

Gardner, Rachel K (DEC)

From: Gut, Ewa <Ewa.Gut@EFIGLOBAL.com>
Sent: Monday, December 23, 2019 12:56 PM
To: Gardner, Rachel K (DEC)
Cc: Rys, Gregory A (HEALTH); Schuck, Maureen E (HEALTH); Taylor, Peter (DEC); Wolff, Robert
Subject: RE: C633084 - Former Globe Woolen Mills - Suppl. Vapor Intrusion Report
Attachments: Supplemental Investigation Vapor Intrusion Report, Former Globe woolen Mill, BCP Site No. C633084 - Updateddoc.pdf

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Good afternoon,

Enclosed please find a copy of the revised report.

Thank you,

Ewa Gut | Project Manager

EFI Global, Inc.

We've Moved! – Please note our new office address

11 Commerce Way, Suite A, Totowa, NJ 07512

OFFICE 732.629.7930 | FAX 732.629.7934

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From: Gardner, Rachel K (DEC) [mailto:rachel.gardner@dec.ny.gov]
Sent: Monday, November 25, 2019 10:31 AM
To: Gut, Ewa
Cc: Rys, Gregory A (HEALTH); Schuck, Maureen E (HEALTH); Taylor, Peter (DEC)
Subject: Re: C633084 - Former Globe Woolen Mills - Suppl. Vapor Intrusion Report

Please see the attached letter regarding the Former Globe Woolen Mills site.

If you would like a physical copy mailed, please let me know. Thank you.

Rachel K. Gardner, E.I.T.

Assistant Engineer, Region 6 Environmental Remediation

New York State Department of Environmental Conservation

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SUPPLEMENTAL INVESTIGATION VAPOR INTRUSION REPORT

EFI Global Project No.: 011.00433
DECEMBER 2019

Former Globe Woolen Mill
BCP Site No. C633084
811 – 827 Court Street
Utica, New York 13502

Prepared For:

Lofts at Globe Mill, L.P.

9333 N Meridian Street, Suite 230
Indianapolis, IN 46260

EFI Global, Inc. (EFI) is presenting the results from a supplemental soil vapor investigation performed at the Former Globe Woolen Mills BCP Site #C633084 located at 811-827 Court Street, Utica, New York 13502 (the Site). This investigation was required by the New York State Brownfields Cleanup Program (BCP) Remedial Action Work Plan (RAWP) to determine if sub-slab depressurization systems (SSDs) are needed for Buildings 2 and 4 and if the chlorinated organic vapors identified in Building 1 and 6 are migrating off-site. The Remedial Investigation (RI) already determined that sub-slab depressurization systems are needed in Building 1, the office connected to Building 1, and Building 6 in accordance with NYSDEC and NYSDOH guidelines. Buildings 2 and 4 have been reevaluated to determine if sub-slab depressurization systems are required or recommended in either of these buildings. The findings of the assessment are being provided to the NYSDEC and NYSDOH in this Report along with the appropriate recommendation.

PURPOSE

The Remedial Investigation (RI) at the site revealed the need to perform additional soil-gas assessment to determine if Buildings 2 and 4 require SSDs and/ or additional monitoring and to perform a property boundary investigation to determine the vapor conditions on the boundary of the Site.

See Figure 1 for the Property location.

BACKGROUND INFORMATION

The planned redevelopment will convert the main structures on the corner of Court and Stark Street (Buildings 1, 2, 4, and 6, and the Office Building) to residential apartments. Based on the Site history and previous (RI) sampling analytical results, a vapor study was completed that consisted of sampling vapors from beneath the floor slab, near slab, and within the building (i.e., indoor air). On March 28, 2019, during this investigation, two sub-slab air samples, four near-slab, and one air sample were collected by EFI from the following buildings as follows and were dictated based upon building construction and confirmation with the on-site New York State Department of Environmental Conservation (NYSDEC) official during the time of sampling.

- SS-1 was taken under the sub-slab of the basement of the Building 4 (northern portion of the structure)
- SS-2 was taken under the sub-slab of the basement of the Building 4 (southern portion of the structure)
- NS-1 was taken near the foundation of the building 1 (northwestern side of the structure along the Court Street side of the Site outside the Site boundary)
- NS-2 was taken near the foundation of the building 1 (western side of the structure along Stark Street side of the Site within the Site boundary)

- NS-3 was taken near the foundation of the building 2 (western side of the structure also along but inside the Stark Street but outside the property boundary of the Site)
- NS-5 was taken near the foundation of the building 1 (northeastern side of the structure along Court Street outside the Site Boundary)
- ASB2-1 was taken in the indoor air in the crawl space of the building 2 since no slab was present

On April 1, 2019, EFI returned to the Property and collected one additional near-slab soil gas sample adjacent to the foundation of the building 4 (NS-4 along the western side of the structure along Stark Street but within the property boundary).

Sample locations can be seen in Figure 2. To collect sub-slab vapor samples, the concrete floor was drilled using a half inch diameter drill bit and three/eighth inch diameter tubing was connected to a Summa canister. Summa canisters were also used to collect near-slab and crawl space air samples. Sample collection was in accordance with the October 2006, New York State Department of Health *Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, as amended in May 2017.

Preliminary Activities

Health and Safety Plan

The proposed work was performed pursuant to the Health and Safety Plan that is specific to this site, which is also compliant with the Occupational Safety and Health Administration, under Hazardous Waste Operations & Emergency Response 29 CFR 1910.120. The Site Health and Safety Plan is designed to reduce the risk of physical or chemical exposures that may affect workers in the proposed work area. The Site Health and Safety Plan includes information about chemicals expected on the site, health and safety procedures for working on-site and emergency response procedures.

Utility Markout

New York State law requires at least three working full days prior to the initiation of any subsurface work (drilling, backhoe operation, etc.) that Call Before You Dig (NY811) be contacted and a utility inspection be performed at the Property. This inspection consists of the marking of underground utility locations by participating utilities.

SUB-SLAB/NEAR-SLAB/AIR VAPOR SAMPLING

Two sub-slab vapor samples, five near-slab samples, and one air sample were analyzed in accordance with the approved work plan. Samples were submitted to a NYSDEC-certified contract laboratory and analyzed for TCL volatile organic compounds (VOCs) by EPA method TO-15. Several VOC compounds were detected in the collected samples, which are summarized in Table 1 and

discussed in detail below.

The goal of collecting sub-slab vapor samples was to identify potential impacts from soil vapor. New York State currently does not have any standards, criteria, or guidance values for concentrations of compounds in sub-slab vapor. Additionally, there are no databases available of background levels of volatile chemicals in subsurface vapors. However, the New York State Department of Health (NYSDOH) has developed a guidance document decision matrix as a risk management tool to provide guidance on a case-by-case basis about actions that should be taken to address current and potential exposures related to soil vapor intrusion. This guideline has specific VOCs as presented in the matrix below. If the VOC is not listed on the matrix, then it has no state guideline. The matrices are intended to be used when evaluating the results from buildings with full slab foundations/near slab foundations such as Buildings 1, 4, and 6. Building 2 did not have a slab, therefore, the sample associated with this building was only taken in the indoor air in the crawl space below the floor, which is not ideal conditions for matrices comparison purposes. The matrices encapsulate the data evaluation processes and actions recommended to address potential exposures.

The NYSDOH has developed three matrices (refer to Appendix B) to use as tools in making decisions when soil vapor may be entering buildings.

<u>Soil Vapor/Indoor Air Matrix</u>	Volatile Chemical
Matrix A	carbon tetrachloride, 1,1-dichloroethene, cis-1,2-dichloroethene, and trichloroethene
Matrix B	methylene chloride, tetrachloroethene, and 1,1,1-trichloroethane
Matrix C	vinyl chloride

Using the Matrix A, B, and C models from the Guidance, the concentrations of these VOCs detected at the Property were evaluated as follows:

- **Matrix A** – The concentration of 1,1-dichloroethene was non-detect in the collected samples. Concentrations of carbon tetrachloride in the collected samples ranged from non-detect to 0.9 ug/m³. These results deemed “No Further Action” for these compounds. Concentrations of trichloroethene (TCE)

ranged from non-detect to 100 micrograms per meter cubed (ug/m^3) and cis-1,2-dichloroethene ranged from ND to $17 \text{ ug}/\text{m}^3$ in the collected samples, which results in the following actions:

- NS-1 – Mitigate for TCE
 - NS-5- Mitigate for TCE & Monitor for cis-1,2-Dichloroethene
 - SS-2 – Monitor for TCE
-
- **Matrix B**– Concentrations of tetrachloroethene (PCE) ranged from non-detect to $80 \text{ ug}/\text{m}^3$ resulting in “No Further Action” related to this compound for all samples. Concentrations of 1,1,1-trichloroethane ranged from non-detect to $16 \text{ ug}/\text{m}^3$ resulting in “No Further Action” related to this compound for all samples. Concentrations of methylene chloride ranged from $8 \text{ ug}/\text{m}^3$ to $26 \text{ ug}/\text{m}^3$ resulting in “No Further Action” related to this compound for all samples.

 - **Matrix C**– The concentration of vinyl chloride non-detect and was less than $0.2 \text{ ug}/\text{m}^3$ in all collected samples resulting in “No Further Action” related to this compound.

The laboratory analytical reports and chain-of-custody forms are included as Appendix A.

FINDINGS AND CONCLUSIONS

Based on the current results, the sub-slab/near-slab air analytical results revealed that TCE was detected in three samples at elevated concentrations with one sample located near the northwest corner of Building 1 outside of the Site boundary (NS-1); one sample located near the northeast corner of Building 1 outside of the Site boundary (NS-5), and the third sample was located under the sub slab of Building 4 (SS-2). Therefore, when applied to the NYSDOH Decision Matrices, mitigation is required within Building 1 and was previously recommended in Building 6. Even though only monitoring is required within Building 4, the TCE exceedance of $11 \text{ ug}/\text{m}^3$ was even higher than the exceedance in Building 6. While TCE was not detected in the Building 2 crawl space, sampling conditions were not optimal and Building 2 is closer to the off-site plume that appears to be migrating onto the site. The soil-gas samples collected at the Site in March 2018 identified exceedances in the sub-slab sample (SS-01) and indoor air samples (IA-01 and IA-02) in the eastern portion of Building 1, which required mitigation, and in the sub-slab sample (SS-04) and indoor air sample (IA-04) in Building 6, which required monitoring. Based on the levels of the samples collected outside of Building 1 beyond the property boundary (NS-1 and NS-5) of $100 \text{ ug}/\text{m}^3$ for TCE compared to the results of the sub-slab sample (SS-01 was $27 \text{ ug}/\text{m}^3$) and indoor air samples (IA-01 was $3 \text{ ug}/\text{m}^3$ and IA-02 was $9.7 \text{ ug}/\text{m}^3$), it appears that there is a TCE plume migrating from an off-site source onto the BCP Site. The results for the March 2018 soil vapor sampling event are located on Table 3 attached.

EFI recommends that even though Building 4 only had a monitoring requirement and Building 2 did not include a mitigation requirement, that sub-slab depressurization systems be installed in all of the on-site buildings to address the uncontrolled vapor plume emanating onto this BCP Site, which is about to be redeveloped for residential use. The Sub-Slab Depressurization System (SSDS) Design and Work Plan was accepted by the Department on August 15, 2019 and final approval will be contingent on satisfactory post-system installation sampling results, is attached hereto in Appendix C.

LIMITATIONS

EFI provided these services consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions.

The results of the sampling represent conditions found on the date of the Supplemental Investigation and may not represent conditions found at other times. Additionally, this assessment was limited with respect to the specific parameters indicated above. Since soil vapor results change frequently based on weather related conditions such as excessive precipitation or dry conditions, heating season, etc., it remains EFI's professional opinion that installation of SSDSs in all of the on-Site buildings that are part of the BCP Site being developed in the prudent course of action.

CLOSING

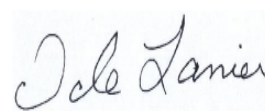
We trust this information meets your needs. If you have any questions regarding this matter, please do not hesitate to call us at 732-629-6930.

Sincerely,

EFI GLOBAL, INC.



Ewa Gut
Project Manager



Dale Lanier, PG
Project Manager

Figures

Tables

Appendix A – Laboratory Analytical Reports

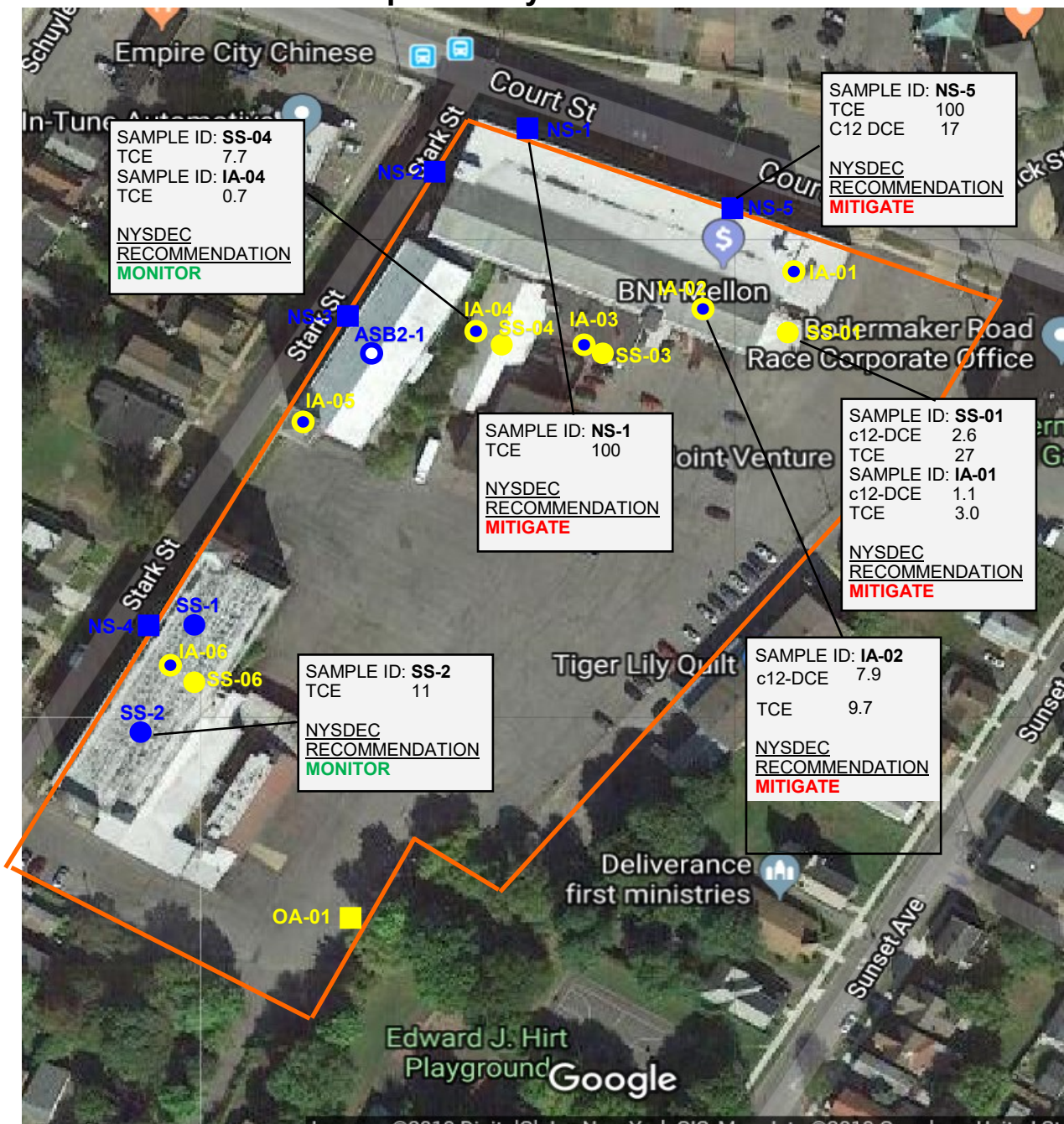
Appendix B – NYSDEC Conservation Decision Matrices

Appendix C – Sub-Slab Depressurization System Design and Work Plan

FIGURE 1: SITE LOCATION/TOPOGRAPHIC MAP



FIGURE 2: Soil Gas Samples Analytical Results



LEGEND:

- - Vapor Intrusion Sub Slab Sample - Spring 2019
- - Vapor Intrusion Near Slab Sample - Spring 2019
- - Cross Space Air Sample - Spring 2019
- - Vapor Intrusion Sub Slab Sample - Spring 2018
- - Outdoor Air Sample - Spring 2018
- - Indoor Air Sample - Spring 2018

SOURCE: GOOGLE MAPS

NOTE: Compound levels are presented in µg/m³



TABLES

TABLE 1: SOIL GAS SAMPLE RESULTS
March 28 & April 1, 2019

Sample Name:		NS-3		NS-2		NS-1		NS-5		ASB2-1		SS-1		SS-2		NS-4		NYSDOH Minimum Action Levels	
Lab ID:		E19-02214-01		E19-02214-02		E19-02214-03		E19-02214-04		E19-02214-05		E19-02214-06		E19-02214-07		E19-02297-01			
Date Sampled:		03/28/2019		03/28/2019		03/28/2019		03/28/2019		03/28/2019		03/28/2019		03/28/2019		04/01/2019			
		Conc	RL	Conc	RL	Conc	RL	Conc	RL	Conc	RL	Conc	RL	Conc	RL	Conc	RL	Sub-slab Vapor Concentration	Indoor Air Concentration
Compound	CAS	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3		
Carbon tetrachloride	56-23-5	ND	0.3	ND	3	ND	3	ND	3	0.9	0.3	ND	3	ND	3	ND	0.3	6	0.2
1,1-Dichloroethene	75-35-4	ND	0.8	ND	8	ND	8	ND	8	ND	0.8	ND	8	ND	8	ND	0.8	6	0.2
1,2-Dichloroethene (cis)	156-59-2	ND	0.8	ND	8	ND	8	17	8	ND	0.8	ND	8	ND	8	ND	0.8	6	0.2
Methylene chloride	75-09-2	11	0.7	23	7	15	7	16	7	8	0.7	19	7	26	7	11	0.7	100	3
Tetrachloroethene	127-18-4	ND	1	ND	14	16	14	80	14	ND	1	ND	14	ND	14	ND	1	100	3
1,1,1-Trichloroethane	71-55-6	ND	1	ND	11	ND	11	16	11	ND	1	ND	11	ND	11	ND	1	100	3
Trichloroethene	79-01-6	ND	0.3	ND	3	100	3	68	3	ND	0.3	ND	3	11	3	ND	0.3	6	0.2
Vinyl chloride	75-01-4	ND	0.5	ND	5	ND	5	ND	5	ND	0.5	ND	5	ND	5	ND	0.5	6	0.2

Results and Action Levels are presented in micrograms per meters cubed (ug/m).

NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, May 2017 Decision Matrices Notes:

NO FURTHER ACTION (this includes ND):

Given that the compoud was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures

IDENTIFY SOURCE(S) AND RESAMPLE OR MITIGATE:

The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample.

Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers capped or by storing VOC-containing products in places where people do not spend much time, such as a garage or shed).

Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:

Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed.

Monitoring may also be needed to determine whether existing building conditions (e.g., positive-pressure heating, ventilation, and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed.

The type and frequency of monitoring is determine on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions.

Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:

Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions.

TABLE 2: SOIL GAS SAMPLE RESULTS
March 28 & April 1, 2019

Sample Name:		NS-3		NS-2		NS-1		NS-5		ASB2-1		SS-1		SS-2		NS-4		NYSDOH Minimum Action Levels	
Lab ID:		E19-02214-01		E19-02214-02		E19-02214-03		E19-02214-04		E19-02214-05		E19-02214-06		E19-02214-07		E19-02297-01			
Date Sampled:		03/28/2019		03/28/2019		03/28/2019		03/28/2019		03/28/2019		03/28/2019		03/28/2019		04/01/2019		Sub-slab Vapor Concentration	Indoor Air Concentration
Compound	CAS	Conc ug/m3	RL ug/m3	Conc ug/m3	RL ug/m3	Conc ug/m3	RL ug/m3	Conc ug/m3	RL ug/m3	Conc ug/m3	RL ug/m3	Conc ug/m3	RL ug/m3	Conc ug/m3	RL ug/m3	Conc ug/m3	RL ug/m3		
Acetone	67-64-1	94	5	77	5	82	5	100	5	5	0.5	120	5	110	5	43	0.5		
Benzene	71-43-2	2	0.6	ND	6	ND	6	ND	6	ND	0.6	ND	6	ND	6	ND	0.6		
Bromodichloromethane	75-27-4	ND	1	ND	13	ND	13	ND	13	ND	1	ND	13	ND	13	ND	1		
Bromoform	75-25-2	ND	2	ND	21	ND	21	ND	21	ND	2	ND	21	ND	21	ND	2		
Bromomethane	74-83-9	ND	0.8	ND	8	ND	8	ND	8	ND	0.8	ND	8	ND	8	ND	0.8		
1,3-Butadiene	106-99-0	ND	0.4	ND	4	ND	4	ND	4	ND	0.4	ND	4	ND	4	ND	0.4		
Chlorobenzene	108-90-7	ND	0.9	ND	9	ND	9	ND	9	ND	0.9	ND	9	ND	9	ND	0.9		
Chloroethane	75-00-3	ND	0.5	ND	5	ND	5	ND	5	ND	0.5	ND	5	ND	5	ND	0.5		
Chloroform	67-66-3	5	1	ND	10	ND	10	210	10	ND	1	26	10	100	10	ND	1		
Chloromethane	74-87-3	ND	0.4	ND	4	ND	4	ND	4	ND	0.4	ND	4	ND	4	ND	0.4		
Carbon disulfide	75-15-0	ND	0.6	ND	6	ND	6	ND	6	ND	0.6	ND	6	ND	6	ND	0.6		
Carbon tetrachloride	56-23-5	ND	0.3	ND	3	ND	3	ND	3	0.9	0.3	ND	3	ND	3	ND	0.3	6	0.2
Cyclohexane	110-82-7	4	0.7	ND	7	ND	7	ND	7	ND	0.7	ND	7	ND	7	ND	0.7		
Dibromochloromethane	124-48-1	ND	2	ND	17	ND	17	ND	17	ND	2	ND	17	ND	17	ND	2		
1,2-Dibromoethane	106-93-4	ND	2	ND	15	ND	15	ND	15	ND	2	ND	15	ND	15	ND	2		
1,2-Dichlorobenzene	95-50-1	ND	1	ND	12	ND	12	ND	12	ND	1	ND	12	ND	12	ND	1		
1,3-Dichlorobenzene	541-73-1	ND	1	ND	12	ND	12	ND	12	ND	1	ND	12	ND	12	ND	1		
1,4-Dichlorobenzene	106-46-7	ND	1	ND	12	ND	12	ND	12	ND	1	ND	12	ND	12	ND	1		
Dichlorodifluoromethane	75-71-8	ND	1	ND	10	ND	10	ND	10	ND	1	ND	10	ND	10	ND	1		
1,1-Dichloroethane	75-34-3	ND	0.8	ND	8	ND	8	ND	8	ND	0.8	ND	8	ND	8	ND	0.8		
1,2-Dichloroethane	107-06-2	ND	0.8	ND	8	ND	8	ND	8	ND	0.8	ND	8	ND	8	ND	0.8		
1,1-Dichloroethene	75-35-4	ND	0.8	ND	8	ND	8	ND	8	ND	0.8	ND	8	ND	8	ND	0.8	6	0.2
1,2-Dichloroethene (cis)	156-59-2	ND	0.8	ND	8	ND	8	17	8	ND	0.8	ND	8	ND	8	ND	0.8	6	0.2
1,2-Dichloroethene (trans)	156-60-5	ND	0.8	ND	8	ND	8	ND	8	ND	0.8	ND	8	ND	8	ND	0.8		
1,2-Dichloropropane	78-87-5	ND	0.9	ND	9	ND	9	ND	9	ND	0.9	ND	9	ND	9	ND	0.9		
1,3-Dichloropropene (cis)	10061-01-5	ND	0.9	ND	9	ND	9	ND	9	ND	0.9	ND	9	ND	9	ND	0.9		
1,3-Dichloropropene (trans)	10061-02-6	ND	0.9	ND	9	ND	9	ND	9	ND	0.9	ND	9	ND	9	ND	0.9		
1,3-Dichloropropene - TOTAL	542-75-6	ND	0.9	ND	9	ND	9	ND	9	ND	0.9	ND	9	ND	9	ND	0.9		
1,2-Dichlorotetrafluoroethane	76-14-2	ND	1	ND	14	ND	14	ND	14	ND	1	ND	14	ND	14	ND	1		
1,4-Dioxane	123-91-1	ND	0.7	ND	7	ND	7	ND	7	ND	0.7	ND	7	ND	7	ND	0.7		
Ethylbenzene	100-41-4	8	0.9	ND	9	ND	9	ND	9	ND	0.9	290	9	ND	9	ND	0.9		
n-Heptane	142-82-5	5	0.8	ND	8	ND	8	ND	8	ND	0.8	ND	8	ND	8	ND	0.8		
1,3-Hexachlorobutadiene	87-68-3	ND	2	ND	21	ND	21	ND	21	ND	2	ND	21	ND	21	ND	2		
n-Hexane	110-54-3	6	0.7	ND	7	ND	7	ND	7	ND	0.7	ND	7	ND	7	ND	0.7		
Methylene chloride	75-09-2	11	0.7	23	7	15	7	16	7	8	0.7	19	7	26	7	11	0.7	100	3
Methyl ethyl ketone	78-93-3	72	0.6	47	6	62	6	34	6	ND	0.6	ND	6	25	6	9	0.6		
Methyl isobutyl ketone	108-10-1	11	0.8	ND	8	10	8	ND	8	ND	0.8	ND	8	ND	8	ND	0.8		
Methyl tert-butyl ether	1634-04-4	ND	0.7	ND	7	ND	7	ND	7	ND	0.7	ND	7	ND	7	ND	0.7		
Styrene	100-42-5	ND	0.9	ND	9	ND	9	ND	9	ND	0.9	ND	9	ND	9	ND	0.9		
Tert-butyl alcohol	75-65-0	4	0.6	ND	6	ND	6	ND	6	ND	0.6	ND	6	ND	6	ND	0.6		
1,1,2,2-Tetrachloroethane	79-34-5	ND	1	ND	14	ND	14	ND	14	ND	1	ND	14	ND	14	ND	1		
Tetrachloroethene	127-18-4	ND	1	ND	14	16	14	80	14	ND	1	ND	14	ND	14	ND	1	100	3
Toluene	108-88-3	94	0.8	180	8	470	8	2000	38	ND	0.8	14	8	14	8	290	2		
1,2,4-Trichlorobenzene	120-82-1	ND	2	ND	15	ND	15	ND	15	ND	2	ND	15	ND	15	ND	2		
1,1,1-Trichloroethane	71-55-6	ND	1	ND	11	ND	11	16	11	ND	1	ND	11	ND	11	ND	1	100	3
1,1,2-Trichloroethane	79-00-5	ND	1	ND	11	ND	11	ND	11	ND	1	ND	11	ND	11	ND	1		
Trichloroethene	79-01-6	ND	0.3	ND	3	100	3	68	3	ND	0.3	ND	3	11	3	ND	0.3	6	0.2
Trichlorofluoromethane	75-69-4	ND	1	ND	11	ND	11	ND	11	2	1	ND	11	ND	11	2	1		
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	2	ND	15	ND	15	ND	15	ND	2	ND	15	ND	15	ND	2		
1,2,4-Trimethylbenzene	95-63-6	6	1	ND	10	ND	10	ND	10	ND	1	ND	10	ND	10	ND	1		
1,3,5-Trimethylbenzene	108-67-8	2	1	ND	10	ND	10	ND	10	ND	1	ND	10	ND	10	ND	1		
2,2,4-Trimethylpentane	540-84-1	ND	0.9	ND	9	ND	9	ND	9	ND	0.9	ND	9	ND	9	ND	0.9		
Vinyl bromide	593-60-2	ND	0.9	ND	9	ND	9	ND	9	ND	0.9	ND	9	ND	9	ND	0.9		
Vinyl chloride	75-01-4	ND	0.5	ND	5	ND	5	ND	5	ND	0.5	ND	5	ND	5	ND	0.5	6	0.2
Xylenes (m p)	179601-23-1	39	0.9	19	9	21	9	20	9	ND	0.9	2000	9	ND	9	2	0.9		
Xylenes (o)	95-47-6	12	0.9	ND	9	ND	9	ND	9	ND	0.9	610	9	ND	9	ND	0.9		
Xylenes - TOTAL	1330-20-7	51	0.9	19	9	21	9	20	9	ND	0.9	2610	9	ND	9	2	0.9		

Results and Action Levels are presented in micrograms per meters cubed (ug/m).

NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, May 2017 Decision Matrices Notes:

Those chemicals of concern listed on the NYSDOH Matrices

NO FURTHER ACTION:

Given that the compoud was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures

IDENTIFY SOURCE(S) AND RESAMPLE OR MITIGATE:

The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample.

Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers capped or by storing VOC-containing products in places where people do not spend much time, such as a garage or shed).

Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:

Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed.

Monitoring may also be needed to determine whether existing building conditions (e.g., positive-pressure heating, ventilation, and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed.

The type and frequency of monitoring is determine on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions.

Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:

Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system,

and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions.

Table 3
Sub Slab Vapor Ambient Air Analytical Results
EPA Air Method Toxic Organics -15 (TO-15)
Sampling Date: 3-29-18

	Sample Identification															NYSDOH Minimum Action Levels ^a				
Sample Date	3/29/18	3/29/18	3/29/18		3/29/18	3/29/18		3/29/18		3/29/18	3/29/18		3/29/18	3/29/18		3/29/18	Sub Slab Vapor Concentration	Indoor Air Concentration		
TO-15 Contaminants	SS-01 Sub Slab	IA-01 Indoor	IA-02 Indoor		SS-03 Sub Slab	IA-03 Indoor		SS-04 Sub Slab	IA-04 Indoor		IA-05 Indoor		SS-06 Sub Slab	IA-06 Indoor		SS-07 Sub Slab			IA-07 Indoor	OA-01 Outdoor
VOLATILE ORGANIC COMPOUNDS ^b																				
1,1,1-Trichloroethane	6.1	ND	1.8		ND	ND		1.3	ND		ND		ND	ND		ND	ND	ND	100	3
1,1-Dichloroethene	ND	ND	ND		ND	ND		ND	ND		ND		ND	ND		ND	ND	ND	6	0.2
1,2,4-Trimethylbenzene	1.7	ND	0.49 J		0.98	1.9		1.8	ND		ND		1.3	ND		1.6	0.54	ND		
1,3,5-Trimethylbenzene	0.84	ND	ND		0.49 J	0.64 J		0.64 J	ND		ND		ND	ND		ND	ND	ND		
1,4-Dichlorobenzene	ND	ND	ND		ND	1.3		ND	ND		ND		ND	ND		ND	ND	ND		
2,2,4-Trimethylpentane	3.3	ND	ND		0.7	1.4		4.3	ND		ND		0.93	ND		1.6	1.1	ND		
4-Ethyltoluene	0.74	ND	ND		ND	0.59 J		0.74	ND		ND		ND	ND		ND	ND	ND		
Acetone	52	8.8	9		28	12		200	6.8		4.3		46	11		26	11	6.2		
Benzene	3.8	0.83	0.61		1.7	1.9		11	0.61		ND		2.3	0.86		2.6	1.1	0.77		
Bromodichloromethane	ND	ND	0.87 J		ND	ND		ND	ND		ND		ND	ND		ND	ND	ND		
Carbon disulfide	2.3	ND	9.3		ND	ND		7.8	ND		ND		ND	ND		ND	ND	ND		
Carbon tetrachloride	ND	0.63	0.69		ND	0.57		ND	0.44		0.38		ND	0.57		ND	ND	0.44	6	0.2
Chloroethane	ND	ND	ND		ND	ND		3.3	ND		ND		0.77	ND		0.42	ND	ND		
Chloroform	48	6.3	22		0.78	2		1.8	0.68		ND		15	ND		2.1	0.73	ND		
Chloromethane	0.33	0.7	0.52		0.47	0.76		0.37	0.62		0.21 J		0.58	0.91		1.3	0.93	0.66		
cis-1,2-Dichloroethene	2.6	1.1	7.9		ND	0.36		ND	ND		ND		ND	ND		ND	ND	ND	6	0.2
Cyclohexane	1.3	ND	ND		ND	0.59		29	ND		ND		0.83	ND		2.4	ND	ND		
Ethyl acetate	ND	ND	ND		1.6	0.43		ND	ND		ND		2	ND		0.68	ND	ND		
Ethylbenzene	3.9	ND	0.48 J		1	0.96		4.3	ND		ND		1.4	ND		1.9	0.52	ND		
Freon 11	1.1	1.4	1.4		5.6	1.3		0.96	1.1		1.1		1.1	1.4		1	1.4	1.1		
Freon 113	ND	ND	0.92 J		ND	ND		ND	ND		ND		ND	0.84		ND	0.84	ND		
Freon 12	2.2	2.8	2.7		1.1	2.5		2.2	2.1		2.3		2.2	2.8		2.2	2.9	2.3		
Heptane	11	ND	ND		6.6	1.5		42	ND		ND		8.6	ND		4.2	0.61	ND		
Hexane	2.9	0.42	ND		2.4	2.1		55	ND		ND		4.2	0.39		6	0.67	ND		
Isopropyl alcohol	22	1.9	2.6		9.3	1.4		29	2.2		0.69		ND	1		25	1.6	0.69		
m p-Xylene	12	0.52	1.1		2.3	2.9		12	0.43		ND		3.5	0.65		7.1	1.2 J	0.48 J		
Methyl Ethyl Ketone	5.9	0.97	1.2		4.3	1.9		9.8	0.71		0.59 J		5.8	0.94		2	1.2	0.86 J		
Methylene chloride	3.1	2	3.6		12	3.9		3.1	1.2		1.9		17	1.6		5.2	1.5	1.3	100	3
o-Xylene	1.6	ND	0.48 J		ND	1.1		1.7	ND		ND		0.56 J	ND		2	0.56 J	ND		
Tetrachloroethylene	36	3.3	5.2		5	0.95		18	0.81 J		ND		5.5	ND		6.8	ND	ND	100	3
Toluene	51	1.1	1.1		19	6.6		42	1.1		0.53 J		25	1.3		13	2.6	3.8		
Trichloroethene	27	3	9.7		1.6	0.97		7.7	0.7		ND		1.8	ND		0.59 J	0.38	ND	6	0.2
Vinyl chloride	ND	ND	0.54		ND	ND		ND	ND		ND		ND	ND		ND	ND	ND	6	0.2

Results and Action levels are presented in micrograms per meters cubed (ug/m³).

N/A - Not Applicable ND - Non-detect

J - Analyte detected below quantitation limit

^aNew York State Department of Health (NYSDOH), Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 and subsequent updates (select matrix coumpounds).

^bCompounds with detected concentrations

NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, May 2017 Decision Matrices Notes:

NO FURTHER ACTION:

Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures

IDENTIFY SOURCE(S) AND RESAMPLE OR MITIGATE:

The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor int rusion given the concentration detected in the sub slab vapor sample.

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Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed.

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Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:

Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building specific basis, taking into account building construction and operating conditions.

APPENDIX A

LABORATORY ANALYTICAL REPORTS

EPA TO-15 DATA PACKAGE

ANALYTICAL DATA PACKAGE FOR THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION ALBANY NEW YORK 12233

Integrated Analytical Laboratories, LLC
Project#: Lofts at Globe Mill
SDG #: E19-02214
Date of first sample receipt: 3/29/2019

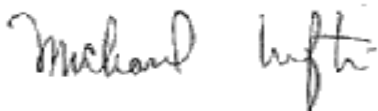
Randolph, NJ 07869
NY ELAP Certification#: 11402
NJDEP (Primary AB) Certification#: 14751
Date of last sample receipt: 3/29/2019

Client: EFI Global
Project/Site: Lofts at Globe Mill/NY

Client Sample Number	Laboratory Sample	Sample Location	Date/Time of Collection
NS-3	E19-02214-01	NA	3/28/2019 10:51
NS-2	E19-02214-02	NA	3/28/2019 11:20
NS-1	E19-02214-03	NA	3/28/2019 11:35
NS-5	E19-02214-04	NA	3/28/2019 12:05
ASB2-1	E19-02214-05	NA	3/28/2019 12:39
SS-1	E19-02214-06	NA	3/28/2019 15:09
SS-2	E19-02214-07	NA	3/28/2019 15:28

This report shall not be reproduced, except in its entirety, without the written consent of Integrated Analytical Laboratories, LLC. The test results included in this report relate only to the samples analyzed. The results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of data contained in this hardcopy data package and in the computer-readable data submitted on CD/diskette and by electronic mail has been authorized by the laboratory manager or his designee, as verified by the following signature.



Michael H. Leftin, Ph.D.
Laboratory Director

Date: April 10, 2019



Lauren Jenkins
Air Division Quality Assurance Officer

Date: April 10, 2019

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Laboratory Acronyms

The following is a list of laboratory acronyms commonly used in EPA Method TO-15 testing:

Acronym	Definition
BLK	Blank/Method Blank
BFB	4-Bromofluorobenzene (Tuning Standard)
CAS Number	Chemical Abstract Service Registry Number
cc	cubic centimeters
CCCVS	Closing Calibration Check Verification Standard
COC	Chain of Custody
DCVS	Daily Calibration Verification Standard
DF	Dilution Factor
EPA	U. S. Environmental Protection Agency (aka USEPA)
"Hg	Inches of Mercury
IA	Indoor Air
IASL	Indoor Air Screening Level
ICAL	Initial Calibration
ICVSS	Initial Calibration Verification Standard
ISTD	Internal Standard
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LCS	Laboratory Control Sample/Spike
LLTO-15	Low Level TO-15
MDL	Method Detection Limit
MDLV	Method Detection Limit Verification
ml	milliliters
ND	Not Detected (at or above RL)
NJDEP	New Jersey Department of Environmental Protection
PM	Project Manager
ppbv	parts per billion, volume-to-volume ratio
PQL	Practical Quantitation Limit - MDLx3
QA	Quality Assurance
QC	Quality Control
RAL	Rapid Action Limit
RL	Reporting Limit
RLLCS	Reporting Limit Laboratory Control Sample
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SGSL	Soil Gas Screening Levels
SS	Sub Slab
TAT	Turnaround Time
TIC	Tentatively Identified Compound
g/m3	micrograms per cubic meter

Section I: Chain of Custody



Integrated Analytical Labs
273 Franklin Road
Randolph, NJ 07869

External Chain of Custody Record/
Field Test Data Sheet
USEPA Method TO-15

Contact Us: 973-361-4252
Fax: 973-366-5613
Web: www.ialonline.com

Client Contact Information				Project Information				Carrier (check one): ☐ IAL Courier ☐ Client Courier ☐ FedEx/UPS				pg <u>1</u> of <u>2</u>												
Company: <u>EFI Global</u>				Project Name: <u>Lofts at Globe Mill</u>				Invoice Information				Analysis		Report		Matrix								
Address: <u>11 Commerce Way</u>				Project Location (State): <u>NY</u>				Attn: <u>Ewa Gut</u>																
Phone: <u>732-224-3100</u>				Project Manager: <u>Ewa Gut</u>				Address:																
Fax: <u>732-629-7934</u>				PM Signature: <u>E. Gut</u>																				
Report to: <u>Ewa Gut</u>				PM E-Mail: <u>ewa.gut@efiglobal.com</u>				PO #: <u>011.00433</u>																
Sampler: <u>J. K. Miller</u>				Quote #:																				
Analysis Turnaround Time - IF NO TAT IS SPECIFIED, 2 WEEK TAT IS ASSUMED								Barometric Pressure																
IAL Standard: 2 weeks (10 business days)																								
Rush (**pre-approved by lab):																								
		24hr**	48hr**	72hr**	96hr**	1wk**		Start		Stop														
Sample Identification	Start DATE & TIME (24hr Clock)	End DATE & TIME (24hr Clock)	Starting Vacuum ("Hg)	Ending Vacuum ("Hg)	Starting Temp. (°F)	Ending Temp. (°F)	Outgoing Vacuum - Lab ("Hg)	Incoming Vacuum - Lab ("Hg)	Flow Regulator ID	Canister ID	Canister Size (1L or 6L)	Flow Controller Readout (cc/min)	EPA TO - 15	NJDEP LLTO-15 (includes 30 TICs)	Library Search (10, 20, or 30 TICs)	Other (Explain in Comments)	Regulatory/ NY Cat B / Full (NJ Required)	Reduced / NY Cat A Data Package	Results Only	Indoor Air	Ambient / Outdoor Air	Sub Slab / Soil Gas / Near Slab (Circle One)	Stack Emission / SVE System	High Concentrations Expected
1 NS-3	3-28-19 10:51	3-28-19 11:46	-30	-1	39	39	-24.0	-1.0	7337354	30453	6	199.2	X				X							
2 NS-2	3-28-19 11:20	3-28-19 12:14	-29	0	39	40	-24.0	0.0	7337511	30159	6	202.3	X				X							
3 NS-1	3-28-19 11:35	3-28-19 12:40	-30	-1	39	45	-24.0	-1.0	10194195	3011	6	199.9	X				X							
4 NS-5	3-28-19 12:05	3-28-19 12:45	-30	0	40	47	-24.0	0.0	7340609	3426	6	203.6	X				X							
5 ASB2-1	3-28-19 12:39	3-28-19 1:15	-30	0	48	48	-24.0	0.0	730378	30232	6	201.9	X				X							
6 SS-1	3-28-19 15:09	3-28-19 15:42	-30	0	55	55	-24.0	0.0	7309955	3006	6	202.7	X				X							
Comments/ Special Analysis Instructions / QC Requirements:													Note: Hold or contingent samples may be designated by writing an "H" or "C" in the appropriate analysis box.											
03191901 031519 01TO06 3015A													ALL FIELDS IN RED ARE REQUIRED											
Shipping Information / Canister Preparation (for laboratory use only)													Laboratory Canister Certification											
Individual Preparing Canisters / Title: P. Jenkins, J. Walukiewicz / Air Department Sample Custodians													GC/MS Analyst Signature											
Lab Affixed Seal Number(s): IAL-2019 0148, - 0149													IAL SDG#: 02214											
Date/Time Shipping Container Sealed: 3-26-19 1530																								
External Chain of Custody																								
Relinquished			Received			Date / Time			Reason for Change of External Custody															
<u>Ewa Gut</u>			<u>J. Walukiewicz</u>			3-26-19 1530			shipment from laboratory to client															
						3-29-19 851			<u>REC'D @ AIR LAB</u>															
						03-24-19 0915																		
Name/Title Resealing Shipping Container Name:													NJDEP Affixed Seal Number:											
Date/Time Sample Shipping Container Resealed:													Individual Opening Sample Shipping Container: Padraic Jenkins / Joseph Walukiewicz											
Date/Time Sample Shipping Container Opened:													Date/Time Internal Chain of Custody Initiated:											



Integrated Analytical Labs
273 Franklin Road
Randolph, NJ 07869

External Chain of Custody Record/
Field Test Data Sheet
USEPA Method TO-15

Contact Us: 973-361-4252
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Client Contact Information			Project Information					Carrier (check one): ☐ IAL Courier ☐ Client Courier ☐ FedEx/UPS				pg 2 of 2												
Company: <u>EFI Global</u>			Project Name: <u>Lofts at Globe Min</u>					Invoice Information				Analysis		Report		Matrix								
Address: <u>11 Commerce Way</u>			Project Location (State): <u>NY</u>					Attn: <u>Ewa Gut</u>																
Phone: <u>732-329-3900</u>			Project Manager: <u>Ewa Gut</u>					Address:																
Fax: <u>732-629-7934</u>			PM Signature: <u>E. Gut</u>					BO #: <u>011. 00433</u>																
Report to: <u>Ewa Gut</u>			PM E-Mail: <u>ewa.gut@efiglobal.com</u>					Quote #:																
Sampler: <u>T. Kania</u>																								
Analysis Turnaround Time - IF NO TAT IS SPECIFIED, 2 WEEK TAT IS ASSUMED										Barometric Pressure														
IAL Standard: 2 weeks (10 business days)																								
Rush (**pre-approved by lab):																								
24hr** 48hr** 72hr** 96hr** 1wk**																								
Sample Identification	Start DATE & TIME (24hr Clock)	End DATE & TIME (24hr Clock)	Starting Vacuum ("Hg)	Ending Vacuum ("Hg)	Starting Temp. ("F)	Ending Temp. ("F)	Outgoing Vacuum - Lab ("Hg)	Incoming Vacuum - Lab ("Hg)	Flow Regulator ID	Canister ID	Canister Size (1L or 6L)	Flow Controller Readout (cc/min)	EPA TO-15	NJDEP LL TO-15 (includes 30 TICs)	Library Search (10, 20, or 30 TICs)	Other (Explain in Comments)	Regulatory NY Cat B / Full (NJ Required)	Reduced / NY Cat A Data Package	Results Only	Indoor Air	Ambient / Outdoor Air	Sub Slab / Soil Gas / Near Slab (Circle One)	Stack Emission / SVE System	High Concentrations Expected
55-2	3-28-19 15:28	3-28-19 16:00	-28	0	55	55	-29.0	0.0	AD13950-4	2045	6	200.2	X				X							
													X				X							
													X				X							
													X				X							
													X				X							
													X				X							
													X				X							

Comments/ Special Analysis Instructions / QC Requirements:
03141901

Note: Hold or contingent samples may be designated by writing an "H" or "C" in the appropriate analysis box.
ALL FIELDS IN RED ARE REQUIRED

Shipping Information / Canister Preparation (for laboratory use only)		Laboratory Canister Certification	
Individual Preparing Canisters / Title: <u>P. Jenkins, J. Walukiewicz / Air Department Sample Custodians</u>		GC/MS Analyst Signature	
Lab Affixed Seal Number(s): <u>IAL - 2019 0148, - 0149</u>		<u>[Signature]</u>	
Date/Time Shipping Container Sealed: <u>3-26-19 1530</u>		IAL SDG#: <u>02214</u>	

External Chain of Custody			
Relinquished	Received	Date / Time	Reason for Change of External Custody
<u>[Signature]</u>	<u>[Signature]</u>	<u>3-26-19 1530</u>	shipment from laboratory to client
<u>[Signature]</u>	<u>[Signature]</u>	<u>3-29-19 851</u>	<u>REC'D @ AIR LAB</u>
<u>[Signature]</u>	<u>[Signature]</u>	<u>03-29-19 0915</u>	
Name/Title Resealing Shipping Container Name:		NJDEP Affixed Seal Number:	
Date/Time Sample Shipping Container Resealed:		Individual Opening Sample Shipping Container: <u>Padraic Jenkins / Joseph Walukiewicz</u>	
Date/Time Sample Shipping Container Opened:		Date/Time Internal Chain of Custody Initiated:	

PROJECT INFORMATION

E19-02214: LOFTS AT GLOBE MILL

To: Ewa Gut
EFI Global, Inc.
Fax: 732-629-7934
EMail: ewa_gut@efiglobal.com

Report To

EFI Global, Inc.
11 Commerce Way
Suite A
Totowa, NJ 07512
Attn: Ewa Gut

Bill To

EFI Global, Inc.
11 Commerce Way
Suite A
Totowa, NJ 07512
Attn: Ewa Gut

Report Format	P.O. #	Received At Lab	TPHC Due	Verbal Due	Hardcopy Due
Category B		Mar 29, 2019 @ 08:51	NA	Apr 12, 2019	Apr 19, 2019 *

* Any **Conditional or Hold** status will delay final hardcopy report sent date.

Diskette Req.

NYSDEC

Lab ID	Client Sample ID	Depth	Sampling Time	Matrix	Unit	Field pH/Temp
02214-001	NS-3	NA	03/28/19@11:46	Air-Other	ppbV	
02214-002	NS-2	NA	03/28/19@12:11	Air-Other	ppbV	
02214-003	NS-1	NA	03/28/19@12:40	Air-Other	ppbV	
02214-004	NS-5	NA	03/28/19@12:45	Air-Other	ppbV	
02214-005	ASB2-1	NA	03/28/19@13:15	Air-Other	ppbV	
02214-006	SS-1	NA	03/28/19@15:42	Air-Other	ppbV	
02214-007	SS-2	NA	03/28/19@16:00	Air-Other	ppbV	

Sample #	Test	Status	QA Method	TAT	Holding Time Expires
001	EPA TO-15	Analyze	TO-15	STD/2 WKS	4/27/2019
002	EPA TO-15	Analyze	TO-15	STD/2 WKS	4/27/2019
003	EPA TO-15	Analyze	TO-15	STD/2 WKS	4/27/2019
004	EPA TO-15	Analyze	TO-15	STD/2 WKS	4/27/2019
005	EPA TO-15	Analyze	TO-15	STD/2 WKS	4/27/2019
006	EPA TO-15	Analyze	TO-15	STD/2 WKS	4/27/2019
007	EPA TO-15	Analyze	TO-15	STD/2 WKS	4/27/2019



Integrated Analytical Laboratories Internal Chain of Custody

Instructions: Use 1 form for each 20 samples of aliquot.

Laboratory Person Accepting Responsibility for Sample(s)			
Laboratory: Integrated Analytical Laboratories	Location: 273 Franklin Rd Randolph, NJ 07869		
Name: Joseph Walukiewicz	Title: Air Department Receiving		
Case No.: E19-02214	Analytical Parameter/Fraction: (check one) ☒ NJDEP LLTO-15 ☐ EPA TO-15		

Sample No.	Aliquot/Extract No.
NS-3	E19- 02214-01
NS-2	E19- 02214-02
NS-1	E19- 02214-03
NS-5	E19- 02214-04
ASB2-1	E19- 02214-05
SS-1	E19- 02214-06
SS-2	E19- 02214-07
	E19-
	E19-
	E19-

Sample No.	Aliquot/Extract No.
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-

Date	Time	Relinquished By	Received By	Purpose of Change of Custody
032919	0915	SIGNATURE	SIGNATURE <i>Joseph Walukiewicz</i>	1. Sample log-in 2. Pressure Check 3. Pre-analysis storage
		PRINTED NAME	PRINTED NAME JOSEPH WALUKIEWICZ	
032919	0925	SIGNATURE <i>Joseph Walukiewicz</i>	SIGNATURE	Placement in TO-15 sample storage area until ready for analysis
		PRINTED NAME JOSEPH WALUKIEWICZ	PRINTED NAME	
4/4/19	1330	SIGNATURE	SIGNATURE <i>Jeff Schmitt</i>	TO-15/LLTO-15 analysis on: 02214-01, 02, 03 - 04, 05, 06, 07
		PRINTED NAME	PRINTED NAME JEFF SCHMITT	
		SIGNATURE	SIGNATURE	
		PRINTED NAME	PRINTED NAME	
		SIGNATURE	SIGNATURE	
		PRINTED NAME	PRINTED NAME	
		SIGNATURE	SIGNATURE	
		PRINTED NAME	PRINTED NAME	
		SIGNATURE	SIGNATURE	
		PRINTED NAME	PRINTED NAME	
		SIGNATURE	SIGNATURE	
		PRINTED NAME	PRINTED NAME	

Section II: Methodology Review

Methodology Summary for Air Collected from Hazardous Waste Site Contract

Laboratory:	Integrated Analytical Lab, LLC	Project No:	Lofts at Globe Mill
Location:	Randolph, NJ	SDG No:	E19-02214

Name	Required Methodology	Indicate Method
Volatile Organics	US EPA TO-15	US EPA Method TO-15

Section III: Case Narrative

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
Project #: Lofts at Globe Mill
SDG #: E19-02214

Randolph, NJ 07869
NJDEP (Primary AB) Certification#: 14751
NY ELAP Certification #: 11402
CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

Date of first sample receipt: 3/29/2019

Date of last sample receipt: 3/29/2019

Client: EFI Global

Project/Site: Lofts at Globe Mill / NY

Client ID	Lab ID	Receipt Date	Analysis Date	DF	Diluted For
NS-3	E19-02214-01	03/29/2019	04/05/2019	10.0	Acetone
NS-3	E19-02214-01	03/29/2019	04/04/2019	1.0	NA
NS-2	E19-02214-02	03/29/2019	04/05/2019	10.0	NA
NS-1	E19-02214-03	03/29/2019	04/05/2019	10.0	NA
NS-5	E19-02214-04	03/29/2019	04/08/2019	50.0	Toluene
NS-5	E19-02214-04	03/29/2019	04/05/2019	10.0	Screening Data
ASB2-1	E19-02214-05	03/29/2019	04/05/2019	1.0	NA
SS-1	E19-02214-06	03/29/2019	04/05/2019	10.0	NA
SS-2	E19-02214-07	03/29/2019	04/05/2019	10.0	NA

IAL Sample ID	Canister ID	Outgoing Pressure ("Hg)	Incoming Pressure ("Hg)	Flow Controller ID	Outgoing Flow Rate (cc/min)	Incoming Flow Rate (cc/min)	Flow Rate RPD*
E19-02214-01	3045A	-29	-1.0	7337354	199.20	201.00	0.90
E19-02214-02	3015A	-29	0.0	7337511	202.30	205.80	1.72
E19-02214-03	3011	-29	-1.0	A0194191-5	199.90	202.10	1.09
E19-02214-04	3426	-29	0.0	7340609	203.60	201.10	1.24
E19-02214-05	5092	-29	0.0	7300978	201.90	200.00	0.95
E19-02214-06	3006	-29	0.0	7309955	202.70	202.60	0.05
E19-02214-07	2095	-29	0.0	A0113956-4	200.20	204.00	1.88

*Pre-sampling and Post-sampling Flow Controller calibration check RPD $\leq$ 20%

Flow Controller Note: none

Sample Receipt: Samples were received in good condition. Documentation was in order.
Samples were received at IAL by: Joseph Walukiewicz

Sample Preparation: None required.

Sample Analysis:

Hold Time: All within recommended hold times.

Instrument Calibration: Meets method criteria.

Analysis performed by: Jeff Schmitt

SDG Non-Conformances: none

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
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Randolph, NJ 07869
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NY ELAP Certification #: 11402
CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

Date of first sample receipt: 3/29/2019

Date of last sample receipt: 3/29/2019

Client: EFI Global

Project/Site: Lofts at Globe Mill / NY

Tentatively Identified Compounds: Tentatively Identified Compounds (TICs) are determined using a NIST library search. TICs are reported at 10% of the applicable internal standard. Dilution factors are calculated into the final reported result. Since the compounds found are tentatively identified, the conversion from ppbv to ug/m3 may not be made.

Canister-to-Canister dilutions: none

Dilutions: Dilutions, if necessary, will be conducted directly on the instrument up to a 500x dilution. When dilutions of 1000x or higher are necessary, the laboratory must inject a volume of sample into another certified clean canister and add humidified Z-1 zero air to the remainder of the canister volume. Tedlar bags are not used for dilutions.

If a sample is received with historically high levels of analytes, a 100x can-to-can dilution may be used from the start. A 100x canister-to-canister dilution may be also be used at the analyst's discretion.

On-instrument dilutions are conducted as follows:

Dilution Factor	Sample Volume Injected (cc)
1	500
2.5	200
5	100
10	50
20	25
25	20
50	10
100	5
200	2.5
250	2
500	1

Canister-to-canister dilutions are conducted as follows:

A certified clean canister is obtained and evacuated to approximately -30"Hg. Both the clean/dilution canister and sample canister are fitted with a 1/4" Swagelok® nut fitting equipped with septa. Depending on dilution factor necessary, a sample aliquot is removed from the canister and injected into the clean canister using 30cc Multifit gas-tight syringe. Once the correct sample aliquot has been transferred, the dilution canister should be connected to the humidified Z-1 zero air supply and filled to ambient pressure (0"Hg).

Dilution Factor	Sample Aliquot	Z-1 Make-up Added
100	60ml	5940ml
1000	6ml	5994ml

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
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CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

Date of first sample receipt: 3/29/2019

Date of last sample receipt: 3/29/2019

Client: EFI Global

Project/Site: Lofts at Globe Mill / NY

If further dilutions need to be made from the dilution canister, they may be made on-instrument. Using a 100x dilution canister, the following on-instrument dilutions can be produced:

Dilution Factor	Sample Volume Injected
100	500ml
250	200ml
500	100ml
1000	50ml
2000	25ml
2500	20ml
5000	10ml

Using a 1000x dilution canister, the following on-instrument dilutions can be produced:

Dilution Factor	Sample Volume Injected
1000	500ml
2500	200ml
5000	100ml
10,000	50ml
20,000	25ml
25,000	20ml
50,000	10ml

If further dilutions need to be made from the dilution canister, beyond 50,000x, a subsequent canister-to-canister dilution must be made using the above prescribed protocol.

GC Column and ID: RTX-1 SN 1119138, RTX-VMS SN 1586881, or equivalent

Calibration Standards: Only gas phase standards were used. Primary and second-source standards provided by Scott Specialty Gases or Airgas Specialty Gases/ Air Liquide

Working Standards: Primary source standards* are created from:

- Airgas Specialty Gases Cylinder #CC483586, valid 3/6/17 through 4/6/19 @ approximately 100ppb per compound, with exception of m&p-xylenes @ 200ppb. Standard is directly introduced into the instrument for all calibration standard concentrations. Dilutions are made accordingly, on instrument. The 10ppbv standard is also used for the Daily Calibration Verification Standard (DCVS), the Laboratory Control Sample (LCS) and Closing Calibration Verification Standard (CCCVS).

The second source standard*, used as the Initial Calibration Verification Standard (ICVSS), is introduced into the instrument in the same manner as the primary source standard, using:

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
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Randolph, NJ 07869
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CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

Date of first sample receipt: 3/29/2019

Date of last sample receipt: 3/29/2019

Client: EFI Global
Project/Site: Lofts at Globe Mill / NY

- Airgas Specialty Gases Cylinder #CC483422, valid 5/4/17 through 4/27/19
@ approximately 100ppb per compound, with exception of m&p-xylenes @ 200ppb.

Internal standards* are created from:

- Scott Gas, Cylinder #ALM029426, valid 5/11/2016 through 5/12/2019
@ 5ppm per compound. Standard is directly introduced into the instrument to reach the 10ppbv concentrations. 1cc of internal standard is added to every standard, method blank, instrument blank, and sample run.

*Standard may be used past its expiration date provided that concentrations are verified by a current/unexpired second source standard.

03/13/2019

100 ppbv internal standard mix (AA1521BFB) - prepared in cylinder #ALM029426
10 ppbv per standard/sample - 50 ml injected
100 ppbv calibration standard (aa1522std01) - prepared in cylinder #CC483586
40 ppbv standard - 200 ml injected
20 ppbv standard - 100 ml injected
10 ppbv standard* - 50 ml injected
*Standard also used for CCCVS
2 ppbv standard - 10 ml injected
0.20 ppbv standard* - 1 ml injected
*Standard also used for RLLCS

03/15/2019

100 ppbv internal standard mix (AA1561BFB) - prepared in cylinder #ALM029426
10 ppbv per standard/sample - 50 ml injected
100 ppbv calibration standard (AA1562DCVS) - prepared in cylinder #CC483586
10 ppbv standard* - 50 ml injected
*Standard also used for DCVS & CCCVS
0.20 ppbv standard* - 1 ml injected
*Standard also used for RLLCS
Method Blank (AA1564BLK) - prepared in canister #1127
500 ml injected

04/04/2019

100 ppbv internal standard mix (AA1961BFB) - prepared in cylinder #ALM029426
10 ppbv per standard/sample - 50 ml injected
100 ppbv calibration standard (AA1962DCVS) - prepared in cylinder #CC483586
10 ppbv standard* - 50 ml injected
*Standard also used for DCVS & CCCVS
0.20 ppbv standard* - 1 ml injected
*Standard also used for RLLCS
Method Blank (AA1964BLK) - prepared in canister #1127

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
Project #: Lofts at Globe Mill
SDG #: E19-02214

Randolph, NJ 07869
NJDEP (Primary AB) Certification#: 14751
NY ELAP Certification #: 11402
CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

Date of first sample receipt: 3/29/2019

Date of last sample receipt: 3/29/2019

Client: EFI Global
Project/Site: Lofts at Globe Mill / NY

04/04/2019

500 ml injected

Sample E19-02214-01 (AA1977) - sample taken in canister #3045A
500 ml sample volume injected, 1x dilution

04/05/2019

100 ppbv internal standard mix (AA1991BFB) - prepared in cylinder #ALM029426
10 ppbv per standard/sample - 50 ml injected
100 ppbv calibration standard (AA1992DCVS) - prepared in cylinder #CC483586
10 ppbv standard* - 50 ml injected

*Standard also used for DCVS & CCCVS

Method Blank (AA1994BLK) - prepared in canister #1127

500 ml injected

Sample E19-02214-01 (AA1999) - sample taken in canister #3045A
50 ml sample volume injected, 10x dilution

Sample E19-02214-02 (AA2001) - sample taken in canister #3015A
50 ml sample volume injected, 10x dilution

Sample E19-02214-03 (AA2002) - sample taken in canister #3011
50 ml sample volume injected, 10x dilution

Sample E19-02214-04 (AA2003) - sample taken in canister #3426
50 ml sample volume injected, 10x dilution

Sample E19-02214-05 (AA2004) - sample taken in canister #5092
500 ml sample volume injected, 1x dilution

Sample E19-02214-06 (AA2005) - sample taken in canister #3006
50 ml sample volume injected, 10x dilution

Sample E19-02214-07 (AA2006) - sample taken in canister #2095
50 ml sample volume injected, 10x dilution

04/08/2019

100 ppbv internal standard mix (AA2021BFB) - prepared in cylinder #ALM029426
10 ppbv per standard/sample - 50 ml injected
100 ppbv calibration standard (AA2022DCVS) - prepared in cylinder #CC483586
10 ppbv standard* - 50 ml injected

*Standard also used for DCVS & CCCVS

Method Blank (AA2024BLK) - prepared in canister #1127

500 ml injected

Sample E19-02214-04 (AA2030) - sample taken in canister #3426
10 ml sample volume injected, 50x dilution

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
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SDG #: E19-02214

Randolph, NJ 07869
NJDEP (Primary AB) Certification#: 14751
NY ELAP Certification #: 11402
CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

Date of first sample receipt: 3/29/2019

Date of last sample receipt: 3/29/2019

Client: EFI Global
Project/Site: Lofts at Globe Mill / NY

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. All conversions are based upon a room temperature of 77°F(25°C) and room pressure of 101.325 kPa (1atm).

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of data contained in this hardcopy data package and in the computer-readable data submitted on CD/diskette and by electronic mail has been authorized by the laboratory manager or his designee, as verified by the following signature.



Michael H. Leftin, Ph.D.
Laboratory Director

April 10, 2019
Date

Section IV: Method Detection Limit Summary

REPORTING METHOD DETECTION LIMIT (MDL) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument ID: GC - Agilent 7890A / MS - Agilent 5975C (IAL ID: Instrument AA)
 Report Prepared by: Lauren Jenkins
 Preparation Date: 5/22/18

MDL Effective Date: 5/22/2018
 MDL Expiration Date: 4/9/2019
 Analyst: Jeff Schmitt

Compound Name	CAS	Molecular Weight	MDL ppbv	PQL ppbv	NY/ LLTO-15/ PA RL ppbv	NY/ LLTO-15/ PA RL µg/m ³	NJ TO-15 RL ppbv	NJ TO-15 RL µg/m ³	True value/ MDL
Propene	115-07-1	42.08	0.13	0.40	0.20	0.34	0.40	0.69	1.7
Dichlorodifluoromethane	124-48-1	120.9	0.15	0.44	0.20	0.99	0.40	2.0	1.5
Chloromethane	74-87-3	50.49	0.20	0.59	0.20	0.41	0.40	0.83	1.1
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.12	0.36	0.20	1.4	0.40	2.8	1.7
Vinyl chloride	75-01-4	62.50	0.10	0.31	0.20	0.51	0.40	1.0	2.1
1,3-Butadiene	106-99-0	54.09	0.075	0.22	0.20	0.44	0.40	0.88	2.9
n-Butane	106-97-8	58.12	0.074	0.22	0.20	0.48	0.40	0.95	3.0
Bromomethane	74-83-9	94.94	0.14	0.43	0.20	0.78	0.40	1.6	1.4
Chloroethane	75-00-3	64.52	0.087	0.26	0.20	0.53	0.40	1.1	2.3
Ethanol	64-17-5	46.07	0.068	0.20	0.20	0.38	0.40	0.75	2.8
Vinyl bromide	593-60-2	106.9	0.082	0.25	0.20	0.87	0.40	1.7	2.7
Acrolein	107-02-8	56.06	0.059	0.18	0.20	0.46	0.40	0.92	4.1
Acetone	67-64-1	58.08	0.10	0.29	0.20	0.48	0.40	0.95	2.3
Trichlorofluoromethane	75-69-4	137.4	0.11	0.34	0.20	1.1	0.40	2.2	1.9
Isopropanol	67-63-0	60.10	0.068	0.20	0.20	0.49	0.40	0.98	2.9
n-Pentane	109-66-0	72.15	0.057	0.17	0.20	0.59	0.40	1.2	3.8
1,1-Dichloroethene	75-35-4	96.94	0.068	0.21	0.20	0.79	0.40	1.6	3.2
Methylene chloride	75-09-2	84.94	0.11	0.32	0.20	0.69	0.40	1.4	2.0
Tert-butyl alcohol	75-65-0	74.12	0.060	0.18	0.20	0.61	0.40	1.2	4.0
Allyl Chloride	107-05-1	76.53	0.075	0.23	0.20	0.63	0.40	1.3	2.9
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.13	0.40	0.20	1.5	0.40	3.1	1.6
Carbon disulfide	75-15-0	76.14	0.12	0.36	0.20	0.62	0.40	1.2	1.8
1,2-Dichloroethene (trans)	156-60-5	96.94	0.067	0.20	0.20	0.79	0.40	1.6	3.3
1,1-Dichloroethane	75-34-3	98.96	0.092	0.27	0.20	0.81	0.40	1.6	2.4
Methyl tert-butyl ether	1634-04-4	88.15	0.036	0.11	0.20	0.72	0.40	1.4	6.1
Methyl ethyl ketone	78-93-3	72.11	0.043	0.13	0.20	0.59	0.40	1.2	5.1
1,2-Dichloroethene (cis)	156-59-2	96.94	0.064	0.19	0.20	0.79	0.40	1.6	3.5
Ethyl acetate	141-78-6	88.11	0.090	0.27	0.20	0.72	0.40	1.4	2.4
n-Hexane	110-54-3	86.17	0.084	0.25	0.20	0.70	0.40	1.4	2.6
Chloroform	67-66-3	119.4	0.10	0.30	0.20	0.98	0.40	2.0	2.2
Tetrahydrofuran	109-99-9	72.11	0.047	0.14	0.20	0.59	0.40	1.2	5.1
1,2-Dichloroethane	106-93-4	98.96	0.089	0.27	0.20	0.81	0.40	1.6	2.5
1,1,1-Trichloroethane	71-55-6	133.4	0.10	0.31	0.20	1.1	0.40	2.2	2.1
Benzene	71-43-2	78.11	0.049	0.15	0.20	0.64	0.40	1.3	4.5
Carbon tetrachloride	56-23-5	153.8	0.11	0.33	0.20	1.3	0.40	2.5	2.0
Cyclohexane	110-82-7	84.16	0.040	0.12	0.20	0.69	0.40	1.4	5.4
1,2-Dichloropropane	78-87-5	113.0	0.094	0.28	0.20	0.92	0.40	1.8	2.3
Bromodichloromethane	75-27-4	163.8	0.14	0.41	0.20	1.3	0.40	2.7	1.6
2,2,4-Trimethylpentane	540-84-1	114.2	0.082	0.25	0.20	0.93	0.40	1.9	2.7
Trichloroethene	79-01-6	131.4	0.091	0.27	0.20	1.1	0.40	2.1	2.4
1,4-Dioxane	123-91-1	88.12	0.057	0.17	0.20	0.72	0.40	1.4	3.5
Methyl methacrylate	80-62-6	100.12	0.057	0.17	0.20	0.82	0.40	1.6	3.8
n-Heptane	142-82-5	100.2	0.066	0.20	0.20	0.82	0.40	1.6	3.3
1,3-Dichloropropene (cis)	10061-01-5	111.0	0.062	0.19	0.20	0.91	0.40	1.8	3.5
Methyl isobutyl ketone	108-10-1	100.2	0.080	0.24	0.20	0.82	0.40	1.6	2.8
1,3-Dichloropropene (trans)	10061-02-6	111.0	0.06	0.18	0.20	0.91	0.40	1.8	3.3
1,1,2-Trichloroethane	79-00-5	133.4	0.12	0.36	0.20	1.1	0.40	2.2	1.9
Toluene	108-88-3	92.14	0.057	0.17	0.20	0.75	0.40	1.5	3.9
Methyl n-butyl ketone	591-78-6	100.16	0.072	0.22	0.20	0.82	0.40	1.6	3.1
Dibromochloromethane	75-71-8	208.3	0.11	0.34	0.20	1.7	0.40	3.4	2.0
1,2-Dibromoethane	107-06-2	187.9	0.095	0.28	0.20	1.5	0.40	3.1	2.3
Tetrachloroethene	127-18-4	165.8	0.082	0.25	0.20	1.4	0.40	2.7	2.7
Chlorobenzene	108-90-7	112.6	0.15	0.44	0.20	0.92	0.40	1.8	1.5
Ethylbenzene	100-41-4	106.2	0.091	0.27	0.20	0.87	0.40	1.7	2.4
Xylenes (m p)	179601-23-1	106.2	0.084	0.25	0.40	1.7	0.40	1.7	5.2
Bromoform	75-25-2	252.8	0.067	0.20	0.20	2.1	0.40	4.1	3.3
Styrene	100-42-5	104.1	0.045	0.14	0.20	0.85	0.40	1.7	4.9
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.057	0.17	0.20	1.4	0.40	2.7	3.8
Xylene (o)	95-47-6	106.2	0.16	0.48	0.20	0.87	0.40	1.7	1.4
n-Nonane	111-84-2	128.2	0.057	0.17	0.20	1.0	0.40	2.1	3.9
Cumene (Isopropylbenzene)	98-82-8	120.2	0.068	0.20	0.20	0.98	0.40	2.0	3.3
2-Chlorotoluene	95-49-8	126.6	0.055	0.17	0.20	1.0	0.40	2.1	4.0
n-Propyl benzene	103-65-1	120.19	0.059	0.18	0.20	0.98	0.40	2.0	3.8
4-Ethyltoluene	622-96-8	120.2	0.059	0.18	0.20	0.98	0.40	2.0	3.7
1,3,5-Trimethylbenzene	108-67-8	120.2	0.058	0.17	0.20	0.98	0.40	2.0	3.8
1,2,4-Trimethylbenzene	95-63-6	120.2	0.041	0.12	0.20	0.98	0.40	2.0	5.3

REPORTING METHOD DETECTION LIMIT (MDL) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument ID: GC - Agilent 7890A / MS - Agilent 5975C (IAL ID: Instrument AA)
 Report Prepared by: Lauren Jenkins
 Preparation Date: 5/22/18

MDL Effective Date: 5/22/2018
 MDL Expiration Date: 4/9/2019
 Analyst: Jeff Schmitt

Compound Name	CAS	Molecular Weight	MDL ppbv	PQL ppbv	NY/ LLTO-15/ PA RL ppbv	NY/ LLTO-15/ PA RL µg/m ³	NJ TO-15 RL ppbv	NJ TO-15 RL µg/m ³	True value/ MDL
Benzyl chloride	100-44-7	126.59	0.066	0.20	0.20	1.0	0.40	2.1	3.0
1,3-Dichlorobenzene	541-73-1	147.0	0.071	0.21	0.20	1.2	0.40	2.4	3.1
1,4-Dichlorobenzene	106-46-7	147.0	0.065	0.19	0.20	1.2	0.40	2.4	3.4
1,2-Dichlorobenzene	95-50-1	147.0	0.070	0.21	0.20	1.2	0.40	2.4	3.1
1,2,4-Trichlorobenzene	120-82-1	181.5	0.080	0.24	0.20	1.5	0.40	3.0	3.0
Naphthalene	91-20-3	128.2	0.075	0.23	0.20	1.0	0.40	2.1	3.2
1,3-Hexachlorobutadiene	87-68-3	260.8	0.16	0.47	0.20	2.1	0.40	4.3	1.4

Where:

MDL is defined as the higher of the MDL Spike and MDL Blank

PQL is MDLx3

ppbv is parts per billion by volume and is how results come off the instrument

µg/m³ = ppbv x molecular weight / 24.45

Processing Method: C:\MSDCHEM\1\METHODS\AA0302.M

Initial Calibration: C:\MSDCHEM\1\METHODS\AA0302.M

Location of this file: P:\PAL Reports\2018\LLTO-15 and TO-15 Common Files\Agilent MDL

Instrument used for Clean Canister Certification Analysis? YES



Michael Leftin, Ph.D.
 Laboratory Director

Date: May 24, 2018



Lauren Jenkins
 Quality Assurance Officer

Date: May 24, 2018

METHOD DETECTION LIMIT SPIKE (MDL_s) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air

Method: EPA TO-15/NJDEP LLTO-15

Filename	Run /Type	Date	Time
aa6444	Spike 1	4/10/2018	22:33
aa6445	Spike 2	4/10/2018	23:08
aa6446	Spike 3	4/10/2018	23:44
aa6479	Spike 4	4/12/2018	13:07
aa6480	Spike 5	4/12/2018	13:42
aa6543	Spike 6	4/16/2018	18:36
aa6544	Spike 7	4/16/2018	19:15

Compound Name	CAS	Spike 1	Spike 2	Spike 3	Spike 4	Spike 5	Spike 6	Spike 7	Mean Value	Spike Value	Percent Recovery	Standard Deviation	MDLs ppbv	Ratio
Propene	115-07-1	0.27	0.25	0.27	0.26	0.28	0.35	0.35	0.29	0.22	132	0.042	0.13	1.67
Dichlorodifluoromethane	124-48-1	0.34	0.32	0.30	0.30	0.28	0.40	0.39	0.33	0.22	151	0.047	0.147	1.49
Chloromethane	74-87-3	0.25	0.25	0.25	0.26	0.24	0.40	0.34	0.28	0.22	129	0.063	0.20	1.11
1,2-Dichlorotetrafluoroethane	76-14-2	0.43	0.41	0.43	0.39	0.38	0.48	0.46	0.42	0.20	212	0.038	0.121	1.65
Vinyl chloride	75-01-4	0.19	0.16	0.18	0.18	0.18	0.24	0.24	0.20	0.22	89	0.033	0.104	2.11
1,3-Butadiene	106-99-0	0.13	0.11	0.11	0.09	0.12	0.16	0.15	0.12	0.22	56	0.024	0.075	2.95
n-Butane	106-97-8	0.18	0.19	0.19	0.16	0.16	0.22	0.21	0.19	0.22	85	0.024	0.074	2.97
Bromomethane	74-83-9	0.26	0.24	0.23	0.23	0.22	0.32	0.33	0.26	0.20	132	0.046	0.144	1.38
Chloroethane	75-00-3	0.25	0.25	0.21	0.24	0.20	0.26	0.28	0.24	0.20	120	0.028	0.09	2.31
Ethanol	64-17-5	0.10	0.09	0.11	0.10	0.10	0.13	0.15	0.11	0.19	60	0.022	0.07	2.76
Vinyl bromide	593-60-2	0.15	0.16	0.13	0.14	0.12	0.18	0.19	0.15	0.22	70	0.026	0.082	2.67
Acrolein	107-02-8	0.11	0.14	0.13	0.12	0.14	0.15	0.16	0.14	0.24	56	0.019	0.06	4.09
Acetone	67-64-1	0.21	0.21	0.19	0.18	0.21	0.25	0.27	0.22	0.22	99	0.031	0.097	2.27
Trichlorofluoromethane	75-69-4	0.35	0.35	0.34	0.32	0.30	0.41	0.39	0.35	0.22	159	0.036	0.114	1.93
Isopropanol	67-63-0	0.10	0.10	0.11	0.10	0.10	0.14	0.15	0.11	0.20	57	0.022	0.07	2.93
n-Pentane	109-66-0	0.13	0.15	0.13	0.12	0.12	0.17	0.16	0.14	0.22	65	0.018	0.057	3.83
1,1-Dichloroethene	75-35-4	0.15	0.16	0.15	0.14	0.14	0.19	0.19	0.16	0.22	72	0.022	0.068	3.21
Methylene chloride	75-09-2	0.30	0.30	0.29	0.30	0.28	0.37	0.36	0.31	0.22	142	0.034	0.108	2.03
Tert-butyl alcohol	75-65-0	0.15	0.14	0.13	0.13	0.13	0.17	0.18	0.15	0.24	62	0.019	0.060	3.99
Allyl Chloride	107-05-1	0.14	0.15	0.13	0.12	0.10	0.18	0.15	0.14	0.22	63	0.024	0.075	2.93
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.42	0.41	0.40	0.38	0.36	0.48	0.46	0.41	0.22	188	0.043	0.134	1.64
Carbon disulfide	75-15-0	0.26	0.25	0.25	0.24	0.23	0.32	0.32	0.27	0.22	122	0.038	0.119	1.85
1,2-Dichloroethene (trans)	156-60-5	0.18	0.18	0.18	0.17	0.16	0.22	0.21	0.18	0.22	84	0.021	0.067	3.26
1,1-Dichloroethane	75-34-3	0.28	0.27	0.27	0.25	0.26	0.33	0.31	0.28	0.22	128	0.029	0.092	2.40
Methyl tert-butyl ether	1634-04-4	0.13	0.13	0.13	0.12	0.11	0.15	0.14	0.13	0.22	58	0.012	0.036	6.08
Methyl ethyl ketone	78-93-3	0.15	0.16	0.16	0.15	0.15	0.18	0.18	0.16	0.22	73	0.014	0.043	5.09
1,2-Dichloroethene (cis)	156-59-2	0.16	0.17	0.15	0.15	0.14	0.20	0.19	0.17	0.22	75	0.020	0.064	3.46
Ethyl acetate	141-78-6	0.24	0.21	0.21	0.22	0.17	0.25	0.25	0.22	0.22	100	0.029	0.09	2.45
n-Hexane	110-54-3	0.16	0.16	0.16	0.15	0.13	0.21	0.20	0.17	0.22	76	0.027	0.084	2.62
Chloroform	67-66-3	0.33	0.33	0.32	0.30	0.29	0.38	0.37	0.33	0.22	150	0.032	0.100	2.19
Tetrahydrofuran	109-99-9	0.11	0.12	0.12	0.11	0.12	0.14	0.15	0.12	0.24	52	0.015	0.047	5.09
1,2-Dichloroethane	106-93-4	0.27	0.26	0.26	0.25	0.24	0.31	0.31	0.27	0.22	124	0.028	0.089	2.47
1,1,1-Trichloroethane	71-55-6	0.32	0.30	0.31	0.29	0.27	0.37	0.35	0.32	0.22	144	0.033	0.105	2.10
Benzene	71-43-2	0.20	0.21	0.20	0.19	0.19	0.23	0.23	0.21	0.22	94	0.016	0.049	4.46
Carbon tetrachloride	56-23-5	0.34	0.32	0.32	0.30	0.29	0.39	0.37	0.33	0.22	151	0.035	0.109	2.01
Cyclohexane	110-82-7	0.13	0.12	0.12	0.12	0.11	0.14	0.14	0.13	0.22	57	0.013	0.040	5.45
1,2-Dichloropropane	78-87-5	0.34	0.33	0.32	0.30	0.30	0.36	0.38	0.33	0.22	150	0.030	0.094	2.33
Bromodichloromethane	75-27-4	0.39	0.38	0.36	0.32	0.33	0.44	0.43	0.38	0.22	172	0.044	0.137	1.60
2,2,4-Trimethylpentane	540-84-1	0.16	0.16	0.16	0.15	0.15	0.21	0.20	0.17	0.22	77	0.026	0.082	2.68
Trichloroethene	79-01-6	0.30	0.28	0.27	0.26	0.24	0.33	0.29	0.28	0.22	128	0.029	0.091	2.42
1,4-Dioxane	123-91-1	0.19	0.21	0.21	0.16	0.19	0.22	0.21	0.20	0.20	100	0.018	0.057	3.50
Methyl methacrylate	80-62-6	0.16	0.15	0.15	0.14	0.13	0.18	0.17	0.15	0.22	70	0.018	0.057	3.85
n-Heptane	142-82-5	0.18	0.16	0.18	0.15	0.15	0.20	0.20	0.17	0.22	79	0.021	0.066	3.35
1,3-Dichloropropene (cis)	10061-01-5	0.20	0.19	0.19	0.17	0.17	0.22	0.22	0.19	0.22	88	0.020	0.062	3.52
Methyl isobutyl ketone	108-10-1	0.18	0.18	0.19	0.16	0.17	0.24	0.21	0.19	0.22	87	0.025	0.08	2.76
1,3-Dichloropropene (trans)	10061-02-6	0.18	0.19	0.17	0.16	0.16	0.21	0.21	0.18	0.20	92	0.019	0.060	3.34
1,1,2-Trichloroethane	79-00-5	0.40	0.39	0.38	0.36	0.35	0.45	0.43	0.39	0.22	180	0.038	0.119	1.85
Toluene	108-88-3	0.18	0.18	0.17	0.17	0.16	0.20	0.21	0.18	0.22	83	0.018	0.057	3.89
Methyl n-butyl ketone	591-78-6	0.16	0.16	0.16	0.14	0.13	0.19	0.19	0.16	0.22	74	0.023	0.07	3.06
Dibromochloromethane	75-71-8	0.36	0.34	0.35	0.33	0.32	0.42	0.40	0.36	0.22	164	0.036	0.112	1.96
1,2-Dibromoethane	107-06-2	0.29	0.28	0.28	0.27	0.25	0.34	0.32	0.29	0.22	132	0.030	0.095	2.32
Tetrachloroethene	127-18-4	0.29	0.31	0.28	0.27	0.26	0.34	0.32	0.30	0.22	134	0.026	0.082	2.69
Chlorobenzene	108-90-7	0.52	0.51	0.50	0.47	0.45	0.58	0.56	0.51	0.22	233	0.046	0.145	1.52
Ethylbenzene	100-41-4	0.28	0.27	0.28	0.25	0.24	0.33	0.30	0.28	0.22	127	0.029	0.091	2.42
Xylenes (m p)	179601-23-1	0.26	0.25	0.25	0.22	0.21	0.29	0.28	0.25	0.44	57	0.027	0.08	5.23
Bromoform	75-25-2	0.19	0.18	0.18	0.16	0.16	0.21	0.21	0.18	0.22	83	0.021	0.067	3.28
Styrene	100-42-5	0.18	0.17	0.16	0.16	0.15	0.19	0.18	0.17	0.22	78	0.014	0.045	4.87
1,1,2,2-Tetrachloroethane	79-34-5	0.15	0.16	0.16	0.14	0.14	0.18	0.18	0.16	0.22	72	0.018	0.057	3.83
Xylene (o)	95-47-6	0.44	0.43	0.42	0.38	0.37	0.51	0.48	0.43	0.22	197	0.051	0.161	1.37
n-Nonane	111-84-2	0.14	0.14	0.13	0.12	0.12	0.16	0.16	0.14	0.22	64	0.018	0.057	3.87

METHOD DETECTION LIMIT SPIKE (MDL_s) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air

Method: EPA TO-15/NJDEP LLTO-15

Filename	Run /Type	Date	Time
aa6444	Spike 1	4/10/2018	22:33
aa6445	Spike 2	4/10/2018	23:08
aa6446	Spike 3	4/10/2018	23:44
aa6479	Spike 4	4/12/2018	13:07
aa6480	Spike 5	4/12/2018	13:42
aa6543	Spike 6	4/16/2018	18:36
aa6544	Spike 7	4/16/2018	19:15

Compound Name	CAS	Spike 1	Spike 2	Spike 3	Spike 4	Spike 5	Spike 6	Spike 7	Mean Value	Spike Value	Percent Recovery	Standard Deviation	MDLs ppbv	Ratio
Cumene (Isopropylbenzene)	98-82-8	0.22	0.21	0.21	0.19	0.18	0.24	0.23	0.21	0.22	97	0.022	0.068	3.25
2-Chlorotoluene	95-49-8	0.18	0.16	0.17	0.15	0.15	0.19	0.19	0.17	0.22	77	0.018	0.055	3.99
n-Propyl benzene	103-65-1	0.16	0.16	0.15	0.14	0.14	0.19	0.18	0.16	0.22	74	0.019	0.059	3.76
4-Ethyltoluene	622-96-8	0.14	0.14	0.14	0.12	0.12	0.16	0.17	0.14	0.22	64	0.019	0.059	3.71
1,3,5-Trimethylbenzene	108-67-8	0.15	0.15	0.14	0.13	0.12	0.17	0.17	0.15	0.22	66	0.019	0.058	3.77
1,2,4-Trimethylbenzene	95-63-6	0.13	0.12	0.13	0.11	0.11	0.14	0.14	0.12	0.22	56	0.013	0.041	5.33
Benzyl chloride	100-44-7	0.18	0.17	0.17	0.15	0.15	0.21	0.19	0.17	0.20	87	0.021	0.066	3.03
1,3-Dichlorobenzene	541-73-1	0.23	0.22	0.22	0.20	0.20	0.26	0.25	0.23	0.22	102	0.023	0.071	3.08
1,4-Dichlorobenzene	106-46-7	0.19	0.18	0.18	0.17	0.17	0.21	0.22	0.19	0.22	86	0.021	0.065	3.40
1,2-Dichlorobenzene	95-50-1	0.20	0.20	0.20	0.18	0.17	0.23	0.22	0.20	0.22	91	0.022	0.070	3.12
1,2,4-Trichlorobenzene	120-82-1	0.11	0.11	0.10	0.11	0.10	0.16	0.16	0.12	0.24	50	0.025	0.080	3.00
Naphthalene	91-20-3	0.06	0.04	0.04	0.05	0.05	0.10	0.09	0.06	0.24	25	0.024	0.075	3.20
1,3-Hexachlorobutadiene	87-68-3	0.36	0.34	0.32	0.31	0.31	0.44	0.41	0.36	0.22	162	0.050	0.157	1.40

METHOD DETECTION LIMIT BLANK (MDL_B) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air

Method: EPA TO-15/
NJDEP LLTO-15

Filename	Run /Type	Date	Time
aa6439	Blank 1	4/10/2018	19:42
aa6443	Blank 2	4/10/2018	21:57
aa6476	Blank 3	4/12/2018	23:24
aa6477	Blank 4	4/12/2018	11:58
aa6478	Blank 5	4/12/2018	12:31
aa6541	Blank 6	4/16/2018	17:22
aa6542	Blank 7	4/16/2018	17:56

Compound Name	CAS	Blank 1	Blank 2	Blank 3	Blank 4	Blank 5	Blank 6	Blank 7	Mean Value	Standard Deviation	MDLb ppbv
Propene	115-07-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichlorodifluoromethane	124-48-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chloromethane	74-87-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichlorotetrafluoroethane	76-14-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vinyl chloride	75-01-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3-Butadiene	106-99-0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Butane	106-97-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bromomethane	74-83-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chloroethane	75-00-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethanol	64-17-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vinyl bromide	593-60-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acrolein	107-02-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acetone	67-64-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trichlorofluoromethane	75-69-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopropanol	67-63-0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Pentane	109-66-0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1-Dichloroethene	75-35-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methylene chloride	75-09-2	0.071	0.073	0.063	0.067	0.047	0.065	0.079	0.066	0.010	0.031
Tert-butyl alcohol	75-65-0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Allyl Chloride	107-05-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carbon disulfide	75-15-0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichloroethene (trans)	156-60-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1-Dichloroethane	75-34-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl tert-butyl ether	1634-04-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl ethyl ketone	78-93-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichloroethene (cis)	156-59-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethyl acetate	141-78-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Hexane	110-54-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chloroform	67-66-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tetrahydrofuran	109-99-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichloroethane	106-93-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1,1-Trichloroethane	71-55-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzene	71-43-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carbon tetrachloride	56-23-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyclohexane	110-82-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichloropropane	78-87-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bromodichloromethane	75-27-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,2,4-Trimethylpentane	540-84-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trichloroethene	79-01-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,4-Dioxane	123-91-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl methacrylate	80-62-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Heptane	142-82-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3-Dichloropropene (cis)	10061-01-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl isobutyl ketone	108-10-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3-Dichloropropene (trans)	10061-02-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1,2-Trichloroethane	79-00-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Toluene	108-88-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl n-butyl ketone	591-78-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibromochloromethane	75-71-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dibromoethane	107-06-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tetrachloroethene	127-18-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chlorobenzene	108-90-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethylbenzene	100-41-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Xylenes (m p)	179601-23-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bromoform	75-25-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Styrene	100-42-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1,2,2-Tetrachloroethane	79-34-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Xylene (o)	95-47-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Nonane	111-84-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

METHOD DETECTION LIMIT BLANK (MDL_B) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air

Method: EPA TO-15/
NJDEP LLTO-15

Filename	Run /Type	Date	Time
aa6439	Blank 1	4/10/2018	19:42
aa6443	Blank 2	4/10/2018	21:57
aa6476	Blank 3	4/12/2018	23:24
aa6477	Blank 4	4/12/2018	11:58
aa6478	Blank 5	4/12/2018	12:31
aa6541	Blank 6	4/16/2018	17:22
aa6542	Blank 7	4/16/2018	17:56

Compound Name	CAS	Blank 1	Blank 2	Blank 3	Blank 4	Blank 5	Blank 6	Blank 7	Mean Value	Standard Deviation	MDLb ppbv
Cumene (Isopropylbenzene)	98-82-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-Chlorotoluene	95-49-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Propyl benzene	103-65-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4-Ethyltoluene	622-96-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3,5-Trimethylbenzene	108-67-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2,4-Trimethylbenzene	95-63-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzyl chloride	100-44-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3-Dichlorobenzene	541-73-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,4-Dichlorobenzene	106-46-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichlorobenzene	95-50-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2,4-Trichlorobenzene	120-82-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naphthalene	91-20-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3-Hexachlorobutadiene	87-68-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

METHOD DETECTION LIMIT VERIFICATION (MDLV) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Analysis Level: 0.20 ppbv, 0.40 for m p-xylenes
 Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument Identification: AA
 Date of Verification Study: 4/17/2018
 Study Identification File : aa6565rlcs
 Analyst: Jeff Schmitt
 Analysis/Processing Method: C:\MSDCHEM\1\METHODS\AA0302.M
 Cylinder ID: CC483586

Lauren Jenkins

Lauren Jenkins
 QA Officer

Date: May 22, 2018

Compound Name	CAS	MDLV (ppbv)	RL (ppbv)	RL/MDLV Ratio
Propene	115-07-1	0.43	0.20	0.47
Dichlorodifluoromethane	124-48-1	0.16	0.20	1.25
Chloromethane	74-87-3	0.34	0.20	0.59
1,2-Dichlorotetrafluoroethane	76-14-2	0.25	0.20	0.80
Vinyl chloride	75-01-4	0.26	0.20	0.77
1,3-Butadiene	106-99-0	0.20	0.20	1.00
n-Butane	106-97-8	0.25	0.20	0.80
Bromomethane	74-83-9	0.15	0.20	1.33
Chloroethane	75-00-3	0.25	0.20	0.80
Ethanol	64-17-5	0.15	0.20	1.33
Vinyl bromide	593-60-2	0.16	0.20	1.25
Acrolein	107-02-8	0.15	0.20	1.33
Acetone	67-64-1	0.26	0.20	0.77
Trichlorofluoromethane	75-69-4	0.27	0.20	0.74
Isopropanol	67-63-0	0.17	0.20	1.18
n-Pentane	109-66-0	0.19	0.20	1.05
1,1-Dichloroethene	75-35-4	0.21	0.20	0.95
Methylene chloride	75-09-2	0.36	0.20	0.56
Tert-butyl alcohol	75-65-0	0.2	0.20	1.00
Allyl Chloride	107-05-1	0.19	0.20	1.05
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.25	0.20	0.80
Carbon disulfide	75-15-0	0.22	0.20	0.91
1,2-Dichloroethene (trans)	156-60-5	0.24	0.20	0.83
1,1-Dichloroethane	75-34-3	0.20	0.20	1.00
Methyl tert-butyl ether	1634-04-4	0.17	0.20	1.18
Methyl ethyl ketone	78-93-3	0.2	0.20	1.00
1,2-Dichloroethene (cis)	156-59-2	0.22	0.20	0.91
Ethyl acetate	141-78-6	0.26	0.20	0.77
n-Hexane	110-54-3	0.21	0.20	0.95
Chloroform	67-66-3	0.25	0.20	0.80
Tetrahydrofuran	109-99-9	0.16	0.20	1.25
1,2-Dichloroethane	106-93-4	0.22	0.20	0.91
1,1,1-Trichloroethane	71-55-6	0.24	0.20	0.83
Benzene	71-43-2	0.25	0.20	0.80
Carbon tetrachloride	56-23-5	0.27	0.20	0.74
Cyclohexane	110-82-7	0.17	0.20	1.18
1,2-Dichloropropane	78-87-5	0.24	0.20	0.83
Bromodichloromethane	75-27-4	0.25	0.20	0.80
2,2,4-Trimethylpentane	540-84-1	0.19	0.20	1.05
Trichloroethene	79-01-6	0.18	0.20	1.11
1,4-Dioxane	123-91-1	0.24	0.20	0.83
Methyl methacrylate	80-62-6	0.17	0.20	1.18
n-Heptane	142-82-5	0.20	0.20	1.00
1,3-Dichloropropene (cis)	10061-01-5	0.22	0.20	0.91
Methyl isobutyl ketone	108-10-1	0.22	0.20	0.91
1,3-Dichloropropene (trans)	10061-02-6	0.20	0.20	1.00
1,1,2-Trichloroethane	79-00-5	0.27	0.20	0.74
Toluene	108-88-3	0.20	0.20	1.00
Methyl n-butyl ketone	591-78-6	0.18	0.20	1.11
Dibromochloromethane	75-71-8	0.26	0.20	0.77
1,2-Dibromoethane	107-06-2	0.23	0.20	0.87
Tetrachloroethene	127-18-4	0.21	0.20	0.95

METHOD DETECTION LIMIT VERIFICATION (MDLV) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Analysis Level: 0.20 ppbv, 0.40 for m p-xylenes
 Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument Identification: AA
 Date of Verification Study: 4/17/2018
 Study Identification File : aa6565rlcs
 Analyst: Jeff Schmitt
 Analysis/Processing Method: C:\MSDCHEM\1\METHODS\AA0302.M
 Cylinder ID: CC483586

Lauren Jenkins

Lauren Jenkins
 QA Officer

Date: May 22, 2018

Compound Name	CAS	MDLV (ppbv)	RL (ppbv)	RL/MDLV Ratio
Chlorobenzene	108-90-7	0.25	0.20	0.80
Ethylbenzene	100-41-4	0.19	0.20	1.05
Xylenes (m p)	179601-23-1	0.35	0.40	1.14
Bromoform	75-25-2	0.24	0.20	0.83
Styrene	100-42-5	0.15	0.20	1.33
Xylene (o)	95-47-6	0.17	0.20	1.18
1,1,2,2-Tetrachloroethane	79-34-5	0.21	0.20	0.95
n-Nonane	111-84-2	0.15	0.20	1.33
Cumene	98-82-8	0.23	0.20	0.87
2-Chlorotoluene	95-49-8	0.20	0.20	1.00
n-Propyl benzene	103-65-1	0.18	0.20	1.11
4-Ethyltoluene	622-96-8	0.16	0.20	1.25
1,3,5-Trimethylbenzene	108-67-8	0.17	0.20	1.18
1,2,4-Trimethylbenzene	95-63-6	0.14	0.20	1.43
Benzyl chloride	100-44-7	0.20	0.20	1.00
1,3-Dichlorobenzene	541-73-1	0.26	0.20	0.77
1,4-Dichlorobenzene	106-46-7	0.23	0.20	0.87
1,2-Dichlorobenzene	95-50-1	0.22	0.20	0.91
1,2,4-Trichlorobenzene	120-82-1	0.17	0.20	1.18
Naphthalene	91-20-3	0.11	0.20	1.82
1,3-Hexachlorobutadiene	87-68-3	0.40	0.20	0.50

REPORTING METHOD DETECTION LIMIT (MDL) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument ID: GC - Agilent 7890A / MS - Agilent 5975C (IAL ID: *Instrument AA*)
 Report Prepared by: Lauren Jenkins
 Preparation Date: 3/4/19

MDL Effective Date: 3/15/2019
 MDL Expiration Date: 4/15/2020
 Analyst: Jeff Schmitt

Compound Name	CAS	Molecular Weight	MDL ppbv	MDL g/m ³	PQL ppbv	RL ppbv	RL g/m ³	True value/ MDL
Propene	115-07-1	42.08	0.27	0.47	0.82	0.20	0.34	1
Dichlorodifluoromethane	75-71-8	120.9	0.13	0.64	0.39	0.20	0.99	2
Chloromethane	74-87-3	50.49	0.20	0.41	0.60	0.20	0.41	1
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.18	1.3	0.54	0.20	1.4	1
Vinyl chloride	75-01-4	62.50	0.12	0.32	0.37	0.20	0.51	2
1,3-Butadiene	106-99-0	54.09	0.10	0.23	0.31	0.20	0.44	2
n-Butane	106-97-8	58.12	0.14	0.32	0.41	0.20	0.48	2
Bromomethane	74-83-9	94.94	0.15	0.59	0.45	0.20	0.78	1
Chloroethane	75-00-3	64.52	0.15	0.39	0.45	0.20	0.53	1
Ethanol	64-17-5	46.07	0.15	0.28	0.44	0.20	0.38	1
Vinyl bromide	593-60-2	106.9	0.13	0.59	0.40	0.20	0.87	2
Acrolein	107-02-8	56.06	0.13	0.31	0.40	0.20	0.46	2
Acetone	67-64-1	58.08	0.13	0.30	0.38	0.20	0.48	2
Trichlorofluoromethane	75-69-4	137.4	0.14	0.81	0.43	0.20	1.1	2
Isopropanol	67-63-0	60.10	0.11	0.26	0.32	0.20	0.49	2
n-Pentane	109-66-0	72.15	0.14	0.41	0.42	0.20	0.59	2
1,1-Dichloroethene	75-35-4	96.94	0.13	0.53	0.40	0.20	0.79	2
Methylene chloride	75-09-2	84.94	0.17	0.61	0.52	0.20	0.69	1
Tert-butyl alcohol	75-65-0	74.12	0.11	0.32	0.32	0.20	0.61	2
Allyl Chloride	107-05-1	76.53	0.13	0.42	0.40	0.20	0.63	2
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.19	1.5	0.58	0.20	1.5	1
Carbon disulfide	75-15-0	76.14	0.12	0.38	0.36	0.20	0.62	2
1,2-Dichloroethene (trans)	156-60-5	96.94	0.10	0.41	0.31	0.20	0.79	2
1,1-Dichloroethane	75-34-3	98.96	0.11	0.43	0.32	0.20	0.81	2
Methyl tert-butyl ether	1634-04-4	88.15	0.089	0.32	0.27	0.20	0.72	2
Methyl ethyl ketone	78-93-3	72.11	0.10	0.31	0.31	0.20	0.59	2
1,2-Dichloroethene (cis)	156-59-2	96.94	0.10	0.42	0.31	0.20	0.79	2
Ethyl acetate	141-78-6	88.11	0.16	0.58	0.48	0.20	0.72	1
n-Hexane	110-54-3	86.17	0.13	0.46	0.40	0.20	0.70	2
Chloroform	67-66-3	119.4	0.13	0.63	0.39	0.20	0.98	2
Tetrahydrofuran	109-99-9	72.11	0.12	0.36	0.36	0.20	0.59	2
1,2-Dichloroethane	107-06-2	98.96	0.10	0.40	0.30	0.20	0.81	2
1,1,1-Trichloroethane	71-55-6	133.4	0.15	0.82	0.45	0.20	1.1	1
Benzene	71-43-2	78.11	0.096	0.31	0.29	0.20	0.64	2
Carbon tetrachloride	56-23-5	153.8	0.13	0.82	0.39	0.20	1.3	2
Cyclohexane	110-82-7	84.16	0.11	0.38	0.33	0.20	0.69	2
1,2-Dichloropropane	78-87-5	113.0	0.15	0.69	0.45	0.20	0.92	1
Bromodichloromethane	75-27-4	163.8	0.15	0.99	0.44	0.20	1.3	1
2,2,4-Trimethylpentane	540-84-1	114.2	0.096	0.45	0.29	0.20	0.93	2
Trichloroethene	79-01-6	131.4	0.10	0.56	0.31	0.20	1.1	2
1,4-Dioxane	123-91-1	88.12	0.11	0.41	0.34	0.20	0.72	2
Methyl methacrylate	80-62-6	100.12	0.080	0.33	0.24	0.20	0.82	3
n-Heptane	142-82-5	100.2	0.096	0.40	0.29	0.20	0.82	2
1,3-Dichloropropene (cis)	10061-01-5	111.0	0.075	0.34	0.22	0.20	0.91	3
Methyl isobutyl ketone	108-10-1	100.2	0.080	0.33	0.24	0.20	0.82	3
1,3-Dichloropropene (trans)	10061-02-6	111.0	0.063	0.29	0.19	0.20	0.91	3
1,1,2-Trichloroethane	79-00-5	133.4	0.14	0.79	0.43	0.20	1.1	2
Toluene	108-88-3	92.14	0.084	0.32	0.25	0.20	0.75	3
Methyl n-butyl ketone	591-78-6	100.16	0.072	0.29	0.21	0.20	0.82	3
Dibromochloromethane	124-48-1	208.3	0.11	0.97	0.34	0.20	1.7	2
1,2-Dibromoethane	106-93-4	187.9	0.092	0.71	0.28	0.20	1.5	2
Tetrachloroethene	127-18-4	165.8	0.094	0.64	0.28	0.20	1.4	2
Chlorobenzene	108-90-7	112.6	0.16	0.73	0.48	0.20	0.92	1
Ethylbenzene	100-41-4	106.2	0.086	0.37	0.26	0.20	0.87	3
Xylenes (m p)	179601-23-1	106.2	0.21	0.90	0.62	0.40	1.7	2
Bromoform	75-25-2	252.8	0.14	1.4	0.41	0.20	2.1	2
Styrene	100-42-5	104.1	0.073	0.31	0.22	0.20	0.85	3
Xylene (o)	95-47-6	106.2	0.13	0.57	0.39	0.20	0.87	2
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.19	1.3	0.58	0.20	1.4	1
n-Nonane	111-84-2	128.2	0.084	0.44	0.25	0.20	1.0	3
Cumene (Isopropylbenzene)	98-82-8	120.2	0.12	0.57	0.35	0.20	0.98	2
2-Chlorotoluene	95-49-8	126.6	0.092	0.48	0.28	0.20	1.0	2
n-Propyl benzene	103-65-1	120.19	0.15	0.71	0.44	0.20	0.98	2

REPORTING METHOD DETECTION LIMIT (MDL) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument ID: GC - Agilent 7890A / MS - Agilent 5975C (IAL ID: *Instrument AA*)
 Report Prepared by: Lauren Jenkins
 Preparation Date: 3/4/19

MDL Effective Date: 3/15/2019
 MDL Expiration Date: 4/15/2020
 Analyst: Jeff Schmitt

Compound Name	CAS	Molecular Weight	MDL ppbv	MDL g/m ³	PQL ppbv	RL ppbv	RL g/m ³	True value/ MDL
4-Ethyltoluene	622-96-8	120.2	0.10	0.51	0.31	0.20	0.98	2
1,3,5-Trimethylbenzene	108-67-8	120.2	0.093	0.46	0.28	0.20	0.98	2
1,2,4-Trimethylbenzene	95-63-6	120.2	0.10	0.49	0.30	0.20	0.98	2
Benzyl chloride	100-44-7	126.59	0.097	0.50	0.29	0.20	1.0	2
1,3-Dichlorobenzene	541-73-1	147.0	0.077	0.46	0.23	0.20	1.2	3
1,4-Dichlorobenzene	106-46-7	147.0	0.085	0.51	0.25	0.20	1.2	3
1,2-Dichlorobenzene	95-50-1	147.0	0.080	0.48	0.24	0.20	1.2	3
1,2,4-Trichlorobenzene	120-82-1	181.5	0.092	0.68	0.28	0.20	1.5	3
Naphthalene	91-20-3	128.2	0.11	0.59	0.34	0.20	1.0	2
1,3-Hexachlorobutadiene	87-68-3	260.8	0.11	1.2	0.34	0.20	2.1	2

Where:

MDL is defined as the higher of the MDL Spike and MDL Blank
 PQL is MDLx3
 RL is defined as the lowest point of the calibration curve
 ppbv is parts per billion by volume and is how results come off the instrument
 $\mu\text{g}/\text{m}^3 = \text{ppbv} \times \text{molecular weight} / 24.45$

Location of this file: P:\PAL Reports\2018\LLTO-15 and TO-15 Common Files\Agilent MDL

Instrument used for Clean Canister Certification Analysis? YES



Michael Leftin, Ph.D.
 Laboratory Director

Date: March 4, 2019



Lauren Jenkins
 Quality Assurance Officer

Date: March 4, 2019

METHOD DETECTION LIMIT VERIFICATION (MDLV) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Analysis Level: 0.20 ppbv, 0.40 for m p-xylenes
 Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument Identification: AA
 Date of Verification Study: 1/2/2019
 Study Identification File : aa0375rlcs
 Analyst: Jeff Schmitt
 Analysis/Processing Method: C:\MSDCHEM\1\METHODS\1205.M
 Cylinder ID: CC483586

Lauren Jenkins

Lauren Jenkins
 QA Officer

Date: March 4, 2019

Compound Name	CAS	MDLV (ppbv)	RL (ppbv)	RL/MDLV Ratio
Propene	115-07-1	0.16	0.20	1
Dichlorodifluoromethane	124-48-1	0.27	0.20	1
Chloromethane	74-87-3	0.19	0.20	1
1,2-Dichlorotetrafluoroethane	76-14-2	0.27	0.20	1
Vinyl chloride	75-01-4	0.16	0.20	1
1,3-Butadiene	106-99-0	0.20	0.20	1
n-Butane	106-97-8	0.30	0.20	1
Bromomethane	74-83-9	0.13	0.20	2
Chloroethane	75-00-3	0.19	0.20	1
Ethanol	64-17-5	0.13	0.20	2
Vinyl bromide	593-60-2	0.16	0.20	1
Acrolein	107-02-8	0.23	0.20	1
Acetone	67-64-1	0.23	0.20	1
Trichlorofluoromethane	75-69-4	0.28	0.20	1
Isopropanol	67-63-0	0.23	0.20	1
n-Pentane	109-66-0	0.14	0.20	1
1,1-Dichloroethene	75-35-4	0.14	0.20	1
Methylene chloride	75-09-2	0.24	0.20	1
Tert-butyl alcohol	75-65-0	0.29	0.20	1
Allyl Chloride	107-05-1	0.21	0.20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.31	0.20	1
Carbon disulfide	75-15-0	0.28	0.20	1
1,2-Dichloroethene (trans)	156-60-5	0.30	0.20	1
1,1-Dichloroethane	75-34-3	0.29	0.20	1
Methyl tert-butyl ether	1634-04-4	0.14	0.20	1
Methyl ethyl ketone	78-93-3	0.24	0.20	1
1,2-Dichloroethene (cis)	156-59-2	0.25	0.20	1
Ethyl acetate	141-78-6	0.25	0.20	1
n-Hexane	110-54-3	0.26	0.20	1
Chloroform	67-66-3	0.23	0.20	1
Tetrahydrofuran	109-99-9	0.23	0.20	1
1,2-Dichloroethane	106-93-4	0.22	0.20	1
1,1,1-Trichloroethane	71-55-6	0.30	0.20	1
Benzene	71-43-2	0.31	0.20	1
Carbon tetrachloride	56-23-5	0.25	0.20	1
Cyclohexane	110-82-7	0.23	0.20	1
1,2-Dichloropropane	78-87-5	0.18	0.20	1
Bromodichloromethane	75-27-4	0.31	0.20	1
2,2,4-Trimethylpentane	540-84-1	0.12	0.20	2
Trichloroethene	79-01-6	0.26	0.20	1
1,4-Dioxane	123-91-1	0.22	0.20	1
Methyl methacrylate	80-62-6	0.15	0.20	1
n-Heptane	142-82-5	0.18	0.20	1
1,3-Dichloropropene (cis)	10061-01-5	0.23	0.20	1
Methyl isobutyl ketone	108-10-1	0.16	0.20	1
1,3-Dichloropropene (trans)	10061-02-6	0.17	0.20	1
1,1,2-Trichloroethane	79-00-5	0.26	0.20	1
Toluene	108-88-3	0.26	0.20	1
Methyl n-butyl ketone	591-78-6	0.18	0.20	1
Dibromochloromethane	75-71-8	0.28	0.20	1
1,2-Dibromoethane	107-06-2	0.27	0.20	1
Tetrachloroethene	127-18-4	0.31	0.20	1

METHOD DETECTION LIMIT VERIFICATION (MDLV) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Analysis Level: 0.20 ppbv, 0.40 for m p-xylenes
 Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument Identification: AA
 Date of Verification Study: 1/2/2019
 Study Identification File : aa0375rlcs
 Analyst: Jeff Schmitt
 Analysis/Processing Method: C:\MSDCHEM\1\METHODS\1205.M
 Cylinder ID: CC483586

Lauren Jenkins

Lauren Jenkins
 QA Officer

Date: March 4, 2019

Compound Name	CAS	MDLV (ppbv)	RL (ppbv)	RL/MDLV Ratio
Chlorobenzene	108-90-7	0.29	0.20	1
Ethylbenzene	100-41-4	0.24	0.20	1
Xylenes (m p)	179601-23-1	0.41	0.40	1
Bromoform	75-25-2	0.22	0.20	1
Styrene	100-42-5	0.16	0.20	1
Xylene (o)	95-47-6	0.20	0.20	1
1,1,2,2-Tetrachloroethane	79-34-5	0.26	0.20	1
n-Nonane	111-84-2	0.19	0.20	1
Cumene	98-82-8	0.24	0.20	1
2-Chlorotoluene	95-49-8	0.22	0.20	1
n-Propyl benzene	103-65-1	0.20	0.20	1
4-Ethyltoluene	622-96-8	0.16	0.20	1
1,3,5-Trimethylbenzene	108-67-8	0.13	0.20	2
1,2,4-Trimethylbenzene	95-63-6	0.08	0.20	2
Benzyl chloride	100-44-7	0.13	0.20	2
1,3-Dichlorobenzene	541-73-1	0.26	0.20	1
1,4-Dichlorobenzene	106-46-7	0.13	0.20	2
1,2-Dichlorobenzene	95-50-1	0.25	0.20	1
1,2,4-Trichlorobenzene	120-82-1	0.17	0.20	1
Naphthalene	91-20-3	0.12	0.20	2
1,3-Hexachlorobutadiene	87-68-3	0.27	0.20	1

Section V: Quality Control Data Summary

BFB Tune Summary

Method Blank

Laboratory Control Sample

Laboratory Sample Duplicate

Internal Standard Area Summary

Data Path: C:\DATA\03-13-19\
Data File: AA1521BFB.D
Acq On: 3/13/2019 9:57:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

PassFail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	201365	26.3
PASS	75	95	30	66	372117	48.5
PASS	95	95	100	100	766592	100.0
PASS	96	95	5	9	51653	6.7
PASS	173	174	0.00	2	3452	0.7
PASS	174	95	50	100	465536	60.7
PASS	175	174	4	9	33896	7.3
PASS	176	174	93	101	440939	94.7
PASS	177	176	5	9	28072	6.4

Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1521BFB	NA	3/13/2019 9:57:00 AM
40 PPBV STD	AA1522STD01	NA	3/13/2019 11:03:00 AM
20 PPBV STD	AA1523STD02	NA	3/13/2019 11:25:00 AM
10 PPBV STD	AA1524STD03	NA	3/13/2019 11:46:00 AM
2 PPBV STD	AA1525STD04	NA	3/13/2019 1:53:00 PM
0.2 PPBV STD	AA1526STD05	NA	3/13/2019 2:52:00 PM
10 PPBV ICVSS	AA1527ICVSS	NA	3/13/2019 3:26:00 PM

Data Path: C:\DATA\03-15-19\
Data File: AA1561BFB.D
Acq On: 3/15/2019 7:56:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	148693	27.4
PASS	75	95	30	66	278955	51.3
PASS	95	95	100	100	543573	100.0
PASS	96	95	5	9	35341	6.5
PASS	173	174	0.00	2	2347	0.7
PASS	174	95	50	100	313856	57.7
PASS	175	174	4	9	21813	7.0
PASS	176	174	93	101	295403	94.1
PASS	177	176	5	9	18075	6.1

Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1561BFB	NA	3/15/2019 7:56:00 AM
10 PPBV DCVS	AA1562DCVS	NA	3/15/2019 8:56:00 AM
10 PPBV LCS	AA1563LCS	NA	3/15/2019 9:17:00 AM
METHOD BLANK	AA1564BLK	NA	3/15/2019 10:03:00 AM
02 PPBV RLLCS	AA1565RLLCS	NA	3/15/2019 10:28:00 AM
3015A	AA1566	NA	3/15/2019 11:29:00 AM
10 PPBV CCCVS	AA1581CCCVS	NA	3/15/2019 8:05:00 PM

Data Path: C:\DATA\04-04-19\
Data File: AA1961BFB.D
Acq On: 4/4/2019 8:21:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	297472	39.1
PASS	75	95	30	66	473131	62.2
PASS	95	95	100	100	760341	100.0
PASS	96	95	5	9	52403	6.9
PASS	173	174	0.00	2	4512	1.1
PASS	174	95	50	100	406955	53.5
PASS	175	174	4	9	29011	7.1
PASS	176	174	93	101	397312	97.6
PASS	177	176	5	9	26157	6.6

Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1961BFB	NA	4/4/2019 8:21:00 AM
10 PPBV DCVS	AA1962DCVS	NA	4/4/2019 9:30:00 AM
10 PPBV LCS	AA1963LCS	NA	4/4/2019 9:55:00 AM
METHOD BLANK	AA1964BLK	NA	4/4/2019 10:38:00 AM
02 PPBV RLLCS	AA1965RLLCS	NA	4/4/2019 11:02:00 AM
E19-02214-01	AA1977	NS-3	4/4/2019 4:14:00 PM
10 PPBV CCCVS	AA1985CCCVS	NA	4/5/2019 8:20:00 AM

Data Path: C:\DATA\04-05-19\
Data File: AA1991BFB.D
Acq On: 4/5/2019 8:41:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	331712	37.8
PASS	75	95	30	66	497387	56.7
PASS	95	95	100	100	876928	100.0
PASS	96	95	5	9	61941	7.1
PASS	173	174	0.00	2	4958	0.9
PASS	174	95	50	100	525760	60.0
PASS	175	174	4	9	37717	7.2
PASS	176	174	93	101	501995	95.5
PASS	177	176	5	9	33387	6.7

Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1991BFB	NA	4/5/2019 8:41:00 AM
10 PPBV DCVS	AA1992DCVS	NA	4/5/2019 9:06:00 AM
10 PPBV LCS	AA1993LCS	NA	4/5/2019 9:30:00 AM
METHOD BLANK	AA1994BLK	NA	4/5/2019 10:50:00 AM
E19-02214-01	AA1999	NS-3	4/5/2019 3:08:00 PM
E19-02214-21	AA2000	NS-3 Dup	4/5/2019 3:29:00 PM
E19-02214-02	AA2001	NS-2	4/5/2019 3:51:00 PM
E19-02214-03	AA2002	NS-1	4/5/2019 4:12:00 PM
E19-02214-04	AA2003	NS-5	4/5/2019 4:33:00 PM
E19-02214-05	AA2004	ASB2-1	4/5/2019 4:57:00 PM
E19-02214-06	AA2005	SS-1	4/5/2019 5:19:00 PM
E19-02214-07	AA2006	SS-2	4/5/2019 5:40:00 PM

Data Path: C:\DATA\04-08-19\
Data File: AA2021BFB.D
Acq On: 4/8/2019 10:03:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	361877	39.1
PASS	75	95	30	66	540864	58.5
PASS	95	95	100	100	925184	100.0
PASS	96	95	5	9	61725	6.7
PASS	173	174	0.00	2	5590	1.0
PASS	174	95	50	100	566357	61.2
PASS	175	174	4	9	45152	8.0
PASS	176	174	93	101	542123	95.7
PASS	177	176	5	9	35717	6.6

Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA2021BFB	NA	4/8/2019 10:03:00 AM
10 PPBV DCVS	AA2022DCVS	NA	4/8/2019 10:32:00 AM
10 PPBV LCS	AA2023LCS	NA	4/8/2019 11:06:00 AM
METHOD BLANK	AA2024BLK	NA	4/8/2019 11:31:00 AM
E19-02214-04	AA2030	NS-5	4/8/2019 2:34:00 PM

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1564BLK
Date Analyzed: 3/15/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 7:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 8:56
10 PPBV LCS [AA1563LCS]	03/15/2019 9:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1564BLK
Date Analyzed: 3/15/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 7:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 8:56
10 PPBV LCS [AA1563LCS]	03/15/2019 9:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1964BLK
Date Analyzed: 4/4/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1961BFB]	04/04/2019 8:21
10 PPBV DCVS [AA1962DCVS]	04/04/2019 9:30
10 PPBV LCS [AA1963LCS]	04/04/2019 9:55
METHOD BLANK [AA1964BLK]	04/04/2019 10:38
02 PPBV RLLCS [AA1965RLLCS]	04/04/2019 11:02
E19-02214-01 [AA1977]	04/04/2019 16:14
10 PPBV CCCVS [AA1985CCCVS]	04/05/2019 8:20

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1964BLK
Date Analyzed: 4/4/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1961BFB]	04/04/2019 8:21
10 PPBV DCVS [AA1962DCVS]	04/04/2019 9:30
10 PPBV LCS [AA1963LCS]	04/04/2019 9:55
METHOD BLANK [AA1964BLK]	04/04/2019 10:38
02 PPBV RLLCS [AA1965RLLCS]	04/04/2019 11:02
E19-02214-01 [AA1977]	04/04/2019 16:14
10 PPBV CCCVS [AA1985CCCVS]	04/05/2019 8:20

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1994BLK
Date Analyzed: 4/5/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1991BFB]	04/05/2019 8:41
10 PPBV DCVS [AA1992DCVS]	04/05/2019 9:06
10 PPBV LCS [AA1993LCS]	04/05/2019 9:30
METHOD BLANK [AA1994BLK]	04/05/2019 10:50
E19-02214-01 [AA1999]	04/05/2019 15:08
E19-02214-21 [AA2000]	04/05/2019 15:29
E19-02214-02 [AA2001]	04/05/2019 15:51
E19-02214-03 [AA2002]	04/05/2019 16:12
E19-02214-04 [AA2003]	04/05/2019 16:33
E19-02214-05 [AA2004]	04/05/2019 16:57
E19-02214-06 [AA2005]	04/05/2019 17:19
E19-02214-07 [AA2006]	04/05/2019 17:40

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1994BLK
Date Analyzed: 4/5/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1991BFB]	04/05/2019 8:41
10 PPBV DCVS [AA1992DCVS]	04/05/2019 9:06
10 PPBV LCS [AA1993LCS]	04/05/2019 9:30
METHOD BLANK [AA1994BLK]	04/05/2019 10:50
E19-02214-01 [AA1999]	04/05/2019 15:08
E19-02214-21 [AA2000]	04/05/2019 15:29
E19-02214-02 [AA2001]	04/05/2019 15:51
E19-02214-03 [AA2002]	04/05/2019 16:12
E19-02214-04 [AA2003]	04/05/2019 16:33
E19-02214-05 [AA2004]	04/05/2019 16:57
E19-02214-06 [AA2005]	04/05/2019 17:19
E19-02214-07 [AA2006]	04/05/2019 17:40

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA2024BLK
Date Analyzed: 4/8/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2021BFB]	04/08/2019 10:03
10 PPBV DCVS [AA2022DCVS]	04/08/2019 10:32
10 PPBV LCS [AA2023LCS]	04/08/2019 11:06
METHOD BLANK [AA2024BLK]	04/08/2019 11:31
E19-02214-04 [AA2030]	04/08/2019 14:34

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA2024BLK
Date Analyzed: 4/8/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2021BFB]	04/08/2019 10:03
10 PPBV DCVS [AA2022DCVS]	04/08/2019 10:32
10 PPBV LCS [AA2023LCS]	04/08/2019 11:06
METHOD BLANK [AA2024BLK]	04/08/2019 11:31
E19-02214-04 [AA2030]	04/08/2019 14:34

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1563LCS
Date Analyzed: 3/15/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 7:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 8:56
10 PPBV LCS [AA1563LCS]	03/15/2019 9:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	13	120
Benzene	71-43-2	13	120
Bromodichloromethane	75-27-4	13	120
Bromoform	75-25-2	12	110
Bromomethane	74-83-9	12	120
1,3-Butadiene	106-99-0	14	130
Chlorobenzene	108-90-7	11	100
Chloroethane	75-00-3	12	120
Chloroform	67-66-3	13	120
Chloromethane	74-87-3	12	110
Carbon disulfide	75-15-0	14	130
Carbon tetrachloride	56-23-5	12	110
Cyclohexane	110-82-7	11	100
Dibromochloromethane	124-48-1	13	120
1,2-Dibromoethane	106-93-4	13	120
1,2-Dichlorobenzene	95-50-1	12	110
1,3-Dichlorobenzene	541-73-1	11	100
1,4-Dichlorobenzene	106-46-7	11	100
Dichlorodifluoromethane	75-71-8	14	130
1,1-Dichloroethane	75-34-3	12	110
1,2-Dichloroethane	107-06-2	13	120
1,1-Dichloroethene	75-35-4	13	120
1,2-Dichloroethene (cis)	156-59-2	13	120
1,2-Dichloroethene (trans)	156-60-5	13	120
1,2-Dichloropropane	78-87-5	12	110
1,3-Dichloropropene (cis)	10061-01-5	13	120
1,3-Dichloropropene (trans)	10061-02-6	12	120
1,2-Dichlorotetrafluoroethane	76-14-2	12	120
1,4-Dioxane	123-91-1	11	110
Ethylbenzene	100-41-4	12	110
n-Heptane	142-82-5	11	100
1,3-Hexachlorobutadiene	87-68-3	12	110
n-Hexane	110-54-3	11	100

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1563LCS
Date Analyzed: 3/15/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 7:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 8:56
10 PPBV LCS [AA1563LCS]	03/15/2019 9:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Methylene chloride	75-09-2	11	100
Methyl ethyl ketone	78-93-3	12	110
Methyl isobutyl ketone	108-10-1	12	110
Methyl tert-butyl ether	1634-04-4	12	110
Styrene	100-42-5	12	110
Tert-butyl alcohol	75-65-0	13	110
1,1,2,2-Tetrachloroethane	79-34-5	13	120
Tetrachloroethene	127-18-4	12	110
Toluene	108-88-3	13	120
1,2,4-Trichlorobenzene	120-82-1	13	110
1,1,1-Trichloroethane	71-55-6	12	110
1,1,2-Trichloroethane	79-00-5	13	120
Trichloroethene	79-01-6	12	110
Trichlorofluoromethane	75-69-4	13	120
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	12	110
1,2,4-Trimethylbenzene	95-63-6	12	110
1,3,5-Trimethylbenzene	108-67-8	12	110
2,2,4-Trimethylpentane	540-84-1	12	110
Vinyl bromide	593-60-2	13	120
Vinyl chloride	75-01-4	14	130
Xylenes (m&p)	179601-23-1	25	110
Xylenes (o)	95-47-6	12	110

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1963LCS
Date Analyzed: 4/4/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1961BFB]	04/04/2019 8:21
10 PPBV DCVS [AA1962DCVS]	04/04/2019 9:30
10 PPBV LCS [AA1963LCS]	04/04/2019 9:55
METHOD BLANK [AA1964BLK]	04/04/2019 10:38
02 PPBV RLLCS [AA1965RLLCS]	04/04/2019 11:02
E19-02214-01 [AA1977]	04/04/2019 16:14
10 PPBV CCCVS [AA1985CCCVS]	04/05/2019 8:20

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	12	110
Benzene	71-43-2	9.8	89
Bromodichloromethane	75-27-4	12	110
Bromoform	75-25-2	12	110
Bromomethane	74-83-9	9.1	92
1,3-Butadiene	106-99-0	10	91
Chlorobenzene	108-90-7	9.4	85
Chloroethane	75-00-3	7.8	78
Chloroform	67-66-3	11	100
Chloromethane	74-87-3	11	100
Carbon disulfide	75-15-0	10	91
Carbon tetrachloride	56-23-5	11	100
Cyclohexane	110-82-7	8.2	75
Dibromochloromethane	124-48-1	12	110
1,2-Dibromoethane	106-93-4	10	91
1,2-Dichlorobenzene	95-50-1	11	100
1,3-Dichlorobenzene	541-73-1	10	91
1,4-Dichlorobenzene	106-46-7	11	100
Dichlorodifluoromethane	75-71-8	12	110
1,1-Dichloroethane	75-34-3	9.7	88
1,2-Dichloroethane	107-06-2	12	110
1,1-Dichloroethene	75-35-4	11	100
1,2-Dichloroethene (cis)	156-59-2	9.9	90
1,2-Dichloroethene (trans)	156-60-5	10	91
1,2-Dichloropropane	78-87-5	9.2	84
1,3-Dichloropropene (cis)	10061-01-5	10	91
1,3-Dichloropropene (trans)	10061-02-6	11	110
1,2-Dichlorotetrafluoroethane	76-14-2	9.7	97
1,4-Dioxane	123-91-1	8.8	88
Ethylbenzene	100-41-4	10.0	91
n-Heptane	142-82-5	9.6	87
1,3-Hexachlorobutadiene	87-68-3	13	120
n-Hexane	110-54-3	13	120

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1963LCS
Date Analyzed: 4/4/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1961BFB]	04/04/2019 8:21
10 PPBV DCVS [AA1962DCVS]	04/04/2019 9:30
10 PPBV LCS [AA1963LCS]	04/04/2019 9:55
METHOD BLANK [AA1964BLK]	04/04/2019 10:38
02 PPBV RLLCS [AA1965RLLCS]	04/04/2019 11:02
E19-02214-01 [AA1977]	04/04/2019 16:14
10 PPBV CCCVS [AA1985CCCVS]	04/05/2019 8:20

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Methylene chloride	75-09-2	9.7	88
Methyl ethyl ketone	78-93-3	10	91
Methyl isobutyl ketone	108-10-1	11	100
Methyl tert-butyl ether	1634-04-4	9.8	89
Styrene	100-42-5	9.9	90
Tert-butyl alcohol	75-65-0	10	83
1,1,2,2-Tetrachloroethane	79-34-5	11	100
Tetrachloroethene	127-18-4	10	91
Toluene	108-88-3	10	91
1,2,4-Trichlorobenzene	120-82-1	13	110
1,1,1-Trichloroethane	71-55-6	11	100
1,1,2-Trichloroethane	79-00-5	11	100
Trichloroethene	79-01-6	9.5	86
Trichlorofluoromethane	75-69-4	12	110
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	9.6	87
1,2,4-Trimethylbenzene	95-63-6	11	100
1,3,5-Trimethylbenzene	108-67-8	11	100
2,2,4-Trimethylpentane	540-84-1	9.6	87
Vinyl bromide	593-60-2	9.6	87
Vinyl chloride	75-01-4	11	100
Xylenes (m&p)	179601-23-1	22	100
Xylenes (o)	95-47-6	9.9	90

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1993LCS
Date Analyzed: 4/5/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1991BFB]	04/05/2019 8:41
10 PPBV DCVS [AA1992DCVS]	04/05/2019 9:06
10 PPBV LCS [AA1993LCS]	04/05/2019 9:30
METHOD BLANK [AA1994BLK]	04/05/2019 10:50
E19-02214-01 [AA1999]	04/05/2019 15:08
E19-02214-21 [AA2000]	04/05/2019 15:29
E19-02214-02 [AA2001]	04/05/2019 15:51
E19-02214-03 [AA2002]	04/05/2019 16:12
E19-02214-04 [AA2003]	04/05/2019 16:33
E19-02214-05 [AA2004]	04/05/2019 16:57
E19-02214-06 [AA2005]	04/05/2019 17:19
E19-02214-07 [AA2006]	04/05/2019 17:40

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	12	110
Benzene	71-43-2	11	100
Bromodichloromethane	75-27-4	10	91
Bromoform	75-25-2	11	100
Bromomethane	74-83-9	9.5	96
1,3-Butadiene	106-99-0	11	100
Chlorobenzene	108-90-7	9.1	83
Chloroethane	75-00-3	12	120
Chloroform	67-66-3	11	100
Chloromethane	74-87-3	11	100
Carbon disulfide	75-15-0	11	100
Carbon tetrachloride	56-23-5	10	91
Cyclohexane	110-82-7	11	100
Dibromochloromethane	124-48-1	10	91
1,2-Dibromoethane	106-93-4	10.0	91
1,2-Dichlorobenzene	95-50-1	9.3	85
1,3-Dichlorobenzene	541-73-1	9.1	83
1,4-Dichlorobenzene	106-46-7	9.1	83
Dichlorodifluoromethane	75-71-8	11	100
1,1-Dichloroethane	75-34-3	11	100
1,2-Dichloroethane	107-06-2	11	100
1,1-Dichloroethene	75-35-4	12	110
1,2-Dichloroethene (cis)	156-59-2	11	100
1,2-Dichloroethene (trans)	156-60-5	11	100
1,2-Dichloropropane	78-87-5	11	100
1,3-Dichloropropene (cis)	10061-01-5	10	91
1,3-Dichloropropene (trans)	10061-02-6	9.3	93
1,2-Dichlorotetrafluoroethane	76-14-2	9.2	92

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1993LCS
Date Analyzed: 4/5/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1991BFB]	04/05/2019 8:41
10 PPBV DCVS [AA1992DCVS]	04/05/2019 9:06
10 PPBV LCS [AA1993LCS]	04/05/2019 9:30
METHOD BLANK [AA1994BLK]	04/05/2019 10:50
E19-02214-01 [AA1999]	04/05/2019 15:08
E19-02214-21 [AA2000]	04/05/2019 15:29
E19-02214-02 [AA2001]	04/05/2019 15:51
E19-02214-03 [AA2002]	04/05/2019 16:12
E19-02214-04 [AA2003]	04/05/2019 16:33
E19-02214-05 [AA2004]	04/05/2019 16:57
E19-02214-06 [AA2005]	04/05/2019 17:19
E19-02214-07 [AA2006]	04/05/2019 17:40

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
1,4-Dioxane	123-91-1	8.7	87
Ethylbenzene	100-41-4	10.0	91
n-Heptane	142-82-5	12	110
1,3-Hexachlorobutadiene	87-68-3	12	110
n-Hexane	110-54-3	11	100
Methylene chloride	75-09-2	12	110
Methyl ethyl ketone	78-93-3	13	120
Methyl isobutyl ketone	108-10-1	11	100
Methyl tert-butyl ether	1634-04-4	10	91
Styrene	100-42-5	9.7	88
Tert-butyl alcohol	75-65-0	12	100
1,1,2,2-Tetrachloroethane	79-34-5	10	91
Tetrachloroethene	127-18-4	10	91
Toluene	108-88-3	10.0	91
1,2,4-Trichlorobenzene	120-82-1	10	83
1,1,1-Trichloroethane	71-55-6	11	100
1,1,2-Trichloroethane	79-00-5	10	91
Trichloroethene	79-01-6	9.3	85
Trichlorofluoromethane	75-69-4	11	100
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	9.6	87
1,2,4-Trimethylbenzene	95-63-6	10	91
1,3,5-Trimethylbenzene	108-67-8	10	91
2,2,4-Trimethylpentane	540-84-1	10	91
Vinyl bromide	593-60-2	10	91
Vinyl chloride	75-01-4	11	100
Xylenes (m&p)	179601-23-1	21	95
Xylenes (o)	95-47-6	9.7	88

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

*** Values outside of QC limits* Values outside of 70-130% QC limits**

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA2023LCS
Date Analyzed: 4/8/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2021BFB]	04/08/2019 10:03
10 PPBV DCVS [AA2022DCVS]	04/08/2019 10:32
10 PPBV LCS [AA2023LCS]	04/08/2019 11:06
METHOD BLANK [AA2024BLK]	04/08/2019 11:31
E19-02214-04 [AA2030]	04/08/2019 14:34

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	13	120
Benzene	71-43-2	9.8	89
Bromodichloromethane	75-27-4	12	110
Bromoform	75-25-2	12	110
Bromomethane	74-83-9	8.9	90
1,3-Butadiene	106-99-0	14	130
Chlorobenzene	108-90-7	9.3	85
Chloroethane	75-00-3	8.6	86
Chloroform	67-66-3	11	100
Chloromethane	74-87-3	14	130
Carbon disulfide	75-15-0	10	91
Carbon tetrachloride	56-23-5	11	100
Cyclohexane	110-82-7	8.6	78
Dibromochloromethane	124-48-1	12	110
1,2-Dibromoethane	106-93-4	11	100
1,2-Dichlorobenzene	95-50-1	11	100
1,3-Dichlorobenzene	541-73-1	10	91
1,4-Dichlorobenzene	106-46-7	10	91
Dichlorodifluoromethane	75-71-8	13	120
1,1-Dichloroethane	75-34-3	9.8	89
1,2-Dichloroethane	107-06-2	12	110
1,1-Dichloroethene	75-35-4	11	100
1,2-Dichloroethene (cis)	156-59-2	10	91
1,2-Dichloroethene (trans)	156-60-5	10	91
1,2-Dichloropropane	78-87-5	9.5	86
1,3-Dichloropropene (cis)	10061-01-5	10	91
1,3-Dichloropropene (trans)	10061-02-6	11	110
1,2-Dichlorotetrafluoroethane	76-14-2	9.9	99
1,4-Dioxane	123-91-1	9.1	91
Ethylbenzene	100-41-4	9.7	88
n-Heptane	142-82-5	10.0	91
1,3-Hexachlorobutadiene	87-68-3	13	120
n-Hexane	110-54-3	11	100
Methylene chloride	75-09-2	10	91
Methyl ethyl ketone	78-93-3	11	100

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA2023LCS
Date Analyzed: 4/8/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2021BFB]	04/08/2019 10:03
10 PPBV DCVS [AA2022DCVS]	04/08/2019 10:32
10 PPBV LCS [AA2023LCS]	04/08/2019 11:06
METHOD BLANK [AA2024BLK]	04/08/2019 11:31
E19-02214-04 [AA2030]	04/08/2019 14:34

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Methyl isobutyl ketone	108-10-1	12	110
Methyl tert-butyl ether	1634-04-4	10	91
Styrene	100-42-5	9.7	88
Tert-butyl alcohol	75-65-0	11	92
1,1,2,2-Tetrachloroethane	79-34-5	11	100
Tetrachloroethene	127-18-4	11	100
Toluene	108-88-3	10	91
1,2,4-Trichlorobenzene	120-82-1	13	110
1,1,1-Trichloroethane	71-55-6	11	100
1,1,2-Trichloroethane	79-00-5	11	100
Trichloroethene	79-01-6	9.8	89
Trichlorofluoromethane	75-69-4	12	110
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	10	91
1,2,4-Trimethylbenzene	95-63-6	10	91
1,3,5-Trimethylbenzene	108-67-8	10	91
2,2,4-Trimethylpentane	540-84-1	8.6	78
Vinyl bromide	593-60-2	10	91
Vinyl chloride	75-01-4	12	110
Xylenes (m&p)	179601-23-1	21	95
Xylenes (o)	95-47-6	9.7	88

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01604
IAL Sample ID: E19-01604-04
Matrix: Air
Summa ID: 1604

Date Received: 3/7/19
Date Analyzed: 3/15/19, 3/15/19
Lab Data File : AA1570, AA1571
Dilution Factor: 1000
Injection Volume: 0.05ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01604-04 Concentration Reported		Sample Dup E19-01604-24 Concentration Reported		Reporting Limits ppbv	RPD
		ppbv	Q	ppbv	Q		
Acetone	67-64-1	2000	U	2000	U	2000	0.00%
Allyl Chloride	107-05-1	2000	U	2000	U	2000	0.00%
Benzene	71-43-2	2000	U	2000	U	2000	0.00%
Bromodichloromethane	75-27-4	2000	U	2000	U	2000	0.00%
Bromoform	75-25-2	2000	U	2000	U	2000	0.00%
Bromomethane	74-83-9	2000	U	2000	U	2000	0.00%
1,3-Butadiene	106-99-0	2000	U	2000	U	2000	0.00%
Chlorobenzene	108-90-7	2000	U	2000	U	2000	0.00%
Chloroethane	75-00-3	2000	U	2000	U	2000	0.00%
Chloroform	67-66-3	2000	U	2000	U	2000	0.00%
Chloromethane	74-87-3	2000	U	2000	U	2000	0.00%
Carbon disulfide	75-15-0	2000	U	2000	U	2000	0.00%
Carbon tetrachloride	56-23-5	2000	U	2000	U	2000	0.00%
2-Chlorotoluene	95-49-8	2000	U	2000	U	2000	0.00%
Cyclohexane	110-82-7	2000	U	2000	U	2000	0.00%
Dibromochloromethane	124-48-1	2000	U	2000	U	2000	0.00%
1,2-Dibromoethane	106-93-4	2000	U	2000	U	2000	0.00%
1,2-Dichlorobenzene	95-50-1	2000	U	2000	U	2000	0.00%
1,3-Dichlorobenzene	541-73-1	2000	U	2000	U	2000	0.00%
1,4-Dichlorobenzene	106-46-7	2000	U	2000	U	2000	0.00%
Dichlorodifluoromethane	75-71-8	2000	U	2000	U	2000	0.00%
1,1-Dichloroethane	75-34-3	2000	U	2000	U	2000	0.00%
1,2-Dichloroethane	107-06-2	2000	U	2000	U	2000	0.00%
1,1-Dichloroethene	75-35-4	2000	U	2000	U	2000	0.00%
1,2-Dichloroethene (cis)	156-59-2	2500	D	2500	D	2000	0.00
1,2-Dichloroethene (trans)	156-60-5	2000	U	2000	U	2000	0.00%
1,2-Dichloropropane	78-87-5	2000	U	2000	U	2000	0.00%
1,3-Dichloropropene (cis)	10061-01-5	2000	U	2000	U	2000	0.00%
1,3-Dichloropropene (trans)	10061-02-6	2000	U	2000	U	2000	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2	2000	U	2000	U	2000	0.00%
1,4-Dioxane	123-91-1	2000	U	2000	U	2000	0.00%
Ethanol	64-17-5	2000	U	2000	U	2000	0.00%
Ethylbenzene	100-41-4	2000	U	2000	U	2000	0.00%
4-Ethyltoluene	622-96-8	2000	U	2000	U	2000	0.00%
n-Heptane	142-82-5	2000	U	2000	U	2000	0.00%
1,3-Hexachlorobutadiene	87-68-3	2000	U	2000	U	2000	0.00%
n-Hexane	110-54-3	2000	U	2000	U	2000	0.00%
Isopropanol	67-63-0	2000	U	2000	U	2000	0.00%

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01604
IAL Sample ID: E19-01604-04
Matrix: Air
Summa ID: 1604

Date Received: 3/7/19
Date Analyzed: 3/15/19,3/15/19
Lab Data File : AA1570,AA1571
Dilution Factor: 1000
Injection Volume: 0.05ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01604-04		Sample Dup E19-01604-24		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
		ppbv		ppbv		ppbv	
Methylene chloride	75-09-2	5300	D	5500	D	2000	-3.70
Methyl ethyl ketone	78-93-3	2000	U	2000	U	2000	0.00%
Methyl isobutyl ketone	108-10-1	2000	U	2000	U	2000	0.00%
Methyl methacrylate	80-62-6	2000	U	2000	U	2000	0.00%
Methyl tert-butyl ether	1634-04-4	2000	U	2000	U	2000	0.00%
Styrene	100-42-5	2000	U	2000	U	2000	0.00%
Tert-butyl alcohol	75-65-0	2000	U	2000	U	2000	0.00%
1,1,2,2-Tetrachloroethane	79-34-5	2000	U	2000	U	2000	0.00%
Tetrachloroethene	127-18-4	2000	U	2000	U	2000	0.00%
Tetrahydrofuran	109-99-9	2000	U	2000	U	2000	0.00%
Toluene	108-88-3	280000	D	290000	D	2000	-3.51
1,2,4-Trichlorobenzene	120-82-1	2000	U	2000	U	2000	0.00%
1,1,1-Trichloroethane	71-55-6	8500	D	8500	D	2000	0.00
1,1,2-Trichloroethane	79-00-5	2000	U	2000	U	2000	0.00%
Trichloroethene	79-01-6	2000	U	2000	U	2000	0.00%
Trichlorofluoromethane	75-69-4	2000	U	2000	U	2000	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2000	U	2000	U	2000	0.00%
1,2,4-Trimethylbenzene	95-63-6	2000	U	2000	U	2000	0.00%
1,3,5-Trimethylbenzene	108-67-8	2000	U	2000	U	2000	0.00%
2,2,4-Trimethylpentane	540-84-1	2000	U	2000	U	2000	0.00%
Vinyl bromide	593-60-2	2000	U	2000	U	2000	0.00%
Vinyl chloride	75-01-4	2000	U	2000	U	2000	0.00%
Xylenes (m p)	179601-23-1	4000	U	4000	U	4000	0.00%
Xylenes (o)	95-47-6	2000	U	2000	U	2000	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-02188
IAL Sample ID: E19-02188-08
Matrix: Air
Summa ID: 1769

Date Received: 3/28/19
Date Analyzed: 4/4/19,4/4/19
Lab Data File : AA1969,AA1970
Dilution Factor: 1
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-02188-08		Sample Dup E19-02188-28		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
Acetone	67-64-1	41		36		4.0	12.99
Allyl Chloride	107-05-1		4.0 U		4.0 U	4.0	0.00%
Benzene	71-43-2		4.0 U		4.0 U	4.0	0.00%
Bromodichloromethane	75-27-4		4.0 U		4.0 U	4.0	0.00%
Bromoform	75-25-2		4.0 U		4.0 U	4.0	0.00%
Bromomethane	74-83-9		4.0 U		4.0 U	4.0	0.00%
1,3-Butadiene	106-99-0		4.0 U		4.0 U	4.0	0.00%
Chlorobenzene	108-90-7		4.0 U		4.0 U	4.0	0.00%
Chloroethane	75-00-3		4.0 U		4.0 U	4.0	0.00%
Chloroform	67-66-3	5.1		4.5		4.0	12.50
Chloromethane	74-87-3		4.0 U		4.0 U	4.0	0.00%
Carbon disulfide	75-15-0		4.0 U		4.0 U	4.0	0.00%
Carbon tetrachloride	56-23-5		4.0 U		4.0 U	4.0	0.00%
2-Chlorotoluene	95-49-8		4.0 U		4.0 U	4.0	0.00%
Cyclohexane	110-82-7		4.0 U		4.0 U	4.0	0.00%
Dibromochloromethane	124-48-1		4.0 U		4.0 U	4.0	0.00%
1,2-Dibromoethane	106-93-4		4.0 U		4.0 U	4.0	0.00%
1,2-Dichlorobenzene	95-50-1		4.0 U		4.0 U	4.0	0.00%
1,3-Dichlorobenzene	541-73-1		4.0 U		4.0 U	4.0	0.00%
1,4-Dichlorobenzene	106-46-7		4.0 U		4.0 U	4.0	0.00%
Dichlorodifluoromethane	75-71-8		4.0 U		4.0 U	4.0	0.00%
1,1-Dichloroethane	75-34-3		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethane	107-06-2		4.0 U		4.0 U	4.0	0.00%
1,1-Dichloroethene	75-35-4		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethene (cis)	156-59-2		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethene (trans)	156-60-5		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloropropane	78-87-5		4.0 U		4.0 U	4.0	0.00%
1,3-Dichloropropene (cis)	10061-01-5		4.0 U		4.0 U	4.0	0.00%
1,3-Dichloropropene (trans)	10061-02-6		4.0 U		4.0 U	4.0	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2		4.0 U		4.0 U	4.0	0.00%
Ethylbenzene	100-41-4		4.0 U		4.0 U	4.0	0.00%
4-Ethyltoluene	622-96-8		4.0 U		4.0 U	4.0	0.00%
n-Heptane	142-82-5		4.0 U		4.0 U	4.0	0.00%
1,3-Hexachlorobutadiene	87-68-3		4.0 U		4.0 U	4.0	0.00%
n-Hexane	110-54-3		4.0 U		4.0 U	4.0	0.00%
Methylene chloride	75-09-2		4.0 U		4.0 U	4.0	0.00%
Methyl ethyl ketone	78-93-3	10		9.3		4.0	7.25
Methyl isobutyl ketone	108-10-1		4.0 U		4.0 U	4.0	0.00%

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-02188
IAL Sample ID: E19-02188-08
Matrix: Air
Summa ID: 1769

Date Received: 3/28/19
Date Analyzed: 4/4/19, 4/4/19
Lab Data File : AA1969, AA1970
Dilution Factor: 1
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-02188-08		Sample Dup E19-02188-28		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
		ppbv		ppbv		ppbv	
Methyl tert-butyl ether	1634-04-4		4.0 U		4.0 U	4.0	0.00%
Styrene	100-42-5		4.0 U		4.0 U	4.0	0.00%
Tert-butyl alcohol	75-65-0	4.8		4.7		4.0	2.11
1,1,2,2-Tetrachloroethane	79-34-5		4.0 U		4.0 U	4.0	0.00%
Tetrachloroethene	127-18-4		4.0 U		4.0 U	4.0	0.00%
Toluene	108-88-3	4.4		4.4		4.0	0.00
1,2,4-Trichlorobenzene	120-82-1		4.0 U		4.0 U	4.0	0.00%
1,1,1-Trichloroethane	71-55-6		4.0 U		4.0 U	4.0	0.00%
1,1,2-Trichloroethane	79-00-5		4.0 U		4.0 U	4.0	0.00%
Trichloroethene	79-01-6		4.0 U		4.0 U	4.0	0.00%
Trichlorofluoromethane	75-69-4		4.0 U		4.0 U	4.0	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		4.0 U		4.0 U	4.0	0.00%
1,2,4-Trimethylbenzene	95-63-6		4.0 U		4.0 U	4.0	0.00%
1,3,5-Trimethylbenzene	108-67-8		4.0 U		4.0 U	4.0	0.00%
2,2,4-Trimethylpentane	540-84-1		4.0 U		4.0 U	4.0	0.00%
Vinyl bromide	593-60-2		4.0 U		4.0 U	4.0	0.00%
Vinyl chloride	75-01-4		4.0 U		4.0 U	4.0	0.00%
Xylenes (m p)	179601-23-1		4.0 U		4.0 U	4.0	0.00%
Xylenes (o)	95-47-6		4.0 U		4.0 U	4.0	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-02214
IAL Sample ID: E19-02214-01
Matrix: Air
Summa ID: 3045A

Date Received: 3/29/19
Date Analyzed: 4/5/19, 4/5/19
Lab Data File : AA1999, AA2000
Dilution Factor: 10
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-02214-01 Concentration Reported		Sample Dup E19-02214-21 Concentration Reported		Reporting Limits ppbv	RPD
		ppbv	Q	ppbv	Q		
Acetone	67-64-1	40	D	41	D	2.0	-2.47
Benzene	71-43-2		2.0 U		2.0 U	2.0	0.00%
Bromodichloromethane	75-27-4		2.0 U		2.0 U	2.0	0.00%
Bromoform	75-25-2		2.0 U		2.0 U	2.0	0.00%
Bromomethane	74-83-9		2.0 U		2.0 U	2.0	0.00%
1,3-Butadiene	106-99-0		2.0 U		2.0 U	2.0	0.00%
Chlorobenzene	108-90-7		2.0 U		2.0 U	2.0	0.00%
Chloroethane	75-00-3		2.0 U		2.0 U	2.0	0.00%
Chloroform	67-66-3		2.0 U		2.0 U	2.0	0.00%
Chloromethane	74-87-3		2.0 U		2.0 U	2.0	0.00%
Carbon disulfide	75-15-0		2.0 U		2.0 U	2.0	0.00%
Carbon tetrachloride	56-23-5		0.40 U		0.40 U	0.40	0.00%
Cyclohexane	110-82-7		2.0 U		2.0 U	2.0	0.00%
Dibromochloromethane	124-48-1		2.0 U		2.0 U	2.0	0.00%
1,2-Dibromoethane	106-93-4		2.0 U		2.0 U	2.0	0.00%
1,2-Dichlorobenzene	95-50-1		2.0 U		2.0 U	2.0	0.00%
1,3-Dichlorobenzene	541-73-1		2.0 U		2.0 U	2.0	0.00%
1,4-Dichlorobenzene	106-46-7		2.0 U		2.0 U	2.0	0.00%
Dichlorodifluoromethane	75-71-8		2.0 U		2.0 U	2.0	0.00%
1,1-Dichloroethane	75-34-3		2.0 U		2.0 U	2.0	0.00%
1,2-Dichloroethane	107-06-2		2.0 U		2.0 U	2.0	0.00%
1,1-Dichloroethene	75-35-4		2.0 U		2.0 U	2.0	0.00%
1,2-Dichloroethene (cis)	156-59-2		2.0 U		2.0 U	2.0	0.00%
1,2-Dichloroethene (trans)	156-60-5		2.0 U		2.0 U	2.0	0.00%
1,2-Dichloropropane	78-87-5		2.0 U		2.0 U	2.0	0.00%
1,3-Dichloropropene (cis)	10061-01-5		2.0 U		2.0 U	2.0	0.00%
1,3-Dichloropropene (trans)	10061-02-6		2.0 U		2.0 U	2.0	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2		2.0 U		2.0 U	2.0	0.00%
1,4-Dioxane	123-91-1		2.0 U		2.0 U	2.0	0.00%
Ethylbenzene	100-41-4		2.0 U		2.0 U	2.0	0.00%
n-Heptane	142-82-5		2.0 U		2.0 U	2.0	0.00%
1,3-Hexachlorobutadiene	87-68-3		2.0 U		2.0 U	2.0	0.00%
n-Hexane	110-54-3		2.0 U		2.0 U	2.0	0.00%
Methylene chloride	75-09-2	5.6	D	5.3	D	2.0	5.50
Methyl ethyl ketone	78-93-3	20	D	20	D	2.0	0.00
Methyl isobutyl ketone	108-10-1		2.0 U	2.3	D	2.0	NC
Methyl tert-butyl ether	1634-04-4		2.0 U		2.0 U	2.0	0.00%
Styrene	100-42-5		2.0 U		2.0 U	2.0	0.00%

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-02214
IAL Sample ID: E19-02214-01
Matrix: Air
Summa ID: 3045A

Date Received: 3/29/19
Date Analyzed: 4/5/19, 4/5/19
Lab Data File : AA1999, AA2000
Dilution Factor: 10
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample	Sample Dup	Reporting		RPD
		E19-02214-01 Concentration Reported ppbv	E19-02214-21 Concentration Reported ppbv	Q	Limits ppbv	
Tert-butyl alcohol	75-65-0	2.0 U	2.0 U	2.0	2.0	0.00%
1,1,2,2-Tetrachloroethane	79-34-5	2.0 U	2.0 U	2.0	2.0	0.00%
Tetrachloroethene	127-18-4	2.0 U	2.0 U	2.0	2.0	0.00%
Toluene	108-88-3	18	19	D	2.0	-5.41
1,2,4-Trichlorobenzene	120-82-1	2.0 U	2.0 U	2.0	2.0	0.00%
1,1,1-Trichloroethane	71-55-6	2.0 U	2.0 U	2.0	2.0	0.00%
1,1,2-Trichloroethane	79-00-5	2.0 U	2.0 U	2.0	2.0	0.00%
Trichloroethene	79-01-6	0.50 U	0.50 U	0.50	0.50	0.00%
Trichlorofluoromethane	75-69-4	2.0 U	2.0 U	2.0	2.0	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.0 U	2.0 U	2.0	2.0	0.00%
1,2,4-Trimethylbenzene	95-63-6	2.0 U	2.0 U	2.0	2.0	0.00%
1,3,5-Trimethylbenzene	108-67-8	2.0 U	2.0 U	2.0	2.0	0.00%
2,2,4-Trimethylpentane	540-84-1	2.0 U	2.0 U	2.0	2.0	0.00%
Vinyl bromide	593-60-2	2.0 U	2.0 U	2.0	2.0	0.00%
Vinyl chloride	75-01-4	2.0 U	2.0 U	2.0	2.0	0.00%
Xylenes (m p)	179601-23-1	6.6	6.3	D	2.0	4.65
Xylenes (o)	95-47-6	2.0 U	2.0 U	2.0	2.0	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-01
Matrix: Air
Summa ID: 2162

Date Received: 3/15/19
Date Analyzed: 4/8/19, 4/8/19
Lab Data File : AA2031, AA2032
Dilution Factor: 10
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-01 Concentration Reported		Sample Dup E19-01821-21 Concentration Reported		Reporting Limits ppbv	RPD
		ppbv	Q	ppbv	Q		
Acetone	67-64-1	9.7	D	10	D	4.0	-3.05
Allyl Chloride	107-05-1		4.0 U		4.0 U	4.0	0.00%
Benzene	71-43-2		4.0 U		4.0 U	4.0	0.00%
Bromodichloromethane	75-27-4		4.0 U		4.0 U	4.0	0.00%
Bromoform	75-25-2		4.0 U		4.0 U	4.0	0.00%
Bromomethane	74-83-9		4.0 U		4.0 U	4.0	0.00%
1,3-Butadiene	106-99-0		4.0 U		4.0 U	4.0	0.00%
Chlorobenzene	108-90-7		4.0 U		4.0 U	4.0	0.00%
Chloroethane	75-00-3		4.0 U		4.0 U	4.0	0.00%
Chloroform	67-66-3		4.0 U		4.0 U	4.0	0.00%
Chloromethane	74-87-3		4.0 U		4.0 U	4.0	0.00%
Carbon disulfide	75-15-0		4.0 U		4.0 U	4.0	0.00%
Carbon tetrachloride	56-23-5		4.0 U		4.0 U	4.0	0.00%
2-Chlorotoluene	95-49-8		4.0 U		4.0 U	4.0	0.00%
Cyclohexane	110-82-7		4.0 U		4.0 U	4.0	0.00%
Dibromochloromethane	124-48-1		4.0 U		4.0 U	4.0	0.00%
1,2-Dibromoethane	106-93-4		4.0 U		4.0 U	4.0	0.00%
1,2-Dichlorobenzene	95-50-1		4.0 U		4.0 U	4.0	0.00%
1,3-Dichlorobenzene	541-73-1		4.0 U		4.0 U	4.0	0.00%
1,4-Dichlorobenzene	106-46-7		4.0 U		4.0 U	4.0	0.00%
Dichlorodifluoromethane	75-71-8		4.0 U		4.0 U	4.0	0.00%
1,1-Dichloroethane	75-34-3		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethane	107-06-2		4.0 U		4.0 U	4.0	0.00%
1,1-Dichloroethene	75-35-4		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethene (cis)	156-59-2		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethene (trans)	156-60-5		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloropropane	78-87-5		4.0 U		4.0 U	4.0	0.00%
1,3-Dichloropropene (cis)	10061-01-5		4.0 U		4.0 U	4.0	0.00%
1,3-Dichloropropene (trans)	10061-02-6		4.0 U		4.0 U	4.0	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2		4.0 U		4.0 U	4.0	0.00%
Ethylbenzene	100-41-4		4.0 U		4.0 U	4.0	0.00%
4-Ethyltoluene	622-96-8		4.0 U		4.0 U	4.0	0.00%
n-Heptane	142-82-5		4.0 U		4.0 U	4.0	0.00%
1,3-Hexachlorobutadiene	87-68-3		4.0 U		4.0 U	4.0	0.00%
n-Hexane	110-54-3		4.0 U		4.0 U	4.0	0.00%
Methylene chloride	75-09-2	6.1	D		4.0 U	4.0	NC
Methyl ethyl ketone	78-93-3		4.0 U		4.0 U	4.0	0.00%
Methyl isobutyl ketone	108-10-1		4.0 U		4.0 U	4.0	0.00%

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-01
Matrix: Air
Summa ID: 2162

Date Received: 3/15/19
Date Analyzed: 4/8/19, 4/8/19
Lab Data File : AA2031, AA2032
Dilution Factor: 10
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-01		Sample Dup E19-01821-21		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
		ppbv		ppbv		ppbv	
Methyl tert-butyl ether	1634-04-4	4.0 U		4.0 U		4.0	0.00%
Styrene	100-42-5	4.0 U		4.0 U		4.0	0.00%
Tert-butyl alcohol	75-65-0	4.0 U		4.0 U		4.0	0.00%
1,1,2,2-Tetrachloroethane	79-34-5	4.0 U		4.0 U		4.0	0.00%
Tetrachloroethene	127-18-4	4.0 U		4.0 U		4.0	0.00%
Toluene	108-88-3	4.0 U		4.0 U		4.0	0.00%
1,2,4-Trichlorobenzene	120-82-1	4.0 U		4.0 U		4.0	0.00%
1,1,1-Trichloroethane	71-55-6	4.0 U		4.0 U		4.0	0.00%
1,1,2-Trichloroethane	79-00-5	4.0 U		4.0 U		4.0	0.00%
Trichloroethene	79-01-6	4.0 U		4.0 U		4.0	0.00%
Trichlorofluoromethane	75-69-4	4.0 U		4.0 U		4.0	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	4.0 U		4.0 U		4.0	0.00%
1,2,4-Trimethylbenzene	95-63-6	4.0 U		4.0 U		4.0	0.00%
1,3,5-Trimethylbenzene	108-67-8	4.0 U		4.0 U		4.0	0.00%
2,2,4-Trimethylpentane	540-84-1	4.0 U		4.0 U		4.0	0.00%
Vinyl bromide	593-60-2	4.0 U		4.0 U		4.0	0.00%
Vinyl chloride	75-01-4	4.0 U		4.0 U		4.0	0.00%
Xylenes (m p)	179601-23-1	4.0 U		4.0 U		4.0	0.00%
Xylenes (o)	95-47-6	4.0 U		4.0 U		4.0	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Initial Calibration Curve Internal Standard Area and Retention Time Summary

Instrument: **AA**

ICAL Date: **3/13/2019**

		BROMOCHLOROMETHANE				1,4-DIFLUOROBENZENE				D-5 CHLOROBENZENE			
		Area		RT		Area		RT		Area		RT	
AVERAGE OF CALIBRATION STANDARDS		599451		4.337		2434192		5.397		2028923		8.259	
UPPER LIMIT		839231		4.667		3407869		5.727		2840492		8.589	
LOWER LIMIT		359671		4.007		1460515		5.067		1217354		7.929	
Lab ID		Area		RT		Area		RT		Area		RT	
40 PPBV STD AA 1522 STD01		562033	6.24	4.345	0.01	2424630	0.39	5.399	0.00	1852861	8.68	8.261	0.00
20 PPBV STD AA 1523 STD04		595915	0.59	4.342	0.00	2483086	2.01	5.399	0.00	2008313	1.02	8.261	0.00
10 PPBV STD AA 1524 STD03		619922	3.41	4.335	0.00	2493141	2.42	5.396	0.00	2093975	3.21	8.258	0.00
2 PPBV STD AA 1525 STD04		603375	0.65	4.332	0.01	2369670	2.65	5.396	0.00	2059554	1.51	8.258	0.00
0.2 PPBV STD AA 1526 STD05		616010	2.76	4.332	0.01	2400433	1.39	5.396	0.00	2129912	4.98	8.258	0.00
ICVSS AA 1527 ICVSS		583648	2.64	4.335	0.00	2364331	2.87	5.399	0.00	2014746	0.70	8.258	0.00

Difference of Internal Area must be within +/- 40%; Retention Times must be within +/- 0.33 minute.

* Values outside QC limits.

Internal Standard Area and Retention Time Summary

Lab File ID (Standard): AA1562DCVS

Date Analyzed: 3/15/2019

Instrument: AA

ICAL Date: 3/13/2019

			BROMOCHLOROMETHANE				1,4-DIFLUOROBENZENE				D-5 CHLORO BENZENE			
			Area #		RT		Area #		RT		Area #		RT	
CALIBRATION STANDARD			540099		4.339		2152642		5.400		1980931		8.258	
UPPER LIMIT			756139		4.67		3013699		5.73		2773303		8.59	
LOWER LIMIT			324059		4.01		1291585		5.07		1188559		7.93	
Lab ID	DF		Area #	%	RT	+/-	Area #	%	RT	+/-	Area #	%	RT	+/-
Method Blank	AA1564BLK	1.0	502043	-7.05	4.335	0.00	1914457	-11.06	5.396	0.00	1682200	-15.08	8.261	0.00
Reporting Limit Laboratory Control Standard	AA1565RLLCS	1.0	450927	-16.51	4.332	-0.01	1698268	-21.11	5.396	0.00	1764566	-10.92	8.261	0.00
3015A	AA1566	1.0	421080	-22.04	4.335	0.00	1652705	-23.22	5.399	0.00	1427067	-27.96	8.261	0.00
Closing Calibration	AA1581CCCVS	1.0	442576	-18.06	4.338	0.00	1767398	-17.90	5.399	0.00	1663681	-16.02	8.261	0.00

Difference of Internal Area must be within +/- 40%; Retention Times must be within +/- 0.33 minute.

* Values outside QC limits.

Internal Standard Area and Retention Time Summary

Lab File ID (Standard): AA1962DCVS

Date Analyzed: 4/4/2019

Instrument: AA

ICAL Date: 3/13/2019

			BROMOCHLOROMETHANE				1,4-DIFLUOROBENZENE				D-5 CHLORO BENZENE			
			Area #		RT		Area #		RT		Area #		RT	
CALIBRATION STANDARD			684601		4.335		2627081		5.399		2714956		8.258	
UPPER LIMIT			958441		4.67		3677913		5.73		3800938		8.59	
LOWER LIMIT			410761		4.01		1576249		5.07		1628974		7.93	
Lab ID	DF		Area #	%	RT	+/-	Area #	%	RT	+/-	Area #	%	RT	+/-
Method Blank	AA1964BLK	1.0	569306	-16.84	4.332	0.00	2106776	-19.81	5.393	-0.01	1838953	-32.27	8.258	0.00
Reporting Limit Laboratory Control Standard	AA1965RLLCS	1.0	544089	-20.52	4.332	0.00	2060533	-21.57	5.396	0.00	1993919	-26.56	8.261	0.00
E19-02214-01	AA1977	1.0	589275	-13.92	4.361	0.03	2519268	-4.10	5.399	0.00	3027783	11.52	8.248	-0.01
Closing Calibration	AA1985CCCVS	1.0	914869	33.64	4.332	0.00	3605274	37.23	5.396	0.00	3316857	22.17	8.258	0.00

Difference of Internal Area must be within +/- 40%; Retention Times must be within +/- 0.33 minute.

* Values outside QC limits.

Internal Standard Area and Retention Time Summary

Lab File ID (Standard): AA1992DCVS

Date Analyzed: 4/5/2019

Instrument: AA

ICAL Date: 3/13/2019

			BROMOCHLOROMETHANE				1,4-DIFLUOROBENZENE				D-5 CHLORO BENZENE			
			Area #		RT		Area #		RT		Area #		RT	
CALIBRATION STANDARD			567545		4.342		2203091		5.400		2070172		8.258	
UPPER LIMIT			794563		4.67		3084327		5.73		2898241		8.59	
LOWER LIMIT			340527		4.01		1321855		5.07		1242103		7.93	
Lab ID	DF		Area #	%	RT	+/-	Area #	%	RT	+/-	Area #	%	RT	+/-
Method Blank	AA1994BLK	1.0	420811	-25.85	4.339	0.00	1579024	-28.33	5.400	0.00	1363374	-34.14	8.258	0.00
E19-02214-01	AA1999	10.0	445197	-21.56	4.348	0.01	1770864	-19.62	5.403	0.00	1761512	-14.91	8.261	0.00
E19-02214-21	AA2000	10.0	486146	-14.34	4.345	0.00	1828929	-16.98	5.403	0.00	1849252	-10.67	8.261	0.00
E19-02214-02	AA2001	10.0	479194	-15.57	4.339	0.00	1860078	-15.57	5.403	0.00	1738769	-16.01	8.258	0.00
E19-02214-03	AA2002	10.0	488822	-13.87	4.342	0.00	1918893	-12.90	5.403	0.00	2077184	0.34	8.258	0.00
E19-02214-04	AA2003	10.0	502588	-11.45	4.342	0.00	1919231	-12.88	5.403	0.00	1869013	-9.72	8.245	-0.01
E19-02214-05	AA2004	1.0	398628	-29.76	4.358	0.02	1758562	-20.18	5.403	0.00	1562478	-24.52	8.264	0.01
E19-02214-06	AA2005	10.0	447540	-21.14	4.345	0.00	1788507	-18.82	5.403	0.00	2533889	22.40	8.258	0.00
E19-02214-07	AA2006	10.0	514685	-9.31	4.345	0.00	2058393	-6.57	5.403	0.00	2292092	10.72	8.258	0.00

Difference of Internal Area must be within +/- 40%; Retention Times must be within +/- 0.33 minute.

* Values outside QC limits.

Internal Standard Area and Retention Time Summary

Lab File ID (Standard): AA2022DCVS

Date Analyzed: 4/8/2019

Instrument: AA

ICAL Date: 3/13/2019

			BROMOCHLOROMETHANE				1,4-DIFLUOROBENZENE				D-5 CHLORO BENZENE			
			Area #		RT		Area #		RT		Area #		RT	
CALIBRATION STANDARD			636062		4.342		2418828		5.399		2322788		8.261	
UPPER LIMIT			890487		4.67		3386359		5.73		3251903		8.59	
LOWER LIMIT			381637		4.01		1451297		5.07		1393673		7.93	
Lab ID	DF		Area #	%	RT	+/-	Area #	%	RT	+/-	Area #	%	RT	+/-
Method Blank	AA2024BLK	1.0	706401	11.06	4.338	0.00	2494077	3.11	5.399	0.00	2167892	-6.67	8.261	0.00
E19-02214-04	AA2030	50.0	506803	-20.32	4.345	0.00	1841716	-23.86	5.399	0.00	1702838	-26.69	8.261	0.00

Difference of Internal Area must be within +/- 40%; Retention Times must be within +/- 0.33 minute.

* Values outside QC limits.

Section VI: Sample Data Summary

Certificate of Analysis

Summary of Results

**Quantitation Reports, Chromatograms,
and Peak Integration Reports**

CERTIFICATE OF ANALYSIS

**ANALYTICAL DATA PACKAGE FOR THE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY NEW YORK 12233**

Integrated Analytical Laboratories, LLC
Project#: Lofts at Globe Mill
SDG #: E19-02214
Date of first sample receipt: 3/29/2019

Randolph, NJ 07869
NY ELAP Certification#: 11402
NJDEP (Primary AB) Certification#: 14751
Date of last sample receipt: 3/29/2019

Client: EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512

Attention: Attention: Ewa Gut

Project/Site: Lofts at Globe Mill/NY

Analysis conducted at: Integrated Analytical Laboratories, LLC
273 Franklin Road
Randolph, NJ 07869

Contact: Michael H. Leftin, Ph.D.

Sample(s):

E19-02214-01
E19-02214-02
E19-02214-03
E19-02214-04
E19-02214-05
E19-02214-06
E19-02214-07

Samples for this analysis were received in good condition with a chain of custody.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Once analysis has been performed on canisters that meets regulatory criteria, samples are recycled for future use, unless other provisions have been made by the client.



Michael H. Leftin, Ph.D.
Laboratory Director

Date: April 10, 2019

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/04/19, 04/05/19
Data File: AA1977, AA1999
Summa ID: 3045A
DF: 1, 10

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		NS-3		Reporting Limits	
IAL ID:		E19-02214-01			
Compound	CAS			ppbv	ug/m3
Acetone	67-64-1	D	40	94	2.0 4.8
Benzene	71-43-2		0.62	2.0	0.20 0.64
Bromodichloromethane	75-27-4		ND	ND	0.20 1.3
Bromoform	75-25-2		ND	ND	0.20 2.1
Bromomethane	74-83-9		ND	ND	0.20 0.78
1,3-Butadiene	106-99-0		ND	ND	0.20 0.44
Chlorobenzene	108-90-7		ND	ND	0.20 0.92
Chloroethane	75-00-3		ND	ND	0.20 0.53
Chloroform	67-66-3		1.0	5.0	0.20 0.98
Chloromethane	74-87-3		ND	ND	0.20 0.41
Carbon disulfide	75-15-0		ND	ND	0.20 0.62
Carbon tetrachloride	56-23-5		ND	ND	0.04 0.25
Cyclohexane	110-82-7		1.1	3.7	0.20 0.69
Dibromochloromethane	124-48-1		ND	ND	0.20 1.7
1,2-Dibromoethane	106-93-4		ND	ND	0.20 1.5
1,2-Dichlorobenzene	95-50-1		ND	ND	0.20 1.2
1,3-Dichlorobenzene	541-73-1		ND	ND	0.20 1.2
1,4-Dichlorobenzene	106-46-7		ND	ND	0.20 1.2
Dichlorodifluoromethane	75-71-8		ND	ND	0.20 0.99
1,1-Dichloroethane	75-34-3		ND	ND	0.20 0.81
1,2-Dichloroethane	107-06-2		ND	ND	0.20 0.81
1,1-Dichloroethene	75-35-4		ND	ND	0.20 0.79
1,2-Dichloroethene (cis)	156-59-2		ND	ND	0.20 0.79
1,2-Dichloroethene (trans)	156-60-5		ND	ND	0.20 0.79
1,2-Dichloropropane	78-87-5		ND	ND	0.20 0.92
1,3-Dichloropropene (cis)	10061-01-5		ND	ND	0.20 0.91
1,3-Dichloropropene (trans)	10061-02-6		ND	ND	0.20 0.91
1,2-Dichlorotetrafluoroethane	76-14-2		ND	ND	0.20 1.4
1,4-Dioxane	123-91-1		ND	ND	0.20 0.72
Ethylbenzene	100-41-4		1.8	7.6	0.20 0.87
n-Heptane	142-82-5		1.3	5.3	0.20 0.82
1,3-Hexachlorobutadiene	87-68-3		ND	ND	0.20 2.1
n-Hexane	110-54-3		1.6	5.6	0.20 0.71
Methylene chloride	75-09-2		3.2	11	0.20 0.70
Methyl ethyl ketone	78-93-3		24	72	0.20 0.59
Methyl isobutyl ketone	108-10-1		2.7	11	0.20 0.82
Methyl tert-butyl ether	1634-04-4		ND	ND	0.20 0.72
Styrene	100-42-5		ND	ND	0.20 0.85
Tert-butyl alcohol	75-65-0		1.5	4.4	0.20 0.61
1,1,2,2-Tetrachloroethane	79-34-5		ND	ND	0.20 1.4
Tetrachloroethene	127-18-4		ND	ND	0.20 1.4
Toluene	108-88-3		25	94	0.20 0.75
1,2,4-Trichlorobenzene	120-82-1		ND	ND	0.20 1.5
1,1,1-Trichloroethane	71-55-6		ND	ND	0.20 1.1
1,1,2-Trichloroethane	79-00-5		ND	ND	0.20 1.1
Trichloroethene	79-01-6		ND	ND	0.05 0.25

IAL SDG #E19-02214

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D = Extra dilution required for this compound

page 1 of 14

Analyst: J. Schmitt



Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/04/19, 04/05/19
Data File: AA1977, AA1999
Summa ID: 3045A
DF: 1, 10

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		NS-3		Reporting	
IAL ID:		E19-02214-01		Limits	
<u>Compound</u>	<u>CAS</u>	<u>ppbv</u>	<u>ug/m3</u>	<u>ppbv</u>	<u>ug/m3</u>
Trichlorofluoromethane	75-69-4	ND	ND	0.20	1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	ND	0.20	1.5
1,2,4-Trimethylbenzene	95-63-6	1.2	6.0	0.20	0.98
1,3,5-Trimethylbenzene	108-67-8	0.45	2.2	0.20	0.98
2,2,4-Trimethylpentane	540-84-1	ND	ND	0.20	0.93
Vinyl bromide	593-60-2	ND	ND	0.20	0.87
Vinyl chloride	75-01-4	ND	ND	0.20	0.51
Xylenes (m p)	179601-23-1	9.0	39	0.20	0.87
Xylenes (o)	95-47-6	2.7	12	0.20	0.87

Data Path : C:\DATA\04-04-19\
 Data File : aa1977.D
 Acq On : 4 Apr 2019 4:14 pm
 Operator : jls
 Sample : E19-02214-01
 Misc : 3045A, 500cc
 ALS Vial : 17 Sample Multiplier: 1

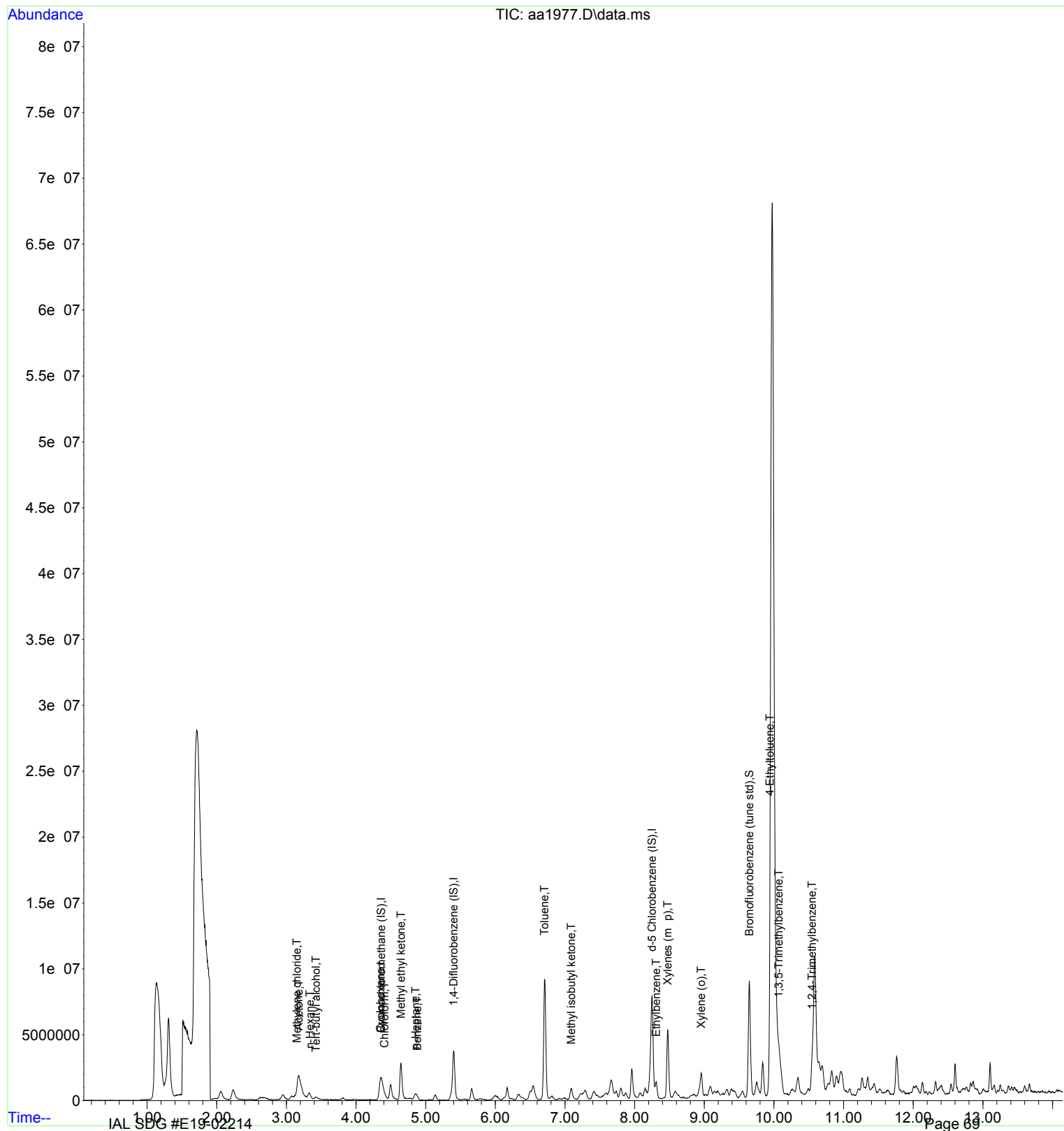
Quant Time: Apr 05 10:20:15 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

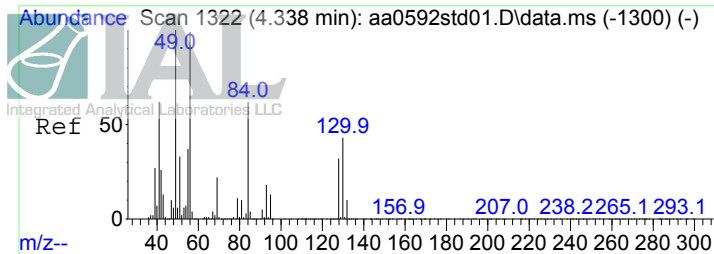
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.361	130	589275	10.00	ppbV	0.026
39) 1,4-Difluorobenzene (IS)	5.399	114	2519268	10.00	ppbV #	0.000
55) d-5 Chlorobenzene (IS)	8.248	117	3027783	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.647	95	3004394	11.37	ppbV	0.000
Target Compounds						
						Qvalue
20) Methylene chloride	3.149	49	312131	3.23	ppbV #	68
21) Acetone	3.178	43	5099193	42.60	ppbV #	73
24) n-Hexane	3.338	41	282724	1.60	ppbV #	67
26) Tert-butyl alcohol	3.425	59	196617	1.46	ppbV	100
29) Cyclohexane	4.351	56	129672	1.06	ppbV #	53
30) Chloroform	4.409	83	137436	1.01	ppbV	98
35) Methyl ethyl ketone	4.644	43	4070522	24.48	ppbV	95
36) n-Heptane	4.856	43	221572	1.30	ppbV	91
37) Benzene	4.879	78	124019	0.62	ppbV	100
47) Toluene	6.705	91	6466912	24.91	ppbV	94
48) Methyl isobutyl ketone	7.091	43	642819	2.69	ppbV #	70
58) Ethylbenzene	8.309	91	844627	1.75	ppbV	92
59) Xylenes (m&p)	8.473	91	3148463	8.96	ppbV	94
60) Xylene (o)	8.956	91	1066866	2.73	ppbV	95
67) 4-Ethyltoluene	9.943	105	546855	1.10	ppbV	99
69) 1,3,5-Trimethylbenzene	10.068	105	197667	0.45	ppbV	98
70) 1,2,4-Trimethylbenzene	10.547	105	535315	1.23	ppbV	90

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

Data Path : C:\DATA\04-04-19\
Data File : aa1977.D
Acq On : 4 Apr 2019 4:14 pm
Operator : jls
Sample : E19-02214-01
Misc : 3045A, 500cc
ALS Vial : 17 Sample Multiplier: 1

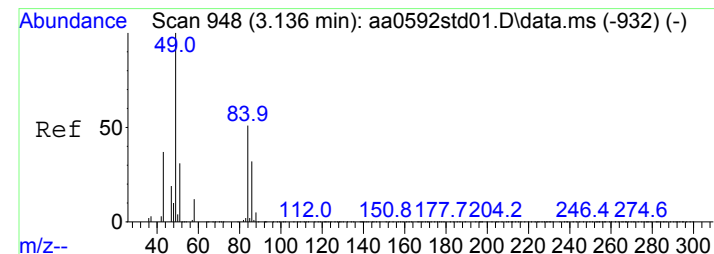
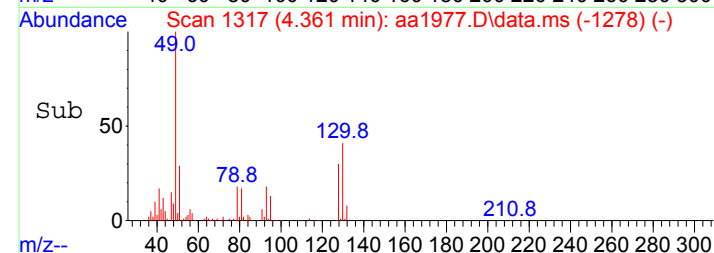
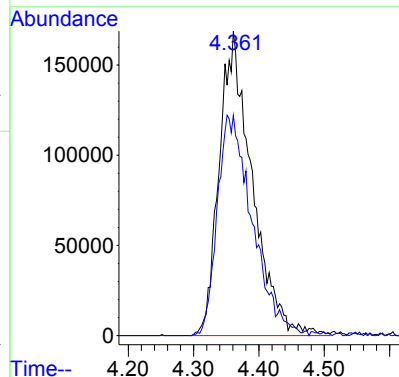
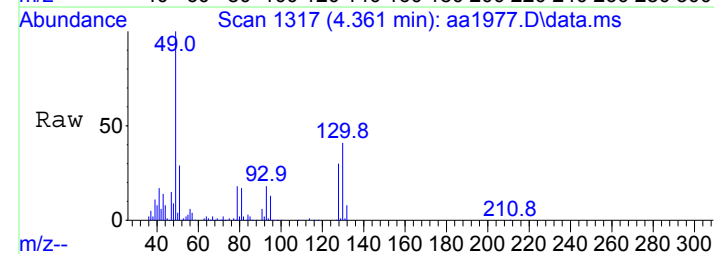
Quant Time: Apr 05 10:20:15 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





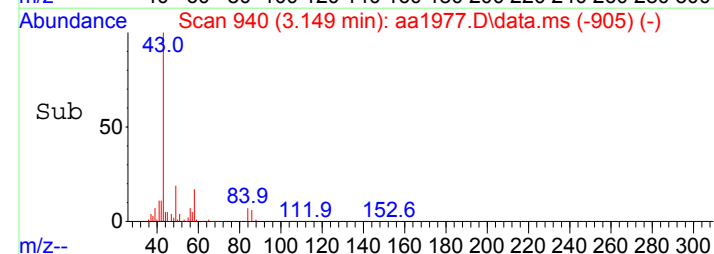
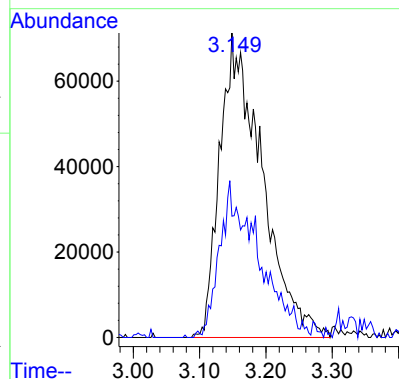
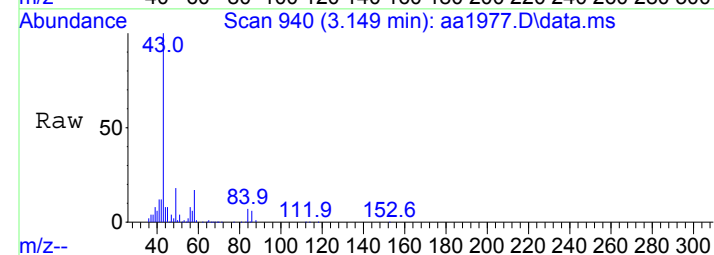
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.361 min Scan# 1317
Delta R.T. 0.026 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

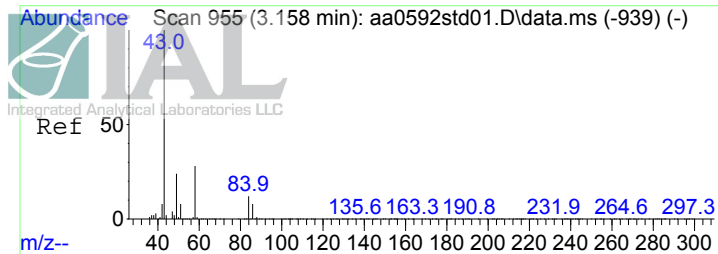
Tgt Ion	Ratio	Lower	Upper
130	100		
128	76.9	62.6	94.0



#20
Methylene chloride
Concen: 3.23 ppbV
RT: 3.149 min Scan# 940
Delta R.T. 0.013 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

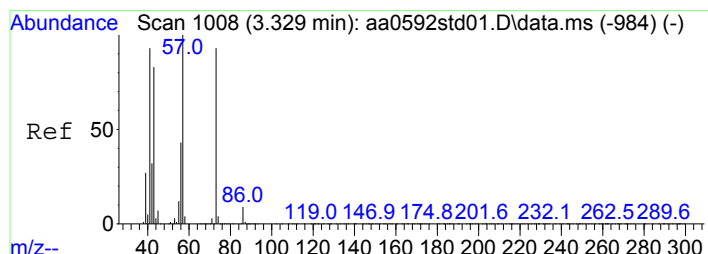
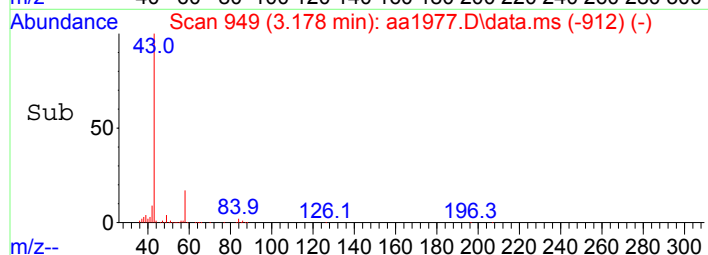
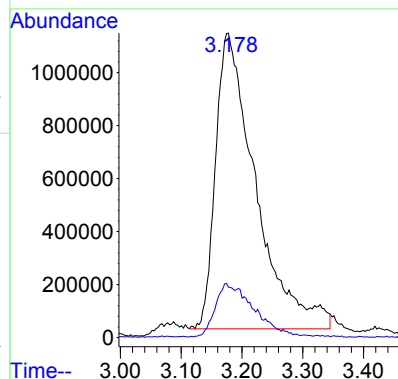
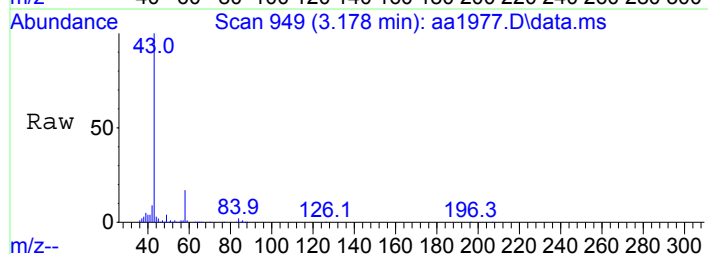
Tgt Ion	Ratio	Lower	Upper
49	100		
84	45.8	58.4	87.6#





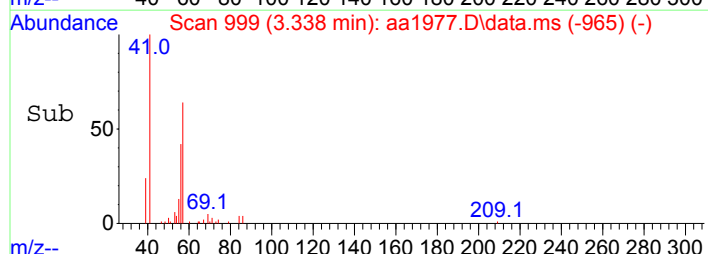
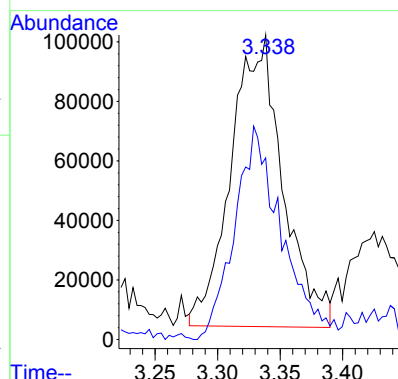
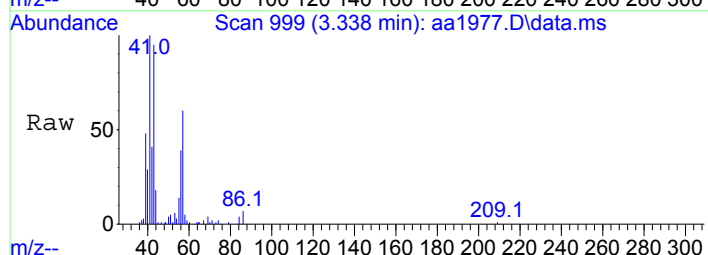
#21
Acetone
Concen: 42.60 ppbV
RT: 3.178 min Scan# 949
Delta R.T. 0.019 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

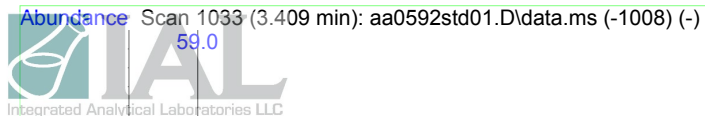
Tgt Ion: 43 Resp: 5099193
Ion Ratio Lower Upper
43 100
58 17.5 26.4 39.6#



#24
n-Hexane
Concen: 1.60 ppbV
RT: 3.338 min Scan# 999
Delta R.T. 0.009 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

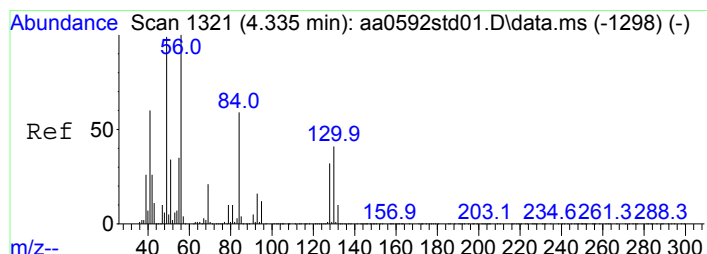
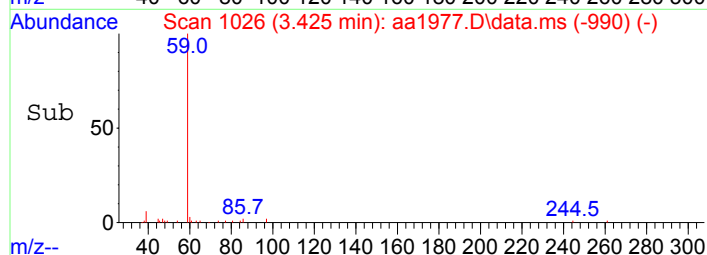
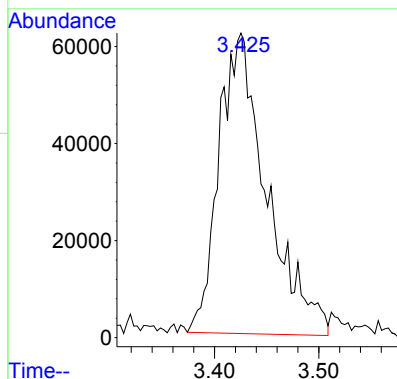
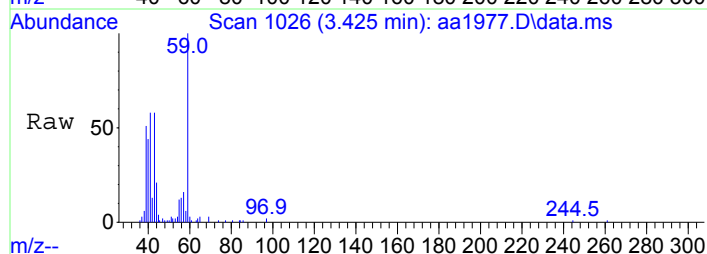
Tgt Ion: 41 Resp: 282724
Ion Ratio Lower Upper
41 100
57 66.3 79.2 118.8#





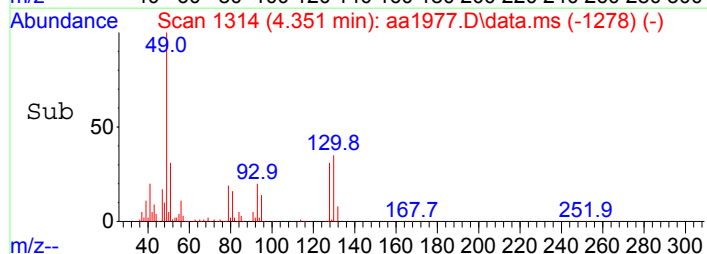
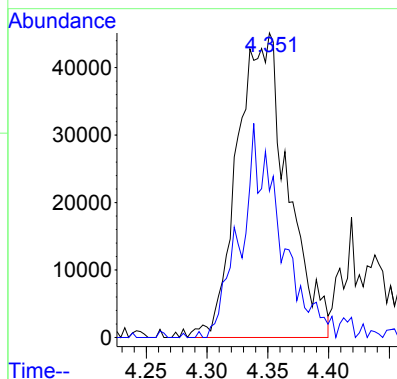
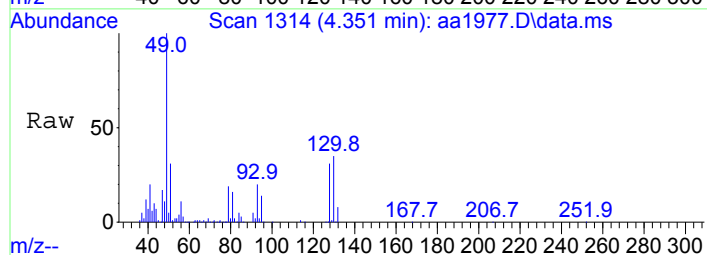
#26
Tert-butyl alcohol
Concen: 1.46 ppbV
RT: 3.425 min Scan# 1026
Delta R.T. 0.016 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

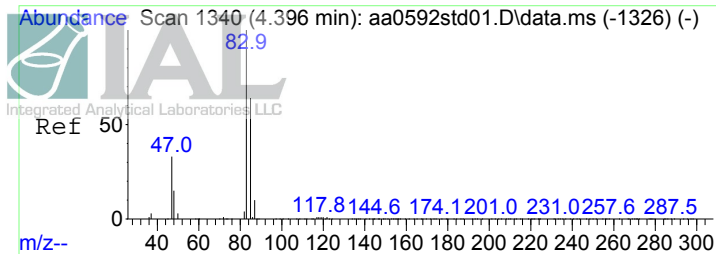
Tgt Ion: 59 Resp: 196617



#29
Cyclohexane
Concen: 1.06 ppbV
RT: 4.351 min Scan# 1314
Delta R.T. 0.016 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

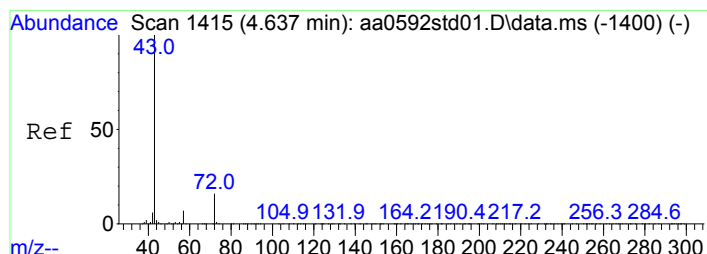
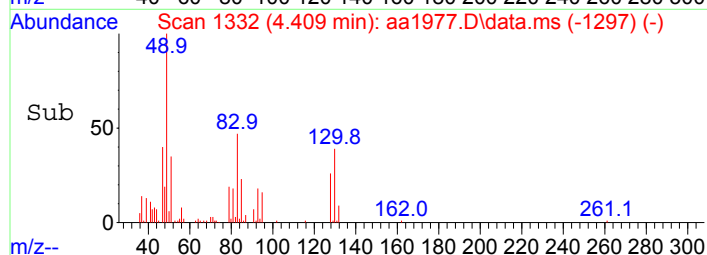
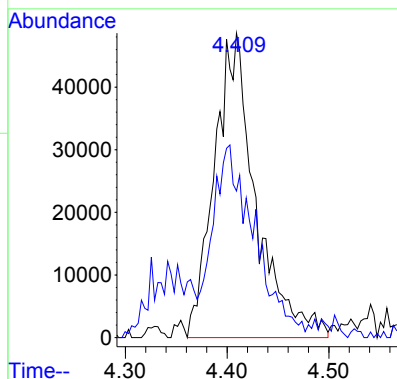
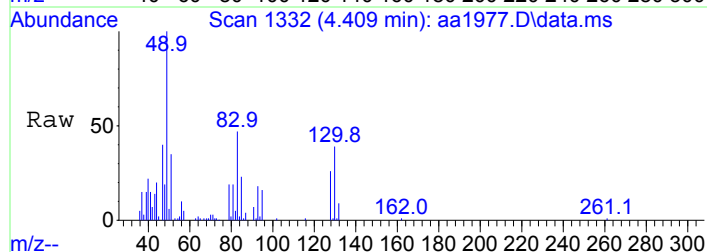
Tgt Ion: 56 Resp: 129672
Ion Ratio Lower Upper
56 100
84 43.9 70.4 105.6#





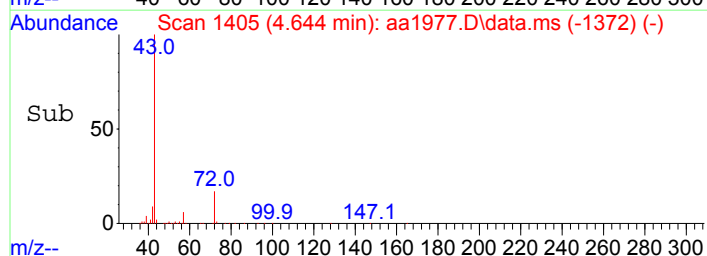
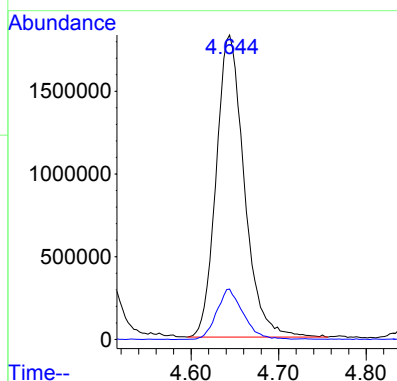
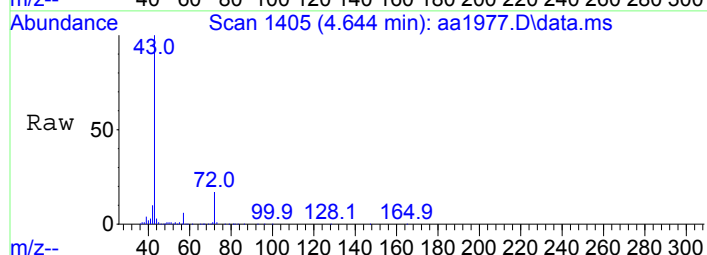
#30
Chloroform
Concen: 1.01 ppbV
RT: 4.409 min Scan# 1332
Delta R.T. 0.013 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

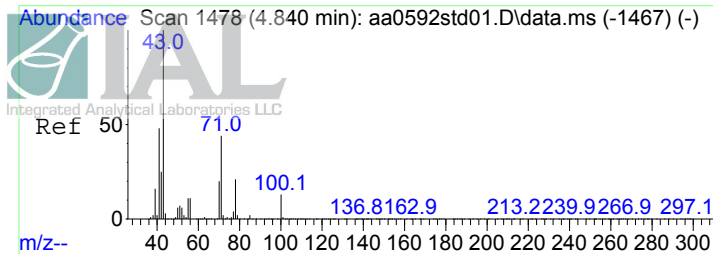
Tgt Ion: 83 Resp: 137436
Ion Ratio Lower Upper
83 100
85 62.4 51.0 76.6



#35
Methyl ethyl ketone
Concen: 24.48 ppbV
RT: 4.644 min Scan# 1405
Delta R.T. 0.006 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

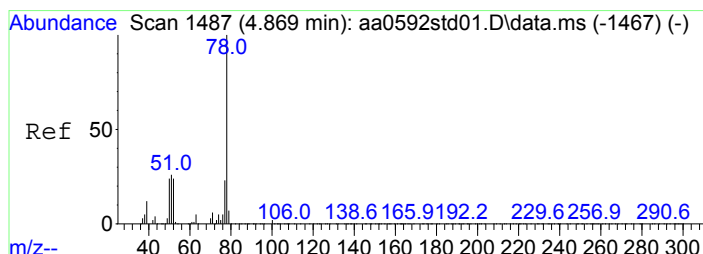
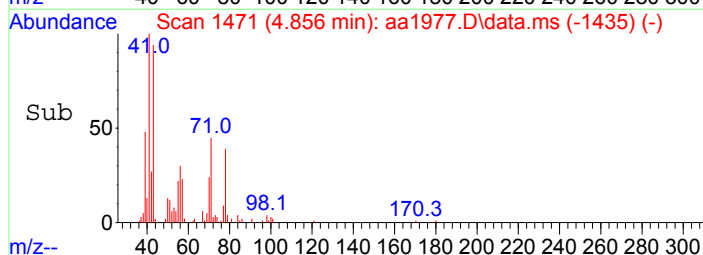
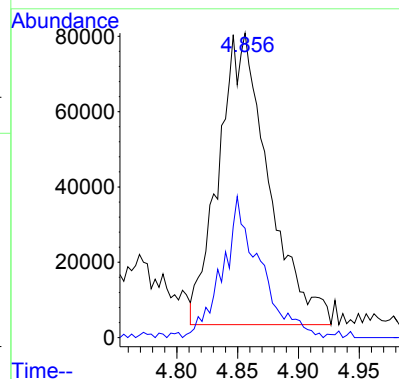
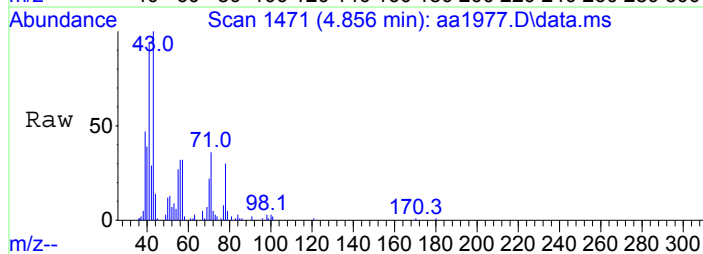
Tgt Ion: 43 Resp: 4070522
Ion Ratio Lower Upper
43 100
72 15.8 14.4 21.6





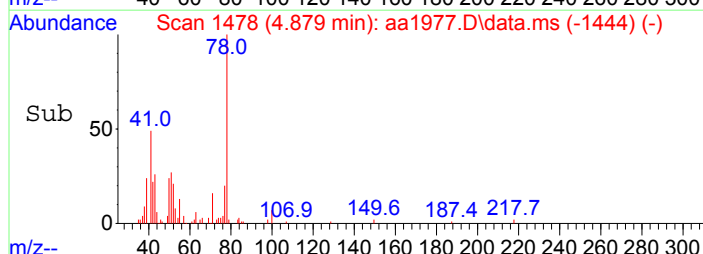
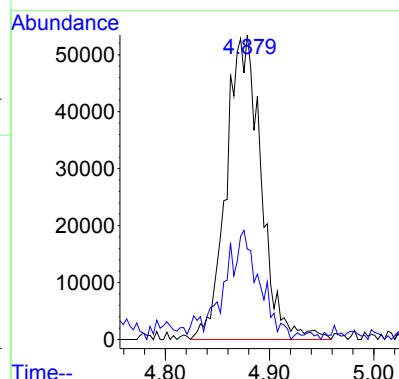
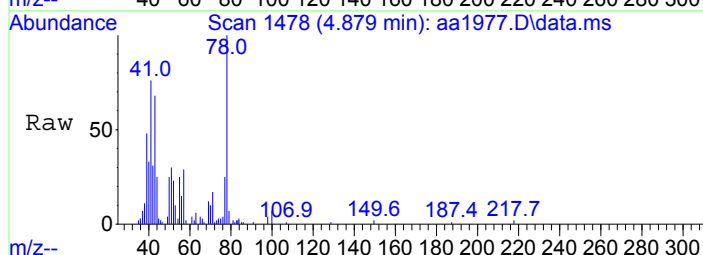
#36
n-Heptane
Concen: 1.30 ppbV
RT: 4.856 min Scan# 1471
Delta R.T. 0.016 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

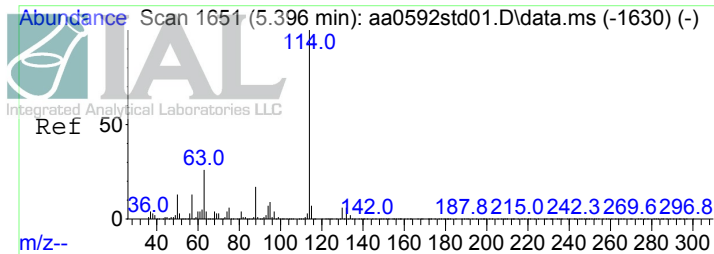
Tgt Ion: 43 Resp: 221572
Ion Ratio Lower Upper
43 100
71 36.5 33.6 50.4



#37
Benzene
Concen: 0.62 ppbV
RT: 4.879 min Scan# 1478
Delta R.T. 0.009 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

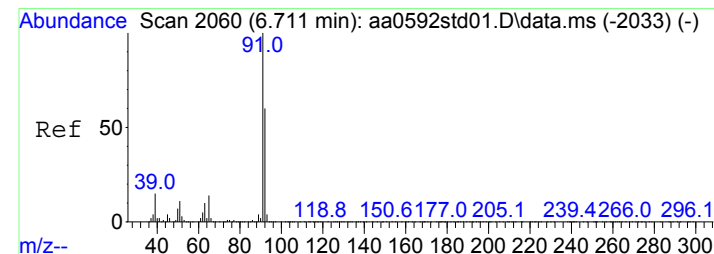
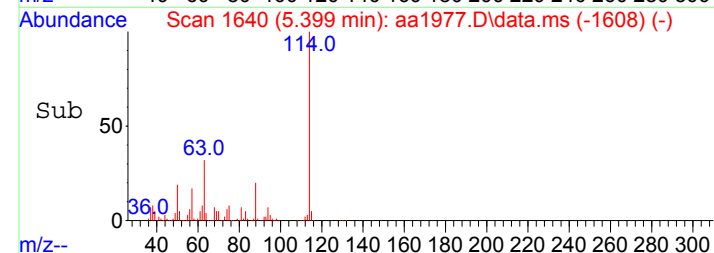
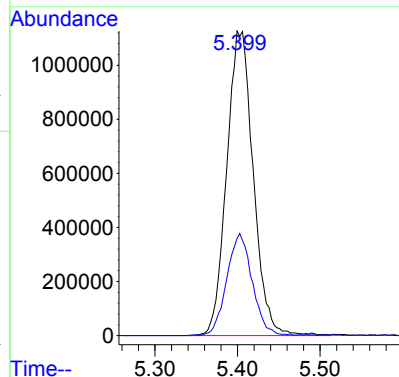
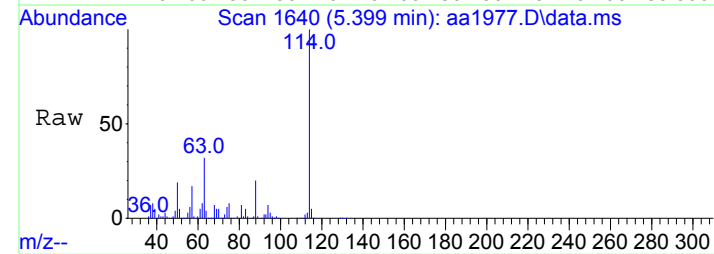
Tgt Ion: 78 Resp: 124019
Ion Ratio Lower Upper
78 100
51 22.9 18.4 27.6





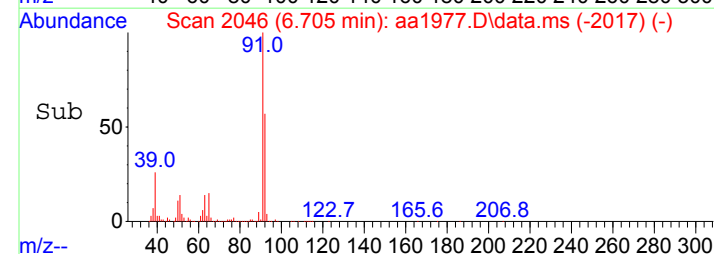
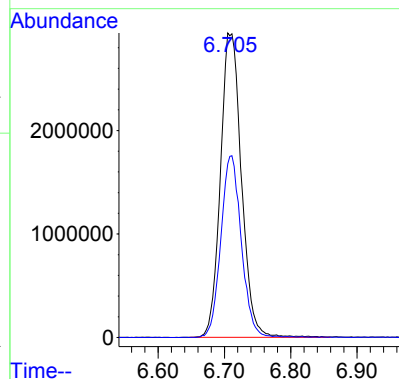
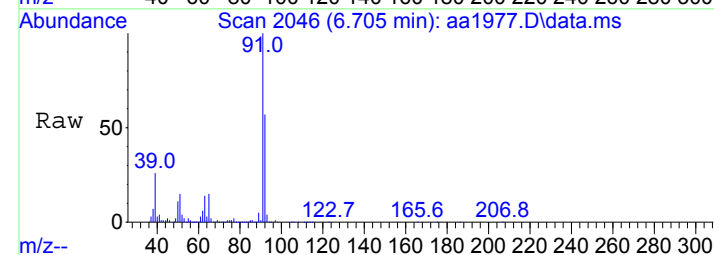
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.399 min Scan# 1640
Delta R.T. 0.003 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

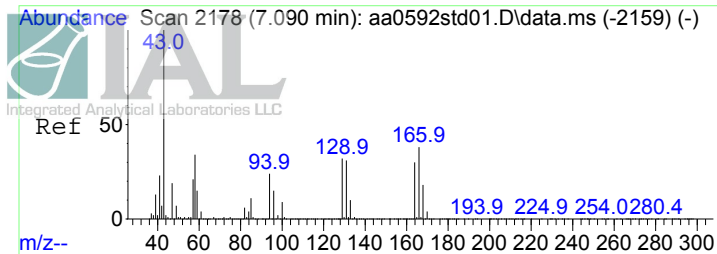
Tgt Ion: 114 Resp: 2519268
Ion Ratio Lower Upper
114 100
63 31.7 20.0 30.0#



#47
Toluene
Concen: 24.91 ppbV
RT: 6.705 min Scan# 2046
Delta R.T. -0.007 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

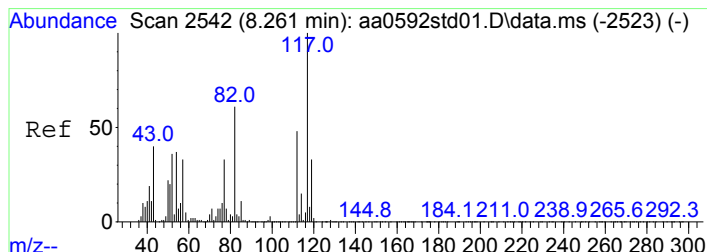
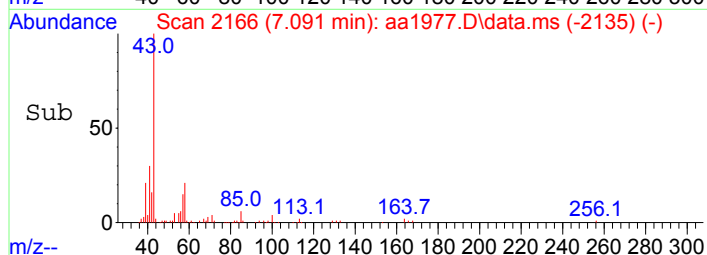
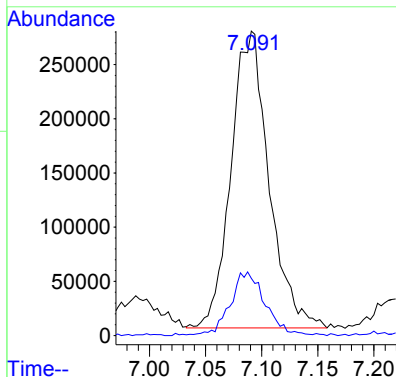
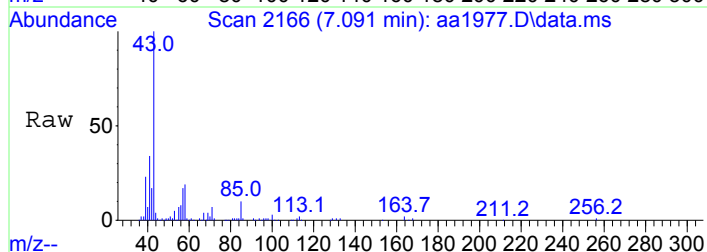
Tgt Ion: 91 Resp: 6466912
Ion Ratio Lower Upper
91 100
92 58.1 50.0 75.0





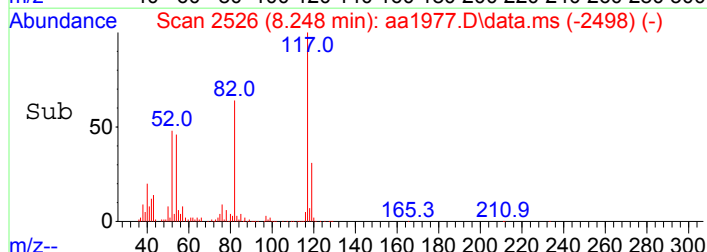
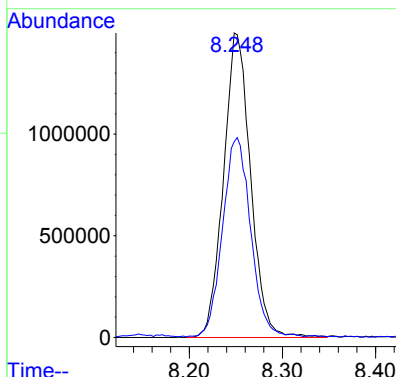
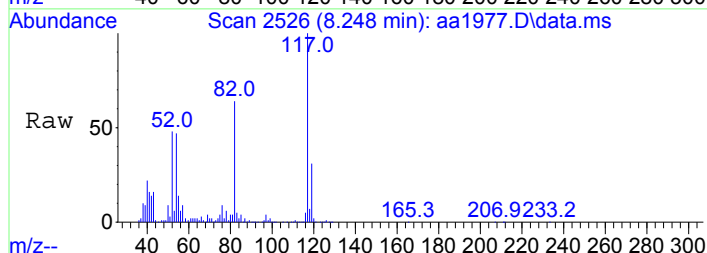
#48
Methyl isobutyl ketone
Concen: 2.69 ppbV
RT: 7.091 min Scan# 2166
Delta R.T. -0.000 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

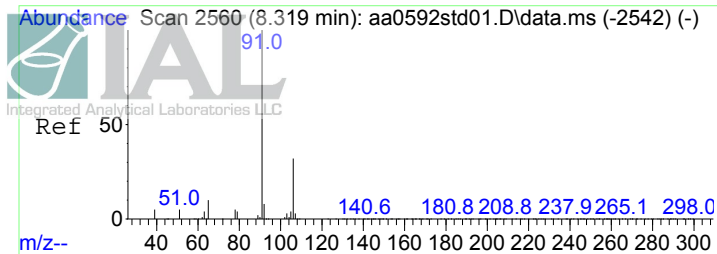
Tgt Ion: 43 Resp: 642819
Ion Ratio Lower Upper
43 100
58 19.7 30.4 45.6#



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.248 min Scan# 2526
Delta R.T. -0.010 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

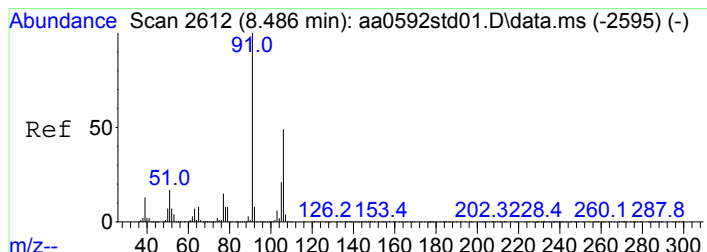
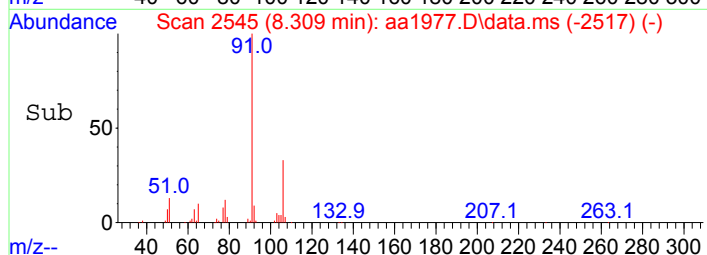
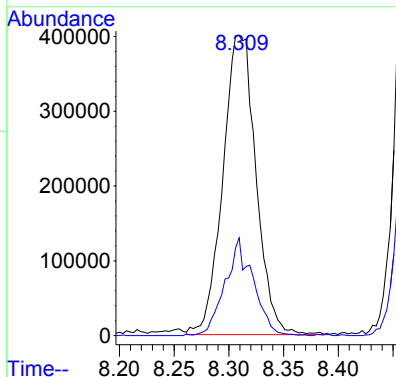
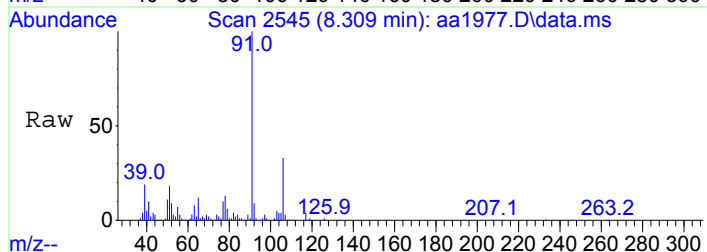
Tgt Ion: 117 Resp: 3027783
Ion Ratio Lower Upper
117 100
82 67.8 48.8 73.2





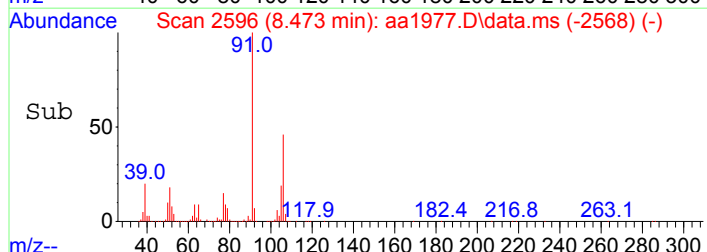
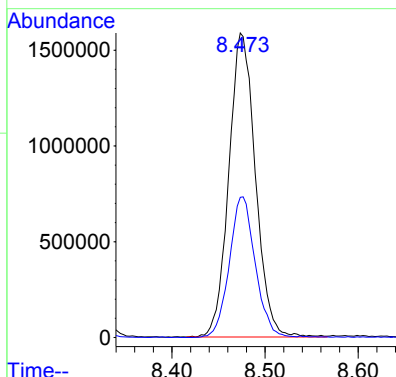
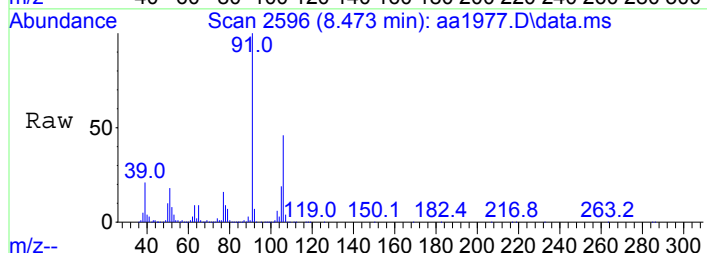
#58
Ethylbenzene
Concen: 1.75 ppbV
RT: 8.309 min Scan# 2545
Delta R.T. -0.010 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

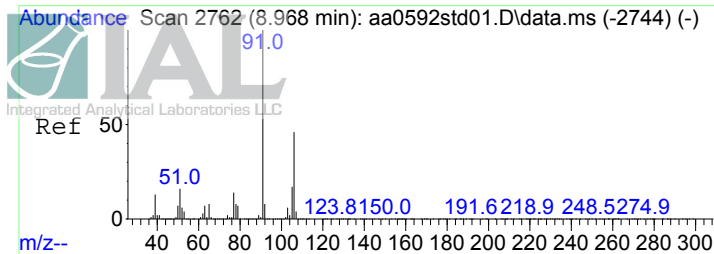
Tgt Ion: 91 Resp: 844627
Ion Ratio Lower Upper
91 100
106 27.6 25.6 38.4



#59
Xylenes (m&p)
Concen: 8.96 ppbV
RT: 8.473 min Scan# 2596
Delta R.T. -0.010 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

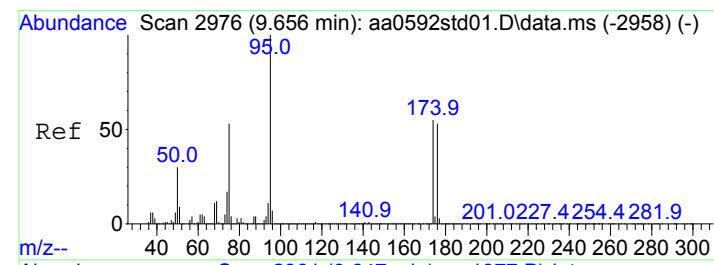
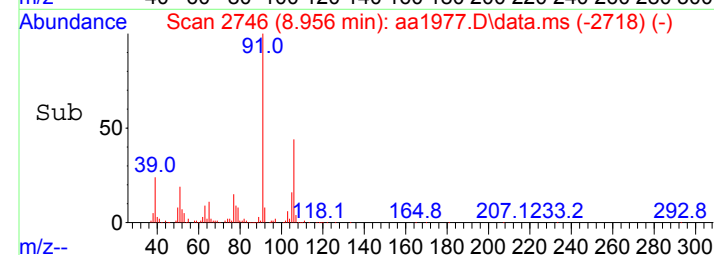
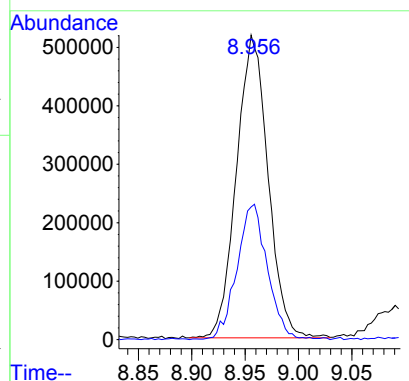
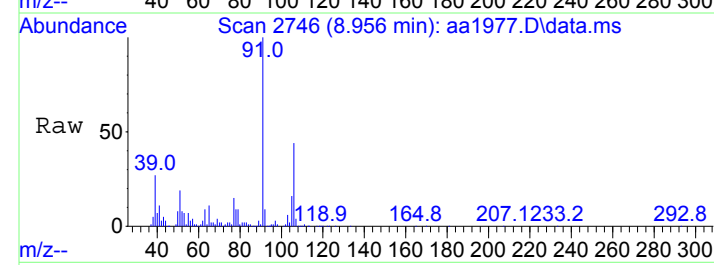
Tgt Ion: 91 Resp: 3148463
Ion Ratio Lower Upper
91 100
106 45.1 39.2 58.8





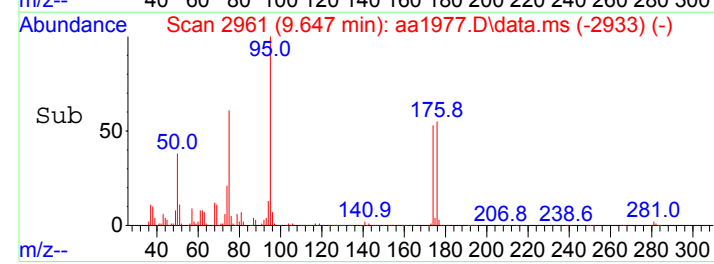
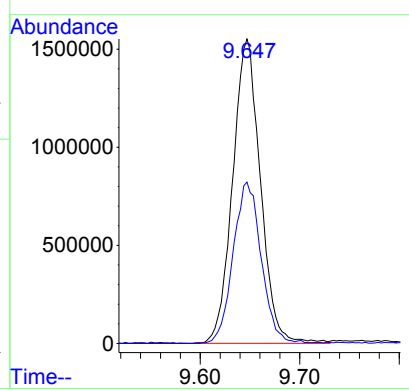
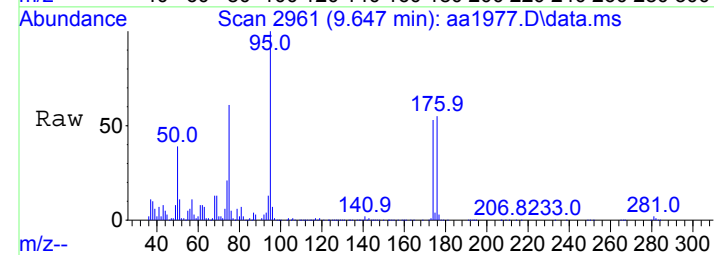
#60
Xylene (o)
Concen: 2.73 ppbV
RT: 8.956 min Scan# 2746
Delta R.T. -0.010 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

Tgt Ion: 91 Resp: 1066866
Ion Ratio Lower Upper
91 100
106 42.7 36.8 55.2

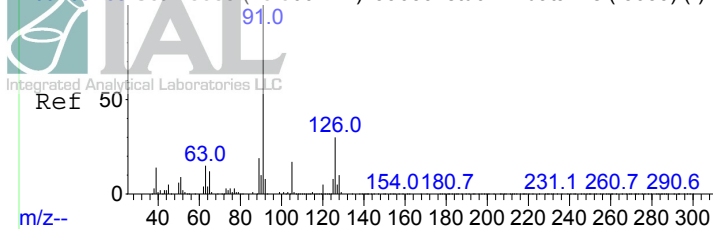


#64
Bromofluorobenzene (tune std)
Concen: 11.37 ppbV
RT: 9.647 min Scan# 2961
Delta R.T. -0.010 min
Lab File: aa1977.D
Acq: 4 Apr 2019 4:14 pm

Tgt Ion: 95 Resp: 3004394
Ion Ratio Lower Upper
95 100
174 53.7 61.5 92.3#



Abundance Scan 3083 (10.000 min): aa0592std01.D\data.ms (-3059) (-)



#67

4-Ethyltoluene

Concen: 1.10 ppbV

RT: 9.943 min Scan# 3053

Delta R.T. -0.032 min

Lab File: aa1977.D

Acq: 4 Apr 2019 4:14 pm

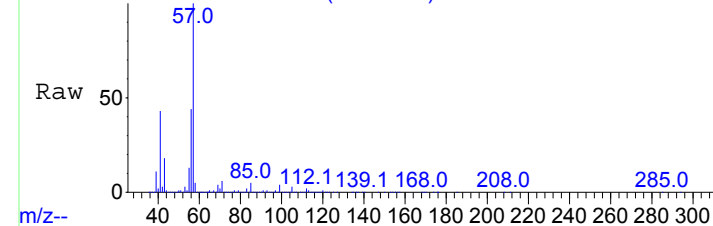
Tgt Ion:105 Resp: 546855

Ion Ratio Lower Upper

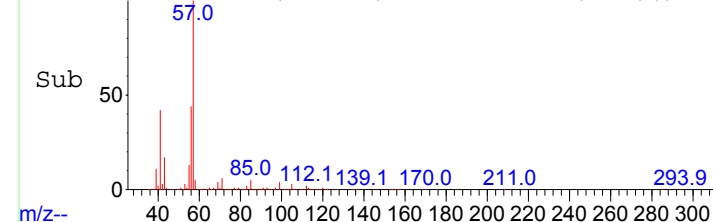
105 100

120 29.3 24.0 36.0

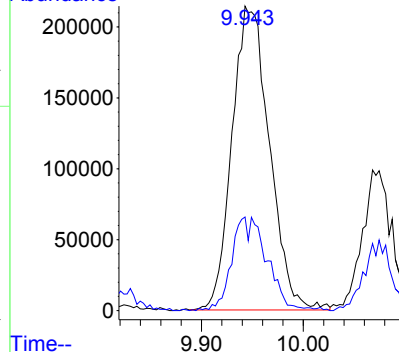
Abundance Scan 3053 (9.943 min): aa1977.D\data.ms



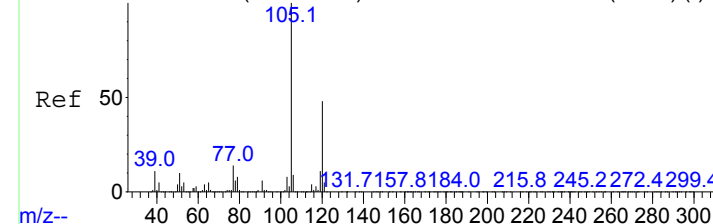
Abundance Scan 3053 (9.943 min): aa1977.D\data.ms (-3032) (-)



Abundance



Abundance Scan 3110 (10.087 min): aa0592std01.D\data.ms (-3094) (-)



#69

1,3,5-Trimethylbenzene

Concen: 0.45 ppbV

RT: 10.068 min Scan# 3092

Delta R.T. -0.016 min

Lab File: aa1977.D

Acq: 4 Apr 2019 4:14 pm

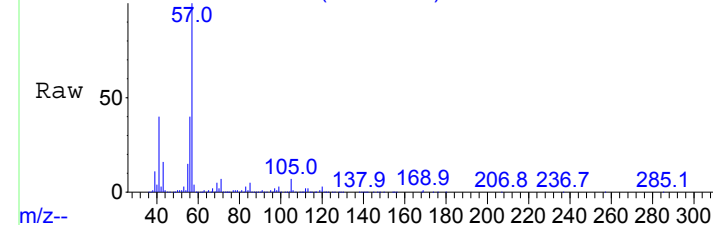
Tgt Ion:105 Resp: 197667

Ion Ratio Lower Upper

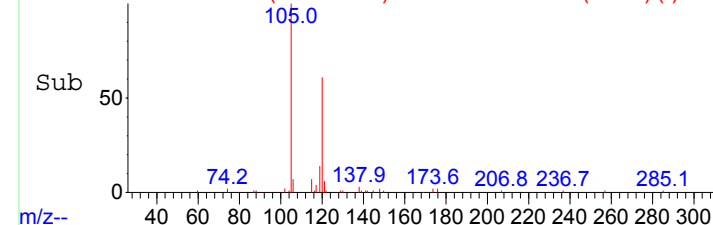
105 100

120 46.8 38.4 57.6

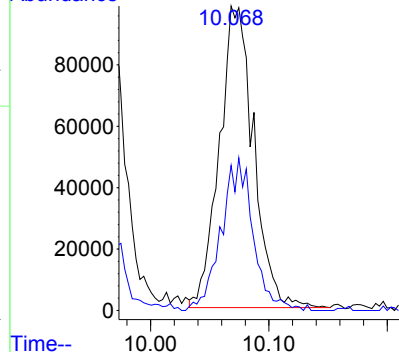
Abundance Scan 3092 (10.068 min): aa1977.D\data.ms

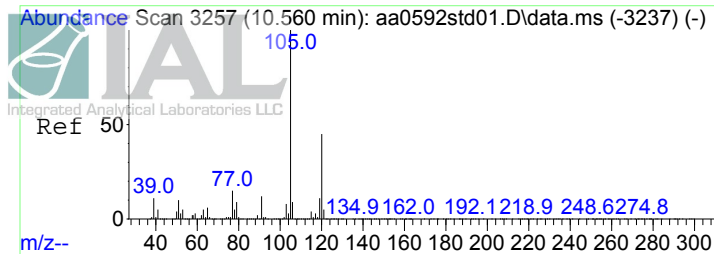


Abundance Scan 3092 (10.068 min): aa1977.D\data.ms (-3066) (-)



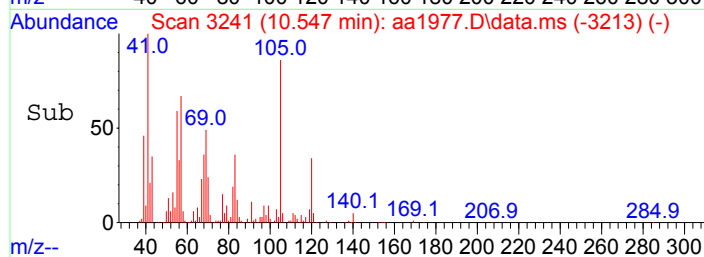
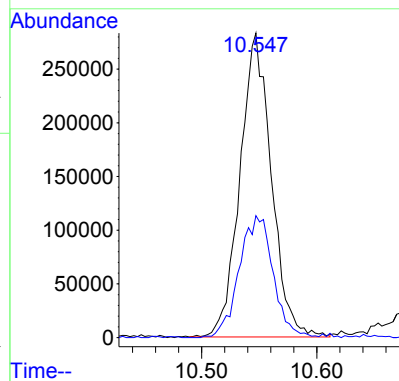
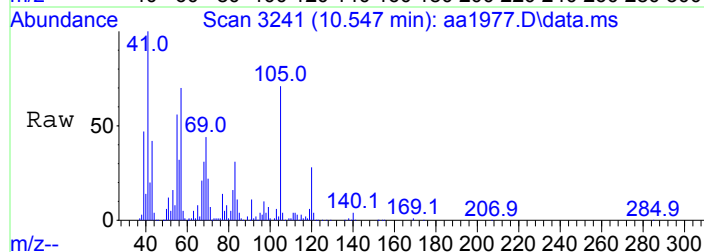
Abundance





#70
 1,2,4-Trimethylbenzene
 Concen: 1.23 ppbV
 RT: 10.547 min Scan# 3241
 Delta R.T. -0.010 min
 Lab File: aa1977.D
 Acq: 4 Apr 2019 4:14 pm

Tgt Ion	105	120	Ratio	Lower	Upper
Resp	535315				
Ion	100	43.3		40.0	60.0



Data Path : C:\DATA\04-05-19\
 Data File : aa1999.D
 Acq On : 5 Apr 2019 3:08 pm
 Operator : jls
 Sample : E19-02214-01 x 10 dil
 Misc : 3045A, 50cc
 ALS Vial : 9 Sample Multiplier: 1

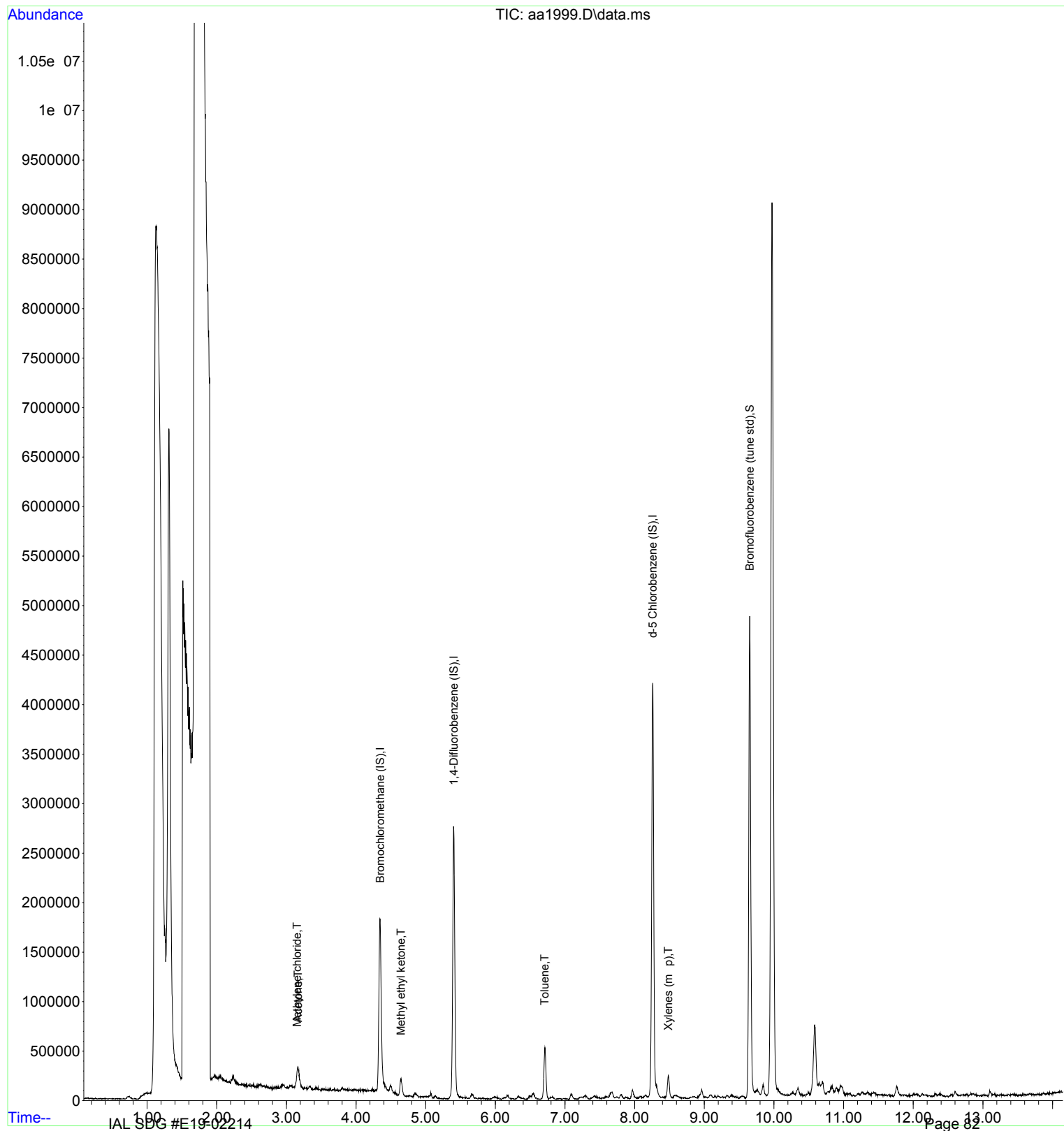
Quant Time: Apr 08 10:21:08 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

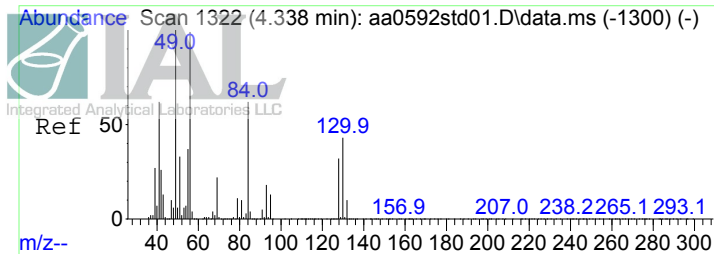
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.348	130	445197	10.00	ppbV	0.013
39) 1,4-Difluorobenzene (IS)	5.403	114	1770864	10.00	ppbV	# 0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1761512	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.654	95	1621962	10.55	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.152	49	41010	0.56	ppbV	# 63
21) Acetone	3.168	43	359717	3.98	ppbV	# 73
35) Methyl ethyl ketone	4.644	43	257251	2.05	ppbV	# 89
47) Toluene	6.708	91	335445	1.84	ppbV	96
59) Xylenes (m&p)	8.483	91	133929	0.66	ppbV	92

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

Data Path : C:\DATA\04-05-19\
Data File : aa1999.D
Acq On : 5 Apr 2019 3:08 pm
Operator : jls
Sample : E19-02214-01 x 10 dil
Misc : 3045A, 50cc
ALS Vial : 9 Sample Multiplier: 1

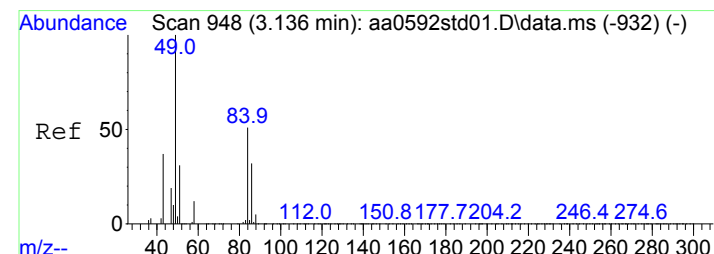
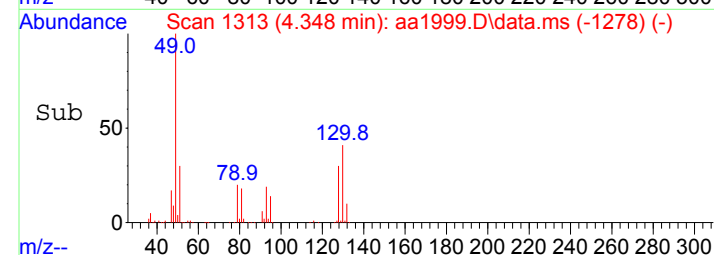
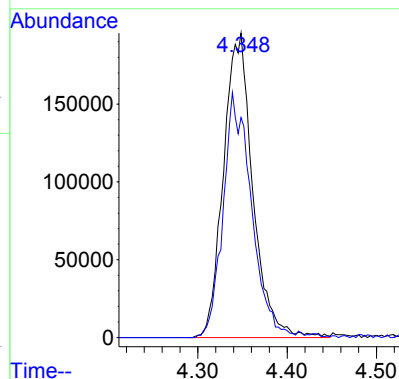
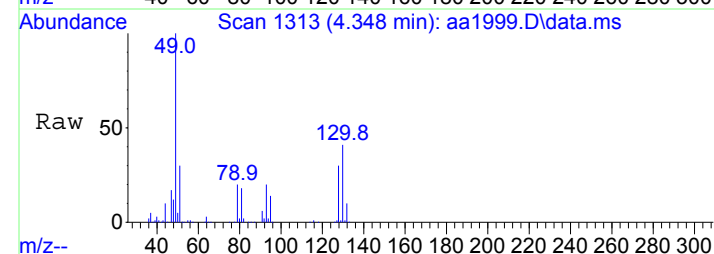
Quant Time: Apr 08 10:21:08 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





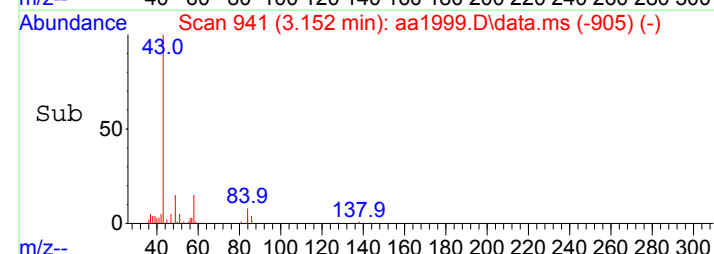
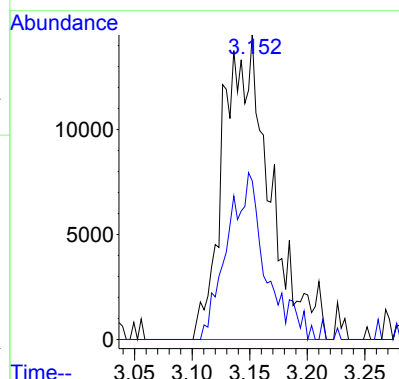
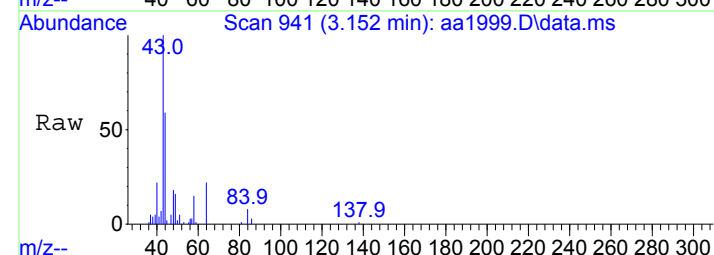
#1
 Bromochloromethane (IS)
 Concen: 10.00 ppbV
 RT: 4.348 min Scan# 1313
 Delta R.T. 0.013 min
 Lab File: aa1999.D
 Acq: 5 Apr 2019 3:08 pm

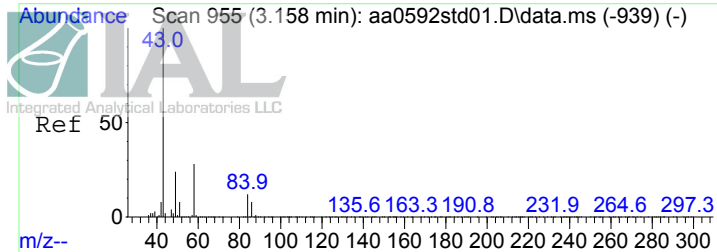
Tgt Ion: 130 Resp: 445197
 Ion Ratio Lower Upper
 130 100
 128 77.4 62.6 94.0



#20
 Methylene chloride
 Concen: 0.56 ppbV
 RT: 3.152 min Scan# 941
 Delta R.T. 0.016 min
 Lab File: aa1999.D
 Acq: 5 Apr 2019 3:08 pm

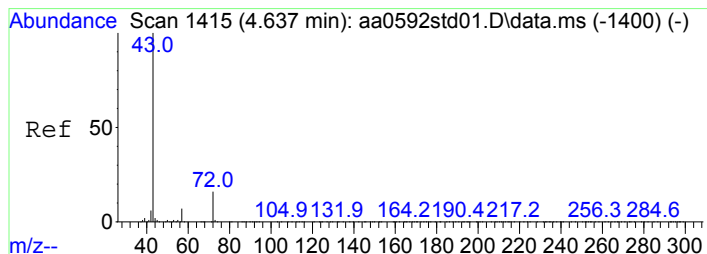
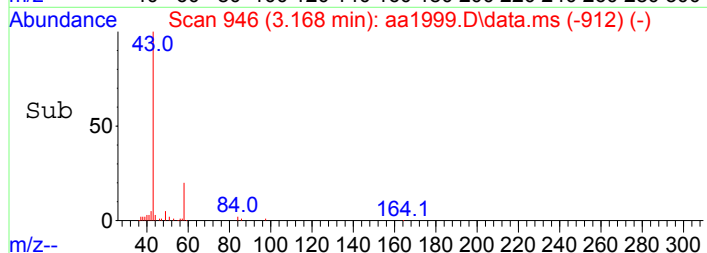
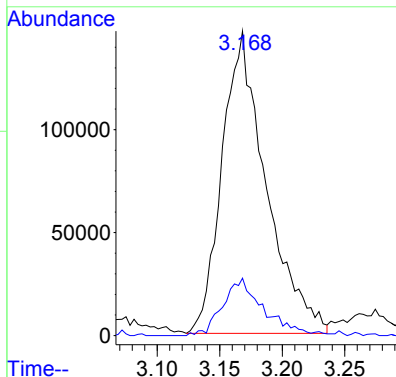
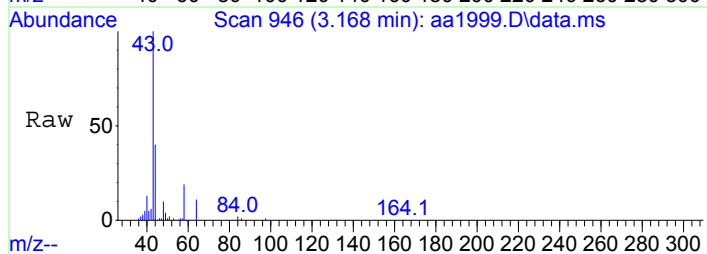
Tgt Ion: 49 Resp: 41010
 Ion Ratio Lower Upper
 49 100
 84 41.6 58.4 87.6#





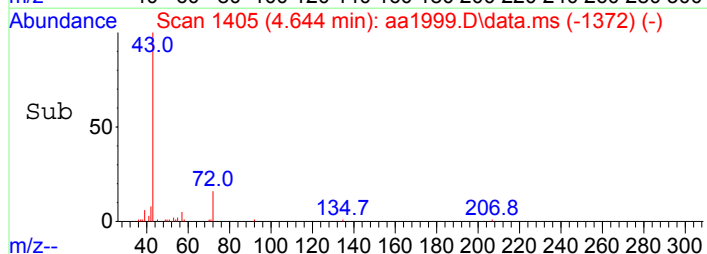
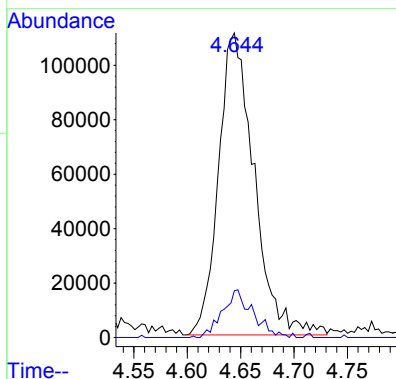
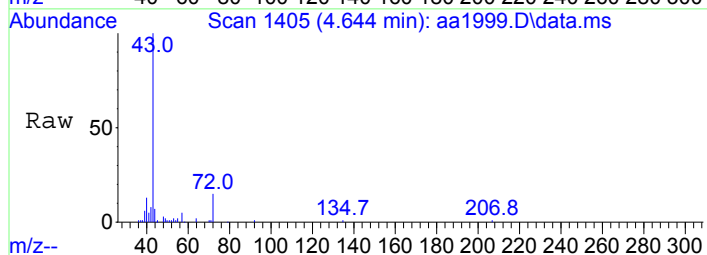
#21
Acetone
Concen: 3.98 ppbV
RT: 3.168 min Scan# 946
Delta R.T. 0.010 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

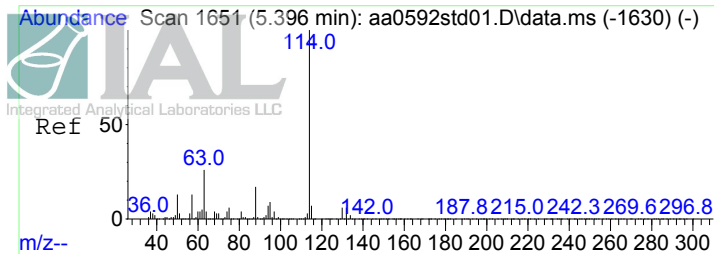
Tgt Ion: 43 Resp: 359717
Ion Ratio Lower Upper
43 100
58 17.6 26.4 39.6#



#35
Methyl ethyl ketone
Concen: 2.05 ppbV
RT: 4.644 min Scan# 1405
Delta R.T. 0.006 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

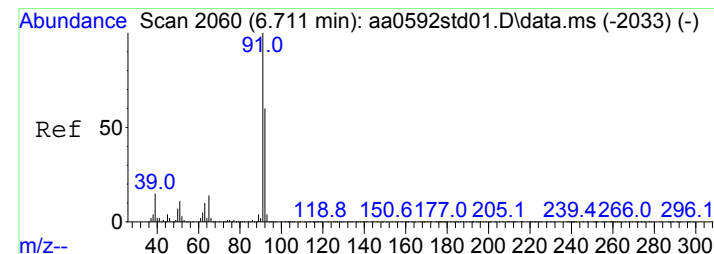
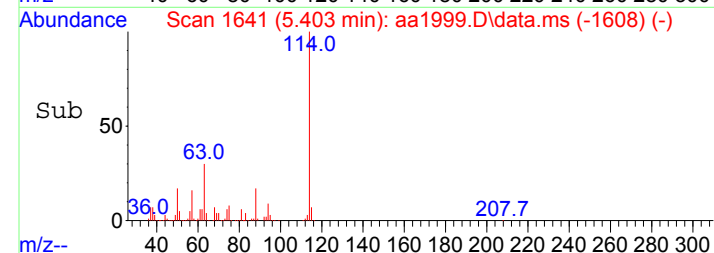
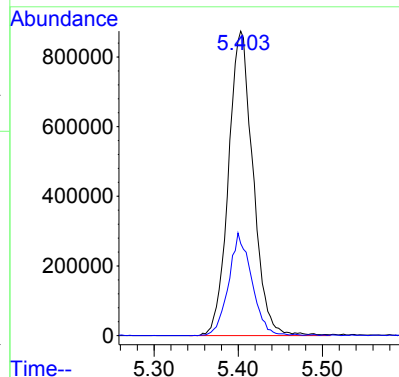
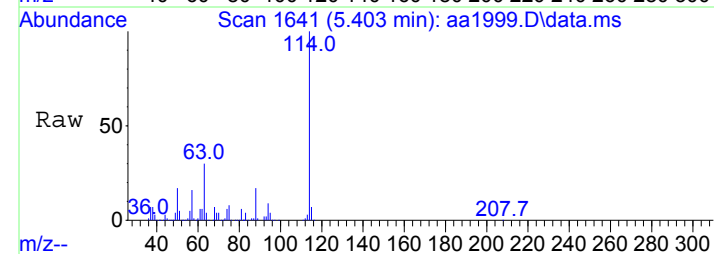
Tgt Ion: 43 Resp: 257251
Ion Ratio Lower Upper
43 100
72 13.4 14.4 21.6#





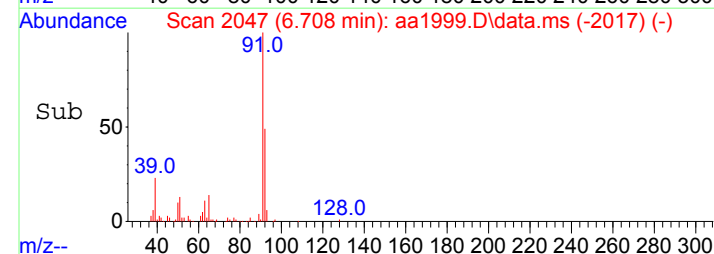
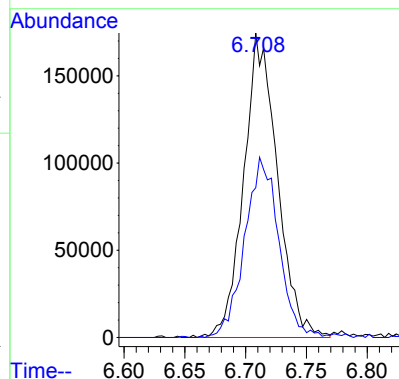
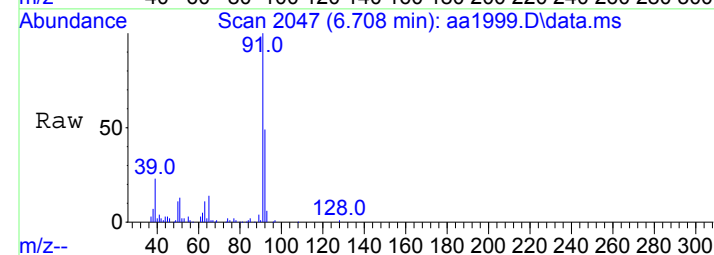
#39
 1,4-Difluorobenzene (IS)
 Concen: 10.00 ppbV
 RT: 5.403 min Scan# 1641
 Delta R.T. 0.006 min
 Lab File: aa1999.D
 Acq: 5 Apr 2019 3:08 pm

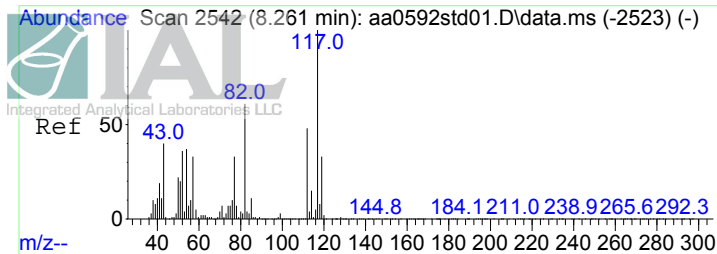
Tgt Ion: 114 Resp: 1770864
 Ion Ratio Lower Upper
 114 100
 63 31.6 20.0 30.0#



#47
 Toluene
 Concen: 1.84 ppbV
 RT: 6.708 min Scan# 2047
 Delta R.T. -0.003 min
 Lab File: aa1999.D
 Acq: 5 Apr 2019 3:08 pm

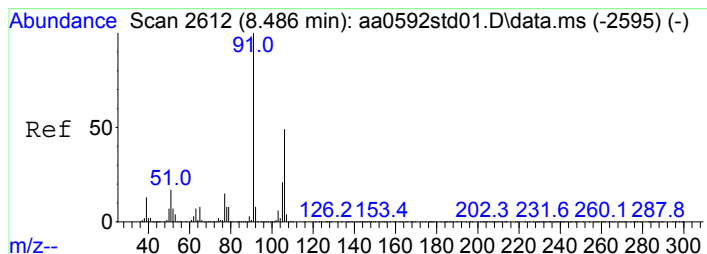
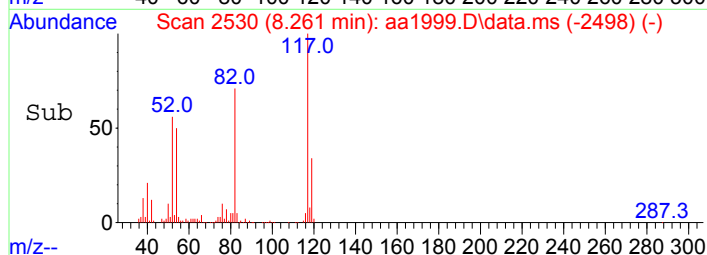
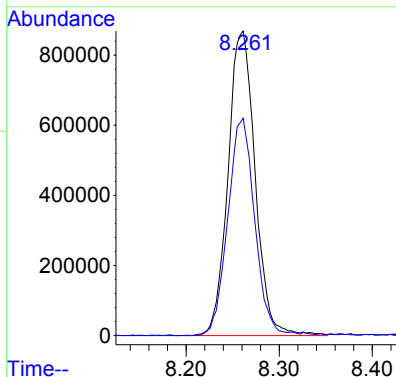
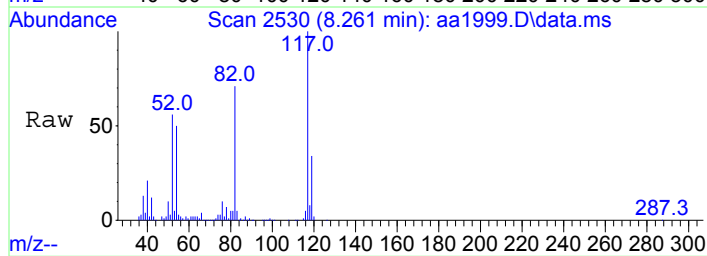
Tgt Ion: 91 Resp: 335445
 Ion Ratio Lower Upper
 91 100
 92 59.7 50.0 75.0





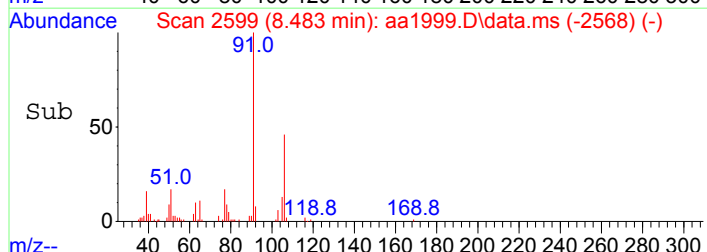
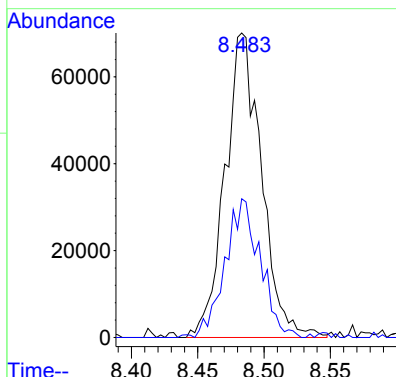
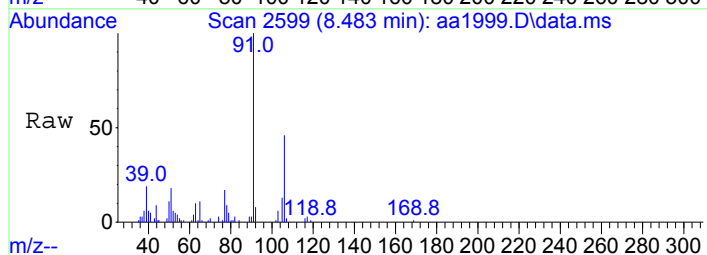
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.261 min Scan# 2530
Delta R.T. 0.003 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

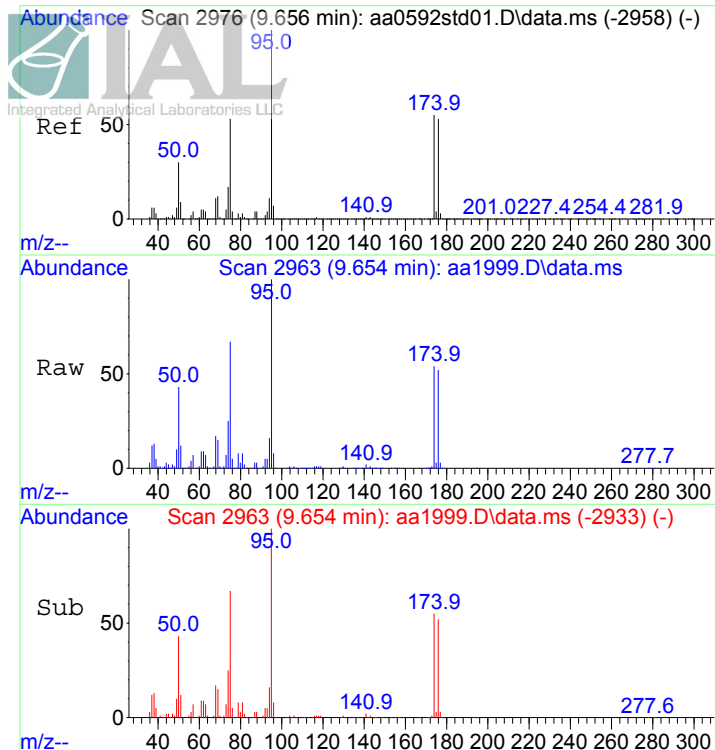
Tgt Ion: 117 Resp: 1761512
Ion Ratio Lower Upper
117 100
82 70.5 48.8 73.2



#59
Xylenes (m&p)
Concen: 0.66 ppbV
RT: 8.483 min Scan# 2599
Delta R.T. 0.000 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

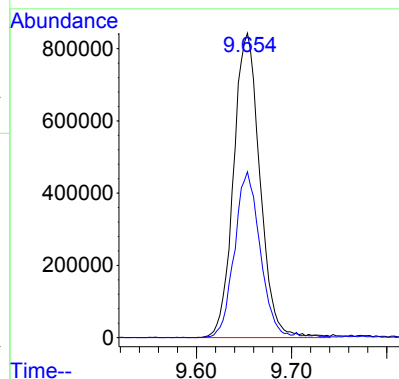
Tgt Ion: 91 Resp: 133929
Ion Ratio Lower Upper
91 100
106 43.5 39.2 58.8





#64
 Bromofluorobenzene (tune std)
 Concen: 10.55 ppbV
 RT: 9.654 min Scan# 2963
 Delta R.T. -0.003 min
 Lab File: aa1999.D
 Acq: 5 Apr 2019 3:08 pm

Tgt Ion	95	174	Ratio	Lower	Upper
95	100				
174	53.7		61.5	92.3	



Summary of Results

EFI Global
 11 Commerce Way Ste A
 Totowa, NJ 07512
 Attn: Ewa Gut
 Project: Lofts at Globe Mill
 Site: NY

Report Date: 04/10/19
 SDG Number: E19-02214
 Date Sampled: 03/28/19
 Date Received: 03/29/19
 Date Analyzed: 04/05/19
 Data File: AA2001
 Summa ID: 3015A
 DF: 10

Analysis: Volatile Organic Compounds by EPA Method TO-15

Compound	Sample Name:		NS-2		Reporting Limits	
	IAL ID:		E19-02214-02			
	CAS		ppbv	ug/m3	ppbv	ug/m3
Acetone	67-64-1	D	32	77	2.0	4.8
Benzene	71-43-2		ND	ND	2.0	6.4
Bromodichloromethane	75-27-4		ND	ND	2.0	13
Bromoform	75-25-2		ND	ND	2.0	21
Bromomethane	74-83-9		ND	ND	2.0	7.8
1,3-Butadiene	106-99-0		ND	ND	2.0	4.4
Chlorobenzene	108-90-7		ND	ND	2.0	9.2
Chloroethane	75-00-3		ND	ND	2.0	5.3
Chloroform	67-66-3		ND	ND	2.0	9.8
Chloromethane	74-87-3		ND	ND	2.0	4.1
Carbon disulfide	75-15-0		ND	ND	2.0	6.2
Carbon tetrachloride	56-23-5		ND	ND	0.40	2.5
Cyclohexane	110-82-7		ND	ND	2.0	6.9
Dibromochloromethane	124-48-1		ND	ND	2.0	17
1,2-Dibromoethane	106-93-4		ND	ND	2.0	15
1,2-Dichlorobenzene	95-50-1		ND	ND	2.0	12
1,3-Dichlorobenzene	541-73-1		ND	ND	2.0	12
1,4-Dichlorobenzene	106-46-7		ND	ND	2.0	12
Dichlorodifluoromethane	75-71-8		ND	ND	2.0	9.9
1,1-Dichloroethane	75-34-3		ND	ND	2.0	8.1
1,2-Dichloroethane	107-06-2		ND	ND	2.0	8.1
1,1-Dichloroethene	75-35-4		ND	ND	2.0	7.9
1,2-Dichloroethene (cis)	156-59-2		ND	ND	2.0	7.9
1,2-Dichloroethene (trans)	156-60-5		ND	ND	2.0	7.9
1,2-Dichloropropane	78-87-5		ND	ND	2.0	9.2
1,3-Dichloropropene (cis)	10061-01-5		ND	ND	2.0	9.1
1,3-Dichloropropene (trans)	10061-02-6		ND	ND	2.0	9.1
1,2-Dichlorotetrafluoroethane	76-14-2		ND	ND	2.0	14
1,4-Dioxane	123-91-1		ND	ND	2.0	7.2
Ethylbenzene	100-41-4		ND	ND	2.0	8.7
n-Heptane	142-82-5		ND	ND	2.0	8.2
1,3-Hexachlorobutadiene	87-68-3		ND	ND	2.0	21
n-Hexane	110-54-3		ND	ND	2.0	7.1
Methylene chloride	75-09-2	D	6.7	23	2.0	7.0
Methyl ethyl ketone	78-93-3	D	16	47	2.0	5.9
Methyl isobutyl ketone	108-10-1		ND	ND	2.0	8.2
Methyl tert-butyl ether	1634-04-4		ND	ND	2.0	7.2
Styrene	100-42-5		ND	ND	2.0	8.5
Tert-butyl alcohol	75-65-0		ND	ND	2.0	6.1
1,1,2,2-Tetrachloroethane	79-34-5		ND	ND	2.0	14
Tetrachloroethene	127-18-4		ND	ND	2.0	14
Toluene	108-88-3	D	48	180	2.0	7.5
1,2,4-Trichlorobenzene	120-82-1		ND	ND	2.0	15
1,1,1-Trichloroethane	71-55-6		ND	ND	2.0	11
1,1,2-Trichloroethane	79-00-5		ND	ND	2.0	11
Trichloroethene	79-01-6		ND	ND	0.46	2.5

IAL SDG #E19-02214

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D = Extra dilution required for this compound

page 3 of 14

Analyst: J. Schmitt



Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/05/19
Data File: AA2001
Summa ID: 3015A
DF: 10

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		NS-2		Reporting	
IAL ID:		E19-02214-02		Limits	
Compound	CAS	ppbv	ug/m3	ppbv	ug/m3
Trichlorofluoromethane	75-69-4	ND	ND	2.0	11
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	ND	2.0	15
1,2,4-Trimethylbenzene	95-63-6	ND	ND	2.0	9.8
1,3,5-Trimethylbenzene	108-67-8	ND	ND	2.0	9.8
2,2,4-Trimethylpentane	540-84-1	ND	ND	2.0	9.3
Vinyl bromide	593-60-2	ND	ND	2.0	8.7
Vinyl chloride	75-01-4	ND	ND	2.0	5.1
Xylenes (m p)	179601-23-1	D	4.5	19	2.0
Xylenes (o)	95-47-6	ND	ND	2.0	8.7

Data Path : C:\DATA\04-05-19\
 Data File : aa2001.D
 Acq On : 5 Apr 2019 3:51 pm
 Operator : jls
 Sample : E19-02214-02 x 10 dil
 Misc : 3015A, 50cc
 ALS Vial : 11 Sample Multiplier: 1

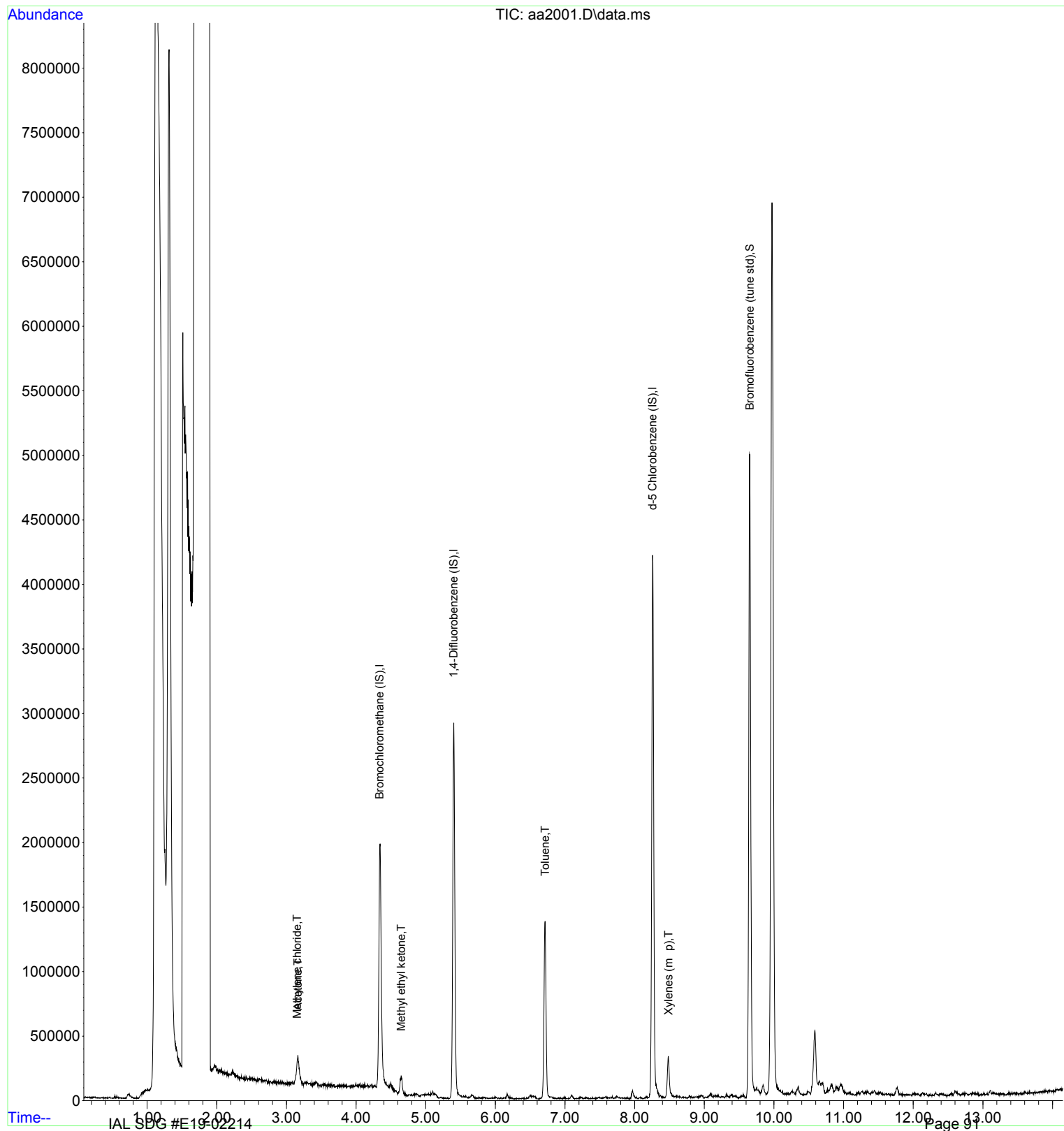
Quant Time: Apr 08 10:30:41 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

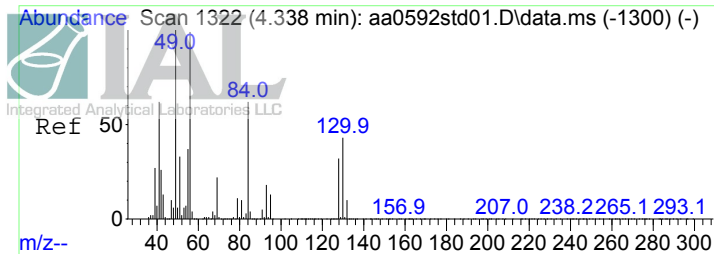
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.339	130	479194	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	1860078	10.00	ppbV #	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	1738769	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1696482	11.18	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.152	49	52333	0.67	ppbV #	71
21) Acetone	3.165	43	314750	3.23	ppbV #	73
35) Methyl ethyl ketone	4.647	43	217059	1.60	ppbV	95
47) Toluene	6.715	91	912080	4.76	ppbV	97
59) Xylenes (m&p)	8.486	91	89885	0.45	ppbV #	66

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

Data Path : C:\DATA\04-05-19\
Data File : aa2001.D
Acq On : 5 Apr 2019 3:51 pm
Operator : jls
Sample : E19-02214-02 x 10 dil
Misc : 3015A, 50cc
ALS Vial : 11 Sample Multiplier: 1

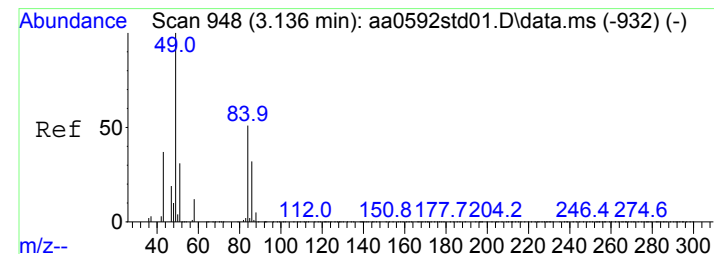
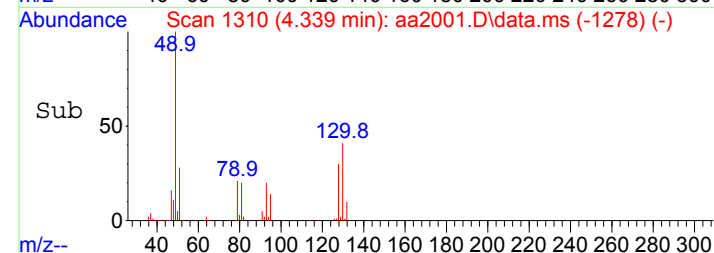
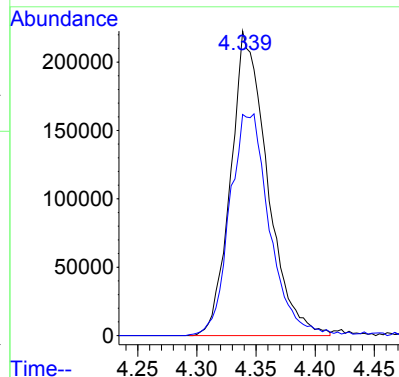
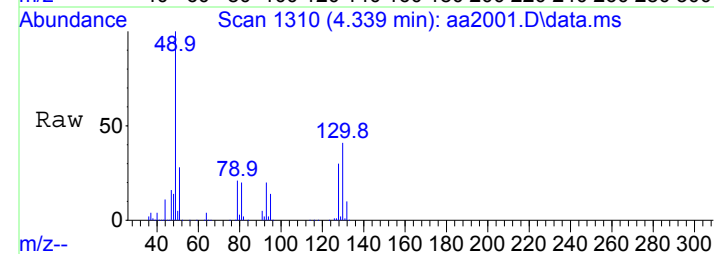
Quant Time: Apr 08 10:30:41 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





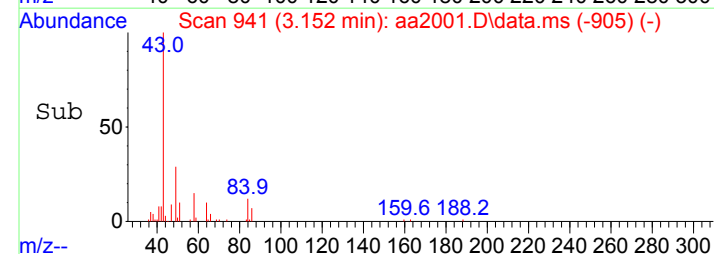
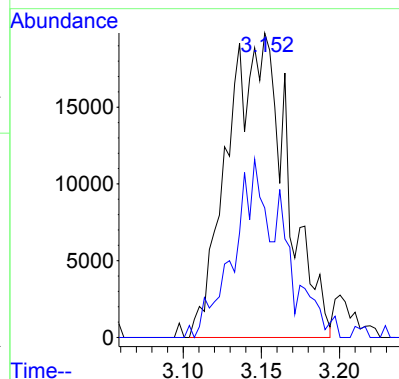
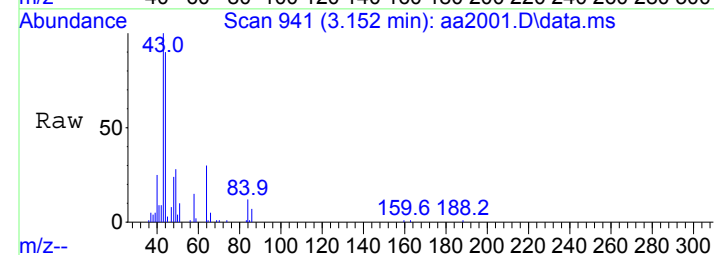
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.339 min Scan# 1310
Delta R.T. 0.004 min
Lab File: aa2001.D
Acq: 5 Apr 2019 3:51 pm

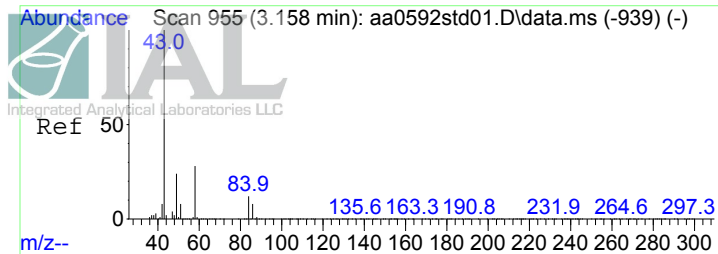
Tgt Ion:130 Resp: 479194
Ion Ratio Lower Upper
130 100
128 79.3 62.6 94.0



#20
Methylene chloride
Concen: 0.67 ppbV
RT: 3.152 min Scan# 941
Delta R.T. 0.016 min
Lab File: aa2001.D
Acq: 5 Apr 2019 3:51 pm

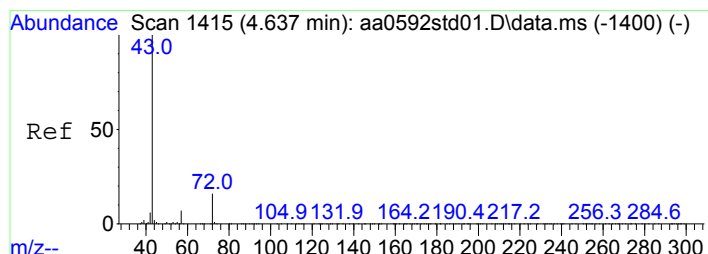
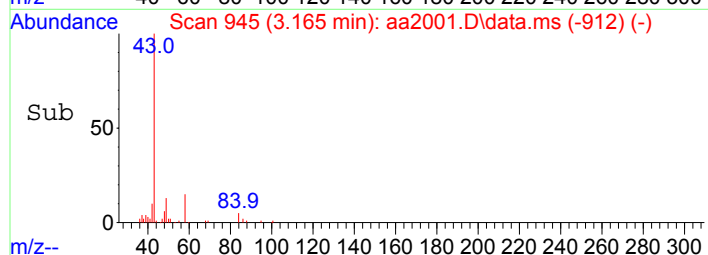
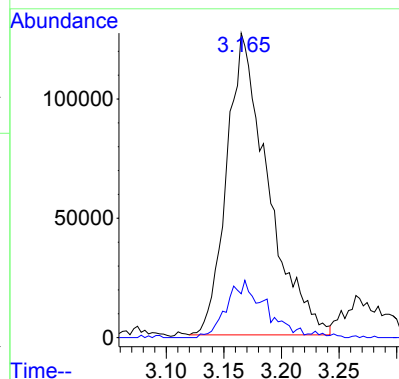
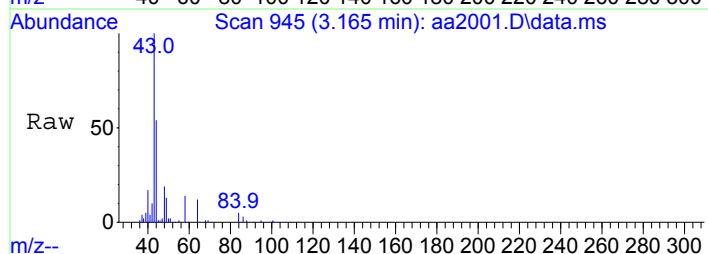
Tgt Ion: 49 Resp: 52333
Ion Ratio Lower Upper
49 100
84 48.6 58.4 87.6#





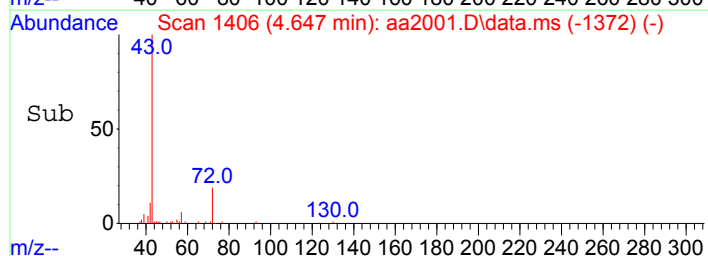
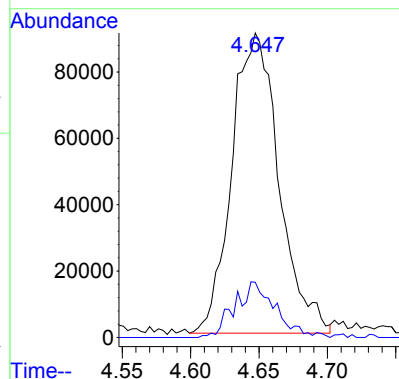
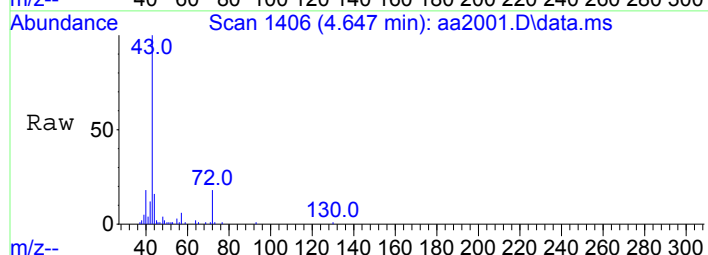
#21
Acetone
Concen: 3.23 ppbV
RT: 3.165 min Scan# 945
Delta R.T. 0.006 min
Lab File: aa2001.D
Acq: 5 Apr 2019 3:51 pm

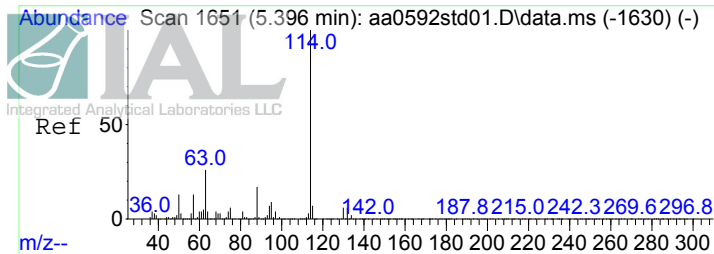
Tgt Ion: 43 Resp: 314750
Ion Ratio Lower Upper
43 100
58 18.0 26.4 39.6#



#35
Methyl ethyl ketone
Concen: 1.60 ppbV
RT: 4.647 min Scan# 1406
Delta R.T. 0.010 min
Lab File: aa2001.D
Acq: 5 Apr 2019 3:51 pm

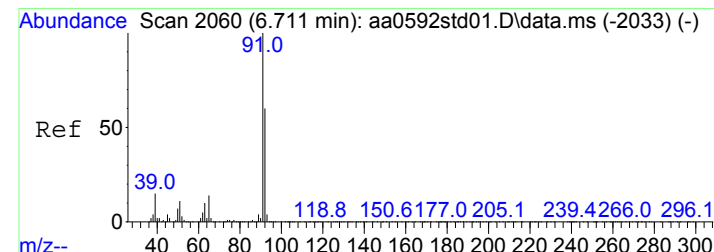
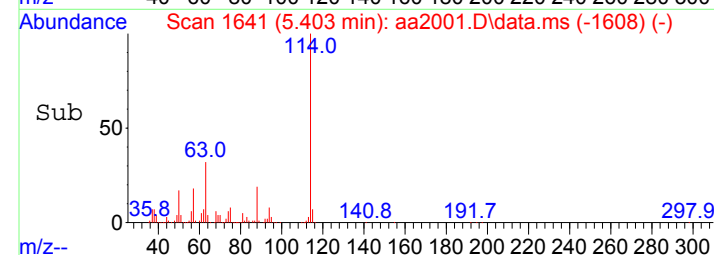
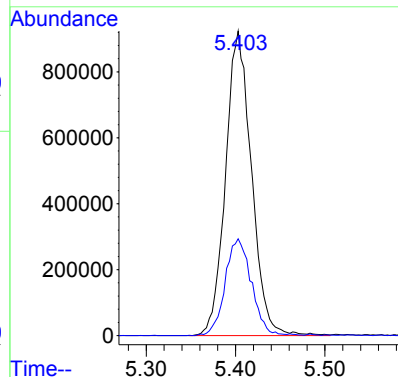
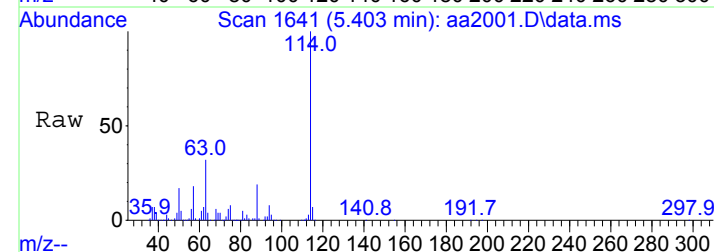
Tgt Ion: 43 Resp: 217059
Ion Ratio Lower Upper
43 100
72 15.7 14.4 21.6





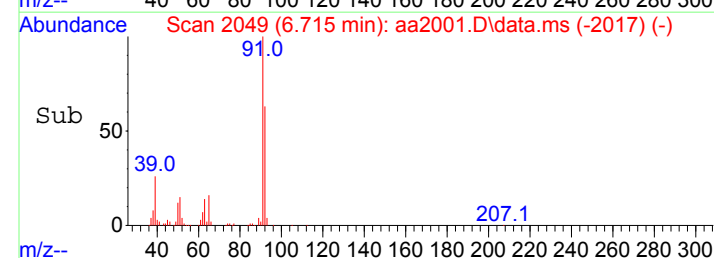
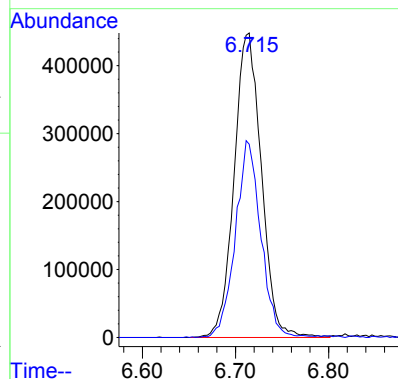
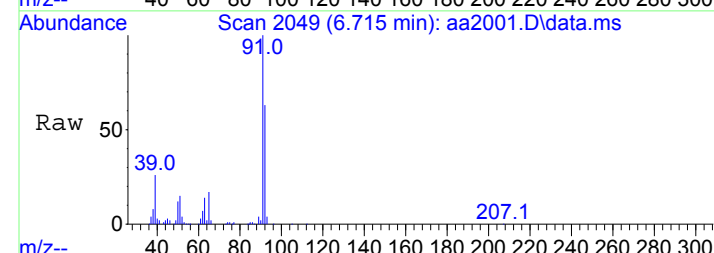
#39
 1,4-Difluorobenzene (IS)
 Concen: 10.00 ppbV
 RT: 5.403 min Scan# 1641
 Delta R.T. 0.006 min
 Lab File: aa2001.D
 Acq: 5 Apr 2019 3:51 pm

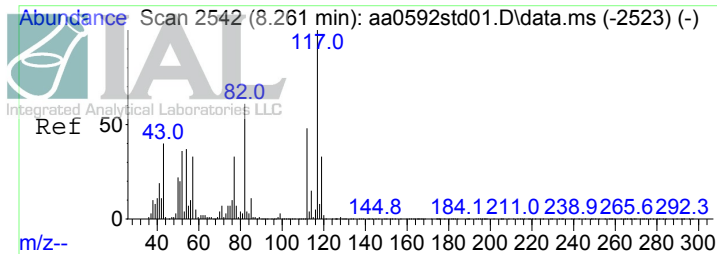
Tgt Ion: 114 Resp: 1860078
 Ion Ratio Lower Upper
 114 100
 63 32.1 20.0 30.0#



#47
 Toluene
 Concen: 4.76 ppbV
 RT: 6.715 min Scan# 2049
 Delta R.T. 0.003 min
 Lab File: aa2001.D
 Acq: 5 Apr 2019 3:51 pm

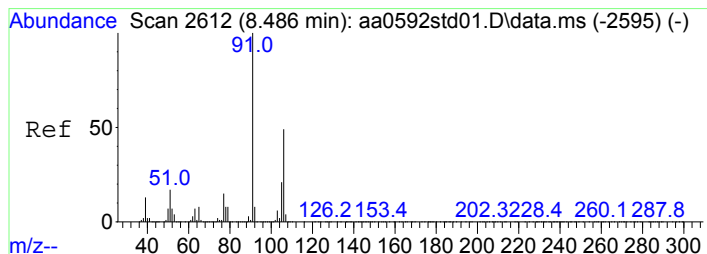
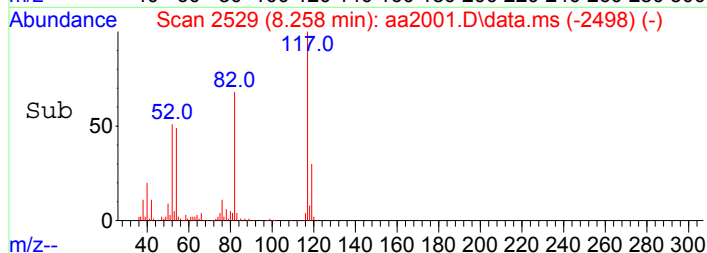
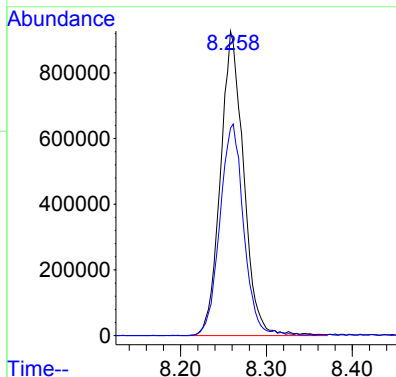
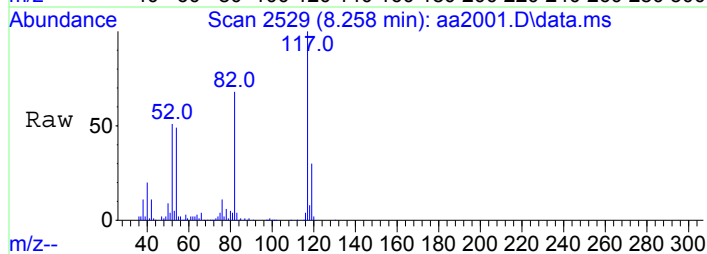
Tgt Ion: 91 Resp: 912080
 Ion Ratio Lower Upper
 91 100
 92 60.3 50.0 75.0





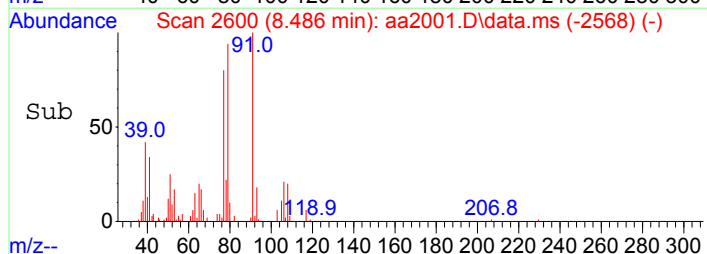
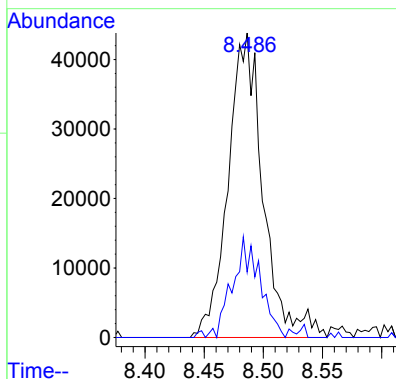
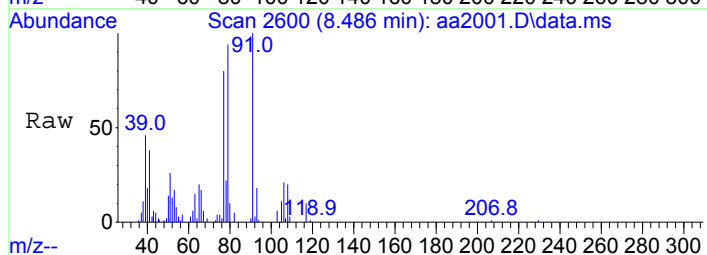
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.258 min Scan# 2529
Delta R.T. -0.000 min
Lab File: aa2001.D
Acq: 5 Apr 2019 3:51 pm

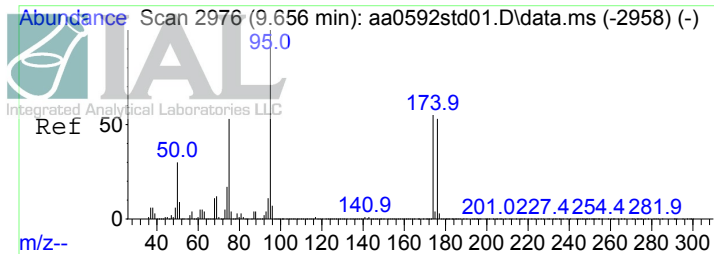
Tgt Ion: 117 Resp: 1738769
Ion Ratio Lower Upper
117 100
82 71.6 48.8 73.2



#59
Xylenes (m&p)
Concen: 0.45 ppbV
RT: 8.486 min Scan# 2600
Delta R.T. 0.003 min
Lab File: aa2001.D
Acq: 5 Apr 2019 3:51 pm

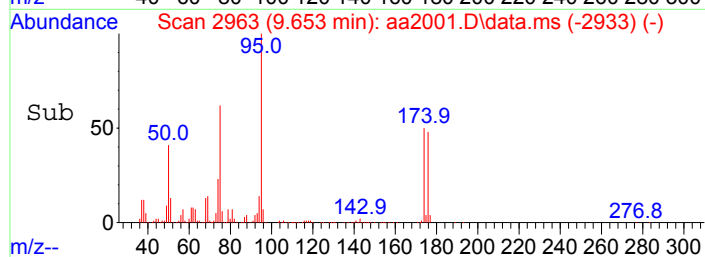
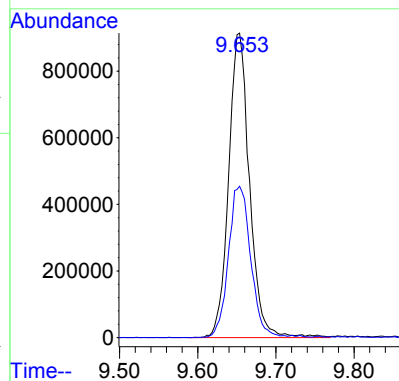
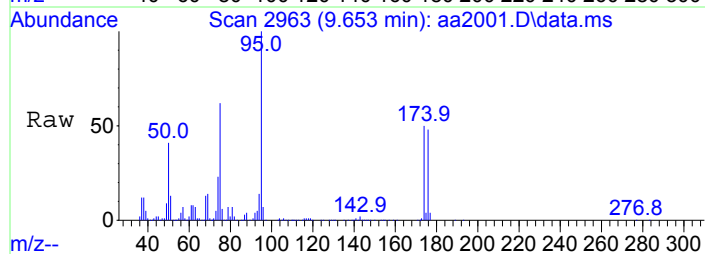
Tgt Ion: 91 Resp: 89885
Ion Ratio Lower Upper
91 100
106 25.8 39.2 58.8#





#64
 Bromofluorobenzene (tune std)
 Concen: 11.18 ppbV
 RT: 9.653 min Scan# 2963
 Delta R.T. -0.003 min
 Lab File: aa2001.D
 Acq: 5 Apr 2019 3:51 pm

Tgt Ion: 95 Resp: 1696482
 Ion Ratio Lower Upper
 95 100
 174 53.0 61.5 92.3#



Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/05/19
Data File: AA2002
Summa ID: 3011
DF: 10

Analysis: Volatile Organic Compounds by EPA Method TO-15

Compound	Sample Name:		NS-1		Reporting Limits	
	IAL ID:		E19-02214-03			
	CAS		ppbv	ug/m3	ppbv	ug/m3
Acetone	67-64-1	D	35	82	2.0	4.8
Benzene	71-43-2		ND	ND	2.0	6.4
Bromodichloromethane	75-27-4		ND	ND	2.0	13
Bromoform	75-25-2		ND	ND	2.0	21
Bromomethane	74-83-9		ND	ND	2.0	7.8
1,3-Butadiene	106-99-0		ND	ND	2.0	4.4
Chlorobenzene	108-90-7		ND	ND	2.0	9.2
Chloroethane	75-00-3		ND	ND	2.0	5.3
Chloroform	67-66-3		ND	ND	2.0	9.8
Chloromethane	74-87-3		ND	ND	2.0	4.1
Carbon disulfide	75-15-0		ND	ND	2.0	6.2
Carbon tetrachloride	56-23-5		ND	ND	0.40	2.5
Cyclohexane	110-82-7		ND	ND	2.0	6.9
Dibromochloromethane	124-48-1		ND	ND	2.0	17
1,2-Dibromoethane	106-93-4		ND	ND	2.0	15
1,2-Dichlorobenzene	95-50-1		ND	ND	2.0	12
1,3-Dichlorobenzene	541-73-1		ND	ND	2.0	12
1,4-Dichlorobenzene	106-46-7		ND	ND	2.0	12
Dichlorodifluoromethane	75-71-8		ND	ND	2.0	9.9
1,1-Dichloroethane	75-34-3		ND	ND	2.0	8.1
1,2-Dichloroethane	107-06-2		ND	ND	2.0	8.1
1,1-Dichloroethene	75-35-4		ND	ND	2.0	7.9
1,2-Dichloroethene (cis)	156-59-2		ND	ND	2.0	7.9
1,2-Dichloroethene (trans)	156-60-5		ND	ND	2.0	7.9
1,2-Dichloropropane	78-87-5		ND	ND	2.0	9.2
1,3-Dichloropropene (cis)	10061-01-5		ND	ND	2.0	9.1
1,3-Dichloropropene (trans)	10061-02-6		ND	ND	2.0	9.1
1,2-Dichlorotetrafluoroethane	76-14-2		ND	ND	2.0	14
1,4-Dioxane	123-91-1		ND	ND	2.0	7.2
Ethylbenzene	100-41-4		ND	ND	2.0	8.7
n-Heptane	142-82-5		ND	ND	2.0	8.2
1,3-Hexachlorobutadiene	87-68-3		ND	ND	2.0	21
n-Hexane	110-54-3		ND	ND	2.0	7.1
Methylene chloride	75-09-2	D	4.4	15	2.0	7.0
Methyl ethyl ketone	78-93-3	D	21	62	2.0	5.9
Methyl isobutyl ketone	108-10-1	D	2.5	10	2.0	8.2
Methyl tert-butyl ether	1634-04-4		ND	ND	2.0	7.2
Styrene	100-42-5		ND	ND	2.0	8.5
Tert-butyl alcohol	75-65-0		ND	ND	2.0	6.1
1,1,2,2-Tetrachloroethane	79-34-5		ND	ND	2.0	14
Tetrachloroethene	127-18-4	D	2.4	16	2.0	14
Toluene	108-88-3	D	120	470	2.0	7.5
1,2,4-Trichlorobenzene	120-82-1		ND	ND	2.0	15
1,1,1-Trichloroethane	71-55-6		ND	ND	2.0	11
1,1,2-Trichloroethane	79-00-5		ND	ND	2.0	11
Trichloroethene	79-01-6	D	19	100	0.46	2.5

IAL SDG #E19-02214

Page 97

D = Extra dilution required for this compound

page 5 of 14

Analyst: J. Schmitt



Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/05/19
Data File: AA2002
Summa ID: 3011
DF: 10

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		NS-1		Reporting	
IAL ID:		E19-02214-03		Limits	
Compound	CAS	ppbv	ug/m3	ppbv	ug/m3
Trichlorofluoromethane	75-69-4	ND	ND	2.0	11
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	ND	2.0	15
1,2,4-Trimethylbenzene	95-63-6	ND	ND	2.0	9.8
1,3,5-Trimethylbenzene	108-67-8	ND	ND	2.0	9.8
2,2,4-Trimethylpentane	540-84-1	ND	ND	2.0	9.3
Vinyl bromide	593-60-2	ND	ND	2.0	8.7
Vinyl chloride	75-01-4	ND	ND	2.0	5.1
Xylenes (m p)	179601-23-1	D	4.9	21	2.0
Xylenes (o)	95-47-6	ND	ND	2.0	8.7

Data Path : C:\DATA\04-05-19\
 Data File : aa2002.D
 Acq On : 5 Apr 2019 4:12 pm
 Operator : jls
 Sample : E19-02214-03 x 10 dil
 Misc : 3011, 50cc
 ALS Vial : 12 Sample Multiplier: 1

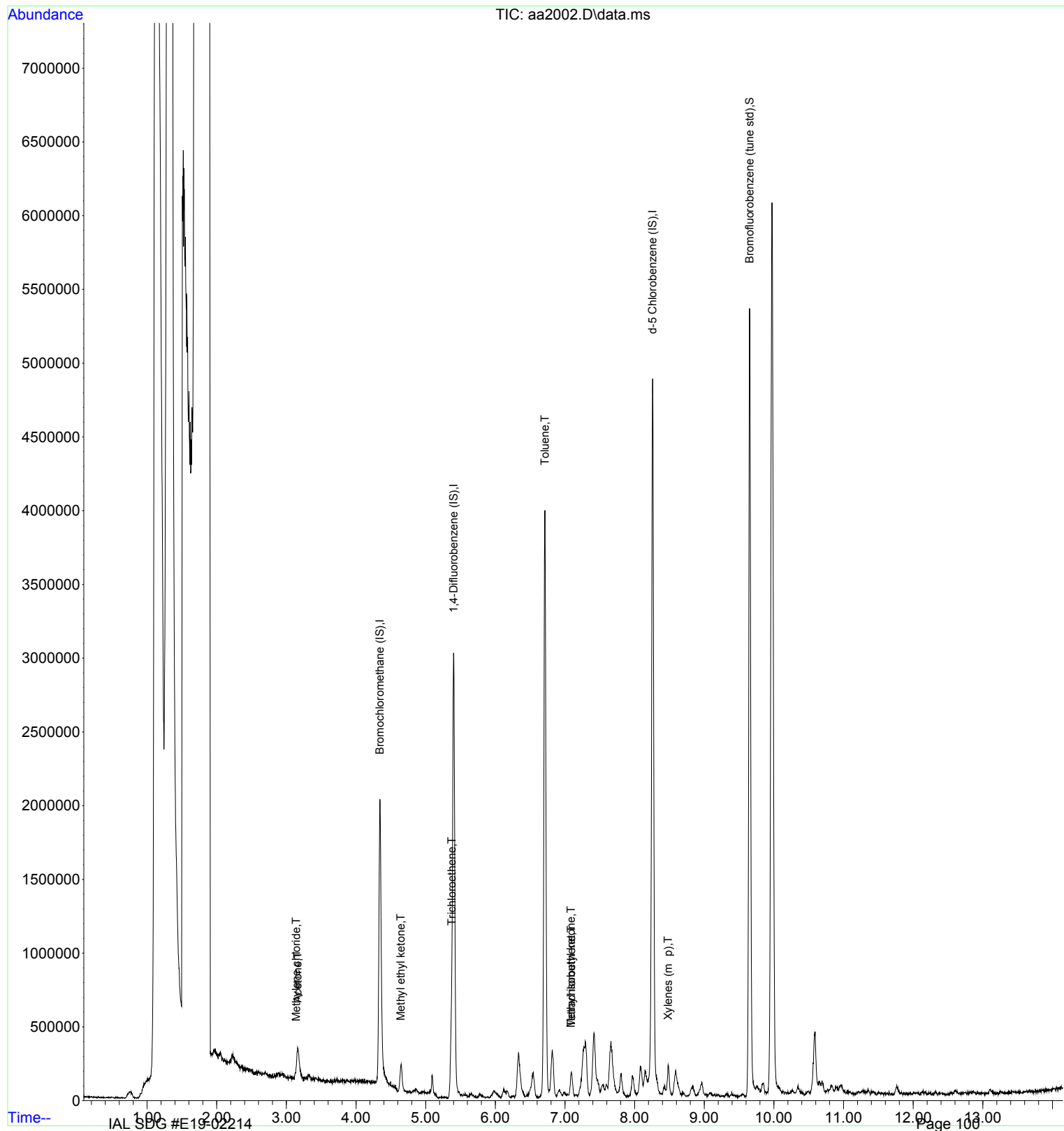
Quant Time: Apr 08 10:35:10 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

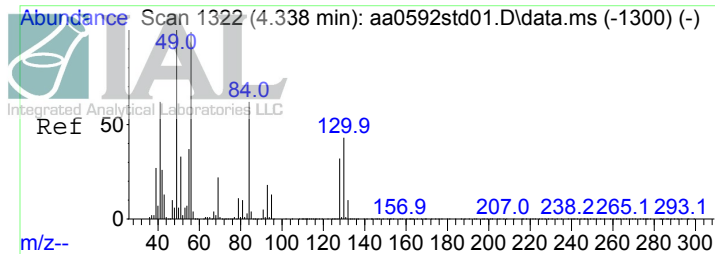
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	488822	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	1918893	10.00	ppbV	# 0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2077184	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.651	95	1788525	9.87	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.140	49	34945	0.44	ppbV	# 64
21) Acetone	3.162	43	342507	3.45	ppbV	# 71
35) Methyl ethyl ketone	4.644	43	288307	2.09	ppbV	# 90
40) Trichloroethene	5.374	130	125102	1.89	ppbV	98
47) Toluene	6.712	91	2462104	12.45	ppbV	94
48) Methyl isobutyl ketone	7.088	43	44657	0.25	ppbV	# 41
49) Tetrachloroethene	7.091	166	18137	0.24	ppbV	100
59) Xylenes (m&p)	8.480	91	118561	0.49	ppbV	94

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

Data Path : C:\DATA\04-05-19\
Data File : aa2002.D
Acq On : 5 Apr 2019 4:12 pm
Operator : jls
Sample : E19-02214-03 x 10 dil
Misc : 3011, 50cc
ALS Vial : 12 Sample Multiplier: 1

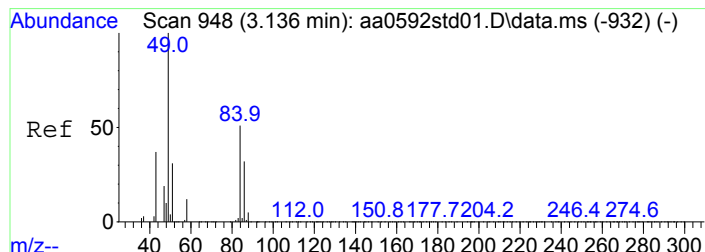
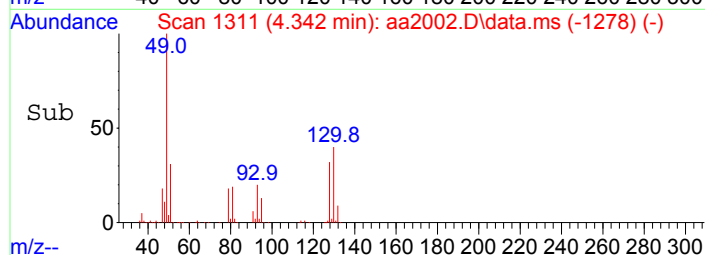
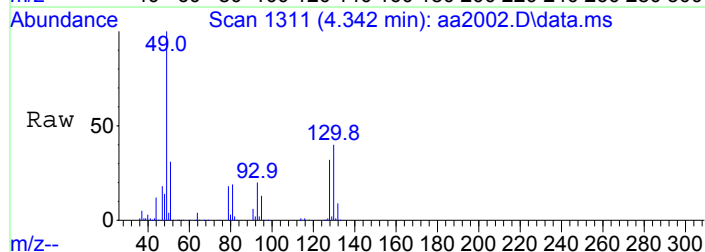
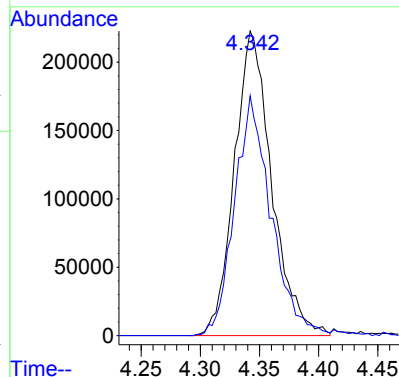
Quant Time: Apr 08 10:35:10 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





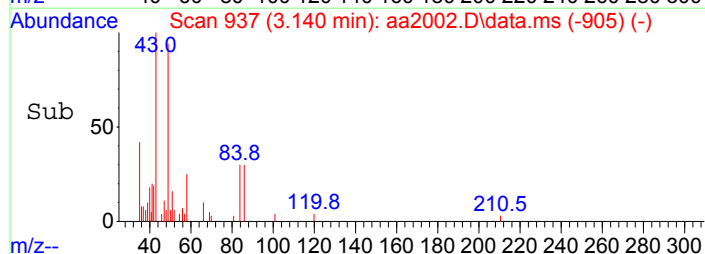
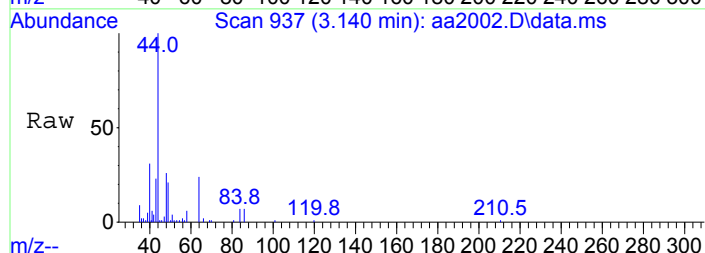
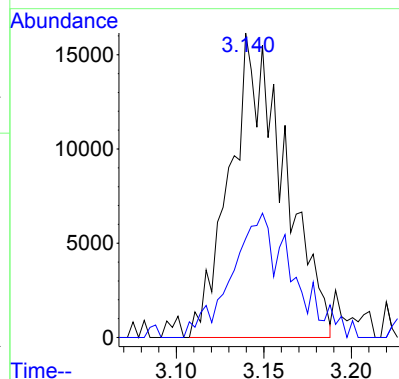
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.342 min Scan# 1311
Delta R.T. 0.007 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

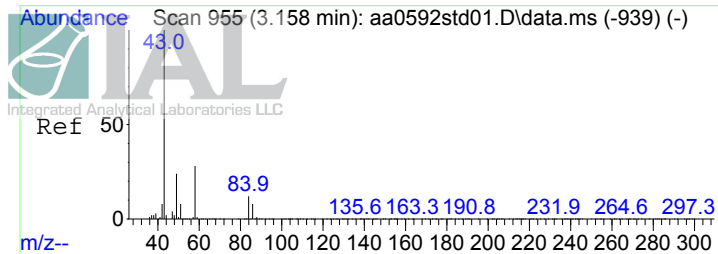
Tgt Ion:130 Resp: 488822
Ion Ratio Lower Upper
130 100
128 76.8 62.6 94.0



#20
Methylene chloride
Concen: 0.44 ppbV
RT: 3.140 min Scan# 937
Delta R.T. 0.003 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

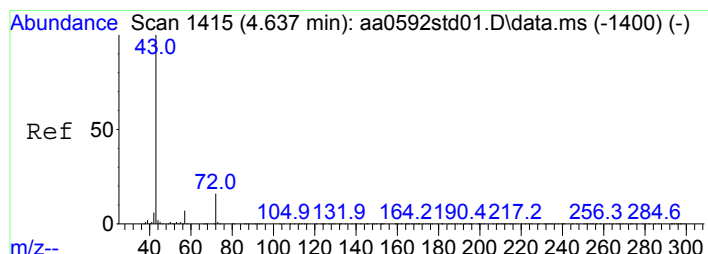
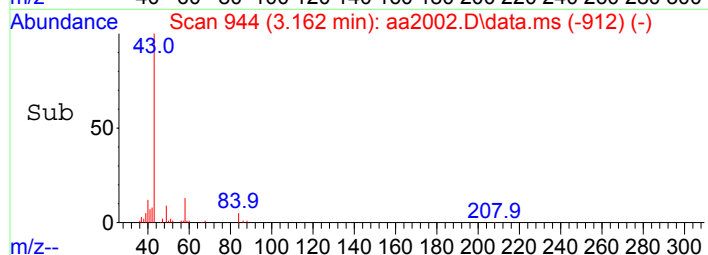
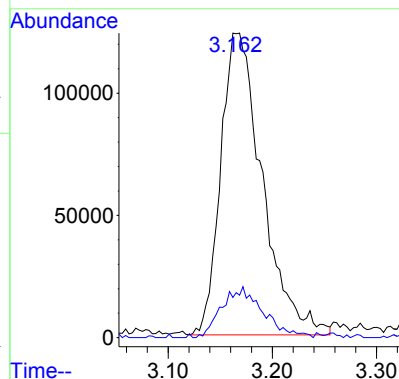
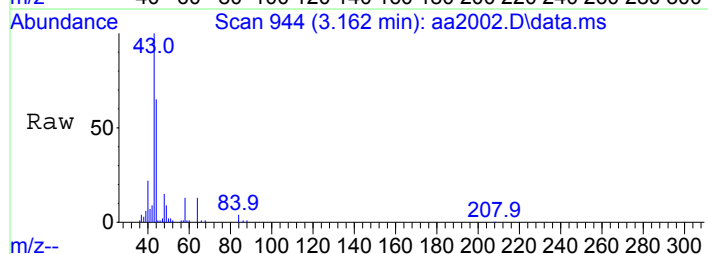
Tgt Ion: 49 Resp: 34945
Ion Ratio Lower Upper
49 100
84 43.1 58.4 87.6#





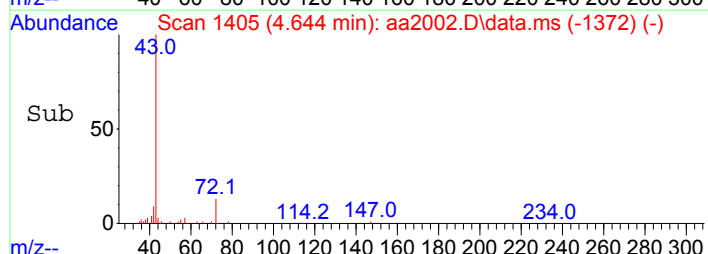
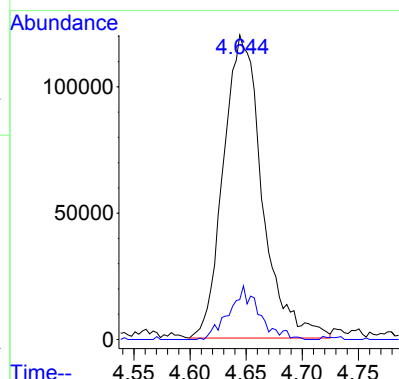
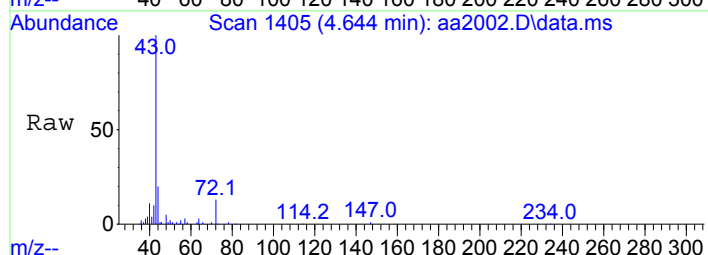
#21
Acetone
Concen: 3.45 ppbV
RT: 3.162 min Scan# 944
Delta R.T. 0.003 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

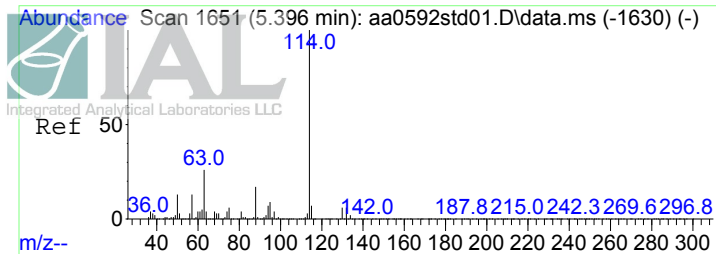
Tgt Ion: 43 Resp: 342507
Ion Ratio Lower Upper
43 100
58 16.6 26.4 39.6#



#35
Methyl ethyl ketone
Concen: 2.09 ppbV
RT: 4.644 min Scan# 1405
Delta R.T. 0.007 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

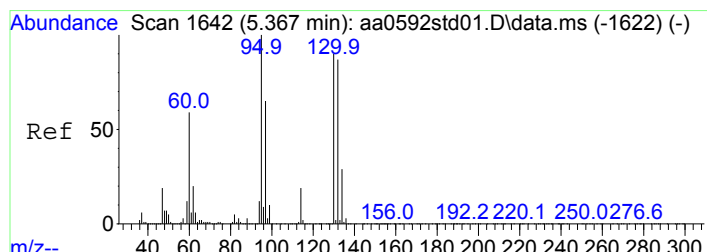
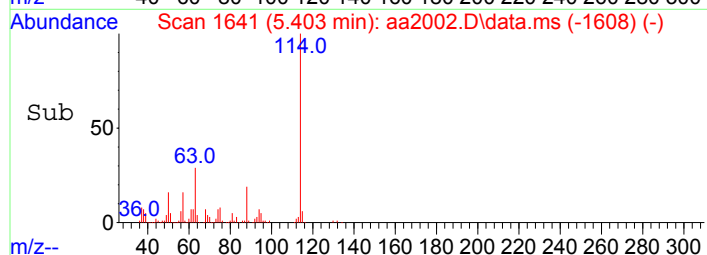
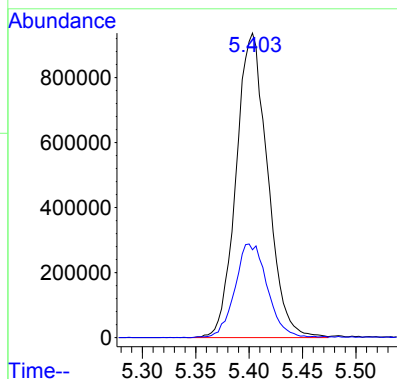
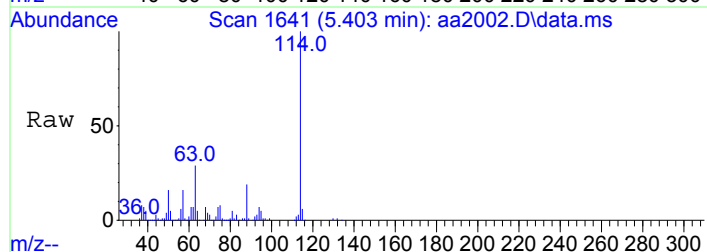
Tgt Ion: 43 Resp: 288307
Ion Ratio Lower Upper
43 100
72 13.7 14.4 21.6#





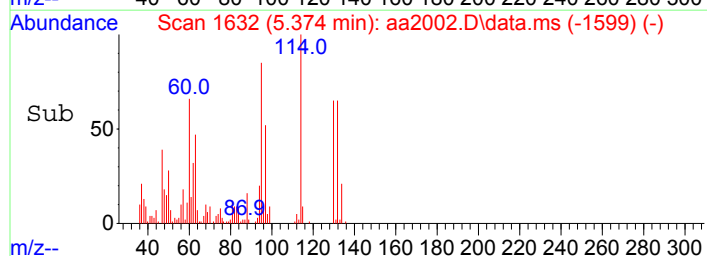
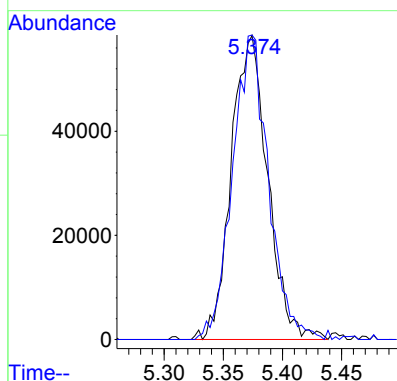
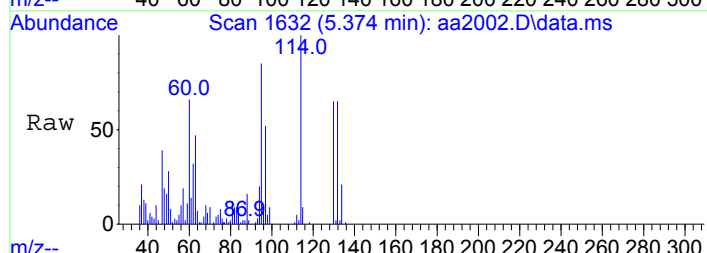
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.007 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

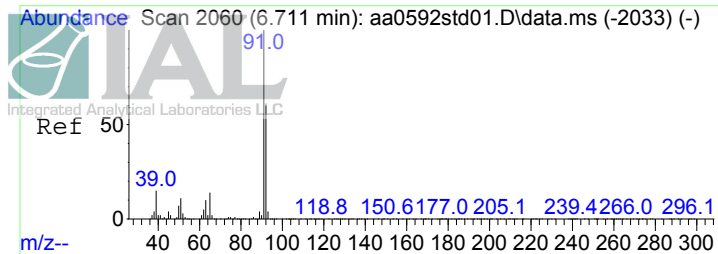
Tgt Ion:114 Resp: 1918893
Ion Ratio Lower Upper
114 100
63 31.9 20.0 30.0#



#40
Trichloroethene
Concen: 1.89 ppbV
RT: 5.374 min Scan# 1632
Delta R.T. 0.007 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

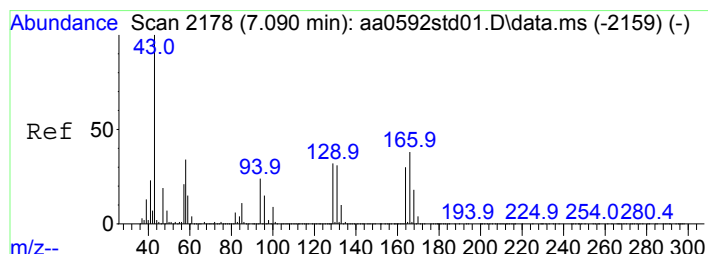
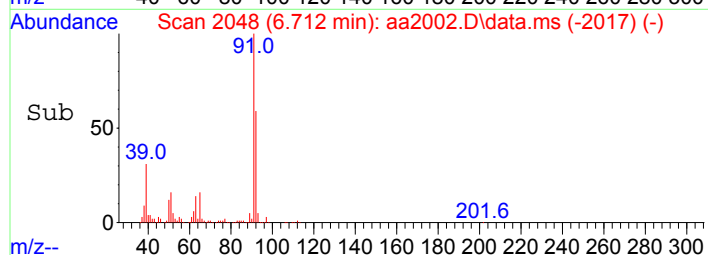
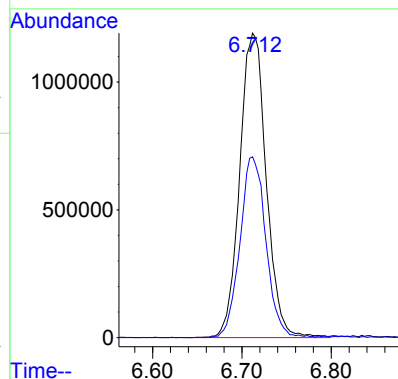
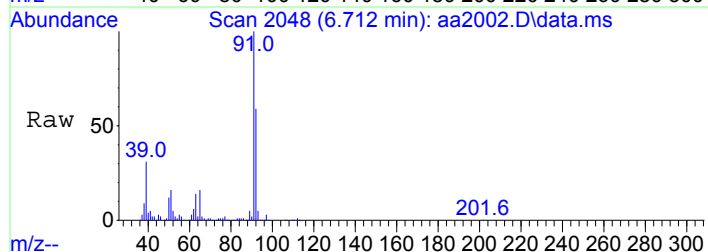
Tgt Ion:130 Resp: 125102
Ion Ratio Lower Upper
130 100
132 99.0 77.8 116.6





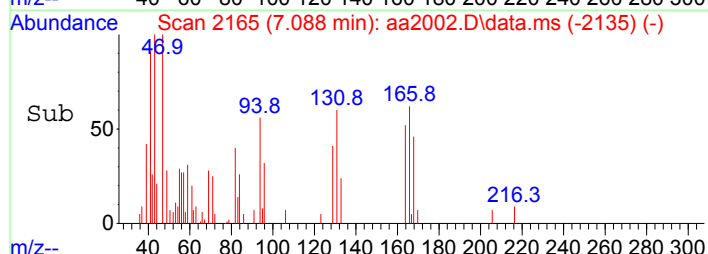
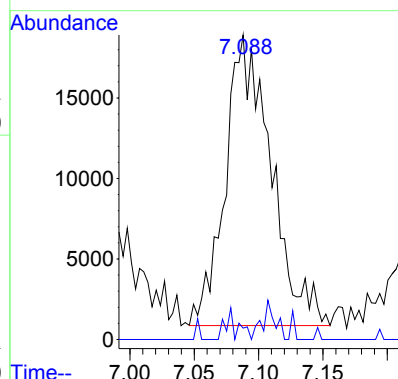
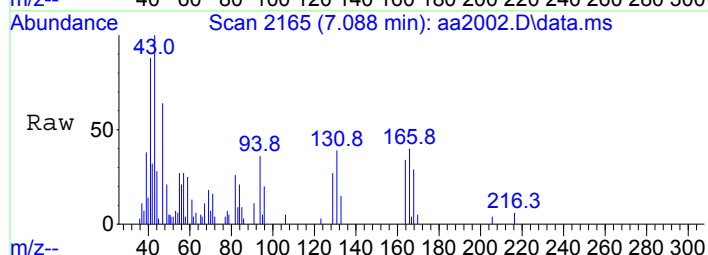
#47
Toluene
Concen: 12.45 ppbV
RT: 6.712 min Scan# 2048
Delta R.T. 0.000 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

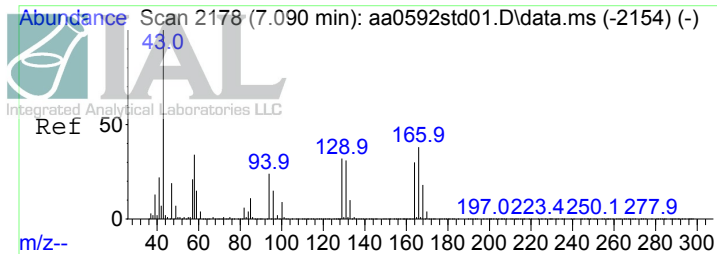
Tgt Ion: 91 Resp: 2462104
Ion Ratio Lower Upper
91 100
92 58.0 50.0 75.0



#48
Methyl isobutyl ketone
Concen: 0.25 ppbV
RT: 7.088 min Scan# 2165
Delta R.T. -0.003 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

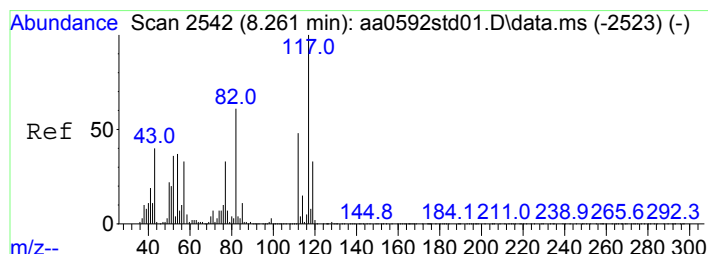
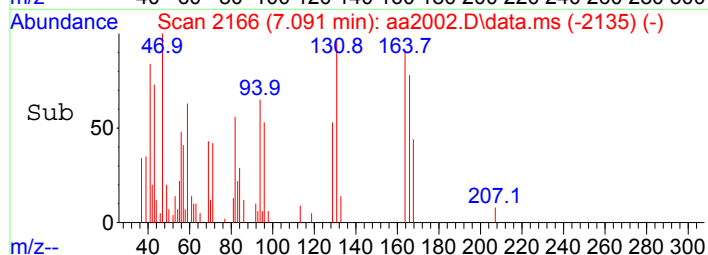
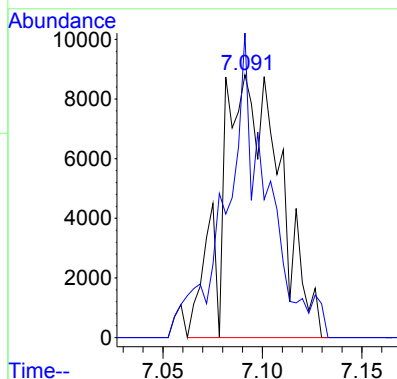
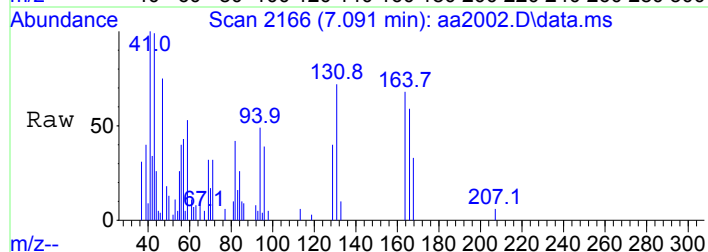
Tgt Ion: 43 Resp: 44657
Ion Ratio Lower Upper
43 100
58 2.7 30.4 45.6#





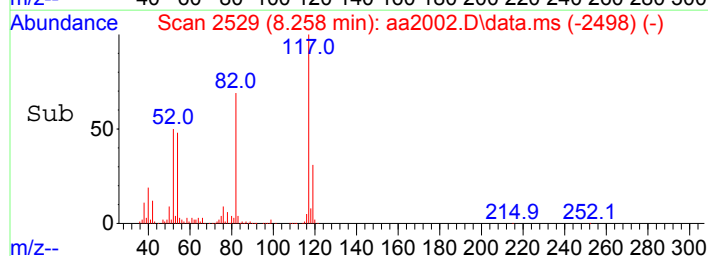
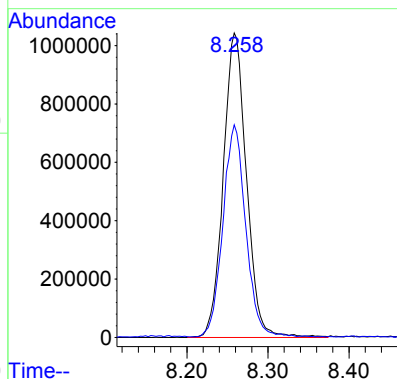
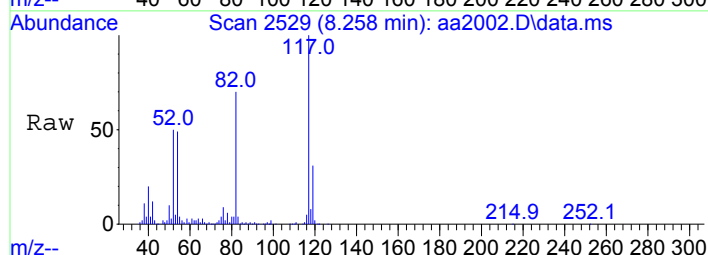
#49
Tetrachloroethene
Concen: 0.24 ppbV
RT: 7.091 min Scan# 2166
Delta R.T. 0.000 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

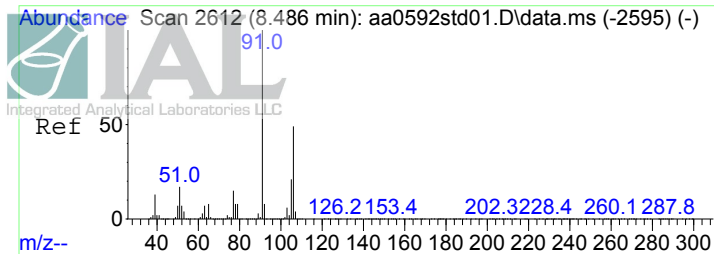
Tgt Ion:166 Resp: 18137
Ion Ratio Lower Upper
166 100
164 80.6 64.6 96.8



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.258 min Scan# 2529
Delta R.T. 0.000 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

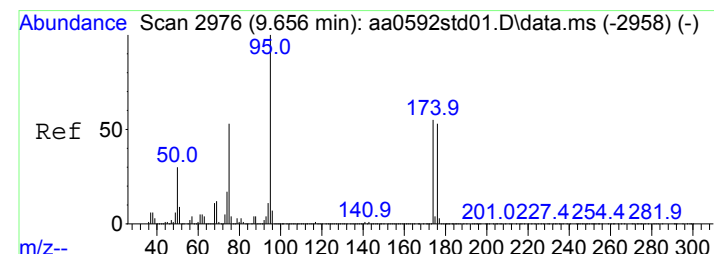
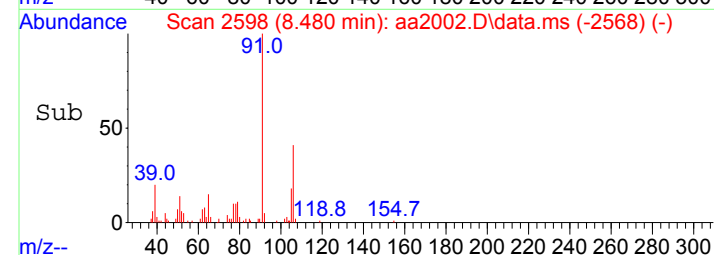
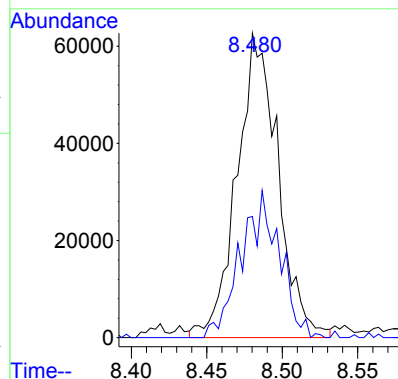
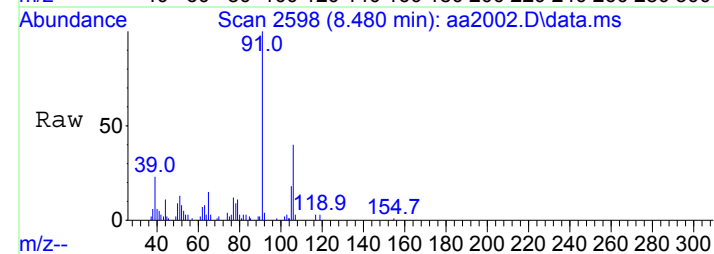
Tgt Ion:117 Resp: 2077184
Ion Ratio Lower Upper
117 100
82 68.6 48.8 73.2





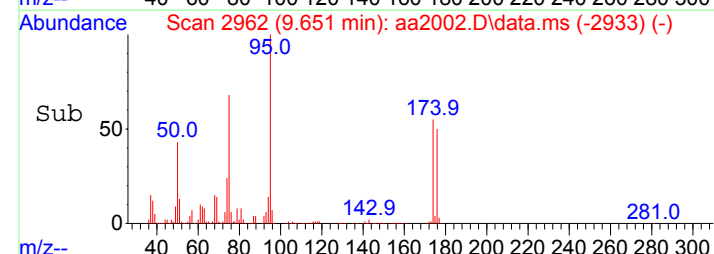
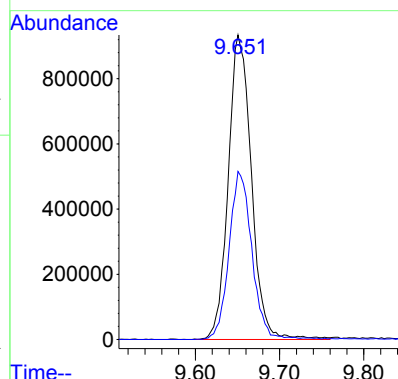
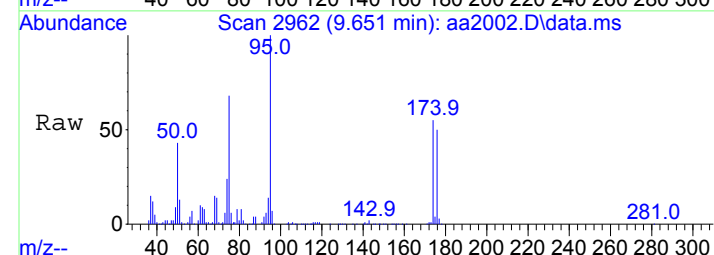
#59
Xylenes (m&p)
Concen: 0.49 ppbV
RT: 8.480 min Scan# 2598
Delta R.T. -0.003 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

Tgt Ion: 91 Resp: 118561
Ion Ratio Lower Upper
91 100
106 45.1 39.2 58.8



#64
Bromofluorobenzene (tune std)
Concen: 9.87 ppbV
RT: 9.651 min Scan# 2962
Delta R.T. -0.006 min
Lab File: aa2002.D
Acq: 5 Apr 2019 4:12 pm

Tgt Ion: 95 Resp: 1788525
Ion Ratio Lower Upper
95 100
174 54.4 61.5 92.3#



Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/05/19, 04/08/19
Data File: AA2003, AA2030
Summa ID: 3426
DF: 10, 50

Analysis: Volatile Organic Compounds by EPA Method TO-15

<u>Compound</u>	<u>Sample Name:</u>		<u>NS-5</u>		<u>Reporting</u>	
	<u>IAL ID:</u>		<u>E19-02214-04</u>		<u>Limits</u>	
	<u>CAS</u>		<u>ppbv</u>	<u>ug/m3</u>	<u>ppbv</u>	<u>ug/m3</u>
Acetone	67-64-1	D	43	100	2.0	4.8
Benzene	71-43-2		ND	ND	2.0	6.4
Bromodichloromethane	75-27-4		ND	ND	2.0	13
Bromoform	75-25-2		ND	ND	2.0	21
Bromomethane	74-83-9		ND	ND	2.0	7.8
1,3-Butadiene	106-99-0		ND	ND	2.0	4.4
Chlorobenzene	108-90-7		ND	ND	2.0	9.2
Chloroethane	75-00-3		ND	ND	2.0	5.3
Chloroform	67-66-3	D	44	210	2.0	9.8
Chloromethane	74-87-3		ND	ND	2.0	4.1
Carbon disulfide	75-15-0		ND	ND	2.0	6.2
Carbon tetrachloride	56-23-5		ND	ND	0.40	2.5
Cyclohexane	110-82-7		ND	ND	2.0	6.9
Dibromochloromethane	124-48-1		ND	ND	2.0	17
1,2-Dibromoethane	106-93-4		ND	ND	2.0	15
1,2-Dichlorobenzene	95-50-1		ND	ND	2.0	12
1,3-Dichlorobenzene	541-73-1		ND	ND	2.0	12
1,4-Dichlorobenzene	106-46-7		ND	ND	2.0	12
Dichlorodifluoromethane	75-71-8		ND	ND	2.0	9.9
1,1-Dichloroethane	75-34-3		ND	ND	2.0	8.1
1,2-Dichloroethane	107-06-2		ND	ND	2.0	8.1
1,1-Dichloroethene	75-35-4		ND	ND	2.0	7.9
1,2-Dichloroethene (cis)	156-59-2	D	4.3	17	2.0	7.9
1,2-Dichloroethene (trans)	156-60-5		ND	ND	2.0	7.9
1,2-Dichloropropane	78-87-5		ND	ND	2.0	9.2
1,3-Dichloropropene (cis)	10061-01-5		ND	ND	2.0	9.1
1,3-Dichloropropene (trans)	10061-02-6		ND	ND	2.0	9.1
1,2-Dichlorotetrafluoroethane	76-14-2		ND	ND	2.0	14
1,4-Dioxane	123-91-1		ND	ND	2.0	7.2
Ethylbenzene	100-41-4		ND	ND	2.0	8.7
n-Heptane	142-82-5		ND	ND	2.0	8.2
1,3-Hexachlorobutadiene	87-68-3		ND	ND	2.0	21
n-Hexane	110-54-3		ND	ND	2.0	7.1
Methylene chloride	75-09-2	D	4.5	16	2.0	7.0
Methyl ethyl ketone	78-93-3	D	12	34	2.0	5.9
Methyl isobutyl ketone	108-10-1		ND	ND	2.0	8.2
Methyl tert-butyl ether	1634-04-4		ND	ND	2.0	7.2
Styrene	100-42-5		ND	ND	2.0	8.5
Tert-butyl alcohol	75-65-0		ND	ND	2.0	6.1
1,1,2,2-Tetrachloroethane	79-34-5		ND	ND	2.0	14
Tetrachloroethene	127-18-4	D	12	80	2.0	14
Toluene	108-88-3	D	540	2000	10	38
1,2,4-Trichlorobenzene	120-82-1		ND	ND	2.0	15
1,1,1-Trichloroethane	71-55-6	D	3.0	16	2.0	11
1,1,2-Trichloroethane	79-00-5		ND	ND	2.0	11
Trichloroethene	79-01-6	D	13	68	0.46	2.5

IAL SDG #E19-02214

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Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/05/19, 04/08/19
Data File: AA2003, AA2030
Summa ID: 3426
DF: 10, 50

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		NS-5		Reporting	
IAL ID:		E19-02214-04		Limits	
Compound	CAS	ppbv	ug/m3	ppbv	ug/m3
Trichlorofluoromethane	75-69-4	ND	ND	2.0	11
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	ND	2.0	15
1,2,4-Trimethylbenzene	95-63-6	ND	ND	2.0	9.8
1,3,5-Trimethylbenzene	108-67-8	ND	ND	2.0	9.8
2,2,4-Trimethylpentane	540-84-1	ND	ND	2.0	9.3
Vinyl bromide	593-60-2	ND	ND	2.0	8.7
Vinyl chloride	75-01-4	ND	ND	2.0	5.1
Xylenes (m p)	179601-23-1	D	4.6	20	8.7
Xylenes (o)	95-47-6	ND	ND	2.0	8.7

Data Path : C:\DATA\04-05-19\
 Data File : aa2003.D
 Acq On : 5 Apr 2019 4:33 pm
 Operator : jls
 Sample : E19-02214-04 x 10 dil
 Misc : 3426, 50cc
 ALS Vial : 13 Sample Multiplier: 1

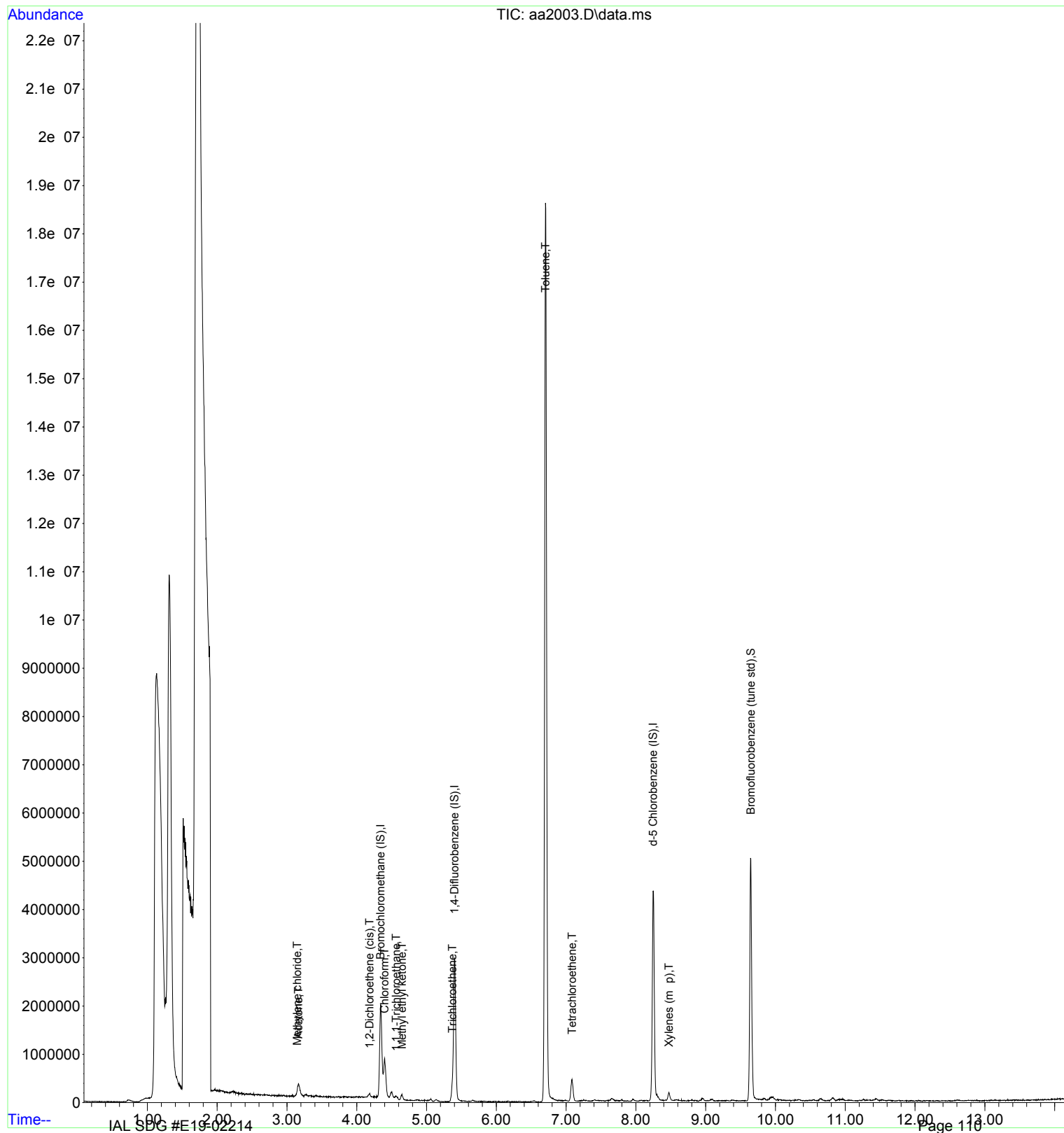
Quant Time: Apr 08 10:40:46 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

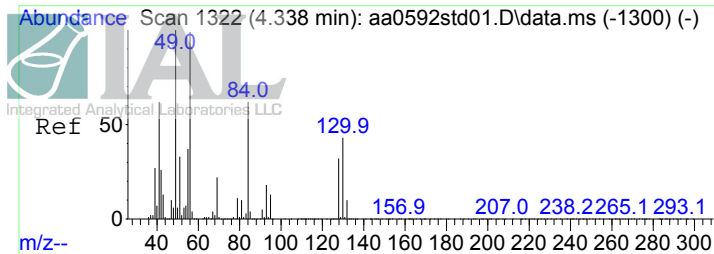
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	502588	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	1919231	10.00	ppbV	# 0.000
55) d-5 Chlorobenzene (IS)	8.245	117	1869013	10.00	ppbV	-0.013
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.647	95	1688508	10.35	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.146	49	36802	0.45	ppbV	# 68
21) Acetone	3.165	43	440456	4.31	ppbV	# 72
28) 1,2-Dichloroethene (cis)	4.184	61	34772	0.43	ppbV	# 73
30) Chloroform	4.400	83	508475	4.40	ppbV	99
34) 1,1,1-Trichloroethane	4.567	97	33727	0.30	ppbV	91
35) Methyl ethyl ketone	4.647	43	163700	1.15	ppbV	# 90
40) Trichloroethene	5.371	130	83259	1.26	ppbV	99
47) Toluene	6.705	91	11890269	60.12	ppbV	96
49) Tetrachloroethene	7.084	166	88545	1.17	ppbV	94
59) Xylenes (m&p)	8.473	91	100221	0.46	ppbV	93

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

Data Path : C:\DATA\04-05-19\
Data File : aa2003.D
Acq On : 5 Apr 2019 4:33 pm
Operator : jls
Sample : E19-02214-04 x 10 dil
Misc : 3426, 50cc
ALS Vial : 13 Sample Multiplier: 1

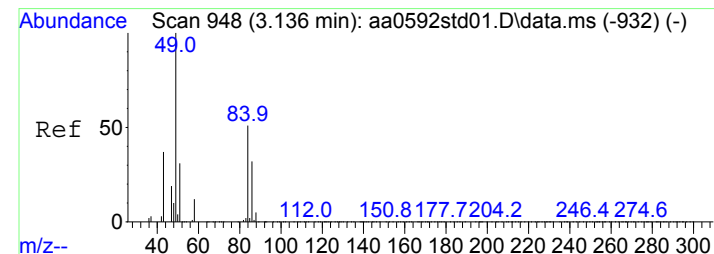
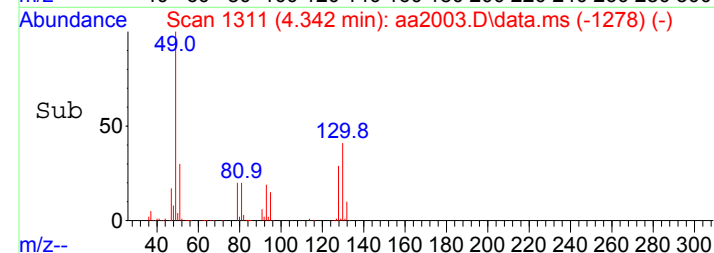
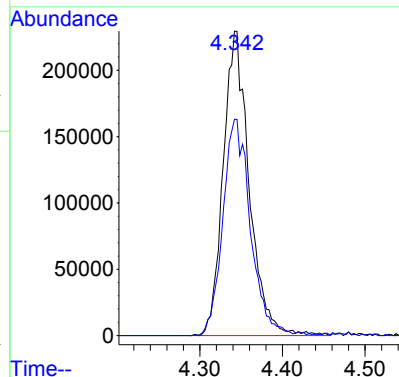
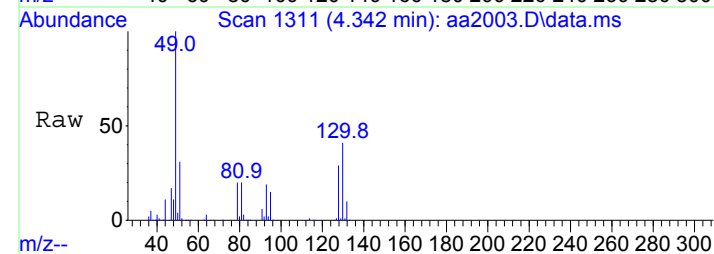
Quant Time: Apr 08 10:40:46 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





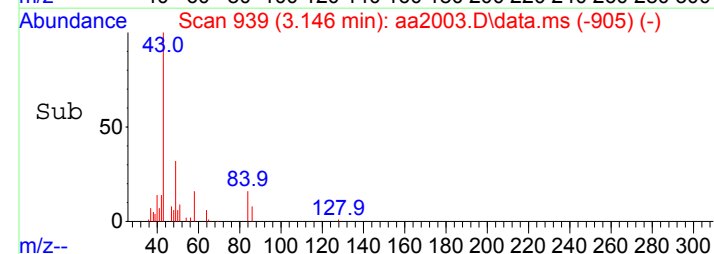
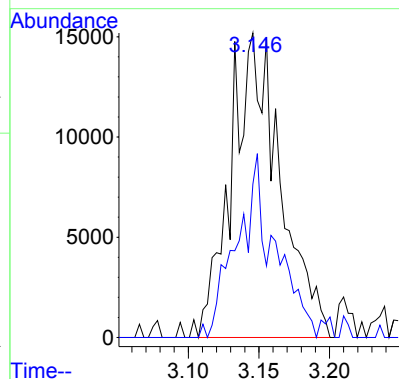
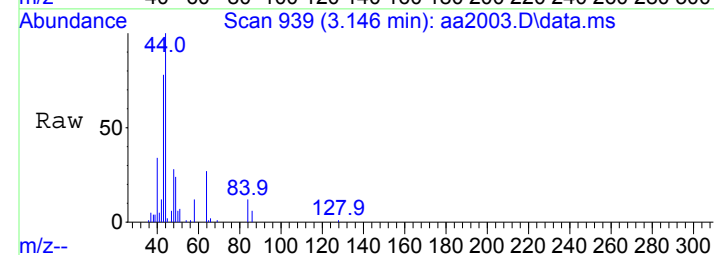
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.342 min Scan# 1311
Delta R.T. 0.007 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

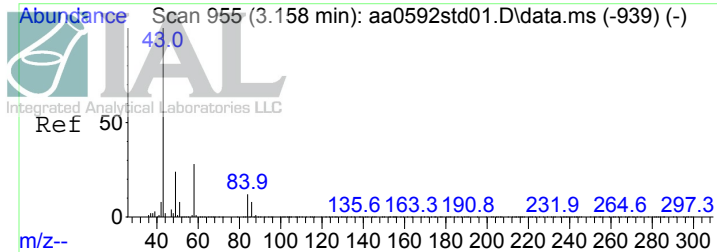
Tgt Ion: 130 Resp: 502588
Ion Ratio Lower Upper
130 100
128 74.9 62.6 94.0



#20
Methylene chloride
Concen: 0.45 ppbV
RT: 3.146 min Scan# 939
Delta R.T. 0.010 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

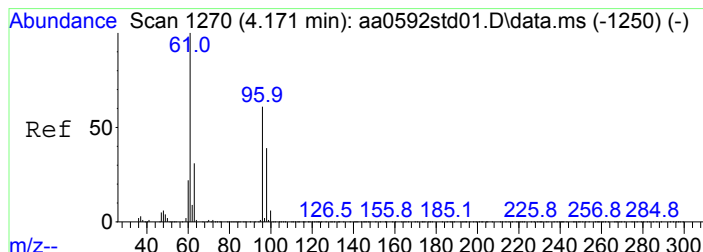
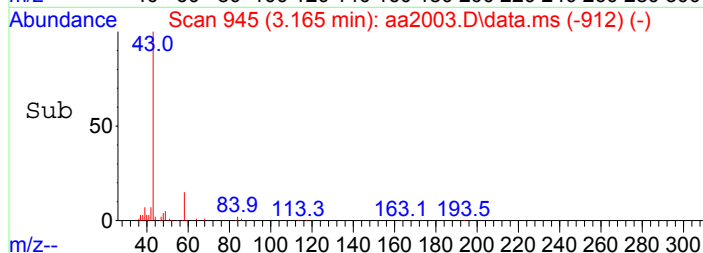
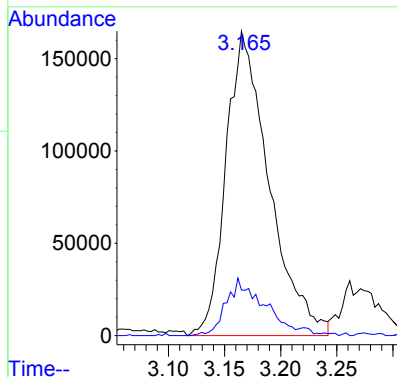
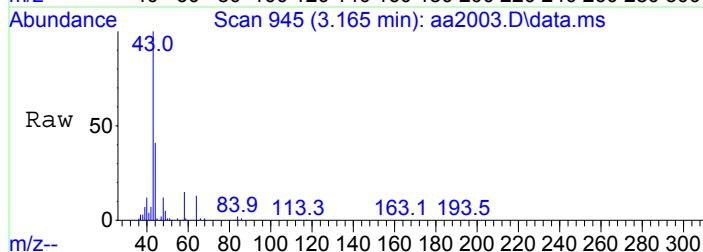
Tgt Ion: 49 Resp: 36802
Ion Ratio Lower Upper
49 100
84 46.3 58.4 87.6#





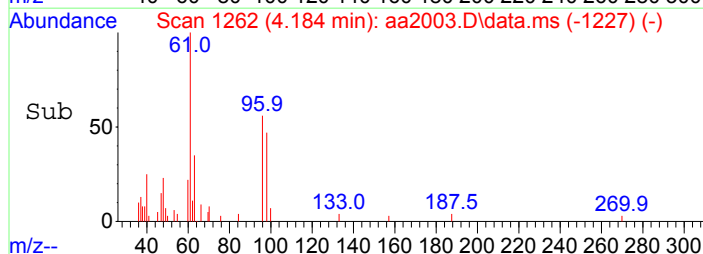
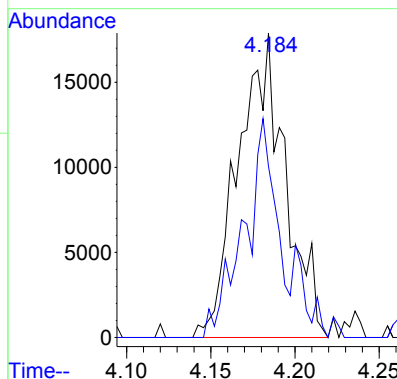
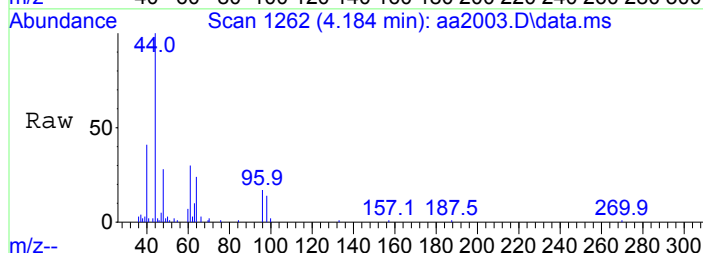
#21
Acetone
Concen: 4.31 ppbV
RT: 3.165 min Scan# 945
Delta R.T. 0.006 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

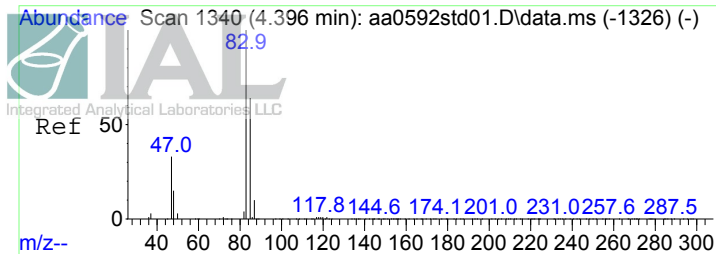
Tgt Ion: 43 Resp: 440456
Ion Ratio Lower Upper
43 100
58 17.1 26.4 39.6#



#28
1,2-Dichloroethene (cis)
Concen: 0.43 ppbV
RT: 4.184 min Scan# 1262
Delta R.T. 0.013 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

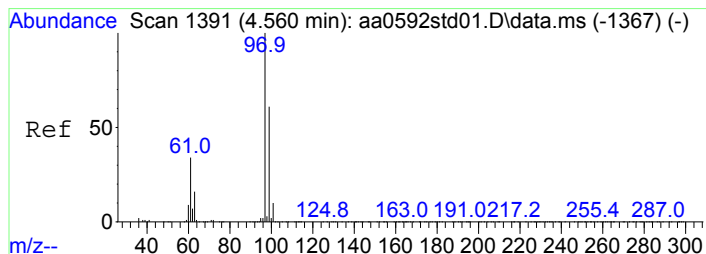
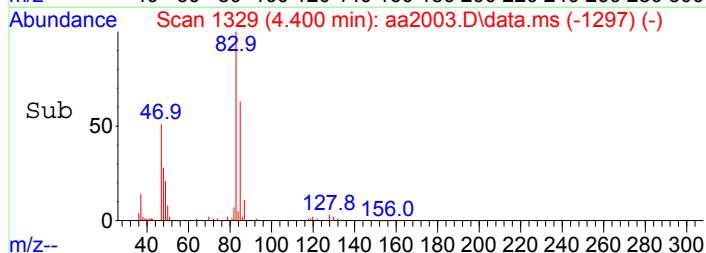
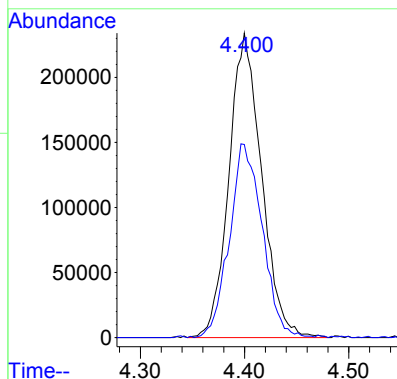
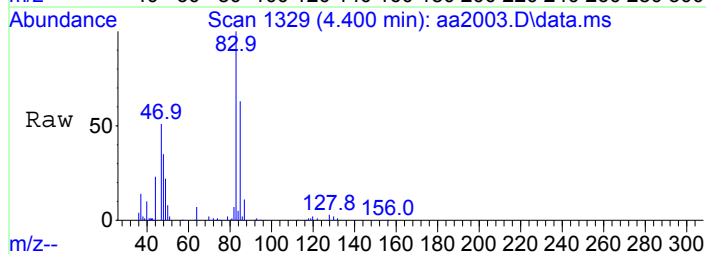
Tgt Ion: 61 Resp: 34772
Ion Ratio Lower Upper
61 100
96 49.1 57.6 86.4#





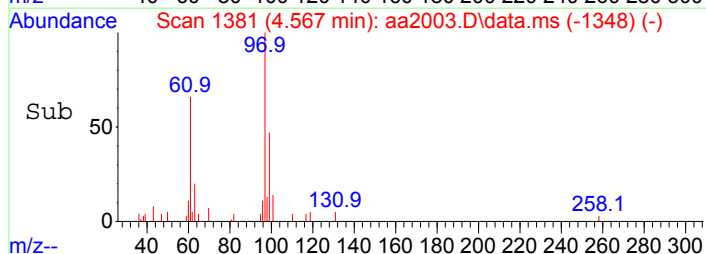
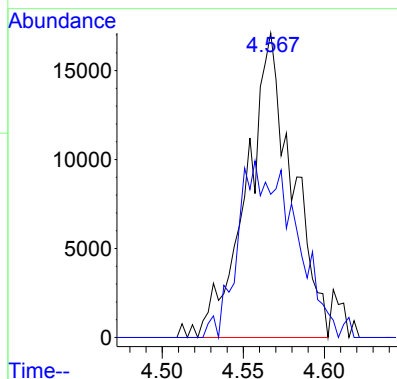
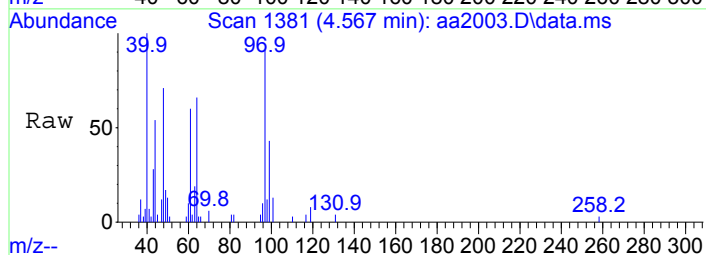
#30
Chloroform
Concen: 4.40 ppbV
RT: 4.400 min Scan# 1329
Delta R.T. 0.003 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

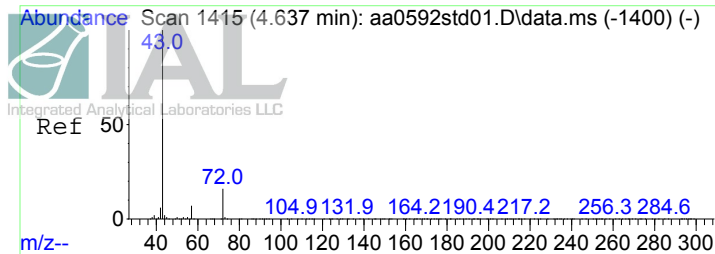
Tgt Ion: 83 Resp: 508475
Ion Ratio Lower Upper
83 100
85 64.2 51.0 76.6



#34
1,1,1-Trichloroethane
Concen: 0.30 ppbV
RT: 4.567 min Scan# 1381
Delta R.T. 0.006 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

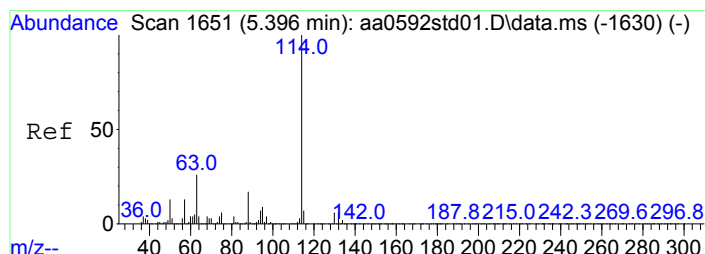
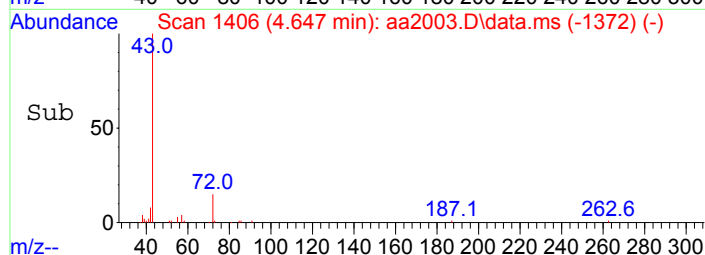
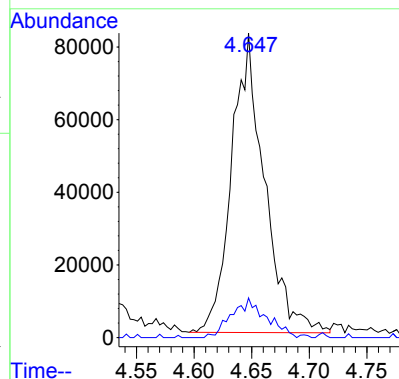
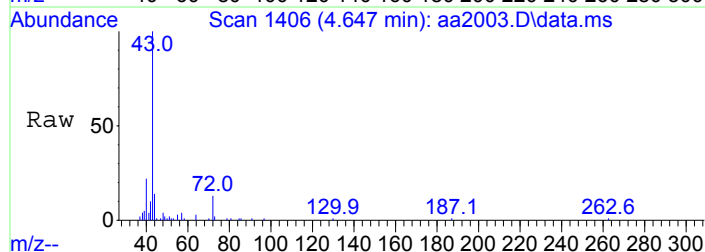
Tgt Ion: 97 Resp: 33727
Ion Ratio Lower Upper
97 100
99 72.1 51.9 77.9





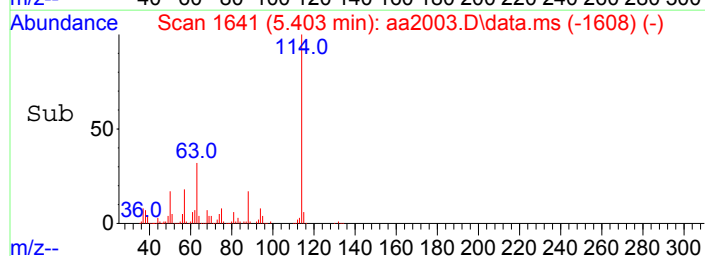
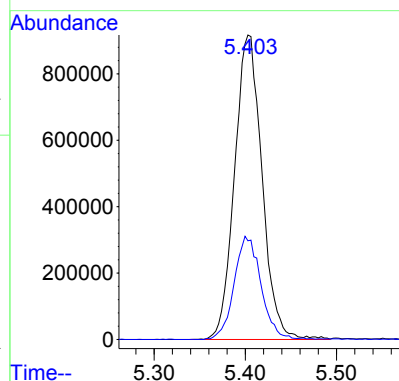
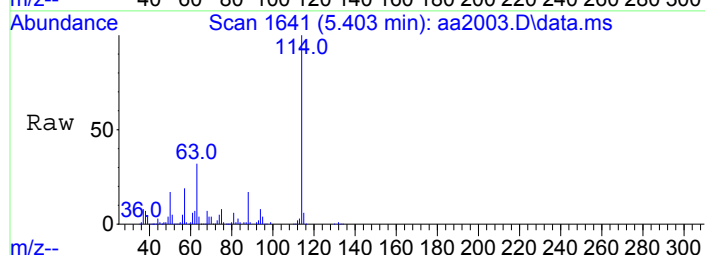
#35
Methyl ethyl ketone
Concen: 1.15 ppbV
RT: 4.647 min Scan# 1406
Delta R.T. 0.010 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

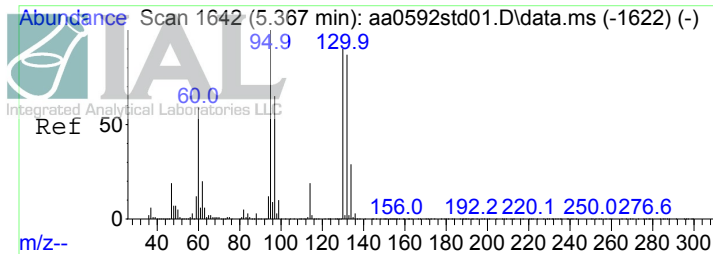
Tgt Ion: 43 Resp: 163700
Ion Ratio Lower Upper
43 100
72 13.7 14.4 21.6#



#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

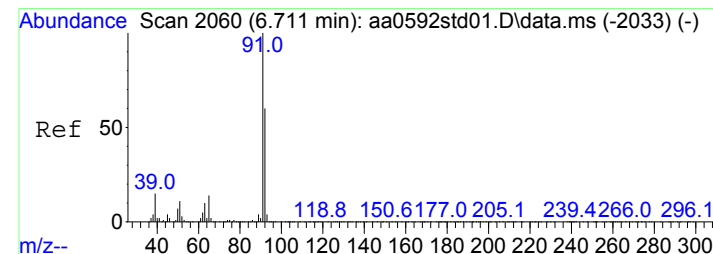
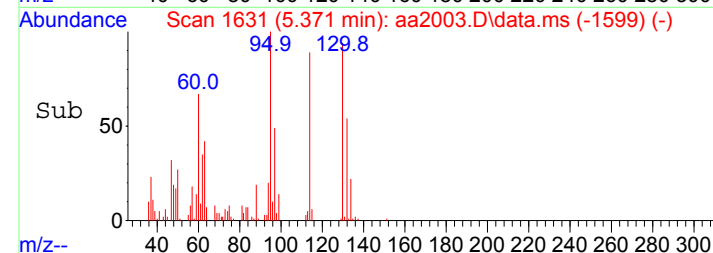
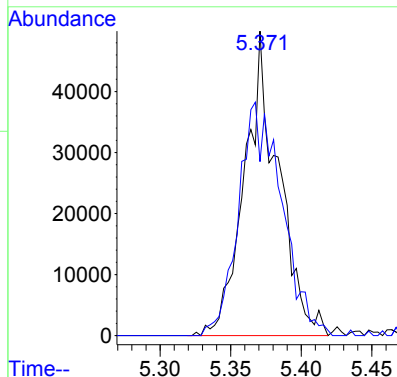
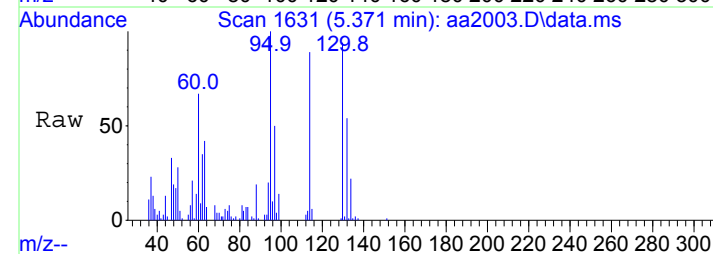
Tgt Ion: 114 Resp: 1919231
Ion Ratio Lower Upper
114 100
63 33.2 20.0 30.0#





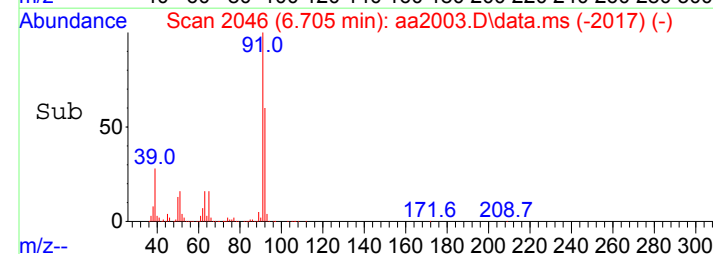
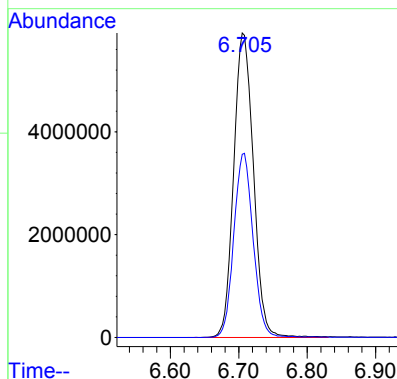
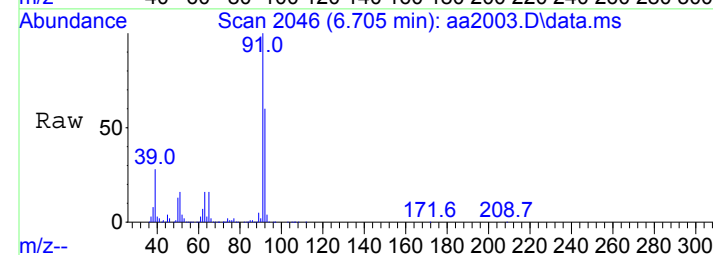
#40
Trichloroethene
Concen: 1.26 ppbV
RT: 5.371 min Scan# 1631
Delta R.T. 0.003 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

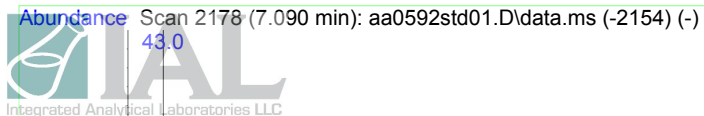
Tgt Ion:130 Resp: 83259
Ion Ratio Lower Upper
130 100
132 97.8 77.8 116.6



#47
Toluene
Concen: 60.12 ppbV
RT: 6.705 min Scan# 2046
Delta R.T. -0.006 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

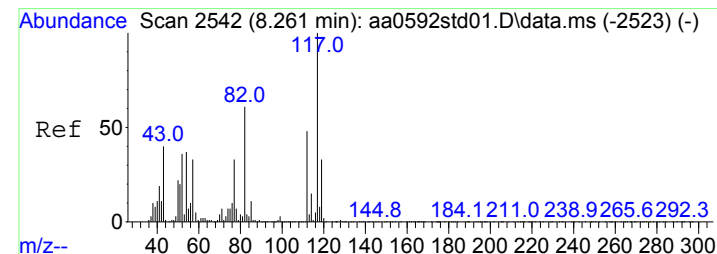
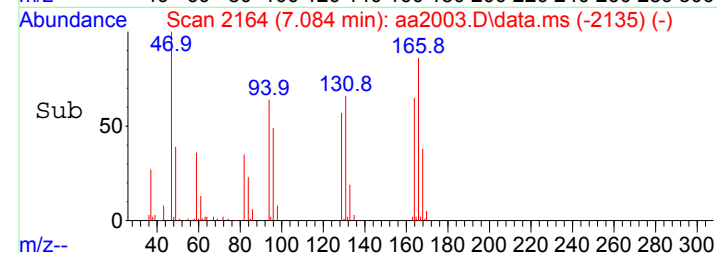
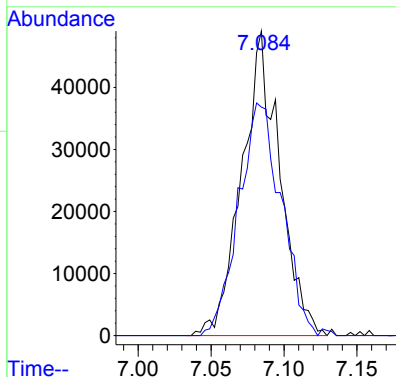
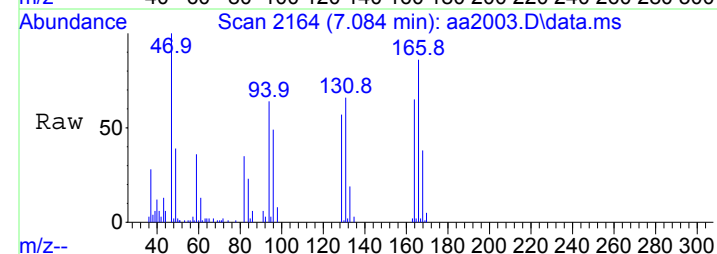
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Ion Ratio Lower Upper
91 100
92 59.1 50.0 75.0





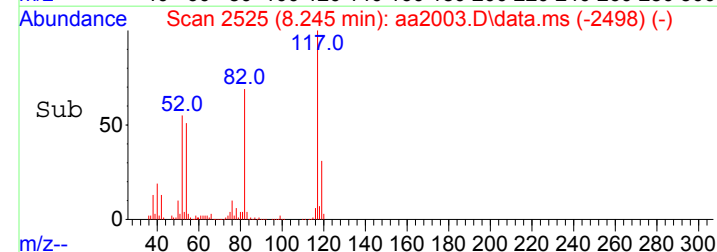
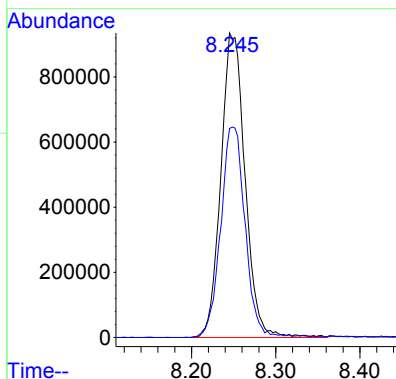
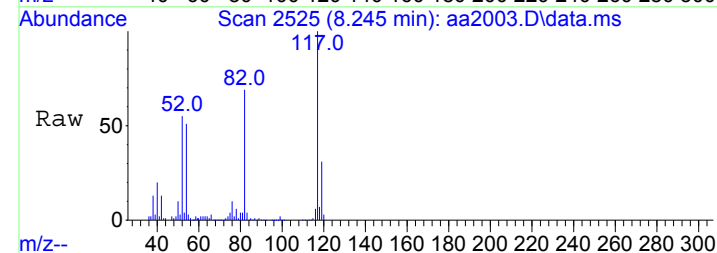
#49
Tetrachloroethene
Concen: 1.17 ppbV
RT: 7.084 min Scan# 2164
Delta R.T. -0.006 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

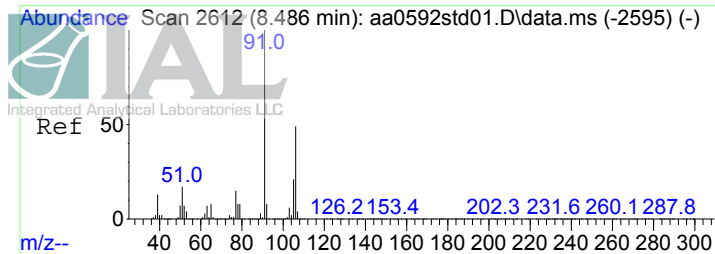
Tgt Ion	166	Resp	88545
Ion Ratio	100	Lower	Upper
164	86.1	64.6	96.8



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.245 min Scan# 2525
Delta R.T. -0.013 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

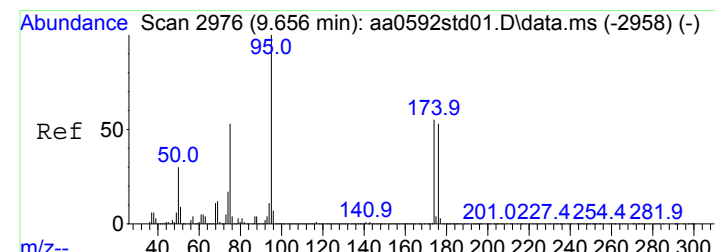
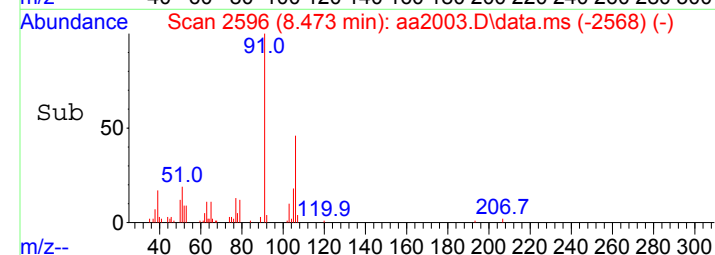
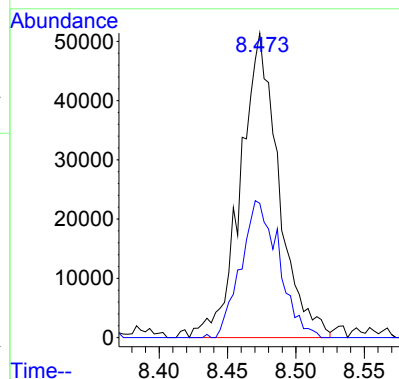
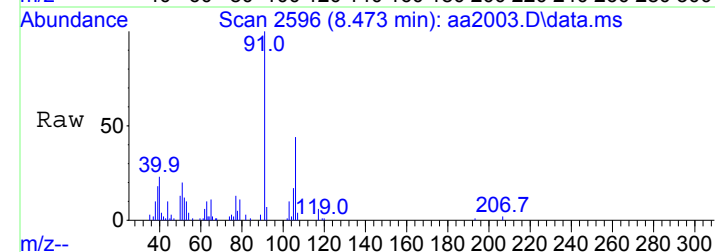
Tgt Ion	117	Resp	1869013
Ion Ratio	100	Lower	Upper
82	69.7	48.8	73.2





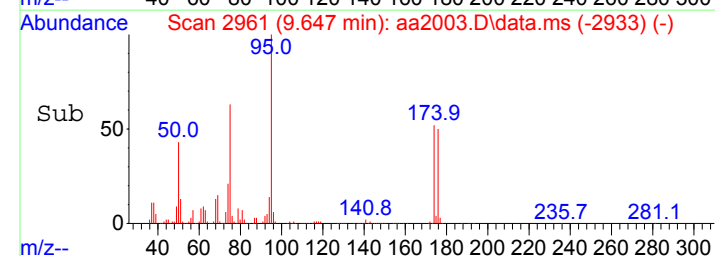
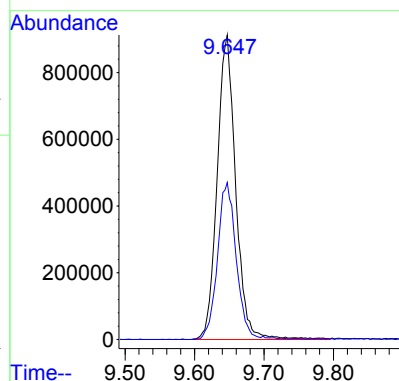
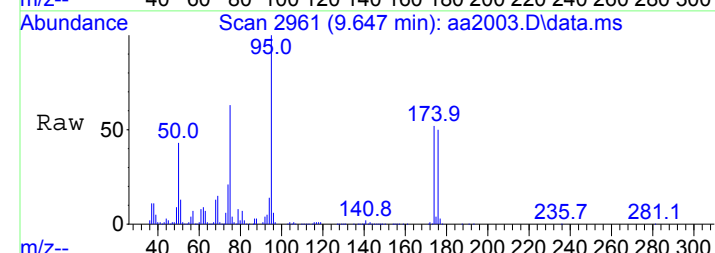
#59
Xylenes (m&p)
Concen: 0.46 ppbV
RT: 8.473 min Scan# 2596
Delta R.T. -0.010 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

Tgt Ion: 91 Resp: 100221
Ion Ratio Lower Upper
91 100
106 44.5 39.2 58.8



#64
Bromofluorobenzene (tune std)
Concen: 10.35 ppbV
RT: 9.647 min Scan# 2961
Delta R.T. -0.010 min
Lab File: aa2003.D
Acq: 5 Apr 2019 4:33 pm

Tgt Ion: 95 Resp: 1688508
Ion Ratio Lower Upper
95 100
174 52.1 61.5 92.3#



Data Path : C:\DATA\04-08-19\
 Data File : aa2030.D
 Acq On : 8 Apr 2019 2:34 pm
 Operator : jjw
 Sample : E19-02214-04 x 50 dil
 Misc : 3426, 10cc
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 09 12:00:26 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

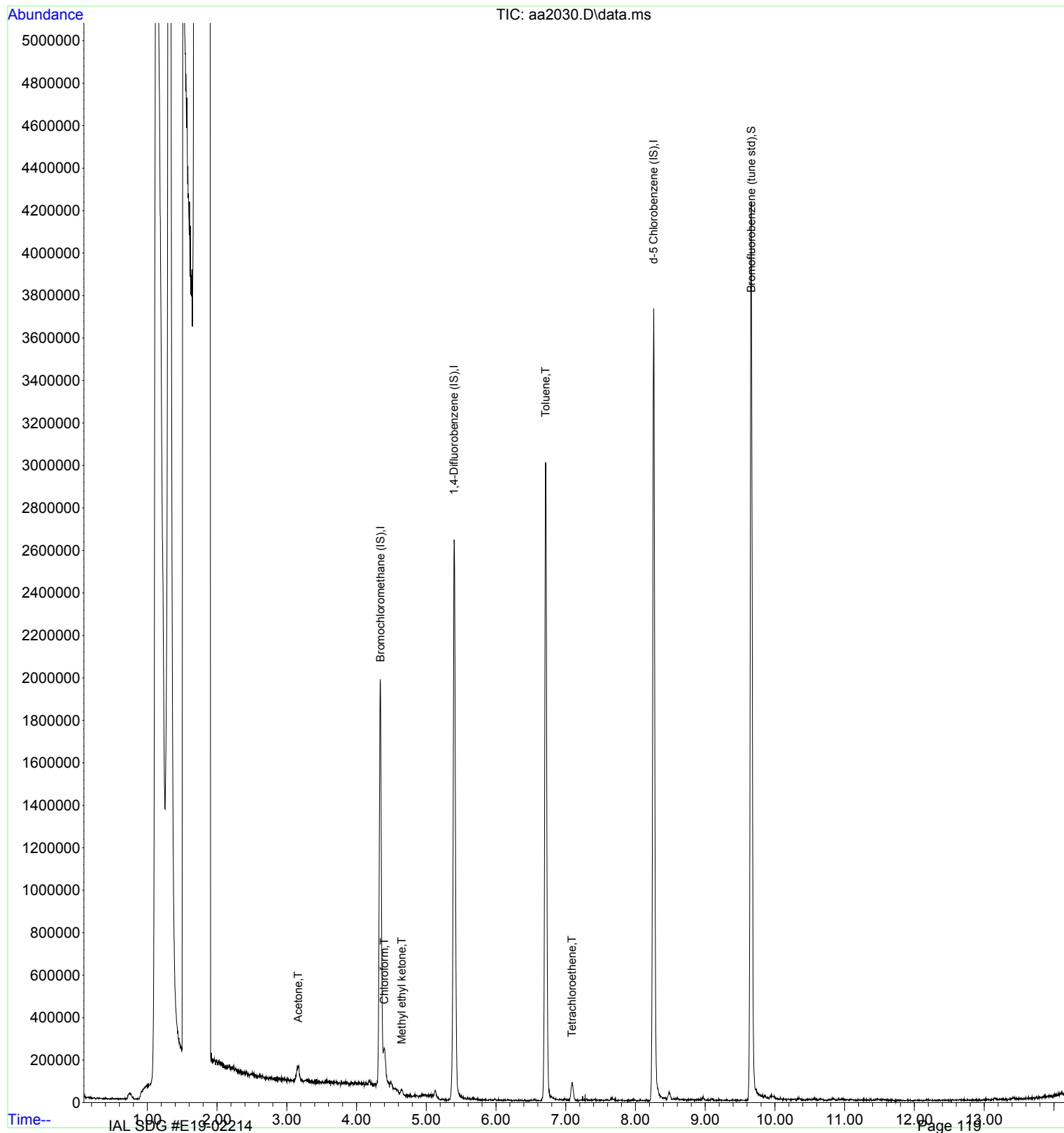
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

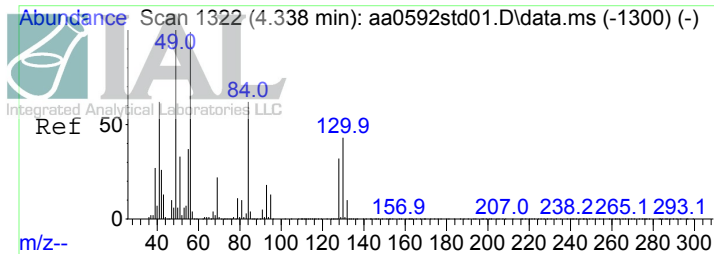
Internal Standards						
1) Bromochloromethane (IS)	4.345	130	506803	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	1841716	10.00	ppbV	# 0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1702838	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	1481092	9.97	ppbV	0.000
Target Compounds						
						Qvalue
21) Acetone	3.165	43	91977	0.89	ppbV	# 73
30) Chloroform	4.399	83	98658	0.85	ppbV	98
35) Methyl ethyl ketone	4.647	43	33891	0.24	ppbV	93
47) Toluene	6.711	91	2060065	10.85	ppbV	95
49) Tetrachloroethene	7.091	166	18765	0.26	ppbV	97

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

Data Path : C:\DATA\04-08-19\
Data File : aa2030.D
Acq On : 8 Apr 2019 2:34 pm
Operator : jjw
Sample : E19-02214-04 x 50 dil
Misc : 3426, 10cc
ALS Vial : 10 Sample Multiplier: 1

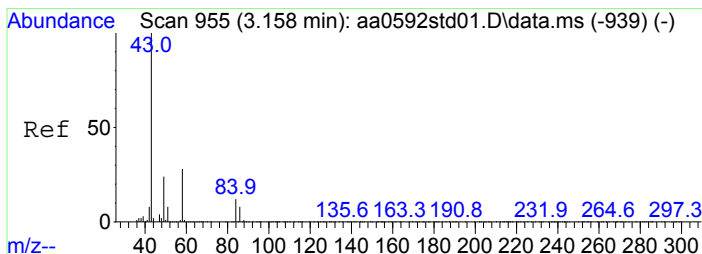
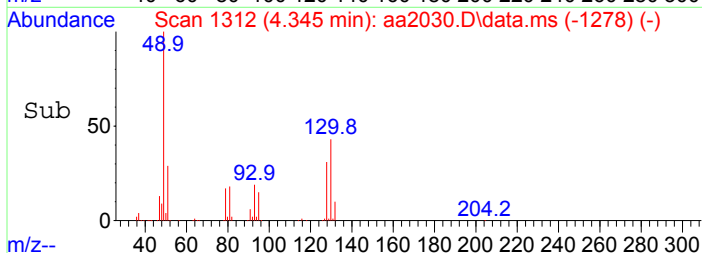
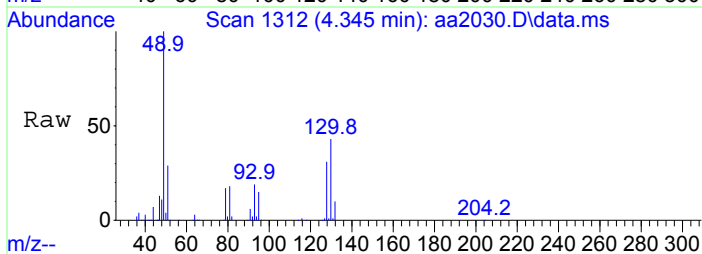
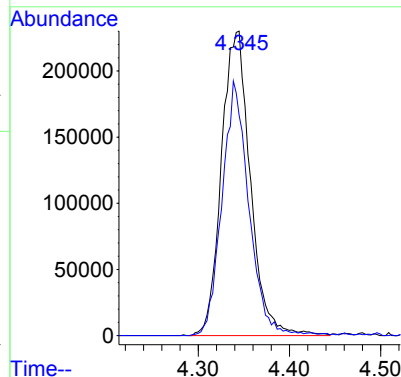
Quant Time: Apr 09 12:00:26 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





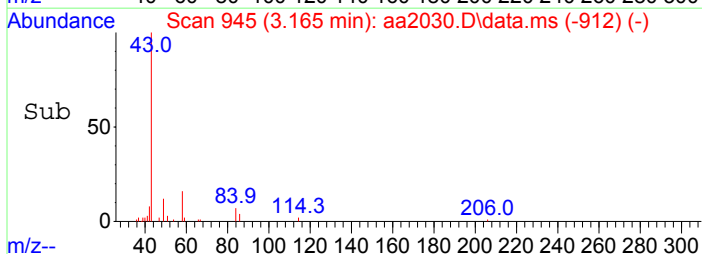
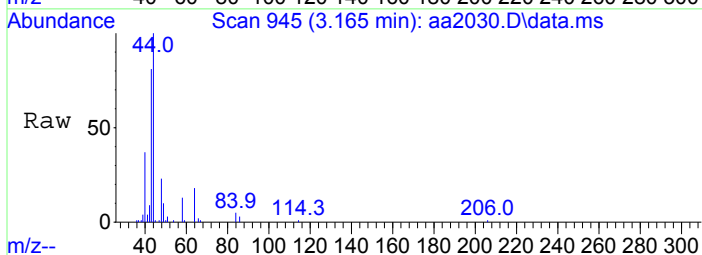
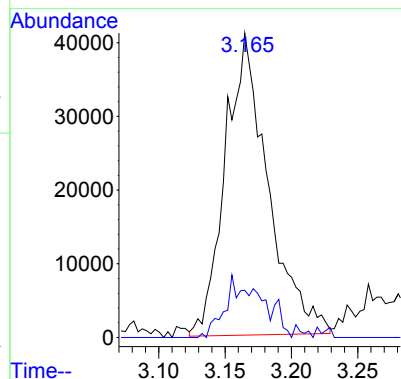
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.345 min Scan# 1312
Delta R.T. 0.010 min
Lab File: aa2030.D
Acq: 8 Apr 2019 2:34 pm

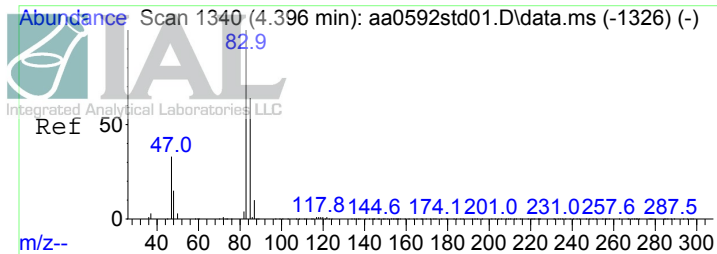
Tgt Ion:130 Resp: 506803
Ion Ratio Lower Upper
130 100
128 77.7 62.6 94.0



#21
Acetone
Concen: 0.89 ppbV
RT: 3.165 min Scan# 945
Delta R.T. 0.006 min
Lab File: aa2030.D
Acq: 8 Apr 2019 2:34 pm

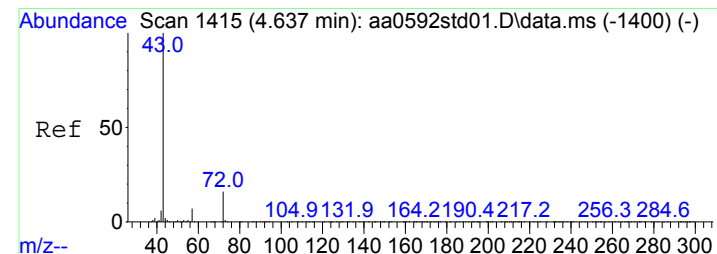
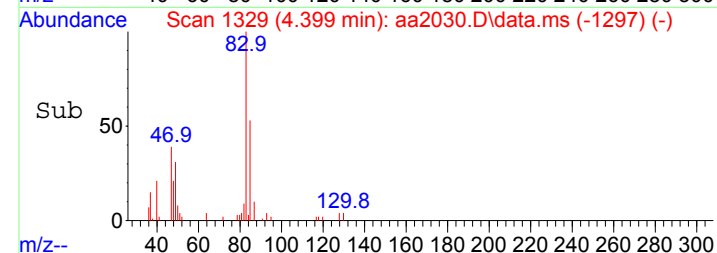
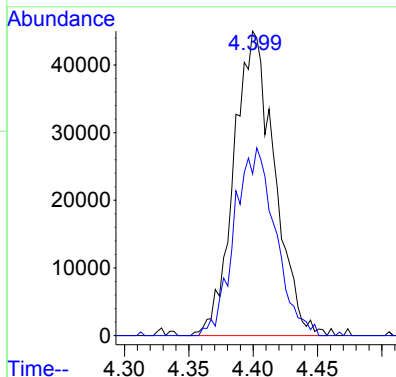
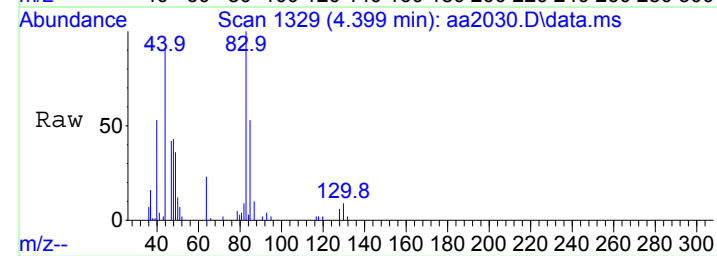
Tgt Ion: 43 Resp: 91977
Ion Ratio Lower Upper
43 100
58 17.6 26.4 39.6#





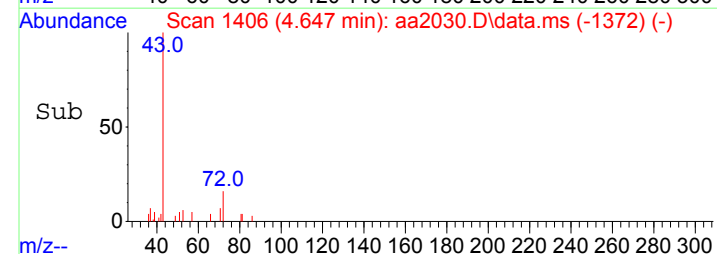
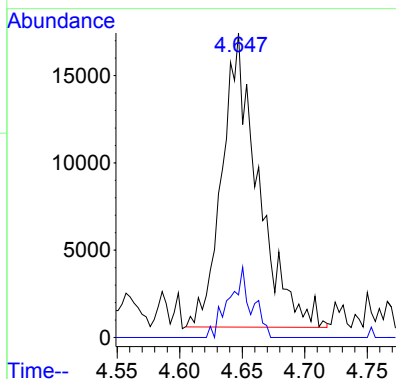
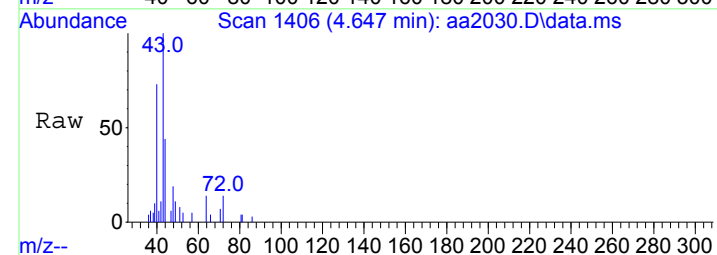
#30
Chloroform
Concen: 0.85 ppbV
RT: 4.399 min Scan# 1329
Delta R.T. 0.003 min
Lab File: aa2030.D
Acq: 8 Apr 2019 2:34 pm

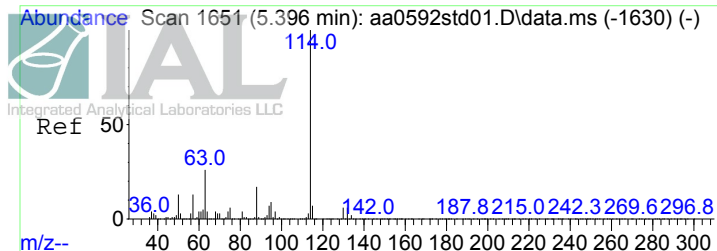
Tgt Ion	83	Resp	98658
Ion Ratio	100	Lower	Upper
85	62.5	51.0	76.6



#35
Methyl ethyl ketone
Concen: 0.24 ppbV
RT: 4.647 min Scan# 1406
Delta R.T. 0.009 min
Lab File: aa2030.D
Acq: 8 Apr 2019 2:34 pm

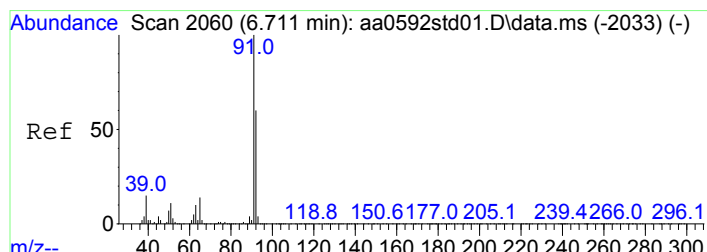
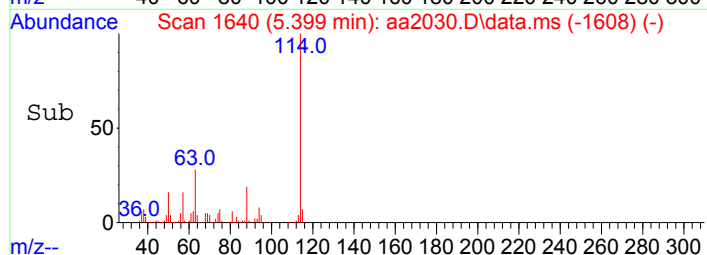
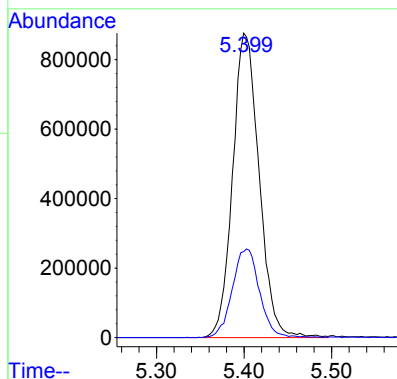
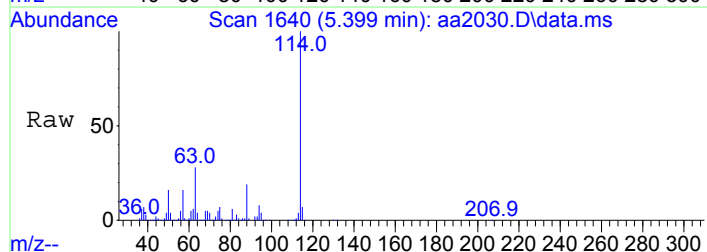
Tgt Ion	43	Resp	33891
Ion Ratio <td>100</td> <td>Lower</td> <td>Upper</td>	100	Lower	Upper
72	14.8	14.4	21.6





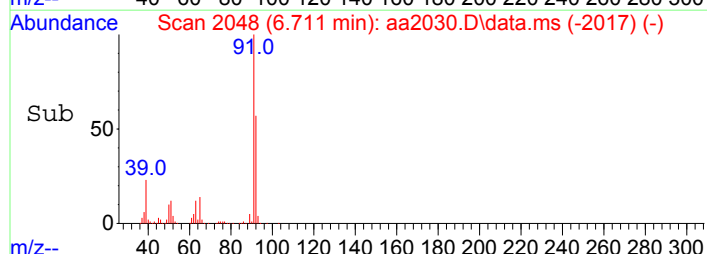
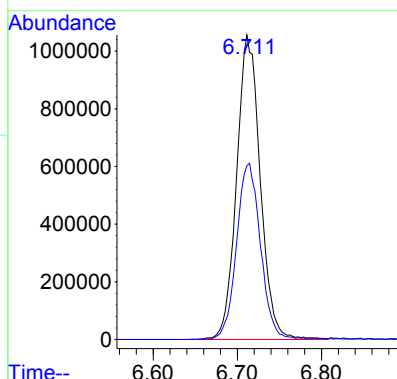
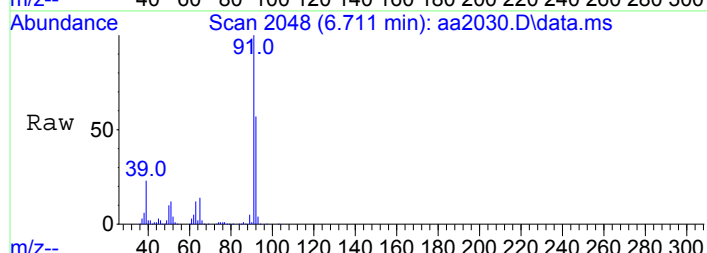
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.399 min Scan# 1640
Delta R.T. 0.003 min
Lab File: aa2030.D
Acq: 8 Apr 2019 2:34 pm

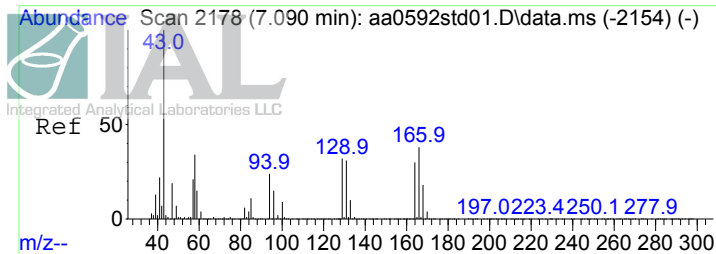
Tgt Ion: 114 Resp: 1841716
Ion Ratio Lower Upper
114 100
63 30.0 20.0 30.0#



#47
Toluene
Concen: 10.85 ppbV
RT: 6.711 min Scan# 2048
Delta R.T. -0.000 min
Lab File: aa2030.D
Acq: 8 Apr 2019 2:34 pm

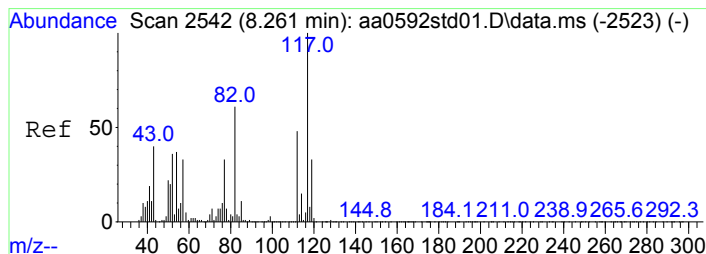
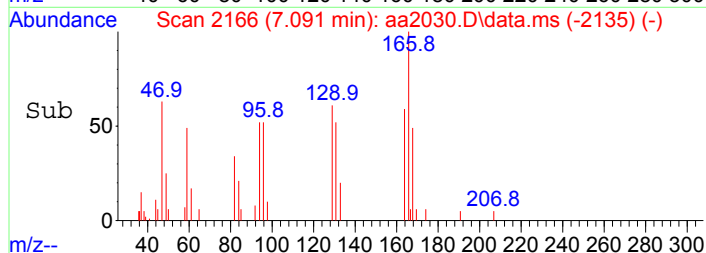
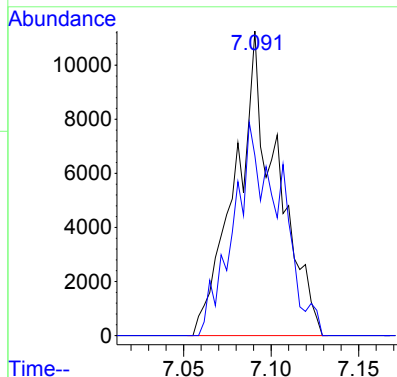
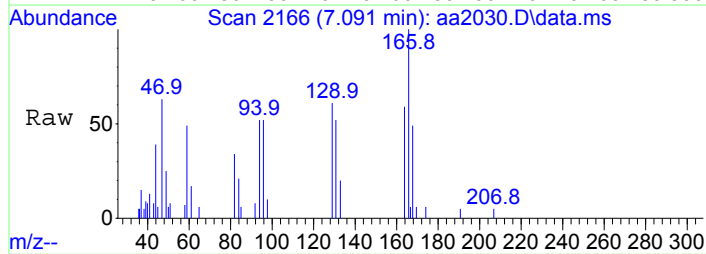
Tgt Ion: 91 Resp: 2060065
Ion Ratio Lower Upper
91 100
92 58.6 50.0 75.0





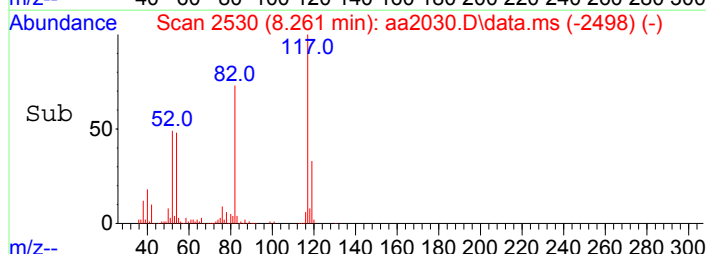
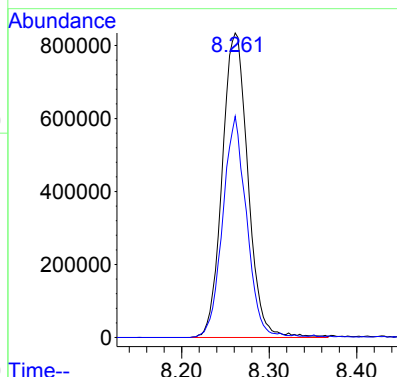
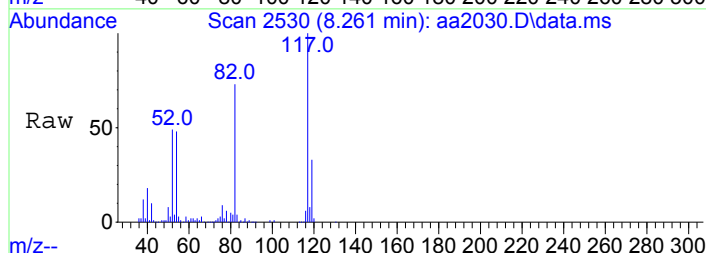
#49
Tetrachloroethene
Concen: 0.26 ppbV
RT: 7.091 min Scan# 2166
Delta R.T. -0.000 min
Lab File: aa2030.D
Acq: 8 Apr 2019 2:34 pm

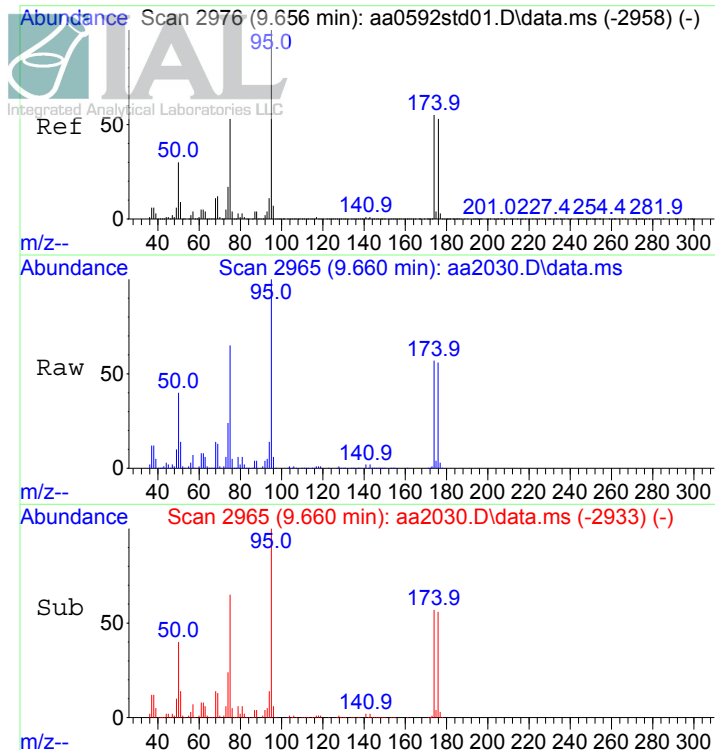
Tgt Ion:166 Resp: 18765
Ion Ratio Lower Upper
166 100
164 78.0 64.6 96.8



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.261 min Scan# 2530
Delta R.T. 0.003 min
Lab File: aa2030.D
Acq: 8 Apr 2019 2:34 pm

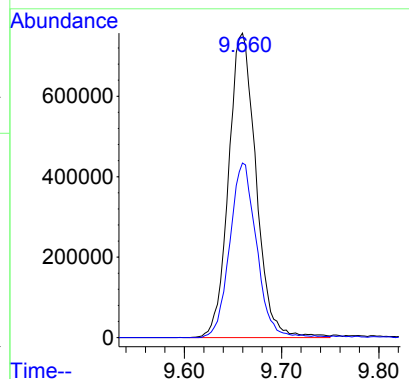
Tgt Ion:117 Resp: 1702838
Ion Ratio Lower Upper
117 100
82 67.7 48.8 73.2





#64
 Bromofluorobenzene (tune std)
 Concen: 9.97 ppbV
 RT: 9.660 min Scan# 2965
 Delta R.T. 0.003 min
 Lab File: aa2030.D
 Acq: 8 Apr 2019 2:34 pm

Tgt Ion	95	174	Ratio	Lower	Upper
95	100				
174	56.1		61.5	92.3	





Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/05/19
Data File: AA2004
Summa ID: 5092
DF: 1

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		ASB2-1		Reporting	
IAL ID:		E19-02214-05		Limits	
Compound	CAS	ppbv	ug/m3	ppbv	ug/m3
Acetone	67-64-1	2.0	4.6	0.20	0.48
Benzene	71-43-2	ND	ND	0.20	0.64
Bromodichloromethane	75-27-4	ND	ND	0.20	1.3
Bromoform	75-25-2	ND	ND	0.20	2.1
Bromomethane	74-83-9	ND	ND	0.20	0.78
1,3-Butadiene	106-99-0	ND	ND	0.20	0.44
Chlorobenzene	108-90-7	ND	ND	0.20	0.92
Chloroethane	75-00-3	ND	ND	0.20	0.53
Chloroform	67-66-3	ND	ND	0.20	0.98
Chloromethane	74-87-3	ND	ND	0.20	0.41
Carbon disulfide	75-15-0	ND	ND	0.20	0.62
Carbon tetrachloride	56-23-5	0.15	0.91	0.04	0.25
Cyclohexane	110-82-7	ND	ND	0.20	0.69
Dibromochloromethane	124-48-1	ND	ND	0.20	1.7
1,2-Dibromoethane	106-93-4	ND	ND	0.20	1.5
1,2-Dichlorobenzene	95-50-1	ND	ND	0.20	1.2
1,3-Dichlorobenzene	541-73-1	ND	ND	0.20	1.2
1,4-Dichlorobenzene	106-46-7	ND	ND	0.20	1.2
Dichlorodifluoromethane	75-71-8	ND	ND	0.20	0.99
1,1-Dichloroethane	75-34-3	ND	ND	0.20	0.81
1,2-Dichloroethane	107-06-2	ND	ND	0.20	0.81
1,1-Dichloroethene	75-35-4	ND	ND	0.20	0.79
1,2-Dichloroethene (cis)	156-59-2	ND	ND	0.20	0.79
1,2-Dichloroethene (trans)	156-60-5	ND	ND	0.20	0.79
1,2-Dichloropropane	78-87-5	ND	ND	0.20	0.92
1,3-Dichloropropene (cis)	10061-01-5	ND	ND	0.20	0.91
1,3-Dichloropropene (trans)	10061-02-6	ND	ND	0.20	0.91
1,2-Dichlorotetrafluoroethane	76-14-2	ND	ND	0.20	1.4
1,4-Dioxane	123-91-1	ND	ND	0.20	0.72
Ethylbenzene	100-41-4	ND	ND	0.20	0.87
n-Heptane	142-82-5	ND	ND	0.20	0.82
1,3-Hexachlorobutadiene	87-68-3	ND	ND	0.20	2.1
n-Hexane	110-54-3	ND	ND	0.20	0.71
Methylene chloride	75-09-2	2.2	7.5	0.20	0.70
Methyl ethyl ketone	78-93-3	ND	ND	0.20	0.59
Methyl isobutyl ketone	108-10-1	ND	ND	0.20	0.82
Methyl tert-butyl ether	1634-04-4	ND	ND	0.20	0.72
Styrene	100-42-5	ND	ND	0.20	0.85
Tert-butyl alcohol	75-65-0	ND	ND	0.20	0.61
1,1,2,2-Tetrachloroethane	79-34-5	ND	ND	0.20	1.4
Tetrachloroethene	127-18-4	ND	ND	0.20	1.4
Toluene	108-88-3	ND	ND	0.20	0.75
1,2,4-Trichlorobenzene	120-82-1	ND	ND	0.20	1.5
1,1,1-Trichloroethane	71-55-6	ND	ND	0.20	1.1
1,1,2-Trichloroethane	79-00-5	ND	ND	0.20	1.1
Trichloroethene	79-01-6	ND	ND	0.05	0.25

IAL SDG #E19-02214

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Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/05/19
Data File: AA2004
Summa ID: 5092
DF: 1

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		ASB2-1		Reporting	
IAL ID:		E19-02214-05		Limits	
Compound	CAS	ppbv	ug/m3	ppbv	ug/m3
Trichlorofluoromethane	75-69-4	0.39	2.2	0.20	1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	ND	0.20	1.5
1,2,4-Trimethylbenzene	95-63-6	ND	ND	0.20	0.98
1,3,5-Trimethylbenzene	108-67-8	ND	ND	0.20	0.98
2,2,4-Trimethylpentane	540-84-1	ND	ND	0.20	0.93
Vinyl bromide	593-60-2	ND	ND	0.20	0.87
Vinyl chloride	75-01-4	ND	ND	0.20	0.51
Xylenes (m p)	179601-23-1	ND	ND	0.20	0.87
Xylenes (o)	95-47-6	ND	ND	0.20	0.87

Data Path : C:\DATA\04-05-19\
 Data File : aa2004.D
 Acq On : 5 Apr 2019 4:57 pm
 Operator : jls
 Sample : E19-02214-05
 Misc : 5092, 500cc
 ALS Vial : 14 Sample Multiplier: 1

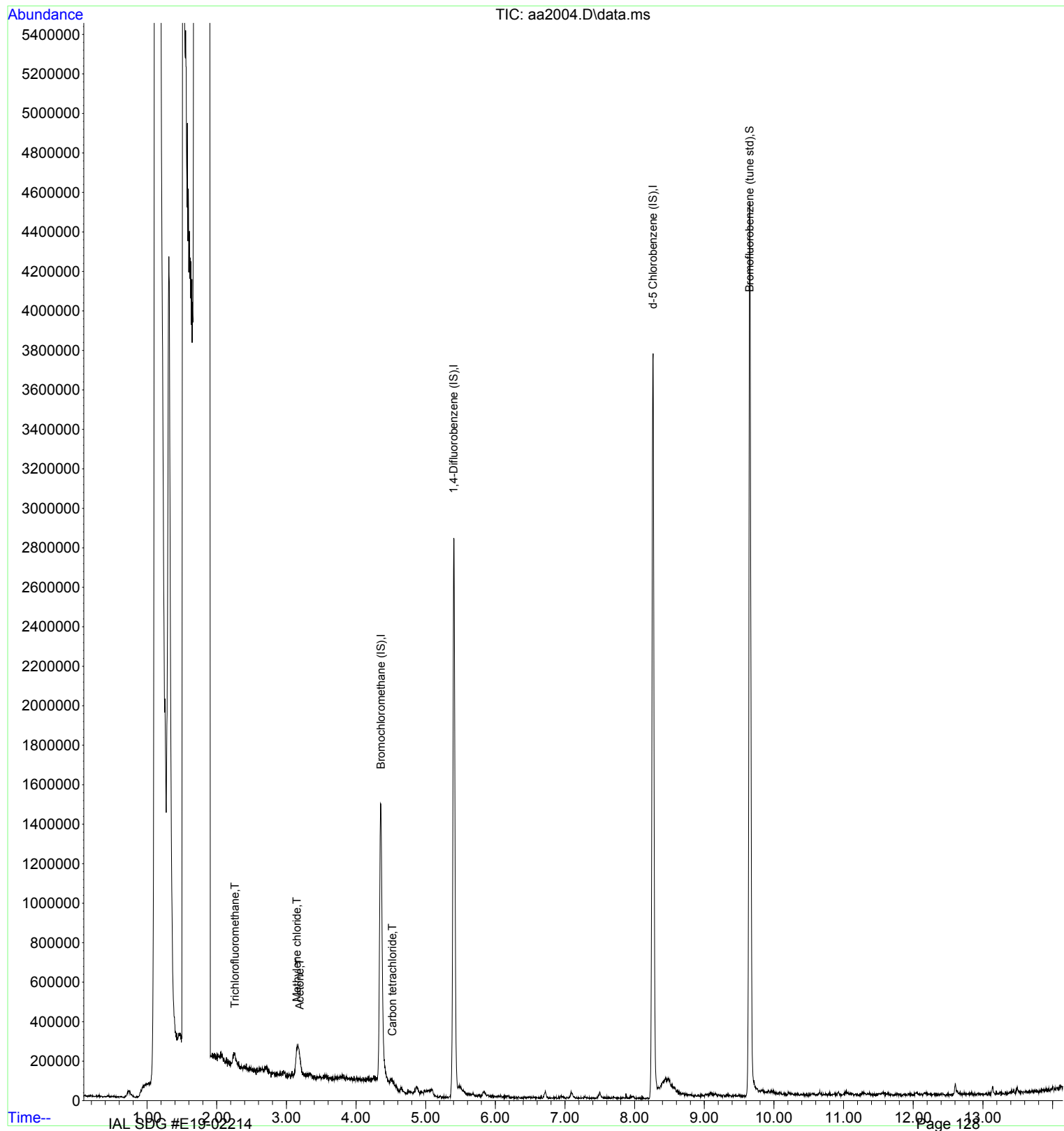
Quant Time: Apr 08 11:10:47 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

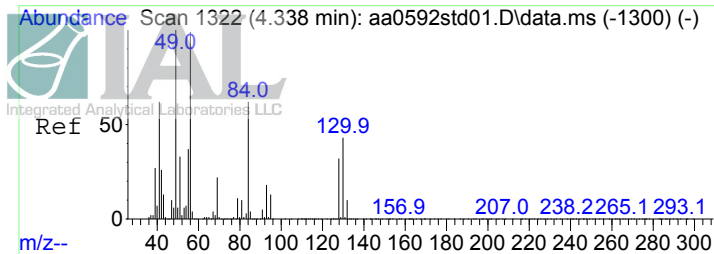
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.358	130	398628	10.00	ppbV	0.023
39) 1,4-Difluorobenzene (IS)	5.403	114	1758562	10.00	ppbV #	0.000
55) d-5 Chlorobenzene (IS)	8.264	117	1562478	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.650	95	1439162	10.55	ppbV	0.000
Target Compounds						
12) Trichlorofluoromethane	2.261	101	41359	0.39	ppbV	Qvalue 86
20) Methylene chloride	3.152	49	140438	2.15	ppbV #	76
21) Acetone	3.191	43	157688	1.95	ppbV #	51
32) Carbon tetrachloride	4.522	117	14619m	0.14	ppbV	

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

Data Path : C:\DATA\04-05-19\
Data File : aa2004.D
Acq On : 5 Apr 2019 4:57 pm
Operator : jls
Sample : E19-02214-05
Misc : 5092, 500cc
ALS Vial : 14 Sample Multiplier: 1

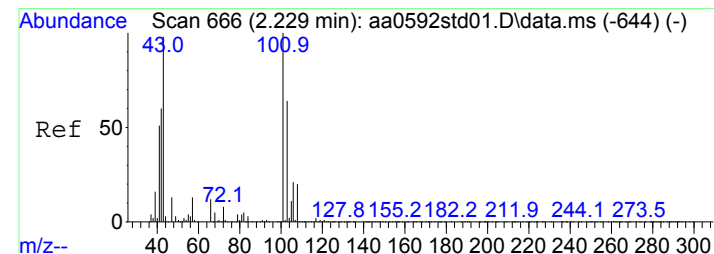
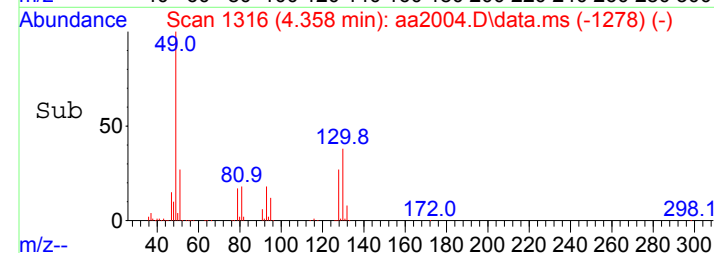
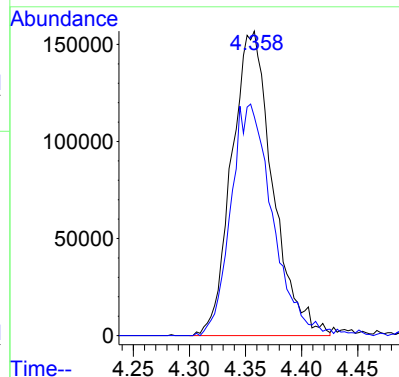
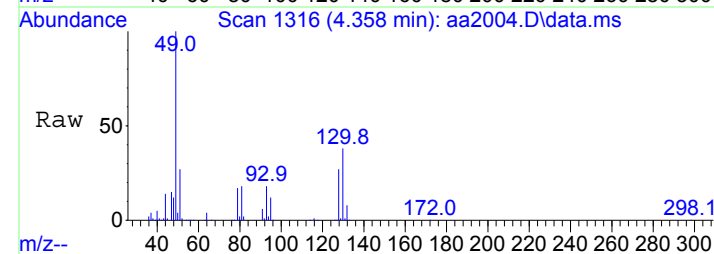
Quant Time: Apr 08 11:10:47 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





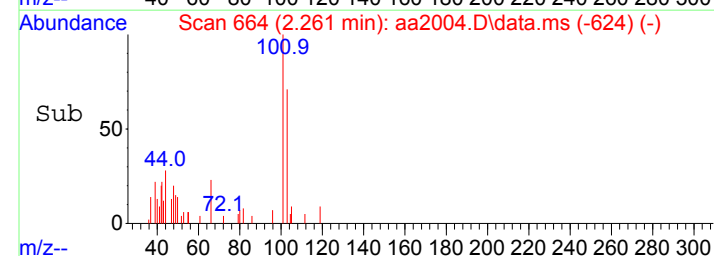
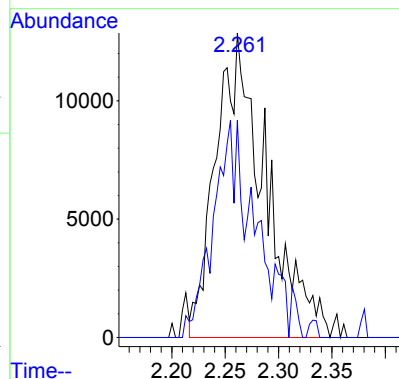
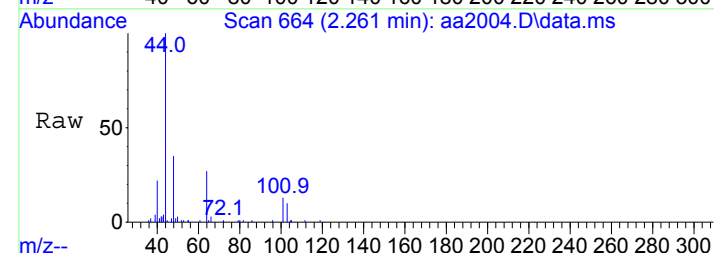
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.358 min Scan# 1316
Delta R.T. 0.023 min
Lab File: aa2004.D
Acq: 5 Apr 2019 4:57 pm

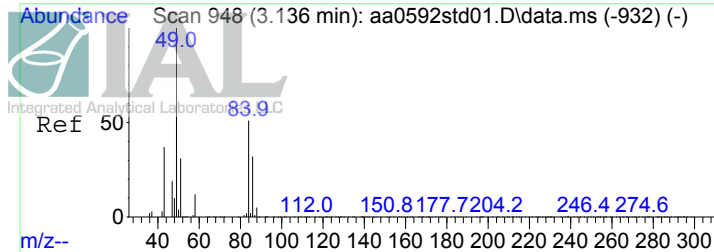
Tgt Ion:130 Resp: 398628
Ion Ratio Lower Upper
130 100
128 77.1 62.6 94.0



#12
Trichlorofluoromethane
Concen: 0.39 ppbV
RT: 2.261 min Scan# 664
Delta R.T. 0.029 min
Lab File: aa2004.D
Acq: 5 Apr 2019 4:57 pm

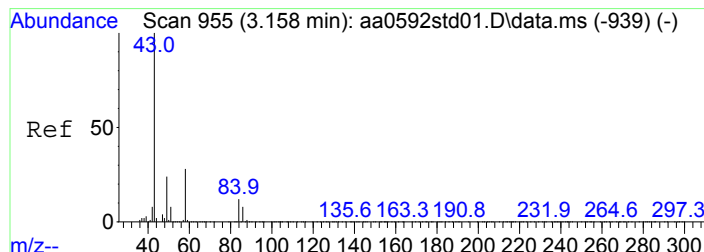
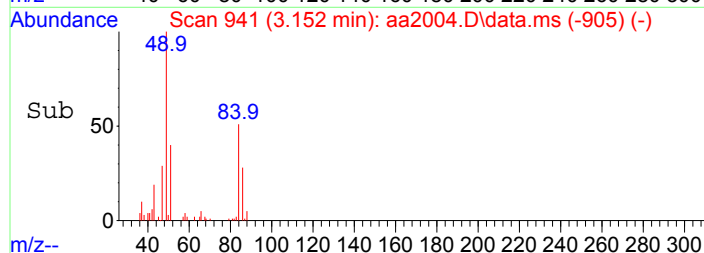
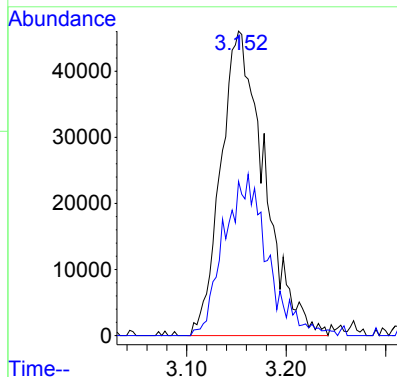
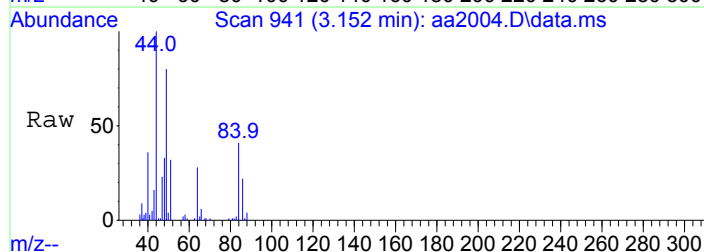
Tgt Ion:101 Resp: 41359
Ion Ratio Lower Upper
101 100
103 54.4 52.0 78.0





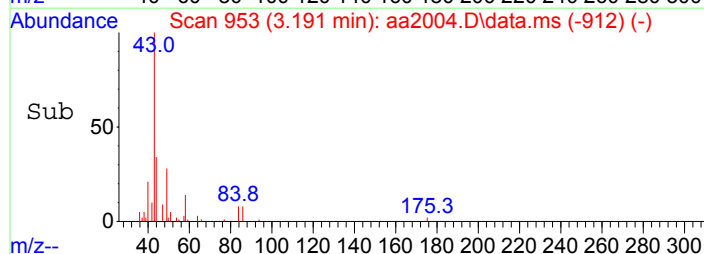
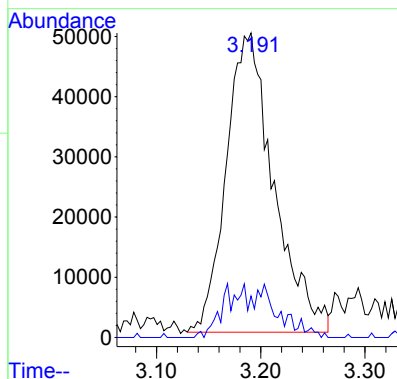
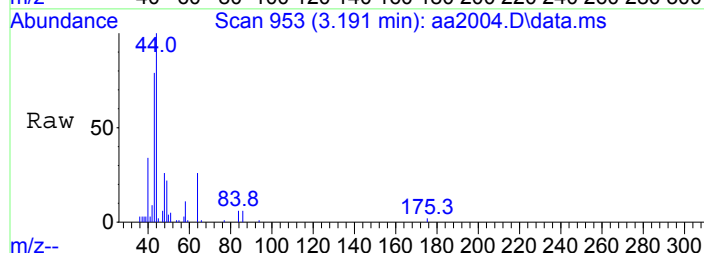
#20
Methylene chloride
Concen: 2.15 ppbV
RT: 3.152 min Scan# 941
Delta R.T. 0.016 min
Lab File: aa2004.D
Acq: 5 Apr 2019 4:57 pm

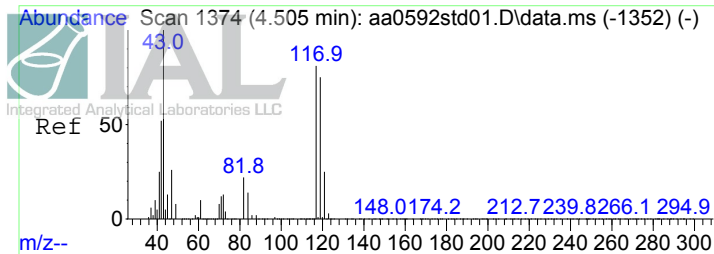
Tgt Ion: 49 Resp: 140438
Ion Ratio Lower Upper
49 100
84 52.5 58.4 87.6#



#21
Acetone
Concen: 1.95 ppbV
RT: 3.191 min Scan# 953
Delta R.T. 0.032 min
Lab File: aa2004.D
Acq: 5 Apr 2019 4:57 pm

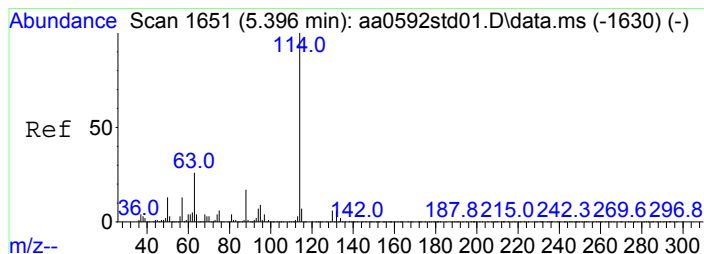
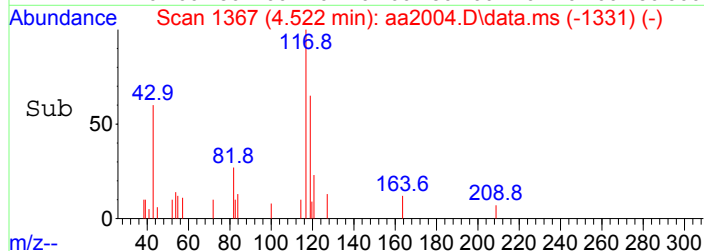
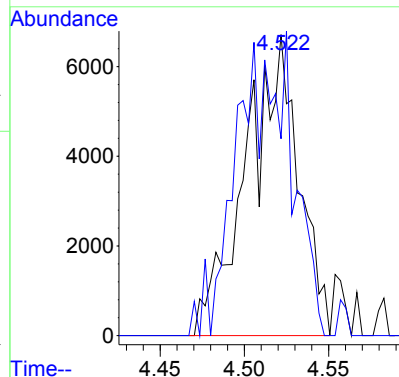
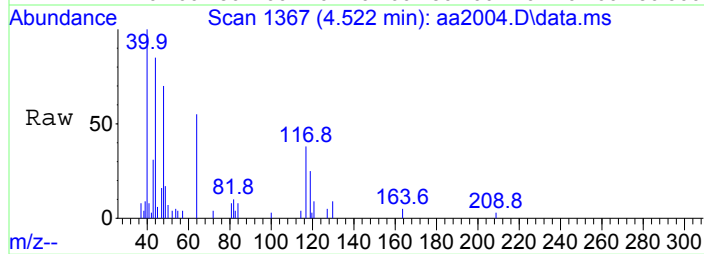
Tgt Ion: 43 Resp: 157688
Ion Ratio Lower Upper
43 100
58 5.3 26.4 39.6#





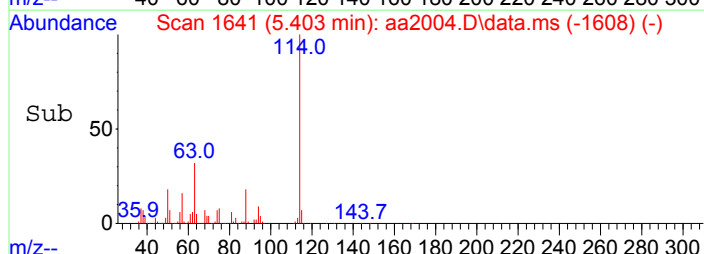
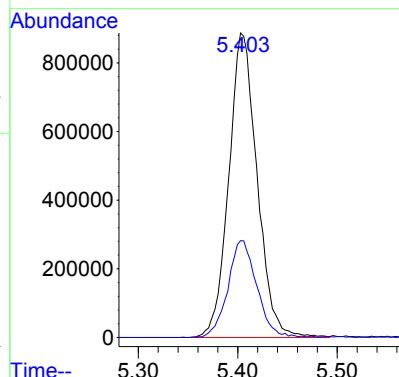
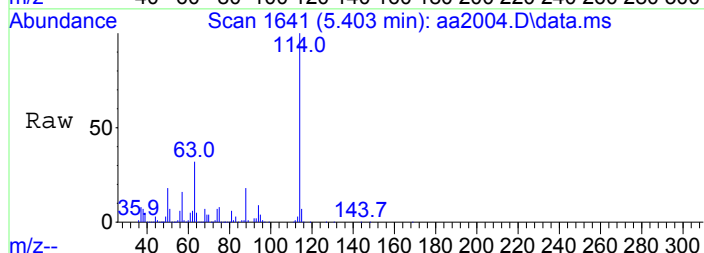
#32
Carbon tetrachloride
Concen: 0.14 ppbV m
RT: 4.522 min Scan# 1367
Delta R.T. 0.016 min
Lab File: aa2004.D
Acq: 5 Apr 2019 4:57 pm

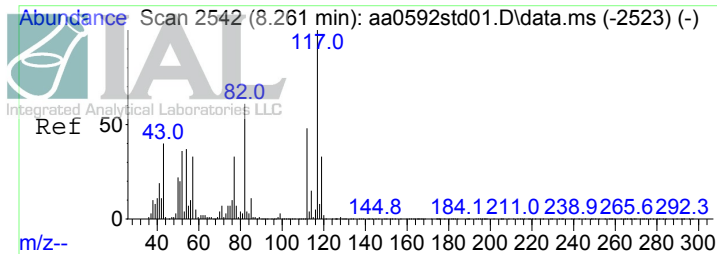
Tgt Ion:117 Resp: 14619
Ion Ratio Lower Upper
117 100
119 0.0 77.0 115.4#



#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa2004.D
Acq: 5 Apr 2019 4:57 pm

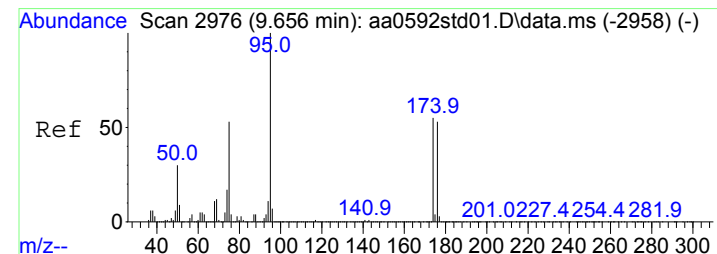
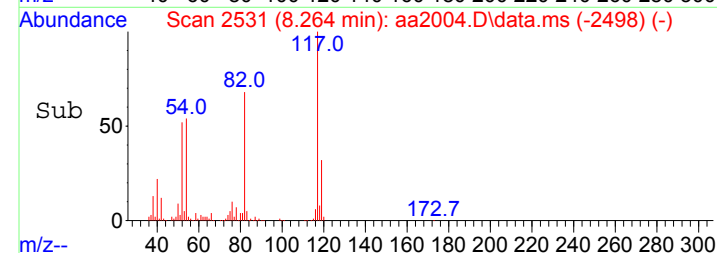
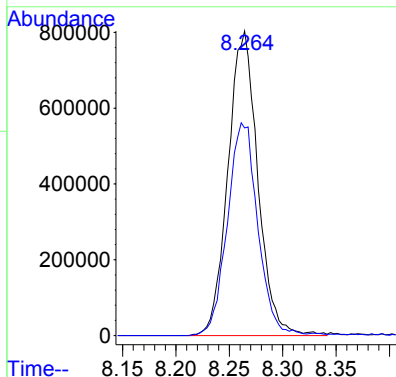
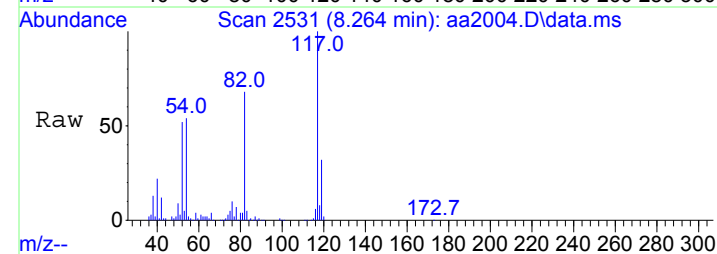
Tgt Ion:114 Resp: 1758562
Ion Ratio Lower Upper
114 100
63 32.5 20.0 30.0#





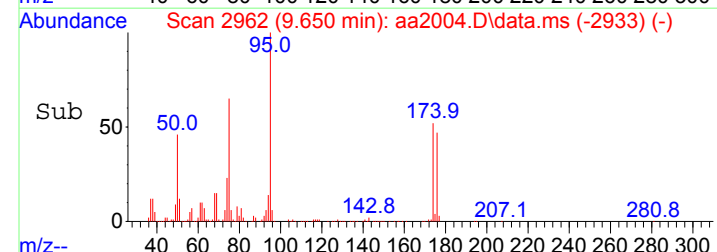
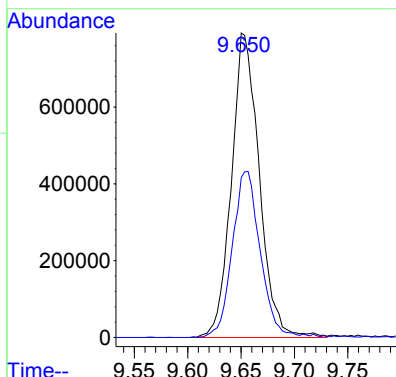
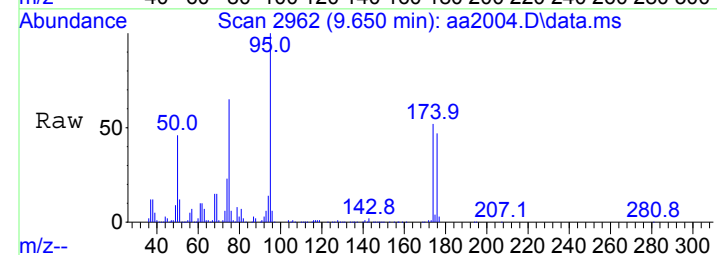
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.264 min Scan# 2531
Delta R.T. 0.006 min
Lab File: aa2004.D
Acq: 5 Apr 2019 4:57 pm

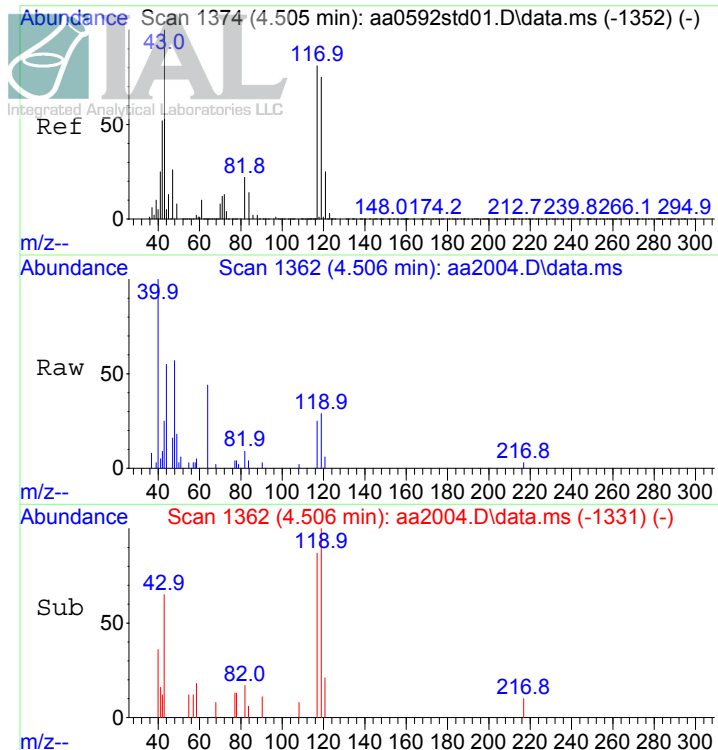
Tgt Ion: 117 Resp: 1562478
Ion Ratio Lower Upper
117 100
82 71.0 48.8 73.2



#64
Bromofluorobenzene (tune std)
Concen: 10.55 ppbV
RT: 9.650 min Scan# 2962
Delta R.T. -0.007 min
Lab File: aa2004.D
Acq: 5 Apr 2019 4:57 pm

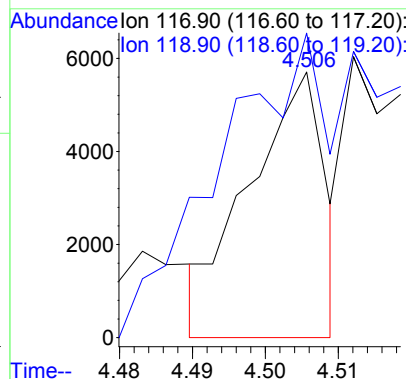
Tgt Ion: 95 Resp: 1439162
Ion Ratio Lower Upper
95 100
174 54.9 61.5 92.3#



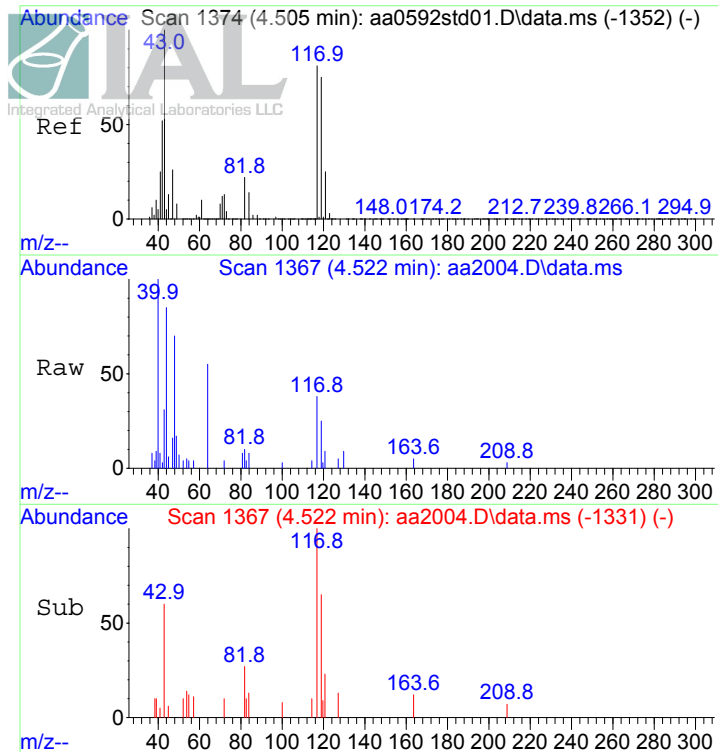


#32
 Carbon tetrachloride
 Concen: 0.04 ppbV
 RT: 4.506 min Scan# 1362
 Delta R.T. -0.000 min
 Lab File: aa2004.D
 Acq: 5 Apr 2019 4:57 pm

Tgt Ion: 117 Resp: 4132
 Ion Ratio Lower Upper
 117 100
 119 0.0 77.0 115.4#

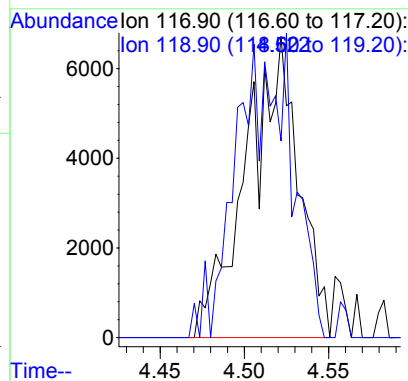


Before manual integration for Carbon tetrachloride.



#32
Carbon tetrachloride
Concen: 0.14 ppbV m
RT: 4.522 min Scan# 1367
Delta R.T. 0.016 min
Lab File: aa2004.D
Acq: 5 Apr 2019 4:57 pm

Tgt Ion:117 Resp: 14619
Ion Ratio Lower Upper
117 100
119 0.0 77.0 115.4#



After manual integration for Carbon tetrachloride.

Summary of Results

EFI Global
 11 Commerce Way Ste A
 Totowa, NJ 07512
 Attn: Ewa Gut
 Project: Lofts at Globe Mill
 Site: NY

Report Date: 04/10/19
 SDG Number: E19-02214
 Date Sampled: 03/28/19
 Date Received: 03/29/19
 Date Analyzed: 04/05/19
 Data File: AA2005
 Summa ID: 3006
 DF: 10

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:			SS-1		Reporting Limits	
IAL ID:			E19-02214-06			
Compound	CAS		ppbv	ug/m3	ppbv	ug/m3
Acetone	67-64-1	D	52	120	2.0	4.8
Benzene	71-43-2		ND	ND	2.0	6.4
Bromodichloromethane	75-27-4		ND	ND	2.0	13
Bromoform	75-25-2		ND	ND	2.0	21
Bromomethane	74-83-9		ND	ND	2.0	7.8
1,3-Butadiene	106-99-0		ND	ND	2.0	4.4
Chlorobenzene	108-90-7		ND	ND	2.0	9.2
Chloroethane	75-00-3		ND	ND	2.0	5.3
Chloroform	67-66-3	D	5.4	26	2.0	9.8
Chloromethane	74-87-3		ND	ND	2.0	4.1
Carbon disulfide	75-15-0		ND	ND	2.0	6.2
Carbon tetrachloride	56-23-5		ND	ND	0.40	2.5
Cyclohexane	110-82-7		ND	ND	2.0	6.9
Dibromochloromethane	124-48-1		ND	ND	2.0	17
1,2-Dibromoethane	106-93-4		ND	ND	2.0	15
1,2-Dichlorobenzene	95-50-1		ND	ND	2.0	12
1,3-Dichlorobenzene	541-73-1		ND	ND	2.0	12
1,4-Dichlorobenzene	106-46-7		ND	ND	2.0	12
Dichlorodifluoromethane	75-71-8		ND	ND	2.0	9.9
1,1-Dichloroethane	75-34-3		ND	ND	2.0	8.1
1,2-Dichloroethane	107-06-2		ND	ND	2.0	8.1
1,1-Dichloroethene	75-35-4		ND	ND	2.0	7.9
1,2-Dichloroethene (cis)	156-59-2		ND	ND	2.0	7.9
1,2-Dichloroethene (trans)	156-60-5		ND	ND	2.0	7.9
1,2-Dichloropropane	78-87-5		ND	ND	2.0	9.2
1,3-Dichloropropene (cis)	10061-01-5		ND	ND	2.0	9.1
1,3-Dichloropropene (trans)	10061-02-6		ND	ND	2.0	9.1
1,2-Dichlorotetrafluoroethane	76-14-2		ND	ND	2.0	14
1,4-Dioxane	123-91-1		ND	ND	2.0	7.2
Ethylbenzene	100-41-4	D	68	290	2.0	8.7
n-Heptane	142-82-5		ND	ND	2.0	8.2
1,3-Hexachlorobutadiene	87-68-3		ND	ND	2.0	21
n-Hexane	110-54-3		ND	ND	2.0	7.1
Methylene chloride	75-09-2	D	5.6	19	2.0	7.0
Methyl ethyl ketone	78-93-3		ND	ND	2.0	5.9
Methyl isobutyl ketone	108-10-1		ND	ND	2.0	8.2
Methyl tert-butyl ether	1634-04-4		ND	ND	2.0	7.2
Styrene	100-42-5		ND	ND	2.0	8.5
Tert-butyl alcohol	75-65-0		ND	ND	2.0	6.1
1,1,2,2-Tetrachloroethane	79-34-5		ND	ND	2.0	14
Tetrachloroethene	127-18-4		ND	ND	2.0	14
Toluene	108-88-3	D	3.8	14	2.0	7.5
1,2,4-Trichlorobenzene	120-82-1		ND	ND	2.0	15
1,1,1-Trichloroethane	71-55-6		ND	ND	2.0	11
1,1,2-Trichloroethane	79-00-5		ND	ND	2.0	11
Trichloroethene	79-01-6		ND	ND	0.46	2.5

IAL SDG #E19-02214

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D = Extra dilution required for this compound

page 11 of 14

Analyst: J. Schmitt



Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/05/19
Data File: AA2005
Summa ID: 3006
DF: 10

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		SS-1		Reporting	
IAL ID:		E19-02214-06		Limits	
Compound	CAS	ppbv	ug/m3	ppbv	ug/m3
Trichlorofluoromethane	75-69-4	ND	ND	2.0	11
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	ND	2.0	15
1,2,4-Trimethylbenzene	95-63-6	ND	ND	2.0	9.8
1,3,5-Trimethylbenzene	108-67-8	ND	ND	2.0	9.8
2,2,4-Trimethylpentane	540-84-1	ND	ND	2.0	9.3
Vinyl bromide	593-60-2	ND	ND	2.0	8.7
Vinyl chloride	75-01-4	ND	ND	2.0	5.1
Xylenes (m p)	179601-23-1	D	450	2000	2.0
Xylenes (o)	95-47-6	D	140	610	2.0

Data Path : C:\DATA\04-05-19\
 Data File : aa2005.D
 Acq On : 5 Apr 2019 5:19 pm
 Operator : jls
 Sample : E19-02214-06 x 10 dil
 Misc : 3006, 50cc
 ALS Vial : 15 Sample Multiplier: 1

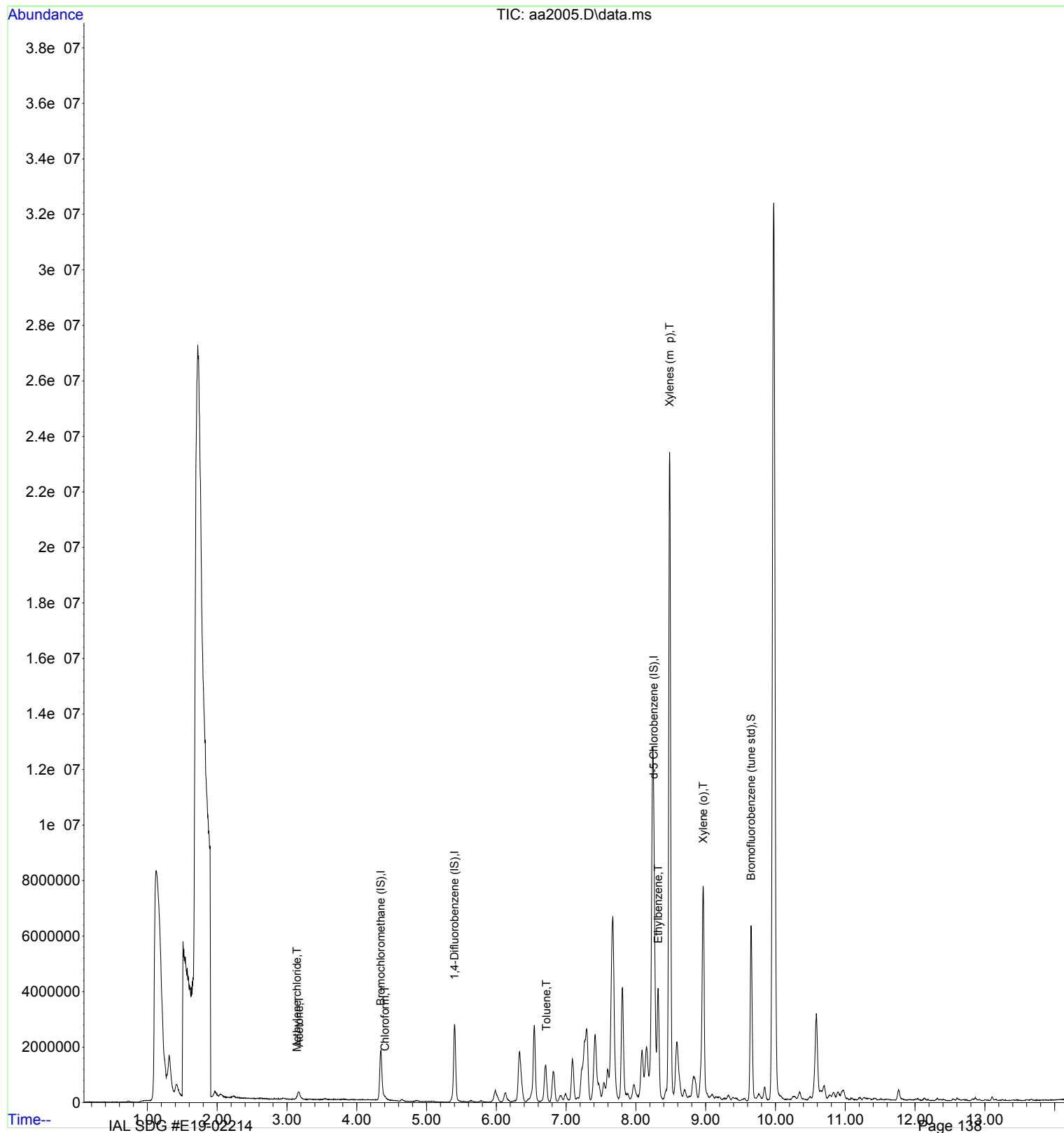
Quant Time: Apr 08 11:26:52 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

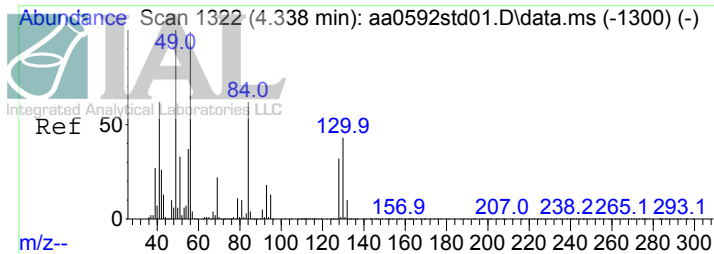
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.345	130	447540	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	1788507	10.00	ppbV	# 0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2533889	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.650	95	2207956	9.98	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.142	49	41207	0.56	ppbV	# 50
21) Acetone	3.175	43	475249	5.23	ppbV	# 72
30) Chloroform	4.406	83	55040	0.53	ppbV	89
47) Toluene	6.718	91	69370	0.38	ppbV	# 71
58) Ethylbenzene	8.319	91	2743955	6.79	ppbV	97
59) Xylenes (m&p)	8.483	91	13356652	45.42	ppbV	97
60) Xylene (o)	8.965	91	4620781	14.15	ppbV	97

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

Data Path : C:\DATA\04-05-19\
Data File : aa2005.D
Acq On : 5 Apr 2019 5:19 pm
Operator : jls
Sample : E19-02214-06 x 10 dil
Misc : 3006, 50cc
ALS Vial : 15 Sample Multiplier: 1

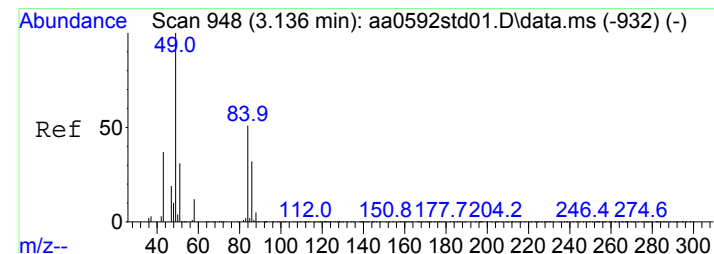
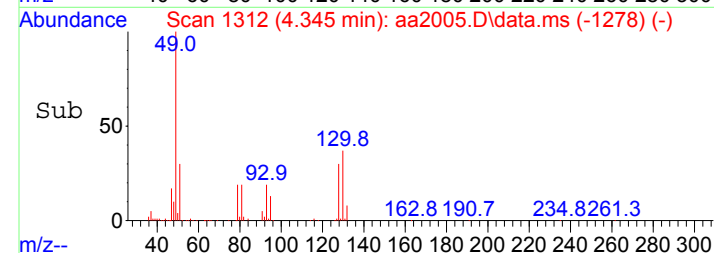
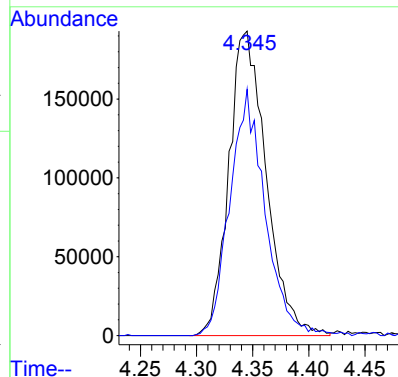
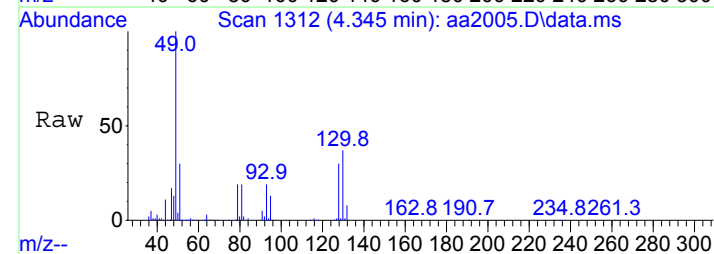
Quant Time: Apr 08 11:26:52 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





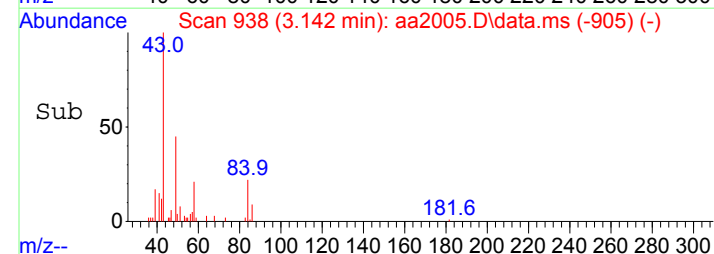
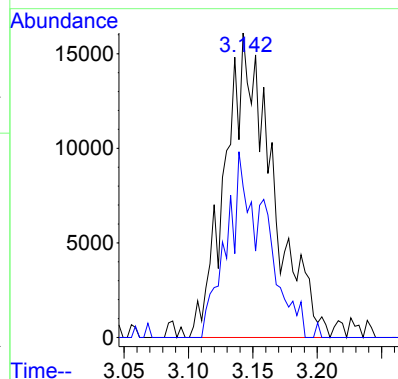
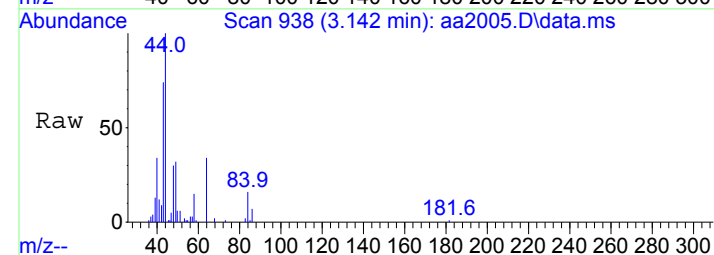
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.345 min Scan# 1312
Delta R.T. 0.010 min
Lab File: aa2005.D
Acq: 5 Apr 2019 5:19 pm

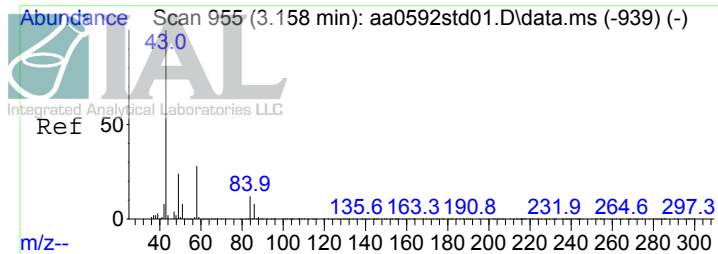
Tgt Ion: 130 Resp: 447540
Ion Ratio Lower Upper
130 100
128 76.2 62.6 94.0



#20
Methylene chloride
Concen: 0.56 ppbV
RT: 3.142 min Scan# 938
Delta R.T. 0.006 min
Lab File: aa2005.D
Acq: 5 Apr 2019 5:19 pm

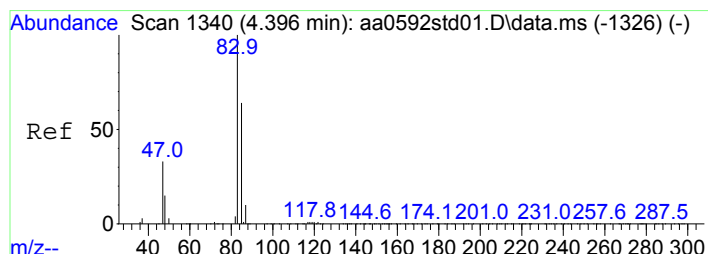
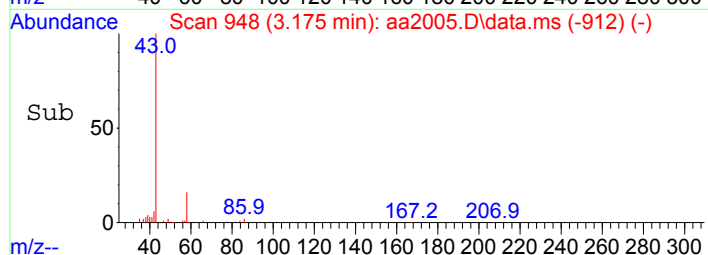
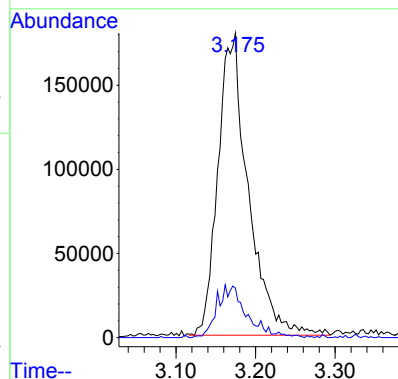
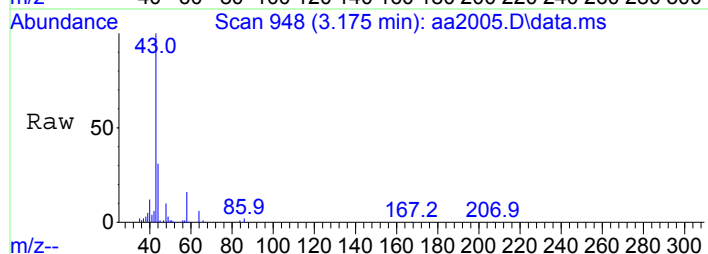
Tgt Ion: 49 Resp: 41207
Ion Ratio Lower Upper
49 100
84 31.1 58.4 87.6#





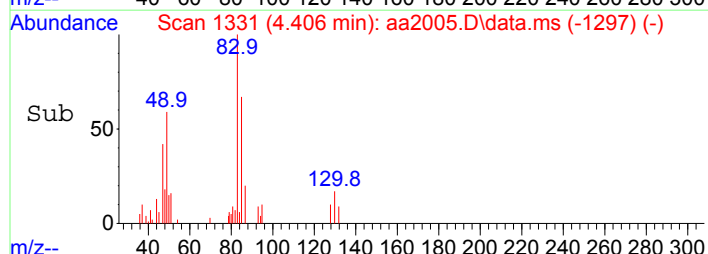
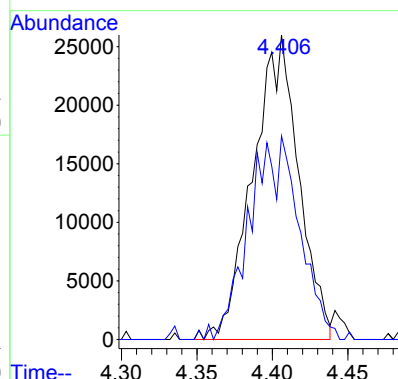
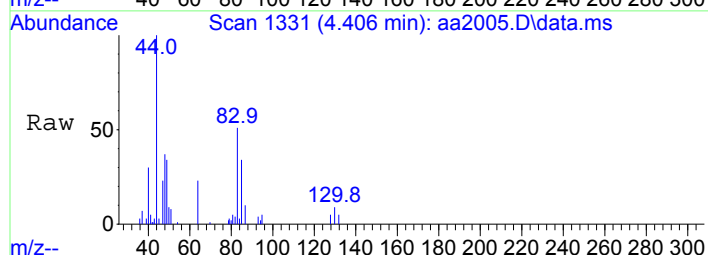
#21
Acetone
Concen: 5.23 ppbV
RT: 3.175 min Scan# 948
Delta R.T. 0.016 min
Lab File: aa2005.D
Acq: 5 Apr 2019 5:19 pm

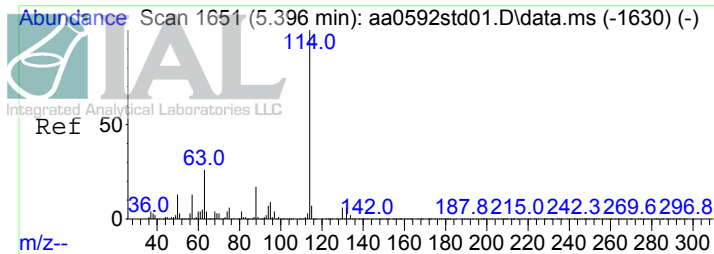
Tgt Ion: 43 Resp: 475249
Ion Ratio Lower Upper
43 100
58 16.9 26.4 39.6#



#30
Chloroform
Concen: 0.53 ppbV
RT: 4.406 min Scan# 1331
Delta R.T. 0.010 min
Lab File: aa2005.D
Acq: 5 Apr 2019 5:19 pm

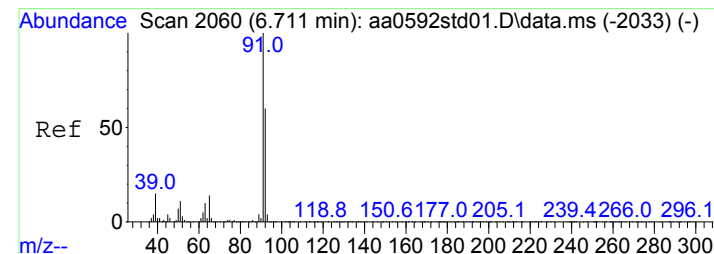
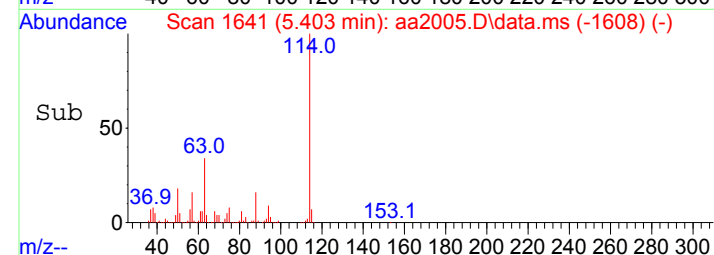
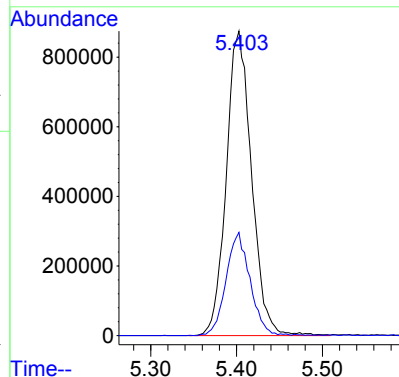
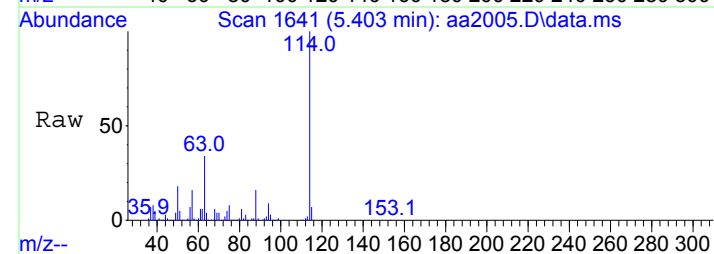
Tgt Ion: 83 Resp: 55040
Ion Ratio Lower Upper
83 100
85 72.7 51.0 76.6





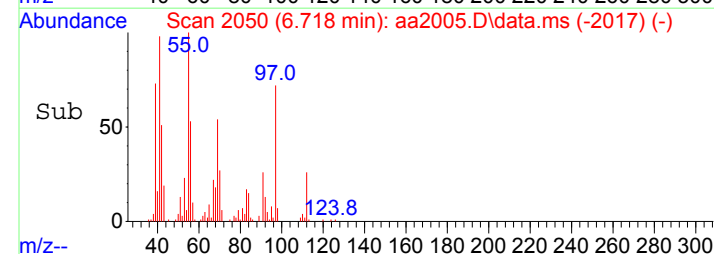
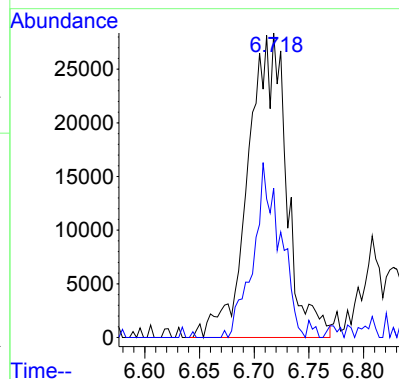
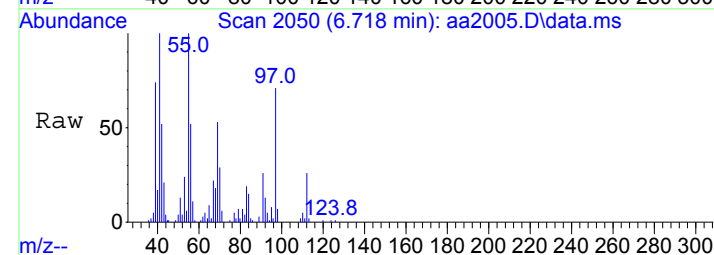
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa2005.D
Acq: 5 Apr 2019 5:19 pm

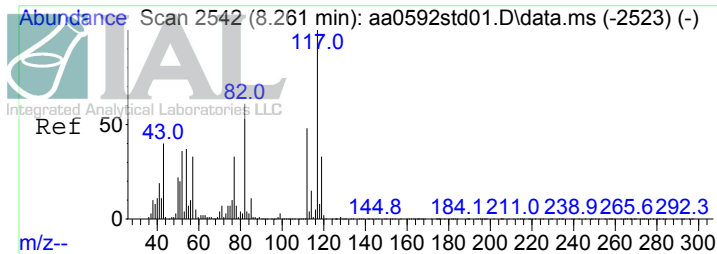
Tgt Ion: 114 Resp: 1788507
Ion Ratio Lower Upper
114 100
63 32.1 20.0 30.0#



#47
Toluene
Concen: 0.38 ppbV
RT: 6.718 min Scan# 2050
Delta R.T. 0.006 min
Lab File: aa2005.D
Acq: 5 Apr 2019 5:19 pm

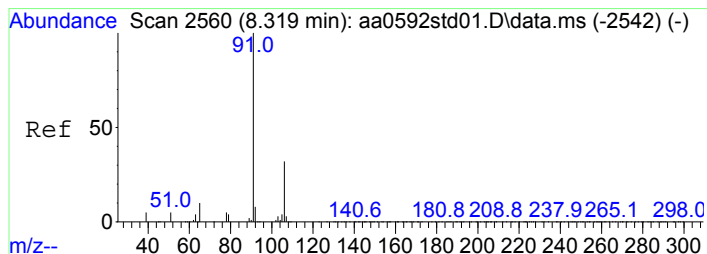
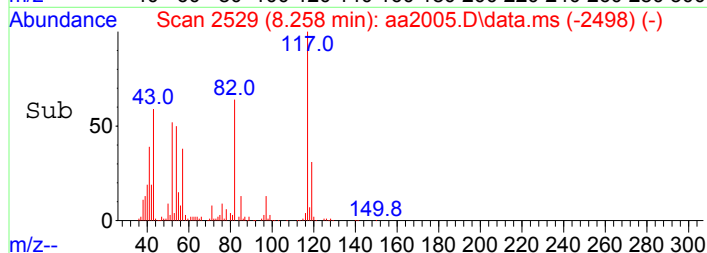
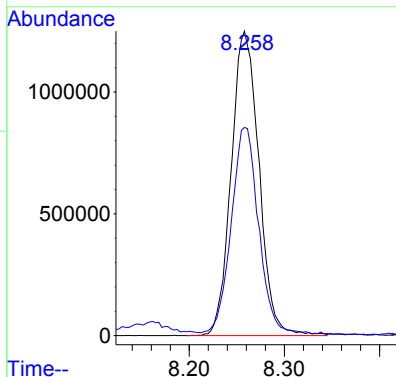
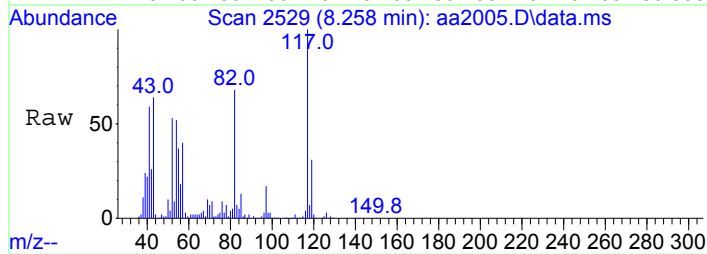
Tgt Ion: 91 Resp: 69370
Ion Ratio Lower Upper
91 100
92 40.3 50.0 75.0#





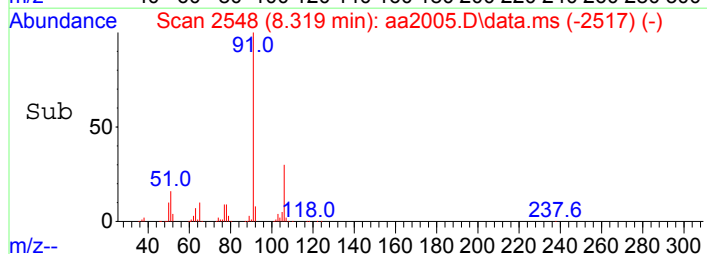
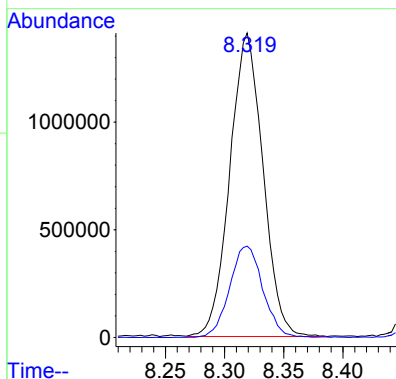
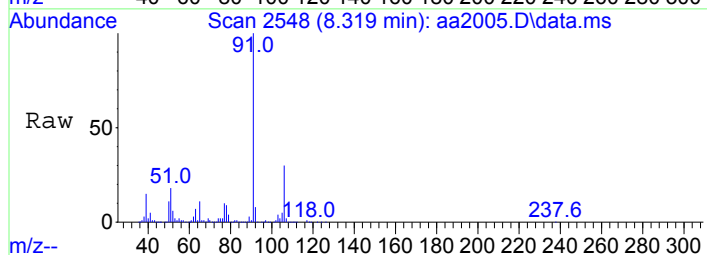
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.258 min Scan# 2529
Delta R.T. -0.000 min
Lab File: aa2005.D
Acq: 5 Apr 2019 5:19 pm

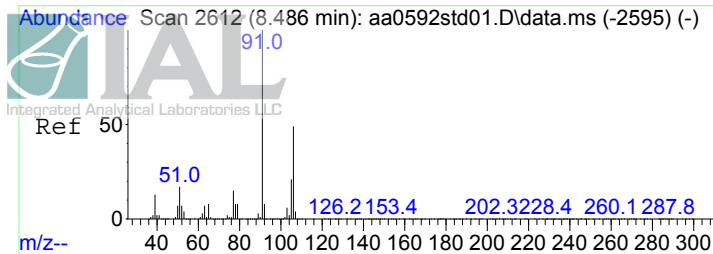
Tgt Ion: 117 Resp: 2533889
Ion Ratio Lower Upper
117 100
82 67.3 48.8 73.2



#58
Ethylbenzene
Concen: 6.79 ppbV
RT: 8.319 min Scan# 2548
Delta R.T. -0.000 min
Lab File: aa2005.D
Acq: 5 Apr 2019 5:19 pm

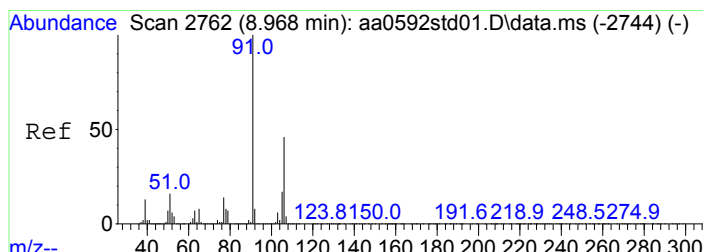
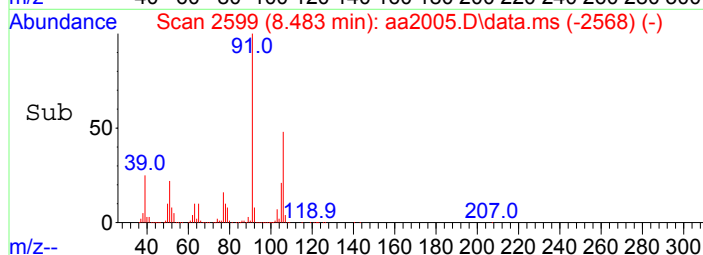
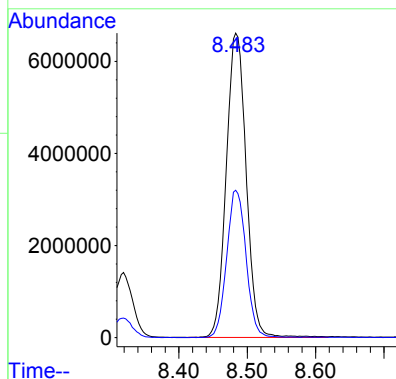
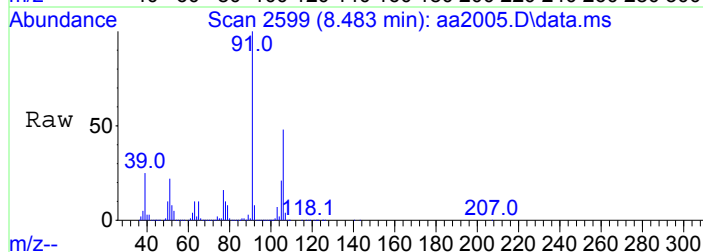
Tgt Ion: 91 Resp: 2743955
Ion Ratio Lower Upper
91 100
106 30.3 25.6 38.4





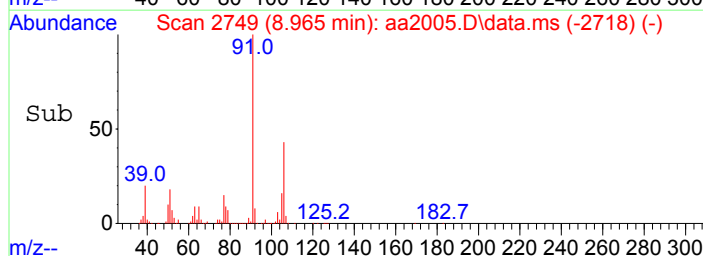
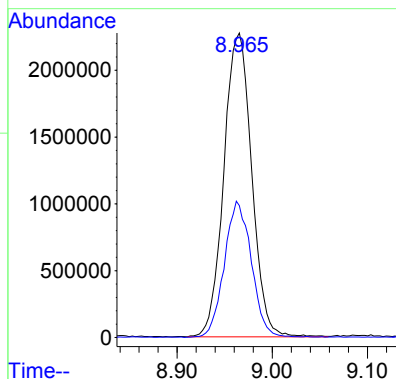
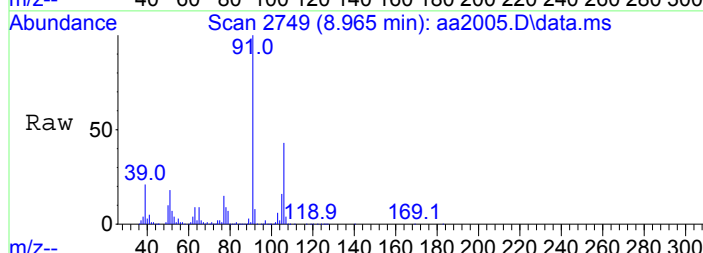
#59
 Xylenes (m&p)
 Concen: 45.42 ppbV
 RT: 8.483 min Scan# 2599
 Delta R.T. -0.000 min
 Lab File: aa2005.D
 Acq: 5 Apr 2019 5:19 pm

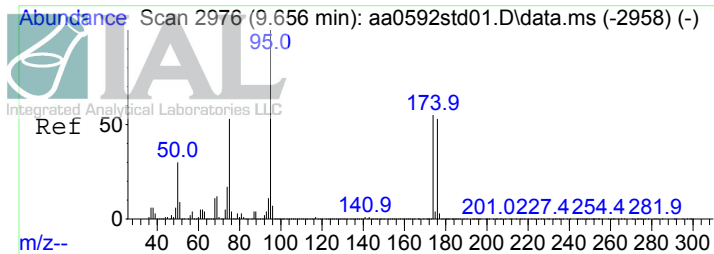
Tgt Ion: 91 Resp: 13356652
 Ion Ratio Lower Upper
 91 100
 106 47.1 39.2 58.8



#60
 Xylene (o)
 Concen: 14.15 ppbV
 RT: 8.965 min Scan# 2749
 Delta R.T. -0.000 min
 Lab File: aa2005.D
 Acq: 5 Apr 2019 5:19 pm

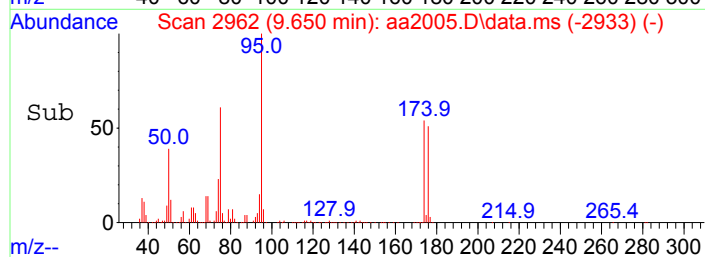
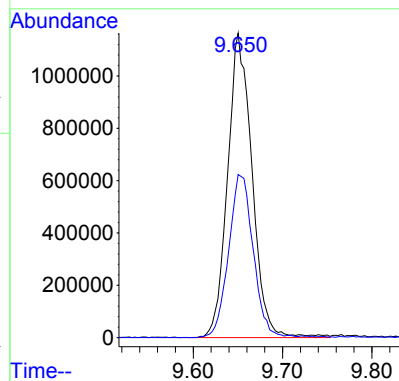
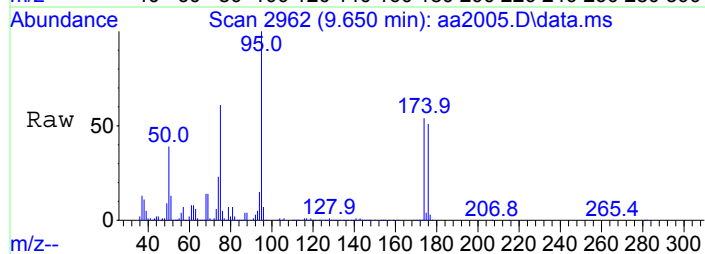
Tgt Ion: 91 Resp: 4620781
 Ion Ratio Lower Upper
 91 100
 106 43.9 36.8 55.2





#64
 Bromofluorobenzene (tune std)
 Concen: 9.98 ppbV
 RT: 9.650 min Scan# 2962
 Delta R.T. -0.007 min
 Lab File: aa2005.D
 Acq: 5 Apr 2019 5:19 pm

Tgt Ion: 95 Resp: 2207956
 Ion Ratio Lower Upper
 95 100
 174 53.9 61.5 92.3#





Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/05/19
Data File: AA2006
Summa ID: 2095
DF: 10

Analysis: Volatile Organic Compounds by EPA Method TO-15

Compound	Sample Name:		SS-2		Reporting	
	IAL ID:		E19-02214-07		Limits	
	CAS		ppbv	ug/m3	ppbv	ug/m3
Acetone	67-64-1	D	47	110	2.0	4.8
Benzene	71-43-2		ND	ND	2.0	6.4
Bromodichloromethane	75-27-4		ND	ND	2.0	13
Bromoform	75-25-2		ND	ND	2.0	21
Bromomethane	74-83-9		ND	ND	2.0	7.8
1,3-Butadiene	106-99-0		ND	ND	2.0	4.4
Chlorobenzene	108-90-7		ND	ND	2.0	9.2
Chloroethane	75-00-3		ND	ND	2.0	5.3
Chloroform	67-66-3	D	21	100	2.0	9.8
Chloromethane	74-87-3		ND	ND	2.0	4.1
Carbon disulfide	75-15-0		ND	ND	2.0	6.2
Carbon tetrachloride	56-23-5		ND	ND	0.40	2.5
Cyclohexane	110-82-7		ND	ND	2.0	6.9
Dibromochloromethane	124-48-1		ND	ND	2.0	17
1,2-Dibromoethane	106-93-4		ND	ND	2.0	15
1,2-Dichlorobenzene	95-50-1		ND	ND	2.0	12
1,3-Dichlorobenzene	541-73-1		ND	ND	2.0	12
1,4-Dichlorobenzene	106-46-7		ND	ND	2.0	12
Dichlorodifluoromethane	75-71-8		ND	ND	2.0	9.9
1,1-Dichloroethane	75-34-3		ND	ND	2.0	8.1
1,2-Dichloroethane	107-06-2		ND	ND	2.0	8.1
1,1-Dichloroethene	75-35-4		ND	ND	2.0	7.9
1,2-Dichloroethene (cis)	156-59-2		ND	ND	2.0	7.9
1,2-Dichloroethene (trans)	156-60-5		ND	ND	2.0	7.9
1,2-Dichloropropane	78-87-5		ND	ND	2.0	9.2
1,3-Dichloropropene (cis)	10061-01-5		ND	ND	2.0	9.1
1,3-Dichloropropene (trans)	10061-02-6		ND	ND	2.0	9.1
1,2-Dichlorotetrafluoroethane	76-14-2		ND	ND	2.0	14
1,4-Dioxane	123-91-1		ND	ND	2.0	7.2
Ethylbenzene	100-41-4		ND	ND	2.0	8.7
n-Heptane	142-82-5		ND	ND	2.0	8.2
1,3-Hexachlorobutadiene	87-68-3		ND	ND	2.0	21
n-Hexane	110-54-3		ND	ND	2.0	7.1
Methylene chloride	75-09-2	D	7.6	26	2.0	7.0
Methyl ethyl ketone	78-93-3	D	8.5	25	2.0	5.9
Methyl isobutyl ketone	108-10-1		ND	ND	2.0	8.2
Methyl tert-butyl ether	1634-04-4		ND	ND	2.0	7.2
Styrene	100-42-5		ND	ND	2.0	8.5
Tert-butyl alcohol	75-65-0		ND	ND	2.0	6.1
1,1,2,2-Tetrachloroethane	79-34-5		ND	ND	2.0	14
Tetrachloroethene	127-18-4		ND	ND	2.0	14
Toluene	108-88-3	D	3.7	14	2.0	7.5
1,2,4-Trichlorobenzene	120-82-1		ND	ND	2.0	15
1,1,1-Trichloroethane	71-55-6		ND	ND	2.0	11
1,1,2-Trichloroethane	79-00-5		ND	ND	2.0	11
Trichloroethene	79-01-6	D	2.1	11	0.46	2.5

IAL SDG #E19-02214

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D = Extra dilution required for this compound

page 13 of 14

Analyst: J. Schmitt



Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts at Globe Mill
Site: NY

Report Date: 04/10/19
SDG Number: E19-02214
Date Sampled: 03/28/19
Date Received: 03/29/19
Date Analyzed: 04/05/19
Data File: AA2006
Summa ID: 2095
DF: 10

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		SS-2		Reporting	
IAL ID:		E19-02214-07		Limits	
<u>Compound</u>	<u>CAS</u>	<u>ppbv</u>	<u>ug/m3</u>	<u>ppbv</u>	<u>ug/m3</u>
Trichlorofluoromethane	75-69-4	ND	ND	2.0	11
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	ND	2.0	15
1,2,4-Trimethylbenzene	95-63-6	ND	ND	2.0	9.8
1,3,5-Trimethylbenzene	108-67-8	ND	ND	2.0	9.8
2,2,4-Trimethylpentane	540-84-1	ND	ND	2.0	9.3
Vinyl bromide	593-60-2	ND	ND	2.0	8.7
Vinyl chloride	75-01-4	ND	ND	2.0	5.1
Xylenes (m p)	179601-23-1	ND	ND	2.0	8.7
Xylenes (o)	95-47-6	ND	ND	2.0	8.7

Data Path : C:\DATA\04-05-19\
 Data File : aa2006.D
 Acq On : 5 Apr 2019 5:40 pm
 Operator : jls
 Sample : E19-02214-07 x 10 dil
 Misc : 2095, 50cc
 ALS Vial : 16 Sample Multiplier: 1

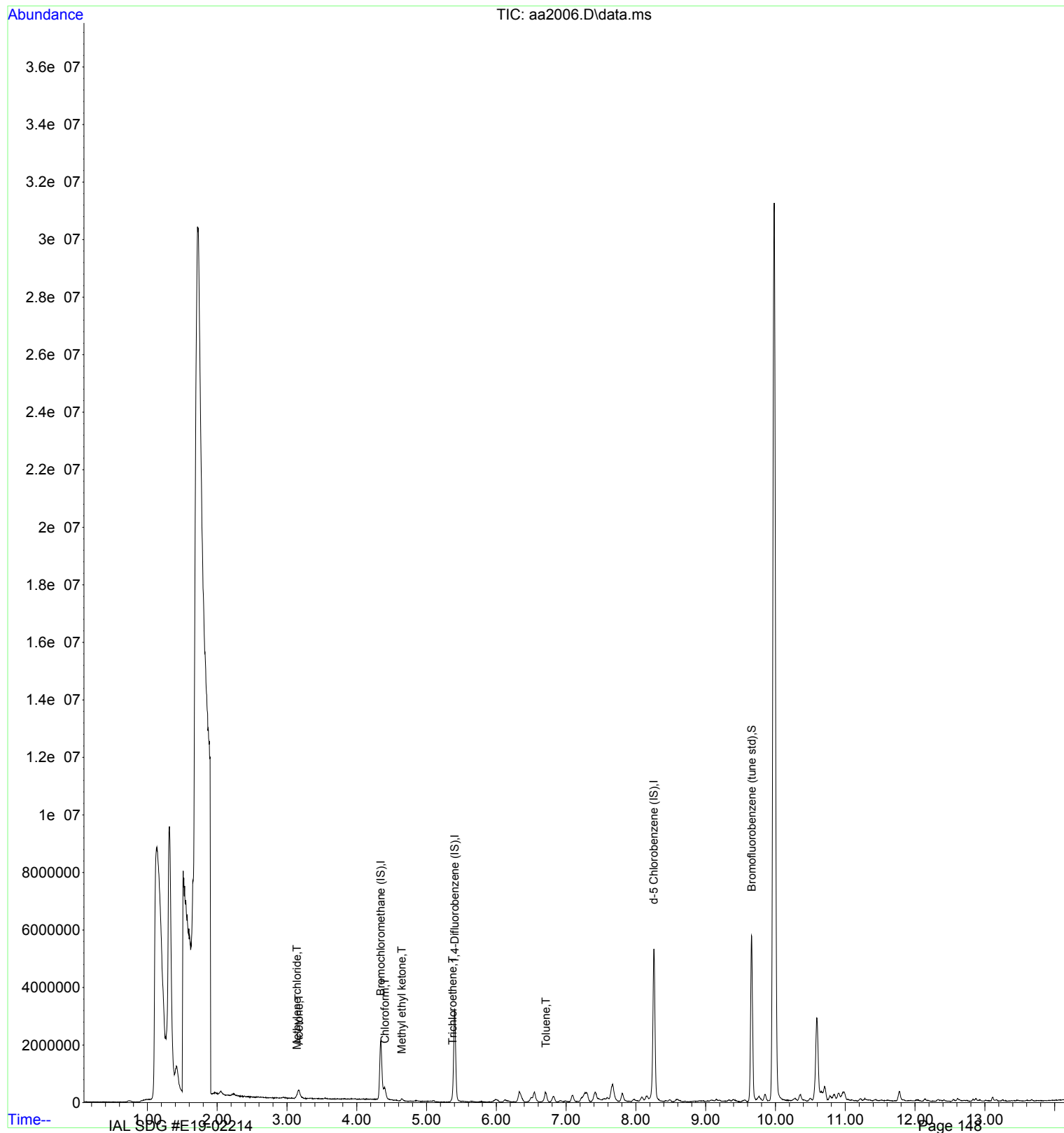
Quant Time: Apr 08 11:35:34 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

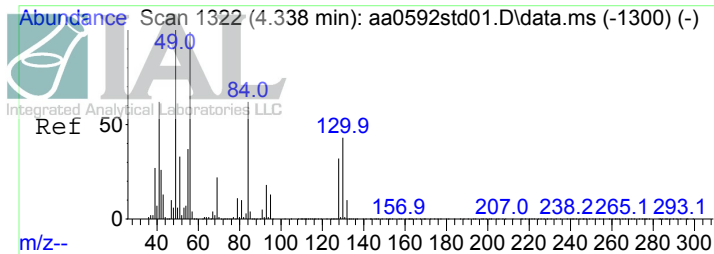
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.345	130	514685	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	2058393	10.00	ppbV #	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2292092	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	1998352	9.99	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.142	49	64288	0.76	ppbV #	68
21) Acetone	3.171	43	494697	4.73	ppbV #	74
30) Chloroform	4.406	83	243498	2.06	ppbV	99
35) Methyl ethyl ketone	4.644	43	123389	0.85	ppbV	93
40) Trichloroethene	5.374	130	14884m	0.21	ppbV	
47) Toluene	6.711	91	78252	0.37	ppbV	88

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

Data Path : C:\DATA\04-05-19\
Data File : aa2006.D
Acq On : 5 Apr 2019 5:40 pm
Operator : jls
Sample : E19-02214-07 x 10 dil
Misc : 2095, 50cc
ALS Vial : 16 Sample Multiplier: 1

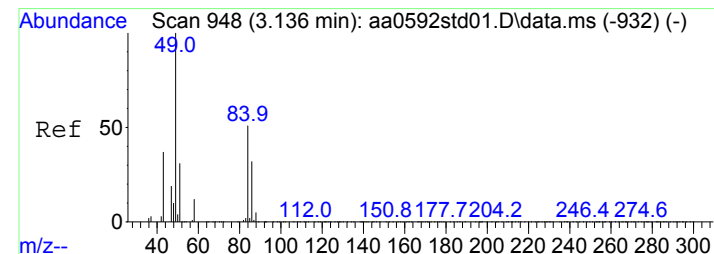
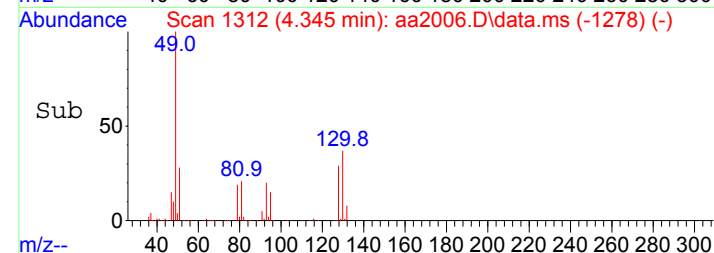
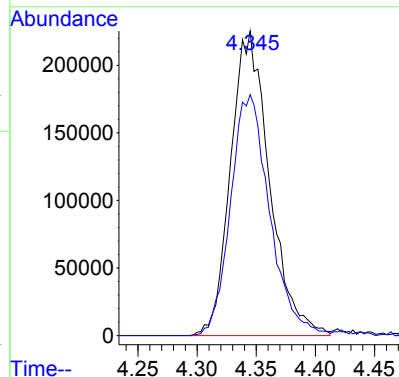
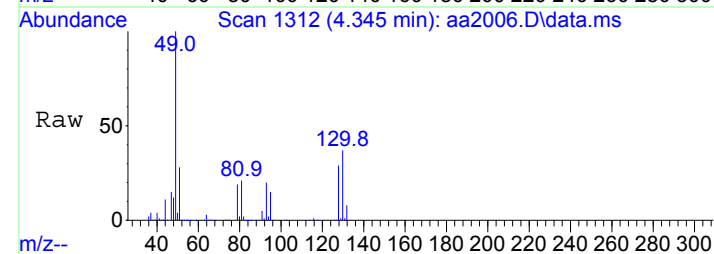
Quant Time: Apr 08 11:35:34 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





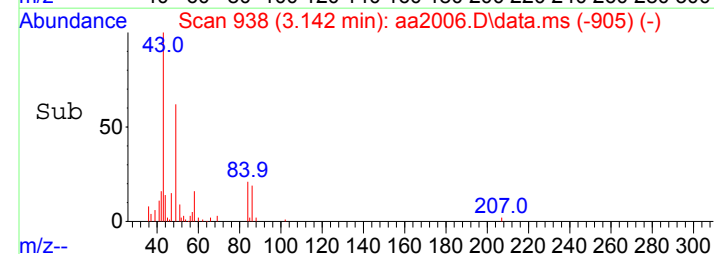
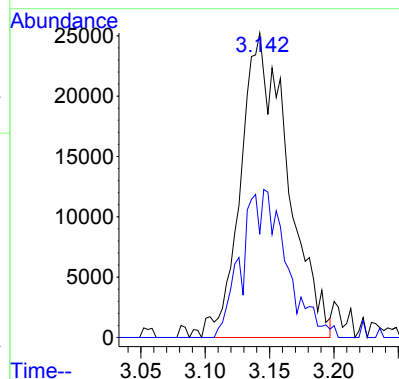
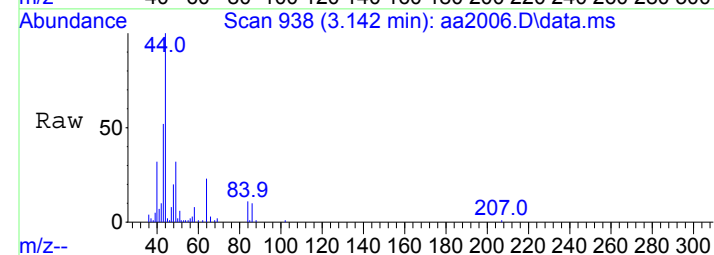
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.345 min Scan# 1312
Delta R.T. 0.010 min
Lab File: aa2006.D
Acq: 5 Apr 2019 5:40 pm

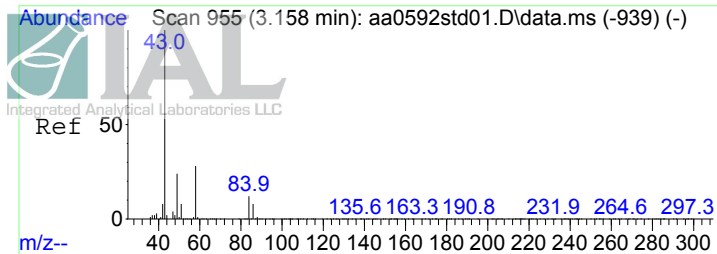
Tgt Ion: 130 Resp: 514685
Ion Ratio Lower Upper
130 100
128 79.6 62.6 94.0



#20
Methylene chloride
Concen: 0.76 ppbV
RT: 3.142 min Scan# 938
Delta R.T. 0.006 min
Lab File: aa2006.D
Acq: 5 Apr 2019 5:40 pm

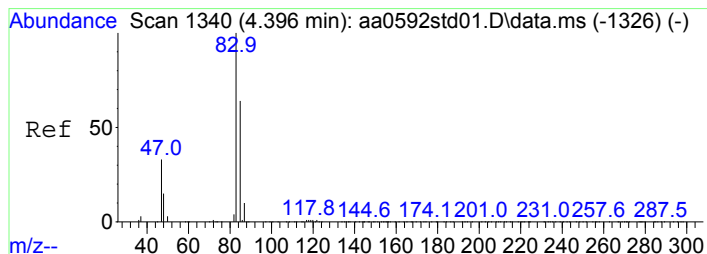
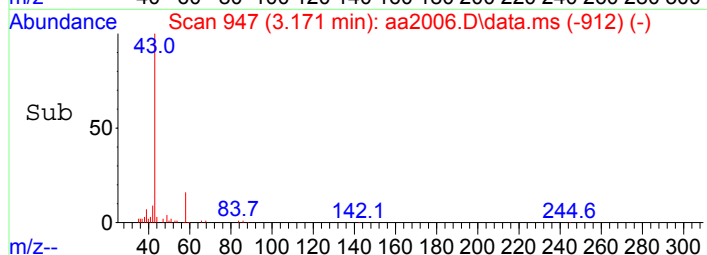
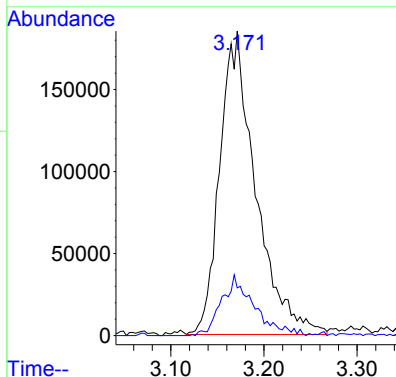
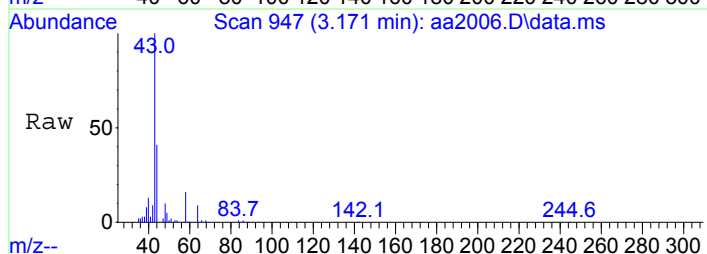
Tgt Ion: 49 Resp: 64288
Ion Ratio Lower Upper
49 100
84 46.2 58.4 87.6#





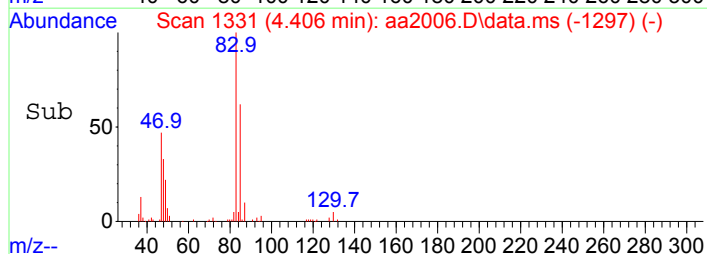
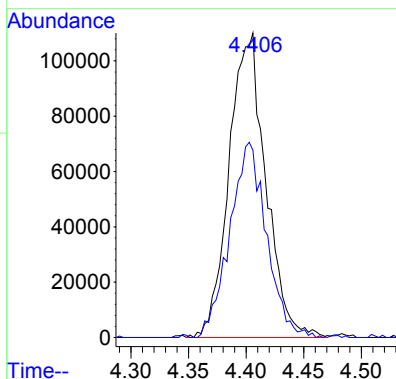
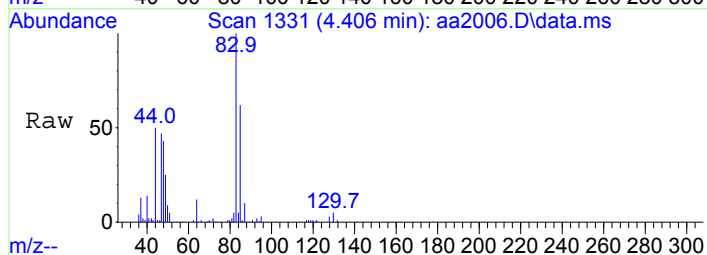
#21
Acetone
Concen: 4.73 ppbV
RT: 3.171 min Scan# 947
Delta R.T. 0.013 min
Lab File: aa2006.D
Acq: 5 Apr 2019 5:40 pm

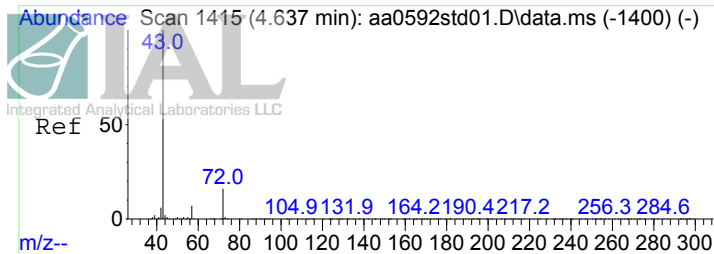
Tgt Ion: 43 Resp: 494697
Ion Ratio Lower Upper
43 100
58 18.1 26.4 39.6#



#30
Chloroform
Concen: 2.06 ppbV
RT: 4.406 min Scan# 1331
Delta R.T. 0.009 min
Lab File: aa2006.D
Acq: 5 Apr 2019 5:40 pm

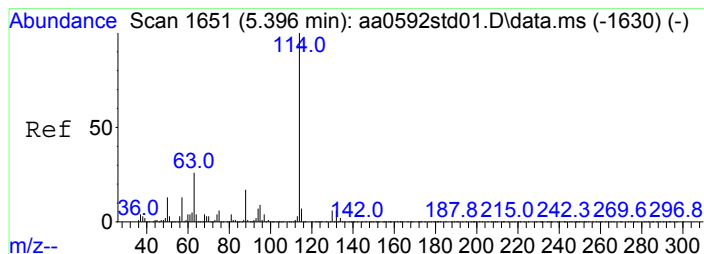
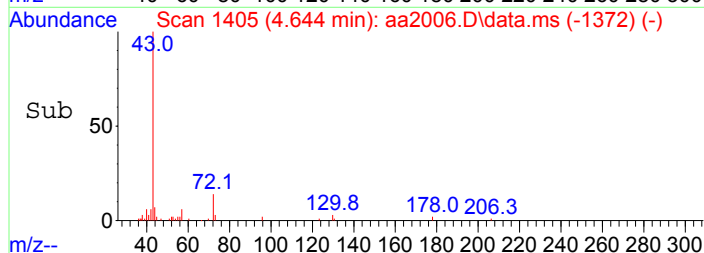
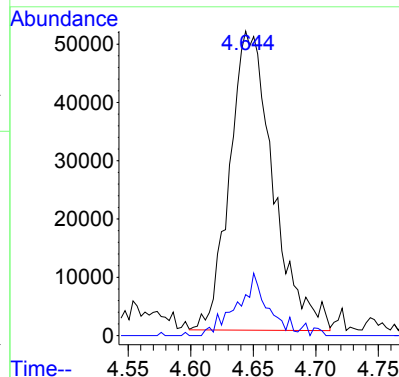
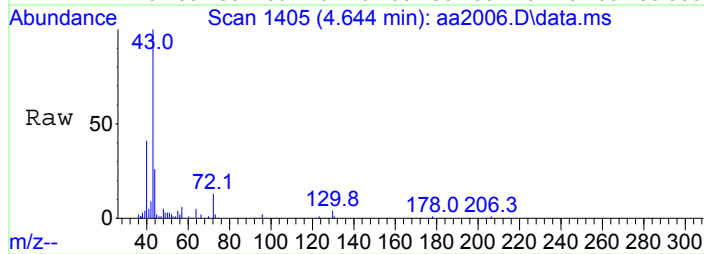
Tgt Ion: 83 Resp: 243498
Ion Ratio Lower Upper
83 100
85 64.2 51.0 76.6





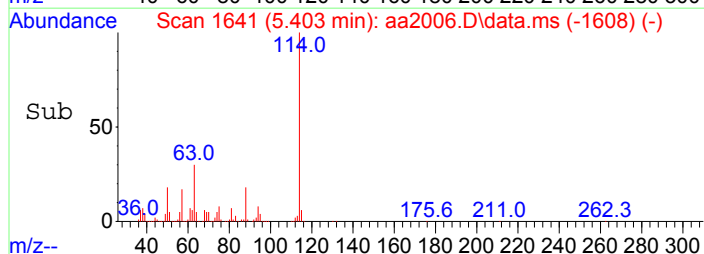
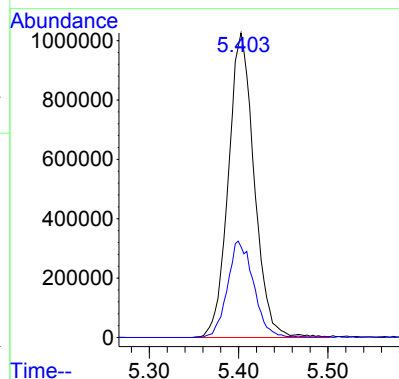
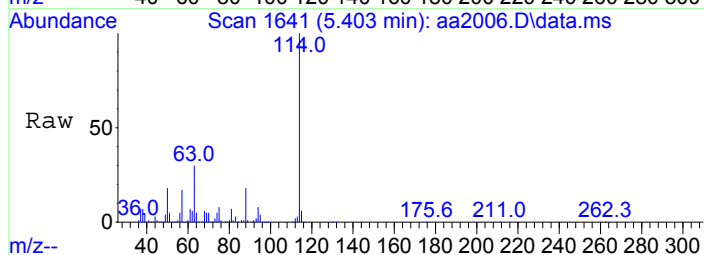
#35
Methyl ethyl ketone
Concen: 0.85 ppbV
RT: 4.644 min Scan# 1405
Delta R.T. 0.006 min
Lab File: aa2006.D
Acq: 5 Apr 2019 5:40 pm

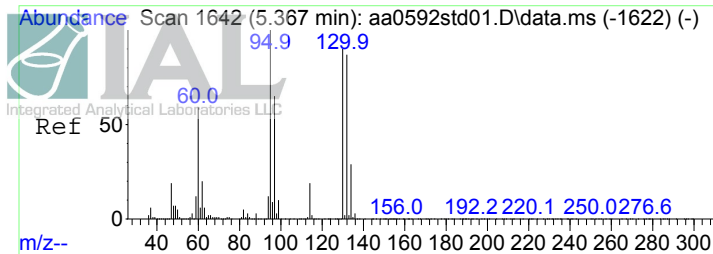
Tgt Ion: 43 Resp: 123389
Ion Ratio Lower Upper
43 100
72 14.8 14.4 21.6



#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa2006.D
Acq: 5 Apr 2019 5:40 pm

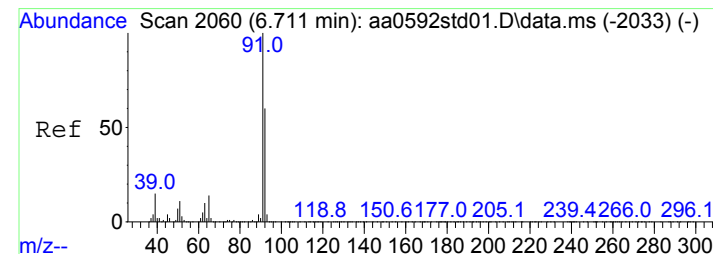
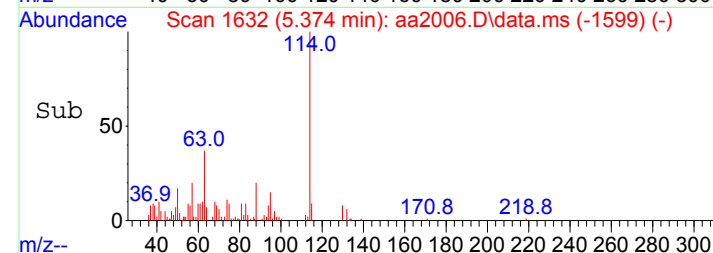
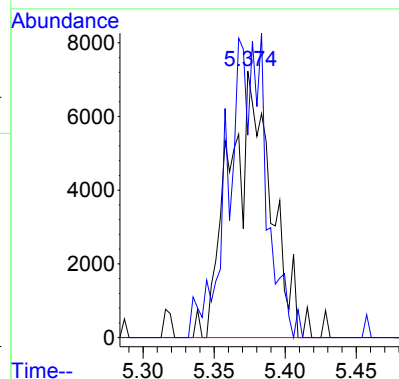
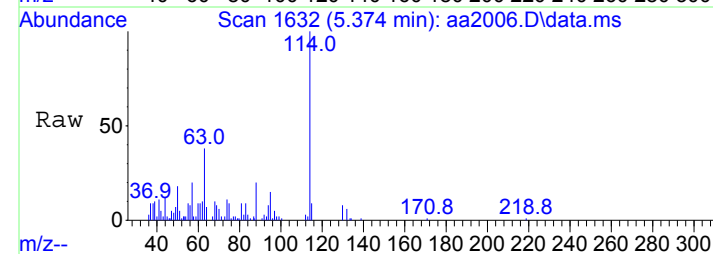
Tgt Ion: 114 Resp: 2058393
Ion Ratio Lower Upper
114 100
63 31.8 20.0 30.0#





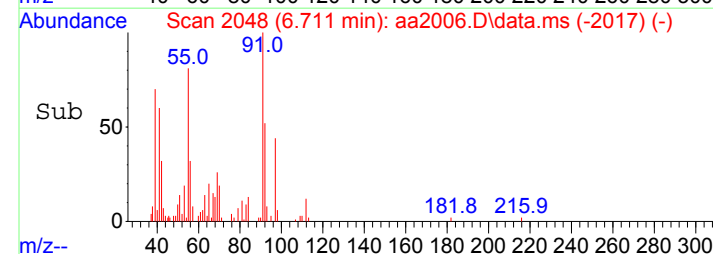
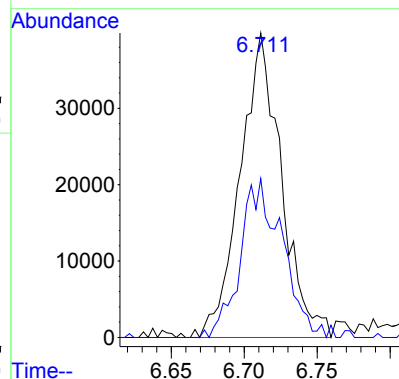
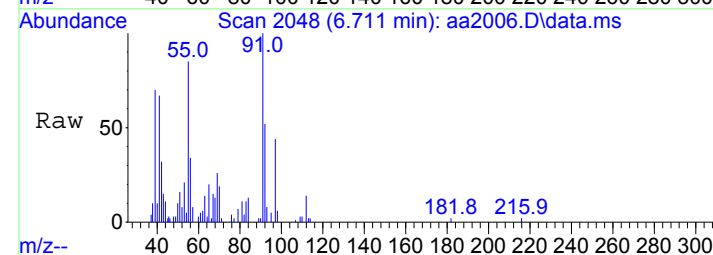
#40
Trichloroethene
Concen: 0.21 ppbV m
RT: 5.374 min Scan# 1632
Delta R.T. 0.006 min
Lab File: aa2006.D
Acq: 5 Apr 2019 5:40 pm

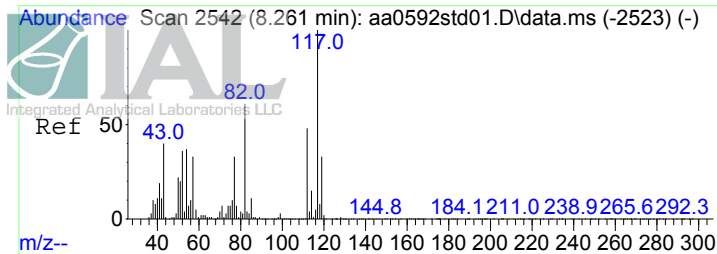
Tgt Ion	130	132	130	132	Resp	Lower	Upper
Ion Ratio	100	0.0	77.8	116.6	#		



#47
Toluene
Concen: 0.37 ppbV
RT: 6.711 min Scan# 2048
Delta R.T. -0.000 min
Lab File: aa2006.D
Acq: 5 Apr 2019 5:40 pm

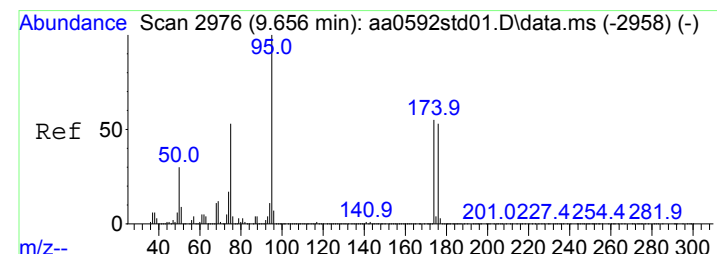
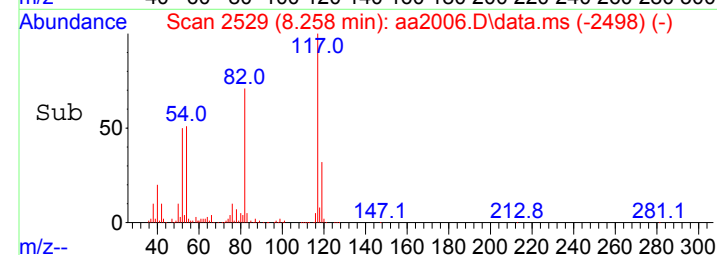
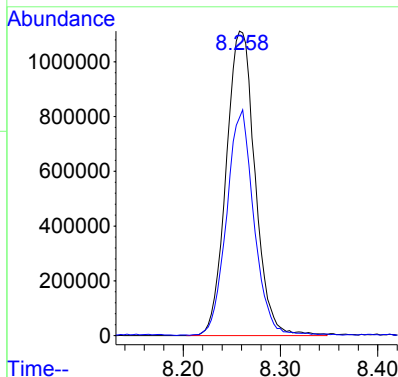
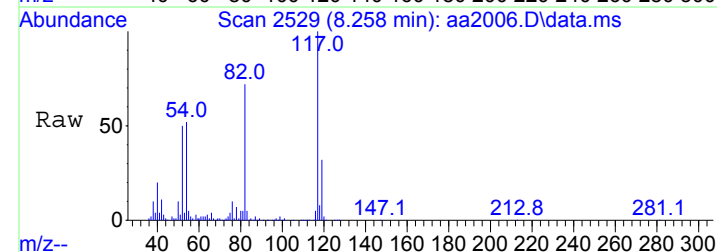
Tgt Ion	91	92	Resp	Lower	Upper
Ion Ratio	100	53.2	78252	50.0	75.0





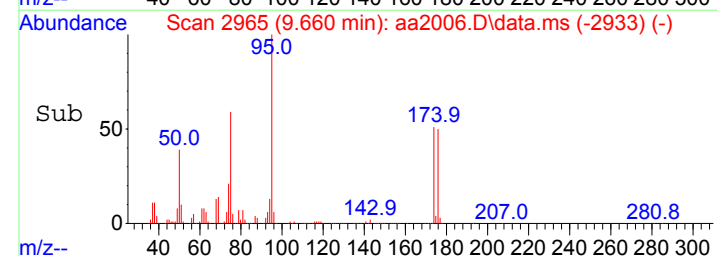
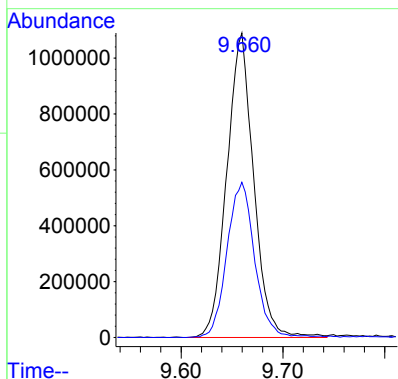
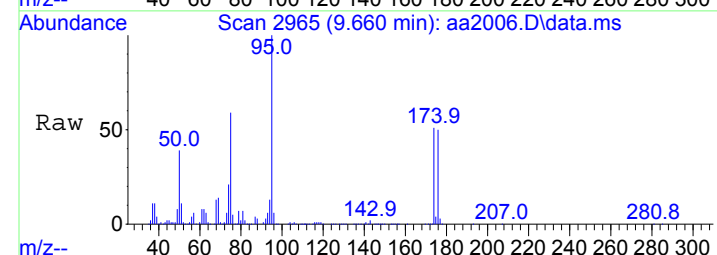
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.258 min Scan# 2529
Delta R.T. -0.000 min
Lab File: aa2006.D
Acq: 5 Apr 2019 5:40 pm

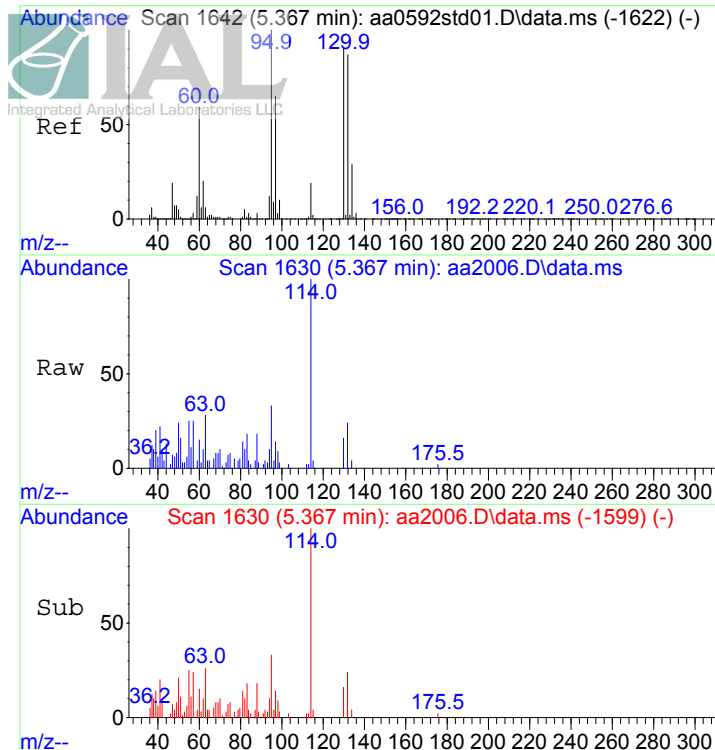
Tgt Ion: 117 Resp: 2292092
Ion Ratio Lower Upper
117 100
82 70.1 48.8 73.2



#64
Bromofluorobenzene (tune std)
Concen: 9.99 ppbV
RT: 9.660 min Scan# 2965
Delta R.T. 0.003 min
Lab File: aa2006.D
Acq: 5 Apr 2019 5:40 pm

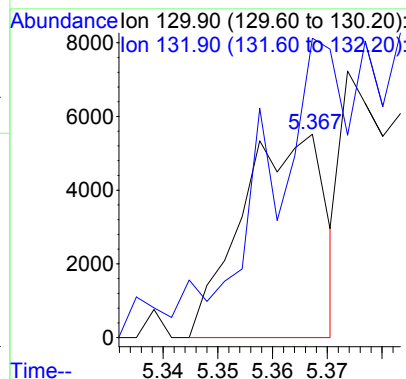
Tgt Ion: 95 Resp: 1998352
Ion Ratio Lower Upper
95 100
174 52.7 61.5 92.3#



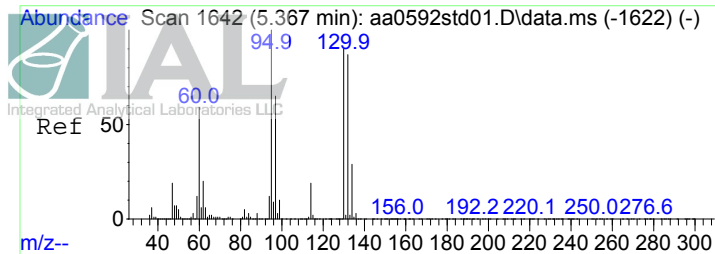


#40
 Trichloroethene
 Concen: 0.08 ppbV
 RT: 5.367 min Scan# 1630
 Delta R.T. -0.000 min
 Lab File: aa2006.D
 Acq: 5 Apr 2019 5:40 pm

Tgt Ion	Ratio	Resp	Lower	Upper
130	100	5831		
132	0.0	77.8		116.6#

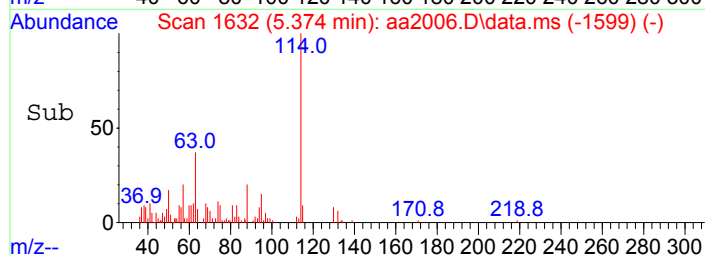
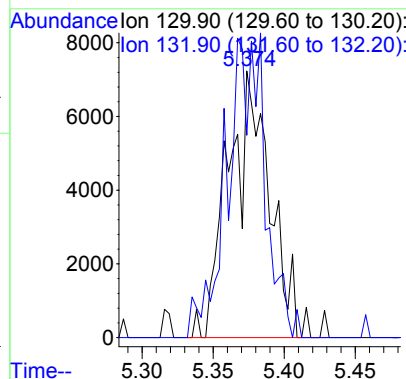
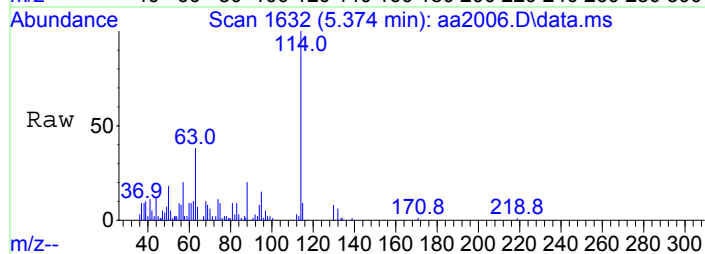


Before manual integration for Trichloroethene.



#40
 Trichloroethene
 Concen: 0.21 ppbV m
 RT: 5.374 min Scan# 1632
 Delta R.T. 0.006 min
 Lab File: aa2006.D
 Acq: 5 Apr 2019 5:40 pm

Tgt Ion	Ratio	Lower	Upper
130	100		
132	0.0	77.8	116.6#



After manual integration for Trichloroethene.

Section VII: Standards Data

Initial Calibration Data

Initial Calibration Verification Data

Continuing Calibration Data

Initial Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA

Method ID: 0313.M

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1521BFB]	03/13/2019 09:57
40 PPBV STD [AA1522STD01]	03/13/2019 11:03
20 PPBV STD [AA1523STD02]	03/13/2019 11:25
10 PPBV STD [AA1524STD03]	03/13/2019 11:46
2 PPBV STD [AA1525STD04]	03/13/2019 13:53
0.2 PPBV STD [AA1526STD05]	03/13/2019 14:52
10 PPBV ICVSS [AA1527ICVSS]	03/13/2019 15:26

RParameter	RRF 0.2ppbv	RRF 2ppbv	RRF 10ppbv	RRF 20ppbv	RRF 40ppbv	Avg ppbv	% RSD
Bromochloromethane	-----ISTD-----						
1,4-Difluorobenzene	-----ISTD-----						
d-5 Chlorobenzene	-----ISTD-----						
Acetone	1.4	1.6	2.3	2.4	2.4	2.0	24
Acrolein	0.31	0.32	0.45	0.49	0.51	0.42	23
Allyl Chloride	0.33	0.43	0.57	0.59	0.60	0.50	24
Benzene	2.7	3.3	3.6	3.7	3.6	3.4	12
Benzyl chloride	0.68	1.2	1.4	1.5	1.6	1.3	29
Bromodichloromethane	0.45	0.56	0.63	0.65	0.65	0.59	14
Bromoform	0.38	0.57	0.60	0.59	0.57	0.54	17
Bromomethane	0.43	0.79	0.98	1.0	1.0	0.84	30
1,3-Butadiene	0.83	0.98	1.2	1.2	1.3	1.1	18
n-Butane	2.1	2.0	2.3	2.4	2.4	2.2	7.9
Chlorobenzene	0.76	0.98	0.96	0.97	0.97	0.93	10
Chloroethane	0.38	0.51	0.66	0.70	0.73	0.60	25
Chloroform	1.8	2.0	2.5	2.6	2.7	2.3	17
Chloromethane	0.25	0.28	0.30	0.31	0.31	0.29	9.1
Carbon disulfide	2.0	2.7	3.5	3.6	3.6	3.1	22
Carbon tetrachloride	1.8	2.5	2.7	2.8	2.8	2.5	16
2-Chlorotoluene	1.2	1.7	1.6	1.5	1.5	1.5	11
Cumene	1.3	1.8	1.8	1.7	1.6	1.6	13
Cyclohexane	1.6	2.0	2.2	2.2	2.4	2.1	14
Dibromochloromethane	0.42	0.58	0.61	0.61	0.61	0.57	15
1,2-Dibromoethane	0.44	0.58	0.59	0.59	0.58	0.56	11
1,2-Dichlorobenzene	0.75	0.99	0.93	0.92	0.92	0.90	9.8
1,3-Dichlorobenzene	0.86	0.97	0.94	0.93	0.93	0.93	4.5
1,4-Dichlorobenzene	0.80	0.96	0.97	0.94	0.95	0.92	7.6
Dichlorodifluoromethane	1.7	2.2	2.8	2.9	2.9	2.5	21
1,1-Dichloroethane	1.7	1.8	2.4	2.5	2.6	2.2	18
1,2-Dichloroethane	1.3	1.5	1.9	2.1	2.2	1.8	22
1,1-Dichloroethene	1.2	1.6	2.1	2.2	2.3	1.9	24
1,2-Dichloroethene (trans)	1.0	1.4	1.8	1.9	2.0	1.6	25
1,2-Dichloroethene (trans)	1.1	1.4	1.9	2.0	2.1	1.7	25
1,2-Dichloropropane	0.32	0.36	0.38	0.38	0.39	0.37	8.3
1,3-Dichloropropene (cis)	0.39	0.48	0.55	0.56	0.56	0.51	15
1,3-Dichloropropene (trans)	0.36	0.50	0.55	0.55	0.56	0.50	17
1,2-Dichlorotetrafluoroethane	2.2	2.8	3.1	3.1	3.2	2.9	14
1,4-Dioxane	0.15	0.18	0.20	0.20	0.20	0.19	12
Ethanol	0.33	0.65	0.70	0.72	0.75	0.63	27
Ethyl acetate	0.34	0.40	0.53	0.58	0.63	0.50	25
Ethylbenzene	1.3	1.8	1.7	1.6	1.6	1.6	10
4-Ethyltoluene	1.4	1.8	1.7	1.7	1.6	1.6	11

*% RSD (Relative Standard Deviation) must be within 30%

**An exception is made for 2 compounds that must be within 40%

RRF - Relative Response Factor

Initial Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA

Method ID: 0313.M

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1521BFB]	03/13/2019 09:57
40 PPBV STD [AA1522STD01]	03/13/2019 11:03
20 PPBV STD [AA1523STD02]	03/13/2019 11:25
10 PPBV STD [AA1524STD03]	03/13/2019 11:46
2 PPBV STD [AA1525STD04]	03/13/2019 13:53
0.2 PPBV STD [AA1526STD05]	03/13/2019 14:52
10 PPBV ICVSS [AA1527ICVSS]	03/13/2019 15:26

RParameter	RRF 0.2ppbv	RRF 2ppbv	RRF 10ppbv	RRF 20ppbv	RRF 40ppbv	Avg ppbv	% RSD
n-Heptane	2.2	2.8	3.0	3.1	3.3	2.9	15
1,3-Hexachlorobutadiene	0.42	0.52	0.43	0.38	0.34	0.42	17
n-Hexane	2.0	2.5	3.6	3.8	3.1	3.0	24
Isopropanol	1.4	1.9	2.7	2.9	3.1	2.4	29
Methylene chloride	1.8	1.3	1.6	1.7	1.8	1.6	12
Methyl ethyl ketone	1.9	2.2	3.1	3.4	3.5	2.8	25
Methyl isobutyl ketone	0.81	0.92	1.0	1.0	0.99	0.95	8.8
Methyl methacrylate	0.50	0.52	0.60	0.63	0.65	0.58	12
Methyl n-butyl ketone	0.64	0.82	0.94	0.97	0.97	0.87	17
Methyl tert-butyl ether	2.3	3.1	3.2	3.2	3.3	3.0	14
Naphthalene	2.0	2.0	2.1	1.9	1.6	1.9	11
n-Nonane	1.1	1.4	1.4	1.4	1.4	1.3	10
n-Pentane	1.6	2.5	2.9	3.1	3.3	2.7	24
Propene	0.63	1.0	1.3	1.3	1.4	1.1	27
n-Propyl benzene	1.9	2.4	2.3	2.2	2.0	2.2	10
Styrene	0.63	0.96	0.95	0.92	0.89	0.87	16
Tert-butyl alcohol	1.7	2.0	2.4	2.6	2.8	2.3	19
1,1,2,2-Tetrachloroethane	0.86	1.1	1.0	1.0	1.0	1.0	9.8
Tetrachloroethene	0.37	0.44	0.41	0.39	0.36	0.39	8.4
Tetrahydrofuran	1.2	1.3	1.8	2.0	2.1	1.7	23
Toluene	0.89	1.1	1.1	1.1	1.0	1.0	8.3
1,2,4-Trichlorobenzene	0.69	0.71	0.63	0.55	0.47	0.61	16
1,1,1-Trichloroethane	1.7	2.2	2.4	2.4	2.5	2.3	14
1,1,2-Trichloroethane	0.30	0.38	0.38	0.38	0.37	0.36	10
Trichloroethene	0.27	0.33	0.38	0.38	0.37	0.35	14
Trichlorofluoromethane	2.0	2.5	2.9	3.0	3.0	2.7	17
1,1,2-Trichloro-1,2,2-trifluoroethane	1.9	2.4	2.4	2.4	2.4	2.3	10
1,2,4-Trimethylbenzene	1.1	1.6	1.5	1.5	1.5	1.4	14
1,3,5-Trimethylbenzene	1.1	1.6	1.5	1.5	1.4	1.4	12
2,2,4-Trimethylpentane	1.3	1.8	2.1	2.0	2.0	1.8	18
Vinyl bromide	0.51	0.85	1.1	1.1	1.1	0.94	29
Vinyl chloride	0.60	0.84	1.1	1.1	1.2	0.97	25
Xylenes (m&p)	1.0	1.4	1.2	1.2	1.0	1.2	13
Xylenes (o)	1.0	1.4	1.3	1.3	1.3	1.3	11

*% RSD (Relative Standard Deviation) must be within 30%

**An exception is made for 2 compounds that must be within 40%

RRF - Relative Response Factor

Method Path : C:\msdchem\1\METHODS\
 Method File : 0313.M
 Title : TO-15 on the Agilent 7890A / 5975C
 Last Update : Wed Mar 13 14:08:18 2019
 Response Via : Initial Calibration

Calibration Files

0.2 =aa1526std05.D 2 =aa1525std04.D 10 =aa1524std03.D 20 =aa1523std02.D 40 =aa1522std01.D

Compound		0.2	2	10	20	40	Avg	%RSD

1) I	Bromochloromethane...	-----ISTD-----						
2) T	Propene	0.631	1.006	1.272	1.309	1.351	1.114	27.08
3) T	Dichlorodifluoro...	1.714	2.222	2.827	2.862	2.896	2.504	20.84
4) T	1,2-Dichlorotetr...	2.227	2.818	3.080	3.132	3.216	2.895	13.89
5) T	n-Butane	2.133	1.968	2.278	2.353	2.405	2.228	7.97
6) T	Chloromethane	0.246	0.280	0.302	0.307	0.308	0.288	9.17
7) T	Vinyl chloride	0.601	0.841	1.087	1.131	1.184	0.969	25.17
8) T	1,3-Butadiene	0.826	0.976	1.185	1.246	1.308	1.108	18.17
9) T	Bromomethane	0.425	0.786	0.984	1.006	1.020	0.844	29.93
10) T	Chloroethane	0.375	0.514	0.664	0.695	0.729	0.596	24.83
11) T	Vinyl bromide	0.505	0.845	1.098	1.118	1.137	0.941	28.84
12) T	Trichlorofluorom...	1.967	2.461	2.873	2.958	3.022	2.656	16.68
13) T	Ethanol	0.327	0.653	0.695	0.718	0.749	0.629	27.38
14) T	1,1-Dichloroethene	1.225	1.568	2.085	2.171	2.252	1.860	23.89
15) T	Carbon disulfide	2.013	2.743	3.519	3.560	3.570	3.081	22.45
16) T	1,1,2-Trichloro...	1.860	2.445	2.378	2.372	2.370	2.285	10.48
17) T	Acrolein	0.311	0.319	0.454	0.486	0.509	0.416	22.60
18) T	Allyl chloride	0.328	0.429	0.565	0.591	0.601	0.503	23.74
19) T	Isopropanol	1.442	1.886	2.720	2.915	3.066	2.406	29.34
20) T	Methylene chloride	1.775	1.300	1.636	1.706	1.788	1.641	12.20
21) T	Acetone	1.390	1.627	2.316	2.391	2.432	2.031	23.95
22) T	1,2-Dichloroethe...	1.083	1.391	1.875	1.969	2.062	1.676	25.09
23) T	n-Pentane	1.638	2.506	2.938	3.106	3.287	2.695	24.42
24) T	n-Hexane	2.025	2.526	3.609	3.777	3.091	3.006	24.44
25) T	Methyl tert-buty...	2.299	3.059	3.182	3.240	3.277	3.011	13.50
26) T	Tert-butyl alcohol	1.652	2.032	2.409	2.587	2.754	2.287	19.45
27) T	1,1-Dichloroethane	1.699	1.821	2.352	2.474	2.587	2.187	18.32
28) T	1,2-Dichloroethe...	1.048	1.350	1.800	1.898	2.006	1.620	25.03
29) t	Cyclohexane	1.616	1.986	2.169	2.248	2.373	2.079	14.15
30) T	Chloroform	1.798	1.958	2.493	2.589	2.664	2.300	17.15
31) T	Ethyl acetate	0.339	0.400	0.528	0.579	0.628	0.495	24.58
32) T	Carbon tetrachlo...	1.848	2.491	2.707	2.770	2.832	2.530	15.89
33) T	Tetrahydrofuran	1.249	1.290	1.795	1.950	2.067	1.670	22.67
34) T	1,1,1-Trichloroe...	1.740	2.223	2.380	2.447	2.518	2.262	13.77
35) T	Methyl ethyl ketone	1.905	2.218	3.117	3.356	3.515	2.822	25.42
36) T	n-Heptane	2.150	2.804	3.033	3.140	3.291	2.883	15.49
37) T	Benzene	2.741	3.296	3.616	3.667	3.632	3.390	11.59
38) T	1,2-Dichloroethane	1.269	1.516	1.946	2.056	2.182	1.794	21.50

39) I	1,4-Difluorobenzen...	-----ISTD-----						
40) T	Trichloroethene	0.270	0.327	0.377	0.377	0.374	0.345	13.63
41) T	2,2,4-Trimethylp...	1.272	1.763	2.050	2.048	2.025	1.832	18.30
42) T	1,2-Dichloropropane	0.317	0.356	0.379	0.384	0.392	0.366	8.37
43) T	Bromodichloromet...	0.453	0.562	0.632	0.649	0.649	0.589	14.25
44) T	Methyl methacrylate	0.503	0.520	0.604	0.633	0.652	0.582	11.55
45) T	1,4-Dioxane	0.148	0.183	0.198	0.202	0.204	0.187	12.49
46) T	cis-1,3-Dichloro...	0.390	0.479	0.546	0.558	0.564	0.508	14.58
47) T	Toluene	0.890	1.106	1.083	1.061	1.013	1.031	8.34
48) T	Methyl isobutyl ...	0.812	0.924	1.007	1.012	0.988	0.949	8.85
49) T	Tetrachloroethene	0.366	0.440	0.410	0.389	0.360	0.393	8.44
50) T	trans-1,3-Dichlo...	0.359	0.495	0.550	0.552	0.555	0.502	16.69
51) T	1,1,2-Trichloroe...	0.296	0.379	0.378	0.375	0.373	0.360	10.06
52) T	Dibromochloromet...	0.415	0.579	0.608	0.614	0.609	0.565	15.05
53) T	1,2-Dibromoethane	0.444	0.577	0.589	0.592	0.584	0.557	11.43
54) T	Methyl n-butyl k...	0.636	0.819	0.938	0.972	0.974	0.868	16.60

55) I	d-5 Chlorobenzene ...	-----ISTD-----						
56) T	n-Nonane	1.091	1.379	1.374	1.401	1.418	1.333	10.21
57) T	Chlorobenzene	0.761	0.975	0.958	0.970	0.974	0.927	10.08
58) T	Ethylbenzene	1.331	1.759	1.666	1.647	1.574	1.595	10.16
59) T	Xylenes (m&p)	1.026	1.361	1.242	1.158	1.017	1.161	12.62
60) T	Xylene (o)	1.049	1.391	1.348	1.335	1.319	1.289	10.60

Method Path : C:\msdchem\1\METHODS\

Method File : 0313.M

61)	T	Styrene	0.631	0.959	0.946	0.920	0.890	0.869	15.64
62)	T	Bromoform	0.376	0.574	0.598	0.588	0.572	0.541	17.22
63)	T	Cumene	1.283	1.843	1.760	1.710	1.633	1.646	13.16
64)	S	Bromofluorobenze...	0.830	0.829	0.840	0.884	0.981	0.873	7.38
65)	T	n-Propyl benzene	1.903	2.432	2.284	2.179	1.974	2.155	10.12
66)	T	1,1,2,2-Tetrachl...	0.856	1.130	1.049	1.033	1.028	1.019	9.82
67)	T	4-Ethyltoluene	1.386	1.847	1.749	1.673	1.558	1.643	10.85
68)	T	2-Chlorotoluene	1.225	1.668	1.566	1.509	1.463	1.486	11.09
69)	T	1,3,5-Trimethylb...	1.138	1.593	1.539	1.491	1.437	1.440	12.38
70)	T	1,2,4-Trimethylb...	1.086	1.591	1.547	1.511	1.461	1.439	14.13
71)	T	1,3-Dichlorobenzene	0.858	0.973	0.937	0.931	0.933	0.926	4.51
72)	T	1,4-Dichlorobenzene	0.796	0.955	0.965	0.942	0.947	0.921	7.64
73)		Benzyl chloride	0.676	1.190	1.441	1.537	1.554	1.280	28.70
74)	T	1,2-Dichlorobenzene	0.752	0.986	0.932	0.921	0.918	0.902	9.80
75)	T	1,3-Hexachlorobu...	0.423	0.523	0.425	0.377	0.338	0.417	16.65
76)	T	1,2,4-Trichlorob...	0.687	0.708	0.625	0.550	0.470	0.608	16.22
77)	T	Naphthalene	2.011	1.978	2.073	1.907	1.563	1.906	10.55

(#) = Out of Range

Data Path : C:\DATA\03-13-19\
 Data File : aa1522std01.D
 Acq On : 13 Mar 2019 11:03 am
 Operator : jls
 Sample : 40 ppbv Std
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 13 12:04:06 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.345	130	562033	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2424630	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1852861	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1816913	11.38	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.425	41	3340975	46.06	ppbV	84
3) Dichlorodifluoromethane	1.457	85	7162056	44.80	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.578	85	7231086	41.42	ppbV	93
5) n-Butane	1.660	43	5948002	45.70	ppbV	97
6) Chloromethane	1.670	15	760507	44.44	ppbV #	1
7) Vinyl chloride	1.712	62	2927615	46.98	ppbV	96
8) 1,3-Butadiene	1.726	39	3235239	47.36	ppbV	89
9) Bromomethane	2.020	94	2269856	40.59	ppbV	99
10) Chloroethane	2.120	64	1638100	42.87	ppbV	95
11) Vinyl bromide	2.219	106	2812218	45.15	ppbV	99
12) Trichlorofluoromethane	2.239	101	7474110	45.61	ppbV	100
13) Ethanol	2.609	45	1583755	39.89	ppbV	96
14) 1,1-Dichloroethene	2.660	61	5569902	46.58	ppbV	99
15) Carbon disulfide	2.682	76	8828148	44.38	ppbV	96
16) 1,1,2-Trichloro-1,2,2-...	2.699	101	5860697	43.91	ppbV	86
17) Acrolein	2.933	56	1372762	51.98	ppbV	96
18) Allyl chloride	3.046	76	1485004	45.73	ppbV	100
19) Isopropanol	3.062	45	6893191	43.53	ppbV	100
20) Methylene chloride	3.139	49	4422494	47.09	ppbV	86
21) Acetone	3.168	43	6014287	45.47	ppbV	93
22) 1,2-Dichloroethene (tr...	3.258	61	5098624	47.19	ppbV	93
23) n-Pentane	3.332	43	8127888	47.86	ppbV	97
24) n-Hexane	3.332	41	7644477	36.83	ppbV	87
25) Methyl tert-butyl ether	3.342	73	8102863	44.90	ppbV #	74
26) Tert-butyl alcohol	3.409	59	7430694	52.93	ppbV	100
27) 1,1-Dichloroethane	3.747	63	6398323	47.17	ppbV	98
28) 1,2-Dichloroethene (cis)	4.174	61	4960219	47.73	ppbV	94
29) Cyclohexane	4.338	56	5868345	47.27	ppbV	84
30) Chloroform	4.396	83	6586968	46.12	ppbV	98
31) Ethyl acetate	4.489	45	1553262	49.93	ppbV	95
32) Carbon tetrachloride	4.506	117	7003491	45.50	ppbV	99
33) Tetrahydrofuran	4.515	42	5577034	52.99	ppbV	95
34) 1,1,1-Trichloroethane	4.563	97	6227156	45.90	ppbV	100
35) Methyl ethyl ketone	4.637	43	8692976	47.79	ppbV	98
36) n-Heptane	4.840	43	8137440	46.91	ppbV	96
37) Benzene	4.872	78	8982836	43.89	ppbV	92
38) 1,2-Dichloroethane	5.039	62	5395329	47.98	ppbV	100
40) Trichloroethene	5.370	130	3987110	43.65	ppbV	97
41) 2,2,4-Trimethylpentane	4.766	57	21607332	43.50	ppbV	95
42) 1,2-Dichloropropane	5.830	63	4186987	45.27	ppbV	100
43) Bromodichloromethane	5.891	83	6922252	44.55	ppbV	97
44) Methyl methacrylate	6.036	41	6956797	46.41	ppbV	96
45) 1,4-Dioxane	6.065	88	1979101	40.81	ppbV	88
46) cis-1,3-Dichloropropene	6.480	75	6021753	44.98	ppbV	99
47) Toluene	6.711	91	10809867	41.59	ppbV	100
48) Methyl isobutyl ketone	7.087	43	10539573	43.05	ppbV	92
49) Tetrachloroethene	7.091	166	3836250	39.58	ppbV	98
50) trans-1,3-Dichloropropene	7.126	75	5378067	40.28	ppbV	92
51) 1,1,2-Trichloroethane	7.287	97	3978886	43.55	ppbV	95

AL SDG #E19-02214

Data Path : C:\DATA\03-13-19\
 Data File : aa1522std01.D
 Acq On : 13 Mar 2019 11:03 am
 Operator : jls
 Sample : 40 ppbv Std
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

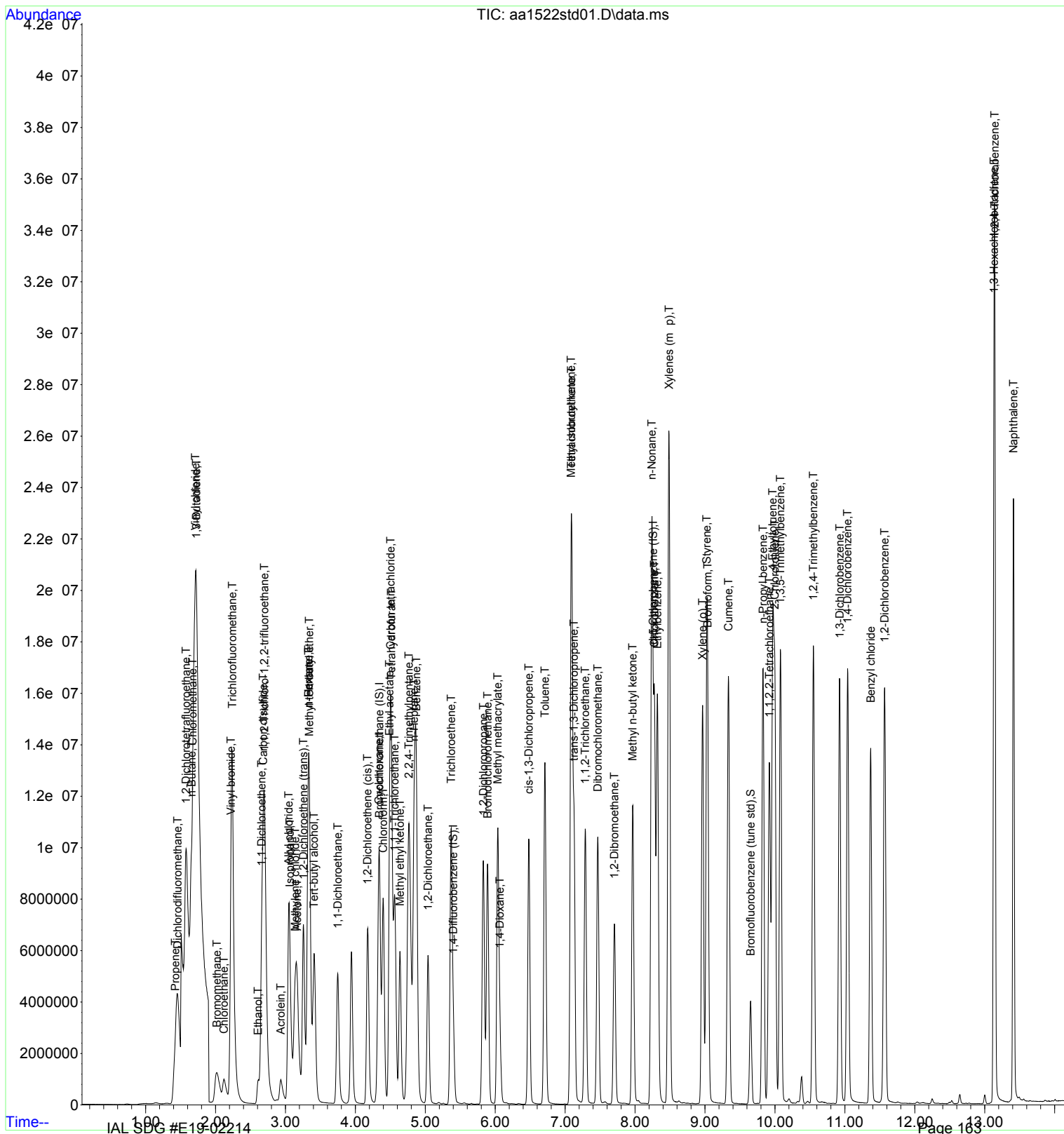
Quant Time: Mar 13 12:04:06 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	6495464	43.85	ppbV	100
53) 1,2-Dibromoethane	7.705	107	6235122	43.55	ppbV	99
54) Methyl n-butyl ketone	7.965	43	10391404	44.88	ppbV	97
56) n-Nonane	8.239	43	11561839	44.98	ppbV	100
57) Chlorobenzene	8.277	112	7937679	44.44	ppbV	95
58) Ethylbenzene	8.319	91	12830355	41.80	ppbV	95
59) Xylenes (m&p)	8.486	91	16579036	74.57	ppbV	88
60) Xylene (o)	8.965	91	10755181	43.26	ppbV	94
61) Styrene	9.026	104	7258728	41.98	ppbV	98
62) Bromoform	9.039	173	4666631	42.48	ppbV	98
63) Cumene	9.335	105	13311478	41.41	ppbV	93
65) n-Propyl benzene	9.830	91	16093218	38.92	ppbV #	90
66) 1,1,2,2-Tetrachloroethane	9.920	83	8378428	43.44	ppbV	98
67) 4-Ethyltoluene	9.968	105	12698368	40.05	ppbV	94
68) 2-Chlorotoluene	9.997	91	11926348	41.87	ppbV	91
69) 1,3,5-Trimethylbenzene	10.078	105	11718355	41.75	ppbV	93
70) 1,2,4-Trimethylbenzene	10.550	105	11907445	42.04	ppbV	99
71) 1,3-Dichlorobenzene	10.927	146	7607510	43.97	ppbV	100
72) 1,4-Dichlorobenzene	11.039	146	7719628	43.71	ppbV	99
73) Benzyl chloride	11.370	91	11517094	41.75	ppbV	96
74) 1,2-Dichlorobenzene	11.570	146	7482301	43.59	ppbV	99
75) 1,3-Hexachlorobutadiene	13.135	225	2752406	37.04	ppbV	92
76) 1,2,4-Trichlorobenzene	13.145	180	4182726	38.42	ppbV	99
77) Naphthalene	13.412	128	13900835	37.70	ppbV #	88

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

Data Path : C:\DATA\
Data File : aa1522st
Acq On : 13 Mar 2011

Quant Time: Mar 13 12:04:06 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 11:56:36 2019
Response via : Initial Calibration



Data Path : C:\DATA\03-13-19\
 Data File : aa1523std02.D
 Acq On : 13 Mar 2019 11:25 am
 Operator : jls
 Sample : 20 ppbv Std
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 13 12:03:27 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	595915	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2483086	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	2008313	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1776218	10.53	ppbV	0.000
Target Compounds						Qvalue
2) Propene	1.419	41	1716409	22.64	ppbV	84
3) Dichlorodifluoromethane	1.454	85	3752570	22.28	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.574	85	3733038	20.34	ppbV	93
5) n-Butane	1.653	43	3084929	22.72	ppbV	97
6) Chloromethane	1.660	15	402310	22.35	ppbV #	1
7) Vinyl chloride	1.708	62	1482537	22.89	ppbV	97
8) 1,3-Butadiene	1.719	39	1633425	23.14	ppbV	92
9) Bromomethane	2.014	94	1186739	20.23	ppbV	99
10) Chloroethane	2.126	64	828729	20.94	ppbV	94
11) Vinyl bromide	2.220	106	1465959	22.40	ppbV	99
12) Trichlorofluoromethane	2.236	101	3878234	22.65	ppbV	99
13) Ethanol	2.612	45	804686	19.44	ppbV	96
14) 1,1-Dichloroethene	2.657	61	2845627	22.91	ppbV	97
15) Carbon disulfide	2.676	76	4667227	22.26	ppbV	98
16) 1,1,2-Trichloro-1,2,2-...	2.699	101	3109275	21.94	ppbV	85
17) Acrolein	2.933	56	694989	25.70	ppbV	96
18) Allyl chloride	3.043	76	774159	22.99	ppbV	100
19) Isopropanol	3.055	45	3473610	21.43	ppbV	98
20) Methylene chloride	3.139	49	2237044	22.95	ppbV	87
21) Acetone	3.162	43	3134461	22.71	ppbV	91
22) 1,2-Dichloroethene (tr...	3.258	61	2581951	23.11	ppbV	94
23) n-Pentane	3.332	43	4071502	23.26	ppbV	98
24) n-Hexane	3.332	41	4951777	23.02	ppbV	88
25) Methyl tert-butyl ether	3.342	73	4247215	22.40	ppbV #	79
26) Tert-butyl alcohol	3.409	59	3700094	25.78	ppbV	100
27) 1,1-Dichloroethane	3.747	63	3243918	23.14	ppbV	99
28) 1,2-Dichloroethene (cis)	4.174	61	2487683	23.19	ppbV	96
29) Cyclohexane	4.338	56	2947381	22.80	ppbV	85
30) Chloroform	4.396	83	3394472	22.85	ppbV	100
31) Ethyl acetate	4.490	45	758662	24.10	ppbV	99
32) Carbon tetrachloride	4.506	117	3630853	22.50	ppbV	100
33) Tetrahydrofuran	4.515	42	2788977	26.07	ppbV	98
34) 1,1,1-Trichloroethane	4.560	97	3208633	22.62	ppbV	99
35) Methyl ethyl ketone	4.637	43	4400169	23.69	ppbV	99
36) n-Heptane	4.840	43	4116210	22.77	ppbV	98
37) Benzene	4.869	78	4807378	22.31	ppbV	96
38) 1,2-Dichloroethane	5.039	62	2694950	23.24	ppbV	99
40) Trichloroethene	5.371	130	2058646	22.01	ppbV	97
41) 2,2,4-Trimethylpentane	4.766	57	11185246	21.98	ppbV	97
42) 1,2-Dichloropropane	5.830	63	2097960	22.30	ppbV	99
43) Bromodichloromethane	5.891	83	3547148	22.59	ppbV	98
44) Methyl methacrylate	6.036	41	3456355	23.05	ppbV	98
45) 1,4-Dioxane	6.068	88	1003407	20.41	ppbV	90
46) cis-1,3-Dichloropropene	6.480	75	3048123	22.47	ppbV	100
47) Toluene	6.711	91	5795600	21.55	ppbV	99
48) Methyl isobutyl ketone	7.091	43	5530381	22.12	ppbV	90
49) Tetrachloroethene	7.091	166	2127262	20.89	ppbV	98
50) trans-1,3-Dichloropropene	7.126	75	2740304	20.08	ppbV	96
51) 1,1,2-Trichloroethane	7.287	97	2051113	21.85	ppbV	95

AL SDG #E19-02214

Data Path : C:\DATA\03-13-19\
 Data File : aa1523std02.D
 Acq On : 13 Mar 2019 11:25 am
 Operator : jls
 Sample : 20 ppbv Std
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

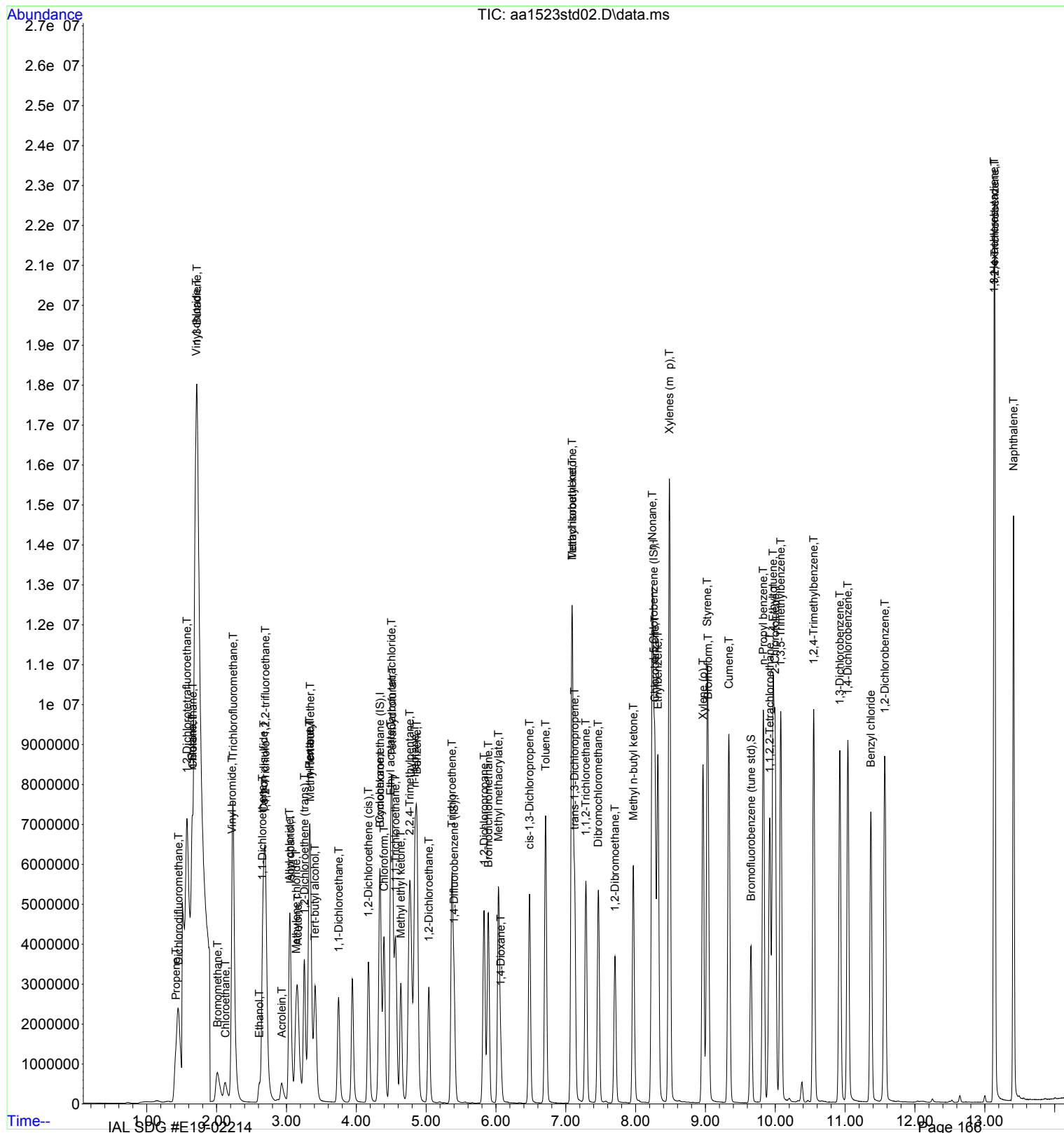
Quant Time: Mar 13 12:03:27 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.464	129	3352496	22.20	ppbV	100
53) 1,2-Dibromoethane	7.705	107	3233275	22.11	ppbV	100
54) Methyl n-butyl ketone	7.968	43	5308086	22.79	ppbV	100
56) n-Nonane	8.239	43	6188337	22.42	ppbV	98
57) Chlorobenzene	8.277	112	4284510	22.26	ppbV	94
58) Ethylbenzene	8.319	91	7277378	21.75	ppbV	98
59) Xylenes (m&p)	8.483	91	10230468	41.01	ppbV	95
60) Xylene (o)	8.965	91	5900002	21.79	ppbV	97
61) Styrene	9.026	104	4064101	21.38	ppbV	98
62) Bromoform	9.039	173	2598673	21.65	ppbV	97
63) Cumene	9.335	105	7553072	21.37	ppbV	97
65) n-Propyl benzene	9.827	91	9629254	20.99	ppbV	96
66) 1,1,2,2-Tetrachloroethane	9.920	83	4562558	21.65	ppbV	100
67) 4-Ethyltoluene	9.968	105	7392046	21.04	ppbV	98
68) 2-Chlorotoluene	9.997	91	6668802	21.21	ppbV	93
69) 1,3,5-Trimethylbenzene	10.078	105	6589628	21.33	ppbV	97
70) 1,2,4-Trimethylbenzene	10.550	105	6674100	21.48	ppbV	96
71) 1,3-Dichlorobenzene	10.923	146	4113077	21.87	ppbV	99
72) 1,4-Dichlorobenzene	11.039	146	4161410	21.48	ppbV	98
73) Benzyl chloride	11.367	91	6174243	21.34	ppbV	98
74) 1,2-Dichlorobenzene	11.570	146	4068375	21.74	ppbV	100
75) 1,3-Hexachlorobutadiene	13.135	225	1667673	19.55	ppbV	92
76) 1,2,4-Trichlorobenzene	13.145	180	2652361	21.14	ppbV	99
77) Naphthalene	13.412	128	9193707	22.09	ppbV	96

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

Data Path : C:\DATA\03-13-19\
 Data File : aa1523std02.D
 Acq On : 13 Mar 2019 11:25 am
 Operator : jls
 Sample : 20 ppbv Std
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 13 12:03:27 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration



Data Path : C:\DATA\03-13-19\
 Data File : aa1524std03.D
 Acq On : 13 Mar 2019 11:46 am
 Operator : jls
 Sample : 10 ppbv Std
 Misc : CC483586
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 13 12:02:48 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.335	130	619922	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	2493141	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2093975	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1758297	10.00	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.416	41	867552	11.00	ppbV	83
3) Dichlorodifluoromethane	1.451	85	1927735	11.00	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.571	85	1909347	10.00	ppbV	93
5) n-Butane	1.650	43	1553716	11.00	ppbV	97
6) Chloromethane	1.650	15	206011	11.00	ppbV	99
7) Vinyl chloride	1.705	62	740993	11.00	ppbV	97
8) 1,3-Butadiene	1.715	39	807882	11.00	ppbV	92
9) Bromomethane	2.004	94	604103	9.90	ppbV	100
10) Chloroethane	2.120	64	411778	10.00	ppbV	95
11) Vinyl bromide	2.216	106	748952	11.00	ppbV	99
12) Trichlorofluoromethane	2.233	101	1958943	11.00	ppbV	99
13) Ethanol	2.612	45	404716	9.40	ppbV	97
14) 1,1-Dichloroethene	2.657	61	1421545	11.00	ppbV	96
15) Carbon disulfide	2.673	76	2399346	11.00	ppbV	99
16) 1,1,2-Trichloro-1,2,2-...	2.692	101	1621552	11.00	ppbV	85
17) Acrolein	2.927	56	337626	12.00	ppbV	95
18) Allyl chloride	3.040	76	385409	11.00	ppbV	100
19) Isopropanol	3.056	45	1686376	10.00	ppbV	97
20) Methylene chloride	3.136	49	1115352	11.00	ppbV	87
21) Acetone	3.159	43	1579442	11.00	ppbV	90
22) 1,2-Dichloroethene (tr...	3.255	61	1278603	11.00	ppbV	96
23) n-Pentane	3.332	43	2003415	11.00	ppbV	98
24) n-Hexane	3.329	41	2461346	11.00	ppbV	87
25) Methyl tert-butyl ether	3.339	73	2169711	11.00	ppbV	82
26) Tert-butyl alcohol	3.409	59	1791977	12.00	ppbV	100
27) 1,1-Dichloroethane	3.744	63	1603974	11.00	ppbV	99
28) 1,2-Dichloroethene (cis)	4.171	61	1227613	11.00	ppbV	97
29) Cyclohexane	4.335	56	1479235	11.00	ppbV	86
30) Chloroform	4.396	83	1700185	11.00	ppbV	99
31) Ethyl acetate	4.490	45	360290	11.00	ppbV	100
32) Carbon tetrachloride	4.506	117	1846252	11.00	ppbV	99
33) Tetrahydrofuran	4.515	42	1335390	12.00	ppbV	100
34) 1,1,1-Trichloroethane	4.560	97	1622866	11.00	ppbV	100
35) Methyl ethyl ketone	4.638	43	2125477	11.00	ppbV	99
36) n-Heptane	4.840	43	2068300	11.00	ppbV	100
37) Benzene	4.869	78	2465896	11.00	ppbV	99
38) 1,2-Dichloroethane	5.040	62	1326828	11.00	ppbV	99
40) Trichloroethene	5.367	130	1032972	11.00	ppbV	97
41) 2,2,4-Trimethylpentane	4.766	57	5621597	11.00	ppbV	98
42) 1,2-Dichloropropane	5.830	63	1038984	11.00	ppbV	99
43) Bromodichloromethane	5.888	83	1734476	11.00	ppbV	98
44) Methyl methacrylate	6.036	41	1655871	11.00	ppbV	100
45) 1,4-Dioxane	6.065	88	493681	10.00	ppbV	92
46) cis-1,3-Dichloropropene	6.480	75	1498534	11.00	ppbV	100
47) Toluene	6.711	91	2970873	11.00	ppbV	98
48) Methyl isobutyl ketone	7.091	43	2761550	11.00	ppbV	90
49) Tetrachloroethene	7.091	166	1124791	11.00	ppbV	99
50) trans-1,3-Dichloropropene	7.126	75	1370415	10.00	ppbV	99
51) 1,1,2-Trichloroethane	7.290	97	1036893	11.00	ppbV	95

AL SDG #E19-02214

Data Path : C:\DATA\03-13-19\
 Data File : aa1524std03.D
 Acq On : 13 Mar 2019 11:46 am
 Operator : jls
 Sample : 10 ppbv Std
 Misc : CC483586
 ALS Vial : 4 Sample Multiplier: 1

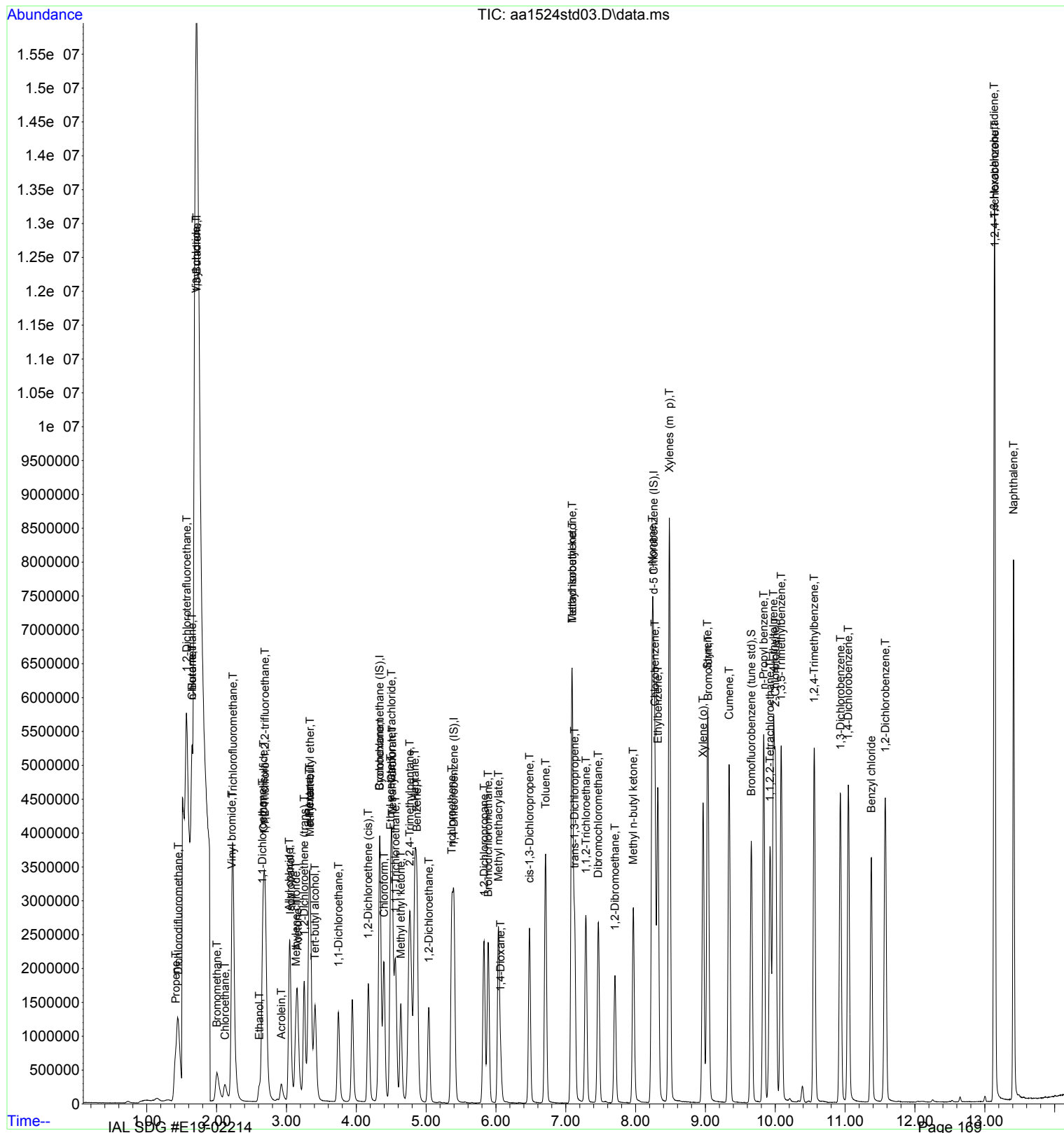
Quant Time: Mar 13 12:02:48 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.464	129	1668191	11.00	ppbV	100
53) 1,2-Dibromoethane	7.705	107	1615467	11.00	ppbV	99
54) Methyl n-butyl ketone	7.965	43	2572622	11.00	ppbV	100
56) n-Nonane	8.239	43	3165356	11.00	ppbV	98
57) Chlorobenzene	8.277	112	2207424	11.00	ppbV	95
58) Ethylbenzene	8.319	91	3837560	11.00	ppbV	99
59) Xylenes (m&p)	8.483	91	5722463	22.00	ppbV	98
60) Xylene (o)	8.965	91	3105022	11.00	ppbV	97
61) Styrene	9.030	104	2179800	11.00	ppbV	97
62) Bromoform	9.039	173	1376477	11.00	ppbV	98
63) Cumene	9.338	105	4054289	11.00	ppbV	98
65) n-Propyl benzene	9.834	91	5261309	11.00	ppbV	98
66) 1,1,2,2-Tetrachloroethane	9.924	83	2416873	11.00	ppbV	100
67) 4-Ethyltoluene	9.975	105	4028755	11.00	ppbV	99
68) 2-Chlorotoluene	10.001	91	3606095	11.00	ppbV	94
69) 1,3,5-Trimethylbenzene	10.084	105	3543925	11.00	ppbV	98
70) 1,2,4-Trimethylbenzene	10.557	105	3562849	11.00	ppbV	95
71) 1,3-Dichlorobenzene	10.933	146	2157298	11.00	ppbV	99
72) 1,4-Dichlorobenzene	11.046	146	2221738	11.00	ppbV	97
73) Benzyl chloride	11.374	91	3016896	10.00	ppbV	99
74) 1,2-Dichlorobenzene	11.576	146	2146706	11.00	ppbV	99
75) 1,3-Hexachlorobutadiene	13.136	225	978272	11.00	ppbV	92
76) 1,2,4-Trichlorobenzene	13.145	180	1570055	12.00	ppbV	100
77) Naphthalene	13.412	128	5207808	12.00	ppbV	98

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

Data Path : C:\DATA\03-13-19\
 Data File : aa1524std03.D
 Acq On : 13 Mar 2019 11:46 am
 Operator : jls
 Sample : 10 ppbv Std
 Misc : CC483586
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 13 12:02:48 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration



Data Path : C:\DATA\03-13-19\
 Data File : aa1525std04.D
 Acq On : 13 Mar 2019 1:53 pm
 Operator : jls
 Sample : 2 ppbv Std
 Misc : CC483586
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 13 13:09:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 12:40:21 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.332	130	603375	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	2369670	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2059554	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.656	95	1707349	9.52	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.412	41	133508	1.77	ppbV	84
3) Dichlorodifluoromethane	1.451	85	294980	1.77	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.567	85	340100	1.72	ppbV	94
5) n-Butane	1.646	43	261302	1.77	ppbV	95
6) Chloromethane	1.643	15	37196	2.23	ppbV #	58
7) Vinyl chloride	1.705	62	111676	1.69	ppbV	98
8) 1,3-Butadiene	1.712	39	129552	1.76	ppbV	93
9) Bromomethane	2.004	94	93849	1.63	ppbV	98
10) Chloroethane	2.117	64	62046	1.71	ppbV	97
11) Vinyl bromide	2.216	106	112167	1.76	ppbV	98
12) Trichlorofluoromethane	2.229	101	326724	1.84	ppbV	99
13) Ethanol	2.605	45	74117	1.62	ppbV	99
14) 1,1-Dichloroethene	2.654	61	208105	1.68	ppbV	93
15) Carbon disulfide	2.670	76	364088	1.76	ppbV	100
16) 1,1,2-Trichloro-1,2,2-...	2.689	101	324513	2.14	ppbV	86
17) Acrolein	2.917	56	46203	1.60	ppbV	93
18) Allyl chloride	3.033	76	57000	1.70	ppbV	100
19) Isopropanol	3.052	45	227597	1.40	ppbV	97
20) Methylene chloride	3.133	49	172563	1.59	ppbV	91
21) Acetone	3.155	43	215919	1.58	ppbV	91
22) 1,2-Dichloroethene (tr...	3.252	61	184661	1.65	ppbV	99
23) n-Pentane	3.332	43	332591	1.82	ppbV	93
24) n-Hexane	3.326	41	335275	1.72	ppbV	91
25) Methyl tert-butyl ether	3.335	73	406124	2.02	ppbV	92
26) Tert-butyl alcohol	3.409	59	294317	1.97	ppbV	100
27) 1,1-Dichloroethane	3.740	63	241787	1.65	ppbV	99
28) 1,2-Dichloroethene (cis)	4.171	61	179219	1.66	ppbV	99
29) Cyclohexane	4.335	56	263629	1.91	ppbV	89
30) Chloroform	4.393	83	259882	1.70	ppbV	97
31) Ethyl acetate	4.489	45	53099	1.56	ppbV	91
32) Carbon tetrachloride	4.502	117	330600	1.96	ppbV	99
33) Tetrahydrofuran	4.522	42	186874	1.65	ppbV	93
34) 1,1,1-Trichloroethane	4.557	97	295121	1.97	ppbV	99
35) Methyl ethyl ketone	4.637	43	294408	1.56	ppbV	95
36) n-Heptane	4.834	43	372147	1.93	ppbV	94
37) Benzene	4.866	78	437558	1.95	ppbV	99
38) 1,2-Dichloroethane	5.036	62	201204	1.69	ppbV	99
40) Trichloroethene	5.367	130	170384	1.88	ppbV	97
41) 2,2,4-Trimethylpentane	4.766	57	919197	1.91	ppbV #	83
42) 1,2-Dichloropropane	5.827	63	185417	1.96	ppbV	98
43) Bromodichloromethane	5.891	83	293093	1.90	ppbV	98
44) Methyl methacrylate	6.036	41	271069	1.83	ppbV	96
45) 1,4-Dioxane	6.068	88	86933	1.74	ppbV	97
46) cis-1,3-Dichloropropene	6.480	75	249525	1.86	ppbV	99
47) Toluene	6.708	91	576463	2.14	ppbV	97
48) Methyl isobutyl ketone	7.094	43	481803	1.93	ppbV	89
49) Tetrachloroethene	7.087	166	229590	2.22	ppbV	98
50) trans-1,3-Dichloropropene	7.126	75	234432	1.79	ppbV	99
51) 1,1,2-Trichloroethane	7.287	97	197768	2.09	ppbV	95

AL SDG #E19-02214

Data Path : C:\DATA\03-13-19\
 Data File : aa1525std04.D
 Acq On : 13 Mar 2019 1:53 pm
 Operator : jls
 Sample : 2 ppbv Std
 Misc : CC483586
 ALS Vial : 5 Sample Multiplier: 1

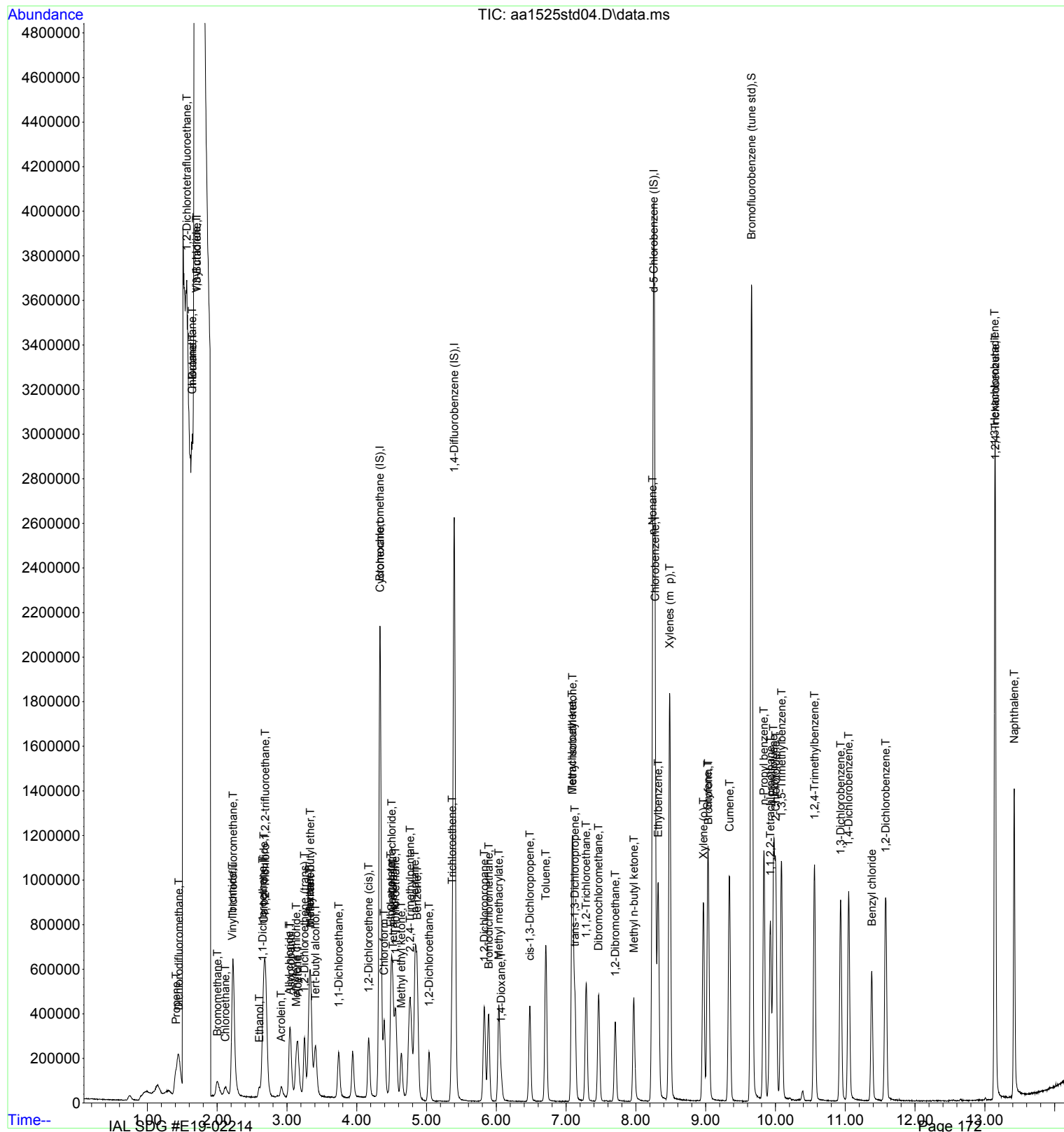
Quant Time: Mar 13 13:09:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 12:40:21 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.464	129	301874	2.03	ppbV	99
53) 1,2-Dibromoethane	7.705	107	300640	2.04	ppbV	100
54) Methyl n-butyl ketone	7.972	43	427143	1.87	ppbV	98
56) n-Nonane	8.239	43	624778	2.09	ppbV	98
57) Chlorobenzene	8.277	112	441620	2.09	ppbV	99
58) Ethylbenzene	8.319	91	797218	2.15	ppbV	100
59) Xylenes (m&p)	8.483	91	1233444	4.61	ppbV	99
60) Xylene (o)	8.968	91	630362	2.13	ppbV	97
61) Styrene	9.029	104	434537	2.17	ppbV	97
62) Bromoform	9.039	173	259874	2.10	ppbV	97
63) Cumene	9.341	105	834899	2.21	ppbV	99
65) n-Propyl benzene	9.833	91	1102060	2.26	ppbV	100
66) 1,1,2,2-Tetrachloroethane	9.927	83	511899	2.21	ppbV	99
67) 4-Ethyltoluene	9.972	105	837043	2.25	ppbV	100
68) 2-Chlorotoluene	10.004	91	755752	2.22	ppbV	95
69) 1,3,5-Trimethylbenzene	10.087	105	721750	2.16	ppbV	98
70) 1,2,4-Trimethylbenzene	10.560	105	720973	2.15	ppbV	95
71) 1,3-Dichlorobenzene	10.933	146	440840	2.07	ppbV	97
72) 1,4-Dichlorobenzene	11.049	146	432571	2.03	ppbV	97
73) Benzyl chloride	11.380	91	490148	1.66	ppbV	100
74) 1,2-Dichlorobenzene	11.579	146	446904	2.12	ppbV	100
75) 1,3-Hexachlorobutadiene	13.142	225	237183	2.34	ppbV	91
76) 1,2,4-Trichlorobenzene	13.152	180	350153	2.18	ppbV	97
77) Naphthalene	13.422	128	977672	1.87	ppbV	100

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

Data Path : C:\DATA\03-13-19\
 Data File : aa1525std04.D
 Acq On : 13 Mar 2019 1:53 pm
 Operator : jls
 Sample : 2 ppbv Std
 Misc : CC483586
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 13 13:09:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 12:40:21 2019
 Response via : Initial Calibration



Data Path : C:\DATA\03-13-19\
 Data File : aa1526std05.D
 Acq On : 13 Mar 2019 2:52 pm
 Operator : jls
 Sample : 0.2 ppbv Std
 Misc : CC483586
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 13 14:08:10 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 13:39:56 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.332	130	616010	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	2400433	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2129912	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	1768211	9.52	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.416	41	8557	0.11	ppbV #	4
3) Dichlorodifluoromethane	1.448	85	23231	0.14	ppbV #	57
4) 1,2-Dichlorotetrafluor...	1.574	85	27432	0.14	ppbV	93
5) n-Butane	1.647	43	28907	0.20	ppbV #	80
6) Chloromethane	1.647	15	3328	0.18	ppbV #	29
7) Vinyl chloride	1.715	62	8148	0.12	ppbV #	66
8) 1,3-Butadiene	1.709	39	11190	0.15	ppbV #	73
9) Bromomethane	2.001	94	5189	0.09	ppbV	81
10) Chloroethane	2.114	64	4625	0.12	ppbV #	48
11) Vinyl bromide	2.217	106	6838	0.11	ppbV	96
12) Trichlorofluoromethane	2.233	101	26652	0.15	ppbV	100
13) Ethanol	2.609	45	3789	0.09	ppbV #	44
14) 1,1-Dichloroethene	2.651	61	16601	0.13	ppbV	91
15) Carbon disulfide	2.670	76	27287	0.13	ppbV #	87
16) 1,1,2-Trichloro-1,2,2-...	2.692	101	25207	0.17	ppbV #	83
17) Acrolein	2.927	56	4602	0.16	ppbV #	73
18) Allyl chloride	3.036	76	4449	0.13	ppbV	100
19) Isopropanol	3.056	45	17765	0.11	ppbV #	82
20) Methylene chloride	3.133	49	24053	0.22	ppbV	85
21) Acetone	3.152	43	18833	0.14	ppbV #	84
22) 1,2-Dichloroethene (tr...	3.255	61	14679	0.13	ppbV	99
23) n-Pentane	3.332	43	22192	0.15	ppbV #	76
24) n-Hexane	3.335	41	27445	0.14	ppbV	93
25) Methyl tert-butyl ether	3.345	73	31159	0.15	ppbV	87
26) Tert-butyl alcohol	3.409	59	24420	0.16	ppbV	100
27) 1,1-Dichloroethane	3.737	63	23020	0.16	ppbV	95
28) 1,2-Dichloroethene (cis)	4.171	61	14208	0.13	ppbV	91
29) Cyclohexane	4.329	56	21905	0.16	ppbV	81
30) Chloroform	4.393	83	24362	0.16	ppbV	98
31) Ethyl acetate	4.499	45	4594	0.14	ppbV	93
32) Carbon tetrachloride	4.499	117	25046	0.15	ppbV	99
33) Tetrahydrofuran	4.525	42	18461	0.16	ppbV	97
34) 1,1,1-Trichloroethane	4.554	97	23577	0.16	ppbV	97
35) Methyl ethyl ketone	4.644	43	25819	0.14	ppbV	98
36) n-Heptane	4.840	43	29137	0.15	ppbV	91
37) Benzene	4.869	78	37140	0.16	ppbV	100
38) 1,2-Dichloroethane	5.036	62	17197	0.14	ppbV	97
40) Trichloroethene	5.371	130	14247	0.16	ppbV	94
41) 2,2,4-Trimethylpentane	4.766	57	67176	0.14	ppbV #	86
42) 1,2-Dichloropropane	5.831	63	16717	0.18	ppbV	92
43) Bromodichloromethane	5.885	83	23945	0.15	ppbV	99
44) Methyl methacrylate	6.033	41	26553	0.18	ppbV	87
45) 1,4-Dioxane	6.078	88	7098	0.14	ppbV	92
46) cis-1,3-Dichloropropene	6.477	75	20604	0.16	ppbV	89
47) Toluene	6.708	91	46975	0.17	ppbV	94
48) Methyl isobutyl ketone	7.091	43	42896	0.18	ppbV #	83
49) Tetrachloroethene	7.084	166	19322	0.19	ppbV	95
50) trans-1,3-Dichloropropene	7.123	75	17225	0.13	ppbV #	78
51) 1,1,2-Trichloroethane	7.287	97	15609	0.17	ppbV	92

AL SDG #E19-02214

Data Path : C:\DATA\03-13-19\
 Data File : aa1526std05.D
 Acq On : 13 Mar 2019 2:52 pm
 Operator : jls
 Sample : 0.2 ppbv Std
 Misc : CC483586
 ALS Vial : 6 Sample Multiplier: 1

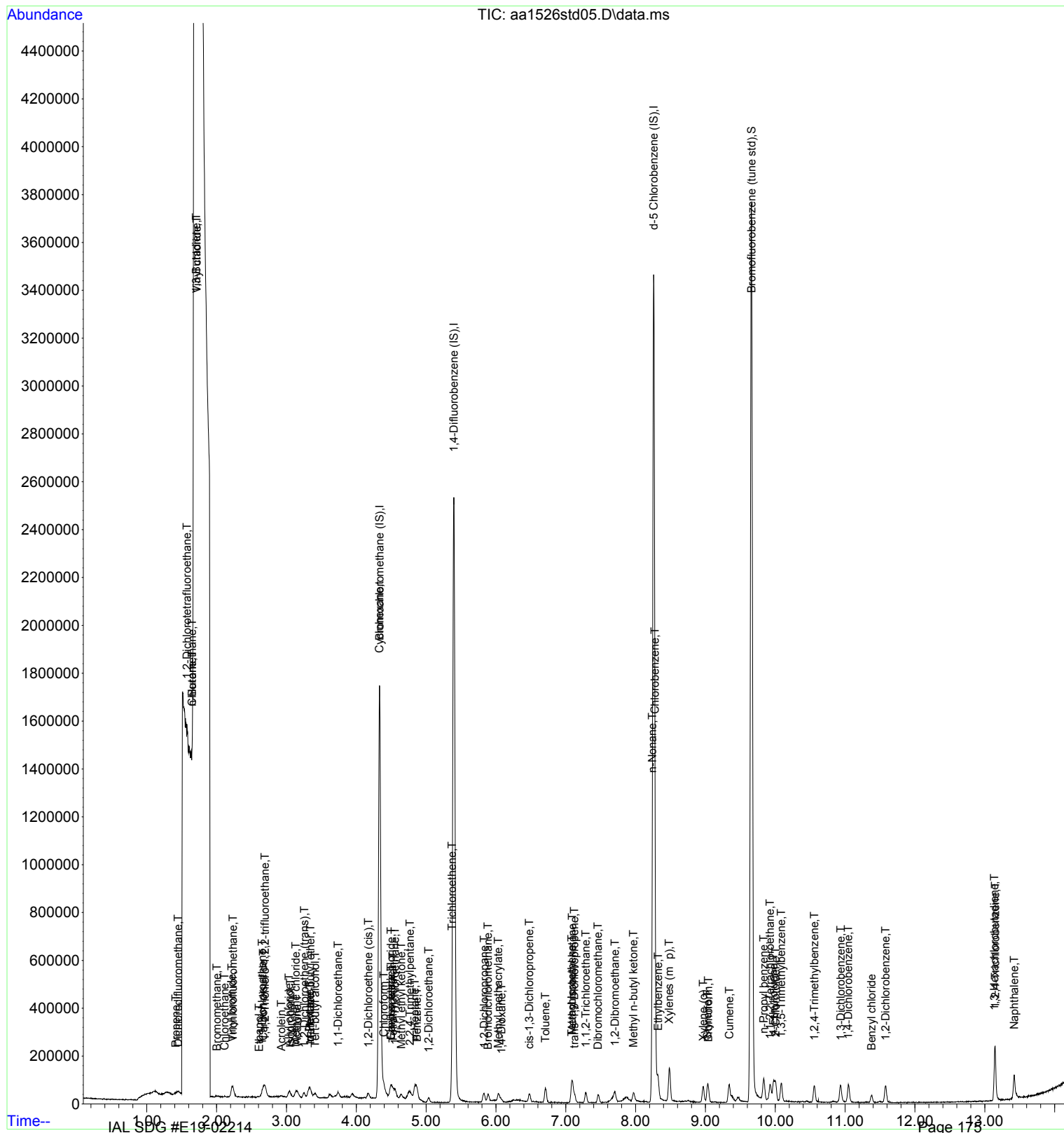
Quant Time: Mar 13 14:08:10 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 13:39:56 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.461	129	21905	0.15	ppbV	97
53) 1,2-Dibromoethane	7.705	107	23433	0.16	ppbV	99
54) Methyl n-butyl ketone	7.969	43	33600	0.15	ppbV	96
56) n-Nonane	8.239	43	51136	0.17	ppbV	87
57) Chlorobenzene	8.277	112	35639	0.17	ppbV #	31
58) Ethylbenzene	8.322	91	62348	0.17	ppbV	97
59) Xylenes (m&p)	8.480	91	96106	0.36	ppbV	100
60) Xylene (o)	8.969	91	49145	0.16	ppbV	97
61) Styrene	9.030	104	29553	0.15	ppbV	97
62) Bromoform	9.043	173	17605	0.14	ppbV	95
63) Cumene	9.342	105	60115	0.16	ppbV	93
65) n-Propyl benzene	9.834	91	89183	0.18	ppbV	99
66) 1,1,2,2-Tetrachloroethane	9.924	83	40104	0.17	ppbV	97
67) 4-Ethyltoluene	9.975	105	64961	0.17	ppbV	99
68) 2-Chlorotoluene	10.004	91	57404	0.17	ppbV	95
69) 1,3,5-Trimethylbenzene	10.084	105	53311	0.16	ppbV	100
70) 1,2,4-Trimethylbenzene	10.560	105	50867	0.15	ppbV	92
71) 1,3-Dichlorobenzene	10.936	146	40216	0.19	ppbV	97
72) 1,4-Dichlorobenzene	11.046	146	37292	0.17	ppbV	95
73) Benzyl chloride	11.377	91	28817	0.10	ppbV	99
74) 1,2-Dichlorobenzene	11.579	146	35217	0.17	ppbV	98
75) 1,3-Hexachlorobutadiene	13.139	225	19838	0.20	ppbV	89
76) 1,2,4-Trichlorobenzene	13.152	180	35134	0.23	ppbV	100
77) Naphthalene	13.422	128	102819	0.22	ppbV	97

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

Data Path : C:\DATA\03-13-19\
 Data File : aa1526std05.D
 Acq On : 13 Mar 2019 2:52 pm
 Operator : jls
 Sample : 0.2 ppbv Std
 Misc : CC483586
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 13 14:08:10 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 13:39:56 2019
 Response via : Initial Calibration



Initial Calibration Verification Sample Standard

Lab Sample Name: 10 PPBV ICVSS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv
Amount of standard injected (ml): 50

Data File: AA1527ICVSS
Date Analyzed: 3/13/2019

Runs with this ICVSS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1521BFB]	03/13/2019 9:57
40 PPBV STD [AA1522STD01]	03/13/2019 11:03
20 PPBV STD [AA1523STD02]	03/13/2019 11:25
10 PPBV STD [AA1524STD03]	03/13/2019 11:46
2 PPBV STD [AA1525STD04]	03/13/2019 13:53
0.2 PPBV STD [AA1526STD05]	03/13/2019 14:52
10 PPBV ICVSS [AA1527ICVSS]	03/13/2019 15:26

Compound	CAS #	Injected Amount (ppbv)	Recovered Amount (ppbv)	% Recovery	QC Limit
Acetone	67-64-1	11	11	100	
Acrolein	107-02-8	7.1	7.6	110	
Allyl Chloride	107-05-1	11	12	110	
Benzene	71-43-2	10	12	120	
Benzyl chloride	100-44-7	11	11	100	
Bromodichloromethane	75-27-4	11	12	110	
Bromoform	75-25-2	11	12	110	
Bromomethane	74-83-9	11	11	100	
1,3-Butadiene	106-99-0	11	11	100	
n-Butane	106-97-8	11	10	91	
Chlorobenzene	108-90-7	10	11	110	
Chloroethane	75-00-3	11	11	100	
Chloroform	67-66-3	11	12	110	
Chloromethane	74-87-3	10	12	120	
Carbon disulfide	75-15-0	11	13	120	
Carbon tetrachloride	56-23-5	11	11	100	
2-Chlorotoluene	95-49-8	11	11	100	
Cumene	98-82-8	11	12	110	
Cyclohexane	110-82-7	11	10	91	
Dibromochloromethane	124-48-1	11	12	110	
1,2-Dibromoethane	106-93-4	10	12	120	
1,2-Dichlorobenzene	95-50-1	10	11	110	
1,3-Dichlorobenzene	541-73-1	10	11	110	
1,4-Dichlorobenzene	106-46-7	10	11	110	
Dichlorodifluoromethane	75-71-8	11	12	110	
1,1-Dichloroethane	75-34-3	11	11	100	
1,2-Dichloroethane	107-06-2	11	11	100	
1,1-Dichloroethene	75-35-4	11	12	110	
1,2-Dichloroethene (cis)	156-59-2	10	12	120	
1,2-Dichloroethene (trans)	156-60-5	11	12	110	
1,2-Dichloropropane	78-87-5	11	11	100	
1,3-Dichloropropene (cis)	10061-01-5	11	12	110	
1,3-Dichloropropene (trans)	10061-02-6	10	11	110	
1,2-Dichlorotetrafluoroethane	76-14-2	11	11	100	
1,4-Dioxane	123-91-1	8.3	11	130	
Ethanol	64-17-5	8.7	9.7	110	
Ethyl acetate	141-78-6	11	11	100	
Ethylbenzene	100-41-4	11	11	100	
4-Ethyltoluene	622-96-8	11	11	100	
n-Heptane	142-82-5	11	11	100	

ICVSS recovery must be within 70-130% of the spiked value for all compounds.

* Values outside of QC limits

Initial Calibration Verification Sample Standard

Lab Sample Name: 10 PPBV ICVSS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv
Amount of standard injected (ml): 50

Data File: AA1527ICVSS
Date Analyzed: 3/13/2019

Runs with this ICVSS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1521BFB]	03/13/2019 9:57
40 PPBV STD [AA1522STD01]	03/13/2019 11:03
20 PPBV STD [AA1523STD02]	03/13/2019 11:25
10 PPBV STD [AA1524STD03]	03/13/2019 11:46
2 PPBV STD [AA1525STD04]	03/13/2019 13:53
0.2 PPBV STD [AA1526STD05]	03/13/2019 14:52
10 PPBV ICVSS [AA1527ICVSS]	03/13/2019 15:26

Compound	CAS #	Injected Amount (ppbv)	Recovered Amount (ppbv)	% Recovery	QC Limit
1,3-Hexachlorobutadiene	87-68-3	10	11	110	
n-Hexane	110-54-3	10	9.5	95	
Isopropanol	67-63-0	8.2	10	120	
Methylene chloride	75-09-2	11	9.9	90	
Methyl ethyl ketone	78-93-3	10	11	110	
Methyl isobutyl ketone	108-10-1	11	11	100	
Methyl methacrylate	80-62-6	11	10	91	
Methyl n-butyl ketone	591-78-6	9.4	11	120	
Methyl tert-butyl ether	1634-04-4	11	12	110	
Naphthalene	91-20-3	9.3	11	120	
n-Nonane	111-84-2	11	10	91	
n-Pentane	109-66-0	11	11	100	
Propene	115-07-1	11	12	110	
n-Propyl benzene	103-65-1	11	12	110	
Styrene	100-42-5	10	12	120	
Tert-butyl alcohol	75-65-0	8.0	9.0	110	
1,1,2,2-Tetrachloroethane	79-34-5	10	11	110	
Tetrachloroethene	127-18-4	10	11	110	
Tetrahydrofuran	109-99-9	11	12	110	
Toluene	108-88-3	10	12	120	
1,2,4-Trichlorobenzene	120-82-1	8.8	11	130	
1,1,1-Trichloroethane	71-55-6	11	11	100	
1,1,2-Trichloroethane	79-00-5	10	12	120	
Trichloroethene	79-01-6	10	11	110	
Trichlorofluoromethane	75-69-4	11	12	110	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	11	11	100	
1,2,4-Trimethylbenzene	95-63-6	10	12	120	
1,3,5-Trimethylbenzene	108-67-8	11	12	110	
2,2,4-Trimethylpentane	540-84-1	11	11	100	
Vinyl bromide	593-60-2	9.7	13	130	
Vinyl chloride	75-01-4	11	12	110	
Xylenes (m&p)	179601-23-1	22	23	100	
Xylenes (o)	95-47-6	11	11	100	

ICVSS recovery must be within 70-130% of the spiked value for all compounds.

* Values outside of QC limits

Data Path : C:\DATA\03-13-19\
 Data File : aa1527icvss.D
 Acq On : 13 Mar 2019 3:26 pm
 Operator : jls
 Sample : 10 ppbv ICVSS
 Misc : CC483422
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 14 07:21:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.335	130	583648	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2364331	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2014746	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	1732211	9.85	ppbV	0.000

Target Compounds					Qvalue	
2) Propene	1.412	41	748543	11.51	ppbV	85
3) Dichlorodifluoromethane	1.451	85	1802725	12.33	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.567	85	1792974	10.61	ppbV	95
5) n-Butane	1.650	43	1337369	10.29	ppbV	96
6) Chloromethane	1.650	15	199458	11.85	ppbV	86
7) Vinyl chloride	1.705	62	674458	11.93	ppbV	97
8) 1,3-Butadiene	1.715	39	722131	11.17	ppbV	90
9) Bromomethane	2.004	94	566534	11.50	ppbV	99
10) Chloroethane	2.117	64	368766	10.61	ppbV	97
11) Vinyl bromide	2.220	106	690120	12.57	ppbV	99
12) Trichlorofluoromethane	2.232	101	1798513	11.60	ppbV	100
13) Ethanol	2.612	45	354409	9.66	ppbV	97
14) 1,1-Dichloroethene	2.654	61	1273882	11.73	ppbV	92
15) Carbon disulfide	2.673	76	2302588	12.81	ppbV	98
16) 1,1,2-Trichloro-1,2,2-...	2.695	101	1495221	11.21	ppbV	87
17) Acrolein	2.930	56	185433	7.64	ppbV	98
18) Allyl chloride	3.043	76	362887	12.37	ppbV	100
19) Isopropanol	3.056	45	1416317	10.09	ppbV	97
20) Methylene chloride	3.136	49	944299	9.86	ppbV	96
21) Acetone	3.155	43	1347935	11.37	ppbV	91
22) 1,2-Dichloroethene (tr...	3.255	61	1144605	11.70	ppbV	99
23) n-Pentane	3.332	43	1728735	10.99	ppbV	97
24) n-Hexane	3.329	41	1672985	9.54	ppbV	89
25) Methyl tert-butyl ether	3.342	73	2044692	11.63	ppbV	91
26) Tert-butyl alcohol	3.409	59	1201294	9.00	ppbV	100
27) 1,1-Dichloroethane	3.744	63	1454057	11.39	ppbV	98
28) 1,2-Dichloroethene (cis)	4.171	61	1092548	11.55	ppbV	100
29) Cyclohexane	4.335	56	1273206	10.50	ppbV	93
30) Chloroform	4.396	83	1596677	11.89	ppbV	97
31) Ethyl acetate	4.490	45	311963	10.80	ppbV	96
32) Carbon tetrachloride	4.502	117	1659100	11.24	ppbV	100
33) Tetrahydrofuran	4.519	42	1147108	11.77	ppbV	94
34) 1,1,1-Trichloroethane	4.560	97	1503836	11.39	ppbV	98
35) Methyl ethyl ketone	4.637	43	1798350	10.92	ppbV	95
36) n-Heptane	4.840	43	1774822	10.55	ppbV	93
37) Benzene	4.869	78	2367880	11.97	ppbV	96
38) 1,2-Dichloroethane	5.039	62	1197781	11.44	ppbV	100
40) Trichloroethene	5.367	130	937195	11.50	ppbV	97
41) 2,2,4-Trimethylpentane	4.766	57	4867456	11.24	ppbV	98
42) 1,2-Dichloropropane	5.827	63	949438	10.99	ppbV	98
43) Bromodichloromethane	5.891	83	1651285	11.85	ppbV	98
44) Methyl methacrylate	6.036	41	1428506	10.38	ppbV	92
45) 1,4-Dioxane	6.068	88	465925	10.53	ppbV	99
46) cis-1,3-Dichloropropene	6.480	75	1406195	11.72	ppbV	100
47) Toluene	6.711	91	2805943	11.52	ppbV	98
48) Methyl isobutyl ketone	7.091	43	2360788	10.52	ppbV	91
49) Tetrachloroethene	7.091	166	1063728	11.45	ppbV	98
50) trans-1,3-Dichloropropene	7.126	75	1274153	10.74	ppbV	97
51) 1,1,2-Trichloroethane	7.287	97	984591	11.56	ppbV	94

AL SDG #E19-02214

Data Path : C:\DATA\03-13-19\
 Data File : aa1527icyss.D
 Acq On : 13 Mar 2019 3:26 pm
 Operator : jls
 Sample : 10 ppbv ICVSS
 Misc : CC483422
 ALS Vial : 7 Sample Multiplier: 1

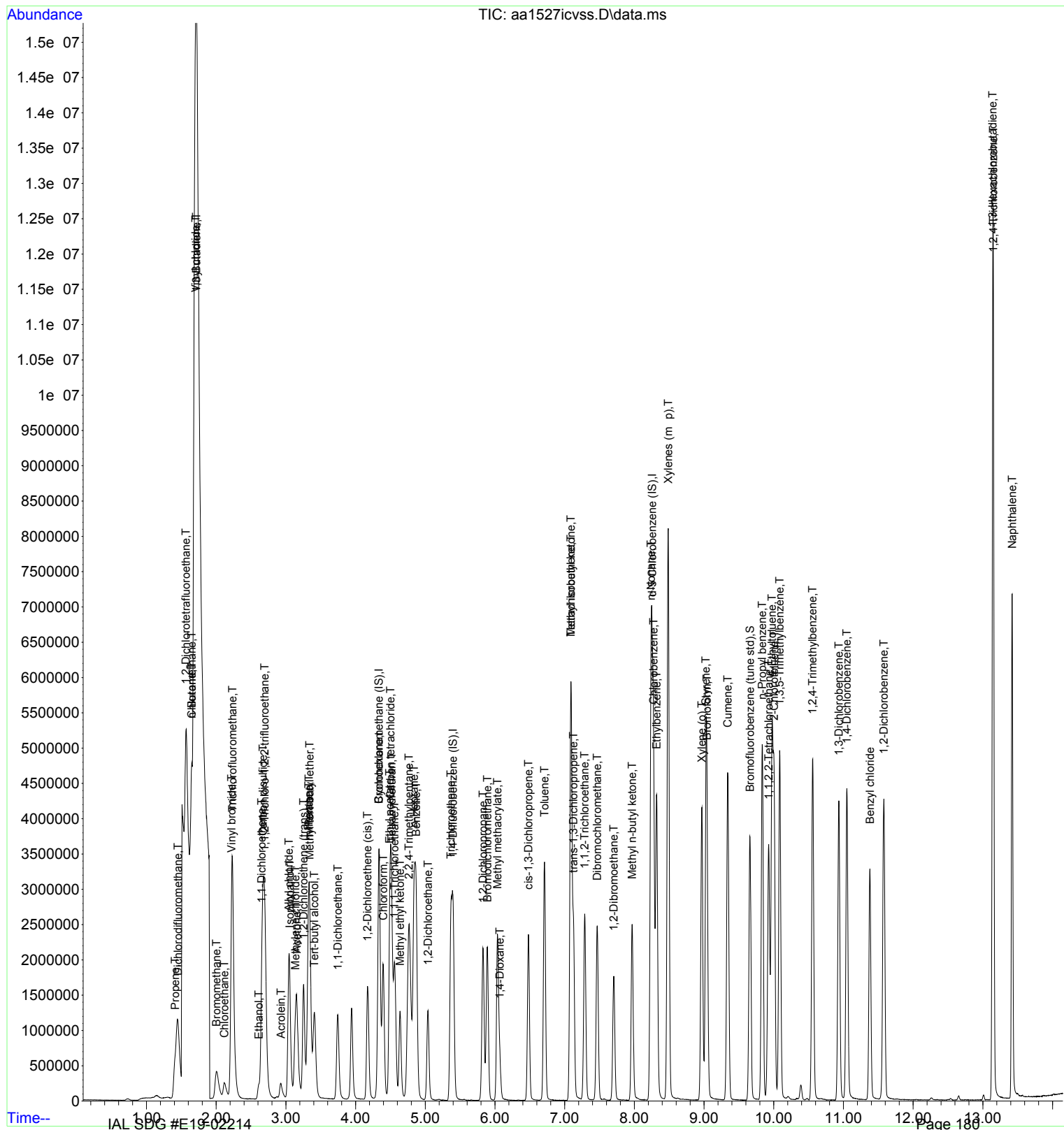
Quant Time: Mar 14 07:21:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1559185	11.67	ppbV	99
53) 1,2-Dibromoethane	7.705	107	1517405	11.52	ppbV	100
54) Methyl n-butyl ketone	7.969	43	2201030	10.73	ppbV	100
56) n-Nonane	8.239	43	2814036	10.48	ppbV	98
57) Chlorobenzene	8.277	112	2053826	10.99	ppbV	98
58) Ethylbenzene	8.319	91	3668920	11.41	ppbV	100
59) Xylenes (m&p)	8.486	91	5457501	23.34	ppbV	98
60) Xylene (o)	8.968	91	2950882	11.37	ppbV	97
61) Styrene	9.026	104	2031345	11.60	ppbV	97
62) Bromoform	9.042	173	1292666	11.85	ppbV	97
63) Cumene	9.338	105	3826084	11.54	ppbV	98
65) n-Propyl benzene	9.833	91	5022139	11.57	ppbV	100
66) 1,1,2,2-Tetrachloroethane	9.927	83	2341213	11.40	ppbV	100
67) 4-Ethyltoluene	9.975	105	3786999	11.44	ppbV	99
68) 2-Chlorotoluene	10.004	91	3422097	11.43	ppbV	95
69) 1,3,5-Trimethylbenzene	10.084	105	3339781	11.51	ppbV	99
70) 1,2,4-Trimethylbenzene	10.557	105	3362667	11.60	ppbV	94
71) 1,3-Dichlorobenzene	10.933	146	2034756	10.90	ppbV	98
72) 1,4-Dichlorobenzene	11.049	146	2068521	11.15	ppbV	97
73) Benzyl chloride	11.380	91	2821388	10.94	ppbV	100
74) 1,2-Dichlorobenzene	11.579	146	2028095	11.16	ppbV	100
75) 1,3-Hexachlorobutadiene	13.142	225	939013	11.17	ppbV	92
76) 1,2,4-Trichlorobenzene	13.152	180	1363579	11.13	ppbV	98
77) Naphthalene	13.422	128	4402041	11.46	ppbV	98

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

Data Path : C:\DATA\03-13-19\
 Data File : aa1527icvss.D
 Acq On : 13 Mar 2019 3:26 pm
 Operator : jls
 Sample : 10 ppbv ICVSS
 Misc : CC483422
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 14 07:21:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA
Amount of standard injected (ml): 50

Date/Time of Calibration: 3/15/2019 08:56
Sample ID: DCS
Laboratory ID: AA1562DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 07:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 08:56
10 PPBV LCS [AA1563LCS]	03/15/2019 09:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
CLEAN CAN CERTIFICATION, BATCH MASTER 3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

Compound Name	Average RRF	Standard RRF	% Difference	Pass/Fail	*
Acetone	2.0	2.3	-14	PASS	
Benzene	3.4	3.9	-14	PASS	
Bromodichloromethane	0.59	0.70	-18	PASS	
Bromoform	0.54	0.61	-13	PASS	
Bromomethane	0.84	1.0	-21	PASS	
1,3-Butadiene	1.1	1.4	-24	PASS	
Chlorobenzene	0.93	0.94	-1.6	PASS	
Chloroethane	0.60	0.69	-16	PASS	
Chloroform	2.3	2.7	-15	PASS	
Chloromethane	0.29	0.37	-27	PASS	
Carbon disulfide	3.1	3.8	-23	PASS	
Carbon tetrachloride	2.5	2.6	-4.4	PASS	
Cyclohexane	2.1	2.0	1.8	PASS	
Dibromochloromethane	0.57	0.65	-14	PASS	
1,2-Dibromoethane	0.56	0.63	-13	PASS	
1,2-Dichlorobenzene	0.90	0.95	-4.9	PASS	
1,3-Dichlorobenzene	0.93	0.94	-1.6	PASS	
1,4-Dichlorobenzene	0.92	0.96	-3.7	PASS	
Dichlorodifluoromethane	2.5	3.1	-24	PASS	
1,1-Dichloroethane	2.2	2.4	-11	PASS	
1,2-Dichloroethane	1.8	2.0	-14	PASS	
1,1-Dichloroethene	1.9	2.2	-18	PASS	
1,2-Dichloroethene (cis)	1.6	1.8	-12	PASS	
1,2-Dichloroethene (trans)	1.7	1.9	-14	PASS	
1,2-Dichloropropane	0.37	0.39	-7.7	PASS	
1,3-Dichloropropene (cis)	0.51	0.58	-15	PASS	
1,3-Dichloropropene (trans)	0.50	0.60	-19	PASS	
1,2-Dichlorotetrafluoroethane	2.9	3.4	-17	PASS	
1,4-Dioxane	0.19	0.21	-11	PASS	
Ethylbenzene	1.6	1.7	-7.2	PASS	
n-Heptane	2.9	2.9	0.00	PASS	
1,3-Hexachlorobutadiene	0.42	0.45	-7.7	PASS	
n-Hexane	3.0	3.6	-21	PASS	
Methylene chloride	1.6	1.6	1.8	PASS	
Methyl ethyl ketone	2.8	3.0	-7.2	PASS	
Methyl isobutyl ketone	0.95	1.0	-9.1	PASS	
Methyl tert-butyl ether	3.0	3.4	-12	PASS	
Styrene	0.87	0.97	-12	PASS	
Tert-butyl alcohol	2.3	2.3	-1.5	PASS	
1,1,2,2-Tetrachloroethane	1.0	1.2	-15	PASS	
Tetrachloroethene	0.39	0.43	-10	PASS	
Toluene	1.0	1.2	-15	PASS	
1,2,4-Trichlorobenzene	0.61	0.64	-4.4	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
 Instrument: AA
 Amount of standard injected (ml): 50

Date/Time of Calibration: 3/15/2019 08:56
 Sample ID: DCS
 Laboratory ID: AA1562DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 07:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 08:56
10 PPBV LCS [AA1563LCS]	03/15/2019 09:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
CLEAN CAN CERTIFICATION, BATCH MASTER 3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

Compound Name	Average RRF	Standard RRF	% Difference	PassFail	*
1,1,1-Trichloroethane	2.3	2.4	-8.3	PASS	
1,1,2-Trichloroethane	0.36	0.41	-14	PASS	
Trichloroethene	0.35	0.37	-7.5	PASS	
Trichlorofluoromethane	2.7	3.0	-14	PASS	
1,1,2-Trichloro-1,2,2-trifluoroethane	2.3	2.5	-8.5	PASS	
1,2,4-Trimethylbenzene	1.4	1.6	-13	PASS	
1,3,5-Trimethylbenzene	1.4	1.6	-13	PASS	
2,2,4-Trimethylpentane	1.8	2.0	-6.7	PASS	
Vinyl bromide	0.94	1.1	-19	PASS	
Vinyl chloride	0.97	1.3	-29	PASS	
Xylenes (m&p)	1.2	1.3	-16	PASS	
Xylenes (o)	1.3	1.4	-8.9	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E19-02214

Data Path : C:\DATA\03-15-19\
 Data File : aa1562dcvs.D
 Acq On : 15 Mar 2019 8:56 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 15 10:16:34 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Bromochloromethane (IS)	1.000	1.000	0.0	87	0.00
2 T	Propene	1.114	1.253	-12.5	86	0.00
3 T	Dichlorodifluoromethane	2.504	3.105	-24.0	96	0.00
4 T	1,2-Dichlorotetrafluoroetha	2.895	3.377	-16.6	96	0.00
5 T	n-Butane	2.228	2.282	-2.4	87	0.00
6 T	Chloromethane	0.288	0.366	-27.1	106	0.00
7 T	Vinyl chloride	0.969	1.251	-29.1	100	0.00
8 T	1,3-Butadiene	1.108	1.368	-23.5	101	0.00
9 T	Bromomethane	0.844	1.025	-21.4	91	0.00
10 T	Chloroethane	0.596	0.689	-15.6	90	0.00
11 T	Vinyl bromide	0.941	1.119	-18.9	89	0.00
12 T	Trichlorofluoromethane	2.656	3.026	-13.9	92	0.00
13 T	Ethanol	0.629	0.596	5.2	75	0.00
14 T	1,1-Dichloroethene	1.860	2.189	-17.7	91	0.00
15 T	Carbon disulfide	3.081	3.788	-22.9	94	0.00
16 T	1,1,2-Trichloro-1,2,2-trifl	2.285	2.479	-8.5	91	0.00
17 T	Acrolein	0.416	0.411	1.2	79	0.00
18 T	Allyl chloride	0.503	0.593	-17.9	91	0.00
19 T	Isopropanol	2.406	2.547	-5.9	82	0.00
20 T	Methylene chloride	1.641	1.612	1.8	86	0.00
21 T	Acetone	2.031	2.324	-14.4	87	0.00
22 T	1,2-Dichloroethene (trans)	1.676	1.907	-13.8	89	0.00
23 T	n-Pentane	2.695	2.961	-9.9	88	0.00
24 T	n-Hexane	3.006	3.630	-20.8	88	0.00
25 T	Methyl tert-butyl ether	3.011	3.357	-11.5	92	0.00
26 T	Tert-butyl alcohol	2.287	2.321	-1.5	84	0.00
27 T	1,1-Dichloroethane	2.187	2.436	-11.4	90	0.00
28 T	1,2-Dichloroethene (cis)	1.620	1.821	-12.4	88	0.00
29 t	Cyclohexane	2.079	2.041	1.8	82	0.00
30 T	Chloroform	2.300	2.653	-15.3	93	0.00
31 T	Ethyl acetate	0.495	0.511	-3.2	84	0.00
32 T	Carbon tetrachloride	2.530	2.641	-4.4	85	0.00
33 T	Tetrahydrofuran	1.670	1.778	-6.5	86	0.00
34 T	1,1,1-Trichloroethane	2.262	2.449	-8.3	90	0.00
35 T	Methyl ethyl ketone	2.822	3.026	-7.2	85	0.00
36 T	n-Heptane	2.883	2.882	0.0	83	0.00
37 T	Benzene	3.390	3.859	-13.8	93	0.00
38 T	1,2-Dichloroethane	1.794	2.049	-14.2	92	0.00
39 I	1,4-Difluorobenzene (IS)	1.000	1.000	0.0	86	0.00
40 T	Trichloroethene	0.345	0.371	-7.5	85	0.00
41 T	2,2,4-Trimethylpentane	1.832	1.955	-6.7	82	0.00
42 T	1,2-Dichloropropane	0.366	0.394	-7.7	90	0.00
43 T	Bromodichloromethane	0.589	0.695	-18.0	95	0.00
44 T	Methyl methacrylate	0.582	0.603	-3.6	86	0.00
45 T	1,4-Dioxane	0.187	0.207	-10.7	90	0.00
46 T	cis-1,3-Dichloropropene	0.508	0.584	-15.0	92	0.00
47 T	Toluene	1.031	1.186	-15.0	95	0.00
48 T	Methyl isobutyl ketone	0.949	1.035	-9.1	89	0.00
49 T	Tetrachloroethene	0.393	0.434	-10.4	91	0.00
50 T	trans-1,3-Dichloropropene	0.502	0.597	-18.9	94	0.00
51 T	1,1,2-Trichloroethane	0.360	0.410	-13.9	94	0.00
52 T	Dibromochloromethane	0.565	0.645	-14.2	92	0.00
53 T	1,2-Dibromoethane	0.557	0.630	-13.1	92	0.00

AL SDG #E19-02214

Data Path : C:\DATA\03-15-19\
 Data File : aa1562dcvs.D
 Acq On : 15 Mar 2019 8:56 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 15 10:16:34 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
54 T	Methyl n-butyl ketone	0.868	0.927	-6.8	85	0.00
55 I	d-5 Chlorobenzene (IS)	1.000	1.000	0.0	95	0.00
56 T	n-Nonane	1.333	1.290	3.2	89	0.00
57 T	Chlorobenzene	0.927	0.942	-1.6	93	0.00
58 T	Ethylbenzene	1.595	1.710	-7.2	97	0.00
59 T	Xylenes (m&p)	1.161	1.346	-15.9	103	0.00
60 T	Xylene (o)	1.289	1.404	-8.9	99	0.00
61 T	Styrene	0.869	0.973	-12.0	97	0.00
62 T	Bromoform	0.541	0.612	-13.1	97	0.00
63 T	Cumene	1.646	1.801	-9.4	97	0.00
64 S	Bromofluorobenzene (tune st	0.873	0.875	-0.2	99	0.00
65 T	n-Propyl benzene	2.155	2.471	-14.7	102	0.00
66 T	1,1,2,2-Tetrachloroethane	1.019	1.169	-14.7	105	0.00
67 T	4-Ethyltoluene	1.643	1.850	-12.6	100	0.00
68 T	2-Chlorotoluene	1.486	1.707	-14.9	103	0.00
69 T	1,3,5-Trimethylbenzene	1.440	1.632	-13.3	100	0.00
70 T	1,2,4-Trimethylbenzene	1.439	1.628	-13.1	100	0.00
71 T	1,3-Dichlorobenzene	0.926	0.941	-1.6	95	0.00
72 T	1,4-Dichlorobenzene	0.921	0.955	-3.7	94	0.00
73	Benzyl chloride	1.280	1.498	-17.0	98	0.00
74 T	1,2-Dichlorobenzene	0.902	0.946	-4.9	96	0.00
75 T	1,3-Hexachlorobutadiene	0.417	0.449	-7.7	100	0.00
76 T	1,2,4-Trichlorobenzene	0.608	0.635	-4.4	96	0.00
77 T	Naphthalene	1.906	2.001	-5.0	91	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data Path : C:\DATA\03-15-19\
 Data File : aa1562dcvs.D
 Acq On : 15 Mar 2019 8:56 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 15 10:16:34 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.339	130	540099	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.400	114	2152642	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	1980931	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1733136	10.02	ppbV	0.000
Target Compounds						Qvalue
2) Propene	1.416	41	744603	12.38	ppbV	86
3) Dichlorodifluoromethane	1.448	85	1844729	13.64	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.568	85	1823932	11.67	ppbV	99
5) n-Butane	1.650	43	1355539	11.27	ppbV	94
6) Chloromethane	1.643	15	217486	13.96	ppbV #	1
7) Vinyl chloride	1.705	62	743170	14.20	ppbV	97
8) 1,3-Butadiene	1.715	39	812690	13.58	ppbV	85
9) Bromomethane	2.011	94	547899	12.02	ppbV	99
10) Chloroethane	2.126	64	371981	11.56	ppbV	95
11) Vinyl bromide	2.220	106	664982	13.09	ppbV	99
12) Trichlorofluoromethane	2.233	101	1797543	12.53	ppbV	100
13) Ethanol	2.612	45	302522	8.91	ppbV	94
14) 1,1-Dichloroethene	2.657	61	1300361	12.94	ppbV	97
15) Carbon disulfide	2.676	76	2250269	13.52	ppbV	98
16) 1,1,2-Trichloro-1,2,2-...	2.696	101	1472683	11.93	ppbV	92
17) Acrolein	2.927	56	266414	11.86	ppbV	96
18) Allyl chloride	3.043	76	352171	12.97	ppbV	100
19) Isopropanol	3.056	45	1375486	10.59	ppbV	95
20) Methylene chloride	3.136	49	957976	10.81	ppbV	92
21) Acetone	3.159	43	1380798	12.59	ppbV	89
22) 1,2-Dichloroethene (tr...	3.255	61	1133230	12.52	ppbV	97
23) n-Pentane	3.332	43	1759301	12.09	ppbV	97
24) n-Hexane	3.332	41	2156706	13.29	ppbV	84
25) Methyl tert-butyl ether	3.345	73	1994177	12.26	ppbV	92
26) Tert-butyl alcohol	3.409	59	1504365	12.18	ppbV	100
27) 1,1-Dichloroethane	3.744	63	1447325	12.25	ppbV	98
28) 1,2-Dichloroethene (cis)	4.175	61	1081721	12.36	ppbV	97
29) Cyclohexane	4.339	56	1212799	10.80	ppbV	93
30) Chloroform	4.396	83	1576023	12.69	ppbV	99
31) Ethyl acetate	4.490	45	303791	11.37	ppbV	99
32) Carbon tetrachloride	4.506	117	1569101	11.49	ppbV	100
33) Tetrahydrofuran	4.519	42	1152637	12.78	ppbV	96
34) 1,1,1-Trichloroethane	4.564	97	1455056	11.91	ppbV	99
35) Methyl ethyl ketone	4.638	43	1797620	11.79	ppbV	96
36) n-Heptane	4.840	43	1712397	11.00	ppbV	93
37) Benzene	4.869	78	2292919	12.52	ppbV	98
38) 1,2-Dichloroethane	5.040	62	1217588	12.57	ppbV	100
40) Trichloroethene	5.367	130	879497	11.85	ppbV	96
41) 2,2,4-Trimethylpentane	4.766	57	4628297	11.74	ppbV	98
42) 1,2-Dichloropropane	5.830	63	932255	11.85	ppbV	100
43) Bromodichloromethane	5.892	83	1646750	12.98	ppbV	100
44) Methyl methacrylate	6.036	41	1426762	11.38	ppbV	95
45) 1,4-Dioxane	6.065	88	446212	11.08	ppbV	98
46) cis-1,3-Dichloropropene	6.480	75	1382524	12.65	ppbV	100
47) Toluene	6.711	91	2807849	12.66	ppbV	95
48) Methyl isobutyl ketone	7.091	43	2451137	12.00	ppbV	88
49) Tetrachloroethene	7.091	166	1027460	12.14	ppbV	97
50) trans-1,3-Dichloropropene	7.126	75	1284750	11.89	ppbV	94
51) 1,1,2-Trichloroethane	7.287	97	971384	12.52	ppbV	91

AL SDG #E19-02214

Data Path : C:\DATA\03-15-19\
 Data File : aa1562dcvs.D
 Acq On : 15 Mar 2019 8:56 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

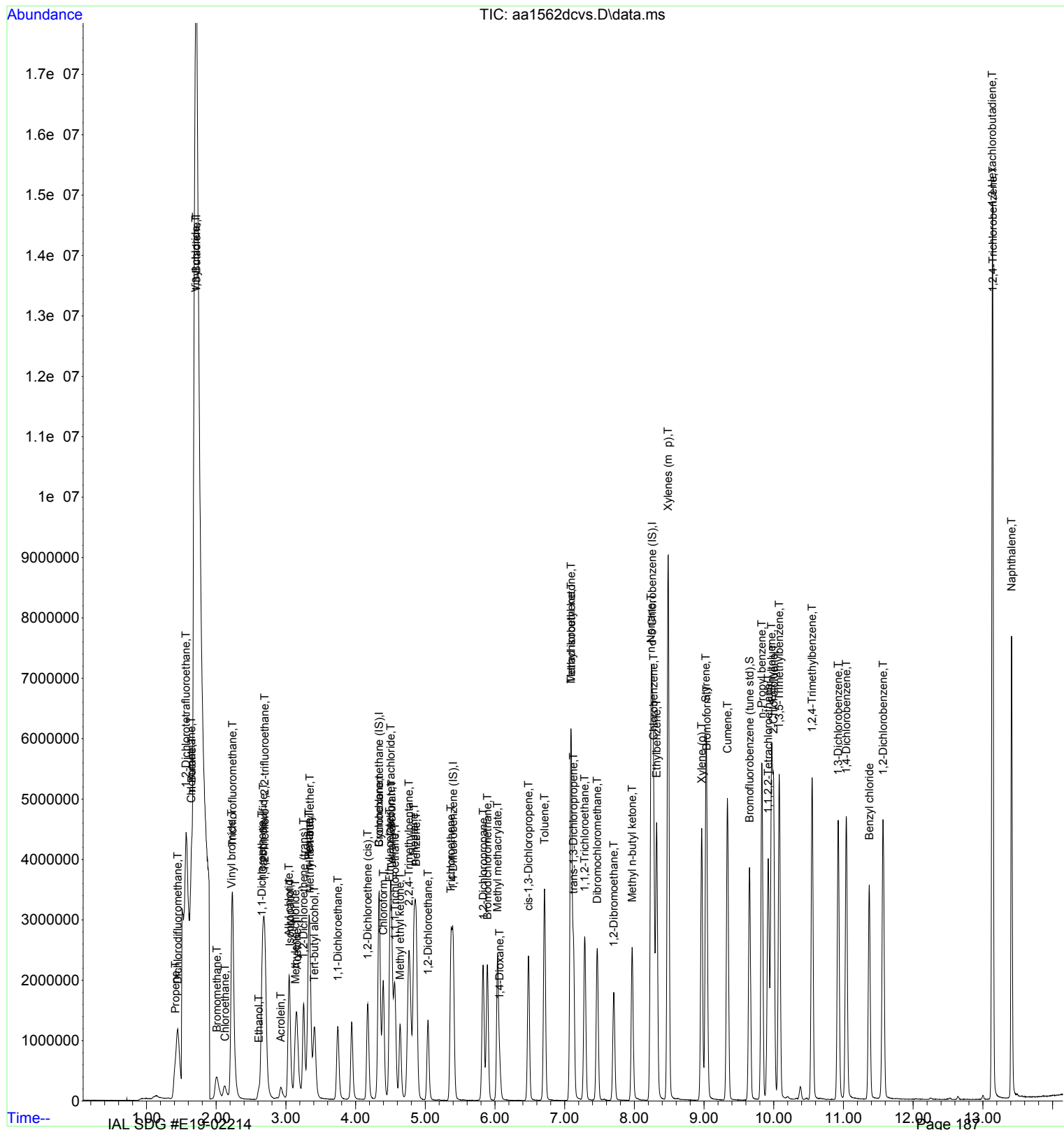
Quant Time: Mar 15 10:16:34 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1527331	12.56	ppbV	99
53) 1,2-Dibromoethane	7.705	107	1490945	12.43	ppbV	100
54) Methyl n-butyl ketone	7.969	43	2193984	11.74	ppbV	98
56) n-Nonane	8.239	43	2810084	10.64	ppbV	95
57) Chlorobenzene	8.277	112	2051877	11.17	ppbV	97
58) Ethylbenzene	8.319	91	3725375	11.79	ppbV	98
59) Xylenes (m&p)	8.483	91	5866998	25.52	ppbV	99
60) Xylene (o)	8.965	91	3058645	11.98	ppbV	99
61) Styrene	9.026	104	2121253	12.32	ppbV	99
62) Bromoform	9.039	173	1334462	12.44	ppbV	98
63) Cumene	9.335	105	3925283	12.04	ppbV	100
65) n-Propyl benzene	9.827	91	5384638	12.62	ppbV	98
66) 1,1,2,2-Tetrachloroethane	9.920	83	2546693	12.62	ppbV	99
67) 4-Ethyltoluene	9.969	105	4030219	12.39	ppbV	99
68) 2-Chlorotoluene	9.998	91	3718603	12.63	ppbV	97
69) 1,3,5-Trimethylbenzene	10.078	105	3555594	12.47	ppbV	99
70) 1,2,4-Trimethylbenzene	10.551	105	3546680	12.44	ppbV	92
71) 1,3-Dichlorobenzene	10.924	146	2050437	11.17	ppbV	99
72) 1,4-Dichlorobenzene	11.042	146	2080660	11.41	ppbV	97
73) Benzyl chloride	11.370	91	2967017	11.70	ppbV	97
74) 1,2-Dichlorobenzene	11.570	146	2061884	11.54	ppbV	99
75) 1,3-Hexachlorobutadiene	13.136	225	977326	11.82	ppbV	91
76) 1,2,4-Trichlorobenzene	13.142	180	1508499	12.52	ppbV	99
77) Naphthalene	13.412	128	4757574	12.60	ppbV	99

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

Data Path : C:\DATA\03-15-19\
 Data File : aa1562dcvs.D
 Acq On : 15 Mar 2019 8:56 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 15 10:16:34 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA
Amount of standard injected (ml): 50

Date/Time of Calibration: 4/4/2019 09:30
Sample ID: DCS
Laboratory ID: AA1962DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1961BFB]	04/04/2019 08:21
10 PPBV DCVS [AA1962DCVS]	04/04/2019 09:30
10 PPBV LCS [AA1963LCS]	04/04/2019 09:55
METHOD BLANK [AA1964BLK]	04/04/2019 10:38
02 PPBV RLLCS [AA1965RLLCS]	04/04/2019 11:02
E19-02214-01 [AA1977]	04/04/2019 16:14
10 PPBV CCCVS [AA1985CCCVS]	04/05/2019 08:20

Compound Name	Average RRF	Standard RRF	% Difference	Pass/Fail	*
Acetone	2.0	2.4	-19	PASS	
Benzene	3.4	3.3	2.4	PASS	
Bromodichloromethane	0.59	0.65	-11	PASS	
Bromoform	0.54	0.60	-11	PASS	
Bromomethane	0.84	0.83	1.9	PASS	
1,3-Butadiene	1.1	1.2	-7.1	PASS	
Chlorobenzene	0.93	0.78	16	PASS	
Chloroethane	0.60	0.53	11	PASS	
Chloroform	2.3	2.4	-5.5	PASS	
Chloromethane	0.29	0.34	-17	PASS	
Carbon disulfide	3.1	3.1	-1.4	PASS	
Carbon tetrachloride	2.5	2.7	-7.4	PASS	
Cyclohexane	2.1	1.6	23	PASS	
Dibromochloromethane	0.57	0.61	-7.1	PASS	
1,2-Dibromoethane	0.56	0.55	2.0	PASS	
1,2-Dichlorobenzene	0.90	0.83	8.4	PASS	
1,3-Dichlorobenzene	0.93	0.81	13	PASS	
1,4-Dichlorobenzene	0.92	0.83	10	PASS	
Dichlorodifluoromethane	2.5	3.0	-21	PASS	
1,1-Dichloroethane	2.2	2.0	7.8	PASS	
1,2-Dichloroethane	1.8	2.1	-17	PASS	
1,1-Dichloroethene	1.9	2.0	-5.9	PASS	
1,2-Dichloroethene (cis)	1.6	1.5	4.8	PASS	
1,2-Dichloroethene (trans)	1.7	1.6	2.8	PASS	
1,2-Dichloropropane	0.37	0.31	15	PASS	
1,3-Dichloropropene (cis)	0.51	0.48	6.3	PASS	
1,3-Dichloropropene (trans)	0.50	0.56	-11	PASS	
1,2-Dichlorotetrafluoroethane	2.9	2.9	-1.6	PASS	
1,4-Dioxane	0.19	0.18	5.9	PASS	
Ethylbenzene	1.6	1.4	12	PASS	
n-Heptane	2.9	2.7	5.5	PASS	
1,3-Hexachlorobutadiene	0.42	0.54	-29	PASS	
n-Hexane	3.0	3.0	1.0	PASS	
Methylene chloride	1.6	1.6	5.1	PASS	
Methyl ethyl ketone	2.8	2.8	1.5	PASS	
Methyl isobutyl ketone	0.95	1.0	-5.9	PASS	
Methyl tert-butyl ether	3.0	2.8	6.8	PASS	
Styrene	0.87	0.77	12	PASS	
Tert-butyl alcohol	2.3	2.0	12	PASS	
1,1,2,2-Tetrachloroethane	1.0	0.99	3.2	PASS	
Tetrachloroethene	0.39	0.36	7.6	PASS	
Toluene	1.0	0.99	3.6	PASS	
1,2,4-Trichlorobenzene	0.61	0.58	4.1	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E19-02214

Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
 Instrument: AA
 Amount of standard injected (ml): 50

Date/Time of Calibration: 4/4/2019 09:30
 Sample ID: DCS
 Laboratory ID: AA1962DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1961BFB]	04/04/2019 08:21
10 PPBV DCVS [AA1962DCVS]	04/04/2019 09:30
10 PPBV LCS [AA1963LCS]	04/04/2019 09:55
METHOD BLANK [AA1964BLK]	04/04/2019 10:38
02 PPBV RLLCS [AA1965RLLCS]	04/04/2019 11:02
E19-02214-01 [AA1977]	04/04/2019 16:14
10 PPBV CCCVS [AA1985CCCVS]	04/05/2019 08:20

Compound Name	Average RRF	Standard RRF	% Difference	Pass/Fail	*
1,1,1-Trichloroethane	2.3	2.5	-8.4	PASS	
1,1,2-Trichloroethane	0.36	0.36	1.4	PASS	
Trichloroethene	0.35	0.30	15	PASS	
Trichlorofluoromethane	2.7	3.0	-12	PASS	
1,1,2-Trichloro-1,2,2-trifluoroethane	2.3	2.1	6.2	PASS	
1,2,4-Trimethylbenzene	1.4	1.3	6.9	PASS	
1,3,5-Trimethylbenzene	1.4	1.4	4.0	PASS	
2,2,4-Trimethylpentane	1.8	1.6	11	PASS	
Vinyl bromide	0.94	0.88	6.3	PASS	
Vinyl chloride	0.97	1.1	-9.1	PASS	
Xylenes (m&p)	1.2	1.1	4.7	PASS	
Xylenes (o)	1.3	1.1	15	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E19-02214

Data Path : C:\DATA\04-04-19\
 Data File : aa1962dcvs.D
 Acq On : 4 Apr 2019 9:30 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 04 10:19:14 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Bromochloromethane (IS)	1.000	1.000	0.0	110	0.00
2 T	Propene	1.114	1.115	-0.1	97	0.00
3 T	Dichlorodifluoromethane	2.504	3.034	-21.2	119	0.00
4 T	1,2-Dichlorotetrafluoroetha	2.895	2.941	-1.6	105	0.00
5 T	n-Butane	2.228	2.063	7.4	100	0.00
6 T	Chloromethane	0.288	0.338	-17.4	124	0.00
7 T	Vinyl chloride	0.969	1.057	-9.1	107	0.00
8 T	1,3-Butadiene	1.108	1.187	-7.1	111	0.00
9 T	Bromomethane	0.844	0.828	1.9	93	0.00
10 T	Chloroethane	0.596	0.530	11.1	88	0.00
11 T	Vinyl bromide	0.941	0.882	6.3	89	0.00
12 T	Trichlorofluoromethane	2.656	2.968	-11.7	114	0.00
13 T	Ethanol	0.629	0.492	21.8	78	0.00
14 T	1,1-Dichloroethene	1.860	1.970	-5.9	104	0.00
15 T	Carbon disulfide	3.081	3.123	-1.4	98	0.00
16 T	1,1,2-Trichloro-1,2,2-trifl	2.285	2.143	6.2	100	0.00
17 T	Acrolein	0.416	0.295	29.1	72	0.00
18 T	Allyl chloride	0.503	0.453	9.9	88	0.00
19 T	Isopropanol	2.406	2.247	6.6	91	0.00
20 T	Methylene chloride	1.641	1.558	5.1	105	0.00
21 T	Acetone	2.031	2.408	-18.6	115	0.00
22 T	1,2-Dichloroethene (trans)	1.676	1.629	2.8	96	0.00
23 T	n-Pentane	2.695	3.076	-14.1	116	0.00
24 T	n-Hexane	3.006	2.975	1.0	91	0.00
25 T	Methyl tert-butyl ether	3.011	2.807	6.8	97	0.00
26 T	Tert-butyl alcohol	2.287	2.018	11.8	93	0.00
27 T	1,1-Dichloroethane	2.187	2.016	7.8	95	0.00
28 T	1,2-Dichloroethene (cis)	1.620	1.542	4.8	95	0.00
29 t	Cyclohexane	2.079	1.595	23.3	81	0.00
30 T	Chloroform	2.300	2.427	-5.5	108	0.00
31 T	Ethyl acetate	0.495	0.455	8.1	95	0.00
32 T	Carbon tetrachloride	2.530	2.718	-7.4	111	0.00
33 T	Tetrahydrofuran	1.670	1.636	2.0	101	0.00
34 T	1,1,1-Trichloroethane	2.262	2.451	-8.4	114	0.00
35 T	Methyl ethyl ketone	2.822	2.779	1.5	98	0.00
36 T	n-Heptane	2.883	2.724	5.5	99	0.00
37 T	Benzene	3.390	3.309	2.4	101	0.00
38 T	1,2-Dichloroethane	1.794	2.091	-16.6	119	0.00
39 I	1,4-Difluorobenzene (IS)	1.000	1.000	0.0	105	0.00
40 T	Trichloroethene	0.345	0.295	14.5	82	0.00
41 T	2,2,4-Trimethylpentane	1.832	1.631	11.0	84	0.00
42 T	1,2-Dichloropropane	0.366	0.313	14.5	87	0.00
43 T	Bromodichloromethane	0.589	0.652	-10.7	109	0.00
44 T	Methyl methacrylate	0.582	0.593	-1.9	103	0.00
45 T	1,4-Dioxane	0.187	0.176	5.9	94	0.00
46 T	cis-1,3-Dichloropropene	0.508	0.476	6.3	92	0.00
47 T	Toluene	1.031	0.994	3.6	97	0.00
48 T	Methyl isobutyl ketone	0.949	1.005	-5.9	105	0.00
49 T	Tetrachloroethene	0.393	0.363	7.6	93	0.00
50 T	trans-1,3-Dichloropropene	0.502	0.558	-11.2	107	0.00
51 T	1,1,2-Trichloroethane	0.360	0.355	1.4	99	0.00
52 T	Dibromochloromethane	0.565	0.605	-7.1	105	0.00
53 T	1,2-Dibromoethane	0.557	0.546	2.0	98	0.00

AL SDG #E19-02214

Data Path : C:\DATA\04-04-19\
 Data File : aa1962dcvs.D
 Acq On : 4 Apr 2019 9:30 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 04 10:19:14 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
54 T	Methyl n-butyl ketone	0.868	0.915	-5.4	103	0.00
55 I	d-5 Chlorobenzene (IS)	1.000	1.000	0.0	130	0.00
56 T	n-Nonane	1.333	1.126	15.5	106	0.00
57 T	Chlorobenzene	0.927	0.779	16.0	105	0.00
58 T	Ethylbenzene	1.595	1.412	11.5	110	0.00
59 T	Xylenes (m&p)	1.161	1.107	4.7	116	0.00
60 T	Xylene (o)	1.289	1.099	14.7	106	0.00
61 T	Styrene	0.869	0.765	12.0	105	0.00
62 T	Bromoform	0.541	0.599	-10.7	130	0.00
63 T	Cumene	1.646	1.473	10.5	109	0.00
64 S	Bromofluorobenzene (tune st	0.873	0.850	2.6	131	0.00
65 T	n-Propyl benzene	2.155	2.072	3.9	118	0.00
66 T	1,1,2,2-Tetrachloroethane	1.019	0.986	3.2	122	0.00
67 T	4-Ethyltoluene	1.643	1.539	6.3	114	0.00
68 T	2-Chlorotoluene	1.486	1.515	-2.0	125	0.00
69 T	1,3,5-Trimethylbenzene	1.440	1.382	4.0	116	0.00
70 T	1,2,4-Trimethylbenzene	1.439	1.340	6.9	112	0.00
71 T	1,3-Dichlorobenzene	0.926	0.805	13.1	111	0.00
72 T	1,4-Dichlorobenzene	0.921	0.825	10.4	111	0.00
73	Benzyl chloride	1.280	1.307	-2.1	118	0.00
74 T	1,2-Dichlorobenzene	0.902	0.826	8.4	115	0.00
75 T	1,3-Hexachlorobutadiene	0.417	0.536	-28.5	164	0.00
76 T	1,2,4-Trichlorobenzene	0.608	0.583	4.1	121	0.00
77 T	Naphthalene	1.906	1.664	12.7	104	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data Path : C:\DATA\04-04-19\
 Data File : aa1962dcvs.D
 Acq On : 4 Apr 2019 9:30 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 04 10:19:14 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.335	130	684601	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2627081	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2714956	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	2306739	9.73	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.415	41	839914	11.01	ppbV	98
3) Dichlorodifluoromethane	1.451	85	2285095	13.33	ppbV	96
4) 1,2-Dichlorotetrafluor...	1.567	85	2013727	10.16	ppbV	96
5) n-Butane	1.650	43	1553703	10.19	ppbV #	85
6) Chloromethane	1.646	15	254756	12.90	ppbV #	13
7) Vinyl chloride	1.708	62	795767	12.00	ppbV	97
8) 1,3-Butadiene	1.719	39	893796	11.78	ppbV #	78
9) Bromomethane	2.004	94	561222	9.71	ppbV	99
10) Chloroethane	2.113	64	363031	8.90	ppbV	94
11) Vinyl bromide	2.219	106	664222	10.31	ppbV	99
12) Trichlorofluoromethane	2.229	101	2235161	12.29	ppbV	100
13) Ethanol	2.615	45	316332	7.35	ppbV	89
14) 1,1-Dichloroethene	2.654	61	1483177	11.65	ppbV	94
15) Carbon disulfide	2.673	76	2351809	11.15	ppbV #	73
16) 1,1,2-Trichloro-1,2,2-...	2.695	101	1613511	10.32	ppbV	99
17) Acrolein	2.930	56	242243	8.51	ppbV	97
18) Allyl chloride	3.043	76	340775	9.90	ppbV	100
19) Isopropanol	3.052	45	1538613	9.34	ppbV #	81
20) Methylene chloride	3.139	49	1173105	10.44	ppbV #	80
21) Acetone	3.155	43	1813186	13.04	ppbV #	75
22) 1,2-Dichloroethene (tr...	3.255	61	1227097	10.69	ppbV	89
23) n-Pentane	3.326	43	2316767	12.56	ppbV	100
24) n-Hexane	3.332	41	2240210	10.89	ppbV	83
25) Methyl tert-butyl ether	3.338	73	2113943	10.25	ppbV	94
26) Tert-butyl alcohol	3.406	59	1658230	10.59	ppbV	100
27) 1,1-Dichloroethane	3.744	63	1518083	10.14	ppbV	98
28) 1,2-Dichloroethene (cis)	4.171	61	1160905	10.46	ppbV	90
29) Cyclohexane	4.335	56	1200936	8.44	ppbV	94
30) Chloroform	4.393	83	1827959	11.61	ppbV	100
31) Ethyl acetate	4.486	45	342800	10.12	ppbV	91
32) Carbon tetrachloride	4.506	117	2046867	11.82	ppbV	98
33) Tetrahydrofuran	4.512	42	1343773	11.75	ppbV	96
34) 1,1,1-Trichloroethane	4.557	97	1845642	11.92	ppbV	98
35) Methyl ethyl ketone	4.634	43	2093029	10.83	ppbV	97
36) n-Heptane	4.837	43	2051628	10.39	ppbV	98
37) Benzene	4.869	78	2491772	10.74	ppbV	92
38) 1,2-Dichloroethane	5.036	62	1574612	12.82	ppbV	99
40) Trichloroethene	5.367	130	852160	9.41	ppbV	99
41) 2,2,4-Trimethylpentane	4.763	57	4712035	9.79	ppbV #	86
42) 1,2-Dichloropropane	5.827	63	905514	9.43	ppbV	96
43) Bromodichloromethane	5.888	83	1884068	12.17	ppbV	97
44) Methyl methacrylate	6.036	41	1712373	11.19	ppbV	89
45) 1,4-Dioxane	6.065	88	462045	9.40	ppbV	97
46) cis-1,3-Dichloropropene	6.480	75	1374369	10.31	ppbV	99
47) Toluene	6.708	91	2871807	10.61	ppbV	94
48) Methyl isobutyl ketone	7.091	43	2904000	11.65	ppbV #	79
49) Tetrachloroethene	7.091	166	1049962	10.17	ppbV	97
50) trans-1,3-Dichloropropene	7.126	75	1466761	11.12	ppbV #	54
51) 1,1,2-Trichloroethane	7.290	97	1026904	10.85	ppbV	89

AL SDG #E19-02214

Data Path : C:\DATA\04-04-19\
 Data File : aa1962dcvs.D
 Acq On : 4 Apr 2019 9:30 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

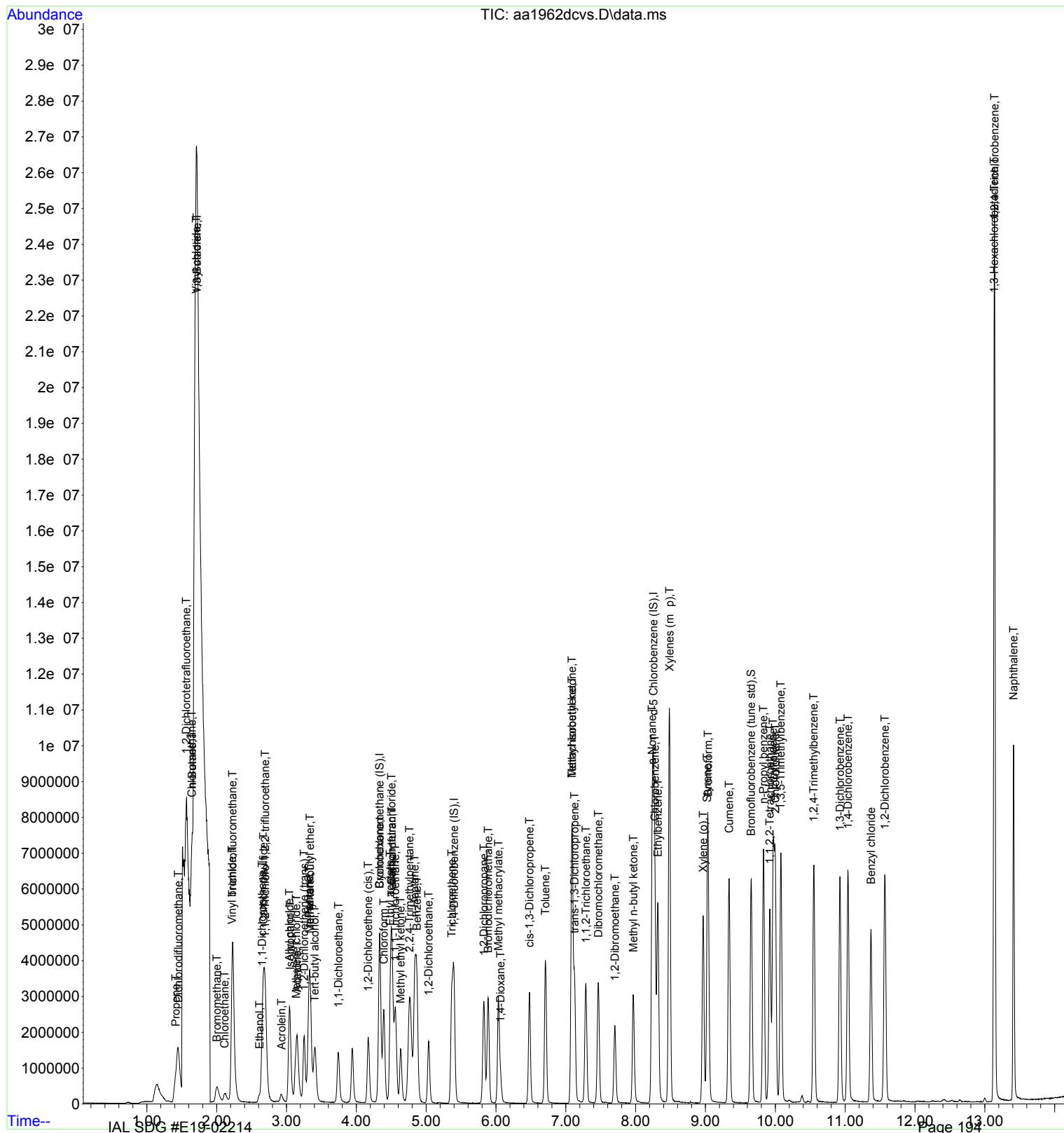
Quant Time: Apr 04 10:19:14 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1748262	11.78	ppbV	100
53) 1,2-Dibromoethane	7.705	107	1576675	10.77	ppbV	100
54) Methyl n-butyl ketone	7.968	43	2643322	11.59	ppbV #	84
56) n-Nonane	8.235	43	3363837	9.30	ppbV	83
57) Chlorobenzene	8.277	112	2327276	9.24	ppbV	96
58) Ethylbenzene	8.319	91	4217559	9.74	ppbV	98
59) Xylenes (m&p)	8.486	91	6613513	20.99	ppbV	98
60) Xylene (o)	8.968	91	3282118	9.38	ppbV	97
61) Styrene	9.026	104	2285732	9.69	ppbV	98
62) Bromoform	9.039	173	1787484	12.16	ppbV	97
63) Cumene	9.338	105	4400350	9.85	ppbV	100
65) n-Propyl benzene	9.830	91	6187945	10.58	ppbV	97
66) 1,1,2,2-Tetrachloroethane	9.920	83	2945224	10.65	ppbV	99
67) 4-Ethyltoluene	9.968	105	4596589	10.31	ppbV	98
68) 2-Chlorotoluene	10.001	91	4524660	11.21	ppbV	99
69) 1,3,5-Trimethylbenzene	10.078	105	4127732	10.56	ppbV	98
70) 1,2,4-Trimethylbenzene	10.550	105	4002588	10.25	ppbV	91
71) 1,3-Dichlorobenzene	10.927	146	2404974	9.56	ppbV	99
72) 1,4-Dichlorobenzene	11.042	146	2462932	9.85	ppbV	98
73) Benzyl chloride	11.370	91	3547356	10.21	ppbV	95
74) 1,2-Dichlorobenzene	11.570	146	2467565	10.08	ppbV	97
75) 1,3-Hexachlorobutadiene	13.135	225	1601086	14.13	ppbV	96
76) 1,2,4-Trichlorobenzene	13.142	180	1898154	11.49	ppbV	98
77) Naphthalene	13.412	128	5422733	10.48	ppbV	99

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

Data Path : C:\DATA\04-04-19\
 Data File : aa1962dcvs.D
 Acq On : 4 Apr 2019 9:30 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 04 10:19:14 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA
Amount of standard injected (ml): 50

Date/Time of Calibration: 4/5/2019 09:06
Sample ID: DCS
Laboratory ID: AA1992DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1991BFB]	04/05/2019 08:41
10 PPBV DCVS [AA1992DCVS]	04/05/2019 09:06
10 PPBV LCS [AA1993LCS]	04/05/2019 09:30
METHOD BLANK [AA1994BLK]	04/05/2019 10:50
E19-02214-01 [AA1999]	04/05/2019 15:08
E19-02214-21 [AA2000]	04/05/2019 15:29
E19-02214-02 [AA2001]	04/05/2019 15:51
E19-02214-03 [AA2002]	04/05/2019 16:12
E19-02214-04 [AA2003]	04/05/2019 16:33
E19-02214-05 [AA2004]	04/05/2019 16:57
E19-02214-06 [AA2005]	04/05/2019 17:19
E19-02214-07 [AA2006]	04/05/2019 17:40

Compound Name	Average RRF	Standard RRF	% Difference	PassFail	*
Acetone	2.0	2.5	-23	PASS	
Benzene	3.4	3.2	4.6	PASS	
Bromodichloromethane	0.59	0.60	-1.9	PASS	
Bromoform	0.54	0.54	0.70	PASS	
Bromomethane	0.84	0.82	2.8	PASS	
1,3-Butadiene	1.1	1.2	-6.8	PASS	
Chlorobenzene	0.93	0.75	19	PASS	
Chloroethane	0.60	0.63	-5.9	PASS	
Chloroform	2.3	2.2	3.1	PASS	
Chloromethane	0.29	0.36	-24	PASS	
Carbon disulfide	3.1	2.9	6.4	PASS	
Carbon tetrachloride	2.5	2.5	3.0	PASS	
Cyclohexane	2.1	2.0	3.8	PASS	
Dibromochloromethane	0.57	0.55	3.5	PASS	
1,2-Dibromoethane	0.56	0.51	8.6	PASS	
1,2-Dichlorobenzene	0.90	0.75	16	PASS	
1,3-Dichlorobenzene	0.93	0.74	20	PASS	
1,4-Dichlorobenzene	0.92	0.76	18	PASS	
Dichlorodifluoromethane	2.5	2.8	-9.9	PASS	
1,1-Dichloroethane	2.2	2.1	5.3	PASS	
1,2-Dichloroethane	1.8	2.0	-9.6	PASS	
1,1-Dichloroethene	1.9	2.0	-5.5	PASS	
1,2-Dichloroethene (cis)	1.6	1.6	-0.70	PASS	
1,2-Dichloroethene (trans)	1.7	1.7	0.30	PASS	
1,2-Dichloropropane	0.37	0.34	6.6	PASS	
1,3-Dichloropropene (cis)	0.51	0.47	7.5	PASS	
1,3-Dichloropropene (trans)	0.50	0.52	-3.0	PASS	
1,2-Dichlorotetrafluoroethane	2.9	2.6	8.9	PASS	
1,4-Dioxane	0.19	0.16	13	PASS	
Ethylbenzene	1.6	1.4	13	PASS	
n-Heptane	2.9	3.0	-5.3	PASS	
1,3-Hexachlorobutadiene	0.42	0.48	-15	PASS	
n-Hexane	3.0	3.1	-3.7	PASS	
Methylene chloride	1.6	1.7	-5.7	PASS	
Methyl ethyl ketone	2.8	3.2	-13	PASS	
Methyl isobutyl ketone	0.95	1.1	-19	PASS	
Methyl tert-butyl ether	3.0	2.7	11	PASS	
Styrene	0.87	0.74	15	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E19-02214

Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA
Amount of standard injected (ml): 50

Date/Time of Calibration: 4/5/2019 09:06
Sample ID: DCS
Laboratory ID: AA1992DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1991BFB]	04/05/2019 08:41
10 PPBV DCVS [AA1992DCVS]	04/05/2019 09:06
10 PPBV LCS [AA1993LCS]	04/05/2019 09:30
METHOD BLANK [AA1994BLK]	04/05/2019 10:50
E19-02214-01 [AA1999]	04/05/2019 15:08
E19-02214-21 [AA2000]	04/05/2019 15:29
E19-02214-02 [AA2001]	04/05/2019 15:51
E19-02214-03 [AA2002]	04/05/2019 16:12
E19-02214-04 [AA2003]	04/05/2019 16:33
E19-02214-05 [AA2004]	04/05/2019 16:57
E19-02214-06 [AA2005]	04/05/2019 17:19
E19-02214-07 [AA2006]	04/05/2019 17:40

Compound Name	Average RRF	Standard RRF	% Difference	PassFail	*
Tert-butyl alcohol	2.3	2.2	2.9	PASS	
1,1,2,2-Tetrachloroethane	1.0	0.95	6.9	PASS	
Tetrachloroethene	0.39	0.36	7.9	PASS	
Toluene	1.0	0.93	9.5	PASS	
1,2,4-Trichlorobenzene	0.61	0.57	6.3	PASS	
1,1,1-Trichloroethane	2.3	2.2	2.2	PASS	
1,1,2-Trichloroethane	0.36	0.33	7.8	PASS	
Trichloroethene	0.35	0.29	16	PASS	
Trichlorofluoromethane	2.7	2.6	2.5	PASS	
1,1,2-Trichloro-1,2,2-trifluoroethane	2.3	2.0	14	PASS	
1,2,4-Trimethylbenzene	1.4	1.3	11	PASS	
1,3,5-Trimethylbenzene	1.4	1.3	9.4	PASS	
2,2,4-Trimethylpentane	1.8	1.7	8.8	PASS	
Vinyl bromide	0.94	0.84	11	PASS	
Vinyl chloride	0.97	1.2	-22	PASS	
Xylenes (m&p)	1.2	1.1	4.7	PASS	
Xylenes (o)	1.3	1.1	15	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E19-02214

Data Path : C:\DATA\04-05-19\
 Data File : aa1992dcvs.D
 Acq On : 5 Apr 2019 9:06 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:22:34 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Bromochloromethane (IS)	1.000	1.000	0.0	92	0.00
2 T	Propene	1.114	1.331	-19.5	96	0.00
3 T	Dichlorodifluoromethane	2.504	2.752	-9.9	89	0.00
4 T	1,2-Dichlorotetrafluoroetha	2.895	2.637	8.9	78	0.00
5 T	n-Butane	2.228	2.362	-6.0	95	0.00
6 T	Chloromethane	0.288	0.358	-24.3	108	0.00
7 T	Vinyl chloride	0.969	1.179	-21.7	99	0.00
8 T	1,3-Butadiene	1.108	1.183	-6.8	91	0.00
9 T	Bromomethane	0.844	0.820	2.8	76	0.00
10 T	Chloroethane	0.596	0.631	-5.9	87	0.00
11 T	Vinyl bromide	0.941	0.840	10.7	70	0.01
12 T	Trichlorofluoromethane	2.656	2.589	2.5	82	0.00
13 T	Ethanol	0.629	0.620	1.4	82	0.00
14 T	1,1-Dichloroethene	1.860	1.963	-5.5	86	0.00
15 T	Carbon disulfide	3.081	2.884	6.4	75	0.00
16 T	1,1,2-Trichloro-1,2,2-trifl	2.285	1.956	14.4	75	0.00
17 T	Acrolein	0.416	0.374	10.1	75	0.00
18 T	Allyl chloride	0.503	0.444	11.7	72	0.00
19 T	Isopropanol	2.406	2.580	-7.2	87	0.00
20 T	Methylene chloride	1.641	1.735	-5.7	97	0.00
21 T	Acetone	2.031	2.490	-22.6	98	0.00
22 T	1,2-Dichloroethene (trans)	1.676	1.671	0.3	82	0.00
23 T	n-Pentane	2.695	2.625	2.6	82	0.00
24 T	n-Hexane	3.006	3.116	-3.7	79	0.00
25 T	Methyl tert-butyl ether	3.011	2.690	10.7	77	0.00
26 T	Tert-butyl alcohol	2.287	2.221	2.9	84	0.00
27 T	1,1-Dichloroethane	2.187	2.071	5.3	81	0.00
28 T	1,2-Dichloroethene (cis)	1.620	1.631	-0.7	83	0.00
29 t	Cyclohexane	2.079	1.999	3.8	84	0.00
30 T	Chloroform	2.300	2.228	3.1	82	0.00
31 T	Ethyl acetate	0.495	0.537	-8.5	93	0.00
32 T	Carbon tetrachloride	2.530	2.453	3.0	83	0.00
33 T	Tetrahydrofuran	1.670	1.896	-13.5	97	0.00
34 T	1,1,1-Trichloroethane	2.262	2.213	2.2	85	0.00
35 T	Methyl ethyl ketone	2.822	3.201	-13.4	94	0.00
36 T	n-Heptane	2.883	3.036	-5.3	92	0.00
37 T	Benzene	3.390	3.234	4.6	82	0.00
38 T	1,2-Dichloroethane	1.794	1.967	-9.6	93	0.00
39 I	1,4-Difluorobenzene (IS)	1.000	1.000	0.0	88	0.00
40 T	Trichloroethene	0.345	0.290	15.9	68	0.00
41 T	2,2,4-Trimethylpentane	1.832	1.670	8.8	72	0.00
42 T	1,2-Dichloropropane	0.366	0.342	6.6	80	0.00
43 T	Bromodichloromethane	0.589	0.600	-1.9	84	0.00
44 T	Methyl methacrylate	0.582	0.640	-10.0	94	0.00
45 T	1,4-Dioxane	0.187	0.162	13.4	72	0.00
46 T	cis-1,3-Dichloropropene	0.508	0.470	7.5	76	0.00
47 T	Toluene	1.031	0.933	9.5	76	0.00
48 T	Methyl isobutyl ketone	0.949	1.126	-18.7	99	0.00
49 T	Tetrachloroethene	0.393	0.362	7.9	78	0.00
50 T	trans-1,3-Dichloropropene	0.502	0.517	-3.0	83	0.00
51 T	1,1,2-Trichloroethane	0.360	0.332	7.8	78	0.00
52 T	Dibromochloromethane	0.565	0.545	3.5	79	0.00
53 T	1,2-Dibromoethane	0.557	0.509	8.6	76	0.00

AL SDG #E19-02214

Data Path : C:\DATA\04-05-19\
 Data File : aa1992dcvs.D
 Acq On : 5 Apr 2019 9:06 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:22:34 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
54 T	Methyl n-butyl ketone	0.868	0.999	-15.1	94	0.00
55 I	d-5 Chlorobenzene (IS)	1.000	1.000	0.0	99	0.00
56 T	n-Nonane	1.333	1.423	-6.8	102	0.00
57 T	Chlorobenzene	0.927	0.754	18.7	78	0.00
58 T	Ethylbenzene	1.595	1.394	12.6	83	0.00
59 T	Xylenes (m&p)	1.161	1.106	4.7	88	0.00
60 T	Xylene (o)	1.289	1.097	14.9	80	0.00
61 T	Styrene	0.869	0.739	15.0	77	0.00
62 T	Bromoform	0.541	0.537	0.7	89	0.00
63 T	Cumene	1.646	1.424	13.5	80	0.00
64 S	Bromofluorobenzene (tune st	0.873	0.854	2.2	101	0.00
65 T	n-Propyl benzene	2.155	1.994	7.5	86	0.00
66 T	1,1,2,2-Tetrachloroethane	1.019	0.949	6.9	89	0.00
67 T	4-Ethyltoluene	1.643	1.459	11.2	82	0.00
68 T	2-Chlorotoluene	1.486	1.415	4.8	89	0.00
69 T	1,3,5-Trimethylbenzene	1.440	1.305	9.4	84	0.00
70 T	1,2,4-Trimethylbenzene	1.439	1.283	10.8	82	0.00
71 T	1,3-Dichlorobenzene	0.926	0.742	19.9	78	0.00
72 T	1,4-Dichlorobenzene	0.921	0.755	18.0	77	0.00
73	Benzyl chloride	1.280	1.245	2.7	85	0.00
74 T	1,2-Dichlorobenzene	0.902	0.754	16.4	80	0.00
75 T	1,3-Hexachlorobutadiene	0.417	0.478	-14.6	111	0.00
76 T	1,2,4-Trichlorobenzene	0.608	0.570	6.3	90	0.00
77 T	Naphthalene	1.906	1.596	16.3	76	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data Path : C:\DATA\04-05-19\
 Data File : aa1992dcvs.D
 Acq On : 5 Apr 2019 9:06 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:22:34 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	567545	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.400	114	2203091	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2070172	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1767112	9.78	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.422	41	831030	13.14	ppbV	88
3) Dichlorodifluoromethane	1.454	85	1718064	12.09	ppbV	96
4) 1,2-Dichlorotetrafluor...	1.574	85	1496409	9.11	ppbV	100
5) n-Butane	1.654	43	1474821	11.67	ppbV	92
6) Chloromethane	1.650	15	223332	13.64	ppbV #	48
7) Vinyl chloride	1.712	62	736045	13.39	ppbV #	42
8) 1,3-Butadiene	1.722	39	738792	11.75	ppbV	93
9) Bromomethane	2.014	94	460670	9.61	ppbV	99
10) Chloroethane	2.123	64	358367	10.60	ppbV	91
11) Vinyl bromide	2.229	106	524319	9.82	ppbV	99
12) Trichlorofluoromethane	2.236	101	1616068	10.72	ppbV	100
13) Ethanol	2.618	45	330799	9.27	ppbV	89
14) 1,1-Dichloroethene	2.660	61	1225343	11.61	ppbV	89
15) Carbon disulfide	2.683	76	1800343	10.30	ppbV #	74
16) 1,1,2-Trichloro-1,2,2-...	2.699	101	1221388	9.42	ppbV	91
17) Acrolein	2.933	56	254769	10.80	ppbV	95
18) Allyl chloride	3.046	76	276882	9.70	ppbV	100
19) Isopropanol	3.059	45	1464380	10.72	ppbV #	91
20) Methylene chloride	3.142	49	1083263	11.63	ppbV #	68
21) Acetone	3.159	43	1554786	13.49	ppbV #	81
22) 1,2-Dichloroethene (tr...	3.258	61	1043305	10.97	ppbV #	83
23) n-Pentane	3.332	43	1639051	10.72	ppbV #	85
24) n-Hexane	3.332	41	1945106	11.40	ppbV	93
25) Methyl tert-butyl ether	3.345	73	1679145	9.82	ppbV #	73
26) Tert-butyl alcohol	3.416	59	1512490	11.65	ppbV	100
27) 1,1-Dichloroethane	3.747	63	1293082	10.42	ppbV	99
28) 1,2-Dichloroethene (cis)	4.178	61	1018540	11.08	ppbV	84
29) Cyclohexane	4.339	56	1247981	10.58	ppbV #	75
30) Chloroform	4.400	83	1390794	10.65	ppbV	99
31) Ethyl acetate	4.493	45	335451	11.94	ppbV	88
32) Carbon tetrachloride	4.509	117	1531562	10.67	ppbV	98
33) Tetrahydrofuran	4.522	42	1291559	13.62	ppbV	90
34) 1,1,1-Trichloroethane	4.564	97	1381845	10.77	ppbV	99
35) Methyl ethyl ketone	4.641	43	1998168	12.47	ppbV #	92
36) n-Heptane	4.843	43	1895633	11.58	ppbV	89
37) Benzene	4.872	78	2018711	10.49	ppbV #	90
38) 1,2-Dichloroethane	5.043	62	1228133	12.07	ppbV	99
40) Trichloroethene	5.371	130	702396	9.25	ppbV	99
41) 2,2,4-Trimethylpentane	4.769	57	4046265	10.03	ppbV	96
42) 1,2-Dichloropropane	5.830	63	827903	10.28	ppbV	99
43) Bromodichloromethane	5.888	83	1452866	11.19	ppbV	98
44) Methyl methacrylate	6.036	41	1551453	12.09	ppbV #	84
45) 1,4-Dioxane	6.068	88	357622	8.68	ppbV #	77
46) cis-1,3-Dichloropropene	6.483	75	1139837	10.19	ppbV	99
47) Toluene	6.711	91	2261173	9.96	ppbV	95
48) Methyl isobutyl ketone	7.088	43	2728837	13.06	ppbV #	82
49) Tetrachloroethene	7.094	166	876858	10.13	ppbV	99
50) trans-1,3-Dichloropropene	7.126	75	1137932	10.29	ppbV #	66
51) 1,1,2-Trichloroethane	7.287	97	805195	10.14	ppbV	90

AL SDG #E19-02214

Data Path : C:\DATA\04-05-19\
 Data File : aa1992dcvs.D
 Acq On : 5 Apr 2019 9:06 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

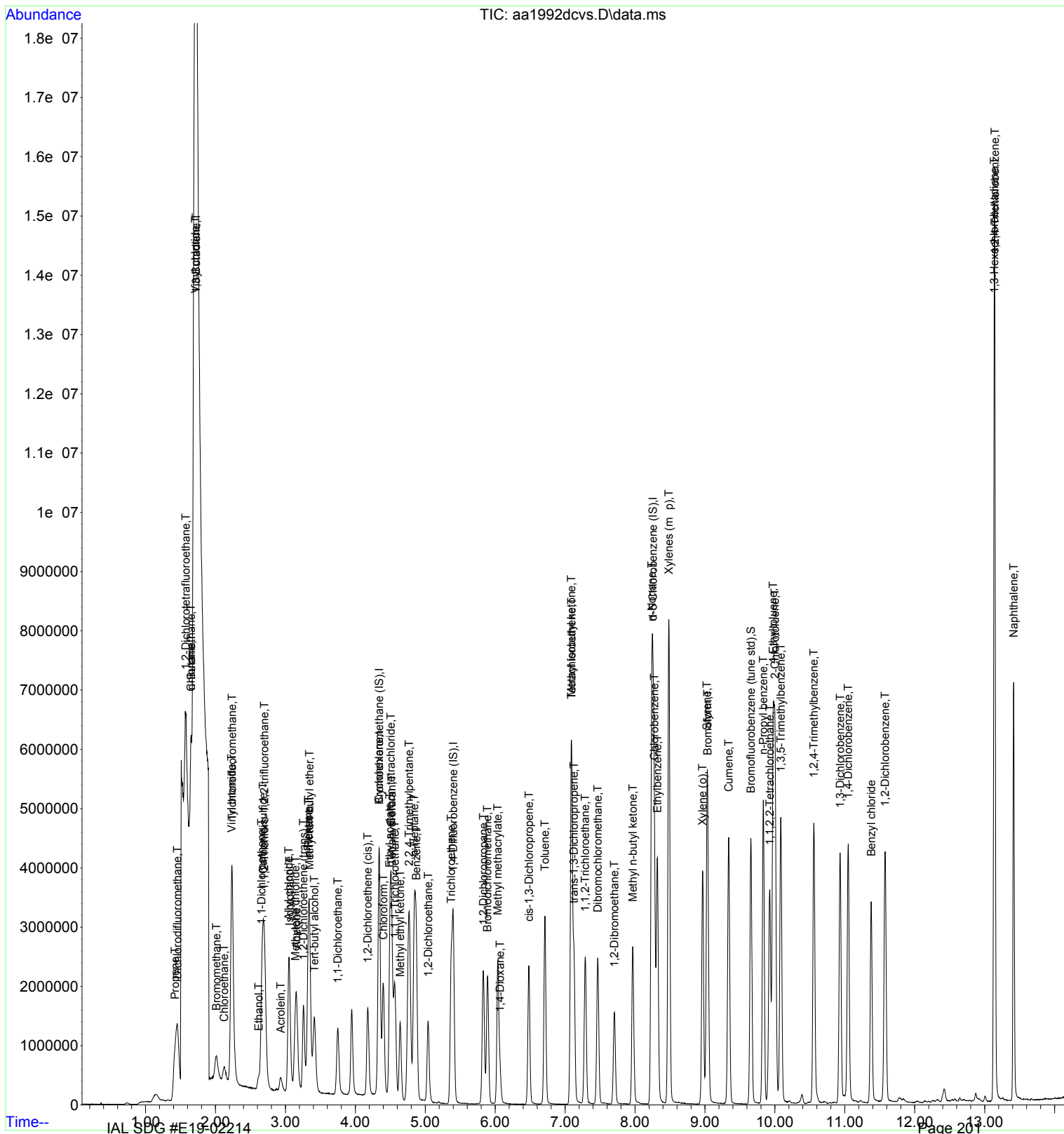
Quant Time: Apr 05 09:22:34 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1321611	10.62	ppbV	99
53) 1,2-Dibromoethane	7.705	107	1233497	10.05	ppbV	99
54) Methyl n-butyl ketone	7.969	43	2421003	12.66	ppbV	88
56) n-Nonane	8.239	43	3240227	11.75	ppbV	86
57) Chlorobenzene	8.277	112	1717773	8.95	ppbV	92
58) Ethylbenzene	8.319	91	3173906	9.61	ppbV	96
59) Xylenes (m&p)	8.483	91	5038791	20.97	ppbV	96
60) Xylene (o)	8.965	91	2498506	9.37	ppbV	97
61) Styrene	9.030	104	1683139	9.35	ppbV	99
62) Bromoform	9.039	173	1223669	10.92	ppbV	97
63) Cumene	9.338	105	3243233	9.52	ppbV	98
65) n-Propyl benzene	9.834	91	4540756	10.18	ppbV	96
66) 1,1,2,2-Tetrachloroethane	9.927	83	2161204	10.24	ppbV	95
67) 4-Ethyltoluene	9.975	105	3322141	9.77	ppbV	97
68) 2-Chlorotoluene	10.001	91	3222520	10.47	ppbV	100
69) 1,3,5-Trimethylbenzene	10.084	105	2971194	9.97	ppbV	96
70) 1,2,4-Trimethylbenzene	10.557	105	2922077	9.81	ppbV	91
71) 1,3-Dichlorobenzene	10.933	146	1688725	8.81	ppbV	99
72) 1,4-Dichlorobenzene	11.049	146	1719726	9.02	ppbV	98
73) Benzyl chloride	11.377	91	2577783	9.73	ppbV	96
74) 1,2-Dichlorobenzene	11.576	146	1716801	9.20	ppbV	99
75) 1,3-Hexachlorobutadiene	13.139	225	1087584	12.59	ppbV	95
76) 1,2,4-Trichlorobenzene	13.145	180	1415110	11.24	ppbV	98
77) Naphthalene	13.415	128	3963856	10.04	ppbV	98

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

Data Path : C:\DATA\
Data File : aa1992dc
Acq On : 5 Apr 2005

Quant Time: Apr 05 09:22:34 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration



Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA
Amount of standard injected (ml): 50

Date/Time of Calibration: 4/8/2019 10:32
Sample ID: DCS
Laboratory ID: AA2022DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2021BFB]	04/08/2019 10:03
10 PPBV DCVS [AA2022DCVS]	04/08/2019 10:32
10 PPBV LCS [AA2023LCS]	04/08/2019 11:06
METHOD BLANK [AA2024BLK]	04/08/2019 11:31
E19-02214-04 [AA2030]	04/08/2019 14:34

Compound Name	Average RRF	Standard RRF	% Difference	Pass/Fail	*
Acetone	2.0	2.4	-18	PASS	
Benzene	3.4	3.0	13	PASS	
Bromodichloromethane	0.59	0.64	-8.0	PASS	
Bromoform	0.54	0.61	-13	PASS	
Bromomethane	0.84	0.76	11	PASS	
1,3-Butadiene	1.1	1.4	-23	PASS	
Chlorobenzene	0.93	0.78	16	PASS	
Chloroethane	0.60	0.52	13	PASS	
Chloroform	2.3	2.3	-0.90	PASS	
Chloromethane	0.29	0.36	-25	PASS	
Carbon disulfide	3.1	2.9	6.2	PASS	
Carbon tetrachloride	2.5	2.6	-3.1	PASS	
Cyclohexane	2.1	1.6	25	PASS	
Dibromochloromethane	0.57	0.60	-6.2	PASS	
1,2-Dibromoethane	0.56	0.53	5.7	PASS	
1,2-Dichlorobenzene	0.90	0.89	1.4	PASS	
1,3-Dichlorobenzene	0.93	0.85	8.6	PASS	
1,4-Dichlorobenzene	0.92	0.88	4.9	PASS	
Dichlorodifluoromethane	2.5	3.0	-20	PASS	
1,1-Dichloroethane	2.2	1.9	14	PASS	
1,2-Dichloroethane	1.8	2.0	-11	PASS	
1,1-Dichloroethene	1.9	1.8	0.60	PASS	
1,2-Dichloroethene (cis)	1.6	1.5	10	PASS	
1,2-Dichloroethene (trans)	1.7	1.5	11	PASS	
1,2-Dichloropropane	0.37	0.30	18	PASS	
1,3-Dichloropropene (cis)	0.51	0.45	12	PASS	
1,3-Dichloropropene (trans)	0.50	0.52	-3.2	PASS	
1,2-Dichlorotetrafluoroethane	2.9	2.8	4.3	PASS	
1,4-Dioxane	0.19	0.16	13	PASS	
Ethylbenzene	1.6	1.4	12	PASS	
n-Heptane	2.9	2.6	10	PASS	
1,3-Hexachlorobutadiene	0.42	0.52	-26	PASS	
n-Hexane	3.0	2.9	2.9	PASS	
Methylene chloride	1.6	1.6	5.5	PASS	
Methyl ethyl ketone	2.8	2.7	2.8	PASS	
Methyl isobutyl ketone	0.95	1.0	-7.1	PASS	
Methyl tert-butyl ether	3.0	2.7	11	PASS	
Styrene	0.87	0.77	12	PASS	
Tert-butyl alcohol	2.3	2.0	12	PASS	
1,1,2,2-Tetrachloroethane	1.0	1.00	2.1	PASS	
Tetrachloroethene	0.39	0.38	2.5	PASS	
Toluene	1.0	0.91	12	PASS	
1,2,4-Trichlorobenzene	0.61	0.65	-7.4	PASS	
1,1,1-Trichloroethane	2.3	2.3	-3.8	PASS	
1,1,2-Trichloroethane	0.36	0.34	5.0	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E19-02214

Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
 Instrument: AA
 Amount of standard injected (ml): 50

Date/Time of Calibration: 4/8/2019 10:32
 Sample ID: DCS
 Laboratory ID: AA2022DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2021BFB]	04/08/2019 10:03
10 PPBV DCVS [AA2022DCVS]	04/08/2019 10:32
10 PPBV LCS [AA2023LCS]	04/08/2019 11:06
METHOD BLANK [AA2024BLK]	04/08/2019 11:31
E19-02214-04 [AA2030]	04/08/2019 14:34

Compound Name	Average RRF	Standard RRF	% Difference	PassFail	*
Trichloroethene	0.35	0.30	15	PASS	
Trichlorofluoromethane	2.7	2.9	-8.9	PASS	
1,1,2-Trichloro-1,2,2-trifluoroethane	2.3	2.1	8.8	PASS	
1,2,4-Trimethylbenzene	1.4	1.4	2.4	PASS	
1,3,5-Trimethylbenzene	1.4	1.4	1.8	PASS	
2,2,4-Trimethylpentane	1.8	1.4	26	PASS	
Vinyl bromide	0.94	0.85	10	PASS	
Vinyl chloride	0.97	1.0	-8.0	PASS	
Xylenes (m&p)	1.2	1.1	3.7	PASS	
Xylenes (o)	1.3	1.1	12	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E19-02214

Data Path : C:\DATA\04-08-19\
 Data File : aa2022dcvs.D
 Acq On : 8 Apr 2019 10:32 am
 Operator : jjw
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 08 11:03:33 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Bromochloromethane (IS)	1.000	1.000	0.0	103	0.00
2 T	Propene	1.114	1.094	1.8	88	0.00
3 T	Dichlorodifluoromethane	2.504	2.994	-19.6	109	0.00
4 T	1,2-Dichlorotetrafluoroetha	2.895	2.770	4.3	92	0.00
5 T	n-Butane	2.228	2.018	9.4	91	0.00
6 T	Chloromethane	0.288	0.359	-24.7	122	0.00
7 T	Vinyl chloride	0.969	1.047	-8.0	99	0.01
8 T	1,3-Butadiene	1.108	1.359	-22.7	118	0.00
9 T	Bromomethane	0.844	0.755	10.5	79	0.00
10 T	Chloroethane	0.596	0.518	13.1	80	0.00
11 T	Vinyl bromide	0.941	0.845	10.2	79	0.00
12 T	Trichlorofluoromethane	2.656	2.892	-8.9	103	0.00
13 T	Ethanol	0.629	0.574	8.7	85	0.00
14 T	1,1-Dichloroethene	1.860	1.849	0.6	91	0.00
15 T	Carbon disulfide	3.081	2.891	6.2	84	0.00
16 T	1,1,2-Trichloro-1,2,2-trifl	2.285	2.083	8.8	90	0.00
17 T	Acrolein	0.416	0.295	29.1	67	0.00
18 T	Allyl chloride	0.503	0.412	18.1	75	0.00
19 T	Isopropanol	2.406	2.233	7.2	84	0.00
20 T	Methylene chloride	1.641	1.551	5.5	97	0.00
21 T	Acetone	2.031	2.395	-17.9	106	0.00
22 T	1,2-Dichloroethene (trans)	1.676	1.499	10.6	82	0.00
23 T	n-Pentane	2.695	2.456	8.9	86	0.00
24 T	n-Hexane	3.006	2.919	2.9	83	0.00
25 T	Methyl tert-butyl ether	3.011	2.677	11.1	86	0.00
26 T	Tert-butyl alcohol	2.287	2.006	12.3	85	0.00
27 T	1,1-Dichloroethane	2.187	1.878	14.1	82	0.00
28 T	1,2-Dichloroethene (cis)	1.620	1.453	10.3	83	0.00
29 t	Cyclohexane	2.079	1.553	25.3	73	0.00
30 T	Chloroform	2.300	2.321	-0.9	96	0.00
31 T	Ethyl acetate	0.495	0.444	10.3	86	0.00
32 T	Carbon tetrachloride	2.530	2.608	-3.1	99	0.00
33 T	Tetrahydrofuran	1.670	1.638	1.9	94	0.00
34 T	1,1,1-Trichloroethane	2.262	2.347	-3.8	101	0.00
35 T	Methyl ethyl ketone	2.822	2.742	2.8	90	0.00
36 T	n-Heptane	2.883	2.587	10.3	88	0.00
37 T	Benzene	3.390	2.958	12.7	84	0.00
38 T	1,2-Dichloroethane	1.794	1.999	-11.4	105	0.00
39 I	1,4-Difluorobenzene (IS)	1.000	1.000	0.0	97	0.00
40 T	Trichloroethene	0.345	0.295	14.5	76	0.00
41 T	2,2,4-Trimethylpentane	1.832	1.365	25.5	65	0.00
42 T	1,2-Dichloropropane	0.366	0.300	18.0	77	0.00
43 T	Bromodichloromethane	0.589	0.636	-8.0	98	0.00
44 T	Methyl methacrylate	0.582	0.598	-2.7	96	0.00
45 T	1,4-Dioxane	0.187	0.162	13.4	80	0.00
46 T	cis-1,3-Dichloropropene	0.508	0.449	11.6	80	0.00
47 T	Toluene	1.031	0.908	11.9	81	0.00
48 T	Methyl isobutyl ketone	0.949	1.016	-7.1	98	0.00
49 T	Tetrachloroethene	0.393	0.383	2.5	91	0.00
50 T	trans-1,3-Dichloropropene	0.502	0.518	-3.2	91	0.00
51 T	1,1,2-Trichloroethane	0.360	0.342	5.0	88	0.00
52 T	Dibromochloromethane	0.565	0.600	-6.2	96	0.00
53 T	1,2-Dibromoethane	0.557	0.525	5.7	86	0.00

AL SDG #E19-02214

Data Path : C:\DATA\04-08-19\
 Data File : aa2022dcvs.D
 Acq On : 8 Apr 2019 10:32 am
 Operator : jjw
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 08 11:03:33 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
54 T	Methyl n-butyl ketone	0.868	0.916	-5.5	95	0.00
55 I	d-5 Chlorobenzene (IS)	1.000	1.000	0.0	111	0.00
56 T	n-Nonane	1.333	1.215	8.9	98	0.00
57 T	Chlorobenzene	0.927	0.776	16.3	90	0.00
58 T	Ethylbenzene	1.595	1.400	12.2	93	0.00
59 T	Xylenes (m&p)	1.161	1.118	3.7	100	0.00
60 T	Xylene (o)	1.289	1.138	11.7	94	0.00
61 T	Styrene	0.869	0.768	11.6	90	0.00
62 T	Bromoform	0.541	0.613	-13.3	114	0.00
63 T	Cumene	1.646	1.487	9.7	94	0.00
64 S	Bromofluorobenzene (tune st	0.873	0.900	-3.1	119	0.00
65 T	n-Propyl benzene	2.155	2.097	2.7	102	0.00
66 T	1,1,2,2-Tetrachloroethane	1.019	0.998	2.1	105	0.00
67 T	4-Ethyltoluene	1.643	1.579	3.9	100	0.00
68 T	2-Chlorotoluene	1.486	1.525	-2.6	108	0.00
69 T	1,3,5-Trimethylbenzene	1.440	1.414	1.8	102	0.00
70 T	1,2,4-Trimethylbenzene	1.439	1.404	2.4	101	0.00
71 T	1,3-Dichlorobenzene	0.926	0.846	8.6	100	0.00
72 T	1,4-Dichlorobenzene	0.921	0.876	4.9	101	0.00
73	Benzyl chloride	1.280	1.373	-7.3	106	0.00
74 T	1,2-Dichlorobenzene	0.902	0.889	1.4	106	0.00
75 T	1,3-Hexachlorobutadiene	0.417	0.524	-25.7	137	0.00
76 T	1,2,4-Trichlorobenzene	0.608	0.653	-7.4	116	0.00
77 T	Naphthalene	1.906	1.780	6.6	95	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data Path : C:\DATA\04-08-19\
 Data File : aa2022dcvs.D
 Acq On : 8 Apr 2019 10:32 am
 Operator : jjw
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 08 11:03:33 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	636062	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2418828	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	2322788	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	2090924	10.31	ppbV	0.000
Target Compounds						
						Qvalue
2) Propene	1.419	41	765369	10.80	ppbV	96
3) Dichlorodifluoromethane	1.457	85	2094997	13.15	ppbV	96
4) 1,2-Dichlorotetrafluor...	1.574	85	1761617	9.57	ppbV	100
5) n-Butane	1.653	43	1412057	9.97	ppbV #	84
6) Chloromethane	1.643	15	251454	13.70	ppbV #	21
7) Vinyl chloride	1.715	62	732398	11.89	ppbV #	61
8) 1,3-Butadiene	1.719	39	950838	13.49	ppbV #	79
9) Bromomethane	2.011	94	475211	8.85	ppbV	97
10) Chloroethane	2.126	64	329698	8.70	ppbV	92
11) Vinyl bromide	2.226	106	591379	9.88	ppbV	98
12) Trichlorofluoromethane	2.236	101	2023186	11.97	ppbV	98
13) Ethanol	2.615	45	343461	8.59	ppbV	92
14) 1,1-Dichloroethene	2.660	61	1293642	10.93	ppbV	94
15) Carbon disulfide	2.676	76	2022541	10.32	ppbV #	64
16) 1,1,2-Trichloro-1,2,2-...	2.702	101	1457076	10.03	ppbV	95
17) Acrolein	2.933	56	225414	8.52	ppbV	98
18) Allyl chloride	3.049	76	288398	9.02	ppbV	100
19) Isopropanol	3.059	45	1420132	9.28	ppbV #	81
20) Methylene chloride	3.139	49	1085274	10.40	ppbV #	76
21) Acetone	3.158	43	1676026	12.97	ppbV #	75
22) 1,2-Dichloroethene (tr...	3.258	61	1048783	9.84	ppbV	91
23) n-Pentane	3.338	43	1718154	10.02	ppbV #	87
24) n-Hexane	3.338	41	2042003	10.68	ppbV	82
25) Methyl tert-butyl ether	3.348	73	1873150	9.78	ppbV	93
26) Tert-butyl alcohol	3.412	59	1531458	10.53	ppbV	100
27) 1,1-Dichloroethane	3.747	63	1313827	9.45	ppbV	98
28) 1,2-Dichloroethene (cis)	4.181	61	1016815	9.87	ppbV	90
29) Cyclohexane	4.342	56	1086304	8.22	ppbV	90
30) Chloroform	4.400	83	1624144	11.10	ppbV	100
31) Ethyl acetate	4.499	45	310934	9.88	ppbV	88
32) Carbon tetrachloride	4.509	117	1824785	11.34	ppbV	100
33) Tetrahydrofuran	4.522	42	1250157	11.77	ppbV	92
34) 1,1,1-Trichloroethane	4.567	97	1642443	11.42	ppbV	99
35) Methyl ethyl ketone	4.644	43	1918590	10.69	ppbV	94
36) n-Heptane	4.846	43	1810311	9.87	ppbV	92
37) Benzene	4.872	78	2069364	9.60	ppbV #	87
38) 1,2-Dichloroethane	5.043	62	1398521	12.26	ppbV	99
40) Trichloroethene	5.371	130	785048	9.41	ppbV	99
41) 2,2,4-Trimethylpentane	4.769	57	3631162	8.20	ppbV	96
42) 1,2-Dichloropropane	5.830	63	798974	9.04	ppbV	98
43) Bromodichloromethane	5.891	83	1691802	11.87	ppbV	100
44) Methyl methacrylate	6.039	41	1591433	11.30	ppbV #	84
45) 1,4-Dioxane	6.071	88	392872	8.68	ppbV	97
46) cis-1,3-Dichloropropene	6.483	75	1194380	9.73	ppbV	99
47) Toluene	6.711	91	2416996	9.70	ppbV	96
48) Methyl isobutyl ketone	7.094	43	2703942	11.78	ppbV #	79
49) Tetrachloroethene	7.091	166	1018009	10.71	ppbV	97
50) trans-1,3-Dichloropropene	7.126	75	1253758	10.33	ppbV #	50
51) 1,1,2-Trichloroethane	7.290	97	909769	10.44	ppbV	92

Data Path : C:\DATA\04-08-19\
 Data File : aa2022dcvs.D
 Acq On : 8 Apr 2019 10:32 am
 Operator : jjw
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

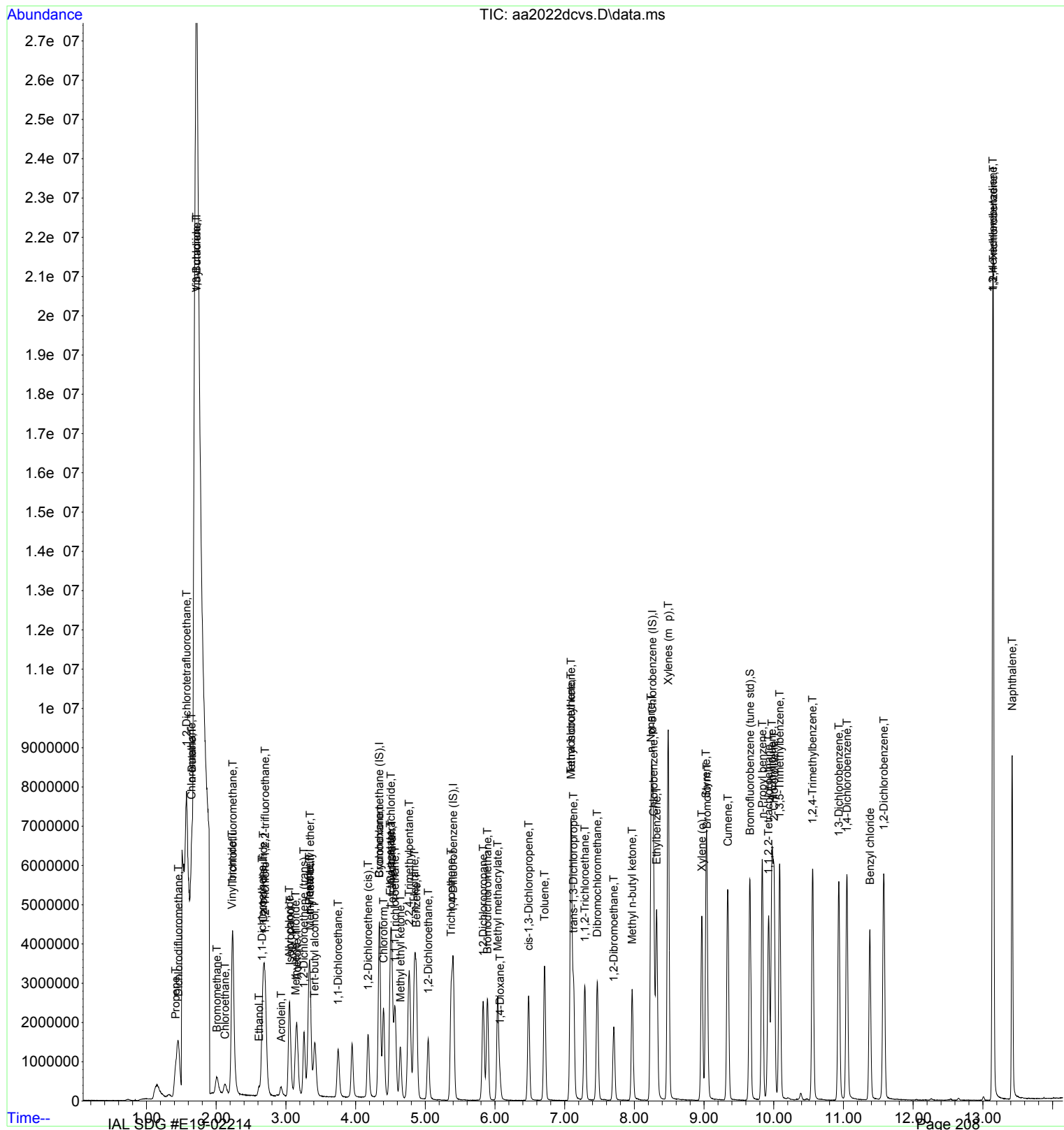
Quant Time: Apr 08 11:03:33 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1595835	11.68	ppbV	98
53) 1,2-Dibromoethane	7.705	107	1396751	10.36	ppbV	98
54) Methyl n-butyl ketone	7.969	43	2438495	11.62	ppbV #	83
56) n-Nonane	8.239	43	3103761	10.03	ppbV	82
57) Chlorobenzene	8.277	112	1983613	9.21	ppbV	96
58) Ethylbenzene	8.319	91	3577612	9.65	ppbV	98
59) Xylenes (m&p)	8.486	91	5711933	21.19	ppbV	97
60) Xylene (o)	8.968	91	2907795	9.72	ppbV	97
61) Styrene	9.030	104	1961714	9.72	ppbV	98
62) Bromoform	9.042	173	1565001	12.44	ppbV	96
63) Cumene	9.341	105	3800353	9.94	ppbV	99
65) n-Propyl benzene	9.837	91	5359178	10.71	ppbV	97
66) 1,1,2,2-Tetrachloroethane	9.923	83	2548984	10.77	ppbV	99
67) 4-Ethyltoluene	9.975	105	4034941	10.57	ppbV	99
68) 2-Chlorotoluene	10.004	91	3896313	11.29	ppbV	99
69) 1,3,5-Trimethylbenzene	10.084	105	3613188	10.81	ppbV	98
70) 1,2,4-Trimethylbenzene	10.557	105	3587886	10.73	ppbV	91
71) 1,3-Dichlorobenzene	10.933	146	2161049	10.04	ppbV	99
72) 1,4-Dichlorobenzene	11.052	146	2239087	10.47	ppbV	98
73) Benzyl chloride	11.380	91	3189318	10.73	ppbV	95
74) 1,2-Dichlorobenzene	11.579	146	2270328	10.84	ppbV	99
75) 1,3-Hexachlorobutadiene	13.145	225	1338098	13.80	ppbV	95
76) 1,2,4-Trichlorobenzene	13.152	180	1819489	12.88	ppbV	99
77) Naphthalene	13.422	128	4960579	11.20	ppbV	99

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

Data Path : C:\DATA\04-08-19\
 Data File : aa2022dcvs.D
 Acq On : 8 Apr 2019 10:32 am
 Operator : jjw
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 08 11:03:33 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Section VIII: Raw Quality Control Data Package

BFB Tune Spectra

Method Blank

Laboratory Control Sample

Laboratory Sample Duplicate

Instrument Run Logs

Pressure Gauge Readings (initial and final)

Example Calculations

Screening Data

Clean Canister Certification

Data Path: C:\DATA\03-13-19\
Data File: AA1521BFB.D
Acq On: 3/13/2019 9:57:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	201365	26.3
PASS	75	95	30	66	372117	48.5
PASS	95	95	100	100	766592	100.0
PASS	96	95	5	9	51653	6.7
PASS	173	174	0.00	2	3452	0.7
PASS	174	95	50	100	465536	60.7
PASS	175	174	4	9	33896	7.3
PASS	176	174	93	101	440939	94.7
PASS	177	176	5	9	28072	6.4

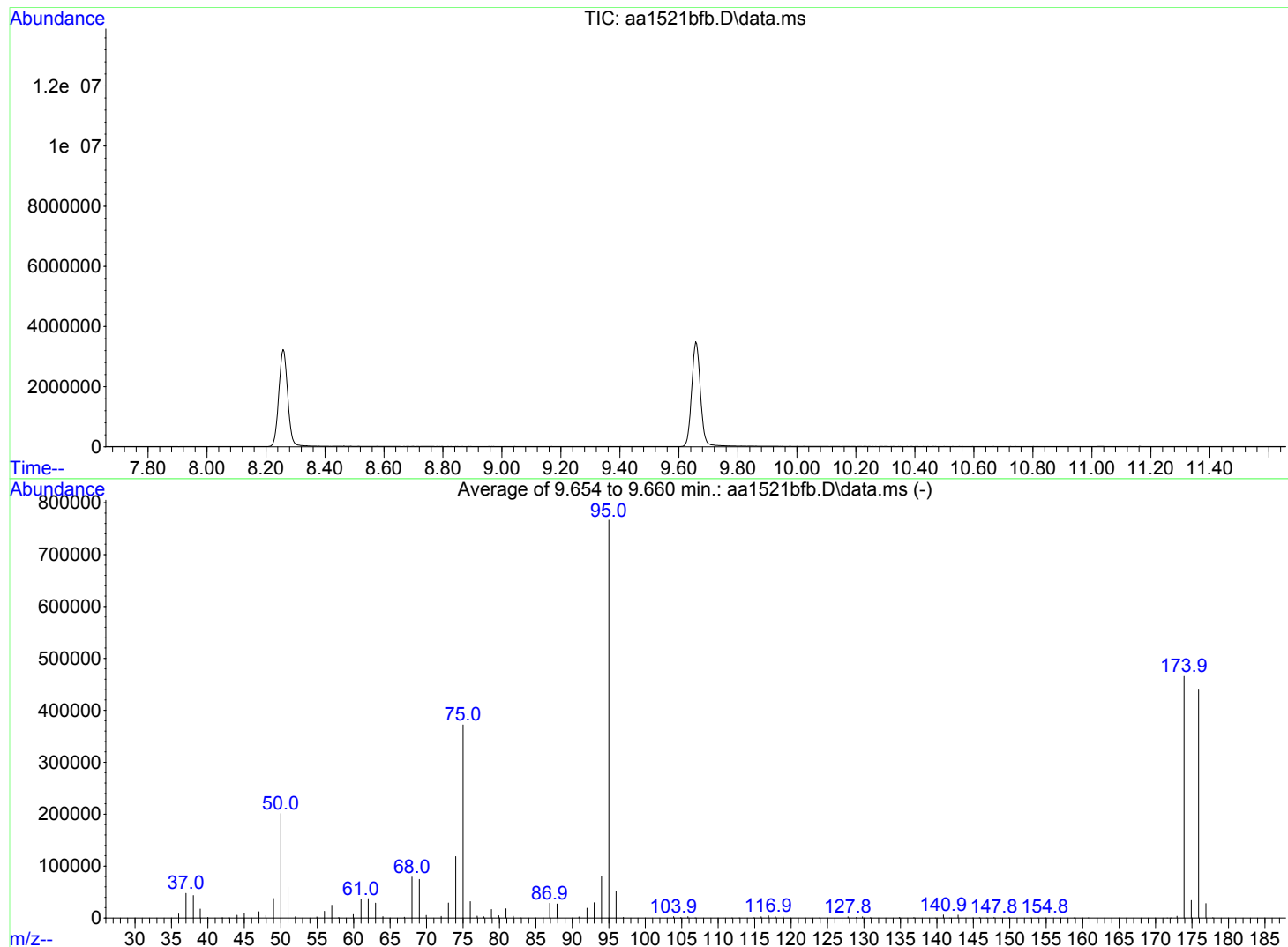
Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1521BFB	NA	3/13/2019 9:57:00 AM
40 PPBV STD	AA1522STD01	NA	3/13/2019 11:03:00 AM
20 PPBV STD	AA1523STD02	NA	3/13/2019 11:25:00 AM
10 PPBV STD	AA1524STD03	NA	3/13/2019 11:46:00 AM
2 PPBV STD	AA1525STD04	NA	3/13/2019 1:53:00 PM
0.2 PPBV STD	AA1526STD05	NA	3/13/2019 2:52:00 PM
10 PPBV ICVSS	AA1527ICVSS	NA	3/13/2019 3:26:00 PM

Data Path : C:\DATA\03-13-19\
 Data File : aa1521bfb.D
 Acq On : 13 Mar 2019 9:57 am
 Operator : jls
 Sample : BFB
 Misc : ALM029426
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0313.M
 Title : TO-15 on the Agilent 7890A / 5975C
 Last Update : Wed Mar 13 14:08:18 2019



AutoFind: Scans 2963, 2964, 2965; Background Corrected with Scan 2945

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	26.3	201365	PASS
75	95	30	66	48.5	372117	PASS
95	95	100	100	100.0	766592	PASS
96	95	5	9	6.7	51653	PASS
173	174	0.00	2	0.7	3452	PASS
174	95	50	100	60.7	465536	PASS
175	174	4	9	7.3	33896	PASS
176	174	93	101	94.7	440939	PASS
177	176	5	9	6.4	28072	PASS

Data Path: C:\DATA\03-15-19\
Data File: AA1561BFB.D
Acq On: 3/15/2019 7:56:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	148693	27.4
PASS	75	95	30	66	278955	51.3
PASS	95	95	100	100	543573	100.0
PASS	96	95	5	9	35341	6.5
PASS	173	174	0.00	2	2347	0.7
PASS	174	95	50	100	313856	57.7
PASS	175	174	4	9	21813	7.0
PASS	176	174	93	101	295403	94.1
PASS	177	176	5	9	18075	6.1

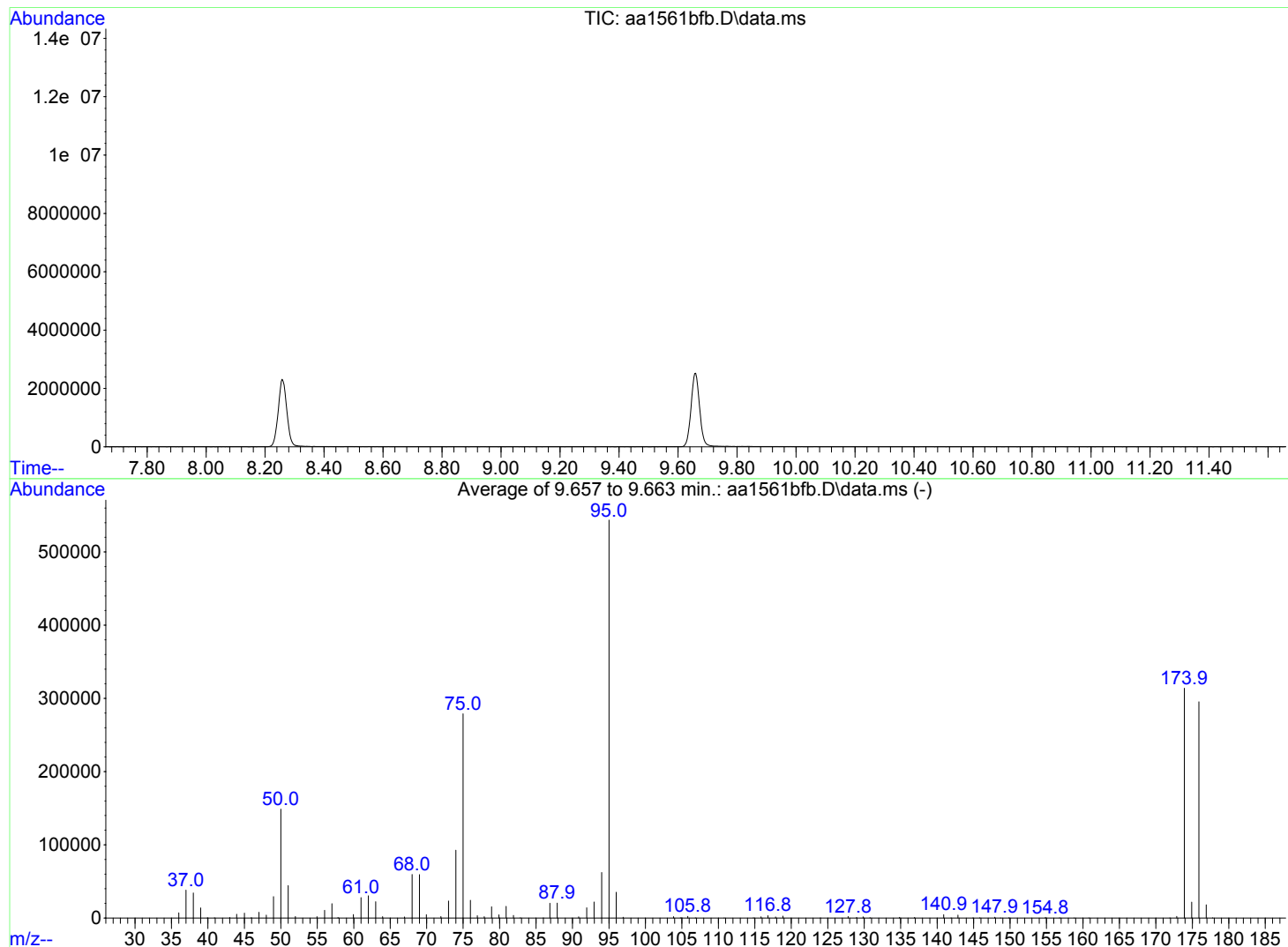
Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1561BFB	NA	3/15/2019 7:56:00 AM
10 PPBV DCVS	AA1562DCVS	NA	3/15/2019 8:56:00 AM
10 PPBV LCS	AA1563LCS	NA	3/15/2019 9:17:00 AM
METHOD BLANK	AA1564BLK	NA	3/15/2019 10:03:00 AM
02 PPBV RLLCS	AA1565RLLCS	NA	3/15/2019 10:28:00 AM
3015A	AA1566	NA	3/15/2019 11:29:00 AM
10 PPBV CCCVS	AA1581CCCVS	NA	3/15/2019 8:05:00 PM

Data Path : C:\DATA\03-15-19\
 Data File : aa1561bfb.D
 Acq On : 15 Mar 2019 7:56 am
 Operator : jls
 Sample : BFB
 Misc : ALM029426
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0313.M
 Title : TO-15 on the Agilent 7890A / 5975C
 Last Update : Wed Mar 13 14:08:18 2019



AutoFind: Scans 2964, 2965, 2966; Background Corrected with Scan 2947

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	27.4	148693	PASS
75	95	30	66	51.3	278955	PASS
95	95	100	100	100.0	543573	PASS
96	95	5	9	6.5	35341	PASS
173	174	0.00	2	0.7	2347	PASS
174	95	50	100	57.7	313856	PASS
175	174	4	9	7.0	21813	PASS
176	174	93	101	94.1	295403	PASS
177	176	5	9	6.1	18075	PASS

Data Path: C:\DATA\04-04-19\
Data File: AA1961BFB.D
Acq On: 4/4/2019 8:21:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	297472	39.1
PASS	75	95	30	66	473131	62.2
PASS	95	95	100	100	760341	100.0
PASS	96	95	5	9	52403	6.9
PASS	173	174	0.00	2	4512	1.1
PASS	174	95	50	100	406955	53.5
PASS	175	174	4	9	29011	7.1
PASS	176	174	93	101	397312	97.6
PASS	177	176	5	9	26157	6.6

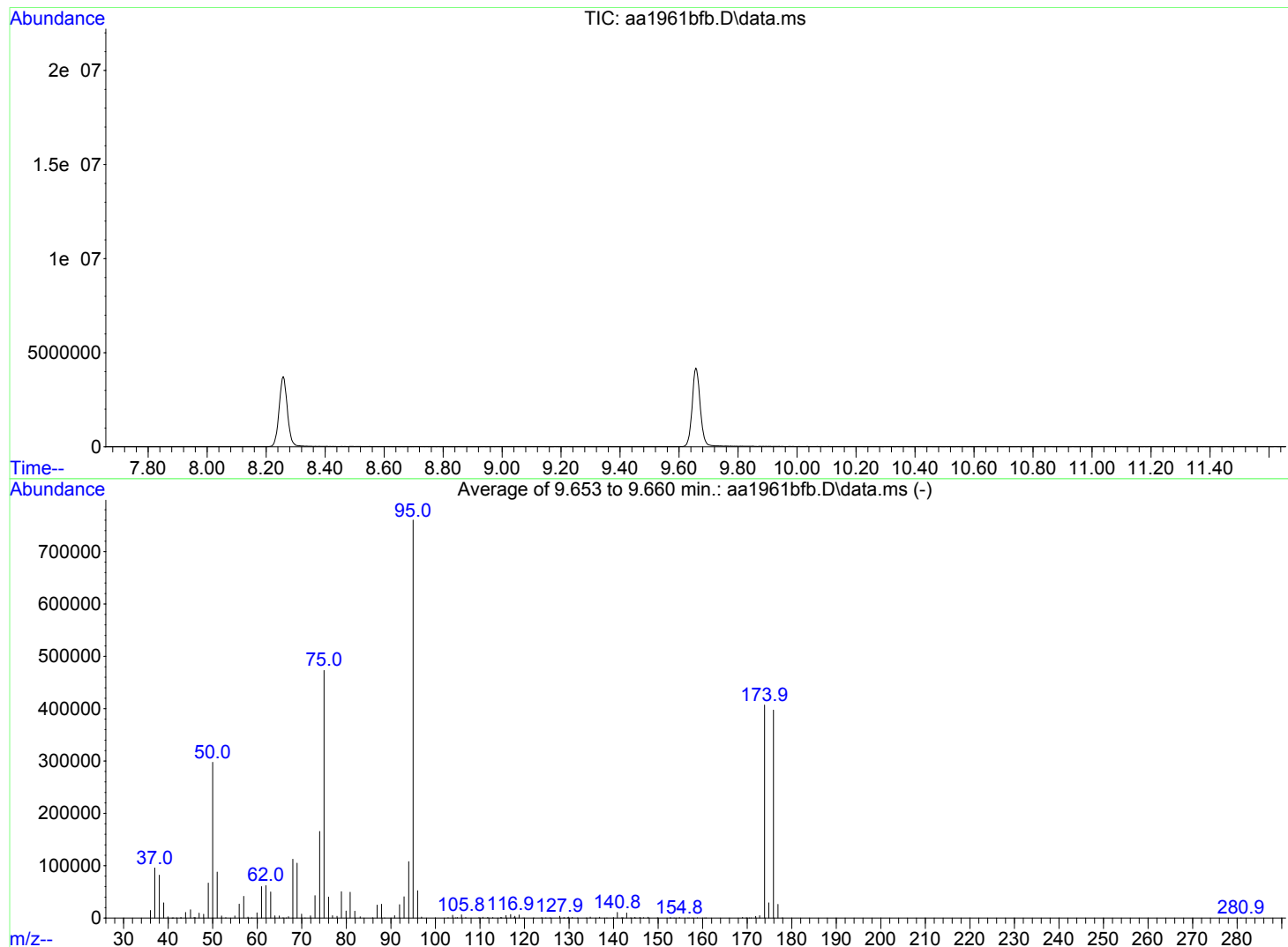
Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1961BFB	NA	4/4/2019 8:21:00 AM
10 PPBV DCVS	AA1962DCVS	NA	4/4/2019 9:30:00 AM
10 PPBV LCS	AA1963LCS	NA	4/4/2019 9:55:00 AM
METHOD BLANK	AA1964BLK	NA	4/4/2019 10:38:00 AM
02 PPBV RLLCS	AA1965RLLCS	NA	4/4/2019 11:02:00 AM
E19-02214-01	AA1977	NS-3	4/4/2019 4:14:00 PM
10 PPBV CCCVS	AA1985CCCVS	NA	4/5/2019 8:20:00 AM

Data Path : C:\DATA\04-04-19\
 Data File : aa1961bfb.D
 Acq On : 4 Apr 2019 8:21 am
 Operator : jls
 Sample : BFB
 Misc : ALM029426
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0313.M
 Title : TO-15 on the Agilent 7890A / 5975C
 Last Update : Wed Mar 13 14:08:18 2019



AutoFind: Scans 2963, 2964, 2965; Background Corrected with Scan 2945

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	39.1	297472	PASS
75	95	30	66	62.2	473131	PASS
95	95	100	100	100.0	760341	PASS
96	95	5	9	6.9	52403	PASS
173	174	0.00	2	1.1	4512	PASS
174	95	50	100	53.5	406955	PASS
175	174	4	9	7.1	29011	PASS
176	174	93	101	97.6	397312	PASS
177	176	5	9	6.6	26157	PASS

Data Path: C:\DATA\04-05-19\
Data File: AA1991BFB.D
Acq On: 4/5/2019 8:41:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	331712	37.8
PASS	75	95	30	66	497387	56.7
PASS	95	95	100	100	876928	100.0
PASS	96	95	5	9	61941	7.1
PASS	173	174	0.00	2	4958	0.9
PASS	174	95	50	100	525760	60.0
PASS	175	174	4	9	37717	7.2
PASS	176	174	93	101	501995	95.5
PASS	177	176	5	9	33387	6.7

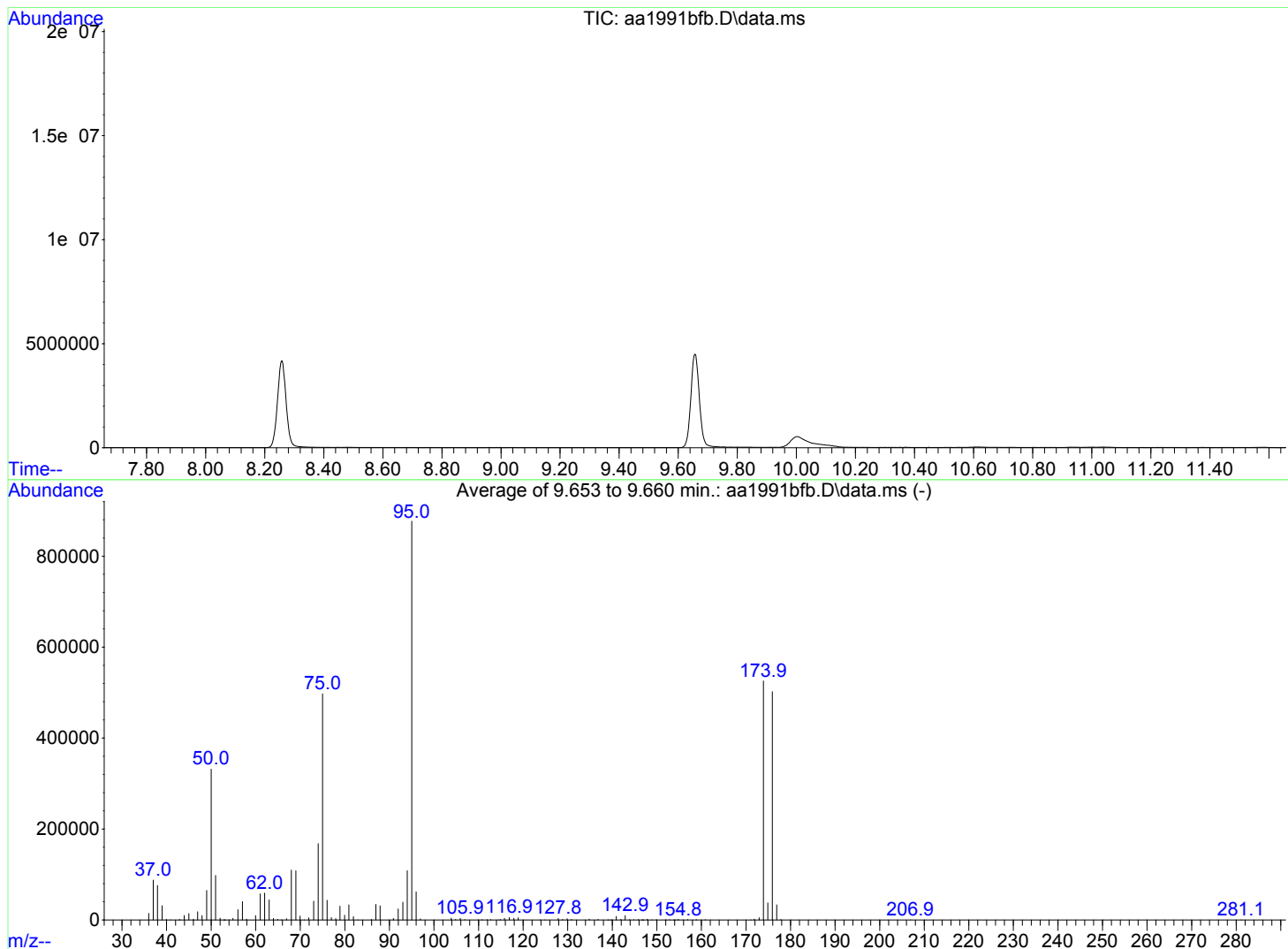
Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1991BFB	NA	4/5/2019 8:41:00 AM
10 PPBV DCVS	AA1992DCVS	NA	4/5/2019 9:06:00 AM
10 PPBV LCS	AA1993LCS	NA	4/5/2019 9:30:00 AM
METHOD BLANK	AA1994BLK	NA	4/5/2019 10:50:00 AM
E19-02214-01	AA1999	NS-3	4/5/2019 3:08:00 PM
E19-02214-21	AA2000	NS-3 Dup	4/5/2019 3:29:00 PM
E19-02214-02	AA2001	NS-2	4/5/2019 3:51:00 PM
E19-02214-03	AA2002	NS-1	4/5/2019 4:12:00 PM
E19-02214-04	AA2003	NS-5	4/5/2019 4:33:00 PM
E19-02214-05	AA2004	ASB2-1	4/5/2019 4:57:00 PM
E19-02214-06	AA2005	SS-1	4/5/2019 5:19:00 PM
E19-02214-07	AA2006	SS-2	4/5/2019 5:40:00 PM

Data Path : C:\DATA\04-05-19\
 Data File : aa1991bfb.D
 Acq On : 5 Apr 2019 8:41 am
 Operator : jls
 Sample : BFB
 Misc : ALM029426
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0313.M
 Title : TO-15 on the Agilent 7890A / 5975C
 Last Update : Wed Mar 13 14:08:18 2019



AutoFind: Scans 2963, 2964, 2965; Background Corrected with Scan 2946

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	37.8	331712	PASS
75	95	30	66	56.7	497387	PASS
95	95	100	100	100.0	876928	PASS
96	95	5	9	7.1	61941	PASS
173	174	0.00	2	0.9	4958	PASS
174	95	50	100	60.0	525760	PASS
175	174	4	9	7.2	37717	PASS
176	174	93	101	95.5	501995	PASS
177	176	5	9	6.7	33387	PASS

Data Path: C:\DATA\04-08-19\
Data File: AA2021BFB.D
Acq On: 4/8/2019 10:03:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	361877	39.1
PASS	75	95	30	66	540864	58.5
PASS	95	95	100	100	925184	100.0
PASS	96	95	5	9	61725	6.7
PASS	173	174	0.00	2	5590	1.0
PASS	174	95	50	100	566357	61.2
PASS	175	174	4	9	45152	8.0
PASS	176	174	93	101	542123	95.7
PASS	177	176	5	9	35717	6.6

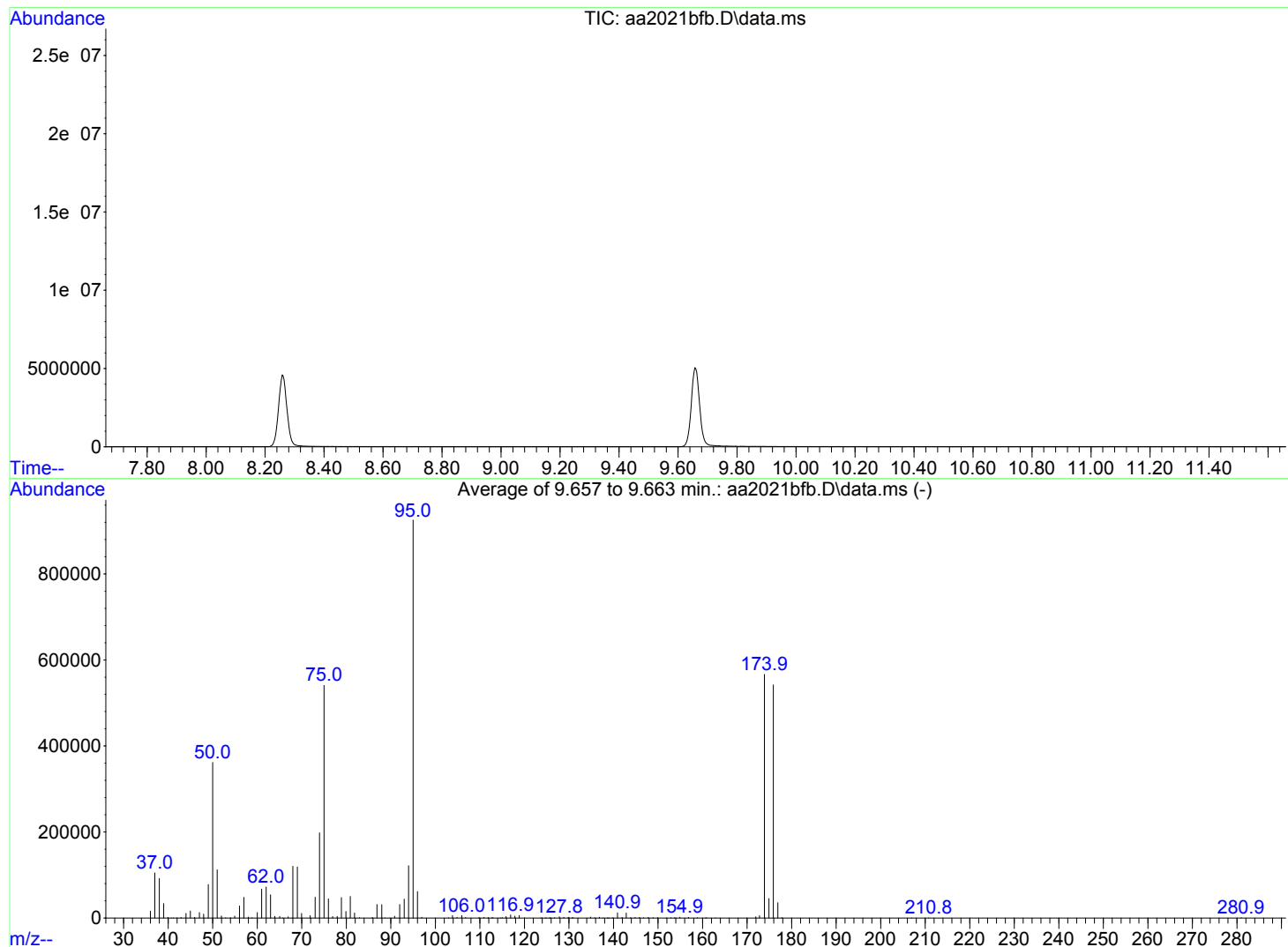
Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA2021BFB	NA	4/8/2019 10:03:00 AM
10 PPBV DCVS	AA2022DCVS	NA	4/8/2019 10:32:00 AM
10 PPBV LCS	AA2023LCS	NA	4/8/2019 11:06:00 AM
METHOD BLANK	AA2024BLK	NA	4/8/2019 11:31:00 AM
E19-02214-04	AA2030	NS-5	4/8/2019 2:34:00 PM

Data Path : C:\DATA\04-08-19\
 Data File : aa2021bfb.D
 Acq On : 8 Apr 2019 10:03 am
 Operator : jjw
 Sample : BFB
 Misc : ALM029426
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0313.M
 Title : TO-15 on the Agilent 7890A / 5975C
 Last Update : Wed Mar 13 14:08:18 2019



AutoFind: Scans 2964, 2965, 2966; Background Corrected with Scan 2947

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	39.1	361877	PASS
75	95	30	66	58.5	540864	PASS
95	95	100	100	100.0	925184	PASS
96	95	5	9	6.7	61725	PASS
173	174	0.00	2	1.0	5590	PASS
174	95	50	100	61.2	566357	PASS
175	174	4	9	8.0	45152	PASS
176	174	93	101	95.7	542123	PASS
177	176	5	9	6.6	35717	PASS

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1564BLK
Date Analyzed: 3/15/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 7:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 8:56
10 PPBV LCS [AA1563LCS]	03/15/2019 9:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1564BLK
Date Analyzed: 3/15/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 7:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 8:56
10 PPBV LCS [AA1563LCS]	03/15/2019 9:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Data Path : C:\DATA\03-15-19\
 Data File : aa1564blk.D
 Acq On : 15 Mar 2019 10:03 am
 Operator : jls
 Sample : Method Blank
 Misc : 1127
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 15 11:20:15 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.335	130	502043	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	1914457	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1682200	10.00	ppbV	0.000

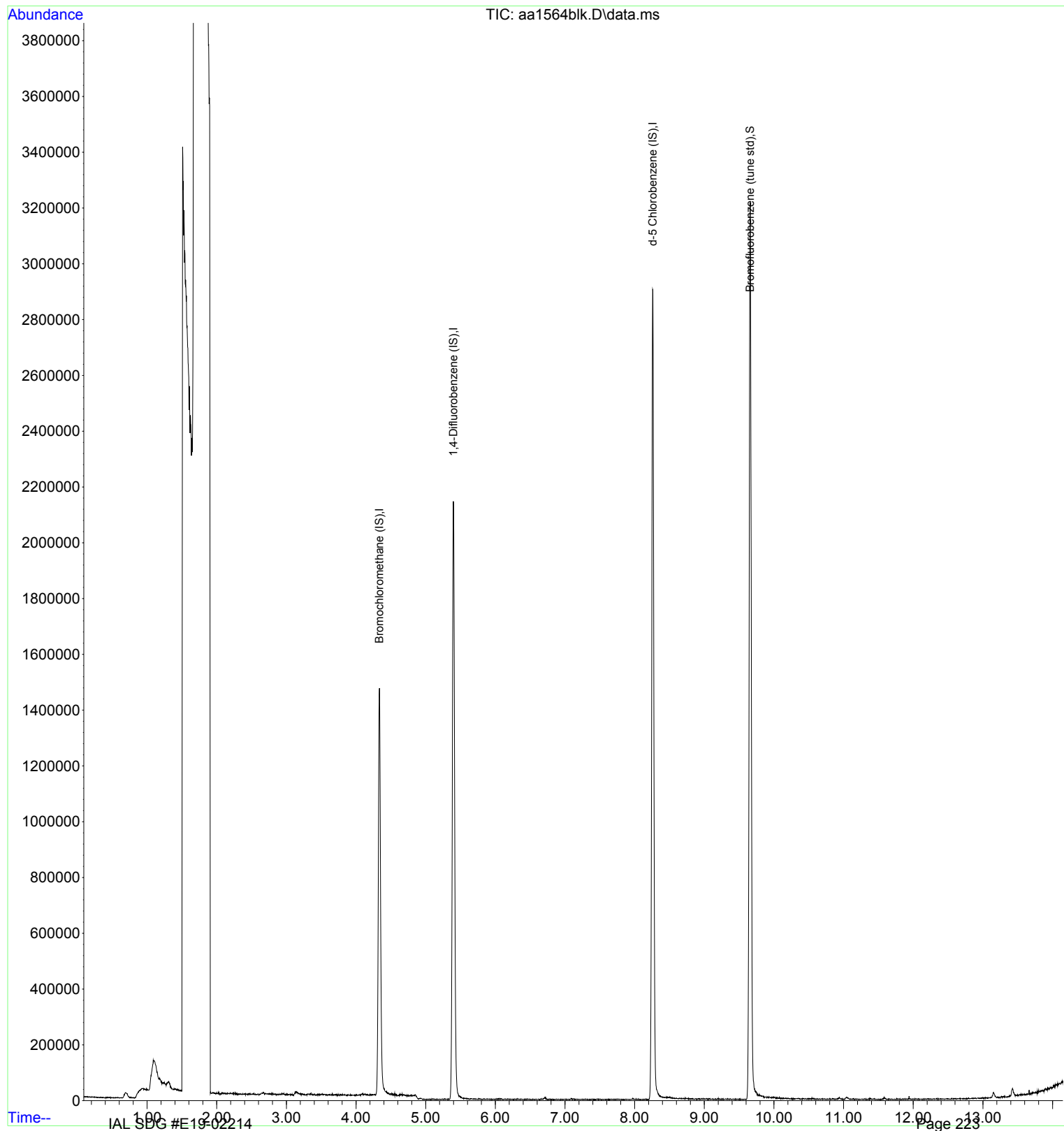
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1435254	9.78	ppbV	0.000

Target Compounds	Qvalue

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

Data Path : C:\DATA\03-15-19\
Data File : aa1564blk.D
Acq On : 15 Mar 2019 10:03 am
Operator : jls
Sample : Method Blank
Misc : 1127
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 15 11:20:15 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration



Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1964BLK
Date Analyzed: 4/4/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1961BFB]	04/04/2019 8:21
10 PPBV DCVS [AA1962DCVS]	04/04/2019 9:30
10 PPBV LCS [AA1963LCS]	04/04/2019 9:55
METHOD BLANK [AA1964BLK]	04/04/2019 10:38
02 PPBV RLLCS [AA1965RLLCS]	04/04/2019 11:02
E19-02214-01 [AA1977]	04/04/2019 16:14
10 PPBV CCCVS [AA1985CCCVS]	04/05/2019 8:20

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1964BLK
Date Analyzed: 4/4/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1961BFB]	04/04/2019 8:21
10 PPBV DCVS [AA1962DCVS]	04/04/2019 9:30
10 PPBV LCS [AA1963LCS]	04/04/2019 9:55
METHOD BLANK [AA1964BLK]	04/04/2019 10:38
02 PPBV RLLCS [AA1965RLLCS]	04/04/2019 11:02
E19-02214-01 [AA1977]	04/04/2019 16:14
10 PPBV CCCVS [AA1985CCCVS]	04/05/2019 8:20

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Data Path : C:\DATA\04-04-19\
 Data File : aa1964blk.D
 Acq On : 4 Apr 2019 10:38 am
 Operator : jls
 Sample : Method Blank
 Misc : 1127
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 05 11:45:20 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.332	130	569306	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.393	114	2106776	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	1838953	10.00	ppbV	0.000

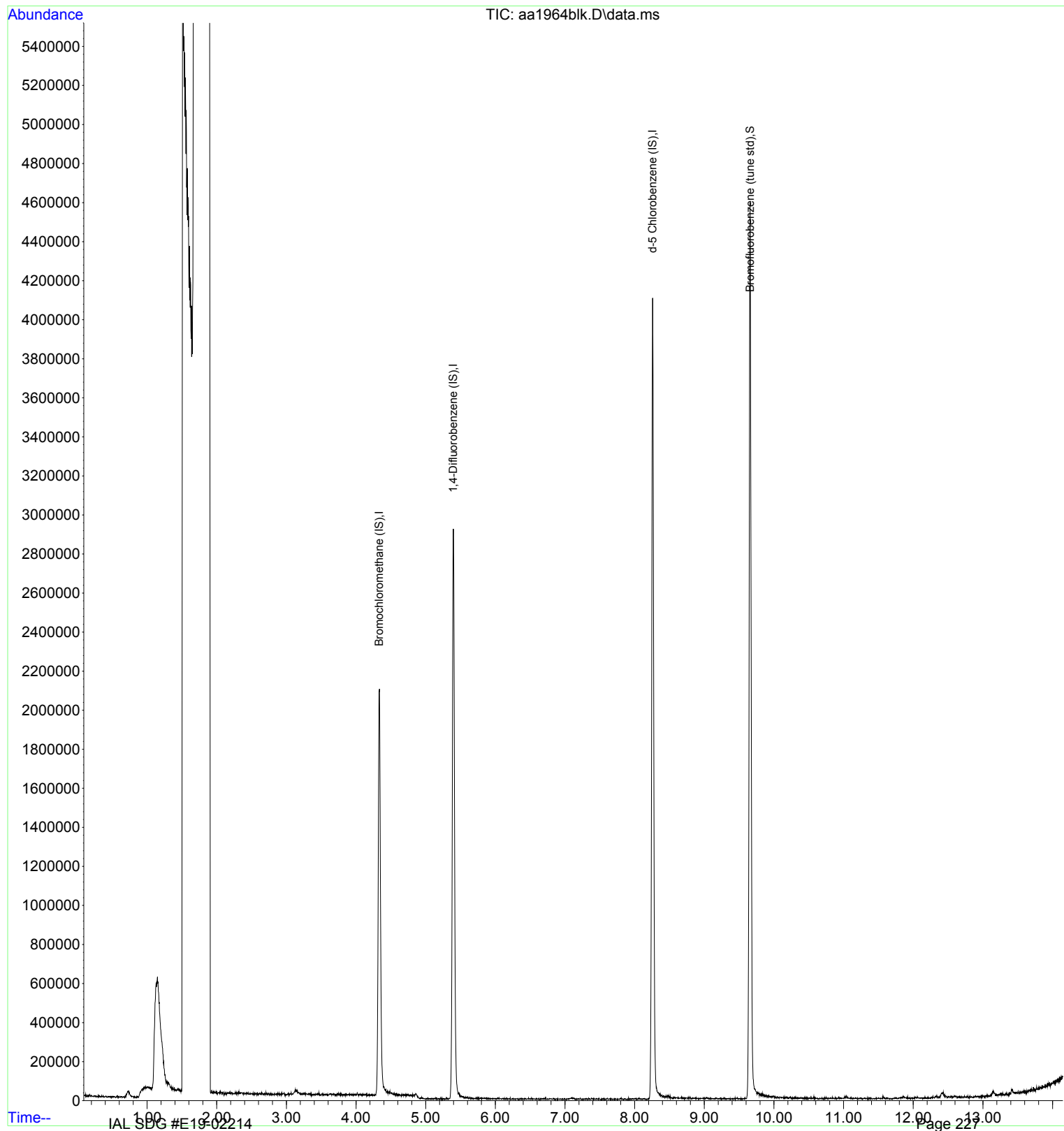
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1627677	10.14	ppbV	0.000

Target Compounds	Qvalue

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

Data Path : C:\DATA\04-04-19\
Data File : aa1964blk.D
Acq On : 4 Apr 2019 10:38 am
Operator : jls
Sample : Method Blank
Misc : 1127
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 05 11:45:20 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration



Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1994BLK
Date Analyzed: 4/5/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1991BFB]	04/05/2019 8:41
10 PPBV DCVS [AA1992DCVS]	04/05/2019 9:06
10 PPBV LCS [AA1993LCS]	04/05/2019 9:30
METHOD BLANK [AA1994BLK]	04/05/2019 10:50
E19-02214-01 [AA1999]	04/05/2019 15:08
E19-02214-21 [AA2000]	04/05/2019 15:29
E19-02214-02 [AA2001]	04/05/2019 15:51
E19-02214-03 [AA2002]	04/05/2019 16:12
E19-02214-04 [AA2003]	04/05/2019 16:33
E19-02214-05 [AA2004]	04/05/2019 16:57
E19-02214-06 [AA2005]	04/05/2019 17:19
E19-02214-07 [AA2006]	04/05/2019 17:40

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1994BLK
Date Analyzed: 4/5/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1991BFB]	04/05/2019 8:41
10 PPBV DCVS [AA1992DCVS]	04/05/2019 9:06
10 PPBV LCS [AA1993LCS]	04/05/2019 9:30
METHOD BLANK [AA1994BLK]	04/05/2019 10:50
E19-02214-01 [AA1999]	04/05/2019 15:08
E19-02214-21 [AA2000]	04/05/2019 15:29
E19-02214-02 [AA2001]	04/05/2019 15:51
E19-02214-03 [AA2002]	04/05/2019 16:12
E19-02214-04 [AA2003]	04/05/2019 16:33
E19-02214-05 [AA2004]	04/05/2019 16:57
E19-02214-06 [AA2005]	04/05/2019 17:19
E19-02214-07 [AA2006]	04/05/2019 17:40

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Data Path : C:\DATA\04-05-19\
 Data File : aa1994blk.D
 Acq On : 5 Apr 2019 10:50 am
 Operator : jls
 Sample : Method Blank
 Misc : 1127
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 05 15:31:23 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.339	130	420811	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.400	114	1579024	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	1363374	10.00	ppbV	0.000

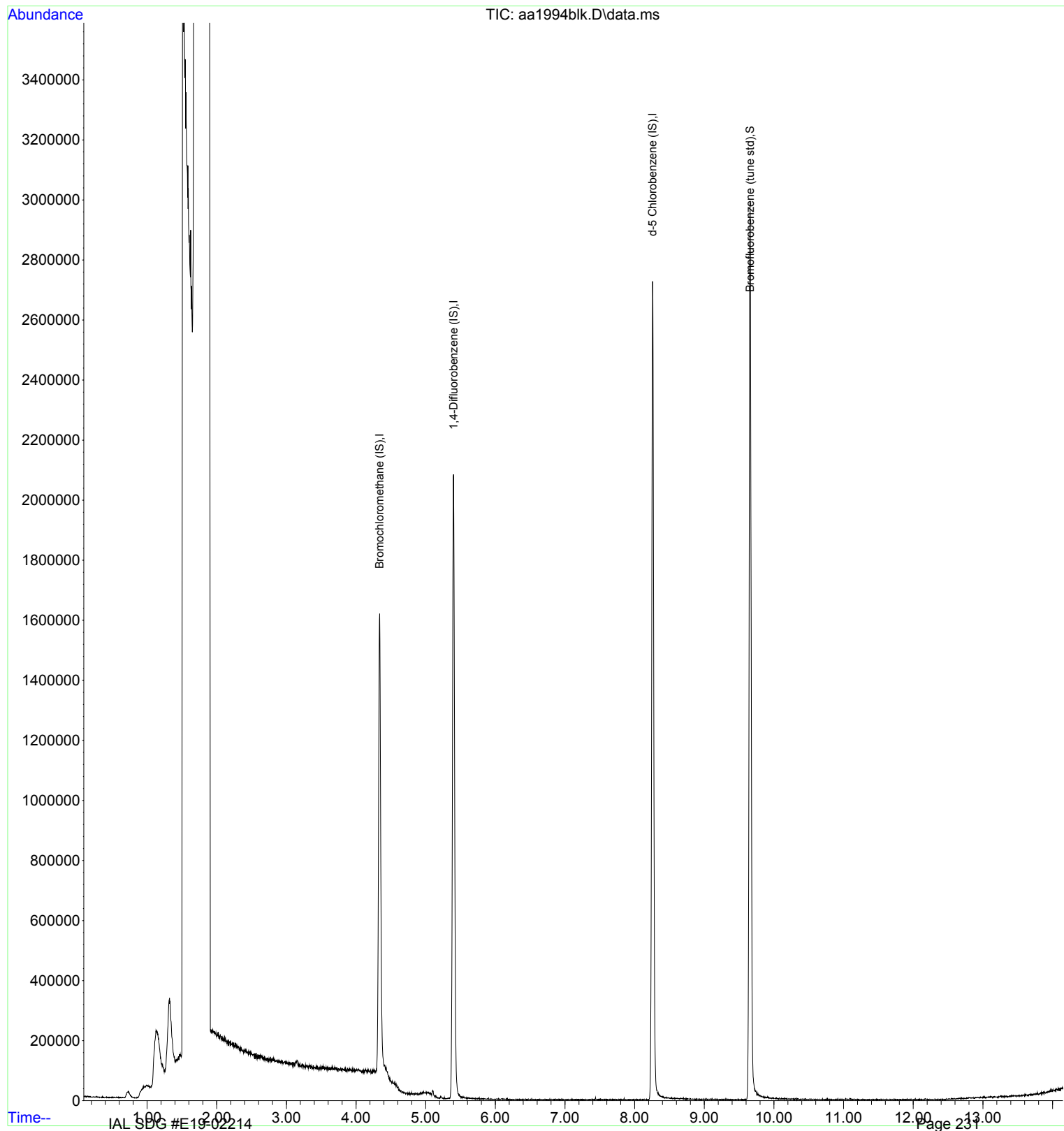
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1167248	9.81	ppbV	0.000

Target Compounds	Qvalue

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

Data Path : C:\DATA\04-05-19\
Data File : aa1994blk.D
Acq On : 5 Apr 2019 10:50 am
Operator : jls
Sample : Method Blank
Misc : 1127
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 05 15:31:23 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration



Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA2024BLK
Date Analyzed: 4/8/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2021BFB]	04/08/2019 10:03
10 PPBV DCVS [AA2022DCVS]	04/08/2019 10:32
10 PPBV LCS [AA2023LCS]	04/08/2019 11:06
METHOD BLANK [AA2024BLK]	04/08/2019 11:31
E19-02214-04 [AA2030]	04/08/2019 14:34

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA2024BLK
Date Analyzed: 4/8/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2021BFB]	04/08/2019 10:03
10 PPBV DCVS [AA2022DCVS]	04/08/2019 10:32
10 PPBV LCS [AA2023LCS]	04/08/2019 11:06
METHOD BLANK [AA2024BLK]	04/08/2019 11:31
E19-02214-04 [AA2030]	04/08/2019 14:34

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Data Path : C:\DATA\04-08-19\
 Data File : aa2024blk.D
 Acq On : 8 Apr 2019 11:31 am
 Operator : jjw
 Sample : Method Blank
 Misc : 1127
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 08 11:48:09 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.338	130	706401	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2494077	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	2167892	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	1826205	9.65	ppbV	0.000

Target Compounds	Qvalue

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

Data Path : C:\DATA\04-08-19\
Data File : aa2024blk.D
Acq On : 8 Apr 2019 11:31 am
Operator : jjw
Sample : Method Blank
Misc : 1127
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 08 11:48:09 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration



Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1563LCS
Date Analyzed: 3/15/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 7:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 8:56
10 PPBV LCS [AA1563LCS]	03/15/2019 9:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	13	120
Benzene	71-43-2	13	120
Bromodichloromethane	75-27-4	13	120
Bromoform	75-25-2	12	110
Bromomethane	74-83-9	12	120
1,3-Butadiene	106-99-0	14	130
Chlorobenzene	108-90-7	11	100
Chloroethane	75-00-3	12	120
Chloroform	67-66-3	13	120
Chloromethane	74-87-3	12	110
Carbon disulfide	75-15-0	14	130
Carbon tetrachloride	56-23-5	12	110
Cyclohexane	110-82-7	11	100
Dibromochloromethane	124-48-1	13	120
1,2-Dibromoethane	106-93-4	13	120
1,2-Dichlorobenzene	95-50-1	12	110
1,3-Dichlorobenzene	541-73-1	11	100
1,4-Dichlorobenzene	106-46-7	11	100
Dichlorodifluoromethane	75-71-8	14	130
1,1-Dichloroethane	75-34-3	12	110
1,2-Dichloroethane	107-06-2	13	120
1,1-Dichloroethene	75-35-4	13	120
1,2-Dichloroethene (cis)	156-59-2	13	120
1,2-Dichloroethene (trans)	156-60-5	13	120
1,2-Dichloropropane	78-87-5	12	110
1,3-Dichloropropene (cis)	10061-01-5	13	120
1,3-Dichloropropene (trans)	10061-02-6	12	120
1,2-Dichlorotetrafluoroethane	76-14-2	12	120
1,4-Dioxane	123-91-1	11	110
Ethylbenzene	100-41-4	12	110
n-Heptane	142-82-5	11	100
1,3-Hexachlorobutadiene	87-68-3	12	110
n-Hexane	110-54-3	11	100

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1563LCS
Date Analyzed: 3/15/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 7:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 8:56
10 PPBV LCS [AA1563LCS]	03/15/2019 9:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Methylene chloride	75-09-2	11	100
Methyl ethyl ketone	78-93-3	12	110
Methyl isobutyl ketone	108-10-1	12	110
Methyl tert-butyl ether	1634-04-4	12	110
Styrene	100-42-5	12	110
Tert-butyl alcohol	75-65-0	13	110
1,1,2,2-Tetrachloroethane	79-34-5	13	120
Tetrachloroethene	127-18-4	12	110
Toluene	108-88-3	13	120
1,2,4-Trichlorobenzene	120-82-1	13	110
1,1,1-Trichloroethane	71-55-6	12	110
1,1,2-Trichloroethane	79-00-5	13	120
Trichloroethene	79-01-6	12	110
Trichlorofluoromethane	75-69-4	13	120
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	12	110
1,2,4-Trimethylbenzene	95-63-6	12	110
1,3,5-Trimethylbenzene	108-67-8	12	110
2,2,4-Trimethylpentane	540-84-1	12	110
Vinyl bromide	593-60-2	13	120
Vinyl chloride	75-01-4	14	130
Xylenes (m&p)	179601-23-1	25	110
Xylenes (o)	95-47-6	12	110

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Data Path : C:\DATA\03-15-19\
 Data File : aa15631cs.D
 Acq On : 15 Mar 2019 9:17 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 15 10:18:55 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.335	130	550002	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.400	114	2182075	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	2065417	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1779678	9.87	ppbV	0.000
Target Compounds						
						Qvalue
2) Propene	1.419	41	773492	12.63	ppbV	87
3) Dichlorodifluoromethane	1.454	85	1910434	13.87	ppbV	96
4) 1,2-Dichlorotetrafluor...	1.571	85	1880237	11.81	ppbV	99
5) n-Butane	1.650	43	1402602	11.45	ppbV	94
6) Chloromethane	1.650	15	197460	12.45	ppbV #	44
7) Vinyl chloride	1.705	62	748038	14.04	ppbV	98
8) 1,3-Butadiene	1.719	39	822969	13.50	ppbV	85
9) Bromomethane	2.007	94	566604	12.20	ppbV	99
10) Chloroethane	2.123	64	377627	11.53	ppbV	95
11) Vinyl bromide	2.223	106	679481	13.13	ppbV	100
12) Trichlorofluoromethane	2.233	101	1866669	12.78	ppbV	99
13) Ethanol	2.612	45	314555	9.10	ppbV	96
14) 1,1-Dichloroethene	2.657	61	1354210	13.24	ppbV	98
15) Carbon disulfide	2.676	76	2358457	13.92	ppbV	99
16) 1,1,2-Trichloro-1,2,2-...	2.696	101	1517465	12.08	ppbV	92
17) Acrolein	2.930	56	282583	12.36	ppbV	99
18) Allyl chloride	3.046	76	360774	13.05	ppbV	100
19) Isopropanol	3.056	45	1428382	10.79	ppbV	94
20) Methylene chloride	3.136	49	991164	10.98	ppbV	92
21) Acetone	3.162	43	1431303	12.81	ppbV #	88
22) 1,2-Dichloroethene (tr...	3.255	61	1170264	12.69	ppbV	95
23) n-Pentane	3.332	43	1827917	12.33	ppbV	99
24) n-Hexane	3.329	41	1769852	10.71	ppbV	93
25) Methyl tert-butyl ether	3.342	73	2064488	12.46	ppbV	91
26) Tert-butyl alcohol	3.409	59	1587790	12.62	ppbV	100
27) 1,1-Dichloroethane	3.747	63	1484473	12.34	ppbV	98
28) 1,2-Dichloroethene (cis)	4.175	61	1116577	12.53	ppbV	96
29) Cyclohexane	4.335	56	1257259	11.00	ppbV	92
30) Chloroform	4.400	83	1617449	12.78	ppbV	98
31) Ethyl acetate	4.493	45	315581	11.60	ppbV	99
32) Carbon tetrachloride	4.506	117	1634713	11.75	ppbV	100
33) Tetrahydrofuran	4.519	42	1191382	12.97	ppbV	96
34) 1,1,1-Trichloroethane	4.564	97	1502126	12.08	ppbV	98
35) Methyl ethyl ketone	4.638	43	1846574	11.90	ppbV	96
36) n-Heptane	4.840	43	1783182	11.24	ppbV	94
37) Benzene	4.869	78	2397584	12.86	ppbV	98
38) 1,2-Dichloroethane	5.040	62	1258674	12.76	ppbV	100
40) Trichloroethene	5.371	130	888996	11.82	ppbV	98
41) 2,2,4-Trimethylpentane	4.769	57	4782471	11.97	ppbV	97
42) 1,2-Dichloropropane	5.830	63	956623	11.99	ppbV	98
43) Bromodichloromethane	5.892	83	1686088	13.11	ppbV	100
44) Methyl methacrylate	6.036	41	1470823	11.58	ppbV	94
45) 1,4-Dioxane	6.065	88	458287	11.23	ppbV	98
46) cis-1,3-Dichloropropene	6.480	75	1425419	12.87	ppbV	99
47) Toluene	6.711	91	2922427	13.00	ppbV	95
48) Methyl isobutyl ketone	7.091	43	2525992	12.20	ppbV	88
49) Tetrachloroethene	7.091	166	1042721	12.16	ppbV	97
50) trans-1,3-Dichloropropene	7.126	75	1335497	12.19	ppbV	96
51) 1,1,2-Trichloroethane	7.287	97	1002029	12.75	ppbV	91

AL SDG #E19-02214

Data Path : C:\DATA\03-15-19\
 Data File : aa1563lcs.D
 Acq On : 15 Mar 2019 9:17 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

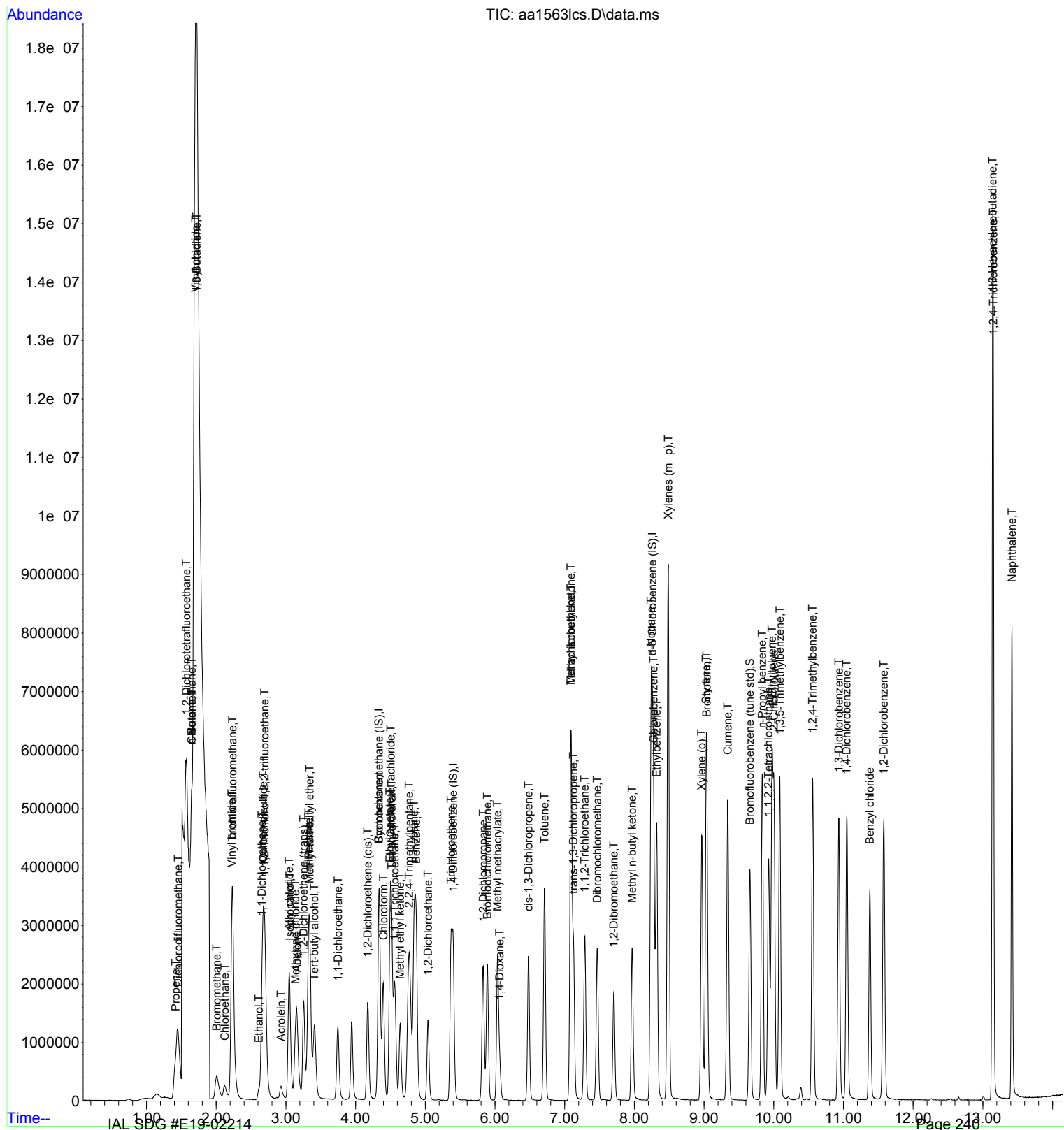
Quant Time: Mar 15 10:18:55 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1576176	12.79	ppbV	99
53) 1,2-Dibromoethane	7.705	107	1530408	12.59	ppbV	99
54) Methyl n-butyl ketone	7.969	43	2288465	12.08	ppbV	98
56) n-Nonane	8.239	43	2895230	10.52	ppbV	95
57) Chlorobenzene	8.277	112	2151813	11.23	ppbV	98
58) Ethylbenzene	8.319	91	3910937	11.87	ppbV	98
59) Xylenes (m&p)	8.486	91	6017926	25.10	ppbV	99
60) Xylene (o)	8.965	91	3173633	11.92	ppbV	99
61) Styrene	9.030	104	2186124	12.18	ppbV	98
62) Bromoform	9.039	173	1360488	12.16	ppbV	97
63) Cumene	9.338	105	4041910	11.89	ppbV	100
65) n-Propyl benzene	9.834	91	5516452	12.40	ppbV	99
66) 1,1,2,2-Tetrachloroethane	9.924	83	2639164	12.54	ppbV	100
67) 4-Ethyltoluene	9.975	105	4118580	12.14	ppbV	98
68) 2-Chlorotoluene	10.001	91	3824572	12.46	ppbV	98
69) 1,3,5-Trimethylbenzene	10.088	105	3611784	12.15	ppbV	99
70) 1,2,4-Trimethylbenzene	10.557	105	3619615	12.18	ppbV	93
71) 1,3-Dichlorobenzene	10.933	146	2140959	11.19	ppbV	98
72) 1,4-Dichlorobenzene	11.046	146	2148662	11.30	ppbV	98
73) Benzyl chloride	11.380	91	3043522	11.52	ppbV	97
74) 1,2-Dichlorobenzene	11.579	146	2146802	11.53	ppbV	99
75) 1,3-Hexachlorobutadiene	13.142	225	1044674	12.12	ppbV	91
76) 1,2,4-Trichlorobenzene	13.152	180	1585349	12.62	ppbV	99
77) Naphthalene	13.419	128	5036155	12.79	ppbV	99

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

Data Path : C:\DATA\03-15-19\
 Data File : aa15631cs.D
 Acq On : 15 Mar 2019 9:17 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 15 10:18:55 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1963LCS
Date Analyzed: 4/4/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1961BFB]	04/04/2019 8:21
10 PPBV DCVS [AA1962DCVS]	04/04/2019 9:30
10 PPBV LCS [AA1963LCS]	04/04/2019 9:55
METHOD BLANK [AA1964BLK]	04/04/2019 10:38
02 PPBV RLLCS [AA1965RLLCS]	04/04/2019 11:02
E19-02214-01 [AA1977]	04/04/2019 16:14
10 PPBV CCCVS [AA1985CCCVS]	04/05/2019 8:20

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	12	110
Benzene	71-43-2	9.8	89
Bromodichloromethane	75-27-4	12	110
Bromoform	75-25-2	12	110
Bromomethane	74-83-9	9.1	92
1,3-Butadiene	106-99-0	10	91
Chlorobenzene	108-90-7	9.4	85
Chloroethane	75-00-3	7.8	78
Chloroform	67-66-3	11	100
Chloromethane	74-87-3	11	100
Carbon disulfide	75-15-0	10	91
Carbon tetrachloride	56-23-5	11	100
Cyclohexane	110-82-7	8.2	75
Dibromochloromethane	124-48-1	12	110
1,2-Dibromoethane	106-93-4	10	91
1,2-Dichlorobenzene	95-50-1	11	100
1,3-Dichlorobenzene	541-73-1	10	91
1,4-Dichlorobenzene	106-46-7	11	100
Dichlorodifluoromethane	75-71-8	12	110
1,1-Dichloroethane	75-34-3	9.7	88
1,2-Dichloroethane	107-06-2	12	110
1,1-Dichloroethene	75-35-4	11	100
1,2-Dichloroethene (cis)	156-59-2	9.9	90
1,2-Dichloroethene (trans)	156-60-5	10	91
1,2-Dichloropropane	78-87-5	9.2	84
1,3-Dichloropropene (cis)	10061-01-5	10	91
1,3-Dichloropropene (trans)	10061-02-6	11	110
1,2-Dichlorotetrafluoroethane	76-14-2	9.7	97
1,4-Dioxane	123-91-1	8.8	88
Ethylbenzene	100-41-4	10.0	91
n-Heptane	142-82-5	9.6	87
1,3-Hexachlorobutadiene	87-68-3	13	120
n-Hexane	110-54-3	13	120

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1963LCS
Date Analyzed: 4/4/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1961BFB]	04/04/2019 8:21
10 PPBV DCVS [AA1962DCVS]	04/04/2019 9:30
10 PPBV LCS [AA1963LCS]	04/04/2019 9:55
METHOD BLANK [AA1964BLK]	04/04/2019 10:38
02 PPBV RLLCS [AA1965RLLCS]	04/04/2019 11:02
E19-02214-01 [AA1977]	04/04/2019 16:14
10 PPBV CCCVS [AA1985CCCVS]	04/05/2019 8:20

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Methylene chloride	75-09-2	9.7	88
Methyl ethyl ketone	78-93-3	10	91
Methyl isobutyl ketone	108-10-1	11	100
Methyl tert-butyl ether	1634-04-4	9.8	89
Styrene	100-42-5	9.9	90
Tert-butyl alcohol	75-65-0	10	83
1,1,2,2-Tetrachloroethane	79-34-5	11	100
Tetrachloroethene	127-18-4	10	91
Toluene	108-88-3	10	91
1,2,4-Trichlorobenzene	120-82-1	13	110
1,1,1-Trichloroethane	71-55-6	11	100
1,1,2-Trichloroethane	79-00-5	11	100
Trichloroethene	79-01-6	9.5	86
Trichlorofluoromethane	75-69-4	12	110
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	9.6	87
1,2,4-Trimethylbenzene	95-63-6	11	100
1,3,5-Trimethylbenzene	108-67-8	11	100
2,2,4-Trimethylpentane	540-84-1	9.6	87
Vinyl bromide	593-60-2	9.6	87
Vinyl chloride	75-01-4	11	100
Xylenes (m&p)	179601-23-1	22	100
Xylenes (o)	95-47-6	9.9	90

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Data Path : C:\DATA\04-04-19\
 Data File : aa1963lcs.D
 Acq On : 4 Apr 2019 9:55 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 04 10:22:06 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.332	130	800637	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	2993864	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2848527	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	2535066	10.20	ppbV	0.000
Target Compounds						
					Qvalue	
2) Propene	1.409	41	896691	10.05	ppbV	97
3) Dichlorodifluoromethane	1.444	85	2471734	12.33	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.567	85	2255549	9.73	ppbV	96
5) n-Butane	1.650	43	1668653	9.36	ppbV #	83
6) Chloromethane	1.647	15	257975	11.17	ppbV #	19
7) Vinyl chloride	1.708	62	854664	11.02	ppbV	100
8) 1,3-Butadiene	1.712	39	890148	10.03	ppbV	84
9) Bromomethane	2.007	94	613910	9.08	ppbV	100
10) Chloroethane	2.114	64	371879	7.80	ppbV #	69
11) Vinyl bromide	2.220	106	726114	9.64	ppbV	99
12) Trichlorofluoromethane	2.232	101	2451834	11.53	ppbV	99
13) Ethanol	2.615	45	357187	7.10	ppbV	87
14) 1,1-Dichloroethene	2.657	61	1607568	10.79	ppbV	95
15) Carbon disulfide	2.670	76	2487686	10.08	ppbV #	70
16) 1,1,2-Trichloro-1,2,2-...	2.699	101	1752183	9.58	ppbV	96
17) Acrolein	2.927	56	260394	7.82	ppbV	92
18) Allyl chloride	3.040	76	366746	9.11	ppbV	100
19) Isopropanol	3.052	45	1713066	8.89	ppbV #	82
20) Methylene chloride	3.139	49	1269086	9.66	ppbV #	80
21) Acetone	3.155	43	1971009	12.12	ppbV #	77
22) 1,2-Dichloroethene (tr...	3.255	61	1346645	10.04	ppbV	88
23) n-Pentane	3.332	43	2511663	11.64	ppbV	99
24) n-Hexane	3.329	41	3199536	13.30	ppbV #	64
25) Methyl tert-butyl ether	3.339	73	2363274	9.80	ppbV	96
26) Tert-butyl alcohol	3.409	59	1871872	10.22	ppbV	100
27) 1,1-Dichloroethane	3.744	63	1700419	9.71	ppbV	99
28) 1,2-Dichloroethene (cis)	4.171	61	1286681	9.92	ppbV	92
29) Cyclohexane	4.332	56	1361899	8.18	ppbV	93
30) Chloroform	4.393	83	2051682	11.14	ppbV	99
31) Ethyl acetate	4.486	45	390540	9.86	ppbV	90
32) Carbon tetrachloride	4.506	117	2305138	11.38	ppbV	99
33) Tetrahydrofuran	4.515	42	1509079	11.28	ppbV	97
34) 1,1,1-Trichloroethane	4.560	97	2028818	11.20	ppbV	99
35) Methyl ethyl ketone	4.638	43	2370045	10.49	ppbV	97
36) n-Heptane	4.837	43	2222511	9.63	ppbV	96
37) Benzene	4.866	78	2661428	9.80	ppbV	91
38) 1,2-Dichloroethane	5.039	62	1719719	11.98	ppbV	98
40) Trichloroethene	5.367	130	984921	9.54	ppbV	98
41) 2,2,4-Trimethylpentane	4.766	57	5249474	9.57	ppbV #	87
42) 1,2-Dichloropropane	5.824	63	1004155	9.18	ppbV	100
43) Bromodichloromethane	5.888	83	2097650	11.89	ppbV	97
44) Methyl methacrylate	6.033	41	1902954	10.92	ppbV	88
45) 1,4-Dioxane	6.062	88	495614	8.85	ppbV	97
46) cis-1,3-Dichloropropene	6.480	75	1538198	10.12	ppbV	99
47) Toluene	6.708	91	3091564	10.02	ppbV	95
48) Methyl isobutyl ketone	7.088	43	3226902	11.36	ppbV #	79
49) Tetrachloroethene	7.088	166	1226298	10.42	ppbV	98
50) trans-1,3-Dichloropropene	7.126	75	1599656	10.65	ppbV #	55
51) 1,1,2-Trichloroethane	7.290	97	1143957	10.61	ppbV	92

Data Path : C:\DATA\04-04-19\
 Data File : aa1963lcs.D
 Acq On : 4 Apr 2019 9:55 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

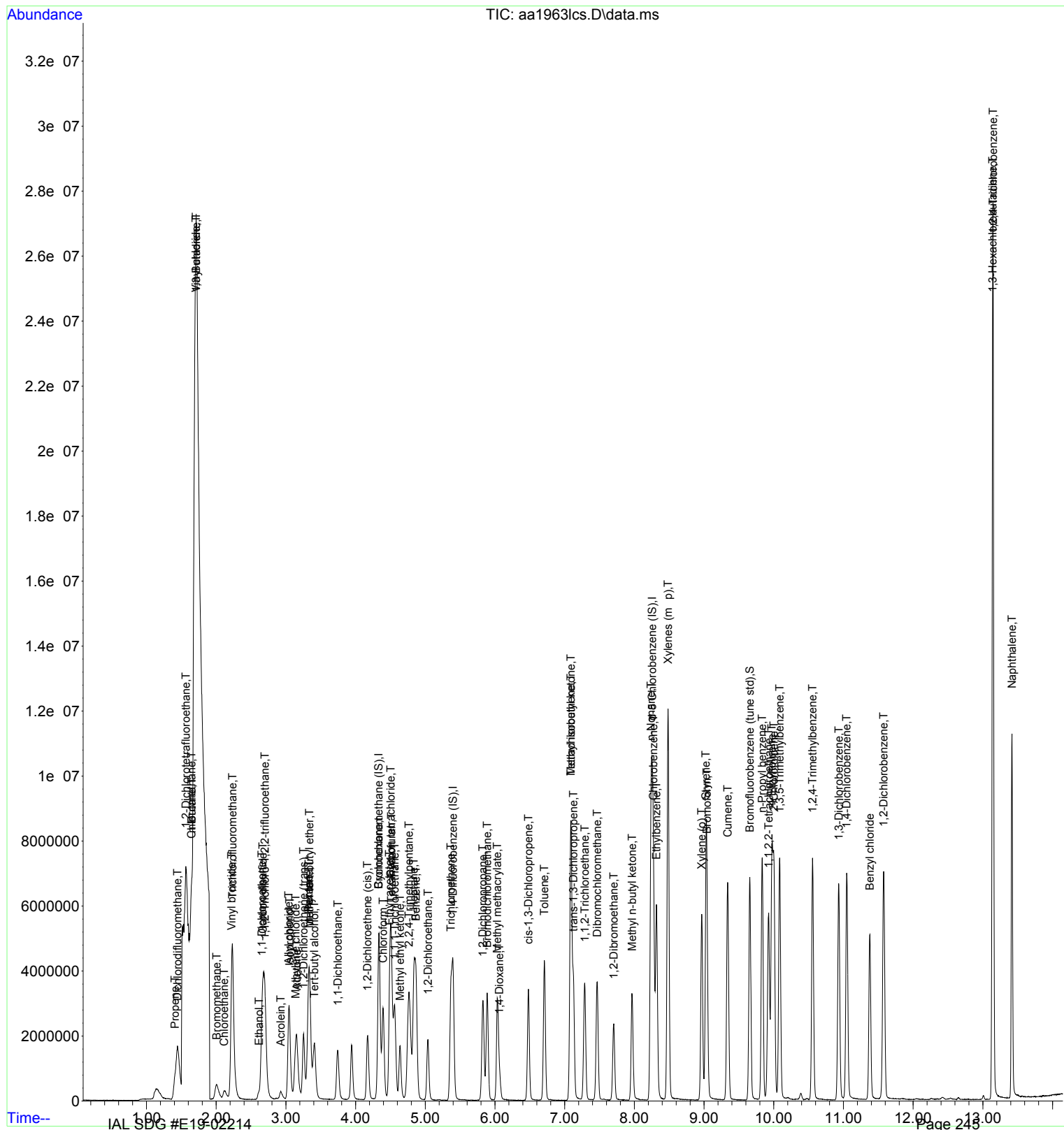
Quant Time: Apr 04 10:22:06 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1974309	11.67	ppbV	99
53) 1,2-Dibromoethane	7.705	107	1744717	10.46	ppbV	99
54) Methyl n-butyl ketone	7.969	43	2881001	11.09	ppbV #	84
56) n-Nonane	8.239	43	3694655	9.73	ppbV	83
57) Chlorobenzene	8.274	112	2488769	9.42	ppbV	95
58) Ethylbenzene	8.316	91	4529215	9.97	ppbV	98
59) Xylenes (m&p)	8.483	91	7219694	21.84	ppbV	98
60) Xylene (o)	8.965	91	3624409	9.87	ppbV	99
61) Styrene	9.026	104	2454702	9.91	ppbV	99
62) Bromoform	9.043	173	1912547	12.40	ppbV	99
63) Cumene	9.338	105	4753390	10.14	ppbV	100
65) n-Propyl benzene	9.833	91	6670468	10.87	ppbV	97
66) 1,1,2,2-Tetrachloroethane	9.927	83	3214959	11.08	ppbV	99
67) 4-Ethyltoluene	9.972	105	5001200	10.69	ppbV	99
68) 2-Chlorotoluene	10.001	91	4835035	11.42	ppbV	99
69) 1,3,5-Trimethylbenzene	10.084	105	4521738	11.03	ppbV	97
70) 1,2,4-Trimethylbenzene	10.557	105	4406198	10.75	ppbV	93
71) 1,3-Dichlorobenzene	10.933	146	2654831	10.06	ppbV	99
72) 1,4-Dichlorobenzene	11.046	146	2759029	10.52	ppbV	97
73) Benzyl chloride	11.377	91	3855914	10.58	ppbV	96
74) 1,2-Dichlorobenzene	11.576	146	2777051	10.81	ppbV	98
75) 1,3-Hexachlorobutadiene	13.142	225	1551474	13.05	ppbV	96
76) 1,2,4-Trichlorobenzene	13.148	180	2272729	13.12	ppbV	100
77) Naphthalene	13.419	128	6325423	11.65	ppbV	98

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

Data Path : C:\DATA\04-04-19\
 Data File : aa1963lcs.D
 Acq On : 4 Apr 2019 9:55 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 04 10:22:06 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1993LCS
Date Analyzed: 4/5/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1991BFB]	04/05/2019 8:41
10 PPBV DCVS [AA1992DCVS]	04/05/2019 9:06
10 PPBV LCS [AA1993LCS]	04/05/2019 9:30
METHOD BLANK [AA1994BLK]	04/05/2019 10:50
E19-02214-01 [AA1999]	04/05/2019 15:08
E19-02214-21 [AA2000]	04/05/2019 15:29
E19-02214-02 [AA2001]	04/05/2019 15:51
E19-02214-03 [AA2002]	04/05/2019 16:12
E19-02214-04 [AA2003]	04/05/2019 16:33
E19-02214-05 [AA2004]	04/05/2019 16:57
E19-02214-06 [AA2005]	04/05/2019 17:19
E19-02214-07 [AA2006]	04/05/2019 17:40

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	12	110
Benzene	71-43-2	11	100
Bromodichloromethane	75-27-4	10	91
Bromoform	75-25-2	11	100
Bromomethane	74-83-9	9.5	96
1,3-Butadiene	106-99-0	11	100
Chlorobenzene	108-90-7	9.1	83
Chloroethane	75-00-3	12	120
Chloroform	67-66-3	11	100
Chloromethane	74-87-3	11	100
Carbon disulfide	75-15-0	11	100
Carbon tetrachloride	56-23-5	10	91
Cyclohexane	110-82-7	11	100
Dibromochloromethane	124-48-1	10	91
1,2-Dibromoethane	106-93-4	10.0	91
1,2-Dichlorobenzene	95-50-1	9.3	85
1,3-Dichlorobenzene	541-73-1	9.1	83
1,4-Dichlorobenzene	106-46-7	9.1	83
Dichlorodifluoromethane	75-71-8	11	100
1,1-Dichloroethane	75-34-3	11	100
1,2-Dichloroethane	107-06-2	11	100
1,1-Dichloroethene	75-35-4	12	110
1,2-Dichloroethene (cis)	156-59-2	11	100
1,2-Dichloroethene (trans)	156-60-5	11	100
1,2-Dichloropropane	78-87-5	11	100
1,3-Dichloropropene (cis)	10061-01-5	10	91
1,3-Dichloropropene (trans)	10061-02-6	9.3	93
1,2-Dichlorotetrafluoroethane	76-14-2	9.2	92

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1993LCS
Date Analyzed: 4/5/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1991BFB]	04/05/2019 8:41
10 PPBV DCVS [AA1992DCVS]	04/05/2019 9:06
10 PPBV LCS [AA1993LCS]	04/05/2019 9:30
METHOD BLANK [AA1994BLK]	04/05/2019 10:50
E19-02214-01 [AA1999]	04/05/2019 15:08
E19-02214-21 [AA2000]	04/05/2019 15:29
E19-02214-02 [AA2001]	04/05/2019 15:51
E19-02214-03 [AA2002]	04/05/2019 16:12
E19-02214-04 [AA2003]	04/05/2019 16:33
E19-02214-05 [AA2004]	04/05/2019 16:57
E19-02214-06 [AA2005]	04/05/2019 17:19
E19-02214-07 [AA2006]	04/05/2019 17:40

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
1,4-Dioxane	123-91-1	8.7	87
Ethylbenzene	100-41-4	10.0	91
n-Heptane	142-82-5	12	110
1,3-Hexachlorobutadiene	87-68-3	12	110
n-Hexane	110-54-3	11	100
Methylene chloride	75-09-2	12	110
Methyl ethyl ketone	78-93-3	13	120
Methyl isobutyl ketone	108-10-1	11	100
Methyl tert-butyl ether	1634-04-4	10	91
Styrene	100-42-5	9.7	88
Tert-butyl alcohol	75-65-0	12	100
1,1,2,2-Tetrachloroethane	79-34-5	10	91
Tetrachloroethene	127-18-4	10	91
Toluene	108-88-3	10.0	91
1,2,4-Trichlorobenzene	120-82-1	10	83
1,1,1-Trichloroethane	71-55-6	11	100
1,1,2-Trichloroethane	79-00-5	10	91
Trichloroethene	79-01-6	9.3	85
Trichlorofluoromethane	75-69-4	11	100
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	9.6	87
1,2,4-Trimethylbenzene	95-63-6	10	91
1,3,5-Trimethylbenzene	108-67-8	10	91
2,2,4-Trimethylpentane	540-84-1	10	91
Vinyl bromide	593-60-2	10	91
Vinyl chloride	75-01-4	11	100
Xylenes (m&p)	179601-23-1	21	95
Xylenes (o)	95-47-6	9.7	88

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Data Path : C:\DATA\04-05-19\
 Data File : aa19931cs.D
 Acq On : 5 Apr 2019 9:30 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 05 11:41:17 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	596402	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.400	114	2350484	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2133585	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1853898	9.96	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.419	41	896353	13.49	ppbV	87
3) Dichlorodifluoromethane	1.454	85	1605808	10.75	ppbV	96
4) 1,2-Dichlorotetrafluor...	1.574	85	1594065	9.23	ppbV	99
5) n-Butane	1.653	43	1574451	11.85	ppbV	92
6) Chloromethane	1.647	15	194067	11.28	ppbV #	54
7) Vinyl chloride	1.709	62	636178	11.01	ppbV	93
8) 1,3-Butadiene	1.719	39	735407	11.13	ppbV	90
9) Bromomethane	2.011	94	480028	9.53	ppbV	100
10) Chloroethane	2.126	64	431829	12.16	ppbV #	83
11) Vinyl bromide	2.223	106	561790	10.01	ppbV	99
12) Trichlorofluoromethane	2.236	101	1727431	10.90	ppbV	100
13) Ethanol	2.615	45	355537	9.48	ppbV	93
14) 1,1-Dichloroethene	2.657	61	1305611	11.77	ppbV	90
15) Carbon disulfide	2.676	76	1929694	10.50	ppbV #	77
16) 1,1,2-Trichloro-1,2,2-...	2.699	101	1301954	9.55	ppbV	91
17) Acrolein	2.933	56	272027	10.97	ppbV	95
18) Allyl chloride	3.046	76	288532	9.62	ppbV	100
19) Isopropanol	3.059	45	1566683	10.92	ppbV #	91
20) Methylene chloride	3.139	49	1130622	11.55	ppbV #	70
21) Acetone	3.162	43	1489967	12.30	ppbV #	81
22) 1,2-Dichloroethene (tr...	3.261	61	1104559	11.05	ppbV	84
23) n-Pentane	3.335	43	2100267	13.07	ppbV	98
24) n-Hexane	3.335	41	2044831	11.41	ppbV	94
25) Methyl tert-butyl ether	3.345	73	1834714	10.22	ppbV #	75
26) Tert-butyl alcohol	3.413	59	1627190	11.93	ppbV	100
27) 1,1-Dichloroethane	3.747	63	1395710	10.70	ppbV	99
28) 1,2-Dichloroethene (cis)	4.178	61	1104820	11.43	ppbV	83
29) Cyclohexane	4.342	56	1358662	10.96	ppbV #	76
30) Chloroform	4.400	83	1503205	10.96	ppbV	100
31) Ethyl acetate	4.493	45	361878	12.26	ppbV	88
32) Carbon tetrachloride	4.506	117	1582542	10.49	ppbV	100
33) Tetrahydrofuran	4.519	42	1385101	13.90	ppbV #	89
34) 1,1,1-Trichloroethane	4.564	97	1456885	10.80	ppbV	100
35) Methyl ethyl ketone	4.641	43	2131918	12.67	ppbV	92
36) n-Heptane	4.843	43	2038113	11.85	ppbV	89
37) Benzene	4.872	78	2128743	10.53	ppbV #	90
38) 1,2-Dichloroethane	5.043	62	1126644	10.53	ppbV	100
40) Trichloroethene	5.371	130	751809	9.28	ppbV	98
41) 2,2,4-Trimethylpentane	4.769	57	4378008	10.17	ppbV	95
42) 1,2-Dichloropropane	5.830	63	906045	10.55	ppbV	99
43) Bromodichloromethane	5.892	83	1395253	10.07	ppbV	99
44) Methyl methacrylate	6.036	41	1658789	12.12	ppbV	85
45) 1,4-Dioxane	6.065	88	383703	8.73	ppbV #	78
46) cis-1,3-Dichloropropene	6.483	75	1225405	10.27	ppbV	99
47) Toluene	6.711	91	2417759	9.98	ppbV	95
48) Methyl isobutyl ketone	7.091	43	2413670	10.82	ppbV #	84
49) Tetrachloroethene	7.091	166	927041	10.03	ppbV	99
50) trans-1,3-Dichloropropene	7.126	75	1092958	9.26	ppbV	82
51) 1,1,2-Trichloroethane	7.290	97	861032	10.17	ppbV	91

AL SDG #E19-02214

Data Path : C:\DATA\04-05-19\
 Data File : aa1993lcs.D
 Acq On : 5 Apr 2019 9:30 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

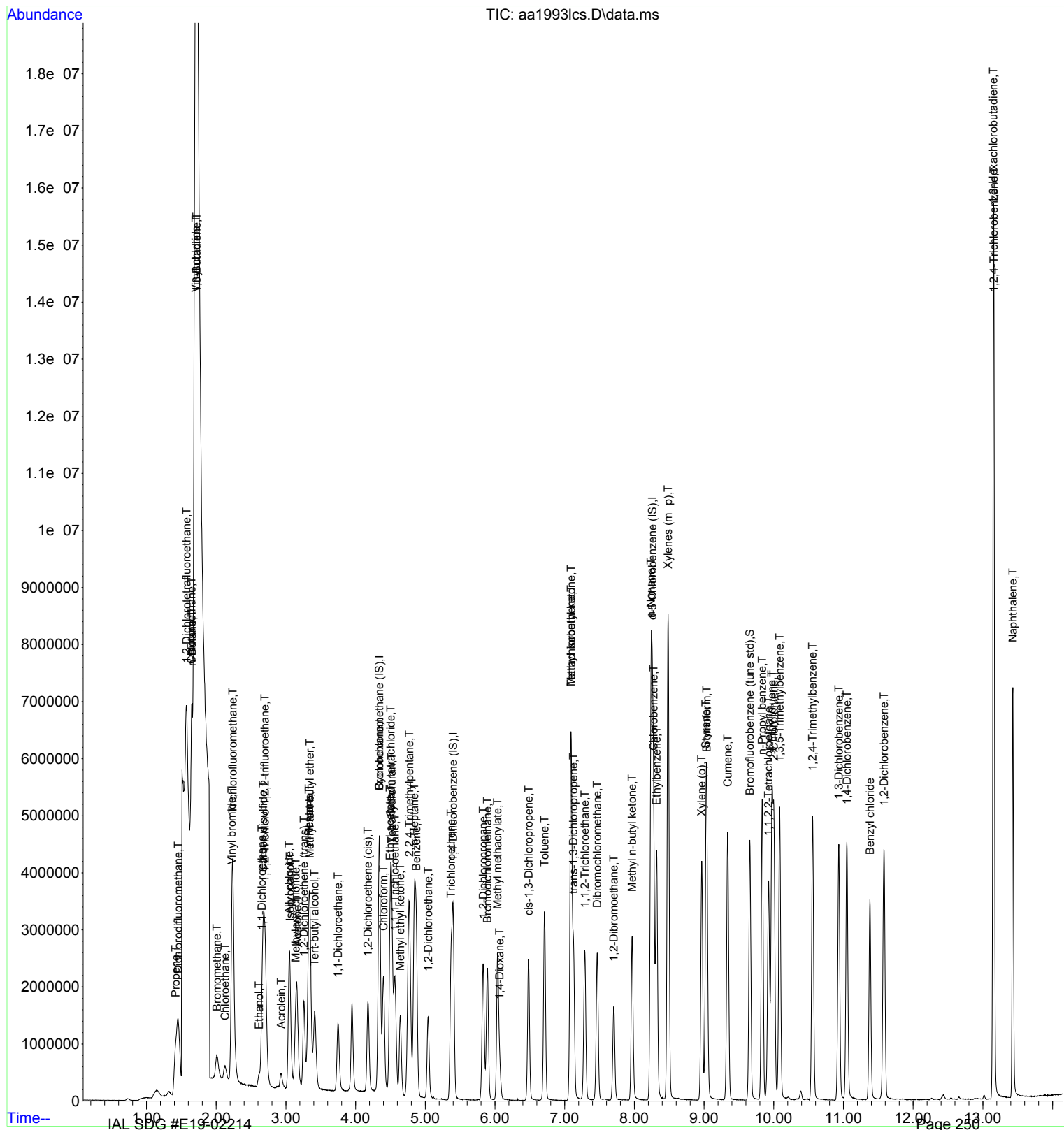
Quant Time: Apr 05 11:41:17 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1393112	10.49	ppbV	99
53) 1,2-Dibromoethane	7.705	107	1303069	9.95	ppbV	100
54) Methyl n-butyl ketone	7.969	43	2571361	12.61	ppbV	89
56) n-Nonane	8.239	43	3386182	11.91	ppbV	87
57) Chlorobenzene	8.277	112	1805422	9.12	ppbV	92
58) Ethylbenzene	8.319	91	3389563	9.96	ppbV	95
59) Xylenes (m&p)	8.483	91	5283033	21.33	ppbV	97
60) Xylene (o)	8.965	91	2678268	9.74	ppbV	97
61) Styrene	9.026	104	1792533	9.67	ppbV	100
62) Bromoform	9.039	173	1283336	11.11	ppbV	97
63) Cumene	9.338	105	3418098	9.74	ppbV	98
65) n-Propyl benzene	9.834	91	4759246	10.35	ppbV	96
66) 1,1,2,2-Tetrachloroethane	9.924	83	2264619	10.42	ppbV	99
67) 4-Ethyltoluene	9.972	105	3495225	9.97	ppbV	97
68) 2-Chlorotoluene	10.001	91	3354466	10.58	ppbV	100
69) 1,3,5-Trimethylbenzene	10.084	105	3091142	10.06	ppbV	98
70) 1,2,4-Trimethylbenzene	10.557	105	3076003	10.02	ppbV	90
71) 1,3-Dichlorobenzene	10.933	146	1790795	9.06	ppbV	98
72) 1,4-Dichlorobenzene	11.052	146	1790793	9.12	ppbV	100
73) Benzyl chloride	11.380	91	2693102	9.86	ppbV	95
74) 1,2-Dichlorobenzene	11.583	146	1785270	9.28	ppbV	100
75) 1,3-Hexachlorobutadiene	13.152	225	1040163	11.68	ppbV	96
76) 1,2,4-Trichlorobenzene	13.158	180	1326115	10.22	ppbV	99
77) Naphthalene	13.431	128	4115604	10.12	ppbV	98

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

Data Path : C:\DATA\04-05-19\
 Data File : aa19931cs.D
 Acq On : 5 Apr 2019 9:30 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 05 11:41:17 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA2023LCS
Date Analyzed: 4/8/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2021BFB]	04/08/2019 10:03
10 PPBV DCVS [AA2022DCVS]	04/08/2019 10:32
10 PPBV LCS [AA2023LCS]	04/08/2019 11:06
METHOD BLANK [AA2024BLK]	04/08/2019 11:31
E19-02214-04 [AA2030]	04/08/2019 14:34

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	13	120
Benzene	71-43-2	9.8	89
Bromodichloromethane	75-27-4	12	110
Bromoform	75-25-2	12	110
Bromomethane	74-83-9	8.9	90
1,3-Butadiene	106-99-0	14	130
Chlorobenzene	108-90-7	9.3	85
Chloroethane	75-00-3	8.6	86
Chloroform	67-66-3	11	100
Chloromethane	74-87-3	14	130
Carbon disulfide	75-15-0	10	91
Carbon tetrachloride	56-23-5	11	100
Cyclohexane	110-82-7	8.6	78
Dibromochloromethane	124-48-1	12	110
1,2-Dibromoethane	106-93-4	11	100
1,2-Dichlorobenzene	95-50-1	11	100
1,3-Dichlorobenzene	541-73-1	10	91
1,4-Dichlorobenzene	106-46-7	10	91
Dichlorodifluoromethane	75-71-8	13	120
1,1-Dichloroethane	75-34-3	9.8	89
1,2-Dichloroethane	107-06-2	12	110
1,1-Dichloroethene	75-35-4	11	100
1,2-Dichloroethene (cis)	156-59-2	10	91
1,2-Dichloroethene (trans)	156-60-5	10	91
1,2-Dichloropropane	78-87-5	9.5	86
1,3-Dichloropropene (cis)	10061-01-5	10	91
1,3-Dichloropropene (trans)	10061-02-6	11	110
1,2-Dichlorotetrafluoroethane	76-14-2	9.9	99
1,4-Dioxane	123-91-1	9.1	91
Ethylbenzene	100-41-4	9.7	88
n-Heptane	142-82-5	10.0	91
1,3-Hexachlorobutadiene	87-68-3	13	120
n-Hexane	110-54-3	11	100
Methylene chloride	75-09-2	10	91
Methyl ethyl ketone	78-93-3	11	100

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA2023LCS
Date Analyzed: 4/8/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2021BFB]	04/08/2019 10:03
10 PPBV DCVS [AA2022DCVS]	04/08/2019 10:32
10 PPBV LCS [AA2023LCS]	04/08/2019 11:06
METHOD BLANK [AA2024BLK]	04/08/2019 11:31
E19-02214-04 [AA2030]	04/08/2019 14:34

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Methyl isobutyl ketone	108-10-1	12	110
Methyl tert-butyl ether	1634-04-4	10	91
Styrene	100-42-5	9.7	88
Tert-butyl alcohol	75-65-0	11	92
1,1,2,2-Tetrachloroethane	79-34-5	11	100
Tetrachloroethene	127-18-4	11	100
Toluene	108-88-3	10	91
1,2,4-Trichlorobenzene	120-82-1	13	110
1,1,1-Trichloroethane	71-55-6	11	100
1,1,2-Trichloroethane	79-00-5	11	100
Trichloroethene	79-01-6	9.8	89
Trichlorofluoromethane	75-69-4	12	110
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	10	91
1,2,4-Trimethylbenzene	95-63-6	10	91
1,3,5-Trimethylbenzene	108-67-8	10	91
2,2,4-Trimethylpentane	540-84-1	8.6	78
Vinyl bromide	593-60-2	10	91
Vinyl chloride	75-01-4	12	110
Xylenes (m&p)	179601-23-1	21	95
Xylenes (o)	95-47-6	9.7	88

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Data Path : C:\DATA\04-08-19\
 Data File : aa20231cs.D
 Acq On : 8 Apr 2019 11:06 am
 Operator : jjw
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 08 11:25:43 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	743154	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2777617	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2671052	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	2345698	10.06	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.419	41	932911	11.27	ppbV	96
3) Dichlorodifluoromethane	1.457	85	2486932	13.36	ppbV	96
4) 1,2-Dichlorotetrafluor...	1.574	85	2123890	9.87	ppbV	99
5) n-Butane	1.653	43	1739879	10.51	ppbV #	86
6) Chloromethane	1.643	15	298856	13.94	ppbV #	24
7) Vinyl chloride	1.712	62	861240	11.96	ppbV #	63
8) 1,3-Butadiene	1.719	39	1115173	13.54	ppbV #	80
9) Bromomethane	2.011	94	555792	8.86	ppbV	99
10) Chloroethane	2.123	64	382145	8.63	ppbV	93
11) Vinyl bromide	2.229	106	712757	10.20	ppbV	99
12) Trichlorofluoromethane	2.236	101	2384084	12.08	ppbV	99
13) Ethanol	2.612	45	398875	8.54	ppbV	96
14) 1,1-Dichloroethene	2.663	61	1563726	11.31	ppbV	94
15) Carbon disulfide	2.679	76	2392209	10.45	ppbV #	70
16) 1,1,2-Trichloro-1,2,2-...	2.702	101	1707771	10.06	ppbV	93
17) Acrolein	2.930	56	273405	8.85	ppbV	94
18) Allyl chloride	3.046	76	342922	9.18	ppbV	100
19) Isopropanol	3.062	45	1757611	9.83	ppbV #	84
20) Methylene chloride	3.142	49	1277615	10.48	ppbV #	77
21) Acetone	3.162	43	2007708	13.30	ppbV #	77
22) 1,2-Dichloroethene (tr...	3.261	61	1277838	10.26	ppbV	90
23) n-Pentane	3.338	43	2500345	12.49	ppbV	100
24) n-Hexane	3.332	41	2452818	10.98	ppbV	84
25) Methyl tert-butyl ether	3.348	73	2276861	10.17	ppbV	91
26) Tert-butyl alcohol	3.416	59	1857771	10.93	ppbV	100
27) 1,1-Dichloroethane	3.747	63	1600371	9.85	ppbV	99
28) 1,2-Dichloroethene (cis)	4.178	61	1243857	10.33	ppbV	89
29) Cyclohexane	4.345	56	1328794	8.60	ppbV	89
30) Chloroform	4.400	83	1920582	11.23	ppbV	100
31) Ethyl acetate	4.496	45	377684	10.27	ppbV	86
32) Carbon tetrachloride	4.509	117	2133586	11.35	ppbV	100
33) Tetrahydrofuran	4.518	42	1475407	11.89	ppbV	93
34) 1,1,1-Trichloroethane	4.567	97	1915611	11.40	ppbV	99
35) Methyl ethyl ketone	4.641	43	2320113	11.06	ppbV	95
36) n-Heptane	4.843	43	2135025	9.96	ppbV	93
37) Benzene	4.872	78	2467275	9.79	ppbV #	90
38) 1,2-Dichloroethane	5.043	62	1633259	12.25	ppbV	98
40) Trichloroethene	5.371	130	938107	9.80	ppbV	99
41) 2,2,4-Trimethylpentane	4.769	57	4364639	8.58	ppbV	94
42) 1,2-Dichloropropane	5.830	63	963766	9.49	ppbV	97
43) Bromodichloromethane	5.891	83	2000311	12.22	ppbV	100
44) Methyl methacrylate	6.039	41	1910806	11.81	ppbV	85
45) 1,4-Dioxane	6.068	88	475194	9.14	ppbV	96
46) cis-1,3-Dichloropropene	6.480	75	1427430	10.13	ppbV	100
47) Toluene	6.711	91	2898640	10.13	ppbV	96
48) Methyl isobutyl ketone	7.091	43	3208398	12.17	ppbV #	80
49) Tetrachloroethene	7.088	166	1211624	11.10	ppbV	98
50) trans-1,3-Dichloropropene	7.126	75	1472807	10.56	ppbV #	53
51) 1,1,2-Trichloroethane	7.290	97	1082000	10.81	ppbV	92

Data Path : C:\DATA\04-08-19\
 Data File : aa2023lcs.D
 Acq On : 8 Apr 2019 11:06 am
 Operator : jjw
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

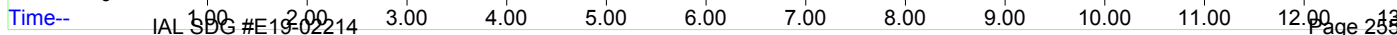
Quant Time: Apr 08 11:25:43 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1892453	12.06	ppbV	99
53) 1,2-Dibromoethane	7.705	107	1657647	10.71	ppbV	99
54) Methyl n-butyl ketone	7.969	43	2877150	11.94	ppbV #	84
56) n-Nonane	8.239	43	3665101	10.30	ppbV	83
57) Chlorobenzene	8.277	112	2301446	9.29	ppbV	95
58) Ethylbenzene	8.319	91	4152025	9.74	ppbV	97
59) Xylenes (m&p)	8.483	91	6527722	21.06	ppbV	98
60) Xylene (o)	8.965	91	3344757	9.72	ppbV	98
61) Styrene	9.030	104	2244013	9.66	ppbV	99
62) Bromoform	9.042	173	1801040	12.45	ppbV	97
63) Cumene	9.338	105	4384612	9.98	ppbV	99
65) n-Propyl benzene	9.837	91	6057880	10.53	ppbV	98
66) 1,1,2,2-Tetrachloroethane	9.923	83	2878470	10.58	ppbV	100
67) 4-Ethyltoluene	9.972	105	4567032	10.41	ppbV	99
68) 2-Chlorotoluene	10.001	91	4379478	11.03	ppbV	99
69) 1,3,5-Trimethylbenzene	10.087	105	4032277	10.49	ppbV	99
70) 1,2,4-Trimethylbenzene	10.560	105	4005089	10.42	ppbV	92
71) 1,3-Dichlorobenzene	10.933	146	2486586	10.05	ppbV	99
72) 1,4-Dichlorobenzene	11.049	146	2502233	10.17	ppbV	99
73) Benzyl chloride	11.380	91	3555774	10.40	ppbV	96
74) 1,2-Dichlorobenzene	11.579	146	2541640	10.55	ppbV	99
75) 1,3-Hexachlorobutadiene	13.145	225	1406123	12.61	ppbV	95
76) 1,2,4-Trichlorobenzene	13.152	180	2106709	12.97	ppbV	99
77) Naphthalene	13.422	128	5703646	11.20	ppbV	99

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

Data Path : C:\DATA\
Data File : aa202310
Acq On : 8 Apr 2023

Quant Time: Apr 08 11:25:43 2019



Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01604
IAL Sample ID: E19-01604-04
Matrix: Air
Summa ID: 1604

Date Received: 3/7/19
Date Analyzed: 3/15/19, 3/15/19
Lab Data File : AA1570, AA1571
Dilution Factor: 1000
Injection Volume: 0.05ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01604-04		Sample Dup E19-01604-24		Reporting Limits ppbv	RPD
		Concentration Reported ppbv	Q	Concentration Reported ppbv	Q		
Acetone	67-64-1	2000	U	2000	U	2000	0.00%
Allyl Chloride	107-05-1	2000	U	2000	U	2000	0.00%
Benzene	71-43-2	2000	U	2000	U	2000	0.00%
Bromodichloromethane	75-27-4	2000	U	2000	U	2000	0.00%
Bromoform	75-25-2	2000	U	2000	U	2000	0.00%
Bromomethane	74-83-9	2000	U	2000	U	2000	0.00%
1,3-Butadiene	106-99-0	2000	U	2000	U	2000	0.00%
Chlorobenzene	108-90-7	2000	U	2000	U	2000	0.00%
Chloroethane	75-00-3	2000	U	2000	U	2000	0.00%
Chloroform	67-66-3	2000	U	2000	U	2000	0.00%
Chloromethane	74-87-3	2000	U	2000	U	2000	0.00%
Carbon disulfide	75-15-0	2000	U	2000	U	2000	0.00%
Carbon tetrachloride	56-23-5	2000	U	2000	U	2000	0.00%
2-Chlorotoluene	95-49-8	2000	U	2000	U	2000	0.00%
Cyclohexane	110-82-7	2000	U	2000	U	2000	0.00%
Dibromochloromethane	124-48-1	2000	U	2000	U	2000	0.00%
1,2-Dibromoethane	106-93-4	2000	U	2000	U	2000	0.00%
1,2-Dichlorobenzene	95-50-1	2000	U	2000	U	2000	0.00%
1,3-Dichlorobenzene	541-73-1	2000	U	2000	U	2000	0.00%
1,4-Dichlorobenzene	106-46-7	2000	U	2000	U	2000	0.00%
Dichlorodifluoromethane	75-71-8	2000	U	2000	U	2000	0.00%
1,1-Dichloroethane	75-34-3	2000	U	2000	U	2000	0.00%
1,2-Dichloroethane	107-06-2	2000	U	2000	U	2000	0.00%
1,1-Dichloroethene	75-35-4	2000	U	2000	U	2000	0.00%
1,2-Dichloroethene (cis)	156-59-2	2500	D	2500	D	2000	0.00
1,2-Dichloroethene (trans)	156-60-5	2000	U	2000	U	2000	0.00%
1,2-Dichloropropane	78-87-5	2000	U	2000	U	2000	0.00%
1,3-Dichloropropene (cis)	10061-01-5	2000	U	2000	U	2000	0.00%
1,3-Dichloropropene (trans)	10061-02-6	2000	U	2000	U	2000	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2	2000	U	2000	U	2000	0.00%
1,4-Dioxane	123-91-1	2000	U	2000	U	2000	0.00%
Ethanol	64-17-5	2000	U	2000	U	2000	0.00%
Ethylbenzene	100-41-4	2000	U	2000	U	2000	0.00%
4-Ethyltoluene	622-96-8	2000	U	2000	U	2000	0.00%
n-Heptane	142-82-5	2000	U	2000	U	2000	0.00%
1,3-Hexachlorobutadiene	87-68-3	2000	U	2000	U	2000	0.00%
n-Hexane	110-54-3	2000	U	2000	U	2000	0.00%
Isopropanol	67-63-0	2000	U	2000	U	2000	0.00%

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01604
IAL Sample ID: E19-01604-04
Matrix: Air
Summa ID: 1604

Date Received: 3/7/19
Date Analyzed: 3/15/19,3/15/19
Lab Data File : AA1570,AA1571
Dilution Factor: 1000
Injection Volume: 0.05ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01604-04 Concentration Reported		Sample Dup E19-01604-24 Concentration Reported		Reporting Limits ppbv	RPD
		ppbv	Q	ppbv	Q		
Methylene chloride	75-09-2	5300	D	5500	D	2000	-3.70
Methyl ethyl ketone	78-93-3	2000	U	2000	U	2000	0.00%
Methyl isobutyl ketone	108-10-1	2000	U	2000	U	2000	0.00%
Methyl methacrylate	80-62-6	2000	U	2000	U	2000	0.00%
Methyl tert-butyl ether	1634-04-4	2000	U	2000	U	2000	0.00%
Styrene	100-42-5	2000	U	2000	U	2000	0.00%
Tert-butyl alcohol	75-65-0	2000	U	2000	U	2000	0.00%
1,1,2,2-Tetrachloroethane	79-34-5	2000	U	2000	U	2000	0.00%
Tetrachloroethene	127-18-4	2000	U	2000	U	2000	0.00%
Tetrahydrofuran	109-99-9	2000	U	2000	U	2000	0.00%
Toluene	108-88-3	280000	D	290000	D	2000	-3.51
1,2,4-Trichlorobenzene	120-82-1	2000	U	2000	U	2000	0.00%
1,1,1-Trichloroethane	71-55-6	8500	D	8500	D	2000	0.00
1,1,2-Trichloroethane	79-00-5	2000	U	2000	U	2000	0.00%
Trichloroethene	79-01-6	2000	U	2000	U	2000	0.00%
Trichlorofluoromethane	75-69-4	2000	U	2000	U	2000	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2000	U	2000	U	2000	0.00%
1,2,4-Trimethylbenzene	95-63-6	2000	U	2000	U	2000	0.00%
1,3,5-Trimethylbenzene	108-67-8	2000	U	2000	U	2000	0.00%
2,2,4-Trimethylpentane	540-84-1	2000	U	2000	U	2000	0.00%
Vinyl bromide	593-60-2	2000	U	2000	U	2000	0.00%
Vinyl chloride	75-01-4	2000	U	2000	U	2000	0.00%
Xylenes (m p)	179601-23-1	4000	U	4000	U	4000	0.00%
Xylenes (o)	95-47-6	2000	U	2000	U	2000	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Data Path : C:\DATA\03-15-19\
 Data File : aa1570.D
 Acq On : 15 Mar 2019 4:02 pm
 Operator : jls
 Sample : E19-01604-04 x 10000 dil
 Misc : 1604 > 3814, 5cc
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 18 09:30:10 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

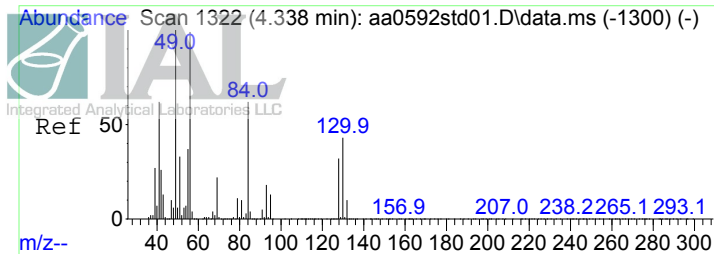
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.338	130	372787	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	1387362	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1297952	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	1067825	9.43	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.142	49	32185	0.53	ppbV	Qvalue 86
28) 1,2-Dichloroethene (cis)	4.181	61	15376	0.25	ppbV	95
34) 1,1,1-Trichloroethane	4.560	97	71759	0.85	ppbV	95
47) Toluene	6.715	91	4019996	28.12	ppbV	95

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

ACQ On : 15 Mar 2024
Integrated Analytical Laboratories LLC

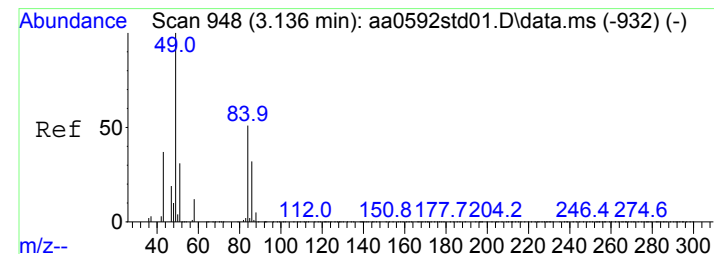
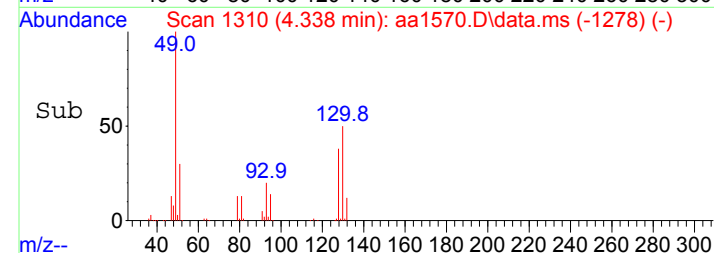
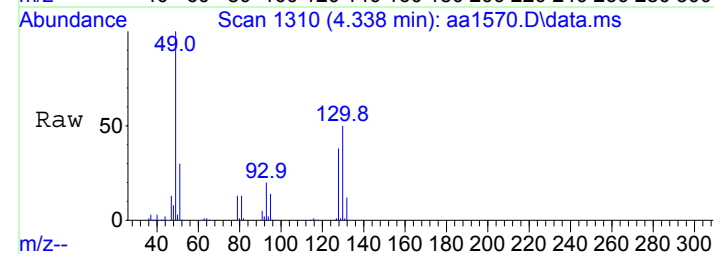
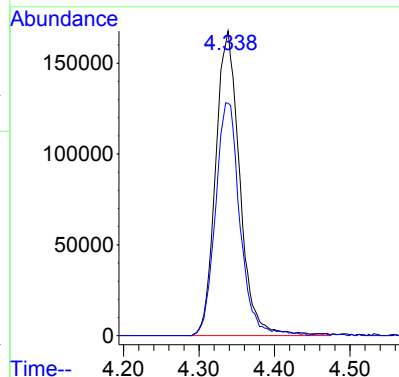
QLast Update : Wed Mar 13 14:08:18 2019





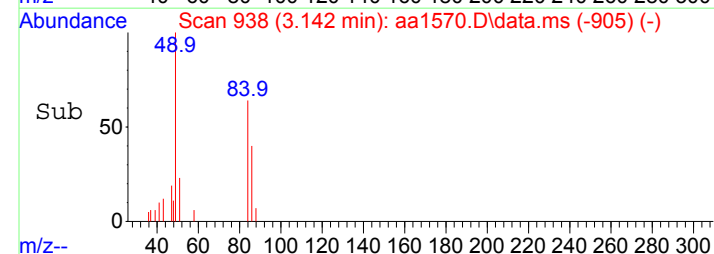
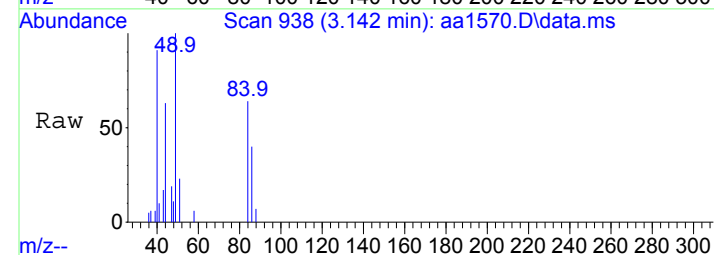
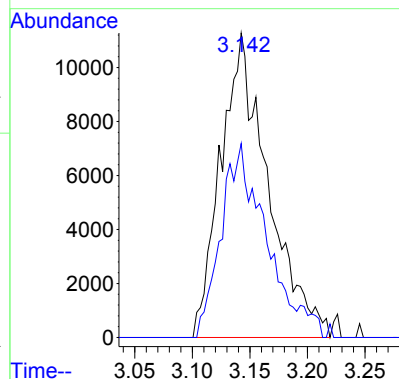
#1
 Bromochloromethane (IS)
 Concen: 10.00 ppbV
 RT: 4.338 min Scan# 1310
 Delta R.T. 0.003 min
 Lab File: aa1570.D
 Acq: 15 Mar 2019 4:02 pm

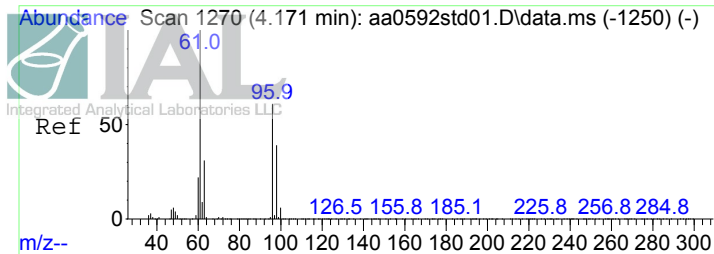
Tgt Ion: 130 Resp: 372787
 Ion Ratio Lower Upper
 130 100
 128 77.6 62.6 94.0



#20
 Methylene chloride
 Concen: 0.53 ppbV
 RT: 3.142 min Scan# 938
 Delta R.T. 0.006 min
 Lab File: aa1570.D
 Acq: 15 Mar 2019 4:02 pm

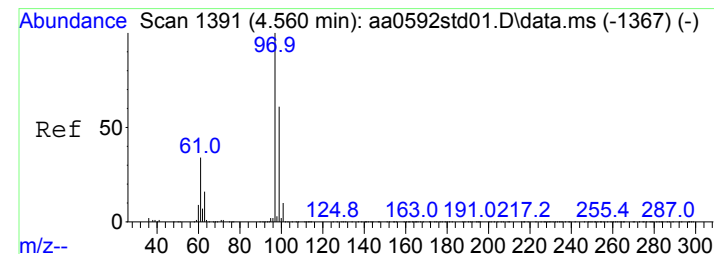
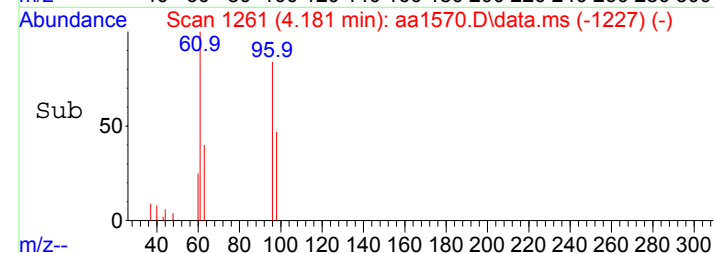
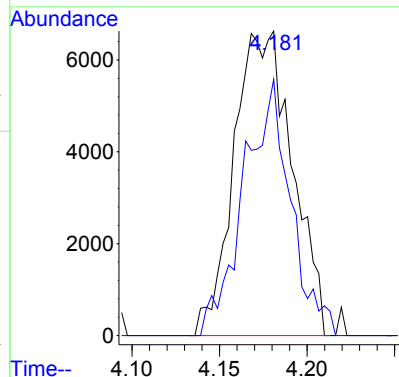
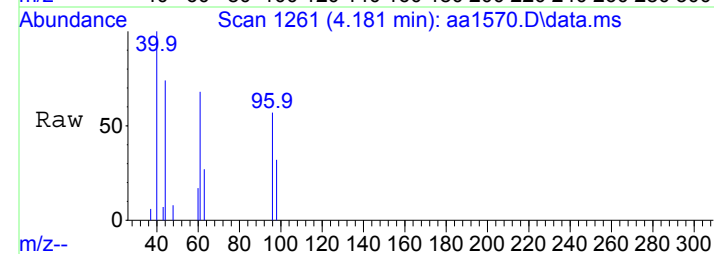
Tgt Ion: 49 Resp: 32185
 Ion Ratio Lower Upper
 49 100
 84 61.1 58.4 87.6





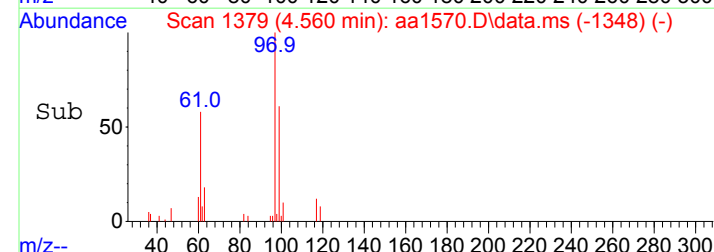
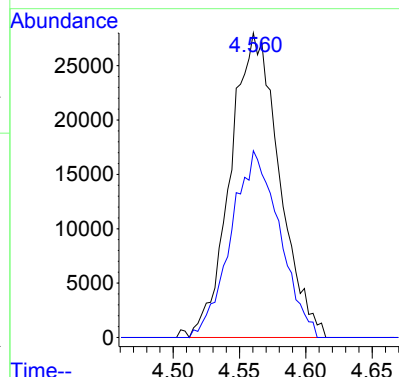
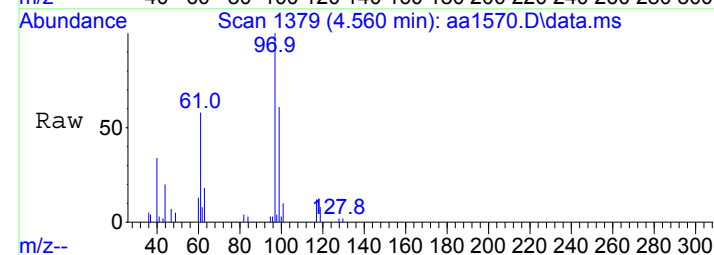
#28
 1,2-Dichloroethene (cis)
 Concen: 0.25 ppbV
 RT: 4.181 min Scan# 1261
 Delta R.T. 0.010 min
 Lab File: aa1570.D
 Acq: 15 Mar 2019 4:02 pm

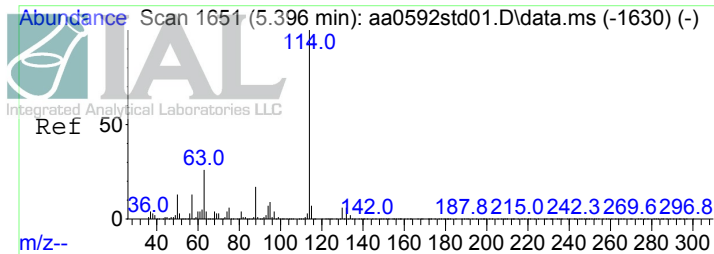
Tgt Ion: 61 Resp: 15376
 Ion Ratio Lower Upper
 61 100
 96 67.5 57.6 86.4



#34
 1,1,1-Trichloroethane
 Concen: 0.85 ppbV
 RT: 4.560 min Scan# 1379
 Delta R.T. -0.000 min
 Lab File: aa1570.D
 Acq: 15 Mar 2019 4:02 pm

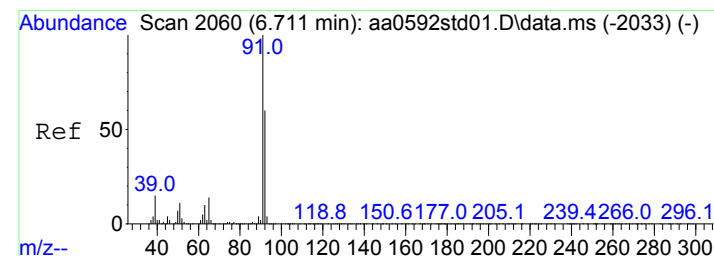
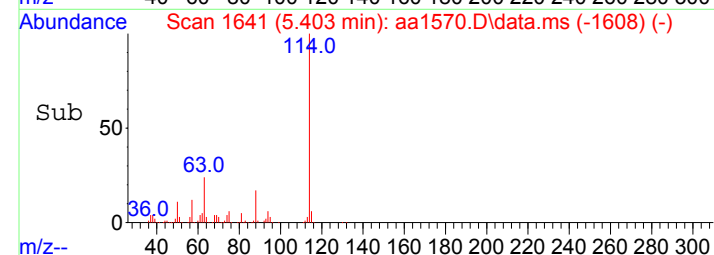
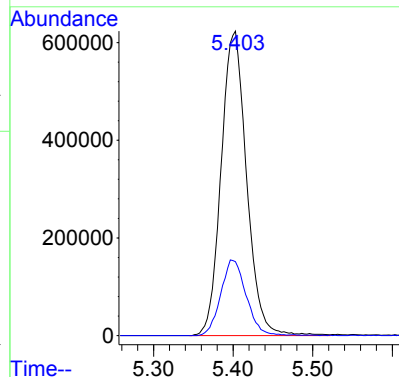
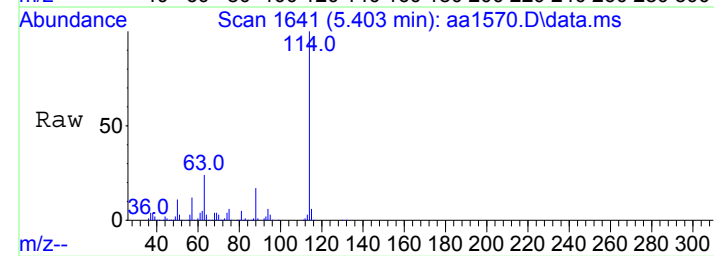
Tgt Ion: 97 Resp: 71759
 Ion Ratio Lower Upper
 97 100
 99 60.8 51.9 77.9





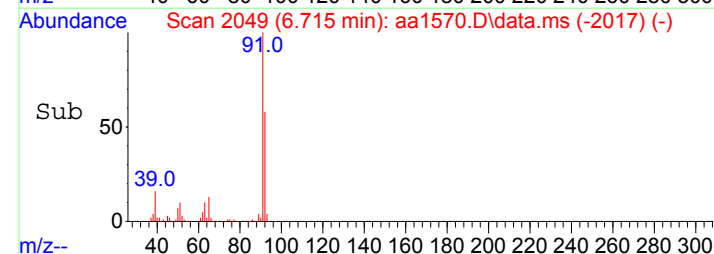
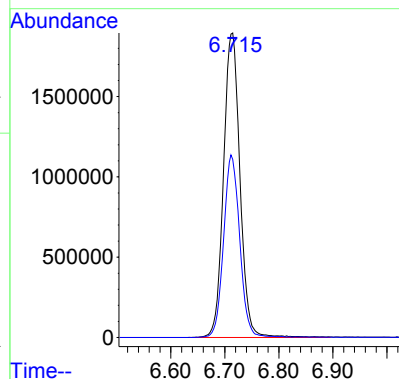
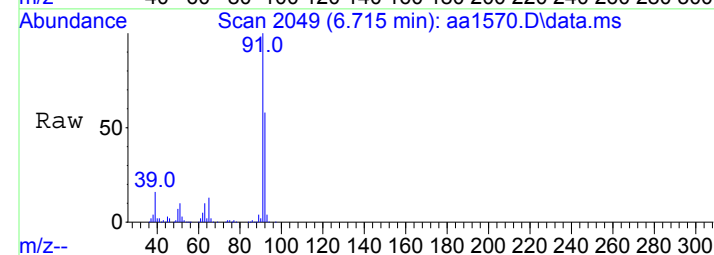
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa1570.D
Acq: 15 Mar 2019 4:02 pm

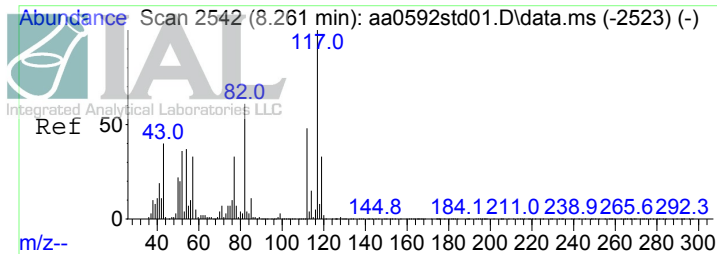
Tgt Ion	114	63	Ratio	Lower	Upper
114	100				
63	24.8		20.0	30.0	



#47
Toluene
Concen: 28.12 ppbV
RT: 6.715 min Scan# 2049
Delta R.T. 0.003 min
Lab File: aa1570.D
Acq: 15 Mar 2019 4:02 pm

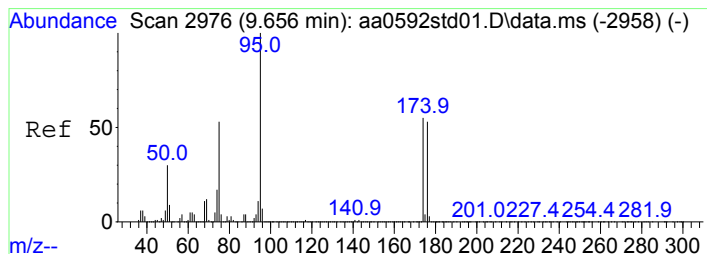
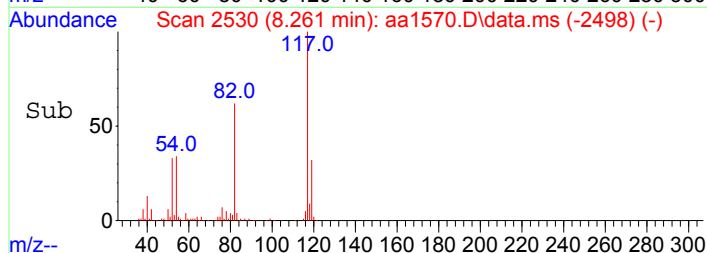
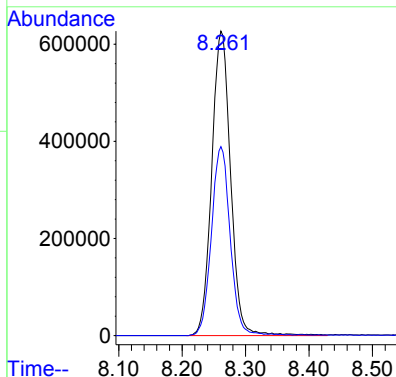
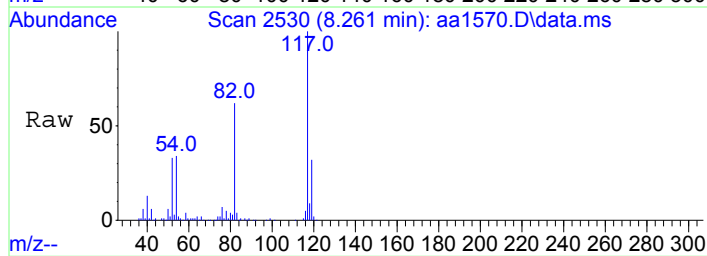
Tgt Ion	91	92	Ratio	Lower	Upper
91	100				
92	58.7		50.0	75.0	





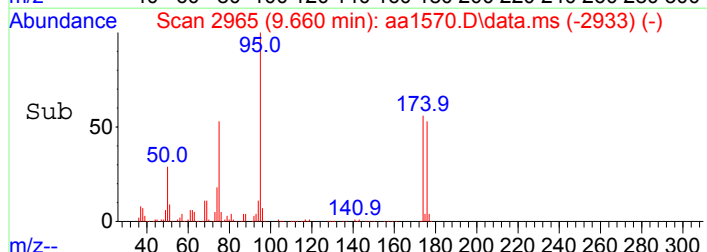
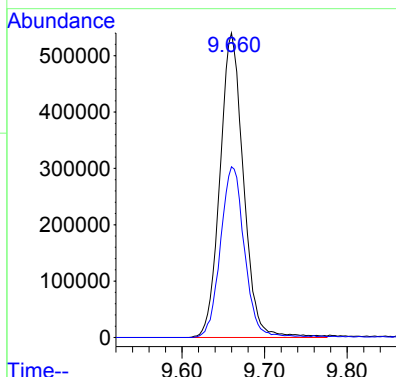
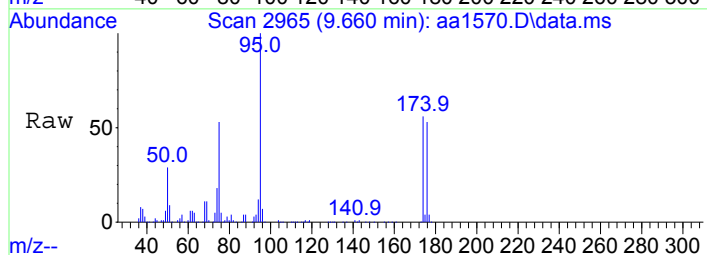
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.261 min Scan# 2530
Delta R.T. 0.003 min
Lab File: aa1570.D
Acq: 15 Mar 2019 4:02 pm

Tgt Ion: 117 Resp: 1297952
Ion Ratio Lower Upper
117 100
82 61.7 48.8 73.2



#64
Bromofluorobenzene (tune std)
Concen: 9.43 ppbV
RT: 9.660 min Scan# 2965
Delta R.T. 0.003 min
Lab File: aa1570.D
Acq: 15 Mar 2019 4:02 pm

Tgt Ion: 95 Resp: 1067825
Ion Ratio Lower Upper
95 100
174 57.2 61.5 92.3#



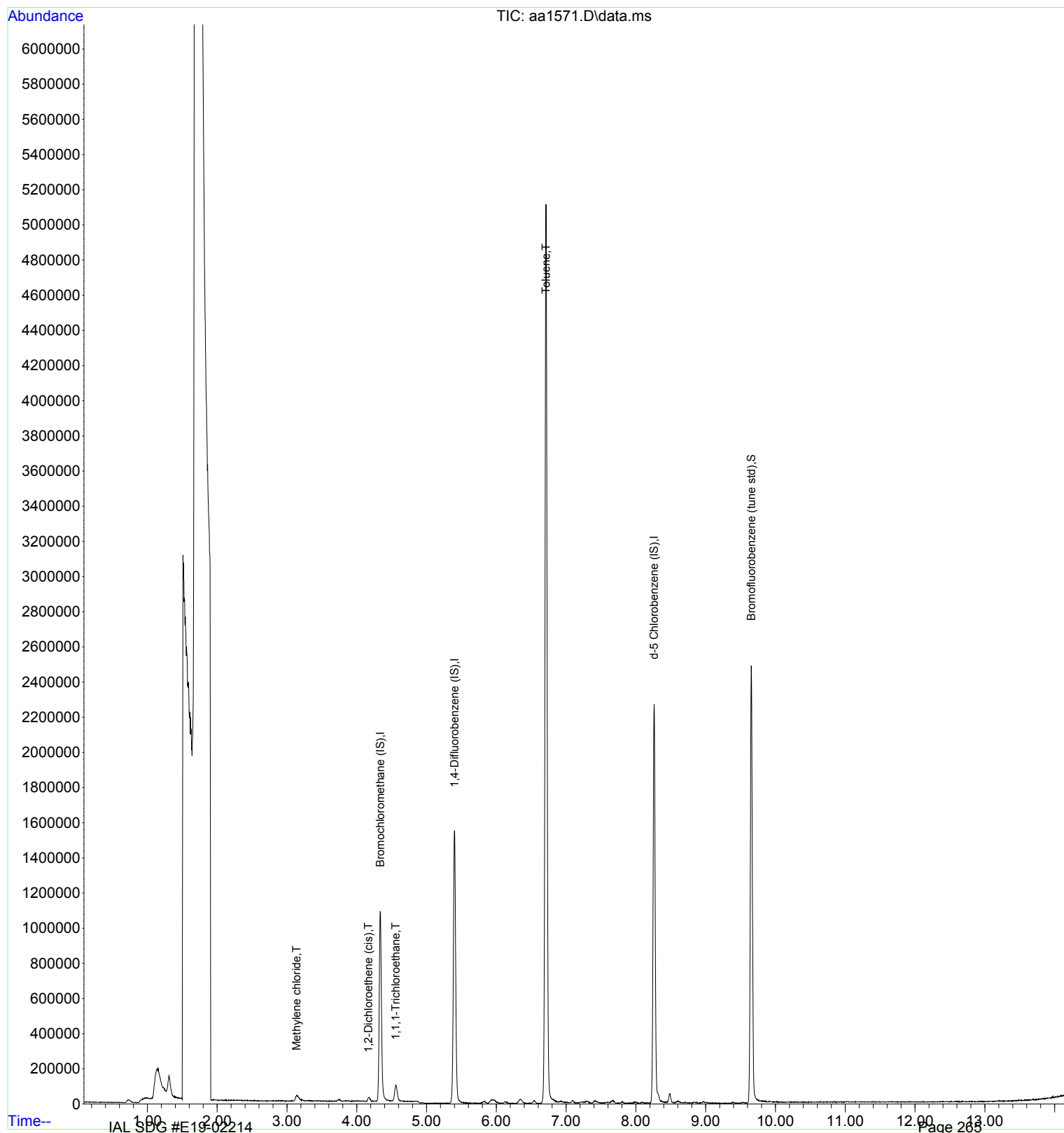
Data Path : C:\DATA\03-15-19\
 Data File : aa1571.D
 Acq On : 15 Mar 2019 4:23 pm
 Operator : jls
 Sample : E19-01604-24 x 10000 dil
 Misc : dup of E19-01604-04 x 2000 dil, can 1604 > 3814
 ALS Vial : 11 Sample Multiplier: 1

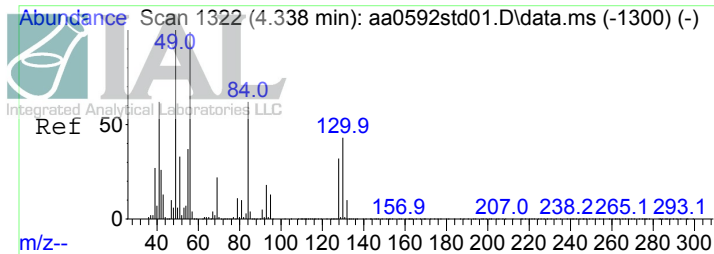
Quant Time: Mar 18 09:31:26 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.339	130	359571	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	1339963	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1280031	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1047843	9.38	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.136	49	32623	0.55	ppbV	Qvalue 89
28) 1,2-Dichloroethene (cis)	4.168	61	14660	0.25	ppbV	98
34) 1,1,1-Trichloroethane	4.560	97	69043	0.85	ppbV	97
47) Toluene	6.711	91	4027041	29.16	ppbV	95

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

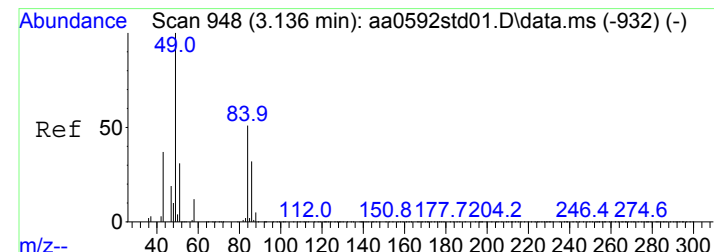
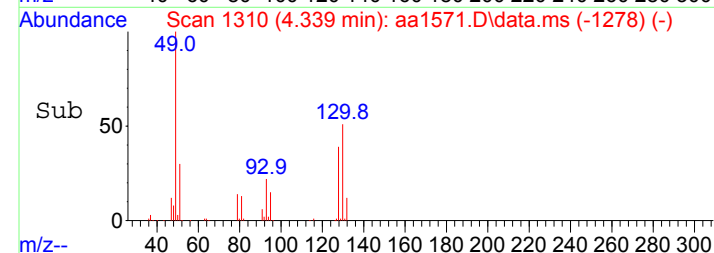
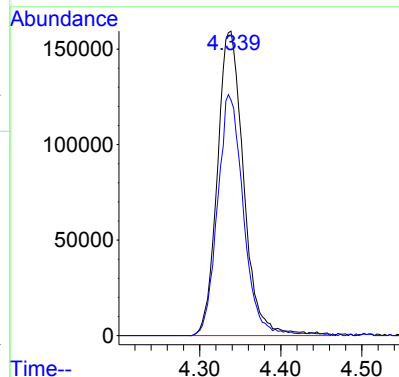
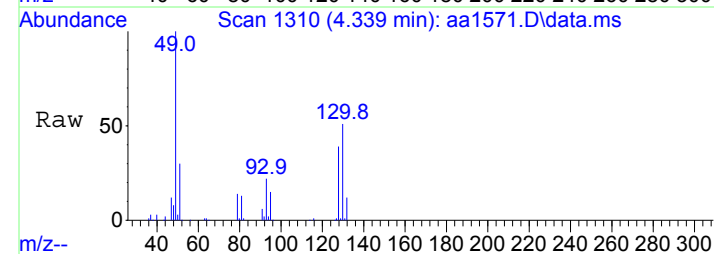
Quant Time: Mar 18 09:31:26 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





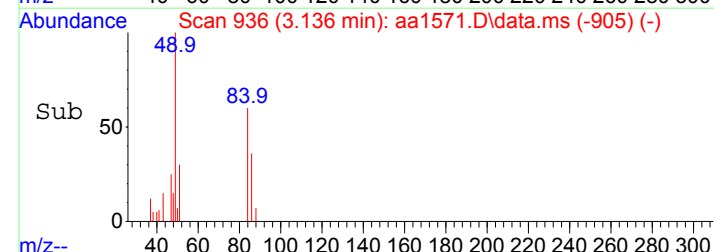
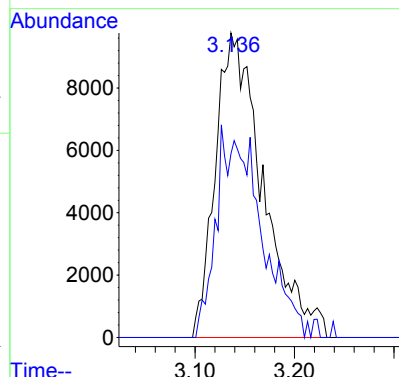
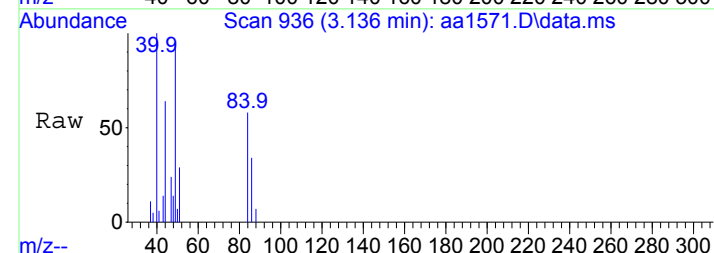
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.339 min Scan# 1310
Delta R.T. 0.004 min
Lab File: aa1571.D
Acq: 15 Mar 2019 4:23 pm

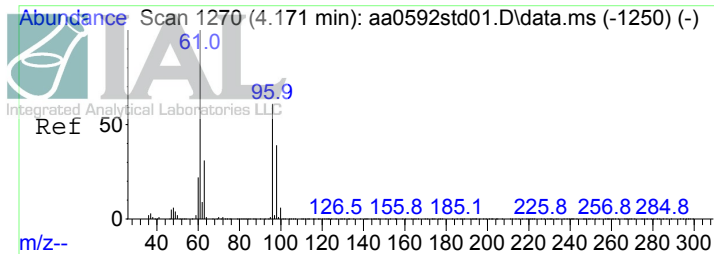
Tgt Ion: 130 Resp: 359571
Ion Ratio Lower Upper
130 100
128 78.1 62.6 94.0



#20
Methylene chloride
Concen: 0.55 ppbV
RT: 3.136 min Scan# 936
Delta R.T. -0.000 min
Lab File: aa1571.D
Acq: 15 Mar 2019 4:23 pm

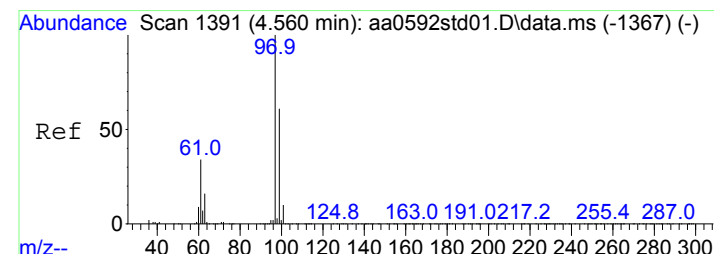
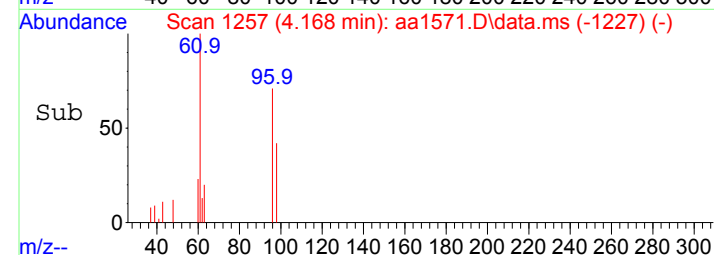
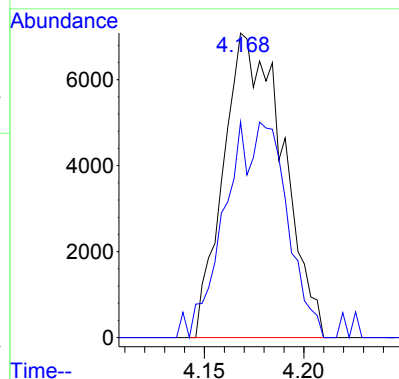
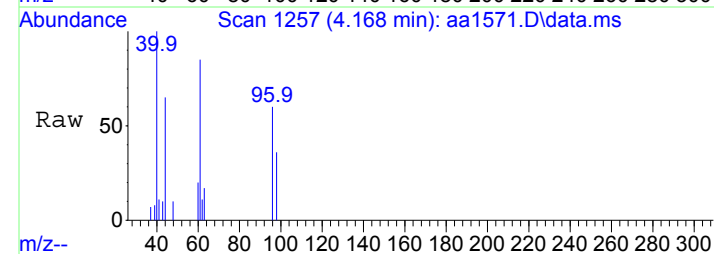
Tgt Ion: 49 Resp: 32623
Ion Ratio Lower Upper
49 100
84 63.8 58.4 87.6





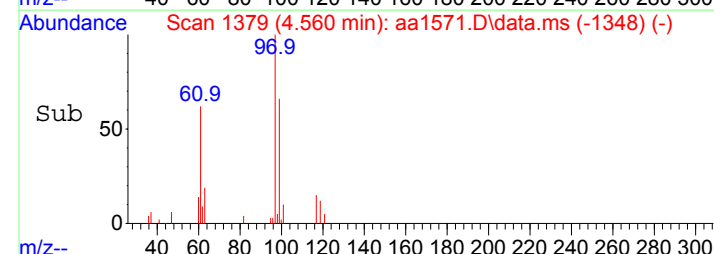
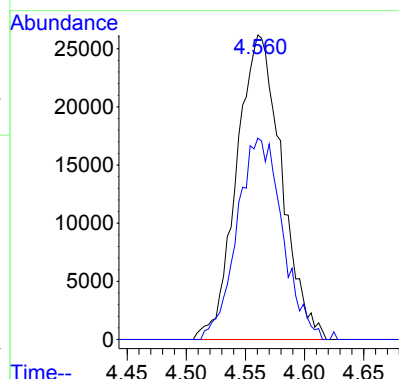
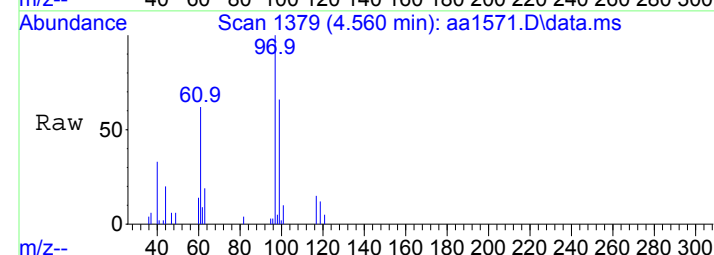
#28
 1,2-Dichloroethene (cis)
 Concen: 0.25 ppbV
 RT: 4.168 min Scan# 1257
 Delta R.T. -0.003 min
 Lab File: aa1571.D
 Acq: 15 Mar 2019 4:23 pm

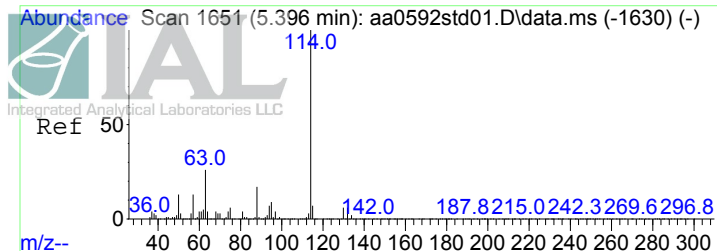
Tgt Ion: 61 Resp: 14660
 Ion Ratio Lower Upper
 61 100
 96 73.4 57.6 86.4



#34
 1,1,1-Trichloroethane
 Concen: 0.85 ppbV
 RT: 4.560 min Scan# 1379
 Delta R.T. -0.000 min
 Lab File: aa1571.D
 Acq: 15 Mar 2019 4:23 pm

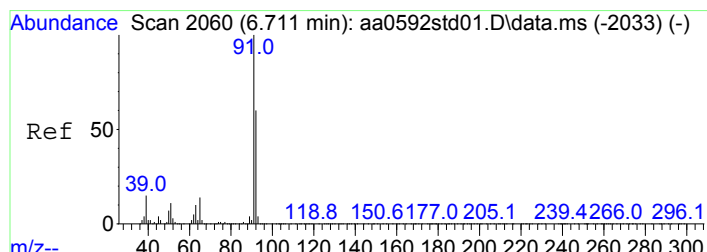
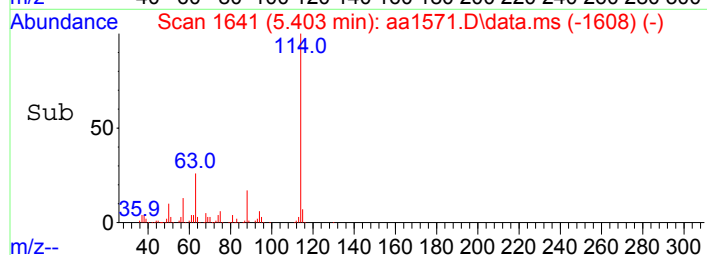
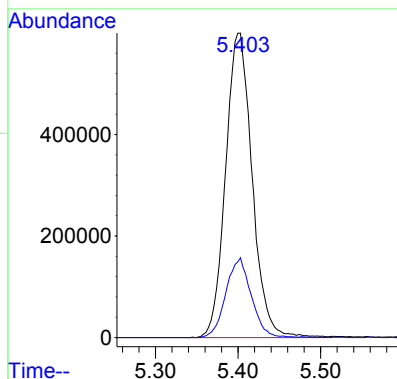
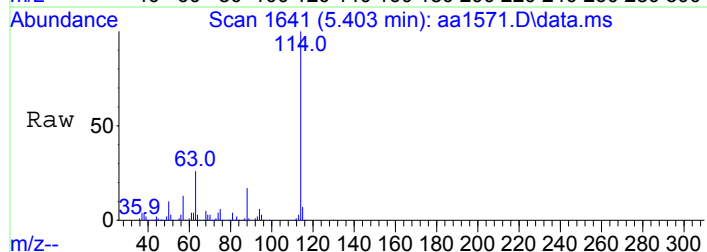
Tgt Ion: 97 Resp: 69043
 Ion Ratio Lower Upper
 97 100
 99 66.9 51.9 77.9





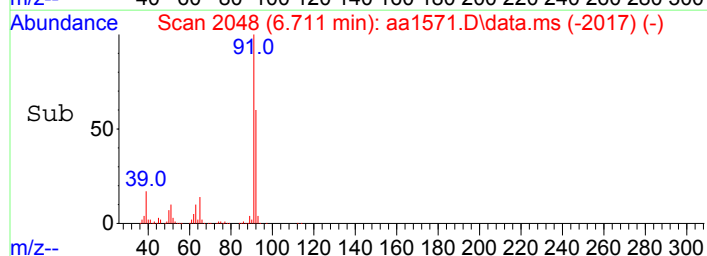
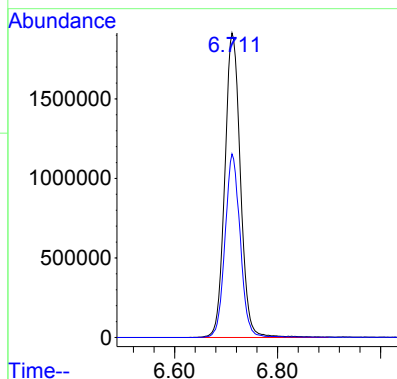
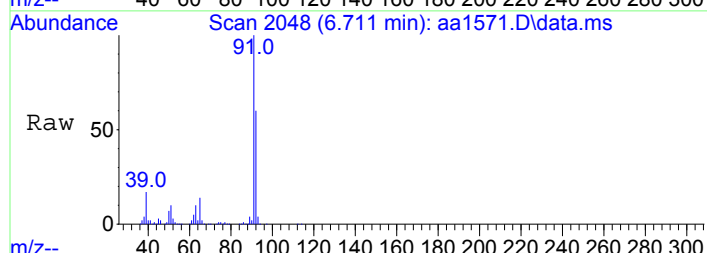
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa1571.D
Acq: 15 Mar 2019 4:23 pm

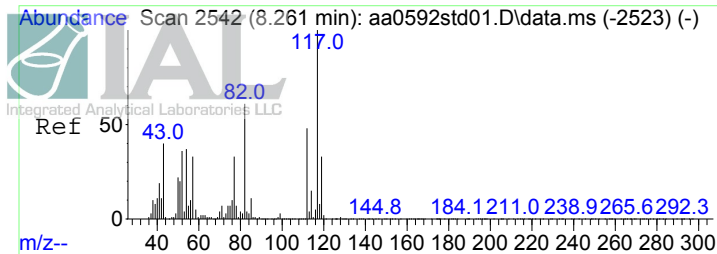
Tgt Ion: 114 Resp: 1339963
Ion Ratio Lower Upper
114 100
63 25.0 20.0 30.0



#47
Toluene
Concen: 29.16 ppbV
RT: 6.711 min Scan# 2048
Delta R.T. -0.000 min
Lab File: aa1571.D
Acq: 15 Mar 2019 4:23 pm

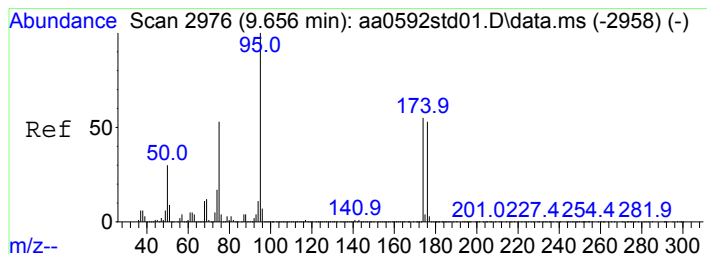
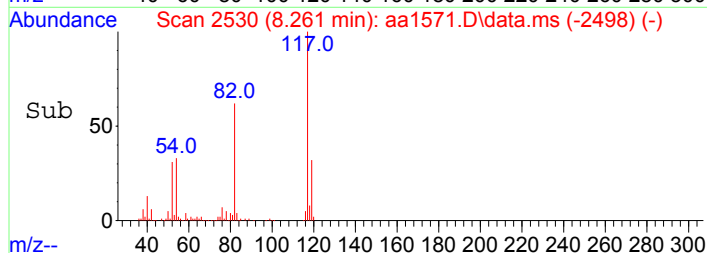
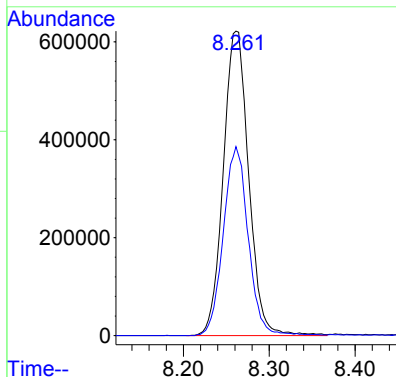
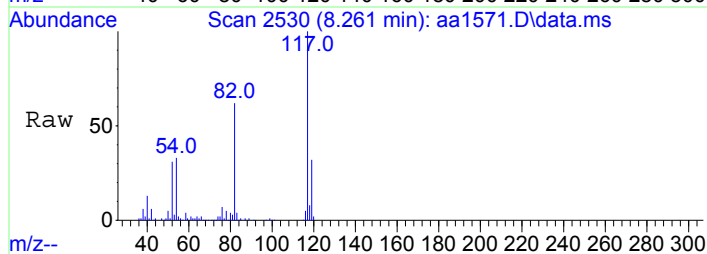
Tgt Ion: 91 Resp: 4027041
Ion Ratio Lower Upper
91 100
92 58.8 50.0 75.0





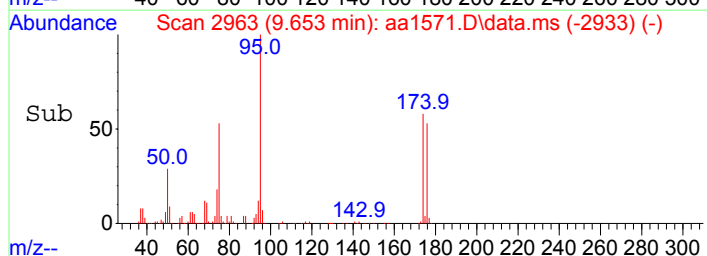
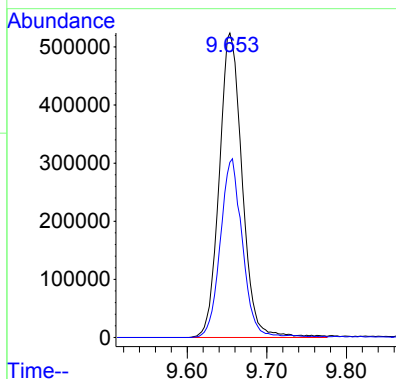
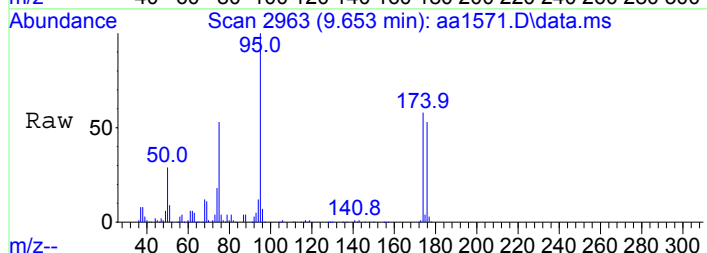
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.261 min Scan# 2530
Delta R.T. 0.003 min
Lab File: aa1571.D
Acq: 15 Mar 2019 4:23 pm

Tgt Ion: 117 Resp: 1280031
Ion Ratio Lower Upper
117 100
82 60.8 48.8 73.2



#64
Bromofluorobenzene (tune std)
Concen: 9.38 ppbV
RT: 9.653 min Scan# 2963
Delta R.T. -0.003 min
Lab File: aa1571.D
Acq: 15 Mar 2019 4:23 pm

Tgt Ion: 95 Resp: 1047843
Ion Ratio Lower Upper
95 100
174 57.1 61.5 92.3#



Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-02188
IAL Sample ID: E19-02188-08
Matrix: Air
Summa ID: 1769

Date Received: 3/28/19
Date Analyzed: 4/4/19,4/4/19
Lab Data File : AA1969,AA1970
Dilution Factor: 1
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-02188-08 Concentration Reported		Sample Dup E19-02188-28 Concentration Reported		Reporting Limits ppbv	RPD
		ppbv	Q	ppbv	Q		
Acetone	67-64-1	41		36		4.0	12.99
Allyl Chloride	107-05-1		4.0 U		4.0 U	4.0	0.00%
Benzene	71-43-2		4.0 U		4.0 U	4.0	0.00%
Bromodichloromethane	75-27-4		4.0 U		4.0 U	4.0	0.00%
Bromoform	75-25-2		4.0 U		4.0 U	4.0	0.00%
Bromomethane	74-83-9		4.0 U		4.0 U	4.0	0.00%
1,3-Butadiene	106-99-0		4.0 U		4.0 U	4.0	0.00%
Chlorobenzene	108-90-7		4.0 U		4.0 U	4.0	0.00%
Chloroethane	75-00-3		4.0 U		4.0 U	4.0	0.00%
Chloroform	67-66-3	5.1		4.5		4.0	12.50
Chloromethane	74-87-3		4.0 U		4.0 U	4.0	0.00%
Carbon disulfide	75-15-0		4.0 U		4.0 U	4.0	0.00%
Carbon tetrachloride	56-23-5		4.0 U		4.0 U	4.0	0.00%
2-Chlorotoluene	95-49-8		4.0 U		4.0 U	4.0	0.00%
Cyclohexane	110-82-7		4.0 U		4.0 U	4.0	0.00%
Dibromochloromethane	124-48-1		4.0 U		4.0 U	4.0	0.00%
1,2-Dibromoethane	106-93-4		4.0 U		4.0 U	4.0	0.00%
1,2-Dichlorobenzene	95-50-1		4.0 U		4.0 U	4.0	0.00%
1,3-Dichlorobenzene	541-73-1		4.0 U		4.0 U	4.0	0.00%
1,4-Dichlorobenzene	106-46-7		4.0 U		4.0 U	4.0	0.00%
Dichlorodifluoromethane	75-71-8		4.0 U		4.0 U	4.0	0.00%
1,1-Dichloroethane	75-34-3		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethane	107-06-2		4.0 U		4.0 U	4.0	0.00%
1,1-Dichloroethene	75-35-4		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethene (cis)	156-59-2		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethene (trans)	156-60-5		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloropropane	78-87-5		4.0 U		4.0 U	4.0	0.00%
1,3-Dichloropropene (cis)	10061-01-5		4.0 U		4.0 U	4.0	0.00%
1,3-Dichloropropene (trans)	10061-02-6		4.0 U		4.0 U	4.0	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2		4.0 U		4.0 U	4.0	0.00%
Ethylbenzene	100-41-4		4.0 U		4.0 U	4.0	0.00%
4-Ethyltoluene	622-96-8		4.0 U		4.0 U	4.0	0.00%
n-Heptane	142-82-5		4.0 U		4.0 U	4.0	0.00%
1,3-Hexachlorobutadiene	87-68-3		4.0 U		4.0 U	4.0	0.00%
n-Hexane	110-54-3		4.0 U		4.0 U	4.0	0.00%
Methylene chloride	75-09-2		4.0 U		4.0 U	4.0	0.00%
Methyl ethyl ketone	78-93-3	10		9.3		4.0	7.25
Methyl isobutyl ketone	108-10-1		4.0 U		4.0 U	4.0	0.00%

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-02188
IAL Sample ID: E19-02188-08
Matrix: Air
Summa ID: 1769

Date Received: 3/28/19
Date Analyzed: 4/4/19, 4/4/19
Lab Data File : AA1969, AA1970
Dilution Factor: 1
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-02188-08		Sample Dup E19-02188-28		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
		ppbv		ppbv		ppbv	
Methyl tert-butyl ether	1634-04-4		4.0 U		4.0 U	4.0	0.00%
Styrene	100-42-5		4.0 U		4.0 U	4.0	0.00%
Tert-butyl alcohol	75-65-0	4.8		4.7		4.0	2.11
1,1,2,2-Tetrachloroethane	79-34-5		4.0 U		4.0 U	4.0	0.00%
Tetrachloroethene	127-18-4		4.0 U		4.0 U	4.0	0.00%
Toluene	108-88-3	4.4		4.4		4.0	0.00
1,2,4-Trichlorobenzene	120-82-1		4.0 U		4.0 U	4.0	0.00%
1,1,1-Trichloroethane	71-55-6		4.0 U		4.0 U	4.0	0.00%
1,1,2-Trichloroethane	79-00-5		4.0 U		4.0 U	4.0	0.00%
Trichloroethene	79-01-6		4.0 U		4.0 U	4.0	0.00%
Trichlorofluoromethane	75-69-4		4.0 U		4.0 U	4.0	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		4.0 U		4.0 U	4.0	0.00%
1,2,4-Trimethylbenzene	95-63-6		4.0 U		4.0 U	4.0	0.00%
1,3,5-Trimethylbenzene	108-67-8		4.0 U		4.0 U	4.0	0.00%
2,2,4-Trimethylpentane	540-84-1		4.0 U		4.0 U	4.0	0.00%
Vinyl bromide	593-60-2		4.0 U		4.0 U	4.0	0.00%
Vinyl chloride	75-01-4		4.0 U		4.0 U	4.0	0.00%
Xylenes (m p)	179601-23-1		4.0 U		4.0 U	4.0	0.00%
Xylenes (o)	95-47-6		4.0 U		4.0 U	4.0	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Data Path : C:\DATA\04-04-19\
 Data File : aa1969.D
 Acq On : 4 Apr 2019 12:43 pm
 Operator : jls
 Sample : E19-02188-08 x 10 dil
 Misc : 1769, 50cc
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 04 14:13:39 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

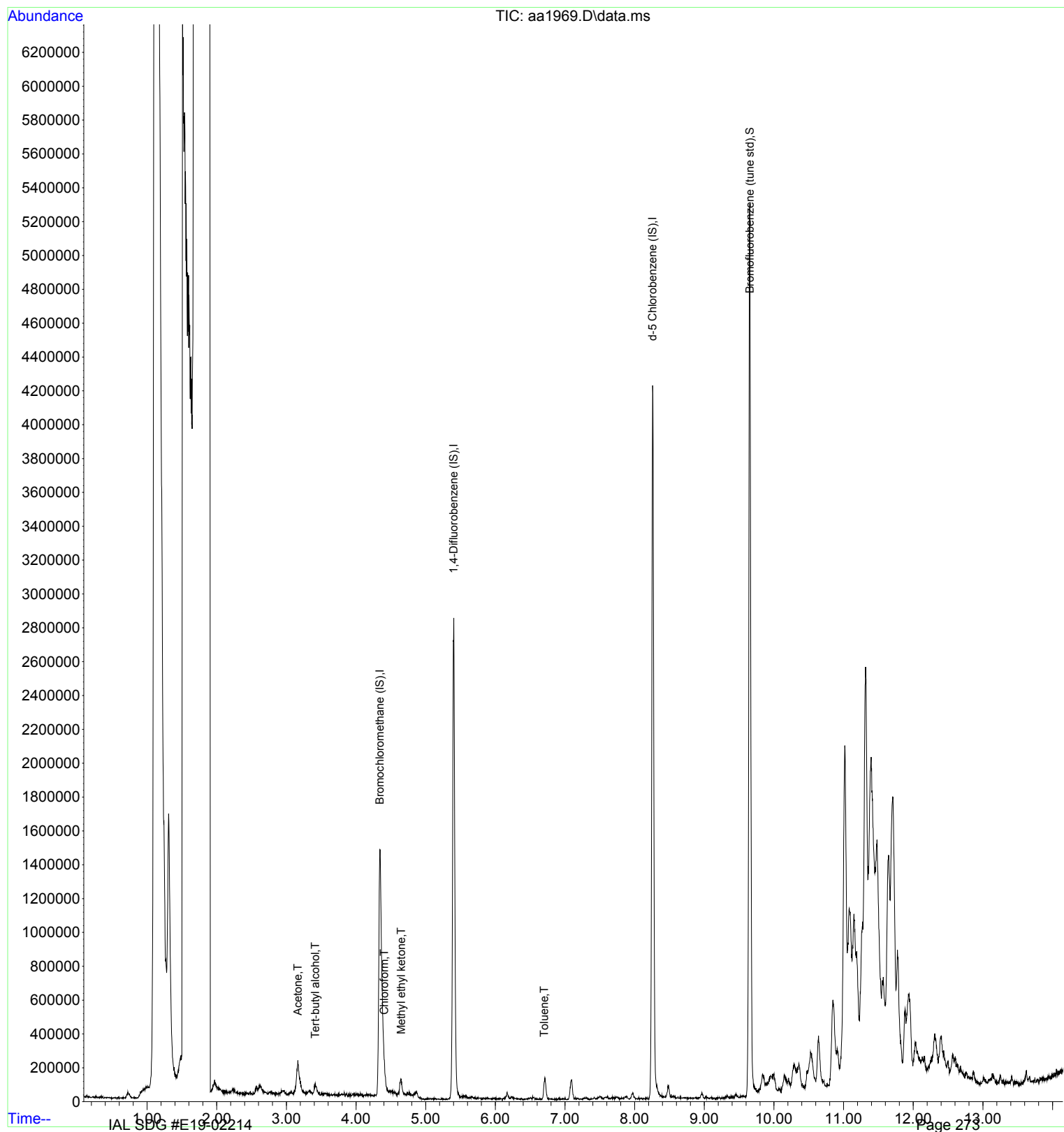
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

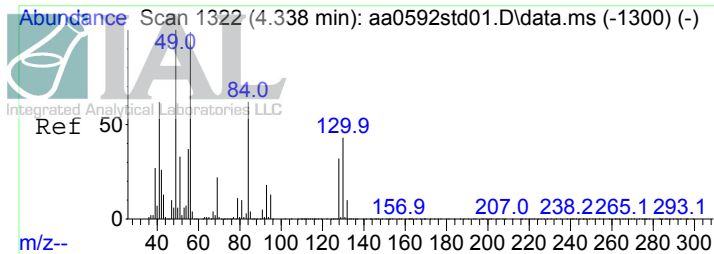
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	462820	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	1838043	10.00	ppbV	# 0.000
55) d-5 Chlorobenzene (IS)	8.258	117	1738727	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1676441	11.05	ppbV	0.000
Target Compounds						
						Qvalue
21) Acetone	3.165	43	380953	4.05	ppbV	# 70
26) Tert-butyl alcohol	3.416	59	51075	0.48	ppbV	100
30) Chloroform	4.406	83	54772	0.51	ppbV	93
35) Methyl ethyl ketone	4.647	43	135935	1.04	ppbV	# 91
47) Toluene	6.702	91	83526	0.44	ppbV	95

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

Data Path : C:\DATA\04-04-19\
Data File : aa1969.D
Acq On : 4 Apr 2019 12:43 pm
Operator : jls
Sample : E19-02188-08 x 10 dil
Misc : 1769, 50cc
ALS Vial : 9 Sample Multiplier: 1

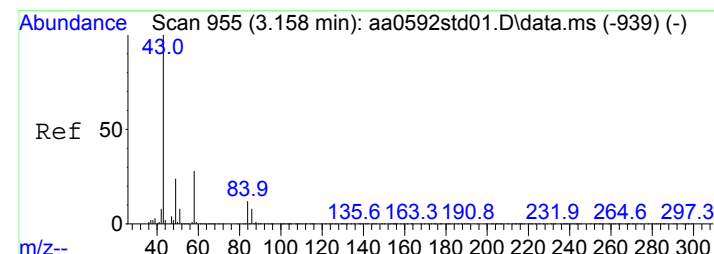
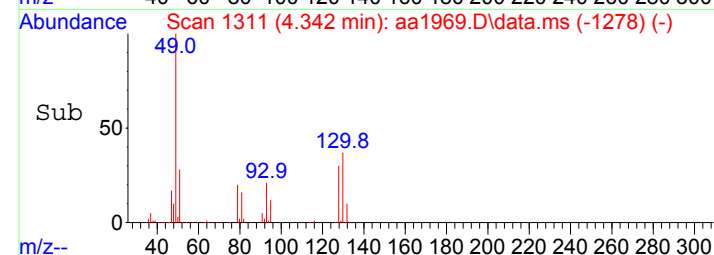
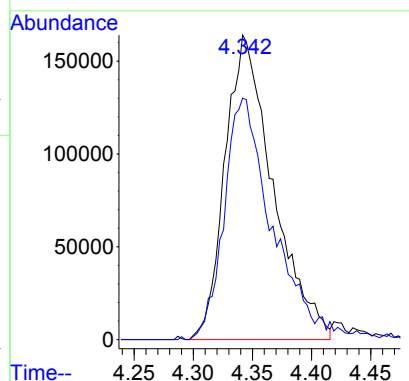
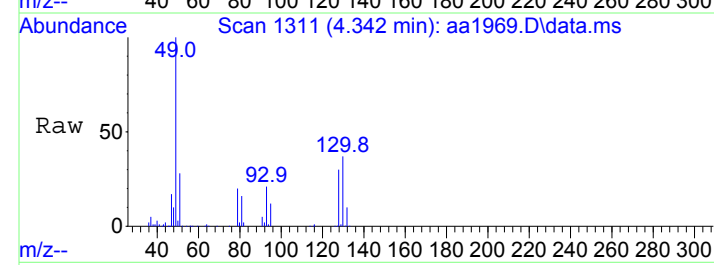
Quant Time: Apr 04 14:13:39 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





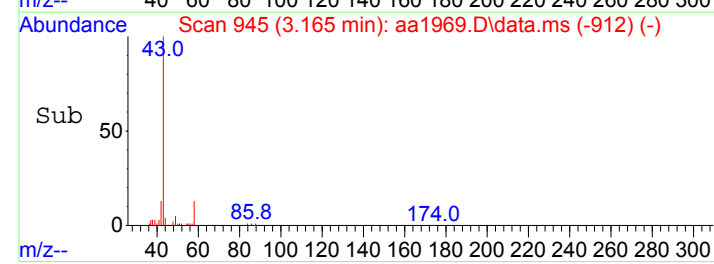
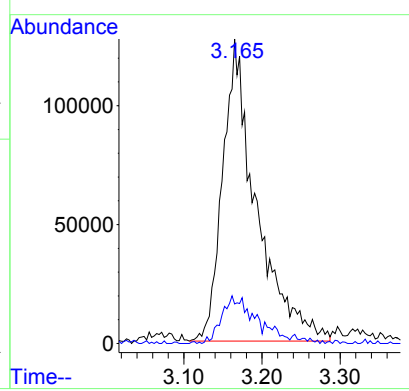
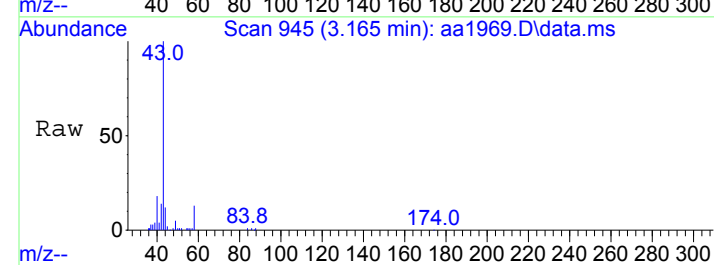
#1
 Bromochloromethane (IS)
 Concen: 10.00 ppbV
 RT: 4.342 min Scan# 1311
 Delta R.T. 0.007 min
 Lab File: aa1969.D
 Acq: 4 Apr 2019 12:43 pm

Tgt Ion:	130	Resp:	462820
Ion Ratio	Lower	Upper	
130	100		
128	80.5	62.6	94.0

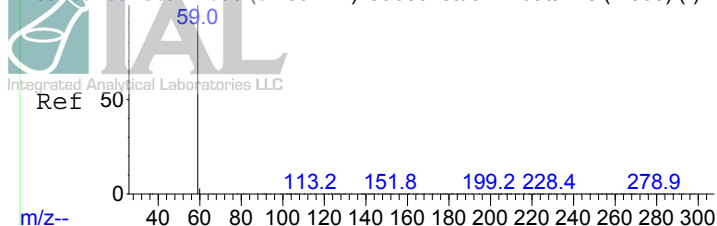


#21
 Acetone
 Concen: 4.05 ppbV
 RT: 3.165 min Scan# 945
 Delta R.T. 0.006 min
 Lab File: aa1969.D
 Acq: 4 Apr 2019 12:43 pm

Tgt Ion:	43	Resp:	380953
Ion Ratio	Lower	Upper	
43	100		
58	16.2	26.4	39.6#



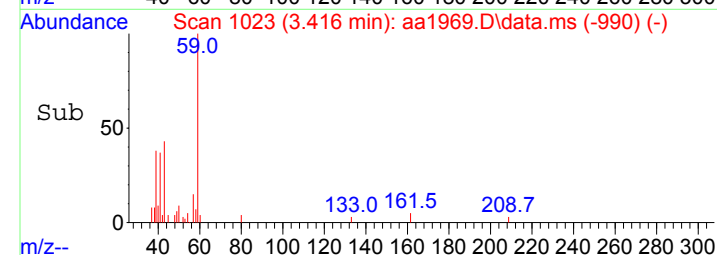
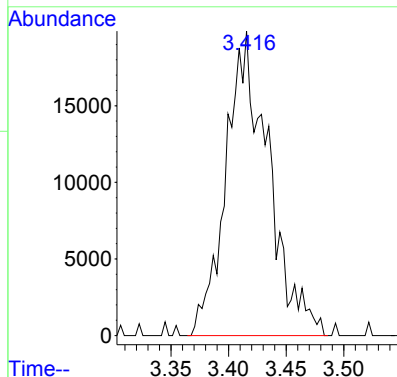
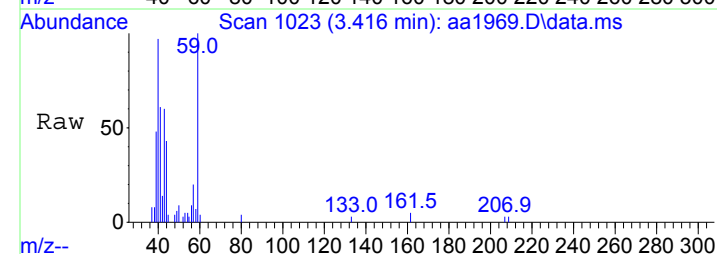
Abundance Scan 1033 (3.409 min): aa0592std01.D\data.ms (-1008) (-)



#26

Tert-butyl alcohol
Concen: 0.48 ppbV
RT: 3.416 min Scan# 1023
Delta R.T. 0.006 min
Lab File: aa1969.D
Acq: 4 Apr 2019 12:43 pm

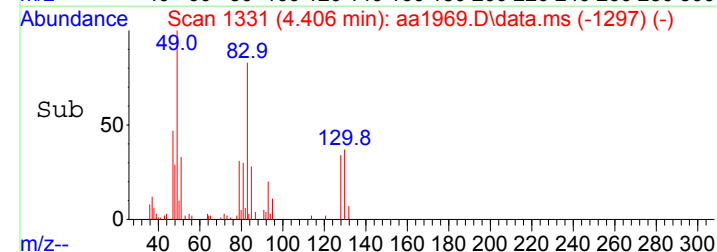
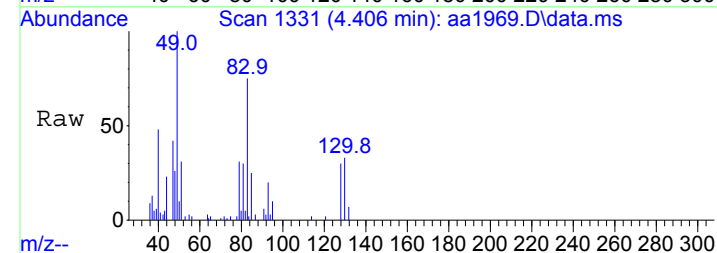
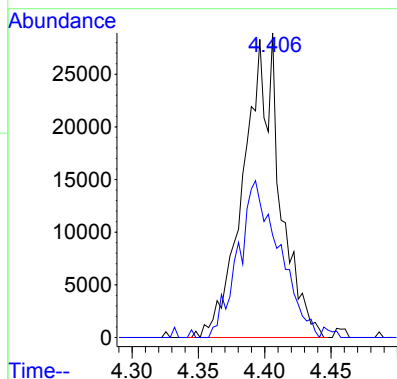
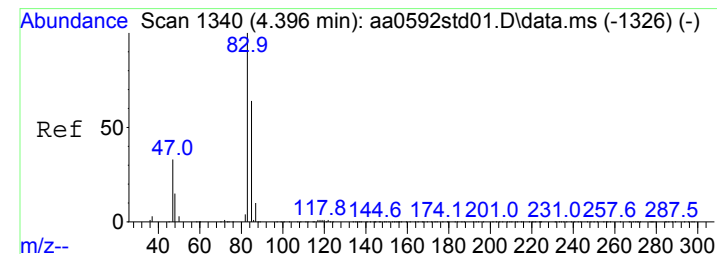
Tgt Ion: 59 Resp: 51075

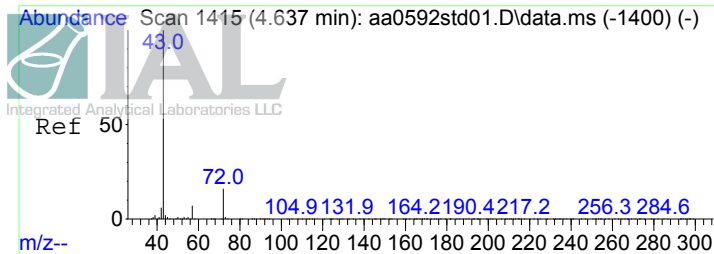


#30

Chloroform
Concen: 0.51 ppbV
RT: 4.406 min Scan# 1331
Delta R.T. 0.009 min
Lab File: aa1969.D
Acq: 4 Apr 2019 12:43 pm

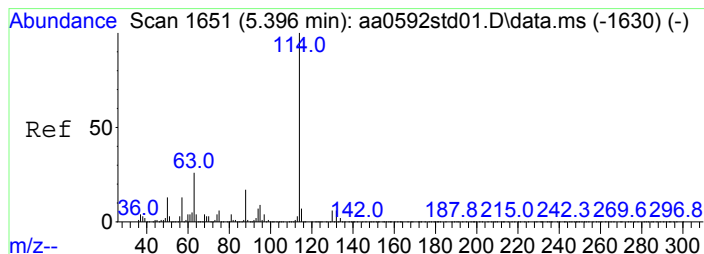
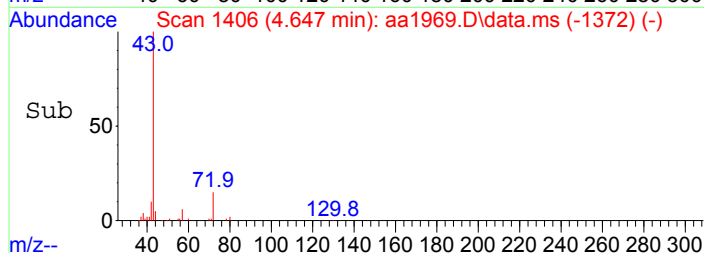
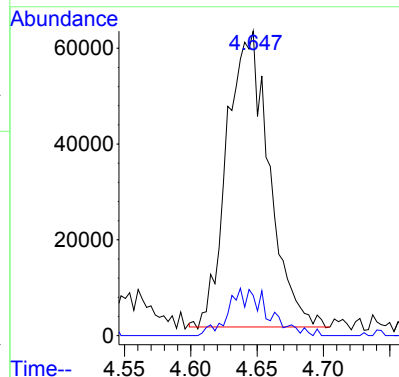
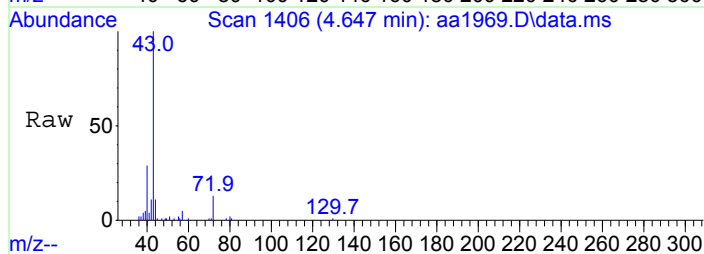
Tgt Ion: 83 Resp: 54772
Ion Ratio Lower Upper
83 100
85 58.4 51.0 76.6





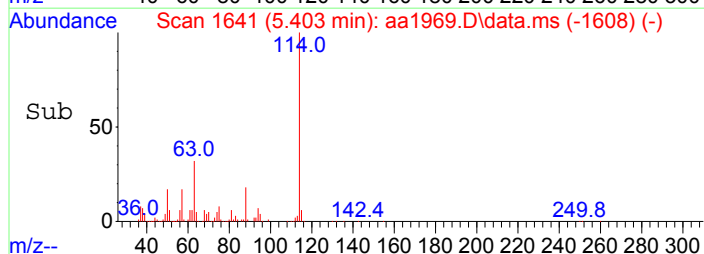
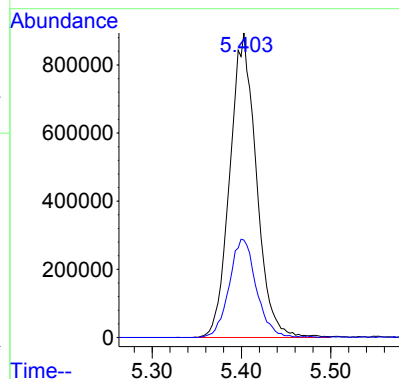
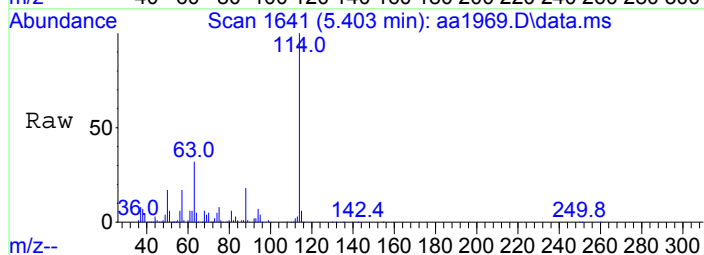
#35
Methyl ethyl ketone
Concen: 1.04 ppbV
RT: 4.647 min Scan# 1406
Delta R.T. 0.009 min
Lab File: aa1969.D
Acq: 4 Apr 2019 12:43 pm

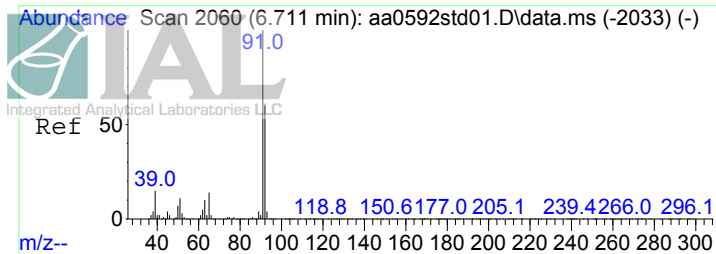
Tgt Ion: 43 Resp: 135935
Ion Ratio Lower Upper
43 100
72 14.0 14.4 21.6#



#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa1969.D
Acq: 4 Apr 2019 12:43 pm

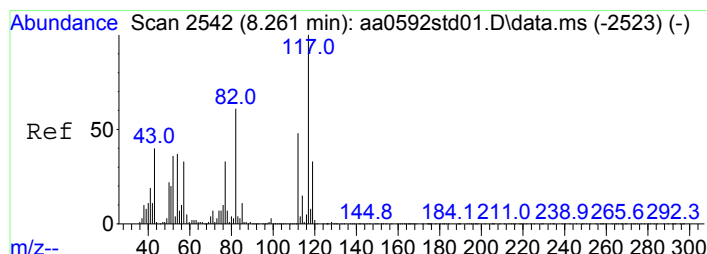
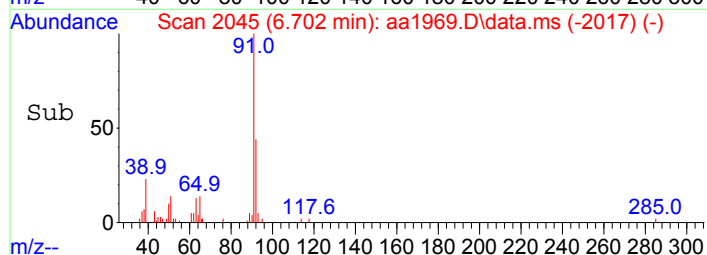
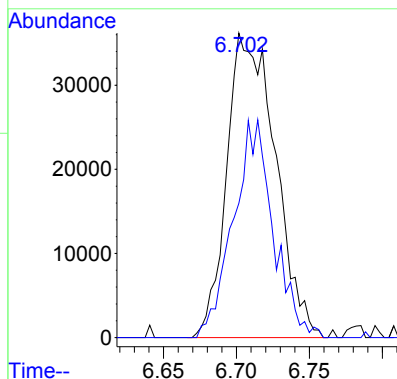
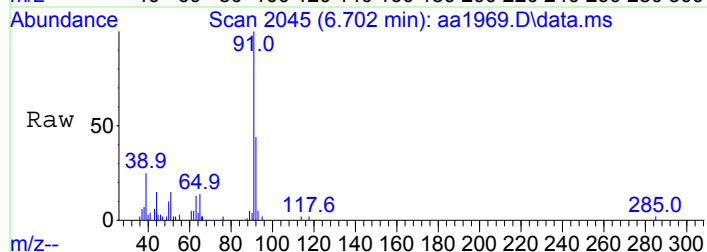
Tgt Ion: 114 Resp: 1838043
Ion Ratio Lower Upper
114 100
63 33.0 20.0 30.0#





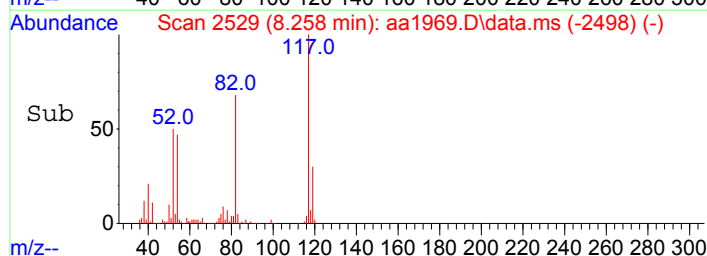
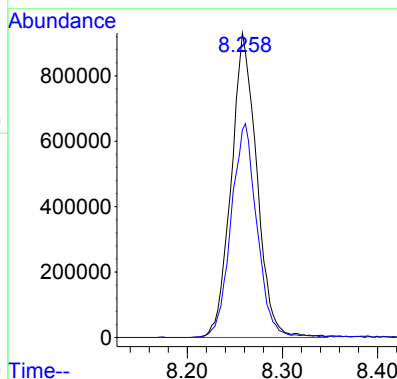
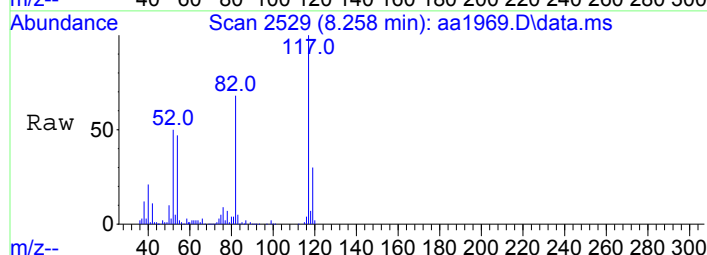
#47
Toluene
Concen: 0.44 ppbV
RT: 6.702 min Scan# 2045
Delta R.T. -0.010 min
Lab File: aa1969.D
Acq: 4 Apr 2019 12:43 pm

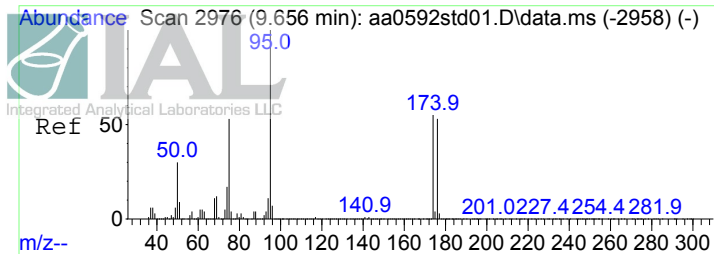
Tgt Ion: 91 Resp: 83526
Ion Ratio Lower Upper
91 100
92 59.0 50.0 75.0



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.258 min Scan# 2529
Delta R.T. -0.000 min
Lab File: aa1969.D
Acq: 4 Apr 2019 12:43 pm

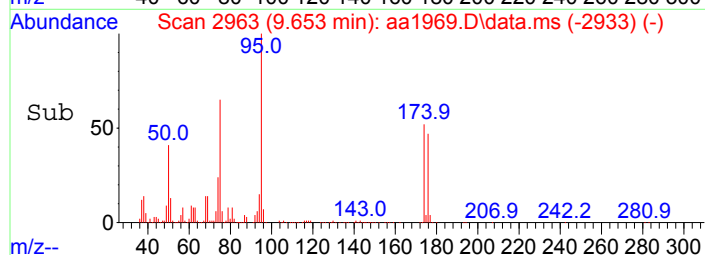
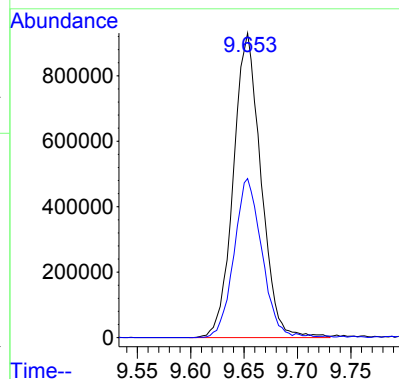
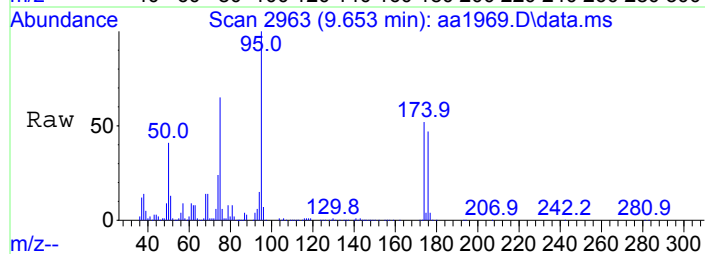
Tgt Ion: 117 Resp: 1738727
Ion Ratio Lower Upper
117 100
82 71.2 48.8 73.2





#64
 Bromofluorobenzene (tune std)
 Concen: 11.05 ppbV
 RT: 9.653 min Scan# 2963
 Delta R.T. -0.003 min
 Lab File: aa1969.D
 Acq: 4 Apr 2019 12:43 pm

Tgt Ion: 95 Resp: 1676441
 Ion Ratio Lower Upper
 95 100
 174 53.0 61.5 92.3#



Data Path : C:\DATA\04-04-19\
 Data File : aa1970.D
 Acq On : 4 Apr 2019 1:04 pm
 Operator : jls
 Sample : E19-02188-28 x 10 dil
 Misc : dup of E19-02188-08 x 10 dil, can 1769
 ALS Vial : 10 Sample Multiplier: 1

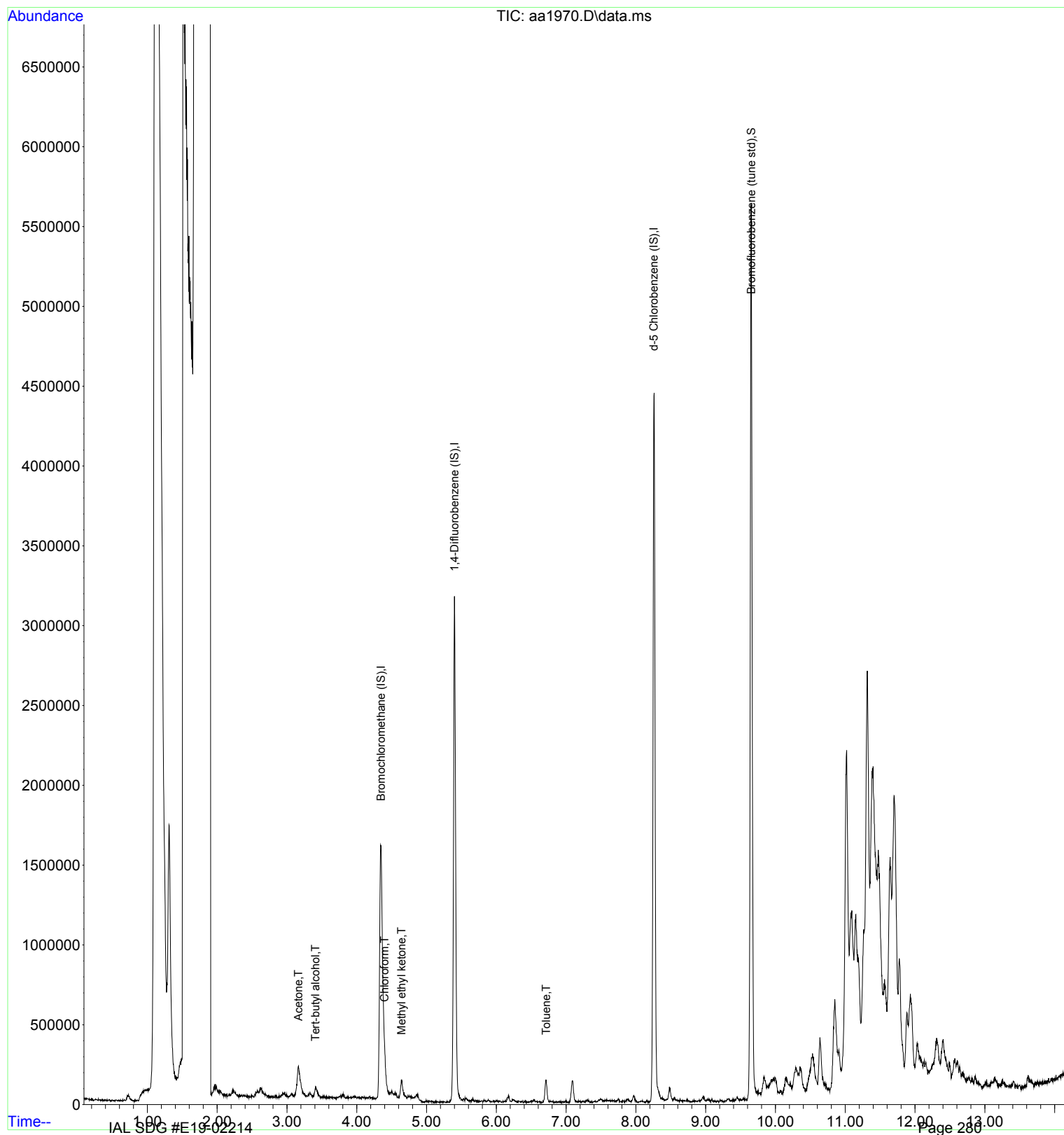
Quant Time: Apr 04 13:53:24 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

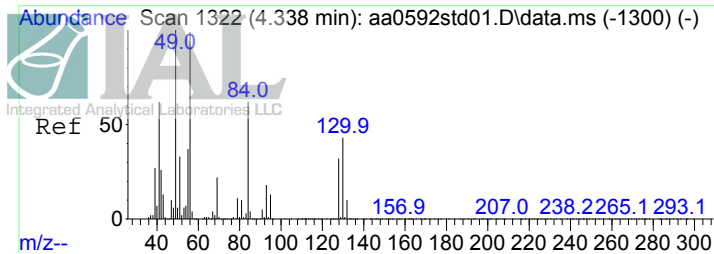
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.348	130	552799	10.00	ppbV	0.013
39) 1,4-Difluorobenzene (IS)	5.403	114	2075346	10.00	ppbV	# 0.000
55) d-5 Chlorobenzene (IS)	8.258	117	1922680	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1817313	10.83	ppbV	0.000
Target Compounds						
21) Acetone	3.165	43	401485	3.58	ppbV	# 73
26) Tert-butyl alcohol	3.409	59	59843	0.47	ppbV	100
30) Chloroform	4.400	83	56583	0.44	ppbV	98
35) Methyl ethyl ketone	4.641	43	144519	0.93	ppbV	99
47) Toluene	6.715	91	93048	0.44	ppbV	95

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

Data Path : C:\DATA\04-04-19\
Data File : aa1970.D
Acq On : 4 Apr 2019 1:04 pm
Operator : jls
Sample : E19-02188-28 x 10 dil
Misc : dup of E19-02188-08 x 10 dil, can 1769
ALS Vial : 10 Sample Multiplier: 1

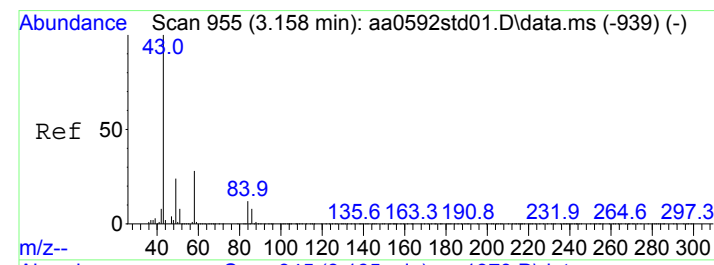
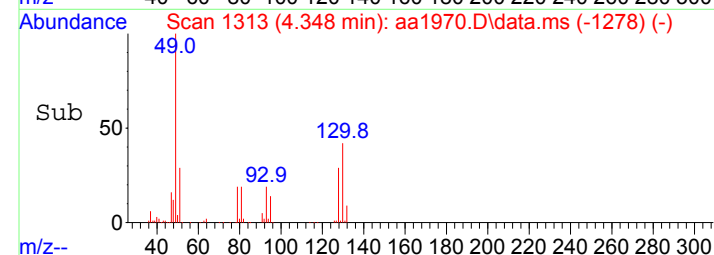
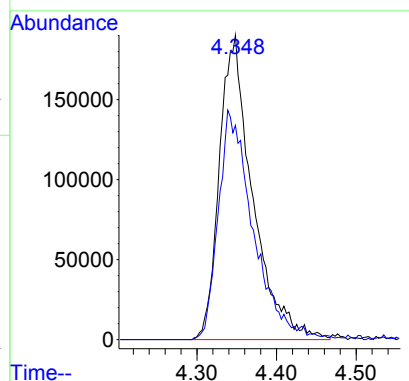
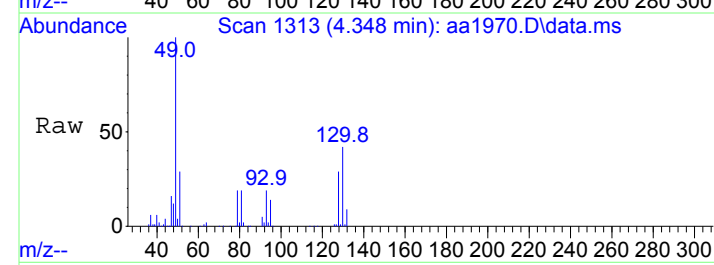
Quant Time: Apr 04 13:53:24 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





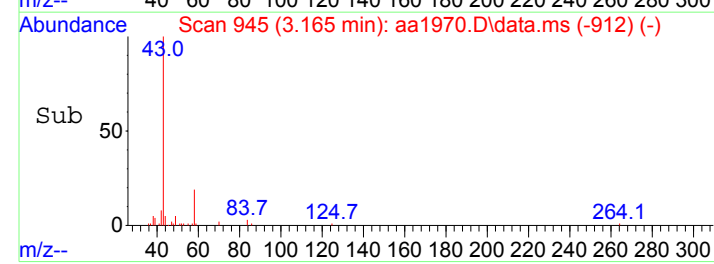
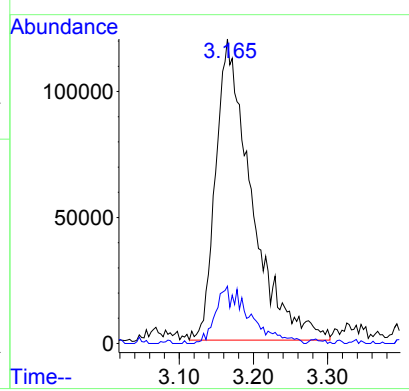
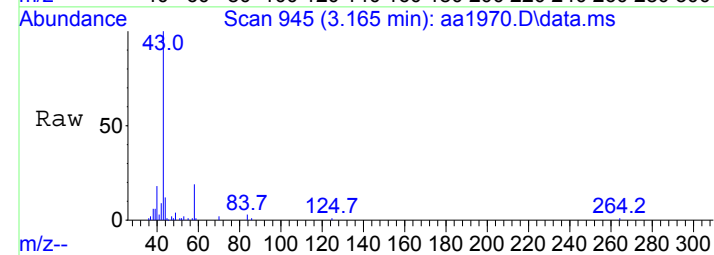
#1
 Bromochloromethane (IS)
 Concen: 10.00 ppbV
 RT: 4.348 min Scan# 1313
 Delta R.T. 0.013 min
 Lab File: aa1970.D
 Acq: 4 Apr 2019 1:04 pm

Tgt Ion:130	Resp: 552799
Ion Ratio	Lower Upper
130	100
128	78.7 62.6 94.0

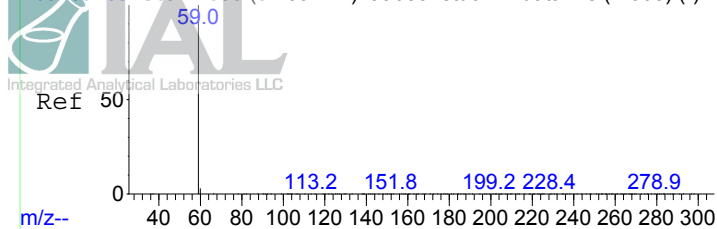


#21
 Acetone
 Concen: 3.58 ppbV
 RT: 3.165 min Scan# 945
 Delta R.T. 0.006 min
 Lab File: aa1970.D
 Acq: 4 Apr 2019 1:04 pm

Tgt Ion: 43	Resp: 401485
Ion Ratio	Lower Upper
43	100
58	17.8 26.4 39.6#



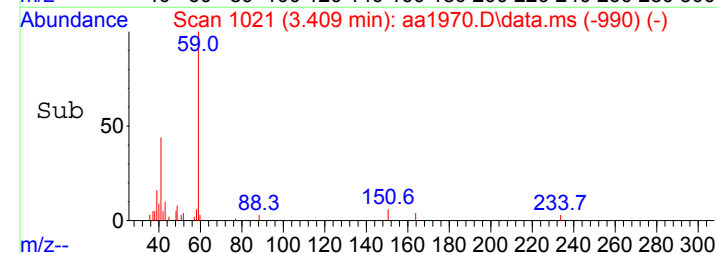
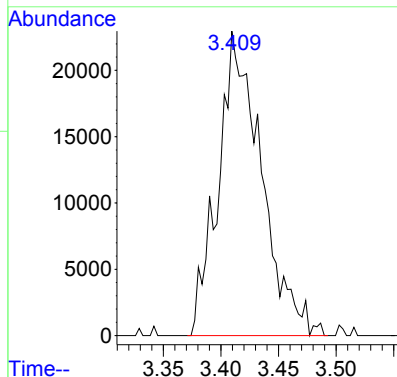
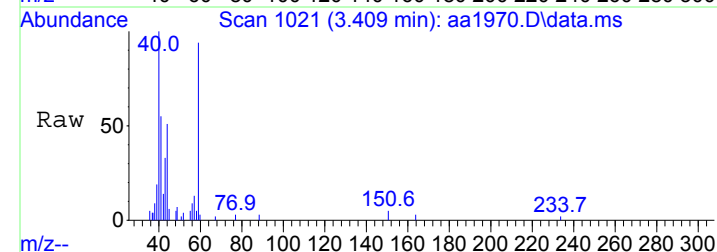
Abundance Scan 1033 (3.409 min): aa0592std01.D\data.ms (-1008) (-)



#26

Tert-butyl alcohol
Concen: 0.47 ppbV
RT: 3.409 min Scan# 1021
Delta R.T. -0.000 min
Lab File: aa1970.D
Acq: 4 Apr 2019 1:04 pm

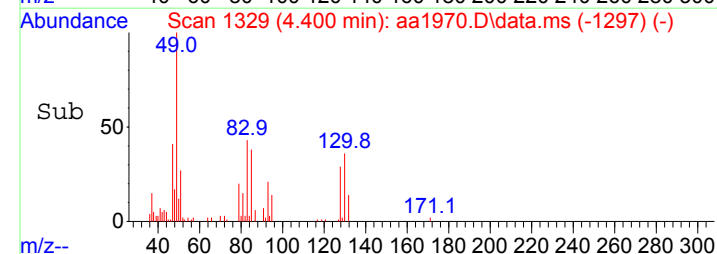
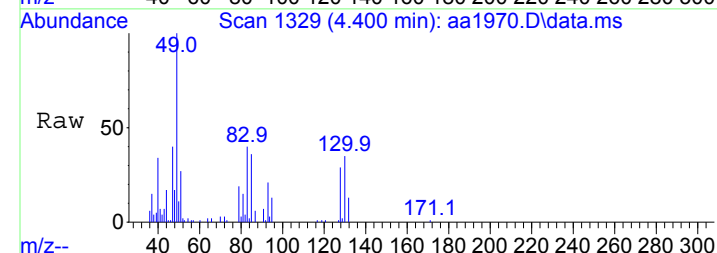
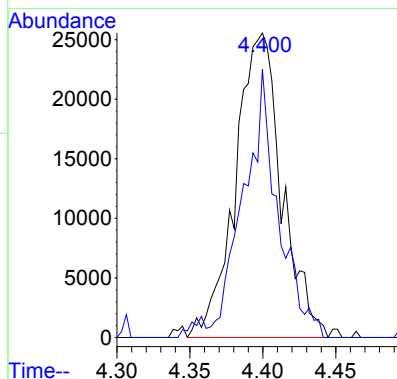
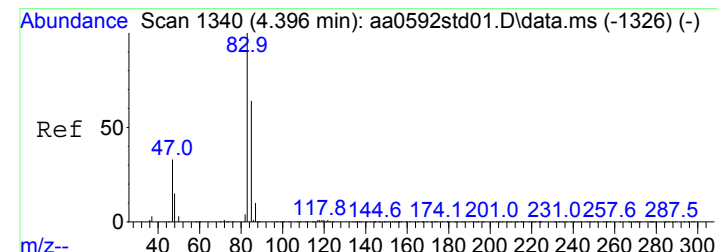
Tgt Ion: 59 Resp: 59843

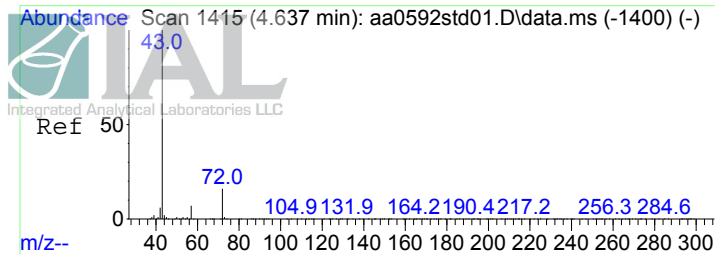


#30

Chloroform
Concen: 0.44 ppbV
RT: 4.400 min Scan# 1329
Delta R.T. 0.003 min
Lab File: aa1970.D
Acq: 4 Apr 2019 1:04 pm

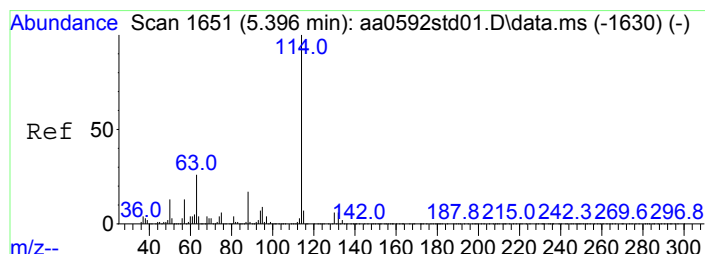
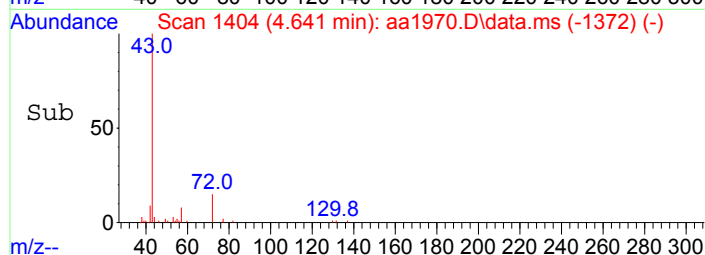
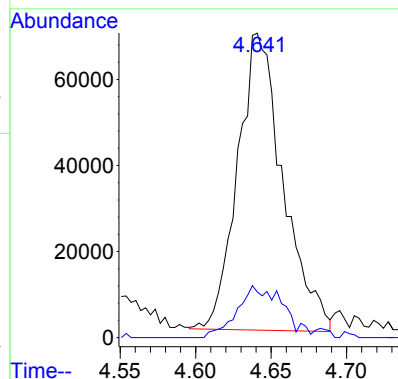
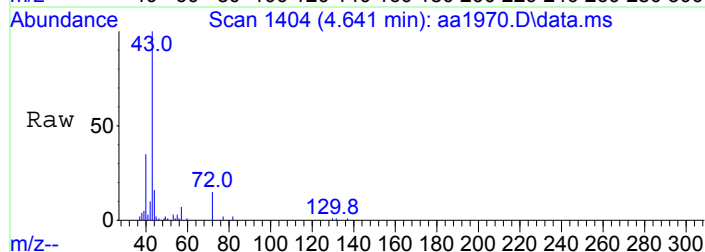
Tgt Ion: 83 Resp: 56583
Ion Ratio Lower Upper
83 100
85 65.1 51.0 76.6





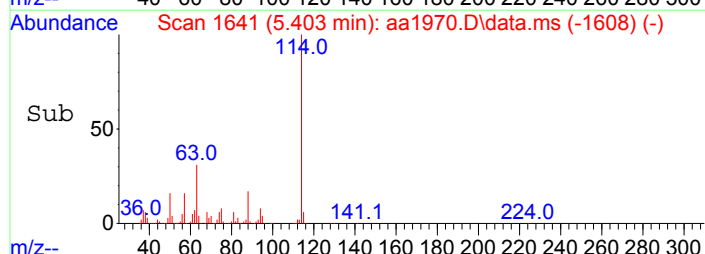
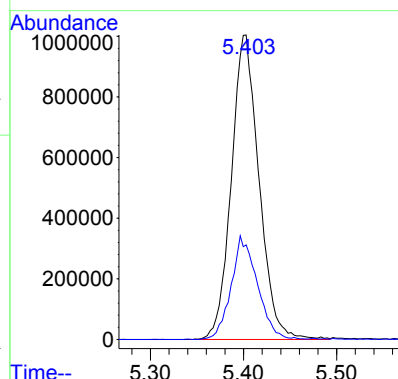
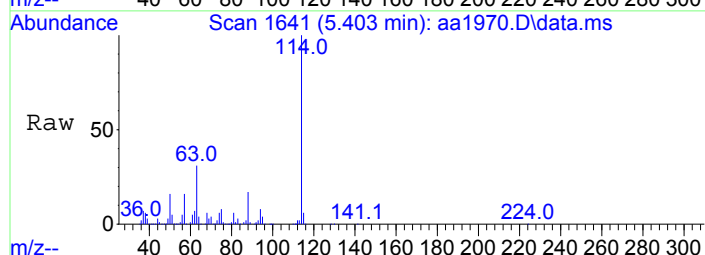
#35
Methyl ethyl ketone
Concen: 0.93 ppbV
RT: 4.641 min Scan# 1404
Delta R.T. 0.003 min
Lab File: aa1970.D
Acq: 4 Apr 2019 1:04 pm

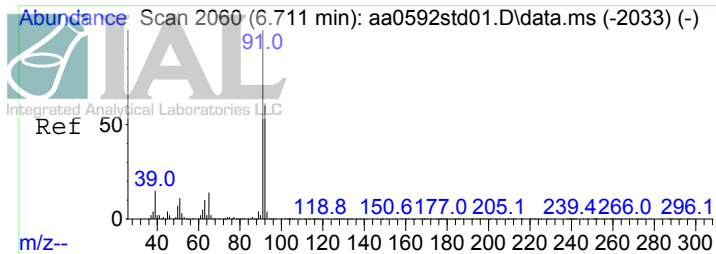
Tgt Ion: 43 Resp: 144519
Ion Ratio Lower Upper
43 100
72 17.5 14.4 21.6



#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa1970.D
Acq: 4 Apr 2019 1:04 pm

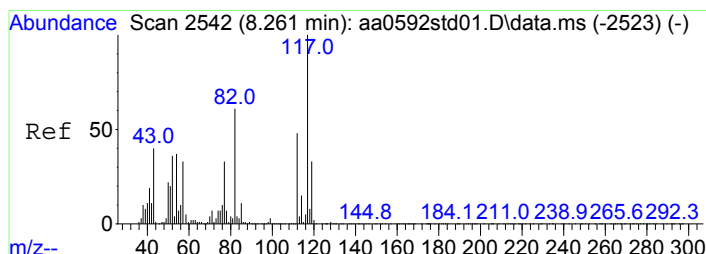
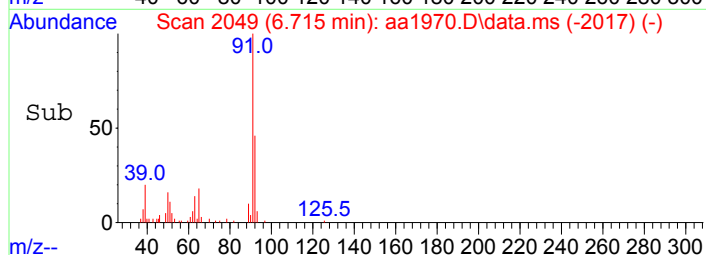
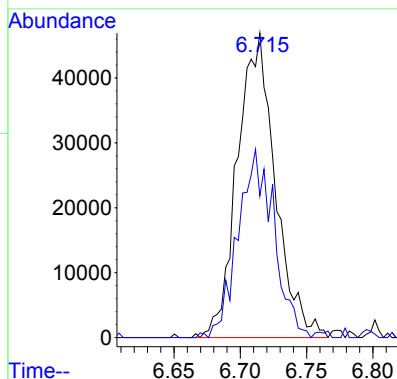
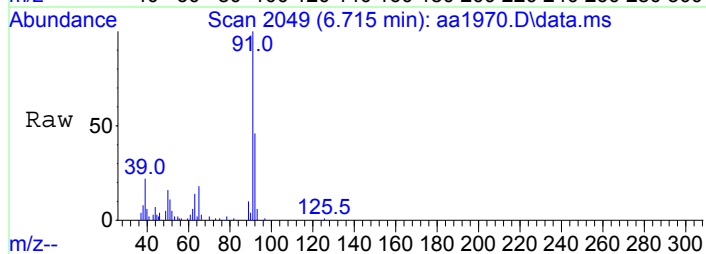
Tgt Ion: 114 Resp: 2075346
Ion Ratio Lower Upper
114 100
63 32.2 20.0 30.0#





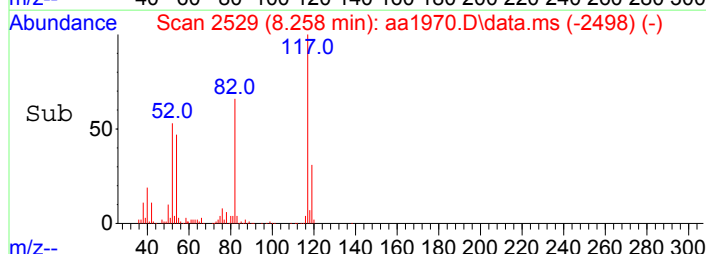
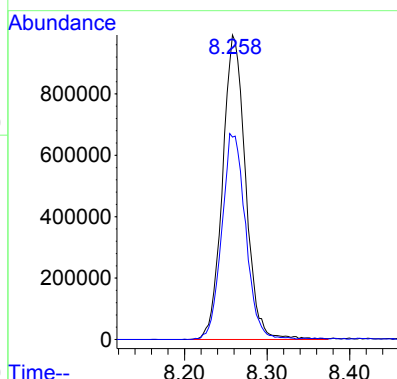
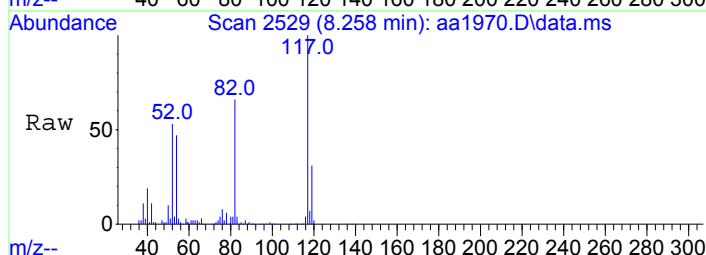
#47
Toluene
Concen: 0.44 ppbV
RT: 6.715 min Scan# 2049
Delta R.T. 0.003 min
Lab File: aa1970.D
Acq: 4 Apr 2019 1:04 pm

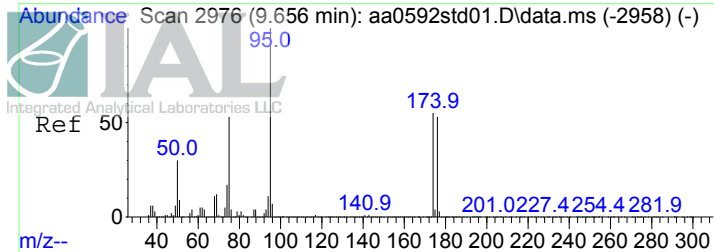
Tgt Ion: 91 Resp: 93048
Ion Ratio Lower Upper
91 100
92 58.4 50.0 75.0



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.258 min Scan# 2529
Delta R.T. -0.000 min
Lab File: aa1970.D
Acq: 4 Apr 2019 1:04 pm

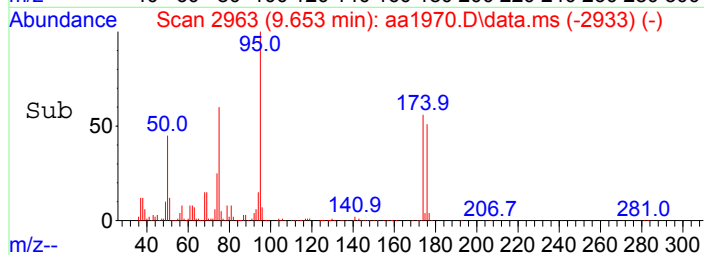
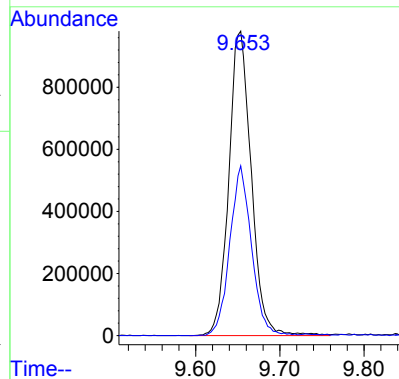
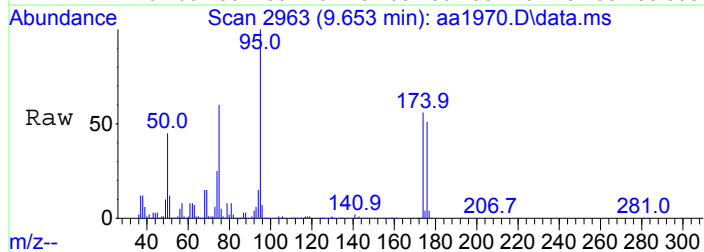
Tgt Ion: 117 Resp: 1922680
Ion Ratio Lower Upper
117 100
82 69.7 48.8 73.2





#64
 Bromofluorobenzene (tune std)
 Concen: 10.83 ppbV
 RT: 9.653 min Scan# 2963
 Delta R.T. -0.003 min
 Lab File: aa1970.D
 Acq: 4 Apr 2019 1:04 pm

Tgt Ion: 95 Resp: 1817313
 Ion Ratio Lower Upper
 95 100
 174 53.9 61.5 92.3#



Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-02214
IAL Sample ID: E19-02214-01
Matrix: Air
Summa ID: 3045A

Date Received: 3/29/19
Date Analyzed: 4/5/19, 4/5/19
Lab Data File : AA1999, AA2000
Dilution Factor: 10
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-02214-01 Concentration Reported		Sample Dup E19-02214-21 Concentration Reported		Reporting Limits ppbv	RPD
		ppbv	Q	ppbv	Q		
Acetone	67-64-1	40	D	41	D	2.0	-2.47
Benzene	71-43-2		2.0 U		2.0 U	2.0	0.00%
Bromodichloromethane	75-27-4		2.0 U		2.0 U	2.0	0.00%
Bromoform	75-25-2		2.0 U		2.0 U	2.0	0.00%
Bromomethane	74-83-9		2.0 U		2.0 U	2.0	0.00%
1,3-Butadiene	106-99-0		2.0 U		2.0 U	2.0	0.00%
Chlorobenzene	108-90-7		2.0 U		2.0 U	2.0	0.00%
Chloroethane	75-00-3		2.0 U		2.0 U	2.0	0.00%
Chloroform	67-66-3		2.0 U		2.0 U	2.0	0.00%
Chloromethane	74-87-3		2.0 U		2.0 U	2.0	0.00%
Carbon disulfide	75-15-0		2.0 U		2.0 U	2.0	0.00%
Carbon tetrachloride	56-23-5		0.40 U		0.40 U	0.40	0.00%
Cyclohexane	110-82-7		2.0 U		2.0 U	2.0	0.00%
Dibromochloromethane	124-48-1		2.0 U		2.0 U	2.0	0.00%
1,2-Dibromoethane	106-93-4		2.0 U		2.0 U	2.0	0.00%
1,2-Dichlorobenzene	95-50-1		2.0 U		2.0 U	2.0	0.00%
1,3-Dichlorobenzene	541-73-1		2.0 U		2.0 U	2.0	0.00%
1,4-Dichlorobenzene	106-46-7		2.0 U		2.0 U	2.0	0.00%
Dichlorodifluoromethane	75-71-8		2.0 U		2.0 U	2.0	0.00%
1,1-Dichloroethane	75-34-3		2.0 U		2.0 U	2.0	0.00%
1,2-Dichloroethane	107-06-2		2.0 U		2.0 U	2.0	0.00%
1,1-Dichloroethene	75-35-4		2.0 U		2.0 U	2.0	0.00%
1,2-Dichloroethene (cis)	156-59-2		2.0 U		2.0 U	2.0	0.00%
1,2-Dichloroethene (trans)	156-60-5		2.0 U		2.0 U	2.0	0.00%
1,2-Dichloropropane	78-87-5		2.0 U		2.0 U	2.0	0.00%
1,3-Dichloropropene (cis)	10061-01-5		2.0 U		2.0 U	2.0	0.00%
1,3-Dichloropropene (trans)	10061-02-6		2.0 U		2.0 U	2.0	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2		2.0 U		2.0 U	2.0	0.00%
1,4-Dioxane	123-91-1		2.0 U		2.0 U	2.0	0.00%
Ethylbenzene	100-41-4		2.0 U		2.0 U	2.0	0.00%
n-Heptane	142-82-5		2.0 U		2.0 U	2.0	0.00%
1,3-Hexachlorobutadiene	87-68-3		2.0 U		2.0 U	2.0	0.00%
n-Hexane	110-54-3		2.0 U		2.0 U	2.0	0.00%
Methylene chloride	75-09-2	5.6	D	5.3	D	2.0	5.50
Methyl ethyl ketone	78-93-3	20	D	20	D	2.0	0.00
Methyl isobutyl ketone	108-10-1		2.0 U	2.3	D	2.0	NC
Methyl tert-butyl ether	1634-04-4		2.0 U		2.0 U	2.0	0.00%
Styrene	100-42-5		2.0 U		2.0 U	2.0	0.00%

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-02214
IAL Sample ID: E19-02214-01
Matrix: Air
Summa ID: 3045A

Date Received: 3/29/19
Date Analyzed: 4/5/19, 4/5/19
Lab Data File : AA1999, AA2000
Dilution Factor: 10
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample	Sample Dup	Reporting		RPD
		E19-02214-01 Concentration Reported ppbv	E19-02214-21 Concentration Reported ppbv	Q	Limits ppbv	
Tert-butyl alcohol	75-65-0	2.0 U	2.0 U	2.0	2.0	0.00%
1,1,2,2-Tetrachloroethane	79-34-5	2.0 U	2.0 U	2.0	2.0	0.00%
Tetrachloroethene	127-18-4	2.0 U	2.0 U	2.0	2.0	0.00%
Toluene	108-88-3	18	19	D	2.0	-5.41
1,2,4-Trichlorobenzene	120-82-1	2.0 U	2.0 U	2.0	2.0	0.00%
1,1,1-Trichloroethane	71-55-6	2.0 U	2.0 U	2.0	2.0	0.00%
1,1,2-Trichloroethane	79-00-5	2.0 U	2.0 U	2.0	2.0	0.00%
Trichloroethene	79-01-6	0.50 U	0.50 U	0.50	0.50	0.00%
Trichlorofluoromethane	75-69-4	2.0 U	2.0 U	2.0	2.0	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.0 U	2.0 U	2.0	2.0	0.00%
1,2,4-Trimethylbenzene	95-63-6	2.0 U	2.0 U	2.0	2.0	0.00%
1,3,5-Trimethylbenzene	108-67-8	2.0 U	2.0 U	2.0	2.0	0.00%
2,2,4-Trimethylpentane	540-84-1	2.0 U	2.0 U	2.0	2.0	0.00%
Vinyl bromide	593-60-2	2.0 U	2.0 U	2.0	2.0	0.00%
Vinyl chloride	75-01-4	2.0 U	2.0 U	2.0	2.0	0.00%
Xylenes (m p)	179601-23-1	6.6	6.3	D	2.0	4.65
Xylenes (o)	95-47-6	2.0 U	2.0 U	2.0	2.0	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Data Path : C:\DATA\04-05-19\
 Data File : aa1999.D
 Acq On : 5 Apr 2019 3:08 pm
 Operator : jls
 Sample : E19-02214-01 x 10 dil
 Misc : 3045A, 50cc
 ALS Vial : 9 Sample Multiplier: 1

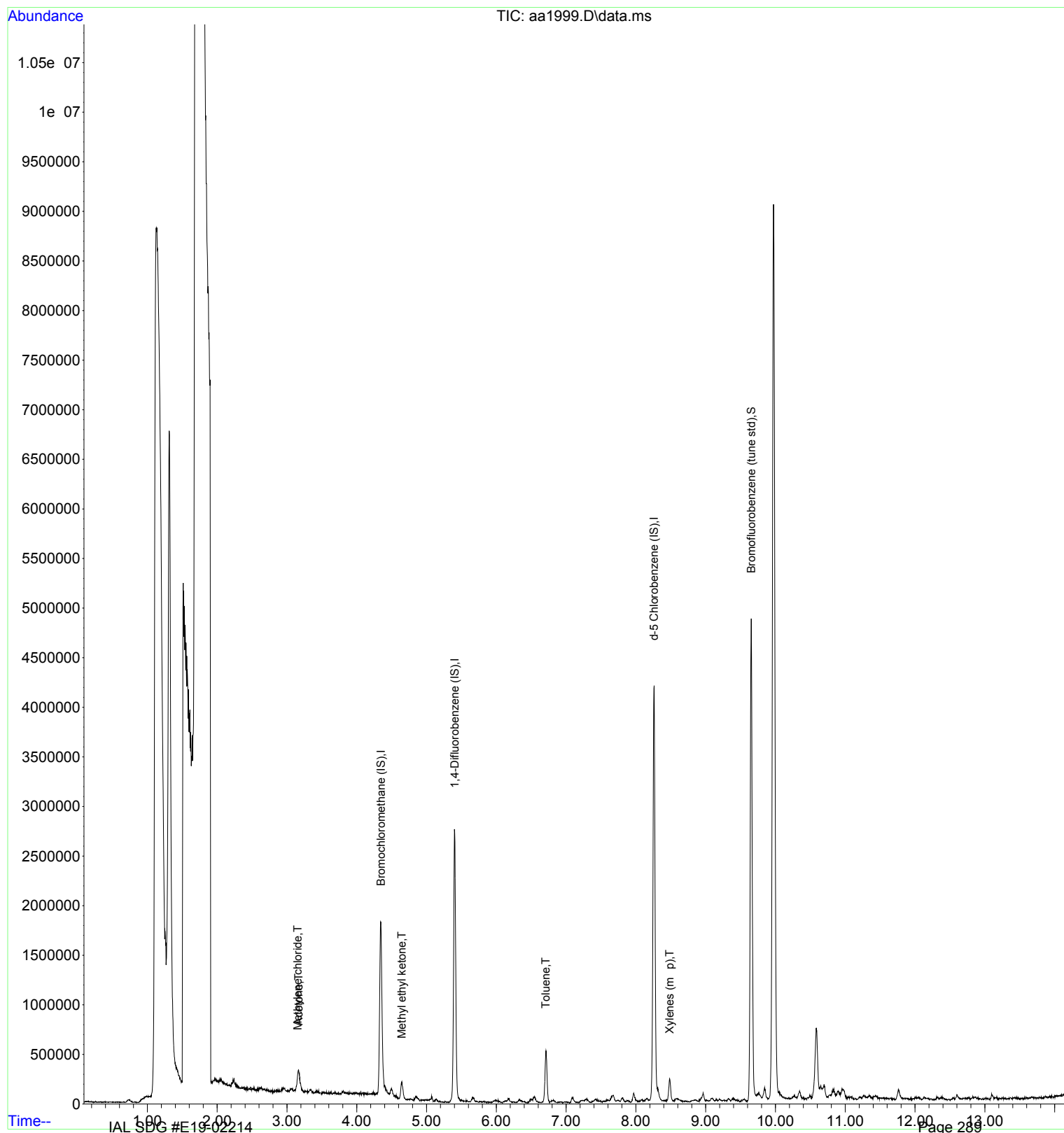
Quant Time: Apr 08 10:21:08 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

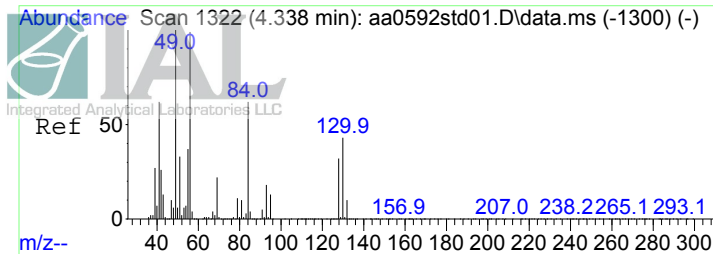
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.348	130	445197	10.00	ppbV	0.013
39) 1,4-Difluorobenzene (IS)	5.403	114	1770864	10.00	ppbV	# 0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1761512	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.654	95	1621962	10.55	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.152	49	41010	0.56	ppbV	# 63
21) Acetone	3.168	43	359717	3.98	ppbV	# 73
35) Methyl ethyl ketone	4.644	43	257251	2.05	ppbV	# 89
47) Toluene	6.708	91	335445	1.84	ppbV	96
59) Xylenes (m&p)	8.483	91	133929	0.66	ppbV	92

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

Data Path : C:\DATA\04-05-19\
Data File : aa1999.D
Acq On : 5 Apr 2019 3:08 pm
Operator : jls
Sample : E19-02214-01 x 10 dil
Misc : 3045A, 50cc
ALS Vial : 9 Sample Multiplier: 1

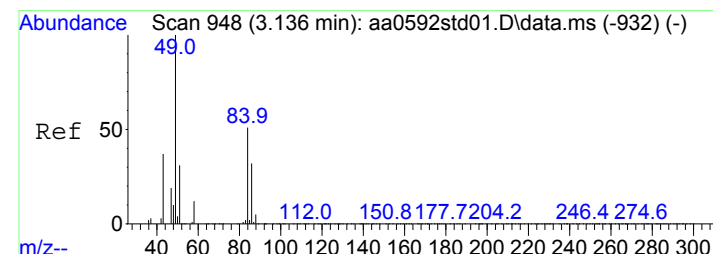
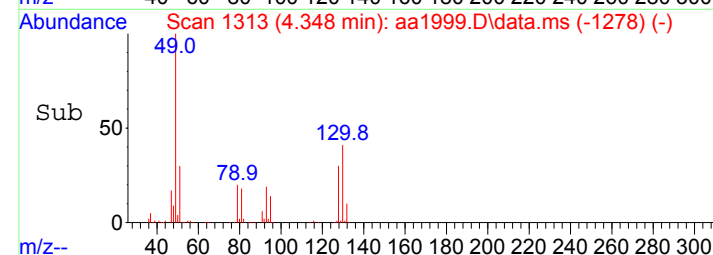
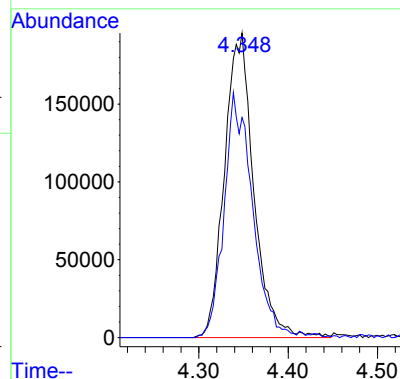
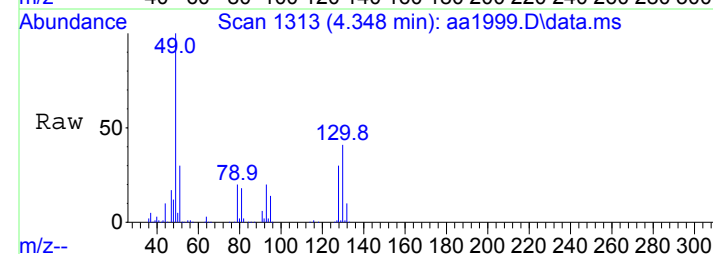
Quant Time: Apr 08 10:21:08 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





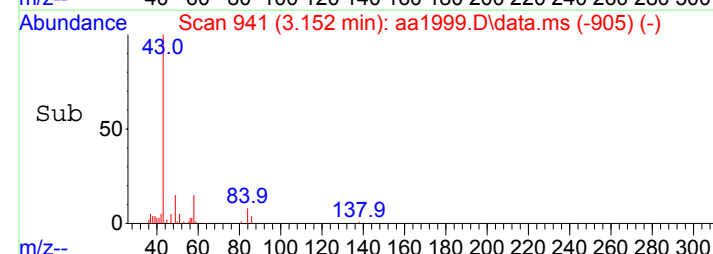
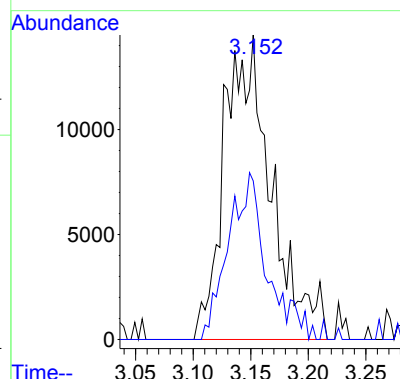
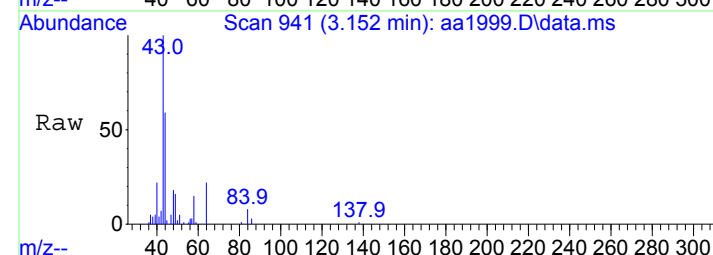
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.348 min Scan# 1313
Delta R.T. 0.013 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

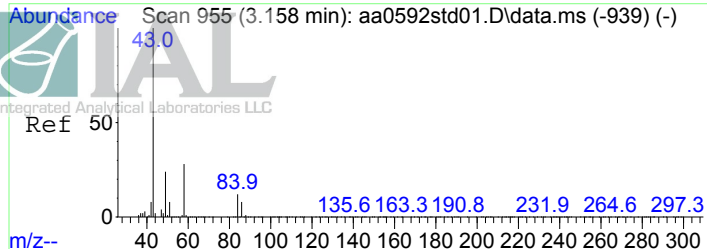
Tgt Ion: 130 Resp: 445197
Ion Ratio Lower Upper
130 100
128 77.4 62.6 94.0



#20
Methylene chloride
Concen: 0.56 ppbV
RT: 3.152 min Scan# 941
Delta R.T. 0.016 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

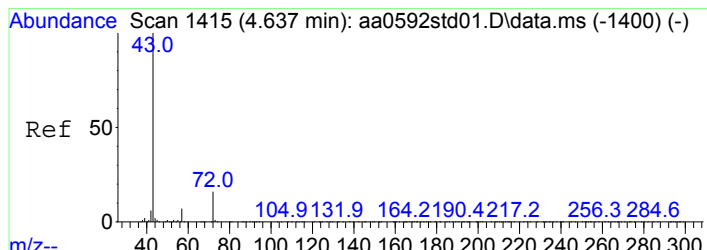
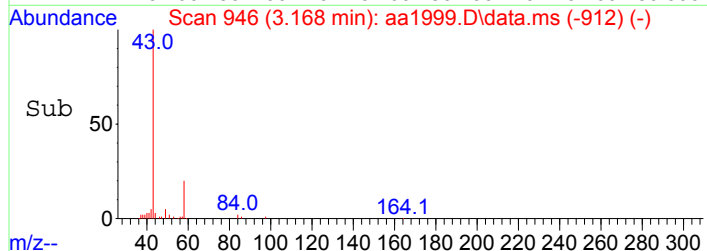
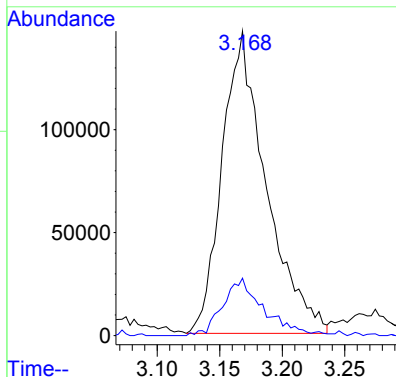
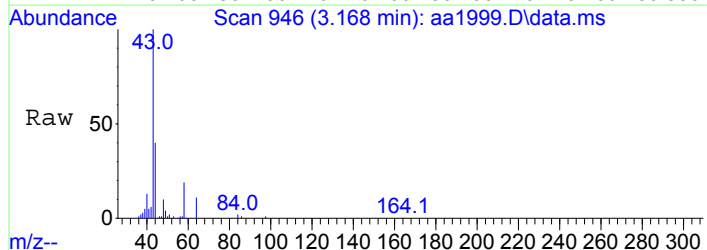
Tgt Ion: 49 Resp: 41010
Ion Ratio Lower Upper
49 100
84 41.6 58.4 87.6#





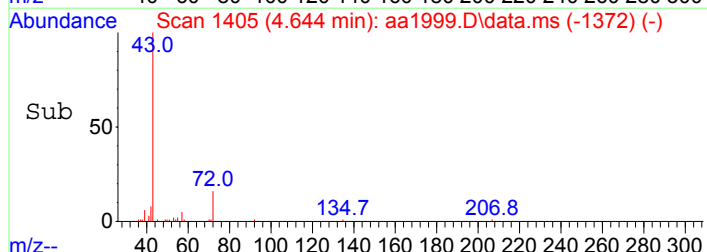
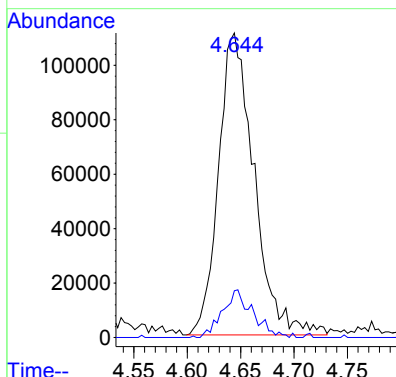
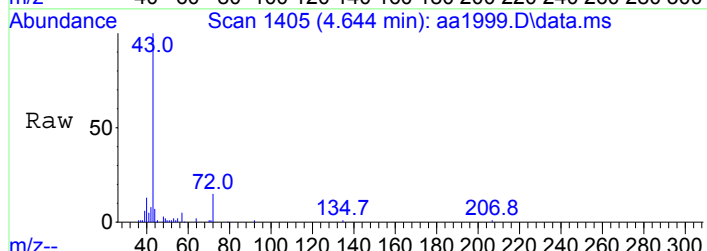
#21
Acetone
Concen: 3.98 ppbV
RT: 3.168 min Scan# 946
Delta R.T. 0.010 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

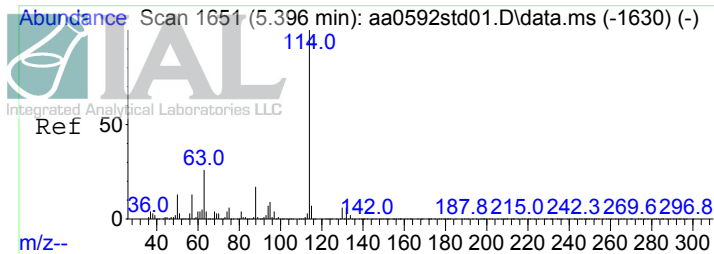
Tgt Ion: 43 Resp: 359717
Ion Ratio Lower Upper
43 100
58 17.6 26.4 39.6#



#35
Methyl ethyl ketone
Concen: 2.05 ppbV
RT: 4.644 min Scan# 1405
Delta R.T. 0.006 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

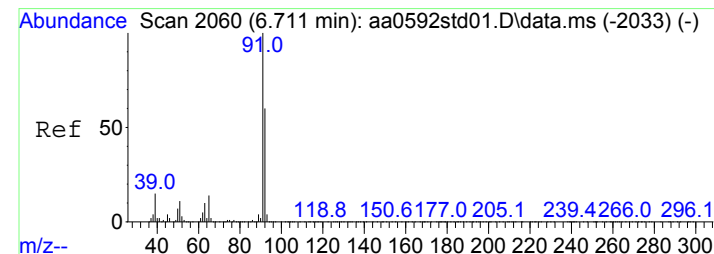
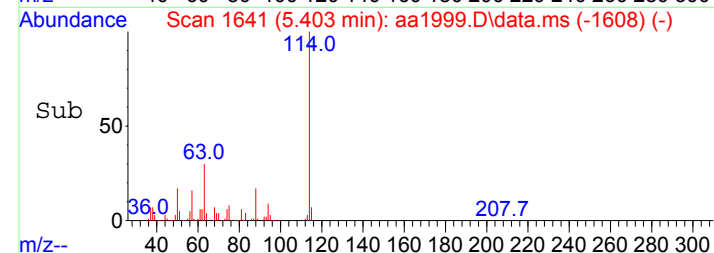
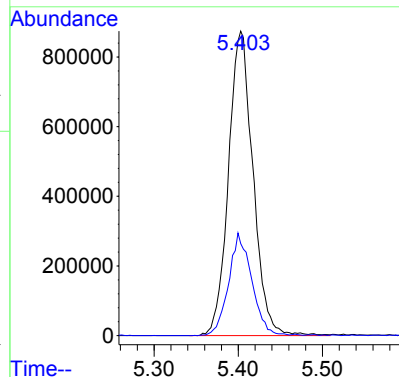
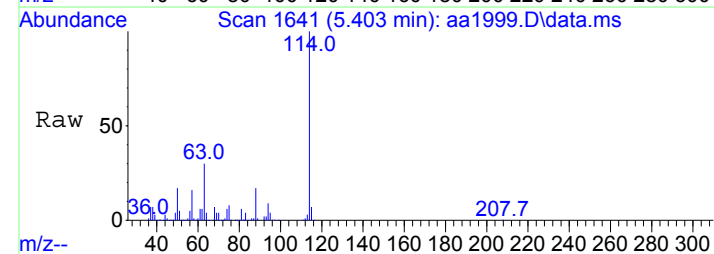
Tgt Ion: 43 Resp: 257251
Ion Ratio Lower Upper
43 100
72 13.4 14.4 21.6#





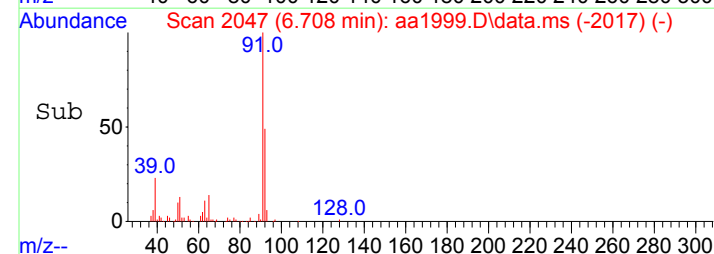
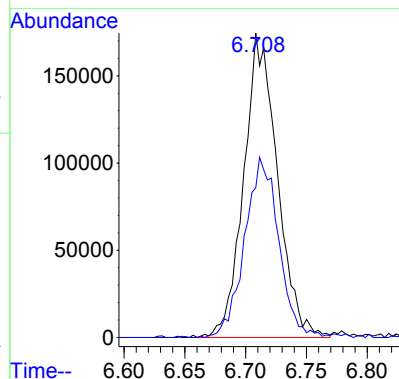
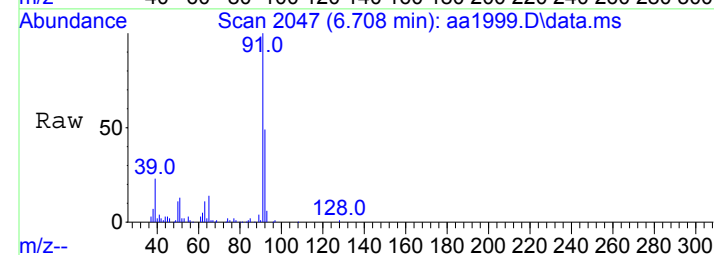
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

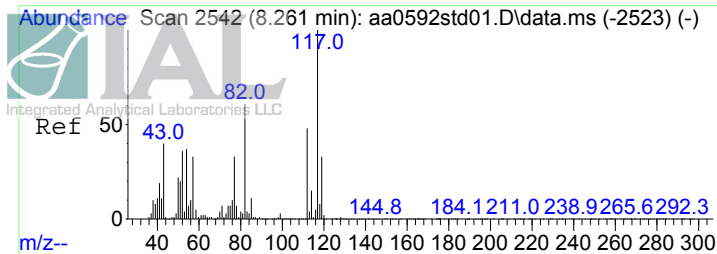
Tgt Ion: 114 Resp: 1770864
Ion Ratio Lower Upper
114 100
63 31.6 20.0 30.0#



#47
Toluene
Concen: 1.84 ppbV
RT: 6.708 min Scan# 2047
Delta R.T. -0.003 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

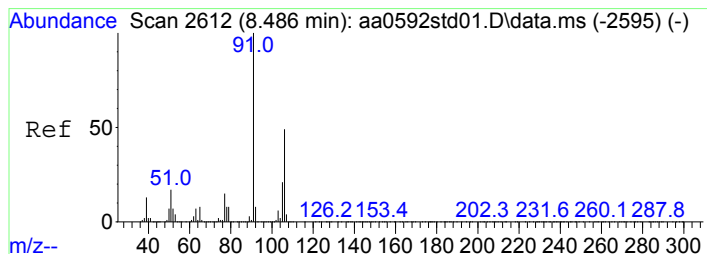
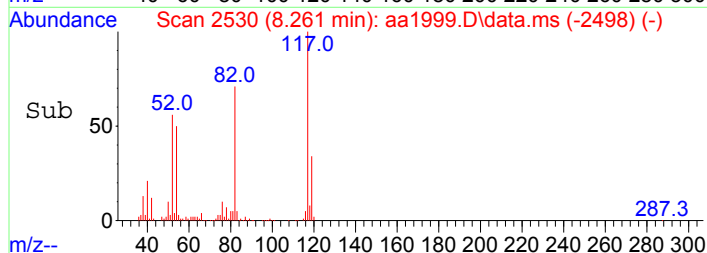
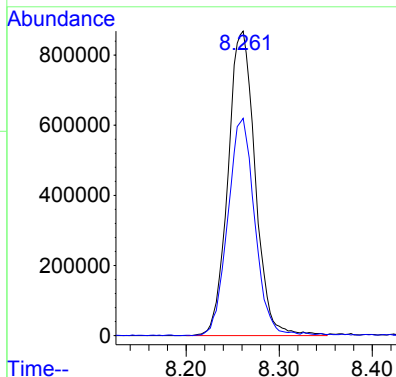
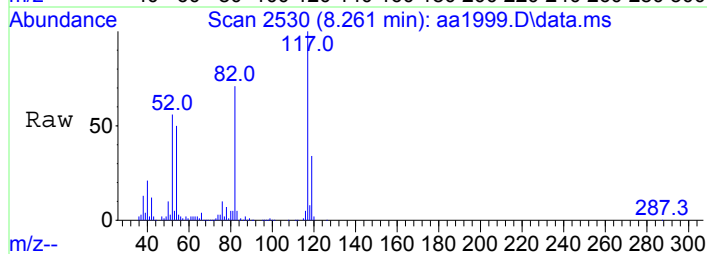
Tgt Ion: 91 Resp: 335445
Ion Ratio Lower Upper
91 100
92 59.7 50.0 75.0





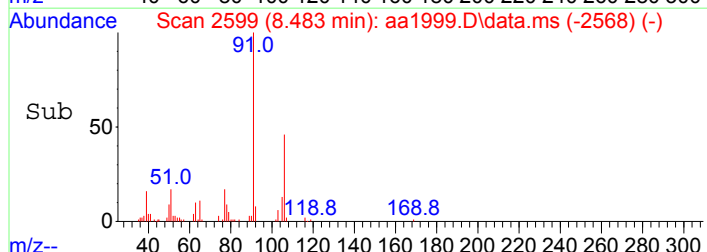
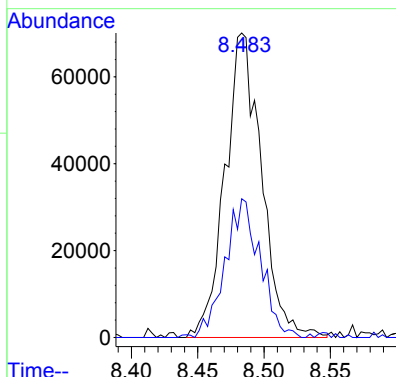
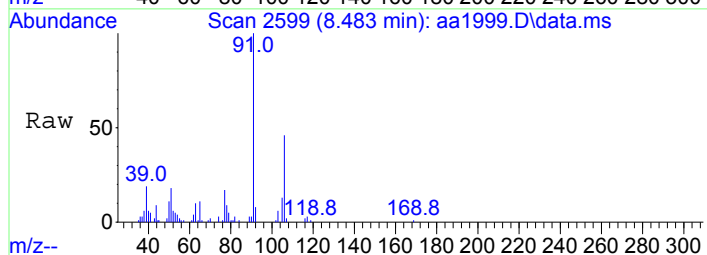
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.261 min Scan# 2530
Delta R.T. 0.003 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

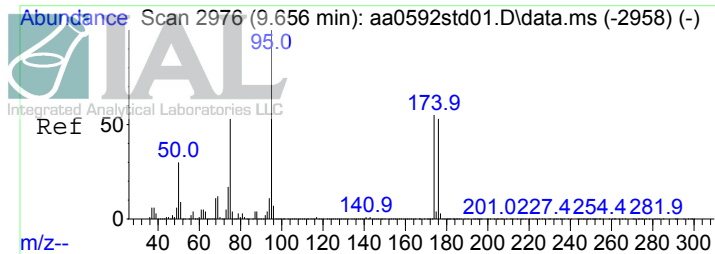
Tgt Ion: 117 Resp: 1761512
Ion Ratio Lower Upper
117 100
82 70.5 48.8 73.2



#59
Xylenes (m&p)
Concen: 0.66 ppbV
RT: 8.483 min Scan# 2599
Delta R.T. 0.000 min
Lab File: aa1999.D
Acq: 5 Apr 2019 3:08 pm

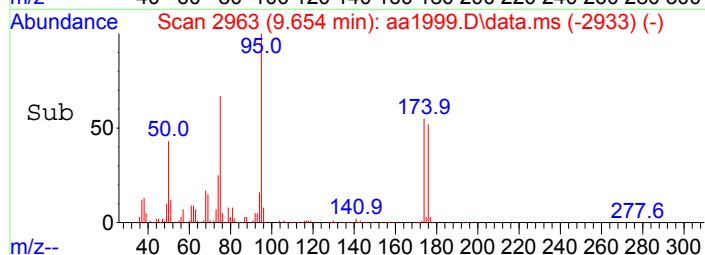
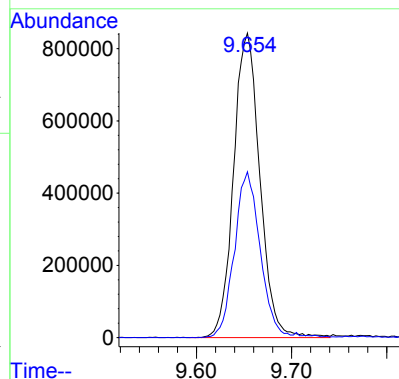
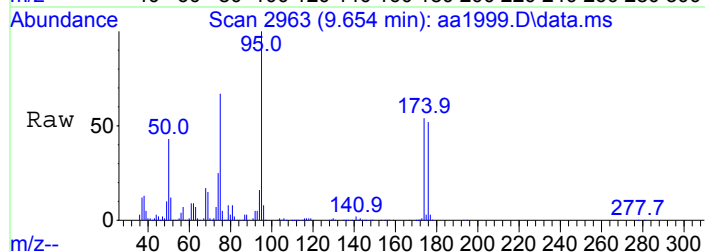
Tgt Ion: 91 Resp: 133929
Ion Ratio Lower Upper
91 100
106 43.5 39.2 58.8





#64
 Bromofluorobenzene (tune std)
 Concen: 10.55 ppbV
 RT: 9.654 min Scan# 2963
 Delta R.T. -0.003 min
 Lab File: aa1999.D
 Acq: 5 Apr 2019 3:08 pm

Tgt Ion: 95 Resp: 1621962
 Ion Ratio Lower Upper
 95 100
 174 53.7 61.5 92.3#



Data Path : C:\DATA\04-05-19\
 Data File : aa2000.D
 Acq On : 5 Apr 2019 3:29 pm
 Operator : jls
 Sample : E19-02214-21 x 10 dil
 Misc : dup of E19-02214-01 x 10 dil, can 3045A
 ALS Vial : 10 Sample Multiplier: 1

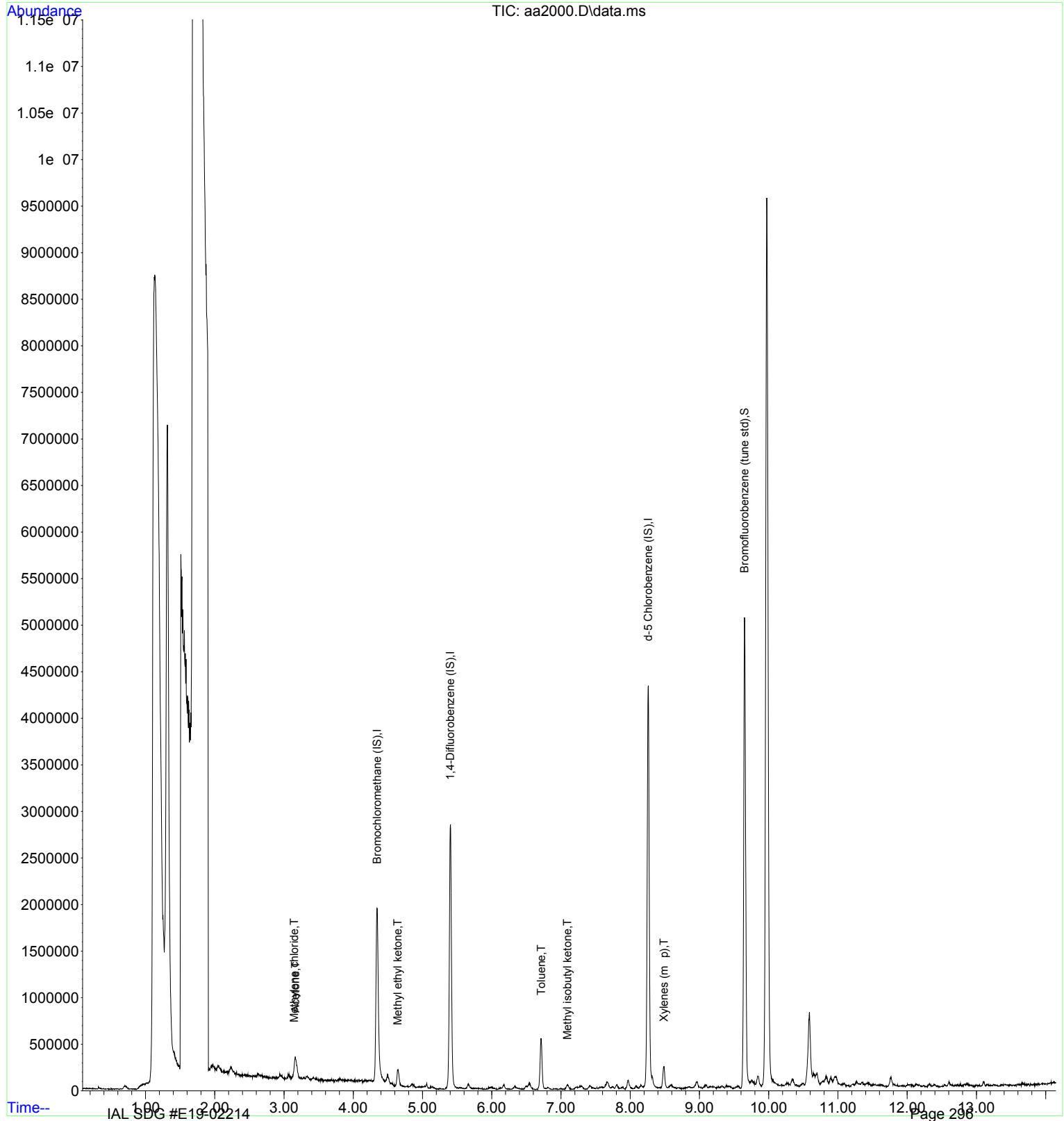
Quant Time: Apr 08 10:24:41 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

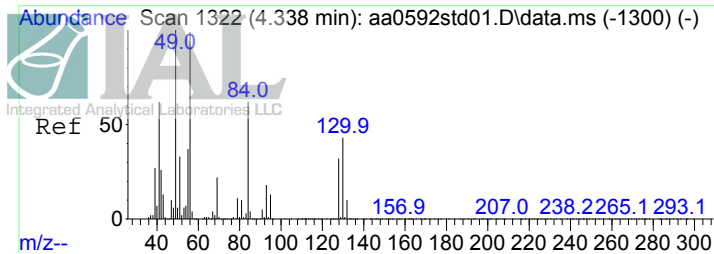
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.345	130	486146	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	1828929	10.00	ppbV #	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1849252	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.650	95	1701775	10.54	ppbV	0.000
Target Compounds						
					Qvalue	
20) Methylene chloride	3.146	49	42245m	0.53	ppbV	
21) Acetone	3.165	43	402350	4.07	ppbV #	70
35) Methyl ethyl ketone	4.641	43	277852	2.03	ppbV #	92
47) Toluene	6.715	91	352024	1.87	ppbV	94
48) Methyl isobutyl ketone	7.094	43	39098	0.23	ppbV #	54
59) Xylenes (m&p)	8.486	91	135642	0.63	ppbV	95

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

Data Path : C:\DATA\04-05-19\
Data File : aa2000.D
Acq On : 5 Apr 2019 3:29 pm
Operator : jls
Sample : E19-02214-21 x 10 dil
Misc : dup of E19-02214-01 x 10 dil, can 3045A
ALS Vial : 10 Sample Multiplier: 1

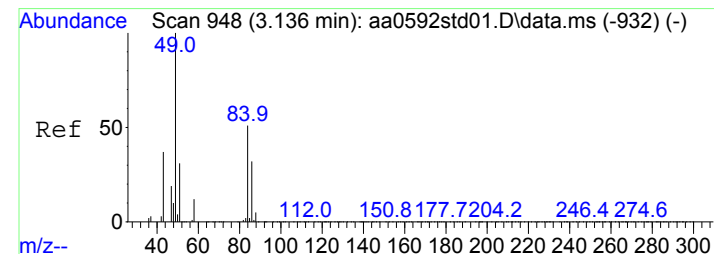
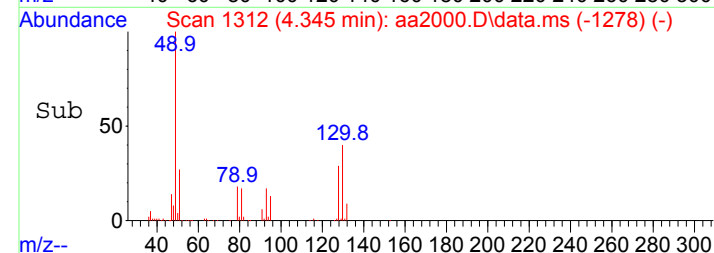
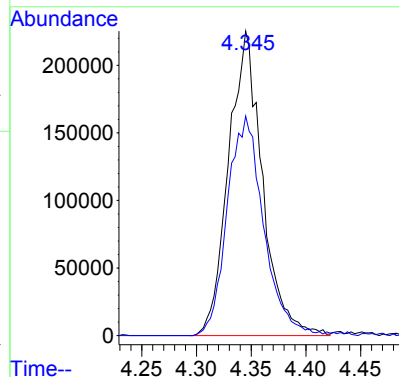
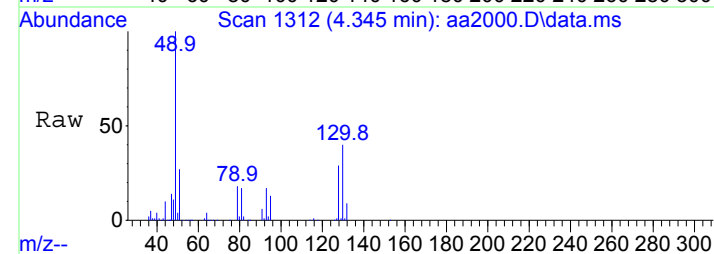
Quant Time: Apr 08 10:24:41 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





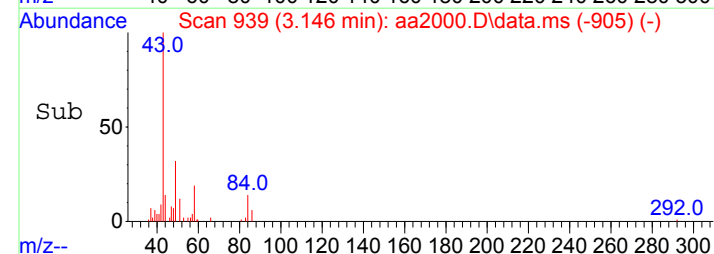
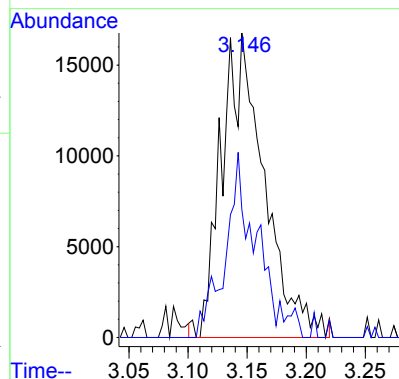
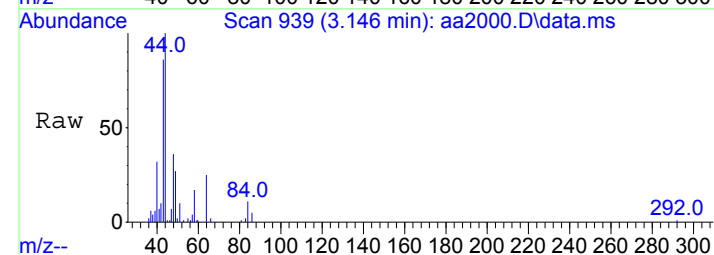
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.345 min Scan# 1312
Delta R.T. 0.010 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

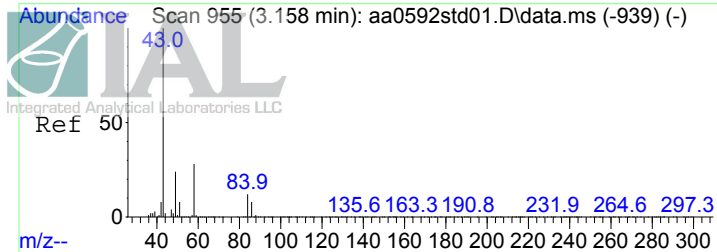
Tgt Ion: 130 Resp: 486146
Ion Ratio Lower Upper
130 100
128 77.0 62.6 94.0



#20
Methylene chloride
Concen: 0.53 ppbV m
RT: 3.146 min Scan# 939
Delta R.T. 0.009 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

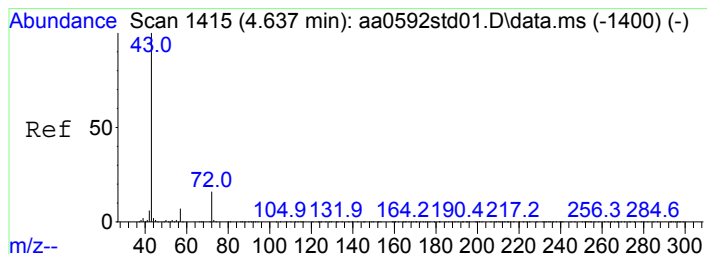
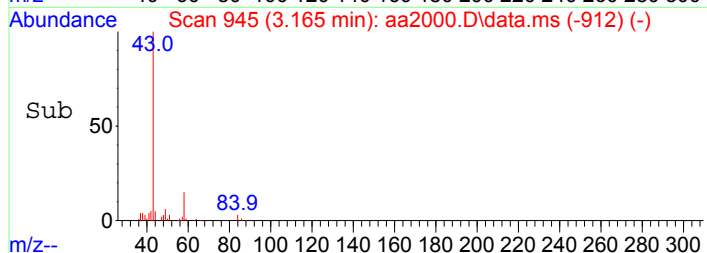
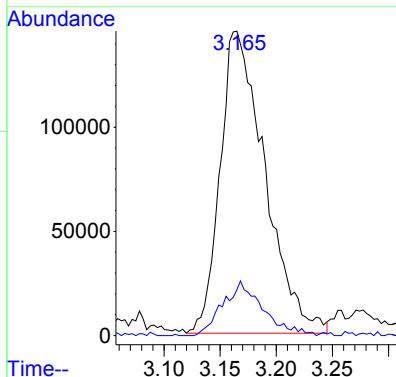
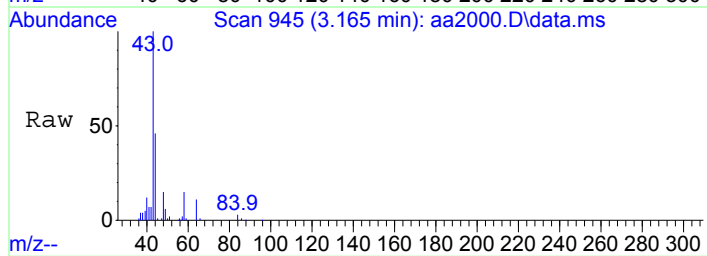
Tgt Ion: 49 Resp: 42245
Ion Ratio Lower Upper
49 100
84 39.0 58.4 87.6#





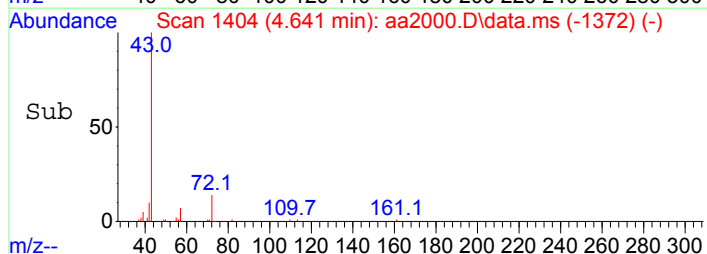
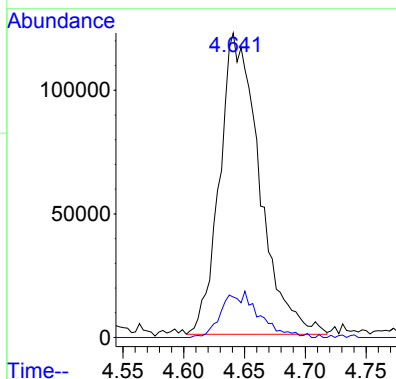
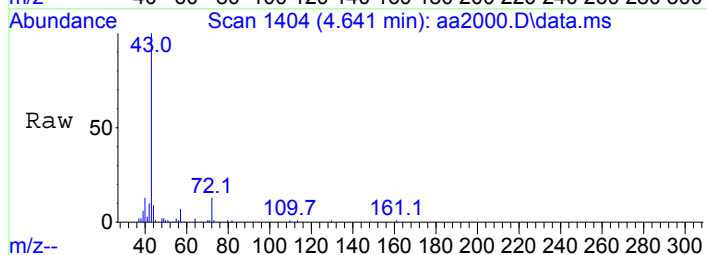
#21
Acetone
Concen: 4.07 ppbV
RT: 3.165 min Scan# 945
Delta R.T. 0.006 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

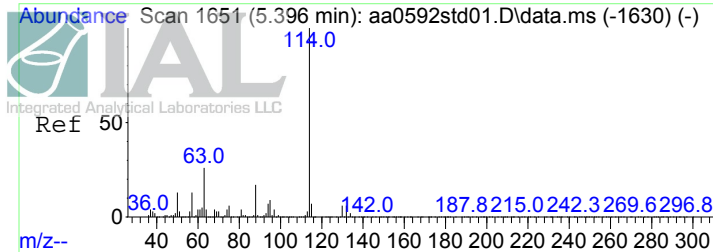
Tgt Ion: 43 Resp: 402350
Ion Ratio Lower Upper
43 100
58 16.0 26.4 39.6#



#35
Methyl ethyl ketone
Concen: 2.03 ppbV
RT: 4.641 min Scan# 1404
Delta R.T. 0.003 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

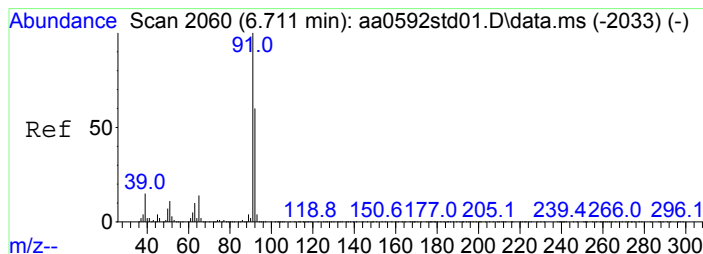
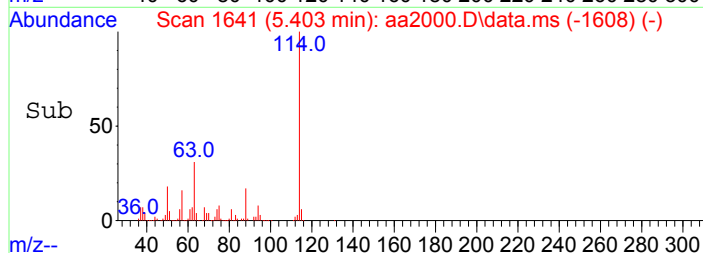
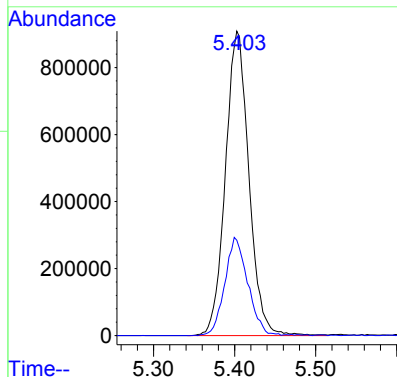
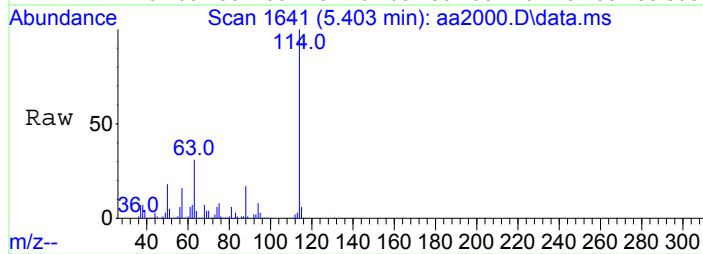
Tgt Ion: 43 Resp: 277852
Ion Ratio Lower Upper
43 100
72 14.3 14.4 21.6#





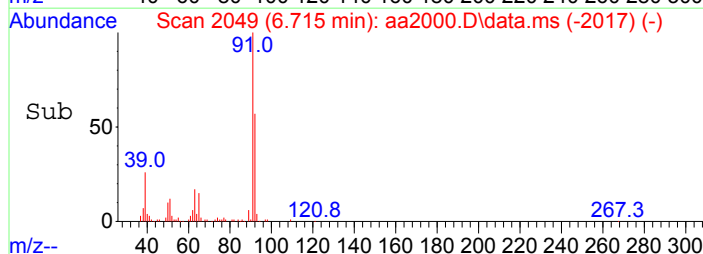
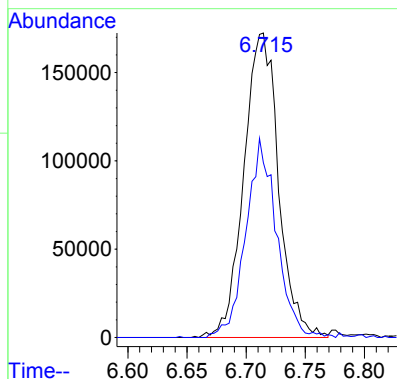
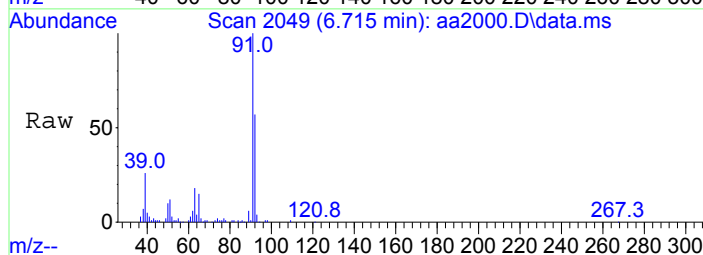
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

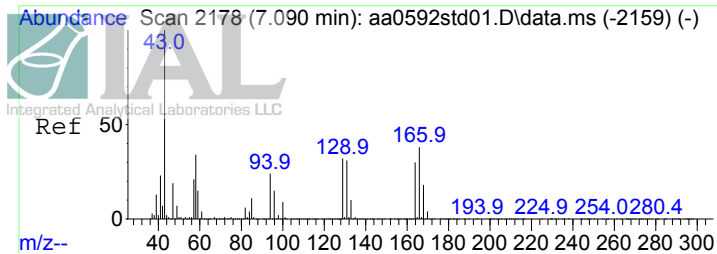
Tgt Ion: 114 Resp: 1828929
Ion Ratio Lower Upper
114 100
63 31.6 20.0 30.0#



#47
Toluene
Concen: 1.87 ppbV
RT: 6.715 min Scan# 2049
Delta R.T. 0.003 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

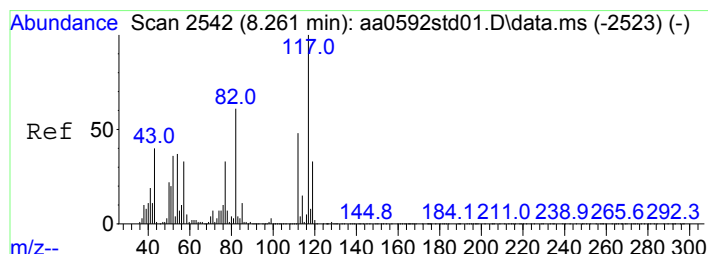
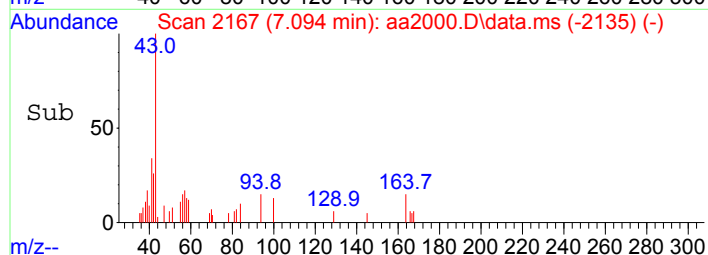
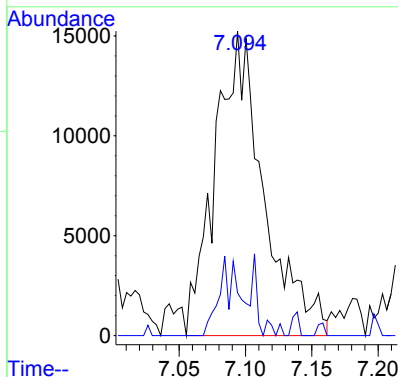
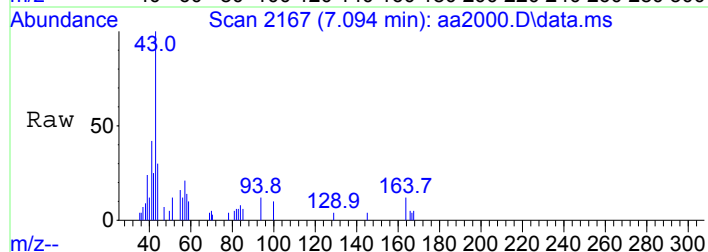
Tgt Ion: 91 Resp: 352024
Ion Ratio Lower Upper
91 100
92 57.7 50.0 75.0





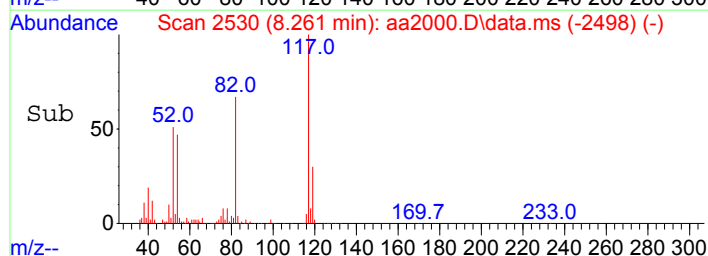
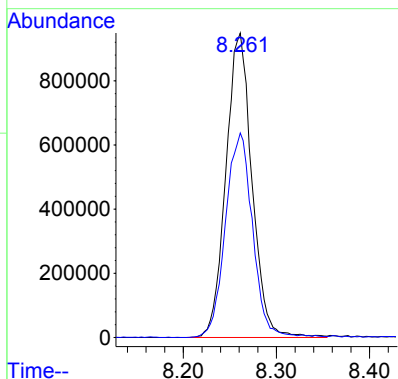
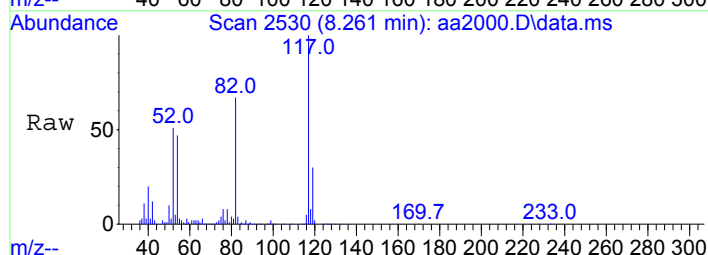
#48
Methyl isobutyl ketone
Concen: 0.23 ppbV
RT: 7.094 min Scan# 2167
Delta R.T. 0.003 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

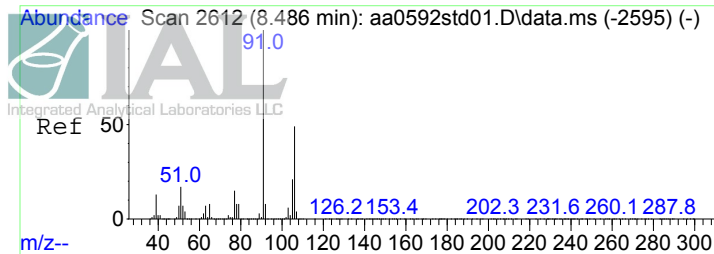
Tgt Ion: 43 Resp: 39098
Ion Ratio Lower Upper
43 100
58 10.6 30.4 45.6#



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.261 min Scan# 2530
Delta R.T. 0.003 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

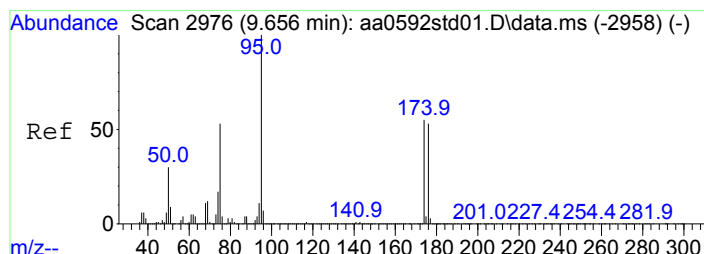
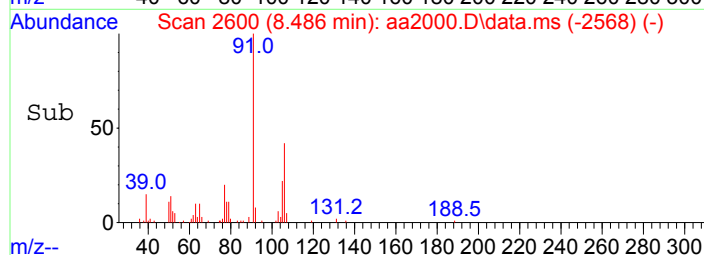
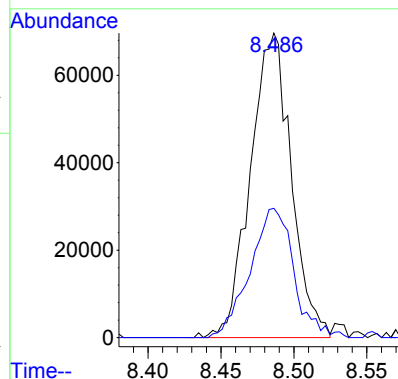
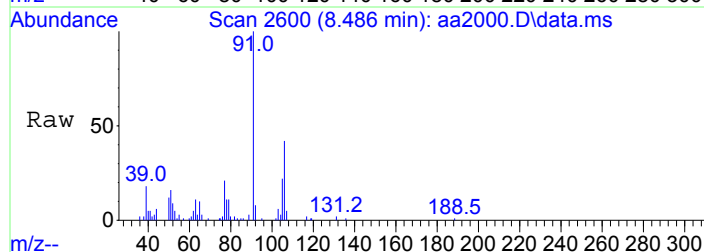
Tgt Ion: 117 Resp: 1849252
Ion Ratio Lower Upper
117 100
82 69.8 48.8 73.2





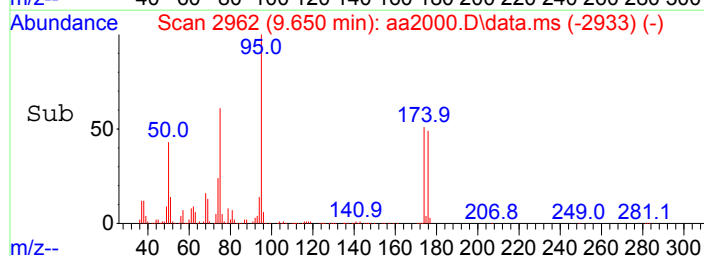
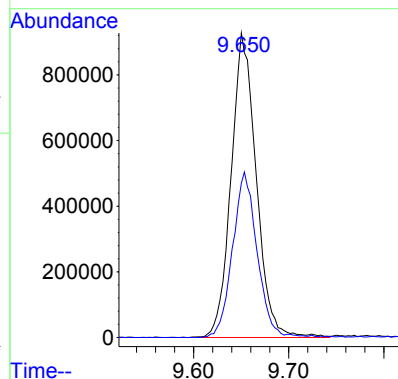
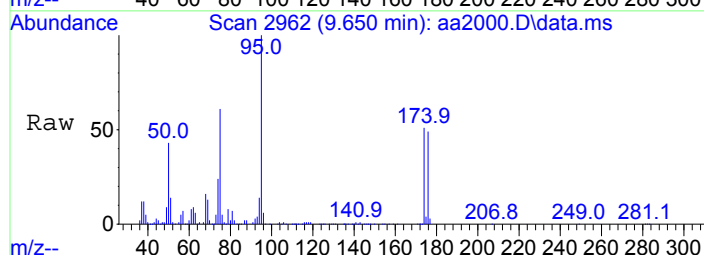
#59
Xylenes (m&p)
Concen: 0.63 ppbV
RT: 8.486 min Scan# 2600
Delta R.T. 0.003 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

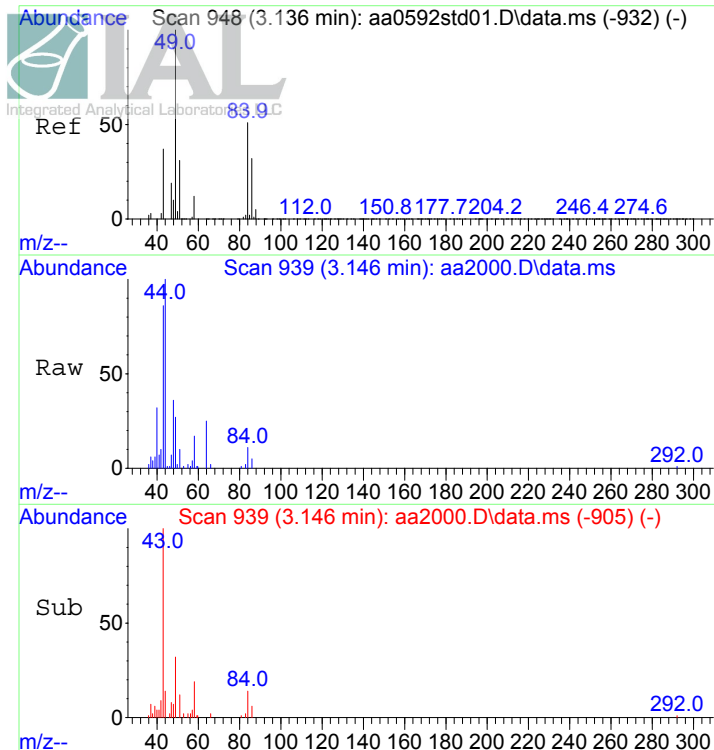
Tgt Ion: 91 Resp: 135642
Ion Ratio Lower Upper
91 100
106 45.5 39.2 58.8



#64
Bromofluorobenzene (tune std)
Concen: 10.54 ppbV
RT: 9.650 min Scan# 2962
Delta R.T. -0.007 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

Tgt Ion: 95 Resp: 1701775
Ion Ratio Lower Upper
95 100
174 53.5 61.5 92.3#

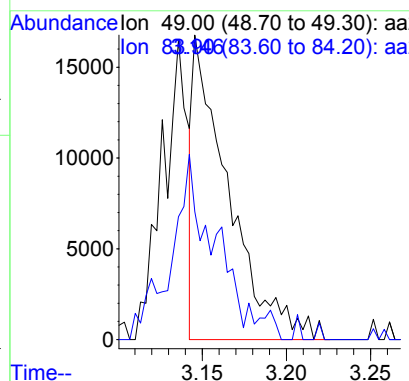




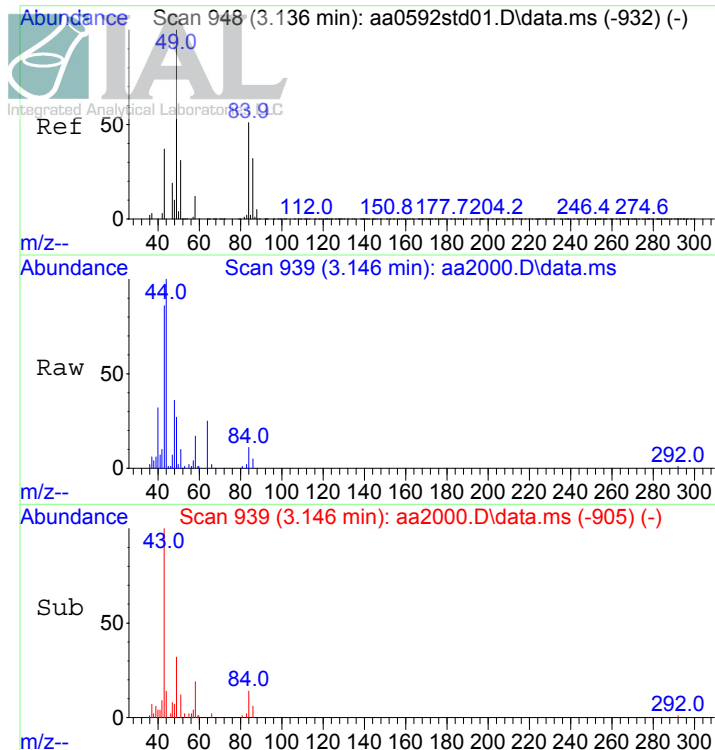
#20
 Methylene chloride
 Concen: 0.31 ppbV
 RT: 3.146 min Scan# 939
 Delta R.T. 0.009 min
 Lab File: aa2000.D
 Acq: 5 Apr 2019 3:29 pm

Tgt Ion: 49 Resp: 24799

Ion	Ratio	Lower	Upper
49	100		
84	66.4	58.4	87.6

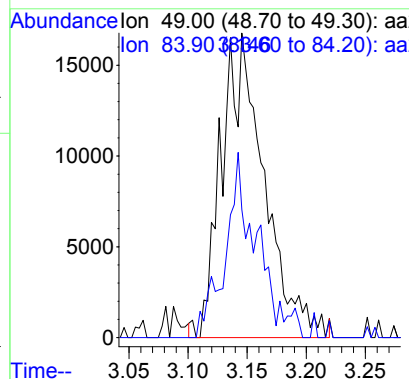


Before manual integration for Methylene chloride.



#20
Methylene chloride
Concen: 0.53 ppbV m
RT: 3.146 min Scan# 939
Delta R.T. 0.009 min
Lab File: aa2000.D
Acq: 5 Apr 2019 3:29 pm

Tgt Ion: 49 Resp: 42245
Ion Ratio Lower Upper
49 100
84 39.0 58.4 87.6#



After manual integration for Methylene chloride.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-01
Matrix: Air
Summa ID: 2162

Date Received: 3/15/19
Date Analyzed: 4/8/19, 4/8/19
Lab Data File : AA2031, AA2032
Dilution Factor: 10
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-01 Concentration Reported		Sample Dup E19-01821-21 Concentration Reported		Reporting Limits ppbv	RPD
		ppbv	Q	ppbv	Q		
Acetone	67-64-1	9.7	D	10	D	4.0	-3.05
Allyl Chloride	107-05-1		4.0 U		4.0 U	4.0	0.00%
Benzene	71-43-2		4.0 U		4.0 U	4.0	0.00%
Bromodichloromethane	75-27-4		4.0 U		4.0 U	4.0	0.00%
Bromoform	75-25-2		4.0 U		4.0 U	4.0	0.00%
Bromomethane	74-83-9		4.0 U		4.0 U	4.0	0.00%
1,3-Butadiene	106-99-0		4.0 U		4.0 U	4.0	0.00%
Chlorobenzene	108-90-7		4.0 U		4.0 U	4.0	0.00%
Chloroethane	75-00-3		4.0 U		4.0 U	4.0	0.00%
Chloroform	67-66-3		4.0 U		4.0 U	4.0	0.00%
Chloromethane	74-87-3		4.0 U		4.0 U	4.0	0.00%
Carbon disulfide	75-15-0		4.0 U		4.0 U	4.0	0.00%
Carbon tetrachloride	56-23-5		4.0 U		4.0 U	4.0	0.00%
2-Chlorotoluene	95-49-8		4.0 U		4.0 U	4.0	0.00%
Cyclohexane	110-82-7		4.0 U		4.0 U	4.0	0.00%
Dibromochloromethane	124-48-1		4.0 U		4.0 U	4.0	0.00%
1,2-Dibromoethane	106-93-4		4.0 U		4.0 U	4.0	0.00%
1,2-Dichlorobenzene	95-50-1		4.0 U		4.0 U	4.0	0.00%
1,3-Dichlorobenzene	541-73-1		4.0 U		4.0 U	4.0	0.00%
1,4-Dichlorobenzene	106-46-7		4.0 U		4.0 U	4.0	0.00%
Dichlorodifluoromethane	75-71-8		4.0 U		4.0 U	4.0	0.00%
1,1-Dichloroethane	75-34-3		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethane	107-06-2		4.0 U		4.0 U	4.0	0.00%
1,1-Dichloroethene	75-35-4		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethene (cis)	156-59-2		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloroethene (trans)	156-60-5		4.0 U		4.0 U	4.0	0.00%
1,2-Dichloropropane	78-87-5		4.0 U		4.0 U	4.0	0.00%
1,3-Dichloropropene (cis)	10061-01-5		4.0 U		4.0 U	4.0	0.00%
1,3-Dichloropropene (trans)	10061-02-6		4.0 U		4.0 U	4.0	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2		4.0 U		4.0 U	4.0	0.00%
Ethylbenzene	100-41-4		4.0 U		4.0 U	4.0	0.00%
4-Ethyltoluene	622-96-8		4.0 U		4.0 U	4.0	0.00%
n-Heptane	142-82-5		4.0 U		4.0 U	4.0	0.00%
1,3-Hexachlorobutadiene	87-68-3		4.0 U		4.0 U	4.0	0.00%
n-Hexane	110-54-3		4.0 U		4.0 U	4.0	0.00%
Methylene chloride	75-09-2	6.1	D		4.0 U	4.0	NC
Methyl ethyl ketone	78-93-3		4.0 U		4.0 U	4.0	0.00%
Methyl isobutyl ketone	108-10-1		4.0 U		4.0 U	4.0	0.00%

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-01
Matrix: Air
Summa ID: 2162

Date Received: 3/15/19
Date Analyzed: 4/8/19, 4/8/19
Lab Data File : AA2031, AA2032
Dilution Factor: 10
Injection Volume: 50ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-01		Sample Dup E19-01821-21		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
		ppbv		ppbv		ppbv	
Methyl tert-butyl ether	1634-04-4	4.0	U	4.0	U	4.0	0.00%
Styrene	100-42-5	4.0	U	4.0	U	4.0	0.00%
Tert-butyl alcohol	75-65-0	4.0	U	4.0	U	4.0	0.00%
1,1,2,2-Tetrachloroethane	79-34-5	4.0	U	4.0	U	4.0	0.00%
Tetrachloroethene	127-18-4	4.0	U	4.0	U	4.0	0.00%
Toluene	108-88-3	4.0	U	4.0	U	4.0	0.00%
1,2,4-Trichlorobenzene	120-82-1	4.0	U	4.0	U	4.0	0.00%
1,1,1-Trichloroethane	71-55-6	4.0	U	4.0	U	4.0	0.00%
1,1,2-Trichloroethane	79-00-5	4.0	U	4.0	U	4.0	0.00%
Trichloroethene	79-01-6	4.0	U	4.0	U	4.0	0.00%
Trichlorofluoromethane	75-69-4	4.0	U	4.0	U	4.0	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	4.0	U	4.0	U	4.0	0.00%
1,2,4-Trimethylbenzene	95-63-6	4.0	U	4.0	U	4.0	0.00%
1,3,5-Trimethylbenzene	108-67-8	4.0	U	4.0	U	4.0	0.00%
2,2,4-Trimethylpentane	540-84-1	4.0	U	4.0	U	4.0	0.00%
Vinyl bromide	593-60-2	4.0	U	4.0	U	4.0	0.00%
Vinyl chloride	75-01-4	4.0	U	4.0	U	4.0	0.00%
Xylenes (m p)	179601-23-1	4.0	U	4.0	U	4.0	0.00%
Xylenes (o)	95-47-6	4.0	U	4.0	U	4.0	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Data Path : C:\DATA\04-08-19\
 Data File : aa2031.D
 Acq On : 8 Apr 2019 3:10 pm
 Operator : jjw
 Sample : E19-01821-01 x 10 dil
 Misc : 2162, 50cc
 ALS Vial : 11 Sample Multiplier: 1

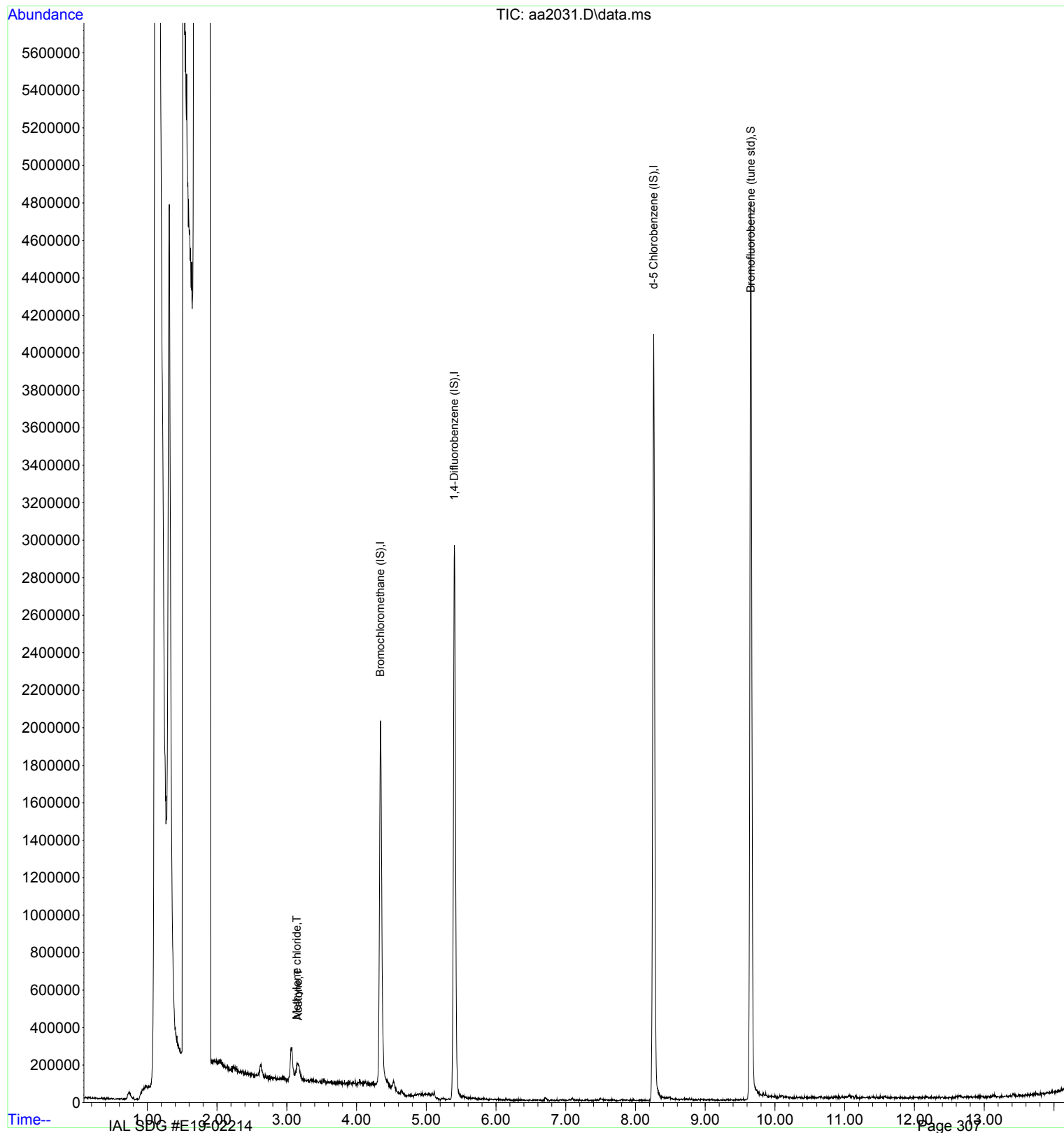
Quant Time: Apr 09 12:04:47 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

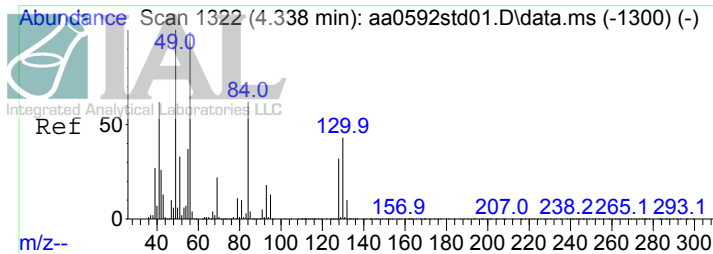
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	516345	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	1980151	10.00	ppbV #	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1759649	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1609052	10.48	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.143	49	51536	0.61	ppbV #	66
21) Acetone	3.165	43	101230	0.97	ppbV #	48

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

Data Path : C:\DATA\04-08-19\
Data File : aa2031.D
Acq On : 8 Apr 2019 3:10 pm
Operator : jjw
Sample : E19-01821-01 x 10 dil
Misc : 2162, 50cc
ALS Vial : 11 Sample Multiplier: 1

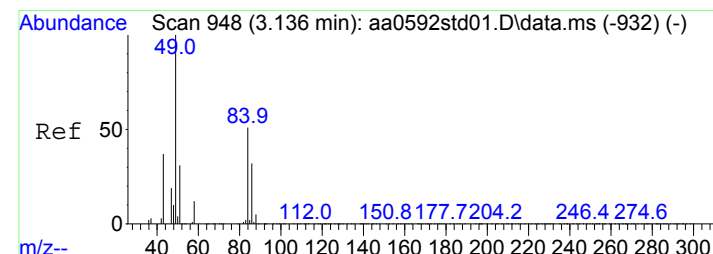
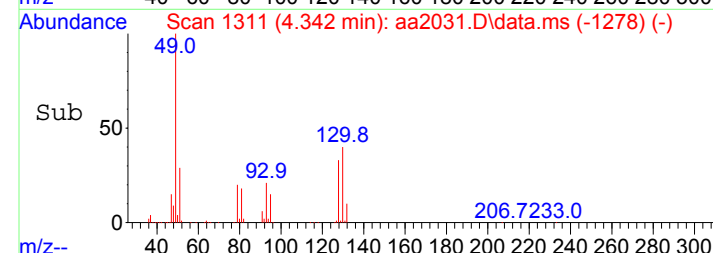
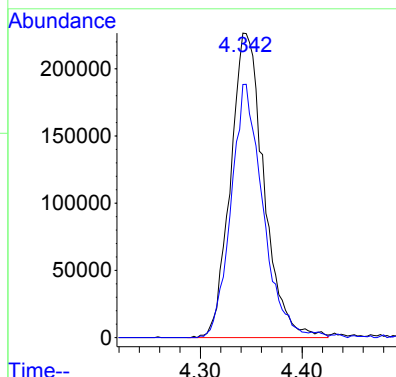
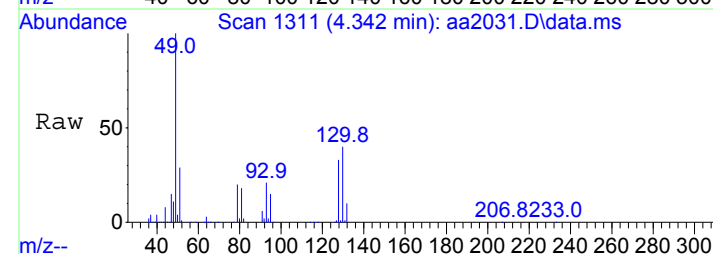
Quant Time: Apr 09 12:04:47 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





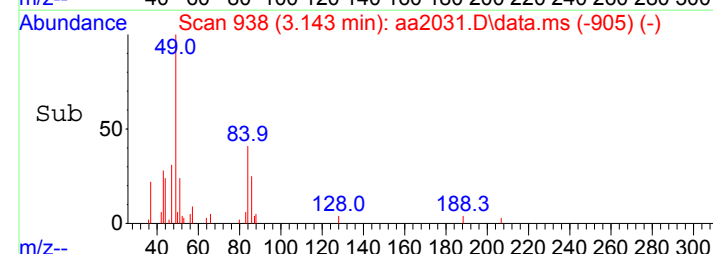
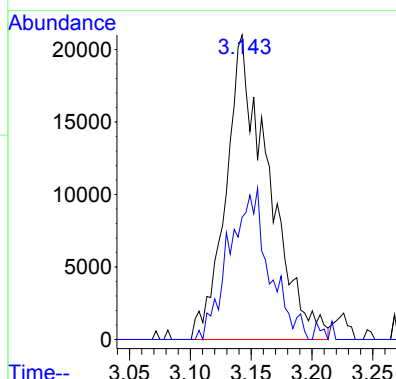
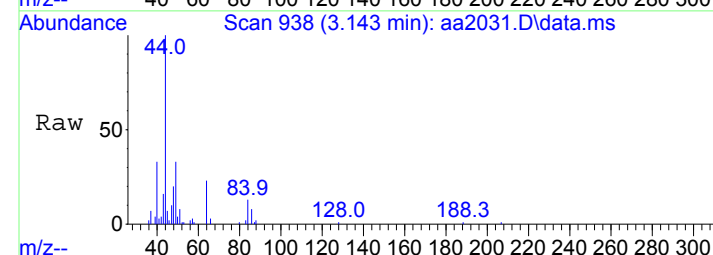
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.342 min Scan# 1311
Delta R.T. 0.007 min
Lab File: aa2031.D
Acq: 8 Apr 2019 3:10 pm

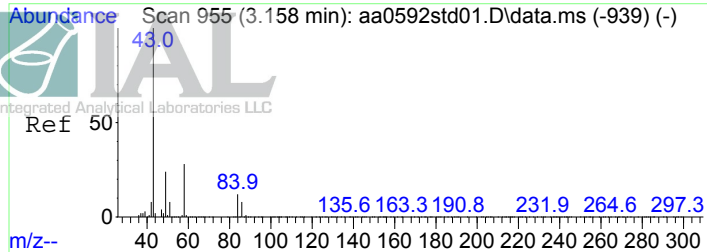
Tgt Ion: 130 Resp: 516345
Ion Ratio Lower Upper
130 100
128 79.4 62.6 94.0



#20
Methylene chloride
Concen: 0.61 ppbV
RT: 3.143 min Scan# 938
Delta R.T. 0.006 min
Lab File: aa2031.D
Acq: 8 Apr 2019 3:10 pm

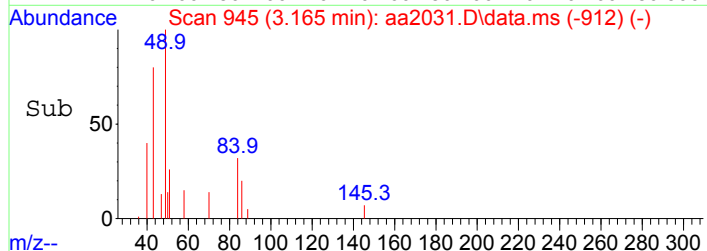
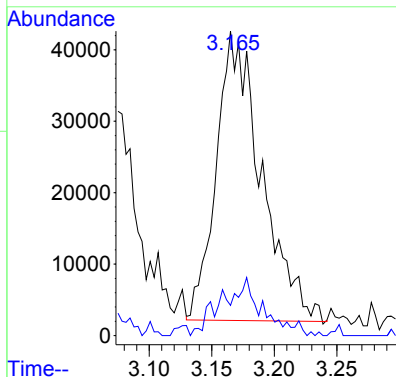
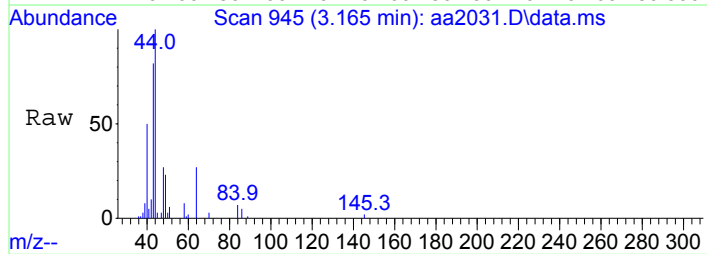
Tgt Ion: 49 Resp: 51536
Ion Ratio Lower Upper
49 100
84 44.6 58.4 87.6#





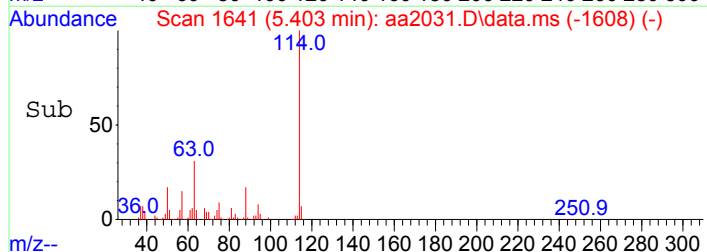
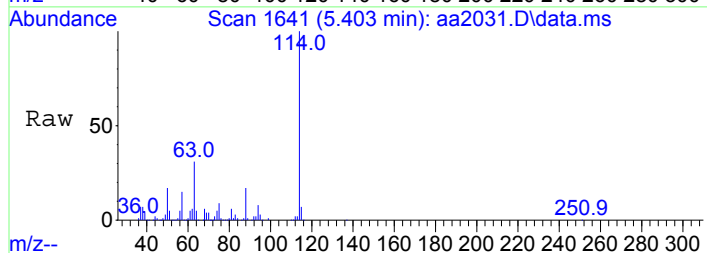
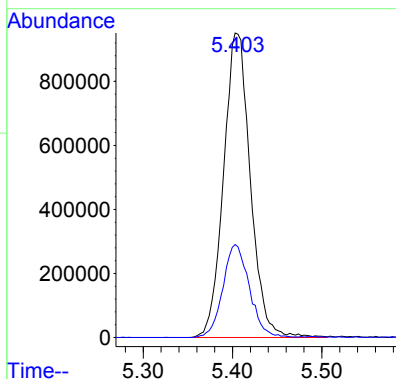
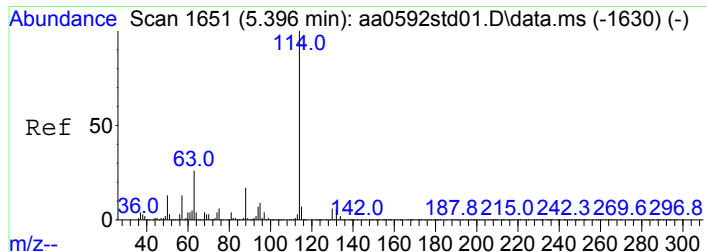
#21
Acetone
Concen: 0.97 ppbV
RT: 3.165 min Scan# 945
Delta R.T. 0.006 min
Lab File: aa2031.D
Acq: 8 Apr 2019 3:10 pm

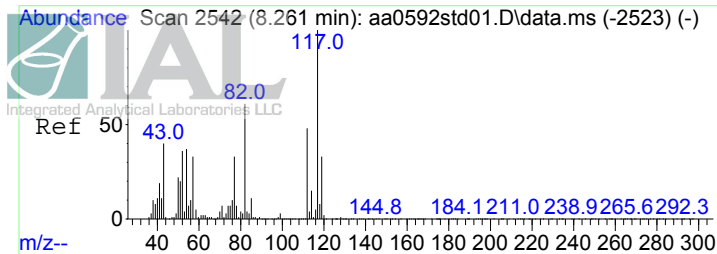
Tgt Ion: 43 Resp: 101230
Ion Ratio Lower Upper
43 100
58 3.8 26.4 39.6#



#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa2031.D
Acq: 8 Apr 2019 3:10 pm

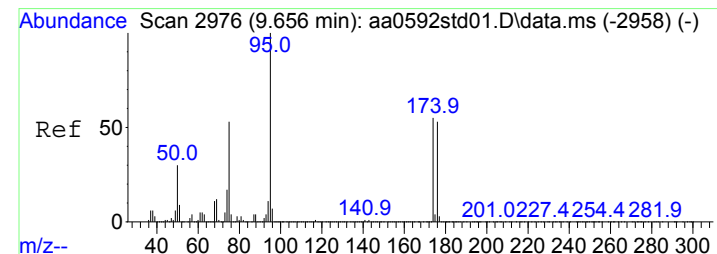
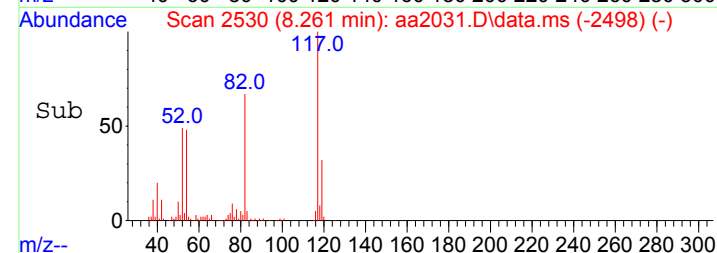
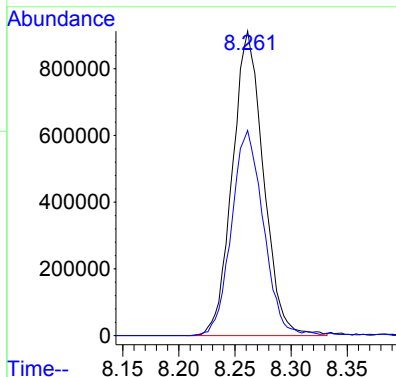
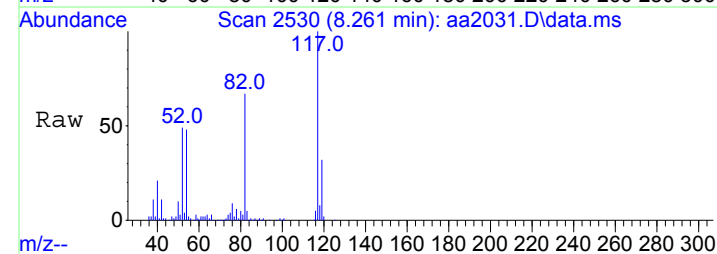
Tgt Ion: 114 Resp: 1980151
Ion Ratio Lower Upper
114 100
63 30.3 20.0 30.0#





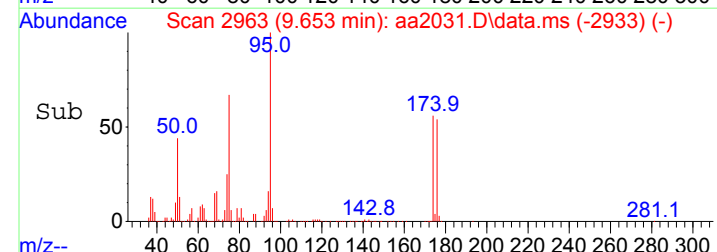
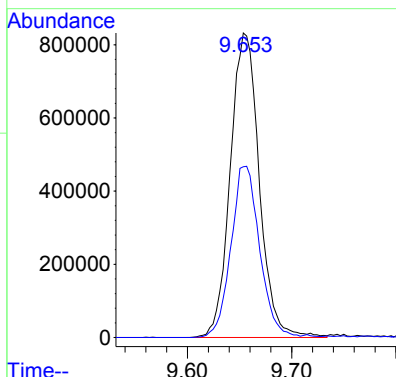
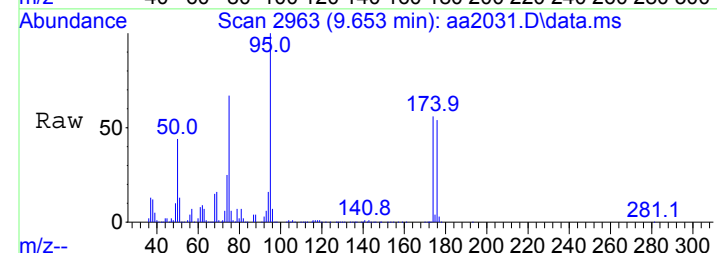
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.261 min Scan# 2530
Delta R.T. 0.003 min
Lab File: aa2031.D
Acq: 8 Apr 2019 3:10 pm

Tgt Ion: 117 Resp: 1759649
Ion Ratio Lower Upper
117 100
82 69.1 48.8 73.2



#64
Bromofluorobenzene (tune std)
Concen: 10.48 ppbV
RT: 9.653 min Scan# 2963
Delta R.T. -0.003 min
Lab File: aa2031.D
Acq: 8 Apr 2019 3:10 pm

Tgt Ion: 95 Resp: 1609052
Ion Ratio Lower Upper
95 100
174 55.6 61.5 92.3#



Data Path : C:\DATA\04-08-19\
 Data File : aa2032.D
 Acq On : 8 Apr 2019 3:31 pm
 Operator : jjw
 Sample : E19-01821-21 x 10 dil
 Misc : dup of E19-01821-01 x 10 dil, can # 2162
 ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 09 12:06:14 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

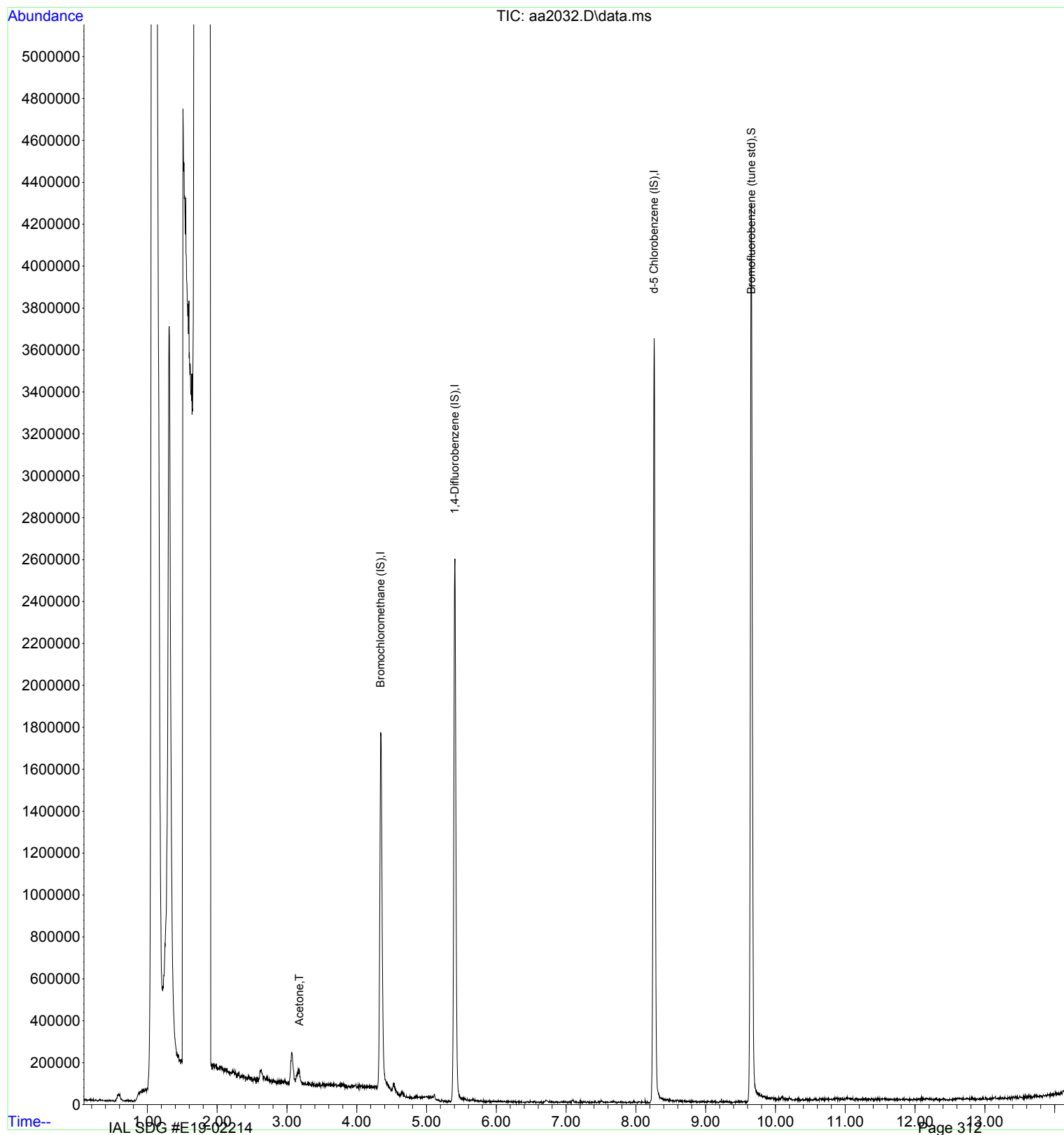
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

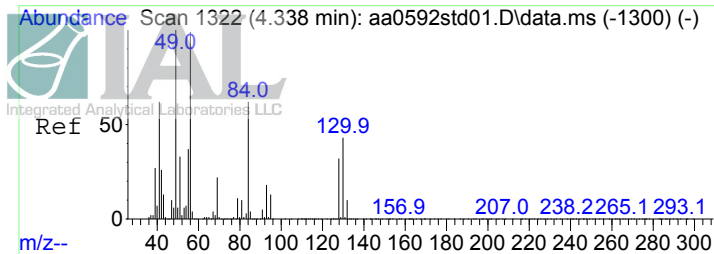
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	446690	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.406	114	1670530	10.00	ppbV #	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1534009	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1403771	10.48	ppbV	0.000
Target Compounds						
21) Acetone	3.178	43	93592	1.03	ppbV #	Qvalue 71

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

Data Path : C:\DATA\04-08-19\
Data File : aa2032.D
Acq On : 8 Apr 2019 3:31 pm
Operator : jjw
Sample : E19-01821-21 x 10 dil
Misc : dup of E19-01821-01 x 10 dil, can # 2162
ALS Vial : 12 Sample Multiplier: 1

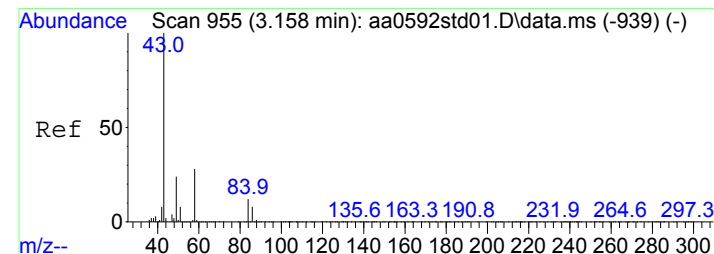
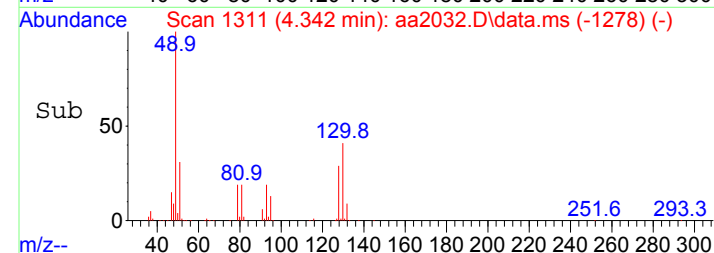
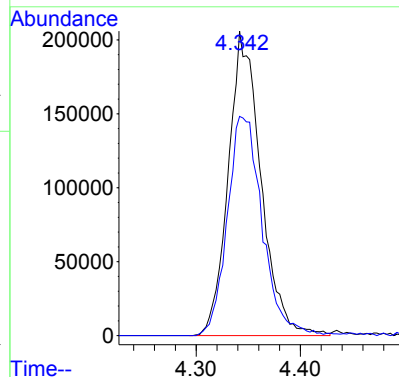
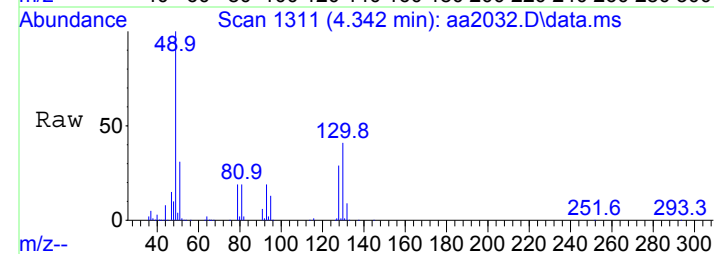
Quant Time: Apr 09 12:06:14 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





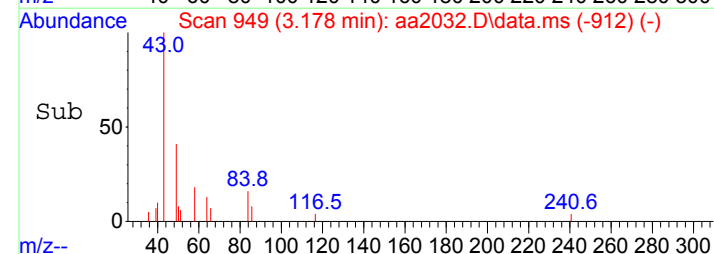
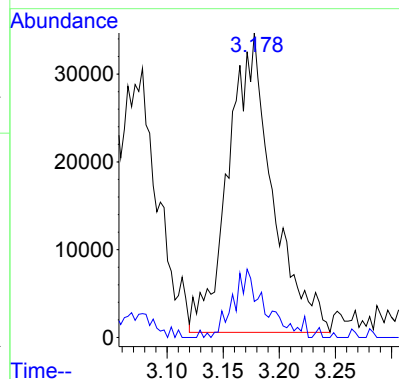
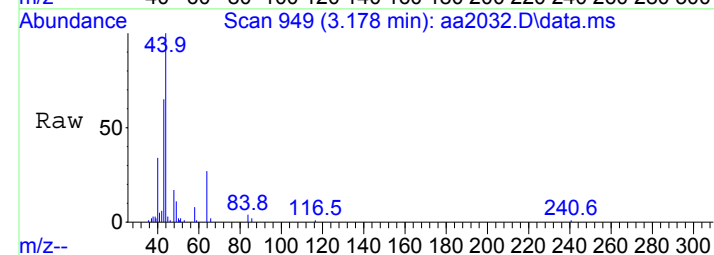
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.342 min Scan# 1311
Delta R.T. 0.007 min
Lab File: aa2032.D
Acq: 8 Apr 2019 3:31 pm

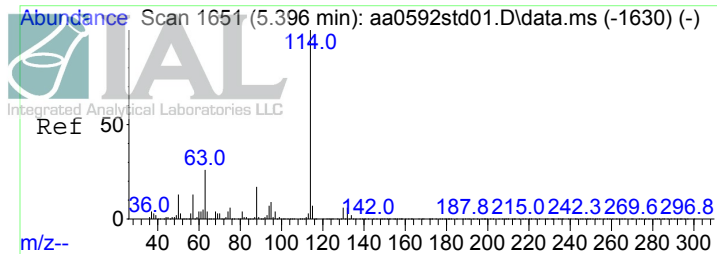
Tgt Ion: 130 Resp: 446690
Ion Ratio Lower Upper
130 100
128 77.4 62.6 94.0



#21
Acetone
Concen: 1.03 ppbV
RT: 3.178 min Scan# 949
Delta R.T. 0.019 min
Lab File: aa2032.D
Acq: 8 Apr 2019 3:31 pm

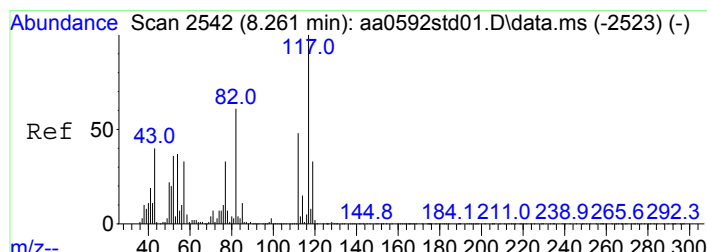
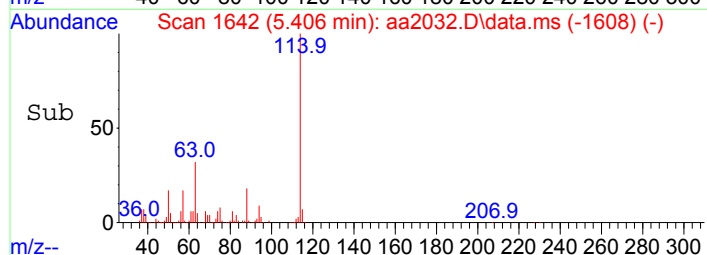
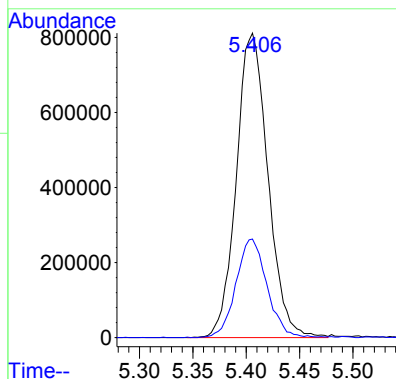
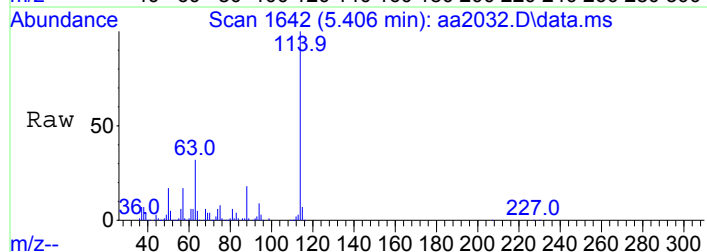
Tgt Ion: 43 Resp: 93592
Ion Ratio Lower Upper
43 100
58 16.3 26.4 39.6#





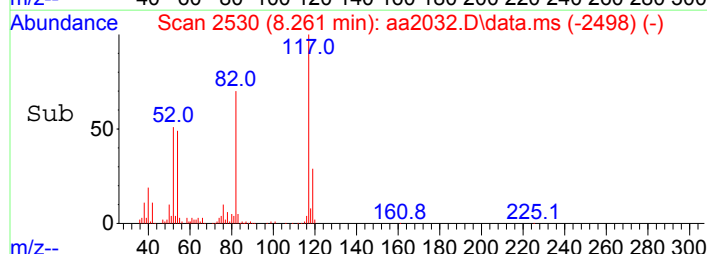
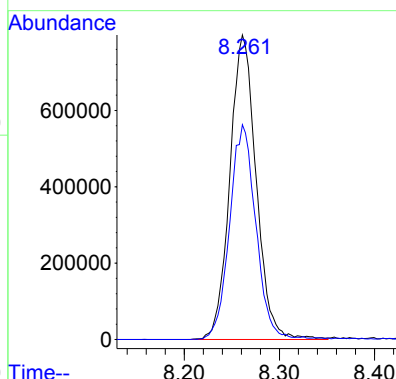
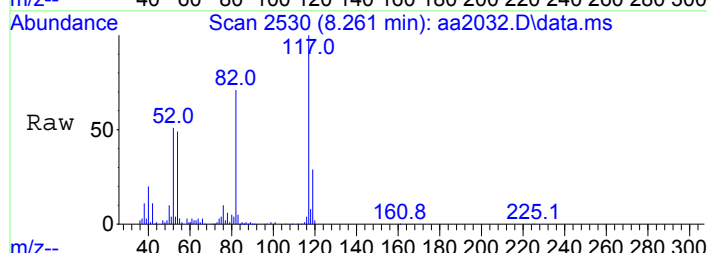
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.406 min Scan# 1642
Delta R.T. 0.009 min
Lab File: aa2032.D
Acq: 8 Apr 2019 3:31 pm

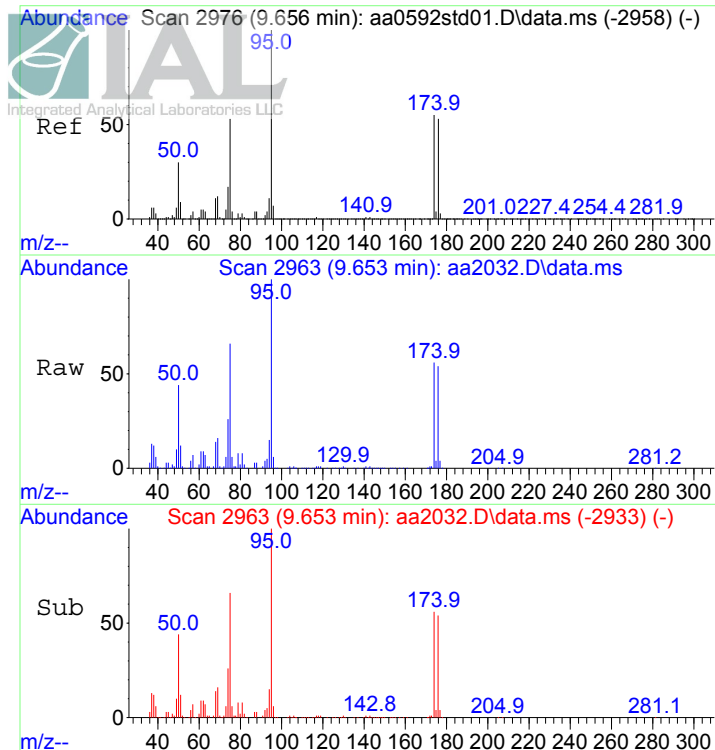
Tgt Ion:114 Resp: 1670530
Ion Ratio Lower Upper
114 100
63 31.9 20.0 30.0#



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.261 min Scan# 2530
Delta R.T. 0.003 min
Lab File: aa2032.D
Acq: 8 Apr 2019 3:31 pm

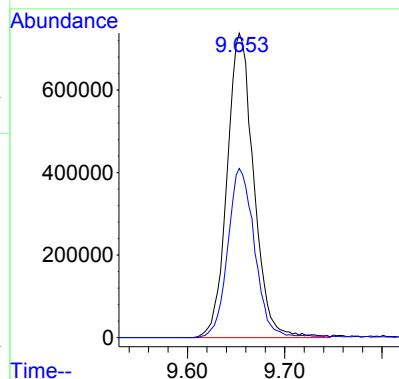
Tgt Ion:117 Resp: 1534009
Ion Ratio Lower Upper
117 100
82 70.9 48.8 73.2





#64
 Bromofluorobenzene (tune std)
 Concen: 10.48 ppbV
 RT: 9.653 min Scan# 2963
 Delta R.T. -0.003 min
 Lab File: aa2032.D
 Acq: 8 Apr 2019 3:31 pm

Tgt Ion	Resp	Lower	Upper
95	100		
174	56.4	61.5	92.3#



Integrated Analytical Laboratories
GC/MS Run Log

Instrument ID: Agilent 7890A / 5975C
Column: Restek RTX-1 SN 992567

Target Directory: D:\Agilent GCMS\

Date of Analysis: 4/4-5, 8/2019
Date of Initial Calibration: 3/13/2019
SDG : E19-02214

File	Laboratory Sample ID	QC Check	Dilution Factor	Can	Analyst	Injection Volume (cc)	Comments	Make-up Air		Acquisition		Room		TO-15 Standard	
								Added to canister (cc)	Added for dilution (cc)	Date	Time	Temp	BP "Hg	Working ID	Vendor ID (Lot)
aa1521bfb	BFB	✓		ALM029426	JJW	50				3/13/2019	9:57	74	30.50		403-402623
aa1522std01	40 ppbv Std	✓		CC483586	JJW	200								3/13/2019	160-401140945-1
aa1523std02	20 ppbv Std	✓		CC483586	JJW	100								3/13/2019	160-401140945-1
aa1524std03	10 ppbv Std	✓		CC483586	JJW	50								3/13/2019	160-401140945-1
aa1525std04	2 ppbv Std	✓		CC483586	JJW	10								3/13/2019	160-401140945-1
aa1526std05	0.2 ppbv Std	✓		CC483586	JJW	1								3/13/2019	160-401140945-1
aa1527icvss	10 ppbv ICVSS	✓		CC483422	JJW	50								3/13/2019	160-401186845-1

Analyst Name: Jeff Schmitt

Signature: 

IAL SDG #E19-02214

Supervisor Name: Lauren Jenkins

Signature: 

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Integrated Analytical Laboratories
GC/MS Run Log

Instrument ID: Agilent 7890A / 5975C
Column: Restek RTX-1 SN 992567

Target Directory: D:\Agilent GCMS\

Date of Analysis: 4/4-5, 8/2019
Date of Initial Calibration: 3/13/2019
SDG : E19-02214

File	Laboratory Sample ID	QC Check	Dilution Factor	Can	Analyst	Injection Volume (cc)	Comments	Make-up Air		Acquisition		Room		TO-15 Standard	
								Added to canister (cc)	Added for dilution (cc)	Date	Time	Temp	BP "Hg	Working ID	Vendor ID (Lot)
aa1561bfb	BFB	✓		ALM029426	JLS	50				3/15/2019	7:56	74	29.97		403-402623
aa1562dcvs	10 ppbv DCVS	✓		AAL071156	JLS	50								3/13/2019	160-401140945-1
aa1563lcs	10 ppbv LCS	✓		CC483422	JLS	50								3/13/2019	160-400895415-1
aa1564blk	Method Blank	✓		1127	JLS	500									
aa1565rllcs	0.2 ppbv RLLCS	✓		AAL071156	JLS	1								3/13/2019	160-401140945-1
aa1566	3015A	✓			JLS	500									
aa1567	E19-01604-01 x 500	✓	500	1522	JLS	1									
aa1568	E19-01604-03 x 50	✓	50	1408	JLS	10									
aa1569	E19-01604-03 x 10	✓	10	1408	JLS	50									
aa1570	E19-01604-04 x 10000	✓	10000	1604 3814	JLS	5									
aa1571	E19-01604-24 x 10000	✓	10000	04-04 x 10000	JLS	5									
aa1572	E19-01604-04 x 1000	✓	1000	1604 3814	JLS	50	not used								
aa1573	E19-01604-05 x 10	✓	10	1409	JLS	50									
aa1574	E19-01604-06 x 10	✓	10	1591	JLS	50									
aa1575	blk	✓			JLS	500									
aa1576	E19-01613-01 x 50	✓	50	1070	JLS	10									
aa1577	E19-01613-02 x 500	✓	500	1515	JLS	1									
aa1578	E19-01694-01	✓		5075	JLS	500									
aa1579	E19-01694-02	✓		3059	JLS	500									
aa1580	blk	✓			JLS	500									
aa1581ccvcs	10 ppbv CCCVS	✓		CC483586	JLS	50				3/15/2019	20:05			3/13/2019	160-401140945-1

Analyst Name: Jeff Schmitt

Signature: 

IAL SDG #E19-02214

Supervisor Name: Lauren Jenkins

Signature: 

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Integrated Analytical Laboratories
GC/MS Run Log

Instrument ID: Agilent 7890A / 5975C
Column: Restek RTX-1 SN 992567

Target Directory: D:\Agilent GCMS\

Date of Analysis: 4/4-5, 8/2019
Date of Initial Calibration: 3/13/2019
SDG : E19-02214

File	Laboratory Sample ID	QC Check	Dilution Factor	Can	Analyst	Injection Volume (cc)	Comments	Make-up Air		Acquisition		Room		TO-15 Standard	
								Added to canister (cc)	Added for dilution (cc)	Date	Time	Temp	BP "Hg	Working ID	Vendor ID (Lot)
aa1961bfb	BFB	✓		ALM029426	JLS	50				4/4/2019	8:21	74	30.38		403-402623
aa1962dcvs	10 ppbv DCVS	✓		AAL071156	JLS	50								3/13/2019	160-401140945-1
aa1963lcs	10 ppbv LCS	✓		CC483422	JLS	50								3/13/2019	160-400895415-1
aa1964blk	Method Blank	✓		1127	JLS	500									
aa1965rlcs	0.2 ppbv RLLCS	✓		AAL071156	JLS	1								3/13/2019	160-401140945-1
aa1966	3125	✓			JLS	500									
aa1967	3042	✓			JLS	500									
aa1968	E19-02188-07	✓		3038A	JLS	500									
aa1969	E19-02188-08 x 10	✓	10	1769	JLS	50									
aa1970	E19-02188-28 x 10	✓	10	02188-08 x 10	JLS	50									
aa1971	E19-02188-09 x 10	✓	10	1601	JLS	50									
aa1972	E19-02188-10 x 10	✓	10	1366	JLS	50									
aa1973	E19-01795-01	✓		2882	JLS	500									
aa1974	E19-02383-01	✓		2164	JLS	500									
aa1975	E19-02838-02	✓		3811	JLS	500									
aa1976	blk	✓			JLS	500									
aa1977	E19-02214-01	✓		3045A	JLS	500									
aa1978	E19-02214-02	✓		3015A	JLS	500									
aa1979	E19-02214-03	✓		3011	JLS	500									
aa1980	E19-02214-04	✓		3426	JLS	500									
aa1981	E19-02214-05	✓		5092	JLS	500									
aa1982	E19-02214-06	✓		3006	JLS	500									
aa1983	E19-02214-07	✓		2095	JLS	500									
aa1984	blk	✓			JLS	500									
aa1985cccvcs	10 ppbv CCCVS	✓		CC483586	JLS	50				4/5/2019	8:20			3/13/2019	160-401140945-1

Analyst Name: Jeff Schmitt

Signature: 

IAL SDG #E19-02214

Supervisor Name: Lauren Jenkins

Signature: 

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Integrated Analytical Laboratories
GC/MS Run Log

Instrument ID: Agilent 7890A / 5975C
Column: Restek RTX-1 SN 992567

Target Directory: D:\Agilent GCMS\

Date of Analysis: 4/4-5, 8/2019
Date of Initial Calibration: 3/13/2019
SDG : E19-02214

File	Laboratory Sample ID	QC Check	Dilution Factor	Can	Analyst	Injection Volume (cc)	Comments	Make-up Air		Acquisition		Room		TO-15 Standard	
								Added to canister (cc)	Added for dilution (cc)	Date	Time	Temp	BP "Hg	Working ID	Vendor ID (Lot)
aa1991bfb	BFB	✓		ALM029426	JLS	50				4/5/2019	8:41	73	30.43		403-402623
aa1992dcvs	10 ppbv DCVS	✓		AAL071156	JLS	50								3/13/2019	160-401140945-1
aa1993lcs	10 ppbv LCS	✓		CC483422	JLS	50								3/13/2019	160-400895415-1
aa1994blk	Method Blank	✓		1127	JLS	500									
aa1995rllcs	0.2 ppbv RLLCS	✓		AAL071156	JLS	1	not used							3/13/2019	160-401140945-1
aa1996	3042	✓			JLS	500									
aa1997	3012	✓			JLS	500									
aa1998	1559	✓			JLS	50									
aa1999	E19-02214-01 x 10	✓	10	3045A	JLS	50									
aa2000	E19-02214-21 x 10	✓	10	02214-01 x 10,	JLS	50									
aa2001	E19-02214-02 x 10	✓	10	3015A	JLS	50									
aa2002	E19-02214-03 x 10	✓	10	3011	JLS	50									
aa2003	E19-02214-04 x 10	✓	10	3426	JLS	50									
aa2004	E19-02214-05	✓		5092	JLS	500									
aa2005	E19-02214-06 x 10	✓	10	3006	JLS	50									
aa2006	E19-02214-07 x 10	✓	10	2095	JLS	50									
aa2007	blk	✓			JLS	500									
aa2008	E19-02229-01	✓		5099	JLS	500									
aa2009	E19-02229-02	✓		4853	JLS	500									
aa2010	E19-02229-03	✓		2893	JLS	500	not used								
aa2011	blk	✓			JLS	500									
aa2012ccvcs	10 ppbv CCCVS	✓		CC483586	JLS	50	not used			4/5/2019	19:57			3/13/2019	160-401140945-1

Analyst Name: Jeff Schmitt

Signature: *Jeff Schmitt*

IAL SDG #E19-02214

Supervisor Name: Lauren Jenkins

Signature: *Lauren Jenkins*

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Integrated Analytical Laboratories
GC/MS Run Log

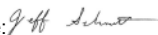
Instrument ID: Agilent 7890A / 5975C
Column: Restek RTX-1 SN 992567

Target Directory: D:\Agilent GCMS\

Date of Analysis: 4/4-5, 8/2019
Date of Initial Calibration: 3/13/2019
SDG : E19-02214

File	Laboratory Sample ID	QC Check	Dilution Factor	Can	Analyst	Injection Volume (cc)	Comments	Make-up Air		Acquisition		Room		TO-15 Standard	
								Added to canister (cc)	Added for dilution (cc)	Date	Time	Temp	BP "Hg	Working ID	Vendor ID (Lot)
aa2021bfb	BFB	✓		ALM029426	JJW	50				4/8/2019	10:03	75	29.78		403-402623
aa2022dcvs	10 ppbv DCVS	✓		AAL071156	JJW	50								3/13/2019	160-401140945-1
aa2023lcs	10 ppbv LCS	✓		CC483422	JJW	50								3/13/2019	160-400895415-1
aa2024blk	Method Blank	✓		1127	JJW	500									
aa2025rllcs	0.2 ppbv RLLCS	✓		AAL071156	JJW	1	not used							3/13/2019	160-401140945-1
aa2026	E19-02214-04 x 50	✓	50	3426	JJW	10	not used								
aa2027	E19-02229-03	✓		2893	JJW	500									
aa2028	E19-02229-01 x 10	✓	10	5099	JJW	50									
aa2029	E19-02229-02 x 10	✓	10	4853	JJW	50									
aa2030	E19-02214-04 x 50	✓	50	3426	JJW	10									
aa2031	E19-01821-01 x 10	✓	10	2162	JJW	50									
aa2032	E19-01821-21 x 10	✓	10	01821-01 x 10	JJW	50									
aa2033	E19-01821-02 x 10	✓	10	3032A	JJW	50									
aa2034	E19-02274-01 x 10	✓	10	2160	JJW	50									
aa2035	E19-02297-01 x 10	✓	10	5095	JJW	50									
aa2036	E19-02344-01 x 10	✓	10	3036	JJW	50									
aa2037	E19-02344-02 x 10	✓	10	2031	JJW	50									
aa2038	E19-02344-03 x 10	✓	10	5080	JJW	50									
aa2039	E19-02344-04 x 10	✓	10	2156	JJW	50									
aa2040	E19-02344-05 x 10	✓	10	3808	JJW	50									
aa2041	E19-02344-06 x 10	✓	10	2891	JJW	50									
aa2042	blk	✓			JJW	500									
aa2043ccvcs	10 ppbv CCCVS	✓		CC483586	JJW	50	not used			4/8/2019	19:32			3/13/2019	160-401140945-1

Analyst Name: Jeff Schmitt

Signature: 

IAL SDG #E19-02214

Supervisor Name: Lauren Jenkins

Signature: 

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Integrated Analytical Labs
273 Franklin Road
Randolph, NJ 07869

External Chain of Custody Record/
Field Test Data Sheet
USEPA Method TO-15

Contact Us: 973-361-4252
Fax: 973-366-5613
Web: www.ialonline.com

Client Contact Information				Project Information				Carrier (check one): ☐ IAL Courier ☐ Client Courier ☐ FedEx/UPS				pg <u>1</u> of <u>2</u>												
Company: <u>EFI Global</u>				Project Name: <u>Lofts at Globe Mill</u>				Invoice Information				Analysis		Report		Matrix								
Address: <u>11 Commerce Way</u>				Project Location (State): <u>NY</u>				Attn: <u>Ewa Gut</u>																
Phone: <u>732-224-3100</u>				Project Manager: <u>Ewa Gut</u>				Address:																
Fax: <u>732-629-7934</u>				PM Signature: <u>E. Gut</u>																				
Report to: <u>Ewa Gut</u>				PM E-Mail: <u>ewa.gut@efiglobal.com</u>				PO #: <u>011.00433</u>																
Sampler: <u>J. K. Miller</u>				Quote #:																				
Analysis Turnaround Time - IF NO TAT IS SPECIFIED, 2 WEEK TAT IS ASSUMED								Barometric Pressure																
IAL Standard: 2 weeks (10 business days)																								
Rush (**pre-approved by lab):																								
		24hr**	48hr**	72hr**	96hr**	1wk**		Start		Stop														
Sample Identification	Start DATE & TIME (24hr Clock)	End DATE & TIME (24hr Clock)	Starting Vacuum ("Hg)	Ending Vacuum ("Hg)	Starting Temp. ("F)	Ending Temp. ("F)	Outgoing Vacuum - Lab ("Hg)	Incoming Vacuum - Lab ("Hg)	Flow Regulator ID	Canister ID	Canister Size (1L or 6L)	Flow Controller Readout (cc/min)	EPA TO - 15	NJDEP LLTO-15 (includes 30 TICs)	Library Search (10, 20, or 30 TICs)	Other (Explain in Comments)	Regulatory/ NY Cat B / Full (NJ Required)	Reduced / NY Cat A Data Package	Results Only	Indoor Air	Ambient / Outdoor Air	Sub Slab / Soil Gas / Near Slab (Circle One)	Stack Emission / SVE System	High Concentrations Expected
1 NS-3	3-28-19 10:51	3-28-19 11:46	-30	-1	39	39	-29.0	-1.0	7337354	30453 0314190	6	199.2	X				X							
2 NS-2	3-28-19 11:20	3-28-19 12:14	-29	0	39	40	-29.0	0.0	7337511	30159 0314190	6	202.3	X				X							
3 NS-1	3-28-19 11:35	3-28-19 12:40	-30	-1	39	45	-29.0	-1.0	1019419-5	3011 0314190	6	199.9	X				X							
4 NS-5	3-28-19 12:05	3-28-19 12:45	-30	0	40	47	-29.0	0.0	7340609	3426 0314190	6	203.6	X				X							
5 ASB2-1	3-28-19 12:39	3-28-19 3:15	-30	0	48	48	-29.0	0.0	730378	5232 0314190	6	201.9	X				X							
6 SS-1	3-28-19 15:09	3-28-19 15:42	-30	0	55	55	-29.0	0.0	7309955	3006 0314190	6	202.7	X				X							
Comments/ Special Analysis Instructions / QC Requirements:													Note: Hold or contingent samples may be designated by writing an "H" or "C" in the appropriate analysis box.											
03191901 031519 01TO06 3015A													ALL FIELDS IN RED ARE REQUIRED											
Shipping Information / Canister Preparation (for laboratory use only)													Laboratory Canister Certification											
Individual Preparing Canisters / Title: P. Jenkins, J. Walukiewicz / Air Department Sample Custodians													GC/MS Analyst Signature											
Lab Affixed Seal Number(s): IAL-2019 0148, - 0149													IAL SDG#: 02214											
Date/Time Shipping Container Sealed: 3-26-19 1530																								
External Chain of Custody																								
Relinquished			Received			Date / Time			Reason for Change of External Custody															
<u>Ewa Gut</u>			<u>J. Walukiewicz</u>			3-26-19 1530			shipment from laboratory to client															
						3-29-19 851			REC'D @ AIR LAB															
						03-24-19 0915																		
Name/Title Resealing Shipping Container Name:													NJDEP Affixed Seal Number:											
Date/Time Sample Shipping Container Resealed:													Individual Opening Sample Shipping Container: Padraic Jenkins / Joseph Walukiewicz											
Date/Time Sample Shipping Container Opened:													Date/Time Internal Chain of Custody Initiated:											



Integrated Analytical Labs
273 Franklin Road
Randolph, NJ 07869

External Chain of Custody Record/
Field Test Data Sheet
USEPA Method TO-15

Contact Us: 973-361-4252
Fax: 973-366-5613
Web: www.lalonline.com

Client Contact Information			Project Information					Carrier (check one): ☐ IAL Courier ☐ Client Courier ☐ FedEx/UPS				pg 2 of 2												
Company: <u>EFI Global</u>			Project Name: <u>Lofts at Globe Min</u>					Invoice Information				Analysis		Report		Matrix								
Address: <u>11 Commerce Way</u>			Project Location (State): <u>NY</u>					Attn: <u>Ewa Gut</u>																
Phone: <u>732-329-3900</u>			Project Manager: <u>Ewa Gut</u>					Address:																
Fax: <u>732-629-7934</u>			PM Signature: <u>E. Gut</u>					BO #: <u>011. 00433</u>																
Report to: <u>Ewa Gut</u>			PM E-Mail: <u>ewa.gut@efiglobal.com</u>					Quote #:																
Sampler: <u>T. Kania</u>																								
Analysis Turnaround Time - IF NO TAT IS SPECIFIED, 2 WEEK TAT IS ASSUMED										Barometric Pressure														
IAL Standard: 2 weeks (10 business days)																								
Rush (**pre-approved by lab):																								
24hr** 48hr** 72hr** 96hr** 1wk**																								
Sample Identification	Start DATE & TIME (24hr Clock)	End DATE & TIME (24hr Clock)	Starting Vacuum ("Hg)	Ending Vacuum ("Hg)	Starting Temp. ("F)	Ending Temp. ("F)	Outgoing Vacuum - Lab ("Hg)	Incoming Vacuum - Lab ("Hg)	Flow Regulator ID	Canister ID	Canister Size (1L or 6L)	Flow Controller Readout (cc/min)	EPA TO-15	NJDEP LL TO-15 (includes 30 TICs)	Library Search (10, 20, or 30 TICs)	Other (Explain in Comments)	Regulatory NY Cat B / Full (NJ Required)	Reduced / NY Cat A Data Package	Results Only	Indoor Air	Ambient / Outdoor Air	Sub Slab / Soil Gas / Near Slab (Circle One)	Stack Emission / SVE System	High Concentrations Expected
55-2	3-28-19 15:28	3-28-19 16:00	-28	0	55	55	-29.0	0.0	AD13950-4	2045	6	200.2	X				X							
													X				X							
													X				X							
													X				X							
													X				X							
													X				X							
													X				X							

Comments/ Special Analysis Instructions / QC Requirements:

03141901

Note: Hold or contingent samples may be designated by writing an "H" or "C" in the appropriate analysis box.

ALL FIELDS IN RED ARE REQUIRED

Shipping Information / Canister Preparation (for laboratory use only)		Laboratory Canister Certification	
Individual Preparing Canisters / Title: <u>P. Jenkins, J. Walukiewicz / Air Department Sample Custodians</u>		GC/MS Analyst Signature	
Lab Affixed Seal Number(s): <u>IAL - 2019 0148, - 0149</u>		<u>[Signature]</u>	
Date/Time Shipping Container Sealed: <u>3-26-19 1530</u>		IAL SDG#: <u>02214</u>	

External Chain of Custody			
Relinquished	Received	Date / Time	Reason for Change of External Custody
<u>[Signature]</u>	<u>[Signature]</u>	<u>3-26-19 1530</u>	shipment from laboratory to client
	<u>[Signature]</u>	<u>3-29-19 851</u>	<u>REC'D @ AIR LAB</u>
	<u>[Signature]</u>	<u>03-29-19 0915</u>	
Name/Title Resealing Shipping Container Name:		NJDEP Affixed Seal Number:	
Date/Time Sample Shipping Container Resealed:		Individual Opening Sample Shipping Container: <u>Padraic Jenkins / Joseph Walukiewicz</u>	
Date/Time Sample Shipping Container Opened:		Date/Time Internal Chain of Custody Initiated:	

Example Calculation (EPA TO-15)

$$\frac{\text{Area of Sample}}{\text{Area of Internal Standard}} \times \frac{\text{Concentration of Internal Standard (10 ppbv)}}{\text{Response Factor}} = \text{Concentration of Sample (ppbv)}$$

Conversion from ppbv to $\mu\text{g}/\text{m}^3$

$$\frac{\text{Concentration of Compound (ppbv)}}{24.45} \times \text{Molecular Weight of Compound} = \text{Concentration of Compound } (\mu\text{g}/\text{m}^3)$$

Clean Canister Certification Report

Lab Sample Name: Clean Canister, Batch Master 3015A
Field Sample Name: Canister 3015A
Sample Volume: 500ml

Data File: AA1566
Date Analyzed: 3/15/2019
Matrix: Air

Canisters associated with this run: 3015A (used for E19-02214-02), 2095 (used for E19-02214-07), 3006 (used for E19-02214-06), 3011 (used for E19-02214-03), 3026A, 3045A (used for E19-02214-01), 3426 (used for E19-02214-04), 5092 (used for E19-02214-05)

Runs with this Clean Canister Certification:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 07:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 08:56
10 PPBV LCS [AA1563LCS]	03/15/2019 09:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
CLEAN CAN CERTIFICATION, BATCH MASTER 3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

This canister has been certified clean, all compounds are below 0.2 ppbv.

Compound	CAS #	RL (ppbv)	Calculated Amount (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.20	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND

Clean Canister Certification Report

Lab Sample Name: Clean Canister, Batch Master 3015A
Field Sample Name: Canister 3015A
Sample Volume: 500ml

Data File: AA1566
Date Analyzed: 3/15/2019
Matrix: Air

Canisters associated with this run: 3015A (used for E19-02214-02), 2095 (used for E19-02214-07), 3006 (used for E19-02214-06), 3011 (used for E19-02214-03), 3026A, 3045A (used for E19-02214-01), 3426 (used for E19-02214-04), 5092 (used for E19-02214-05)

Runs with this Clean Canister Certification:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1561BFB]	03/15/2019 07:56
10 PPBV DCVS [AA1562DCVS]	03/15/2019 08:56
10 PPBV LCS [AA1563LCS]	03/15/2019 09:17
METHOD BLANK [AA1564BLK]	03/15/2019 10:03
02 PPBV RLLCS [AA1565RLLCS]	03/15/2019 10:28
CLEAN CAN CERTIFICATION, BATCH MASTER 3015A [AA1566]	03/15/2019 11:29
10 PPBV CCCVS [AA1581CCCVS]	03/15/2019 20:05

This canister has been certified clean, all compounds are below 0.2 ppbv.

Compound	CAS #	RL (ppbv)	Calculated Amount (ppbv)
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.40	ND
Xylenes (o)	95-47-6	0.20	ND

Data Path : C:\DATA\03-15-19\
 Data File : aa1566.D
 Acq On : 15 Mar 2019 11:29 am
 Operator : jls
 Sample : 3015A
 Misc : 2095, 3006, 3011, 3026A, 3045A, 3426, 5092
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 15 11:44:51 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.335	130	421080	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	1652705	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1427067	10.00	ppbV	0.000

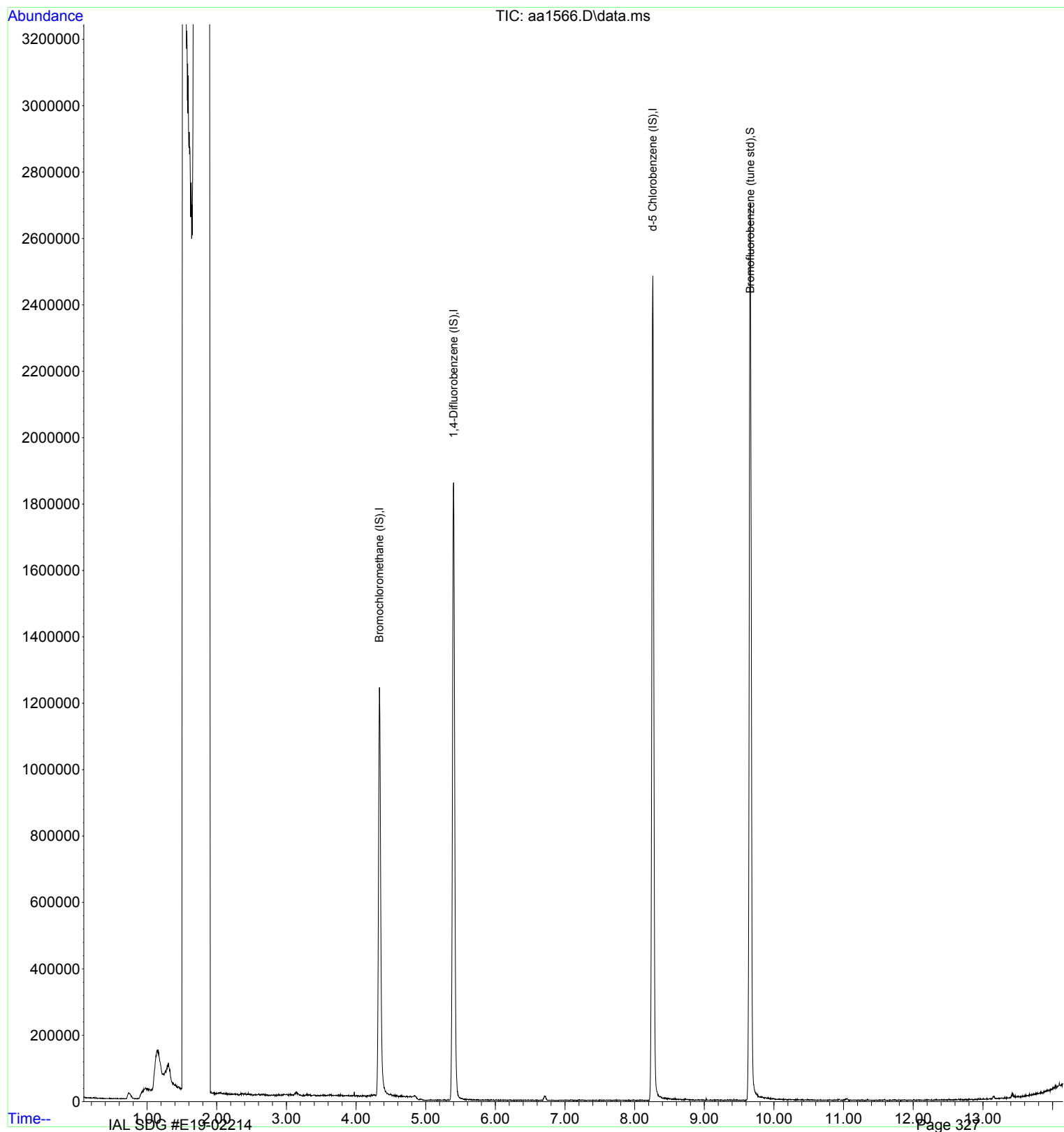
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	1171281	9.40	ppbV	0.000

Target Compounds	Qvalue

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

Data Path : C:\DATA\03-15-19\
Data File : aa1566.D
Acq On : 15 Mar 2019 11:29 am
Operator : jls
Sample : 3015A
Misc : 2095, 3006, 3011, 3026A, 3045A, 3426, 5092
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 15 11:44:51 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration



LAST PAGE OF DOCUMENT

EPA TO-15 DATA PACKAGE

ANALYTICAL DATA PACKAGE FOR THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION ALBANY NEW YORK 12233

Integrated Analytical Laboratories, LLC
Project#: Lofts of Globe Mill
SDG #: E19-02297
Date of first sample receipt: 4/2/2019

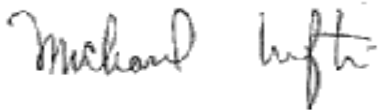
Randolph, NJ 07869
NY ELAP Certification#: 11402
NJDEP (Primary AB) Certification#: 14751
Date of last sample receipt: 4/2/2019

Client: EFI Global
Project/Site: Lofts of Globe Mill/NY

Client Sample Number	Laboratory Sample	Sample Location	Date/Time of Collection
NS-4	E19-02297-01	NA	4/1/2019 12:32

This report shall not be reproduced, except in its entirety, without the written consent of Integrated Analytical Laboratories, LLC. The test results included in this report relate only to the samples analyzed. The results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of data contained in this hardcopy data package and in the computer-readable data submitted on CD/diskette and by electronic mail has been authorized by the laboratory manager or his designee, as verified by the following signature.



Michael H. Leftin, Ph.D.
Laboratory Director

Date: April 22, 2019



Lauren Jenkins
Air Division Quality Assurance Officer

Date: April 22, 2019

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Laboratory Acronyms

The following is a list of laboratory acronyms commonly used in EPA Method TO-15 testing:

Acronym	Definition
BLK	Blank/Method Blank
BFB	4-Bromofluorobenzene (Tuning Standard)
CAS Number	Chemical Abstract Service Registry Number
cc	cubic centimeters
CCCVS	Closing Calibration Check Verification Standard
COC	Chain of Custody
DCVS	Daily Calibration Verification Standard
DF	Dilution Factor
EPA	U. S. Environmental Protection Agency (aka USEPA)
"Hg	Inches of Mercury
IA	Indoor Air
IASL	Indoor Air Screening Level
ICAL	Initial Calibration
ICVSS	Initial Calibration Verification Standard
ISTD	Internal Standard
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LCS	Laboratory Control Sample/Spike
LLTO-15	Low Level TO-15
MDL	Method Detection Limit
MDLV	Method Detection Limit Verification
ml	milliliters
ND	Not Detected (at or above RL)
NJDEP	New Jersey Department of Environmental Protection
PM	Project Manager
ppbv	parts per billion, volume-to-volume ratio
PQL	Practical Quantitation Limit - MDLx3
QA	Quality Assurance
QC	Quality Control
RAL	Rapid Action Limit
RL	Reporting Limit
RLLCS	Reporting Limit Laboratory Control Sample
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SGSL	Soil Gas Screening Levels
SS	Sub Slab
TAT	Turnaround Time
TIC	Tentatively Identified Compound
g/m3	micrograms per cubic meter

Section I: Chain of Custody



Integrated Analytical Labs
273 Franklin Road
Randolph, NJ 07869

External Chain of Custody Record/
Field Test Data Sheet
USEPA Method TO-15

Contact Us: 973-361-4252
Fax: 973-366-5613
Web: www.ialonline.com

Client Contact Information			Project Information						Carrier (check one): ☐ IAL Courier ☐ Client Courier ☐ FedEx/UPS				pg <u>1</u> of <u>1</u>												
Company: <u>EFI Global</u>			Project Name: <u>Lofts of Globe Mill</u>						Invoice Information				Analysis		Report		Matrix								
Address: <u>11 Commerce Way</u>			Project Location (State): <u>NY</u>						Attn: <u>Ewa Gut</u>																
Totowa, NJ 07512			Project Manager: <u>Ewa Gut</u>						Address:																
Phone: <u>732-221-3100</u>			PM Signature: <u>E. Gut</u>																						
Fax: <u>732-629-7934</u>			PM E-Mail: <u>ewa.gut@efiglobal.com</u>						PP #: <u>011.00433</u>																
Report to: <u>Ewa Gut</u>			Sampler: <u>T. Rania</u>						Quote #:																
Analyst Turnaround Time - IF NO TAT IS SPECIFIED, 2 WEEK TAT IS ASSUMED										Barometric Pressure															
IAL Standard: 2 weeks (10 business days)										Start				Stop											
Rush (**pre-approved by lab):										24hr**		48hr**		72hr**		96hr**		1wk**							
Sample Identification		Start DATE & TIME (24hr Clock)		End DATE & TIME (24hr Clock)		Starting Vacuum ("Hg)		Ending Vacuum ("Hg)		Starting Temp. ("F)		Ending Temp. ("F)		Outgoing Vacuum - Lab ("Hg)		Incoming Vacuum - Lab ("Hg)		Flow Regulator ID		Canister ID		Canister Size (1L or 6L)		Flow Controller Readout (cc/min)	
115-4		4-2-19 12:32		4-2-19 13:30		-30		0		31		31		-29.0		0.0		72447555095		06		202.0		X	

PROJECT INFORMATION

E19-02297: LOFTS OF GLOBE MILL

To: Ewa Gut
EFI Global, Inc.
Fax: 732-629-7934
EMail: ewa_gut@efiglobal.com

Report To

EFI Global, Inc.
11 Commerce Way
Suite A
Totowa, NJ 07512
Attn: Ewa Gut

Bill To

EFI Global, Inc.
11 Commerce Way
Suite A
Totowa, NJ 07512
Attn: Ewa Gut

Report Format	P.O. #	Received At Lab	TPHC Due	Verbal Due	Hardcopy Due
Air Regulatory	011.00433	Apr 02, 2019 @ 09:15	NA	Apr 16, 2019	Apr 23, 2019 *

* Any *Conditional or Hold* status will delay final hardcopy report sent date.

Diskette Req.

Not Required

Lab ID	Client Sample ID	Depth	Sampling Time	Matrix	Unit	Field pH/Temp
02297-001	NS-4	NA	04/01/19@13:03	Air-Other	ppbV	

Sample #	Test	Status	QA Method	TAT	Holding Time Expires
001	EPA TO-15	Analyze	TO-15	STD/2 WKS	5/1/2019



Integrated Analytical Laboratories Internal Chain of Custody

Instructions: Use 1 form for each 20 samples of aliquot.

Laboratory Person Accepting Responsibility for Sample(s)			
Laboratory:	Integrated Analytical Laboratories	Location:	273 Franklin Rd Randolph, NJ 07869
Name:	Joseph Walukiewicz	Title:	Air Department Receiving
Case No.:	E19-02297	Analytical Parameter/Fraction: (check one)	☐ NJDEP LLTO-15 ☒ EPA TO-15

Sample No.	Aliquot/Extract No.
NS-4	E19-02297-01
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-

Sample No.	Aliquot/Extract No.
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-
	E19-

Date	Time	Relinquished By	Received By	Purpose of Change of Custody
040219	0915	SIGNATURE	SIGNATURE <i>Joseph Walukiewicz</i>	1. Sample log-in 2. Pressure Check 3. Pre-analysis storage
		PRINTED NAME	PRINTED NAME JOSEPH WALUKIEWICZ	
040219	0920	SIGNATURE <i>Joseph Walukiewicz</i>	SIGNATURE	Placement in TO-15 sample storage area until ready for analysis
		PRINTED NAME JOSEPH WALUKIEWICZ	PRINTED NAME	
4/8/19	1340	SIGNATURE	SIGNATURE <i>Jeff Schmitt</i>	TO-15/LLTO-15 analysis on: 02297-01
		PRINTED NAME	PRINTED NAME JEFF SCHMITT	
		SIGNATURE	SIGNATURE	
		PRINTED NAME	PRINTED NAME	
		SIGNATURE	SIGNATURE	
		PRINTED NAME	PRINTED NAME	
		SIGNATURE	SIGNATURE	
		PRINTED NAME	PRINTED NAME	
		SIGNATURE	SIGNATURE	
		PRINTED NAME	PRINTED NAME	
		SIGNATURE	SIGNATURE	
		PRINTED NAME	PRINTED NAME	

Section II: Methodology Review

Methodology Summary for Air Collected from Hazardous Waste Site Contract

Laboratory:	Integrated Analytical Lab, LLC	Project No:	Lofts of Globe Mill
Location:	Randolph, NJ	SDG No:	E19-02297

Name	Required Methodology	Indicate Method
Volatile Organics	US EPA TO-15	US EPA Method TO-15

Section III: Case Narrative

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
Project #: Lofts of Globe Mill
SDG #: E19-02297

Randolph, NJ 07869
NJDEP (Primary AB) Certification#: 14751
NY ELAP Certification #: 11402
CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

Date of first sample receipt: 4/2/2019

Date of last sample receipt: 4/2/2019

Client: EFI Global

Project/Site: Lofts of Globe Mill / NY

Client ID	Lab ID	Receipt Date	Analysis Date	DF	Diluted For
NS-4	E19-02297-01	04/02/2019	04/11/2019	2.0	Toluene
NS-4	E19-02297-01	04/02/2019	04/11/2019	1.0	NA

IAL Sample ID	Canister ID	Outgoing Pressure ("Hg)	Incoming Pressure ("Hg)	Flow Controller ID	Outgoing Flow Rate (cc/min)	Incoming Flow Rate (cc/min)	Flow Rate RPD*
E19-02297-01	5095	-29	0.0	7249755	208.60	200.00	4.21

*Pre-sampling and Post-sampling Flow Controller calibration check RPD $\leq$ 20%

Flow Controller Note: none

Sample Receipt: Samples were received in good condition. Documentation was in order.
Samples were received at IAL by: Joseph Walukiewicz

Sample Preparation: None required.

Sample Analysis:

Hold Time: All within recommended hold times.

Instrument Calibration: Meets method criteria.

Analysis performed by: Jeff Schmitt

SDG Non-Conformances: none

Tentatively Identified Compounds: Tentatively Identified Compounds (TICs) are determined using a NIST library search.

TICs are reported at 10% of the applicable internal standard. Dilution factors are calculated into the final reported result. Since the compounds found are tentatively identified, the conversion from ppbv to ug/m3 may not be made.

Canister-to-Canister dilutions: none

Dilutions: Dilutions, if necessary, will be conducted directly on the instrument up to a 500x dilution. When dilutions of 1000x or higher are necessary, the laboratory must inject a volume of sample into another certified clean canister and add humidified Z-1 zero air to the remainder of the canister volume. Tedlar bags are not used for dilutions.

If a sample is received with historically high levels of analytes, a 100x can-to-can dilution may be used from the start. A 100x canister-to-canister dilution may be also be used at the analyst's discretion.

On-instrument dilutions are conducted as follows:

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
Project #: Lofts of Globe Mill
SDG #: E19-02297

Randolph, NJ 07869
NJDEP (Primary AB) Certification#: 14751
NY ELAP Certification #: 11402
CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

Date of first sample receipt: 4/2/2019

Date of last sample receipt: 4/2/2019

Client: EFI Global

Project/Site: Lofts of Globe Mill / NY

Dilution Factor	Sample Volume Injected (cc)
1	500
2.5	200
5	100
10	50
20	25
25	20
50	10
100	5
200	2.5
250	2
500	1

Canister-to-canister dilutions are conducted as follows:

A certified clean canister is obtained and evacuated to approximately -30"Hg. Both the clean/dilution canister and sample canister are fitted with a 1/4" Swagelok® nut fitting equipped with septa. Depending on dilution factor necessary, a sample aliquot is removed from the canister and injected into the clean canister using 30cc Multifit gas-tight syringe. Once the correct sample aliquot has been transferred, the dilution canister should be connected to the humidified Z-1 zero air supply and filled to ambient pressure (0"Hg).

Dilution Factor	Sample Aliquot	Z-1 Make-up Added
100	60ml	5940ml
1000	6ml	5994ml

If further dilutions need to be made from the dilution canister, they may be made on-instrument. Using a 100x dilution canister, the following on-instrument dilutions can be produced:

Dilution Factor	Sample Volume Injected
100	500ml
250	200ml
500	100ml
1000	50ml
2000	25ml
2500	20ml
5000	10ml

Using a 1000x dilution canister, the following on-instrument dilutions can be produced:

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
Project #: Lofts of Globe Mill
SDG #: E19-02297

Randolph, NJ 07869
NJDEP (Primary AB) Certification#: 14751
NY ELAP Certification #: 11402
CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

Date of first sample receipt: 4/2/2019

Date of last sample receipt: 4/2/2019

Client: EFI Global
Project/Site: Lofts of Globe Mill / NY

Dilution Factor	Sample Volume Injected
1000	500ml
2500	200ml
5000	100ml
10,000	50ml
20,000	25ml
25,000	20ml
50,000	10ml

If further dilutions need to be made from the dilution canister, beyond 50,000x, a subsequent canister-to-canister dilution must be made using the above prescribed protocol.

GC Column and ID: RTX-1 SN 1119138, RTX-VMS SN 1586881, or equivalent
Calibration Standards: Only gas phase standards were used. Primary and second-source standards provided by Scott Specialty Gases or Airgas Specialty Gases/ Air Liquide
Working Standards: Primary source standards* are created from:
- Airgas Specialty Gases Cylinder #CC483586, valid 3/6/17 through 4/6/19
@ approximately 100ppb per compound, with exception of m&p-xylenes @ 200ppb.
Standard is directly introduced into the instrument for all calibration standard concentrations. Dilutions are made accordingly, on instrument. The 10ppbv standard is also used for the Daily Calibration Verification Standard (DCVS), the Laboratory Control Sample (LCS) and Closing Calibration Verification Standard (CCCVS).

The second source standard*, used as the Initial Calibration Verification Standard (ICVSS), is introduced into the instrument in the same manner as the primary source standard, using:

- Airgas Specialty Gases Cylinder #CC483422, valid 5/4/17 through 4/27/19
@ approximately 100ppb per compound, with exception of m&p-xylenes @ 200ppb.

Internal standards* are created from:

- Scott Gas, Cylinder #ALM029426, valid 5/11/2016 through 5/12/2019
@ 5ppm per compound. Standard is directly introduced into the instrument to reach the 10ppbv concentrations. 1cc of internal standard is added to every standard, method blank, instrument blank, and sample run.

*Standard may be used past its expiration date provided that concentrations are verified by a current/unexpired second source standard.

03/13/2019

100 ppbv internal standard mix (AA1521BFB) - prepared in cylinder #ALM029426
10 ppbv per standard/sample - 50 ml injected

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
Project #: Lofts of Globe Mill
SDG #: E19-02297

Randolph, NJ 07869
NJDEP (Primary AB) Certification#: 14751
NY ELAP Certification #: 11402
CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

Date of first sample receipt: 4/2/2019

Date of last sample receipt: 4/2/2019

Client: EFI Global
Project/Site: Lofts of Globe Mill / NY

03/13/2019

100 ppbv calibration standard (aa1522std01) - prepared in cylinder #CC483586
40 ppbv standard - 200 ml injected
20 ppbv standard - 100 ml injected
10 ppbv standard* - 50 ml injected
*Standard also used for CCCVS
2 ppbv standard - 10 ml injected
0.20 ppbv standard* - 1 ml injected
*Standard also used for RLLCS

03/26/2019

100 ppbv internal standard mix (AA1761BFB) - prepared in cylinder #ALM029426
10 ppbv per standard/sample - 50 ml injected
100 ppbv calibration standard (AA1762DCVS) - prepared in cylinder #CC483586
10 ppbv standard* - 50 ml injected
*Standard also used for DCVS & CCCVS
0.20 ppbv standard* - 1 ml injected
*Standard also used for RLLCS
Method Blank (AA1764BLK) - prepared in canister #1127
500 ml injected

04/11/2019

100 ppbv internal standard mix (AA2051BFB) - prepared in cylinder #ALM029426
10 ppbv per standard/sample - 50 ml injected
100 ppbv calibration standard (AA2052DCVS) - prepared in cylinder #CC483586
10 ppbv standard* - 50 ml injected
*Standard also used for DCVS & CCCVS
0.20 ppbv standard* - 1 ml injected
*Standard also used for RLLCS
Method Blank (AA2054BLK) - prepared in canister #1127
500 ml injected
Sample E19-02297-01 (AA2069) - sample taken in canister #5095
500 ml sample volume injected, 1x dilution
Sample E19-02297-01 (AA2068) - sample taken in canister #5095
250 ml sample volume injected, 2x dilution

CASE NARRATIVE

Integrated Analytical Laboratories, LLC
Project #: Lofts of Globe Mill
SDG #: E19-02297

Randolph, NJ 07869
NJDEP (Primary AB) Certification#: 14751
NY ELAP Certification #: 11402
CT DPH Certification#: PH-0699
PADEP Certification#: 68-00773

Analytical Method: EPA Method TO-15

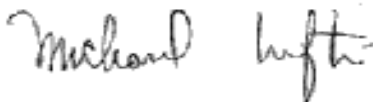
Date of first sample receipt: 4/2/2019

Date of last sample receipt: 4/2/2019

Client: EFI Global
Project/Site: Lofts of Globe Mill / NY

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. All conversions are based upon a room temperature of 77°F(25°C) and room pressure of 101.325 kPa (1atm).

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of data contained in this hardcopy data package and in the computer-readable data submitted on CD/diskette and by electronic mail has been authorized by the laboratory manager or his designee, as verified by the following signature.



Michael H. Leftin, Ph.D.
Laboratory Director

April 22, 2019
Date

Section IV: Method Detection Limit Summary

REPORTING METHOD DETECTION LIMIT (MDL) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument ID: GC - Agilent 7890A / MS - Agilent 5975C (IAL ID: Instrument AA)
 Report Prepared by: Lauren Jenkins
 Preparation Date: 5/22/18

MDL Effective Date: 5/22/2018
 MDL Expiration Date: 4/9/2019
 Analyst: Jeff Schmitt

Compound Name	CAS	Molecular Weight	MDL ppbv	PQL ppbv	NY/ LLTO-15/ PA RL ppbv	NY/ LLTO-15/ PA RL µg/m ³	NJ TO-15 RL ppbv	NJ TO-15 RL µg/m ³	True value/ MDL
Propene	115-07-1	42.08	0.13	0.40	0.20	0.34	0.40	0.69	1.7
Dichlorodifluoromethane	124-48-1	120.9	0.15	0.44	0.20	0.99	0.40	2.0	1.5
Chloromethane	74-87-3	50.49	0.20	0.59	0.20	0.41	0.40	0.83	1.1
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.12	0.36	0.20	1.4	0.40	2.8	1.7
Vinyl chloride	75-01-4	62.50	0.10	0.31	0.20	0.51	0.40	1.0	2.1
1,3-Butadiene	106-99-0	54.09	0.075	0.22	0.20	0.44	0.40	0.88	2.9
n-Butane	106-97-8	58.12	0.074	0.22	0.20	0.48	0.40	0.95	3.0
Bromomethane	74-83-9	94.94	0.14	0.43	0.20	0.78	0.40	1.6	1.4
Chloroethane	75-00-3	64.52	0.087	0.26	0.20	0.53	0.40	1.1	2.3
Ethanol	64-17-5	46.07	0.068	0.20	0.20	0.38	0.40	0.75	2.8
Vinyl bromide	593-60-2	106.9	0.082	0.25	0.20	0.87	0.40	1.7	2.7
Acrolein	107-02-8	56.06	0.059	0.18	0.20	0.46	0.40	0.92	4.1
Acetone	67-64-1	58.08	0.10	0.29	0.20	0.48	0.40	0.95	2.3
Trichlorofluoromethane	75-69-4	137.4	0.11	0.34	0.20	1.1	0.40	2.2	1.9
Isopropanol	67-63-0	60.10	0.068	0.20	0.20	0.49	0.40	0.98	2.9
n-Pentane	109-66-0	72.15	0.057	0.17	0.20	0.59	0.40	1.2	3.8
1,1-Dichloroethene	75-35-4	96.94	0.068	0.21	0.20	0.79	0.40	1.6	3.2
Methylene chloride	75-09-2	84.94	0.11	0.32	0.20	0.69	0.40	1.4	2.0
Tert-butyl alcohol	75-65-0	74.12	0.060	0.18	0.20	0.61	0.40	1.2	4.0
Allyl Chloride	107-05-1	76.53	0.075	0.23	0.20	0.63	0.40	1.3	2.9
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.13	0.40	0.20	1.5	0.40	3.1	1.6
Carbon disulfide	75-15-0	76.14	0.12	0.36	0.20	0.62	0.40	1.2	1.8
1,2-Dichloroethene (trans)	156-60-5	96.94	0.067	0.20	0.20	0.79	0.40	1.6	3.3
1,1-Dichloroethane	75-34-3	98.96	0.092	0.27	0.20	0.81	0.40	1.6	2.4
Methyl tert-butyl ether	1634-04-4	88.15	0.036	0.11	0.20	0.72	0.40	1.4	6.1
Methyl ethyl ketone	78-93-3	72.11	0.043	0.13	0.20	0.59	0.40	1.2	5.1
1,2-Dichloroethene (cis)	156-59-2	96.94	0.064	0.19	0.20	0.79	0.40	1.6	3.5
Ethyl acetate	141-78-6	88.11	0.090	0.27	0.20	0.72	0.40	1.4	2.4
n-Hexane	110-54-3	86.17	0.084	0.25	0.20	0.70	0.40	1.4	2.6
Chloroform	67-66-3	119.4	0.10	0.30	0.20	0.98	0.40	2.0	2.2
Tetrahydrofuran	109-99-9	72.11	0.047	0.14	0.20	0.59	0.40	1.2	5.1
1,2-Dichloroethane	106-93-4	98.96	0.089	0.27	0.20	0.81	0.40	1.6	2.5
1,1,1-Trichloroethane	71-55-6	133.4	0.10	0.31	0.20	1.1	0.40	2.2	2.1
Benzene	71-43-2	78.11	0.049	0.15	0.20	0.64	0.40	1.3	4.5
Carbon tetrachloride	56-23-5	153.8	0.11	0.33	0.20	1.3	0.40	2.5	2.0
Cyclohexane	110-82-7	84.16	0.040	0.12	0.20	0.69	0.40	1.4	5.4
1,2-Dichloropropane	78-87-5	113.0	0.094	0.28	0.20	0.92	0.40	1.8	2.3
Bromodichloromethane	75-27-4	163.8	0.14	0.41	0.20	1.3	0.40	2.7	1.6
2,2,4-Trimethylpentane	540-84-1	114.2	0.082	0.25	0.20	0.93	0.40	1.9	2.7
Trichloroethene	79-01-6	131.4	0.091	0.27	0.20	1.1	0.40	2.1	2.4
1,4-Dioxane	123-91-1	88.12	0.057	0.17	0.20	0.72	0.40	1.4	3.5
Methyl methacrylate	80-62-6	100.12	0.057	0.17	0.20	0.82	0.40	1.6	3.8
n-Heptane	142-82-5	100.2	0.066	0.20	0.20	0.82	0.40	1.6	3.3
1,3-Dichloropropene (cis)	10061-01-5	111.0	0.062	0.19	0.20	0.91	0.40	1.8	3.5
Methyl isobutyl ketone	108-10-1	100.2	0.080	0.24	0.20	0.82	0.40	1.6	2.8
1,3-Dichloropropene (trans)	10061-02-6	111.0	0.06	0.18	0.20	0.91	0.40	1.8	3.3
1,1,2-Trichloroethane	79-00-5	133.4	0.12	0.36	0.20	1.1	0.40	2.2	1.9
Toluene	108-88-3	92.14	0.057	0.17	0.20	0.75	0.40	1.5	3.9
Methyl n-butyl ketone	591-78-6	100.16	0.072	0.22	0.20	0.82	0.40	1.6	3.1
Dibromochloromethane	75-71-8	208.3	0.11	0.34	0.20	1.7	0.40	3.4	2.0
1,2-Dibromoethane	107-06-2	187.9	0.095	0.28	0.20	1.5	0.40	3.1	2.3
Tetrachloroethene	127-18-4	165.8	0.082	0.25	0.20	1.4	0.40	2.7	2.7
Chlorobenzene	108-90-7	112.6	0.15	0.44	0.20	0.92	0.40	1.8	1.5
Ethylbenzene	100-41-4	106.2	0.091	0.27	0.20	0.87	0.40	1.7	2.4
Xylenes (m p)	179601-23-1	106.2	0.084	0.25	0.40	1.7	0.40	1.7	5.2
Bromoform	75-25-2	252.8	0.067	0.20	0.20	2.1	0.40	4.1	3.3
Styrene	100-42-5	104.1	0.045	0.14	0.20	0.85	0.40	1.7	4.9
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.057	0.17	0.20	1.4	0.40	2.7	3.8
Xylene (o)	95-47-6	106.2	0.16	0.48	0.20	0.87	0.40	1.7	1.4
n-Nonane	111-84-2	128.2	0.057	0.17	0.20	1.0	0.40	2.1	3.9
Cumene (Isopropylbenzene)	98-82-8	120.2	0.068	0.20	0.20	0.98	0.40	2.0	3.3
2-Chlorotoluene	95-49-8	126.6	0.055	0.17	0.20	1.0	0.40	2.1	4.0
n-Propyl benzene	103-65-1	120.19	0.059	0.18	0.20	0.98	0.40	2.0	3.8
4-Ethyltoluene	622-96-8	120.2	0.059	0.18	0.20	0.98	0.40	2.0	3.7
1,3,5-Trimethylbenzene	108-67-8	120.2	0.058	0.17	0.20	0.98	0.40	2.0	3.8
1,2,4-Trimethylbenzene	95-63-6	120.2	0.041	0.12	0.20	0.98	0.40	2.0	5.3

REPORTING METHOD DETECTION LIMIT (MDL) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument ID: GC - Agilent 7890A / MS - Agilent 5975C (IAL ID: Instrument AA)
 Report Prepared by: Lauren Jenkins
 Preparation Date: 5/22/18

MDL Effective Date: 5/22/2018
 MDL Expiration Date: 4/9/2019
 Analyst: Jeff Schmitt

Compound Name	CAS	Molecular Weight	MDL ppbv	PQL ppbv	NY/ LLTO-15/ PA RL ppbv	NY/ LLTO-15/ PA RL µg/m ³	NJ TO-15 RL ppbv	NJ TO-15 RL µg/m ³	True value/ MDL
Benzyl chloride	100-44-7	126.59	0.066	0.20	0.20	1.0	0.40	2.1	3.0
1,3-Dichlorobenzene	541-73-1	147.0	0.071	0.21	0.20	1.2	0.40	2.4	3.1
1,4-Dichlorobenzene	106-46-7	147.0	0.065	0.19	0.20	1.2	0.40	2.4	3.4
1,2-Dichlorobenzene	95-50-1	147.0	0.070	0.21	0.20	1.2	0.40	2.4	3.1
1,2,4-Trichlorobenzene	120-82-1	181.5	0.080	0.24	0.20	1.5	0.40	3.0	3.0
Naphthalene	91-20-3	128.2	0.075	0.23	0.20	1.0	0.40	2.1	3.2
1,3-Hexachlorobutadiene	87-68-3	260.8	0.16	0.47	0.20	2.1	0.40	4.3	1.4

Where:

MDL is defined as the higher of the MDL Spike and MDL Blank

PQL is MDLx3

ppbv is parts per billion by volume and is how results come off the instrument

µg/m³ = ppbv x molecular weight / 24.45

Processing Method: C:\MSDCHEM\1\METHODS\AA0302.M

Initial Calibration: C:\MSDCHEM\1\METHODS\AA0302.M

Location of this file: P:\PAL Reports\2018\LLTO-15 and TO-15 Common Files\Agilent MDL

Instrument used for Clean Canister Certification Analysis? YES



Michael Leftin, Ph.D.
 Laboratory Director

Date: May 24, 2018



Lauren Jenkins
 Quality Assurance Officer

Date: May 24, 2018

METHOD DETECTION LIMIT SPIKE (MDL_s) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air

Method: EPA TO-15/NJDEP LLTO-15

Filename	Run /Type	Date	Time
aa6444	Spike 1	4/10/2018	22:33
aa6445	Spike 2	4/10/2018	23:08
aa6446	Spike 3	4/10/2018	23:44
aa6479	Spike 4	4/12/2018	13:07
aa6480	Spike 5	4/12/2018	13:42
aa6543	Spike 6	4/16/2018	18:36
aa6544	Spike 7	4/16/2018	19:15

Compound Name	CAS	Spike 1	Spike 2	Spike 3	Spike 4	Spike 5	Spike 6	Spike 7	Mean Value	Spike Value	Percent Recovery	Standard Deviation	MDLs ppbv	Ratio
Propene	115-07-1	0.27	0.25	0.27	0.26	0.28	0.35	0.35	0.29	0.22	132	0.042	0.13	1.67
Dichlorodifluoromethane	124-48-1	0.34	0.32	0.30	0.30	0.28	0.40	0.39	0.33	0.22	151	0.047	0.147	1.49
Chloromethane	74-87-3	0.25	0.25	0.25	0.26	0.24	0.40	0.34	0.28	0.22	129	0.063	0.20	1.11
1,2-Dichlorotetrafluoroethane	76-14-2	0.43	0.41	0.43	0.39	0.38	0.48	0.46	0.42	0.20	212	0.038	0.121	1.65
Vinyl chloride	75-01-4	0.19	0.16	0.18	0.18	0.18	0.24	0.24	0.20	0.22	89	0.033	0.104	2.11
1,3-Butadiene	106-99-0	0.13	0.11	0.11	0.09	0.12	0.16	0.15	0.12	0.22	56	0.024	0.075	2.95
n-Butane	106-97-8	0.18	0.19	0.19	0.16	0.16	0.22	0.21	0.19	0.22	85	0.024	0.074	2.97
Bromomethane	74-83-9	0.26	0.24	0.23	0.23	0.22	0.32	0.33	0.26	0.20	132	0.046	0.144	1.38
Chloroethane	75-00-3	0.25	0.25	0.21	0.24	0.20	0.26	0.28	0.24	0.20	120	0.028	0.09	2.31
Ethanol	64-17-5	0.10	0.09	0.11	0.10	0.10	0.13	0.15	0.11	0.19	60	0.022	0.07	2.76
Vinyl bromide	593-60-2	0.15	0.16	0.13	0.14	0.12	0.18	0.19	0.15	0.22	70	0.026	0.082	2.67
Acrolein	107-02-8	0.11	0.14	0.13	0.12	0.14	0.15	0.16	0.14	0.24	56	0.019	0.06	4.09
Acetone	67-64-1	0.21	0.21	0.19	0.18	0.21	0.25	0.27	0.22	0.22	99	0.031	0.097	2.27
Trichlorofluoromethane	75-69-4	0.35	0.35	0.34	0.32	0.30	0.41	0.39	0.35	0.22	159	0.036	0.114	1.93
Isopropanol	67-63-0	0.10	0.10	0.11	0.10	0.10	0.14	0.15	0.11	0.20	57	0.022	0.07	2.93
n-Pentane	109-66-0	0.13	0.15	0.13	0.12	0.12	0.17	0.16	0.14	0.22	65	0.018	0.057	3.83
1,1-Dichloroethene	75-35-4	0.15	0.16	0.15	0.14	0.14	0.19	0.19	0.16	0.22	72	0.022	0.068	3.21
Methylene chloride	75-09-2	0.30	0.30	0.29	0.30	0.28	0.37	0.36	0.31	0.22	142	0.034	0.108	2.03
Tert-butyl alcohol	75-65-0	0.15	0.14	0.13	0.13	0.13	0.17	0.18	0.15	0.24	62	0.019	0.060	3.99
Allyl Chloride	107-05-1	0.14	0.15	0.13	0.12	0.10	0.18	0.15	0.14	0.22	63	0.024	0.075	2.93
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.42	0.41	0.40	0.38	0.36	0.48	0.46	0.41	0.22	188	0.043	0.134	1.64
Carbon disulfide	75-15-0	0.26	0.25	0.25	0.24	0.23	0.32	0.32	0.27	0.22	122	0.038	0.119	1.85
1,2-Dichloroethene (trans)	156-60-5	0.18	0.18	0.18	0.17	0.16	0.22	0.21	0.18	0.22	84	0.021	0.067	3.26
1,1-Dichloroethane	75-34-3	0.28	0.27	0.27	0.25	0.26	0.33	0.31	0.28	0.22	128	0.029	0.092	2.40
Methyl tert-butyl ether	1634-04-4	0.13	0.13	0.13	0.12	0.11	0.15	0.14	0.13	0.22	58	0.012	0.036	6.08
Methyl ethyl ketone	78-93-3	0.15	0.16	0.16	0.15	0.15	0.18	0.18	0.16	0.22	73	0.014	0.043	5.09
1,2-Dichloroethene (cis)	156-59-2	0.16	0.17	0.15	0.15	0.14	0.20	0.19	0.17	0.22	75	0.020	0.064	3.46
Ethyl acetate	141-78-6	0.24	0.21	0.21	0.22	0.17	0.25	0.25	0.22	0.22	100	0.029	0.09	2.45
n-Hexane	110-54-3	0.16	0.16	0.16	0.15	0.13	0.21	0.20	0.17	0.22	76	0.027	0.084	2.62
Chloroform	67-66-3	0.33	0.33	0.32	0.30	0.29	0.38	0.37	0.33	0.22	150	0.032	0.100	2.19
Tetrahydrofuran	109-99-9	0.11	0.12	0.12	0.11	0.12	0.14	0.15	0.12	0.24	52	0.015	0.047	5.09
1,2-Dichloroethane	106-93-4	0.27	0.26	0.26	0.25	0.24	0.31	0.31	0.27	0.22	124	0.028	0.089	2.47
1,1,1-Trichloroethane	71-55-6	0.32	0.30	0.31	0.29	0.27	0.37	0.35	0.32	0.22	144	0.033	0.105	2.10
Benzene	71-43-2	0.20	0.21	0.20	0.19	0.19	0.23	0.23	0.21	0.22	94	0.016	0.049	4.46
Carbon tetrachloride	56-23-5	0.34	0.32	0.32	0.30	0.29	0.39	0.37	0.33	0.22	151	0.035	0.109	2.01
Cyclohexane	110-82-7	0.13	0.12	0.12	0.12	0.11	0.14	0.14	0.13	0.22	57	0.013	0.040	5.45
1,2-Dichloropropane	78-87-5	0.34	0.33	0.32	0.30	0.30	0.36	0.38	0.33	0.22	150	0.030	0.094	2.33
Bromodichloromethane	75-27-4	0.39	0.38	0.36	0.32	0.33	0.44	0.43	0.38	0.22	172	0.044	0.137	1.60
2,2,4-Trimethylpentane	540-84-1	0.16	0.16	0.16	0.15	0.15	0.21	0.20	0.17	0.22	77	0.026	0.082	2.68
Trichloroethene	79-01-6	0.30	0.28	0.27	0.26	0.24	0.33	0.29	0.28	0.22	128	0.029	0.091	2.42
1,4-Dioxane	123-91-1	0.19	0.21	0.21	0.16	0.19	0.22	0.21	0.20	0.20	100	0.018	0.057	3.50
Methyl methacrylate	80-62-6	0.16	0.15	0.15	0.14	0.13	0.18	0.17	0.15	0.22	70	0.018	0.057	3.85
n-Heptane	142-82-5	0.18	0.16	0.18	0.15	0.15	0.20	0.20	0.17	0.22	79	0.021	0.066	3.35
1,3-Dichloropropene (cis)	10061-01-5	0.20	0.19	0.19	0.17	0.17	0.22	0.22	0.19	0.22	88	0.020	0.062	3.52
Methyl isobutyl ketone	108-10-1	0.18	0.18	0.19	0.16	0.17	0.24	0.21	0.19	0.22	87	0.025	0.08	2.76
1,3-Dichloropropene (trans)	10061-02-6	0.18	0.19	0.17	0.16	0.16	0.21	0.21	0.18	0.20	92	0.019	0.060	3.34
1,1,2-Trichloroethane	79-00-5	0.40	0.39	0.38	0.36	0.35	0.45	0.43	0.39	0.22	180	0.038	0.119	1.85
Toluene	108-88-3	0.18	0.18	0.17	0.17	0.16	0.20	0.21	0.18	0.22	83	0.018	0.057	3.89
Methyl n-butyl ketone	591-78-6	0.16	0.16	0.16	0.14	0.13	0.19	0.19	0.16	0.22	74	0.023	0.07	3.06
Dibromochloromethane	75-71-8	0.36	0.34	0.35	0.33	0.32	0.42	0.40	0.36	0.22	164	0.036	0.112	1.96
1,2-Dibromoethane	107-06-2	0.29	0.28	0.28	0.27	0.25	0.34	0.32	0.29	0.22	132	0.030	0.095	2.32
Tetrachloroethene	127-18-4	0.29	0.31	0.28	0.27	0.26	0.34	0.32	0.30	0.22	134	0.026	0.082	2.69
Chlorobenzene	108-90-7	0.52	0.51	0.50	0.47	0.45	0.58	0.56	0.51	0.22	233	0.046	0.145	1.52
Ethylbenzene	100-41-4	0.28	0.27	0.28	0.25	0.24	0.33	0.30	0.28	0.22	127	0.029	0.091	2.42
Xylenes (m p)	179601-23-1	0.26	0.25	0.25	0.22	0.21	0.29	0.28	0.25	0.44	57	0.027	0.08	5.23
Bromoform	75-25-2	0.19	0.18	0.18	0.16	0.16	0.21	0.21	0.18	0.22	83	0.021	0.067	3.28
Styrene	100-42-5	0.18	0.17	0.16	0.16	0.15	0.19	0.18	0.17	0.22	78	0.014	0.045	4.87
1,1,2,2-Tetrachloroethane	79-34-5	0.15	0.16	0.16	0.14	0.14	0.18	0.18	0.16	0.22	72	0.018	0.057	3.83
Xylene (o)	95-47-6	0.44	0.43	0.42	0.38	0.37	0.51	0.48	0.43	0.22	197	0.051	0.161	1.37
n-Nonane	111-84-2	0.14	0.14	0.13	0.12	0.12	0.16	0.16	0.14	0.22	64	0.018	0.057	3.87

METHOD DETECTION LIMIT SPIKE (MDL_s) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air

Method: EPA TO-15/NJDEP LLTO-15

Filename	Run /Type	Date	Time
aa6444	Spike 1	4/10/2018	22:33
aa6445	Spike 2	4/10/2018	23:08
aa6446	Spike 3	4/10/2018	23:44
aa6479	Spike 4	4/12/2018	13:07
aa6480	Spike 5	4/12/2018	13:42
aa6543	Spike 6	4/16/2018	18:36
aa6544	Spike 7	4/16/2018	19:15

Compound Name	CAS	Spike 1	Spike 2	Spike 3	Spike 4	Spike 5	Spike 6	Spike 7	Mean Value	Spike Value	Percent Recovery	Standard Deviation	MDLs ppbv	Ratio
Cumene (Isopropylbenzene)	98-82-8	0.22	0.21	0.21	0.19	0.18	0.24	0.23	0.21	0.22	97	0.022	0.068	3.25
2-Chlorotoluene	95-49-8	0.18	0.16	0.17	0.15	0.15	0.19	0.19	0.17	0.22	77	0.018	0.055	3.99
n-Propyl benzene	103-65-1	0.16	0.16	0.15	0.14	0.14	0.19	0.18	0.16	0.22	74	0.019	0.059	3.76
4-Ethyltoluene	622-96-8	0.14	0.14	0.14	0.12	0.12	0.16	0.17	0.14	0.22	64	0.019	0.059	3.71
1,3,5-Trimethylbenzene	108-67-8	0.15	0.15	0.14	0.13	0.12	0.17	0.17	0.15	0.22	66	0.019	0.058	3.77
1,2,4-Trimethylbenzene	95-63-6	0.13	0.12	0.13	0.11	0.11	0.14	0.14	0.12	0.22	56	0.013	0.041	5.33
Benzyl chloride	100-44-7	0.18	0.17	0.17	0.15	0.15	0.21	0.19	0.17	0.20	87	0.021	0.066	3.03
1,3-Dichlorobenzene	541-73-1	0.23	0.22	0.22	0.20	0.20	0.26	0.25	0.23	0.22	102	0.023	0.071	3.08
1,4-Dichlorobenzene	106-46-7	0.19	0.18	0.18	0.17	0.17	0.21	0.22	0.19	0.22	86	0.021	0.065	3.40
1,2-Dichlorobenzene	95-50-1	0.20	0.20	0.20	0.18	0.17	0.23	0.22	0.20	0.22	91	0.022	0.070	3.12
1,2,4-Trichlorobenzene	120-82-1	0.11	0.11	0.10	0.11	0.10	0.16	0.16	0.12	0.24	50	0.025	0.080	3.00
Naphthalene	91-20-3	0.06	0.04	0.04	0.05	0.05	0.10	0.09	0.06	0.24	25	0.024	0.075	3.20
1,3-Hexachlorobutadiene	87-68-3	0.36	0.34	0.32	0.31	0.31	0.44	0.41	0.36	0.22	162	0.050	0.157	1.40

METHOD DETECTION LIMIT BLANK (MDL_B) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air

Method: EPA TO-15/
NJDEP LLTO-15

Filename	Run /Type	Date	Time
aa6439	Blank 1	4/10/2018	19:42
aa6443	Blank 2	4/10/2018	21:57
aa6476	Blank 3	4/12/2018	23:24
aa6477	Blank 4	4/12/2018	11:58
aa6478	Blank 5	4/12/2018	12:31
aa6541	Blank 6	4/16/2018	17:22
aa6542	Blank 7	4/16/2018	17:56

Compound Name	CAS	Blank 1	Blank 2	Blank 3	Blank 4	Blank 5	Blank 6	Blank 7	Mean Value	Standard Deviation	MDLb ppbv
Propene	115-07-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichlorodifluoromethane	124-48-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chloromethane	74-87-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichlorotetrafluoroethane	76-14-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vinyl chloride	75-01-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3-Butadiene	106-99-0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Butane	106-97-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bromomethane	74-83-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chloroethane	75-00-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethanol	64-17-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vinyl bromide	593-60-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acrolein	107-02-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acetone	67-64-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trichlorofluoromethane	75-69-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopropanol	67-63-0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Pentane	109-66-0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1-Dichloroethene	75-35-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methylene chloride	75-09-2	0.071	0.073	0.063	0.067	0.047	0.065	0.079	0.066	0.010	0.031
Tert-butyl alcohol	75-65-0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Allyl Chloride	107-05-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carbon disulfide	75-15-0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichloroethene (trans)	156-60-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1-Dichloroethane	75-34-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl tert-butyl ether	1634-04-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl ethyl ketone	78-93-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichloroethene (cis)	156-59-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethyl acetate	141-78-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Hexane	110-54-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chloroform	67-66-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tetrahydrofuran	109-99-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichloroethane	106-93-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1,1-Trichloroethane	71-55-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzene	71-43-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carbon tetrachloride	56-23-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyclohexane	110-82-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichloropropane	78-87-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bromodichloromethane	75-27-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,2,4-Trimethylpentane	540-84-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trichloroethene	79-01-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,4-Dioxane	123-91-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl methacrylate	80-62-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Heptane	142-82-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3-Dichloropropene (cis)	10061-01-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl isobutyl ketone	108-10-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3-Dichloropropene (trans)	10061-02-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1,2-Trichloroethane	79-00-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Toluene	108-88-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl n-butyl ketone	591-78-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibromochloromethane	75-71-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dibromoethane	107-06-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tetrachloroethene	127-18-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chlorobenzene	108-90-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethylbenzene	100-41-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Xylenes (m p)	179601-23-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bromoform	75-25-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Styrene	100-42-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,1,2,2-Tetrachloroethane	79-34-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Xylene (o)	95-47-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Nonane	111-84-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

METHOD DETECTION LIMIT BLANK (MDL_B) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air

Method: EPA TO-15/
NJDEP LLTO-15

Filename	Run /Type	Date	Time
aa6439	Blank 1	4/10/2018	19:42
aa6443	Blank 2	4/10/2018	21:57
aa6476	Blank 3	4/12/2018	23:24
aa6477	Blank 4	4/12/2018	11:58
aa6478	Blank 5	4/12/2018	12:31
aa6541	Blank 6	4/16/2018	17:22
aa6542	Blank 7	4/16/2018	17:56

Compound Name	CAS	Blank 1	Blank 2	Blank 3	Blank 4	Blank 5	Blank 6	Blank 7	Mean Value	Standard Deviation	MDLb ppbv
Cumene (Isopropylbenzene)	98-82-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-Chlorotoluene	95-49-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-Propyl benzene	103-65-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4-Ethyltoluene	622-96-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3,5-Trimethylbenzene	108-67-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2,4-Trimethylbenzene	95-63-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzyl chloride	100-44-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3-Dichlorobenzene	541-73-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,4-Dichlorobenzene	106-46-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2-Dichlorobenzene	95-50-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,2,4-Trichlorobenzene	120-82-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naphthalene	91-20-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,3-Hexachlorobutadiene	87-68-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

METHOD DETECTION LIMIT VERIFICATION (MDLV) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Analysis Level: 0.20 ppbv, 0.40 for m p-xylenes
 Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument Identification: AA
 Date of Verification Study: 4/17/2018
 Study Identification File : aa6565rlcs
 Analyst: Jeff Schmitt
 Analysis/Processing Method: C:\MSDCHEM\1\METHODS\AA0302.M
 Cylinder ID: CC483586

Lauren Jenkins

Lauren Jenkins
 QA Officer

Date: May 22, 2018

Compound Name	CAS	MDLV (ppbv)	RL (ppbv)	RL/MDLV Ratio
Propene	115-07-1	0.43	0.20	0.47
Dichlorodifluoromethane	124-48-1	0.16	0.20	1.25
Chloromethane	74-87-3	0.34	0.20	0.59
1,2-Dichlorotetrafluoroethane	76-14-2	0.25	0.20	0.80
Vinyl chloride	75-01-4	0.26	0.20	0.77
1,3-Butadiene	106-99-0	0.20	0.20	1.00
n-Butane	106-97-8	0.25	0.20	0.80
Bromomethane	74-83-9	0.15	0.20	1.33
Chloroethane	75-00-3	0.25	0.20	0.80
Ethanol	64-17-5	0.15	0.20	1.33
Vinyl bromide	593-60-2	0.16	0.20	1.25
Acrolein	107-02-8	0.15	0.20	1.33
Acetone	67-64-1	0.26	0.20	0.77
Trichlorofluoromethane	75-69-4	0.27	0.20	0.74
Isopropanol	67-63-0	0.17	0.20	1.18
n-Pentane	109-66-0	0.19	0.20	1.05
1,1-Dichloroethene	75-35-4	0.21	0.20	0.95
Methylene chloride	75-09-2	0.36	0.20	0.56
Tert-butyl alcohol	75-65-0	0.2	0.20	1.00
Allyl Chloride	107-05-1	0.19	0.20	1.05
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.25	0.20	0.80
Carbon disulfide	75-15-0	0.22	0.20	0.91
1,2-Dichloroethene (trans)	156-60-5	0.24	0.20	0.83
1,1-Dichloroethane	75-34-3	0.20	0.20	1.00
Methyl tert-butyl ether	1634-04-4	0.17	0.20	1.18
Methyl ethyl ketone	78-93-3	0.2	0.20	1.00
1,2-Dichloroethene (cis)	156-59-2	0.22	0.20	0.91
Ethyl acetate	141-78-6	0.26	0.20	0.77
n-Hexane	110-54-3	0.21	0.20	0.95
Chloroform	67-66-3	0.25	0.20	0.80
Tetrahydrofuran	109-99-9	0.16	0.20	1.25
1,2-Dichloroethane	106-93-4	0.22	0.20	0.91
1,1,1-Trichloroethane	71-55-6	0.24	0.20	0.83
Benzene	71-43-2	0.25	0.20	0.80
Carbon tetrachloride	56-23-5	0.27	0.20	0.74
Cyclohexane	110-82-7	0.17	0.20	1.18
1,2-Dichloropropane	78-87-5	0.24	0.20	0.83
Bromodichloromethane	75-27-4	0.25	0.20	0.80
2,2,4-Trimethylpentane	540-84-1	0.19	0.20	1.05
Trichloroethene	79-01-6	0.18	0.20	1.11
1,4-Dioxane	123-91-1	0.24	0.20	0.83
Methyl methacrylate	80-62-6	0.17	0.20	1.18
n-Heptane	142-82-5	0.20	0.20	1.00
1,3-Dichloropropene (cis)	10061-01-5	0.22	0.20	0.91
Methyl isobutyl ketone	108-10-1	0.22	0.20	0.91
1,3-Dichloropropene (trans)	10061-02-6	0.20	0.20	1.00
1,1,2-Trichloroethane	79-00-5	0.27	0.20	0.74
Toluene	108-88-3	0.20	0.20	1.00
Methyl n-butyl ketone	591-78-6	0.18	0.20	1.11
Dibromochloromethane	75-71-8	0.26	0.20	0.77
1,2-Dibromoethane	107-06-2	0.23	0.20	0.87
Tetrachloroethene	127-18-4	0.21	0.20	0.95

METHOD DETECTION LIMIT VERIFICATION (MDLV) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Analysis Level: 0.20 ppbv, 0.40 for m p-xylenes
 Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument Identification: AA
 Date of Verification Study: 4/17/2018
 Study Identification File : aa6565rlcs
 Analyst: Jeff Schmitt
 Analysis/Processing Method: C:\MSDCHEM\1\METHODS\AA0302.M
 Cylinder ID: CC483586

Lauren Jenkins

Lauren Jenkins
 QA Officer

Date: May 22, 2018

Compound Name	CAS	MDLV (ppbv)	RL (ppbv)	RL/MDLV Ratio
Chlorobenzene	108-90-7	0.25	0.20	0.80
Ethylbenzene	100-41-4	0.19	0.20	1.05
Xylenes (m p)	179601-23-1	0.35	0.40	1.14
Bromoform	75-25-2	0.24	0.20	0.83
Styrene	100-42-5	0.15	0.20	1.33
Xylene (o)	95-47-6	0.17	0.20	1.18
1,1,2,2-Tetrachloroethane	79-34-5	0.21	0.20	0.95
n-Nonane	111-84-2	0.15	0.20	1.33
Cumene	98-82-8	0.23	0.20	0.87
2-Chlorotoluene	95-49-8	0.20	0.20	1.00
n-Propyl benzene	103-65-1	0.18	0.20	1.11
4-Ethyltoluene	622-96-8	0.16	0.20	1.25
1,3,5-Trimethylbenzene	108-67-8	0.17	0.20	1.18
1,2,4-Trimethylbenzene	95-63-6	0.14	0.20	1.43
Benzyl chloride	100-44-7	0.20	0.20	1.00
1,3-Dichlorobenzene	541-73-1	0.26	0.20	0.77
1,4-Dichlorobenzene	106-46-7	0.23	0.20	0.87
1,2-Dichlorobenzene	95-50-1	0.22	0.20	0.91
1,2,4-Trichlorobenzene	120-82-1	0.17	0.20	1.18
Naphthalene	91-20-3	0.11	0.20	1.82
1,3-Hexachlorobutadiene	87-68-3	0.40	0.20	0.50

REPORTING METHOD DETECTION LIMIT (MDL) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument ID: GC - Agilent 7890A / MS - Agilent 5975C (IAL ID: *Instrument AA*)
 Report Prepared by: Lauren Jenkins
 Preparation Date: 3/4/19

MDL Effective Date: 3/15/2019
 MDL Expiration Date: 4/15/2020
 Analyst: Jeff Schmitt

Compound Name	CAS	Molecular Weight	MDL ppbv	MDL g/m ³	PQL ppbv	RL ppbv	RL g/m ³	True value/ MDL
Propene	115-07-1	42.08	0.27	0.47	0.82	0.20	0.34	1
Dichlorodifluoromethane	75-71-8	120.9	0.13	0.64	0.39	0.20	0.99	2
Chloromethane	74-87-3	50.49	0.20	0.41	0.60	0.20	0.41	1
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.18	1.3	0.54	0.20	1.4	1
Vinyl chloride	75-01-4	62.50	0.12	0.32	0.37	0.20	0.51	2
1,3-Butadiene	106-99-0	54.09	0.10	0.23	0.31	0.20	0.44	2
n-Butane	106-97-8	58.12	0.14	0.32	0.41	0.20	0.48	2
Bromomethane	74-83-9	94.94	0.15	0.59	0.45	0.20	0.78	1
Chloroethane	75-00-3	64.52	0.15	0.39	0.45	0.20	0.53	1
Ethanol	64-17-5	46.07	0.15	0.28	0.44	0.20	0.38	1
Vinyl bromide	593-60-2	106.9	0.13	0.59	0.40	0.20	0.87	2
Acrolein	107-02-8	56.06	0.13	0.31	0.40	0.20	0.46	2
Acetone	67-64-1	58.08	0.13	0.30	0.38	0.20	0.48	2
Trichlorofluoromethane	75-69-4	137.4	0.14	0.81	0.43	0.20	1.1	2
Isopropanol	67-63-0	60.10	0.11	0.26	0.32	0.20	0.49	2
n-Pentane	109-66-0	72.15	0.14	0.41	0.42	0.20	0.59	2
1,1-Dichloroethene	75-35-4	96.94	0.13	0.53	0.40	0.20	0.79	2
Methylene chloride	75-09-2	84.94	0.17	0.61	0.52	0.20	0.69	1
Tert-butyl alcohol	75-65-0	74.12	0.11	0.32	0.32	0.20	0.61	2
Allyl Chloride	107-05-1	76.53	0.13	0.42	0.40	0.20	0.63	2
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.19	1.5	0.58	0.20	1.5	1
Carbon disulfide	75-15-0	76.14	0.12	0.38	0.36	0.20	0.62	2
1,2-Dichloroethene (trans)	156-60-5	96.94	0.10	0.41	0.31	0.20	0.79	2
1,1-Dichloroethane	75-34-3	98.96	0.11	0.43	0.32	0.20	0.81	2
Methyl tert-butyl ether	1634-04-4	88.15	0.089	0.32	0.27	0.20	0.72	2
Methyl ethyl ketone	78-93-3	72.11	0.10	0.31	0.31	0.20	0.59	2
1,2-Dichloroethene (cis)	156-59-2	96.94	0.10	0.42	0.31	0.20	0.79	2
Ethyl acetate	141-78-6	88.11	0.16	0.58	0.48	0.20	0.72	1
n-Hexane	110-54-3	86.17	0.13	0.46	0.40	0.20	0.70	2
Chloroform	67-66-3	119.4	0.13	0.63	0.39	0.20	0.98	2
Tetrahydrofuran	109-99-9	72.11	0.12	0.36	0.36	0.20	0.59	2
1,2-Dichloroethane	107-06-2	98.96	0.10	0.40	0.30	0.20	0.81	2
1,1,1-Trichloroethane	71-55-6	133.4	0.15	0.82	0.45	0.20	1.1	1
Benzene	71-43-2	78.11	0.096	0.31	0.29	0.20	0.64	2
Carbon tetrachloride	56-23-5	153.8	0.13	0.82	0.39	0.20	1.3	2
Cyclohexane	110-82-7	84.16	0.11	0.38	0.33	0.20	0.69	2
1,2-Dichloropropane	78-87-5	113.0	0.15	0.69	0.45	0.20	0.92	1
Bromodichloromethane	75-27-4	163.8	0.15	0.99	0.44	0.20	1.3	1
2,2,4-Trimethylpentane	540-84-1	114.2	0.096	0.45	0.29	0.20	0.93	2
Trichloroethene	79-01-6	131.4	0.10	0.56	0.31	0.20	1.1	2
1,4-Dioxane	123-91-1	88.12	0.11	0.41	0.34	0.20	0.72	2
Methyl methacrylate	80-62-6	100.12	0.080	0.33	0.24	0.20	0.82	3
n-Heptane	142-82-5	100.2	0.096	0.40	0.29	0.20	0.82	2
1,3-Dichloropropene (cis)	10061-01-5	111.0	0.075	0.34	0.22	0.20	0.91	3
Methyl isobutyl ketone	108-10-1	100.2	0.080	0.33	0.24	0.20	0.82	3
1,3-Dichloropropene (trans)	10061-02-6	111.0	0.063	0.29	0.19	0.20	0.91	3
1,1,2-Trichloroethane	79-00-5	133.4	0.14	0.79	0.43	0.20	1.1	2
Toluene	108-88-3	92.14	0.084	0.32	0.25	0.20	0.75	3
Methyl n-butyl ketone	591-78-6	100.16	0.072	0.29	0.21	0.20	0.82	3
Dibromochloromethane	124-48-1	208.3	0.11	0.97	0.34	0.20	1.7	2
1,2-Dibromoethane	106-93-4	187.9	0.092	0.71	0.28	0.20	1.5	2
Tetrachloroethene	127-18-4	165.8	0.094	0.64	0.28	0.20	1.4	2
Chlorobenzene	108-90-7	112.6	0.16	0.73	0.48	0.20	0.92	1
Ethylbenzene	100-41-4	106.2	0.086	0.37	0.26	0.20	0.87	3
Xylenes (m p)	179601-23-1	106.2	0.21	0.90	0.62	0.40	1.7	2
Bromoform	75-25-2	252.8	0.14	1.4	0.41	0.20	2.1	2
Styrene	100-42-5	104.1	0.073	0.31	0.22	0.20	0.85	3
Xylene (o)	95-47-6	106.2	0.13	0.57	0.39	0.20	0.87	2
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.19	1.3	0.58	0.20	1.4	1
n-Nonane	111-84-2	128.2	0.084	0.44	0.25	0.20	1.0	3
Cumene (Isopropylbenzene)	98-82-8	120.2	0.12	0.57	0.35	0.20	0.98	2
2-Chlorotoluene	95-49-8	126.6	0.092	0.48	0.28	0.20	1.0	2
n-Propyl benzene	103-65-1	120.19	0.15	0.71	0.44	0.20	0.98	2

REPORTING METHOD DETECTION LIMIT (MDL) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument ID: GC - Agilent 7890A / MS - Agilent 5975C (IAL ID: *Instrument AA*)
 Report Prepared by: Lauren Jenkins
 Preparation Date: 3/4/19

MDL Effective Date: 3/15/2019
 MDL Expiration Date: 4/15/2020
 Analyst: Jeff Schmitt

Compound Name	CAS	Molecular Weight	MDL ppbv	MDL g/m ³	PQL ppbv	RL ppbv	RL g/m ³	True value/ MDL
4-Ethyltoluene	622-96-8	120.2	0.10	0.51	0.31	0.20	0.98	2
1,3,5-Trimethylbenzene	108-67-8	120.2	0.093	0.46	0.28	0.20	0.98	2
1,2,4-Trimethylbenzene	95-63-6	120.2	0.10	0.49	0.30	0.20	0.98	2
Benzyl chloride	100-44-7	126.59	0.097	0.50	0.29	0.20	1.0	2
1,3-Dichlorobenzene	541-73-1	147.0	0.077	0.46	0.23	0.20	1.2	3
1,4-Dichlorobenzene	106-46-7	147.0	0.085	0.51	0.25	0.20	1.2	3
1,2-Dichlorobenzene	95-50-1	147.0	0.080	0.48	0.24	0.20	1.2	3
1,2,4-Trichlorobenzene	120-82-1	181.5	0.092	0.68	0.28	0.20	1.5	3
Naphthalene	91-20-3	128.2	0.11	0.59	0.34	0.20	1.0	2
1,3-Hexachlorobutadiene	87-68-3	260.8	0.11	1.2	0.34	0.20	2.1	2

Where:

MDL is defined as the higher of the MDL Spike and MDL Blank
 PQL is MDLx3
 RL is defined as the lowest point of the calibration curve
 ppbv is parts per billion by volume and is how results come off the instrument
 $\mu\text{g}/\text{m}^3 = \text{ppbv} \times \text{molecular weight} / 24.45$

Location of this file: P:\PAL Reports\2018\LLTO-15 and TO-15 Common Files\Agilent MDL

Instrument used for Clean Canister Certification Analysis? YES



Michael Leftin, Ph.D.
 Laboratory Director

Date: March 4, 2019



Lauren Jenkins
 Quality Assurance Officer

Date: March 4, 2019

METHOD DETECTION LIMIT VERIFICATION (MDLV) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Analysis Level: 0.20 ppbv, 0.40 for m p-xylenes
 Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument Identification: AA
 Date of Verification Study: 1/2/2019
 Study Identification File : aa0375rllcs
 Analyst: Jeff Schmitt
 Analysis/Processing Method: C:\MSDCHEM\1\METHODS\1205.M
 Cylinder ID: CC483586

Lauren Jenkins

Lauren Jenkins
 QA Officer

Date: March 4, 2019

Compound Name	CAS	MDLV (ppbv)	RL (ppbv)	RL/MDLV Ratio
Propene	115-07-1	0.16	0.20	1
Dichlorodifluoromethane	124-48-1	0.27	0.20	1
Chloromethane	74-87-3	0.19	0.20	1
1,2-Dichlorotetrafluoroethane	76-14-2	0.27	0.20	1
Vinyl chloride	75-01-4	0.16	0.20	1
1,3-Butadiene	106-99-0	0.20	0.20	1
n-Butane	106-97-8	0.30	0.20	1
Bromomethane	74-83-9	0.13	0.20	2
Chloroethane	75-00-3	0.19	0.20	1
Ethanol	64-17-5	0.13	0.20	2
Vinyl bromide	593-60-2	0.16	0.20	1
Acrolein	107-02-8	0.23	0.20	1
Acetone	67-64-1	0.23	0.20	1
Trichlorofluoromethane	75-69-4	0.28	0.20	1
Isopropanol	67-63-0	0.23	0.20	1
n-Pentane	109-66-0	0.14	0.20	1
1,1-Dichloroethene	75-35-4	0.14	0.20	1
Methylene chloride	75-09-2	0.24	0.20	1
Tert-butyl alcohol	75-65-0	0.29	0.20	1
Allyl Chloride	107-05-1	0.21	0.20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.31	0.20	1
Carbon disulfide	75-15-0	0.28	0.20	1
1,2-Dichloroethene (trans)	156-60-5	0.30	0.20	1
1,1-Dichloroethane	75-34-3	0.29	0.20	1
Methyl tert-butyl ether	1634-04-4	0.14	0.20	1
Methyl ethyl ketone	78-93-3	0.24	0.20	1
1,2-Dichloroethene (cis)	156-59-2	0.25	0.20	1
Ethyl acetate	141-78-6	0.25	0.20	1
n-Hexane	110-54-3	0.26	0.20	1
Chloroform	67-66-3	0.23	0.20	1
Tetrahydrofuran	109-99-9	0.23	0.20	1
1,2-Dichloroethane	106-93-4	0.22	0.20	1
1,1,1-Trichloroethane	71-55-6	0.30	0.20	1
Benzene	71-43-2	0.31	0.20	1
Carbon tetrachloride	56-23-5	0.25	0.20	1
Cyclohexane	110-82-7	0.23	0.20	1
1,2-Dichloropropane	78-87-5	0.18	0.20	1
Bromodichloromethane	75-27-4	0.31	0.20	1
2,2,4-Trimethylpentane	540-84-1	0.12	0.20	2
Trichloroethene	79-01-6	0.26	0.20	1
1,4-Dioxane	123-91-1	0.22	0.20	1
Methyl methacrylate	80-62-6	0.15	0.20	1
n-Heptane	142-82-5	0.18	0.20	1
1,3-Dichloropropene (cis)	10061-01-5	0.23	0.20	1
Methyl isobutyl ketone	108-10-1	0.16	0.20	1
1,3-Dichloropropene (trans)	10061-02-6	0.17	0.20	1
1,1,2-Trichloroethane	79-00-5	0.26	0.20	1
Toluene	108-88-3	0.26	0.20	1
Methyl n-butyl ketone	591-78-6	0.18	0.20	1
Dibromochloromethane	75-71-8	0.28	0.20	1
1,2-Dibromoethane	107-06-2	0.27	0.20	1
Tetrachloroethene	127-18-4	0.31	0.20	1

METHOD DETECTION LIMIT VERIFICATION (MDLV) REPORT

Integrated Analytical Laboratories - Randolph, NJ

Analysis Level: 0.20 ppbv, 0.40 for m p-xylenes
 Matrix: Air
 Column ID: Restek Rtx-1, 60 meter, 0.32mm ID, 1 um
 Instrument Identification: AA
 Date of Verification Study: 1/2/2019
 Study Identification File : aa0375rlcs
 Analyst: Jeff Schmitt
 Analysis/Processing Method: C:\MSDCHEM\1\METHODS\1205.M
 Cylinder ID: CC483586

Lauren Jenkins

Lauren Jenkins
 QA Officer

Date: March 4, 2019

Compound Name	CAS	MDLV (ppbv)	RL (ppbv)	RL/MDLV Ratio
Chlorobenzene	108-90-7	0.29	0.20	1
Ethylbenzene	100-41-4	0.24	0.20	1
Xylenes (m p)	179601-23-1	0.41	0.40	1
Bromoform	75-25-2	0.22	0.20	1
Styrene	100-42-5	0.16	0.20	1
Xylene (o)	95-47-6	0.20	0.20	1
1,1,2,2-Tetrachloroethane	79-34-5	0.26	0.20	1
n-Nonane	111-84-2	0.19	0.20	1
Cumene	98-82-8	0.24	0.20	1
2-Chlorotoluene	95-49-8	0.22	0.20	1
n-Propyl benzene	103-65-1	0.20	0.20	1
4-Ethyltoluene	622-96-8	0.16	0.20	1
1,3,5-Trimethylbenzene	108-67-8	0.13	0.20	2
1,2,4-Trimethylbenzene	95-63-6	0.08	0.20	2
Benzyl chloride	100-44-7	0.13	0.20	2
1,3-Dichlorobenzene	541-73-1	0.26	0.20	1
1,4-Dichlorobenzene	106-46-7	0.13	0.20	2
1,2-Dichlorobenzene	95-50-1	0.25	0.20	1
1,2,4-Trichlorobenzene	120-82-1	0.17	0.20	1
Naphthalene	91-20-3	0.12	0.20	2
1,3-Hexachlorobutadiene	87-68-3	0.27	0.20	1

Section V: Quality Control Data Summary

BFB Tune Summary

Method Blank

Laboratory Control Sample

Laboratory Sample Duplicate

Internal Standard Area Summary

Data Path: C:\DATA\03-13-19\
Data File: AA1521BFB.D
Acq On: 3/13/2019 9:57:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

PassFail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	201365	26.3
PASS	75	95	30	66	372117	48.5
PASS	95	95	100	100	766592	100.0
PASS	96	95	5	9	51653	6.7
PASS	173	174	0.00	2	3452	0.7
PASS	174	95	50	100	465536	60.7
PASS	175	174	4	9	33896	7.3
PASS	176	174	93	101	440939	94.7
PASS	177	176	5	9	28072	6.4

Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1521BFB	NA	3/13/2019 9:57:00 AM
40 PPBV STD	AA1522STD01	NA	3/13/2019 11:03:00 AM
20 PPBV STD	AA1523STD02	NA	3/13/2019 11:25:00 AM
10 PPBV STD	AA1524STD03	NA	3/13/2019 11:46:00 AM
2 PPBV STD	AA1525STD04	NA	3/13/2019 1:53:00 PM
0.2 PPBV STD	AA1526STD05	NA	3/13/2019 2:52:00 PM
10 PPBV ICVSS	AA1527ICVSS	NA	3/13/2019 3:26:00 PM

Data Path: C:\DATA\03-26-19\
Data File: AA1761BFB.D
Acq On: 3/26/2019 8:08:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

PassFail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	213270	32.4
PASS	75	95	30	66	370859	56.3
PASS	95	95	100	100	658539	100.0
PASS	96	95	5	9	44923	6.8
PASS	173	174	0.00	2	1418	0.4
PASS	174	95	50	100	362475	55.0
PASS	175	174	4	9	27029	7.5
PASS	176	174	93	101	349184	96.3
PASS	177	176	5	9	23925	6.9

Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1761BFB	NA	3/26/2019 8:08:00 AM
10 PPBV DCVS	AA1762DCVS	NA	3/26/2019 8:39:00 AM
10 PPBV LCS	AA1763LCS	NA	3/26/2019 9:08:00 AM
METHOD BLANK	AA1764BLK	NA	3/26/2019 11:04:00 AM
02 PPBV RLLCS	AA1765RLLCS	NA	3/26/2019 11:27:00 AM
5084	AA1785	NA	3/26/2019 7:40:00 PM
10 PPBV CCCVS	AA1786CCCVS	NA	3/26/2019 8:02:00 PM

Data Path: C:\DATA\04-11-19\
Data File: AA2051BFB.D
Acq On: 4/11/2019 9:20:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	257877	35.2
PASS	75	95	30	66	474112	64.7
PASS	95	95	100	100	732309	100.0
PASS	96	95	5	9	50987	7.0
PASS	173	174	0.00	2	4290	1.0
PASS	174	95	50	100	418304	57.1
PASS	175	174	4	9	32013	7.7
PASS	176	174	93	101	405184	96.9
PASS	177	176	5	9	25416	6.3

Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA2051BFB	NA	4/11/2019 9:20:00 AM
10 PPBV DCVS	AA2052DCVS	NA	4/11/2019 9:44:00 AM
10 PPBV LCS	AA2053LCS	NA	4/11/2019 10:05:00 AM
METHOD BLANK	AA2054BLK	NA	4/11/2019 10:48:00 AM
02 PPBV RLLCS	AA2055RLLCS	NA	4/11/2019 11:13:00 AM
0.1 PPBV DCVS	AA2056DCVSSIM	NA	4/11/2019 12:35:00 PM
METHOD BLANK	AA2057BLKSIM	NA	4/11/2019 1:09:00 PM
E19-02297-01	AA2068	NS-4	4/11/2019 6:31:00 PM
E19-02297-01	AA2069	NS-4	4/11/2019 6:54:00 PM
10 PPBV CCCVS	AA2078CCCVS	NA	4/12/2019 8:27:00 AM

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1764BLK
Date Analyzed: 3/26/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 8:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 8:39
10 PPBV LCS [AA1763LCS]	03/26/2019 9:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1764BLK
Date Analyzed: 3/26/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 8:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 8:39
10 PPBV LCS [AA1763LCS]	03/26/2019 9:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA2054BLK
Date Analyzed: 4/11/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2051BFB]	04/11/2019 9:20
10 PPBV DCVS [AA2052DCVS]	04/11/2019 9:44
10 PPBV LCS [AA2053LCS]	04/11/2019 10:05
METHOD BLANK [AA2054BLK]	04/11/2019 10:48
02 PPBV RLLCS [AA2055RLLCS]	04/11/2019 11:13
0.1 PPBV DCVS [AA2056DCVSSIM]	04/11/2019 12:35
METHOD BLANK [AA2057BLKSIM]	04/11/2019 13:09
E19-02297-01 [AA2068]	04/11/2019 18:31
E19-02297-01 [AA2069]	04/11/2019 18:54
10 PPBV CCCVS [AA2078CCCVS]	04/12/2019 8:27

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA2054BLK
Date Analyzed: 4/11/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2051BFB]	04/11/2019 9:20
10 PPBV DCVS [AA2052DCVS]	04/11/2019 9:44
10 PPBV LCS [AA2053LCS]	04/11/2019 10:05
METHOD BLANK [AA2054BLK]	04/11/2019 10:48
02 PPBV RLLCS [AA2055RLLCS]	04/11/2019 11:13
0.1 PPBV DCVS [AA2056DCVSSIM]	04/11/2019 12:35
METHOD BLANK [AA2057BLKSIM]	04/11/2019 13:09
E19-02297-01 [AA2068]	04/11/2019 18:31
E19-02297-01 [AA2069]	04/11/2019 18:54
10 PPBV CCCVS [AA2078CCCVS]	04/12/2019 8:27

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1763LCS
Date Analyzed: 3/26/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 8:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 8:39
10 PPBV LCS [AA1763LCS]	03/26/2019 9:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	11	100
Benzene	71-43-2	10	91
Bromodichloromethane	75-27-4	10	91
Bromoform	75-25-2	10	91
Bromomethane	74-83-9	9.4	95
1,3-Butadiene	106-99-0	12	110
Chlorobenzene	108-90-7	8.7	79
Chloroethane	75-00-3	8.3	83
Chloroform	67-66-3	10	91
Chloromethane	74-87-3	12	110
Carbon disulfide	75-15-0	11	100
Carbon tetrachloride	56-23-5	9.9	90
Cyclohexane	110-82-7	7.9	72
Dibromochloromethane	124-48-1	10	91
1,2-Dibromoethane	106-93-4	9.8	89
1,2-Dichlorobenzene	95-50-1	9.0	82
1,3-Dichlorobenzene	541-73-1	8.6	78
1,4-Dichlorobenzene	106-46-7	8.9	81
Dichlorodifluoromethane	75-71-8	11	100
1,1-Dichloroethane	75-34-3	9.4	85
1,2-Dichloroethane	107-06-2	10	91
1,1-Dichloroethene	75-35-4	10	91
1,2-Dichloroethene (cis)	156-59-2	9.4	85
1,2-Dichloroethene (trans)	156-60-5	9.5	86
1,2-Dichloropropane	78-87-5	8.8	80
1,3-Dichloropropene (cis)	10061-01-5	9.5	86
1,3-Dichloropropene (trans)	10061-02-6	9.5	95
1,2-Dichlorotetrafluoroethane	76-14-2	9.5	95
1,4-Dioxane	123-91-1	8.7	87
Ethylbenzene	100-41-4	9.3	85
n-Heptane	142-82-5	8.6	78
1,3-Hexachlorobutadiene	87-68-3	11	100
n-Hexane	110-54-3	11	100

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1763LCS
Date Analyzed: 3/26/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 8:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 8:39
10 PPBV LCS [AA1763LCS]	03/26/2019 9:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Methylene chloride	75-09-2	8.7	79
Methyl ethyl ketone	78-93-3	9.2	84
Methyl isobutyl ketone	108-10-1	9.6	87
Methyl tert-butyl ether	1634-04-4	9.3	85
Styrene	100-42-5	9.3	85
Tert-butyl alcohol	75-65-0	8.9	74
1,1,2,2-Tetrachloroethane	79-34-5	10	91
Tetrachloroethene	127-18-4	9.4	85
Toluene	108-88-3	9.7	88
1,2,4-Trichlorobenzene	120-82-1	10	83
1,1,1-Trichloroethane	71-55-6	9.9	90
1,1,2-Trichloroethane	79-00-5	10	91
Trichloroethene	79-01-6	8.7	79
Trichlorofluoromethane	75-69-4	10	91
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	9.4	85
1,2,4-Trimethylbenzene	95-63-6	9.3	85
1,3,5-Trimethylbenzene	108-67-8	9.5	86
2,2,4-Trimethylpentane	540-84-1	8.8	80
Vinyl bromide	593-60-2	9.7	88
Vinyl chloride	75-01-4	11	100
Xylenes (m&p)	179601-23-1	20	91
Xylenes (o)	95-47-6	8.9	81

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA2053LCS
Date Analyzed: 4/11/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2051BFB]	04/11/2019 9:20
10 PPBV DCVS [AA2052DCVS]	04/11/2019 9:44
10 PPBV LCS [AA2053LCS]	04/11/2019 10:05
METHOD BLANK [AA2054BLK]	04/11/2019 10:48
02 PPBV RLLCS [AA2055RLLCS]	04/11/2019 11:13
0.1 PPBV DCVS [AA2056DCVSSIM]	04/11/2019 12:35
METHOD BLANK [AA2057BLKSIM]	04/11/2019 13:09
E19-02297-01 [AA2068]	04/11/2019 18:31
E19-02297-01 [AA2069]	04/11/2019 18:54
10 PPBV CCCVS [AA2078CCCVS]	04/12/2019 8:27

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	13	120
Benzene	71-43-2	12	110
Bromodichloromethane	75-27-4	13	120
Bromoform	75-25-2	13	120
Bromomethane	74-83-9	9.4	95
1,3-Butadiene	106-99-0	12	110
Chlorobenzene	108-90-7	9.6	87
Chloroethane	75-00-3	10	100
Chloroform	67-66-3	13	120
Chloromethane	74-87-3	11	100
Carbon disulfide	75-15-0	12	110
Carbon tetrachloride	56-23-5	13	120
Cyclohexane	110-82-7	9.1	83
Dibromochloromethane	124-48-1	12	110
1,2-Dibromoethane	106-93-4	11	100
1,2-Dichlorobenzene	95-50-1	11	100
1,3-Dichlorobenzene	541-73-1	9.8	89
1,4-Dichlorobenzene	106-46-7	10	91
Dichlorodifluoromethane	75-71-8	11	100
1,1-Dichloroethane	75-34-3	11	100
1,2-Dichloroethane	107-06-2	13	120
1,1-Dichloroethene	75-35-4	12	110
1,2-Dichloroethene (cis)	156-59-2	11	100
1,2-Dichloroethene (trans)	156-60-5	11	100
1,2-Dichloropropane	78-87-5	10	91
1,3-Dichloropropene (cis)	10061-01-5	11	100
1,3-Dichloropropene (trans)	10061-02-6	12	120
1,2-Dichlorotetrafluoroethane	76-14-2	11	110
1,4-Dioxane	123-91-1	9.5	95
Ethylbenzene	100-41-4	9.7	88

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

*** Values outside of QC limits* Values outside of 70-130% QC limits**

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA2053LCS
Date Analyzed: 4/11/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2051BFB]	04/11/2019 9:20
10 PPBV DCVS [AA2052DCVS]	04/11/2019 9:44
10 PPBV LCS [AA2053LCS]	04/11/2019 10:05
METHOD BLANK [AA2054BLK]	04/11/2019 10:48
02 PPBV RLLCS [AA2055RLLCS]	04/11/2019 11:13
0.1 PPBV DCVS [AA2056DCVSSIM]	04/11/2019 12:35
METHOD BLANK [AA2057BLKSIM]	04/11/2019 13:09
E19-02297-01 [AA2068]	04/11/2019 18:31
E19-02297-01 [AA2069]	04/11/2019 18:54
10 PPBV CCCVS [AA2078CCCVS]	04/12/2019 8:27

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
n-Heptane	142-82-5	9.5	86
1,3-Hexachlorobutadiene	87-68-3	13	120
n-Hexane	110-54-3	10	91
Methylene chloride	75-09-2	11	100
Methyl ethyl ketone	78-93-3	10	91
Methyl isobutyl ketone	108-10-1	11	100
Methyl tert-butyl ether	1634-04-4	11	100
Styrene	100-42-5	9.9	90
Tert-butyl alcohol	75-65-0	11	92
1,1,2,2-Tetrachloroethane	79-34-5	11	100
Tetrachloroethene	127-18-4	11	100
Toluene	108-88-3	11	100
1,2,4-Trichlorobenzene	120-82-1	12	100
1,1,1-Trichloroethane	71-55-6	13	120
1,1,2-Trichloroethane	79-00-5	11	100
Trichloroethene	79-01-6	9.0	82
Trichlorofluoromethane	75-69-4	14	130
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	11	100
1,2,4-Trimethylbenzene	95-63-6	10	91
1,3,5-Trimethylbenzene	108-67-8	11	100
2,2,4-Trimethylpentane	540-84-1	9.3	85
Vinyl bromide	593-60-2	11	100
Vinyl chloride	75-01-4	11	100
Xylenes (m&p)	179601-23-1	22	100
Xylenes (o)	95-47-6	9.2	84

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-05
Matrix: Air
Summa ID: 1571

Date Received: 3/15/19
Date Analyzed: 3/26/19, 3/26/19
Lab Data File : AA1766, AA1767
Dilution Factor: 100
Injection Volume: 0.5ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-05		Sample Dup E19-01821-25		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
		ppbv		ppbv		ppbv	
Acetone	67-64-1	400	U	400	U	400	0.00%
Allyl Chloride	107-05-1	400	U	400	U	400	0.00%
Benzene	71-43-2	400	U	400	U	400	0.00%
Bromodichloromethane	75-27-4	400	U	400	U	400	0.00%
Bromoform	75-25-2	400	U	400	U	400	0.00%
Bromomethane	74-83-9	400	U	400	U	400	0.00%
1,3-Butadiene	106-99-0	400	U	400	U	400	0.00%
Chlorobenzene	108-90-7	400	U	400	U	400	0.00%
Chloroethane	75-00-3	400	U	400	U	400	0.00%
Chloroform	67-66-3	400	U	400	U	400	0.00%
Chloromethane	74-87-3	400	U	400	U	400	0.00%
Carbon disulfide	75-15-0	400	U	400	U	400	0.00%
Carbon tetrachloride	56-23-5	400	U	400	U	400	0.00%
2-Chlorotoluene	95-49-8	400	U	400	U	400	0.00%
Cyclohexane	110-82-7	400	U	400	U	400	0.00%
Dibromochloromethane	124-48-1	400	U	400	U	400	0.00%
1,2-Dibromoethane	106-93-4	400	U	400	U	400	0.00%
1,2-Dichlorobenzene	95-50-1	400	U	400	U	400	0.00%
1,3-Dichlorobenzene	541-73-1	400	U	400	U	400	0.00%
1,4-Dichlorobenzene	106-46-7	400	U	400	U	400	0.00%
Dichlorodifluoromethane	75-71-8	400	U	400	U	400	0.00%
1,1-Dichloroethane	75-34-3	400	U	400	U	400	0.00%
1,2-Dichloroethane	107-06-2	400	U	400	U	400	0.00%
1,1-Dichloroethene	75-35-4	400	U	400	U	400	0.00%
1,2-Dichloroethene (cis)	156-59-2	400	U	400	U	400	0.00%
1,2-Dichloroethene (trans)	156-60-5	400	U	400	U	400	0.00%
1,2-Dichloropropane	78-87-5	400	U	400	U	400	0.00%
1,3-Dichloropropene (cis)	10061-01-5	400	U	400	U	400	0.00%
1,3-Dichloropropene (trans)	10061-02-6	400	U	400	U	400	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2	400	U	400	U	400	0.00%
Ethylbenzene	100-41-4	400	U	400	U	400	0.00%
4-Ethyltoluene	622-96-8	400	U	400	U	400	0.00%
n-Heptane	142-82-5	400	U	400	U	400	0.00%
1,3-Hexachlorobutadiene	87-68-3	400	U	400	U	400	0.00%
n-Hexane	110-54-3	400	U	400	U	400	0.00%
Methylene chloride	75-09-2	400	U	400	U	400	0.00%
Methyl ethyl ketone	78-93-3	400	U	400	U	400	0.00%
Methyl isobutyl ketone	108-10-1	400	U	400	U	400	0.00%

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-05
Matrix: Air
Summa ID: 1571

Date Received: 3/15/19
Date Analyzed: 3/26/19, 3/26/19
Lab Data File : AA1766, AA1767
Dilution Factor: 100
Injection Volume: 0.5ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-05		Sample Dup E19-01821-25		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
		ppbv		ppbv		ppbv	
Methyl tert-butyl ether	1634-04-4	400 U		400 U		400	0.00%
Styrene	100-42-5	400 U		400 U		400	0.00%
Tert-butyl alcohol	75-65-0	400 U		400 U		400	0.00%
1,1,2,2-Tetrachloroethane	79-34-5	400 U		400 U		400	0.00%
Tetrachloroethene	127-18-4	400 U		400 U		400	0.00%
Toluene	108-88-3	400 U		400 U		400	0.00%
1,2,4-Trichlorobenzene	120-82-1	400 U		400 U		400	0.00%
1,1,1-Trichloroethane	71-55-6	400 U		400 U		400	0.00%
1,1,2-Trichloroethane	79-00-5	400 U		400 U		400	0.00%
Trichloroethene	79-01-6	400 U		400 U		400	0.00%
Trichlorofluoromethane	75-69-4	400 U		400 U		400	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	400 U		400 U		400	0.00%
1,2,4-Trimethylbenzene	95-63-6	400 U		400 U		400	0.00%
1,3,5-Trimethylbenzene	108-67-8	400 U		400 U		400	0.00%
2,2,4-Trimethylpentane	540-84-1	400 U		400 U		400	0.00%
Vinyl bromide	593-60-2	400 U		400 U		400	0.00%
Vinyl chloride	75-01-4	400 U		400 U		400	0.00%
Xylenes (m p)	179601-23-1	400 U		400 U		400	0.00%
Xylenes (o)	95-47-6	400 U		400 U		400	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-01
Matrix: Air
Summa ID: 2162

Date Received: 3/15/19
Date Analyzed: 4/11/19, 4/11/19
Lab Data File : AA2063, AA2064
Dilution Factor: 1
Injection Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-01 Concentration Reported		Sample Dup E19-01821-21 Concentration Reported		Reporting Limits ppbv	RPD
		ppbv	Q	ppbv	Q		
Acetone	67-64-1	8.0		9.4		0.40	-16.09
Allyl Chloride	107-05-1		0.40 U		0.40 U	0.40	0.00%
Benzene	71-43-2		0.40 U		0.40 U	0.40	0.00%
Bromodichloromethane	75-27-4		0.40 U		0.40 U	0.40	0.00%
Bromoform	75-25-2		0.40 U		0.40 U	0.40	0.00%
Bromomethane	74-83-9		0.40 U		0.40 U	0.40	0.00%
1,3-Butadiene	106-99-0		0.40 U		0.40 U	0.40	0.00%
Chlorobenzene	108-90-7		0.40 U		0.40 U	0.40	0.00%
Chloroethane	75-00-3		0.40 U		0.40 U	0.40	0.00%
Chloroform	67-66-3		0.40 U		0.40 U	0.40	0.00%
Chloromethane	74-87-3		0.40 U		0.40 U	0.40	0.00%
Carbon disulfide	75-15-0		0.40 U		0.40 U	0.40	0.00%
Carbon tetrachloride	56-23-5		0.40 U		0.40 U	0.40	0.00%
2-Chlorotoluene	95-49-8		0.40 U		0.40 U	0.40	0.00%
Cyclohexane	110-82-7		0.40 U		0.40 U	0.40	0.00%
Dibromochloromethane	124-48-1		0.40 U		0.40 U	0.40	0.00%
1,2-Dibromoethane	106-93-4		0.40 U		0.40 U	0.40	0.00%
1,2-Dichlorobenzene	95-50-1		0.40 U		0.40 U	0.40	0.00%
1,3-Dichlorobenzene	541-73-1		0.40 U		0.40 U	0.40	0.00%
1,4-Dichlorobenzene	106-46-7		0.40 U		0.40 U	0.40	0.00%
Dichlorodifluoromethane	75-71-8		0.40 U		0.40 U	0.40	0.00%
1,1-Dichloroethane	75-34-3		0.40 U		0.40 U	0.40	0.00%
1,2-Dichloroethane	107-06-2		0.40 U		0.40 U	0.40	0.00%
1,1-Dichloroethene	75-35-4		0.40 U		0.40 U	0.40	0.00%
1,2-Dichloroethene (cis)	156-59-2		0.40 U		0.40 U	0.40	0.00%
1,2-Dichloroethene (trans)	156-60-5		0.40 U		0.40 U	0.40	0.00%
1,2-Dichloropropane	78-87-5		0.40 U		0.40 U	0.40	0.00%
1,3-Dichloropropene (cis)	10061-01-5		0.40 U		0.40 U	0.40	0.00%
1,3-Dichloropropene (trans)	10061-02-6		0.40 U		0.40 U	0.40	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2		0.40 U		0.40 U	0.40	0.00%
Ethylbenzene	100-41-4		0.40 U		0.40 U	0.40	0.00%
4-Ethyltoluene	622-96-8		0.40 U		0.40 U	0.40	0.00%
n-Heptane	142-82-5		0.40 U		0.40 U	0.40	0.00%
1,3-Hexachlorobutadiene	87-68-3		0.40 U		0.40 U	0.40	0.00%
n-Hexane	110-54-3		0.40 U		0.40 U	0.40	0.00%
Methylene chloride	75-09-2	2.1		2.2		0.40	-4.65
Methyl ethyl ketone	78-93-3	2.2		2.3		0.40	-4.44
Methyl isobutyl ketone	108-10-1		0.40 U		0.40 U	0.40	0.00%

Qualifier:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-01
Matrix: Air
Summa ID: 2162

Date Received: 3/15/19
Date Analyzed: 4/11/19,4/11/19
Lab Data File : AA2063,AA2064
Dilution Factor: 1
Injection Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-01		Sample Dup E19-01821-21		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
		ppbv		ppbv		ppbv	
Methyl tert-butyl ether	1634-04-4	0.40	U	0.40	U	0.40	0.00%
Styrene	100-42-5	0.40	U	0.40	U	0.40	0.00%
Tert-butyl alcohol	75-65-0	0.40	U	0.40	U	0.40	0.00%
1,1,2,2-Tetrachloroethane	79-34-5	0.40	U	0.40	U	0.40	0.00%
Tetrachloroethene	127-18-4	0.40	U	0.40	U	0.40	0.00%
Toluene	108-88-3	0.40	U	0.40	U	0.40	0.00%
1,2,4-Trichlorobenzene	120-82-1	0.40	U	0.40	U	0.40	0.00%
1,1,1-Trichloroethane	71-55-6	0.40	U	0.40	U	0.40	0.00%
1,1,2-Trichloroethane	79-00-5	0.40	U	0.40	U	0.40	0.00%
Trichloroethene	79-01-6	0.40	U	0.40	U	0.40	0.00%
Trichlorofluoromethane	75-69-4	0.40	U	0.40	U	0.40	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.40	U	0.40	U	0.40	0.00%
1,2,4-Trimethylbenzene	95-63-6	0.40	U	0.40	U	0.40	0.00%
1,3,5-Trimethylbenzene	108-67-8	0.40	U	0.40	U	0.40	0.00%
2,2,4-Trimethylpentane	540-84-1	0.40	U	0.40	U	0.40	0.00%
Vinyl bromide	593-60-2	0.40	U	0.40	U	0.40	0.00%
Vinyl chloride	75-01-4	0.40	U	0.40	U	0.40	0.00%
Xylenes (m p)	179601-23-1	0.40	U	0.40	U	0.40	0.00%
Xylenes (o)	95-47-6	0.40	U	0.40	U	0.40	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Initial Calibration Curve Internal Standard Area and Retention Time Summary

Instrument: **AA**

ICAL Date: **3/13/2019**

		BROMOCHLOROMETHANE				1,4-DIFLUOROBENZENE				D-5 CHLOROBENZENE			
		Area		RT		Area		RT		Area		RT	
AVERAGE OF CALIBRATION STANDARDS		599451		4.337		2434192		5.397		2028923		8.259	
UPPER LIMIT		839231		4.667		3407869		5.727		2840492		8.589	
LOWER LIMIT		359671		4.007		1460515		5.067		1217354		7.929	
Lab ID		Area		RT		Area		RT		Area		RT	
40 PPBV STD AA 1522 STD01		562033	6.24	4.345	0.01	2424630	0.39	5.399	0.00	1852861	8.68	8.261	0.00
20 PPBV STD AA 1523 STD04		595915	0.59	4.342	0.00	2483086	2.01	5.399	0.00	2008313	1.02	8.261	0.00
10 PPBV STD AA 1524 STD03		619922	3.41	4.335	0.00	2493141	2.42	5.396	0.00	2093975	3.21	8.258	0.00
2 PPBV STD AA 1525 STD04		603375	0.65	4.332	0.01	2369670	2.65	5.396	0.00	2059554	1.51	8.258	0.00
0.2 PPBV STD AA 1526 STD05		616010	2.76	4.332	0.01	2400433	1.39	5.396	0.00	2129912	4.98	8.258	0.00
ICVSS AA 1527 ICVSS		583648	2.64	4.335	0.00	2364331	2.87	5.399	0.00	2014746	0.70	8.258	0.00

Difference of Internal Area must be within +/- 40%; Retention Times must be within +/- 0.33 minute.

* Values outside QC limits.

Internal Standard Area and Retention Time Summary

Lab File ID (Standard): AA1762DCVS

Date Analyzed: 3/26/2019

Instrument: AA

ICAL Date: 3/13/2019

			BROMOCHLOROMETHANE				1,4-DIFLUOROBENZENE				D-5 CHLORO BENZENE			
			Area #		RT		Area #		RT		Area #		RT	
CALIBRATION STANDARD			495313		4.332		1937183		5.396		1979719		8.258	
UPPER LIMIT			693438		4.66		2712056		5.73		2771607		8.59	
LOWER LIMIT			297188		4.00		1162310		5.07		1187831		7.93	
Lab ID	DF		Area #	%	RT	+/-	Area #	%	RT	+/-	Area #	%	RT	+/-
Method Blank	AA1764BLK	1.0	437665	-11.64	4.332	0.00	1640766	-15.30	5.396	0.00	1491146	-24.68	8.261	0.00
Reporting Limit Laboratory Control Standard	AA1765RLLCS	1.0	430817	-13.02	4.332	0.00	1651992	-14.72	5.396	0.00	1567936	-20.80	8.261	0.00
5084	AA1785	1.0	378861	-23.51	4.338	0.01	1399943	-27.73	5.403	0.01	1260198	-36.34	8.261	0.00
Closing Calibration	AA1786CCCVS	1.0	454800	-8.18	4.335	0.00	1787949	-7.70	5.396	0.00	1988015	0.42	8.258	0.00

Difference of Internal Area must be within +/- 40%; Retention Times must be within +/- 0.33 minute.

* Values outside QC limits.

Internal Standard Area and Retention Time Summary

Lab File ID (Standard): AA2052DCVS

Date Analyzed: 4/11/2019

Instrument: AA

ICAL Date: 3/13/2019

			BROMOCHLOROMETHANE				1,4-DIFLUOROBENZENE				D-5 CHLORO BENZENE			
			Area #		RT		Area #		RT		Area #		RT	
CALIBRATION STANDARD			602091		4.342		2409502		5.396		2665630		8.261	
UPPER LIMIT			842927		4.67		3373303		5.73		3731882		8.59	
LOWER LIMIT			361255		4.01		1445701		5.07		1599378		7.93	
Lab ID	DF		Area #	%	RT	+/-	Area #	%	RT	+/-	Area #	%	RT	+/-
Method Blank	AA2054BLK	1.0	574572	-4.57	4.338	0.00	2149500	-10.79	5.399	0.00	1940145	-27.22	8.258	0.00
Reporting Limit Laboratory Control Standard	AA2055RLLCS	1.0	494392	-17.89	4.335	-0.01	2028506	-15.81	5.400	0.00	1949513	-26.86	8.258	0.00
E19-02297-01	AA2068	2.0	569090	-5.48	4.358	0.02	2311325	-4.07	5.406	0.01	2537435	-4.81	8.248	-0.01
E19-02297-01	AA2069	1.0	550920	-8.50	4.351	0.01	2422913	0.56	5.403	0.01	2808878	5.37	8.252	-0.01
Closing Calibration	AA2078CCCVS	1.0	713140	18.44	4.338	0.00	2978684	23.62	5.403	0.01	2823462	5.92	8.258	0.00

Difference of Internal Area must be within +/- 40%; Retention Times must be within +/- 0.33 minute.

* Values outside QC limits.

Section VI: Sample Data Summary

Certificate of Analysis

Summary of Results

**Quantitation Reports, Chromatograms,
and Peak Integration Reports**

CERTIFICATE OF ANALYSIS

**ANALYTICAL DATA PACKAGE FOR THE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY NEW YORK 12233**

Integrated Analytical Laboratories, LLC
Project#: Lofts of Globe Mill
SDG #: E19-02297
Date of first sample receipt: 4/2/2019

Randolph, NJ 07869
NY ELAP Certification#: 11402
NJDEP (Primary AB) Certification#: 14751
Date of last sample receipt: 4/2/2019

Client: EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512

Attention: Attention: Ewa Gut

Project/Site: Lofts of Globe Mill/NY

Analysis conducted at: Integrated Analytical Laboratories, LLC
273 Franklin Road
Randolph, NJ 07869

Contact: Michael H. Leftin, Ph.D.

Sample(s):
E19-02297-01

Samples for this analysis were received in good condition with a chain of custody.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Once analysis has been performed on canisters that meets regulatory criteria, samples are recycled for future use, unless other provisions have been made by the client.



Michael H. Leftin, Ph.D.
Laboratory Director

Date: April 22, 2019



Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts of Globe Mill
Site: NY

Report Date: 04/12/19
SDG Number: E19-02297
Date Sampled: 04/01/19
Date Received: 04/02/19
Date Analyzed: 04/11/19
Data File: AA2069, AA2068
Summa ID: 5095
DF: 1, 2

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		NS-4		Reporting Limits	
IAL ID:		E19-02297-01			
Compound	CAS	ppbv	ug/m3	ppbv	ug/m3
Acetone	67-64-1	18	43	0.20	0.48
Benzene	71-43-2	ND	ND	0.20	0.64
Bromodichloromethane	75-27-4	ND	ND	0.20	1.3
Bromoform	75-25-2	ND	ND	0.20	2.1
Bromomethane	74-83-9	ND	ND	0.20	0.78
1,3-Butadiene	106-99-0	ND	ND	0.20	0.44
Chlorobenzene	108-90-7	ND	ND	0.20	0.92
Chloroethane	75-00-3	ND	ND	0.20	0.53
Chloroform	67-66-3	ND	ND	0.20	0.98
Chloromethane	74-87-3	ND	ND	0.20	0.41
Carbon disulfide	75-15-0	ND	ND	0.20	0.62
Carbon tetrachloride	56-23-5	ND	ND	0.04	0.25
Cyclohexane	110-82-7	ND	ND	0.20	0.69
Dibromochloromethane	124-48-1	ND	ND	0.20	1.7
1,2-Dibromoethane	106-93-4	ND	ND	0.20	1.5
1,2-Dichlorobenzene	95-50-1	ND	ND	0.20	1.2
1,3-Dichlorobenzene	541-73-1	ND	ND	0.20	1.2
1,4-Dichlorobenzene	106-46-7	ND	ND	0.20	1.2
Dichlorodifluoromethane	75-71-8	ND	ND	0.20	0.99
1,1-Dichloroethane	75-34-3	ND	ND	0.20	0.81
1,2-Dichloroethane	107-06-2	ND	ND	0.20	0.81
1,1-Dichloroethene	75-35-4	ND	ND	0.20	0.79
1,2-Dichloroethene (cis)	156-59-2	ND	ND	0.20	0.79
1,2-Dichloroethene (trans)	156-60-5	ND	ND	0.20	0.79
1,2-Dichloropropane	78-87-5	ND	ND	0.20	0.92
1,3-Dichloropropene (cis)	10061-01-5	ND	ND	0.20	0.91
1,3-Dichloropropene (trans)	10061-02-6	ND	ND	0.20	0.91
1,2-Dichlorotetrafluoroethane	76-14-2	ND	ND	0.20	1.4
1,4-Dioxane	123-91-1	ND	ND	0.20	0.72
Ethylbenzene	100-41-4	ND	ND	0.20	0.87
n-Heptane	142-82-5	ND	ND	0.20	0.82
1,3-Hexachlorobutadiene	87-68-3	ND	ND	0.20	2.1
n-Hexane	110-54-3	ND	ND	0.20	0.71
Methylene chloride	75-09-2	3.1	11	0.20	0.70
Methyl ethyl ketone	78-93-3	2.9	8.6	0.20	0.59
Methyl isobutyl ketone	108-10-1	ND	ND	0.20	0.82
Methyl tert-butyl ether	1634-04-4	ND	ND	0.20	0.72
Styrene	100-42-5	ND	ND	0.20	0.85
Tert-butyl alcohol	75-65-0	ND	ND	0.20	0.61
1,1,2,2-Tetrachloroethane	79-34-5	ND	ND	0.20	1.4
Tetrachloroethene	127-18-4	ND	ND	0.20	1.4
Toluene	108-88-3	D 76	290	0.40	1.5
1,2,4-Trichlorobenzene	120-82-1	ND	ND	0.20	1.5
1,1,1-Trichloroethane	71-55-6	ND	ND	0.20	1.1
1,1,2-Trichloroethane	79-00-5	ND	ND	0.20	1.1
Trichloroethene	79-01-6	ND	ND	0.05	0.25

IAL SDG #E19-02297

Page 48

D = Extra dilution required for this compound

page 1 of 2

Analyst: J. Schmitt



Integrated Analytical Laboratories LLC

Summary of Results

EFI Global
11 Commerce Way Ste A
Totowa, NJ 07512
Attn: Ewa Gut
Project: Lofts of Globe Mill
Site: NY

Report Date: 04/12/19
SDG Number: E19-02297
Date Sampled: 04/01/19
Date Received: 04/02/19
Date Analyzed: 04/11/19
Data File: AA2069, AA2068
Summa ID: 5095
DF: 1, 2

Analysis: Volatile Organic Compounds by EPA Method TO-15

Sample Name:		NS-4		Reporting	
IAL ID:		E19-02297-01		Limits	
<u>Compound</u>	<u>CAS</u>	<u>ppbv</u>	<u>ug/m3</u>	<u>ppbv</u>	<u>ug/m3</u>
Trichlorofluoromethane	75-69-4	0.34	1.9	0.20	1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	ND	0.20	1.5
1,2,4-Trimethylbenzene	95-63-6	ND	ND	0.20	0.98
1,3,5-Trimethylbenzene	108-67-8	ND	ND	0.20	0.98
2,2,4-Trimethylpentane	540-84-1	ND	ND	0.20	0.93
Vinyl bromide	593-60-2	ND	ND	0.20	0.87
Vinyl chloride	75-01-4	ND	ND	0.20	0.51
Xylenes (m p)	179601-23-1	0.40	1.7	0.20	0.87
Xylenes (o)	95-47-6	ND	ND	0.20	0.87

Data Path : C:\DATA\04-11-19\
 Data File : aa2069.D
 Acq On : 11 Apr 2019 6:54 pm
 Operator : jls
 Sample : E19-02297-01
 Misc : 5095, 500cc
 ALS Vial : 19 Sample Multiplier: 1

Quant Time: Apr 12 10:45:50 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

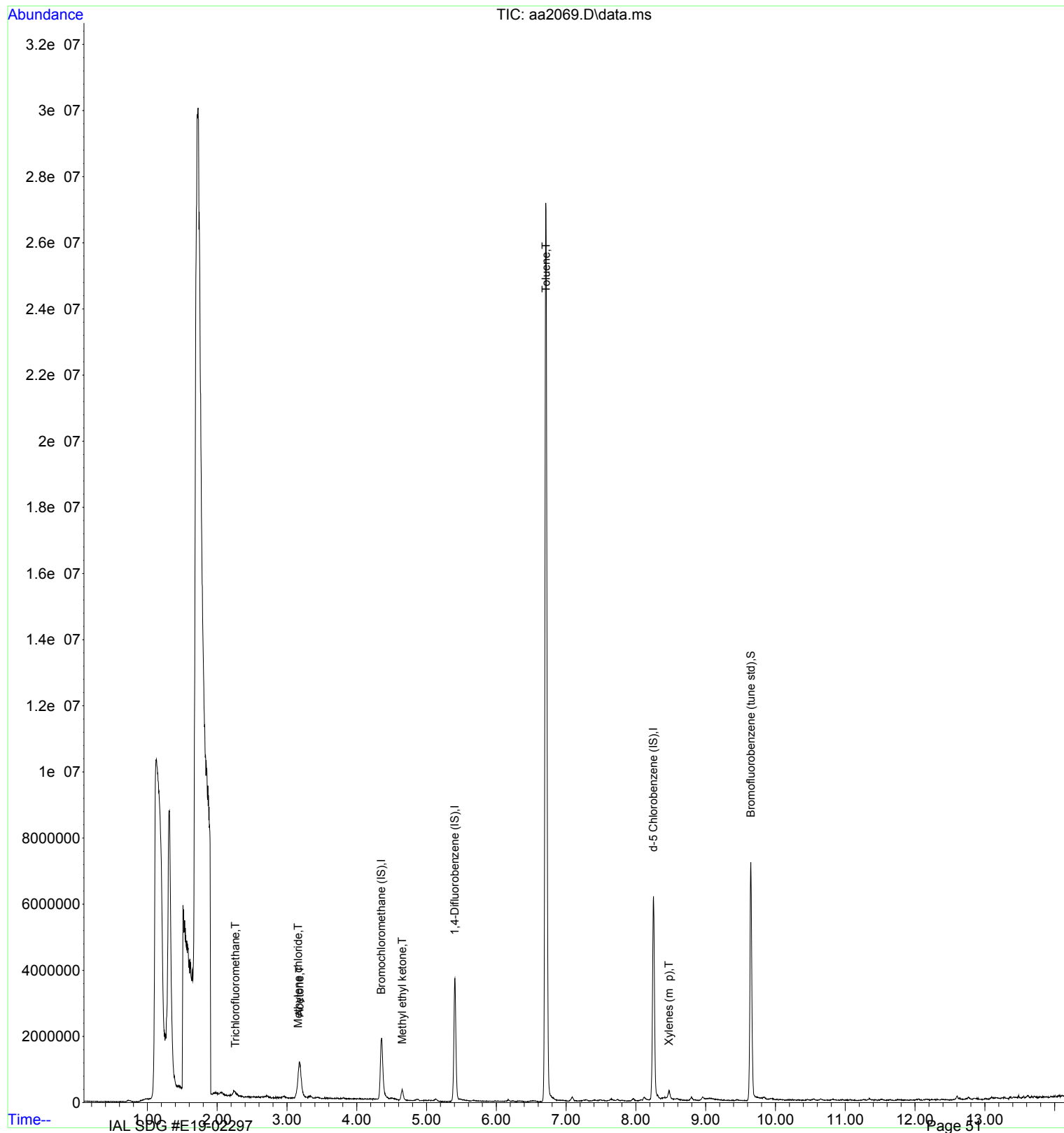
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

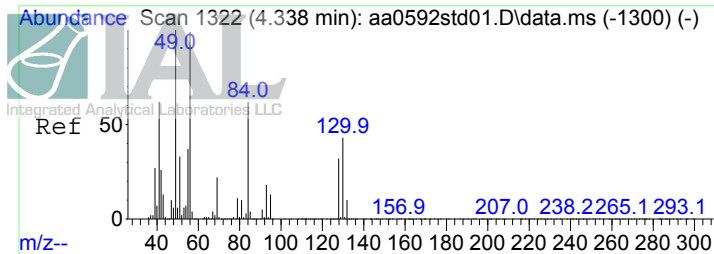
Internal Standards						
1) Bromochloromethane (IS)	4.351	130	550920	10.00	ppbV	0.016
39) 1,4-Difluorobenzene (IS)	5.403	114	2422913	10.00	ppbV #	0.000
55) d-5 Chlorobenzene (IS)	8.252	117	2808878	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.647	95	2259235	9.22	ppbV	0.000
Target Compounds						
						Qvalue
12) Trichlorofluoromethane	2.261	101	49248	0.34	ppbV	85
20) Methylene chloride	3.162	49	279729	3.09	ppbV #	72
21) Acetone	3.181	43	2033319	18.17	ppbV #	82
35) Methyl ethyl ketone	4.650	43	455734	2.93	ppbV	96
47) Toluene	6.711	91	18097793	72.48	ppbV	100
59) Xylenes (m&p)	8.473	91	130714	0.40	ppbV	95

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

Data Path : C:\DATA\04-11-19\
Data File : aa2069.D
Acq On : 11 Apr 2019 6:54 pm
Operator : jls
Sample : E19-02297-01
Misc : 5095, 500cc
ALS Vial : 19 Sample Multiplier: 1

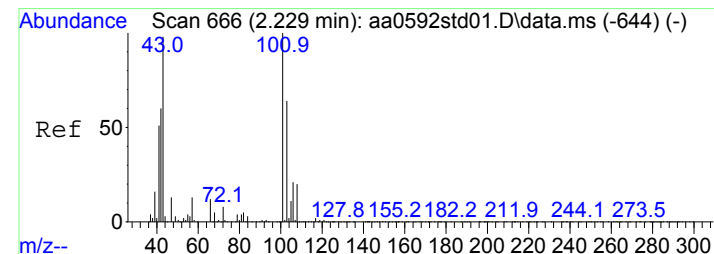
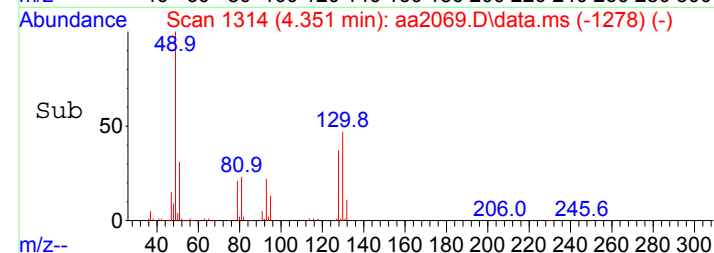
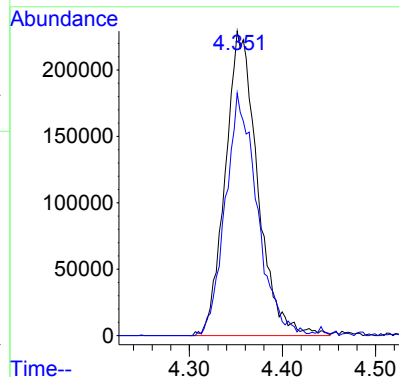
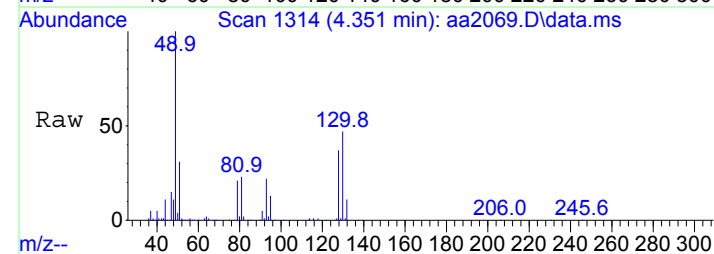
Quant Time: Apr 12 10:45:50 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





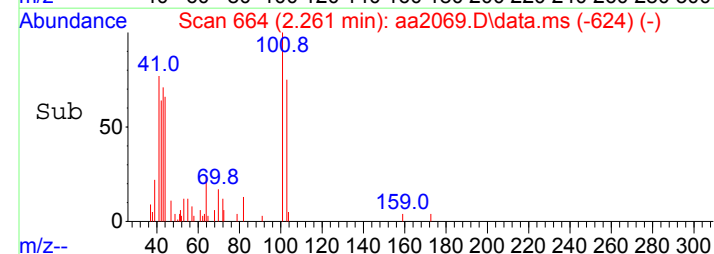
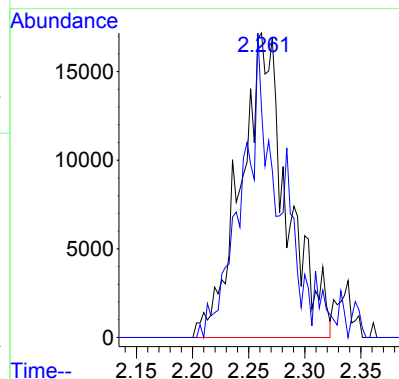
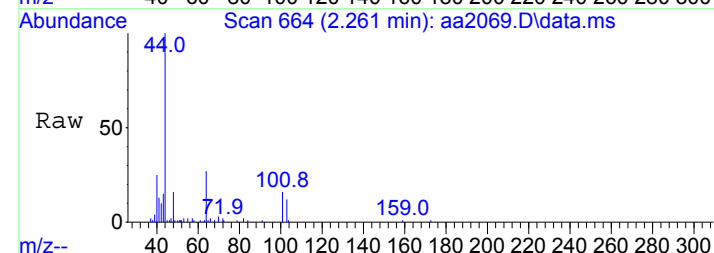
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.351 min Scan# 1314
Delta R.T. 0.016 min
Lab File: aa2069.D
Acq: 11 Apr 2019 6:54 pm

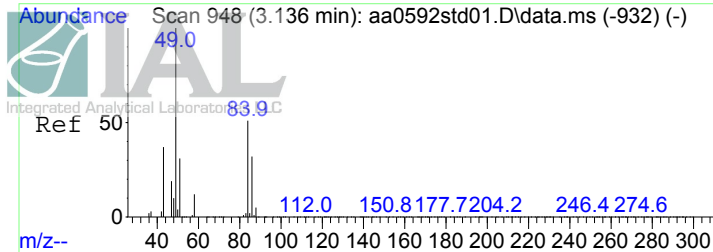
Tgt Ion:130 Resp: 550920
Ion Ratio Lower Upper
130 100
128 78.7 62.6 94.0



#12
Trichlorofluoromethane
Concen: 0.34 ppbV
RT: 2.261 min Scan# 664
Delta R.T. 0.029 min
Lab File: aa2069.D
Acq: 11 Apr 2019 6:54 pm

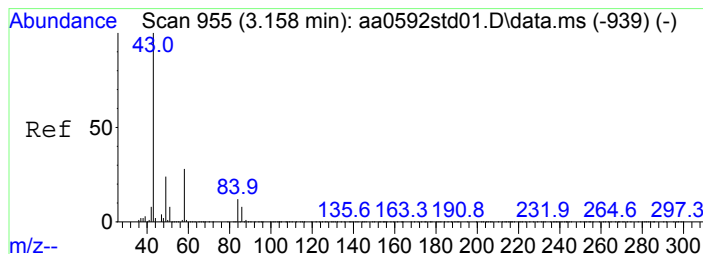
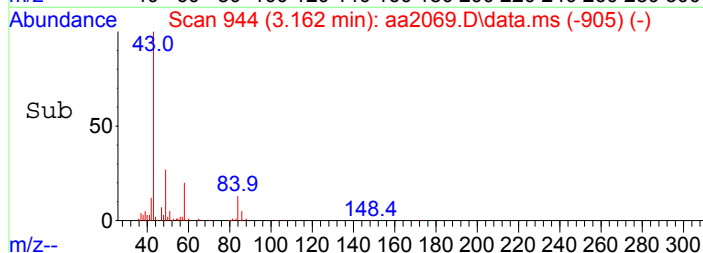
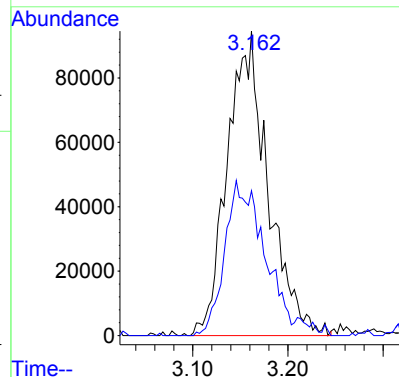
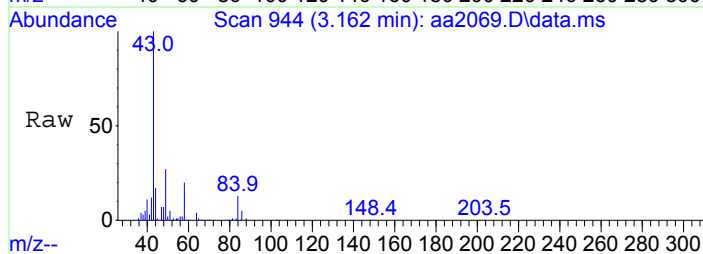
Tgt Ion:101 Resp: 49248
Ion Ratio Lower Upper
101 100
103 76.9 52.0 78.0





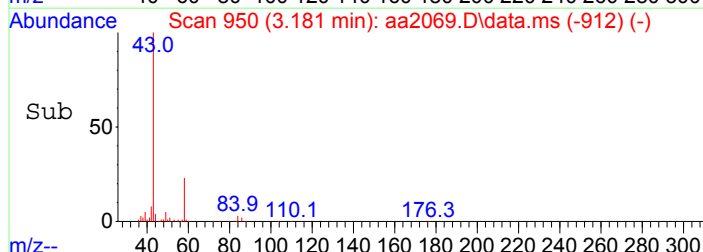
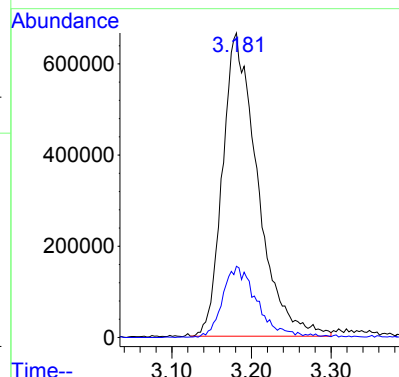
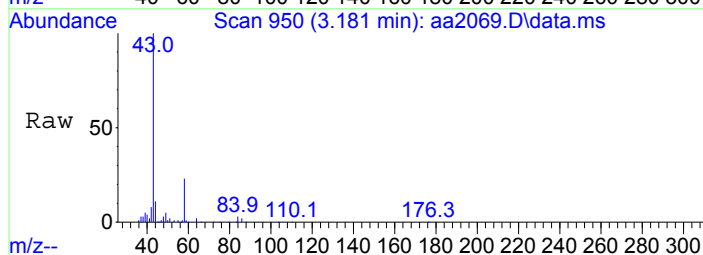
#20
Methylene chloride
Concen: 3.09 ppbV
RT: 3.162 min Scan# 944
Delta R.T. 0.026 min
Lab File: aa2069.D
Acq: 11 Apr 2019 6:54 pm

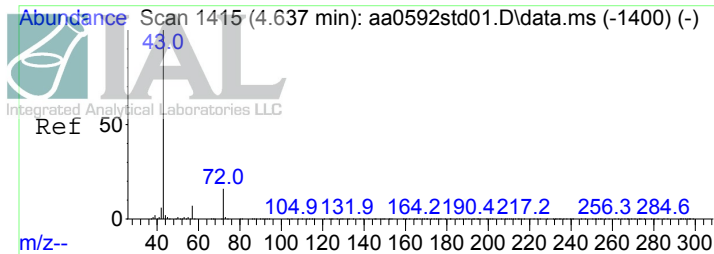
Tgt Ion: 49 Resp: 279729
Ion Ratio Lower Upper
49 100
84 49.3 58.4 87.6#



#21
Acetone
Concen: 18.17 ppbV
RT: 3.181 min Scan# 950
Delta R.T. 0.022 min
Lab File: aa2069.D
Acq: 11 Apr 2019 6:54 pm

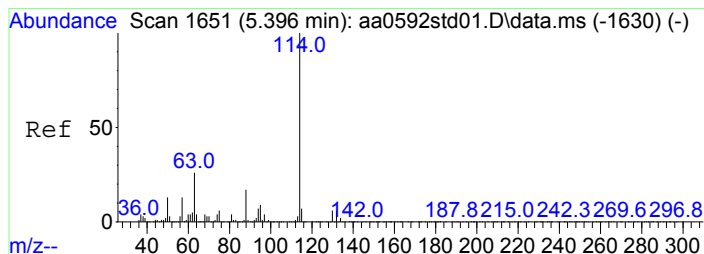
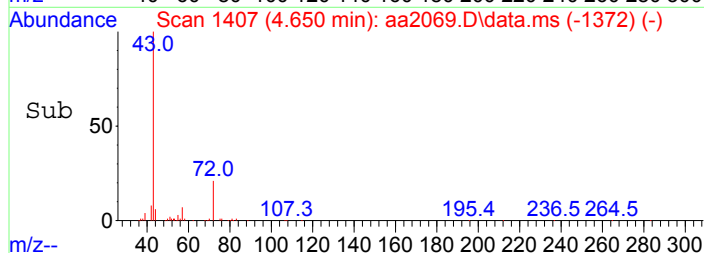
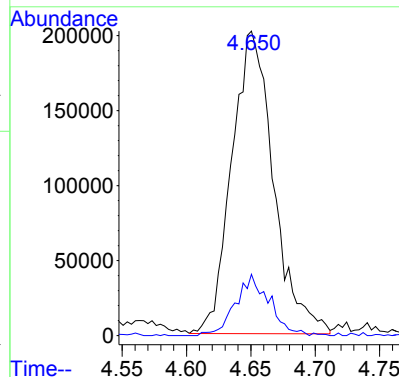
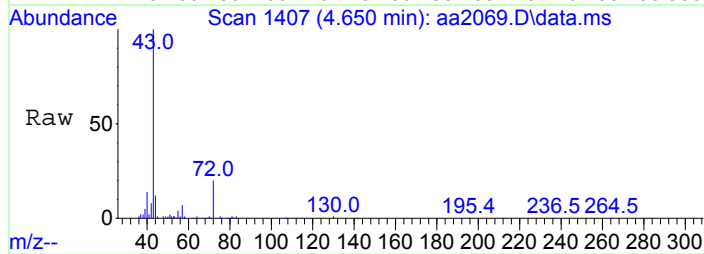
Tgt Ion: 43 Resp: 2033319
Ion Ratio Lower Upper
43 100
58 22.9 26.4 39.6#





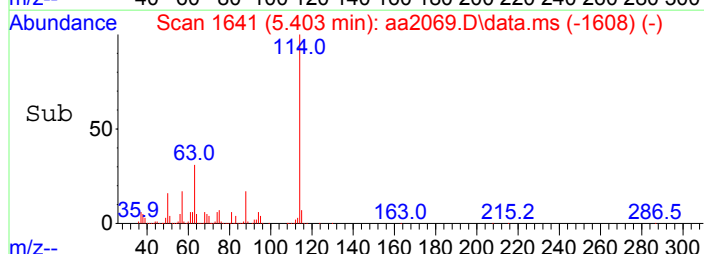
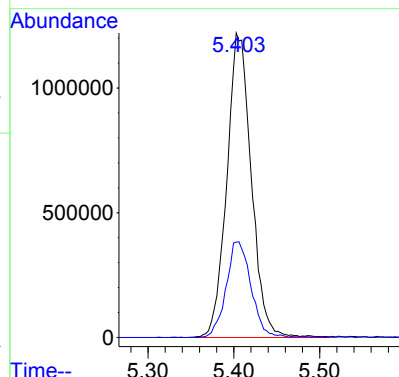
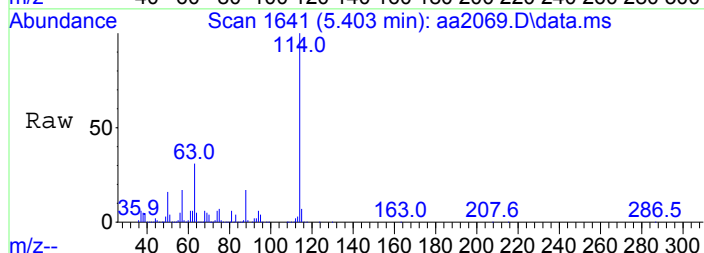
#35
Methyl ethyl ketone
Concen: 2.93 ppbV
RT: 4.650 min Scan# 1407
Delta R.T. 0.013 min
Lab File: aa2069.D
Acq: 11 Apr 2019 6:54 pm

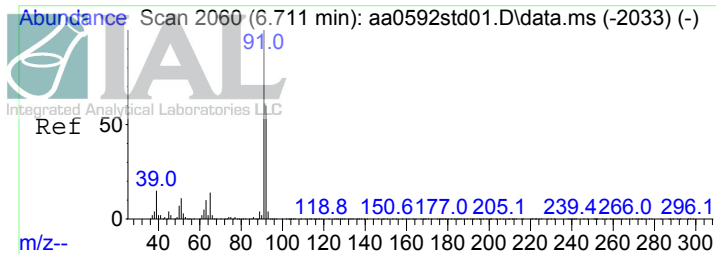
Tgt Ion: 43 Resp: 455734
Ion Ratio Lower Upper
43 100
72 16.2 14.4 21.6



#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.006 min
Lab File: aa2069.D
Acq: 11 Apr 2019 6:54 pm

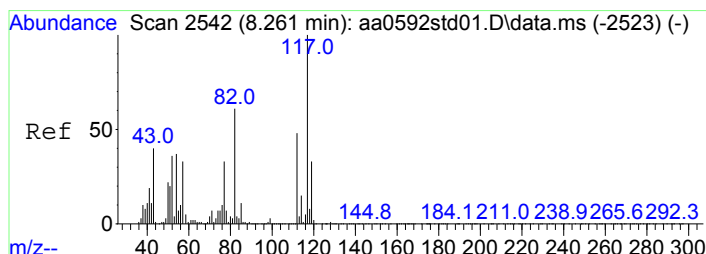
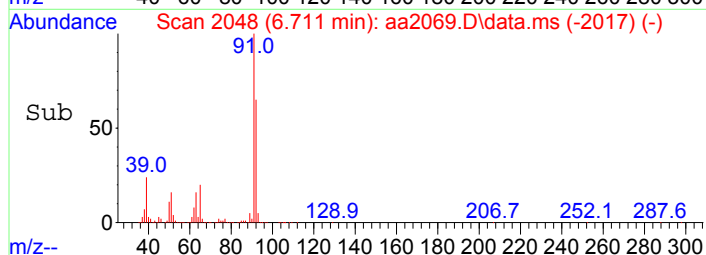
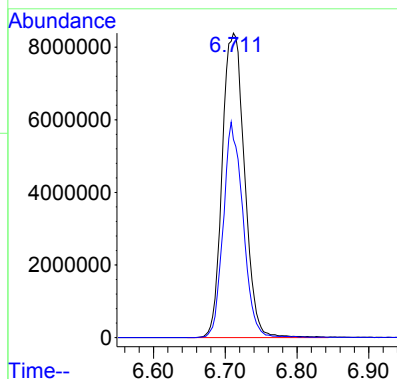
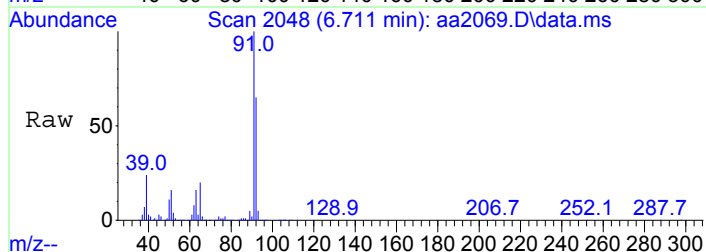
Tgt Ion: 114 Resp: 2422913
Ion Ratio Lower Upper
114 100
63 31.9 20.0 30.0#





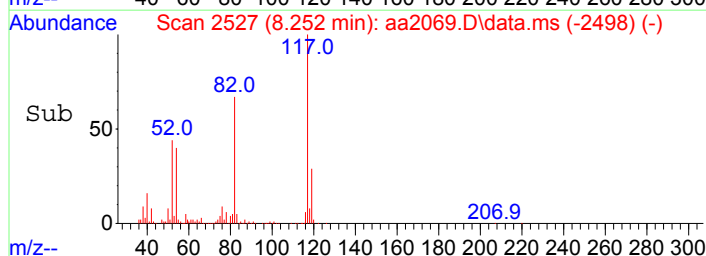
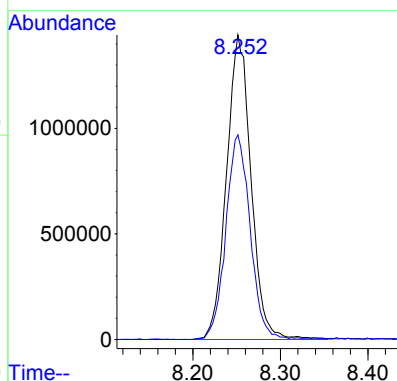
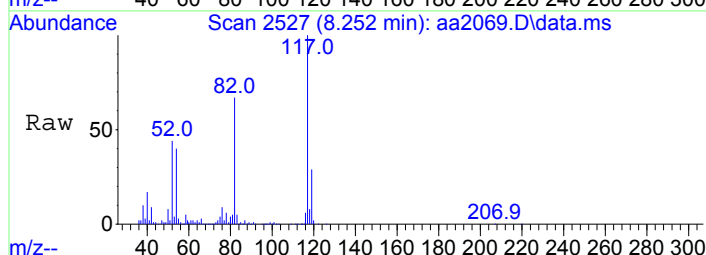
#47
Toluene
Concen: 72.48 ppbV
RT: 6.711 min Scan# 2048
Delta R.T. -0.000 min
Lab File: aa2069.D
Acq: 11 Apr 2019 6:54 pm

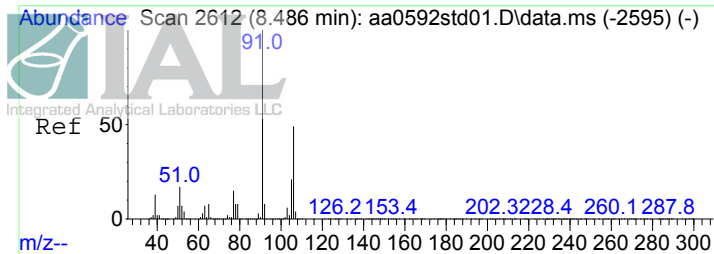
Tgt Ion: 91 Resp: 18097793
Ion Ratio Lower Upper
91 100
92 62.6 50.0 75.0



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.252 min Scan# 2527
Delta R.T. -0.007 min
Lab File: aa2069.D
Acq: 11 Apr 2019 6:54 pm

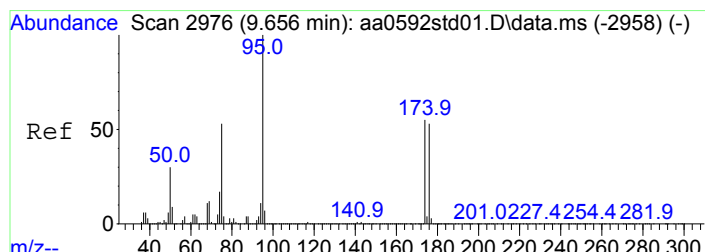
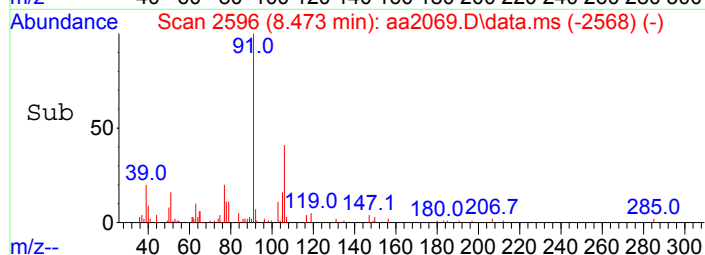
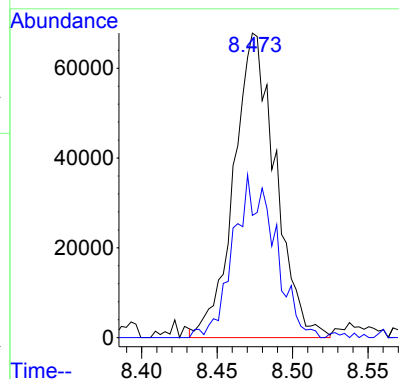
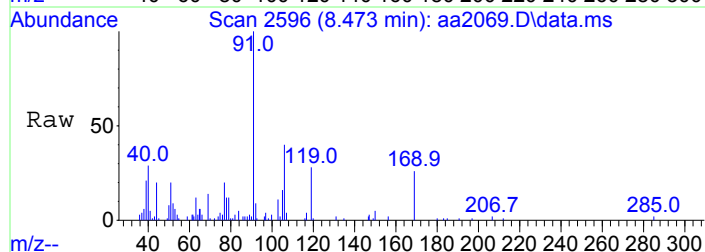
Tgt Ion: 117 Resp: 2808878
Ion Ratio Lower Upper
117 100
82 67.0 48.8 73.2





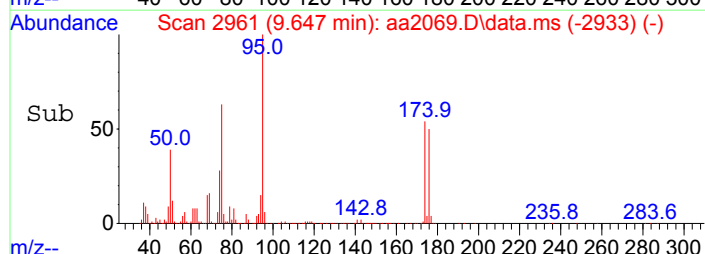
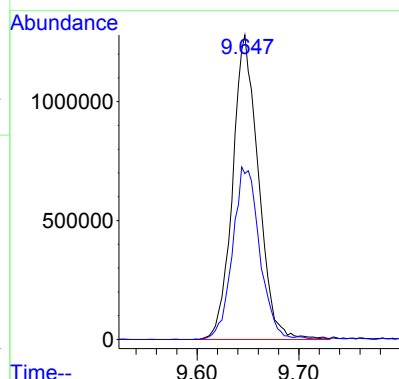
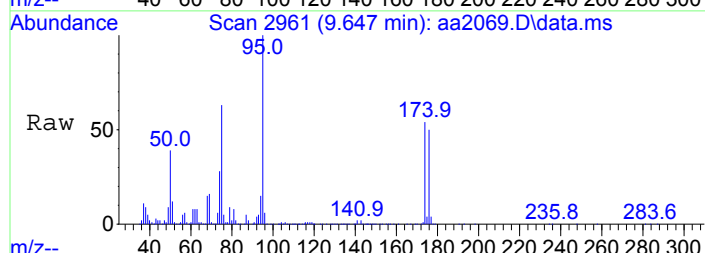
#59
Xylenes (m&p)
Concen: 0.40 ppbV
RT: 8.473 min Scan# 2596
Delta R.T. -0.010 min
Lab File: aa2069.D
Acq: 11 Apr 2019 6:54 pm

Tgt Ion: 91 Resp: 130714
Ion Ratio Lower Upper
91 100
106 52.6 39.2 58.8



#64
Bromofluorobenzene (tune std)
Concen: 9.22 ppbV
RT: 9.647 min Scan# 2961
Delta R.T. -0.010 min
Lab File: aa2069.D
Acq: 11 Apr 2019 6:54 pm

Tgt Ion: 95 Resp: 2259235
Ion Ratio Lower Upper
95 100
174 59.8 61.5 92.3#



Data Path : C:\DATA\04-11-19\
 Data File : aa2068.D
 Acq On : 11 Apr 2019 6:31 pm
 Operator : jls
 Sample : E19-02297-01 x 2 dil
 Misc : 5095, 250cc
 ALS Vial : 18 Sample Multiplier: 1

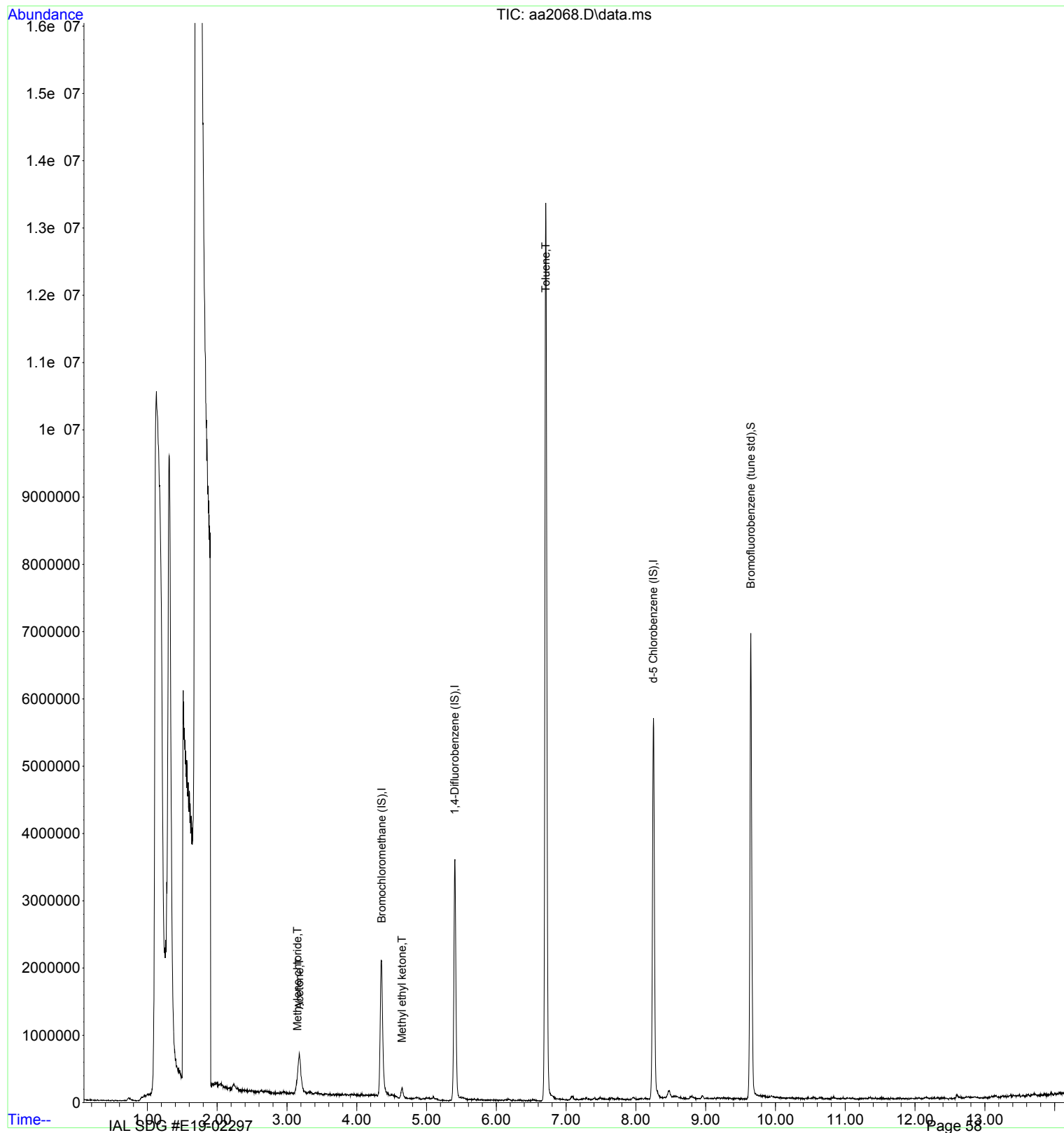
Quant Time: Apr 12 10:50:13 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

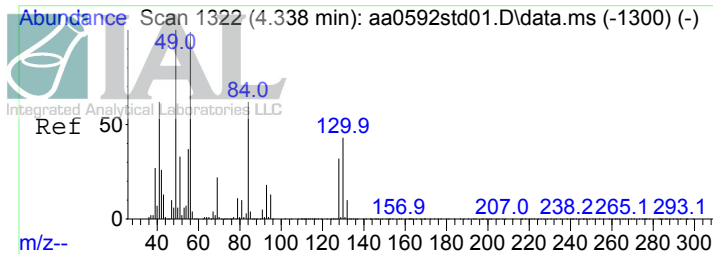
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.358	130	569090	10.00	ppbV	0.023
39) 1,4-Difluorobenzene (IS)	5.406	114	2311325	10.00	ppbV #	0.000
55) d-5 Chlorobenzene (IS)	8.248	117	2537435	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.647	95	2112236	9.54	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.149	49	150096	1.61	ppbV #	43
21) Acetone	3.178	43	1048636	9.07	ppbV #	85
35) Methyl ethyl ketone	4.647	43	207159	1.29	ppbV	100
47) Toluene	6.708	91	9045902	37.98	ppbV	95

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

Data Path : C:\DATA\04-11-19\
Data File : aa2068.D
Acq On : 11 Apr 2019 6:31 pm
Operator : jls
Sample : E19-02297-01 x 2 dil
Misc : 5095, 250cc
ALS Vial : 18 Sample Multiplier: 1

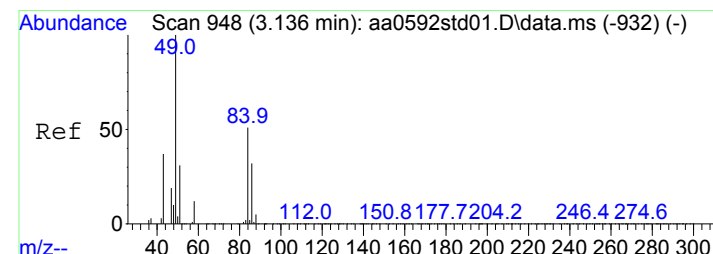
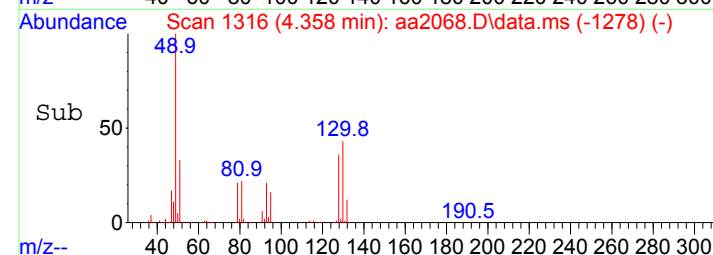
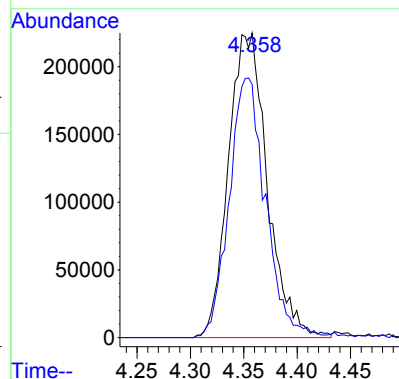
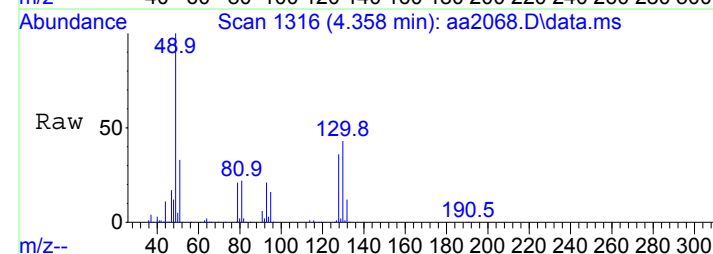
Quant Time: Apr 12 10:50:13 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





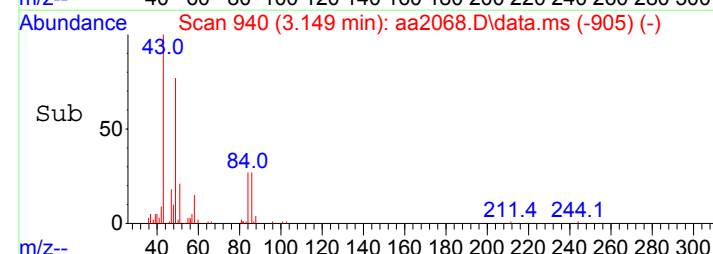
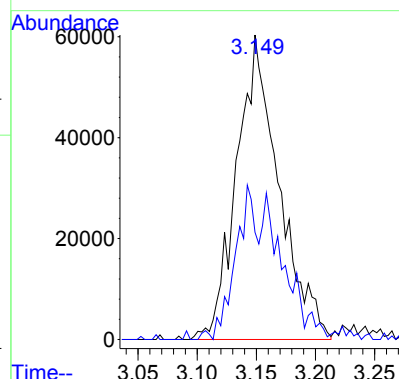
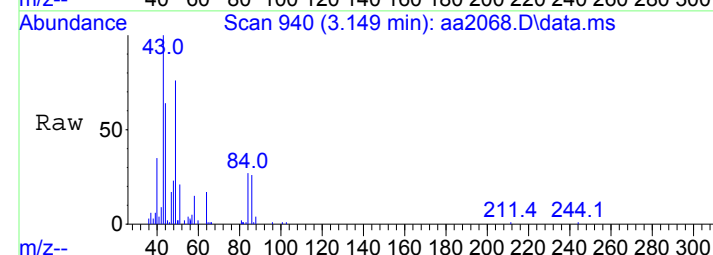
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.358 min Scan# 1316
Delta R.T. 0.023 min
Lab File: aa2068.D
Acq: 11 Apr 2019 6:31 pm

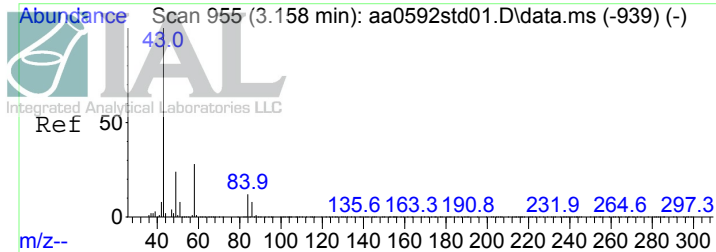
Tgt Ion: 130 Resp: 569090
Ion Ratio Lower Upper
130 100
128 79.7 62.6 94.0



#20
Methylene chloride
Concen: 1.61 ppbV
RT: 3.149 min Scan# 940
Delta R.T. 0.013 min
Lab File: aa2068.D
Acq: 11 Apr 2019 6:31 pm

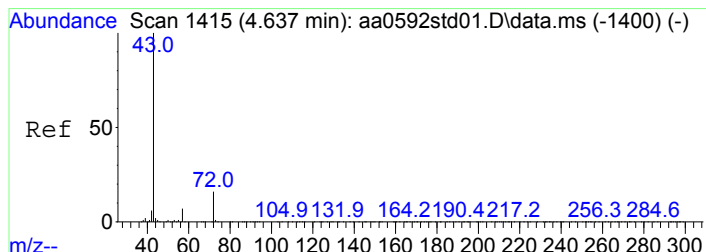
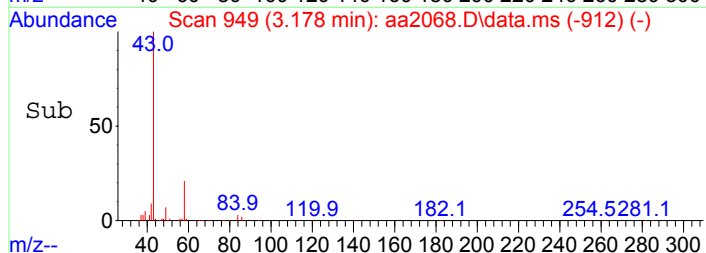
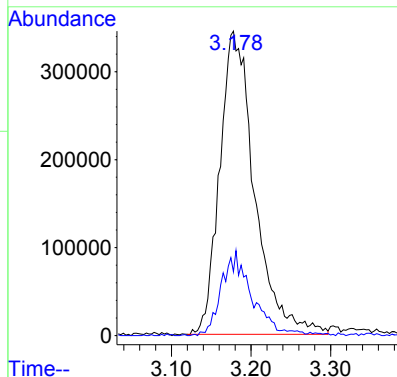
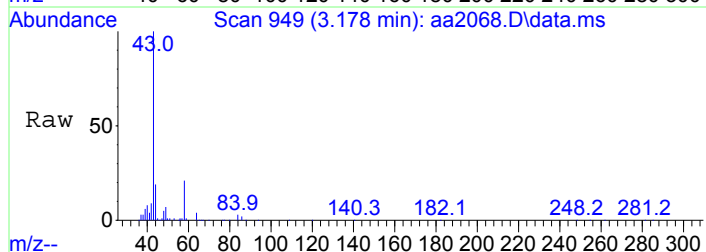
Tgt Ion: 49 Resp: 150096
Ion Ratio Lower Upper
49 100
84 24.9 58.4 87.6#





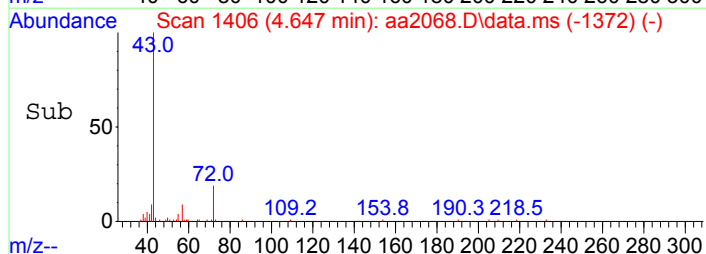
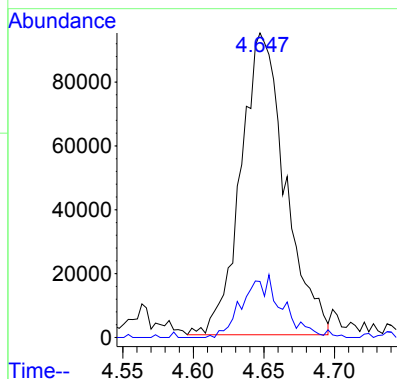
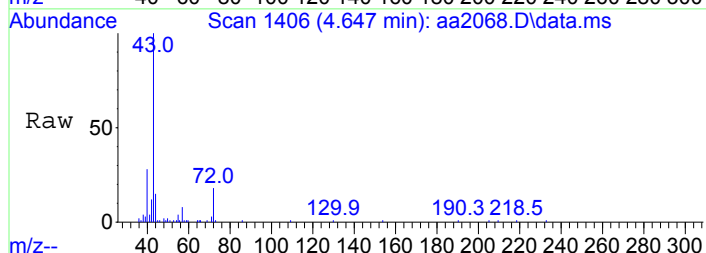
#21
Acetone
Concen: 9.07 ppbV
RT: 3.178 min Scan# 949
Delta R.T. 0.019 min
Lab File: aa2068.D
Acq: 11 Apr 2019 6:31 pm

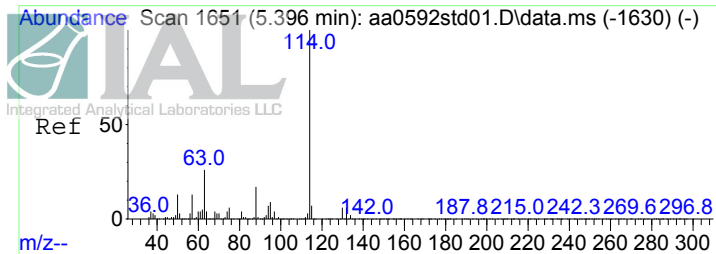
Tgt Ion: 43 Resp: 1048636
Ion Ratio Lower Upper
43 100
58 24.3 26.4 39.6#



#35
Methyl ethyl ketone
Concen: 1.29 ppbV
RT: 4.647 min Scan# 1406
Delta R.T. 0.010 min
Lab File: aa2068.D
Acq: 11 Apr 2019 6:31 pm

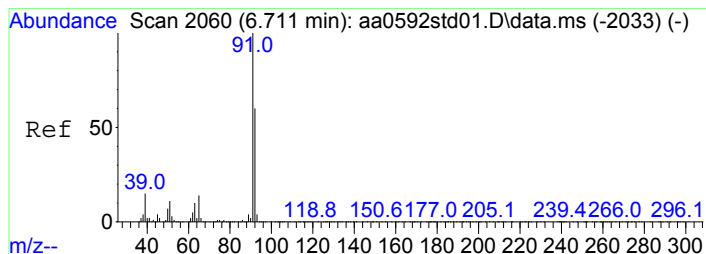
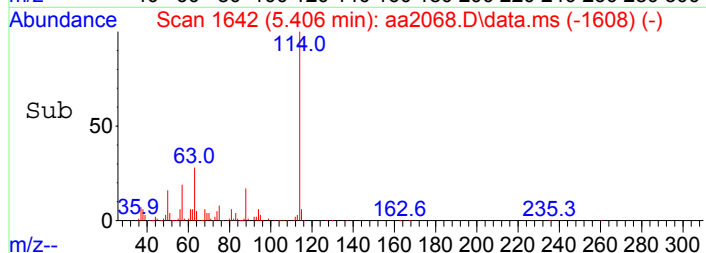
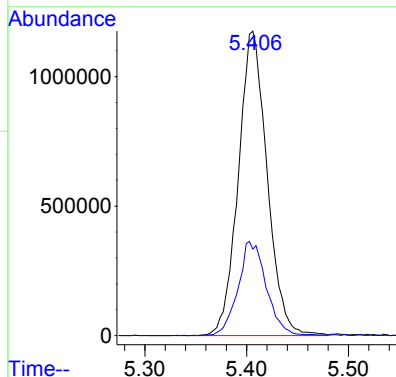
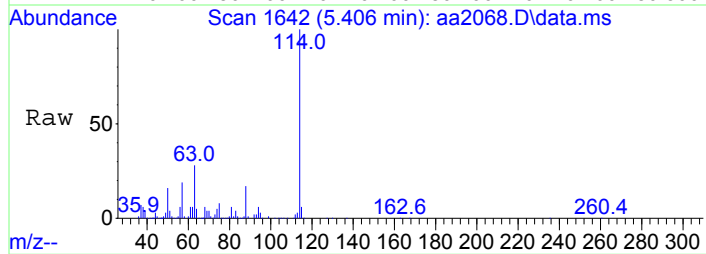
Tgt Ion: 43 Resp: 207159
Ion Ratio Lower Upper
43 100
72 18.1 14.4 21.6





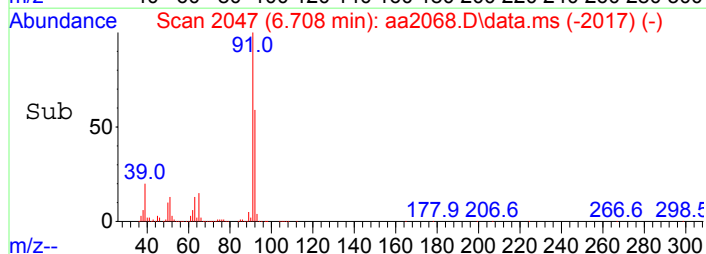
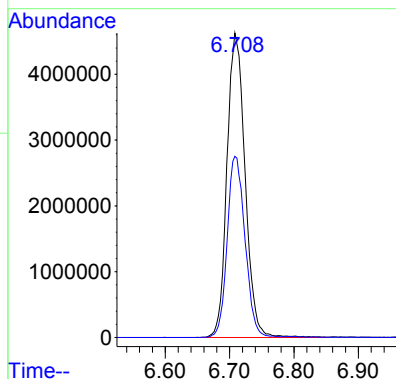
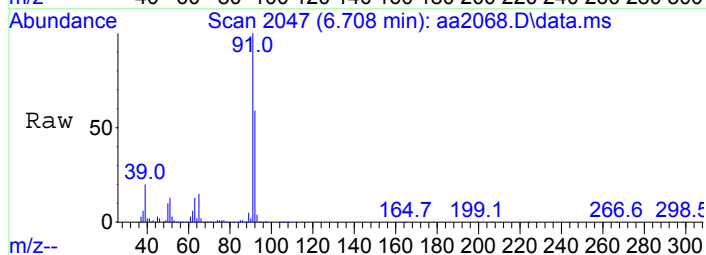
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.406 min Scan# 1642
Delta R.T. 0.010 min
Lab File: aa2068.D
Acq: 11 Apr 2019 6:31 pm

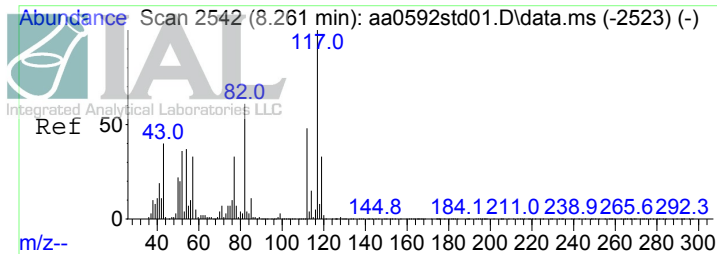
Tgt Ion: 114 Resp: 2311325
Ion Ratio Lower Upper
114 100
63 30.5 20.0 30.0#



#47
Toluene
Concen: 37.98 ppbV
RT: 6.708 min Scan# 2047
Delta R.T. -0.003 min
Lab File: aa2068.D
Acq: 11 Apr 2019 6:31 pm

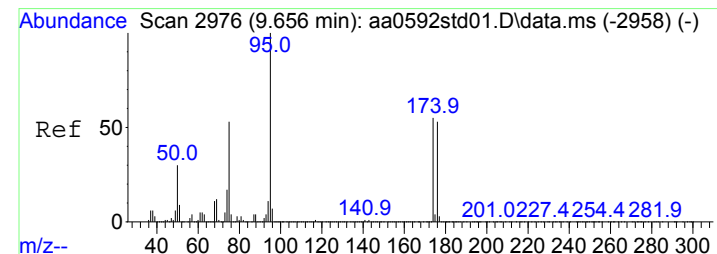
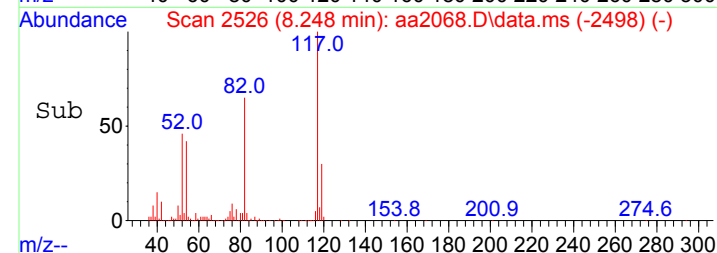
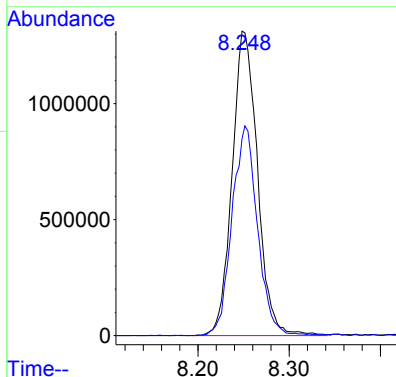
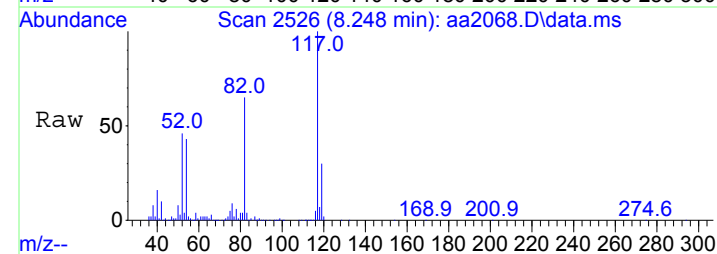
Tgt Ion: 91 Resp: 9045902
Ion Ratio Lower Upper
91 100
92 58.8 50.0 75.0





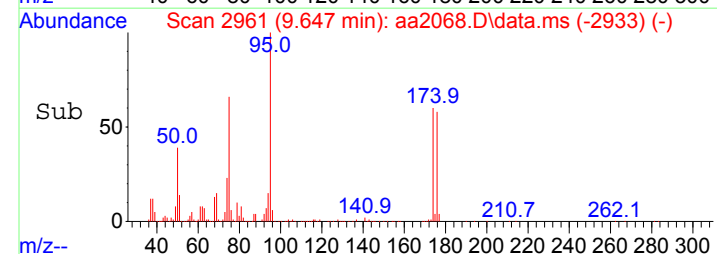
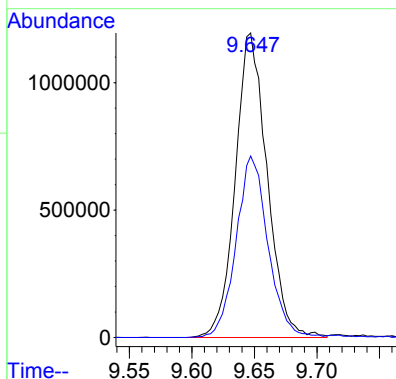
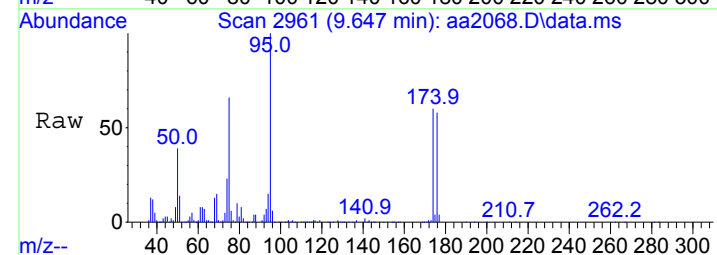
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.248 min Scan# 2526
Delta R.T. -0.010 min
Lab File: aa2068.D
Acq: 11 Apr 2019 6:31 pm

Tgt Ion: 117 Resp: 2537435
Ion Ratio Lower Upper
117 100
82 69.4 48.8 73.2



#64
Bromofluorobenzene (tune std)
Concen: 9.54 ppbV
RT: 9.647 min Scan# 2961
Delta R.T. -0.010 min
Lab File: aa2068.D
Acq: 11 Apr 2019 6:31 pm

Tgt Ion: 95 Resp: 2112236
Ion Ratio Lower Upper
95 100
174 59.6 61.5 92.3#



Section VII: Standards Data

Initial Calibration Data

Initial Calibration Verification Data

Continuing Calibration Data

Initial Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA

Method ID: 0313.M

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1521BFB]	03/13/2019 09:57
40 PPBV STD [AA1522STD01]	03/13/2019 11:03
20 PPBV STD [AA1523STD02]	03/13/2019 11:25
10 PPBV STD [AA1524STD03]	03/13/2019 11:46
2 PPBV STD [AA1525STD04]	03/13/2019 13:53
0.2 PPBV STD [AA1526STD05]	03/13/2019 14:52
10 PPBV ICVSS [AA1527ICVSS]	03/13/2019 15:26

RParameter	RRF 0.2ppbv	RRF 2ppbv	RRF 10ppbv	RRF 20ppbv	RRF 40ppbv	Avg ppbv	% RSD
Bromochloromethane	-----ISTD-----						
1,4-Difluorobenzene	-----ISTD-----						
d-5 Chlorobenzene	-----ISTD-----						
Acetone	1.4	1.6	2.3	2.4	2.4	2.0	24
Acrolein	0.31	0.32	0.45	0.49	0.51	0.42	23
Allyl Chloride	0.33	0.43	0.57	0.59	0.60	0.50	24
Benzene	2.7	3.3	3.6	3.7	3.6	3.4	12
Benzyl chloride	0.68	1.2	1.4	1.5	1.6	1.3	29
Bromodichloromethane	0.45	0.56	0.63	0.65	0.65	0.59	14
Bromoform	0.38	0.57	0.60	0.59	0.57	0.54	17
Bromomethane	0.43	0.79	0.98	1.0	1.0	0.84	30
1,3-Butadiene	0.83	0.98	1.2	1.2	1.3	1.1	18
n-Butane	2.1	2.0	2.3	2.4	2.4	2.2	7.9
Chlorobenzene	0.76	0.98	0.96	0.97	0.97	0.93	10
Chloroethane	0.38	0.51	0.66	0.70	0.73	0.60	25
Chloroform	1.8	2.0	2.5	2.6	2.7	2.3	17
Chloromethane	0.25	0.28	0.30	0.31	0.31	0.29	9.1
Carbon disulfide	2.0	2.7	3.5	3.6	3.6	3.1	22
Carbon tetrachloride	1.8	2.5	2.7	2.8	2.8	2.5	16
2-Chlorotoluene	1.2	1.7	1.6	1.5	1.5	1.5	11
Cumene	1.3	1.8	1.8	1.7	1.6	1.6	13
Cyclohexane	1.6	2.0	2.2	2.2	2.4	2.1	14
Dibromochloromethane	0.42	0.58	0.61	0.61	0.61	0.57	15
1,2-Dibromoethane	0.44	0.58	0.59	0.59	0.58	0.56	11
1,2-Dichlorobenzene	0.75	0.99	0.93	0.92	0.92	0.90	9.8
1,3-Dichlorobenzene	0.86	0.97	0.94	0.93	0.93	0.93	4.5
1,4-Dichlorobenzene	0.80	0.96	0.97	0.94	0.95	0.92	7.6
Dichlorodifluoromethane	1.7	2.2	2.8	2.9	2.9	2.5	21
1,1-Dichloroethane	1.7	1.8	2.4	2.5	2.6	2.2	18
1,2-Dichloroethane	1.3	1.5	1.9	2.1	2.2	1.8	22
1,1-Dichloroethene	1.2	1.6	2.1	2.2	2.3	1.9	24
1,2-Dichloroethene (trans)	1.0	1.4	1.8	1.9	2.0	1.6	25
1,2-Dichloroethene (trans)	1.1	1.4	1.9	2.0	2.1	1.7	25
1,2-Dichloropropane	0.32	0.36	0.38	0.38	0.39	0.37	8.3
1,3-Dichloropropene (cis)	0.39	0.48	0.55	0.56	0.56	0.51	15
1,3-Dichloropropene (trans)	0.36	0.50	0.55	0.55	0.56	0.50	17
1,2-Dichlorotetrafluoroethane	2.2	2.8	3.1	3.1	3.2	2.9	14
1,4-Dioxane	0.15	0.18	0.20	0.20	0.20	0.19	12
Ethanol	0.33	0.65	0.70	0.72	0.75	0.63	27
Ethyl acetate	0.34	0.40	0.53	0.58	0.63	0.50	25
Ethylbenzene	1.3	1.8	1.7	1.6	1.6	1.6	10
4-Ethyltoluene	1.4	1.8	1.7	1.7	1.6	1.6	11

*% RSD (Relative Standard Deviation) must be within 30%

**An exception is made for 2 compounds that must be within 40%

RRF - Relative Response Factor

Initial Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA

Method ID: 0313.M

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1521BFB]	03/13/2019 09:57
40 PPBV STD [AA1522STD01]	03/13/2019 11:03
20 PPBV STD [AA1523STD02]	03/13/2019 11:25
10 PPBV STD [AA1524STD03]	03/13/2019 11:46
2 PPBV STD [AA1525STD04]	03/13/2019 13:53
0.2 PPBV STD [AA1526STD05]	03/13/2019 14:52
10 PPBV ICVSS [AA1527ICVSS]	03/13/2019 15:26

RParameter	RRF 0.2ppbv	RRF 2ppbv	RRF 10ppbv	RRF 20ppbv	RRF 40ppbv	Avg ppbv	% RSD
n-Heptane	2.2	2.8	3.0	3.1	3.3	2.9	15
1,3-Hexachlorobutadiene	0.42	0.52	0.43	0.38	0.34	0.42	17
n-Hexane	2.0	2.5	3.6	3.8	3.1	3.0	24
Isopropanol	1.4	1.9	2.7	2.9	3.1	2.4	29
Methylene chloride	1.8	1.3	1.6	1.7	1.8	1.6	12
Methyl ethyl ketone	1.9	2.2	3.1	3.4	3.5	2.8	25
Methyl isobutyl ketone	0.81	0.92	1.0	1.0	0.99	0.95	8.8
Methyl methacrylate	0.50	0.52	0.60	0.63	0.65	0.58	12
Methyl n-butyl ketone	0.64	0.82	0.94	0.97	0.97	0.87	17
Methyl tert-butyl ether	2.3	3.1	3.2	3.2	3.3	3.0	14
Naphthalene	2.0	2.0	2.1	1.9	1.6	1.9	11
n-Nonane	1.1	1.4	1.4	1.4	1.4	1.3	10
n-Pentane	1.6	2.5	2.9	3.1	3.3	2.7	24
Propene	0.63	1.0	1.3	1.3	1.4	1.1	27
n-Propyl benzene	1.9	2.4	2.3	2.2	2.0	2.2	10
Styrene	0.63	0.96	0.95	0.92	0.89	0.87	16
Tert-butyl alcohol	1.7	2.0	2.4	2.6	2.8	2.3	19
1,1,2,2-Tetrachloroethane	0.86	1.1	1.0	1.0	1.0	1.0	9.8
Tetrachloroethene	0.37	0.44	0.41	0.39	0.36	0.39	8.4
Tetrahydrofuran	1.2	1.3	1.8	2.0	2.1	1.7	23
Toluene	0.89	1.1	1.1	1.1	1.0	1.0	8.3
1,2,4-Trichlorobenzene	0.69	0.71	0.63	0.55	0.47	0.61	16
1,1,1-Trichloroethane	1.7	2.2	2.4	2.4	2.5	2.3	14
1,1,2-Trichloroethane	0.30	0.38	0.38	0.38	0.37	0.36	10
Trichloroethene	0.27	0.33	0.38	0.38	0.37	0.35	14
Trichlorofluoromethane	2.0	2.5	2.9	3.0	3.0	2.7	17
1,1,2-Trichloro-1,2,2-trifluoroethane	1.9	2.4	2.4	2.4	2.4	2.3	10
1,2,4-Trimethylbenzene	1.1	1.6	1.5	1.5	1.5	1.4	14
1,3,5-Trimethylbenzene	1.1	1.6	1.5	1.5	1.4	1.4	12
2,2,4-Trimethylpentane	1.3	1.8	2.1	2.0	2.0	1.8	18
Vinyl bromide	0.51	0.85	1.1	1.1	1.1	0.94	29
Vinyl chloride	0.60	0.84	1.1	1.1	1.2	0.97	25
Xylenes (m&p)	1.0	1.4	1.2	1.2	1.0	1.2	13
Xylenes (o)	1.0	1.4	1.3	1.3	1.3	1.3	11

*% RSD (Relative Standard Deviation) must be within 30%

**An exception is made for 2 compounds that must be within 40%

RRF - Relative Response Factor

Method Path : C:\msdchem\1\METHODS\
 Method File : 0313.M
 Title : TO-15 on the Agilent 7890A / 5975C
 Last Update : Wed Mar 13 14:08:18 2019
 Response Via : Initial Calibration

Calibration Files

0.2 =aa1526std05.D 2 =aa1525std04.D 10 =aa1524std03.D 20 =aa1523std02.D 40 =aa1522std01.D

	Compound	0.2	2	10	20	40	Avg	%RSD
1) I	Bromochloromethane...	-----ISTD-----						
2) T	Propene	0.631	1.006	1.272	1.309	1.351	1.114	27.08
3) T	Dichlorodifluoro...	1.714	2.222	2.827	2.862	2.896	2.504	20.84
4) T	1,2-Dichlorotetr...	2.227	2.818	3.080	3.132	3.216	2.895	13.89
5) T	n-Butane	2.133	1.968	2.278	2.353	2.405	2.228	7.97
6) T	Chloromethane	0.246	0.280	0.302	0.307	0.308	0.288	9.17
7) T	Vinyl chloride	0.601	0.841	1.087	1.131	1.184	0.969	25.17
8) T	1,3-Butadiene	0.826	0.976	1.185	1.246	1.308	1.108	18.17
9) T	Bromomethane	0.425	0.786	0.984	1.006	1.020	0.844	29.93
10) T	Chloroethane	0.375	0.514	0.664	0.695	0.729	0.596	24.83
11) T	Vinyl bromide	0.505	0.845	1.098	1.118	1.137	0.941	28.84
12) T	Trichlorofluorom...	1.967	2.461	2.873	2.958	3.022	2.656	16.68
13) T	Ethanol	0.327	0.653	0.695	0.718	0.749	0.629	27.38
14) T	1,1-Dichloroethene	1.225	1.568	2.085	2.171	2.252	1.860	23.89
15) T	Carbon disulfide	2.013	2.743	3.519	3.560	3.570	3.081	22.45
16) T	1,1,2-Trichloro...	1.860	2.445	2.378	2.372	2.370	2.285	10.48
17) T	Acrolein	0.311	0.319	0.454	0.486	0.509	0.416	22.60
18) T	Allyl chloride	0.328	0.429	0.565	0.591	0.601	0.503	23.74
19) T	Isopropanol	1.442	1.886	2.720	2.915	3.066	2.406	29.34
20) T	Methylene chloride	1.775	1.300	1.636	1.706	1.788	1.641	12.20
21) T	Acetone	1.390	1.627	2.316	2.391	2.432	2.031	23.95
22) T	1,2-Dichloroethe...	1.083	1.391	1.875	1.969	2.062	1.676	25.09
23) T	n-Pentane	1.638	2.506	2.938	3.106	3.287	2.695	24.42
24) T	n-Hexane	2.025	2.526	3.609	3.777	3.091	3.006	24.44
25) T	Methyl tert-buty...	2.299	3.059	3.182	3.240	3.277	3.011	13.50
26) T	Tert-butyl alcohol	1.652	2.032	2.409	2.587	2.754	2.287	19.45
27) T	1,1-Dichloroethane	1.699	1.821	2.352	2.474	2.587	2.187	18.32
28) T	1,2-Dichloroethe...	1.048	1.350	1.800	1.898	2.006	1.620	25.03
29) t	Cyclohexane	1.616	1.986	2.169	2.248	2.373	2.079	14.15
30) T	Chloroform	1.798	1.958	2.493	2.589	2.664	2.300	17.15
31) T	Ethyl acetate	0.339	0.400	0.528	0.579	0.628	0.495	24.58
32) T	Carbon tetrachlo...	1.848	2.491	2.707	2.770	2.832	2.530	15.89
33) T	Tetrahydrofuran	1.249	1.290	1.795	1.950	2.067	1.670	22.67
34) T	1,1,1-Trichloroe...	1.740	2.223	2.380	2.447	2.518	2.262	13.77
35) T	Methyl ethyl ketone	1.905	2.218	3.117	3.356	3.515	2.822	25.42
36) T	n-Heptane	2.150	2.804	3.033	3.140	3.291	2.883	15.49
37) T	Benzene	2.741	3.296	3.616	3.667	3.632	3.390	11.59
38) T	1,2-Dichloroethane	1.269	1.516	1.946	2.056	2.182	1.794	21.50
39) I	1,4-Difluorobenzen...	-----ISTD-----						
40) T	Trichloroethene	0.270	0.327	0.377	0.377	0.374	0.345	13.63
41) T	2,2,4-Trimethylp...	1.272	1.763	2.050	2.048	2.025	1.832	18.30
42) T	1,2-Dichloropropane	0.317	0.356	0.379	0.384	0.392	0.366	8.37
43) T	Bromodichloromet...	0.453	0.562	0.632	0.649	0.649	0.589	14.25
44) T	Methyl methacrylate	0.503	0.520	0.604	0.633	0.652	0.582	11.55
45) T	1,4-Dioxane	0.148	0.183	0.198	0.202	0.204	0.187	12.49
46) T	cis-1,3-Dichloro...	0.390	0.479	0.546	0.558	0.564	0.508	14.58
47) T	Toluene	0.890	1.106	1.083	1.061	1.013	1.031	8.34
48) T	Methyl isobutyl ...	0.812	0.924	1.007	1.012	0.988	0.949	8.85
49) T	Tetrachloroethene	0.366	0.440	0.410	0.389	0.360	0.393	8.44
50) T	trans-1,3-Dichlo...	0.359	0.495	0.550	0.552	0.555	0.502	16.69
51) T	1,1,2-Trichloroe...	0.296	0.379	0.378	0.375	0.373	0.360	10.06
52) T	Dibromochloromet...	0.415	0.579	0.608	0.614	0.609	0.565	15.05
53) T	1,2-Dibromoethane	0.444	0.577	0.589	0.592	0.584	0.557	11.43
54) T	Methyl n-butyl k...	0.636	0.819	0.938	0.972	0.974	0.868	16.60
55) I	d-5 Chlorobenzene ...	-----ISTD-----						
56) T	n-Nonane	1.091	1.379	1.374	1.401	1.418	1.333	10.21
57) T	Chlorobenzene	0.761	0.975	0.958	0.970	0.974	0.927	10.08
58) T	Ethylbenzene	1.331	1.759	1.666	1.647	1.574	1.595	10.16
59) T	Xylenes (m&p)	1.026	1.361	1.242	1.158	1.017	1.161	12.62
60) T	Xylene (o)	1.049	1.391	1.348	1.335	1.319	1.289	10.60

ALSDC#E19-02297

Method Path : C:\msdchem\1\METHODS\

Method File : 0313.M

61)	T	Styrene	0.631	0.959	0.946	0.920	0.890	0.869	15.64
62)	T	Bromoform	0.376	0.574	0.598	0.588	0.572	0.541	17.22
63)	T	Cumene	1.283	1.843	1.760	1.710	1.633	1.646	13.16
64)	S	Bromofluorobenze...	0.830	0.829	0.840	0.884	0.981	0.873	7.38
65)	T	n-Propyl benzene	1.903	2.432	2.284	2.179	1.974	2.155	10.12
66)	T	1,1,2,2-Tetrachl...	0.856	1.130	1.049	1.033	1.028	1.019	9.82
67)	T	4-Ethyltoluene	1.386	1.847	1.749	1.673	1.558	1.643	10.85
68)	T	2-Chlorotoluene	1.225	1.668	1.566	1.509	1.463	1.486	11.09
69)	T	1,3,5-Trimethylb...	1.138	1.593	1.539	1.491	1.437	1.440	12.38
70)	T	1,2,4-Trimethylb...	1.086	1.591	1.547	1.511	1.461	1.439	14.13
71)	T	1,3-Dichlorobenzene	0.858	0.973	0.937	0.931	0.933	0.926	4.51
72)	T	1,4-Dichlorobenzene	0.796	0.955	0.965	0.942	0.947	0.921	7.64
73)		Benzyl chloride	0.676	1.190	1.441	1.537	1.554	1.280	28.70
74)	T	1,2-Dichlorobenzene	0.752	0.986	0.932	0.921	0.918	0.902	9.80
75)	T	1,3-Hexachlorobu...	0.423	0.523	0.425	0.377	0.338	0.417	16.65
76)	T	1,2,4-Trichlorob...	0.687	0.708	0.625	0.550	0.470	0.608	16.22
77)	T	Naphthalene	2.011	1.978	2.073	1.907	1.563	1.906	10.55

(#) = Out of Range

Data Path : C:\DATA\03-13-19\
 Data File : aa1522std01.D
 Acq On : 13 Mar 2019 11:03 am
 Operator : jls
 Sample : 40 ppbv Std
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 13 12:04:06 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.345	130	562033	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2424630	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1852861	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1816913	11.38	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.425	41	3340975	46.06	ppbV	84
3) Dichlorodifluoromethane	1.457	85	7162056	44.80	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.578	85	7231086	41.42	ppbV	93
5) n-Butane	1.660	43	5948002	45.70	ppbV	97
6) Chloromethane	1.670	15	760507	44.44	ppbV #	1
7) Vinyl chloride	1.712	62	2927615	46.98	ppbV	96
8) 1,3-Butadiene	1.726	39	3235239	47.36	ppbV	89
9) Bromomethane	2.020	94	2269856	40.59	ppbV	99
10) Chloroethane	2.120	64	1638100	42.87	ppbV	95
11) Vinyl bromide	2.219	106	2812218	45.15	ppbV	99
12) Trichlorofluoromethane	2.239	101	7474110	45.61	ppbV	100
13) Ethanol	2.609	45	1583755	39.89	ppbV	96
14) 1,1-Dichloroethene	2.660	61	5569902	46.58	ppbV	99
15) Carbon disulfide	2.682	76	8828148	44.38	ppbV	96
16) 1,1,2-Trichloro-1,2,2-...	2.699	101	5860697	43.91	ppbV	86
17) Acrolein	2.933	56	1372762	51.98	ppbV	96
18) Allyl chloride	3.046	76	1485004	45.73	ppbV	100
19) Isopropanol	3.062	45	6893191	43.53	ppbV	100
20) Methylene chloride	3.139	49	4422494	47.09	ppbV	86
21) Acetone	3.168	43	6014287	45.47	ppbV	93
22) 1,2-Dichloroethene (tr...	3.258	61	5098624	47.19	ppbV	93
23) n-Pentane	3.332	43	8127888	47.86	ppbV	97
24) n-Hexane	3.332	41	7644477	36.83	ppbV	87
25) Methyl tert-butyl ether	3.342	73	8102863	44.90	ppbV #	74
26) Tert-butyl alcohol	3.409	59	7430694	52.93	ppbV	100
27) 1,1-Dichloroethane	3.747	63	6398323	47.17	ppbV	98
28) 1,2-Dichloroethene (cis)	4.174	61	4960219	47.73	ppbV	94
29) Cyclohexane	4.338	56	5868345	47.27	ppbV	84
30) Chloroform	4.396	83	6586968	46.12	ppbV	98
31) Ethyl acetate	4.489	45	1553262	49.93	ppbV	95
32) Carbon tetrachloride	4.506	117	7003491	45.50	ppbV	99
33) Tetrahydrofuran	4.515	42	5577034	52.99	ppbV	95
34) 1,1,1-Trichloroethane	4.563	97	6227156	45.90	ppbV	100
35) Methyl ethyl ketone	4.637	43	8692976	47.79	ppbV	98
36) n-Heptane	4.840	43	8137440	46.91	ppbV	96
37) Benzene	4.872	78	8982836	43.89	ppbV	92
38) 1,2-Dichloroethane	5.039	62	5395329	47.98	ppbV	100
40) Trichloroethene	5.370	130	3987110	43.65	ppbV	97
41) 2,2,4-Trimethylpentane	4.766	57	21607332	43.50	ppbV	95
42) 1,2-Dichloropropane	5.830	63	4186987	45.27	ppbV	100
43) Bromodichloromethane	5.891	83	6922252	44.55	ppbV	97
44) Methyl methacrylate	6.036	41	6956797	46.41	ppbV	96
45) 1,4-Dioxane	6.065	88	1979101	40.81	ppbV	88
46) cis-1,3-Dichloropropene	6.480	75	6021753	44.98	ppbV	99
47) Toluene	6.711	91	10809867	41.59	ppbV	100
48) Methyl isobutyl ketone	7.087	43	10539573	43.05	ppbV	92
49) Tetrachloroethene	7.091	166	3836250	39.58	ppbV	98
50) trans-1,3-Dichloropropene	7.126	75	5378067	40.28	ppbV	92
51) 1,1,2-Trichloroethane	7.287	97	3978886	43.55	ppbV	95

AL SDG #E19-02297

Data Path : C:\DATA\03-13-19\
 Data File : aa1522std01.D
 Acq On : 13 Mar 2019 11:03 am
 Operator : jls
 Sample : 40 ppbv Std
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

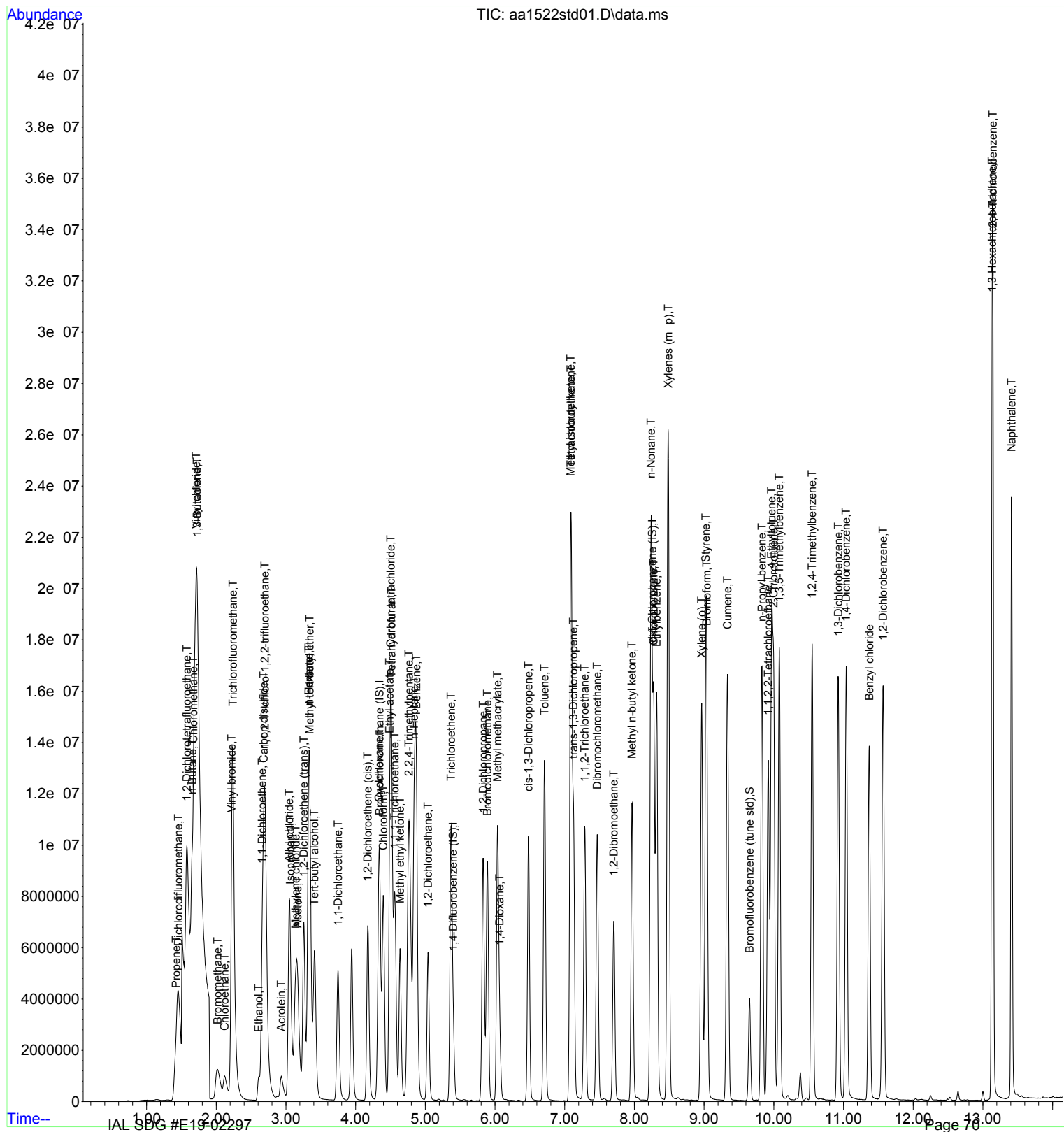
Quant Time: Mar 13 12:04:06 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	6495464	43.85	ppbV	100
53) 1,2-Dibromoethane	7.705	107	6235122	43.55	ppbV	99
54) Methyl n-butyl ketone	7.965	43	10391404	44.88	ppbV	97
56) n-Nonane	8.239	43	11561839	44.98	ppbV	100
57) Chlorobenzene	8.277	112	7937679	44.44	ppbV	95
58) Ethylbenzene	8.319	91	12830355	41.80	ppbV	95
59) Xylenes (m&p)	8.486	91	16579036	74.57	ppbV	88
60) Xylene (o)	8.965	91	10755181	43.26	ppbV	94
61) Styrene	9.026	104	7258728	41.98	ppbV	98
62) Bromoform	9.039	173	4666631	42.48	ppbV	98
63) Cumene	9.335	105	13311478	41.41	ppbV	93
65) n-Propyl benzene	9.830	91	16093218	38.92	ppbV #	90
66) 1,1,2,2-Tetrachloroethane	9.920	83	8378428	43.44	ppbV	98
67) 4-Ethyltoluene	9.968	105	12698368	40.05	ppbV	94
68) 2-Chlorotoluene	9.997	91	11926348	41.87	ppbV	91
69) 1,3,5-Trimethylbenzene	10.078	105	11718355	41.75	ppbV	93
70) 1,2,4-Trimethylbenzene	10.550	105	11907445	42.04	ppbV	99
71) 1,3-Dichlorobenzene	10.927	146	7607510	43.97	ppbV	100
72) 1,4-Dichlorobenzene	11.039	146	7719628	43.71	ppbV	99
73) Benzyl chloride	11.370	91	11517094	41.75	ppbV	96
74) 1,2-Dichlorobenzene	11.570	146	7482301	43.59	ppbV	99
75) 1,3-Hexachlorobutadiene	13.135	225	2752406	37.04	ppbV	92
76) 1,2,4-Trichlorobenzene	13.145	180	4182726	38.42	ppbV	99
77) Naphthalene	13.412	128	13900835	37.70	ppbV #	88

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

Data Path : C:\DATA\03-13-19\
 Data File : aa1522std01.D
 Acq On : 13 Mar 2019 11:03 am
 Operator : jls
 Sample : 40 ppbv Std
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 13 12:04:06 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration



Data Path : C:\DATA\03-13-19\
 Data File : aa1523std02.D
 Acq On : 13 Mar 2019 11:25 am
 Operator : jls
 Sample : 20 ppbv Std
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 13 12:03:27 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	595915	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2483086	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	2008313	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1776218	10.53	ppbV	0.000
Target Compounds						
						Qvalue
2) Propene	1.419	41	1716409	22.64	ppbV	84
3) Dichlorodifluoromethane	1.454	85	3752570	22.28	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.574	85	3733038	20.34	ppbV	93
5) n-Butane	1.653	43	3084929	22.72	ppbV	97
6) Chloromethane	1.660	15	402310	22.35	ppbV #	1
7) Vinyl chloride	1.708	62	1482537	22.89	ppbV	97
8) 1,3-Butadiene	1.719	39	1633425	23.14	ppbV	92
9) Bromomethane	2.014	94	1186739	20.23	ppbV	99
10) Chloroethane	2.126	64	828729	20.94	ppbV	94
11) Vinyl bromide	2.220	106	1465959	22.40	ppbV	99
12) Trichlorofluoromethane	2.236	101	3878234	22.65	ppbV	99
13) Ethanol	2.612	45	804686	19.44	ppbV	96
14) 1,1-Dichloroethene	2.657	61	2845627	22.91	ppbV	97
15) Carbon disulfide	2.676	76	4667227	22.26	ppbV	98
16) 1,1,2-Trichloro-1,2,2-...	2.699	101	3109275	21.94	ppbV	85
17) Acrolein	2.933	56	694989	25.70	ppbV	96
18) Allyl chloride	3.043	76	774159	22.99	ppbV	100
19) Isopropanol	3.055	45	3473610	21.43	ppbV	98
20) Methylene chloride	3.139	49	2237044	22.95	ppbV	87
21) Acetone	3.162	43	3134461	22.71	ppbV	91
22) 1,2-Dichloroethene (tr...	3.258	61	2581951	23.11	ppbV	94
23) n-Pentane	3.332	43	4071502	23.26	ppbV	98
24) n-Hexane	3.332	41	4951777	23.02	ppbV	88
25) Methyl tert-butyl ether	3.342	73	4247215	22.40	ppbV #	79
26) Tert-butyl alcohol	3.409	59	3700094	25.78	ppbV	100
27) 1,1-Dichloroethane	3.747	63	3243918	23.14	ppbV	99
28) 1,2-Dichloroethene (cis)	4.174	61	2487683	23.19	ppbV	96
29) Cyclohexane	4.338	56	2947381	22.80	ppbV	85
30) Chloroform	4.396	83	3394472	22.85	ppbV	100
31) Ethyl acetate	4.490	45	758662	24.10	ppbV	99
32) Carbon tetrachloride	4.506	117	3630853	22.50	ppbV	100
33) Tetrahydrofuran	4.515	42	2788977	26.07	ppbV	98
34) 1,1,1-Trichloroethane	4.560	97	3208633	22.62	ppbV	99
35) Methyl ethyl ketone	4.637	43	4400169	23.69	ppbV	99
36) n-Heptane	4.840	43	4116210	22.77	ppbV	98
37) Benzene	4.869	78	4807378	22.31	ppbV	96
38) 1,2-Dichloroethane	5.039	62	2694950	23.24	ppbV	99
40) Trichloroethene	5.371	130	2058646	22.01	ppbV	97
41) 2,2,4-Trimethylpentane	4.766	57	11185246	21.98	ppbV	97
42) 1,2-Dichloropropane	5.830	63	2097960	22.30	ppbV	99
43) Bromodichloromethane	5.891	83	3547148	22.59	ppbV	98
44) Methyl methacrylate	6.036	41	3456355	23.05	ppbV	98
45) 1,4-Dioxane	6.068	88	1003407	20.41	ppbV	90
46) cis-1,3-Dichloropropene	6.480	75	3048123	22.47	ppbV	100
47) Toluene	6.711	91	5795600	21.55	ppbV	99
48) Methyl isobutyl ketone	7.091	43	5530381	22.12	ppbV	90
49) Tetrachloroethene	7.091	166	2127262	20.89	ppbV	98
50) trans-1,3-Dichloropropene	7.126	75	2740304	20.08	ppbV	96
51) 1,1,2-Trichloroethane	7.287	97	2051113	21.85	ppbV	95

AL SDG #E19-02297

Data Path : C:\DATA\03-13-19\
 Data File : aa1523std02.D
 Acq On : 13 Mar 2019 11:25 am
 Operator : jls
 Sample : 20 ppbv Std
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

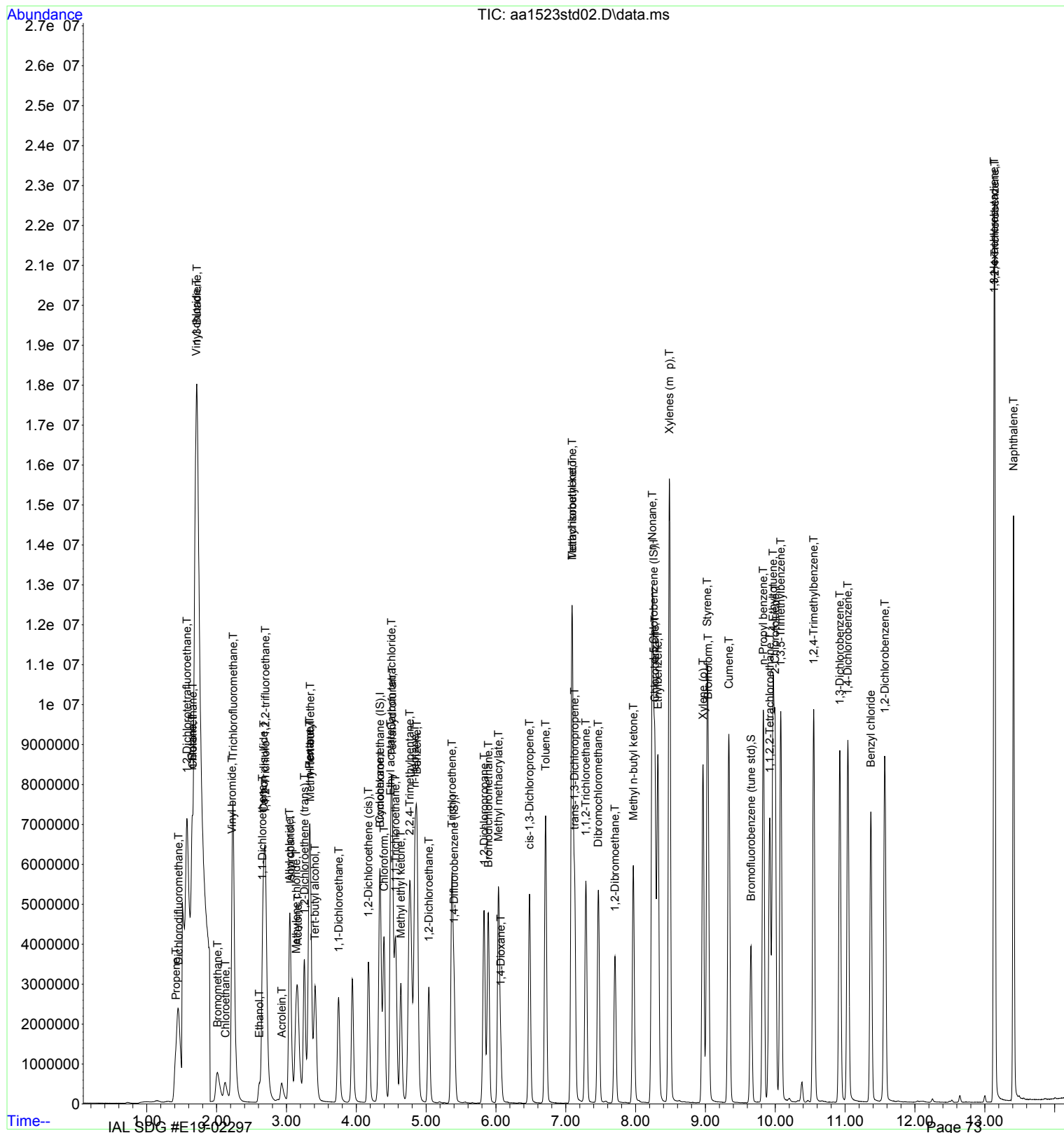
Quant Time: Mar 13 12:03:27 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.464	129	3352496	22.20	ppbV	100
53) 1,2-Dibromoethane	7.705	107	3233275	22.11	ppbV	100
54) Methyl n-butyl ketone	7.968	43	5308086	22.79	ppbV	100
56) n-Nonane	8.239	43	6188337	22.42	ppbV	98
57) Chlorobenzene	8.277	112	4284510	22.26	ppbV	94
58) Ethylbenzene	8.319	91	7277378	21.75	ppbV	98
59) Xylenes (m&p)	8.483	91	10230468	41.01	ppbV	95
60) Xylene (o)	8.965	91	5900002	21.79	ppbV	97
61) Styrene	9.026	104	4064101	21.38	ppbV	98
62) Bromoform	9.039	173	2598673	21.65	ppbV	97
63) Cumene	9.335	105	7553072	21.37	ppbV	97
65) n-Propyl benzene	9.827	91	9629254	20.99	ppbV	96
66) 1,1,2,2-Tetrachloroethane	9.920	83	4562558	21.65	ppbV	100
67) 4-Ethyltoluene	9.968	105	7392046	21.04	ppbV	98
68) 2-Chlorotoluene	9.997	91	6668802	21.21	ppbV	93
69) 1,3,5-Trimethylbenzene	10.078	105	6589628	21.33	ppbV	97
70) 1,2,4-Trimethylbenzene	10.550	105	6674100	21.48	ppbV	96
71) 1,3-Dichlorobenzene	10.923	146	4113077	21.87	ppbV	99
72) 1,4-Dichlorobenzene	11.039	146	4161410	21.48	ppbV	98
73) Benzyl chloride	11.367	91	6174243	21.34	ppbV	98
74) 1,2-Dichlorobenzene	11.570	146	4068375	21.74	ppbV	100
75) 1,3-Hexachlorobutadiene	13.135	225	1667673	19.55	ppbV	92
76) 1,2,4-Trichlorobenzene	13.145	180	2652361	21.14	ppbV	99
77) Naphthalene	13.412	128	9193707	22.09	ppbV	96

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

Data Path : C:\DATA\03-13-19\
 Data File : aa1523std02.D
 Acq On : 13 Mar 2019 11:25 am
 Operator : jls
 Sample : 20 ppbv Std
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 13 12:03:27 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration



Data Path : C:\DATA\03-13-19\
 Data File : aa1524std03.D
 Acq On : 13 Mar 2019 11:46 am
 Operator : jls
 Sample : 10 ppbv Std
 Misc : CC483586
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 13 12:02:48 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.335	130	619922	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	2493141	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2093975	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1758297	10.00	ppbV	0.000
Target Compounds						Qvalue
2) Propene	1.416	41	867552	11.00	ppbV	83
3) Dichlorodifluoromethane	1.451	85	1927735	11.00	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.571	85	1909347	10.00	ppbV	93
5) n-Butane	1.650	43	1553716	11.00	ppbV	97
6) Chloromethane	1.650	15	206011	11.00	ppbV	99
7) Vinyl chloride	1.705	62	740993	11.00	ppbV	97
8) 1,3-Butadiene	1.715	39	807882	11.00	ppbV	92
9) Bromomethane	2.004	94	604103	9.90	ppbV	100
10) Chloroethane	2.120	64	411778	10.00	ppbV	95
11) Vinyl bromide	2.216	106	748952	11.00	ppbV	99
12) Trichlorofluoromethane	2.233	101	1958943	11.00	ppbV	99
13) Ethanol	2.612	45	404716	9.40	ppbV	97
14) 1,1-Dichloroethene	2.657	61	1421545	11.00	ppbV	96
15) Carbon disulfide	2.673	76	2399346	11.00	ppbV	99
16) 1,1,2-Trichloro-1,2,2-...	2.692	101	1621552	11.00	ppbV	85
17) Acrolein	2.927	56	337626	12.00	ppbV	95
18) Allyl chloride	3.040	76	385409	11.00	ppbV	100
19) Isopropanol	3.056	45	1686376	10.00	ppbV	97
20) Methylene chloride	3.136	49	1115352	11.00	ppbV	87
21) Acetone	3.159	43	1579442	11.00	ppbV	90
22) 1,2-Dichloroethene (tr...	3.255	61	1278603	11.00	ppbV	96
23) n-Pentane	3.332	43	2003415	11.00	ppbV	98
24) n-Hexane	3.329	41	2461346	11.00	ppbV	87
25) Methyl tert-butyl ether	3.339	73	2169711	11.00	ppbV	82
26) Tert-butyl alcohol	3.409	59	1791977	12.00	ppbV	100
27) 1,1-Dichloroethane	3.744	63	1603974	11.00	ppbV	99
28) 1,2-Dichloroethene (cis)	4.171	61	1227613	11.00	ppbV	97
29) Cyclohexane	4.335	56	1479235	11.00	ppbV	86
30) Chloroform	4.396	83	1700185	11.00	ppbV	99
31) Ethyl acetate	4.490	45	360290	11.00	ppbV	100
32) Carbon tetrachloride	4.506	117	1846252	11.00	ppbV	99
33) Tetrahydrofuran	4.515	42	1335390	12.00	ppbV	100
34) 1,1,1-Trichloroethane	4.560	97	1622866	11.00	ppbV	100
35) Methyl ethyl ketone	4.638	43	2125477	11.00	ppbV	99
36) n-Heptane	4.840	43	2068300	11.00	ppbV	100
37) Benzene	4.869	78	2465896	11.00	ppbV	99
38) 1,2-Dichloroethane	5.040	62	1326828	11.00	ppbV	99
40) Trichloroethene	5.367	130	1032972	11.00	ppbV	97
41) 2,2,4-Trimethylpentane	4.766	57	5621597	11.00	ppbV	98
42) 1,2-Dichloropropane	5.830	63	1038984	11.00	ppbV	99
43) Bromodichloromethane	5.888	83	1734476	11.00	ppbV	98
44) Methyl methacrylate	6.036	41	1655871	11.00	ppbV	100
45) 1,4-Dioxane	6.065	88	493681	10.00	ppbV	92
46) cis-1,3-Dichloropropene	6.480	75	1498534	11.00	ppbV	100
47) Toluene	6.711	91	2970873	11.00	ppbV	98
48) Methyl isobutyl ketone	7.091	43	2761550	11.00	ppbV	90
49) Tetrachloroethene	7.091	166	1124791	11.00	ppbV	99
50) trans-1,3-Dichloropropene	7.126	75	1370415	10.00	ppbV	99
51) 1,1,2-Trichloroethane	7.290	97	1036893	11.00	ppbV	95

AL SDG #E19-02297

Data Path : C:\DATA\03-13-19\
 Data File : aa1524std03.D
 Acq On : 13 Mar 2019 11:46 am
 Operator : jls
 Sample : 10 ppbv Std
 Misc : CC483586
 ALS Vial : 4 Sample Multiplier: 1

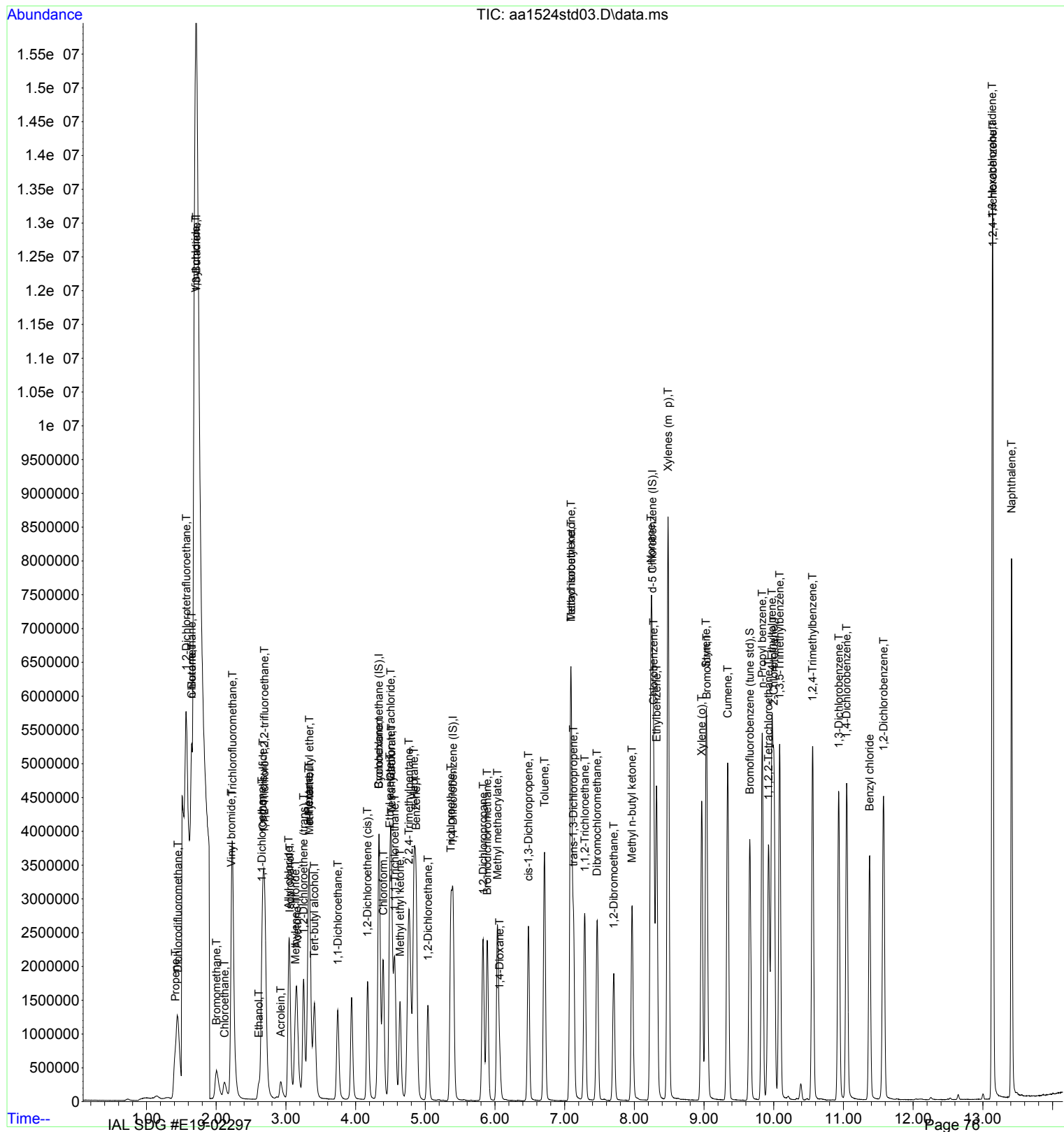
Quant Time: Mar 13 12:02:48 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.464	129	1668191	11.00	ppbV	100
53) 1,2-Dibromoethane	7.705	107	1615467	11.00	ppbV	99
54) Methyl n-butyl ketone	7.965	43	2572622	11.00	ppbV	100
56) n-Nonane	8.239	43	3165356	11.00	ppbV	98
57) Chlorobenzene	8.277	112	2207424	11.00	ppbV	95
58) Ethylbenzene	8.319	91	3837560	11.00	ppbV	99
59) Xylenes (m&p)	8.483	91	5722463	22.00	ppbV	98
60) Xylene (o)	8.965	91	3105022	11.00	ppbV	97
61) Styrene	9.030	104	2179800	11.00	ppbV	97
62) Bromoform	9.039	173	1376477	11.00	ppbV	98
63) Cumene	9.338	105	4054289	11.00	ppbV	98
65) n-Propyl benzene	9.834	91	5261309	11.00	ppbV	98
66) 1,1,2,2-Tetrachloroethane	9.924	83	2416873	11.00	ppbV	100
67) 4-Ethyltoluene	9.975	105	4028755	11.00	ppbV	99
68) 2-Chlorotoluene	10.001	91	3606095	11.00	ppbV	94
69) 1,3,5-Trimethylbenzene	10.084	105	3543925	11.00	ppbV	98
70) 1,2,4-Trimethylbenzene	10.557	105	3562849	11.00	ppbV	95
71) 1,3-Dichlorobenzene	10.933	146	2157298	11.00	ppbV	99
72) 1,4-Dichlorobenzene	11.046	146	2221738	11.00	ppbV	97
73) Benzyl chloride	11.374	91	3016896	10.00	ppbV	99
74) 1,2-Dichlorobenzene	11.576	146	2146706	11.00	ppbV	99
75) 1,3-Hexachlorobutadiene	13.136	225	978272	11.00	ppbV	92
76) 1,2,4-Trichlorobenzene	13.145	180	1570055	12.00	ppbV	100
77) Naphthalene	13.412	128	5207808	12.00	ppbV	98

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

Data Path : C:\DATA\03-13-19\
 Data File : aa1524std03.D
 Acq On : 13 Mar 2019 11:46 am
 Operator : jls
 Sample : 10 ppbv Std
 Misc : CC483586
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 13 12:02:48 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 11:56:36 2019
 Response via : Initial Calibration



Data Path : C:\DATA\03-13-19\
 Data File : aa1525std04.D
 Acq On : 13 Mar 2019 1:53 pm
 Operator : jls
 Sample : 2 ppbv Std
 Misc : CC483586
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 13 13:09:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 12:40:21 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.332	130	603375	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	2369670	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2059554	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.656	95	1707349	9.52	ppbV	0.000

Target Compounds					Qvalue	
2) Propene	1.412	41	133508	1.77	ppbV	84
3) Dichlorodifluoromethane	1.451	85	294980	1.77	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.567	85	340100	1.72	ppbV	94
5) n-Butane	1.646	43	261302	1.77	ppbV	95
6) Chloromethane	1.643	15	37196	2.23	ppbV #	58
7) Vinyl chloride	1.705	62	111676	1.69	ppbV	98
8) 1,3-Butadiene	1.712	39	129552	1.76	ppbV	93
9) Bromomethane	2.004	94	93849	1.63	ppbV	98
10) Chloroethane	2.117	64	62046	1.71	ppbV	97
11) Vinyl bromide	2.216	106	112167	1.76	ppbV	98
12) Trichlorofluoromethane	2.229	101	326724	1.84	ppbV	99
13) Ethanol	2.605	45	74117	1.62	ppbV	99
14) 1,1-Dichloroethene	2.654	61	208105	1.68	ppbV	93
15) Carbon disulfide	2.670	76	364088	1.76	ppbV	100
16) 1,1,2-Trichloro-1,2,2-...	2.689	101	324513	2.14	ppbV	86
17) Acrolein	2.917	56	46203	1.60	ppbV	93
18) Allyl chloride	3.033	76	57000	1.70	ppbV	100
19) Isopropanol	3.052	45	227597	1.40	ppbV	97
20) Methylene chloride	3.133	49	172563	1.59	ppbV	91
21) Acetone	3.155	43	215919	1.58	ppbV	91
22) 1,2-Dichloroethene (tr...	3.252	61	184661	1.65	ppbV	99
23) n-Pentane	3.332	43	332591	1.82	ppbV	93
24) n-Hexane	3.326	41	335275	1.72	ppbV	91
25) Methyl tert-butyl ether	3.335	73	406124	2.02	ppbV	92
26) Tert-butyl alcohol	3.409	59	294317	1.97	ppbV	100
27) 1,1-Dichloroethane	3.740	63	241787	1.65	ppbV	99
28) 1,2-Dichloroethene (cis)	4.171	61	179219	1.66	ppbV	99
29) Cyclohexane	4.335	56	263629	1.91	ppbV	89
30) Chloroform	4.393	83	259882	1.70	ppbV	97
31) Ethyl acetate	4.489	45	53099	1.56	ppbV	91
32) Carbon tetrachloride	4.502	117	330600	1.96	ppbV	99
33) Tetrahydrofuran	4.522	42	186874	1.65	ppbV	93
34) 1,1,1-Trichloroethane	4.557	97	295121	1.97	ppbV	99
35) Methyl ethyl ketone	4.637	43	294408	1.56	ppbV	95
36) n-Heptane	4.834	43	372147	1.93	ppbV	94
37) Benzene	4.866	78	437558	1.95	ppbV	99
38) 1,2-Dichloroethane	5.036	62	201204	1.69	ppbV	99
40) Trichloroethene	5.367	130	170384	1.88	ppbV	97
41) 2,2,4-Trimethylpentane	4.766	57	919197	1.91	ppbV #	83
42) 1,2-Dichloropropane	5.827	63	185417	1.96	ppbV	98
43) Bromodichloromethane	5.891	83	293093	1.90	ppbV	98
44) Methyl methacrylate	6.036	41	271069	1.83	ppbV	96
45) 1,4-Dioxane	6.068	88	86933	1.74	ppbV	97
46) cis-1,3-Dichloropropene	6.480	75	249525	1.86	ppbV	99
47) Toluene	6.708	91	576463	2.14	ppbV	97
48) Methyl isobutyl ketone	7.094	43	481803	1.93	ppbV	89
49) Tetrachloroethene	7.087	166	229590	2.22	ppbV	98
50) trans-1,3-Dichloropropene	7.126	75	234432	1.79	ppbV	99
51) 1,1,2-Trichloroethane	7.287	97	197768	2.09	ppbV	95

AL SDG #E19-02297

Data Path : C:\DATA\03-13-19\
 Data File : aa1525std04.D
 Acq On : 13 Mar 2019 1:53 pm
 Operator : jls
 Sample : 2 ppbv Std
 Misc : CC483586
 ALS Vial : 5 Sample Multiplier: 1

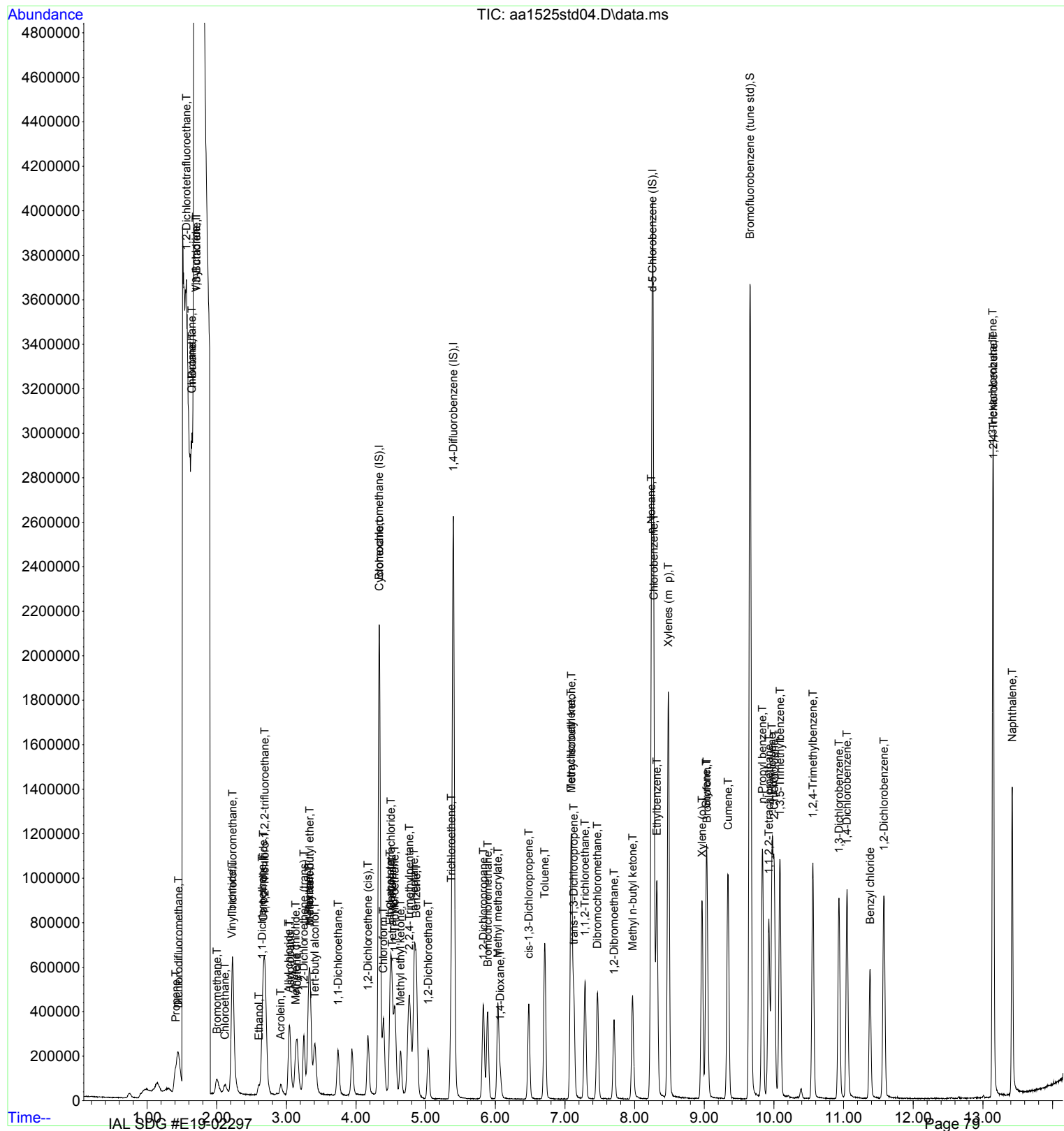
Quant Time: Mar 13 13:09:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 12:40:21 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.464	129	301874	2.03	ppbV	99
53) 1,2-Dibromoethane	7.705	107	300640	2.04	ppbV	100
54) Methyl n-butyl ketone	7.972	43	427143	1.87	ppbV	98
56) n-Nonane	8.239	43	624778	2.09	ppbV	98
57) Chlorobenzene	8.277	112	441620	2.09	ppbV	99
58) Ethylbenzene	8.319	91	797218	2.15	ppbV	100
59) Xylenes (m&p)	8.483	91	1233444	4.61	ppbV	99
60) Xylene (o)	8.968	91	630362	2.13	ppbV	97
61) Styrene	9.029	104	434537	2.17	ppbV	97
62) Bromoform	9.039	173	259874	2.10	ppbV	97
63) Cumene	9.341	105	834899	2.21	ppbV	99
65) n-Propyl benzene	9.833	91	1102060	2.26	ppbV	100
66) 1,1,2,2-Tetrachloroethane	9.927	83	511899	2.21	ppbV	99
67) 4-Ethyltoluene	9.972	105	837043	2.25	ppbV	100
68) 2-Chlorotoluene	10.004	91	755752	2.22	ppbV	95
69) 1,3,5-Trimethylbenzene	10.087	105	721750	2.16	ppbV	98
70) 1,2,4-Trimethylbenzene	10.560	105	720973	2.15	ppbV	95
71) 1,3-Dichlorobenzene	10.933	146	440840	2.07	ppbV	97
72) 1,4-Dichlorobenzene	11.049	146	432571	2.03	ppbV	97
73) Benzyl chloride	11.380	91	490148	1.66	ppbV	100
74) 1,2-Dichlorobenzene	11.579	146	446904	2.12	ppbV	100
75) 1,3-Hexachlorobutadiene	13.142	225	237183	2.34	ppbV	91
76) 1,2,4-Trichlorobenzene	13.152	180	350153	2.18	ppbV	97
77) Naphthalene	13.422	128	977672	1.87	ppbV	100

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

Data Path : C:\DATA\03-13-19\
 Data File : aa1525std04.D
 Acq On : 13 Mar 2019 1:53 pm
 Operator : jls
 Sample : 2 ppbv Std
 Misc : CC483586
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 13 13:09:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 12:40:21 2019
 Response via : Initial Calibration



Data Path : C:\DATA\03-13-19\
 Data File : aa1526std05.D
 Acq On : 13 Mar 2019 2:52 pm
 Operator : jls
 Sample : 0.2 ppbv Std
 Misc : CC483586
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 13 14:08:10 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 13:39:56 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.332	130	616010	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	2400433	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2129912	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	1768211	9.52	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.416	41	8557	0.11	ppbV #	4
3) Dichlorodifluoromethane	1.448	85	23231	0.14	ppbV #	57
4) 1,2-Dichlorotetrafluor...	1.574	85	27432	0.14	ppbV	93
5) n-Butane	1.647	43	28907	0.20	ppbV #	80
6) Chloromethane	1.647	15	3328	0.18	ppbV #	29
7) Vinyl chloride	1.715	62	8148	0.12	ppbV #	66
8) 1,3-Butadiene	1.709	39	11190	0.15	ppbV #	73
9) Bromomethane	2.001	94	5189	0.09	ppbV	81
10) Chloroethane	2.114	64	4625	0.12	ppbV #	48
11) Vinyl bromide	2.217	106	6838	0.11	ppbV	96
12) Trichlorofluoromethane	2.233	101	26652	0.15	ppbV	100
13) Ethanol	2.609	45	3789	0.09	ppbV #	44
14) 1,1-Dichloroethene	2.651	61	16601	0.13	ppbV	91
15) Carbon disulfide	2.670	76	27287	0.13	ppbV #	87
16) 1,1,2-Trichloro-1,2,2-...	2.692	101	25207	0.17	ppbV #	83
17) Acrolein	2.927	56	4602	0.16	ppbV #	73
18) Allyl chloride	3.036	76	4449	0.13	ppbV	100
19) Isopropanol	3.056	45	17765	0.11	ppbV #	82
20) Methylene chloride	3.133	49	24053	0.22	ppbV	85
21) Acetone	3.152	43	18833	0.14	ppbV #	84
22) 1,2-Dichloroethene (tr...	3.255	61	14679	0.13	ppbV	99
23) n-Pentane	3.332	43	22192	0.15	ppbV #	76
24) n-Hexane	3.335	41	27445	0.14	ppbV	93
25) Methyl tert-butyl ether	3.345	73	31159	0.15	ppbV	87
26) Tert-butyl alcohol	3.409	59	24420	0.16	ppbV	100
27) 1,1-Dichloroethane	3.737	63	23020	0.16	ppbV	95
28) 1,2-Dichloroethene (cis)	4.171	61	14208	0.13	ppbV	91
29) Cyclohexane	4.329	56	21905	0.16	ppbV	81
30) Chloroform	4.393	83	24362	0.16	ppbV	98
31) Ethyl acetate	4.499	45	4594	0.14	ppbV	93
32) Carbon tetrachloride	4.499	117	25046	0.15	ppbV	99
33) Tetrahydrofuran	4.525	42	18461	0.16	ppbV	97
34) 1,1,1-Trichloroethane	4.554	97	23577	0.16	ppbV	97
35) Methyl ethyl ketone	4.644	43	25819	0.14	ppbV	98
36) n-Heptane	4.840	43	29137	0.15	ppbV	91
37) Benzene	4.869	78	37140	0.16	ppbV	100
38) 1,2-Dichloroethane	5.036	62	17197	0.14	ppbV	97
40) Trichloroethene	5.371	130	14247	0.16	ppbV	94
41) 2,2,4-Trimethylpentane	4.766	57	67176	0.14	ppbV #	86
42) 1,2-Dichloropropane	5.831	63	16717	0.18	ppbV	92
43) Bromodichloromethane	5.885	83	23945	0.15	ppbV	99
44) Methyl methacrylate	6.033	41	26553	0.18	ppbV	87
45) 1,4-Dioxane	6.078	88	7098	0.14	ppbV	92
46) cis-1,3-Dichloropropene	6.477	75	20604	0.16	ppbV	89
47) Toluene	6.708	91	46975	0.17	ppbV	94
48) Methyl isobutyl ketone	7.091	43	42896	0.18	ppbV #	83
49) Tetrachloroethene	7.084	166	19322	0.19	ppbV	95
50) trans-1,3-Dichloropropene	7.123	75	17225	0.13	ppbV #	78
51) 1,1,2-Trichloroethane	7.287	97	15609	0.17	ppbV	92

AL SDG #E19-02297

Data Path : C:\DATA\03-13-19\
 Data File : aa1526std05.D
 Acq On : 13 Mar 2019 2:52 pm
 Operator : jls
 Sample : 0.2 ppbv Std
 Misc : CC483586
 ALS Vial : 6 Sample Multiplier: 1

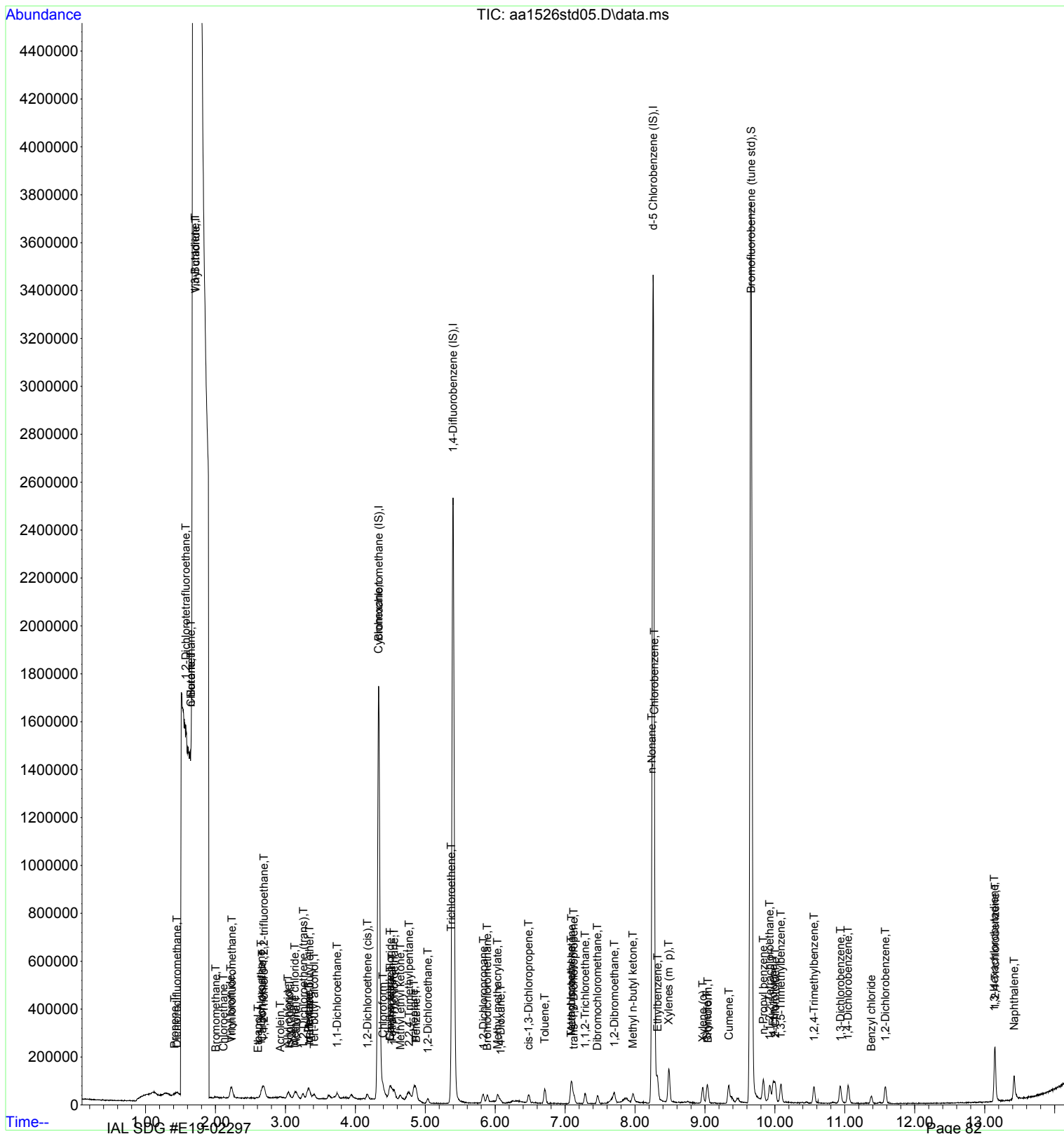
Quant Time: Mar 13 14:08:10 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 13:39:56 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.461	129	21905	0.15	ppbV	97
53) 1,2-Dibromoethane	7.705	107	23433	0.16	ppbV	99
54) Methyl n-butyl ketone	7.969	43	33600	0.15	ppbV	96
56) n-Nonane	8.239	43	51136	0.17	ppbV	87
57) Chlorobenzene	8.277	112	35639	0.17	ppbV #	31
58) Ethylbenzene	8.322	91	62348	0.17	ppbV	97
59) Xylenes (m&p)	8.480	91	96106	0.36	ppbV	100
60) Xylene (o)	8.969	91	49145	0.16	ppbV	97
61) Styrene	9.030	104	29553	0.15	ppbV	97
62) Bromoform	9.043	173	17605	0.14	ppbV	95
63) Cumene	9.342	105	60115	0.16	ppbV	93
65) n-Propyl benzene	9.834	91	89183	0.18	ppbV	99
66) 1,1,2,2-Tetrachloroethane	9.924	83	40104	0.17	ppbV	97
67) 4-Ethyltoluene	9.975	105	64961	0.17	ppbV	99
68) 2-Chlorotoluene	10.004	91	57404	0.17	ppbV	95
69) 1,3,5-Trimethylbenzene	10.084	105	53311	0.16	ppbV	100
70) 1,2,4-Trimethylbenzene	10.560	105	50867	0.15	ppbV	92
71) 1,3-Dichlorobenzene	10.936	146	40216	0.19	ppbV	97
72) 1,4-Dichlorobenzene	11.046	146	37292	0.17	ppbV	95
73) Benzyl chloride	11.377	91	28817	0.10	ppbV	99
74) 1,2-Dichlorobenzene	11.579	146	35217	0.17	ppbV	98
75) 1,3-Hexachlorobutadiene	13.139	225	19838	0.20	ppbV	89
76) 1,2,4-Trichlorobenzene	13.152	180	35134	0.23	ppbV	100
77) Naphthalene	13.422	128	102819	0.22	ppbV	97

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

Data Path : C:\DATA\
Data File : aa1526st
Acq On : 13 Mar 2

Quant Time: Mar 13 14:08:10 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 13:39:56 2019
Response via : Initial Calibration



Initial Calibration Verification Sample Standard

Lab Sample Name: 10 PPBV ICVSS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv
Amount of standard injected (ml): 50

Data File: AA1527ICVSS
Date Analyzed: 3/13/2019

Runs with this ICVSS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1521BFB]	03/13/2019 9:57
40 PPBV STD [AA1522STD01]	03/13/2019 11:03
20 PPBV STD [AA1523STD02]	03/13/2019 11:25
10 PPBV STD [AA1524STD03]	03/13/2019 11:46
2 PPBV STD [AA1525STD04]	03/13/2019 13:53
0.2 PPBV STD [AA1526STD05]	03/13/2019 14:52
10 PPBV ICVSS [AA1527ICVSS]	03/13/2019 15:26

Compound	CAS #	Injected Amount (ppbv)	Recovered Amount (ppbv)	% Recovery	QC Limit
Acetone	67-64-1	11	11	100	
Acrolein	107-02-8	7.1	7.6	110	
Allyl Chloride	107-05-1	11	12	110	
Benzene	71-43-2	10	12	120	
Benzyl chloride	100-44-7	11	11	100	
Bromodichloromethane	75-27-4	11	12	110	
Bromoform	75-25-2	11	12	110	
Bromomethane	74-83-9	11	11	100	
1,3-Butadiene	106-99-0	11	11	100	
n-Butane	106-97-8	11	10	91	
Chlorobenzene	108-90-7	10	11	110	
Chloroethane	75-00-3	11	11	100	
Chloroform	67-66-3	11	12	110	
Chloromethane	74-87-3	10	12	120	
Carbon disulfide	75-15-0	11	13	120	
Carbon tetrachloride	56-23-5	11	11	100	
2-Chlorotoluene	95-49-8	11	11	100	
Cumene	98-82-8	11	12	110	
Cyclohexane	110-82-7	11	10	91	
Dibromochloromethane	124-48-1	11	12	110	
1,2-Dibromoethane	106-93-4	10	12	120	
1,2-Dichlorobenzene	95-50-1	10	11	110	
1,3-Dichlorobenzene	541-73-1	10	11	110	
1,4-Dichlorobenzene	106-46-7	10	11	110	
Dichlorodifluoromethane	75-71-8	11	12	110	
1,1-Dichloroethane	75-34-3	11	11	100	
1,2-Dichloroethane	107-06-2	11	11	100	
1,1-Dichloroethene	75-35-4	11	12	110	
1,2-Dichloroethene (cis)	156-59-2	10	12	120	
1,2-Dichloroethene (trans)	156-60-5	11	12	110	
1,2-Dichloropropane	78-87-5	11	11	100	
1,3-Dichloropropene (cis)	10061-01-5	11	12	110	
1,3-Dichloropropene (trans)	10061-02-6	10	11	110	
1,2-Dichlorotetrafluoroethane	76-14-2	11	11	100	
1,4-Dioxane	123-91-1	8.3	11	130	
Ethanol	64-17-5	8.7	9.7	110	
Ethyl acetate	141-78-6	11	11	100	
Ethylbenzene	100-41-4	11	11	100	
4-Ethyltoluene	622-96-8	11	11	100	
n-Heptane	142-82-5	11	11	100	

ICVSS recovery must be within 70-130% of the spiked value for all compounds.

* Values outside of QC limits

Initial Calibration Verification Sample Standard

Lab Sample Name: 10 PPBV ICVSS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv
Amount of standard injected (ml): 50

Data File: AA1527ICVSS
Date Analyzed: 3/13/2019

Runs with this ICVSS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1521BFB]	03/13/2019 9:57
40 PPBV STD [AA1522STD01]	03/13/2019 11:03
20 PPBV STD [AA1523STD02]	03/13/2019 11:25
10 PPBV STD [AA1524STD03]	03/13/2019 11:46
2 PPBV STD [AA1525STD04]	03/13/2019 13:53
0.2 PPBV STD [AA1526STD05]	03/13/2019 14:52
10 PPBV ICVSS [AA1527ICVSS]	03/13/2019 15:26

Compound	CAS #	Injected Amount (ppbv)	Recovered Amount (ppbv)	% Recovery	QC Limit
1,3-Hexachlorobutadiene	87-68-3	10	11	110	
n-Hexane	110-54-3	10	9.5	95	
Isopropanol	67-63-0	8.2	10	120	
Methylene chloride	75-09-2	11	9.9	90	
Methyl ethyl ketone	78-93-3	10	11	110	
Methyl isobutyl ketone	108-10-1	11	11	100	
Methyl methacrylate	80-62-6	11	10	91	
Methyl n-butyl ketone	591-78-6	9.4	11	120	
Methyl tert-butyl ether	1634-04-4	11	12	110	
Naphthalene	91-20-3	9.3	11	120	
n-Nonane	111-84-2	11	10	91	
n-Pentane	109-66-0	11	11	100	
Propene	115-07-1	11	12	110	
n-Propyl benzene	103-65-1	11	12	110	
Styrene	100-42-5	10	12	120	
Tert-butyl alcohol	75-65-0	8.0	9.0	110	
1,1,2,2-Tetrachloroethane	79-34-5	10	11	110	
Tetrachloroethene	127-18-4	10	11	110	
Tetrahydrofuran	109-99-9	11	12	110	
Toluene	108-88-3	10	12	120	
1,2,4-Trichlorobenzene	120-82-1	8.8	11	130	
1,1,1-Trichloroethane	71-55-6	11	11	100	
1,1,2-Trichloroethane	79-00-5	10	12	120	
Trichloroethene	79-01-6	10	11	110	
Trichlorofluoromethane	75-69-4	11	12	110	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	11	11	100	
1,2,4-Trimethylbenzene	95-63-6	10	12	120	
1,3,5-Trimethylbenzene	108-67-8	11	12	110	
2,2,4-Trimethylpentane	540-84-1	11	11	100	
Vinyl bromide	593-60-2	9.7	13	130	
Vinyl chloride	75-01-4	11	12	110	
Xylenes (m&p)	179601-23-1	22	23	100	
Xylenes (o)	95-47-6	11	11	100	

ICVSS recovery must be within 70-130% of the spiked value for all compounds.

* Values outside of QC limits

Data Path : C:\DATA\03-13-19\
 Data File : aa1527icvss.D
 Acq On : 13 Mar 2019 3:26 pm
 Operator : jls
 Sample : 10 ppbv ICVSS
 Misc : CC483422
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 14 07:21:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.335	130	583648	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2364331	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2014746	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	1732211	9.85	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.412	41	748543	11.51	ppbV	85
3) Dichlorodifluoromethane	1.451	85	1802725	12.33	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.567	85	1792974	10.61	ppbV	95
5) n-Butane	1.650	43	1337369	10.29	ppbV	96
6) Chloromethane	1.650	15	199458	11.85	ppbV	86
7) Vinyl chloride	1.705	62	674458	11.93	ppbV	97
8) 1,3-Butadiene	1.715	39	722131	11.17	ppbV	90
9) Bromomethane	2.004	94	566534	11.50	ppbV	99
10) Chloroethane	2.117	64	368766	10.61	ppbV	97
11) Vinyl bromide	2.220	106	690120	12.57	ppbV	99
12) Trichlorofluoromethane	2.232	101	1798513	11.60	ppbV	100
13) Ethanol	2.612	45	354409	9.66	ppbV	97
14) 1,1-Dichloroethene	2.654	61	1273882	11.73	ppbV	92
15) Carbon disulfide	2.673	76	2302588	12.81	ppbV	98
16) 1,1,2-Trichloro-1,2,2-...	2.695	101	1495221	11.21	ppbV	87
17) Acrolein	2.930	56	185433	7.64	ppbV	98
18) Allyl chloride	3.043	76	362887	12.37	ppbV	100
19) Isopropanol	3.056	45	1416317	10.09	ppbV	97
20) Methylene chloride	3.136	49	944299	9.86	ppbV	96
21) Acetone	3.155	43	1347935	11.37	ppbV	91
22) 1,2-Dichloroethene (tr...	3.255	61	1144605	11.70	ppbV	99
23) n-Pentane	3.332	43	1728735	10.99	ppbV	97
24) n-Hexane	3.329	41	1672985	9.54	ppbV	89
25) Methyl tert-butyl ether	3.342	73	2044692	11.63	ppbV	91
26) Tert-butyl alcohol	3.409	59	1201294	9.00	ppbV	100
27) 1,1-Dichloroethane	3.744	63	1454057	11.39	ppbV	98
28) 1,2-Dichloroethene (cis)	4.171	61	1092548	11.55	ppbV	100
29) Cyclohexane	4.335	56	1273206	10.50	ppbV	93
30) Chloroform	4.396	83	1596677	11.89	ppbV	97
31) Ethyl acetate	4.490	45	311963	10.80	ppbV	96
32) Carbon tetrachloride	4.502	117	1659100	11.24	ppbV	100
33) Tetrahydrofuran	4.519	42	1147108	11.77	ppbV	94
34) 1,1,1-Trichloroethane	4.560	97	1503836	11.39	ppbV	98
35) Methyl ethyl ketone	4.637	43	1798350	10.92	ppbV	95
36) n-Heptane	4.840	43	1774822	10.55	ppbV	93
37) Benzene	4.869	78	2367880	11.97	ppbV	96
38) 1,2-Dichloroethane	5.039	62	1197781	11.44	ppbV	100
40) Trichloroethene	5.367	130	937195	11.50	ppbV	97
41) 2,2,4-Trimethylpentane	4.766	57	4867456	11.24	ppbV	98
42) 1,2-Dichloropropane	5.827	63	949438	10.99	ppbV	98
43) Bromodichloromethane	5.891	83	1651285	11.85	ppbV	98
44) Methyl methacrylate	6.036	41	1428506	10.38	ppbV	92
45) 1,4-Dioxane	6.068	88	465925	10.53	ppbV	99
46) cis-1,3-Dichloropropene	6.480	75	1406195	11.72	ppbV	100
47) Toluene	6.711	91	2805943	11.52	ppbV	98
48) Methyl isobutyl ketone	7.091	43	2360788	10.52	ppbV	91
49) Tetrachloroethene	7.091	166	1063728	11.45	ppbV	98
50) trans-1,3-Dichloropropene	7.126	75	1274153	10.74	ppbV	97
51) 1,1,2-Trichloroethane	7.287	97	984591	11.56	ppbV	94

AL SDG #E19-02297

Data Path : C:\DATA\03-13-19\
 Data File : aa1527icvss.D
 Acq On : 13 Mar 2019 3:26 pm
 Operator : jls
 Sample : 10 ppbv ICVSS
 Misc : CC483422
 ALS Vial : 7 Sample Multiplier: 1

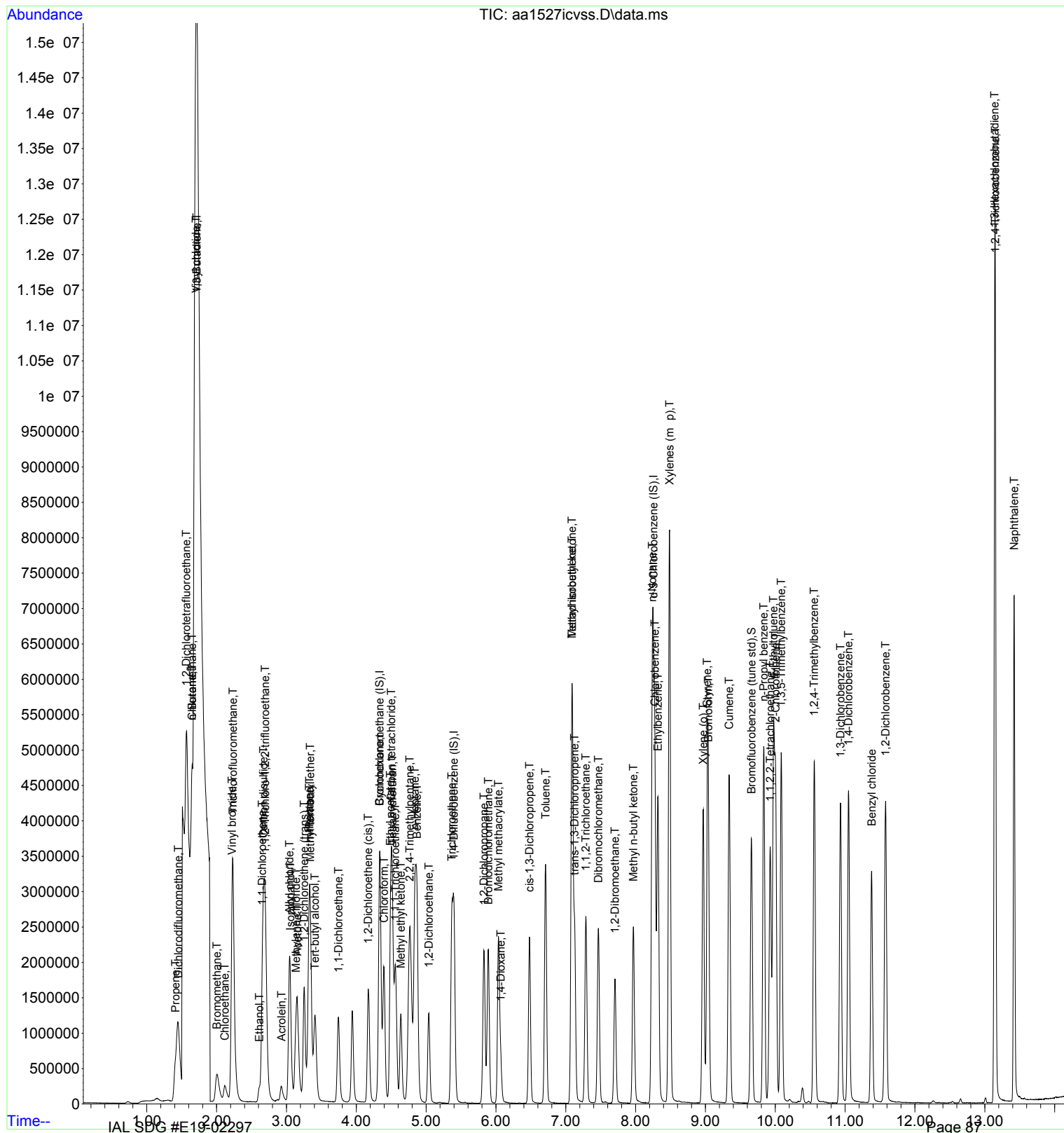
Quant Time: Mar 14 07:21:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1559185	11.67	ppbV	99
53) 1,2-Dibromoethane	7.705	107	1517405	11.52	ppbV	100
54) Methyl n-butyl ketone	7.969	43	2201030	10.73	ppbV	100
56) n-Nonane	8.239	43	2814036	10.48	ppbV	98
57) Chlorobenzene	8.277	112	2053826	10.99	ppbV	98
58) Ethylbenzene	8.319	91	3668920	11.41	ppbV	100
59) Xylenes (m&p)	8.486	91	5457501	23.34	ppbV	98
60) Xylene (o)	8.968	91	2950882	11.37	ppbV	97
61) Styrene	9.026	104	2031345	11.60	ppbV	97
62) Bromoform	9.042	173	1292666	11.85	ppbV	97
63) Cumene	9.338	105	3826084	11.54	ppbV	98
65) n-Propyl benzene	9.833	91	5022139	11.57	ppbV	100
66) 1,1,2,2-Tetrachloroethane	9.927	83	2341213	11.40	ppbV	100
67) 4-Ethyltoluene	9.975	105	3786999	11.44	ppbV	99
68) 2-Chlorotoluene	10.004	91	3422097	11.43	ppbV	95
69) 1,3,5-Trimethylbenzene	10.084	105	3339781	11.51	ppbV	99
70) 1,2,4-Trimethylbenzene	10.557	105	3362667	11.60	ppbV	94
71) 1,3-Dichlorobenzene	10.933	146	2034756	10.90	ppbV	98
72) 1,4-Dichlorobenzene	11.049	146	2068521	11.15	ppbV	97
73) Benzyl chloride	11.380	91	2821388	10.94	ppbV	100
74) 1,2-Dichlorobenzene	11.579	146	2028095	11.16	ppbV	100
75) 1,3-Hexachlorobutadiene	13.142	225	939013	11.17	ppbV	92
76) 1,2,4-Trichlorobenzene	13.152	180	1363579	11.13	ppbV	98
77) Naphthalene	13.422	128	4402041	11.46	ppbV	98

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

Data Path : C:\DATA\03-13-19\
 Data File : aa1527icvss.D
 Acq On : 13 Mar 2019 3:26 pm
 Operator : jls
 Sample : 10 ppbv ICVSS
 Misc : CC483422
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 14 07:21:04 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA
Amount of standard injected (ml): 50

Date/Time of Calibration: 3/26/2019 08:39
Sample ID: DCS
Laboratory ID: AA1762DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 08:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 08:39
10 PPBV LCS [AA1763LCS]	03/26/2019 09:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
CLEAN CAN CERTIFICATION, BATCH MASTER 5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

Compound Name	Average RRF	Standard RRF	% Difference	Pass/Fail	*
Acetone	2.0	2.0	2.8	PASS	
Benzene	3.4	3.2	4.6	PASS	
Bromodichloromethane	0.59	0.59	-0.80	PASS	
Bromoform	0.54	0.51	6.7	PASS	
Bromomethane	0.84	0.76	9.8	PASS	
1,3-Butadiene	1.1	1.2	-12	PASS	
Chlorobenzene	0.93	0.75	19	PASS	
Chloroethane	0.60	0.49	18	PASS	
Chloroform	2.3	2.2	3.7	PASS	
Chloromethane	0.29	0.34	-17	PASS	
Carbon disulfide	3.1	3.0	3.1	PASS	
Carbon tetrachloride	2.5	2.3	8.3	PASS	
Cyclohexane	2.1	1.5	29	PASS	
Dibromochloromethane	0.57	0.54	4.1	PASS	
1,2-Dibromoethane	0.56	0.51	8.6	PASS	
1,2-Dichlorobenzene	0.90	0.76	16	PASS	
1,3-Dichlorobenzene	0.93	0.74	21	PASS	
1,4-Dichlorobenzene	0.92	0.73	21	PASS	
Dichlorodifluoromethane	2.5	2.5	-0.80	PASS	
1,1-Dichloroethane	2.2	1.9	14	PASS	
1,2-Dichloroethane	1.8	1.8	0.80	PASS	
1,1-Dichloroethene	1.9	1.7	8.9	PASS	
1,2-Dichloroethene (cis)	1.6	1.4	14	PASS	
1,2-Dichloroethene (trans)	1.7	1.5	13	PASS	
1,2-Dichloropropane	0.37	0.31	16	PASS	
1,3-Dichloropropene (cis)	0.51	0.45	11	PASS	
1,3-Dichloropropene (trans)	0.50	0.50	0.40	PASS	
1,2-Dichlorotetrafluoroethane	2.9	2.7	5.6	PASS	
1,4-Dioxane	0.19	0.17	11	PASS	
Ethylbenzene	1.6	1.4	14	PASS	
n-Heptane	2.9	2.3	19	PASS	
1,3-Hexachlorobutadiene	0.42	0.41	1.2	PASS	
n-Hexane	3.0	2.5	18	PASS	
Methylene chloride	1.6	1.3	18	PASS	
Methyl ethyl ketone	2.8	2.4	15	PASS	
Methyl isobutyl ketone	0.95	0.86	9.5	PASS	
Methyl tert-butyl ether	3.0	2.5	16	PASS	
Styrene	0.87	0.73	17	PASS	
Tert-butyl alcohol	2.3	1.7	26	PASS	
1,1,2,2-Tetrachloroethane	1.0	0.97	4.8	PASS	
Tetrachloroethene	0.39	0.35	11	PASS	
Toluene	1.0	0.94	8.6	PASS	
1,2,4-Trichlorobenzene	0.61	0.50	18	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA
Amount of standard injected (ml): 50

Date/Time of Calibration: 3/26/2019 08:39
Sample ID: DCS
Laboratory ID: AA1762DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 08:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 08:39
10 PPBV LCS [AA1763LCS]	03/26/2019 09:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
CLEAN CAN CERTIFICATION, BATCH MASTER 5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

Compound Name	Average RRF	Standard RRF	% Difference	PassFail	*
1,1,1-Trichloroethane	2.3	2.1	6.7	PASS	
1,1,2-Trichloroethane	0.36	0.34	5.6	PASS	
Trichloroethene	0.35	0.27	22	PASS	
Trichlorofluoromethane	2.7	2.4	8.1	PASS	
1,1,2-Trichloro-1,2,2-trifluoroethane	2.3	1.9	15	PASS	
1,2,4-Trimethylbenzene	1.4	1.2	14	PASS	
1,3,5-Trimethylbenzene	1.4	1.3	12	PASS	
2,2,4-Trimethylpentane	1.8	1.5	19	PASS	
Vinyl bromide	0.94	0.78	17	PASS	
Vinyl chloride	0.97	1.0	-5.4	PASS	
Xylenes (m&p)	1.2	1.1	9.2	PASS	
Xylenes (o)	1.3	1.0	20	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E19-02297

Data Path : C:\DATA\03-26-19\
 Data File : aa1762dcvs.D
 Acq On : 26 Mar 2019 8:39 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 26 09:07:32 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Bromochloromethane (IS)	1.000	1.000	0.0	80	0.00
2 T	Propene	1.114	0.944	15.3	59	0.00
3 T	Dichlorodifluoromethane	2.504	2.524	-0.8	71	0.00
4 T	1,2-Dichlorotetrafluoroetha	2.895	2.734	5.6	71	0.00
5 T	n-Butane	2.228	1.711	23.2	60	0.00
6 T	Chloromethane	0.288	0.336	-16.7	89	0.00
7 T	Vinyl chloride	0.969	1.021	-5.4	75	0.00
8 T	1,3-Butadiene	1.108	1.241	-12.0	84	0.00
9 T	Bromomethane	0.844	0.761	9.8	62	0.00
10 T	Chloroethane	0.596	0.488	18.1	59	0.00
11 T	Vinyl bromide	0.941	0.778	17.3	57	0.00
12 T	Trichlorofluoromethane	2.656	2.442	8.1	68	0.00
13 T	Ethanol	0.629	0.492	21.8	57	0.00
14 T	1,1-Dichloroethene	1.860	1.694	8.9	65	0.00
15 T	Carbon disulfide	3.081	2.985	3.1	68	0.00
16 T	1,1,2-Trichloro-1,2,2-trifl	2.285	1.938	15.2	65	0.00
17 T	Acrolein	0.416	0.277	33.4#	49	0.00
18 T	Allyl chloride	0.503	0.430	14.5	61	0.00
19 T	Isopropanol	2.406	1.875	22.1	55	0.00
20 T	Methylene chloride	1.641	1.346	18.0	66	0.00
21 T	Acetone	2.031	1.974	2.8	68	0.00
22 T	1,2-Dichloroethene (trans)	1.676	1.466	12.5	62	0.00
23 T	n-Pentane	2.695	2.430	9.8	66	0.00
24 T	n-Hexane	3.006	2.470	17.8	55	0.00
25 T	Methyl tert-butyl ether	3.011	2.522	16.2	63	0.00
26 T	Tert-butyl alcohol	2.287	1.692	26.0	56	0.00
27 T	1,1-Dichloroethane	2.187	1.887	13.7	64	0.00
28 T	1,2-Dichloroethene (cis)	1.620	1.402	13.5	62	0.00
29 t	Cyclohexane	2.079	1.487	28.5	55	0.00
30 T	Chloroform	2.300	2.216	3.7	71	0.00
31 T	Ethyl acetate	0.495	0.399	19.4	60	0.00
32 T	Carbon tetrachloride	2.530	2.319	8.3	68	0.00
33 T	Tetrahydrofuran	1.670	1.411	15.5	63	0.00
34 T	1,1,1-Trichloroethane	2.262	2.110	6.7	71	0.00
35 T	Methyl ethyl ketone	2.822	2.403	14.8	62	0.00
36 T	n-Heptane	2.883	2.334	19.0	61	0.00
37 T	Benzene	3.390	3.235	4.6	71	0.00
38 T	1,2-Dichloroethane	1.794	1.780	0.8	73	0.00
39 I	1,4-Difluorobenzene (IS)	1.000	1.000	0.0	78	0.00
40 T	Trichloroethene	0.345	0.270	21.7	56	0.00
41 T	2,2,4-Trimethylpentane	1.832	1.490	18.7	56	0.00
42 T	1,2-Dichloropropane	0.366	0.309	15.6	63	0.00
43 T	Bromodichloromethane	0.589	0.594	-0.8	73	0.00
44 T	Methyl methacrylate	0.582	0.491	15.6	63	0.00
45 T	1,4-Dioxane	0.187	0.167	10.7	65	0.00
46 T	cis-1,3-Dichloropropene	0.508	0.454	10.6	65	0.00
47 T	Toluene	1.031	0.942	8.6	68	0.00
48 T	Methyl isobutyl ketone	0.949	0.859	9.5	66	0.00
49 T	Tetrachloroethene	0.393	0.349	11.2	66	0.00
50 T	trans-1,3-Dichloropropene	0.502	0.500	0.4	71	0.00
51 T	1,1,2-Trichloroethane	0.360	0.340	5.6	70	0.00
52 T	Dibromochloromethane	0.565	0.542	4.1	69	0.00
53 T	1,2-Dibromoethane	0.557	0.509	8.6	67	0.00

AL SDG #E19-02297

Data Path : C:\DATA\03-26-19\
 Data File : aa1762dcvs.D
 Acq On : 26 Mar 2019 8:39 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 26 09:07:32 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
54 T	Methyl n-butyl ketone	0.868	0.773	10.9	64	0.00
55 I	d-5 Chlorobenzene (IS)	1.000	1.000	0.0	95	0.00
56 T	n-Nonane	1.333	0.988	25.9	68	0.00
57 T	Chlorobenzene	0.927	0.749	19.2	74	0.00
58 T	Ethylbenzene	1.595	1.372	14.0	78	0.00
59 T	Xylenes (m&p)	1.161	1.054	9.2	80	0.00
60 T	Xylene (o)	1.289	1.033	19.9	72	0.00
61 T	Styrene	0.869	0.725	16.6	72	0.00
62 T	Bromoform	0.541	0.505	6.7	80	0.00
63 T	Cumene	1.646	1.374	16.5	74	0.00
64 S	Bromofluorobenzene (tune st	0.873	0.821	6.0	92	0.00
65 T	n-Propyl benzene	2.155	1.940	10.0	80	0.00
66 T	1,1,2,2-Tetrachloroethane	1.019	0.970	4.8	87	0.00
67 T	4-Ethyltoluene	1.643	1.419	13.6	77	0.00
68 T	2-Chlorotoluene	1.486	1.369	7.9	83	0.00
69 T	1,3,5-Trimethylbenzene	1.440	1.263	12.3	78	0.00
70 T	1,2,4-Trimethylbenzene	1.439	1.242	13.7	76	0.00
71 T	1,3-Dichlorobenzene	0.926	0.735	20.6	74	0.00
72 T	1,4-Dichlorobenzene	0.921	0.729	20.8	71	0.00
73	Benzyl chloride	1.280	1.141	10.9	75	0.00
74 T	1,2-Dichlorobenzene	0.902	0.761	15.6	77	0.00
75 T	1,3-Hexachlorobutadiene	0.417	0.412	1.2	92	0.00
76 T	1,2,4-Trichlorobenzene	0.608	0.499	17.9	76	0.00
77 T	Naphthalene	1.906	1.473	22.7	67	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data Path : C:\DATA\03-26-19\
 Data File : aa1762dcvs.D
 Acq On : 26 Mar 2019 8:39 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 26 09:07:32 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.332	130	495313	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	1937183	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	1979719	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1626179	9.41	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.412	41	514094	9.32	ppbV	95
3) Dichlorodifluoromethane	1.444	85	1375088	11.09	ppbV	98
4) 1,2-Dichlorotetrafluor...	1.564	85	1354244	9.45	ppbV	90
5) n-Butane	1.647	43	932232	8.45	ppbV #	85
6) Chloromethane	1.650	15	182819	12.80	ppbV #	22
7) Vinyl chloride	1.712	62	556224	11.59	ppbV	98
8) 1,3-Butadiene	1.715	39	675975	12.32	ppbV #	76
9) Bromomethane	2.007	94	373404	8.93	ppbV	100
10) Chloroethane	2.123	64	241741	8.19	ppbV	95
11) Vinyl bromide	2.216	106	423725	9.09	ppbV	100
12) Trichlorofluoromethane	2.229	101	1330362	10.11	ppbV	98
13) Ethanol	2.609	45	229022	7.36	ppbV #	86
14) 1,1-Dichloroethene	2.654	61	923007	10.02	ppbV	98
15) Carbon disulfide	2.673	76	1626553	10.66	ppbV #	82
16) 1,1,2-Trichloro-1,2,2-...	2.695	101	1055909	9.33	ppbV	99
17) Acrolein	2.924	56	164416	7.98	ppbV	99
18) Allyl chloride	3.039	76	234507	9.42	ppbV	100
19) Isopropanol	3.052	45	928596	7.79	ppbV #	82
20) Methylene chloride	3.133	49	733347	9.02	ppbV	85
21) Acetone	3.158	43	1075421	10.69	ppbV #	83
22) 1,2-Dichloroethene (tr...	3.255	61	798583	9.62	ppbV	91
23) n-Pentane	3.329	43	1323984	9.92	ppbV	98
24) n-Hexane	3.332	41	1345611	9.04	ppbV	89
25) Methyl tert-butyl ether	3.335	73	1374145	9.21	ppbV	95
26) Tert-butyl alcohol	3.406	59	1005710	8.88	ppbV	100
27) 1,1-Dichloroethane	3.744	63	1027984	9.49	ppbV	99
28) 1,2-Dichloroethene (cis)	4.174	61	764094	9.52	ppbV	93
29) Cyclohexane	4.335	56	810158	7.87	ppbV	97
30) Chloroform	4.393	83	1207641	10.60	ppbV	99
31) Ethyl acetate	4.490	45	217244	8.86	ppbV	92
32) Carbon tetrachloride	4.502	117	1263324	10.08	ppbV	97
33) Tetrahydrofuran	4.515	42	838415	10.13	ppbV	97
34) 1,1,1-Trichloroethane	4.560	97	1149745	10.26	ppbV	98
35) Methyl ethyl ketone	4.638	43	1309397	9.37	ppbV	98
36) n-Heptane	4.837	43	1271681	8.90	ppbV	95
37) Benzene	4.869	78	1762443	10.49	ppbV	99
38) 1,2-Dichloroethane	5.036	62	969628	10.91	ppbV	100
40) Trichloroethene	5.367	130	574991	8.61	ppbV	99
41) 2,2,4-Trimethylpentane	4.766	57	3175144	8.95	ppbV	94
42) 1,2-Dichloropropane	5.830	63	657958	9.29	ppbV	97
43) Bromodichloromethane	5.888	83	1265372	11.09	ppbV	100
44) Methyl methacrylate	6.036	41	1045480	9.27	ppbV	98
45) 1,4-Dioxane	6.065	88	323315	8.92	ppbV	96
46) cis-1,3-Dichloropropene	6.480	75	966860	9.83	ppbV	100
47) Toluene	6.711	91	2007354	10.06	ppbV	95
48) Methyl isobutyl ketone	7.091	43	1831251	9.96	ppbV #	83
49) Tetrachloroethene	7.094	166	742946	9.76	ppbV	97
50) trans-1,3-Dichloropropene	7.126	75	967707	9.95	ppbV #	76
51) 1,1,2-Trichloroethane	7.284	97	725341	10.39	ppbV	88

AL SDG #E19-02297

Data Path : C:\DATA\03-26-19\
 Data File : aa1762dcvs.D
 Acq On : 26 Mar 2019 8:39 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

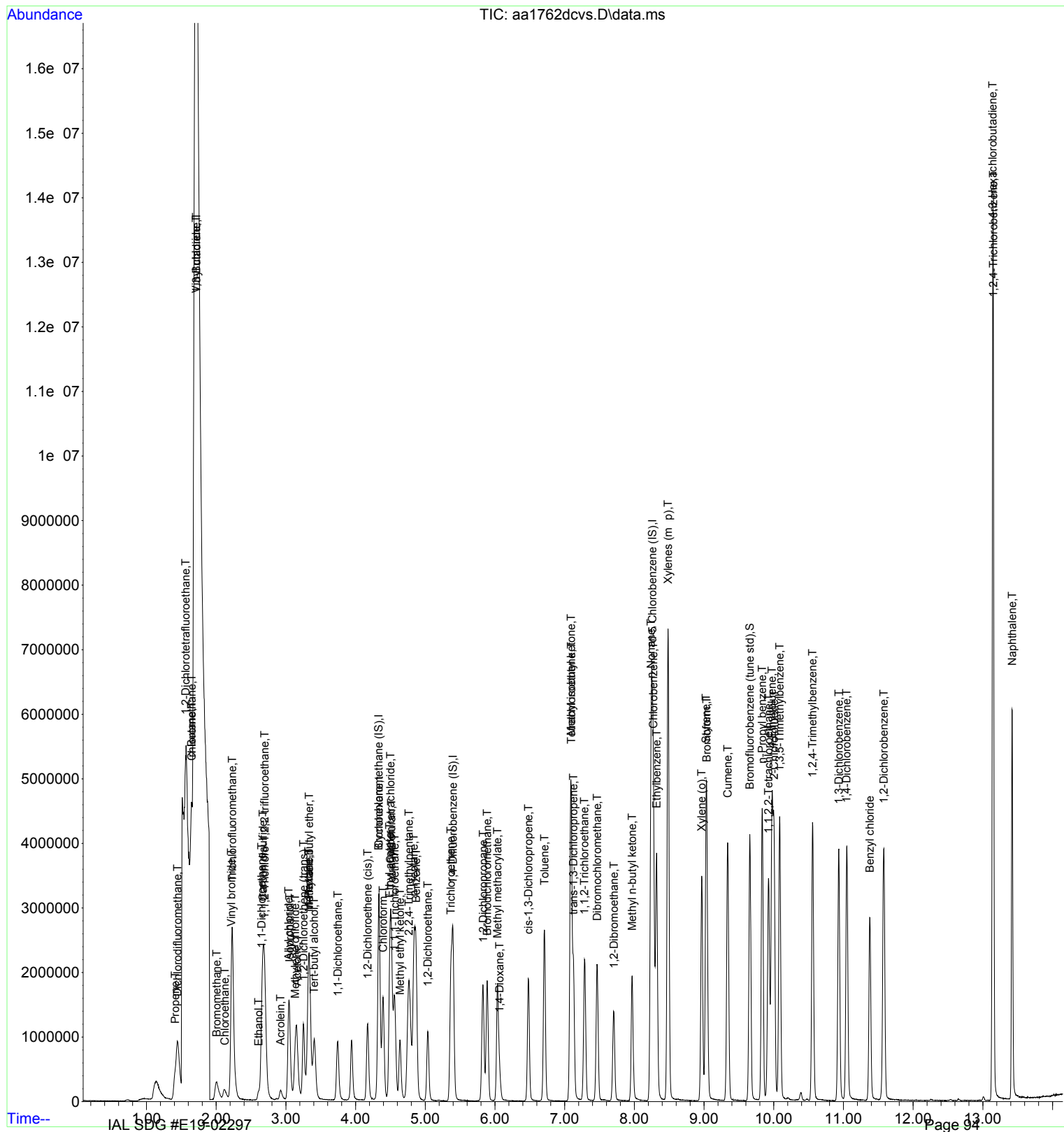
Quant Time: Mar 26 09:07:32 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1154789	10.55	ppbV	100
53) 1,2-Dibromoethane	7.708	107	1084408	10.05	ppbV	99
54) Methyl n-butyl ketone	7.969	43	1647315	9.80	ppbV	89
56) n-Nonane	8.239	43	2150937	8.15	ppbV	89
57) Chlorobenzene	8.274	112	1631154	8.88	ppbV	96
58) Ethylbenzene	8.319	91	2987556	9.46	ppbV	97
59) Xylenes (m&p)	8.483	91	4592317	19.99	ppbV	98
60) Xylene (o)	8.965	91	2248837	8.82	ppbV	99
61) Styrene	9.030	104	1579449	9.18	ppbV	99
62) Bromoform	9.039	173	1099664	10.26	ppbV	97
63) Cumene	9.338	105	2992317	9.19	ppbV	100
65) n-Propyl benzene	9.833	91	4224946	9.90	ppbV	97
66) 1,1,2,2-Tetrachloroethane	9.923	83	2112922	10.47	ppbV	100
67) 4-Ethyltoluene	9.975	105	3090894	9.50	ppbV	99
68) 2-Chlorotoluene	10.004	91	2981839	10.13	ppbV	99
69) 1,3,5-Trimethylbenzene	10.084	105	2750231	9.65	ppbV	99
70) 1,2,4-Trimethylbenzene	10.557	105	2703627	9.49	ppbV	92
71) 1,3-Dichlorobenzene	10.933	146	1600248	8.73	ppbV	97
72) 1,4-Dichlorobenzene	11.046	146	1586920	8.71	ppbV	99
73) Benzyl chloride	11.377	91	2259574	8.92	ppbV	96
74) 1,2-Dichlorobenzene	11.579	146	1657946	9.29	ppbV	96
75) 1,3-Hexachlorobutadiene	13.142	225	896457	10.85	ppbV	96
76) 1,2,4-Trichlorobenzene	13.152	180	1186388	9.85	ppbV	99
77) Naphthalene	13.422	128	3499876	9.27	ppbV	99

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

Data Path : C:\DATA\03-26-19\
 Data File : aa1762dcvs.D
 Acq On : 26 Mar 2019 8:39 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 26 09:07:32 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA
Amount of standard injected (ml): 50

Date/Time of Calibration: 4/11/2019 09:44
Sample ID: DCS
Laboratory ID: AA2052DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2051BFB]	04/11/2019 09:20
10 PPBV DCVS [AA2052DCVS]	04/11/2019 09:44
10 PPBV LCS [AA2053LCS]	04/11/2019 10:05
METHOD BLANK [AA2054BLK]	04/11/2019 10:48
02 PPBV RLLCS [AA2055RLLCS]	04/11/2019 11:13
0.1 PPBV DCVS [AA2056DCVSSIM]	04/11/2019 12:35
METHOD BLANK [AA2057BLKSIM]	04/11/2019 13:09
E19-02297-01 [AA2068]	04/11/2019 18:31
E19-02297-01 [AA2069]	04/11/2019 18:54
10 PPBV CCCVS [AA2078CCCVS]	04/12/2019 08:27

Compound Name	Average RRF	Standard RRF	% Difference	PassFail	*
Acetone	2.0	2.1	-3.8	PASS	
Benzene	3.4	3.7	-9.9	PASS	
Bromodichloromethane	0.59	0.69	-17	PASS	
Bromoform	0.54	0.63	-16	PASS	
Bromomethane	0.84	0.66	22	PASS	
1,3-Butadiene	1.1	1.4	-23	PASS	
Chlorobenzene	0.93	0.76	18	PASS	
Chloroethane	0.60	0.51	15	PASS	
Chloroform	2.3	2.6	-15	PASS	
Chloromethane	0.29	0.32	-9.4	PASS	
Carbon disulfide	3.1	2.9	4.8	PASS	
Carbon tetrachloride	2.5	2.9	-13	PASS	
Cyclohexane	2.1	1.7	20	PASS	
Dibromochloromethane	0.57	0.64	-12	PASS	
1,2-Dibromoethane	0.56	0.56	0.40	PASS	
1,2-Dichlorobenzene	0.90	0.87	3.7	PASS	
1,3-Dichlorobenzene	0.93	0.81	12	PASS	
1,4-Dichlorobenzene	0.92	0.84	8.6	PASS	
Dichlorodifluoromethane	2.5	2.9	-17	PASS	
1,1-Dichloroethane	2.2	2.0	8.3	PASS	
1,2-Dichloroethane	1.8	2.2	-24	PASS	
1,1-Dichloroethene	1.9	1.8	3.1	PASS	
1,2-Dichloroethene (cis)	1.6	1.5	9.2	PASS	
1,2-Dichloroethene (trans)	1.7	1.5	11	PASS	
1,2-Dichloropropane	0.37	0.34	8.5	PASS	
1,3-Dichloropropene (cis)	0.51	0.45	12	PASS	
1,3-Dichloropropene (trans)	0.50	0.59	-18	PASS	
1,2-Dichlorotetrafluoroethane	2.9	2.8	4.9	PASS	
1,4-Dioxane	0.19	0.17	8.0	PASS	
Ethylbenzene	1.6	1.4	15	PASS	
n-Heptane	2.9	2.5	15	PASS	
1,3-Hexachlorobutadiene	0.42	0.51	-23	PASS	
n-Hexane	3.0	2.7	10	PASS	
Methylene chloride	1.6	1.5	7.6	PASS	
Methyl ethyl ketone	2.8	2.5	11	PASS	
Methyl isobutyl ketone	0.95	0.89	5.8	PASS	
Methyl tert-butyl ether	3.0	2.6	15	PASS	
Styrene	0.87	0.78	11	PASS	
Tert-butyl alcohol	2.3	1.8	22	PASS	
1,1,2,2-Tetrachloroethane	1.0	1.1	-8.8	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E19-02297

Continuing Calibration Data Summary Report

Initial Calibration Curve: 3/13/2019
Instrument: AA
Amount of standard injected (ml): 50

Date/Time of Calibration: 4/11/2019 09:44
Sample ID: DCS
Laboratory ID: AA2052DCVS

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2051BFB]	04/11/2019 09:20
10 PPBV DCVS [AA2052DCVS]	04/11/2019 09:44
10 PPBV LCS [AA2053LCS]	04/11/2019 10:05
METHOD BLANK [AA2054BLK]	04/11/2019 10:48
02 PPBV RLLCS [AA2055RLLCS]	04/11/2019 11:13
0.1 PPBV DCVS [AA2056DCVSSIM]	04/11/2019 12:35
METHOD BLANK [AA2057BLKSIM]	04/11/2019 13:09
E19-02297-01 [AA2068]	04/11/2019 18:31
E19-02297-01 [AA2069]	04/11/2019 18:54
10 PPBV CCCVS [AA2078CCCVS]	04/12/2019 08:27

Compound Name	Average RRF	Standard RRF	% Difference	Pass/Fail	*
Tetrachloroethene	0.39	0.39	0.00	PASS	
Toluene	1.0	0.97	6.4	PASS	
1,2,4-Trichlorobenzene	0.61	0.59	2.5	PASS	
1,1,1-Trichloroethane	2.3	2.6	-15	PASS	
1,1,2-Trichloroethane	0.36	0.38	-4.4	PASS	
Trichloroethene	0.35	0.28	20	PASS	
Trichlorofluoromethane	2.7	2.9	-7.6	PASS	
1,1,2-Trichloro-1,2,2-trifluoroethane	2.3	2.0	11	PASS	
1,2,4-Trimethylbenzene	1.4	1.4	4.6	PASS	
1,3,5-Trimethylbenzene	1.4	1.5	-6.5	PASS	
2,2,4-Trimethylpentane	1.8	1.5	17	PASS	
Vinyl bromide	0.94	0.75	20	PASS	
Vinyl chloride	0.97	1.1	-13	PASS	
Xylenes (m&p)	1.2	1.2	-0.20	PASS	
Xylenes (o)	1.3	1.0	19	PASS	

*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E19-02297

Data Path : C:\DATA\04-11-19\
 Data File : aa2052dcvs.D
 Acq On : 11 Apr 2019 9:44 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 13:39:52 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Bromochloromethane (IS)	1.000	1.000	0.0	97	0.00
2 T	Propene	1.114	0.733	34.2#	56	0.00
3 T	Dichlorodifluoromethane	2.504	2.926	-16.9	101	0.00
4 T	1,2-Dichlorotetrafluoroetha	2.895	2.752	4.9	87	0.00
5 T	n-Butane	2.228	1.526	31.5#	65	0.00
6 T	Chloromethane	0.288	0.315	-9.4	101	0.00
7 T	Vinyl chloride	0.969	1.096	-13.1	98	0.01
8 T	1,3-Butadiene	1.108	1.361	-22.8	112	0.00
9 T	Bromomethane	0.844	0.657	22.2	65	0.00
10 T	Chloroethane	0.596	0.506	15.1	74	0.00
11 T	Vinyl bromide	0.941	0.749	20.4	66	0.00
12 T	Trichlorofluoromethane	2.656	2.858	-7.6	97	0.00
13 T	Ethanol	0.629	0.448	28.8	63	0.01
14 T	1,1-Dichloroethene	1.860	1.803	3.1	84	0.00
15 T	Carbon disulfide	3.081	2.932	4.8	81	0.00
16 T	1,1,2-Trichloro-1,2,2-trifl	2.285	2.028	11.2	83	0.00
17 T	Acrolein	0.416	0.249	40.1#	53	0.00
18 T	Allyl chloride	0.503	0.395	21.5	68	0.00
19 T	Isopropanol	2.406	1.793	25.5	64	0.00
20 T	Methylene chloride	1.641	1.516	7.6	90	0.00
21 T	Acetone	2.031	2.109	-3.8	88	0.00
22 T	1,2-Dichloroethene (trans)	1.676	1.497	10.7	78	0.00
23 T	n-Pentane	2.695	2.062	23.5	68	0.00
24 T	n-Hexane	3.006	2.697	10.3	73	0.00
25 T	Methyl tert-butyl ether	3.011	2.556	15.1	78	0.00
26 T	Tert-butyl alcohol	2.287	1.786	21.9	72	0.00
27 T	1,1-Dichloroethane	2.187	2.006	8.3	83	0.00
28 T	1,2-Dichloroethene (cis)	1.620	1.471	9.2	79	0.00
29 t	Cyclohexane	2.079	1.668	19.8	75	0.00
30 T	Chloroform	2.300	2.647	-15.1	103	0.00
31 T	Ethyl acetate	0.495	0.398	19.6	73	0.00
32 T	Carbon tetrachloride	2.530	2.853	-12.8	102	0.00
33 T	Tetrahydrofuran	1.670	1.490	10.8	81	0.00
34 T	1,1,1-Trichloroethane	2.262	2.611	-15.4	107	0.00
35 T	Methyl ethyl ketone	2.822	2.505	11.2	78	0.00
36 T	n-Heptane	2.883	2.452	14.9	79	0.00
37 T	Benzene	3.390	3.725	-9.9	100	0.00
38 T	1,2-Dichloroethane	1.794	2.226	-24.1	111	0.00
39 I	1,4-Difluorobenzene (IS)	1.000	1.000	0.0	97	0.00
40 T	Trichloroethene	0.345	0.276	20.0	71	0.00
41 T	2,2,4-Trimethylpentane	1.832	1.520	17.0	72	0.00
42 T	1,2-Dichloropropane	0.366	0.335	8.5	86	0.00
43 T	Bromodichloromethane	0.589	0.691	-17.3	106	0.00
44 T	Methyl methacrylate	0.582	0.493	15.3	79	0.00
45 T	1,4-Dioxane	0.187	0.172	8.0	84	0.00
46 T	cis-1,3-Dichloropropene	0.508	0.449	11.6	79	0.00
47 T	Toluene	1.031	0.965	6.4	86	0.00
48 T	Methyl isobutyl ketone	0.949	0.894	5.8	86	0.00
49 T	Tetrachloroethene	0.393	0.393	0.0	93	0.00
50 T	trans-1,3-Dichloropropene	0.502	0.593	-18.1	104	0.00
51 T	1,1,2-Trichloroethane	0.360	0.376	-4.4	96	0.00
52 T	Dibromochloromethane	0.565	0.635	-12.4	101	0.00
53 T	1,2-Dibromoethane	0.557	0.555	0.4	91	0.00

AL SDG #E19-02297

Data Path : C:\DATA\04-11-19\
 Data File : aa2052dcvs.D
 Acq On : 11 Apr 2019 9:44 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 13:39:52 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.40min
 Max. RRF Dev : 30% Max. Rel. Area : 500%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
54 T	Methyl n-butyl ketone	0.868	0.803	7.5	83	0.00
55 I	d-5 Chlorobenzene (IS)	1.000	1.000	0.0	127	0.00
56 T	n-Nonane	1.333	0.966	27.5	89	0.00
57 T	Chlorobenzene	0.927	0.764	17.6	101	0.00
58 T	Ethylbenzene	1.595	1.362	14.6	104	0.00
59 T	Xylenes (m&p)	1.161	1.163	-0.2	119	0.00
60 T	Xylene (o)	1.289	1.048	18.7	99	0.00
61 T	Styrene	0.869	0.777	10.6	105	0.00
62 T	Bromoform	0.541	0.625	-15.5	133	0.00
63 T	Cumene	1.646	1.503	8.7	109	0.00
64 S	Bromofluorobenzene (tune st	0.873	0.860	1.5	130	0.00
65 T	n-Propyl benzene	2.155	2.166	-0.5	121	0.00
66 T	1,1,2,2-Tetrachloroethane	1.019	1.109	-8.8	135	0.00
67 T	4-Ethyltoluene	1.643	1.678	-2.1	122	0.00
68 T	2-Chlorotoluene	1.486	1.658	-11.6	135	0.00
69 T	1,3,5-Trimethylbenzene	1.440	1.533	-6.5	127	0.00
70 T	1,2,4-Trimethylbenzene	1.439	1.373	4.6	113	0.00
71 T	1,3-Dichlorobenzene	0.926	0.812	12.3	110	0.00
72 T	1,4-Dichlorobenzene	0.921	0.842	8.6	111	0.00
73	Benzyl chloride	1.280	1.268	0.9	112	0.00
74 T	1,2-Dichlorobenzene	0.902	0.869	3.7	119	0.00
75 T	1,3-Hexachlorobutadiene	0.417	0.512	-22.8	153	0.00
76 T	1,2,4-Trichlorobenzene	0.608	0.593	2.5	121	0.00
77 T	Naphthalene	1.906	1.533	19.6	94	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data Path : C:\DATA\04-11-19\
 Data File : aa2052dcvs.D
 Acq On : 11 Apr 2019 9:44 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 13:39:52 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	602091	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	2409502	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	2665630	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	2293583	9.86	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.415	41	485693	7.24	ppbV	100
3) Dichlorodifluoromethane	1.460	85	1938060	12.85	ppbV	98
4) 1,2-Dichlorotetrafluor...	1.574	85	1657071	9.51	ppbV	88
5) n-Butane	1.657	43	1010901	7.54	ppbV #	72
6) Chloromethane	1.650	15	208539	12.01	ppbV #	9
7) Vinyl chloride	1.719	62	726166	12.45	ppbV	98
8) 1,3-Butadiene	1.722	39	901125	13.51	ppbV	82
9) Bromomethane	2.007	94	391846	7.71	ppbV	96
10) Chloroethane	2.123	64	304531	8.49	ppbV	100
11) Vinyl bromide	2.223	106	496204	8.76	ppbV	96
12) Trichlorofluoromethane	2.236	101	1893100	11.84	ppbV	97
13) Ethanol	2.625	45	253401	6.70	ppbV #	82
14) 1,1-Dichloroethene	2.660	61	1193843	10.66	ppbV	89
15) Carbon disulfide	2.679	76	1942019	10.47	ppbV #	67
16) 1,1,2-Trichloro-1,2,2-...	2.702	101	1343081	9.76	ppbV	99
17) Acrolein	2.924	56	180008	7.19	ppbV	92
18) Allyl chloride	3.043	76	261721	8.65	ppbV	100
19) Isopropanol	3.059	45	1079746	7.45	ppbV #	70
20) Methylene chloride	3.142	49	1004244	10.16	ppbV #	77
21) Acetone	3.158	43	1396478	11.42	ppbV #	83
22) 1,2-Dichloroethene (tr...	3.264	61	991574	9.83	ppbV	84
23) n-Pentane	3.335	43	1365554	8.42	ppbV	91
24) n-Hexane	3.338	41	1785992	9.87	ppbV	83
25) Methyl tert-butyl ether	3.348	73	1692838	9.34	ppbV	95
26) Tert-butyl alcohol	3.412	59	1290046	9.37	ppbV	100
27) 1,1-Dichloroethane	3.747	63	1328357	10.09	ppbV	99
28) 1,2-Dichloroethene (cis)	4.181	61	974389	9.99	ppbV #	82
29) Cyclohexane	4.342	56	1104677	8.83	ppbV	90
30) Chloroform	4.399	83	1753022	12.66	ppbV	100
31) Ethyl acetate	4.499	45	263486	8.84	ppbV	93
32) Carbon tetrachloride	4.506	117	1889720	12.41	ppbV	99
33) Tetrahydrofuran	4.518	42	1076494	10.70	ppbV	97
34) 1,1,1-Trichloroethane	4.563	97	1729358	12.70	ppbV	97
35) Methyl ethyl ketone	4.641	43	1658857	9.76	ppbV	98
36) n-Heptane	4.843	43	1624178	9.36	ppbV	92
37) Benzene	4.872	78	2467278	12.09	ppbV	94
38) 1,2-Dichloroethane	5.039	62	1474129	13.65	ppbV	98
40) Trichloroethene	5.374	130	732032	8.81	ppbV	98
41) 2,2,4-Trimethylpentane	4.769	57	4028120	9.13	ppbV	96
42) 1,2-Dichloropropane	5.830	63	888819	10.09	ppbV	97
43) Bromodichloromethane	5.891	83	1832592	12.91	ppbV	98
44) Methyl methacrylate	6.036	41	1306676	9.31	ppbV	98
45) 1,4-Dioxane	6.065	88	413658	9.18	ppbV	88
46) cis-1,3-Dichloropropene	6.480	75	1190277	9.73	ppbV	100
47) Toluene	6.715	91	2557732	10.30	ppbV	94
48) Methyl isobutyl ketone	7.094	43	2369129	10.36	ppbV	87
49) Tetrachloroethene	7.091	166	1041095	10.99	ppbV	99
50) trans-1,3-Dichloropropene	7.126	75	1428950	11.82	ppbV #	74
51) 1,1,2-Trichloroethane	7.287	97	997322	11.49	ppbV	87

AL SDG #E19-02297

Data Path : C:\DATA\04-11-19\
 Data File : aa2052dcvs.D
 Acq On : 11 Apr 2019 9:44 am
 Operator : jls
 Sample : 10 ppbv DCVS
 Misc : CC483586
 ALS Vial : 2 Sample Multiplier: 1

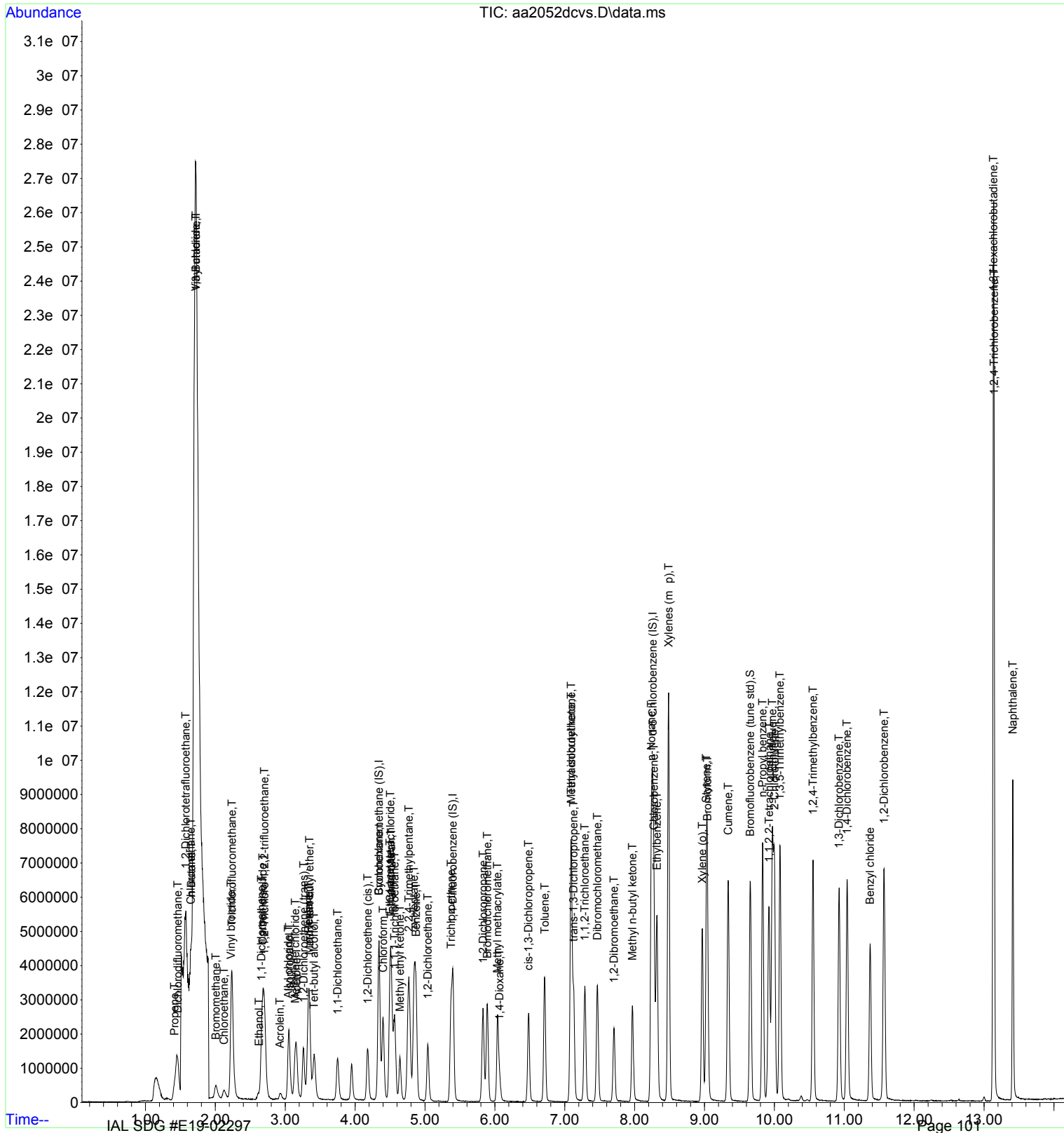
Quant Time: Apr 11 13:39:52 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1683804	12.37	ppbV	99
53) 1,2-Dibromoethane	7.705	107	1470918	10.96	ppbV	98
54) Methyl n-butyl ketone	7.968	43	2129501	10.18	ppbV	95
56) n-Nonane	8.239	43	2831699	7.97	ppbV	98
57) Chlorobenzene	8.277	112	2238742	9.06	ppbV	90
58) Ethylbenzene	8.319	91	3993582	9.39	ppbV	96
59) Xylenes (m&p)	8.486	91	6822360	22.05	ppbV	96
60) Xylene (o)	8.968	91	3072932	8.95	ppbV	98
61) Styrene	9.026	104	2279061	9.84	ppbV	98
62) Bromoform	9.042	173	1833068	12.70	ppbV	98
63) Cumene	9.338	105	4406828	10.05	ppbV	97
65) n-Propyl benzene	9.830	91	6350826	11.06	ppbV	96
66) 1,1,2,2-Tetrachloroethane	9.923	83	3251972	11.97	ppbV	100
67) 4-Ethyltoluene	9.972	105	4920588	11.24	ppbV	97
68) 2-Chlorotoluene	10.001	91	4860710	12.27	ppbV	99
69) 1,3,5-Trimethylbenzene	10.078	105	4496247	11.72	ppbV	95
70) 1,2,4-Trimethylbenzene	10.554	105	4024650	10.49	ppbV	89
71) 1,3-Dichlorobenzene	10.923	146	2380450	9.64	ppbV	97
72) 1,4-Dichlorobenzene	11.039	146	2469832	10.06	ppbV	96
73) Benzyl chloride	11.367	91	3380686	9.91	ppbV	95
74) 1,2-Dichlorobenzene	11.570	146	2548457	10.60	ppbV	99
75) 1,3-Hexachlorobutadiene	13.135	225	1500685	13.49	ppbV	97
76) 1,2,4-Trichlorobenzene	13.145	180	1896501	11.70	ppbV	98
77) Naphthalene	13.412	128	4902789	9.65	ppbV	98

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

Data Path : C:\DATA\
Data File : aa2052dc
Acq On : 11 Apr 2011

Quant Time: Apr 11 13:39:52 2019



Section VIII: Raw Quality Control Data Package

BFB Tune Spectra

Method Blank

Laboratory Control Sample

Laboratory Sample Duplicate

Instrument Run Logs

Pressure Gauge Readings (initial and final)

Example Calculations

Screening Data

Clean Canister Certification

Data Path: C:\DATA\03-13-19\
Data File: AA1521BFB.D
Acq On: 3/13/2019 9:57:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

PassFail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	201365	26.3
PASS	75	95	30	66	372117	48.5
PASS	95	95	100	100	766592	100.0
PASS	96	95	5	9	51653	6.7
PASS	173	174	0.00	2	3452	0.7
PASS	174	95	50	100	465536	60.7
PASS	175	174	4	9	33896	7.3
PASS	176	174	93	101	440939	94.7
PASS	177	176	5	9	28072	6.4

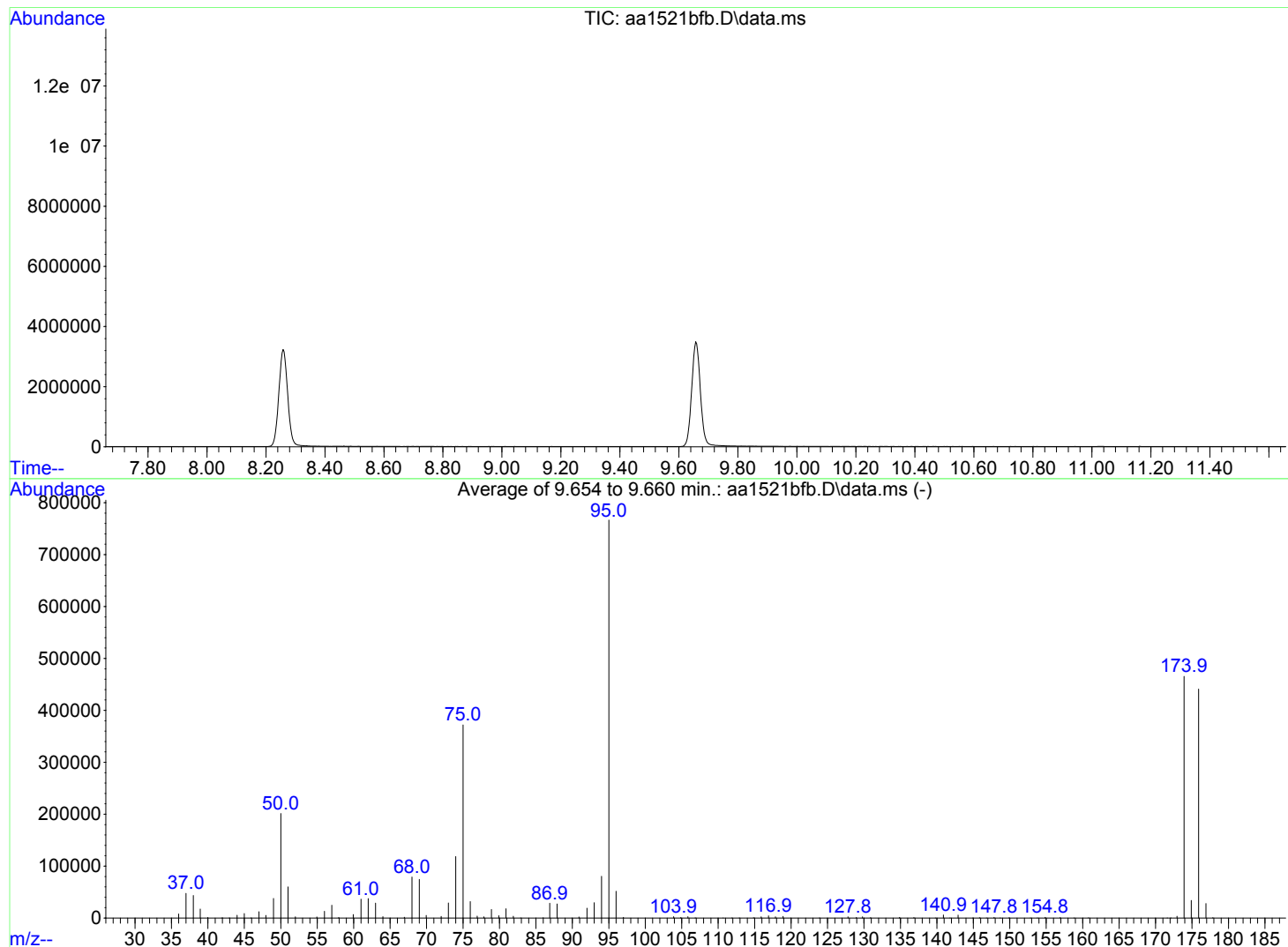
Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1521BFB	NA	3/13/2019 9:57:00 AM
40 PPBV STD	AA1522STD01	NA	3/13/2019 11:03:00 AM
20 PPBV STD	AA1523STD02	NA	3/13/2019 11:25:00 AM
10 PPBV STD	AA1524STD03	NA	3/13/2019 11:46:00 AM
2 PPBV STD	AA1525STD04	NA	3/13/2019 1:53:00 PM
0.2 PPBV STD	AA1526STD05	NA	3/13/2019 2:52:00 PM
10 PPBV ICVSS	AA1527ICVSS	NA	3/13/2019 3:26:00 PM

Data Path : C:\DATA\03-13-19\
 Data File : aa1521bfb.D
 Acq On : 13 Mar 2019 9:57 am
 Operator : jls
 Sample : BFB
 Misc : ALM029426
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0313.M
 Title : TO-15 on the Agilent 7890A / 5975C
 Last Update : Wed Mar 13 14:08:18 2019



AutoFind: Scans 2963, 2964, 2965; Background Corrected with Scan 2945

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	26.3	201365	PASS
75	95	30	66	48.5	372117	PASS
95	95	100	100	100.0	766592	PASS
96	95	5	9	6.7	51653	PASS
173	174	0.00	2	0.7	3452	PASS
174	95	50	100	60.7	465536	PASS
175	174	4	9	7.3	33896	PASS
176	174	93	101	94.7	440939	PASS
177	176	5	9	6.4	28072	PASS

Data Path: C:\DATA\03-26-19\
Data File: AA1761BFB.D
Acq On: 3/26/2019 8:08:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

PassFail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	213270	32.4
PASS	75	95	30	66	370859	56.3
PASS	95	95	100	100	658539	100.0
PASS	96	95	5	9	44923	6.8
PASS	173	174	0.00	2	1418	0.4
PASS	174	95	50	100	362475	55.0
PASS	175	174	4	9	27029	7.5
PASS	176	174	93	101	349184	96.3
PASS	177	176	5	9	23925	6.9

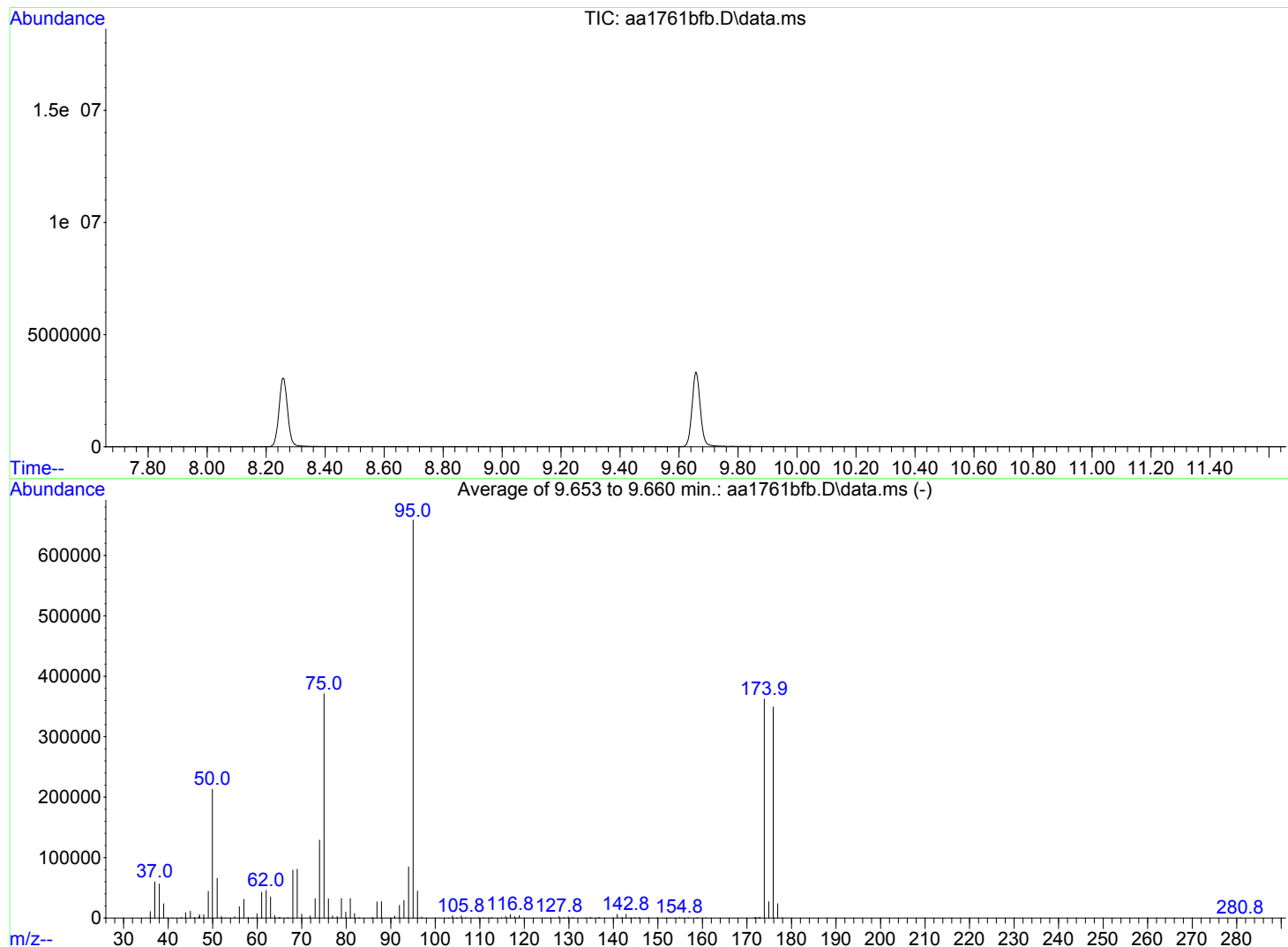
Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA1761BFB	NA	3/26/2019 8:08:00 AM
10 PPBV DCVS	AA1762DCVS	NA	3/26/2019 8:39:00 AM
10 PPBV LCS	AA1763LCS	NA	3/26/2019 9:08:00 AM
METHOD BLANK	AA1764BLK	NA	3/26/2019 11:04:00 AM
02 PPBV RLLCS	AA1765RLLCS	NA	3/26/2019 11:27:00 AM
5084	AA1785	NA	3/26/2019 7:40:00 PM
10 PPBV CCCVS	AA1786CCCVS	NA	3/26/2019 8:02:00 PM

Data Path : C:\DATA\03-26-19\
 Data File : aa1761bfb.D
 Acq On : 26 Mar 2019 8:08 am
 Operator : jls
 Sample : BFB
 Misc : ALM029426
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0313.M
 Title : TO-15 on the Agilent 7890A / 5975C
 Last Update : Wed Mar 13 14:08:18 2019



AutoFind: Scans 2963, 2964, 2965; Background Corrected with Scan 2947

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	32.4	213270	PASS
75	95	30	66	56.3	370859	PASS
95	95	100	100	100.0	658539	PASS
96	95	5	9	6.8	44923	PASS
173	174	0.00	2	0.4	1418	PASS
174	95	50	100	55.0	362475	PASS
175	174	4	9	7.5	27029	PASS
176	174	93	101	96.3	349184	PASS
177	176	5	9	6.9	23925	PASS

Data Path: C:\DATA\04-11-19\
Data File: AA2051BFB.D
Acq On: 4/11/2019 9:20:00AM
Operator: jls
Sample: BFB
Misc: ALM029426
ALS Vial: 1 **Multiplier:** 1
Integration File: rteint.p
Method: C:\msdchem\1\METHODS\0313.M
Last Update: Wed Mar 13 14:08:18 2019
Spectrum Information:

Pass/Fail	Target Mass	Rel. to Mass	Lower Limit %	Higher Limit %	Raw Abundance	% Relative Abundance
PASS	50	95	8	40	257877	35.2
PASS	75	95	30	66	474112	64.7
PASS	95	95	100	100	732309	100.0
PASS	96	95	5	9	50987	7.0
PASS	173	174	0.00	2	4290	1.0
PASS	174	95	50	100	418304	57.1
PASS	175	174	4	9	32013	7.7
PASS	176	174	93	101	405184	96.9
PASS	177	176	5	9	25416	6.3

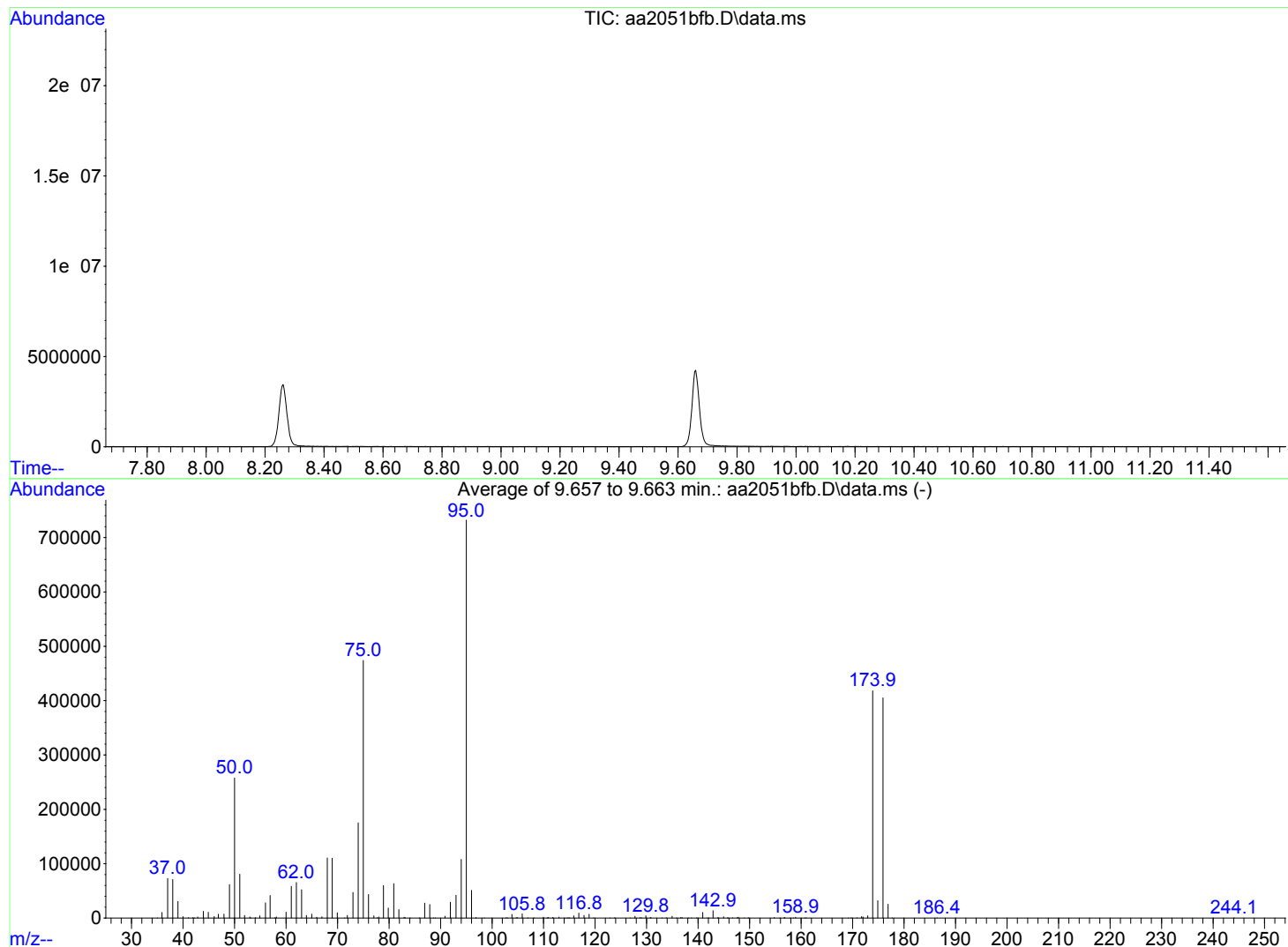
Runs with this BFB:

Lab Sample Number	Date File	Field Sample	Date/Time of Sample/Standard Analysis
BFB	AA2051BFB	NA	4/11/2019 9:20:00 AM
10 PPBV DCVS	AA2052DCVS	NA	4/11/2019 9:44:00 AM
10 PPBV LCS	AA2053LCS	NA	4/11/2019 10:05:00 AM
METHOD BLANK	AA2054BLK	NA	4/11/2019 10:48:00 AM
02 PPBV RLLCS	AA2055RLLCS	NA	4/11/2019 11:13:00 AM
0.1 PPBV DCVS	AA2056DCVSSIM	NA	4/11/2019 12:35:00 PM
METHOD BLANK	AA2057BLKSIM	NA	4/11/2019 1:09:00 PM
E19-02297-01	AA2068	NS-4	4/11/2019 6:31:00 PM
E19-02297-01	AA2069	NS-4	4/11/2019 6:54:00 PM
10 PPBV CCCVS	AA2078CCCVS	NA	4/12/2019 8:27:00 AM

Data Path : C:\DATA\04-11-19\
 Data File : aa2051bfb.D
 Acq On : 11 Apr 2019 9:20 am
 Operator : jls
 Sample : BFB
 Misc : ALM029426
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0313.M
 Title : TO-15 on the Agilent 7890A / 5975C
 Last Update : Wed Mar 13 14:08:18 2019



AutoFind: Scans 2964, 2965, 2966; Background Corrected with Scan 2945

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	35.2	257877	PASS
75	95	30	66	64.7	474112	PASS
95	95	100	100	100.0	732309	PASS
96	95	5	9	7.0	50987	PASS
173	174	0.00	2	1.0	4290	PASS
174	95	50	100	57.1	418304	PASS
175	174	4	9	7.7	32013	PASS
176	174	93	101	96.9	405184	PASS
177	176	5	9	6.3	25416	PASS

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1764BLK
Date Analyzed: 3/26/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 8:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 8:39
10 PPBV LCS [AA1763LCS]	03/26/2019 9:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA1764BLK
Date Analyzed: 3/26/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 8:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 8:39
10 PPBV LCS [AA1763LCS]	03/26/2019 9:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Data Path : C:\DATA\03-26-19\
 Data File : aa1764blk.D
 Acq On : 26 Mar 2019 11:04 am
 Operator : jls
 Sample : Method Blank
 Misc : 1127
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 28 13:27:58 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.332	130	437665	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	1640766	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1491146	10.00	ppbV	0.000

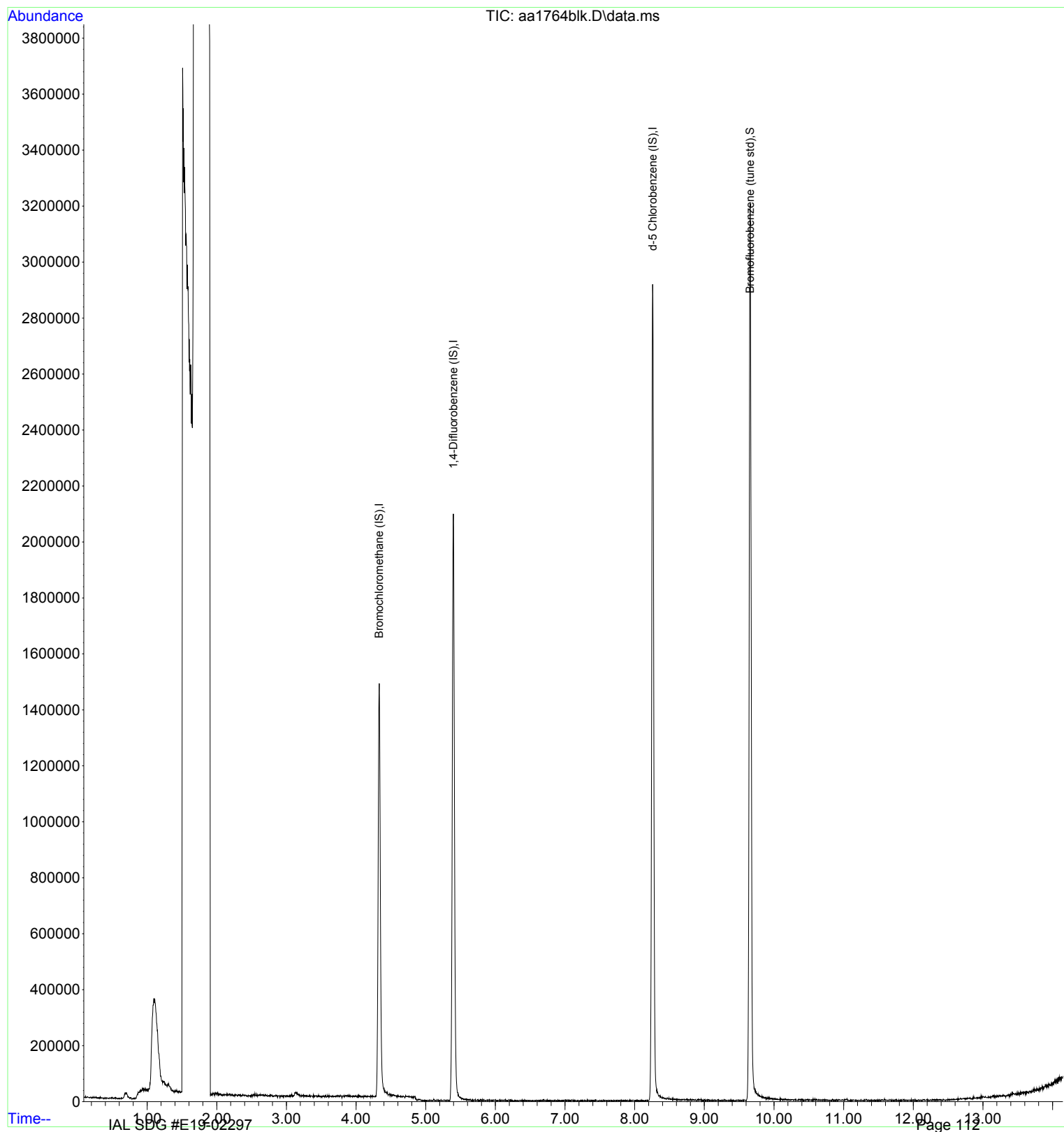
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.656	95	1253483	9.63	ppbV	0.000

Target Compounds	Qvalue

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

Data Path : C:\DATA\03-26-19\
Data File : aa1764blk.D
Acq On : 26 Mar 2019 11:04 am
Operator : jls
Sample : Method Blank
Misc : 1127
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 28 13:27:58 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration



Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA2054BLK
Date Analyzed: 4/11/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2051BFB]	04/11/2019 9:20
10 PPBV DCVS [AA2052DCVS]	04/11/2019 9:44
10 PPBV LCS [AA2053LCS]	04/11/2019 10:05
METHOD BLANK [AA2054BLK]	04/11/2019 10:48
02 PPBV RLLCS [AA2055RLLCS]	04/11/2019 11:13
0.1 PPBV DCVS [AA2056DCVSSIM]	04/11/2019 12:35
METHOD BLANK [AA2057BLKSIM]	04/11/2019 13:09
E19-02297-01 [AA2068]	04/11/2019 18:31
E19-02297-01 [AA2069]	04/11/2019 18:54
10 PPBV CCCVS [AA2078CCCVS]	04/12/2019 8:27

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.19	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Method Blank Report

Lab Sample Name: METHOD BLANK
Field Sample Name: METHOD BLANK
Matrix: Air
Dilution Factor: 1

Data File: AA2054BLK
Date Analyzed: 4/11/2019
Sample Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Runs with this Method Blank:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2051BFB]	04/11/2019 9:20
10 PPBV DCVS [AA2052DCVS]	04/11/2019 9:44
10 PPBV LCS [AA2053LCS]	04/11/2019 10:05
METHOD BLANK [AA2054BLK]	04/11/2019 10:48
02 PPBV RLLCS [AA2055RLLCS]	04/11/2019 11:13
0.1 PPBV DCVS [AA2056DCVSSIM]	04/11/2019 12:35
METHOD BLANK [AA2057BLKSIM]	04/11/2019 13:09
E19-02297-01 [AA2068]	04/11/2019 18:31
E19-02297-01 [AA2069]	04/11/2019 18:54
10 PPBV CCCVS [AA2078CCCVS]	04/12/2019 8:27

Compound	CAS #	Reporting Limit (ppbv)	Concentration (ppbv)
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.20	ND
Xylenes (o)	95-47-6	0.20	ND

Method Blank must be less than the Practical Quantitation Limit (PQL).

Data Path : C:\DATA\04-11-19\
 Data File : aa2054blk.D
 Acq On : 11 Apr 2019 10:48 am
 Operator : jls
 Sample : Method Blank
 Misc : 1127
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 15 12:00:09 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.338	130	574572	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2149500	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	1940145	10.00	ppbV	0.000

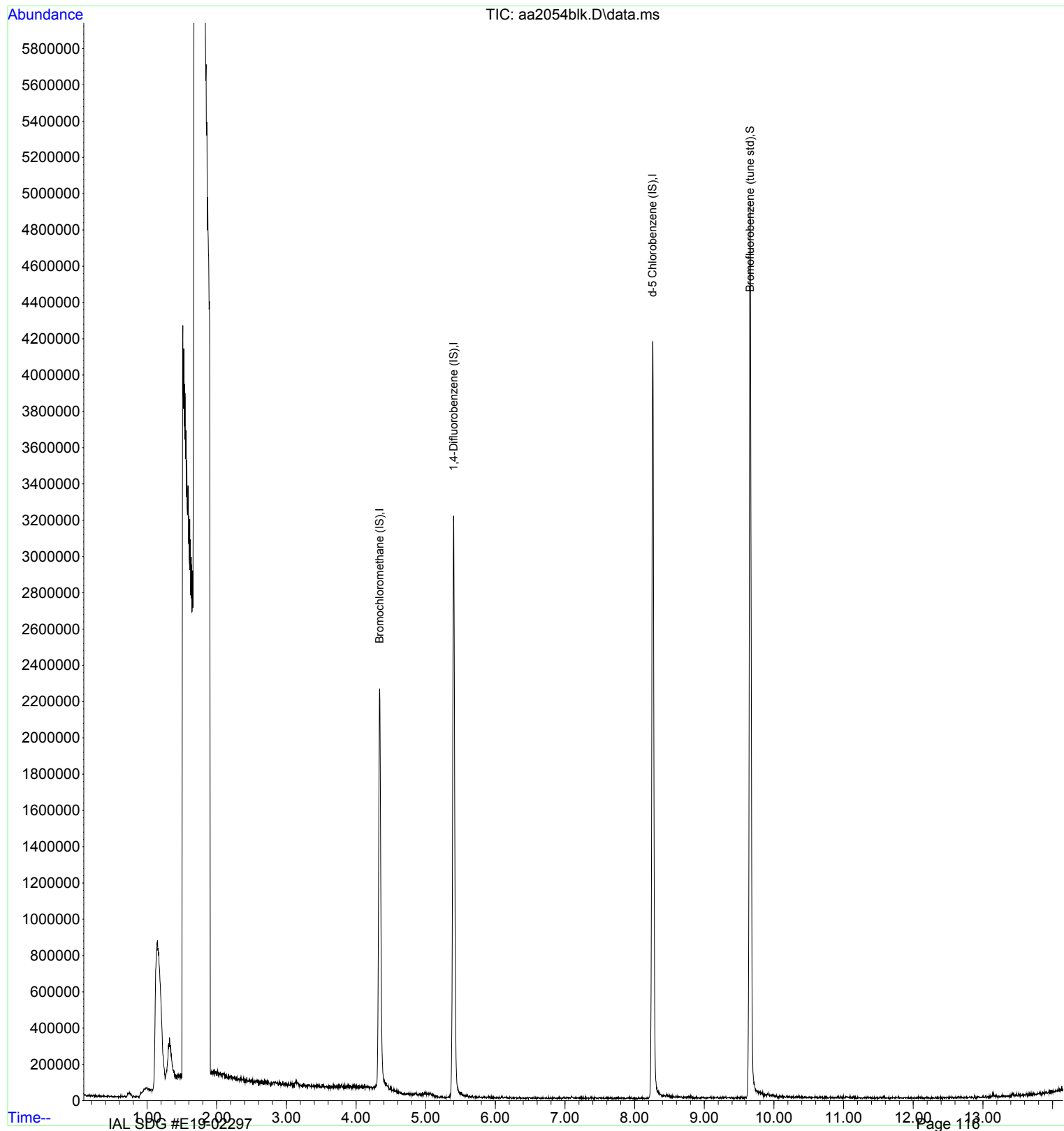
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.656	95	1665905	9.84	ppbV	0.000

Target Compounds	Qvalue

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

Data Path : C:\DATA\04-11-19\
Data File : aa2054blk.D
Acq On : 11 Apr 2019 10:48 am
Operator : jls
Sample : Method Blank
Misc : 1127
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 15 12:00:09 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration



Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1763LCS
Date Analyzed: 3/26/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 8:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 8:39
10 PPBV LCS [AA1763LCS]	03/26/2019 9:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	11	100
Benzene	71-43-2	10	91
Bromodichloromethane	75-27-4	10	91
Bromoform	75-25-2	10	91
Bromomethane	74-83-9	9.4	95
1,3-Butadiene	106-99-0	12	110
Chlorobenzene	108-90-7	8.7	79
Chloroethane	75-00-3	8.3	83
Chloroform	67-66-3	10	91
Chloromethane	74-87-3	12	110
Carbon disulfide	75-15-0	11	100
Carbon tetrachloride	56-23-5	9.9	90
Cyclohexane	110-82-7	7.9	72
Dibromochloromethane	124-48-1	10	91
1,2-Dibromoethane	106-93-4	9.8	89
1,2-Dichlorobenzene	95-50-1	9.0	82
1,3-Dichlorobenzene	541-73-1	8.6	78
1,4-Dichlorobenzene	106-46-7	8.9	81
Dichlorodifluoromethane	75-71-8	11	100
1,1-Dichloroethane	75-34-3	9.4	85
1,2-Dichloroethane	107-06-2	10	91
1,1-Dichloroethene	75-35-4	10	91
1,2-Dichloroethene (cis)	156-59-2	9.4	85
1,2-Dichloroethene (trans)	156-60-5	9.5	86
1,2-Dichloropropane	78-87-5	8.8	80
1,3-Dichloropropene (cis)	10061-01-5	9.5	86
1,3-Dichloropropene (trans)	10061-02-6	9.5	95
1,2-Dichlorotetrafluoroethane	76-14-2	9.5	95
1,4-Dioxane	123-91-1	8.7	87
Ethylbenzene	100-41-4	9.3	85
n-Heptane	142-82-5	8.6	78
1,3-Hexachlorobutadiene	87-68-3	11	100
n-Hexane	110-54-3	11	100

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

*** Values outside of QC limits* Values outside of 70-130% QC limits**

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA1763LCS
Date Analyzed: 3/26/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 8:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 8:39
10 PPBV LCS [AA1763LCS]	03/26/2019 9:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Methylene chloride	75-09-2	8.7	79
Methyl ethyl ketone	78-93-3	9.2	84
Methyl isobutyl ketone	108-10-1	9.6	87
Methyl tert-butyl ether	1634-04-4	9.3	85
Styrene	100-42-5	9.3	85
Tert-butyl alcohol	75-65-0	8.9	74
1,1,2,2-Tetrachloroethane	79-34-5	10	91
Tetrachloroethene	127-18-4	9.4	85
Toluene	108-88-3	9.7	88
1,2,4-Trichlorobenzene	120-82-1	10	83
1,1,1-Trichloroethane	71-55-6	9.9	90
1,1,2-Trichloroethane	79-00-5	10	91
Trichloroethene	79-01-6	8.7	79
Trichlorofluoromethane	75-69-4	10	91
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	9.4	85
1,2,4-Trimethylbenzene	95-63-6	9.3	85
1,3,5-Trimethylbenzene	108-67-8	9.5	86
2,2,4-Trimethylpentane	540-84-1	8.8	80
Vinyl bromide	593-60-2	9.7	88
Vinyl chloride	75-01-4	11	100
Xylenes (m&p)	179601-23-1	20	91
Xylenes (o)	95-47-6	8.9	81

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Data Path : C:\DATA\03-26-19\
 Data File : aa17631cs.D
 Acq On : 26 Mar 2019 9:08 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 28 13:27:10 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.332	130	576166	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.396	114	2264016	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	2182854	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	1822676	9.57	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.409	41	617128	9.62	ppbV	91
3) Dichlorodifluoromethane	1.448	85	1626347	11.27	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.567	85	1590835	9.54	ppbV	94
5) n-Butane	1.650	43	1117166	8.70	ppbV	88
6) Chloromethane	1.647	15	192964	11.61	ppbV #	31
7) Vinyl chloride	1.712	62	634270	11.36	ppbV	98
8) 1,3-Butadiene	1.715	39	763097	11.95	ppbV #	75
9) Bromomethane	2.007	94	457661	9.41	ppbV	97
10) Chloroethane	2.117	64	285368	8.32	ppbV	95
11) Vinyl bromide	2.223	106	525736	9.70	ppbV	99
12) Trichlorofluoromethane	2.229	101	1541324	10.07	ppbV	99
13) Ethanol	2.609	45	239227	6.61	ppbV #	86
14) 1,1-Dichloroethene	2.654	61	1081643	10.09	ppbV	99
15) Carbon disulfide	2.670	76	1886530	10.63	ppbV #	86
16) 1,1,2-Trichloro-1,2,2-...	2.692	101	1239898	9.42	ppbV	99
17) Acrolein	2.927	56	192780	8.05	ppbV	100
18) Allyl chloride	3.043	76	282251	9.74	ppbV	100
19) Isopropanol	3.052	45	1087511	7.85	ppbV #	85
20) Methylene chloride	3.136	49	825181	8.73	ppbV	90
21) Acetone	3.155	43	1247836	10.66	ppbV #	82
22) 1,2-Dichloroethene (tr...	3.252	61	916494	9.49	ppbV	95
23) n-Pentane	3.329	43	1511920	9.74	ppbV	95
24) n-Hexane	3.329	41	1976911	11.42	ppbV #	71
25) Methyl tert-butyl ether	3.342	73	1606169	9.26	ppbV	95
26) Tert-butyl alcohol	3.409	59	1169316	8.87	ppbV	100
27) 1,1-Dichloroethane	3.740	63	1184823	9.40	ppbV	98
28) 1,2-Dichloroethene (cis)	4.171	61	881706	9.44	ppbV	95
29) Cyclohexane	4.335	56	945957	7.90	ppbV	96
30) Chloroform	4.393	83	1345873	10.15	ppbV	98
31) Ethyl acetate	4.490	45	243750	8.55	ppbV	100
32) Carbon tetrachloride	4.503	117	1437270	9.86	ppbV	98
33) Tetrahydrofuran	4.515	42	964011	10.02	ppbV	96
34) 1,1,1-Trichloroethane	4.560	97	1288352	9.89	ppbV	100
35) Methyl ethyl ketone	4.638	43	1495273	9.20	ppbV	99
36) n-Heptane	4.837	43	1423710	8.57	ppbV	95
37) Benzene	4.869	78	1962581	10.05	ppbV	99
38) 1,2-Dichloroethane	5.039	62	1076375	10.42	ppbV	99
40) Trichloroethene	5.367	130	675242	8.65	ppbV	98
41) 2,2,4-Trimethylpentane	4.766	57	3629899	8.75	ppbV	95
42) 1,2-Dichloropropane	5.827	63	731457	8.84	ppbV	98
43) Bromodichloromethane	5.888	83	1385353	10.38	ppbV	99
44) Methyl methacrylate	6.036	41	1182621	8.97	ppbV	100
45) 1,4-Dioxane	6.068	88	367092	8.67	ppbV	98
46) cis-1,3-Dichloropropene	6.480	75	1090345	9.49	ppbV	100
47) Toluene	6.711	91	2270862	9.73	ppbV	96
48) Methyl isobutyl ketone	7.091	43	2054108	9.56	ppbV #	83
49) Tetrachloroethene	7.091	166	833035	9.36	ppbV	98
50) trans-1,3-Dichloropropene	7.129	75	1084045	9.54	ppbV #	79
51) 1,1,2-Trichloroethane	7.287	97	825780	10.12	ppbV	90

AL SDG #E19-02297

Data Path : C:\DATA\03-26-19\
 Data File : aa1763lcs.D
 Acq On : 26 Mar 2019 9:08 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

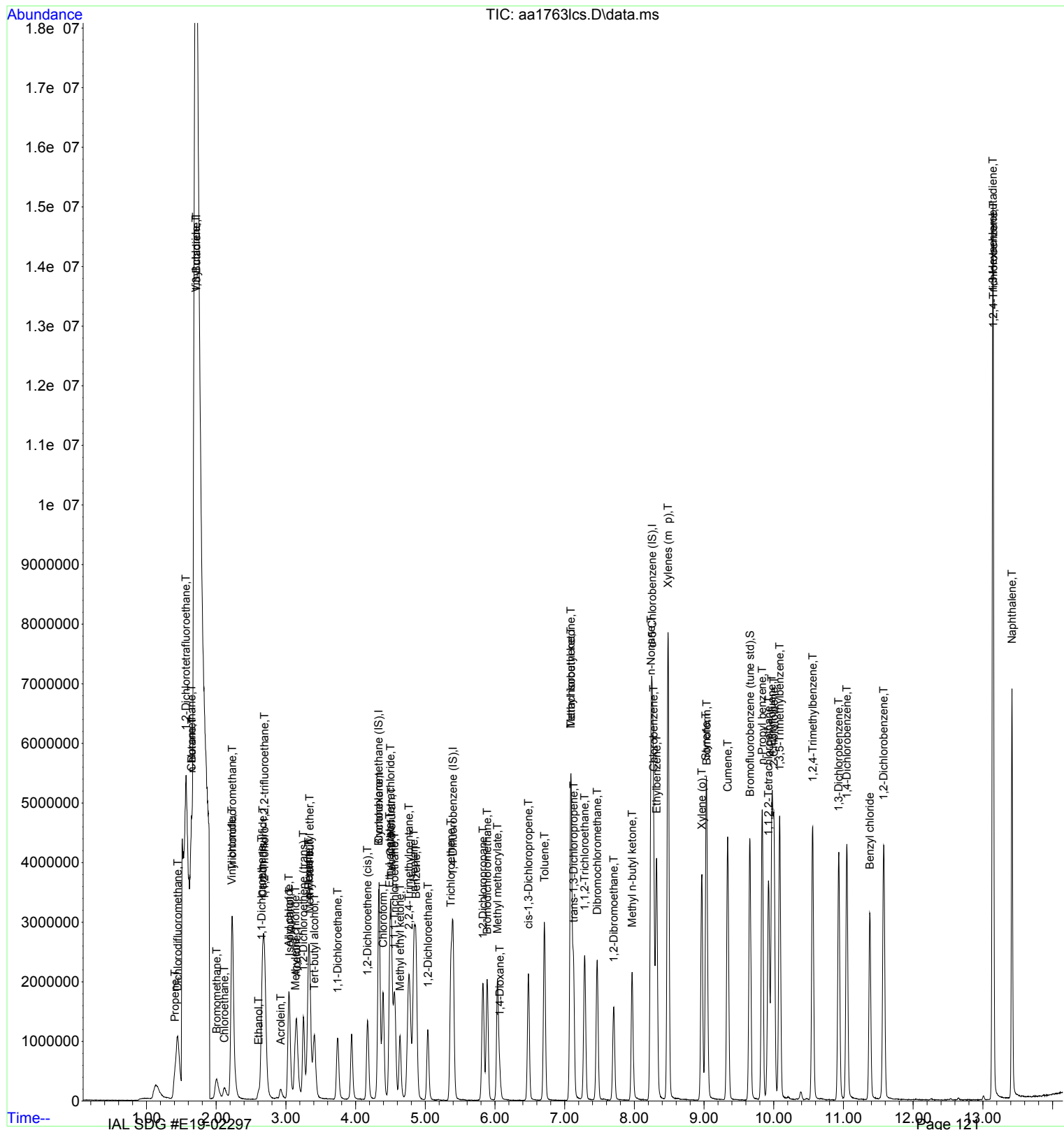
Quant Time: Mar 28 13:27:10 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.467	129	1290082	10.09	ppbV	99
53) 1,2-Dibromoethane	7.705	107	1233951	9.78	ppbV	100
54) Methyl n-butyl ketone	7.969	43	1834029	9.33	ppbV	90
56) n-Nonane	8.239	43	2387129	8.21	ppbV	89
57) Chlorobenzene	8.277	112	1757420	8.68	ppbV	97
58) Ethylbenzene	8.319	91	3250468	9.33	ppbV	97
59) Xylenes (m&p)	8.483	91	4965584	19.60	ppbV	99
60) Xylene (o)	8.969	91	2515249	8.94	ppbV	99
61) Styrene	9.026	104	1758570	9.27	ppbV	99
62) Bromoform	9.039	173	1209451	10.23	ppbV	96
63) Cumene	9.338	105	3308407	9.21	ppbV	100
65) n-Propyl benzene	9.834	91	4643243	9.87	ppbV	96
66) 1,1,2,2-Tetrachloroethane	9.924	83	2275698	10.23	ppbV	99
67) 4-Ethyltoluene	9.972	105	3433664	9.58	ppbV	98
68) 2-Chlorotoluene	10.001	91	3242048	9.99	ppbV	99
69) 1,3,5-Trimethylbenzene	10.084	105	2998199	9.54	ppbV	99
70) 1,2,4-Trimethylbenzene	10.560	105	2921236	9.30	ppbV	93
71) 1,3-Dichlorobenzene	10.930	146	1748425	8.65	ppbV	97
72) 1,4-Dichlorobenzene	11.049	146	1794413	8.93	ppbV	95
73) Benzyl chloride	11.380	91	2476541	8.87	ppbV	95
74) 1,2-Dichlorobenzene	11.576	146	1767474	8.98	ppbV	100
75) 1,3-Hexachlorobutadiene	13.145	225	1011932	11.11	ppbV	97
76) 1,2,4-Trichlorobenzene	13.152	180	1341381	10.10	ppbV	99
77) Naphthalene	13.419	128	3919423	9.42	ppbV	99

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

Data Path : C:\DATA\03-26-19\
 Data File : aa1763lcs.D
 Acq On : 26 Mar 2019 9:08 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 28 13:27:10 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA2053LCS
Date Analyzed: 4/11/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2051BFB]	04/11/2019 9:20
10 PPBV DCVS [AA2052DCVS]	04/11/2019 9:44
10 PPBV LCS [AA2053LCS]	04/11/2019 10:05
METHOD BLANK [AA2054BLK]	04/11/2019 10:48
02 PPBV RLLCS [AA2055RLLCS]	04/11/2019 11:13
0.1 PPBV DCVS [AA2056DCVSSIM]	04/11/2019 12:35
METHOD BLANK [AA2057BLKSIM]	04/11/2019 13:09
E19-02297-01 [AA2068]	04/11/2019 18:31
E19-02297-01 [AA2069]	04/11/2019 18:54
10 PPBV CCCVS [AA2078CCCVS]	04/12/2019 8:27

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
Acetone	67-64-1	13	120
Benzene	71-43-2	12	110
Bromodichloromethane	75-27-4	13	120
Bromoform	75-25-2	13	120
Bromomethane	74-83-9	9.4	95
1,3-Butadiene	106-99-0	12	110
Chlorobenzene	108-90-7	9.6	87
Chloroethane	75-00-3	10	100
Chloroform	67-66-3	13	120
Chloromethane	74-87-3	11	100
Carbon disulfide	75-15-0	12	110
Carbon tetrachloride	56-23-5	13	120
Cyclohexane	110-82-7	9.1	83
Dibromochloromethane	124-48-1	12	110
1,2-Dibromoethane	106-93-4	11	100
1,2-Dichlorobenzene	95-50-1	11	100
1,3-Dichlorobenzene	541-73-1	9.8	89
1,4-Dichlorobenzene	106-46-7	10	91
Dichlorodifluoromethane	75-71-8	11	100
1,1-Dichloroethane	75-34-3	11	100
1,2-Dichloroethane	107-06-2	13	120
1,1-Dichloroethene	75-35-4	12	110
1,2-Dichloroethene (cis)	156-59-2	11	100
1,2-Dichloroethene (trans)	156-60-5	11	100
1,2-Dichloropropane	78-87-5	10	91
1,3-Dichloropropene (cis)	10061-01-5	11	100
1,3-Dichloropropene (trans)	10061-02-6	12	120
1,2-Dichlorotetrafluoroethane	76-14-2	11	110
1,4-Dioxane	123-91-1	9.5	95
Ethylbenzene	100-41-4	9.7	88

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

*** Values outside of QC limits* Values outside of 70-130% QC limits**

Laboratory Control Spike

Lab Sample Name: 10 PPBV LCS
Spike Amount: 10 ppbv, except m&p-Xylenes at 20 ppbv

Data File: AA2053LCS
Date Analyzed: 4/11/2019

Runs with this LCS:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA2051BFB]	04/11/2019 9:20
10 PPBV DCVS [AA2052DCVS]	04/11/2019 9:44
10 PPBV LCS [AA2053LCS]	04/11/2019 10:05
METHOD BLANK [AA2054BLK]	04/11/2019 10:48
02 PPBV RLLCS [AA2055RLLCS]	04/11/2019 11:13
0.1 PPBV DCVS [AA2056DCVSSIM]	04/11/2019 12:35
METHOD BLANK [AA2057BLKSIM]	04/11/2019 13:09
E19-02297-01 [AA2068]	04/11/2019 18:31
E19-02297-01 [AA2069]	04/11/2019 18:54
10 PPBV CCCVS [AA2078CCCVS]	04/12/2019 8:27

Compound	CAS #	Calculated Amount (ppbv)	% Recovery
n-Heptane	142-82-5	9.5	86
1,3-Hexachlorobutadiene	87-68-3	13	120
n-Hexane	110-54-3	10	91
Methylene chloride	75-09-2	11	100
Methyl ethyl ketone	78-93-3	10	91
Methyl isobutyl ketone	108-10-1	11	100
Methyl tert-butyl ether	1634-04-4	11	100
Styrene	100-42-5	9.9	90
Tert-butyl alcohol	75-65-0	11	92
1,1,2,2-Tetrachloroethane	79-34-5	11	100
Tetrachloroethene	127-18-4	11	100
Toluene	108-88-3	11	100
1,2,4-Trichlorobenzene	120-82-1	12	100
1,1,1-Trichloroethane	71-55-6	13	120
1,1,2-Trichloroethane	79-00-5	11	100
Trichloroethene	79-01-6	9.0	82
Trichlorofluoromethane	75-69-4	14	130
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	11	100
1,2,4-Trimethylbenzene	95-63-6	10	91
1,3,5-Trimethylbenzene	108-67-8	11	100
2,2,4-Trimethylpentane	540-84-1	9.3	85
Vinyl bromide	593-60-2	11	100
Vinyl chloride	75-01-4	11	100
Xylenes (m&p)	179601-23-1	22	100
Xylenes (o)	95-47-6	9.2	84

LCS recovery must be within 70-130% of the spiked value for all compounds except Acetone, Dioxane (1,4-), Hexachlorobutadiene, Naphthalene, and 1,2,4-Trichlorobenzene. These compounds must be within 40-160%.

* Values outside of QC limits* Values outside of 70-130% QC limits

Data Path : C:\DATA\04-11-19\
 Data File : aa20531cs.D
 Acq On : 11 Apr 2019 10:05 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 13:42:50 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.345	130	740819	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.399	114	2936834	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	3293163	10.00	ppbV	0.000

System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.660	95	2684816	9.34	ppbV	0.000

Target Compounds						Qvalue
2) Propene	1.415	41	759758	9.21	ppbV	96
3) Dichlorodifluoromethane	1.457	85	2053115	11.07	ppbV	97
4) 1,2-Dichlorotetrafluor...	1.574	85	2413283	11.25	ppbV	95
5) n-Butane	1.653	43	1479276	8.96	ppbV #	81
6) Chloromethane	1.657	15	231127	10.82	ppbV #	24
7) Vinyl chloride	1.712	62	791448	11.03	ppbV	98
8) 1,3-Butadiene	1.722	39	1006862	12.27	ppbV #	81
9) Bromomethane	2.011	94	588394	9.41	ppbV	97
10) Chloroethane	2.130	64	453553	10.28	ppbV	94
11) Vinyl bromide	2.223	106	739922	10.62	ppbV	97
12) Trichlorofluoromethane	2.239	101	2689486	13.67	ppbV	99
13) Ethanol	2.625	45	333684	7.17	ppbV #	85
14) 1,1-Dichloroethene	2.660	61	1699914	12.34	ppbV	90
15) Carbon disulfide	2.679	76	2745331	12.03	ppbV #	75
16) 1,1,2-Trichloro-1,2,2-...	2.699	101	1883125	11.13	ppbV	100
17) Acrolein	2.927	56	282947	9.19	ppbV	95
18) Allyl chloride	3.052	76	374768	10.06	ppbV	100
19) Isopropanol	3.059	45	1520803	8.53	ppbV #	76
20) Methylene chloride	3.142	49	1302421	10.71	ppbV #	81
21) Acetone	3.158	43	1910457	12.70	ppbV #	83
22) 1,2-Dichloroethene (tr...	3.261	61	1408454	11.34	ppbV #	83
23) n-Pentane	3.342	43	1849534	9.27	ppbV	92
24) n-Hexane	3.332	41	2290526	10.29	ppbV	97
25) Methyl tert-butyl ether	3.345	73	2370308	10.63	ppbV	88
26) Tert-butyl alcohol	3.419	59	1859352	10.97	ppbV	100
27) 1,1-Dichloroethane	3.750	63	1785984	11.02	ppbV	100
28) 1,2-Dichloroethene (cis)	4.178	61	1343314	11.19	ppbV	84
29) Cyclohexane	4.342	56	1399698	9.09	ppbV	90
30) Chloroform	4.399	83	2153594	12.64	ppbV	99
31) Ethyl acetate	4.493	45	338787	9.24	ppbV	90
32) Carbon tetrachloride	4.506	117	2364496	12.62	ppbV	100
33) Tetrahydrofuran	4.518	42	1308242	10.57	ppbV	94
34) 1,1,1-Trichloroethane	4.567	97	2113426	12.61	ppbV	98
35) Methyl ethyl ketone	4.641	43	2106304	10.07	ppbV	98
36) n-Heptane	4.843	43	2032529	9.52	ppbV	91
37) Benzene	4.872	78	3090370	12.30	ppbV	96
38) 1,2-Dichloroethane	5.039	62	1761379	13.26	ppbV	100
40) Trichloroethene	5.374	130	909635	8.98	ppbV	99
41) 2,2,4-Trimethylpentane	4.769	57	5011235	9.32	ppbV	97
42) 1,2-Dichloropropane	5.830	63	1095721	10.21	ppbV	99
43) Bromodichloromethane	5.891	83	2230870	12.89	ppbV	100
44) Methyl methacrylate	6.036	41	1639416	9.59	ppbV	97
45) 1,4-Dioxane	6.068	88	520871	9.48	ppbV	88
46) cis-1,3-Dichloropropene	6.483	75	1583147	10.62	ppbV	99
47) Toluene	6.711	91	3302471	10.91	ppbV	93
48) Methyl isobutyl ketone	7.091	43	2971869	10.67	ppbV	88
49) Tetrachloroethene	7.091	166	1322052	11.45	ppbV	96
50) trans-1,3-Dichloropropene	7.126	75	1738841	11.80	ppbV #	74
51) 1,1,2-Trichloroethane	7.284	97	1209389	11.43	ppbV	84

AL SDG #E19-02297

Data Path : C:\DATA\04-11-19\
 Data File : aa2053lcs.D
 Acq On : 11 Apr 2019 10:05 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

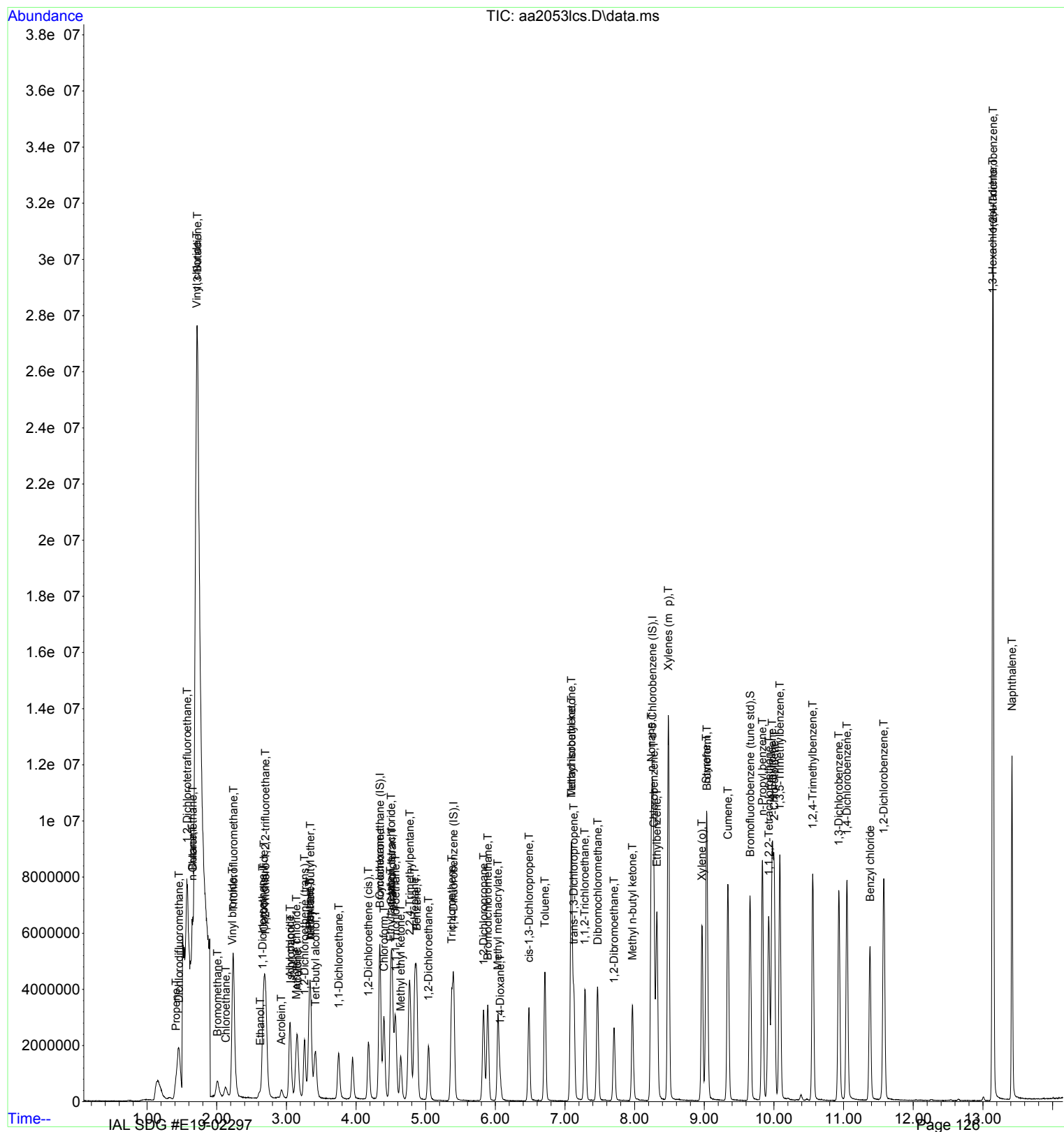
Quant Time: Apr 11 13:42:50 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
52) Dibromochloromethane	7.470	129	2065391	12.45	ppbV	100
53) 1,2-Dibromoethane	7.705	107	1838555	11.24	ppbV	98
54) Methyl n-butyl ketone	7.968	43	2677128	10.50	ppbV	95
56) n-Nonane	8.239	43	3463041	7.89	ppbV	98
57) Chlorobenzene	8.277	112	2923155	9.57	ppbV	93
58) Ethylbenzene	8.319	91	5120043	9.75	ppbV	97
59) Xylenes (m&p)	8.483	91	8252372	21.59	ppbV	99
60) Xylene (o)	8.965	91	3910444	9.22	ppbV	97
61) Styrene	9.030	104	2838120	9.91	ppbV	99
62) Bromoform	9.039	173	2338275	13.11	ppbV	96
63) Cumene	9.338	105	5323050	9.82	ppbV	99
65) n-Propyl benzene	9.833	91	7574165	10.67	ppbV	96
66) 1,1,2,2-Tetrachloroethane	9.927	83	3822537	11.39	ppbV	99
67) 4-Ethyltoluene	9.975	105	5789294	10.70	ppbV	98
68) 2-Chlorotoluene	10.004	91	5744433	11.74	ppbV	99
69) 1,3,5-Trimethylbenzene	10.084	105	5239648	11.05	ppbV	97
70) 1,2,4-Trimethylbenzene	10.557	105	4866863	10.27	ppbV	90
71) 1,3-Dichlorobenzene	10.930	146	3000278	9.83	ppbV	99
72) 1,4-Dichlorobenzene	11.049	146	3086813	10.18	ppbV	97
73) Benzyl chloride	11.380	91	4093016	9.71	ppbV	97
74) 1,2-Dichlorobenzene	11.576	146	3174765	10.69	ppbV	99
75) 1,3-Hexachlorobutadiene	13.142	225	1844667	13.42	ppbV	96
76) 1,2,4-Trichlorobenzene	13.148	180	2449667	12.23	ppbV	98
77) Naphthalene	13.418	128	6437718	10.25	ppbV	98

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

Data Path : C:\DATA\04-11-19\
 Data File : aa20531cs.D
 Acq On : 11 Apr 2019 10:05 am
 Operator : jls
 Sample : 10 ppbv LCS
 Misc : CC483586
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 13:42:50 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration



Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-05
Matrix: Air
Summa ID: 1571

Date Received: 3/15/19
Date Analyzed: 3/26/19, 3/26/19
Lab Data File : AA1766, AA1767
Dilution Factor: 100
Injection Volume: 0.5ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-05 Concentration Reported		Sample Dup E19-01821-25 Concentration Reported		Reporting Limits ppbv	RPD
		ppbv	Q	ppbv	Q		
Acetone	67-64-1	400	U	400	U	400	0.00%
Allyl Chloride	107-05-1	400	U	400	U	400	0.00%
Benzene	71-43-2	400	U	400	U	400	0.00%
Bromodichloromethane	75-27-4	400	U	400	U	400	0.00%
Bromoform	75-25-2	400	U	400	U	400	0.00%
Bromomethane	74-83-9	400	U	400	U	400	0.00%
1,3-Butadiene	106-99-0	400	U	400	U	400	0.00%
Chlorobenzene	108-90-7	400	U	400	U	400	0.00%
Chloroethane	75-00-3	400	U	400	U	400	0.00%
Chloroform	67-66-3	400	U	400	U	400	0.00%
Chloromethane	74-87-3	400	U	400	U	400	0.00%
Carbon disulfide	75-15-0	400	U	400	U	400	0.00%
Carbon tetrachloride	56-23-5	400	U	400	U	400	0.00%
2-Chlorotoluene	95-49-8	400	U	400	U	400	0.00%
Cyclohexane	110-82-7	400	U	400	U	400	0.00%
Dibromochloromethane	124-48-1	400	U	400	U	400	0.00%
1,2-Dibromoethane	106-93-4	400	U	400	U	400	0.00%
1,2-Dichlorobenzene	95-50-1	400	U	400	U	400	0.00%
1,3-Dichlorobenzene	541-73-1	400	U	400	U	400	0.00%
1,4-Dichlorobenzene	106-46-7	400	U	400	U	400	0.00%
Dichlorodifluoromethane	75-71-8	400	U	400	U	400	0.00%
1,1-Dichloroethane	75-34-3	400	U	400	U	400	0.00%
1,2-Dichloroethane	107-06-2	400	U	400	U	400	0.00%
1,1-Dichloroethene	75-35-4	400	U	400	U	400	0.00%
1,2-Dichloroethene (cis)	156-59-2	400	U	400	U	400	0.00%
1,2-Dichloroethene (trans)	156-60-5	400	U	400	U	400	0.00%
1,2-Dichloropropane	78-87-5	400	U	400	U	400	0.00%
1,3-Dichloropropene (cis)	10061-01-5	400	U	400	U	400	0.00%
1,3-Dichloropropene (trans)	10061-02-6	400	U	400	U	400	0.00%
1,2-Dichlorotetrafluoroethane	76-14-2	400	U	400	U	400	0.00%
Ethylbenzene	100-41-4	400	U	400	U	400	0.00%
4-Ethyltoluene	622-96-8	400	U	400	U	400	0.00%
n-Heptane	142-82-5	400	U	400	U	400	0.00%
1,3-Hexachlorobutadiene	87-68-3	400	U	400	U	400	0.00%
n-Hexane	110-54-3	400	U	400	U	400	0.00%
Methylene chloride	75-09-2	400	U	400	U	400	0.00%
Methyl ethyl ketone	78-93-3	400	U	400	U	400	0.00%
Methyl isobutyl ketone	108-10-1	400	U	400	U	400	0.00%

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-05
Matrix: Air
Summa ID: 1571

Date Received: 3/15/19
Date Analyzed: 3/26/19, 3/26/19
Lab Data File : AA1766, AA1767
Dilution Factor: 100
Injection Volume: 0.5ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-05		Sample Dup E19-01821-25		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
		ppbv		ppbv		ppbv	
Methyl tert-butyl ether	1634-04-4	400	U	400	U	400	0.00%
Styrene	100-42-5	400	U	400	U	400	0.00%
Tert-butyl alcohol	75-65-0	400	U	400	U	400	0.00%
1,1,2,2-Tetrachloroethane	79-34-5	400	U	400	U	400	0.00%
Tetrachloroethene	127-18-4	400	U	400	U	400	0.00%
Toluene	108-88-3	400	U	400	U	400	0.00%
1,2,4-Trichlorobenzene	120-82-1	400	U	400	U	400	0.00%
1,1,1-Trichloroethane	71-55-6	400	U	400	U	400	0.00%
1,1,2-Trichloroethane	79-00-5	400	U	400	U	400	0.00%
Trichloroethene	79-01-6	400	U	400	U	400	0.00%
Trichlorofluoromethane	75-69-4	400	U	400	U	400	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	400	U	400	U	400	0.00%
1,2,4-Trimethylbenzene	95-63-6	400	U	400	U	400	0.00%
1,3,5-Trimethylbenzene	108-67-8	400	U	400	U	400	0.00%
2,2,4-Trimethylpentane	540-84-1	400	U	400	U	400	0.00%
Vinyl bromide	593-60-2	400	U	400	U	400	0.00%
Vinyl chloride	75-01-4	400	U	400	U	400	0.00%
Xylenes (m p)	179601-23-1	400	U	400	U	400	0.00%
Xylenes (o)	95-47-6	400	U	400	U	400	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Data Path : C:\DATA\03-26-19\
 Data File : aa1766.D
 Acq On : 26 Mar 2019 12:14 pm
 Operator : jls
 Sample : E19-01821-05 x 1000 dil
 Misc : 1571 > 3125, 50cc
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 28 13:34:12 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.339	130	378893	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.400	114	1509594	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.258	117	1370703	10.00	ppbV	0.000

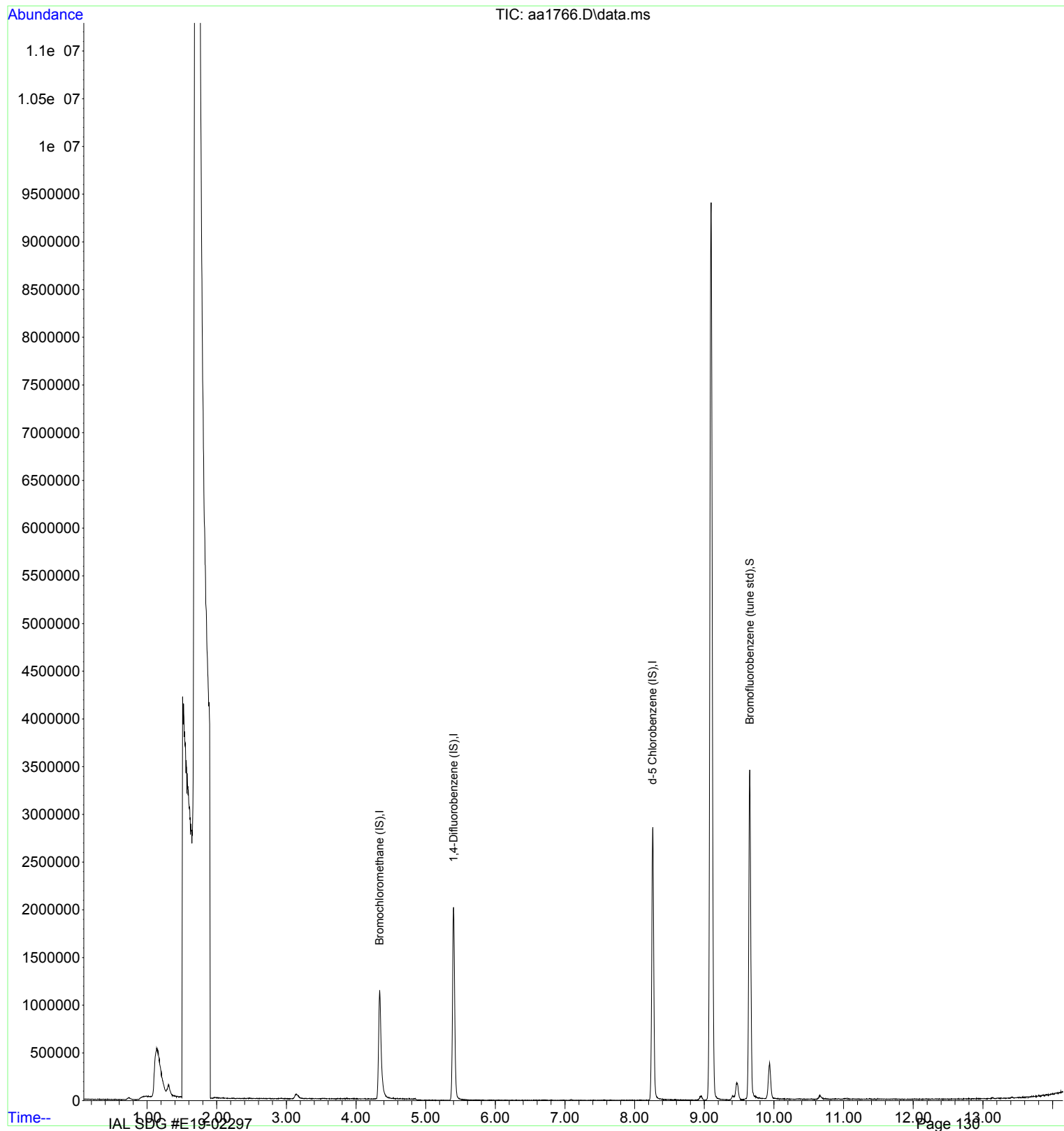
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.653	95	1353932	11.32	ppbV	0.000

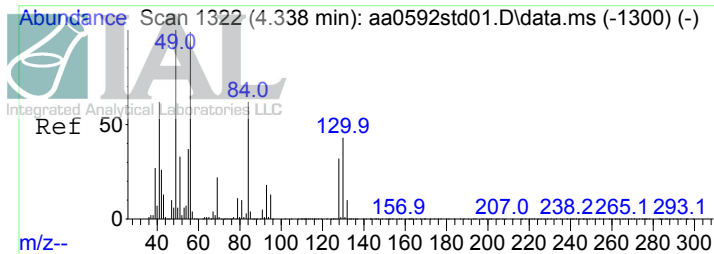
Target Compounds	Qvalue

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

Data Path : C:\DATA\03-26-19\
Data File : aa1766.D
Acq On : 26 Mar 2019 12:14 pm
Operator : jls
Sample : E19-01821-05 x 1000 dil
Misc : 1571 > 3125, 50cc
ALS Vial : 6 Sample Multiplier: 1

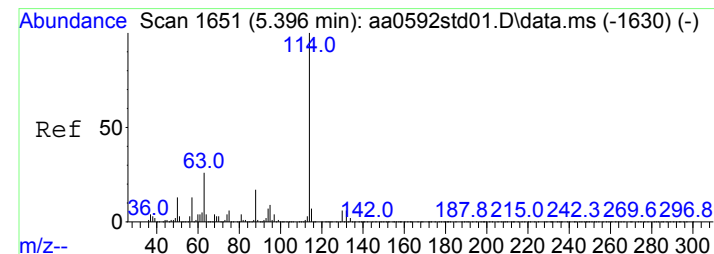
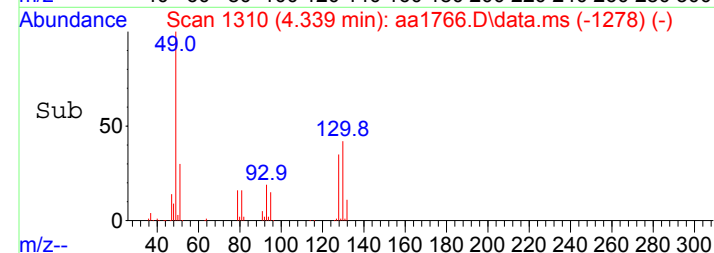
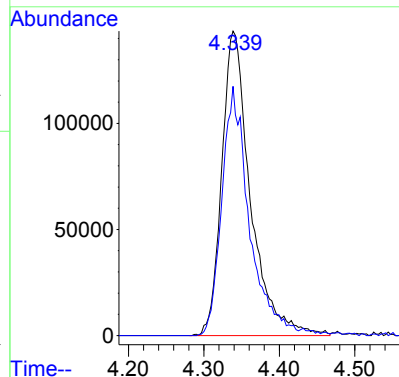
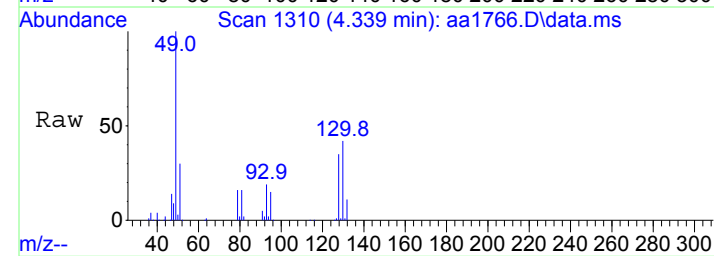
Quant Time: Mar 28 13:34:12 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





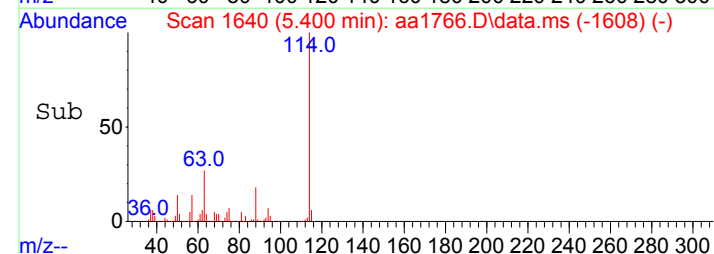
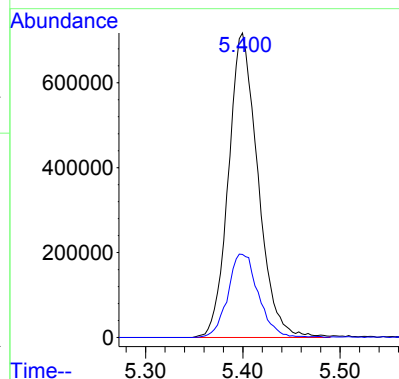
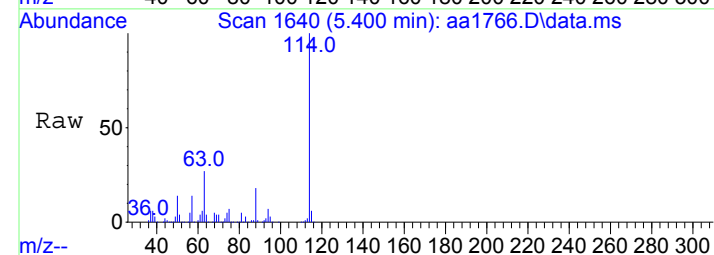
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.339 min Scan# 1310
Delta R.T. 0.004 min
Lab File: aa1766.D
Acq: 26 Mar 2019 12:14 pm

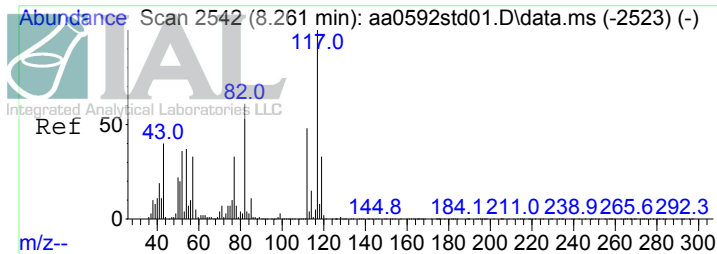
Tgt Ion:130 Resp: 378893
Ion Ratio Lower Upper
130 100
128 79.1 62.6 94.0



#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.400 min Scan# 1640
Delta R.T. 0.003 min
Lab File: aa1766.D
Acq: 26 Mar 2019 12:14 pm

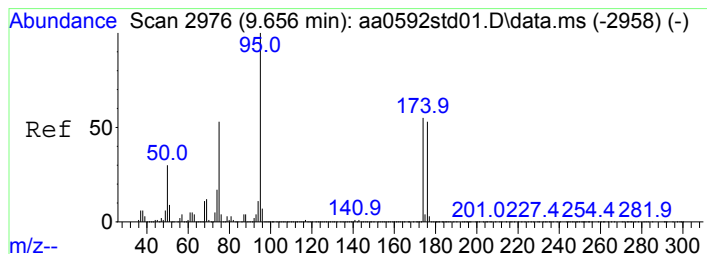
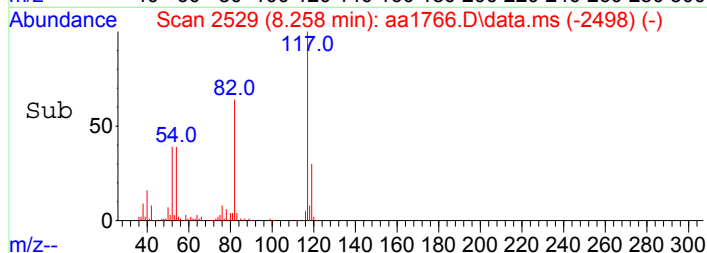
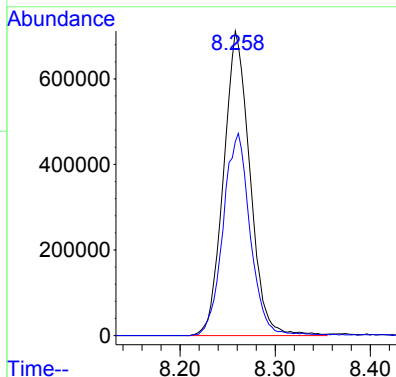
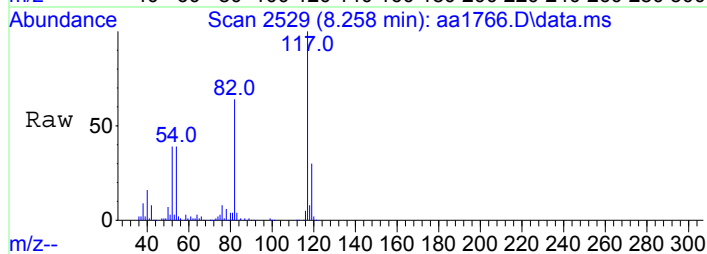
Tgt Ion:114 Resp: 1509594
Ion Ratio Lower Upper
114 100
63 28.3 20.0 30.0





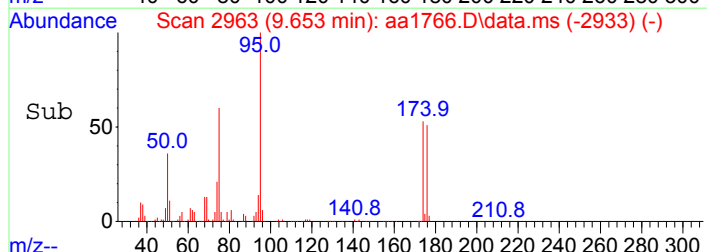
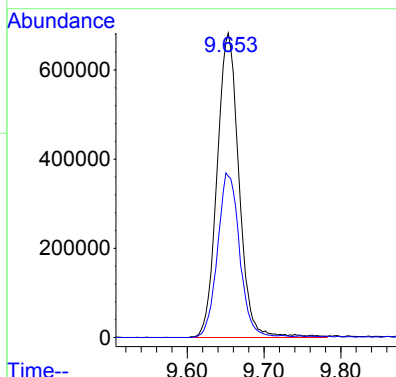
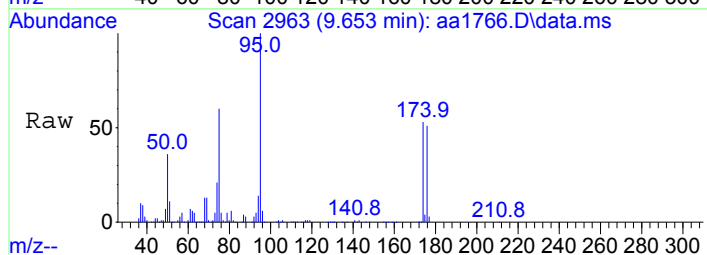
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.258 min Scan# 2529
Delta R.T. -0.000 min
Lab File: aa1766.D
Acq: 26 Mar 2019 12:14 pm

Tgt Ion: 117 Resp: 1370703
Ion Ratio Lower Upper
117 100
82 68.5 48.8 73.2



#64
Bromofluorobenzene (tune std)
Concen: 11.32 ppbV
RT: 9.653 min Scan# 2963
Delta R.T. -0.003 min
Lab File: aa1766.D
Acq: 26 Mar 2019 12:14 pm

Tgt Ion: 95 Resp: 1353932
Ion Ratio Lower Upper
95 100
174 54.6 61.5 92.3#



Data Path : C:\DATA\03-26-19\
 Data File : aa1767.D
 Acq On : 26 Mar 2019 12:36 pm
 Operator : jls
 Sample : E19-01821-25 x 1000 dil
 Misc : dup of E19-01821-05 x 1000 dil, can 3125
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 28 13:35:20 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.342	130	349914	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.400	114	1413836	10.00	ppbV	0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1311906	10.00	ppbV	0.000

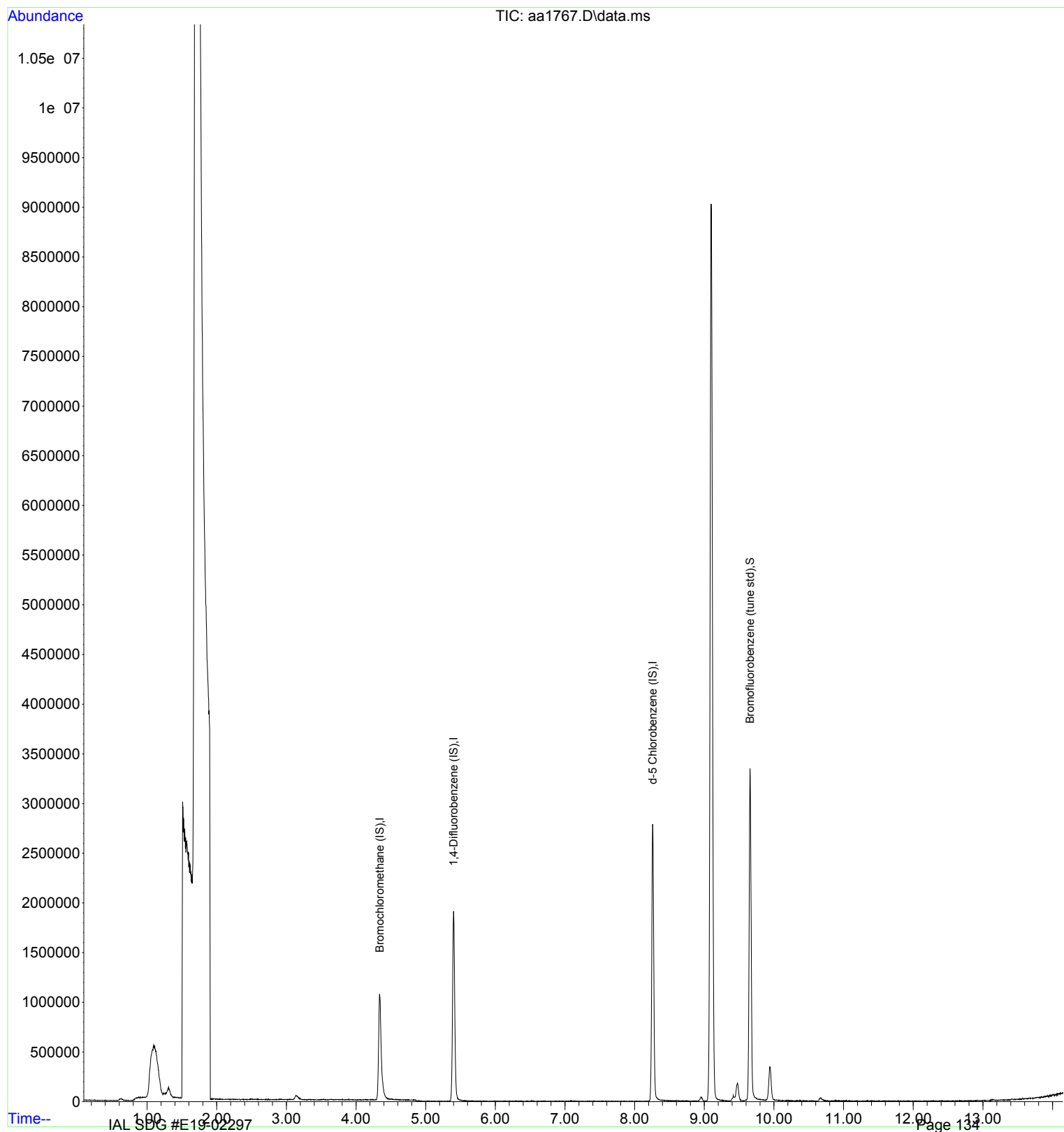
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1286592	11.24	ppbV	0.000

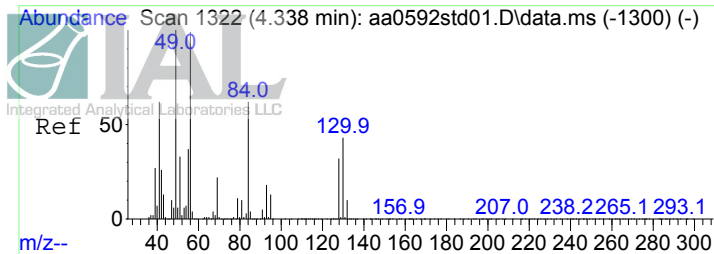
Target Compounds	Qvalue

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

Data Path : C:\DATA\03-26-19\
Data File : aa1767.D
Acq On : 26 Mar 2019 12:36 pm
Operator : jls
Sample : E19-01821-25 x 1000 dil
Misc : dup of E19-01821-05 x 1000 dil, can 3125
ALS Vial : 7 Sample Multiplier: 1

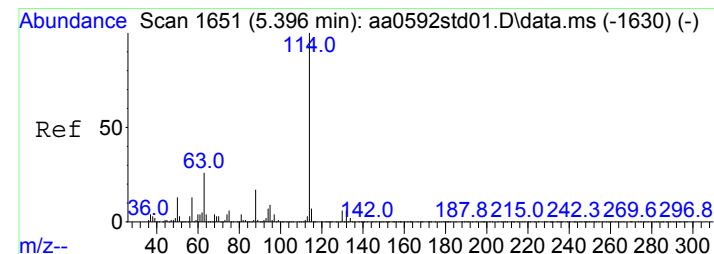
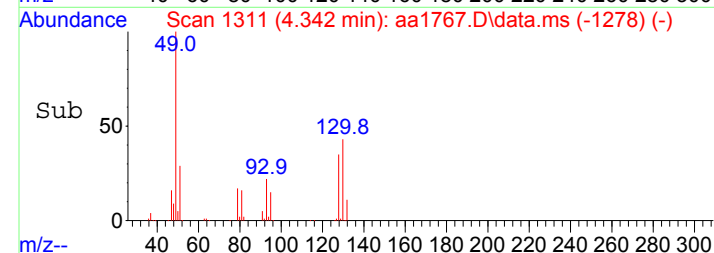
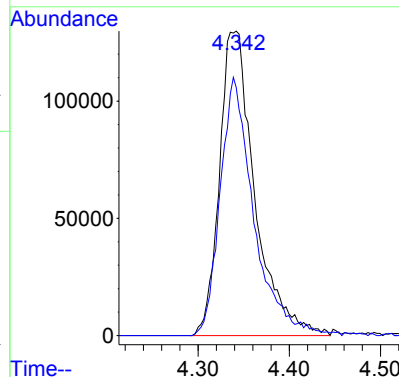
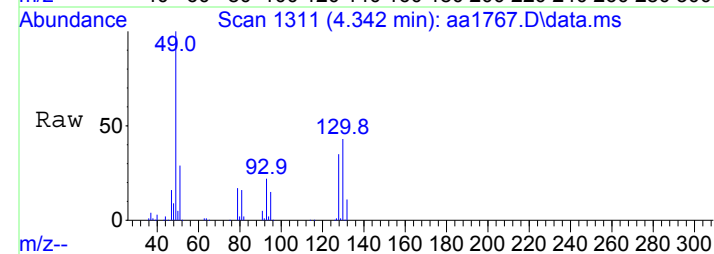
Quant Time: Mar 28 13:35:20 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





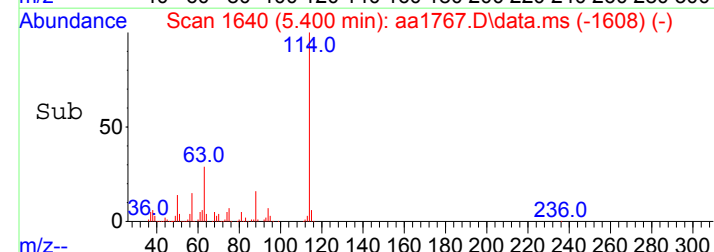
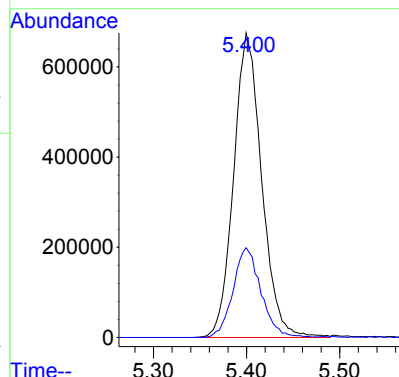
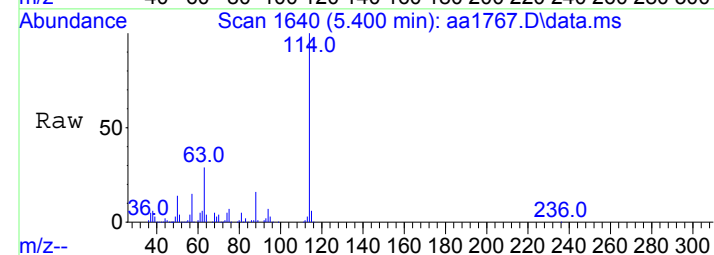
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.342 min Scan# 1311
Delta R.T. 0.007 min
Lab File: aa1767.D
Acq: 26 Mar 2019 12:36 pm

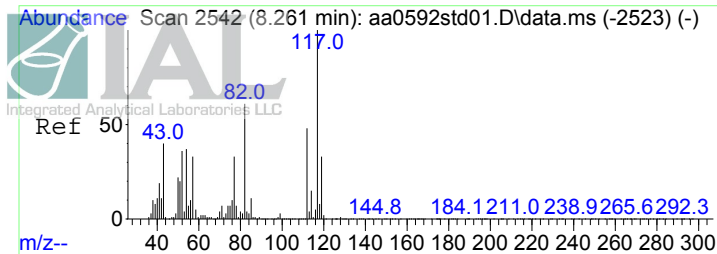
Tgt Ion:130 Resp: 349914
Ion Ratio Lower Upper
130 100
128 80.7 62.6 94.0



#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.400 min Scan# 1640
Delta R.T. 0.003 min
Lab File: aa1767.D
Acq: 26 Mar 2019 12:36 pm

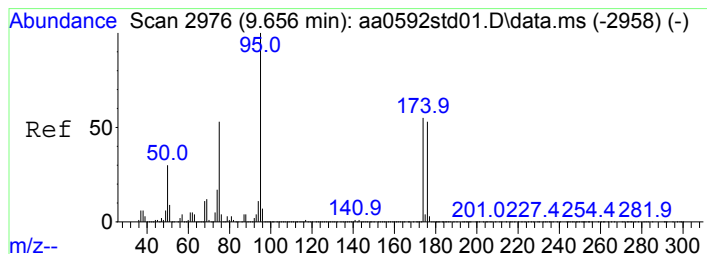
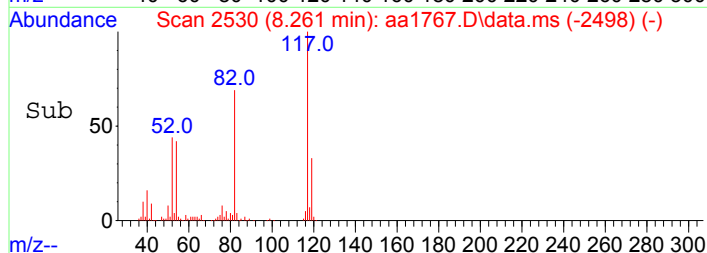
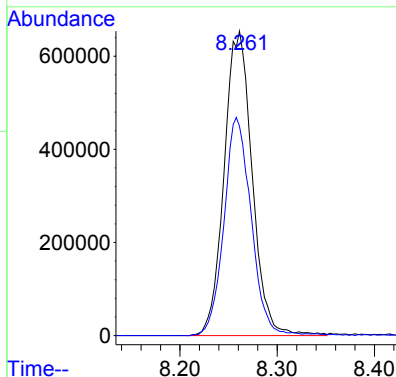
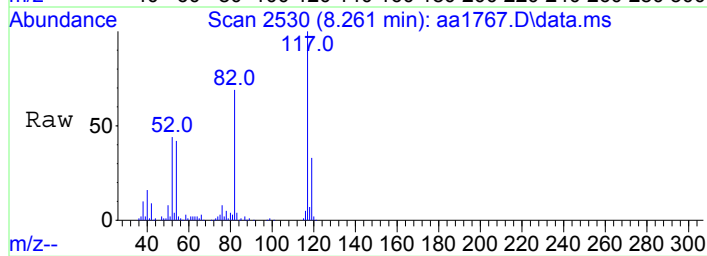
Tgt Ion:114 Resp: 1413836
Ion Ratio Lower Upper
114 100
63 29.3 20.0 30.0





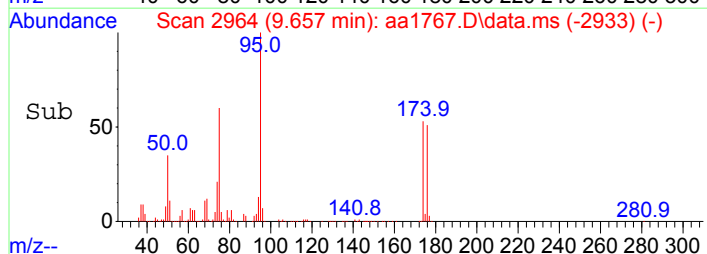
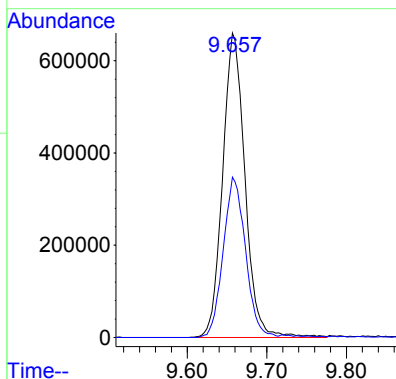
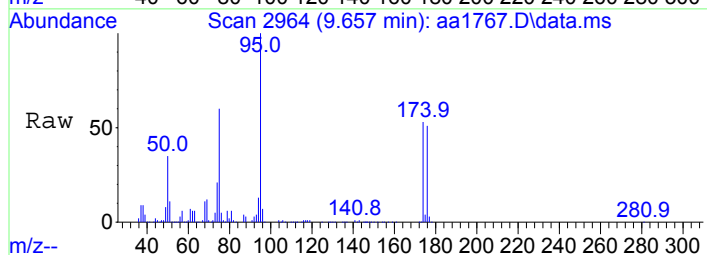
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.261 min Scan# 2530
Delta R.T. 0.003 min
Lab File: aa1767.D
Acq: 26 Mar 2019 12:36 pm

Tgt Ion: 117 Resp: 1311906
Ion Ratio Lower Upper
117 100
82 69.7 48.8 73.2



#64
Bromofluorobenzene (tune std)
Concen: 11.24 ppbV
RT: 9.657 min Scan# 2964
Delta R.T. -0.000 min
Lab File: aa1767.D
Acq: 26 Mar 2019 12:36 pm

Tgt Ion: 95 Resp: 1286592
Ion Ratio Lower Upper
95 100
174 52.5 61.5 92.3#



Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-01
Matrix: Air
Summa ID: 2162

Date Received: 3/15/19
Date Analyzed: 4/11/19,4/11/19
Lab Data File : AA2063,AA2064
Dilution Factor: 1
Injection Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample	Sample Dup	Reporting		RPD
		E19-01821-01 Concentration Reported	E19-01821-21 Concentration Reported	ppbv	Q	
Acetone	67-64-1	8.0	9.4	0.40	-16.09	
Allyl Chloride	107-05-1	0.40 U	0.40 U	0.40	0.00%	
Benzene	71-43-2	0.40 U	0.40 U	0.40	0.00%	
Bromodichloromethane	75-27-4	0.40 U	0.40 U	0.40	0.00%	
Bromoform	75-25-2	0.40 U	0.40 U	0.40	0.00%	
Bromomethane	74-83-9	0.40 U	0.40 U	0.40	0.00%	
1,3-Butadiene	106-99-0	0.40 U	0.40 U	0.40	0.00%	
Chlorobenzene	108-90-7	0.40 U	0.40 U	0.40	0.00%	
Chloroethane	75-00-3	0.40 U	0.40 U	0.40	0.00%	
Chloroform	67-66-3	0.40 U	0.40 U	0.40	0.00%	
Chloromethane	74-87-3	0.40 U	0.40 U	0.40	0.00%	
Carbon disulfide	75-15-0	0.40 U	0.40 U	0.40	0.00%	
Carbon tetrachloride	56-23-5	0.40 U	0.40 U	0.40	0.00%	
2-Chlorotoluene	95-49-8	0.40 U	0.40 U	0.40	0.00%	
Cyclohexane	110-82-7	0.40 U	0.40 U	0.40	0.00%	
Dibromochloromethane	124-48-1	0.40 U	0.40 U	0.40	0.00%	
1,2-Dibromoethane	106-93-4	0.40 U	0.40 U	0.40	0.00%	
1,2-Dichlorobenzene	95-50-1	0.40 U	0.40 U	0.40	0.00%	
1,3-Dichlorobenzene	541-73-1	0.40 U	0.40 U	0.40	0.00%	
1,4-Dichlorobenzene	106-46-7	0.40 U	0.40 U	0.40	0.00%	
Dichlorodifluoromethane	75-71-8	0.40 U	0.40 U	0.40	0.00%	
1,1-Dichloroethane	75-34-3	0.40 U	0.40 U	0.40	0.00%	
1,2-Dichloroethane	107-06-2	0.40 U	0.40 U	0.40	0.00%	
1,1-Dichloroethene	75-35-4	0.40 U	0.40 U	0.40	0.00%	
1,2-Dichloroethene (cis)	156-59-2	0.40 U	0.40 U	0.40	0.00%	
1,2-Dichloroethene (trans)	156-60-5	0.40 U	0.40 U	0.40	0.00%	
1,2-Dichloropropane	78-87-5	0.40 U	0.40 U	0.40	0.00%	
1,3-Dichloropropene (cis)	10061-01-5	0.40 U	0.40 U	0.40	0.00%	
1,3-Dichloropropene (trans)	10061-02-6	0.40 U	0.40 U	0.40	0.00%	
1,2-Dichlorotetrafluoroethane	76-14-2	0.40 U	0.40 U	0.40	0.00%	
Ethylbenzene	100-41-4	0.40 U	0.40 U	0.40	0.00%	
4-Ethyltoluene	622-96-8	0.40 U	0.40 U	0.40	0.00%	
n-Heptane	142-82-5	0.40 U	0.40 U	0.40	0.00%	
1,3-Hexachlorobutadiene	87-68-3	0.40 U	0.40 U	0.40	0.00%	
n-Hexane	110-54-3	0.40 U	0.40 U	0.40	0.00%	
Methylene chloride	75-09-2	2.1	2.2	0.40	-4.65	
Methyl ethyl ketone	78-93-3	2.2	2.3	0.40	-4.44	
Methyl isobutyl ketone	108-10-1	0.40 U	0.40 U	0.40	0.00%	

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

Laboratory Sample Duplicate Report

SDG Number: E19-01821
IAL Sample ID: E19-01821-01
Matrix: Air
Summa ID: 2162

Date Received: 3/15/19
Date Analyzed: 4/11/19,4/11/19
Lab Data File : AA2063,AA2064
Dilution Factor: 1
Injection Volume: 500ml
GC/MS Column: RTX-1, 0.32 mmID

Compound	CAS	Sample E19-01821-01		Sample Dup E19-01821-21		Reporting Limits	RPD
		Concentration Reported	Q	Concentration Reported	Q		
		ppbv		ppbv		ppbv	
Methyl tert-butyl ether	1634-04-4	0.40	U	0.40	U	0.40	0.00%
Styrene	100-42-5	0.40	U	0.40	U	0.40	0.00%
Tert-butyl alcohol	75-65-0	0.40	U	0.40	U	0.40	0.00%
1,1,2,2-Tetrachloroethane	79-34-5	0.40	U	0.40	U	0.40	0.00%
Tetrachloroethene	127-18-4	0.40	U	0.40	U	0.40	0.00%
Toluene	108-88-3	0.40	U	0.40	U	0.40	0.00%
1,2,4-Trichlorobenzene	120-82-1	0.40	U	0.40	U	0.40	0.00%
1,1,1-Trichloroethane	71-55-6	0.40	U	0.40	U	0.40	0.00%
1,1,2-Trichloroethane	79-00-5	0.40	U	0.40	U	0.40	0.00%
Trichloroethene	79-01-6	0.40	U	0.40	U	0.40	0.00%
Trichlorofluoromethane	75-69-4	0.40	U	0.40	U	0.40	0.00%
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.40	U	0.40	U	0.40	0.00%
1,2,4-Trimethylbenzene	95-63-6	0.40	U	0.40	U	0.40	0.00%
1,3,5-Trimethylbenzene	108-67-8	0.40	U	0.40	U	0.40	0.00%
2,2,4-Trimethylpentane	540-84-1	0.40	U	0.40	U	0.40	0.00%
Vinyl bromide	593-60-2	0.40	U	0.40	U	0.40	0.00%
Vinyl chloride	75-01-4	0.40	U	0.40	U	0.40	0.00%
Xylenes (m p)	179601-23-1	0.40	U	0.40	U	0.40	0.00%
Xylenes (o)	95-47-6	0.40	U	0.40	U	0.40	0.00%

RPD must be 25 for all laboratory duplicate samples. Laboratory duplicate samples are run once daily.

NC The RPD could not be calculated since the compound was only detected in either the parent or duplicate sample.

Qualifir:

E=Concentration exceeds upper level of calibration range for instrument.

D=Extra dilution required for this compound. J=Duplicate samples do not met RPD criteria.

U=Compound ND or under reporting limit.

Data Path : C:\DATA\04-11-19\
 Data File : aa2063.D
 Acq On : 11 Apr 2019 4:31 pm
 Operator : jls
 Sample : E19-01821-01
 Misc : 2162, 500cc
 ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 12 08:17:30 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

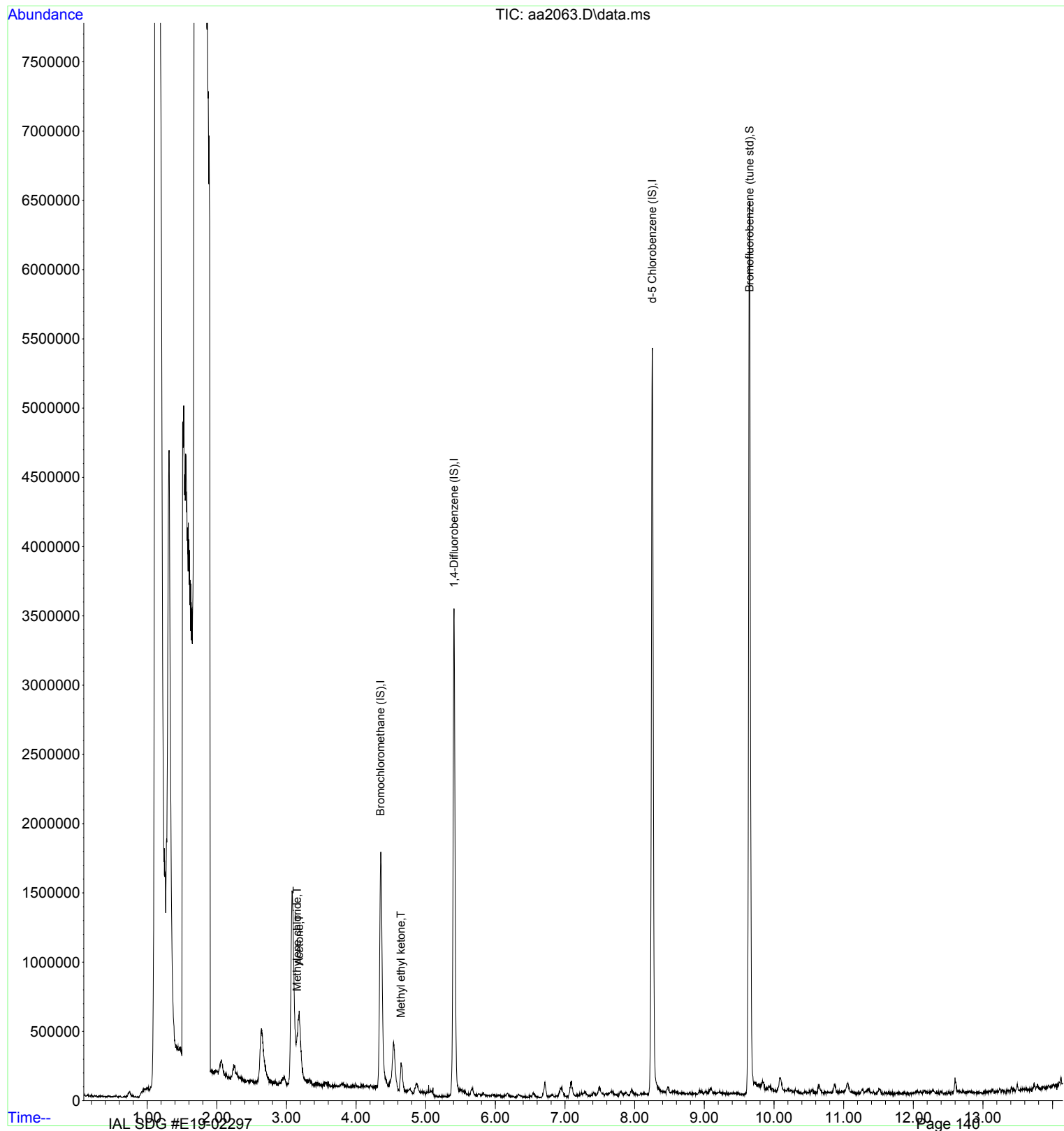
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

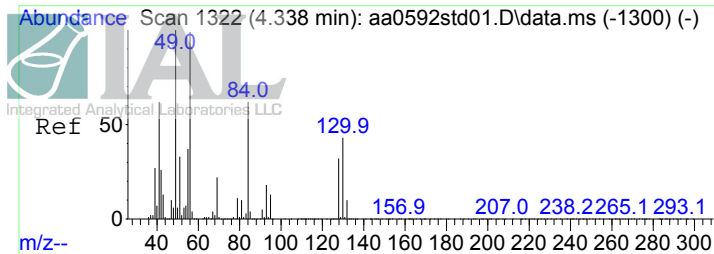
Internal Standards						
1) Bromochloromethane (IS)	4.351	130	493103	10.00	ppbV	0.016
39) 1,4-Difluorobenzene (IS)	5.409	114	2209761	10.00	ppbV #	0.012
55) d-5 Chlorobenzene (IS)	8.254	117	2335605	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.650	95	1956076	9.60	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.152	49	168205	2.08	ppbV #	38
21) Acetone	3.184	43	796467	7.95	ppbV #	83
35) Methyl ethyl ketone	4.644	43	298864	2.15	ppbV	97

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

Data Path : C:\DATA\04-11-19\
Data File : aa2063.D
Acq On : 11 Apr 2019 4:31 pm
Operator : jls
Sample : E19-01821-01
Misc : 2162, 500cc
ALS Vial : 13 Sample Multiplier: 1

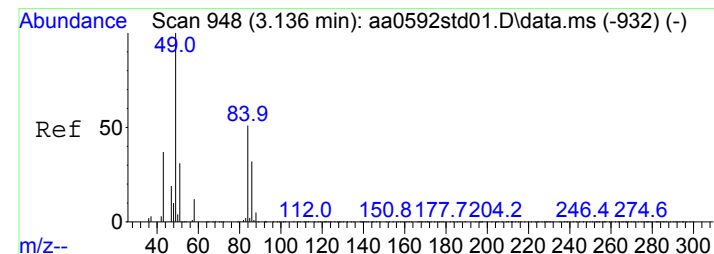
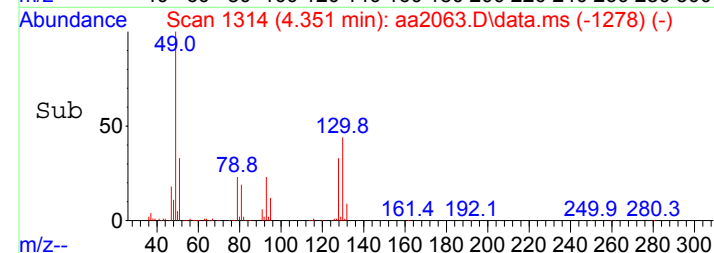
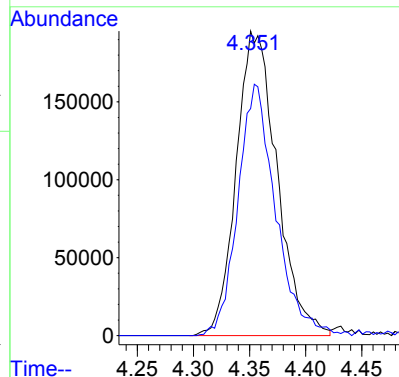
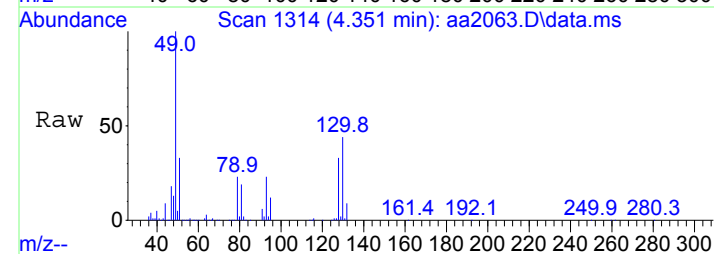
Quant Time: Apr 12 08:17:30 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





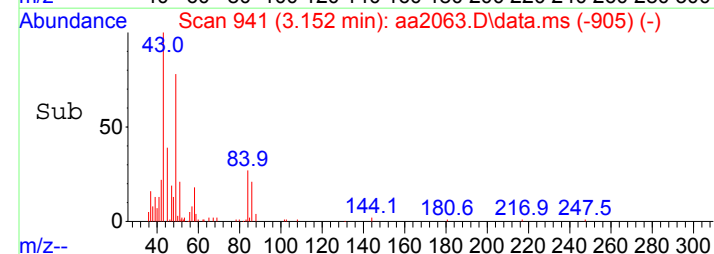
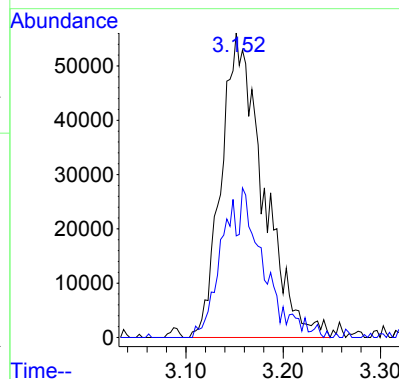
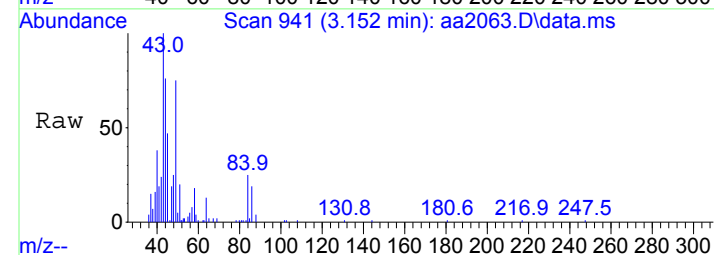
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.351 min Scan# 1314
Delta R.T. 0.016 min
Lab File: aa2063.D
Acq: 11 Apr 2019 4:31 pm

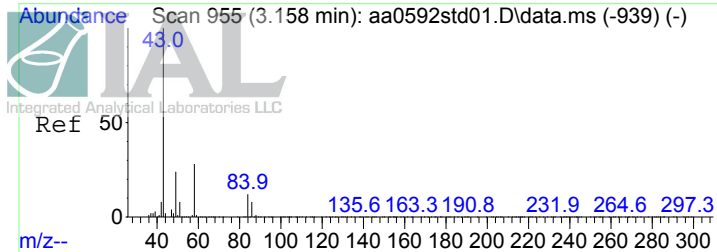
Tgt Ion: 130 Resp: 493103
Ion Ratio Lower Upper
130 100
128 76.3 62.6 94.0



#20
Methylene chloride
Concen: 2.08 ppbV
RT: 3.152 min Scan# 941
Delta R.T. 0.016 min
Lab File: aa2063.D
Acq: 11 Apr 2019 4:31 pm

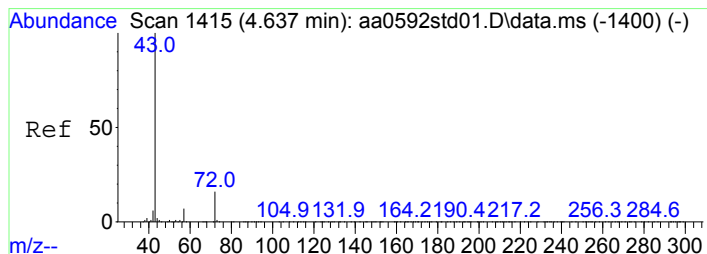
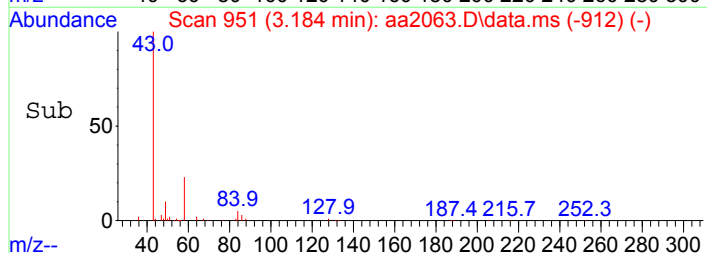
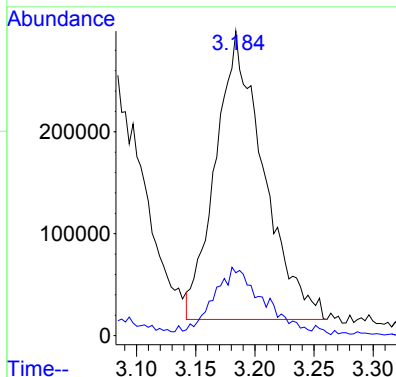
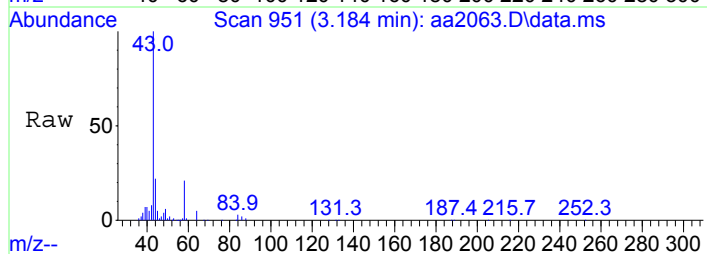
Tgt Ion: 49 Resp: 168205
Ion Ratio Lower Upper
49 100
84 21.1 58.4 87.6#





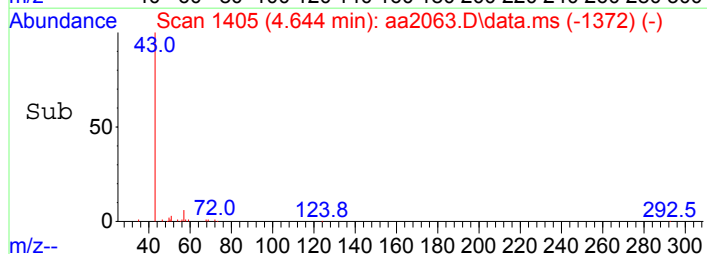
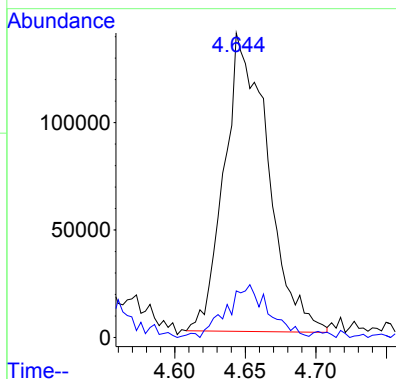
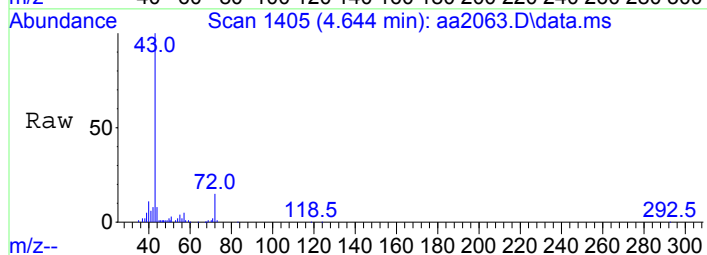
#21
Acetone
Concen: 7.95 ppbV
RT: 3.184 min Scan# 951
Delta R.T. 0.025 min
Lab File: aa2063.D
Acq: 11 Apr 2019 4:31 pm

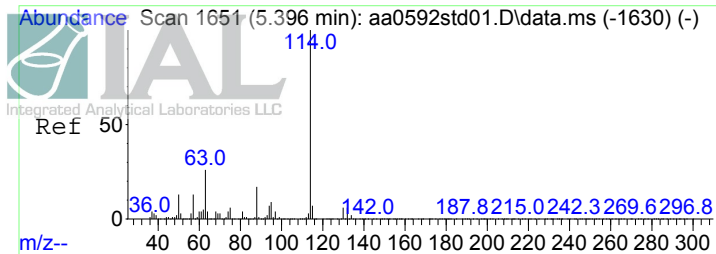
Tgt Ion: 43 Resp: 796467
Ion Ratio Lower Upper
43 100
58 23.3 26.4 39.6#



#35
Methyl ethyl ketone
Concen: 2.15 ppbV
RT: 4.644 min Scan# 1405
Delta R.T. 0.006 min
Lab File: aa2063.D
Acq: 11 Apr 2019 4:31 pm

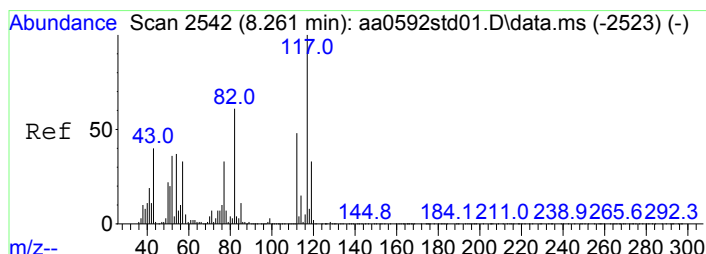
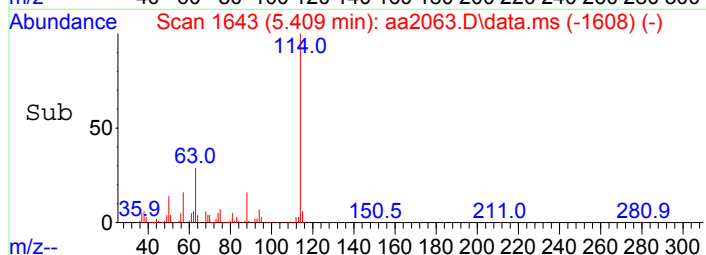
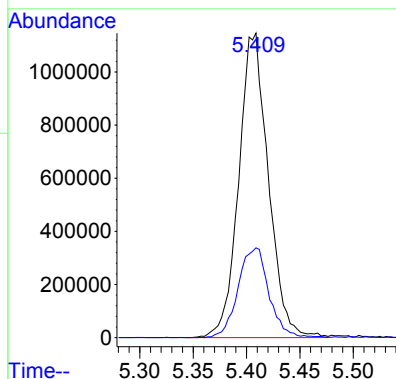
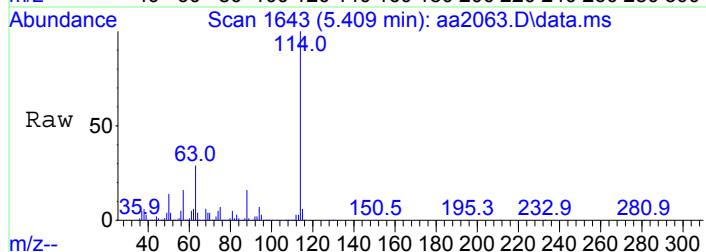
Tgt Ion: 43 Resp: 298864
Ion Ratio Lower Upper
43 100
72 16.9 14.4 21.6





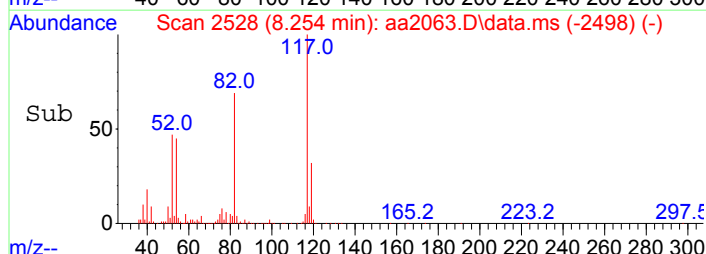
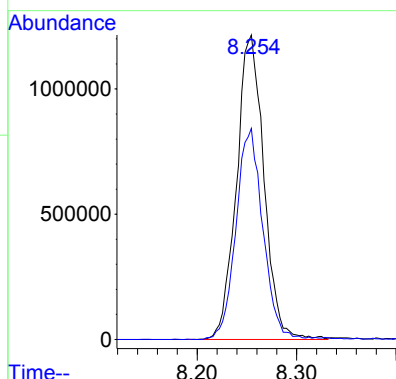
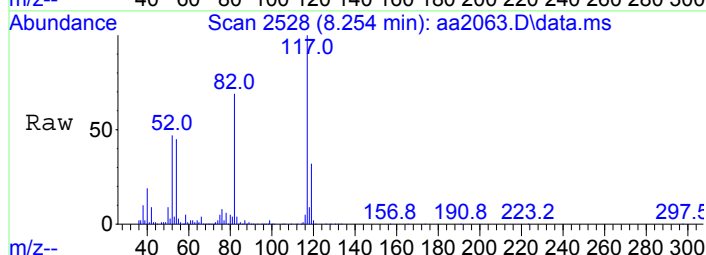
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.409 min Scan# 1643
Delta R.T. 0.012 min
Lab File: aa2063.D
Acq: 11 Apr 2019 4:31 pm

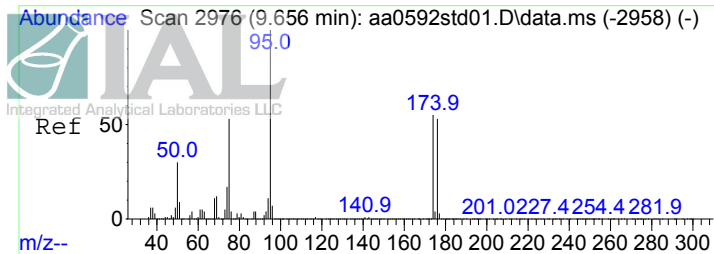
Tgt Ion:114 Resp: 2209761
Ion Ratio Lower Upper
114 100
63 30.7 20.0 30.0#



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.254 min Scan# 2528
Delta R.T. -0.004 min
Lab File: aa2063.D
Acq: 11 Apr 2019 4:31 pm

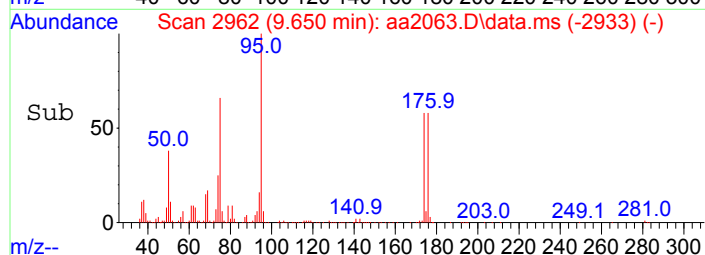
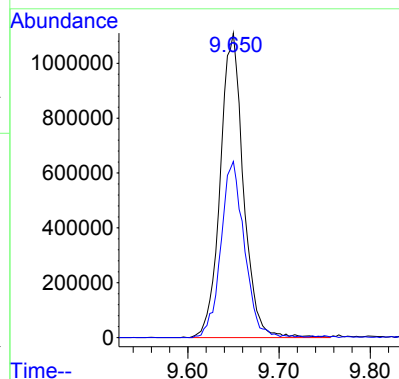
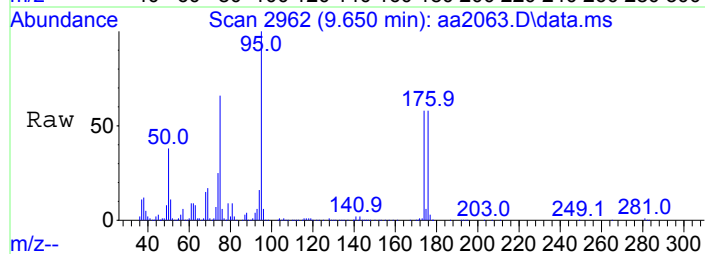
Tgt Ion:117 Resp: 2335605
Ion Ratio Lower Upper
117 100
82 68.3 48.8 73.2





#64
 Bromofluorobenzene (tune std)
 Concen: 9.60 ppbV
 RT: 9.650 min Scan# 2962
 Delta R.T. -0.007 min
 Lab File: aa2063.D
 Acq: 11 Apr 2019 4:31 pm

Tgt Ion: 95 Resp: 1956076
 Ion Ratio Lower Upper
 95 100
 174 58.9 61.5 92.3#



Data Path : C:\DATA\04-11-19\
 Data File : aa2064.D
 Acq On : 11 Apr 2019 4:58 pm
 Operator : jls
 Sample : E19-01821-21
 Misc : dup of E19-01821-01, can # 2162
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 12 08:17:47 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

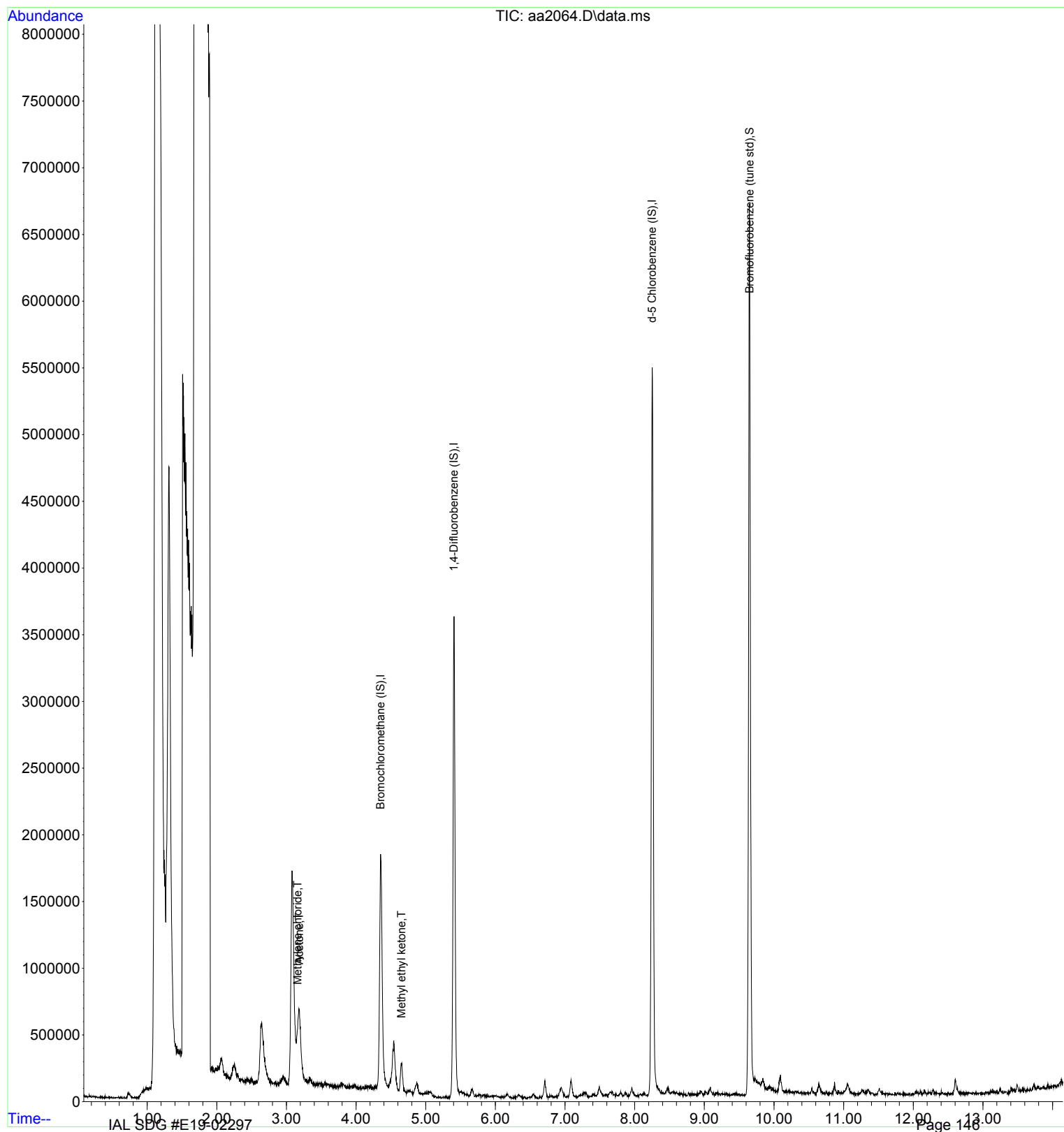
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

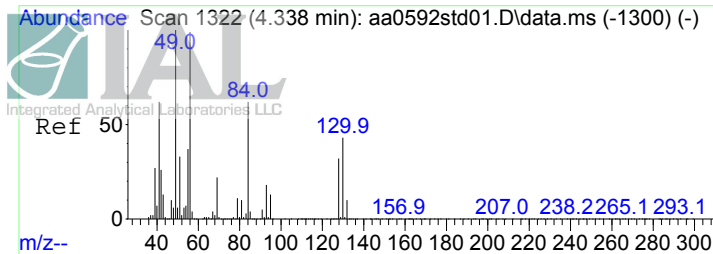
Internal Standards						
1) Bromochloromethane (IS)	4.351	130	504829	10.00	ppbV	0.016
39) 1,4-Difluorobenzene (IS)	5.406	114	2274049	10.00	ppbV #	0.000
55) d-5 Chlorobenzene (IS)	8.251	117	2440563	10.00	ppbV	0.000
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.650	95	2069373	9.72	ppbV	0.000
Target Compounds						
20) Methylene chloride	3.158	49	183044	2.21	ppbV #	47
21) Acetone	3.184	43	966412	9.43	ppbV #	85
35) Methyl ethyl ketone	4.650	43	324695	2.28	ppbV	97

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

Data Path : C:\DATA\04-11-19\
Data File : aa2064.D
Acq On : 11 Apr 2019 4:58 pm
Operator : jls
Sample : E19-01821-21
Misc : dup of E19-01821-01, can # 2162
ALS Vial : 14 Sample Multiplier: 1

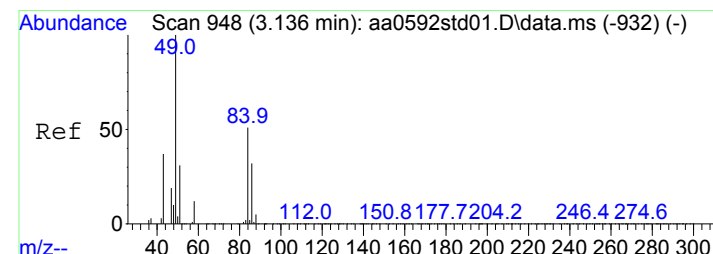
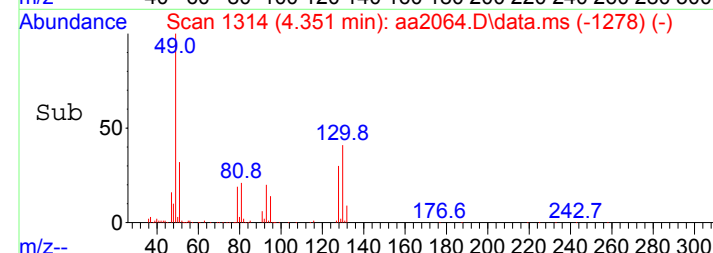
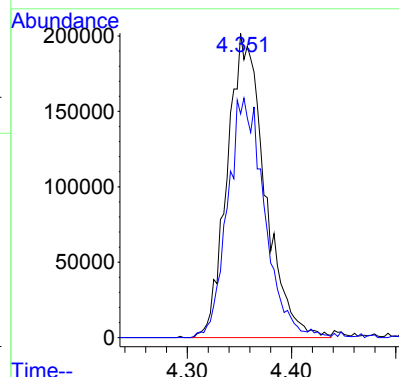
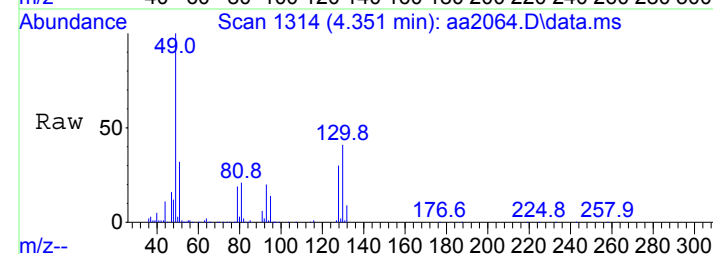
Quant Time: Apr 12 08:17:47 2019
Quant Method : C:\msdchem\1\METHODS\0313.M
Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





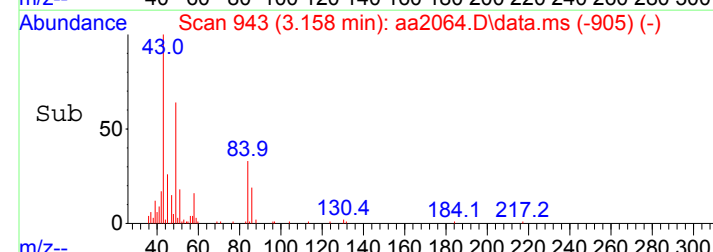
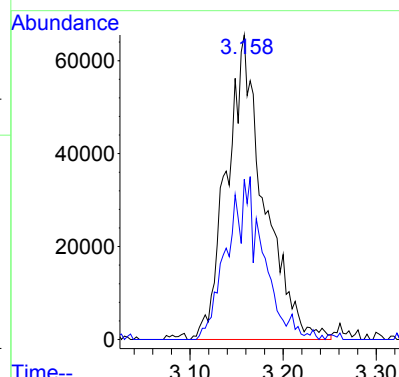
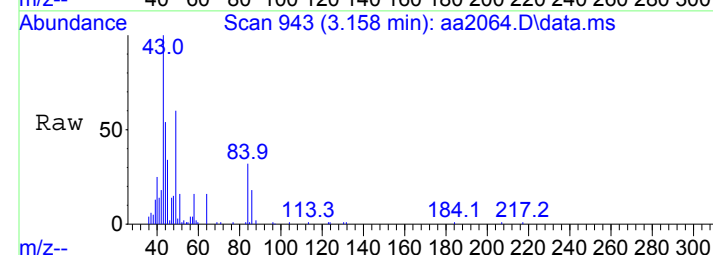
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.351 min Scan# 1314
Delta R.T. 0.016 min
Lab File: aa2064.D
Acq: 11 Apr 2019 4:58 pm

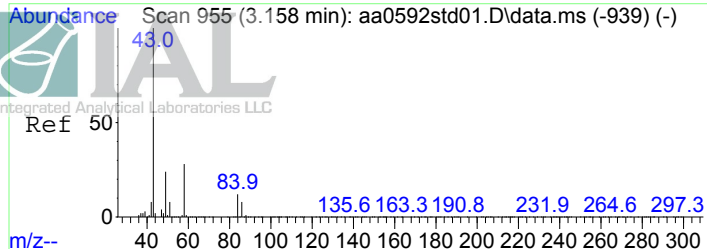
Tgt Ion: 130 Resp: 504829
Ion Ratio Lower Upper
130 100
128 77.7 62.6 94.0



#20
Methylene chloride
Concen: 2.21 ppbV
RT: 3.158 min Scan# 943
Delta R.T. 0.022 min
Lab File: aa2064.D
Acq: 11 Apr 2019 4:58 pm

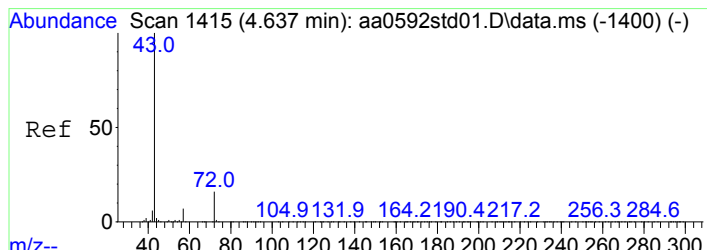
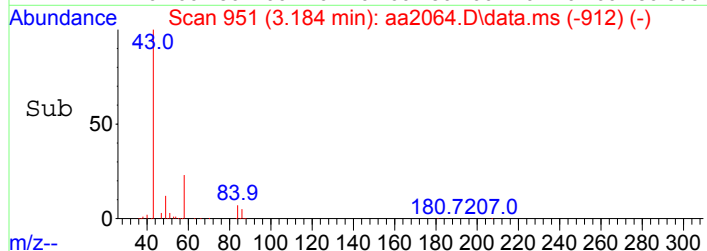
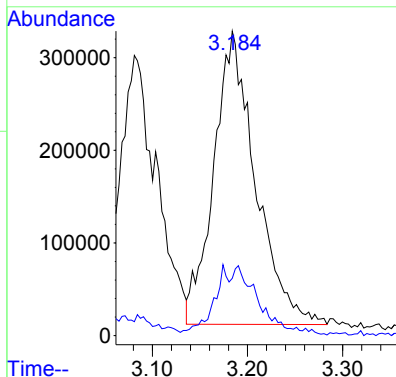
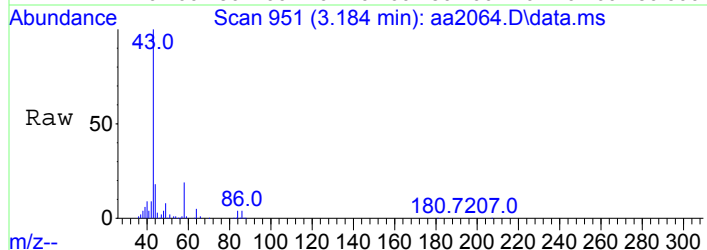
Tgt Ion: 49 Resp: 183044
Ion Ratio Lower Upper
49 100
84 28.6 58.4 87.6#





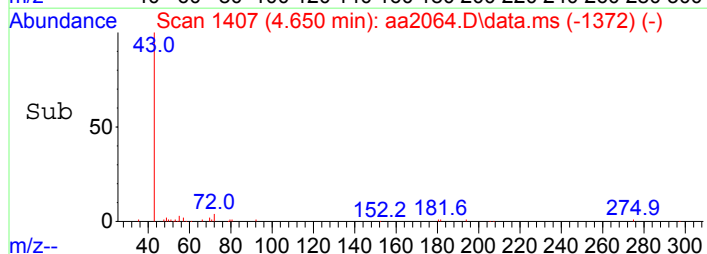
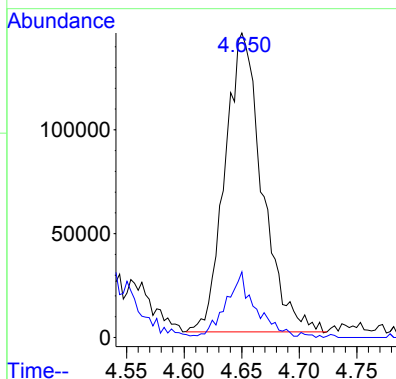
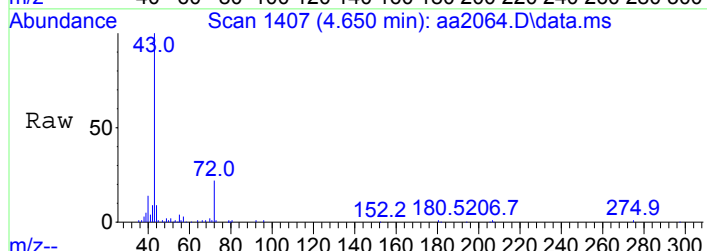
#21
Acetone
Concen: 9.43 ppbV
RT: 3.184 min Scan# 951
Delta R.T. 0.025 min
Lab File: aa2064.D
Acq: 11 Apr 2019 4:58 pm

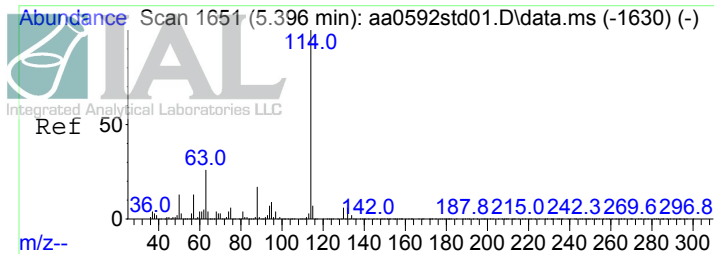
Tgt Ion: 43 Resp: 966412
Ion Ratio Lower Upper
43 100
58 24.3 26.4 39.6#



#35
Methyl ethyl ketone
Concen: 2.28 ppbV
RT: 4.650 min Scan# 1407
Delta R.T. 0.012 min
Lab File: aa2064.D
Acq: 11 Apr 2019 4:58 pm

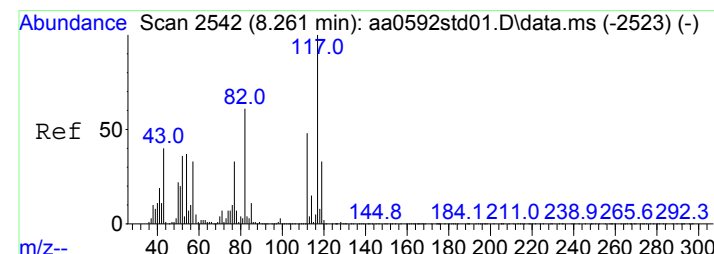
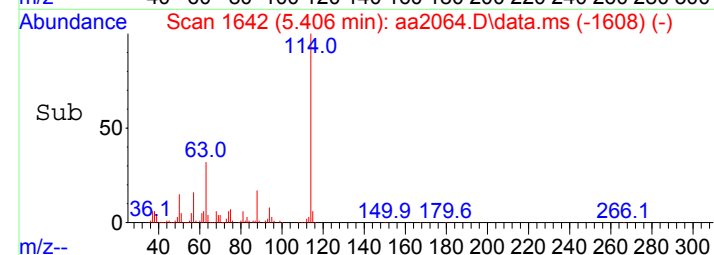
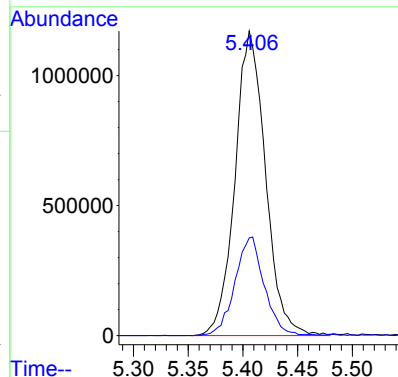
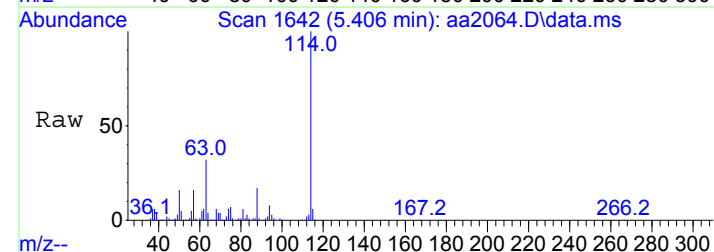
Tgt Ion: 43 Resp: 324695
Ion Ratio Lower Upper
43 100
72 16.7 14.4 21.6





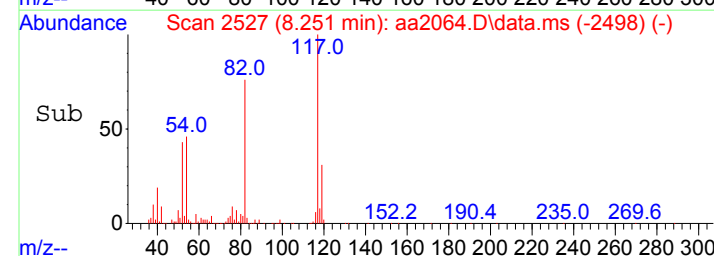
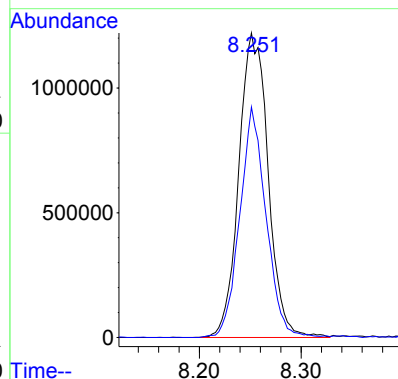
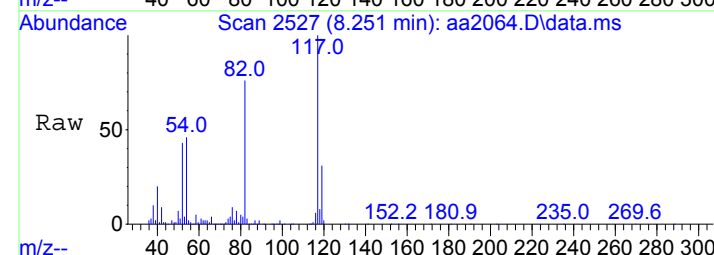
#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.406 min Scan# 1642
Delta R.T. 0.009 min
Lab File: aa2064.D
Acq: 11 Apr 2019 4:58 pm

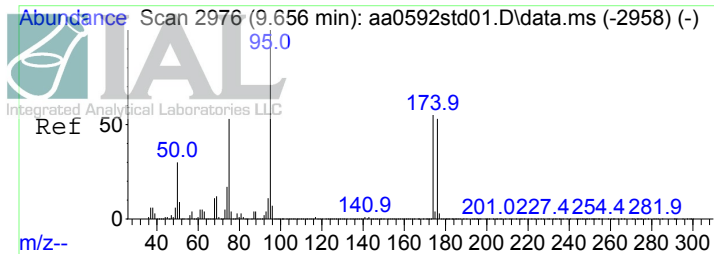
Tgt Ion:114 Resp: 2274049
Ion Ratio Lower Upper
114 100
63 31.2 20.0 30.0#



#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.251 min Scan# 2527
Delta R.T. -0.007 min
Lab File: aa2064.D
Acq: 11 Apr 2019 4:58 pm

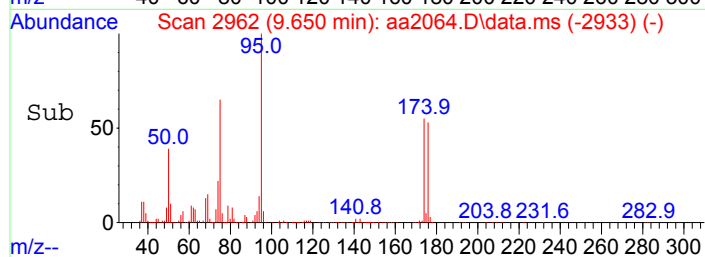
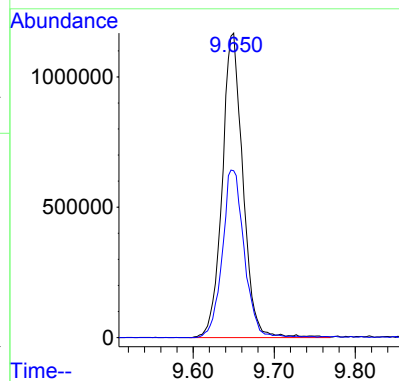
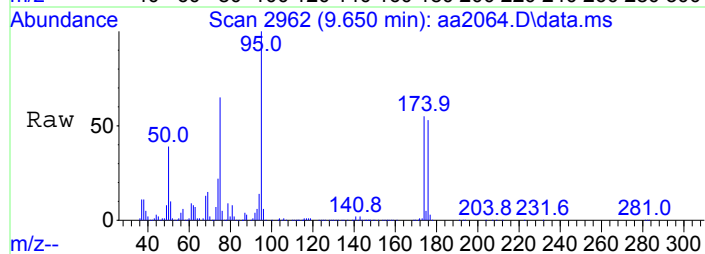
Tgt Ion:117 Resp: 2440563
Ion Ratio Lower Upper
117 100
82 68.1 48.8 73.2





#64
 Bromofluorobenzene (tune std)
 Concen: 9.72 ppbV
 RT: 9.650 min Scan# 2962
 Delta R.T. -0.007 min
 Lab File: aa2064.D
 Acq: 11 Apr 2019 4:58 pm

Tgt Ion: 95 Resp: 2069373
 Ion Ratio Lower Upper
 95 100
 174 58.5 61.5 92.3#



Integrated Analytical Laboratories
GC/MS Run Log

Instrument ID: Agilent 7890A / 5975C
Column: Restek RTX-1 SN 992567

Target Directory: D:\Agilent GCMS\

Date of Analysis: 4/11/2019
Date of Initial Calibration: 3/13/2019
SDG : E19-02297

File	Laboratory Sample ID	QC Check	Dilution Factor	Can	Analyst	Injection Volume (cc)	Comments	Make-up Air		Acquisition		Room		TO-15 Standard	
								Added to canister (cc)	Added for dilution (cc)	Date	Time	Temp	BP "Hg	Working ID	Vendor ID (Lot)
aa1521bfb	BFB	✓		ALM029426	JJW	50				3/13/2019	9:57	74	30.50		403-402623
aa1522std01	40 ppbv Std	✓		CC483586	JJW	200								3/13/2019	160-401140945-1
aa1523std02	20 ppbv Std	✓		CC483586	JJW	100								3/13/2019	160-401140945-1
aa1524std03	10 ppbv Std	✓		CC483586	JJW	50								3/13/2019	160-401140945-1
aa1525std04	2 ppbv Std	✓		CC483586	JJW	10								3/13/2019	160-401140945-1
aa1526std05	0.2 ppbv Std	✓		CC483586	JJW	1								3/13/2019	160-401140945-1
aa1527icvss	10 ppbv ICVSS	✓		CC483422	JJW	50								3/13/2019	160-401186845-1

Analyst Name: Jeff Schmitt

Signature: 

IAL SDG #E19-02297

Supervisor Name: Lauren Jenkins

Signature: 

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Integrated Analytical Laboratories
GC/MS Run Log

Instrument ID: Agilent 7890A / 5975C
Column: Restek RTX-1 SN 992567

Target Directory: D:\Agilent GCMS\

Date of Analysis: 4/11/2019
Date of Initial Calibration: 3/13/2019
SDG : E19-02297

File	Laboratory Sample ID	QC Check	Dilution Factor	Can	Analyst	Injection Volume (cc)	Comments	Make-up Air		Acquisition		Room		TO-15 Standard	
								Added to canister (cc)	Added for dilution (cc)	Date	Time	Temp	BP "Hg	Working ID	Vendor ID (Lot)
aa1761bfb	BFB	✓		ALM029426	JLS	50				3/26/2019	8:08	72	30.44		403-402623
aa1762dcvs	10 ppbv DCVS	✓		AAL071156	JLS	50								3/13/2019	160-401140945-1
aa1763lcs	10 ppbv LCS	✓		CC483422	JLS	50								3/13/2019	160-400895415-1
aa1764blk	Method Blank	✓		1127	JLS	500									
aa1765rlcs	0.2 ppbv RLLCS	✓		AAL071156	JLS	1								3/13/2019	160-401140945-1
aa1766	E19-01821-05 x 1000	✓	1000	1571 3125	JLS	50									
aa1767	E19-01821-25 x 1000	✓	1000	21-05 x 1000, d	JLS	50									
aa1768	E19-01821-06 x 200	✓	200	1602	JLS	2.5	not used								
aa1769	E19-01974-01	✓		2892	JLS	500									
aa1770	E19-01974-01 x 4	✓	4	2892	JLS	125									
aa1771	E19-01974-02	✓		3830	JLS	500									
aa1772	E19-01974-02 x 4	✓	4	3830	JLS	125									
aa1773	E19-01888-01 x 200	✓	200	1548	JLS	2.5	not used								
aa1774	E19-01888-01 x 50	✓	50	1548	JLS	10									
aa1775	E19-01888-02 x 10	✓	10	1547	JLS	50									
aa1776	E19-01888-03 x 10	✓	10	1589	JLS	50	not used								
aa1777	E19-01888-04 x 100	✓	100	1564	JLS	5	not used								
aa1778	E19-01888-05 x 100	✓	100	1541	JLS	5	not used								
aa1779	E19-01888-06 x 100	✓	100	1365	JLS	5									
aa1780	E19-01888-07 x 100	✓	100	1765	JLS	5	not used								
aa1781	E19-01888-08 x 100	✓	100	1764	JLS	5	not used								
aa1782	E19-01910-01 x 100	✓	100	1362	JLS	5									
aa1783	E19-01910-02 x 100	✓	100	1600	JLS	5									
aa1784	blk	✓			JLS	500									
aa1785	5084	✓			JLS	500									
aa1786ccvcs	10 ppbv CCCVS	✓		CC483586	JLS	50				3/26/2019	20:02			3/13/2019	160-401140945-1

Analyst Name: Jeff Schmitt

Signature: 

IAL SDG #E19-02297

Supervisor Name: Lauren Jenkins

Signature: 

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Integrated Analytical Laboratories
GC/MS Run Log

Instrument ID: Agilent 7890A / 5975C
Column: Restek RTX-1 SN 992567

Target Directory: D:\Agilent GCMS\

Date of Analysis: 4/11/2019
Date of Initial Calibration: 3/13/2019
SDG : E19-02297

File	Laboratory Sample ID	QC Check	Dilution Factor	Can	Analyst	Injection Volume (cc)	Comments	Make-up Air		Acquisition		Room		TO-15 Standard	
								Added to canister (cc)	Added for dilution (cc)	Date	Time	Temp	BP "Hg	Working ID	Vendor ID (Lot)
aa2051bfb	BFB	✓		ALM029426	JLS	50				4/11/2019	9:20	74	30.22		403-402623
aa2052dcvs	10 ppbv DCVS	✓		AAL071156	JLS	50								3/13/2019	160-401140945-1
aa2053lcs	10 ppbv LCS	✓		CC483422	JLS	50								3/13/2019	160-400895415-1
aa2054blk	Method Blank	✓		1127	JLS	500									
aa2055rlcs	0.2 ppbv RLLCS	✓		AAL071156	JLS	1								3/13/2019	160-401140945-1
aa2056dcvssim	0.1 ppbv SIM Std	✓		4852	JLS	100								2/6/2019sim	
aa2057blksim	Method Blank	✓		1127	JLS	500									
aa2058	3042	✓			JLS	500									
aa2059sim	3042	✓			JLS	500									
aa2060	3012	✓			JLS	500									
aa2061	1559	✓			JLS	50									
aa2062	3026	✓			JLS	500									
aa2063	E18-01821-01	✓		2162	JLS	500									
aa2064	E19-01821-21	✓	dup of E19-01821-01, c		JLS	500									
aa2065	E19-01821-02	✓		3032A	JLS	500									
aa2066	E19-02274-01 x 10	✓	10	2160	JLS	50									
aa2067	E19-02274-01	✓		2160	JLS	500									
aa2068	E19-02297-01 x 2	✓	2	5095	JLS	250									
aa2069	E19-02297-01	✓		5095	JLS	500									
aa2070	E19-02344-01	✓		3036	JLS	500									
aa2071	E19-02344-02	✓		2031	JLS	500									
aa2072	E19-02344-03	✓		5080	JLS	500									
aa2073	E19-02344-04 x 2	✓	2	2156	JLS	250	not used								
aa2074	E19-02344-04	✓		2156	JLS	500	not used								
aa2075	E19-02344-05	✓		3808	JLS	500	not used								
aa2076	E19-02344-06	✓		2891	JLS	500	not used								
aa2077	blk	✓			JLS	500	500								
aa2078cccvcs	10 ppbv CCCVS	✓		CC483586	JJW	50				4/12/2019	8:27			3/13/2019	160-401140945-1

Analyst Name: Jeff Schmitt

Signature: *Jeff Schmitt*

IAL SDG #E19-02297

Supervisor Name: Lauren Jenkins

Signature: *Lauren Jenkins*

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[illegible]

Example Calculation (EPA TO-15)

$$\frac{\text{Area of Sample}}{\text{Area of Internal Standard}} \times \frac{\text{Concentration of Internal Standard (10 ppbv)}}{\text{Response Factor}} = \text{Concentration of Sample (ppbv)}$$

Conversion from ppbv to $\mu\text{g}/\text{m}^3$

$$\frac{\text{Concentration of Compound (ppbv)}}{24.45} \times \text{Molecular Weight of Compound} = \text{Concentration of Compound } (\mu\text{g}/\text{m}^3)$$

Clean Canister Certification Report

Lab Sample Name: Clean Canister, Batch Master 5084
Field Sample Name: Canister 5084
Sample Volume: 500ml

Data File: AA1785
Date Analyzed: 3/26/2019
Matrix: Air

Canisters associated with this run: 5084, 2155, 2900, 3007, 3010, 3280, 3293, 5095 (used for E19-02297-01)

Runs with this Clean Canister Certification:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 08:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 08:39
10 PPBV LCS [AA1763LCS]	03/26/2019 09:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
CLEAN CAN CERTIFICATION, BATCH MASTER 5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

This canister has been certified clean, all compounds are below 0.2 ppbv.

Compound	CAS #	RL (ppbv)	Calculated Amount (ppbv)
Acetone	67-64-1	0.20	ND
Benzene	71-43-2	0.20	ND
Bromodichloromethane	75-27-4	0.20	ND
Bromoform	75-25-2	0.20	ND
Bromomethane	74-83-9	0.20	ND
1,3-Butadiene	106-99-0	0.20	ND
Chlorobenzene	108-90-7	0.20	ND
Chloroethane	75-00-3	0.20	ND
Chloroform	67-66-3	0.20	ND
Chloromethane	74-87-3	0.20	ND
Carbon disulfide	75-15-0	0.20	ND
Carbon tetrachloride	56-23-5	0.20	ND
Cyclohexane	110-82-7	0.20	ND
Dibromochloromethane	124-48-1	0.20	ND
1,2-Dibromoethane	106-93-4	0.20	ND
1,2-Dichlorobenzene	95-50-1	0.20	ND
1,3-Dichlorobenzene	541-73-1	0.20	ND
1,4-Dichlorobenzene	106-46-7	0.20	ND
Dichlorodifluoromethane	75-71-8	0.20	ND
1,1-Dichloroethane	75-34-3	0.20	ND
1,2-Dichloroethane	107-06-2	0.20	ND
1,1-Dichloroethene	75-35-4	0.20	ND
1,2-Dichloroethene (cis)	156-59-2	0.20	ND
1,2-Dichloroethene (trans)	156-60-5	0.20	ND
1,2-Dichloropropane	78-87-5	0.20	ND
1,3-Dichloropropene (cis)	10061-01-5	0.20	ND
1,3-Dichloropropene (trans)	10061-02-6	0.20	ND
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	ND
1,4-Dioxane	123-91-1	0.20	ND
Ethylbenzene	100-41-4	0.20	ND
n-Heptane	142-82-5	0.20	ND
1,3-Hexachlorobutadiene	87-68-3	0.20	ND
n-Hexane	110-54-3	0.20	ND
Methylene chloride	75-09-2	0.20	ND
Methyl ethyl ketone	78-93-3	0.20	ND

Clean Canister Certification Report

Lab Sample Name: Clean Canister, Batch Master 5084
Field Sample Name: Canister 5084
Sample Volume: 500ml

Data File: AA1785
Date Analyzed: 3/26/2019
Matrix: Air

Canisters associated with this run: 5084, 2155, 2900, 3007, 3010, 3280, 3293, 5095 (used for E19-02297-01)

Runs with this Clean Canister Certification:

Standard/Sample Run	Date/Time of Sample/Standard Injection
BFB [AA1761BFB]	03/26/2019 08:08
10 PPBV DCVS [AA1762DCVS]	03/26/2019 08:39
10 PPBV LCS [AA1763LCS]	03/26/2019 09:08
METHOD BLANK [AA1764BLK]	03/26/2019 11:04
02 PPBV RLLCS [AA1765RLLCS]	03/26/2019 11:27
CLEAN CAN CERTIFICATION, BATCH MASTER 5084 [AA1785]	03/26/2019 19:40
10 PPBV CCCVS [AA1786CCCVS]	03/26/2019 20:02

This canister has been certified clean, all compounds are below 0.2 ppbv.

Compound	CAS #	RL (ppbv)	Calculated Amount (ppbv)
Methyl isobutyl ketone	108-10-1	0.20	ND
Methyl tert-butyl ether	1634-04-4	0.20	ND
Styrene	100-42-5	0.20	ND
Tert-butyl alcohol	75-65-0	0.20	ND
1,1,2,2-Tetrachloroethane	79-34-5	0.20	ND
Tetrachloroethene	127-18-4	0.20	ND
Toluene	108-88-3	0.20	ND
1,2,4-Trichlorobenzene	120-82-1	0.20	ND
1,1,1-Trichloroethane	71-55-6	0.20	ND
1,1,2-Trichloroethane	79-00-5	0.20	ND
Trichloroethene	79-01-6	0.20	ND
Trichlorofluoromethane	75-69-4	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.20	ND
1,2,4-Trimethylbenzene	95-63-6	0.20	ND
1,3,5-Trimethylbenzene	108-67-8	0.20	ND
2,2,4-Trimethylpentane	540-84-1	0.20	ND
Vinyl bromide	593-60-2	0.20	ND
Vinyl chloride	75-01-4	0.20	ND
Xylenes (m&p)	179601-23-1	0.40	ND
Xylenes (o)	95-47-6	0.20	ND

Data Path : C:\DATA\03-26-19\
 Data File : aa1785.D
 Acq On : 26 Mar 2019 7:40 pm
 Operator : jls
 Sample : 5084
 Misc : 2155, 2900, 3007, 3010, 3280, 3293, 5095
 ALS Vial : 25 Sample Multiplier: 1

Quant Time: Mar 27 09:54:38 2019
 Quant Method : C:\msdchem\1\METHODS\0313.M
 Quant Title : TO-15 on the Agilent 7890A / 5975C
 QLast Update : Wed Mar 13 14:08:18 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS)	4.338	130	378861	10.00	ppbV	0.000
39) 1,4-Difluorobenzene (IS)	5.403	114	1399943	10.00	ppbV	# 0.000
55) d-5 Chlorobenzene (IS)	8.261	117	1260198	10.00	ppbV	0.000

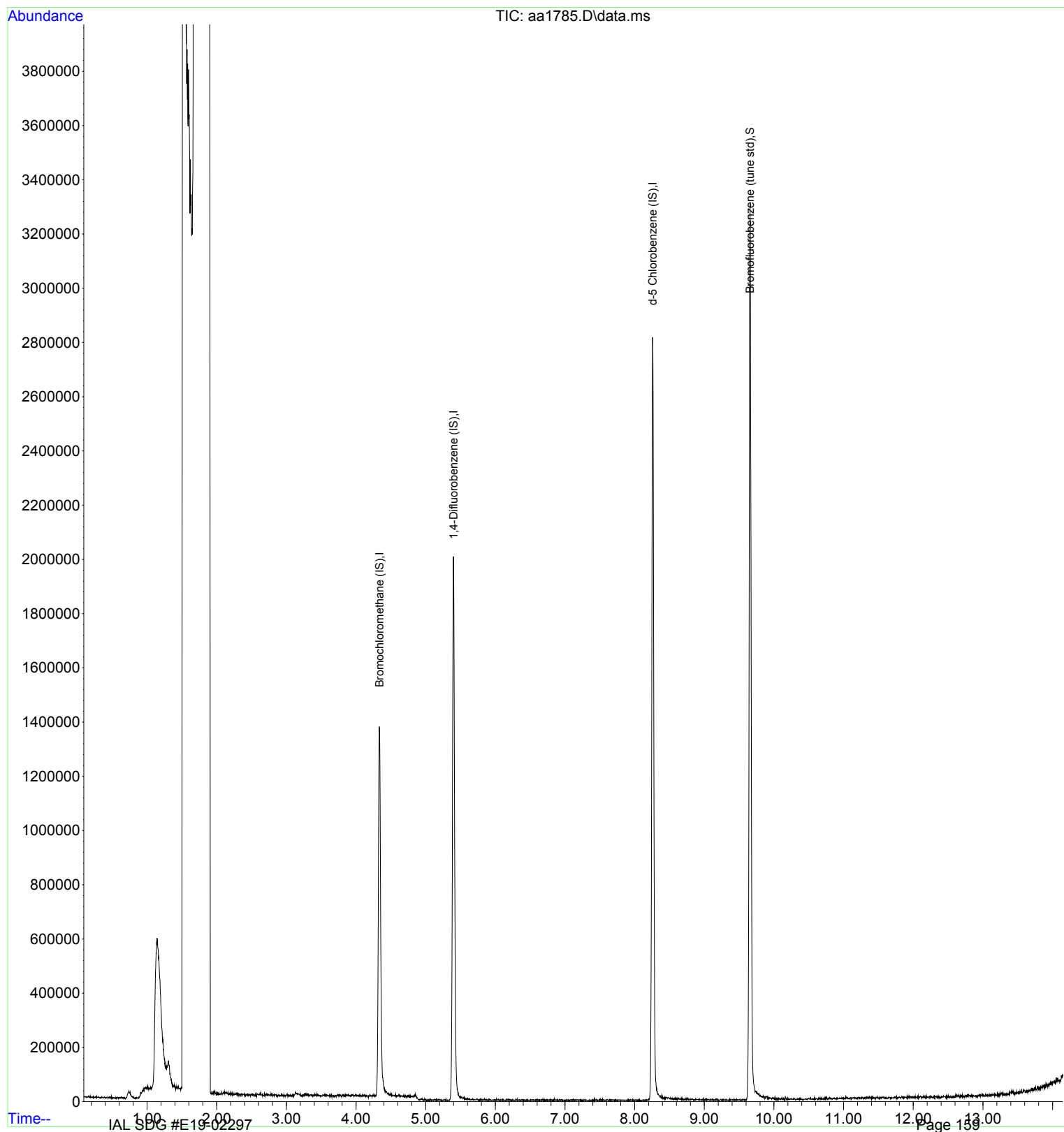
System Monitoring Compounds						
64) Bromofluorobenzene (tu...	9.657	95	1134983	10.32	ppbV	0.000

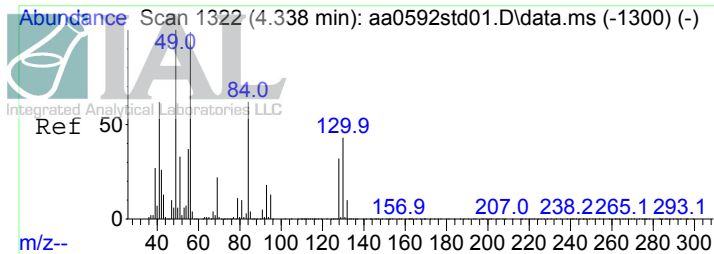
Target Compounds	Qvalue

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

Data Path : C:\DATA\03-26-19\
Data File : aa1785.D
Acq On : 26 Mar 2019 7:40 pm
Operator : jls
Sample : 5084
Misc : 2155, 2900, 3007, 3010, 3280, 3293, 5095
ALS Vial : 25 Sample Multiplier: 1

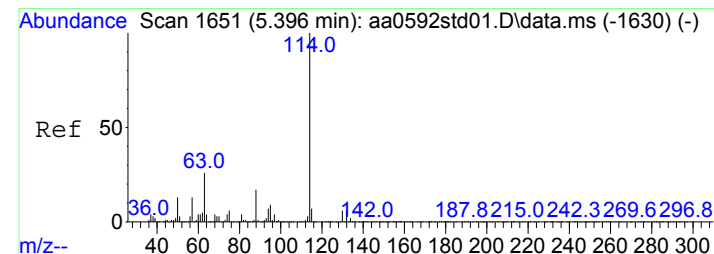
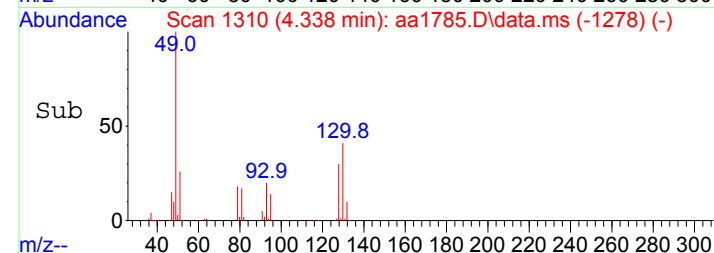
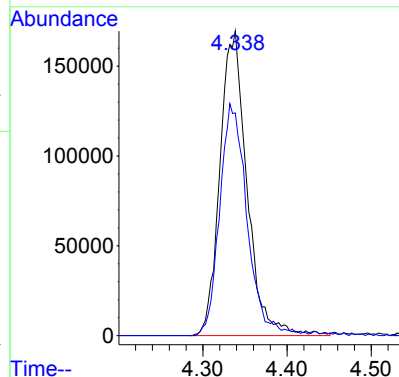
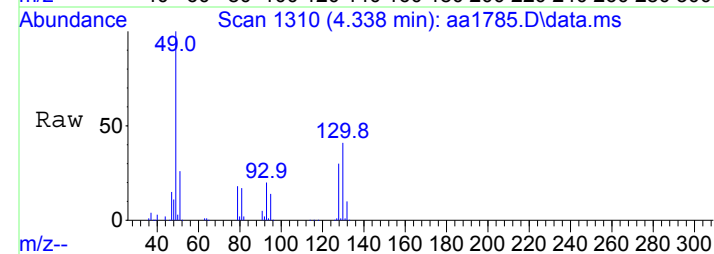
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Quant Title : TO-15 on the Agilent 7890A / 5975C
QLast Update : Wed Mar 13 14:08:18 2019
Response via : Initial Calibration





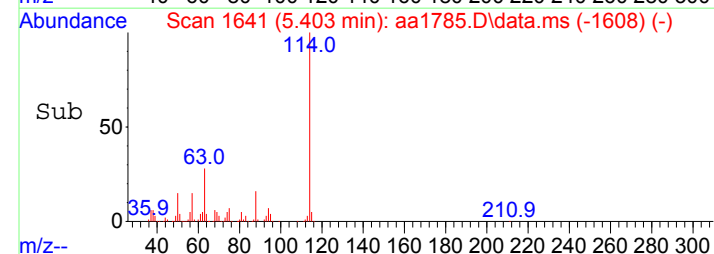
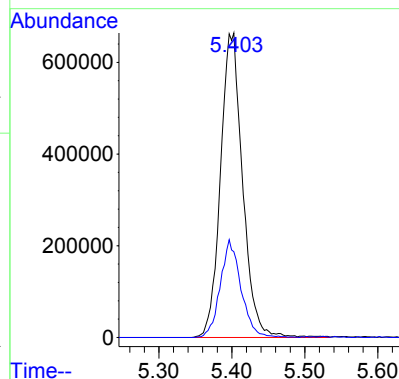
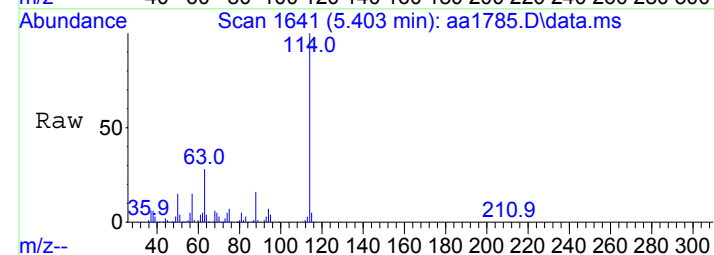
#1
Bromochloromethane (IS)
Concen: 10.00 ppbV
RT: 4.338 min Scan# 1310
Delta R.T. 0.003 min
Lab File: aa1785.D
Acq: 26 Mar 2019 7:40 pm

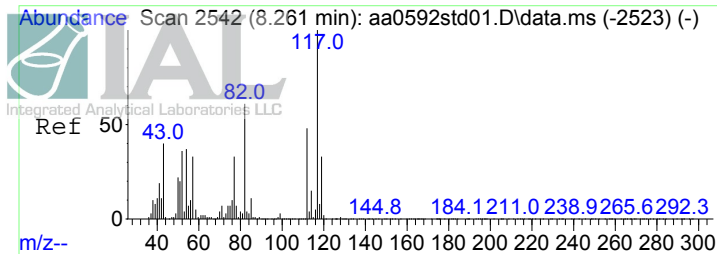
Tgt Ion:130 Resp: 378861
Ion Ratio Lower Upper
130 100
128 77.0 62.6 94.0



#39
1,4-Difluorobenzene (IS)
Concen: 10.00 ppbV
RT: 5.403 min Scan# 1641
Delta R.T. 0.007 min
Lab File: aa1785.D
Acq: 26 Mar 2019 7:40 pm

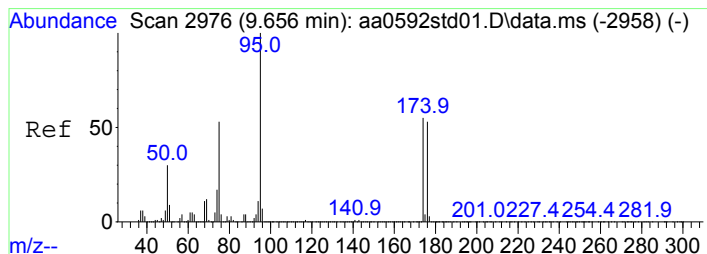
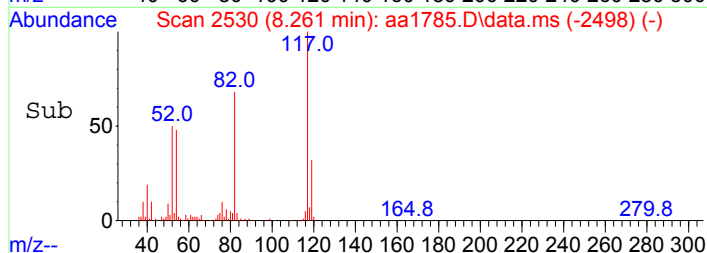
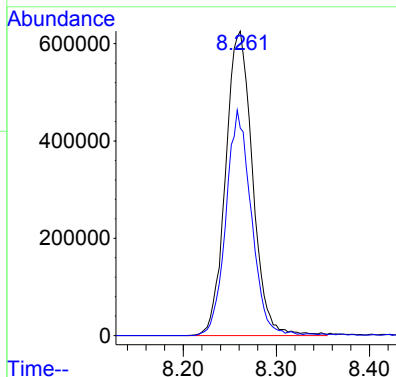
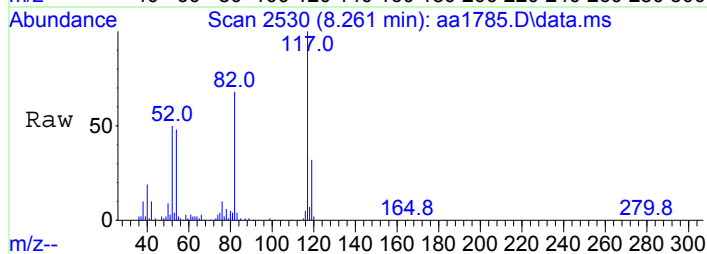
Tgt Ion:114 Resp: 1399943
Ion Ratio Lower Upper
114 100
63 30.1 20.0 30.0#





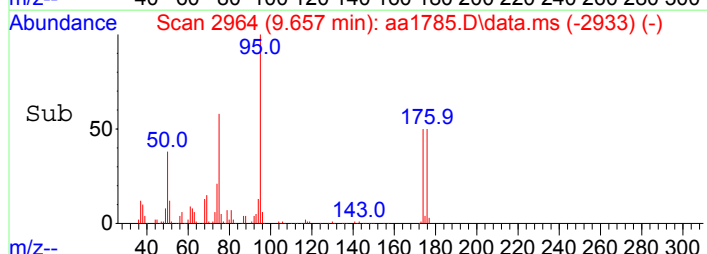
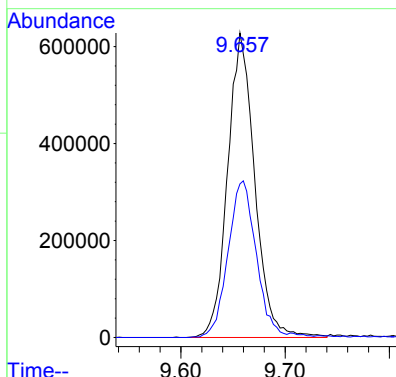
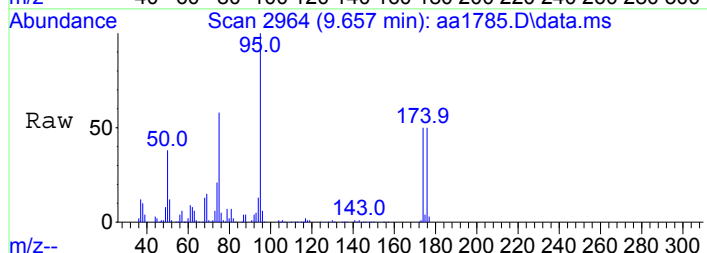
#55
d-5 Chlorobenzene (IS)
Concen: 10.00 ppbV
RT: 8.261 min Scan# 2530
Delta R.T. 0.003 min
Lab File: aa1785.D
Acq: 26 Mar 2019 7:40 pm

Tgt Ion: 117 Resp: 1260198
Ion Ratio Lower Upper
117 100
82 69.6 48.8 73.2



#64
Bromofluorobenzene (tune std)
Concen: 10.32 ppbV
RT: 9.657 min Scan# 2964
Delta R.T. -0.000 min
Lab File: aa1785.D
Acq: 26 Mar 2019 7:40 pm

Tgt Ion: 95 Resp: 1134983
Ion Ratio Lower Upper
95 100
174 54.4 61.5 92.3#



LAST PAGE OF DOCUMENT

APPENDIX B

NYSDEC CONVERSRSATION DECISION MATRICKS

APPENDIX C

SUB-SURFACE DEPRESSURIZATION SYSTEM DESIGN & WORK PLAN

Soil Vapor/Indoor Air Matrix A

May 2017

Analytes Assigned:

Trichloroethene (TCE), *cis*-1,2-Dichloroethene (c12-DCE), 1,1-Dichloroethene (11-DCE), Carbon Tetrachloride

SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m ³)	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m ³)		
	< 0.2	0.2 to < 1	1 and above
< 6	1. No further action	2. No Further Action	3. IDENTIFY SOURCE(S) and RESAMPLE or MITIGATE
6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

No further action: No additional actions are recommended to address human exposures.

Identify Source(s) and Resample or Mitigate: We recommend that reasonable and practical actions be taken to identify the source(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges. For example, if an indoor or outdoor air source is identified, we recommend the appropriate party implement actions to reduce the levels. In the event that indoor or outdoor sources are not readily identified or confirmed, resampling (which might include additional sub-slab vapor and indoor air sampling locations) is recommended to demonstrate that SVI mitigation actions are not needed. Based on the information available, mitigation might also be recommended when soil vapor intrusion cannot be ruled out.

Monitor: We recommend monitoring (sampling on a recurring basis), including but not necessarily limited to sub-slab vapor, basement air and outdoor air sampling, to determine whether concentrations in the indoor air or sub-slab vapor have changed and/or to evaluate temporal influences. Monitoring might also be recommended to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined based on site-, building- and analyte-specific information, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: We recommend mitigation to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

These general recommendations are made with consideration being given to the additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX A

This matrix summarizes actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

- [1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate analyte-specific, building-specific conditions (e.g., dirt floor in basement, crawl spaces, thick slabs, current occupancy, etc.), and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, collection of additional samples may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Mitigation might be recommended when the results of multiple contaminants indicate monitoring is recommended. Proactive actions may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action might be undertaken for reasons other than public health (e.g., seeking community acceptance, reducing costs, etc.). However, actions implemented *in lieu* of sampling will typically be expected to be captured in the final engineering report and site management plan, and might not rule out the need for post-implementation sampling (e.g., to document effectiveness or to support terminating the action).
- [2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of soil vapor contamination, nor does it preclude remediating contaminated soil vapor or the source of soil vapor contamination.
- [3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 0.20 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples and dirt floor soil vapor samples, a minimum reporting limit of 1 microgram per cubic meter is recommended.
- [4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions might be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.
- [5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.
- [6] The party responsible for implementing the recommended actions will differ depending upon several factors, including but not limited to the following: the identified source of the volatile chemicals, the environmental remediation program, and analyte-specific, site-specific and building-specific factors.

Soil Vapor/Indoor Air Matrix B

May 2017

Analytes Assigned:

Tetrachloroethene (PCE), 1,1,1-Trichloroethane (111-TCA), Methylene Chloride

SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m ³)	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m ³)		
	< 3	3 to < 10	10 and above
< 100	1. No further action	2. No Further Action	3. IDENTIFY SOURCE(S) and RESAMPLE or MITIGATE
100 to < 1,000	4. No further action	5. MONITOR	6. MITIGATE
1,000 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

No further action: No additional actions are recommended to address human exposures.

Identify Source(s) and Resample or Mitigate: We recommend that reasonable and practical actions be taken to identify the source(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges. For example, if an indoor or outdoor air source is identified, we recommend the appropriate party implement actions to reduce the levels. In the event that indoor or outdoor sources are not readily identified or confirmed, resampling (which might include additional sub-slab vapor and indoor air sampling locations) is recommended to demonstrate that SVI mitigation actions are not needed. Based on the information available, mitigation might also be recommended when soil vapor intrusion cannot be ruled out.

Monitor: We recommend monitoring (sampling on a recurring basis), including but not necessarily limited to sub-slab vapor, basement air and outdoor air sampling, to determine whether concentrations in the indoor air or sub-slab vapor have changed and/or to evaluate temporal influences. Monitoring might also be recommended to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined based on site-, building- and analyte-specific information, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: We recommend mitigation to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

These general recommendations are made with consideration being given to the additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX B

This matrix summarizes actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

- [1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate analyte-specific, building-specific conditions (e.g., dirt floor in basement, crawl spaces, thick slabs, current occupancy, etc.), and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, collection of additional samples may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Mitigation might be recommended when the results of multiple contaminants indicate monitoring is recommended. Proactive actions may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action might be undertaken for reasons other than public health (e.g., seeking community acceptance, reducing costs, etc.). However, actions implemented *in lieu* of sampling will typically be expected to be captured in the final engineering report and site management plan, and might not rule out the need for post-implementation sampling (e.g., to document effectiveness or to support terminating the action).
- [2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of soil vapor contamination, nor does it preclude remediating contaminated soil vapor or the source of soil vapor contamination.
- [3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 1 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples and dirt floor soil vapor samples, a minimum reporting limit of 1 microgram per cubic meter is recommended.
- [4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions might be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.
- [5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.
- [6] The party responsible for implementing the recommended actions will differ depending upon several factors, including but not limited to the following: the identified source of the volatile chemicals, the environmental remediation program, and analyte-specific, site-specific and building-specific factors.

Soil Vapor/Indoor Air Matrix C

May 2017

Analytes Assigned:

Vinyl Chloride

SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m ³)	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m ³)	
	< 0.2	0.2 and above
< 6	1. No further action	2. IDENTIFY SOURCE(S) and RESAMPLE or MITIGATE
6 to < 60	3. MONITOR	4. MITIGATE
60 and above	5. MITIGATE	6. MITIGATE

No further action: No additional actions are recommended to address human exposures.

Identify Source(s) and Resample or Mitigate: We recommend that reasonable and practical actions be taken to identify the source(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges. For example, if an indoor or outdoor air source is identified, we recommend the appropriate party implement actions to reduce the levels. In the event that indoor or outdoor sources are not readily identified or confirmed, resampling (which might include additional sub-slab vapor and indoor air sampling locations) is recommended to demonstrate that SVI mitigation actions are not needed. Based on the information available, mitigation might also be recommended when soil vapor intrusion cannot be ruled out.

Monitor: We recommend monitoring (sampling on a recurring basis), including but not necessarily limited to sub-slab vapor, basement air and outdoor air sampling, to determine whether concentrations in the indoor air or sub-slab vapor have changed and/or to evaluate temporal influences. Monitoring might also be recommended to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined based on site-, building- and analyte-specific information, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: We recommend mitigation to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

These general recommendations are made with consideration being given to the additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX C

This matrix summarizes actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

- [1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate analyte-specific, building-specific conditions (e.g., dirt floor in basement, crawl spaces, thick slabs, current occupancy, etc.), and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, collection of additional samples may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Mitigation might be recommended when the results of multiple contaminants indicate monitoring is recommended. Proactive actions may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action might be undertaken for reasons other than public health (e.g., seeking community acceptance, reducing costs, etc.). However, actions implemented *in lieu* of sampling will typically be expected to be captured in the final engineering report and site management plan, and might not rule out the need for post-implementation sampling (e.g., to document effectiveness or to support terminating the action).
- [2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of soil vapor contamination, nor does it preclude remediating contaminated soil vapor or the source of soil vapor contamination.
- [3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 0.20 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples and dirt floor soil vapor samples, a minimum reporting limit of 1 microgram per cubic meter is recommended.
- [4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions might be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.
- [5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.
- [6] The party responsible for implementing the recommended actions will differ depending upon several factors, including but not limited to the following: the identified source of the volatile chemicals, the environmental remediation program, and analyte-specific, site-specific and building-specific factors.

Sub-Slab Depressurization System Design and Work Plan

*Globe Mill Lofts
811 Court Street
Utica, NY 13502*

For

**EFI Global, Inc.
11 Commerce Way, Suite A
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Prepared By:



PO Box 671
Honeoye, NY 14471



1270 Niagara Street
Buffalo, NY 14226

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1.0 INTRODUCTION

A complete visual inspection and sub slab vacuum diagnostics were performed at the buildings located at 811 Court Street Utica, NY 13502. Based upon the data obtained various Sub-Slab Depressurization Systems (SSDS) have been designed to prevent potential air contaminants from entering the buildings via soil vapor intrusion (SVI).

2.0 OBJECTIVE

The objective of the installation of the SSDS is to obtain a negative sub slab vacuum pressure of - 0.004" of water column under the concrete slab or floor of the lowest level. This will extract suspect vapors and discharge the vapors to the exterior of the buildings, preventing the vapors from migrating into the buildings. A SSDS can be utilized for extraction of radon and other volatile organic vapors as well. The systems are similar in construction and have a similar objective of obtaining a negative vacuum pressure under the concrete slab. The installation of the SSDS will conform to the most recent standards of the Radon Mitigation Standards ASTM E2121, the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006, and the ASTM D3034 Standard Specification for Type PSM Poly (Vinyl Chloride) PVC Pipe and Fittings.

3.0 SUB-SLAB DEPRESSURIZATION DESIGN

3.1 SSDS DIAGNOSTICS

Building 1: Building 1 is constructed over a crawlspace. The northern half of the crawlspace contains a concrete or asphalt floor. The southern half of the crawlspace is water-saturated dirt floor. The northern half of the eastern end of Building 1 is constructed over a separate small crawlspace with a concrete/asphalt floor, and the southern half is assumed to be constructed on a slab on grade.

A suction point was installed through the floor in the crawlspace by coring through the concrete/ asphalt floor with a 7" concrete core drill. Various "test points" (0.5") were installed at various locations away from the suction point. Various fans were utilized to measure air flow (CFM) and Static Pressure. Using a digital micromanometer at each test point, readings were documented. The information collected was utilized to design the proposed SSDS including suction point location, quantity of suction points, pipe size, fan size, etc.

Due to the large number of pillars and the moisture noted in the southern half of the crawlspace in Building 1, installation of geofabric, washed stone, perforated drain tile, and flowable concrete fill is proposed for the SSDS system in the southern half of the crawlspace. Refer to the attached diagrams for the design of the SSDS System's for the Building 1. It is noted that the design is subject to

changes during actual installation based on building layout and objective to maintain adequate negative vacuum.

Building 2: Building 2 is constructed over a crawlspace with a dirt floor. Due to the large number of pillars in the crawlspace in Building 2, installation of geofabric, washed stone, perforated drain tile, and flowable concrete fill is proposed for the SSDS system in the crawlspace in Building 2. Refer to the attached diagrams for the design of the SSDS System's for the Building 2. It is noted that the design is subject to changes during actual installation based on building layout and objective to maintain adequate negative vacuum.

Building 4: Building 4 is constructed over a basement. The floor in the basement consists of approximated 4'x4' concrete pavers. Suction points were installed through the floor by coring through the concrete pavers with a 7" concrete core drill. Various "test points" (0.5") were installed at locations away from the suction point. Fans were utilized measuring air flow (CFM) and Static Pressure using a digital micromanometer at each test point and readings were documented. The information collected was utilized to design the proposed SSDS including suction point location, quantity of suction points, pipe size, fan size, etc. Refer to the attached diagrams for the design of the SSDS System's for the Building 4. It is noted that the design is subject to changes during actual installation based on building layout and objective to maintain adequate negative vacuum.

Building 6: Building 6 is assumed to be two buildings joined together with slab on grade concrete floors. Suction Points were installed by coring through the concrete floor with a 7" concrete core drill. Various "test points" (0.5") were installed at locations away from the suction point. Fans were utilized measuring air flow (CFM) and Static Pressure using a digital micromanometer at each test point and readings were documented. The information collected was utilized to design the proposed SSDS including suction point location, quantity of suction points, pipe size, fan size, etc. Refer to the attached diagrams for the design of the SSDS for the Building 6. It is noted that the design is subject to changes during actual installation based on building layout and objective to maintain adequate negative vacuum.

Dye Building: The Dye Building contains a slab on grade concrete floor. Suction Points were installed by coring through the concrete floor with a 7" concrete core drill. Various "test points" (0.5") were installed at various locations away from the suction point. Various fans were utilized measuring air flow (CFM) and Static Pressure. Using a digital micromanometer at each test point, readings were documented. The information collected was utilized to design the proposed SSDS including suction point location, quantity of suction points, pipe size, fan size, etc. Refer to the attached diagrams for the design of the SSDS for the Dye Building. It is noted that the design is subject to changes during actual installation based on building layout and objective to maintain adequate negative vacuum.

3.2 SUCTION POINTS

Suction points will be installed by coring through the concrete floor and removing at least 1 cubic ft of soil from beneath the suction point. Washed #2 round stone will replace the excavated soil.

3.3 CRAWLSPACE

Due to the large number of pillars in the crawlspaces of Building 2 and half of Building 1, installation of geofabric over the soil to hold the washed stone, placement of washed stone with a perforated drain tile to be used as vapor extraction. Placement of flowable concrete fill over the washed stone is proposed for the SSDS in the southern half of the crawlspace in Building 1 and the crawlspace of Building 2.

3.4 PIPING

Each suction point will consist of a vertical riser of 4" or 6" PVC Pipe that will connect various suction points together forming a manifold system using 4" or 6" PVC pipe. Each manifold system will exit either through the side wall and vent above the roof line or will be installed internally and exit the building through the roof. The inline fan will be installed near the top of the riser pipe below the roof or above the roof for the internal risers. All piping will be installed and anchored in accordance to standards. Refer to the layout of the proposed systems locations.

3.5 INLINE FANS

Inline fans will be installed on the exterior of the buildings below the roof top and discharge at least 12" above the roof or 30' above ground level on buildings with non-operational windows. Discharge points will be at least 2' above operations windows, openings, etc., that are within ten feet of the discharge pipe. Fans will be wired with switches at fan locations and wired into the nearest electric panels on a dedicated circuit. Alarms will be installed on the vacuum side of the fans and be wired into a separate dedicated circuit.

3.6 SUB SLAB PRESSURE TESTING AFTER SYSTEM INSTALLATIONS

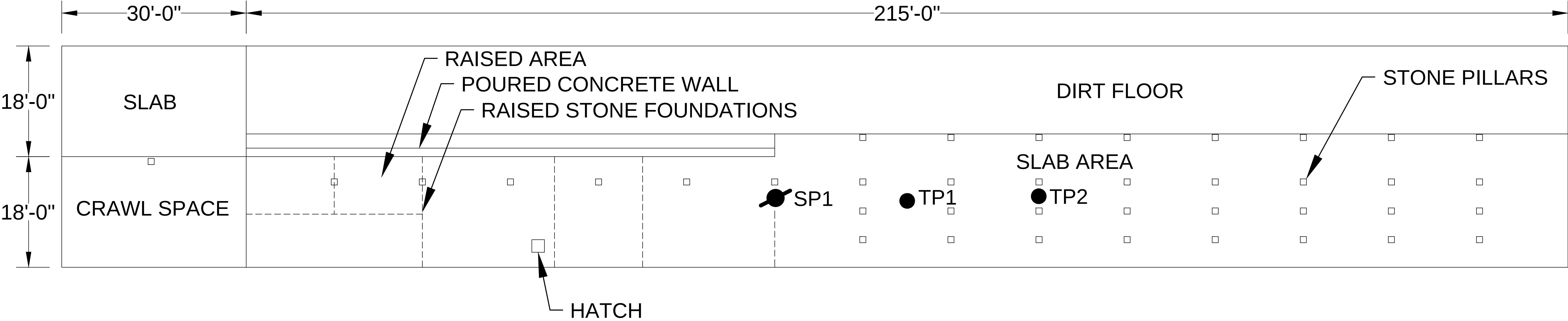
After all systems are installed a pilot test study will be completed to verify negative vacuum under all concrete slabs of at least -0.004" of wc. In addition, indoor air testing of the buildings with operational SSDS will be performed per NYSDOH guidance, and final State approval will be contingent on satisfactory post-system installation sample results.

3.7 HEALTH AND SAFETY WORK PLAN

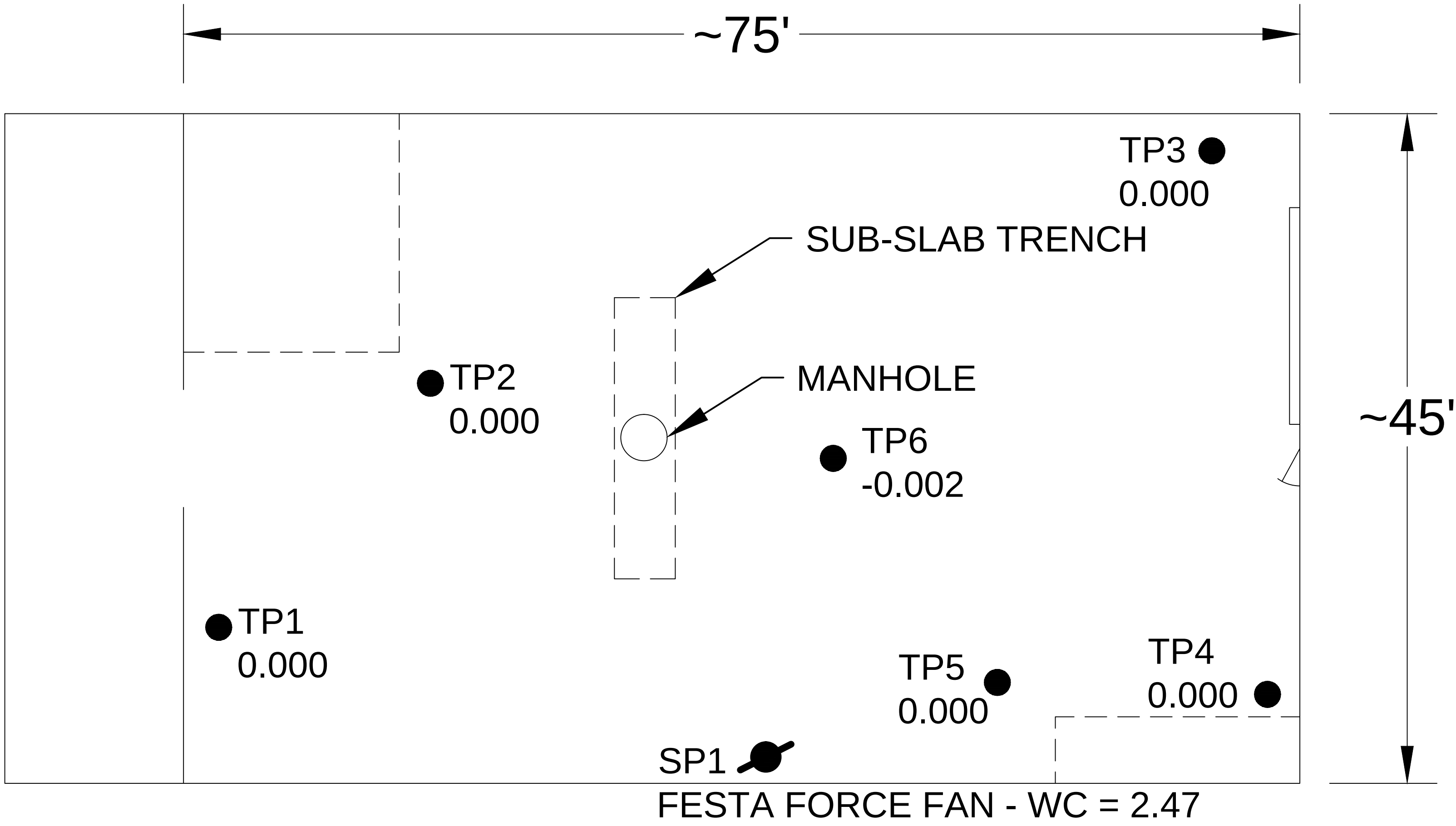
It is required that a private Environmental Consultant provide an onsite representative to perform background readings for VOCs. Dust control and work plan safety meetings will be held by the contractor prior to the start of work each day. An onsite supervisor will be designated as the safety officer. All workers will be directed to perform work in a safe manner and notify site safety officer of any potential hazards.

RESULTS:
SP1: FESTA FORCE = WC - 2.48
TP1: 0.000
TP2: -0.006

BUILDING 1 DIAGNOSTICS



DIE BUILDING DIAGNOSTICS

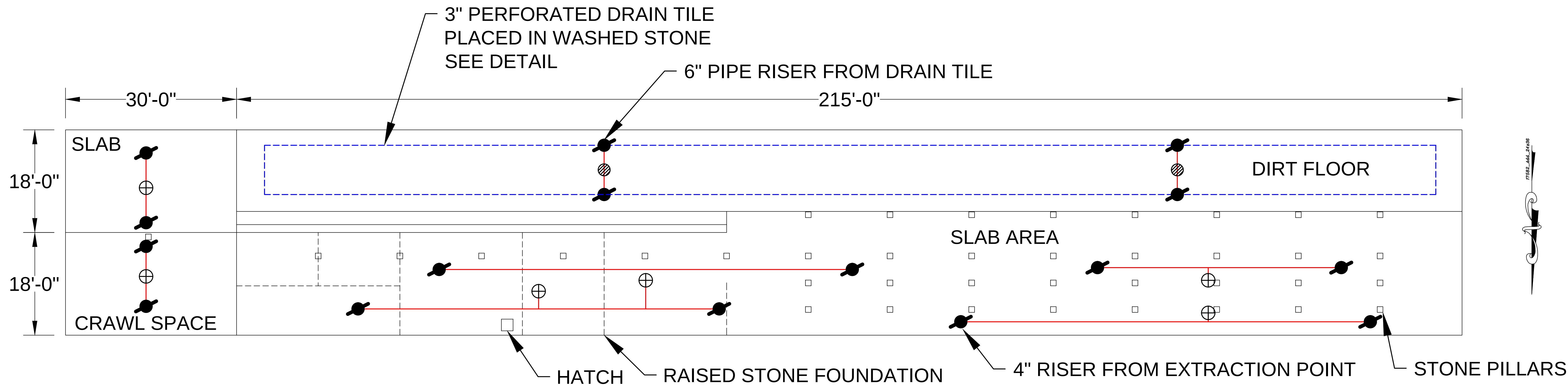


LEGEND

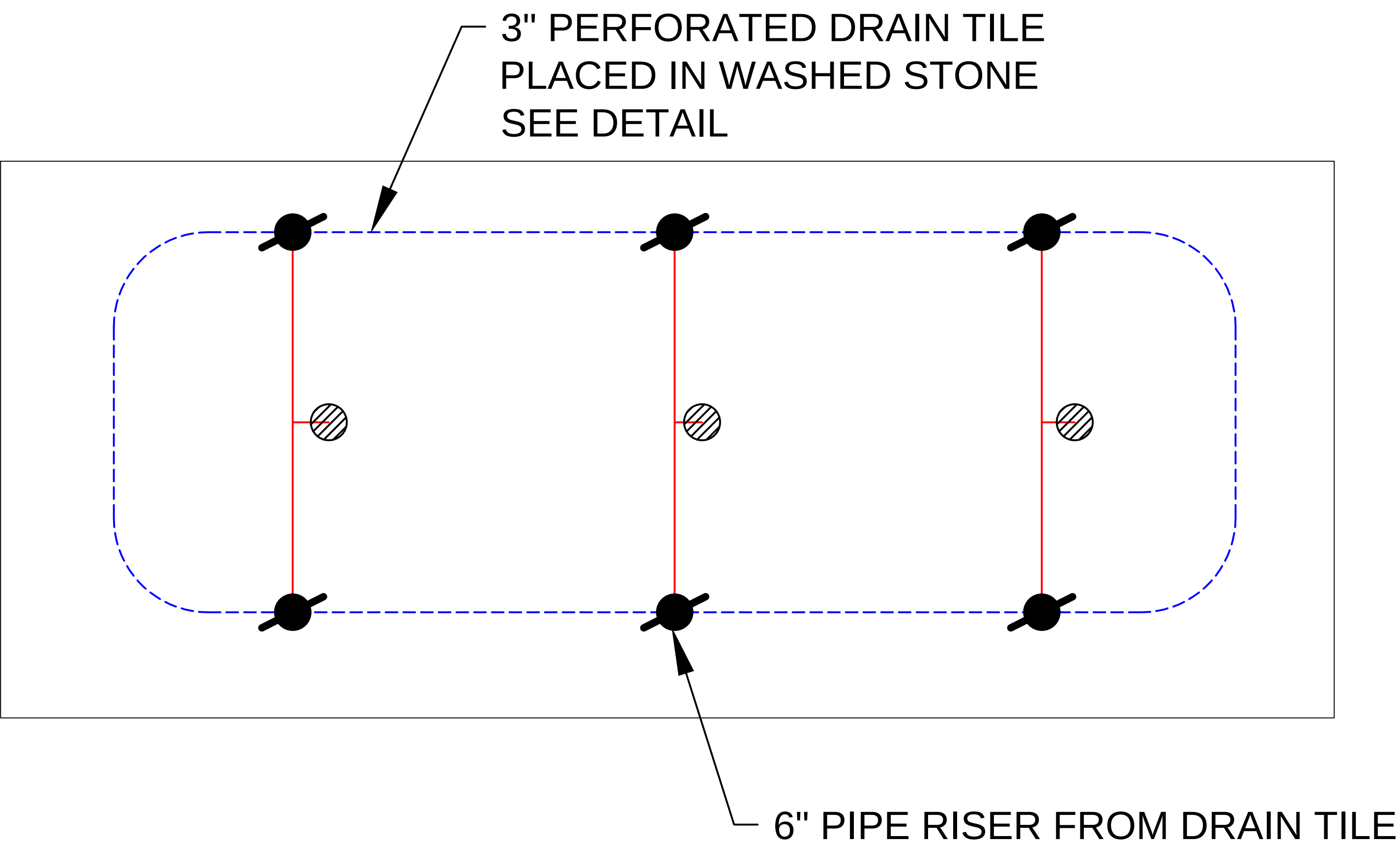
- FESTA FANS SP#
- TEST POINT

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06-13-2019	SCALE: N/A	SHEET 1 OF 7

BUILDING 1 PROPOSED SSDS



BUILDING 2 PROPOSED SSDS



LEGEND

- 6" PVC PIPE RISER TO ROOF MOUNTED FESTA FURY FAN
- EXTRACTION POINT
- 3" PERFORATED DRAIN TILE
- OVER HEAD 4" SCHEDULE 40 PVC PIPE
- 4" PVC RISER TO ROOF MOUNTED FESTA FORCE FAN

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Building 1 & 2 Proposed SSDS
Lofts at Globe Mills

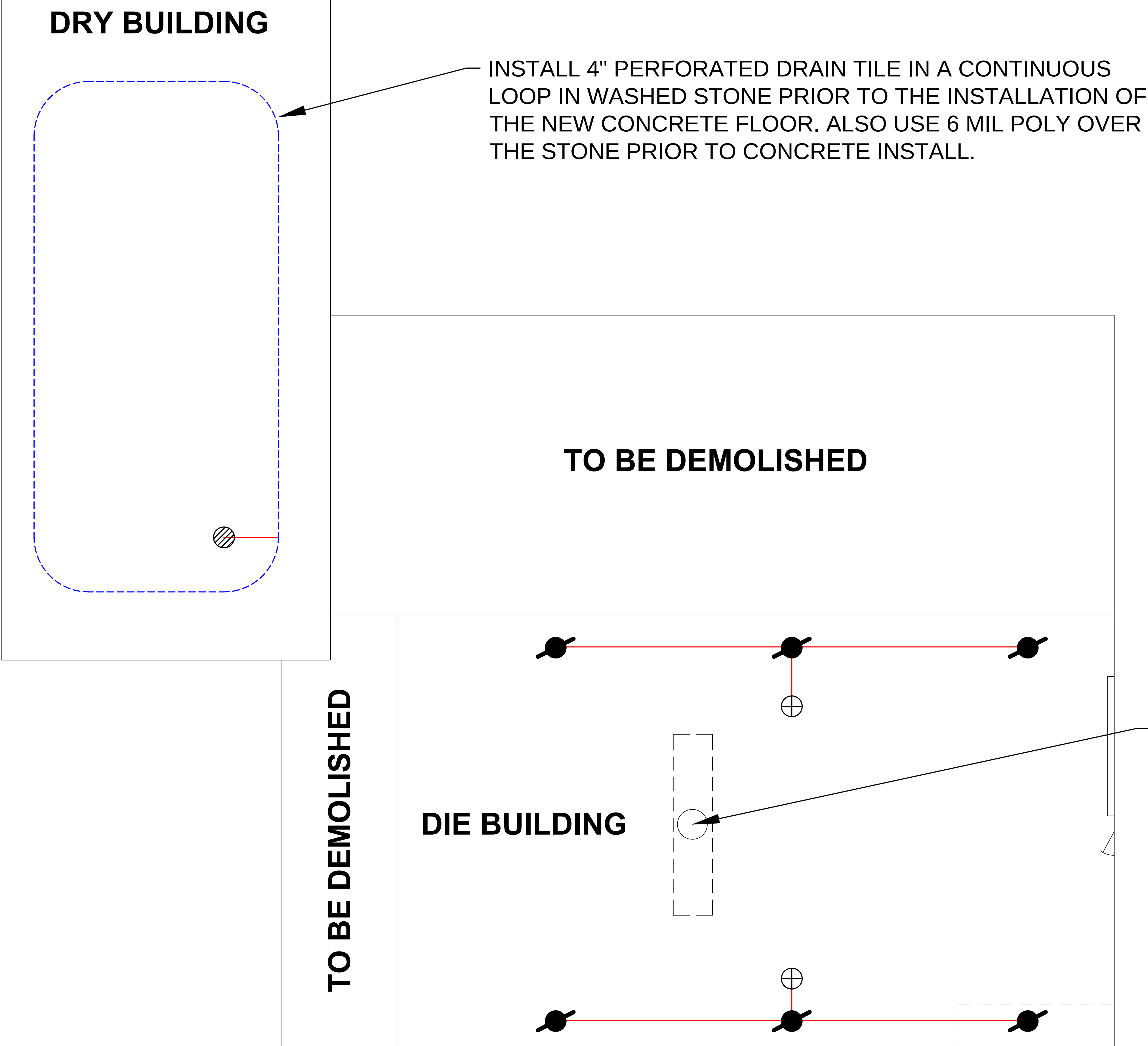
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SCALE: N/A

SHEET 2 OF 7

DIE BLDG. PROPOSED SSDS LAYOUT

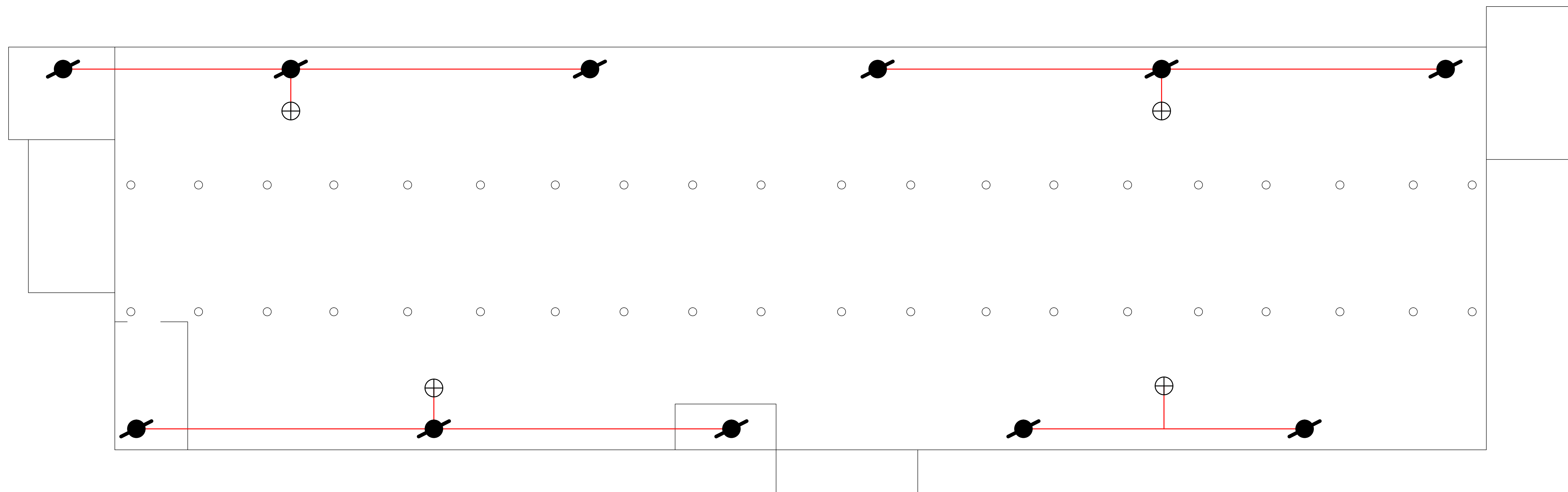


LEGEND

- 6" PVC PIPE RISER TO ROOF MOUNTED FESTA FURY FAN
- EXTRACTION POINT
- 4" PERFORATED DRAIN TILE
- OVER HEAD 4" SCHEDULE 40 PVC PIPE
- 4" PVC PIPE RISER TO ROOF MOUNTED FESTA FORCE FAN

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06-14-2019	SCALE: N/A	SHEET 3 OF 7

BUILDING 4 BASEMENT PROPOSED SSDS

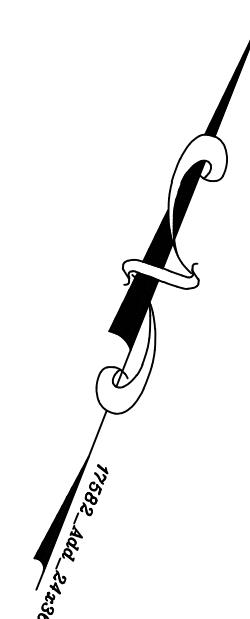


LEGEND

- ⊕ 4" PVC PIPE RISER TO ROOF MOUNTED FESTA FORCE FAN
- EXTRACTION POINT
- OVER HEAD 4" SCHEDULE 40 PVC PIPE

NOTE:

SKIM COAT NECESSARY ON EXISTING FLOOR TO SEAL THE EXISTING FLOOR.
REPAIR EXISTING CONCRETE FLOOR NEAR ASSUMED WATER MAIN.



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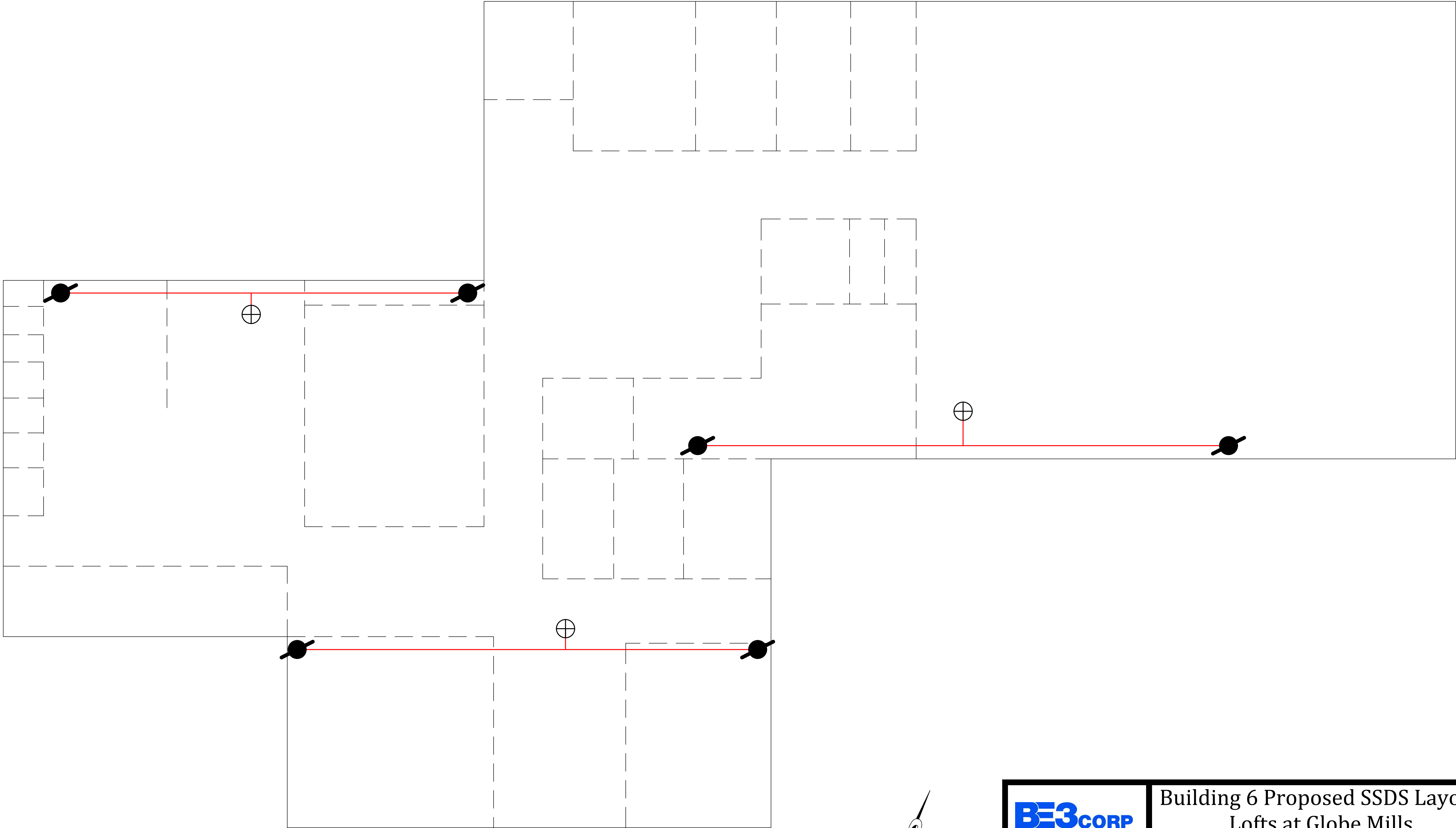
Building 4 Proposed SSDS Layout
Lofts at Globe Mills

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Albany, NY 12202

SCALE: N/A

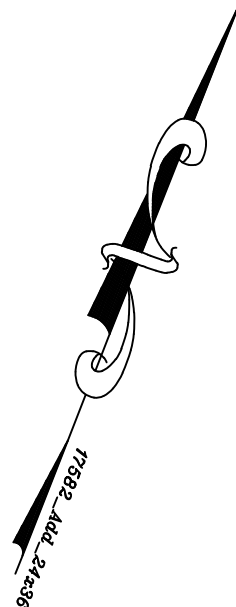
SHEET 4 OF 7

BUILDING 6 PROPOSED SSDS LAYOUT



LEGEND

- ⊕ 4" PVC PIPE RISER TO ROOF MOUNTED FESTA FORCE FAN
- CORED HOLE / EXTRACTION POINT
- OVER HEAD 4" SCHEDULE 40 PVC PIPE



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Building 6 Proposed SSDS Layout
Lofts at Globe Mills

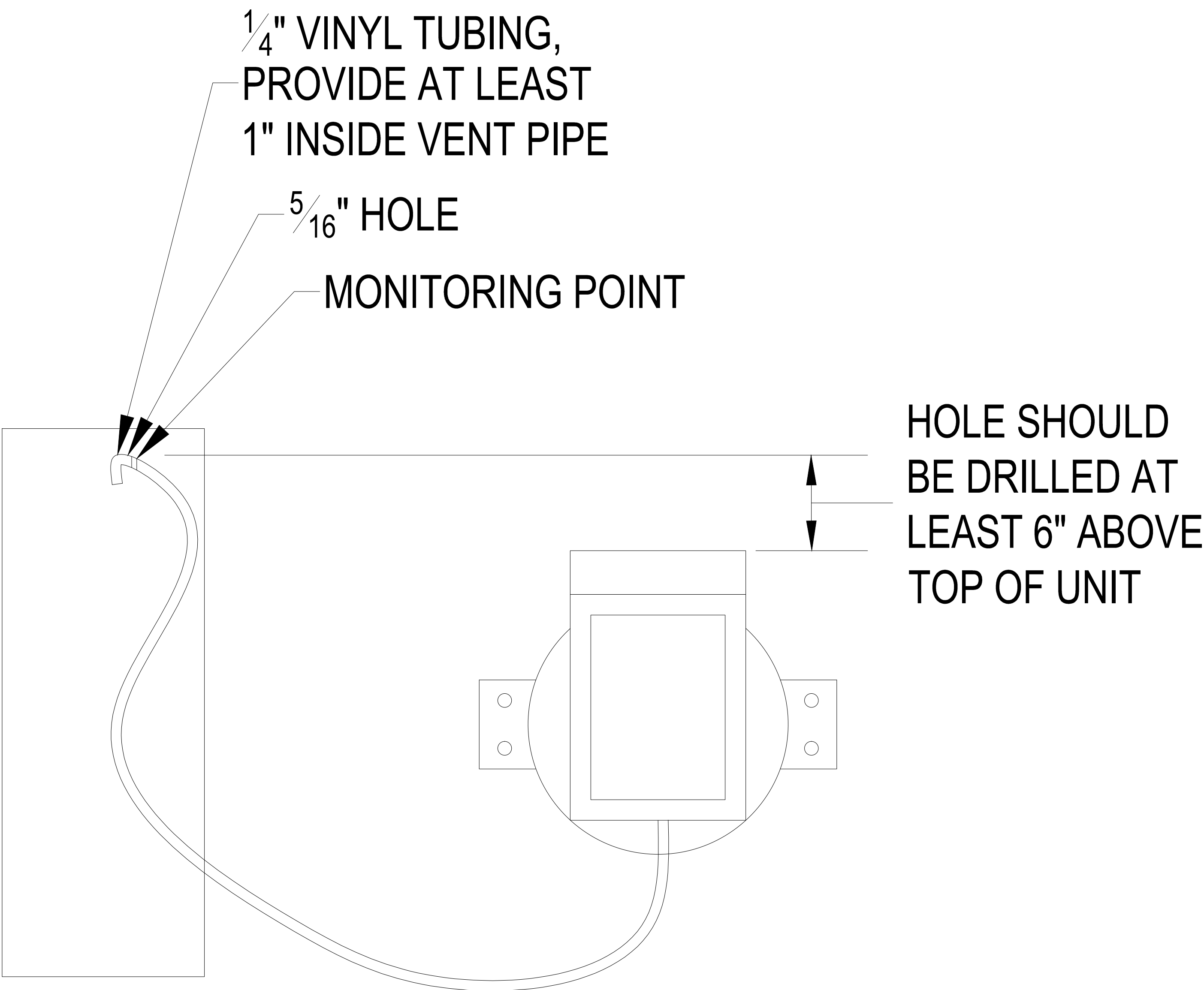
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SCALE: N/A

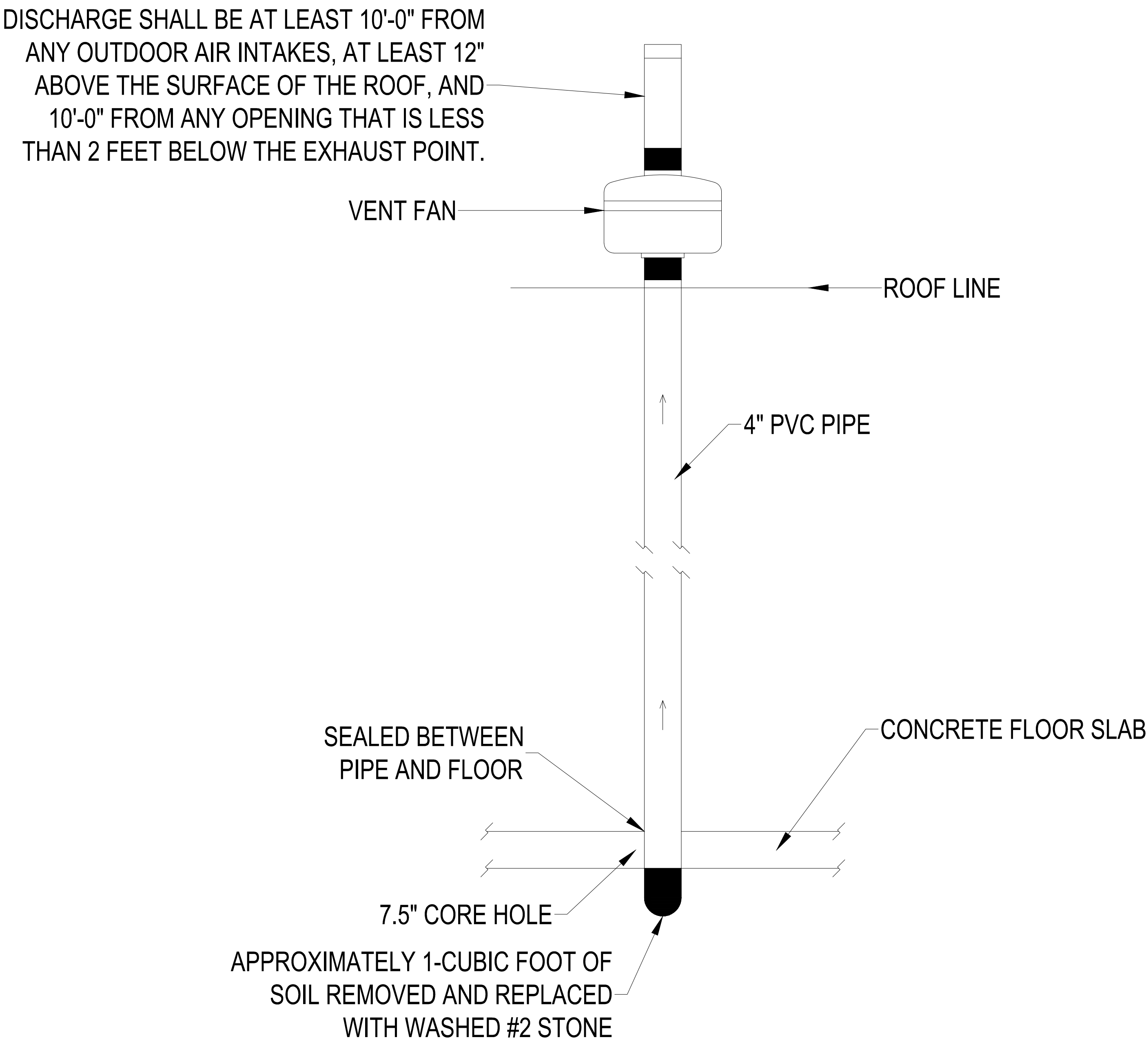
SHEET 5 OF 7

ALARM DETAIL



- NOTES:**
- 1. PRESSURE SET POINT: -0.25 INCHES WC.
 - 2. PROVIDE ALARM COMPANY LABEL AND CONTACT INFORMATION
 - 3. LOCATE DEVICE WHERE IT CAN BE SEEN AND HEARD
 - 4. CONNECT DEVICE TO A SEPARATE CIRCUIT FROM FAN SO THAT IT WILL ACTIVATE IF POWER TO THE FAN IS INTERRUPTED
 - 5. ALARM WILL SOUND WHEN PRESSURE WITHIN THE VENT PIPE DROPS BELOW THE SET POINT

TYPICAL VENT



- NOTES:**
- 1. INSTALL ELECTRICAL INCLUDING POWER OFF SWITCH WITHIN REACH
 - 2. PVC PIPE AND FITTINGS SHALL CONFORM TO ASTM D3034



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Alarm Detail and Typical Vent
Lofts at Globe Mills

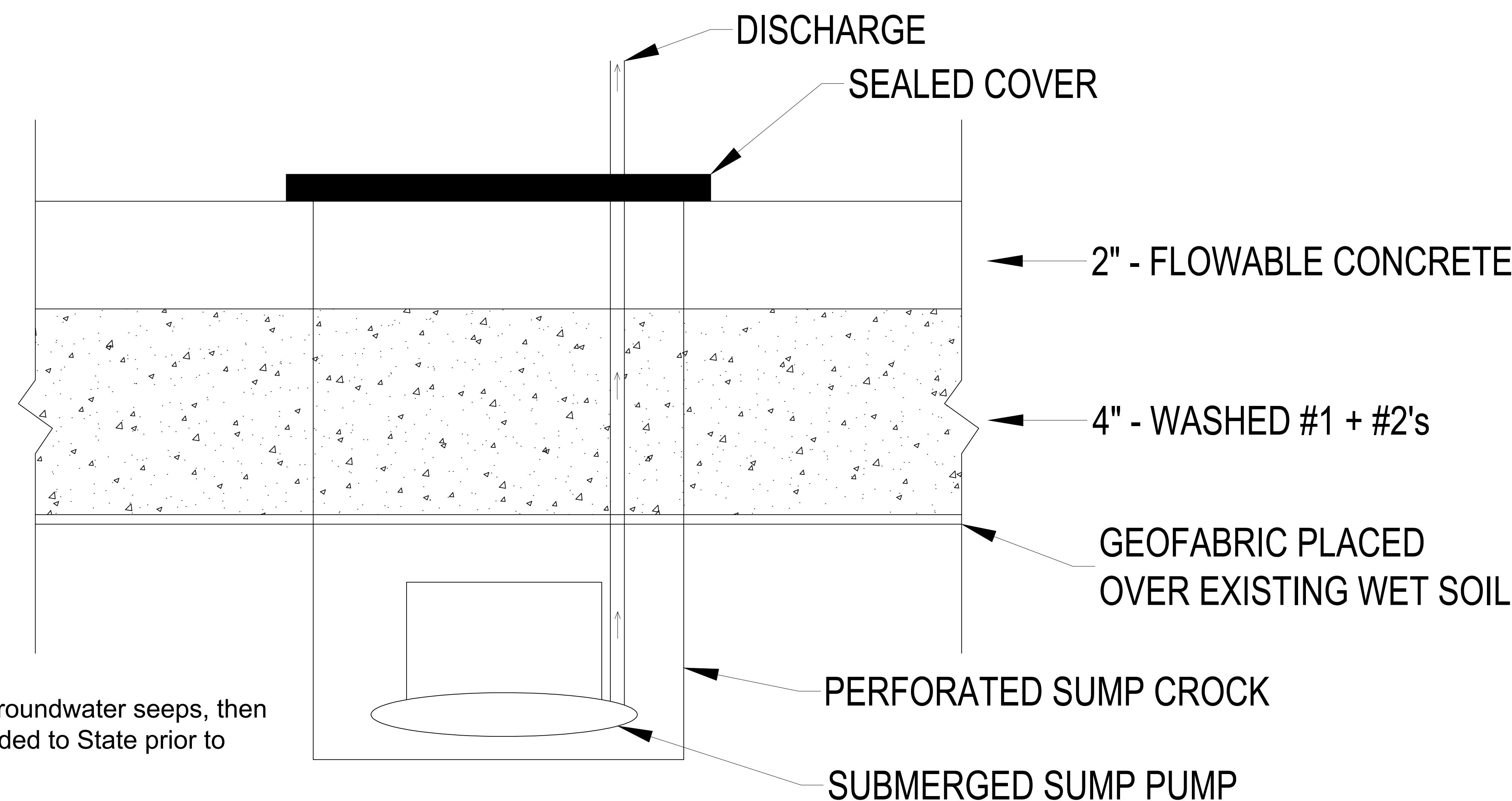
811 Court Street
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06-14-2019

SCALE: N/A

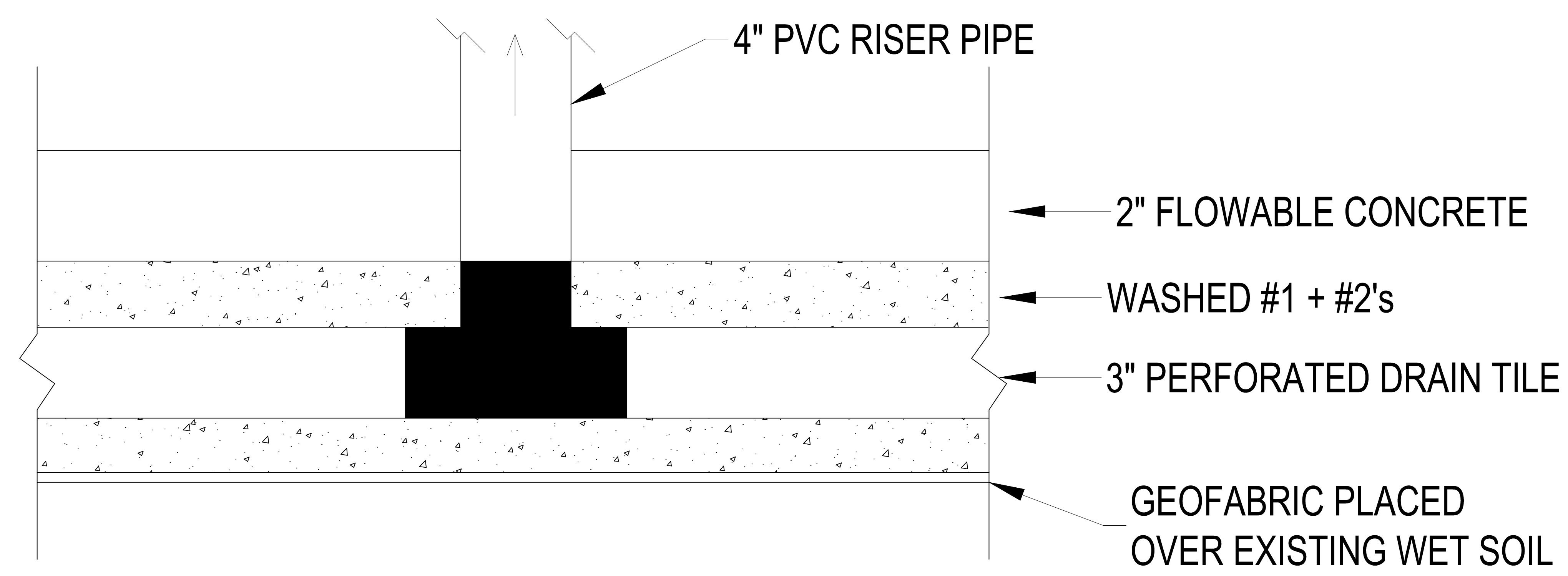
SHEET 6 OF 7

SUMP DETAIL



Note: if sumps are installed within an SSDS due to groundwater seeps, then details of water collection and discharge will be provided to State prior to operation.

BUILDING 1 + 2 CRAWL AREA
DIRT FLOOR SSDS DETAIL



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	811 Court Street Albany, NY 12202	
	06-14-2019	SCALE: N/A
SHEET 7 OF 7		