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November 12, 2019

Mr. Michael Squire  
New York State Department of Environmental Conservation  
Division of Environmental Remediation  
Remedial Bureau C  
625 Broadway, 11<sup>th</sup> Floor  
Albany, New York 12233-7014

Re: Soil Vapor Intrusion Investigation Report & Periodic Review Report  
Congers Colonial Plaza  
285 Route 303  
Congers, Clarkstown, Rockland County, New York  
NYSDEC # V00456  
BEI Job # 060141

Dear Mr. Squire:

Please find the attached Soil Vapor Intrusion Investigation Report (SVIIR) and Periodic Review Report (PRR) for the above referenced subject property. The SVIIR was completed in accordance with BEI's Soil Vapor Extraction System (SVES) Decommissioning Work Plan dated February 9, 2018, approved in a letter correspondence from the New York State Department of Environmental Conservation (NYSDEC) dated March 23, 2018. This SVIIR documents the remedial activities conducted at the subject property to determine if it is appropriate to decommission the two (2) SVES operating at the subject property.

Based upon the analytical results of the vapor intrusion investigation, tetrachloroethene (PCE) and its degradation compounds were detected in soil gas at concentrations warranting continued operation of the SVES. Therefore, the annual inspection of the SVES was conducted and documented in the PRR portion of the report. The SVES were operating properly and the engineering and institutional controls are functioning in accordance with the requirements of the Site Management Plan (SMP) dated December 2013 and approved by NYSDEC and NYSDOH on June 12, 2014.

Congers Colonial Plaza  
285 Route 303  
Congers, New York  
BEI Job # 060141

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If you have any questions, please contact me at our Summit, NJ office at (908) 918-1702.

Sincerely,



Jeff McCurdy, Project Manager  
**Brennan Environmental, Inc.**

Cc: 285 Route 303, L.L.C., c/o UNLMTD Real Estate Group, Mr. Anthony Siniscalchi (via email)  
Mr. Nathan Walz, New York State Dept. of Health, 547 River Street, Troy, NY 12180-2213

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**BRENNAN ENVIRONMENTAL, INC.**  
ENVIRONMENTAL CONSULTING SERVICES

# **Soil Vapor Intrusion Investigation Report & Periodic Review Report**

PER NYSDEC DER-10



Congers Colonial Plaza  
285 Route 303  
Congers, Town of Clarkstown, Rockland County, New York  
Section 35.19 Block 2 Lot 11  
September 2019  
DEC Case #V00456  
BEI Job #060141

Prepared for:  
285 Route 303, LLC  
c/o UNLMTD Real Estate  
200 Washington Street  
5<sup>th</sup> Floor  
Hoboken, New Jersey 07030

Prepared by:  
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## **INTRODUCTION**

Brennan Environmental, Inc. (BEI) was retained by 285 Route 303, LLC to prepare this Soil Vapor Intrusion Investigation Report (SVIIR) and Periodic Review Report (PRR) that document the remedial activities conducted at the site identified as 285 Route 303, Section 35.19 Block 2 Lot 11, Congers, Town of Clarkstown, Rockland County, NY (subject property). This SVIIR was prepared in accordance with the New York State Department of Environmental Conservation's (NYSDEC's) Technical Guidance for Site Investigation and Remediation (TGSIR), DER-10, and the New York State Department of Health's (NYSDOH's) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006 (NYSDOH Final Guidance). The PRR portion of the report was prepared in accordance with the NYSDEC's TGSIR, DER-10.

Section I of this report details the execution of the vapor sampling activities conducted to determine if the soil vapor extraction systems (SVES) operating at the subject property could be decommissioned. The sampling activities were conducted in accordance with BEI's SVES Decommissioning Workplan (DWP) dated February 9, 2018, which was approved by the NYSDEC in a correspondence dated March 23, 2018. Vapor intrusion (VI) investigation activities were conducted at three (3) tenancies at the subject property for which a SVES currently operates to mitigate the VI pathway; Carmen's Laundromat, the former First Class Dry Cleaners, and the former Tutor Time. The results from the VI investigation indicated that chlorinated volatile organic compounds (CVOCs), specifically tetrachloroethene (PCE) and its degradation compounds, remain present in soil vapor and require continued mitigation pursuant to the NYSDOH's Final Guidance.

Since the SVES will remain operational, the annual inspection was conducted. The results of the inspection are documented in the PRR portion of this report (Section II).

## **SECTION I – SOIL VAPOR INTRUSION INVESTIGATION REPORT**

### **1.0 HISTORICAL INFORMATION**

According to the Remedial Action Summary Report (RASR) dated August 2006 by RND Services Inc. (RND) of Nyack, New York, initial remedial activities were conducted at the subject property to address a discharge of residual product and waste during the dismantling of a dry cleaning unit at the former First Class Dry Cleaners in October 2000. CVOCs were reportedly present in these materials. Results of a subsequent indoor air sampling event conducted by RND in the former First Class Dry Cleaners indicated that PCE concentrations were detected above NYSDOH action guidelines. Two (2) SVES were installed in February and March 2001 at the subject building to mitigate the VI pathway. The locations of the SVES are depicted on Figure 4.

RND subsequently conducted soil and groundwater investigation activities. The concrete slab was removed from the northern side of the basement below the former dry cleaner tenancy and

test pits were installed to collect soil samples. Seven (7) overburden monitoring wells and three (3) bedrock monitoring wells were installed to investigate groundwater quality. Soil and groundwater analytical results indicated that PCE concentrations were detected above NYSDEC standards.

Approximately 200 tons of contaminated soil was excavated from below the building slab. However, some impacted soil remained in place due to structural limitations. Potassium permanganate injections were also conducted to remediate residual PCE contaminated groundwater.

Periodic indoor air and sub-slab soil vapor sampling was conducted to monitor PCE concentrations in the following six (6) tenancies at the Congers Colonial Plaza:

- Stay Fit Seniors:
- Hong Kong Kitchen:
- former Tutor Time which is currently vacant:
- DePaulis Enterprises IV, Inc.:
- former Launder Station Laundromat, currently Carmen's Laundromat: and
- former First Class Dry Cleaners which is currently vacant.

A majority of the sampling events were conducted with the SVES operational. Based on the results of the indoor air and soil vapor sampling, the SVES were effectively mitigating the VI pathway.

The NYSDEC authorized no further investigation for groundwater at the subject property in a correspondence dated November 30, 2005 and pursuant to NYSDEC's Decision Document dated December 2011, no further action was required for the subject property with the continued operation of the SVES to treat residual soil vapor contamination and the establishment of a deed restriction limiting the site use at the subject property to restricted residential, commercial or industrial use. A Site Management Plan (SMP) dated December 2013 was approved by NYSDEC and NYSDOH on June 12, 2014.

The SVES have been in operations for over 15 years. An investigation was proposed to determine if the SVES are still needed to mitigate the VI pathway. A SVES DWP detailing the proposed decommissioning sampling activities was submitted to the NYSDEC on February 9, 2018 and approved by NYSDEC on March 23, 2018. NYSDEC's approval letter is included as Appendix 1. The activities were executed in the summer of 2018 and the results of the activities are provided herein.

## **2.0 PHYSICAL SETTING**

### **2.1 REGIONAL GEOLOGY AND HYDROGEOLOGY**

According to RND's Results of the Investigation Work Plan dated September 2003, the subsurface geology at the subject property is composed of variable till deposited by glacier ice

underlain by the Brunswick Formation of the Newark Group. During RND's investigation, bedrock was encountered at depths ranging from 47 to 53 feet below site grade (bsg).

According to Environmental Data Resources' (EDR's) Radius Map Report, the soil component name for the area that includes the subject property is identified as "Watchaug", and is composed of fine sandy loam. This soil type has moderate infiltration rates, with moderately coarse textures. During the groundwater investigation at the subject property, depth to groundwater in monitoring wells was measured at approximately 5 feet below site grade (bsg). According to RND's Results of the Investigation Work Plan dated September 2003, the groundwater flow is to the southwest.

## **2.2 SITE TOPOGRAPHY**

BEI reviewed the USGS Topographic Quadrangle for Haverstraw, New York. According to the topographic map, the subject property is located approximately 241 feet above mean sea level. The portion of the Haverstraw, New York quadrangle depicting the subject property is included as Figure 2.

## **2.3 1,000 FOOT RADIUS LAND USE**

Based on visits to the site and the topographic map, land use within a 1,000-foot radius of the subject property appears to be a mixture of commercial and residential properties. The subject property is bounded by wooded areas to the north and west, Route 303 to the east, across which are commercial properties, and Meola Road to the south, across which are residential properties.

## **2.4 BASELINE ECOLOGICAL ASSESSMENT**

### **2.4.1 Wellhead Assessment**

One (1) supply well is located on the northwest side of the subject property, upgradient of the soil and groundwater contamination. The well is maintained to supply water to the washing machines operated in Carmen's Laundromat. RND collected a water sample from an inlet to the water heater located in the laundromat which was laboratory analyzed for CVOCs. All contaminant concentrations were reportedly not detected (ND) in the supply well sample. Based on this information, no further investigation is proposed for the supply well. No other potable wells were identified within close proximity to the subject property.

### **2.4.2 Surface Water Body Assessment**

BEI reviewed available surface water mapping resources to identify surface water bodies located within one-half mile of the subject property. The nearest surface water body is the Toms Brook, which is located approximately 750 feet west of the subject property. Based upon the distance from the subject property, the Toms Brook is not considered to be a potential receptor.

### 2.4.3 Wetland Assessment

BEI reviewed the National Wetlands Inventory (NWI) map for wetlands located within one-half mile of the subject property. According to the NWI map, the subject property is mapped as an “Upland” area. Freshwater Emergent Wetlands (Classification PEM1Ed) were identified approximately 900 feet west of the subject property and Freshwater Forested/Shrub Wetlands (Classification PFO1C) were identified approximately 2,200 feet southeast and 2,600 feet west-southwest of the subject property. The portion of the NWI wetland map depicting the subject property is included as Figure 3. Based upon the distance from the subject property, wetlands are not considered to be a potential receptor.

## 3.0 TECHNICAL OVERVIEW

### 3.1 RELIABILITY OF ANALYTICAL DATA

Soil vapor sampling activities were performed in accordance with the requirements outlined in the NYSDOH’s Final Guidance. All samples were analyzed by Integrated Analytical Laboratories, Inc. (IAL) of Randolph, New Jersey, a New York certified laboratory (New York Certification #11402). The data quality assurance deliverables conformed to the Non-USEPA CLP Method as specified in the NYSDEC’s TGSIR, DER-10, and were validated by a third party pursuant to NYSDEC requirements. Proper chain of custody documentation were maintained for all samples until delivery to a New York certified laboratory. Minimum detection limits (MDLs) for all compounds analyzed were below the current applicable NYSDOH Air Guidance Values (AGV).

A summary of analytical methods and quality assurance is included in the Analysis Conformance/Nonconformance Summary pages in the laboratory packages. The locations of the sub-slab soil gas, indoor air, and ambient air samples are depicted on Figure 4.

The following “Key” provides the explanations necessary to understand the sampling result summary tables listed in the following report sections.

#### ABBREVIATION KEY

|                                                                                                           |
|-----------------------------------------------------------------------------------------------------------|
| TVOCC - Indicates Total Volatile Organic Contaminant Concentration.                                       |
| TOCC - Indicates Total Organic Contaminant Concentration.                                                 |
| MDL - Indicates Method Detection Limit / PQL - Indicates Practical Qualitative Limits.                    |
| NS - Indicates compound was Not Sampled for in the analysis.                                              |
| ND - Indicates compound was analyzed for but not detected at the MDL.                                     |
| ~ - Indicates no standard is listed.                                                                      |
| <b>Bold &amp; Italics</b> - Indicate that compound was detected above NJDEP cleanup criteria or standard. |
| ppm - Indicates parts per million.                                                                        |
| ppb - Indicates parts per billion.                                                                        |

All other compounds analyzed in the particular scan were not detected, therefore they are not listed in the summary table

### **3.2 SITE CONTAMINATION SUMMARY**

During remedial investigation activities conducted at the subject property by RND, PCE concentrations were detected above the NYSDOH AGV in the indoor air samples collected from the Tutor Time tenancy and the former tenancy of the First Class Dry Cleaners. Therefore, the SVES were installed in February and March 2001. Subsequent indoor air sampling documented the effectiveness of the SVES in mitigating the VI pathway.

Four (4) sub-slab soil vapor sampling events were conducted between November 2005 and December 2010. The first two (2) events were conducted with the SVES turned off. Analytical results for these sampling event indicated that PCE concentrations were low level, less than 150  $\mu\text{g}/\text{m}^3$ . However, soil vapor samples were not collected from below the former First Class Dry Cleaners during either event. Two (2) additional soil vapor sampling events were conducted in March and December 2010 while the SVES were operating. The sample collected from below the former First Class Dry Cleaners indicated that the PCE concentration in soil vapor was 3.1  $\mu\text{g}/\text{m}^3$  while the SVES were operating. A historic PCE concentration table for indoor air and soil vapor is provided as Appendix 3.

### **4.0 FINDINGS/RECOMMENDATIONS**

Pursuant to BEI's approved SVES DWP, to satisfy the NYSDEC's and NYSDOH's requirements for decommissioning the SVES, nine (9) air samples were proposed to be collected over an 8-hour period and analyzed for CVOCs via US EPA Method TO-15. Specifically, five (5) indoor air samples, three (3) sub-slab soil vapor samples, and one (1) ambient air sample were proposed to be collected from the three (3) tenancies of the subject building. The samples were proposed to be collected after the SVES have been shut down for at least 30 days to allow conditions to acclimate. The results would be compared to the NYSDOH's Final Guidance VI Decision Matrices to evaluate if the SVES could be decommissioned. The indoor and ambient air samples would be conditionally analyzed based upon the results of the soil vapor samples. Following sampling, the SVES would be restarted. The NYSDEC's SVES DWP approval letter is provided as Appendix 1.

#### **4.1 SVES DECOMMISSIONING ACTIVITIES CONDUCTED**

On April 20, 2018, the SVES at the subject property were powered down in preparation for indoor air and sub-slab soil vapor sampling. On July 31, 2018, BEI was onsite to collect five (5) indoor air samples from the subject property. First-floor indoor air samples, identified as IA-FF-101, IA-FF-102, and IA-FF-103, were collected from Carmen's Laundromat, the former First Class Dry Cleaner, and the former Tutor Time, respectively. Basement-level indoor air samples, identified as IA-B-101 and IA-B-102, were collected from the former First Class Dry Cleaner and the former Tutor Time, respectively. One (1) ambient air sample, identified as AA-101, was collected from the northern exterior of the subject building to document background conditions. A six-liter Summa canister with an 8-hour regulator was placed at breathing zone height to collect each sample. The NYSDOH's Indoor Air Quality Questionnaire and Building Inventory

(Inventory) was completed which included a summary of hazardous substances stored in the tenancies. The completed Inventory is provided as Appendix 2.

On August 1, 2018, BEI returned to the site to collect three (3) sub-slab soil gas samples; SS-101 from Carmen's Laundromat, SS-102 from the former First Class Dry Cleaner, and SS-103 from the former Tutor Time. A 3/4-inch diameter hole was installed through the concrete building slab at each sampling location to create temporary sampling ports. A six-liter Summa canister equipped with an 8-hour regulator was used to collect each sample. The sampling apparatus was purged with a negative pressure pump prior to sampling. All samples were sent to a New York certified laboratory to be analyzed for CVOCs via US EPA Method TO-15. Each temporary sampling point was repaired with concrete and the SVES were restarted following sampling. A summary of the analytical results for the sub-slab soil vapor samples is provided in Table 1 below and sample locations are depicted on the VI Sample Location Map included as Figure 4.

**Table 1: Sub-Slab Soil Vapor Analytical Results – August 1, 2018**

| Sample ID:                     | SS-101       | SS-102       | SS-103       |
|--------------------------------|--------------|--------------|--------------|
| Lab ID:                        | E18-06141-07 | E18-06141-08 | E18-06141-09 |
| Matrix:                        | Air          | Air          | Air          |
| Date:                          | 8/1/2018     | 8/1/2018     | 8/1/2018     |
| Parameter (µg/m <sup>3</sup> ) |              |              |              |
| 1,1-Dichloroethene             | ND           | 2            | ND           |
| Cis-1,2-Dichloroethene         | ND           | 950          | ND           |
| Trans-1,2-Dichloroethene       | ND           | 6.9          | ND           |
| Tetrachloroethene              | 10           | 10,000       | 950          |
| Trichloroethene                | ND           | 460          | 0.93         |

ND – Not Detected

The analytical results indicated that PCE was detected in sub-slab soil vapor at 10 µg/m<sup>3</sup> in SS-101, at 950 µg/m<sup>3</sup> in SS-103, and at 10,000 µg/m<sup>3</sup> in SS-102. Trichloroethene (TCE), a degradation compound of PCE, was detected in sub-slab soil vapor at 0.93 µg/m<sup>3</sup> in SS-103 and 460 µg/m<sup>3</sup> in SS-102. The PCE concentrations in SS-101 and SS-103 are in line with previous soil vapor results collected from these locations while the SVES are turned off. SS-102 represents the first soil vapor sample collected from below the former First Class Dry Cleaner while the SVES are not operating. The full data analytical package is provided as Appendix 8.

## 4.2 SAMPLE RESULTS EVALUATION

In accordance with the NYSDOHs Final Guidance, the sub-slab soil gas concentrations of PCE and TCE were compared to the Soil Vapor/Indoor Air Decision Matrix 2 (Matrix 2) and Soil Vapor/Indoor Air Decision Matrix 1 (Matrix 1), respectively. Since the PCE and TCE concentrations in SS-102, which was collected from the former First Class Cleaner tenancy, exceeded 1,000 µg/m<sup>3</sup> and 250 µg/m<sup>3</sup>, respectively, mitigation is the appropriate remedy regardless of the indoor air concentrations. Therefore, the indoor air and ambient air samples were not analyzed. Continued operation of the SVES are required to mitigate the VI pathway at

the subject property. Matrix 2 and Matrix 1 are provided below as Table 2 and Table 3, respectively.

**Table 2: Tetrachloroethene - Matrix 2**

|                                                           |             | Indoor Air Concentration ( $\mu\text{g}/\text{m}^3$ ) |                                  |                                  |                                  |
|-----------------------------------------------------------|-------------|-------------------------------------------------------|----------------------------------|----------------------------------|----------------------------------|
|                                                           |             | < 3.0                                                 | 3.0 - 30                         | 30 - 100                         | > 100                            |
| Sub-Slab Vapor Concentration ( $\mu\text{g}/\text{m}^3$ ) | < 100       | NFA                                                   | Reasonable and Practical Actions | Reasonable and Practical Actions | Reasonable and Practical Actions |
|                                                           | 100 - 1,000 | Monitor                                               | Monitor/Mitigate                 | Mitigate                         | Mitigate                         |
|                                                           | > 1,000     | Mitigate                                              | Mitigate                         | Mitigate                         | Mitigate                         |

**Table 3: Trichloroethene – Matrix 1**

|                                                           |              | Indoor Air Concentration ( $\mu\text{g}/\text{m}^3$ ) |                                  |                                  |                                  |
|-----------------------------------------------------------|--------------|-------------------------------------------------------|----------------------------------|----------------------------------|----------------------------------|
|                                                           |              | < 0.25                                                | 0.25 - 1.0                       | 1.0 - 5                          | > 5                              |
| Sub-Slab Vapor Concentration ( $\mu\text{g}/\text{m}^3$ ) | < 5.0        | NFA                                                   | Reasonable and Practical Actions | Reasonable and Practical Actions | Reasonable and Practical Actions |
|                                                           | 5.0 - 50.0   | NFA                                                   | Monitor                          | Monitor                          | Mitigate                         |
|                                                           | 50.0 - 250.0 | Monitor                                               | Monitor/Mitigate                 | Mitigate                         | Mitigate                         |
|                                                           | > 250        | Mitigate                                              | Mitigate                         | Mitigate                         | Mitigate                         |

#### 4.3 DATA VALIDATION

In accordance with NYSDEC requirements, a Data Usability Summary Report (DUSR) was generated for the air analytical results from the soil vapor intrusion investigation conducted at the subject property. The DUSR was generated by Alpha Geoscience (Alpha) of Clifton Park, NY. According to Alpha, the analytical data was complete and acceptable with no data flags. Therefore, the results meet the criteria for data quality and data use for the subject property. The DUSR and QA/QC Review generated by Alpha are included as Appendix 4.

#### 5.0 SUMMARY

In accordance with the February 9, 2018 SVES DWP, a soil vapor intrusion investigation was conducted to determine whether the SVES currently in operation at the subject property could be decommissioned. As part of the investigation, five (5) indoor air samples, three (3) soil gas samples, and one (1) ambient air sample were collected from three (3) tenancies of the subject building.

Based on the sub-slab soil vapor results, elevated concentrations of PCE and its degradation compounds remain present in soil gas. Pursuant to the NYSDOH Final Guidance Decision Matrices, mitigation remains the applicable remedy. Therefore, the SVES will remain operational. Since the SVES was observed to be functioning properly and has been demonstrated to be effective at mitigating the VI pathway, no changes are proposed to the monitoring plan. Section II below satisfies the requirements for the annual PRR.

## **SECTION II – PERIODIC REVIEW REPORT**

### **1.0 REMEDY PERFORMANCE, EFFECTIVENESS, & PROTECTIVENESS**

The remedies implemented at the subject property include ECs and ICs to protect human health and the environment. The ECs at the subject property consist of a soil cover system and the SVE system and the ICs consist of site use restrictions. Based on the August 1, 2018 site inspection, the remedy remains protective in accordance with the SMP. An evaluation of the ECs and ICs is provided below.

#### **1.1 Engineering Control Systems**

The ECs at the subject property consist of a soil cover system and two (2) SVES. The soil cover system prevents exposure to residual soil contamination left in-place below the former First Class Cleaners tenant space at the subject property. This cover system is comprised of the concrete building slab. The two (2) SVES, VES-1 and VES-2, are installed at the subject property to mitigate PCE-impacted sub-slab soil vapor. VES-1 is located in the basement below the former First Class Dry Cleaners and VES-2 is located in a garage adjacent to the western portion of the former Tutor Time tenancy. In accordance with the NYSDEC correspondence dated November 30, 2005, the SVES are required to be operated until PCE vapors in the indoor air, during non-operation of the VES, are below acceptable NYSDEC and NYSDOH levels.

During the August 1, 2018 site activities, the SVES were restarted following the decommissioning sampling event discussed in Section I of this report. The SVES were inspected and recommissioned as part of this event. VES-1 and VES-2 were both observed to be in good condition and functioning properly. Additionally, the basement floor below the former Tutor Time and former First Class Dry Cleaner was inspected and no breeches were observed. Only small hair-line cracks were observed in the concrete slab in the basement below the former dry cleaners tenancy. Therefore, the soil cover system remains protective of human health and the environment. Based on the inspection, the ECs are performing as designed and remain protective of human health and the environment. The EC certification form is attached as Appendix 5 and the General Site-Wide Inspection Checklist is attached as Appendix 6.

#### **1.2 Institutional Control Systems**

A series of ICs is required for the subject property to: (1) implement, maintain and monitor EC systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and (3) limit the use and development of the site to restricted residential, commercial or industrial uses only.

The subject property has a series of ICs in the form of site use restrictions. Adherence to these ICs is required by the Environmental Deed Restriction and is implemented under the SMP. The site use restrictions that apply to the Controlled Property are:

- The subject property may only be used for restricted residential, commercial, or industrial use provided that the long-term Engineering and Institutional Controls included in the SMP are employed;
- The subject property may not be used for a higher level of use, such as unrestricted residential use, without additional remediation and amendment of the Environmental Deed Restriction, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- The use of the groundwater underlying the subject property is prohibited without treatment rendering it safe for intended use with the exception of the well currently used to provide water to washing machines at the on-site laundromat tenancy;
- The potential for vapor intrusion must be evaluated for any buildings developed at the subject property, and any potential impacts that are identified must be monitored or mitigated;
- Vegetable gardens and farming on the property are prohibited; and
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

During BEI's August 1, 2018 site inspection, the site use at the subject property complied with the established ICs. The subject property was operated for commercial use, an acceptable use pursuant to the ICs described above. No new structures have been constructed at the subject property since the establishment of the Environmental Deed Restriction. No activities were conducted at the subject property that disturbed the remaining contaminated material. The IC certification is attached as Appendix 5.

### **1.3 Conclusions**

BEI conducted a site inspection on August 1, 2018. All ECs were inspected and observed to be functioning in accordance with the SMP. The site use at the subject property was in compliance with the ICs detailed in the SMP. Based on this information, all SMP requirements are being achieved and no changes are required. The Institutional and Engineering Controls Certification Form is included as Appendix 5 and the General Site-Wide Inspection Checklist is included as Appendix 6.

## **2.0 MONITORING PLAN COMPLIANCE REPORT**

The Monitoring Plan describes the measurements for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, the soil cover system, and all affected site media. Exposure to remaining contamination in soil at the subject property is prevented by a soil cover system placed over the residually contaminated soil. This cover system is comprised of the concrete building slab. Pursuant to the SMP, the Monitoring Plan for the subject property consists of an annual inspection of the soil cover at the subject property. During each inspection, the integrity of the basement floor in the former Tutor Time and former First Class Dry Cleaner is evaluated. Soil cover monitoring is covered separately from the other ECs because it is a passive component of the site remedy. The Monitoring Plan for the active ECs is included with the Operation and Maintenance Plan for these systems in Section 3.0 below.

A site inspection was conducted by BEI on August 1, 2018. The concrete slab basement floor of the former Tutor Time and former First Class Dry Cleaner was inspected and no breeches were observed. Only small hair-line cracks were observed in the concrete slab in the basement of the former Tutor Time, below the former dry cleaner tenant space. Based on the findings of the August 1, 2018 site inspection, the soil cover system remains protective of human health and the environment. The certification form is attached as Appendix 5 and the General Site-Wide Inspection Checklist is attached as Appendix 6.

## **3.0 OPERATION & MAINTENANCE PLAN COMPLIANCE**

The Operation and Maintenance Plan for the subject property describes the measures necessary to operate, monitor, and maintain the mechanical components of the remedy selected for the subject property. Two (2) SVE systems are installed at the subject property to mitigate PCE-impacted soil vapors remaining below the subject building following soil excavation and in-situ remedial activities. VES-1 is located in the basement below the former First Class Dry Cleaners and VES-2 is located in the garage located adjacent to the western portion of the former Tutor Time tenancy. Pursuant to the SMP, the Operation and Maintenance Plan for the subject property consists of an annual inspection of the SVE systems. During each inspection, a visual inspection of the complete system will be conducted and the General Site-Wide Inspection Checklist will be prepared. SVE system components to be monitored include, but are not limited to, the vacuum blower and general system piping.

During the August 1, 2018 site inspection, the SVES were restarted following the vapor sampling event. The systems were inspected and the certification checklist and the General Site-Wide Inspection Checklist were completed. VES-1 and VES-2 were observed to be functioning properly during the site inspection.

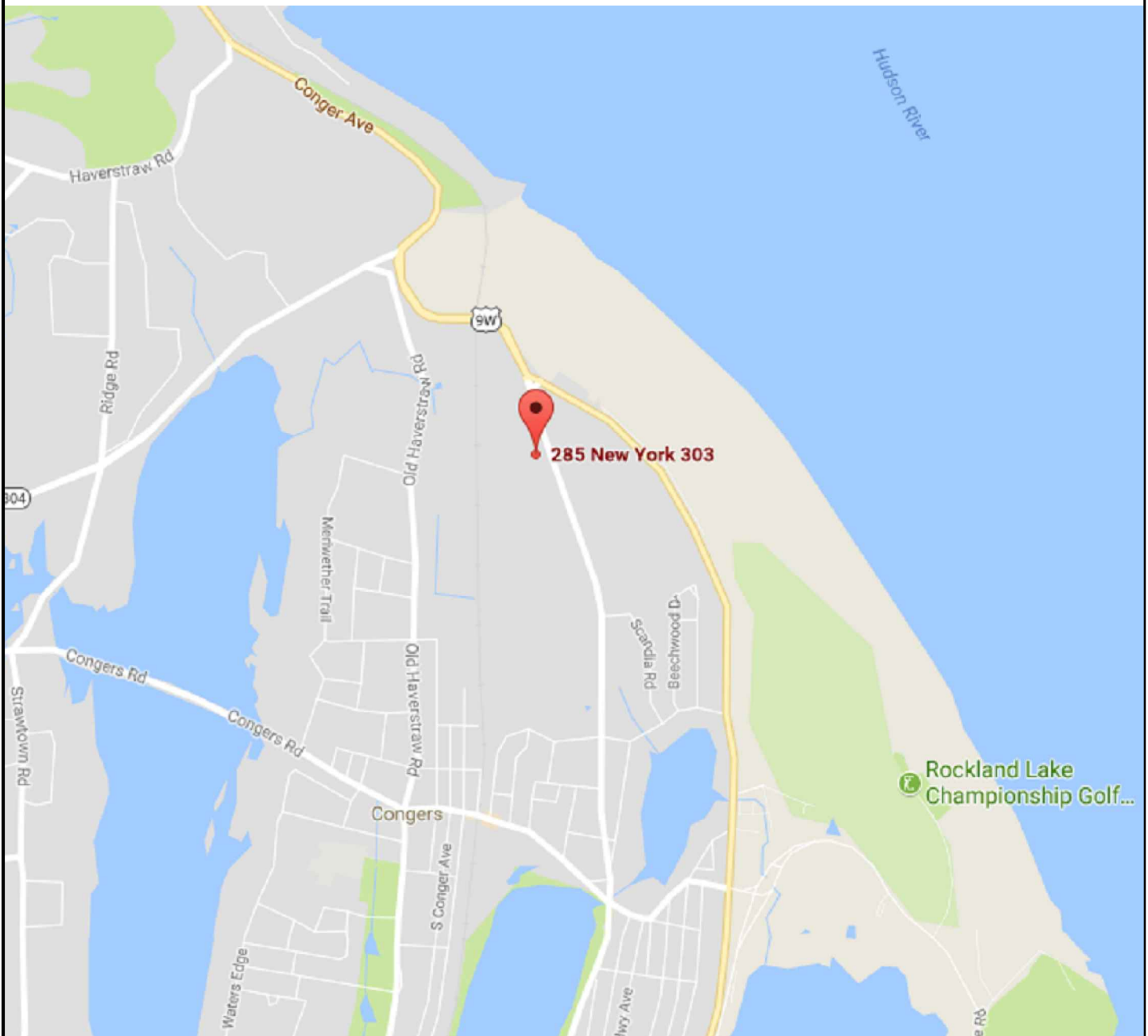
The subject property is periodically inspected and maintained by the property owner. During these periodic inspections, the SVES will be checked by the owner's representative to confirm that the systems are operational.

#### **4.0 CONCLUSIONS AND RECOMMENDATIONS**

During the August 1, 2018 site inspection, the SVES were inspected and observed to be functioning properly. The site use at the subject property was in compliance with the ICs detailed in the SMP. Based on this information, all requirements set forth in the SMP are being met and no changes to the SMP are required. The Institutional and Engineering Controls Certification Form is included as Appendix 5 and the General Site-Wide Inspection Checklist is included as Appendix 6.

FIGURE 1

Site Location Map



**FIGURE:**

Site Location Map

**1**

Congers Colonial Plaza  
285 Route 303  
Congers, Rockland County, NY



SOURCE:  
Google Maps

Scale: As Shown  
Date: 9/26/2018

Drawn/Checked By: AS/JMc  
Project #060141



**Brennan Environmental, Inc.**  
19 Chatham Road, Summit, New Jersey 07901  
908.918.1702

FIGURE 2

USGS Topographic Quadrangle Map



**FIGURE:**  
USGS Topographic  
Quadrangle Map

**2**

Congers Colonial Plaza  
285 Route 303  
Congers, Rockland County, NY



SOURCE:  
Terrain Navigator

Scale: As Shown  
Date: 9/26/2018

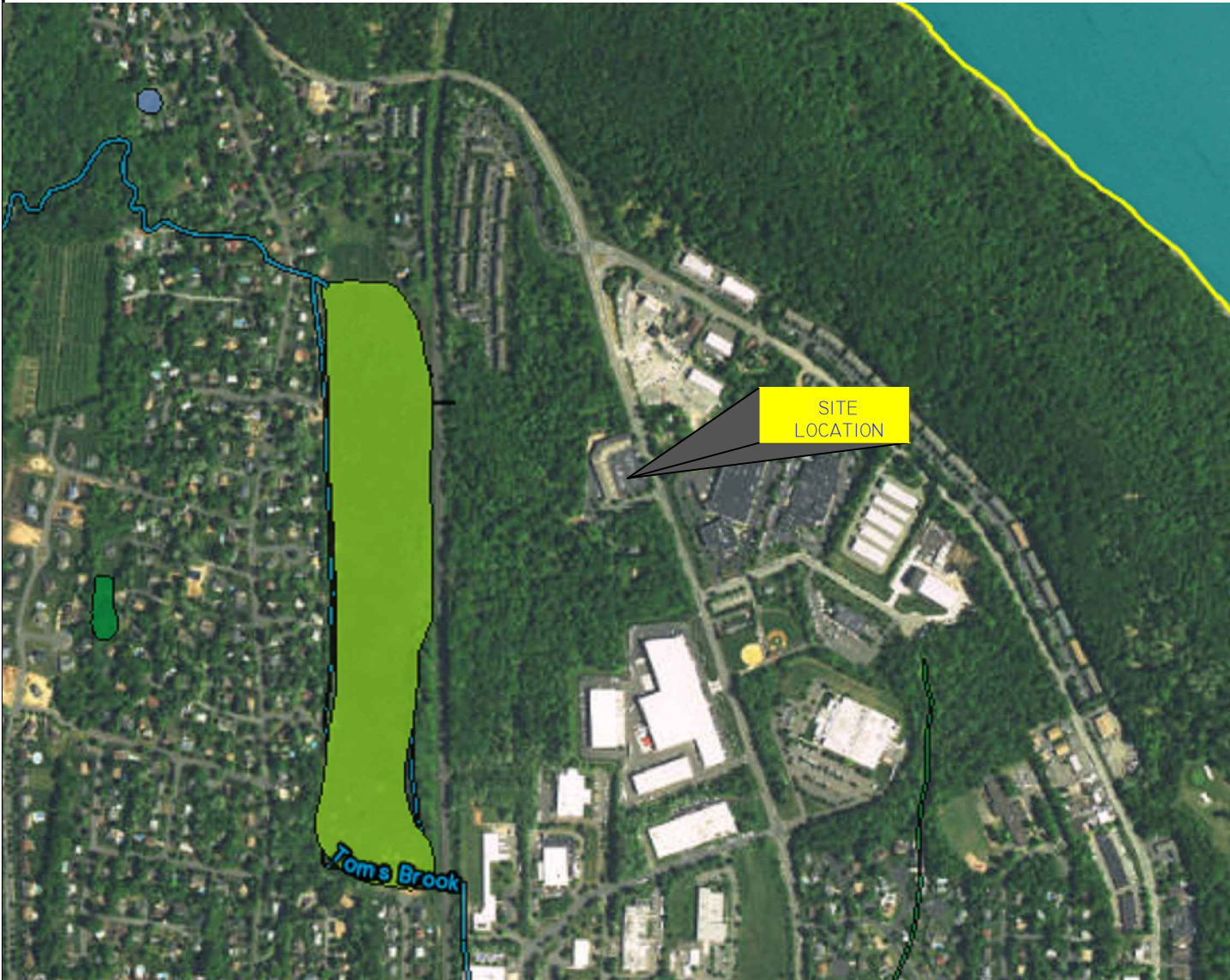
Drawn/Checked By: AS/JMc  
Project #060141



**Brennan Environmental, Inc.**  
19 Chatham Road, Summit, New Jersey 07901  
908.918.1702

FIGURE 3

GIS Wetlands Map

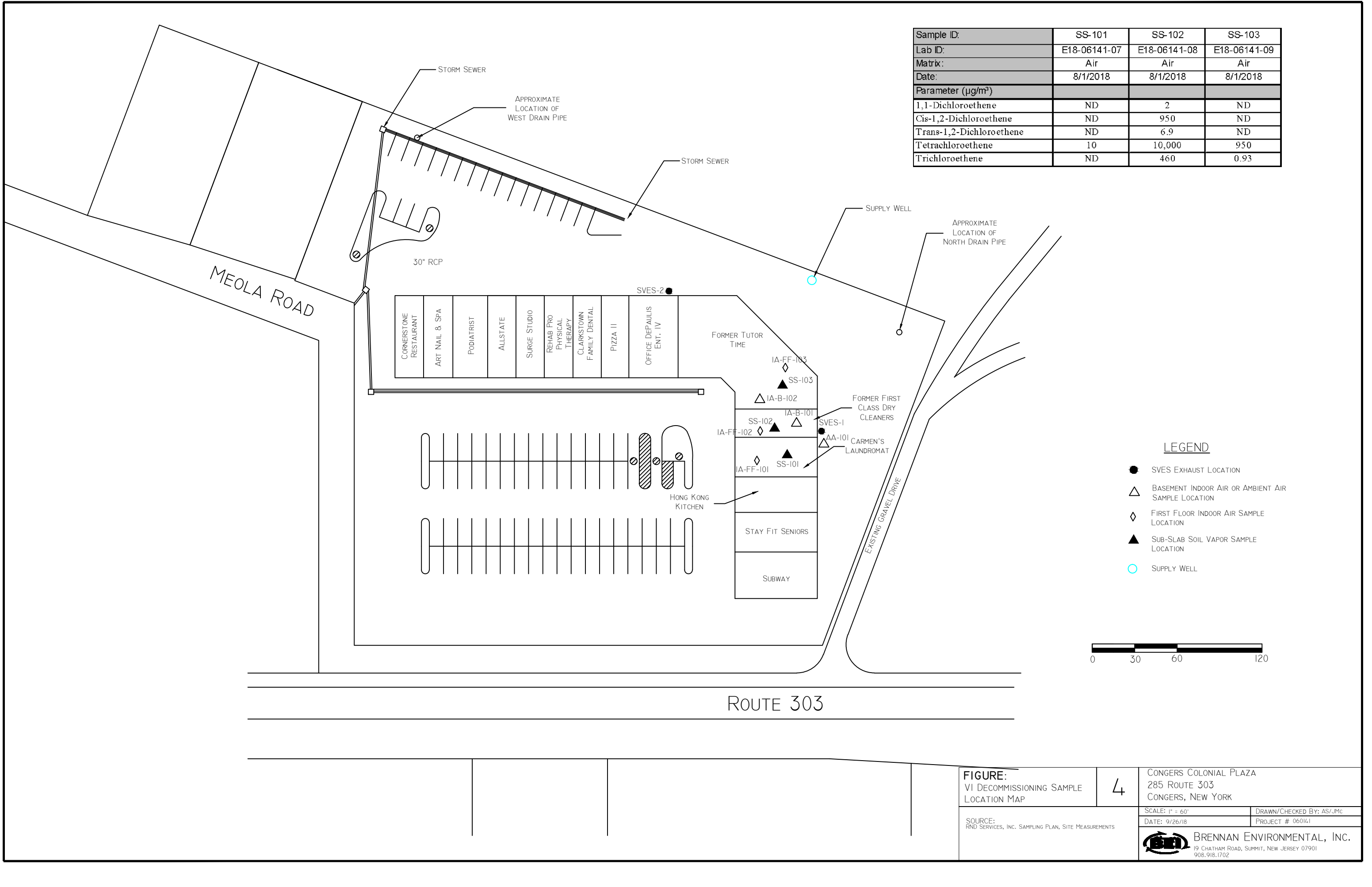


|                                                                                     |                                                                                                                                                                                       |          |                                                                         |                          |  |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------|--------------------------|--|
| <b>FIGURE:</b><br>NWI Wetlands Map                                                  |                                                                                                                                                                                       | <b>3</b> | Congers Colonial Plaza<br>285 Route 303<br>Congers, Rockland County, NY |                          |  |
|  | SOURCE:                                                                                                                                                                               |          | Scale: As Shown                                                         | Drawn/Checked By: AS/JMc |  |
|                                                                                     | GIS                                                                                                                                                                                   |          | Date: 9/26/2018                                                         | Project #060141          |  |
|                                                                                     |  <b>Brennan Environmental, Inc.</b><br>19 Chatham Road, Summit, New Jersey 07901<br>908.918.1702 |          |                                                                         |                          |  |

FIGURE 4

VI Decommissioning Sample Location Map

|                          |              |              |              |
|--------------------------|--------------|--------------|--------------|
| Sample ID:               | SS-101       | SS-102       | SS-103       |
| Lab ID:                  | E18-06141-07 | E18-06141-08 | E18-06141-09 |
| Matrix:                  | Air          | Air          | Air          |
| Date:                    | 8/1/2018     | 8/1/2018     | 8/1/2018     |
| Parameter (µg/m³)        |              |              |              |
| 1,1-Dichloroethene       | ND           | 2            | ND           |
| Cis-1,2-Dichloroethene   | ND           | 950          | ND           |
| Trans-1,2-Dichloroethene | ND           | 6.9          | ND           |
| Tetrachloroethene        | 10           | 10,000       | 950          |
| Trichloroethene          | ND           | 460          | 0.93         |



|                                                                |   |                                                                                                                                                                                |                          |
|----------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| FIGURE:<br>VI DECOMMISSIONING SAMPLE<br>LOCATION MAP           | 4 | CONGERS COLONIAL PLAZA<br>285 ROUTE 303<br>CONGERS, NEW YORK                                                                                                                   |                          |
|                                                                |   | SCALE: 1" = 60'                                                                                                                                                                | DRAWN/CHECKED BY: AS/JMC |
|                                                                |   | DATE: 9/26/18                                                                                                                                                                  | PROJECT # 060141         |
| SOURCE:<br>RND SERVICES, INC. SAMPLING PLAN, SITE MEASUREMENTS |   |  BRENNAN ENVIRONMENTAL, INC.<br>19 CHATHAM ROAD, SUMMIT, NEW JERSEY 07901<br>908.918.1702 |                          |

## APPENDIX 1

NYSDEC Correspondence

# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C

625 Broadway, 11th Floor, Albany, NY 12233-7014

P: (518) 402-9662 | F: (518) 402-9679

[www.dec.ny.gov](http://www.dec.ny.gov)

Mr. Anthony Siniscalchi  
UNLMTD Real Estate Group  
200 Washington Street  
Hoboken, NJ 07030

Re: Congers Colonial Plaza  
Site No. V00456  
Congers, Rockland County, NY  
SVE Decommissioning Work Plan

Dear Mr. Siniscalchi:

We have reviewed the Soil Vapor Extraction System Decommissioning Work Plan submitted by a letter of February 9, 2018 from your consultant, Jeff McCurdy of Brennan Environmental, Inc. for the referenced site. Based on our review, the task presented in the work plan appears to be consistent with the outline provided to Jeff McCurdy by Mark Sergott's (of NYSDOH) email of January 26, 2016. The work plan is hereby approved.

Please submit a letter report presenting the findings of the field activities. If you have any questions, please contact me at (518) 402-9662.

Sincerely,



Amen M. Omorogbe, P.E.  
Remedial Bureau C  
Division of Environmental Remediation

Jeff McCurdy, BEI, [jmccurdy@bei-env.com](mailto:jmccurdy@bei-env.com)  
Mark Sergott, NYSDOH  
G. Heitzman, NYSDEC



Department of  
Environmental  
Conservation

## APPENDIX 2

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Indoor Air Quality Questionnaire and Building Inventory

**NEW YORK STATE DEPARTMENT OF HEALTH  
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY  
CENTER FOR ENVIRONMENTAL HEALTH**

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Andrew Schmucker Date/Time Prepared 7/31/2018, 8:00 am

Preparer's Affiliation Brennan Environmental, Inc. Phone No. 908-918-1702

Purpose of Investigation To determine if SVES Decommissioning is appropriate

**1. OCCUPANT:**

The former First Class Dry Cleaners and Former Tutor Time were vacant at the time of sampling. Therefore, no occupants were present for interview during sampling.

Interviewed: ☒ Y ☐ N

Last Name: Carmen First Name: Roy

Address: 285 Route 303, Congers, NY

County: Rockland

Home Phone: 914-384-1671 Office Phone: \_\_\_\_\_

Number of Occupants/persons at this location 2 Age of Occupants Adults

**2. OWNER OR LANDLORD:** (Check if same as occupant ☐ )

Interviewed: ☐ Y ☒ N

285 Route 303, LLC c/o

Last Name: Siniscalchi First Name: Anthony

Address: 285 Route 303, Congers, New York 10920

County: Rockland

Home Phone: N/A Office Phone: \_\_\_\_\_

**3. BUILDING CHARACTERISTICS**

**Type of Building:** (Circle appropriate response)

Residential  
Industrial

School  
Church

Commercial Multi-use  
Other: \_\_\_\_\_

**If the property is residential, type?** (Circle appropriate response)

|              |                 |                   |
|--------------|-----------------|-------------------|
| Ranch        | 2-Family        | 3-Family          |
| Raised Ranch | Split Level     | Colonial          |
| Cape Cod     | Contemporary    | Mobile Home       |
| Duplex       | Apartment House | Townhouses/Condos |
| Modular      | Log Home        | Other: _____      |

**If multiple units, how many?** \_\_\_\_\_

**If the property is commercial, type?**

Business Type(s) Commerical Shopping Center

Does it include residences (i.e., multi-use)? Y ☒ N If yes, how many? \_\_\_\_\_

**Other characteristics:**

Number of floors 2

Building age ~ 30 years

Is the building insulated? ☒ Y ☐ N

How air tight? Tight ☒ Average ☐ Not Tight

#### 4. AIRFLOW

**Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:**

Airflow between floors

Stairwells, HVAC

---



---



---

Airflow near source

Exterior doorway

---



---



---

Outdoor air infiltration

Doors, windows, and subsurface utilities

---



---



---

Infiltration into air ducts

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### 5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

- a. Above grade construction: wood frame concrete stone brick
- b. Basement type: full crawlspace slab other \_\_\_\_\_
- c. Basement floor: concrete dirt stone other \_\_\_\_\_
- d. Basement floor: uncovered covered covered with Linoleum Tile, Carpet
- e. Concrete floor: unsealed sealed sealed with \_\_\_\_\_
- f. Foundation walls: poured block stone other \_\_\_\_\_
- g. Foundation walls: unsealed sealed sealed with \_\_\_\_\_
- h. The basement is: wet damp dry moldy
- i. The basement is: finished unfinished partially finished
- j. Sump present? Y / N
- k. Water in sump? Y / N not applicable (sump sealed)

Basement/Lowest level depth below grade: 10 (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

Hairline cracks in basement slab and floor drains in former Tutor Time tenancy.

### 6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

|                            |                  |                                 |
|----------------------------|------------------|---------------------------------|
| <u>Hot air circulation</u> | Heat pump        | Hot water baseboard             |
| Space Heaters              | Stream radiation | Radiant floor                   |
| Electric baseboard         | Wood stove       | Outdoor wood boiler Other _____ |

The primary type of fuel used is:

|                    |          |          |
|--------------------|----------|----------|
| <u>Natural Gas</u> | Fuel Oil | Kerosene |
| Electric           | Propane  | Solar    |
| Wood               | Coal     |          |

Domestic hot water tank fueled by: \_\_\_\_\_

Boiler/furnace located in: Basement Outdoors Main Floor Other \_\_\_\_\_

Air conditioning: Central Air Window units Open Windows None  
Wall-mounted

Are there air distribution ducts present? ☒ Y ☐ N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

Unknown

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## 7. OCCUPANCY

Is basement/lowest level occupied? Full-time ☒ Occasionally ☐ Seldom ☐ Almost Never

**Level** **General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**

Basement Storage, Utilities, Former Tutor Time (Currently Vacant, Former Day Care facility)

1<sup>st</sup> Floor Laundromat, Former Day Care Facility, Former Retail Space (Currently Vacant)

2<sup>nd</sup> Floor

3<sup>rd</sup> Floor

4<sup>th</sup> Floor

## 8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage?

☒ Y ☐ N

b. Does the garage have a separate heating unit?

Y ☒ N ☐ NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car)

☒ Y ☐ N ☐ NA  
Please specify Truck

d. Has the building ever had a fire?

Y ☒ N ☐ When?

e. Is a kerosene or unvented gas space heater present?

Y ☒ N ☐ Where?

f. Is there a workshop or hobby/craft area?

Y ☒ N ☐ Where & Type?

g. Is there smoking in the building?

Y ☒ N ☐ How frequently?

h. Have cleaning products been used recently?

Y ☒ N ☐ When & Type?

i. Have cosmetic products been used recently?

Y ☒ N ☐ When & Type?

- j. Has painting/staining been done in the last 6 months? Y ☒ N Where & When? \_\_\_\_\_
- k. Is there new carpet, drapes or other textiles? Y ☒ N Where & When? \_\_\_\_\_
- l. Have air fresheners been used recently? Y ☒ N When & Type? \_\_\_\_\_
- m. Is there a kitchen exhaust fan? Y ☒ N If yes, where vented? \_\_\_\_\_
- n. Is there a bathroom exhaust fan? ☒ Y N If yes, where vented? Outside
- o. Is there a clothes dryer? ☒ Y N If yes, is it vented outside? ☒ Y N
- p. Has there been a pesticide application? Y ☒ N When & Type? \_\_\_\_\_

Are there odors in the building?

☒ Y N

If yes, please describe: \_\_\_\_\_ Light mold odors

Do any of the building occupants use solvents at work?

Y ☒ N

(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? \_\_\_\_\_

If yes, are their clothes washed at work?

Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly)

Yes, use dry-cleaning infrequently (monthly or less)

Yes, work at a dry-cleaning service

☒ No

Unknown

Is there a radon mitigation system for the building/structure? Y ☒ N Date of Installation: \_\_\_\_\_

Is the system active or passive?

Active/Passive

## 9. WATER AND SEWAGE

Water Supply: ☒ Public Water ☒ Drilled Well Driven Well Dug Well Other: \_\_\_\_\_

Sewage Disposal: ☒ Public Sewer Septic Tank Leach Field Dry Well Other: \_\_\_\_\_

## 10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: \_\_\_\_\_

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

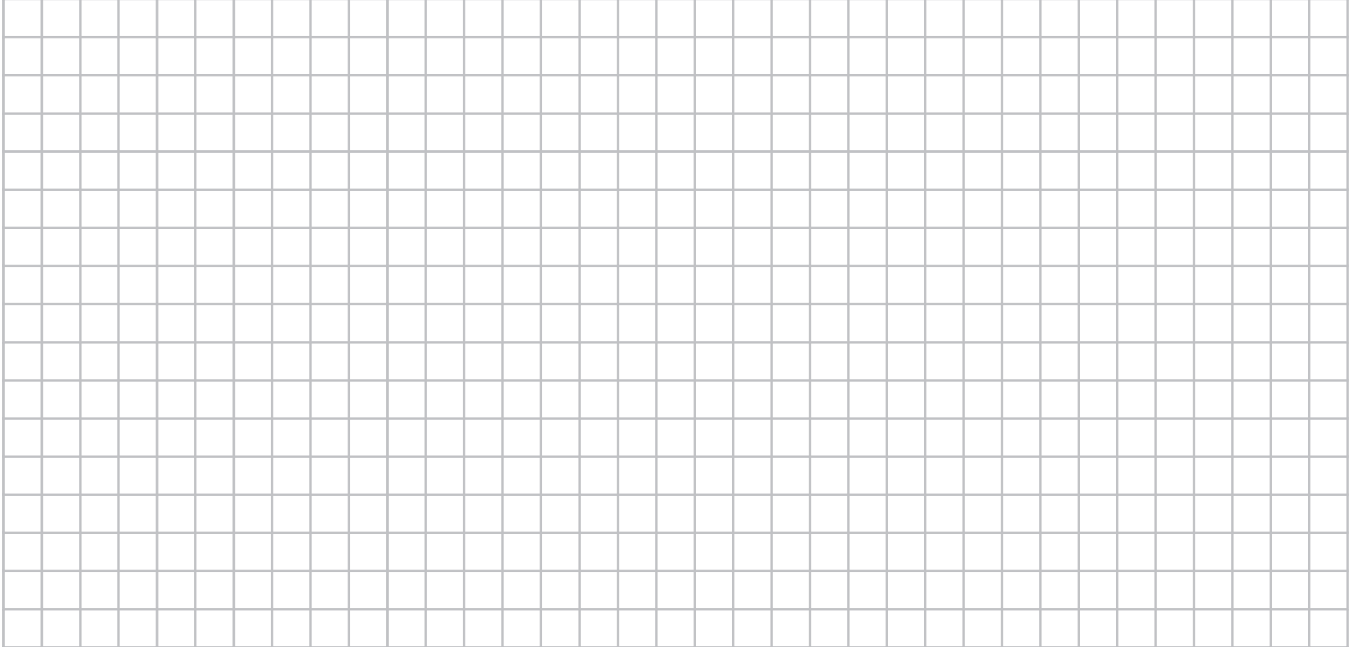
c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

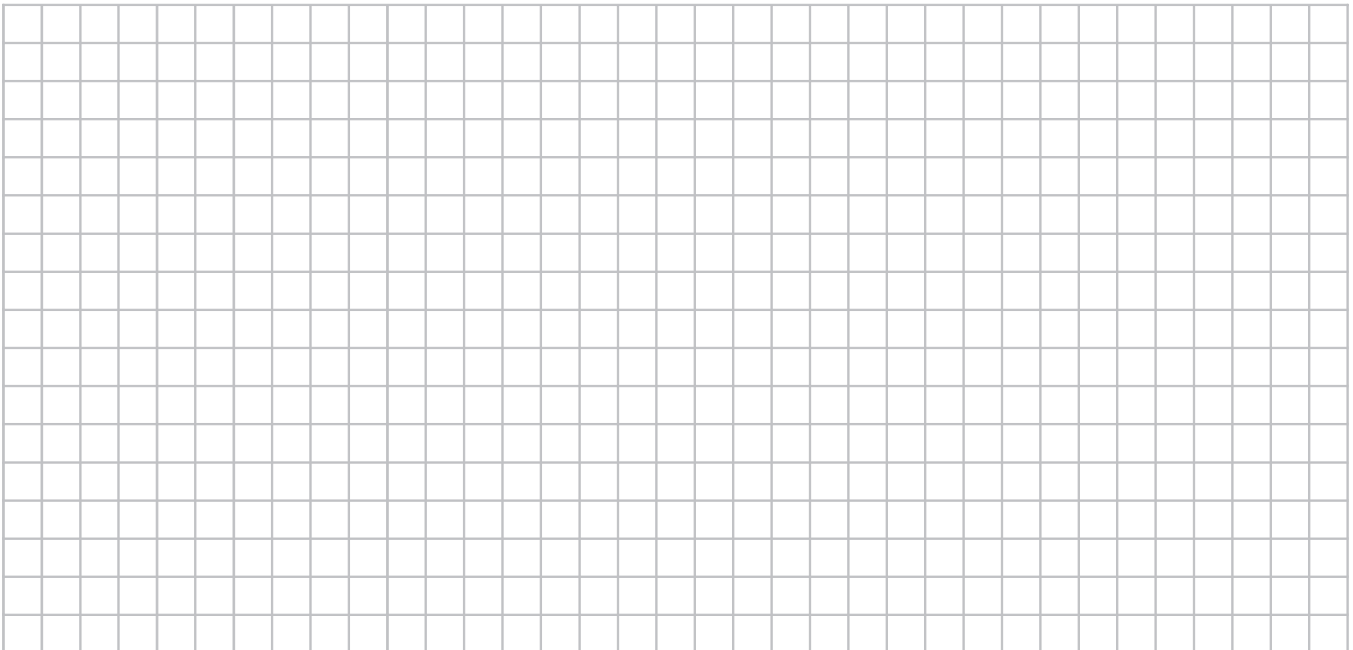
**11. FLOOR PLANS**

**Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.**

**Basement:** See attached figure.



**First Floor:** See attached figure.



## 12. OUTDOOR PLOT

**Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.**

**Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.**

See attached figure.



### 13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: N/A

List specific products found in the residence that have the potential to affect indoor air quality.

| Location <sup>****</sup> | Product Description              | Size <sup>***</sup><br>(units) | Condition <sup>*</sup> | Chemical Ingredients | Field Instrument Reading<br>(units) | Photo <sup>**</sup><br><u>Y / N</u> |
|--------------------------|----------------------------------|--------------------------------|------------------------|----------------------|-------------------------------------|-------------------------------------|
| Carmen's                 | Bleach                           | < 1 gal                        | UO                     |                      | N/A                                 | N                                   |
| Carmen's                 | Toilet Scrubber                  | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Softsoap                         | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Propane                          | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | CRC Lectra Clean                 | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Glade Air Freshener              | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Air Duster                       | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Spray 9                          | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | HDV Sprayer                      | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Spic & Span                      | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Lemon Pledge                     | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | WD-40                            | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Fabuloso                         | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Germicidal Bleach                | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | ZEP Glass Cleaner                | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | HPV All Purpose Cleaning Vinegar | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Roto-Rooter Pipe Shield          | < 1 gal                        | U                      |                      | N/A                                 | N                                   |
| Carmen's                 | Laundry Detergent                | < 1 gal                        | UO                     |                      | N/A                                 | N                                   |
|                          |                                  |                                |                        |                      |                                     |                                     |

\* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**

\*\* Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

\*\*\* Only small household quantities (<1 gallon per type) of these materials were identified in the tenancy.

\*\*\*\* The former First Class Dry Cleaners and Former Tutor Time were vacant at the time of sampling. No products were identified within these tenancies.

## APPENDIX 3

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Historic PCE Concentrations: Soil Vapor and Indoor Air

Historic PCE Concentrations: Soil Vapor and Indoor Air  
 Congers Colonial Plaza  
 285 Route 303  
 Congers, New York  
 BEI Job #060141

|                            |                            | Sample ID | 12/7/2000 | 12/18/2000 | 1/11/2001 | 1/18/2001 | 3/16/2001 | 4/11/2001 | 5/14/2001 | 6/16/2001 | 7/16/2001 | 10/29/2001 | 11/29/2001 | 12/3/2001 | 4/30/2002 | 7/22/2002 | 11/11/2002 | 2/4/2003 | 11/30/2003* | 4/8/2004** | 6/7/2004** | 11/27/2004* | 11/27-28/2005* | 8/25/2009* | 3/25/2010 | 12/6/2010 | 8/1/2018* |
|----------------------------|----------------------------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|-----------|-----------|-----------|------------|----------|-------------|------------|------------|-------------|----------------|------------|-----------|-----------|-----------|
| Sample Location            |                            |           |           |            |           |           |           |           |           |           |           |            |            |           |           |           |            |          |             |            |            |             |                |            |           |           |           |
| First Floor Indoor Air     |                            |           |           |            |           |           |           |           |           |           |           |            |            |           |           |           |            |          |             |            |            |             |                |            |           |           |           |
| Laundry Station Laundromat | Laundromat, IA-1           | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | 13         | 4.2         | ND             | ~          | ~         |           |           |
| Hong Kong Kitchen          | IA-2                       | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | ~          | 1.6         | ND             | ~          | ~         |           |           |
| Stay Fit Seniors           | IA-3                       | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | ~          | ND          | ND             | ~          | ~         |           |           |
| First Class Dry Cleaner    | Up Dry, IA-5               | 1.435     | 0.9       | 0.14       | 0.016     | 0.05      | 41        | 66        | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | 13         | ~           | 8.1            | ~          | ~         |           |           |
| Tutor Time                 | IA-6                       | ~         | ~         | ~          | ~         | 0.008     | 33        | 14        | 16        | 6         | 5.8       | <2.1       | <2.1       | 4         | <2.0      | <2.1      | <2.1       | 118      | 86          | 5.2        | 7.7        | ~           | ~              | ~          | ND        | ~         |           |
| Depaulis IV                | Depaulis IV                | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | 4.2        | ~           | ~              | ~          | ~         |           |           |
| Basement Indoor Air        |                            |           |           |            |           |           |           |           |           |           |           |            |            |           |           |           |            |          |             |            |            |             |                |            |           |           |           |
| Tutor Time                 | IA-4                       | ~         | ~         | ~          | ~         | 0.012     | 46        | 4         | 32        | 13        | 7.3       | <2.1       | <2.1       | 4.7       | 9.5       | 2.8       | <2.1       | 87       | 46          | 12         | 27         | ~           | 8.1            | 2.1        | ND        | ~         |           |
| First Class Dry Cleaner    | Down Dry, IA-5^            | 1.726     | 1.3       | 0.11       | 0.012     | 0.07      | 234       | 101       | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | 21         | ~           | ~              | ND         | ~         |           |           |
| Depaulis IV                | Garage                     | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | 3.1        | ~           | ~              | ~          | ~         |           |           |
| Sub-Slab Soil Vapor        |                            |           |           |            |           |           |           |           |           |           |           |            |            |           |           |           |            |          |             |            |            |             |                |            |           |           |           |
| Laundry Station Laundromat | SS-1, S-101                | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | ~          | 17          | 1.7            | ~          | 10        |           |           |
| Hong Kong Kitchen          | SS-2                       | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | ~          | 5           | 1.8            | ~          | ~         |           |           |
| Stay Fit Seniors           | SS-3                       | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | ~          | 24          | 1.9            | ~          | ~         |           |           |
| Tutor Time                 | SS Toddler A, SS-4, SS-103 | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | 140        | ~           | ~              | ND         | 950       |           |           |
| First Class Dry Cleaners   | SS-5, SS-102               | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | ~          | ~           | ~              | 3.1        | 10,000    |           |           |
| Depaulis IV                | SS-VES2F                   | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | 3.2        | ~           | ~              | ~          | ~         |           |           |
| VES-1 Exhaust              | SS-VES1G                   | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | 32         | ~           | ~              | ~          | ~         |           |           |
| VES-2 Exhaust              | SS-VES2G                   | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | 0.69       | ~           | ~              | ~          | ~         |           |           |
| Ambient Air                |                            |           |           |            |           |           |           |           |           |           |           |            |            |           |           |           |            |          |             |            |            |             |                |            |           |           |           |
| VES-1 Exhaust              | AA-1                       | <0.067    | ~         | ~          | ~         | <0.0004   | <2        | ~         | 19        | 20        | 2.9       | <2.1       | <2.1       | <2.0      | <2.1      | <2.4      | ~          | 2        | 78          | 7.9        | 6.8        | ~           | ND             | ND         | ND        | ~         |           |
| VES-2 Exhaust              | AA-2                       | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | ~          | ND          | 1.8            | ~          | ~         |           |           |
| Outside Tutor Time         | Background                 | ~         | ~         | ~          | ~         | ~         | ~         | ~         | ~         | ~         | ~         | ~          | ~          | ~         | ~         | ~         | ~          | ~        | ~           | ~          | ND         | ~           | ~              | ~          | ~         |           |           |

^ - Please note that the indoor air sample collected from the basement of the former First Class Dry Cleaner was mistakenly identified by the identical sample name as the first floor, IA-5, on the chain of custody. In order to distinguish the results, the basement sample is identified herein as IA-5^.

Sample results in µg/m³

ND - Not detected at laboratory MDL

~ - Not sampled on this date

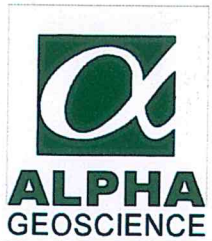
\* - Samples collected with VES-1 and VES-2 turned off

\*\* - Elevated results attributed to clogged filter; filters changed and locations resampled on June 7, 2004

## APPENDIX 4

---

### Data Usability Summary Report



Geology

Hydrology

Remediation

Water Supply

RECEIVED  
SEP 24 2018

BY: .....

September 20, 2018

Mr. Jeff McCurdy  
Brennan Environmental, Inc.  
19 Chatham Road  
Summit, New Jersey 07901

Re: Data Validation Report  
Congers Colonial Plaza  
July 2018 Sub Slab Air Samples

Dear Mr. McCurdy:

The data usability summary report (DUSR) and data validation summary are attached to this letter for Congers Colonial Plaza, July 2018 sub slab air samples. The data for Integrated Analytical Laboratories LLC, SDG# E18-06141, are acceptable with no issues that are identified and discussed in the validation summary. There are no data that are qualified as either estimated (J) or rejected (R) in the data pack.

A list of common data validation acronyms is attached to this letter to assist you in interpreting the validation summaries. If you have any questions concerning the work performed, please contact me at (518) 348-6995. Thank you for the opportunity to assist Brennan Environmental, Inc.

Sincerely,  
Alpha Geoscience

Donald Anné  
Senior Chemist

DCA:dca  
attachments

Z:\projects\2010\10600 - 10620\10615-congers colonial plaza\2018\Congeners Colonial Plaza-181.ltr.wpd

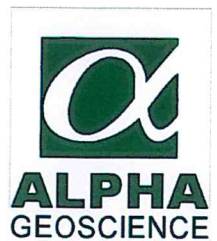
## Data Validation Acronyms

|             |                                                                   |
|-------------|-------------------------------------------------------------------|
| AA          | Atomic absorption, flame technique                                |
| BHC         | Hexachlorocyclohexane                                             |
| BFB         | Bromofluorobenzene                                                |
| CCB         | Continuing calibration blank                                      |
| CCC         | Calibration check compound                                        |
| CCV         | Continuing calibration verification                               |
| CN          | Cyanide                                                           |
| CRDL        | Contract required detection limit                                 |
| CRQL        | Contract required quantitation limit                              |
| CVAA        | Atomic adsorption, cold vapor technique                           |
| DCAA        | 2,4-Dichlorophenylacetic acid                                     |
| DCB         | Decachlorobiphenyl                                                |
| DFTPP       | Decafluorotriphenyl phosphine                                     |
| ECD         | Electron capture detector                                         |
| FAA         | Atomic absorption, furnace technique                              |
| FID         | Flame ionization detector                                         |
| FNP         | 1-Fluoronaphthalene                                               |
| GC          | Gas chromatography                                                |
| GC/MS       | Gas chromatography/mass spectrometry                              |
| GPC         | Gel permeation chromatography                                     |
| ICB         | Initial calibration blank                                         |
| ICP         | Inductively coupled plasma-atomic emission spectrometer           |
| ICV         | Initial calibration verification                                  |
| IDL         | Instrument detection limit                                        |
| IS          | Internal standard                                                 |
| LCS         | Laboratory control sample                                         |
| LCS/LCSD    | Laboratory control sample/laboratory control sample duplicate     |
| MSA         | Method of standard additions                                      |
| MS/MSD      | Matrix spike/matrix spike duplicate                               |
| PID         | Photo ionization detector                                         |
| PCB         | Polychlorinated biphenyl                                          |
| PCDD        | Polychlorinated dibenzodioxins                                    |
| PCDF        | Polychlorinated dibenzofurans                                     |
| QA          | Quality assurance                                                 |
| QC          | Quality control                                                   |
| RF          | Response factor                                                   |
| RPD         | Relative percent difference                                       |
| RRF         | Relative response factor                                          |
| RRF(number) | Relative response factor at concentration of the number following |
| RT          | Retention time                                                    |
| RRT         | Relative retention time                                           |
| SDG         | Sample delivery group                                             |
| SPCC        | System performance check compound                                 |
| TCX         | Tetrachloro-m-xylene                                              |
| %D          | Percent difference                                                |
| %R          | Percent recovery                                                  |
| %RSD        | Percent relative standard deviation                               |

## **Data Validation Qualifiers Used in the QA/QC Reviews for USEPA Region II**

|    |   |                                                                                                                                                                                   |
|----|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| U  | = | Not detected. The associated number indicates the approximate sample concentration necessary to be detected significantly greater than the level of the highest associated blank. |
| R  | = | Unreliable result; data is rejected or unusable. Analyte may or may not be present in the sample. Supporting data or information is necessary to confirm the result.              |
| N  | = | Tentative identification. Analyte is considered present. Special methods may be needed to confirm its presence or absence during future sampling efforts.                         |
| J  | = | Analyte is present. Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method.                                     |
| J- | = | Analyte is present. Reported value may be biased low and associated with a higher level of uncertainty than is normally expected with the analytical method.                      |
| J+ | = | Analyte is present. Reported value may be biased high and associated with a higher level of uncertainty than is normally expected with the analytical method.                     |
| UJ | = | Not detected, quantitation limit may be inaccurate or imprecise.                                                                                                                  |

Note: These qualifiers are used for data validation purposes. The data validation qualifiers may differ from the qualifiers that the laboratory assigns to the data. Refer to the laboratory analytical report for the definitions of the laboratory qualifiers.



Geology

Hydrology

Remediation

Water Supply

**Data Usability Summary Report for  
Integrated Analytical Laboratories LLC  
SDG # E18-06141**

**3 Sub Slab Air Samples  
Collected July 31, 2018**

Prepared by: Donald Anné  
September 20, 2018

---

The data package contains the documentation required by NYSDEC ASP. The proper chain of custody procedures were followed by the samplers. All information appeared legible and complete. The data pack contained the results of TO15 volatile analyses for 3 sub slab air samples.

The overall performances of the analyses are acceptable. Integrated Analytical Laboratories LLC did fulfill the requirements of the analytical method.

The data are acceptable with no issues that are identified in the accompanying data validation reviews. There are no data that were qualified as either estimated (J) or rejected (R); therefore, all data are considered usable. Detailed information on data quality is included in the data validation review.



Geology

Hydrology

Remediation

Water Supply

**QA/QC Review of TO15 Volatiles Data for  
Integrated Analytical Laboratories LLC  
SDG # E18-06141**

**3 Sub Slab Air Samples  
Collected July 31, 2018**

Prepared by: Donald Anné  
September 20, 2018

---

Holding Times: Samples were analyzed within the EPA recommended holding times.

GC/MS Tuning and Mass Calibration: The BFB tuning criteria were within control limits.

Initial Calibration: The average RRFs for target compounds were above the allowable minimum (0.050), as required.

Continuing Calibration: The CCRFs for target compounds were above the allowable minimum (0.050) and the %Ds were below the allowable maximum (30%), as required.

Blanks: The analyses of the method blanks reported target compounds as not detected.

Internal Standard Area Summary: The internal standard areas and retention times were within control limits.

Laboratory Duplicate Sample: The relative percent differences for detected compounds were below the allowable maximum (30%) in laboratory duplicate samples E18-04189-01, E18-06204-01, and E18-06173-01, as required.

Compound ID: Checked compounds were within GC quantitation limits. The mass spectra for detected compounds contained the primary and secondary ions, as outlined in the method.

Clean Cannister Verification: The analysis of clean cannister verification samples reported target compounds as not detected, as required.

Canister Pressure: The laboratory reported all samples with residual vacuums, as required.



# Integrated Analytical Laboratories LLC

## Summary of Results

Brennan Environmental  
19 Chatham Road  
Summit, NJ 07901  
Attn: Jeff McCurdy  
Project: Congers CP / 060141  
Site: NY

Report Date: 08/13/18  
SDG Number: E18-06141  
Date Sampled: 08/01/18  
Date Received: 08/02/18  
Date Analyzed: 08/06/18  
Data File: AA8206  
Summa ID: 3014A  
DF: 1

### Analysis: Volatile Organic Compounds by EPA Method TO-15

| Sample Name:<br>IAL ID:    |              | SS-101<br>E18-06141-07 |              | Reporting<br>Limits |              |
|----------------------------|--------------|------------------------|--------------|---------------------|--------------|
| <u>Compound</u>            | <u>CAS #</u> | <u>ppbv</u>            | <u>ug/m3</u> | <u>ppbv</u>         | <u>ug/m3</u> |
| 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         |
| 1,1,2,2-Tetrachloroethane  | 79-34-5      | ND                     | ND           | 0.20                | 1.4          |
| Tetrachloroethene          | 127-18-4     | 1.5                    | 10           | 0.20                | 1.4          |
| 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         |
| Vinyl chloride             | 75-01-4      | ND                     | ND           | 0.20                | 0.51         |



# Integrated Analytical Laboratories LLC

## Summary of Results

Brennan Environmental  
19 Chatham Road  
Summit, NJ 07901  
Attn: Jeff McCurdy  
Project: Congers CP / 060141  
Site: NY

Report Date: 08/13/18  
SDG Number: E18-06141  
Date Sampled: 08/01/18  
Date Received: 08/02/18  
Date Analyzed: 08/06/18, 08/07/18  
Data File: AA8207, AA8232  
Summa ID: 2155  
DF: 1, 100

### Analysis: Volatile Organic Compounds by EPA Method TO-15

| Sample Name:               |          | SS-102       |       | Reporting |       |
|----------------------------|----------|--------------|-------|-----------|-------|
| IAL ID:                    |          | E18-06141-08 |       | Limits    |       |
| Compound                   | CAS #    | ppbv         | ug/m3 | ppbv      | ug/m3 |
| 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  | 0.50         | 2.0   | 0.20      | 0.79  |
| 1,2-Dichloroethene (cis)   | 156-59-2 | D            | 240   | 20        | 79    |
| 1,2-Dichloroethene (trans) | 156-60-5 | 1.8          | 6.9   | 0.20      | 0.79  |
| 1,1,2,2-Tetrachloroethane  | 79-34-5  | ND           | ND    | 0.20      | 1.4   |
| Tetrachloroethene          | 127-18-4 | D            | 1500  | 20        | 136   |
| 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  | D            | 86    | 4.6       | 25    |
| Vinyl chloride             | 75-01-4  | ND           | ND    | 0.20      | 0.51  |



# Integrated Analytical Laboratories LLC

## Summary of Results

Brennan Environmental  
19 Chatham Road  
Summit, NJ 07901  
Attn: Jeff McCurdy  
Project: Congers CP / 060141  
Site: NY

Report Date: 08/13/18  
SDG Number: E18-06141  
Date Sampled: 08/01/18  
Date Received: 08/02/18  
Date Analyzed: 08/06/18, 08/07/18  
Data File: AA8208, AA8233  
Summa ID: 5089  
DF: 1, 10

### Analysis: Volatile Organic Compounds by EPA Method TO-15

| <u>Compound</u>            | <u>Sample Name:</u><br><u>IAL ID:</u> |   | <u>SS-103</u><br><u>E18-06141-09</u> |              | <u>Reporting</u><br><u>Limits</u> |              |
|----------------------------|---------------------------------------|---|--------------------------------------|--------------|-----------------------------------|--------------|
|                            | <u>CAS #</u>                          |   | <u>ppbv</u>                          | <u>ug/m3</u> | <u>ppbv</u>                       | <u>ug/m3</u> |
| 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         |
| 1,1,2,2-Tetrachloroethane  | 79-34-5                               |   | ND                                   | ND           | 0.20                              | 1.4          |
| Tetrachloroethene          | 127-18-4                              | D | 140                                  | 950          | 2.0                               | 14           |
| 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                               |   | 0.17                                 | 0.93         | 0.05                              | 0.25         |
| Vinyl chloride             | 75-01-4                               |   | ND                                   | ND           | 0.20                              | 0.51         |

## APPENDIX 5

---

Institutional & Engineering Controls Certification Form



Enclosure 2  
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
Site Management Periodic Review Report Notice  
Institutional and Engineering Controls Certification Form



| Site Details                                                                                                                                                |        | Box 1                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------|
| Site No.                                                                                                                                                    | V00456 |                                                              |
| Site Name Congers Colonial Plaza                                                                                                                            |        |                                                              |
| Site Address: 285 Route 303      Zip Code: 10920-                                                                                                           |        |                                                              |
| City/Town: Congers                                                                                                                                          |        |                                                              |
| County: Rockland                                                                                                                                            |        |                                                              |
| Site Acreage: 2.8                                                                                                                                           |        |                                                              |
| Reporting Period: July 31, 2017 to July 31, 2018                                                                                                            |        |                                                              |
|                                                                                                                                                             |        | YES      NO                                                  |
| 1. Is the information above correct?                                                                                                                        |        | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| If NO, include handwritten above or on a separate sheet.                                                                                                    |        |                                                              |
| 2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?                       |        | <input type="checkbox"/> <input checked="" type="checkbox"/> |
| 3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?                                                      |        | <input type="checkbox"/> <input checked="" type="checkbox"/> |
| 4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?               |        | <input type="checkbox"/> <input checked="" type="checkbox"/> |
| If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form. |        |                                                              |
| 5. Is the site currently undergoing development?                                                                                                            |        | <input type="checkbox"/> <input checked="" type="checkbox"/> |
|                                                                                                                                                             |        | Box 2                                                        |
|                                                                                                                                                             |        | YES      NO                                                  |
| 6. Is the current site use consistent with the use(s) listed below?<br>Restricted-Residential, Commercial, and Industrial                                   |        | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 7. Are all ICs/ECs in place and functioning as designed?                                                                                                    |        | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and<br>DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.                        |        |                                                              |
| A Corrective Measures Work Plan must be submitted along with this form to address these issues.                                                             |        |                                                              |
| _____<br>Signature of Owner, Remedial Party or Designated Representative                                                                                    |        | _____<br>Date                                                |

**Description of Institutional Controls**

| <u>Parcel</u> | <u>Owner</u>                             | <u>Institutional Control</u>                                                                                                                         |
|---------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 35.19-2-11    | 285 Route 303, LLC and 119 Route 46, LLC | Ground Water Use Restriction<br>Landuse Restriction<br>Monitoring Plan<br>Site Management Plan<br><br>O&M Plan<br>Soil Management Plan<br>IC/EC Plan |

The owner of the property shall prohibit the property from ever being used for purposes other than for restricted residential, commercial or industrial use without the express written waiver of such prohibition by the Department or Relevant Agency.

The owner of the property shall prohibit the use of the groundwater underlying the property without treatment rendering it safe for drinking water or industrial purposes, as appropriate, unless the user first obtains permission to do so from the Department or Relevant Agency.

The owner of the property shall provide a periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the Department or Relevant Agency, which will certify that the institutional and engineering controls put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired.

**Box 4****Description of Engineering Controls**

| <u>Parcel</u>                                       | <u>Engineering Control</u>       |
|-----------------------------------------------------|----------------------------------|
| 35.19-2-11                                          | Vapor Mitigation<br>Cover System |
| soil vapor extraction (SVE) Systems<br>Cover System |                                  |

**Periodic Review Report (PRR) Certification Statements**

1. I certify by checking "YES" below that:

- a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;
- b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES NO

☒ ☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

- (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;
- (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;
- (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;
- (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and
- (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

☒ ☐

**IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and  
DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

**A Corrective Measures Work Plan must be submitted along with this form to address these issues.**

\_\_\_\_\_  
Signature of Owner, Remedial Party or Designated Representative

\_\_\_\_\_  
Date

IC CERTIFICATIONS  
SITE NO. V00456

Box 6

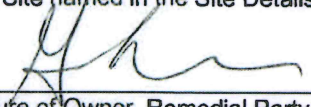
**SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE**

I certify that all information and statements in Boxes 1, 2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Gabriella Lobente at 200 Washington Street Hirschman NJ 07030  
print name print business address

am certifying as owner (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

  
Signature of Owner, Remedial Party, or Designated Representative  
Rendering Certification

11/1/2019  
Date

IC/EC CERTIFICATIONS

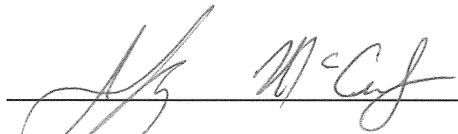
Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Jeff McCurdy at 19 Chatham Road, Summit, NJ 07901,  
print name print business address

am certifying as a Qualified Environmental Professional for the Owner  
(Owner or Remedial Party)



Signature of Qualified Environmental Professional, for  
the Owner or Remedial Party, Rendering Certification

Stamp  
(Required for PE)

9/13/19  
Date

## APPENDIX 6

---

### General Site-Wide Inspection Checklist

### General Site-Wide Inspection Checklist

Date of Inspection: August 1, 2018

Inspector Name: Andrew Schmucker

Inspector Company: Brennan Environmental, Inc.

Inspector Position: Environmental Scientist

Site Name: Congers Colonial Plaza

Site Address: 285 Route 303, Congers, NY

|                                                                                                                                                          | Yes      | No            | NA            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------|---------------|
| 1.0 Is all PVC piping in good condition with no breaks, cracks or leaks?                                                                                 | <u>X</u> | <u>      </u> | <u>      </u> |
| 2.0 Are openings around the suction point piping penetrations of the slab properly sealed?                                                               | <u>X</u> | <u>      </u> | <u>      </u> |
| 3.0 Are accessible openings around utility penetrations of the foundation walls and slab, test holes, wells and other openings in slabs properly sealed? | <u>X</u> | <u>      </u> | <u>      </u> |
| 4.0 Are openings / cracks sealed where the slab meets the foundation wall (if appropriate)?                                                              | <u>X</u> | <u>      </u> | <u>      </u> |
| 5.0 Is there adequate access to service the fan and other electrical services?                                                                           | <u>X</u> | <u>      </u> | <u>      </u> |
| 6.0 Is there a sump pit in the basement?                                                                                                                 | <u>X</u> | <u>      </u> | <u>      </u> |

|                                                                                                                                | Yes           | No            | NA            |
|--------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|
| 6.1 Is the sump pit installed with a sealed impermeable cover?                                                                 | <u>  X  </u>  | <u>      </u> | <u>      </u> |
| 6.2 Are the penetrations through the cover sealed?                                                                             | <u>      </u> | <u>      </u> | <u>  X  </u>  |
| 6.3 Does the cover have a clear view port to permit observations of conditions in the sump pit?                                | <u>      </u> | <u>  X  </u>  | <u>      </u> |
| 7.0 Does each suction point have a mechanism to measure vacuum?                                                                | <u>  X  </u>  | <u>      </u> | <u>      </u> |
| 7.1 Is the pressure reading from the latest commissioning clearly marked on the vent pipe?                                     | <u>      </u> | <u>  X  </u>  | <u>      </u> |
| 7.2 Are the current diagnostic measurements within a 20% difference as compared to the system commissioning (baseline) values? | <u>      </u> | <u>      </u> | <u>  X  </u>  |
| 8.0 Does the mitigation system include an operational audible alarm to inform occupants of a system malfunction?               | <u>      </u> | <u>  X  </u>  | <u>      </u> |
| 9.0 Is the exterior PVC piping in good condition with no breaks, cracks or leaks?                                              | <u>  X  </u>  | <u>      </u> | <u>      </u> |

|                                                                                                                         | Yes           | No            | NA            |
|-------------------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|
| 10.0 Is the fan functioning properly?                                                                                   | <u>  x  </u>  | <u>      </u> | <u>      </u> |
| 11.0 Are photographs from the inspection attached?                                                                      | <u>  x  </u>  | <u>      </u> | <u>      </u> |
| 12.0 Are other documents such as copies of invoices for repair work, receipts for replacement equipment, etc. attached? | <u>      </u> | <u>      </u> | <u>  x  </u>  |
| 13.0 Were any maintenance activities required?                                                                          | <u>      </u> | <u>  x  </u>  | <u>      </u> |
| 14.0 Are site records up to date?                                                                                       | <u>  x  </u>  | <u>      </u> | <u>      </u> |
| 15.0 Has site usage changed since the previous site inspection?                                                         | <u>      </u> | <u>  x  </u>  | <u>      </u> |

## 16.0 Additional Notes & Comments

The tenant space remains vacant.

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## 17.0 Site Sketch (if applicable)

See attached.

## APPENDIX 7

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Photographic Log



Photo 1: View of SS-102 installed in the basement of the former First Class Dry Cleaners.



Photo 2: View of SS-103 installed in the basement of the former Tutor Time.



Photo 3: View of Carmen's Laundromat.



Photo 4: View of the former Tutor Time .

## APPENDIX 8

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Laboratory Analytical Report (E18-06141)

## 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#: Congers CP / 060141  
SDG #: E18-06141  
Date of first sample receipt: 8/2/2018

Randolph, NJ 07869  
NY ELAP Certification#: 11402  
NJDEP (Primary AB) Certification#: 14751  
Date of last sample receipt: 8/2/2018

Client: Brennan Environmental  
Project/Site: Congers CP / 060141/NY

| Client Sample Number | Laboratory Sample | Sample Location | Date/Time of Collection |
|----------------------|-------------------|-----------------|-------------------------|
| SS-101               | E18-06141-07      | NA              | 7/31/2018 9:17          |
| SS-102               | E18-06141-08      | NA              | 7/31/2018 8:33          |
| SS-103               | E18-06141-09      | NA              | 7/31/2018 8:38          |

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: August 27, 2018



Lauren Jenkins  
Air Division Quality Assurance Officer

Date: August 27, 2018

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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                   |
| µg/m <sup>3</sup> | micrograms per cubic meter                        |

## **Section I: Chain of Custody**

|                                                                                                                                                                                                                                  |  |                                   |  |                                            |  |                          |  |                                                                                                                                                 |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|--|--------------------------------------------|--|--------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------|--|-------------|--|-----------------------------|--|-------------------------------------|--|---|--|--|--|--|--|
| <b>Client Contact Information</b>                                                                                                                                                                                                |  |                                   |  | <b>Project Information</b>                 |  |                          |  | Carrier (check one): <input checked="" type="checkbox"/> IAL Courier <input type="checkbox"/> Client Courier <input type="checkbox"/> FedEx/UPS |  |                        |  | pg <u>1</u> of <u>2</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Company: <u>BEI</u>                                                                                                                                                                                                              |  |                                   |  | Project Name: <u>Conyers C.P. / 060141</u> |  |                          |  | <b>Invoice Information</b>                                                                                                                      |  |                        |  | <b>Analysis</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | <b>Report</b>                  |  | <b>Matrix</b>                                                                                                                                         |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Address: <u>19 Chatham Rd.</u>                                                                                                                                                                                                   |  |                                   |  | Project Location (State): <u>NY</u>        |  |                          |  | Attn:                                                                                                                                           |  |                        |  | <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> EPA TO-15<br/> NJDEP LLTO-15 (includes 30 TICs)<br/> Library Search (10, 20, or 30 TICs)<br/> Other (Explain in Comments)<br/> Regulatory/ NY Cat B / Full (NJ Required)<br/> Reduced / NY Cat A Data Package<br/> Results Only<br/> Indoor Air<br/> Ambient / Outdoor Air<br/> Sub Slab / Soil Gas / Near Slab (Circle One)<br/> Stack Emission / SVE System<br/> High Concentrations Expected </div> |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Summit, NJ 07901                                                                                                                                                                                                                 |  |                                   |  | Project Manager: <u>Jeff McCurdy</u>       |  |                          |  | Address:                                                                                                                                        |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Phone: <u>908-918-1702</u>                                                                                                                                                                                                       |  |                                   |  | PM Signature: <u>[Signature]</u>           |  |                          |  | PO #:                                                                                                                                           |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Fax: <u>908-918-1707</u>                                                                                                                                                                                                         |  |                                   |  | PM E-Mail: <u>jmccurdy@bei-enr.com</u>     |  |                          |  | Quote #:                                                                                                                                        |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Report to:                                                                                                                                                                                                                       |  |                                   |  | Sampler: <u>AS</u>                         |  |                          |  |                                                                                                                                                 |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| <b>Analysis Turnaround Time - IF NO TAT IS SPECIFIED, 2 WEEK TAT IS ASSUMED</b>                                                                                                                                                  |  |                                   |  |                                            |  |                          |  | <b>Barometric Pressure</b>                                                                                                                      |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| IAL Standard: 2 weeks (10 business days)<br>Rush (**pre-approved by lab):      24hr**      48hr**      72hr**      96hr**      1wk**                                                                                             |  |                                   |  |                                            |  |                          |  | Start                                                                                                                                           |  | <u>30.10</u>           |  | Stop                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | <u>30.10</u>                   |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Sample Identification                                                                                                                                                                                                            |  | Start DATE & TIME<br>(24hr Clock) |  | End DATE & TIME<br>(24hr Clock)            |  | Starting Vacuum<br>("Hg) |  | Ending Vacuum<br>("Hg)                                                                                                                          |  | Starting Temp.<br>("F) |  | Ending Temp.<br>("F)                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Outgoing Vacuum - Lab<br>("Hg) |  | Incoming Vacuum - Lab<br>("Hg)                                                                                                                        |  | Flow Regulator ID                         |  | Canister ID |  | Canister Size<br>(1L or 6L) |  | Flow Controller Readout<br>(cc/min) |  |   |  |  |  |  |  |
|                                                                                                                                                                                                                                  |  |                                   |  |                                            |  |                          |  |                                                                                                                                                 |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| 1) AA-101                                                                                                                                                                                                                        |  | 7/31/18 935                       |  | 7/31/18 408                                |  | -30                      |  | -2.0                                                                                                                                            |  | 72                     |  | 92                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | -29.0                          |  | -2.0                                                                                                                                                  |  | 7342673                                   |  | J076        |  | 6L                          |  | 12.4                                |  | H |  |  |  |  |  |
| 2) IA-FF-101                                                                                                                                                                                                                     |  | 837                               |  | 8/1/18 411                                 |  | -29.5                    |  | -2.5                                                                                                                                            |  | 68                     |  | 68                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | -29.0                          |  | -2.5                                                                                                                                                  |  | 6702495-3                                 |  | 3613        |  | 6L                          |  | 12.3                                |  | H |  |  |  |  |  |
| 3) IA-FF-102                                                                                                                                                                                                                     |  | 839                               |  | 355                                        |  | -28.5                    |  | -2.0                                                                                                                                            |  | 68                     |  | 69                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | -29.0                          |  | -2.0                                                                                                                                                  |  | 7342708                                   |  | 3814        |  | 6L                          |  | 12.4                                |  | H |  |  |  |  |  |
| 4) IA-FF-103                                                                                                                                                                                                                     |  | 844                               |  | 412                                        |  | -30                      |  | -2.5                                                                                                                                            |  | 68                     |  | 68                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | -29.0                          |  | -2.5                                                                                                                                                  |  | 0302495-5                                 |  | 2753        |  | 6L                          |  | 12.5                                |  | H |  |  |  |  |  |
| 5) IA-B-101                                                                                                                                                                                                                      |  | 840                               |  | 348                                        |  | -29                      |  | -2.5                                                                                                                                            |  | 68                     |  | 68                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | -29.0                          |  | -2.5                                                                                                                                                  |  | 0121687-1                                 |  | 3277        |  | 6L                          |  | 12.5                                |  | H |  |  |  |  |  |
| 6) IA-B-102                                                                                                                                                                                                                      |  | 842                               |  | 410                                        |  | -29.5                    |  | -2.5                                                                                                                                            |  | 68                     |  | 68                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | -29.0                          |  | -2.5                                                                                                                                                  |  | 7340286                                   |  | 3026A       |  | 6L                          |  | 12.6                                |  | H |  |  |  |  |  |
| Comments/ Special Analysis Instructions / QC Requirements:<br><u>3013, 2753, 3026A</u><br><u>06081801 06131822 3059</u><br><u>H = hold X = run Report CUOCs only</u><br><u>5076, 3814, 3277</u><br><u>05221801 05291822 5078</u> |  |                                   |  |                                            |  |                          |  |                                                                                                                                                 |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  | Note: Hold or contingent samples may be designated by writing an "H" or "C" in the appropriate analysis box.<br><b>ALL FIELDS IN RED ARE REQUIRED</b> |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| <b>Shipping Information / Canister Preparation (for laboratory use only)</b>                                                                                                                                                     |  |                                   |  |                                            |  |                          |  |                                                                                                                                                 |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  | <b>Laboratory Canister Certification</b>                                                                                                              |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Individual Preparing Canisters / Title: <u>P. Jenkins, J. Walukiewicz / Air Department Sample Custodians</u>                                                                                                                     |  |                                   |  |                                            |  |                          |  |                                                                                                                                                 |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  | GC/MS Analyst Signature: <u>[Signature]</u>                                                                                                           |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Lab Affixed Seal Number(s): <u>IAL-20180200, -0201, -0202</u>                                                                                                                                                                    |  |                                   |  |                                            |  |                          |  |                                                                                                                                                 |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  | IAL SDG#: <u>06141</u>                                                                                                                                |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Date/Time Shipping Container Sealed: <u>7-26-18 1130</u>                                                                                                                                                                         |  |                                   |  |                                            |  |                          |  |                                                                                                                                                 |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| <b>External Chain of Custody</b>                                                                                                                                                                                                 |  |                                   |  |                                            |  |                          |  |                                                                                                                                                 |  |                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                |  |                                                                                                                                                       |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| Relinquished                                                                                                                                                                                                                     |  |                                   |  |                                            |  | Received                 |  |                                                                                                                                                 |  |                        |  | Date / Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                |  |                                                                                                                                                       |  | Reason for Change of External Custody     |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| <u>[Signature]</u>                                                                                                                                                                                                               |  |                                   |  |                                            |  | <u>[Signature]</u>       |  |                                                                                                                                                 |  |                        |  | <u>7-26-18 1130</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                |  |                                                                                                                                                       |  | <u>shipment from laboratory to client</u> |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| <u>[Signature]</u>                                                                                                                                                                                                               |  |                                   |  |                                            |  | <u>[Signature]</u>       |  |                                                                                                                                                 |  |                        |  | <u>8/2/18 1606</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                |  |                                                                                                                                                       |  | <u>Rec'd @ air lab</u>                    |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |
| <u>[Signature]</u>                                                                                                                                                                                                               |  |                                   |  |                                            |  | <u>[Signature]</u>       |  |                                                                                                                                                 |  |                        |  | <u>8/2/18 1659</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: _____                                                                                                  |  |                                           |  |             |  |                             |  |                                     |  |   |  |  |  |  |  |

| Client Contact Information                                               |  |                                   | Project Information                      |                                 |  |                                       | Carrier (check one): <input checked="" type="checkbox"/> IAL Courier <input type="checkbox"/> Client Courier <input type="checkbox"/> FedEx/UPS |                                     |  |                                     | pg 2 of 2                                                                                                                                                                                                                                                                                                                                                                   |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|--------------------------------------------------------------------------|--|-----------------------------------|------------------------------------------|---------------------------------|--|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------|---------------------------------------------|--------|---------------------------------------------|--|-------------------|--|-------------|--|-----------------------------|--|----------------------------------------|--|---|--|--|--|--|--|---|--|
| Company: BEI                                                             |  |                                   | Project Name: Congers C.P. / 06C141      |                                 |  |                                       | Invoice Information                                                                                                                             |                                     |  |                                     | Analysis                                                                                                                                                                                                                                                                                                                                                                    |                                   | Report |                                             | Matrix |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
| Address: 14 Chatham Rd.<br>Summit, NJ 07901                              |  |                                   | Project Location (State): NY             |                                 |  |                                       | Attn:                                                                                                                                           |                                     |  |                                     | EPA TO - 15<br>NJDEP LLTO-15 (includes 30 TICs)<br>Library Search (10, 20, or 30 TICs)<br>Other (Explain in Comments)<br>Regulatory/ NY Cat B / Full (NJ Required)<br>Reduced / NY Cat A Data Package<br>Results Only<br>Indoor Air<br>Ambient / Outdoor Air<br>Sub Slab / Soil Gas / Near Slab (Circle One)<br>Stack Emission / SVE System<br>High Concentrations Expected |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
| Phone: 908-918-1702                                                      |  |                                   | Project Manager: Jeff McCurdy            |                                 |  |                                       | Address:                                                                                                                                        |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
| Fax: 908-918-1707                                                        |  |                                   | PM Signature: <i>[Signature]</i>         |                                 |  |                                       | PO #:                                                                                                                                           |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
| Report to:                                                               |  |                                   | PM E-Mail: <i>jeffmccurdy@be-inc.com</i> |                                 |  |                                       | Quote #:                                                                                                                                        |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   | Sampler: AS                              |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
| Analysis Turnaround Time - IF NO TAT IS SPECIFIED, 2 WEEK TAT IS ASSUMED |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  | Barometric Pressure                 |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
| IAL Standard: 2 weeks (10 business days)                                 |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  | Start 30.10 Stop 30.10              |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
| Rush (**pre-approved by lab): 24hr** 48hr** 72hr** 96hr** 1wk**          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
| Sample Identification                                                    |  | Start DATE & TIME<br>(24hr Clock) |                                          | End DATE & TIME<br>(24hr Clock) |  | Starting Vacuum<br>( <sup>3</sup> Hg) |                                                                                                                                                 | Ending Vacuum<br>( <sup>3</sup> Hg) |  | Starting Temp.<br>( <sup>o</sup> F) |                                                                                                                                                                                                                                                                                                                                                                             | Ending Temp.<br>( <sup>o</sup> F) |        | Outgoing Vacuum - Lab<br>( <sup>3</sup> Hg) |        | Incoming Vacuum - Lab<br>( <sup>3</sup> Hg) |  | Flow Regulator ID |  | Canister ID |  | Canister Size<br>(1L or 6L) |  | Flow Controller<br>Readout<br>(cc/min) |  |   |  |  |  |  |  |   |  |
| 55-101                                                                   |  | 8/1/18 917                        |                                          | 8/1/18 415                      |  | -29.0                                 |                                                                                                                                                 | -2.5                                |  | 68                                  |                                                                                                                                                                                                                                                                                                                                                                             | 68                                |        | -29.0                                       |        | -2.5                                        |  | A00988641-6       |  | 3014A       |  | 6L                          |  | 12.7                                   |  | X |  |  |  |  |  | X |  |
| 55-102                                                                   |  | ↓ 833                             |                                          | ↓ 419                           |  | -30.0                                 |                                                                                                                                                 | -2.5                                |  | 68                                  |                                                                                                                                                                                                                                                                                                                                                                             | 68                                |        | -29.0                                       |        | -2.5                                        |  | A0302498-2        |  | 2155        |  | 6L                          |  | 12.6                                   |  | X |  |  |  |  |  | X |  |
| 55-103                                                                   |  | ↓ 838                             |                                          | ↓ 411                           |  | -30.0                                 |                                                                                                                                                 | -2.5                                |  | 68                                  |                                                                                                                                                                                                                                                                                                                                                                             | 69                                |        | -29.0                                       |        | -2.5                                        |  | A0302497          |  | 5089        |  | 6L                          |  | 12.5                                   |  | X |  |  |  |  |  | X |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |
|                                                                          |  |                                   |                                          |                                 |  |                                       |                                                                                                                                                 |                                     |  |                                     |                                                                                                                                                                                                                                                                                                                                                                             |                                   |        |                                             |        |                                             |  |                   |  |             |  |                             |  |                                        |  |   |  |  |  |  |  |   |  |

## PROJECT INFORMATION

**RUSH**

**E18-06141: CONGERS CP / 060141**

**To:** Jeff McCurdy  
Brennan Environmental, Inc.  
Fax: 1(908) 918-1707  
EMail: jmccurdy@bei-env.com

**Report To**

Brennan Environmental, Inc.  
19 Chatham Road  
Summit, NJ 07901  
Attn: Jeff McCurdy

**Bill To**

Brennan Environmental, Inc.  
19 Chatham Rd.  
Summit, NJ 07901  
Attn: Jeff McCurdy

| Report Format  | P.O. # | Received At Lab      | TPHC Due | Verbal Due   | Hardcopy Due   |
|----------------|--------|----------------------|----------|--------------|----------------|
| Air Regulatory |        | Aug 02, 2018 @ 16:59 | NA       | Aug 16, 2018 | Aug 30, 2018 * |

\* 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 |
|-----------|------------------|-------|----------------|-------------|------|---------------|
| 06141-001 | AA-101           | NA    | 07/31/18@16:08 | Air-Ambient | ppbV |               |
| 06141-002 | IA-FF-101        | NA    | 07/31/18@16:11 | Air-Indoor  | ppbV |               |
| 06141-003 | IA-FF-102        | NA    | 07/31/18@15:55 | Air-Indoor  | ppbV |               |
| 06141-004 | IA-FF-103        | NA    | 07/31/18@16:12 | Air-Indoor  | ppbV |               |
| 06141-005 | IA-B-101         | NA    | 07/31/18@15:48 | Air-Indoor  | ppbV |               |
| 06141-006 | IA-B-102         | NA    | 07/31/18@16:10 | Air-Indoor  | ppbV |               |
| 06141-007 | SS-101           | NA    | 08/01/18@16:15 | Air-Other   | ppbV |               |
| 06141-008 | SS-102           | NA    | 08/01/18@16:19 | Air-Other   | ppbV |               |
| 06141-009 | SS-103           | NA    | 08/01/18@16:11 | Air-Other   | ppbV |               |

| Sample # | Test           | Status  | QA Method | TAT       | Holding Time Expires |
|----------|----------------|---------|-----------|-----------|----------------------|
| 001      | TO-15 analysis | Cancel  | TO-15     | STD/2 WKS | 8/30/2018            |
| 002      | TO-15 analysis | Cancel  | TO-15     | STD/2 WKS | 8/30/2018            |
| 003      | TO-15 analysis | Cancel  | TO-15     | STD/2 WKS | 8/30/2018            |
| 004      | TO-15 analysis | Cancel  | TO-15     | STD/2 WKS | 8/30/2018            |
| 005      | TO-15 analysis | Cancel  | TO-15     | STD/2 WKS | 8/30/2018            |
| 006      | TO-15 analysis | Cancel  | TO-15     | STD/2 WKS | 8/30/2018            |
| 007      | TO-15 analysis | Analyze | TO-15     | STD/2 WKS | 8/31/2018            |
| 008      | TO-15 analysis | Analyze | TO-15     | STD/2 WKS | 8/31/2018            |
| 009      | TO-15 analysis | Analyze | TO-15     | STD/2 WKS | 8/31/2018            |

**Project Notes:**

**NOTE 1 taken by kfalconer on 08/03/2018 09:24**  
REPORT CVOCS ONLY

## PROJECT INFORMATION

**RUSH**

**E18-06141: CONGERS CP / 060141**

**REV 1 taken by lauren on 08/23/2018 11:02**

As per Jeff McCurdy, cancel TO-15 analysis for sample # 1,2,3,4,5,6





# 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.:                                                | E18-06141                          | Analytical Parameter/Fraction: (check one) | <input type="checkbox"/> NJDEP LLTO-15<br><input checked="" type="checkbox"/> EPA TO-15 |

| Sample No. | Aliquot/Extract No. |
|------------|---------------------|
| 22-101     | E18-06141-001       |
| 12-FF-101  | E18-06141-002       |
| 12-FF-102  | E18-06141-003       |
| 12-FF-103  | E18-06141-004       |
| 12-B-101   | E18-06141-005       |
| 12-B-102   | E18-06141-006       |
| 12-101     | E18-06141-007       |
| 12-102     | E18-06141-008       |
| 12-103     | E18-06141-009       |
|            | E18-                |

| Sample No. | Aliquot/Extract No. |
|------------|---------------------|
|            | E18-                |
|            | E18-                |
|            | E18-                |
|            | E18-                |
|            | E18-                |
|            | E18-                |
|            | E18-                |
|            | E18-                |
|            | E18-                |
|            | E18-                |

| Date     | Time | Relinquished By                                                        | Received By                                                            | Purpose of Change of Custody                                                 |
|----------|------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 08/02/18 | 1700 | SIGNATURE<br>PRINTED NAME                                              | SIGNATURE <i>Joseph Walukiewicz</i><br>PRINTED NAME JOSEPH WALUKIEWICZ | 1. Sample log-in<br>2. Pressure Check<br>3. Pre-analysis storage             |
| 08/02/18 | 1715 | SIGNATURE <i>Joseph Walukiewicz</i><br>PRINTED NAME JOSEPH WALUKIEWICZ | SIGNATURE<br>PRINTED NAME                                              | Placement in TO-15 sample storage area until ready for analysis              |
| 08/06/18 | 1230 | SIGNATURE<br>PRINTED NAME                                              | SIGNATURE <i>Jeff Schmitt</i><br>PRINTED NAME JEFF SCHMITT             | TO-15/LLTO-15 analysis on:<br>E18-06141-01, 02, 03, 04, 05<br>06, 07, 08, 09 |
|          |      |                                                                        |                                                                        |                                                                              |
|          |      |                                                                        |                                                                        |                                                                              |
|          |      |                                                                        |                                                                        |                                                                              |
|          |      |                                                                        |                                                                        |                                                                              |
|          |      |                                                                        |                                                                        |                                                                              |
|          |      |                                                                        |                                                                        |                                                                              |
|          |      |                                                                        |                                                                        |                                                                              |
|          |      |                                                                        |                                                                        |                                                                              |

## **Section II: Methodology Review**

## Methodology Summary for Air Collected from Hazardous Waste Site Contract

|                    |                                |                    |                     |
|--------------------|--------------------------------|--------------------|---------------------|
| <b>Laboratory:</b> | Integrated Analytical Lab, LLC | <b>Project No:</b> | Congers CP / 060141 |
| <b>Location:</b>   | Randolph, NJ                   | <b>SDG No:</b>     | E18-06141           |

| <b>Name</b>       | <b>Required Methodology</b> | <b>Indicate Method</b> |
|-------------------|-----------------------------|------------------------|
| Volatile Organics | US EPA TO-15                | US EPA Method TO-15    |

## **Section III: Case Narrative**

## CASE NARRATIVE

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

Integrated Analytical Laboratories, LLC  
Project #: Congers CP / 060141  
SDG #: E18-06141  
Date of first sample receipt: 8/2/2018

Randolph, NJ 07869  
NY ELAP Certification #: 11402  
NJDEP (Primary AB) Certification#: 14751  
Date of last sample receipt: 8/2/2018

Client: Brennan Environmental  
Project/Site: Congers CP / 060141 / NY

| Client ID | Lab ID       | Receipt Date | Analysis Date                   | DF    | Diluted For                                                      |
|-----------|--------------|--------------|---------------------------------|-------|------------------------------------------------------------------|
| AA-101    | E18-06141-01 | 08/02/2018   | Cancelled as per client request |       | NA                                                               |
| IA-FF-101 | E18-06141-02 | 08/02/2018   | Cancelled as per client request |       | NA                                                               |
| IA-FF-102 | E18-06141-03 | 08/02/2018   | Cancelled as per client request |       | NA                                                               |
| IA-FF-103 | E18-06141-04 | 08/02/2018   | Cancelled as per client request |       | NA                                                               |
| IA-B-101  | E18-06141-05 | 08/02/2018   | Cancelled as per client request |       | NA                                                               |
| IA-B-102  | E18-06141-06 | 08/02/2018   | Cancelled as per client request |       | NA                                                               |
| SS-101    | E18-06141-07 | 08/02/2018   | 08/06/2018                      | 1.0   | NA                                                               |
| SS-102    | E18-06141-08 | 08/02/2018   | 08/07/2018                      | 100.0 | 1,2-Dichloroethene (cis)<br>Trichloroethene<br>Tetrachloroethene |
| SS-102    | E18-06141-08 | 08/02/2018   | 08/06/2018                      | 1.0   | NA                                                               |
| SS-103    | E18-06141-09 | 08/02/2018   | 08/07/2018                      | 10.0  | Tetrachloroethene                                                |
| SS-103    | E18-06141-09 | 08/02/2018   | 08/06/2018                      | 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* |
|---------------|-------------|-------------------------|-------------------------|--------------------|-----------------------------|-----------------------------|----------------|
| E18-06141-01  | 5076        | -29                     | -2.0                    | 7342673            | 12.40                       | 12.60                       | 1.60           |
| E18-06141-02  | 3013        | -29                     | -2.5                    | A0302495-3         | 12.30                       | 12.50                       | 1.61           |
| E18-06141-03  | 3814        | -29                     | -2.0                    | 7342708            | 12.40                       | 12.40                       | 0.00           |
| E18-06141-04  | 2753        | -29                     | -2.5                    | A03024955-5        | 12.50                       | 12.30                       | 1.61           |
| E18-06141-05  | 3277        | -29                     | -2.5                    | A0121687-1         | 12.50                       | 12.70                       | 1.59           |
| E18-06141-06  | 3026A       | -29                     | -2.5                    | 7340286            | 12.60                       | 12.60                       | 0.00           |
| E18-06141-07  | 3014A       | -29                     | -2.5                    | A00988641-6        | 12.70                       | 12.80                       | 0.78           |
| E18-06141-08  | 2155        | -29                     | -2.5                    | A0302498-2         | 12.60                       | 12.90                       | 2.35           |
| E18-06141-09  | 5089        | -29                     | -2.5                    | A0302497-4         | 12.50                       | 12.80                       | 2.37           |

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

Flow Controller Note: none

## CASE NARRATIVE

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

Integrated Analytical Laboratories, LLC  
Project #: Congers CP / 060141  
SDG #: E18-06141  
Date of first sample receipt: 8/2/2018

Randolph, NJ 07869  
NY ELAP Certification #: 11402  
NJDEP (Primary AB) Certification#: 14751  
Date of last sample receipt: 8/2/2018

Client: Brennan Environmental  
Project/Site: Congers CP / 060141 / NY

**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:*

| 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                           |

## CASE NARRATIVE

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

Integrated Analytical Laboratories, LLC  
Project #: Congers CP / 060141  
SDG #: E18-06141  
Date of first sample receipt: 8/2/2018

Randolph, NJ 07869  
NY ELAP Certification #: 11402  
NJDEP (Primary AB) Certification#: 14751  
Date of last sample receipt: 8/2/2018

Client: Brennan Environmental  
Project/Site: Congers CP / 060141 / NY

*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:

| 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.

## CASE NARRATIVE

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

Integrated Analytical Laboratories, LLC  
Project #: Congers CP / 060141  
SDG #: E18-06141  
Date of first sample receipt: 8/2/2018

Randolph, NJ 07869  
NY ELAP Certification #: 11402  
NJDEP (Primary AB) Certification#: 14751  
Date of last sample receipt: 8/2/2018

Client: Brennan Environmental  
Project/Site: Congers CP / 060141 / NY

**GC Column and ID:** RTX-1 SN 1119138 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, with humidified clean air. The 10ppbv standard is also used for the Daily Calibration Verification Standard (DCVS) 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. 1:500 Dilutions are made on instrument with humidified clean air. 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.

#### 05/18/2018

100 ppbv internal standard mix - prepared in cylinder #ALM029426  
10 ppbv per standard/sample - 50 ml injected  
100 ppbv calibration standard - 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

#### 06/13/2018

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

## CASE NARRATIVE

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

Integrated Analytical Laboratories, LLC  
Project #: Congers CP / 060141  
SDG #: E18-06141  
Date of first sample receipt: 8/2/2018

Randolph, NJ 07869  
NY ELAP Certification #: 11402  
NJDEP (Primary AB) Certification#: 14751  
Date of last sample receipt: 8/2/2018

Client: Brennan Environmental  
Project/Site: Congers CP / 060141 / NY

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 - prepared in canister #1127  
500 ml injected

#### 07/25/2018

100 ppbv internal standard mix - prepared in cylinder #ALM029426  
10 ppbv per standard/sample - 50 ml injected  
100 ppbv calibration standard - 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

#### 08/06/2018

100 ppbv internal standard mix - prepared in cylinder #ALM029426  
10 ppbv per standard/sample - 50 ml injected  
100 ppbv calibration standard - 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 - prepared in canister #1127  
500 ml injected  
Sample E18-06141-07 - sample taken in canister #3014A  
500 ml sample volume injected, 1x dilution  
Sample E18-06141-08 - sample taken in canister #2155  
500 ml sample volume injected, 1x dilution  
Sample E18-06141-09 - sample taken in canister #5089  
500 ml sample volume injected, 1x dilution

#### 08/07/2018

100 ppbv internal standard mix - prepared in cylinder #ALM029426  
10 ppbv per standard/sample - 50 ml injected  
100 ppbv calibration standard - prepared in cylinder #CC483586  
10 ppbv standard\* - 50 ml injected  
\*Standard also used for DCVS & CCCVS

## CASE NARRATIVE

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

**Integrated Analytical Laboratories, LLC**  
**Project #: Congers CP / 060141**  
**SDG #: E18-06141**  
**Date of first sample receipt: 8/2/2018**

**Randolph, NJ 07869**  
**NY ELAP Certification #: 11402**  
**NJDEP (Primary AB) Certification#: 14751**  
**Date of last sample receipt: 8/2/2018**

**Client: Brennan Environmental**  
**Project/Site: Congers CP / 060141 / NY**

0.20 ppbv standard\* - 1 ml injected  
\*Standard also used for RLLCS  
Method Blank - prepared in canister #1127  
500 ml injected  
Sample E18-06141-08 - sample taken in canister #2155  
5 ml sample volume injected, 100x dilution  
Sample E18-06141-09 - sample taken in canister #5089  
50 ml sample volume injected, 10x dilution

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.



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Michael H. Leftin, Ph.D.  
Laboratory Director

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August 27, 2018  
Date

## **Section IV: Method Detection Limit Summary**

# 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: Jeff Schmitt  
 Preparation Date: 6/27/17

MDL Effective Date: 6/27/2017  
 MDL Expiration Date: 6/27/2018  
 MDL Analysis Date: 6/27/2017  
 Analyst: Jeff Schmitt

| Filename | Run # | Date      | Time  | Filename | Run # | Date      | Time  |
|----------|-------|-----------|-------|----------|-------|-----------|-------|
| aa2539   | Run 1 | 6/27/2017 | 11:54 | aa2544   | Run 6 | 6/27/2017 | 14:44 |
| aa2540   | Run 2 | 6/27/2017 | 12:28 | aa2545   | Run 7 | 6/27/2017 | 15:18 |
| aa2541   | Run 3 | 6/27/2017 | 13:02 |          |       |           |       |
| aa2542   | Run 4 | 6/27/2017 | 13:36 |          |       |           |       |
| aa2543   | Run 5 | 6/27/2017 | 14:10 |          |       |           |       |

| Compound Name                         | Run 1* | Run 2* | Run 3* | Run 4* | Run 5* | Run 6* | Run 7* | MEAN Value | TRUE Value | Percent Recovery | Std Dev Conc | MDL ppbv | PQL ppbv | NY/LLTO-15/ PA RL ppbv | NY/LLTO-15/ PA RL µg/m³ | NJ TO-15 RL ppbv | NJ TO-15 RL µg/m³ | True value/ MDL |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|------------|------------|------------------|--------------|----------|----------|------------------------|-------------------------|------------------|-------------------|-----------------|
| Propene                               | 0.18   | 0.15   | 0.10   | 0.08   | 0.15   | 0.05   | 0.13   | 0.12       | 0.20       | 61               | 0.045        | 0.14     | 0.43     | 0.20                   | 0.34                    | 0.40             | 0.69              | 1.4             |
| Dichlorodifluoromethane               | 0.18   | 0.20   | 0.18   | 0.16   | 0.21   | 0.21   | 0.18   | 0.19       | 0.20       | 94               | 0.016        | 0.050    | 0.15     | 0.20                   | 0.99                    | 0.40             | 2.0               | 4.0             |
| Chloromethane                         | 0.08   | 0.17   | 0.12   | 0.08   | 0.13   | 0.10   | 0.17   | 0.12       | 0.20       | 61               | 0.038        | 0.12     | 0.36     | 0.20                   | 0.41                    | 0.40             | 0.83              | 1.7             |
| 1,2-Dichlorotetrafluoroethane         | 0.31   | 0.32   | 0.31   | 0.28   | 0.34   | 0.34   | 0.32   | 0.32       | 0.20       | 159              | 0.019        | 0.059    | 0.18     | 0.20                   | 1.4                     | 0.40             | 2.8               | 3.4             |
| Vinyl chloride                        | 0.12   | 0.14   | 0.13   | 0.11   | 0.15   | 0.14   | 0.12   | 0.13       | 0.20       | 65               | 0.015        | 0.046    | 0.14     | 0.20                   | 0.51                    | 0.40             | 1.0               | 4.3             |
| 1,3-Butadiene                         | 0.18   | 0.21   | 0.19   | 0.15   | 0.21   | 0.20   | 0.18   | 0.19       | 0.20       | 96               | 0.022        | 0.069    | 0.21     | 0.20                   | 0.44                    | 0.40             | 0.88              | 2.9             |
| n-Butane                              | 0.28   | 0.29   | 0.27   | 0.24   | 0.30   | 0.29   | 0.26   | 0.28       | 0.20       | 139              | 0.022        | 0.068    | 0.20     | 0.20                   | 0.47                    | 0.40             | 0.95              | 3.0             |
| Bromomethane                          | 0.12   | 0.12   | 0.12   | 0.09   | 0.12   | 0.06   | 0.11   | 0.11       | 0.20       | 53               | 0.023        | 0.073    | 0.22     | 0.20                   | 0.78                    | 0.40             | 1.6               | 2.7             |
| Chloroethane                          | 0.08   | 0.16   | 0.08   | 0.16   | 0.24   | 0.20   | 0.17   | 0.15       | 0.20       | 77               | 0.058        | 0.18     | 0.54     | 0.20                   | 0.53                    | 0.40             | 1.1               | 1.1             |
| Ethanol                               | 0.24   | 0.11   | 0.17   | 0.20   | 0.27   | 0.29   | 0.22   | 0.21       | 0.20       | 107              | 0.061        | 0.19     | 0.57     | 0.20                   | 0.38                    | 0.40             | 0.75              | 1.0             |
| Vinyl bromide                         | 0.14   | 0.14   | 0.14   | 0.12   | 0.16   | 0.17   | 0.14   | 0.14       | 0.20       | 72               | 0.015        | 0.047    | 0.14     | 0.20                   | 0.87                    | 0.40             | 1.7               | 4.3             |
| Acrolein                              | 0.20   | 0.24   | 0.21   | 0.19   | 0.10   | 0.22   | 0.20   | 0.19       | 0.20       | 97               | 0.043        | 0.14     | 0.41     | 0.20                   | 0.46                    | 0.40             | 0.92              | 1.5             |
| Acetone                               | 0.26   | 0.26   | 0.25   | 0.23   | 0.28   | 0.19   | 0.24   | 0.24       | 0.20       | 122              | 0.028        | 0.088    | 0.26     | 0.20                   | 0.48                    | 0.40             | 0.95              | 2.3             |
| Trichlorofluoromethane                | 0.33   | 0.35   | 0.35   | 0.32   | 0.38   | 0.38   | 0.35   | 0.35       | 0.20       | 176              | 0.023        | 0.072    | 0.22     | 0.20                   | 1.1                     | 0.40             | 2.2               | 3               |
| Isopropanol                           | 0.34   | 0.35   | 0.33   | 0.30   | 0.40   | 0.34   | 0.32   | 0.34       | 0.20       | 170              | 0.032        | 0.10     | 0.30     | 0.20                   | 0.49                    | 0.40             | 0.98              | 2.0             |
| n-Pentane                             | 0.31   | 0.33   | 0.32   | 0.28   | 0.31   | 0.32   | 0.30   | 0.31       | 0.20       | 155              | 0.015        | 0.046    | 0.14     | 0.20                   | 0.59                    | 0.40             | 1.2               | 4.3             |
| 1,1-Dichloroethene                    | 0.21   | 0.23   | 0.22   | 0.20   | 0.25   | 0.25   | 0.22   | 0.23       | 0.20       | 113              | 0.017        | 0.054    | 0.16     | 0.20                   | 0.79                    | 0.40             | 1.6               | 3.7             |
| Methylene chloride                    | 0.27   | 0.27   | 0.26   | 0.25   | 0.29   | 0.29   | 0.28   | 0.27       | 0.20       | 137              | 0.014        | 0.045    | 0.13     | 0.20                   | 0.69                    | 0.40             | 1.4               | 4.5             |
| Tert-butyl alcohol                    | 0.36   | 0.36   | 0.35   | 0.30   | 0.34   | 0.38   | 0.31   | 0.34       | 0.20       | 172              | 0.030        | 0.093    | 0.28     | 0.20                   | 0.61                    | 0.40             | 1.2               | 2.2             |
| Allyl Chloride                        | 0.22   | 0.22   | 0.21   | 0.18   | 0.22   | 0.23   | 0.19   | 0.21       | 0.20       | 105              | 0.017        | 0.054    | 0.16     | 0.20                   | 0.63                    | 0.40             | 1.3               | 3.7             |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.34   | 0.36   | 0.35   | 0.31   | 0.37   | 0.38   | 0.35   | 0.35       | 0.20       | 175              | 0.022        | 0.068    | 0.20     | 0.20                   | 1.5                     | 0.40             | 3.1               | 2.9             |
| Carbon disulfide                      | 0.17   | 0.19   | 0.18   | 0.15   | 0.20   | 0.19   | 0.17   | 0.18       | 0.20       | 89               | 0.017        | 0.052    | 0.16     | 0.20                   | 0.62                    | 0.40             | 1.2               | 3.8             |
| 1,2-Dichloroethene (trans)            | 0.21   | 0.24   | 0.22   | 0.20   | 0.24   | 0.24   | 0.21   | 0.22       | 0.20       | 112              | 0.018        | 0.057    | 0.17     | 0.20                   | 0.79                    | 0.40             | 1.6               | 3.5             |
| 1,1-Dichloroethane                    | 0.29   | 0.32   | 0.29   | 0.28   | 0.33   | 0.34   | 0.30   | 0.31       | 0.20       | 155              | 0.022        | 0.069    | 0.21     | 0.20                   | 0.81                    | 0.40             | 1.6               | 2.9             |
| Methyl tert-butyl ether               | 0.26   | 0.28   | 0.25   | 0.22   | 0.27   | 0.27   | 0.24   | 0.26       | 0.20       | 128              | 0.020        | 0.064    | 0.19     | 0.20                   | 0.72                    | 0.40             | 1.4               | 3.1             |
| Methyl ethyl ketone                   | 0.35   | 0.37   | 0.34   | 0.31   | 0.38   | 0.37   | 0.34   | 0.35       | 0.20       | 176              | 0.024        | 0.077    | 0.23     | 0.20                   | 0.59                    | 0.40             | 1.2               | 2.6             |
| 1,2-Dichloroethene (cis)              | 0.25   | 0.27   | 0.25   | 0.22   | 0.27   | 0.27   | 0.24   | 0.25       | 0.20       | 127              | 0.019        | 0.058    | 0.17     | 0.20                   | 0.79                    | 0.40             | 1.6               | 3.4             |
| Ethyl acetate                         | 0.46   | 0.48   | 0.49   | 0.44   | 0.51   | 0.54   | 0.45   | 0.48       | 0.20       | 241              | 0.035        | 0.11     | 0.33     | 0.20                   | 0.72                    | 0.40             | 1.4               | 1.8             |
| n-Hexane                              | 0.33   | 0.35   | 0.34   | 0.31   | 0.38   | 0.35   | 0.32   | 0.34       | 0.20       | 170              | 0.022        | 0.069    | 0.21     | 0.20                   | 0.70                    | 0.40             | 1.4               | 2.9             |
| Chloroform                            | 0.29   | 0.33   | 0.31   | 0.29   | 0.34   | 0.34   | 0.31   | 0.31       | 0.20       | 157              | 0.022        | 0.068    | 0.20     | 0.20                   | 0.98                    | 0.40             | 2.0               | 2.9             |
| Tetrahydrofuran                       | 0.39   | 0.41   | 0.41   | 0.35   | 0.43   | 0.43   | 0.38   | 0.40       | 0.20       | 200              | 0.026        | 0.082    | 0.24     | 0.20                   | 0.59                    | 0.40             | 1.2               | 2.5             |
| 1,2-Dichloroethane                    | 0.32   | 0.34   | 0.33   | 0.30   | 0.37   | 0.37   | 0.34   | 0.34       | 0.20       | 170              | 0.026        | 0.082    | 0.25     | 0.20                   | 0.81                    | 0.40             | 1.6               | 2.4             |
| 1,1,1-Trichloroethane                 | 0.31   | 0.33   | 0.31   | 0.28   | 0.34   | 0.34   | 0.31   | 0.32       | 0.20       | 158              | 0.020        | 0.064    | 0.19     | 0.20                   | 1.1                     | 0.40             | 2.2               | 3.1             |
| Benzene                               | 0.33   | 0.35   | 0.33   | 0.30   | 0.35   | 0.36   | 0.32   | 0.33       | 0.20       | 167              | 0.021        | 0.065    | 0.20     | 0.20                   | 0.64                    | 0.40             | 1.3               | 3               |
| Carbon tetrachloride                  | 0.25   | 0.27   | 0.24   | 0.22   | 0.26   | 0.27   | 0.25   | 0.25       | 0.20       | 126              | 0.016        | 0.050    | 0.15     | 0.20                   | 1.3                     | 0.40             | 2.5               | 4.0             |
| Cyclohexane                           | 0.27   | 0.29   | 0.27   | 0.24   | 0.29   | 0.28   | 0.25   | 0.27       | 0.20       | 134              | 0.019        | 0.061    | 0.18     | 0.20                   | 0.69                    | 0.40             | 1.4               | 3.3             |
| 1,2-Dichloropropane                   | 0.40   | 0.41   | 0.41   | 0.38   | 0.44   | 0.44   | 0.40   | 0.41       | 0.20       | 206              | 0.023        | 0.071    | 0.21     | 0.20                   | 0.92                    | 0.40             | 1.8               | 2.8             |
| Bromodichloromethane                  | 0.32   | 0.34   | 0.33   | 0.30   | 0.36   | 0.35   | 0.32   | 0.33       | 0.20       | 165              | 0.021        | 0.066    | 0.20     | 0.20                   | 1.3                     | 0.40             | 2.7               | 3.0             |
| 2,2,4-Trimethylpentane                | 0.22   | 0.25   | 0.24   | 0.20   | 0.25   | 0.26   | 0.22   | 0.23       | 0.20       | 117              | 0.021        | 0.065    | 0.20     | 0.20                   | 0.93                    | 0.40             | 1.9               | 3.1             |
| Trichloroethene                       | 0.36   | 0.38   | 0.37   | 0.32   | 0.39   | 0.39   | 0.35   | 0.37       | 0.20       | 183              | 0.026        | 0.080    | 0.24     | 0.20                   | 1.1                     | 0.40             | 2.1               | 2.5             |
| 1,4-Dioxane                           | 0.39   | 0.41   | 0.38   | 0.35   | 0.41   | 0.41   | 0.36   | 0.39       | 0.20       | 194              | 0.024        | 0.076    | 0.23     | 0.20                   | 0.72                    | 0.40             | 1.4               | 2.6             |
| Methyl methacrylate                   | 0.39   | 0.42   | 0.38   | 0.37   | 0.42   | 0.41   | 0.38   | 0.40       | 0.20       | 198              | 0.023        | 0.071    | 0.21     | 0.20                   | 0.82                    | 0.40             | 1.6               | 2.8             |
| n-Heptane                             | 0.35   | 0.37   | 0.35   | 0.31   | 0.37   | 0.36   | 0.34   | 0.35       | 0.20       | 175              | 0.022        | 0.068    | 0.20     | 0.20                   | 0.82                    | 0.40             | 1.6               | 3.0             |
| 1,3-Dichloropropene (cis)             | 0.33   | 0.35   | 0.33   | 0.31   | 0.36   | 0.36   | 0.32   | 0.34       | 0.20       | 169              | 0.020        | 0.063    | 0.19     | 0.20                   | 0.91                    | 0.40             | 1.8               | 3.2             |
| Methyl isobutyl ketone                | 0.44   | 0.48   | 0.45   | 0.42   | 0.51   | 0.50   | 0.44   | 0.46       | 0.20       | 232              | 0.034        | 0.11     | 0.32     | 0.20                   | 0.82                    | 0.40             | 1.6               | 1.9             |
| 1,3-Dichloropropene (trans)           | 0.37   | 0.39   | 0.36   | 0.34   | 0.40   | 0.39   | 0.35   | 0.37       | 0.20       | 186              | 0.020        | 0.063    | 0.19     | 0.20                   | 0.91                    | 0.40             | 1.8               | 3.2             |
| 1,1,2-Trichloroethane                 | 0.40   | 0.42   | 0.39   | 0.36   | 0.42   | 0.45   | 0.41   | 0.41       | 0.20       | 203              | 0.027        | 0.085    | 0.26     | 0.20                   | 1.1                     | 0.40             | 2.2               | 2.4             |

# 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: Jeff Schmitt  
 Preparation Date: 6/27/17

MDL Effective Date: 6/27/2017  
 MDL Expiration Date: 6/27/2018  
 MDL Analysis Date: 6/27/2017  
 Analyst: Jeff Schmitt

| Filename | Run # | Date      | Time  | Filename | Run # | Date      | Time  |
|----------|-------|-----------|-------|----------|-------|-----------|-------|
| aa2539   | Run 1 | 6/27/2017 | 11:54 | aa2544   | Run 6 | 6/27/2017 | 14:44 |
| aa2540   | Run 2 | 6/27/2017 | 12:28 | aa2545   | Run 7 | 6/27/2017 | 15:18 |
| aa2541   | Run 3 | 6/27/2017 | 13:02 |          |       |           |       |
| aa2542   | Run 4 | 6/27/2017 | 13:36 |          |       |           |       |
| aa2543   | Run 5 | 6/27/2017 | 14:10 |          |       |           |       |

| Compound Name             | Run 1* | Run 2* | Run 3* | Run 4* | Run 5* | Run 6* | Run 7* | MEAN Value | TRUE Value | Percent Recovery | Std Dev Conc | MDL ppbv | PQL ppbv | NY/LLTO-15/PA RL ppbv | NY/LLTO-15/PA RL µg/m³ | NJ TO-15 RL ppbv | NJ TO-15 RL µg/m³ | True value/MDL |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|------------|------------|------------------|--------------|----------|----------|-----------------------|------------------------|------------------|-------------------|----------------|
| Toluene                   | 0.43   | 0.45   | 0.43   | 0.38   | 0.45   | 0.44   | 0.42   | 0.43       | 0.20       | 214              | 0.025        | 0.077    | 0.23     | 0.20                  | 0.75                   | 0.40             | 1.5               | 2.6            |
| Methyl n-butyl ketone     | 0.48   | 0.50   | 0.47   | 0.43   | 0.51   | 0.52   | 0.46   | 0.48       | 0.20       | 240              | 0.031        | 0.10     | 0.30     | 0.20                  | 0.82                   | 0.40             | 1.6               | 2.0            |
| Dibromochloromethane      | 0.27   | 0.28   | 0.27   | 0.24   | 0.29   | 0.29   | 0.27   | 0.27       | 0.20       | 136              | 0.016        | 0.051    | 0.15     | 0.20                  | 1.7                    | 0.40             | 3.4               | 4              |
| 1,2-Dibromoethane         | 0.38   | 0.40   | 0.38   | 0.34   | 0.41   | 0.41   | 0.36   | 0.38       | 0.20       | 192              | 0.025        | 0.078    | 0.23     | 0.20                  | 1.5                    | 0.40             | 3.1               | 2.6            |
| Tetrachloroethene         | 0.41   | 0.43   | 0.43   | 0.39   | 0.46   | 0.46   | 0.41   | 0.43       | 0.20       | 213              | 0.025        | 0.078    | 0.24     | 0.20                  | 1.4                    | 0.40             | 2.7               | 2.5            |
| Chlorobenzene             | 0.39   | 0.41   | 0.40   | 0.36   | 0.43   | 0.43   | 0.39   | 0.40       | 0.20       | 200              | 0.026        | 0.080    | 0.24     | 0.20                  | 0.92                   | 0.40             | 1.8               | 2.5            |
| Ethylbenzene              | 0.36   | 0.38   | 0.35   | 0.32   | 0.38   | 0.37   | 0.34   | 0.36       | 0.20       | 179              | 0.023        | 0.071    | 0.21     | 0.20                  | 0.87                   | 0.40             | 1.7               | 3              |
| Xylenes (m&p)             | 0.75   | 0.76   | 0.72   | 0.67   | 0.77   | 0.76   | 0.68   | 0.73       | 0.40       | 182              | 0.040        | 0.13     | 0.38     | 0.40                  | 1.7                    | 0.40             | 1.7               | 1.6            |
| Bromoform                 | 0.22   | 0.23   | 0.22   | 0.20   | 0.24   | 0.24   | 0.22   | 0.23       | 0.20       | 113              | 0.014        | 0.045    | 0.13     | 0.20                  | 2.1                    | 0.40             | 4.1               | 4              |
| Styrene                   | 0.33   | 0.34   | 0.32   | 0.28   | 0.35   | 0.33   | 0.30   | 0.32       | 0.20       | 161              | 0.022        | 0.069    | 0.21     | 0.20                  | 0.85                   | 0.40             | 1.7               | 3              |
| 1,1,2,2-Tetrachloroethane | 0.37   | 0.38   | 0.37   | 0.32   | 0.38   | 0.38   | 0.34   | 0.36       | 0.20       | 182              | 0.023        | 0.073    | 0.22     | 0.20                  | 1.4                    | 0.40             | 2.7               | 2.8            |
| Xylene (o)                | 0.40   | 0.41   | 0.39   | 0.35   | 0.43   | 0.43   | 0.38   | 0.40       | 0.20       | 199              | 0.026        | 0.083    | 0.25     | 0.20                  | 0.87                   | 0.40             | 1.7               | 2.4            |
| n-Nonane                  | 0.34   | 0.35   | 0.32   | 0.30   | 0.36   | 0.36   | 0.31   | 0.33       | 0.20       | 167              | 0.023        | 0.072    | 0.22     | 0.20                  | 1.4                    | 0.40             | 2.1               | 3              |
| Cumene                    | 0.34   | 0.36   | 0.34   | 0.31   | 0.37   | 0.37   | 0.33   | 0.35       | 0.20       | 173              | 0.024        | 0.075    | 0.23     | 0.20                  | 1.0                    | 0.40             | 2.0               | 3              |
| 2-Chlorotoluene           | 0.36   | 0.36   | 0.34   | 0.32   | 0.37   | 0.37   | 0.34   | 0.35       | 0.20       | 175              | 0.019        | 0.059    | 0.18     | 0.20                  | 0.98                   | 0.40             | 2.1               | 3.4            |
| n-Propyl benzene          | 0.35   | 0.37   | 0.34   | 0.31   | 0.37   | 0.36   | 0.33   | 0.35       | 0.20       | 173              | 0.023        | 0.072    | 0.22     | 0.20                  | 1.0                    | 0.40             | 2.0               | 2.8            |
| 4-Ethyltoluene            | 0.32   | 0.34   | 0.32   | 0.29   | 0.34   | 0.34   | 0.30   | 0.32       | 0.20       | 161              | 0.020        | 0.062    | 0.19     | 0.20                  | 0.98                   | 0.40             | 2.0               | 3.2            |
| 1,3,5-Trimethylbenzene    | 0.32   | 0.34   | 0.32   | 0.28   | 0.34   | 0.34   | 0.30   | 0.32       | 0.20       | 160              | 0.022        | 0.069    | 0.21     | 0.20                  | 0.98                   | 0.40             | 2.0               | 2.9            |
| 1,2,4-Trimethylbenzene    | 0.31   | 0.32   | 0.30   | 0.27   | 0.32   | 0.31   | 0.28   | 0.30       | 0.20       | 151              | 0.022        | 0.069    | 0.21     | 0.20                  | 0.98                   | 0.40             | 2.0               | 3              |
| Benzyl chloride           | 0.27   | 0.27   | 0.25   | 0.23   | 0.27   | 0.27   | 0.24   | 0.26       | 0.20       | 129              | 0.018        | 0.056    | 0.17     | 0.20                  | 1.0                    | 0.40             | 2.1               | 3.6            |
| 1,3-Dichlorobenzene       | 0.38   | 0.39   | 0.37   | 0.34   | 0.40   | 0.40   | 0.36   | 0.38       | 0.20       | 189              | 0.023        | 0.072    | 0.22     | 0.20                  | 1.2                    | 0.40             | 2.4               | 2.8            |
| 1,4-Dichlorobenzene       | 0.36   | 0.38   | 0.35   | 0.32   | 0.38   | 0.38   | 0.34   | 0.36       | 0.20       | 179              | 0.024        | 0.076    | 0.23     | 0.20                  | 1.2                    | 0.40             | 2.4               | 2.6            |
| 1,2-Dichlorobenzene       | 0.36   | 0.37   | 0.36   | 0.33   | 0.38   | 0.38   | 0.34   | 0.36       | 0.20       | 179              | 0.020        | 0.063    | 0.19     | 0.20                  | 1.2                    | 0.40             | 2.4               | 3.2            |
| 1,2,4-Trichlorobenzene    | 0.41   | 0.41   | 0.39   | 0.35   | 0.41   | 0.41   | 0.38   | 0.40       | 0.20       | 198              | 0.024        | 0.077    | 0.23     | 0.20                  | 1.5                    | 0.40             | 3.0               | 3              |
| Naphthalene               | 0.41   | 0.41   | 0.39   | 0.36   | 0.41   | 0.40   | 0.35   | 0.39       | 0.20       | 194              | 0.025        | 0.079    | 0.24     | 0.20                  | 1.0                    | 0.40             | 2.1               | 2.5            |
| 1,3-Hexachlorobutadiene   | 0.40   | 0.42   | 0.40   | 0.38   | 0.43   | 0.45   | 0.40   | 0.41       | 0.20       | 206              | 0.024        | 0.075    | 0.22     | 0.20                  | 2.1                    | 0.40             | 4.3               | 2.7            |

Processing Method: C:\MSDCHEM\1\METHODS\IAA0612.M  
 Initial Calibration: C:\MSDCHEM\1\METHODS\IAA0612.M  
 Location of this file: P:\PAL Reports\2015\LLTO-15 and TO-15 Common Files\Agilent MDL

*Michael Leftin*  
 Michael Leftin, Ph.D.  
 Laboratory Director

*Lauren Jenkins*  
 Lauren Jenkins  
 Air Division Quality Assurance Officer

Date: July 5, 2017

Date: July 5, 2017

Instrument used for Clean Canister Certification Analysis? YES

# 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: 6/27/2017  
 Study Identification File #: aa2546  
 Analyst: Jeff Schmitt  
 Analysis/Processing Method: C:\MSDCHEM\1\METHODS\AA0612.M  
 Cleanup Method: Not Applicable

*Lauren Jenkins*  
 Lauren Jenkins  
 Air Division QA Officer  
 Date: 6/28/17

| Compound Name                         | CAS #       | MDLV Source | Source Study (File ID) | Source Instrument | Source Analysis Date | MDLV (ppbv) | RL (ppbv) | RL/MDLV Ratio |
|---------------------------------------|-------------|-------------|------------------------|-------------------|----------------------|-------------|-----------|---------------|
| Propene                               | 115-07-1    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.09        | 0.20      | 2.22          |
| Dichlorodifluoromethane               | 124-48-1    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.2         | 0.20      | 1.00          |
| Chloromethane                         | 74-87-3     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.18        | 0.20      | 1.1           |
| 1,2-Dichlorotetrafluoroethane         | 76-14-2     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.34        | 0.20      | 0.59          |
| Vinyl chloride                        | 75-01-4     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.14        | 0.20      | 1.4           |
| 1,3-Butadiene                         | 106-99-0    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.2         | 0.20      | 1.0           |
| n-Butane                              | 106-97-8    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.29        | 0.20      | 0.7           |
| Bromomethane                          | 74-83-9     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.14        | 0.20      | 1.43          |
| Chloroethane                          | 75-00-3     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.13        | 0.20      | 1.5           |
| Ethanol                               | 64-17-5     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.29        | 0.20      | 0.7           |
| Vinyl bromide                         | 593-60-2    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.16        | 0.20      | 1.3           |
| Acrolein                              | 107-02-8    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.19        | 0.20      | 1.1           |
| Acetone                               | 67-64-1     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.31        | 0.20      | 0.65          |
| Trichlorofluoromethane                | 75-69-4     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.37        | 0.20      | 0.54          |
| Isopropanol                           | 67-63-0     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.34        | 0.20      | 0.6           |
| n-Pentane                             | 109-66-0    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.33        | 0.20      | 0.6           |
| 1,1-Dichloroethene                    | 75-35-4     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.24        | 0.20      | 0.8           |
| Methylene chloride                    | 75-09-2     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.28        | 0.20      | 0.71          |
| Tert-butyl alcohol                    | 75-65-0     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.36        | 0.20      | 0.6           |
| Allyl Chloride                        | 107-05-1    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.21        | 0.20      | 1.0           |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 76-13-1     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.37        | 0.20      | 0.54          |
| Carbon disulfide                      | 75-15-0     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.19        | 0.20      | 1.05          |
| 1,2-Dichloroethene (trans)            | 156-60-5    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.24        | 0.20      | 0.8           |
| 1,1-Dichloroethane                    | 75-34-3     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.33        | 0.20      | 0.6           |
| Methyl tert-butyl ether               | 1634-04-4   | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.26        | 0.20      | 0.8           |
| Methyl ethyl ketone                   | 78-93-3     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.34        | 0.20      | 0.6           |
| 1,2-Dichloroethene (cis)              | 156-59-2    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.26        | 0.20      | 0.8           |
| Ethyl acetate                         | 141-78-6    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.49        | 0.20      | 0.4           |
| n-Hexane                              | 110-54-3    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.35        | 0.20      | 0.6           |
| Chloroform                            | 67-66-3     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.34        | 0.20      | 0.59          |
| Tetrahydrofuran                       | 109-99-9    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.37        | 0.20      | 0.5           |
| 1,2-Dichloroethane                    | 106-93-4    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.36        | 0.20      | 0.56          |
| 1,1,1-Trichloroethane                 | 71-55-6     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.33        | 0.20      | 0.61          |
| Benzene                               | 71-43-2     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.34        | 0.20      | 0.6           |
| Carbon tetrachloride                  | 56-23-5     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.26        | 0.20      | 0.77          |
| Cyclohexane                           | 110-82-7    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.27        | 0.20      | 0.7           |
| 1,2-Dichloropropane                   | 78-87-5     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.45        | 0.20      | 0.44          |
| Bromodichloromethane                  | 75-27-4     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.35        | 0.20      | 0.57          |
| 2,2,4-Trimethylpentane                | 540-84-1    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.24        | 0.20      | 0.8           |
| Trichloroethene                       | 79-01-6     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.4         | 0.20      | 0.5           |
| 1,4-Dioxane                           | 123-91-1    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.41        | 0.20      | 0.5           |
| Methyl methacrylate                   | 80-62-6     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.4         | 0.20      | 0.5           |
| n-Heptane                             | 142-82-5    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.37        | 0.20      | 0.5           |
| 1,3-Dichloropropene (cis)             | 10061-01-5  | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.35        | 0.20      | 0.6           |
| Methyl isobutyl ketone                | 108-10-1    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.49        | 0.20      | 0.4           |
| 1,3-Dichloropropene (trans)           | 10061-02-6  | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.38        | 0.20      | 0.5           |
| 1,1,2-Trichloroethane                 | 79-00-5     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.43        | 0.20      | 0.47          |
| Toluene                               | 108-88-3    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.44        | 0.20      | 0.5           |
| Methyl n-butyl ketone                 | 591-78-6    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.5         | 0.20      | 0.4           |
| Dibromochloromethane                  | 75-71-8     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.29        | 0.20      | 0.69          |
| 1,2-Dibromoethane                     | 107-06-2    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.41        | 0.20      | 0.5           |
| Tetrachloroethene                     | 127-18-4    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.43        | 0.20      | 0.5           |
| Chlorobenzene                         | 108-90-7    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.21        | 0.20      | 0.95          |
| Ethylbenzene                          | 100-41-4    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.42        | 0.20      | 0.5           |
| Xylenes (m&p)                         | 179601-23-1 | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.37        | 0.40      | 1.1           |
| Bromoform                             | 75-25-2     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.77        | 0.20      | 0.26          |
| Styrene                               | 100-42-5    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.23        | 0.20      | 0.9           |
| Xylene (o)                            | 95-47-6     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.32        | 0.20      | 0.6           |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.37        | 0.20      | 0.54          |
| n-Nonane                              | 111-84-2    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.41        | 0.20      | 0.5           |
| Cumene                                | 98-82-8     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.36        | 0.20      | 0.13          |
| 2-Chlorotoluene                       | 95-49-8     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.36        | 0.20      | 0.12          |
| 4-Ethyltoluene                        | 622-96-8    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.32        | 0.20      | 0.10          |
| 1,3,5-Trimethylbenzene                | 108-67-8    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.33        | 0.20      | 0.10          |
| 1,2,4-Trimethylbenzene                | 95-63-6     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.31        | 0.20      | 0.090         |
| 1,3-Dichlorobenzene                   | 541-73-1    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.39        | 0.20      | 0.14          |
| 1,4-Dichlorobenzene                   | 106-46-7    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.38        | 0.20      | 0.12          |
| 1,2-Dichlorobenzene                   | 95-50-1     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.36        | 0.20      | 0.13          |
| 1,2,4-Trichlorobenzene                | 120-82-1    | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.4         | 0.20      | 0.10          |
| Naphthalene                           | 91-20-3     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.36        | 0.20      | 0.030         |
| 1,3-Hexachlorobutadiene               | 87-68-3     | AAL071156   | aa4155rlcs             | AA                | 6/22/15              | 0.44        | 0.20      | 0.22          |

Location of this file: P:\Paldata\Pal Reports\TO-15 MDLS

# 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 <sup>3</sup> | NJ TO-15 RL ppbv | NJ TO-15 RL µg/m <sup>3</sup> | 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 <sup>3</sup> | NJ TO-15 RL ppbv | NJ TO-15 RL µg/m <sup>3</sup> | 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/m<sup>3</sup> = 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<sub>s</sub>) 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<sub>s</sub>) 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<sub>B</sub>) 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<sub>B</sub>) 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 #: aa6565rllcs  
 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<br>(ppbv) | RL<br>(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 #: aa6565rllcs  
 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<br>(ppbv) | RL<br>(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          |

## **Section V: Quality Control Data Summary**

**BFB Tune Summary**

**Method Blank**

**Laboratory Sample Duplicate**

**Internal Standard Area Summary**

**Data Path:** C:\DATA\05-18-18\  
**Data File:** AA7071BFB.D  
**Acq On:** 5/18/2018 8:17:00AM  
**Operator:** jls  
**Sample:** BFB  
**Misc:** ALM029426  
**ALS Vial:** 1 **Multiplier:** 1  
**Integration File:** rteint.p  
**Method:** C:\msdchem\1\METHODS\0511.M  
**Last Update:** Mon May 14 11:16:39 2018  
**Spectrum Information:**

| PassFail | Target Mass | Rel. to Mass | Lower Limit % | Higher Limit % | Raw Abundance | % Relative Abundance |
|----------|-------------|--------------|---------------|----------------|---------------|----------------------|
| PASS     | 50          | 95           | 8             | 40             | 183818        | 27.3                 |
| PASS     | 75          | 95           | 30            | 66             | 378859        | 56.2                 |
| PASS     | 95          | 95           | 100           | 100            | 674347        | 100.0                |
| PASS     | 96          | 95           | 5             | 9              | 45051         | 6.7                  |
| PASS     | 173         | 174          | 0.00          | 2              | 2912          | 0.8                  |
| PASS     | 174         | 95           | 50            | 100            | 387670        | 57.5                 |
| PASS     | 175         | 174          | 4             | 9              | 26268         | 6.8                  |
| PASS     | 176         | 174          | 93            | 101            | 373555        | 96.4                 |
| PASS     | 177         | 176          | 5             | 9              | 24192         | 6.5                  |

Runs with this BFB:

| Lab Sample Number | Date File   | Field Sample | Date/Time of Sample/Standard Analysis |
|-------------------|-------------|--------------|---------------------------------------|
| BFB               | AA7071BFB   | NA           | 5/18/2018 8:17:00 AM                  |
| 40 PPBV STD       | AA7073STD01 | NA           | 5/18/2018 9:46:00 AM                  |
| 20 PPBV STD       | AA7074STD02 | NA           | 5/18/2018 10:19:00 AM                 |
| 10 PPBV STD       | AA7075STD03 | NA           | 5/18/2018 10:53:00 AM                 |
| 2 PPBV STD        | AA7076STD04 | NA           | 5/18/2018 12:20:00 PM                 |
| 0.2 PPBV STD      | AA7077STD05 | NA           | 5/18/2018 1:03:00 PM                  |
| 10 PPBV ICVSS     | AA7078ICVSS | NA           | 5/18/2018 3:14:00 PM                  |

**Data Path:** C:\DATA\06-13-18\  
**Data File:** AA7471BFB.D  
**Acq On:** 6/13/2018 8:30:00AM  
**Operator:** jls  
**Sample:** BFB  
**Misc:** ALM029426  
**ALS Vial:** 1 **Multiplier:** 1  
**Integration File:** rteint.p  
**Method:** C:\msdchem\1\METHODS\0518.M  
**Last Update:** Fri May 18 13:51:08 2018  
**Spectrum Information:**

| PassFail | Target Mass | Rel. to Mass | Lower Limit % | Higher Limit % | Raw Abundance | % Relative Abundance |
|----------|-------------|--------------|---------------|----------------|---------------|----------------------|
| PASS     | 50          | 95           | 8             | 40             | 200102        | 30.6                 |
| PASS     | 75          | 95           | 30            | 66             | 384246        | 58.8                 |
| PASS     | 95          | 95           | 100           | 100            | 653589        | 100.0                |
| PASS     | 96          | 95           | 5             | 9              | 42346         | 6.5                  |
| PASS     | 173         | 174          | 0.00          | 2              | 3805          | 1.0                  |
| PASS     | 174         | 95           | 50            | 100            | 363368        | 55.6                 |
| PASS     | 175         | 174          | 4             | 9              | 26616         | 7.3                  |
| PASS     | 176         | 174          | 93            | 101            | 348380        | 95.9                 |
| PASS     | 177         | 176          | 5             | 9              | 23261         | 6.7                  |

Runs with this BFB:

| Lab Sample Number | Date File   | Field Sample | Date/Time of Sample/Standard Analysis |
|-------------------|-------------|--------------|---------------------------------------|
| BFB               | AA7471BFB   | NA           | 6/13/2018 8:30:00 AM                  |
| 10 PPBV DCVS      | AA7472DCVS  | NA           | 6/13/2018 9:18:00 AM                  |
| METHOD BLANK      | AA7473BLK   | NA           | 6/13/2018 10:25:00 AM                 |
| 02 PPBV RLLCS     | AA7474RLLCS | NA           | 6/13/2018 11:14:00 AM                 |
| 3059              | AA7475      | NA           | 6/13/2018 12:20:00 PM                 |
| 10 PPBV CCCVS     | AA7485CCCVS | NA           | 6/13/2018 8:47:00 PM                  |

**Data Path:** C:\DATA\07-25-18\  
**Data File:** AA7971BFB.D  
**Acq On:** 7/25/2018 8:35:00AM  
**Operator:** jls  
**Sample:** BFB  
**Misc:** ALM029426  
**ALS Vial:** 1 **Multiplier:** 1  
**Integration File:** rteint.p  
**Method:** C:\msdchem\1\METHODS\0518.M  
**Last Update:** Fri May 18 13:51:08 2018  
**Spectrum Information:**

| Pass/Fail | Target Mass | Rel. to Mass | Lower Limit % | Higher Limit % | Raw Abundance | % Relative Abundance |
|-----------|-------------|--------------|---------------|----------------|---------------|----------------------|
| PASS      | 50          | 95           | 8             | 40             | 156657        | 20.1                 |
| PASS      | 75          | 95           | 30            | 66             | 381141        | 49.0                 |
| PASS      | 95          | 95           | 100           | 100            | 778176        | 100.0                |
| PASS      | 96          | 95           | 5             | 9              | 52476         | 6.7                  |
| PASS      | 173         | 174          | 0.00          | 2              | 3085          | 0.7                  |
| PASS      | 174         | 95           | 50            | 100            | 459712        | 59.1                 |
| PASS      | 175         | 174          | 4             | 9              | 31097         | 6.8                  |
| PASS      | 176         | 174          | 93            | 101            | 438861        | 95.5                 |
| PASS      | 177         | 176          | 5             | 9              | 27982         | 6.4                  |

Runs with this BFB:

| Lab Sample Number | Date File   | Field Sample | Date/Time of Sample/Standard Analysis |
|-------------------|-------------|--------------|---------------------------------------|
| BFB               | AA7971BFB   | NA           | 7/25/2018 8:35:00 AM                  |
| 40 PPBV STD       | AA7972STD01 | NA           | 7/25/2018 9:55:00 AM                  |
| 20 PPBV STD       | AA7973STD02 | NA           | 7/25/2018 10:29:00 AM                 |
| 10 PPBV STD       | AA7974STD03 | NA           | 7/25/2018 11:02:00 AM                 |
| 2 PPBV STD        | AA7975STD04 | NA           | 7/25/2018 12:18:00 PM                 |
| 0.2 PPBV STD      | AA7976STD05 | NA           | 7/25/2018 1:42:00 PM                  |
| 10 PPBV ICVSS     | AA7977ICVSS | NA           | 7/25/2018 3:05:00 PM                  |

**Data Path:** C:\DATA\08-06-18\  
**Data File:** AA8191BFB.D  
**Acq On:** 8/6/2018 11:26:00AM  
**Operator:** jls  
**Sample:** BFB  
**Misc:** ALM029426  
**ALS Vial:** 1 **Multiplier:** 1  
**Integration File:** rteint.p  
**Method:** C:\msdchem\1\METHODS\0725.M  
**Last Update:** Wed Jul 25 14:15:57 2018  
**Spectrum Information:**

| Pass/Fail | Target Mass | Rel. to Mass | Lower Limit % | Higher Limit % | Raw Abundance | % Relative Abundance |
|-----------|-------------|--------------|---------------|----------------|---------------|----------------------|
| PASS      | 50          | 95           | 8             | 40             | 177003        | 32.6                 |
| PASS      | 75          | 95           | 30            | 66             | 334482        | 61.6                 |
| PASS      | 95          | 95           | 100           | 100            | 542971        | 100.0                |
| PASS      | 96          | 95           | 5             | 9              | 36432         | 6.7                  |
| PASS      | 173         | 174          | 0.00          | 2              | 2635          | 0.9                  |
| PASS      | 174         | 95           | 50            | 100            | 286464        | 52.8                 |
| PASS      | 175         | 174          | 4             | 9              | 21901         | 7.6                  |
| PASS      | 176         | 174          | 93            | 101            | 278015        | 97.1                 |
| PASS      | 177         | 176          | 5             | 9              | 17336         | 6.2                  |

Runs with this BFB:

| Lab Sample Number | Date File   | Field Sample | Date/Time of Sample/Standard Analysis |
|-------------------|-------------|--------------|---------------------------------------|
| BFB               | AA8191BFB   | NA           | 8/6/2018 11:26:00 AM                  |
| 10 PPBV DCVS      | AA8192DCVS  | NA           | 8/6/2018 1:07:00 PM                   |
| METHOD BLANK      | AA8193BLK   | NA           | 8/6/2018 1:42:00 PM                   |
| 02 PPBV RLLCS     | AA8194RLLCS | NA           | 8/6/2018 2:23:00 PM                   |
| E18-06141-07      | AA8206      | SS-101       | 8/6/2018 10:28:00 PM                  |
| E18-06141-08      | AA8207      | SS-102       | 8/6/2018 11:02:00 PM                  |
| E18-06141-09      | AA8208      | SS-103       | 8/6/2018 11:35:00 PM                  |
| 10 PPBV CCCVS     | AA8213CCCVS | NA           | 8/7/2018 2:22:00 AM                   |

**Data Path:** C:\DATA\08-07-18\  
**Data File:** AA8221BFB.D  
**Acq On:** 8/7/2018 9:33:00AM  
**Operator:** jls  
**Sample:** BFB  
**Misc:** ALM029426  
**ALS Vial:** 1 **Multiplier:** 1  
**Integration File:** rteint.p  
**Method:** C:\msdchem\1\METHODS\0725.M  
**Last Update:** Wed Jul 25 14:15:57 2018  
**Spectrum Information:**

| PassFail | Target Mass | Rel. to Mass | Lower Limit % | Higher Limit % | Raw Abundance | % Relative Abundance |
|----------|-------------|--------------|---------------|----------------|---------------|----------------------|
| PASS     | 50          | 95           | 8             | 40             | 155635        | 33.4                 |
| PASS     | 75          | 95           | 30            | 66             | 289323        | 62.1                 |
| PASS     | 95          | 95           | 100           | 100            | 466217        | 100.0                |
| PASS     | 96          | 95           | 5             | 9              | 29664         | 6.4                  |
| PASS     | 173         | 174          | 0.00          | 2              | 2337          | 1.0                  |
| PASS     | 174         | 95           | 50            | 100            | 240853        | 51.7                 |
| PASS     | 175         | 174          | 4             | 9              | 17856         | 7.4                  |
| PASS     | 176         | 174          | 93            | 101            | 230955        | 95.9                 |
| PASS     | 177         | 176          | 5             | 9              | 15117         | 6.5                  |

Runs with this BFB:

| Lab Sample Number | Date File   | Field Sample | Date/Time of Sample/Standard Analysis |
|-------------------|-------------|--------------|---------------------------------------|
| BFB               | AA8221BFB   | NA           | 8/7/2018 9:33:00 AM                   |
| 10 PPBV DCVS      | AA8222DCVS  | NA           | 8/7/2018 10:17:00 AM                  |
| METHOD BLANK      | AA8223BLK   | NA           | 8/7/2018 11:01:00 AM                  |
| 02 PPBV RLLCS     | AA8224RLLCS | NA           | 8/7/2018 11:47:00 AM                  |
| E18-06141-08      | AA8232      | SS-102       | 8/7/2018 4:57:00 PM                   |
| E18-06141-09      | AA8233      | SS-103       | 8/7/2018 5:31:00 PM                   |
| 10 PPBV CCCVS     | AA8242CCCVS | NA           | 8/7/2018 10:31:00 PM                  |

## Method Blank Report

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

**Data File:** AA7473BLK  
**Date Analyzed:** 6/13/2018  
**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 [AA7471BFB]             | 06/13/2018 8:30                        |
| 10 PPBV DCVS [AA7472DCVS]   | 06/13/2018 9:18                        |
| METHOD BLANK [AA7473BLK]    | 06/13/2018 10:25                       |
| 02 PPBV RLLCS [AA7474RLLCS] | 06/13/2018 11:14                       |
| 3059 [AA7475]               | 06/13/2018 12:20                       |
| 10 PPBV CCCVS [AA7485CCCVS] | 06/13/2018 20:47                       |

| Compound                      | CAS #      | Reporting Limit<br>(ppbv) | Concentration<br>(ppbv) |
|-------------------------------|------------|---------------------------|-------------------------|
| Acetone                       | 67-64-1    | 0.20                      | ND                      |
| Benzene                       | 71-43-2    | 0.15                      | 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   | 0.12                      | 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   | 0.19                      | 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 | 0.19                      | ND                      |
| 1,3-Dichloropropene (trans)   | 10061-02-6 | 0.18                      | ND                      |
| 1,2-Dichlorotetrafluoroethane | 76-14-2    | 0.20                      | ND                      |
| 1,4-Dioxane                   | 123-91-1   | 0.17                      | 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    | 0.13                      | ND                      |
| Methyl isobutyl ketone        | 108-10-1   | 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:** AA7473BLK  
**Date Analyzed:** 6/13/2018  
**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 [AA7471BFB]             | 06/13/2018 8:30                        |
| 10 PPBV DCVS [AA7472DCVS]   | 06/13/2018 9:18                        |
| METHOD BLANK [AA7473BLK]    | 06/13/2018 10:25                       |
| 02 PPBV RLLCS [AA7474RLLCS] | 06/13/2018 11:14                       |
| 3059 [AA7475]               | 06/13/2018 12:20                       |
| 10 PPBV CCCVS [AA7485CCCVS] | 06/13/2018 20:47                       |

| Compound                              | CAS #       | Reporting Limit<br>(ppbv) | Concentration<br>(ppbv) |
|---------------------------------------|-------------|---------------------------|-------------------------|
| Methyl tert-butyl ether               | 1634-04-4   | 0.11                      | ND                      |
| Styrene                               | 100-42-5    | 0.14                      | ND                      |
| Tert-butyl alcohol                    | 75-65-0     | 0.18                      | ND                      |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     | 0.17                      | ND                      |
| Tetrachloroethene                     | 127-18-4    | 0.20                      | ND                      |
| Toluene                               | 108-88-3    | 0.17                      | 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     | 0.12                      | ND                      |
| 1,3,5-Trimethylbenzene                | 108-67-8    | 0.17                      | 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:** AA8193BLK  
**Date Analyzed:** 8/6/2018  
**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 [AA8191BFB]             | 08/06/2018 11:26                       |
| 10 PPBV DCVS [AA8192DCVS]   | 08/06/2018 13:07                       |
| METHOD BLANK [AA8193BLK]    | 08/06/2018 13:42                       |
| 02 PPBV RLLCS [AA8194RLLCS] | 08/06/2018 14:23                       |
| E18-06141-07 [AA8206]       | 08/06/2018 22:28                       |
| E18-06141-08 [AA8207]       | 08/06/2018 23:02                       |
| E18-06141-09 [AA8208]       | 08/06/2018 23:35                       |
| 10 PPBV CCCVS [AA8213CCCVS] | 08/07/2018 2:22                        |

| Compound                      | CAS #      | Reporting Limit<br>(ppbv) | Concentration<br>(ppbv) |
|-------------------------------|------------|---------------------------|-------------------------|
| Acetone                       | 67-64-1    | 0.20                      | ND                      |
| Benzene                       | 71-43-2    | 0.15                      | 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   | 0.12                      | 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   | 0.19                      | 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 | 0.19                      | ND                      |
| 1,3-Dichloropropene (trans)   | 10061-02-6 | 0.18                      | ND                      |
| 1,2-Dichlorotetrafluoroethane | 76-14-2    | 0.20                      | ND                      |
| 1,4-Dioxane                   | 123-91-1   | 0.17                      | 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                      |

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:** AA8193BLK  
**Date Analyzed:** 8/6/2018  
**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 [AA8191BFB]             | 08/06/2018 11:26                       |
| 10 PPBV DCVS [AA8192DCVS]   | 08/06/2018 13:07                       |
| METHOD BLANK [AA8193BLK]    | 08/06/2018 13:42                       |
| 02 PPBV RLLCS [AA8194RLLCS] | 08/06/2018 14:23                       |
| E18-06141-07 [AA8206]       | 08/06/2018 22:28                       |
| E18-06141-08 [AA8207]       | 08/06/2018 23:02                       |
| E18-06141-09 [AA8208]       | 08/06/2018 23:35                       |
| 10 PPBV CCCVS [AA8213CCCVS] | 08/07/2018 2:22                        |

| Compound                              | CAS #       | Reporting Limit<br>(ppbv) | Concentration<br>(ppbv) |
|---------------------------------------|-------------|---------------------------|-------------------------|
| Methyl ethyl ketone                   | 78-93-3     | 0.13                      | ND                      |
| Methyl isobutyl ketone                | 108-10-1    | 0.20                      | ND                      |
| Methyl tert-butyl ether               | 1634-04-4   | 0.11                      | ND                      |
| Styrene                               | 100-42-5    | 0.14                      | ND                      |
| Tert-butyl alcohol                    | 75-65-0     | 0.18                      | ND                      |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     | 0.17                      | ND                      |
| Tetrachloroethene                     | 127-18-4    | 0.20                      | ND                      |
| Toluene                               | 108-88-3    | 0.17                      | 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     | 0.12                      | ND                      |
| 1,3,5-Trimethylbenzene                | 108-67-8    | 0.17                      | 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:** AA8223BLK  
**Date Analyzed:** 8/7/2018  
**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 [AA8221BFB]             | 08/07/2018 9:33                        |
| 10 PPBV DCVS [AA8222DCVS]   | 08/07/2018 10:17                       |
| METHOD BLANK [AA8223BLK]    | 08/07/2018 11:01                       |
| 02 PPBV RLLCS [AA8224RLLCS] | 08/07/2018 11:47                       |
| E18-06141-08 [AA8232]       | 08/07/2018 16:57                       |
| E18-06141-09 [AA8233]       | 08/07/2018 17:31                       |
| 10 PPBV CCCVS [AA8242CCCVS] | 08/07/2018 22:31                       |

| Compound                      | CAS #      | Reporting Limit (ppbv) | Concentration (ppbv) |
|-------------------------------|------------|------------------------|----------------------|
| Acetone                       | 67-64-1    | 0.20                   | ND                   |
| Benzene                       | 71-43-2    | 0.15                   | 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   | 0.12                   | 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   | 0.19                   | 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 | 0.19                   | ND                   |
| 1,3-Dichloropropene (trans)   | 10061-02-6 | 0.18                   | ND                   |
| 1,2-Dichlorotetrafluoroethane | 76-14-2    | 0.20                   | ND                   |
| 1,4-Dioxane                   | 123-91-1   | 0.17                   | 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    | 0.13                   | 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:** AA8223BLK  
**Date Analyzed:** 8/7/2018  
**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 [AA8221BFB]             | 08/07/2018 9:33                        |
| 10 PPBV DCVS [AA8222DCVS]   | 08/07/2018 10:17                       |
| METHOD BLANK [AA8223BLK]    | 08/07/2018 11:01                       |
| 02 PPBV RLLCS [AA8224RLLCS] | 08/07/2018 11:47                       |
| E18-06141-08 [AA8232]       | 08/07/2018 16:57                       |
| E18-06141-09 [AA8233]       | 08/07/2018 17:31                       |
| 10 PPBV CCCVS [AA8242CCCVS] | 08/07/2018 22:31                       |

| Compound                              | CAS #       | Reporting Limit<br>(ppbv) | Concentration<br>(ppbv) |
|---------------------------------------|-------------|---------------------------|-------------------------|
| Methyl isobutyl ketone                | 108-10-1    | 0.20                      | ND                      |
| Methyl tert-butyl ether               | 1634-04-4   | 0.11                      | ND                      |
| Styrene                               | 100-42-5    | 0.14                      | ND                      |
| Tert-butyl alcohol                    | 75-65-0     | 0.18                      | ND                      |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     | 0.17                      | ND                      |
| Tetrachloroethene                     | 127-18-4    | 0.20                      | ND                      |
| Toluene                               | 108-88-3    | 0.17                      | 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     | 0.12                      | ND                      |
| 1,3,5-Trimethylbenzene                | 108-67-8    | 0.17                      | 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).

# Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

## Laboratory Sample Duplicate Report

SDG Number: E18-04189  
IAL Sample ID: E18-04189-01  
Matrix: Air  
Summa ID: 5096

Date Received: 6/8/18  
Date Analyzed: 6/13/18,6/13/18  
Lab Data File#: AA7478,AA7479  
Dilution Factor: 1  
Injection Volume: 500ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                      | CAS #      | Sample<br>E18-04189-01<br>Concentration<br>Reported |        | Sample Dup<br>E18-04189-21<br>Concentration<br>Reported |        | Reporting<br>Limits<br>ppbv | RPD     |
|-------------------------------|------------|-----------------------------------------------------|--------|---------------------------------------------------------|--------|-----------------------------|---------|
|                               |            | ppbv                                                | Q      | ppbv                                                    | Q      |                             |         |
| Acetone                       | 67-64-1    | 3.1                                                 |        | 3.1                                                     |        | 0.40                        | 0.00%   |
| 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    | 2.3                                                 |        | 2.6                                                     |        | 0.40                        | -12.24% |
| Methyl ethyl ketone           | 78-93-3    |                                                     | 0.40 U |                                                         | 0.40 U | 0.40                        | 0.00%   |
| 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: E18-04189  
IAL Sample ID: E18-04189-01  
Matrix: Air  
Summa ID: 5096

Date Received: 6/8/18  
Date Analyzed: 6/13/18,6/13/18  
Lab Data File#: AA7478,AA7479  
Dilution Factor: 1  
Injection Volume: 500ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                              | CAS #       | Sample<br>E18-04189-01<br>Concentration<br>Reported |   | Sample Dup<br>E18-04189-21<br>Concentration<br>Reported |   | Reporting<br>Limits<br>ppbv | RPD   |
|---------------------------------------|-------------|-----------------------------------------------------|---|---------------------------------------------------------|---|-----------------------------|-------|
|                                       |             | ppbv                                                | Q | ppbv                                                    | Q |                             |       |
| 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.

# Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

## Laboratory Sample Duplicate Report

SDG Number: E18-06204  
IAL Sample ID: E18-06204-01  
Matrix: Air  
Summa ID: 3280

Date Received: 8/6/18  
Date Analyzed: 8/6/18,8/6/18  
Lab Data File#: AA8195,AA8196  
Dilution Factor: 1  
Injection Volume: 500ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                      | CAS #      | Sample<br>E18-06204-01<br>Concentration<br>Reported |        | Sample Dup<br>E18-06204-21<br>Concentration<br>Reported |        | Reporting<br>Limits<br>ppbv | RPD    |
|-------------------------------|------------|-----------------------------------------------------|--------|---------------------------------------------------------|--------|-----------------------------|--------|
|                               |            | ppbv                                                | Q      | ppbv                                                    | Q      |                             |        |
| Acetone                       | 67-64-1    | 10                                                  |        | 10.0                                                    |        | 0.20                        | 0.00%  |
| Allyl Chloride                | 107-05-1   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Benzene                       | 71-43-2    | 0.26                                                |        | 0.24                                                    |        | 0.20                        | 8.00%  |
| Bromodichloromethane          | 75-27-4    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Bromoform                     | 75-25-2    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Bromomethane                  | 74-83-9    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3-Butadiene                 | 106-99-0   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Chlorobenzene                 | 108-90-7   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Chloroethane                  | 75-00-3    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Chloroform                    | 67-66-3    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Chloromethane                 | 74-87-3    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Carbon disulfide              | 75-15-0    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Carbon tetrachloride          | 56-23-5    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 2-Chlorotoluene               | 95-49-8    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Cyclohexane                   | 110-82-7   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Dibromochloromethane          | 124-48-1   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dibromoethane             | 106-93-4   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichlorobenzene           | 95-50-1    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3-Dichlorobenzene           | 541-73-1   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,4-Dichlorobenzene           | 106-46-7   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Dichlorodifluoromethane       | 75-71-8    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,1-Dichloroethane            | 75-34-3    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichloroethane            | 107-06-2   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,1-Dichloroethene            | 75-35-4    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichloroethene (cis)      | 156-59-2   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichloroethene (trans)    | 156-60-5   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichloropropane           | 78-87-5    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3-Dichloropropene (cis)     | 10061-01-5 |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3-Dichloropropene (trans)   | 10061-02-6 |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichlorotetrafluoroethane | 76-14-2    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,4-Dioxane                   | 123-91-1   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Ethanol                       | 64-17-5    | 84                                                  | E      | 80                                                      | E      | 0.20                        | 4.88%  |
| Ethylbenzene                  | 100-41-4   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 4-Ethyltoluene                | 622-96-8   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| n-Heptane                     | 142-82-5   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3-Hexachlorobutadiene       | 87-68-3    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| n-Hexane                      | 110-54-3   | 0.20                                                |        | 0.21                                                    |        | 0.20                        | -4.88% |
| Isopropanol                   | 67-63-0    | 1.2                                                 |        | 1.2                                                     |        | 0.20                        | 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: E18-06204  
IAL Sample ID: E18-06204-01  
Matrix: Air  
Summa ID: 3280

Date Received: 8/6/18  
Date Analyzed: 8/6/18, 8/6/18  
Lab Data File#: AA8195, AA8196  
Dilution Factor: 1  
Injection Volume: 500ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                              | CAS #       | Sample<br>E18-06204-01<br>Concentration<br>Reported |        | Sample Dup<br>E18-06204-21<br>Concentration<br>Reported |        | Reporting<br>Limits<br>ppbv | RPD    |
|---------------------------------------|-------------|-----------------------------------------------------|--------|---------------------------------------------------------|--------|-----------------------------|--------|
|                                       |             | ppbv                                                | Q      | ppbv                                                    | Q      |                             |        |
| Methylene chloride                    | 75-09-2     | 1.5                                                 |        | 1.4                                                     |        | 0.20                        | 6.90%  |
| Methyl ethyl ketone                   | 78-93-3     | 1.7                                                 |        | 1.8                                                     |        | 0.20                        | -5.71% |
| Methyl isobutyl ketone                | 108-10-1    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Methyl methacrylate                   | 80-62-6     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Methyl tert-butyl ether               | 1634-04-4   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Styrene                               | 100-42-5    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Tert-butyl alcohol                    | 75-65-0     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Tetrachloroethene                     | 127-18-4    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Tetrahydrofuran                       | 109-99-9    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Toluene                               | 108-88-3    | 0.23                                                |        | 0.23                                                    |        | 0.20                        | 0.00%  |
| 1,2,4-Trichlorobenzene                | 120-82-1    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,1,1-Trichloroethane                 | 71-55-6     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,1,2-Trichloroethane                 | 79-00-5     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Trichloroethene                       | 79-01-6     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Trichlorofluoromethane                | 75-69-4     | 0.57                                                |        | 0.55                                                    |        | 0.20                        | 3.57%  |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 76-13-1     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2,4-Trimethylbenzene                | 95-63-6     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3,5-Trimethylbenzene                | 108-67-8    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 2,2,4-Trimethylpentane                | 540-84-1    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Vinyl bromide                         | 593-60-2    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Vinyl chloride                        | 75-01-4     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Xylenes (m&p)                         | 179601-23-1 |                                                     | 0.40 U |                                                         | 0.40 U | 0.40                        | 0.00%  |
| Xylenes (o)                           | 95-47-6     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 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: E18-06173  
IAL Sample ID: E18-06173-01  
Matrix: Air  
Summa ID: 1070

Date Received: 8/3/18  
Date Analyzed: 8/7/18,8/7/18  
Lab Data File#: AA8228,AA8229  
Dilution Factor: 1  
Injection Volume: 50ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                      | CAS #      | Sample<br>E18-06173-01<br>Concentration<br>Reported |       | Sample Dup<br>E18-06173-21<br>Concentration<br>Reported |       | Reporting<br>Limits<br>ppbv | RPD    |
|-------------------------------|------------|-----------------------------------------------------|-------|---------------------------------------------------------|-------|-----------------------------|--------|
|                               |            | ppbv                                                | Q     | ppbv                                                    | Q     |                             |        |
| Acetone                       | 67-64-1    | 30                                                  |       | 27                                                      |       | 2.0                         | 10.53% |
| Allyl Chloride                | 107-05-1   |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 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    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 2-Chlorotoluene               | 95-49-8    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 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%  |
| Ethanol                       | 64-17-5    | 380                                                 |       | 370                                                     |       | 2.0                         | 2.67%  |
| Ethylbenzene                  | 100-41-4   |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 4-Ethyltoluene                | 622-96-8   |                                                     | 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%  |
| Isopropanol                   | 67-63-0    | 5.2                                                 |       | 5.5                                                     |       | 2.0                         | -5.61% |

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: E18-06173  
IAL Sample ID: E18-06173-01  
Matrix: Air  
Summa ID: 1070

Date Received: 8/3/18  
Date Analyzed: 8/7/18,8/7/18  
Lab Data File#: AA8228,AA8229  
Dilution Factor: 1  
Injection Volume: 50ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                              | CAS #       | Sample<br>E18-06173-01<br>Concentration<br>Reported |       | Sample Dup<br>E18-06173-21<br>Concentration<br>Reported |       | Reporting<br>Limits<br>ppbv | RPD    |
|---------------------------------------|-------------|-----------------------------------------------------|-------|---------------------------------------------------------|-------|-----------------------------|--------|
|                                       |             | ppbv                                                | Q     | ppbv                                                    | Q     |                             |        |
| Methylene chloride                    | 75-09-2     | 99                                                  |       | 100                                                     |       | 2.0                         | -1.01% |
| Methyl ethyl ketone                   | 78-93-3     | 2.8                                                 |       | 2.2                                                     |       | 2.0                         | 24.00% |
| Methyl isobutyl ketone                | 108-10-1    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Methyl methacrylate                   | 80-62-6     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 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%  |
| Tert-butyl alcohol                    | 75-65-0     | 3.1                                                 |       | 3.0                                                     |       | 2.0                         | 3.28%  |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Tetrachloroethene                     | 127-18-4    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Tetrahydrofuran                       | 109-99-9    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Toluene                               | 108-88-3    | 2.7                                                 |       | 2.7                                                     |       | 2.0                         | 0.00%  |
| 1,2,4-Trichlorobenzene                | 120-82-1    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 1,1,1-Trichloroethane                 | 71-55-6     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 1,1,2-Trichloroethane                 | 79-00-5     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Trichloroethene                       | 79-01-6     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Trichlorofluoromethane                | 75-69-4     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 76-13-1     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 1,2,4-Trimethylbenzene                | 95-63-6     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 1,3,5-Trimethylbenzene                | 108-67-8    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 2,2,4-Trimethylpentane                | 540-84-1    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Vinyl bromide                         | 593-60-2    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Vinyl chloride                        | 75-01-4     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Xylenes (m&p)                         | 179601-23-1 |                                                     | 4.0 U |                                                         | 4.0 U | 4.0                         | 0.00%  |
| Xylenes (o)                           | 95-47-6     |                                                     | 2.0 U |                                                         | 2.0 U | 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.

## Initial Calibration Curve Internal Standard Area and Retention Time Summary

Instrument: AA

ICAL Date: 5/18/2018

|                                  |               | BROMOCHLOROMETHANE |      |       |      | 1,4-DIFLUOROBENZENE |      |        |      | D-5 CHLOROBENZENE |      |        |      |
|----------------------------------|---------------|--------------------|------|-------|------|---------------------|------|--------|------|-------------------|------|--------|------|
|                                  |               | Area #             |      | RT    |      | Area #              |      | RT     |      | Area #            |      | RT     |      |
| AVERAGE OF CALIBRATION STANDARDS |               | 534003             |      | 7.733 |      | 2218829             |      | 9.782  |      | 1956425           |      | 15.111 |      |
| UPPER LIMIT                      |               | 747604             |      | 8.063 |      | 3106360             |      | 10.112 |      | 2738995           |      | 15.441 |      |
| LOWER LIMIT                      |               | 320402             |      | 7.403 |      | 1331297             |      | 9.452  |      | 1173855           |      | 14.781 |      |
| Lab ID                           |               | Area #             | %    | RT    | +/-  | Area #              | %    | RT     | +/-  | Area #            | %    | RT     | +/-  |
| 40 PPBV STD                      | AA 7073 STD01 | 497626             | 6.81 | 7.759 | 0.03 | 2152735             | 2.98 | 9.788  | 0.01 | 1991801           | 1.81 | 15.113 | 0.00 |
| 2 PPBV STD                       | AA 7074 STD04 | 531970             | 0.38 | 7.740 | 0.01 | 2238046             | 0.87 | 9.785  | 0.00 | 2008933           | 2.68 | 15.112 | 0.00 |
| 10 PPBV STD                      | AA 7075 STD03 | 543623             | 1.80 | 7.724 | 0.01 | 2258745             | 1.80 | 9.782  | 0.00 | 1967114           | 0.55 | 15.109 | 0.00 |
| 2 PPBV STD                       | AA 7076 STD04 | 531646             | 0.44 | 7.717 | 0.02 | 2168184             | 2.28 | 9.775  | 0.01 | 1841018           | 5.90 | 15.112 | 0.00 |
| 0.2 PPBV STD                     | AA 7077 STD05 | 565151             | 5.83 | 7.724 | 0.01 | 2276433             | 2.60 | 9.778  | 0.00 | 1973260           | 0.86 | 15.109 | 0.00 |
| ICVSS                            | AA 7078 ICVSS | 522049             | 2.24 | 7.724 | 0.01 | 2190215             | 1.29 | 9.782  | 0.00 | 1913238           | 2.21 | 15.113 | 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): AA7472DCVS

Date Analyzed: 6/13/2018

Instrument: AA

ICAL Date: 5/18/2018

|                                             |             |     | BROMOCHLOROMETHANE |       |       |      | 1,4-DIFLUOROBENZENE |        |       |      | D-5 CHLORO BENZENE |        |        |      |
|---------------------------------------------|-------------|-----|--------------------|-------|-------|------|---------------------|--------|-------|------|--------------------|--------|--------|------|
|                                             |             |     | Area #             |       | RT    |      | Area #              |        | RT    |      | Area #             |        | RT     |      |
| CALIBRATION STANDARD                        |             |     | 539798             |       | 7.724 |      | 2150341             |        | 9.785 |      | 1773674            |        | 15.116 |      |
| UPPER LIMIT                                 |             |     | 755717             |       | 8.05  |      | 3010477             |        | 10.12 |      | 2483144            |        | 15.45  |      |
| LOWER LIMIT                                 |             |     | 323879             |       | 7.39  |      | 1290205             |        | 9.46  |      | 1064204            |        | 14.79  |      |
| Lab ID                                      | DF          |     | Area #             | %     | RT    | +/-  | Area #              | %      | RT    | +/-  | Area #             | %      | RT     | +/-  |
| Method Blank                                | AA7473BLK   | 1.0 | 510475             | -5.43 | 7.724 | 0.00 | 1863647             | -13.33 | 9.785 | 0.00 | 1558649            | -12.12 | 15.116 | 0.00 |
| Reporting Limit Laboratory Control Standard | AA7474RLLCS | 1.0 | 558319             | 3.43  | 7.720 | 0.00 | 2000895             | -6.95  | 9.781 | 0.00 | 1704889            | -3.88  | 15.116 | 0.00 |
| 3059                                        | AA7475      | 1.0 | 486608             | -9.85 | 7.724 | 0.00 | 1675394             | -22.09 | 9.785 | 0.00 | 1426411            | -19.58 | 15.116 | 0.00 |
| Closing Calibration                         | AA7485CCCVS | 1.0 | 512140             | -5.12 | 7.727 | 0.00 | 1948511             | -9.39  | 9.785 | 0.00 | 1565782            | -11.72 | 15.116 | 0.00 |

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

\* Values outside QC limits.

## Initial Calibration Curve Internal Standard Area and Retention Time Summary

Instrument: AA

ICAL Date: 7/25/2018

|                                  |               | BROMOCHLOROMETHANE |      |       |      | 1,4-DIFLUOROBENZENE |       |        |      | D-5 CHLOROBENZENE |       |        |      |
|----------------------------------|---------------|--------------------|------|-------|------|---------------------|-------|--------|------|-------------------|-------|--------|------|
|                                  |               | Area #             |      | RT    |      | Area #              |       | RT     |      | Area #            |       | RT     |      |
| AVERAGE OF CALIBRATION STANDARDS |               | 476007             |      | 7.689 |      | 2043575             |       | 9.740  |      | 1757787           |       | 15.057 |      |
| UPPER LIMIT                      |               | 666410             |      | 8.019 |      | 2861004             |       | 10.070 |      | 2460901           |       | 15.387 |      |
| LOWER LIMIT                      |               | 285604             |      | 7.359 |      | 1226145             |       | 9.410  |      | 1054672           |       | 14.727 |      |
| Lab ID                           |               | Area #             | %    | RT    | +/-  | Area #              | %     | RT     | +/-  | Area #            | %     | RT     | +/-  |
| 40 PPBV STD                      | AA 7972 STD01 | 459428             | 3.48 | 7.702 | 0.01 | 2108198             | 3.16  | 9.743  | 0.00 | 1916771           | 9.04  | 15.058 | 0.00 |
| 20 PPBV STD                      | AA 7973 STD04 | 486694             | 2.25 | 7.695 | 0.01 | 2128550             | 4.16  | 9.744  | 0.00 | 1865915           | 6.15  | 15.058 | 0.00 |
| 10 PPBV STD                      | AA 7974 STD03 | 485778             | 2.05 | 7.689 | 0.00 | 2080600             | 1.81  | 9.740  | 0.00 | 1771224           | 0.76  | 15.058 | 0.00 |
| 2 PPBV STD                       | AA 7975 STD04 | 442159             | 7.11 | 7.679 | 0.01 | 1836044             | 10.16 | 9.737  | 0.00 | 1531011           | 12.90 | 15.055 | 0.00 |
| 0.2 PPBV STD                     | AA 7976 STD05 | 505975             | 6.30 | 7.679 | 0.01 | 2064481             | 1.02  | 9.734  | 0.01 | 1704012           | 3.06  | 15.055 | 0.00 |
| ICVSS                            | AA 7977 ICVSS | 434360             | 8.75 | 7.686 | 0.00 | 1814996             | 11.19 | 9.734  | 0.01 | 1540277           | 12.37 | 15.055 | 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): AA8192DCVS

Date Analyzed: 8/6/2018

Instrument: AA

ICAL Date: 7/25/2018

|                                             |             |     | BROMOCHLOROMETHANE |        |       |       | 1,4-DIFLUOROBENZENE |        |       |      | D-5 CHLORO BENZENE |        |        |      |
|---------------------------------------------|-------------|-----|--------------------|--------|-------|-------|---------------------|--------|-------|------|--------------------|--------|--------|------|
|                                             |             |     | Area #             |        | RT    |       | Area #              |        | RT    |      | Area #             |        | RT     |      |
| CALIBRATION STANDARD                        |             |     | 438428             |        | 7.686 |       | 1771164             |        | 9.734 |      | 1475100            |        | 15.049 |      |
| UPPER LIMIT                                 |             |     | 613799             |        | 8.02  |       | 2479630             |        | 10.06 |      | 2065140            |        | 15.38  |      |
| LOWER LIMIT                                 |             |     | 263057             |        | 7.36  |       | 1062698             |        | 9.40  |      | 885060             |        | 14.72  |      |
| Lab ID                                      | DF          |     | Area #             | %      | RT    | +/-   | Area #              | %      | RT    | +/-  | Area #             | %      | RT     | +/-  |
| Method Blank                                | AA8193BLK   | 1.0 | 418368             | -4.58  | 7.679 | -0.01 | 1550382             | -12.47 | 9.731 | 0.00 | 1251713            | -15.14 | 15.052 | 0.00 |
| Reporting Limit Laboratory Control Standard | AA8194RLLCS | 1.0 | 423253             | -3.46  | 7.679 | -0.01 | 1605091             | -9.38  | 9.731 | 0.00 | 1341071            | -9.09  | 15.052 | 0.00 |
| E18-06141-07                                | AA8206      | 1.0 | 352575             | -19.58 | 7.724 | 0.04  | 1467744             | -17.13 | 9.747 | 0.01 | 1402127            | -4.95  | 15.058 | 0.01 |
| E18-06141-08                                | AA8207      | 1.0 | 485982             | 10.85  | 7.731 | 0.05  | 1975065             | 11.51  | 9.747 | 0.01 | 1713875            | 16.19  | 15.058 | 0.01 |
| E18-06141-09                                | AA8208      | 1.0 | 516268             | 17.75  | 7.721 | 0.04  | 2306557             | 30.23  | 9.747 | 0.01 | 1996784            | 35.37  | 15.058 | 0.01 |
| Closing Calibration                         | AA8213CCCVS | 1.0 | 386051             | -11.95 | 7.682 | 0.00  | 1532831             | -13.46 | 9.737 | 0.00 | 1278044            | -13.36 | 15.052 | 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): AA8222DCVS

Date Analyzed: 8/7/2018

Instrument: AA

ICAL Date: 7/25/2018

|                                             |             |       | BROMOCHLOROMETHANE |        |       |       | 1,4-DIFLUOROBENZENE |        |       |      | D-5 CHLORO BENZENE |        |        |      |
|---------------------------------------------|-------------|-------|--------------------|--------|-------|-------|---------------------|--------|-------|------|--------------------|--------|--------|------|
|                                             |             |       | Area #             |        | RT    |       | Area #              |        | RT    |      | Area #             |        | RT     |      |
| CALIBRATION STANDARD                        |             |       | 404488             |        | 7.682 |       | 1591121             |        | 9.734 |      | 1304098            |        | 15.049 |      |
| UPPER LIMIT                                 |             |       | 566283             |        | 8.01  |       | 2227569             |        | 10.06 |      | 1825737            |        | 15.38  |      |
| LOWER LIMIT                                 |             |       | 242693             |        | 7.35  |       | 954673              |        | 9.40  |      | 782459             |        | 14.72  |      |
| Lab ID                                      | DF          |       | Area #             | %      | RT    | +/-   | Area #              | %      | RT    | +/-  | Area #             | %      | RT     | +/-  |
| Method Blank                                | AA8223BLK   | 1.0   | 386755             | -4.38  | 7.682 | 0.00  | 1385734             | -12.91 | 9.734 | 0.00 | 1124467            | -13.77 | 15.052 | 0.00 |
| Reporting Limit Laboratory Control Standard | AA8224RLLCS | 1.0   | 398730             | -1.42  | 7.676 | -0.01 | 1455932             | -8.50  | 9.730 | 0.00 | 1218171            | -6.59  | 15.055 | 0.01 |
| E18-06141-08                                | AA8232      | 100.0 | 332191             | -17.87 | 7.682 | 0.00  | 1080070             | -32.12 | 9.737 | 0.00 | 922301             | -29.28 | 15.052 | 0.00 |
| E18-06141-09                                | AA8233      | 10.0  | 305198             | -24.55 | 7.692 | 0.01  | 1178297             | -25.95 | 9.743 | 0.01 | 1041852            | -20.11 | 15.055 | 0.01 |
| Closing Calibration                         | AA8242CCCVS | 1.0   | 316732             | -21.70 | 7.682 | 0.00  | 1419983             | -10.76 | 9.734 | 0.00 | 1112022            | -14.73 | 15.055 | 0.01 |

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

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

**Integrated Analytical Laboratories, LLC**  
**Project#: Congers CP / 060141**  
**SDG #: E18-06141**  
**Date of first sample receipt: 8/2/2018**

**Randolph, NJ 07869**  
**NY ELAP Certification#: 11402**  
**NJDEP (Primary AB) Certification#: 14751**  
**Date of last sample receipt: 8/2/2018**

*Client:* Brennan Environmental  
19 Chatham Road  
Summit, NJ 07901

*Attention:* Attention: Jeff McCurdy

*Project/Site:* Congers CP / 060141/NY

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

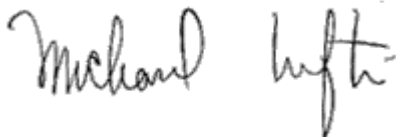
*Contact:* Michael H. Leftin, Ph.D.

**Sample(s):**

E18-06141-07  
E18-06141-08  
E18-06141-09

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.



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Michael H. Leftin, Ph.D.  
Laboratory Director

Date: August 27, 2018



# Integrated Analytical Laboratories LLC

## Summary of Results

Brennan Environmental  
19 Chatham Road  
Summit, NJ 07901  
Attn: Jeff McCurdy  
Project: Congers CP / 060141  
Site: NY

Report Date: 08/13/18  
SDG Number: E18-06141  
Date Sampled: 08/01/18  
Date Received: 08/02/18  
Date Analyzed: 08/06/18  
Data File: AA8206  
Summa ID: 3014A  
DF: 1

### Analysis: Volatile Organic Compounds by EPA Method TO-15

| Sample Name:               |          | SS-101       |       | Reporting |       |
|----------------------------|----------|--------------|-------|-----------|-------|
| IAL ID:                    |          | E18-06141-07 |       | Limits    |       |
| Compound                   | CAS #    | ppbv         | ug/m3 | ppbv      | ug/m3 |
| 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  |
| 1,1,2,2-Tetrachloroethane  | 79-34-5  | ND           | ND    | 0.20      | 1.4   |
| Tetrachloroethene          | 127-18-4 | 1.5          | 10    | 0.20      | 1.4   |
| 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  |
| Vinyl chloride             | 75-01-4  | ND           | ND    | 0.20      | 0.51  |

Data Path : C:\DATA\08-06-18\  
 Data File : aa8206.D  
 Acq On : 6 Aug 2018 10:28 pm  
 Operator : jls  
 Sample : E18-06141-07  
 Misc : 3014A, 500cc  
 ALS Vial : 16 Sample Multiplier: 1

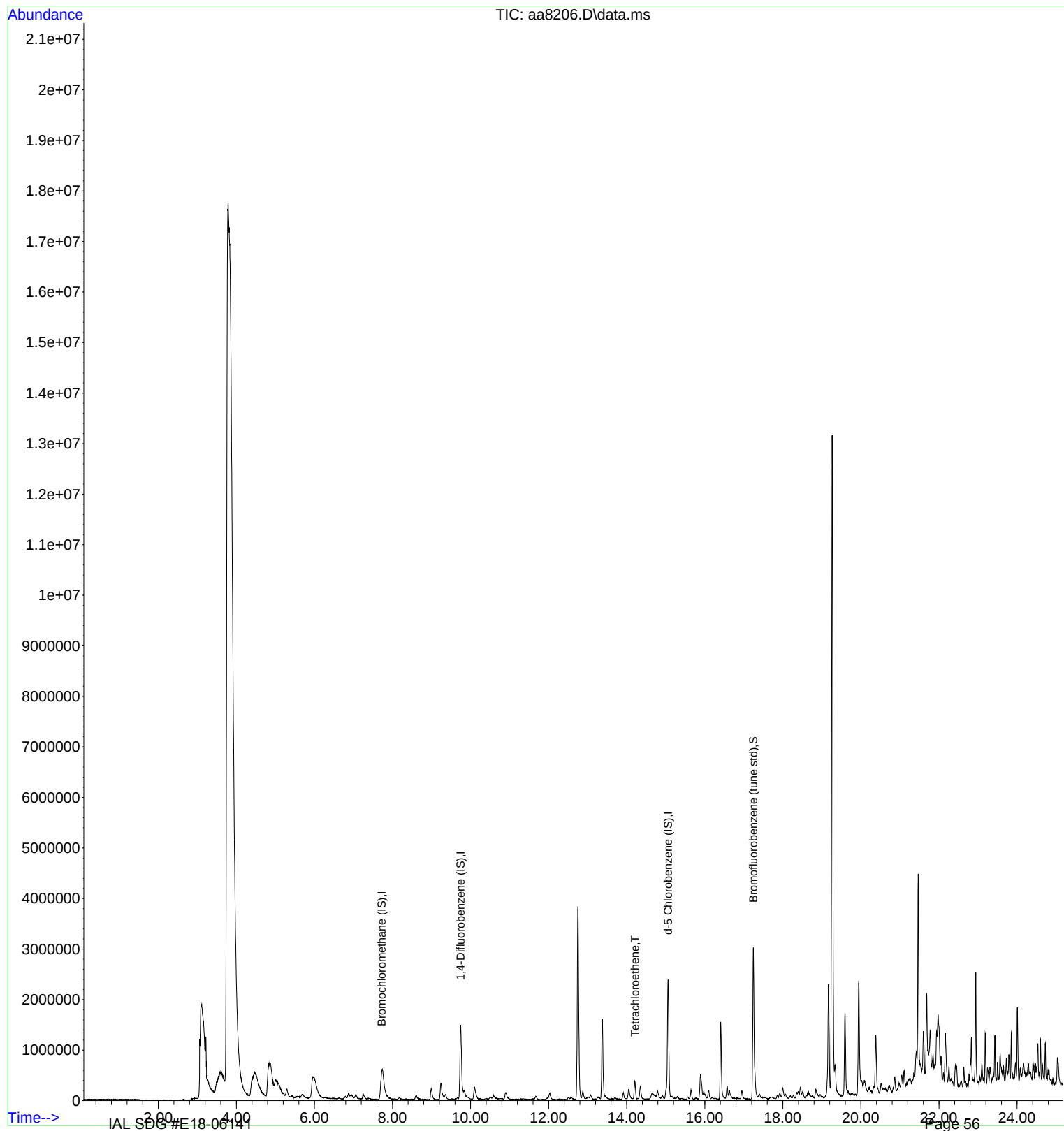
Quant Time: Aug 07 11:27:02 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

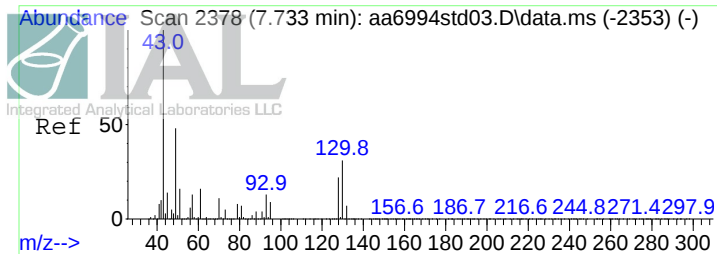
| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min)     |
|-------------------------------|--------|------|----------|-------|-------|--------------|
| -----                         |        |      |          |       |       |              |
| Internal Standards            |        |      |          |       |       |              |
| 1) Bromochloromethane (IS)    | 7.724  | 130  | 352575   | 10.00 | ppbV  | 0.04         |
| 38) 1,4-Difluorobenzene (IS)  | 9.747  | 114  | 1467744  | 10.00 | ppbV  | # 0.00       |
| 55) d-5 Chlorobenzene (IS)    | 15.058 | 117  | 1402127  | 10.00 | ppbV  | 0.00         |
| System Monitoring Compounds   |        |      |          |       |       |              |
| 64) Bromofluorobenzene (tu... | 17.245 | 95   | 1320113  | 10.32 | ppbV  | 0.00         |
| Target Compounds              |        |      |          |       |       |              |
| 54) Tetrachloroethene         | 14.213 | 166  | 102997   | 1.53  | ppbV  | Qvalue<br>99 |
| -----                         |        |      |          |       |       |              |

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

Data Path : C:\DATA\08-06-18\  
Data File : aa8206.D  
Acq On : 6 Aug 2018 10:28 pm  
Operator : jls  
Sample : E18-06141-07  
Misc : 3014A, 500cc  
ALS Vial : 16 Sample Multiplier: 1

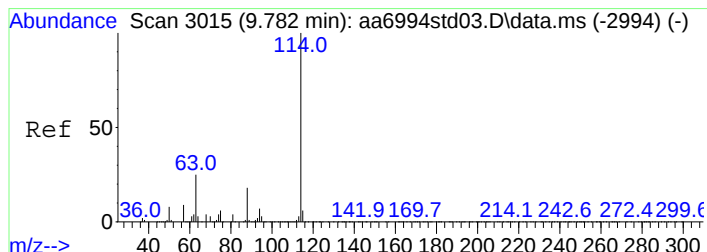
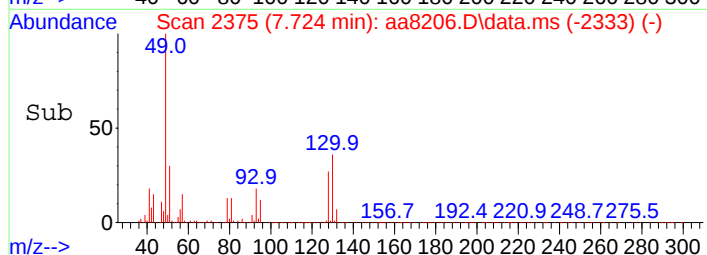
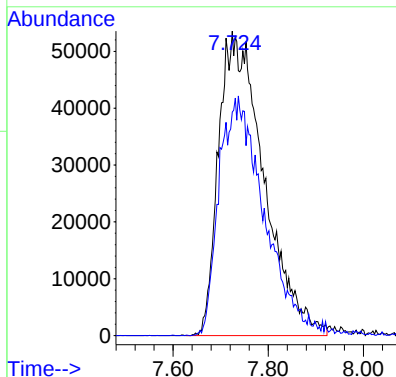
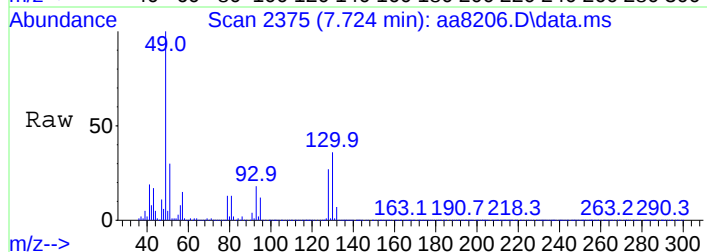
Quant Time: Aug 07 11:27:02 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration





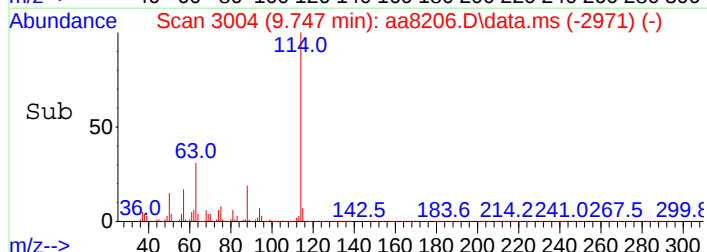
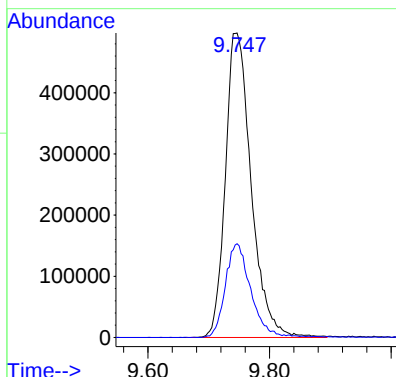
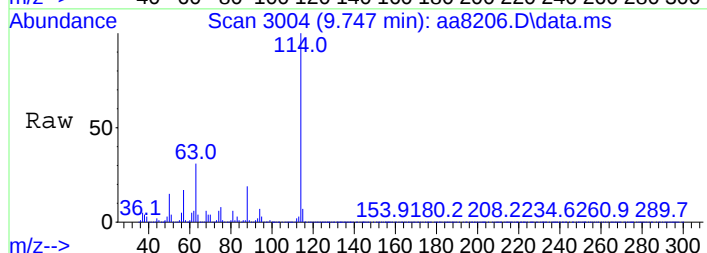
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.724 min Scan# 2375  
Delta R.T. 0.035 min  
Lab File: aa8206.D  
Acq: 6 Aug 2018 10:28 pm

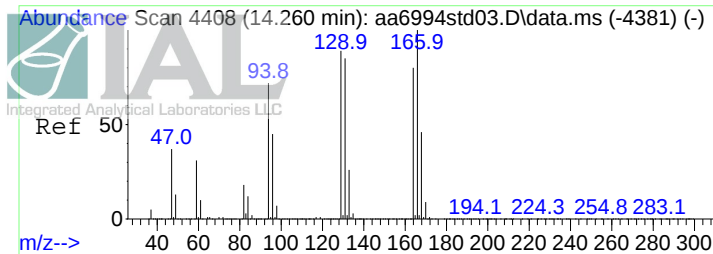
Tgt Ion:130 Resp: 352575  
Ion Ratio Lower Upper  
130 100  
128 77.9 62.6 94.0



#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.747 min Scan# 3004  
Delta R.T. 0.006 min  
Lab File: aa8206.D  
Acq: 6 Aug 2018 10:28 pm

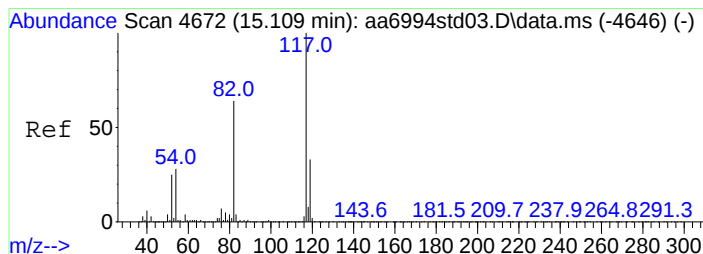
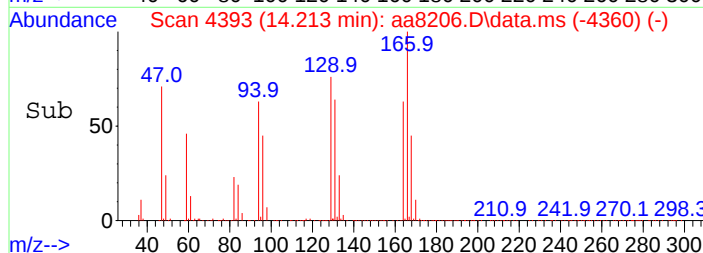
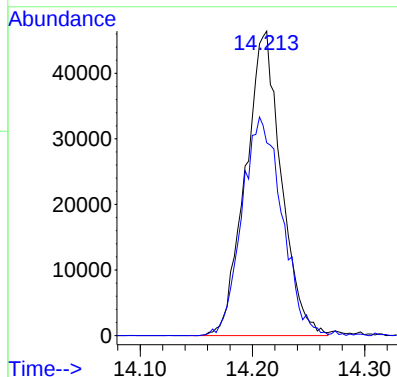
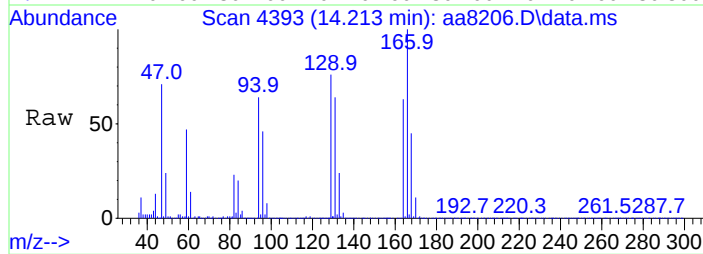
Tgt Ion:114 Resp: 1467744  
Ion Ratio Lower Upper  
114 100  
63 30.5 20.0 30.0#





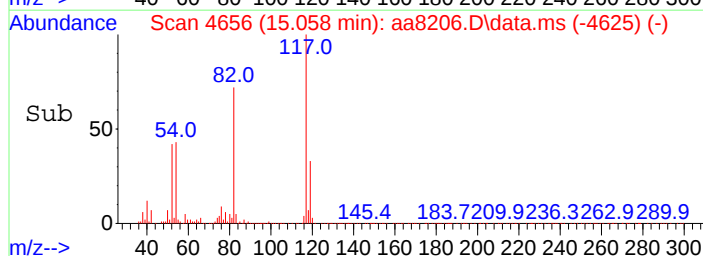
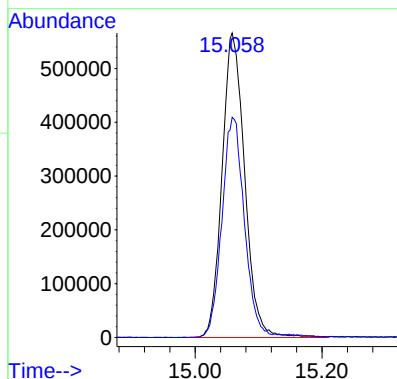
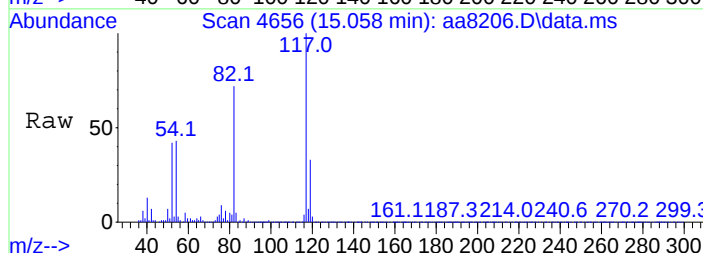
#54  
Tetrachloroethene  
Concen: 1.53 ppbV  
RT: 14.213 min Scan# 4393  
Delta R.T. 0.006 min  
Lab File: aa8206.D  
Acq: 6 Aug 2018 10:28 pm

Tgt Ion:166 Resp: 102997  
Ion Ratio Lower Upper  
166 100  
164 80.0 64.6 96.8

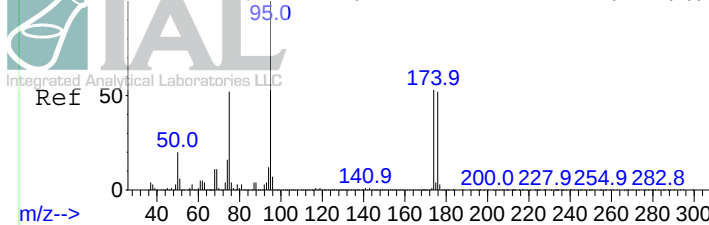


#55  
d-5 Chlorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 15.058 min Scan# 4656  
Delta R.T. 0.000 min  
Lab File: aa8206.D  
Acq: 6 Aug 2018 10:28 pm

Tgt Ion:117 Resp: 1402127  
Ion Ratio Lower Upper  
117 100  
82 71.6 56.0 84.0



Abundance Scan 5355 (17.305 min): aa6994std03.D\data.ms (-5334) (-)



#64

Bromofluorobenzene (tune std)

Concen: 10.32 ppbV

RT: 17.245 min Scan# 5336

Delta R.T. -0.003 min

Lab File: aa8206.D

Acq: 6 Aug 2018 10:28 pm

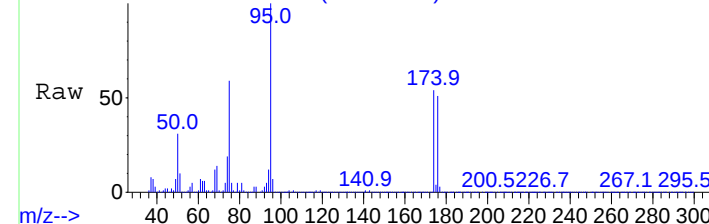
Tgt Ion: 95 Resp: 1320113

Ion Ratio Lower Upper

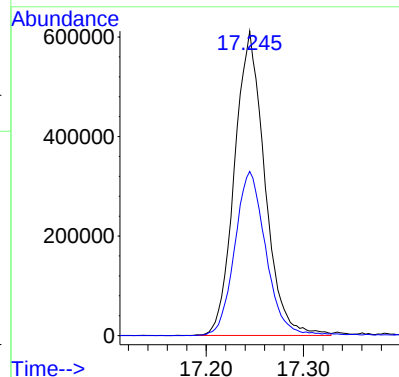
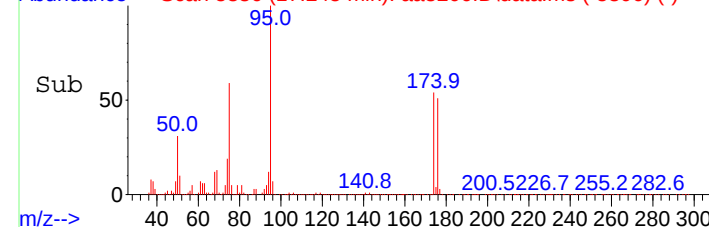
95 100

174 55.7 61.5 92.3#

Abundance Scan 5336 (17.245 min): aa8206.D\data.ms



Abundance Scan 5336 (17.245 min): aa8206.D\data.ms (-5306) (-)





# Integrated Analytical Laboratories LLC

## Summary of Results

Brennan Environmental  
19 Chatham Road  
Summit, NJ 07901  
Attn: Jeff McCurdy  
Project: Congers CP / 060141  
Site: NY

Report Date: 08/13/18  
SDG Number: E18-06141  
Date Sampled: 08/01/18  
Date Received: 08/02/18  
Date Analyzed: 08/06/18, 08/07/18  
Data File: AA8207, AA8232  
Summa ID: 2155  
DF: 1, 100

### Analysis: Volatile Organic Compounds by EPA Method TO-15

| Sample Name:               |          | SS-102       |       | Reporting |       |
|----------------------------|----------|--------------|-------|-----------|-------|
| IAL ID:                    |          | E18-06141-08 |       | Limits    |       |
| Compound                   | CAS #    | ppbv         | ug/m3 | ppbv      | ug/m3 |
| 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  | 0.50         | 2.0   | 0.20      | 0.79  |
| 1,2-Dichloroethene (cis)   | 156-59-2 | D            | 240   | 20        | 79    |
| 1,2-Dichloroethene (trans) | 156-60-5 |              | 1.8   | 0.20      | 0.79  |
| 1,1,2,2-Tetrachloroethane  | 79-34-5  | ND           | ND    | 0.20      | 1.4   |
| Tetrachloroethene          | 127-18-4 | D            | 1500  | 20        | 136   |
| 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  | D            | 86    | 4.6       | 25    |
| Vinyl chloride             | 75-01-4  | ND           | ND    | 0.20      | 0.51  |

Data Path : C:\DATA\08-06-18\  
 Data File : aa8207.D  
 Acq On : 6 Aug 2018 11:02 pm  
 Operator : jls  
 Sample : E18-06141-08  
 Misc : 2155, 500cc  
 ALS Vial : 17 Sample Multiplier: 1

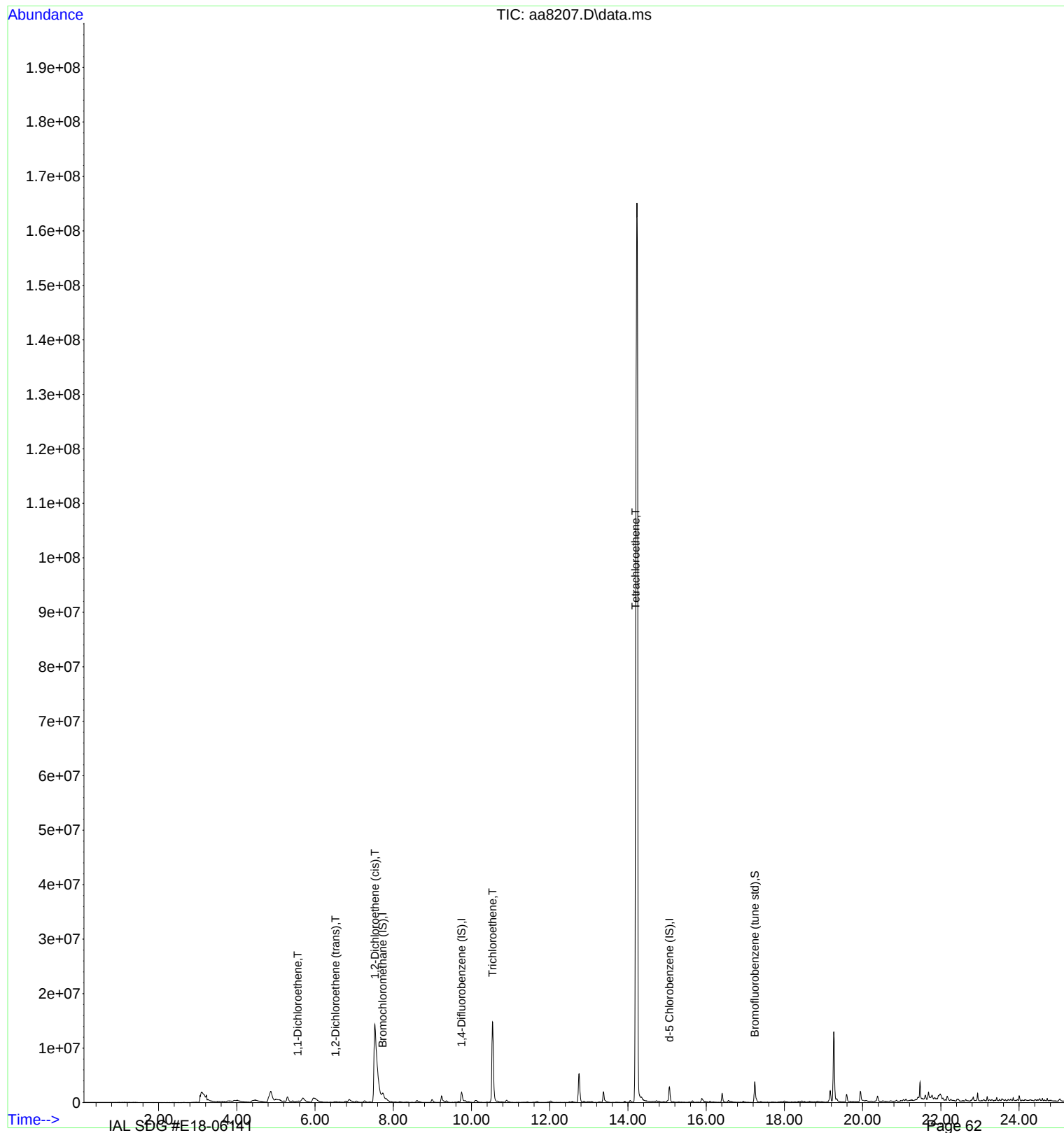
Quant Time: Aug 07 11:33:40 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

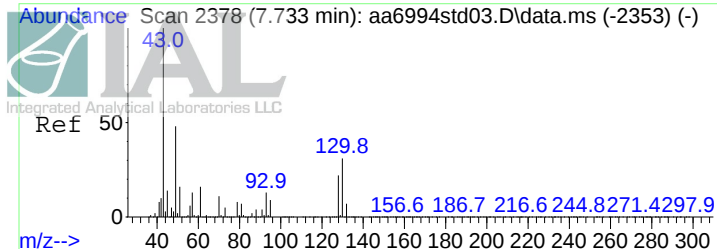
| Compound                      | R.T.   | QIon | Response | Conc   | Units | Dev(Min)    |
|-------------------------------|--------|------|----------|--------|-------|-------------|
| Internal Standards            |        |      |          |        |       |             |
| 1) Bromochloromethane (IS)    | 7.731  | 130  | 485982   | 10.00  | ppbV  | 0.04        |
| 38) 1,4-Difluorobenzene (IS)  | 9.747  | 114  | 1975065  | 10.00  | ppbV  | 0.00        |
| 55) d-5 Chlorobenzene (IS)    | 15.058 | 117  | 1713875  | 10.00  | ppbV  | 0.00        |
| System Monitoring Compounds   |        |      |          |        |       |             |
| 64) Bromofluorobenzene (tu... | 17.245 | 95   | 1735320  | 11.10  | ppbV  | 0.00        |
| Target Compounds              |        |      |          |        |       |             |
| 18) 1,1-Dichloroethene        | 5.554  | 61   | 57333    | 0.50   | ppbV  | Qvalue # 62 |
| 24) 1,2-Dichloroethene (tr... | 6.525  | 61   | 181309   | 1.75   | ppbV  | 96          |
| 28) 1,2-Dichloroethene (cis)  | 7.528  | 61   | 27917034 | 278.07 | ppbV  | 91          |
| 42) Trichloroethene           | 10.538 | 130  | 5206629  | 72.49  | ppbV  | 100         |
| 54) Tetrachloroethene         | 14.194 | 166  | 37556129 | 414.72 | ppbV  | 83          |

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

Data Path : C:\DATA\08-06-18\  
Data File : aa8207.D  
Acq On : 6 Aug 2018 11:02 pm  
Operator : jls  
Sample : E18-06141-08  
Misc : 2155, 500cc  
ALS Vial : 17 Sample Multiplier: 1

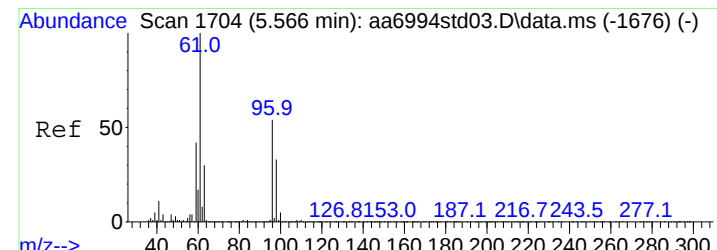
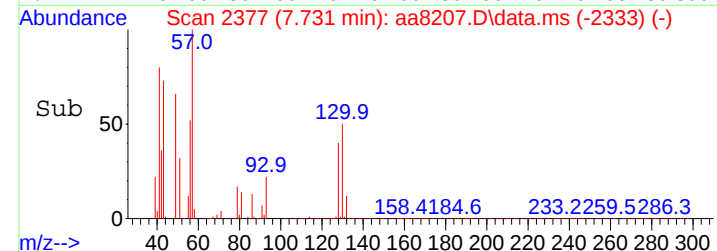
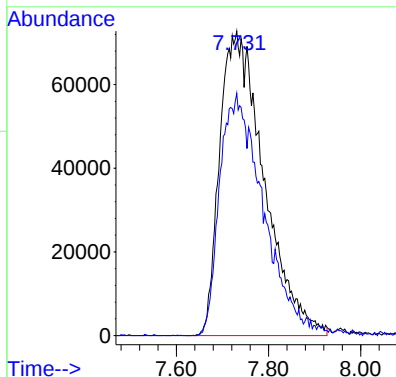
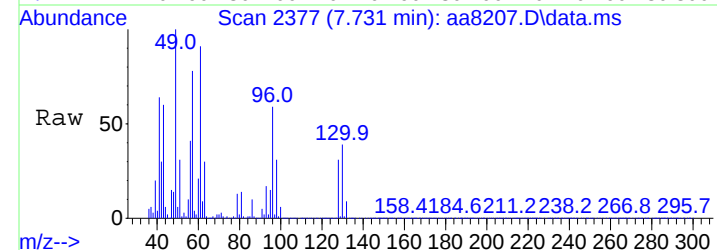
Quant Time: Aug 07 11:33:40 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration





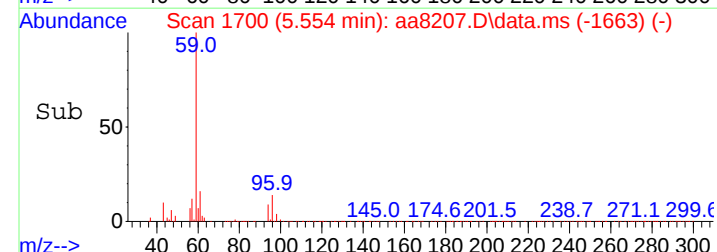
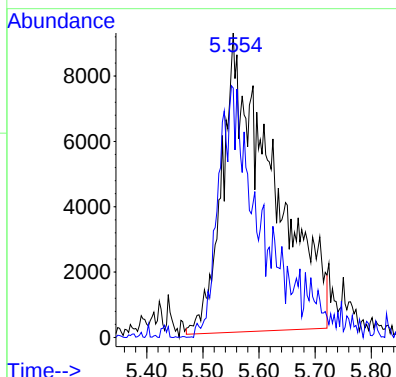
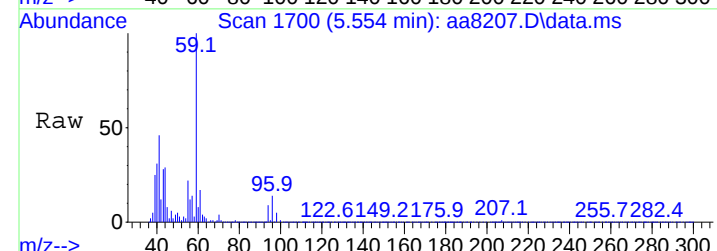
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.731 min Scan# 2377  
Delta R.T. 0.042 min  
Lab File: aa8207.D  
Acq: 6 Aug 2018 11:02 pm

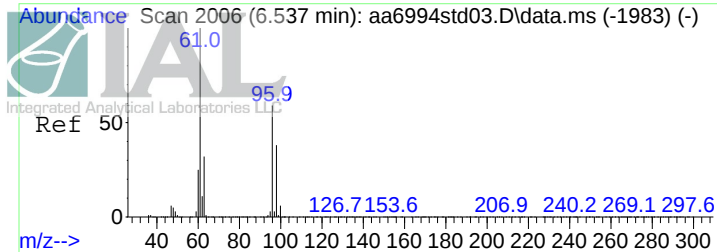
Tgt Ion: 130 Resp: 485982  
Ion Ratio Lower Upper  
130 100  
128 77.6 62.6 94.0



#18  
1,1-Dichloroethene  
Concen: 0.50 ppbV  
RT: 5.554 min Scan# 1700  
Delta R.T. 0.019 min  
Lab File: aa8207.D  
Acq: 6 Aug 2018 11:02 pm

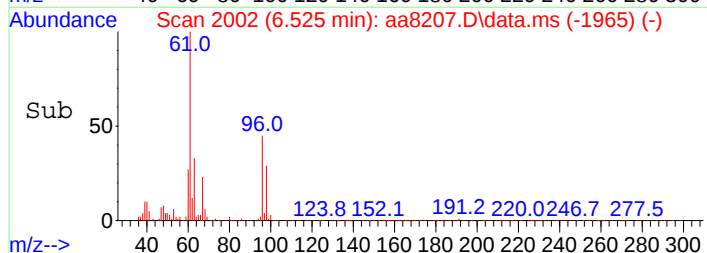
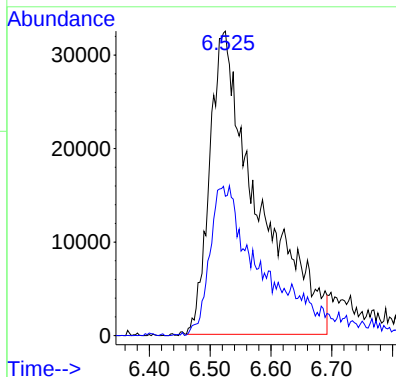
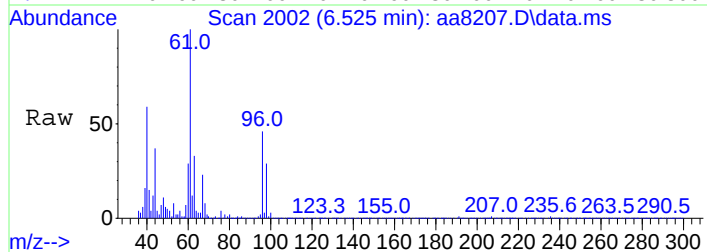
Tgt Ion: 61 Resp: 57333  
Ion Ratio Lower Upper  
61 100  
96 25.3 41.6 62.4#





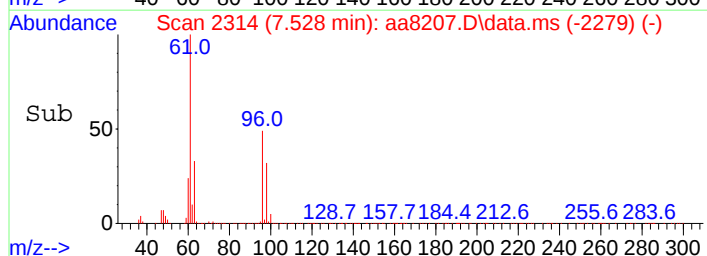
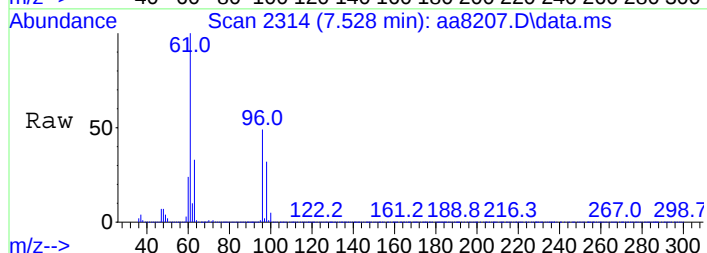
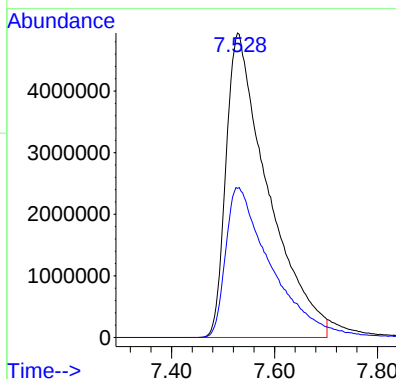
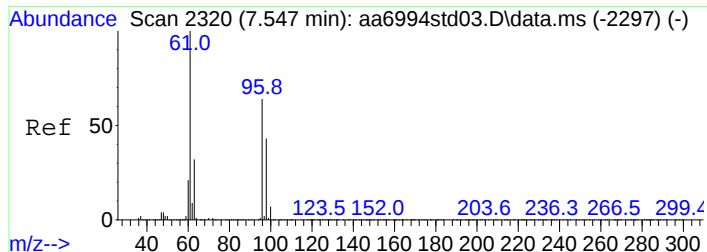
#24  
1,2-Dichloroethene (trans)  
Concen: 1.75 ppbV  
RT: 6.525 min Scan# 2002  
Delta R.T. 0.019 min  
Lab File: aa8207.D  
Acq: 6 Aug 2018 11:02 pm

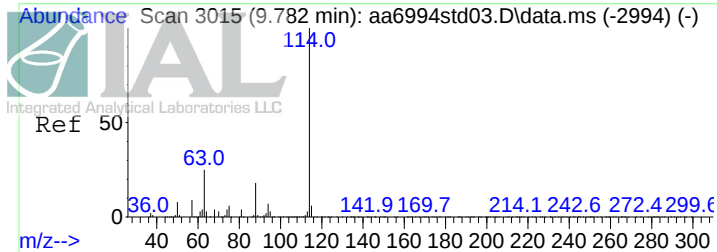
Tgt Ion: 61 Resp: 181309  
Ion Ratio Lower Upper  
61 100  
96 51.4 43.2 64.8



#28  
1,2-Dichloroethene (cis)  
Concen: 278.07 ppbV  
RT: 7.528 min Scan# 2314  
Delta R.T. 0.013 min  
Lab File: aa8207.D  
Acq: 6 Aug 2018 11:02 pm

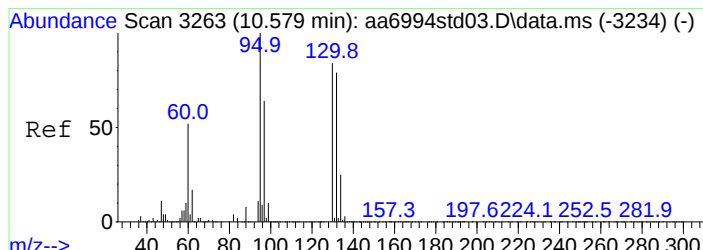
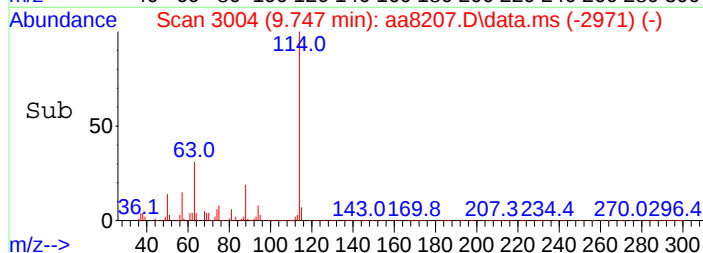
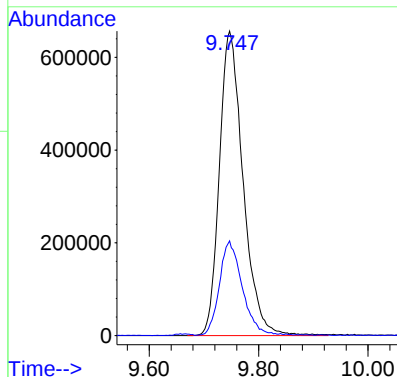
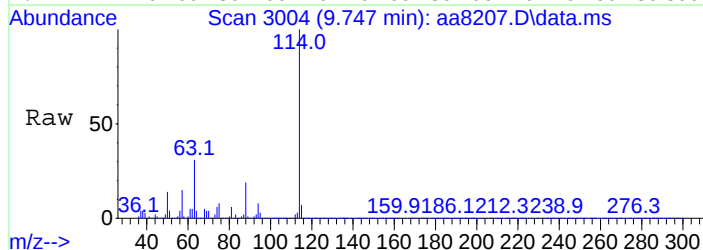
Tgt Ion: 61 Resp: 27917034  
Ion Ratio Lower Upper  
61 100  
96 52.0 47.2 70.8





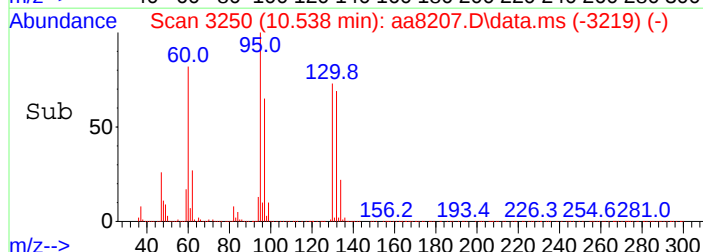
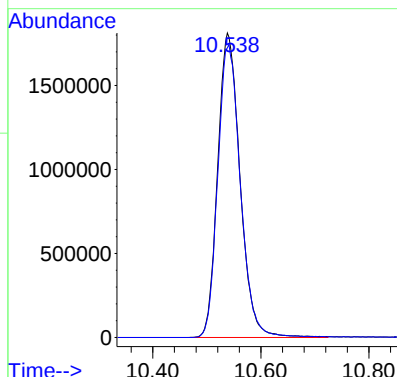
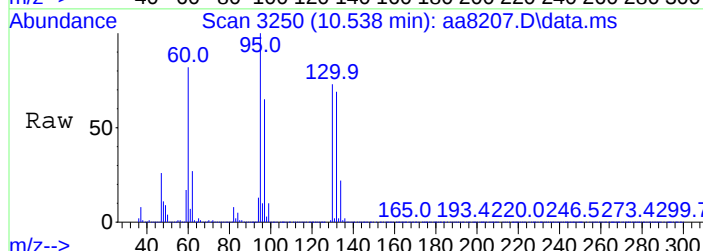
#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.747 min Scan# 3004  
Delta R.T. 0.007 min  
Lab File: aa8207.D  
Acq: 6 Aug 2018 11:02 pm

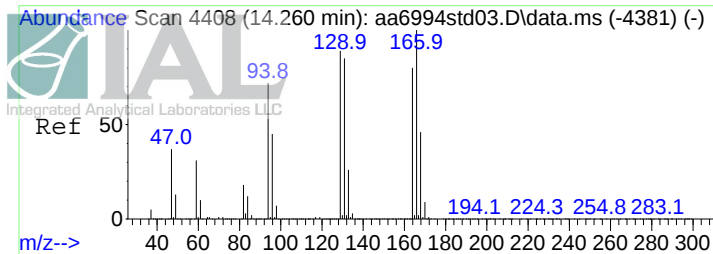
Tgt Ion:114 Resp: 1975065  
Ion Ratio Lower Upper  
114 100  
63 29.9 20.0 30.0



#42  
Trichloroethene  
Concen: 72.49 ppbV  
RT: 10.538 min Scan# 3250  
Delta R.T. 0.000 min  
Lab File: aa8207.D  
Acq: 6 Aug 2018 11:02 pm

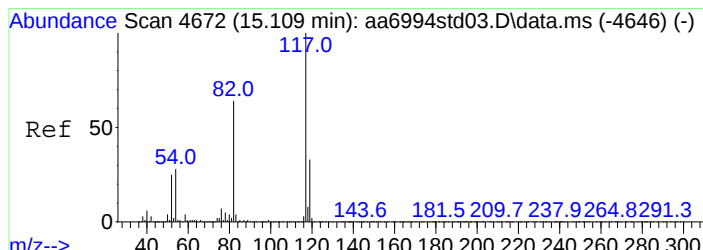
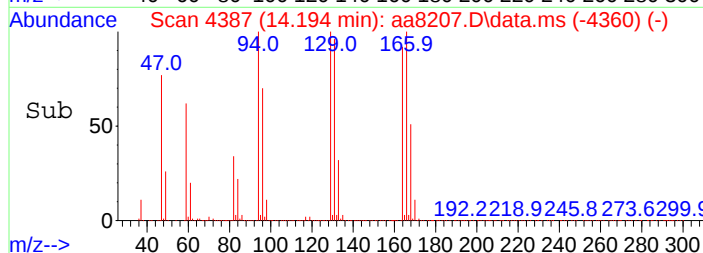
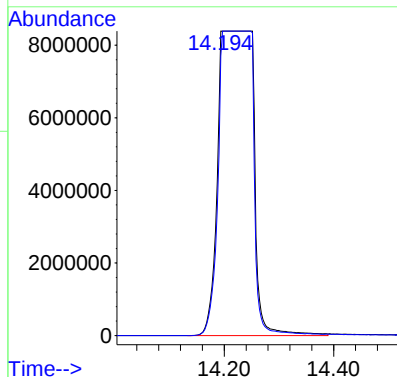
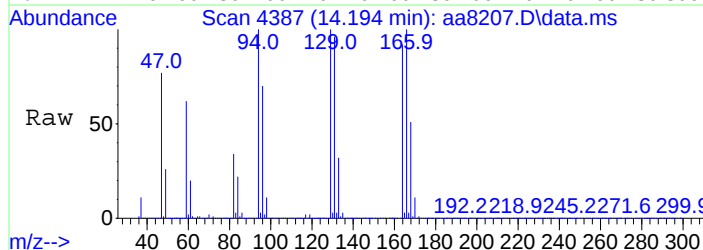
Tgt Ion:130 Resp: 5206629  
Ion Ratio Lower Upper  
130 100  
132 97.3 77.8 116.6





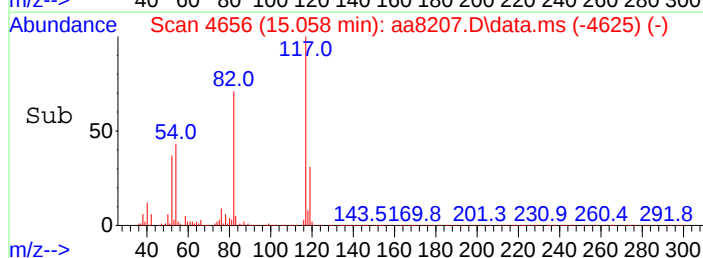
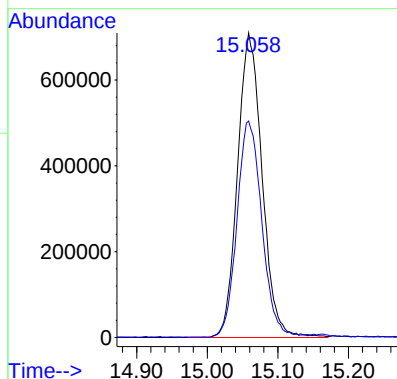
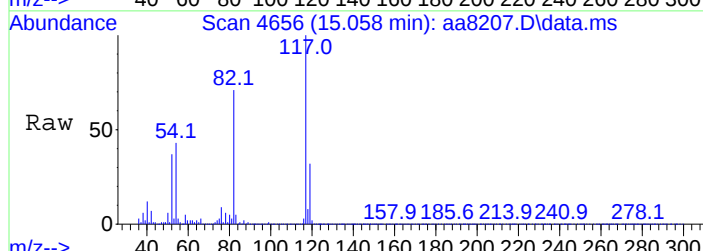
#54  
Tetrachloroethene  
Concen: 414.72 ppbV  
RT: 14.194 min Scan# 4387  
Delta R.T. -0.013 min  
Lab File: aa8207.D  
Acq: 6 Aug 2018 11:02 pm

Tgt Ion:166 Resp:37556129  
Ion Ratio Lower Upper  
166 100  
164 95.9 64.6 96.8

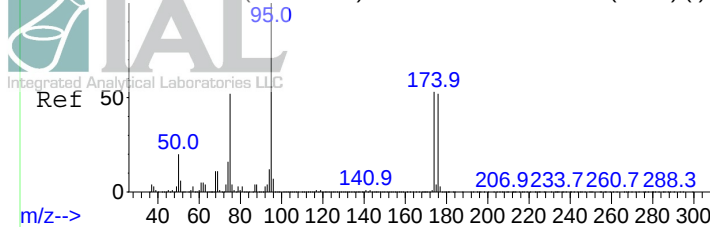


#55  
d-5 Chlorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 15.058 min Scan# 4656  
Delta R.T. 0.000 min  
Lab File: aa8207.D  
Acq: 6 Aug 2018 11:02 pm

Tgt Ion:117 Resp: 1713875  
Ion Ratio Lower Upper  
117 100  
82 73.0 56.0 84.0



Abundance Scan 5355 (17.305 min): aa6994std03.D\data.ms (-5334) (-)



#64

Bromofluorobenzene (tune std)

Concen: 11.10 ppbV

RT: 17.245 min Scan# 5336

Delta R.T. -0.003 min

Lab File: aa8207.D

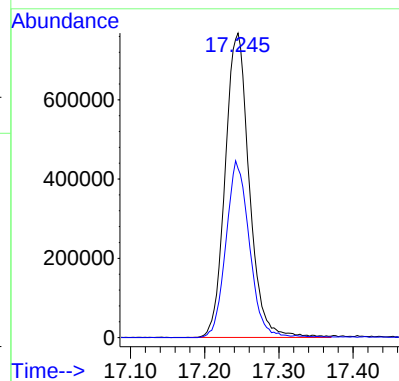
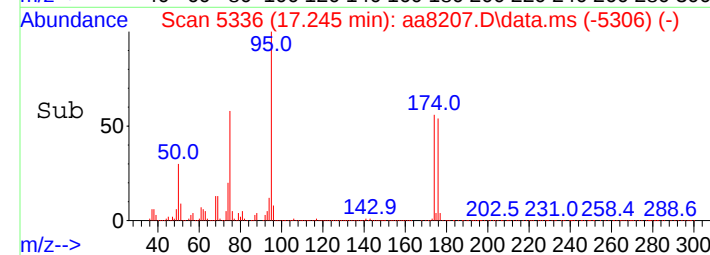
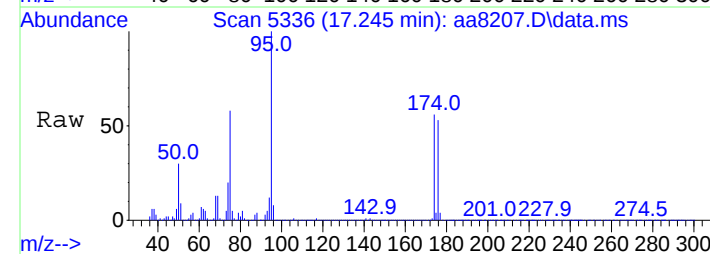
Acq: 6 Aug 2018 11:02 pm

Tgt Ion: 95 Resp: 1735320

Ion Ratio Lower Upper

95 100

174 57.0 61.5 92.3#



Data Path : C:\DATA\08-07-18\  
 Data File : aa8232.D  
 Acq On : 7 Aug 2018 4:57 pm  
 Operator : jjw  
 Sample : E18-06141-08 x 100 dil  
 Misc : 2155, 5cc  
 ALS Vial : 12 Sample Multiplier: 1

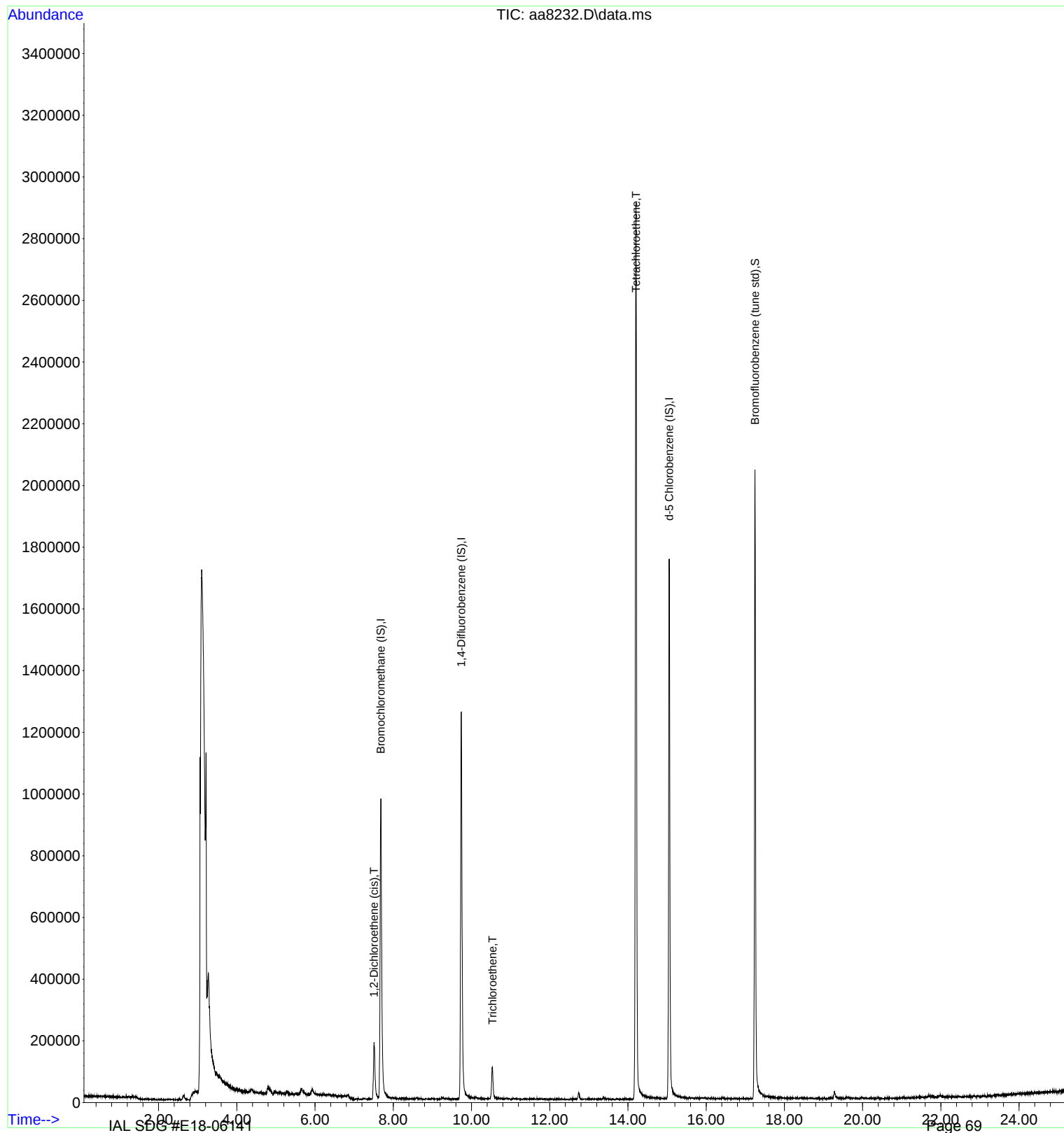
Quant Time: Aug 09 11:20:50 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

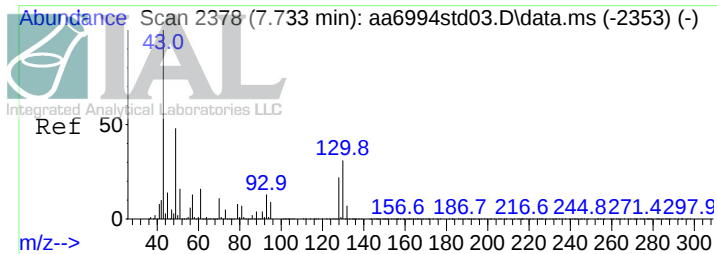
| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min)  |
|-------------------------------|--------|------|----------|-------|-------|-----------|
| -----                         |        |      |          |       |       |           |
| Internal Standards            |        |      |          |       |       |           |
| 1) Bromochloromethane (IS)    | 7.682  | 130  | 332191   | 10.00 | ppbV  | 0.00      |
| 38) 1,4-Difluorobenzene (IS)  | 9.737  | 114  | 1080070  | 10.00 | ppbV  | # 0.00    |
| 55) d-5 Chlorobenzene (IS)    | 15.052 | 117  | 922301   | 10.00 | ppbV  | 0.00      |
| System Monitoring Compounds   |        |      |          |       |       |           |
| 64) Bromofluorobenzene (tu... | 17.248 | 95   | 817274   | 9.72  | ppbV  | 0.00      |
| Target Compounds              |        |      |          |       |       |           |
| 28) 1,2-Dichloroethene (cis)  | 7.509  | 61   | 164078   | 2.39  | ppbV  | Qvalue 98 |
| 42) Trichloroethene           | 10.538 | 130  | 33853    | 0.86  | ppbV  | 98        |
| 54) Tetrachloroethene         | 14.206 | 166  | 753398   | 15.21 | ppbV  | 97        |
| -----                         |        |      |          |       |       |           |

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

Data Path : C:\DATA\08-07-18\  
Data File : aa8232.D  
Acq On : 7 Aug 2018 4:57 pm  
Operator : jjw  
Sample : E18-06141-08 x 100 dil  
Misc : 2155, 5cc  
ALS Vial : 12 Sample Multiplier: 1

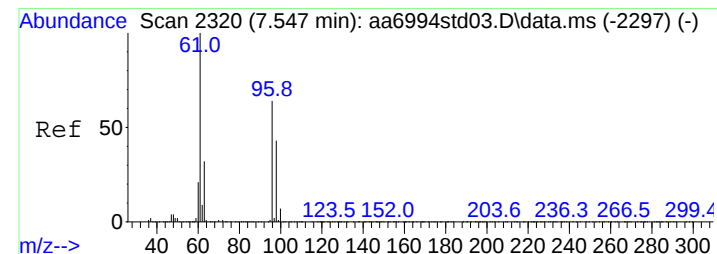
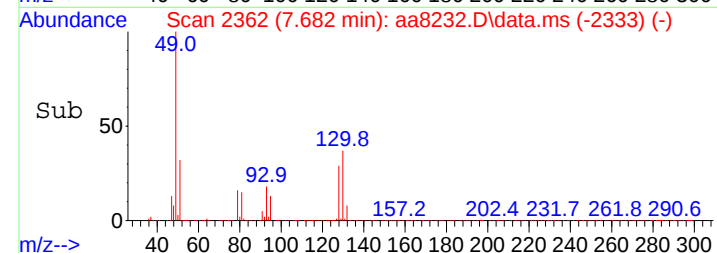
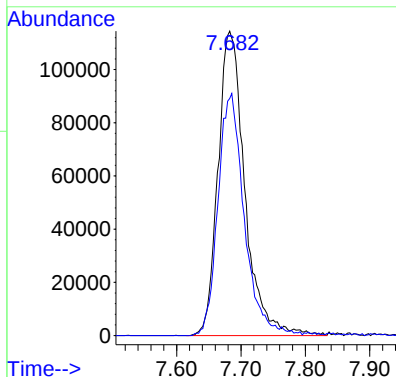
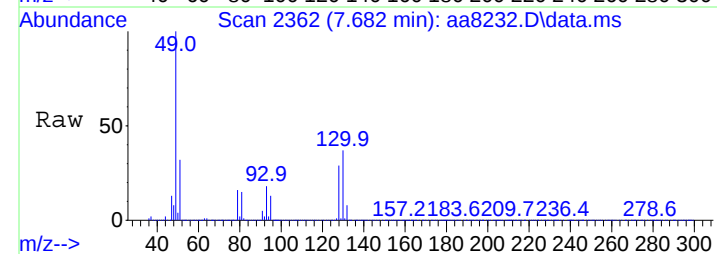
Quant Time: Aug 09 11:20:50 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration





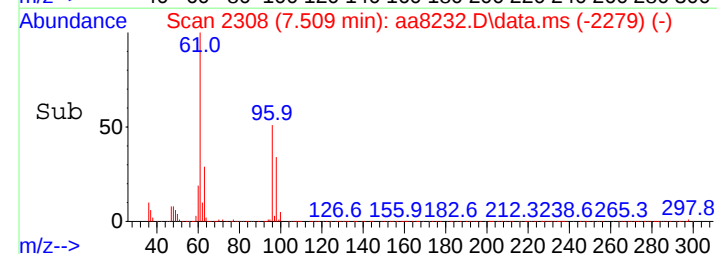
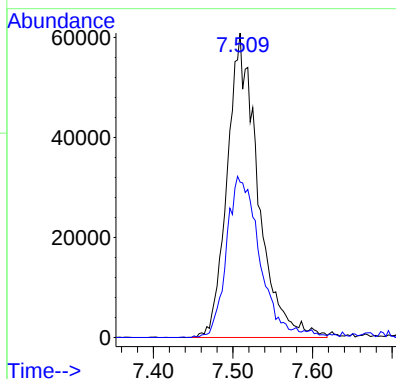
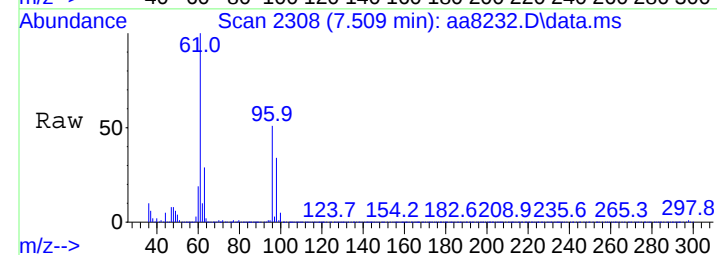
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.682 min Scan# 2362  
Delta R.T. -0.007 min  
Lab File: aa8232.D  
Acq: 7 Aug 2018 4:57 pm

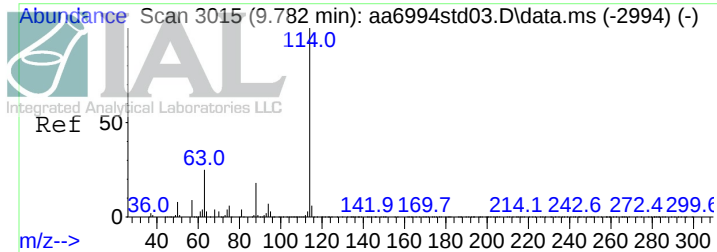
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 130     | 100   |       |       |
| 128     | 77.7  | 62.6  | 94.0  |



#28  
1,2-Dichloroethene (cis)  
Concen: 2.39 ppbV  
RT: 7.509 min Scan# 2308  
Delta R.T. -0.006 min  
Lab File: aa8232.D  
Acq: 7 Aug 2018 4:57 pm

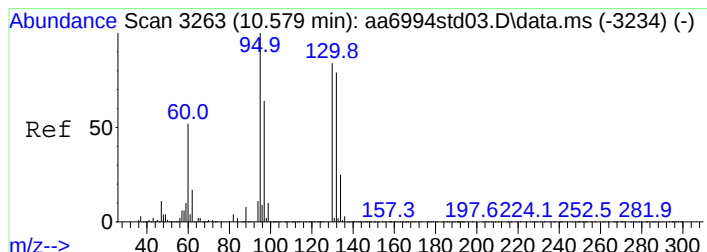
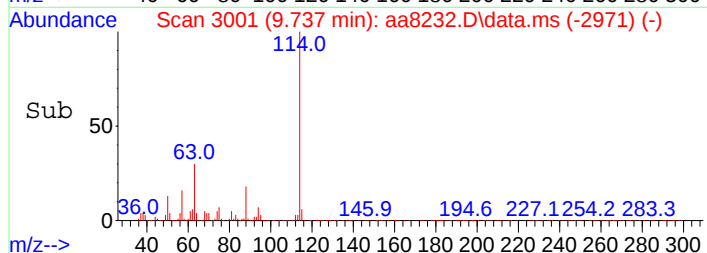
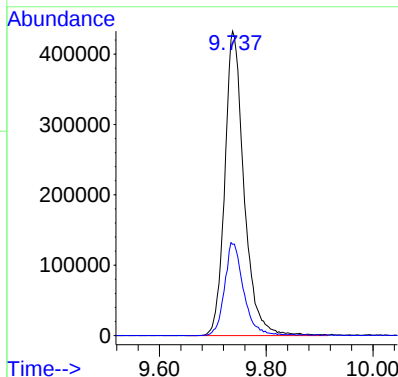
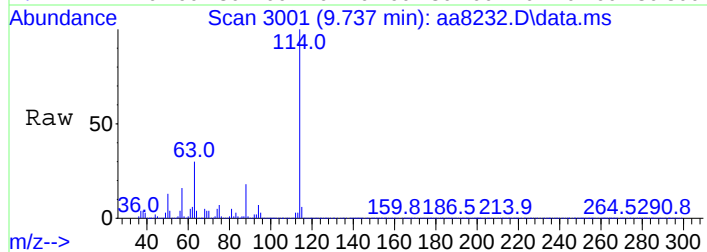
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 61      | 100   |       |       |
| 96      | 57.5  | 47.2  | 70.8  |





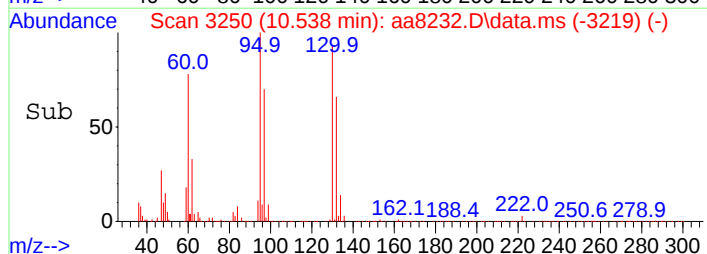
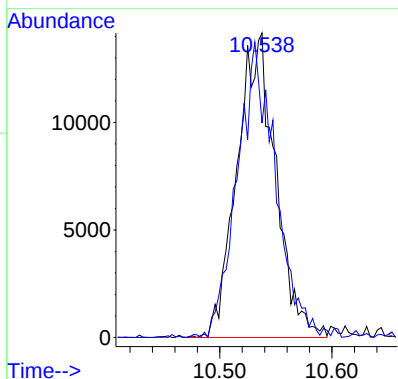
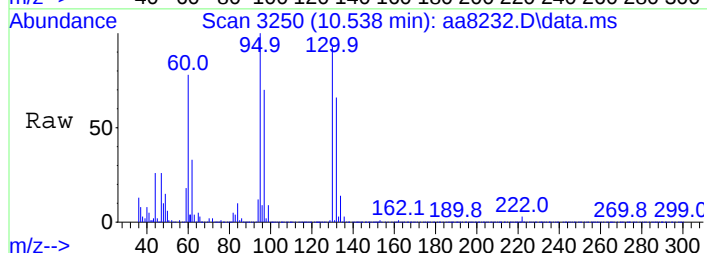
#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.737 min Scan# 3001  
Delta R.T. -0.003 min  
Lab File: aa8232.D  
Acq: 7 Aug 2018 4:57 pm

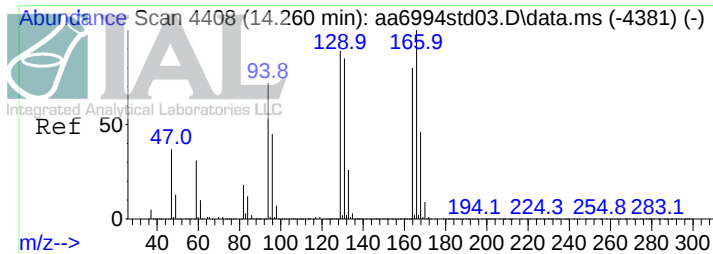
Tgt Ion:114 Resp: 1080070  
Ion Ratio Lower Upper  
114 100  
63 30.2 20.0 30.0#



#42  
Trichloroethene  
Concen: 0.86 ppbV  
RT: 10.538 min Scan# 3250  
Delta R.T. 0.000 min  
Lab File: aa8232.D  
Acq: 7 Aug 2018 4:57 pm

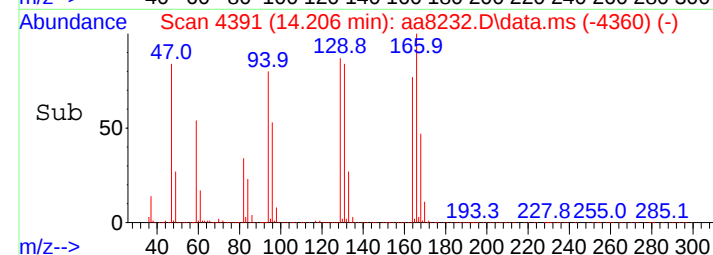
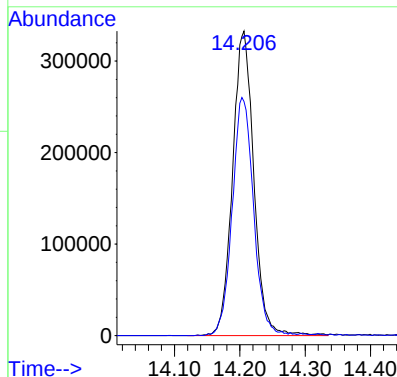
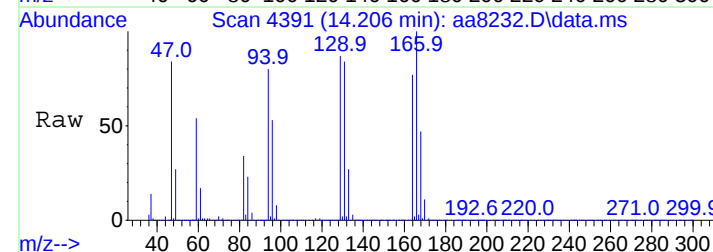
Tgt Ion:130 Resp: 33853  
Ion Ratio Lower Upper  
130 100  
132 95.3 77.8 116.6





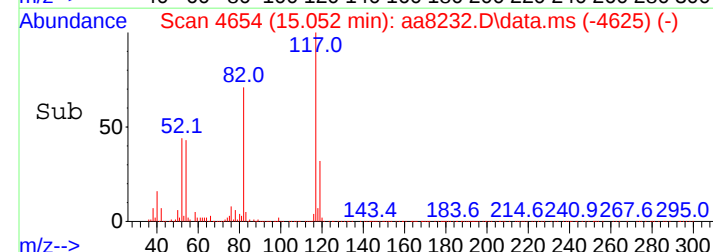
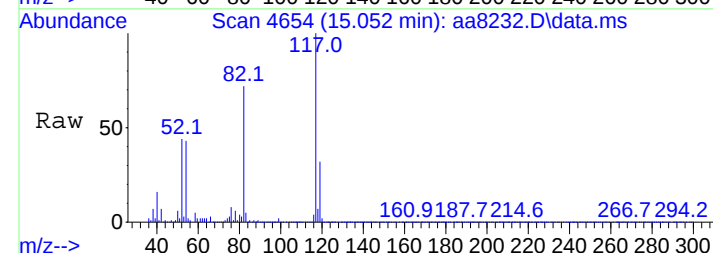
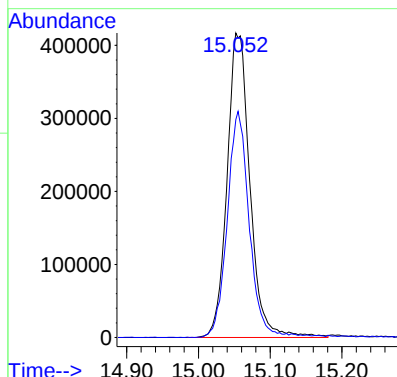
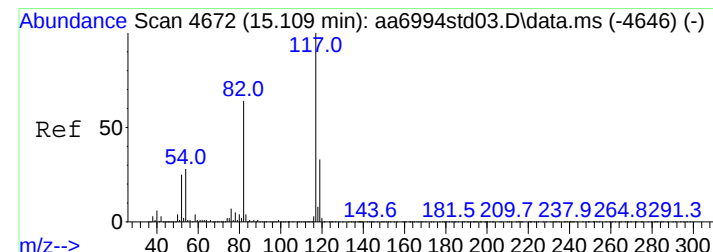
#54  
Tetrachloroethene  
Concen: 15.21 ppbV  
RT: 14.206 min Scan# 4391  
Delta R.T. 0.000 min  
Lab File: aa8232.D  
Acq: 7 Aug 2018 4:57 pm

| Tgt Ion   | 166  | Resp  | 753398 |
|-----------|------|-------|--------|
| Ion Ratio | 100  | Lower | Upper  |
| 164       | 78.3 | 64.6  | 96.8   |

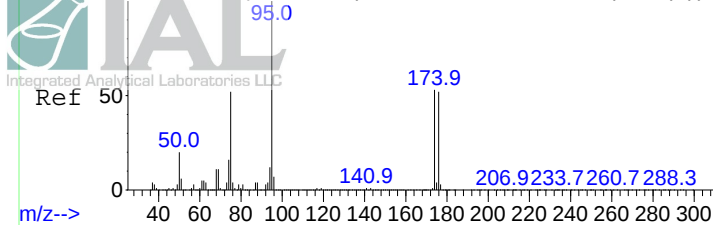


#55  
d-5 Chlorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 15.052 min Scan# 4654  
Delta R.T. -0.006 min  
Lab File: aa8232.D  
Acq: 7 Aug 2018 4:57 pm

| Tgt Ion   | 117  | Resp  | 922301 |
|-----------|------|-------|--------|
| Ion Ratio | 100  | Lower | Upper  |
| 82        | 71.7 | 56.0  | 84.0   |



Abundance Scan 5355 (17.305 min): aa6994std03.D\data.ms (-5334) (-)



#64

Bromofluorobenzene (tune std)

Concen: 9.72 ppbV

RT: 17.248 min Scan# 5337

Delta R.T. 0.000 min

Lab File: aa8232.D

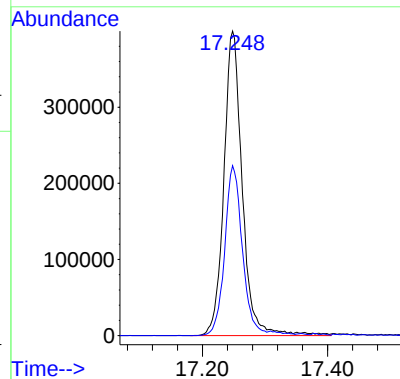
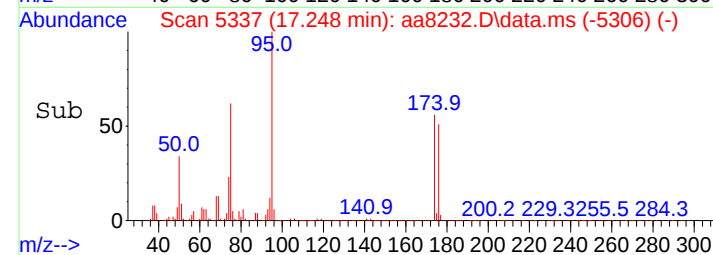
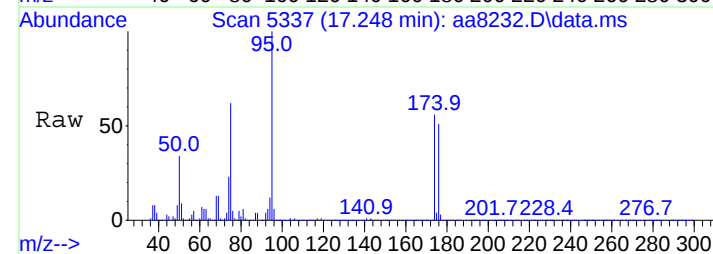
Acq: 7 Aug 2018 4:57 pm

Tgt Ion: 95 Resp: 817274

Ion Ratio Lower Upper

95 100

174 54.5 61.5 92.3#





# Integrated Analytical Laboratories LLC

## Summary of Results

Brennan Environmental  
19 Chatham Road  
Summit, NJ 07901  
Attn: Jeff McCurdy  
Project: Congers CP / 060141  
Site: NY

Report Date: 08/13/18  
SDG Number: E18-06141  
Date Sampled: 08/01/18  
Date Received: 08/02/18  
Date Analyzed: 08/06/18, 08/07/18  
Data File: AA8208, AA8233  
Summa ID: 5089  
DF: 1, 10

### Analysis: Volatile Organic Compounds by EPA Method TO-15

| Sample Name:               |          | SS-103       |       | Reporting |       |
|----------------------------|----------|--------------|-------|-----------|-------|
| IAL ID:                    |          | E18-06141-09 |       | Limits    |       |
| Compound                   | CAS #    | ppbv         | ug/m3 | ppbv      | ug/m3 |
| 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  |
| 1,1,2,2-Tetrachloroethane  | 79-34-5  | ND           | ND    | 0.20      | 1.4   |
| Tetrachloroethene          | 127-18-4 | D 140        | 950   | 2.0       | 14    |
| 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  | 0.17         | 0.93  | 0.05      | 0.25  |
| Vinyl chloride             | 75-01-4  | ND           | ND    | 0.20      | 0.51  |

Data Path : C:\DATA\08-06-18\  
 Data File : aa8208.D  
 Acq On : 6 Aug 2018 11:35 pm  
 Operator : jls  
 Sample : E18-06141-09  
 Misc : 5089, 500cc  
 ALS Vial : 18 Sample Multiplier: 1

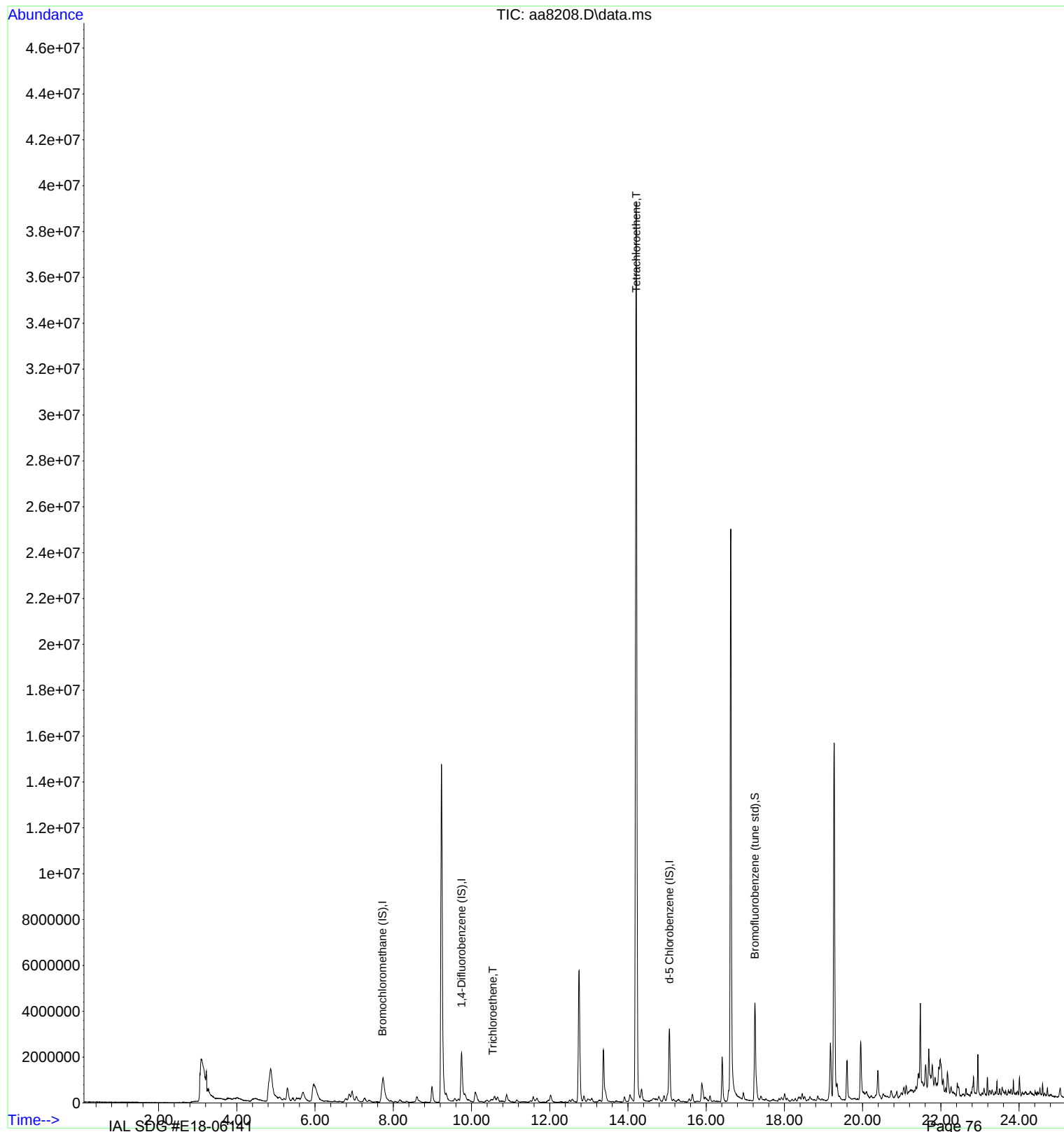
Quant Time: Aug 07 11:41:23 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

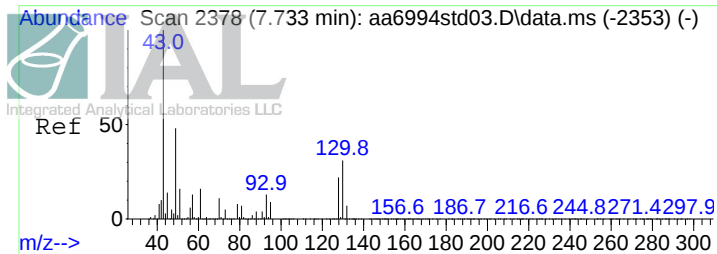
| Compound                      | R.T.   | QIon | Response | Conc   | Units | Dev(Min) |
|-------------------------------|--------|------|----------|--------|-------|----------|
| Internal Standards            |        |      |          |        |       |          |
| 1) Bromochloromethane (IS)    | 7.721  | 130  | 516268   | 10.00  | ppbV  | 0.03     |
| 38) 1,4-Difluorobenzene (IS)  | 9.747  | 114  | 2306557  | 10.00  | ppbV  | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.058 | 117  | 1996784  | 10.00  | ppbV  | 0.00     |
| System Monitoring Compounds   |        |      |          |        |       |          |
| 64) Bromofluorobenzene (tu... | 17.245 | 95   | 2065867  | 11.34  | ppbV  | 0.00     |
| Target Compounds              |        |      |          |        |       |          |
| 42) Trichloroethene           | 10.541 | 130  | 14488    | 0.17   | ppbV  | 99       |
| 54) Tetrachloroethene         | 14.210 | 166  | 10904647 | 103.11 | ppbV  | 98       |

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

Data Path : C:\DATA\08-06-18\  
Data File : aa8208.D  
Acq On : 6 Aug 2018 11:35 pm  
Operator : jls  
Sample : E18-06141-09  
Misc : 5089, 500cc  
ALS Vial : 18 Sample Multiplier: 1

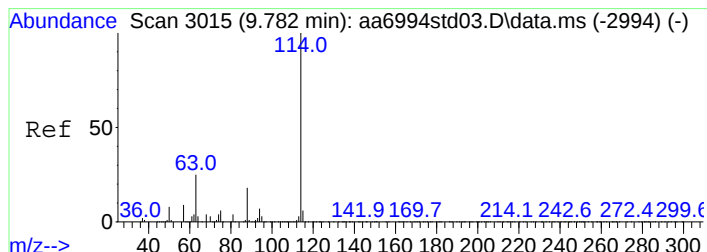
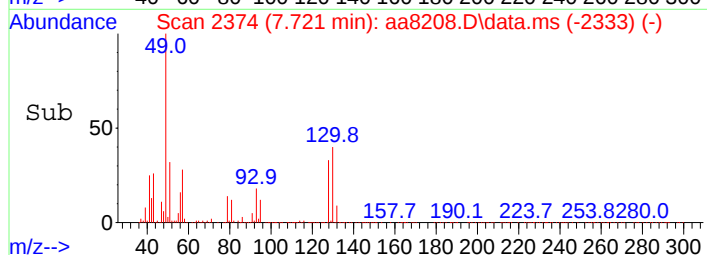
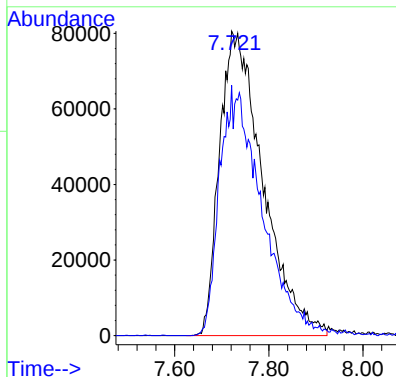
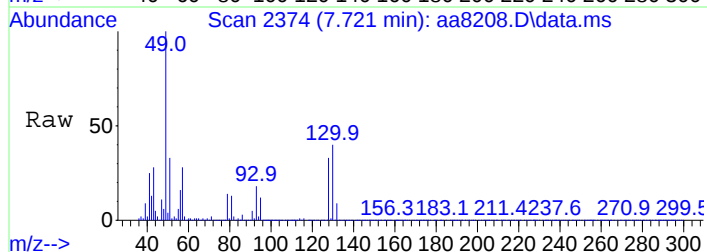
Quant Time: Aug 07 11:41:23 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration





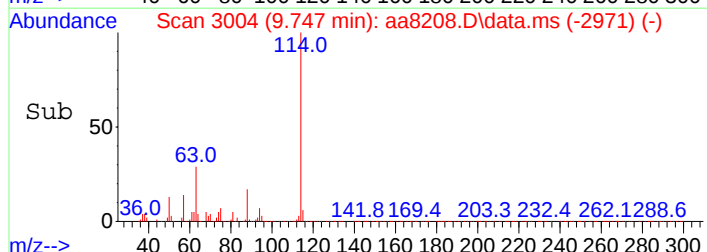
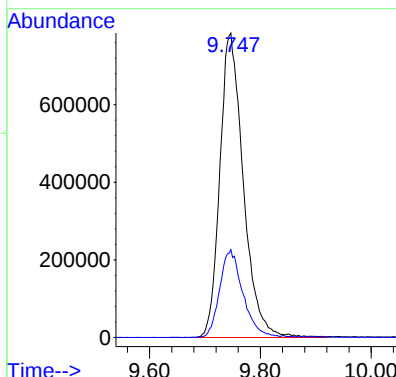
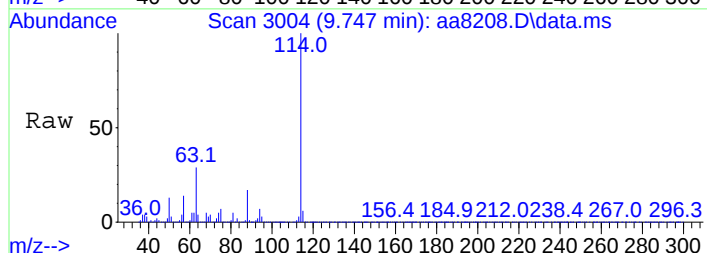
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.721 min Scan# 2374  
Delta R.T. 0.032 min  
Lab File: aa8208.D  
Acq: 6 Aug 2018 11:35 pm

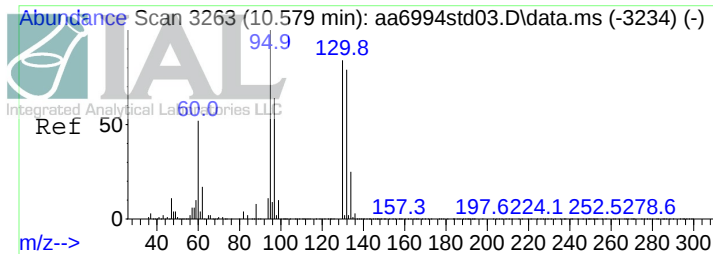
Tgt Ion:130 Resp: 516268  
Ion Ratio Lower Upper  
130 100  
128 79.1 62.6 94.0



#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.747 min Scan# 3004  
Delta R.T. 0.007 min  
Lab File: aa8208.D  
Acq: 6 Aug 2018 11:35 pm

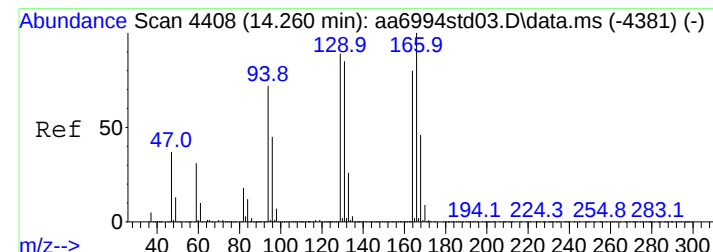
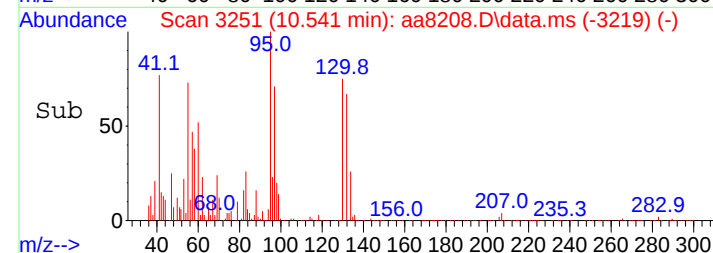
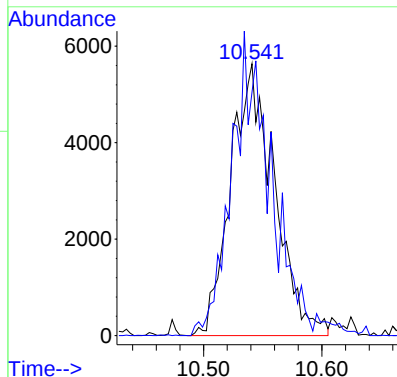
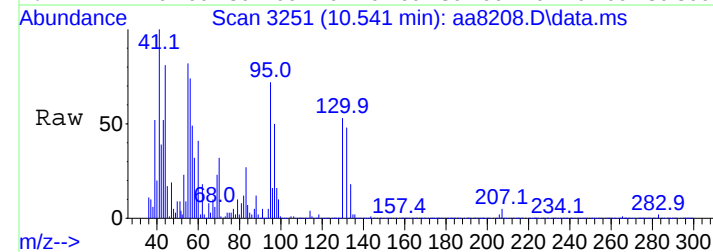
Tgt Ion:114 Resp: 2306557  
Ion Ratio Lower Upper  
114 100  
63 28.4 20.0 30.0





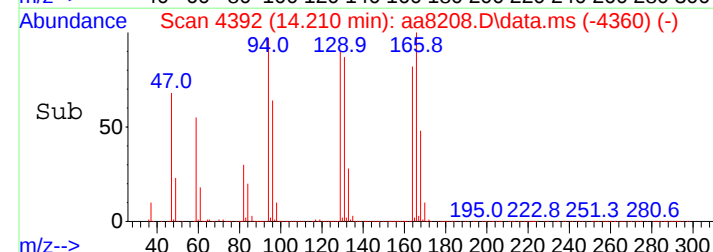
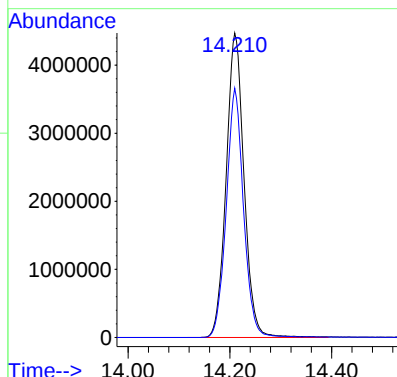
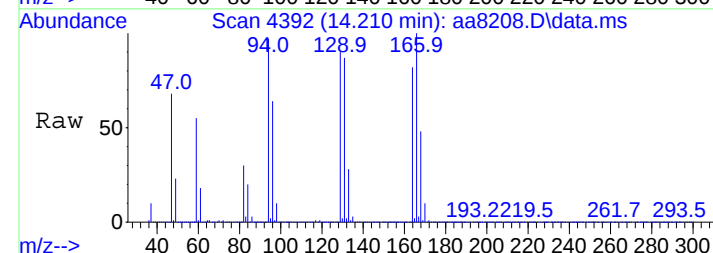
#42  
Trichloroethene  
Concen: 0.17 ppbV  
RT: 10.541 min Scan# 3251  
Delta R.T. 0.003 min  
Lab File: aa8208.D  
Acq: 6 Aug 2018 11:35 pm

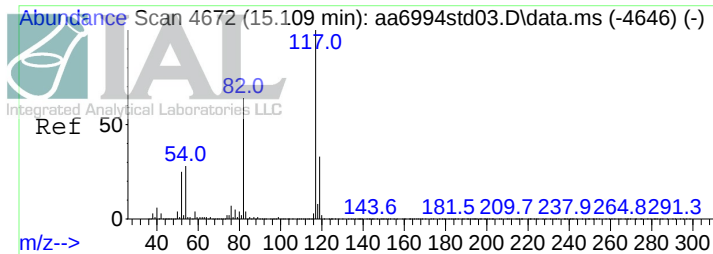
Tgt Ion:130 Resp: 14488  
Ion Ratio Lower Upper  
130 100  
132 97.7 77.8 116.6



#54  
Tetrachloroethene  
Concen: 103.11 ppbV  
RT: 14.210 min Scan# 4392  
Delta R.T. 0.003 min  
Lab File: aa8208.D  
Acq: 6 Aug 2018 11:35 pm

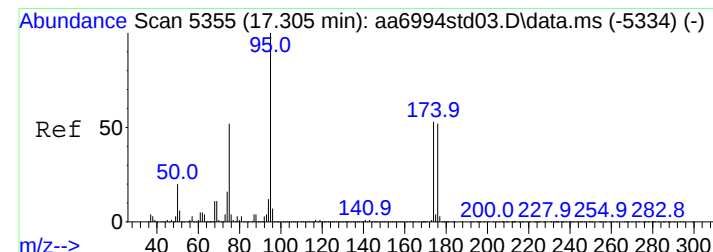
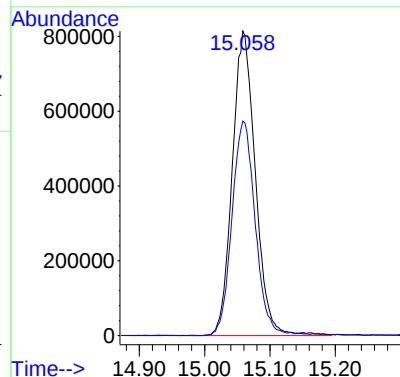
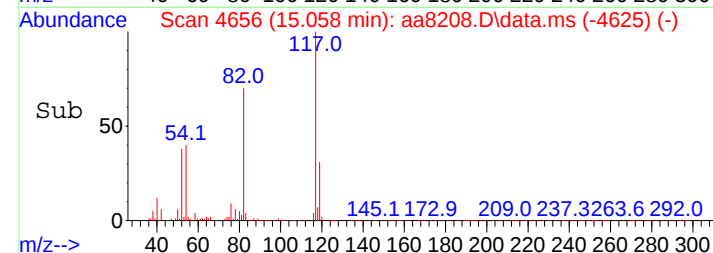
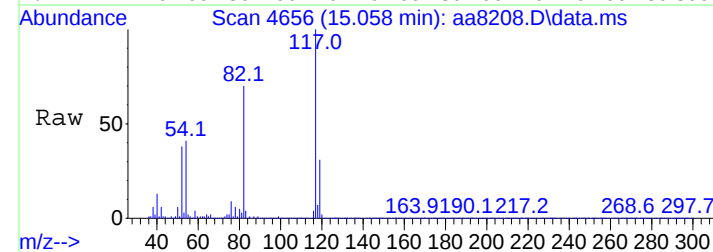
Tgt Ion:166 Resp:10904647  
Ion Ratio Lower Upper  
166 100  
164 79.3 64.6 96.8





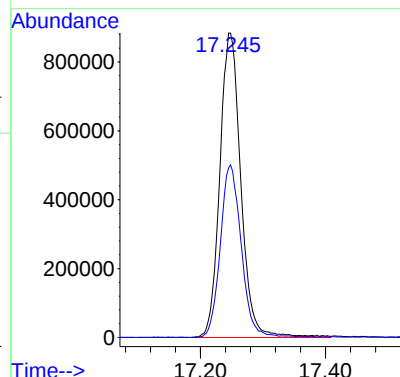
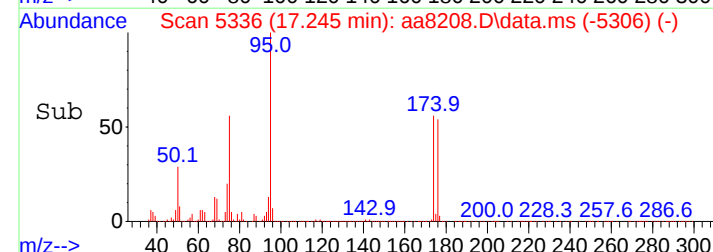
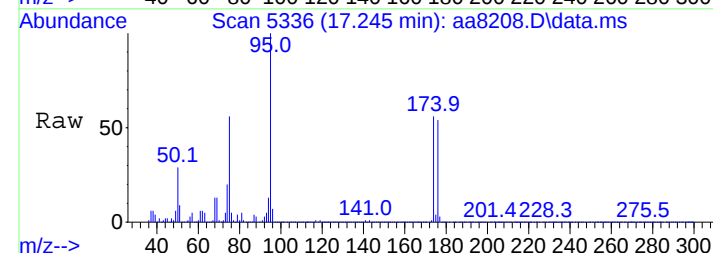
#55  
d-5 Chlorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 15.058 min Scan# 4656  
Delta R.T. 0.000 min  
Lab File: aa8208.D  
Acq: 6 Aug 2018 11:35 pm

Tgt Ion: 117 Resp: 1996784  
Ion Ratio Lower Upper  
117 100  
82 71.8 56.0 84.0



#64  
Bromofluorobenzene (tune std)  
Concen: 11.34 ppbV  
RT: 17.245 min Scan# 5336  
Delta R.T. -0.003 min  
Lab File: aa8208.D  
Acq: 6 Aug 2018 11:35 pm

Tgt Ion: 95 Resp: 2065867  
Ion Ratio Lower Upper  
95 100  
174 56.4 61.5 92.3#



Data Path : C:\DATA\08-07-18\  
 Data File : aa8233.D  
 Acq On : 7 Aug 2018 5:31 pm  
 Operator : jjw  
 Sample : E18-06141-09 x 10 dil  
 Misc : 5089, 50cc  
 ALS Vial : 13 Sample Multiplier: 1

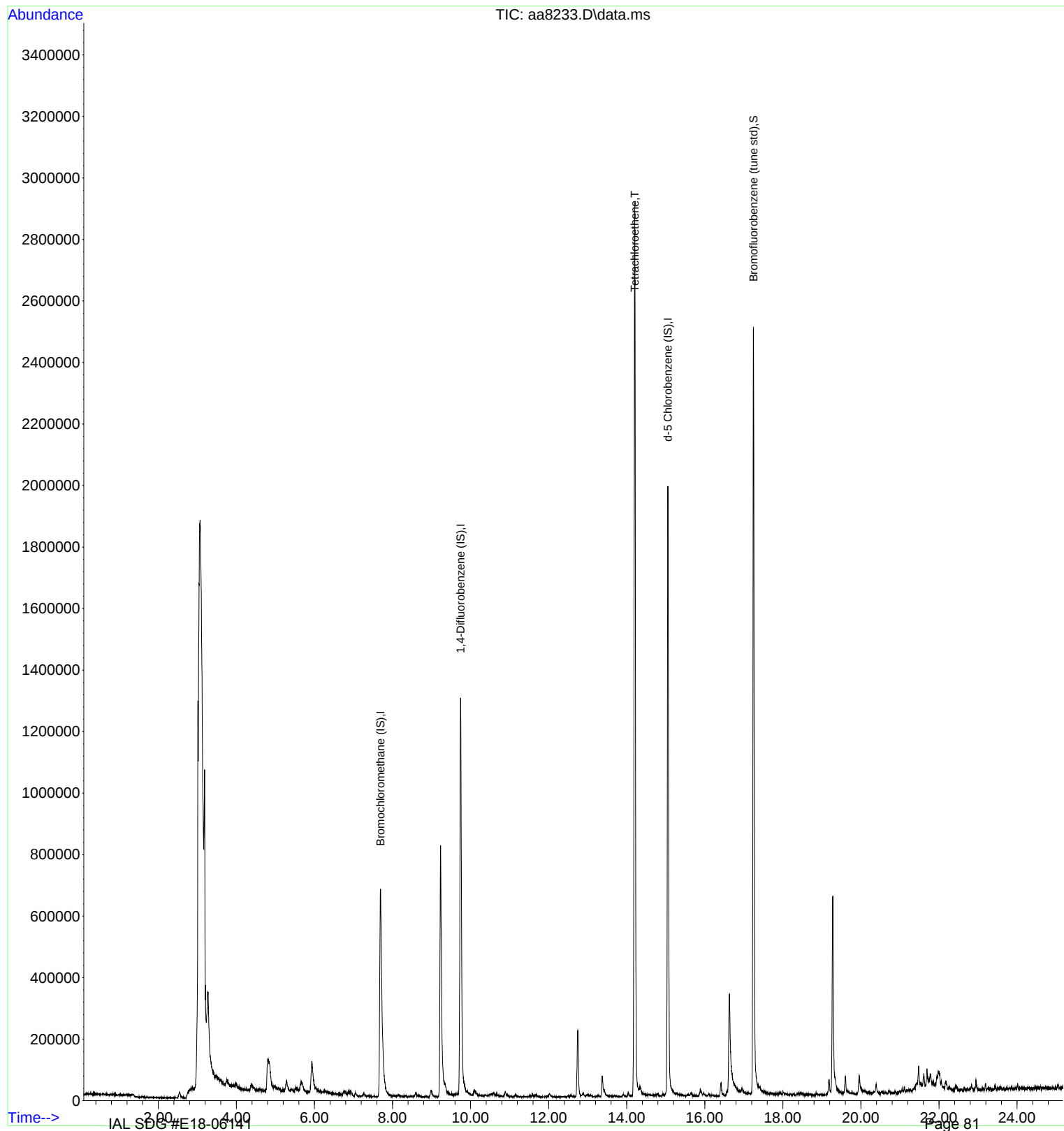
Quant Time: Aug 09 11:24:30 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

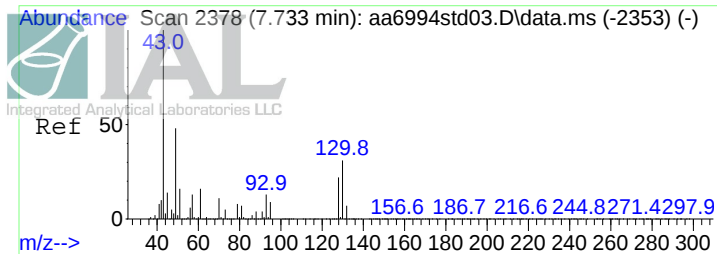
| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min)     |
|-------------------------------|--------|------|----------|-------|-------|--------------|
| -----                         |        |      |          |       |       |              |
| Internal Standards            |        |      |          |       |       |              |
| 1) Bromochloromethane (IS)    | 7.692  | 130  | 305198   | 10.00 | ppbV  | 0.00         |
| 38) 1,4-Difluorobenzene (IS)  | 9.743  | 114  | 1178297  | 10.00 | ppbV  | # 0.00       |
| 55) d-5 Chlorobenzene (IS)    | 15.055 | 117  | 1041852  | 10.00 | ppbV  | 0.00         |
| System Monitoring Compounds   |        |      |          |       |       |              |
| 64) Bromofluorobenzene (tu... | 17.248 | 95   | 1043585  | 10.98 | ppbV  | 0.00         |
| Target Compounds              |        |      |          |       |       |              |
| 54) Tetrachloroethene         | 14.206 | 166  | 755419   | 13.98 | ppbV  | Qvalue<br>98 |
| -----                         |        |      |          |       |       |              |

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

Data Path : C:\DATA\08-07-18\  
Data File : aa8233.D  
Acq On : 7 Aug 2018 5:31 pm  
Operator : jjw  
Sample : E18-06141-09 x 10 dil  
Misc : 5089, 50cc  
ALS Vial : 13 Sample Multiplier: 1

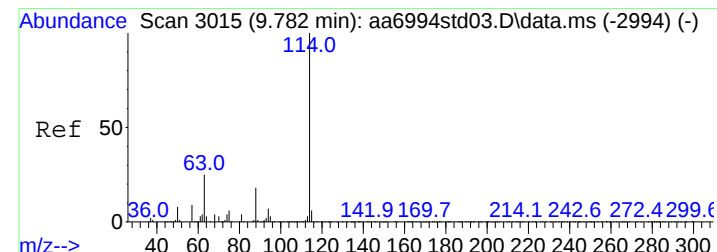
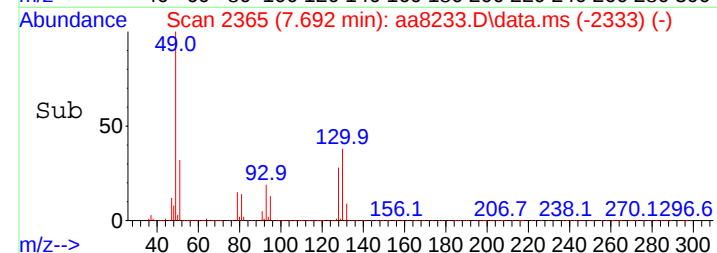
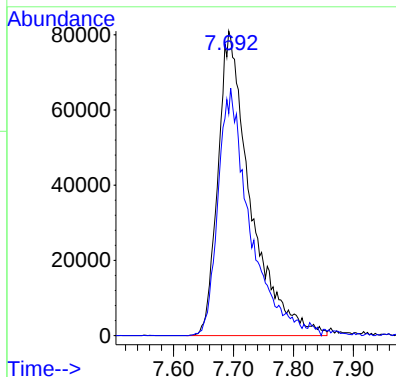
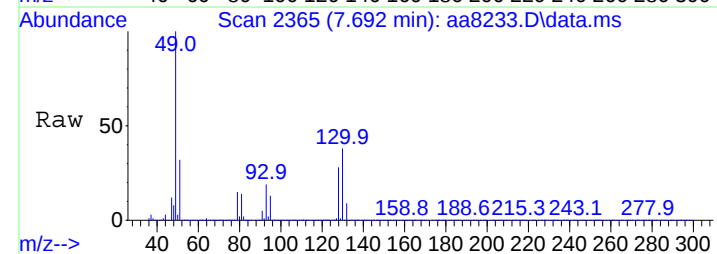
Quant Time: Aug 09 11:24:30 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration





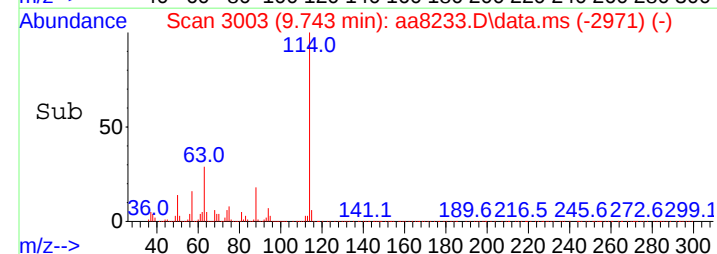
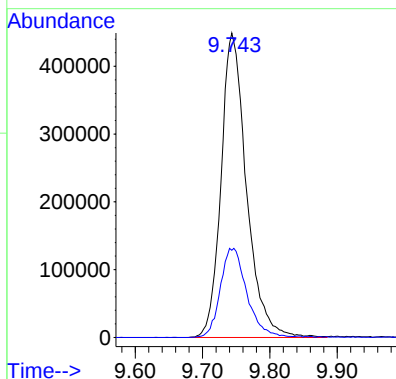
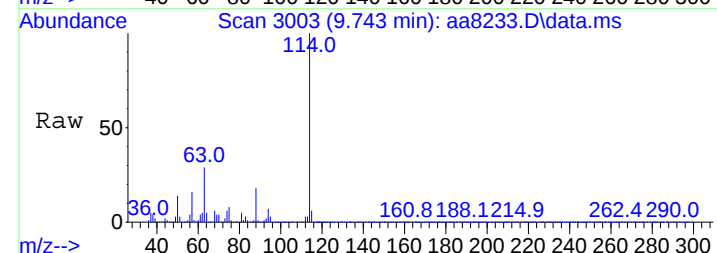
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.692 min Scan# 2365  
Delta R.T. 0.003 min  
Lab File: aa8233.D  
Acq: 7 Aug 2018 5:31 pm

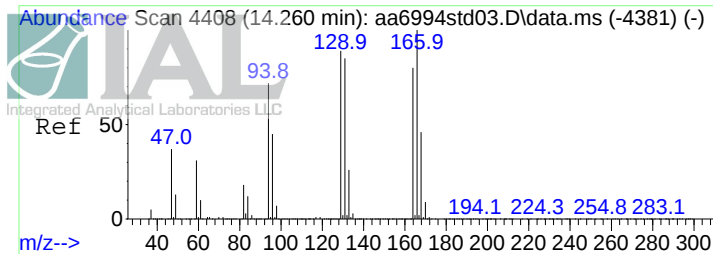
Tgt Ion:130 Resp: 305198  
Ion Ratio Lower Upper  
130 100  
128 79.0 62.6 94.0



#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.743 min Scan# 3003  
Delta R.T. 0.003 min  
Lab File: aa8233.D  
Acq: 7 Aug 2018 5:31 pm

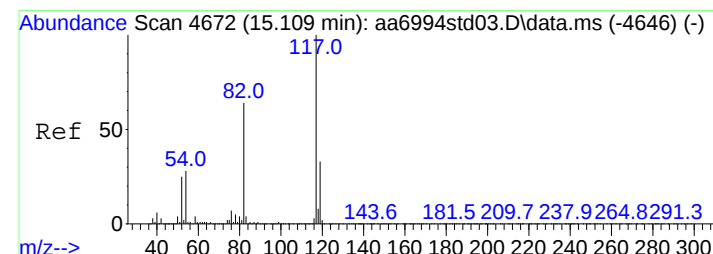
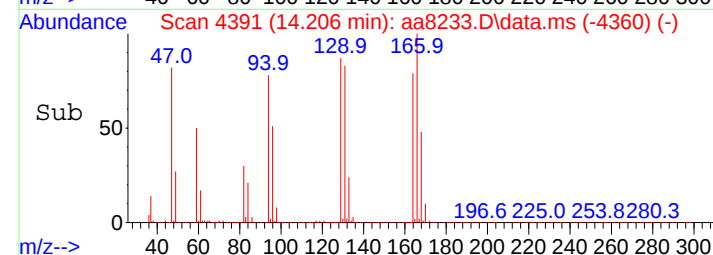
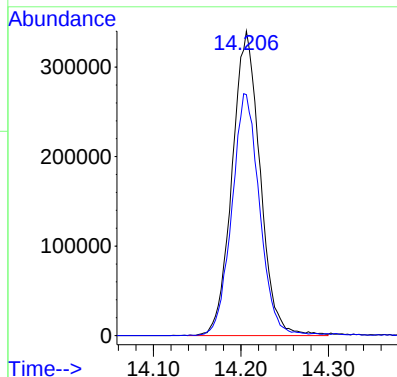
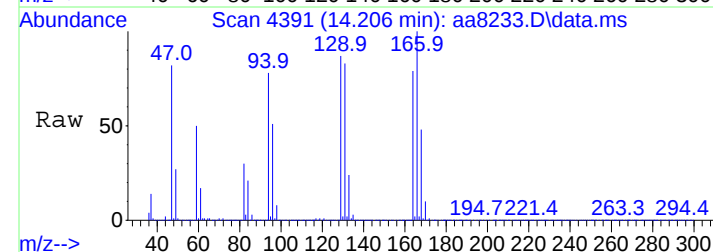
Tgt Ion:114 Resp: 1178297  
Ion Ratio Lower Upper  
114 100  
63 30.5 20.0 30.0#





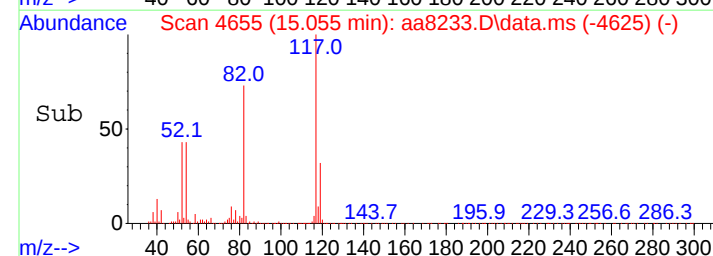
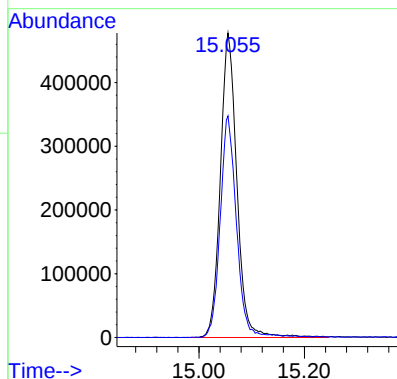
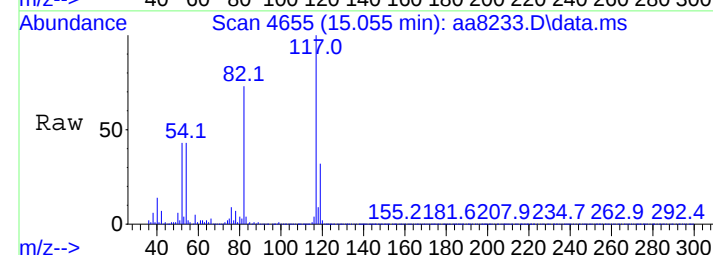
#54  
Tetrachloroethene  
Concen: 13.98 ppbV  
RT: 14.206 min Scan# 4391  
Delta R.T. 0.000 min  
Lab File: aa8233.D  
Acq: 7 Aug 2018 5:31 pm

| Tgt Ion   | 166  | Resp  | 755419 |
|-----------|------|-------|--------|
| Ion Ratio | 100  | Lower | Upper  |
| 164       | 78.8 | 64.6  | 96.8   |

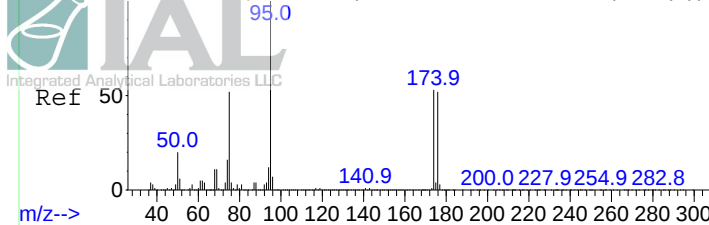


#55  
d-5 Chlorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 15.055 min Scan# 4655  
Delta R.T. -0.003 min  
Lab File: aa8233.D  
Acq: 7 Aug 2018 5:31 pm

| Tgt Ion                                              | 117  | Resp  | 1041852 |
|------------------------------------------------------|------|-------|---------|
| Ion Ratio <td>100</td> <td>Lower</td> <td>Upper</td> | 100  | Lower | Upper   |
| 82                                                   | 71.7 | 56.0  | 84.0    |



Abundance Scan 5355 (17.305 min): aa6994std03.D\data.ms (-5334) (-)



#64

Bromofluorobenzene (tune std)

Concen: 10.98 ppbV

RT: 17.248 min Scan# 5337

Delta R.T. 0.000 min

Lab File: aa8233.D

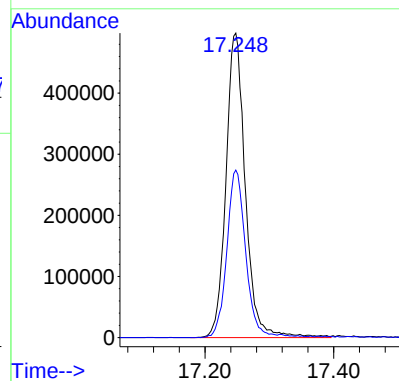
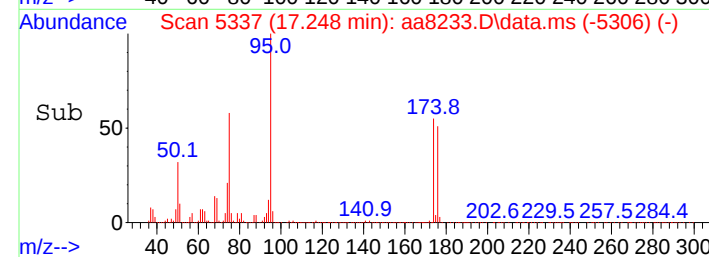
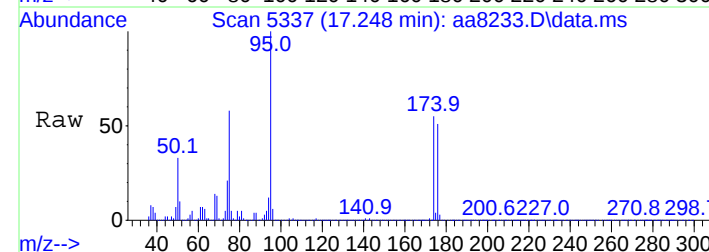
Acq: 7 Aug 2018 5:31 pm

Tgt Ion: 95 Resp: 1043585

Ion Ratio Lower Upper

95 100

174 54.0 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: 5/18/2018  
Instrument: AA

Method ID: 0518.M

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA7071BFB]             | 05/18/2018 08:17                       |
| 40 PPBV STD [AA7073STD01]   | 05/18/2018 09:46                       |
| 20 PPBV STD [AA7074STD02]   | 05/18/2018 10:19                       |
| 10 PPBV STD [AA7075STD03]   | 05/18/2018 10:53                       |
| 2 PPBV STD [AA7076STD04]    | 05/18/2018 12:20                       |
| 0.2 PPBV STD [AA7077STD05]  | 05/18/2018 13:03                       |
| 10 PPBV ICVSS [AA7078ICVSS] | 05/18/2018 15:14                       |

| RParameter                    | RRF<br>0.2ppbv | RRF<br>2ppbv | RRF<br>10ppbv | RRF<br>20ppbv | RRF<br>40ppbv | Avg<br>ppbv | % RSD |
|-------------------------------|----------------|--------------|---------------|---------------|---------------|-------------|-------|
| Bromochloromethane            | -----ISTD----- |              |               |               |               |             |       |
| 1,4-Difluorobenzene           | -----ISTD----- |              |               |               |               |             |       |
| d-5 Chlorobenzene             | -----ISTD----- |              |               |               |               |             |       |
| Acetone                       | 0.92           | 0.64         | 0.84          | 0.82          | 0.82          | 0.81        | 13    |
| Acrolein                      | 0.48           | 0.41         | 0.53          | 0.56          | 0.57          | 0.51        | 13    |
| Allyl Chloride                | 0.60           | 0.44         | 0.59          | 0.62          | 0.59          | 0.57        | 12    |
| Benzene                       | 4.9            | 3.7          | 4.2           | 4.4           | 4.6           | 4.4         | 10    |
| Benzyl chloride               | 0.79           | 0.83         | 1.2           | 1.3           | 1.4           | 1.1         | 26    |
| Bromodichloromethane          | 0.97           | 0.72         | 0.79          | 0.82          | 0.83          | 0.82        | 11    |
| Bromoform                     | 0.71           | 0.63         | 0.60          | 0.59          | 0.58          | 0.62        | 8.0   |
| Bromomethane                  | 1.2            | 0.92         | 1.1           | 1.1           | 1.0           | 1.1         | 10    |
| 1,3-Butadiene                 | 1.2            | 1.1          | 1.3           | 1.3           | 1.2           | 1.2         | 6.3   |
| Chlorobenzene                 | 1.4            | 1.1          | 1.00          | 0.99          | 0.97          | 1.1         | 18    |
| Chloroethane                  | 1.1            | 0.66         | 0.78          | 0.80          | 0.81          | 0.82        | 18    |
| Chloroform                    | 3.6            | 2.7          | 3.1           | 3.2           | 3.3           | 3.2         | 11    |
| Chloromethane                 | 0.64           | 0.44         | 0.47          | 0.47          | 0.44          | 0.49        | 18    |
| Carbon disulfide              | 4.1            | 3.3          | 3.9           | 3.9           | 3.8           | 3.8         | 8.4   |
| Carbon tetrachloride          | 3.5            | 2.8          | 2.8           | 2.9           | 3.1           | 3.0         | 10    |
| 2-Chlorotoluene               | 1.6            | 1.6          | 1.5           | 1.5           | 1.5           | 1.6         | 5.0   |
| Cumene                        | 2.1            | 2.1          | 1.9           | 1.8           | 1.7           | 1.9         | 7.9   |
| Cyclohexane                   | 2.6            | 2.4          | 2.6           | 2.6           | 2.7           | 2.6         | 3.9   |
| Dibromochloromethane          | 0.81           | 0.63         | 0.64          | 0.67          | 0.69          | 0.69        | 10    |
| 1,2-Dibromoethane             | 0.79           | 0.62         | 0.64          | 0.66          | 0.67          | 0.68        | 9.7   |
| 1,2-Dichlorobenzene           | 1.2            | 1.1          | 0.98          | 0.94          | 0.90          | 1.0         | 12    |
| 1,3-Dichlorobenzene           | 1.3            | 1.1          | 0.97          | 0.92          | 0.85          | 1.0         | 18    |
| 1,4-Dichlorobenzene           | 1.3            | 1.1          | 0.99          | 0.95          | 0.90          | 1.0         | 14    |
| Dichlorodifluoromethane       | 4.1            | 3.0          | 3.5           | 3.5           | 3.6           | 3.5         | 10    |
| 1,1-Dichloroethane            | 3.5            | 2.4          | 2.9           | 3.0           | 3.1           | 3.0         | 13    |
| 1,2-Dichloroethane            | 3.2            | 2.2          | 2.5           | 2.6           | 2.7           | 2.7         | 14    |
| 1,1-Dichloroethene            | 2.8            | 2.1          | 2.6           | 2.7           | 2.7           | 2.6         | 10    |
| 1,2-Dichloroethene (trans)    | 2.3            | 1.7          | 2.2           | 2.3           | 2.4           | 2.2         | 12    |
| 1,2-Dichloroethene (trans)    | 2.5            | 1.8          | 2.3           | 2.4           | 2.5           | 2.3         | 12    |
| 1,2-Dichloropropane           | 0.59           | 0.44         | 0.46          | 0.47          | 0.48          | 0.49        | 12    |
| 1,3-Dichloropropene (cis)     | 0.60           | 0.49         | 0.61          | 0.65          | 0.67          | 0.60        | 11    |
| 1,3-Dichloropropene (trans)   | 0.54           | 0.46         | 0.60          | 0.66          | 0.70          | 0.59        | 17    |
| 1,2-Dichlorotetrafluoroethane | 4.5            | 3.5          | 3.4           | 3.7           | 3.6           | 3.7         | 12    |
| 1,4-Dioxane                   | 0.22           | 0.17         | 0.21          | 0.22          | 0.22          | 0.21        | 9.6   |
| Ethanol                       | 0.91           | 0.92         | 0.69          | 0.72          | 0.73          | 0.79        | 14    |
| Ethylbenzene                  | 1.9            | 1.9          | 1.8           | 1.8           | 1.7           | 1.8         | 4.7   |
| 4-Ethyltoluene                | 1.7            | 2.0          | 1.9           | 1.8           | 1.7           | 1.8         | 6.7   |
| n-Heptane                     | 0.87           | 0.84         | 0.82          | 0.81          | 0.81          | 0.83        | 3.0   |
| 1,3-Hexachlorobutadiene       | 0.89           | 0.65         | 0.55          | 0.49          | 0.42          | 0.60        | 30    |

\*% 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: 5/18/2018  
Instrument: AA

Method ID: 0518.M

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA7071BFB]             | 05/18/2018 08:17                       |
| 40 PPBV STD [AA7073STD01]   | 05/18/2018 09:46                       |
| 20 PPBV STD [AA7074STD02]   | 05/18/2018 10:19                       |
| 10 PPBV STD [AA7075STD03]   | 05/18/2018 10:53                       |
| 2 PPBV STD [AA7076STD04]    | 05/18/2018 12:20                       |
| 0.2 PPBV STD [AA7077STD05]  | 05/18/2018 13:03                       |
| 10 PPBV ICVSS [AA7078ICVSS] | 05/18/2018 15:14                       |

| RParameter                            | RRF<br>0.2ppbv | RRF<br>2ppbv | RRF<br>10ppbv | RRF<br>20ppbv | RRF<br>40ppbv | Avg<br>ppbv | % RSD |
|---------------------------------------|----------------|--------------|---------------|---------------|---------------|-------------|-------|
| n-Hexane                              | 2.8            | 2.2          | 2.5           | 2.6           | 2.7           | 2.6         | 9.1   |
| Isopropanol                           | 2.6            | 2.0          | 2.7           | 2.9           | 2.8           | 2.6         | 13    |
| Methylene chloride                    | 3.3            | 1.9          | 2.1           | 2.2           | 2.2           | 2.3         | 25    |
| Methyl ethyl ketone                   | 3.7            | 2.9          | 3.7           | 3.9           | 4.1           | 3.7         | 13    |
| Methyl isobutyl ketone                | 1.0            | 1.1          | 1.1           | 1.2           | 1.2           | 1.1         | 5.1   |
| Methyl methacrylate                   | 0.54           | 0.50         | 0.63          | 0.68          | 0.68          | 0.61        | 13    |
| Methyl n-butyl ketone                 | 0.85           | 0.88         | 1.0           | 1.1           | 1.1           | 1.0         | 13    |
| Methyl tert-butyl ether               | 3.3            | 3.0          | 3.3           | 3.5           | 3.6           | 3.3         | 6.8   |
| Naphthalene                           | 0.23           | 0.21         | 0.25          | 0.25          | 0.24          | 0.24        | 8.4   |
| Propene                               | 1.4            | 1.1          | 1.2           | 1.3           | 1.3           | 1.3         | 6.8   |
| Styrene                               | 0.80           | 0.93         | 1.0           | 1.0           | 0.99          | 0.94        | 9.4   |
| Tert-butyl alcohol                    | 2.3            | 1.9          | 2.3           | 2.5           | 2.6           | 2.3         | 12    |
| 1,1,2,2-Tetrachloroethane             | 1.7            | 1.5          | 1.2           | 1.2           | 1.1           | 1.3         | 19    |
| Tetrachloroethene                     | 0.63           | 0.47         | 0.45          | 0.45          | 0.44          | 0.49        | 17    |
| Tetrahydrofuran                       | 1.7            | 1.3          | 1.8           | 1.9           | 2.0           | 1.7         | 17    |
| Toluene                               | 1.2            | 1.1          | 1.2           | 1.2           | 1.2           | 1.2         | 3.9   |
| 1,2,4-Trichlorobenzene                | 1.1            | 0.72         | 0.76          | 0.72          | 0.65          | 0.79        | 22    |
| 1,1,1-Trichloroethane                 | 3.5            | 2.8          | 2.9           | 2.9           | 3.1           | 3.0         | 9.3   |
| 1,1,2-Trichloroethane                 | 0.56           | 0.43         | 0.42          | 0.43          | 0.44          | 0.45        | 13    |
| Trichloroethene                       | 0.46           | 0.34         | 0.37          | 0.38          | 0.38          | 0.38        | 11    |
| Trichlorofluoromethane                | 4.7            | 3.5          | 3.7           | 3.7           | 3.8           | 3.9         | 12    |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 3.8            | 3.1          | 2.7           | 2.7           | 2.8           | 3.0         | 16    |
| 1,2,4-Trimethylbenzene                | 1.4            | 1.7          | 1.7           | 1.6           | 1.6           | 1.6         | 9.0   |
| 1,3,5-Trimethylbenzene                | 1.5            | 1.8          | 1.7           | 1.6           | 1.5           | 1.6         | 7.9   |
| 2,2,4-Trimethylpentane                | 1.6            | 1.6          | 1.9           | 1.9           | 1.9           | 1.8         | 9.2   |
| Vinyl bromide                         | 0.93           | 0.87         | 1.1           | 1.1           | 1.2           | 1.0         | 12    |
| Vinyl chloride                        | 1.6            | 1.2          | 1.5           | 1.5           | 1.5           | 1.5         | 8.3   |
| Xylenes (m&p)                         | 1.5            | 1.6          | 1.4           | 1.4           | 1.3           | 1.4         | 6.4   |
| Xylenes (o)                           | 1.6            | 1.7          | 1.5           | 1.5           | 1.4           | 1.5         | 7.3   |

\*% 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 : 0518.M  
 Title : TO-15 on the Agilent 7890A / 5975C  
 Last Update : Fri May 18 13:51:08 2018  
 Response Via : Initial Calibration

## Calibration Files

0.2 =aa7077std05.D 2 =aa7076std04.D 10 =aa7075std03.D 20 =aa7074std02.D 40 =aa7073std01.D

|       | Compound              | 0.2            | 2     | 10    | 20    | 40    | Avg   | %RSD  |
|-------|-----------------------|----------------|-------|-------|-------|-------|-------|-------|
| 1) I  | Bromochloromethane... | -----ISTD----- |       |       |       |       |       |       |
| 2) T  | Propene               | 1.359          | 1.134 | 1.238 | 1.269 | 1.326 | 1.265 | 6.89  |
| 3) T  | Dichlorodifluoro...   | 4.055          | 3.029 | 3.478 | 3.540 | 3.604 | 3.541 | 10.32 |
| 4) T  | Chloromethane         | 0.643          | 0.436 | 0.466 | 0.471 | 0.436 | 0.490 | 17.76 |
| 5) T  | 1,2-Dichlorotetr...   | 4.503          | 3.528 | 3.375 | 3.675 | 3.554 | 3.727 | 11.99 |
| 6) T  | Vinyl chloride        | 1.570          | 1.246 | 1.460 | 1.485 | 1.488 | 1.450 | 8.36  |
| 7) T  | 1,3-Butadiene         | 1.216          | 1.110 | 1.297 | 1.301 | 1.229 | 1.231 | 6.32  |
| 8) T  | n-Butane              | 3.596          | 2.551 | 2.767 | 2.725 | 2.591 | 2.846 | 15.07 |
| 9) T  | Bromomethane          | 1.223          | 0.923 | 1.066 | 1.072 | 1.022 | 1.061 | 10.20 |
| 10) T | Chloroethane          | 1.058          | 0.661 | 0.778 | 0.796 | 0.808 | 0.820 | 17.68 |
| 11) T | Ethanol               | 0.905          | 0.917 | 0.692 | 0.716 | 0.732 | 0.792 | 13.79 |
| 12) T | Vinyl bromide         | 0.934          | 0.872 | 1.090 | 1.122 | 1.155 | 1.035 | 12.04 |
| 13) T | Acrolein              | 0.477          | 0.414 | 0.534 | 0.558 | 0.567 | 0.510 | 12.61 |
| 14) T | Acetone               | 0.919          | 0.643 | 0.838 | 0.823 | 0.820 | 0.808 | 12.51 |
| 15) T | Trichlorofluorom...   | 4.726          | 3.516 | 3.676 | 3.730 | 3.782 | 3.886 | 12.35 |
| 16) T | Isopropanol           | 2.617          | 2.047 | 2.741 | 2.877 | 2.777 | 2.612 | 12.59 |
| 17) T | n-Pentane             | 3.233          | 2.582 | 3.095 | 3.157 | 3.239 | 3.061 | 8.97  |
| 18) T | 1,1-Dichloroethene    | 2.773          | 2.111 | 2.608 | 2.678 | 2.675 | 2.569 | 10.21 |
| 19) T | Methylene chloride    | 3.342          | 1.870 | 2.114 | 2.150 | 2.197 | 2.334 | 24.73 |
| 20) T | Tert-butyl alcohol    | 2.258          | 1.905 | 2.337 | 2.549 | 2.647 | 2.339 | 12.36 |
| 21) T | Allyl chloride        | 0.600          | 0.443 | 0.592 | 0.616 | 0.589 | 0.568 | 12.48 |
| 22) T | 1,1,2-Trichloro-...   | 3.820          | 3.060 | 2.700 | 2.679 | 2.770 | 3.006 | 15.97 |
| 23) T | Carbon disulfide      | 4.116          | 3.252 | 3.859 | 3.853 | 3.780 | 3.772 | 8.42  |
| 24) T | 1,2-Dichloroethe...   | 2.487          | 1.818 | 2.292 | 2.382 | 2.461 | 2.288 | 11.94 |
| 25) T | 1,1-Dichloroethane    | 3.471          | 2.434 | 2.867 | 2.974 | 3.060 | 2.961 | 12.60 |
| 26) T | Methyl tert-buty...   | 3.277          | 2.996 | 3.322 | 3.471 | 3.600 | 3.333 | 6.82  |
| 27) T | Methyl ethyl ketone   | 3.732          | 2.882 | 3.689 | 3.914 | 4.100 | 3.663 | 12.73 |
| 28) T | 1,2-Dichloroethe...   | 2.299          | 1.732 | 2.228 | 2.331 | 2.418 | 2.201 | 12.33 |
| 29) T | Ethyl acetate         | 0.565          | 0.462 | 0.606 | 0.650 | 0.680 | 0.593 | 14.34 |
| 30) T | n-Hexane              | 2.784          | 2.199 | 2.503 | 2.620 | 2.738 | 2.569 | 9.11  |
| 31) T | Chloroform            | 3.641          | 2.658 | 3.074 | 3.165 | 3.279 | 3.163 | 11.23 |
| 32) T | Tetrahydrofuran       | 1.712          | 1.270 | 1.777 | 1.914 | 2.015 | 1.738 | 16.51 |
| 33) T | 1,2-Dichloroethane    | 3.197          | 2.159 | 2.531 | 2.630 | 2.742 | 2.652 | 14.15 |
| 34) T | 1,1,1-Trichloroe...   | 3.526          | 2.849 | 2.852 | 2.923 | 3.058 | 3.042 | 9.33  |
| 35) T | Benzene               | 4.941          | 3.722 | 4.240 | 4.420 | 4.583 | 4.381 | 10.27 |
| 36) T | Carbon tetrachlo...   | 3.503          | 2.750 | 2.789 | 2.895 | 3.066 | 3.001 | 10.21 |
| 37) T | Cyclohexane           | 2.640          | 2.432 | 2.600 | 2.638 | 2.708 | 2.604 | 3.98  |
| 38) I | 1,4-Difluorobenzen... | -----ISTD----- |       |       |       |       |       |       |
| 39) T | 1,2-Dichloropropane   | 0.588          | 0.442 | 0.455 | 0.470 | 0.477 | 0.487 | 11.97 |
| 40) T | Bromodichloromet...   | 0.967          | 0.717 | 0.792 | 0.816 | 0.829 | 0.824 | 11.00 |
| 41) T | 2,2,4-Trimethylp...   | 1.629          | 1.601 | 1.894 | 1.923 | 1.935 | 1.796 | 9.28  |
| 42) T | Trichloroethene       | 0.458          | 0.339 | 0.372 | 0.377 | 0.376 | 0.384 | 11.43 |
| 43) T | 1,4-Dioxane           | 0.220          | 0.174 | 0.205 | 0.217 | 0.222 | 0.208 | 9.64  |
| 44) T | Methyl methacrylate   | 0.542          | 0.502 | 0.631 | 0.675 | 0.684 | 0.607 | 13.40 |
| 45) T | n-Heptane             | 0.869          | 0.835 | 0.821 | 0.809 | 0.808 | 0.828 | 3.04  |
| 46) T | cis-1,3-Dichloro...   | 0.599          | 0.492 | 0.608 | 0.649 | 0.670 | 0.604 | 11.40 |
| 47) T | Methyl isobutyl ...   | 1.048          | 1.075 | 1.141 | 1.178 | 1.170 | 1.122 | 5.16  |
| 48) T | trans-1,3-Dichlo...   | 0.539          | 0.458 | 0.604 | 0.664 | 0.704 | 0.594 | 16.56 |
| 49) T | 1,1,2-Trichloroe...   | 0.560          | 0.425 | 0.418 | 0.429 | 0.436 | 0.454 | 13.20 |
| 50) T | Toluene               | 1.242          | 1.117 | 1.154 | 1.192 | 1.196 | 1.180 | 3.99  |
| 51) T | Methyl n-butyl k...   | 0.845          | 0.884 | 1.041 | 1.111 | 1.130 | 1.002 | 13.03 |
| 52) T | Dibromochloromet...   | 0.807          | 0.633 | 0.642 | 0.666 | 0.686 | 0.687 | 10.24 |
| 53) T | 1,2-Dibromoethane     | 0.787          | 0.617 | 0.639 | 0.660 | 0.672 | 0.675 | 9.76  |
| 54) T | Tetrachloroethene     | 0.633          | 0.474 | 0.446 | 0.448 | 0.440 | 0.488 | 16.80 |
| 55) I | d-5 Chlorobenzene ... | -----ISTD----- |       |       |       |       |       |       |
| 56) T | Chlorobenzene         | 1.435          | 1.082 | 0.996 | 0.985 | 0.969 | 1.094 | 17.92 |
| 57) T | Ethylbenzene          | 1.941          | 1.912 | 1.836 | 1.796 | 1.723 | 1.841 | 4.77  |
| 58) T | Xylenes (m&p)         | 1.461          | 1.554 | 1.433 | 1.383 | 1.305 | 1.427 | 6.47  |
| 59) T | Bromoform             | 0.706          | 0.630 | 0.597 | 0.594 | 0.584 | 0.622 | 8.01  |
| 60) T | Styrene               | 0.795          | 0.926 | 1.000 | 1.006 | 0.990 | 0.943 | 9.41  |

AL SDG #E18-06141

Method Path : C:\msdchem\1\METHODS\  
Method File : 0518.M

|     |   |                     |       |       |       |       |       |       |       |
|-----|---|---------------------|-------|-------|-------|-------|-------|-------|-------|
| 61) | T | Xylene (o)          | 1.567 | 1.670 | 1.521 | 1.450 | 1.380 | 1.518 | 7.32  |
| 62) | T | 1,1,2,2-Tetrachl... | 1.692 | 1.454 | 1.220 | 1.160 | 1.099 | 1.325 | 18.50 |
| 63) | T | n-Nonane            | 1.365 | 1.687 | 1.537 | 1.453 | 1.351 | 1.479 | 9.36  |
| 64) | S | Bromofluorobenze... | 0.915 | 0.929 | 0.920 | 0.914 | 0.924 | 0.921 | 0.67  |
| 65) | T | Cumene              | 2.056 | 2.051 | 1.893 | 1.812 | 1.710 | 1.904 | 7.92  |
| 66) | T | 2-Chlorotoluene     | 1.646 | 1.633 | 1.546 | 1.520 | 1.460 | 1.561 | 5.02  |
| 67) | T | n-Propyl benzene    | 2.546 | 2.954 | 2.616 | 2.467 | 2.278 | 2.572 | 9.63  |
| 68) | T | 4-Ethyltoluene      | 1.683 | 1.957 | 1.855 | 1.772 | 1.672 | 1.788 | 6.73  |
| 69) | T | 1,3,5-Trimethylb... | 1.522 | 1.829 | 1.697 | 1.607 | 1.522 | 1.635 | 7.97  |
| 70) | T | 1,2,4-Trimethylb... | 1.362 | 1.725 | 1.692 | 1.641 | 1.565 | 1.597 | 9.04  |
| 71) | T | Benzyl chloride     | 0.787 | 0.826 | 1.164 | 1.321 | 1.397 | 1.099 | 25.53 |
| 72) | T | 1,3-Dichlorobenzene | 1.318 | 1.087 | 0.968 | 0.919 | 0.853 | 1.029 | 17.76 |
| 73) | T | 1,4-Dichlorobenzene | 1.264 | 1.094 | 0.993 | 0.954 | 0.904 | 1.042 | 13.66 |
| 74) | T | 1,2-Dichlorobenzene | 1.208 | 1.058 | 0.975 | 0.942 | 0.897 | 1.016 | 12.04 |
| 75) | T | 1,2,4-Trichlorob... | 1.094 | 0.719 | 0.760 | 0.723 | 0.651 | 0.789 | 22.12 |
| 76) | T | Naphthalene         | 0.227 | 0.206 | 0.253 | 0.253 | 0.238 | 0.235 | 8.44  |
| 77) | T | 1,3-Hexachlorobu... | 0.887 | 0.652 | 0.546 | 0.487 | 0.423 | 0.599 | 30.35 |

-----  
(#) = Out of Range

Data Path : C:\DATA\05-18-18\  
 Data File : aa7073std01.D  
 Acq On : 18 May 2018 9:46 am  
 Operator : jls  
 Sample : 40 ppbv Std  
 Misc : CC483586  
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 11:37:38 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 11:37:26 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.759  | 130  | 497626   | 10.00 | ppbV   | 0.04     |
| 38) 1,4-Difluorobenzene (IS)  | 9.788  | 114  | 2152735  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.113 | 117  | 1991801  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.309 | 95   | 1841417  | 10.08 | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       |        | Qvalue   |
| 2) Propene                    | 3.541  | 41   | 2903235  | 46.55 | ppbV   | 82       |
| 3) Dichlorodifluoromethane    | 3.592  | 85   | 7890221  | 45.18 | ppbV   | 97       |
| 4) Chloromethane              | 3.795  | 52   | 953559   | 40.90 | ppbV # | 1        |
| 5) 1,2-Dichlorotetrafluor...  | 3.760  | 85   | 7073452m | 44.67 | ppbV   |          |
| 6) Vinyl chloride             | 3.882  | 62   | 3257860  | 44.46 | ppbV # | 50       |
| 7) 1,3-Butadiene              | 3.972  | 54   | 2690988  | 41.62 | ppbV   | 100      |
| 8) n-Butane                   | 4.023  | 43   | 5672952  | 41.52 | ppbV   | 93       |
| 9) Bromomethane               | 4.277  | 94   | 2014205  | 37.86 | ppbV   | 97       |
| 10) Chloroethane              | 4.374  | 64   | 1608730  | 41.06 | ppbV   | 92       |
| 11) Ethanol                   | 4.399  | 45   | 1369985  | 39.11 | ppbV   | 96       |
| 12) Vinyl bromide             | 4.673  | 106  | 2529945  | 45.96 | ppbV   | 99       |
| 13) Acrolein                  | 4.737  | 56   | 1355476  | 49.86 | ppbV   | 96       |
| 14) Acetone                   | 4.827  | 58   | 1794562  | 43.43 | ppbV   | 85       |
| 15) Trichlorofluoromethane    | 5.017  | 101  | 8281215  | 44.94 | ppbV   | 100      |
| 16) Isopropanol               | 5.014  | 45   | 5527707  | 39.55 | ppbV # | 53       |
| 17) n-Pentane                 | 5.313  | 43   | 7090927  | 45.58 | ppbV   | 95       |
| 18) 1,1-Dichloroethene        | 5.573  | 61   | 5856653  | 44.53 | ppbV   | 90       |
| 19) Methylene chloride        | 5.689  | 49   | 4810194  | 45.35 | ppbV   | 100      |
| 20) Tert-butyl alcohol        | 5.538  | 59   | 6323555  | 52.01 | ppbV   | 100      |
| 21) Allyl chloride            | 5.788  | 76   | 1289380  | 42.90 | ppbV   | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.911  | 101  | 6064592  | 45.32 | ppbV   | 87       |
| 23) Carbon disulfide          | 5.975  | 76   | 8276326  | 43.13 | ppbV   | 99       |
| 24) 1,2-Dichloroethene (tr... | 6.544  | 61   | 5387714  | 46.32 | ppbV   | 100      |
| 25) 1,1-Dichloroethane        | 6.737  | 63   | 6699550  | 46.10 | ppbV   | 98       |
| 26) Methyl tert-butyl ether   | 6.759  | 73   | 7881704  | 46.63 | ppbV   | 96       |
| 27) Methyl ethyl ketone       | 7.075  | 43   | 8976908  | 47.45 | ppbV   | 100      |
| 28) 1,2-Dichloroethene (cis)  | 7.554  | 61   | 5293956  | 46.67 | ppbV   | 99       |
| 29) Ethyl acetate             | 7.743  | 45   | 1489617  | 47.68 | ppbV   | 100      |
| 30) n-Hexane                  | 7.772  | 57   | 5996014  | 47.04 | ppbV   | 100      |
| 31) Chloroform                | 7.853  | 83   | 7180003  | 46.26 | ppbV   | 100      |
| 32) Tetrahydrofuran           | 8.238  | 42   | 4814098  | 52.43 | ppbV   | 92       |
| 33) 1,2-Dichloroethane        | 8.621  | 62   | 6004482  | 46.77 | ppbV   | 99       |
| 34) 1,1,1-Trichloroethane     | 8.901  | 97   | 6696335  | 46.61 | ppbV   | 100      |
| 35) Benzene                   | 9.396  | 78   | 10034352 | 46.57 | ppbV   | 99       |
| 36) Carbon tetrachloride      | 9.563  | 117  | 6712610  | 47.47 | ppbV   | 99       |
| 37) Cyclohexane               | 9.708  | 56   | 5929762  | 45.50 | ppbV   | 90       |
| 39) 1,2-Dichloropropane       | 10.306 | 63   | 4520946  | 45.38 | ppbV   | 100      |
| 40) Bromodichloromethane      | 10.528 | 83   | 7848057  | 45.36 | ppbV   | 100      |
| 41) 2,2,4-Trimethylpentane    | 10.640 | 57   | 18330470 | 44.62 | ppbV   | 96       |
| 42) Trichloroethene           | 10.582 | 130  | 3561175  | 44.20 | ppbV   | 96       |
| 43) 1,4-Dioxane               | 10.544 | 88   | 1909558  | 42.01 | ppbV   | 98       |
| 44) Methyl methacrylate       | 10.795 | 41   | 6478787  | 46.07 | ppbV   | 98       |
| 45) n-Heptane                 | 10.936 | 43   | 7654967  | 43.62 | ppbV   | 96       |
| 46) cis-1,3-Dichloropropene   | 11.595 | 75   | 6350305  | 46.94 | ppbV   | 100      |
| 47) Methyl isobutyl ketone    | 11.611 | 43   | 11084002 | 44.42 | ppbV   | 97       |
| 48) trans-1,3-Dichloropropene | 12.229 | 75   | 6063832  | 44.44 | ppbV   | 98       |
| 49) 1,1,2-Trichloroethane     | 12.441 | 97   | 4128347  | 45.27 | ppbV   | 90       |
| 50) Toluene                   | 12.798 | 91   | 11327617 | 44.86 | ppbV   | 99       |
| 51) Methyl n-butyl ketone     | 13.113 | 43   | 10706608 | 46.24 | ppbV   | 97       |

AL SDG #E18-06141

Data Path : C:\DATA\05-18-18\  
 Data File : aa7073std01.D  
 Acq On : 18 May 2018 9:46 am  
 Operator : jls  
 Sample : 40 ppbv Std  
 Misc : CC483586  
 ALS Vial : 3 Sample Multiplier: 1

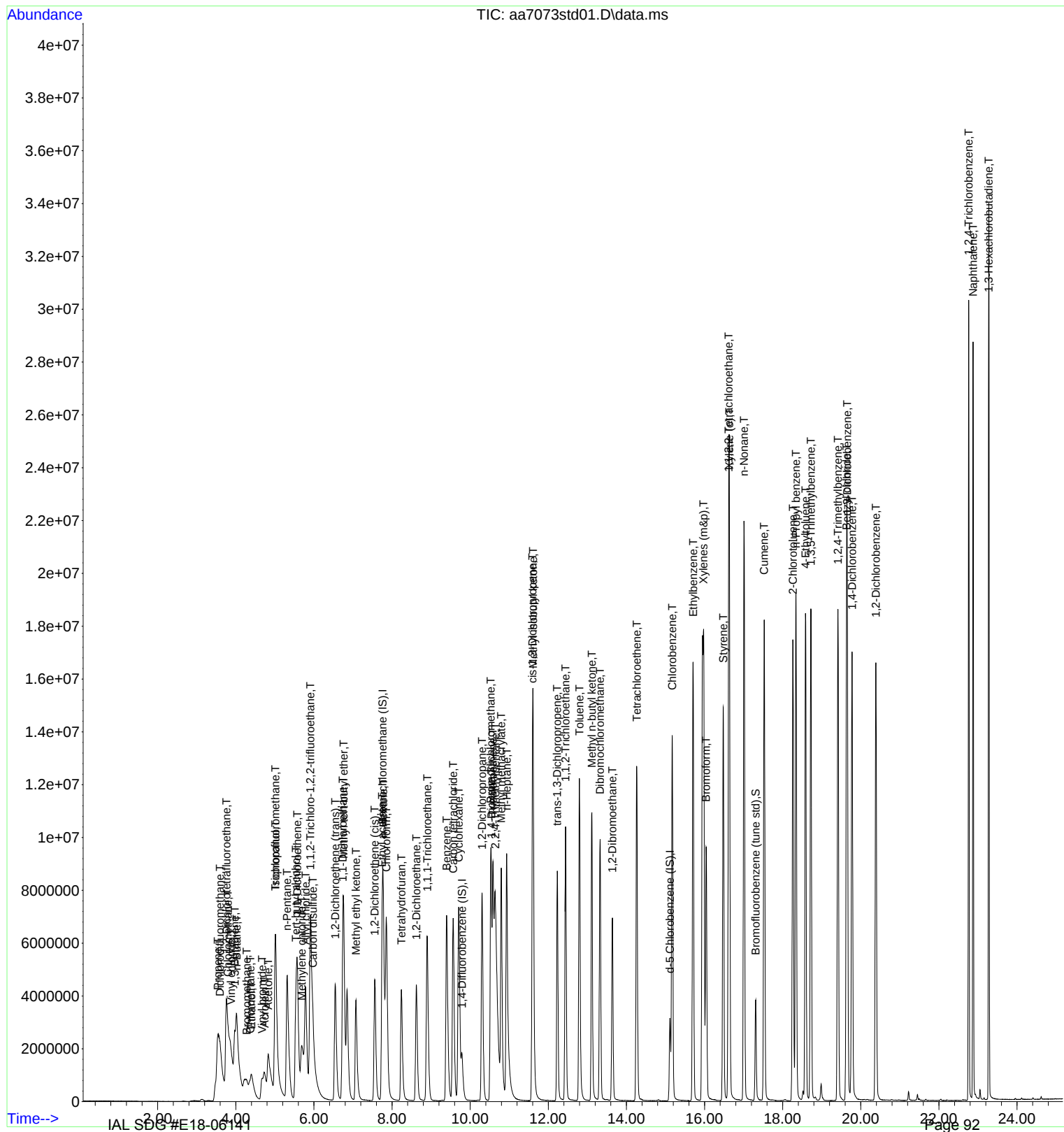
Quant Time: May 18 11:37:38 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 11:37:26 2018  
 Response via : Initial Calibration

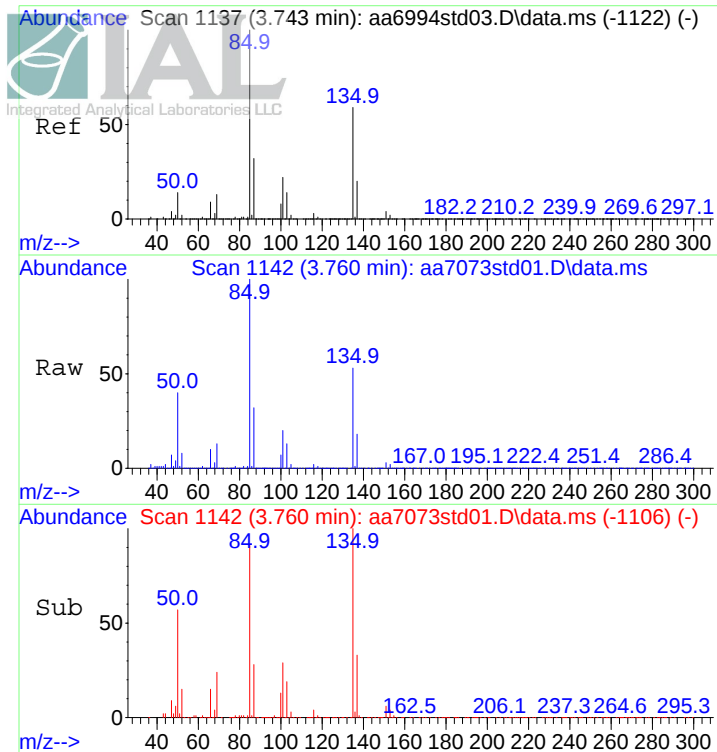
| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| 52) Dibromochloromethane      | 13.325 | 129  | 6497747  | 46.17 | ppbV  | 100      |
| 53) 1,2-Dibromoethane         | 13.640 | 107  | 6368628  | 45.54 | ppbV  | 99       |
| 54) Tetrachloroethene         | 14.264 | 166  | 4164333  | 43.29 | ppbV  | 98       |
| 56) Chlorobenzene             | 15.171 | 112  | 8496608  | 43.06 | ppbV  | 98       |
| 57) Ethylbenzene              | 15.708 | 91   | 15102551 | 41.76 | ppbV  | 97       |
| 58) Xylenes (m&p)             | 15.975 | 91   | 22878040 | 81.58 | ppbV  | 97       |
| 59) Bromoform                 | 16.039 | 173  | 5118623  | 43.16 | ppbV  | 98       |
| 60) Styrene                   | 16.479 | 104  | 8673250  | 43.41 | ppbV  | 99       |
| 61) Xylene (o)                | 16.637 | 91   | 12096421 | 40.88 | ppbV  | 97       |
| 62) 1,1,2,2-Tetrachloroethane | 16.618 | 83   | 9635267  | 40.65 | ppbV  | 99       |
| 63) n-Nonane                  | 17.010 | 43   | 11843056 | 39.77 | ppbV  | 92       |
| 65) Cumene                    | 17.528 | 105  | 14984429 | 40.62 | ppbV  | 100      |
| 66) 2-Chlorotoluene           | 18.261 | 91   | 12791930 | 41.89 | ppbV  | 99       |
| 67) n-Propyl benzene          | 18.338 | 91   | 19967781 | 39.44 | ppbV  | 98       |
| 68) 4-Ethyltoluene            | 18.585 | 105  | 14654612 | 40.57 | ppbV  | 98       |
| 69) 1,3,5-Trimethylbenzene    | 18.724 | 105  | 13337284 | 40.54 | ppbV  | 98       |
| 70) 1,2,4-Trimethylbenzene    | 19.415 | 105  | 13717500 | 41.33 | ppbV  | 100      |
| 71) Benzyl chloride           | 19.634 | 91   | 11131592 | 44.97 | ppbV  | 98       |
| 72) 1,3-Dichlorobenzene       | 19.653 | 146  | 7471637  | 39.75 | ppbV  | 100      |
| 73) 1,4-Dichlorobenzene       | 19.778 | 146  | 7924734  | 40.86 | ppbV  | 100      |
| 74) 1,2-Dichlorobenzene       | 20.386 | 146  | 7865403  | 41.19 | ppbV  | 99       |
| 75) 1,2,4-Trichlorobenzene    | 22.762 | 180  | 6225065  | 42.16 | ppbV  | 99       |
| 76) Naphthalene               | 22.875 | 127  | 2274212  | 45.09 | ppbV  | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.276 | 225  | 3704125  | 36.00 | ppbV  | 96       |

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

Data Path : C:\DATA\05-18-18\  
 Data File : aa7073std01.D  
 Acq On : 18 May 2018 9:46 am  
 Operator : jls  
 Sample : 40 ppbv Std  
 Misc : CC483586  
 ALS Vial : 3 Sample Multiplier: 1

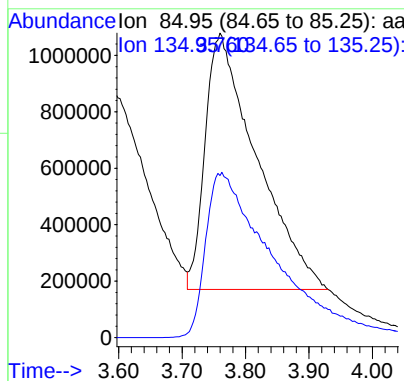
Quant Time: May 18 11:37:38 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 11:37:26 2018  
 Response via : Initial Calibration



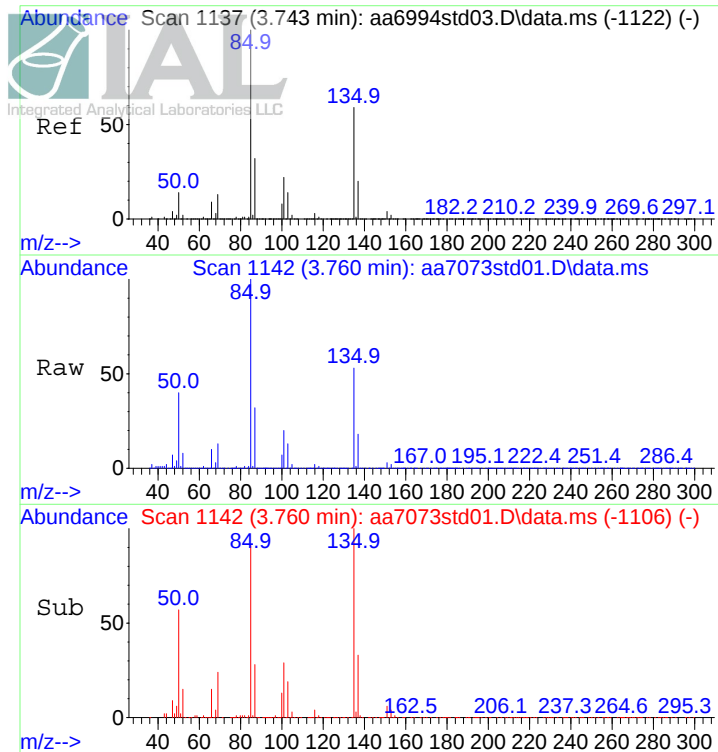


#5  
 1,2-Dichlorotetrafluoroethane  
 Concen: 32.24 ppbV  
 RT: 3.760 min Scan# 1142  
 Delta R.T. 0.016 min  
 Lab File: aa7073std01.D  
 Acq: 18 May 2018 9:46 am

Tgt Ion: 85 Resp: 5105732  
 Ion Ratio Lower Upper  
 85 100  
 135 78.7 46.4 69.6#

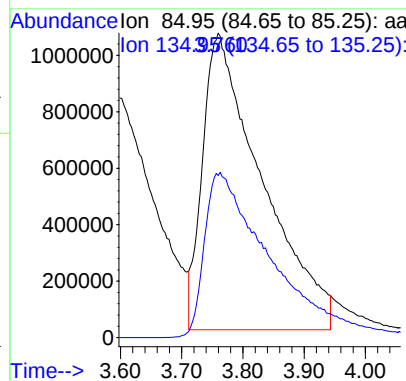


Before manual integration for 1, 2-Dichlorotetrafluoroethane.



#5  
 1,2-Dichlorotetrafluoroethane  
 Concen: 44.67 ppbV m  
 RT: 3.760 min Scan# 1142  
 Delta R.T. 0.016 min  
 Lab File: aa7073std01.D  
 Acq: 18 May 2018 9:46 am

Tgt Ion: 85 Resp: 7073452  
 Ion Ratio Lower Upper  
 85 100  
 135 56.8 46.4 69.6



After manual integration for 1, 2-Dichlorotetrafluoroethane.

Data Path : C:\DATA\05-18-18\  
 Data File : aa7074std02.D  
 Acq On : 18 May 2018 10:19 am  
 Operator : jls  
 Sample : 20 ppbv Std  
 Misc : CC483586  
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 11:37:08 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 11:36:21 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.740  | 130  | 531970   | 10.00 | ppbV   | 0.02     |
| 38) 1,4-Difluorobenzene (IS)  | 9.785  | 114  | 2238046  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.112 | 117  | 2008933  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.305 | 95   | 1835985  | 9.93  | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       |        | Qvalue   |
| 2) Propene                    | 3.512  | 41   | 1484720  | 22.54 | ppbV   | 83       |
| 3) Dichlorodifluoromethane    | 3.541  | 85   | 4143365  | 22.39 | ppbV   | 97       |
| 4) Chloromethane              | 3.756  | 52   | 551651   | 22.27 | ppbV   | 89       |
| 5) 1,2-Dichlorotetrafluor...  | 3.753  | 85   | 3909499m | 21.78 | ppbV   |          |
| 6) Vinyl chloride             | 3.869  | 62   | 1738287  | 22.38 | ppbV   | 87       |
| 7) 1,3-Butadiene              | 3.968  | 54   | 1522794  | 22.06 | ppbV   | 99       |
| 8) n-Butane                   | 4.013  | 43   | 3189269  | 21.67 | ppbV   | 95       |
| 9) Bromomethane               | 4.232  | 94   | 1129084  | 19.90 | ppbV   | 98       |
| 10) Chloroethane              | 4.364  | 64   | 847208   | 20.46 | ppbV   | 92       |
| 11) Ethanol                   | 4.402  | 45   | 716152   | 19.46 | ppbV   | 98       |
| 12) Vinyl bromide             | 4.666  | 106  | 1313405  | 22.65 | ppbV   | 100      |
| 13) Acrolein                  | 4.727  | 56   | 712750   | 25.08 | ppbV   | 96       |
| 14) Acetone                   | 4.820  | 58   | 963285   | 21.62 | ppbV   | 98       |
| 15) Trichlorofluoromethane    | 5.007  | 101  | 4365295  | 22.32 | ppbV   | 100      |
| 16) Isopropanol               | 5.004  | 45   | 3060927  | 20.99 | ppbV # | 90       |
| 17) n-Pentane                 | 5.309  | 43   | 3694806  | 22.44 | ppbV   | 94       |
| 18) 1,1-Dichloroethene        | 5.569  | 61   | 3134080  | 22.59 | ppbV   | 91       |
| 19) Methylene chloride        | 5.685  | 49   | 2515790  | 22.37 | ppbV   | 99       |
| 20) Tert-butyl alcohol        | 5.537  | 59   | 3254922  | 26.18 | ppbV   | 100      |
| 21) Allyl chloride            | 5.778  | 76   | 721129   | 22.91 | ppbV   | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.910  | 101  | 3134896  | 21.83 | ppbV   | 88       |
| 23) Carbon disulfide          | 5.971  | 76   | 4508716  | 21.96 | ppbV   | 100      |
| 24) 1,2-Dichloroethene (tr... | 6.540  | 61   | 2787665  | 22.86 | ppbV   | 100      |
| 25) 1,1-Dichloroethane        | 6.730  | 63   | 3481144  | 22.83 | ppbV   | 98       |
| 26) Methyl tert-butyl ether   | 6.759  | 73   | 4062472  | 22.99 | ppbV   | 96       |
| 27) Methyl ethyl ketone       | 7.071  | 43   | 4581098  | 23.35 | ppbV   | 100      |
| 28) 1,2-Dichloroethene (cis)  | 7.553  | 61   | 2728274  | 23.02 | ppbV   | 99       |
| 29) Ethyl acetate             | 7.743  | 45   | 760229   | 23.58 | ppbV   | 100      |
| 30) n-Hexane                  | 7.772  | 57   | 3066330  | 23.03 | ppbV   | 100      |
| 31) Chloroform                | 7.852  | 83   | 3703561  | 22.65 | ppbV   | 99       |
| 32) Tetrahydrofuran           | 8.235  | 42   | 2443244  | 25.85 | ppbV   | 92       |
| 33) 1,2-Dichloroethane        | 8.621  | 62   | 3077517  | 22.86 | ppbV   | 99       |
| 34) 1,1,1-Trichloroethane     | 8.894  | 97   | 3420329  | 22.54 | ppbV   | 100      |
| 35) Benzene                   | 9.396  | 78   | 5172999  | 22.93 | ppbV   | 100      |
| 36) Carbon tetrachloride      | 9.563  | 117  | 3388067  | 22.84 | ppbV   | 100      |
| 37) Cyclohexane               | 9.708  | 56   | 3087138  | 22.32 | ppbV   | 89       |
| 39) 1,2-Dichloropropane       | 10.302 | 63   | 2315306  | 22.72 | ppbV   | 100      |
| 40) Bromodichloromethane      | 10.524 | 83   | 4016130  | 22.66 | ppbV   | 99       |
| 41) 2,2,4-Trimethylpentane    | 10.646 | 57   | 9467560  | 22.34 | ppbV   | 97       |
| 42) Trichloroethene           | 10.579 | 130  | 1855876  | 22.32 | ppbV   | 96       |
| 43) 1,4-Dioxane               | 10.540 | 88   | 973335   | 21.23 | ppbV   | 97       |
| 44) Methyl methacrylate       | 10.794 | 41   | 3323272  | 23.52 | ppbV   | 100      |
| 45) n-Heptane                 | 10.933 | 43   | 3984310  | 21.68 | ppbV   | 97       |
| 46) cis-1,3-Dichloropropene   | 11.588 | 75   | 3193269  | 23.46 | ppbV   | 100      |
| 47) Methyl isobutyl ketone    | 11.611 | 43   | 5798007  | 22.71 | ppbV   | 99       |
| 48) trans-1,3-Dichloropropene | 12.232 | 75   | 2972169  | 22.00 | ppbV   | 98       |
| 49) 1,1,2-Trichloroethane     | 12.441 | 97   | 2111440  | 22.54 | ppbV   | 89       |
| 50) Toluene                   | 12.794 | 91   | 5867864  | 22.72 | ppbV   | 98       |
| 51) Methyl n-butyl ketone     | 13.109 | 43   | 5468033  | 23.47 | ppbV   | 99       |

AL SDG #E18-06141

Data Path : C:\DATA\05-18-18\  
 Data File : aa7074std02.D  
 Acq On : 18 May 2018 10:19 am  
 Operator : jls  
 Sample : 20 ppbv Std  
 Misc : CC483586  
 ALS Vial : 4 Sample Multiplier: 1

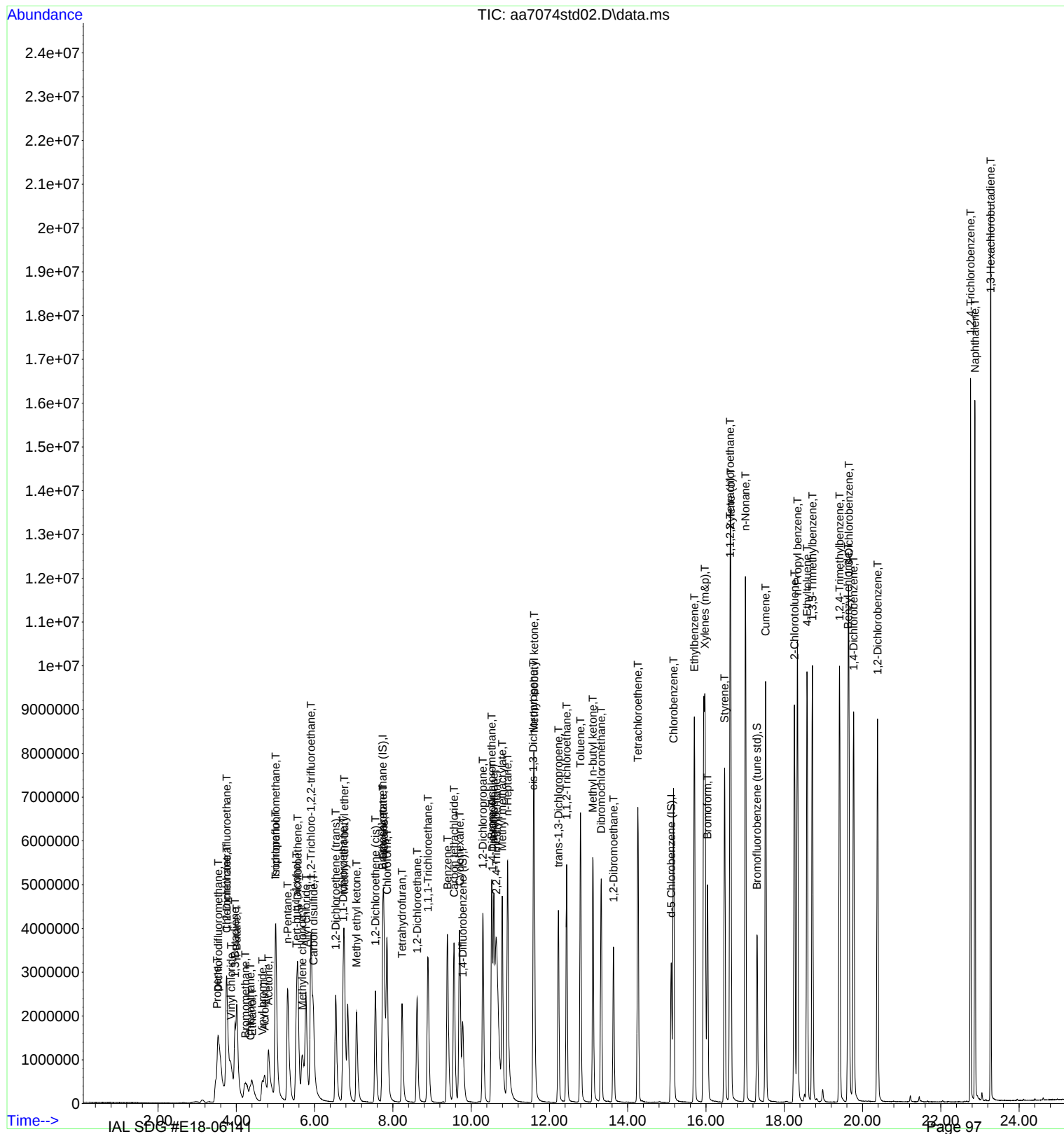
Quant Time: May 18 11:37:08 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 11:36:21 2018  
 Response via : Initial Calibration

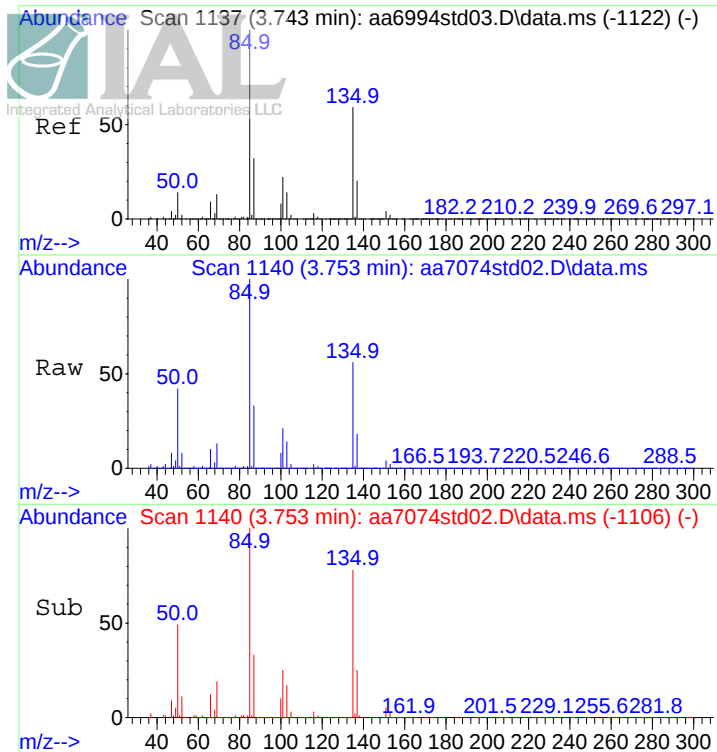
| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| 52) Dibromochloromethane      | 13.322 | 129  | 3279041  | 22.84 | ppbV   | 99       |
| 53) 1,2-Dibromoethane         | 13.637 | 107  | 3249507  | 22.71 | ppbV   | 100      |
| 54) Tetrachloroethene         | 14.260 | 166  | 2203864  | 22.07 | ppbV   | 98       |
| 56) Chlorobenzene             | 15.170 | 112  | 4355563  | 21.77 | ppbV   | 99       |
| 57) Ethylbenzene              | 15.704 | 91   | 7936994  | 21.52 | ppbV   | 96       |
| 58) Xylenes (m&p)             | 15.971 | 91   | 12225755 | 42.48 | ppbV # | 28       |
| 59) Bromoform                 | 16.038 | 173  | 2626421  | 21.91 | ppbV   | 97       |
| 60) Styrene                   | 16.476 | 104  | 4444465  | 22.12 | ppbV   | 98       |
| 61) Xylene (o)                | 16.633 | 91   | 6406380  | 20.96 | ppbV   | 96       |
| 62) 1,1,2,2-Tetrachloroethane | 16.614 | 83   | 5128408  | 20.93 | ppbV   | 98       |
| 63) n-Nonane                  | 17.009 | 43   | 6423191  | 20.81 | ppbV   | 96       |
| 65) Cumene                    | 17.524 | 105  | 8006340  | 21.06 | ppbV   | 98       |
| 66) 2-Chlorotoluene           | 18.260 | 91   | 6717849  | 21.63 | ppbV   | 98       |
| 67) n-Propyl benzene          | 18.337 | 91   | 10903452 | 20.74 | ppbV   | 96       |
| 68) 4-Ethyltoluene            | 18.582 | 105  | 7829590  | 21.00 | ppbV   | 97       |
| 69) 1,3,5-Trimethylbenzene    | 18.720 | 105  | 7100443  | 20.83 | ppbV   | 100      |
| 70) 1,2,4-Trimethylbenzene    | 19.411 | 105  | 7252590  | 21.34 | ppbV   | 99       |
| 71) Benzyl chloride           | 19.630 | 91   | 5309178  | 22.70 | ppbV   | 99       |
| 72) 1,3-Dichlorobenzene       | 19.649 | 146  | 4062553  | 20.88 | ppbV   | 99       |
| 73) 1,4-Dichlorobenzene       | 19.775 | 146  | 4215661  | 21.12 | ppbV   | 99       |
| 74) 1,2-Dichlorobenzene       | 20.386 | 146  | 4163747  | 21.25 | ppbV   | 100      |
| 75) 1,2,4-Trichlorobenzene    | 22.762 | 180  | 3486106  | 22.85 | ppbV   | 98       |
| 76) Naphthalene               | 22.874 | 127  | 1222014  | 24.04 | ppbV   | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.276 | 225  | 2152097  | 19.62 | ppbV   | 95       |

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

Data Path : C:\DATA\05-18-18\  
 Data File : aa7074std02.D  
 Acq On : 18 May 2018 10:19 am  
 Operator : jls  
 Sample : 20 ppbv Std  
 Misc : CC483586  
 ALS Vial : 4 Sample Multiplier: 1

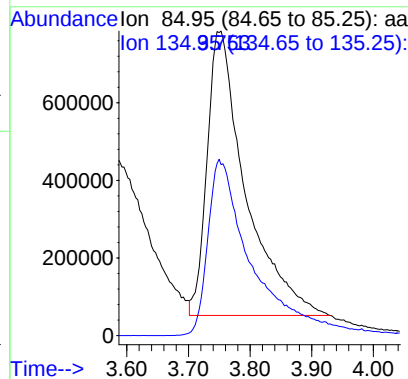
Quant Time: May 18 11:37:08 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 11:36:21 2018  
 Response via : Initial Calibration



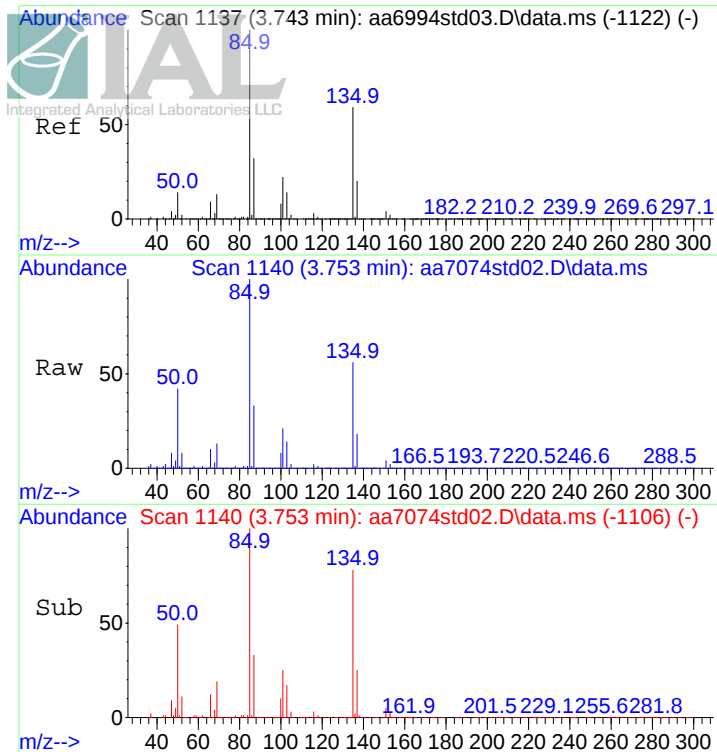


#5  
 1,2-Dichlorotetrafluoroethane  
 Concen: 17.72 ppbV  
 RT: 3.753 min Scan# 1140  
 Delta R.T. 0.010 min  
 Lab File: aa7074std02.D  
 Acq: 18 May 2018 10:19 am

Tgt Ion: 85 Resp: 3180717  
 Ion Ratio Lower Upper  
 85 100  
 135 68.7 46.4 69.6

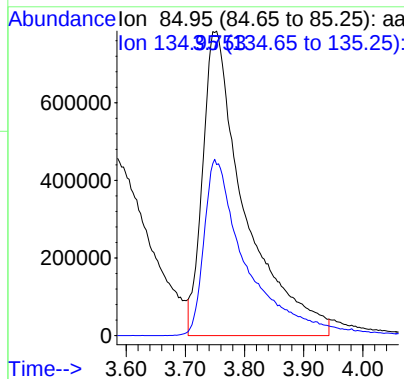


Before manual integration for 1, 2-Dichlorotetrafluoroethane.



#5  
 1,2-Dichlorotetrafluoroethane  
 Concen: 21.78 ppbV m  
 RT: 3.753 min Scan# 1140  
 Delta R.T. 0.010 min  
 Lab File: aa7074std02.D  
 Acq: 18 May 2018 10:19 am

Tgt Ion: 85 Resp: 3909499  
 Ion Ratio Lower Upper  
 85 100  
 135 55.9 46.4 69.6



After manual integration for 1, 2-Dichlorotetrafluoroethane.

Data Path : C:\DATA\05-18-18\  
 Data File : aa7075std03.D  
 Acq On : 18 May 2018 10:53 am  
 Operator : jls  
 Sample : 10 ppbv Std  
 Misc : CC483586  
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 11:26:02 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 11:25:51 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.724  | 130  | 543623   | 10.00 | ppbV   | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.782  | 114  | 2258745  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.109 | 117  | 1967114  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.309 | 95   | 1810039  | 10.00 | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       |        | Qvalue   |
| 2) Propene                    | 3.483  | 41   | 740351   | 11.05 | ppbV   | 83       |
| 3) Dichlorodifluoromethane    | 3.531  | 85   | 2080034  | 11.01 | ppbV   | 97       |
| 4) Chloromethane              | 3.734  | 52   | 278411   | 11.00 | ppbV   | 90       |
| 5) 1,2-Dichlorotetrafluor...  | 3.743  | 85   | 1834502  | 10.01 | ppbV   | 95       |
| 6) Vinyl chloride             | 3.862  | 62   | 872965   | 11.01 | ppbV   | 87       |
| 7) 1,3-Butadiene              | 3.965  | 54   | 775850   | 11.01 | ppbV # | 64       |
| 8) n-Butane                   | 4.013  | 43   | 1654335  | 11.01 | ppbV   | 95       |
| 9) Bromomethane               | 4.229  | 94   | 573956   | 9.95  | ppbV   | 97       |
| 10) Chloroethane              | 4.357  | 64   | 423149   | 9.97  | ppbV   | 93       |
| 11) Ethanol                   | 4.396  | 45   | 353572   | 9.39  | ppbV   | 96       |
| 12) Vinyl bromide             | 4.666  | 106  | 651915   | 11.11 | ppbV   | 100      |
| 13) Acrolein                  | 4.724  | 56   | 348524   | 12.01 | ppbV   | 93       |
| 14) Acetone                   | 4.820  | 58   | 500879   | 11.12 | ppbV # | 53       |
| 15) Trichlorofluoromethane    | 5.004  | 101  | 2198346  | 11.01 | ppbV   | 99       |
| 16) Isopropanol               | 5.000  | 45   | 1490063  | 10.02 | ppbV   | 98       |
| 17) n-Pentane                 | 5.306  | 43   | 1850884  | 11.01 | ppbV   | 95       |
| 18) 1,1-Dichloroethene        | 5.566  | 61   | 1559392  | 11.01 | ppbV   | 91       |
| 19) Methylene chloride        | 5.682  | 49   | 1263982  | 11.06 | ppbV # | 74       |
| 20) Tert-butyl alcohol        | 5.531  | 59   | 1524846  | 12.01 | ppbV   | 100      |
| 21) Allyl chloride            | 5.779  | 76   | 353885   | 11.07 | ppbV   | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.907  | 101  | 1614484  | 11.01 | ppbV   | 88       |
| 23) Carbon disulfide          | 5.965  | 76   | 2307921  | 11.01 | ppbV # | 85       |
| 24) 1,2-Dichloroethene (tr... | 6.537  | 61   | 1370869  | 11.01 | ppbV   | 100      |
| 25) 1,1-Dichloroethane        | 6.727  | 63   | 1714370  | 11.01 | ppbV   | 98       |
| 26) Methyl tert-butyl ether   | 6.759  | 73   | 1986726  | 11.01 | ppbV   | 96       |
| 27) Methyl ethyl ketone       | 7.071  | 43   | 2205827  | 11.01 | ppbV # | 89       |
| 28) 1,2-Dichloroethene (cis)  | 7.550  | 61   | 1332135  | 11.01 | ppbV   | 100      |
| 29) Ethyl acetate             | 7.740  | 45   | 362368   | 11.01 | ppbV   | 100      |
| 30) n-Hexane                  | 7.766  | 57   | 1496602  | 11.01 | ppbV # | 68       |
| 31) Chloroform                | 7.846  | 83   | 1837950  | 11.01 | ppbV   | 99       |
| 32) Tetrahydrofuran           | 8.235  | 42   | 1158913  | 12.02 | ppbV   | 91       |
| 33) 1,2-Dichloroethane        | 8.618  | 62   | 1513276  | 11.01 | ppbV   | 100      |
| 34) 1,1,1-Trichloroethane     | 8.891  | 97   | 1705454  | 11.01 | ppbV   | 100      |
| 35) Benzene                   | 9.389  | 78   | 2535720  | 11.01 | ppbV # | 91       |
| 36) Carbon tetrachloride      | 9.560  | 117  | 1667638  | 11.01 | ppbV   | 99       |
| 37) Cyclohexane               | 9.704  | 56   | 1554884  | 11.08 | ppbV   | 89       |
| 39) 1,2-Dichloropropane       | 10.299 | 63   | 1131231  | 11.00 | ppbV   | 100      |
| 40) Bromodichloromethane      | 10.524 | 83   | 1967277  | 11.01 | ppbV   | 99       |
| 41) 2,2,4-Trimethylpentane    | 10.637 | 57   | 4705769  | 10.97 | ppbV   | 97       |
| 42) Trichloroethene           | 10.579 | 130  | 923228   | 11.00 | ppbV   | 96       |
| 43) 1,4-Dioxane               | 10.544 | 88   | 462639   | 10.00 | ppbV # | 75       |
| 44) Methyl methacrylate       | 10.794 | 41   | 1568858  | 11.00 | ppbV # | 65       |
| 45) n-Heptane                 | 10.929 | 43   | 2039918  | 11.00 | ppbV # | 78       |
| 46) cis-1,3-Dichloropropene   | 11.589 | 75   | 1511338  | 11.00 | ppbV   | 100      |
| 47) Methyl isobutyl ketone    | 11.611 | 43   | 2834046  | 11.00 | ppbV # | 79       |
| 48) trans-1,3-Dichloropropene | 12.228 | 75   | 1363556  | 10.00 | ppbV # | 63       |
| 49) 1,1,2-Trichloroethane     | 12.441 | 97   | 1039768  | 11.00 | ppbV   | 91       |
| 50) Toluene                   | 12.794 | 91   | 2867532  | 11.00 | ppbV   | 98       |
| 51) Methyl n-butyl ketone     | 13.113 | 43   | 2586043  | 11.00 | ppbV # | 76       |

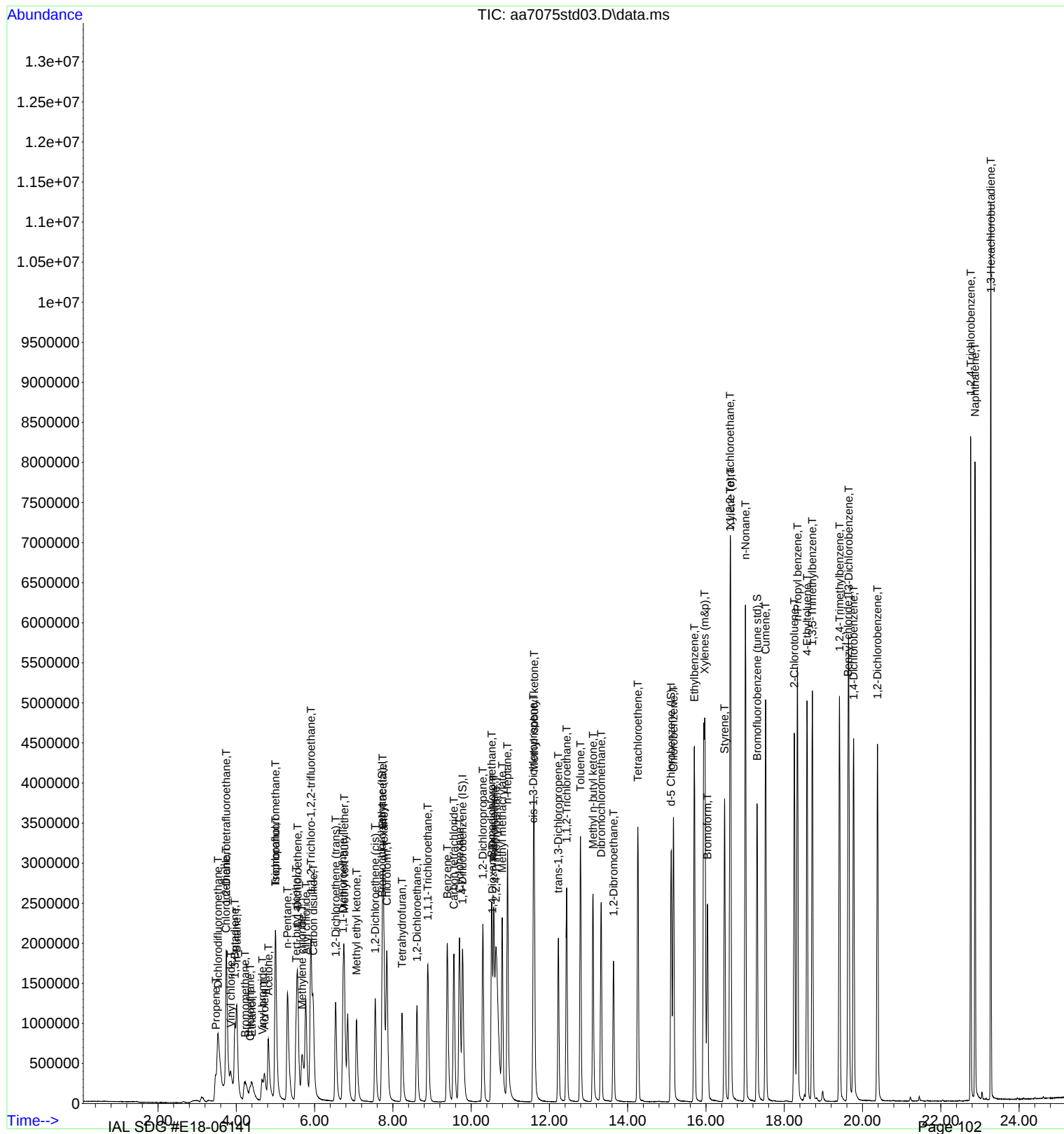
AL SDG #E18-06141

Data Path : C:\DATA\05-18-18\  
 Data File : aa7075std03.D  
 Acq On : 18 May 2018 10:53 am  
 Operator : jls  
 Sample : 10 ppbv Std  
 Misc : CC483586  
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 11:26:02 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 11:25:51 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| 52) Dibromochloromethane      | 13.322 | 129  | 1593950  | 11.00 | ppbV   | 99       |
| 53) 1,2-Dibromoethane         | 13.637 | 107  | 1588612  | 11.00 | ppbV   | 100      |
| 54) Tetrachloroethene         | 14.261 | 166  | 1108368  | 11.00 | ppbV   | 98       |
| 56) Chlorobenzene             | 15.170 | 112  | 2154977  | 11.00 | ppbV   | 100      |
| 57) Ethylbenzene              | 15.701 | 91   | 3972028  | 11.00 | ppbV   | 96       |
| 58) Xylenes (m&p)             | 15.968 | 91   | 6199946  | 22.00 | ppbV   | 96       |
| 59) Bromoform                 | 16.039 | 173  | 1290866  | 11.00 | ppbV   | 97       |
| 60) Styrene                   | 16.476 | 104  | 2164639  | 11.00 | ppbV   | 98       |
| 61) Xylene (o)                | 16.630 | 91   | 3292121  | 11.00 | ppbV   | 96       |
| 62) 1,1,2,2-Tetrachloroethane | 16.617 | 83   | 2639332  | 11.00 | ppbV   | 99       |
| 63) n-Nonane                  | 17.010 | 57   | 2717275  | 11.00 | ppbV # | 66       |
| 65) Cumene                    | 17.524 | 105  | 4095384  | 11.00 | ppbV   | 97       |
| 66) 2-Chlorotoluene           | 18.257 | 91   | 3345139  | 11.00 | ppbV   | 99       |
| 67) n-Propyl benzene          | 18.337 | 91   | 5661498  | 11.00 | ppbV   | 95       |
| 68) 4-Ethyltoluene            | 18.582 | 105  | 4014940  | 11.00 | ppbV   | 96       |
| 69) 1,3,5-Trimethylbenzene    | 18.717 | 105  | 3672316  | 11.00 | ppbV   | 99       |
| 70) 1,2,4-Trimethylbenzene    | 19.411 | 105  | 3660162  | 11.00 | ppbV   | 98       |
| 71) Benzyl chloride           | 19.630 | 91   | 2290255  | 10.00 | ppbV   | 99       |
| 72) 1,3-Dichlorobenzene       | 19.646 | 146  | 2095333  | 11.00 | ppbV   | 99       |
| 73) 1,4-Dichlorobenzene       | 19.775 | 146  | 2149543  | 11.00 | ppbV   | 99       |
| 74) 1,2-Dichlorobenzene       | 20.382 | 146  | 2110390  | 11.00 | ppbV   | 100      |
| 75) 1,2,4-Trichlorobenzene    | 22.765 | 180  | 1792894  | 12.00 | ppbV   | 99       |
| 76) Naphthalene               | 22.874 | 127  | 597227   | 12.00 | ppbV   | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.279 | 225  | 1181650  | 11.00 | ppbV   | 95       |

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



Data Path : C:\DATA\05-18-18\  
 Data File : aa7076std04.D  
 Acq On : 18 May 2018 12:20 pm  
 Operator : jls  
 Sample : 2 ppbv Std  
 Misc : CC483586  
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 12:46:12 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 12:06:03 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| Internal Standards            |        |      |          |       |       |          |
| 1) Bromochloromethane (IS)    | 7.717  | 130  | 531646   | 10.00 | ppbV  | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.775  | 114  | 2168184  | 10.00 | ppbV  | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.112 | 117  | 1841018  | 10.00 | ppbV  | 0.00     |
| System Monitoring Compounds   |        |      |          |       |       |          |
| 64) Bromofluorobenzene (tu... | 17.308 | 95   | 1709856  | 10.10 | ppbV  | 0.00     |
| Target Compounds              |        |      |          |       |       |          |
|                               |        |      |          |       |       | Qvalue   |
| 2) Propene                    | 3.476  | 41   | 132626   | 1.88  | ppbV  | 83       |
| 3) Dichlorodifluoromethane    | 3.531  | 85   | 354292   | 1.83  | ppbV  | 96       |
| 4) Chloromethane              | 3.724  | 52   | 51018    | 2.00  | ppbV  | 88       |
| 5) 1,2-Dichlorotetrafluor...  | 3.740  | 85   | 375176   | 1.89  | ppbV  | 98       |
| 6) Vinyl chloride             | 3.865  | 62   | 145725   | 1.81  | ppbV  | 84       |
| 7) 1,3-Butadiene              | 3.962  | 54   | 129844   | 1.84  | ppbV  | 93       |
| 8) n-Butane                   | 4.007  | 43   | 298326   | 1.97  | ppbV  | 90       |
| 9) Bromomethane               | 4.209  | 94   | 97199    | 1.67  | ppbV  | 96       |
| 10) Chloroethane              | 4.354  | 64   | 70288    | 1.63  | ppbV  | 96       |
| 11) Ethanol                   | 4.386  | 45   | 91666    | 2.15  | ppbV  | 97       |
| 12) Vinyl bromide             | 4.647  | 106  | 101955   | 1.68  | ppbV  | 99       |
| 13) Acrolein                  | 4.714  | 56   | 52814    | 1.78  | ppbV  | 99       |
| 14) Acetone                   | 4.814  | 58   | 75164    | 1.69  | ppbV  | 89       |
| 15) Trichlorofluoromethane    | 4.994  | 101  | 411260   | 1.98  | ppbV  | 100      |
| 16) Isopropanol               | 4.997  | 45   | 217705   | 1.47  | ppbV  | 98       |
| 17) n-Pentane                 | 5.306  | 43   | 301966   | 1.76  | ppbV  | 97       |
| 18) 1,1-Dichloroethene        | 5.563  | 61   | 246965   | 1.73  | ppbV  | 91       |
| 19) Methylene chloride        | 5.672  | 49   | 218722   | 1.86  | ppbV  | 100      |
| 20) Tert-butyl alcohol        | 5.531  | 59   | 243064   | 1.81  | ppbV  | 100      |
| 21) Allyl chloride            | 5.762  | 76   | 51763    | 1.62  | ppbV  | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.904  | 101  | 357853   | 2.27  | ppbV  | 88       |
| 23) Carbon disulfide          | 5.955  | 76   | 380328   | 1.81  | ppbV  | 96       |
| 24) 1,2-Dichloroethene (tr... | 6.534  | 61   | 212690   | 1.68  | ppbV  | 98       |
| 25) 1,1-Dichloroethane        | 6.720  | 63   | 284656   | 1.78  | ppbV  | 98       |
| 26) Methyl tert-butyl ether   | 6.756  | 73   | 350451   | 1.84  | ppbV  | 96       |
| 27) Methyl ethyl ketone       | 7.077  | 43   | 337043   | 1.64  | ppbV  | 97       |
| 28) 1,2-Dichloroethene (cis)  | 7.544  | 61   | 202527   | 1.64  | ppbV  | 100      |
| 29) Ethyl acetate             | 7.743  | 45   | 54059    | 1.59  | ppbV  | 100      |
| 30) n-Hexane                  | 7.756  | 57   | 257212   | 1.81  | ppbV  | 95       |
| 31) Chloroform                | 7.846  | 83   | 310890   | 1.81  | ppbV  | 99       |
| 32) Tetrahydrofuran           | 8.235  | 42   | 162029   | 1.65  | ppbV  | 88       |
| 33) 1,2-Dichloroethane        | 8.611  | 62   | 252565   | 1.78  | ppbV  | 100      |
| 34) 1,1,1-Trichloroethane     | 8.888  | 97   | 333228   | 2.03  | ppbV  | 100      |
| 35) Benzene                   | 9.389  | 78   | 435366   | 1.81  | ppbV  | 100      |
| 36) Carbon tetrachloride      | 9.556  | 117  | 321683   | 1.98  | ppbV  | 99       |
| 37) Cyclohexane               | 9.698  | 56   | 284422   | 1.91  | ppbV  | 90       |
| 39) 1,2-Dichloropropane       | 10.296 | 63   | 210794   | 2.00  | ppbV  | 99       |
| 40) Bromodichloromethane      | 10.521 | 83   | 342181   | 1.90  | ppbV  | 100      |
| 41) 2,2,4-Trimethylpentane    | 10.633 | 57   | 763501   | 1.80  | ppbV  | 94       |
| 42) Trichloroethene           | 10.576 | 130  | 161774   | 1.93  | ppbV  | 97       |
| 43) 1,4-Dioxane               | 10.543 | 88   | 75425    | 1.60  | ppbV  | 95       |
| 44) Methyl methacrylate       | 10.797 | 41   | 239222   | 1.67  | ppbV  | 99       |
| 45) n-Heptane                 | 10.929 | 43   | 398154   | 2.12  | ppbV  | 99       |
| 46) cis-1,3-Dichloropropene   | 11.592 | 75   | 234782   | 1.69  | ppbV  | 99       |
| 47) Methyl isobutyl ketone    | 11.617 | 43   | 512933   | 1.96  | ppbV  | 98       |
| 48) trans-1,3-Dichloropropene | 12.228 | 75   | 198542   | 1.42  | ppbV  | 97       |
| 49) 1,1,2-Trichloroethane     | 12.440 | 97   | 202874   | 2.07  | ppbV  | 89       |
| 50) Toluene                   | 12.794 | 91   | 532944   | 2.00  | ppbV  | 96       |
| 51) Methyl n-butyl ketone     | 13.119 | 43   | 421816   | 1.77  | ppbV  | 96       |

AL SDG #E18-06141

Data Path : C:\DATA\05-18-18\  
 Data File : aa7076std04.D  
 Acq On : 18 May 2018 12:20 pm  
 Operator : jls  
 Sample : 2 ppbv Std  
 Misc : CC483586  
 ALS Vial : 6 Sample Multiplier: 1

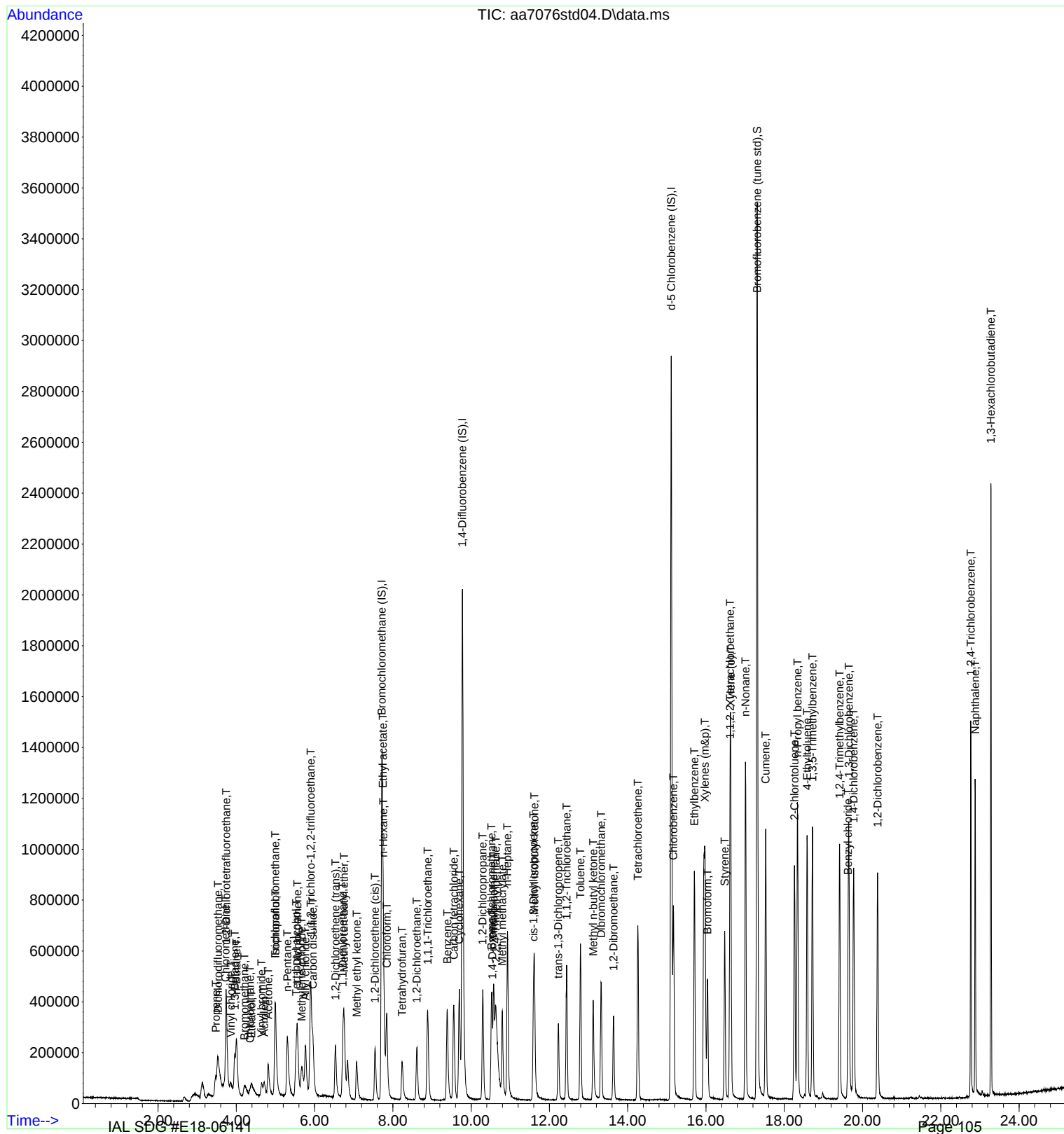
Quant Time: May 18 12:46:12 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 12:06:03 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc | Units | Dev(Min) |
|-------------------------------|--------|------|----------|------|-------|----------|
| 52) Dibromochloromethane      | 13.321 | 129  | 301886   | 2.02 | ppbV  | 98       |
| 53) 1,2-Dibromoethane         | 13.640 | 107  | 294478   | 1.99 | ppbV  | 100      |
| 54) Tetrachloroethene         | 14.260 | 166  | 225984   | 2.19 | ppbV  | 97       |
| 56) Chlorobenzene             | 15.167 | 112  | 438067   | 2.22 | ppbV  | 99       |
| 57) Ethylbenzene              | 15.704 | 91   | 774341   | 2.17 | ppbV  | 96       |
| 58) Xylenes (m&p)             | 15.974 | 91   | 1258920  | 4.44 | ppbV  | 97       |
| 59) Bromoform                 | 16.038 | 173  | 255272   | 2.19 | ppbV  | 95       |
| 60) Styrene                   | 16.479 | 104  | 375106   | 1.95 | ppbV  | 99       |
| 61) Xylene (o)                | 16.633 | 91   | 676541   | 2.30 | ppbV  | 96       |
| 62) 1,1,2,2-Tetrachloroethane | 16.614 | 83   | 588991   | 2.46 | ppbV  | 98       |
| 63) n-Nonane                  | 17.009 | 43   | 683291   | 2.31 | ppbV  | 98       |
| 65) Cumene                    | 17.527 | 105  | 830635   | 2.27 | ppbV  | 97       |
| 66) 2-Chlorotoluene           | 18.260 | 91   | 661544   | 2.19 | ppbV  | 100      |
| 67) n-Propyl benzene          | 18.337 | 91   | 1196302  | 2.37 | ppbV  | 94       |
| 68) 4-Ethyltoluene            | 18.585 | 105  | 792642   | 2.23 | ppbV  | 96       |
| 69) 1,3,5-Trimethylbenzene    | 18.720 | 105  | 740731   | 2.27 | ppbV  | 98       |
| 70) 1,2,4-Trimethylbenzene    | 19.414 | 105  | 698841   | 2.16 | ppbV  | 97       |
| 71) Benzyl chloride           | 19.630 | 91   | 304003   | 1.33 | ppbV  | 100      |
| 72) 1,3-Dichlorobenzene       | 19.649 | 146  | 440454   | 2.34 | ppbV  | 100      |
| 73) 1,4-Dichlorobenzene       | 19.775 | 146  | 442950   | 2.30 | ppbV  | 98       |
| 74) 1,2-Dichlorobenzene       | 20.385 | 146  | 428607   | 2.25 | ppbV  | 99       |
| 75) 1,2,4-Trichlorobenzene    | 22.765 | 180  | 317666   | 2.25 | ppbV  | 99       |
| 76) Naphthalene               | 22.877 | 127  | 91044    | 1.92 | ppbV  | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.282 | 225  | 264100   | 2.55 | ppbV  | 95       |

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

Operator : jls

Response via : Initial Calibration



Data Path : C:\DATA\05-18-18\  
 Data File : aa7077std05.D  
 Acq On : 18 May 2018 1:03 pm  
 Operator : jls  
 Sample : 0.2 ppbv Std  
 Misc : CC483586  
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 13:32:39 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 12:46:18 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| Internal Standards            |        |      |          |       |       |          |
| 1) Bromochloromethane (IS)    | 7.724  | 130  | 565151   | 10.00 | ppbV  | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.778  | 114  | 2276433  | 10.00 | ppbV  | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.109 | 117  | 1973260  | 10.00 | ppbV  | 0.00     |
| System Monitoring Compounds   |        |      |          |       |       |          |
| 64) Bromofluorobenzene (tu... | 17.309 | 95   | 1806381  | 9.93  | ppbV  | 0.00     |
| Target Compounds              |        |      |          |       |       | Qvalue   |
| 2) Propene                    | 3.460  | 41   | 16894    | 0.24  | ppbV  | # 71     |
| 3) Dichlorodifluoromethane    | 3.521  | 85   | 50420    | 0.26  | ppbV  | # 83     |
| 4) Chloromethane              | 3.740  | 52   | 8000m    | 0.31  | ppbV  |          |
| 5) 1,2-Dichlorotetrafluor...  | 3.734  | 85   | 50893    | 0.25  | ppbV  | 89       |
| 6) Vinyl chloride             | 3.856  | 62   | 19517    | 0.24  | ppbV  | # 68     |
| 7) 1,3-Butadiene              | 3.959  | 54   | 15122    | 0.22  | ppbV  | 83       |
| 8) n-Butane                   | 4.010  | 43   | 44711    | 0.30  | ppbV  | 97       |
| 9) Bromomethane               | 4.219  | 94   | 13685m   | 0.24  | ppbV  |          |
| 10) Chloroethane              | 4.344  | 64   | 11953m   | 0.28  | ppbV  |          |
| 11) Ethanol                   | 4.393  | 45   | 9615m    | 0.22  | ppbV  |          |
| 12) Vinyl bromide             | 4.676  | 106  | 11612    | 0.19  | ppbV  | 94       |
| 13) Acrolein                  | 4.724  | 56   | 6466     | 0.22  | ppbV  | # 15     |
| 14) Acetone                   | 4.814  | 58   | 11425    | 0.26  | ppbV  | 81       |
| 15) Trichlorofluoromethane    | 4.994  | 101  | 58754    | 0.28  | ppbV  | 98       |
| 16) Isopropanol               | 4.994  | 45   | 29583    | 0.20  | ppbV  | # 81     |
| 17) n-Pentane                 | 5.303  | 43   | 40200    | 0.24  | ppbV  | 96       |
| 18) 1,1-Dichloroethene        | 5.557  | 61   | 34473    | 0.24  | ppbV  | 90       |
| 19) Methylene chloride        | 5.679  | 49   | 41552    | 0.35  | ppbV  | 98       |
| 20) Tert-butyl alcohol        | 5.531  | 59   | 30621    | 0.23  | ppbV  | 100      |
| 21) Allyl chloride            | 5.762  | 76   | 7462     | 0.24  | ppbV  | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.901  | 101  | 47494    | 0.30  | ppbV  | 91       |
| 23) Carbon disulfide          | 5.959  | 76   | 51179    | 0.25  | ppbV  | # 75     |
| 24) 1,2-Dichloroethene (tr... | 6.528  | 61   | 30920    | 0.24  | ppbV  | 98       |
| 25) 1,1-Dichloroethane        | 6.717  | 63   | 43161    | 0.27  | ppbV  | 99       |
| 26) Methyl tert-butyl ether   | 6.762  | 73   | 40748    | 0.22  | ppbV  | 98       |
| 27) Methyl ethyl ketone       | 7.084  | 43   | 46402    | 0.23  | ppbV  | 99       |
| 28) 1,2-Dichloroethene (cis)  | 7.550  | 61   | 28581    | 0.23  | ppbV  | 97       |
| 29) Ethyl acetate             | 7.746  | 45   | 7027     | 0.21  | ppbV  | 100      |
| 30) n-Hexane                  | 7.756  | 57   | 34619    | 0.24  | ppbV  | 95       |
| 31) Chloroform                | 7.849  | 83   | 45270    | 0.26  | ppbV  | 100      |
| 32) Tetrahydrofuran           | 8.241  | 42   | 23222    | 0.24  | ppbV  | # 84     |
| 33) 1,2-Dichloroethane        | 8.614  | 62   | 39749    | 0.28  | ppbV  | 97       |
| 34) 1,1,1-Trichloroethane     | 8.881  | 97   | 43844    | 0.27  | ppbV  | 99       |
| 35) Benzene                   | 9.392  | 78   | 61436    | 0.26  | ppbV  | 98       |
| 36) Carbon tetrachloride      | 9.556  | 117  | 43551    | 0.27  | ppbV  | 97       |
| 37) Cyclohexane               | 9.698  | 56   | 32827    | 0.22  | ppbV  | 87       |
| 39) 1,2-Dichloropropane       | 10.299 | 63   | 29438    | 0.28  | ppbV  | 97       |
| 40) Bromodichloromethane      | 10.524 | 83   | 48412    | 0.27  | ppbV  | 99       |
| 41) 2,2,4-Trimethylpentane    | 10.624 | 57   | 81573    | 0.19  | ppbV  | 93       |
| 42) Trichloroethene           | 10.579 | 130  | 22926    | 0.28  | ppbV  | 99       |
| 43) 1,4-Dioxane               | 10.550 | 88   | 10037    | 0.22  | ppbV  | 94       |
| 44) Methyl methacrylate       | 10.794 | 41   | 27164    | 0.19  | ppbV  | 94       |
| 45) n-Heptane                 | 10.929 | 43   | 43536    | 0.23  | ppbV  | 97       |
| 46) cis-1,3-Dichloropropene   | 11.592 | 75   | 30006    | 0.22  | ppbV  | 98       |
| 47) Methyl isobutyl ketone    | 11.627 | 43   | 52478    | 0.20  | ppbV  | 96       |
| 48) trans-1,3-Dichloropropene | 12.232 | 75   | 24549    | 0.18  | ppbV  | 91       |
| 49) 1,1,2-Trichloroethane     | 12.437 | 97   | 28062    | 0.29  | ppbV  | 88       |
| 50) Toluene                   | 12.797 | 91   | 62215    | 0.23  | ppbV  | 98       |
| 51) Methyl n-butyl ketone     | 13.119 | 43   | 42331    | 0.18  | ppbV  | 93       |

AL SDG #E18-06141

Data Path : C:\DATA\05-18-18\  
 Data File : aa7077std05.D  
 Acq On : 18 May 2018 1:03 pm  
 Operator : jls  
 Sample : 0.2 ppbv Std  
 Misc : CC483586  
 ALS Vial : 7 Sample Multiplier: 1

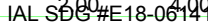
Quant Time: May 18 13:32:39 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 12:46:18 2018  
 Response via : Initial Calibration

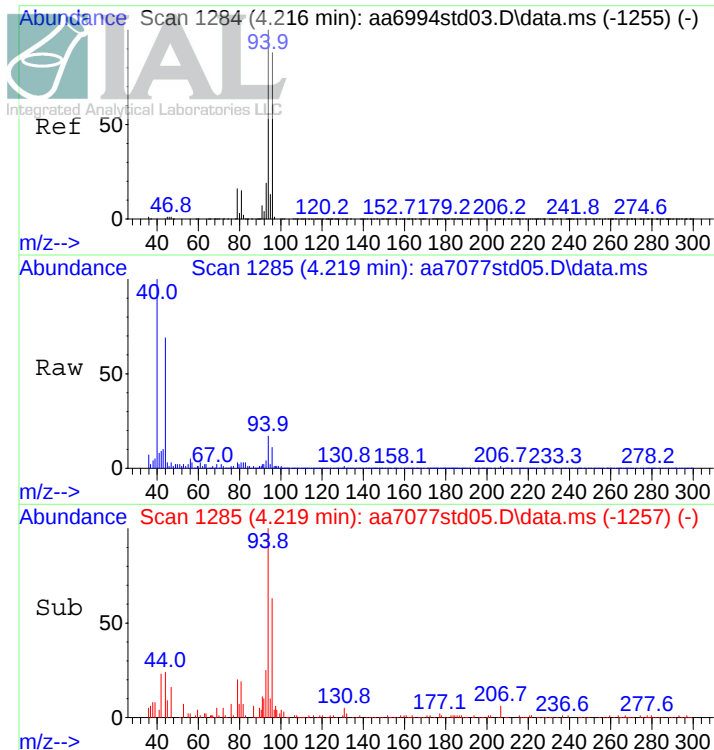
| Compound                      | R.T.   | QIon | Response | Conc | Units | Dev(Min) |
|-------------------------------|--------|------|----------|------|-------|----------|
| 52) Dibromochloromethane      | 13.318 | 129  | 40399    | 0.27 | ppbV  | 96       |
| 53) 1,2-Dibromoethane         | 13.640 | 107  | 39419    | 0.27 | ppbV  | 98       |
| 54) Tetrachloroethene         | 14.260 | 166  | 31692    | 0.31 | ppbV  | 98       |
| 56) Chlorobenzene             | 15.170 | 112  | 62317    | 0.31 | ppbV  | 96       |
| 57) Ethylbenzene              | 15.704 | 91   | 84252    | 0.24 | ppbV  | 96       |
| 58) Xylenes (m&p)             | 15.971 | 91   | 126837   | 0.45 | ppbV  | 97       |
| 59) Bromoform                 | 16.039 | 173  | 30639    | 0.26 | ppbV  | 97       |
| 60) Styrene                   | 16.479 | 104  | 34517    | 0.18 | ppbV  | 97       |
| 61) Xylene (o)                | 16.633 | 91   | 68032    | 0.23 | ppbV  | 96       |
| 62) 1,1,2,2-Tetrachloroethane | 16.617 | 83   | 73449    | 0.30 | ppbV  | 97       |
| 63) n-Nonane                  | 17.013 | 43   | 59250    | 0.20 | ppbV  | 93       |
| 65) Cumene                    | 17.527 | 105  | 89239    | 0.24 | ppbV  | 97       |
| 66) 2-Chlorotoluene           | 18.264 | 91   | 71441    | 0.24 | ppbV  | 99       |
| 67) n-Propyl benzene          | 18.341 | 91   | 110526   | 0.22 | ppbV  | 96       |
| 68) 4-Ethyltoluene            | 18.588 | 105  | 73047    | 0.20 | ppbV  | 95       |
| 69) 1,3,5-Trimethylbenzene    | 18.720 | 105  | 66060    | 0.20 | ppbV  | 98       |
| 70) 1,2,4-Trimethylbenzene    | 19.415 | 105  | 59145    | 0.18 | ppbV  | 99       |
| 71) Benzyl chloride           | 19.630 | 91   | 31049    | 0.13 | ppbV  | 99       |
| 72) 1,3-Dichlorobenzene       | 19.649 | 146  | 57201    | 0.30 | ppbV  | 100      |
| 73) 1,4-Dichlorobenzene       | 19.772 | 146  | 54870    | 0.28 | ppbV  | 100      |
| 74) 1,2-Dichlorobenzene       | 20.386 | 146  | 52450    | 0.27 | ppbV  | 99       |
| 75) 1,2,4-Trichlorobenzene    | 22.765 | 180  | 51790    | 0.37 | ppbV  | 99       |
| 76) Naphthalene               | 22.881 | 127  | 10737    | 0.23 | ppbV  | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.279 | 225  | 38503    | 0.37 | ppbV  | 93       |

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

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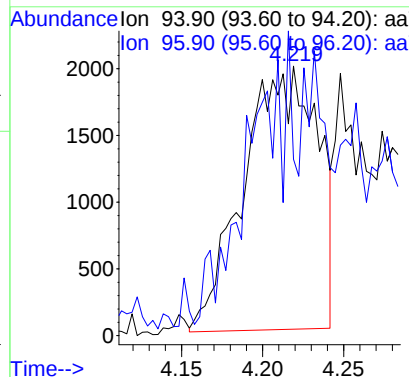
QLast Update : Fri May 18 12:46:18 2018



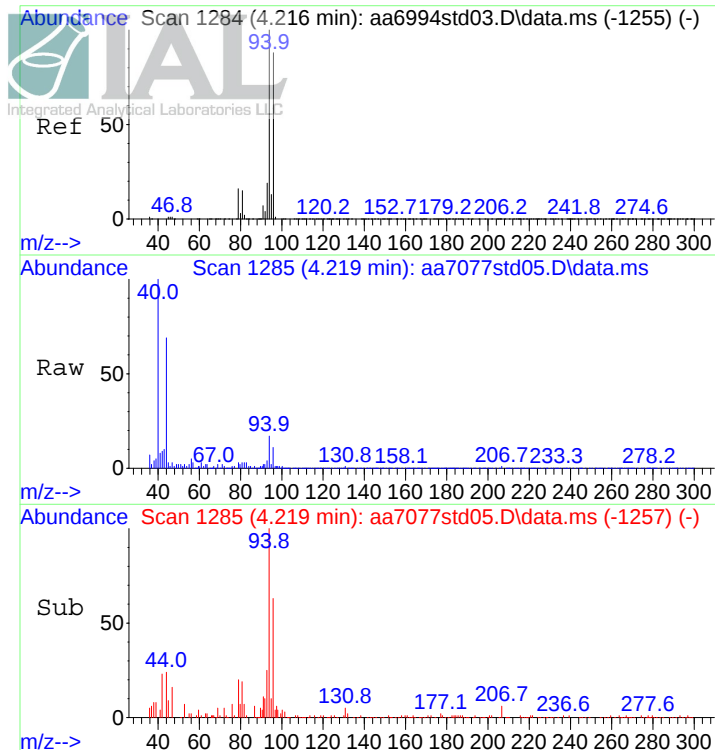


#9  
 Bromomethane  
 Concen: 0.11 ppbV  
 RT: 4.219 min Scan# 1285  
 Delta R.T. -0.010 min  
 Lab File: aa7077std05.D  
 Acq: 18 May 2018 1:03 pm

| Tgt Ion | 94   | 96   | Ratio | Lower | Upper  |
|---------|------|------|-------|-------|--------|
| Resp    | 6278 |      |       |       |        |
| Ion     | 100  | 60.6 |       | 75.8  | 113.8# |

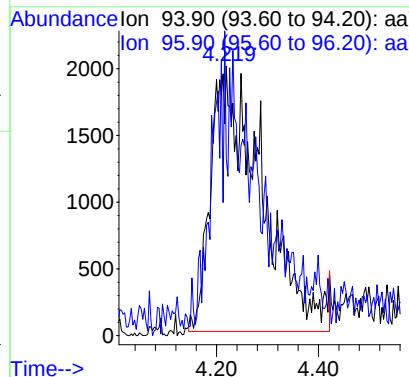


Before manual integration for Bromomethane.

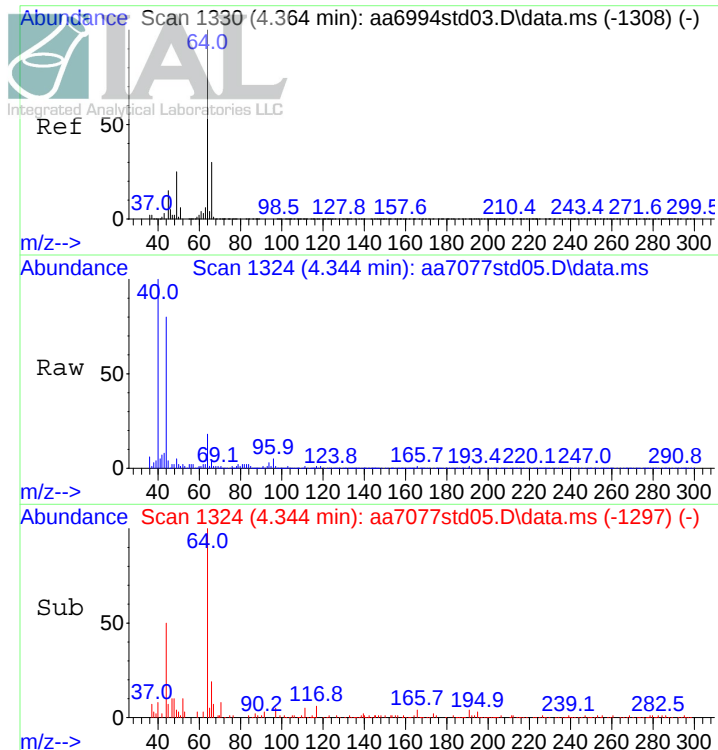


#9  
 Bromomethane  
 Concen: 0.24 ppbV m  
 RT: 4.219 min Scan# 1285  
 Delta R.T. -0.010 min  
 Lab File: aa7077std05.D  
 Acq: 18 May 2018 1:03 pm

| Tgt Ion | 94 | 96 | Ratio | 100 | 27.8 | Resp | 13685 | Lower | 75.8 | Upper | 113.8# |
|---------|----|----|-------|-----|------|------|-------|-------|------|-------|--------|
| Ion     | 94 | 96 | Ratio | 100 | 27.8 | Resp | 13685 | Lower | 75.8 | Upper | 113.8# |

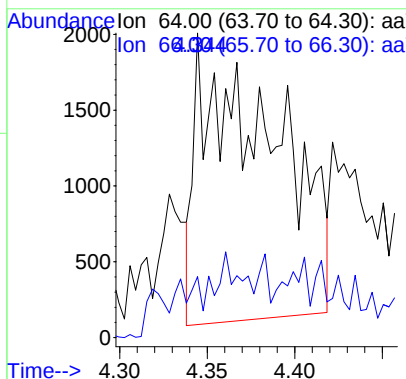


After manual integration for Bromomethane.

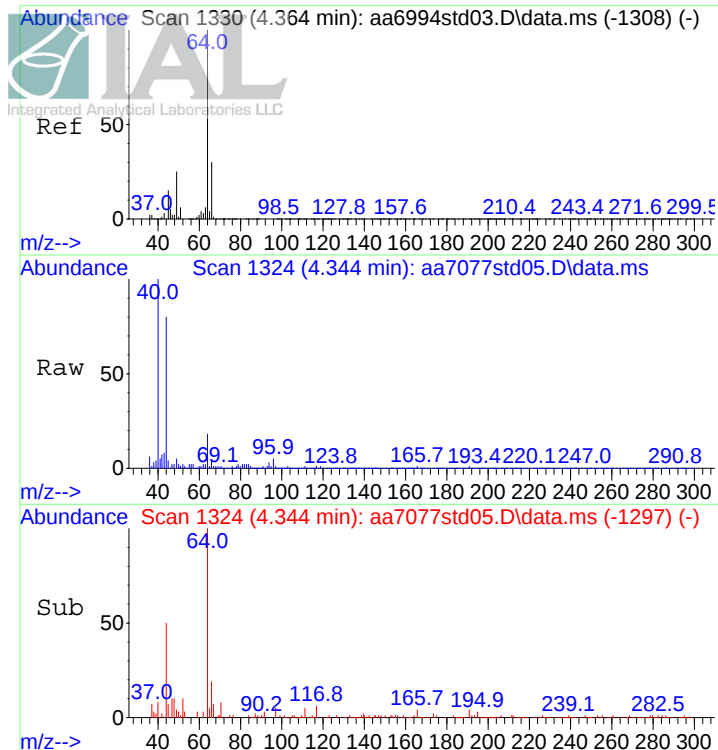


#10  
Chloroethane  
Concen: 0.13 ppbV  
RT: 4.344 min Scan# 1324  
Delta R.T. -0.013 min  
Lab File: aa7077std05.D  
Acq: 18 May 2018 1:03 pm

Tgt Ion: 64 Resp: 5717  
Ion Ratio Lower Upper  
64 100  
66 3.8 21.6 32.4#

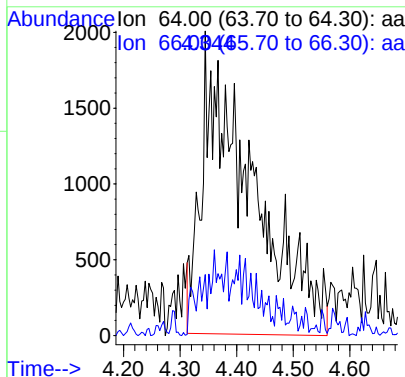


Before manual integration for Chloroethane.

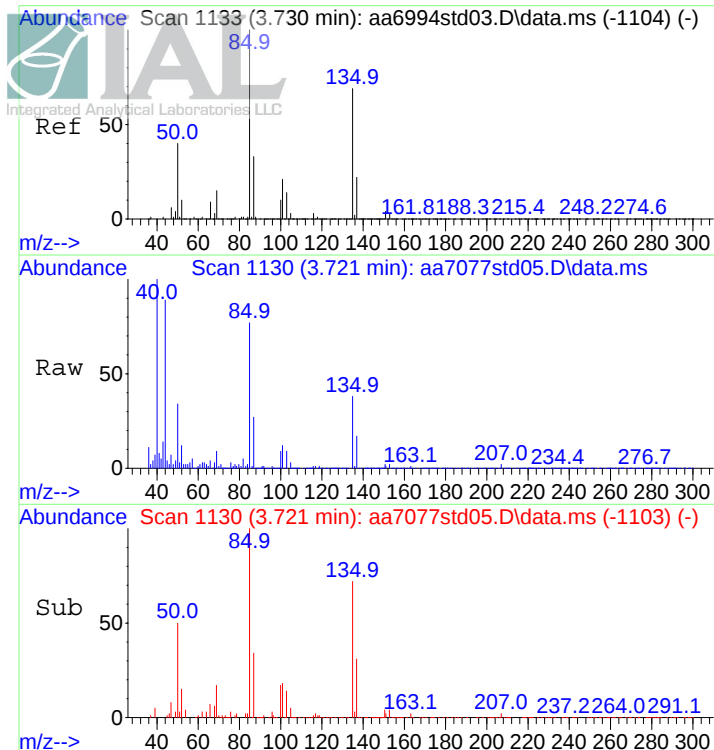


#10  
Chloroethane  
Concen: 0.28 ppbV m  
RT: 4.344 min Scan# 1324  
Delta R.T. -0.013 min  
Lab File: aa7077std05.D  
Acq: 18 May 2018 1:03 pm

Tgt Ion: 64 Resp: 11953  
Ion Ratio Lower Upper  
64 100  
66 1.8 21.6 32.4#

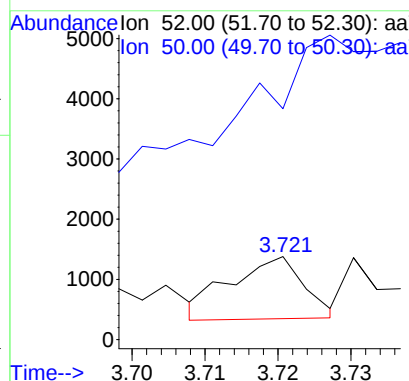


After manual integration for Chloroethane.

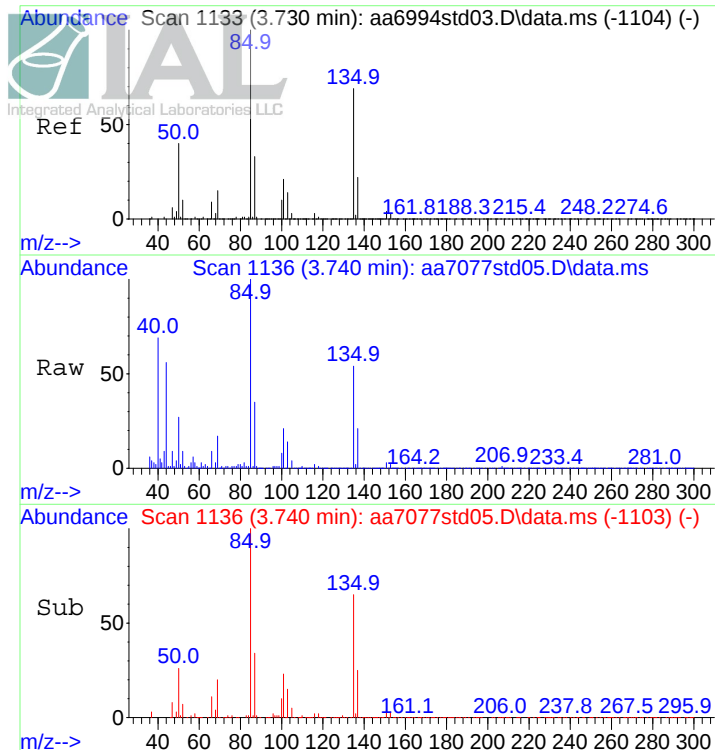


#4  
 Chloromethane  
 Concen: 0.03 ppbV  
 RT: 3.721 min Scan# 1130  
 Delta R.T. -0.013 min  
 Lab File: aa7077std05.D  
 Acq: 18 May 2018 1:03 pm

|           |       |       |        |
|-----------|-------|-------|--------|
| Tgt Ion:  | 52    | Resp: | 727    |
| Ion Ratio | Lower | Upper |        |
| 52        | 100   |       |        |
| 50        | 0.0   | 314.4 | 471.6# |

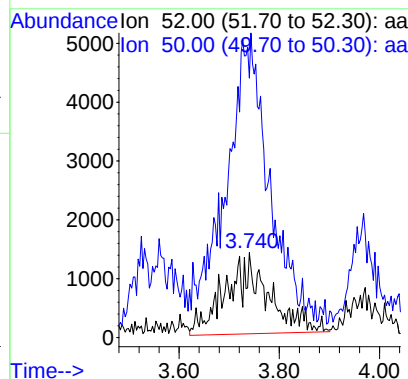


Before manual integration for Chloromethane.

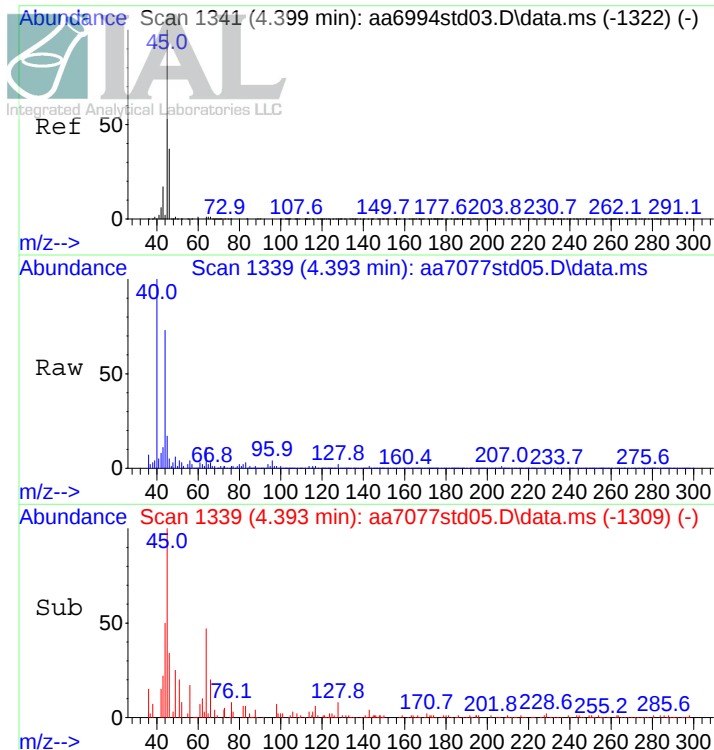


#4  
Chloromethane  
Concen: 0.31 ppbV m  
RT: 3.740 min Scan# 1136  
Delta R.T. 0.006 min  
Lab File: aa7077std05.D  
Acq: 18 May 2018 1:03 pm

| Tgt Ion | Ratio | Resp  | Lower  | Upper |
|---------|-------|-------|--------|-------|
| 52      | 100   | 8000  |        |       |
| 50      | 0.0   | 314.4 | 471.6# |       |

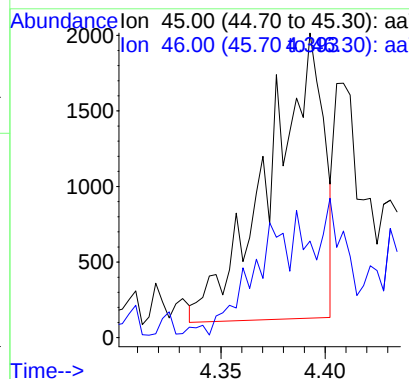


After manual integration for Chloromethane.

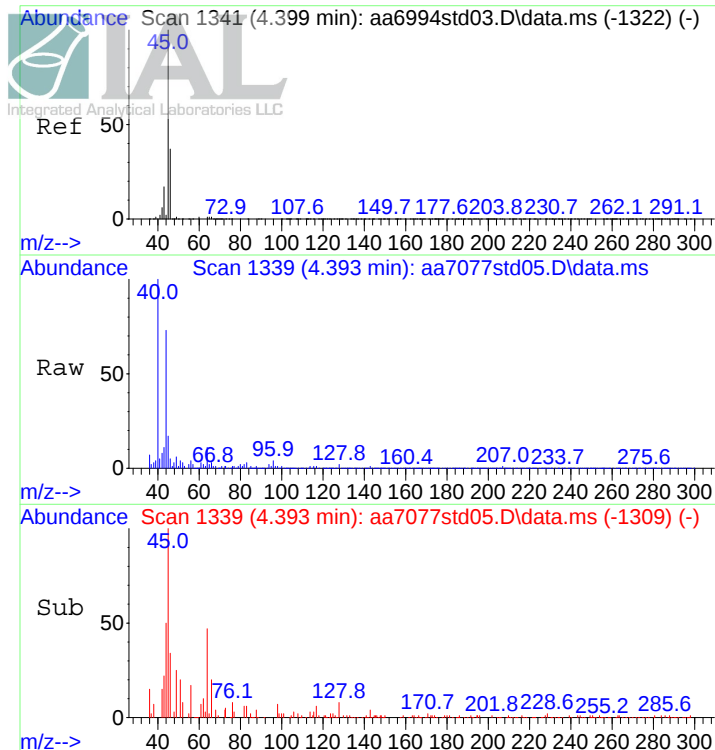


#11  
 Ethanol  
 Concen: 0.08 ppbV  
 RT: 4.393 min Scan# 1339  
 Delta R.T. -0.003 min  
 Lab File: aa7077std05.D  
 Acq: 18 May 2018 1:03 pm

Tgt Ion: 45 Resp: 3464  
 Ion Ratio Lower Upper  
 45 100  
 46 13.7 32.6 48.8#

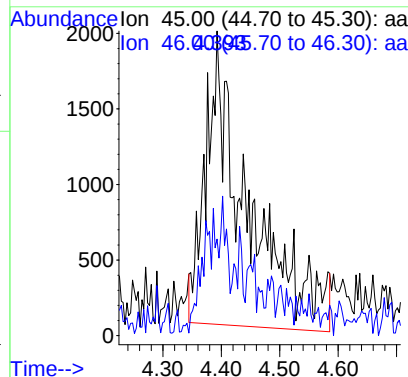


Before manual integration for Ethanol.



#11  
Ethanol  
Concen: 0.22 ppbV m  
RT: 4.393 min Scan# 1339  
Delta R.T. -0.003 min  
Lab File: aa7077std05.D  
Acq: 18 May 2018 1:03 pm

| Tgt Ion | 45  | 46 | Ratio | Lower | Upper |
|---------|-----|----|-------|-------|-------|
| 45      | 100 |    |       |       |       |
| 46      | 4.9 |    | 32.6  |       | 48.8# |



After manual integration for Ethanol.

## Initial Calibration Data Summary Report

Initial Calibration Curve: 7/25/2018  
Instrument: AA

Method ID: 0725.M

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA7971BFB]             | 07/25/2018 08:35                       |
| 40 PPBV STD [AA7972STD01]   | 07/25/2018 09:55                       |
| 20 PPBV STD [AA7973STD02]   | 07/25/2018 10:29                       |
| 10 PPBV STD [AA7974STD03]   | 07/25/2018 11:02                       |
| 2 PPBV STD [AA7975STD04]    | 07/25/2018 12:18                       |
| 0.2 PPBV STD [AA7976STD05]  | 07/25/2018 13:42                       |
| 10 PPBV ICVSS [AA7977ICVSS] | 07/25/2018 15:05                       |

| RParameter                    | RRF<br>0.2ppbv | RRF<br>2ppbv | RRF<br>10ppbv | RRF<br>20ppbv | RRF<br>40ppbv | Avg<br>ppbv | % RSD |
|-------------------------------|----------------|--------------|---------------|---------------|---------------|-------------|-------|
| Bromochloromethane            | -----ISTD----- |              |               |               |               |             |       |
| 1,4-Difluorobenzene           | -----ISTD----- |              |               |               |               |             |       |
| d-5 Chlorobenzene             | -----ISTD----- |              |               |               |               |             |       |
| Acetone                       | 0.73           | 0.64         | 0.78          | 0.82          | 0.84          | 0.76        | 11    |
| Acrolein                      | 0.35           | 0.44         | 0.54          | 0.55          | 0.58          | 0.49        | 19    |
| Allyl Chloride                | 0.61           | 0.52         | 0.67          | 0.68          | 0.68          | 0.63        | 10    |
| Benzene                       | 4.4            | 3.9          | 4.5           | 4.6           | 4.8           | 4.4         | 7.4   |
| Benzyl chloride               | 1.3            | 1.6          | 1.7           | 1.7           | 1.6           | 1.6         | 12    |
| Bromodichloromethane          | 0.76           | 0.68         | 0.76          | 0.76          | 0.75          | 0.74        | 4.5   |
| Bromoform                     | 0.62           | 0.62         | 0.62          | 0.60          | 0.56          | 0.60        | 4.4   |
| Bromomethane                  | 0.96           | 0.91         | 1.1           | 1.1           | 1.1           | 1.0         | 7.8   |
| 1,3-Butadiene                 | 1.1            | 1.0          | 1.2           | 1.2           | 1.2           | 1.2         | 7.5   |
| Chlorobenzene                 | 1.3            | 1.1          | 1.1           | 1.0           | 0.98          | 1.1         | 9.9   |
| Chloroethane                  | 0.69           | 0.63         | 0.77          | 0.80          | 0.84          | 0.75        | 12    |
| Chloroform                    | 3.0            | 2.5          | 3.0           | 3.1           | 3.2           | 3.0         | 8.4   |
| Chloromethane                 | 0.44           | 0.38         | 0.41          | 0.41          | 0.42          | 0.41        | 5.4   |
| Carbon disulfide              | 3.7            | 3.4          | 4.1           | 4.2           | 4.3           | 4.0         | 9.2   |
| Carbon tetrachloride          | 3.0            | 2.6          | 2.7           | 2.7           | 2.9           | 2.8         | 4.9   |
| 2-Chlorotoluene               | 1.8            | 1.7          | 1.6           | 1.6           | 1.5           | 1.6         | 8.3   |
| Cumene                        | 2.2            | 2.1          | 2.0           | 1.9           | 1.7           | 2.0         | 8.7   |
| Cyclohexane                   | 2.5            | 2.4          | 2.5           | 2.5           | 2.7           | 2.5         | 3.6   |
| Dibromochloromethane          | 0.64           | 0.59         | 0.62          | 0.62          | 0.62          | 0.62        | 2.6   |
| 1,2-Dibromoethane             | 0.75           | 0.63         | 0.66          | 0.67          | 0.67          | 0.67        | 6.3   |
| 1,2-Dichlorobenzene           | 1.2            | 1.0          | 0.99          | 0.95          | 0.87          | 1.0         | 11    |
| 1,3-Dichlorobenzene           | 1.2            | 1.1          | 0.98          | 0.92          | 0.82          | 0.99        | 14    |
| 1,4-Dichlorobenzene           | 1.2            | 1.1          | 1.0           | 0.97          | 0.88          | 1.0         | 10    |
| Dichlorodifluoromethane       | 3.4            | 2.7          | 3.2           | 3.3           | 3.5           | 3.2         | 9.6   |
| 1,1-Dichloroethane            | 2.8            | 2.4          | 2.8           | 2.9           | 3.0           | 2.8         | 7.9   |
| 1,2-Dichloroethane            | 2.3            | 1.9          | 2.3           | 2.3           | 2.5           | 2.3         | 8.4   |
| 1,1-Dichloroethene            | 2.3            | 2.0          | 2.4           | 2.5           | 2.5           | 2.3         | 8.6   |
| 1,2-Dichloroethene (trans)    | 2.0            | 1.8          | 2.2           | 2.3           | 2.4           | 2.1         | 10    |
| 1,2-Dichloroethene (trans)    | 1.9            | 1.8          | 2.1           | 2.2           | 2.3           | 2.1         | 11    |
| 1,2-Dichloropropane           | 0.52           | 0.42         | 0.45          | 0.45          | 0.45          | 0.46        | 8.1   |
| 1,3-Dichloropropene (cis)     | 0.62           | 0.56         | 0.64          | 0.66          | 0.65          | 0.62        | 6.2   |
| 1,3-Dichloropropene (trans)   | 0.63           | 0.57         | 0.66          | 0.68          | 0.69          | 0.65        | 7.8   |
| 1,2-Dichlorotetrafluoroethane | 4.1            | 3.3          | 3.5           | 3.4           | 3.3           | 3.5         | 9.5   |
| 1,4-Dioxane                   | 0.18           | 0.20         | 0.22          | 0.22          | 0.22          | 0.21        | 7.7   |
| Ethanol                       | 0.84           | 1.0          | 0.71          | 0.69          | 0.68          | 0.79        | 19    |
| Ethylbenzene                  | 2.2            | 2.1          | 1.9           | 1.9           | 1.7           | 2.0         | 9.7   |
| 4-Ethyltoluene                | 2.0            | 2.0          | 1.9           | 1.9           | 1.7           | 1.9         | 6.7   |
| n-Heptane                     | 0.69           | 0.65         | 0.62          | 0.62          | 0.62          | 0.64        | 4.4   |
| 1,3-Hexachlorobutadiene       | 0.76           | 0.61         | 0.53          | 0.46          | 0.42          | 0.55        | 24    |

\*% 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: 7/25/2018  
Instrument: AA

Method ID: 0725.M

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA7971BFB]             | 07/25/2018 08:35                       |
| 40 PPBV STD [AA7972STD01]   | 07/25/2018 09:55                       |
| 20 PPBV STD [AA7973STD02]   | 07/25/2018 10:29                       |
| 10 PPBV STD [AA7974STD03]   | 07/25/2018 11:02                       |
| 2 PPBV STD [AA7975STD04]    | 07/25/2018 12:18                       |
| 0.2 PPBV STD [AA7976STD05]  | 07/25/2018 13:42                       |
| 10 PPBV ICVSS [AA7977ICVSS] | 07/25/2018 15:05                       |

| RParameter                            | RRF<br>0.2ppbv | RRF<br>2ppbv | RRF<br>10ppbv | RRF<br>20ppbv | RRF<br>40ppbv | Avg<br>ppbv | % RSD |
|---------------------------------------|----------------|--------------|---------------|---------------|---------------|-------------|-------|
| n-Hexane                              | 2.5            | 2.2          | 2.4           | 2.5           | 2.6           | 2.4         | 6.3   |
| Isopropanol                           | 2.4            | 2.3          | 2.5           | 2.6           | 2.7           | 2.5         | 6.6   |
| Methylene chloride                    | 2.6            | 1.6          | 1.8           | 1.8           | 1.9           | 1.9         | 21    |
| Methyl ethyl ketone                   | 2.9            | 2.3          | 2.8           | 2.9           | 3.1           | 2.8         | 11    |
| Methyl isobutyl ketone                | 0.91           | 0.85         | 0.83          | 0.83          | 0.82          | 0.85        | 4.6   |
| Methyl methacrylate                   | 0.52           | 0.43         | 0.47          | 0.48          | 0.48          | 0.48        | 6.3   |
| Methyl n-butyl ketone                 | 0.83           | 0.74         | 0.79          | 0.80          | 0.81          | 0.80        | 4.1   |
| Methyl tert-butyl ether               | 4.1            | 3.8          | 4.0           | 4.1           | 4.2           | 4.0         | 3.3   |
| Naphthalene                           | 0.25           | 0.24         | 0.27          | 0.26          | 0.23          | 0.25        | 5.6   |
| Propene                               | 0.66           | 0.81         | 0.91          | 0.92          | 0.97          | 0.85        | 15    |
| Styrene                               | 1.0            | 1.1          | 1.1           | 1.1           | 1.0           | 1.1         | 2.4   |
| Tert-butyl alcohol                    | 3.3            | 2.8          | 3.2           | 3.3           | 3.4           | 3.2         | 7.1   |
| 1,1,2,2-Tetrachloroethane             | 1.5            | 1.3          | 1.2           | 1.2           | 1.1           | 1.2         | 13    |
| Tetrachloroethene                     | 0.55           | 0.46         | 0.44          | 0.43          | 0.42          | 0.46        | 11    |
| Tetrahydrofuran                       | 1.4            | 1.2          | 1.4           | 1.5           | 1.6           | 1.4         | 11    |
| Toluene                               | 1.4            | 1.2          | 1.2           | 1.2           | 1.2           | 1.3         | 5.2   |
| 1,2,4-Trichlorobenzene                | 0.95           | 0.77         | 0.75          | 0.70          | 0.62          | 0.76        | 16    |
| 1,1,1-Trichloroethane                 | 3.2            | 2.8          | 2.9           | 2.9           | 3.0           | 3.0         | 4.9   |
| 1,1,2-Trichloroethane                 | 0.49           | 0.42         | 0.43          | 0.43          | 0.43          | 0.44        | 6.3   |
| Trichloroethene                       | 0.42           | 0.33         | 0.37          | 0.36          | 0.35          | 0.36        | 9.3   |
| Trichlorofluoromethane                | 3.7            | 3.1          | 3.4           | 3.4           | 3.5           | 3.4         | 6.2   |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 3.2            | 2.8          | 2.7           | 2.6           | 2.7           | 2.8         | 8.1   |
| 1,2,4-Trimethylbenzene                | 1.7            | 1.8          | 1.8           | 1.7           | 1.6           | 1.7         | 5.7   |
| 1,3,5-Trimethylbenzene                | 1.9            | 1.8          | 1.8           | 1.7           | 1.5           | 1.7         | 8.2   |
| 2,2,4-Trimethylpentane                | 1.8            | 1.7          | 1.9           | 1.9           | 1.9           | 1.8         | 3.9   |
| Vinyl bromide                         | 0.96           | 1.0          | 1.2           | 1.3           | 1.3           | 1.2         | 14    |
| Vinyl chloride                        | 1.4            | 1.2          | 1.5           | 1.5           | 1.6           | 1.4         | 9.1   |
| Xylenes (m&p)                         | 1.7            | 1.6          | 1.6           | 1.4           | 1.3           | 1.5         | 10    |
| Xylenes (o)                           | 1.7            | 1.7          | 1.5           | 1.5           | 1.3           | 1.6         | 10    |

\*% 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 : 0725.M  
 Title : TO-15 on the Agilent 7890A / 5975C  
 Last Update : Wed Jul 25 14:15:57 2018  
 Response Via : Initial Calibration

## Calibration Files

0.2 =aa7976std05.D 2 =aa7975std04.D 10 =aa7974std03.D 20 =aa7973std02.D 40 =aa7972std01.D

|       | Compound              | 0.2            | 2     | 10    | 20    | 40    | Avg   | %RSD  |
|-------|-----------------------|----------------|-------|-------|-------|-------|-------|-------|
| 1) I  | Bromochloromethane... | -----ISTD----- |       |       |       |       |       |       |
| 2) T  | Propene               | 0.658          | 0.808 | 0.908 | 0.923 | 0.972 | 0.854 | 14.62 |
| 3) T  | Dichlorodifluoro...   | 3.407          | 2.691 | 3.222 | 3.317 | 3.462 | 3.220 | 9.61  |
| 4) T  | Chloromethane         | 0.440          | 0.377 | 0.411 | 0.411 | 0.419 | 0.411 | 5.46  |
| 5) T  | 1,2-Dichlorotetr...   | 4.099          | 3.300 | 3.466 | 3.384 | 3.304 | 3.511 | 9.58  |
| 6) T  | Vinyl chloride        | 1.396          | 1.218 | 1.476 | 1.496 | 1.557 | 1.428 | 9.18  |
| 7) T  | 1,3-Butadiene         | 1.088          | 1.036 | 1.201 | 1.209 | 1.234 | 1.153 | 7.50  |
| 8) T  | n-Butane              | 2.520          | 2.013 | 2.174 | 2.181 | 2.231 | 2.224 | 8.31  |
| 9) T  | Bromomethane          | 0.960          | 0.905 | 1.085 | 1.073 | 1.058 | 1.016 | 7.82  |
| 10) T | Chloroethane          | 0.689          | 0.625 | 0.772 | 0.801 | 0.842 | 0.746 | 11.76 |
| 11) T | Ethanol               | 0.835          | 1.029 | 0.705 | 0.685 | 0.683 | 0.787 | 18.92 |
| 12) T | Vinyl bromide         | 0.964          | 1.009 | 1.229 | 1.257 | 1.315 | 1.155 | 13.63 |
| 13) T | Acrolein              | 0.348          | 0.443 | 0.537 | 0.552 | 0.582 | 0.493 | 19.44 |
| 14) T | Acetone               | 0.732          | 0.639 | 0.779 | 0.815 | 0.842 | 0.762 | 10.50 |
| 15) T | Trichlorofluorom...   | 3.732          | 3.142 | 3.400 | 3.411 | 3.519 | 3.441 | 6.22  |
| 16) T | Isopropanol           | 2.370          | 2.258 | 2.541 | 2.592 | 2.655 | 2.483 | 6.63  |
| 17) T | n-Pentane             | 2.781          | 2.129 | 2.470 | 2.523 | 2.629 | 2.506 | 9.66  |
| 18) T | 1,1-Dichloroethene    | 2.280          | 2.017 | 2.424 | 2.454 | 2.529 | 2.341 | 8.64  |
| 19) T | Methylene chloride    | 2.621          | 1.573 | 1.757 | 1.778 | 1.854 | 1.917 | 21.24 |
| 20) T | Tert-butyl alcohol    | 3.268          | 2.827 | 3.151 | 3.263 | 3.444 | 3.191 | 7.17  |
| 21) T | Allyl chloride        | 0.610          | 0.524 | 0.666 | 0.679 | 0.675 | 0.631 | 10.40 |
| 22) T | 1,1,2-Trichloro-...   | 3.181          | 2.816 | 2.655 | 2.636 | 2.678 | 2.794 | 8.17  |
| 23) T | Carbon disulfide      | 3.749          | 3.412 | 4.135 | 4.175 | 4.293 | 3.953 | 9.22  |
| 24) T | 1,2-Dichloroethe...   | 2.027          | 1.800 | 2.211 | 2.263 | 2.364 | 2.133 | 10.43 |
| 25) T | 1,1-Dichloroethane    | 2.792          | 2.391 | 2.810 | 2.865 | 2.961 | 2.764 | 7.91  |
| 26) T | Methyl tert-buty...   | 4.058          | 3.814 | 4.005 | 4.060 | 4.179 | 4.023 | 3.30  |
| 27) T | Methyl ethyl ketone   | 2.891          | 2.334 | 2.803 | 2.942 | 3.134 | 2.821 | 10.55 |
| 28) T | 1,2-Dichloroethe...   | 1.920          | 1.768 | 2.144 | 2.200 | 2.298 | 2.066 | 10.50 |
| 29) T | Ethyl acetate         | 0.456          | 0.394 | 0.472 | 0.498 | 0.527 | 0.469 | 10.63 |
| 30) T | n-Hexane              | 2.459          | 2.176 | 2.401 | 2.474 | 2.596 | 2.421 | 6.39  |
| 31) T | Chloroform            | 3.035          | 2.533 | 3.036 | 3.065 | 3.174 | 2.969 | 8.43  |
| 32) T | Tetrahydrofuran       | 1.411          | 1.174 | 1.445 | 1.506 | 1.605 | 1.428 | 11.20 |
| 33) T | 1,2-Dichloroethane    | 2.326          | 1.949 | 2.281 | 2.338 | 2.463 | 2.271 | 8.48  |
| 34) T | 1,1,1-Trichloroe...   | 3.160          | 2.787 | 2.883 | 2.916 | 3.046 | 2.959 | 4.93  |
| 35) T | Benzene               | 4.366          | 3.921 | 4.452 | 4.604 | 4.801 | 4.429 | 7.41  |
| 36) T | Carbon tetrachlo...   | 2.964          | 2.607 | 2.719 | 2.744 | 2.866 | 2.780 | 4.97  |
| 37) T | Cyclohexane           | 2.519          | 2.395 | 2.517 | 2.531 | 2.652 | 2.523 | 3.61  |
| 38) I | 1,4-Difluorobenzen... | -----ISTD----- |       |       |       |       |       |       |
| 39) T | 1,2-Dichloropropane   | 0.518          | 0.419 | 0.445 | 0.450 | 0.448 | 0.456 | 8.10  |
| 40) T | Bromodichloromet...   | 0.762          | 0.681 | 0.757 | 0.757 | 0.745 | 0.740 | 4.55  |
| 41) T | 2,2,4-Trimethylp...   | 1.841          | 1.721 | 1.903 | 1.886 | 1.858 | 1.841 | 3.90  |
| 42) T | Trichloroethene       | 0.420          | 0.329 | 0.366 | 0.356 | 0.347 | 0.364 | 9.37  |
| 43) T | 1,4-Dioxane           | 0.184          | 0.196 | 0.216 | 0.222 | 0.217 | 0.207 | 7.79  |
| 44) T | Methyl methacrylate   | 0.518          | 0.434 | 0.468 | 0.476 | 0.484 | 0.476 | 6.33  |
| 45) T | n-Heptane             | 0.686          | 0.647 | 0.623 | 0.620 | 0.621 | 0.639 | 4.43  |
| 46) T | cis-1,3-Dichloro...   | 0.619          | 0.558 | 0.640 | 0.655 | 0.648 | 0.624 | 6.28  |
| 47) T | Methyl isobutyl ...   | 0.913          | 0.849 | 0.833 | 0.826 | 0.815 | 0.847 | 4.60  |
| 48) T | trans-1,3-Dichlo...   | 0.625          | 0.567 | 0.660 | 0.683 | 0.691 | 0.645 | 7.82  |
| 49) T | 1,1,2-Trichloroe...   | 0.488          | 0.422 | 0.427 | 0.430 | 0.426 | 0.438 | 6.31  |
| 50) T | Toluene               | 1.372          | 1.209 | 1.235 | 1.235 | 1.223 | 1.255 | 5.29  |
| 51) T | Methyl n-butyl k...   | 0.827          | 0.743 | 0.788 | 0.804 | 0.814 | 0.795 | 4.10  |
| 52) T | Dibromochloromet...   | 0.637          | 0.593 | 0.618 | 0.624 | 0.615 | 0.618 | 2.60  |
| 53) T | 1,2-Dibromoethane     | 0.745          | 0.632 | 0.656 | 0.667 | 0.665 | 0.673 | 6.36  |
| 54) T | Tetrachloroethene     | 0.548          | 0.455 | 0.439 | 0.433 | 0.417 | 0.459 | 11.32 |
| 55) I | d-5 Chlorobenzene ... | -----ISTD----- |       |       |       |       |       |       |
| 56) T | Chlorobenzene         | 1.267          | 1.089 | 1.063 | 1.039 | 0.982 | 1.088 | 9.90  |
| 57) T | Ethylbenzene          | 2.243          | 2.071 | 1.939 | 1.866 | 1.742 | 1.972 | 9.77  |
| 58) T | Xylenes (m&p)         | 1.712          | 1.608 | 1.590 | 1.424 | 1.316 | 1.530 | 10.33 |
| 59) T | Bromoform             | 0.624          | 0.616 | 0.621 | 0.601 | 0.558 | 0.604 | 4.46  |
| 60) T | Styrene               | 1.043          | 1.063 | 1.094 | 1.081 | 1.030 | 1.062 | 2.49  |

AL SDG #E18-06141

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

Method File : 0725.M

|     |   |                     |       |       |       |       |       |       |       |
|-----|---|---------------------|-------|-------|-------|-------|-------|-------|-------|
| 61) | T | Xylene (o)          | 1.742 | 1.679 | 1.546 | 1.462 | 1.340 | 1.554 | 10.45 |
| 62) | T | 1,1,2,2-Tetrachl... | 1.460 | 1.346 | 1.212 | 1.153 | 1.053 | 1.245 | 12.90 |
| 63) | T | n-Nonane            | 1.295 | 1.298 | 1.166 | 1.100 | 1.023 | 1.176 | 10.27 |
| 64) | S | Bromofluorobenze... | 0.921 | 0.917 | 0.909 | 0.906 | 0.906 | 0.912 | 0.73  |
| 65) | T | Cumene              | 2.160 | 2.099 | 1.974 | 1.876 | 1.730 | 1.968 | 8.78  |
| 66) | T | 2-Chlorotoluene     | 1.818 | 1.696 | 1.614 | 1.552 | 1.463 | 1.629 | 8.35  |
| 67) | T | n-Propyl benzene    | 2.859 | 2.929 | 2.711 | 2.547 | 2.282 | 2.666 | 9.75  |
| 68) | T | 4-Ethyltoluene      | 1.958 | 2.029 | 1.933 | 1.850 | 1.695 | 1.893 | 6.75  |
| 69) | T | 1,3,5-Trimethylb... | 1.881 | 1.846 | 1.760 | 1.665 | 1.526 | 1.736 | 8.29  |
| 70) | T | 1,2,4-Trimethylb... | 1.722 | 1.833 | 1.764 | 1.692 | 1.567 | 1.715 | 5.75  |
| 71) | T | Benzyl chloride     | 1.262 | 1.566 | 1.730 | 1.737 | 1.626 | 1.584 | 12.26 |
| 72) | T | 1,3-Dichlorobenzene | 1.176 | 1.056 | 0.975 | 0.917 | 0.815 | 0.987 | 13.88 |
| 73) | T | 1,4-Dichlorobenzene | 1.155 | 1.076 | 1.013 | 0.970 | 0.884 | 1.020 | 10.12 |
| 74) | T | 1,2-Dichlorobenzene | 1.169 | 1.048 | 0.986 | 0.945 | 0.870 | 1.004 | 11.26 |
| 75) | T | 1,2,4-Trichlorob... | 0.953 | 0.769 | 0.754 | 0.703 | 0.616 | 0.759 | 16.32 |
| 76) | T | Naphthalene         | 0.252 | 0.238 | 0.265 | 0.264 | 0.234 | 0.251 | 5.61  |
| 77) | T | 1,3-Hexachlorobu... | 0.758 | 0.608 | 0.526 | 0.461 | 0.416 | 0.554 | 24.44 |

-----  
(#) = Out of Range

Data Path : C:\DATA\07-25-18\  
 Data File : aa7972std01.D  
 Acq On : 25 Jul 2018 9:55 am  
 Operator : jls  
 Sample : 40 ppbv Std  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 25 11:49:13 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 11:48:47 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.702  | 130  | 459428   | 10.00 | ppbV   | 0.01     |
| 38) 1,4-Difluorobenzene (IS)  | 9.743  | 114  | 2108198  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.058 | 117  | 1916771  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.251 | 95   | 1737147  | 9.98  | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       | Qvalue |          |
| 2) Propene                    | 3.477  | 41   | 1965032  | 46.71 | ppbV # | 79       |
| 3) Dichlorodifluoromethane    | 3.531  | 85   | 6999220  | 46.59 | ppbV   | 97       |
| 4) Chloromethane              | 3.734  | 52   | 846080   | 44.82 | ppbV # | 64       |
| 5) 1,2-Dichlorotetrafluor...  | 3.737  | 85   | 6071502  | 38.59 | ppbV   | 90       |
| 6) Vinyl chloride             | 3.859  | 62   | 3148204  | 46.13 | ppbV   | 87       |
| 7) 1,3-Butadiene              | 3.956  | 54   | 2494533  | 45.07 | ppbV # | 76       |
| 8) n-Butane                   | 4.001  | 43   | 4509713  | 45.08 | ppbV   | 98       |
| 9) Bromomethane               | 4.203  | 94   | 1924371  | 38.82 | ppbV   | 100      |
| 10) Chloroethane              | 4.342  | 64   | 1546620  | 42.80 | ppbV   | 92       |
| 11) Ethanol                   | 4.377  | 45   | 1180335  | 36.98 | ppbV   | 97       |
| 12) Vinyl bromide             | 4.644  | 106  | 2658643  | 46.55 | ppbV   | 97       |
| 13) Acrolein                  | 4.708  | 56   | 1283660  | 51.33 | ppbV   | 98       |
| 14) Acetone                   | 4.808  | 58   | 1702732  | 46.49 | ppbV   | 71       |
| 15) Trichlorofluoromethane    | 4.985  | 101  | 7112735  | 45.46 | ppbV   | 99       |
| 16) Isopropanol               | 4.985  | 45   | 4879981  | 41.38 | ppbV   | 93       |
| 17) n-Pentane                 | 5.287  | 43   | 5313474  | 46.33 | ppbV   | 92       |
| 18) 1,1-Dichloroethene        | 5.544  | 61   | 5112666  | 45.63 | ppbV   | 99       |
| 19) Methylene chloride        | 5.660  | 49   | 3746902  | 46.14 | ppbV # | 78       |
| 20) Tert-butyl alcohol        | 5.509  | 59   | 7595366  | 51.55 | ppbV   | 100      |
| 21) Allyl chloride            | 5.750  | 76   | 1363505  | 44.15 | ppbV   | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.882  | 101  | 5414219  | 44.54 | ppbV   | 88       |
| 23) Carbon disulfide          | 5.946  | 76   | 8677369  | 45.46 | ppbV # | 90       |
| 24) 1,2-Dichloroethene (tr... | 6.512  | 61   | 4778182  | 46.49 | ppbV   | 90       |
| 25) 1,1-Dichloroethane        | 6.699  | 63   | 5986100  | 45.92 | ppbV   | 99       |
| 26) Methyl tert-butyl ether   | 6.728  | 73   | 8447001  | 45.60 | ppbV   | 100      |
| 27) Methyl ethyl ketone       | 7.039  | 43   | 6334927  | 48.00 | ppbV # | 83       |
| 28) 1,2-Dichloroethene (cis)  | 7.518  | 61   | 4645622  | 46.56 | ppbV   | 89       |
| 29) Ethyl acetate             | 7.708  | 45   | 1065569  | 47.82 | ppbV   | 100      |
| 30) n-Hexane                  | 7.737  | 57   | 5248464  | 46.87 | ppbV # | 80       |
| 31) Chloroform                | 7.814  | 83   | 6415960  | 45.78 | ppbV   | 99       |
| 32) Tetrahydrofuran           | 8.197  | 42   | 3538735  | 52.19 | ppbV   | 95       |
| 33) 1,2-Dichloroethane        | 8.580  | 62   | 4979239  | 46.93 | ppbV   | 99       |
| 34) 1,1,1-Trichloroethane     | 8.856  | 97   | 6158415  | 46.23 | ppbV   | 100      |
| 35) Benzene                   | 9.354  | 78   | 9704796  | 46.65 | ppbV # | 89       |
| 36) Carbon tetrachloride      | 9.518  | 117  | 5792951  | 46.17 | ppbV   | 100      |
| 37) Cyclohexane               | 9.663  | 56   | 5361381  | 46.24 | ppbV   | 98       |
| 39) 1,2-Dichloropropane       | 10.258 | 63   | 4158869  | 44.11 | ppbV   | 99       |
| 40) Bromodichloromethane      | 10.483 | 83   | 6906930  | 43.29 | ppbV   | 98       |
| 41) 2,2,4-Trimethylpentane    | 10.592 | 57   | 17233646 | 43.16 | ppbV   | 99       |
| 42) Trichloroethene           | 10.538 | 130  | 3222063  | 42.33 | ppbV   | 99       |
| 43) 1,4-Dioxane               | 10.496 | 88   | 1833462  | 39.70 | ppbV   | 82       |
| 44) Methyl methacrylate       | 10.753 | 41   | 4490218  | 45.15 | ppbV # | 70       |
| 45) n-Heptane                 | 10.888 | 43   | 5759111  | 43.94 | ppbV # | 76       |
| 46) cis-1,3-Dichloropropene   | 11.544 | 75   | 6011272  | 44.02 | ppbV   | 99       |
| 47) Methyl isobutyl ketone    | 11.567 | 43   | 7556480  | 43.21 | ppbV # | 83       |
| 48) trans-1,3-Dichloropropene | 12.181 | 75   | 5825154  | 41.15 | ppbV # | 77       |
| 49) 1,1,2-Trichloroethane     | 12.393 | 97   | 3947997  | 43.72 | ppbV   | 92       |
| 50) Toluene                   | 12.747 | 91   | 11346790 | 43.58 | ppbV   | 99       |
| 51) Methyl n-butyl ketone     | 13.062 | 43   | 7546602  | 44.97 | ppbV # | 80       |

AL SDG #E18-06141

Data Path : C:\DATA\07-25-18\  
 Data File : aa7972std01.D  
 Acq On : 25 Jul 2018 9:55 am  
 Operator : jls  
 Sample : 40 ppbv Std  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

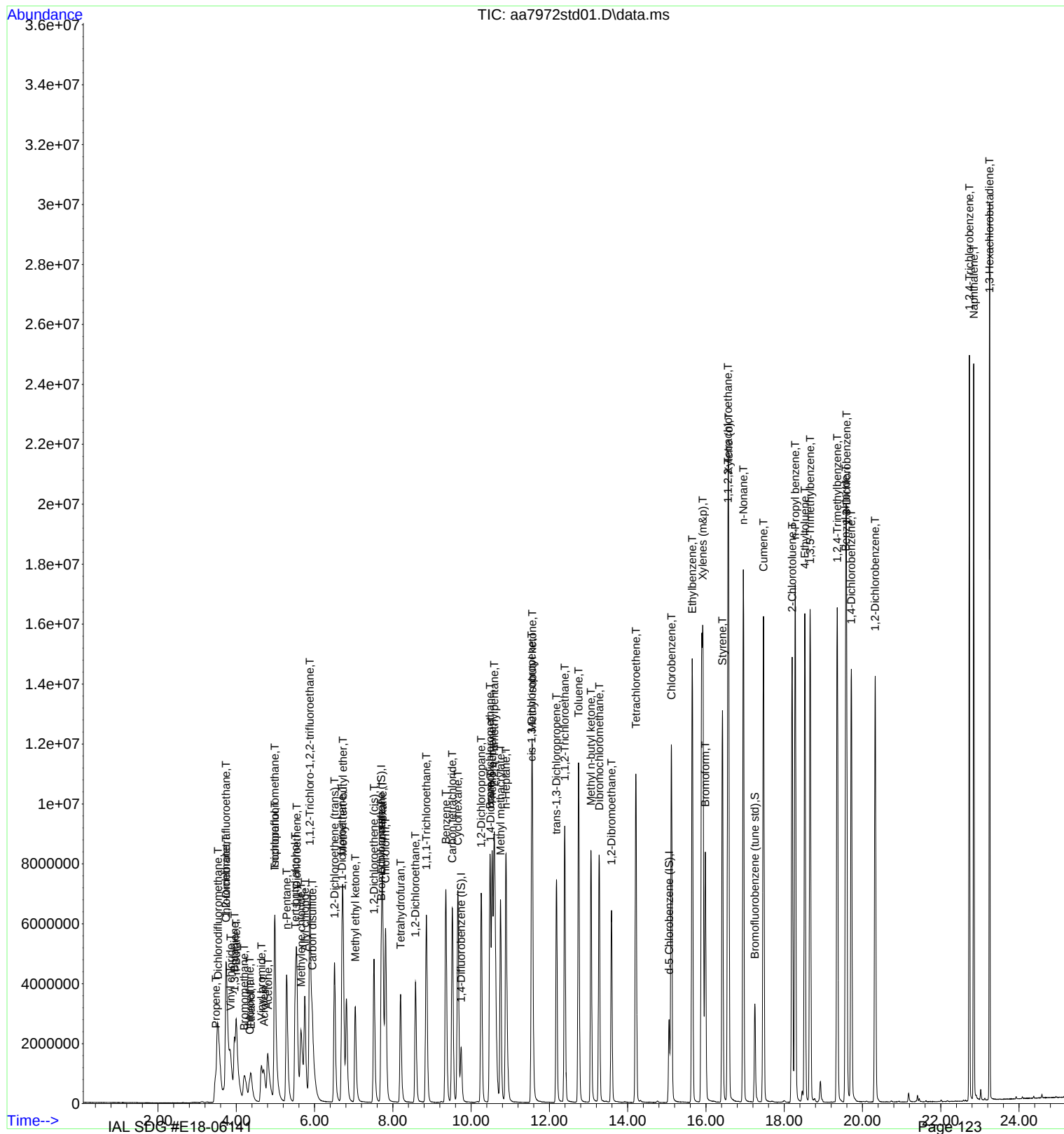
Quant Time: Jul 25 11:49:13 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 11:48:47 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| 52) Dibromochloromethane      | 13.274 | 129  | 5704164  | 43.57 | ppbV   | 100      |
| 53) 1,2-Dibromoethane         | 13.586 | 107  | 6166796  | 44.24 | ppbV   | 96       |
| 54) Tetrachloroethene         | 14.210 | 166  | 3866986  | 42.04 | ppbV   | 98       |
| 56) Chlorobenzene             | 15.116 | 112  | 8282237  | 41.11 | ppbV   | 95       |
| 57) Ethylbenzene              | 15.650 | 91   | 14690673 | 40.29 | ppbV   | 100      |
| 58) Xylenes (m&p)             | 15.917 | 91   | 22193499 | 76.81 | ppbV   | 99       |
| 59) Bromoform                 | 15.984 | 173  | 4710263  | 40.23 | ppbV   | 98       |
| 60) Styrene                   | 16.422 | 104  | 8683428  | 41.65 | ppbV   | 97       |
| 61) Xylene (o)                | 16.579 | 91   | 11299455 | 39.20 | ppbV   | 100      |
| 62) 1,1,2,2-Tetrachloroethane | 16.560 | 83   | 8878843  | 39.18 | ppbV   | 98       |
| 63) n-Nonane                  | 16.955 | 43   | 8627836  | 39.73 | ppbV # | 75       |
| 65) Cumene                    | 17.470 | 105  | 14588254 | 39.54 | ppbV   | 98       |
| 66) 2-Chlorotoluene           | 18.203 | 91   | 12340907 | 40.68 | ppbV   | 97       |
| 67) n-Propyl benzene          | 18.280 | 91   | 19245579 | 38.19 | ppbV   | 98       |
| 68) 4-Ethyltoluene            | 18.528 | 105  | 14294954 | 39.43 | ppbV   | 98       |
| 69) 1,3,5-Trimethylbenzene    | 18.663 | 105  | 12872347 | 39.21 | ppbV   | 99       |
| 70) 1,2,4-Trimethylbenzene    | 19.354 | 105  | 13212625 | 39.90 | ppbV   | 100      |
| 71) Benzyl chloride           | 19.569 | 91   | 12469556 | 37.52 | ppbV   | 97       |
| 72) 1,3-Dichlorobenzene       | 19.592 | 146  | 6869883  | 37.90 | ppbV   | 99       |
| 73) 1,4-Dichlorobenzene       | 19.714 | 146  | 7454051  | 39.21 | ppbV   | 98       |
| 74) 1,2-Dichlorobenzene       | 20.325 | 146  | 7337521  | 39.65 | ppbV   | 99       |
| 75) 1,2,4-Trichlorobenzene    | 22.730 | 180  | 5665233  | 40.58 | ppbV   | 100      |
| 76) Naphthalene               | 22.843 | 127  | 2155413  | 42.56 | ppbV   | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.248 | 225  | 3506387  | 37.07 | ppbV   | 95       |

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

Data Path : C:\DATA\07-25-18\  
 Data File : aa7972std01.D  
 Acq On : 25 Jul 2018 9:55 am  
 Operator : jls  
 Sample : 40 ppbv Std  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 25 11:49:13 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 11:48:47 2018  
 Response via : Initial Calibration



Data Path : C:\DATA\07-25-18\  
 Data File : aa7973std02.D  
 Acq On : 25 Jul 2018 10:29 am  
 Operator : jls  
 Sample : 20 ppbv Std  
 Misc : CC483586  
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 25 11:48:30 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 11:48:15 2018  
 Response via : Initial Calibration

| Compound                     | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|------------------------------|--------|------|----------|-------|-------|----------|
| Internal Standards           |        |      |          |       |       |          |
| 1) Bromochloromethane (IS)   | 7.695  | 130  | 486694   | 10.00 | ppbV  | 0.00     |
| 38) 1,4-Difluorobenzene (IS) | 9.744  | 114  | 2128550  | 10.00 | ppbV  | 0.00     |
| 55) d-5 Chlorobenzene (IS)   | 15.058 | 117  | 1865915  | 10.00 | ppbV  | 0.00     |

|                               |        |    |         |      |      |      |
|-------------------------------|--------|----|---------|------|------|------|
| System Monitoring Compounds   |        |    |         |      |      |      |
| 64) Bromofluorobenzene (tu... | 17.251 | 95 | 1691328 | 9.97 | ppbV | 0.00 |

|                               |        |     |         |       |        |        |
|-------------------------------|--------|-----|---------|-------|--------|--------|
| Target Compounds              |        |     |         |       |        | Qvalue |
| 2) Propene                    | 3.470  | 41  | 988321  | 22.35 | ppbV # | 79     |
| 3) Dichlorodifluoromethane    | 3.522  | 85  | 3551951 | 22.65 | ppbV   | 97     |
| 4) Chloromethane              | 3.715  | 52  | 439853  | 21.99 | ppbV   | 87     |
| 5) 1,2-Dichlorotetrafluor...  | 3.731  | 85  | 3294031 | 19.53 | ppbV   | 93     |
| 6) Vinyl chloride             | 3.850  | 62  | 1601376 | 22.30 | ppbV   | 87     |
| 7) 1,3-Butadiene              | 3.950  | 54  | 1294497 | 22.15 | ppbV # | 76     |
| 8) n-Butane                   | 3.995  | 43  | 2335614 | 22.08 | ppbV   | 98     |
| 9) Bromomethane               | 4.197  | 94  | 1033740 | 19.58 | ppbV   | 99     |
| 10) Chloroethane              | 4.342  | 64  | 779909  | 20.76 | ppbV   | 91     |
| 11) Ethanol                   | 4.380  | 45  | 626678  | 18.27 | ppbV   | 98     |
| 12) Vinyl bromide             | 4.638  | 106 | 1345719 | 22.49 | ppbV   | 96     |
| 13) Acrolein                  | 4.702  | 56  | 644716  | 24.68 | ppbV   | 97     |
| 14) Acetone                   | 4.802  | 58  | 872734  | 23.01 | ppbV # | 68     |
| 15) Trichlorofluoromethane    | 4.982  | 101 | 3652093 | 22.07 | ppbV   | 100    |
| 16) Isopropanol               | 4.975  | 45  | 2523205 | 20.40 | ppbV   | 94     |
| 17) n-Pentane                 | 5.287  | 43  | 2701076 | 22.47 | ppbV   | 91     |
| 18) 1,1-Dichloroethene        | 5.538  | 61  | 2627511 | 22.28 | ppbV   | 98     |
| 19) Methylene chloride        | 5.657  | 49  | 1904128 | 22.27 | ppbV # | 78     |
| 20) Tert-butyl alcohol        | 5.506  | 59  | 3811059 | 24.85 | ppbV   | 100    |
| 21) Allyl chloride            | 5.747  | 76  | 726511  | 22.42 | ppbV   | 100    |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.879  | 101 | 2822496 | 21.84 | ppbV   | 89     |
| 23) Carbon disulfide          | 5.933  | 76  | 4469998 | 22.21 | ppbV # | 89     |
| 24) 1,2-Dichloroethene (tr... | 6.506  | 61  | 2422888 | 22.51 | ppbV   | 90     |
| 25) 1,1-Dichloroethane        | 6.695  | 63  | 3067293 | 22.43 | ppbV   | 99     |
| 26) Methyl tert-butyl ether   | 6.724  | 73  | 4346736 | 22.30 | ppbV   | 100    |
| 27) Methyl ethyl ketone       | 7.039  | 43  | 3149923 | 23.09 | ppbV # | 83     |
| 28) 1,2-Dichloroethene (cis)  | 7.515  | 61  | 2355895 | 22.58 | ppbV   | 89     |
| 29) Ethyl acetate             | 7.705  | 45  | 533489  | 23.24 | ppbV   | 100    |
| 30) n-Hexane                  | 7.737  | 57  | 2649428 | 22.68 | ppbV # | 80     |
| 31) Chloroform                | 7.811  | 83  | 3281622 | 22.21 | ppbV   | 99     |
| 32) Tetrahydrofuran           | 8.194  | 42  | 1759578 | 25.02 | ppbV   | 94     |
| 33) 1,2-Dichloroethane        | 8.576  | 62  | 2503054 | 22.54 | ppbV   | 99     |
| 34) 1,1,1-Trichloroethane     | 8.856  | 97  | 3122551 | 22.25 | ppbV   | 99     |
| 35) Benzene                   | 9.351  | 78  | 4929159 | 22.75 | ppbV # | 89     |
| 36) Carbon tetrachloride      | 9.518  | 117 | 2937632 | 22.20 | ppbV   | 100    |
| 37) Cyclohexane               | 9.663  | 56  | 2710024 | 22.12 | ppbV   | 97     |
| 39) 1,2-Dichloropropane       | 10.258 | 63  | 2107013 | 22.26 | ppbV   | 99     |
| 40) Bromodichloromethane      | 10.480 | 83  | 3543384 | 22.00 | ppbV   | 98     |
| 41) 2,2,4-Trimethylpentane    | 10.592 | 57  | 8830251 | 21.80 | ppbV   | 98     |
| 42) Trichloroethene           | 10.535 | 130 | 1667714 | 21.40 | ppbV   | 100    |
| 43) 1,4-Dioxane               | 10.496 | 88  | 946441  | 20.60 | ppbV # | 80     |
| 44) Methyl methacrylate       | 10.750 | 41  | 2228132 | 22.39 | ppbV # | 70     |
| 45) n-Heptane                 | 10.888 | 43  | 2903562 | 21.89 | ppbV # | 76     |
| 46) cis-1,3-Dichloropropene   | 11.544 | 75  | 3067165 | 22.50 | ppbV   | 99     |
| 47) Methyl isobutyl ketone    | 11.567 | 43  | 3867016 | 21.80 | ppbV # | 85     |
| 48) trans-1,3-Dichloropropene | 12.181 | 75  | 2906551 | 20.68 | ppbV # | 76     |
| 49) 1,1,2-Trichloroethane     | 12.393 | 97  | 2013416 | 22.17 | ppbV   | 93     |
| 50) Toluene                   | 12.743 | 91  | 5782558 | 22.00 | ppbV   | 98     |
| 51) Methyl n-butyl ketone     | 13.062 | 43  | 3763374 | 22.43 | ppbV # | 81     |

AL SDG #E18-06141

Data Path : C:\DATA\07-25-18\  
 Data File : aa7973std02.D  
 Acq On : 25 Jul 2018 10:29 am  
 Operator : jls  
 Sample : 20 ppbv Std  
 Misc : CC483586  
 ALS Vial : 3 Sample Multiplier: 1

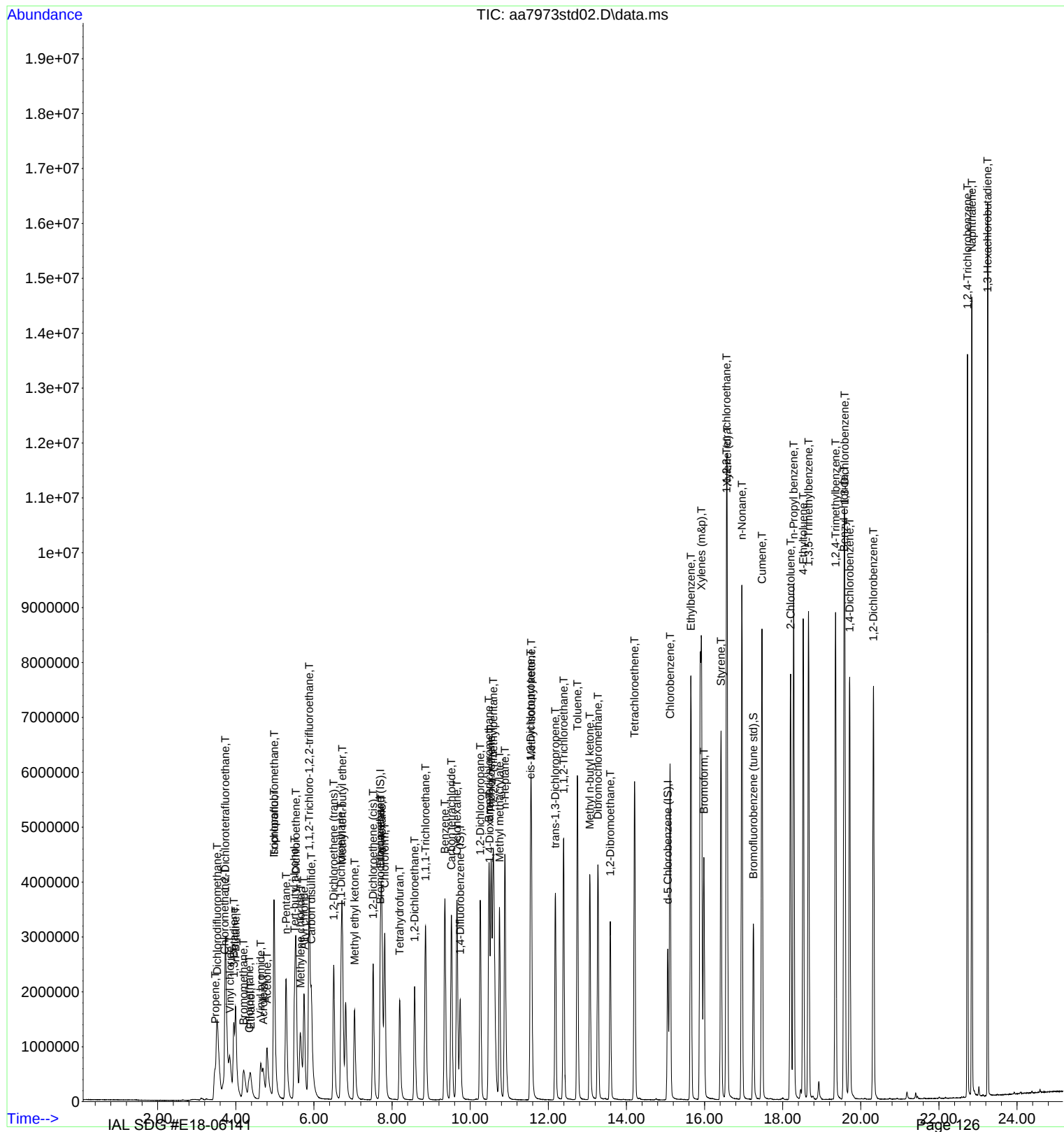
Quant Time: Jul 25 11:48:30 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 11:48:15 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| 52) Dibromochloromethane      | 13.271 | 129  | 2923392  | 22.24 | ppbV   | 99       |
| 53) 1,2-Dibromoethane         | 13.586 | 107  | 3121800  | 22.37 | ppbV   | 96       |
| 54) Tetrachloroethene         | 14.206 | 166  | 2029587  | 21.71 | ppbV   | 97       |
| 56) Chlorobenzene             | 15.116 | 112  | 4266769  | 21.52 | ppbV   | 94       |
| 57) Ethylbenzene              | 15.650 | 91   | 7658674  | 21.17 | ppbV   | 99       |
| 58) Xylenes (m&p)             | 15.917 | 91   | 11694300 | 39.41 | ppbV   | 100      |
| 59) Bromoform                 | 15.984 | 173  | 2467470  | 21.31 | ppbV   | 98       |
| 60) Styrene                   | 16.422 | 104  | 4438818  | 21.74 | ppbV   | 96       |
| 61) Xylene (o)                | 16.579 | 91   | 6000746  | 20.80 | ppbV   | 99       |
| 62) 1,1,2,2-Tetrachloroethane | 16.560 | 83   | 4734111  | 20.94 | ppbV   | 98       |
| 63) n-Nonane                  | 16.955 | 43   | 4515097  | 20.75 | ppbV # | 77       |
| 65) Cumene                    | 17.470 | 105  | 7699058  | 20.90 | ppbV   | 97       |
| 66) 2-Chlorotoluene           | 18.203 | 91   | 6371298  | 21.16 | ppbV   | 97       |
| 67) n-Propyl benzene          | 18.280 | 91   | 10455124 | 20.67 | ppbV   | 96       |
| 68) 4-Ethyltoluene            | 18.528 | 105  | 7595419  | 21.06 | ppbV   | 96       |
| 69) 1,3,5-Trimethylbenzene    | 18.663 | 105  | 6835220  | 20.81 | ppbV   | 99       |
| 70) 1,2,4-Trimethylbenzene    | 19.354 | 105  | 6944267  | 21.10 | ppbV   | 99       |
| 71) Benzyl chloride           | 19.570 | 91   | 6483719  | 20.08 | ppbV   | 97       |
| 72) 1,3-Dichlorobenzene       | 19.589 | 146  | 3762437  | 20.69 | ppbV   | 98       |
| 73) 1,4-Dichlorobenzene       | 19.714 | 146  | 3983041  | 21.07 | ppbV   | 98       |
| 74) 1,2-Dichlorobenzene       | 20.325 | 146  | 3878212  | 21.08 | ppbV   | 100      |
| 75) 1,2,4-Trichlorobenzene    | 22.730 | 180  | 3148298  | 22.38 | ppbV   | 99       |
| 76) Naphthalene               | 22.843 | 127  | 1181278  | 23.92 | ppbV   | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.248 | 225  | 1892848  | 19.29 | ppbV   | 96       |

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

Data Path : C:\DATA\07-25-18\  
 Data File : aa7973std02.D  
 Acq On : 25 Jul 2018 10:29 am  
 Operator : jls  
 Sample : 20 ppbv Std  
 Misc : CC483586  
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 25 11:48:30 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 11:48:15 2018  
 Response via : Initial Calibration



Data Path : C:\DATA\07-25-18\  
 Data File : aa7974std03.D  
 Acq On : 25 Jul 2018 11:02 am  
 Operator : jls  
 Sample : 10 ppbv Std  
 Misc : CC483586  
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 25 11:47:45 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 11:47:37 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.689  | 130  | 485778   | 10.00 | ppbV   | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.740  | 114  | 2080600  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.058 | 117  | 1771224  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.248 | 95   | 1610179  | 10.00 | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       | Qvalue |          |
| 2) Propene                    | 3.457  | 41   | 485401   | 11.00 | ppbV # | 80       |
| 3) Dichlorodifluoromethane    | 3.519  | 85   | 1721657  | 11.00 | ppbV   | 97       |
| 4) Chloromethane              | 3.692  | 52   | 219571   | 11.00 | ppbV # | 1        |
| 5) 1,2-Dichlorotetrafluor...  | 3.728  | 85   | 1683545  | 10.00 | ppbV   | 95       |
| 6) Vinyl chloride             | 3.846  | 62   | 788471   | 11.00 | ppbV   | 87       |
| 7) 1,3-Butadiene              | 3.943  | 54   | 641540   | 11.00 | ppbV # | 77       |
| 8) n-Butane                   | 3.991  | 43   | 1161584  | 11.00 | ppbV   | 97       |
| 9) Bromomethane               | 4.194  | 94   | 521785   | 9.90  | ppbV   | 99       |
| 10) Chloroethane              | 4.335  | 64   | 375017   | 10.00 | ppbV   | 93       |
| 11) Ethanol                   | 4.377  | 45   | 321790   | 9.40  | ppbV   | 100      |
| 12) Vinyl bromide             | 4.637  | 106  | 656891   | 11.00 | ppbV   | 97       |
| 13) Acrolein                  | 4.695  | 56   | 312853   | 12.00 | ppbV   | 96       |
| 14) Acetone                   | 4.795  | 58   | 416502   | 11.00 | ppbV   | 72       |
| 15) Trichlorofluoromethane    | 4.978  | 101  | 1816579  | 11.00 | ppbV   | 100      |
| 16) Isopropanol               | 4.975  | 45   | 1234391  | 10.00 | ppbV   | 93       |
| 17) n-Pentane                 | 5.284  | 43   | 1319811  | 11.00 | ppbV   | 92       |
| 18) 1,1-Dichloroethene        | 5.535  | 61   | 1295082  | 11.00 | ppbV   | 98       |
| 19) Methylene chloride        | 5.650  | 49   | 938843   | 11.00 | ppbV # | 78       |
| 20) Tert-butyl alcohol        | 5.502  | 59   | 1837100  | 12.00 | ppbV   | 100      |
| 21) Allyl chloride            | 5.744  | 76   | 355787   | 11.00 | ppbV   | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.879  | 101  | 1418961  | 11.00 | ppbV   | 89       |
| 23) Carbon disulfide          | 5.933  | 76   | 2209326  | 11.00 | ppbV # | 91       |
| 24) 1,2-Dichloroethene (tr... | 6.506  | 61   | 1181605  | 11.00 | ppbV   | 89       |
| 25) 1,1-Dichloroethane        | 6.692  | 63   | 1501637  | 11.00 | ppbV   | 99       |
| 26) Methyl tert-butyl ether   | 6.724  | 73   | 2140023  | 11.00 | ppbV   | 100      |
| 27) Methyl ethyl ketone       | 7.039  | 43   | 1497882  | 11.00 | ppbV # | 83       |
| 28) 1,2-Dichloroethene (cis)  | 7.515  | 61   | 1145414  | 11.00 | ppbV   | 90       |
| 29) Ethyl acetate             | 7.705  | 45   | 252052   | 11.00 | ppbV   | 100      |
| 30) n-Hexane                  | 7.734  | 57   | 1282758  | 11.00 | ppbV # | 81       |
| 31) Chloroform                | 7.808  | 83   | 1622409  | 11.00 | ppbV   | 98       |
| 32) Tetrahydrofuran           | 8.197  | 42   | 842429   | 12.00 | ppbV   | 95       |
| 33) 1,2-Dichloroethane        | 8.576  | 62   | 1219030  | 11.00 | ppbV   | 99       |
| 34) 1,1,1-Trichloroethane     | 8.853  | 97   | 1540529  | 11.00 | ppbV   | 99       |
| 35) Benzene                   | 9.348  | 78   | 2378901  | 11.00 | ppbV # | 89       |
| 36) Carbon tetrachloride      | 9.518  | 117  | 1452782  | 11.00 | ppbV   | 100      |
| 37) Cyclohexane               | 9.660  | 56   | 1344949  | 11.00 | ppbV   | 97       |
| 39) 1,2-Dichloropropane       | 10.258 | 63   | 1017552  | 11.00 | ppbV   | 99       |
| 40) Bromodichloromethane      | 10.480 | 83   | 1731985  | 11.00 | ppbV   | 98       |
| 41) 2,2,4-Trimethylpentane    | 10.595 | 57   | 4354544  | 11.00 | ppbV   | 98       |
| 42) Trichloroethene           | 10.538 | 130  | 837753   | 11.00 | ppbV   | 99       |
| 43) 1,4-Dioxane               | 10.499 | 88   | 449087   | 10.00 | ppbV   | 82       |
| 44) Methyl methacrylate       | 10.750 | 41   | 1070120  | 11.00 | ppbV # | 71       |
| 45) n-Heptane                 | 10.888 | 43   | 1426371  | 11.00 | ppbV # | 76       |
| 46) cis-1,3-Dichloropropene   | 11.547 | 75   | 1465634  | 11.00 | ppbV   | 99       |
| 47) Methyl isobutyl ketone    | 11.570 | 43   | 1906864  | 11.00 | ppbV # | 86       |
| 48) trans-1,3-Dichloropropene | 12.184 | 75   | 1373612  | 10.00 | ppbV # | 77       |
| 49) 1,1,2-Trichloroethane     | 12.393 | 97   | 976409   | 11.00 | ppbV   | 93       |
| 50) Toluene                   | 12.743 | 91   | 2826398  | 11.00 | ppbV   | 97       |
| 51) Methyl n-butyl ketone     | 13.065 | 43   | 1803996  | 11.00 | ppbV # | 83       |

AL SDG #E18-06141

Data Path : C:\DATA\07-25-18\  
 Data File : aa7974std03.D  
 Acq On : 25 Jul 2018 11:02 am  
 Operator : jls  
 Sample : 10 ppbv Std  
 Misc : CC483586  
 ALS Vial : 4 Sample Multiplier: 1

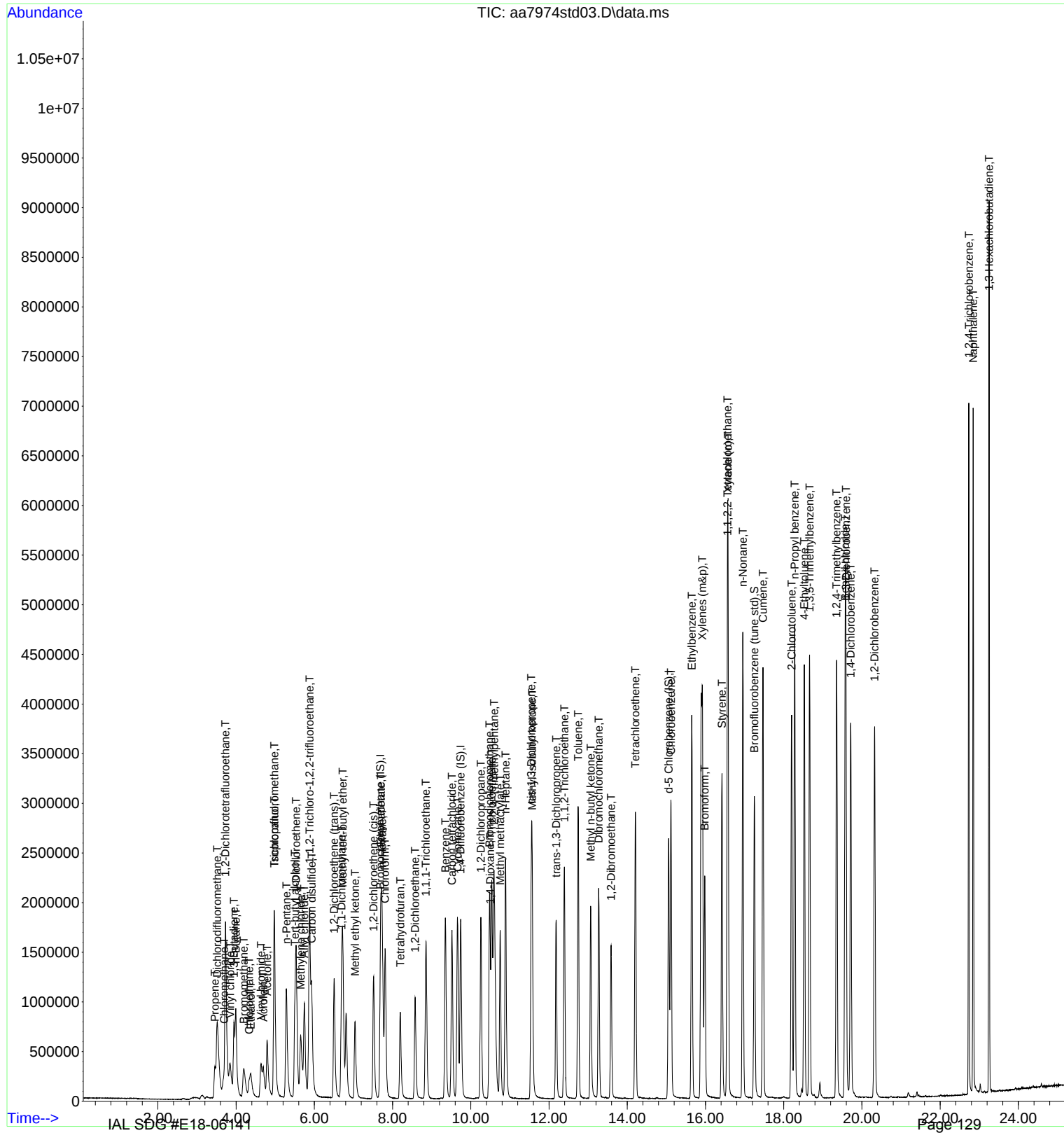
Quant Time: Jul 25 11:47:45 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 11:47:37 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| 52) Dibromochloromethane      | 13.271 | 129  | 1413643  | 11.00 | ppbV   | 99       |
| 53) 1,2-Dibromoethane         | 13.586 | 107  | 1500610  | 11.00 | ppbV   | 96       |
| 54) Tetrachloroethene         | 14.206 | 166  | 1005355  | 11.00 | ppbV   | 98       |
| 56) Chlorobenzene             | 15.116 | 112  | 2070449  | 11.00 | ppbV   | 93       |
| 57) Ethylbenzene              | 15.650 | 91   | 3778299  | 11.00 | ppbV   | 98       |
| 58) Xylenes (m&p)             | 15.917 | 91   | 6197500  | 22.00 | ppbV   | 96       |
| 59) Bromoform                 | 15.981 | 173  | 1209271  | 11.00 | ppbV   | 97       |
| 60) Styrene                   | 16.422 | 104  | 2131498  | 11.00 | ppbV   | 96       |
| 61) Xylene (o)                | 16.576 | 91   | 3011718  | 11.00 | ppbV   | 100      |
| 62) 1,1,2,2-Tetrachloroethane | 16.560 | 83   | 2360623  | 11.00 | ppbV   | 98       |
| 63) n-Nonane                  | 16.955 | 43   | 2272106  | 11.00 | ppbV # | 79       |
| 65) Cumene                    | 17.470 | 105  | 3846808  | 11.00 | ppbV   | 97       |
| 66) 2-Chlorotoluene           | 18.203 | 91   | 3143676  | 11.00 | ppbV   | 97       |
| 67) n-Propyl benzene          | 18.280 | 91   | 5281946  | 11.00 | ppbV   | 95       |
| 68) 4-Ethyltoluene            | 18.528 | 105  | 3765828  | 11.00 | ppbV   | 96       |
| 69) 1,3,5-Trimethylbenzene    | 18.659 | 105  | 3429338  | 11.00 | ppbV   | 100      |
| 70) 1,2,4-Trimethylbenzene    | 19.351 | 105  | 3436295  | 11.00 | ppbV   | 99       |
| 71) Benzyl chloride           | 19.569 | 91   | 3064617  | 10.00 | ppbV   | 97       |
| 72) 1,3-Dichlorobenzene       | 19.592 | 146  | 1898980  | 11.00 | ppbV   | 98       |
| 73) 1,4-Dichlorobenzene       | 19.714 | 146  | 1974346  | 11.00 | ppbV   | 98       |
| 74) 1,2-Dichlorobenzene       | 20.325 | 146  | 1921004  | 11.00 | ppbV   | 99       |
| 75) 1,2,4-Trichlorobenzene    | 22.733 | 180  | 1602141  | 12.00 | ppbV   | 99       |
| 76) Naphthalene               | 22.843 | 127  | 562619   | 12.00 | ppbV   | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.251 | 225  | 1024427  | 11.00 | ppbV   | 96       |

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

Data Path : C:\DATA\07-25-18\  
Data File : aa7974std03.D  
Acq On : 25 Jul 2018 11:02 am

Quant Time: Jul 25 11:47:45 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 11:47:37 2018  
Response via : Initial Calibration



Data Path : C:\DATA\07-25-18\  
 Data File : aa7975std04.D  
 Acq On : 25 Jul 2018 12:18 pm  
 Operator : jls  
 Sample : 2 ppbv Std  
 Misc : CC483586  
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 25 12:45:06 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 12:03:50 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.679  | 130  | 442159   | 10.00 | ppbV   | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.737  | 114  | 1836044  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.055 | 117  | 1531011  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.251 | 95   | 1404561  | 10.07 | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       | Qvalue |          |
| 2) Propene                    | 3.448  | 41   | 78631    | 1.98  | ppbV # | 80       |
| 3) Dichlorodifluoromethane    | 3.519  | 85   | 261761   | 1.88  | ppbV   | 97       |
| 4) Chloromethane              | 3.683  | 52   | 36696    | 2.10  | ppbV # | 1        |
| 5) 1,2-Dichlorotetrafluor...  | 3.721  | 85   | 291795   | 1.99  | ppbV   | 97       |
| 6) Vinyl chloride             | 3.840  | 62   | 118454   | 1.87  | ppbV   | 89       |
| 7) 1,3-Butadiene              | 3.937  | 54   | 100761   | 1.96  | ppbV   | 84       |
| 8) n-Butane                   | 3.988  | 43   | 195789   | 2.09  | ppbV   | 94       |
| 9) Bromomethane               | 4.187  | 94   | 79223    | 1.76  | ppbV   | 98       |
| 10) Chloroethane              | 4.329  | 64   | 55246    | 1.64  | ppbV # | 88       |
| 11) Ethanol                   | 4.371  | 45   | 85520    | 2.37  | ppbV   | 99       |
| 12) Vinyl bromide             | 4.625  | 106  | 98171    | 1.85  | ppbV   | 96       |
| 13) Acrolein                  | 4.692  | 56   | 47056    | 2.05  | ppbV   | 97       |
| 14) Acetone                   | 4.789  | 58   | 62165    | 1.84  | ppbV   | 75       |
| 15) Trichlorofluoromethane    | 4.975  | 101  | 305604   | 2.06  | ppbV   | 99       |
| 16) Isopropanol               | 4.969  | 45   | 199685   | 1.81  | ppbV   | 92       |
| 17) n-Pentane                 | 5.281  | 43   | 207084   | 1.94  | ppbV   | 94       |
| 18) 1,1-Dichloroethene        | 5.525  | 61   | 196205   | 1.91  | ppbV   | 100      |
| 19) Methylene chloride        | 5.647  | 49   | 153043   | 2.01  | ppbV # | 83       |
| 20) Tert-butyl alcohol        | 5.502  | 59   | 299995   | 2.15  | ppbV   | 100      |
| 21) Allyl chloride            | 5.737  | 76   | 50997    | 1.83  | ppbV   | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.872  | 101  | 273970   | 2.33  | ppbV   | 89       |
| 23) Carbon disulfide          | 5.927  | 76   | 331928   | 1.89  | ppbV # | 91       |
| 24) 1,2-Dichloroethene (tr... | 6.499  | 61   | 175124   | 1.85  | ppbV   | 90       |
| 25) 1,1-Dichloroethane        | 6.689  | 63   | 232574   | 1.92  | ppbV   | 99       |
| 26) Methyl tert-butyl ether   | 6.727  | 73   | 371042   | 2.11  | ppbV   | 99       |
| 27) Methyl ethyl ketone       | 7.043  | 43   | 227065   | 1.85  | ppbV # | 86       |
| 28) 1,2-Dichloroethene (cis)  | 7.512  | 61   | 171952   | 1.87  | ppbV   | 91       |
| 29) Ethyl acetate             | 7.711  | 45   | 38370    | 1.85  | ppbV   | 100      |
| 30) n-Hexane                  | 7.727  | 57   | 211648   | 2.01  | ppbV   | 84       |
| 31) Chloroform                | 7.805  | 83   | 246384   | 1.90  | ppbV   | 99       |
| 32) Tetrahydrofuran           | 8.200  | 42   | 124601   | 1.99  | ppbV   | 91       |
| 33) 1,2-Dichloroethane        | 8.573  | 62   | 189562   | 1.91  | ppbV   | 100      |
| 34) 1,1,1-Trichloroethane     | 8.846  | 97   | 271151   | 2.14  | ppbV   | 100      |
| 35) Benzene                   | 9.345  | 78   | 381445   | 1.96  | ppbV   | 91       |
| 36) Carbon tetrachloride      | 9.515  | 117  | 253566   | 2.12  | ppbV   | 99       |
| 37) Cyclohexane               | 9.653  | 56   | 232948   | 2.09  | ppbV   | 98       |
| 39) 1,2-Dichloropropane       | 10.251 | 63   | 169395   | 2.11  | ppbV   | 100      |
| 40) Bromodichloromethane      | 10.473 | 83   | 275138   | 2.08  | ppbV   | 97       |
| 41) 2,2,4-Trimethylpentane    | 10.586 | 57   | 694979   | 2.10  | ppbV   | 98       |
| 42) Trichloroethene           | 10.531 | 130  | 132953   | 2.08  | ppbV   | 99       |
| 43) 1,4-Dioxane               | 10.505 | 88   | 72147    | 1.85  | ppbV   | 83       |
| 44) Methyl methacrylate       | 10.750 | 41   | 175407   | 2.08  | ppbV # | 75       |
| 45) n-Heptane                 | 10.885 | 43   | 261435   | 2.30  | ppbV # | 79       |
| 46) cis-1,3-Dichloropropene   | 11.538 | 75   | 225544   | 1.98  | ppbV   | 98       |
| 47) Methyl isobutyl ketone    | 11.570 | 43   | 342759   | 2.29  | ppbV   | 89       |
| 48) trans-1,3-Dichloropropene | 12.181 | 75   | 208336   | 1.77  | ppbV # | 81       |
| 49) 1,1,2-Trichloroethane     | 12.390 | 97   | 170605   | 2.22  | ppbV   | 94       |
| 50) Toluene                   | 12.743 | 91   | 488169   | 2.20  | ppbV   | 98       |
| 51) Methyl n-butyl ketone     | 13.071 | 43   | 299937   | 2.10  | ppbV # | 85       |

AL SDG #E18-06141

Data Path : C:\DATA\07-25-18\  
 Data File : aa7975std04.D  
 Acq On : 25 Jul 2018 12:18 pm  
 Operator : jls  
 Sample : 2 ppbv Std  
 Misc : CC483586  
 ALS Vial : 5 Sample Multiplier: 1

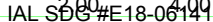
Quant Time: Jul 25 12:45:06 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 12:03:50 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|------|--------|----------|
| 52) Dibromochloromethane      | 13.271 | 129  | 239686   | 2.17 | ppbV   | 99       |
| 53) 1,2-Dibromoethane         | 13.586 | 107  | 255131   | 2.15 | ppbV   | 96       |
| 54) Tetrachloroethene         | 14.206 | 166  | 183734   | 2.33 | ppbV   | 99       |
| 56) Chlorobenzene             | 15.116 | 112  | 366932   | 2.31 | ppbV   | 93       |
| 57) Ethylbenzene              | 15.647 | 91   | 697526   | 2.42 | ppbV   | 98       |
| 58) Xylenes (m&p)             | 15.920 | 91   | 1083055  | 4.74 | ppbV   | 99       |
| 59) Bromoform                 | 15.981 | 173  | 207538   | 2.29 | ppbV   | 98       |
| 60) Styrene                   | 16.422 | 104  | 357882   | 2.21 | ppbV   | 97       |
| 61) Xylene (o)                | 16.573 | 91   | 565479   | 2.47 | ppbV   | 100      |
| 62) 1,1,2,2-Tetrachloroethane | 16.560 | 83   | 453501   | 2.50 | ppbV   | 98       |
| 63) n-Nonane                  | 16.955 | 43   | 437271   | 2.53 | ppbV # | 82       |
| 65) Cumene                    | 17.470 | 105  | 707068   | 2.43 | ppbV   | 97       |
| 66) 2-Chlorotoluene           | 18.200 | 91   | 571345   | 2.38 | ppbV   | 98       |
| 67) n-Propyl benzene          | 18.280 | 91   | 986527   | 2.49 | ppbV   | 95       |
| 68) 4-Ethyltoluene            | 18.524 | 105  | 683257   | 2.40 | ppbV   | 97       |
| 69) 1,3,5-Trimethylbenzene    | 18.663 | 105  | 621617   | 2.42 | ppbV   | 98       |
| 70) 1,2,4-Trimethylbenzene    | 19.354 | 105  | 617452   | 2.38 | ppbV   | 98       |
| 71) Benzyl chloride           | 19.569 | 91   | 479594   | 1.89 | ppbV   | 97       |
| 72) 1,3-Dichlorobenzene       | 19.592 | 146  | 355664   | 2.49 | ppbV   | 98       |
| 73) 1,4-Dichlorobenzene       | 19.714 | 146  | 362548   | 2.43 | ppbV   | 96       |
| 74) 1,2-Dichlorobenzene       | 20.322 | 146  | 353034   | 2.42 | ppbV   | 98       |
| 75) 1,2,4-Trichlorobenzene    | 22.733 | 180  | 282410   | 2.61 | ppbV   | 98       |
| 76) Naphthalene               | 22.846 | 127  | 87604    | 2.29 | ppbV   | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.251 | 225  | 204886   | 2.68 | ppbV   | 95       |

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

ACQ On : 25 Jul 2014  
Integrated Analytical Laboratories LLC

QLast Update : Wed Jul 25 12:03:50 2018



Data Path : C:\DATA\07-25-18\  
 Data File : aa7976std05.D  
 Acq On : 25 Jul 2018 1:42 pm  
 Operator : jls  
 Sample : 0.2 ppbv Std  
 Misc : CC483586  
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 25 14:07:24 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 13:25:42 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| Internal Standards            |        |      |          |       |       |          |
| 1) Bromochloromethane (IS)    | 7.679  | 130  | 505975   | 10.00 | ppbV  | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.734  | 114  | 2064481  | 10.00 | ppbV  | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.055 | 117  | 1704012  | 10.00 | ppbV  | 0.00     |
| System Monitoring Compounds   |        |      |          |       |       |          |
| 64) Bromofluorobenzene (tu... | 17.248 | 95   | 1569127  | 10.08 | ppbV  | 0.00     |
| Target Compounds              |        |      |          |       |       | Qvalue   |
| 2) Propene                    | 3.454  | 41   | 7319     | 0.14  | ppbV  | # 4      |
| 3) Dichlorodifluoromethane    | 3.522  | 85   | 37924    | 0.22  | ppbV  | # 86     |
| 4) Chloromethane              | 3.673  | 52   | 4895m    | 0.26  | ppbV  |          |
| 5) 1,2-Dichlorotetrafluor...  | 3.721  | 85   | 41484    | 0.22  | ppbV  | 99       |
| 6) Vinyl chloride             | 3.840  | 62   | 15540    | 0.20  | ppbV  | 90       |
| 7) 1,3-Butadiene              | 3.937  | 54   | 12107    | 0.19  | ppbV  | 95       |
| 8) n-Butane                   | 3.985  | 43   | 28051    | 0.23  | ppbV  | 96       |
| 9) Bromomethane               | 4.194  | 94   | 9614     | 0.17  | ppbV  | # 59     |
| 10) Chloroethane              | 4.313  | 64   | 6976     | 0.19  | ppbV  | # 59     |
| 11) Ethanol                   | 4.374  | 45   | 7947m    | 0.20  | ppbV  |          |
| 12) Vinyl bromide             | 4.622  | 106  | 10734    | 0.17  | ppbV  | # 42     |
| 13) Acrolein                  | 4.689  | 56   | 4231     | 0.15  | ppbV  | # 51     |
| 14) Acetone                   | 4.805  | 58   | 8147     | 0.20  | ppbV  | 81       |
| 15) Trichlorofluoromethane    | 4.969  | 101  | 41547    | 0.22  | ppbV  | 98       |
| 16) Isopropanol               | 4.975  | 45   | 23985    | 0.17  | ppbV  | # 88     |
| 17) n-Pentane                 | 5.284  | 43   | 30958    | 0.23  | ppbV  | 90       |
| 18) 1,1-Dichloroethene        | 5.531  | 61   | 25377    | 0.20  | ppbV  | 94       |
| 19) Methylene chloride        | 5.644  | 49   | 29180    | 0.28  | ppbV  | # 81     |
| 20) Tert-butyl alcohol        | 5.509  | 59   | 39682    | 0.23  | ppbV  | 100      |
| 21) Allyl chloride            | 5.744  | 76   | 6789     | 0.20  | ppbV  | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.872  | 101  | 35414    | 0.23  | ppbV  | 88       |
| 23) Carbon disulfide          | 5.917  | 76   | 41730    | 0.19  | ppbV  | # 81     |
| 24) 1,2-Dichloroethene (tr... | 6.499  | 61   | 22565    | 0.19  | ppbV  | # 82     |
| 25) 1,1-Dichloroethane        | 6.692  | 63   | 31076    | 0.20  | ppbV  | 99       |
| 26) Methyl tert-butyl ether   | 6.728  | 73   | 45176    | 0.21  | ppbV  | 100      |
| 27) Methyl ethyl ketone       | 7.056  | 43   | 32178    | 0.21  | ppbV  | 95       |
| 28) 1,2-Dichloroethene (cis)  | 7.509  | 61   | 21368    | 0.19  | ppbV  | # 84     |
| 29) Ethyl acetate             | 7.721  | 45   | 5075     | 0.20  | ppbV  | 100      |
| 30) n-Hexane                  | 7.731  | 57   | 27375    | 0.21  | ppbV  | 88       |
| 31) Chloroform                | 7.808  | 83   | 33786    | 0.21  | ppbV  | 99       |
| 32) Tetrahydrofuran           | 8.210  | 42   | 17131    | 0.22  | ppbV  | # 85     |
| 33) 1,2-Dichloroethane        | 8.570  | 62   | 25895    | 0.21  | ppbV  | 94       |
| 34) 1,1,1-Trichloroethane     | 8.850  | 97   | 35176    | 0.22  | ppbV  | 99       |
| 35) Benzene                   | 9.342  | 78   | 48602    | 0.20  | ppbV  | 96       |
| 36) Carbon tetrachloride      | 9.502  | 117  | 32991    | 0.22  | ppbV  | 94       |
| 37) Cyclohexane               | 9.647  | 56   | 28043    | 0.21  | ppbV  | 98       |
| 39) 1,2-Dichloropropane       | 10.252 | 63   | 23544    | 0.23  | ppbV  | 98       |
| 40) Bromodichloromethane      | 10.477 | 83   | 34629    | 0.21  | ppbV  | 98       |
| 41) 2,2,4-Trimethylpentane    | 10.586 | 57   | 83595    | 0.20  | ppbV  | 99       |
| 42) Trichloroethene           | 10.531 | 130  | 19056    | 0.24  | ppbV  | 92       |
| 43) 1,4-Dioxane               | 10.522 | 88   | 7613     | 0.17  | ppbV  | # 36     |
| 44) Methyl methacrylate       | 10.756 | 41   | 23522    | 0.22  | ppbV  | # 79     |
| 45) n-Heptane                 | 10.885 | 43   | 31156    | 0.21  | ppbV  | # 77     |
| 46) cis-1,3-Dichloropropene   | 11.541 | 75   | 28118    | 0.20  | ppbV  | 98       |
| 47) Methyl isobutyl ketone    | 11.589 | 43   | 41480    | 0.22  | ppbV  | 89       |
| 48) trans-1,3-Dichloropropene | 12.181 | 75   | 25807    | 0.18  | ppbV  | 86       |
| 49) 1,1,2-Trichloroethane     | 12.390 | 97   | 22149    | 0.23  | ppbV  | 92       |
| 50) Toluene                   | 12.740 | 91   | 62307    | 0.22  | ppbV  | 96       |
| 51) Methyl n-butyl ketone     | 13.084 | 43   | 37567    | 0.21  | ppbV  | 96       |

AL SDG #E18-06141

Data Path : C:\DATA\07-25-18\  
 Data File : aa7976std05.D  
 Acq On : 25 Jul 2018 1:42 pm  
 Operator : jls  
 Sample : 0.2 ppbv Std  
 Misc : CC483586  
 ALS Vial : 6 Sample Multiplier: 1

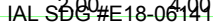
Quant Time: Jul 25 14:07:24 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 13:25:42 2018  
 Response via : Initial Calibration

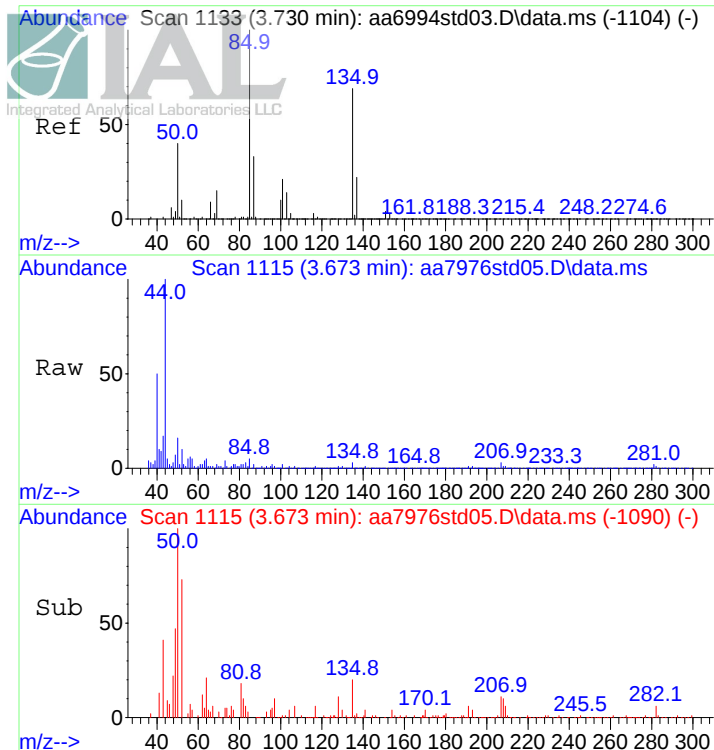
| Compound                      | R.T.   | QIon | Response | Conc | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|------|--------|----------|
| 52) Dibromochloromethane      | 13.267 | 129  | 28953    | 0.21 | ppbV   | 100      |
| 53) 1,2-Dibromoethane         | 13.583 | 107  | 33845    | 0.23 | ppbV   | 95       |
| 54) Tetrachloroethene         | 14.203 | 166  | 24894    | 0.24 | ppbV   | 96       |
| 56) Chlorobenzene             | 15.116 | 112  | 47512    | 0.24 | ppbV   | 95       |
| 57) Ethylbenzene              | 15.650 | 91   | 84088    | 0.23 | ppbV   | 98       |
| 58) Xylenes (m&p)             | 15.917 | 91   | 128386   | 0.44 | ppbV # | 28       |
| 59) Bromoform                 | 15.981 | 173  | 23394    | 0.21 | ppbV   | 98       |
| 60) Styrene                   | 16.422 | 104  | 39109    | 0.20 | ppbV   | 99       |
| 61) Xylene (o)                | 16.573 | 91   | 65305    | 0.23 | ppbV   | 100      |
| 62) 1,1,2,2-Tetrachloroethane | 16.560 | 83   | 54745    | 0.24 | ppbV   | 97       |
| 63) n-Nonane                  | 16.952 | 43   | 48551    | 0.22 | ppbV   | 90       |
| 65) Cumene                    | 17.467 | 105  | 80967    | 0.22 | ppbV   | 98       |
| 66) 2-Chlorotoluene           | 18.200 | 91   | 68160    | 0.23 | ppbV   | 99       |
| 67) n-Propyl benzene          | 18.280 | 91   | 107193   | 0.22 | ppbV   | 97       |
| 68) 4-Ethyltoluene            | 18.525 | 105  | 73402    | 0.21 | ppbV   | 97       |
| 69) 1,3,5-Trimethylbenzene    | 18.656 | 105  | 70531    | 0.22 | ppbV   | 98       |
| 70) 1,2,4-Trimethylbenzene    | 19.354 | 105  | 64555    | 0.20 | ppbV   | 98       |
| 71) Benzyl chloride           | 19.569 | 91   | 42999    | 0.15 | ppbV   | 96       |
| 72) 1,3-Dichlorobenzene       | 19.589 | 146  | 44070    | 0.24 | ppbV   | 100      |
| 73) 1,4-Dichlorobenzene       | 19.711 | 146  | 43316    | 0.22 | ppbV   | 94       |
| 74) 1,2-Dichlorobenzene       | 20.322 | 146  | 43839    | 0.24 | ppbV   | 96       |
| 75) 1,2,4-Trichlorobenzene    | 22.733 | 180  | 38969    | 0.26 | ppbV   | 95       |
| 76) Naphthalene               | 22.839 | 127  | 10301    | 0.23 | ppbV   | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.251 | 225  | 28434    | 0.28 | ppbV   | 96       |

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

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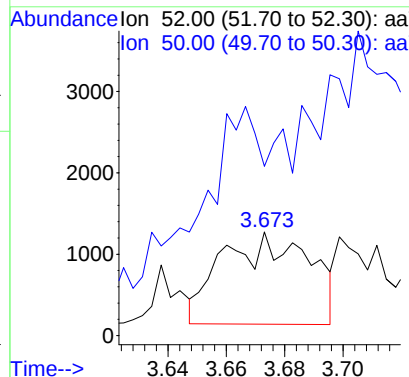
QLast Update : Wed Jul 25 13:25:42 2018



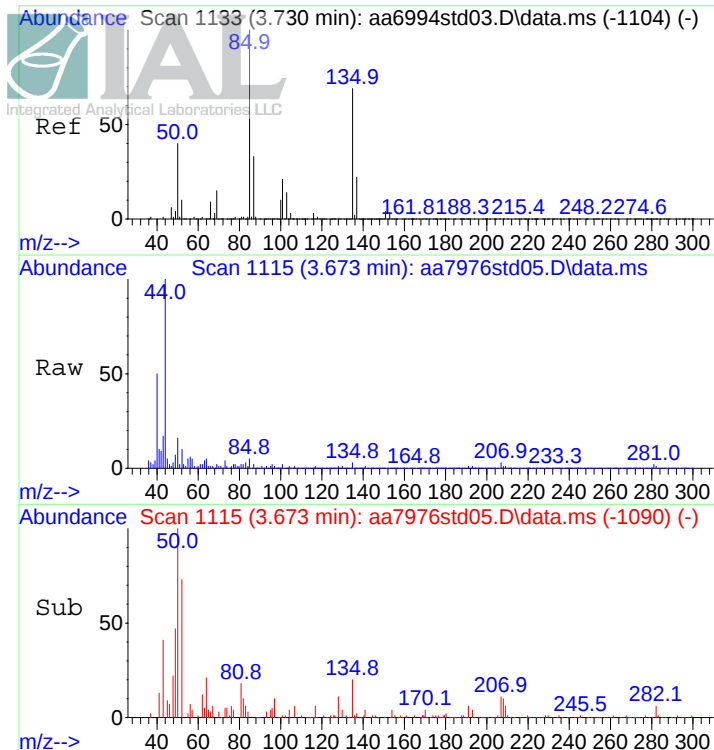


#4  
 Chloromethane  
 Concen: 0.12 ppbV  
 RT: 3.673 min Scan# 1115  
 Delta R.T. -0.019 min  
 Lab File: aa7976std05.D  
 Acq: 25 Jul 2018 1:42 pm

| Tgt Ion | 52   | 50    | Ratio | Lower | Upper  |
|---------|------|-------|-------|-------|--------|
| Resp    | 2327 |       |       |       |        |
| Ion     | 100  | 282.1 |       | 314.4 | 471.6# |

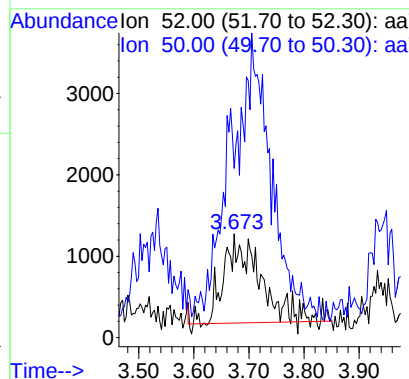


Before manual integration for Chloromethane.

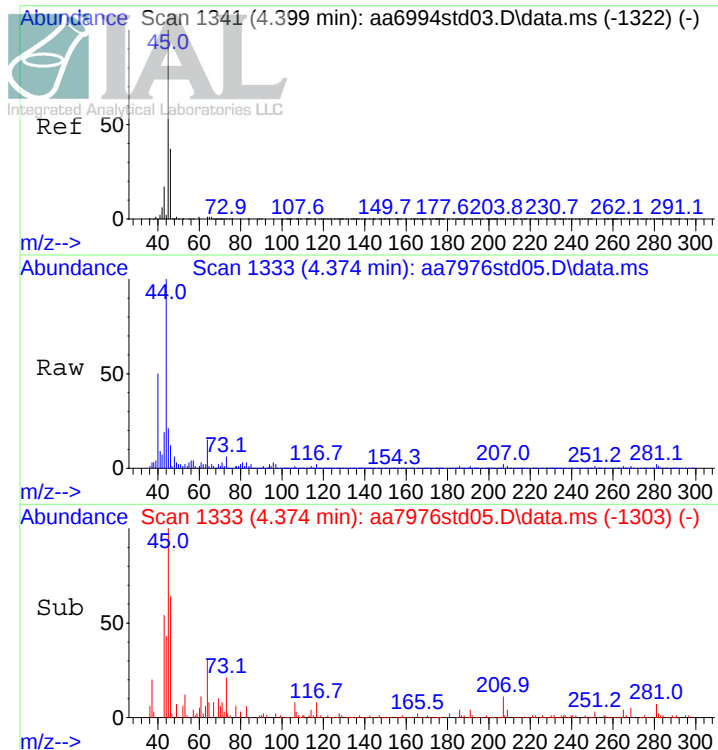


#4  
 Chloromethane  
 Concen: 0.26 ppbV m  
 RT: 3.673 min Scan# 1115  
 Delta R.T. -0.019 min  
 Lab File: aa7976std05.D  
 Acq: 25 Jul 2018 1:42 pm

| Tgt Ion   | 52 | Resp  | 4895         |
|-----------|----|-------|--------------|
| Ion Ratio | 52 | 100   |              |
|           | 50 | 134.1 | 314.4 471.6# |

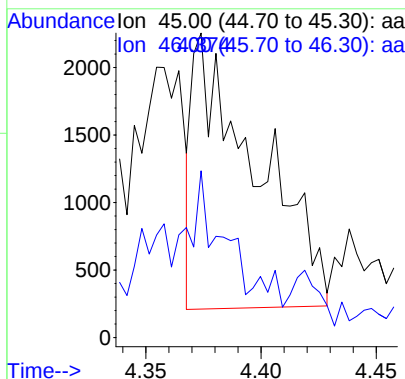


After manual integration for Chloromethane.

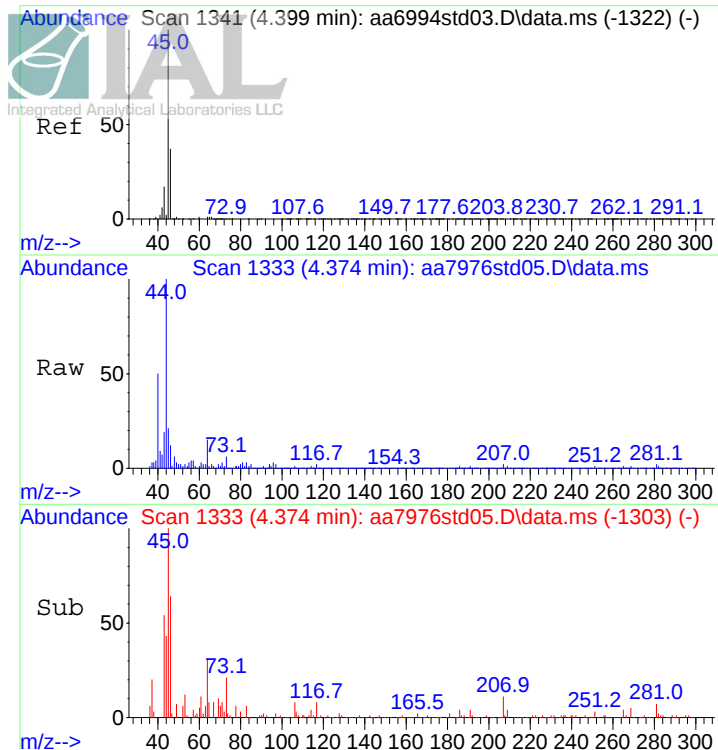


#11  
Ethanol  
Concen: 0.10 ppbV  
RT: 4.374 min Scan# 1333  
Delta R.T. -0.003 min  
Lab File: aa7976std05.D  
Acq: 25 Jul 2018 1:42 pm

Tgt Ion: 45 Resp: 3891  
Ion Ratio Lower Upper  
45 100  
46 36.8 32.6 48.8

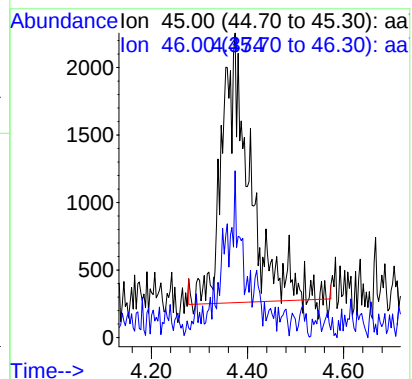


Before manual integration for Ethanol.



#11  
Ethanol  
Concen: 0.20 ppbV m  
RT: 4.374 min Scan# 1333  
Delta R.T. -0.003 min  
Lab File: aa7976std05.D  
Acq: 25 Jul 2018 1:42 pm

Tgt Ion: 45 Resp: 7947  
Ion Ratio Lower Upper  
45 100  
46 18.0 32.6 48.8#



After manual integration for Ethanol.

## 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:** AA7078ICVSS  
**Date Analyzed:** 5/18/2018

Runs with this ICVSS:

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA7071BFB]             | 05/18/2018 8:17                        |
| 40 PPBV STD [AA7073STD01]   | 05/18/2018 9:46                        |
| 20 PPBV STD [AA7074STD02]   | 05/18/2018 10:19                       |
| 10 PPBV STD [AA7075STD03]   | 05/18/2018 10:53                       |
| 2 PPBV STD [AA7076STD04]    | 05/18/2018 12:20                       |
| 0.2 PPBV STD [AA7077STD05]  | 05/18/2018 13:03                       |
| 10 PPBV ICVSS [AA7078ICVSS] | 05/18/2018 15:14                       |

| Compound                      | CAS #      | Injected Amount (ppbv) | Recovered Amount (ppbv) | % Recovery | QC Limit |
|-------------------------------|------------|------------------------|-------------------------|------------|----------|
| Acetone                       | 67-64-1    | 11                     | 11                      | 100        |          |
| Acrolein                      | 107-02-8   | 7.1                    | 8.6                     | 120        |          |
| Allyl Chloride                | 107-05-1   | 11                     | 11                      | 100        |          |
| Benzene                       | 71-43-2    | 10                     | 11                      | 110        |          |
| Benzyl chloride               | 100-44-7   | 11                     | 11                      | 100        |          |
| Bromodichloromethane          | 75-27-4    | 11                     | 11                      | 100        |          |
| Bromoform                     | 75-25-2    | 11                     | 11                      | 100        |          |
| Bromomethane                  | 74-83-9    | 11                     | 10                      | 91         |          |
| 1,3-Butadiene                 | 106-99-0   | 11                     | 11                      | 100        |          |
| n-Butane                      | 106-97-8   | 11                     | 11                      | 100        |          |
| Chlorobenzene                 | 108-90-7   | 10                     | 10.0                    | 100        |          |
| Chloroethane                  | 75-00-3    | 11                     | 9.4                     | 85         |          |
| Chloroform                    | 67-66-3    | 11                     | 11                      | 100        |          |
| Chloromethane                 | 74-87-3    | 10                     | 11                      | 110        |          |
| Carbon disulfide              | 75-15-0    | 11                     | 11                      | 100        |          |
| Carbon tetrachloride          | 56-23-5    | 11                     | 10                      | 91         |          |
| 2-Chlorotoluene               | 95-49-8    | 11                     | 11                      | 100        |          |
| Cumene                        | 98-82-8    | 11                     | 11                      | 100        |          |
| Cyclohexane                   | 110-82-7   | 11                     | 11                      | 100        |          |
| Dibromochloromethane          | 124-48-1   | 11                     | 10                      | 91         |          |
| 1,2-Dibromoethane             | 106-93-4   | 10                     | 10                      | 100        |          |
| 1,2-Dichlorobenzene           | 95-50-1    | 10                     | 10                      | 100        |          |
| 1,3-Dichlorobenzene           | 541-73-1   | 10                     | 10                      | 100        |          |
| 1,4-Dichlorobenzene           | 106-46-7   | 10                     | 10                      | 100        |          |
| Dichlorodifluoromethane       | 75-71-8    | 11                     | 11                      | 100        |          |
| 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                     | 11                      | 100        |          |
| 1,2-Dichloroethene (cis)      | 156-59-2   | 10                     | 11                      | 110        |          |
| 1,2-Dichloroethene (trans)    | 156-60-5   | 11                     | 11                      | 100        |          |
| 1,2-Dichloropropane           | 78-87-5    | 11                     | 10                      | 91         |          |
| 1,3-Dichloropropene (cis)     | 10061-01-5 | 11                     | 11                      | 100        |          |
| 1,3-Dichloropropene (trans)   | 10061-02-6 | 10                     | 10                      | 100        |          |
| 1,2-Dichlorotetrafluoroethane | 76-14-2    | 11                     | 9.0                     | 82         |          |
| 1,4-Dioxane                   | 123-91-1   | 8.3                    | 9.7                     | 120        |          |
| Ethanol                       | 64-17-5    | 8.7                    | 8.0                     | 92         |          |
| 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:** AA7078ICVSS  
**Date Analyzed:** 5/18/2018

Runs with this ICVSS:

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA7071BFB]             | 05/18/2018 8:17                        |
| 40 PPBV STD [AA7073STD01]   | 05/18/2018 9:46                        |
| 20 PPBV STD [AA7074STD02]   | 05/18/2018 10:19                       |
| 10 PPBV STD [AA7075STD03]   | 05/18/2018 10:53                       |
| 2 PPBV STD [AA7076STD04]    | 05/18/2018 12:20                       |
| 0.2 PPBV STD [AA7077STD05]  | 05/18/2018 13:03                       |
| 10 PPBV ICVSS [AA7078ICVSS] | 05/18/2018 15:14                       |

| Compound                              | CAS #       | Injected Amount (ppbv) | Recovered Amount (ppbv) | % Recovery | QC Limit |
|---------------------------------------|-------------|------------------------|-------------------------|------------|----------|
| 1,3-Hexachlorobutadiene               | 87-68-3     | 10                     | 10.0                    | 100        |          |
| n-Hexane                              | 110-54-3    | 10                     | 11                      | 110        |          |
| Isopropanol                           | 67-63-0     | 8.2                    | 8.3                     | 100        |          |
| Methylene chloride                    | 75-09-2     | 11                     | 10                      | 91         |          |
| Methyl ethyl ketone                   | 78-93-3     | 10                     | 11                      | 110        |          |
| Methyl isobutyl ketone                | 108-10-1    | 11                     | 11                      | 100        |          |
| Methyl methacrylate                   | 80-62-6     | 11                     | 11                      | 100        |          |
| Methyl n-butyl ketone                 | 591-78-6    | 9.4                    | 11                      | 120        |          |
| Methyl tert-butyl ether               | 1634-04-4   | 11                     | 11                      | 100        |          |
| Naphthalene                           | 91-20-3     | 9.3                    | 12                      | 130        |          |
| n-Nonane                              | 111-84-2    | 11                     | 11                      | 100        |          |
| n-Pentane                             | 109-66-0    | 11                     | 11                      | 100        |          |
| Propene                               | 115-07-1    | 11                     | 11                      | 100        |          |
| n-Propyl benzene                      | 103-65-1    | 11                     | 11                      | 100        |          |
| Styrene                               | 100-42-5    | 10                     | 12                      | 120        |          |
| Tert-butyl alcohol                    | 75-65-0     | 8.0                    | 8.5                     | 110        |          |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     | 10                     | 10                      | 100        |          |
| Tetrachloroethene                     | 127-18-4    | 10                     | 10                      | 100        |          |
| Tetrahydrofuran                       | 109-99-9    | 11                     | 12                      | 110        |          |
| Toluene                               | 108-88-3    | 10                     | 11                      | 110        |          |
| 1,2,4-Trichlorobenzene                | 120-82-1    | 8.8                    | 9.9                     | 110        |          |
| 1,1,1-Trichloroethane                 | 71-55-6     | 11                     | 10                      | 91         |          |
| 1,1,2-Trichloroethane                 | 79-00-5     | 10                     | 10                      | 100        |          |
| Trichloroethene                       | 79-01-6     | 10                     | 11                      | 110        |          |
| Trichlorofluoromethane                | 75-69-4     | 11                     | 10                      | 91         |          |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 76-13-1     | 11                     | 10.0                    | 91         |          |
| 1,2,4-Trimethylbenzene                | 95-63-6     | 10                     | 12                      | 120        |          |
| 1,3,5-Trimethylbenzene                | 108-67-8    | 11                     | 11                      | 100        |          |
| 2,2,4-Trimethylpentane                | 540-84-1    | 11                     | 11                      | 100        |          |
| Vinyl bromide                         | 593-60-2    | 9.7                    | 12                      | 120        |          |
| Vinyl chloride                        | 75-01-4     | 11                     | 11                      | 100        |          |
| Xylenes (m&p)                         | 179601-23-1 | 22                     | 22                      | 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\05-18-18\  
 Data File : aa70781cyss.D  
 Acq On : 18 May 2018 3:14 pm  
 Operator : jls  
 Sample : 10 ppbv ICVSS  
 Misc : CC483422  
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 21 10:49:09 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| Internal Standards            |        |      |          |       |       |          |
| 1) Bromochloromethane (IS)    | 7.724  | 130  | 522049   | 10.00 | ppbV  | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.782  | 114  | 2190215  | 10.00 | ppbV  | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.113 | 117  | 1913238  | 10.00 | ppbV  | 0.00     |
| System Monitoring Compounds   |        |      |          |       |       |          |
| 64) Bromofluorobenzene (tu... | 17.309 | 95   | 1757413  | 9.98  | ppbV  | 0.00     |
| Target Compounds              |        |      |          |       |       |          |
|                               |        |      |          |       |       | Qvalue   |
| 2) Propene                    | 3.473  | 41   | 730162   | 11.06 | ppbV  | 83       |
| 3) Dichlorodifluoromethane    | 3.534  | 85   | 2027364  | 10.97 | ppbV  | 97       |
| 4) Chloromethane              | 3.730  | 52   | 276132   | 10.79 | ppbV  | 97       |
| 5) 1,2-Dichlorotetrafluor...  | 3.746  | 85   | 1759325  | 9.04  | ppbV  | 94       |
| 6) Vinyl chloride             | 3.859  | 62   | 839310   | 11.09 | ppbV  | 87       |
| 7) 1,3-Butadiene              | 3.962  | 54   | 733268   | 11.41 | ppbV  | 96       |
| 8) n-Butane                   | 4.013  | 43   | 1601575  | 10.78 | ppbV  | 94       |
| 9) Bromomethane               | 4.213  | 94   | 555490   | 10.03 | ppbV  | 97       |
| 10) Chloroethane              | 4.357  | 64   | 403118   | 9.41  | ppbV  | 93       |
| 11) Ethanol                   | 4.399  | 45   | 331087   | 8.00  | ppbV  | 97       |
| 12) Vinyl bromide             | 4.656  | 106  | 624617   | 11.56 | ppbV  | 100      |
| 13) Acrolein                  | 4.724  | 56   | 228811   | 8.59  | ppbV  | 97       |
| 14) Acetone                   | 4.820  | 58   | 480248   | 11.38 | ppbV  | 96       |
| 15) Trichlorofluoromethane    | 5.000  | 101  | 2123834  | 10.47 | ppbV  | 99       |
| 16) Isopropanol               | 5.000  | 45   | 1136925  | 8.34  | ppbV  | 93       |
| 17) n-Pentane                 | 5.306  | 43   | 1783363  | 11.16 | ppbV  | 95       |
| 18) 1,1-Dichloroethene        | 5.566  | 61   | 1496651  | 11.16 | ppbV  | 92       |
| 19) Methylene chloride        | 5.679  | 49   | 1228354  | 10.08 | ppbV  | 99       |
| 20) Tert-butyl alcohol        | 5.528  | 59   | 1031467  | 8.45  | ppbV  | 100      |
| 21) Allyl chloride            | 5.775  | 76   | 333899   | 11.26 | ppbV  | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.907  | 101  | 1565336  | 9.98  | ppbV  | 88       |
| 23) Carbon disulfide          | 5.965  | 76   | 2223694  | 11.29 | ppbV  | 97       |
| 24) 1,2-Dichloroethene (tr... | 6.534  | 61   | 1304129  | 10.92 | ppbV  | 99       |
| 25) 1,1-Dichloroethane        | 6.727  | 63   | 1656694  | 10.72 | ppbV  | 99       |
| 26) Methyl tert-butyl ether   | 6.756  | 73   | 1903804  | 10.94 | ppbV  | 96       |
| 27) Methyl ethyl ketone       | 7.071  | 43   | 2144860  | 11.22 | ppbV  | 99       |
| 28) 1,2-Dichloroethene (cis)  | 7.550  | 61   | 1271567  | 11.06 | ppbV  | 99       |
| 29) Ethyl acetate             | 7.743  | 45   | 348813   | 11.27 | ppbV  | 100      |
| 30) n-Hexane                  | 7.766  | 57   | 1425441  | 10.63 | ppbV  | 97       |
| 31) Chloroform                | 7.843  | 83   | 1780945  | 10.78 | ppbV  | 99       |
| 32) Tetrahydrofuran           | 8.235  | 42   | 1110856  | 12.25 | ppbV  | 90       |
| 33) 1,2-Dichloroethane        | 8.614  | 62   | 1465335  | 10.58 | ppbV  | 100      |
| 34) 1,1,1-Trichloroethane     | 8.888  | 97   | 1650398  | 10.39 | ppbV  | 99       |
| 35) Benzene                   | 9.389  | 78   | 2434532  | 10.64 | ppbV  | 99       |
| 36) Carbon tetrachloride      | 9.560  | 117  | 1618838  | 10.33 | ppbV  | 99       |
| 37) Cyclohexane               | 9.701  | 56   | 1491999  | 10.98 | ppbV  | 89       |
| 39) 1,2-Dichloropropane       | 10.299 | 63   | 1087670  | 10.21 | ppbV  | 99       |
| 40) Bromodichloromethane      | 10.521 | 83   | 1904826  | 10.55 | ppbV  | 99       |
| 41) 2,2,4-Trimethylpentane    | 10.634 | 57   | 4504117  | 11.45 | ppbV  | 96       |
| 42) Trichloroethene           | 10.579 | 130  | 888910   | 10.56 | ppbV  | 98       |
| 43) 1,4-Dioxane               | 10.540 | 88   | 442701   | 9.73  | ppbV  | 98       |
| 44) Methyl methacrylate       | 10.794 | 41   | 1526724  | 11.49 | ppbV  | 99       |
| 45) n-Heptane                 | 10.929 | 43   | 1977206  | 10.90 | ppbV  | 100      |
| 46) cis-1,3-Dichloropropene   | 11.589 | 75   | 1447617  | 10.95 | ppbV  | 100      |
| 47) Methyl isobutyl ketone    | 11.611 | 43   | 2752777  | 11.20 | ppbV  | 99       |
| 48) trans-1,3-Dichloropropene | 12.228 | 75   | 1305414  | 10.04 | ppbV  | 99       |
| 49) 1,1,2-Trichloroethane     | 12.441 | 97   | 1005340  | 10.12 | ppbV  | 90       |
| 50) Toluene                   | 12.794 | 91   | 2771243  | 10.72 | ppbV  | 98       |
| 51) Methyl n-butyl ketone     | 13.109 | 43   | 2511183  | 11.44 | ppbV  | 99       |

AL SDG #E18-06141

Data Path : C:\DATA\05-18-18\  
 Data File : aa70781cyss.D  
 Acq On : 18 May 2018 3:14 pm  
 Operator : jls  
 Sample : 10 ppbv ICVSS  
 Misc : CC483422  
 ALS Vial : 8 Sample Multiplier: 1

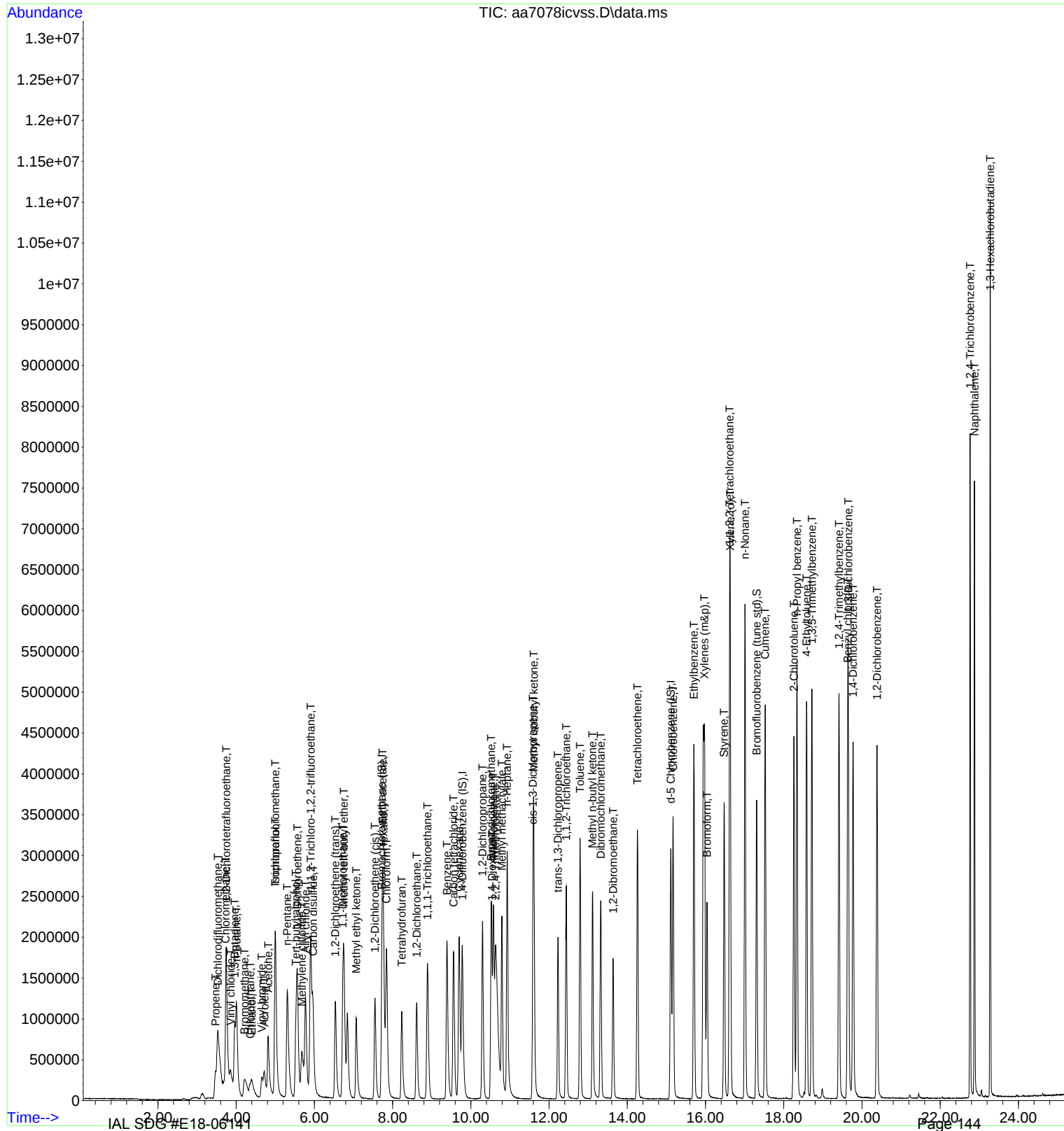
Quant Time: May 21 10:49:09 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| 52) Dibromochloromethane      | 13.325 | 129  | 1561436  | 10.38 | ppbV  | 99       |
| 53) 1,2-Dibromoethane         | 13.637 | 107  | 1529144  | 10.34 | ppbV  | 99       |
| 54) Tetrachloroethene         | 14.260 | 166  | 1076316  | 10.07 | ppbV  | 97       |
| 56) Chlorobenzene             | 15.170 | 112  | 2087476  | 9.98  | ppbV  | 99       |
| 57) Ethylbenzene              | 15.704 | 91   | 3845744  | 10.92 | ppbV  | 96       |
| 58) Xylenes (m&p)             | 15.971 | 91   | 5995366  | 21.96 | ppbV  | 96       |
| 59) Bromoform                 | 16.039 | 173  | 1274264  | 10.70 | ppbV  | 96       |
| 60) Styrene                   | 16.476 | 104  | 2086221  | 11.56 | ppbV  | 98       |
| 61) Xylene (o)                | 16.633 | 91   | 3185589  | 10.97 | ppbV  | 96       |
| 62) 1,1,2,2-Tetrachloroethane | 16.617 | 83   | 2560084  | 10.10 | ppbV  | 99       |
| 63) n-Nonane                  | 17.010 | 43   | 3246020  | 11.47 | ppbV  | 100      |
| 65) Cumene                    | 17.527 | 105  | 3969393  | 10.90 | ppbV  | 97       |
| 66) 2-Chlorotoluene           | 18.260 | 91   | 3243514  | 10.86 | ppbV  | 99       |
| 67) n-Propyl benzene          | 18.337 | 91   | 5484694  | 11.14 | ppbV  | 95       |
| 68) 4-Ethyltoluene            | 18.585 | 105  | 3867722  | 11.31 | ppbV  | 96       |
| 69) 1,3,5-Trimethylbenzene    | 18.720 | 105  | 3534194  | 11.30 | ppbV  | 100      |
| 70) 1,2,4-Trimethylbenzene    | 19.415 | 105  | 3543577  | 11.60 | ppbV  | 98       |
| 71) Benzyl chloride           | 19.633 | 91   | 2209493  | 10.51 | ppbV  | 99       |
| 72) 1,3-Dichlorobenzene       | 19.649 | 146  | 2039322  | 10.36 | ppbV  | 100      |
| 73) 1,4-Dichlorobenzene       | 19.775 | 146  | 2070619  | 10.39 | ppbV  | 99       |
| 74) 1,2-Dichlorobenzene       | 20.386 | 146  | 2037844  | 10.48 | ppbV  | 100      |
| 75) 1,2,4-Trichlorobenzene    | 22.765 | 180  | 1496366  | 9.91  | ppbV  | 97       |
| 76) Naphthalene               | 22.878 | 127  | 558973   | 12.41 | ppbV  | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.279 | 225  | 1144775  | 9.99  | ppbV  | 96       |

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

Data Path : C:\DATA\05-18-18\  
Data File : aa70781civss.D  
Acq On : 18 May 2018 3:14 pm

Quant Time: May 21 10:49:09 2018  
Quant Method : C:\msdchem\1\METHODS\0518.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Fri May 18 13:51:08 2018  
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:** AA7977ICVSS  
**Date Analyzed:** 7/25/2018

Runs with this ICVSS:

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA7971BFB]             | 07/25/2018 8:35                        |
| 40 PPBV STD [AA7972STD01]   | 07/25/2018 9:55                        |
| 20 PPBV STD [AA7973STD02]   | 07/25/2018 10:29                       |
| 10 PPBV STD [AA7974STD03]   | 07/25/2018 11:02                       |
| 2 PPBV STD [AA7975STD04]    | 07/25/2018 12:18                       |
| 0.2 PPBV STD [AA7976STD05]  | 07/25/2018 13:42                       |
| 10 PPBV ICVSS [AA7977ICVSS] | 07/25/2018 15:05                       |

| Compound                      | CAS #      | Injected Amount (ppbv) | Recovered Amount (ppbv) | % Recovery | QC Limit |
|-------------------------------|------------|------------------------|-------------------------|------------|----------|
| Acetone                       | 67-64-1    | 11                     | 11                      | 100        |          |
| Acrolein                      | 107-02-8   | 7.1                    | 13                      | 180        | *        |
| Allyl Chloride                | 107-05-1   | 11                     | 11                      | 100        |          |
| Benzene                       | 71-43-2    | 10                     | 10                      | 100        |          |
| Benzyl chloride               | 100-44-7   | 11                     | 11                      | 100        |          |
| Bromodichloromethane          | 75-27-4    | 11                     | 11                      | 100        |          |
| Bromoform                     | 75-25-2    | 11                     | 12                      | 110        |          |
| Bromomethane                  | 74-83-9    | 11                     | 10                      | 91         |          |
| 1,3-Butadiene                 | 106-99-0   | 11                     | 11                      | 100        |          |
| n-Butane                      | 106-97-8   | 11                     | 11                      | 100        |          |
| Chlorobenzene                 | 108-90-7   | 10                     | 11                      | 110        |          |
| Chloroethane                  | 75-00-3    | 11                     | 10                      | 91         |          |
| Chloroform                    | 67-66-3    | 11                     | 11                      | 100        |          |
| Chloromethane                 | 74-87-3    | 10                     | 11                      | 110        |          |
| Carbon disulfide              | 75-15-0    | 11                     | 11                      | 100        |          |
| Carbon tetrachloride          | 56-23-5    | 11                     | 11                      | 100        |          |
| 2-Chlorotoluene               | 95-49-8    | 11                     | 11                      | 100        |          |
| Cumene                        | 98-82-8    | 11                     | 11                      | 100        |          |
| Cyclohexane                   | 110-82-7   | 11                     | 11                      | 100        |          |
| Dibromochloromethane          | 124-48-1   | 11                     | 11                      | 100        |          |
| 1,2-Dibromoethane             | 106-93-4   | 10                     | 10                      | 100        |          |
| 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                     | 11                      | 100        |          |
| 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                     | 11                      | 100        |          |
| 1,2-Dichloroethene (cis)      | 156-59-2   | 10                     | 11                      | 110        |          |
| 1,2-Dichloroethene (trans)    | 156-60-5   | 11                     | 11                      | 100        |          |
| 1,2-Dichloropropane           | 78-87-5    | 11                     | 11                      | 100        |          |
| 1,3-Dichloropropene (cis)     | 10061-01-5 | 11                     | 11                      | 100        |          |
| 1,3-Dichloropropene (trans)   | 10061-02-6 | 10                     | 10                      | 100        |          |
| 1,2-Dichlorotetrafluoroethane | 76-14-2    | 11                     | 9.6                     | 87         |          |
| 1,4-Dioxane                   | 123-91-1   | 8.3                    | 9.9                     | 120        |          |
| Ethanol                       | 64-17-5    | 8.7                    | 8.8                     | 100        |          |
| 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:** AA7977ICVSS  
**Date Analyzed:** 7/25/2018

Runs with this ICVSS:

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA7971BFB]             | 07/25/2018 8:35                        |
| 40 PPBV STD [AA7972STD01]   | 07/25/2018 9:55                        |
| 20 PPBV STD [AA7973STD02]   | 07/25/2018 10:29                       |
| 10 PPBV STD [AA7974STD03]   | 07/25/2018 11:02                       |
| 2 PPBV STD [AA7975STD04]    | 07/25/2018 12:18                       |
| 0.2 PPBV STD [AA7976STD05]  | 07/25/2018 13:42                       |
| 10 PPBV ICVSS [AA7977ICVSS] | 07/25/2018 15:05                       |

| 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                     | 10                      | 100        |          |
| Isopropanol                           | 67-63-0     | 8.2                    | 10                      | 120        |          |
| Methylene chloride                    | 75-09-2     | 11                     | 10                      | 91         |          |
| Methyl ethyl ketone                   | 78-93-3     | 10                     | 11                      | 110        |          |
| Methyl isobutyl ketone                | 108-10-1    | 11                     | 11                      | 100        |          |
| Methyl methacrylate                   | 80-62-6     | 11                     | 11                      | 100        |          |
| Methyl n-butyl ketone                 | 591-78-6    | 9.4                    | 11                      | 120        |          |
| Methyl tert-butyl ether               | 1634-04-4   | 11                     | 10                      | 91         |          |
| Naphthalene                           | 91-20-3     | 9.3                    | 11                      | 120        |          |
| n-Nonane                              | 111-84-2    | 11                     | 11                      | 100        |          |
| n-Pentane                             | 109-66-0    | 11                     | 11                      | 100        |          |
| Propene                               | 115-07-1    | 11                     | 12                      | 110        |          |
| n-Propyl benzene                      | 103-65-1    | 11                     | 11                      | 100        |          |
| Styrene                               | 100-42-5    | 10                     | 11                      | 110        |          |
| Tert-butyl alcohol                    | 75-65-0     | 8.0                    | 9.2                     | 120        |          |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     | 10                     | 11                      | 110        |          |
| Tetrachloroethene                     | 127-18-4    | 10                     | 10                      | 100        |          |
| Tetrahydrofuran                       | 109-99-9    | 11                     | 12                      | 110        |          |
| Toluene                               | 108-88-3    | 10                     | 10                      | 100        |          |
| 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                     | 11                      | 110        |          |
| Trichloroethene                       | 79-01-6     | 10                     | 11                      | 110        |          |
| Trichlorofluoromethane                | 75-69-4     | 11                     | 11                      | 100        |          |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 76-13-1     | 11                     | 10                      | 91         |          |
| 1,2,4-Trimethylbenzene                | 95-63-6     | 10                     | 11                      | 110        |          |
| 1,3,5-Trimethylbenzene                | 108-67-8    | 11                     | 11                      | 100        |          |
| 2,2,4-Trimethylpentane                | 540-84-1    | 11                     | 11                      | 100        |          |
| Vinyl bromide                         | 593-60-2    | 9.7                    | 11                      | 110        |          |
| Vinyl chloride                        | 75-01-4     | 11                     | 11                      | 100        |          |
| 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\07-25-18\  
 Data File : aa79771cyss.D  
 Acq On : 25 Jul 2018 3:05 pm  
 Operator : jls  
 Sample : 10 ppbv ICVSS  
 Misc : CC483422  
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jul 25 15:36:45 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.686  | 130  | 434360   | 10.00 | ppbV   | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.734  | 114  | 1814996  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.055 | 117  | 1540277  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.248 | 95   | 1475009  | 10.50 | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       | Qvalue |          |
| 2) Propene                    | 3.451  | 41   | 431460   | 11.63 | ppbV # | 80       |
| 3) Dichlorodifluoromethane    | 3.519  | 85   | 1508906  | 10.79 | ppbV   | 97       |
| 4) Chloromethane              | 3.689  | 52   | 190066   | 10.64 | ppbV # | 1        |
| 5) 1,2-Dichlorotetrafluor...  | 3.727  | 85   | 1464207  | 9.60  | ppbV   | 96       |
| 6) Vinyl chloride             | 3.846  | 62   | 664405   | 10.71 | ppbV   | 86       |
| 7) 1,3-Butadiene              | 3.946  | 54   | 551716   | 11.01 | ppbV   | 82       |
| 8) n-Butane                   | 3.991  | 43   | 1033251  | 10.70 | ppbV   | 97       |
| 9) Bromomethane               | 4.194  | 94   | 448735   | 10.17 | ppbV   | 99       |
| 10) Chloroethane              | 4.338  | 64   | 328461   | 10.14 | ppbV   | 93       |
| 11) Ethanol                   | 4.371  | 45   | 299949   | 8.77  | ppbV   | 98       |
| 12) Vinyl bromide             | 4.637  | 106  | 557257   | 11.11 | ppbV   | 96       |
| 13) Acrolein                  | 4.699  | 56   | 269452   | 12.60 | ppbV   | 97       |
| 14) Acetone                   | 4.792  | 58   | 364690   | 11.02 | ppbV   | 79       |
| 15) Trichlorofluoromethane    | 4.972  | 101  | 1612224  | 10.79 | ppbV   | 100      |
| 16) Isopropanol               | 4.969  | 45   | 1085784  | 10.07 | ppbV   | 95       |
| 17) n-Pentane                 | 5.277  | 43   | 1184109  | 10.88 | ppbV   | 93       |
| 18) 1,1-Dichloroethene        | 5.535  | 61   | 1129497  | 11.11 | ppbV   | 99       |
| 19) Methylene chloride        | 5.650  | 49   | 857233   | 10.30 | ppbV # | 84       |
| 20) Tert-butyl alcohol        | 5.502  | 59   | 1281055  | 9.24  | ppbV   | 100      |
| 21) Allyl chloride            | 5.740  | 76   | 299466   | 10.93 | ppbV   | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.875  | 101  | 1239123  | 10.21 | ppbV   | 89       |
| 23) Carbon disulfide          | 5.927  | 76   | 1893599  | 11.03 | ppbV   | 92       |
| 24) 1,2-Dichloroethene (tr... | 6.502  | 61   | 1026262  | 11.08 | ppbV   | 92       |
| 25) 1,1-Dichloroethane        | 6.695  | 63   | 1316577  | 10.97 | ppbV   | 99       |
| 26) Methyl tert-butyl ether   | 6.721  | 73   | 1802161  | 10.31 | ppbV   | 100      |
| 27) Methyl ethyl ketone       | 7.036  | 43   | 1349894  | 11.02 | ppbV # | 89       |
| 28) 1,2-Dichloroethene (cis)  | 7.509  | 61   | 996984   | 11.11 | ppbV   | 91       |
| 29) Ethyl acetate             | 7.702  | 45   | 226087   | 11.09 | ppbV   | 100      |
| 30) n-Hexane                  | 7.731  | 57   | 1081737  | 10.29 | ppbV   | 87       |
| 31) Chloroform                | 7.808  | 83   | 1402575  | 10.88 | ppbV   | 98       |
| 32) Tetrahydrofuran           | 8.190  | 42   | 743740   | 11.99 | ppbV   | 93       |
| 33) 1,2-Dichloroethane        | 8.573  | 62   | 1084031  | 10.99 | ppbV   | 98       |
| 34) 1,1,1-Trichloroethane     | 8.849  | 97   | 1357207  | 10.56 | ppbV   | 99       |
| 35) Benzene                   | 9.345  | 78   | 1991345  | 10.35 | ppbV   | 92       |
| 36) Carbon tetrachloride      | 9.515  | 117  | 1293160  | 10.71 | ppbV   | 100      |
| 37) Cyclohexane               | 9.653  | 56   | 1160406  | 10.59 | ppbV   | 100      |
| 39) 1,2-Dichloropropane       | 10.255 | 63   | 872412   | 10.54 | ppbV   | 99       |
| 40) Bromodichloromethane      | 10.476 | 83   | 1514686  | 11.27 | ppbV   | 98       |
| 41) 2,2,4-Trimethylpentane    | 10.592 | 57   | 3745203  | 11.21 | ppbV   | 98       |
| 42) Trichloroethene           | 10.531 | 130  | 711375   | 10.78 | ppbV   | 100      |
| 43) 1,4-Dioxane               | 10.496 | 88   | 372744   | 9.91  | ppbV   | 81       |
| 44) Methyl methacrylate       | 10.746 | 41   | 954538   | 11.05 | ppbV # | 78       |
| 45) n-Heptane                 | 10.885 | 43   | 1279075  | 11.02 | ppbV # | 82       |
| 46) cis-1,3-Dichloropropene   | 11.541 | 75   | 1246698  | 11.00 | ppbV   | 99       |
| 47) Methyl isobutyl ketone    | 11.566 | 43   | 1715186  | 11.16 | ppbV   | 90       |
| 48) trans-1,3-Dichloropropene | 12.177 | 75   | 1174855  | 10.03 | ppbV # | 81       |
| 49) 1,1,2-Trichloroethane     | 12.386 | 97   | 835731   | 10.50 | ppbV   | 92       |
| 50) Toluene                   | 12.740 | 91   | 2368634  | 10.40 | ppbV   | 97       |
| 51) Methyl n-butyl ketone     | 13.065 | 43   | 1602395  | 11.10 | ppbV   | 87       |

AL SDG #E18-06141

Data Path : C:\DATA\07-25-18\  
 Data File : aa79771cyss.D  
 Acq On : 25 Jul 2018 3:05 pm  
 Operator : jls  
 Sample : 10 ppbv ICVSS  
 Misc : CC483422  
 ALS Vial : 7 Sample Multiplier: 1

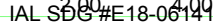
Quant Time: Jul 25 15:36:45 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| 52) Dibromochloromethane      | 13.267 | 129  | 1242245  | 11.08 | ppbV  | 99       |
| 53) 1,2-Dibromoethane         | 13.582 | 107  | 1276654  | 10.45 | ppbV  | 96       |
| 54) Tetrachloroethene         | 14.206 | 166  | 872215   | 10.48 | ppbV  | 98       |
| 56) Chlorobenzene             | 15.113 | 112  | 1785159  | 10.65 | ppbV  | 94       |
| 57) Ethylbenzene              | 15.650 | 91   | 3244054  | 10.68 | ppbV  | 98       |
| 58) Xylenes (m&p)             | 15.917 | 91   | 5414325  | 22.97 | ppbV  | 95       |
| 59) Bromoform                 | 15.981 | 173  | 1100601  | 11.83 | ppbV  | 97       |
| 60) Styrene                   | 16.418 | 104  | 1821922  | 11.14 | ppbV  | 97       |
| 61) Xylene (o)                | 16.576 | 91   | 2646162  | 11.06 | ppbV  | 99       |
| 62) 1,1,2,2-Tetrachloroethane | 16.557 | 83   | 2075885  | 10.83 | ppbV  | 98       |
| 63) n-Nonane                  | 16.952 | 43   | 2082795  | 11.49 | ppbV  | 84       |
| 65) Cumene                    | 17.470 | 105  | 3385196  | 11.17 | ppbV  | 97       |
| 66) 2-Chlorotoluene           | 18.200 | 91   | 2749738  | 10.96 | ppbV  | 97       |
| 67) n-Propyl benzene          | 18.280 | 91   | 4664264  | 11.36 | ppbV  | 95       |
| 68) 4-Ethyltoluene            | 18.524 | 105  | 3300488  | 11.32 | ppbV  | 96       |
| 69) 1,3,5-Trimethylbenzene    | 18.659 | 105  | 3031397  | 11.34 | ppbV  | 99       |
| 70) 1,2,4-Trimethylbenzene    | 19.351 | 105  | 3029482  | 11.47 | ppbV  | 98       |
| 71) Benzyl chloride           | 19.569 | 91   | 2678803  | 10.98 | ppbV  | 97       |
| 72) 1,3-Dichlorobenzene       | 19.589 | 146  | 1694967  | 11.14 | ppbV  | 98       |
| 73) 1,4-Dichlorobenzene       | 19.711 | 146  | 1763837  | 11.23 | ppbV  | 98       |
| 74) 1,2-Dichlorobenzene       | 20.325 | 146  | 1706377  | 11.04 | ppbV  | 99       |
| 75) 1,2,4-Trichlorobenzene    | 22.733 | 180  | 1288590  | 11.03 | ppbV  | 99       |
| 76) Naphthalene               | 22.846 | 127  | 441780   | 11.44 | ppbV  | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.251 | 225  | 917375   | 10.75 | ppbV  | 96       |

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

Integrated Analytical Laboratories LLC

QLast Update : Wed Jul 25 14:15:57 2018



## Continuing Calibration Data Summary Report

Initial Calibration Curve: 5/18/2018  
Instrument: AA  
Amount of standard injected (ml): 50

Date/Time of Calibration: 6/13/2018 09:18  
Sample ID: DCS  
Laboratory ID: AA7472DCVS

| Standard/Sample Run                                 | Date/Time of Sample/Standard Injection |
|-----------------------------------------------------|----------------------------------------|
| BFB [AA7471BFB]                                     | 06/13/2018 08:30                       |
| 10 PPBV DCVS [AA7472DCVS]                           | 06/13/2018 09:18                       |
| METHOD BLANK [AA7473BLK]                            | 06/13/2018 10:25                       |
| 02 PPBV RLLCS [AA7474RLLCS]                         | 06/13/2018 11:14                       |
| CLEAN CAN CERTIFICATION, BATCH MASTER 3059 [AA7475] | 06/13/2018 12:20                       |
| 10 PPBV CCCVS [AA7485CCCVS]                         | 06/13/2018 20:47                       |

| Compound Name                 | Average RRF | Standard RRF | % Difference | PassFail | * |
|-------------------------------|-------------|--------------|--------------|----------|---|
| Acetone                       | 0.81        | 0.88         | -8.4         | PASS     |   |
| Benzene                       | 4.4         | 4.1          | 7.3          | PASS     |   |
| Bromodichloromethane          | 0.82        | 0.88         | -6.7         | PASS     |   |
| Bromoform                     | 0.62        | 0.70         | -13          | PASS     |   |
| Bromomethane                  | 1.1         | 1.1          | -0.70        | PASS     |   |
| 1,3-Butadiene                 | 1.2         | 1.3          | -4.5         | PASS     |   |
| Chlorobenzene                 | 1.1         | 1.1          | 2.6          | PASS     |   |
| Chloroethane                  | 0.82        | 0.81         | 0.90         | PASS     |   |
| Chloroform                    | 3.2         | 3.3          | -5.0         | PASS     |   |
| Chloromethane                 | 0.49        | 0.52         | -6.7         | PASS     |   |
| Carbon disulfide              | 3.8         | 4.1          | -8.4         | PASS     |   |
| Carbon tetrachloride          | 3.0         | 3.0          | -0.10        | PASS     |   |
| Cyclohexane                   | 2.6         | 2.6          | 0.50         | PASS     |   |
| Dibromochloromethane          | 0.69        | 0.69         | 0.30         | PASS     |   |
| 1,2-Dibromoethane             | 0.68        | 0.64         | 4.6          | PASS     |   |
| 1,2-Dichlorobenzene           | 1.0         | 1.0          | -2.1         | PASS     |   |
| 1,3-Dichlorobenzene           | 1.0         | 1.1          | -3.2         | PASS     |   |
| 1,4-Dichlorobenzene           | 1.0         | 1.1          | -1.3         | PASS     |   |
| Dichlorodifluoromethane       | 3.5         | 3.7          | -4.1         | PASS     |   |
| 1,1-Dichloroethane            | 3.0         | 3.1          | -4.4         | PASS     |   |
| 1,2-Dichloroethane            | 2.7         | 2.7          | -2.0         | PASS     |   |
| 1,1-Dichloroethene            | 2.6         | 2.8          | -7.0         | PASS     |   |
| 1,2-Dichloroethene (cis)      | 2.2         | 2.2          | 1.9          | PASS     |   |
| 1,2-Dichloroethene (trans)    | 2.3         | 2.2          | 2.5          | PASS     |   |
| 1,2-Dichloropropane           | 0.49        | 0.47         | 3.5          | PASS     |   |
| 1,3-Dichloropropene (cis)     | 0.60        | 0.61         | -0.50        | PASS     |   |
| 1,3-Dichloropropene (trans)   | 0.59        | 0.60         | -0.50        | PASS     |   |
| 1,2-Dichlorotetrafluoroethane | 3.7         | 3.7          | 1.0          | PASS     |   |
| 1,4-Dioxane                   | 0.21        | 0.19         | 7.2          | PASS     |   |
| Ethylbenzene                  | 1.8         | 1.9          | -1.8         | PASS     |   |
| n-Heptane                     | 0.83        | 0.93         | -12          | PASS     |   |
| 1,3-Hexachlorobutadiene       | 0.60        | 0.63         | -5.5         | PASS     |   |
| n-Hexane                      | 2.6         | 2.5          | 1.6          | PASS     |   |
| Methylene chloride            | 2.3         | 2.4          | -2.4         | PASS     |   |
| Methyl ethyl ketone           | 3.7         | 3.9          | -5.9         | PASS     |   |
| Methyl isobutyl ketone        | 1.1         | 1.3          | -13          | PASS     |   |
| Methyl tert-butyl ether       | 3.3         | 3.2          | 2.7          | PASS     |   |
| Styrene                       | 0.94        | 0.98         | -3.7         | PASS     |   |
| Tert-butyl alcohol            | 2.3         | 2.5          | -7.6         | PASS     |   |
| 1,1,2,2-Tetrachloroethane     | 1.3         | 1.4          | -5.5         | PASS     |   |
| Tetrachloroethene             | 0.49        | 0.43         | 12           | PASS     |   |
| Toluene                       | 1.2         | 1.1          | 6.2          | PASS     |   |
| 1,2,4-Trichlorobenzene        | 0.79        | 0.80         | -0.80        | PASS     |   |
| 1,1,1-Trichloroethane         | 3.0         | 3.0          | 0.00         | PASS     |   |

\*%Difference must be within +/- 30%

RRF - Relative Response Factor

## Continuing Calibration Data Summary Report

Initial Calibration Curve: 5/18/2018  
 Instrument: AA  
 Amount of standard injected (ml): 50

Date/Time of Calibration: 6/13/2018 09:18  
 Sample ID: DCS  
 Laboratory ID: AA7472DCVS

| Standard/Sample Run                                 | Date/Time of Sample/Standard Injection |
|-----------------------------------------------------|----------------------------------------|
| BFB [AA7471BFB]                                     | 06/13/2018 08:30                       |
| 10 PPBV DCVS [AA7472DCVS]                           | 06/13/2018 09:18                       |
| METHOD BLANK [AA7473BLK]                            | 06/13/2018 10:25                       |
| 02 PPBV RLLCS [AA7474RLLCS]                         | 06/13/2018 11:14                       |
| CLEAN CAN CERTIFICATION, BATCH MASTER 3059 [AA7475] | 06/13/2018 12:20                       |
| 10 PPBV CCCVS [AA7485CCCVS]                         | 06/13/2018 20:47                       |

| Compound Name                         | Average RRF | Standard RRF | % Difference | PassFail | * |
|---------------------------------------|-------------|--------------|--------------|----------|---|
| 1,1,2-Trichloroethane                 | 0.45        | 0.44         | 4.0          | PASS     |   |
| Trichloroethene                       | 0.38        | 0.39         | -1.0         | PASS     |   |
| Trichlorofluoromethane                | 3.9         | 3.9          | -1.2         | PASS     |   |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 3.0         | 2.8          | 5.8          | PASS     |   |
| 1,2,4-Trimethylbenzene                | 1.6         | 1.8          | -10          | PASS     |   |
| 1,3,5-Trimethylbenzene                | 1.6         | 1.8          | -11          | PASS     |   |
| 2,2,4-Trimethylpentane                | 1.8         | 2.2          | -22          | PASS     |   |
| Vinyl bromide                         | 1.0         | 1.0          | -0.40        | PASS     |   |
| Vinyl chloride                        | 1.5         | 1.4          | 0.20         | PASS     |   |
| Xylenes (m&p)                         | 1.4         | 1.5          | -7.6         | PASS     |   |
| Xylenes (o)                           | 1.5         | 1.6          | -8.4         | PASS     |   |

\*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E18-06141

Data Path : C:\DATA\06-13-18\  
 Data File : aa7472dcvs.D  
 Acq On : 13 Jun 2018 9:18 am  
 Operator : jls  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 10:11:03 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 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   | 99    | 0.00     |
| 2 T  | Propene                     | 1.265 | 1.342 | -6.1  | 108   | 0.00     |
| 3 T  | Dichlorodifluoromethane     | 3.541 | 3.685 | -4.1  | 105   | 0.00     |
| 4 T  | Chloromethane               | 0.490 | 0.523 | -6.7  | 111   | -0.04    |
| 5 T  | 1,2-Dichlorotetrafluoroetha | 3.727 | 3.688 | 1.0   | 109   | 0.00     |
| 6 T  | Vinyl chloride              | 1.450 | 1.447 | 0.2   | 98    | 0.00     |
| 7 T  | 1,3-Butadiene               | 1.231 | 1.286 | -4.5  | 98    | 0.00     |
| 8 T  | n-Butane                    | 2.846 | 3.149 | -10.6 | 113   | 0.00     |
| 9 T  | Bromomethane                | 1.061 | 1.068 | -0.7  | 99    | 0.00     |
| 10 T | Chloroethane                | 0.820 | 0.813 | 0.9   | 104   | 0.00     |
| 11 T | Ethanol                     | 0.792 | 0.747 | 5.7   | 107   | 0.00     |
| 12 T | Vinyl bromide               | 1.035 | 1.039 | -0.4  | 95    | 0.00     |
| 13 T | Acrolein                    | 0.510 | 0.550 | -7.8  | 102   | 0.00     |
| 14 T | Acetone                     | 0.808 | 0.876 | -8.4  | 104   | 0.00     |
| 15 T | Trichlorofluoromethane      | 3.886 | 3.931 | -1.2  | 106   | 0.00     |
| 16 T | Isopropanol                 | 2.612 | 2.745 | -5.1  | 99    | 0.00     |
| 17 T | n-Pentane                   | 3.061 | 3.200 | -4.5  | 103   | 0.00     |
| 18 T | 1,1-Dichloroethene          | 2.569 | 2.750 | -7.0  | 105   | 0.00     |
| 19 T | Methylene chloride          | 2.334 | 2.391 | -2.4  | 112   | 0.00     |
| 20 T | Tert-butyl alcohol          | 2.339 | 2.516 | -7.6  | 107   | 0.00     |
| 21 T | Allyl chloride              | 0.568 | 0.552 | 2.8   | 93    | 0.00     |
| 22 T | 1,1,2-Trichloro-1,2,2-trifl | 3.006 | 2.833 | 5.8   | 104   | 0.00     |
| 23 T | Carbon disulfide            | 3.772 | 4.088 | -8.4  | 105   | 0.00     |
| 24 T | 1,2-Dichloroethene (trans)  | 2.288 | 2.231 | 2.5   | 97    | 0.00     |
| 25 T | 1,1-Dichloroethane          | 2.961 | 3.091 | -4.4  | 107   | 0.00     |
| 26 T | Methyl tert-butyl ether     | 3.333 | 3.244 | 2.7   | 97    | 0.00     |
| 27 T | Methyl ethyl ketone         | 3.663 | 3.880 | -5.9  | 104   | 0.00     |
| 28 T | 1,2-Dichloroethene (cis)    | 2.201 | 2.159 | 1.9   | 96    | 0.00     |
| 29 T | Ethyl acetate               | 0.593 | 0.650 | -9.6  | 106   | 0.00     |
| 30 T | n-Hexane                    | 2.569 | 2.528 | 1.6   | 100   | 0.00     |
| 31 T | Chloroform                  | 3.163 | 3.320 | -5.0  | 107   | 0.00     |
| 32 T | Tetrahydrofuran             | 1.738 | 1.797 | -3.4  | 100   | 0.00     |
| 33 T | 1,2-Dichloroethane          | 2.652 | 2.705 | -2.0  | 106   | 0.00     |
| 34 T | 1,1,1-Trichloroethane       | 3.042 | 3.041 | 0.0   | 106   | 0.00     |
| 35 T | Benzene                     | 4.381 | 4.059 | 7.3   | 95    | 0.00     |
| 36 T | Carbon tetrachloride        | 3.001 | 3.004 | -0.1  | 107   | 0.00     |
| 37 T | Cyclohexane                 | 2.604 | 2.591 | 0.5   | 99    | 0.00     |
| 38 I | 1,4-Difluorobenzene (IS)    | 1.000 | 1.000 | 0.0   | 95    | 0.00     |
| 39 T | 1,2-Dichloropropane         | 0.487 | 0.470 | 3.5   | 98    | 0.00     |
| 40 T | Bromodichloromethane        | 0.824 | 0.879 | -6.7  | 106   | 0.00     |
| 41 T | 2,2,4-Trimethylpentane      | 1.796 | 2.190 | -21.9 | 110   | 0.00     |
| 42 T | Trichloroethene             | 0.384 | 0.388 | -1.0  | 99    | 0.00     |
| 43 T | 1,4-Dioxane                 | 0.208 | 0.193 | 7.2   | 90    | 0.00     |
| 44 T | Methyl methacrylate         | 0.607 | 0.668 | -10.0 | 101   | 0.00     |
| 45 T | n-Heptane                   | 0.828 | 0.926 | -11.8 | 107   | 0.00     |
| 46 T | cis-1,3-Dichloropropene     | 0.604 | 0.607 | -0.5  | 95    | 0.00     |
| 47 T | Methyl isobutyl ketone      | 1.122 | 1.272 | -13.4 | 106   | 0.00     |
| 48 T | trans-1,3-Dichloropropene   | 0.594 | 0.597 | -0.5  | 94    | 0.00     |
| 49 T | 1,1,2-Trichloroethane       | 0.454 | 0.436 | 4.0   | 99    | 0.00     |
| 50 T | Toluene                     | 1.180 | 1.107 | 6.2   | 91    | 0.00     |
| 51 T | Methyl n-butyl ketone       | 1.002 | 1.108 | -10.6 | 101   | 0.00     |
| 52 T | Dibromochloromethane        | 0.687 | 0.685 | 0.3   | 102   | 0.00     |
| 53 T | 1,2-Dibromoethane           | 0.675 | 0.644 | 4.6   | 96    | 0.00     |

AL SDG #E18-06141

Data Path : C:\DATA\06-13-18\  
 Data File : aa7472dcvs.D  
 Acq On : 13 Jun 2018 9:18 am  
 Operator : jls  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 10:11:03 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 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 | Tetrachloroethene           | 0.488 | 0.432 | 11.5   | 92    | 0.00     |
| 55 I | d-5 Chlorobenzene (IS)      | 1.000 | 1.000 | 0.0    | 90    | 0.00     |
| 56 T | Chlorobenzene               | 1.094 | 1.066 | 2.6    | 96    | 0.00     |
| 57 T | Ethylbenzene                | 1.841 | 1.874 | -1.8   | 92    | 0.00     |
| 58 T | Xylenes (m&p)               | 1.427 | 1.536 | -7.6   | 97    | 0.00     |
| 59 T | Bromoform                   | 0.622 | 0.702 | -12.9  | 106   | 0.00     |
| 60 T | Styrene                     | 0.943 | 0.978 | -3.7   | 88    | 0.00     |
| 61 T | Xylene (o)                  | 1.518 | 1.646 | -8.4   | 98    | 0.00     |
| 62 T | 1,1,2,2-Tetrachloroethane   | 1.325 | 1.398 | -5.5   | 103   | 0.00     |
| 63 T | n-Nonane                    | 1.479 | 1.839 | -24.3  | 108   | 0.00     |
| 64 S | Bromofluorobenzene (tune st | 0.921 | 0.975 | -5.9   | 95    | 0.00     |
| 65 T | Cumene                      | 1.904 | 1.989 | -4.5   | 95    | 0.00     |
| 66 T | 2-Chlorotoluene             | 1.561 | 1.639 | -5.0   | 96    | 0.00     |
| 67 T | n-Propyl benzene            | 2.572 | 2.849 | -10.8  | 98    | 0.00     |
| 68 T | 4-Ethyltoluene              | 1.788 | 1.938 | -8.4   | 94    | 0.00     |
| 69 T | 1,3,5-Trimethylbenzene      | 1.635 | 1.808 | -10.6  | 96    | 0.00     |
| 70 T | 1,2,4-Trimethylbenzene      | 1.597 | 1.762 | -10.3  | 94    | 0.00     |
| 71 T | Benzyl chloride             | 1.099 | 1.601 | -45.7# | 124   | 0.00     |
| 72 T | 1,3-Dichlorobenzene         | 1.029 | 1.062 | -3.2   | 99    | 0.00     |
| 73 T | 1,4-Dichlorobenzene         | 1.042 | 1.056 | -1.3   | 96    | 0.00     |
| 74 T | 1,2-Dichlorobenzene         | 1.016 | 1.037 | -2.1   | 96    | 0.00     |
| 75 T | 1,2,4-Trichlorobenzene      | 0.789 | 0.795 | -0.8   | 94    | 0.00     |
| 76 T | Naphthalene                 | 0.235 | 0.263 | -11.9  | 94    | 0.00     |
| 77 T | 1,3-Hexachlorobutadiene     | 0.599 | 0.632 | -5.5   | 104   | 0.00     |

(#) = Out of Range

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

Data Path : C:\DATA\06-13-18\  
 Data File : aa7472dcvs.D  
 Acq On : 13 Jun 2018 9:18 am  
 Operator : jls  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 10:11:03 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.724  | 130  | 539798   | 10.00 | ppbV   | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.785  | 114  | 2150341  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.116 | 117  | 1773674  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.312 | 95   | 1728565  | 10.59 | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       | Qvalue |          |
| 2) Propene                    | 3.473  | 41   | 796633   | 11.67 | ppbV   | 84       |
| 3) Dichlorodifluoromethane    | 3.537  | 85   | 2187832  | 11.45 | ppbV   | 98       |
| 4) Chloromethane              | 3.698  | 52   | 310310   | 11.72 | ppbV # | 1        |
| 5) 1,2-Dichlorotetrafluor...  | 3.746  | 85   | 1990852  | 9.90  | ppbV   | 100      |
| 6) Vinyl chloride             | 3.868  | 62   | 858989   | 10.98 | ppbV   | 88       |
| 7) 1,3-Butadiene              | 3.968  | 54   | 763581   | 11.49 | ppbV   | 85       |
| 8) n-Butane                   | 4.013  | 43   | 1869922  | 12.17 | ppbV   | 90       |
| 9) Bromomethane               | 4.219  | 94   | 570583   | 9.96  | ppbV   | 98       |
| 10) Chloroethane              | 4.364  | 64   | 438914   | 9.91  | ppbV   | 93       |
| 11) Ethanol                   | 4.399  | 45   | 379115   | 8.86  | ppbV   | 99       |
| 12) Vinyl bromide             | 4.663  | 106  | 616932   | 11.05 | ppbV   | 99       |
| 13) Acrolein                  | 4.717  | 56   | 356484   | 12.95 | ppbV   | 95       |
| 14) Acetone                   | 4.817  | 58   | 520154   | 11.92 | ppbV   | 81       |
| 15) Trichlorofluoromethane    | 5.000  | 101  | 2334372  | 11.13 | ppbV   | 99       |
| 16) Isopropanol               | 5.000  | 45   | 1481834  | 10.51 | ppbV # | 83       |
| 17) n-Pentane                 | 5.312  | 43   | 1900109  | 11.50 | ppbV   | 99       |
| 18) 1,1-Dichloroethene        | 5.566  | 61   | 1633019  | 11.78 | ppbV   | 88       |
| 19) Methylene chloride        | 5.679  | 49   | 1419869  | 11.27 | ppbV   | 94       |
| 20) Tert-butyl alcohol        | 5.531  | 59   | 1629759  | 12.91 | ppbV   | 100      |
| 21) Allyl chloride            | 5.778  | 76   | 327986   | 10.70 | ppbV   | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.907  | 101  | 1681933  | 10.37 | ppbV   | 85       |
| 23) Carbon disulfide          | 5.962  | 76   | 2427456  | 11.92 | ppbV   | 96       |
| 24) 1,2-Dichloroethene (tr... | 6.540  | 61   | 1324820  | 10.73 | ppbV   | 95       |
| 25) 1,1-Dichloroethane        | 6.727  | 63   | 1835583  | 11.48 | ppbV   | 99       |
| 26) Methyl tert-butyl ether   | 6.759  | 73   | 1926444  | 10.71 | ppbV   | 94       |
| 27) Methyl ethyl ketone       | 7.074  | 43   | 2304085  | 11.65 | ppbV   | 95       |
| 28) 1,2-Dichloroethene (cis)  | 7.550  | 61   | 1281740  | 10.79 | ppbV   | 95       |
| 29) Ethyl acetate             | 7.743  | 45   | 385806   | 12.06 | ppbV   | 100      |
| 30) n-Hexane                  | 7.769  | 57   | 1501365  | 10.83 | ppbV   | 87       |
| 31) Chloroform                | 7.846  | 83   | 1971358  | 11.55 | ppbV   | 98       |
| 32) Tetrahydrofuran           | 8.235  | 42   | 1163814  | 12.41 | ppbV # | 85       |
| 33) 1,2-Dichloroethane        | 8.617  | 62   | 1605976  | 11.22 | ppbV   | 100      |
| 34) 1,1,1-Trichloroethane     | 8.891  | 97   | 1805454  | 11.00 | ppbV   | 99       |
| 35) Benzene                   | 9.392  | 78   | 2409905  | 10.19 | ppbV   | 96       |
| 36) Carbon tetrachloride      | 9.563  | 117  | 1783490  | 11.01 | ppbV   | 100      |
| 37) Cyclohexane               | 9.707  | 56   | 1538354  | 10.95 | ppbV   | 84       |
| 39) 1,2-Dichloropropane       | 10.302 | 63   | 1112181  | 10.63 | ppbV   | 99       |
| 40) Bromodichloromethane      | 10.524 | 83   | 2079060  | 11.73 | ppbV   | 99       |
| 41) 2,2,4-Trimethylpentane    | 10.637 | 57   | 5180610  | 13.41 | ppbV   | 100      |
| 42) Trichloroethene           | 10.579 | 130  | 916905   | 11.10 | ppbV   | 95       |
| 43) 1,4-Dioxane               | 10.543 | 88   | 415510   | 9.30  | ppbV   | 93       |
| 44) Methyl methacrylate       | 10.794 | 41   | 1579870  | 12.11 | ppbV   | 94       |
| 45) n-Heptane                 | 10.932 | 43   | 2189277  | 12.29 | ppbV   | 94       |
| 46) cis-1,3-Dichloropropene   | 11.592 | 75   | 1435942  | 11.06 | ppbV   | 100      |
| 47) Methyl isobutyl ketone    | 11.614 | 43   | 3008902  | 12.47 | ppbV   | 96       |
| 48) trans-1,3-Dichloropropene | 12.231 | 75   | 1283942  | 10.06 | ppbV   | 93       |
| 49) 1,1,2-Trichloroethane     | 12.444 | 97   | 1031155  | 10.57 | ppbV   | 89       |
| 50) Toluene                   | 12.797 | 91   | 2618304  | 10.32 | ppbV   | 97       |
| 51) Methyl n-butyl ketone     | 13.116 | 43   | 2621325  | 12.16 | ppbV   | 94       |

AL SDG #E18-06141

Data Path : C:\DATA\06-13-18\  
 Data File : aa7472dcvs.D  
 Acq On : 13 Jun 2018 9:18 am  
 Operator : jls  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

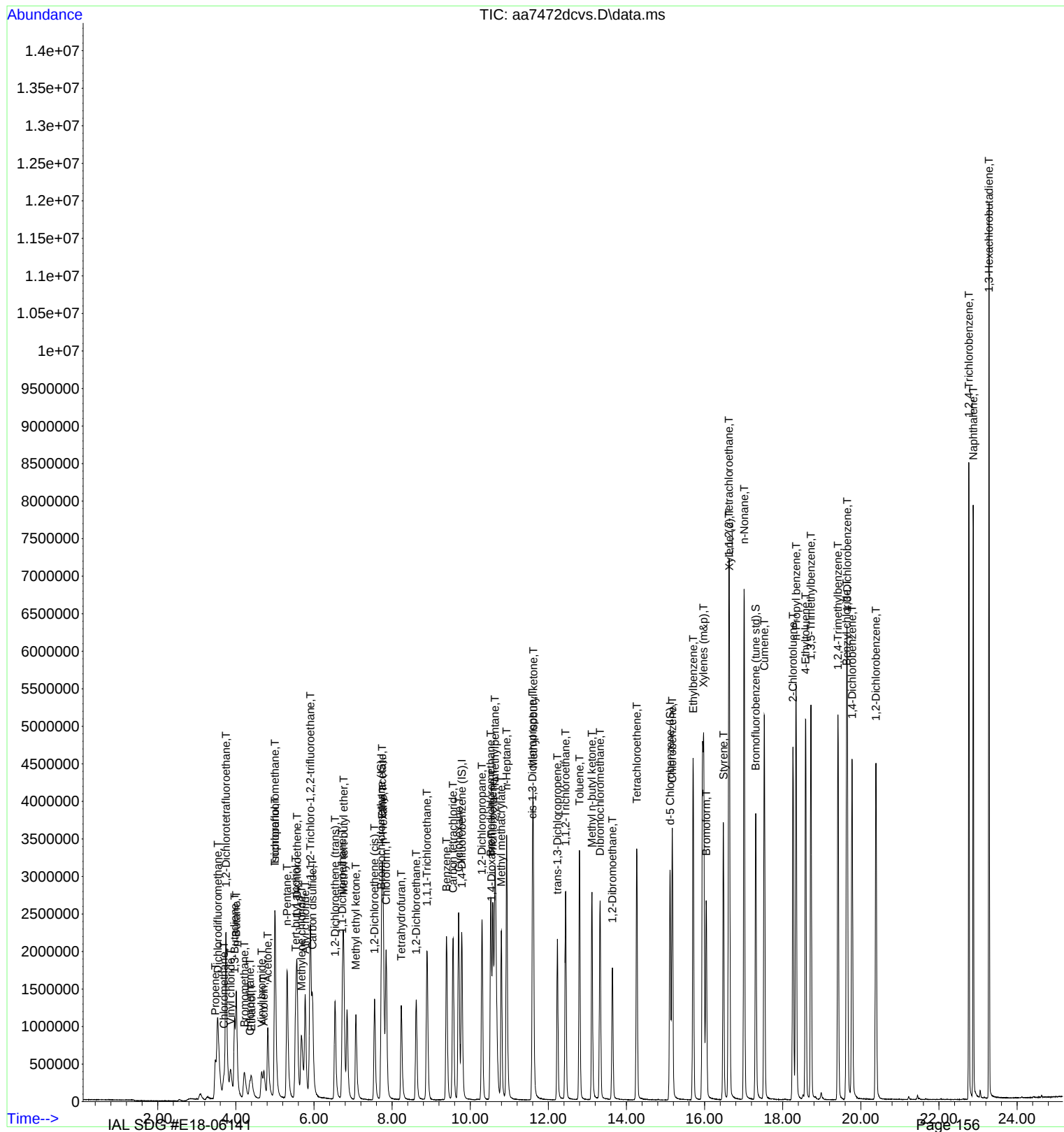
Quant Time: Jun 13 10:11:03 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| 52) Dibromochloromethane      | 13.325 | 129  | 1619280  | 10.97 | ppbV  | 98       |
| 53) 1,2-Dibromoethane         | 13.640 | 107  | 1523377  | 10.49 | ppbV  | 100      |
| 54) Tetrachloroethene         | 14.264 | 166  | 1020691  | 9.73  | ppbV  | 98       |
| 56) Chlorobenzene             | 15.173 | 112  | 2079022  | 10.72 | ppbV  | 96       |
| 57) Ethylbenzene              | 15.707 | 91   | 3655504  | 11.19 | ppbV  | 95       |
| 58) Xylenes (m&p)             | 15.974 | 91   | 5994572  | 23.68 | ppbV  | 95       |
| 59) Bromoform                 | 16.042 | 173  | 1369647  | 12.41 | ppbV  | 97       |
| 60) Styrene                   | 16.482 | 104  | 1908242  | 11.40 | ppbV  | 98       |
| 61) Xylene (o)                | 16.636 | 91   | 3212341  | 11.93 | ppbV  | 95       |
| 62) 1,1,2,2-Tetrachloroethane | 16.620 | 83   | 2728257  | 11.61 | ppbV  | 99       |
| 63) n-Nonane                  | 17.013 | 43   | 3588130  | 13.68 | ppbV  | 96       |
| 65) Cumene                    | 17.530 | 105  | 3881084  | 11.49 | ppbV  | 97       |
| 66) 2-Chlorotoluene           | 18.263 | 91   | 3196887  | 11.55 | ppbV  | 96       |
| 67) n-Propyl benzene          | 18.344 | 91   | 5557562  | 12.18 | ppbV  | 94       |
| 68) 4-Ethyltoluene            | 18.585 | 105  | 3781802  | 11.93 | ppbV  | 95       |
| 69) 1,3,5-Trimethylbenzene    | 18.723 | 105  | 3527242  | 12.16 | ppbV  | 99       |
| 70) 1,2,4-Trimethylbenzene    | 19.414 | 105  | 3437135  | 12.13 | ppbV  | 97       |
| 71) Benzyl chloride           | 19.633 | 91   | 2839391  | 14.57 | ppbV  | 99       |
| 72) 1,3-Dichlorobenzene       | 19.652 | 146  | 2071672  | 11.35 | ppbV  | 99       |
| 73) 1,4-Dichlorobenzene       | 19.778 | 146  | 2060344  | 11.15 | ppbV  | 100      |
| 74) 1,2-Dichlorobenzene       | 20.385 | 146  | 2023280  | 11.22 | ppbV  | 100      |
| 75) 1,2,4-Trichlorobenzene    | 22.765 | 180  | 1692425  | 12.09 | ppbV  | 98       |
| 76) Naphthalene               | 22.877 | 127  | 559096   | 13.39 | ppbV  | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.282 | 225  | 1233004  | 11.61 | ppbV  | 97       |

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

Data Path : C:\DATA\06-13-18\  
 Data File : aa7472dcvs.D  
 Acq On : 13 Jun 2018 9:18 am  
 Operator : jls  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 10:11:03 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 Response via : Initial Calibration



## Continuing Calibration Data Summary Report

Initial Calibration Curve: 7/25/2018  
Instrument: AA  
Amount of standard injected (ml): 50

Date/Time of Calibration: 8/6/2018 13:07  
Sample ID: DCS  
Laboratory ID: AA8192DCVS

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA8191BFB]             | 08/06/2018 11:26                       |
| 10 PPBV DCVS [AA8192DCVS]   | 08/06/2018 13:07                       |
| METHOD BLANK [AA8193BLK]    | 08/06/2018 13:42                       |
| 02 PPBV RLLCS [AA8194RLLCS] | 08/06/2018 14:23                       |
| E18-06141-07 [AA8206]       | 08/06/2018 22:28                       |
| E18-06141-08 [AA8207]       | 08/06/2018 23:02                       |
| E18-06141-09 [AA8208]       | 08/06/2018 23:35                       |
| 10 PPBV CCCVS [AA8213CCCVS] | 08/07/2018 02:22                       |

| Compound Name                 | Average RRF | Standard RRF | % Difference | Pass/Fail | * |
|-------------------------------|-------------|--------------|--------------|-----------|---|
| Acetone                       | 0.76        | 0.87         | -14          | PASS      |   |
| Benzene                       | 4.4         | 4.1          | 7.7          | PASS      |   |
| Bromodichloromethane          | 0.74        | 0.86         | -16          | PASS      |   |
| Bromoform                     | 0.60        | 0.72         | -20          | PASS      |   |
| Bromomethane                  | 1.0         | 1.1          | -4.2         | PASS      |   |
| 1,3-Butadiene                 | 1.2         | 1.3          | -16          | PASS      |   |
| Chlorobenzene                 | 1.1         | 1.0          | 4.4          | PASS      |   |
| Chloroethane                  | 0.75        | 0.80         | -7.0         | PASS      |   |
| Chloroform                    | 3.0         | 3.3          | -10          | PASS      |   |
| Chloromethane                 | 0.41        | 0.52         | -26          | PASS      |   |
| Carbon disulfide              | 4.0         | 4.1          | -3.9         | PASS      |   |
| Carbon tetrachloride          | 2.8         | 2.9          | -4.0         | PASS      |   |
| Cyclohexane                   | 2.5         | 2.7          | -5.4         | PASS      |   |
| Dibromochloromethane          | 0.62        | 0.67         | -7.9         | PASS      |   |
| 1,2-Dibromoethane             | 0.67        | 0.66         | 1.9          | PASS      |   |
| 1,2-Dichlorobenzene           | 1.0         | 1.1          | -11          | PASS      |   |
| 1,3-Dichlorobenzene           | 0.99        | 1.1          | -15          | PASS      |   |
| 1,4-Dichlorobenzene           | 1.0         | 1.2          | -16          | PASS      |   |
| Dichlorodifluoromethane       | 3.2         | 3.8          | -18          | PASS      |   |
| 1,1-Dichloroethane            | 2.8         | 3.1          | -12          | PASS      |   |
| 1,2-Dichloroethane            | 2.3         | 2.8          | -25          | PASS      |   |
| 1,1-Dichloroethene            | 2.3         | 2.8          | -20          | PASS      |   |
| 1,2-Dichloroethene (cis)      | 2.1         | 2.3          | -12          | PASS      |   |
| 1,2-Dichloroethene (trans)    | 2.1         | 2.4          | -12          | PASS      |   |
| 1,2-Dichloropropane           | 0.46        | 0.48         | -5.5         | PASS      |   |
| 1,3-Dichloropropene (cis)     | 0.62        | 0.65         | -4.0         | PASS      |   |
| 1,3-Dichloropropene (trans)   | 0.65        | 0.67         | -4.2         | PASS      |   |
| 1,2-Dichlorotetrafluoroethane | 3.5         | 3.6          | -3.0         | PASS      |   |
| 1,4-Dioxane                   | 0.21        | 0.20         | 3.4          | PASS      |   |
| Ethylbenzene                  | 2.0         | 1.9          | 3.7          | PASS      |   |
| n-Heptane                     | 0.64        | 0.68         | -6.9         | PASS      |   |
| 1,3-Hexachlorobutadiene       | 0.55        | 0.64         | -16          | PASS      |   |
| n-Hexane                      | 2.4         | 2.5          | -5.2         | PASS      |   |
| Methylene chloride            | 1.9         | 2.5          | -29          | PASS      |   |
| Methyl ethyl ketone           | 2.8         | 2.7          | 3.9          | PASS      |   |
| Methyl isobutyl ketone        | 0.85        | 0.97         | -14          | PASS      |   |
| Methyl tert-butyl ether       | 4.0         | 3.5          | 12           | PASS      |   |
| Styrene                       | 1.1         | 1.0          | 3.9          | PASS      |   |
| Tert-butyl alcohol            | 3.2         | 2.9          | 9.2          | PASS      |   |
| 1,1,2,2-Tetrachloroethane     | 1.2         | 1.4          | -9.8         | PASS      |   |
| Tetrachloroethene             | 0.46        | 0.41         | 12           | PASS      |   |
| Toluene                       | 1.3         | 1.2          | 7.5          | PASS      |   |

\*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E18-06141

## Continuing Calibration Data Summary Report

Initial Calibration Curve: 7/25/2018  
Instrument: AA  
Amount of standard injected (ml): 50

Date/Time of Calibration: 8/6/2018 13:07  
Sample ID: DCS  
Laboratory ID: AA8192DCVS

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA8191BFB]             | 08/06/2018 11:26                       |
| 10 PPBV DCVS [AA8192DCVS]   | 08/06/2018 13:07                       |
| METHOD BLANK [AA8193BLK]    | 08/06/2018 13:42                       |
| 02 PPBV RLLCS [AA8194RLLCS] | 08/06/2018 14:23                       |
| E18-06141-07 [AA8206]       | 08/06/2018 22:28                       |
| E18-06141-08 [AA8207]       | 08/06/2018 23:02                       |
| E18-06141-09 [AA8208]       | 08/06/2018 23:35                       |
| 10 PPBV CCCVS [AA8213CCCVS] | 08/07/2018 02:22                       |

| Compound Name                         | Average RRF | Standard RRF | % Difference | PassFail | * |
|---------------------------------------|-------------|--------------|--------------|----------|---|
| 1,2,4-Trichlorobenzene                | 0.76        | 0.82         | -8.2         | PASS     |   |
| 1,1,1-Trichloroethane                 | 3.0         | 3.0          | -2.9         | PASS     |   |
| 1,1,2-Trichloroethane                 | 0.44        | 0.42         | 3.7          | PASS     |   |
| Trichloroethene                       | 0.36        | 0.36         | 1.6          | PASS     |   |
| Trichlorofluoromethane                | 3.4         | 3.8          | -11          | PASS     |   |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.8         | 2.7          | 3.9          | PASS     |   |
| 1,2,4-Trimethylbenzene                | 1.7         | 1.9          | -13          | PASS     |   |
| 1,3,5-Trimethylbenzene                | 1.7         | 2.0          | -12          | PASS     |   |
| 2,2,4-Trimethylpentane                | 1.8         | 2.1          | -16          | PASS     |   |
| Vinyl bromide                         | 1.2         | 1.1          | 3.1          | PASS     |   |
| Vinyl chloride                        | 1.4         | 1.5          | -4.8         | PASS     |   |
| Xylenes (m&p)                         | 1.5         | 1.6          | -3.6         | PASS     |   |
| Xylenes (o)                           | 1.6         | 1.7          | -8.2         | PASS     |   |

\*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E18-06141

Data Path : C:\DATA\08-06-18\  
 Data File : aa8192dcvs.D  
 Acq On : 6 Aug 2018 1:07 pm  
 Operator : jls  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 06 16:03:05 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 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   | 90    | 0.00     |
| 2 T  | Propene                     | 0.854 | 0.631 | 26.1  | 63    | 0.00     |
| 3 T  | Dichlorodifluoromethane     | 3.220 | 3.813 | -18.4 | 107   | 0.00     |
| 4 T  | Chloromethane               | 0.411 | 0.517 | -25.8 | 113   | -0.01    |
| 5 T  | 1,2-Dichlorotetrafluoroetha | 3.511 | 3.615 | -3.0  | 94    | 0.00     |
| 6 T  | Vinyl chloride              | 1.428 | 1.496 | -4.8  | 92    | 0.00     |
| 7 T  | 1,3-Butadiene               | 1.153 | 1.333 | -15.6 | 100   | 0.00     |
| 8 T  | n-Butane                    | 2.224 | 2.248 | -1.1  | 93    | 0.00     |
| 9 T  | Bromomethane                | 1.016 | 1.059 | -4.2  | 88    | 0.00     |
| 10 T | Chloroethane                | 0.746 | 0.798 | -7.0  | 93    | 0.00     |
| 11 T | Ethanol                     | 0.787 | 0.869 | -10.4 | 111   | 0.00     |
| 12 T | Vinyl bromide               | 1.155 | 1.119 | 3.1   | 82    | 0.00     |
| 13 T | Acrolein                    | 0.493 | 0.560 | -13.6 | 94    | 0.00     |
| 14 T | Acetone                     | 0.762 | 0.865 | -13.5 | 100   | 0.00     |
| 15 T | Trichlorofluoromethane      | 3.441 | 3.831 | -11.3 | 102   | 0.00     |
| 16 T | Isopropanol                 | 2.483 | 3.187 | -28.4 | 113   | 0.00     |
| 17 T | n-Pentane                   | 2.506 | 1.764 | 29.6  | 64    | 0.00     |
| 18 T | 1,1-Dichloroethene          | 2.341 | 2.816 | -20.3 | 105   | 0.00     |
| 19 T | Methylene chloride          | 1.917 | 2.464 | -28.5 | 127   | 0.00     |
| 20 T | Tert-butyl alcohol          | 3.191 | 2.898 | 9.2   | 83    | 0.00     |
| 21 T | Allyl chloride              | 0.631 | 0.606 | 4.0   | 82    | 0.00     |
| 22 T | 1,1,2-Trichloro-1,2,2-trifl | 2.794 | 2.685 | 3.9   | 91    | 0.00     |
| 23 T | Carbon disulfide            | 3.953 | 4.109 | -3.9  | 90    | 0.00     |
| 24 T | 1,2-Dichloroethene (trans)  | 2.133 | 2.393 | -12.2 | 98    | 0.00     |
| 25 T | 1,1-Dichloroethane          | 2.764 | 3.108 | -12.4 | 100   | 0.00     |
| 26 T | Methyl tert-butyl ether     | 4.023 | 3.531 | 12.2  | 80    | 0.00     |
| 27 T | Methyl ethyl ketone         | 2.821 | 2.711 | 3.9   | 87    | 0.00     |
| 28 T | 1,2-Dichloroethene (cis)    | 2.066 | 2.317 | -12.1 | 98    | 0.00     |
| 29 T | Ethyl acetate               | 0.469 | 0.412 | 12.2  | 79    | 0.00     |
| 30 T | n-Hexane                    | 2.421 | 2.548 | -5.2  | 96    | 0.00     |
| 31 T | Chloroform                  | 2.969 | 3.273 | -10.2 | 97    | 0.00     |
| 32 T | Tetrahydrofuran             | 1.428 | 1.197 | 16.2  | 75    | 0.00     |
| 33 T | 1,2-Dichloroethane          | 2.271 | 2.831 | -24.7 | 112   | 0.00     |
| 34 T | 1,1,1-Trichloroethane       | 2.959 | 3.045 | -2.9  | 95    | 0.00     |
| 35 T | Benzene                     | 4.429 | 4.089 | 7.7   | 83    | 0.00     |
| 36 T | Carbon tetrachloride        | 2.780 | 2.892 | -4.0  | 96    | 0.00     |
| 37 T | Cyclohexane                 | 2.523 | 2.660 | -5.4  | 95    | 0.00     |
| 38 I | 1,4-Difluorobenzene (IS)    | 1.000 | 1.000 | 0.0   | 85    | 0.00     |
| 39 T | 1,2-Dichloropropane         | 0.456 | 0.481 | -5.5  | 92    | 0.00     |
| 40 T | Bromodichloromethane        | 0.740 | 0.855 | -15.5 | 96    | 0.00     |
| 41 T | 2,2,4-Trimethylpentane      | 1.841 | 2.142 | -16.3 | 96    | 0.00     |
| 42 T | Trichloroethene             | 0.364 | 0.358 | 1.6   | 83    | 0.00     |
| 43 T | 1,4-Dioxane                 | 0.207 | 0.200 | 3.4   | 79    | 0.00     |
| 44 T | Methyl methacrylate         | 0.476 | 0.576 | -21.0 | 105   | 0.00     |
| 45 T | n-Heptane                   | 0.639 | 0.683 | -6.9  | 93    | 0.00     |
| 46 T | cis-1,3-Dichloropropene     | 0.624 | 0.649 | -4.0  | 86    | 0.00     |
| 47 T | Methyl isobutyl ketone      | 0.847 | 0.965 | -13.9 | 99    | 0.00     |
| 48 T | trans-1,3-Dichloropropene   | 0.645 | 0.672 | -4.2  | 87    | 0.00     |
| 49 T | 1,1,2-Trichloroethane       | 0.438 | 0.422 | 3.7   | 84    | 0.00     |
| 50 T | Toluene                     | 1.255 | 1.161 | 7.5   | 80    | 0.00     |
| 51 T | Methyl n-butyl ketone       | 0.795 | 0.912 | -14.7 | 98    | 0.00     |
| 52 T | Dibromochloromethane        | 0.618 | 0.667 | -7.9  | 92    | 0.00     |
| 53 T | 1,2-Dibromoethane           | 0.673 | 0.660 | 1.9   | 86    | 0.00     |

AL SDG #E18-06141

Data Path : C:\DATA\08-06-18\  
 Data File : aa8192dcvs.D  
 Acq On : 6 Aug 2018 1:07 pm  
 Operator : jls  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 06 16:03:05 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 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 | Tetrachloroethene           | 0.459 | 0.405 | 11.8  | 79    | 0.00     |
| 55 I | d-5 Chlorobenzene (IS)      | 1.000 | 1.000 | 0.0   | 83    | 0.00     |
| 56 T | Chlorobenzene               | 1.088 | 1.040 | 4.4   | 81    | 0.00     |
| 57 T | Ethylbenzene                | 1.972 | 1.900 | 3.7   | 82    | 0.00     |
| 58 T | Xylenes (m&p)               | 1.530 | 1.585 | -3.6  | 83    | 0.00     |
| 59 T | Bromoform                   | 0.604 | 0.724 | -19.9 | 97    | 0.00     |
| 60 T | Styrene                     | 1.062 | 1.021 | 3.9   | 78    | 0.00     |
| 61 T | Xylene (o)                  | 1.554 | 1.682 | -8.2  | 91    | 0.00     |
| 62 T | 1,1,2,2-Tetrachloroethane   | 1.245 | 1.367 | -9.8  | 94    | 0.00     |
| 63 T | n-Nonane                    | 1.176 | 1.527 | -29.8 | 109   | 0.00     |
| 64 S | Bromofluorobenzene (tune st | 0.912 | 1.038 | -13.8 | 95    | 0.00     |
| 65 T | Cumene                      | 1.968 | 2.093 | -6.4  | 88    | 0.00     |
| 66 T | 2-Chlorotoluene             | 1.629 | 1.705 | -4.7  | 88    | 0.00     |
| 67 T | n-Propyl benzene            | 2.666 | 3.085 | -15.7 | 95    | 0.00     |
| 68 T | 4-Ethyltoluene              | 1.893 | 2.090 | -10.4 | 90    | 0.00     |
| 69 T | 1,3,5-Trimethylbenzene      | 1.736 | 1.951 | -12.4 | 92    | 0.00     |
| 70 T | 1,2,4-Trimethylbenzene      | 1.715 | 1.938 | -13.0 | 91    | 0.00     |
| 71 T | Benzyl chloride             | 1.584 | 1.934 | -22.1 | 93    | 0.00     |
| 72 T | 1,3-Dichlorobenzene         | 0.987 | 1.130 | -14.5 | 97    | 0.00     |
| 73 T | 1,4-Dichlorobenzene         | 1.020 | 1.178 | -15.5 | 97    | 0.00     |
| 74 T | 1,2-Dichlorobenzene         | 1.004 | 1.113 | -10.9 | 94    | 0.00     |
| 75 T | 1,2,4-Trichlorobenzene      | 0.759 | 0.821 | -8.2  | 91    | 0.00     |
| 76 T | Naphthalene                 | 0.251 | 0.284 | -13.1 | 89    | 0.00     |
| 77 T | 1,3-Hexachlorobutadiene     | 0.554 | 0.640 | -15.5 | 101   | 0.00     |

(#) = Out of Range

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

Data Path : C:\DATA\08-06-18\  
 Data File : aa8192dcvs.D  
 Acq On : 6 Aug 2018 1:07 pm  
 Operator : jls  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 06 16:03:05 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.686  | 130  | 438428   | 10.00 | ppbV   | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.734  | 114  | 1771164  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.049 | 117  | 1475100  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.242 | 95   | 1530975  | 11.38 | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       | Qvalue |          |
| 2) Propene                    | 3.461  | 41   | 304366   | 8.13  | ppbV   | 88       |
| 3) Dichlorodifluoromethane    | 3.519  | 85   | 1838935  | 13.03 | ppbV   | 97       |
| 4) Chloromethane              | 3.679  | 52   | 249104   | 13.81 | ppbV # | 1        |
| 5) 1,2-Dichlorotetrafluor...  | 3.724  | 85   | 1584882  | 10.30 | ppbV   | 99       |
| 6) Vinyl chloride             | 3.840  | 62   | 721657   | 11.52 | ppbV   | 87       |
| 7) 1,3-Butadiene              | 3.943  | 54   | 643048   | 12.72 | ppbV   | 92       |
| 8) n-Butane                   | 3.988  | 43   | 1084038  | 11.12 | ppbV   | 94       |
| 9) Bromomethane               | 4.187  | 94   | 459869   | 10.32 | ppbV   | 99       |
| 10) Chloroethane              | 4.332  | 64   | 349689   | 10.69 | ppbV   | 93       |
| 11) Ethanol                   | 4.377  | 45   | 357948   | 10.37 | ppbV   | 99       |
| 12) Vinyl bromide             | 4.634  | 106  | 539793   | 10.66 | ppbV   | 97       |
| 13) Acrolein                  | 4.692  | 56   | 294616   | 13.64 | ppbV   | 93       |
| 14) Acetone                   | 4.792  | 58   | 416930   | 12.49 | ppbV   | 81       |
| 15) Trichlorofluoromethane    | 4.975  | 101  | 1847468  | 12.25 | ppbV   | 100      |
| 16) Isopropanol               | 4.969  | 45   | 1397289  | 12.83 | ppbV   | 94       |
| 17) n-Pentane                 | 5.277  | 43   | 850703   | 7.74  | ppbV   | 96       |
| 18) 1,1-Dichloroethene        | 5.531  | 61   | 1357985  | 13.23 | ppbV   | 87       |
| 19) Methylene chloride        | 5.650  | 49   | 1188453  | 14.14 | ppbV   | 92       |
| 20) Tert-butyl alcohol        | 5.502  | 59   | 1524721  | 10.90 | ppbV   | 100      |
| 21) Allyl chloride            | 5.740  | 76   | 292135   | 10.57 | ppbV   | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.872  | 101  | 1294943  | 10.57 | ppbV   | 85       |
| 23) Carbon disulfide          | 5.924  | 76   | 1981881  | 11.44 | ppbV # | 90       |
| 24) 1,2-Dichloroethene (tr... | 6.502  | 61   | 1154134  | 12.34 | ppbV   | 94       |
| 25) 1,1-Dichloroethane        | 6.689  | 63   | 1499130  | 12.37 | ppbV   | 99       |
| 26) Methyl tert-butyl ether   | 6.721  | 73   | 1703078  | 9.66  | ppbV   | 94       |
| 27) Methyl ethyl ketone       | 7.033  | 43   | 1307380  | 10.57 | ppbV   | 97       |
| 28) 1,2-Dichloroethene (cis)  | 7.509  | 61   | 1117186  | 12.33 | ppbV   | 94       |
| 29) Ethyl acetate             | 7.695  | 45   | 198693   | 9.65  | ppbV   | 100      |
| 30) n-Hexane                  | 7.727  | 57   | 1228660  | 11.57 | ppbV   | 89       |
| 31) Chloroform                | 7.805  | 83   | 1578630  | 12.13 | ppbV   | 97       |
| 32) Tetrahydrofuran           | 8.194  | 42   | 629589   | 10.05 | ppbV   | 88       |
| 33) 1,2-Dichloroethane        | 8.570  | 62   | 1365421  | 13.71 | ppbV   | 100      |
| 34) 1,1,1-Trichloroethane     | 8.850  | 97   | 1468303  | 11.32 | ppbV   | 99       |
| 35) Benzene                   | 9.342  | 78   | 1972093  | 10.16 | ppbV   | 95       |
| 36) Carbon tetrachloride      | 9.512  | 117  | 1394602  | 11.44 | ppbV   | 99       |
| 37) Cyclohexane               | 9.657  | 56   | 1282816  | 11.60 | ppbV   | 85       |
| 39) 1,2-Dichloropropane       | 10.255 | 63   | 936511   | 11.59 | ppbV   | 100      |
| 40) Bromodichloromethane      | 10.470 | 83   | 1664975  | 12.70 | ppbV   | 97       |
| 41) 2,2,4-Trimethylpentane    | 10.589 | 57   | 4173224  | 12.80 | ppbV   | 100      |
| 42) Trichloroethene           | 10.528 | 130  | 697920   | 10.84 | ppbV   | 99       |
| 43) 1,4-Dioxane               | 10.493 | 88   | 354021   | 9.64  | ppbV   | 98       |
| 44) Methyl methacrylate       | 10.743 | 41   | 1122453  | 13.32 | ppbV   | 91       |
| 45) n-Heptane                 | 10.878 | 43   | 1330679  | 11.75 | ppbV   | 94       |
| 46) cis-1,3-Dichloropropene   | 11.538 | 75   | 1263776  | 11.43 | ppbV   | 98       |
| 47) Methyl isobutyl ketone    | 11.560 | 43   | 1880766  | 12.54 | ppbV   | 96       |
| 48) trans-1,3-Dichloropropene | 12.177 | 75   | 1189639  | 10.41 | ppbV   | 91       |
| 49) 1,1,2-Trichloroethane     | 12.383 | 97   | 822438   | 10.59 | ppbV   | 89       |
| 50) Toluene                   | 12.740 | 91   | 2261627  | 10.18 | ppbV   | 94       |
| 51) Methyl n-butyl ketone     | 13.058 | 43   | 1776612  | 12.62 | ppbV   | 94       |

AL SDG #E18-06141

Data Path : C:\DATA\08-06-18\  
 Data File : aa8192dcvs.D  
 Acq On : 6 Aug 2018 1:07 pm  
 Operator : jls  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

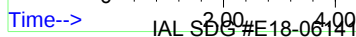
Quant Time: Aug 06 16:03:05 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| 52) Dibromochloromethane      | 13.264 | 129  | 1299265  | 11.88 | ppbV  | 100      |
| 53) 1,2-Dibromoethane         | 13.579 | 107  | 1285505  | 10.79 | ppbV  | 95       |
| 54) Tetrachloroethene         | 14.197 | 166  | 789922   | 9.73  | ppbV  | 99       |
| 56) Chlorobenzene             | 15.110 | 112  | 1687277  | 10.51 | ppbV  | 100      |
| 57) Ethylbenzene              | 15.644 | 91   | 3082982  | 10.60 | ppbV  | 95       |
| 58) Xylenes (m&p)             | 15.910 | 91   | 5143044  | 22.79 | ppbV  | 95       |
| 59) Bromoform                 | 15.978 | 173  | 1173969  | 13.17 | ppbV  | 97       |
| 60) Styrene                   | 16.415 | 104  | 1657361  | 10.58 | ppbV  | 98       |
| 61) Xylene (o)                | 16.570 | 91   | 2729707  | 11.91 | ppbV  | 95       |
| 62) 1,1,2,2-Tetrachloroethane | 16.553 | 83   | 2218126  | 12.08 | ppbV  | 97       |
| 63) n-Nonane                  | 16.949 | 43   | 2478302  | 14.28 | ppbV  | 97       |
| 65) Cumene                    | 17.463 | 105  | 3396814  | 11.70 | ppbV  | 95       |
| 66) 2-Chlorotoluene           | 18.196 | 91   | 2766632  | 11.52 | ppbV  | 94       |
| 67) n-Propyl benzene          | 18.274 | 91   | 5005472  | 12.73 | ppbV  | 92       |
| 68) 4-Ethyltoluene            | 18.521 | 105  | 3391155  | 12.14 | ppbV  | 95       |
| 69) 1,3,5-Trimethylbenzene    | 18.656 | 105  | 3165205  | 12.36 | ppbV  | 98       |
| 70) 1,2,4-Trimethylbenzene    | 19.348 | 105  | 3144189  | 12.43 | ppbV  | 95       |
| 71) Benzyl chloride           | 19.563 | 91   | 2852487  | 12.21 | ppbV  | 100      |
| 72) 1,3-Dichlorobenzene       | 19.582 | 146  | 1834174  | 12.59 | ppbV  | 98       |
| 73) 1,4-Dichlorobenzene       | 19.708 | 146  | 1911222  | 12.70 | ppbV  | 98       |
| 74) 1,2-Dichlorobenzene       | 20.319 | 146  | 1805329  | 12.19 | ppbV  | 99       |
| 75) 1,2,4-Trichlorobenzene    | 22.730 | 180  | 1453447  | 12.99 | ppbV  | 99       |
| 76) Naphthalene               | 22.839 | 127  | 502670   | 13.60 | ppbV  | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.248 | 225  | 1038802  | 12.71 | ppbV  | 97       |

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

ACQ-001 : 6 Aug 2017  
Integrated Analytical Laboratories, LLC

QLast Update : Wed Jul 25 14:15:57 2018



## Continuing Calibration Data Summary Report

Initial Calibration Curve: 7/25/2018  
Instrument: AA  
Amount of standard injected (ml): 50

Date/Time of Calibration: 8/7/2018 10:17  
Sample ID: DCS  
Laboratory ID: AA8222DCVS

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA8221BFB]             | 08/07/2018 09:33                       |
| 10 PPBV DCVS [AA8222DCVS]   | 08/07/2018 10:17                       |
| METHOD BLANK [AA8223BLK]    | 08/07/2018 11:01                       |
| 02 PPBV RLLCS [AA8224RLLCS] | 08/07/2018 11:47                       |
| E18-06141-08 [AA8232]       | 08/07/2018 16:57                       |
| E18-06141-09 [AA8233]       | 08/07/2018 17:31                       |
| 10 PPBV CCCVS [AA8242CCCVS] | 08/07/2018 22:31                       |

| Compound Name                 | Average RRF | Standard RRF | % Difference | Pass/Fail | * |
|-------------------------------|-------------|--------------|--------------|-----------|---|
| Acetone                       | 0.76        | 0.81         | -6.3         | PASS      |   |
| Benzene                       | 4.4         | 4.0          | 11           | PASS      |   |
| Bromodichloromethane          | 0.74        | 0.87         | -18          | PASS      |   |
| Bromoform                     | 0.60        | 0.72         | -19          | PASS      |   |
| Bromomethane                  | 1.0         | 1.0          | -1.9         | PASS      |   |
| 1,3-Butadiene                 | 1.2         | 1.2          | -2.9         | PASS      |   |
| Chlorobenzene                 | 1.1         | 1.1          | 0.70         | PASS      |   |
| Chloroethane                  | 0.75        | 0.75         | -0.70        | PASS      |   |
| Chloroform                    | 3.0         | 3.2          | -8.9         | PASS      |   |
| Chloromethane                 | 0.41        | 0.50         | -22          | PASS      |   |
| Carbon disulfide              | 4.0         | 4.1          | -3.4         | PASS      |   |
| Carbon tetrachloride          | 2.8         | 2.8          | 1.0          | PASS      |   |
| Cyclohexane                   | 2.5         | 2.5          | 1.1          | PASS      |   |
| Dibromochloromethane          | 0.62        | 0.68         | -10          | PASS      |   |
| 1,2-Dibromoethane             | 0.67        | 0.66         | 1.5          | PASS      |   |
| 1,2-Dichlorobenzene           | 1.0         | 1.1          | -10          | PASS      |   |
| 1,3-Dichlorobenzene           | 0.99        | 1.1          | -16          | PASS      |   |
| 1,4-Dichlorobenzene           | 1.0         | 1.2          | -13          | PASS      |   |
| Dichlorodifluoromethane       | 3.2         | 3.7          | -15          | PASS      |   |
| 1,1-Dichloroethane            | 2.8         | 3.0          | -8.7         | PASS      |   |
| 1,2-Dichloroethane            | 2.3         | 2.8          | -23          | PASS      |   |
| 1,1-Dichloroethene            | 2.3         | 2.7          | -16          | PASS      |   |
| 1,2-Dichloroethene (cis)      | 2.1         | 2.2          | -4.2         | PASS      |   |
| 1,2-Dichloroethene (trans)    | 2.1         | 2.2          | -3.6         | PASS      |   |
| 1,2-Dichloropropane           | 0.46        | 0.47         | -3.1         | PASS      |   |
| 1,3-Dichloropropene (cis)     | 0.62        | 0.63         | -1.1         | PASS      |   |
| 1,3-Dichloropropene (trans)   | 0.65        | 0.65         | 0.00         | PASS      |   |
| 1,2-Dichlorotetrafluoroethane | 3.5         | 3.5          | -0.10        | PASS      |   |
| 1,4-Dioxane                   | 0.21        | 0.19         | 8.2          | PASS      |   |
| Ethylbenzene                  | 2.0         | 1.9          | 1.4          | PASS      |   |
| n-Heptane                     | 0.64        | 0.50         | 21           | PASS      |   |
| 1,3-Hexachlorobutadiene       | 0.55        | 0.65         | -17          | PASS      |   |
| n-Hexane                      | 2.4         | 2.4          | 0.10         | PASS      |   |
| Methylene chloride            | 1.9         | 2.4          | -27          | PASS      |   |
| Methyl ethyl ketone           | 2.8         | 3.2          | -13          | PASS      |   |
| Methyl isobutyl ketone        | 0.85        | 0.69         | 18           | PASS      |   |
| Methyl tert-butyl ether       | 4.0         | 3.1          | 22           | PASS      |   |
| Styrene                       | 1.1         | 1.0          | 4.7          | PASS      |   |
| Tert-butyl alcohol            | 3.2         | 2.5          | 22           | PASS      |   |
| 1,1,2,2-Tetrachloroethane     | 1.2         | 1.5          | -18          | PASS      |   |
| Tetrachloroethene             | 0.46        | 0.41         | 10           | PASS      |   |
| Toluene                       | 1.3         | 1.2          | 7.3          | PASS      |   |
| 1,2,4-Trichlorobenzene        | 0.76        | 0.80         | -5.3         | PASS      |   |

\*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E18-06141

## Continuing Calibration Data Summary Report

Initial Calibration Curve: 7/25/2018  
Instrument: AA  
Amount of standard injected (ml): 50

Date/Time of Calibration: 8/7/2018 10:17  
Sample ID: DCS  
Laboratory ID: AA8222DCVS

| Standard/Sample Run         | Date/Time of Sample/Standard Injection |
|-----------------------------|----------------------------------------|
| BFB [AA8221BFB]             | 08/07/2018 09:33                       |
| 10 PPBV DCVS [AA8222DCVS]   | 08/07/2018 10:17                       |
| METHOD BLANK [AA8223BLK]    | 08/07/2018 11:01                       |
| 02 PPBV RLLCS [AA8224RLLCS] | 08/07/2018 11:47                       |
| E18-06141-08 [AA8232]       | 08/07/2018 16:57                       |
| E18-06141-09 [AA8233]       | 08/07/2018 17:31                       |
| 10 PPBV CCCVS [AA8242CCCVS] | 08/07/2018 22:31                       |

| Compound Name                         | Average RRF | Standard RRF | % Difference | PassFail | * |
|---------------------------------------|-------------|--------------|--------------|----------|---|
| 1,1,1-Trichloroethane                 | 3.0         | 2.9          | 1.9          | PASS     |   |
| 1,1,2-Trichloroethane                 | 0.44        | 0.44         | -0.90        | PASS     |   |
| Trichloroethene                       | 0.36        | 0.37         | -1.9         | PASS     |   |
| Trichlorofluoromethane                | 3.4         | 3.6          | -5.3         | PASS     |   |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.8         | 2.7          | 3.3          | PASS     |   |
| 1,2,4-Trimethylbenzene                | 1.7         | 1.9          | -12          | PASS     |   |
| 1,3,5-Trimethylbenzene                | 1.7         | 2.0          | -13          | PASS     |   |
| 2,2,4-Trimethylpentane                | 1.8         | 2.1          | -15          | PASS     |   |
| Vinyl bromide                         | 1.2         | 1.0          | 12           | PASS     |   |
| Vinyl chloride                        | 1.4         | 1.4          | 4.4          | PASS     |   |
| Xylenes (m&p)                         | 1.5         | 1.6          | -4.5         | PASS     |   |
| Xylenes (o)                           | 1.6         | 1.7          | -11          | PASS     |   |

\*%Difference must be within +/- 30%

RRF - Relative Response Factor

IAL SDG #E18-06141

Data Path : C:\DATA\08-07-18\  
 Data File : aa8222dcvs.D  
 Acq On : 7 Aug 2018 10:17 am  
 Operator : jjw  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 07 10:57:35 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 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   | 83    | 0.00     |
| 2 T  | Propene                     | 0.854 | 0.749 | 12.3  | 69    | 0.00     |
| 3 T  | Dichlorodifluoromethane     | 3.220 | 3.694 | -14.7 | 95    | 0.00     |
| 4 T  | Chloromethane               | 0.411 | 0.502 | -22.1 | 102   | 0.00     |
| 5 T  | 1,2-Dichlorotetrafluoroetha | 3.511 | 3.515 | -0.1  | 84    | 0.00     |
| 6 T  | Vinyl chloride              | 1.428 | 1.365 | 4.4   | 77    | 0.00     |
| 7 T  | 1,3-Butadiene               | 1.153 | 1.187 | -2.9  | 82    | 0.00     |
| 8 T  | n-Butane                    | 2.224 | 2.878 | -29.4 | 110   | 0.00     |
| 9 T  | Bromomethane                | 1.016 | 1.035 | -1.9  | 79    | 0.00     |
| 10 T | Chloroethane                | 0.746 | 0.751 | -0.7  | 81    | 0.00     |
| 11 T | Ethanol                     | 0.787 | 0.727 | 7.6   | 86    | 0.00     |
| 12 T | Vinyl bromide               | 1.155 | 1.021 | 11.6  | 69    | 0.00     |
| 13 T | Acrolein                    | 0.493 | 0.502 | -1.8  | 78    | 0.00     |
| 14 T | Acetone                     | 0.762 | 0.810 | -6.3  | 87    | 0.00     |
| 15 T | Trichlorofluoromethane      | 3.441 | 3.625 | -5.3  | 89    | 0.00     |
| 16 T | Isopropanol                 | 2.483 | 2.772 | -11.6 | 91    | 0.00     |
| 17 T | n-Pentane                   | 2.506 | 3.025 | -20.7 | 102   | 0.00     |
| 18 T | 1,1-Dichloroethene          | 2.341 | 2.715 | -16.0 | 93    | 0.00     |
| 19 T | Methylene chloride          | 1.917 | 2.427 | -26.6 | 115   | 0.00     |
| 20 T | Tert-butyl alcohol          | 3.191 | 2.479 | 22.3  | 65    | 0.00     |
| 21 T | Allyl chloride              | 0.631 | 0.562 | 10.9  | 70    | 0.00     |
| 22 T | 1,1,2-Trichloro-1,2,2-trifl | 2.794 | 2.702 | 3.3   | 85    | 0.00     |
| 23 T | Carbon disulfide            | 3.953 | 4.086 | -3.4  | 82    | 0.00     |
| 24 T | 1,2-Dichloroethene (trans)  | 2.133 | 2.210 | -3.6  | 83    | 0.00     |
| 25 T | 1,1-Dichloroethane          | 2.764 | 3.004 | -8.7  | 89    | 0.00     |
| 26 T | Methyl tert-butyl ether     | 4.023 | 3.122 | 22.4  | 65    | 0.00     |
| 27 T | Methyl ethyl ketone         | 2.821 | 3.198 | -13.4 | 95    | 0.00     |
| 28 T | 1,2-Dichloroethene (cis)    | 2.066 | 2.152 | -4.2  | 84    | 0.00     |
| 29 T | Ethyl acetate               | 0.469 | 0.562 | -19.8 | 99    | 0.00     |
| 30 T | n-Hexane                    | 2.421 | 2.419 | 0.1   | 84    | 0.00     |
| 31 T | Chloroform                  | 2.969 | 3.234 | -8.9  | 89    | 0.00     |
| 32 T | Tetrahydrofuran             | 1.428 | 1.760 | -23.2 | 101   | 0.00     |
| 33 T | 1,2-Dichloroethane          | 2.271 | 2.792 | -22.9 | 102   | 0.00     |
| 34 T | 1,1,1-Trichloroethane       | 2.959 | 2.903 | 1.9   | 84    | 0.00     |
| 35 T | Benzene                     | 4.429 | 3.963 | 10.5  | 74    | 0.00     |
| 36 T | Carbon tetrachloride        | 2.780 | 2.753 | 1.0   | 84    | 0.00     |
| 37 T | Cyclohexane                 | 2.523 | 2.495 | 1.1   | 83    | 0.00     |
| 38 I | 1,4-Difluorobenzene (IS)    | 1.000 | 1.000 | 0.0   | 76    | 0.00     |
| 39 T | 1,2-Dichloropropane         | 0.456 | 0.470 | -3.1  | 81    | 0.00     |
| 40 T | Bromodichloromethane        | 0.740 | 0.870 | -17.6 | 88    | 0.00     |
| 41 T | 2,2,4-Trimethylpentane      | 1.841 | 2.111 | -14.7 | 85    | 0.00     |
| 42 T | Trichloroethene             | 0.364 | 0.371 | -1.9  | 78    | -0.01    |
| 43 T | 1,4-Dioxane                 | 0.207 | 0.190 | 8.2   | 67    | 0.00     |
| 44 T | Methyl methacrylate         | 0.476 | 0.416 | 12.6  | 68    | 0.00     |
| 45 T | n-Heptane                   | 0.639 | 0.503 | 21.3  | 62    | 0.00     |
| 46 T | cis-1,3-Dichloropropene     | 0.624 | 0.631 | -1.1  | 75    | 0.00     |
| 47 T | Methyl isobutyl ketone      | 0.847 | 0.694 | 18.1  | 64    | 0.00     |
| 48 T | trans-1,3-Dichloropropene   | 0.645 | 0.645 | 0.0   | 75    | 0.00     |
| 49 T | 1,1,2-Trichloroethane       | 0.438 | 0.442 | -0.9  | 79    | 0.00     |
| 50 T | Toluene                     | 1.255 | 1.164 | 7.3   | 72    | 0.00     |
| 51 T | Methyl n-butyl ketone       | 0.795 | 0.704 | 11.4  | 68    | 0.00     |
| 52 T | Dibromochloromethane        | 0.618 | 0.680 | -10.0 | 84    | 0.00     |
| 53 T | 1,2-Dibromoethane           | 0.673 | 0.663 | 1.5   | 77    | 0.00     |

AL SDG #E18-06141

Data Path : C:\DATA\08-07-18\  
 Data File : aa8222dcvs.D  
 Acq On : 7 Aug 2018 10:17 am  
 Operator : jjw  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 07 10:57:35 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 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 | Tetrachloroethene           | 0.459 | 0.413 | 10.0  | 72    | 0.00     |
| 55 I | d-5 Chlorobenzene (IS)      | 1.000 | 1.000 | 0.0   | 74    | 0.00     |
| 56 T | Chlorobenzene               | 1.088 | 1.080 | 0.7   | 75    | 0.00     |
| 57 T | Ethylbenzene                | 1.972 | 1.945 | 1.4   | 74    | 0.00     |
| 58 T | Xylenes (m&p)               | 1.530 | 1.599 | -4.5  | 74    | 0.00     |
| 59 T | Bromoform                   | 0.604 | 0.717 | -18.7 | 85    | 0.00     |
| 60 T | Styrene                     | 1.062 | 1.012 | 4.7   | 68    | 0.00     |
| 61 T | Xylene (o)                  | 1.554 | 1.722 | -10.8 | 82    | 0.00     |
| 62 T | 1,1,2,2-Tetrachloroethane   | 1.245 | 1.464 | -17.6 | 89    | 0.00     |
| 63 T | n-Nonane                    | 1.176 | 1.498 | -27.4 | 95    | 0.00     |
| 64 S | Bromofluorobenzene (tune st | 0.912 | 1.044 | -14.5 | 85    | 0.00     |
| 65 T | Cumene                      | 1.968 | 2.131 | -8.3  | 79    | 0.00     |
| 66 T | 2-Chlorotoluene             | 1.629 | 1.759 | -8.0  | 80    | 0.00     |
| 67 T | n-Propyl benzene            | 2.666 | 3.122 | -17.1 | 85    | 0.00     |
| 68 T | 4-Ethyltoluene              | 1.893 | 2.105 | -11.2 | 80    | 0.00     |
| 69 T | 1,3,5-Trimethylbenzene      | 1.736 | 1.968 | -13.4 | 82    | 0.00     |
| 70 T | 1,2,4-Trimethylbenzene      | 1.715 | 1.918 | -11.8 | 80    | 0.00     |
| 71 T | Benzyl chloride             | 1.584 | 1.852 | -16.9 | 79    | 0.00     |
| 72 T | 1,3-Dichlorobenzene         | 0.987 | 1.145 | -16.0 | 86    | 0.00     |
| 73 T | 1,4-Dichlorobenzene         | 1.020 | 1.151 | -12.8 | 84    | 0.00     |
| 74 T | 1,2-Dichlorobenzene         | 1.004 | 1.104 | -10.0 | 82    | 0.00     |
| 75 T | 1,2,4-Trichlorobenzene      | 0.759 | 0.799 | -5.3  | 78    | 0.00     |
| 76 T | Naphthalene                 | 0.251 | 0.272 | -8.4  | 76    | 0.00     |
| 77 T | 1,3-Hexachlorobutadiene     | 0.554 | 0.648 | -17.0 | 91    | 0.00     |

(#) = Out of Range

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

Data Path : C:\DATA\08-07-18\  
 Data File : aa8222dcvs.D  
 Acq On : 7 Aug 2018 10:17 am  
 Operator : jjw  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 07 10:57:35 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.682  | 130  | 404488   | 10.00 | ppbV   | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.734  | 114  | 1591121  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.049 | 117  | 1304098  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.245 | 95   | 1361833  | 11.45 | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        | Qvalue   |
| 2) Propene                    | 3.461  | 41   | 333397   | 9.65  | ppbV   | 88       |
| 3) Dichlorodifluoromethane    | 3.522  | 85   | 1643634  | 12.62 | ppbV   | 97       |
| 4) Chloromethane              | 3.699  | 52   | 223554   | 13.43 | ppbV # | 1        |
| 5) 1,2-Dichlorotetrafluor...  | 3.728  | 85   | 1421663  | 10.01 | ppbV   | 97       |
| 6) Vinyl chloride             | 3.843  | 62   | 607411   | 10.51 | ppbV   | 88       |
| 7) 1,3-Butadiene              | 3.946  | 54   | 528277   | 11.32 | ppbV   | 82       |
| 8) n-Butane                   | 3.988  | 43   | 1280649  | 14.24 | ppbV # | 87       |
| 9) Bromomethane               | 4.203  | 94   | 414307   | 10.08 | ppbV   | 98       |
| 10) Chloroethane              | 4.332  | 64   | 303914   | 10.07 | ppbV   | 91       |
| 11) Ethanol                   | 4.374  | 45   | 276350   | 8.68  | ppbV   | 97       |
| 12) Vinyl bromide             | 4.631  | 106  | 454469   | 9.73  | ppbV   | 95       |
| 13) Acrolein                  | 4.692  | 56   | 243851   | 12.24 | ppbV   | 95       |
| 14) Acetone                   | 4.792  | 58   | 360312   | 11.70 | ppbV   | 73       |
| 15) Trichlorofluoromethane    | 4.975  | 101  | 1613029  | 11.59 | ppbV   | 99       |
| 16) Isopropanol               | 4.972  | 45   | 1121332  | 11.16 | ppbV # | 87       |
| 17) n-Pentane                 | 5.281  | 43   | 1346021  | 13.28 | ppbV   | 98       |
| 18) 1,1-Dichloroethene        | 5.535  | 61   | 1207782  | 12.76 | ppbV   | 87       |
| 19) Methylene chloride        | 5.644  | 49   | 1079715  | 13.93 | ppbV   | 92       |
| 20) Tert-butyl alcohol        | 5.499  | 59   | 1203173  | 9.32  | ppbV   | 100      |
| 21) Allyl chloride            | 5.744  | 76   | 250159   | 9.81  | ppbV   | 100      |
| 22) 1,1,2-Trichloro-1,2,2-... | 5.875  | 101  | 1202213  | 10.64 | ppbV   | 83       |
| 23) Carbon disulfide          | 5.924  | 76   | 1818232  | 11.37 | ppbV # | 88       |
| 24) 1,2-Dichloroethene (tr... | 6.499  | 61   | 983160   | 11.40 | ppbV   | 97       |
| 25) 1,1-Dichloroethane        | 6.689  | 63   | 1336708  | 11.96 | ppbV   | 99       |
| 26) Methyl tert-butyl ether   | 6.721  | 73   | 1389271  | 8.54  | ppbV   | 95       |
| 27) Methyl ethyl ketone       | 7.033  | 43   | 1422716  | 12.47 | ppbV   | 96       |
| 28) 1,2-Dichloroethene (cis)  | 7.509  | 61   | 957454   | 11.46 | ppbV   | 97       |
| 29) Ethyl acetate             | 7.702  | 45   | 250199   | 13.18 | ppbV   | 100      |
| 30) n-Hexane                  | 7.724  | 57   | 1076376  | 10.99 | ppbV   | 86       |
| 31) Chloroform                | 7.805  | 83   | 1439004  | 11.98 | ppbV   | 98       |
| 32) Tetrahydrofuran           | 8.190  | 42   | 854272   | 14.79 | ppbV # | 83       |
| 33) 1,2-Dichloroethane        | 8.570  | 62   | 1242105  | 13.52 | ppbV   | 99       |
| 34) 1,1,1-Trichloroethane     | 8.846  | 97   | 1291828  | 10.79 | ppbV   | 99       |
| 35) Benzene                   | 9.342  | 78   | 1763209  | 9.84  | ppbV   | 95       |
| 36) Carbon tetrachloride      | 9.512  | 117  | 1225016  | 10.90 | ppbV   | 100      |
| 37) Cyclohexane               | 9.657  | 56   | 1109929  | 10.88 | ppbV   | 88       |
| 39) 1,2-Dichloropropane       | 10.248 | 63   | 823141   | 11.34 | ppbV   | 98       |
| 40) Bromodichloromethane      | 10.473 | 83   | 1523040  | 12.93 | ppbV   | 98       |
| 41) 2,2,4-Trimethylpentane    | 10.589 | 57   | 3695096  | 12.61 | ppbV   | 99       |
| 42) Trichloroethene           | 10.525 | 130  | 649943   | 11.23 | ppbV   | 97       |
| 43) 1,4-Dioxane               | 10.489 | 88   | 302644   | 9.18  | ppbV   | 99       |
| 44) Methyl methacrylate       | 10.743 | 41   | 728507   | 9.62  | ppbV   | 93       |
| 45) n-Heptane                 | 10.878 | 43   | 880263   | 8.65  | ppbV   | 93       |
| 46) cis-1,3-Dichloropropene   | 11.538 | 75   | 1104407  | 11.12 | ppbV   | 99       |
| 47) Methyl isobutyl ketone    | 11.560 | 43   | 1215031  | 9.01  | ppbV   | 93       |
| 48) trans-1,3-Dichloropropene | 12.177 | 75   | 1025649  | 9.99  | ppbV   | 87       |
| 49) 1,1,2-Trichloroethane     | 12.383 | 97   | 773565   | 11.09 | ppbV   | 89       |
| 50) Toluene                   | 12.737 | 91   | 2037850  | 10.21 | ppbV   | 94       |
| 51) Methyl n-butyl ketone     | 13.058 | 43   | 1232417  | 9.74  | ppbV   | 93       |

AL SDG #E18-06141

Data Path : C:\DATA\08-07-18\  
 Data File : aa8222dcvs.D  
 Acq On : 7 Aug 2018 10:17 am  
 Operator : jjw  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

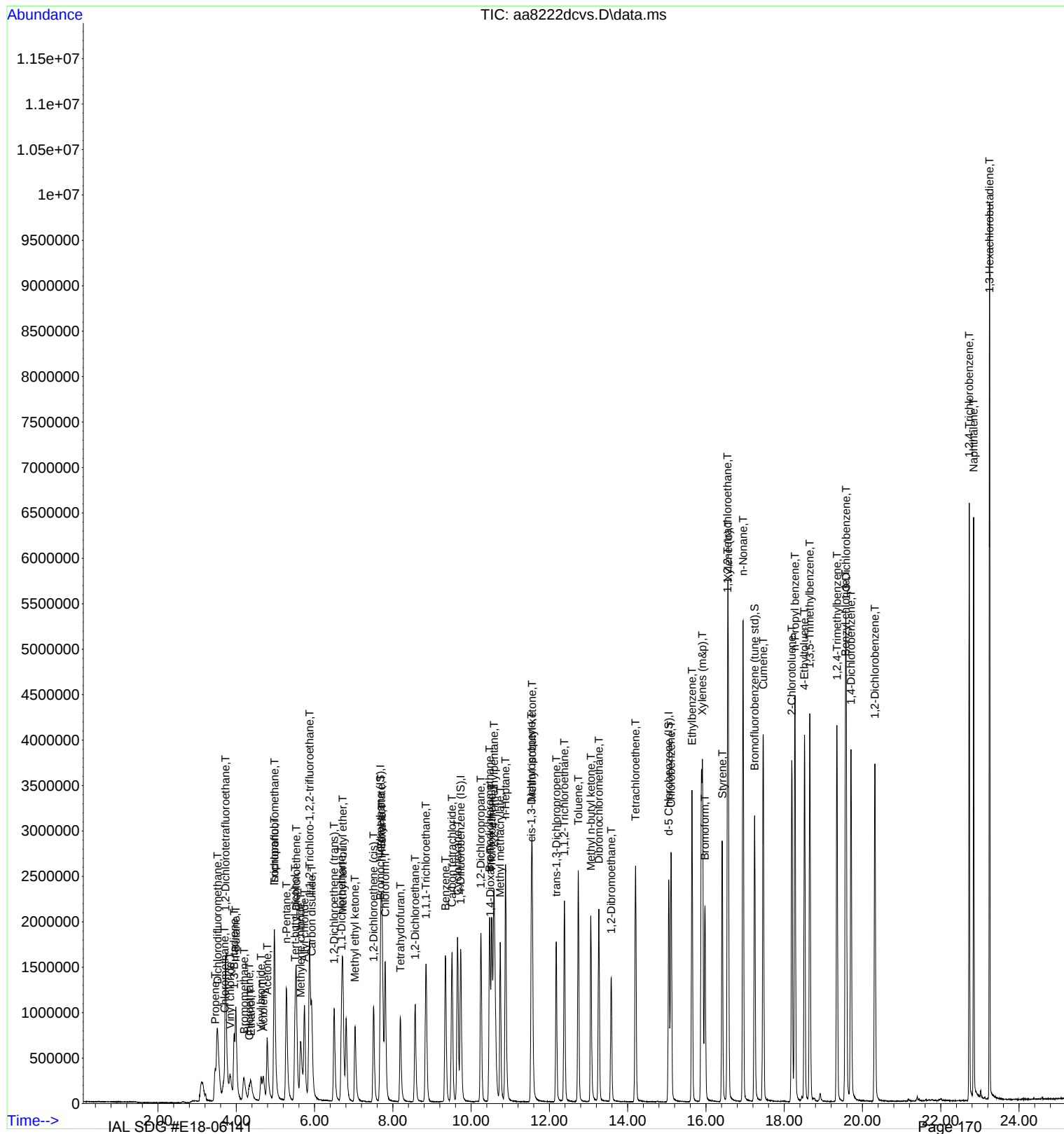
Quant Time: Aug 07 10:57:35 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| 52) Dibromochloromethane      | 13.264 | 129  | 1190543  | 12.12 | ppbV  | 100      |
| 53) 1,2-Dibromoethane         | 13.579 | 107  | 1161108  | 10.85 | ppbV  | 97       |
| 54) Tetrachloroethene         | 14.203 | 166  | 722436   | 9.90  | ppbV  | 99       |
| 56) Chlorobenzene             | 15.110 | 112  | 1548795  | 10.91 | ppbV  | 100      |
| 57) Ethylbenzene              | 15.644 | 91   | 2789576  | 10.85 | ppbV  | 95       |
| 58) Xylenes (m&p)             | 15.907 | 91   | 4587138  | 22.99 | ppbV  | 95       |
| 59) Bromoform                 | 15.975 | 173  | 1029107  | 13.06 | ppbV  | 97       |
| 60) Styrene                   | 16.418 | 104  | 1451963  | 10.48 | ppbV  | 99       |
| 61) Xylene (o)                | 16.570 | 91   | 2470278  | 12.19 | ppbV  | 95       |
| 62) 1,1,2,2-Tetrachloroethane | 16.553 | 83   | 2100434  | 12.94 | ppbV  | 96       |
| 63) n-Nonane                  | 16.949 | 43   | 2148325  | 14.00 | ppbV  | 95       |
| 65) Cumene                    | 17.463 | 105  | 3056880  | 11.91 | ppbV  | 95       |
| 66) 2-Chlorotoluene           | 18.193 | 91   | 2523060  | 11.88 | ppbV  | 95       |
| 67) n-Propyl benzene          | 18.274 | 91   | 4479204  | 12.89 | ppbV  | 92       |
| 68) 4-Ethyltoluene            | 18.518 | 105  | 3019565  | 12.23 | ppbV  | 94       |
| 69) 1,3,5-Trimethylbenzene    | 18.653 | 105  | 2823448  | 12.47 | ppbV  | 97       |
| 70) 1,2,4-Trimethylbenzene    | 19.348 | 105  | 2750707  | 12.30 | ppbV  | 95       |
| 71) Benzyl chloride           | 19.563 | 91   | 2414584  | 11.69 | ppbV  | 99       |
| 72) 1,3-Dichlorobenzene       | 19.582 | 146  | 1641931  | 12.75 | ppbV  | 98       |
| 73) 1,4-Dichlorobenzene       | 19.708 | 146  | 1651802  | 12.42 | ppbV  | 98       |
| 74) 1,2-Dichlorobenzene       | 20.315 | 146  | 1583140  | 12.10 | ppbV  | 98       |
| 75) 1,2,4-Trichlorobenzene    | 22.727 | 180  | 1250631  | 12.64 | ppbV  | 100      |
| 76) Naphthalene               | 22.839 | 127  | 425537   | 13.02 | ppbV  | 100      |
| 77) 1,3-Hexachlorobutadiene   | 23.248 | 225  | 929653   | 12.87 | ppbV  | 96       |

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

Data Path : C:\DATA\08-07-18\  
 Data File : aa8222dcvs.D  
 Acq On : 7 Aug 2018 10:17 am  
 Operator : jjw  
 Sample : 10 ppbv DCVS  
 Misc : CC483586  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 07 10:57:35 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration



## **Section VIII: Raw Quality Control Data Package**

**BFB Tune Spectra**

**Method Blank**

**Laboratory Sample Duplicate**

**Instrument Run Logs**

**Pressure Gauge Readings (initial and final)**

**Example Calculations**

**Screening Data**

**Clean Canister Certification**

**Data Path:** C:\DATA\05-18-18\  
**Data File:** AA7071BFB.D  
**Acq On:** 5/18/2018 8:17:00AM  
**Operator:** jls  
**Sample:** BFB  
**Misc:** ALM029426  
**ALS Vial:** 1 **Multiplier:** 1  
**Integration File:** rteint.p  
**Method:** C:\msdchem\1\METHODS\0511.M  
**Last Update:** Mon May 14 11:16:39 2018  
**Spectrum Information:**

| Pass/Fail | Target Mass | Rel. to Mass | Lower Limit % | Higher Limit % | Raw Abundance | % Relative Abundance |
|-----------|-------------|--------------|---------------|----------------|---------------|----------------------|
| PASS      | 50          | 95           | 8             | 40             | 183818        | 27.3                 |
| PASS      | 75          | 95           | 30            | 66             | 378859        | 56.2                 |
| PASS      | 95          | 95           | 100           | 100            | 674347        | 100.0                |
| PASS      | 96          | 95           | 5             | 9              | 45051         | 6.7                  |
| PASS      | 173         | 174          | 0.00          | 2              | 2912          | 0.8                  |
| PASS      | 174         | 95           | 50            | 100            | 387670        | 57.5                 |
| PASS      | 175         | 174          | 4             | 9              | 26268         | 6.8                  |
| PASS      | 176         | 174          | 93            | 101            | 373555        | 96.4                 |
| PASS      | 177         | 176          | 5             | 9              | 24192         | 6.5                  |

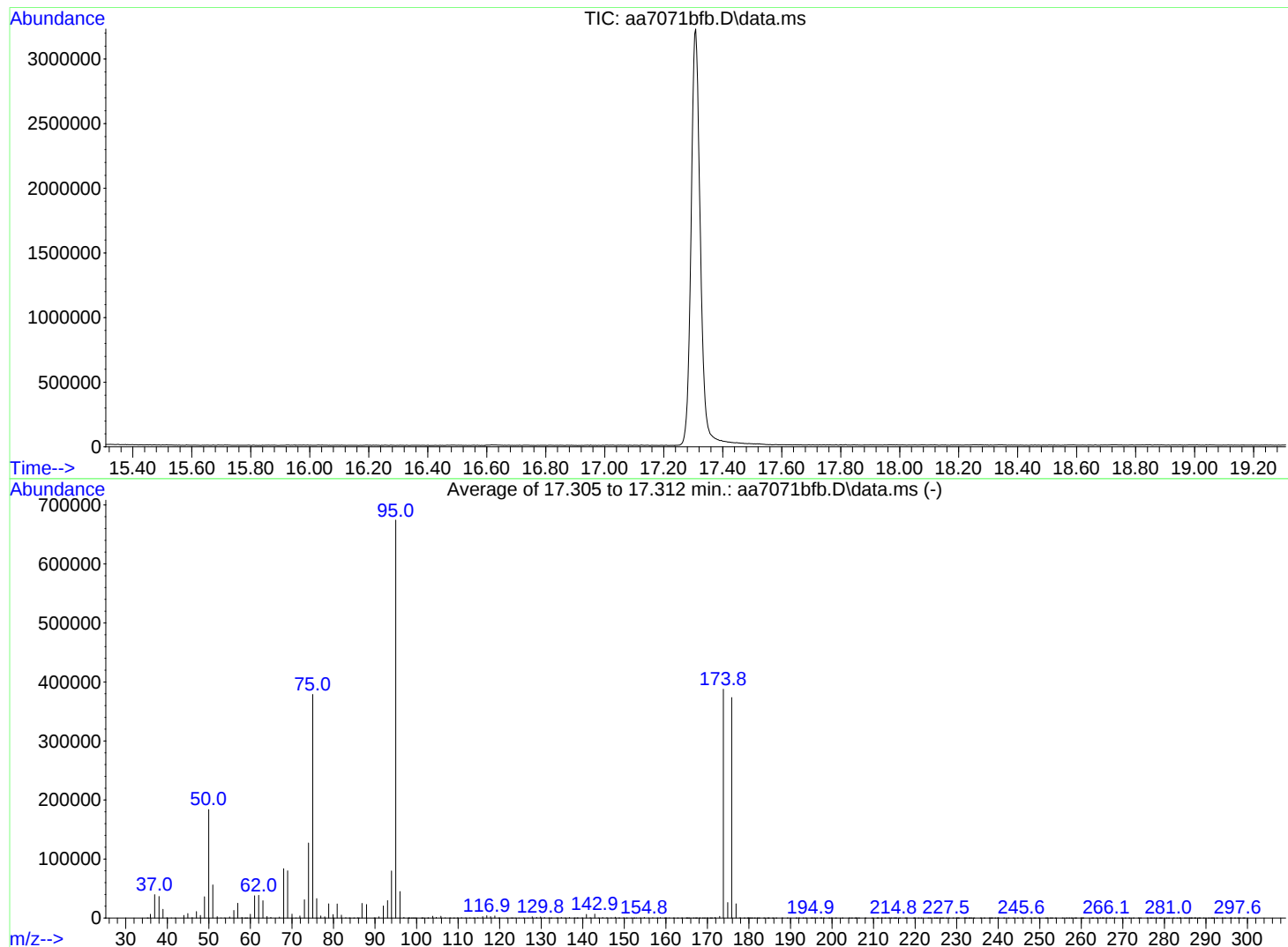
Runs with this BFB:

| Lab Sample Number | Date File   | Field Sample | Date/Time of Sample/Standard Analysis |
|-------------------|-------------|--------------|---------------------------------------|
| BFB               | AA7071BFB   | NA           | 5/18/2018 8:17:00 AM                  |
| 40 PPBV STD       | AA7073STD01 | NA           | 5/18/2018 9:46:00 AM                  |
| 20 PPBV STD       | AA7074STD02 | NA           | 5/18/2018 10:19:00 AM                 |
| 10 PPBV STD       | AA7075STD03 | NA           | 5/18/2018 10:53:00 AM                 |
| 2 PPBV STD        | AA7076STD04 | NA           | 5/18/2018 12:20:00 PM                 |
| 0.2 PPBV STD      | AA7077STD05 | NA           | 5/18/2018 1:03:00 PM                  |
| 10 PPBV ICVSS     | AA7078ICVSS | NA           | 5/18/2018 3:14:00 PM                  |

Data Path : C:\DATA\05-18-18\  
 Data File : aa7071bfb.D  
 Acq On : 18 May 2018 8:17 am  
 Operator : jls  
 Sample : BFB  
 Misc : ALM029426  
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0518.M  
 Title : TO-15 on the Agilent 7890A / 5975C  
 Last Update : Fri May 18 13:51:08 2018



AutoFind: Scans 5355, 5356, 5357; Background Corrected with Scan 5332

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 8            | 40           | 27.3      | 183818  | PASS             |
| 75          | 95           | 30           | 66           | 56.2      | 378859  | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 674347  | PASS             |
| 96          | 95           | 5            | 9            | 6.7       | 45051   | PASS             |
| 173         | 174          | 0.00         | 2            | 0.8       | 2912    | PASS             |
| 174         | 95           | 50           | 100          | 57.5      | 387670  | PASS             |
| 175         | 174          | 4            | 9            | 6.8       | 26268   | PASS             |
| 176         | 174          | 93           | 101          | 96.4      | 373555  | PASS             |
| 177         | 176          | 5            | 9            | 6.5       | 24192   | PASS             |

**Data Path:** C:\DATA\06-13-18\  
**Data File:** AA7471BFB.D  
**Acq On:** 6/13/2018 8:30:00AM  
**Operator:** jls  
**Sample:** BFB  
**Misc:** ALM029426  
**ALS Vial:** 1 **Multiplier:** 1  
**Integration File:** rteint.p  
**Method:** C:\msdchem\1\METHODS\0518.M  
**Last Update:** Fri May 18 13:51:08 2018  
**Spectrum Information:**

| PassFail | Target Mass | Rel. to Mass | Lower Limit % | Higher Limit % | Raw Abundance | % Relative Abundance |
|----------|-------------|--------------|---------------|----------------|---------------|----------------------|
| PASS     | 50          | 95           | 8             | 40             | 200102        | 30.6                 |
| PASS     | 75          | 95           | 30            | 66             | 384246        | 58.8                 |
| PASS     | 95          | 95           | 100           | 100            | 653589        | 100.0                |
| PASS     | 96          | 95           | 5             | 9              | 42346         | 6.5                  |
| PASS     | 173         | 174          | 0.00          | 2              | 3805          | 1.0                  |
| PASS     | 174         | 95           | 50            | 100            | 363368        | 55.6                 |
| PASS     | 175         | 174          | 4             | 9              | 26616         | 7.3                  |
| PASS     | 176         | 174          | 93            | 101            | 348380        | 95.9                 |
| PASS     | 177         | 176          | 5             | 9              | 23261         | 6.7                  |

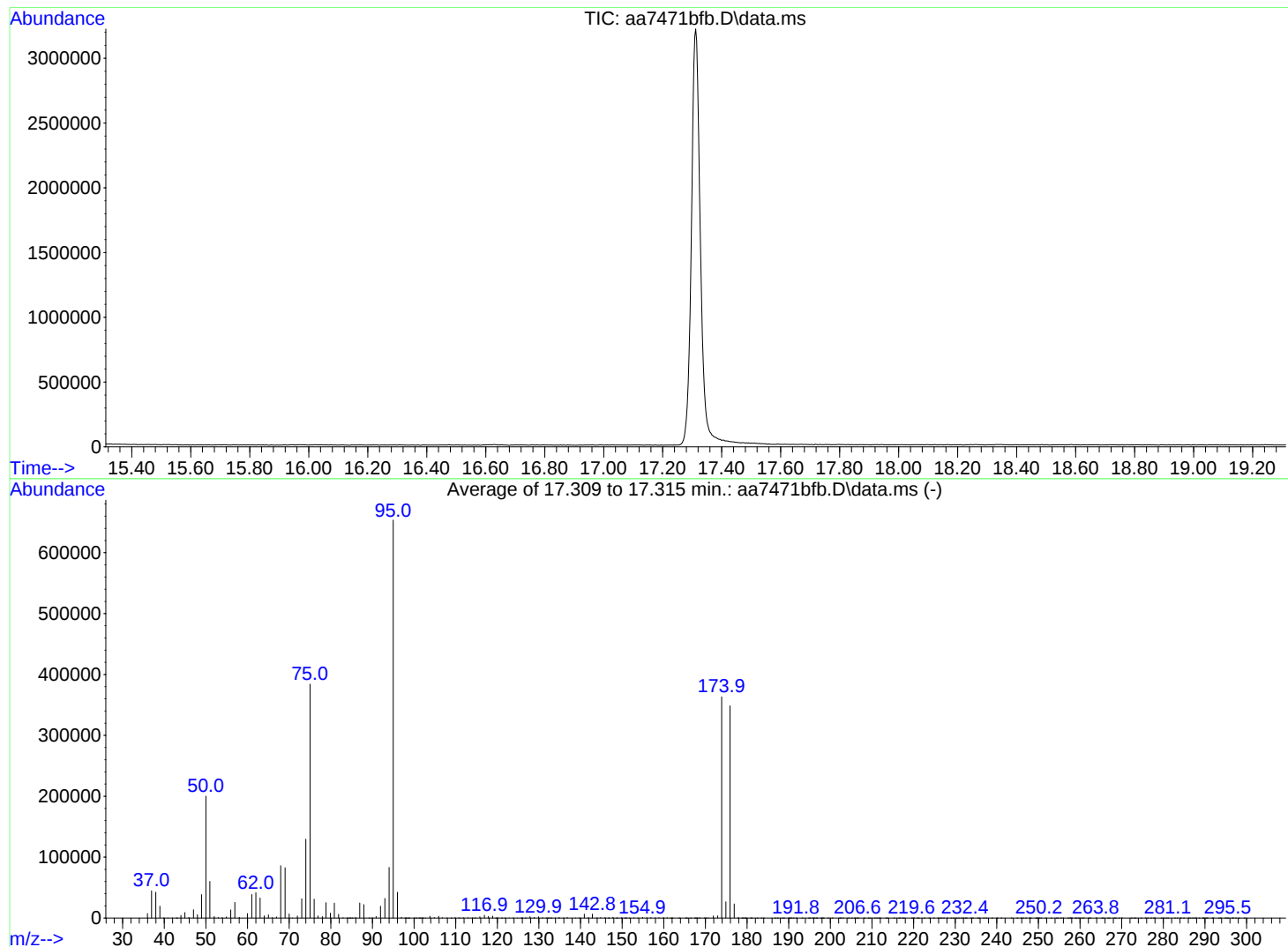
Runs with this BFB:

| Lab Sample Number | Date File   | Field Sample | Date/Time of Sample/Standard Analysis |
|-------------------|-------------|--------------|---------------------------------------|
| BFB               | AA7471BFB   | NA           | 6/13/2018 8:30:00 AM                  |
| 10 PPBV DCVS      | AA7472DCVS  | NA           | 6/13/2018 9:18:00 AM                  |
| METHOD BLANK      | AA7473BLK   | NA           | 6/13/2018 10:25:00 AM                 |
| 02 PPBV RLLCS     | AA7474RLLCS | NA           | 6/13/2018 11:14:00 AM                 |
| 3059              | AA7475      | NA           | 6/13/2018 12:20:00 PM                 |
| 10 PPBV CCCVS     | AA7485CCCVS | NA           | 6/13/2018 8:47:00 PM                  |

Data Path : C:\DATA\06-13-18\  
 Data File : aa7471bfb.D  
 Acq On : 13 Jun 2018 8:30 am  
 Operator : jls  
 Sample : BFB  
 Misc : ALM029426  
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0518.M  
 Title : TO-15 on the Agilent 7890A / 5975C  
 Last Update : Fri May 18 13:51:08 2018



AutoFind: Scans 5356, 5357, 5358; Background Corrected with Scan 5334

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 8            | 40           | 30.6      | 200102  | PASS             |
| 75          | 95           | 30           | 66           | 58.8      | 384246  | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 653589  | PASS             |
| 96          | 95           | 5            | 9            | 6.5       | 42346   | PASS             |
| 173         | 174          | 0.00         | 2            | 1.0       | 3805    | PASS             |
| 174         | 95           | 50           | 100          | 55.6      | 363368  | PASS             |
| 175         | 174          | 4            | 9            | 7.3       | 26616   | PASS             |
| 176         | 174          | 93           | 101          | 95.9      | 348380  | PASS             |
| 177         | 176          | 5            | 9            | 6.7       | 23261   | PASS             |

**Data Path:** C:\DATA\07-25-18\  
**Data File:** AA7971BFB.D  
**Acq On:** 7/25/2018 8:35:00AM  
**Operator:** jls  
**Sample:** BFB  
**Misc:** ALM029426  
**ALS Vial:** 1 **Multiplier:** 1  
**Integration File:** rteint.p  
**Method:** C:\msdchem\1\METHODS\0518.M  
**Last Update:** Fri May 18 13:51:08 2018  
**Spectrum Information:**

| Pass/Fail | Target Mass | Rel. to Mass | Lower Limit % | Higher Limit % | Raw Abundance | % Relative Abundance |
|-----------|-------------|--------------|---------------|----------------|---------------|----------------------|
| PASS      | 50          | 95           | 8             | 40             | 156657        | 20.1                 |
| PASS      | 75          | 95           | 30            | 66             | 381141        | 49.0                 |
| PASS      | 95          | 95           | 100           | 100            | 778176        | 100.0                |
| PASS      | 96          | 95           | 5             | 9              | 52476         | 6.7                  |
| PASS      | 173         | 174          | 0.00          | 2              | 3085          | 0.7                  |
| PASS      | 174         | 95           | 50            | 100            | 459712        | 59.1                 |
| PASS      | 175         | 174          | 4             | 9              | 31097         | 6.8                  |
| PASS      | 176         | 174          | 93            | 101            | 438861        | 95.5                 |
| PASS      | 177         | 176          | 5             | 9              | 27982         | 6.4                  |

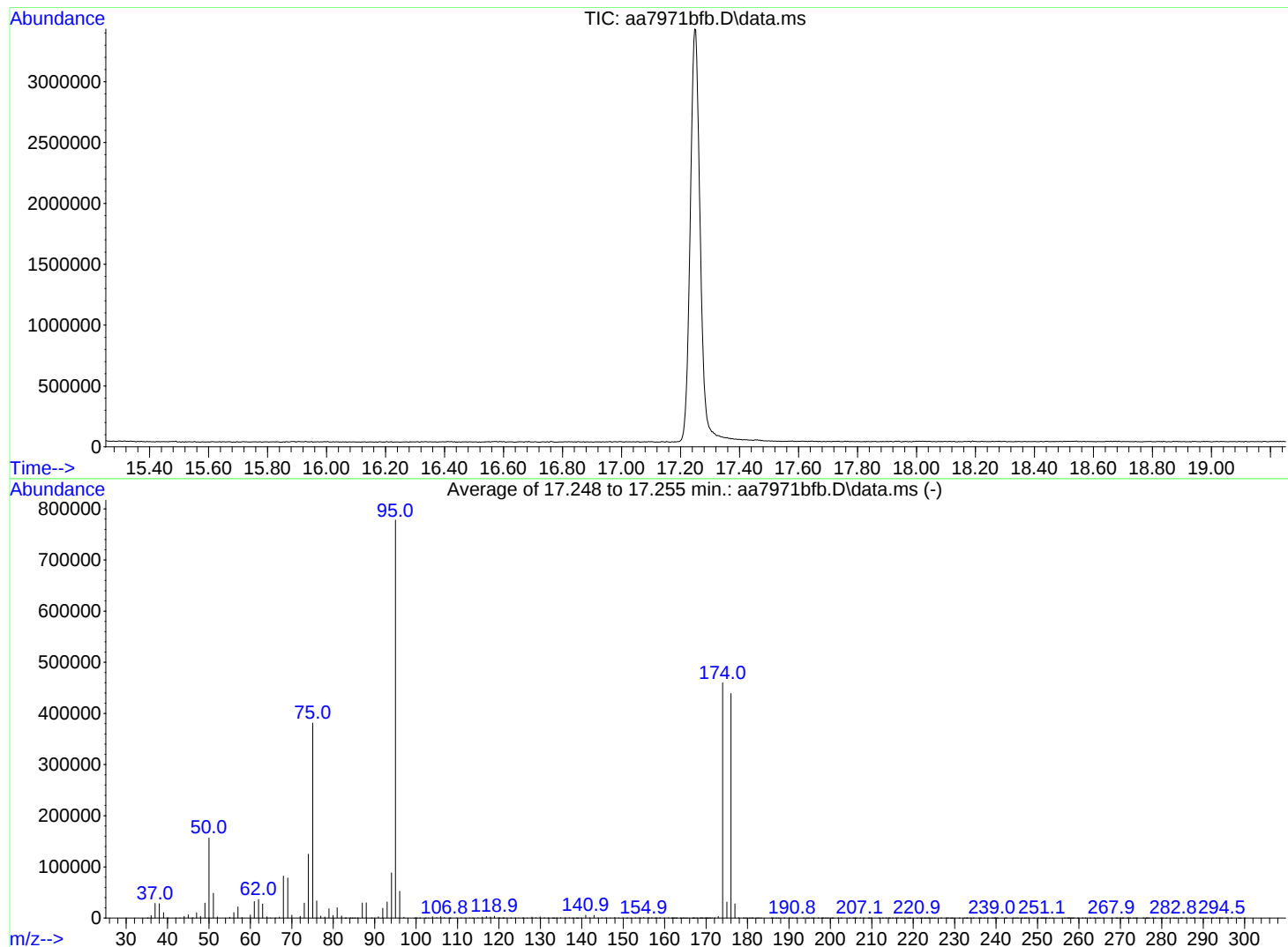
Runs with this BFB:

| Lab Sample Number | Date File   | Field Sample | Date/Time of Sample/Standard Analysis |
|-------------------|-------------|--------------|---------------------------------------|
| BFB               | AA7971BFB   | NA           | 7/25/2018 8:35:00 AM                  |
| 40 PPBV STD       | AA7972STD01 | NA           | 7/25/2018 9:55:00 AM                  |
| 20 PPBV STD       | AA7973STD02 | NA           | 7/25/2018 10:29:00 AM                 |
| 10 PPBV STD       | AA7974STD03 | NA           | 7/25/2018 11:02:00 AM                 |
| 2 PPBV STD        | AA7975STD04 | NA           | 7/25/2018 12:18:00 PM                 |
| 0.2 PPBV STD      | AA7976STD05 | NA           | 7/25/2018 1:42:00 PM                  |
| 10 PPBV ICVSS     | AA7977ICVSS | NA           | 7/25/2018 3:05:00 PM                  |

Data Path : C:\DATA\07-25-18\  
 Data File : aa7971bfb.D  
 Acq On : 25 Jul 2018 8:35 am  
 Operator : jls  
 Sample : BFB  
 Misc : ALM029426  
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0725.M  
 Title : TO-15 on the Agilent 7890A / 5975C  
 Last Update : Wed Jul 25 14:15:57 2018



AutoFind: Scans 5337, 5338, 5339; Background Corrected with Scan 5316

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 8            | 40           | 20.1      | 156657  | PASS             |
| 75          | 95           | 30           | 66           | 49.0      | 381141  | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 778176  | PASS             |
| 96          | 95           | 5            | 9            | 6.7       | 52476   | PASS             |
| 173         | 174          | 0.00         | 2            | 0.7       | 3085    | PASS             |
| 174         | 95           | 50           | 100          | 59.1      | 459712  | PASS             |
| 175         | 174          | 4            | 9            | 6.8       | 31097   | PASS             |
| 176         | 174          | 93           | 101          | 95.5      | 438861  | PASS             |
| 177         | 176          | 5            | 9            | 6.4       | 27982   | PASS             |

**Data Path:** C:\DATA\08-06-18\  
**Data File:** AA8191BFB.D  
**Acq On:** 8/6/2018 11:26:00AM  
**Operator:** jls  
**Sample:** BFB  
**Misc:** ALM029426  
**ALS Vial:** 1 **Multiplier:** 1  
**Integration File:** rteint.p  
**Method:** C:\msdchem\1\METHODS\0725.M  
**Last Update:** Wed Jul 25 14:15:57 2018  
**Spectrum Information:**

| Pass/Fail | Target Mass | Rel. to Mass | Lower Limit % | Higher Limit % | Raw Abundance | % Relative Abundance |
|-----------|-------------|--------------|---------------|----------------|---------------|----------------------|
| PASS      | 50          | 95           | 8             | 40             | 177003        | 32.6                 |
| PASS      | 75          | 95           | 30            | 66             | 334482        | 61.6                 |
| PASS      | 95          | 95           | 100           | 100            | 542971        | 100.0                |
| PASS      | 96          | 95           | 5             | 9              | 36432         | 6.7                  |
| PASS      | 173         | 174          | 0.00          | 2              | 2635          | 0.9                  |
| PASS      | 174         | 95           | 50            | 100            | 286464        | 52.8                 |
| PASS      | 175         | 174          | 4             | 9              | 21901         | 7.6                  |
| PASS      | 176         | 174          | 93            | 101            | 278015        | 97.1                 |
| PASS      | 177         | 176          | 5             | 9              | 17336         | 6.2                  |

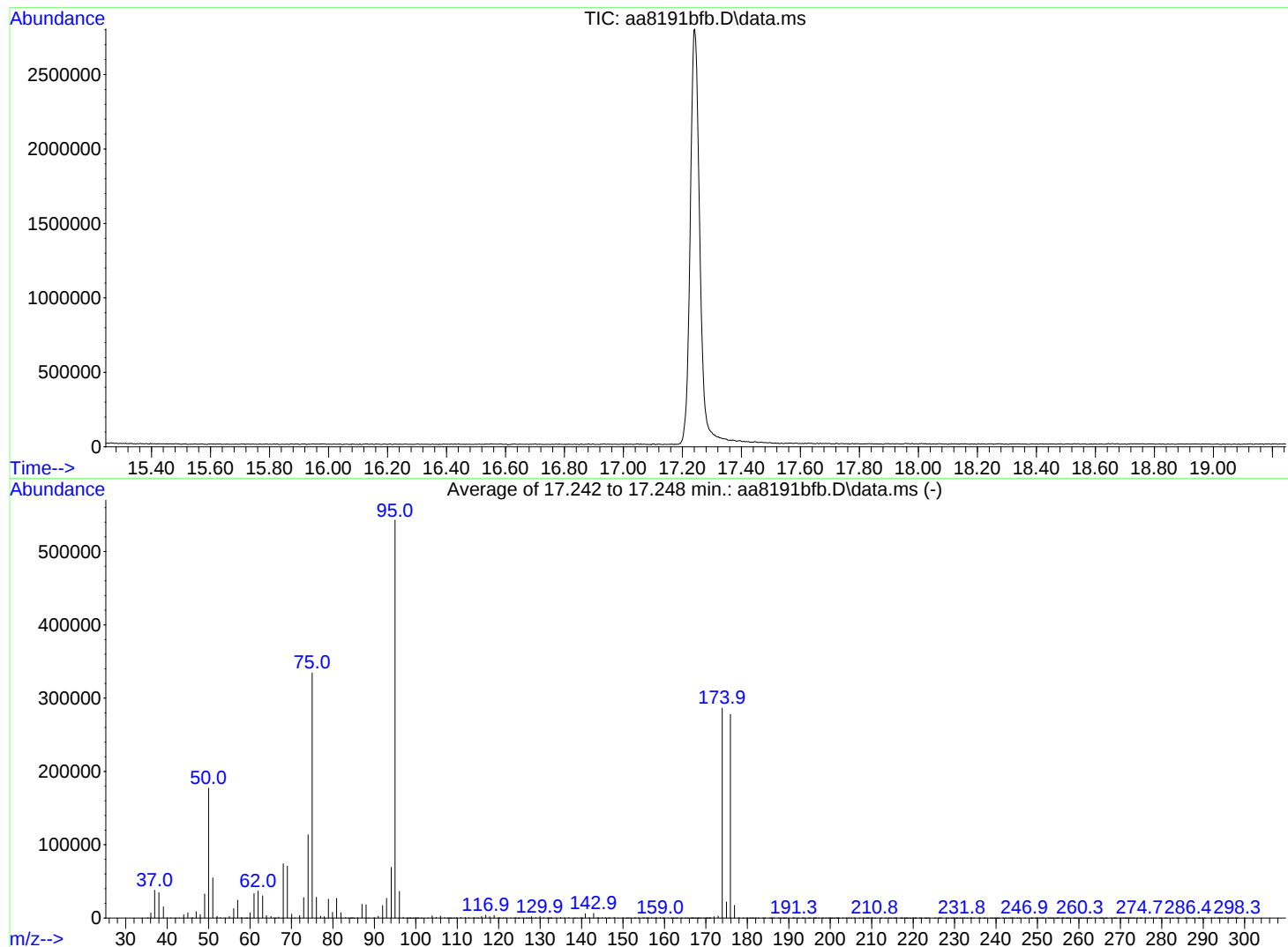
Runs with this BFB:

| Lab Sample Number | Date File   | Field Sample | Date/Time of Sample/Standard Analysis |
|-------------------|-------------|--------------|---------------------------------------|
| BFB               | AA8191BFB   | NA           | 8/6/2018 11:26:00 AM                  |
| 10 PPBV DCVS      | AA8192DCVS  | NA           | 8/6/2018 1:07:00 PM                   |
| METHOD BLANK      | AA8193BLK   | NA           | 8/6/2018 1:42:00 PM                   |
| 02 PPBV RLLCS     | AA8194RLLCS | NA           | 8/6/2018 2:23:00 PM                   |
| E18-06141-07      | AA8206      | SS-101       | 8/6/2018 10:28:00 PM                  |
| E18-06141-08      | AA8207      | SS-102       | 8/6/2018 11:02:00 PM                  |
| E18-06141-09      | AA8208      | SS-103       | 8/6/2018 11:35:00 PM                  |
| 10 PPBV CCCVS     | AA8213CCCVS | NA           | 8/7/2018 2:22:00 AM                   |

Data Path : C:\DATA\08-06-18\  
 Data File : aa8191bfb.D  
 Acq On : 6 Aug 2018 11:26 am  
 Operator : jls  
 Sample : BFB  
 Misc : ALM029426  
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0725.M  
 Title : TO-15 on the Agilent 7890A / 5975C  
 Last Update : Wed Jul 25 14:15:57 2018



AutoFind: Scans 5335, 5336, 5337; Background Corrected with Scan 5309

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 8            | 40           | 32.6      | 177003  | PASS             |
| 75          | 95           | 30           | 66           | 61.6      | 334482  | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 542971  | PASS             |
| 96          | 95           | 5            | 9            | 6.7       | 36432   | PASS             |
| 173         | 174          | 0.00         | 2            | 0.9       | 2635    | PASS             |
| 174         | 95           | 50           | 100          | 52.8      | 286464  | PASS             |
| 175         | 174          | 4            | 9            | 7.6       | 21901   | PASS             |
| 176         | 174          | 93           | 101          | 97.1      | 278015  | PASS             |
| 177         | 176          | 5            | 9            | 6.2       | 17336   | PASS             |

**Data Path:** C:\DATA\08-07-18\  
**Data File:** AA8221BFB.D  
**Acq On:** 8/7/2018 9:33:00AM  
**Operator:** jls  
**Sample:** BFB  
**Misc:** ALM029426  
**ALS Vial:** 1 **Multiplier:** 1  
**Integration File:** rteint.p  
**Method:** C:\msdchem\1\METHODS\0725.M  
**Last Update:** Wed Jul 25 14:15:57 2018  
**Spectrum Information:**

| Pass/Fail | Target Mass | Rel. to Mass | Lower Limit % | Higher Limit % | Raw Abundance | % Relative Abundance |
|-----------|-------------|--------------|---------------|----------------|---------------|----------------------|
| PASS      | 50          | 95           | 8             | 40             | 155635        | 33.4                 |
| PASS      | 75          | 95           | 30            | 66             | 289323        | 62.1                 |
| PASS      | 95          | 95           | 100           | 100            | 466217        | 100.0                |
| PASS      | 96          | 95           | 5             | 9              | 29664         | 6.4                  |
| PASS      | 173         | 174          | 0.00          | 2              | 2337          | 1.0                  |
| PASS      | 174         | 95           | 50            | 100            | 240853        | 51.7                 |
| PASS      | 175         | 174          | 4             | 9              | 17856         | 7.4                  |
| PASS      | 176         | 174          | 93            | 101            | 230955        | 95.9                 |
| PASS      | 177         | 176          | 5             | 9              | 15117         | 6.5                  |

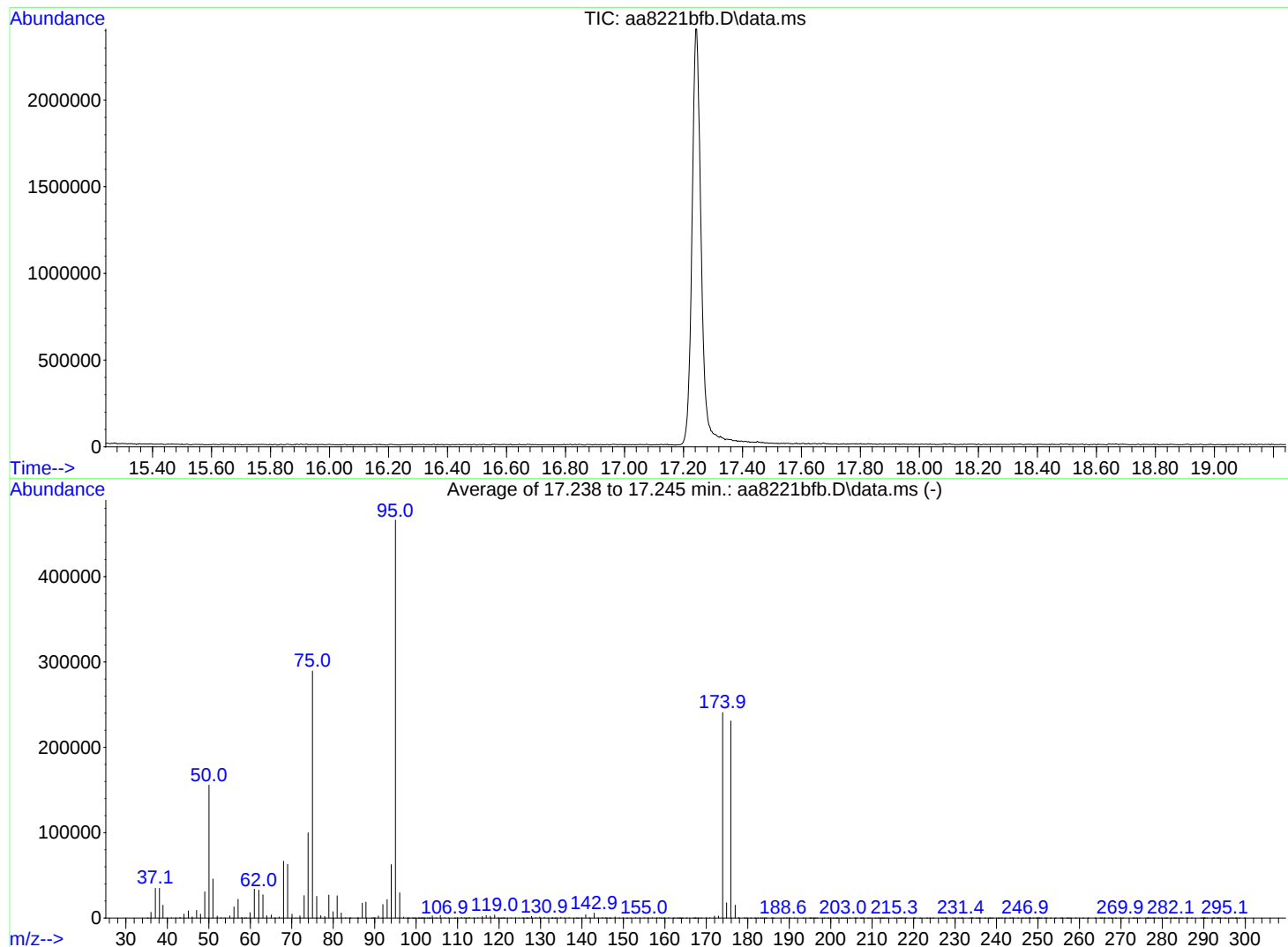
Runs with this BFB:

| Lab Sample Number | Date File   | Field Sample | Date/Time of Sample/Standard Analysis |
|-------------------|-------------|--------------|---------------------------------------|
| BFB               | AA8221BFB   | NA           | 8/7/2018 9:33:00 AM                   |
| 10 PPBV DCVS      | AA8222DCVS  | NA           | 8/7/2018 10:17:00 AM                  |
| METHOD BLANK      | AA8223BLK   | NA           | 8/7/2018 11:01:00 AM                  |
| 02 PPBV RLLCS     | AA8224RLLCS | NA           | 8/7/2018 11:47:00 AM                  |
| E18-06141-08      | AA8232      | SS-102       | 8/7/2018 4:57:00 PM                   |
| E18-06141-09      | AA8233      | SS-103       | 8/7/2018 5:31:00 PM                   |
| 10 PPBV CCCVS     | AA8242CCCVS | NA           | 8/7/2018 10:31:00 PM                  |

Data Path : C:\DATA\08-07-18\  
 Data File : aa8221bfb.D  
 Acq On : 7 Aug 2018 9:33 am  
 Operator : jjw  
 Sample : BFB  
 Misc : ALM029426  
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\0725.M  
 Title : TO-15 on the Agilent 7890A / 5975C  
 Last Update : Wed Jul 25 14:15:57 2018



AutoFind: Scans 5334, 5335, 5336; Background Corrected with Scan 5312

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 8            | 40           | 33.4      | 155635  | PASS             |
| 75          | 95           | 30           | 66           | 62.1      | 289323  | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 466217  | PASS             |
| 96          | 95           | 5            | 9            | 6.4       | 29664   | PASS             |
| 173         | 174          | 0.00         | 2            | 1.0       | 2337    | PASS             |
| 174         | 95           | 50           | 100          | 51.7      | 240853  | PASS             |
| 175         | 174          | 4            | 9            | 7.4       | 17856   | PASS             |
| 176         | 174          | 93           | 101          | 95.9      | 230955  | PASS             |
| 177         | 176          | 5            | 9            | 6.5       | 15117   | PASS             |

## Method Blank Report

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

**Data File:** AA7473BLK  
**Date Analyzed:** 6/13/2018  
**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 [AA7471BFB]             | 06/13/2018 8:30                        |
| 10 PPBV DCVS [AA7472DCVS]   | 06/13/2018 9:18                        |
| METHOD BLANK [AA7473BLK]    | 06/13/2018 10:25                       |
| 02 PPBV RLLCS [AA7474RLLCS] | 06/13/2018 11:14                       |
| 3059 [AA7475]               | 06/13/2018 12:20                       |
| 10 PPBV CCCVS [AA7485CCCVS] | 06/13/2018 20:47                       |

| Compound                      | CAS #      | Reporting Limit<br>(ppbv) | Concentration<br>(ppbv) |
|-------------------------------|------------|---------------------------|-------------------------|
| Acetone                       | 67-64-1    | 0.20                      | ND                      |
| Benzene                       | 71-43-2    | 0.15                      | 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   | 0.12                      | 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   | 0.19                      | 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 | 0.19                      | ND                      |
| 1,3-Dichloropropene (trans)   | 10061-02-6 | 0.18                      | ND                      |
| 1,2-Dichlorotetrafluoroethane | 76-14-2    | 0.20                      | ND                      |
| 1,4-Dioxane                   | 123-91-1   | 0.17                      | 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    | 0.13                      | ND                      |
| Methyl isobutyl ketone        | 108-10-1   | 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:** AA7473BLK  
**Date Analyzed:** 6/13/2018  
**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 [AA7471BFB]             | 06/13/2018 8:30                        |
| 10 PPBV DCVS [AA7472DCVS]   | 06/13/2018 9:18                        |
| METHOD BLANK [AA7473BLK]    | 06/13/2018 10:25                       |
| 02 PPBV RLLCS [AA7474RLLCS] | 06/13/2018 11:14                       |
| 3059 [AA7475]               | 06/13/2018 12:20                       |
| 10 PPBV CCCVS [AA7485CCCVS] | 06/13/2018 20:47                       |

| Compound                              | CAS #       | Reporting Limit<br>(ppbv) | Concentration<br>(ppbv) |
|---------------------------------------|-------------|---------------------------|-------------------------|
| Methyl tert-butyl ether               | 1634-04-4   | 0.11                      | ND                      |
| Styrene                               | 100-42-5    | 0.14                      | ND                      |
| Tert-butyl alcohol                    | 75-65-0     | 0.18                      | ND                      |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     | 0.17                      | ND                      |
| Tetrachloroethene                     | 127-18-4    | 0.20                      | ND                      |
| Toluene                               | 108-88-3    | 0.17                      | 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     | 0.12                      | ND                      |
| 1,3,5-Trimethylbenzene                | 108-67-8    | 0.17                      | 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\06-13-18\  
 Data File : aa7473blk.D  
 Acq On : 13 Jun 2018 10:25 am  
 Operator : jls  
 Sample : Method Blank  
 Misc : 1127, 500cc  
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 14 13:54:42 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 Response via : Initial Calibration

| Compound                     | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|------------------------------|--------|------|----------|-------|-------|----------|
| Internal Standards           |        |      |          |       |       |          |
| 1) Bromochloromethane (IS)   | 7.724  | 130  | 510475   | 10.00 | ppbV  | 0.00     |
| 38) 1,4-Difluorobenzene (IS) | 9.785  | 114  | 1863647  | 10.00 | ppbV  | # 0.00   |
| 55) d-5 Chlorobenzene (IS)   | 15.116 | 117  | 1558649  | 10.00 | ppbV  | 0.00     |

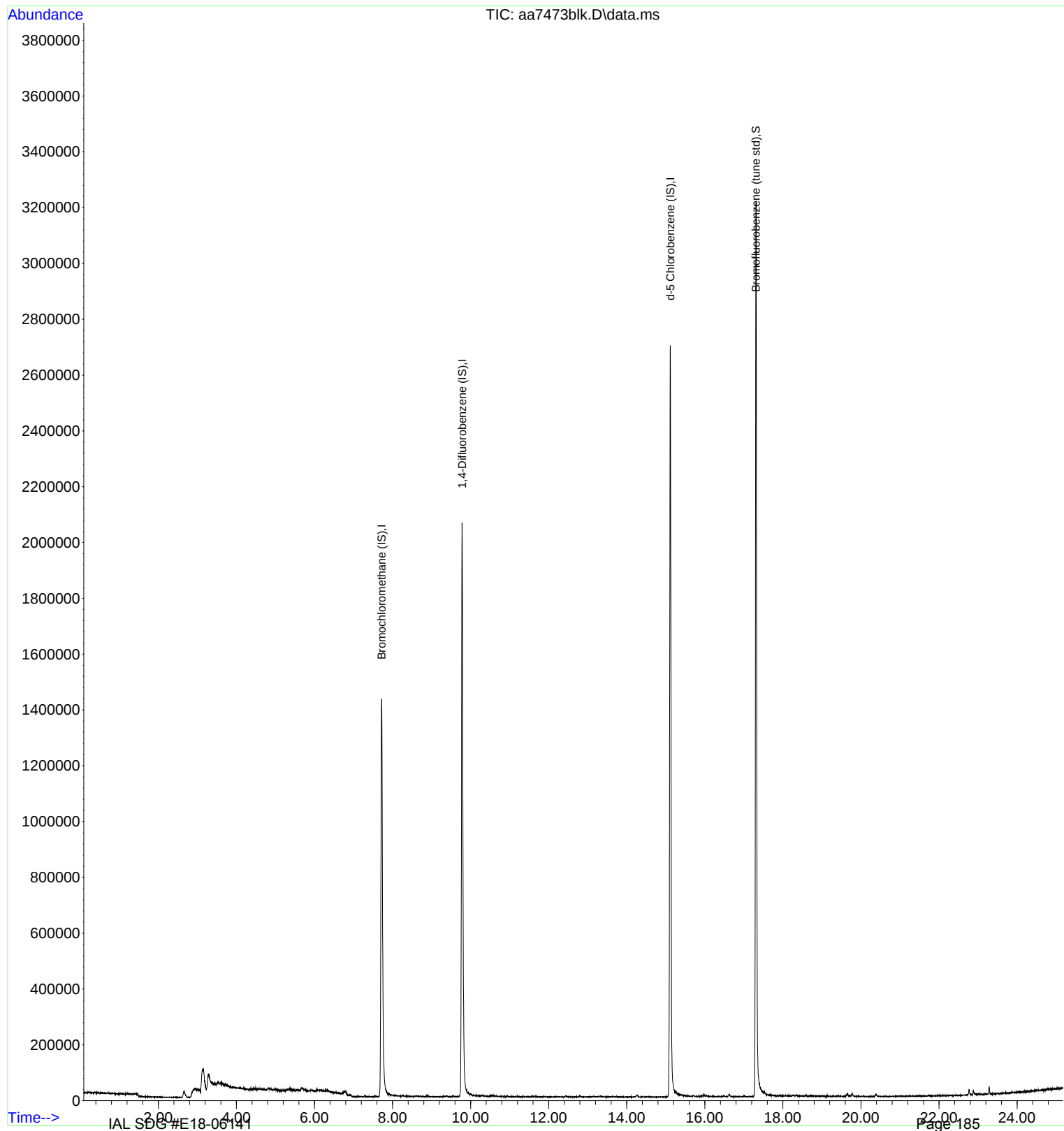
|                               |        |    |         |      |      |      |
|-------------------------------|--------|----|---------|------|------|------|
| System Monitoring Compounds   |        |    |         |      |      |      |
| 64) Bromofluorobenzene (tu... | 17.312 | 95 | 1385718 | 9.66 | ppbV | 0.00 |

| Target Compounds | Qvalue |
|------------------|--------|
| -----            |        |

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

Data Path : C:\DATA\06-13-18\  
Data File : aa7473blk.D  
Acq On : 13 Jun 2018 10:25 am  
Operator : jls  
Sample : Method Blank  
Misc : 1127, 500cc  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 14 13:54:42 2018  
Quant Method : C:\msdchem\1\METHODS\0518.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Fri May 18 13:51:08 2018  
Response via : Initial Calibration



## Method Blank Report

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

**Data File:** AA8193BLK  
**Date Analyzed:** 8/6/2018  
**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 [AA8191BFB]             | 08/06/2018 11:26                       |
| 10 PPBV DCVS [AA8192DCVS]   | 08/06/2018 13:07                       |
| METHOD BLANK [AA8193BLK]    | 08/06/2018 13:42                       |
| 02 PPBV RLLCS [AA8194RLLCS] | 08/06/2018 14:23                       |
| E18-06141-07 [AA8206]       | 08/06/2018 22:28                       |
| E18-06141-08 [AA8207]       | 08/06/2018 23:02                       |
| E18-06141-09 [AA8208]       | 08/06/2018 23:35                       |
| 10 PPBV CCCVS [AA8213CCCVS] | 08/07/2018 2:22                        |

| Compound                      | CAS #      | Reporting Limit<br>(ppbv) | Concentration<br>(ppbv) |
|-------------------------------|------------|---------------------------|-------------------------|
| Acetone                       | 67-64-1    | 0.20                      | ND                      |
| Benzene                       | 71-43-2    | 0.15                      | 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   | 0.12                      | 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   | 0.19                      | 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 | 0.19                      | ND                      |
| 1,3-Dichloropropene (trans)   | 10061-02-6 | 0.18                      | ND                      |
| 1,2-Dichlorotetrafluoroethane | 76-14-2    | 0.20                      | ND                      |
| 1,4-Dioxane                   | 123-91-1   | 0.17                      | 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                      |

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:** AA8193BLK  
**Date Analyzed:** 8/6/2018  
**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 [AA8191BFB]             | 08/06/2018 11:26                       |
| 10 PPBV DCVS [AA8192DCVS]   | 08/06/2018 13:07                       |
| METHOD BLANK [AA8193BLK]    | 08/06/2018 13:42                       |
| 02 PPBV RLLCS [AA8194RLLCS] | 08/06/2018 14:23                       |
| E18-06141-07 [AA8206]       | 08/06/2018 22:28                       |
| E18-06141-08 [AA8207]       | 08/06/2018 23:02                       |
| E18-06141-09 [AA8208]       | 08/06/2018 23:35                       |
| 10 PPBV CCCVS [AA8213CCCVS] | 08/07/2018 2:22                        |

| Compound                              | CAS #       | Reporting Limit<br>(ppbv) | Concentration<br>(ppbv) |
|---------------------------------------|-------------|---------------------------|-------------------------|
| Methyl ethyl ketone                   | 78-93-3     | 0.13                      | ND                      |
| Methyl isobutyl ketone                | 108-10-1    | 0.20                      | ND                      |
| Methyl tert-butyl ether               | 1634-04-4   | 0.11                      | ND                      |
| Styrene                               | 100-42-5    | 0.14                      | ND                      |
| Tert-butyl alcohol                    | 75-65-0     | 0.18                      | ND                      |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     | 0.17                      | ND                      |
| Tetrachloroethene                     | 127-18-4    | 0.20                      | ND                      |
| Toluene                               | 108-88-3    | 0.17                      | 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     | 0.12                      | ND                      |
| 1,3,5-Trimethylbenzene                | 108-67-8    | 0.17                      | 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\08-06-18\  
 Data File : aa8193blk.D  
 Acq On : 6 Aug 2018 1:42 pm  
 Operator : jls  
 Sample : Method Blank  
 Misc : 1127, 500cc  
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 06 14:08:12 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

| Compound                     | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|------------------------------|--------|------|----------|-------|-------|----------|
| Internal Standards           |        |      |          |       |       |          |
| 1) Bromochloromethane (IS)   | 7.679  | 130  | 418368   | 10.00 | ppbV  | 0.00     |
| 38) 1,4-Difluorobenzene (IS) | 9.731  | 114  | 1550382  | 10.00 | ppbV  | # 0.00   |
| 55) d-5 Chlorobenzene (IS)   | 15.052 | 117  | 1251713  | 10.00 | ppbV  | 0.00     |

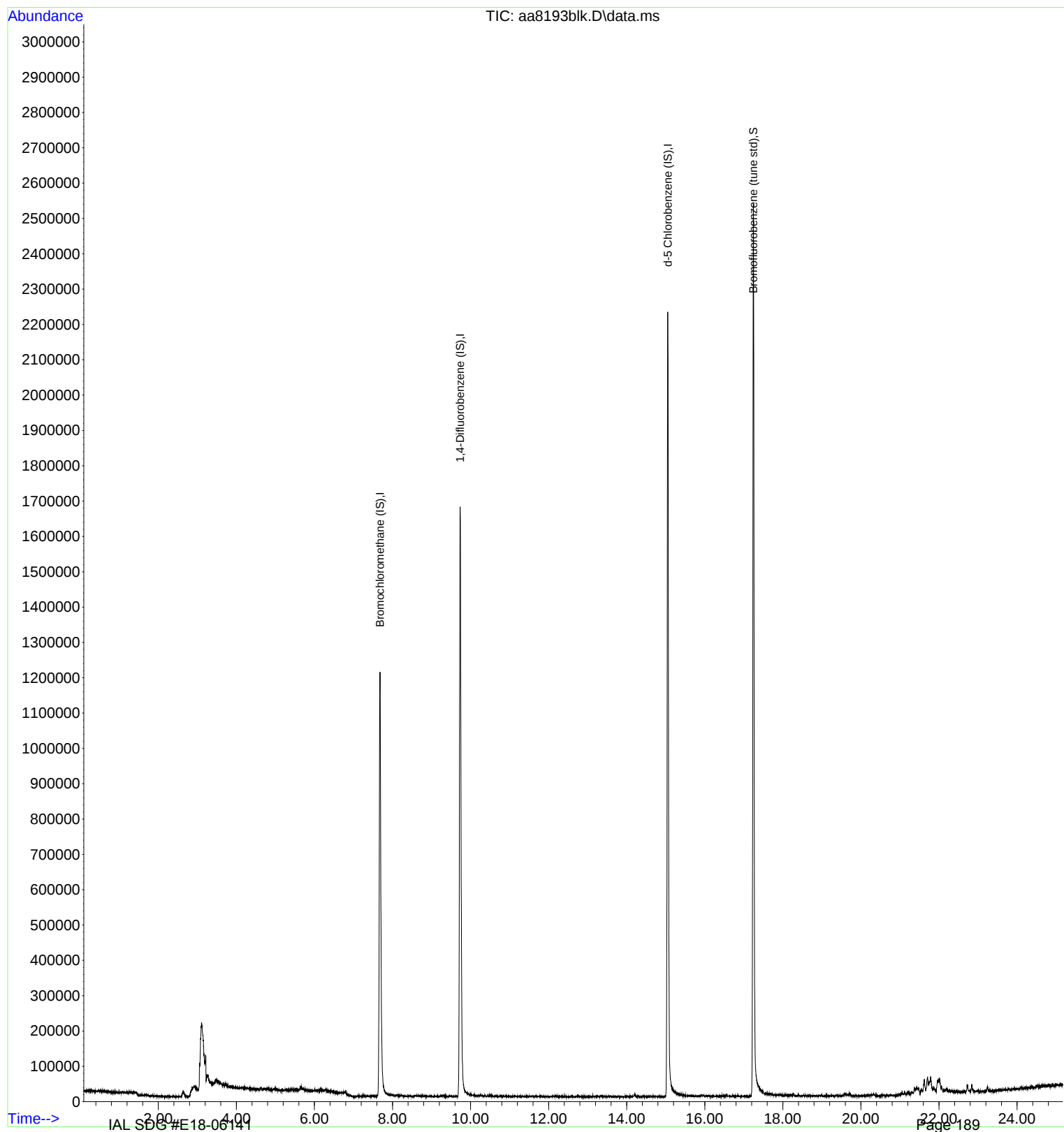
|                               |        |    |         |       |      |      |
|-------------------------------|--------|----|---------|-------|------|------|
| System Monitoring Compounds   |        |    |         |       |      |      |
| 64) Bromofluorobenzene (tu... | 17.245 | 95 | 1143580 | 10.02 | ppbV | 0.00 |

| Target Compounds | Qvalue |
|------------------|--------|
| -----            |        |

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

Data Path : C:\DATA\08-06-18\  
Data File : aa8193blk.D  
Acq On : 6 Aug 2018 1:42 pm  
Operator : jls  
Sample : Method Blank  
Misc : 1127, 500cc  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 06 14:08:12 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration



## Method Blank Report

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

**Data File:** AA8223BLK  
**Date Analyzed:** 8/7/2018  
**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 [AA8221BFB]             | 08/07/2018 9:33                        |
| 10 PPBV DCVS [AA8222DCVS]   | 08/07/2018 10:17                       |
| METHOD BLANK [AA8223BLK]    | 08/07/2018 11:01                       |
| 02 PPBV RLLCS [AA8224RLLCS] | 08/07/2018 11:47                       |
| E18-06141-08 [AA8232]       | 08/07/2018 16:57                       |
| E18-06141-09 [AA8233]       | 08/07/2018 17:31                       |
| 10 PPBV CCCVS [AA8242CCCVS] | 08/07/2018 22:31                       |

| Compound                      | CAS #      | Reporting Limit (ppbv) | Concentration (ppbv) |
|-------------------------------|------------|------------------------|----------------------|
| Acetone                       | 67-64-1    | 0.20                   | ND                   |
| Benzene                       | 71-43-2    | 0.15                   | 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   | 0.12                   | 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   | 0.19                   | 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 | 0.19                   | ND                   |
| 1,3-Dichloropropene (trans)   | 10061-02-6 | 0.18                   | ND                   |
| 1,2-Dichlorotetrafluoroethane | 76-14-2    | 0.20                   | ND                   |
| 1,4-Dioxane                   | 123-91-1   | 0.17                   | 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    | 0.13                   | 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:** AA8223BLK  
**Date Analyzed:** 8/7/2018  
**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 [AA8221BFB]             | 08/07/2018 9:33                        |
| 10 PPBV DCVS [AA8222DCVS]   | 08/07/2018 10:17                       |
| METHOD BLANK [AA8223BLK]    | 08/07/2018 11:01                       |
| 02 PPBV RLLCS [AA8224RLLCS] | 08/07/2018 11:47                       |
| E18-06141-08 [AA8232]       | 08/07/2018 16:57                       |
| E18-06141-09 [AA8233]       | 08/07/2018 17:31                       |
| 10 PPBV CCCVS [AA8242CCCVS] | 08/07/2018 22:31                       |

| Compound                              | CAS #       | Reporting Limit<br>(ppbv) | Concentration<br>(ppbv) |
|---------------------------------------|-------------|---------------------------|-------------------------|
| Methyl isobutyl ketone                | 108-10-1    | 0.20                      | ND                      |
| Methyl tert-butyl ether               | 1634-04-4   | 0.11                      | ND                      |
| Styrene                               | 100-42-5    | 0.14                      | ND                      |
| Tert-butyl alcohol                    | 75-65-0     | 0.18                      | ND                      |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     | 0.17                      | ND                      |
| Tetrachloroethene                     | 127-18-4    | 0.20                      | ND                      |
| Toluene                               | 108-88-3    | 0.17                      | 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     | 0.12                      | ND                      |
| 1,3,5-Trimethylbenzene                | 108-67-8    | 0.17                      | 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\08-07-18\  
 Data File : aa8223blk.D  
 Acq On : 7 Aug 2018 11:01 am  
 Operator : jjw  
 Sample : Method Blank  
 Misc : 1127, 500cc  
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 07 11:31:16 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

| Compound                     | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|------------------------------|--------|------|----------|-------|-------|----------|
| Internal Standards           |        |      |          |       |       |          |
| 1) Bromochloromethane (IS)   | 7.682  | 130  | 386755   | 10.00 | ppbV  | 0.00     |
| 38) 1,4-Difluorobenzene (IS) | 9.734  | 114  | 1385734  | 10.00 | ppbV  | # 0.00   |
| 55) d-5 Chlorobenzene (IS)   | 15.052 | 117  | 1124467  | 10.00 | ppbV  | 0.00     |

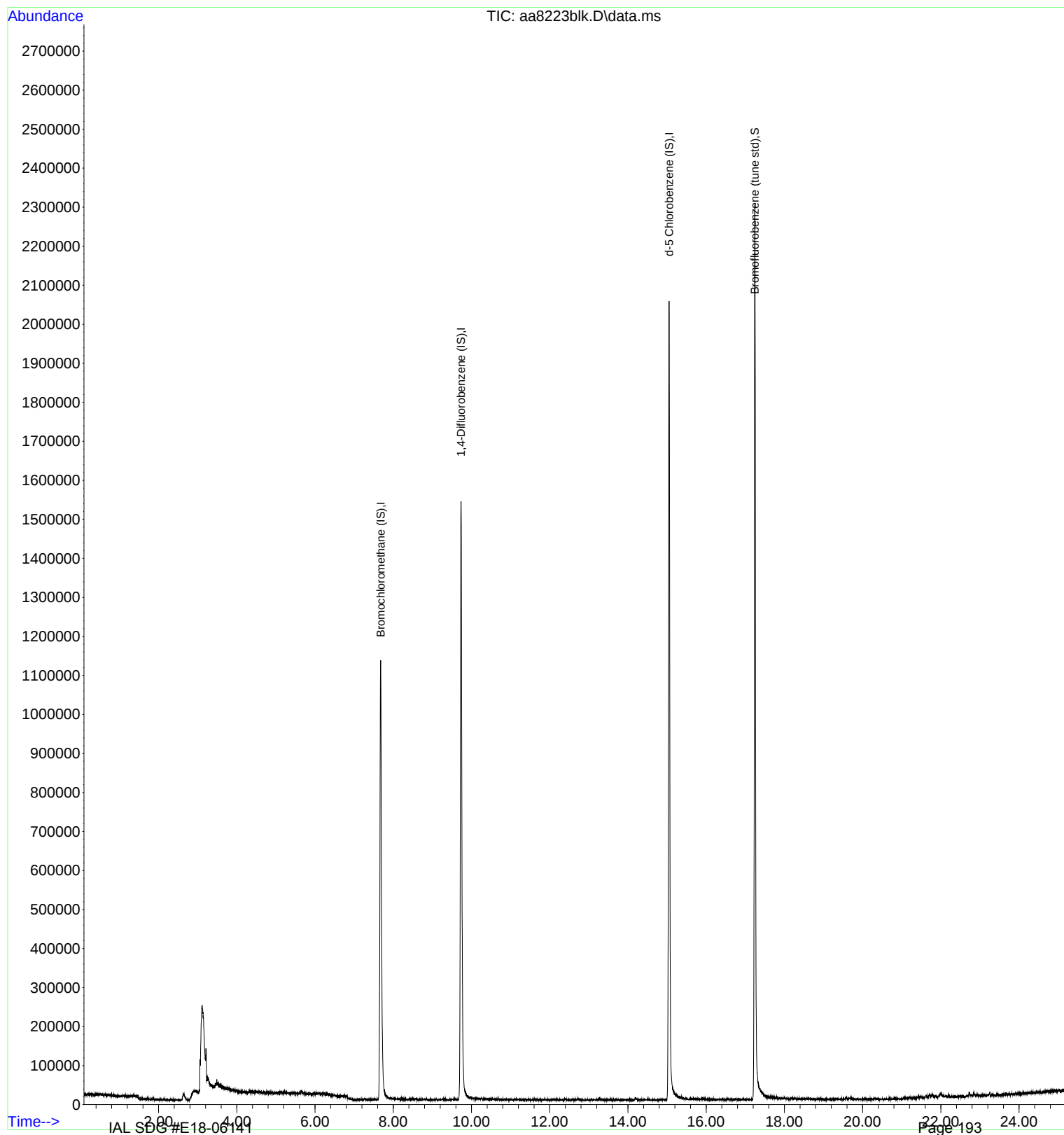
|                               |        |    |        |      |      |      |
|-------------------------------|--------|----|--------|------|------|------|
| System Monitoring Compounds   |        |    |        |      |      |      |
| 64) Bromofluorobenzene (tu... | 17.245 | 95 | 997109 | 9.72 | ppbV | 0.00 |

| Target Compounds | Qvalue |
|------------------|--------|
| -----            |        |

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

Data Path : C:\DATA\08-07-18\  
Data File : aa8223blk.D  
Acq On : 7 Aug 2018 11:01 am  
Operator : jjw  
Sample : Method Blank  
Misc : 1127, 500cc  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 07 11:31:16 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration



# Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

## Laboratory Sample Duplicate Report

SDG Number: E18-04189  
IAL Sample ID: E18-04189-01  
Matrix: Air  
Summa ID: 5096

Date Received: 6/8/18  
Date Analyzed: 6/13/18,6/13/18  
Lab Data File#: AA7478,AA7479  
Dilution Factor: 1  
Injection Volume: 500ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                      | CAS #      | Sample<br>E18-04189-01<br>Concentration<br>Reported |        | Sample Dup<br>E18-04189-21<br>Concentration<br>Reported |        | Reporting<br>Limits<br>ppbv | RPD     |
|-------------------------------|------------|-----------------------------------------------------|--------|---------------------------------------------------------|--------|-----------------------------|---------|
|                               |            | ppbv                                                | Q      | ppbv                                                    | Q      |                             |         |
| Acetone                       | 67-64-1    | 3.1                                                 |        | 3.1                                                     |        | 0.40                        | 0.00%   |
| 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    | 2.3                                                 |        | 2.6                                                     |        | 0.40                        | -12.24% |
| Methyl ethyl ketone           | 78-93-3    |                                                     | 0.40 U |                                                         | 0.40 U | 0.40                        | 0.00%   |
| 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: E18-04189  
IAL Sample ID: E18-04189-01  
Matrix: Air  
Summa ID: 5096

Date Received: 6/8/18  
Date Analyzed: 6/13/18,6/13/18  
Lab Data File#: AA7478,AA7479  
Dilution Factor: 1  
Injection Volume: 500ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                              | CAS #       | Sample<br>E18-04189-01    |   | Sample Dup<br>E18-04189-21 |   | Reporting<br>Limits | RPD   |
|---------------------------------------|-------------|---------------------------|---|----------------------------|---|---------------------|-------|
|                                       |             | Concentration<br>Reported | Q | Concentration<br>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\06-13-18\  
 Data File : aa7478.D  
 Acq On : 13 Jun 2018 4:48 pm  
 Operator : jls  
 Sample : E18-04189-01  
 Misc : 5096, 500cc  
 ALS Vial : 8 Sample Multiplier: 1

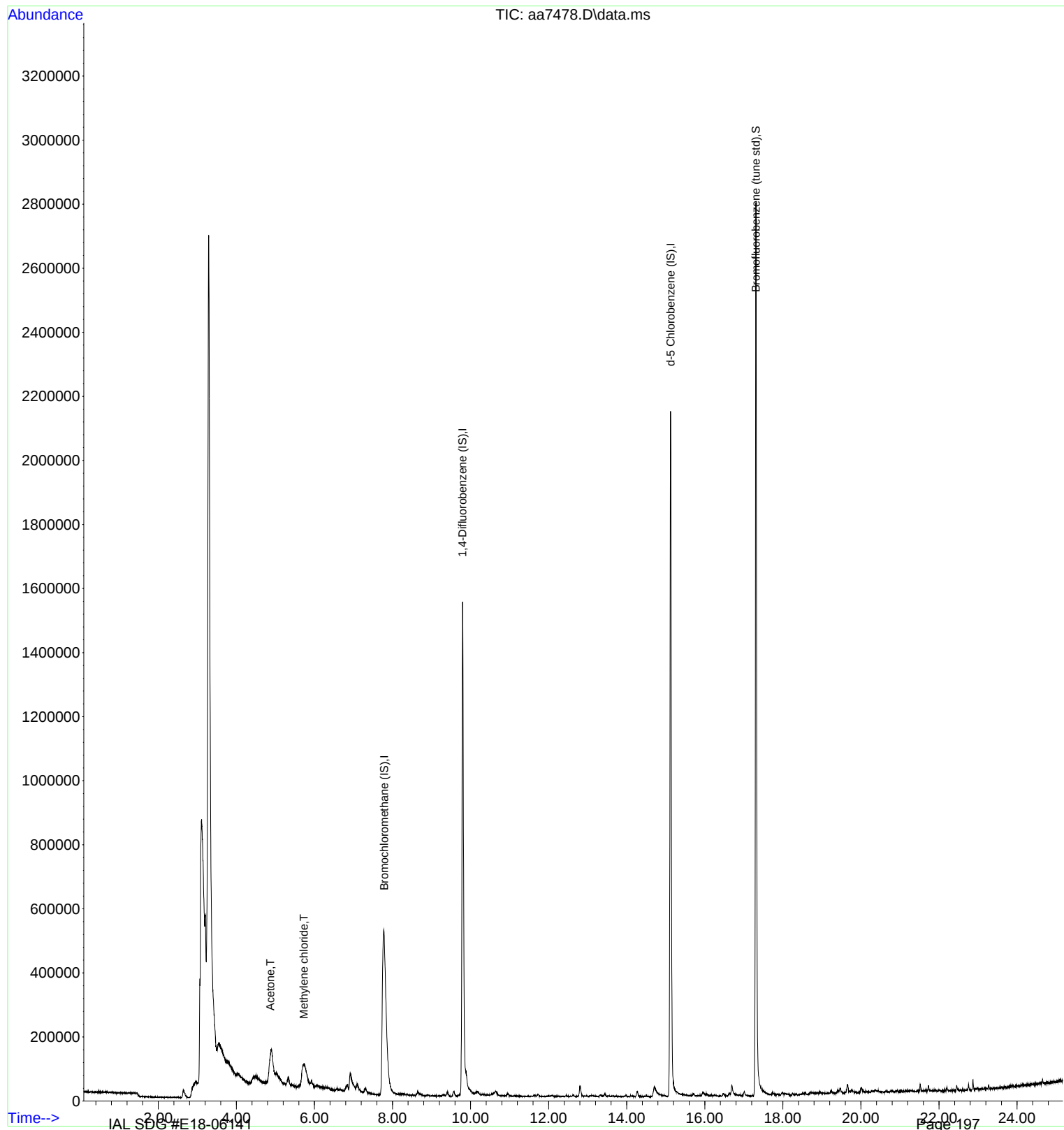
Quant Time: Jun 14 10:45:36 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 Response via : Initial Calibration

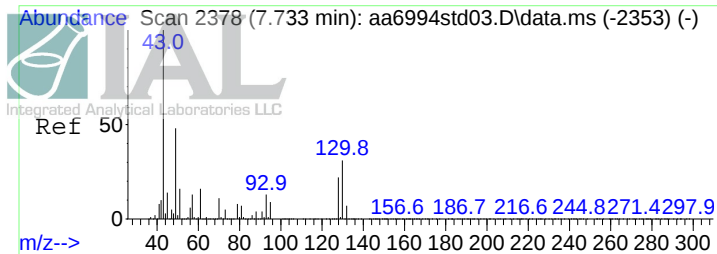
| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| -----                         |        |      |          |       |       |          |
| Internal Standards            |        |      |          |       |       |          |
| 1) Bromochloromethane (IS)    | 7.788  | 130  | 409872   | 10.00 | ppbV  | 0.06     |
| 38) 1,4-Difluorobenzene (IS)  | 9.795  | 114  | 1446308  | 10.00 | ppbV  | # 0.01   |
| 55) d-5 Chlorobenzene (IS)    | 15.122 | 117  | 1304566  | 10.00 | ppbV  | 0.01     |
| System Monitoring Compounds   |        |      |          |       |       |          |
| 64) Bromofluorobenzene (tu... | 17.309 | 95   | 1183822  | 9.86  | ppbV  | 0.00     |
| Target Compounds              |        |      |          |       |       |          |
|                               |        |      |          |       |       | Qvalue   |
| 14) Acetone                   | 4.872  | 58   | 102946   | 3.11  | ppbV  | 70       |
| 19) Methylene chloride        | 5.731  | 49   | 217471   | 2.27  | ppbV  | 94       |
| -----                         |        |      |          |       |       |          |

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

Data Path : C:\DATA\06-13-18\  
Data File : aa7478.D  
Acq On : 13 Jun 2018 4:48 pm  
Operator : jls  
Sample : E18-04189-01  
Misc : 5096, 500cc  
ALS Vial : 8 Sample Multiplier: 1

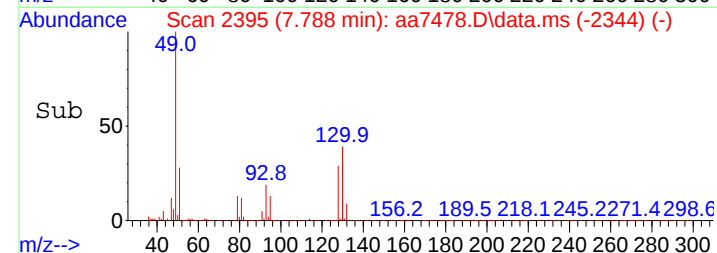
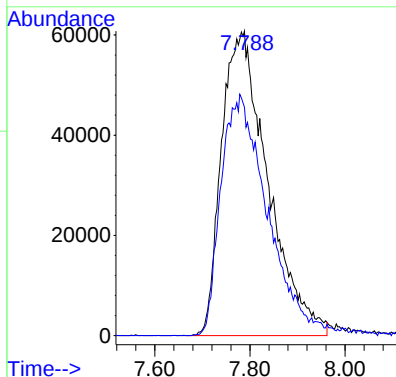
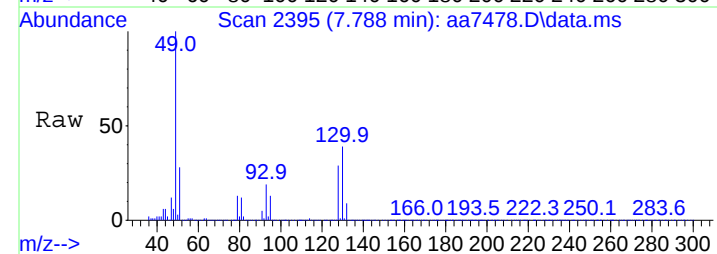
Quant Time: Jun 14 10:45:36 2018  
Quant Method : C:\msdchem\1\METHODS\0518.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Fri May 18 13:51:08 2018  
Response via : Initial Calibration





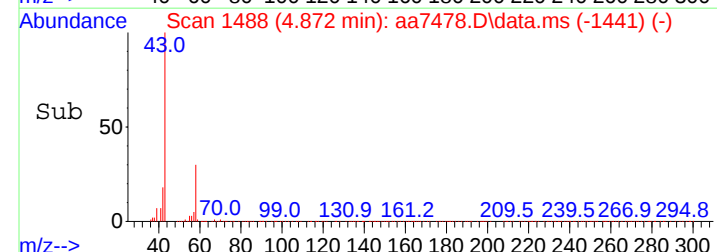
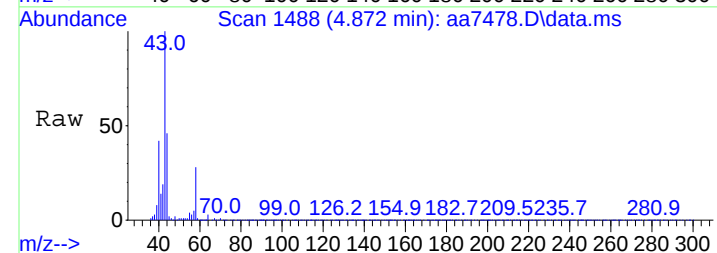
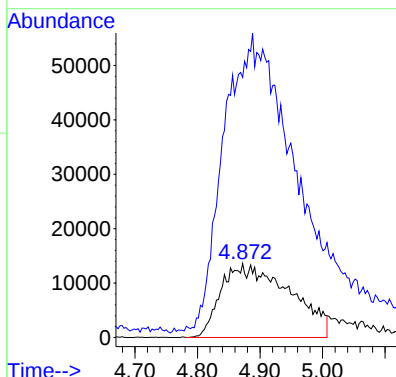
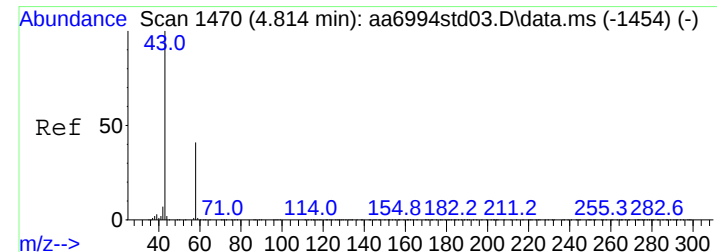
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.788 min Scan# 2395  
Delta R.T. 0.064 min  
Lab File: aa7478.D  
Acq: 13 Jun 2018 4:48 pm

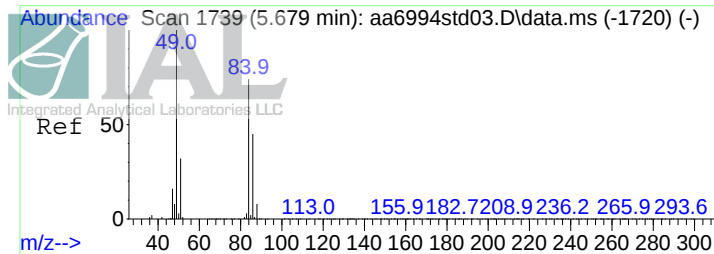
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 130     | 100   |       |       |
| 128     | 78.8  | 62.6  | 94.0  |



#14  
Acetone  
Concen: 3.11 ppbV  
RT: 4.872 min Scan# 1488  
Delta R.T. 0.052 min  
Lab File: aa7478.D  
Acq: 13 Jun 2018 4:48 pm

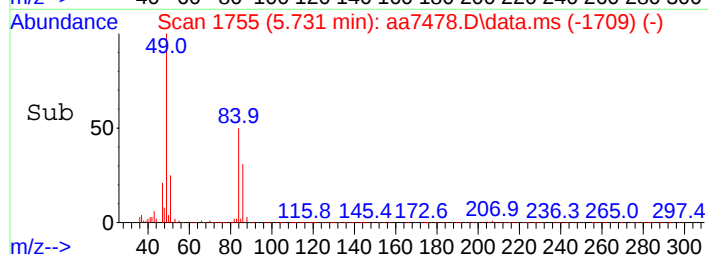
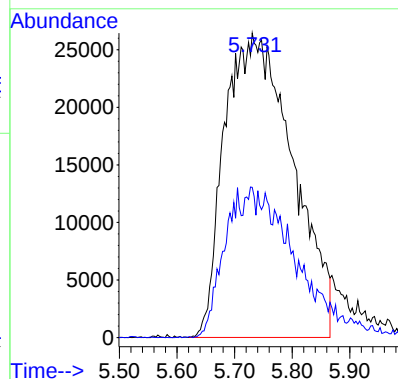
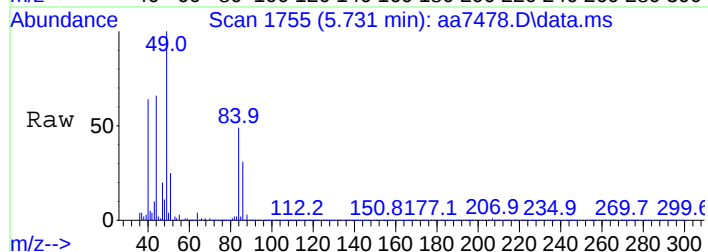
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 58      | 100   |       |       |
| 43      | 392.3 | 263.2 | 394.8 |





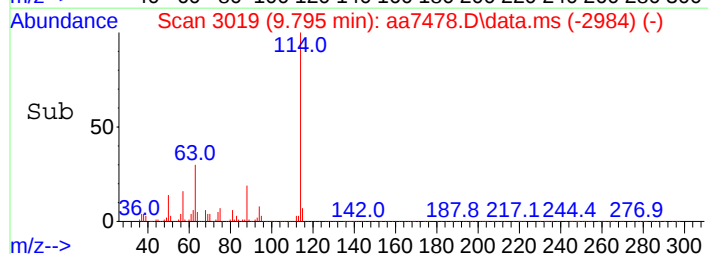
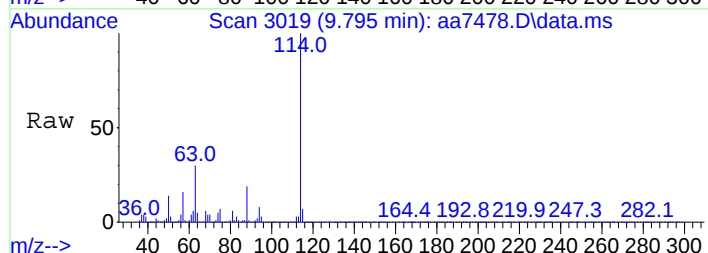
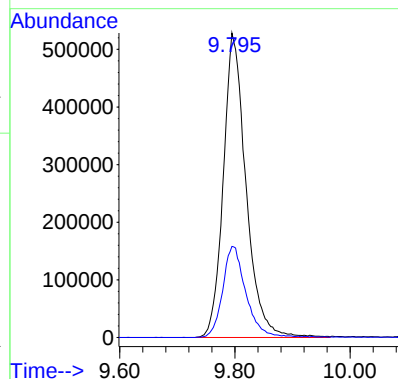
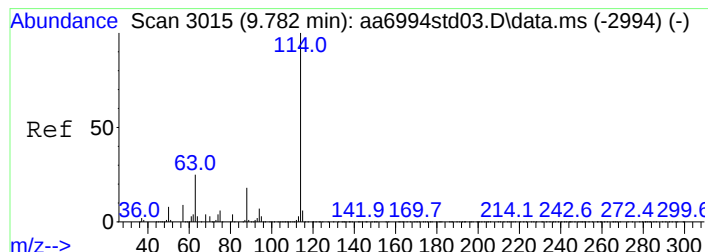
#19  
Methylene chloride  
Concen: 2.27 ppbV  
RT: 5.731 min Scan# 1755  
Delta R.T. 0.049 min  
Lab File: aa7478.D  
Acq: 13 Jun 2018 4:48 pm

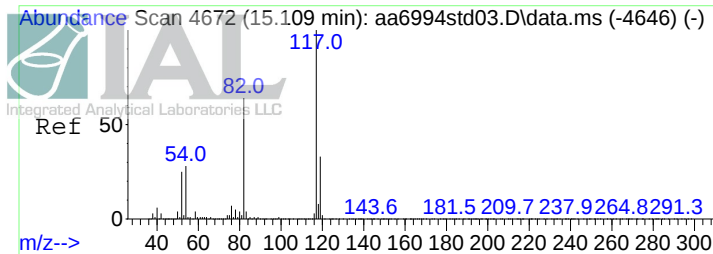
Tgt Ion: 49 Resp: 217471  
Ion Ratio Lower Upper  
49 100  
84 47.8 41.6 62.4



#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.795 min Scan# 3019  
Delta R.T. 0.013 min  
Lab File: aa7478.D  
Acq: 13 Jun 2018 4:48 pm

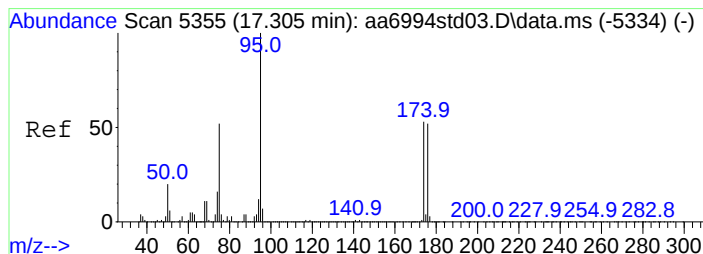
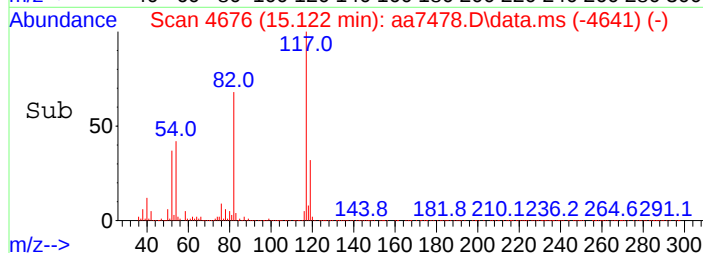
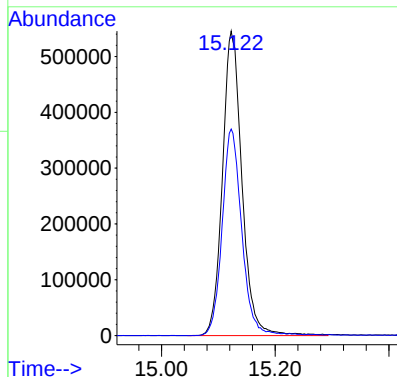
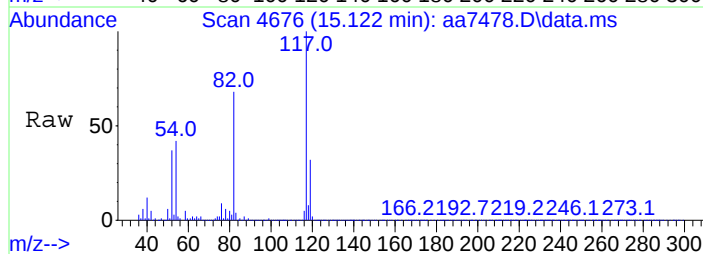
Tgt Ion: 114 Resp: 1446308  
Ion Ratio Lower Upper  
114 100  
63 30.6 20.0 30.0#





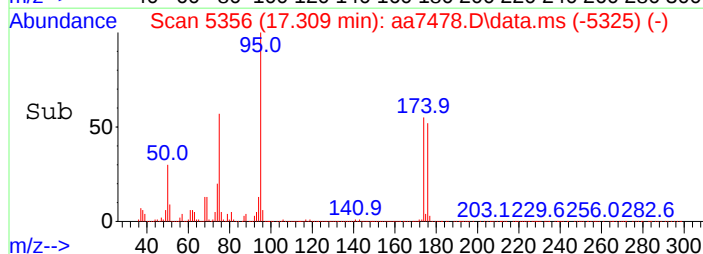
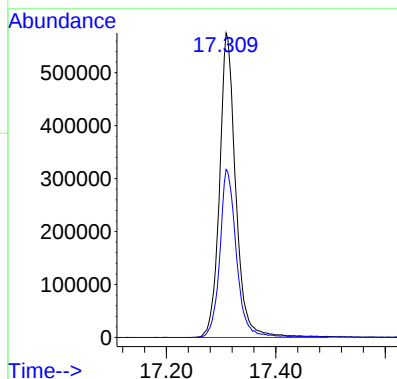
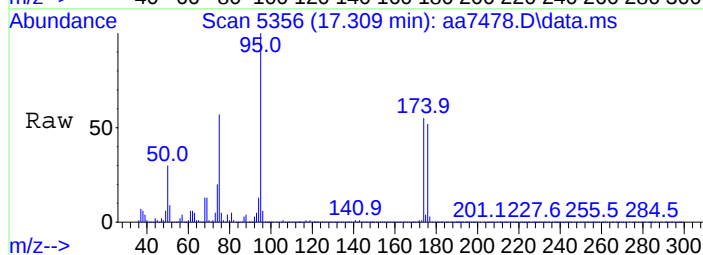
#55  
d-5 Chlorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 15.122 min Scan# 4676  
Delta R.T. 0.013 min  
Lab File: aa7478.D  
Acq: 13 Jun 2018 4:48 pm

Tgt Ion: 117 Resp: 1304566  
Ion Ratio Lower Upper  
117 100  
82 68.1 56.0 84.0



#64  
Bromofluorobenzene (tune std)  
Concen: 9.86 ppbV  
RT: 17.309 min Scan# 5356  
Delta R.T. 0.000 min  
Lab File: aa7478.D  
Acq: 13 Jun 2018 4:48 pm

Tgt Ion: 95 Resp: 1183822  
Ion Ratio Lower Upper  
95 100  
174 56.7 61.5 92.3#



Data Path : C:\DATA\06-13-18\  
 Data File : aa7479.D  
 Acq On : 13 Jun 2018 5:27 pm  
 Operator : jls  
 Sample : E18-04189-21  
 Misc : dup of E18-4189-01, can # 5096  
 ALS Vial : 9 Sample Multiplier: 1

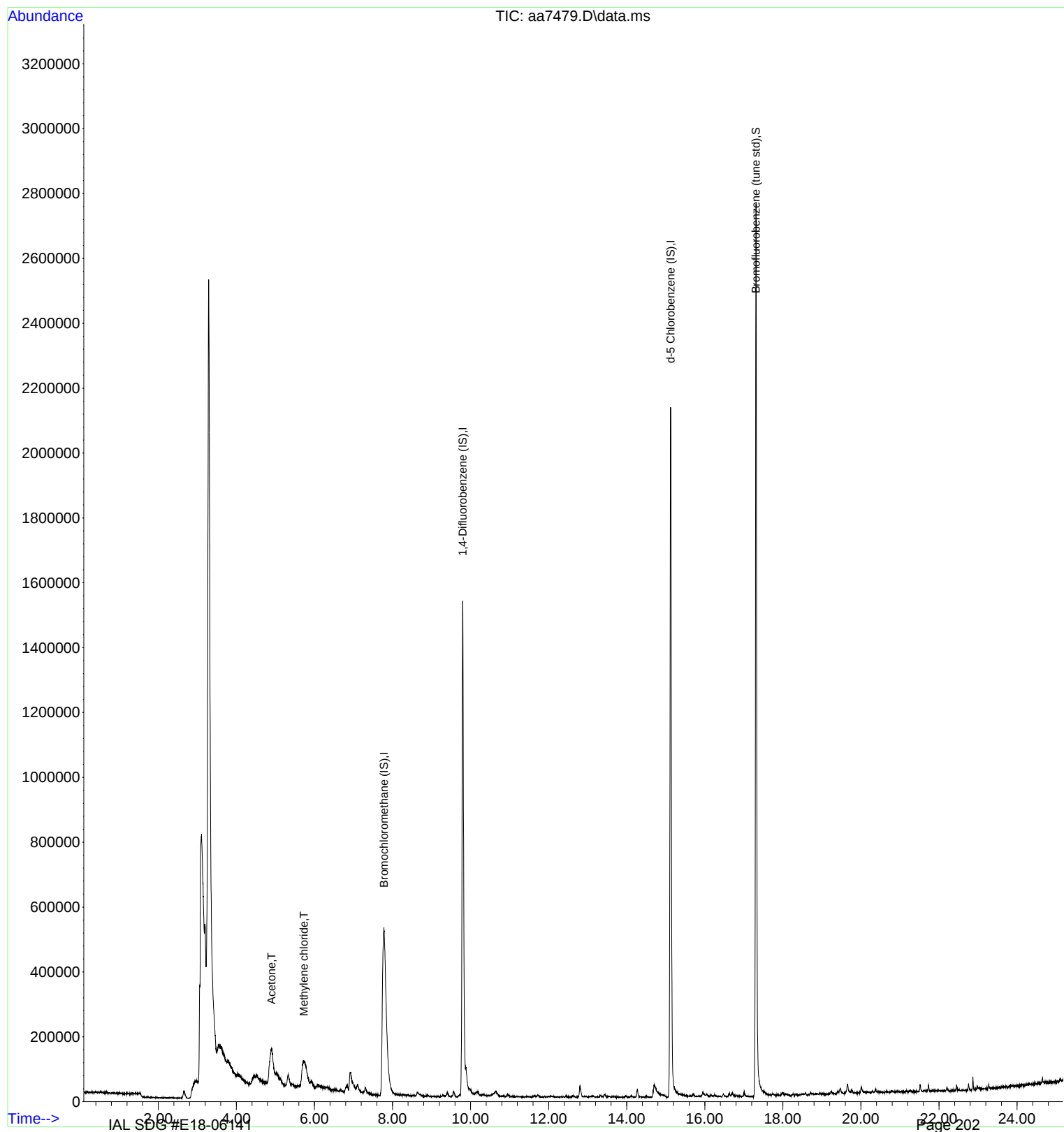
Quant Time: Jun 14 11:13:05 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 Response via : Initial Calibration

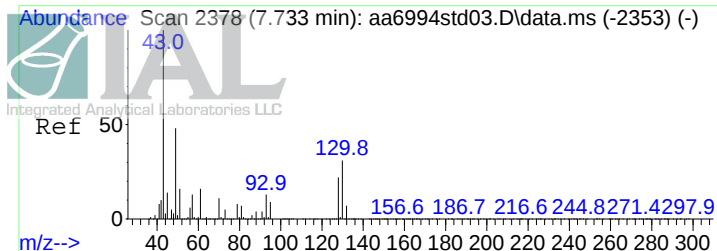
| Compound                      | R.T.   | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------------|--------|------|----------|-------|-------|----------|
| Internal Standards            |        |      |          |       |       |          |
| 1) Bromochloromethane (IS)    | 7.782  | 130  | 417414   | 10.00 | ppbV  | 0.06     |
| 38) 1,4-Difluorobenzene (IS)  | 9.798  | 114  | 1445638  | 10.00 | ppbV  | # 0.02   |
| 55) d-5 Chlorobenzene (IS)    | 15.126 | 117  | 1308945  | 10.00 | ppbV  | 0.02     |
| System Monitoring Compounds   |        |      |          |       |       |          |
| 64) Bromofluorobenzene (tu... | 17.312 | 95   | 1173967  | 9.74  | ppbV  | 0.00     |
| Target Compounds              |        |      |          |       |       |          |
| 14) Acetone                   | 4.901  | 58   | 105050   | 3.11  | ppbV  | # 59     |
| 19) Methylene chloride        | 5.731  | 49   | 254918   | 2.62  | ppbV  | 95       |

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

Data Path : C:\DATA\06-13-18\  
Data File : aa7479.D  
Acq On : 13 Jun 2018 5:27 pm  
Operator : jls  
Sample : E18-04189-21  
Misc : dup of E18-4189-01, can # 5096  
ALS Vial : 9 Sample Multiplier: 1

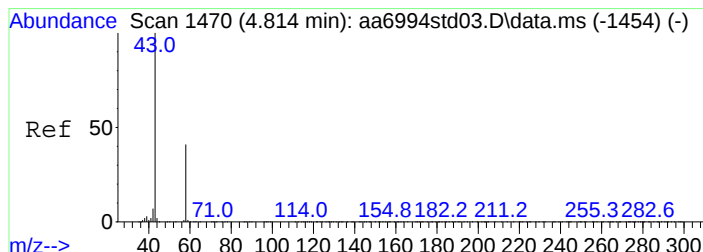
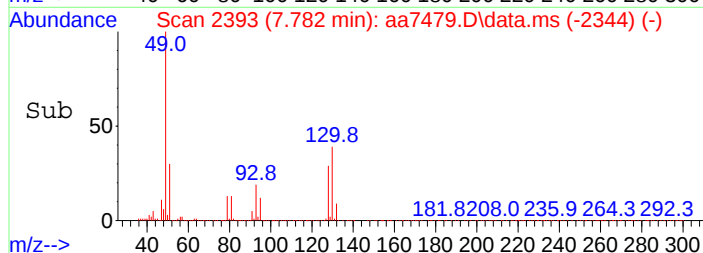
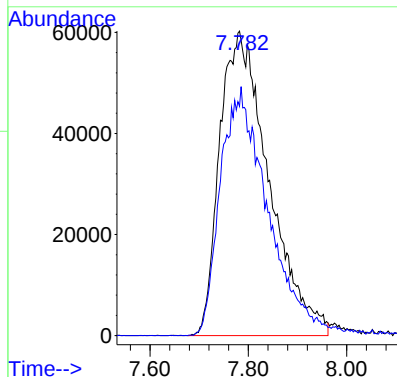
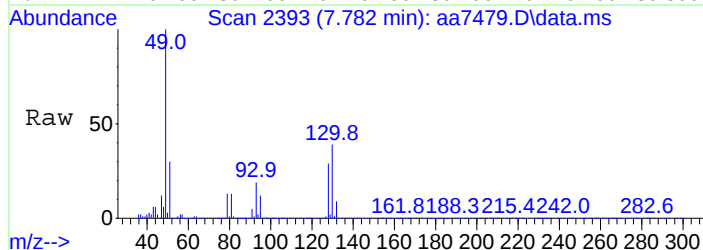
Quant Time: Jun 14 11:13:05 2018  
Quant Method : C:\msdchem\1\METHODS\0518.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Fri May 18 13:51:08 2018  
Response via : Initial Calibration





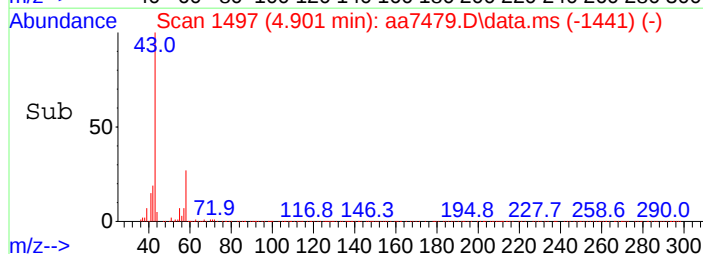
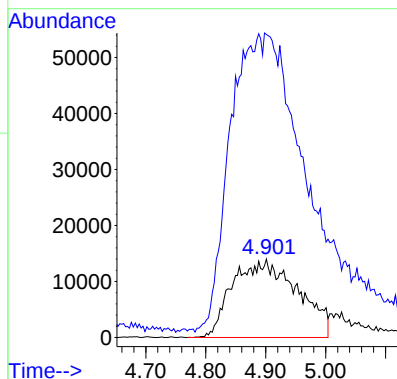
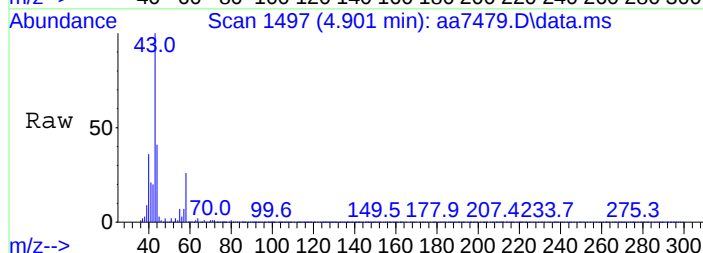
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.782 min Scan# 2393  
Delta R.T. 0.058 min  
Lab File: aa7479.D  
Acq: 13 Jun 2018 5:27 pm

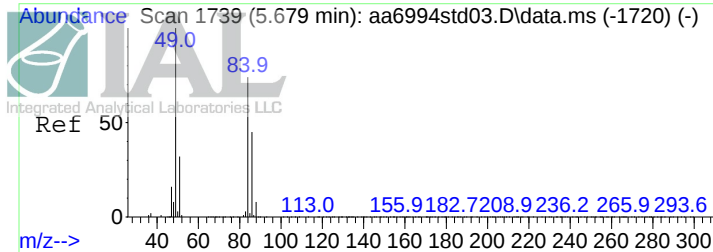
Tgt Ion: 130 Resp: 417414  
Ion Ratio Lower Upper  
130 100  
128 77.9 62.6 94.0



#14  
Acetone  
Concen: 3.11 ppbV  
RT: 4.901 min Scan# 1497  
Delta R.T. 0.081 min  
Lab File: aa7479.D  
Acq: 13 Jun 2018 5:27 pm

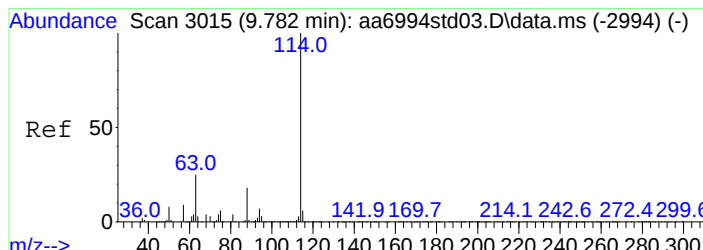
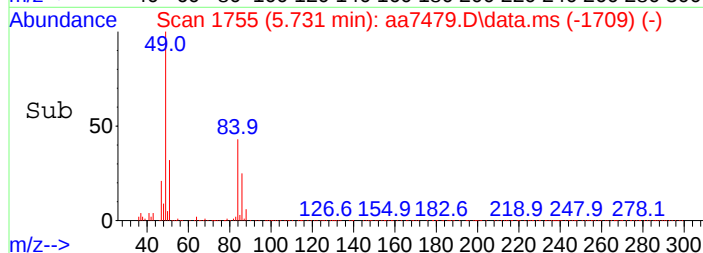
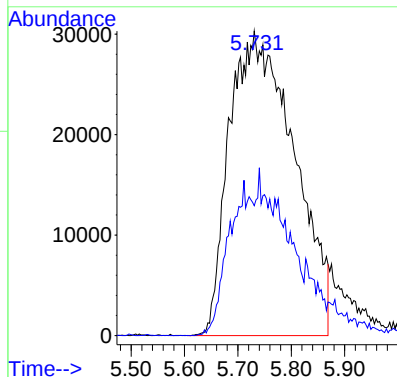
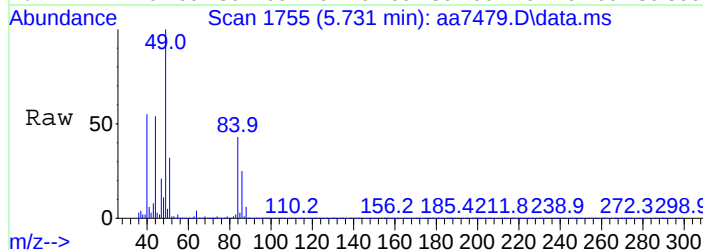
Tgt Ion: 58 Resp: 105050  
Ion Ratio Lower Upper  
58 100  
43 413.6 263.2 394.8#





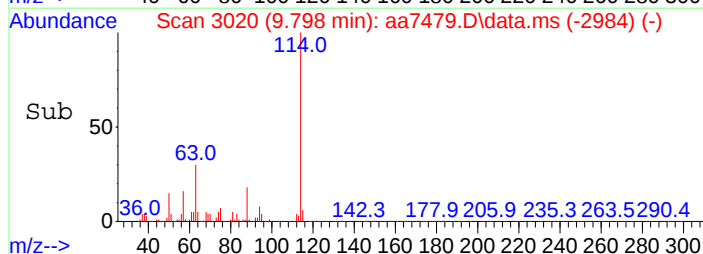
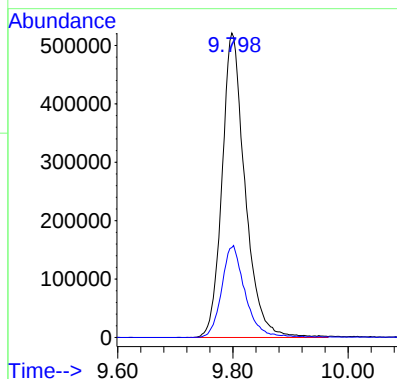
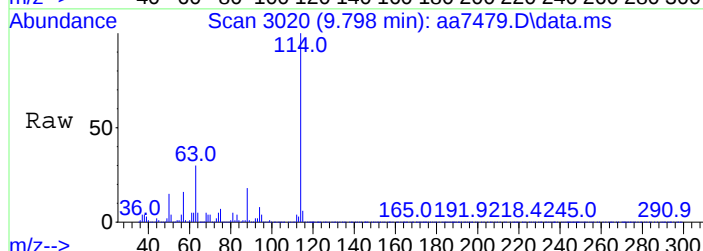
#19  
Methylene chloride  
Concen: 2.62 ppbV  
RT: 5.731 min Scan# 1755  
Delta R.T. 0.049 min  
Lab File: aa7479.D  
Acq: 13 Jun 2018 5:27 pm

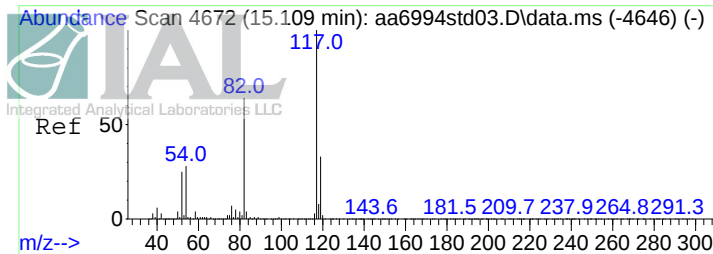
Tgt Ion: 49 Resp: 254918  
Ion Ratio Lower Upper  
49 100  
84 48.4 41.6 62.4



#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.798 min Scan# 3020  
Delta R.T. 0.016 min  
Lab File: aa7479.D  
Acq: 13 Jun 2018 5:27 pm

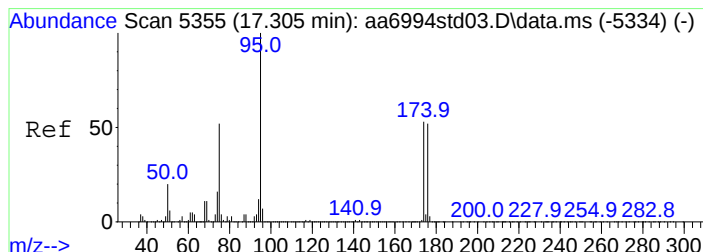
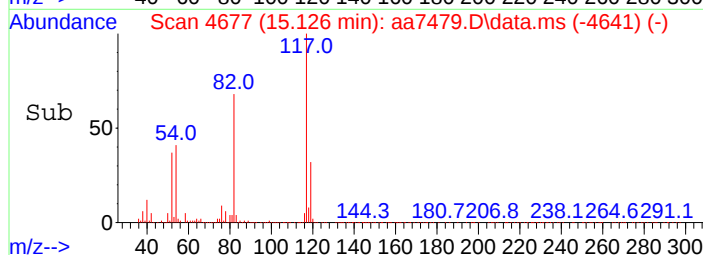
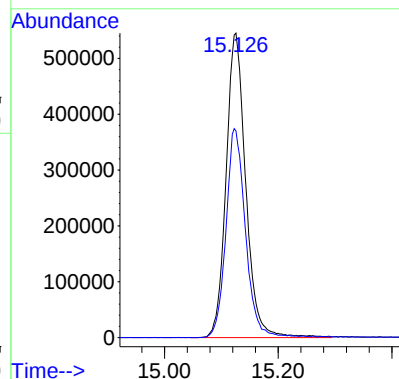
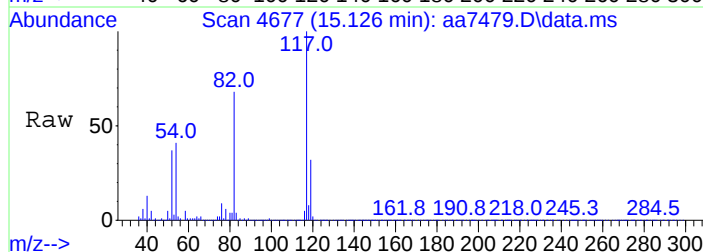
Tgt Ion: 114 Resp: 1445638  
Ion Ratio Lower Upper  
114 100  
63 30.7 20.0 30.0#





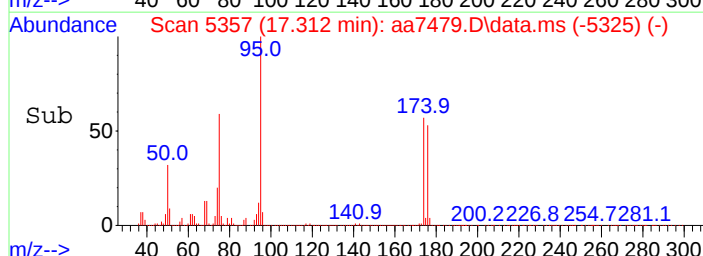
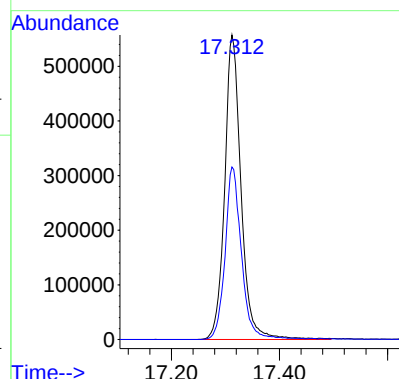
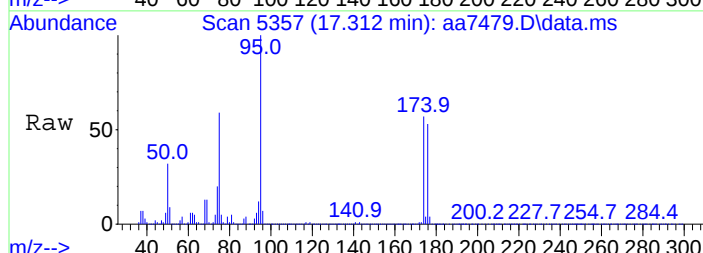
#55  
d-5 Chlorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 15.126 min Scan# 4677  
Delta R.T. 0.016 min  
Lab File: aa7479.D  
Acq: 13 Jun 2018 5:27 pm

Tgt Ion: 117 Resp: 1308945  
Ion Ratio Lower Upper  
117 100  
82 68.1 56.0 84.0



#64  
Bromofluorobenzene (tune std)  
Concen: 9.74 ppbV  
RT: 17.312 min Scan# 5357  
Delta R.T. 0.004 min  
Lab File: aa7479.D  
Acq: 13 Jun 2018 5:27 pm

Tgt Ion: 95 Resp: 1173967  
Ion Ratio Lower Upper  
95 100  
174 56.7 61.5 92.3#



# Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

## Laboratory Sample Duplicate Report

SDG Number: E18-06204  
IAL Sample ID: E18-06204-01  
Matrix: Air  
Summa ID: 3280

Date Received: 8/6/18  
Date Analyzed: 8/6/18,8/6/18  
Lab Data File#: AA8195,AA8196  
Dilution Factor: 1  
Injection Volume: 500ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                      | CAS #      | Sample<br>E18-06204-01<br>Concentration<br>Reported |        | Sample Dup<br>E18-06204-21<br>Concentration<br>Reported |        | Reporting<br>Limits<br>ppbv | RPD    |
|-------------------------------|------------|-----------------------------------------------------|--------|---------------------------------------------------------|--------|-----------------------------|--------|
|                               |            | ppbv                                                | Q      | ppbv                                                    | Q      |                             |        |
| Acetone                       | 67-64-1    | 10                                                  |        | 10.0                                                    |        | 0.20                        | 0.00%  |
| Allyl Chloride                | 107-05-1   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Benzene                       | 71-43-2    | 0.26                                                |        | 0.24                                                    |        | 0.20                        | 8.00%  |
| Bromodichloromethane          | 75-27-4    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Bromoform                     | 75-25-2    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Bromomethane                  | 74-83-9    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3-Butadiene                 | 106-99-0   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Chlorobenzene                 | 108-90-7   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Chloroethane                  | 75-00-3    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Chloroform                    | 67-66-3    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Chloromethane                 | 74-87-3    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Carbon disulfide              | 75-15-0    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Carbon tetrachloride          | 56-23-5    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 2-Chlorotoluene               | 95-49-8    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Cyclohexane                   | 110-82-7   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Dibromochloromethane          | 124-48-1   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dibromoethane             | 106-93-4   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichlorobenzene           | 95-50-1    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3-Dichlorobenzene           | 541-73-1   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,4-Dichlorobenzene           | 106-46-7   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Dichlorodifluoromethane       | 75-71-8    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,1-Dichloroethane            | 75-34-3    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichloroethane            | 107-06-2   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,1-Dichloroethene            | 75-35-4    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichloroethene (cis)      | 156-59-2   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichloroethene (trans)    | 156-60-5   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichloropropane           | 78-87-5    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3-Dichloropropene (cis)     | 10061-01-5 |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3-Dichloropropene (trans)   | 10061-02-6 |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2-Dichlorotetrafluoroethane | 76-14-2    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,4-Dioxane                   | 123-91-1   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Ethanol                       | 64-17-5    | 84                                                  | E      | 80                                                      | E      | 0.20                        | 4.88%  |
| Ethylbenzene                  | 100-41-4   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 4-Ethyltoluene                | 622-96-8   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| n-Heptane                     | 142-82-5   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3-Hexachlorobutadiene       | 87-68-3    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| n-Hexane                      | 110-54-3   | 0.20                                                |        | 0.21                                                    |        | 0.20                        | -4.88% |
| Isopropanol                   | 67-63-0    | 1.2                                                 |        | 1.2                                                     |        | 0.20                        | 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: E18-06204  
IAL Sample ID: E18-06204-01  
Matrix: Air  
Summa ID: 3280

Date Received: 8/6/18  
Date Analyzed: 8/6/18, 8/6/18  
Lab Data File#: AA8195, AA8196  
Dilution Factor: 1  
Injection Volume: 500ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                              | CAS #       | Sample<br>E18-06204-01<br>Concentration<br>Reported |        | Sample Dup<br>E18-06204-21<br>Concentration<br>Reported |        | Reporting<br>Limits<br>ppbv | RPD    |
|---------------------------------------|-------------|-----------------------------------------------------|--------|---------------------------------------------------------|--------|-----------------------------|--------|
|                                       |             | ppbv                                                | Q      | ppbv                                                    | Q      |                             |        |
| Methylene chloride                    | 75-09-2     | 1.5                                                 |        | 1.4                                                     |        | 0.20                        | 6.90%  |
| Methyl ethyl ketone                   | 78-93-3     | 1.7                                                 |        | 1.8                                                     |        | 0.20                        | -5.71% |
| Methyl isobutyl ketone                | 108-10-1    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Methyl methacrylate                   | 80-62-6     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Methyl tert-butyl ether               | 1634-04-4   |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Styrene                               | 100-42-5    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Tert-butyl alcohol                    | 75-65-0     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Tetrachloroethene                     | 127-18-4    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Tetrahydrofuran                       | 109-99-9    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Toluene                               | 108-88-3    | 0.23                                                |        | 0.23                                                    |        | 0.20                        | 0.00%  |
| 1,2,4-Trichlorobenzene                | 120-82-1    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,1,1-Trichloroethane                 | 71-55-6     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,1,2-Trichloroethane                 | 79-00-5     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Trichloroethene                       | 79-01-6     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Trichlorofluoromethane                | 75-69-4     | 0.57                                                |        | 0.55                                                    |        | 0.20                        | 3.57%  |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 76-13-1     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,2,4-Trimethylbenzene                | 95-63-6     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 1,3,5-Trimethylbenzene                | 108-67-8    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| 2,2,4-Trimethylpentane                | 540-84-1    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Vinyl bromide                         | 593-60-2    |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Vinyl chloride                        | 75-01-4     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 0.00%  |
| Xylenes (m&p)                         | 179601-23-1 |                                                     | 0.40 U |                                                         | 0.40 U | 0.40                        | 0.00%  |
| Xylenes (o)                           | 95-47-6     |                                                     | 0.20 U |                                                         | 0.20 U | 0.20                        | 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\08-06-18\  
 Data File : aa8195.D  
 Acq On : 6 Aug 2018 4:17 pm  
 Operator : jls  
 Sample : E18-06204-01  
 Misc : 3280, 500cc  
 ALS Vial : 5 Sample Multiplier: 1

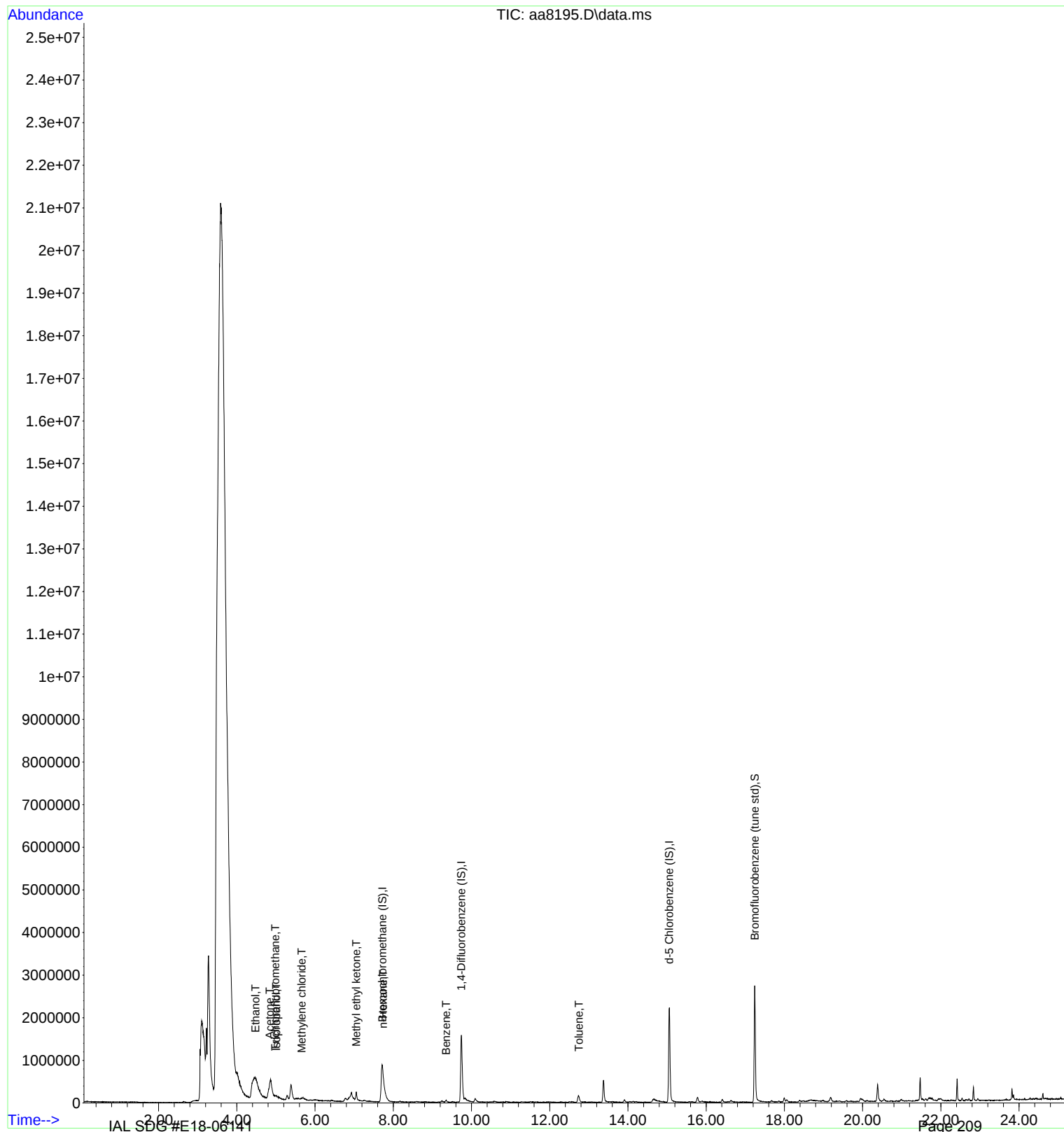
Quant Time: Aug 07 09:36:00 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

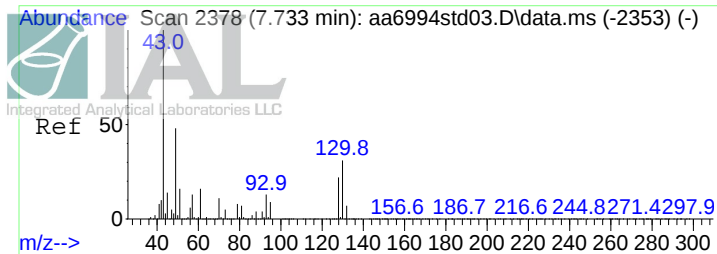
| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.724  | 130  | 395950   | 10.00 | ppbV   | 0.04     |
| 38) 1,4-Difluorobenzene (IS)  | 9.740  | 114  | 1565245  | 10.00 | ppbV # | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.055 | 117  | 1357197  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.242 | 95   | 1243769  | 10.05 | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       | Qvalue |          |
| 11) Ethanol                   | 4.474  | 45   | 2609452  | 83.69 | ppbV # | 35       |
| 14) Acetone                   | 4.837  | 58   | 306980   | 10.18 | ppbV # | 1        |
| 15) Trichlorofluoromethane    | 4.985  | 101  | 77186    | 0.57  | ppbV   | 84       |
| 16) Isopropanol               | 5.011  | 45   | 114485   | 1.16  | ppbV # | 53       |
| 19) Methylene chloride        | 5.657  | 49   | 116112   | 1.53  | ppbV # | 40       |
| 27) Methyl ethyl ketone       | 7.052  | 43   | 191738   | 1.72  | ppbV # | 76       |
| 30) n-Hexane                  | 7.737  | 57   | 19229    | 0.20  | ppbV # | 22       |
| 35) Benzene                   | 9.351  | 78   | 44737    | 0.26  | ppbV # | 88       |
| 50) Toluene                   | 12.743 | 91   | 45918    | 0.23  | ppbV   | 92       |

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

Data Path : C:\DATA\08-06-18\  
Data File : aa8195.D  
Acq On : 6 Aug 2018 4:17 pm  
Operator : jls  
Sample : E18-06204-01  
Misc : 3280, 500cc  
ALS Vial : 5 Sample Multiplier: 1

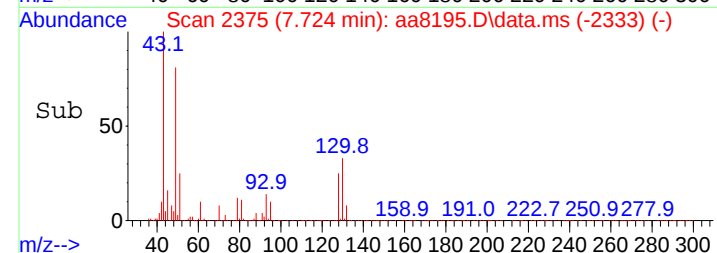
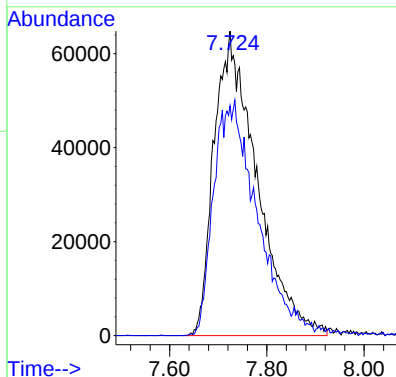
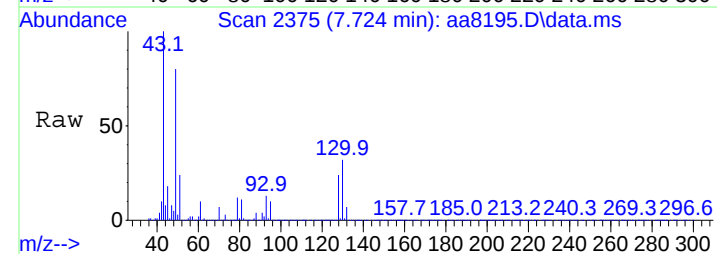
Quant Time: Aug 07 09:36:00 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration





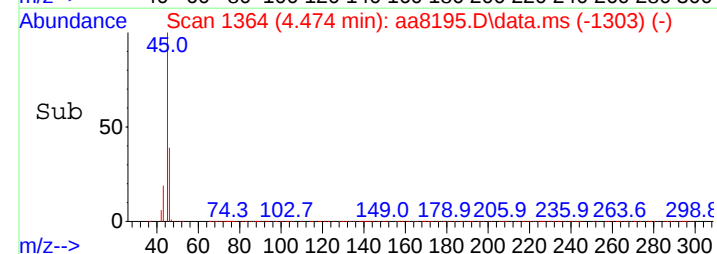
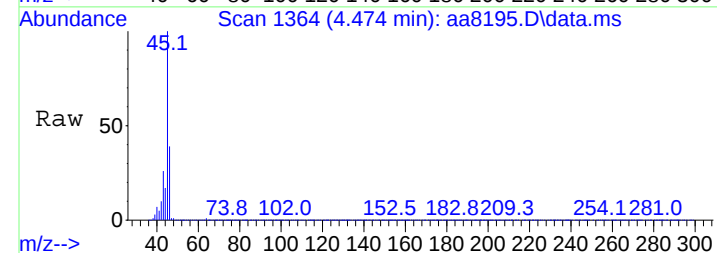
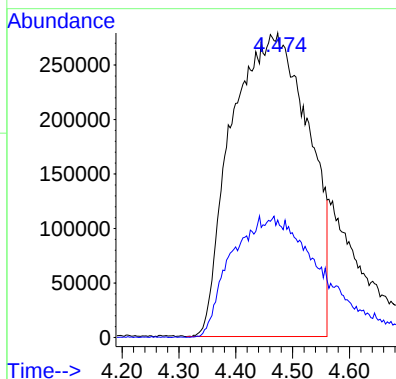
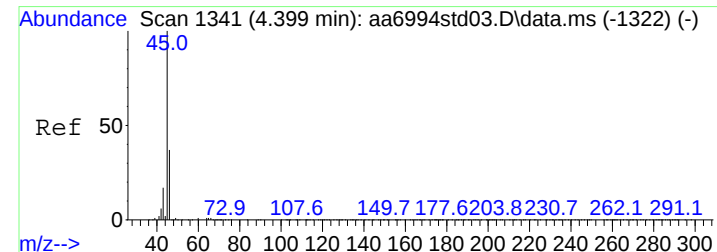
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.724 min Scan# 2375  
Delta R.T. 0.035 min  
Lab File: aa8195.D  
Acq: 6 Aug 2018 4:17 pm

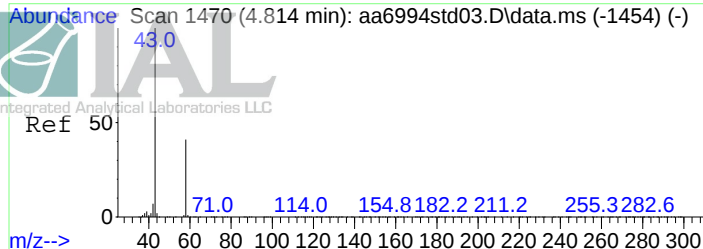
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 130     | 100   |       |       |
| 128     | 78.4  | 62.6  | 94.0  |



#11  
Ethanol  
Concen: 83.69 ppbV  
RT: 4.474 min Scan# 1364  
Delta R.T. 0.097 min  
Lab File: aa8195.D  
Acq: 6 Aug 2018 4:17 pm

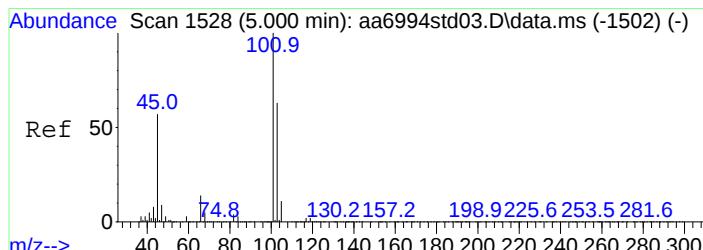
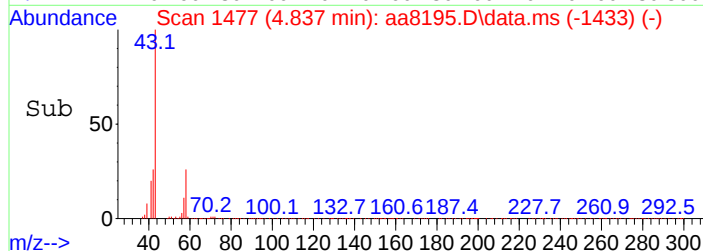
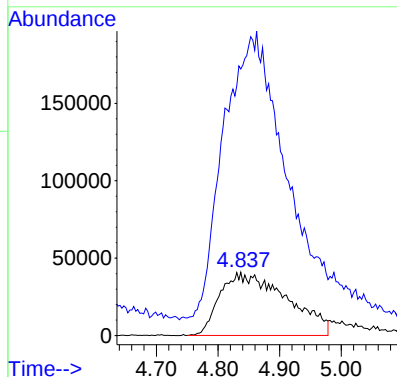
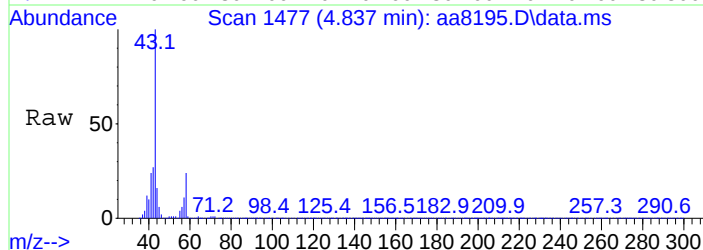
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 45      | 100   |       |       |
| 46      | 0.0   | 32.6  | 48.8# |





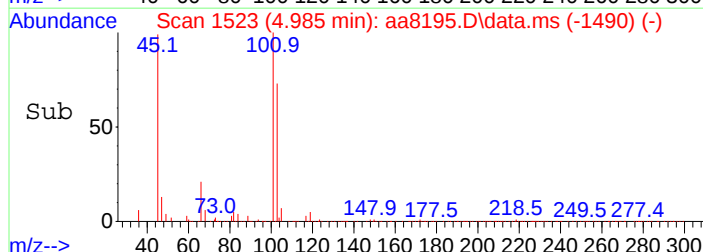
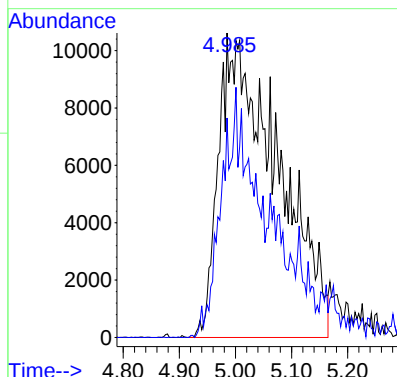
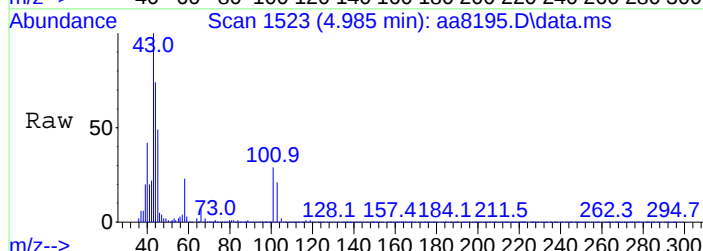
#14  
Acetone  
Concen: 10.18 ppbV  
RT: 4.837 min Scan# 1477  
Delta R.T. 0.042 min  
Lab File: aa8195.D  
Acq: 6 Aug 2018 4:17 pm

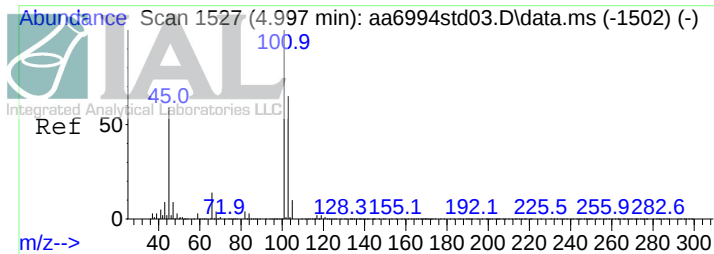
Tgt Ion: 58 Resp: 306980  
Ion Ratio Lower Upper  
58 100  
43 0.0 263.2 394.8#



#15  
Trichlorofluoromethane  
Concen: 0.57 ppbV  
RT: 4.985 min Scan# 1523  
Delta R.T. 0.007 min  
Lab File: aa8195.D  
Acq: 6 Aug 2018 4:17 pm

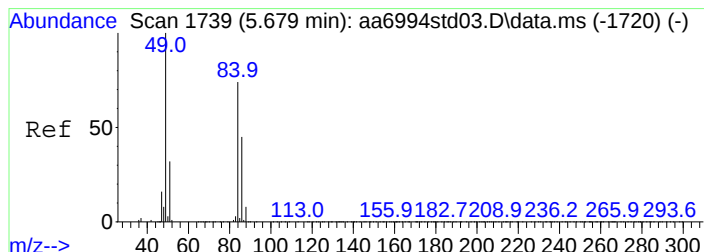
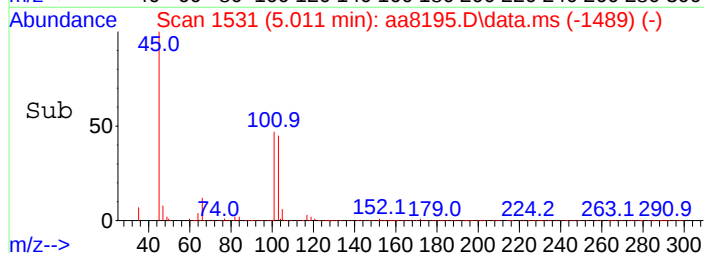
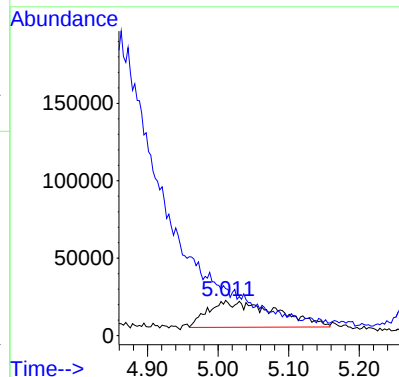
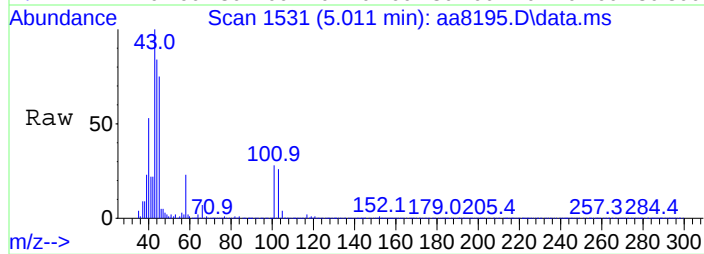
Tgt Ion: 101 Resp: 77186  
Ion Ratio Lower Upper  
101 100  
103 52.3 52.0 78.0





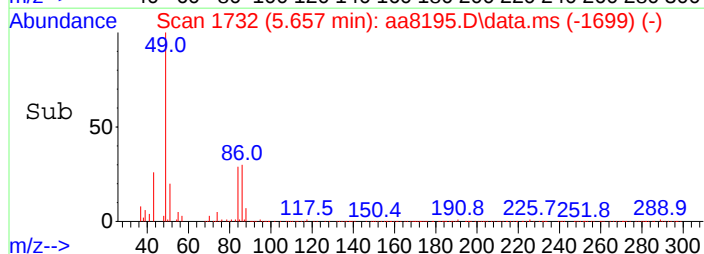
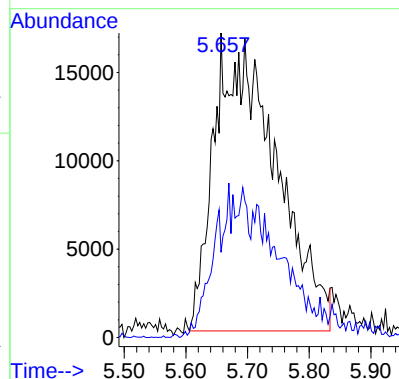
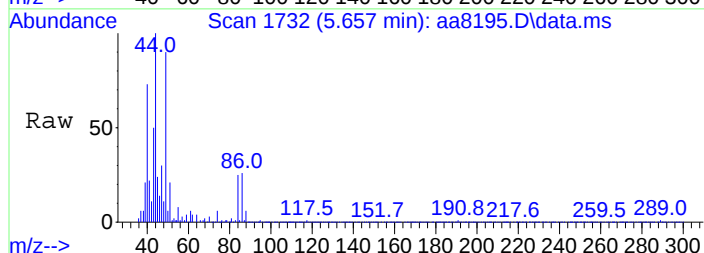
#16  
Isopropanol  
Concen: 1.16 ppbV  
RT: 5.011 min Scan# 1531  
Delta R.T. 0.036 min  
Lab File: aa8195.D  
Acq: 6 Aug 2018 4:17 pm

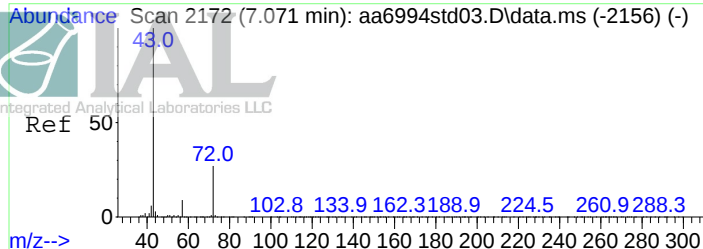
Tgt Ion: 45 Resp: 114485  
Ion Ratio Lower Upper  
45 100  
43 0.0 18.4 27.6#



#19  
Methylene chloride  
Concen: 1.53 ppbV  
RT: 5.657 min Scan# 1732  
Delta R.T. 0.007 min  
Lab File: aa8195.D  
Acq: 6 Aug 2018 4:17 pm

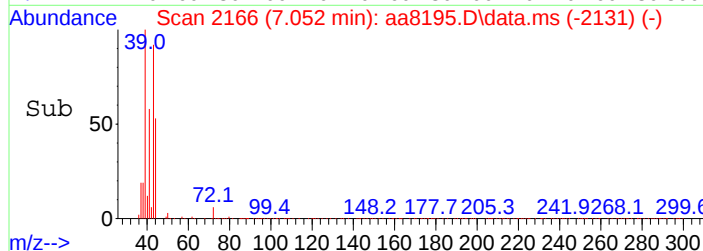
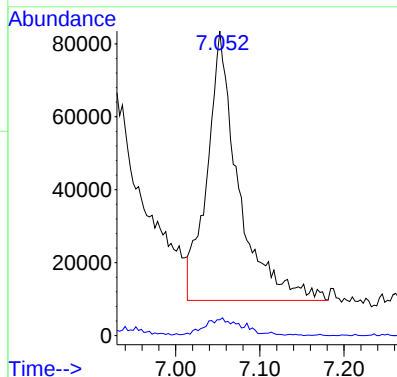
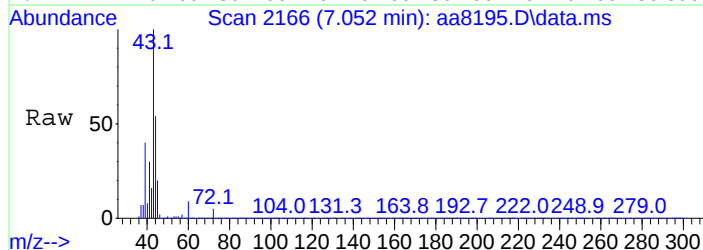
Tgt Ion: 49 Resp: 116112  
Ion Ratio Lower Upper  
49 100  
84 9.6 41.6 62.4#





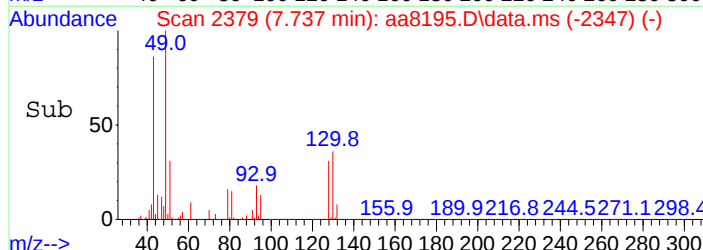
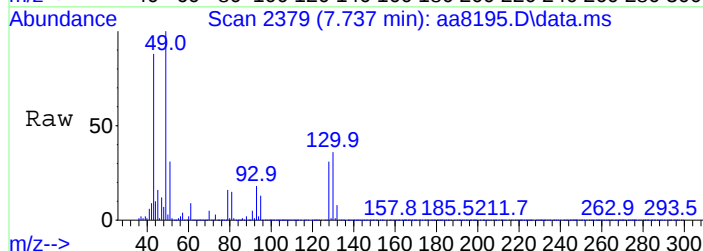
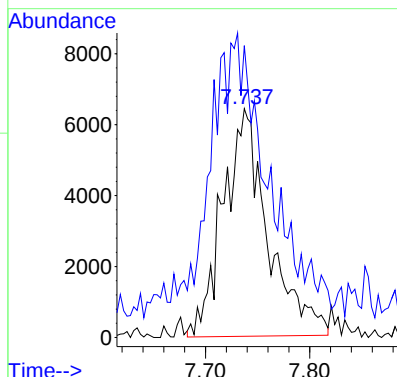
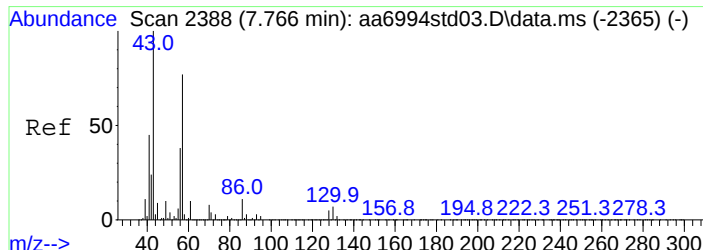
#27  
Methyl ethyl ketone  
Concen: 1.72 ppbV  
RT: 7.052 min Scan# 2166  
Delta R.T. 0.013 min  
Lab File: aa8195.D  
Acq: 6 Aug 2018 4:17 pm

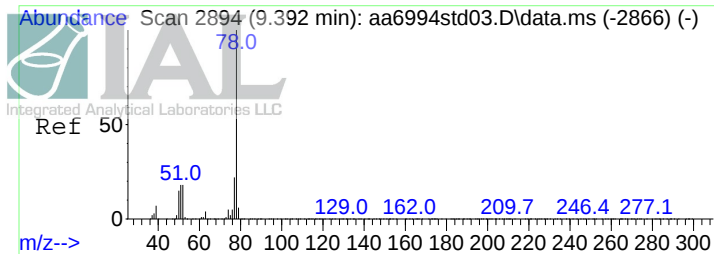
Tgt Ion: 43 Resp: 191738  
Ion Ratio Lower Upper  
43 100  
72 7.4 14.4 21.6#



#30  
n-Hexane  
Concen: 0.20 ppbV  
RT: 7.737 min Scan# 2379  
Delta R.T. 0.003 min  
Lab File: aa8195.D  
Acq: 6 Aug 2018 4:17 pm

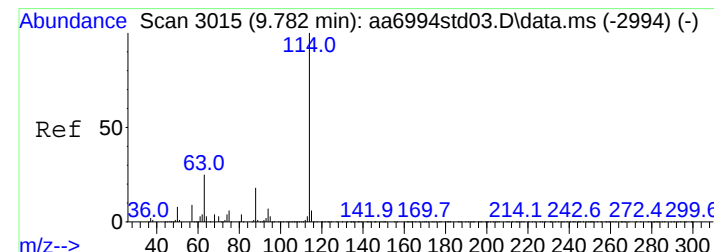
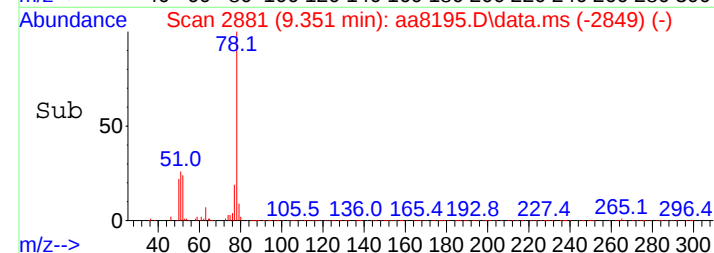
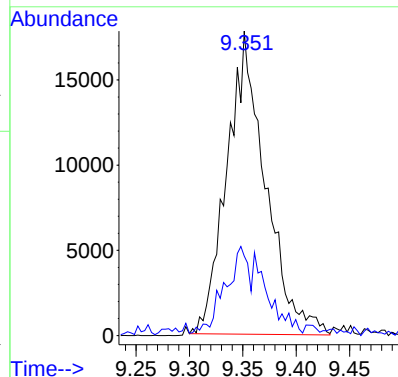
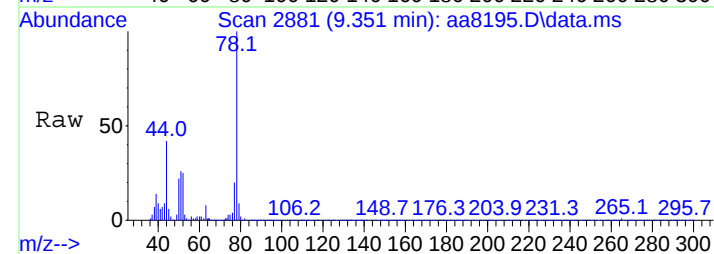
Tgt Ion: 57 Resp: 19229  
Ion Ratio Lower Upper  
57 100  
41 154.6 67.2 100.8#





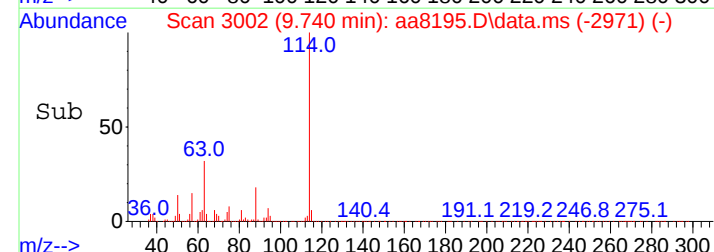
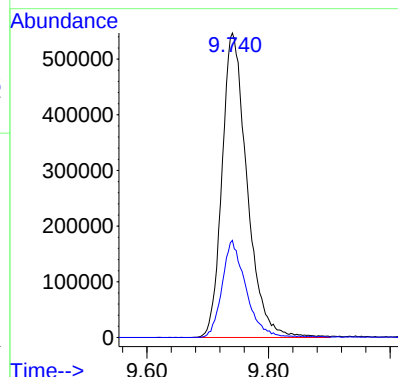
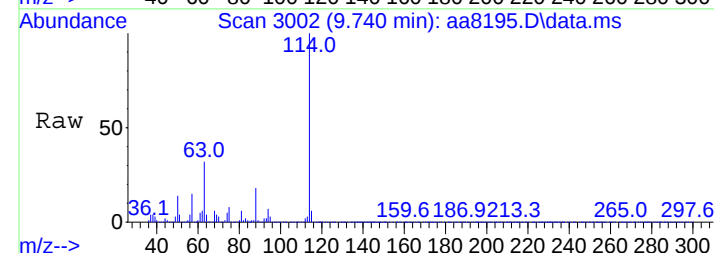
#35  
Benzene  
Concen: 0.26 ppbV  
RT: 9.351 min Scan# 2881  
Delta R.T. 0.003 min  
Lab File: aa8195.D  
Acq: 6 Aug 2018 4:17 pm

Tgt Ion: 78 Resp: 44737  
Ion Ratio Lower Upper  
78 100  
51 17.8 19.2 28.8#

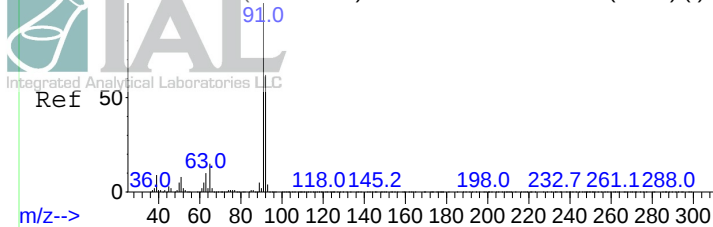


#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.740 min Scan# 3002  
Delta R.T. 0.000 min  
Lab File: aa8195.D  
Acq: 6 Aug 2018 4:17 pm

Tgt Ion: 114 Resp: 1565245  
Ion Ratio Lower Upper  
114 100  
63 30.5 20.0 30.0#



Abundance Scan 3952 (12.794 min): aa6994std03.D\data.ms (-3923) (-)



#50

Toluene

Concen: 0.23 ppbV

RT: 12.743 min Scan# 3936

Delta R.T. 0.000 min

Lab File: aa8195.D

Acq: 6 Aug 2018 4:17 pm

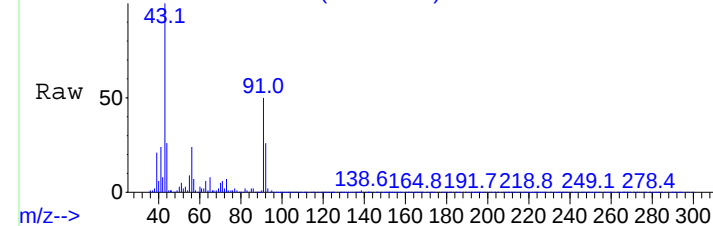
Tgt Ion: 91 Resp: 45918

Ion Ratio Lower Upper

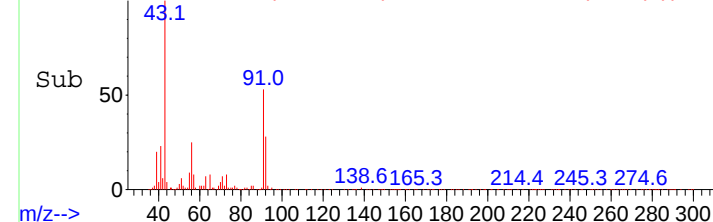
91 100

92 56.1 50.0 75.0

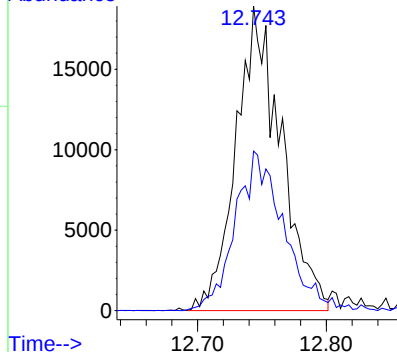
Abundance Scan 3936 (12.743 min): aa8195.D\data.ms



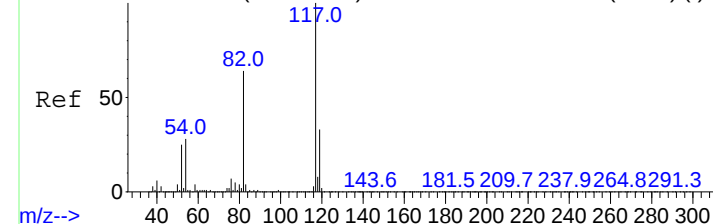
Abundance Scan 3936 (12.743 min): aa8195.D\data.ms (-3905) (-)



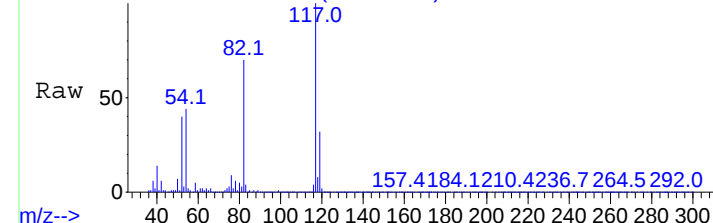
Abundance



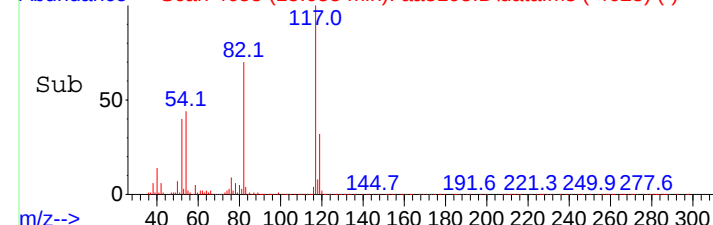
Abundance Scan 4672 (15.109 min): aa6994std03.D\data.ms (-4646) (-)



Abundance Scan 4655 (15.055 min): aa8195.D\data.ms



Abundance Scan 4655 (15.055 min): aa8195.D\data.ms (-4625) (-)



#55

d-5 Chlorobenzene (IS)

Concen: 10.00 ppbV

RT: 15.055 min Scan# 4655

Delta R.T. -0.003 min

Lab File: aa8195.D

Acq: 6 Aug 2018 4:17 pm

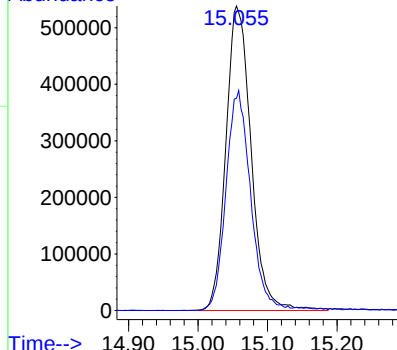
Tgt Ion: 117 Resp: 1357197

Ion Ratio Lower Upper

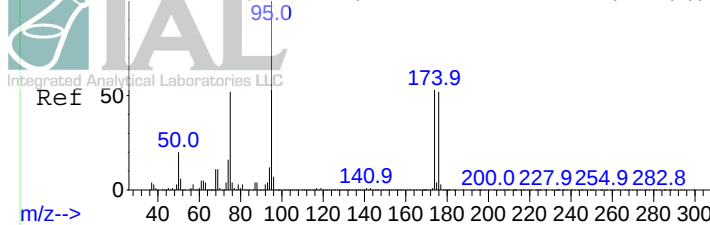
117 100

82 71.2 56.0 84.0

Abundance



Abundance Scan 5355 (17.305 min): aa6994std03.D\data.ms (-5334) (-)



#64

Bromofluorobenzene (tune std)

Concen: 10.05 ppbV

RT: 17.242 min Scan# 5335

Delta R.T. -0.006 min

Lab File: aa8195.D

Acq: 6 Aug 2018 4:17 pm

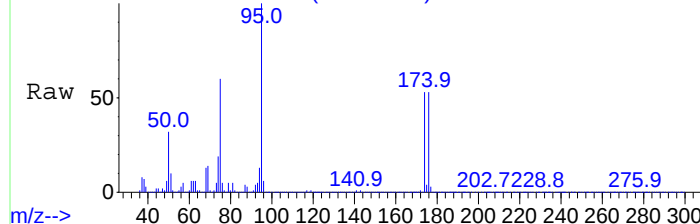
Tgt Ion: 95 Resp: 1243769

Ion Ratio Lower Upper

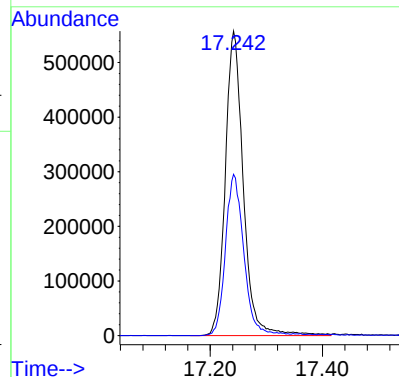
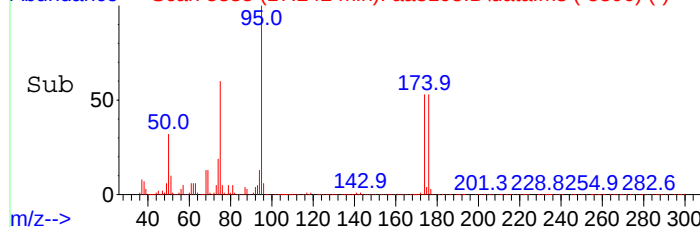
95 100

174 54.0 61.5 92.3#

Abundance Scan 5335 (17.242 min): aa8195.D\data.ms



Abundance Scan 5335 (17.242 min): aa8195.D\data.ms (-5306) (-)



Data Path : C:\DATA\08-06-18\  
 Data File : aa8196.D  
 Acq On : 6 Aug 2018 4:50 pm  
 Operator : jls  
 Sample : E18-06204-21  
 Misc : dup of E18-06204-01, can # 3280  
 ALS Vial : 6 Sample Multiplier: 1

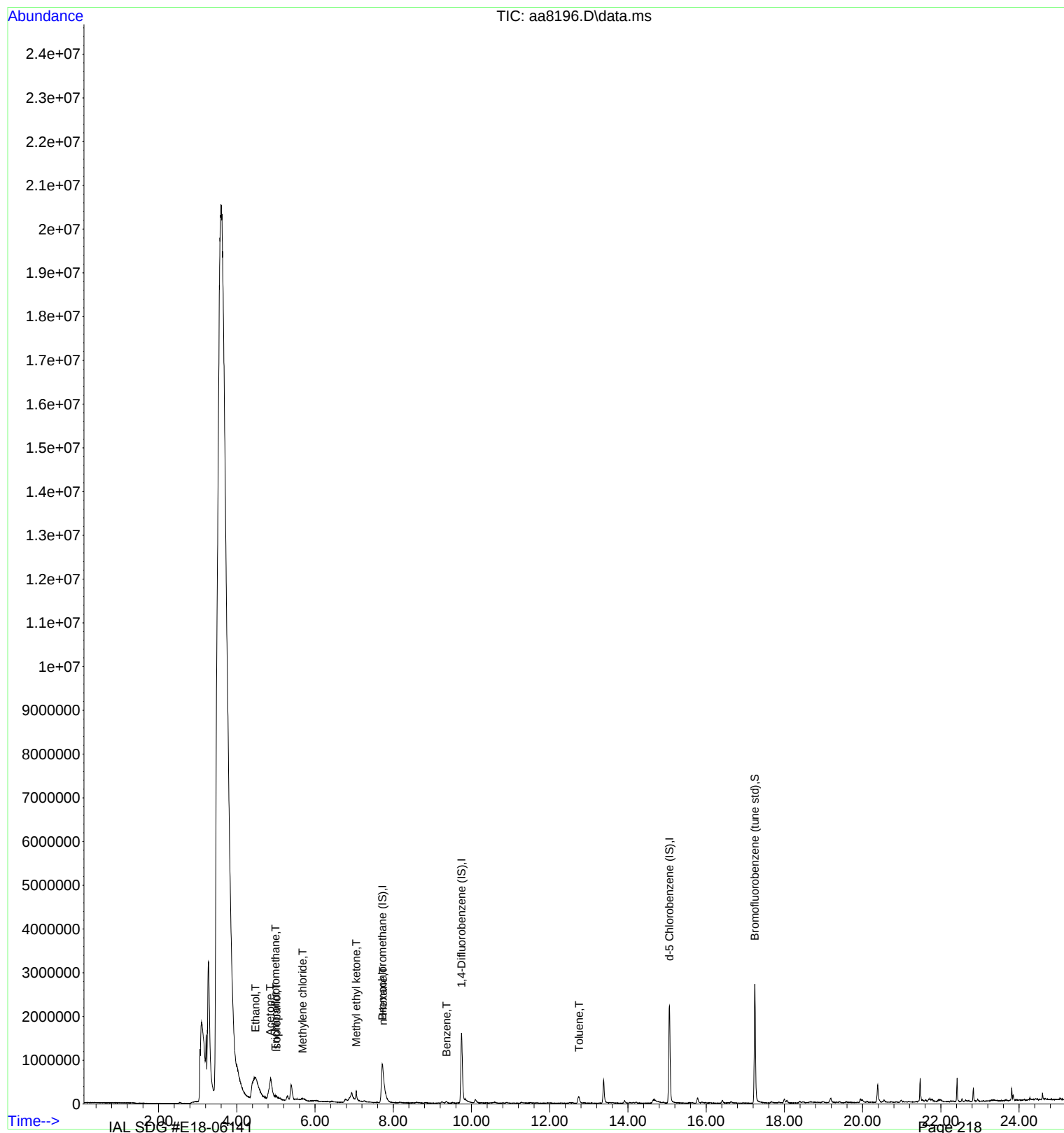
Quant Time: Aug 07 09:42:13 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

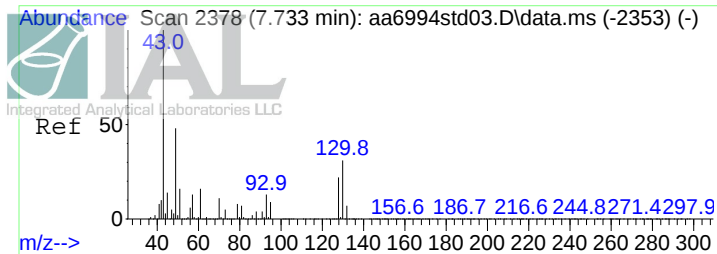
| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.724  | 130  | 410636   | 10.00 | ppbV   | 0.04     |
| 38) 1,4-Difluorobenzene (IS)  | 9.743  | 114  | 1600414  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.061 | 117  | 1372203  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.241 | 95   | 1243695  | 9.94  | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       | Qvalue |          |
| 11) Ethanol                   | 4.480  | 45   | 2591610  | 80.15 | ppbV # | 35       |
| 14) Acetone                   | 4.853  | 58   | 312445   | 9.99  | ppbV # | 61       |
| 15) Trichlorofluoromethane    | 4.991  | 101  | 77441    | 0.55  | ppbV   | 89       |
| 16) Isopropanol               | 5.014  | 45   | 125232   | 1.23  | ppbV # | 53       |
| 19) Methylene chloride        | 5.682  | 49   | 113349   | 1.44  | ppbV   | 87       |
| 27) Methyl ethyl ketone       | 7.052  | 43   | 207474   | 1.79  | ppbV # | 73       |
| 30) n-Hexane                  | 7.737  | 57   | 20657    | 0.21  | ppbV # | 77       |
| 35) Benzene                   | 9.361  | 78   | 43169    | 0.24  | ppbV   | 94       |
| 50) Toluene                   | 12.750 | 91   | 46925    | 0.23  | ppbV   | 89       |

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

Data Path : C:\DATA\08-06-18\  
Data File : aa8196.D  
Acq On : 6 Aug 2018 4:50 pm  
Operator : jls  
Sample : E18-06204-21  
Misc : dup of E18-06204-01, can # 3280  
ALS Vial : 6 Sample Multiplier: 1

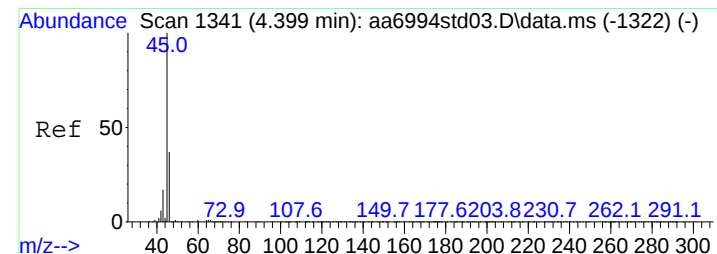
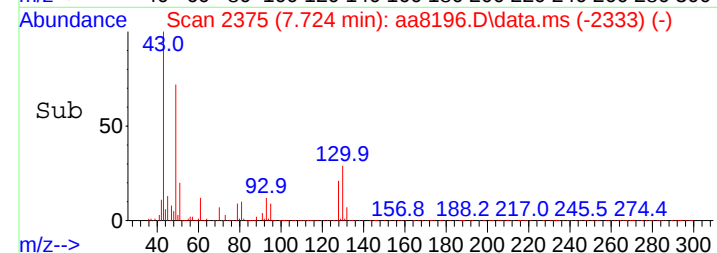
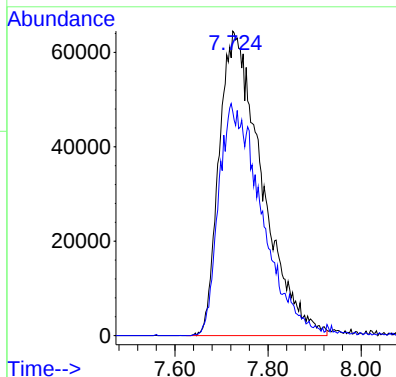
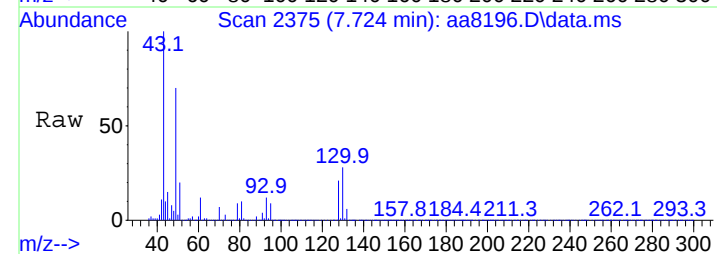
Quant Time: Aug 07 09:42:13 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration





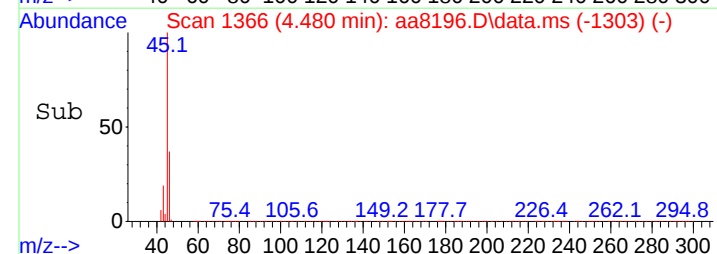
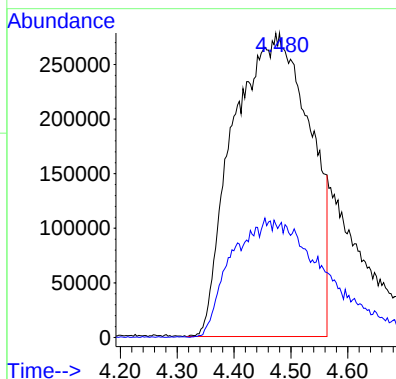
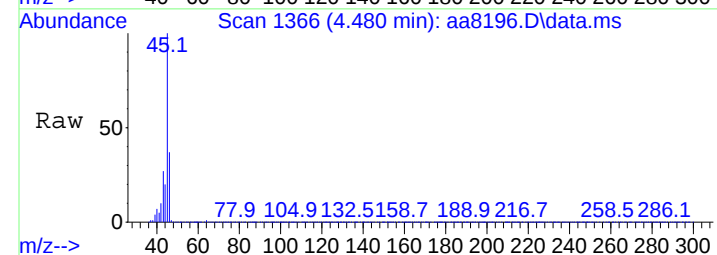
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.724 min Scan# 2375  
Delta R.T. 0.035 min  
Lab File: aa8196.D  
Acq: 6 Aug 2018 4:50 pm

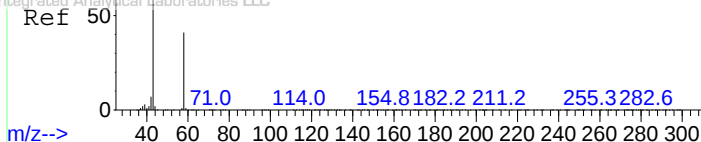
Tgt Ion: 130 Resp: 410636  
Ion Ratio Lower Upper  
130 100  
128 76.8 62.6 94.0



#11  
Ethanol  
Concen: 80.15 ppbV  
RT: 4.480 min Scan# 1366  
Delta R.T. 0.103 min  
Lab File: aa8196.D  
Acq: 6 Aug 2018 4:50 pm

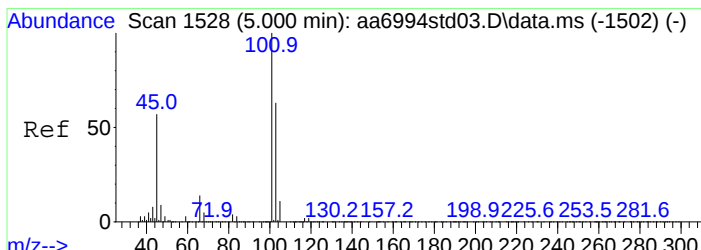
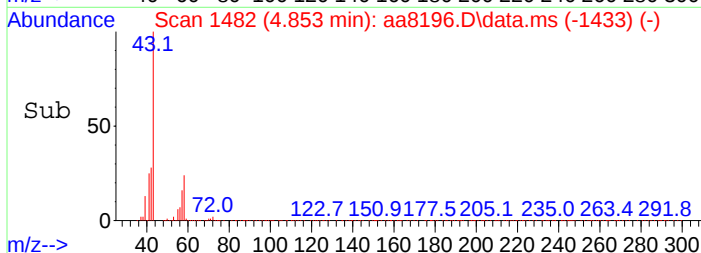
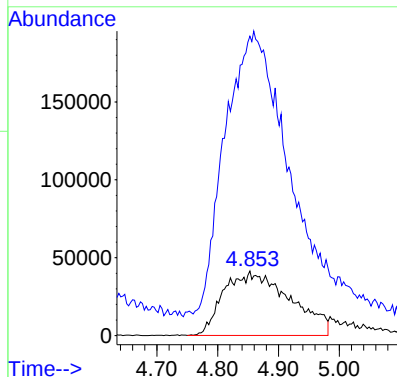
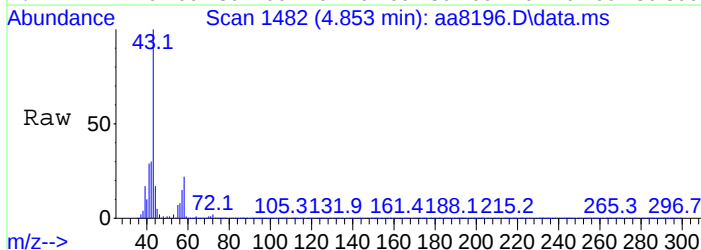
Tgt Ion: 45 Resp: 2591610  
Ion Ratio Lower Upper  
45 100  
46 0.0 32.6 48.8#





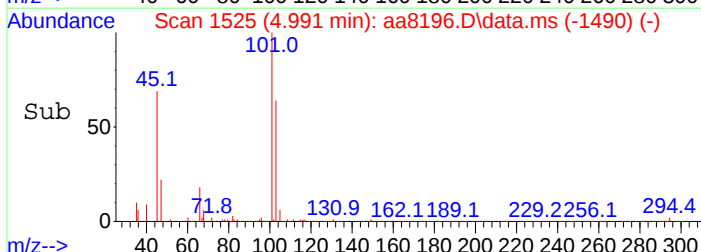
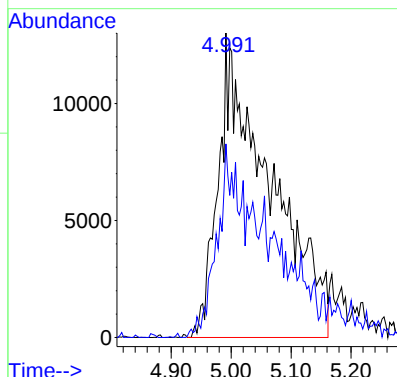
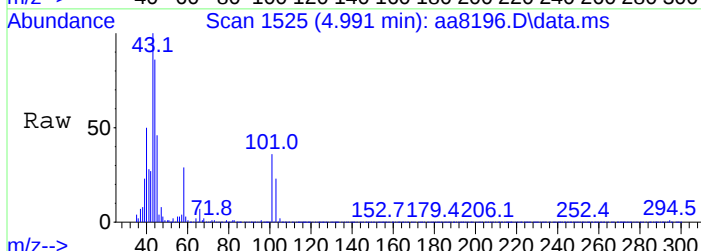
#14  
Acetone  
Concen: 9.99 ppbV  
RT: 4.853 min Scan# 1482  
Delta R.T. 0.058 min  
Lab File: aa8196.D  
Acq: 6 Aug 2018 4:50 pm

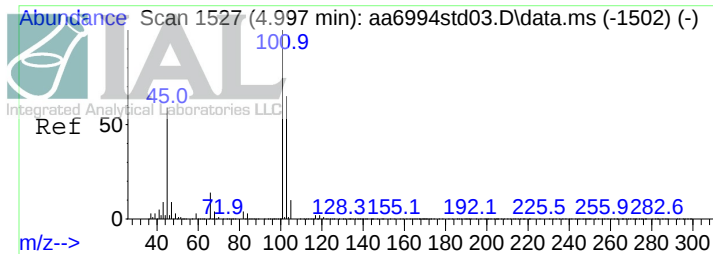
Tgt Ion: 58 Resp: 312445  
Ion Ratio Lower Upper  
58 100  
43 410.7 263.2 394.8#



#15  
Trichlorofluoromethane  
Concen: 0.55 ppbV  
RT: 4.991 min Scan# 1525  
Delta R.T. 0.013 min  
Lab File: aa8196.D  
Acq: 6 Aug 2018 4:50 pm

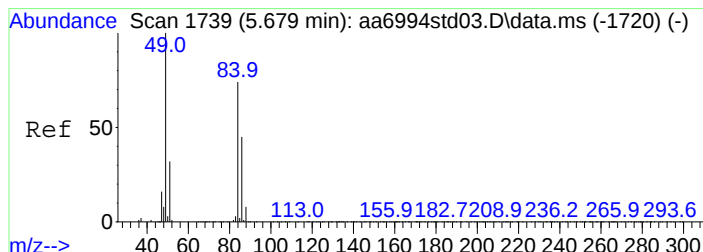
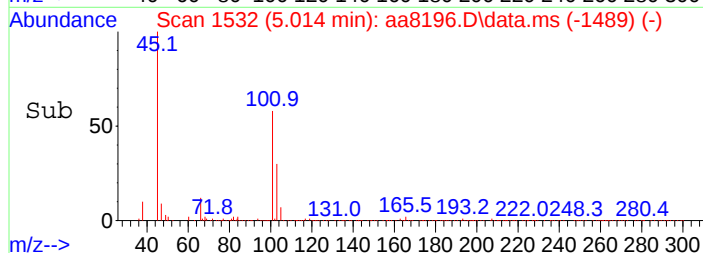
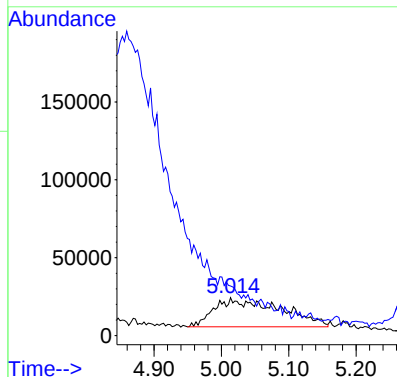
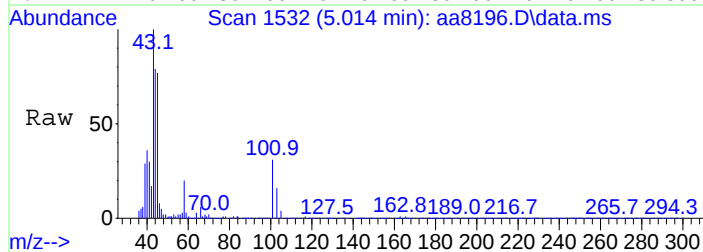
Tgt Ion: 101 Resp: 77441  
Ion Ratio Lower Upper  
101 100  
103 56.1 52.0 78.0





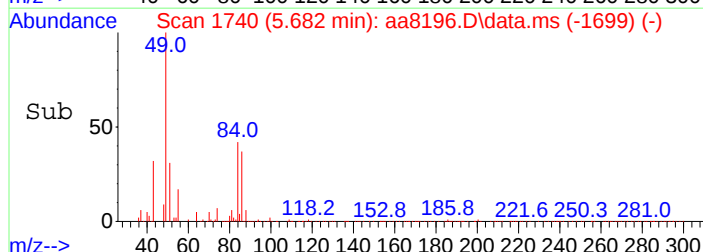
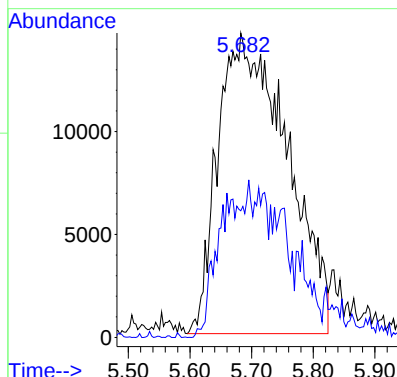
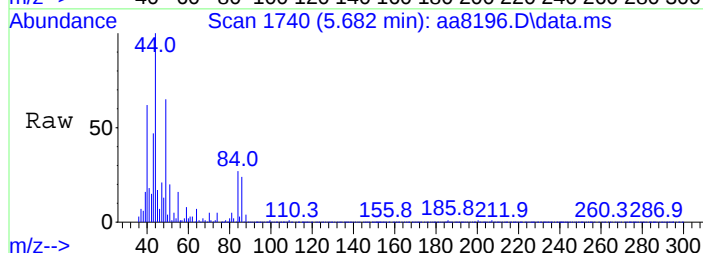
#16  
Isopropanol  
Concen: 1.23 ppbV  
RT: 5.014 min Scan# 1532  
Delta R.T. 0.039 min  
Lab File: aa8196.D  
Acq: 6 Aug 2018 4:50 pm

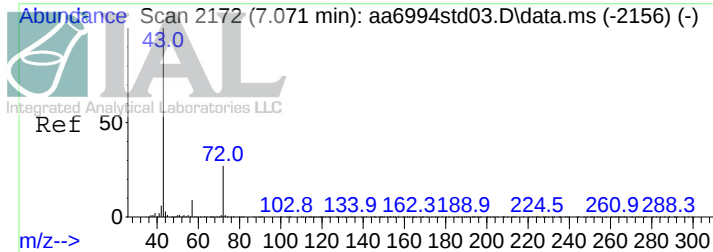
Tgt Ion: 45 Resp: 125232  
Ion Ratio Lower Upper  
45 100  
43 0.0 18.4 27.6#



#19  
Methylene chloride  
Concen: 1.44 ppbV  
RT: 5.682 min Scan# 1740  
Delta R.T. 0.032 min  
Lab File: aa8196.D  
Acq: 6 Aug 2018 4:50 pm

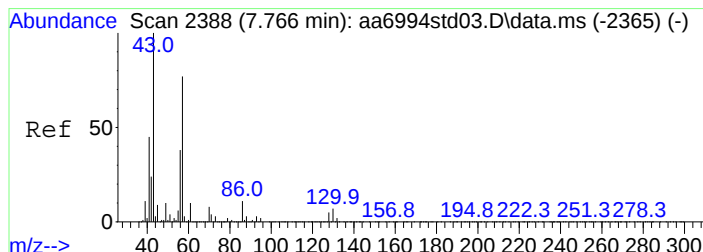
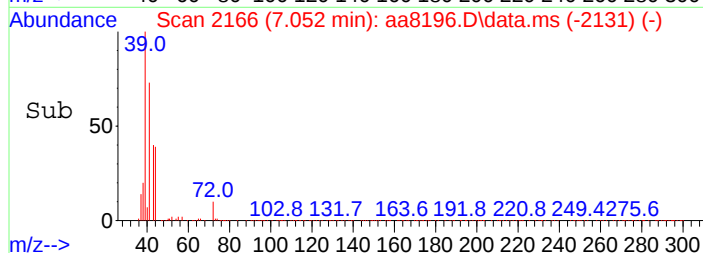
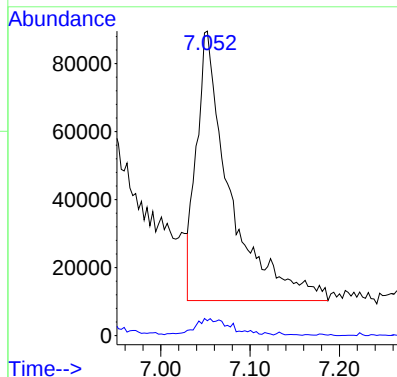
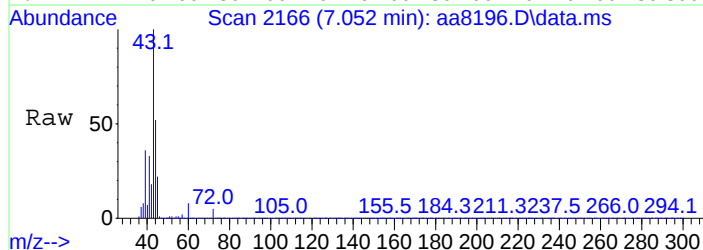
Tgt Ion: 49 Resp: 113349  
Ion Ratio Lower Upper  
49 100  
84 43.1 41.6 62.4





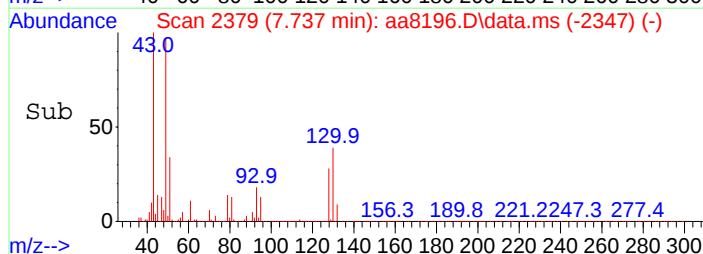
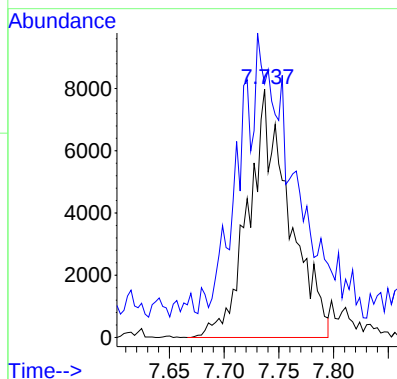
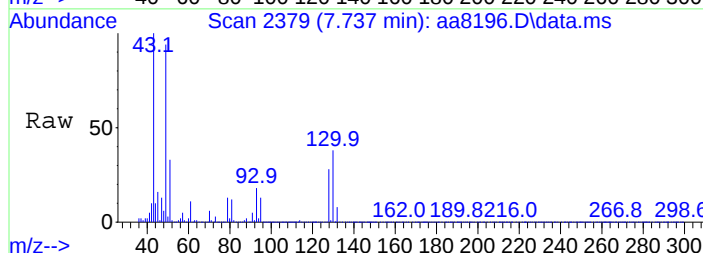
#27  
Methyl ethyl ketone  
Concen: 1.79 ppbV  
RT: 7.052 min Scan# 2166  
Delta R.T. 0.013 min  
Lab File: aa8196.D  
Acq: 6 Aug 2018 4:50 pm

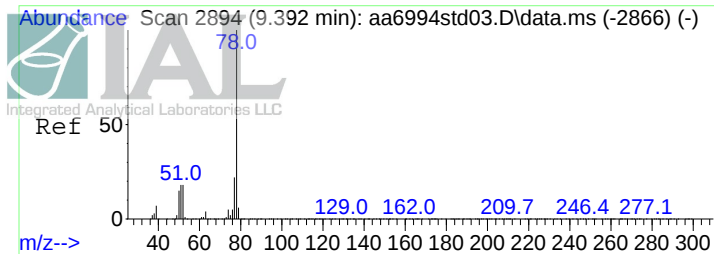
Tgt Ion: 43 Resp: 207474  
Ion Ratio Lower Upper  
43 100  
72 6.0 14.4 21.6#



#30  
n-Hexane  
Concen: 0.21 ppbV  
RT: 7.737 min Scan# 2379  
Delta R.T. 0.003 min  
Lab File: aa8196.D  
Acq: 6 Aug 2018 4:50 pm

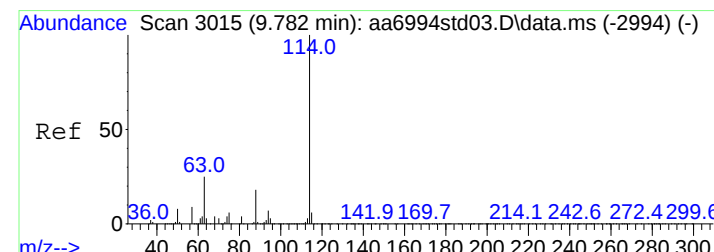
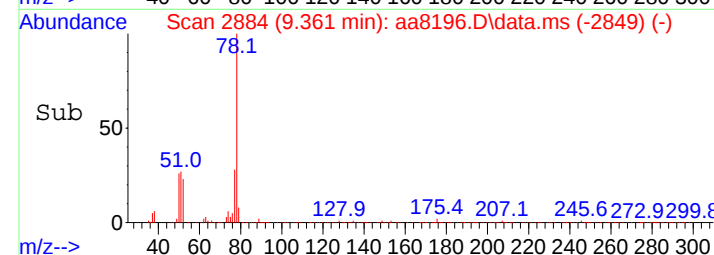
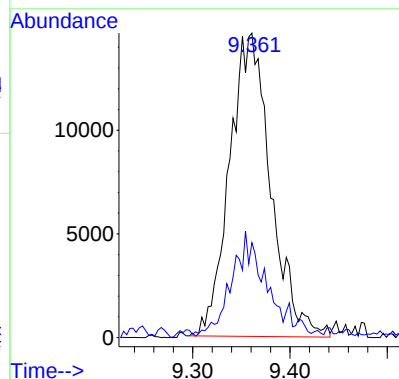
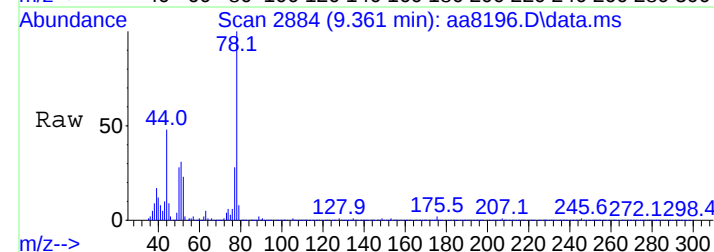
Tgt Ion: 57 Resp: 20657  
Ion Ratio Lower Upper  
57 100  
41 105.1 67.2 100.8#





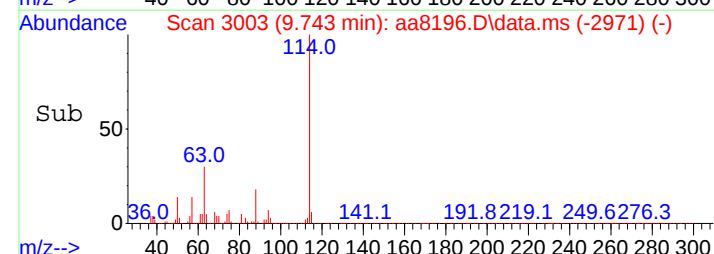
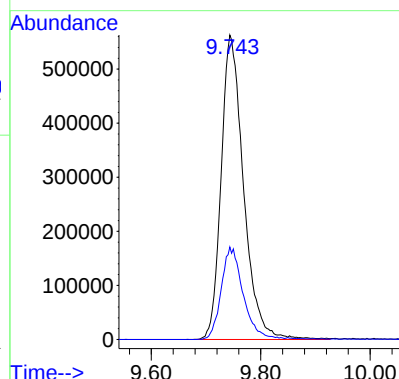
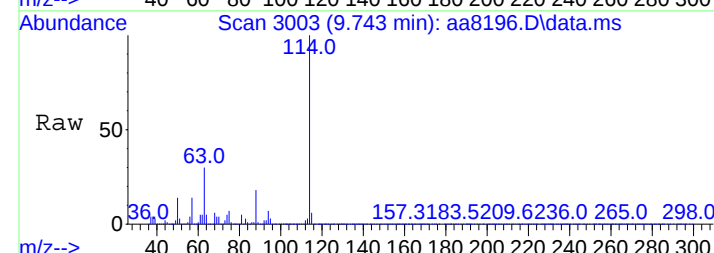
#35  
Benzene  
Concen: 0.24 ppbV  
RT: 9.361 min Scan# 2884  
Delta R.T. 0.013 min  
Lab File: aa8196.D  
Acq: 6 Aug 2018 4:50 pm

Tgt Ion: 78 Resp: 43169  
Ion Ratio Lower Upper  
78 100  
51 27.1 19.2 28.8

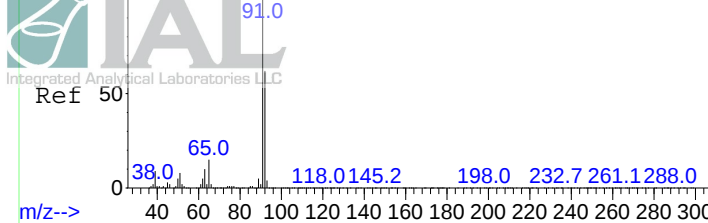


#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.743 min Scan# 3003  
Delta R.T. 0.003 min  
Lab File: aa8196.D  
Acq: 6 Aug 2018 4:50 pm

Tgt Ion: 114 Resp: 1600414  
Ion Ratio Lower Upper  
114 100  
63 29.6 20.0 30.0



Abundance Scan 3952 (12.794 min): aa6994std03.D\data.ms (-3923) (-)



#50

Toluene

Concen: 0.23 ppbV

RT: 12.750 min Scan# 3938

Delta R.T. 0.006 min

Lab File: aa8196.D

Acq: 6 Aug 2018 4:50 pm

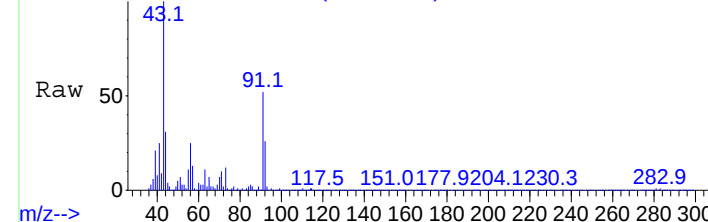
Tgt Ion: 91 Resp: 46925

Ion Ratio Lower Upper

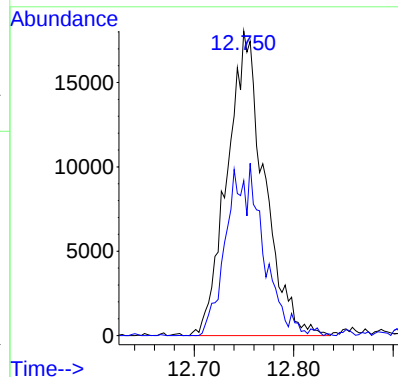
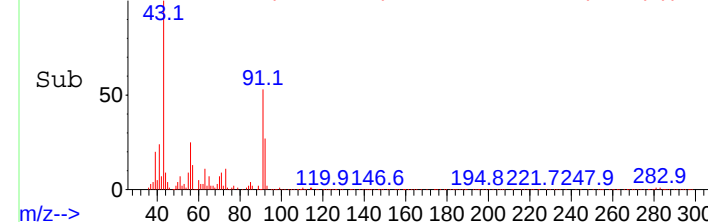
91 100

92 54.0 50.0 75.0

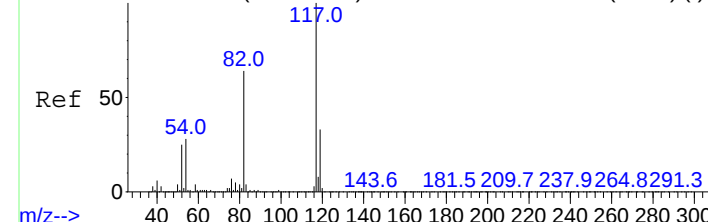
Abundance Scan 3938 (12.750 min): aa8196.D\data.ms



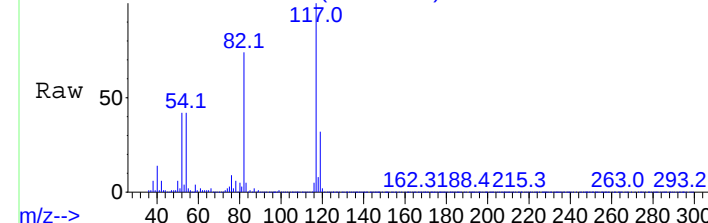
Abundance Scan 3938 (12.750 min): aa8196.D\data.ms (-3905) (-)



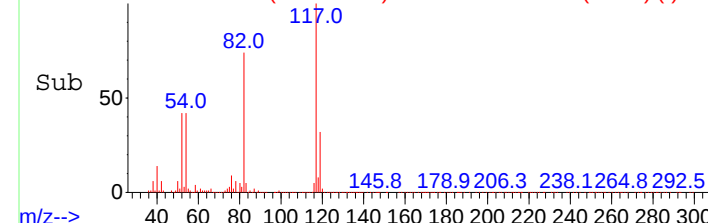
Abundance Scan 4672 (15.109 min): aa6994std03.D\data.ms (-4646) (-)



Abundance Scan 4657 (15.061 min): aa8196.D\data.ms



Abundance Scan 4657 (15.061 min): aa8196.D\data.ms (-4625) (-)



#55

d-5 Chlorobenzene (IS)

Concen: 10.00 ppbV

RT: 15.061 min Scan# 4657

Delta R.T. 0.003 min

Lab File: aa8196.D

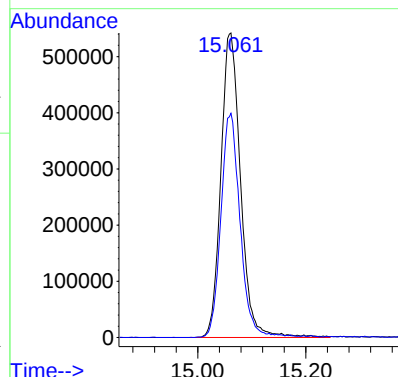
Acq: 6 Aug 2018 4:50 pm

Tgt Ion: 117 Resp: 1372203

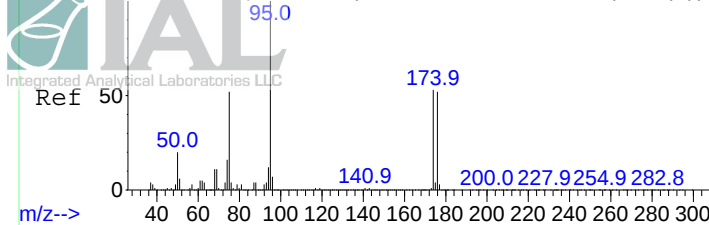
Ion Ratio Lower Upper

117 100

82 72.0 56.0 84.0



Abundance Scan 5355 (17.305 min): aa6994std03.D\data.ms (-5334) (-)



#64

Bromofluorobenzene (tune std)

Concen: 9.94 ppbV

RT: 17.241 min Scan# 5335

Delta R.T. -0.006 min

Lab File: aa8196.D

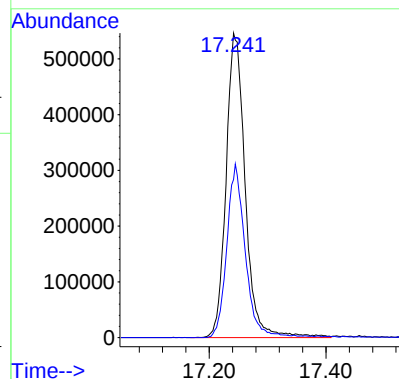
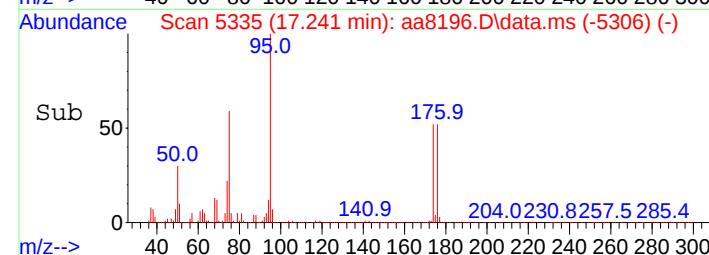
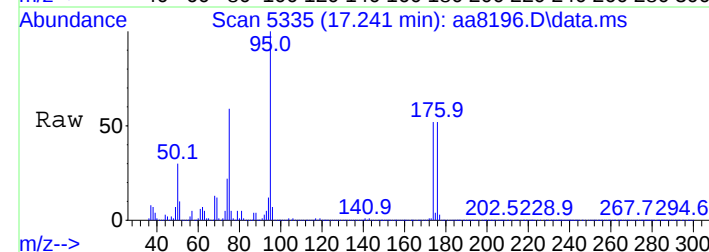
Acq: 6 Aug 2018 4:50 pm

Tgt Ion: 95 Resp: 1243695

Ion Ratio Lower Upper

95 100

174 55.0 61.5 92.3#



# Integrated Analytical Laboratories, LLC

Volatile Organic Compounds by EPA Method TO-15

## Laboratory Sample Duplicate Report

SDG Number: E18-06173  
IAL Sample ID: E18-06173-01  
Matrix: Air  
Summa ID: 1070

Date Received: 8/3/18  
Date Analyzed: 8/7/18,8/7/18  
Lab Data File#: AA8228,AA8229  
Dilution Factor: 1  
Injection Volume: 50ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                      | CAS #      | Sample<br>E18-06173-01<br>Concentration<br>Reported |       | Sample Dup<br>E18-06173-21<br>Concentration<br>Reported |       | Reporting<br>Limits<br>ppbv | RPD    |
|-------------------------------|------------|-----------------------------------------------------|-------|---------------------------------------------------------|-------|-----------------------------|--------|
|                               |            | ppbv                                                | Q     | ppbv                                                    | Q     |                             |        |
| Acetone                       | 67-64-1    | 30                                                  |       | 27                                                      |       | 2.0                         | 10.53% |
| Allyl Chloride                | 107-05-1   |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 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    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 2-Chlorotoluene               | 95-49-8    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 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%  |
| Ethanol                       | 64-17-5    | 380                                                 |       | 370                                                     |       | 2.0                         | 2.67%  |
| Ethylbenzene                  | 100-41-4   |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 4-Ethyltoluene                | 622-96-8   |                                                     | 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%  |
| Isopropanol                   | 67-63-0    | 5.2                                                 |       | 5.5                                                     |       | 2.0                         | -5.61% |

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: E18-06173  
IAL Sample ID: E18-06173-01  
Matrix: Air  
Summa ID: 1070

Date Received: 8/3/18  
Date Analyzed: 8/7/18,8/7/18  
Lab Data File#: AA8228,AA8229  
Dilution Factor: 1  
Injection Volume: 50ml  
GC/MS Column: RTX-1, 0.32 mmID

| Compound                              | CAS #       | Sample<br>E18-06173-01<br>Concentration<br>Reported |       | Sample Dup<br>E18-06173-21<br>Concentration<br>Reported |       | Reporting<br>Limits<br>ppbv | RPD    |
|---------------------------------------|-------------|-----------------------------------------------------|-------|---------------------------------------------------------|-------|-----------------------------|--------|
|                                       |             | ppbv                                                | Q     | ppbv                                                    | Q     |                             |        |
| Methylene chloride                    | 75-09-2     | 99                                                  |       | 100                                                     |       | 2.0                         | -1.01% |
| Methyl ethyl ketone                   | 78-93-3     | 2.8                                                 |       | 2.2                                                     |       | 2.0                         | 24.00% |
| Methyl isobutyl ketone                | 108-10-1    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Methyl methacrylate                   | 80-62-6     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 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%  |
| Tert-butyl alcohol                    | 75-65-0     | 3.1                                                 |       | 3.0                                                     |       | 2.0                         | 3.28%  |
| 1,1,2,2-Tetrachloroethane             | 79-34-5     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Tetrachloroethene                     | 127-18-4    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Tetrahydrofuran                       | 109-99-9    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Toluene                               | 108-88-3    | 2.7                                                 |       | 2.7                                                     |       | 2.0                         | 0.00%  |
| 1,2,4-Trichlorobenzene                | 120-82-1    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 1,1,1-Trichloroethane                 | 71-55-6     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 1,1,2-Trichloroethane                 | 79-00-5     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Trichloroethene                       | 79-01-6     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Trichlorofluoromethane                | 75-69-4     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 76-13-1     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 1,2,4-Trimethylbenzene                | 95-63-6     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 1,3,5-Trimethylbenzene                | 108-67-8    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| 2,2,4-Trimethylpentane                | 540-84-1    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Vinyl bromide                         | 593-60-2    |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Vinyl chloride                        | 75-01-4     |                                                     | 2.0 U |                                                         | 2.0 U | 2.0                         | 0.00%  |
| Xylenes (m&p)                         | 179601-23-1 |                                                     | 4.0 U |                                                         | 4.0 U | 4.0                         | 0.00%  |
| Xylenes (o)                           | 95-47-6     |                                                     | 2.0 U |                                                         | 2.0 U | 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\08-07-18\  
 Data File : aa8228.D  
 Acq On : 7 Aug 2018 2:44 pm  
 Operator : jjw  
 Sample : E18-06173-01 x 10 dil  
 Misc : 1070, 50cc  
 ALS Vial : 8 Sample Multiplier: 1

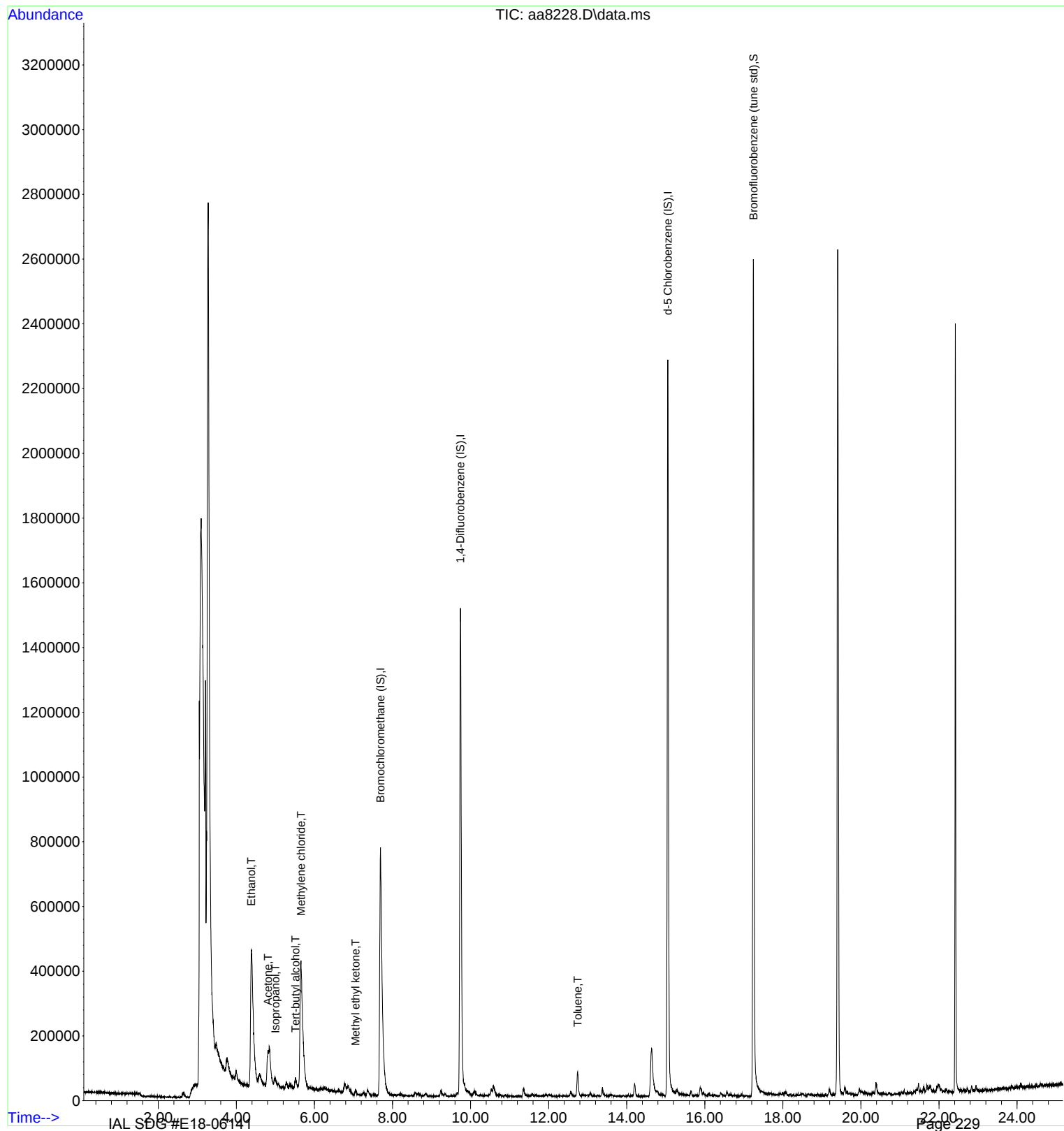
Quant Time: Aug 08 13:07:49 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

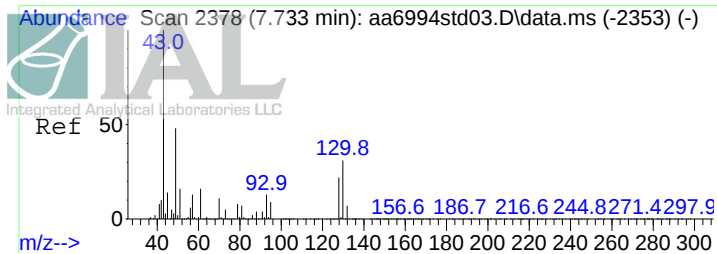
| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.692  | 130  | 384714   | 10.00 | ppbV   | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.740  | 114  | 1413711  | 10.00 | ppbV   | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.055 | 117  | 1261827  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.248 | 95   | 1085952  | 9.44  | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       | Qvalue |          |
| 11) Ethanol                   | 4.383  | 45   | 1144225  | 37.77 | ppbV   | 97       |
| 14) Acetone                   | 4.808  | 58   | 88386    | 3.02  | ppbV # | 49       |
| 16) Isopropanol               | 5.001  | 45   | 49479    | 0.52  | ppbV # | 53       |
| 19) Methylene chloride        | 5.657  | 49   | 729142   | 9.89  | ppbV   | 96       |
| 20) Tert-butyl alcohol        | 5.512  | 59   | 37800    | 0.31  | ppbV   | 100      |
| 27) Methyl ethyl ketone       | 7.052  | 43   | 30133    | 0.28  | ppbV # | 74       |
| 50) Toluene                   | 12.743 | 91   | 48498    | 0.27  | ppbV   | 94       |

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

Data Path : C:\DATA\08-07-18\  
Data File : aa8228.D  
Acq On : 7 Aug 2018 2:44 pm  
Operator : jjw  
Sample : E18-06173-01 x 10 dil  
Misc : 1070, 50cc  
ALS Vial : 8 Sample Multiplier: 1

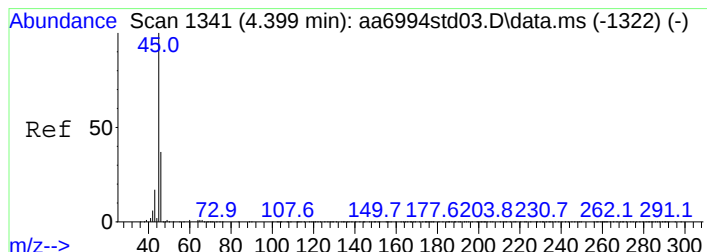
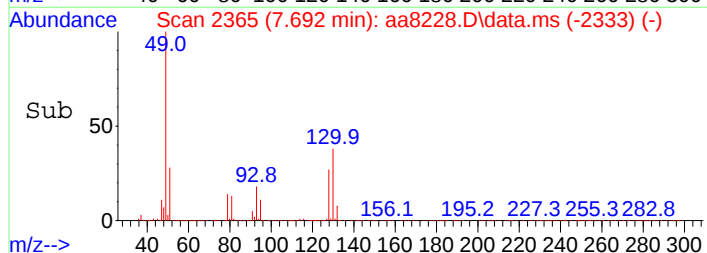
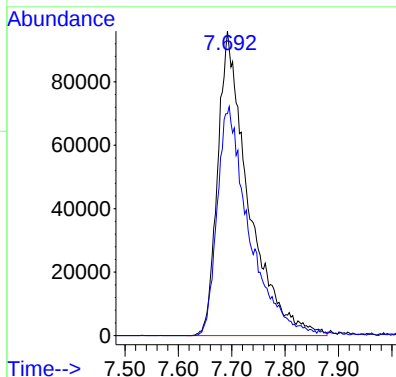
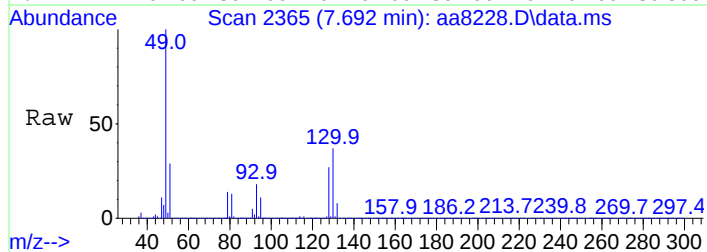
Quant Time: Aug 08 13:07:49 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration





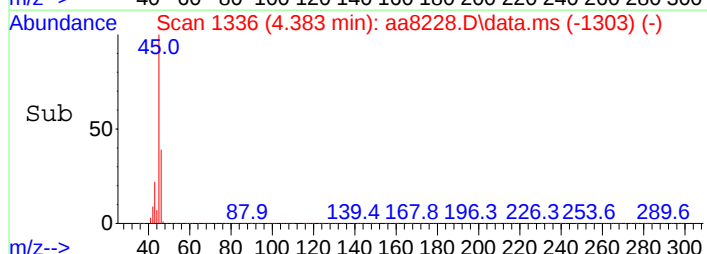
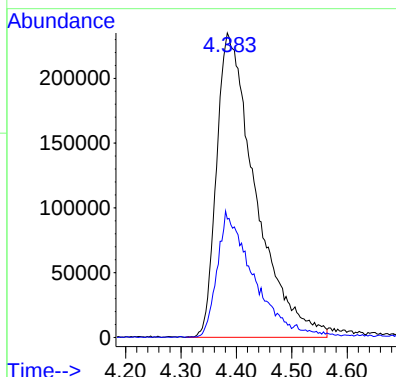
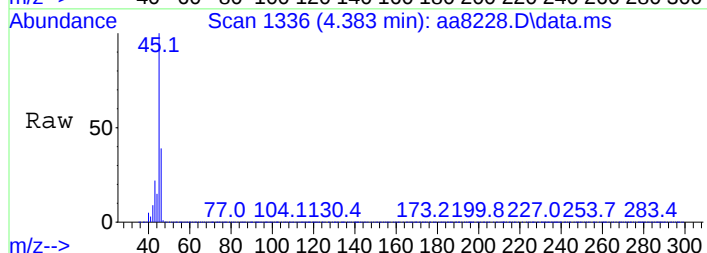
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.692 min Scan# 2365  
Delta R.T. 0.003 min  
Lab File: aa8228.D  
Acq: 7 Aug 2018 2:44 pm

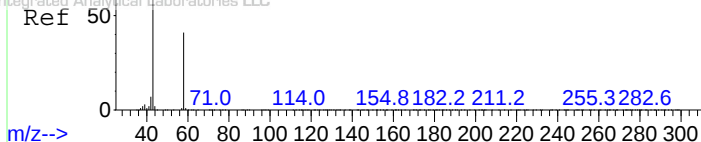
Tgt Ion: 130 Resp: 384714  
Ion Ratio Lower Upper  
130 100  
128 77.9 62.6 94.0



#11  
Ethanol  
Concen: 37.77 ppbV  
RT: 4.383 min Scan# 1336  
Delta R.T. 0.006 min  
Lab File: aa8228.D  
Acq: 7 Aug 2018 2:44 pm

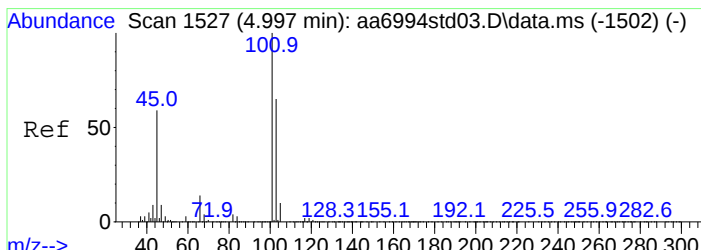
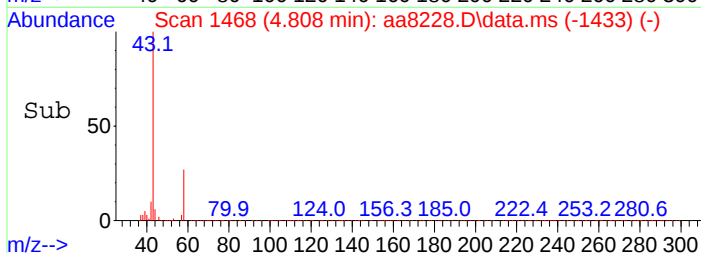
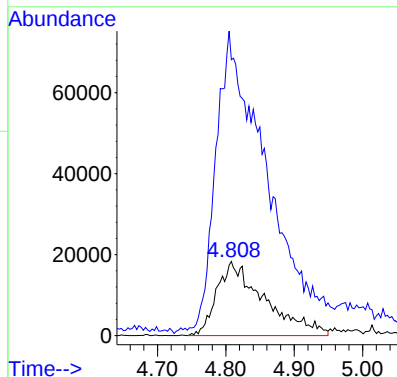
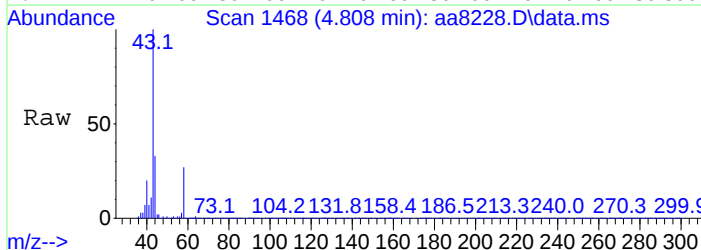
Tgt Ion: 45 Resp: 1144225  
Ion Ratio Lower Upper  
45 100  
46 38.7 32.6 48.8





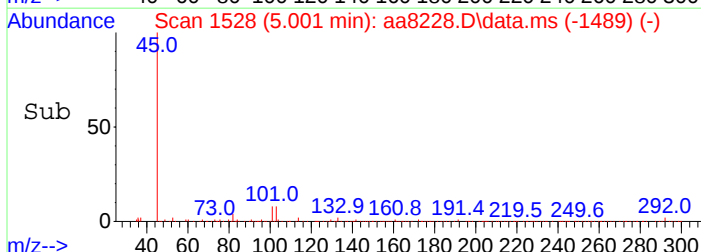
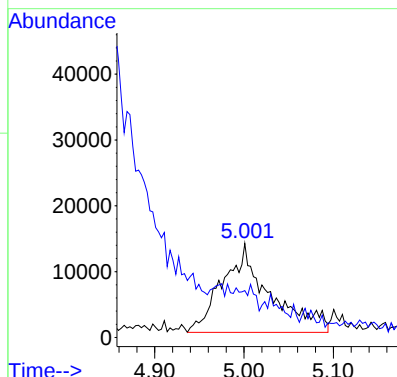
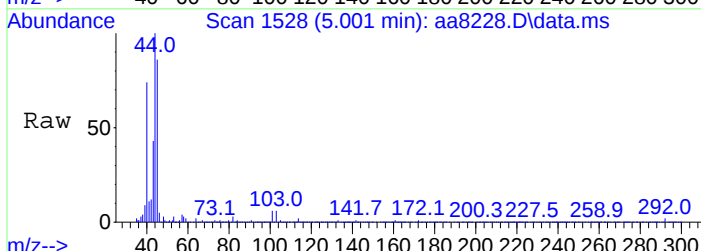
#14  
Acetone  
Concen: 3.02 ppbV  
RT: 4.808 min Scan# 1468  
Delta R.T. 0.013 min  
Lab File: aa8228.D  
Acq: 7 Aug 2018 2:44 pm

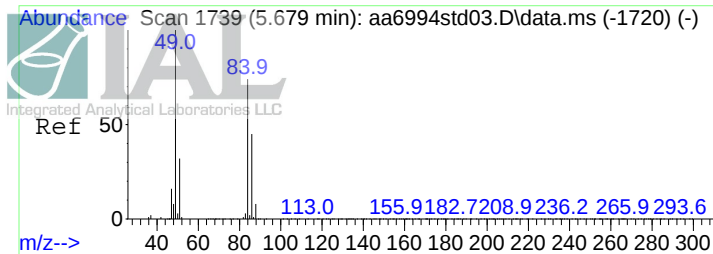
Tgt Ion: 58 Resp: 88386  
Ion Ratio Lower Upper  
58 100  
43 436.1 263.2 394.8#



#16  
Isopropanol  
Concen: 0.52 ppbV  
RT: 5.001 min Scan# 1528  
Delta R.T. 0.026 min  
Lab File: aa8228.D  
Acq: 7 Aug 2018 2:44 pm

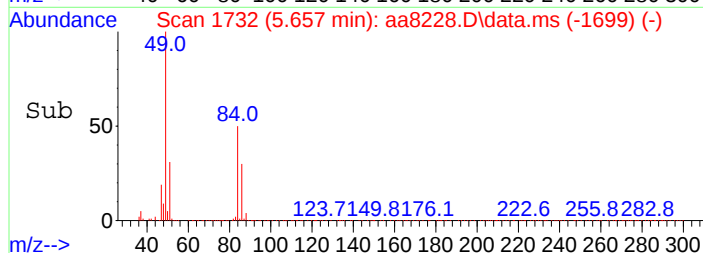
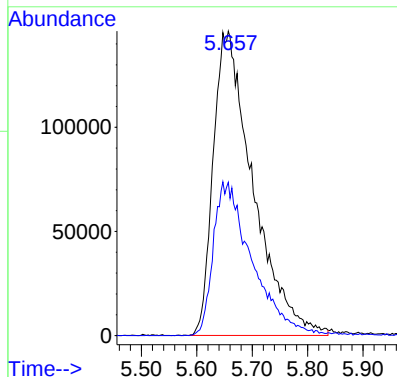
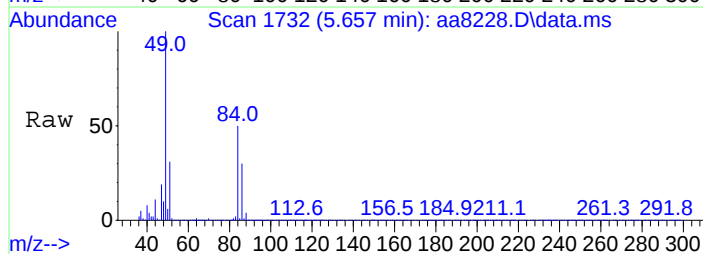
Tgt Ion: 45 Resp: 49479  
Ion Ratio Lower Upper  
45 100  
43 0.0 18.4 27.6#





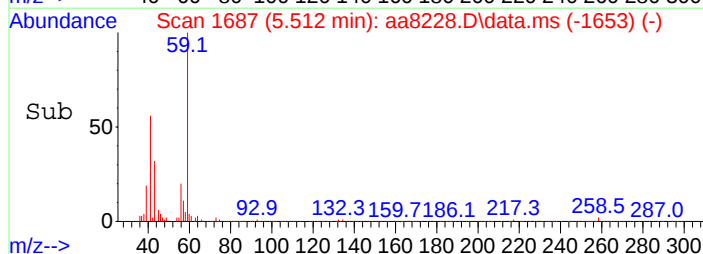
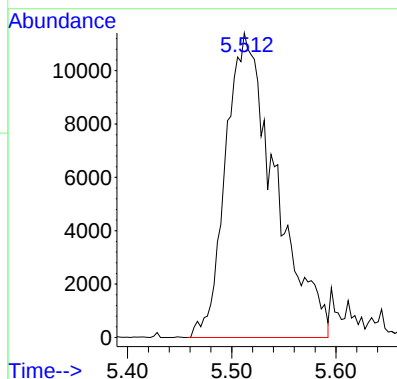
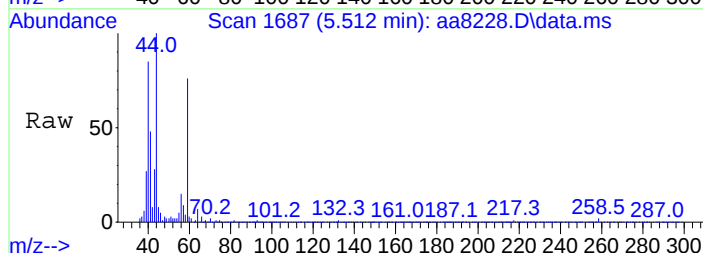
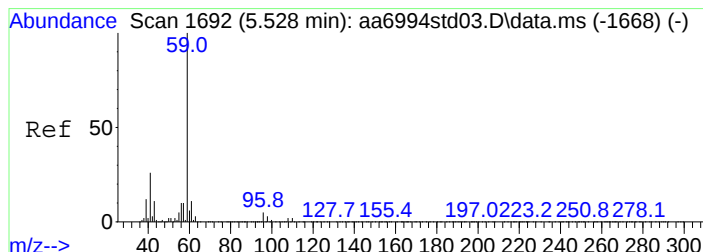
#19  
Methylene chloride  
Concen: 9.89 ppbV  
RT: 5.657 min Scan# 1732  
Delta R.T. 0.006 min  
Lab File: aa8228.D  
Acq: 7 Aug 2018 2:44 pm

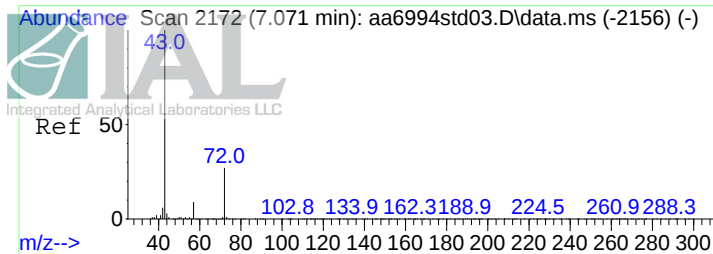
Tgt Ion: 49 Resp: 729142  
Ion Ratio Lower Upper  
49 100  
84 49.1 41.6 62.4



#20  
Tert-butyl alcohol  
Concen: 0.31 ppbV  
RT: 5.512 min Scan# 1687  
Delta R.T. 0.010 min  
Lab File: aa8228.D  
Acq: 7 Aug 2018 2:44 pm

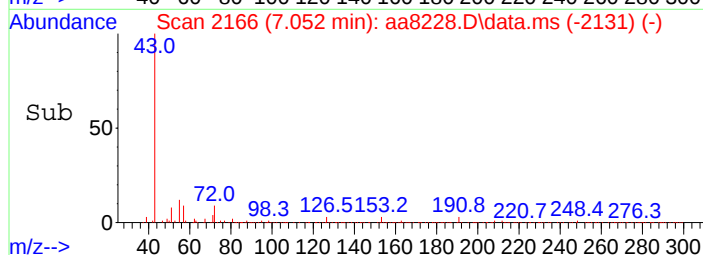
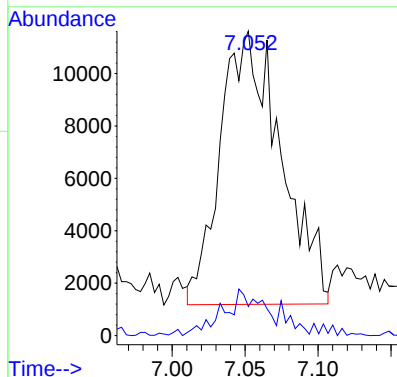
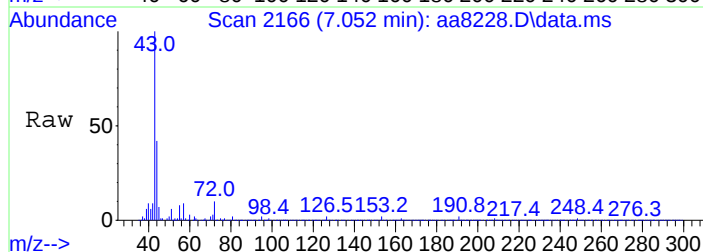
Tgt Ion: 59 Resp: 37800





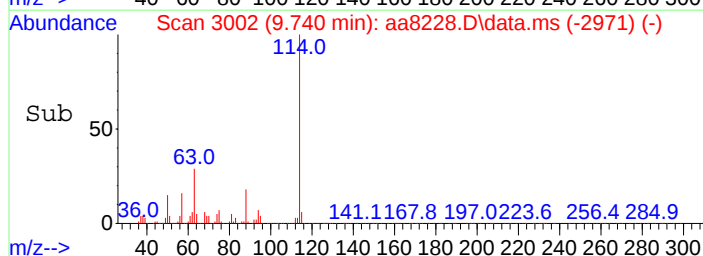
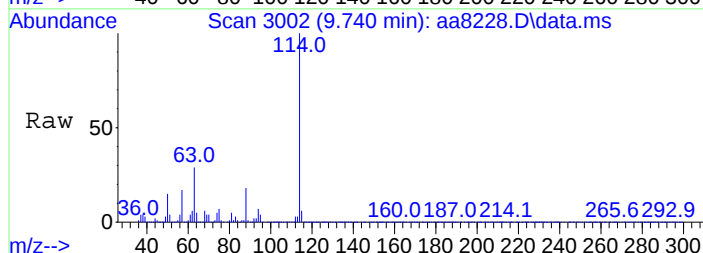
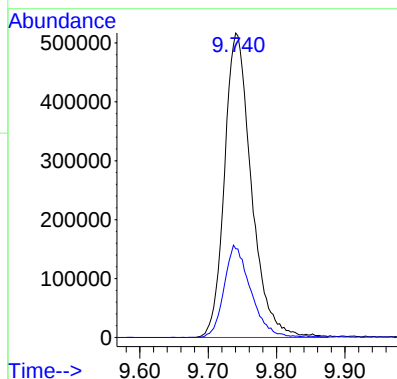
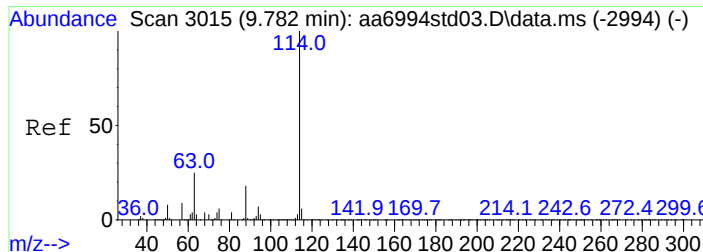
#27  
Methyl ethyl ketone  
Concen: 0.28 ppbV  
RT: 7.052 min Scan# 2166  
Delta R.T. 0.013 min  
Lab File: aa8228.D  
Acq: 7 Aug 2018 2:44 pm

Tgt Ion: 43 Resp: 30133  
Ion Ratio Lower Upper  
43 100  
72 6.5 14.4 21.6#

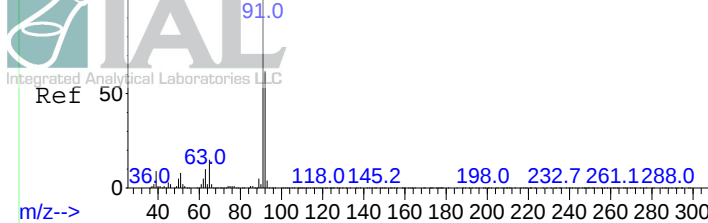


#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.740 min Scan# 3002  
Delta R.T. 0.000 min  
Lab File: aa8228.D  
Acq: 7 Aug 2018 2:44 pm

Tgt Ion: 114 Resp: 1413711  
Ion Ratio Lower Upper  
114 100  
63 29.9 20.0 30.0



Abundance Scan 3952 (12.794 min): aa6994std03.D\data.ms (-3923) (-)



#50

Toluene

Concen: 0.27 ppbV

RT: 12.743 min Scan# 3936

Delta R.T. 0.000 min

Lab File: aa8228.D

Acq: 7 Aug 2018 2:44 pm

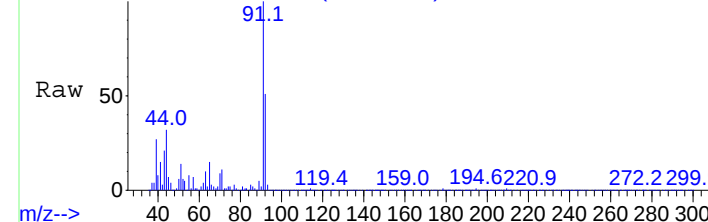
Tgt Ion: 91 Resp: 48498

Ion Ratio Lower Upper

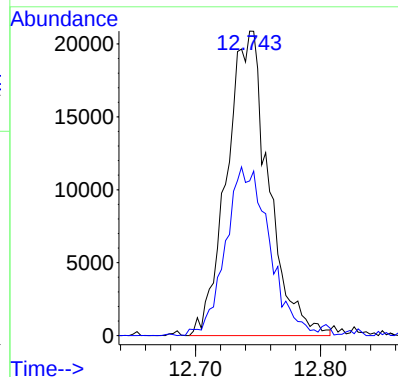
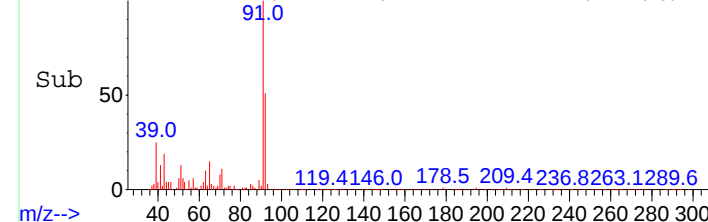
91 100

92 57.9 50.0 75.0

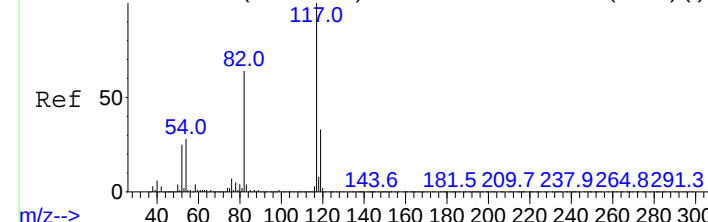
Abundance Scan 3936 (12.743 min): aa8228.D\data.ms



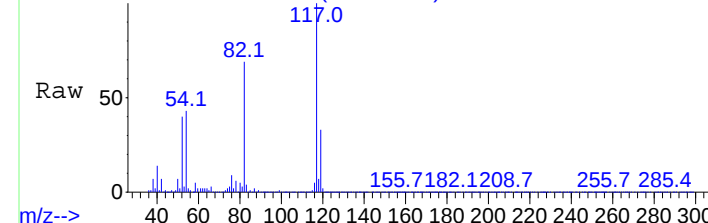
Abundance Scan 3936 (12.743 min): aa8228.D\data.ms (-3905) (-)



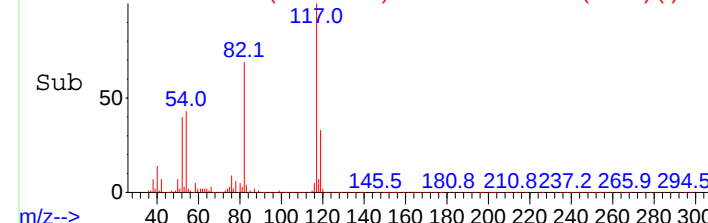
Abundance Scan 4672 (15.109 min): aa6994std03.D\data.ms (-4646) (-)



Abundance Scan 4655 (15.055 min): aa8228.D\data.ms



Abundance Scan 4655 (15.055 min): aa8228.D\data.ms (-4625) (-)



#55

d-5 Chlorobenzene (IS)

Concen: 10.00 ppbV

RT: 15.055 min Scan# 4655

Delta R.T. -0.003 min

Lab File: aa8228.D

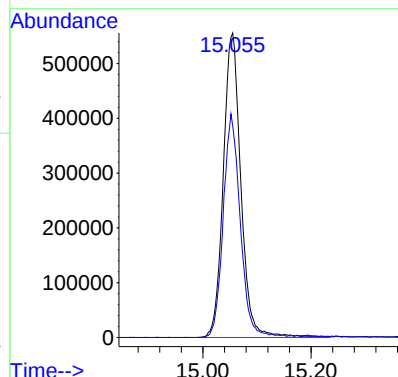
Acq: 7 Aug 2018 2:44 pm

Tgt Ion: 117 Resp: 1261827

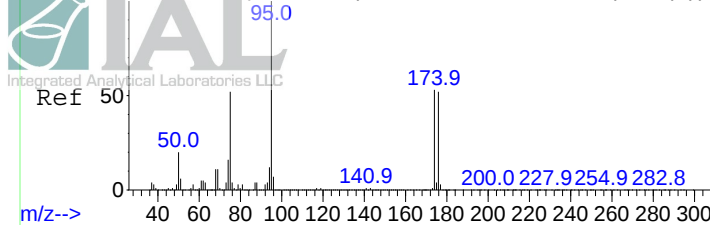
Ion Ratio Lower Upper

117 100

82 71.2 56.0 84.0



Abundance Scan 5355 (17.305 min): aa6994std03.D\data.ms (-5334) (-)



#64

Bromofluorobenzene (tune std)

Concen: 9.44 ppbV

RT: 17.248 min Scan# 5337

Delta R.T. 0.000 min

Lab File: aa8228.D

Acq: 7 Aug 2018 2:44 pm

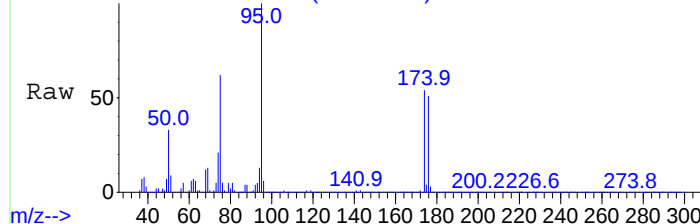
Tgt Ion: 95 Resp: 1085952

Ion Ratio Lower Upper

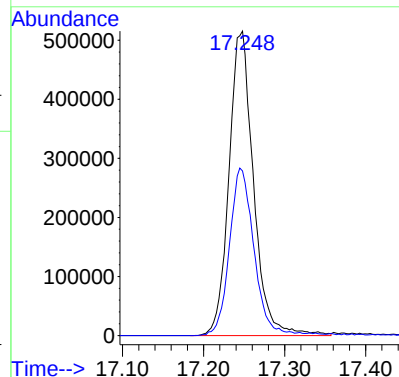
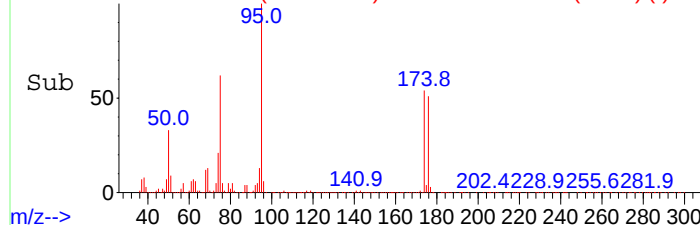
95 100

174 55.3 61.5 92.3#

Abundance Scan 5337 (17.248 min): aa8228.D\data.ms



Abundance Scan 5337 (17.248 min): aa8228.D\data.ms (-5306) (-)



Data Path : C:\DATA\08-07-18\  
 Data File : aa8229.D  
 Acq On : 7 Aug 2018 3:17 pm  
 Operator : jjw  
 Sample : E18-06173-21 x 10 dil  
 Misc : dup of E18-06173-01 x 10 dil, can 1070  
 ALS Vial : 9 Sample Multiplier: 1

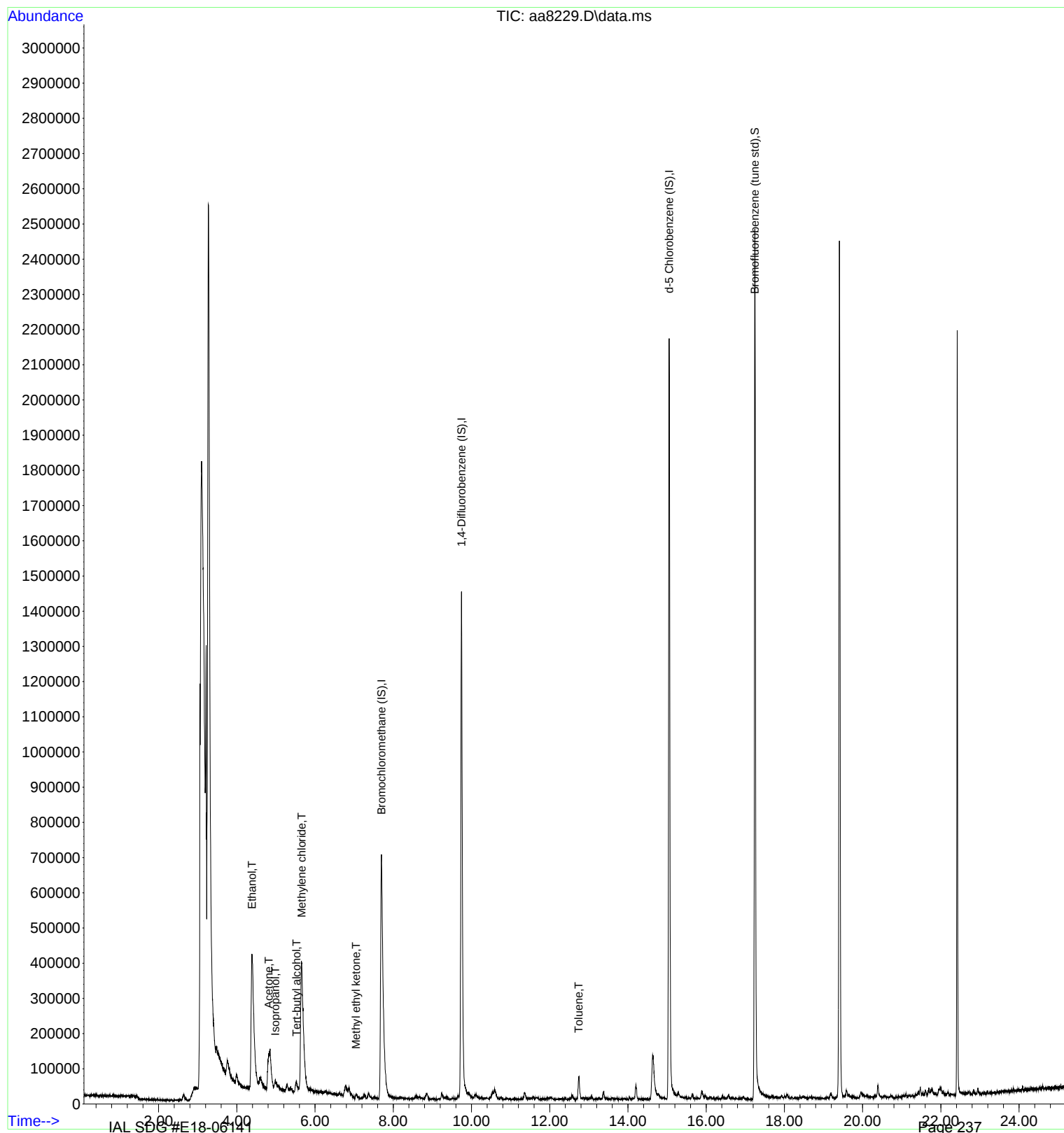
Quant Time: Aug 08 13:09:58 2018  
 Quant Method : C:\msdchem\1\METHODS\0725.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Wed Jul 25 14:15:57 2018  
 Response via : Initial Calibration

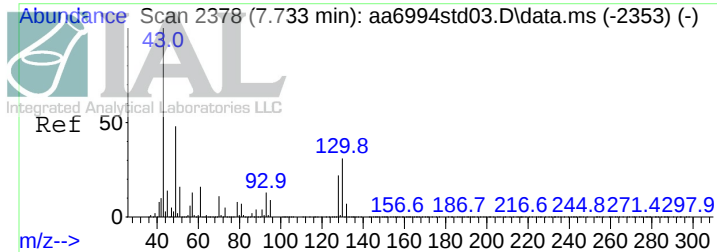
| Compound                      | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards            |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)    | 7.695  | 130  | 353353   | 10.00 | ppbV   | 0.00     |
| 38) 1,4-Difluorobenzene (IS)  | 9.743  | 114  | 1303289  | 10.00 | ppbV # | 0.00     |
| 55) d-5 Chlorobenzene (IS)    | 15.055 | 117  | 1182462  | 10.00 | ppbV   | 0.00     |
| System Monitoring Compounds   |        |      |          |       |        |          |
| 64) Bromofluorobenzene (tu... | 17.245 | 95   | 1022916  | 9.49  | ppbV   | 0.00     |
| Target Compounds              |        |      |          |       |        |          |
|                               |        |      |          |       | Qvalue |          |
| 11) Ethanol                   | 4.387  | 45   | 1026205  | 36.88 | ppbV   | 97       |
| 14) Acetone                   | 4.814  | 58   | 73001    | 2.71  | ppbV # | 40       |
| 16) Isopropanol               | 4.985  | 45   | 48384    | 0.55  | ppbV # | 71       |
| 19) Methylene chloride        | 5.660  | 49   | 680511   | 10.05 | ppbV   | 94       |
| 20) Tert-butyl alcohol        | 5.525  | 59   | 33629    | 0.30  | ppbV   | 100      |
| 27) Methyl ethyl ketone       | 7.046  | 43   | 21982    | 0.22  | ppbV   | 98       |
| 50) Toluene                   | 12.737 | 91   | 43258    | 0.26  | ppbV   | 89       |

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

Data Path : C:\DATA\08-07-18\  
Data File : aa8229.D  
Acq On : 7 Aug 2018 3:17 pm  
Operator : jjw  
Sample : E18-06173-21 x 10 dil  
Misc : dup of E18-06173-01 x 10 dil, can 1070  
ALS Vial : 9 Sample Multiplier: 1

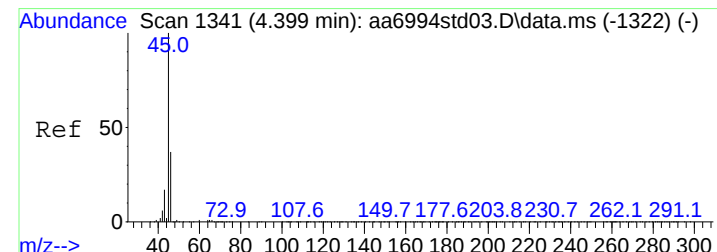
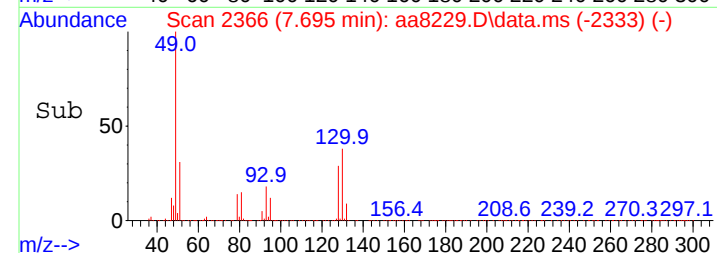
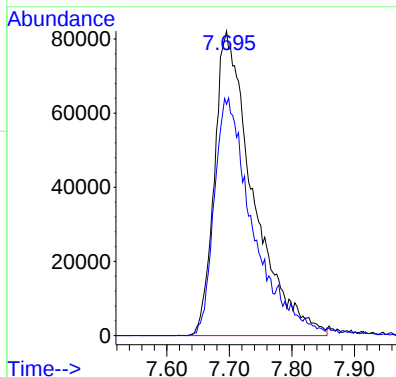
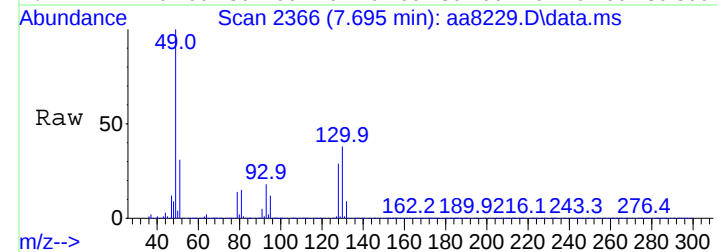
Quant Time: Aug 08 13:09:58 2018  
Quant Method : C:\msdchem\1\METHODS\0725.M  
Quant Title : TO-15 on the Agilent 7890A / 5975C  
QLast Update : Wed Jul 25 14:15:57 2018  
Response via : Initial Calibration





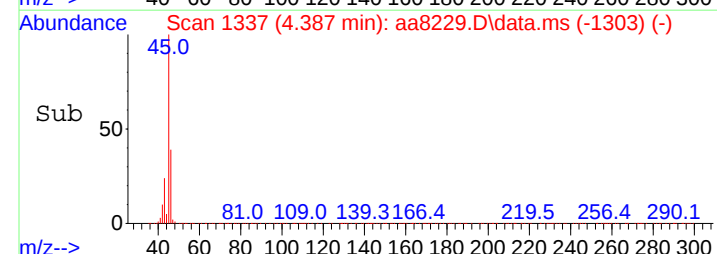
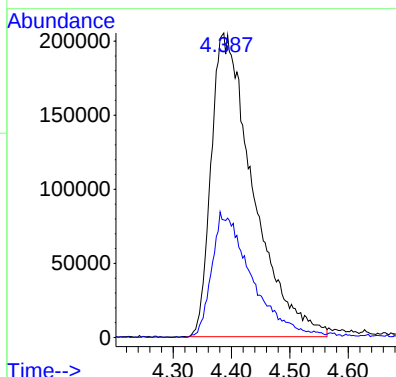
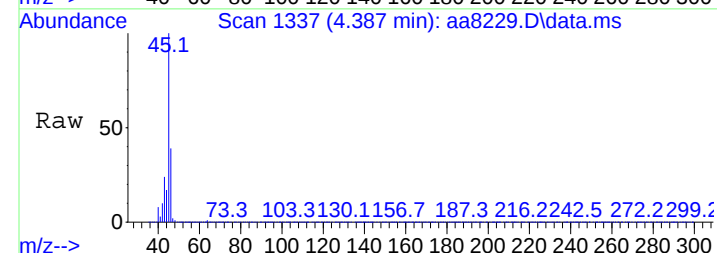
#1  
Bromochloromethane (IS)  
Concen: 10.00 ppbV  
RT: 7.695 min Scan# 2366  
Delta R.T. 0.006 min  
Lab File: aa8229.D  
Acq: 7 Aug 2018 3:17 pm

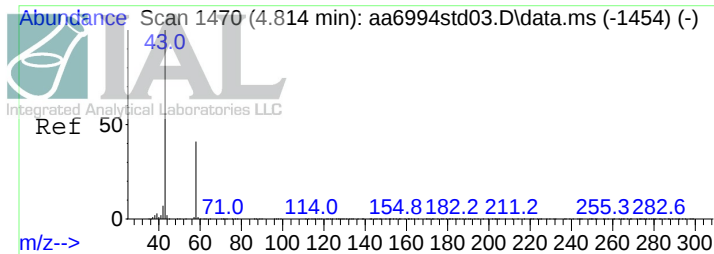
Tgt Ion: 130 Resp: 353353  
Ion Ratio Lower Upper  
130 100  
128 77.9 62.6 94.0



#11  
Ethanol  
Concen: 36.88 ppbV  
RT: 4.387 min Scan# 1337  
Delta R.T. 0.010 min  
Lab File: aa8229.D  
Acq: 7 Aug 2018 3:17 pm

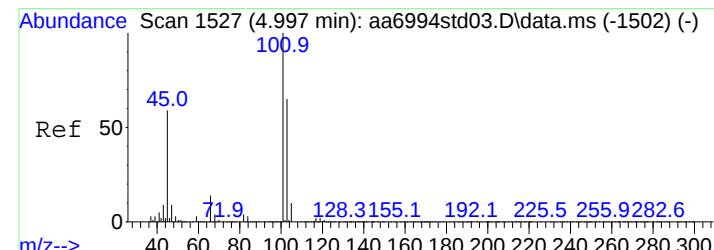
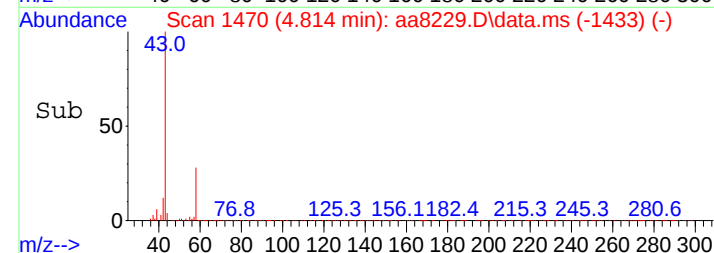
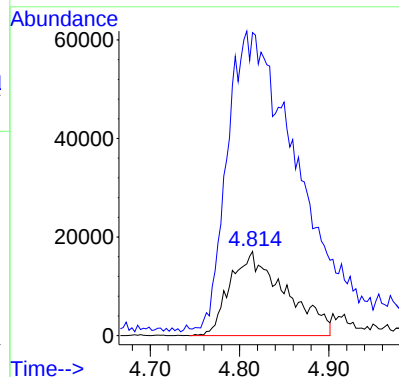
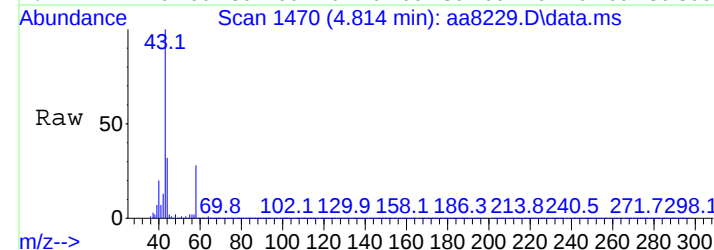
Tgt Ion: 45 Resp: 1026205  
Ion Ratio Lower Upper  
45 100  
46 39.0 32.6 48.8





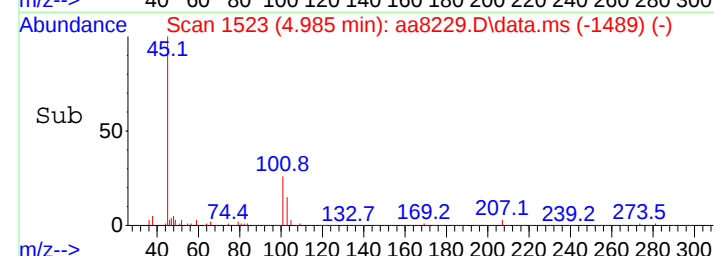
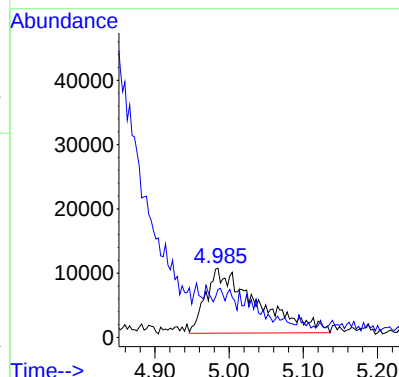
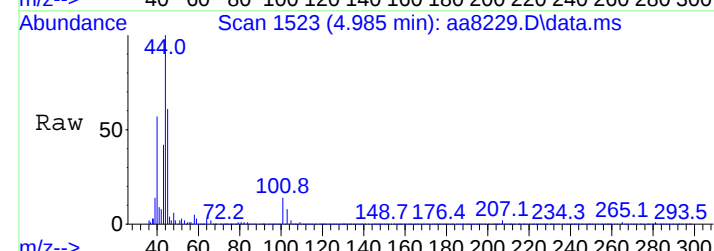
#14  
Acetone  
Concen: 2.71 ppbV  
RT: 4.814 min Scan# 1470  
Delta R.T. 0.019 min  
Lab File: aa8229.D  
Acq: 7 Aug 2018 3:17 pm

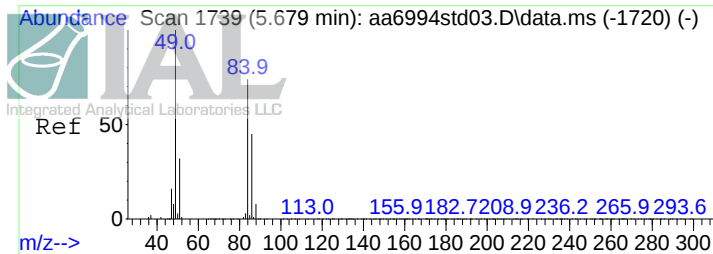
Tgt Ion: 58 Resp: 73001  
Ion Ratio Lower Upper  
58 100  
43 454.8 263.2 394.8#



#16  
Isopropanol  
Concen: 0.55 ppbV  
RT: 4.985 min Scan# 1523  
Delta R.T. 0.010 min  
Lab File: aa8229.D  
Acq: 7 Aug 2018 3:17 pm

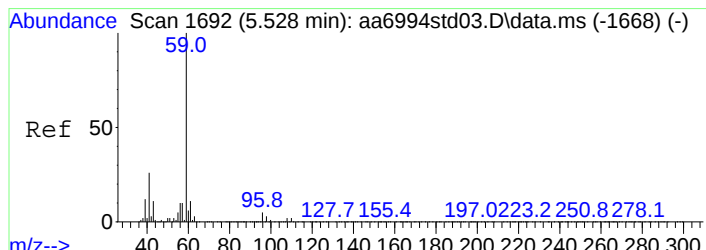
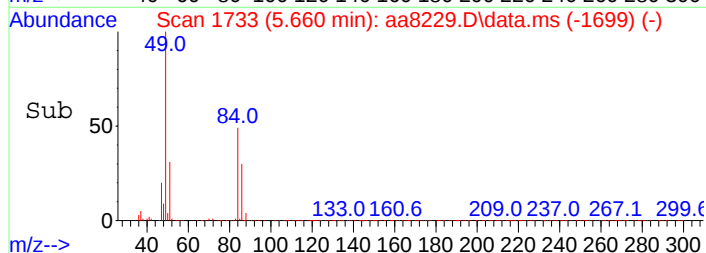
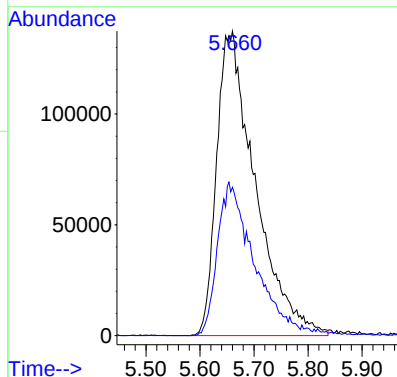
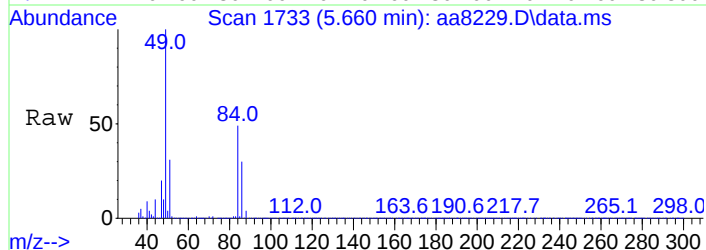
Tgt Ion: 45 Resp: 48384  
Ion Ratio Lower Upper  
45 100  
43 8.8 18.4 27.6#





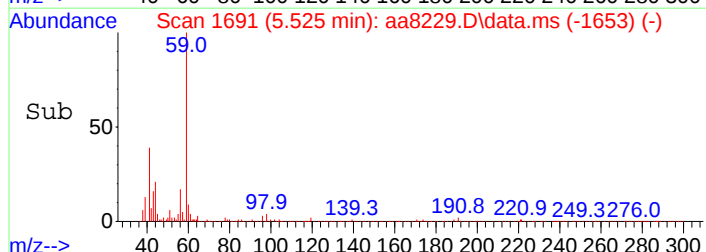
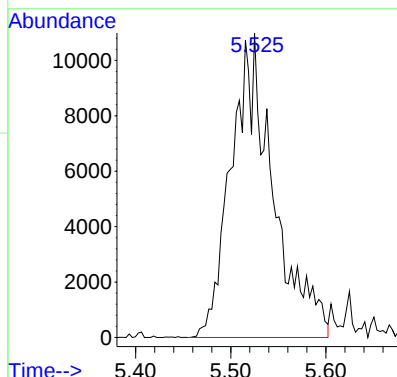
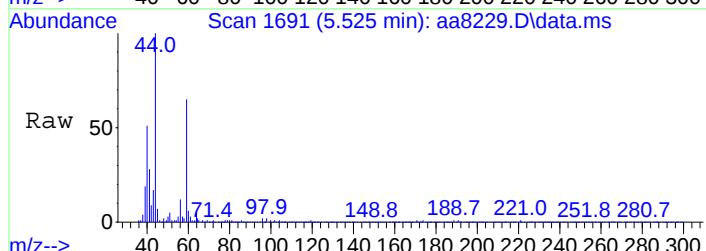
#19  
Methylene chloride  
Concen: 10.05 ppbV  
RT: 5.660 min Scan# 1733  
Delta R.T. 0.010 min  
Lab File: aa8229.D  
Acq: 7 Aug 2018 3:17 pm

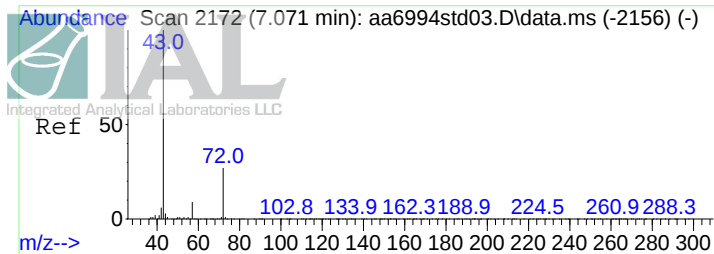
Tgt Ion: 49 Resp: 680511  
Ion Ratio Lower Upper  
49 100  
84 47.9 41.6 62.4



#20  
Tert-butyl alcohol  
Concen: 0.30 ppbV  
RT: 5.525 min Scan# 1691  
Delta R.T. 0.023 min  
Lab File: aa8229.D  
Acq: 7 Aug 2018 3:17 pm

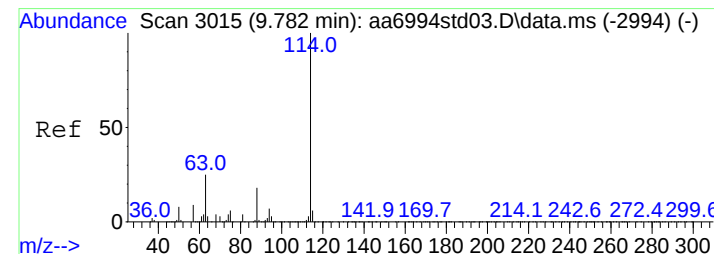
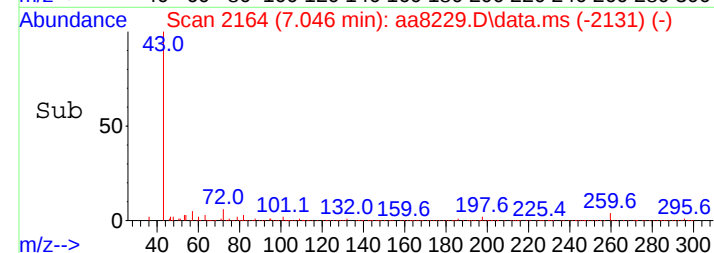
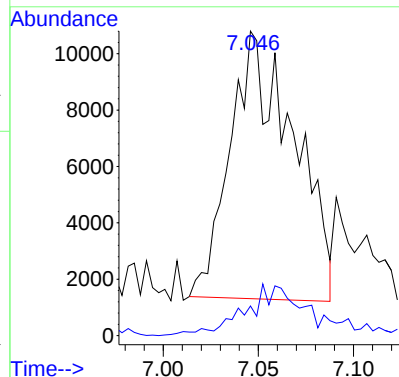
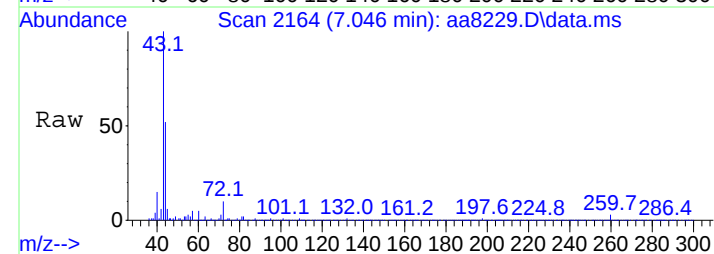
Tgt Ion: 59 Resp: 33629





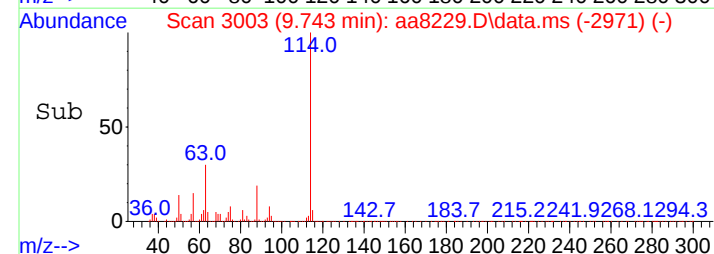
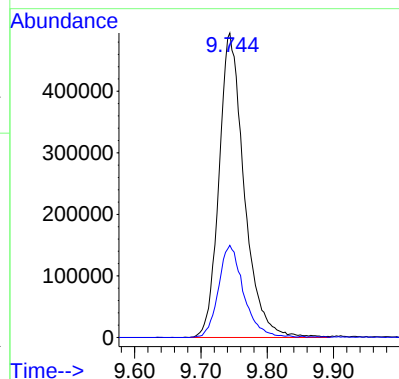
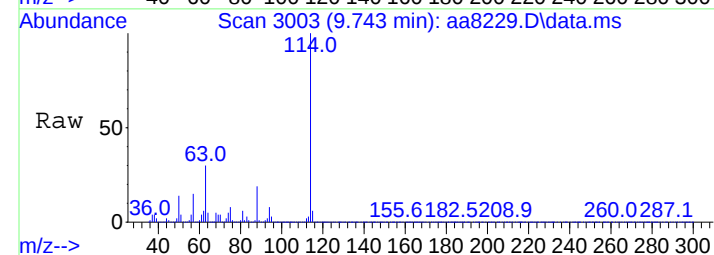
#27  
Methyl ethyl ketone  
Concen: 0.22 ppbV  
RT: 7.046 min Scan# 2164  
Delta R.T. 0.007 min  
Lab File: aa8229.D  
Acq: 7 Aug 2018 3:17 pm

Tgt Ion: 43 Resp: 21982  
Ion Ratio Lower Upper  
43 100  
72 18.8 14.4 21.6

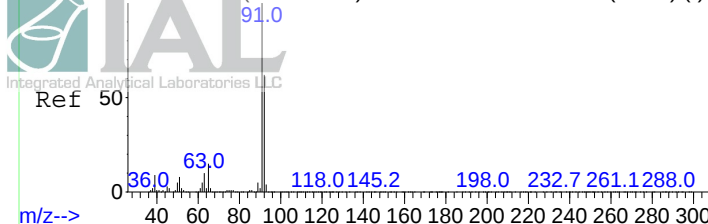


#38  
1,4-Difluorobenzene (IS)  
Concen: 10.00 ppbV  
RT: 9.743 min Scan# 3003  
Delta R.T. 0.003 min  
Lab File: aa8229.D  
Acq: 7 Aug 2018 3:17 pm

Tgt Ion: 114 Resp: 1303289  
Ion Ratio Lower Upper  
114 100  
63 30.3 20.0 30.0#



Abundance Scan 3952 (12.794 min): aa6994std03.D\data.ms (-3923) (-)



#50

Toluene

Concen: 0.26 ppbV

RT: 12.737 min Scan# 3934

Delta R.T. -0.006 min

Lab File: aa8229.D

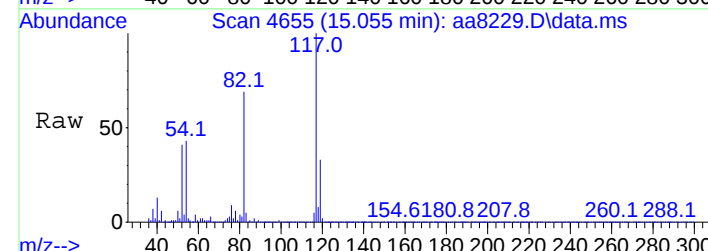
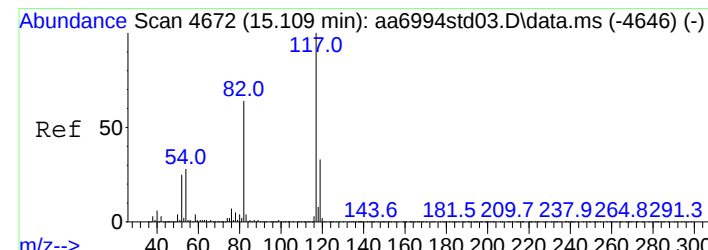
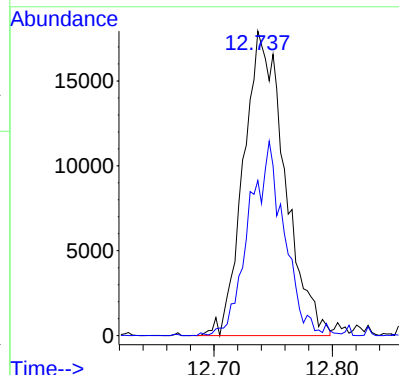
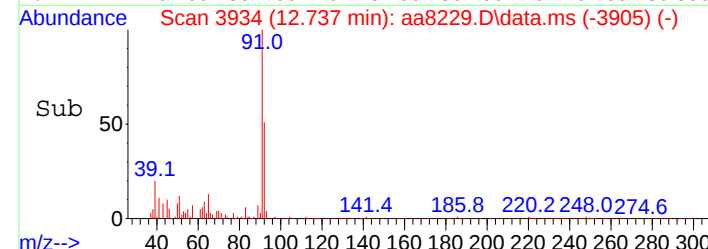
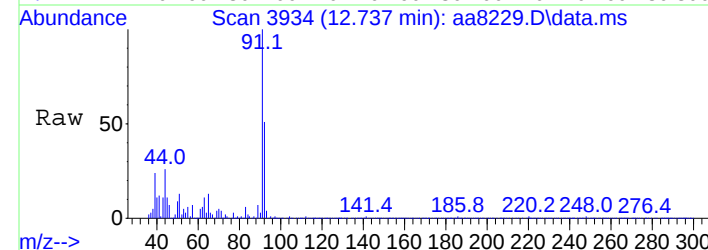
Acq: 7 Aug 2018 3:17 pm

Tgt Ion: 91 Resp: 43258

Ion Ratio Lower Upper

91 100

92 54.2 50.0 75.0



#55

d-5 Chlorobenzene (IS)

Concen: 10.00 ppbV

RT: 15.055 min Scan# 4655

Delta R.T. -0.003 min

Lab File: aa8229.D

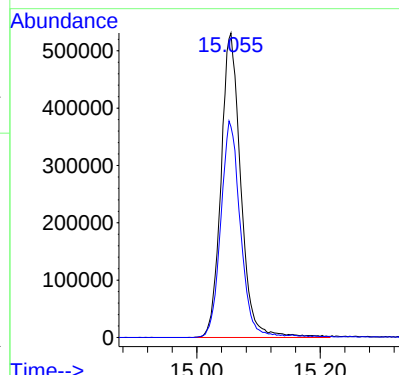
Acq: 7 Aug 2018 3:17 pm

Tgt Ion: 117 Resp: 1182462

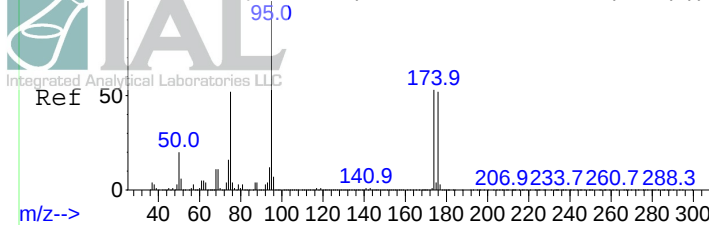
Ion Ratio Lower Upper

117 100

82 70.7 56.0 84.0



Abundance Scan 5355 (17.305 min): aa6994std03.D\data.ms (-5334) (-)



#64

Bromofluorobenzene (tune std)

Concen: 9.49 ppbV

RT: 17.245 min Scan# 5336

Delta R.T. -0.003 min

Lab File: aa8229.D

Acq: 7 Aug 2018 3:17 pm

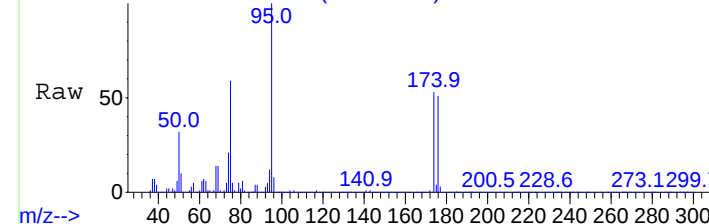
Tgt Ion: 95 Resp: 1022916

Ion Ratio Lower Upper

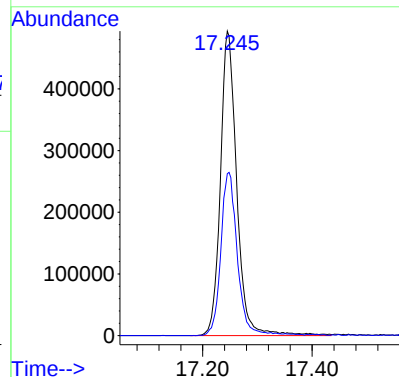
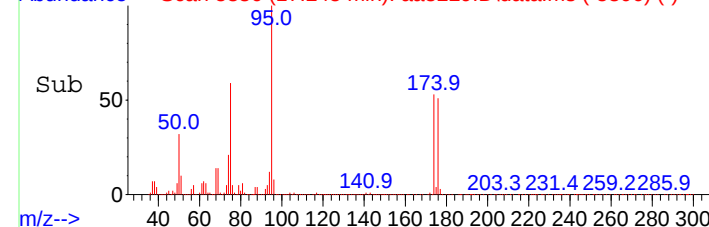
95 100

174 54.5 61.5 92.3#

Abundance Scan 5336 (17.245 min): aa8229.D\data.ms



Abundance Scan 5336 (17.245 min): aa8229.D\data.ms (-5306) (-)



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: 8/6-7/2018  
Date of Initial Calibration: 5/18/2018, 7/25/2018  
SDG #: E18-06141

| 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#) |
| aa7071bfb   | BFB                  | ✓        |                 | ALM029426 | JLS     | 50                    |          |                        |                         | 5/18/2018   | 8:17 | 74   | 30.06  |                | 403-402623       |
| aa7072std01 | 40 ppbv Std          | ✓        |                 | CC483586  | JLS     | 200                   |          |                        |                         |             |      |      |        | 5/18/2018      | 160-401140945-1  |
| aa7073std02 | 20 ppbv Std          | ✓        |                 | CC483586  | JLS     | 100                   |          |                        |                         |             |      |      |        | 5/18/2018      | 160-401140945-1  |
| aa7074std03 | 10 ppbv Std          | ✓        |                 | CC483586  | JLS     | 50                    |          |                        |                         |             |      |      |        | 5/18/2018      | 160-401140945-1  |
| aa7075std04 | 2 ppbv Std           | ✓        |                 | CC483586  | JLS     | 10                    |          |                        |                         |             |      |      |        | 5/18/2018      | 160-401140945-1  |
| aa7076std05 | 0.2 ppbv Std         | ✓        |                 | CC483586  | JLS     | 1                     |          |                        |                         |             |      |      |        | 5/18/2018      | 160-401140945-1  |
| aa7077icvss | 10 ppbv ICVSS        | ✓        |                 | CC483422  | JLS     | 50                    |          |                        |                         |             |      |      |        |                | 160-401186845-1  |

Analyst Name: Jeff Schmitt

Signature:   
IAL SDG #E18-06141

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: 8/6-7/2018  
Date of Initial Calibration: 5/18/2018, 7/25/2018  
SDG #: E18-06141

| 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#) |
| aa7471bfb  | BFB                  | ✓        |                        | ALM029426 | JLS     | 50                    |          |                        |                         | 6/13/2018   | 8:30  | 72   | 30.07  |                | 403-402623       |
| aa7472dcvs | 10 ppbv DCVS         | ✓        |                        | AAL071156 | JLS     | 50                    |          |                        |                         |             |       |      |        | 5/18/2018      | 160-401140945-1  |
| aa7473rlcs | 0.2 ppbv RLLCS       | ✓        |                        | AAL071156 | JLS     | 1                     |          |                        |                         |             |       |      |        | 5/18/2018      | 160-401140945-1  |
| aa7474blk  | Method Blank         | ✓        |                        | 1127      | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa7475     | 3059                 | ✓        |                        |           | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa7476     | E18-04190-11 x 5     | ✓        | 5                      | 3280      | JLS     | 100                   |          |                        |                         |             |       |      |        |                |                  |
| aa7477     | blk                  | ✓        |                        |           | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa7478     | E18-04189-01         | ✓        |                        | 5096      | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa7479     | E18-04189-21         | ✓        | dup of E18-04189-01, c |           | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa7480     | E18-04189-02         | ✓        |                        | 5101      | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa7481     | E18-04189-03         | ✓        |                        | 3039A     | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa7482     | E18-04189-04 x 100   | ✓        | 100                    | 1771      | JLS     | 5                     | not used |                        |                         |             |       |      |        |                |                  |
| aa7483     | E18-04189-05 x 100   | ✓        | 100                    | 1541      | JLS     | 5                     | not used |                        |                         |             |       |      |        |                |                  |
| aa7484     | blk                  | ✓        |                        |           | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa7485cccv | 10 ppbv CCCVS        | ✓        |                        | CC483586  | JLS     | 50                    |          |                        |                         | 6/13/2018   | 20:47 |      |        | 5/18/2018      | 160-401140945-1  |

Analyst Name: Jeff Schmitt

Signature:   
IAL SDG #E18-06141

Supervisor Name: Lauren Jenkins

Signature:   
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Integrated Analytical Laboratories  
GC/MS Run Log

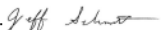
Instrument ID: Agilent 7890A / 5975C  
Column: Restek RTX-1 SN 992567

Target Directory: D:\Agilent GCMS\

Date of Analysis: 8/6-7/2018  
Date of Initial Calibration: 5/18/2018, 7/25/2018  
SDG #: E18-06141

| 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#) |
| aa7971bfb   | BFB                  | ✓        |                 | ALM029426 | JLS     | 50                    |          |                        |                         | 7/25/2018   | 8:35 | 75   | 30.12  |                | 403-402623       |
| aa7972std01 | 40 ppbv Std          | ✓        |                 | CC483586  | JLS     | 200                   |          |                        |                         |             |      |      |        | 7/25/2018      | 160-401140945-1  |
| aa7973std02 | 20 ppbv Std          | ✓        |                 | CC483586  | JLS     | 100                   |          |                        |                         |             |      |      |        | 7/25/2018      | 160-401140945-1  |
| aa7974std03 | 10 ppbv Std          | ✓        |                 | CC483586  | JLS     | 50                    |          |                        |                         |             |      |      |        | 7/25/2018      | 160-401140945-1  |
| aa7975std04 | 2 ppbv Std           | ✓        |                 | CC483586  | JLS     | 10                    |          |                        |                         |             |      |      |        | 7/25/2018      | 160-401140945-1  |
| aa7976std05 | 0.2 ppbv Std         | ✓        |                 | CC483586  | JLS     | 1                     |          |                        |                         |             |      |      |        | 7/25/2018      | 160-401140945-1  |
| aa7977icvss | 10 ppbv ICVSS        | ✓        |                 | CC483422  | JLS     | 50                    |          |                        |                         |             |      |      |        |                | 160-401186845-1  |
| aa7978      | E18-05039-01 x 100   | ✓        | 100             | 5093      | JLS     | 5                     | not used |                        |                         |             |      |      |        |                |                  |
| aa7979      | E18-05039-02 x 100   | ✓        | 100             | 3033      | JLS     | 5                     | not used |                        |                         |             |      |      |        |                |                  |
| aa7980      | E18-05040-01 x 100   | ✓        | 100             | 1769      | JLS     | 5                     | not used |                        |                         |             |      |      |        |                |                  |
| aa7981      | E18-05041-01 x 100   | ✓        | 100             | 1523      | JLS     | 5                     | not used |                        |                         |             |      |      |        |                |                  |
| aa7982      | E18-05041-02 x 100   | ✓        | 100             | 1599      | JLS     | 5                     | not used |                        |                         |             |      |      |        |                |                  |

Analyst Name: Jeff Schmitt

Signature:   
IAL SDG #E18-06141

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: 8/6-7/2018  
Date of Initial Calibration: 5/18/2018, 7/25/2018  
SDG #: E18-06141

| 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#) |
| aa8191bfb  | BFB                  | ✓        |                        | ALM029426 | JLS     | 50                    |          |                        |                         | 8/6/2018    | 11:26 | 75   | 30.20  |                | 403-402623       |
| aa8192dcvs | 10 ppbv DCVS         | ✓        |                        | AAL071156 | JLS     | 50                    |          |                        |                         |             |       |      |        | 7/25/2018      | 160-401140945-1  |
| aa8193rlcs | 0.2 ppbv RLLCS       | ✓        |                        | AAL071156 | JLS     | 1                     |          |                        |                         |             |       |      |        | 7/25/2018      | 160-401140945-1  |
| aa8194blk  | Method Blank         | ✓        |                        | 1127      | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8195     | E18-06204-01         | ✓        |                        | 3280      | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8196     | E18-06204-21         | ✓        | dup of E18-06204-01, c |           | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8197     | E18-06204-02 x 10    | ✓        | 10                     | 1548      | JLS     | 50                    |          |                        |                         |             |       |      |        |                |                  |
| aa8198     | blk                  | ✓        |                        |           | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8199     | E18-05043-04 x 10    | ✓        | 10                     | 2885      | JLS     | 50                    |          |                        |                         |             |       |      |        |                |                  |
| aa8200     | E18-05043-04         | ✓        |                        | 2885      | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8201     | E18-05043-05 x 10    | ✓        | 10                     | 2065      | JLS     | 50                    |          |                        |                         |             |       |      |        |                |                  |
| aa8202     | E18-05043-05         | ✓        |                        | 2065      | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8203     | E18-05043-06 x 10    | ✓        | 10                     | 4866      | JLS     | 50                    | not used |                        |                         |             |       |      |        |                |                  |
| aa8204     | E18-05043-06         | ✓        |                        | 4866      | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8205     | blk                  | ✓        |                        |           | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8206     | E18-06141-07         | ✓        |                        | 3014A     | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8207     | E18-06141-08         | ✓        |                        | 2155      | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8208     | E18-06141-09         | ✓        |                        | 5089      | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8209     | blk                  | ✓        |                        |           | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8210     | E18-06173-01 x 100   | ✓        | 100                    | 1070      | JLS     | 5                     | not used |                        |                         |             |       |      |        |                |                  |
| aa8211     | E18-06173-02 x 100   | ✓        | 100                    | 1764      | JLS     | 5                     | not used |                        |                         |             |       |      |        |                |                  |
| aa8212     | blk                  | ✓        |                        |           | JLS     | 500                   |          |                        |                         |             |       |      |        |                |                  |
| aa8213cccv | 10 ppbv CCCVS        | ✓        |                        | CC483586  | JLS     | 50                    |          |                        |                         | 8/7/2018    | 2:22  |      |        | 7/25/2018      | 160-401140945-1  |

Analyst Name: Jeff Schmitt

Signature: *Jeff Schmitt*  
IAL SDG #E18-06141

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: 8/6-7/2018  
Date of Initial Calibration: 5/18/2018, 7/25/2018  
SDG #: E18-06141

| 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#) |
| aa8221bfb   | BFB                  | ✓        |                 | ALM029426     | JJW     | 50                    |          |                        |                         | 8/7/2018    | 9:33 | 74   | 30.11  |                | 403-402623       |
| aa8222dcvs  | 10 ppbv DCVS         | ✓        |                 | AAL071156     | JJW     | 50                    |          |                        |                         |             |      |      |        | 7/25/2018      | 160-401140945-1  |
| aa8223rlcs  | 0.2 ppbv RLLCS       | ✓        |                 | AAL071156     | JJW     | 1                     |          |                        |                         |             |      |      |        | 7/25/2018      | 160-401140945-1  |
| aa8224blk   | Method Blank         | ✓        |                 | 1127          | JJW     | 500                   |          |                        |                         |             |      |      |        |                |                  |
| aa8225      | E18-06204-02 x 100   | ✓        | 100             | 1548          | JJW     | 5                     | not used |                        |                         |             |      |      |        |                |                  |
| aa8226      | E18-06204-02 x 10    | ✓        | 10              | 1548          | JJW     | 50                    |          |                        |                         |             |      |      |        |                |                  |
| aa8227      | E18-06204-02 x 20    | ✓        | 20              | 1548          | JJW     | 25                    |          |                        |                         |             |      |      |        |                |                  |
| aa8228      | E18-06173-01 x 10    | ✓        | 10              | 1070          | JJW     | 50                    |          |                        |                         |             |      |      |        |                |                  |
| aa8229      | E18-06173-21 x 10    | ✓        | 10              | 06173-01 x 10 | JJW     | 50                    |          |                        |                         |             |      |      |        |                |                  |
| aa8230      | E18-06173-02 x 10    | ✓        | 10              | 1764          | JJW     | 50                    |          |                        |                         |             |      |      |        |                |                  |
| aa8231      | blk                  | ✓        |                 |               | JJW     | 500                   |          |                        |                         |             |      |      |        |                |                  |
| aa8232      | E18-06141-08 x 100   | ✓        | 100             | 2155          | JJW     | 5                     |          |                        |                         |             |      |      |        |                |                  |
| aa8233      | E18-06141-09 x 10    | ✓        | 10              | 5089          | JJW     | 50                    |          |                        |                         |             |      |      |        |                |                  |
| aa8234      | blk                  | ✓        |                 |               | JJW     | 500                   |          |                        |                         |             |      |      |        |                |                  |
| aa8235      | E18-06174-01 x 100   | ✓        | 100             | 1603          | JJW     | 5                     | not used |                        |                         |             |      |      |        |                |                  |
| aa8236      | E18-06174-02 x 100   | ✓        | 100             | 1779          | JJW     | 5                     |          |                        |                         |             |      |      |        |                |                  |
| aa8237      | E18-06174-03 x 100   | ✓        | 100             | 1600          | JJW     | 5                     |          |                        |                         |             |      |      |        |                |                  |
| aa8238      | E18-06174-04 x 100   | ✓        | 100             | 1570          | JJW     | 5                     | not used |                        |                         |             |      |      |        |                |                  |
| aa8239      | E18-06174-05 x 100   | ✓        | 100             | 1400          | JJW     | 5                     | not used |                        |                         |             |      |      |        |                |                  |
| aa8240      | E18-06174-06 x 100   | ✓        | 100             | 1521          | JJW     | 5                     |          |                        |                         |             |      |      |        |                |                  |
| aa8241      | blk                  | ✓        |                 |               | JJW     | 500                   |          |                        |                         |             |      |      |        |                |                  |
| aa8242ccvcs | 10 ppbv CCCVS        | ✓        |                 | CC483586      | JJW     | 50                    |          |                        |                         | 8/7/2018    | 2:22 |      |        | 7/25/2018      | 160-401140945-1  |

Analyst Name: Jeff Schmitt

Signature: *Jeff Schmitt*  
IAL SDG #E18-06141

Supervisor Name: Lauren Jenkins

Signature: *Lauren Jenkins*  
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| Client Contact Information                                                                                                                                                                                                       |                                |                              |                       | Project Information                        |                     |                   |                             | Carrier (check one): <input checked="" type="checkbox"/> IAL Courier <input type="checkbox"/> Client Courier <input type="checkbox"/> FedEx/UPS |                                                                                           |             |                          | pg 1 of 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                       |       |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------|-----------------------|--------------------------------------------|---------------------|-------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--|--|
| Company: <u>BEI</u>                                                                                                                                                                                                              |                                |                              |                       | Project Name: <u>Conyers C.P. / 060141</u> |                     |                   |                             | Invoice Information                                                                                                                             |                                                                                           |             |                          | Analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                       |       |  |  |
| Address: <u>19 Chatham Rd.</u>                                                                                                                                                                                                   |                                |                              |                       | Project Location (State): <u>NY</u>        |                     |                   |                             | Attn:                                                                                                                                           |                                                                                           |             |                          | Report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                       |       |  |  |
| <u>Summit, NJ 07901</u>                                                                                                                                                                                                          |                                |                              |                       | Project Manager: <u>Jeff McCurdy</u>       |                     |                   |                             | Address:                                                                                                                                        |                                                                                           |             |                          | Matrix                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                       |       |  |  |
| Phone: <u>908-918-1702</u>                                                                                                                                                                                                       |                                |                              |                       | PM Signature: <u>[Signature]</u>           |                     |                   |                             | PO #:                                                                                                                                           |                                                                                           |             |                          | <div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">EPA TO-15</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NJDEP LLTO-15 (includes 30 TICs)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Library Search (10, 20, or 30 TICs)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Other (Explain in Comments)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Regulatory/ NY Cat B / Full (NJ Required)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Reduced / NY Cat A Data Package</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Results Only</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Indoor Air</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Ambient / Outdoor Air</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Sub Slab / Soil Gas / Near Slab (Circle One)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Stack Emission / SVE System</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">High Concentrations Expected</div> </div> |                                                                                                                                                       |       |  |  |
| Fax: <u>908-918-1707</u>                                                                                                                                                                                                         |                                |                              |                       | PM E-Mail: <u>Jmccurdy@bei-enr.com</u>     |                     |                   |                             | Quote #:                                                                                                                                        |                                                                                           |             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                       |       |  |  |
| Report to:                                                                                                                                                                                                                       |                                |                              |                       | Sampler: <u>AS</u>                         |                     |                   |                             |                                                                                                                                                 |                                                                                           |             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                       |       |  |  |
| Analysis Turnaround Time - IF NO TAT IS SPECIFIED, 2 WEEK TAT IS ASSUMED                                                                                                                                                         |                                |                              |                       |                                            |                     |                   |                             | Barometric Pressure                                                                                                                             |                                                                                           |             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                       |       |  |  |
| IAL Standard: 2 weeks (10 business days)<br>Rush (**pre-approved by lab): 24hr** 48hr** 72hr** 96hr** 1wk**                                                                                                                      |                                |                              |                       |                                            |                     |                   |                             | Start                                                                                                                                           |                                                                                           | 30.10       |                          | Stop                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                       | 30.10 |  |  |
| 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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                       |       |  |  |
| 1) AA-101                                                                                                                                                                                                                        | 7/31/18 935                    | 7/31/18 408                  | -30                   | -2.0                                       | 72                  | 92                | -29.0                       | -2.0                                                                                                                                            | 7342673                                                                                   | 5076        | 6L                       | 12.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | H                                                                                                                                                     |       |  |  |
| 2) IA-FF-101                                                                                                                                                                                                                     | 837                            | 411                          | -29.5                 | -2.5                                       | 69                  | 68                | -29.0                       | -2.5A                                                                                                                                           | 0702495-3                                                                                 | 3013        | 6L                       | 12.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | H                                                                                                                                                     |       |  |  |
| 3) IA-FF-102                                                                                                                                                                                                                     | 839                            | 355                          | -28.5                 | -2.0                                       | 68                  | 69                | -29.0                       | -2.0                                                                                                                                            | 7342708                                                                                   | 3814        | 6L                       | 12.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | H                                                                                                                                                     |       |  |  |
| 4) IA-FF-103                                                                                                                                                                                                                     | 844                            | 412                          | -30                   | -2.5                                       | 68                  | 69                | -29.0                       | -2.5A                                                                                                                                           | 0302495-5                                                                                 | 2753        | 6L                       | 12.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | H                                                                                                                                                     |       |  |  |
| 5) IA-B-101                                                                                                                                                                                                                      | 840                            | 348                          | -29                   | -2.5                                       | 69                  | 68                | -29.0                       | -2.5A                                                                                                                                           | 0121687-1                                                                                 | 3277        | 6L                       | 12.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | H                                                                                                                                                     |       |  |  |
| 6) IA-B-102                                                                                                                                                                                                                      | 842                            | 410                          | -29.5                 | -2.5                                       | 68                  | 68                | -29.0                       | -2.5                                                                                                                                            | 7340286                                                                                   | 3026A       | 6L                       | 12.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | H                                                                                                                                                     |       |  |  |
| Comments/ Special Analysis Instructions / QC Requirements:<br><u>3013, 2753, 3026A</u><br><u>06081801 06131822 3059</u><br><u>H = hold X = run Report CVOCS only</u><br><u>5076, 3814, 3277</u><br><u>05221801 05291822 5078</u> |                                |                              |                       |                                            |                     |                   |                             |                                                                                                                                                 |                                                                                           |             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Note: Hold or contingent samples may be designated by writing an "H" or "C" in the appropriate analysis box.<br><b>ALL FIELDS IN RED ARE REQUIRED</b> |       |  |  |
| 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-20180200, -0201, -0202</u>                                                                                                                                                                    |                                |                              |                       |                                            |                     |                   |                             |                                                                                                                                                 | <u>[Signature]</u><br>IAL SDG#: <u>06141</u>                                              |             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                       |       |  |  |
| Date/Time Shipping Container Sealed: <u>7-26-18 1130</u>                                                                                                                                                                         |                                |                              |                       |                                            |                     |                   |                             |                                                                                                                                                 |                                                                                           |             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                       |       |  |  |
| External Chain of Custody                                                                                                                                                                                                        |                                |                              |                       |                                            |                     |                   |                             |                                                                                                                                                 |                                                                                           |             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                       |       |  |  |
| Relinquished                                                                                                                                                                                                                     |                                |                              |                       | Received                                   |                     |                   |                             | Date / Time                                                                                                                                     |                                                                                           |             |                          | Reason for Change of External Custody                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                       |       |  |  |
| <u>[Signature]</u>                                                                                                                                                                                                               |                                |                              |                       | <u>[Signature]</u>                         |                     |                   |                             | <u>7-26-18 1130</u>                                                                                                                             |                                                                                           |             |                          | <u>shipment from laboratory to client</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                       |       |  |  |
|                                                                                                                                                                                                                                  |                                |                              |                       |                                            |                     |                   |                             | <u>8/21/18 1606</u>                                                                                                                             |                                                                                           |             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                       |       |  |  |
|                                                                                                                                                                                                                                  |                                |                              |                       |                                            |                     |                   |                             | <u>8/21/18 1659</u>                                                                                                                             |                                                                                           |             |                          | <u>Rec'd @ air lab</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:                                            |             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                       |       |  |  |



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

|                                                                                                                                                 |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------------------------------------------|-----|--------------------------------------------|-----|------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------|------|------------------------------------------------------------------------------------|--|----------------------------------------------|--|--------------------|--|---------------------------------|--|-----------------------------------------|--|--|
| <b>Client Contact Information</b>                                                                                                               |        |                                           |     | <b>Project Information</b>                 |     |                              |      | <b>Carrier (check one):</b> <input checked="" type="checkbox"/> IAL Courier <input type="checkbox"/> Client Courier <input type="checkbox"/> FedEx/UPS |    |                            |      | <b>pg</b> 2 <b>of</b> 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Company:</b> BEI                                                                                                                             |        |                                           |     | <b>Project Name:</b> Congers C.P. / 066141 |     |                              |      | <b>Invoice Information</b>                                                                                                                             |    |                            |      | <b>Analysis</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       | <b>Report</b>                      |      | <b>Matrix</b>                                                                      |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Address:</b> 19 Chatham Rd.<br>Summit, NJ 07901                                                                                              |        |                                           |     | <b>Project Location (State):</b> NY        |     |                              |      | <b>Attn:</b>                                                                                                                                           |    |                            |      | <div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">EPA TO - 15</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NUDEP LL TO-15 (includes 30 TICs)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Library Search (10, 20, or 30 TICs)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Other (Explain in Comments)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Regulatory/ NY Cat B / Full (NJ Required)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Reduced / NY Cat A Data Package</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Results Only</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Indoor Air</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Ambient / Outdoor Air</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Sub Slab / Soil Gas / Near Slab (Circle One)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Stack Emission / SVE System</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">High Concentrations Expected</div> </div> |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Project Manager:</b> Jeff McCurdy                                                                                                            |        |                                           |     | <b>Address:</b>                            |     |                              |      |                                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Phone:</b> 908-918-1702                                                                                                                      |        |                                           |     | <b>PM Signature:</b>                       |     |                              |      | <b>PO #:</b>                                                                                                                                           |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Fax:</b> 908-918-1707                                                                                                                        |        |                                           |     | <b>PM E-Mail:</b> jmcurdy@be-inc.com       |     |                              |      | <b>Quote #:</b>                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Report to:</b>                                                                                                                               |        |                                           |     | <b>Sampler:</b> AS                         |     |                              |      |                                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Analysis Turnaround Time - IF NO TAT IS SPECIFIED, 2 WEEK TAT IS ASSUMED</b>                                                                 |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    | <b>Barometric Pressure</b> |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| IAL Standard: 2 weeks (10 business days)                                                                                                        |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| Rush (**pre-approved by lab): 24hr** 48hr** 72hr** 96hr** 1wk**                                                                                 |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    | <b>Start</b>               |      | 30.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       | <b>Stop</b>                        |      | 30.10                                                                              |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Sample Identification</b>                                                                                                                    |        | <b>Start DATE &amp; TIME (24hr Clock)</b> |     | <b>End DATE &amp; TIME (24hr Clock)</b>    |     | <b>Starting Vacuum ("Hg)</b> |      | <b>Ending Vacuum ("Hg)</b>                                                                                                                             |    | <b>Starting Temp. (°F)</b> |      | <b>Ending Temp. (°F)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       | <b>Outgoing Vacuum - Lab ("Hg)</b> |      | <b>Incoming Vacuum - Lab ("Hg)</b>                                                 |  | <b>Flow Regulator ID</b>                     |  | <b>Canister ID</b> |  | <b>Canister Size (1L or 6L)</b> |  | <b>Flow Controller Readout (cc/min)</b> |  |  |
| 7)                                                                                                                                              | 55-101 | 8/1/18                                    | 917 | 8/1/18                                     | 415 | -29.0                        | -2.5 | 68                                                                                                                                                     | 68 | -29.0                      | -2.5 | A00988641-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3014A | 6L                                 | 12.7 | X                                                                                  |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| 8)                                                                                                                                              | 55-102 | ↓                                         | 833 | ↓                                          | 419 | -30.0                        | -2.5 | 68                                                                                                                                                     | 68 | -29.0                      | -2.5 | A0302498-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2155  | 6L                                 | 12.6 | X                                                                                  |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| 9)                                                                                                                                              | 55-103 | ↓                                         | 839 | ↓                                          | 411 | -30.0                        | -2.5 | 68                                                                                                                                                     | 69 | -29.0                      | -2.5 | A0302497                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5089  | 6L                                 | 12.5 | X                                                                                  |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Comments/ Special Analysis Instructions / QC Requirements:</b><br>3014A, 2155, 5089<br>06091801 061318aa 3059 H=hold X=run Report CVOCS only |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Shipping Information / Canister Preparation (for laboratory use only)</b>                                                                    |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      | <b>Laboratory Canister Certification</b>                                           |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| Individual Preparing Canisters / Title: P. Jenkins, J. Walukiewicz / Air Department Sample Custodians                                           |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      | GC/MS Analyst Signature                                                            |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| Lab Affixed Seal Number(s): IAL-20180200, -0201, -0202                                                                                          |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| Date/Time Shipping Container Sealed: 7-26-18 1130                                                                                               |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      | IAL SDG#: 06141                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>External Chain of Custody</b>                                                                                                                |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
| <b>Relinquished</b>                                                                                                                             |        |                                           |     |                                            |     | <b>Received</b>              |      |                                                                                                                                                        |    |                            |      | <b>Date / Time</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |                                    |      |                                                                                    |  | <b>Reason for Change of External Custody</b> |  |                    |  |                                 |  |                                         |  |  |
|                                                                                                                                                 |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      | 7-26-18 1130                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                    |      |                                                                                    |  | shipment from laboratory to client           |  |                    |  |                                 |  |                                         |  |  |
|                                                                                                                                                 |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      | 8/2/18 1606                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                    |      |                                                                                    |  |                                              |  |                    |  |                                 |  |                                         |  |  |
|                                                                                                                                                 |        |                                           |     |                                            |     |                              |      |                                                                                                                                                        |    |                            |      | 8/2/18 1659                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                    |      |                                                                                    |  | Rec'd @ air lab                              |  |                    |  |                                 |  |                                         |  |  |
| 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:                                     |  |                                              |  |                    |  |                                 |  |                                         |  |  |

## 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 3059  
**Field Sample Name:** Canister 3059  
**Sample Volume:** 500ml

**Data File:** AA7475  
**Date Analyzed:** 6/13/2018  
**Matrix:** Air

Canisters associated with this run: 3059,2155(used for E18-06141-08),2164,2753,3013,3014A(used for E18-06141-07),3026A,5089(used for E18-06141-09)

Runs with this Clean Canister Certification:

| Standard/Sample Run                                 | Date/Time of Sample/Standard Injection |
|-----------------------------------------------------|----------------------------------------|
| BFB [AA7471BFB]                                     | 06/13/2018 08:30                       |
| 10 PPBV DCVS [AA7472DCVS]                           | 06/13/2018 09:18                       |
| METHOD BLANK [AA7473BLK]                            | 06/13/2018 10:25                       |
| 02 PPBV RLLCS [AA7474RLLCS]                         | 06/13/2018 11:14                       |
| CLEAN CAN CERTIFICATION, BATCH MASTER 3059 [AA7475] | 06/13/2018 12:20                       |
| 10 PPBV CCCVS [AA7485CCCVS]                         | 06/13/2018 20:47                       |

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 3059  
**Field Sample Name:** Canister 3059  
**Sample Volume:** 500ml

**Data File:** AA7475  
**Date Analyzed:** 6/13/2018  
**Matrix:** Air

Canisters associated with this run: 3059,2155(used for E18-06141-08),2164,2753,3013,3014A(used for E18-06141-07),3026A,5089(used for E18-06141-09)

Runs with this Clean Canister Certification:

| Standard/Sample Run                                 | Date/Time of Sample/Standard Injection |
|-----------------------------------------------------|----------------------------------------|
| BFB [AA7471BFB]                                     | 06/13/2018 08:30                       |
| 10 PPBV DCVS [AA7472DCVS]                           | 06/13/2018 09:18                       |
| METHOD BLANK [AA7473BLK]                            | 06/13/2018 10:25                       |
| 02 PPBV RLLCS [AA7474RLLCS]                         | 06/13/2018 11:14                       |
| CLEAN CAN CERTIFICATION, BATCH MASTER 3059 [AA7475] | 06/13/2018 12:20                       |
| 10 PPBV CCCVS [AA7485CCCVS]                         | 06/13/2018 20:47                       |

This canister has been certified clean, all compounds are below 0.2 ppbv.

| Compound                              | CAS #       | RL<br>(ppbv) | Calculated<br>Amount<br>(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\06-13-18\  
 Data File : aa7475.D  
 Acq On : 13 Jun 2018 12:20 pm  
 Operator : jls  
 Sample : 3059  
 Misc : 2155, 2164, 2753, 3013, 3014A, 3026A, 5089  
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 18 08:48:05 2018  
 Quant Method : C:\msdchem\1\METHODS\0518.M  
 Quant Title : TO-15 on the Agilent 7890A / 5975C  
 QLast Update : Fri May 18 13:51:08 2018  
 Response via : Initial Calibration

| Compound                     | R.T.   | QIon | Response | Conc  | Units  | Dev(Min) |
|------------------------------|--------|------|----------|-------|--------|----------|
| Internal Standards           |        |      |          |       |        |          |
| 1) Bromochloromethane (IS)   | 7.724  | 130  | 486608   | 10.00 | ppbV   | 0.00     |
| 38) 1,4-Difluorobenzene (IS) | 9.785  | 114  | 1675394  | 10.00 | ppbV # | 0.00     |
| 55) d-5 Chlorobenzene (IS)   | 15.116 | 117  | 1426411  | 10.00 | ppbV   | 0.00     |

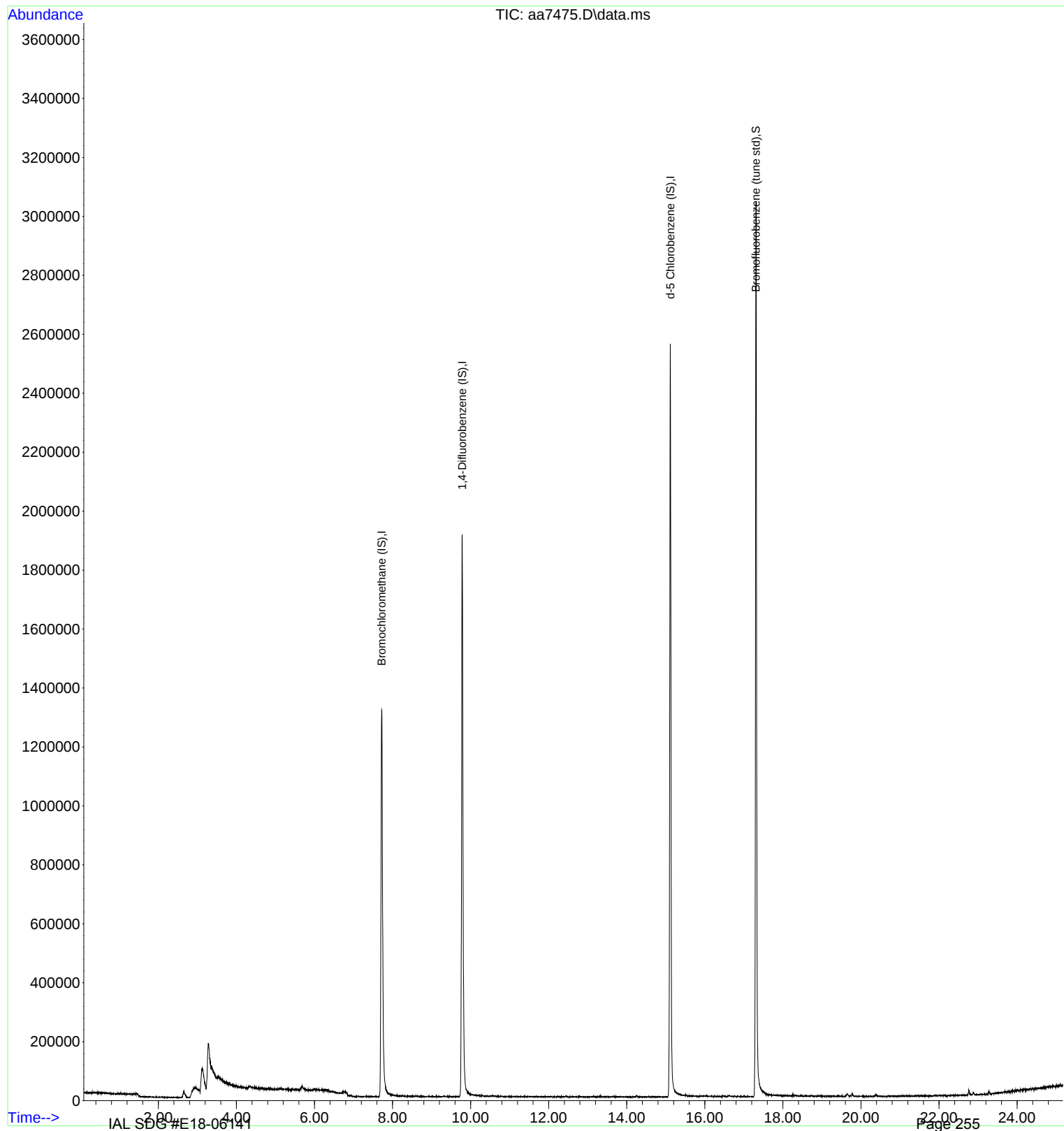
|                               |        |    |         |      |      |      |
|-------------------------------|--------|----|---------|------|------|------|
| System Monitoring Compounds   |        |    |         |      |      |      |
| 64) Bromofluorobenzene (tu... | 17.312 | 95 | 1270032 | 9.67 | ppbV | 0.00 |

| Target Compounds | Qvalue |
|------------------|--------|
|------------------|--------|

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

Data Path : C:\DATA\06-13-18\  
Data File : aa7475.D  
Acq On : 13 Jun 2018 12:20 pm  
Operator : jls  
Sample : 3059  
Misc : 2155, 2164, 2753, 3013, 3014A, 3026A, 5089  
ALS Vial : 5 Sample Multiplier: 1

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Quant Method : C:\msdchem\1\METHODS\0518.M  
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