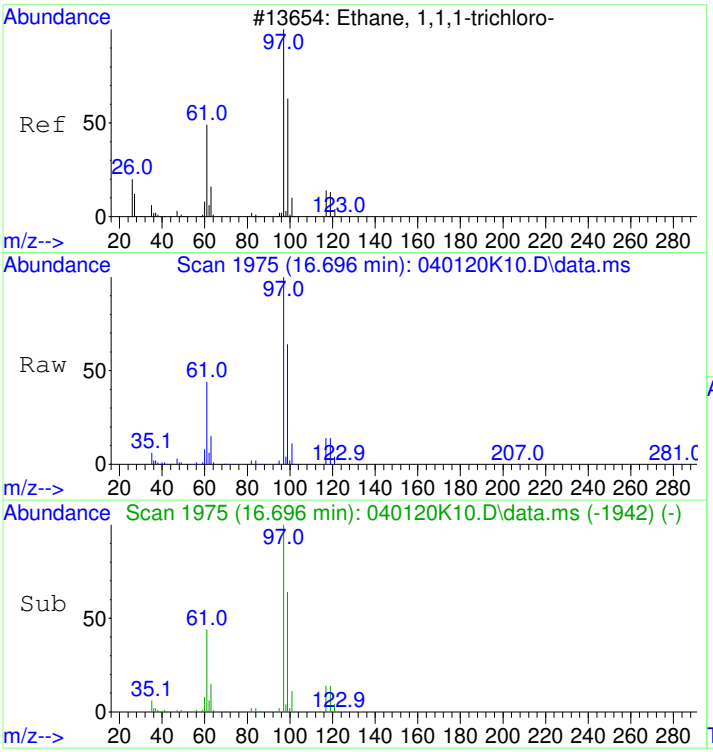


#29
Cyclohexane
Concen: 9.76 ppbv
RT: 16.617 min Scan# 1962
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 56 Resp: 171808

Ion	Ratio	Lower	Upper
56	100		
41	52.2	32.2	72.2
84	84.7	64.7	104.7

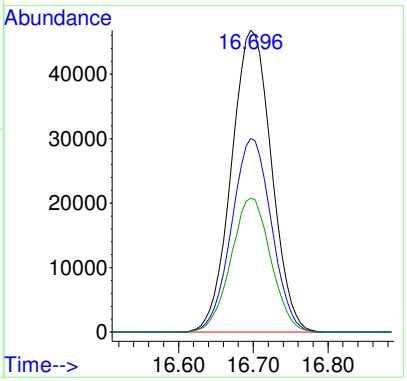


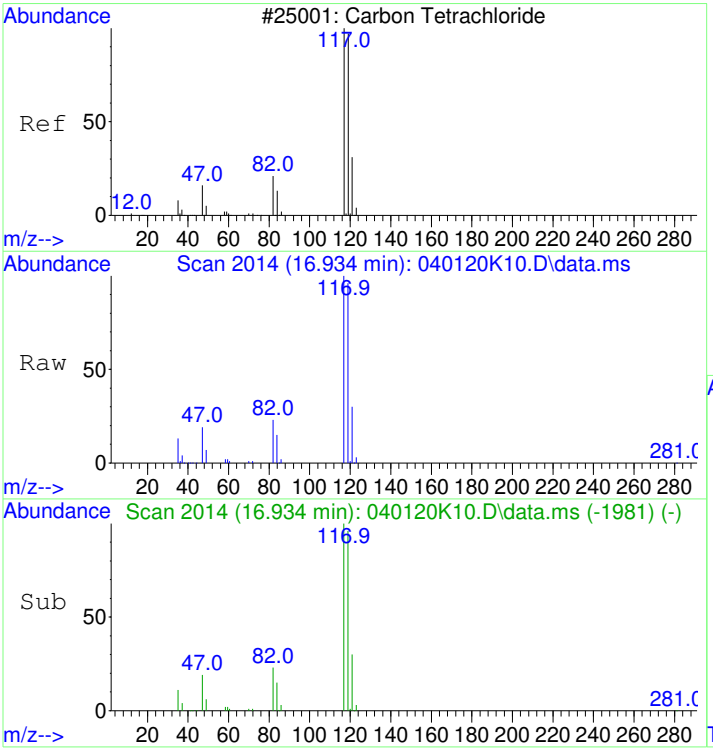


#30
1,1,1-Trichloroethane
Concen: 9.94 ppbv
RT: 16.696 min Scan# 1975
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 97 Resp: 174031

Ion	Ratio	Lower	Upper
97	100		
99	63.9	43.9	83.9
61	44.2	24.2	64.2

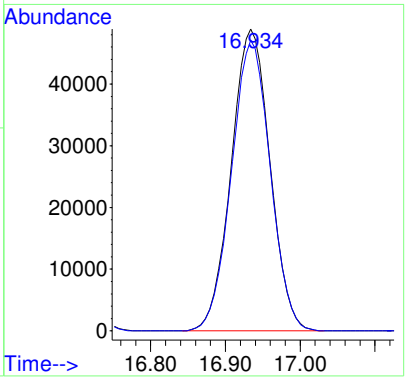


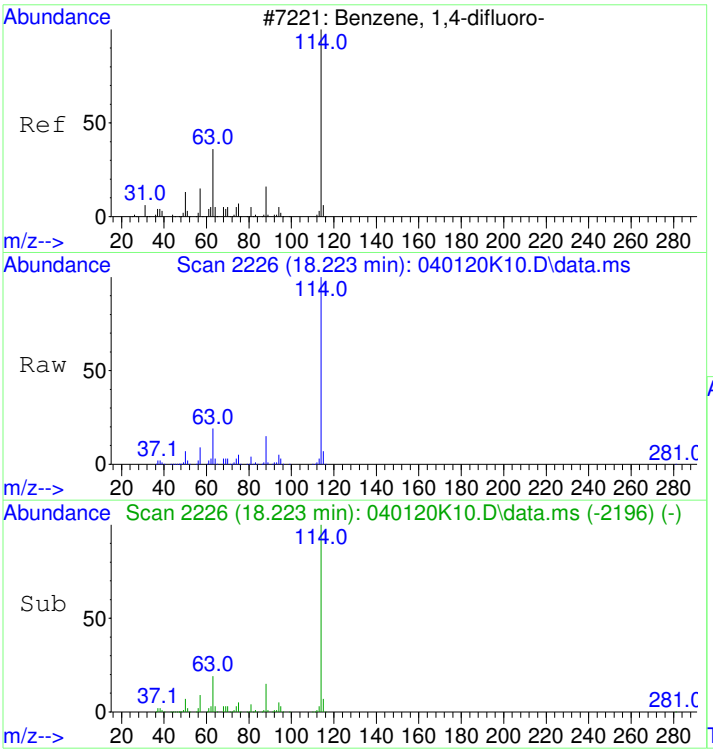


#31
Carbon tetrachloride
Concen: 9.81 ppbv
RT: 16.934 min Scan# 2014
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:117 Resp: 175935

Ion	Ratio	Lower	Upper
117	100		
119	96.2	76.2	116.2

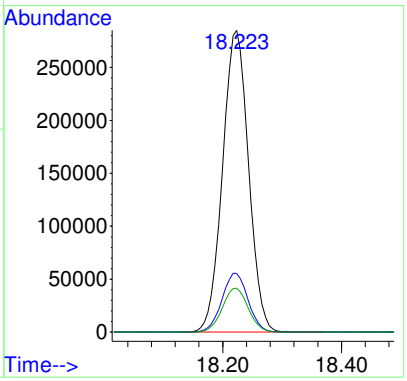


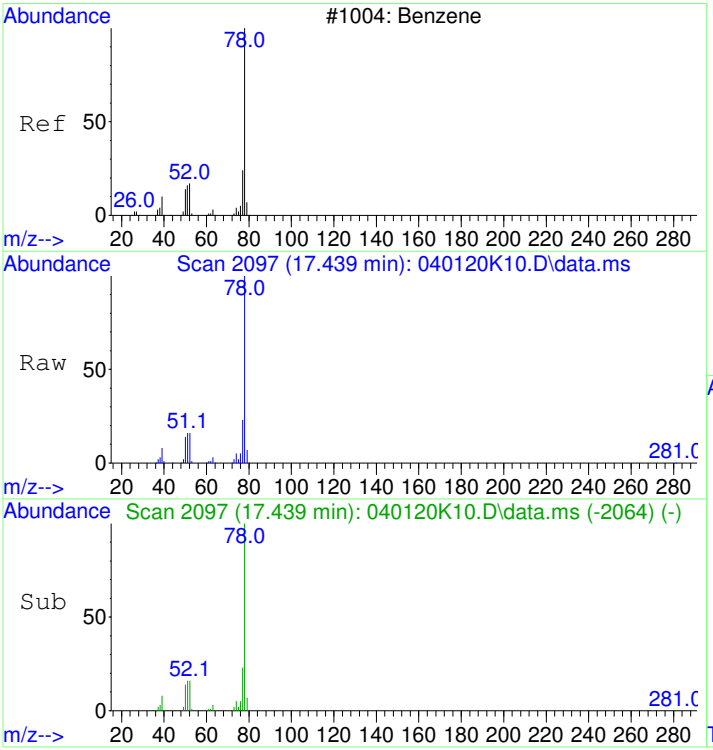


#32
1,4-DIFLUOROBENZENE
Concen: 19.60 ppbv
RT: 18.223 min Scan# 2226
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:114 Resp: 865447

Ion	Ratio	Lower	Upper
114	100		
63	19.6	0.0	39.6
88	14.5	0.0	34.5

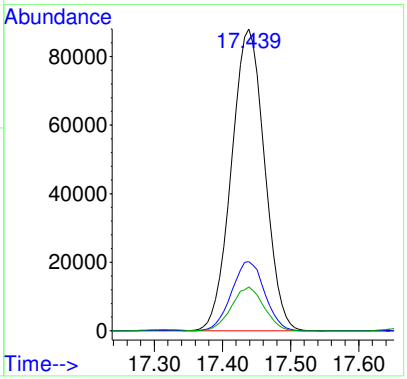


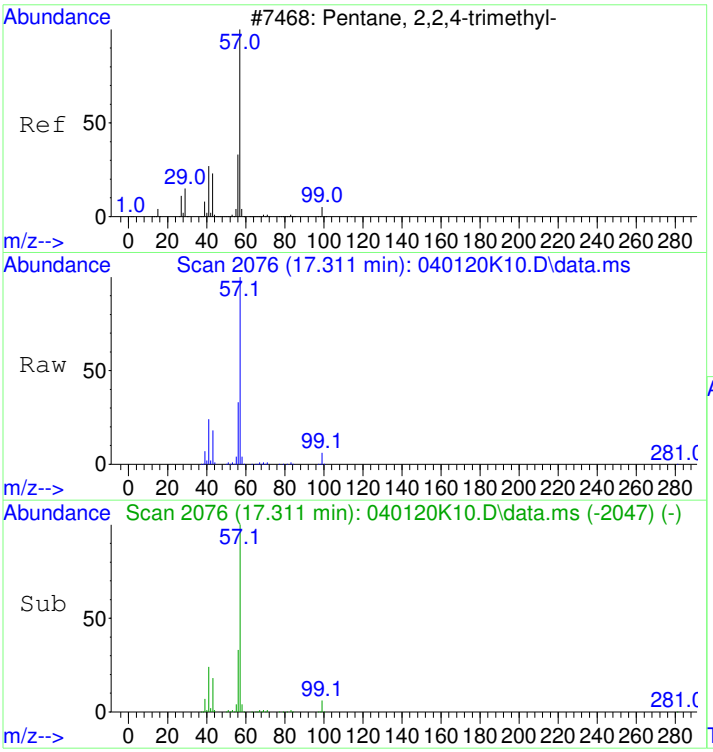


#33
Benzene
Concen: 10.15 ppbv
RT: 17.439 min Scan# 2097
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 78 Resp: 296759

Ion	Ratio	Lower	Upper
78	100		
77	23.0	3.0	43.0
50	14.0	0.0	34.0

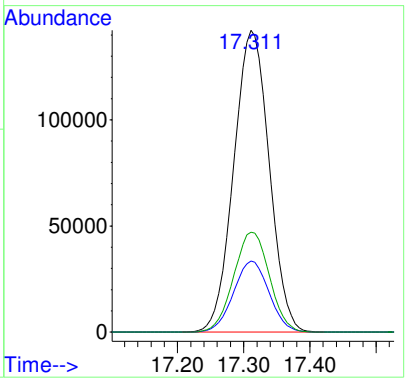


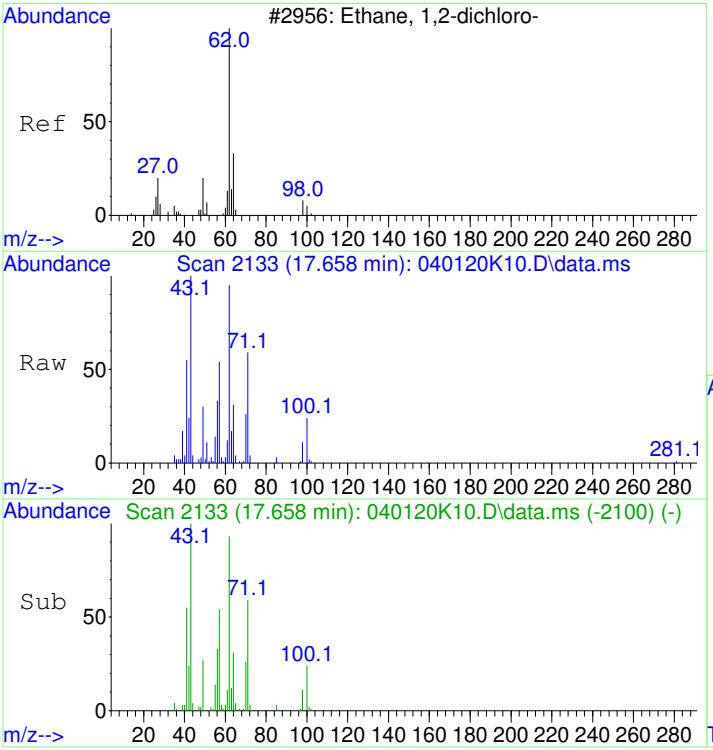


#34
2,2,4-Trimethylpentane
Concen: 10.36 ppbv
RT: 17.311 min Scan# 2076
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 57 Resp: 528496

Ion	Ratio	Lower	Upper
57	100		
41	23.7	3.7	43.7
56	33.5	13.5	53.5

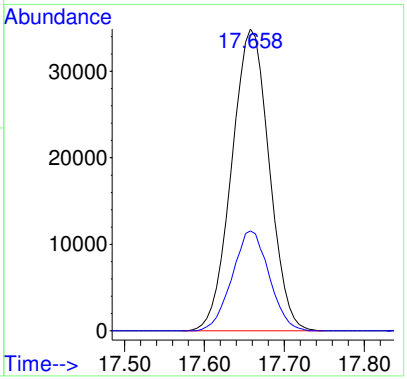


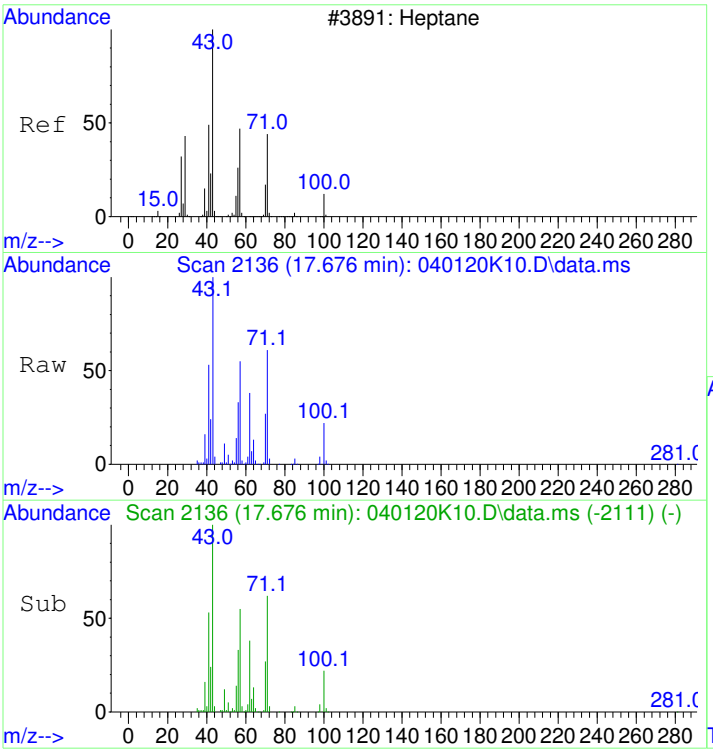


#35
1,2-Dichloroethane
Concen: 10.20 ppbv
RT: 17.658 min Scan# 2133
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 62 Resp: 113676

Ion	Ratio	Lower	Upper
62	100		
64	32.7	12.7	52.7

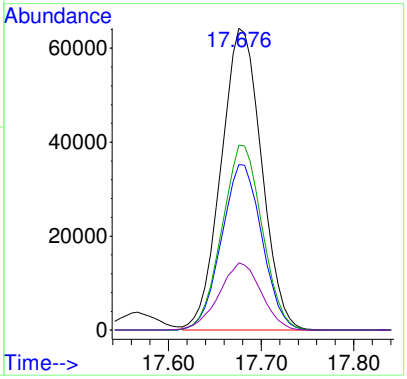


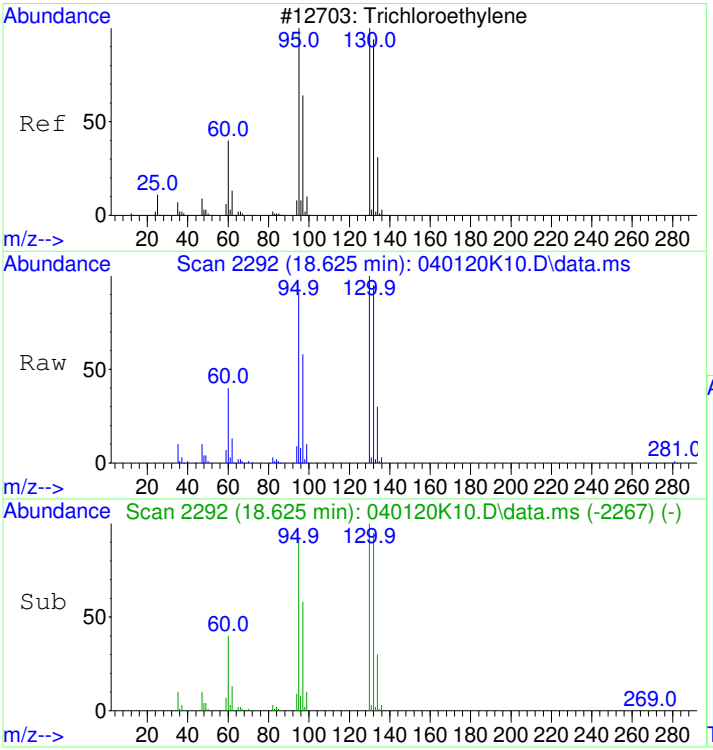


#36
Heptane
Concen: 10.63 ppbv
RT: 17.676 min Scan# 2136
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 43 Resp: 194869

Ion	Ratio	Lower	Upper
43	100		
57	54.9	34.9	74.9
71	60.9	40.9	80.9
100	23.3	3.3	43.3

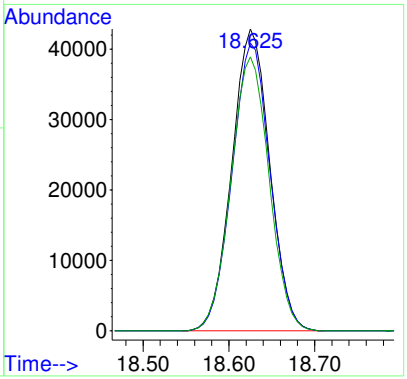


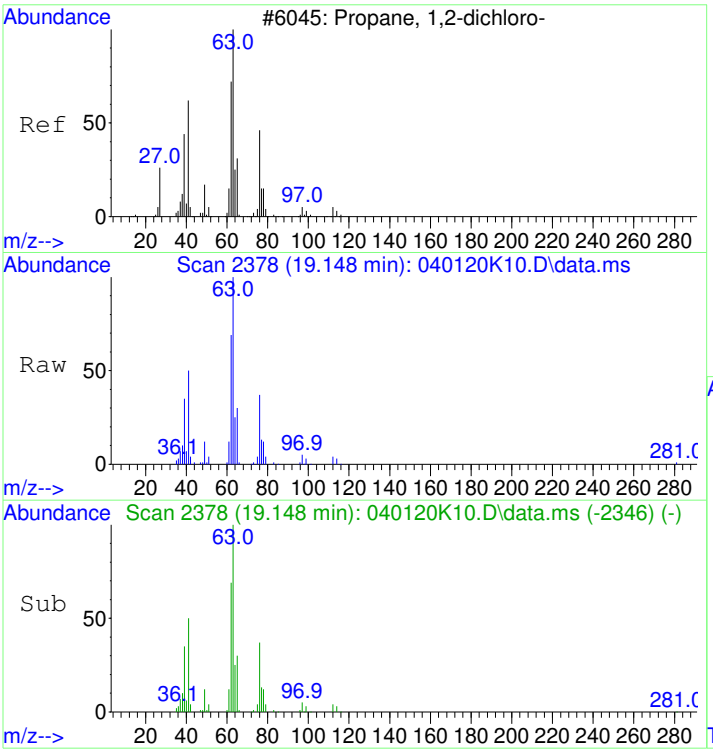


#37
Trichloroethene
Concen: 10.62 ppbv
RT: 18.625 min Scan# 2292
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:130 Resp: 131721

Ion	Ratio	Lower	Upper
130	100		
132	95.5	75.5	115.5
95	91.3	71.3	111.3

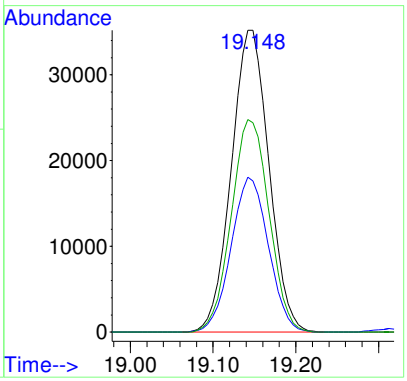


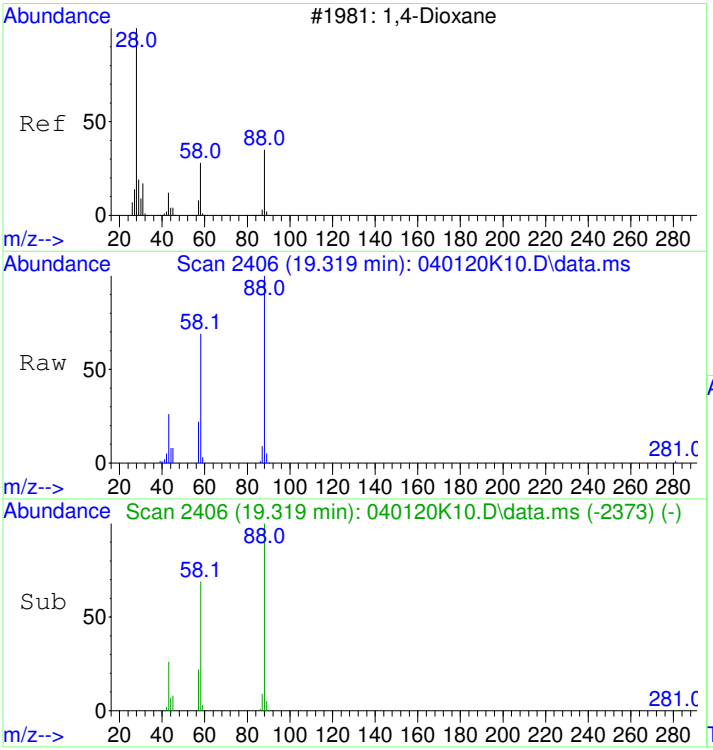


#38
1,2-Dichloropropane
Concen: 10.23 ppbv
RT: 19.148 min Scan# 2378
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 63 Resp: 111164

Ion	Ratio	Lower	Upper
63	100		
41	51.0	31.0	71.0
62	70.7	50.7	90.7

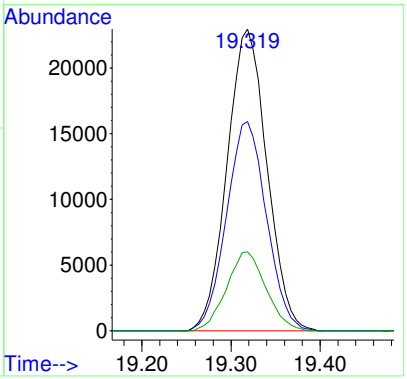


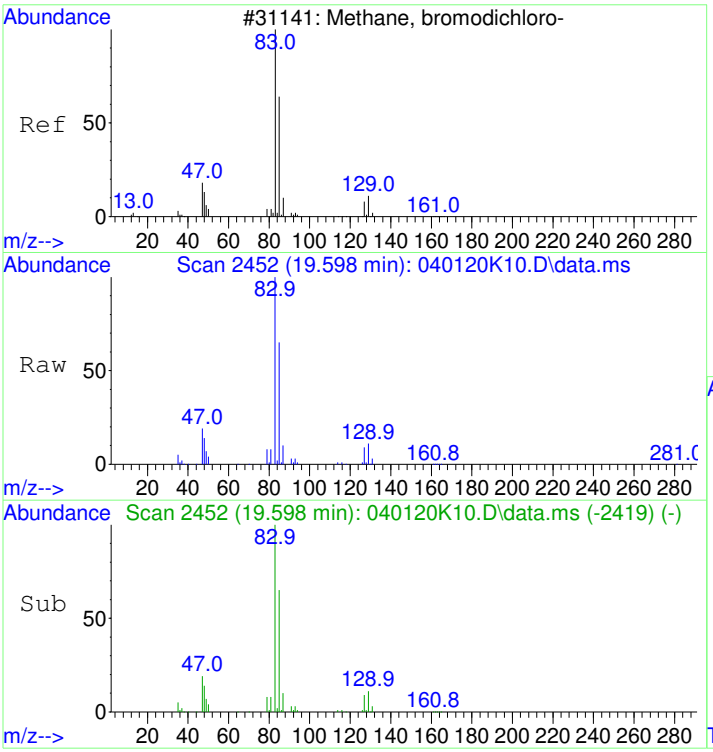


#39
1,4-Dioxane
Concen: 10.33 ppbv
RT: 19.319 min Scan# 2406
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 88 Resp: 71270

Ion	Ratio	Lower	Upper
88	100		
58	69.5	49.5	89.5
43	25.9	5.9	45.9

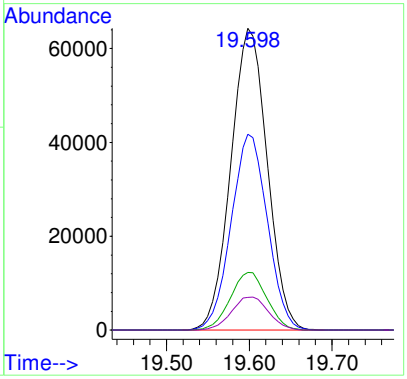


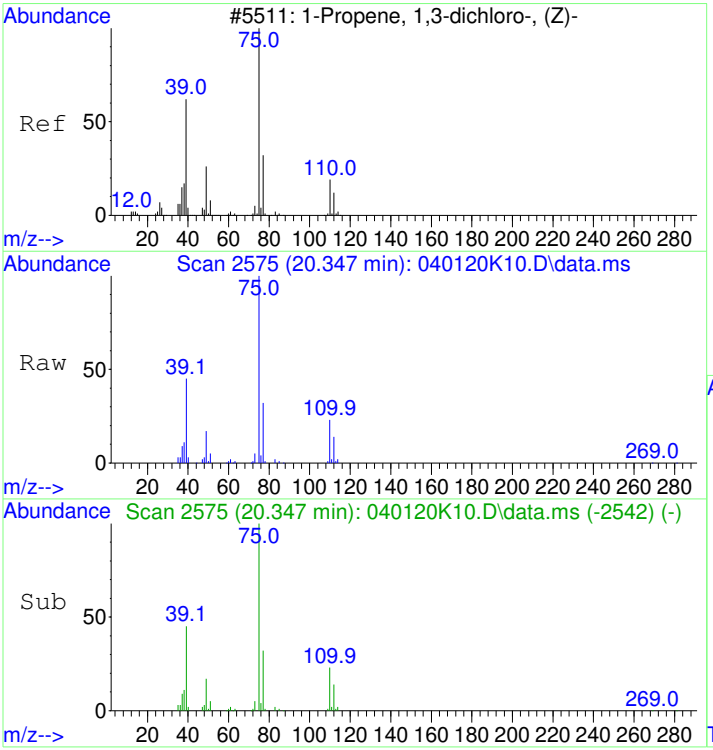


#40
Bromodichloromethane
Concen: 10.51 ppbv
RT: 19.598 min Scan# 2452
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 83 Resp: 196791

Ion	Ratio	Lower	Upper
83	100		
85	64.5	44.5	84.5
47	19.2	0.0	39.2
129	11.2	0.0	31.2

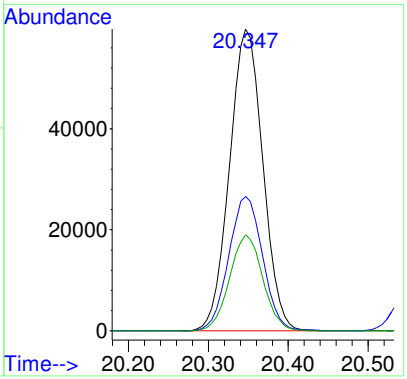


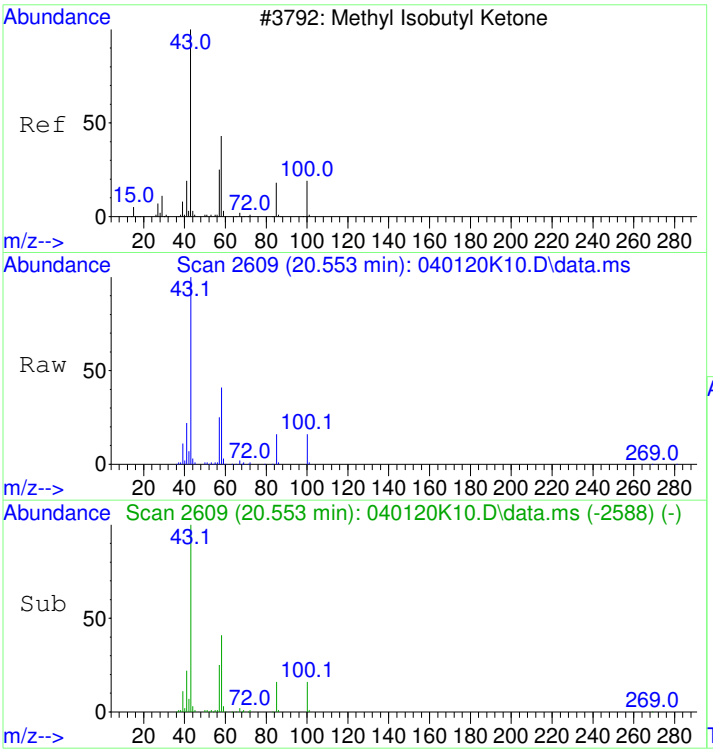


#41
cis-1,3-Dichloropropene
Concen: 10.34 ppbv
RT: 20.347 min Scan# 2575
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 75 Resp: 173129

Ion	Ratio	Lower	Upper
75	100		
39	45.3	25.3	65.3
77	31.6	11.6	51.6

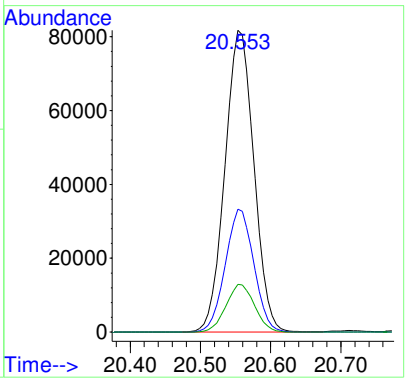


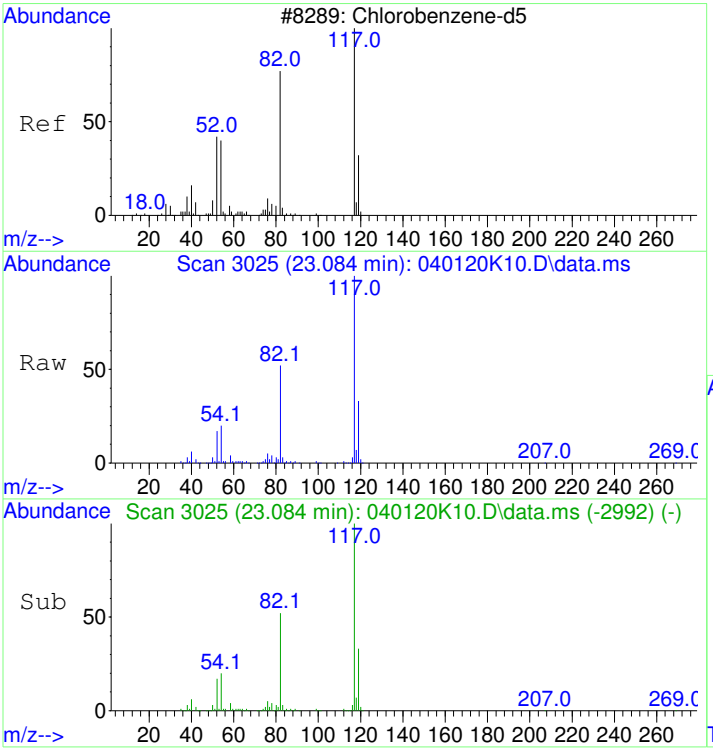


#42
4-Methyl-2-pentanone (MIBK)
Concen: 11.02 ppbv
RT: 20.553 min Scan# 2609
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 43 Resp: 234938

Ion	Ratio	Lower	Upper
43	100		
58	40.1	20.1	60.1
100	15.5	0.0	35.5

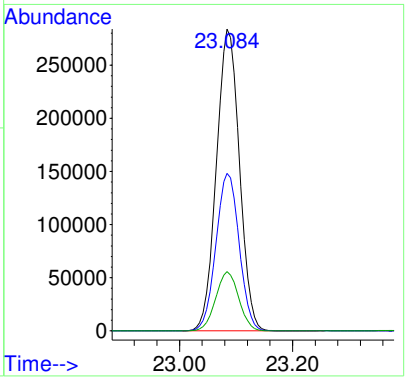


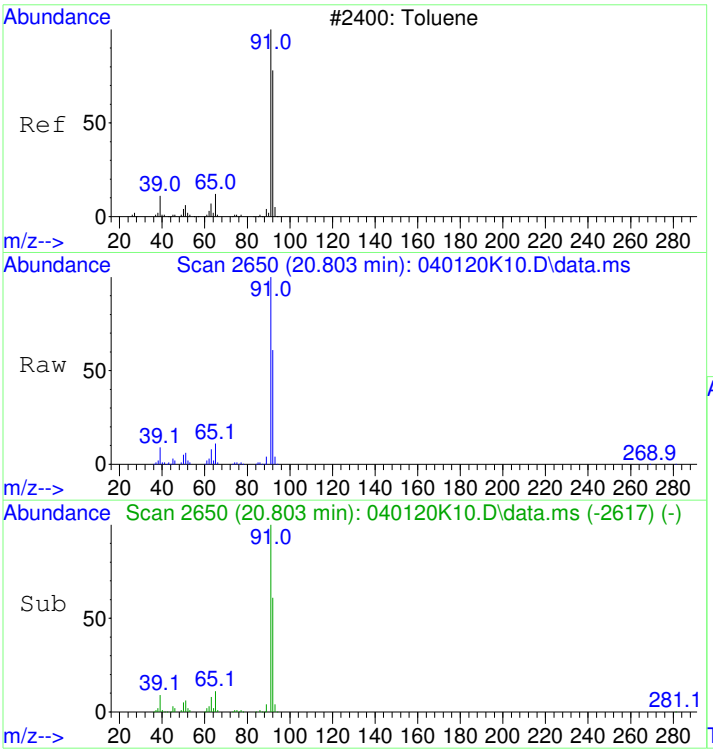


#43
CHLOROBENZENE-d5
Concen: 19.60 ppbv
RT: 23.084 min Scan# 3025
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:117 Resp: 803106

Ion	Ratio	Lower	Upper
117	100		
82	52.5	32.5	72.5
54	19.6	0.0	39.6

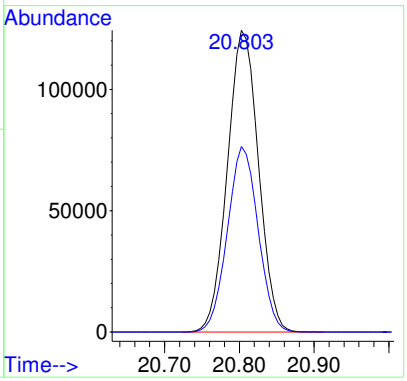


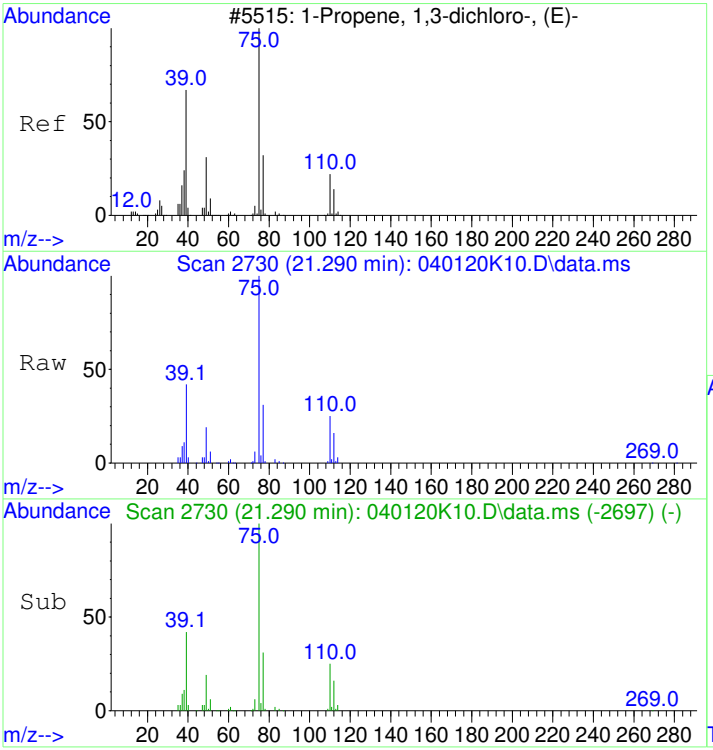


#44
Toluene
Concen: 10.02 ppbv
RT: 20.803 min Scan# 2650
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 91 Resp: 359510

Ion	Ratio	Lower	Upper
91	100		
92	60.7	40.7	80.7

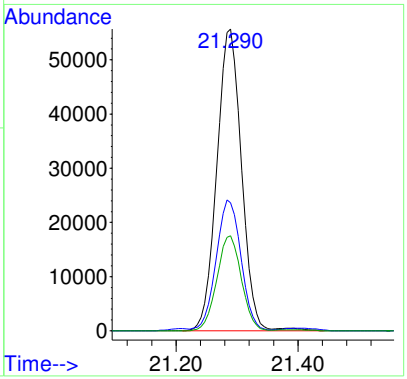


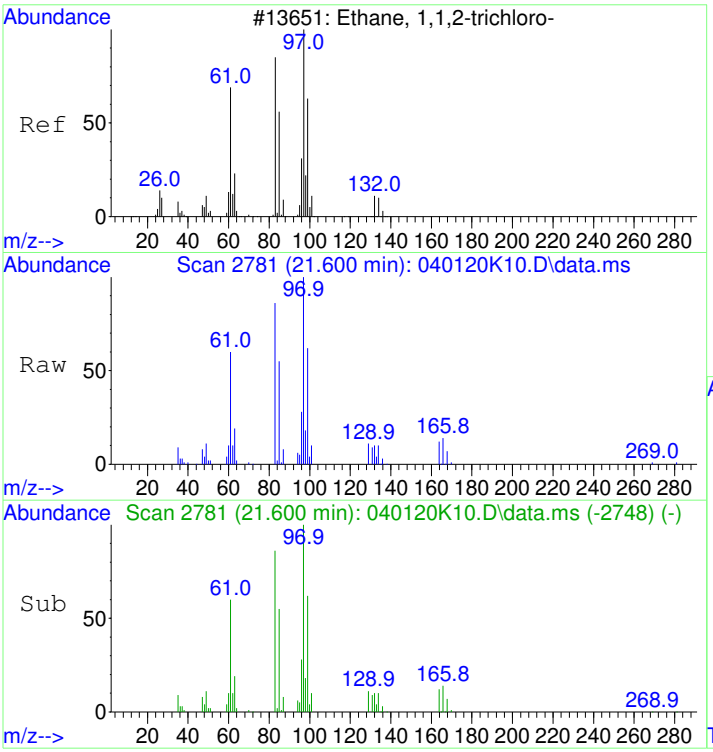


#45
trans-1,3-Dichloropropene
Concen: 9.82 ppbv
RT: 21.290 min Scan# 2730
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 75 Resp: 156760

Ion	Ratio	Lower	Upper
75	100		
39	45.0	25.0	65.0
77	31.7	11.7	51.7

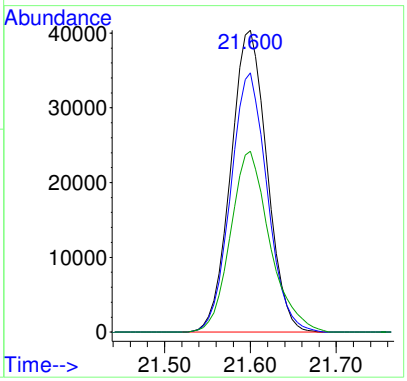


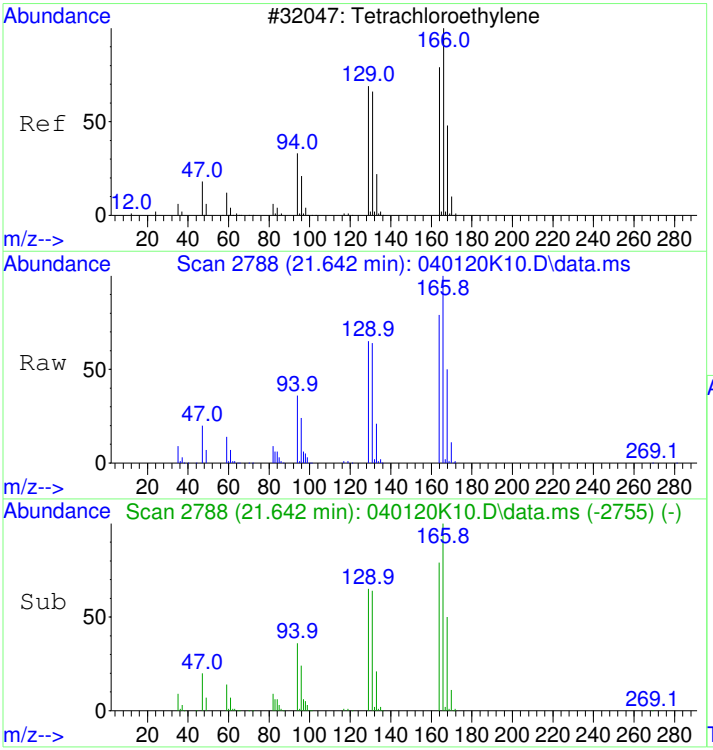


#46
1,1,2-Trichloroethane
Concen: 10.09 ppbv
RT: 21.600 min Scan# 2781
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 97 Resp: 118349

Ion	Ratio	Lower	Upper
97	100		
83	86.9	66.9	106.9
61	65.0	45.0	85.0

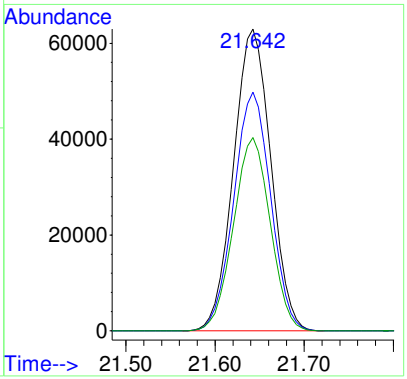


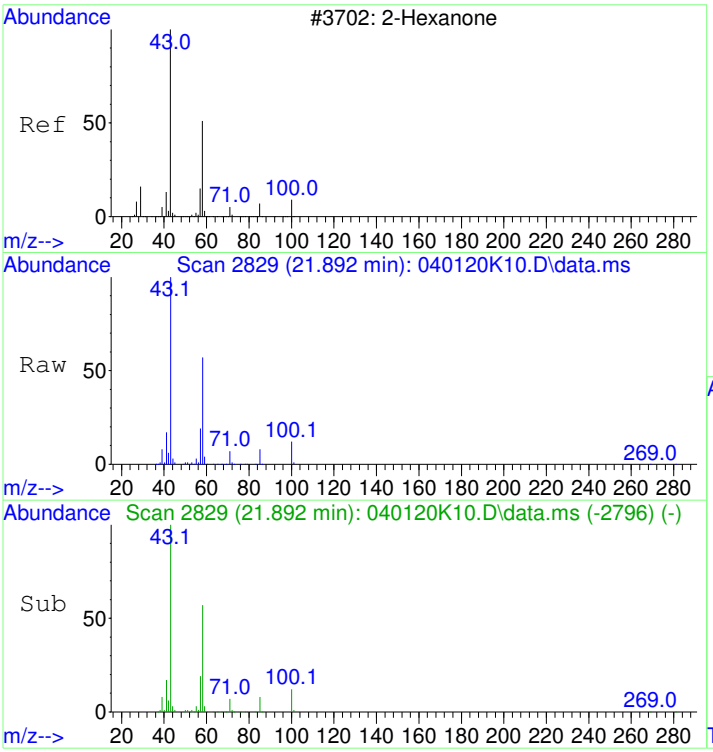


#47
Tetrachloroethene
Concen: 9.90 ppbv
RT: 21.642 min Scan# 2788
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:166 Resp: 182553

Ion	Ratio	Lower	Upper
166	100		
164	78.4	58.4	98.4
131	63.1	43.1	83.1

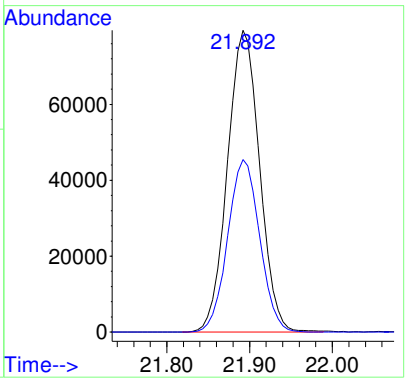


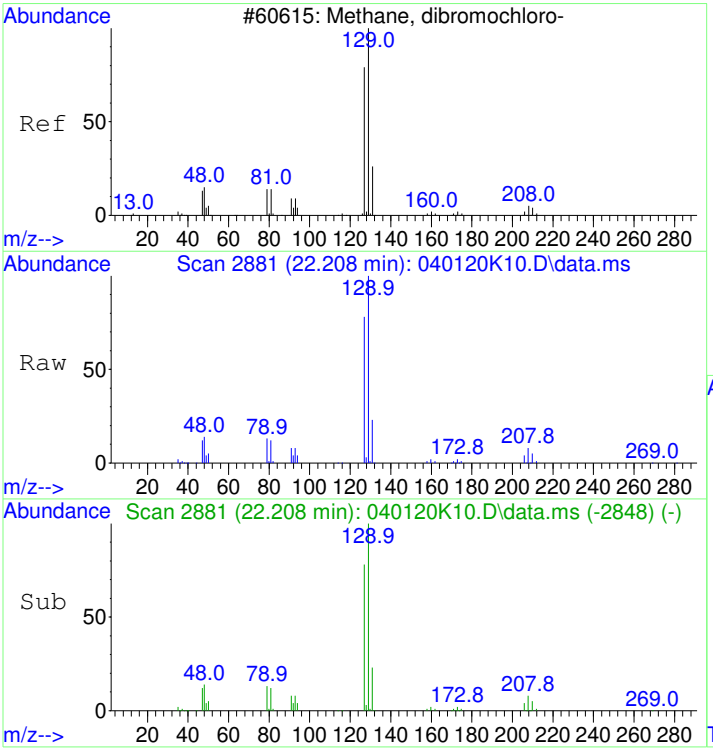


#48
2-Hexanone
Concen: 10.74 ppbv
RT: 21.892 min Scan# 2829
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 43 Resp: 214775

Ion	Ratio	Lower	Upper
43	100		
58	56.8	36.8	76.8

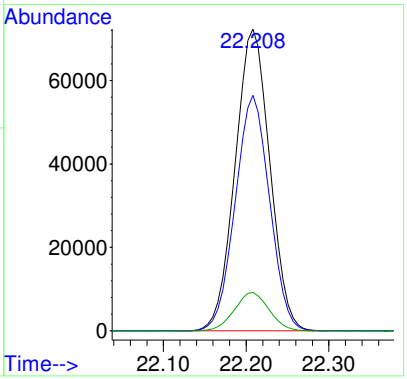


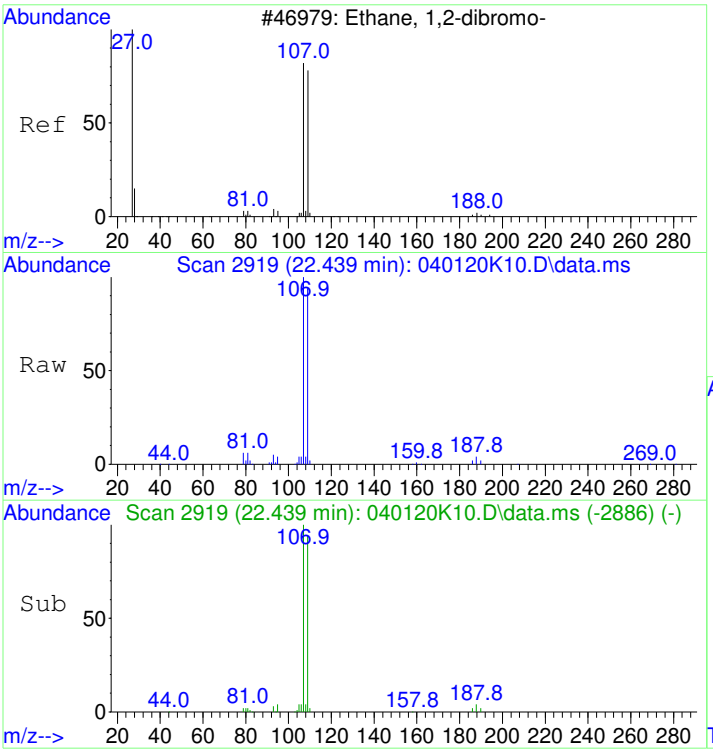


#49
Chlorodibromomethane
Concen: 10.91 ppbv
RT: 22.208 min Scan# 2881
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:129 Resp: 211013

Ion	Ratio	Lower	Upper
129	100		
127	77.2	57.2	97.2
79	12.8	0.0	32.8

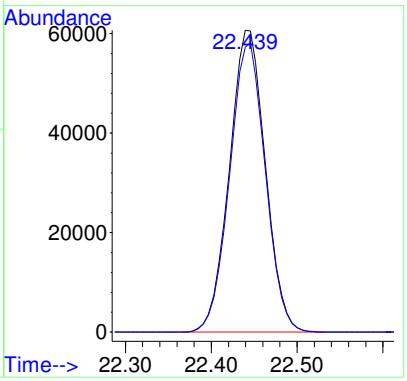


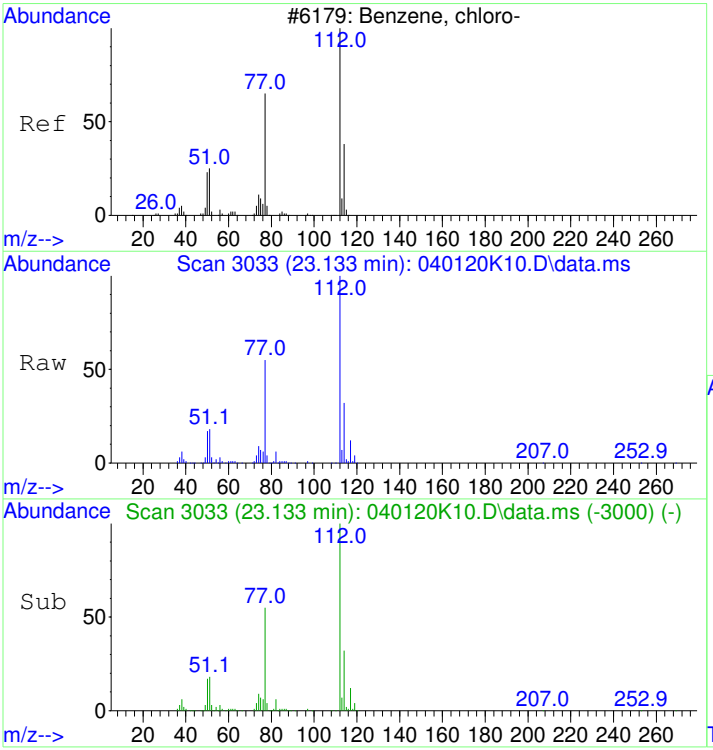


#50
1,2-Dibromoethane (EDB)
Concen: 10.27 ppbv
RT: 22.439 min Scan# 2919
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:107 Resp: 176732

Ion	Ratio	Lower	Upper
107	100		
109	95.1	75.1	115.1

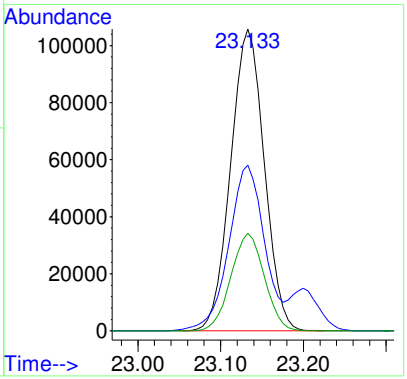


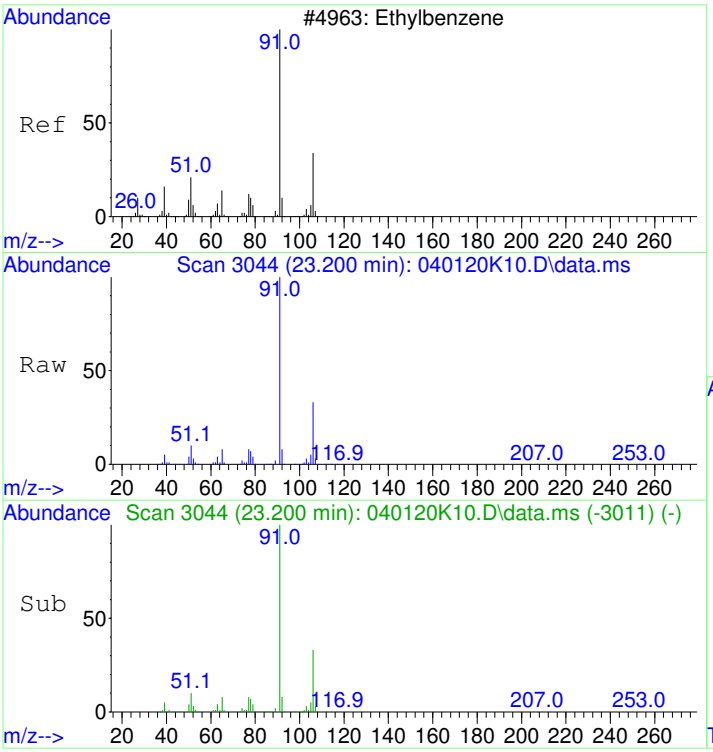


#51
Chlorobenzene
Concen: 10.12 ppbv
RT: 23.133 min Scan# 3033
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:112 Resp: 298702

Ion	Ratio	Lower	Upper
112	100		
77	70.5	50.5	90.5
114	32.1	12.1	52.1

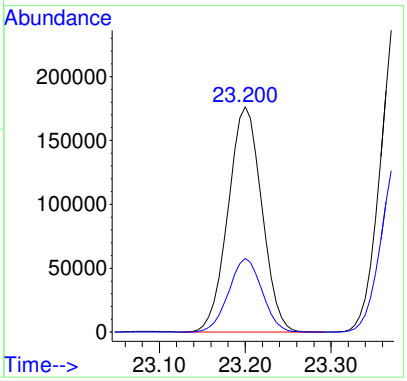


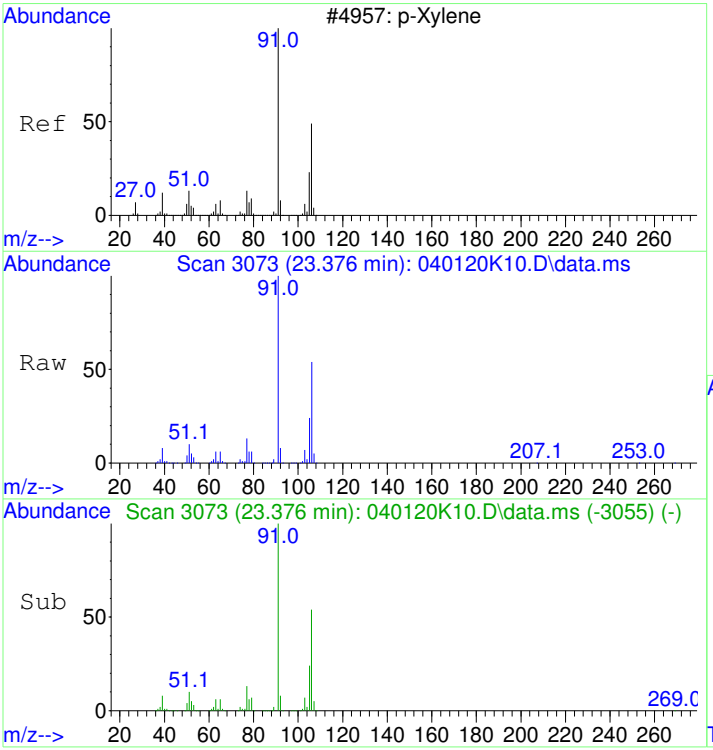


#52
Ethylbenzene
Concen: 10.26 ppbv
RT: 23.200 min Scan# 3044
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 91 Resp: 480770

Ion	Ratio	Lower	Upper
91	100		
106	32.4	12.4	52.4

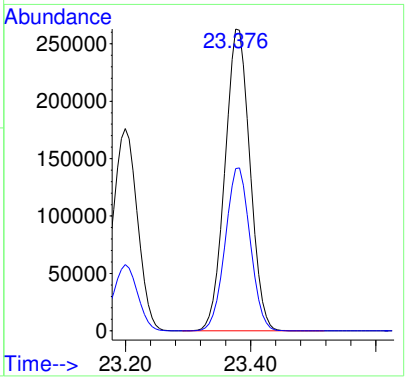


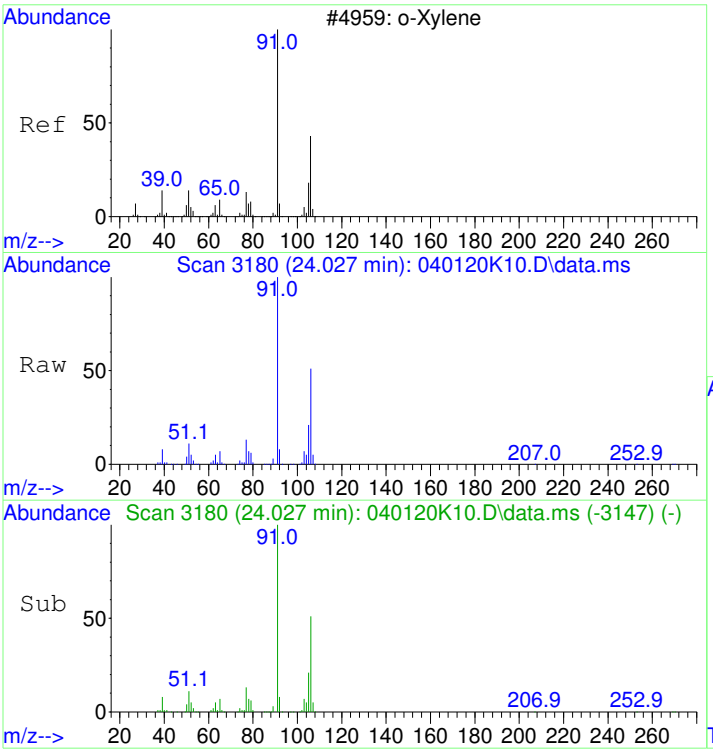


#53
m&p-Xylene
Concen: 20.59 ppbv
RT: 23.376 min Scan# 3073
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 91 Resp: 731542

Ion	Ratio	Lower	Upper
91	100		
106	54.0	34.0	74.0

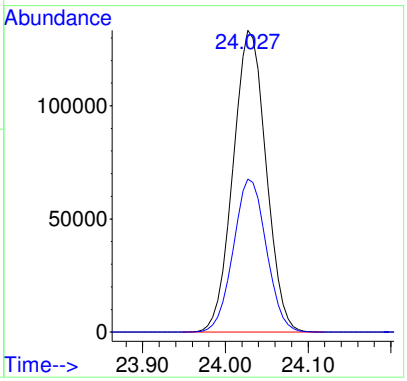


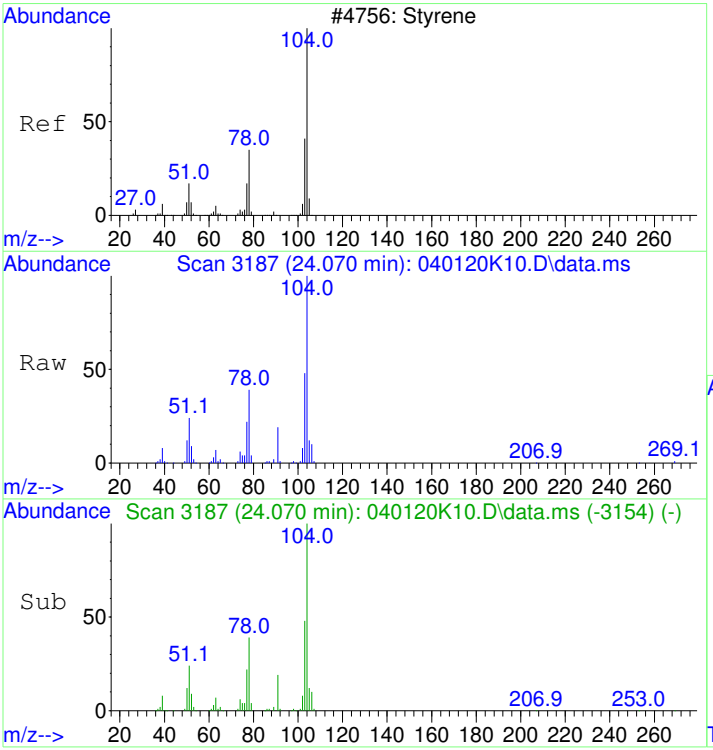


#54
o-Xylene
Concen: 10.11 ppbv
RT: 24.027 min Scan# 3180
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 91 Resp: 370125

Ion	Ratio	Lower	Upper
91	100		
106	50.7	30.7	70.7

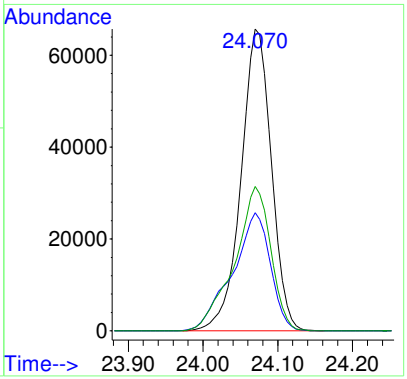


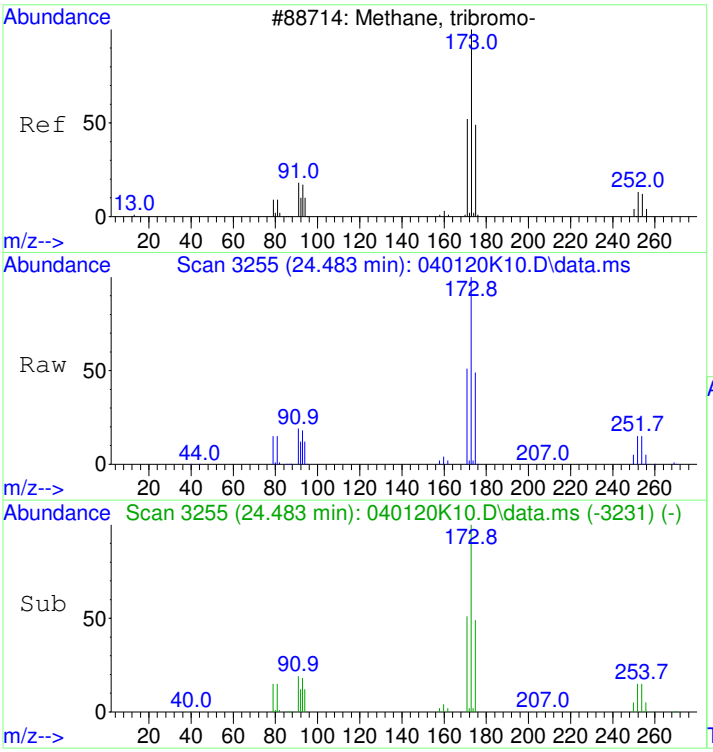


#55
Styrene
Concen: 9.85 ppbv
RT: 24.070 min Scan# 3187
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:104 Resp: 185526

Ion	Ratio	Lower	Upper
104	100		
78	48.9	28.9	68.9
103	57.1	37.1	77.1

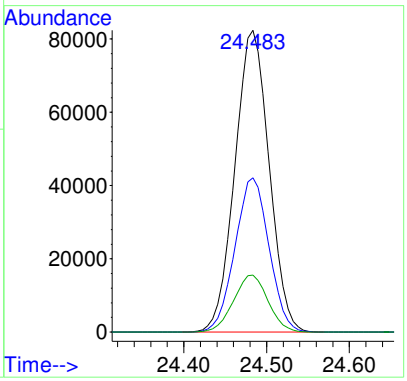


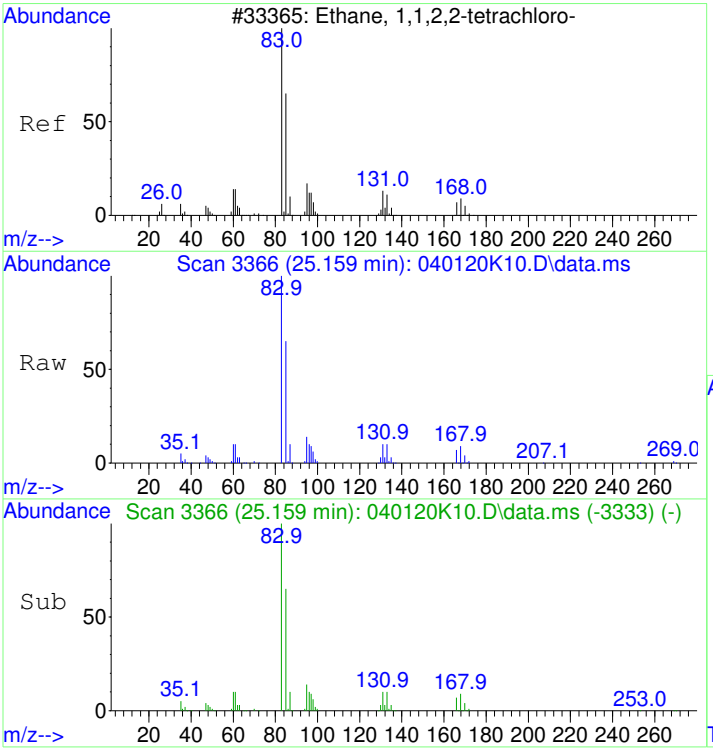


#56
Bromoform
Concen: 11.54 ppbv
RT: 24.483 min Scan# 3255
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:173 Resp: 237167

Ion	Ratio	Lower	Upper
173	100		
171	50.8	30.8	70.8
91	19.0	0.0	39.0

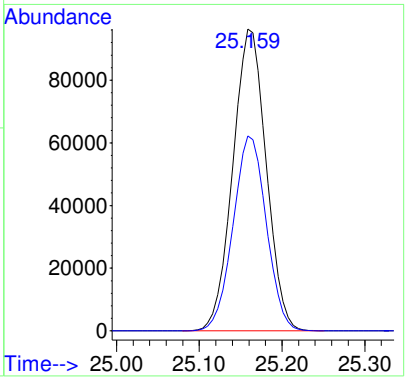


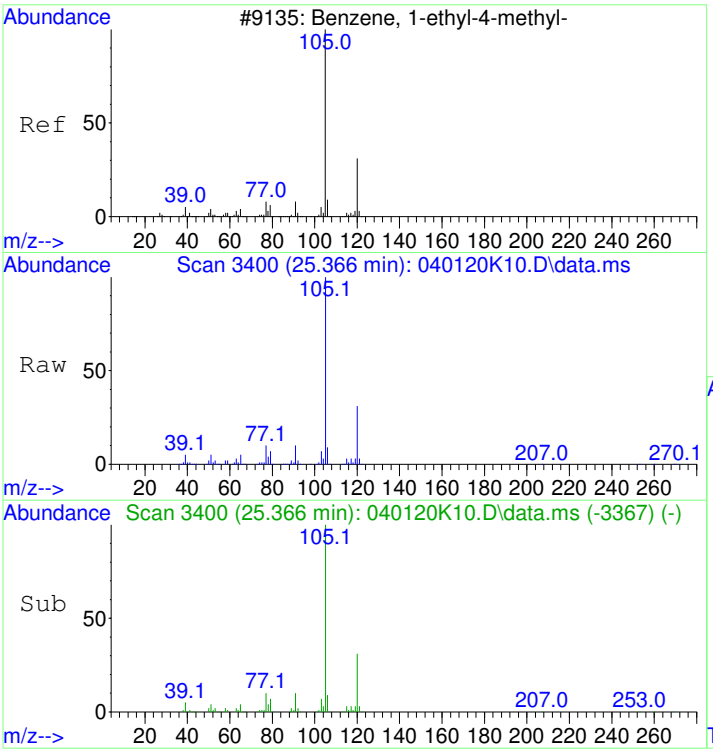


#57
1,1,2,2-Tetrachloroethane
Concen: 10.14 ppbv
RT: 25.159 min Scan# 3366
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 83 Resp: 270188

Ion	Ratio	Lower	Upper
83	100		
85	64.3	44.3	84.3

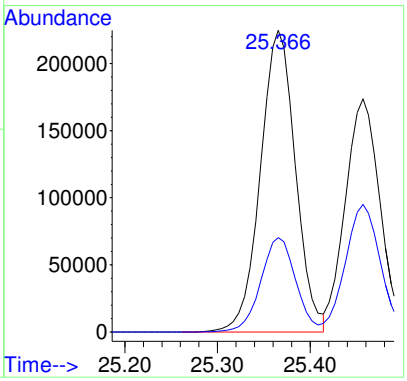


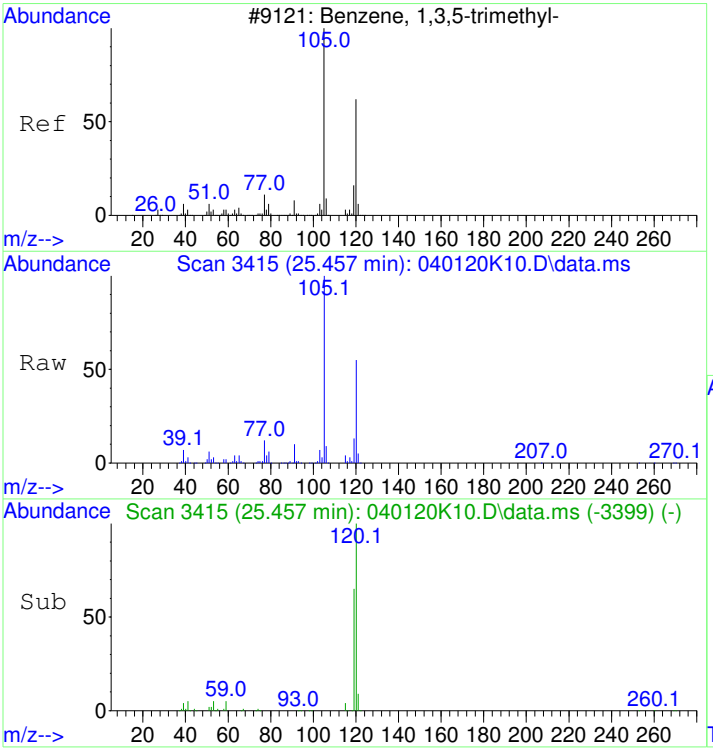


#58
4-Ethyltoluene
Concen: 10.32 ppbv
RT: 25.366 min Scan# 3400
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:105 Resp: 591258

Ion	Ratio	Lower	Upper
105	100		
120	31.1	11.1	51.1

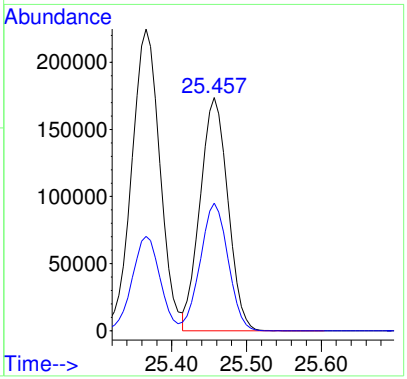


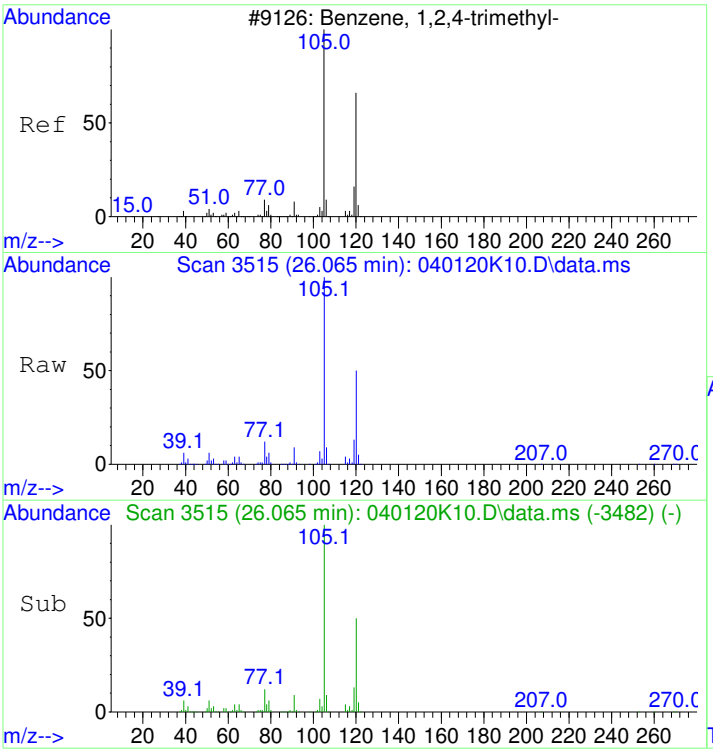


#59
1,3,5-Trimethylbenzene
Concen: 10.49 ppbv
RT: 25.457 min Scan# 3415
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:105 Resp: 448975

Ion	Ratio	Lower	Upper
105	100		
120	54.9	34.9	74.9

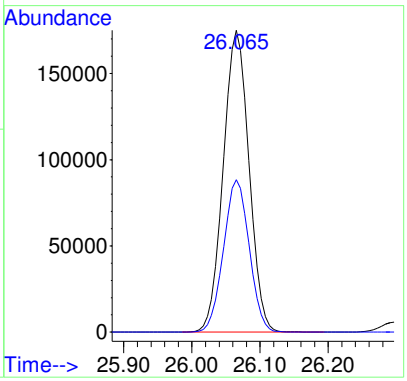


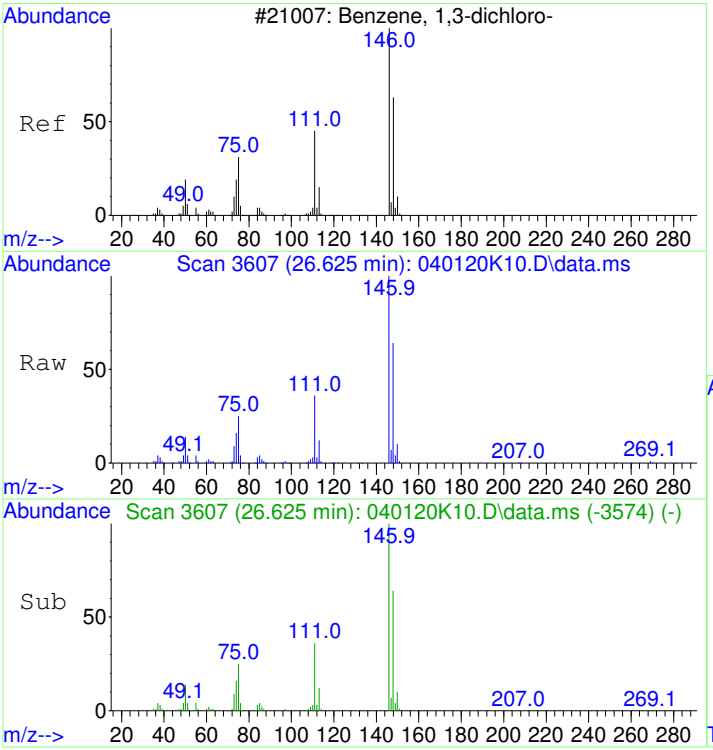


#60
1,2,4-Trimethylbenzene
Concen: 10.59 ppbv
RT: 26.065 min Scan# 3515
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:105 Resp: 457716

Ion	Ratio	Lower	Upper
105	100		
120	50.4	30.4	70.4

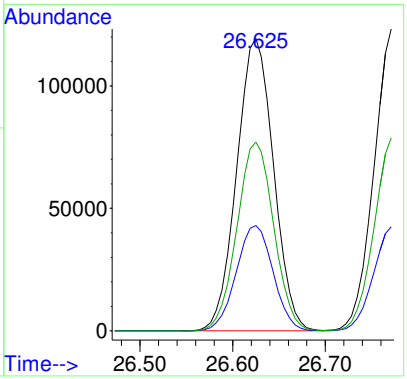


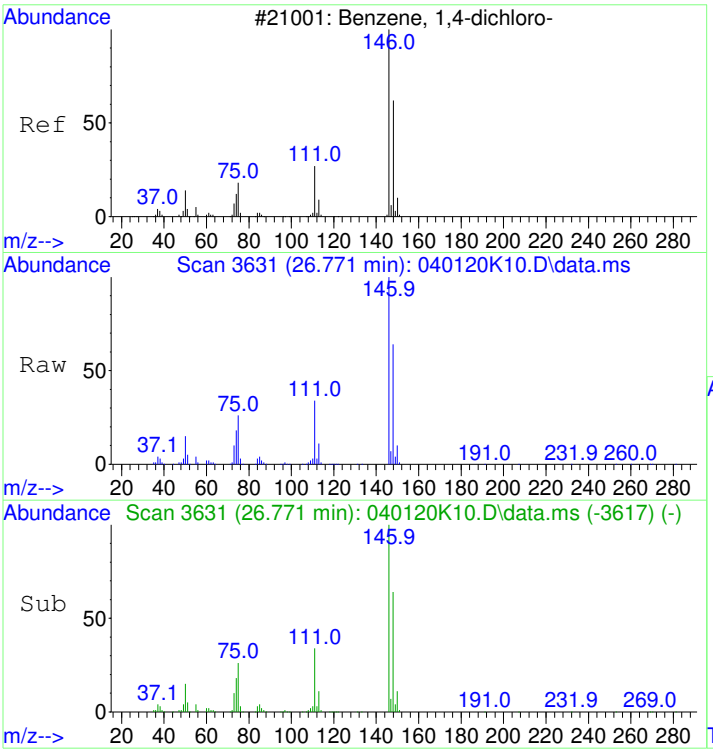


#61
1,3-Dichlorobenzene
Concen: 10.31 ppbv
RT: 26.625 min Scan# 3607
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:146 Resp: 329641

Ion	Ratio	Lower	Upper
146	100		
111	36.1	16.1	56.1
148	64.5	44.5	84.5

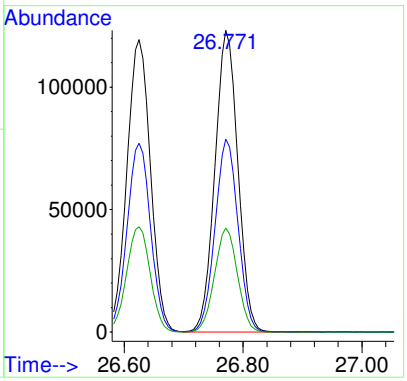


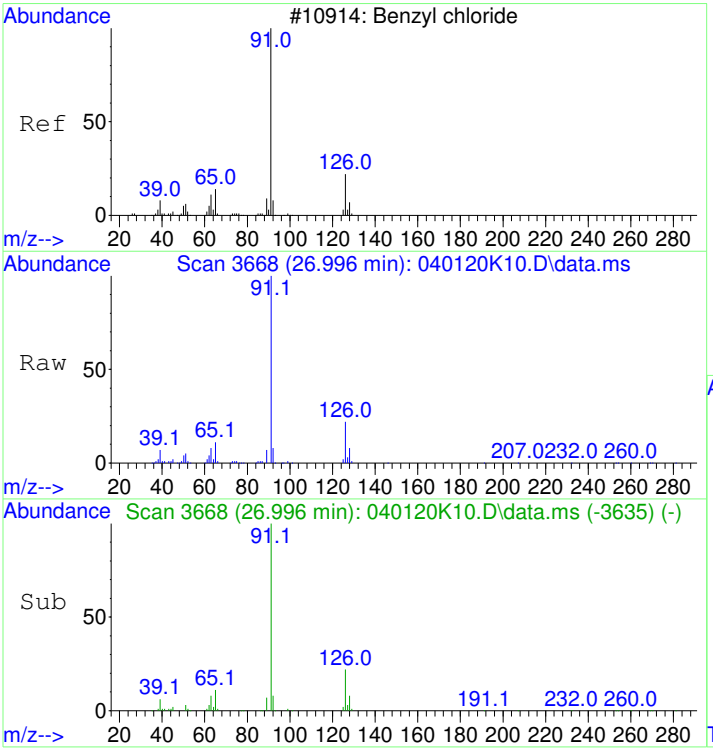


#62
1,4-Dichlorobenzene
Concen: 10.38 ppbv
RT: 26.771 min Scan# 3631
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:146 Resp: 330362

Ion	Ratio	Lower	Upper
146	100		
148	63.9	43.9	83.9
111	34.3	14.3	54.3

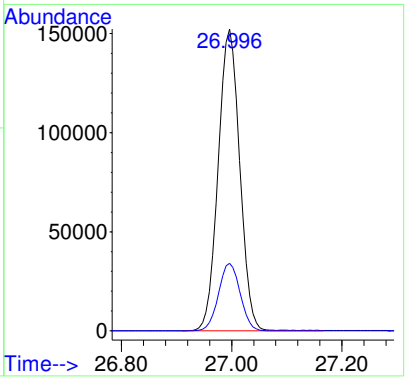


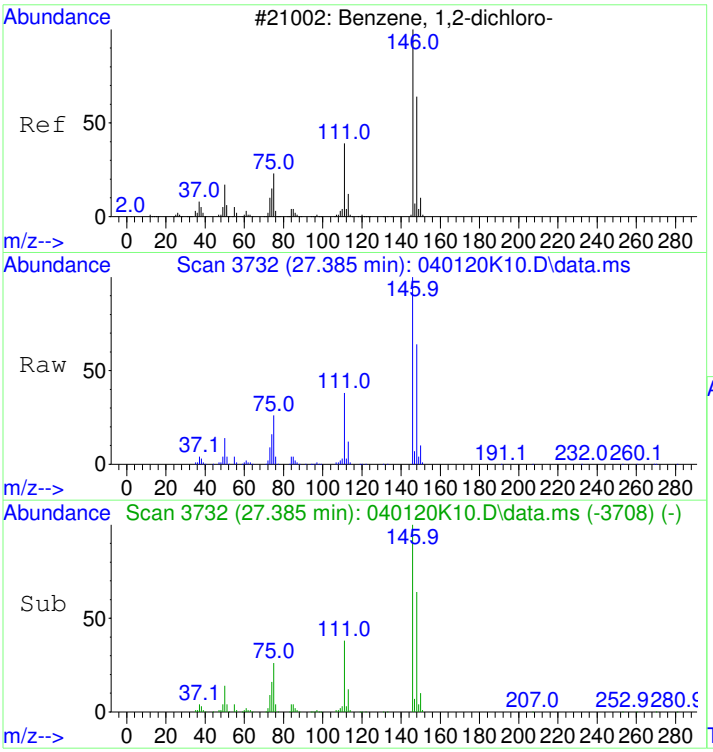


#63
Benzyl chloride
Concen: 12.45 ppbv
RT: 26.996 min Scan# 3668
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion: 91 Resp: 413201

Ion	Ratio	Lower	Upper
91	100		
126	22.4	2.4	42.4

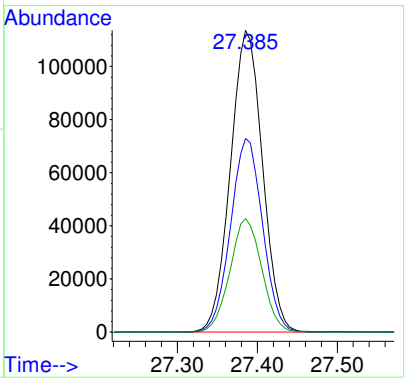


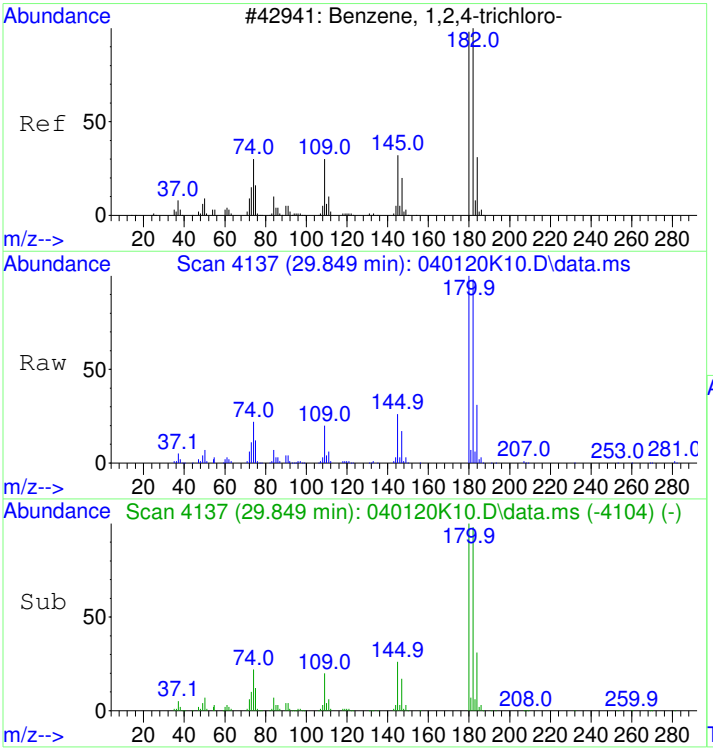


#64
1,2-Dichlorobenzene
Concen: 10.16 ppbv
RT: 27.385 min Scan# 3732
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:146 Resp: 317029

Ion	Ratio	Lower	Upper
146	100		
148	63.9	43.9	83.9
111	37.3	17.3	57.3

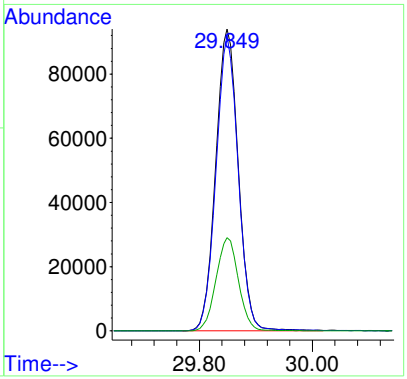


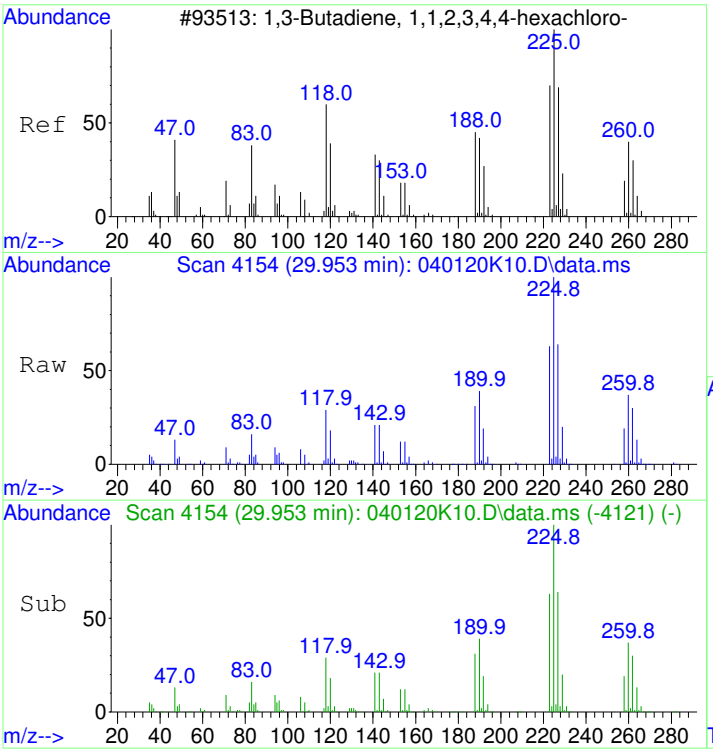


#65
1,2,4-Trichlorobenzene
Concen: 9.66 ppbv
RT: 29.849 min Scan# 4137
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:180 Resp: 260795

Ion	Ratio	Lower	Upper
180	100		
182	95.9	75.9	115.9
184	30.7	10.7	50.7

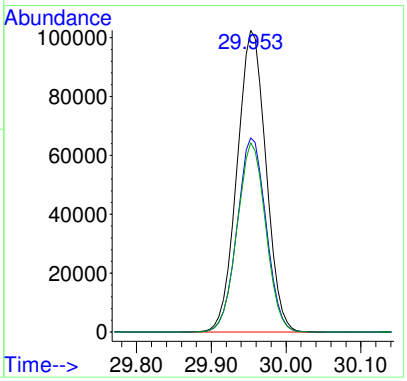




#66
Hexachlorobutadiene
Concen: 9.59 ppbv
RT: 29.953 min Scan# 4154
Delta R.T. 0.000 min
Lab File: 040120K10.D
Acq: 1 Apr 2020 7:47 pm

Tgt Ion:225 Resp: 275262

Ion	Ratio	Lower	Upper
225	100		
227	64.6	44.6	84.6
223	62.2	42.2	82.2



LSC Area Percent Report

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K10.D
Acq On : 1 Apr 2020 7:47 pm
Operator : LLH
Sample : S20D002-CAL4
Misc : 10ppbv
ALS Vial : 29 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 2 Min Area: 1 % of largest Peak
Start Thrs: 0.6 Max Peaks: 100
Stop Thrs : 0.5 Peak Location: TOP

If leading or trailing edge < 100 prefer < Tangent else baseline drop >
Peak separation: 5

Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Title : TO15

Signal : TIC: 040120K10.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.998	41	52	59	rBB	65604	200957	7.71%	0.484%
2	5.101	59	69	80	rBB	109651	335564	12.87%	0.808%
3	5.484	117	132	155	rBB2	209313	757431	29.06%	1.823%
4	5.728	155	172	189	rBB	37521	147242	5.65%	0.354%
5	6.068	217	228	237	rBB	41696	131374	5.04%	0.316%
6	6.172	237	245	257	rBB	75289	244396	9.38%	0.588%
7	7.243	403	421	451	rBB	46754	210348	8.07%	0.506%
8	7.608	465	481	502	rBB2	22472	101693	3.90%	0.245%
9	8.252	574	587	597	rBB	29263	112580	4.32%	0.271%
10	8.380	597	608	625	rBB	70784	317099	12.17%	0.763%
11	10.376	911	936	1033	rBB6	123136	1192606	45.76%	2.871%
12	11.087	1040	1053	1061	rBB	25901	106057	4.07%	0.255%
13	11.197	1063	1071	1085	rBB	47563	183939	7.06%	0.443%
14	11.592	1117	1136	1177	rBB	43799	218738	8.39%	0.527%
15	11.963	1177	1197	1263	rBB	73171	341859	13.12%	0.823%
16	12.481	1263	1282	1316	rBB	73661	334438	12.83%	0.805%
17	13.022	1351	1371	1411	rBB3	112186	975822	37.44%	2.349%
18	13.588	1445	1464	1514	rBB2	157280	650096	24.94%	1.565%
19	14.397	1584	1597	1605	rBB	67480	245618	9.42%	0.591%
20	14.494	1605	1613	1625	rBB	68504	216098	8.29%	0.520%
21	15.778	1814	1824	1831	rBB	86886	254942	9.78%	0.614%
22	15.863	1831	1838	1849	rBB	167803	501706	19.25%	1.208%
23	16.307	1895	1911	1923	rBB2	364658	1391737	53.40%	3.350%
24	16.441	1923	1933	1947	rBB	123784	409936	15.73%	0.987%
25	16.617	1947	1962	1992	rBB2	190899	1240675	47.60%	2.987%
26	16.934	1997	2014	2035	rBB2	156850	566444	21.73%	1.364%
27	17.311	2062	2076	2087	rBB	288460	1037339	39.80%	2.497%
28	17.439	2087	2097	2109	rBB	179946	573106	21.99%	1.380%
29	17.676	2123	2136	2149	rBB2	333690	1099749	42.19%	2.648%
30	18.223	2204	2226	2259	rBB	623780	1894788	72.70%	4.561%
31	18.625	2277	2292	2307	rBB	223895	685980	26.32%	1.651%
32	19.142	2358	2377	2391	rBB	164213	519078	19.91%	1.250%
33	19.319	2391	2406	2435	rBB	59451	184001	7.06%	0.443%
34	19.598	2435	2452	2473	rBB	180890	548473	21.04%	1.320%
35	20.347	2559	2575	2595	rBB	176528	513924	19.72%	1.237%
36	20.553	2595	2609	2637	rBB	212023	606006	23.25%	1.459%
37	20.803	2637	2650	2665	rBB	296193	848729	32.56%	2.043%
38	21.290	2709	2730	2741	rBB	167483	477462	18.32%	1.149%
39	21.636	2765	2787	2803	rBB2	359820	1609314	61.74%	3.874%
40	21.892	2819	2829	2850	rBB	203583	549097	21.07%	1.322%

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K10.D
Acq On : 1 Apr 2020 7:47 pm
Operator : LLH
Sample : S20D002-CAL4
Misc : 10ppbv
ALS Vial : 29 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 2 Min Area: 1 % of largest Peak
Start Thrs: 0.6 Max Peaks: 100
Stop Thrs : 0.5 Peak Location: TOP

If leading or trailing edge < 100 prefer < Tangent else baseline drop >
Peak separation: 5

Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Title : TO15

41	22.208	2867	2881	2905	rBB	234645	680840	26.12%	1.639%
42	22.445	2905	2920	2979	rBB	151540	442726	16.99%	1.066%
43	23.084	3015	3025	3039	rBB2	766967	2606488	100.00%	6.275%
44	23.200	3039	3044	3052	rBB	302039	650218	24.95%	1.565%
45	23.376	3059	3073	3125	rBB	757275	2107022	80.84%	5.072%
46	24.033	3168	3181	3239	rBB2	382604	1577406	60.52%	3.797%
47	24.483	3242	3255	3269	rBB	284939	819480	31.44%	1.973%
48	25.159	3351	3366	3383	rBB	306492	862023	33.07%	2.075%
49	25.366	3388	3400	3407	rBB	507585	1247358	47.86%	3.003%
50	25.457	3407	3415	3425	rBB	476103	1161017	44.54%	2.795%
51	26.065	3501	3515	3541	rBB	489067	1278830	49.06%	3.079%
52	26.296	3541	3553	3589	rBB2	26164	76076	2.92%	0.183%
53	26.625	3593	3607	3619	rBB	426621	1184205	45.43%	2.851%
54	26.771	3619	3631	3655	rBB	443858	1183448	45.40%	2.849%
55	26.996	3655	3668	3685	rBB	323594	871276	33.43%	2.098%
56	27.385	3720	3732	3775	rBB	413585	1152847	44.23%	2.775%
57	29.849	4127	4137	4145	rBB	419130	1101047	42.24%	2.651%

Sum of corrected areas: 41538748

Table of Contents

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Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K10.D
Acq On    :  1 Apr 2020   7:47 pm
Operator  : LLH
Sample    : S20D002-CAL4
Misc      : 10ppbv
ALS Vial  : 29   Sample Multiplier: 1

Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title  : TO15

TIC Library    : C:\Database\NIST02.L
TIC Integration Parameters: lscint.p
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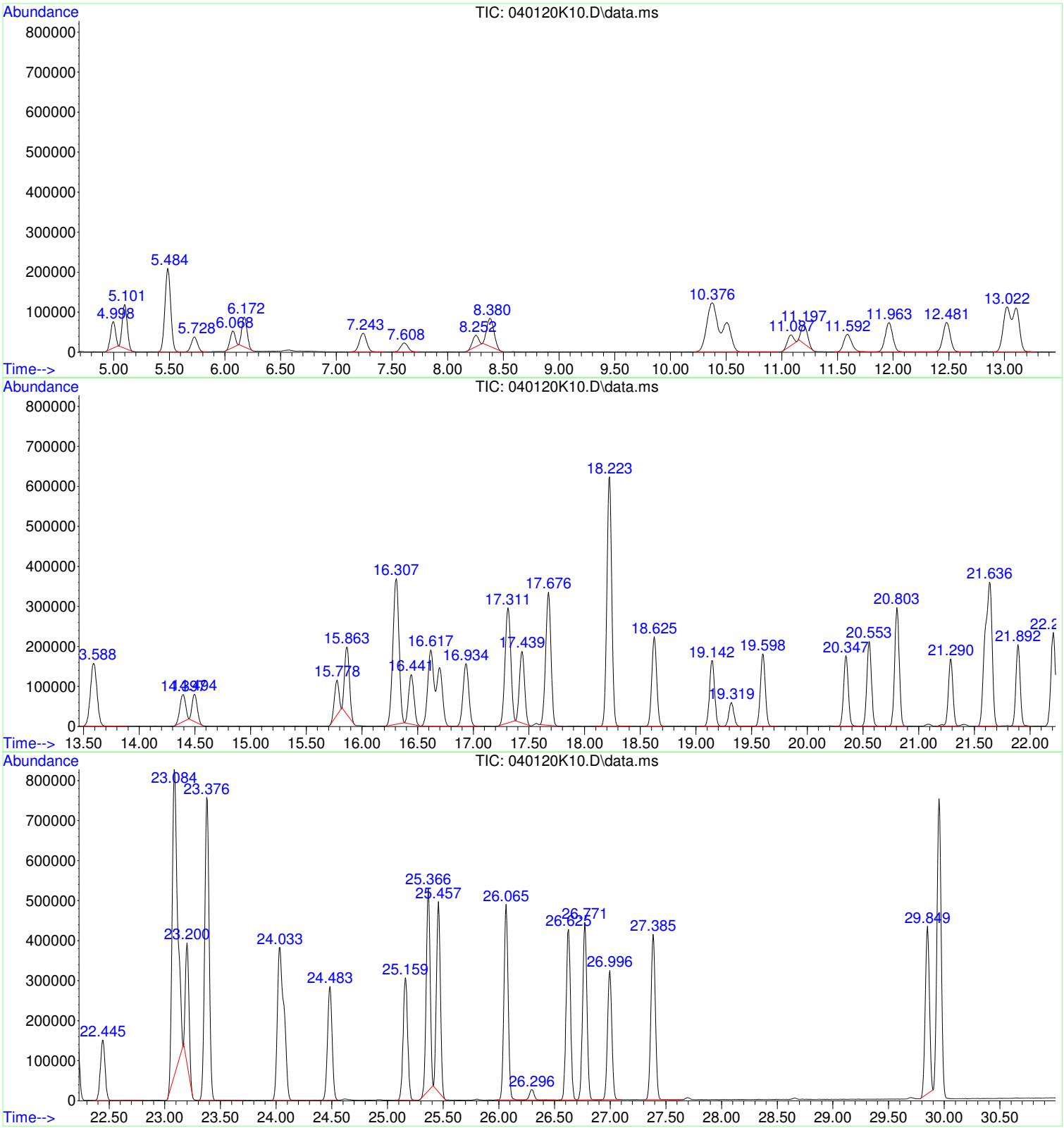

Library Search Compound Report

Table of Contents

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K10.D
Acq On : 1 Apr 2020 7:47 pm
Operator : LLH
Sample : S20D002-CAL4
Misc : 10ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15

TIC Library : C:\Database\NIST02.L
TIC Integration Parameters: lscint.p

No Library Search Compounds Detected
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Tentatively Identified Compound (LSC) summary

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  Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
  Data File : 040120K10.D
  Acq On    :  1 Apr 2020   7:47 pm
  Operator  : LLH
  Sample    : S20D002-CAL4
  Misc      : 10ppbv
  ALS Vial  : 29   Sample Multiplier: 1

  Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
  Quant Title  : TO15

  TIC Library   : C:\Database\NIST02.L
  TIC Integration Parameters: lscint.p

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

REVIEWED
By LLH at 11:26 am, Apr 02, 2020

S20D002-CAL5

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K11.D
InstName : HP5973K
Acq On : 1 Apr 2020 8:39 pm
Operator : LLH
Sample : S20D002-CAL5
Misc : 15ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Apr 02 09:55:28 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:55:20 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards								
1)	BROMOCHLOROMETHANE	16.313	49	292622	19.60	ppbv		0.00
32)	1,4-DIFLUOROBENZENE	18.223	114	900340	19.60	ppbv		0.00
43)	CHLOROBENZENE-d5	23.084	117	843082	19.60	ppbv		0.00
Target Compounds								Qvalue
2)	Propene	4.998	41	139020	16.55	ppbv		100
3)	Dichlorodifluoromethane	5.101	85	352411	15.48	ppbv		100
4)	1,2-Dichlorotetrafluor...	5.484	85	382639	14.55	ppbv		99
5)	Chloromethane	5.728	50	143177	16.46	ppbv		99
6)	Vinyl chloride	6.075	62	178918	16.00	ppbv		99
7)	1,3-Butadiene	6.178	54	138207	15.62	ppbv		99
8)	Bromomethane	7.243	94	122278	14.44	ppbv		100
9)	Chloroethane	7.614	64	82458	14.74	ppbv		100
10)	Bromoethene	8.259	106	127092	15.23	ppbv		100
11)	Trichlorofluoromethane	8.386	101	299527	13.51	ppbv		100
12)	1,1,2-Trichloro-1,2,2-...	10.376	151	225753	13.95	ppbv		100
13)	1,1-Dichloroethene	10.509	61	211166	15.06	ppbv		99
14)	Acetone	11.081	43	213188	15.52	ppbv		99
15)	Carbon disulfide	11.203	76	400015	15.38	ppbv		100
16)	2-Propanol	11.586	45	221287	16.60	ppbv		99
17)	Allyl chloride	11.963	41	199339	16.12	ppbv		100
18)	Dichloromethane	12.481	49	159015	13.57	ppbv		100
19)	tert-Butyl methyl ethe...	13.022	73	421737	15.33	ppbv		100
20)	trans-1,2-Dichloroethene	13.107	61	204010	15.65	ppbv		100
21)	Hexane	13.594	57	261324	14.76	ppbv		99
22)	1,1-Dichloroethane	14.391	63	248766	13.81	ppbv		100
23)	Vinyl acetate	14.500	43	357766	16.65	ppbv		99
24)	cis-1,2-Dichloroethene	15.778	61	189705	14.70	ppbv	#	100
25)	2-Butanone (MEK)	15.863	72	81094	15.21	ppbv		98
26)	Ethyl acetate	15.869	61	47919	14.70	ppbv		100
27)	Tetrahydrofuran	16.283	42	181913	14.88	ppbv		99
28)	Chloroform	16.447	83	267049	14.93	ppbv		100
29)	Cyclohexane	16.617	56	263634	14.86	ppbv		100
30)	1,1,1-Trichloroethane	16.696	97	267699	15.17	ppbv		99
31)	Carbon tetrachloride	16.934	117	271498	15.01	ppbv		100
33)	Benzene	17.439	78	457434	15.04	ppbv		100
34)	2,2,4-Trimethylpentane	17.311	57	810850	15.28	ppbv		100
35)	1,2-Dichloroethane	17.658	62	174427	15.04	ppbv		100
36)	Heptane	17.682	43	298484	15.65	ppbv		99
37)	Trichloroethene	18.625	130	203406	15.76	ppbv		99
38)	1,2-Dichloropropane	19.148	63	169845	15.03	ppbv		100
39)	1,4-Dioxane	19.318	88	110491	15.39	ppbv		99
40)	Bromodichloromethane	19.598	83	304152	15.61	ppbv		100
41)	cis-1,3-Dichloropropene	20.347	75	267525	15.35	ppbv		100
42)	4-Methyl-2-pentanone (...	20.560	43	360786	16.27	ppbv		99
44)	Toluene	20.809	91	557984	14.81	ppbv		100
45)	trans-1,3-Dichloropropene	21.290	75	245324	14.64	ppbv		99
46)	1,1,2-Trichloroethane	21.600	97	183171	14.88	ppbv		99
47)	Tetrachloroethene	21.642	166	286591	14.80	ppbv		100
48)	2-Hexanone	21.892	43	330606	15.74	ppbv		99
49)	Chlorodibromomethane	22.208	129	330765	16.29	ppbv		100
50)	1,2-Dibromoethane (EDB)	22.445	107	276561	15.31	ppbv		99
51)	Chlorobenzene	23.133	112	463480	14.96	ppbv		99
52)	Ethylbenzene	23.200	91	743910	15.12	ppbv		100
53)	m&p-Xylene	23.382	91	1133129	30.38	ppbv		99
54)	o-Xylene	24.033	91	577422	15.03	ppbv		100

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K11.D
InstName : HP5973K
Acq On : 1 Apr 2020 8:39 pm
Operator : LLH
Sample : S20D002-CAL5
Misc : 15ppbv
ALS Vial : 29 Sample Multiplier: 1

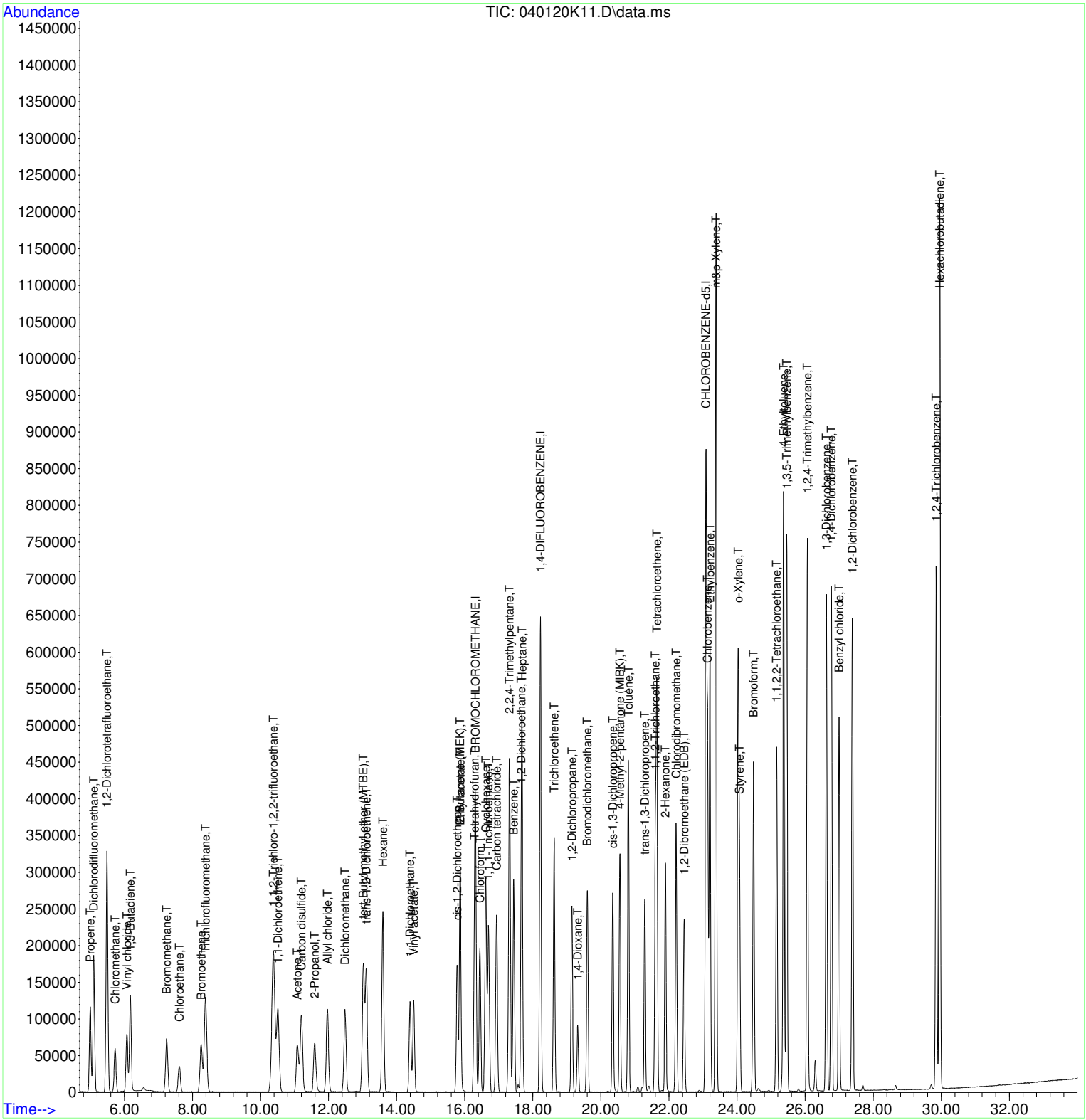
Quant Time: Apr 02 09:55:28 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:55:20 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
55)	Styrene	24.076	104	291442	14.75	ppbv	100
56)	Bromoform	24.483	173	375705	17.42	ppbv	99
57)	1,1,2,2-Tetrachloroethane	25.159	83	419962	15.01	ppbv	100
58)	4-Ethyltoluene	25.366	105	920900	15.31	ppbv	99
59)	1,3,5-Trimethylbenzene	25.457	105	697042	15.51	ppbv	100
60)	1,2,4-Trimethylbenzene	26.065	105	712165	15.69	ppbv	99
61)	1,3-Dichlorobenzene	26.625	146	518116	15.44	ppbv	100
62)	1,4-Dichlorobenzene	26.771	146	516124	15.45	ppbv	99
63)	Benzyl chloride	26.996	91	649632	18.64	ppbv	99
64)	1,2-Dichlorobenzene	27.385	146	496433	15.15	ppbv	100
65)	1,2,4-Trichlorobenzene	29.849	180	425298	15.00	ppbv	100
66)	Hexachlorobutadiene	29.953	225	439916	14.59	ppbv	100

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

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K11.D
InstName : HP5973K
Acq On : 1 Apr 2020 8:39 pm
Operator : LLH
Sample : S20D002-CAL5
Misc : 15ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Apr 02 09:55:28 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:55:20 2020
Response via : Initial Calibration



S20D002-CAL6

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K12.D
InstName : HP5973K
Acq On : 1 Apr 2020 9:31 pm
Operator : LLH
Sample : S20D002-CAL6
Misc : 20ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Apr 02 09:56:20 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:56:15 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	16.313	49	298225	19.60	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	930144	19.60	ppbv		0.00
43) CHLOROBENZENE-d5	23.084	117	876910	19.60	ppbv		0.00
Target Compounds							Qvalue
2) Propene	4.991	41	190282	22.10	ppbv		100
3) Dichlorodifluoromethane	5.095	85	486584	21.04	ppbv		100
4) 1,2-Dichlorotetrafluor...	5.484	85	535311	20.16	ppbv		99
5) Chloromethane	5.721	50	195085	21.93	ppbv		99
6) Vinyl chloride	6.068	62	246230	21.32	ppbv		100
7) 1,3-Butadiene	6.172	54	188278	20.58	ppbv		97
8) Bromomethane	7.236	94	172951	20.53	ppbv		100
9) Chloroethane	7.607	64	114710	20.42	ppbv		100
10) Bromoethene	8.252	106	179996	21.78	ppbv		99
11) Trichlorofluoromethane	8.380	101	419265	18.80	ppbv		100
12) 1,1,2-Trichloro-1,2,2-...	10.375	151	316376	19.71	ppbv		100
13) 1,1-Dichloroethene	10.503	61	295691	20.95	ppbv		99
14) Acetone	11.075	43	293400	21.07	ppbv		100
15) Carbon disulfide	11.197	76	556264	21.42	ppbv		99
16) 2-Propanol	11.586	45	309800	22.88	ppbv		99
17) Allyl chloride	11.963	41	274862	21.96	ppbv		99
18) Dichloromethane	12.480	49	217341	18.29	ppbv		99
19) tert-Butyl methyl ethe...	13.022	73	587705	21.37	ppbv		100
20) trans-1,2-Dichloroethene	13.113	61	283793	21.63	ppbv		100
21) Hexane	13.588	57	361381	20.31	ppbv		99
22) 1,1-Dichloroethane	14.391	63	343874	18.98	ppbv		100
23) Vinyl acetate	14.500	43	495405	22.71	ppbv		99
24) cis-1,2-Dichloroethene	15.778	61	264564	20.40	ppbv	#	100
25) 2-Butanone (MEK)	15.863	72	112474	21.11	ppbv	#	96
26) Ethyl acetate	15.863	61	66250	20.13	ppbv		98
27) Tetrahydrofuran	16.283	42	251455	20.24	ppbv		98
28) Chloroform	16.441	83	370922	20.62	ppbv		100
29) Cyclohexane	16.617	56	365035	20.43	ppbv		99
30) 1,1,1-Trichloroethane	16.702	97	371170	20.85	ppbv		99
31) Carbon tetrachloride	16.934	117	376508	20.48	ppbv		100
33) Benzene	17.438	78	631821	20.09	ppbv		100
34) 2,2,4-Trimethylpentane	17.311	57	1118236	20.30	ppbv		99
35) 1,2-Dichloroethane	17.657	62	240019	19.76	ppbv		100
36) Heptane	17.682	43	408438	20.44	ppbv		98
37) Trichloroethene	18.625	130	283918	21.44	ppbv		99
38) 1,2-Dichloropropane	19.142	63	236978	20.23	ppbv		99
39) 1,4-Dioxane	19.318	88	155346	21.03	ppbv		99
40) Bromodichloromethane	19.598	83	423378	20.88	ppbv		100
41) cis-1,3-Dichloropropene	20.346	75	376436	20.85	ppbv		99
42) 4-Methyl-2-pentanone (...	20.553	43	498511	21.46	ppbv		98
44) Toluene	20.803	91	777859	19.97	ppbv		100
45) trans-1,3-Dichloropropene	21.289	75	342965	19.65	ppbv		97
46) 1,1,2-Trichloroethane	21.600	97	258527	20.31	ppbv		99
47) Tetrachloroethene	21.642	166	406059	20.38	ppbv		100
48) 2-Hexanone	21.892	43	458759	20.83	ppbv		98
49) Chlorodibromomethane	22.208	129	465863	22.00	ppbv		100
50) 1,2-Dibromoethane (EDB)	22.445	107	388678	20.84	ppbv		99
51) Chlorobenzene	23.133	112	648034	20.25	ppbv		99
52) Ethylbenzene	23.200	91	1040045	20.39	ppbv		99
53) m&p-Xylene	23.382	91	1589007	41.00	ppbv		99
54) o-Xylene	24.033	91	804546	20.17	ppbv		100

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K12.D
InstName : HP5973K
Acq On : 1 Apr 2020 9:31 pm
Operator : LLH
Sample : S20D002-CAL6
Misc : 20ppbv
ALS Vial : 29 Sample Multiplier: 1

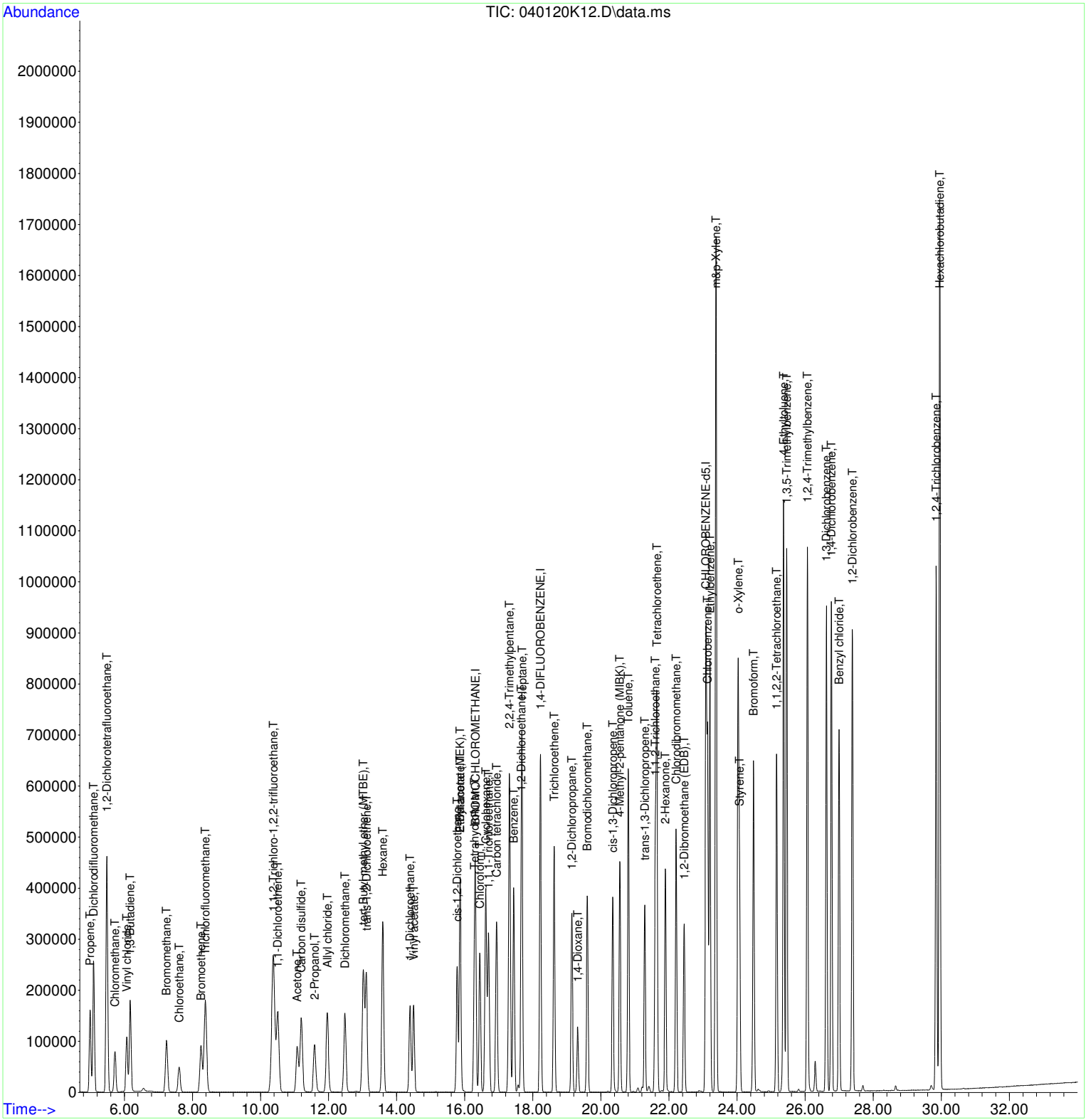
Quant Time: Apr 02 09:56:20 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:56:15 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
55) Styrene	24.076	104	409226	20.16 ppbv	99
56) Bromoform	24.483	173	533634	23.48 ppbv	99
57) 1,1,2,2-Tetrachloroethane	25.159	83	585991	20.13 ppbv	100
58) 4-Ethyltoluene	25.365	105	1290613	20.72 ppbv	99
59) 1,3,5-Trimethylbenzene	25.457	105	973801	20.88 ppbv	99
60) 1,2,4-Trimethylbenzene	26.065	105	994956	21.12 ppbv	99
61) 1,3-Dichlorobenzene	26.625	146	729073	20.95 ppbv	100
62) 1,4-Dichlorobenzene	26.771	146	725315	20.94 ppbv	100
63) Benzyl chloride	26.996	91	909155	24.60 ppbv	99
64) 1,2-Dichlorobenzene	27.385	146	695249	20.44 ppbv	100
65) 1,2,4-Trichlorobenzene	29.849	180	620336	21.15 ppbv	100
66) Hexachlorobutadiene	29.952	225	634275	20.26 ppbv	100

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

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K12.D
InstName : HP5973K
Acq On : 1 Apr 2020 9:31 pm
Operator : LLH
Sample : S20D002-CAL6
Misc : 20ppbv
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Apr 02 09:56:20 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:56:15 2020
Response via : Initial Calibration



S20D002-SCV1

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K13.D
InstName : HP5973K
Acq On : 1 Apr 2020 10:24 pm
Operator : LLH
Sample : S20D002-SCV1
Misc : 10ppbv
ALS Vial : 38 Sample Multiplier: 1

Quant Time: Apr 02 09:57:41 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	16.313	49	314982	19.60	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	965414	19.60	ppbv		0.00
43) CHLOROBENZENE-d5	23.084	117	886908	19.60	ppbv		0.00
Target Compounds							Qvalue
2) Propene	4.998	41	106022	11.54	ppbv		99
3) Dichlorodifluoromethane	5.101	85	275792	11.27	ppbv		100
4) 1,2-Dichlorotetrafluor...	5.484	85	287593	10.29	ppbv		94
5) Chloromethane	5.728	50	108258	11.44	ppbv		100
6) Vinyl chloride	6.074	62	135607	10.91	ppbv		99
7) 1,3-Butadiene	6.172	54	104701	10.62	ppbv		98
8) Bromomethane	7.242	94	100360	11.51	ppbv		99
9) Chloroethane	7.614	64	66458	11.34	ppbv		98
10) Bromoethene	8.252	106	102658	12.08	ppbv		100
11) Trichlorofluoromethane	8.380	101	243249	10.44	ppbv		100
12) 1,1,2-Trichloro-1,2,2-...	10.369	151	186238	11.30	ppbv		98
13) 1,1-Dichloroethene	10.509	61	168485	11.40	ppbv		99
14) Acetone	11.081	43	167117	11.38	ppbv		99
15) Carbon disulfide	11.203	76	328088	12.20	ppbv		99
16) 2-Propanol	11.586	45	170202	11.89	ppbv		99
17) Allyl chloride	11.963	41	153442	11.66	ppbv		98
18) Dichloromethane	12.480	49	125722	10.04	ppbv		99
19) tert-Butyl methyl ethe...	13.022	73	330533	11.57	ppbv		100
20) trans-1,2-Dichloroethene	13.107	61	148247	10.81	ppbv		99
21) Hexane	13.594	57	199776	10.75	ppbv		98
22) 1,1-Dichloroethane	14.397	63	201754	10.66	ppbv		100
23) Vinyl acetate	14.494	43	276341	12.02	ppbv		99
24) cis-1,2-Dichloroethene	15.778	61	160202	11.82	ppbv	#	99
25) 2-Butanone (MEK)	15.863	72	62900	11.38	ppbv	#	95
26) Ethyl acetate	15.869	61	37919	11.01	ppbv	#	92
27) Tetrahydrofuran	16.283	42	125395	9.56	ppbv		98
28) Chloroform	16.441	83	209891	11.17	ppbv		100
29) Cyclohexane	16.617	56	201376	10.77	ppbv		99
30) 1,1,1-Trichloroethane	16.696	97	196212	10.53	ppbv		99
31) Carbon tetrachloride	16.934	117	211501	10.93	ppbv		100
33) Benzene	17.439	78	361675	11.04	ppbv		100
34) 2,2,4-Trimethylpentane	17.311	57	624630	10.83	ppbv		99
35) 1,2-Dichloroethane	17.657	62	134901	10.51	ppbv		100
36) Heptane	17.682	43	227180	10.75	ppbv		98
37) Trichloroethene	18.625	130	157803	11.53	ppbv		99
38) 1,2-Dichloropropane	19.142	63	132844	10.83	ppbv		99
39) 1,4-Dioxane	19.318	88	85715	11.16	ppbv		99
40) Bromodichloromethane	19.598	83	224477	10.56	ppbv		100
41) cis-1,3-Dichloropropene	20.346	75	209180	11.08	ppbv		98
42) 4-Methyl-2-pentanone (...	20.553	43	272914	11.10	ppbv		99
44) Toluene	20.803	91	436399	11.12	ppbv		100
45) trans-1,3-Dichloropropene	21.289	75	187502	10.58	ppbv		98
46) 1,1,2-Trichloroethane	21.600	97	142542	11.10	ppbv		99
47) Tetrachloroethene	21.642	166	221800	11.09	ppbv		100
48) 2-Hexanone	21.892	43	244795	10.85	ppbv		98
49) Chlorodibromomethane	22.208	129	236908	11.03	ppbv		100
50) 1,2-Dibromoethane (EDB)	22.445	107	210610	11.21	ppbv		99
51) Chlorobenzene	23.133	112	352975	10.95	ppbv		100
52) Ethylbenzene	23.200	91	574945	11.14	ppbv		100
53) m&p-Xylene	23.382	91	865705	22.01	ppbv		100
54) o-Xylene	24.033	91	440821	10.91	ppbv		100

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K13.D
InstName : HP5973K
Acq On : 1 Apr 2020 10:24 pm
Operator : LLH
Sample : S20D002-SCV1
Misc : 10ppbv
ALS Vial : 38 Sample Multiplier: 1

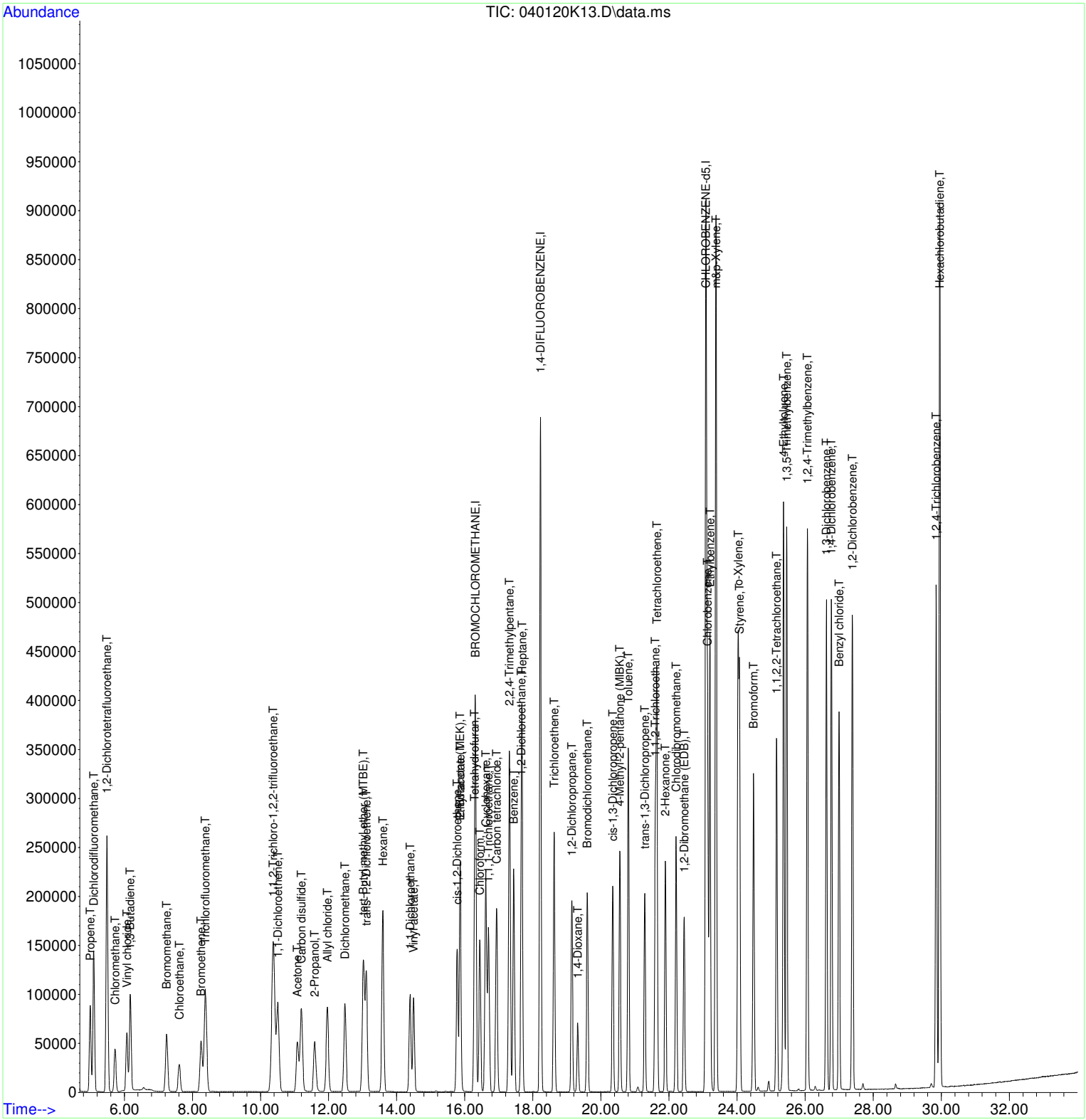
Quant Time: Apr 02 09:57:41 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
55)	Styrene	24.076	104	369530	18.16 ppbv	93
56)	Bromoform	24.483	173	270989	11.63 ppbv	99
57)	1,1,2,2-Tetrachloroethane	25.159	83	320809	10.85 ppbv	100
58)	4-Ethyltoluene	25.365	105	688269	10.92 ppbv	100
59)	1,3,5-Trimethylbenzene	25.457	105	528094	11.17 ppbv	100
60)	1,2,4-Trimethylbenzene	26.065	105	542520	11.36 ppbv	100
61)	1,3-Dichlorobenzene	26.625	146	381102	10.82 ppbv	100
62)	1,4-Dichlorobenzene	26.771	146	377095	10.75 ppbv	99
63)	Benzyl chloride	26.996	91	495495	12.97 ppbv	99
64)	1,2-Dichlorobenzene	27.385	146	374728	10.87 ppbv	100
65)	1,2,4-Trichlorobenzene	29.849	180	308646	10.38 ppbv	100
66)	Hexachlorobutadiene	29.952	225	331900	10.42 ppbv	99

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

Data Path : D:\msdchem\1\2020\DATA\040120K_FSAA\
Data File : 040120K13.D
InstName : HP5973K
Acq On : 1 Apr 2020 10:24 pm
Operator : LLH
Sample : S20D002-SCV1
Misc : 10ppbv
ALS Vial : 38 Sample Multiplier: 1

Quant Time: Apr 02 09:57:41 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration



SEQUENCE

S20E006

Sequence Date: 05/11/2020

Instrument: HP5973K

Sequence Analyses:

VOCs, Soil Gas

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	B20E005	SEQUENCE #:	S20E006 05/11/20
BATCH #:	+ CAN CERTIFICATION	ANALYSIS:	TO15 HP5973K

	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.	04/01/20 Thu Apr 02, 2020 09:57:00			
	Initial Calibration ID (LIMS number):	2004002 / S20D002			
	ICAL within QC criteria?	✔			OK
	SCV within QC criteria?	✔			2-Propanol = 140%; Styrene = 182%
INSTRUMENT / QC CHECKS	Tune or degradation checks within QC criteria?	☐	Y	Y	PASSED
	CCV(s) within QC criteria?	☐	Y	Y	OK
	QLS(s) within QC criteria?	☐	Y	Y	Benzyl Chloride and 1,2,4,-TCB
	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	CLEAN
	LCS(s) or SRM(s) within QC criteria?	☐	Y	Y	OK
	MSs/MSDs and/or DUPs within QC criteria?	✔			
	Other method-specific QCs within QC criteria? Specify if applicable.	✔			

ANALYST / REVIEWER - DATA REVIEW CHECKLIST

BATCH #:	B20E005	SEQUENCE #:	S20E006	05/11/20
BATCH #:	+ CAN CERTIFICATION	ANALYSIS:	TO15	HP5973K

	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?	☐	Y	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:	EM 05/12/20
	REVIEWED BY:	Rajabi, Ziyad Digitally signed by Rajabi, Ziyad Date: 2020.05.15 11:43:58 -07'00' SIGN HERE

COMMENTS

FORM #: Q015
REV #: 1

Injection Log

Directory: d:\MSDCHEM\1\2020\DATA\051120K_FSAA

Table of Contents

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	27	051120K01.D	1.	S20E006-TUN1	BFB 1901028	11 May 2020 10:08
2	29	051120K02.D	1.	S20E006-CCV1@B20E005-BS1	10ppbv 2014029@2014032	11 May 2020 10:58
3	27	051120K03.D	1.	S20E006-CRL1	1.0ppbv 2014026	11 May 2020 11:48
4	33	051120K04.D	1.	B20E005-BLK1	200ml BLANK	11 May 2020 12:41
5	11	051120K05.D	1.98	2005005-03	200ml D9-SC-050820	11 May 2020 13:33
6	12	051120K06.D	1.96	2005005-04	200ml D10-SC-050820	11 May 2020 14:26
7	13	051120K07.D	1.99	2005005-01	200ml 272 Ariana-MH3-SS-050820	11 May 2020 15:19
8	12	051120K08.D	1.99	B20E005-DUP1	200ml 272 Ariana-MH3-SS-050820DUP	11 May 2020 16:12
9	14	051120K09.D	2.05	2005005-02	200ml 261 Ariana-MH2-SS-050820	11 May 2020 17:05
10	33	051120K10.D	1.	S20E006-IBL1	200ml IB	11 May 2020 17:58
11	15	051120K11.D	1.	CAN #670	200ml RECERTIFICATION	11 May 2020 18:50
12	16	051120K12.D	1.	CAN #851	200ml RECERTIFICATION	11 May 2020 19:43

GC/MS QA-QC Check Report

Table of Contents

Tune File : D:\msdchem\1\2020\DATA\051120K_FSAA\051120K01.D
Tune Time : 11 May 2020 10:08 am

Daily Calibration File : D:\msdchem\1\2020\DATA\051120K_FSAA\051120K02.D

File	Sample	Surrogate Recovery %	Internal Standard Responses	
		242663	739081	692357
051120K02.D	S20E006-CCV1	242663	739081	692357
051120K03.D	S20E006-CRL1	253244	787950	707058
051120K04.D	B20E005-BLK1	246674	768477	675190
051120K05.D	2005005-03	249702	775397	693294
051120K06.D	2005005-04	262093	812129	728017
051120K07.D	2005005-01	273696	827424	742240
051120K08.D	B20E005-DUP1	282552	856128	769685
051120K09.D	2005005-02	291620	884273	791055
051120K10.D	S20E006-IBL1	286908	882428	776680
051120K11.D	CAN #670	274008	845289	751676
051120K12.D	CAN #851	269113	827452	741342

(fails) - fails 24hr time check * - fails criteria

Created: Tue May 12 09:18:43 2020 HP5973K

Sequence Report

Name	Inlet	Pos.	Int Std	Cal Std	Sample	Method	Inject	Status
BFB	Two	T7	40	40	50	TO-15_A.CTD3	5/11/2020 10:08:09 AM	Completed
CCV	Two	T9	40	0	100	TO-15_A.CTD3	5/11/2020 10:58:53 AM	Completed
CRL	Two	T7	40	0	20	TO-15_A.CTD3	5/11/2020 11:48:22 AM	Completed
BLANK	Three	T3	40	0	200	TO-15_A.CTD3	5/11/2020 12:41:04 PM	Completed
2005005-03	One	T1	40	0	200	TO-15_A.CTD3	5/11/2020 1:33:52 PM	Completed
2005005-04	One	T2	40	0	200	TO-15_A.CTD3	5/11/2020 2:26:39 PM	Completed
2005005-01	One	T3	40	0	200	TO-15_A.CTD3	5/11/2020 3:19:21 PM	Completed
2005005-01DUP	One	T3	40	0	200	TO-15_A.CTD3	5/11/2020 4:12:38 PM	Completed
2005005-02	One	T4	40	0	200	TO-15_A.CTD3	5/11/2020 5:05:22 PM	Completed
IB	Three	T3	40	0	200	TO-15_A.CTD3	5/11/2020 5:58:01 PM	Completed
CAN #670	One	T5	40	0	200	TO-15_A.CTD3	5/11/2020 6:50:43 PM	Completed
CAN #851	One	T6	40	0	200	TO-15_A.CTD3	5/11/2020 7:43:21 PM	Completed

Analysis Sequence

S20E006

Project: R20S18
Analysis: VOCs, Soil Gas

Instrument: HP5973K **Calibration ID:** 2004002 Printed: 05/12/2020 9:55 am

Lab Number	Sample Name	Order	Analyzed Date	STD ID	ISTD ID	Sequenced By	File ID	Comments
S20E006-TUN1	BFB Tune	1	5/11/20 10:08	1901028		EM	051120K01.D	
S20E006-CCV1	CCV - TO15	2	5/11/20 10:58	2018025		EM	051120K02.D	
B20E005-BS1	LCS	3	5/11/20 10:58			EM	051120K02.D	
S20E006-CRL1	QLS - TO15	4	5/11/20 11:48	2018024		EM	051120K03.D	
B20E005-BLK1	Blank	5	5/11/20 12:41		2006146	EM	051120K04.D	
2005005-03 A	D9-SC-050820	6	5/11/20 13:33		2006146	EM	051120K05.D	
2005005-04 A	D10-SC-050820	7	5/11/20 14:26		2006146	EM	051120K06.D	
2005005-01 A	272 Ariana-MH3-SS-050820	8	5/11/20 15:19		2006146	EM	051120K07.D	
B20E005-DUP1	Duplicate	9	5/11/20 16:12		2006146	EM	051120K08.D	
2005005-02 A	261 Ariana-MH2-SS-050820	10	5/11/20 17:05		2006146	EM	051120K09.D	
S20E006-IBL1	Instrument Blank	11	5/11/20 17:58		2006146	EM	051120K10.D	

Sequence Comments

Reagents

Reagent # **Description**

Table of Contents

SEQUENCE DATA

S20E006

S20E006-TUN1

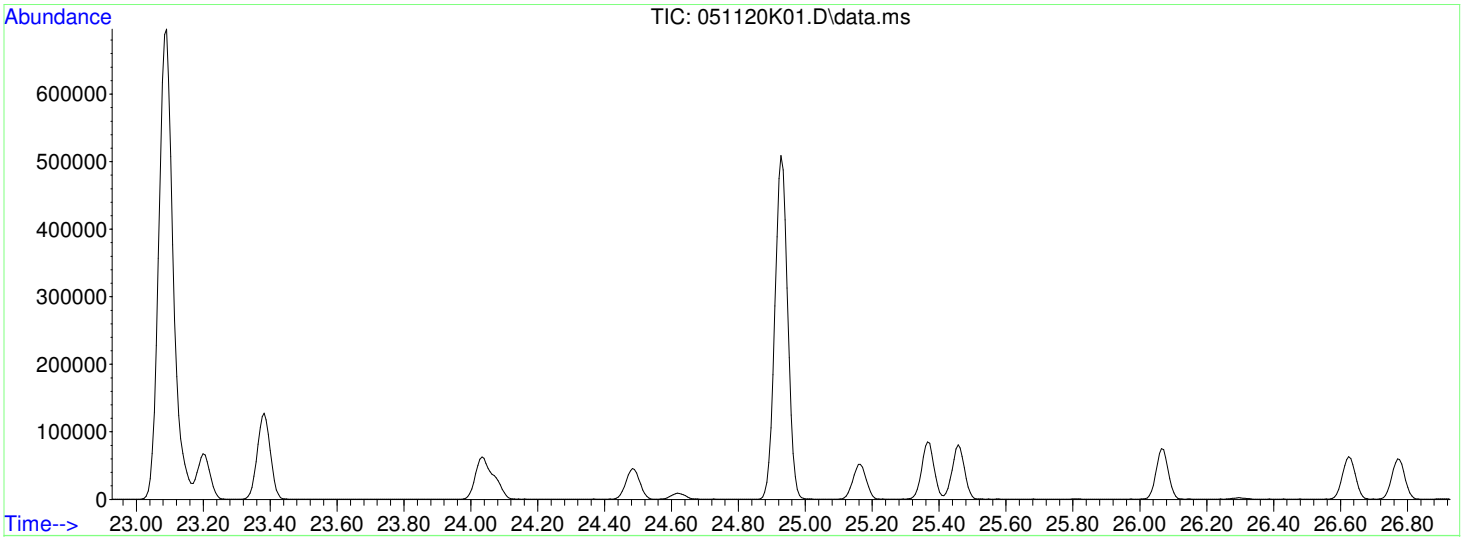
Table of Contents

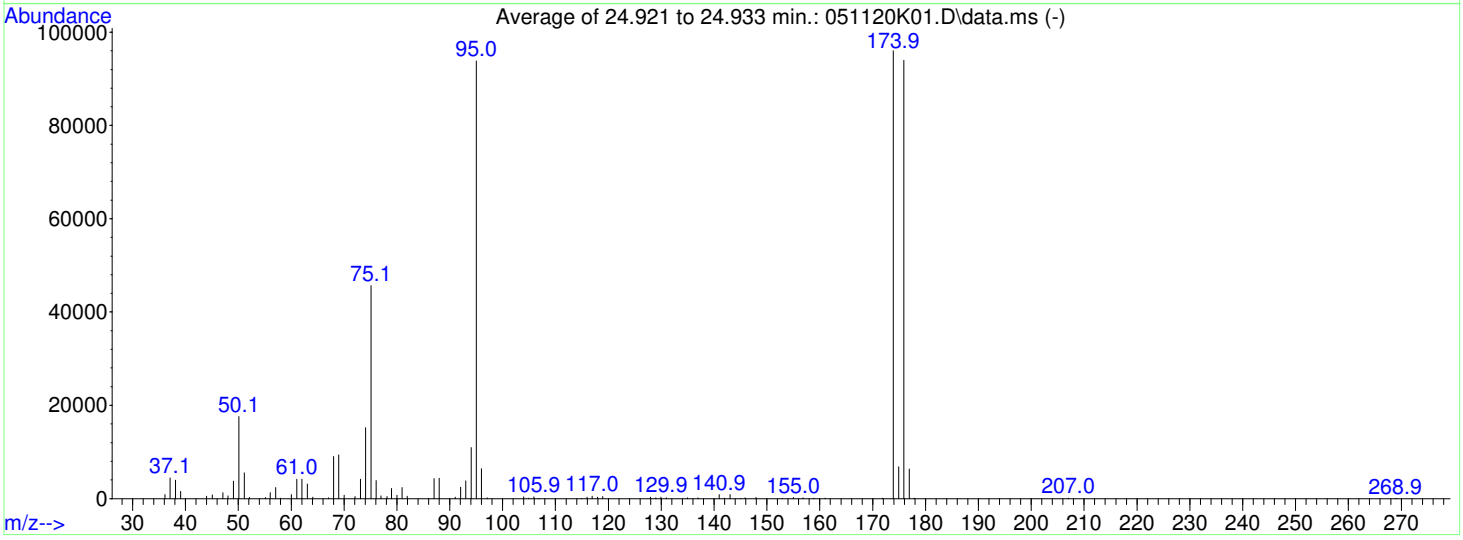
Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K01.D
InstName : HP5973K
Acq On : 11 May 2020 10:08 am
Operator : EM
Sample : S20E006-TUN1
Misc : BFB 1901028
ALS Vial : 27 Sample Multiplier: 1

REVIEWED
By EM at 11:54 am, May 11, 2020

Integration File: lscint.p

Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Title : TO15
Last Update : Thu Apr 02 09:57:00 2020



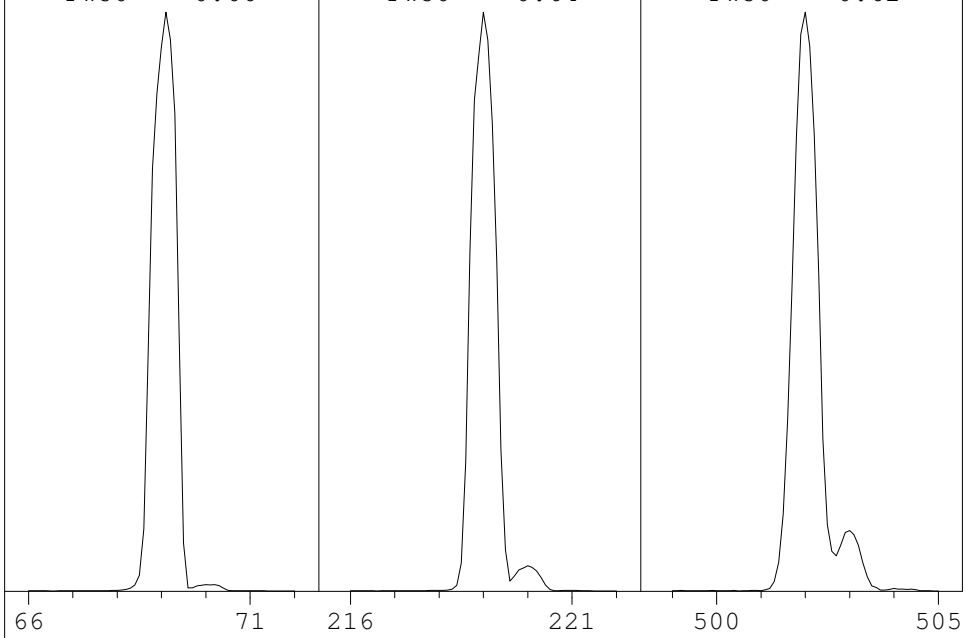


AutoFind: Scans 3327, 3328, 3329; Background Corrected with Scan 3312

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.7	17581	PASS
75	95	30	66	48.7	45661	PASS
95	95	100	100	100.0	93840	PASS
96	95	5	9	6.8	6419	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	102.4	96051	PASS
175	174	4	9	7.1	6859	PASS
176	174	93	101	97.8	93941	PASS
177	176	5	9	6.7	6333	PASS

Mon May 11 09:41:50 2020 Instrum
C:\msdchem\1\5973N\bfb051120K.U US03960556

Mass	69.10	Mass	219.00	Mass	502.00
Ab	831042	Ab	476352	Ab	43984
Pw50	0.66	Pw50	0.64	Pw50	0.62

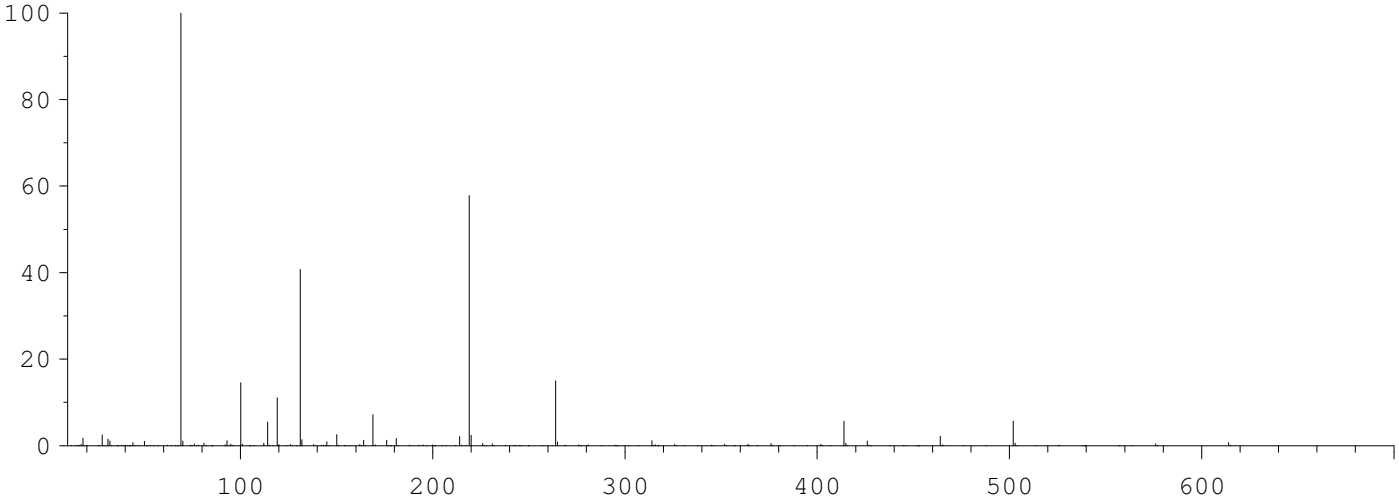


Ion Pol	Pos	MassGain	72
		MassOffs	-8
Emission	34.6	AmuGain	1990
EIEnrgy	69.9	AmuOffs	129
Filament	2	Wid219	-0.031
		DC Pol	Pos
Repeller	32.13		
IonFcus	90.2	HEDEnab	On
EntLens	19.0	EMVolts	1165
EntOffs	19.83		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	230	Turbo Speed	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
181 peaks Base: 69.10 Abundance: 737600



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.10	737600	100.00	70.10	8119	1.10
219.00	426176	57.78	220.00	17984	4.22
502.00	41928	5.68	503.00	3991	9.52

Air/Water Check: H20~1.75% N2~2.52% O2~1.11% CO2~0.74% N2/H2O~143.78%

Column(1) Flow: 0.873 Column(2): 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 502; EM Gain 143533
Repeller Maximum 35 volts using ion 219; Gain Factor 1.44

MassGain Values(Samples): 72(3) 72(2) 72(1) 72(0) 72(FS)

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	129.0	129.0	129.0	129.0	129.0	129.0	129.0
Entrance Lens Offset:	19.8	19.8	19.8	19.8	19.8	19.8	19.8

S20E006-CCV1

Evaluate Continuing Calibration Report

Table of Contents

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K02.D
InstName : HP5973K
Acq On : 11 May 2020 10:58 am
Operator : EM
Sample : S20E006-CCV1@B20E005-BS1
Misc : 10ppbv 2014029@2014032
ALS Vial : 29 Sample Multiplier: 1

REVIEWED
By EM at 11:55 am, May 11, 2020

Quant Time: May 11 11:54:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	84	0.00
2	T	Propene	0.571	0.514	10.0	78	0.00
3	T	Dichlorodifluoromethane	1.523	1.433	5.9	80	0.00
4	T	1,2-Dichlorotetrafluoroetha	1.739	1.603	7.8	79	0.00
5	T	Chloromethane	0.589	0.529	10.2	77	0.00
6	T	Vinyl chloride	0.774	0.713	7.9	78	0.01
7	T	1,3-Butadiene	0.613	0.579	5.5	81	0.01
8	T	Bromomethane	0.542	0.488	10.0	78	0.00
9	T	Chloroethane	0.365	0.323	11.5	77	0.01
10	T	Bromoethene	0.529	0.469	11.3	77	0.00
11	T	Trichlorofluoromethane	1.450	1.374	5.2	82	0.02
12	T	1,1,2-Trichloro-1,2,2-trifl	1.026	0.976	4.9	82	0.00
13	T	1,1-Dichloroethene	0.920	0.817	11.2	76	0.01
14	T	Acetone	0.914	0.809	11.5	78	0.00
15	T	Carbon disulfide	1.674	1.497	10.6	78	0.00
16	T	2-Propanol	0.891	0.789	11.4	75	0.02
17	T	Allyl chloride	0.819	0.717	12.5	76	0.01
18	T	Dichloromethane	0.779	0.678	13.0	80	0.00
19	T	tert-Butyl methyl ether (MT	1.777	1.553	12.6	76	0.00
20	T	trans-1,2-Dichloroethene	0.854	0.763	10.7	78	0.00
21	T	Hexane	1.156	1.023	11.5	76	0.01
22	T	1,1-Dichloroethane	1.178	1.060	10.0	78	0.01
23	T	Vinyl acetate	1.431	1.305	8.8	77	0.01
24	T	cis-1,2-Dichloroethene	0.843	0.965	-14.5	97	0.00
25	T	2-Butanone (MEK)	0.344	0.310	9.9	77	0.01
26	T	Ethyl acetate	0.214	0.185	13.6	75	0.00
27	T	Tetrahydrofuran	0.816	0.752	7.8	79	0.00
28	T	Chloroform	1.169	1.099	6.0	81	0.00
29	T	Cyclohexane	1.164	1.038	10.8	77	0.00
30	T	1,1,1-Trichloroethane	1.159	1.114	3.9	82	0.00
31	T	Carbon tetrachloride	1.204	1.167	3.1	83	0.00
32	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	85	0.00
33	T	Benzene	0.665	0.613	7.8	79	0.00
34	T	2,2,4-Trimethylpentane	1.171	1.056	9.8	78	0.00
35	T	1,2-Dichloroethane	0.261	0.247	5.4	81	0.00
36	T	Heptane	0.429	0.393	8.4	78	0.00
37	T	Trichloroethene	0.278	0.262	5.8	81	0.00
38	T	1,2-Dichloropropane	0.249	0.227	8.8	78	0.00
39	T	1,4-Dioxane	0.156	0.136	12.8	75	0.00
40	T	Bromodichloromethane	0.431	0.408	5.3	81	0.00
41	T	cis-1,3-Dichloropropene	0.383	0.349	8.9	76	0.00
42	T	4-Methyl-2-pentanone (MIBK)	0.499	0.482	3.4	81	0.00
43	I	CHLOROBENZENE-d5	1.000	1.000	0.0	86	0.00
44	T	Toluene	0.867	0.800	7.7	80	0.00
45	T	trans-1,3-Dichloropropene	0.392	0.352	10.2	76	0.00
46	T	1,1,2-Trichloroethane	0.284	0.263	7.4	80	0.00
47	T	Tetrachloroethene	0.442	0.428	3.2	84	0.00
48	T	2-Hexanone	0.499	0.483	3.2	82	0.00
49	T	Chlorodibromomethane	0.475	0.453	4.6	83	0.00
50	T	1,2-Dibromoethane (EDB)	0.415	0.378	8.9	78	0.00
51	T	Chlorobenzene	0.712	0.664	6.7	81	0.00

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K02.D
InstName : HP5973K
Acq On : 11 May 2020 10:58 am
Operator : EM
Sample : S20E006-CCV1@B20E005-BS1
Misc : 10ppbv 2014029@2014032
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 11 11:54:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	T	Ethylbenzene	1.140	1.063	6.8	80	0.00
53	T	m&p-Xylene	0.869	0.827	4.8	81	0.00
54	T	o-Xylene	0.893	0.844	5.5	81	0.00
55	T	Styrene	0.450	0.409	9.1	76	0.00
56	T	Bromoform	0.515	0.504	2.1	83	0.00
57	T	1,1,2,2-Tetrachloroethane	0.654	0.619	5.4	80	0.00
58	T	4-Ethyltoluene	1.393	1.314	5.7	80	0.00
59	T	1,3,5-Trimethylbenzene	1.045	1.032	1.2	83	0.00
60	T	1,2,4-Trimethylbenzene	1.055	1.032	2.2	81	0.00
61	T	1,3-Dichlorobenzene	0.778	0.739	5.0	79	0.00
62	T	1,4-Dichlorobenzene	0.775	0.716	7.6	77	0.00
63	T	Benzyl chloride	0.845	0.763	9.7	72	0.00
64	T	1,2-Dichlorobenzene	0.762	0.736	3.4	80	0.00
65	T	1,2,4-Trichlorobenzene	0.657	0.567	13.7	69	0.00
66	T	Hexachlorobutadiene	0.704	0.714	-1.4	84	0.00

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

Quantitation Report (Not Reviewed)

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K02.D
InstName : HP5973K
Acq On : 11 May 2020 10:58 am
Operator : EM
Sample : S20E006-CCV1@B20E005-BS1
Misc : 10ppbv 2014029@2014032
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 11 11:54:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	16.313	49	242663	19.60	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	739081	19.60	ppbv		0.00
43) CHLOROBENZENE-d5	23.090	117	692357	19.60	ppbv		0.00
Target Compounds							Qvalue
2) Propene	4.998	41	70027	9.90	ppbv		99
3) Dichlorodifluoromethane	5.101	85	180968	9.60	ppbv		100
4) 1,2-Dichlorotetrafluor...	5.490	85	192518	8.94	ppbv		99
5) Chloromethane	5.734	50	70690	9.70	ppbv		100
6) Vinyl chloride	6.081	62	91838	9.59	ppbv		100
7) 1,3-Butadiene	6.184	54	73884	9.73	ppbv		98
8) Bromomethane	7.242	94	61638	9.18	ppbv		99
9) Chloroethane	7.620	64	40820	9.04	ppbv		100
10) Bromoethene	8.258	106	63228	9.66	ppbv		99
11) Trichlorofluoromethane	8.392	101	159945	8.91	ppbv		100
12) 1,1,2-Trichloro-1,2,2-...	10.376	151	120840	9.52	ppbv		97
13) 1,1-Dichloroethene	10.522	61	105222	9.24	ppbv		100
14) Acetone	11.087	43	108207	9.57	ppbv		98
15) Carbon disulfide	11.203	76	203904	9.84	ppbv		99
16) 2-Propanol	11.604	45	107468	9.75	ppbv		95
17) Allyl chloride	11.969	41	97620	9.63	ppbv		100
18) Dichloromethane	12.487	49	83924	8.70	ppbv		98
19) tert-Butyl methyl ethe...	13.028	73	205733	9.35	ppbv		100
20) trans-1,2-Dichloroethene	13.113	61	102923	9.74	ppbv		99
21) Hexane	13.600	57	129135	9.02	ppbv		98
22) 1,1-Dichloroethane	14.403	63	125972	8.64	ppbv		100
23) Vinyl acetate	14.506	43	177735	10.03	ppbv		100
24) cis-1,2-Dichloroethene	15.778	61	120617	11.55	ppbv	#	82
25) 2-Butanone (MEK)	15.869	72	40249	9.45	ppbv	#	93
26) Ethyl acetate	15.875	61	23570	8.88	ppbv	#	86
27) Tetrahydrofuran	16.289	42	94067	9.31	ppbv		100
28) Chloroform	16.447	83	141496	9.78	ppbv		100
29) Cyclohexane	16.623	56	132355	9.19	ppbv		99
30) 1,1,1-Trichloroethane	16.702	97	143479	10.00	ppbv		100
31) Carbon tetrachloride	16.934	117	145921	9.79	ppbv		100
33) Benzene	17.445	78	235736	9.40	ppbv		99
34) 2,2,4-Trimethylpentane	17.317	57	409975	9.28	ppbv		99
35) 1,2-Dichloroethane	17.664	62	92031	9.37	ppbv		100
36) Heptane	17.682	43	152542	9.43	ppbv		100
37) Trichloroethene	18.631	130	106895	10.21	ppbv		99
38) 1,2-Dichloropropane	19.148	63	86521	9.21	ppbv		97
39) 1,4-Dioxane	19.318	88	53273	9.06	ppbv		99
40) Bromodichloromethane	19.604	83	160084	9.84	ppbv		99
41) cis-1,3-Dichloropropene	20.347	75	131765	9.11	ppbv		98
42) 4-Methyl-2-pentanone (...	20.559	43	190672	10.13	ppbv		99
44) Toluene	20.809	91	288086	9.40	ppbv		99
45) trans-1,3-Dichloropropene	21.289	75	119308	8.62	ppbv		99
46) 1,1,2-Trichloroethane	21.600	97	94707	9.45	ppbv		99
47) Tetrachloroethene	21.642	166	154225	9.88	ppbv		99
48) 2-Hexanone	21.898	43	175589	9.97	ppbv		99
49) Chlorodibromomethane	22.208	129	174580	10.41	ppbv		99
50) 1,2-Dibromoethane (EDB)	22.445	107	138702	9.45	ppbv		100
51) Chlorobenzene	23.133	112	241579	9.60	ppbv		100
52) Ethylbenzene	23.200	91	386609	9.60	ppbv		99
53) m&p-Xylene	23.382	91	596189	19.42	ppbv		100
54) o-Xylene	24.033	91	298292	9.46	ppbv		100

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K02.D
InstName : HP5973K
Acq On : 11 May 2020 10:58 am
Operator : EM
Sample : S20E006-CCV1@B20E005-BS1
Misc : 10ppbv 2014029@2014032
ALS Vial : 29 Sample Multiplier: 1

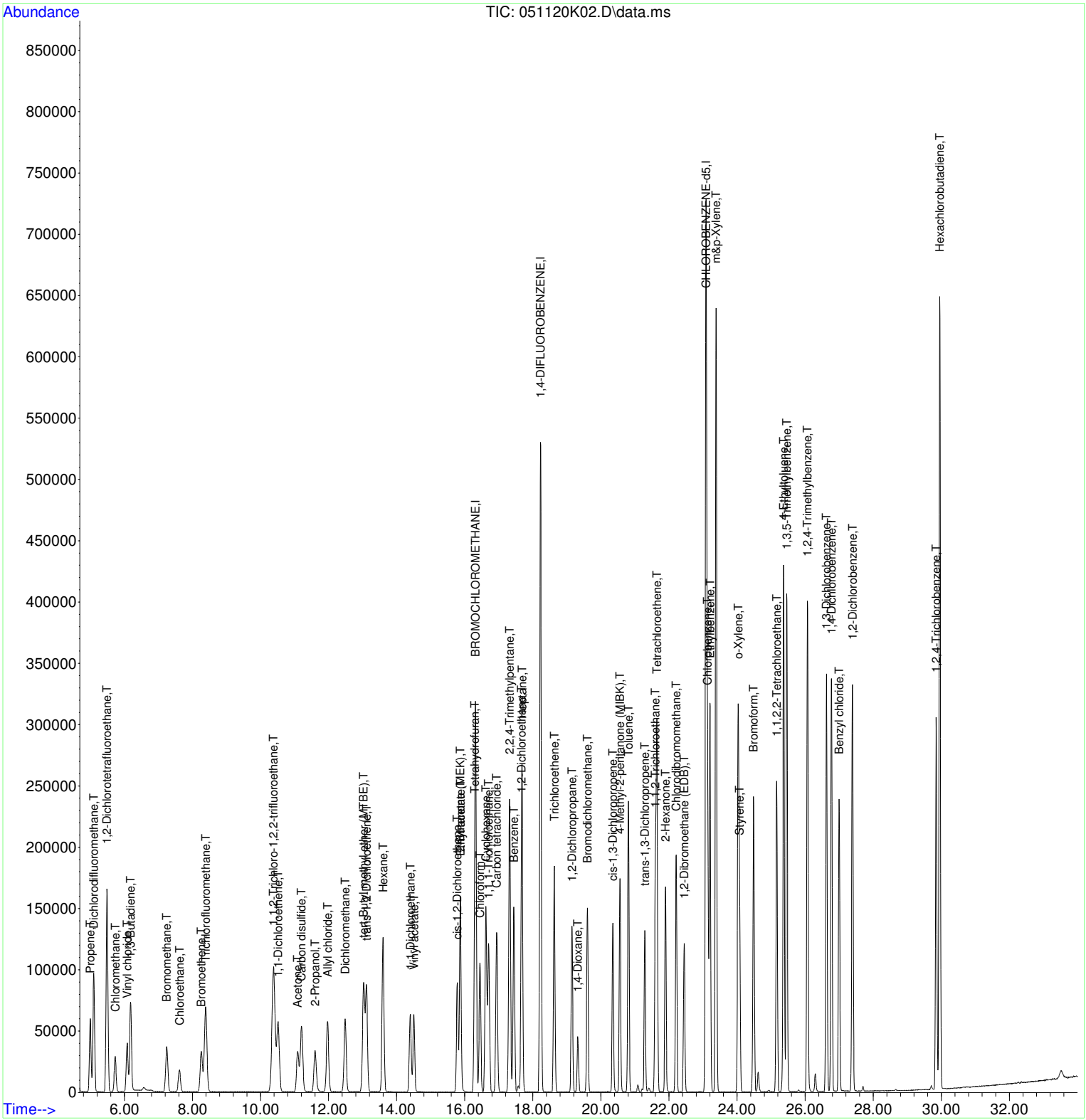
Quant Time: May 11 11:54:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
55) Styrene	24.076	104	141507	8.91	ppbv	98
56) Bromoform	24.483	173	196009	10.78	ppbv	100
57) 1,1,2,2-Tetrachloroethane	25.165	83	216459	9.37	ppbv	100
58) 4-Ethyltoluene	25.365	105	473565	9.63	ppbv	99
59) 1,3,5-Trimethylbenzene	25.457	105	371704	10.07	ppbv	99
60) 1,2,4-Trimethylbenzene	26.065	105	371782	9.97	ppbv	100
61) 1,3-Dichlorobenzene	26.625	146	260880	9.49	ppbv	99
62) 1,4-Dichlorobenzene	26.777	146	252754	9.23	ppbv	100
63) Benzyl chloride	26.996	91	296444	9.94	ppbv	100
64) 1,2-Dichlorobenzene	27.391	146	254777	9.46	ppbv	100
65) 1,2,4-Trichlorobenzene	29.849	180	180251	7.77	ppbv	100
66) Hexachlorobutadiene	29.952	225	232038	9.33	ppbv	100

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

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K02.D
InstName : HP5973K
Acq On : 11 May 2020 10:58 am
Operator : EM
Sample : S20E006-CCV1@B20E005-BS1
Misc : 10ppbv 2014029@2014032
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 11 11:54:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration



REVIEWED
By EM at 11:55 am, May 11, 2020

LCS REPORT

Instrument Name: HP5973K
Sample Name: S20E006-CCV1@B20E005-BS1
Misc Info: 10ppbv 2014029@2014032
Date Acquired: 5/11/2020 10:58
QLast Update: Thu Apr 02 09:57:00 2020
Operator: EM

#	Name	Ret Time	Amount	Concentration	%R	QC	LIMIT	STATUS
1)	BROMOCHLOROMETHANE	16.31	#N/A	19.60	#N/A	70.0	130.0	#N/A
2)	Propene	5.00	11.00	9.90	90%	72.0	114.0	pass
3)	Dichlorodifluoromethane	5.10	10.20	9.60	94%	73.0	120.0	pass
4)	1,2-Dichlorotetrafluoroethane	5.49	9.70	8.94	92%	74.0	116.0	pass
5)	Chloromethane	5.73	10.80	9.70	90%	73.0	113.0	pass
6)	Vinyl chloride	6.08	10.40	9.59	92%	68.0	119.0	pass
7)	1,3-Butadiene	6.18	10.30	9.73	94%	68.0	120.0	pass
8)	Bromomethane	7.24	10.20	9.18	90%	71.0	122.0	pass
9)	Chloroethane	7.62	10.20	9.04	89%	73.0	116.0	pass
10)	Bromoethene	8.26	10.90	9.66	89%	64.0	123.0	pass
11)	Trichlorofluoromethane	8.39	9.40	8.91	95%	74.0	120.0	pass
12)	1,1,2-Trichloro-1,2,2-trifluoroethane	10.38	10.00	9.52	95%	63.0	126.0	pass
13)	1,1-Dichloroethene	10.52	10.40	9.24	89%	69.0	119.0	pass
14)	Acetone	11.09	10.80	9.57	89%	79.0	114.0	pass
15)	Carbon disulfide	11.20	11.00	9.84	89%	75.0	120.0	pass
16)	2-Propanol	11.60	11.00	9.75	89%	66.0	119.0	pass
17)	Allyl chloride	11.97	11.00	9.63	88%	72.0	116.0	pass
18)	Dichloromethane	12.49	10.00	8.70	87%	76.0	110.0	pass
19)	tert-Butyl methyl ether (MTBE)	13.03	10.70	9.35	87%	61.0	124.0	pass
20)	trans-1,2-Dichloroethene	13.11	10.90	9.74	89%	78.0	113.0	pass
21)	Hexane	13.60	10.20	9.02	88%	76.0	116.0	pass
22)	1,1-Dichloroethane	14.40	9.60	8.64	90%	76.0	113.0	pass
23)	Vinyl acetate	14.51	11.00	10.03	91%	71.0	117.0	pass
24)	cis-1,2-Dichloroethene	15.78	10.10	11.55	114%	74.0	116.0	pass
25)	2-Butanone (MEK)	15.87	10.50	9.45	90%	73.0	124.0	pass
26)	Ethyl acetate	15.88	10.30	8.88	86%	71.0	122.0	pass
27)	Tetrahydrofuran	16.29	10.10	9.31	92%	79.0	119.0	pass
28)	Chloroform	16.45	10.40	9.78	94%	77.0	115.0	pass
29)	Cyclohexane	16.62	10.30	9.19	89%	76.0	114.0	pass
30)	1,1,1-Trichloroethane	16.70	10.40	10.00	96%	77.0	117.0	pass
31)	Carbon tetrachloride	16.93	10.10	9.79	97%	75.0	121.0	pass
32)	1,4-DIFLUOROBENZENE	18.22	#N/A	19.60	#N/A	70.0	130.0	#N/A
33)	Benzene	17.44	10.20	9.40	92%	81.0	115.0	pass
34)	2,2,4-Trimethylpentane	17.32	10.30	9.28	90%	77.0	120.0	pass
35)	1,2-Dichloroethane	17.66	9.90	9.37	95%	74.0	128.0	pass
36)	Heptane	17.68	10.30	9.43	92%	73.0	128.0	pass
37)	Trichloroethene	18.63	10.80	10.21	94%	82.0	113.0	pass
38)	1,2-Dichloropropane	19.15	10.10	9.21	91%	78.0	119.0	pass
39)	1,4-Dioxane	19.32	10.40	9.06	87%	73.0	120.0	pass
40)	Bromodichloromethane	19.60	10.40	9.84	95%	79.0	124.0	pass
41)	cis-1,3-Dichloropropene	20.35	10.00	9.11	91%	82.0	117.0	pass
42)	4-Methyl-2-pentanone (MIBK)	20.56	10.50	10.13	96%	67.0	136.0	pass
43)	CHLOROBENZENE-d5	23.09	#N/A	19.60	#N/A	70.0	130.0	#N/A
44)	Toluene	20.81	10.20	9.40	92%	80.0	120.0	pass
45)	trans-1,3-Dichloropropene	21.29	9.60	8.62	90%	81.0	122.0	pass
46)	1,1,2-Trichloroethane	21.60	10.20	9.45	93%	81.0	121.0	pass
47)	Tetrachloroethene	21.64	10.20	9.88	97%	69.0	122.0	pass

48)	2-Hexanone	21.90	10.30	9.97	97%	61.0	140.0	pass
49)	Chlorodibromomethane	22.21	10.90	10.41	96%	82.0	128.0	pass
50)	1,2-Dibromoethane (EDB)	22.45	10.40	9.45	91%	80.0	121.0	pass
51)	Chlorobenzene	23.13	10.30	9.60	93%	80.0	122.0	pass
52)	Ethylbenzene	23.20	10.30	9.60	93%	80.0	125.0	pass
53)	m&p-Xylene	23.38	20.40	19.42	95%	80.0	128.0	pass
54)	o-Xylene	24.03	10.00	9.46	95%	79.0	130.0	pass
55)	Styrene	24.08	9.80	8.91	91%	76.0	133.0	pass
56)	Bromoform	24.48	11.00	10.78	98%	82.0	136.0	pass
57)	1,1,2,2-Tetrachloroethane	25.16	9.90	9.37	95%	78.0	132.0	pass
58)	4-Ethyltoluene	25.37	10.20	9.63	94%	77.0	133.0	pass
59)	1,3,5-Trimethylbenzene	25.46	10.20	10.07	99%	78.0	133.0	pass
60)	1,2,4-Trimethylbenzene	26.07	10.20	9.97	98%	78.0	133.0	pass
61)	1,3-Dichlorobenzene	26.62	10.00	9.49	95%	76.0	133.0	pass
62)	1,4-Dichlorobenzene	26.78	10.00	9.23	92%	75.0	134.0	pass
63)	Benzyl chloride	27.00	11.00	9.94	90%	73.0	144.0	pass
64)	1,2-Dichlorobenzene	27.39	9.80	9.46	97%	77.0	134.0	pass
65)	1,2,4-Trichlorobenzene	29.85	9.00	7.77	86%	70.0	133.0	pass
66)	Hexachlorobutadiene	29.96	9.20	9.33	101%	74.0	130.0	pass

B20E005-BS1

REVIEWED
By EM at 11:55 am, May 11, 2020

LCS REPORT

Instrument Name: HP5973K
Sample Name: S20E006-CCV1@B20E005-BS1
Misc Info: 10ppbv 2014029@2014032
Date Acquired: 5/11/2020 10:58
QLast Update: Thu Apr 02 09:57:00 2020
Operator: EM

#	Name	Ret Time	Amount	Concentration	%R	QC	LIMIT	STATUS
1)	BROMOCHLOROMETHANE	16.31	#N/A	19.60	#N/A	70.0	130.0	#N/A
2)	Propene	5.00	11.00	9.90	90%	72.0	114.0	pass
3)	Dichlorodifluoromethane	5.10	10.20	9.60	94%	73.0	120.0	pass
4)	1,2-Dichlorotetrafluoroethane	5.49	9.70	8.94	92%	74.0	116.0	pass
5)	Chloromethane	5.73	10.80	9.70	90%	73.0	113.0	pass
6)	Vinyl chloride	6.08	10.40	9.59	92%	68.0	119.0	pass
7)	1,3-Butadiene	6.18	10.30	9.73	94%	68.0	120.0	pass
8)	Bromomethane	7.24	10.20	9.18	90%	71.0	122.0	pass
9)	Chloroethane	7.62	10.20	9.04	89%	73.0	116.0	pass
10)	Bromoethene	8.26	10.90	9.66	89%	64.0	123.0	pass
11)	Trichlorofluoromethane	8.39	9.40	8.91	95%	74.0	120.0	pass
12)	1,1,2-Trichloro-1,2,2-trifluoroethane	10.38	10.00	9.52	95%	63.0	126.0	pass
13)	1,1-Dichloroethene	10.52	10.40	9.24	89%	69.0	119.0	pass
14)	Acetone	11.09	10.80	9.57	89%	79.0	114.0	pass
15)	Carbon disulfide	11.20	11.00	9.84	89%	75.0	120.0	pass
16)	2-Propanol	11.60	11.00	9.75	89%	66.0	119.0	pass
17)	Allyl chloride	11.97	11.00	9.63	88%	72.0	116.0	pass
18)	Dichloromethane	12.49	10.00	8.70	87%	76.0	110.0	pass
19)	tert-Butyl methyl ether (MTBE)	13.03	10.70	9.35	87%	61.0	124.0	pass
20)	trans-1,2-Dichloroethene	13.11	10.90	9.74	89%	78.0	113.0	pass
21)	Hexane	13.60	10.20	9.02	88%	76.0	116.0	pass
22)	1,1-Dichloroethane	14.40	9.60	8.64	90%	76.0	113.0	pass
23)	Vinyl acetate	14.51	11.00	10.03	91%	71.0	117.0	pass
24)	cis-1,2-Dichloroethene	15.78	10.10	11.55	114%	74.0	116.0	pass
25)	2-Butanone (MEK)	15.87	10.50	9.45	90%	73.0	124.0	pass
26)	Ethyl acetate	15.88	10.30	8.88	86%	71.0	122.0	pass
27)	Tetrahydrofuran	16.29	10.10	9.31	92%	79.0	119.0	pass
28)	Chloroform	16.45	10.40	9.78	94%	77.0	115.0	pass
29)	Cyclohexane	16.62	10.30	9.19	89%	76.0	114.0	pass
30)	1,1,1-Trichloroethane	16.70	10.40	10.00	96%	77.0	117.0	pass
31)	Carbon tetrachloride	16.93	10.10	9.79	97%	75.0	121.0	pass
32)	1,4-DIFLUOROBENZENE	18.22	#N/A	19.60	#N/A	70.0	130.0	#N/A
33)	Benzene	17.44	10.20	9.40	92%	81.0	115.0	pass
34)	2,2,4-Trimethylpentane	17.32	10.30	9.28	90%	77.0	120.0	pass
35)	1,2-Dichloroethane	17.66	9.90	9.37	95%	74.0	128.0	pass
36)	Heptane	17.68	10.30	9.43	92%	73.0	128.0	pass
37)	Trichloroethene	18.63	10.80	10.21	94%	82.0	113.0	pass
38)	1,2-Dichloropropane	19.15	10.10	9.21	91%	78.0	119.0	pass
39)	1,4-Dioxane	19.32	10.40	9.06	87%	73.0	120.0	pass
40)	Bromodichloromethane	19.60	10.40	9.84	95%	79.0	124.0	pass
41)	cis-1,3-Dichloropropene	20.35	10.00	9.11	91%	82.0	117.0	pass
42)	4-Methyl-2-pentanone (MIBK)	20.56	10.50	10.13	96%	67.0	136.0	pass
43)	CHLOROBENZENE-d5	23.09	#N/A	19.60	#N/A	70.0	130.0	#N/A
44)	Toluene	20.81	10.20	9.40	92%	80.0	120.0	pass
45)	trans-1,3-Dichloropropene	21.29	9.60	8.62	90%	81.0	122.0	pass
46)	1,1,2-Trichloroethane	21.60	10.20	9.45	93%	81.0	121.0	pass
47)	Tetrachloroethene	21.64	10.20	9.88	97%	69.0	122.0	pass

48)	2-Hexanone	21.90	10.30	9.97	97%	61.0	140.0	pass
49)	Chlorodibromomethane	22.21	10.90	10.41	96%	82.0	128.0	pass
50)	1,2-Dibromoethane (EDB)	22.45	10.40	9.45	91%	80.0	121.0	pass
51)	Chlorobenzene	23.13	10.30	9.60	93%	80.0	122.0	pass
52)	Ethylbenzene	23.20	10.30	9.60	93%	80.0	125.0	pass
53)	m&p-Xylene	23.38	20.40	19.42	95%	80.0	128.0	pass
54)	o-Xylene	24.03	10.00	9.46	95%	79.0	130.0	pass
55)	Styrene	24.08	9.80	8.91	91%	76.0	133.0	pass
56)	Bromoform	24.48	11.00	10.78	98%	82.0	136.0	pass
57)	1,1,2,2-Tetrachloroethane	25.16	9.90	9.37	95%	78.0	132.0	pass
58)	4-Ethyltoluene	25.37	10.20	9.63	94%	77.0	133.0	pass
59)	1,3,5-Trimethylbenzene	25.46	10.20	10.07	99%	78.0	133.0	pass
60)	1,2,4-Trimethylbenzene	26.07	10.20	9.97	98%	78.0	133.0	pass
61)	1,3-Dichlorobenzene	26.62	10.00	9.49	95%	76.0	133.0	pass
62)	1,4-Dichlorobenzene	26.78	10.00	9.23	92%	75.0	134.0	pass
63)	Benzyl chloride	27.00	11.00	9.94	90%	73.0	144.0	pass
64)	1,2-Dichlorobenzene	27.39	9.80	9.46	97%	77.0	134.0	pass
65)	1,2,4-Trichlorobenzene	29.85	9.00	7.77	86%	70.0	133.0	pass
66)	Hexachlorobutadiene	29.96	9.20	9.33	101%	74.0	130.0	pass

Quantitation Report (Not Reviewed)

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K02.D
InstName : HP5973K
Acq On : 11 May 2020 10:58 am
Operator : EM
Sample : S20E006-CCV1@B20E005-BS1
Misc : 10ppbv 2014029@2014032
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 11 11:54:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	16.313	49	242663	19.60	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	739081	19.60	ppbv		0.00
43) CHLOROBENZENE-d5	23.090	117	692357	19.60	ppbv		0.00
Target Compounds							Qvalue
2) Propene	4.998	41	70027	9.90	ppbv		99
3) Dichlorodifluoromethane	5.101	85	180968	9.60	ppbv		100
4) 1,2-Dichlorotetrafluor...	5.490	85	192518	8.94	ppbv		99
5) Chloromethane	5.734	50	70690	9.70	ppbv		100
6) Vinyl chloride	6.081	62	91838	9.59	ppbv		100
7) 1,3-Butadiene	6.184	54	73884	9.73	ppbv		98
8) Bromomethane	7.242	94	61638	9.18	ppbv		99
9) Chloroethane	7.620	64	40820	9.04	ppbv		100
10) Bromoethene	8.258	106	63228	9.66	ppbv		99
11) Trichlorofluoromethane	8.392	101	159945	8.91	ppbv		100
12) 1,1,2-Trichloro-1,2,2-...	10.376	151	120840	9.52	ppbv		97
13) 1,1-Dichloroethene	10.522	61	105222	9.24	ppbv		100
14) Acetone	11.087	43	108207	9.57	ppbv		98
15) Carbon disulfide	11.203	76	203904	9.84	ppbv		99
16) 2-Propanol	11.604	45	107468	9.75	ppbv		95
17) Allyl chloride	11.969	41	97620	9.63	ppbv		100
18) Dichloromethane	12.487	49	83924	8.70	ppbv		98
19) tert-Butyl methyl ethe...	13.028	73	205733	9.35	ppbv		100
20) trans-1,2-Dichloroethene	13.113	61	102923	9.74	ppbv		99
21) Hexane	13.600	57	129135	9.02	ppbv		98
22) 1,1-Dichloroethane	14.403	63	125972	8.64	ppbv		100
23) Vinyl acetate	14.506	43	177735	10.03	ppbv		100
24) cis-1,2-Dichloroethene	15.778	61	120617	11.55	ppbv	#	82
25) 2-Butanone (MEK)	15.869	72	40249	9.45	ppbv	#	93
26) Ethyl acetate	15.875	61	23570	8.88	ppbv	#	86
27) Tetrahydrofuran	16.289	42	94067	9.31	ppbv		100
28) Chloroform	16.447	83	141496	9.78	ppbv		100
29) Cyclohexane	16.623	56	132355	9.19	ppbv		99
30) 1,1,1-Trichloroethane	16.702	97	143479	10.00	ppbv		100
31) Carbon tetrachloride	16.934	117	145921	9.79	ppbv		100
33) Benzene	17.445	78	235736	9.40	ppbv		99
34) 2,2,4-Trimethylpentane	17.317	57	409975	9.28	ppbv		99
35) 1,2-Dichloroethane	17.664	62	92031	9.37	ppbv		100
36) Heptane	17.682	43	152542	9.43	ppbv		100
37) Trichloroethene	18.631	130	106895	10.21	ppbv		99
38) 1,2-Dichloropropane	19.148	63	86521	9.21	ppbv		97
39) 1,4-Dioxane	19.318	88	53273	9.06	ppbv		99
40) Bromodichloromethane	19.604	83	160084	9.84	ppbv		99
41) cis-1,3-Dichloropropene	20.347	75	131765	9.11	ppbv		98
42) 4-Methyl-2-pentanone (...	20.559	43	190672	10.13	ppbv		99
44) Toluene	20.809	91	288086	9.40	ppbv		99
45) trans-1,3-Dichloropropene	21.289	75	119308	8.62	ppbv		99
46) 1,1,2-Trichloroethane	21.600	97	94707	9.45	ppbv		99
47) Tetrachloroethene	21.642	166	154225	9.88	ppbv		99
48) 2-Hexanone	21.898	43	175589	9.97	ppbv		99
49) Chlorodibromomethane	22.208	129	174580	10.41	ppbv		99
50) 1,2-Dibromoethane (EDB)	22.445	107	138702	9.45	ppbv		100
51) Chlorobenzene	23.133	112	241579	9.60	ppbv		100
52) Ethylbenzene	23.200	91	386609	9.60	ppbv		99
53) m&p-Xylene	23.382	91	596189	19.42	ppbv		100
54) o-Xylene	24.033	91	298292	9.46	ppbv		100

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K02.D
InstName : HP5973K
Acq On : 11 May 2020 10:58 am
Operator : EM
Sample : S20E006-CCV1@B20E005-BS1
Misc : 10ppbv 2014029@2014032
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 11 11:54:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
55) Styrene	24.076	104	141507	8.91	ppbv	98
56) Bromoform	24.483	173	196009	10.78	ppbv	100
57) 1,1,2,2-Tetrachloroethane	25.165	83	216459	9.37	ppbv	100
58) 4-Ethyltoluene	25.365	105	473565	9.63	ppbv	99
59) 1,3,5-Trimethylbenzene	25.457	105	371704	10.07	ppbv	99
60) 1,2,4-Trimethylbenzene	26.065	105	371782	9.97	ppbv	100
61) 1,3-Dichlorobenzene	26.625	146	260880	9.49	ppbv	99
62) 1,4-Dichlorobenzene	26.777	146	252754	9.23	ppbv	100
63) Benzyl chloride	26.996	91	296444	9.94	ppbv	100
64) 1,2-Dichlorobenzene	27.391	146	254777	9.46	ppbv	100
65) 1,2,4-Trichlorobenzene	29.849	180	180251	7.77	ppbv	100
66) Hexachlorobutadiene	29.952	225	232038	9.33	ppbv	100

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

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Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K02.D
InstName  : HP5973K
Acq On    : 11 May 2020  10:58 am
Operator  : EM
Sample    : S20E006-CCV1@B20E005-BS1
Misc      : 10ppbv 2014029@2014032
ALS Vial  : 29   Sample Multiplier: 1

Quant Time: May 11 11:54:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title  : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration
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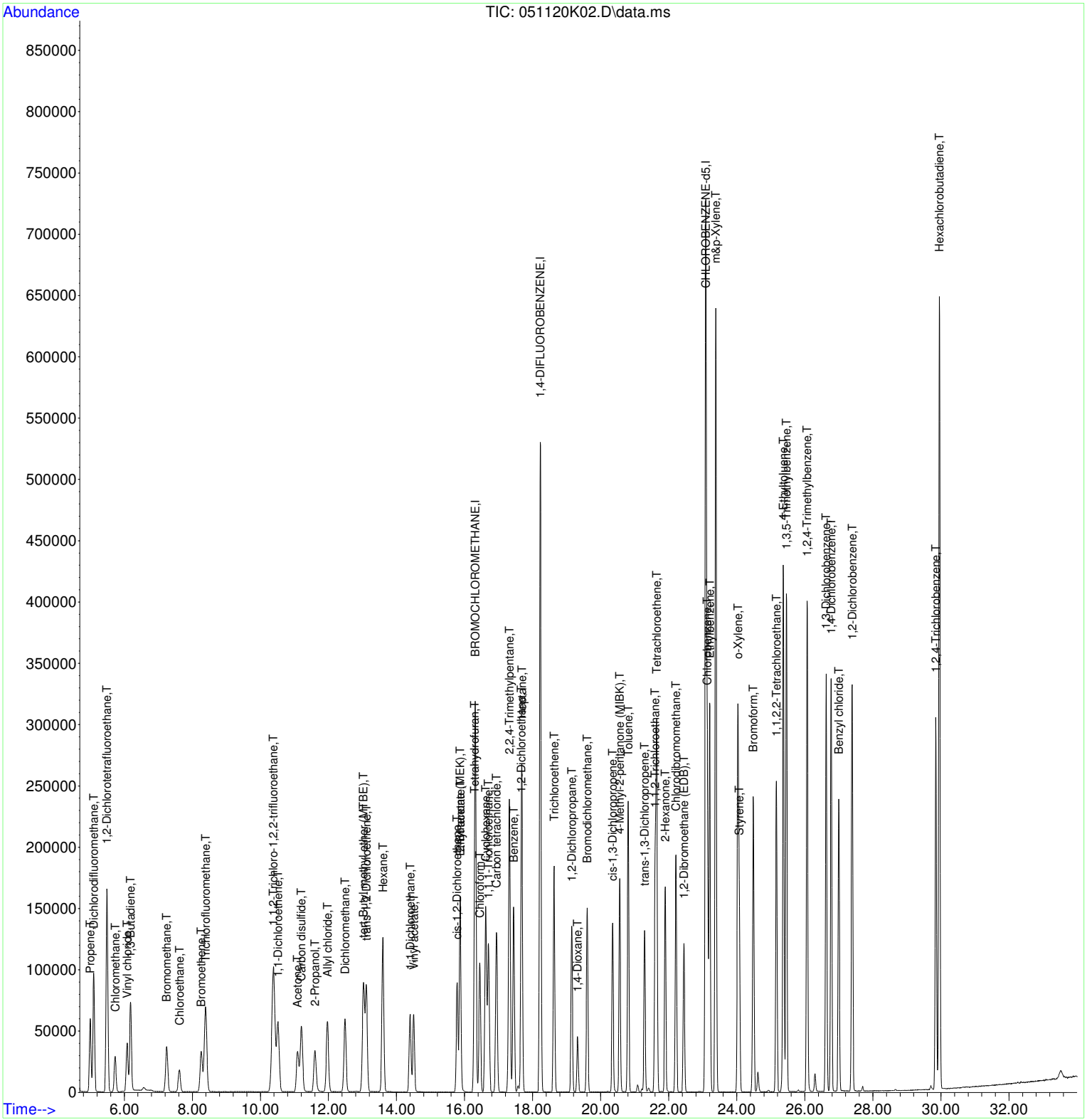


Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K02.D
InstName : HP5973K
Acq On : 11 May 2020 10:58 am
Operator : EM
Sample : S20E006-CCV1@B20E005-BS1
Misc : 10ppbv 2014029@2014032
ALS Vial : 29 Sample Multiplier: 1

REVIEWED
By EM at 11:55 am, May 11, 2020

Quant Time: May 11 11:54:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	84	0.00
2	T	Propene	0.571	0.514	10.0	78	0.00
3	T	Dichlorodifluoromethane	1.523	1.433	5.9	80	0.00
4	T	1,2-Dichlorotetrafluoroetha	1.739	1.603	7.8	79	0.00
5	T	Chloromethane	0.589	0.529	10.2	77	0.00
6	T	Vinyl chloride	0.774	0.713	7.9	78	0.01
7	T	1,3-Butadiene	0.613	0.579	5.5	81	0.01
8	T	Bromomethane	0.542	0.488	10.0	78	0.00
9	T	Chloroethane	0.365	0.323	11.5	77	0.01
10	T	Bromoethene	0.529	0.469	11.3	77	0.00
11	T	Trichlorofluoromethane	1.450	1.374	5.2	82	0.02
12	T	1,1,2-Trichloro-1,2,2-trifl	1.026	0.976	4.9	82	0.00
13	T	1,1-Dichloroethene	0.920	0.817	11.2	76	0.01
14	T	Acetone	0.914	0.809	11.5	78	0.00
15	T	Carbon disulfide	1.674	1.497	10.6	78	0.00
16	T	2-Propanol	0.891	0.789	11.4	75	0.02
17	T	Allyl chloride	0.819	0.717	12.5	76	0.01
18	T	Dichloromethane	0.779	0.678	13.0	80	0.00
19	T	tert-Butyl methyl ether (MT	1.777	1.553	12.6	76	0.00
20	T	trans-1,2-Dichloroethene	0.854	0.763	10.7	78	0.00
21	T	Hexane	1.156	1.023	11.5	76	0.01
22	T	1,1-Dichloroethane	1.178	1.060	10.0	78	0.01
23	T	Vinyl acetate	1.431	1.305	8.8	77	0.01
24	T	cis-1,2-Dichloroethene	0.843	0.965	-14.5	97	0.00
25	T	2-Butanone (MEK)	0.344	0.310	9.9	77	0.01
26	T	Ethyl acetate	0.214	0.185	13.6	75	0.00
27	T	Tetrahydrofuran	0.816	0.752	7.8	79	0.00
28	T	Chloroform	1.169	1.099	6.0	81	0.00
29	T	Cyclohexane	1.164	1.038	10.8	77	0.00
30	T	1,1,1-Trichloroethane	1.159	1.114	3.9	82	0.00
31	T	Carbon tetrachloride	1.204	1.167	3.1	83	0.00
32	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	85	0.00
33	T	Benzene	0.665	0.613	7.8	79	0.00
34	T	2,2,4-Trimethylpentane	1.171	1.056	9.8	78	0.00
35	T	1,2-Dichloroethane	0.261	0.247	5.4	81	0.00
36	T	Heptane	0.429	0.393	8.4	78	0.00
37	T	Trichloroethene	0.278	0.262	5.8	81	0.00
38	T	1,2-Dichloropropane	0.249	0.227	8.8	78	0.00
39	T	1,4-Dioxane	0.156	0.136	12.8	75	0.00
40	T	Bromodichloromethane	0.431	0.408	5.3	81	0.00
41	T	cis-1,3-Dichloropropene	0.383	0.349	8.9	76	0.00
42	T	4-Methyl-2-pentanone (MIBK)	0.499	0.482	3.4	81	0.00
43	I	CHLOROBENZENE-d5	1.000	1.000	0.0	86	0.00
44	T	Toluene	0.867	0.800	7.7	80	0.00
45	T	trans-1,3-Dichloropropene	0.392	0.352	10.2	76	0.00
46	T	1,1,2-Trichloroethane	0.284	0.263	7.4	80	0.00
47	T	Tetrachloroethene	0.442	0.428	3.2	84	0.00
48	T	2-Hexanone	0.499	0.483	3.2	82	0.00
49	T	Chlorodibromomethane	0.475	0.453	4.6	83	0.00
50	T	1,2-Dibromoethane (EDB)	0.415	0.378	8.9	78	0.00
51	T	Chlorobenzene	0.712	0.664	6.7	81	0.00

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K02.D
InstName : HP5973K
Acq On : 11 May 2020 10:58 am
Operator : EM
Sample : S20E006-CCV1@B20E005-BS1
Misc : 10ppbv 2014029@2014032
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 11 11:54:14 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	T	Ethylbenzene	1.140	1.063	6.8	80	0.00
53	T	m&p-Xylene	0.869	0.827	4.8	81	0.00
54	T	o-Xylene	0.893	0.844	5.5	81	0.00
55	T	Styrene	0.450	0.409	9.1	76	0.00
56	T	Bromoform	0.515	0.504	2.1	83	0.00
57	T	1,1,2,2-Tetrachloroethane	0.654	0.619	5.4	80	0.00
58	T	4-Ethyltoluene	1.393	1.314	5.7	80	0.00
59	T	1,3,5-Trimethylbenzene	1.045	1.032	1.2	83	0.00
60	T	1,2,4-Trimethylbenzene	1.055	1.032	2.2	81	0.00
61	T	1,3-Dichlorobenzene	0.778	0.739	5.0	79	0.00
62	T	1,4-Dichlorobenzene	0.775	0.716	7.6	77	0.00
63	T	Benzyl chloride	0.845	0.763	9.7	72	0.00
64	T	1,2-Dichlorobenzene	0.762	0.736	3.4	80	0.00
65	T	1,2,4-Trichlorobenzene	0.657	0.567	13.7	69	0.00
66	T	Hexachlorobutadiene	0.704	0.714	-1.4	84	0.00

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

S20E006-CRL1

Quantitation Report (Not Reviewed)

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K03.D
InstName : HP5973K
Acq On : 11 May 2020 11:48 am
Operator : EM
Sample : S20E006-CRL1
Misc : 1.0ppbv 2014026
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 11 14:40:17 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	16.313	49	253244	19.60	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	787950	19.60	ppbv		0.00
43) CHLOROBENZENE-d5	23.090	117	707058	19.60	ppbv		0.00
Target Compounds							Qvalue
2) Propene	4.998	41	7340	0.99	ppbv		97
3) Dichlorodifluoromethane	5.101	85	17513	0.89	ppbv		98
4) 1,2-Dichlorotetrafluor...	5.497	85	18586	0.83	ppbv		98
5) Chloromethane	5.734	50	7032	0.92	ppbv		98
6) Vinyl chloride	6.068	62	9378	0.94	ppbv		100
7) 1,3-Butadiene	6.178	54	7633	0.96	ppbv		86
8) Bromomethane	7.249	94	5841	0.83	ppbv		99
9) Chloroethane	7.608	64	3722	0.79	ppbv	#	43
10) Bromoethene	8.258	106	6255	0.92	ppbv		95
11) Trichlorofluoromethane	8.380	101	14902	0.80	ppbv		99
12) 1,1,2-Trichloro-1,2,2-...	10.382	151	11310	0.85	ppbv		96
13) 1,1-Dichloroethene	10.503	61	9217	0.78	ppbv	#	28
14) Acetone	11.100	43	10109	0.86	ppbv		95
15) Carbon disulfide	11.209	76	19817	0.92	ppbv		100
16) 2-Propanol	11.611	45	8391	0.73	ppbv		85
17) Allyl chloride	11.963	41	8600	0.81	ppbv		97
18) Dichloromethane	12.480	49	10088	1.00	ppbv		99
19) tert-Butyl methyl ethe...	13.040	73	17383	0.76	ppbv		99
20) trans-1,2-Dichloroethene	13.119	61	9763	0.89	ppbv		98
21) Hexane	13.594	57	10747	0.72	ppbv		93
22) 1,1-Dichloroethane	14.403	63	11691	0.77	ppbv		97
23) Vinyl acetate	14.500	43	12593	0.68	ppbv		99
24) cis-1,2-Dichloroethene	15.772	61	10300	0.95	ppbv	#	83
25) 2-Butanone (MEK)	15.875	72	3332	0.75	ppbv	#	87
26) Ethyl acetate	15.875	61	2142	0.77	ppbv	#	98
27) Tetrahydrofuran	16.295	42	8265	0.78	ppbv		96
28) Chloroform	16.441	83	12779	0.85	ppbv		98
29) Cyclohexane	16.623	56	11477	0.76	ppbv		98
30) 1,1,1-Trichloroethane	16.702	97	12619	0.84	ppbv		99
31) Carbon tetrachloride	16.940	117	12519	0.80	ppbv		98
33) Benzene	17.439	78	21015	0.79	ppbv		100
34) 2,2,4-Trimethylpentane	17.317	57	34530	0.73	ppbv		97
35) 1,2-Dichloroethane	17.664	62	8067	0.77	ppbv		98
36) Heptane	17.682	43	12516	0.73	ppbv		99
37) Trichloroethene	18.625	130	9357	0.84	ppbv		99
38) 1,2-Dichloropropane	19.142	63	7395	0.74	ppbv		96
39) 1,4-Dioxane	19.318	88	4293	0.69	ppbv		99
40) Bromodichloromethane	19.598	83	14390	0.83	ppbv		99
41) cis-1,3-Dichloropropene	20.353	75	10008	0.65	ppbv		98
42) 4-Methyl-2-pentanone (...	20.559	43	15126	0.75	ppbv		97
44) Toluene	20.809	91	22949	0.73	ppbv		99
45) trans-1,3-Dichloropropene	21.290	75	8529	0.60	ppbv		97
46) 1,1,2-Trichloroethane	21.600	97	7841	0.77	ppbv		98
47) Tetrachloroethene	21.648	166	12835	0.81	ppbv		98
48) 2-Hexanone	21.898	43	12159	0.68	ppbv		95
49) Chlorodibromomethane	22.208	129	13959	0.82	ppbv		99
50) 1,2-Dibromoethane (EDB)	22.445	107	10880	0.73	ppbv		99
51) Chlorobenzene	23.139	112	20610	0.80	ppbv	#	79
52) Ethylbenzene	23.200	91	30947	0.75	ppbv		100
53) m&p-Xylene	23.382	91	44988	1.43	ppbv		100
54) o-Xylene	24.027	91	21533	0.67	ppbv		100

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K03.D
InstName : HP5973K
Acq On : 11 May 2020 11:48 am
Operator : EM
Sample : S20E006-CRL1
Misc : 1.0ppbv 2014026
ALS Vial : 27 Sample Multiplier: 1

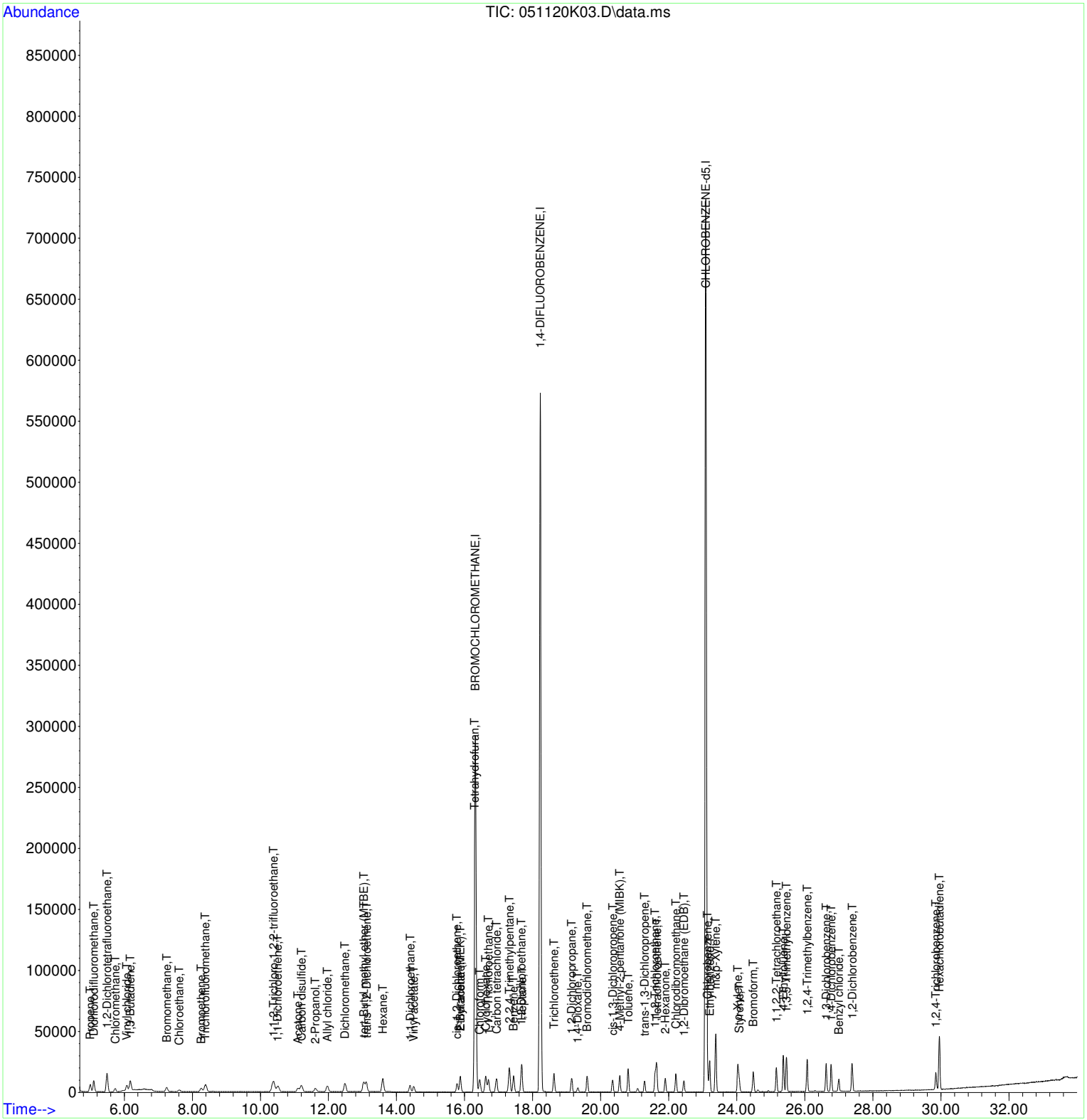
Quant Time: May 11 14:40:17 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
55) Styrene	24.076	104	9685	0.60 ppbv	97
56) Bromoform	24.483	173	13649	0.73 ppbv	98
57) 1,1,2,2-Tetrachloroethane	25.165	83	16439	0.70 ppbv	99
58) 4-Ethyltoluene	25.365	105	32846	0.65 ppbv	98
59) 1,3,5-Trimethylbenzene	25.457	105	25959	0.69 ppbv	99
60) 1,2,4-Trimethylbenzene	26.071	105	24298	0.64 ppbv	100
61) 1,3-Dichlorobenzene	26.631	146	17910	0.64 ppbv	99
62) 1,4-Dichlorobenzene	26.777	146	16854	0.60 ppbv	99
63) Benzyl chloride	26.996	91	13611	0.45 ppbv	98
64) 1,2-Dichlorobenzene	27.391	146	17908	0.65 ppbv	99
65) 1,2,4-Trichlorobenzene	29.849	180	9532	0.40 ppbv	99
66) Hexachlorobutadiene	29.953	225	16154	0.64 ppbv	99

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

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K03.D
InstName : HP5973K
Acq On : 11 May 2020 11:48 am
Operator : EM
Sample : S20E006-CRL1
Misc : 1.0ppbv 2014026
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 11 14:40:17 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration



B20E005-BLK1

Quantitation Report (Not Reviewed)

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K04.D
InstName : HP5973K
Acq On : 11 May 2020 12:41 pm
Operator : EM
Sample : B20E005-BLK1
Misc : 200ml BLANK
ALS Vial : 33 Sample Multiplier: 1

Quant Time: May 11 14:39:56 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) BROMOCHLOROMETHANE	16.313	49	246674	19.60 ppbv	0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	768477	19.60 ppbv	0.00
43) CHLOROBENZENE-d5	23.090	117	675190	19.60 ppbv	0.00

Target Compounds Qvalue

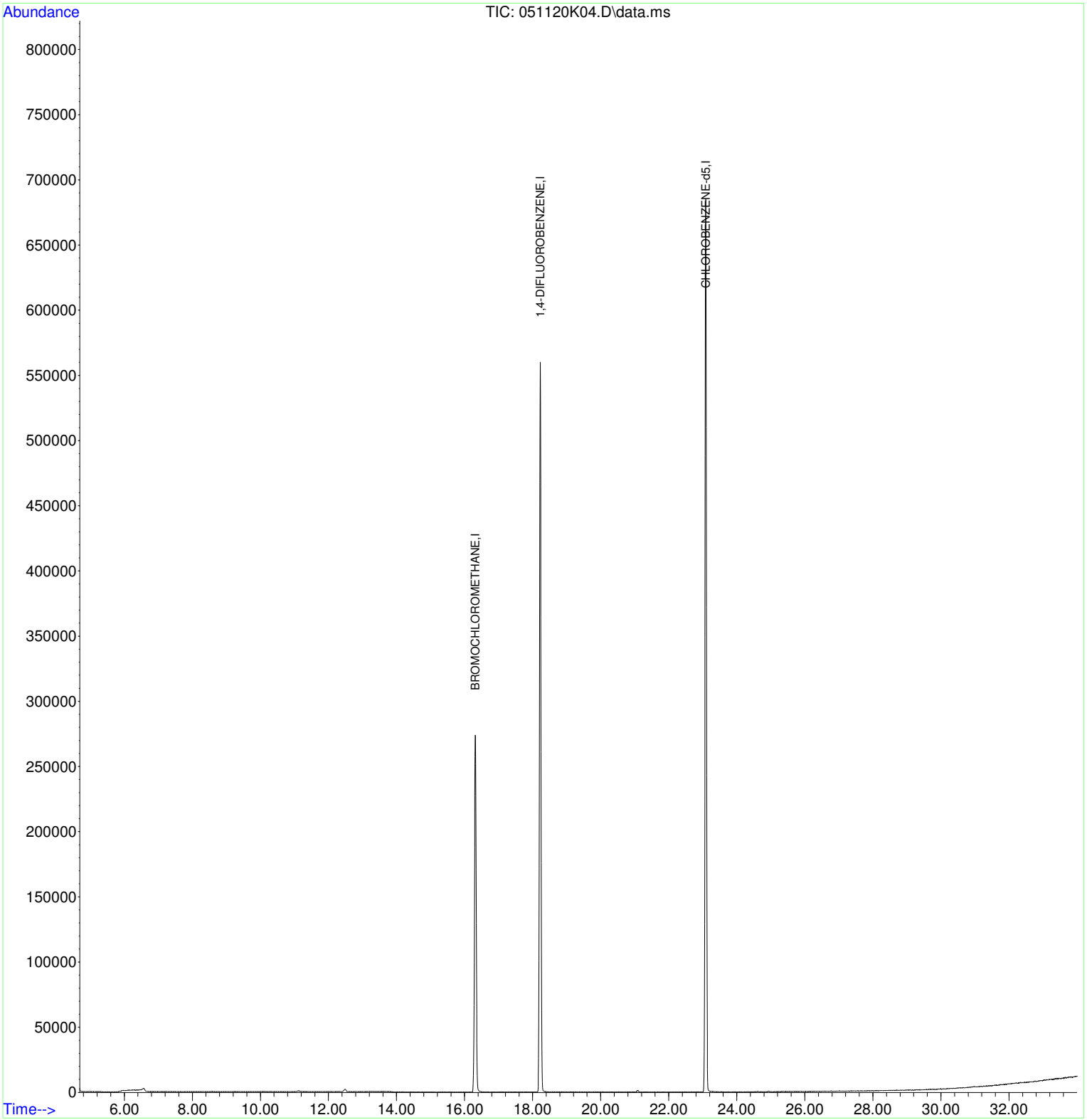
(#) = qualifier out of range (m) = manual integration (+) = signals summed

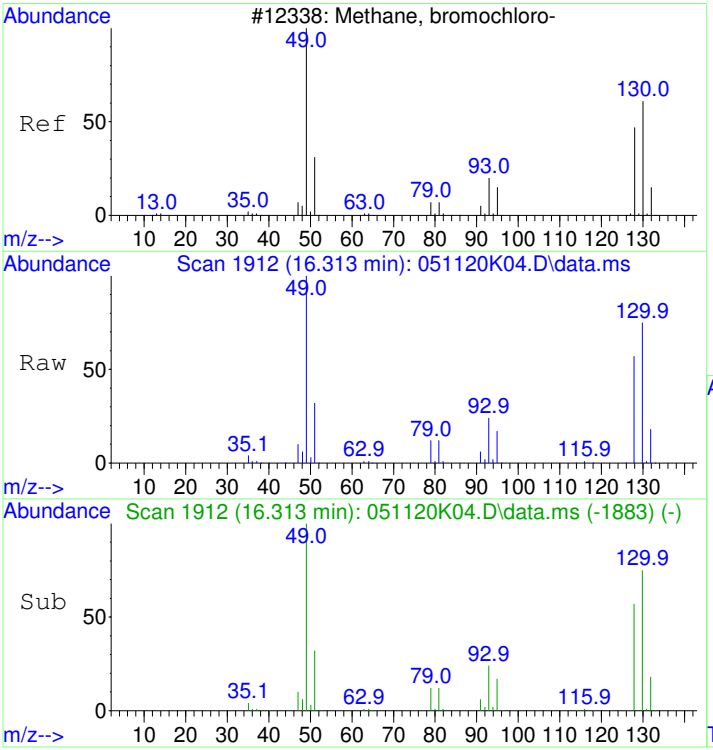
REVIEWED
By EM at 2:40 pm, May 11, 2020

Table of Contents

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K04.D
InstName : HP5973K
Acq On : 11 May 2020 12:41 pm
Operator : EM
Sample : B20E005-BLK1
Misc : 200ml BLANK
ALS Vial : 33 Sample Multiplier: 1

Quant Time: May 11 14:39:56 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

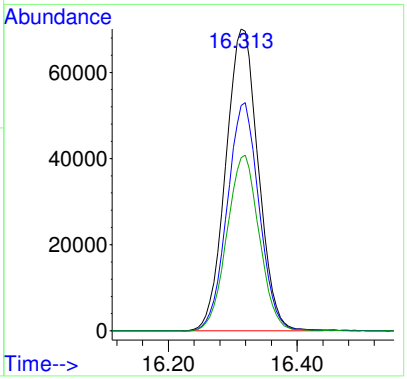


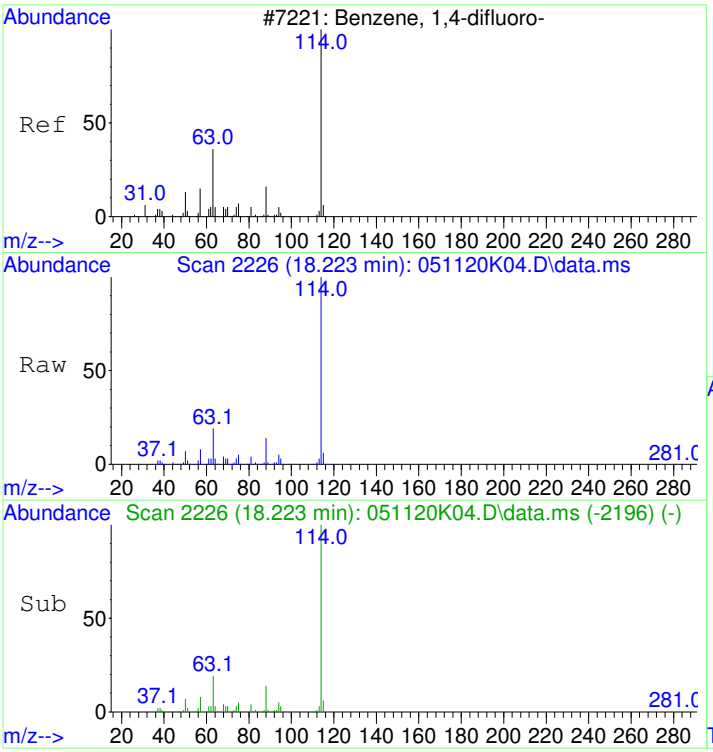


#1
BROMOCHLOROMETHANE
Concen: 19.60 ppbv
RT: 16.313 min Scan# 1912
Delta R.T. 0.000 min
Lab File: 051120K04.D
Acq: 11 May 2020 12:41 pm

Tgt Ion: 49 Resp: 246674

Ion	Ratio	Lower	Upper
49	100		
130	74.1	51.1	91.1
128	57.1	35.0	75.0

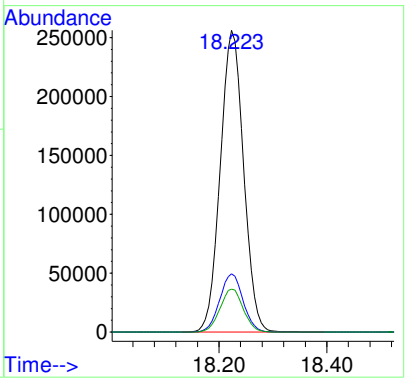


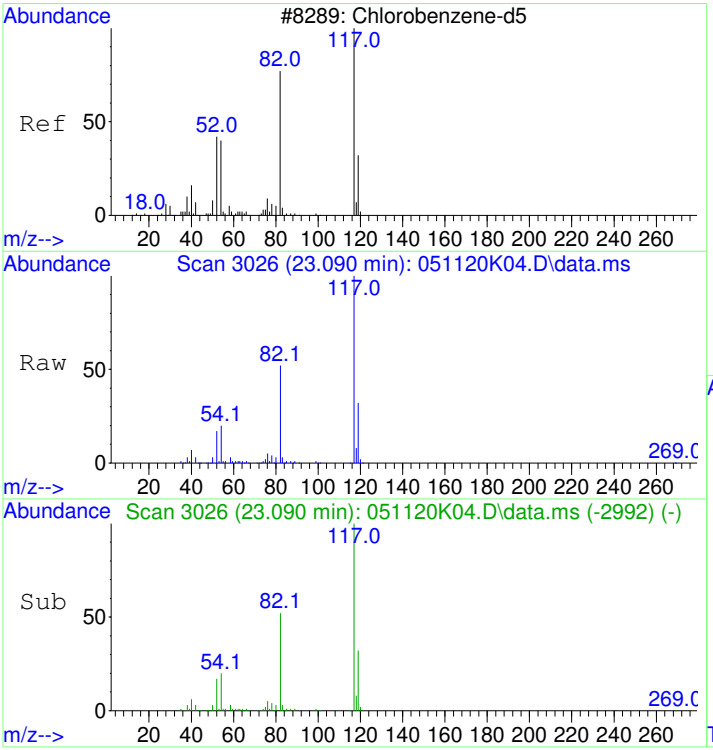


#32
1,4-DIFLUOROBENZENE
Concen: 19.60 ppbv
RT: 18.223 min Scan# 2226
Delta R.T. -0.000 min
Lab File: 051120K04.D
Acq: 11 May 2020 12:41 pm

Tgt Ion:114 Resp: 768477

Ion	Ratio	Lower	Upper
114	100		
63	19.3	0.0	39.6
88	14.2	0.0	34.5

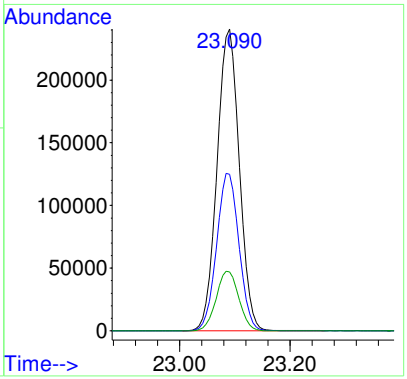




#43
CHLOROBENZENE-d5
Concen: 19.60 ppbv
RT: 23.090 min Scan# 3026
Delta R.T. 0.006 min
Lab File: 051120K04.D
Acq: 11 May 2020 12:41 pm

Tgt Ion:117 Resp: 675190

Ion	Ratio	Lower	Upper
117	100		
82	52.3	32.5	72.5
54	20.0	0.0	39.6



2005005-03

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K05.D
InstName : HP5973K
Acq On : 11 May 2020 1:33 pm
Operator : EM
Sample : 2005005-03
Misc : 200ml D9-SC-050820
ALS Vial : 11 Sample Multiplier: 1.98

REPORT

Quant Time: May 11 14:40:27 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

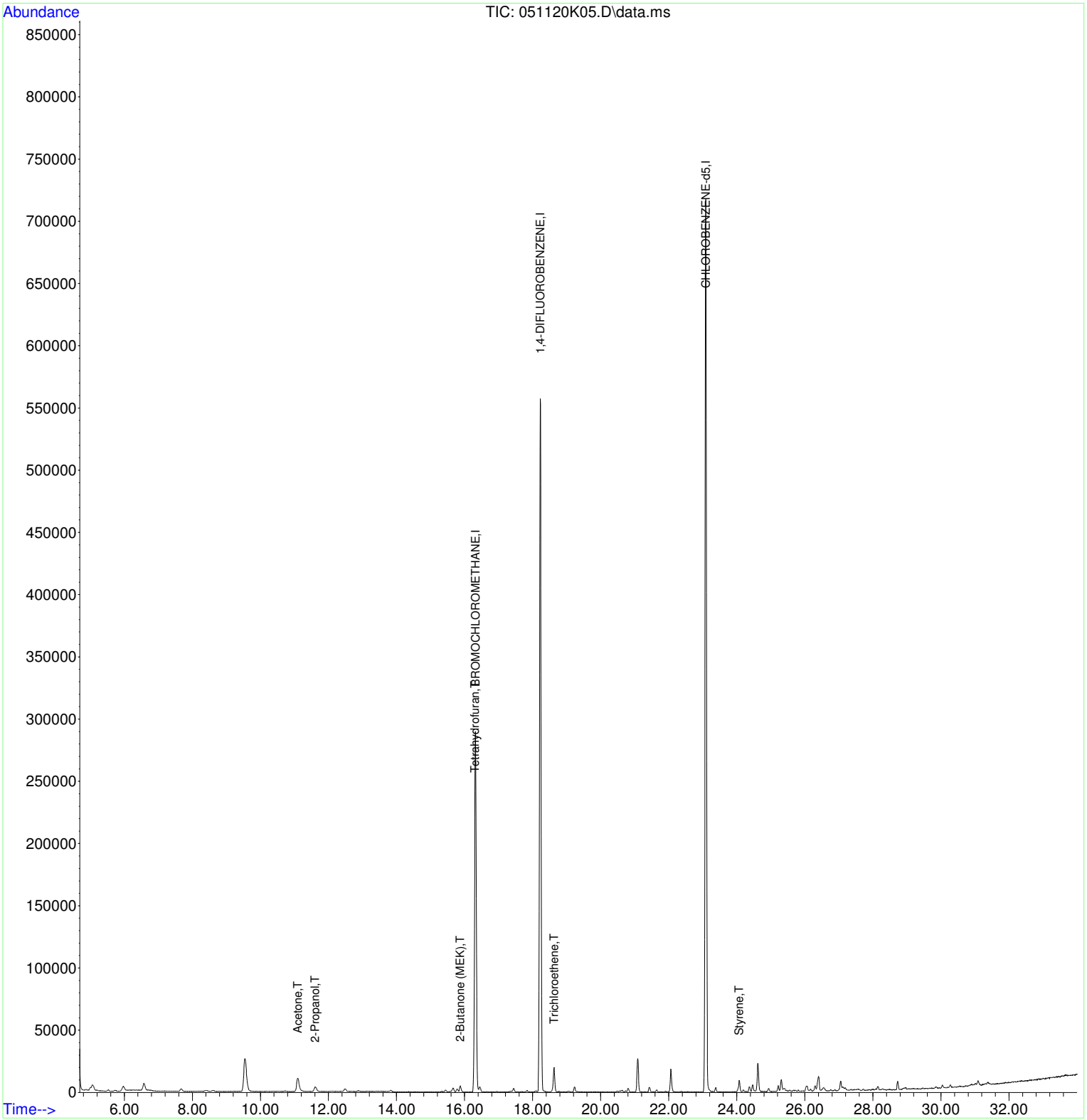
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	16.319	49	249702	19.60	ppbv	0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	775397	19.60	ppbv	0.00
43) CHLOROBENZENE-d5	23.090	117	693294	19.60	ppbv	0.00
Target Compounds						Qvalue
14) Acetone	11.093	43	36431	3.13	ppbv	98
16) 2-Propanol	11.604	45	11817	1.04	ppbv	85
25) 2-Butanone (MEK)	15.869	72	2740	0.63	ppbv #	1
27) Tetrahydrofuran	16.301	42	12173	1.17	ppbv	99
37) Trichloroethene	18.625	130	11577	1.05	ppbv	98
55) Styrene	24.070	104	8416	0.53	ppbv	87

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

REVIEWED
By EM at 4:18 pm, May 11, 2020

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K05.D
InstName : HP5973K
Acq On : 11 May 2020 1:33 pm
Operator : EM
Sample : 2005005-03
Misc : 200ml D9-SC-050820
ALS Vial : 11 Sample Multiplier: 1.98

Quant Time: May 11 14:40:27 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration



2005005-04

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K06.D
InstName : HP5973K
Acq On : 11 May 2020 2:26 pm
Operator : EM
Sample : 2005005-04
Misc : 200ml D10-SC-050820
ALS Vial : 12 Sample Multiplier: 1.96

REPORT

Quant Time: May 11 16:16:57 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

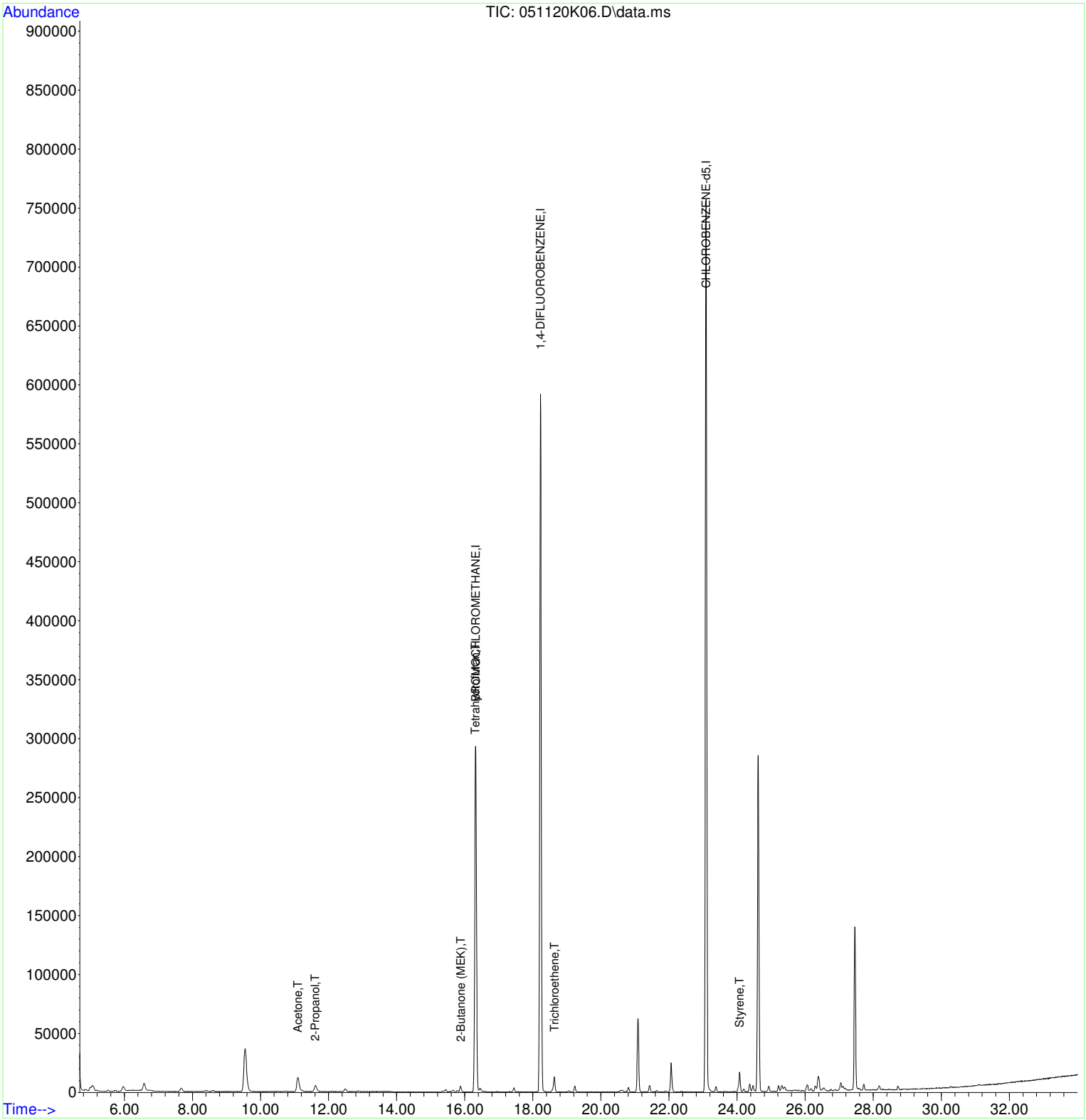
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	16.319	49	262093	19.60	ppbv	0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	812129	19.60	ppbv	0.00
43) CHLOROBENZENE-d5	23.090	117	728017	19.60	ppbv	0.00
Target Compounds						Qvalue
14) Acetone	11.093	43	39766	3.26	ppbv	98
16) 2-Propanol	11.604	45	16583	1.39	ppbv	90
25) 2-Butanone (MEK)	15.881	72	2647	0.58	ppbv #	6
27) Tetrahydrofuran	16.307	42	5147	0.47	ppbv	95
37) Trichloroethene	18.631	130	7805	0.68	ppbv	99
55) Styrene	24.076	104	14014	0.84	ppbv	89

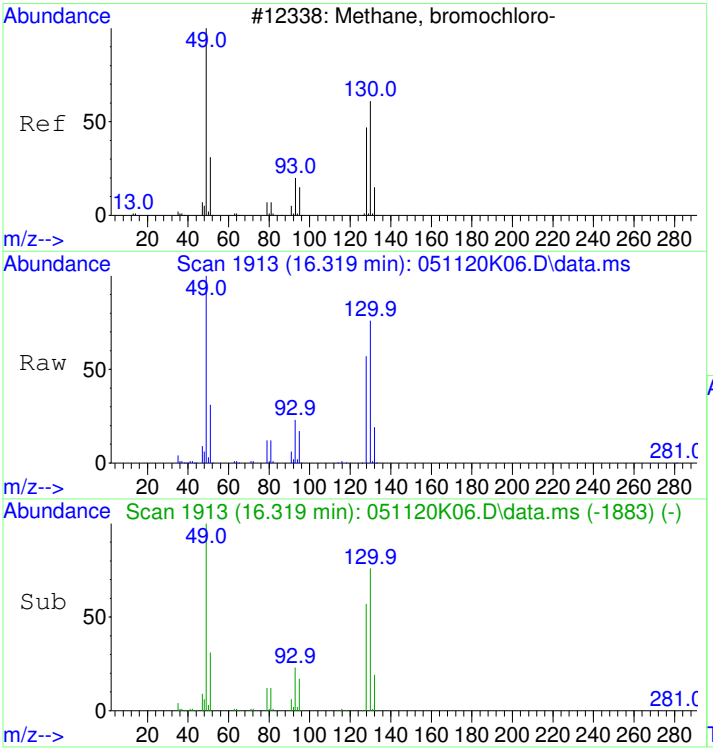
(#) = qualifier out of range (m) = manual integration (+) = signals summed

REVIEWED
By EM at 4:17 pm, May 11, 2020

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K06.D
InstName : HP5973K
Acq On : 11 May 2020 2:26 pm
Operator : EM
Sample : 2005005-04
Misc : 200ml D10-SC-050820
ALS Vial : 12 Sample Multiplier: 1.96

Quant Time: May 11 16:16:57 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

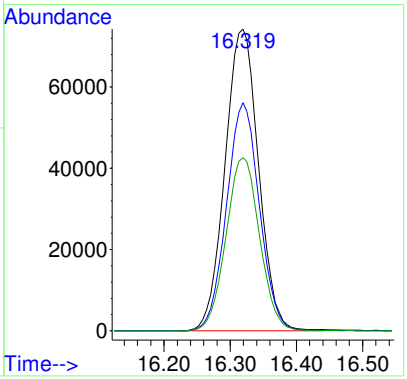


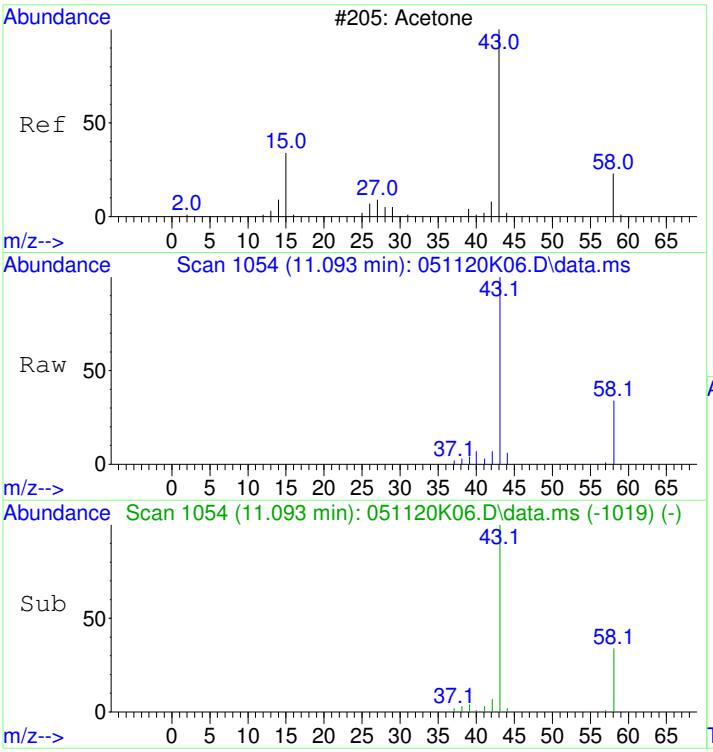


#1
BROMOCHLOROMETHANE
Concen: 19.60 ppbv
RT: 16.319 min Scan# 1913
Delta R.T. 0.006 min
Lab File: 051120K06.D
Acq: 11 May 2020 2:26 pm

Tgt Ion: 49 Resp: 262093

Ion	Ratio	Lower	Upper
49	100		
130	74.0	51.1	91.1
128	57.0	35.0	75.0

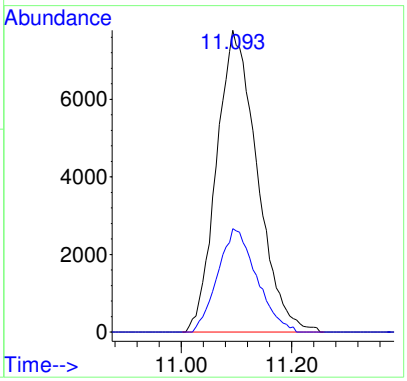


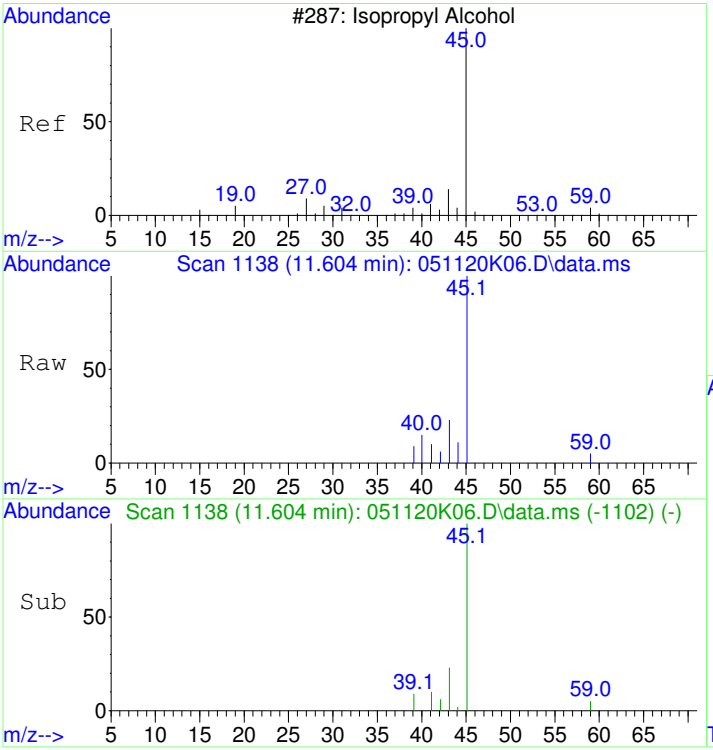


#14
Acetone
Concen: 3.26 ppbv
RT: 11.093 min Scan# 1054
Delta R.T. 0.012 min
Lab File: 051120K06.D
Acq: 11 May 2020 2:26 pm

Tgt Ion: 43 Resp: 39766

Ion	Ratio	Lower	Upper
43	100		
58	32.8	14.0	54.0

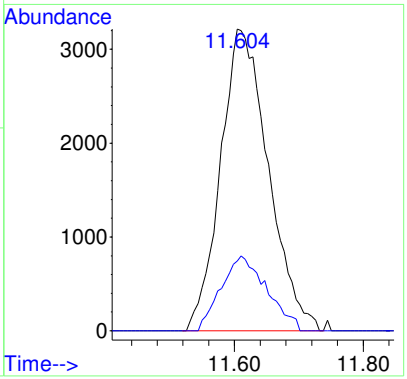


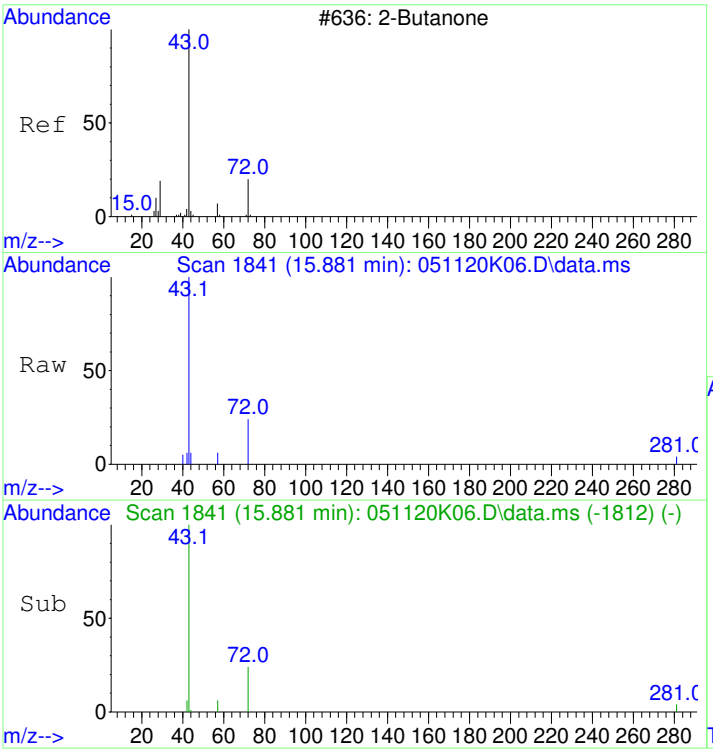


#16
2-Propanol
Concen: 1.39 ppbv
RT: 11.604 min Scan# 1138
Delta R.T. 0.018 min
Lab File: 051120K06.D
Acq: 11 May 2020 2:26 pm

Tgt Ion: 45 Resp: 16583

Ion	Ratio	Lower	Upper
45	100		
43	23.6	0.0	39.0

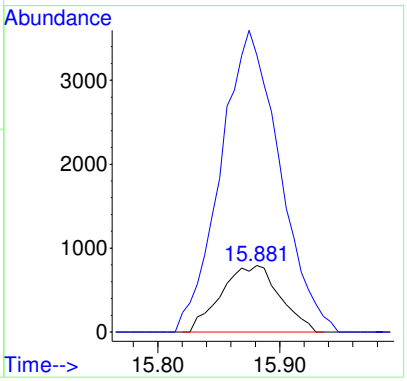


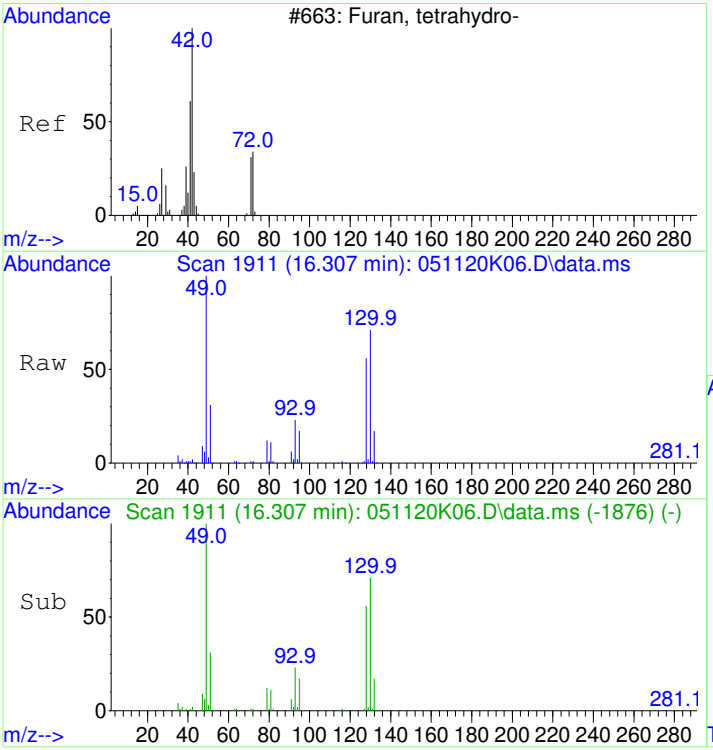


#25
2-Butanone (MEK)
Concen: 0.58 ppbv
RT: 15.881 min Scan# 1841
Delta R.T. 0.024 min
Lab File: 051120K06.D
Acq: 11 May 2020 2:26 pm

Tgt Ion: 72 Resp: 2647

Ion	Ratio	Lower	Upper
72	100		
43	457.3	812.3	832.3#

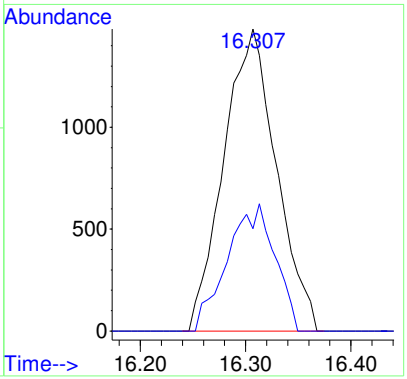


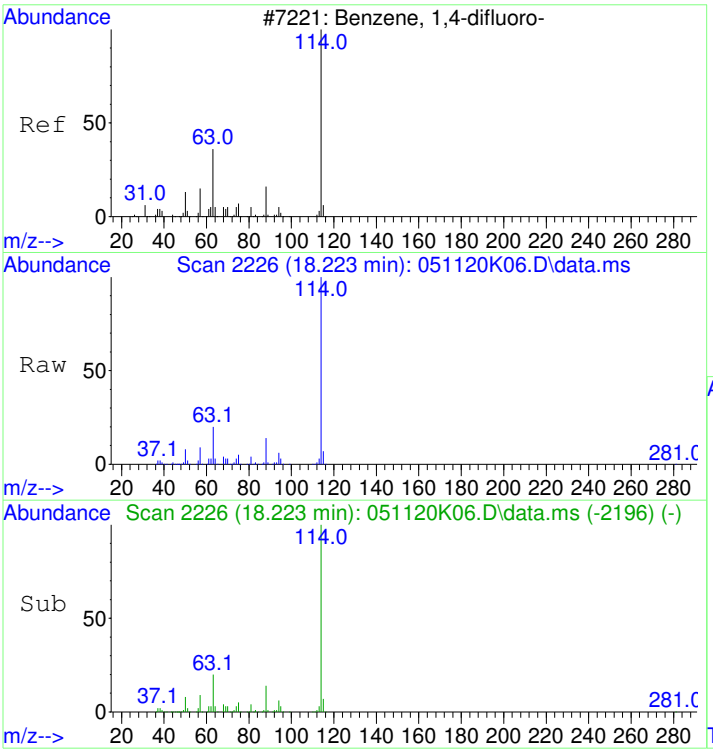


#27
Tetrahydrofuran
Concen: 0.47 ppbv
RT: 16.307 min Scan# 1911
Delta R.T. 0.024 min
Lab File: 051120K06.D
Acq: 11 May 2020 2:26 pm

Tgt Ion: 42 Resp: 5147

Ion	Ratio	Lower	Upper
42	100		
72	38.0	21.2	61.2

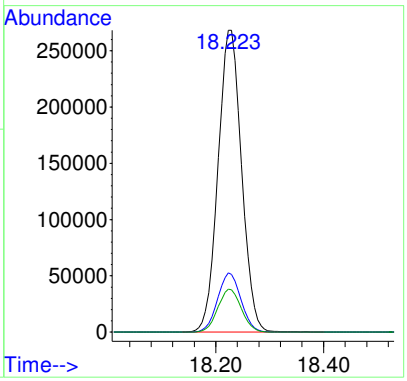


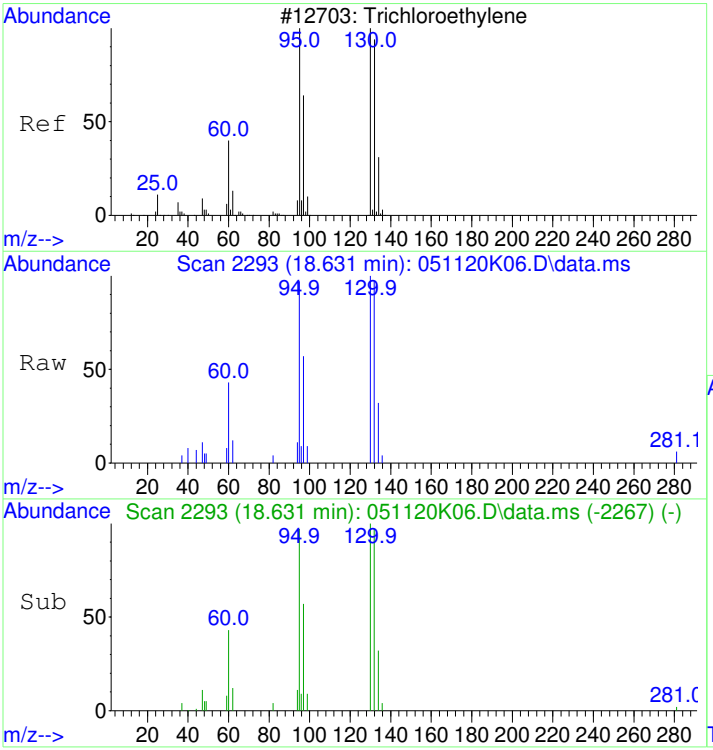


#32
1,4-DIFLUOROBENZENE
Concen: 19.60 ppbv
RT: 18.223 min Scan# 2226
Delta R.T. -0.000 min
Lab File: 051120K06.D
Acq: 11 May 2020 2:26 pm

Tgt Ion:114 Resp: 812129

Ion	Ratio	Lower	Upper
114	100		
63	19.4	0.0	39.6
88	14.2	0.0	34.5

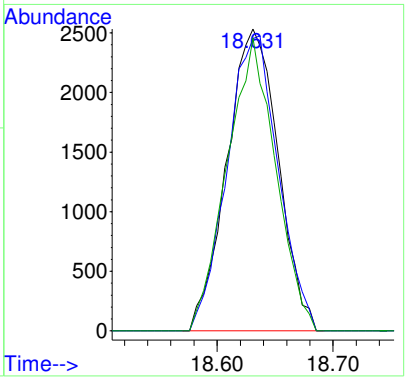


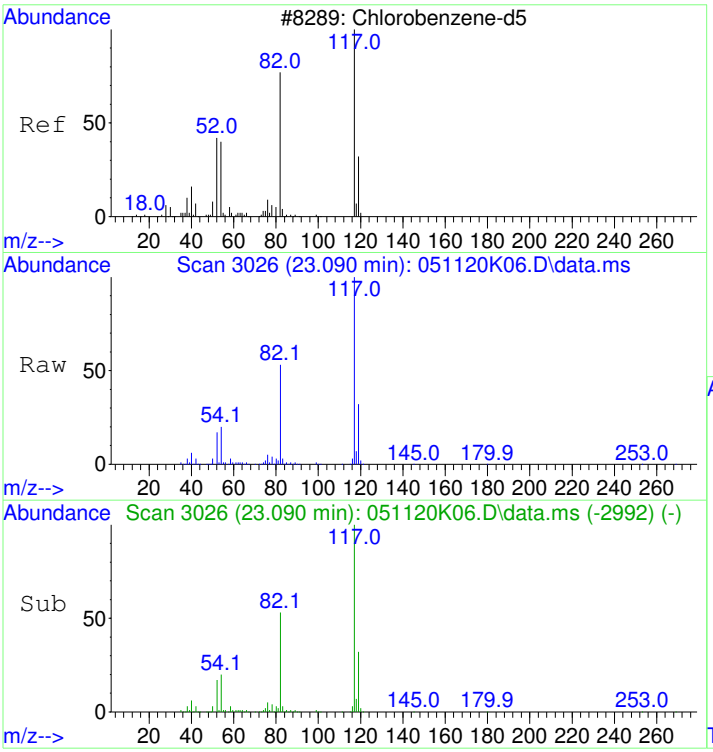


#37
Trichloroethene
Concen: 0.68 ppbv
RT: 18.631 min Scan# 2293
Delta R.T. 0.006 min
Lab File: 051120K06.D
Acq: 11 May 2020 2:26 pm

Tgt Ion:130 Resp: 7805

Ion	Ratio	Lower	Upper
130	100		
132	97.5	75.5	115.5
95	91.8	71.3	111.3

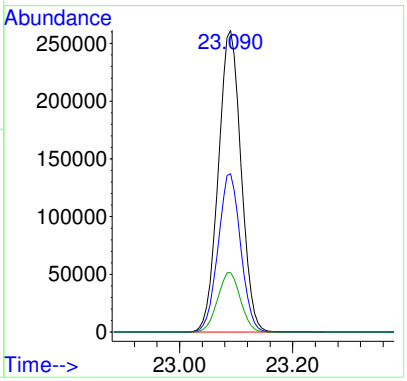


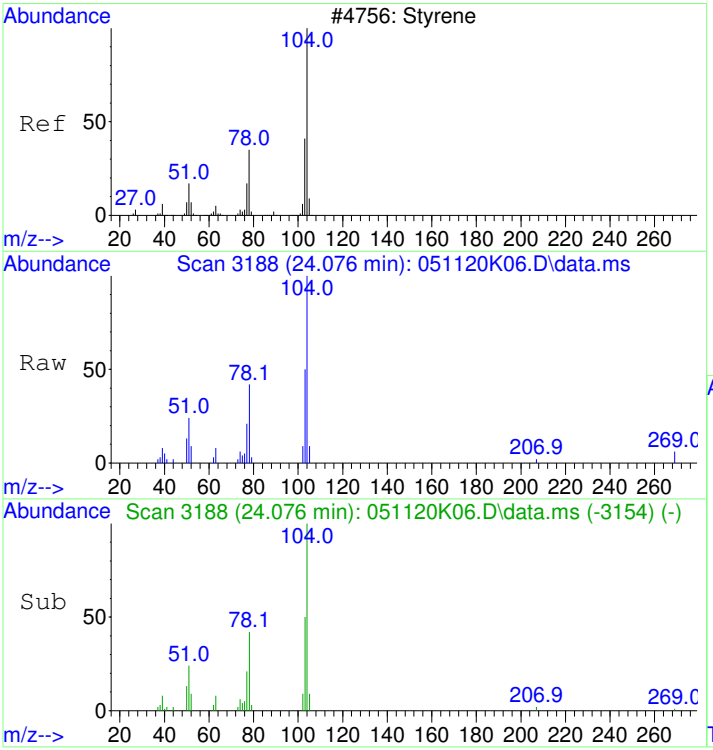


#43
CHLOROBENZENE-d5
Concen: 19.60 ppbv
RT: 23.090 min Scan# 3026
Delta R.T. 0.006 min
Lab File: 051120K06.D
Acq: 11 May 2020 2:26 pm

Tgt Ion:117 Resp: 728017

Ion	Ratio	Lower	Upper
117	100		
82	52.2	32.5	72.5
54	19.9	0.0	39.6

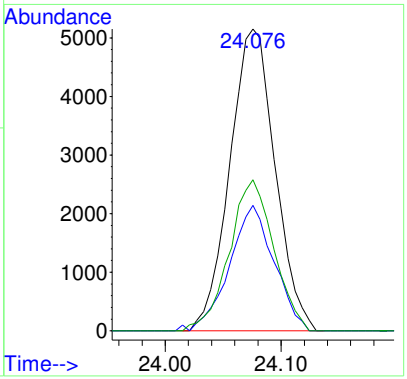




#55
Styrene
Concen: 0.84 ppbv
RT: 24.076 min Scan# 3188
Delta R.T. 0.006 min
Lab File: 051120K06.D
Acq: 11 May 2020 2:26 pm

Tgt Ion:104 Resp: 14014

Ion	Ratio	Lower	Upper
104	100		
78	40.9	28.9	68.9
103	49.1	37.1	77.1



2005005-01

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K07.D
InstName : HP5973K
Acq On : 11 May 2020 3:19 pm
Operator : EM
Sample : 2005005-01
Misc : 200ml 272 Ariana-MH3-SS-050820
ALS Vial : 13 Sample Multiplier: 1.99

REPORT

Quant Time: May 11 16:17:27 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)	
Internal Standards								
1) BROMOCHLOROMETHANE	16.313	49	273696	19.60	ppbv		0.00	
32) 1,4-DIFLUOROBENZENE	18.223	114	827424	19.60	ppbv		0.00	
43) CHLOROBENZENE-d5	23.084	117	742240	19.60	ppbv		0.00	
Target Compounds							Qvalue	
2) Propene	4.992	41	3568	0.45	ppbv		91	
14) Acetone	11.081	43	332330	26.05	ppbv		99	OC NR
15) Carbon disulfide	11.203	76	12640	0.54	ppbv	#	81	
16) 2-Propanol	11.605	45	223786	18.00	ppbv		98	
24) cis-1,2-Dichloroethene	15.784	61	6997	0.59	ppbv	#	93	
25) 2-Butanone (MEK)	15.863	72	259439	54.00	ppbv	#	1	OC NR
27) Tetrahydrofuran	16.283	42	150022	13.16	ppbv		99	
37) Trichloroethene	18.631	130	16793	1.43	ppbv		98	
55) Styrene	24.070	104	20103	1.18	ppbv		87	

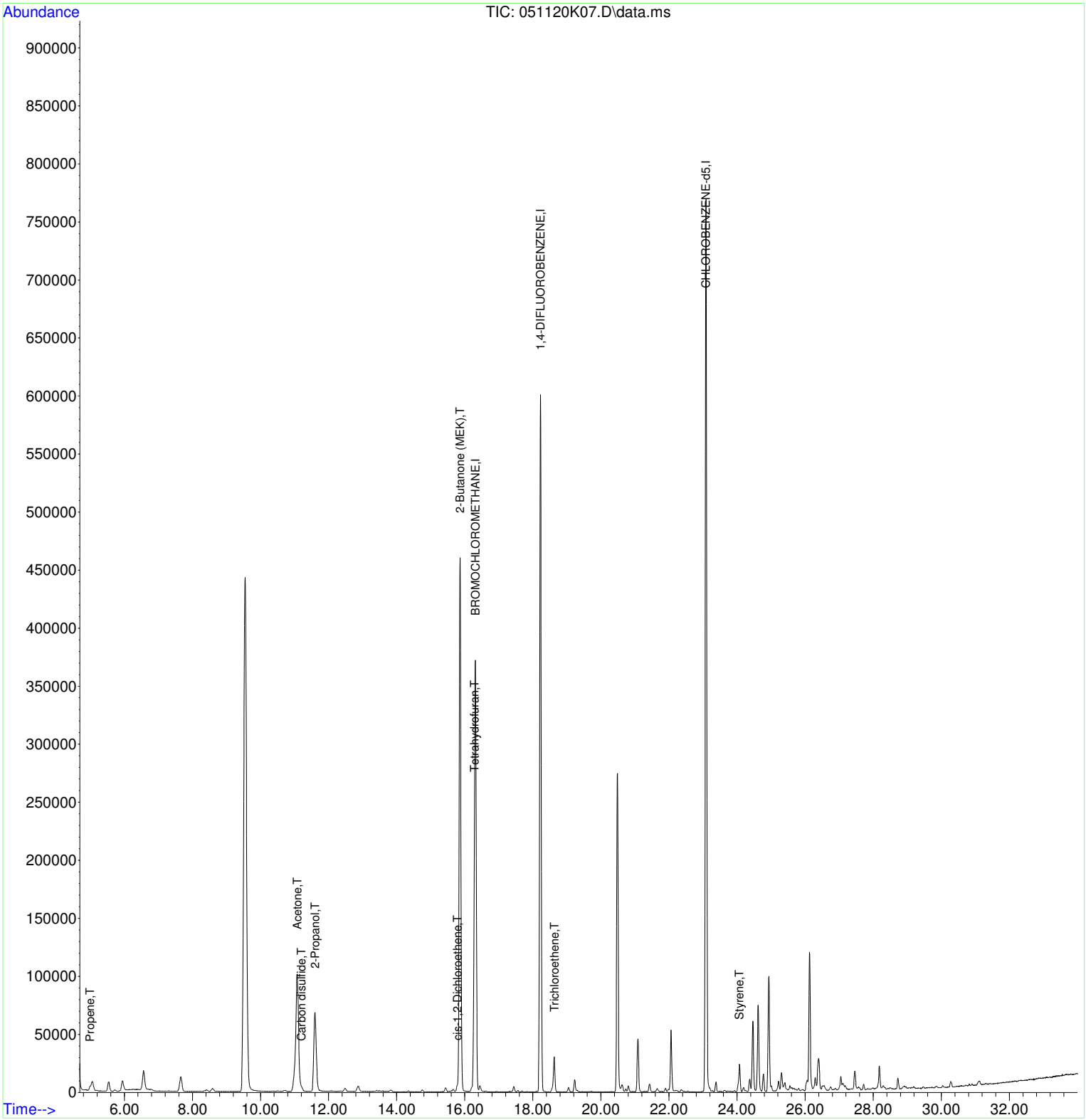
(#) = qualifier out of range (m) = manual integration (+) = signals summed

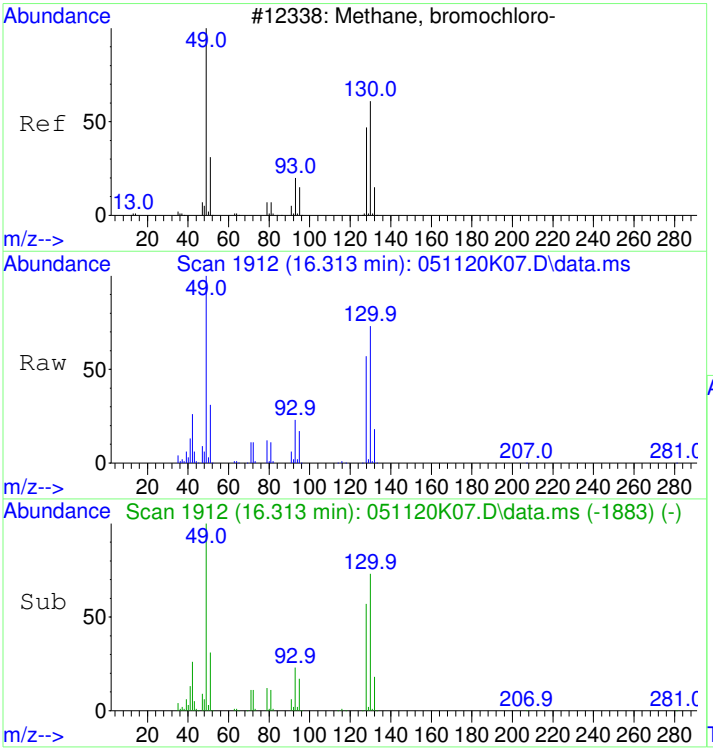
REVIEWED
By EM at 4:17 pm, May 11, 2020

Table of Contents

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K07.D
InstName : HP5973K
Acq On : 11 May 2020 3:19 pm
Operator : EM
Sample : 2005005-01
Misc : 200ml 272 Ariana-MH3-SS-050820
ALS Vial : 13 Sample Multiplier: 1.99

Quant Time: May 11 16:17:27 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

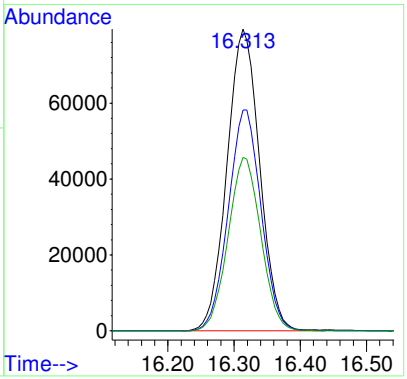


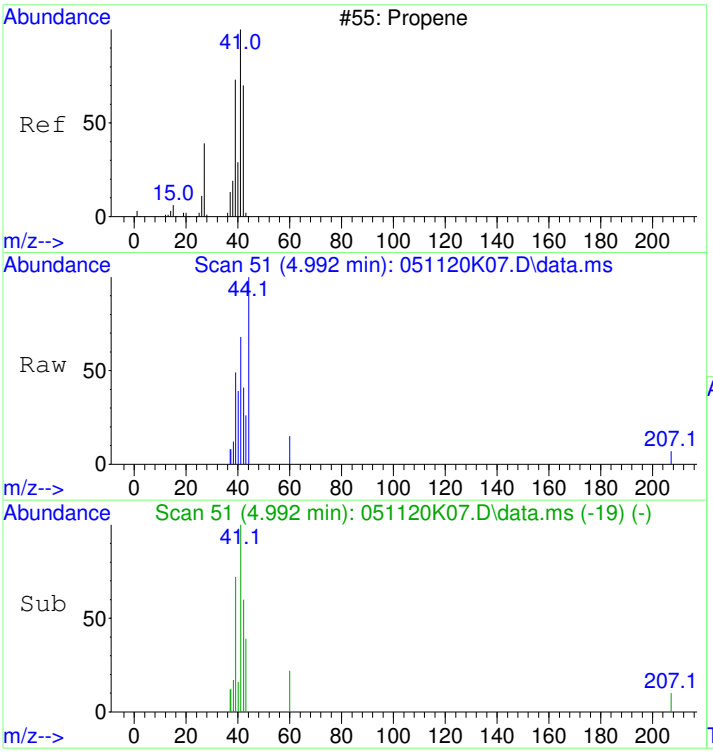


#1
BROMOCHLOROMETHANE
Concen: 19.60 ppbv
RT: 16.313 min Scan# 1912
Delta R.T. 0.000 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion: 49 Resp: 273696

Ion	Ratio	Lower	Upper
49	100		
130	73.4	51.1	91.1
128	57.1	35.0	75.0

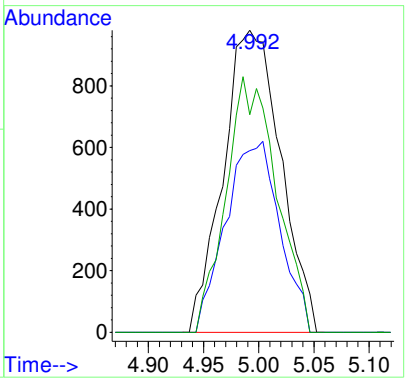


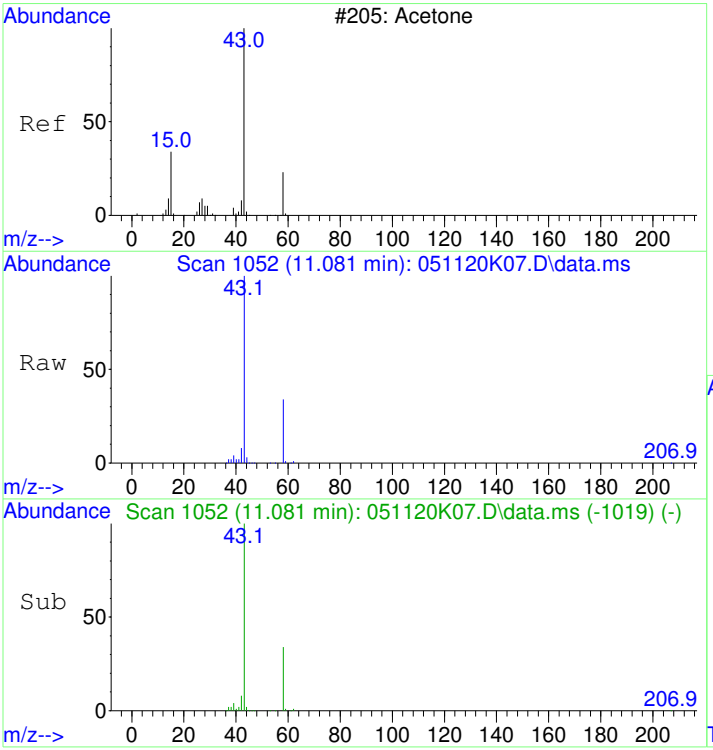


#2
Propene
Concen: 0.45 ppbv
RT: 4.992 min Scan# 51
Delta R.T. -0.006 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion: 41 Resp: 3568

Ion	Ratio	Lower	Upper
41	100		
42	59.3	47.4	87.4
39	74.4	47.3	87.3

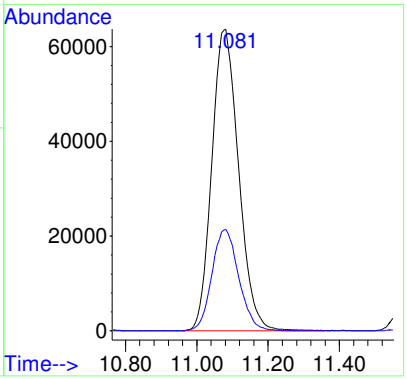


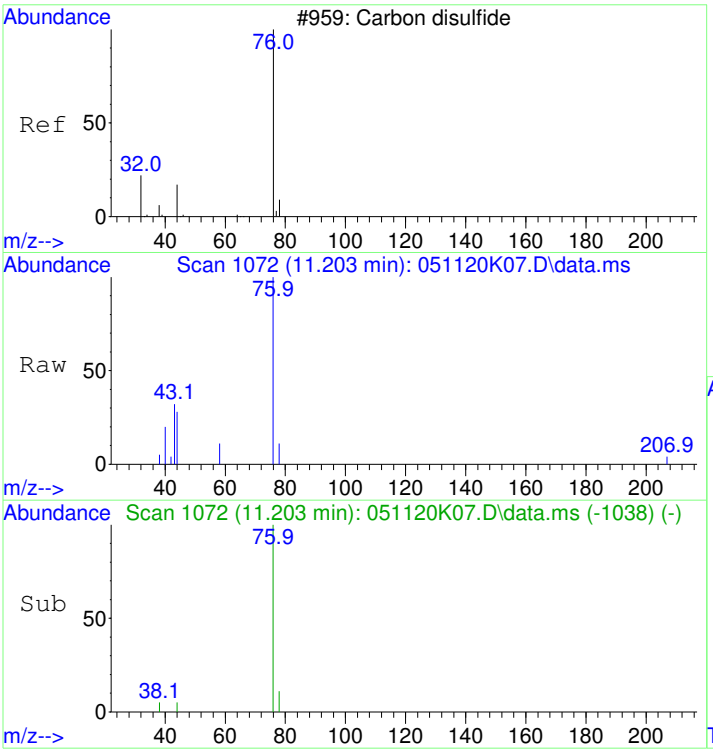


#14
Acetone
Concen: 26.05 ppbv
RT: 11.081 min Scan# 1052
Delta R.T. 0.000 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion: 43 Resp: 332330

Ion	Ratio	Lower	Upper
43	100		
58	33.7	14.0	54.0

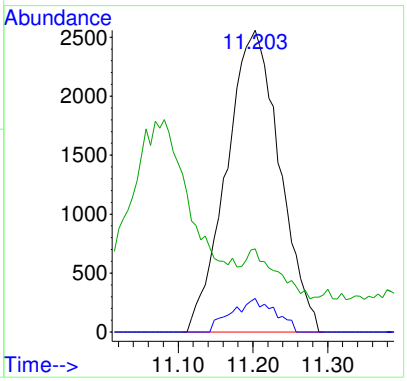


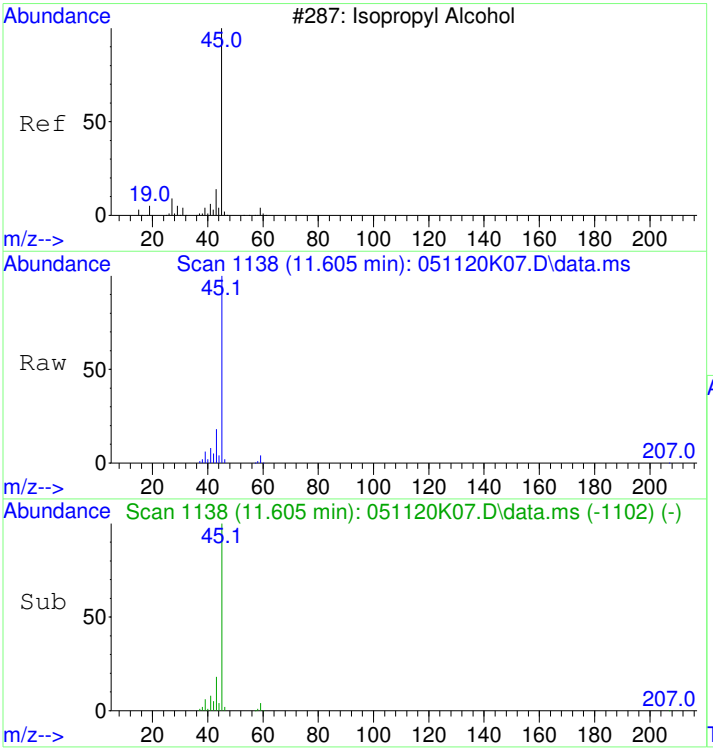


#15
Carbon disulfide
Concen: 0.54 ppbv
RT: 11.203 min Scan# 1072
Delta R.T. 0.006 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion: 76 Resp: 12640

Ion	Ratio	Lower	Upper
76	100		
78	9.1	0.0	29.1
44	0.0	0.0	33.0

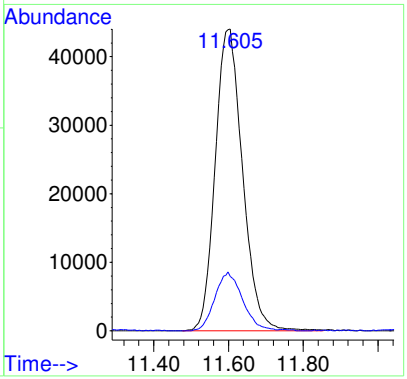


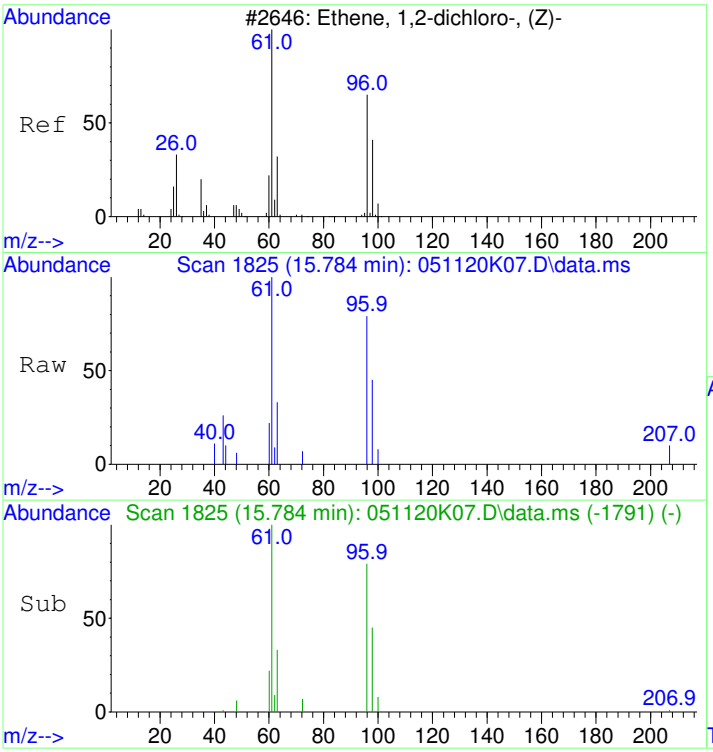


#16
2-Propanol
Concen: 18.00 ppbv
RT: 11.605 min Scan# 1138
Delta R.T. 0.018 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion: 45 Resp: 223786

Ion	Ratio	Lower	Upper
45	100		
43	19.8	0.0	39.0

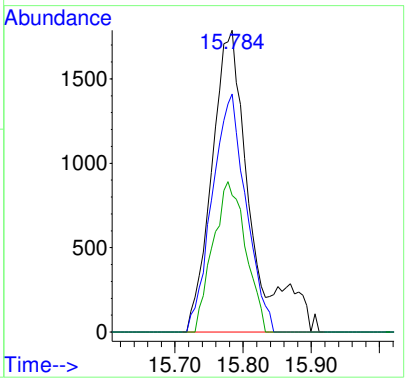


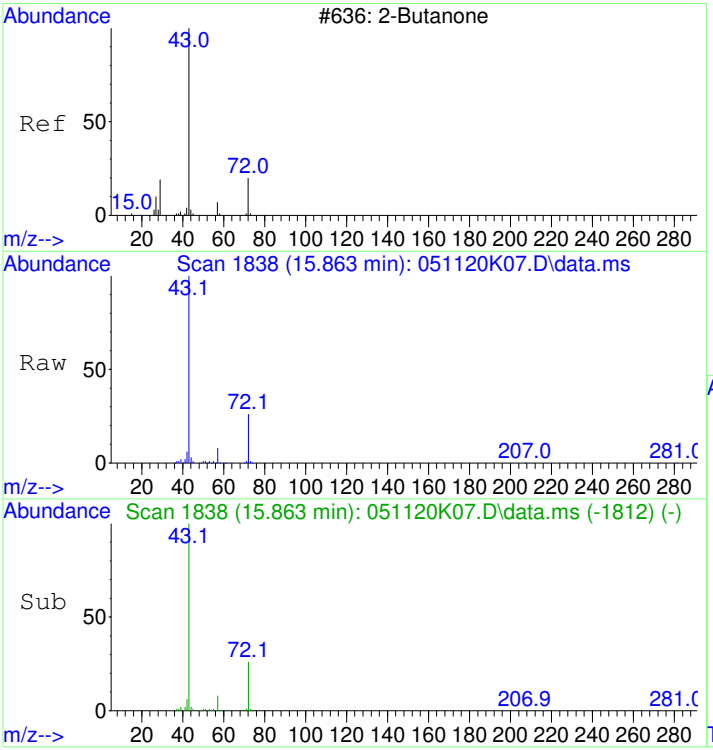


#24
cis-1,2-Dichloroethene
Concen: 0.59 ppbv
RT: 15.784 min Scan# 1825
Delta R.T. 0.006 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion: 61 Resp: 6997

Ion	Ratio	Lower	Upper
61	100		
96	69.6	55.7	95.7
98	42.4	0.0	20.0#

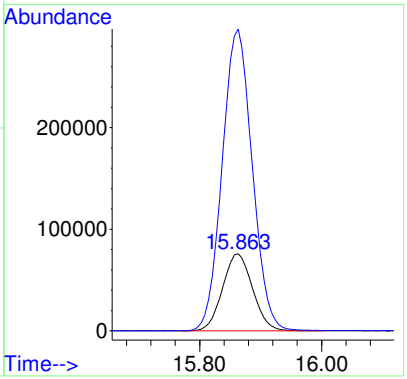


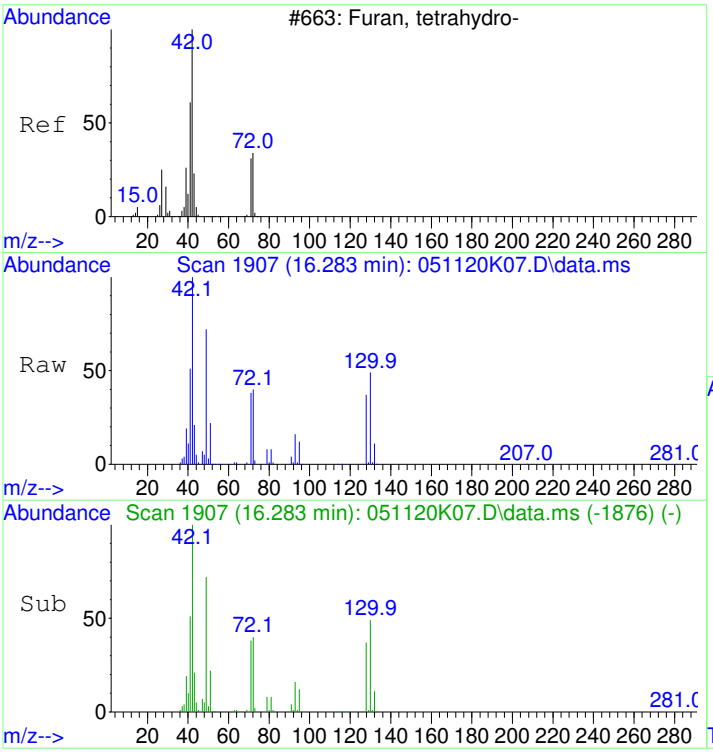


#25
2-Butanone (MEK)
Concen: 54.00 ppbv
RT: 15.863 min Scan# 1838
Delta R.T. 0.006 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion: 72 Resp: 259439

Ion	Ratio	Lower	Upper
72	100		
43	392.5	812.3	832.3#

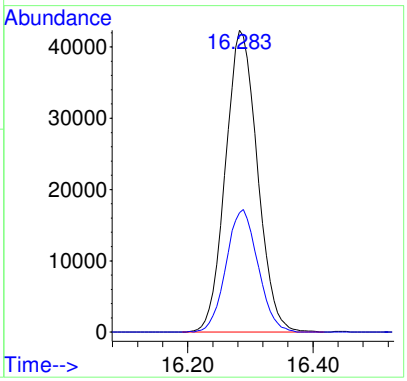


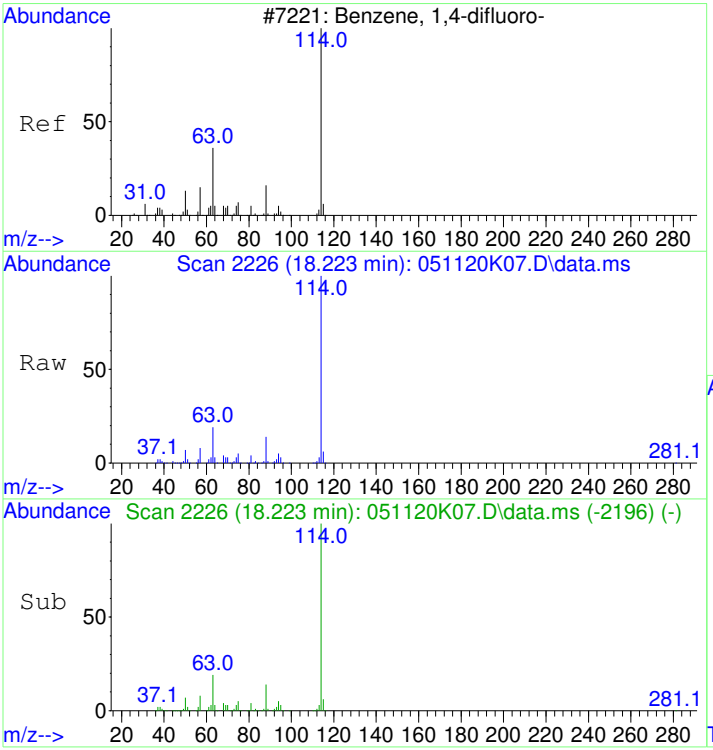


#27
Tetrahydrofuran
Concen: 13.16 ppbv
RT: 16.283 min Scan# 1907
Delta R.T. 0.000 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion: 42 Resp: 150022

Ion	Ratio	Lower	Upper
42	100		
72	40.5	21.2	61.2

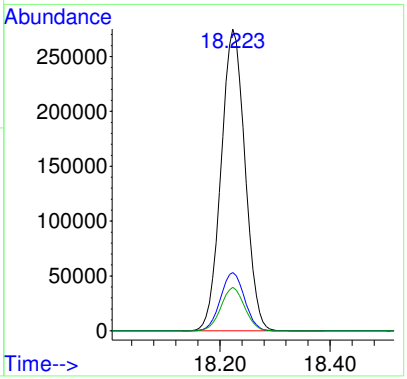


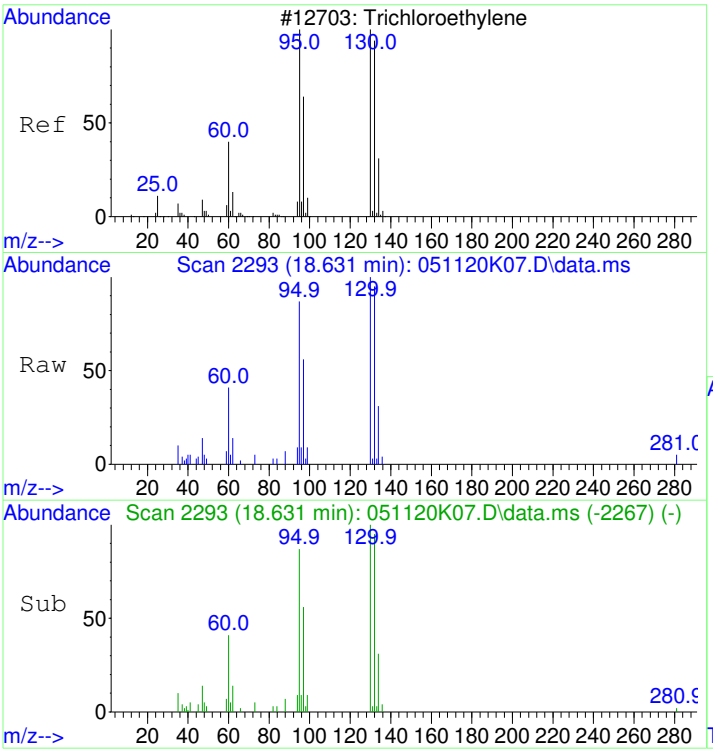


#32
1,4-DIFLUOROBENZENE
Concen: 19.60 ppbv
RT: 18.223 min Scan# 2226
Delta R.T. 0.000 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion:114 Resp: 827424

Ion	Ratio	Lower	Upper
114	100		
63	19.4	0.0	39.6
88	14.2	0.0	34.5

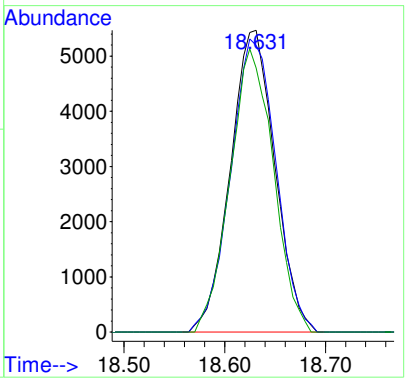


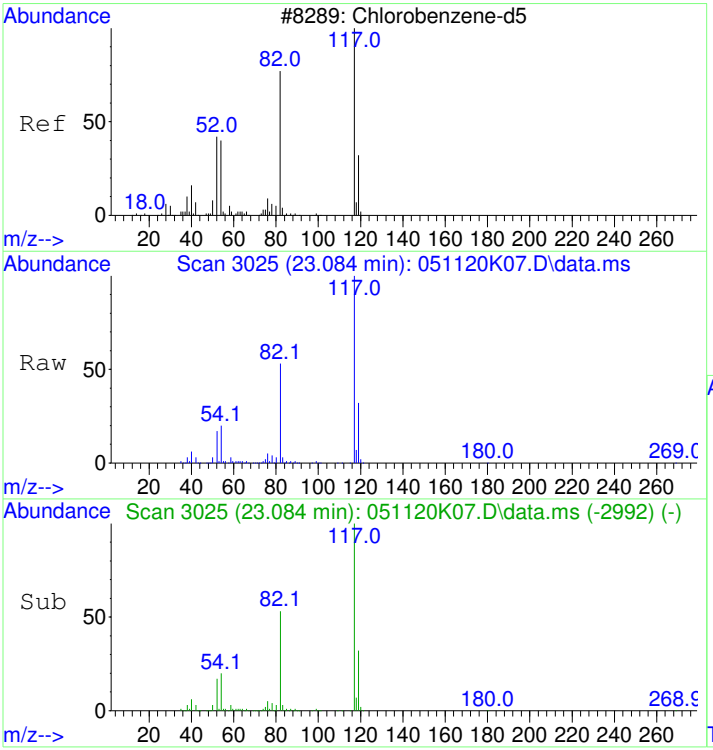


#37
Trichloroethene
Concen: 1.43 ppbv
RT: 18.631 min Scan# 2293
Delta R.T. 0.006 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion:130 Resp: 16793

Ion	Ratio	Lower	Upper
130	100		
132	99.0	75.5	115.5
95	91.4	71.3	111.3

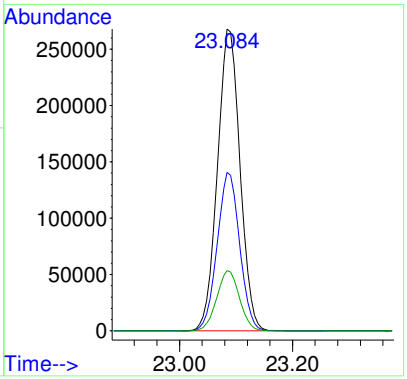


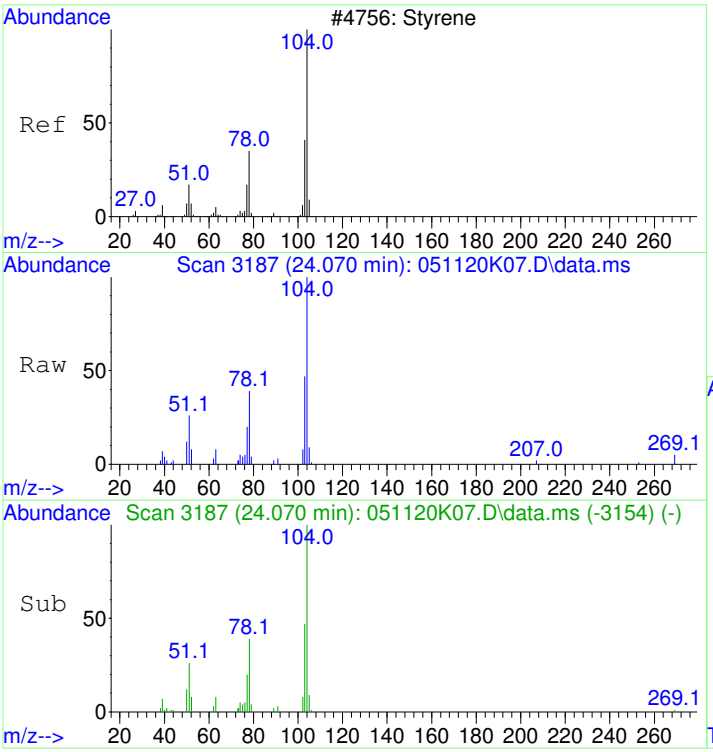


#43
CHLOROBENZENE-d5
Concen: 19.60 ppbv
RT: 23.084 min Scan# 3025
Delta R.T. 0.000 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion:117 Resp: 742240

Ion	Ratio	Lower	Upper
117	100		
82	52.3	32.5	72.5
54	20.1	0.0	39.6

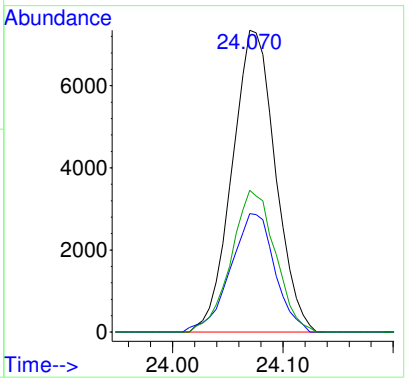




#55
Styrene
Concen: 1.18 ppbv
RT: 24.070 min Scan# 3187
Delta R.T. 0.000 min
Lab File: 051120K07.D
Acq: 11 May 2020 3:19 pm

Tgt Ion:104 Resp: 20103

Ion	Ratio	Lower	Upper
104	100		
78	40.2	28.9	68.9
103	47.7	37.1	77.1



B20E005-DUP1

Quantitation Report (Not Reviewed)

Table of Contents

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K08.D
InstName : HP5973K
Acq On : 11 May 2020 4:12 pm
Operator : EM
Sample : B20E005-DUP1
Misc : 200ml 272 Ariana-MH3-SS-050820DUP
ALS Vial : 12 Sample Multiplier: 1.99

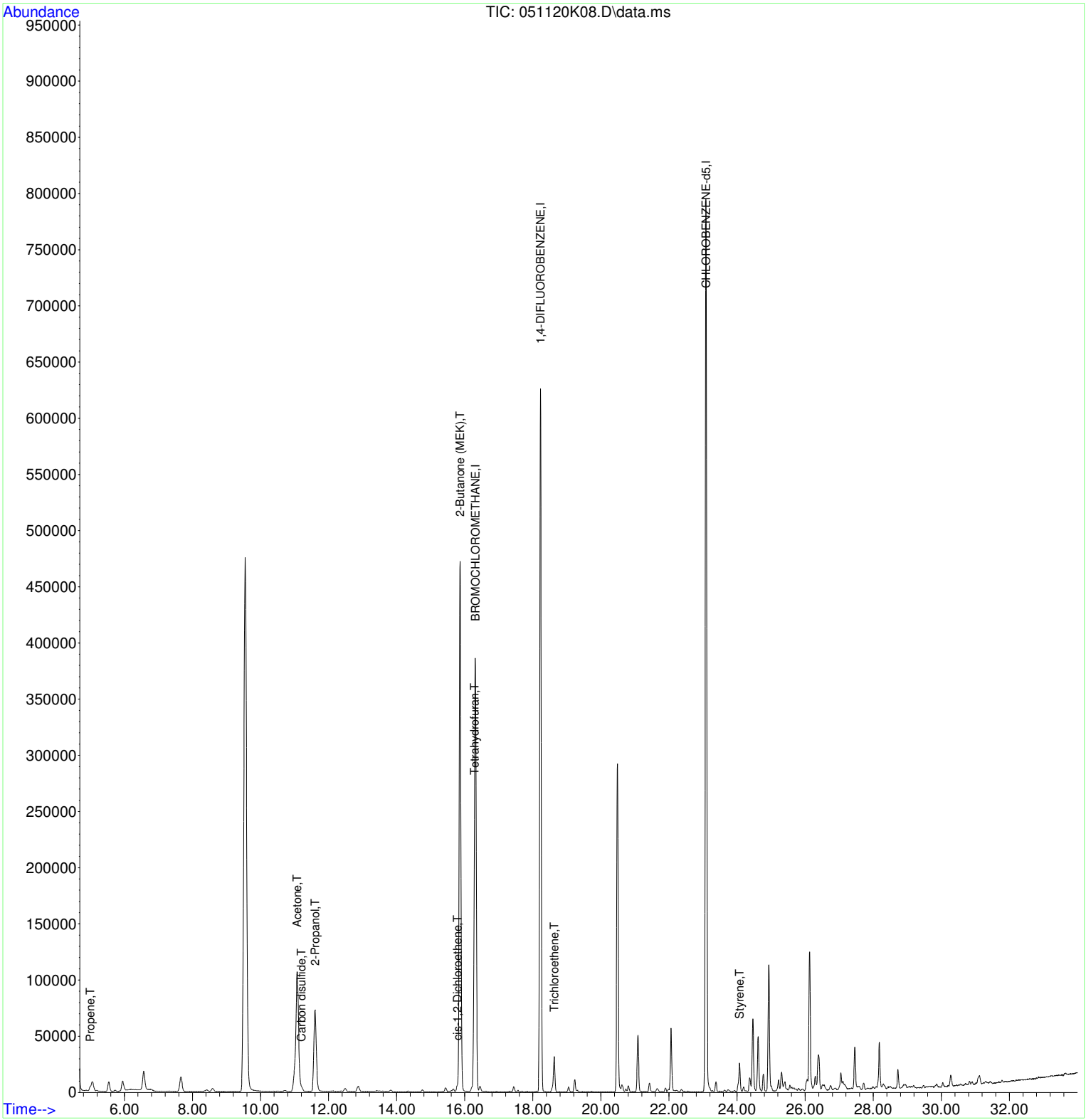
Quant Time: May 12 09:12:42 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

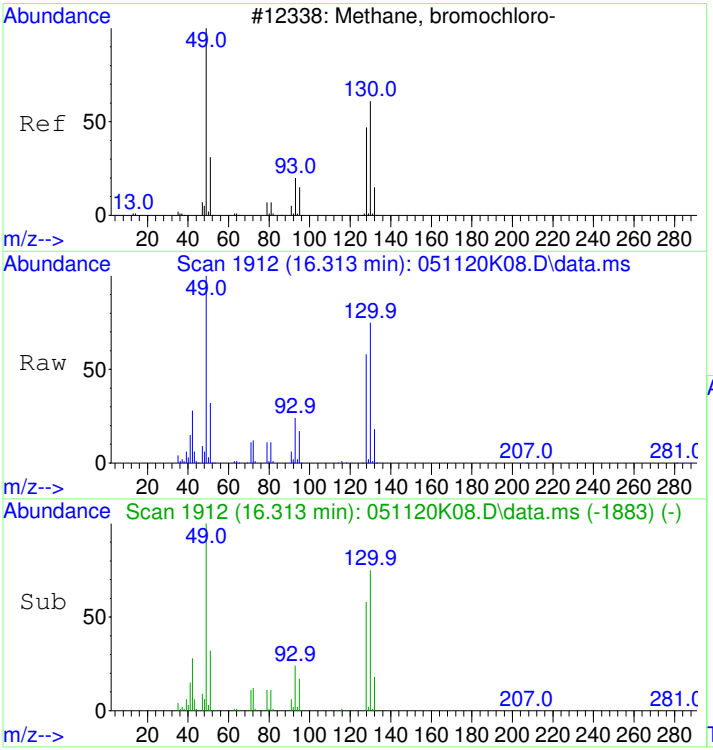
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)	
Internal Standards								
1) BROMOCHLOROMETHANE	16.313	49	282552	19.60	ppbv		0.00	
32) 1,4-DIFLUOROBENZENE	18.223	114	856128	19.60	ppbv		0.00	
43) CHLOROBENZENE-d5	23.090	117	769685	19.60	ppbv		0.00	
Target Compounds							Qvalue	
2) Propene	4.998	41	3703	0.45	ppbv		88	
14) Acetone	11.075	43	345847	26.26	ppbv		99	OC NR
15) Carbon disulfide	11.203	76	13031	0.54	ppbv	#	81	
16) 2-Propanol	11.605	45	237845	18.53	ppbv		98	
24) cis-1,2-Dichloroethene	15.784	61	7316	0.60	ppbv	#	93	
25) 2-Butanone (MEK)	15.863	72	269452	54.33	ppbv	#	1	OC NR
27) Tetrahydrofuran	16.283	42	155482	13.21	ppbv		100	
37) Trichloroethene	18.625	130	17374	1.43	ppbv		99	
55) Styrene	24.076	104	21056	1.19	ppbv		88	

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

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K08.D
InstName : HP5973K
Acq On : 11 May 2020 4:12 pm
Operator : EM
Sample : B20E005-DUP1
Misc : 200ml 272 Ariana-MH3-SS-050820DUP
ALS Vial : 12 Sample Multiplier: 1.99

Quant Time: May 12 09:12:42 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

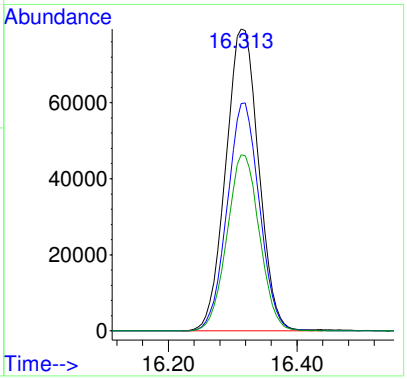


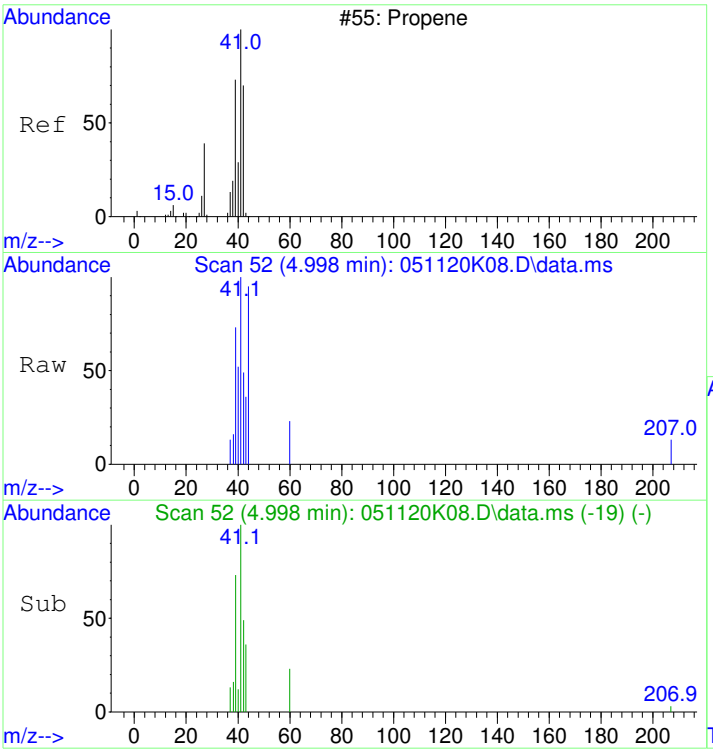


#1
BROMOCHLOROMETHANE
Concen: 19.60 ppbv
RT: 16.313 min Scan# 1912
Delta R.T. 0.000 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion: 49 Resp: 282552

Ion	Ratio	Lower	Upper
49	100		
130	73.8	51.1	91.1
128	57.1	35.0	75.0

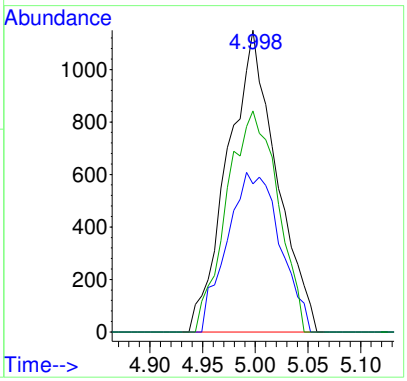


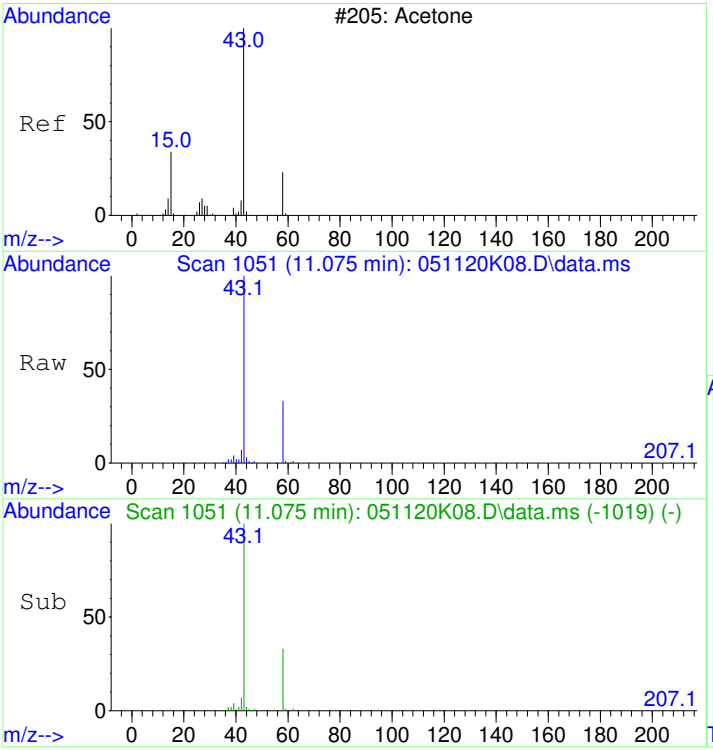


#2
Propene
Concen: 0.45 ppbv
RT: 4.998 min Scan# 52
Delta R.T. -0.000 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion: 41 Resp: 3703

Ion	Ratio	Lower	Upper
41	100		
42	57.4	47.4	87.4
39	76.9	47.3	87.3

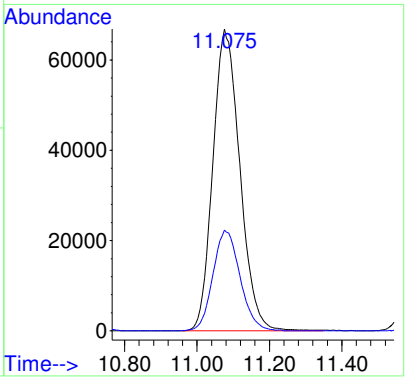


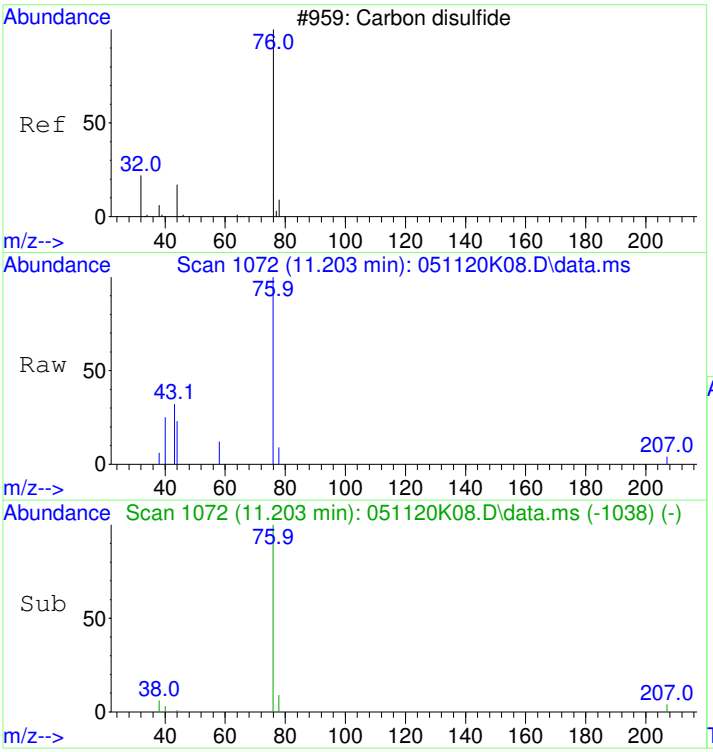


#14
Acetone
Concen: 26.26 ppbv
RT: 11.075 min Scan# 1051
Delta R.T. -0.006 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion: 43 Resp: 345847

Ion	Ratio	Lower	Upper
43	100		
58	33.5	14.0	54.0

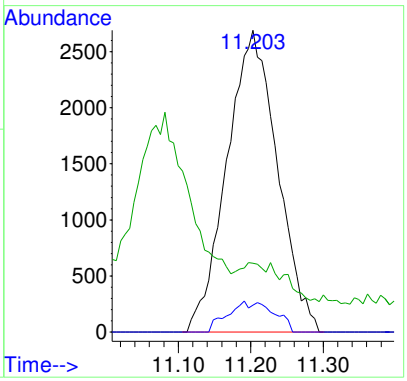


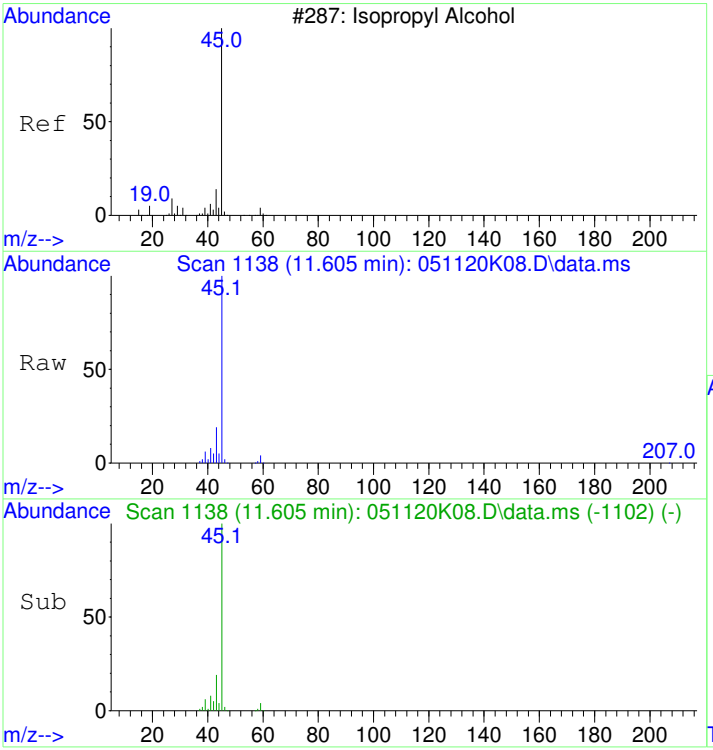


#15
Carbon disulfide
Concen: 0.54 ppbv
RT: 11.203 min Scan# 1072
Delta R.T. 0.006 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion: 76 Resp: 13031

Ion	Ratio	Lower	Upper
76	100		
78	9.2	0.0	29.1
44	0.0	0.0	33.0

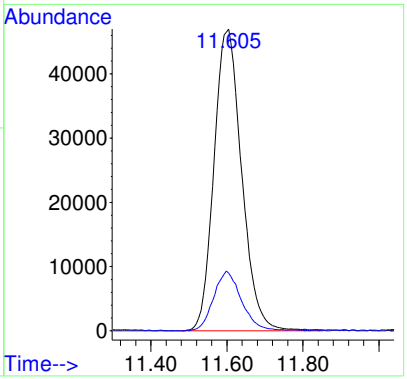


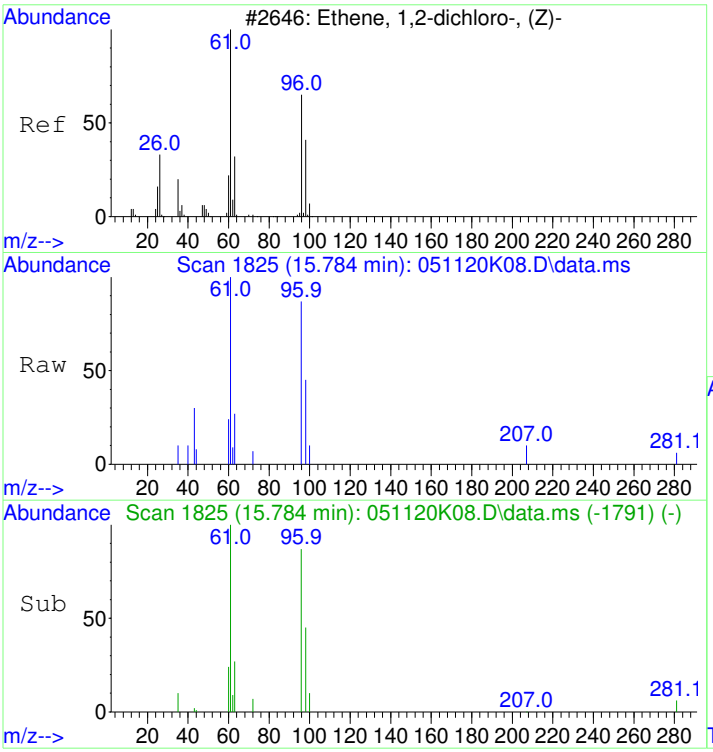


#16
2-Propanol
Concen: 18.53 ppbv
RT: 11.605 min Scan# 1138
Delta R.T. 0.018 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion: 45 Resp: 237845

Ion	Ratio	Lower	Upper
45	100		
43	20.0	0.0	39.0

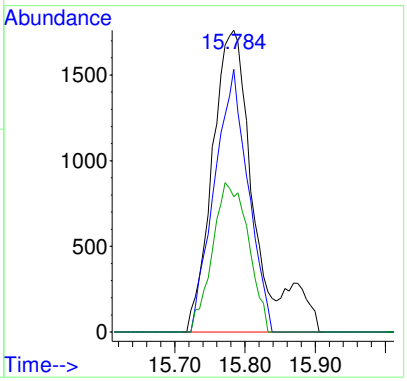


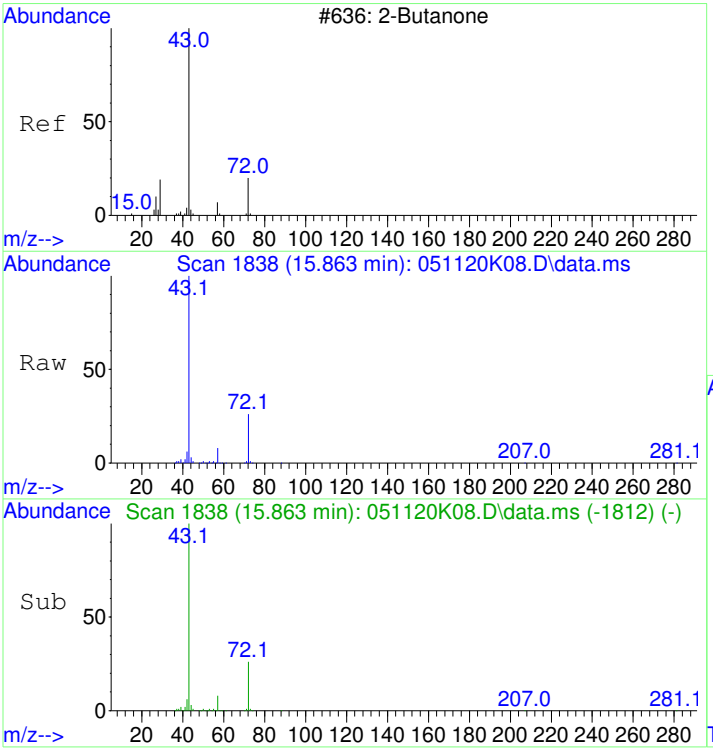


#24
cis-1,2-Dichloroethene
Concen: 0.60 ppbv
RT: 15.784 min Scan# 1825
Delta R.T. 0.006 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion: 61 Resp: 7316

Ion	Ratio	Lower	Upper
61	100		
96	70.0	55.7	95.7
98	42.3	0.0	20.0#

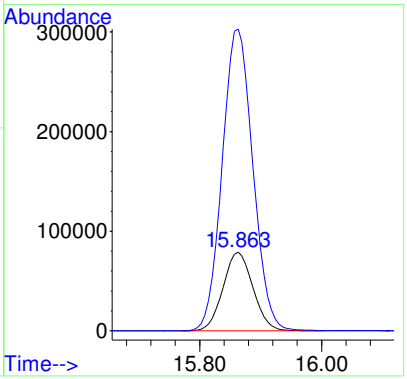


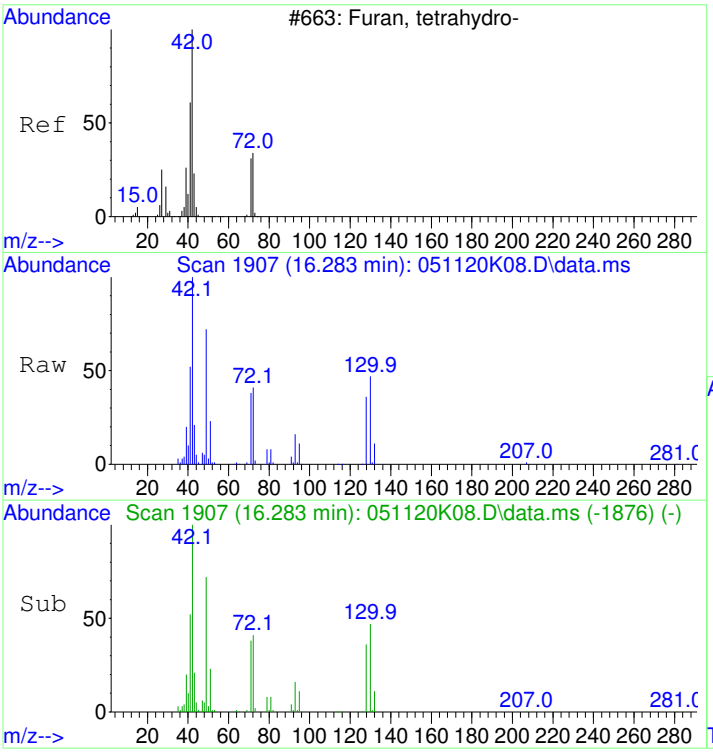


#25
2-Butanone (MEK)
Concen: 54.33 ppbv
RT: 15.863 min Scan# 1838
Delta R.T. 0.006 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion: 72 Resp: 269452

Ion	Ratio	Lower	Upper
72	100		
43	393.4	812.3	832.3#

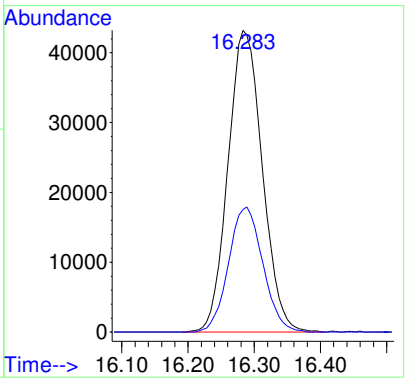


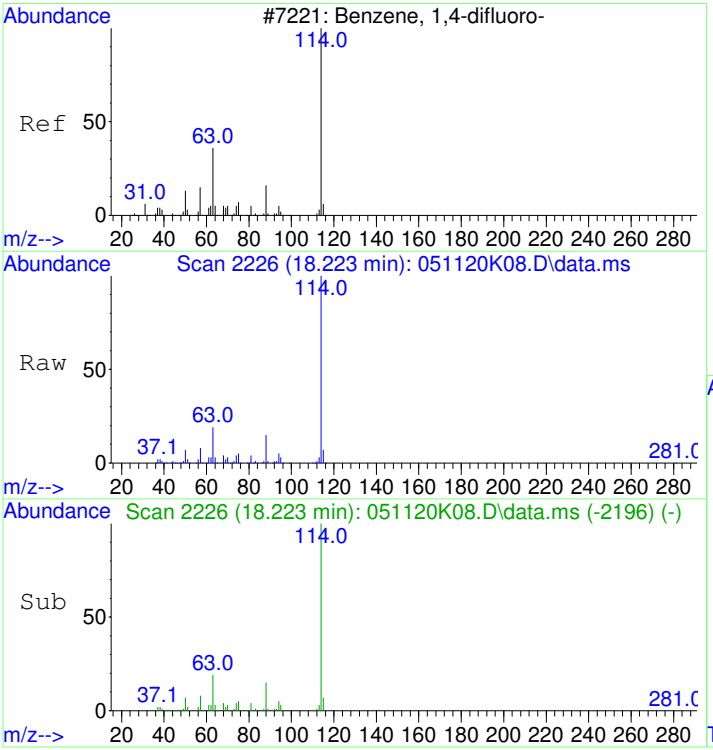


#27
Tetrahydrofuran
Concen: 13.21 ppbv
RT: 16.283 min Scan# 1907
Delta R.T. -0.000 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion: 42 Resp: 155482

Ion	Ratio	Lower	Upper
42	100		
72	41.4	21.2	61.2

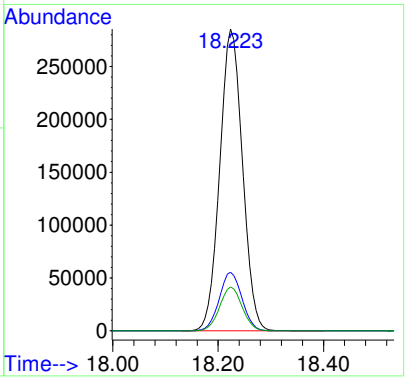


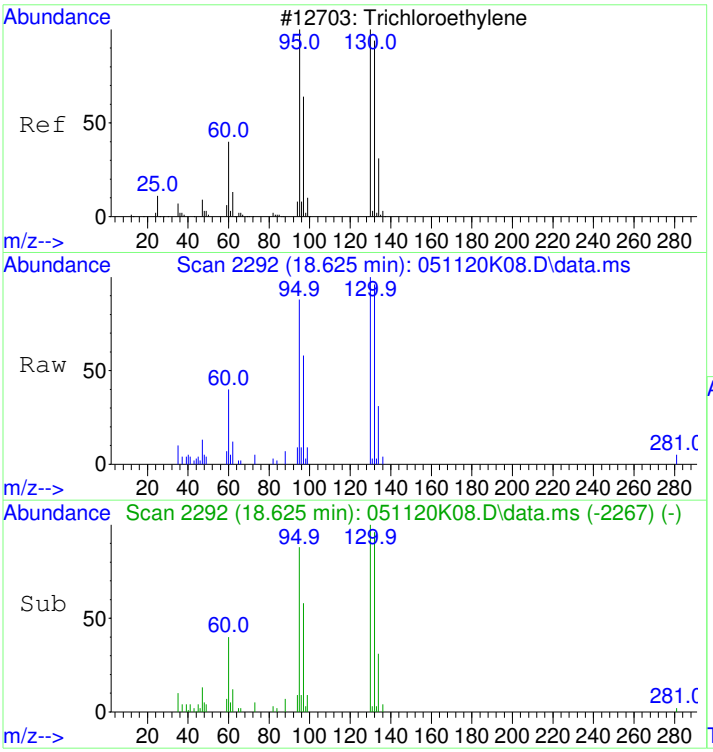


#32
1,4-DIFLUOROBENZENE
Concen: 19.60 ppbv
RT: 18.223 min Scan# 2226
Delta R.T. -0.000 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion:114 Resp: 856128

Ion	Ratio	Lower	Upper
114	100		
63	19.4	0.0	39.6
88	14.4	0.0	34.5

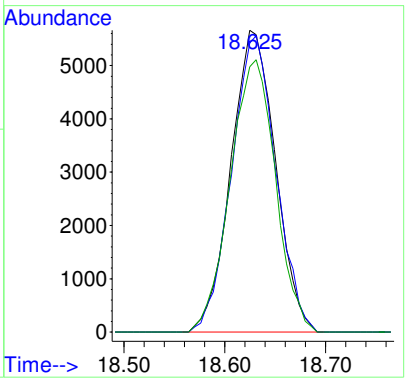


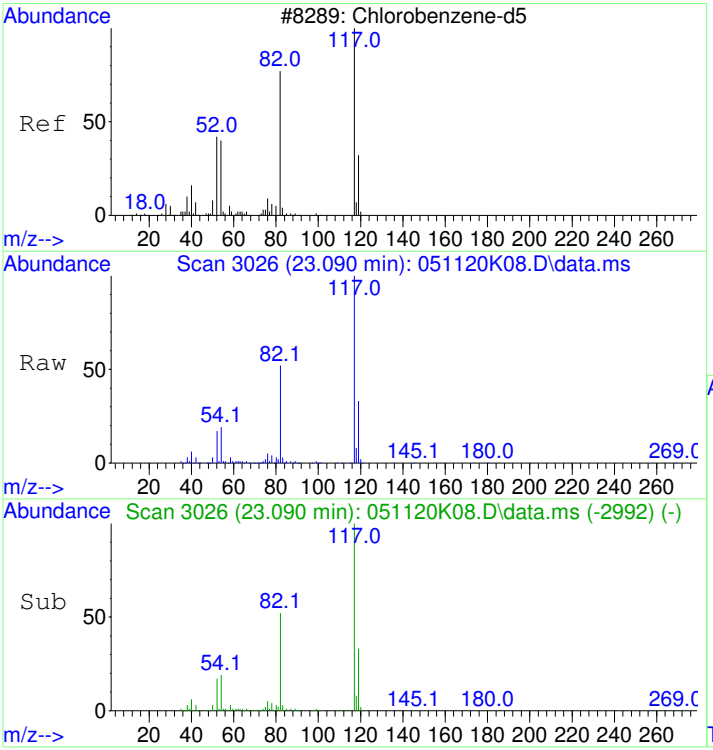


#37
Trichloroethene
Concen: 1.43 ppbv
RT: 18.625 min Scan# 2292
Delta R.T. -0.000 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion:130 Resp: 17374

Ion	Ratio	Lower	Upper
130	100		
132	97.5	75.5	115.5
95	91.8	71.3	111.3

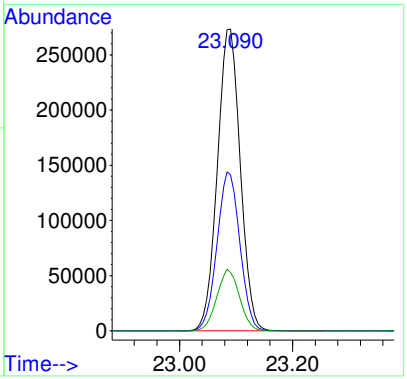


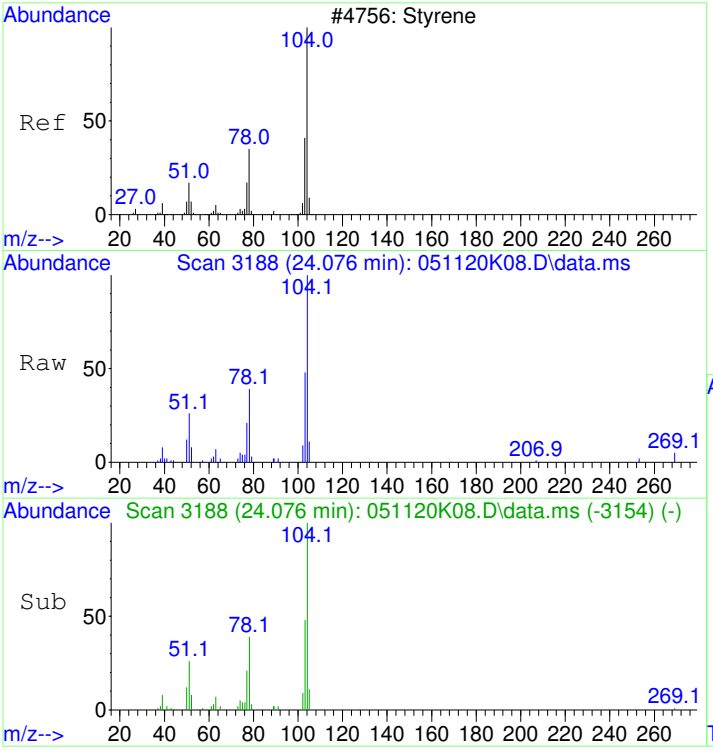


#43
CHLOROBENZENE-d5
Concen: 19.60 ppbv
RT: 23.090 min Scan# 3026
Delta R.T. 0.006 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion:117 Resp: 769685

Ion	Ratio	Lower	Upper
117	100		
82	52.4	32.5	72.5
54	20.1	0.0	39.6

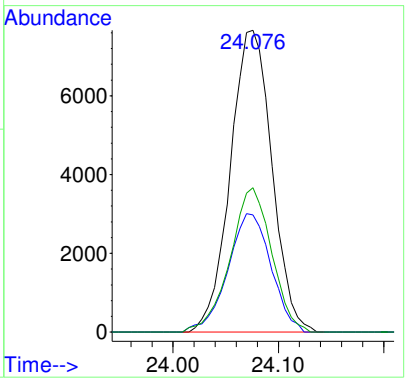




#55
Styrene
Concen: 1.19 ppbv
RT: 24.076 min Scan# 3188
Delta R.T. 0.006 min
Lab File: 051120K08.D
Acq: 11 May 2020 4:12 pm

Tgt Ion:104 Resp: 21056

Ion	Ratio	Lower	Upper
104	100		
78	40.7	28.9	68.9
103	47.6	37.1	77.1



2005005-02

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K09.D
InstName : HP5973K
Acq On : 11 May 2020 5:05 pm
Operator : EM
Sample : 2005005-02
Misc : 200ml 261 Ariana-MH2-SS-050820
ALS Vial : 14 Sample Multiplier: 2.05

REPORT

Quant Time: May 12 09:13:38 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	16.313	49	291620	19.60	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	884273	19.60	ppbv		0.00
43) CHLOROBENZENE-d5	23.084	117	791055	19.60	ppbv		0.00
Target Compounds							Qvalue
2) Propene	5.004	41	4134	0.49	ppbv		87
14) Acetone	11.087	43	56798	4.18	ppbv		99
16) 2-Propanol	11.598	45	144726	10.92	ppbv		97
24) cis-1,2-Dichloroethene	15.784	61	36029	2.87	ppbv	#	99
25) 2-Butanone (MEK)	15.863	72	40945	8.00	ppbv	#	1
27) Tetrahydrofuran	16.289	42	119436	9.83	ppbv		100
28) Chloroform	16.441	83	19387	1.11	ppbv		99
37) Trichloroethene	18.625	130	71597	5.71	ppbv		99
55) Styrene	24.070	104	16344	0.90	ppbv		89

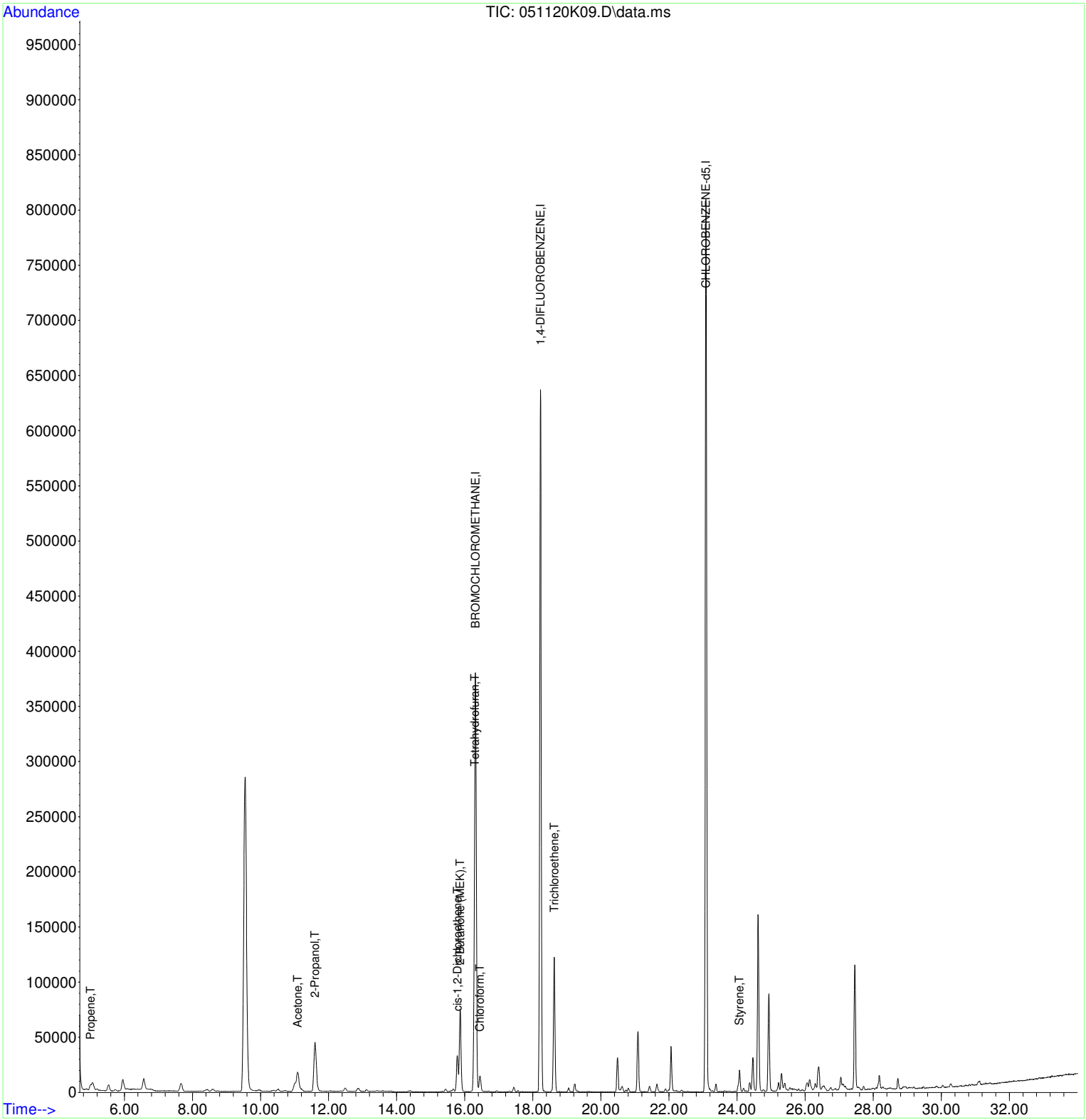
(#) = qualifier out of range (m) = manual integration (+) = signals summed

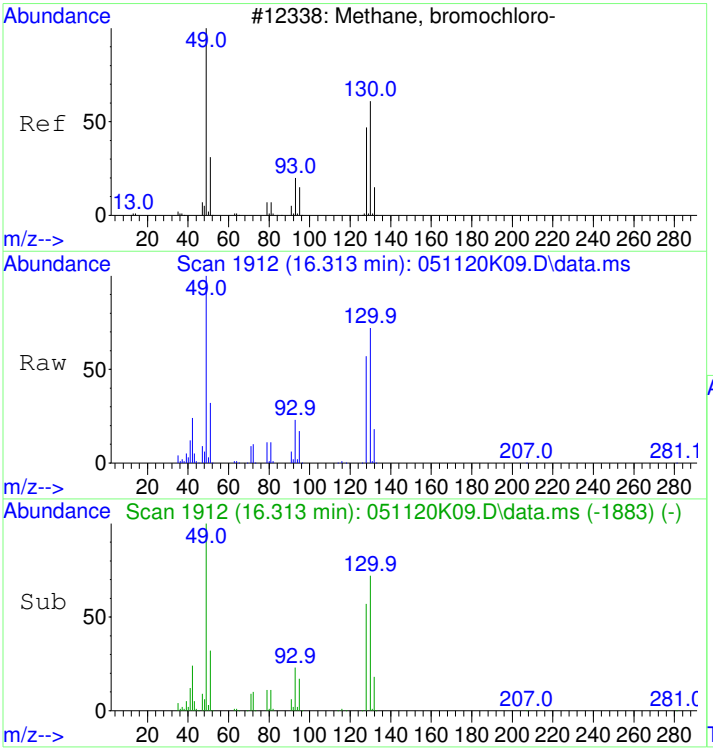
REVIEWED
By EM at 9:14 am, May 12, 2020

Table of Contents

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K09.D
InstName : HP5973K
Acq On : 11 May 2020 5:05 pm
Operator : EM
Sample : 2005005-02
Misc : 200ml 261 Ariana-MH2-SS-050820
ALS Vial : 14 Sample Multiplier: 2.05

Quant Time: May 12 09:13:38 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

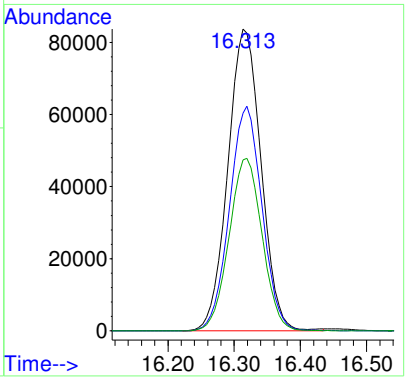


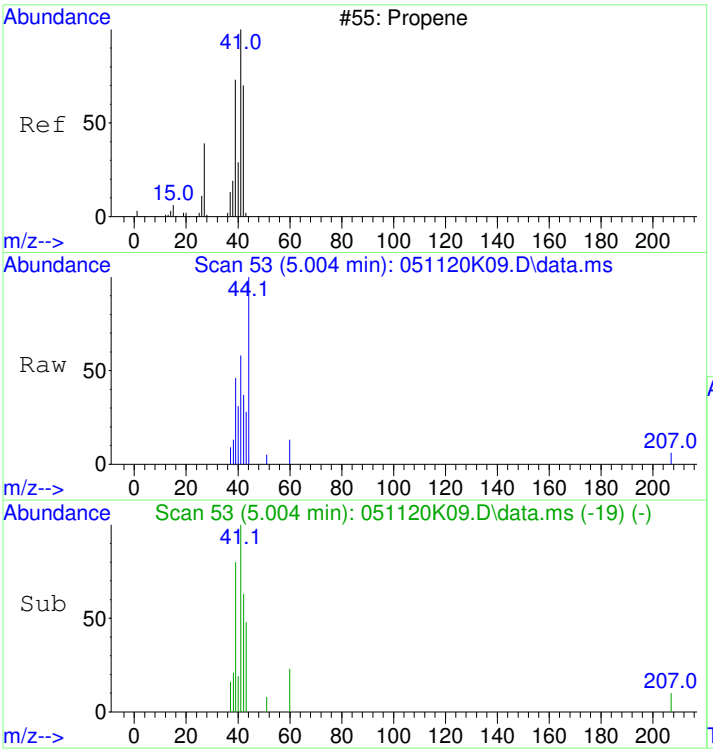


#1
BROMOCHLOROMETHANE
Concen: 19.60 ppbv
RT: 16.313 min Scan# 1912
Delta R.T. 0.000 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion: 49 Resp: 291620

Ion	Ratio	Lower	Upper
49	100		
130	73.1	51.1	91.1
128	56.6	35.0	75.0

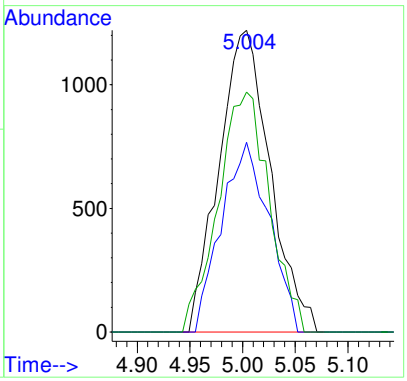


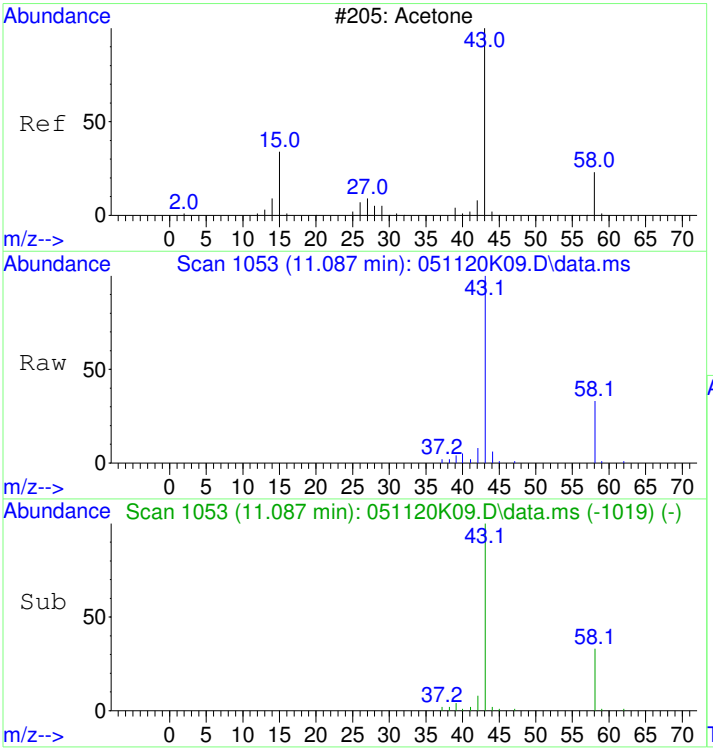


#2
Propene
Concen: 0.49 ppbv
RT: 5.004 min Scan# 53
Delta R.T. 0.006 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion: 41 Resp: 4134

Ion	Ratio	Lower	Upper
41	100		
42	58.4	47.4	87.4
39	79.2	47.3	87.3

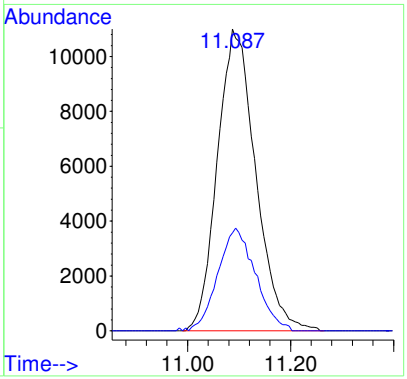


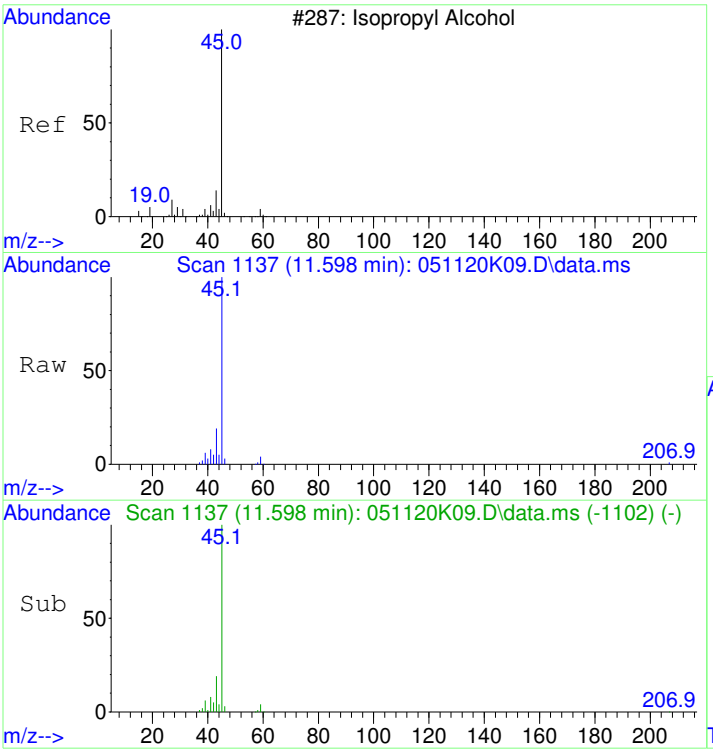


#14
Acetone
Concen: 4.18 ppbv
RT: 11.087 min Scan# 1053
Delta R.T. 0.006 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion: 43 Resp: 56798

Ion	Ratio	Lower	Upper
43	100		
58	33.4	14.0	54.0

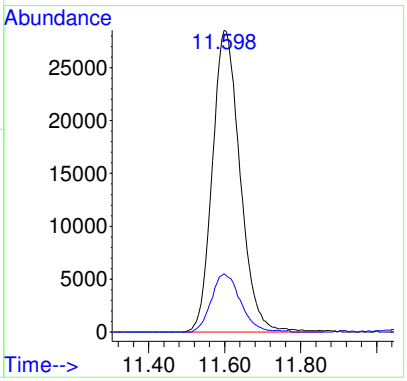


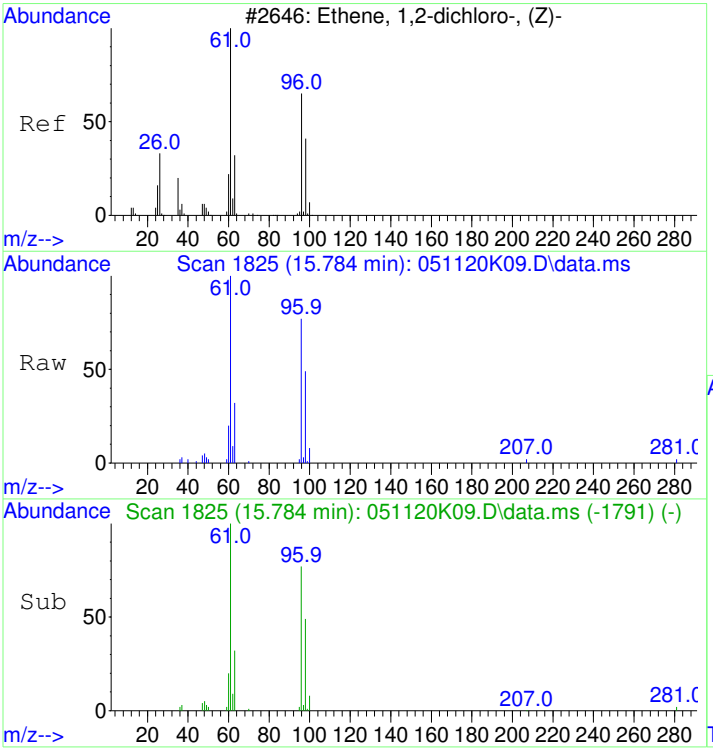


#16
2-Propanol
Concen: 10.92 ppbv
RT: 11.598 min Scan# 1137
Delta R.T. 0.012 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion: 45 Resp: 144726

Ion	Ratio	Lower	Upper
45	100		
43	20.4	0.0	39.0

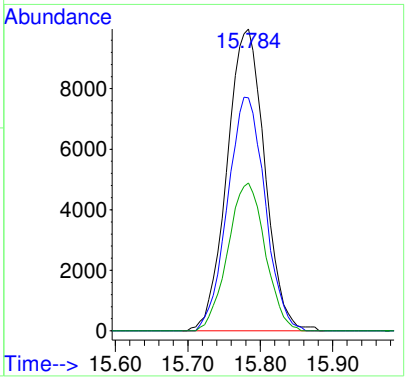


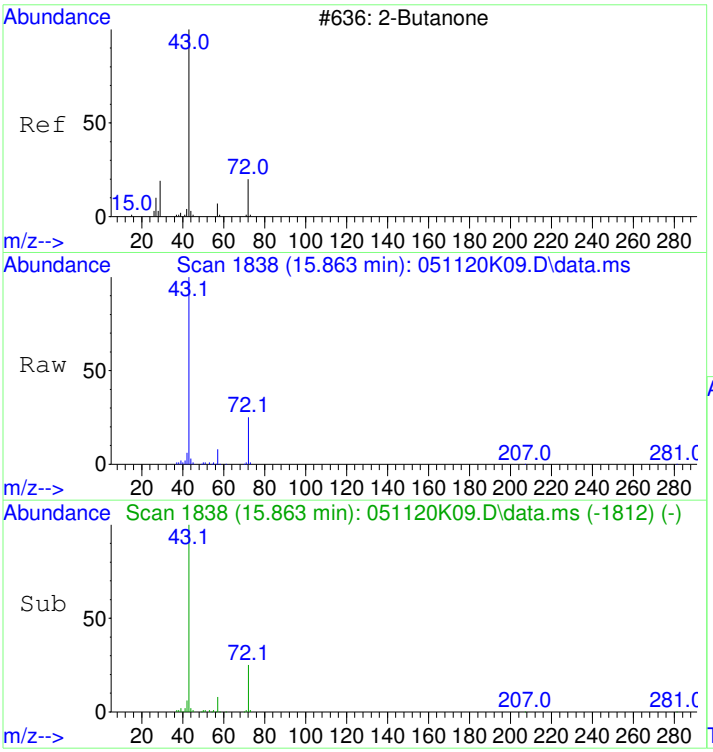


#24
cis-1,2-Dichloroethene
Concen: 2.87 ppbv
RT: 15.784 min Scan# 1825
Delta R.T. 0.006 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion: 61 Resp: 36029

Ion	Ratio	Lower	Upper
61	100		
96	77.0	55.7	95.7
98	48.4	0.0	20.0#

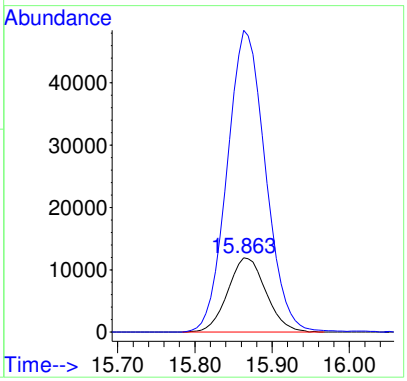


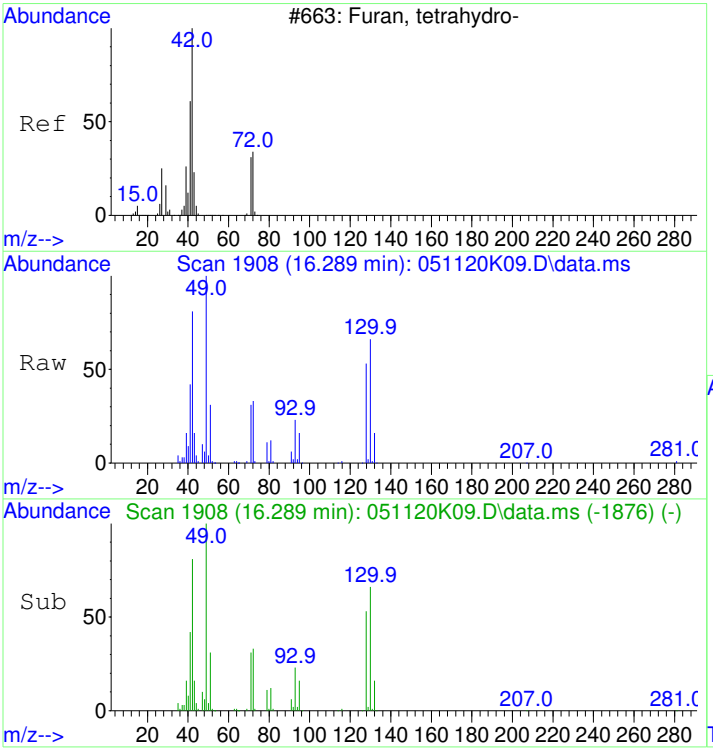


#25
2-Butanone (MEK)
Concen: 8.00 ppbv
RT: 15.863 min Scan# 1838
Delta R.T. 0.006 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion: 72 Resp: 40945

Ion	Ratio	Lower	Upper
72	100		
43	408.9	812.3	832.3#

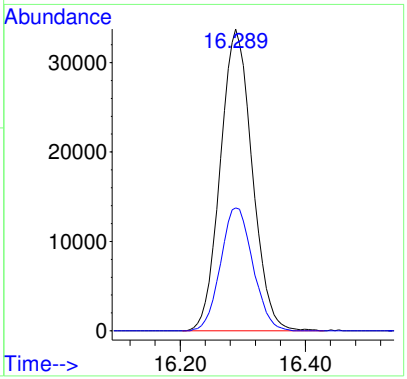


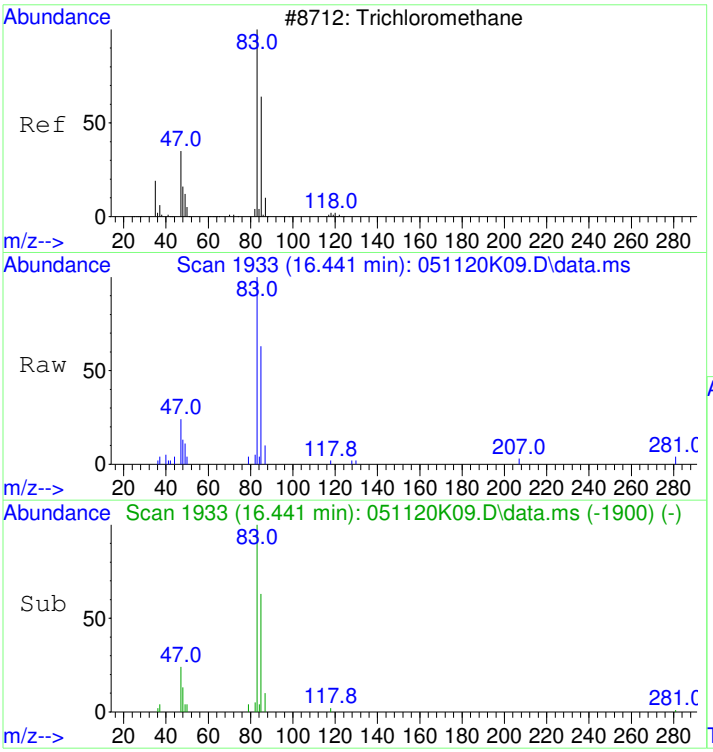


#27
Tetrahydrofuran
Concen: 9.83 ppbv
RT: 16.289 min Scan# 1908
Delta R.T. 0.006 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion: 42 Resp: 119436

Ion	Ratio	Lower	Upper
42	100		
72	41.2	21.2	61.2

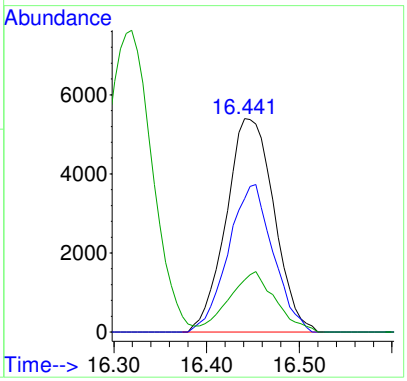


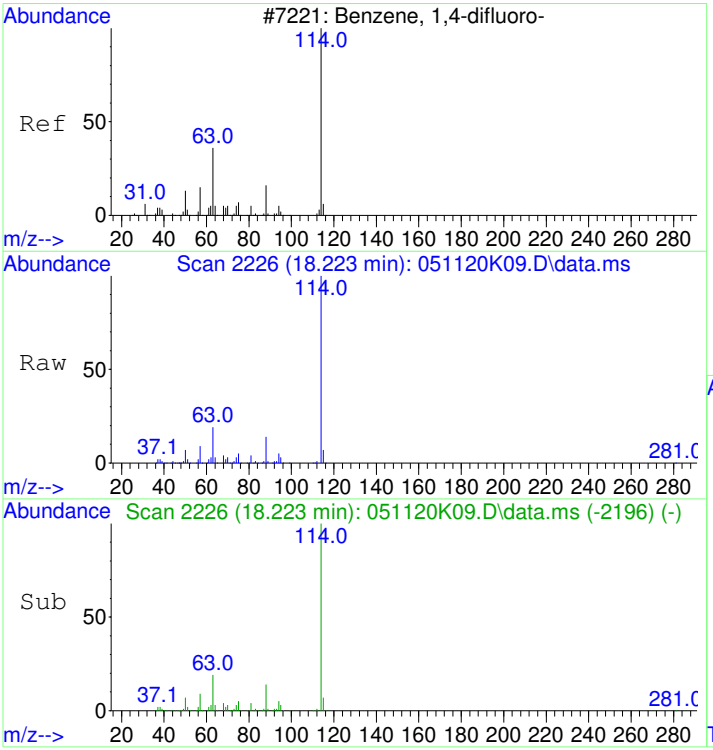


#28
Chloroform
Concen: 1.11 ppbv
RT: 16.441 min Scan# 1933
Delta R.T. -0.000 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion: 83 Resp: 19387

Ion	Ratio	Lower	Upper
83	100		
85	64.8	44.6	84.6
47	24.3	3.0	43.0

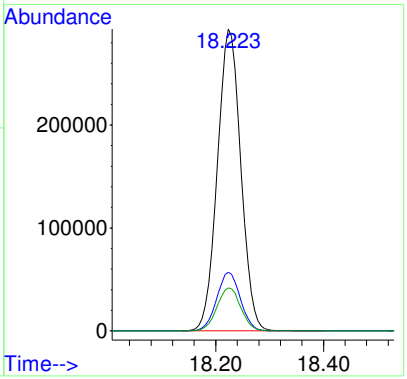


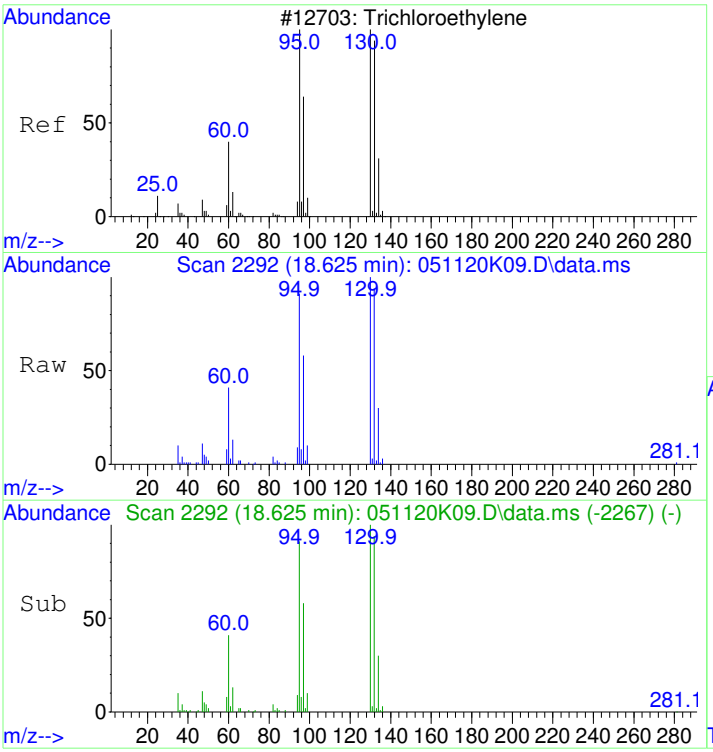


#32
1,4-DIFLUOROBENZENE
Concen: 19.60 ppbv
RT: 18.223 min Scan# 2226
Delta R.T. -0.000 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion:114 Resp: 884273

Ion	Ratio	Lower	Upper
114	100		
63	19.5	0.0	39.6
88	14.4	0.0	34.5

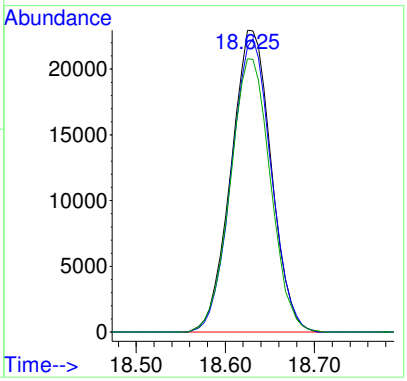


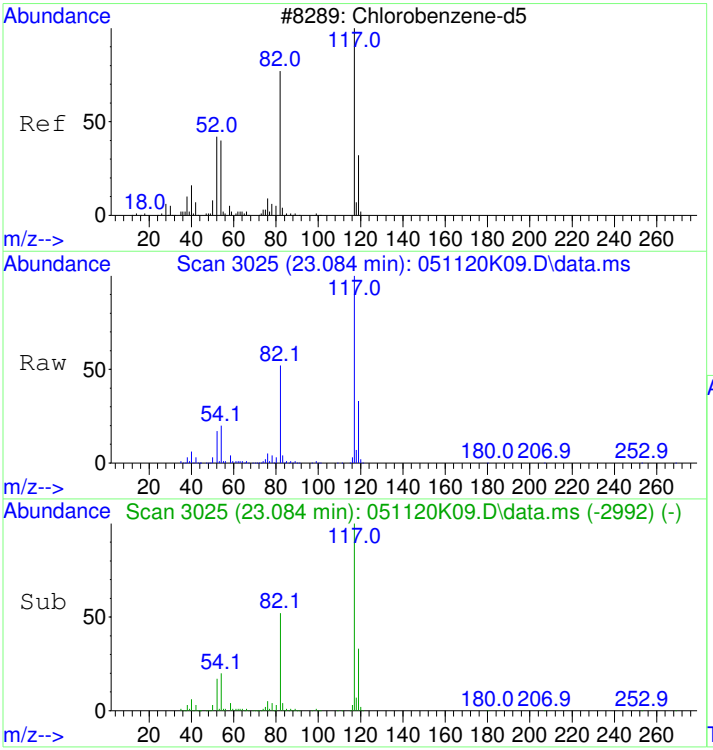


#37
Trichloroethene
Concen: 5.71 ppbv
RT: 18.625 min Scan# 2292
Delta R.T. -0.000 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion:130 Resp: 71597

Ion	Ratio	Lower	Upper
130	100		
132	95.9	75.5	115.5
95	90.7	71.3	111.3

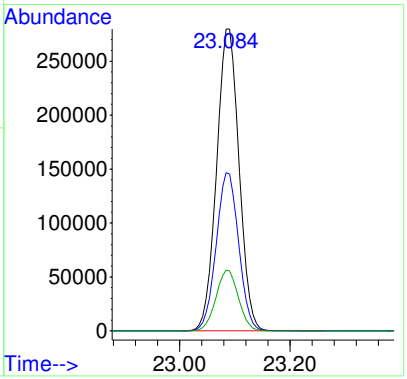


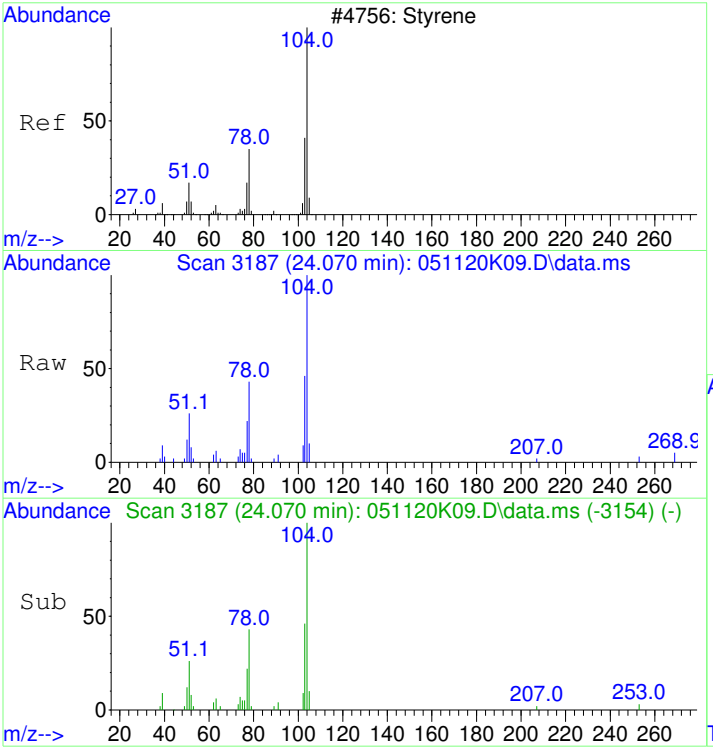


#43
CHLOROBENZENE-d5
Concen: 19.60 ppbv
RT: 23.084 min Scan# 3025
Delta R.T. -0.000 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion:117 Resp: 791055

Ion	Ratio	Lower	Upper
117	100		
82	52.4	32.5	72.5
54	20.0	0.0	39.6

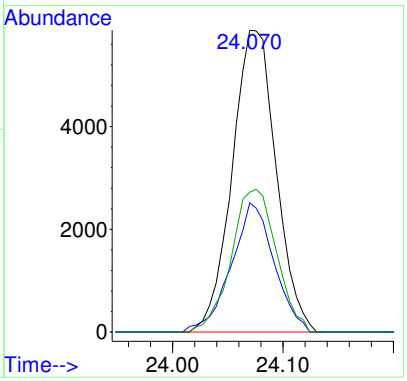




#55
Styrene
Concen: 0.90 ppbv
RT: 24.070 min Scan# 3187
Delta R.T. -0.000 min
Lab File: 051120K09.D
Acq: 11 May 2020 5:05 pm

Tgt Ion:104 Resp: 16344

Ion	Ratio	Lower	Upper
104	100		
78	41.8	28.9	68.9
103	48.7	37.1	77.1



S20E006-IBL1

Quantitation Report (Not Reviewed)

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K10.D
InstName : HP5973K
Acq On : 11 May 2020 5:58 pm
Operator : EM
Sample : S20E006-IBL1
Misc : 200ml IB
ALS Vial : 33 Sample Multiplier: 1

Quant Time: May 12 09:13:43 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) BROMOCHLOROMETHANE	16.313	49	286908	19.60 ppbv	0.00
32) 1,4-DIFLUOROBENZENE	18.223	114	882428	19.60 ppbv	0.00
43) CHLOROBENZENE-d5	23.090	117	776680	19.60 ppbv	0.00

Target Compounds Qvalue

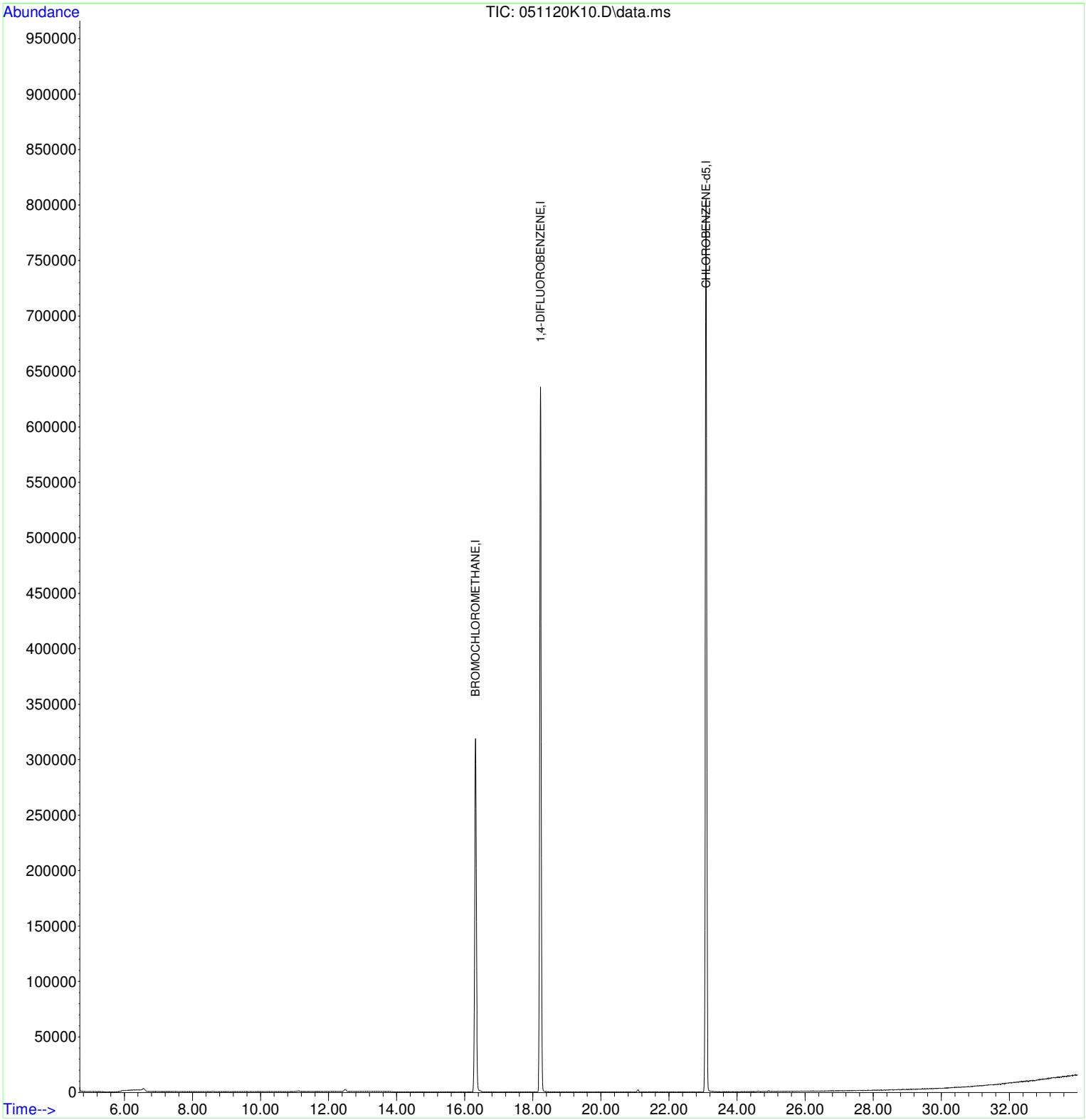
(#) = qualifier out of range (m) = manual integration (+) = signals summed

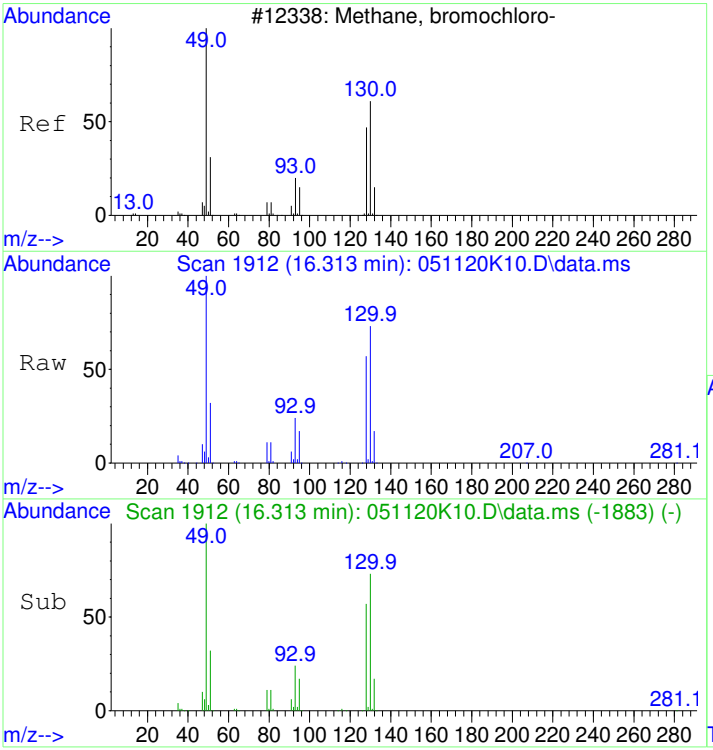
REVIEWED
By EM at 9:14 am, May 12, 2020

Table of Contents

Data Path : D:\msdchem\1\2020\DATA\051120K_FSAA\
Data File : 051120K10.D
InstName : HP5973K
Acq On : 11 May 2020 5:58 pm
Operator : EM
Sample : S20E006-IBL1
Misc : 200ml IB
ALS Vial : 33 Sample Multiplier: 1

Quant Time: May 12 09:13:43 2020
Quant Method : D:\msdchem\1\2020\METHOD\040120K_TO15AA.M
Quant Title : TO15
QLast Update : Thu Apr 02 09:57:00 2020
Response via : Initial Calibration

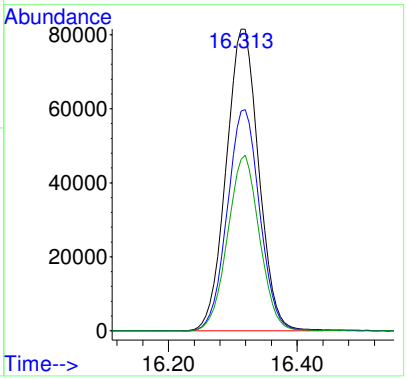


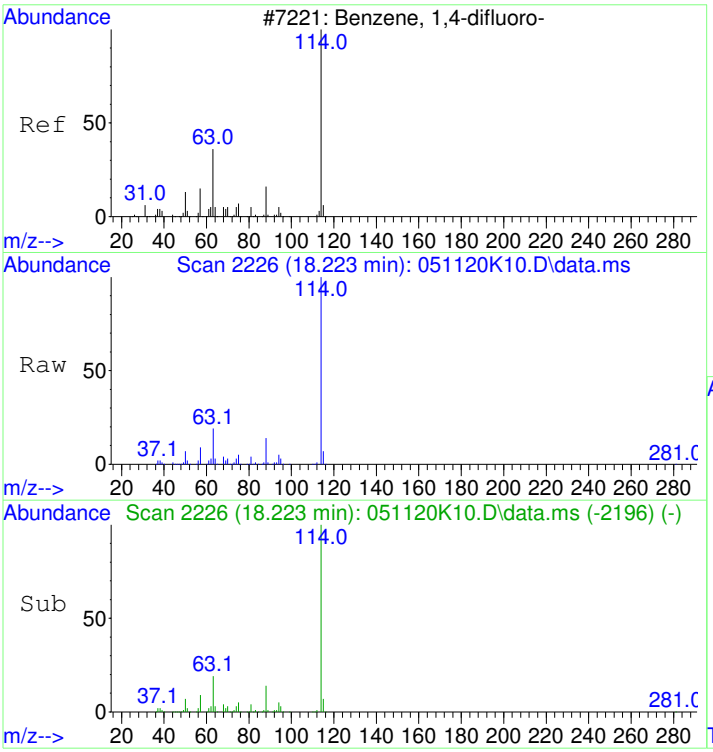


#1
BROMOCHLOROMETHANE
Concen: 19.60 ppbv
RT: 16.313 min Scan# 1912
Delta R.T. -0.000 min
Lab File: 051120K10.D
Acq: 11 May 2020 5:58 pm

Tgt Ion: 49 Resp: 286908

Ion	Ratio	Lower	Upper
49	100		
130	73.1	51.1	91.1
128	56.3	35.0	75.0

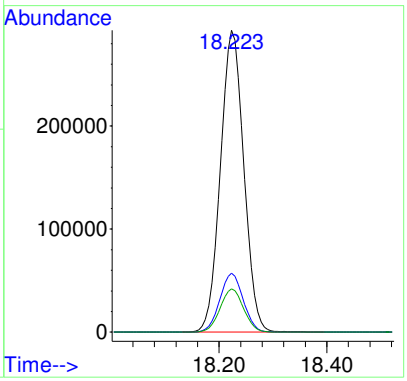


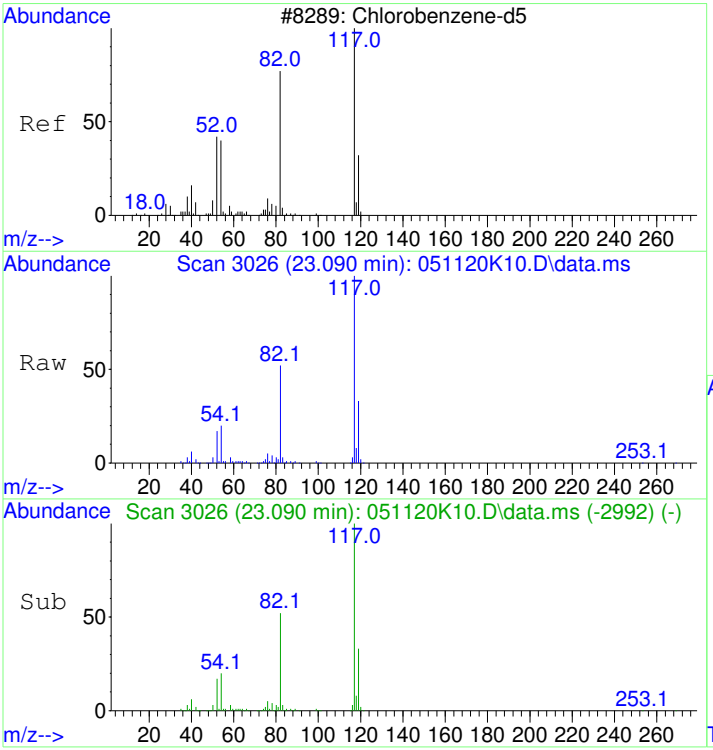


#32
1,4-DIFLUOROBENZENE
Concen: 19.60 ppbv
RT: 18.223 min Scan# 2226
Delta R.T. -0.000 min
Lab File: 051120K10.D
Acq: 11 May 2020 5:58 pm

Tgt Ion:114 Resp: 882428

Ion	Ratio	Lower	Upper
114	100		
63	19.5	0.0	39.6
88	14.3	0.0	34.5

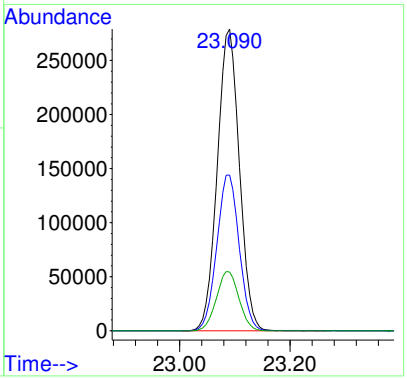




#43
CHLOROBENZENE-d5
Concen: 19.60 ppbv
RT: 23.090 min Scan# 3026
Delta R.T. 0.006 min
Lab File: 051120K10.D
Acq: 11 May 2020 5:58 pm

Tgt Ion:117 Resp: 776680

Ion	Ratio	Lower	Upper
117	100		
82	52.4	32.5	72.5
54	20.0	0.0	39.6



Cannister Certifications

2005005-01

Quantitation Report (Not Reviewed)

Data Path : D:\msdchem\1\2019\DATA\120619K_FSAA\
Data File : 120619K13.D
InstName : HP5973K
Acq On : 6 Dec 2019 10:55 pm
Operator : EM
Sample : CAN #864
Misc : 200ml RECERTIFICATION
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 10 08:30:48 2019
Quant Method : D:\msdchem\1\2019\METHOD\120319K_TO15AA.M
Quant Title : TO15
QLast Update : Wed Dec 04 12:42:17 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)	
Internal Standards							
1) BROMOCHLOROMETHANE	16.316	49	257828	20.00	ppbv	0.00	
32) 1,4-DIFLUOROBENZENE	18.227	114	919444	20.00	ppbv	0.00	
43) CHLOROBENZENE-d5	23.094	117	807135	22.00	ppbv	0.00	
Target Compounds						Qvalue	
15) Carbon disulfide	11.212	76	8499	0.40	ppbv	# 82	<1/2MDL

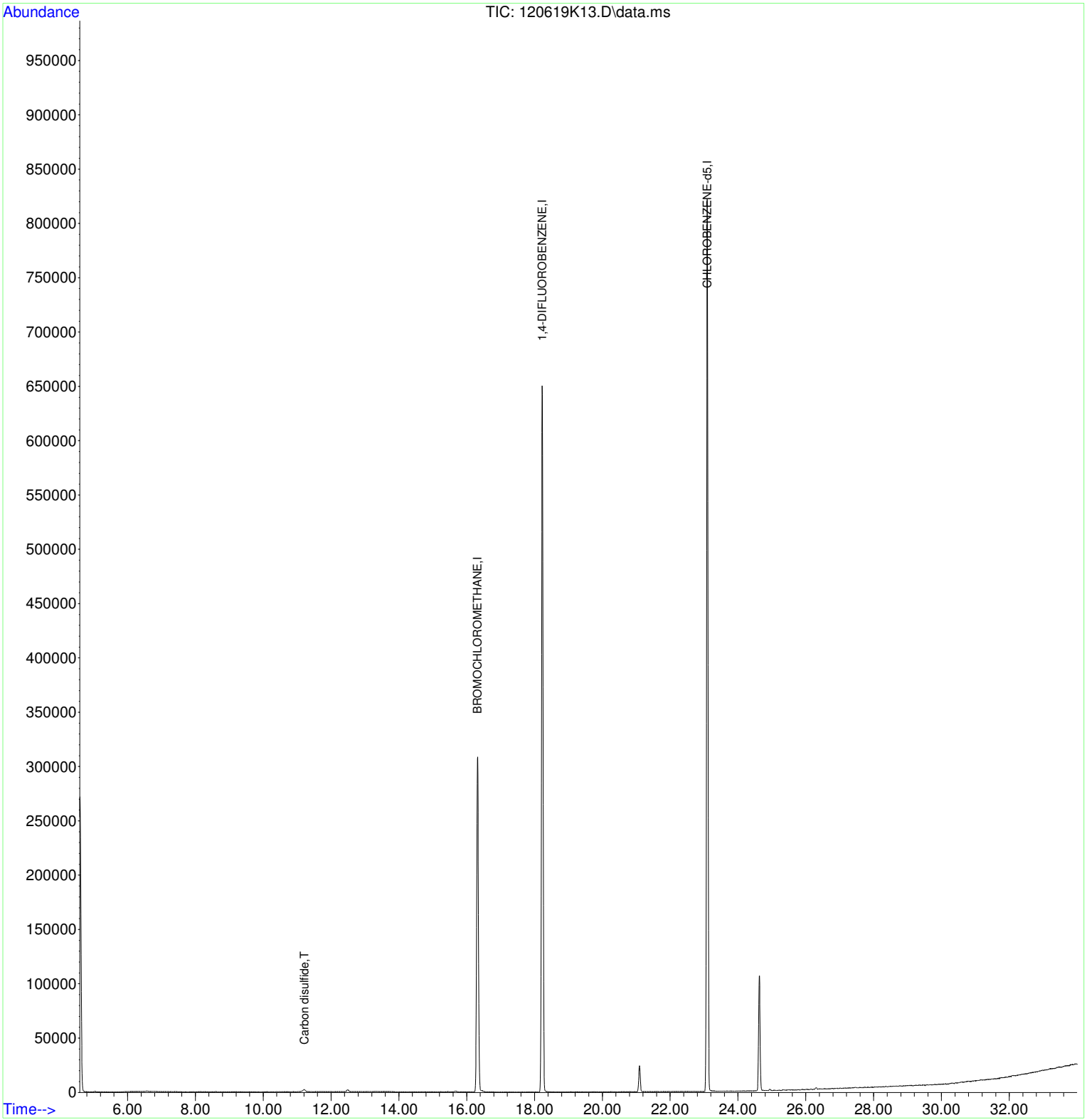
(#) = qualifier out of range (m) = manual integration (+) = signals summed

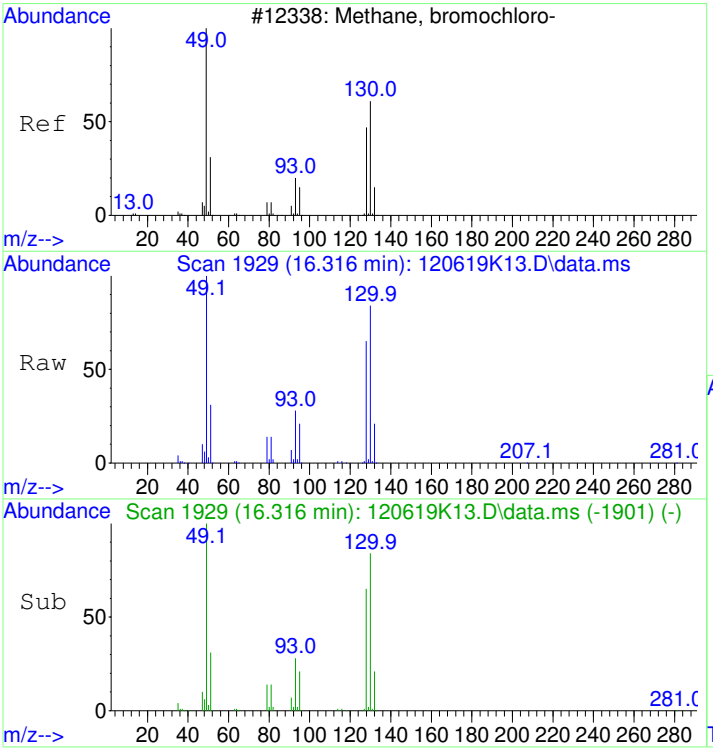
REVIEWED
By EM at 8:33 am, Dec 10, 2019

Table of Contents

Data Path : D:\msdchem\1\2019\DATA\120619K_FSAA\
Data File : 120619K13.D
InstName : HP5973K
Acq On : 6 Dec 2019 10:55 pm
Operator : EM
Sample : CAN #864
Misc : 200ml RECERTIFICATION
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 10 08:30:48 2019
Quant Method : D:\msdchem\1\2019\METHOD\120319K_TO15AA.M
Quant Title : TO15
QLast Update : Wed Dec 04 12:42:17 2019
Response via : Initial Calibration

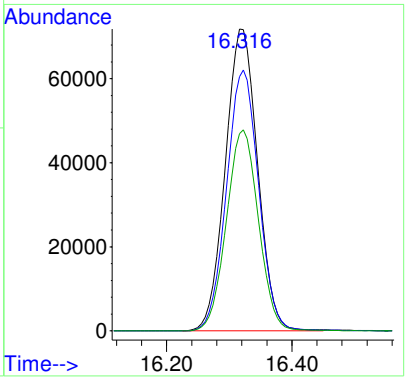


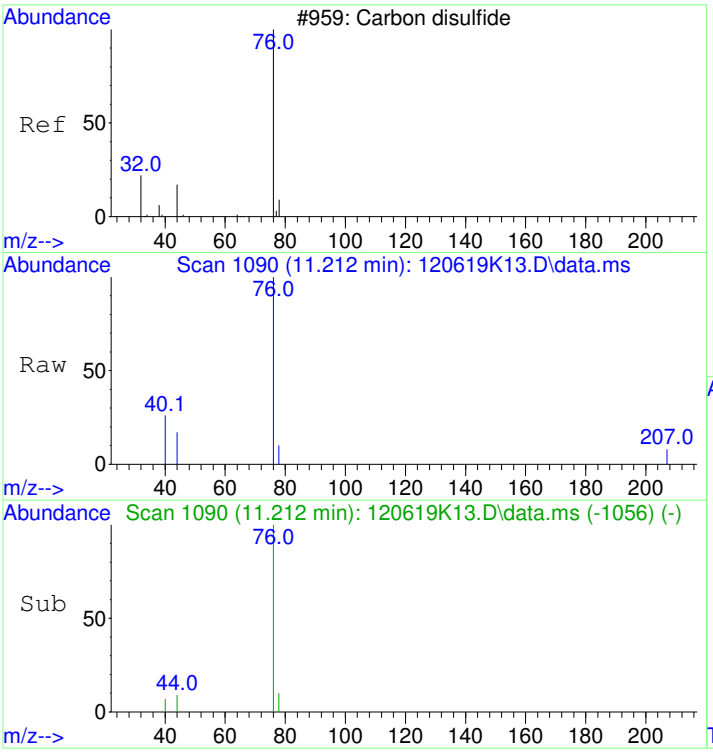


#1
BROMOCHLOROMETHANE
Concen: 20.00 ppbv
RT: 16.316 min Scan# 1929
Delta R.T. -0.007 min
Lab File: 120619K13.D
Acq: 6 Dec 2019 10:55 pm

Tgt Ion: 49 Resp: 257828

Ion	Ratio	Lower	Upper
49	100		
130	85.7	62.7	102.7
128	65.5	43.9	83.9

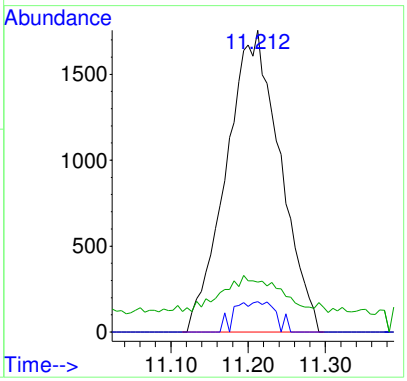


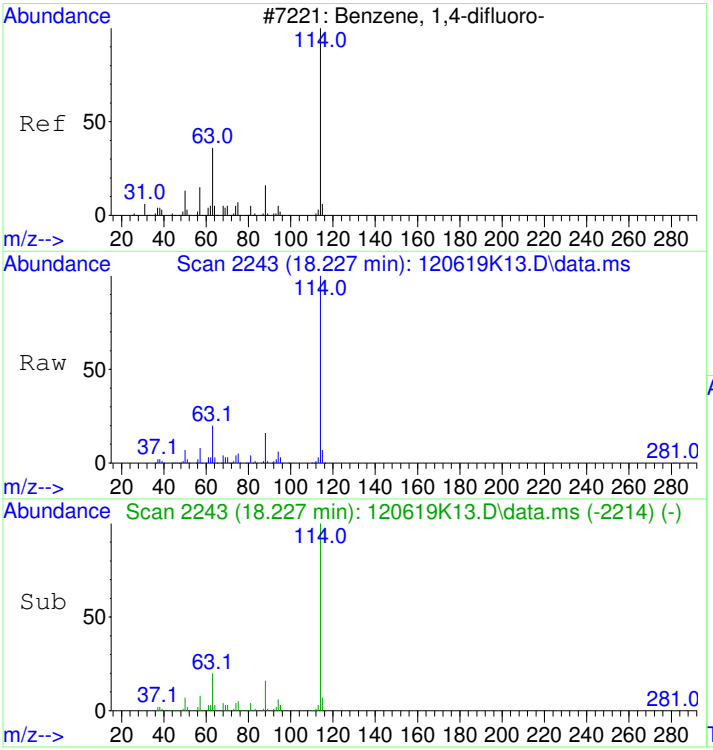


#15
Carbon disulfide
Concen: 0.40 ppbv
RT: 11.212 min Scan# 1090
Delta R.T. 0.006 min
Lab File: 120619K13.D
Acq: 6 Dec 2019 10:55 pm

Tgt Ion: 76 Resp: 8499

Ion	Ratio	Lower	Upper
76	100		
78	7.7	0.0	29.1
44	0.0	0.0	31.1

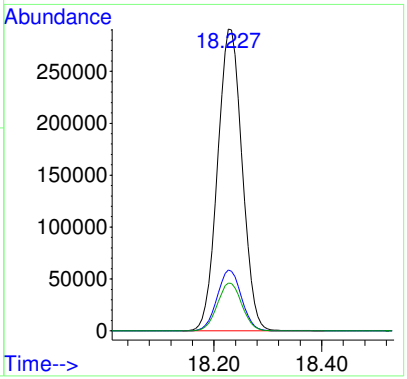


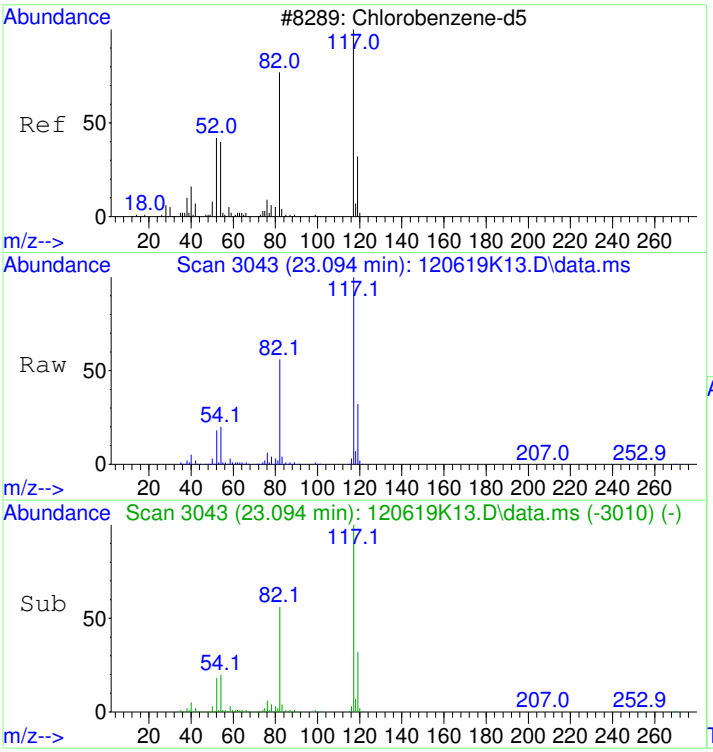


#32
1,4-DIFLUOROBENZENE
Concen: 20.00 ppbv
RT: 18.227 min Scan# 2243
Delta R.T. -0.006 min
Lab File: 120619K13.D
Acq: 6 Dec 2019 10:55 pm

Tgt Ion:114 Resp: 919444

Ion	Ratio	Lower	Upper
114	100		
63	19.9	0.0	39.8
88	15.7	0.0	35.7

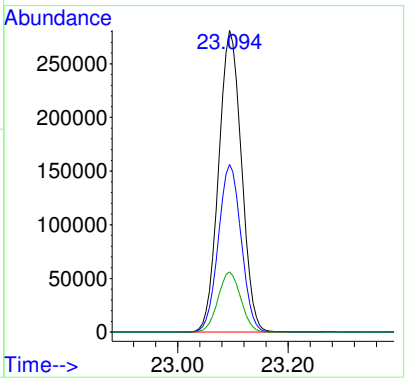




#43
CHLOROBENZENE-d5
Concen: 22.00 ppbv
RT: 23.094 min Scan# 3043
Delta R.T. -0.000 min
Lab File: 120619K13.D
Acq: 6 Dec 2019 10:55 pm

Tgt Ion:117 Resp: 807135

Ion	Ratio	Lower	Upper
117	100		
82	55.6	35.3	75.3
54	19.9	0.0	39.5



2005005-02

Quantitation Report (Not Reviewed)

Data Path : D:\msdchem\1\2019\DATA\120519K_FSAA\
Data File : 120519K08.D
InstName : HP5973K
Acq On : 5 Dec 2019 5:45 pm
Operator : EM
Sample : CAN #870
Misc : 200ml RECERTIFICATION
ALS Vial : 18 Sample Multiplier: 1

CLEAN

Quant Time: Dec 06 11:46:01 2019
Quant Method : D:\msdchem\1\2019\METHOD\120319K_TO15AA.M
Quant Title : TO15
QLast Update : Wed Dec 04 12:42:17 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) BROMOCHLOROMETHANE	16.317	49	262608	20.00 ppbv	0.00
32) 1,4-DIFLUOROBENZENE	18.227	114	927863	20.00 ppbv	0.00
43) CHLOROBENZENE-d5	23.094	117	813660	22.00 ppbv	0.00

Target Compounds Qvalue

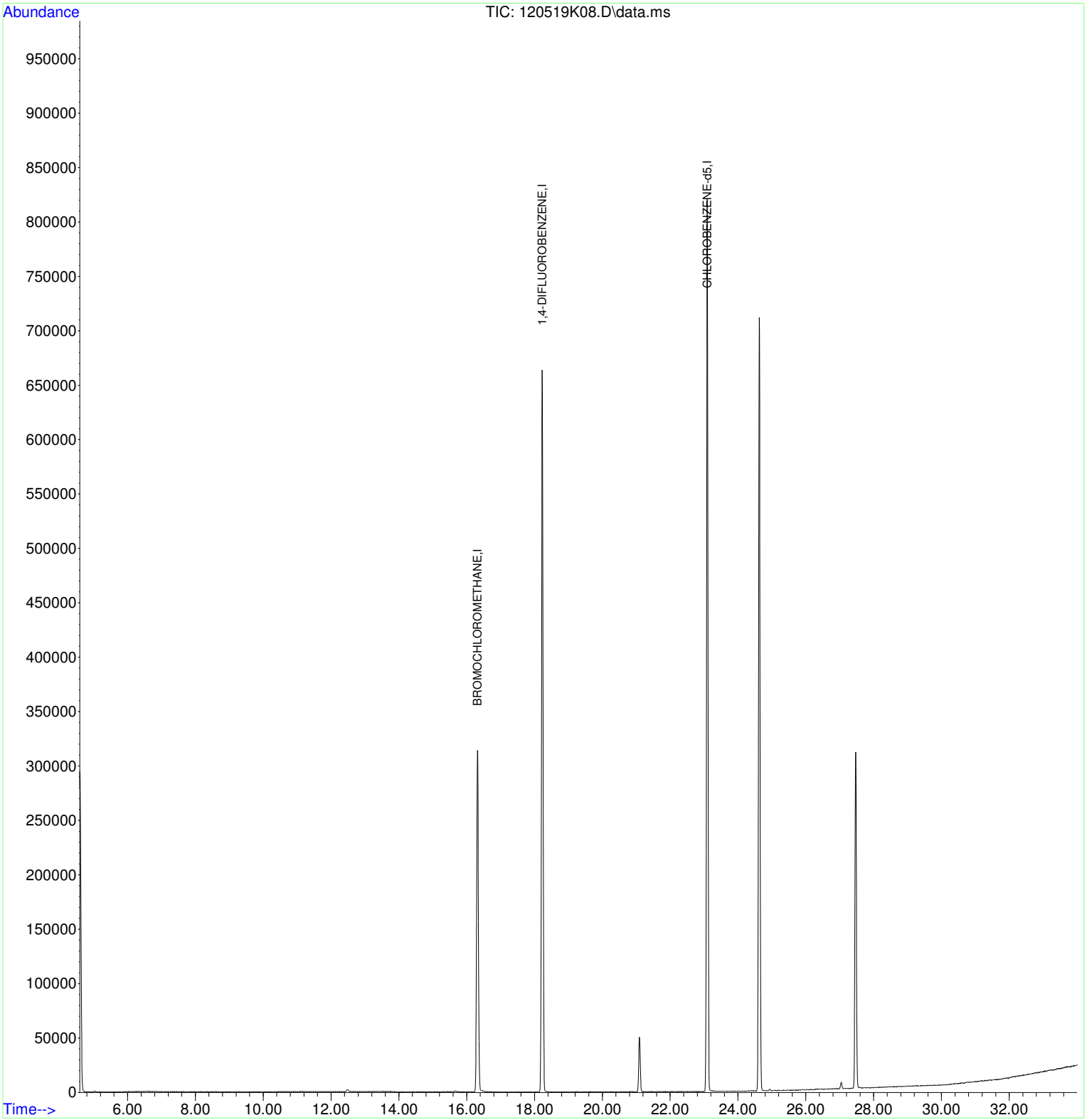
(#) = qualifier out of range (m) = manual integration (+) = signals summed

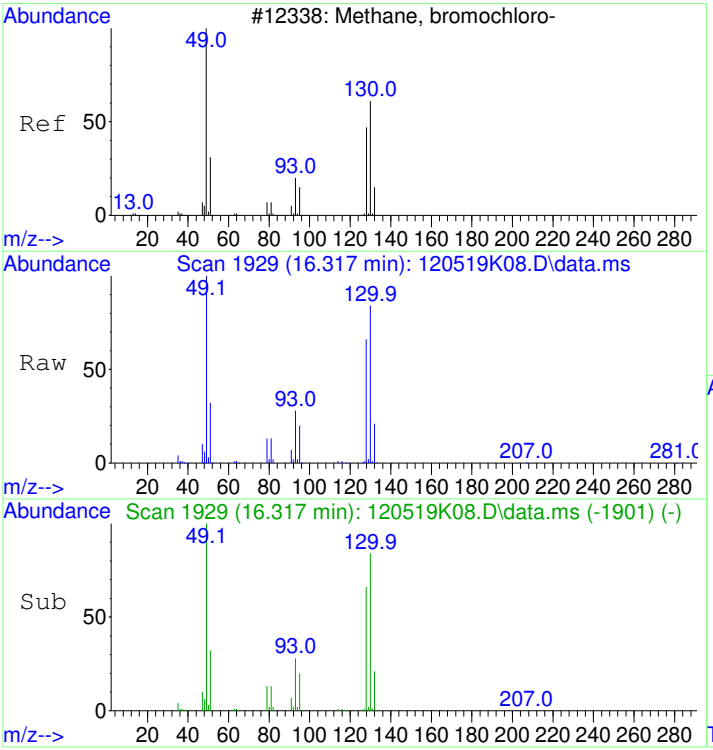
REVIEWED
By EM at 1:26 pm, Dec 06, 2019

Table of Contents

Data Path : D:\msdchem\1\2019\DATA\120519K_FSAA\
Data File : 120519K08.D
InstName : HP5973K
Acq On : 5 Dec 2019 5:45 pm
Operator : EM
Sample : CAN #870
Misc : 200ml RECERTIFICATION
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 06 11:46:01 2019
Quant Method : D:\msdchem\1\2019\METHOD\120319K_TO15AA.M
Quant Title : TO15
QLast Update : Wed Dec 04 12:42:17 2019
Response via : Initial Calibration

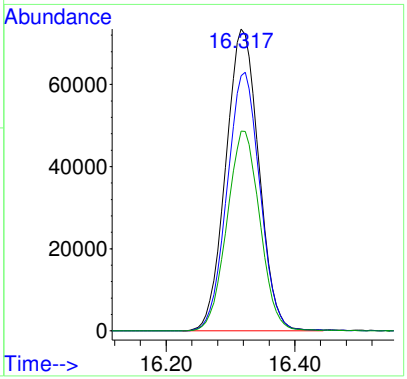


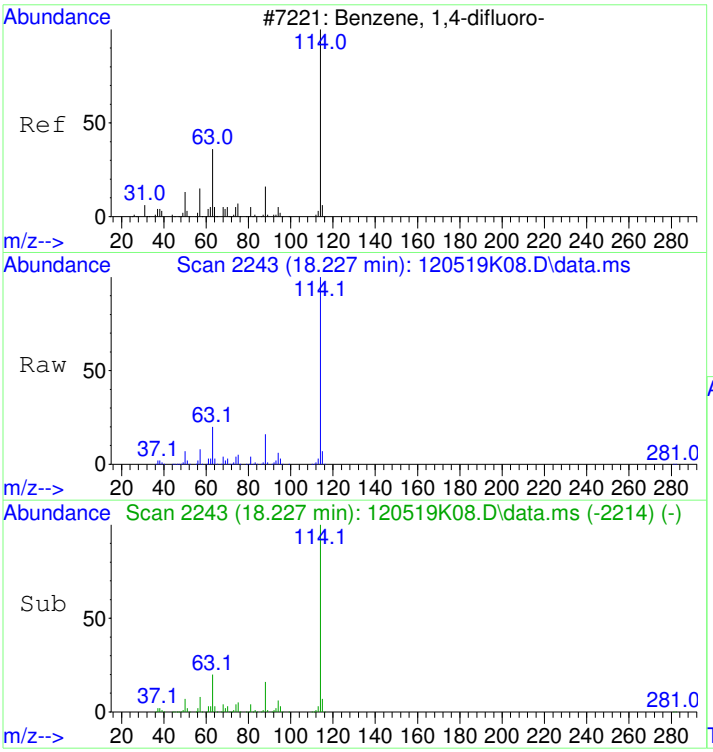


#1
BROMOCHLOROMETHANE
Concen: 20.00 ppbv
RT: 16.317 min Scan# 1929
Delta R.T. -0.006 min
Lab File: 120519K08.D
Acq: 5 Dec 2019 5:45 pm

Tgt Ion: 49 Resp: 262608

Ion	Ratio	Lower	Upper
49	100		
130	85.0	62.7	102.7
128	65.2	43.9	83.9

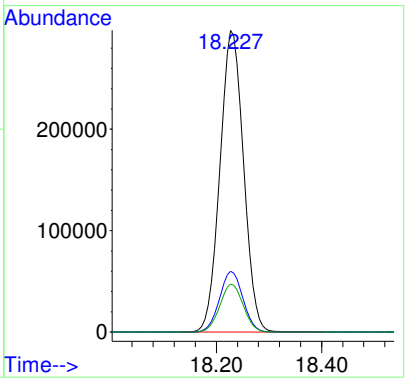


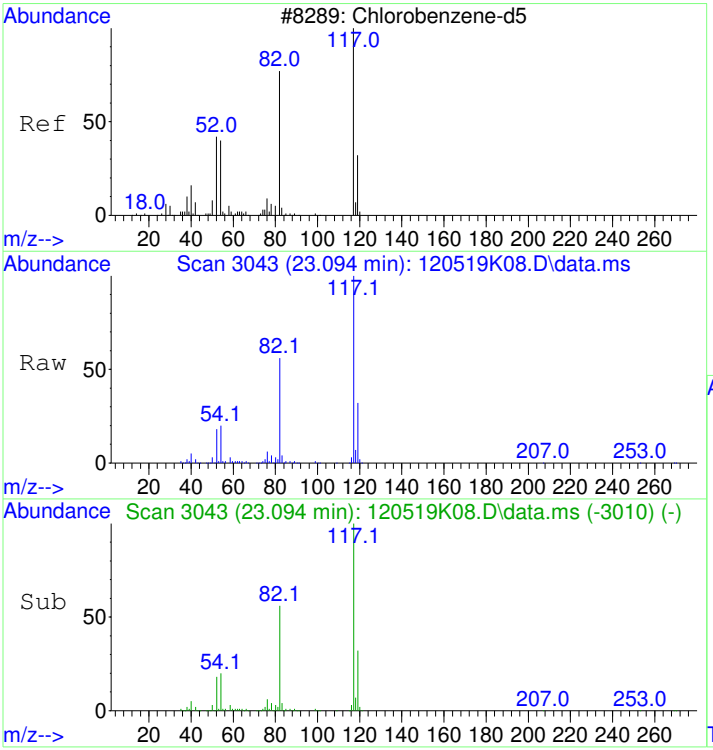


#32
1,4-DIFLUOROBENZENE
Concen: 20.00 ppbv
RT: 18.227 min Scan# 2243
Delta R.T. -0.006 min
Lab File: 120519K08.D
Acq: 5 Dec 2019 5:45 pm

Tgt Ion:114 Resp: 927863

Ion	Ratio	Lower	Upper
114	100		
63	20.0	0.0	39.8
88	15.8	0.0	35.7

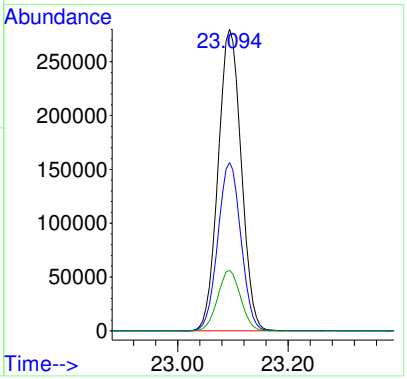




#43
CHLOROBENZENE-d5
Concen: 22.00 ppbv
RT: 23.094 min Scan# 3043
Delta R.T. 0.000 min
Lab File: 120519K08.D
Acq: 5 Dec 2019 5:45 pm

Tgt Ion:117 Resp: 813660

Ion	Ratio	Lower	Upper
117	100		
82	55.6	35.3	75.3
54	19.9	0.0	39.5



2005005-03

Data Path : D:\msdchem\1\2019\DATA\120619K_FSAA\
Data File : 120619K14.D
InstName : HP5973K
Acq On : 6 Dec 2019 11:48 pm
Operator : EM
Sample : CAN #868
Misc : 200ml RECERTIFICATION
ALS Vial : 19 Sample Multiplier: 1

CLEAN

Quant Time: Dec 10 08:30:51 2019
Quant Method : D:\msdchem\1\2019\METHOD\120319K_TO15AA.M
Quant Title : TO15
QLast Update : Wed Dec 04 12:42:17 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) BROMOCHLOROMETHANE	16.323	49	256419	20.00 ppbv	0.00
32) 1,4-DIFLUOROBENZENE	18.233	114	917795	20.00 ppbv	0.00
43) CHLOROBENZENE-d5	23.094	117	805278	22.00 ppbv	0.00

Target Compounds Qvalue

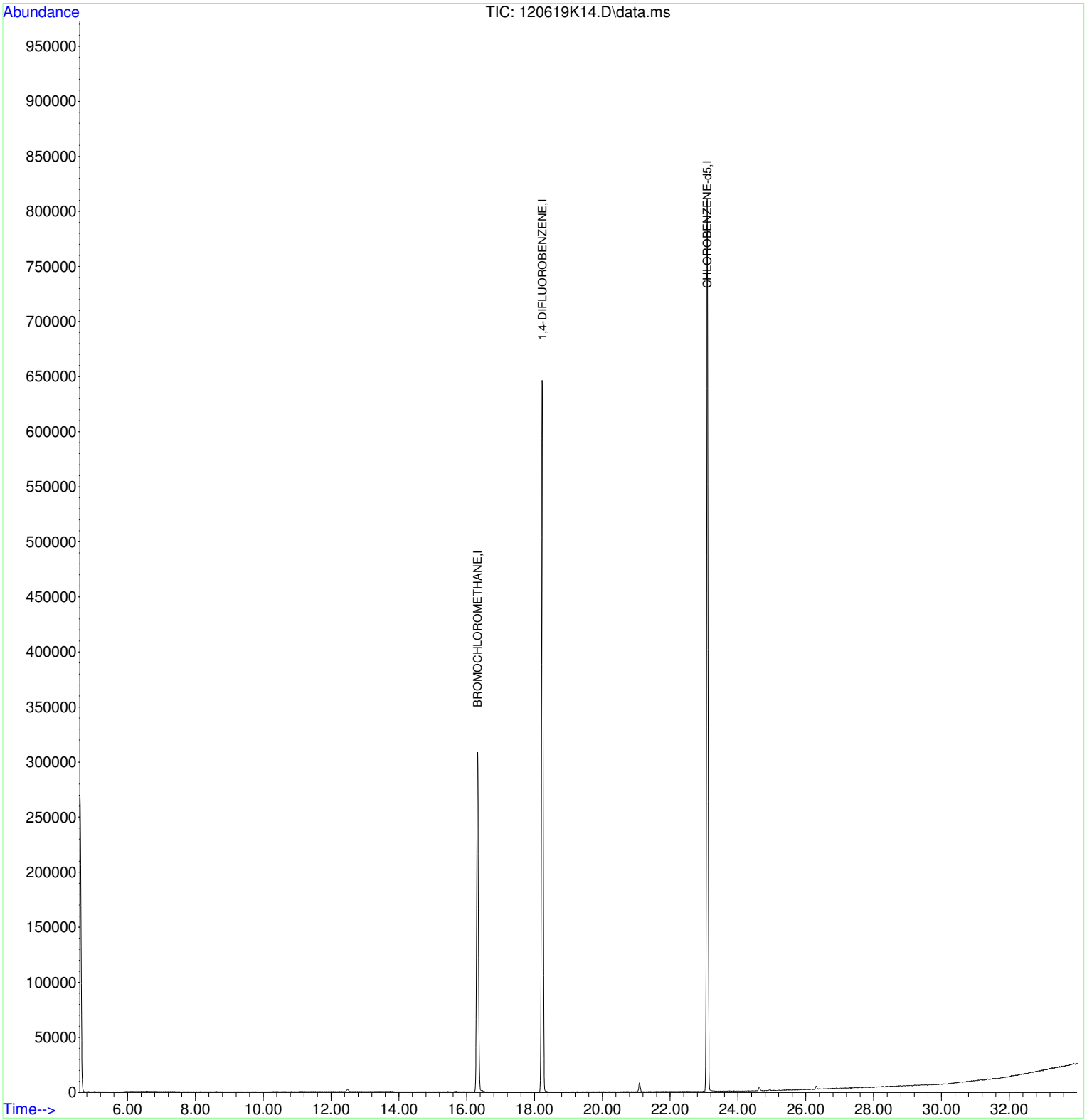
(#) = qualifier out of range (m) = manual integration (+) = signals summed

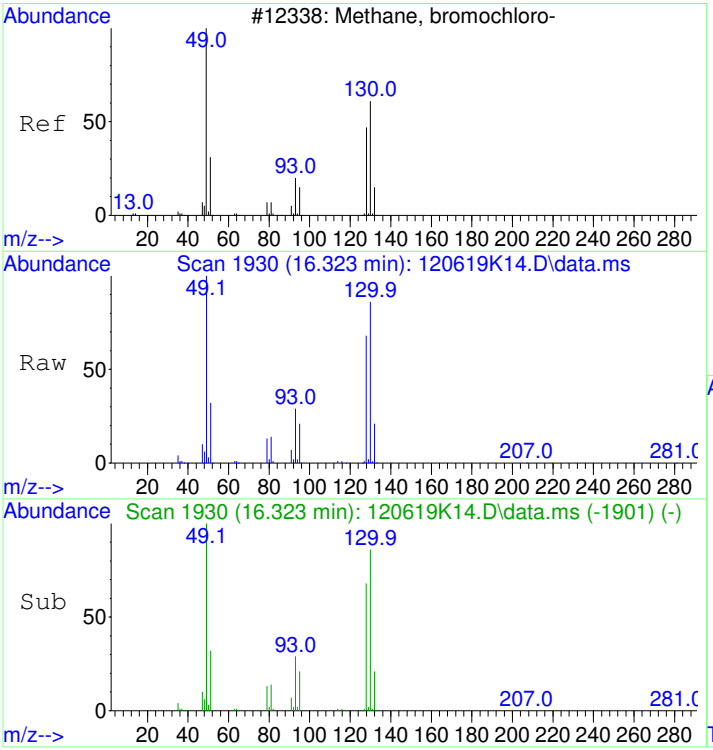
REVIEWED
By EM at 8:33 am, Dec 10, 2019

Table of Contents

Data Path : D:\msdchem\1\2019\DATA\120619K_FSAA\
Data File : 120619K14.D
InstName : HP5973K
Acq On : 6 Dec 2019 11:48 pm
Operator : EM
Sample : CAN #868
Misc : 200ml RECERTIFICATION
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Dec 10 08:30:51 2019
Quant Method : D:\msdchem\1\2019\METHOD\120319K_TO15AA.M
Quant Title : TO15
QLast Update : Wed Dec 04 12:42:17 2019
Response via : Initial Calibration

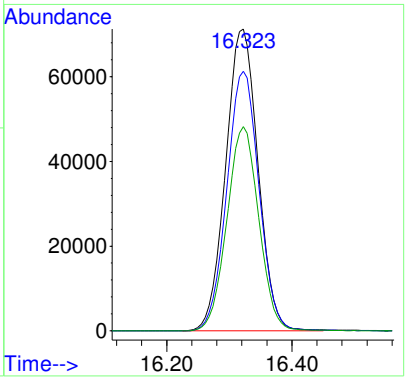


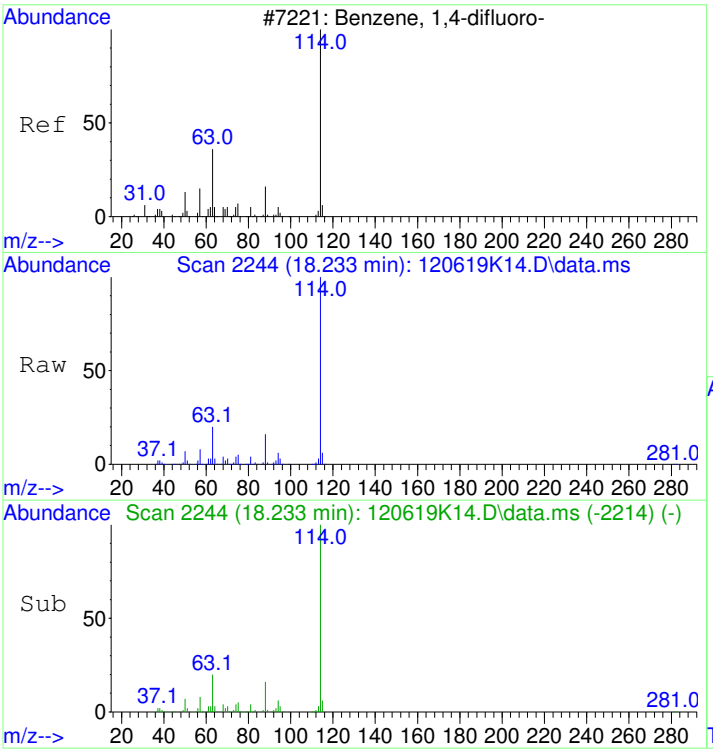


#1
BROMOCHLOROMETHANE
Concen: 20.00 ppbv
RT: 16.323 min Scan# 1930
Delta R.T. -0.000 min
Lab File: 120619K14.D
Acq: 6 Dec 2019 11:48 pm

Tgt Ion: 49 Resp: 256419

Ion	Ratio	Lower	Upper
49	100		
130	85.6	62.7	102.7
128	66.1	43.9	83.9

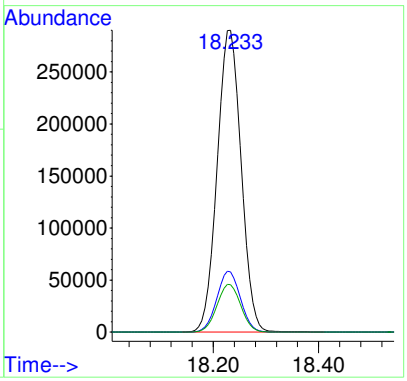


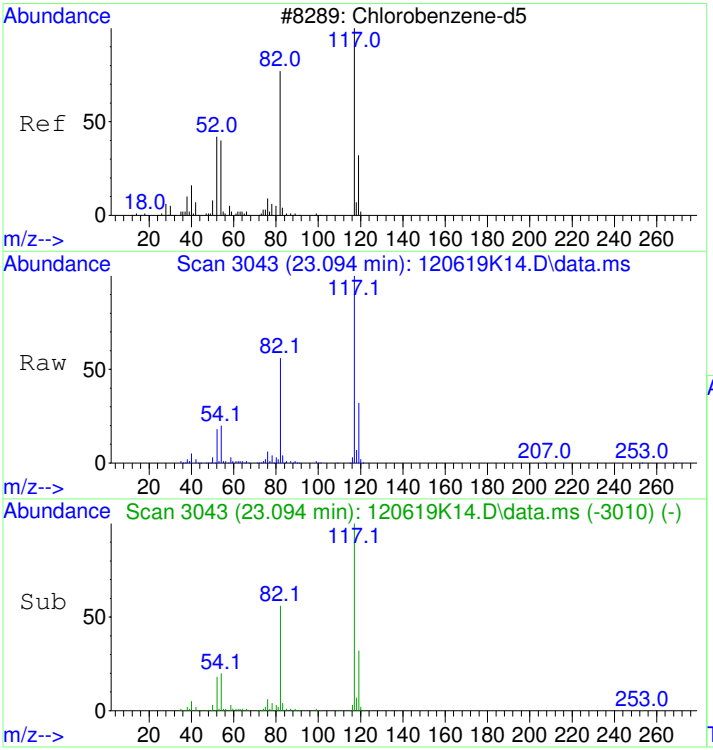


#32
1,4-DIFLUOROBENZENE
Concen: 20.00 ppbv
RT: 18.233 min Scan# 2244
Delta R.T. -0.000 min
Lab File: 120619K14.D
Acq: 6 Dec 2019 11:48 pm

Tgt Ion:114 Resp: 917795

Ion	Ratio	Lower	Upper
114	100		
63	19.8	0.0	39.8
88	15.7	0.0	35.7

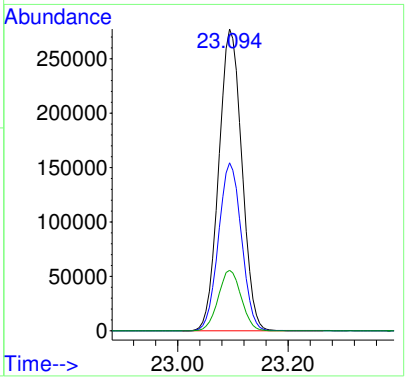




#43
CHLOROBENZENE-d5
Concen: 22.00 ppbv
RT: 23.094 min Scan# 3043
Delta R.T. -0.000 min
Lab File: 120619K14.D
Acq: 6 Dec 2019 11:48 pm

Tgt Ion:117 Resp: 805278

Ion	Ratio	Lower	Upper
117	100		
82	55.5	35.3	75.3
54	19.9	0.0	39.5



2005005-04

Quantitation Report (Not Reviewed)

Data Path : D:\msdchem\1\2019\DATA\120519K_FSAA\
Data File : 120519K25.D
InstName : HP5973K
Acq On : 6 Dec 2019 8:46 am
Operator : EM
Sample : CAN #647
Misc : 200ml RECERTIFICATION
ALS Vial : 17 Sample Multiplier: 1

CLEAN

Quant Time: Dec 06 11:47:04 2019
Quant Method : D:\msdchem\1\2019\METHOD\120319K_TO15AA.M
Quant Title : TO15
QLast Update : Wed Dec 04 12:42:17 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) BROMOCHLOROMETHANE	16.323	49	263750	20.00 ppbv	0.00
32) 1,4-DIFLUOROBENZENE	18.233	114	933798	20.00 ppbv	0.00
43) CHLOROBENZENE-d5	23.094	117	819775	22.00 ppbv	0.00

Target Compounds Qvalue

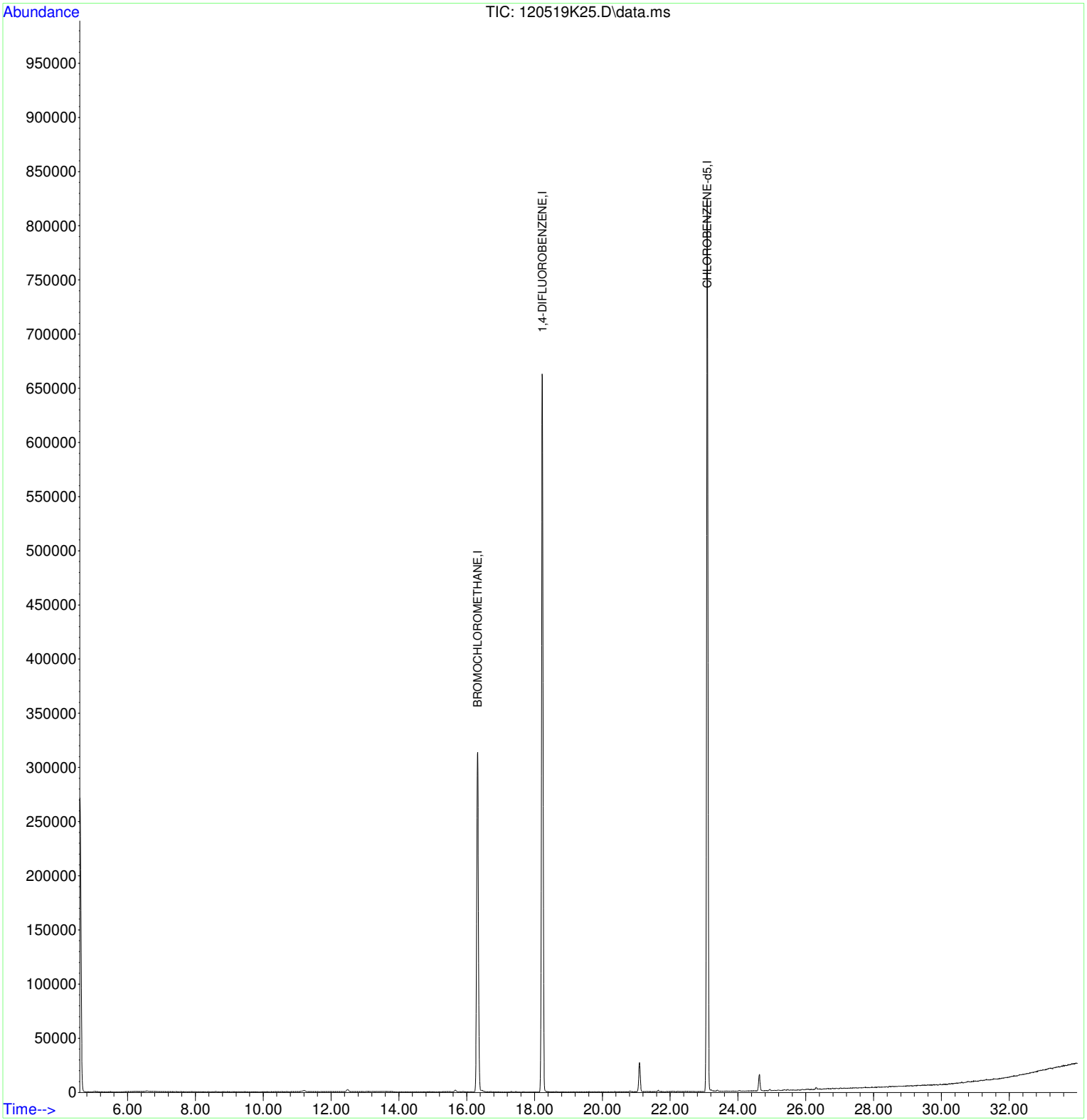
(#) = qualifier out of range (m) = manual integration (+) = signals summed

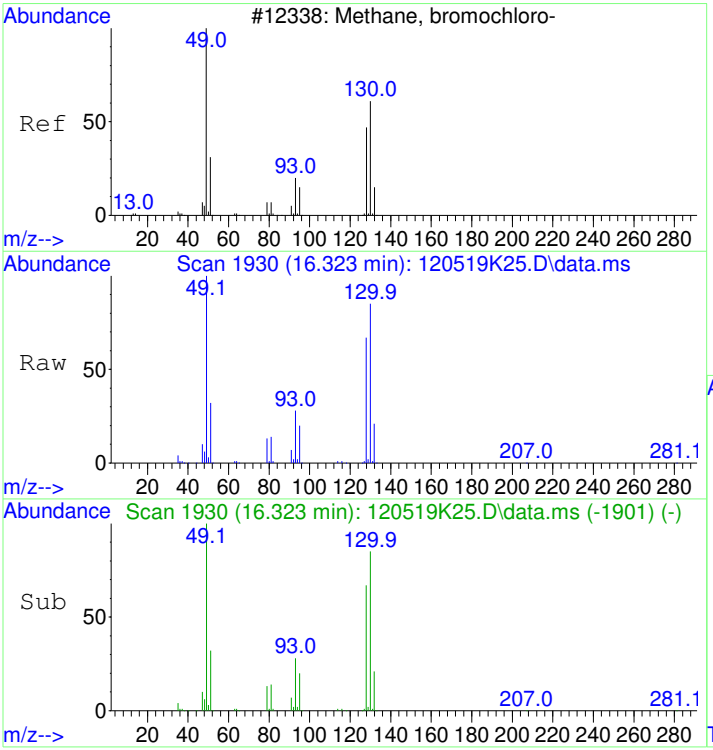
REVIEWED
By EM at 1:31 pm, Dec 06, 2019

Table of Contents

Data Path : D:\msdchem\1\2019\DATA\120519K_FSAA\
Data File : 120519K25.D
InstName : HP5973K
Acq On : 6 Dec 2019 8:46 am
Operator : EM
Sample : CAN #647
Misc : 200ml RECERTIFICATION
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 06 11:47:04 2019
Quant Method : D:\msdchem\1\2019\METHOD\120319K_TO15AA.M
Quant Title : TO15
QLast Update : Wed Dec 04 12:42:17 2019
Response via : Initial Calibration

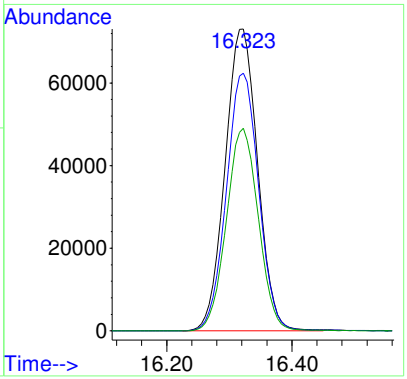


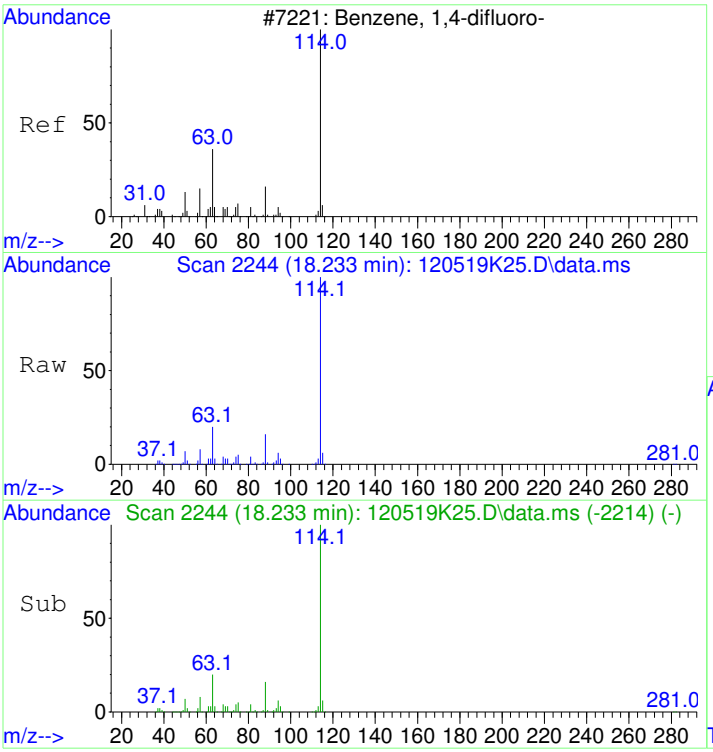


#1
BROMOCHLOROMETHANE
Concen: 20.00 ppbv
RT: 16.323 min Scan# 1930
Delta R.T. -0.000 min
Lab File: 120519K25.D
Acq: 6 Dec 2019 8:46 am

Tgt Ion: 49 Resp: 263750

Ion	Ratio	Lower	Upper
49	100		
130	84.8	62.7	102.7
128	65.6	43.9	83.9

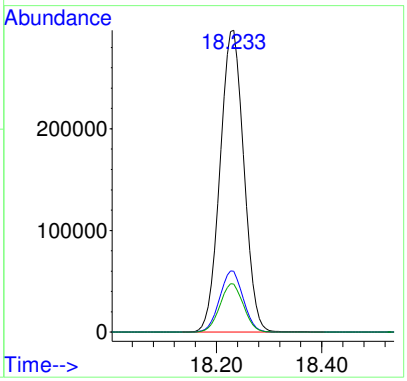


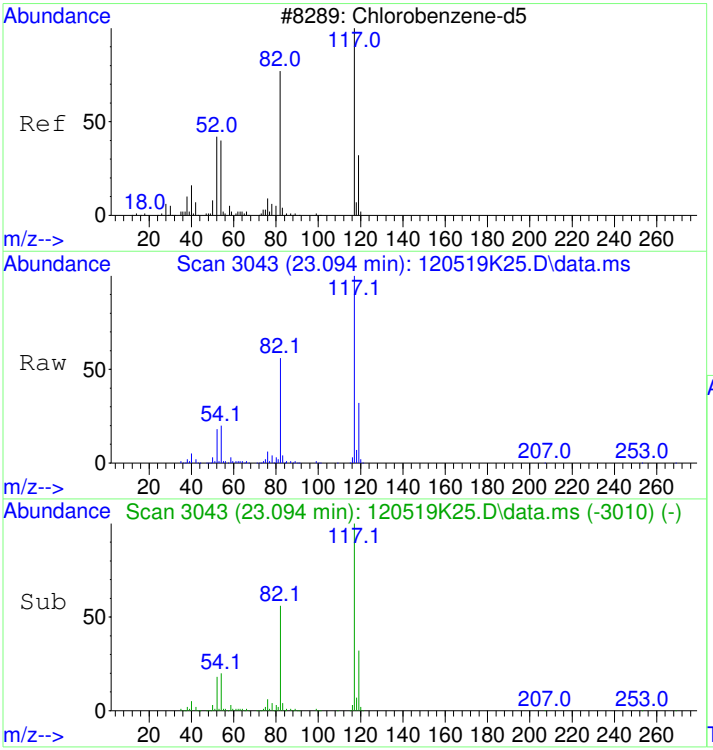


#32
1,4-DIFLUOROBENZENE
Concen: 20.00 ppbv
RT: 18.233 min Scan# 2244
Delta R.T. -0.000 min
Lab File: 120519K25.D
Acq: 6 Dec 2019 8:46 am

Tgt Ion:114 Resp: 933798

Ion	Ratio	Lower	Upper
114	100		
63	20.0	0.0	39.8
88	15.8	0.0	35.7

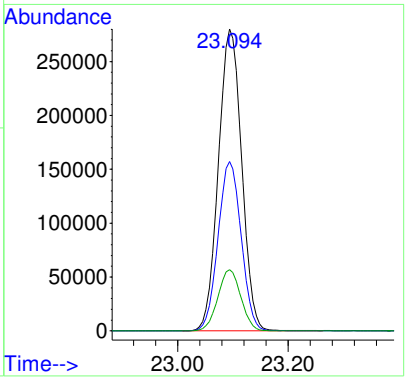




#43
CHLOROBENZENE-d5
Concen: 22.00 ppbv
RT: 23.094 min Scan# 3043
Delta R.T. -0.000 min
Lab File: 120519K25.D
Acq: 6 Dec 2019 8:46 am

Tgt Ion:117 Resp: 819775

Ion	Ratio	Lower	Upper
117	100		
82	55.7	35.3	75.3
54	20.0	0.0	39.5



SCAN SUBSET 1835117

THE LINDE GROUP

Linde

SHIPPED TO: GSS Warehouse
258 Lindbergh Ave
Livermore, CA 94551

PAGE: 1 of 2

AU010412 CH08/2018

CERTIFICATE OF ANALYSIS

Sales#:	116668180	**Cylinder Size:**	185 (3.2" X 9.4")
Production#:	1465303	**Cylinder # :**	AB-105739
Certification Date:	Aug-16-2018	**Cylinder Pressure:**	1700 psig
P.O.# :	133434-Restek	**Cylinder Valve:**	CGA 180 / Aluminum
Blend Type:	CERTIFIED	**Cylinder Volume:**	0.8 Liter
Material#:	24086373	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	98 Liters
Expiration Date:	Aug-16-2019	**Blend Tolerance:**	10% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	5% Relative
Part Number:	34434	**NIST Traceable Certificate#:**	17-67149

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Propylene	115-07-1	1.00 ppm	1.10 ppm
1,3-Butadiene	106-99-0	1.00 ppm	1.03 ppm
Vinyl Bromide	593-60-2	1.00 ppm	1.09 ppm
Acetone	67-64-1	1.00 ppm	1.08 ppm
Isopropyl Alcohol	67-63-0	1.00 ppm	1.10 ppm
Carbon Disulfide (Analytical Accuracy ± 10%)	75-15-0	1.00 ppm	1.10 ppm
Allyl Chloride	107-05-1	1.00 ppm	1.10 ppm
Trans-1,2-Dichloroethene	156-60-5	1.00 ppm	1.09 ppm
Methyl Tert-Butyl Ether	1634-04-4	1.00 ppm	1.07 ppm
Vinyl Acetate	108-05-4	1.00 ppm	1.10 ppm
Methyl Ethyl Ketone	78-93-3	1.00 ppm	1.05 ppm
n-Hexane	110-54-3	1.00 ppm	1.02 ppm
Ethyl Acetate	141-78-6	1.00 ppm	1.03 ppm
Tetrahydrofuran	109-99-9	1.00 ppm	1.01 ppm
Cyclohexane	110-82-7	1.00 ppm	1.03 ppm
Bromodichloromethane	75-27-4	1.00 ppm	1.04 ppm
1,4-Dioxane	123-91-1	1.00 ppm	1.04 ppm
2,2,4-Trimethylpentane	540-84-1	1.00 ppm	1.03 ppm
n-Heptane	142-82-5	1.00 ppm	1.03 ppm
Methyl Isobutyl Ketone	108-10-1	1.00 ppm	1.05 ppm
Methyl Butyl Ketone	591-78-6	1.00 ppm	1.03 ppm
Dibromochloromethane	124-48-1	1.00 ppm	1.09 ppm
Bromoform	75-25-2	1.00 ppm	1.10 ppm

THE LINDE GROUP

SHIPPED TO: GSS Warehouse
258 Lindbergh Ave
Livermore, CA 94551

PAGE: 2 of 2

CERTIFICATE OF ANALYSIS

Sales#:	116668180	**Cylinder Size:**	185 (3.2" X 9.4")
Production#:	1465303	**Cylinder # :**	AB-105739
Certification Date:	Aug-16-2018	**Cylinder Pressure:**	1700 psig
P.O.# :	133434-Restek	**Cylinder Valve:**	CGA 180 / Aluminum
Blend Type:	CERTIFIED	**Cylinder Volume:**	0.8 Liter
Material#:	24086373	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	98 Liters
Expiration Date:	Aug-16-2019	**Blend Tolerance:**	10% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	5% Relative
Part Number:	34434	**NIST Traceable Certificate#:**	17-67149

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
4-Ethyltoluene	622-96-8	1.00 ppm	1.02 ppm
Benzyl Chloride (Analytical Accuracy ± 10%)	100-44-7	1.00 ppm	1.10 ppm
Nitrogen	7727-37-9	Balance	Balance

Source Identification Number: 310159

ANALYST: Lou Lorenzetti

DATE: Aug-16-2018

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

Analytical Standard Record

EPA Region 9 Laboratory

1835117

Description:	TO-15 25 Compound Subset Standard, 1pp	**Expires:**	08/16/19
Standard Type:	Other Solution	**Prepared:**	08/16/18
Solvent:	Nitrogen	**Prepared By:**	** Vendor **
Final Volume (mls):	98000	**Department:**	Air
Vials:	1	**Last Edit:**	08/31/18 11:44 by LLH
Vendor:	Linde Spectra	**Lot Numbe**	1465303

Linde Spectra via Restek; Cylinder# AB-105739; Bar code: AU010412
Part #34434

Analyte	CAS Number	Concentration (ppm)
Bromoform	75-25-2	1.1
1,4-Dioxane	123-91-1	1.04
2,2,4-Trimethylpentane	540-84-1	1.03
2-Butanone (MEK)	78-93-3	1.05
2-Hexanone	591-78-6	1.03
2-Propanol	67-63-0	1.1
4-Ethyltoluene	622-96-8	1.02
4-Methyl-2-pentanone (MIBK)	108-10-1	1.05
Acetone	67-64-1	1.08
Allyl chloride	107-05-1	1.1
Benzyl chloride	100-44-7	1.1
1,3-Butadiene	106-99-0	1.03
Bromoethene	593-60-2	1.09
Vinyl acetate	108-05-4	1.1
Carbon disulfide	75-15-0	1.1
Chlorodibromomethane	124-48-1	1.09
Cyclohexane	110-82-7	1.03
Ethyl acetate	141-78-6	1.03
Heptane	142-82-5	1.03
Hexane	110-54-3	1.02
Propene	115-07-1	1.1
tert-Butyl methyl ether (MTBE)	1634-04-4	1.07
Tetrahydrofuran	109-99-9	1.01
trans-1,2-Dichloroethene	156-60-5	1.09
Bromodichloromethane	75-27-4	1.04

APPENDIX A.
DOCUMENTATION OF RECERTIFICATION – CALIBRATION STANDARD

	LIMS ID	Manu. Expiration Date	Dilution LIMS ID
Expired Standard	1835117	8/16/19	—
Verification Standard	1943118	10/11/20	—
Analysis: TO15	SOP # and Rev. #: 311 REV. 4	Criteria %R or %D: ±15.0%	New expiration date: 8/16/2020
Analysis Date: 10/24/19	Instrument: AG5973N	Analyst: EM	

Analyte	Ave Response, Expired	Ave. Response, Verification	%R or %D	Fail criteria?
See attached sheets				
~~PROPENE~~	~~51727/11~~	~~48577/92~~	~~892~~	~~10/30/19~~
File ID (1)	102419N16	102419N14		
File ID (2)				
File ID (3)				

APPROVAL SIGNATURES	APPROVE (Y/N)	PRINT NAME	SIGNATURE	DATE
Group Leader or Supervisor	Y	Ziyad Rajabi	[signature]	10-30-19
Technical Director	Y	R. Baive	[signature]	11/13/19
Lab QAO	Y	Barbara Bates	Barbara Bates	11/13/19

The use of this exact layout is not required. However, the form title must be used, and the information in the header blocks must appear on the first page of the documentation. In most instances, it will be best to use Element DataTool to create an Excel file and manipulate the data to obtain average responses, percent recovery or difference (section 5.2.5), and failing flags.

RECERTIFICATION OF STANDARDS CALCULATION FORM

STANDARD	EXPIRED STD 1835117	CONC ppbv	VERIFICATION STD 1943118	CONC ppbv	(EXPIRED/CONC) / (VERI/CONC) x100
DATA FILE	102419N16		102419N14		
Propene	51727	5.50	48577	4.60	89
1,3-Butadiene	31586	5.15	28263	4.75	103
Bromoethene	47282	5.45	46107	5.15	97
Acetone	82581	5.40	85869	5.05	90
Carbon disulfide	194308	5.50	166908	5.20	110
2-Propanol	81905	5.50	67446	5.15	114
Allyl chloride	71447	5.50	65663	5.45	108
tert-Butyl methyl ether(MTBE)	176226	5.35	169367	5.30	103
trans-1,2-Dichloroethene	92780	5.45	81797	4.95	103
Hexane	89876	5.10	83282	5.10	108
Vinyl acetate	147684	5.50	132223	5.50	112
2-Butanone (MEK)	29117	5.25	26881	5.05	104
Ethyl acetate	18596	5.15	17006	5.10	108
Tetrahydrofuran	63521	5.05	57102	4.70	104
Cyclohexane	94754	5.15	85915	5.20	111
2,2,4-Trimethylpentane	277285	5.15	264952	5.00	102
Heptane	103139	5.15	96162	5.10	106
1,4-Dioxane	41436	5.20	36756	5.00	108
Bromodichloromethane	160519	5.20	149079	5.00	104
4-Methyl-2-pentanone (MIBK)	143993	5.25	132855	4.85	100
2-Hexanone	132274	5.15	114823	4.85	108
Chlorodibromomethane	171676	5.45	158905	5.05	100
Bromoform	173998	5.50	159470	5.05	100
4-Ethyltoluene	356791	5.10	338901	4.85	100
Benzyl chloride	217831	5.50	161740	4.70	115

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\2019\DATA\102419N FSA\
Data File : 102419N16.D
Acq On : 25 Oct 2019 12:53 pm
InstName : AG5973N
Operator : EM
Sample : 1835117
Misc : LOOP 1835117 RECERTIFICATION
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 25 13:25:34 2019
Quant Method : C:\msdchem\1\2019\METHOD\102219N_TO15AA.M
Quant Title : TO15
QLast Update : Wed Oct 23 13:49:19 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	15.014	49	228594	22.00	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	17.080	114	749207	22.00	ppbv		0.00
43) CHLOROBENZENE-d5	22.031	117	688631	22.00	ppbv		0.00
Target Compounds							Qvalue
2) Propene	3.937	41	51727	10.80	ppbv	#	100
7) 1,3-Butadiene	4.937	54	31586	11.87	ppbv		92
10) Bromoethene	6.686	106	47282	9.81	ppbv		98
14) Acetone	9.119	43	92581	10.45	ppbv		95
15) Carbon disulfide	9.320	76	194308	13.34	ppbv	#	100
16) 2-Propanol	9.734	45	81905	13.44	ppbv		97
17) Allyl chloride	10.167	41	71447	11.54	ppbv	#	94
18) Dichloromethane	10.752	49	3332	0.47	ppbv	#	92
19) tert-Butyl methyl ethe...	11.496	73	176226	10.62	ppbv		100
20) trans-1,2-Dichloroethene	11.539	61	92780	11.87	ppbv		92
21) Hexane	12.179	57	89876	10.35	ppbv	#	93
23) Vinyl acetate	13.112	43	147684	22.18	ppbv		97
25) 2-Butanone (MEK)	14.557	72	29117	11.04	ppbv	#	100
26) Ethyl acetate	14.618	61	18596	10.52	ppbv	#	66
27) Tetrahydrofuran	15.026	42	63521	10.53	ppbv		93
29) Cyclohexane	15.410	56	94754	10.91	ppbv	#	37
34) 2,2,4-Trimethylpentane	16.190	57	277285	11.12	ppbv	#	66
36) Heptane	16.593	43	103139	12.02	ppbv	#	97
39) 1,4-Dioxane	18.202	88	41436	11.37	ppbv	#	93
40) Bromodichloromethane	18.477	83	160519	12.52	ppbv	#	100
42) 4-Methyl-2-pentanone (...	19.489	43	143993	13.41	ppbv	#	97
48) 2-Hexanone	20.848	43	132274	15.41	ppbv		94
49) Chlorodibromomethane	21.128	129	171676	12.61	ppbv	#	100
56) Bromoform	23.415	173	173998	12.07	ppbv	#	99
58) 4-Ethyltoluene	24.360	105	356791	11.06	ppbv		98
63) Benzyl chloride	25.957	91	217831	17.37	ppbv		97

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

$$\frac{1\,mL \text{ of } 1000\ ppbv\ Subset}{200\ mL} = \cancel{10}\ 5.0\ ppbv$$

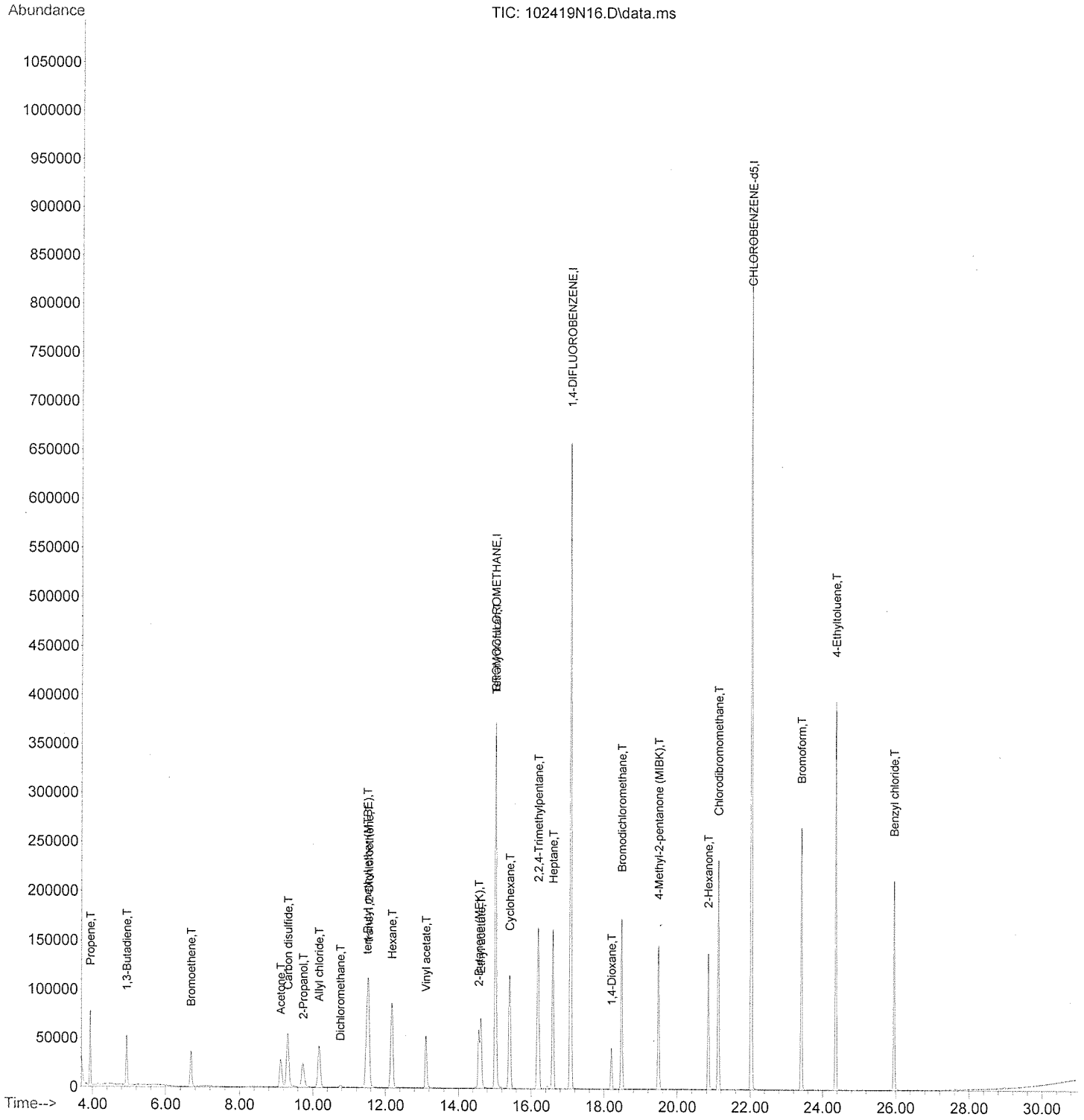
on 11/18/19

page 3 of 10

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\2019\DATA\102419N FSA\
Data File : 102419N16.D
Acq On : 25 Oct 2019 12:53 pm
InstName : AG5973N
Operator : EM
Sample : 1835117
Misc : OOP 1835117 RECERTIFICATION
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 25 13:25:34 2019
Quant Method : C:\msdchem\1\2019\METHOD\102219N_TO15AA.M
Quant Title : TO15
QLast Update : Wed Oct 23 13:49:19 2019
Response via : Initial Calibration



Analytical Standard Record

EPA Region 9 Laboratory

1835117

Description:	TO-15 25 Compound Subset Standard, 1pp	**Expires:**	08/16/19
Standard Type:	Other Solution	**Prepared:**	08/16/18
Solvent:	Nitrogen	**Prepared By:**	** Vendor **
Final Volume (mls):	98000	**Department:**	Air
Vials:	1	**Last Edit:**	08/31/18 11:44 by LLH
Vendor:	Linde Spectra	**Lot Numbe**	1465303

Linde Spectra via Restek; Cylinder# AB-105739; Bar code: AU010412
Part #34434

Analyte	CAS Number	Concentration (ppm)
Bromoform	75-25-2	1.1
1,4-Dioxane	123-91-1	1.04
2,2,4-Trimethylpentane	540-84-1	1.03
2-Butanone (MEK)	78-93-3	1.05
2-Hexanone	591-78-6	1.03
2-Propanol	67-63-0	1.1
4-Ethyltoluene	622-96-8	1.02
4-Methyl-2-pentanone (MIBK)	108-10-1	1.05
Acetone	67-64-1	1.08
Allyl chloride	107-05-1	1.1
Benzyl chloride	100-44-7	1.1
1,3-Butadiene	106-99-0	1.03
Bromoethene	593-60-2	1.09
Vinyl acetate	108-05-4	1.1
Carbon disulfide	75-15-0	1.1
Chlorodibromomethane	124-48-1	1.09
Cyclohexane	110-82-7	1.03
Ethyl acetate	141-78-6	1.03
Heptane	142-82-5	1.03
Hexane	110-54-3	1.02
Propene	115-07-1	1.1
tert-Butyl methyl ether (MTBE)	1634-04-4	1.07
Tetrahydrofuran	109-99-9	1.01
trans-1,2-Dichloroethene	156-60-5	1.09
Bromodichloromethane	75-27-4	1.04

ISO 9001:2008 Linde **SPECTRA** Environmental Gases, 80 Industrial Drive, Alpha, NJ 08865

SCAN SUBSET 1835117

THE LINDE GROUP Linde

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258 Lindbergh Ave
Livermore, CA 94551

PAGE: 1 of 2

AU010412 CH08/3/18

CERTIFICATE OF ANALYSIS

Sales#:	116668180	**Cylinder Size:**	185 (3.2" X 9.4")
Production#:	1465303	**Cylinder # :**	AB-105739
Certification Date:	Aug-16-2018	**Cylinder Pressure:**	1700 psig
P.O.# :	133434-Restek	**Cylinder Valve:**	CGA 180 / Aluminum
Blend Type:	CERTIFIED	**Cylinder Volume:**	0.8 Liter
Material#:	24086373	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	98 Liters
Expiration Date:	Aug-16-2019	**Blend Tolerance:**	10% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	5% Relative
Part Number:	34434	**NIST Traceable Certificate#:**	17-67149

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Propylene	115-07-1	1.00 ppm	1.10 ppm
1,3-Butadiene	106-99-0	1.00 ppm	1.03 ppm
Vinyl Bromide	593-60-2	1.00 ppm	1.09 ppm
Acetone	67-64-1	1.00 ppm	1.08 ppm
Isopropyl Alcohol	67-63-0	1.00 ppm	1.10 ppm
Carbon Disulfide (Analytical Accuracy ± 10%)	75-15-0	1.00 ppm	1.10 ppm
Allyl Chloride	107-05-1	1.00 ppm	1.10 ppm
Trans-1,2-Dichloroethene	156-60-5	1.00 ppm	1.09 ppm
Methyl Tert-Butyl Ether	1634-04-4	1.00 ppm	1.07 ppm
Vinyl Acetate	108-05-4	1.00 ppm	1.10 ppm
Methyl Ethyl Ketone	78-93-3	1.00 ppm	1.05 ppm
n-Hexane	110-54-3	1.00 ppm	1.02 ppm
Ethyl Acetate	141-78-6	1.00 ppm	1.03 ppm
Tetrahydrofuran	109-99-9	1.00 ppm	1.01 ppm
Cyclohexane	110-82-7	1.00 ppm	1.03 ppm
Bromodichloromethane	75-27-4	1.00 ppm	1.04 ppm
1,4-Dioxane	123-91-1	1.00 ppm	1.04 ppm
2,2,4-Trimethylpentane	540-84-1	1.00 ppm	1.03 ppm
n-Heptane	142-82-5	1.00 ppm	1.03 ppm
Methyl Isobutyl Ketone	108-10-1	1.00 ppm	1.05 ppm
Methyl Butyl Ketone	591-78-6	1.00 ppm	1.03 ppm
Dibromochloromethane	124-48-1	1.00 ppm	1.09 ppm
Bromoform	75-25-2	1.00 ppm	1.10 ppm

Linde Gas North America LLC

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ISO 9001:2008 Linde **SPECTRA** Environmental Gases, 80 Industrial Drive, Alpha, NJ 08865

THE LINDE GROUP

SHIPPED TO: GSS Warehouse
258 Lindbergh Ave
Livermore, CA 94551

PAGE: 2 of 2

CERTIFICATE OF ANALYSIS

Sales#:	116668180	**Cylinder Size:**	185 (3.2" X 9.4")
Production#:	1465303	**Cylinder # :**	AB-105739
Certification Date:	Aug-16-2018	**Cylinder Pressure:**	1700 psig
P.O.# :	133434-Restek	**Cylinder Valve:**	CGA 180 / Aluminum
Blend Type:	CERTIFIED	**Cylinder Volume:**	0.8 Liter
Material#:	24086373	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	98 Liters
Expiration Date:	Aug-16-2019	**Blend Tolerance:**	10% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	5% Relative
Part Number:	34434	**NIST Traceable Certificate#:**	17-67149

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
4-Ethyltoluene	622-96-8	1.00 ppm	1.02 ppm
Benzyl Chloride (Analytical Accuracy ± 10%)	100-44-7	1.00 ppm	1.10 ppm
Nitrogen	7727-37-9	Balance	Balance

Source Identification Number: 310159

ANALYST: Lou Lorenzetti

DATE: Aug-16-2018

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\2019\DATA\102419N FSA\
Data File : 102419N14.D
Acq On : 25 Oct 2019 11:16 am
InstName : AG5973N
Operator : EM
Sample : 1943118
Misc : LOOP 1943118
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Oct 25 12:01:04 2019
Quant Method : C:\msdchem\1\2019\METHOD\102219N_TO15AA.M
Quant Title : TO15
QLast Update : Wed Oct 23 13:49:19 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	15.026	49	229872	22.00	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	17.081	114	769162	22.00	ppbv		0.00
43) CHLOROBENZENE-d5	22.031	117	695454	22.00	ppbv		0.00
Target Compounds							Qvalue
2) Propene	3.967	41	48577	10.09	ppbv	#	100
7) 1,3-Butadiene	4.961	54	28263	10.56	ppbv		93
10) Bromoethene	6.711	106	46107	9.51	ppbv		100
14) Acetone	9.137	43	85869	9.64	ppbv		95
15) Carbon disulfide	9.338	76	166908	11.39	ppbv	#	100
16) 2-Propanol	9.741	45	67446	11.01	ppbv		95
17) Allyl chloride	10.192	41	65663	10.55	ppbv	#	94
18) Dichloromethane	10.783	49	3538	0.49	ppbv	#	89
19) tert-Butyl methyl ethe...	11.509	73	169367	10.15	ppbv		99
20) trans-1,2-Dichloroethene	11.551	61	81797	10.41	ppbv		94
21) Hexane	12.191	57	83282	9.54	ppbv	#	94
23) Vinyl acetate	13.118	43	132223	19.75	ppbv		97
25) 2-Butanone (MEK)	14.563	72	26881	10.14	ppbv	#	100
26) Ethyl acetate	14.630	61	17006	9.57	ppbv	#	67
27) Tetrahydrofuran	15.032	42	57102	9.42	ppbv		95
29) Cyclohexane	15.416	56	85915	9.84	ppbv	#	37
34) 2,2,4-Trimethylpentane	16.197	57	264952	10.35	ppbv	#	67
36) Heptane	16.593	43	96162	10.92	ppbv	#	98
39) 1,4-Dioxane	18.196	88	36756	9.82	ppbv	#	96
40) Bromodichloromethane	18.483	83	149079	11.32	ppbv	#	99
42) 4-Methyl-2-pentanone (...	19.489	43	132855	12.05	ppbv	#	98
48) 2-Hexanone	20.854	43	114823	13.24	ppbv		94
49) Chlorodibromomethane	21.129	129	158905	11.56	ppbv	#	100
56) Bromoform	23.415	173	159470	10.95	ppbv	#	99
58) 4-Ethyltoluene	24.360	105	338901	10.41	ppbv		99
59) ~~1,3,5-Trimethylbenzene~~	~~24.360~~	~~105~~	~~339245~~	~~12.39~~	~~ppbv~~		~~71~~
63) Benzyl chloride	25.957	91	161740	12.77	ppbv		98

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

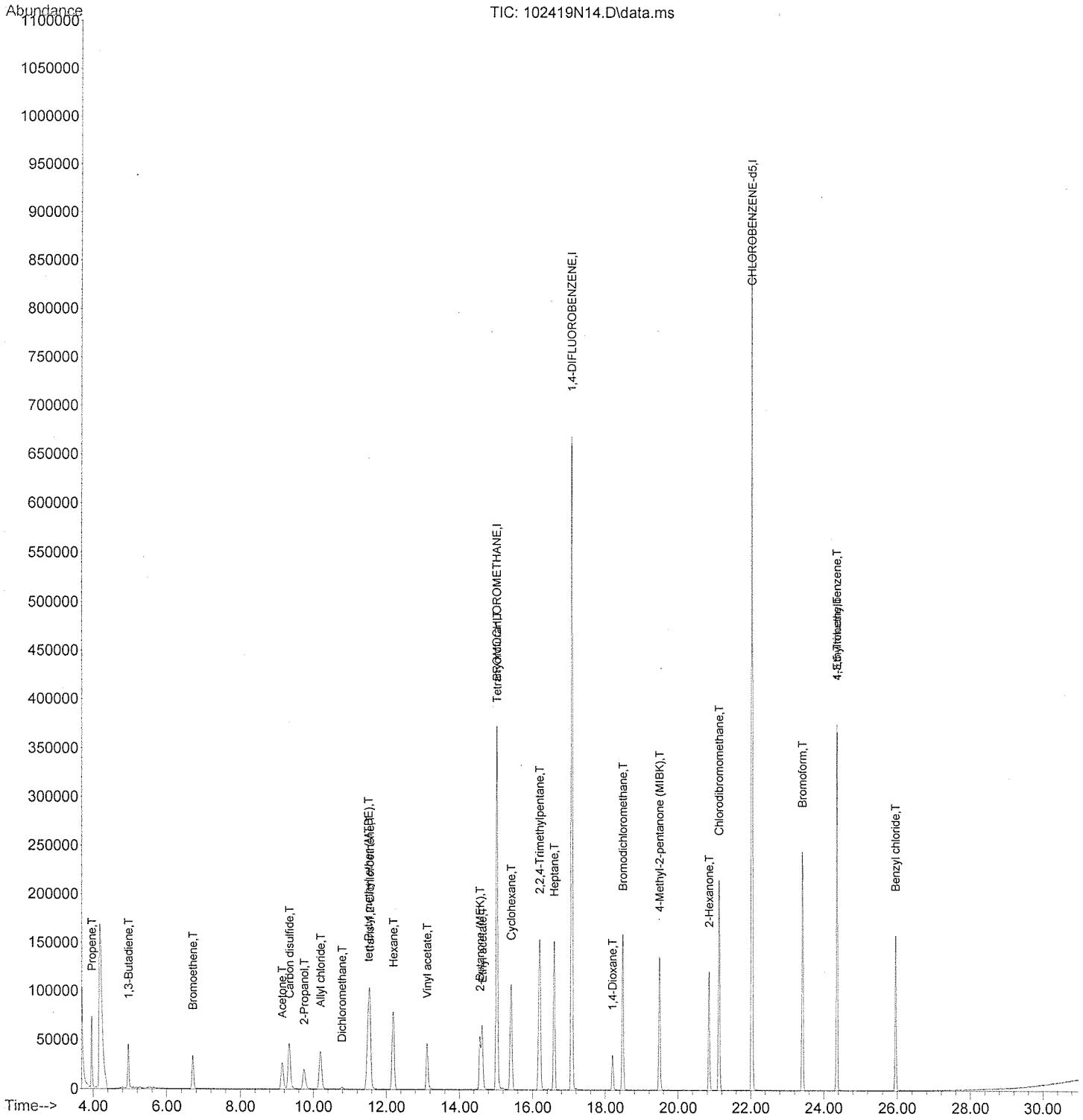
1mL of 1000 ppbv SUBSET Std
200 mL
= ~~10~~ 5.0 ppbv
em 11/13/19

page 8 of 10

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\2019\DATA\102419N FSA\
Data File : 102419N14.D
Acq On : 25 Oct 2019 11:16 am
InstName : AG5973N
Operator : EM
Sample : 1943118
Misc : LOOP 1943118
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Oct 25 12:01:04 2019
Quant Method : C:\msdchem\1\2019\METHOD\102219N_TO15AA.M
Quant Title : TO15
QLast Update : Wed Oct 23 13:49:19 2019
Response via : Initial Calibration



102219N_TO15AA.M Fri Oct 25 12:01:04 2019

Analytical Standard Record

EPA Region 9 Laboratory

1943118

Description:	TO-15 25 Compound Subset Standard, 1pp	**Expires:**	10/11/20
Standard Type:	Other Solution	**Prepared:**	10/11/19
Solvent:	Nitrogen	**Prepared By:**	Estrellita Manuel
Final Volume (mls):	98000	**Department:**	Air
Vials:	1	**Last Edit:**	10/24/19 09:58 by EM
Vendor:	Linde Spectra	**Lot Numbe**	1498270

Linde Spectra via Restek; Cylinder# AB-112107; Bar code: AU011347
Part #34434.

Analyte	CAS Number	Concentration (ppm)
Bromoform	75-25-2	1.01
1,4-Dioxane	123-91-1	1
2,2,4-Trimethylpentane	540-84-1	1
2-Butanone (MEK)	78-93-3	1.01
2-Hexanone	591-78-6	0.97
2-Propanol	67-63-0	1.03
4-Ethyltoluene	622-96-8	0.97
4-Methyl-2-pentanone (MIBK)	108-10-1	0.97
Acetone	67-64-1	1.01
Allyl chloride	107-05-1	1.09
Benzyl chloride	100-44-7	0.94
1,3-Butadiene	106-99-0	0.95
Bromoethene	593-60-2	1.03
Vinyl acetate	108-05-4	1.1
Carbon disulfide	75-15-0	1.04
Chlorodibromomethane	124-48-1	1.01
Cyclohexane	110-82-7	1.04
Ethyl acetate	141-78-6	1.02
Heptane	142-82-5	1.02
Hexane	110-54-3	1.02
Propene	115-07-1	0.92
tert-Butyl methyl ether (MTBE)	1634-04-4	1.06
Tetrahydrofuran	109-99-9	0.94
trans-1,2-Dichloroethene	156-60-5	0.99
Bromodichloromethane	75-27-4	1

ISO 9001:2008 Linde **SPECTRA** Environmental Gases, 80 Industrial Drive, Alpha, NJ 08865

1841026 scan Primary

THE LINDE GROUP Linde

SHIPPED TO: GSS Warehouse
12351 Sunrise Valley Drive
Reston, VA 20191

PAGE: 1 of 2

AU010530 Rec'd 10/2/18 LH 10/08/18

CERTIFICATE OF ANALYSIS

Sales#:	116777286	**Cylinder Size:**	185 (3.2" X 9.4")
Production#:	1469105	**Cylinder # :**	AB-110084
Certification Date:	Sep-17-2018	**Cylinder Pressure:**	1700 psig
P.O.# :	134399-RESTEK	**Cylinder Valve:**	CGA 180 / Aluminum
Blend Type:	CERTIFIED	**Cylinder Volume:**	0.8 Liter
Material#:	24086371	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	98 Liters
Expiration Date:	Sep-17-2019	**Blend Tolerance:**	10% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	5% Relative
Part Number:	34400	**NIST Traceable Certificate#:**	17-67149

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Dichlorodifluoromethane	75-71-8	1.00 ppm	1.02 ppm
Chloromethane	74-87-3	1.00 ppm	1.08 ppm
Freon-114	76-14-2	1.00 ppm	0.97 ppm
Vinyl Chloride	75-01-4	1.00 ppm	1.04 ppm
Bromomethane	74-83-9	1.00 ppm	1.02 ppm
Chloroethane	75-00-3	1.00 ppm	1.02 ppm
Freon-11	75-69-4	1.00 ppm	0.96 ppm
1,1-Dichloroethene	75-35-4	1.00 ppm	1.04 ppm
Methylene Chloride	75-09-2	1.00 ppm	1.00 ppm
Freon-113	76-13-1	1.00 ppm	1.00 ppm
1,1-Dichloroethane	75-34-3	1.00 ppm	0.96 ppm
Cis-1,2-Dichloroethylene	156-59-2	1.00 ppm	1.01 ppm
Chloroform	67-66-3	1.00 ppm	1.04 ppm
1,2-Dichloroethane	107-06-2	1.00 ppm	0.99 ppm
1,1,1-Trichloroethane	71-55-6	1.00 ppm	1.04 ppm
Benzene	71-43-2	1.00 ppm	1.02 ppm
Carbon Tetrachloride	56-23-5	1.00 ppm	1.01 ppm
1,2-Dichloropropane	78-87-5	1.00 ppm	1.01 ppm
Trichloroethylene	79-01-6	1.00 ppm	1.08 ppm
Cis-1,3-Dichloropropene	10061-01-5	1.00 ppm	1.00 ppm
Trans-1,3-Dichloropropene	10061-02-6	1.00 ppm	0.96 ppm
1,1,2-Trichloroethane	79-00-5	1.00 ppm	1.02 ppm
Toluene	108-88-3	1.00 ppm	1.02 ppm
1,2-Dibromoethane EDB	106-93-4	1.00 ppm	1.04 ppm
Tetrachloroethylene	127-18-4	1.00 ppm	1.02 ppm
Chlorobenzene	108-90-7	1.00 ppm	1.03 ppm
Ethylbenzene	100-41-4	1.00 ppm	1.03 ppm
P-Xylene	106-42-3	1.00 ppm	1.02 ppm

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

1841026

THE LINDE GROUP

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12351 Sunrise Valley Drive
Reston, VA 20191

PAGE: 2 of 2

CERTIFICATE OF ANALYSIS

Sales#:	116777286	**Cylinder Size:**	185 (3.2" X 9.4")
Production#:	1469105	**Cylinder # :**	AB-110084
Certification Date:	Sep-17-2018	**Cylinder Pressure:**	1700 psig
P.O.# :	134399-RESTEK	**Cylinder Valve:**	CGA 180 / Aluminum
Blend Type:	CERTIFIED	**Cylinder Volume:**	0.8 Liter
Material#:	24086371	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	98 Liters
Expiration Date:	Sep-17-2019	**Blend Tolerance:**	10% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	5% Relative
Part Number:	34400	**NIST Traceable Certificate#:**	17-67149

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
M-Xylene	108-38-3	1.00 ppm	1.02 ppm
Styrene	100-42-5	1.00 ppm	0.98 ppm
O-Xylene	95-47-6	1.00 ppm	1.00 ppm
1,1,2,2-Tetrachloroethane	79-34-5	1.00 ppm	0.99 ppm
1,3,5-Trimethylbenzene	108-67-8	1.00 ppm	1.02 ppm
1,2,4-Trimethylbenzene	95-63-6	1.00 ppm	1.02 ppm
1,3-Dichlorobenzene	541-73-1	1.00 ppm	1.00 ppm
1,4-Dichlorobenzene	106-46-7	1.00 ppm	1.00 ppm
1,2-Dichlorobenzene	95-50-1	1.00 ppm	0.98 ppm
1,2,4-Trichlorobenzene	120-82-1	1.00 ppm	0.90 ppm
Hexachloro-1,3-Butadiene	87-68-3	1.00 ppm	0.92 ppm
Nitrogen	7727-37-9	Balance	Balance

Source Identification Number: 311316

ANALYST: BB
Brian Bramkamp

DATE: Sep-17-2018

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

Analytical Standard Record

EPA Region 9 Laboratory

1841026

Description:	TO-14A 39 Component Mix Standard	**Expires:**	09/17/19
Standard Type:	Other Solution	**Prepared:**	09/17/18
Solvent:	Nitrogen	**Prepared By:**	** Vendor **
Final Volume (mls):	98000	**Department:**	Air
Vials:	1	**Last Edit:**	10/09/18 13:04 by LLH
Vendor:	Linde Spectra	**Lot Numb**	1469105

Cylinder # AB-110084
AU010530
Part # 34400

Analyte	CAS Number	Concentration (ppm)
1,2-Dibromoethane (EDB)	106-93-4	1.04
1,1,1-Trichloroethane	71-55-6	1.04
Benzene	71-43-2	1.02
1,4-Dichlorobenzene	106-46-7	1
1,3-Dichlorobenzene	541-73-1	1
1,3,5-Trimethylbenzene	108-67-8	1.02
1,2-Dichlorotetrafluoroethane	76-14-2	0.97
1,2-Dichloropropane	78-87-5	1.01
Carbon tetrachloride	56-23-5	1.01
1,2-Dichlorobenzene	95-50-1	0.98
Chlorobenzene	108-90-7	1.03
1,2,4-Trimethylbenzene	95-63-6	1.02
1,2,4-Trichlorobenzene	120-82-1	0.9
1,1-Dichloroethene	75-35-4	1.04
1,1-Dichloroethane	75-34-3	0.96
1,1,2-Trichloroethane	79-00-5	1.02
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1
1,1,2,2-Tetrachloroethane	79-34-5	0.99
1,2-Dichloroethane	107-06-2	0.99
Ethylbenzene	100-41-4	1.03
Trichlorofluoromethane	75-69-4	0.94
Trichloroethene	79-01-6	1.08
trans-1,3-Dichloropropene	10061-02-6	0.96
Toluene	108-88-3	1.02
Tetrachloroethene	127-18-4	1.02
Styrene	100-42-5	0.98
o-Xylene	95-47-6	1
Bromomethane	74-83-9	1.02
Hexachlorobutadiene	87-68-3	0.92
Vinyl chloride	75-01-4	1.04

Analytical Standard Record

EPA Region 9 Laboratory

1841026

Dichloromethane	75-09-2	1
Dichlorodifluoromethane	75-71-8	1.02
cis-1,3-Dichloropropene	10061-01-5	1
cis-1,2-Dichloroethene	156-59-2	1.01
Chloromethane	74-87-3	1.08
Chloroform	67-66-3	1.04
Chloroethane	75-00-3	1.02
m&p-Xylene	179601-23-1	2.04

APPENDIX B.
DOCUMENTATION OF RECERTIFICATION – CALIBRATION STANDARD

	LIMS ID	Dilution LIMS ID	Manu. Expiration Date
Expired Standard	1841026	1933053	9/17/19
Verification Standard	1931163 /	1933054	07/18/20 /
Analysis: TO15	SOP # and Rev. #: 311 R4	Criteria %R or %D: +/- 15%	New expiration date: 9/17/20
Analysis Date: 08/14/19	Instrument: HP5973K	Analyst: UH	

Analyte	Ave. Response, Expired	Ave. Response, Verification	%R or %D	Fail criteria?
see attached calculation form – 2 out of 39 analytes failed				
1,2,4-Trichlorobenzene failed at 118% rec.				
Styrene failed at 81% rec				
			UH 08/15/19	
File ID (1)	081419N08	081419N09		
File ID (2)				
File ID (3)				

APPROVAL SIGNATURES	APPROVE (Y/N)	PRINT NAME	SIGNATURE	DATE
Group Leader or Supervisor	Y	Ziyad Rajab		8-21-19
Technical Director	Y	R. Baker		9/18/19
Lab QAO	Y	P. Husby		9/18/19

The use of this exact layout is not required. However, the form title must be used, and the information in the header blocks must appear on the first page of the documentation. In most instances, it will be best to use Element DataTool to create an Excel file and manipulate the data to obtain average responses, percent recovery or difference (section 5.2.5), and failing flags.

✓ em 8/21/19

Page 1 of 8

RECERTIFICATION OF STANDARDS CALCULATION FORM

standard #	EXPIRED STD 1841026 (_1933053_)	CONC ppbv	VERIFICATION STD 1931163 (_1933054_)	CONC ppbv	(EXPIRED/CONC) / (VERI/CONC) x100
data file	081419N08		081419N09		
Dichlorodifluoromethane	168671	10.2	176903	9.6	**90**
1,2-Dichlorotetrafluroethane	146947	9.7	154446	10.0	**98**
Chloromethane	36936	10.8	38442	9.7	**86**
Vinyl chloride	33438	10.4	35139	11.0	**101**
Bromomethane	35149	10.2	37518	10.9	**100**
Chloroethane	18466	10.2	19409	10.9	**102**
Trichlorofluoromethane	154063	9.4	161277	10.9	**111**
1,1,2,-Trichloro-1,2,2-trifluoroethane	85388	10	90690	10.9	**103**
1,1-Dichloroethene	68511	10.4	72317	10.9	**99**
Dichloromethane	43344	10	43894	10.0	**99**
1,1-Dichloroethane	72277	9.6	74645	10.5	**106**
cis-1,2-Dichloroethene	55639	10.1	56914	10.8	**105**
Chloroform	105729	10.4	108284	10.9	**102**
1,1,1-Trichloroethane	128543	10.4	132621	10.9	**102**
Carbon tetrachloride	143964	10.1	149758	11.0	**105**
Benzene	123987	10.2	126054	10.9	**105**
1,2-Dichloroethane	77372	9.9	79146	10.9	**108**
Trichloroethene	65971	10.8	68192	11.0	**99**
1,2-Dichloropropane	42057	10.1	44010	11.0	**104**
cis-1,3-Dichloropropene	77283	10	79636	11.0	**107**
Toluene	168770	10.2	171491	10.9	**105**
trans-1,3-Dichloropropene	79610	9.6	77704	10.6	**113**
1,1,2-Trichloroethane	57503	10.2	59578	10.9	**103**
Tetrachloroethene	103100	10.2	106343	10.8	**103**
1,2-Dibromethane (EDB)	95434	10.4	91875	10.9	**109**
Chlorobenzene	146286	10.3	147186	10.9	**105**
Ethylbenzene	243448	10.3	246934	10.9	**104**
m/p-Xylenes	390001	20.4	400141	21.6	**103**
o-Xylene	199709	10	205129	10.8	**105**
Styrene	103971	9.8	141603	10.8	**81**
1,1,2,2-Tetrachloroethane	123824	9.9	126594	10.8	**107**
1,3,5-Trimethylbenzene	259323	10.2	264061	10.9	**105**
1,2,4-Trimethylbenzene	252712	10.2	259149	10.9	**104**
1,3-Dichlorobenzene	162230	10	161565	11.0	**110**
1,4-Dichlorobenzene	155795	10	152331	11.0	**113**
1,2-Dichlorobenzene	159397	9.8	162754	11.0	**110**
1,2,4-Trichlorobenzene	85315	9.0	88517	11.0	**118**
Hexachlorobutadiene	184121	9.2	212908	10.9	**102**

Data Path : C:\msdchem\1\2019\DATA\081419N FSA\
Data File : 081419N08.D
Acq On : 14 Aug 2019 10:18 pm
InstName : AG5973N
Operator : LLH
Sample : SCAN PRIM 1841026 / SUB 1835117
Misc : 200ml RECERTIFICATION (1933053)
ALS Vial : 14 Sample Multiplier: 1

200ml of 10ppbv
Ultra 8/14/19

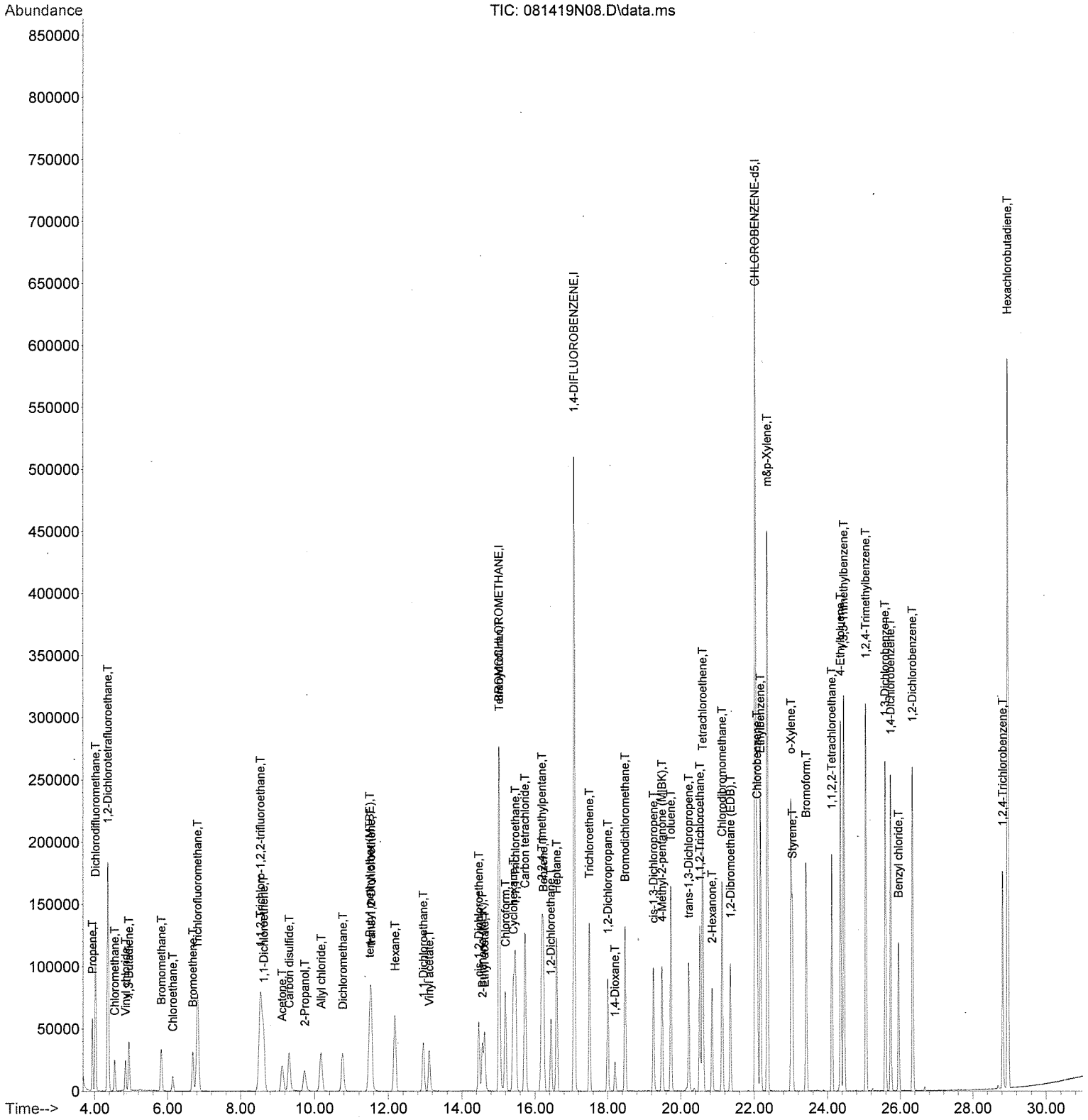
Quant Time: Aug 15 10:42:56 2019
Quant Method : C:\msdchem\1\2019\METHOD\080919N_TO15AA.M
Quant Title : TO15
QLast Update : Tue Aug 13 09:47:43 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	15.020	49	158036	22.00	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	17.080	114	610024	22.00	ppbv	#	0.00
43) CHLOROBENZENE-d5	22.031	117	563022	22.00	ppbv		0.00
Target Compounds							Qvalue
2) Propene	3.937	41	35215	8.93	ppbv	#	100
3) Dichlorodifluoromethane	4.028	85	168671	8.58	ppbv	#	100
4) 1,2-Dichlorotetrafluor...	4.357	85	146947	8.00	ppbv	#	99
5) Chloromethane	4.546	50	36936	8.55	ppbv		100
6) Vinyl chloride	4.845	62	33438	8.65	ppbv		100
7) 1,3-Butadiene	4.930	54	24106	9.07	ppbv		99
8) Bromomethane	5.820	94	35149	8.43	ppbv		99
9) Chloroethane	6.131	64	18466	8.04	ppbv		98
10) Bromoethene	6.686	106	40956	9.25	ppbv		98
11) Trichlorofluoromethane	6.814	101	154063	7.77	ppbv	#	100
12) 1,1,2-Trichloro-1,2,2-...	8.539	151	85388	8.01	ppbv	#	99
13) 1,1-Dichloroethene	8.625	61	68511	8.46	ppbv	#	99
14) Acetone	9.119	43	67842	8.62	ppbv		100
15) Carbon disulfide	9.314	76	109850	8.95	ppbv	#	100
16) 2-Propanol	9.734	45	51825	9.76	ppbv		99
17) Allyl chloride	10.173	41	47701	9.45	ppbv	#	98
18) Dichloromethane	10.765	49	43344	7.51	ppbv	#	99
19) tert-Butyl methyl ethe...	11.496	73	140893	9.08	ppbv		99
20) trans-1,2-Dichloroethene	11.533	61	63822	8.87	ppbv		98
21) Hexane	12.179	57	62013	8.82	ppbv	#	98
22) 1,1-Dichloroethane	12.947	63	72277	7.52	ppbv		100
23) Vinyl acetate	13.112	43	90298	12.28	ppbv		100
24) cis-1,2-Dichloroethene	14.459	61	55639	8.31	ppbv	#	99
25) 2-Butanone (MEK)	14.563	72	19972	9.17	ppbv	#	100
26) Ethyl acetate	14.618	61	13071	8.86	ppbv	#	97
27) Tetrahydrofuran	15.026	42	40010	7.88	ppbv		98
28) Chloroform	15.191	83	105729	8.24	ppbv	#	99
29) Cyclohexane	15.410	56	63710	8.78	ppbv	#	100
30) 1,1,1-Trichloroethane	15.465	97	128543	8.39	ppbv	#	100
31) Carbon tetrachloride	15.727	117	143964	8.25	ppbv		100
33) Benzene	16.233	78	123987	8.26	ppbv	#	100
34) 2,2,4-Trimethylpentane	16.190	57	202986	8.72	ppbv	#	100
35) 1,2-Dichloroethane	16.434	62	77372	8.20	ppbv		99
36) Heptane	16.593	43	71792	8.91	ppbv	#	98
37) Trichloroethene	17.495	130	65971	8.57	ppbv	#	99
38) 1,2-Dichloropropane	18.001	63	42057	8.15	ppbv	#	99
39) 1,4-Dioxane	18.196	88	24663	7.30	ppbv	#	99
40) Bromodichloromethane	18.477	83	122574	8.37	ppbv	#	100
41) cis-1,3-Dichloropropene	19.257	75	77283	8.58	ppbv	#	100
42) 4-Methyl-2-pentanone (...	19.489	43	91696	8.51	ppbv	#	100
44) Toluene	19.732	91	168770	8.49	ppbv		100
45) trans-1,3-Dichloropropene	20.214	75	79610	8.66	ppbv	#	99
46) 1,1,2-Trichloroethane	20.519	97	57503	8.38	ppbv	#	99
47) Tetrachloroethene	20.598	166	103100	8.42	ppbv	#	100
48) 2-Hexanone	20.854	43	74757	8.48	ppbv		99
49) Chlorodibromomethane	21.128	129	127589	8.24	ppbv	#	99
50) 1,2-Dibromoethane (EDB)	21.354	107	95434	8.80	ppbv		99
51) Chlorobenzene	22.079	112	146286	8.43	ppbv	#	100
52) Ethylbenzene	22.171	91	243448	8.45	ppbv		100
53) m&p-Xylene	22.354	91	390001	16.78	ppbv		99
54) o-Xylene	23.000	91	199709	8.40	ppbv		99

✓ em 8/21/19

Data Path : C:\msdchem\1\2019\DATA\081419N FSA\
Data File : 081419N08.D
Acq On : 14 Aug 2019 10:18 pm
InstName : AG5973N
Operator : LLH
Sample : SCAN PRIM 1841026 / SUB 1835117
Misc : 200ml RECERTIFICATION (1933053)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 15 10:42:56 2019
Quant Method : C:\msdchem\1\2019\METHOD\080919N_TO15AA.M
Quant Title : TO15
QLast Update : Tue Aug 13 09:47:43 2019
Response via : Initial Calibration



Analytical Standard Record
EPA Region 9 Laboratory
1841026

Description:	TO-14A 39 Component Mix Standard	**Expires:**	09/17/19
Standard Type:	Other Solution	**Prepared:**	09/17/18
Solvent:	Nitrogen	**Prepared By:**	** Vendor **
Final Volume (mls):	98000	**Department:**	Air
Vials:	1	**Last Edit:**	10/09/18 13:04 by LLH
Vendor:	Linde Spectra	**Lot Numb**	1469105

Cylinder # AB-110084
AU010530
Part # 34400

Analyte	CAS Number	Concentration (ppm)
1,2-Dibromoethane (EDB)	106-93-4	1.04
1,1,1-Trichloroethane	71-55-6	1.04
Benzene	71-43-2	1.02
1,4-Dichlorobenzene	106-46-7	1
1,3-Dichlorobenzene	541-73-1	1
1,3,5-Trimethylbenzene	108-67-8	1.02
1,2-Dichlorotetrafluoroethane	76-14-2	0.97
1,2-Dichloropropane	78-87-5	1.01
Carbon tetrachloride	56-23-5	1.01
1,2-Dichlorobenzene	95-50-1	0.98
Chlorobenzene	108-90-7	1.03
1,2,4-Trimethylbenzene	95-63-6	1.02
1,2,4-Trichlorobenzene	120-82-1	0.9
1,1-Dichloroethene	75-35-4	1.04
1,1-Dichloroethane	75-34-3	0.96
1,1,2-Trichloroethane	79-00-5	1.02
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1
1,1,2,2-Tetrachloroethane	79-34-5	0.99
1,2-Dichloroethane	107-06-2	0.99
Ethylbenzene	100-41-4	1.03
Trichlorofluoromethane	75-69-4	0.94
Trichloroethene	79-01-6	1.08
trans-1,3-Dichloropropene	10061-02-6	0.96
Toluene	108-88-3	1.02
Tetrachloroethene	127-18-4	1.02
Styrene	100-42-5	0.98
o-Xylene	95-47-6	1
Bromomethane	74-83-9	1.02
Hexachlorobutadiene	87-68-3	0.92
Vinyl chloride	75-01-4	1.04

✓ em 8/21/20

Page v of 8

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\2019\DATA\081419N FSA\
Data File : 081419N09.D
Acq On : 14 Aug 2019 11:10 pm
InstName : AG5973N
Operator : LLH
Sample : SCAN PRIMARY 1931163
Misc : 200ml VERIFICATION (1933054)
ALS Vial : 16 Sample Multiplier: 1

200ml of 10 ppbv
LLH 09/13/19

Quant Time: Aug 15 10:45:26 2019
Quant Method : C:\msdchem\1\2019\METHOD\080919N_TO15AA.M
Quant Title : TO15
QLast Update : Tue Aug 13 09:47:43 2019
Response via : Initial Calibration

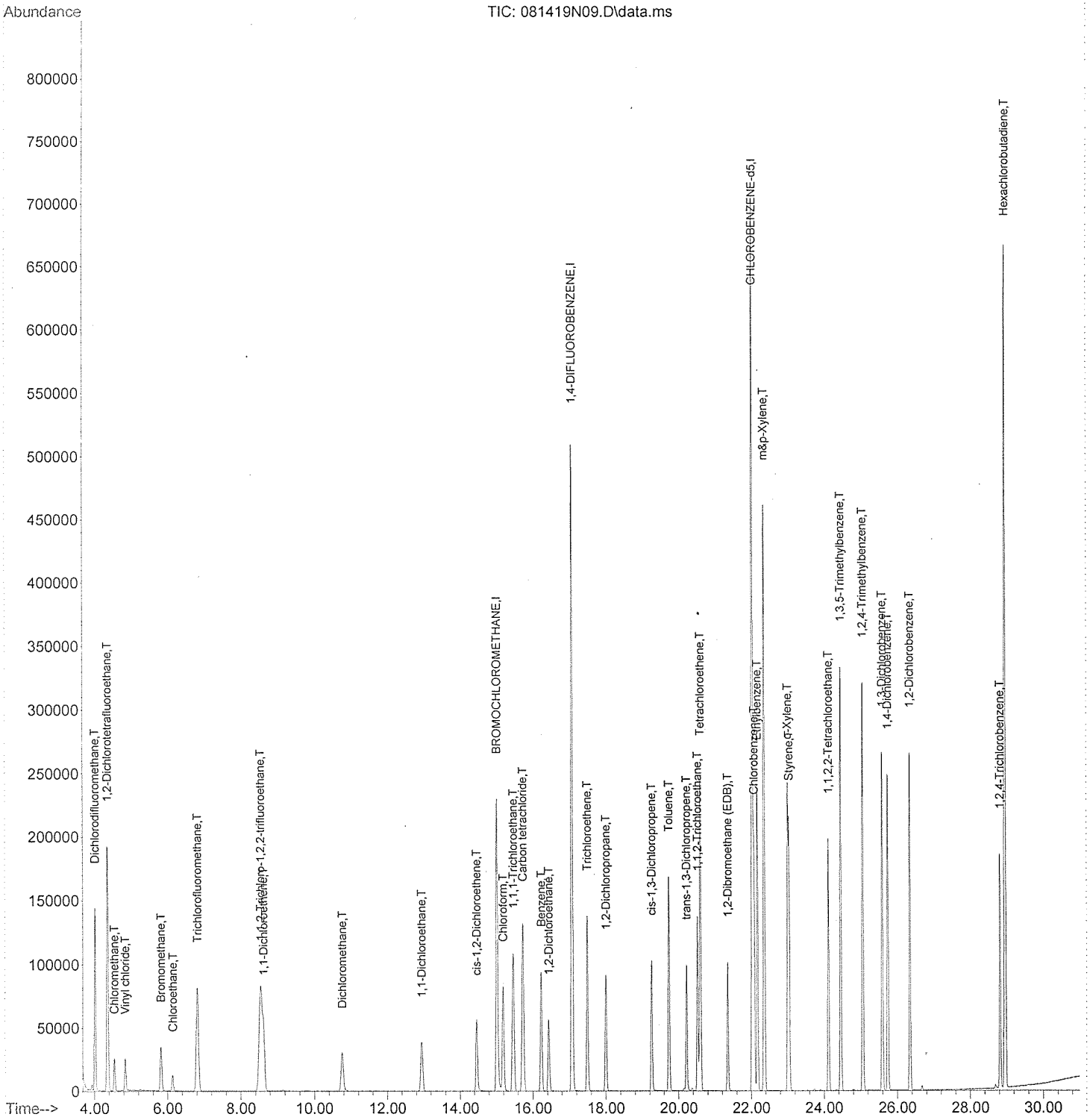
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	15.020	49	154879	22.00	ppbv		0.00
32) 1,4-DIFLUOROBENZENE	17.081	114	603877	22.00	ppbv	#	0.00
43) CHLOROBENZENE-d5	22.031	117	547647	22.00	ppbv		0.00
Target Compounds							Qvalue
3) Dichlorodifluoromethane	4.022	85	176903	9.19	ppbv	#	100
4) 1,2-Dichlorotetrafluor...	4.357	85	154446	8.58	ppbv	#	99
5) Chloromethane	4.546	50	38442	9.08	ppbv		100
6) Vinyl chloride	4.839	62	35139	9.28	ppbv		100
8) Bromomethane	5.814	94	37518	9.18	ppbv		99
9) Chloroethane	6.138	64	19409	8.62	ppbv		99
11) Trichlorofluoromethane	6.814	101	161277	8.30	ppbv	#	100
12) 1,1,2-Trichloro-1,2,2-...	8.539	151	90690	8.69	ppbv	#	98
13) 1,1-Dichloroethene	8.619	61	72317	9.11	ppbv	#	99
18) Dichloromethane	10.759	49	43894	7.76	ppbv	#	100
22) 1,1-Dichloroethane	12.947	63	74645	7.92	ppbv		99
24) cis-1,2-Dichloroethene	14.459	61	56914	8.67	ppbv	#	100
28) Chloroform	15.185	83	108284	8.61	ppbv	#	99
30) 1,1,1-Trichloroethane	15.465	97	132621	8.83	ppbv	#	99
31) Carbon tetrachloride	15.733	117	149758	8.75	ppbv		99
33) Benzene	16.233	78	126054	8.48	ppbv	#	99
35) 1,2-Dichloroethane	16.440	62	79146	8.47	ppbv		100
37) Trichloroethene	17.495	130	68192	8.95	ppbv	#	100
38) 1,2-Dichloropropane	18.001	63	44010	8.62	ppbv	#	100
41) cis-1,3-Dichloropropene	19.257	75	79636	8.93	ppbv	#	98
44) Toluene	19.732	91	171491	8.87	ppbv		100
45) trans-1,3-Dichloropropene	20.214	75	77704	8.69	ppbv	#	99
46) 1,1,2-Trichloroethane	20.519	97	59578	8.93	ppbv	#	99
47) Tetrachloroethene	20.598	166	106343	8.93	ppbv	#	99
50) 1,2-Dibromoethane (EDB)	21.354	107	91875	8.71	ppbv		99
51) Chlorobenzene	22.080	112	147186	8.72	ppbv	#	100
52) Ethylbenzene	22.171	91	246934	8.81	ppbv		100
53) m&p-Xylene	22.354	91	400141	17.70	ppbv		100
54) o-Xylene	23.000	91	205129	8.88	ppbv		99
55) Styrene	23.043	104	141603	8.97	ppbv	#	100
57) 1,1,2,2-Tetrachloroethane	24.122	83	126594	8.63	ppbv		99
59) 1,3,5-Trimethylbenzene	24.457	105	264061	8.82	ppbv		99
60) 1,2,4-Trimethylbenzene	25.061	105	259149	8.98	ppbv		99
61) 1,3-Dichlorobenzene	25.591	146	161565	8.42	ppbv		100
62) 1,4-Dichlorobenzene	25.737	146	152331	8.37	ppbv	#	100
64) 1,2-Dichlorobenzene	26.347	146	162754	8.22	ppbv	#	100
65) 1,2,4-Trichlorobenzene	28.822	180	88517	8.17	ppbv	#	99
66) Hexachlorobutadiene	28.962	225	212908	8.53	ppbv		100

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\2019\DATA\081419N FSA\
Data File : 081419N09.D
Acq On : 14 Aug 2019 11:10 pm
InstName : AG5973N
Operator : LLH
Sample : SCAN PRIMARY 1931163
Misc : 200ml VERIFICATION (1933054)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 15 10:45:26 2019
Quant Method : C:\msdchem\1\2019\METHOD\080919N_TO15AA.M
Quant Title : TO15
QLast Update : Tue Aug 13 09:47:43 2019
Response via : Initial Calibration



Analytical Standard Record

EPA Region 9 Laboratory

1931163

Description:	TO-14A 39 Component Mix Standard, 1.0	**Expires:**	07/18/20
Standard Type:	Other Solution	**Prepared:**	07/18/19
Solvent:	Nitrogen	**Prepared By:**	** Vendor **
Final Volume (mls):	98000	**Department:**	Air
Vials:	1	**Last Edit:**	08/02/19 12:38 by LLH
Vendor:	Linde Spectra	**Lot Numbe**	1492796

Cylinder # AB-111784
AU011176
Part # 34400

Analyte	CAS Number	Concentration (ppm)
1,2-Dibromoethane (EDB)	106-93-4	1.09
1,1,1-Trichloroethane	71-55-6	1.09
Benzene	71-43-2	1.09
1,4-Dichlorobenzene	106-46-7	1.1
1,3-Dichlorobenzene	541-73-1	1.1
1,3,5-Trimethylbenzene	108-67-8	1.09
1,2-Dichlorotetrafluoroethane	76-14-2	1
1,2-Dichloropropane	78-87-5	1.1
Carbon tetrachloride	56-23-5	1.1
1,2-Dichlorobenzene	95-50-1	1.1
Chlorobenzene	108-90-7	1.09
1,2,4-Trimethylbenzene	95-63-6	1.09
1,2,4-Trichlorobenzene	120-82-1	1.1
1,1-Dichloroethene	75-35-4	1.09
1,1-Dichloroethane	75-34-3	1.05
1,1,2-Trichloroethane	79-00-5	1.09
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.09
1,1,2,2-Tetrachloroethane	79-34-5	1.08
1,2-Dichloroethane	107-06-2	1.09
Ethylbenzene	100-41-4	1.09
Trichlorofluoromethane	75-69-4	1.09
Trichloroethene	79-01-6	1.1
trans-1,3-Dichloropropene	10061-02-6	1.06
Toluene	108-88-3	1.09
Tetrachloroethene	127-18-4	1.08
Styrene	100-42-5	1.08
o-Xylene	95-47-6	1.08
Bromomethane	74-83-9	1.09
Hexachlorobutadiene	87-68-3	1.09
Vinyl chloride	75-01-4	1.1

lem 8/21/19

Page 8 of 8

Analytical Standard Record

EPA Region 9 Laboratory

1901028

Description:	TO/14A GC/MS Tuning Mix, Stock 100pp	**Expires:**	12/14/20
Standard Type:	Other Solution	**Prepared:**	12/14/18
Solvent:	Nitrogen	**Prepared By:**	** Vendor **
Final Volume (mls):	98000	**Department:**	Air
Vials:	1	**Last Edit:**	12/24/19 09:40 by LLH
Vendor:	Linde Spectra	**Lot Numbe**	1477592

Part #34424 Bar Code# AU010656 Cylinder # AB-110190
Do not use under 150psig. Original expiration date: 12/14/2019.
Extended expiration date: 12/14/2020

Analyte	CAS Number	Concentration (ppm)
4-Bromofluorobenzene	460-00-4	0.09

THE LINDE GROUP

Linde

SHIPPED TO: GSS Warehouse
258 Lindbergh Ave.
Livermore, CA 94551-9512

PAGE: 1 of 1

1901028
AU010656

CERTIFICATE OF ANALYSIS

Sales#:	116997676	**Cylinder Size:**	185 (3.2" X 9.4")
Production#:	1477592	**Cylinder # :**	AB-110190
Certification Date:	Dec-14-2018	**Cylinder Pressure:**	1700 psig
P.O.# :	136993-RESTEK	**Cylinder Valve:**	CGA 180 / Aluminum
Blend Type:	CERTIFIED	**Cylinder Volume:**	0.8 Liter
Material#:	24087971	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	98 Liters
Expiration Date:	Dec-14-2019	**Blend Tolerance:**	10% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	10% Relative
Part Number:	34424	**NIST Traceable Certificate#:**	17-67149

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
4-Bromofluorobenzene	460-00-4	100 ppb	90 ppb
Nitrogen	7727-37-9	Balance	Balance

Recd 1/4/19

Source Identification Number: 279475

ANALYST: Brian Bramkamp

DATE: Dec-14-2018

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

APPENDIX C.
DOCUMENTATION OF EXTENDED USE

	LIMS ID	Manu. Expiration Date	Reagent LIMS ID
Material, Expired	1901028	12/14/19	—
Analysis: 8015	SOP # 311	Rev. 4	

Analysis Date: 11/27/19	Instrument: K	HP5973K	Analyst: UH
Criteria: refer to SOP 893 R0 section 4.4			

Analyte	Ave Response, Expired	Comparison (explain in criteria section)	Fail criteria?
Bromofluorobenzene (BFB)	12046300	—	No
File ID (1)	112719K01	Req: 519K118	
File ID (2)			
File ID (3)			

Notes: See attached TIC report for BFB.

Approval Signatures	Approve (Y/N)	Signature	Print Name
Group Leader/Supervisor	Y	[signature]	Ziyad Rajabi
Technical Director	Y	[signature]	R. Bone
Lab QAO	Y	Barbara Bates	B Bates
		LAB QAO Signature Date	12-30-19

The use of this exact layout is not required; however, the form title must be used. Clarity of the criteria and notes are of particular importance for extended due to the variety of materials and their intended use.

New expiration date = 12/14/20

Library Search Compound Report

Data Path : D:\msdchem\1\2019\DATA\112719K_FSAA\
Data File : 112719K01.D
Acq On : 27 Nov 2019 10:01 am
Operator : LLH
Sample : S19K118-TUN1
Misc : BFB 1901028
ALS Vial : 27 Sample Multiplier: 1

40 ngs – good response AS 12/23/19

Quant Method : D:\msdchem\1\2019\METHOD\110119K_TO15AA.M
Quant Title : TO15

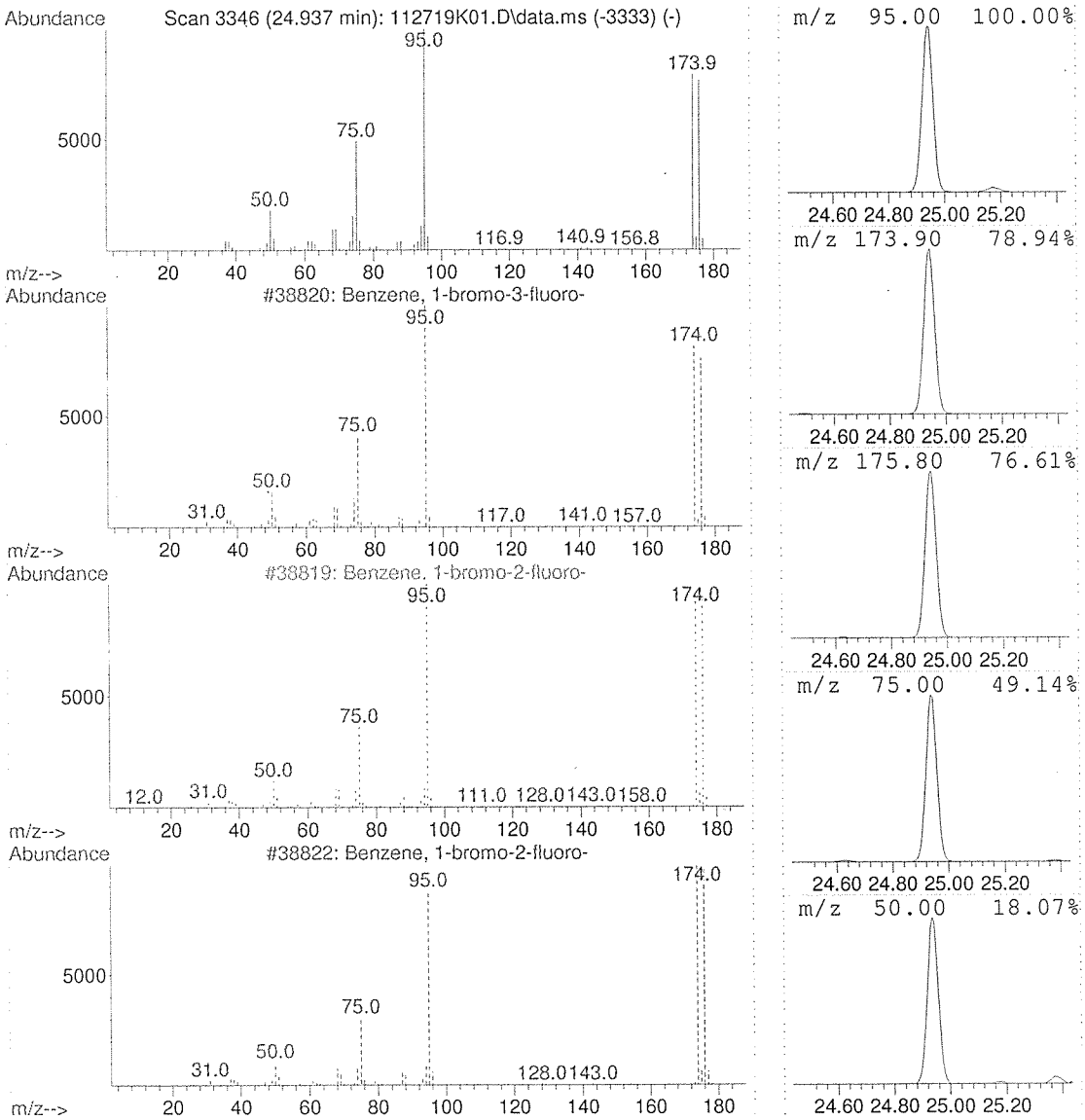
TIC Library : C:\Database\NIST02.L
TIC Integration Parameters: lscint.p

****

Peak Number 3 Benzene, 1-bromo-3-fluoro- Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
24.937	12.79 ppbv	1206300	CHLOROBENZENE-d5	23.100

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzene, 1-bromo-3-fluoro-	174	C6H4BrF	001073-06-9	98
2	Benzene, 1-bromo-2-fluoro-	174	C6H4BrF	001072-85-1	96
3	Benzene, 1-bromo-2-fluoro-	174	C6H4BrF	001072-85-1	94
4	p-Bromofluorobenzene	174	C6H4BrF	000460-00-4	93
5	Benzene, 1-bromo-3-fluoro-	174	C6H4BrF	001073-06-9	93



Analytical Standard Record

EPA Region 9 Laboratory

1901028

Description:	TO/14A GC/MS Tuning Mix, Stock 100pp	**Expires:**	12/14/19
Standard Type:	Other Solution	**Prepared:**	12/14/18
Solvent:	Nitrogen	**Prepared By:**	** Vendor **
Final Volume (mls):	98000	**Department:**	Air
Vials:	1	**Last Edit:**	01/04/19 15:54 by EM
Vendor:	Linde Spectra	**Lot Numbe**	1477592

Part #34424 Bar Code# AU010656 Cylinder # AB-110190
Do not use under 150psig.

Analyte	CAS Number	Concentration (ppm)
4-Bromofluorobenzene	460-00-4	0.09

Analytical Standard Record

EPA Region 9 Laboratory

1948024

Description:	TO-15 25 Compound Subset Standarc	**Expires:**	10/30/21
Standard Type:	Other Solution	**Prepared:**	10/21/19
Solvent:	Nitrogen	**Prepared By:**	** Vendor **
Final Volume (mls):	110000	**Department:**	Air
Vials:	1	**Last Edit:**	11/26/19 11:34 by LLH
Vendor:	Scott/Air Liquide	**Lot Numb**	160-401624549-1

Scott/Air Liquide Cylinder# ST0000197961
Bar code: AU011459 Supelco Cat No. 41979-U

Analyte	CAS Number	Concentration (ppm)
Bromoform	75-25-2	0.12
1,4-Dioxane	123-91-1	0.11
2,2,4-Trimethylpentane	540-84-1	0.11
2-Butanone (MEK)	78-93-3	0.11
2-Hexanone	591-78-6	0.11
2-Propanol	67-63-0	0.085
4-Ethyltoluene	622-96-8	0.11
4-Methyl-2-pentanone (MIBK)	108-10-1	0.11
Acetone	67-64-1	0.1
Allyl chloride	107-05-1	0.12
Benzyl chloride	100-44-7	0.11
1,3-Butadiene	106-99-0	0.1
Bromoethene	593-60-2	0.11
Vinyl acetate	108-05-4	0.11
Carbon disulfide	75-15-0	0.12
Chlorodibromomethane	124-48-1	0.11
Cyclohexane	110-82-7	0.11
Ethyl acetate	141-78-6	0.11
Heptane	142-82-5	0.11
Hexane	110-54-3	0.11
Propene	115-07-1	0.1
tert-Butyl methyl ether (MTBE)	1634-04-4	0.11
Tetrahydrofuran	109-99-9	0.095
trans-1,2-Dichloroethene	156-60-5	0.1
Bromodichloromethane	75-27-4	0.11

SCV Subset 1948024

Airgas [redacted]y Gases
Airgas [redacted] L C
6141 Easton [redacted]
Bldg 1
Plumsteadvil e, PA 18949
[redacted]

CERTIFICATE OF ANALYSIS

[redacted] of [redacted] [redacted]R TIFIED [redacted]RB

Part Number:	[redacted]	Reference Number:	160-401624549-1
Cylinder Number:	ST0 1[redacted] 1	Cylinder Volume:	1 0.0 LG
Laboratory:	124 - Plumsteadvil e - PA	Cylinder Pres ure:	180 PSIG
Analysis Date:	Oct 30, 2019	Valve Outlet:	180
Lot Number:	160-401624549-1	Expiration Date:	Oct 30, 2021

Traceability Statement: Hydrocarbon Proces standards are NIST traceable either directly by weight o by comparison to Airgas laboratory standards that are directly NIST traceable by weight.

CERTIFIED CONCENTRATIONS

Component	Requestd Concentration	Reportd [redacted]%	Accuracy
1,2 TRANS DICHLOROETHYLENE	10 .0 P B	10 .0 P B	+/- 10%
1,3 BUTADIENE	10 .0 P B	10 .0 P B	+/- 10%
1,4 DIOXANE	10 .0 P B	1 0.0 P B	+/- 10%
4 ETHYL TOLUENE	10 .0 P B	1 0.0 P B	+/- 10%
ACETONE	10 .0 P B	10 .0 P B	+/- 10%
ALLYL CHLORIDE	10 .0 P B	120.0 P B	+/- 10%
BE[redacted] Y CHLORIDE	10 .0 P B	1 0.0 P B	+/- 10%
BROMO DICHLORO METHANE	10 .0 P B	1 0.0 P B	+/- 10%
BROMOFORM	10 .0 P B	120.0 P B	+/- 10%
CARBON DISULFIDE	10 .0 P B	120.0 P B	+/- 10%
CHLORO DIBROMO METHANE	10 .0 P B	1 0.0 P B	+/- 10%
CYCLOHEXANE	10 .0 P B	1 0.0 P B	+/- 10%
ETHYL ACETATE	10 .0 P B	1 0.0 P B	+/- 10%
HEXANE	10 .0 P B	1 0.0 P B	+/- 10%
ISO CTANE 2,2,4	10 .0 P B	1 0.0 P B	+/- 10%
ISOPROPYL ALCOHOL	10 .0 P B	85.0 P B	+/- 10%
METHYL BUTYL KETONE 2-Hexanone	10 .0 P B	1 0.0 P B	+/- 10%
METHYL ETHYL KETONE	10 .0 P B	1 0.0 P B	+/- 10%
METHYL ISOBUTYL KETONE	10 .0 P B	1 0.0 P B	+/- 10%
METHYL TERT BUTYL ETHER	10 .0 P B	1 0.0 P B	+/- 10%
N HEPTANE	10 .0 P B	1 0.0 P B	+/- 10%
PROPYLENE	10 .0 P B	10 .0 P B	+/- 10%
TETRAHYDROFURAN	10 .0 P B	95.0 P B	+/- 10%
VINYL ACETATE	10 .0 P B	1 0.0 P B	+/- 10%
VINYL BROMIDE Bromo ethene	10 .0 P B	1 0.0 P B	+/- 10%
NITROGEN	Balance	Balance	

Permanent Notes: SIGMA ALDRICH P/N 41[redacted] -U

Notes: PO number: P485010

Date of manufacture: 21-Oct-2019

A pproved fo[redacted]Rel[redacted]e[redacted]s

[redacted] 1 6 160-401624549-1

Analytical Standard Record

EPA Region 9 Laboratory

2006146

Description:	TO-14A Internal Standard Mix, Stock(100	**Expires:**	01/29/22
Standard Type:	Other Solution	**Prepared:**	01/29/20
Solvent:	Nitrogen	**Prepared By:**	** Vendor **
Final Volume (mls):	110000	**Department:**	Air
Vials:	1	**Last Edit:**	02/06/20 15:46 by LLH
Vendor:	Scott/Air Liquide	**Lot Numbe**	160-401699356-1

Restek Part # 26353, Cylinder #: ST0000248715 AU011653
Orig exp date: 01/29/22

Analyte	CAS Number	Concentration (ppm)
Chlorobenzene-d5	3114-55-4	0.098
Bromochloromethane	74-97-5	0.098
1,4-Difluorobenzene	540-36-3	0.098

Airgas
an Air Liquide company

I Std

AU011653/54/55

Airgas Specialty Gases
Airgas USA, LLC
6141 Easton Road
Bldg 1
Plumsteadville, PA 18949
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: CERTIFIED STANDARD-SPEC

Part Number:	X04NI99CA98C000	Reference Number:	160-401699356-1
Cylinder Number:	ST0000248717 /15/16	Cylinder Volume:	98.0 LG
Laboratory:	124 - Plumsteadville - PA	Cylinder Pressure:	1800 PSIG
Analysis Date:	Jan 29, 2020	Valve Outlet:	180
Lot Number:	160-401699356-1		

Expiration Date: Jan 29, 2022

02/06/20

Product composition verified by direct comparison to calibration standards traceable to N.I.S.T. weights and/or N.I.S.T. Gas Mixture reference materials.

ANALYTICAL RESULTS

Component	Req Conc	Actual Concentration (Mole %)	Analytical Uncertainty
1,4 DIFLUOROBENZENE	100.000 PPB	98.000 PPB	+/- 10%
BROMOCHLOROMETHANE	100.000 PPB	98.000 PPB	+/- 10%
CHLOROBENZENE-D5	100.000 PPB	96.000 PPB	+/- 10%
NITROGEN	Balance		

Permanent Notes: RESTEK P/N 26353

Notes: PO number: P6624

AU011653 - 2006146
654 - 2006147
655 - 2006148

Approved for Release

Analytical Standard Record

EPA Region 9 Laboratory

2014015

Description:	TO-15 LOW Std, 10 ppbv	**Expires:**	04/30/20
Standard Type:	Other Solution	**Prepared:**	03/31/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	2500	**Department:**	Air
Vials:	2	**Last Edit:**	03/31/20 12:26 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
1,3-Butadiene	106-99-0	0.0103
Bromoethene	593-60-2	0.0109
Bromodichloromethane	75-27-4	0.0104
Benzyl chloride	100-44-7	0.011
Benzene	71-43-2	0.0102
Allyl chloride	107-05-1	0.011
Acetone	67-64-1	0.0108
4-Methyl-2-pentanone (MIBK)	108-10-1	0.0105
4-Ethyltoluene	622-96-8	0.0102
2-Propanol	67-63-0	0.011
2-Hexanone	591-78-6	0.0103
2-Butanone (MEK)	78-93-3	0.0105
2,2,4-Trimethylpentane	540-84-1	0.0103
1,4-Dioxane	123-91-1	0.0104
1,1,1-Trichloroethane	71-55-6	0.0104
1,2-Dibromoethane (EDB)	106-93-4	0.0104
1,1,2,2-Tetrachloroethane	79-34-5	0.0099
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.01
1,1,2-Trichloroethane	79-00-5	0.0102
1,1-Dichloroethane	75-34-3	0.0096
1,1-Dichloroethene	75-35-4	0.0104
1,4-Dichlorobenzene	106-46-7	0.01
1,2,4-Trimethylbenzene	95-63-6	0.0102
1,3-Dichlorobenzene	541-73-1	0.01
1,2-Dichlorobenzene	95-50-1	0.0098
1,2-Dichloroethane	107-06-2	0.0099
1,2-Dichloropropane	78-87-5	0.0101
1,2-Dichlorotetrafluoroethane	76-14-2	0.0097
1,3,5-Trimethylbenzene	108-67-8	0.0102
Carbon disulfide	75-15-0	0.011

Analytical Standard Record
EPA Region 9 Laboratory
2014015

1,2,4-Trichlorobenzene	120-82-1	0.009
Tetrahydrofuran	109-99-9	0.0101
Bromoform	75-25-2	0.011
m&p-Xylene	179601-23-1	0.0204
o-Xylene	95-47-6	0.01
Propene	115-07-1	0.011
Styrene	100-42-5	0.0098
Hexachlorobutadiene	87-68-3	0.0092
Tetrachloroethene	127-18-4	0.0102
Heptane	142-82-5	0.0103
Toluene	108-88-3	0.0102
trans-1,2-Dichloroethene	156-60-5	0.0109
trans-1,3-Dichloropropene	10061-02-6	0.0096
Trichloroethene	79-01-6	0.0108
Trichlorofluoromethane	75-69-4	0.0094
Vinyl acetate	108-05-4	0.011
tert-Butyl methyl ether (MTBE)	1634-04-4	0.0107
cis-1,2-Dichloroethene	156-59-2	0.0101
Vinyl chloride	75-01-4	0.0104
Carbon tetrachloride	56-23-5	0.0101
Chlorobenzene	108-90-7	0.0103
Chlorodibromomethane	124-48-1	0.0109
Chloroethane	75-00-3	0.0102
Hexane	110-54-3	0.0102
Chloromethane	74-87-3	0.0108
Bromomethane	74-83-9	0.0102
cis-1,3-Dichloropropene	10061-01-5	0.01
Cyclohexane	110-82-7	0.0103
Dichlorodifluoromethane	75-71-8	0.0102
Dichloromethane	75-09-2	0.01
Ethyl acetate	141-78-6	0.0103
Ethylbenzene	100-41-4	0.0103
Chloroform	67-66-3	0.0104

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1841026	TO-14A 39 Component Mix Stand	09/17/18	** Vendor **	09/17/20	09/18/19 13:14 by EM	25
1835117	TO-15 25 Compound Subset Stand	08/16/18	** Vendor **	08/16/20	11/14/19 15:08 by EM	25

Analytical Standard Record

EPA Region 9 Laboratory

2014016

Description:	TO-15 CAL Std, 20 ppbv	**Expires:**	04/30/20
Standard Type:	Other Solution	**Prepared:**	03/31/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	2500	**Department:**	Air
Vials:	2	**Last Edit:**	03/31/20 12:27 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
1,3-Butadiene	106-99-0	0.0206
Bromoethene	593-60-2	0.0218
Bromodichloromethane	75-27-4	0.0208
Benzyl chloride	100-44-7	0.022
Benzene	71-43-2	0.0204
Allyl chloride	107-05-1	0.022
Acetone	67-64-1	0.0216
4-Methyl-2-pentanone (MIBK)	108-10-1	0.021
4-Ethyltoluene	622-96-8	0.0204
2-Propanol	67-63-0	0.022
2-Hexanone	591-78-6	0.0206
2-Butanone (MEK)	78-93-3	0.021
2,2,4-Trimethylpentane	540-84-1	0.0206
1,4-Dioxane	123-91-1	0.0208
1,1,1-Trichloroethane	71-55-6	0.0208
1,2-Dibromoethane (EDB)	106-93-4	0.0208
1,1,2,2-Tetrachloroethane	79-34-5	0.0198
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.02
1,1,2-Trichloroethane	79-00-5	0.0204
1,1-Dichloroethane	75-34-3	0.0192
1,1-Dichloroethene	75-35-4	0.0208
1,4-Dichlorobenzene	106-46-7	0.02
1,2,4-Trimethylbenzene	95-63-6	0.0204
1,3-Dichlorobenzene	541-73-1	0.02
1,2-Dichlorobenzene	95-50-1	0.0196
1,2-Dichloroethane	107-06-2	0.0198
1,2-Dichloropropane	78-87-5	0.0202
1,2-Dichlorotetrafluoroethane	76-14-2	0.0194
1,3,5-Trimethylbenzene	108-67-8	0.0204
Carbon disulfide	75-15-0	0.022

Analytical Standard Record
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2014016

1,2,4-Trichlorobenzene	120-82-1	0.018
Tetrahydrofuran	109-99-9	0.0202
Bromoform	75-25-2	0.022
m&p-Xylene	179601-23-1	0.0408
o-Xylene	95-47-6	0.02
Propene	115-07-1	0.022
Styrene	100-42-5	0.0196
Hexachlorobutadiene	87-68-3	0.0184
Tetrachloroethene	127-18-4	0.0204
Heptane	142-82-5	0.0206
Toluene	108-88-3	0.0204
trans-1,2-Dichloroethene	156-60-5	0.0218
trans-1,3-Dichloropropene	10061-02-6	0.0192
Trichloroethene	79-01-6	0.0216
Trichlorofluoromethane	75-69-4	0.0188
Vinyl acetate	108-05-4	0.022
tert-Butyl methyl ether (MTBE)	1634-04-4	0.0214
cis-1,2-Dichloroethene	156-59-2	0.0202
Vinyl chloride	75-01-4	0.0208
Carbon tetrachloride	56-23-5	0.0202
Chlorobenzene	108-90-7	0.0206
Chlorodibromomethane	124-48-1	0.0218
Chloroethane	75-00-3	0.0204
Hexane	110-54-3	0.0204
Chloromethane	74-87-3	0.0216
Bromomethane	74-83-9	0.0204
cis-1,3-Dichloropropene	10061-01-5	0.02
Cyclohexane	110-82-7	0.0206
Dichlorodifluoromethane	75-71-8	0.0204
Dichloromethane	75-09-2	0.02
Ethyl acetate	141-78-6	0.0206
Ethylbenzene	100-41-4	0.0206
Chloroform	67-66-3	0.0208

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1841026	TO-14A 39 Component Mix Stand	09/17/18	** Vendor **	09/17/20	09/18/19 13:14 by EM	50
1835117	TO-15 25 Compound Subset Stand	08/16/18	** Vendor **	08/16/20	11/14/19 15:08 by EM	50

Analytical Standard Record

EPA Region 9 Laboratory

2014017

Description:	TO-15 SCV 10 ppbv (VIRTUAL)	**Expires:**	04/30/20
Standard Type:	Other Solution	**Prepared:**	03/31/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	2000	**Department:**	Air
Vials:	1	**Last Edit:**	04/01/20 10:13 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
1,3-Butadiene	106-99-0	0.01
Bromoethene	593-60-2	0.011
Bromodichloromethane	75-27-4	0.011
Benzyl chloride	100-44-7	0.011
Benzene	71-43-2	0.01
Allyl chloride	107-05-1	0.012
Acetone	67-64-1	0.01
4-Methyl-2-pentanone (MIBK)	108-10-1	0.011
4-Ethyltoluene	622-96-8	0.011
2-Propanol	67-63-0	0.0085
2-Hexanone	591-78-6	0.011
2-Butanone (MEK)	78-93-3	0.011
2,2,4-Trimethylpentane	540-84-1	0.011
1,4-Dioxane	123-91-1	0.011
1,1,1-Trichloroethane	71-55-6	0.011
1,2-Dibromoethane (EDB)	106-93-4	0.01
1,1,2,2-Tetrachloroethane	79-34-5	0.0099
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.011
1,1,2-Trichloroethane	79-00-5	0.01
1,1-Dichloroethane	75-34-3	0.011
1,1-Dichloroethene	75-35-4	0.011
1,4-Dichlorobenzene	106-46-7	0.0099
1,2,4-Trimethylbenzene	95-63-6	0.01
1,3-Dichlorobenzene	541-73-1	0.01
1,2-Dichlorobenzene	95-50-1	0.0096
1,2-Dichloroethane	107-06-2	0.011
1,2-Dichloropropane	78-87-5	0.01
1,2-Dichlorotetrafluoroethane	76-14-2	0.011
1,3,5-Trimethylbenzene	108-67-8	0.01
Carbon disulfide	75-15-0	0.012

Analytical Standard Record
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2014017

1,2,4-Trichlorobenzene	120-82-1	0.0093
Tetrahydrofuran	109-99-9	0.0095
Bromoform	75-25-2	0.012
m&p-Xylene	179601-23-1	0.022
o-Xylene	95-47-6	0.01
Propene	115-07-1	0.01
Styrene	100-42-5	0.01
Hexachlorobutadiene	87-68-3	0.0099
Tetrachloroethene	127-18-4	0.011
Heptane	142-82-5	0.011
Toluene	108-88-3	0.01
trans-1,2-Dichloroethene	156-60-5	0.01
trans-1,3-Dichloropropene	10061-02-6	0.01
Trichloroethene	79-01-6	0.011
Trichlorofluoromethane	75-69-4	0.011
Vinyl acetate	108-05-4	0.011
tert-Butyl methyl ether (MTBE)	1634-04-4	0.011
cis-1,2-Dichloroethene	156-59-2	0.011
Vinyl chloride	75-01-4	0.01
Carbon tetrachloride	56-23-5	0.011
Chlorobenzene	108-90-7	0.011
Chlorodibromomethane	124-48-1	0.011
Chloroethane	75-00-3	0.011
Hexane	110-54-3	0.011
Chloromethane	74-87-3	0.012
Bromomethane	74-83-9	0.011
cis-1,3-Dichloropropene	10061-01-5	0.01
Cyclohexane	110-82-7	0.011
Dichlorodifluoromethane	75-71-8	0.011
Dichloromethane	75-09-2	0.011
Ethyl acetate	141-78-6	0.011
Ethylbenzene	100-41-4	0.011
Chloroform	67-66-3	0.011

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2014018	TO-14A 39 Component Mix Stand	03/02/20	** Vendor **	03/11/23	04/01/20 10:13 by LLH	200
1948024	TO-15 25 Compound Subset Stand	10/21/19	** Vendor **	10/30/21	03/03/20 11:57 by LLH	200

Analytical Standard Record

EPA Region 9 Laboratory

2014018

Description:	TO-14A 39 Component Mix Standard	**Expires:**	03/11/23
Standard Type:	Analyte Spike	**Prepared:**	03/02/20
Solvent:	Nitrogen	**Prepared By:**	** Vendor **
Final Volume (mls):	98000	**Department:**	Air
Vials:	1	**Last Edit:**	04/01/20 10:13 by LLH
Vendor:	Scott/Air Liquide	**Lot Numb**	160-401747861-1

Supelco: 41900-U Cylinder # ST0000248893 AU011833
Part No. X40NI99CA98C000 Scott/Air Liquide Exp date: 03/11/23

Analyte	CAS Number	Concentration (ppm)
1,2-Dibromoethane (EDB)	106-93-4	0.1
1,1,1-Trichloroethane	71-55-6	0.11
Benzene	71-43-2	0.1
1,4-Dichlorobenzene	106-46-7	0.099
1,3-Dichlorobenzene	541-73-1	0.1
1,3,5-Trimethylbenzene	108-67-8	0.1
1,2-Dichlorotetrafluoroethane	76-14-2	0.11
1,2-Dichloropropane	78-87-5	0.1
Carbon tetrachloride	56-23-5	0.11
1,2-Dichlorobenzene	95-50-1	0.096
Chlorobenzene	108-90-7	0.11
1,2,4-Trimethylbenzene	95-63-6	0.1
1,2,4-Trichlorobenzene	120-82-1	0.093
1,1-Dichloroethene	75-35-4	0.11
1,1-Dichloroethane	75-34-3	0.11
1,1,2-Trichloroethane	79-00-5	0.1
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.11
1,1,2,2-Tetrachloroethane	79-34-5	0.099
1,2-Dichloroethane	107-06-2	0.11
Ethylbenzene	100-41-4	0.11
Trichlorofluoromethane	75-69-4	0.11
Trichloroethene	79-01-6	0.11
trans-1,3-Dichloropropene	10061-02-6	0.1
Toluene	108-88-3	0.1
Tetrachloroethene	127-18-4	0.11
Styrene	100-42-5	0.1
o-Xylene	95-47-6	0.1
Bromomethane	74-83-9	0.11
Hexachlorobutadiene	87-68-3	0.099
Vinyl chloride	75-01-4	0.1

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Dichloromethane	75-09-2	0.11
Dichlorodifluoromethane	75-71-8	0.11
cis-1,3-Dichloropropene	10061-01-5	0.1
cis-1,2-Dichloroethene	156-59-2	0.11
Chloromethane	74-87-3	0.12
Chloroform	67-66-3	0.11
Chloroethane	75-00-3	0.11
m&p-Xylene	179601-23-1	0.22

Airgas
an Air Liquide company

SCV Primary 2014-18

Airgas Specialty Gases
Airgas USA, LLC
6141 Easton Road
Bldg 1
Plumsteadville, PA 18949
Airgas.com

AU0118353

CERTIFICATE OF BATCH ANALYSIS

Grade of Product: CERTIFIED STANDARD-SPEC

Part Number:	X40NI99CA98C000	Reference Number:	160-401747861-1
		Cylinder Volume:	98.0 LG
Laboratory:	124 - Plumsteadville - PA	Cylinder Pressure:	1800 PSIG
Analysis Date:	Mar 11, 2020	Valve Outlet:	180
Lot Number:	160-401747861-1		

Exp 03/31/20

Product composition verified by direct comparison to calibration standards traceable to N.I.S.T. weights and/or N.I.S.T. Gas Mixture reference materials.

ANALYTICAL RESULTS

Component	Req Conc	Actual Concentration (Mole %)	Analytical Uncertainty
1,1 DICHLOROETHANE	100.000 PPB	110.000 PPB	+/- 10%
1,1 DICHLOROETHYLENE	100.000 PPB	110.000 PPB	+/- 10%
1,1,1 TRICHLOROETHANE	100.000 PPB	110.000 PPB	+/- 10%
1,1,2 TRICHLORO ETHANE	100.000 PPB	100.000 PPB	+/- 10%
1,1,2,2 TETRACHLOROETHANE	100.000 PPB	99.000 PPB	+/- 10%
1,2 DIBROMO ETHANE EDB	100.000 PPB	100.000 PPB	+/- 10%
1,2 DICHLORO PROPANE	100.000 PPB	100.000 PPB	+/- 10%
1,2 DICHLOROBENZENE	100.000 PPB	96.000 PPB	+/- 10%
1,2 DICHLOROETHANE	100.000 PPB	110.000 PPB	+/- 10%
1,2,4 TRICHLOROBENZENE	100.000 PPB	93.000 PPB	+/- 10%
1,2,4 TRIMETHYLBENZENE	100.000 PPB	100.000 PPB	+/- 10%
1,3 DICHLORO BENZENE	100.000 PPB	100.000 PPB	+/- 10%
1,3,5 TRIMETHYL BENZENE	100.000 PPB	100.000 PPB	+/- 10%
1,4 DICHLOROBENZENE	100.000 PPB	99.000 PPB	+/- 10%
BENZENE	100.000 PPB	100.000 PPB	+/- 10%
BROMOMETHANE	100.000 PPB	110.000 PPB	+/- 10%
CARBON TETRACHLORIDE	100.000 PPB	110.000 PPB	+/- 10%
CHLOROBENZENE	100.000 PPB	110.000 PPB	+/- 10%
CHLOROFORM	100.000 PPB	110.000 PPB	+/- 10%
CIS 1,2 DICHLOROETHYLENE	100.000 PPB	110.000 PPB	+/- 10%
CIS 1,3 DICHLOROPROPENE	100.000 PPB	100.000 PPB	+/- 10%
ETHYL BENZENE	100.000 PPB	110.000 PPB	+/- 10%
ETHYL CHLORIDE chloroethane	100.000 PPB	110.000 PPB	+/- 10%
HEXACHLORO 1,3 BUTADIENE	100.000 PPB	99.000 PPB	+/- 10%
M XYLENE	100.000 PPB	110.000 PPB	+/- 10%
METHYL CHLORIDE chloromethane	100.000 PPB	120.000 PPB	+/- 10%
METHYLENE CHLORIDE	100.000 PPB	110.000 PPB	+/- 10%
O XYLENE	100.000 PPB	100.000 PPB	+/- 10%
P XYLENE	100.000 PPB	110.000 PPB	+/- 10%
PERCHLOROETHYLENE	100.000 PPB	110.000 PPB	+/- 10%
R11 TRICHLOROFLUOROMETHANE	100.000 PPB	110.000 PPB	+/- 10%
R113 TRICHLOROTRIFLUOROETHANE	100.000 PPB	110.000 PPB	+/- 10%
R114 DICHLOROTETRAFLUOROETHANE	100.000 PPB	110.000 PPB	+/- 10%
R12 DICHLORODIFLUOROMETHANE	100.000 PPB	110.000 PPB	+/- 10%

Approved for Release

Airgas
an Air Liquide company

2014018

Airgas Specialty Gases
Airgas USA, LLC
6141 Easton Road
Bldg 1
Plumsteadville, PA 18949
Airgas.com

STYRENE	100.000 PPB	100.000 PPB	+/- 10%
TOLUENE	100.000 PPB	100.000 PPB	+/- 10%
TRANS 1,3 DICHLOROPROPENE	100.000 PPB	100.000 PPB	+/- 10%
TRICHLOROETHYLENE	100.000 PPB	110.000 PPB	+/- 10%
VINYL CHLORIDE	100.000 PPB	100.000 PPB	+/- 10%
NITROGEN	Balance		

Permanent Notes: SIGMA-ALDRICH P/N 41900-U

Notes: Cylinder number: ST0000248893

PO number: P487467
Date of manufacture: 02-March-2020

Approved for Release

Analytical Standard Record
EPA Region 9 Laboratory
2014026

Description:	TO-15 CAL1 1.0 ppbv (VIRTUAL)	**Expires:**	04/30/20
Standard Type:	Other Solution	**Prepared:**	04/01/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	200	**Department:**	Air
Vials:	1	**Last Edit:**	04/01/20 10:27 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	0.00108
1,4-Dioxane	123-91-1	0.00104
2,2,4-Trimethylpentane	540-84-1	0.00103
2-Butanone (MEK)	78-93-3	0.00105
2-Hexanone	591-78-6	0.00103
2-Propanol	67-63-0	0.0011
Bromoform	75-25-2	0.0011
4-Methyl-2-pentanone (MIBK)	108-10-1	0.00105
1,3-Dichlorobenzene	541-73-1	0.001
Allyl chloride	107-05-1	0.0011
Benzene	71-43-2	0.00102
Benzyl chloride	100-44-7	0.0011
Bromochloromethane	74-97-5	0.0196
Bromodichloromethane	75-27-4	0.00104
1,1,1-Trichloroethane	71-55-6	0.00104
4-Ethyltoluene	622-96-8	0.00102
1,2-Dichlorobenzene	95-50-1	0.00098
1,1,2,2-Tetrachloroethane	79-34-5	0.00099
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.001
1,1,2-Trichloroethane	79-00-5	0.00102
1,1-Dichloroethane	75-34-3	0.00096
1,1-Dichloroethene	75-35-4	0.00104
1,2,4-Trichlorobenzene	120-82-1	0.0009
1,4-Difluorobenzene	540-36-3	0.0196
1,2-Dibromoethane (EDB)	106-93-4	0.00104
1,4-Dichlorobenzene	106-46-7	0.001
1,2-Dichloroethane	107-06-2	0.00099
1,2-Dichloropropane	78-87-5	0.00101
1,2-Dichlorotetrafluoroethane	76-14-2	0.00097
1,3,5-Trimethylbenzene	108-67-8	0.00102

Analytical Standard Record

EPA Region 9 Laboratory

2014026

1,3-Butadiene	106-99-0	0.00103
Bromomethane	74-83-9	0.00102
1,2,4-Trimethylbenzene	95-63-6	0.00102
Tetrahydrofuran	109-99-9	0.00101
Hexane	110-54-3	0.00102
m&p-Xylene	179601-23-1	0.00204
o-Xylene	95-47-6	0.001
Propene	115-07-1	0.0011
Styrene	100-42-5	0.00098
Bromoethene	593-60-2	0.00109
Tetrachloroethene	127-18-4	0.00102
Ethylbenzene	100-41-4	0.00103
Toluene	108-88-3	0.00102
trans-1,2-Dichloroethene	156-60-5	0.00109
trans-1,3-Dichloropropene	10061-02-6	0.00096
Trichloroethene	79-01-6	0.00108
Trichlorofluoromethane	75-69-4	0.00094
Vinyl acetate	108-05-4	0.0011
tert-Butyl methyl ether (MTBE)	1634-04-4	0.00107
cis-1,2-Dichloroethene	156-59-2	0.00101
Carbon disulfide	75-15-0	0.0011
Carbon tetrachloride	56-23-5	0.00101
Chlorobenzene	108-90-7	0.00103
Chlorobenzene-d5	3114-55-4	0.0196
Chlorodibromomethane	124-48-1	0.00109
Chloroethane	75-00-3	0.00102
Hexachlorobutadiene	87-68-3	0.00092
Chloromethane	74-87-3	0.00108
Heptane	142-82-5	0.00103
cis-1,3-Dichloropropene	10061-01-5	0.001
Cyclohexane	110-82-7	0.00103
Dichlorodifluoromethane	75-71-8	0.00102
Dichloromethane	75-09-2	0.001
Ethyl acetate	141-78-6	0.00103
Vinyl chloride	75-01-4	0.00104
Chloroform	67-66-3	0.00104

Analytical Standard Record

EPA Region 9 Laboratory

2014026

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2006146	TO-14A Internal Standard Mix, Stc	01/29/20	** Vendor **	01/29/22	02/06/20 15:46 by LLH	40
2014015	TO-15 LOW Std, 10 ppbv	03/31/20	Liza Hernandez	04/30/20	03/31/20 12:26 by LLH	20

Analytical Standard Record

EPA Region 9 Laboratory

2014027

Description:	TO-15 CAL2 2.0 ppbv (VIRTUAL)	**Expires:**	04/30/20
Standard Type:	Other Solution	**Prepared:**	04/01/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	200	**Department:**	Air
Vials:	1	**Last Edit:**	04/01/20 10:28 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	0.00216
1,4-Dioxane	123-91-1	0.00208
2,2,4-Trimethylpentane	540-84-1	0.00206
2-Butanone (MEK)	78-93-3	0.0021
2-Hexanone	591-78-6	0.00206
2-Propanol	67-63-0	0.0022
Bromoform	75-25-2	0.0022
4-Methyl-2-pentanone (MIBK)	108-10-1	0.0021
1,3-Dichlorobenzene	541-73-1	0.002
Allyl chloride	107-05-1	0.0022
Benzene	71-43-2	0.00204
Benzyl chloride	100-44-7	0.0022
Bromochloromethane	74-97-5	0.0196
Bromodichloromethane	75-27-4	0.00208
1,1,1-Trichloroethane	71-55-6	0.00208
4-Ethyltoluene	622-96-8	0.00204
1,2-Dichlorobenzene	95-50-1	0.00196
1,1,2,2-Tetrachloroethane	79-34-5	0.00198
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.002
1,1,2-Trichloroethane	79-00-5	0.00204
1,1-Dichloroethane	75-34-3	0.00192
1,1-Dichloroethene	75-35-4	0.00208
1,2,4-Trichlorobenzene	120-82-1	0.0018
1,4-Difluorobenzene	540-36-3	0.0196
1,2-Dibromoethane (EDB)	106-93-4	0.00208
1,4-Dichlorobenzene	106-46-7	0.002
1,2-Dichloroethane	107-06-2	0.00198
1,2-Dichloropropane	78-87-5	0.00202
1,2-Dichlorotetrafluoroethane	76-14-2	0.00194
1,3,5-Trimethylbenzene	108-67-8	0.00204

Analytical Standard Record

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2014027

1,3-Butadiene	106-99-0	0.00206
Bromomethane	74-83-9	0.00204
1,2,4-Trimethylbenzene	95-63-6	0.00204
Tetrahydrofuran	109-99-9	0.00202
Hexane	110-54-3	0.00204
m&p-Xylene	179601-23-1	0.00408
o-Xylene	95-47-6	0.002
Propene	115-07-1	0.0022
Styrene	100-42-5	0.00196
Bromoethene	593-60-2	0.00218
Tetrachloroethene	127-18-4	0.00204
Ethylbenzene	100-41-4	0.00206
Toluene	108-88-3	0.00204
trans-1,2-Dichloroethene	156-60-5	0.00218
trans-1,3-Dichloropropene	10061-02-6	0.00192
Trichloroethene	79-01-6	0.00216
Trichlorofluoromethane	75-69-4	0.00188
Vinyl acetate	108-05-4	0.0022
tert-Butyl methyl ether (MTBE)	1634-04-4	0.00214
cis-1,2-Dichloroethene	156-59-2	0.00202
Carbon disulfide	75-15-0	0.0022
Carbon tetrachloride	56-23-5	0.00202
Chlorobenzene	108-90-7	0.00206
Chlorobenzene-d5	3114-55-4	0.0196
Chlorodibromomethane	124-48-1	0.00218
Chloroethane	75-00-3	0.00204
Hexachlorobutadiene	87-68-3	0.00184
Chloromethane	74-87-3	0.00216
Heptane	142-82-5	0.00206
cis-1,3-Dichloropropene	10061-01-5	0.002
Cyclohexane	110-82-7	0.00206
Dichlorodifluoromethane	75-71-8	0.00204
Dichloromethane	75-09-2	0.002
Ethyl acetate	141-78-6	0.00206
Vinyl chloride	75-01-4	0.00208
Chloroform	67-66-3	0.00208

Analytical Standard Record

EPA Region 9 Laboratory

2014027

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2006146	TO-14A Internal Standard Mix, Stc	01/29/20	** Vendor **	01/29/22	02/06/20 15:46 by LLH	40
2014016	TO-15 CAL Std, 20 ppbv	03/31/20	Liza Hernandez	04/30/20	03/31/20 12:27 by LLH	20

Analytical Standard Record

EPA Region 9 Laboratory

2014028

Description:	TO-15 CAL3 5.0 ppbv (VIRTUAL)	**Expires:**	04/30/20
Standard Type:	Other Solution	**Prepared:**	04/01/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	200	**Department:**	Air
Vials:	1	**Last Edit:**	04/01/20 10:28 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	0.0054
1,4-Dioxane	123-91-1	0.0052
2,2,4-Trimethylpentane	540-84-1	0.00515
2-Butanone (MEK)	78-93-3	0.00525
2-Hexanone	591-78-6	0.00515
2-Propanol	67-63-0	0.0055
Bromoform	75-25-2	0.0055
4-Methyl-2-pentanone (MIBK)	108-10-1	0.00525
1,3-Dichlorobenzene	541-73-1	0.005
Allyl chloride	107-05-1	0.0055
Benzene	71-43-2	0.0051
Benzyl chloride	100-44-7	0.0055
Bromochloromethane	74-97-5	0.0196
Bromodichloromethane	75-27-4	0.0052
1,1,1-Trichloroethane	71-55-6	0.0052
4-Ethyltoluene	622-96-8	0.0051
1,2-Dichlorobenzene	95-50-1	0.0049
1,1,2,2-Tetrachloroethane	79-34-5	0.00495
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.005
1,1,2-Trichloroethane	79-00-5	0.0051
1,1-Dichloroethane	75-34-3	0.0048
1,1-Dichloroethene	75-35-4	0.0052
1,2,4-Trichlorobenzene	120-82-1	0.0045
1,4-Difluorobenzene	540-36-3	0.0196
1,2-Dibromoethane (EDB)	106-93-4	0.0052
1,4-Dichlorobenzene	106-46-7	0.005
1,2-Dichloroethane	107-06-2	0.00495
1,2-Dichloropropane	78-87-5	0.00505
1,2-Dichlorotetrafluoroethane	76-14-2	0.00485
1,3,5-Trimethylbenzene	108-67-8	0.0051

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1,3-Butadiene	106-99-0	0.00515
Bromomethane	74-83-9	0.0051
1,2,4-Trimethylbenzene	95-63-6	0.0051
Tetrahydrofuran	109-99-9	0.00505
Hexane	110-54-3	0.0051
m&p-Xylene	179601-23-1	0.0102
o-Xylene	95-47-6	0.005
Propene	115-07-1	0.0055
Styrene	100-42-5	0.0049
Bromoethene	593-60-2	0.00545
Tetrachloroethene	127-18-4	0.0051
Ethylbenzene	100-41-4	0.00515
Toluene	108-88-3	0.0051
trans-1,2-Dichloroethene	156-60-5	0.00545
trans-1,3-Dichloropropene	10061-02-6	0.0048
Trichloroethene	79-01-6	0.0054
Trichlorofluoromethane	75-69-4	0.0047
Vinyl acetate	108-05-4	0.0055
tert-Butyl methyl ether (MTBE)	1634-04-4	0.00535
cis-1,2-Dichloroethene	156-59-2	0.00505
Carbon disulfide	75-15-0	0.0055
Carbon tetrachloride	56-23-5	0.00505
Chlorobenzene	108-90-7	0.00515
Chlorobenzene-d5	3114-55-4	0.0196
Chlorodibromomethane	124-48-1	0.00545
Chloroethane	75-00-3	0.0051
Hexachlorobutadiene	87-68-3	0.0046
Chloromethane	74-87-3	0.0054
Heptane	142-82-5	0.00515
cis-1,3-Dichloropropene	10061-01-5	0.005
Cyclohexane	110-82-7	0.00515
Dichlorodifluoromethane	75-71-8	0.0051
Dichloromethane	75-09-2	0.005
Ethyl acetate	141-78-6	0.00515
Vinyl chloride	75-01-4	0.0052
Chloroform	67-66-3	0.0052

Analytical Standard Record

EPA Region 9 Laboratory

2014028

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2006146	TO-14A Internal Standard Mix, Stc	01/29/20	** Vendor **	01/29/22	02/06/20 15:46 by LLH	40
2014016	TO-15 CAL Std, 20 ppbv	03/31/20	Liza Hernandez	04/30/20	03/31/20 12:27 by LLH	50

Analytical Standard Record

EPA Region 9 Laboratory

2014029

Description:	TO-15 CAL4 10 ppbv (VIRTUAL) -	**Expires:**	04/30/20
Standard Type:	Other Solution	**Prepared:**	04/01/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	200	**Department:**	Air
Vials:	1	**Last Edit:**	04/01/20 10:29 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	0.0108
1,4-Dioxane	123-91-1	0.0104
2,2,4-Trimethylpentane	540-84-1	0.0103
2-Butanone (MEK)	78-93-3	0.0105
2-Hexanone	591-78-6	0.0103
2-Propanol	67-63-0	0.011
Bromoform	75-25-2	0.011
4-Methyl-2-pentanone (MIBK)	108-10-1	0.0105
1,3-Dichlorobenzene	541-73-1	0.01
Allyl chloride	107-05-1	0.011
Benzene	71-43-2	0.0102
Benzyl chloride	100-44-7	0.011
Bromochloromethane	74-97-5	0.0196
Bromodichloromethane	75-27-4	0.0104
1,1,1-Trichloroethane	71-55-6	0.0104
4-Ethyltoluene	622-96-8	0.0102
1,2-Dichlorobenzene	95-50-1	0.0098
1,1,2,2-Tetrachloroethane	79-34-5	0.0099
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.01
1,1,2-Trichloroethane	79-00-5	0.0102
1,1-Dichloroethane	75-34-3	0.0096
1,1-Dichloroethene	75-35-4	0.0104
1,2,4-Trichlorobenzene	120-82-1	0.009
1,4-Difluorobenzene	540-36-3	0.0196
1,2-Dibromoethane (EDB)	106-93-4	0.0104
1,4-Dichlorobenzene	106-46-7	0.01
1,2-Dichloroethane	107-06-2	0.0099
1,2-Dichloropropane	78-87-5	0.0101
1,2-Dichlorotetrafluoroethane	76-14-2	0.0097
1,3,5-Trimethylbenzene	108-67-8	0.0102

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1,3-Butadiene	106-99-0	0.0103
Bromomethane	74-83-9	0.0102
1,2,4-Trimethylbenzene	95-63-6	0.0102
Tetrahydrofuran	109-99-9	0.0101
Hexane	110-54-3	0.0102
m&p-Xylene	179601-23-1	0.0204
o-Xylene	95-47-6	0.01
Propene	115-07-1	0.011
Styrene	100-42-5	0.0098
Bromoethene	593-60-2	0.0109
Tetrachloroethene	127-18-4	0.0102
Ethylbenzene	100-41-4	0.0103
Toluene	108-88-3	0.0102
trans-1,2-Dichloroethene	156-60-5	0.0109
trans-1,3-Dichloropropene	10061-02-6	0.0096
Trichloroethene	79-01-6	0.0108
Trichlorofluoromethane	75-69-4	0.0094
Vinyl acetate	108-05-4	0.011
tert-Butyl methyl ether (MTBE)	1634-04-4	0.0107
cis-1,2-Dichloroethene	156-59-2	0.0101
Carbon disulfide	75-15-0	0.011
Carbon tetrachloride	56-23-5	0.0101
Chlorobenzene	108-90-7	0.0103
Chlorobenzene-d5	3114-55-4	0.0196
Chlorodibromomethane	124-48-1	0.0109
Chloroethane	75-00-3	0.0102
Hexachlorobutadiene	87-68-3	0.0092
Chloromethane	74-87-3	0.0108
Heptane	142-82-5	0.0103
cis-1,3-Dichloropropene	10061-01-5	0.01
Cyclohexane	110-82-7	0.0103
Dichlorodifluoromethane	75-71-8	0.0102
Dichloromethane	75-09-2	0.01
Ethyl acetate	141-78-6	0.0103
Vinyl chloride	75-01-4	0.0104
Chloroform	67-66-3	0.0104

Analytical Standard Record

EPA Region 9 Laboratory

2014029

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2006146	TO-14A Internal Standard Mix, Stc	01/29/20	** Vendor **	01/29/22	02/06/20 15:46 by LLH	40
2014016	TO-15 CAL Std, 20 ppbv	03/31/20	Liza Hernandez	04/30/20	03/31/20 12:27 by LLH	100

Analytical Standard Record

EPA Region 9 Laboratory

2014030

Description:	TO-15 CAL5 15 ppbv (VIRTUAL)	**Expires:**	04/30/20
Standard Type:	Other Solution	**Prepared:**	04/01/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	200	**Department:**	Air
Vials:	1	**Last Edit:**	04/01/20 10:29 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	0.0162
1,4-Dioxane	123-91-1	0.0156
2,2,4-Trimethylpentane	540-84-1	0.0154
2-Butanone (MEK)	78-93-3	0.0158
2-Hexanone	591-78-6	0.0154
2-Propanol	67-63-0	0.0165
Bromoform	75-25-2	0.0165
4-Methyl-2-pentanone (MIBK)	108-10-1	0.0158
1,3-Dichlorobenzene	541-73-1	0.015
Allyl chloride	107-05-1	0.0165
Benzene	71-43-2	0.0153
Benzyl chloride	100-44-7	0.0165
Bromochloromethane	74-97-5	0.0196
Bromodichloromethane	75-27-4	0.0156
1,1,1-Trichloroethane	71-55-6	0.0156
4-Ethyltoluene	622-96-8	0.0153
1,2-Dichlorobenzene	95-50-1	0.0147
1,1,2,2-Tetrachloroethane	79-34-5	0.0148
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.015
1,1,2-Trichloroethane	79-00-5	0.0153
1,1-Dichloroethane	75-34-3	0.0144
1,1-Dichloroethene	75-35-4	0.0156
1,2,4-Trichlorobenzene	120-82-1	0.0135
1,4-Difluorobenzene	540-36-3	0.0196
1,2-Dibromoethane (EDB)	106-93-4	0.0156
1,4-Dichlorobenzene	106-46-7	0.015
1,2-Dichloroethane	107-06-2	0.0148
1,2-Dichloropropane	78-87-5	0.0152
1,2-Dichlorotetrafluoroethane	76-14-2	0.0146
1,3,5-Trimethylbenzene	108-67-8	0.0153

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1,3-Butadiene	106-99-0	0.0154
Bromomethane	74-83-9	0.0153
1,2,4-Trimethylbenzene	95-63-6	0.0153
Tetrahydrofuran	109-99-9	0.0152
Hexane	110-54-3	0.0153
m&p-Xylene	179601-23-1	0.0306
o-Xylene	95-47-6	0.015
Propene	115-07-1	0.0165
Styrene	100-42-5	0.0147
Bromoethene	593-60-2	0.0164
Tetrachloroethene	127-18-4	0.0153
Ethylbenzene	100-41-4	0.0154
Toluene	108-88-3	0.0153
trans-1,2-Dichloroethene	156-60-5	0.0164
trans-1,3-Dichloropropene	10061-02-6	0.0144
Trichloroethene	79-01-6	0.0162
Trichlorofluoromethane	75-69-4	0.0141
Vinyl acetate	108-05-4	0.0165
tert-Butyl methyl ether (MTBE)	1634-04-4	0.016
cis-1,2-Dichloroethene	156-59-2	0.0152
Carbon disulfide	75-15-0	0.0165
Carbon tetrachloride	56-23-5	0.0152
Chlorobenzene	108-90-7	0.0154
Chlorobenzene-d5	3114-55-4	0.0196
Chlorodibromomethane	124-48-1	0.0164
Chloroethane	75-00-3	0.0153
Hexachlorobutadiene	87-68-3	0.0138
Chloromethane	74-87-3	0.0162
Heptane	142-82-5	0.0154
cis-1,3-Dichloropropene	10061-01-5	0.015
Cyclohexane	110-82-7	0.0154
Dichlorodifluoromethane	75-71-8	0.0153
Dichloromethane	75-09-2	0.015
Ethyl acetate	141-78-6	0.0154
Vinyl chloride	75-01-4	0.0156
Chloroform	67-66-3	0.0156

Analytical Standard Record

EPA Region 9 Laboratory

2014030

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2006146	TO-14A Internal Standard Mix, Stc	01/29/20	** Vendor **	01/29/22	02/06/20 15:46 by LLH	40
2014016	TO-15 CAL Std, 20 ppbv	03/31/20	Liza Hernandez	04/30/20	03/31/20 12:27 by LLH	150

Analytical Standard Record

EPA Region 9 Laboratory

2014031

Description:	TO-15 CAL6 20 ppbv (VIRTUAL)	**Expires:**	04/30/20
Standard Type:	Other Solution	**Prepared:**	04/01/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	200	**Department:**	Air
Vials:	1	**Last Edit:**	04/01/20 10:30 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	0.0216
1,4-Dioxane	123-91-1	0.0208
2,2,4-Trimethylpentane	540-84-1	0.0206
2-Butanone (MEK)	78-93-3	0.021
2-Hexanone	591-78-6	0.0206
2-Propanol	67-63-0	0.022
Bromoform	75-25-2	0.022
4-Methyl-2-pentanone (MIBK)	108-10-1	0.021
1,3-Dichlorobenzene	541-73-1	0.02
Allyl chloride	107-05-1	0.022
Benzene	71-43-2	0.0204
Benzyl chloride	100-44-7	0.022
Bromochloromethane	74-97-5	0.0196
Bromodichloromethane	75-27-4	0.0208
1,1,1-Trichloroethane	71-55-6	0.0208
4-Ethyltoluene	622-96-8	0.0204
1,2-Dichlorobenzene	95-50-1	0.0196
1,1,2,2-Tetrachloroethane	79-34-5	0.0198
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.02
1,1,2-Trichloroethane	79-00-5	0.0204
1,1-Dichloroethane	75-34-3	0.0192
1,1-Dichloroethene	75-35-4	0.0208
1,2,4-Trichlorobenzene	120-82-1	0.018
1,4-Difluorobenzene	540-36-3	0.0196
1,2-Dibromoethane (EDB)	106-93-4	0.0208
1,4-Dichlorobenzene	106-46-7	0.02
1,2-Dichloroethane	107-06-2	0.0198
1,2-Dichloropropane	78-87-5	0.0202
1,2-Dichlorotetrafluoroethane	76-14-2	0.0194
1,3,5-Trimethylbenzene	108-67-8	0.0204

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1,3-Butadiene	106-99-0	0.0206
Bromomethane	74-83-9	0.0204
1,2,4-Trimethylbenzene	95-63-6	0.0204
Tetrahydrofuran	109-99-9	0.0202
Hexane	110-54-3	0.0204
m&p-Xylene	179601-23-1	0.0408
o-Xylene	95-47-6	0.02
Propene	115-07-1	0.022
Styrene	100-42-5	0.0196
Bromoethene	593-60-2	0.0218
Tetrachloroethene	127-18-4	0.0204
Ethylbenzene	100-41-4	0.0206
Toluene	108-88-3	0.0204
trans-1,2-Dichloroethene	156-60-5	0.0218
trans-1,3-Dichloropropene	10061-02-6	0.0192
Trichloroethene	79-01-6	0.0216
Trichlorofluoromethane	75-69-4	0.0188
Vinyl acetate	108-05-4	0.022
tert-Butyl methyl ether (MTBE)	1634-04-4	0.0214
cis-1,2-Dichloroethene	156-59-2	0.0202
Carbon disulfide	75-15-0	0.022
Carbon tetrachloride	56-23-5	0.0202
Chlorobenzene	108-90-7	0.0206
Chlorobenzene-d5	3114-55-4	0.0196
Chlorodibromomethane	124-48-1	0.0218
Chloroethane	75-00-3	0.0204
Hexachlorobutadiene	87-68-3	0.0184
Chloromethane	74-87-3	0.0216
Heptane	142-82-5	0.0206
cis-1,3-Dichloropropene	10061-01-5	0.02
Cyclohexane	110-82-7	0.0206
Dichlorodifluoromethane	75-71-8	0.0204
Dichloromethane	75-09-2	0.02
Ethyl acetate	141-78-6	0.0206
Vinyl chloride	75-01-4	0.0208
Chloroform	67-66-3	0.0208

Analytical Standard Record

EPA Region 9 Laboratory

2014031

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2006146	TO-14A Internal Standard Mix, Stc	01/29/20	** Vendor **	01/29/22	02/06/20 15:46 by LLH	40
2014016	TO-15 CAL Std, 20 ppbv	03/31/20	Liza Hernandez	04/30/20	03/31/20 12:27 by LLH	200

Analytical Standard Record

EPA Region 9 Laboratory

2014033

Description:	TO-15 SCV 10 ppbv (VIRTUAL)	**Expires:**	04/30/20
Standard Type:	Other Solution	**Prepared:**	04/01/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	200	**Department:**	Air
Vials:	1	**Last Edit:**	04/01/20 10:31 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	0.01
1,4-Dioxane	123-91-1	0.011
2,2,4-Trimethylpentane	540-84-1	0.011
2-Butanone (MEK)	78-93-3	0.011
2-Hexanone	591-78-6	0.011
2-Propanol	67-63-0	0.0085
Bromoform	75-25-2	0.012
4-Methyl-2-pentanone (MIBK)	108-10-1	0.011
1,3-Dichlorobenzene	541-73-1	0.01
Allyl chloride	107-05-1	0.012
Benzene	71-43-2	0.01
Benzyl chloride	100-44-7	0.011
Bromochloromethane	74-97-5	0.0196
Bromodichloromethane	75-27-4	0.011
1,1,1-Trichloroethane	71-55-6	0.011
4-Ethyltoluene	622-96-8	0.011
1,2-Dichlorobenzene	95-50-1	0.0096
1,1,2,2-Tetrachloroethane	79-34-5	0.0099
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.011
1,1,2-Trichloroethane	79-00-5	0.01
1,1-Dichloroethane	75-34-3	0.011
1,1-Dichloroethene	75-35-4	0.011
1,2,4-Trichlorobenzene	120-82-1	0.0093
1,4-Difluorobenzene	540-36-3	0.0196
1,2-Dibromoethane (EDB)	106-93-4	0.01
1,4-Dichlorobenzene	106-46-7	0.0099
1,2-Dichloroethane	107-06-2	0.011
1,2-Dichloropropane	78-87-5	0.01
1,2-Dichlorotetrafluoroethane	76-14-2	0.011
1,3,5-Trimethylbenzene	108-67-8	0.01

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2014033

1,3-Butadiene	106-99-0	0.01
Bromomethane	74-83-9	0.011
1,2,4-Trimethylbenzene	95-63-6	0.01
Tetrahydrofuran	109-99-9	0.0095
Hexane	110-54-3	0.011
m&p-Xylene	179601-23-1	0.022
o-Xylene	95-47-6	0.01
Propene	115-07-1	0.01
Styrene	100-42-5	0.01
Bromoethene	593-60-2	0.011
Tetrachloroethene	127-18-4	0.011
Ethylbenzene	100-41-4	0.011
Toluene	108-88-3	0.01
trans-1,2-Dichloroethene	156-60-5	0.01
trans-1,3-Dichloropropene	10061-02-6	0.01
Trichloroethene	79-01-6	0.011
Trichlorofluoromethane	75-69-4	0.011
Vinyl acetate	108-05-4	0.011
tert-Butyl methyl ether (MTBE)	1634-04-4	0.011
cis-1,2-Dichloroethene	156-59-2	0.011
Carbon disulfide	75-15-0	0.012
Carbon tetrachloride	56-23-5	0.011
Chlorobenzene	108-90-7	0.011
Chlorobenzene-d5	3114-55-4	0.0196
Chlorodibromomethane	124-48-1	0.011
Chloroethane	75-00-3	0.011
Hexachlorobutadiene	87-68-3	0.0099
Chloromethane	74-87-3	0.012
Heptane	142-82-5	0.011
cis-1,3-Dichloropropene	10061-01-5	0.01
Cyclohexane	110-82-7	0.011
Dichlorodifluoromethane	75-71-8	0.011
Dichloromethane	75-09-2	0.011
Ethyl acetate	141-78-6	0.011
Vinyl chloride	75-01-4	0.01
Chloroform	67-66-3	0.011

Analytical Standard Record

EPA Region 9 Laboratory

2014033

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2006146	TO-14A Internal Standard Mix, Stc	01/29/20	** Vendor **	01/29/22	02/06/20 15:46 by LLH	40
2014017	TO-15 SCV 10 ppbv (VIRTUAL)	03/31/20	Liza Hernandez	04/30/20	04/01/20 10:13 by LLH	200

Analytical Standard Record

EPA Region 9 Laboratory

2018022

Description:	TO-15 LOW Std, 10 ppbv	**Expires:**	05/29/20
Standard Type:	Other Solution	**Prepared:**	04/30/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	2500	**Department:**	Air
Vials:	2	**Last Edit:**	04/30/20 09:45 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
1,3-Butadiene	106-99-0	0.0103
Bromoethene	593-60-2	0.0109
Bromodichloromethane	75-27-4	0.0104
Benzyl chloride	100-44-7	0.011
Benzene	71-43-2	0.0102
Allyl chloride	107-05-1	0.011
Acetone	67-64-1	0.0108
4-Methyl-2-pentanone (MIBK)	108-10-1	0.0105
4-Ethyltoluene	622-96-8	0.0102
2-Propanol	67-63-0	0.011
2-Hexanone	591-78-6	0.0103
2-Butanone (MEK)	78-93-3	0.0105
2,2,4-Trimethylpentane	540-84-1	0.0103
1,4-Dioxane	123-91-1	0.0104
1,1,1-Trichloroethane	71-55-6	0.0104
1,2-Dibromoethane (EDB)	106-93-4	0.0104
1,1,2,2-Tetrachloroethane	79-34-5	0.0099
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.01
1,1,2-Trichloroethane	79-00-5	0.0102
1,1-Dichloroethane	75-34-3	0.0096
1,1-Dichloroethene	75-35-4	0.0104
1,4-Dichlorobenzene	106-46-7	0.01
1,2,4-Trimethylbenzene	95-63-6	0.0102
1,3-Dichlorobenzene	541-73-1	0.01
1,2-Dichlorobenzene	95-50-1	0.0098
1,2-Dichloroethane	107-06-2	0.0099
1,2-Dichloropropane	78-87-5	0.0101
1,2-Dichlorotetrafluoroethane	76-14-2	0.0097
1,3,5-Trimethylbenzene	108-67-8	0.0102
Carbon disulfide	75-15-0	0.011

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2018022

1,2,4-Trichlorobenzene	120-82-1	0.009
Tetrahydrofuran	109-99-9	0.0101
Bromoform	75-25-2	0.011
m&p-Xylene	179601-23-1	0.0204
o-Xylene	95-47-6	0.01
Propene	115-07-1	0.011
Styrene	100-42-5	0.0098
Hexachlorobutadiene	87-68-3	0.0092
Tetrachloroethene	127-18-4	0.0102
Heptane	142-82-5	0.0103
Toluene	108-88-3	0.0102
trans-1,2-Dichloroethene	156-60-5	0.0109
trans-1,3-Dichloropropene	10061-02-6	0.0096
Trichloroethene	79-01-6	0.0108
Trichlorofluoromethane	75-69-4	0.0094
Vinyl acetate	108-05-4	0.011
tert-Butyl methyl ether (MTBE)	1634-04-4	0.0107
cis-1,2-Dichloroethene	156-59-2	0.0101
Vinyl chloride	75-01-4	0.0104
Carbon tetrachloride	56-23-5	0.0101
Chlorobenzene	108-90-7	0.0103
Chlorodibromomethane	124-48-1	0.0109
Chloroethane	75-00-3	0.0102
Hexane	110-54-3	0.0102
Chloromethane	74-87-3	0.0108
Bromomethane	74-83-9	0.0102
cis-1,3-Dichloropropene	10061-01-5	0.01
Cyclohexane	110-82-7	0.0103
Dichlorodifluoromethane	75-71-8	0.0102
Dichloromethane	75-09-2	0.01
Ethyl acetate	141-78-6	0.0103
Ethylbenzene	100-41-4	0.0103
Chloroform	67-66-3	0.0104

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1841026	TO-14A 39 Component Mix Stand	09/17/18	** Vendor **	09/17/20	09/18/19 13:14 by EM	25
1835117	TO-15 25 Compound Subset Stand	08/16/18	** Vendor **	08/16/20	11/14/19 15:08 by EM	25

Analytical Standard Record

EPA Region 9 Laboratory

2018023

Description:	TO-15 CAL Std, 20 ppbv	**Expires:**	05/29/20
Standard Type:	Other Solution	**Prepared:**	04/30/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	2500	**Department:**	Air
Vials:	2	**Last Edit:**	04/30/20 09:46 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
1,3-Butadiene	106-99-0	0.0206
Bromoethene	593-60-2	0.0218
Bromodichloromethane	75-27-4	0.0208
Benzyl chloride	100-44-7	0.022
Benzene	71-43-2	0.0204
Allyl chloride	107-05-1	0.022
Acetone	67-64-1	0.0216
4-Methyl-2-pentanone (MIBK)	108-10-1	0.021
4-Ethyltoluene	622-96-8	0.0204
2-Propanol	67-63-0	0.022
2-Hexanone	591-78-6	0.0206
2-Butanone (MEK)	78-93-3	0.021
2,2,4-Trimethylpentane	540-84-1	0.0206
1,4-Dioxane	123-91-1	0.0208
1,1,1-Trichloroethane	71-55-6	0.0208
1,2-Dibromoethane (EDB)	106-93-4	0.0208
1,1,2,2-Tetrachloroethane	79-34-5	0.0198
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.02
1,1,2-Trichloroethane	79-00-5	0.0204
1,1-Dichloroethane	75-34-3	0.0192
1,1-Dichloroethene	75-35-4	0.0208
1,4-Dichlorobenzene	106-46-7	0.02
1,2,4-Trimethylbenzene	95-63-6	0.0204
1,3-Dichlorobenzene	541-73-1	0.02
1,2-Dichlorobenzene	95-50-1	0.0196
1,2-Dichloroethane	107-06-2	0.0198
1,2-Dichloropropane	78-87-5	0.0202
1,2-Dichlorotetrafluoroethane	76-14-2	0.0194
1,3,5-Trimethylbenzene	108-67-8	0.0204
Carbon disulfide	75-15-0	0.022

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1,2,4-Trichlorobenzene	120-82-1	0.018
Tetrahydrofuran	109-99-9	0.0202
Bromoform	75-25-2	0.022
m&p-Xylene	179601-23-1	0.0408
o-Xylene	95-47-6	0.02
Propene	115-07-1	0.022
Styrene	100-42-5	0.0196
Hexachlorobutadiene	87-68-3	0.0184
Tetrachloroethene	127-18-4	0.0204
Heptane	142-82-5	0.0206
Toluene	108-88-3	0.0204
trans-1,2-Dichloroethene	156-60-5	0.0218
trans-1,3-Dichloropropene	10061-02-6	0.0192
Trichloroethene	79-01-6	0.0216
Trichlorofluoromethane	75-69-4	0.0188
Vinyl acetate	108-05-4	0.022
tert-Butyl methyl ether (MTBE)	1634-04-4	0.0214
cis-1,2-Dichloroethene	156-59-2	0.0202
Vinyl chloride	75-01-4	0.0208
Carbon tetrachloride	56-23-5	0.0202
Chlorobenzene	108-90-7	0.0206
Chlorodibromomethane	124-48-1	0.0218
Chloroethane	75-00-3	0.0204
Hexane	110-54-3	0.0204
Chloromethane	74-87-3	0.0216
Bromomethane	74-83-9	0.0204
cis-1,3-Dichloropropene	10061-01-5	0.02
Cyclohexane	110-82-7	0.0206
Dichlorodifluoromethane	75-71-8	0.0204
Dichloromethane	75-09-2	0.02
Ethyl acetate	141-78-6	0.0206
Ethylbenzene	100-41-4	0.0206
Chloroform	67-66-3	0.0208

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
1841026	TO-14A 39 Component Mix Stand	09/17/18	** Vendor **	09/17/20	09/18/19 13:14 by EM	50
1835117	TO-15 25 Compound Subset Stand	08/16/18	** Vendor **	08/16/20	11/14/19 15:08 by EM	50

Analytical Standard Record

EPA Region 9 Laboratory

2018024

Description:	TO-15 CAL1 1.0 ppbv (VIRTUAL)	**Expires:**	05/29/20
Standard Type:	Other Solution	**Prepared:**	04/30/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	200	**Department:**	Air
Vials:	1	**Last Edit:**	04/30/20 09:47 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	0.00108
1,4-Dioxane	123-91-1	0.00104
2,2,4-Trimethylpentane	540-84-1	0.00103
2-Butanone (MEK)	78-93-3	0.00105
2-Hexanone	591-78-6	0.00103
2-Propanol	67-63-0	0.0011
Bromoform	75-25-2	0.0011
4-Methyl-2-pentanone (MIBK)	108-10-1	0.00105
1,3-Dichlorobenzene	541-73-1	0.001
Allyl chloride	107-05-1	0.0011
Benzene	71-43-2	0.00102
Benzyl chloride	100-44-7	0.0011
Bromochloromethane	74-97-5	0.0196
Bromodichloromethane	75-27-4	0.00104
1,1,1-Trichloroethane	71-55-6	0.00104
4-Ethyltoluene	622-96-8	0.00102
1,2-Dichlorobenzene	95-50-1	0.00098
1,1,2,2-Tetrachloroethane	79-34-5	0.00099
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.001
1,1,2-Trichloroethane	79-00-5	0.00102
1,1-Dichloroethane	75-34-3	0.00096
1,1-Dichloroethene	75-35-4	0.00104
1,2,4-Trichlorobenzene	120-82-1	0.0009
1,4-Difluorobenzene	540-36-3	0.0196
1,2-Dibromoethane (EDB)	106-93-4	0.00104
1,4-Dichlorobenzene	106-46-7	0.001
1,2-Dichloroethane	107-06-2	0.00099
1,2-Dichloropropane	78-87-5	0.00101
1,2-Dichlorotetrafluoroethane	76-14-2	0.00097
1,3,5-Trimethylbenzene	108-67-8	0.00102

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1,3-Butadiene	106-99-0	0.00103
Bromomethane	74-83-9	0.00102
1,2,4-Trimethylbenzene	95-63-6	0.00102
Tetrahydrofuran	109-99-9	0.00101
Hexane	110-54-3	0.00102
m&p-Xylene	179601-23-1	0.00204
o-Xylene	95-47-6	0.001
Propene	115-07-1	0.0011
Styrene	100-42-5	0.00098
Bromoethene	593-60-2	0.00109
Tetrachloroethene	127-18-4	0.00102
Ethylbenzene	100-41-4	0.00103
Toluene	108-88-3	0.00102
trans-1,2-Dichloroethene	156-60-5	0.00109
trans-1,3-Dichloropropene	10061-02-6	0.00096
Trichloroethene	79-01-6	0.00108
Trichlorofluoromethane	75-69-4	0.00094
Vinyl acetate	108-05-4	0.0011
tert-Butyl methyl ether (MTBE)	1634-04-4	0.00107
cis-1,2-Dichloroethene	156-59-2	0.00101
Carbon disulfide	75-15-0	0.0011
Carbon tetrachloride	56-23-5	0.00101
Chlorobenzene	108-90-7	0.00103
Chlorobenzene-d5	3114-55-4	0.0196
Chlorodibromomethane	124-48-1	0.00109
Chloroethane	75-00-3	0.00102
Hexachlorobutadiene	87-68-3	0.00092
Chloromethane	74-87-3	0.00108
Heptane	142-82-5	0.00103
cis-1,3-Dichloropropene	10061-01-5	0.001
Cyclohexane	110-82-7	0.00103
Dichlorodifluoromethane	75-71-8	0.00102
Dichloromethane	75-09-2	0.001
Ethyl acetate	141-78-6	0.00103
Vinyl chloride	75-01-4	0.00104
Chloroform	67-66-3	0.00104

Analytical Standard Record

EPA Region 9 Laboratory

2018024

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2006146	TO-14A Internal Standard Mix, Sto	01/29/20	** Vendor **	01/29/22	02/06/20 15:46 by LLH	40
2018022	TO-15 LOW Std, 10 ppbv	04/30/20	Liza Hernandez	05/29/20	04/30/20 09:45 by LLH	20

Analytical Standard Record

EPA Region 9 Laboratory

2018025

Description:	TO-15 CAL4 10 ppbv (VIRTUAL) -	**Expires:**	05/29/20
Standard Type:	Other Solution	**Prepared:**	04/30/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	200	**Department:**	Air
Vials:	1	**Last Edit:**	04/30/20 09:48 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	0.0108
1,4-Dioxane	123-91-1	0.0104
2,2,4-Trimethylpentane	540-84-1	0.0103
2-Butanone (MEK)	78-93-3	0.0105
2-Hexanone	591-78-6	0.0103
2-Propanol	67-63-0	0.011
Bromoform	75-25-2	0.011
4-Methyl-2-pentanone (MIBK)	108-10-1	0.0105
1,3-Dichlorobenzene	541-73-1	0.01
Allyl chloride	107-05-1	0.011
Benzene	71-43-2	0.0102
Benzyl chloride	100-44-7	0.011
Bromochloromethane	74-97-5	0.0196
Bromodichloromethane	75-27-4	0.0104
1,1,1-Trichloroethane	71-55-6	0.0104
4-Ethyltoluene	622-96-8	0.0102
1,2-Dichlorobenzene	95-50-1	0.0098
1,1,2,2-Tetrachloroethane	79-34-5	0.0099
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.01
1,1,2-Trichloroethane	79-00-5	0.0102
1,1-Dichloroethane	75-34-3	0.0096
1,1-Dichloroethene	75-35-4	0.0104
1,2,4-Trichlorobenzene	120-82-1	0.009
1,4-Difluorobenzene	540-36-3	0.0196
1,2-Dibromoethane (EDB)	106-93-4	0.0104
1,4-Dichlorobenzene	106-46-7	0.01
1,2-Dichloroethane	107-06-2	0.0099
1,2-Dichloropropane	78-87-5	0.0101
1,2-Dichlorotetrafluoroethane	76-14-2	0.0097
1,3,5-Trimethylbenzene	108-67-8	0.0102

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1,3-Butadiene	106-99-0	0.0103
Bromomethane	74-83-9	0.0102
1,2,4-Trimethylbenzene	95-63-6	0.0102
Tetrahydrofuran	109-99-9	0.0101
Hexane	110-54-3	0.0102
m&p-Xylene	179601-23-1	0.0204
o-Xylene	95-47-6	0.01
Propene	115-07-1	0.011
Styrene	100-42-5	0.0098
Bromoethene	593-60-2	0.0109
Tetrachloroethene	127-18-4	0.0102
Ethylbenzene	100-41-4	0.0103
Toluene	108-88-3	0.0102
trans-1,2-Dichloroethene	156-60-5	0.0109
trans-1,3-Dichloropropene	10061-02-6	0.0096
Trichloroethene	79-01-6	0.0108
Trichlorofluoromethane	75-69-4	0.0094
Vinyl acetate	108-05-4	0.011
tert-Butyl methyl ether (MTBE)	1634-04-4	0.0107
cis-1,2-Dichloroethene	156-59-2	0.0101
Carbon disulfide	75-15-0	0.011
Carbon tetrachloride	56-23-5	0.0101
Chlorobenzene	108-90-7	0.0103
Chlorobenzene-d5	3114-55-4	0.0196
Chlorodibromomethane	124-48-1	0.0109
Chloroethane	75-00-3	0.0102
Hexachlorobutadiene	87-68-3	0.0092
Chloromethane	74-87-3	0.0108
Heptane	142-82-5	0.0103
cis-1,3-Dichloropropene	10061-01-5	0.01
Cyclohexane	110-82-7	0.0103
Dichlorodifluoromethane	75-71-8	0.0102
Dichloromethane	75-09-2	0.01
Ethyl acetate	141-78-6	0.0103
Vinyl chloride	75-01-4	0.0104
Chloroform	67-66-3	0.0104

Analytical Standard Record

EPA Region 9 Laboratory

2018025

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2006146	TO-14A Internal Standard Mix, Sto	01/29/20	** Vendor **	01/29/22	02/06/20 15:46 by LLH	40
2018023	TO-15 CAL Std, 20 ppbv	04/30/20	Liza Hernandez	05/29/20	04/30/20 09:46 by LLH	100

Analytical Standard Record

EPA Region 9 Laboratory

2018026

Description:	TO-15 BS1 (VIRTUAL)	**Expires:**	05/29/20
Standard Type:	Analyte Spike	**Prepared:**	04/30/20
Solvent:	Zero Grade Air	**Prepared By:**	Liza Hernandez
Final Volume (mls):	200	**Department:**	Air
Vials:	1	**Last Edit:**	04/30/20 09:49 by LLH
Vendor:	*Prepared*	**Lot Numb**	-

Analyte	CAS Number	Concentration (ppm)
Acetone	67-64-1	0.0216
1,4-Dioxane	123-91-1	0.0208
2,2,4-Trimethylpentane	540-84-1	0.0206
2-Butanone (MEK)	78-93-3	0.021
2-Hexanone	591-78-6	0.0206
2-Propanol	67-63-0	0.022
Bromoform	75-25-2	0.022
4-Methyl-2-pentanone (MIBK)	108-10-1	0.021
1,3-Dichlorobenzene	541-73-1	0.02
Allyl chloride	107-05-1	0.022
Benzene	71-43-2	0.0204
Benzyl chloride	100-44-7	0.022
Bromochloromethane	74-97-5	0.0196
Bromodichloromethane	75-27-4	0.0208
1,1,1-Trichloroethane	71-55-6	0.0208
4-Ethyltoluene	622-96-8	0.0204
1,2-Dichlorobenzene	95-50-1	0.0196
1,1,2,2-Tetrachloroethane	79-34-5	0.0198
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.02
1,1,2-Trichloroethane	79-00-5	0.0204
1,1-Dichloroethane	75-34-3	0.0192
1,1-Dichloroethene	75-35-4	0.0208
1,2,4-Trichlorobenzene	120-82-1	0.018
1,4-Difluorobenzene	540-36-3	0.0196
1,2-Dibromoethane (EDB)	106-93-4	0.0208
1,4-Dichlorobenzene	106-46-7	0.02
1,2-Dichloroethane	107-06-2	0.0198
1,2-Dichloropropane	78-87-5	0.0202
1,2-Dichlorotetrafluoroethane	76-14-2	0.0194
1,3,5-Trimethylbenzene	108-67-8	0.0204

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1,3-Butadiene	106-99-0	0.0206
Bromomethane	74-83-9	0.0204
1,2,4-Trimethylbenzene	95-63-6	0.0204
Tetrahydrofuran	109-99-9	0.0202
Hexane	110-54-3	0.0204
m&p-Xylene	179601-23-1	0.0408
o-Xylene	95-47-6	0.02
Propene	115-07-1	0.022
Styrene	100-42-5	0.0196
Bromoethene	593-60-2	0.0218
Tetrachloroethene	127-18-4	0.0204
Ethylbenzene	100-41-4	0.0206
Toluene	108-88-3	0.0204
trans-1,2-Dichloroethene	156-60-5	0.0218
trans-1,3-Dichloropropene	10061-02-6	0.0192
Trichloroethene	79-01-6	0.0216
Trichlorofluoromethane	75-69-4	0.0188
Vinyl acetate	108-05-4	0.022
tert-Butyl methyl ether (MTBE)	1634-04-4	0.0214
cis-1,2-Dichloroethene	156-59-2	0.0202
Carbon disulfide	75-15-0	0.022
Carbon tetrachloride	56-23-5	0.0202
Chlorobenzene	108-90-7	0.0206
Chlorobenzene-d5	3114-55-4	0.0196
Chlorodibromomethane	124-48-1	0.0218
Chloroethane	75-00-3	0.0204
Hexachlorobutadiene	87-68-3	0.0184
Chloromethane	74-87-3	0.0216
Heptane	142-82-5	0.0206
cis-1,3-Dichloropropene	10061-01-5	0.02
Cyclohexane	110-82-7	0.0206
Dichlorodifluoromethane	75-71-8	0.0204
Dichloromethane	75-09-2	0.02
Ethyl acetate	141-78-6	0.0206
Vinyl chloride	75-01-4	0.0208
Chloroform	67-66-3	0.0208

Analytical Standard Record

EPA Region 9 Laboratory

2018026

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
2006146	TO-14A Internal Standard Mix, Sto	01/29/20	** Vendor **	01/29/22	02/06/20 15:46 by LLH	40
2018023	TO-15 CAL Std, 20 ppbv	04/30/20	Liza Hernandez	05/29/20	04/30/20 09:46 by LLH	200